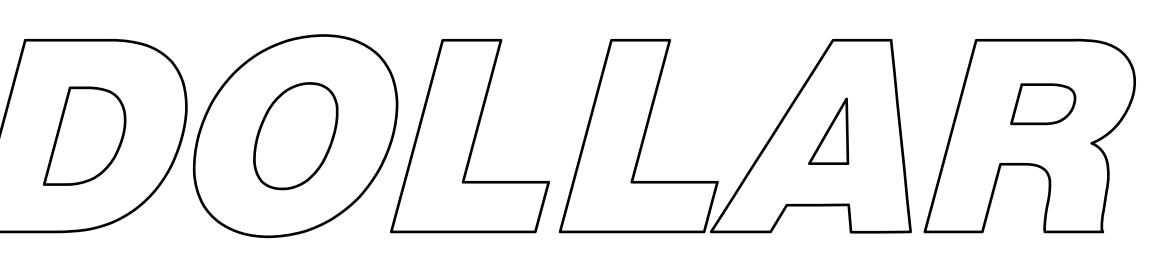
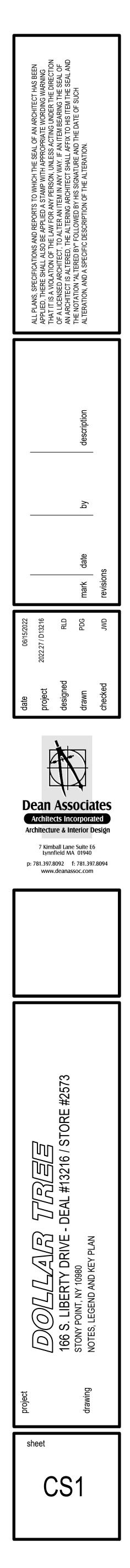


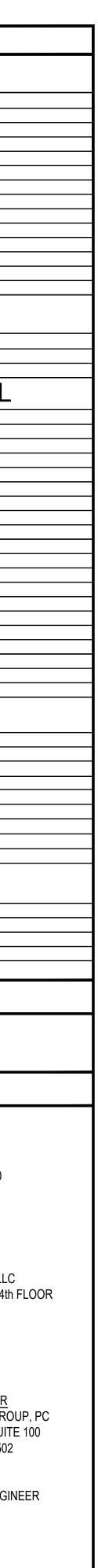
		DEAL # 13210	5/SIURE # 25/3		
ABBREVIATIONS	SYMBOLS	KEY	PLAN	INDEX OF DRAWINGS	
ACTACOUSTICAL CEILING TILEMAXMAXIMUMADAAMERICAN DISABILITIES ACTMFG, MANUFMANUFACTURE, IAFFABOVE FINISHED FLOORMINMININUM, MINUTARCHARCHITECT, ARCHITECTURALMTDMOUNTEDAPPROXAPPROXIMATEMTLMETALBDBOARDOCON CENTRABLDGBUILDINGOCON CENTRACEMCEMENT PLASTER FINISHOPPOPPOSITECLGCELARPLAMPLASTIC LAMINACMUCONCRETE MASONRY UNITPLYWDPLYWOODCOLCOLUMNPRPAIROFDRINKING FOUNTAINPSPOUNDS PER SQDTLDETALPTDPAINTEDDWGDRAWINGRELOREQUIREDEAEACHSCSOLID COREEIFSEXTERIOR INSULATION FINISH SYSTEMSCSOLID COREELEVELEVATIONSFSOUARE FEETEQEQUALSIMSIMILAREXISTEXINGUISHERTGTHICK, THICKNESFRFIBERGLAS REINFORCED PANELTYPTYPICALFINFINISH, FINISHEDUONUNDERWRITERSFTGFOOTINGUONUNDERWRITERSFTGFOOTINGVTRVENT THROUGHFWHEIGHT& ANDHMHOLLOWLANGLEHORHARDWAREWIFWIFHHMHOLLOWLANGLEHVACHARDWAREWIFWIFHHVACHEATI	Image: ACT Image: ACT Image: ACT Image: ACT EXPANSION JOINT WATE Image: ACT Image: ACT Image: ACT SQUARE INCH Image: ACT Image: ACT Image: ACT SQUARE INCH Image: ACT Image: ACT Image: ACT ESS Image: ACT Image: ACT Image: ACT Image: ACT ESS Image: ACT Image: ACT Image: ACT Image: ACT Image: ACT ESS Image: ACT Image: ACT Image: ACT Image: ACT Image: ACT Image: A	 ELEVATION DATUM BREAK LINE EXISTING DOOR NEW DOOR OYPSUM WALL BOARD WOOD TRIM WOOD TRIM NEW WALL CONSTRUCTION CMU CONCRETE 	<image/> <image/> <image/>	A0 PARTIAL FLOOR PLAN AI A0.1 PARTIAL FLOOR PLAN AI A1 FIXTURE / EGRESS PLAN A1.1 ENLARGED PLANS, DET/ A1.2 ENLARGED PLANS, DET/ A1.3 ENLARGED PLANS, DET/ A1.3 ENLARGED PLANS, DET/ A1.4 ENLARGED PLANS, DET/ A1.5 ENLARGED PLANS, DET/ A1.6 A1.3 ENLARGED PLANS, DET/ A1.3 ENLARGED PLANS, DET/ A1.4 ENLARGED PLANS, DET/ A1.5 ENLARGED PLANS, DET/ A1.6 A1.3 ENLARGED PLANS, DET/ A1.5 ENLARGED PLANS, DET/ A1.6 ENLARGED PLANS, DET/ A1.7 ENLARGED PLANS, DET/ A2 REFLECTED CEILING PL A3 EXTERIOR ELEVATIONS A3.1 EXTERIOR ELEVATIONS A3.1 EXTERIOR ELEVATIONS A3.2 INTERIOR ELEVATIONS A4.1 DETAILS, ELEVATIONS A S1 PARTIAL FOUNDATION F	EY PLAN REFLECTED CEILING DEMO PLAN NR REFLECTED CEILING DEMO PLAN ND WALL CONSTRUCTION TYPES IAND DETAILS IANLO SECTIONS AND ELEVATIONS IALS, SECTIONS AND ELEVATIONS IALS, SECTIONS AND ELEVATIONS IND SCHEDULES ND SCHEDULES RAL PLAN, NOTES AND DETAILS CAL / PLUMBING / ELECTRICAL I ON AN ES ATIONS AN I I I I I I I I I I I I I I I I I I
 CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES AND REGULATIONS. CONSTRUCTION SHALL ALSO COMPLY WITH LANDLORD'S CRITERIA (UNLESS PRECLUDED BY CODE). ALL WOOD FRAMEWORK, WOOD BLOCKING AND PLYWOOD SHALL BE FIRE RETARDANT TREATED PER CODE. ALL FINISH MATERIALS SHALL MEET FLAME SPREAD AND SMOKE DEVELOPMENT RATING CLASS C (OR CLASS 3). WALL CONSTRUCTION BY THE TENANT'S CONTRACTOR IS SHOWN HATCHED. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BID TO DETERMINE THE EXTENT OF WORK. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND THE TENANT OF ANY DISCREPANCIES PRIOR TO BIDDING. ALL MATERIALS INDICATED ARE NEW, UNLESS SPECIFICALLY NOTED AS EXISTING, AND SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR . LAW ALL MATERIALS INDICATED ARE NEW, UNLESS SPECIFICALLY NOTED AS EXISTING, AND SHALL BE PROVIDED SHALL BE INSTALLED BY THE CONTRACTOR PER TENANT'S REQUIREMENTS AND/OR MANUFACTURER'S PUBLISHED STANDARDS. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE PATCHED OR REPAIRED TO MATCH THE EXISTING ADJACENT MATERIALS, SO THAT THE REPAIR IS IMPERCEPTIBLE. NOT DURING THE COURSE OF CONSTRUCTION, IF THE CONTRACTOR UNCOVERS ANY CODE VIOLATION KNOWN TO HIM OR ANY DISCREPANCY WITH THE DESIGN, CONTRACTOR SHALL NOTIFY THE ARCHITECT OF SUCH IMMEDIATELY. CONTRACTOR SHALL ASSEMBLE AND INSTALL MATERIALS/ PRODUCTS IN CONTRACTOR SHALL ASSEMBLE AND INSTALL MATERIALS/ PRODUCTS IN 	ROVIDE TENANT IDENTIFICATION SIGN AT REAR DOOR PER LANDLORD'S 13. (RITERIA. FI () 2A-10BC RATED FIRE EXTINGUISHERS TO BE TENANT SUPPLIED. SIMILAR 14. (() 2J. INDUSTRIES MODEL COSMIC 5E. LOCATE EXTINGUISHERS AS SHOWN. 17 ROVIDE WALL BRACKETS AND MOUNT CONTROLS AT 48" AFF MAX. FI ROVIDE "FIRE EXTINGUISHER" SIGNS ON WALL DIRECTLY ABOVE EACH (NIT. CONTRACTOR SHALL HAVE EXTINGUISHERS INSPECTED AND FI AGGED . II HE CONTRACTOR SHALL VERIFY THAT TOILET ROOM(S), INCLUDING Y XTURES AND ACCESSORIES (BOTH EXISTING AND NEW) MEET ALL FI PPLICABLE LOCAL, STATE AND FEDERAL ACCESSIBILITY CODES AND Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ONE DOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y ANDLORD, IF ON EDOES NOT EXIST WITHIN 10 FEET OF REAR DOOR. Y	CONTRACTOR SHALL NOTIFY CONSTRUCTION PM OF ANY NECESSARY REPAIRS TO ROOF PRIOR TO PERFORMING ANY OR ALL WORK. CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY AND ALL PREVIOUS TENANT'S EXTERIOR SIGNAGE LEFT BEHIND. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISED DISTURBED BY REMOVAL OF PREVIOUS TENANT SIGNAGE SHALL BE PATCHED OR REPAIRED AND PAINTED TO MATCH EXISTING ADJACENT MATERIALS SO THAT THE REPAIR S IMPERCEPTIBLE. CONTRACTORS SHALL NOT INCLUDE THIS SCOPE OF WORK IN THEIR BID AND WILL BE HANDLED VIA CHANGE ORDER AFTER SITE EVALUATION IS DONE BY WINNING BIDDER. CONTRACTOR SHALL FORWARD THE EVALUATION AND PRICE QUOTE TO THE CONSTRUCTION PM FOR APPROVAL PRIOR TO PERFORMING ANY AND ALL WORK. CONTRACTOR SHALL INSTALL TENANT SUPPLIED INTERIOR GRAPHICS AND SIGNS TO INCLUDE BUT NOT LIMITED TO PERIMETER WALL GRAPHICS/SIGNAGE, HANGING GRAPHICS/SIGNAGE AND STOREFRONT WINDOW DECALS. CONTACT THE CONSTRUCTION PM FOR SPAPHIC/SIGNAGE DRAWINGS. CONTRACTOR SHALL SEAL ALL EXTERIOR PENETRATIONS INCLUDING CRACKS, HOLES, GAPS, AND EXISTING PENETRATIONS. CONTRACTOR SHALL SELECT MATERIAL APPROPRIATE FOR CONDITION TO PROVIDE PERMANENT RODENT-PROOF INFILL (INSULATION SPRAY FOAM IS NOT AN ACCEPTABLE FINISHED MATERIAL.) CONTRACTOR SHALL POST ON BULLETIN BOARD IN OFFICE FINAL NSPECTIONS & CERTIFICATE OF OCCUPANCY. ALL PLAQUE SIGNAGE INCLUDING BUT NOT LIMITED TO TOILET SIGNS, ADDER STORAGE SIGN, AND FLEX CONVEYOR SIGN SHALL BE ATTACHED	ADDITIONAL REQUIREMENTS. GENERAL SITE ACCESSIBILITY - SECTIONS 1104 AND 1106 OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION, THE EXTERIOR ROUTES OF TRAVEL AND ACCESSIBLE PARKING ARE EXISTING PRIOR TO THE OCCUPANCY OF THE NEW TENANT. NO CHANGE OF OCCUPANCY OR EXTERIOR SITE MODIFICATION SHALL OCCUR WITHOUT PRIOR PERMITTING AND COMPLIANCE TO ABOVE MENTIONED CODE. REQUIRED SITE DEVELOPMENT OR COMPLIANCE TO ABOVE MENTIONED CODE SHALL BE SOLE RESPONSIBILITY OF LANDLORD AND/OR OWNER OF EXISTING BUILDING AND SITE.	FP-2 FIRE SPRINKLER NOTES	IUM" PROJECT DIRECTOR ARCHITECT DEAN ASSOCIATES ARCHITECTS INC. 7 KIMBALL LANE, SUITE E6 LYNNFIELD, MA 01940 PHONE (781) 397-8092 PHONE 551-206-9300
STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRIAL/ASSOCIATION STANDARDS.BUT GOM10. FIELD VERIFY AND/OR REPORT ASBESTOS-CONTAINING MATERIAL TO ARCHITECT AND TENANT UPON DISCOVERY.CAB DET11. SMOKE AND FIRE PARTITIONS SHALL BE CONSTRUCTED PER THE DESIGNATED UL DESIGN AND SHALL BE EXTENDED VERTICALLY TO THE BOTTOM OF THE STRUCTURE ABOVE. PROVIDE FIRE STOPS AND SEAL ALL PIPE AND CONDUIT PENETRATIONS WITH SEALANT THAT COMPLIES WITH THE MINIMUM FIRE RATED REQUIREMENTS FOR THE PARTITION. DUCT PENETRATIONS SHALL BE PROTECTED WITH SMOKE AND/OR FIRE DAMPERS.10. DOC DOC PATCHING, FLOATING/LEVELING OF FLOORS AND INFILLING.12. ALL INTERIOR CONCRETE SHALL BE PORTLAND CEMENT BASED TO INCLUDE PATCHING, FLOATING/LEVELING OF FLOORS AND INFILLING.NOT ELE NOT LETERING SHALL BE PREMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. LETTERING SHALL BE PREMANENTLY IDENTIFIED WITH SIGNS OR ELE STENCILING. LETTERING SHALL BE NOT LESS THAN 3" IN HEIGHT LOCATED ABOVE AN ACCESSIBLE CEILING AND REPEATED IN INTERVALS NOT EXCEEDING 30' HORIZONTALLY ALONG THE WALL OR PARTITION. SUGGESTED WORDING SHALL BE " FIRE AND/OR SMOKE BARRIER-PROTECT ALL OPENINGS."11. COM TEN14. ANY DETAIL WHICH MAY BE INCOMPLETE OR LACKING IN THE PLANS OR SPECIFICATIONS SHALL NOT CONSTITUTE CLAIM FOR EXTRA COMPENSATION. SUCH DETAIL, IF REQUESTED BY THE CONTRACTOR, SHALL BE SUPPLIED BY THE ENGINEER/ARCHITECT AND SUBMITTED TO THE LAN	UT NOT LIMITED TO CART CORRAL, PERIMETER WALL GONDOLA, FLOOR ONDOLA, BALLOON CENTER, HANGING BALLOON CORRALS, HELIUM TANK ABINET (SALES FLOOR), HELIUM TANK BRACKETS (STOCKROOM, SEE ETAIL), GRAVITY CONVEYOR SYSTEM, AND MOBILE FIXTURES PER ENANT'S FIXTURE PLAN. CALIFORNIA PROJECTS ONLY, CONTRACTOR HALL STRAP ALL FIXTURES AS PER THE SEISMIC DRAWINGS PROVIDED. ONTACT THE CONSTRUCTION PM IF FIXTURE/SEISMIC DRAWING WAS NOT ADE AVAILABLE TO YOU DURING YOUR BIDDING PROCESS. OORS AND FRAMES (OTHER THAN THOSE LISTED AS EXIST) ARE TENANT UPPLIED FOR CONTRACTOR INSTALLED BY CONTRACTOR AS EQUIRED. AUTOMATIC DOORS (WHEN NOTED) WILL BE SUPPLIED AND ISTALLED BY TENANT'S VENDOR (CONTRACTOR IS RESPONSIBLE FOR LECTRICAL CONNECTION.) ONTRACTOR SHALL REMOVE ANY EXISTING SIGNAGE THAT HAS PREVIOUS ENANT'S NAME (INTERIOR AND/OR EXTERIOR.) ANY SIGNAGE THAT IS EQUIRED SHALL BE REPLACED IN LIKE KIND WITH DOLLAR TREE'S NAME. ONTRACTOR SHALL VERIFY IF THERE IS AN EXISTING ACCESS PANEL TO	TO MOUNTING SURFACE WITH CONSTRUCTION ADHESIVE. WALK-IN FREEZER COOLER UNIT IS TO BE INSTALLED PER MANUFACTUREF SPECIFICATIONS. THE UNIT IS SELF-CONTAINED AND DOES NOT REQUIRE A FLOOR SINK DRAIN. THE INTERIOR CEILING AND WALL FINISH ARE A NSF APPROVED GALVANIZED FINISH. THE FREEZER FLOOR IS TO HAVE AN ALUMINUM DIAMOND TREAD FINISH. THE FREEZER FLOOR IS TO HAVE AN ALUMINUM DIAMOND TREAD FINISH. THE FREEZER FLOOR IS TO HAVE AN ALUMINUM DIAMOND TREAD FINISH. THE FREEZER FLOOR IS TO HAVE AN ALUMINUM DIAMOND TREAD FINISH. THE FREEZER FLOOR IS TO HAVE AN ALUMINUM DIAMOND TREAD FINISH. PROVIDE NEW ALUMINUM AND GLASS STOREFRONT SYSTEM EQUAL TO KAWNEER TRIFAB VG 451 SERIES, STICK SYSTEM FABRICATION, WITH ANODIZED FINISH TO MATCH EXISTING. PROVIDE TEMPERED 1" INSULATED LOW E GLAZING AS INDICATED. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL FIELD CONDITIONS, AND FOR ALL ACCESSORY PARTS AND HARDWARE REQUIRED. CONTRACTOR SHALL SUBMIT SHOP DRAWING TO THE LANDLORD FOR APPROVAL PRIOR TO CONSTRUCTION. AT ROOF, FLASH NEW MECHANICAL EQUIPMENT CURBS IN ACCORDANCE WITH ROOFING MANUFACTURER'S RECOMMENDATIONS. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR MORE INFORMATION. GENERAL CONTRACTOR SHALL COORDINATE WITH CONSTRUCTION PM PRIOR TO STARTING WORK AT ROOF SO AS NOT TO VOID LANDLORD ROOF WARRANTY.	 MOP SINK- THIS FACILITY WILL BE SUPPLIED WITH A 24"x36" FLOOR MOUNTED MOP SINK WITH APPROVED VACUUM BREAKER FAUCET. WALLS SURROUNDING MOP SINK WILL HAVE FRP TO 8'-0" ABOVE FINISH FLOOR FOR EASY CLEANABLE SURFACE. NSF, ANSI AND UL APPROVED- ALL EQUIPMENT WITHIN THIS FACILITY IS NSF, ANSI AND UL APPROVED, CUT SHEETS FOR EQUIPMENT AVAILABLE UPON REQUEST. FINISH SCHEDULE- A FINISH SCHEDULE IS INCLUDED IN THIS SET OF CONSTRUCTION DOCUMENTS AND LOCATED ON SHEET A4 FOR YOUR USE. QUESTIONS- EXAMINER PLEASE FEEL FREE TO CONTACT THE ARCHITECT AND ENGINEERS LISTED ON SHEET CS1 WITH ANY QUESTIONS OR ITEMS YOU NEED CLARIFICATION ON. ALSO YOU CAN CONTACT STEVE MCMAHON, DIRECTOR OF STORE DESIGN FOR DOLLAR TREE STORES, INC AT 757-321-5830. 	USE GROUP: M - MERCANTILE CONSTRUCTION TYPE: II B NUMBER OF STORIES: ONE SPRINKLERED: YES TOTAL LEASE AREA: 12,518 SF OCCUPANCY LOAD: SALES AREA 9975 / 60 = 166 PRE-SALES 2543 / 300 = 8 TOTAL = 174 PROJECT ADDRESS: 166 S LIBERTY DR STONY POINT, NY 10980 BUILDING DEPARTMENT PHONE NO: 845-786-2716 EXT. 305 FIRE MONITORING REQUIRED: YES	FAX (781) 397-8094 JAMES W DEANED VOORHIS JRPLUMB, MECH, ELEC ENGINEER KLH ENGINEERS 1538 ALEXANDRIA PIKE, SUITE 11 FT. THOMAS, KY 41075 TEL: 859 442 8050 FAX: 859 442 8058 SIMON GOYERT, PELANDLORD GATOR STONY POINT, LLC 7850 NW 146th STREET 4th FLG MIAMI LAKES, FL PHONE 305-949-9049 DINA BARTOLETTASIGN CONTRACTOR ANCHOR SIGN 2200 DISCHER AVENUE CHARLESTON, SC 29405 PHONE (843) 576-3209 MEGAN JACKSONSTRUCTURAL ENGINEER McPHERSON DESIGN GROUP, 6371 CENTER DRIVE, SUITE 10 NORFOLK, VIRGINIA 23502 PHONE (757) 965-2001 MARCOS FREEMAN, ENGINEERFIRE PROTECTION CODE CONSULTANT PROFESSIONAL ENGINEERS, PC 215 WEST 40TH STREET, 10TH FLOOR NEW YORK, NY 10018 PHONE (212) 216-9596 MATT AUSTINSTRUCTURAL ENGINEER MCPHERSON DESIGN GROUP, 6371 CENTER DRIVE, SUITE 10 NORFOLK, VIRGINIA 23502 PHONE (757) 965-2001 MARCOS FREEMAN, ENGINEER

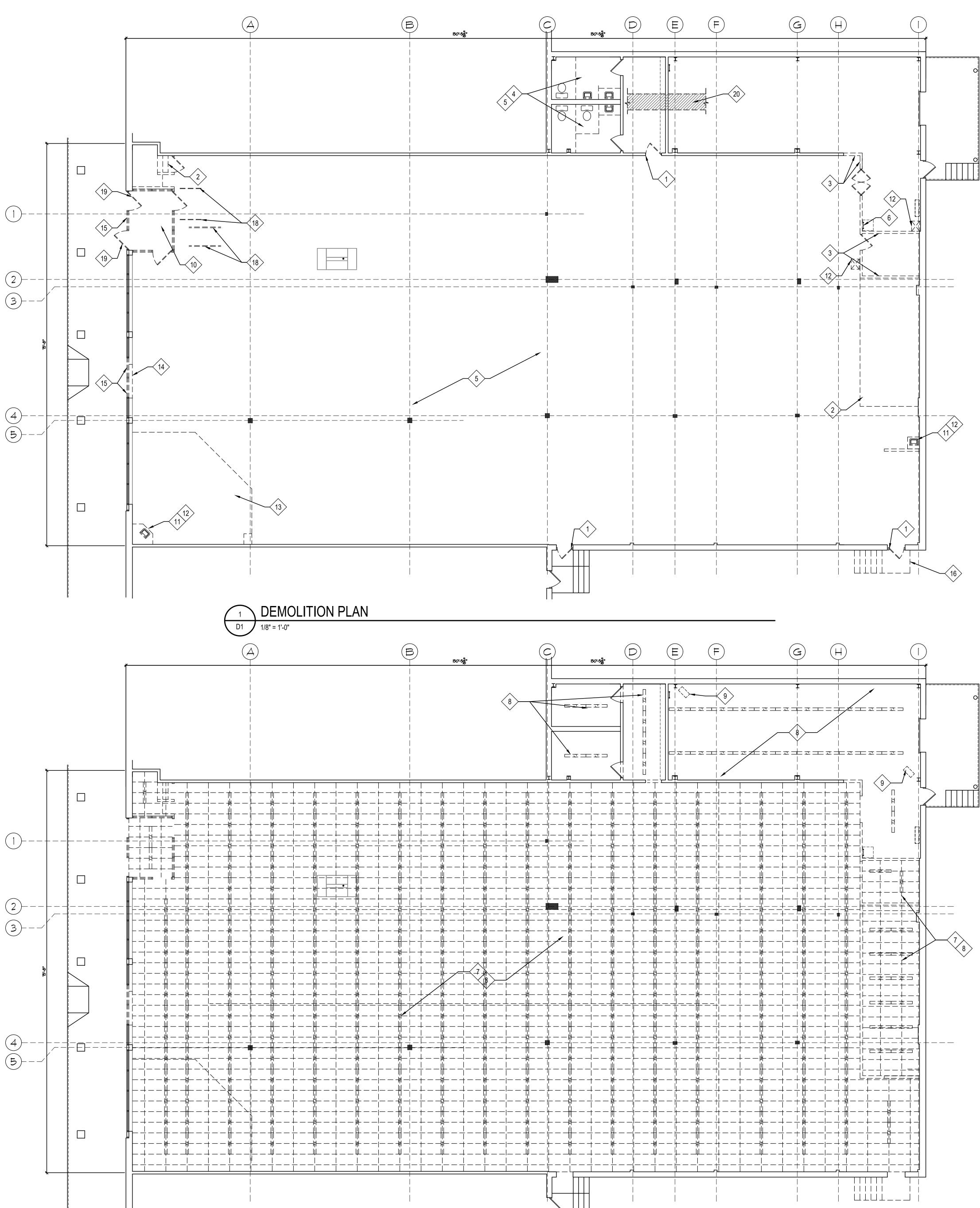


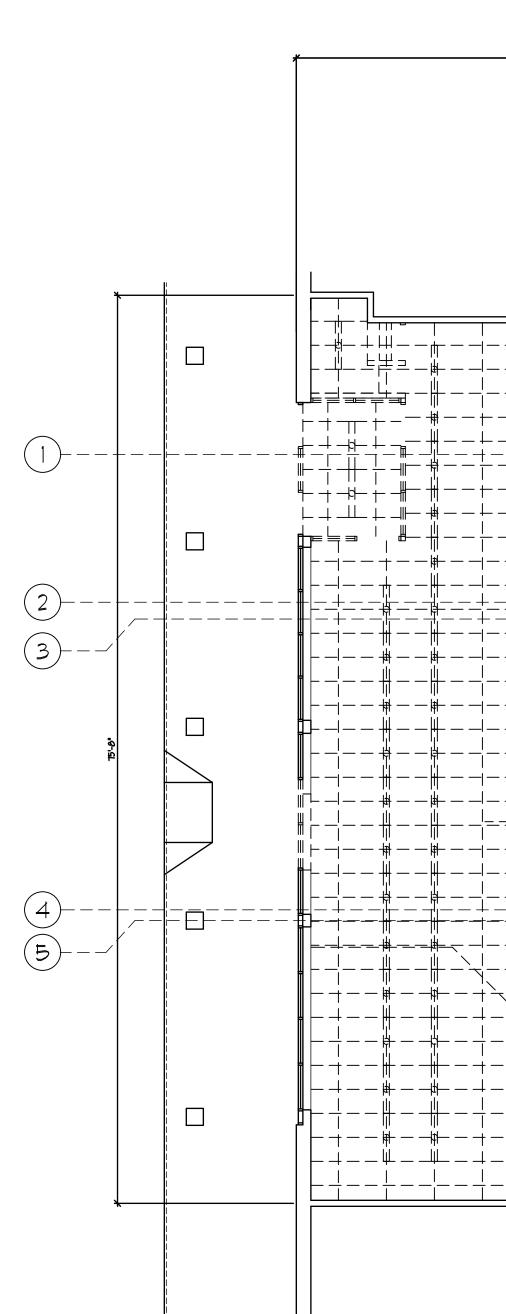
166 S. LIBERTY DR STONY POINT, NY DEAL # 13216 / STORE # 2573











² REFLECTED CEILING DEMOLITION PLAN D1 1/8" = 1'-0"

DE	EMOLITION NOTES	$\langle \rangle$
	REMOVE DOOR AND FRAME COMPLETE.	
2>	REMOVE EXISTING RAISED FLOOR COMPLETE.	
3	REMOVE PARTITION COMPLETE.	
4	REMOVE EXISTING TOILET FIXTURES, WALL FINISHES AND ACCESSORIES COMPLETE. FOR REMOVAL OF PLUMBING FIXTURES AND NEW FINISHES. SEE PLUMBING SHEETS.	
5	FLOORING CONTRACTOR (TENANT HIRED) SHALL REMOVE EXISTING VCT COMPLETE. GC SHALL NOT INCLUDE IN BID.	i
6	REMOVE EXISTING LADDER COMPLETE. BOLT SHUT ROOF HATCH.	
$\langle 7 \rangle$	REMOVE EXISTING ACT AND GRID COMPLETE.	
8	REMOVE EXISTING LIGHT FIXTURES COMPLETE.	
9	REMOVE EXISTING CEILING HUNG HEATER COMPLETE.	
10	REMOVE EXISTING VESTIBULE INCLUDING ACT, LIGHT FIXTURES, FLOORING, DOORS AND GLAZING PARTITIONS COMPLETE.	
	REMOVE EXISTING MILLWORK COMPLETE.	
12	REMOVE EXISTING MOP SINK COMPLETE.	
13	FLOORING CONTRACTOR (TENANT HIRED) SHALL REMOVE EXISTING CARPET COMPLETE. GC SHALL NOT INCLUDE IN BID.	
14	REMOVE PORTION OF EXISTING KNEE WALL COMPLETE FOR INSTALLATION OF STOREFRONT AND DOOR IN NEW WORK.	
15	REMOVE EXIST STOREFRONT FRAMING AND GLAZING COMPLETE.	
(16)	REMOVE EXISTING STAIR COMPLETE.	
	REMOVE EXISTING GWB CEILING COMPLETE.	
18	REMOVE EXISTING RAILING COMPLETE.	
19	REMOVE EXIST STOREFRONT DOORS, TRANSOM AND THRESHOLD COMPLETE	
20>	REMOVE PORTION OF EXISTING CONCRETE SLAB AS REQUIRED TO TRENCH FLOOR FOR RELOCATION OF PLUMBING FIXTURES. CONTRACTOR SHALL INCLUDE IN BID ALL TRENCHING REQUIRED TO EXTEND PLUMBING IN NEW WORK (CONTRACTOR SHALL AVOID SALE	

DEMOLITION GENERAL NOTES

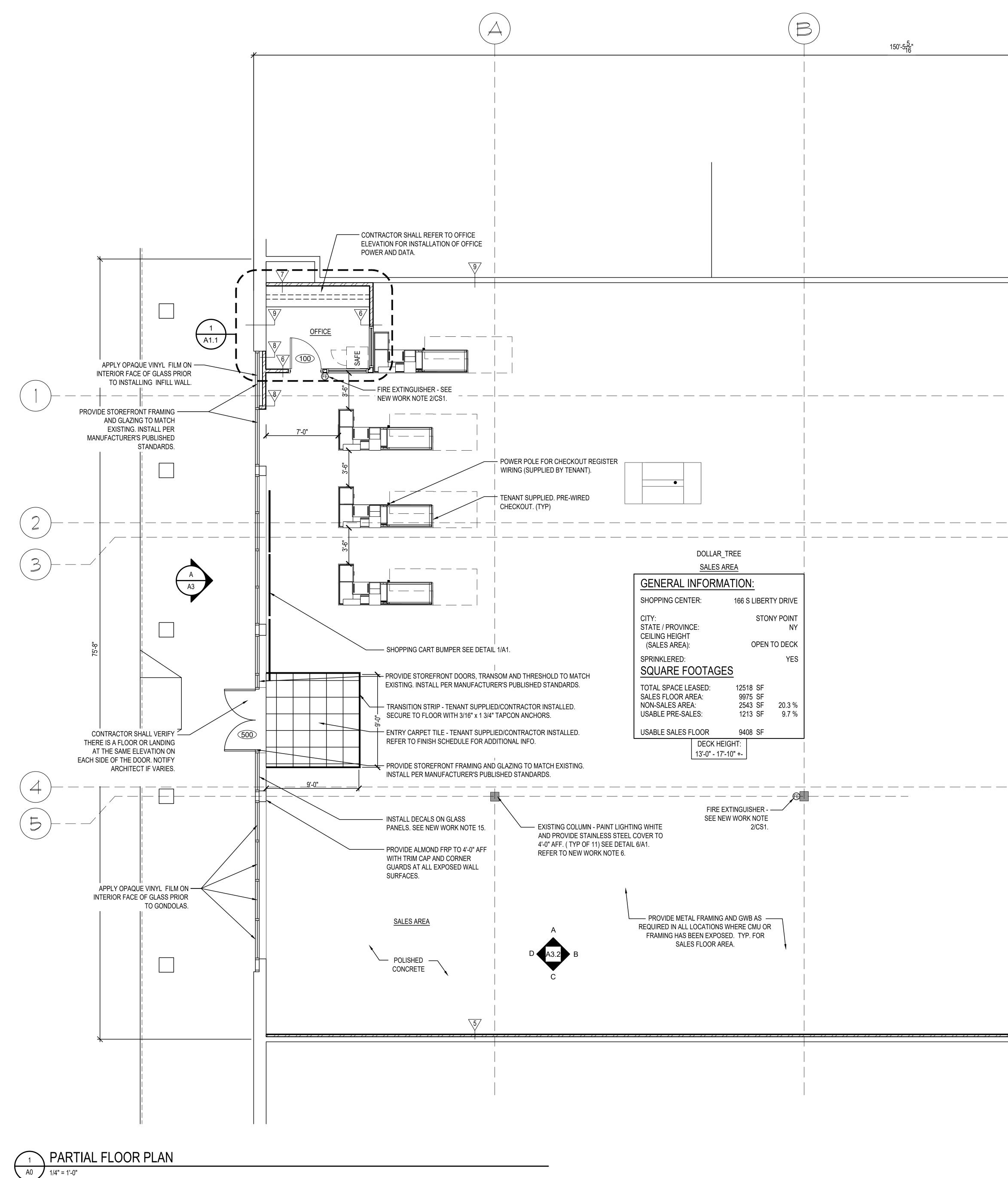
FLOOR IF POSSIBLE.)

REMOVE COMPLETE ALL IMPROVEMENTS AS REQUIRED TO FACILITATE CONSTRUCTION INDICATED BY THE CONSTRUCTION DOCUMENTS AND FOR THE SCOPE OF NEW WORK.

EXTEND PLUMBING IN NEW WORK. (CONTRACTOR SHALL AVOID SALES

ABATEMENT WORK BY OTHERS PRIOR TO PROJECT START MAY IMPACT THE SCOPE OF DEMOLITION WORK. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.



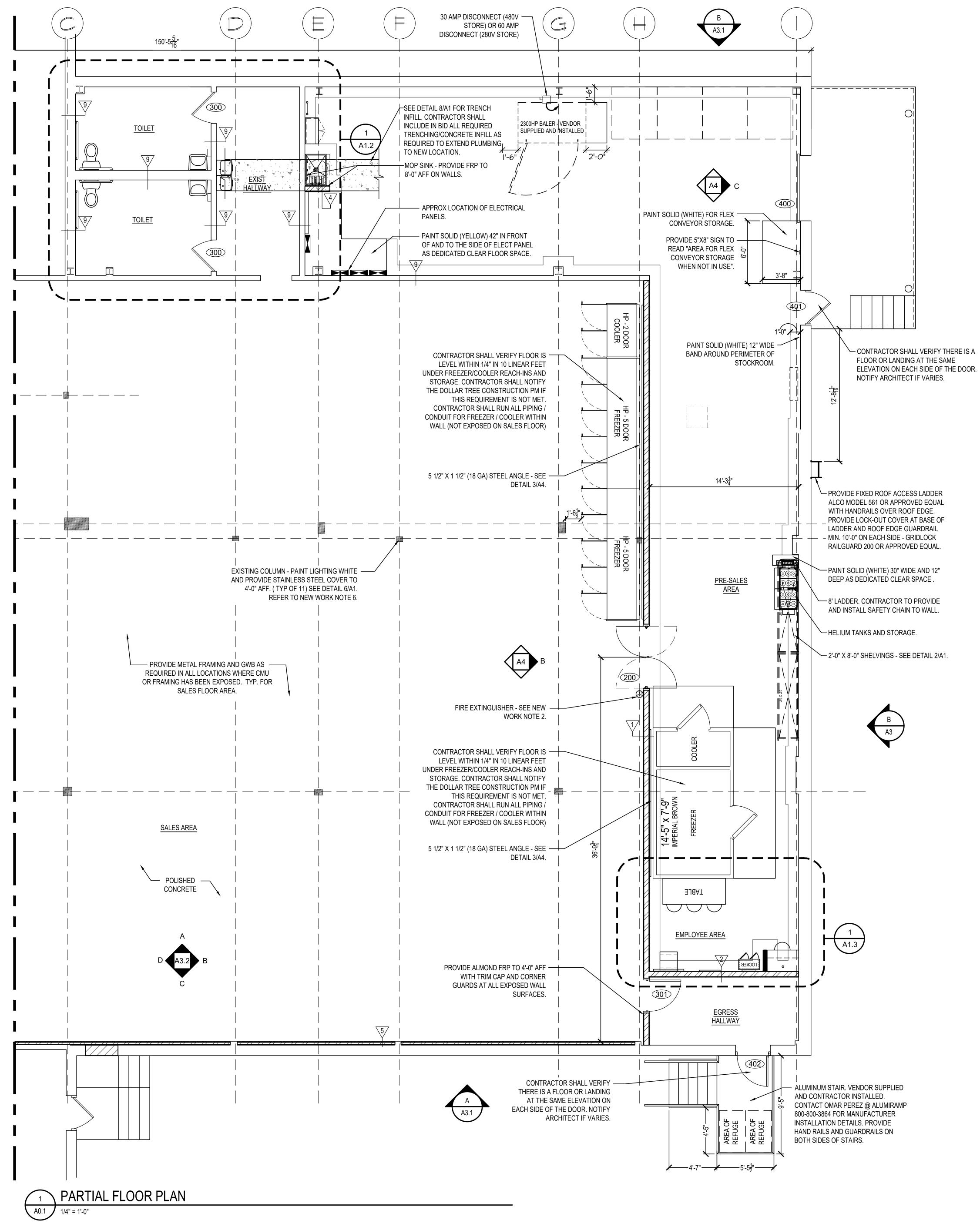


3)	
	150'-5 <u>5</u> "

WALL CONSTRUCTION TYPES

- 77 PARTITION WALL: 6" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH SIDE TO ROOF DECK ON SALES AREA SIDE AND TO 12'-0" AFF ON STOCKROOM SIDE. SEE DETAIL 1/A4.1 FOR ADDITIONAL REQUIREMENTS AND BRACING. FINISH PER FINISH SCHEDULE, SHEET A4.
- 2/ PARTITION WALL: 6" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH SIDE TO ROOF DECK ON SALES / STOCKROOM SIDE AND TO FINISHED CEILING ON TOILET ROOM / HALLWAY SIDE. SEE DETAIL 2/A4.1. FINISH PER FINISH SCHEDULE, SHEET A4.
- 3 NOT USED
- 747 PLUMBING PARTITION: 6" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED CEILING OR UNDERSIDE OF DECK. PLUMBING WALLS SHALL HAVE WATER RESISTANT GWB. FINISH PER FINISH SCHEDULE, SHEET A4.
- 57 PARTITION WALL: 3 5/8" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED HARD CEILING OR 6" ABOVE SUSPENDED CEILING. PLUMBING WALLS ON INTERIOR OF TOILETS SHALL HAVE WATER RESISTANT GWB.
- 6/ PARTITION WALL: 3 5/8" (20 GAGE) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH SIDE TO 8'-0" AFF. SEE DETAIL 4/A1.1. FINISH PER FINISH SCHEDULE SHEET A4.
- 77 PARTITION WALL: 3 5/8" (20 GAGE) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO 6" ABOVE FINISH CEILING. FINISH PER FINISH SCHEDULE SHEET A4.
- 8 PARTITION WALL: 3 5/8" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED HARD CEILING OR 6" ABOVE SUSPENDED CEILING. PROVIDE VENT AND OPAQUE FILM ON INTERIOR OF STOREFRONT GLASS. SEE DETAIL 3/A4.1. FINISH PER FINISH SCHEDULE, SHEET A4.
- TENANT DEMISING WALL: EXISTING METAL STUDS AND GWB. PATCH AND REPAIR AS REQUIRED. PROVIDE FIRE TAPED GWB ON EXISTING STUDS WHERE WALL CAVITY HAS BEEN EXPOSED. FINISH PER FINISH SCHEDULE, SHEET A4.





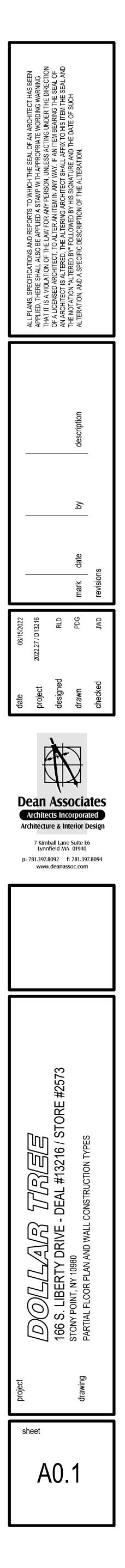
WALL CONSTRUCTION TYPES

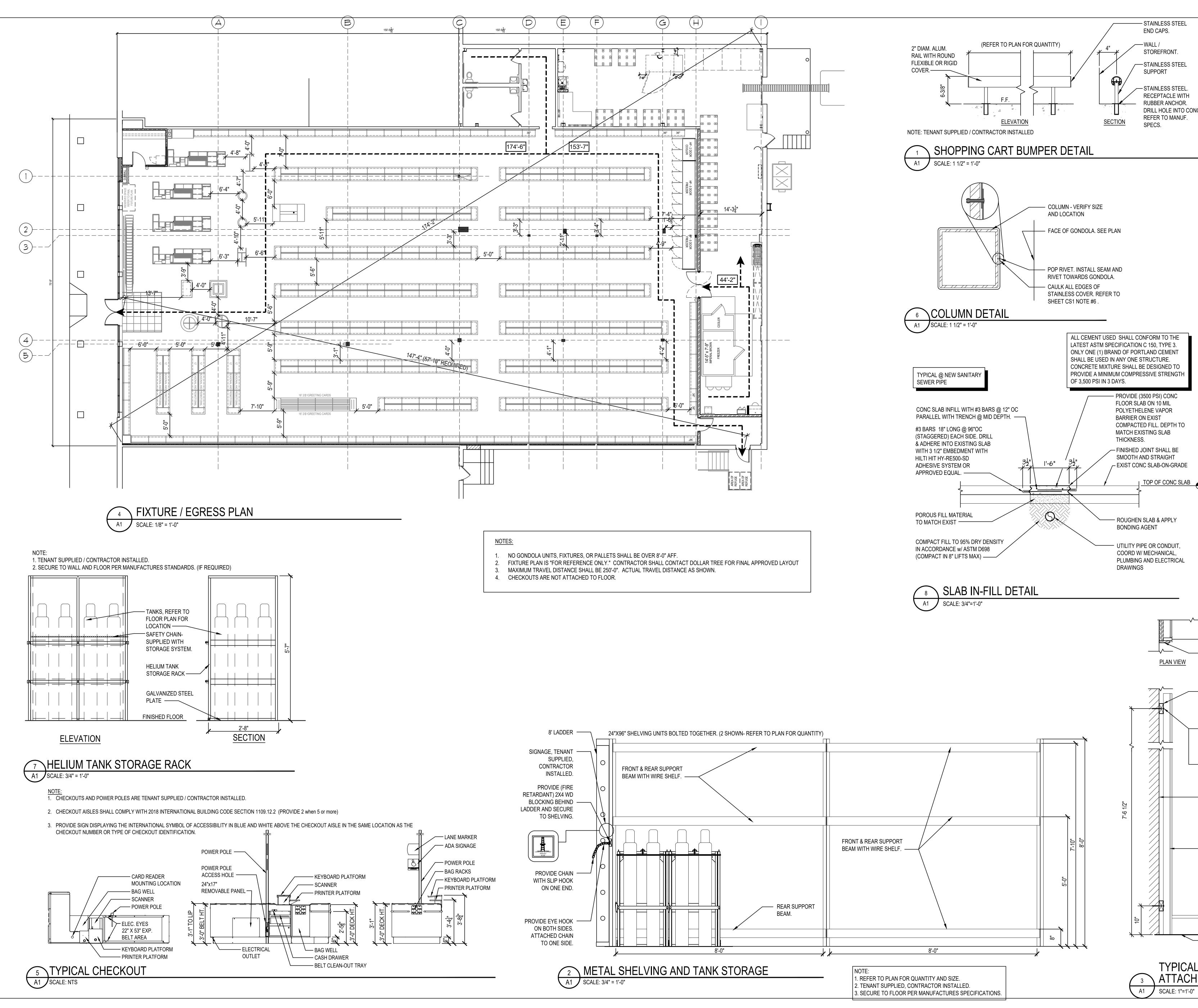
- T/ PARTITION WALL: 6" (20 GA) METAL STUDS @ 16" OC V LAYER 5/8" GWB EACH SIDE TO ROOF DECK ON SALES SIDE AND TO 12'-0" AFF ON STOCKROOM SIDE. SEE DE 1/A4.1 FOR ADDITIONAL REQUIREMENTS AND BRACIN PER FINISH SCHEDULE, SHEET A4.
- 2/ PARTITION WALL: 6" (20 GA) METAL STUDS @ 16" OC \ LAYER 5/8" GWB EACH SIDE TO ROOF DECK ON SALES STOCKROOM SIDE AND TO FINISHED CEILING ON TOI / HALLWAY SIDE. SEE DETAIL 2/A4.1. FINISH PER FINI SCHEDULE, SHEET A4.

3 NOT USED

- 747 PLUMBING PARTITION: 6" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED CEILING OR UNDERSIDE OF DECK. PLUMBING WALLS SHALL HAVE WATER RESISTANT GWB. FINISH PER FINISH SCHEDULE. SHEET A4.
- ▼57 PARTITION WALL: 3 5/8" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED HARD CEILING OR 6" ABOVE SUSPENDED CEILING. PLUMBING WALLS ON INTERIOR OF TOILETS SHALL HAVE WATER RESISTANT GWB.
- 67 PARTITION WALL: 3 5/8" (20 GAGE) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH SIDE TO 8'-0" AFF. SEE DETAIL 4/A1.1. FINISH PER FINISH SCHEDULE SHEET A4.
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- TENANT DEMISING WALL: EXISTING METAL STUDS AND GWB. PATCH AND REPAIR AS REQUIRED. PROVIDE FIRE TAPED GWB ON EXISTING STUDS WHERE WALL CAVITY HAS BEEN EXPOSED. FINISH PER FINISH SCHEDULE, SHEET A4.

WITH ONE ES AREA DETAIL ING. FINISH	
WITH ONE ES / DILET ROOM NISH	

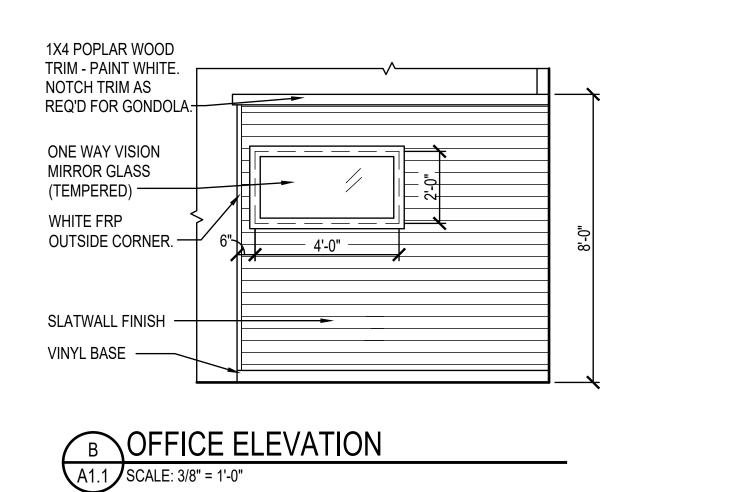


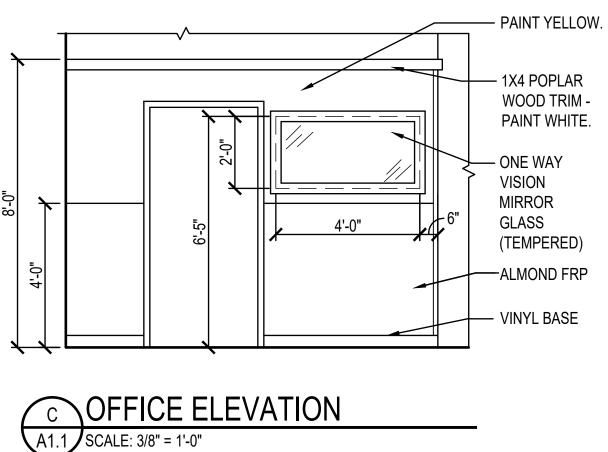


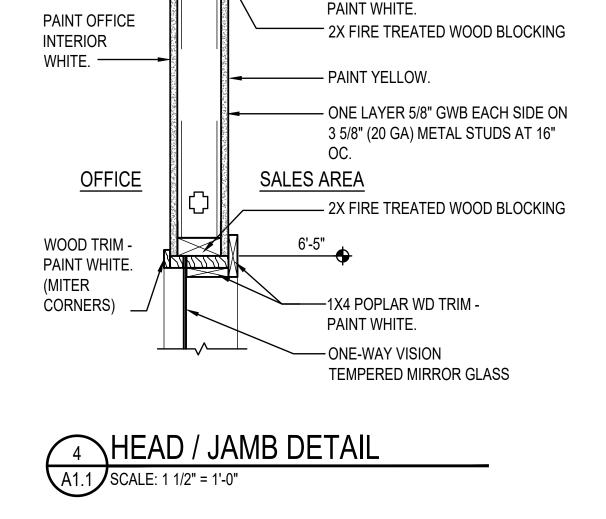
L L TH R O CONC. F.	ALL PLANS, SPECIFICATIONS AND REPORTS TO WHICH THE SEAL OF AN ARCHITECT HAS BEEN APPLIED, THERE SHALL ALSO BE APPLIED A STAMP WITH APPROPRIATE WORDING WARNING THAT IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF
	date 06/15/2022 project 2022.27 / D13216
	Dean As Architecture a 7 Kimball Lynnfield p: 781.397.8092 www.dea
 CONTRACTOR SHALL PROVIDE AND INSTALL 1X4 WD TRIM AT EXPOSED SIDES OF GONDOLA. ATTACHED TO 2X4 STUDS. PAINT WHITE. CONTRACTOR SHALL PROVIDE AND INSTALL 2X4 WD STUDS AS SHOWN AND ATTACH TO FACE OF WALL AS REQUIRED. METAL OR WOOD STUDS - USE 1/4" X 4" ZINC COATED TEK SELF DRILLING SCREWS AT EACH STUD. MASONRY - USE HILTI 1/4" X 4" KWIK-CON II FASTENERS AT 24" OC. FACE OF WALL - SEE WALL CONSTRUCTION TYPES FOR ADDITIONAL INFO. SALES AREA GONDOLA FIXTURE SUPPLIED BY TENANT AND INSTALLED BY CONTRACTOR PER MANUF PUBLISHED STANDARDS (TYP). PROVIDE BOLTS IN UPRIGHTS AT 4th HOLE FROM BOTTOM AND 6th HOLE FROM THE TOP. 	

SLAB AND TENANT FLOOR FINISH

TYPICAL FIXTURE ATTACHMENT DETAIL sheet





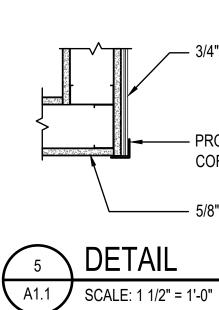


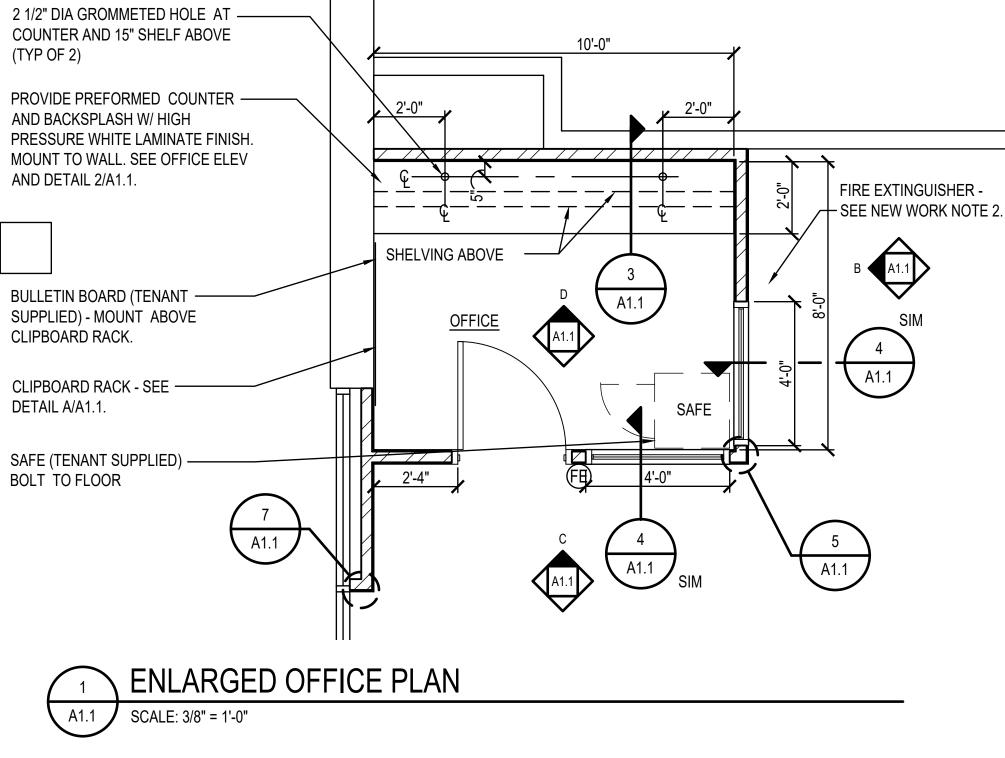
8'-0"

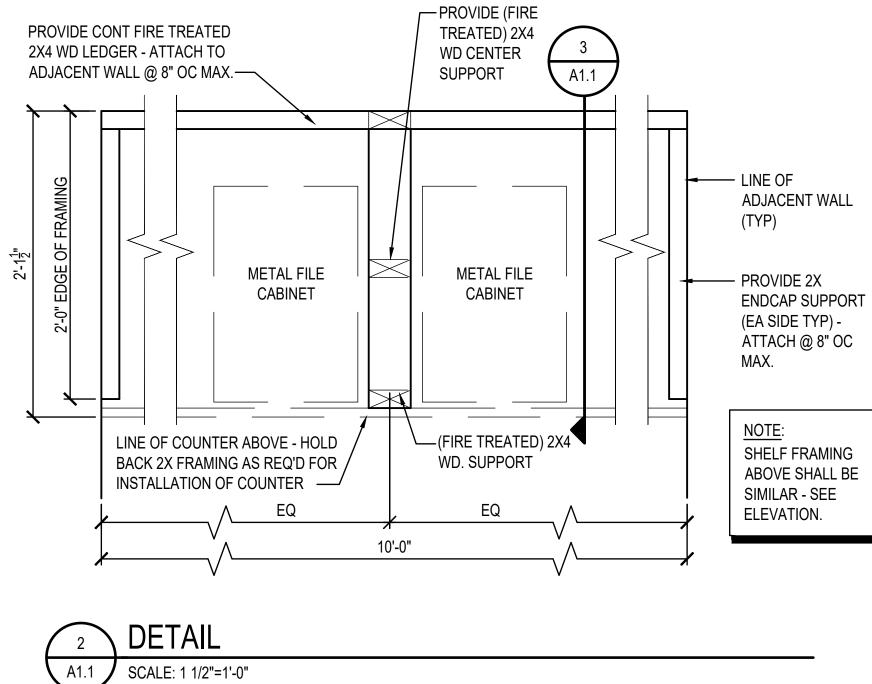
- 1X4 POPLAR WD TRIM -

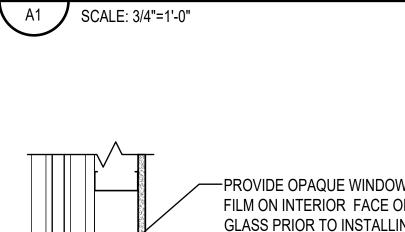
PROVIDE CORNER

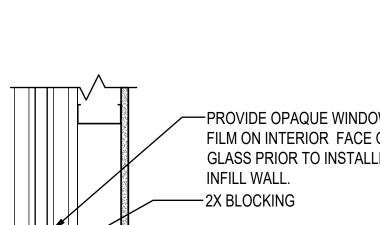
BEAD —

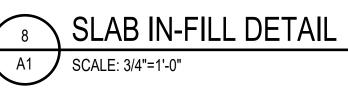


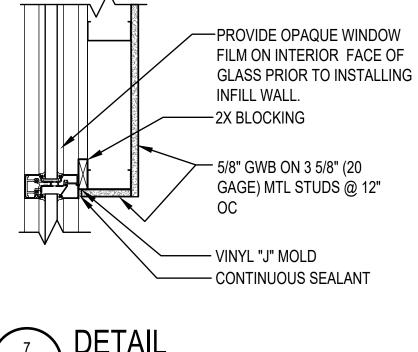


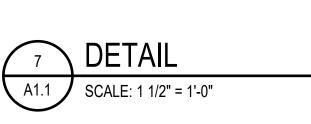


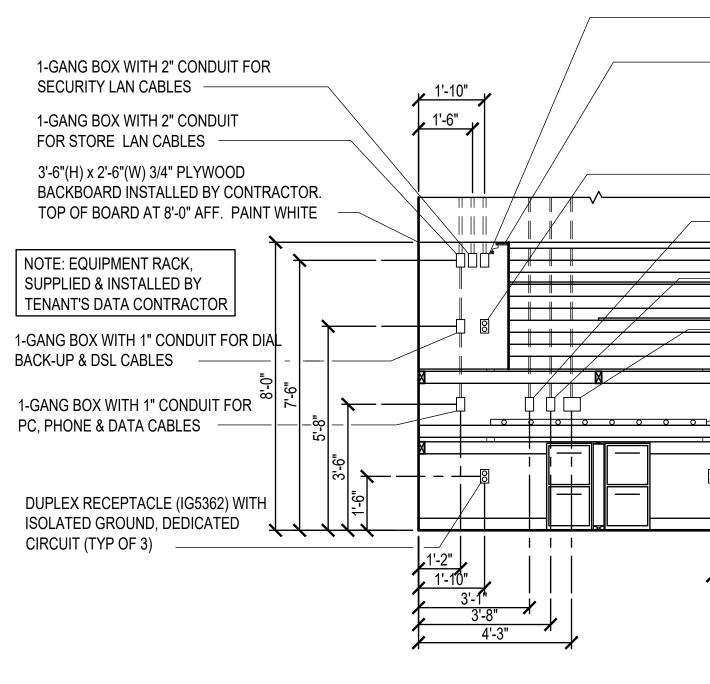












ELECTRICAL AND DATA

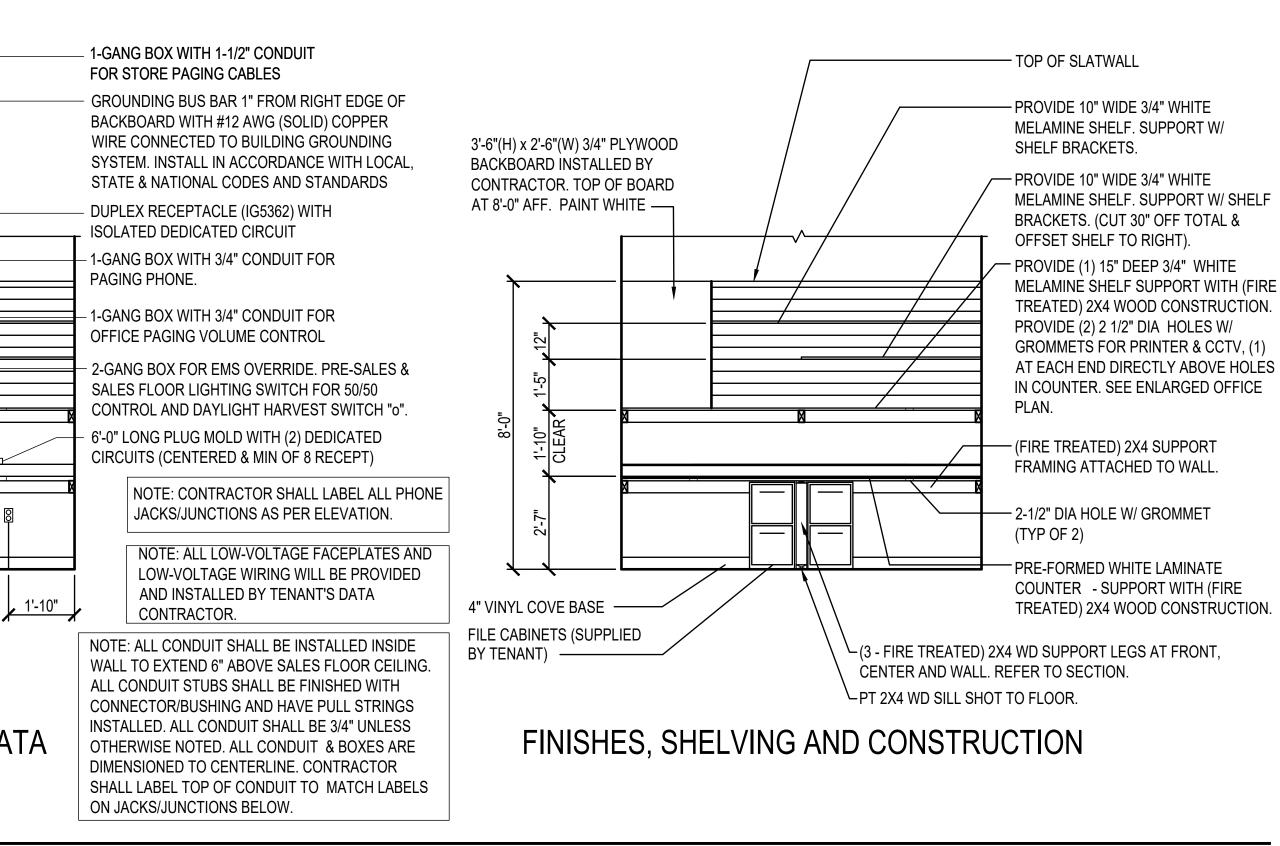
OFFICE ELEVATION

A1.1 SCALE: 3/8" = 1'-0"

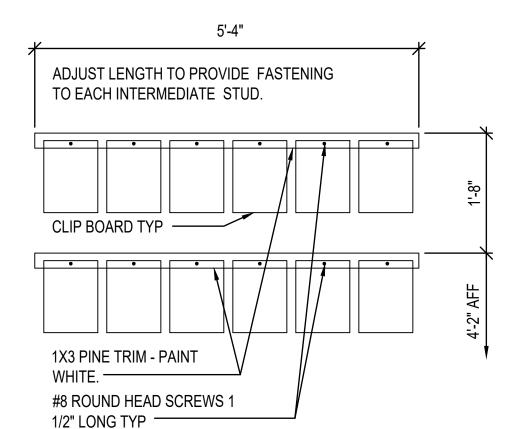
→ 3/4" SLATWALL ON GWB

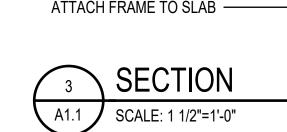
- PROVIDE FRP OUTSIDE CORNER - WHITE.

— 5/8" GWB - PAINT YELLOW.

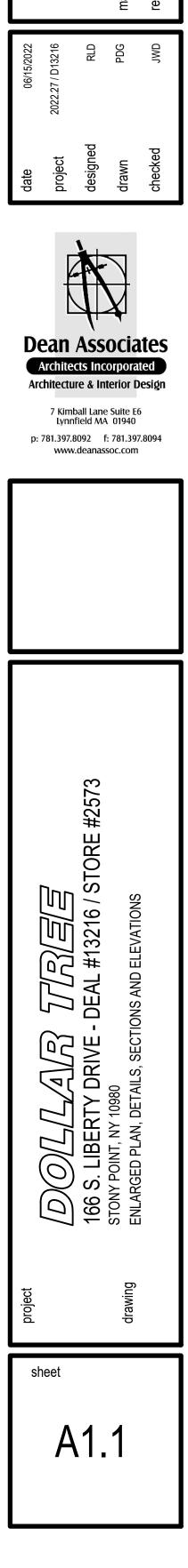


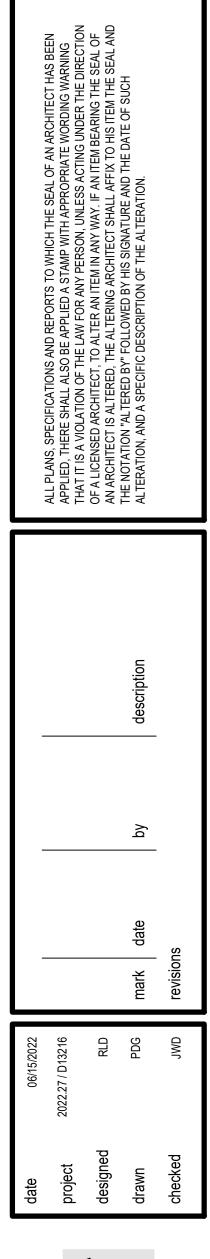


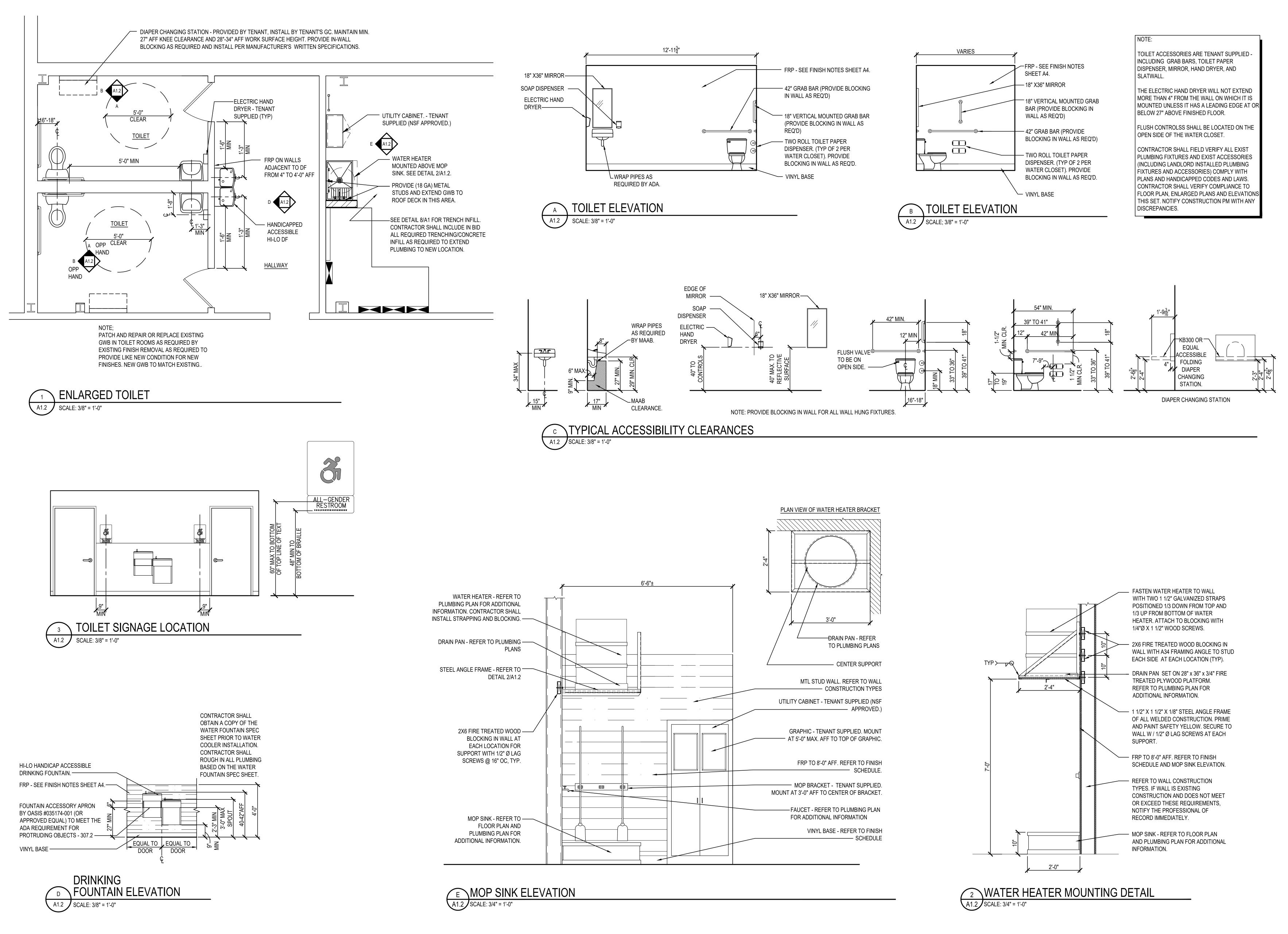


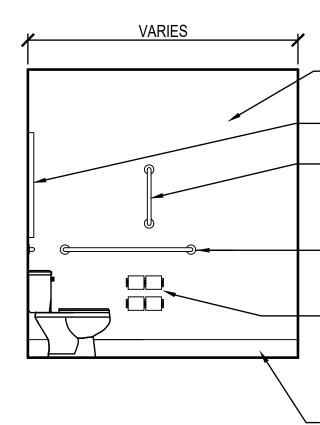


€ 5"	
PROVIDE 3/4" X 15" WHITE MELAMINE SHELF	
2 1 /2" HOLE WITH GROMMENT. SEE ELEVATION FOR ADDITIONAL REQUIREMENTS	
CONT (FIRE TREATED) 2X4 WD FRAME ATTACHED TO WALL PAINT FRAMING WHITE	1'-10"
PROVIDE PREFORMED WHITE LAMINATE COUNTER TOP WITH BACKSPLASH.	
(FIRE TREATED) 2X4 WD SUPPORT FRAME	
PAINT ALL FRAMING WHITE.	
ATTACH FRAME TO ADJACENT WALL	- <u>F</u> N
PROVIDE VERT (FIRE TREATED) 2X4 WD FRAME SUPPORT AT CENTER OF COUNTER.	
ATTACH FRAME TO SLAB	

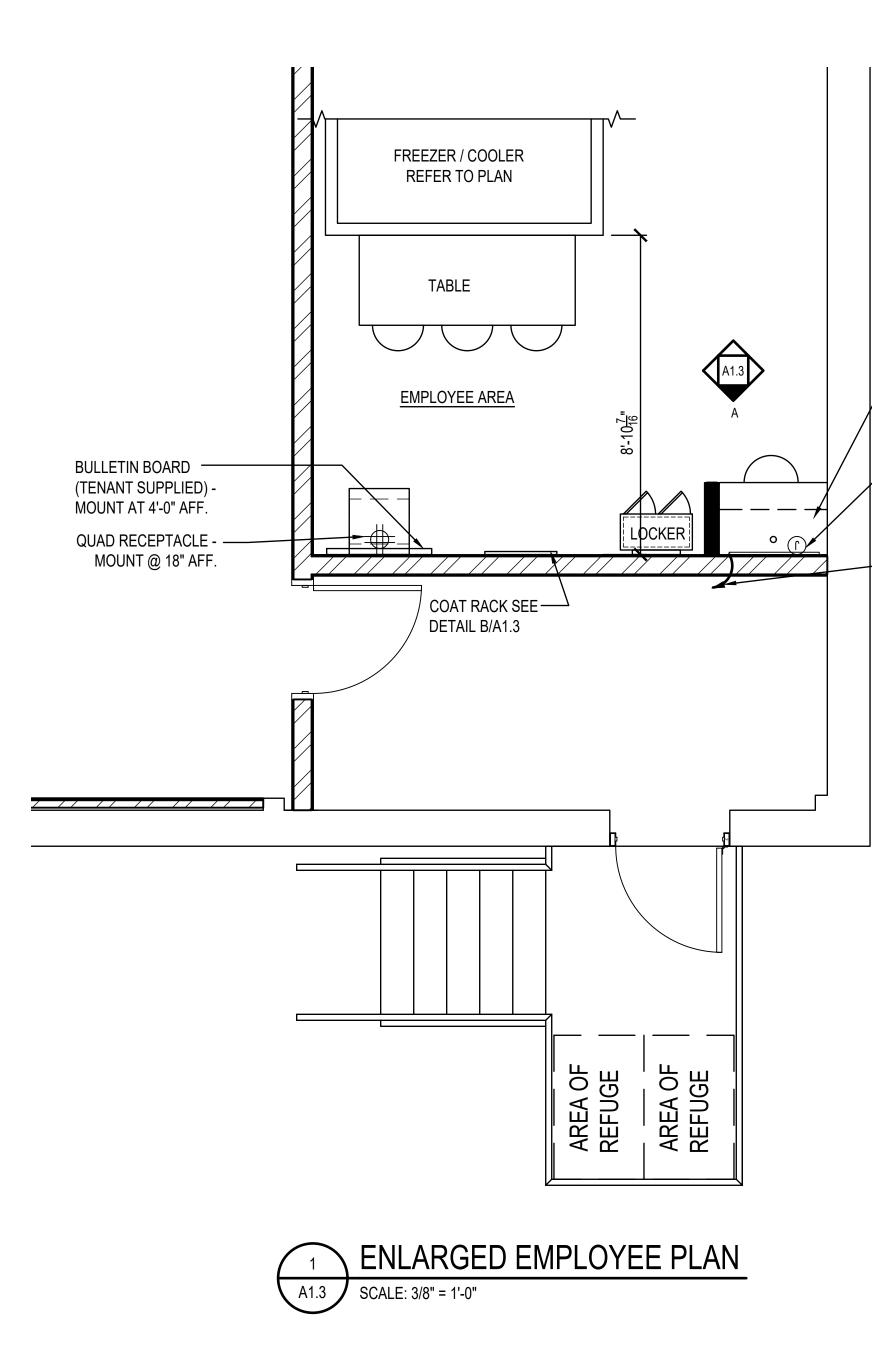


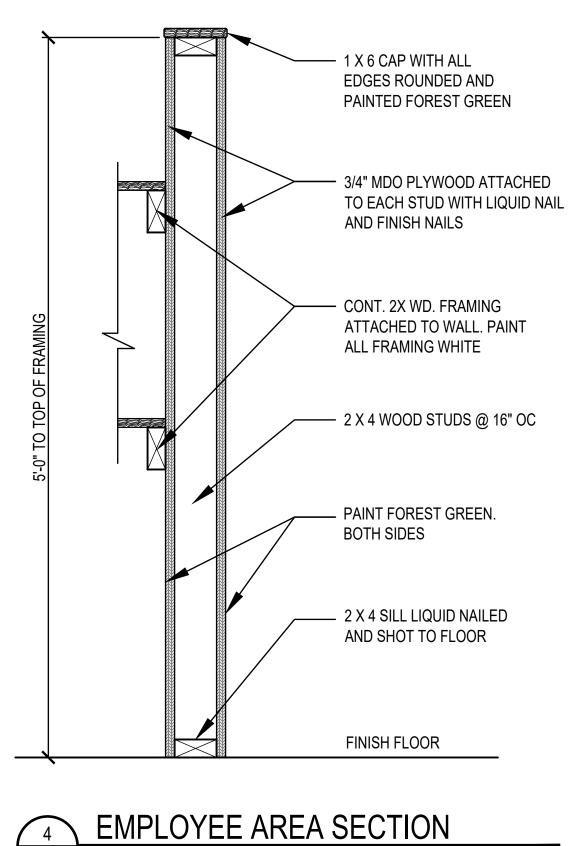










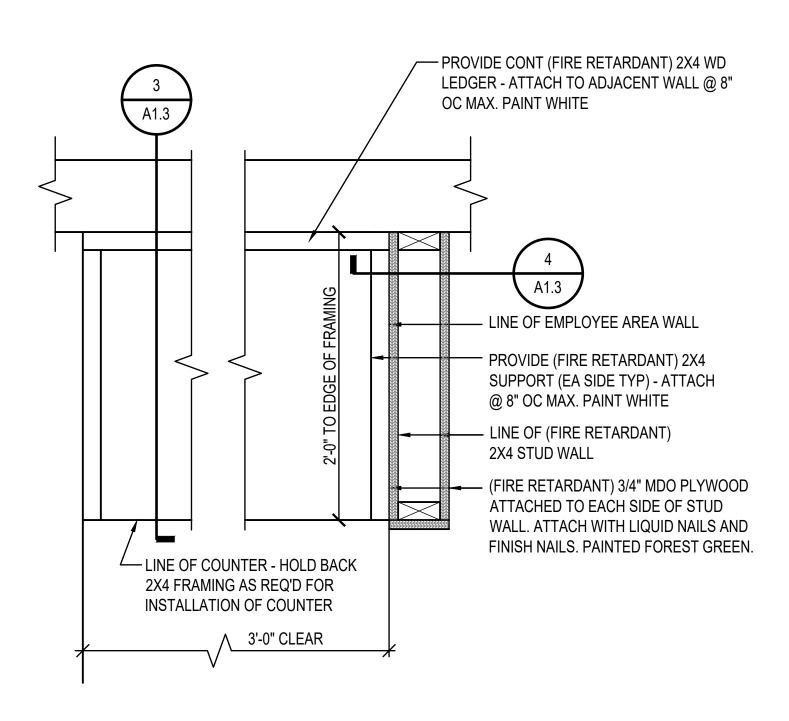


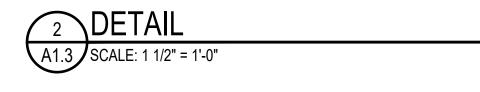
4 EMPLOYEE A1.3 SCALE: 1 1/2" = 1'-0"

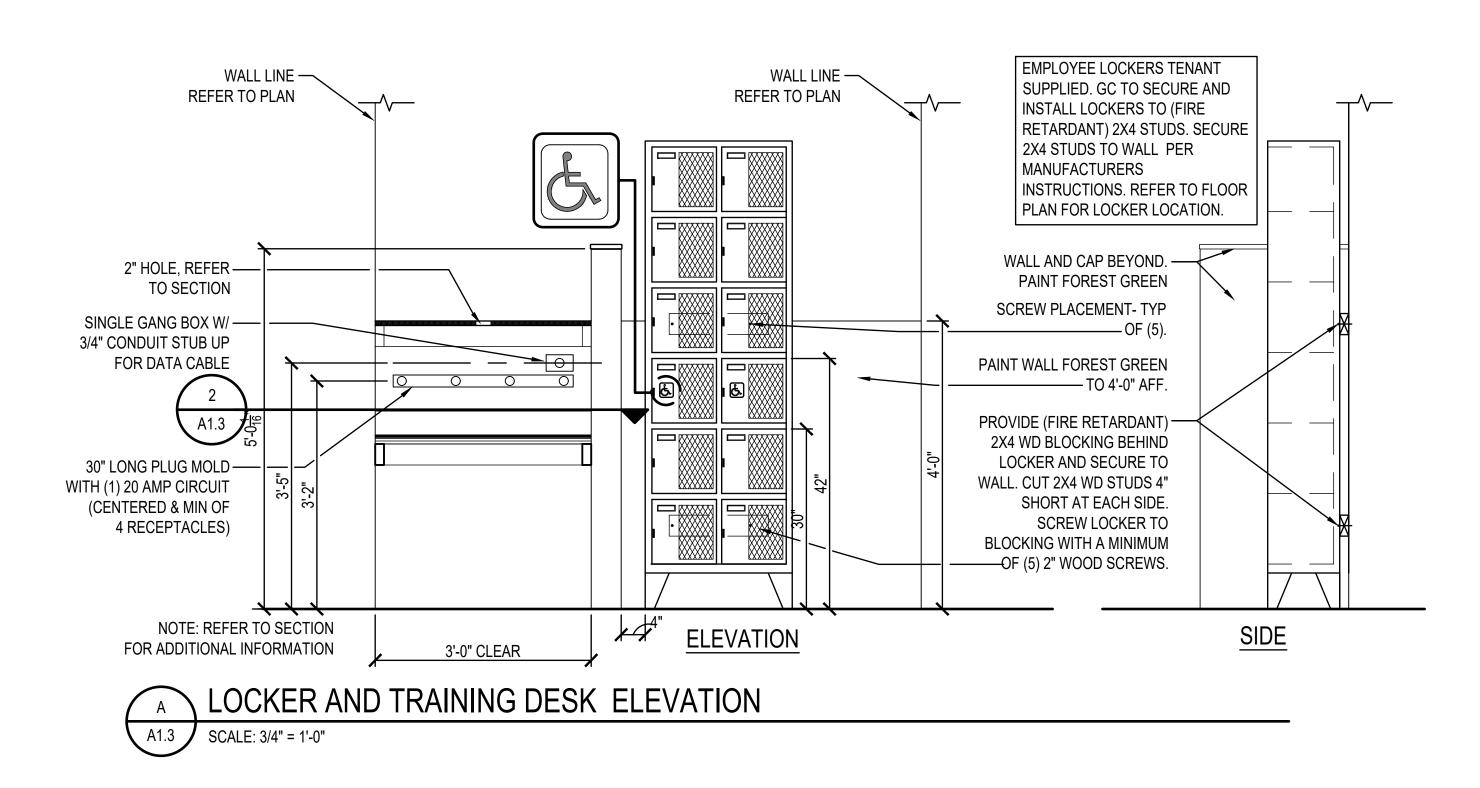
---- PREFORMED COUNTER -REFER TO ELEV AND DETAIL A/A1.3.

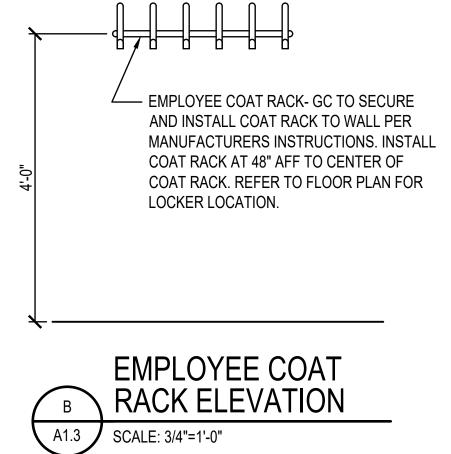
SINGLE GANG BOX WITH 3/4" CONDUIT STUB UP FOR DATA CABLE

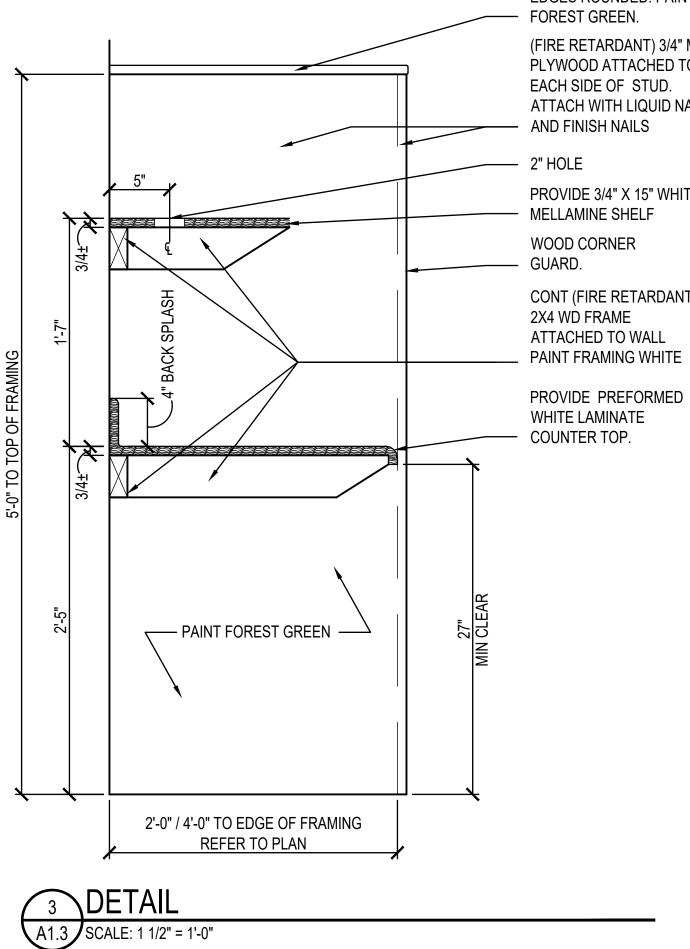
30" LONG PLUG MOLD WITH (1) 20 AMP CIRCUIT (CENTERED AND MIN OF 4 RECEPTACLES)











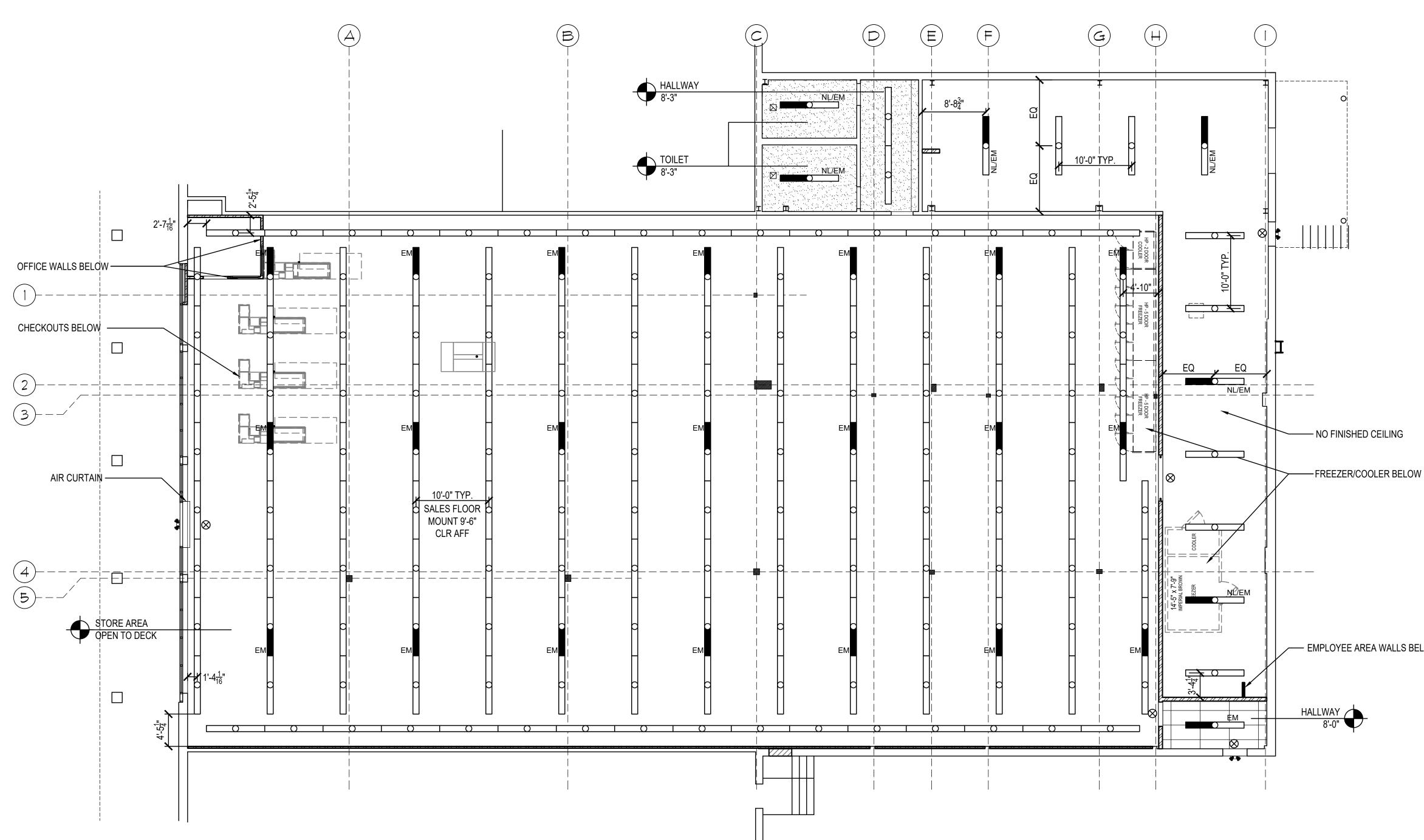
CONT (FIRE RETARDANT) ATTACHED TO WALL

PROVIDE 3/4" X 15" WHITE MELLAMINE SHELF

EDGES ROUNDED. PAINT FOREST GREEN. (FIRE RETARDANT) 3/4" MDO PLYWOOD ATTACHED TO EACH SIDE OF STUD. ATTACH WITH LIQUID NAILS

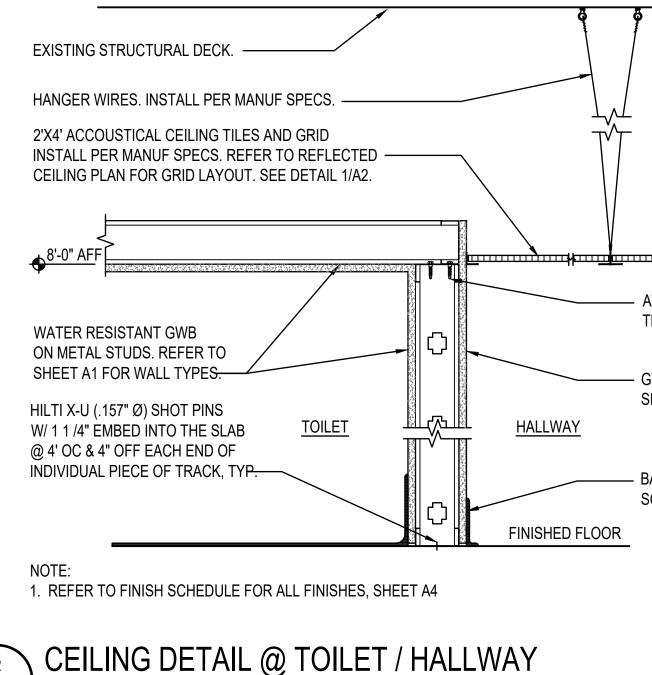
PROVIDE 1 X 6 CAP WITH ALL







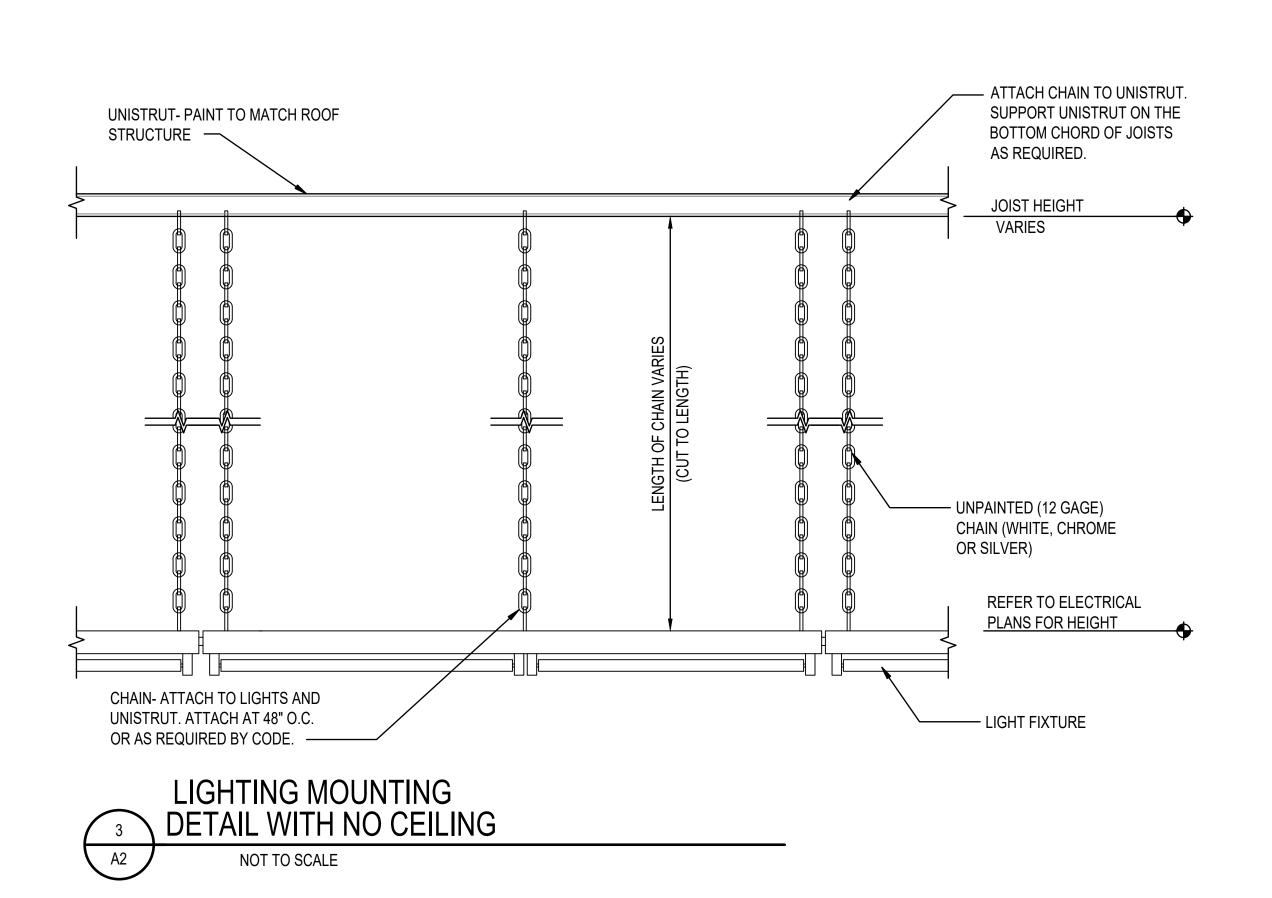
A2 SCALE: 1 1/2"=1'-0"



- ATTACHED WITH (2)-#12 TEK SCREWS AT EACH STUD.

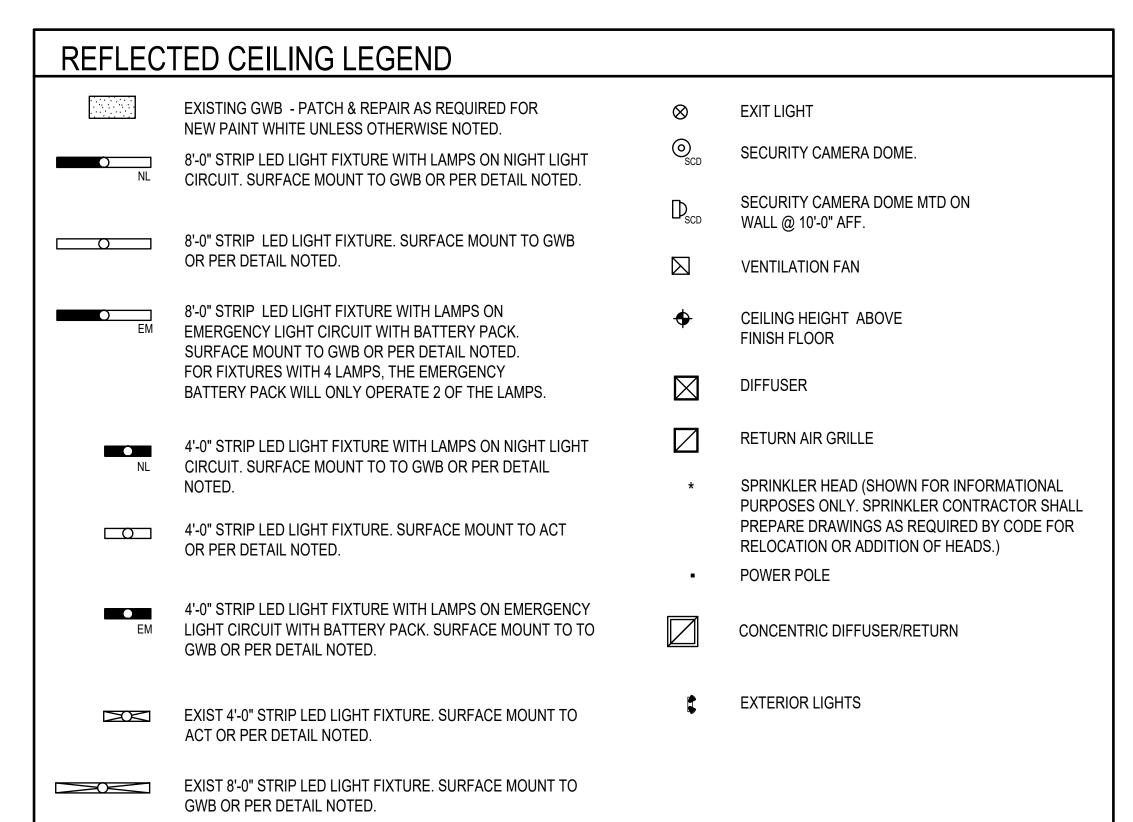
– GWB ON METAL STUDS. REFER TO SHEET A1 FOR WALL TYPES.

- BASE. REFER TO FINISH SCHEDULE, SHEET A4 (TYP.)



CEILING NOTES:

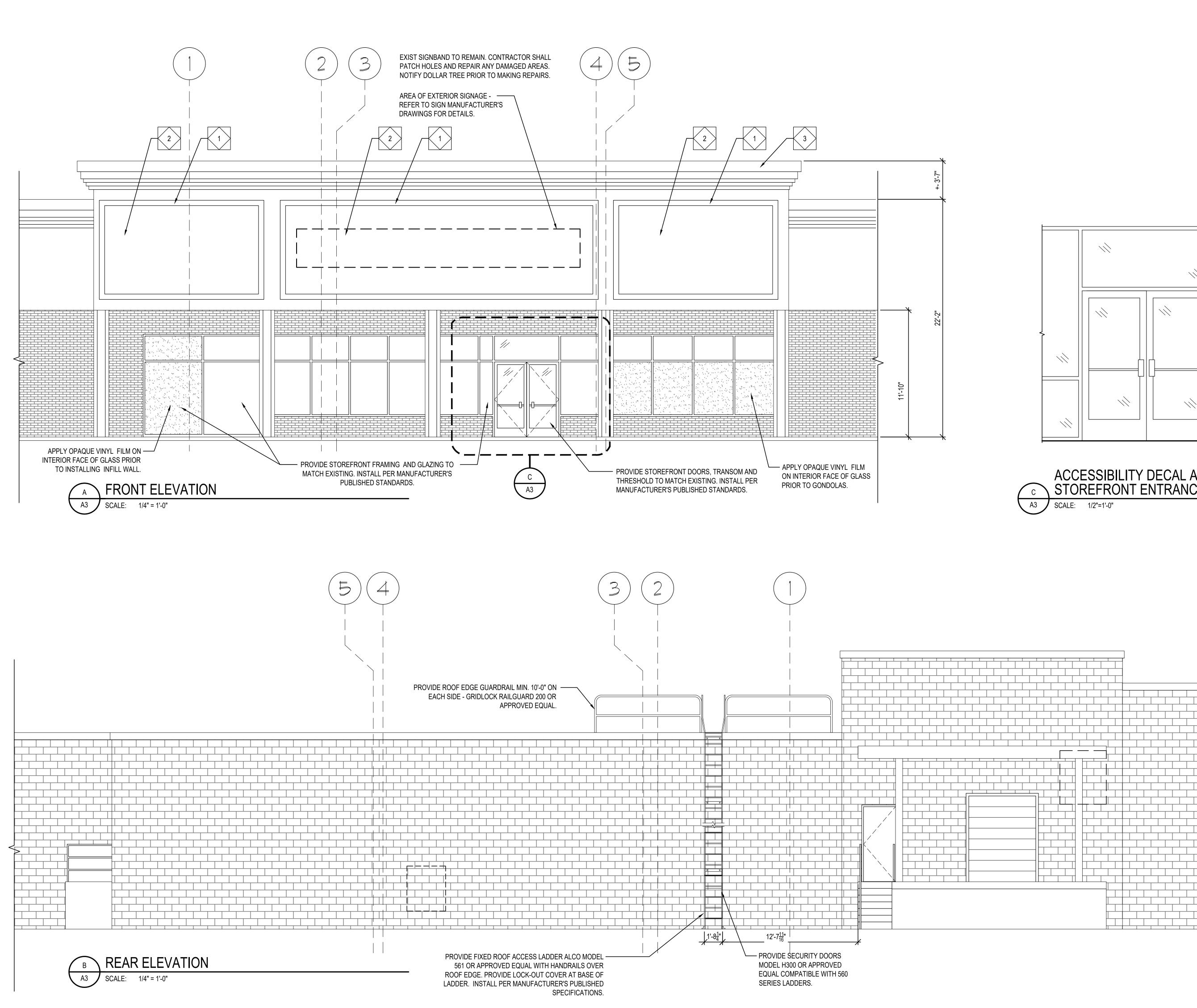
- 1. CONTRACTOR SHALL CLEAN ALL DUST AND DIRT FROM ROOF DECK, BEAMS AND JOIST, MECHANICAL EQUIPMENT, CONDUIT AND WIRES. PAINT DECK, MECHANICAL EQUIPMENT, AND STRUCTURE TRUSTY TAN ON SALES FLOOR AND IN HALLWAY ONLY - REFER TO FINISH SCHEDULE.
- 2. SEE DETAIL 3/A2 FOR LIGHT MOUNTING. 3. MOUNT LIGHTS AND SECURITY CAMERA DOMES AT 12'-0" AFF IN SALES AREA AND 10'-0 AFF IN STOCKROOM.
- 4. LIGHT FIXTURES AND SECURITY CAMERA DOMES, MIRROR PANELS, OCCUPANCY SENSOR AND POWER POLES (UON) ARE TENANT SUPPLIED / CONTRACTOR INSTALLED.

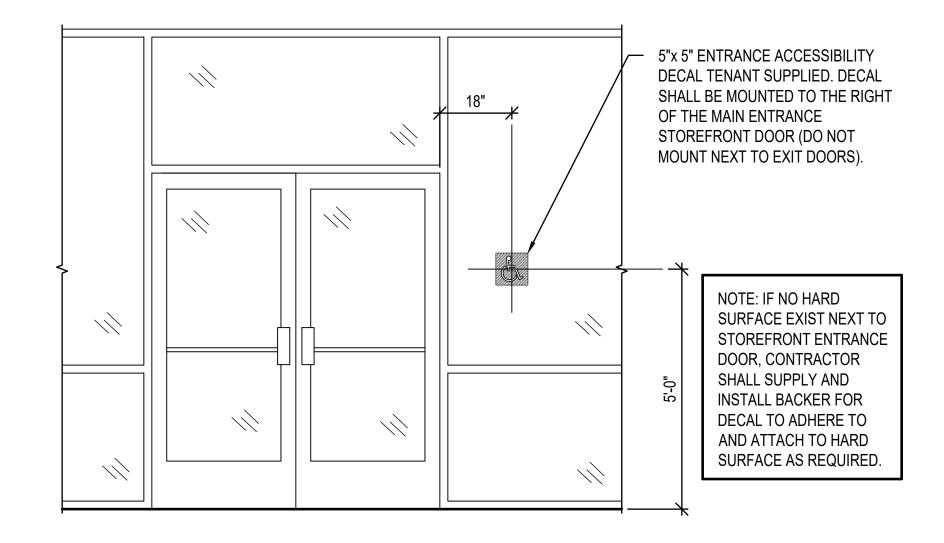


_____ EMPLOYEE AREA WALLS BELOW

NOTE 1. MAINTAIN MIN. 18" CLEAR BETWEEN SPRINKLERS AND ANY LIGHT OR OTHER OBSTRUCTION. NOTIFY FIRE PROTECTION ENGINEER AND ARCHITECT OF ANY ISSUES MEETING CLEARANCE REQUIREMENTS.







C			TY DECAL T ENTRAN	
A3	SCALE:	1/2"=1'-0"		

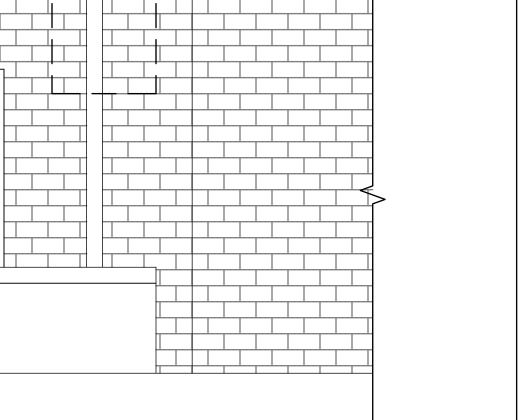
GC TO CLEAN AND POWER WASH EXTERIOR OF BUILDING INCLUDING UNDERSIDE OF CANOPY, SIDEWALKS AND PARKING LOT IN LEASE AREA.

SIGNS, LOCATION, NUMBER AND SIZE ARE NOT APPROVED UNDER THIS BUILDING PERMIT. A

SEPARATE SIGN LOCATION PERMIT IS REQUIRED FOR EACH SIGN. NOTES: CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY AND ALL PREVIOUS

TENANT'S EXTERIOR SIGNAGE LEFT BEHIND. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISED DISTURBED BY REMOVAL OF PREVIOUS TENANT SIGNAGE SHALL BE PATCHED OR REPAIRED AND PAINTED TO MATCH EXISTING ADJACENT MATERIALS SO THAT THE REPAIR IS IMPERCEPTIBLE. CONTRACTORS SHALL NOT INCLUDE THIS SCOPE OF WORK IN THEIR BID AND WILL BE HANDLED VIA CHANGE ORDER AFTER SITE EVALUATION IS DONE BY WINNING BIDDER. CONTRACTOR SHALL FORWARD THE EVALUATION AND PRICE QUOTE TO THE CONSTRUCTION PM FOR APPROVAL PRIOR TO PERFORMING ANY AND ALL WORK.

PAINT FACADE PER COLORS NOTED: CONTACT DOLLAR TREE CONSTRUCTION PM. PRIOR TO PAINTING.



1 SHERMAN WILLIAMS BALANCED BEIGE" SW#7037 - SATIN FINISH STO: NA-1010-0052 "SANDSTONE" STO 310 AND STO 648 PAINT:

PAINT:

3 → SHERWIN WILLIAMS "ENVY" LRV 18% #2032.10 - SATIN FINISH **STO** NA10-0054

"ENVY"

STOLIT 130D AND STO 648

PAINT:

K 4 SHERMAN WILLIAMS VIRTUAL TAUPE" SW#7039 - SATIN FINISH STO: NA10-0055 "VIRTUAL TAUPE" STO 648

PAINT:

STO:

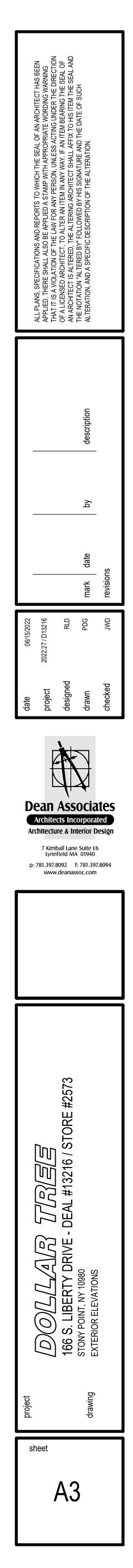
2 SHERWIN WILLIAMS

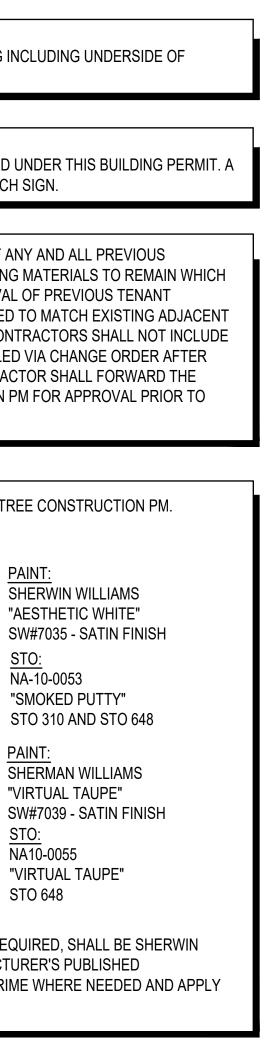
NA-10-0053

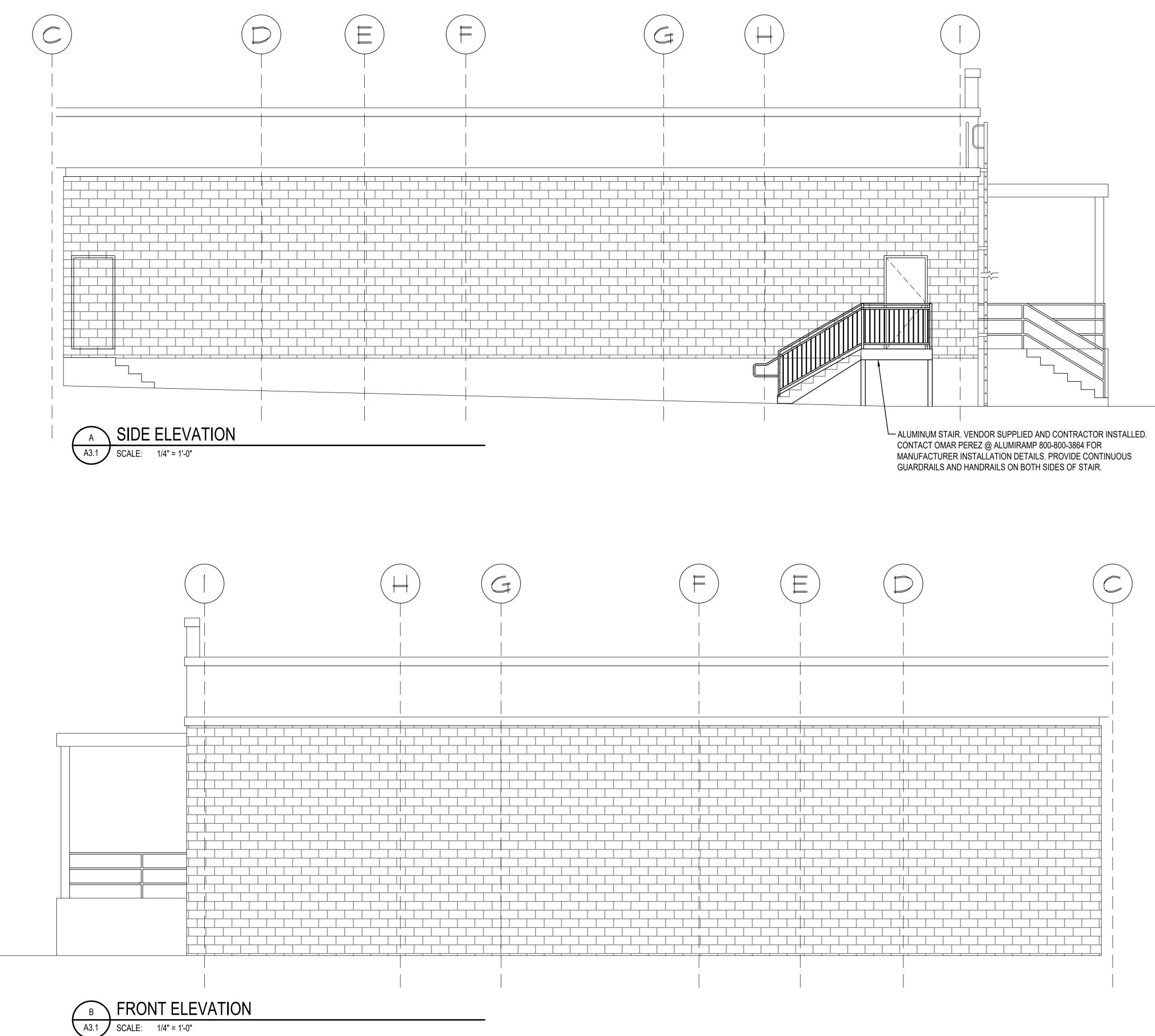
"SMOKED PUTTY"

"AESTHETIC WHITE"

GENERAL PAINTING NOTE: EXTERIOR PAINT, WHERE REQUIRED, SHALL BE SHERWIN WILLIAMS OR APPROVED EQUAL APPLIED PER MANUFACTURER'S PUBLISHED SPECIFICATIONS. PREP SURFACES, PATCH AND SPOT PRIME WHERE NEEDED AND APPLY MINIMUM TWO (2) COATS OF FINISH PAINT.







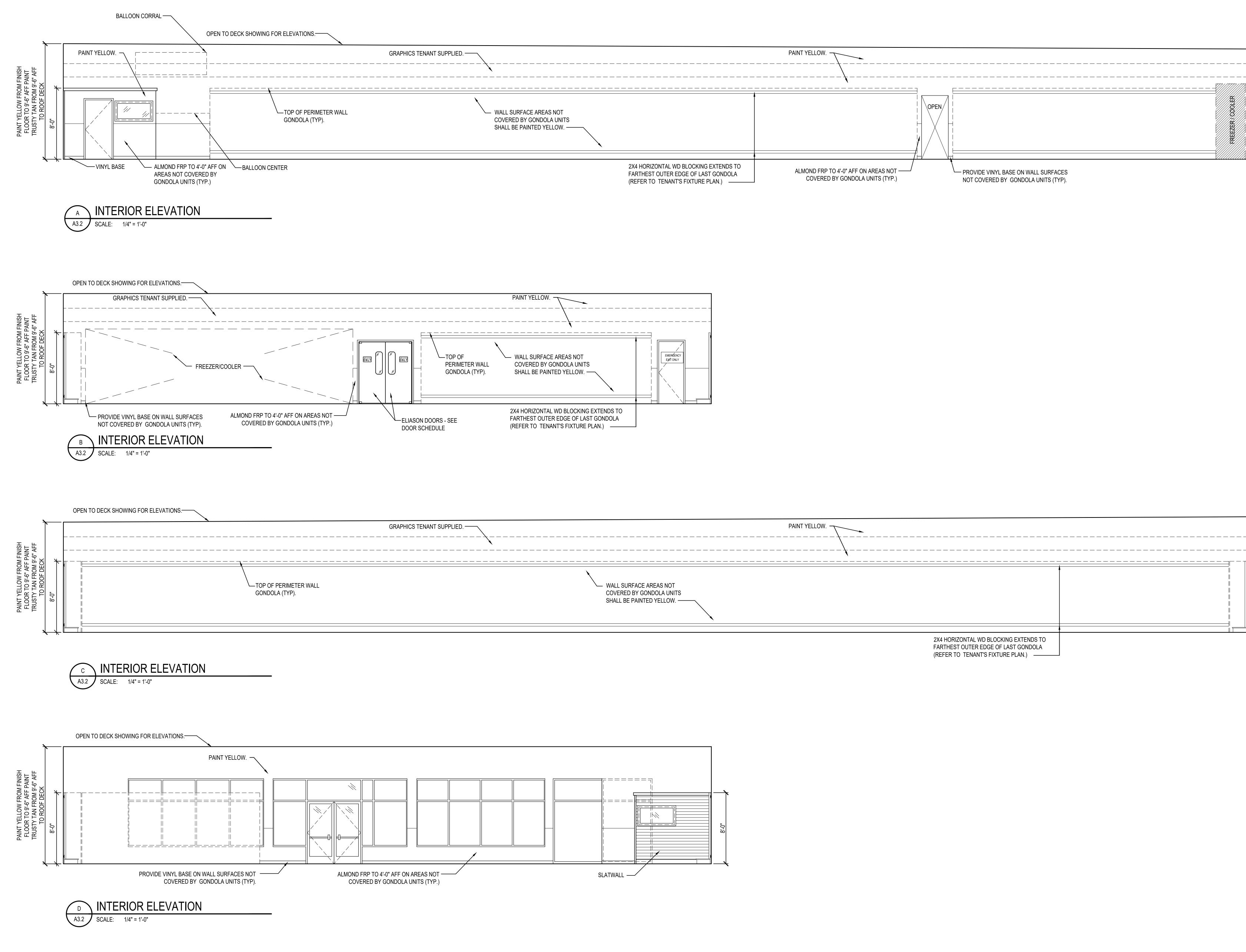
NOTE: GC TO CLEAN AND POWER WASH EXTERIOR OF BUILDING INCLUDING UNDERSIDE OF CANOPY, SIDEWALKS AND PARKING LOT IN LEASE AREA.

NOTE:

SIGNS, LOCATION, NUMBER AND SIZE ARE NOT APPROVED UNDER THIS BUILDING PERMIT. A SEPARATE SIGN LOCATION PERMIT IS REQUIRED FOR EACH SIGN.

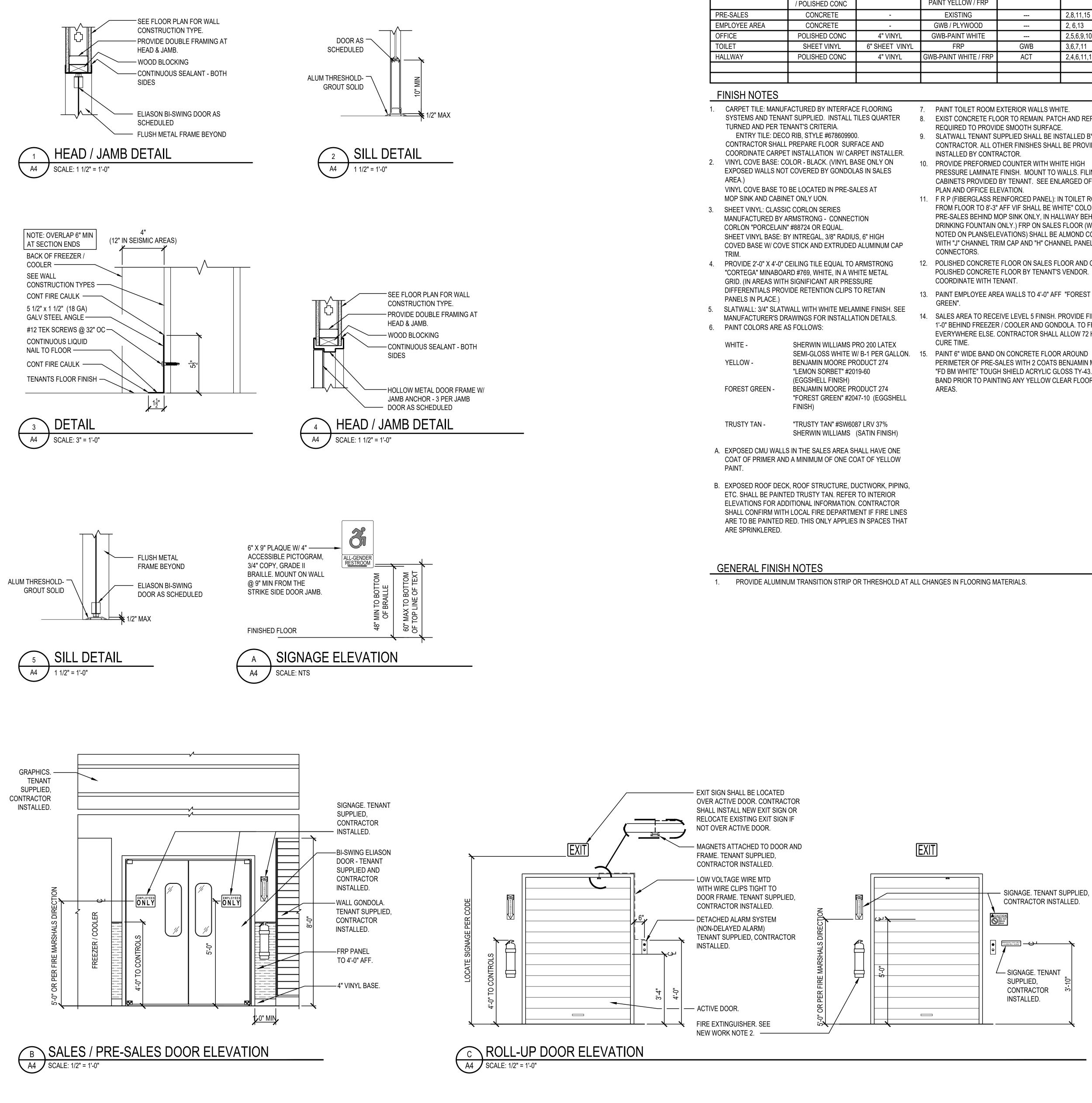
NOTES: CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY AND ALL PREVIOUS TENANT'S EXTERIOR SIGNAGE LEFT BEHIND. ALL EXISTING MATERIALS TO REMAIN WHICH ARE DAMAGED OR OTHERWISED DISTURBED BY REMOVAL OF PREVIOUS TENANT SIGNAGE SHALL BE PATCHED OR REPAIRED AND PAINTED TO MATCH EXISTING ADJACENT MATERIALS SO THAT THE REPAIR IS IMPERCEPTIBLE. CONTRACTORS SHALL NOT INCLUDE THIS SCOPE OF WORK IN THEIR BID AND WILL BE HANDLED VIA CHANGE ORDER AFTER SITE EVALUATION IS DONE BY WINNING BIDDER. CONTRACTOR SHALL FORWARD THE EVALUATION AND PRICE QUOTE TO THE CONSTRUCTION PM FOR APPROVAL PRIOR TO PERFORMING ANY AND ALL WORK.





ELLOW.	
2X4 HORIZONTAL WD BLOCKING EXTENDS TO FARTHEST OUTER EDGE OF LAST GONDOLA (REFER TO, TENANT'S FIXTURE PLAN.)	





FINISH SCHEDULE								
SPACES	FLOORS	BASES	WALLS	CEILING	NOTES			
SALES	ENTRY CARPET TILE / POLISHED CONC	4" VINYL	GWB-PAINT YELLOW / PAINT YELLOW / FRP		1,2,5,6,9,11,12,14			
PRE-SALES	CONCRETE	-	EXISTING		2,8,11,15			
EMPLOYEE AREA	CONCRETE	-	GWB / PLYWOOD		2, 6,13			
OFFICE	POLISHED CONC	4" VINYL	GWB-PAINT WHITE		2,5,6,9,10,12			
TOILET	SHEET VINYL	6" SHEET VINYL	FRP	GWB	3,6,7,11			
HALLWAY	POLISHED CONC	4" VINYL	GWB-PAINT WHITE / FRP	ACT	2,4,6,11,12			

<u> </u>						
1.		ACTURED BY INTERFACE FLOORING T SUPPLIED. INSTALL TILES QUARTER VANT'S CRITERIA.	7. 8.			
	CONTRACTOR SHALL	RIB, STYLE #678609900. PREPARE FLOOR SURFACE AND INSTALLATION W/ CARPET INSTALLER.	9.			
2.	VINYL COVE BASE: CC	INSTALLATION W/ CARPET INSTALLER. DLOR - BLACK. (VINYL BASE ONLY ON COVERED BY GONDOLAS IN SALES	10.			
	VINYL COVE BASE TO MOP SINK AND CABINE	BE LOCATED IN PRE-SALES AT ET ONLY UON.	11.			
3.	MANUFACTURED BY ARMSTRONG - CONNECTION CORLON "PORCELAIN" #88724 OR EQUAL. SHEET VINYL BASE: BY INTREGAL, 3/8" RADIUS, 6" HIGH COVED BASE W/ COVE STICK AND EXTRUDED ALUMINUM CAP					
4.	"CORTEGA" MINABOARD #769, WHITE, IN A WHITE METAL GRID. (IN AREAS WITH SIGNIFICANT AIR PRESSURE DIFFERENTIALS PROVIDE RETENTION CLIPS TO RETAIN					
5. 6.		ALL WITH WHITE MELAMINE FINISH. SEE AWINGS FOR INSTALLATION DETAILS. S FOLLOWS:	13. 14.			
	WHITE - YELLOW - FOREST GREEN -	SHERWIN WILLIAMS PRO 200 LATEX SEMI-GLOSS WHITE W/ B-1 PER GALLON. BENJAMIN MOORE PRODUCT 274 "LEMON SORBET" #2019-60 (EGGSHELL FINISH) BENJAMIN MOORE PRODUCT 274 "FOREST GREEN" #2047-10 (EGGSHELL	15.			
	TRUSTY TAN -	FINISH) "TRUSTY TAN" #SW6087 LRV 37% SHERWIN WILLIAMS (SATIN FINISH)				
A.		IN THE SALES AREA SHALL HAVE ONE A MINIMUM OF ONE COAT OF YELLOW				
Β.		, ROOF STRUCTURE, DUCTWORK, PIPING,				

EXIST CONCRETE FLOOR TO REMAIN. PATCH AND REPAIR AS

SLATWALL TENANT SUPPLIED SHALL BE INSTALLED BY THE CONTRACTOR. ALL OTHER FINISHES SHALL BE PROVIDED AND

PRESSURE LAMINATE FINISH. MOUNT TO WALLS. FILING CABINETS PROVIDED BY TENANT. SEE ENLARGED OFFICE

F R P (FIBERGLASS REINFORCED PANEL): IN TOILET ROOM FROM FLOOR TO 8'-3" AFF VIF SHALL BE WHITE" COLOR (IN PRE-SALES BEHIND MOP SINK ONLY, IN HALLWAY BEHIND DRINKING FOUNTAIN ONLY.) FRP ON SALES FLOOR (WHERE NOTED ON PLANS/ELEVATIONS) SHALL BE ALMOND COLOR WITH "J" CHANNEL TRIM CAP AND "H" CHANNEL PANEL

POLISHED CONCRETE FLOOR ON SALES FLOOR AND OFFICE.

SALES AREA TO RECEIVE LEVEL 5 FINISH. PROVIDE FINISH TO 1'-0" BEHIND FREEZER / COOLER AND GONDOLA. TO FF EVERYWHERE ELSE. CONTRACTOR SHALL ALLOW 72 HOUR

PERIMETER OF PRE-SALES WITH 2 COATS BENJAMIN MOORE "FD BM WHITE" TOUGH SHIELD ACRYLIC GLOSS TY-43. PAINT BAND PRIOR TO PAINTING ANY YELLOW CLEAR FLOOR SPACE

	DOOR SCHEDULE									
	DOORS			DETAILS			FR	HDW	DOOR	
#	W	Η	Т	MATERIAL	HEAD	JAMB	SILL		NOTES	NOTES
100	3'-0"	6'-8"	1 3/4"	SOLID CORE WD	4/A4	4/A4	-		100A	5
200	PR 3'-0"	7'-0"	.063"	TEMP. ALUM ALLOY	1/A4	1/A4	2/A4		200A	2,7,11
300	3'-0"	6'-8"	1 3/4"	EXIST SOLID CORE WD	-	-	-		300C	3,5,6
301	3'-0"	6'-8"	1 3/4"	SOLID CORE WD	4/A4	4/A4	-		300D	5,10
400	-	-	-	EX. ROLL-UP O.H.	-	-	-		400A	13
401	3'-0"	7'-0"	1 3/4"	EXISTING HOLLOW METAL	-	-	-		400C	1,3,4,5,8,10
500	PR 3'-0"	7'-0"	1 3/4"	STOREFRONT	-	-	2/A4		500A	1,8

DOOR NOTES

- 1. PROVIDE A SIGN POSTED ON THE EGRESS SIDE, ON OR ADJACENT TO THE DOOR STATING: "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED." THE SIGN SHALL BE IN LETTERS 1" HIGH ON A CONTRASTING BACKGROUND.
- 2. NEW DOORS SUPPLIED BY TENANT W/ PRE-INSTALLED BRUSHED ALUM COVER PLATE ON SALES AREA SIDE OF THE DOOR. EXIST DOORS INSTALL ALUM COVER PLATE (SUPPLIED BY TENANT) ON EXIST DOORS TO REMAIN.
- 3. DOOR, FRAME AND HINGES ARE EXISTING. PROVIDE AND INSTALL ANY MISSING ITEMS OF HARDWARE PER HARDWARE NOTES.
- 4 PROVIDE (ONE) PEEP HOLE TO VIEW OUT. MOUNT @ 4'-3" AFF.
- 5. PAINT DOOR AND FRAME W/ WHITE
- SEMI-GLOSS ENAMEL PAINT. 6 INSTALL TENANT SUPPLIED SIGNAGE PER
- DETAIL A/A4.
- 7. REINFORCE JAMBS WITH WOOD BLOCKING. 8. CONTRACTOR TO PROVIDE AND INSTALL DOOR SWEEP ON ALL EXTERIOR DOORS TO PREVENT
- WATER, WIND AND DEBRIS INFILTRATION. 9. PROVIDE STOREFRONT DOORS, TRANSOM AND THRESHOLD TO MATCH EXIST. PROVIDE SHOP DRAWINGS TO LANDLORD FOR APPROVAL PRIOR TO INSTALLATION.
- 10. PROVIDE SIGNAGE THAT READS "EMERGENCY EXIT ONLY."
- 11. PROVIDE SIGNAGE THAT READS "EMPLOYEES ONLY."
- 12. REMOVE PULL HANDLES AND HARDWARE ON EXTERIOR SIDE OF DOOR. PROVIDE COVER PLATES TO MATCH FOR ALL HOLES IN DOOR AND FRAME.
- 13. EXISTING OVERHEAD DOOR PROVIDE HASP FOR TENANT'S LOCK.

GENERAL HARDWARE NOTES:

- 1. THRESHOLDS AT EGRESS DOORS SHALL BE NO MORE THAN 1/2" (MAX) HEIGHT AFF.
- 2. ALL DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL BE INSTALLED 34" (MIN) TO 44" (MAX) AFF AND SHALL BE "SINGLE-HANDED" OPERABLE WITHOUT USE OF KEY OR SPECIAL KNOWLEDGE.
- 3. WHERE EGRESS DOORS ARE USED IN PAIRS, THE UNLATCHING OF THE LEAF SHALL NOT REQUIRE MORE THAN ONE (1) OPERATION AS MENTIONED IN GENERAL HARDWARE NOTE #2 ABOVE.
- 4. CONTROLS AND OPERATING MECHANISMS SHALL BE LEVER-TYPE (OR EQUAL) PROVIDING OPERATION WITH ONE HAND AND NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
- 5. THE FORCE REQUIRED TO ACTIVATE CONTROLS OF INTERIOR HINGED DOORS SHALL BE NO GREATER THAN 5 POUNDS (22.2 N).
- 6. DOORS EQUIPPED WITH CLOSERS SHALL BE ADJUSTED SO THAT THE SWEEP PERIOD FROM AN OPEN POSITION OF 70 DEGREES WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 3" FROM THE LATCH, MEASURED FROM THE LEADING EDGE OF THE DOOR.

HARDWARE NOTES

HDW # 100A

1 1/2 PAIR HINGES: STANDARD WEIGHT **1 MECHANICAL PUSH BUTTON LOCKSET** WITH LEVER HANDLE 1 CLOSER 1 FLOOR STOP

HDW # 200A

LWP-3 ALUMINUM TRAFFIC DOOR EASY SWING HINGE SYSTEM 9" X 30" CLEAR ACRYLIC WINDOW FLUSH HOLLOW METAL FRAME - DRYWALL

HDW # 300C EXIST 1 1/2 PAIR HINGES: STANDARD WEIGHT EXIST 1 PRIVACY SET WITH LEVER HANDLE EXIST 1 CLOSER EXIST FLOOR/WALL STOP

HDW # 300D

1 1/2 PAIR HINGES: STANDARD WEIGHT 1 PASSAGE SET W/ LEVER HANDLE 1 CLOSER (FLOOR/WALL STOP IF SHIPPED WITH HARDWARE) INSTALL STAND ALONE ALARM - REFER TO DOOR ALARM MOUNTING DETAIL (TENANT SUPPLIED)

HDW # 400A EXIST ROLL-UP DOOR RAILS AND HARDWARE

EXIST LATCH INSTALL HASP FOR LOCK INSTALL STAND ALONE ALARM

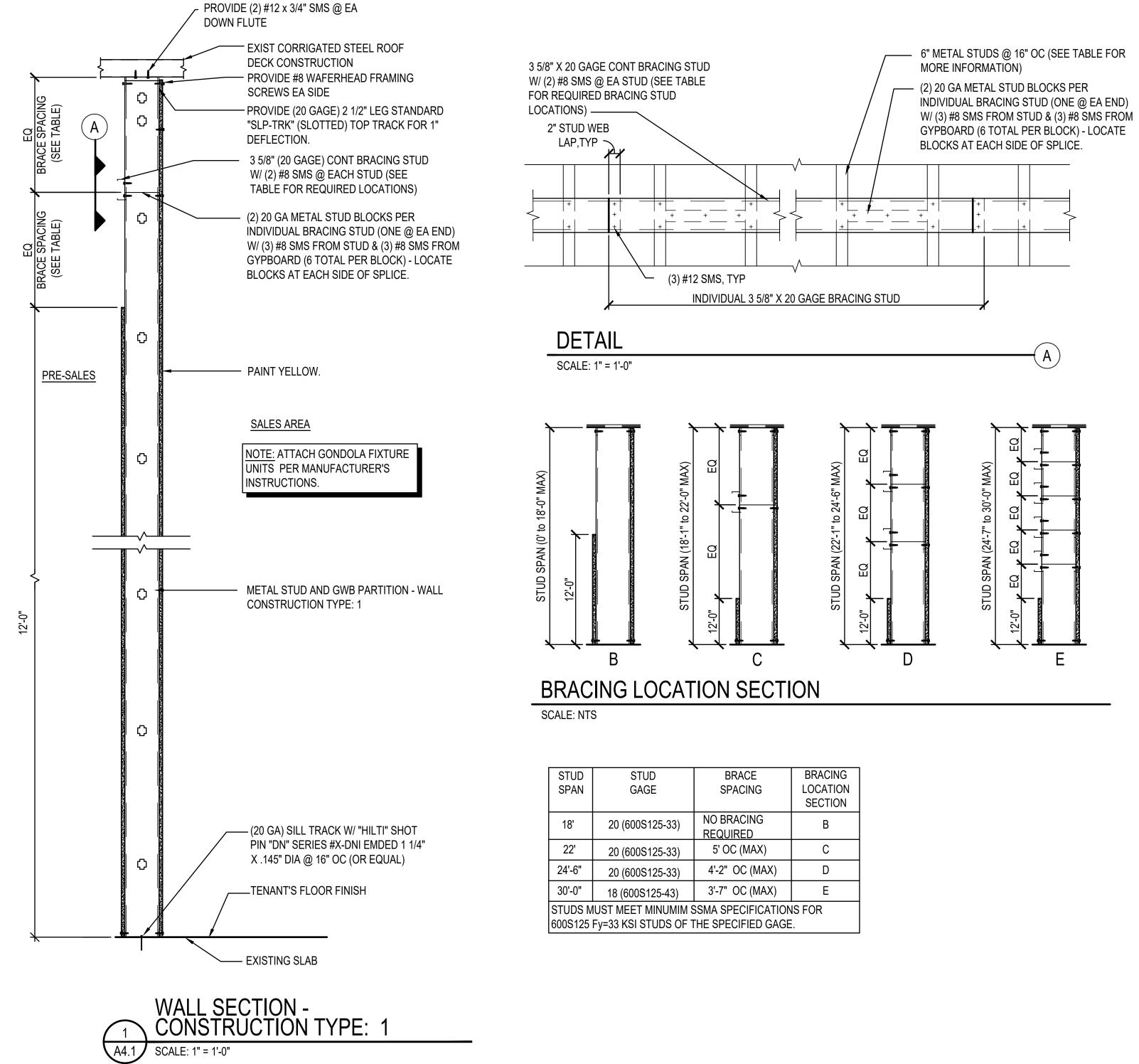
HDW # 400C

- 1 1/2 PAIR HINGES: STANDARD WEIGHT, NON- REMOVABLE PINS
- 1 NON-ALARMED, NON-KEYED PANIC BAR
- DEVICE: WITH STAND ALONE ALARM
- REFER TO DOOR ALARM MOUNTING DETAIL 1 CLOSER WITH STOP ARM
- 1 PEEP HOLE 1 ALUM THRESHOLD (1/2" MAX HEIGHT)
- 1 SWEEP
- **1 WEATHER STRIP** 1 RAIN DRIP
- HDW # 500A HINGES PER STOREFRONT MANUFACTURER
 - (BY GENERAL CONTRACTOR)
 - 2 CLOSERS WITH STOP ARM AND DROP PLATE
- 2 PUSH PLATES (BY GENERAL CONTRACTOR) 2 PULL HANDLES (BY GENERAL CONTRACTOR)
- 1 KABA CYLINDER (SUPPLIED BY TENANT)
- 1 COMMERCIAL GRADE ADA COMPLIANT DEADLOCK

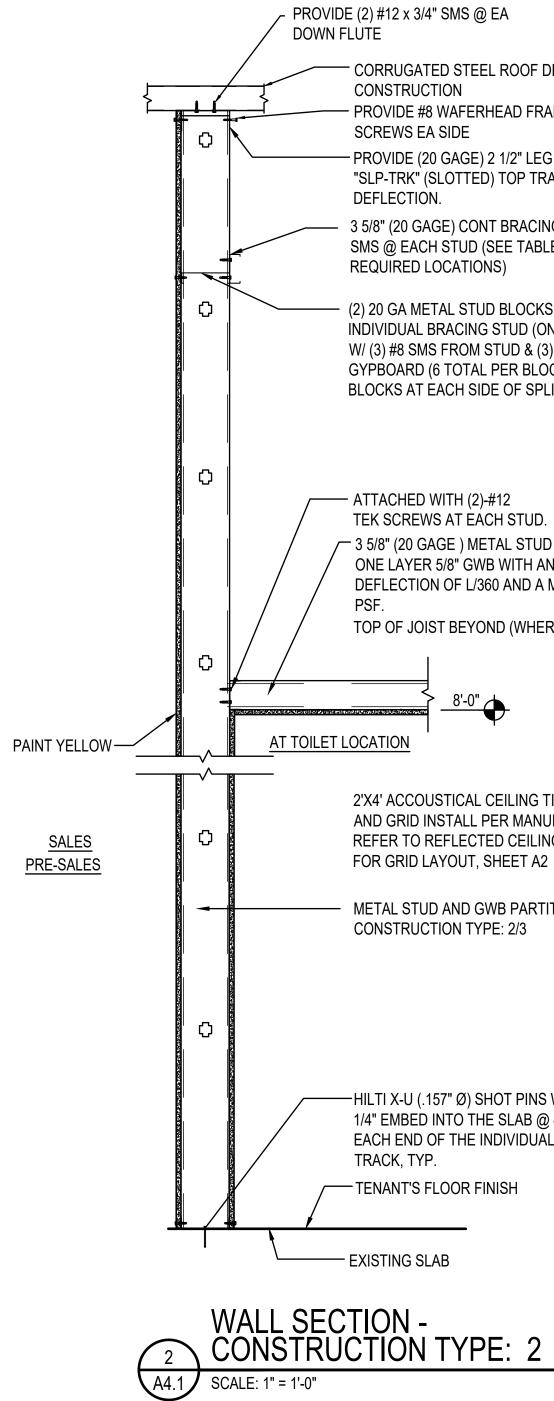
NOTE: CONTRACTOR SHALL VERIFY CLOSER DOES NOT HAVE A HOLD-OPEN FEATURE. IF CLOSER DOES, THE CONTRACTOR SHALL REPLACE WITH NEW CLOSER.

W/ TURN ON SALES SIDE (BY GENERAL CONTRACTOR)





	BRACE	BRACING				
	SPACING	LOCATION				
		SECTION				
5-33)	NO BRACING	В				
5 00)	REQUIRED					
5-33)	5' OC (MAX)	С				
5-33)	4'-2" OC (MAX)	D				
5-43)	3'-7" OC (MAX)	E				
IUMIM SSMA SPECIFICATIONS FOR						
DS OF THE SPECIFIED GAGE.						



- CORRUGATED STEEL ROOF DECK CONSTRUCTION - PROVIDE #8 WAFERHEAD FRAMING

- PROVIDE (20 GAGE) 2 1/2" LEG STANDARD "SLP-TRK" (SLOTTED) TOP TRACK FOR 1"

- 3 5/8" (20 GAGE) CONT BRACING STUD W/ (2) #8 SMS @ EACH STUD (SEE TABLE FOR REQUIRED LOCATIONS)

- (2) 20 GA METAL STUD BLOCKS PER INDIVIDUAL BRACING STUD (ONE @ EA END) W/ (3) #8 SMS FROM STUD & (3) #8 SMS FROM GYPBOARD (6 TOTAL PER BLOCK) - LOCATE BLOCKS AT EACH SIDE OF SPLICE.

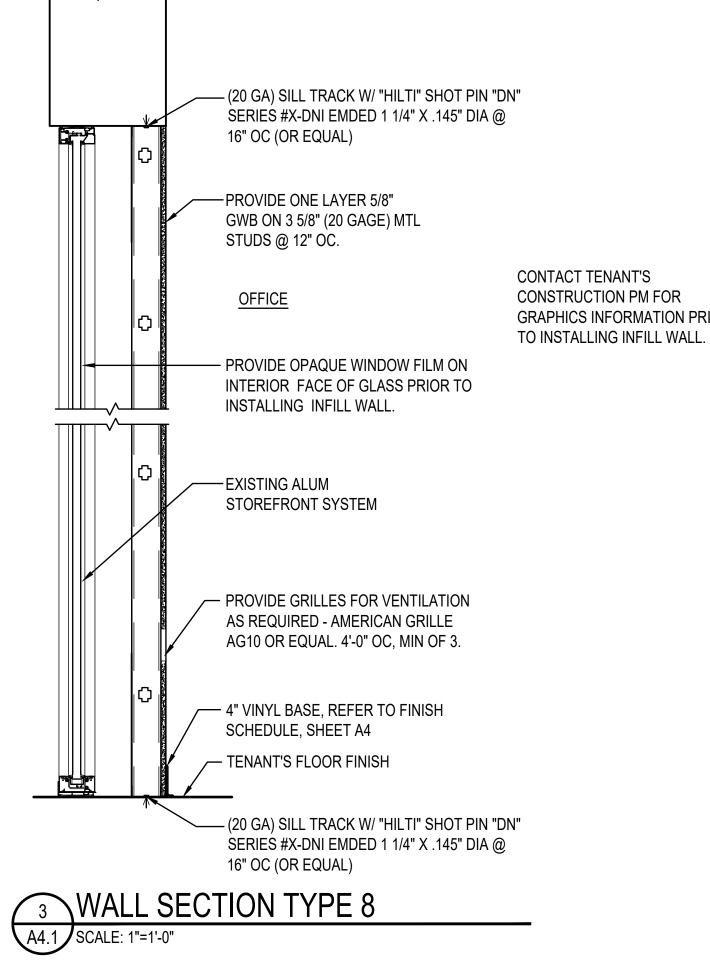
/ ATTACHED WITH (2)-#12 TEK SCREWS AT EACH STUD. / 3 5/8" (20 GAGE) METAL STUD JOIST WITH ONE LAYER 5/8" GWB WITH AND A DEFLECTION OF L/360 AND A MAX. LOAD OF 5

> TOP OF JOIST BEYOND (WHERE OCCURS)-8'-0" 8'-0" AT HALLWAY LOCATION

2'X4' ACCOUSTICAL CEILING TILES AND GRID INSTALL PER MANUF SPECS. REFER TO REFLECTED CEILING PLAN FOR GRID LAYOUT, SHEET A2 -------

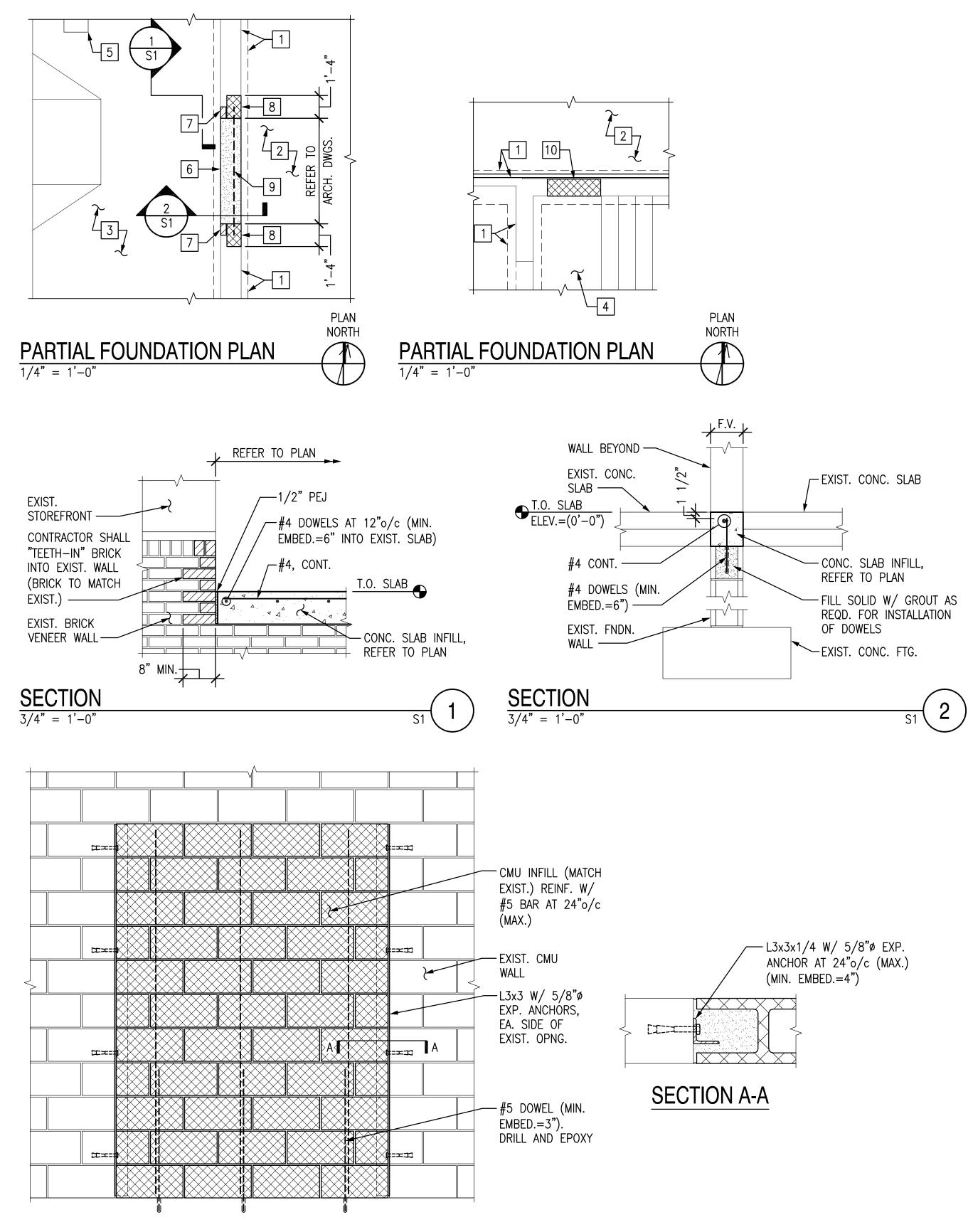
• METAL STUD AND GWB PARTITION - WALL CONSTRUCTION TYPE: 2/3

— HILTI X-U (.157" Ø) SHOT PINS W/ 1 1/4" EMBED INTO THE SLAB @ 4' OC & 4" OFF EACH END OF THE INDIVIDUAL PIECE OF





GRAPHICS INFORMATION PRIOR



TYPICAL MASONRY WALL INFILL ELEVATION NOT TO SCALE



PLAN NOTES:

ALL WORK SHOWN IS NEW WORK UNLESS DENOTED AS EXISTING. ALL EXISTING ITEMS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION.

2. TOP OF EXISTING INTERIOR SLAB ELEVATION EQUALS REFERENCE ELEVATION 0'-0". ALL ELEVATIONS ARE BASED UPON THIS REFERENCE ELEVATION.

3. REFER TO THE ARCHITECTURAL DRAWINGS FOR DEMOLITION NOT NOTED.

4. CONTRACTOR SHALL COORDINATE DIMENSIONS NOT NOTED WITH THE ARCHITECTURAL DRAWINGS.

5. CONTRACTOR SHALL IN NO WAY DAMAGE ANY BUILDING COMPONENT TO REMAIN. IF DAMAGE OCCURS, IT SHALL BE REPAIRED OR REPLACED (TO THE SATISFACTION OF THE OWNER) AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING, GUYING, AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK HAS BEEN COMPLETED. THE DESIGN OF SHORING, GUYING, AND BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR.

KEY NOTES:

1 EXISTING FOUNDATION AND FOUNDATION WALL.

2 EXISTING CONCRETE SLAB-ON-GRADE.

3 EXISTING CONCRETE SIDEWALK.

4 EXISTING CONCRETE LANDING AND STAIRS.

5 EXISTING COLUMN.

6 CONTRACTOR SHALL DEMOLISH EXISTING BRICK VENEER AND FOUNDATION WALL DENOTED ON PLAN (-0'-8") BELOW FINISHED FLOOR ELEVATION. PROVIDE NEW CONCRETE SLAB IN-FILL, 8" DEEP (MINIMUM) BY WIDTH OF WALL (FIELD VERIFY) REINFORCED AS SHOWN IN SECTION 2 ON THIS SHEET. REMOVE EXISTING SLAB AS REQUIRED TO REMOVE THE WALL.

7 PROVIDE BRICK VENEER TO MATCH EXISTING. "TEETH-IN" BRICK (8" MINIMUM) INTO EXISTING MASONRY WALL WHERE APPLICABLE.

8 PROVIDE CMU TO MATCH EXISTING. "TEETH-IN" CMU (16" MINIMUM) INTO EXISTING MASONRY WALL WHERE APPLICABLE. GROUT ALL CMU CELLS SOLID, UNLESS OTHERWISE NOTED.

9 W8x21 STEEL BEAM LINTEL ABOVE WITH 3/8" THICK x CONTINUOUS STEEL PLATE (PLATE WIDTH SHALL EQUAL WALL WIDTH, MINUS 1").

10 CMU INFILL AT EXISTING OPENING. REFER TO TYPICAL MASONRY WALL INFILL ELEVATION ON THIS SHEET.

GENERAL NOTES:

1. ALL ITEMS SHOWN ON THIS DRAWING ARE NEW CONSTRUCTION, UNLESS OTHERWISE NOTED AS EXISTING.

2. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

3. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

4. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, ANCHORS, CHASES, INSERTS, HANGERS, HOLES, ETC. TO BE PLACED IN THE STRUCTURAL WORK.

5. THE STRUCTURE WAS DESIGNED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. THE FOLLOWING LOADS IN ADDITION TO THE LOADS OF THE PERMANENT MATERIALS AND CONSTRUCTION, WERE USED:

GROUND SNOW LOAD : 30 PSF ROOF LOAD : 20 PSF GROUND FLOOR : 100 PSF WIND SPEED : 114 MPH RISK CATEGORY : II **EXPOSURE CATEGORY :** FROST DEPTH : 48"

6. CONTRACTOR SHALL PROTECT EXISTING BUILDING ELEMENTS TO REMAIN. ANY DAMAGE DONE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

CAST IN PLACE CONCRETE NOTES:

- CAST-IN-PLACE CONCRETE FOR THIS STRUCTURE HAS BEEN DESIG ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) : ACI 318R "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE COMMENTARY".
- 2. CONCRETE SHALL BE NORMAL WEIGHT AND SHALL OBTAIN 28 DAY STRENGTH OF 3,500 PSI. ALL FLOOR SLAB CONCRETE SHALL BE WITH 3.5% TO 6.5% AIR.

REINFORCING MATERIALS SHALL BE AS FOLLOWS:

- A) REINFORCING BARS ASTM A615, GRADE 60, DEFORMED. B) WELDED WIRE REINFORCEMENT - ASTM A185, WELDED STEE REINFORCEMENT. PROVIDE SHEET TYPE, ROLL TYPE NOT AC
- 4. ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR WELD PLATES SHALL BE ACCURATELY PLACED IN THE POSITIONS S ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED DISPLACEMENT BEYOND PERMITTED TOLERANCES.
- MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS INDICATED DRAWINGS SHALL GOVERN WHEN IN CONFLICT WITH ACI 318.

MASONRY NOTES:

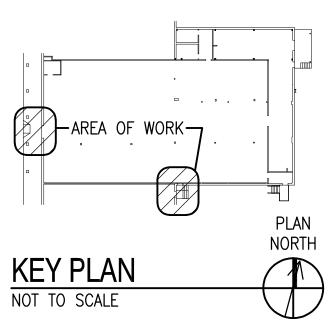
- 1. ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONCRETE INSTITUTE (ACI) : ACI 530, "BUILDING CODE REQUIREMEN MASONRY STRUCTURES" AND ACI 530.1, "SPECIFICATIONS FOR MAS STRUCTURES."
- ALL CONCRETE MASONRY UNITS SHALL BE IN ACCORDANCE WITH / "SPECIFICATIONS FOR HOLLOW LOAD-BEARING UNITS" AND SHALL COMPRESSIVE STRENGTH OF F'M=1,500 PSI.
- ALL MORTAR FOR USE IN ENGINEERED MASONRY BEARING WALLS ACCORDANCE WITH ASTM C-270 TYPE "S" MORTAR. ALL MASONRY BE IN ACCORDANCE WITH ASTM C476 AND SHALL OBTAIN A 28-DA STRENGTH OF 3,000 PSI.
- ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A6 DEFORMED BARS. CENTER REINFORCING BARS IN BLOCK CELLS U OTHERWISE NOTED.
- THE MASONRY CONTRACTOR SHALL BUILD, REINFORCE, AND GROUT NO GREATER THAN 4'-O" LIFTS, VIBRATING GROUT IMMEDIATELY AFT
- PROVIDE GALVANIZED HORIZONTAL LADDER (EXTERIOR CONDITION)/1 CONDITION) TYPE JOINT REINFORCING WITH NO. 9 GAGE CROSS RO CENTER ON ALL WALLS.
- DIMENSIONS SHOWN FOR CMU WALLS ARE NOMINAL BLOCK. HOLD OUTSIDE FACE OF CMU.

STRUCTURAL STEEL NOTES:

- 1. ALL STRUCTURAL WIDE FLANGE SHAPES SHALL BE IN ACCORDANCE A992, GRADE 50 KSI SPECIFICATIONS. ALL STEEL ANGLES, PLATES MISCELLANEOUS MEMBERS SHALL BE IN ACCORDANCE WITH ASTM KSI SPECIFICATIONS. STRUCTURAL PIPING SHALL BE IN ACCORDANCE A53, GRADE B.
- 2. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE FOURTEEN THE MANUAL OF STEEL CONSTRUCTION OF THE AMERICAN INSTITUT CONSTRUCTION.
- 3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1.
- 4. STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE PAINTED WITH HI-BUILD EPOXOLINE, SERIES 66, PRIME AND INTERMEDIATE COATS ENDURA-SHIELD II, SERIES 1074, FINISH COAT. TOTAL PAINT THICK BE LESS THAN 10 MILS. ALL PAINTING SHALL BE DONE IN ACCOR MANUFACTURER'S WRITTEN INSTRUCTION.

STRUCTURAL ABBREVIATIONS LIST

			<u> </u>
ADDIT.	ADDITION/ADDITIONAL	MECH.	MECHANICAL
ARCH.	ARCHITECTURAL	MPH	MILES PER HO
B.O.	BOTTOM OF	MTL.	METAL
CMU	CONCRETE MASONRY UNIT	o/c	ON CENTER
CONC.	CONCRETE	0.H.	OPPOSITE HAN
CONT.	CONTINUE/CONTINUOUS	OPNG.	OPENING
COORD.	COORDINATE	OPP.	OPPOSITE
Ø	DIAMETER	PEJ	PREMOLDED EX
DIAG.	DIAGONAL	PLF	POUNDS PER
DWGS.	DRAWINGS	PSF	POUNDS PER
EA.	EACH	PSI	POUNDS PER
ELEV.	ELEVATION	REINF.	REINFORCED/R
EMBED.	EMBEDDED/EMBEDMENT	REQD.	REQUIRED
EQUIP.	EQUIPMENT	RTU	ROOT TOP UNI
EXIST.	EXISTING	SIM.	SIMILAR
FNDN.	FOUNDATION	STL.	STEEL
FTG.	FOOTING	STRUCT.	STRUCTURE/ST
F.V.	FIELD VERIFY	THK.	THICK/THICKNE
К	KIP (1,000 POUNDS)	T.O.	TOP OF
KSI	KIPS PER SQUARE INCH	TYP.	TYPICAL
LBS	POUND/POUNDS	U.O.N.	UNLESS OTHER
LLV	LONG LEG VERTICAL	VERT.	VERTICAL
MAS.	MASONRY	W/	WITH
MAX.	MAXIMUM	WT.	WEIGHT
MIN.	MINIMUM		

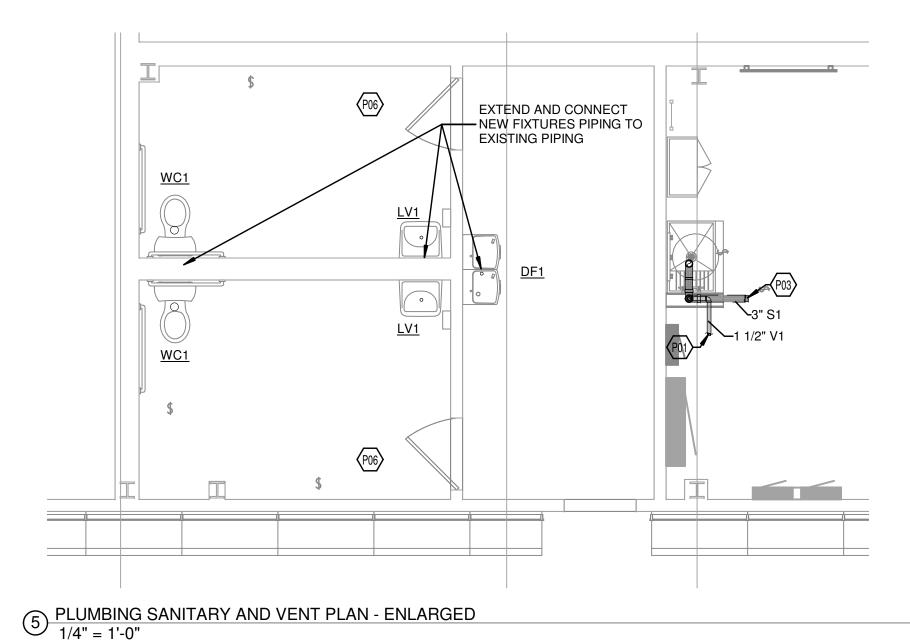


	-	IS	A	REDUCTION,	GRAPHIC	SCALE
GRAPHI	C SCALE:					

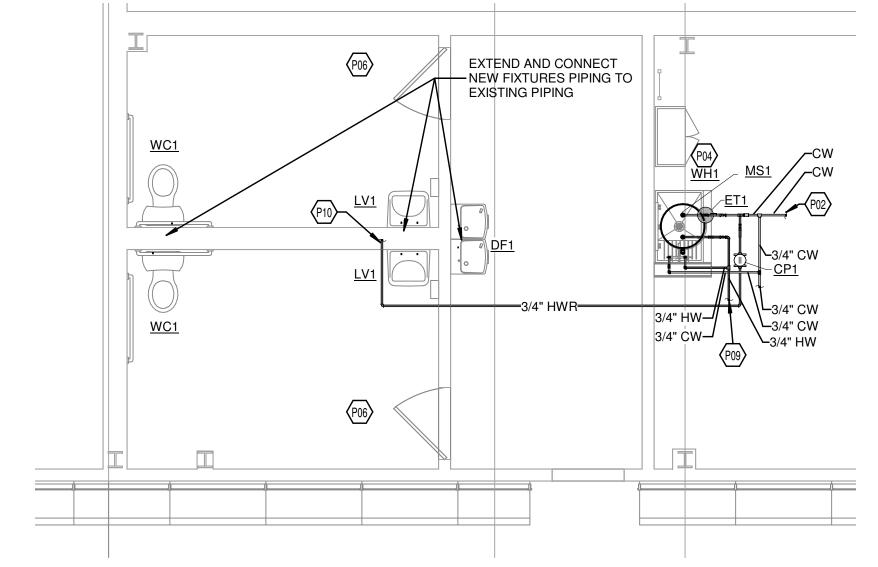
1/4" = 1'-0"	5'		0'	5'		10'	<u> </u>
3/4" = 1'-0"	06'	'1'	2'	3'	4'	5'	emai

GNED IN CI 318 AND ACI E AND
COMPRESSIVE AIR ENTRAINED
EL WIRE CCEPTABLE. BOLTS AND
SHOWN AND TO PREVENT
) ON THE
E AMERICAN ENTS FOR SONRY
ASTM C–90 HAVE A 28–DAY
SHALL BE IN Y GROUT SHALL AY COMPRESSIVE
615, GRADE 60 JNLESS
T THE WALLS IN TER EACH LIFT. TRUSS (INTERIOR
ODS AT 16" ON D DIMENSIONS TO
E WITH ASTM ES AND A36 GRADE 36 NCE WITH ASTM
NTH EDITION OF TE OF STEEL
TH TNEMEC S AND KNESS SHALL NOT ORDANCE WITH THE
OUR
ND
EXPANSION JOINT LINEAR FOOT SQUARE FOOT SQUARE INCH REINFORCING
TRUCTURAL
RWISE NOTED
BRIEGORY IN CLERLING STRUCTURAL ANGINEER 192 Ballard Court, Suite 102 Virginia Beach, Virginia 23462
Virginia Beach, Virginia 23462 Phone (757) 965—2000 Facsimile (757) 965—2001 mail GGerling @M cPhersonDesignGroup.com









THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL

CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR

GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING.

THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY

APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN

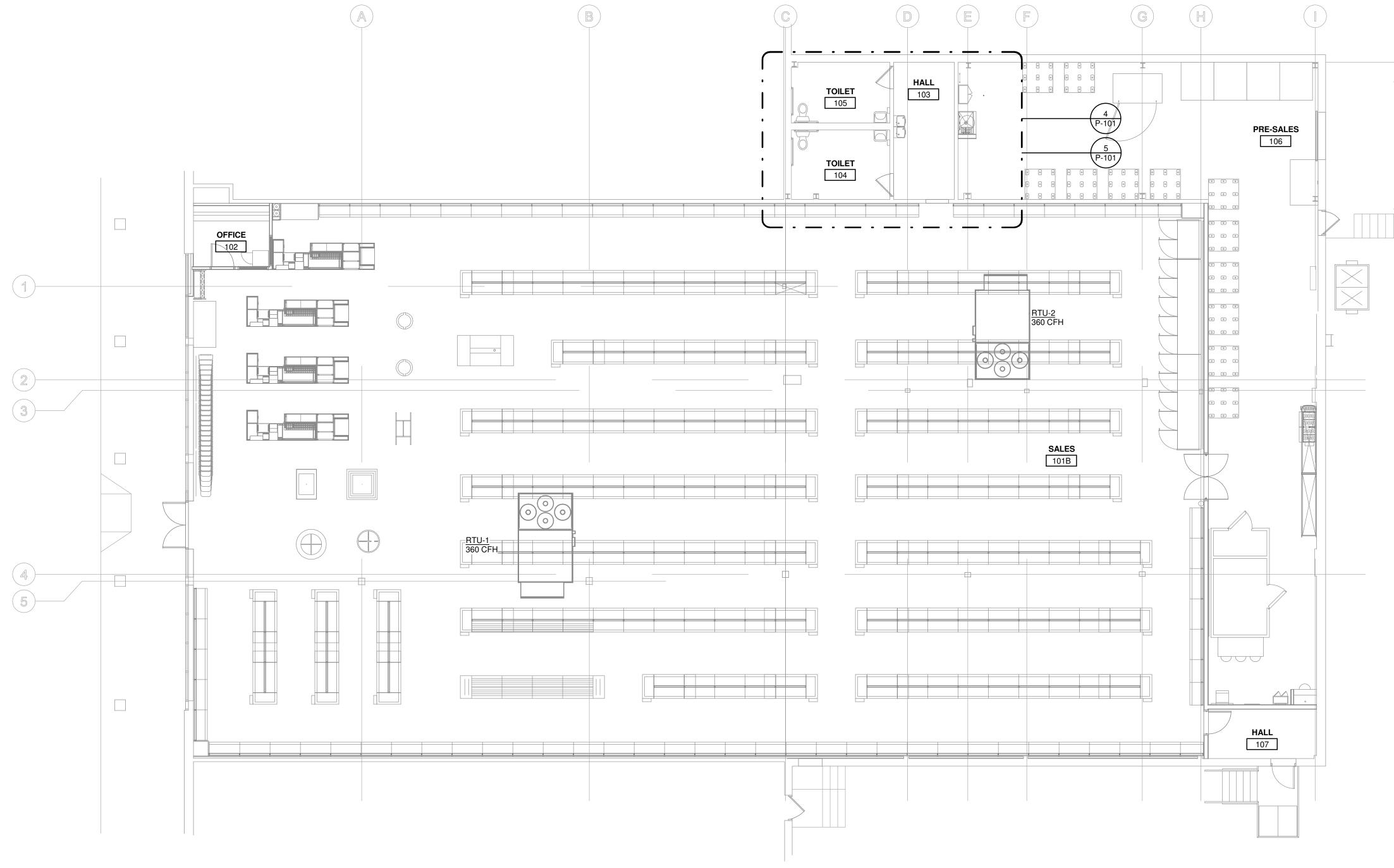
ALL WORK INSTALLED IN STRICT ACCORDANCE WITH

PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER

LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO

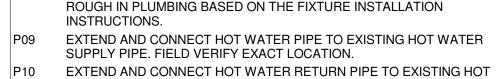
EXISTING CONDITIONS.

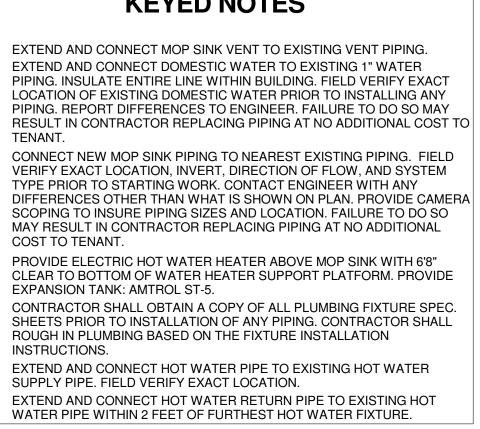
INTENT.



GENERAL DEMO PLUMBING NOTES		KEYED NOTES
AT ALL LOCATIONS WHERE PLUMBING FIXTURES ARE TO BE REMOVED, PLUMBING SUBCONTRACTOR SHALL REMOVE PIPING (WATER, WASTE, VENT) TO A POINT BEYOND FINISH SURFACE AND CAP OFF. WHERE PIPING SERVING EXISTING FIXTURE TO BE REMOVED ALSO SERVES FIXTURES THAT ARE TO REMAIN, PIPING SHALL BE REROUTED AND RECONNECTED AS REQUIRED TO ACCOMMODATE REMODELED AREAS AS REQUIRED. WHERE EXISTING WALLS ARE REMOVED AND PIPING IS FOUND THAT MUST REMAIN, PLUMBING SUBCONTRACTOR SHALL REROUTE AND RECONNECT PIPING AS REQUIRED, E.G. DOMESTIC WATER PIPING, GAS, SOIL, WASTE, VENT, AND ROOF LEADER PIPING. ALL PLUMBING PIPING THAT IS FOUND TO NO LONGER SERVE ANY PURPOSE SHALL BE REMOVED AND CAPPED OFF BEYOND FINISH SURFACE.	P01 P02 P03	EXTEND AND CONNECT MOP SINK VENT TO EXISTIN EXTEND AND CONNECT DOMESTIC WATER TO EXIS PIPING. INSULATE ENTIRE LINE WITHIN BUILDING. F LOCATION OF EXISTING DOMESTIC WATER PRIOR T PIPING. REPORT DIFFERENCES TO ENGINEER. FAIL RESULT IN CONTRACTOR REPLACING PIPING AT NO TENANT. CONNECT NEW MOP SINK PIPING TO NEAREST EXIS VERIFY EXACT LOCATION, INVERT, DIRECTION OF F TYPE PRIOR TO STARTING WORK. CONTACT ENGIN DIFFERENCES OTHER THAN WHAT IS SHOWN ON P SCOPING TO INSURE PIPING SIZES AND LOCATION. MAY RESULT IN CONTRACTOR REPLACING PIPING / COST TO TENANT.
SUBSTITUTION NOTE	P04	PROVIDE ELECTRIC HOT WATER HEATER ABOVE M CLEAR TO BOTTOM OF WATER HEATER SUPPORT F EXPANSION TANK: AMTROL ST-5.
PEX AND CPVC IS APPROVED FOR INTERIOR WATER PIPING. COORDINATE WITH LOCAL JURISDICTION PRIOR TO INSTALLATION. IF PEX AND CPVC IS NOT APPROVED BY AHJ, USE HARD COPPER TUBE, ASTM B 88. TYPE L.	P06	CONTRACTOR SHALL OBTAIN A COPY OF ALL PLUM SHEETS PRIOR TO INSTALLATION OF ANY PIPING. C ROUGH IN PLUMBING BASED ON THE FIXTURE INST INSTRUCTIONS.
	Png	

SCHEDULE 40 PVC PIPE AND FITTINGS CAN BE USED THROUGHOUT. CONTRACTOR SHALL MAINTAIN INTEGRITY OF FIRE RATINGS. PIPING SHALL NOT BE RUN IN PLENUM SPACES AND CONTRACTOR SHALL PROVIDE INTUMESCENT COLLARS WHEN PENETRATING A RATED WALL, FLOOR, OR OTHER ASSEMBLY

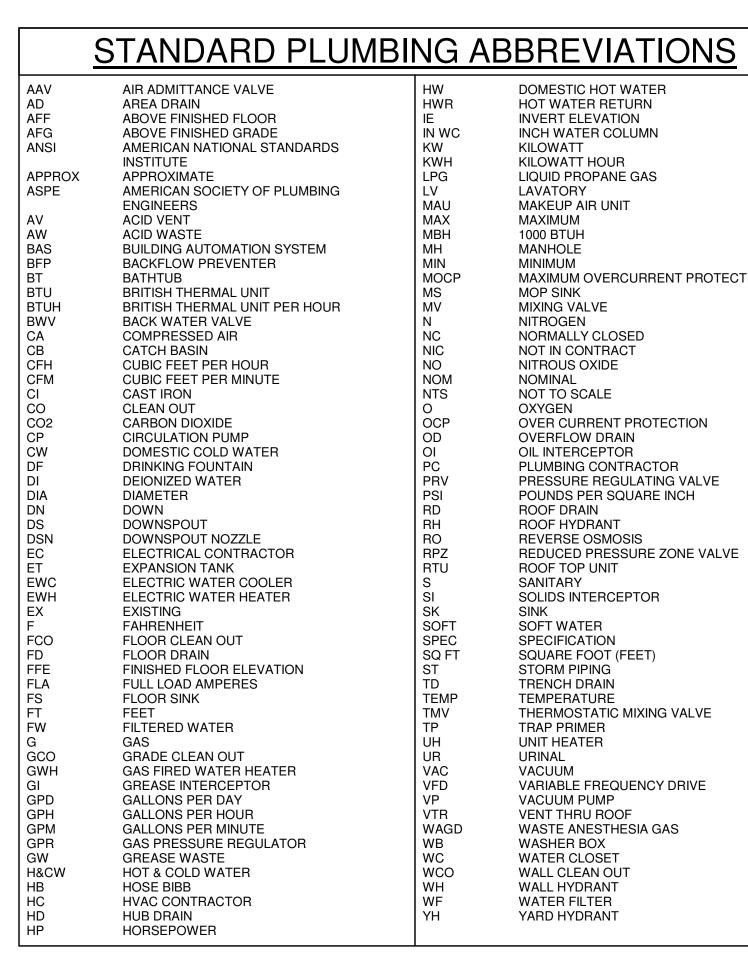








	PLUMBING LEGEND								
SYMBOL	DESCRIPTION								
	PLAN-VIEW LINE TYPES								
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE								
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK								
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK								
>	DIRECTION OF FLOW								
PIPING LINE TYPES									
s	SANITARY WASTE PIPING								
V	SANITARY VENT PIPING								
CW	DOMESTIC COLD WATER PIPING								
HW	DOMESTIC HOT WATER PIPING (120 ℉)								
——-G——-	NATURAL GAS PIPING								
PLUMBING ACCESSORIES									
E-	PIPE CAP								
<u>⊢ wco o co</u>	<u>CO</u> - CLEANOUT, <u>FCO</u> - FLOOR CLEANOUT, <u>GCO</u> - GRADE CLEANOUT, <u>WCO</u> - WALL CLEANOUT								
● <u>FD</u>	FLOOR DRAIN								
Ē	EXPANSION TANK								
	PIPE VALVES								
	CONTROL VALVE , SHUT-OFF VALVE								
	CHECK VALVE								
TMV	THERMOSTATIC MIXING VALVE								
	PRESSURE REGULATOR VALVE								
	BACKFLOW PREVENTER								
	TRAP PRIMER VALVE								
	PLUMBING SYMBOLS								
ю	PIPE UP								
+>	PIPE DOWN								
	PIPE TEE DOWN								
	PIPE TEE UP								
7	PIPE CONTINUATION								
$\mathbf{\Theta}$	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)								
O <u>VTR</u>	VENT THROUGH ROOF								



DO	LLAR TREE PLUMBING ELE	CTRIC	CAL	COORE	DINAT	ON	SCHE	DULE														
ABBREVIATIONS CONTRACTOR TYPE							MOT	OR CONTI	ROL TYPE							CONTRO	OL TYPE					
DC MC SD CN TS C/B FUSE FLA MCA CP	CLOCAL DISCONNECTECELECTRICAL CONTRACTORCMOTOR CONTROL (POWER)EXEXISTINGDDUCT SMOKE DETECTORFCFIRE PROTECTION CONTRACTORCCONTROLSGCGENERAL CONTRACTORACONTROLSHCHVAC CONTRACTORBH.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARDMFRMANUFACTURERISEFUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)PCPLUMBING CONTRACTORAOPERATING FULL LOAD AMPSOROWNER OR OTHERSCAMINIMUM CIRCUIT AMPACITYHCHC					CS MCC MG MS VFD MSR OV	C M M M V	OTOR CO AGNETIC ANUAL ST ARIABLE I ANUAL ST	ARTER	ARTER OR CONTACT Y DRIVE CONTROL RELA	¥Υ				TC CPT BAS LOW LINE RLINE MAN FA CO INT	BUILDIN LOW VO LINE VO REVER MANUA FIRE AL CARBO	OL POWEF NG AUTOM DLTAGE CO DLTAGE CO SE ACTING L	ATION SYS DNTROLS DNTROLS I LINE VOLT	TEM FAGE THEI	RMOSTA		
EQUIP	PMENT MARK DESCRIPTION	VOLTS (V)	PHASE	EMERGENCY	BHP (HP)	HP (HP)	HTG KW (kW)	WATTS (W)	FLA (A)	MCA (A)	OCP (A)	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURM	
CP1	HOT WATER RECIRCULATING PUMP	120	1			1/40			.52				EC	EC	EC	MG	MFR	MFR	MFR	LINE	PC	PC
DF1	DOMESTIC ELECTRIC WATER COOLER	120	1										EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR
WH1	DOMESTIC ELECTRIC TANK-TYPE WATER HEATER	120	1				2						EC	EC	EC					INT	MFR	MFR

		INT	TRAP	VENT	SAN	HW SIZE	CW SIZE	VALVE/FAUCET	VALVE/FAUCET				
	ACCESSORIES	TRAP	SIZE (in)	SIZE (in)	SIZE (in)	(in)	(in)	MODEL	MFGR	MODEL	MANUFACTURER	DESCRIPTION	MARK
IT	FURNISH STD. CABINET FINISH FOUNTAIN, SUPPLY STOP & TUBE, DRAIN KIT, AND WALL HANGER KIT	NO		1-1/2	1-1/2		1/2			A172-UG- BF	MURDOCK	DOMESTIC ELECTRIC WATER COOLER	DF1
	FDA APPROVED, POTABLE WATER EXPANSION TANK, 2.1 GALLON ACCEPTANCE.						3/4			PLT-5	WATTS	EXPANSION TANK	ET1
DRAIN, AND ADA PIPING F	FURNISH LAVATORY, LEAD FREE METERING FAUCET, WALL HANGER KIT, SUPPLY STOPS & TUBES, DRAIN, AND PROVIDE ASSE 1070 VALVES.	NO	1-1/2	1-1/2	1-1/2	1/2	1/2	Z86500-XL	ZURN	Z5344	ZURN	LAVATORY	LV1
	FURNISH VACUUM BREAKER, HOSE AND BRACKET, MOP HANGER, AND DRAIN KIT.	NO	3	1-1/2	3	1/2	1/2	Z843MI	ZURN	Z1996-36	ZURN	MOP SINK	MS1
CLOSET BOLTS & CAPS, V (SIDE OPPOSITE THE WA	FURNISH ADA CLOSET & TANK, ADA OPEN FRONT SEAT, SELF SUSTAINING HINGE, FLOOR FLANGE, CLOSET BO SUPPLY STOP & TUBE. FLUSH CONTROL MUST BE LOCATED ON THE WIDE/ACCESS SIE OF THE WC (SIDE OPPO	YES		2	3		1/2			Z5560	ZURN	TANK WATER CLOSET	WC1
CL (SI	FURNISH ADA CLOSET & TANK, ADA OPEN FRONT SEAT, SELF SUSTAINING HINGE, FLOOR FLANGE, CL	YES		2	3						-		_

 MARK
 DESCRIP

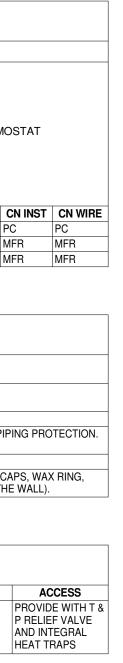
 WH1
 DOMESTIC ELECTRIC TANK

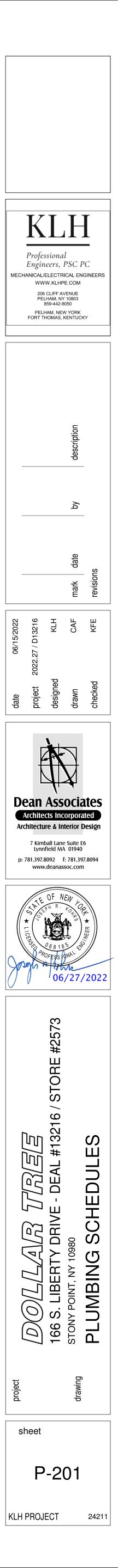
ADMITTANCE VALVE	HW	DOMESTIC HOT WATER
	HWR	HOT WATER RETURN
VE FINISHED FLOOR	IE	INVERT ELEVATION
VE FINISHED GRADE	IN WC	INCH WATER COLUMN
RICAN NATIONAL STANDARDS	KW	KILOWATT
ITUTE	KWH	KILOWATT HOUR
ROXIMATE	LPG	LIQUID PROPANE GAS
RICAN SOCIETY OF PLUMBING	LV	LAVATORY
INEERS	MAU	MAKEUP AIR UNIT
) VENT	MAX	MAXIMUM
WASTE	MBH	1000 BTUH
DING AUTOMATION SYSTEM	MH	MANHOLE
KFLOW PREVENTER	MIN	MINIMUM
HTUB	MOCP	MAXIMUM OVERCURRENT PROTECTION
TISH THERMAL UNIT	MS	MOP SINK
ISH THERMAL UNIT PER HOUR	MV	
K WATER VALVE	N	NITROGEN
IPRESSED AIR	NC	NORMALLY CLOSED
CH BASIN	NIC	NOT IN CONTRACT
IC FEET PER HOUR	NO	NITROUS OXIDE
IC FEET PER MINUTE	NOM	NOMINAL
TIRON	NTS	NOT TO SCALE
AN OUT	0	OXYGEN
	-	
BON DIOXIDE	OCP	OVER CURRENT PROTECTION
CULATION PUMP	OD	OVERFLOW DRAIN
IESTIC COLD WATER	OI	OIL INTERCEPTOR
IKING FOUNTAIN	PC	PLUMBING CONTRACTOR
NIZED WATER	PRV	PRESSURE REGULATING VALVE
1ETER	PSI	POUNDS PER SQUARE INCH
/N	RD	ROOF DRAIN
INSPOUT	RH	ROOF HYDRANT
/NSPOUT NOZZLE	RO	REVERSE OSMOSIS
CTRICAL CONTRACTOR	RPZ	REDUCED PRESSURE ZONE VALVE
ANSION TANK	RTU	ROOF TOP UNIT
CTRIC WATER COOLER	S	SANITARY
CTRIC WATER HEATER	SI	SOLIDS INTERCEPTOR
TING	SK	SINK
RENHEIT	SOFT	SOFT WATER
OR CLEAN OUT	SPEC	SPECIFICATION
OR DRAIN	SQ FT	SQUARE FOOT (FEET)
-		
SHED FLOOR ELEVATION	ST	STORM PIPING
LOAD AMPERES	TD	TRENCH DRAIN
OR SINK	TEMP	TEMPERATURE
Г	TMV	THERMOSTATIC MIXING VALVE
ERED WATER	TP	TRAP PRIMER
	UH	UNIT HEATER
DE CLEAN OUT	UR	URINAL
FIRED WATER HEATER	VAC	VACUUM
ASE INTERCEPTOR	VFD	VARIABLE FREQUENCY DRIVE
LONS PER DAY	VP	
LONS PER HOUR	VTR	VENT THRU ROOF
LONS PER MINUTE	WAGD	WASTE ANESTHESIA GAS
PRESSURE REGULATOR	WB	WASHER BOX
ASE WASTE	WC	WATER CLOSET
& COLD WATER	WCO	WALL CLEAN OUT
E BIBB	WH	WALL HYDRANT
C CONTRACTOR	WF	WATER FILTER
	YH	YARD HYDRANT
SEPOWER		

DOLLAR TREE PLUMBING FIXTURE SCHEDULE

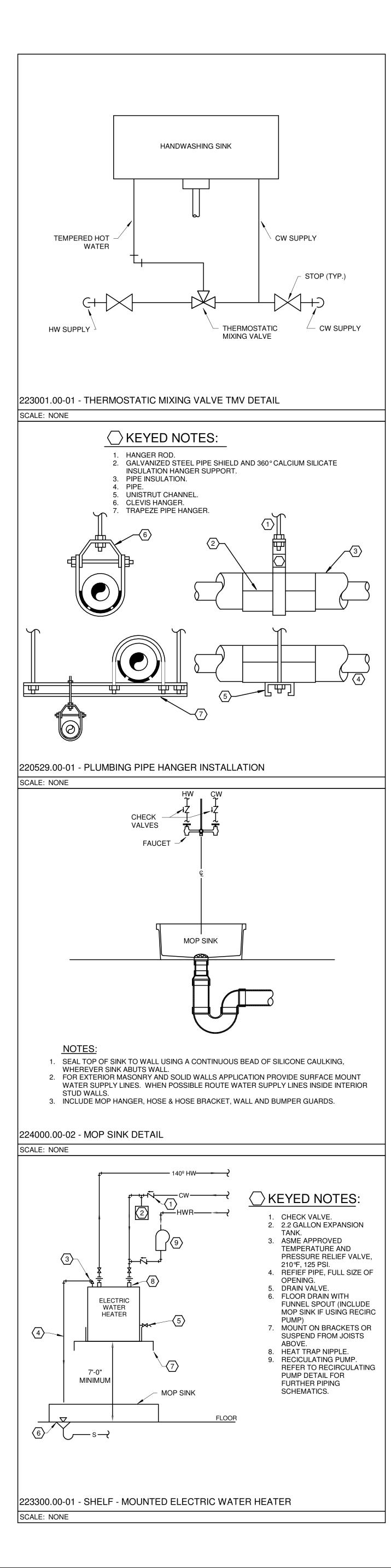
DOLLAR TREE PLUMBING WATER HEATER SCHEDULE

SCRIPTION	MANUFACTURER	MODEL	EFFICIENCY	EWT (DEG F)	LWT (DEG F)	STORAGE (GAL)	FUEL	HTG KW	VOLTS	PHASE	WEIGHT	
TANK-TYPE WATER HEATER	BRADFORD	RE110U6	98	56	140	10	ELECTRIC	2	120	1	30	PRC P RE AND HEA





of nents witha





SECTION 22 05 00.00 - COMMON WORK RESULTS FOR PLUMBING GENERAL The General Provisions of the Contract including the General and Supplemental Conditions and General Requirements apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract. Contractor shall obtain and pay for all permits, certificates of inspection and approvals required. Submittal of a bid indicates that the contractor has examined the drawings, specifications, and had an opportunity to visit the site to be able to provide a comprehensive complete bid to include providing all

Clearly state all full load amps (FLA), voltages and model numbers on all submittals. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories. Provide wiring diagrams: For power, signal, and control wiring. APPLICABLE STANDARDS The installation of all plumbing work shall conform to all the following, but not limited, applicable local and municipal utility standards, rules and regulations, plumbing codes and statutes having jurisdiction. All plumbing fixtures, equipment, accessories, and appurtenances shall be NSF/ANSI 61-372 compliant. New York Building Code; New York Plumbing Code; American Society for Test Materials (ASTM); National Sanitation Foundation (NSF);

American Standards Association (ASA); Underwriters Laboratories (UL); National Fire Protection Association (NFPA); National Electric Code (NEC); PLANS AND SPECIFICATIONS Obtain the latest owner design and construction standards document(s). Comply with all owner-specific requirements in addition to requirements set forth in these specifications and accompanying drawings. Should there be a conflict, the owner's standards shall take precedence, unless prevailing codes and regulations mandate otherwise. The drawings that accompany these specifications are diagrammatic. Wherever possible make use of submittal data and verify all dimensions on site. Provide additional fittings as required by site conditions and codes at no additional cost to conform to the structure, avoid obstructions, provide required service clearances and

preserve headroom. Do not scale from drawings, all measurements should be taken in the field. **EXISTING CONDITIONS** Where new plumbing systems are required to be connected to existing plumbing systems, provide all camera scoping and dye testing necessary to verify the exact location, size, invert elevation, pressure, pipe integrity, and system type to ensure a proper connection is executed. The contractor shall notify the engineer immediately if it is found a proper connection cannot be executed **CUTTING, PATCHING AND DEMOLITION** The contractor shall be responsible for damages to the grounds, walks, road, building, piping systems, electrical systems, and their equipment and contents, caused by

installed by him. The contractor shall repair at his expense all damaged so caused. All repair work shall be done as directed by and in such manner as satisfactory to the architect. Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding the contractor's guarantee bond nor relieving the contractor of his responsibilities during the bonding period.

Cut and drill all openings in roofs, walls, and floors required for the installation. Neatly patch all openings cut. Hold cutting and patching to a minimum by arranging with other contractors for all sleeves and openings before construction is started. When drilling/cutting concrete slabs, utilize ground penetrating radar (GPR) and/or X-ray scanning equipment to verify the location is free from obstructions, including but not limited to: structural rebar/strands/tendons, electrical conduit/wiring, and/or piping/ductwork.

EXCAVATION AND BACKFILL Perform all excavation and backfilling required for this work. Contractor shall consult with utility company prior to beginning excavation. At a minimum, all piping shall be laid on a bed of sand, 6" deep, well tamped into place and

installed around the piping in 6" lifts to a point 6" above the WARRANTY This contractor shall warrant that all work under this section shall be free of defective work, materials and parts for a period of one year after acceptance of the work and shall repair, revise, and replace, at no cost to the owner, any such defects occurring within the warranty period. Use of Electronic Drawings from the Owner's Design

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer. "Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page -Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

22 05 03.00 - SUBMITTALS FOR PLUMBING Provide submittals in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division.

Some Divisions may include a division-specific "Submittal Requirements for" section. Where this section exists, it articulates additional requirements for submittals that apply to the work of that Division. The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected

and returned, without technical review. Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Separate PDF file packages shall be supplied for each section, for each submittal type. Each PDF shall represent a single standalone submittal. Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration. Include cover sheet / title page: The cover sheet shall

documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com. Include an index: The index shall enumerate the contents of the submittal. Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals:

Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc...).

materials, labor, tools, and equipment required to provide complete plumbing systems as outlined in Division-22.

leaks in the piping systems being installed or having been

properly graded to permit the pipe to have an even bearing throughout its entire length. Sand shall be

include the information identified in the contract

Resubmittals shall include a copy of the reviewers comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal is cause for rejection. Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 220523 would be labeled as "220523.00-PD-00"; the first resubmittal of same shall be labeled "220523.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "220523.00-SD-00"; the first resubmittal of same shall be labeled "220523.00-SD-01"

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer.

Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page - Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

22 05 23.00 - GENERAL DUTY VALVES Submittal Requirements

Product Data: For each type of product indicated. GENERAL Provide stops or isolation valves on domestic water supplies to isolate hot and cold water to each fixture, including all equipment and equipment provided by others. Access shall be provided to all valves. Provide fire-rated access panel(s) to maintain full access to concealed

Ball valves - 2 inch and smaller: Lead-Free, 150 psi @ 250°F minimum pressure rating, cast bronze body, blowout-proof stem Butterfly Valves - 3" and up: Ductile Iron Butterfly Valve,

200 WOG, Lug Body, Lever Operator. Approved Manufacturers: Milwaukee Valve, NIBCO, and Watts Water Technologies Co. Valves to conform to: MSS-SP-110 Type I/ MSS-SP-67 Type I. NSF/ANSI -61/372.

Check valves - to be same size as system piping it accompanies. Lead-free, bronze body, 250 WOG, nonshock, spring check valve. Conforms to the following standard(s): MSS-SP-80 I, NSF/ANSI -61/372

22 05 29.00 – HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

GENERAL

Provide hangers, supports, clamps, attachments, and structural steel members where required to support piping and equipment from building structure. Support of piping from the decking or equipment is

Arrange for grouping of parallel runs of horizontal piping supported together on field-fabricated, heavy-duty trapeze hangers where possible. Trapeze hangers shall conform to: MSS SP-69, Type 59. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers. Hangers shall be sized to allow insulation to pass through

unobstructed. Hanger and support types: Hangers: Provide adjustable, Steel Clevis Hangers (MSS Type 1) for suspension of noninsulated or insulated, stationary pipes. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers.

> Hanger and support types: Hangers: Provide adjustable, Steel Clevis Hangers (MSS Type 1) for suspension of noninsulated or insulated, stationary pipes. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers.

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Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers

Hangers and supports shall be placed at all changes in direction, valves and equipment. The maximum horizontal spacing of cast-iron pipe hangers can be 10' where 10-foot lengths of pipe are installed

Piping shall also be supported at each change in direction, valves and equipment. Clevis-type hangers shall and supports shall conform to: MSS SP-58, Type 1-58.

22 05 53.00 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT PIPING

Provide self-adhesive pipe labels with white background and black lettering, contact type with permanent adhesive backing. Include identification of piping service using same designations or abbreviations as used on the drawings and an arrow indicating flow direction. EQUIPMENT

Provide self-adhesive plastic equipment labels with white background and black lettering, contact type with permanent adhesive backing, 160 degree F temperature. Include equipment's drawing designation and specification section number where equipment is specified.

22 07 19.00 – PLUMBING SYSTEM INSULATION

GENERAL Insulation shall be listed and labeled per ASTM E 84 for plenum installations employing slip on techniques. Provide insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties. Surface Preparation: Clean and dry surfaces to receive

insulation. Remove materials that will adversely affect insulation application. PIPING SYSTEMS REQUIRING INSULATION Insulate domestic cold water piping, associated fittings

and valves with flexible elastomeric 1/2" wall thickness insulation. Insulate domestic hot water piping, associated fittings and valves with 1" thick flexible elastomeric, 1-1/2" thick fiberglass insulation or per local energy code, whichever

Insulate domestic hot water return piping, associated fittings and valves with 1" wall thickness insulation or per local energy code, whichever greater. Insulate waste piping above ceilings that receive condensate with 1/2" wall thickness insulation.

Insulate exposed sanitary drains, domestic water, domestic hot water, and stops for plumbing fixtures for people with disabilities.

FLEXIBLE ELASTOMERIC INSULATION Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials. Adhesives, Sealers, and Protective Finishes: As

recommended by insulation manufacturer for applications indicated Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: Aeroflex USA, Inc.; Aerocel., Armacell LLC; AP

Armaflex.,K-Flex USA; FIBERGLASS INSULATION Fiberglass piping insulation: ASTM C 547, Class 1

Encase pipe fittings insulation with one-piece pre-molded PVC fitting covers. Vapor Barrier Material: Paper-backed aluminum foil, except as otherwise indicated, strength and permeability rating equivalent to adjoining pipe insulation jacketing.

Staples, Bands, Wires, and Cement: As recommended by insulation manufacturer for applications indicated. Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications indicated. Manufacturers: Subject to compliance with requirements,

available products that may be incorporated into the work include, and are limited to, the following: Armstrong World Industries, Inc., Owens-Corning Fiberglass Corp., Johns Manville. ADHESIVES

Materials shall be compatible with insulation materials. jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated

Insulation for handicap accessible fixtures All handicap lavatory p-trap and angle stop assemblies shall be insulated with trap wrap protective kit manufactured by Proflo model PF202WH or equal. Abrasion resistant, anti-microbial vinyl exterior cover shall be smooth. For traps, the insulation shall have a cleanout nut cap to allow service to the trap without disassembly. For stops, the insulation shall have a lock lid that prevents tampering but allows access without removal of the insulation. Fasteners shall remain substantially out of

Manufacturers: subject to compliance with requirements: Proflo, Truebro, Plumberex

22 11 16.00 – DOMESTIC WATER PIPING Submittal Requirements Product Data: For each type of product indicated.

GENERAL Install piping concealed from view unless noted otherwise, free of sags and bends. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction. Clean and disinfect potable domestic water piping using approved procedures by authorities having jurisdiction or AWWA C651, whichever is more rigorous. Install at right angles; diagonal runs are prohibited unless otherwise shown. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal. Coordinate all piping with all other trades. Provide water pressure regulators where necessary to

limit the incoming water pressure to 80 psi inside the building DOMESTIC WATER PIPING ABOVE GROUND Hard copper tube, ASTM B 88, Type L; wrought-copper, solder-joint fittings; and soldered joints. Solder Filler Metals: ASTM B 32, lead-free alloys.

Flux: ASTM B 813, water flushable. Type "L"; copper pressure-seal joint; and pressure-seal joint systems. CATHODIC PROTECTION

Provide dielectric insulation at points where copper or brass pipe comes in contact with ferrous piping, reinforcing steel or other dissimilar metal in structure

22 11 23.00 - RECIRCULATION DOMESTIC WATER Submittal Requirements

Product Data: For each type of product indicated. GENERAL Hot-water circulating pump shall be constructed of the

following: in-line wet-rotor, lead-free bronze body, plastic impeller, with ceramic bearings. Working pressure to be a minimum 125 psig with a maximum continuous operating temperature of 220° F. Pump shall be controlled with an aquastat and timer.

Aquastat: Electric; surface mounted sensing element. Adjustable temperature control of hot-water circulation from 65 to 200 °F. Timer: Electric; for control of hot-water circulation

Programmable type, seven-day, twenty-four hour clock with manual override on-off switch. Programmable for preset times during the day for each day for seven days. Approved Manufacturers: Armstrong Pumps Inc, Bell & Gossett/Goulds Water Technology; Xylem Inc., Taco inc., Honeywell International inc. Pumps shall conform to: UL 778, NSF 61/372 CONNECTIONS

On water heating systems with separate storage tanks, interlock pump between water heater(s) and hot-water storage tank(s) with water heater burner and time-delay

22 13 16.00 - SANITARY, WASTE AND VENT PIPING SYSTEM Submittal Requirements

Product Data: For each type of product indicated.

GENERAL Provide a complete soil, waste and vent system in the building and on the site as indicated on the drawings and as specified herein.

Above ground soil, waste and vent piping within buildings including soil stacks, vent stacks, horizontal branches, traps, and connections to fixtures and drains. Underground building drain piping including mains branches, traps, connections to fixtures and drains, and

connections to stacks, terminating at connection to existing sanitary sewer. INTERIOR PIPING ABOVE GRADE

No-Hub cast iron soil, waste, and vent piping and fittings 1-1/2" and larger shall conform to ASTM A-888. Pipe couplings shall conform to ASTM C 1277 and CISPI 310. Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction changes and shall be surely supported or secured to maintain such alignment. Soil, waste and vent piping smaller than 1-1/2" shall be

Type "M" copper and conform to ASTM B-306. BELOW GRADE PIPING Solid wall schedule 40 PVC pipe and fittings 2" and larger shall conform to ASTM D 2665 / ASTM D 1785 DWV.

Fittings shall conform to ASTM D 2665, made to ASTM D, DWV patterns and fit schedule 40 pipe. Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction changes and shall be surely set and buried to maintain

such alignment. Soil, waste and vent piping smaller 1-1/2" and smaller below grade shall not be permitted

Slope piping according to local codes. Protection shall be given to all footings and other structural elements during underground work adjacent to such items. Refer to architectural and/or structural

drawings for locations. Vent all fixtures, connect branch vents to main vent risers at least six inches above flood rim of fixtures. Pitch vent lines back to soil or waste pipe, free of drops and sags. Cleanouts shall be full size of pipe up to 4", and 4" for larger sizes. For underground and concealed lines, provide cleanouts in accessible positions at each right angle turn and at intervals not to exceed fifty feet. In floors, install flush with finish floor with extension pipe from cleanout wye.

22 30 01.00 - POINT OF USE THERMOSTATIC MIXING VALVES Submittal Requirements

Product Data: For each type of product indicated. GENERAL Thermostatic mixing valves shall be provided for all public

hand washing sinks and lavatories and shall be ASSE 1070 listed, lead free, sweat connections, 125 psi operating pressure. Mount under sink or lavatory. Set outlet temperature of thermostatic mixing valve to 105 dearees F Point-of use thermostatic mixing valves shall be equal to

Powers LFG480. Route tempered water to hot water side of sink and lavatories. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the followina:

Symmons, Acorn Engineering, Powers, Bradley 22 33 00.00 - COMMERCIAL ELECTRIC, DOMESTIC

WATER HEATERS Submittal Requirements

Product Data: For each type of product indicated. TANK TYPE Provide commercial electric tank type water heater as scheduled. Comply with UL 1453 Standard. Provide corrosion resistant metal drain pan with raised edges at the base of the water heater and include drain

Provide field fabricated piping heat trap arrangement according to ASHRAE/IESNA 90.1.

Provide combination temperature and pressure relief valve, ASME rated and stamped with relieving capacity at least as great as heat input and pressure setting less than water heater's rated operating pressure. Provide water heater stands or mounting brackets with manufacturer's factory fabricated steel capable of supporting water heater. Provide steel pressure-rated thermal expansion tank

constructed with welded joints and factory-installed butyl rubber diaphragm, pre-charged to minimum system operating pressure at tank. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be

incorporated into the work include, and are limited to, the following: Bock Water Heaters, Bradford White Corp., Lochinvar Corp., State Industries.

22 40 00.00 - PLUMBING FIXTURES

Submittal Requirements

GENERAL

following

Product Data: For each type of product indicated. Refer to plumbing fixture schedule and install per the manufacturer's installation and operation manual. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the American Standard, Kohler Co., Zurn Industries, LLC.



FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

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

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

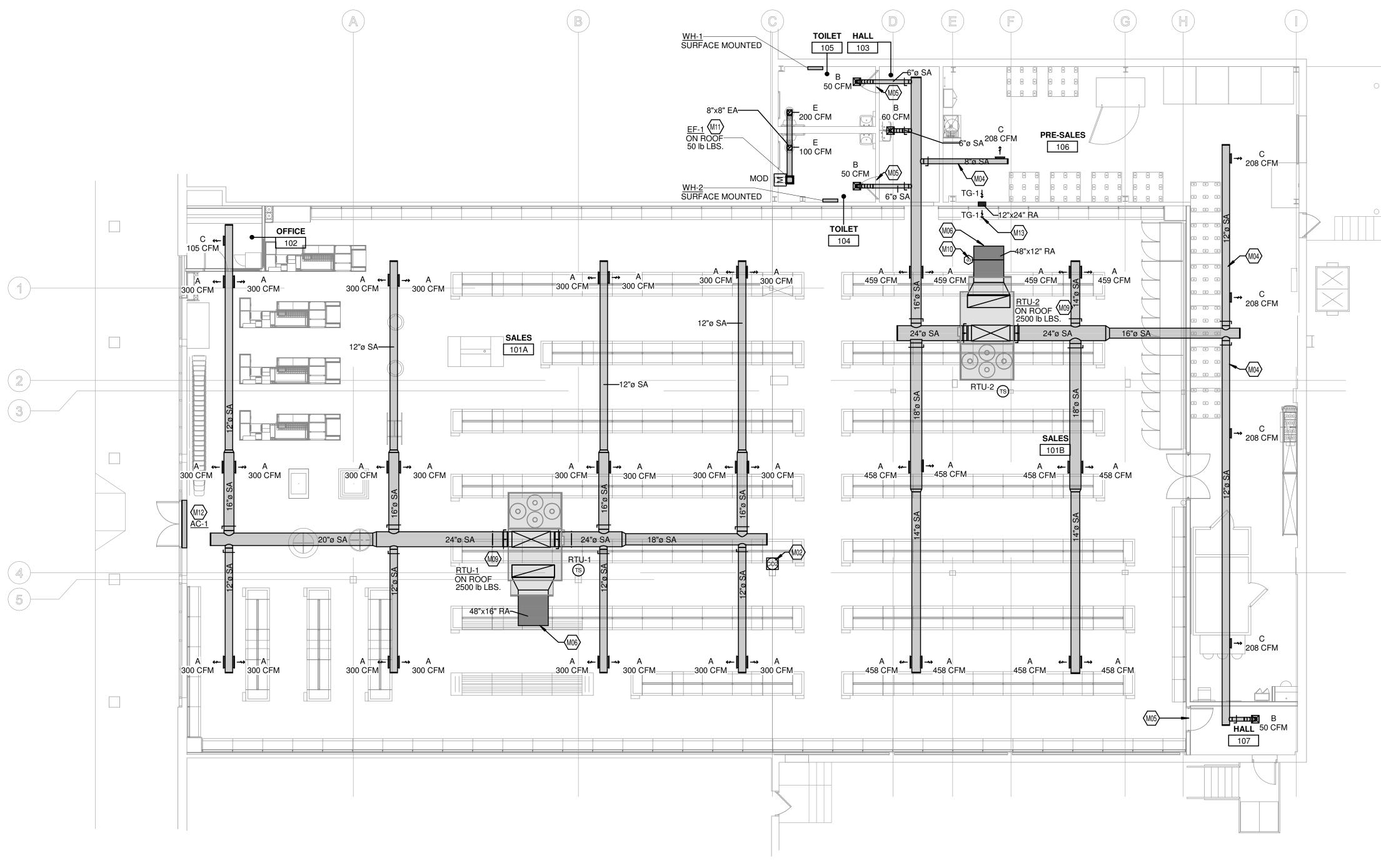
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GENERAL DUCTWORK NOTE

CONTRACTOR SHALL SITE VERIFY EXISTING HVAC UNIT LOCATION(S) & POTENTIAL DUCTWORK OBSTRUCTIONS (SPRINKLER LINES, STRUCTURAL BEAMS & JOIST, ETC..) PRIOR TO FABRICATING DUCTWORK. CONTRACTOR SHALL CONTACT THE DTFD CONSTRUCTION PROJECT MANAGER IF CONFLICTS BETWEEN CONSTRUCTION DOCUMENTS & EXISTING CONDITION EXIST FOR DIRECTION..

GENERAL DEMOLITION NOTE MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, HANGERS, INSULATION, AIR DEVICES, CONTROLS AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE



HVAC CONTROLS NOTE

CONTRACTOR SHALL REFER TO THE EM SHEETS FOR INSTALLATION INSTRUCTIONS FOR THE VENDOR FURNISHED, CONTRACTOR INSTALLED HVAC CONTROL SYSTEM AND TEMPERATURE AND CO2 SENSOR LOCATIONS PRIOR TO THE INSTALLATION OF ALL RELATED ITEMS

KEYED NOTES

M02	TENANTS CONTRACTOR SHALL INSTALL TENANT VE SENSOR 7'-0" A.F.F. THESE SENSOR SHALL CONTRO
M04	CONTRACTOR SHALL LOCATE BOTTOM OF STOCK R ABOVE LIGHTING. ANY DEVIATION TO THIS DIMENSION INTERFERENCE WITH ANY BUILDING OBSTRUCTION STRUCTURE, OVERHEAD DOORS, ETC. SHALL BE BE ATTENTION OF THE ENGINEER PRIOR TO FABRICAT
M05	PROVIDE 1" AIRSPACE BETWEEN BOTTOM OF DOOF FLOOR FOR AIRFLOW.
M06	COVER OPEN END OF RETURN DUCT WITH 1" MESH A REMOVABLE METAL FRAME.
M09	EXISTING HVAC UNIT TO REMAIN. CONTRACTOR SH. COMPONENTS AND PROVIDE AND INSTALL NEW ACC CONTROLS AS INDICATED ON PLANS, SCHEDULE, N REQUIRED TO MEET THE SEQUENCE OF OPERATION PROJECT SPECIFICATIONS. CONNECT NEW DUCTS FROM EXISTING ROOFTOP UNITS PROVIDED BY OTH TRANSITION FITTINGS.
M10	FURNISH AND INSTALL SMOKE DUCT DETECTOR (SY #D4120) IN RETURN AIR DROP FROM UNIT. WIRE SM TO BUILDING FIRE ALARM CONTROL PANEL OR FUR REMOTE AUDIBLE/VISUAL ALARM DEVICE WITH A RE (SYSTEM SENSOR #RTS2-AOS) LOCATED IN AN APPH FIELD VERIFY EXACT REQUIREMENTS. CONTRACTO SYSTEM TO ENSURE PROPER FUNCTION PRIOR TO SPACE.
M11	PROVIDE NEW ROOF MOUNTED EXHAUST FAN AND SCHEDULED AIR FLOW. MAINTAIN A MINIMUM OF 10' BUILDING INTAKE. ALL ROOF WORK TO BE DONE BY APPROVED ROOFING CONTRACTOR AT THE GENER. EXPENSE.
M12	INSTALL AIR CURTAIN 1" ABOVE FRONT ENTRANCE I TO OPERATE WHEN FRONT ENTRANCE DOOR IS OP OFF WHEN DOOR IS CLOSED.

M13 MOUNT TRANSFER GRILLES AS HIGH AS POSSIBLE.

ENDOR PROVIDED CO2 OL SALES RTU'S. ROOM DUCTWORK SION DUE TO IS SUCH AS BROUGHT TO THE TING THE DUCTWORK. R AND FINISHED H HARDWARE CLOTH IN HALL SERVICE HVAC CESSORIES AND NOTES, AND AS ONS OUTLINED IN THE 3 TO DUCT DROPS THERS WITH SYSTEM SENSOR MOKE DUCT DETECTOR RNISH AND INSTALL A REMOTE TEST SWITCH PROVED LOCATION. OR SHALL TEST D TENANT OCCUPYING D BALANCE TO THE 0'0" FROM ANY Y LANDLORD RAL CONTRACTOR'S

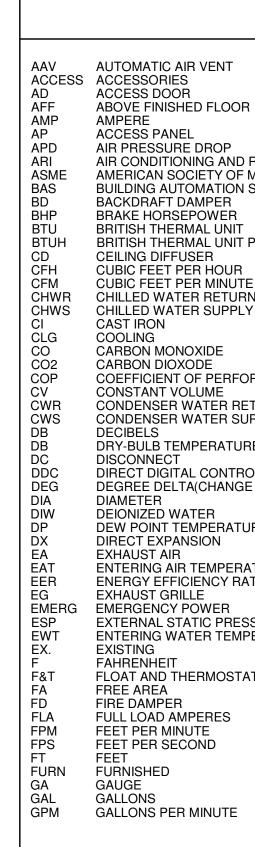
DOOR. AIR CURTAIN PENED AND TO SHUT





MECHANICAL LEGEND

SYMBOL	DESCRIPTION								
CREATED IN BOTH "COLO CONTROLLED THROUGH AND WHITE". TO MAINTA FOR FURTHER INSTRUCT INSTRUCTIONS".	TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).								
	MECHANICAL STATS & SENSORS								
(CO2)	CARBON DIOXIDE SENSOR								
	MECHANICAL DUCTWORK ACCESSORIES								
	ROUND ELBOW WITH TURNING VANES								
	DUCT WITH MANUAL VOLUME DAMPER								
L L	ELBOW WITH TURNING VANES								
M	MOTOR OPERATED DAMPER - LOW VOLTAGE								
<u>(</u>)	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.								
	MECHANICAL AIR DEVICES								
SR 🔀	SUPPLY REGISTER								
	RETURN REGISTER								
ER	EXHAUST REGISTER								
SG X	SUPPLY GRILLE								
RG	RETURN GRILLE								
	CEILING DIFFUSER								
CD-10"Ø	2'x2' SQUARE CEILING DIFFUSER WITH 10" NECK								
	MECHANICAL DUCTWORK								
	SUPPLY DUCT WITH ELBOW TURNED UP								
	SUPPLY DUCT WITH ELBOW TURNED DOWN								
	RETURN DUCT WITH ELBOW TURNED UP								
	RETURN DUCT WITH ELBOW TURNED DOWN								
	EXHAUST DUCT WITH ELBOW TURNED UP								
	EXHAUST DUCT WITH ELBOW TURNED DOWN								
24X12 SA	SUPPLY DUCT								
24X12 RA	RETURN DUCT								
24X12 EA	EXHAUST DUCT								
	FLEXIBLE DUCTWORK CONNECTION								
	BRANCH TAKEOFF								
24"/12" RA	OVAL DUCT								
	REDUCER, CONCENTRIC								



REDUCER, NONCONCENTRIC

DUCT FLEX CONNECTOR

							EI		TRIC	AL CC	ORDINA		I SC	HEDL	JLE									
ABBREVI	ATIONS			CONTRAC	TOR TYPE						MOTOR CON							CONTR	OL TYPE					
DC MC SD CN TS C/B FUSE FLA MCA CP	LOCAL DISCONNECT MOTOR CONTROL (POWER) DUCT SMOKE DETECTOR CONTROLS TOGGLE SWITCH H.A.C.R. CIRCUIT BREAKER AT SOUF FUSE AT LOCAL DISCONNECT (VERI OPERATING FULL LOAD AMPS MINIMUM CIRCUIT AMPACITY CORD AND PLUG CONNECTION			EC EX FC GC HC MFR PC OR	EXISTING FIRE PRC GENERAL HVAC CO MANUFAC PLUMBIN	DTECTION CO CONTRACT NTRACTOR	ONTRACTOF FOR	7			MCC MO MG MAO MS MAN VFD VAF MSR MAN	MBINATION : TOR CONTR GNETIC STA NUAL START ABLE FREC NUAL START FRCURRENT	OL START RTER OR ER QUENCY D ER W/ CC	FER CONTACT DRIVE DNTROL REL	AY			TC CPT BAS LOW LINE RLINE MAN FA CO INT ASD DSD	BUILDI LOW V LINE V REVEF MANU/ FIRE A CARBO INTEG AREA	ROL POWER ING AUTOM OLTAGE CO OLTAGE CO RSE ACTINO AL	IATION SYS ONTROLS ONTROLS G LINE VOL IDE SENSO UIPMENT TECTOR	STEM	IMOSTAT	
EQUIPME	NT MARK DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	НР	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	FA
AC-1-A	Air Curtain w/No Heat	120 V	1						16			EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC	NA	1044
EF-1-A	HVAC Fan	120 V	1		0.25							EC	EC	EC	MG	MFR	MFR	MFR	MAN	EC	EC	EC	NA	2791
RTU-1-A	Packaged Rooftop Unit, Gas Heat	208 V	3						124	150				EX	EX	EX	EX	MFR	BAS	OR	OR	OR	NA	0
RTU-2-A	Packaged Rooftop Unit, Gas Heat	208 V	3						124	150			EX	EX	EX	EX	EX	EX	BAS	OR	OR	OR	NA	0
WH-1-A	Electric Unit Heater	120 V	1				1.5		12.5			EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR	NA	1331
WH-2-A	Electric Unit Heater	120 V	1				1.5		12.5			EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR	NA	2125

													RC	DOFIC	JP UNI	1550	HEDU	ILE												
Equipment sh	all be braced and labeled by	the equipment r	nanufacturer	to withstand the minim	um scheduled	l available fa	ult curre	nt value for	r listed eq	juipment.																				
EQUIPMENT MARK	DESCRIPTION	ST	WEIG		R MODEL	. MIN EE	CFM R (cfm)		BHP (hp)		CO2 CFM (cfm)	NOMINAL TONS	OA EAT W (Deg F)	B MAT CLG D (Deg F)	B MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	MIN HTG AFUE	GAS HTG IN (mbh)	GAS HTG OUT	MIN GAS PRESSURE (in WC)	MAX GAS PRESSURE (in WC)	EMERGENCY	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT	T AC
RTU-1	PACKAGED ROOFTOP UNIT,	GAS HEAT EXIS			48TMD025	12.0	7305	0.5		l) 1657	681 ft3/min	20	55 °F	83	69	240	176	55	55		181	81.00 %	360	275	3.50 InH2O	13.00 InH2O	NO	(RTU-1) A - 208V/3PH, 124 MCA, 150A OCP	0	20,22
RTU-2	PACKAGED ROOFTOP UNIT,	GAS HEAT EXIS	STING 2500 I	D CARRIER	48TMD025	12.0	6750	0.5	6.5 hp(l	I) 1505	688 ft3/min	20	55 °F	83	69	216	162	55	55	39 °F	215	81.00 %	360	275	3.50 InH2O	13.00 InH2O		(RTU-2) A - 208V/3PH, 124 MCA, 150A OCP	0	20,22

NUMBER	NAME	AREA	PEOPLE RED	OA PER PERSON	OA PER SQ FT.	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRIT OA	PRESSURE	PCT OPERABLE	l VE
101A	SALES	5629 SF	85	7.5	0.12	4465	7200	1632	1632	7200	0	22.8	Neutral	0	
101B	SALES	4017 SF	61	7.5	0.12	3095	5500	1226	1226	5500	0	20.8	Neutral	0	
102	OFFICE	80 SF	1	5	0.06	105	105	24	24	105	0	11.7	Neutral	0	
103	HALL	144 SF	0	0	0.06	55	60	13	13	60	0	18	Neutral	0	
104	TOILET	118 SF	0	0	0	40	50	11	11	0	100	0	Negative	0	
105	TOILET	103 SF	0	0	0	45	50	11	11	0	100	0	Negative	0	
106	PRE-SALES	1804 SF	0	0	0.12	755	1040	232	232	1040	0	26	Neutral	0	
107	HALL	93 SF	0	0	0.06	35	50	11	11	50	0	13.9	Neutral	0	
TOTAL		11988 SF													

											LOA	D SC	HED	ULE										
THE HEATING AN													à load fac	CTOR) MET	THOD. AS	SUMPTIONS	AND EXE	CUTION OF	THESE ME	THODS AF	RE PER ASH	IRAE 183-2	007	
						COOLI	NG LOAD E	REAKDOW	'N										HEAT	ING LOAD	BREAKDOV	/N		
CWALL SE CPART SE CGLASS SE CSOLAR SE CLIGHTS SE CEQUIP SE	NSIBLE HE NSIBLE HE NSIBLE HE NSIBLE HE NSIBLE HE NSIBLE HE NSIBLE HE	AT GAIN AT GAIN AT GAIN AT GAIN AT GAIN AT GAIN	N FROM E N FROM F N FROM G N FROM S N FROM II N FROM F	EXTERIOR PARITIONS GLAZING GOLAR GAIL NTERIOR L PLUG LOAD	N THROGH		COAL	S S T L T	OTAL SENS ENSIBLE HI OTAL SENS ATENT HEA ATENT HEA OTAL LATE OTAL HEAT	EAT GAIN F EAT GAIN F SIBLE HEAT T GAIN FR T GAIN FF NT HEAT G	FROM AIR FROM OUT GAIN COM PEOPL ROM OUTD GAIN	HANDLER F DOOR VEN _E OOR VENT	ITILATION A			ROOF WALL PART GLASS SLAB SPACE DA TOT	HEAT HEAT HEAT HEAT TOTAL HEAT	LOSS FROM LOSS FROM LOSS FROM LOSS FROM LOSS FROM HEAT LOSS LOSS FROM HEAT LOSS	1 EXTERIO 1 PARTITIC 1 GLAZING 1 SLAB 5 FROM SF 1 OUTDOO	PACE	ATION AIR			
EQUIPMENT MA	ARK CR	DOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	СТОТ	HROOF	HWALL	HPART	HGLASS	HSPACE	HSLAB	HOA
RTU-1	13.57		.83	0.07	3.12	2.87	62.36	28.88	34.52	149.87	1.83	24.65	176.35	17.2	45.98	63.18	239.53	28.14	2.93	0.18	19.95	180.92	20.54	109.18
RTU-2	15.07	2	.91	0.03	0	0	61.76	31.11	27.1	137.99	1.69	22.38	162.06	12.2	41.76	53.96	216.01	32.48	12.85	0.08	0	215.02	70.45	99.15

RD I	HVAC ABBREVIATI	ONS	
HD	HEAD	RO	REVERSE OSMOSIS
HOA	HAND/OFF/AUTOMATIC	RPM	REVOLUTIONS PER MINUTE
HP HPR			REFRIGERANT SUCTION SUPPLY AIR
	(STEAM CONDENSATE)	SAT	SUPPLY AIR TEMPERATURE
			SHADING COEFFICIENT SMOKE CONTROL DAMPER
HWR	HEATING HOT WATER RETURN	SD	SMOKE DETECTOR
HWS			SENSIBLE HEAT STATIC PRESSURE
			TESTING, ADJUSTING, BALANCE
IAQ	INDOOR AIR QUALITY	TDH	TOTAL DYNAMIC HEAD
IN HG	INCHES OF MERCURY		TOTAL DISSOLVED SOLIDS
			TOTAL STATIC PRESSURE
			THERMOSTAT UNDERWRITERS LABORATORY
INST	INSTALLED	VAV	VARIABLE AIR VOLUME
			VARIABLE FREQUENCY DRIVE
			WET-BULB (TEMPERATURE) WATER GAGE
		WPD	WATER SIDE PRESSURE DROP
LF	LINEAR FOOT (FEET)	WIRE	WIRED
LPR			
LPS			
LWT	LEAVING WATER TEMPERATURE		
MAX	MAXIMUM		
MIN	MINIMUM		
MPR			
MPS			
MRI	MAGNETIC RESONANCE IMAGING		
MVD			
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN		
PD	PRESSURE DROP		
PSI	POUNDS PER SQUARE INCH		
PSIA	POUNDS PER SQUARE INCH – ABSOLUTE		
PSIG	POUNDS PER SQUARE INCH – GAGE		
RH	RELATIVE HUMIDITY		
RL	REFRIGERANT LIQUID LINE		
KLA	KUN LOAD AMPERE		
	HD HOA HP HPR HSTAT HTG HWR HWS HZ I/O IAQ IN WG IPLV INST KW KWH LAT LBS/HR LF LPR LPS LWT MAX MBH MCA MERV MIN MDR MPS MRI MOD NAC NC NO NTS OCP PPM PSIA SIG RA RAT RH	HD HEAD HOA HAND/OFF/AUTOMATIC HP HORSEPOWER HPR HIGH PRESSURE RETURN (STEAM CONDENSATE) HTG HEATING HOT WATER RETURN HTG HEATING HOT WATER RETURN HWR HEATING HOT WATER RETURN HWS HEATING HOT WATER SUPPLY HZ HERTZ I/O INPUT/OUTPUT IAQ INDOOR AIR QUALITY IN HG INCHES OF MERCURY IN WG INCH WATER COLUMN IN WG INCH WATER TEMPERATURE LBS/HR POUNDS PER HOUR LF LINEAR FOOT (FEET) LPR LOW PRESSURE RETURN (STEAM CONDENSATE) LPS LOW PRESSURE STEAM LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH 1000 BTUH MCA MINIMUM BRANCH CIRCUIT AMPACITY MERV MINIMUM BEFICIENCY REPORTING VALUE MIN MINIMUM FFICIENCY REPORTING VALUE MIN MINIMUM PRESSURE RETURN (STEAM CONDENSATE) MPS MEDIUM PRESSURE STEAM MRI MAGNETIC RESONANCE IMAGING MVD MANUAL VOLUME DAMPER NA NOT APPLICABLE NC NORMALLY CLOSED NO NORMALLY CL	HOAHAD/OFF/AUTOMATICRPMHPAHORSEPOWERRSHPRHIGH PRESSURE RETURNSA(STEAM CONDENSATE)SATHSTATHUMIDISTATSCHTGHEATING HOT WATER RETURNSDHWRHEATING HOT WATER RETURNSDHWSHEATING HOT WATER RETURNSDHWSHEATING HOT WATER SUPPLYSENSIZHERTZSPIOINPUT/OUTPUTTABIAQINDOR AIR QUALITYTDHIN HGINCHES OF MERCURYTDSIN WCINCH WATER COLUMNTSPIN WCINCH WATER GUGETSTATIPLVINTERGRATED PART LOAD VALUEULINSTINSTALLEDVAVKWKLOWATTVFDKWHKLOWATTWGLBS/HRPOUNDS PER HOURWPDLFLINEAR FOOT (FEET)WIRELPRLOW PRESSURE STEAMWIRELPRLOW PRESSURE STEAMWIRELWTLEAVING WATER TEMPERATUREMAXIMUMMDDMOD BTUHMCAMCAMINIMUM BERANCH CIRCUIT AMPACITYMERVMINIMUM BERANCH CIRCUIT AMPACITYMERVMINIMUM BERANCH CIRCUIT AMPACITYMRRMEDIUM PRESSURE STEAMMRIMAGNETIC RESONANCE IMAGINGMVDMANUAL VOLUME DAMPERMAMOD MOTOR OPERATED DAMPERMRMEDIUM PRESSURE STEAMMRIMAGNETIC RESONANCE IMAGINGMVDMANUAL VOLOSEDNONORMALLY OPEN

DOLLAR TREE HVAC VENTILATION SCHEDULE

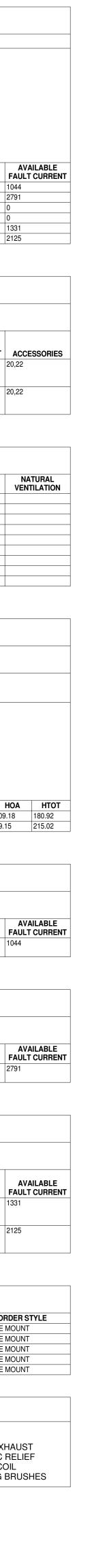
				AIF	R CURTA	INS SCH	HEDULE			
Equipment shall be	e braced and labeled	d by the equipment	manufacturer to with	stand the minimum	scheduled available	fault current value	for listed equipment.			
EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	WEIGHT (lbs.)	MANUFACTURER	MODEL	CFM (cfm)	EMERGENCY	ELECTRIC CONNECTION SUMMARY	A FAU
AC-1	AIR CURTAIN W/NO HEAT	SALES 101A	NEW	130 lb	POWERED AIRE	ETA-2-72	2802	NO	(AC-1) A - 120V/1PH, 16 MCA	1044

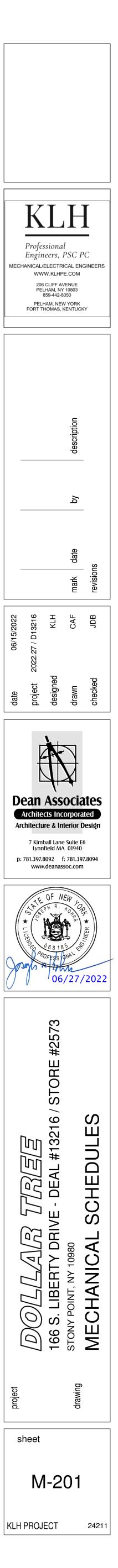
				FANS	SCHED	ULE			
Equipment shall be	braced and labeled	by the equipment man	ufacturer to withsta	nd the minimum sch	eduled available fau	Ilt current value	for listed equ	ipment.	
EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	MANUFACTURER	MODEL	CFM (cfm)	ESP (in WC)	ELECTRIC CONNECTION SUMMARY	FAL
EF-1	HVAC FAN	ROOF	NEW	JOHNSON CONTROLS	EVD06B	200	0.5	(EF-1) A - 120V/1PH, 0.25 HP	2791

Equipment shall b	be braced and labele	d by the equipment			RS SCHE		e for listed equipment.		
EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	WEIGHT (Ibs)	MANUFACTURER	MODEL	HTG MBH (mbh)	ELECTRIC CONNECTION SUMMARY	ہ FAL
WH-1	ELECTRIC UNIT HEATER	TOILET 105	NEW	25 lb	MARKEL	E3055	0	(WH-1) A - 120V/1PH, 1.5 KW HTG, 12.5 MCA	1331
WH-2	ELECTRIC UNIT HEATER	TOILET 104	NEW	25 lb	MARKEL	E3055	0	(WH-2) A - 120V/1PH, 1.5 KW HTG, 12.5 MCA	2125

	DOLL	ARIRE	EHVP		JOERO A	IND REGR	STERS SCHED	JULE
TAG	MANUFACTURER	MODEL	FACE	MOUNTING	MATERIAL	FINISH	DAMPER TYPE	BORDER
A	TITUS	S300FL	18"x6"	DUCT	ALUMINUM	STANDARD WHITE	OPPOSED BLADE	SURFACE MOU
В	TITUS	TMS	12"x12"	CEILING	STEEL	STANDARD WHITE	BUTTERFLY	SURFACE MOU
С	TITUS	S300FL	14"x6"	DUCT	ALUMINUM	STANDARD WHITE	OPPOSED BLADE	SURFACE MOU
E	TITUS	350RL	8"x8"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	SURFACE MOU
TG-1	TITUS	50 F	12"x24"	SIDEWALL	STEEL	STANDARD WHITE	(none)	SURFACE MOU

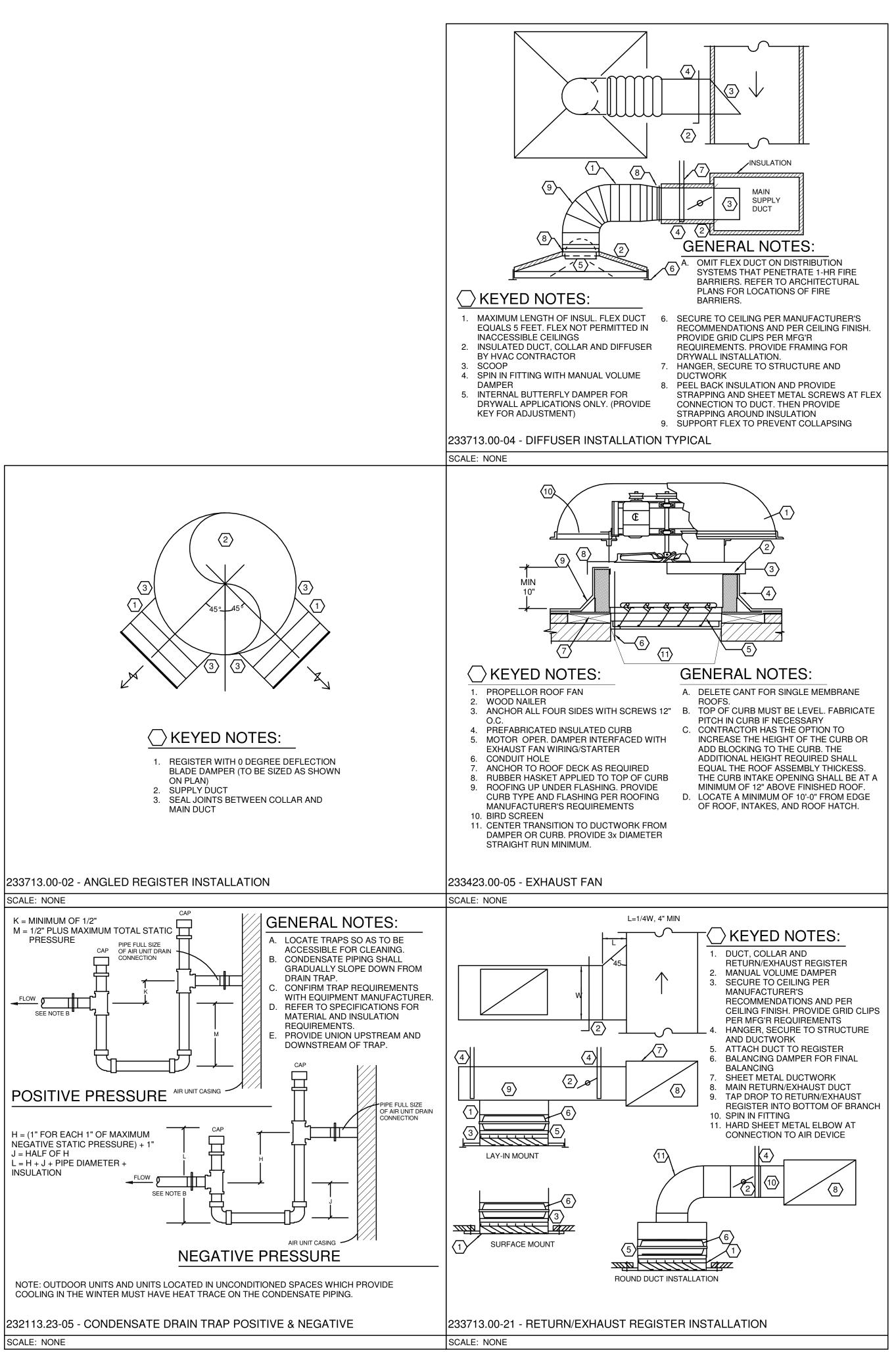
HVAC ACCE	ESSORIES				
ACCESSORIES:					
 MOTOR DAMPER ECONOMIZER ROOF CURB HAIL GUARDS 	 5. INTAKE HOOD 6. VIBRATION ISOLATION 7. FLAT FILTER 8. FILTER/MIXING BOX 	9. ACCESS DOOR 10. FLEX CONNECTIONS 11. MOUNTING COLLAR 12. HOT GAS BYPASS	 FACE/BYPASS DAMPER CONDENSATE PUMP MOTOR GUARD GREASE TRAP 	17. DUCT FLANGES 18. BASE RAIL 19. HUMIDIFIER 20. CO2 SENSORS	 ECON POWERED EXHAU ECON BAROMETRIC REL HOT GAS REHEAT COIL SHAFT GROUNDING BRU





ut of ц ĝ SCALE: NONE SEE NOTE B J = HALF OF H L = H + J + PIPE DIAMETER +INSULATION

SCALE: NONE





General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to work of this section.

The base bid includes furnishing all materials, labor, tools, and equipment and the performance of all work required to install a complete heating and air conditioning system as outlined herein.

Guarantee The contractor shall provide a guarantee in written form stating that all work under this section shall be free of defective work, materials, or parts for a period of one year from the date of owner's final acceptance and shall repair, revise or replace at no cost to the owner any such defects occurring within the guarantee period. Contractor shall also state in written form that any items or occurrences arising during the guarantee period will be attended to in a timely manner and will in no case exceed four (4) working days from date of notification by owner.

Quality Assurance Provide a complete installation in conformance with the following standards. AGA: American Gas Association

ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers

NFPA: National Fire Protection Association SMACNA: Sheet Metal and Air Conditioning Contractors National Association. Statewide Building Code

IMC: International Mechanical Code

Permits, Fees, Inspections, Laws and Regulations Permits and fees of every nature required in connection with this work shall be obtained and paid for by this contractor who shall also pay for all the installation fees and similar charges. Laws and regulations, which bear upon or affect the various branches of this work shall be complied with by this contractor and are hereby made a part of this contract. All work, which such laws require to be inspected, shall be submitted to the proper public official for inspection and a certificate of final approval must be furnished. Work in Existing Spaces

General: Care shall be taken when working in existing spaces so as not to damage existing walls and ceilings where work is being performed.

Ceilings: Where work is being performed above ceilings, and the architectural drawings do not indicate ceiling modifications by the general contractor, it shall be the responsibility of this contractor to remove and replace existing ceilings where work is being performed. In those instances, all repair and installation of new grid, ceiling panels, etc shall be the responsibility of this contractor. Match existing finishes.

Walls & Floors: It shall be the responsibility of this contractor to patch existing walls and floors and match existing finishes where work is being removed or installed and patching is being performed, unless noted otherwise on the architectural drawings. Demolition

Any Equipment to be demolished shall also include the demolition of any and all ductwork, piping etc serving or served by the equipment, all accessories, air devices, wiring, gas piping, venting, control wiring and power wiring associated with the equipment.

Demolition shall be coordinated with all trades. All materials shall be turned over to the owner or disposed at the owner's direction

Contractor is responsible for reclaiming any refrigerant in association with the demolition in accordance with all local, state and federal regulations Any roof or wall penetration shall be patched watertight to the satisfaction of the architect.

Tests and Adjustments No ducts, piping, fixtures or equipment shall be concealed or covered until they have been inspected and approved by the Architect and the inspector who shall be notified by the contractor when the work is ready for inspection. Work shall be completely installed, tested and leak tight

before inspection is required. All tests shall be repeated to the satisfaction of those making the inspection. Architectural coordination items Cutting and Patching: Cut and drill all openings in walls

and floors required for the installation. Secure approval of Engineer before cutting and drilling. Neatly patch all openinas cut.

Fire Caulking: Patching through fire rated walls and enclosures shall not diminish the rating of that wall or enclosure. Patch shall be equal to rockwool, firestop, caulk or approved "rated" patch.

Access Panels and Pathways: Furnish all access panels required for proper servicing of equipment. Provide access panels for all concealed valves, vents, controls, cleanout doors, and sprinkler devices required by NFPA. Provide access panels for all fire and/or fire & smoke dampers. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks.

project conditions Where new HVAC systems are required to be connected to existing HVAC systems, it is the contractor's responsibility to verify the location, size, pressure, condition, and they shall verify that the existing HVAC system is indeed the correct and appropriate HVAC system before any work is done. Provide all necessary camera scoping and dye testing as necessary. If there is any need for concern, if it is determined that the existing HVAC system is not a correct or appropriate HVAC system or not connected to a correct or appropriate HVAC system, if the condition of the existing HVAC system is not viable for re-use, or any other condition that would not allow the proper functioning of the new HVAC system, the contractor shall notify the engineer in writing immediately via RFI and wait for direction before proceeding. MECHANICAL EQUIPMENT COMMON

REQUIREMENTS INSPECTION

Examine areas and conditions under which mechanical equipment is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer. Uncrate equipment and inspect for damage. Verify that

nameplate data corresponds with unit designation. INSTALLATION General: Install mechanical equipment as indicated, and

in accordance with manufacturer's installation instructions. Location: Install each unit level/plum and accurately in position indicated in relation to other work; and maintain sufficient clearance for normal service and maintenance, but in no case less than that recommended by manufacturer

Coordinate with other trades to assure correct recess size for recessed units. Protect interior mechanical equipment with protective covers during balance of construction.

For ducted equipment, connect ductwork to units with flexible duct connections. Provide transitions to exactly match unit duct connection size. Provide 1" acoustic duct lining on return air side a minimum of 10' from fan. Piping: Restrictors or piping changes shall be made as necessary to achieve manufacturers recommended pressure drops. The findings shall be reported to the engineer at project closeout.

Provide trap at drain piping connection to unit sized per manufacturer's recommendations. Access: Provide access space around and over mechanical equipment for service as indicated, but in no case less than that recommended by manufacturer or

required by code in effect. Access Panels: Furnish all access panels required for proper servicing of equipment. Provide access panels for all concealed valves, vents, controls and cleanout doors, and sprinkler devices required by NFPA. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks. Rooftop mechanical equipment shall be installed a

minimum of 10'-0" from any roof edge regardless of location indicated on plans, unless a screen wall or railing

architectural plans for coordination. Roof Curbs: Furnish roof curbs to roofing Installer for in accordance with National Roofing Contractor's

specifications. ELECTRICAL COORDINATION ITEMS

> Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer with manufacturer's submittal and installation equipment start-up until wiring installation is acceptable to equipment installer.

instructions, and with recognized industry practices; NEC and NECA's "Standard of Installation". bolts, in accordance with equipment manufacturer's published torque tightening values for equipment electric heating terminals as indicated. Tighten

effective grounding. FIELD QUALITY CONTROL Testing: After installation has been completed, test to

requirements. Cleaning: After construction is completed, including Repair any marred or scratched surfaces with manufacturer's touch-up paint. START-UP

Provide the services of a factory-authorized service damaged or malfunctioning controls and equipment. TRAINING OF OWNER'S PERSONNEL Provide services of manufacturer's technical

SECTION 23 05 03.00 – SUBMITTALS FOR HVAC General Where submittals are required by the Contract Documents, they shall be prepared and supplied in Division 01, the Contractor is advised to review and

comply with the requirements articulated within each Division and within each section of that Division. apply to the work of that Division. the project organized for all parties involved. They are necessary to ensure a timely turnaround and an

and returned, without technical review. Requirements Supply submittals for each section: Submittals shall be Refer to the specifications for identification of which packages shall be supplied for each section, for each Separately bound and identified submittals shall be provided where hardcopies are required Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration.

include the information identified in the contract KLH website at www.klhengrs.com of the submittal

specifications, complete and include them within the appropriate submittal. Supply complete submittals: and more contract-compliant than its rejected

submittal rejection and shall be amended with a is cause for rejection.

sheet: The electronic file name of submittals shall match

Plan drawings for the Project were created with AutoCAD and Revit.

AutoCAD-based plan drawings may be made available for the creation of shop and as-built drawings. purposes

available only in PDF, JPG or similar non-editable electronic form, at the sole discretion of the Design Professional

dat he S OF compu of the **WNERSHIP OF INSTRUMENT** *I reports, plans, specifications, (rvice shall remain the property iitation, the copyright thereto.*

installation. Install and secure roof curb to roof structure, Association (NRCA) installation recommendations and shop drawings. Install and secure units on curbs and coordinate roof penetrations and flashing. Install according to roofing manufacturer's recommendation and

Indoor Suspended Equipment: Install suspended from structure with all threaded rod and vibration isolators. Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory-mounted.

Verify that electrical wiring installation is in accordance requirements of Division 26 sections. Do not proceed with

Install electric heating terminal units including components in accordance with equipment manufacturer's written complying with applicable installation requirements of Tighten connectors and terminals, including screws and connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A.

Grounding: Provide equipment grounding connections for connections to comply with tightening torque values specified in UL Std 486A to assure permanent and

demonstrate proper operation of mechanical equipment at performance requirements specified. When possible, field correct malfunctioning units, then retest to demonstrate compliance. Replace units, which cannot be satisfactorily corrected. Test controls and demonstrate compliance with

painting, clean unit exposed surfaces, vacuum clean coils and inside of cabinets. Clean factory-finished surfaces.

representative to start-up rooftop units, in accordance with manufacturer's written start-up instructions. Test controls and demonstrate compliance with requirements. Replace

representative for 1-half day to instruct Owner's personnel

in operation and maintenance of units. Schedule training with Owner, provide at least 7-day notice to Contractor and Engineer of training date.

accordance with the Contract Documents. In addition to Some Divisions may include a division-specific "Submittal

Requirements for" section. Where this section exists, it articulates additional requirements for submittals that The following requirements help to identify, track and keep

appropriate technical review. Submittals that do not conform to the administrative requirements are rejected

supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. submittals are required for the project. Separate PDF file submittal type, where electronic submittals are required. Each PDF shall represent a single standalone submittal.

Include cover sheet / title page: The cover sheet shall documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the

Include an index: The index shall enumerate the contents Include checklists: Where checklists are included with the

Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. Do not send half the product data as one submittal and the other half as a separate one. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission. etc...). Resubmittals shall include a copy of the reviewer's comments supplied with the prior

description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal Name electronic files to match the submittal ID and cover

the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 234116 would be labeled as "234116.00-PD-00"; the first resubmittal of same shall be labeled "234116.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "234116.00-SD-00"; the first resubmittal of same shall be labeled "234116.00-

Use of Electronic Drawings from the Owner's Design

If expressly permitted by the Owner and the terms of the Contract. editable electronic versions of standard-scale.

Upon request when available, electronic versions of standard-scale, Navisworks (.dwf) and (.nwc) or AutoCAD 36 (.dwg) files may be made available for coordination

Due to the proprietary nature of internal design systems, editable native-software versions of some drawings, including but not limited to system diagrams and details will not be made available in an editable form. In these cases, electronic versions of the drawings may be made

The Request Drawings form can be accessed, filled out and submitted at the following internet address (scroll down to bottom of home page): <u>http://www.klhengrs.com</u>. SECTION 23 05 29.00 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

Submittal Requirements Product Data: For each type of product indicated. Shop Drawings: Fabrication and installation details

Support all piping, ductwork and equipment by hangers or brackets properly from the building structure. Support from decking above is prohibited. Furnish structural stee members where required to support piping and equipment. No portion of piping or valves shall be supported by equipment. Ductwork - Support by means of hangers as follows: Duct Width Hanger Size and Type Max. Spacing 30 or less (#16 gage) 31 to 60 (#14 gage) A pair of hangers shall be located at every transverse joint

SECTION 23 05 93.00 – TESTING, ADJUSTING AND BALANCING FOR HVAC

and elsewhere according to the table.

Submittal Requirements Shop Drawings: Certified Reports: Submit testing, adjusting, and balancing reports bearing the seal and signature of the Test and Balance Engineer. The reports shall be certified proof that the systems have been tested, adjusted, and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed; are a true representation of how the systems are operating at the completion of the testing, adjusting, and balancing procedures; and are an accurate record of all final quantities measured, to establish normal operating values of the systems. Final Report: Upon verification and approval prepare final reports, type written, and organized and formatted as specified below. Submit 2 complete sets of final report to the landlord.

Test, adjust, and balance the following mechanical svstems: Supply air systems, all pressure ranges

Return air systems Exhaust air systems. Test systems for proper sound and vibration levels. Quality Assurance

Codes and Standards: AABC: "National Standards for Total System Balance". ASHRAE: ASHRAE Handbook, 2011 Applications, Chapter 38, Testing, Adjusting, and Balancing.

Qualifications The contractor shall procure the services of an independent Balance and Testing Agency, approved by the Engineer, and a member of Associated Air Balance Council (AABC) or NEBB, which specializes in the balancing and testing of heating, ventilating and air conditioning systems, to balance, adjust and test all air and water systems and equipment as herein specified. All work by this agency shall be done under direct supervision of a qualified heating and ventilating Engineer employed by this agency. All instruments used by this agency shall be accurately calibrated and maintained in good working

Sequencing and Scheduling Test, adjust and balance air conditioning systems during summer season and heating systems during winter season, including at least a period of operation at outside conditions within 5 deg F wet bulb temperature of maximum summer design condition, and within 10 deg F dry bulb temperature of minimum winter design condition. Take final temperature readings during seasonal operation

Check all filters for cleanliness, provide new as required. Check dampers (volume and fire) for correct and locked position, and temperature control for completeness of installation before starting fans. Place outlet dampers in full open position. Lubricate all motors and bearings. Check fan belt tension. Check fan rotation. Air balance and testing shall not begin until the system has been completed and is in full working order. The

Contractor shall put all heating, ventilating and air conditioning systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing. The contractor shall submit within 30 days after receipt of contract, 8 copies of submittal data for the testing and balancing of the air conditioning, heating, and ventilating systems. The Air Balance and Testing Agency shall provide proof of having successfully completed at least five projects of similar size and scope

The air balancing contractor shall include the additional cost to change every fan factory installed sheave, pulley and/or belt of in order to obtain the design air flows. Renovations: In areas where existing HVAC equipment is being utilized, balancing contractor shall include the cost to pre-check each equipment air flows, serving the area of work, prior to demolition, and re-check and adjust each air handler after new construction. Air flows of existing air handlers serving existing spaces shall be similar after project is complete

Performing Testing, Adjusting and Balancing Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards Cut insulation, ductwork, and piping for installation of test

probes to the minimum extent necessary to allow adequate performance of procedures. Patch insulation, ductwork, and housings, using materials

identical to those removed. Seal ducts and piping, and test for and repair leaks. Seal insulation to re-establish integrity of the vapor barrier. Mark equipment settings, including damper control positions; valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification

materials Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

SECTION 23 07 13.00 – DUCT INSULATION

Submittal Requirements Product Data: For each product indicated. Shop Drawings: Include plans, elevations,

sections, details and attachments to other work. All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50. Insulation shall have a

minimum installed thermal resistance value of R6 or code minimum, whichever higher. Rigid Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IB, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film. Flexible Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film. Vapor Barrier Material for Ductwork: Paper-backed aluminum-foil, except as otherwise indicated; strength and permeability rating equivalent to factory-applied vapor barriers on adjoining ductwork insulation, where available; with following additional construction characteristics: High Puncture Resistance: Low vapor transmission (for ducts in exposed areas: Mech. Rooms, etc.) Moderate Puncture Resistance: Medium vapor transmission (for ducts in concealed areas). All ductwork shall be insulated except: Double wall ductwork

Fabric ductwork Metal ducts with duct liner of sufficient thickness to comply with energy code.

Factory insulated flexible ductwork Factory insulated plenums and casings

Flexible connectors

Vibration control devices Factory insulated access panels and doors

Supply ductwork exposed in conditioned spaces excluding mechanical rooms, server rooms and electric equipment Toilet exhaust, general exhaust and return ductwork in an insulated joist or attic space.

SECTION 23 09 93.00 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

Submittal Requirements Product Data: Provide written sequences of operation for each controlled system and piece of equipment.

Packaged Rooftop Unit 1. Startup

The unit shall operate on a 7 day/night programmable thermostat. During startup, the fan shall run with the dampers in the full recirculation position. Provide occupied changeover

sequence with optimum start function. When the return air temperature reaches occupied setpoint (adjustable), the minimum outside air damper shall open to the controlled minimum outdoor air position. 2. Supply Fan Control

The supply fan shall be two staged and modulate up and down based on a call for heating or cooling. 3. Space Temperature Control Provide 7-day programmable thermostat with digital

display of space temperature and setpoint (+/- deg. F. adjustable), with override feature and remote space temperature sensor. 4. Minimum Outside Air Control

Provide carbon dioxide sensors in the space to measure carbon dioxide levels. Outside air damper shall modulate to maintain maximum carbon dioxide level setpoint at all times during occupied mode. CO2 levels shall be held below 1000 ppm (adjustable). When CO2 levels are below setpoint, outside air damper shall be at a minimum position, which equates to the sum of the "OA SQFT" multiplied by the room areas of each room in the "HVAC Ventilation Schedule" during occupied mode.

5. Economizer Control Provide dual enthalpy economizer control. Economizer control shall be enabled whenever the outside air enthalpy is lower than the return air enthalpy. Enthalpy shall be calculated from sensors which are tied to the same controller for accuracy. During economizer mode, the outside air damper shall modulate to 100% open. The economizer damper shall modulate open on a call for cooling and modulate closed on a call for heating. The return damper shall modulate inversely with the economizer damper.

6. Cooling Control Cooling shall be controlled to maintain space temperature setpoint. On a call for cooling, the heating shall be off and supply fan speed shall be low. On a further call for cooling, the economizer shall be enabled. On a further call for cooling, disable the economizer and energize first stage cooling on. On a further call for cooling, the supply fan speed shall be high and energized second stage of cooling

7. Heating Control Heating shall be controlled to maintain space temperature setpoint. On a call for heating, the mechanical cooling shall be off. On a further call for heating, the economizer mode shall be disabled. On a further call for heating, the supply fan shall be set

to low speed and the gas heating shall be disabled. On a further call for heating, the supply fan shall be set to high speed and the gas heating shall be staged on. 8. Smoke Detector When the smoke detector is alarmed, the system shall be

alarmed and the air handler shall fail safe with manual Unoccupied Mode

During the unoccupied mode of operation, the RTU shall go into night setback mode. Night Setback/Shutdown

At night setback/shutdown the RTU shall go to fail safe position. Fail safe position is defined by the following: The supply fan is off, the outdoor air intake damper is closed, the heating is off and the mechanical cooling is off. The supply fan shall cycle in conjunction with either the heating or cooling system to maintain a minimum/maximum space temperature depending on the season.

Exhaust Fans (Manual) Exhaust fans shall be controlled by local manual switch

furnished, installed and wired by electrical contractor. When activated, exhaust fan motor damper shall open and fan shall start.

(Indicated by EC on HECS schedule)

Electric Wall Heater/ Unit Heater Provide a self-contained integral thermostat with

adjustable setpoint. On a call for heating, fan shall start and coil shall activate to maintain room temperature

setnoint Provide relays and controls to automatically disconnect power to the electric heaters when the Cooling system is in operation

Air Curtain

Provide a self-contained integral thermostat with adjustable setpoint. On a call for heating, fan shall start and to maintain room temperature setpoint. Provide relays and controls to automatically shut off heat when outdoor air temperatures are greater than 45F.

Controls

Electrical contractor will provide power wiring. HVAC contractor shall provide all the low voltage wiring of HVAC units and controls, thermostats and controllers. Thermostat shall be by the manufacturer of the HVAC unit (heat/cool/auto/off) with night setback. Provide plastic protective cover for all thermostats.

Low Voltage Thermostats

Low voltage thermostats shall be furnished, installed and wired by the HVAC contractor. The electrical contractor shall provide 4" square x 1- 1/2" deep wall outlet boxes (with single-gang rings) for all thermostats/sensors. The electrical contractor shall provide one 3/4" empty conduit from each thermostat/sensor location, turned out above accessible ceilings (in joist space or against overhead slab/deck). The HVAC/Temperature Control Contractor shall provide all other necessary conduit, raceway and wiring related work. Conduit shall be identified in ceiling cavity and shall be provided with sweep bends, bushings and dragline. The HVAC/Temperature Control Contractor shall coordinate

with the General Contractor to ensure thermal envelope is maintained at these locations.

Carbon Dioxide Sensors Carbon dioxide sensors shall be non-dispersive infrared (NIDR) type with a measurement range of 0-2000 ppm, repeatability of +/-20 ppm and a measurement accuracy of +/-75 ppm. The recommended calibration interval shall be a minimum of 5 Space mounted applications shall utilize diffusion through an

attractive, satin finish, high impact housing. General Control Wiring Requirements and Installation

Except where specifically indicated otherwise above, the HVAC/Temperature Control Contractor shall provide all electrical work as required for all temperature control related wiring (i.e. conduit, raceway, outlet boxes, junction boxes, wiring, etc.) in accordance with Electrical Specifications requirements. All conduit shall be 3/4" minimum.

Coordinate all thermostat/sensor locations in field (case by case) with Architect, Owner and Electrical Contractor to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. All thermostat/sensor wall locations indicated on HVAC drawings are schematic only and must be verified case-by-case prior to rough-in. All electrical work as described in this specification shall be per the latest edition of the National Electrical Code (NEC) and per applicable state and local codes.

Where "free-air" installation methods (either exposed above the ceilings, in bridle rings or in cable trays) are permitted under Electrical Specifications above ceilings, provide plenum-rated cables wherever plenum ceilings (if any) exist and install as defined under Electrical Specifications. Install low voltage circuits, located in concrete slabs and masonry walls, in inaccessible locations, or exposed in occupied areas, in electrical conduit regardless of what wiring methods are permitted under Electrical Specifications. Where cable trays or bridle rings are provided by the electrical contractor for low voltage cables, these raceways may be utilized for control wiring by this contractor (provide special color coded jackets, label cable jackets per Electrical Specifications and group control wiring cables together). Provide conduit drops from cable tray/bridle ring paths to wall outlet boxes and equipment unless directed otherwise under Electrical Specifications.

Regardless of permitted methods in Electrical Specifications, all cables/wiring installed concealed by gypsum board, masonry or other inaccessible materials in walls or above ceilings shall be installed in conduit, 3/4" minimum.

All conduit, bridle rings, raceway, outlet boxes, etc. necessary for complete operational installation of control wiring shall be provided (furnished and installed) by the temperature control contractor in strict compliance with Electrical Specifications documents. Coordinate all work with all other applicable trades including the electrical contractor.

Provide all required conduit work to and between equipment in a manner compliant with that described above (i.e. between VAV boxes, to boilers, starters, condensing units, etc. as applicable). Install control wiring without splices between terminal points, color-coded. Install in neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code and per Electrical Specifications. Install circuits over 25 volt with color-coded No. 12 wire in electrical metallic tubing, per Electrical Specifications. Install circuits under 25 volt with color-coded No. 18 wire with 0.031" high temperature (105 degs. F) plastic insulation on each conductor and plastic sheath over all. Install electronic circuits with color-coded No. 22 wire with 0.023" polyethylene insulation on each conductor with plastic-jacketed copper shield over all.

Smoke Detector All duct smoke detectors will be furnished by electrical contractor, installed by the HVAC contractor, and wired by the electrical contractor per local codes. HVAC

SECTION 23 31 13.00 – METAL DUCTS Submittal Requirements

> Shop Drawings: Sheet metal thickness, reinforcing details, duct layouts indicating sizes, configuration, liner material, elevation and static pressure class.

Ductwork Materials Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting. Mechanical contractor shall confirm ductwork paint scope and color with architect. Exposed ductwork which is to be painted shall have paint grip applied and be oil free. Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel, lock forming guality; with G 90 zinc coating and mill phosphatized for exposed locations. Minimum gauge shall be 24. Miscellaneous Ductwork Materials Volume Dampers: Provide volume dampers in all branch

Fittings: Provide radius type fittings fabricated of multiple sections with maximum 15 deg. change of direction per section. Unless specifically detailed otherwise, use 45 deg. laterals and 45 deg. elbows for branch takeoff connections. Where 90 deg. branches are indicated, provide conical type tees Duct Sealant: Non-hardening, non-migrating mastic or liquid elastic sealant, type applicable for

fabrication/installation detail, as compounded and recommended by manufacturer specifically for sealing joints and seams in ductwork. Duct Cement: Non-hardening migrating mastic or liquid neoprene based cement, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for cementing fitting components, or longitudinal seams in ductwork. Ductwork Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners,

ductwork. Flexible Ducts Either spiral-wound spring steel with flameproof vinyl sheathing, or corrugated aluminum. Unless specifically

mentioned, the maximum length of flex duct on the supply equals 5 feet. Flex is not allowed for return, relief or exhaust applications. The flexible ducts indicated for use in the H.V.A.C. system shall conform to the requirements of UL 181 for Class 0 or Class 1 flexible air ducts and shall be so identified Where installed in unconditioned spaces other than return

fiberglass sheath with vinyl vapor barrier jacket. Installation is not permitted above drywall ceilings and inaccessible ceilings. Fabrication Shop fabricate ductwork in 4, 8, 10 or 12-ft lengths, unless

otherwise indicated or required to complete runs. All ductwork shall be Pittsburgh Construction with a minimum of thickness of 24 gauge. In addition, ductwork used in systems over 3" W.G. shall have cold sealant applied. Shop fabricate ductwork of gauges and reinforcement complying with SMACNA "HVAC Duct Construction Standards". Lined Duct

Fabricate ductwork with duct liner in each section of duct where indicated. Laminate liner to internal surfaces of duct in accordance with instructions by manufacturers of lining and adhesive, and fasten with mechanical fasteners. Duct liner to be 3-lb density for acoustic requirements 1"

thick or as noted. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Duct Liner: Fibrous glass of thickness indicated. 3-lb

density. All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50. Duct Liner Adhesive: As recommended by insulation manufacturer and complying with NFPA 90A or NFPA

Construction Standards.

standards.

Installation of Metal Ductwork

contractor will interlock fan with smoke detector

Product Data: For liners, adhesives, sealants and

ducts or as required for balancing to required air flows.

anchors, rods, straps, trim and angles for support of

air plenums, provide 1" thick 1-1/2 lb. continuous flexible

Duct Liner Fasteners: Comply with SMACNA HVAC Duct

General: Assemble and install ductwork in accordance with recognized industry practices which will achieve airtight (5% leakage for systems rated 3" and under; 1% for systems rated over 3") and noiseless (no objectionable noise) systems, capable of performing each indicated service. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type which will hold ducts true-to-shape and to prevent buckling. Support vertical ducts at every

Sealing: Seal all longitudinal seams, S's and drives and all joints with mastic or cement. Install according to SMACNA

Balancing Dampers: The sheet metal contractor shall be fully responsible for installing balancing dampers in the ductwork, (whether shown on the drawing or not) in order to arrive at the intended air flow. The balancing sub-

contractor shall provide direction and assistance in determining locations where dampers are required. Additional dampers, if required shall be installed at no additional cost to the owner. Wall Penetrations: Seal and pack around all ducts and piping sleeves which pass through walls that extend to bottom side of structure and rated walls. Field Fabrication: Complete fabrication of work at project as necessary to match shop-fabricated work and

accommodate installation requirements. Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Run ductwork in shortest route which does not obstruct useable space or block access for servicing building and its equipment. Hold ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearance to 1/2" where furring is shown for enclosure or concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts,

hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically shown. Coordinate layout with suspended ceiling and lighting layouts and similar finished work. Electrical Equipment Spaces: Do not route ductwork

through transformer vaults and their electrical equipment spaces and enclosures Penetrations: Where ducts pass through interior partitions

and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct. Overlap opening on 4 sides by at least 1-1/2". Fasten to duct and substrate Where ducts pass through fire-rated floors, walls, or

partitions, provide fire dampers and firestopping between duct and substrate, in accordance with requirements of Division-7 Section "Firestopping" All dampers integral to or utilized as part of an engineered

smoke control system shall be listed and comply with UL All fire dampers shall be listed and comply with UL 555.

All dampers shall be low leakage with edge and blade seals. Damper manufacturers are subject to specification compliance. Provide products by one of the following: Greenheck Fan Corporation Nailor Industries

Ruskin Company Young Regulator Company

Coordination: Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls and other associated work of

ductwork system. Installation of Duct Liner

General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Store internally lined ductwork up off of the floor. Protect internally lined ductwork from water and dust. The following ductwork shall be lined in addition to that shown per plans:

Return from open ceiling plenum return to HVAC unit. Supply and return ductwork 10 feet downstream of HVAC Transfer air ducts.

Butter the leading edge of all internal duct lining with the manufacturer's recommended adhesive. Inspect and repair all damaged lining prior to installation of ductwork.

Installation of Flexible Ducts Maximum Length: For any duct run using flexible ductwork, do not exceed 5' - 0" extended length.

Installation shall have smooth full radius turns down to diffuse Installation not permitted above inaccessible ceilings.

23 34 23.00 - HVAC POWER VENTILATORS

Submittal Requirements

Product Data: For each type of product indicated Centrifugal Roof Ventilators Provide centrifugal roof type, curb mounted, power ventilators of type, size, and capacity as scheduled, and as specified herein.

Type: Centrifugal fan, direct or belt driven as scheduled. Provide aluminum, galvanized steel, or fiberglass weatherproof housings as scheduled. Provide square base to suit roof curb. Provide permanent split-capacitor type motor for direct driven fans; capacitor-start, inductionrun type motor for belt driven fans.

Provide the Following Types of Housing Design: Hooded dome type Electrical: Provide factory-wired non-fusible type disconnect switch at motor in fan housing. Provide

thermal overload protection in fan motor. Provide conduit chase within unit for electrical connection. Provide NEMA 1 disconnect factory mounted. For single phase fractional HP fans use a toggle type disconnect switch. On three phase integral HP fans use a NEMA 1 safety switch.

Bird Screens: Provide removable bird screens, 1/2" mesh, 16-ga aluminum or brass wire. Roof Curb: Provide factory fabricated roof curb by the

same manufacturer as the equipment. Roof curb to be insulated Manufacturer: Subject to compliance with requirements

provide centrifugal roof ventilators of one of the following: Acme CaptiveAire

Cook (Loren) Co. Greenheck.

Twin City Fan & Blower Prefabricated Roof Curbs

General: Provide manufacturer's standard shopfabricated units, modified if necessary to comply with

requirements. Fabricate structural framing for units of structural quality sheet steel, formed to manufacturer's standard profiles for coordination with roofing, insulation and deck construction. Include 45 deg. cant strips and deck flanges with offsets to accommodate roof insulation. Weld corners and seams to form watertight units.

Clean and paint units with manufacturer's standard rustinhibitive metal primer paint Reinforce continuous runs of over 3'-0" length, by inserting welded stiffeners of heavy gage with flanges as required to provide sufficient rigidity and strength to withstand maximum lateral forces in addition to superimposed vertical loads

Gage and Height: Fabricate units of metal gage and to height above roof surface as indicated. Where gage or height are not indicated, fabricate units of 14-ga metal, and nominal height of 14". Provide pressure treated wood nailer, not less than 1-5/8" thick and of width indicated, but not less than width of support wall assembly. Anchor nailer securely to top of metal frame unit.

Provide lumber pressure treated with water-borne preservatives for "above ground" use. Insulate units inside structural support wall with rigid glass fiber insulation board of approximately 3-lb. density and 1-

1/2" minimum thickness, except as otherwise indicated. Manufacturer: Subject to compliance with requirements, provide prefabricated roof curbs of one of the following: Custom Curb, Inc. Equipment Manufacturer. MicroMetl

Pate Co. Shipman. Thycurb.

INSTALLATION

Coordinate ventilator work with work of roofing, walls, and ceilings, as necessary for proper interfacing. Provide access door in duct below ventilator to service dampe Solder bottom joints and up 2" of side joints of duct under

roof ventilator to retain any moisture entering ventilator.

SECTION 23 34 33.00 – AIR CURTAINS

Submittal Requirements Product Data: For each type of product indicated.

General: Provide air doors of size and capacity as noted on drawings. Air doors shall operate at a low sound level and meet OSHA standards. Construction

Wheels: Talc-filled polypropylene or aluminum. Housing: Galvanized steel.

Motorboard: Galvanized steel. Velocity Control: Provide adjustable louver damper controls for regulating rate of air flow. When louvers are completely closed air velocity shall reduce to sixty percent. Directional Control: Provide adjustable vanes at outlet nozzle for directing air where needed and readily set to compensate for possible draft conditions through door openings. Vanes shall have a forty percent girth sweep

front to back. Motors: Provide totally enclosed shaded-pole, or

permanent-split capacitor motors, Class "B" insulation resiliently mounted, tap wound with built-in thermal overload protection, and with permanently lubricated type sleeve or ball bearings. Select motors with the voltage as scheduled

Extended Motor Oilers: Provide plastic tubes for lubricating motor bearings which are installed beneath

Motor Controls: Provide multi-speed motor control switch with OFF position, mounted behind access door. Fans: Provide double width, double inlet centrifugal fans, which are balanced statically and dynamically, of indicated capacity. Select fans with single or double extended motor shaft, with fan housing and motor fastened as an integral assembly to a motorboard.

Electric Air Curtains Devices: Provide air doors with the following devices: Thermally activated fan switch to keep fan motor operating until residual heat is dissipated.

Disconnect switch. Automatic reset, high limit cut-out switch located in

discharge air stream. Manual "Summer-OFF-Winter" switch.

Unit-mounted line voltage thermostat Time delay relay

Control Power Transformer Magnetic Contactor (Relay Kit) Manufacturers: Subject to compliance with requirements, provide electric air doors of one of the following:

Mars Sales Company, Inc.

Powered Aire Inc. Ravwall

Schwank Installation

Provide disconnect at side or unit for installation in recessed ceiling. Provide trim piece to finish linear slot supply in ceiling for

recessed units. Coordinate with other electrical work, including

wiring/cabling, as necessary to properly interface installation of heating terminal units with other work.

Clean dust and debris from each heating terminal as it is installed to ensure cleanliness. Comb out damaged fins where bent or crushed before

covering elements with enclosures. Touch-up scratched or marred heating terminal enclosure surfaces to match original finishes.

Field Quality Control Upon completion of installation of electric heating terminals, and after building circuitry has been energized, test heating terminals to demonstrate capability and compliance with requirements.

Replace electric heating terminals and accessories which are damaged and remove damaged items from construction site.

23 37 13.00 – DIFFUSERS, REGISTERS AND LOUVERS

Submittal Requirements Product Data: For each type of product indicated.

DIFFUSERS, GRILLES AND REGISTERS Manufacturer: Subject to compliance with requirements, provide diffusers of one of the following: Anemostat Products Div., Dynamics Corp. of America.

Metal-Aire Titus Products Div., Philips Industries, Inc.

Tuttle and Bailey. Price

Louvers and dampers Provide louvers and dampers of size as noted. Manufacturer: Subject to compliance with requirements,

Product Data: For each type of product indicated

General: Provide unit heaters in locations as indicated,

and of capacities, style, and having accessories as

scheduled. Provide temperature control valves for

modulation during a call for heat and closed during

General: Provide a heavy duty fan forced wall heater.

Unit to have built in, tamper proof thermostat or remote

Front cover shall be decorative 16 gauge welded bar

brazed to non glowing, steel sheathed elements.

thermostat, built in disconnect switch.

an delay and thermal cutout are standard

Provide wall heaters with the following devices:

Automatic reset, high limit cut-out switch located in

Provide all required control transformers.

Heating grid shall be made up of rugged steel fins, copper

Thermally activated fan switch to keep fan motor operating

Manufacturers: Subject to compliance with requirements,

Hang units from building substrate, not from piping.

Protect units with protective covers during balance of

Coordinate with other electrical work, including

wiring/cabling, as necessary to properly interface installation of heating terminal units with other work.

Mount as high as possible to maintain greatest headroom

Support units with rod-type hangers anchored to building

Clean dust and debris from each heating terminal as it is

Touch-up scratched or marred heating terminal enclosure

Tighten connectors and terminals, including screws and

connectors. Where manufacturer's torquing requirements

bolts, in accordance with equipment manufacturer's

are not indicated, tighten connectors and terminals to

comply with tightening torques specified in UL Std 486A.

published torque tightening values for equipment

Comb out damaged fins where bent or crushed before

provide diffusers of one of the following: Aerolite

23 82 39.00 – UNIT HEATERS

Wall and ceiling unit heaters

Submittal Requirements

Prefco Greenheck

Ruskin

Accessories:

24V time delay relay

Disconnect switch.

discharge air stream

Qmark

Markel

Raywall

substrate

construction.

Installation

Trane Co.

Surface mounting box

until residual heat is dissipated.

Control Power Transformer

Installation of Heaters

Magnetic Contactor (Relay Kit)

possible unless otherwise indicated.

installed to ensure cleanliness.

covering elements with enclosures.

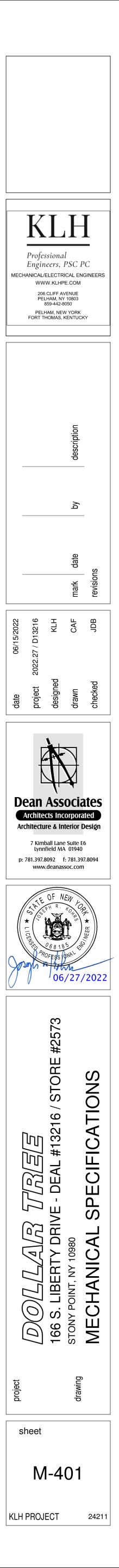
surfaces to match original finishes.

Manual "Summer-OFF-Winter" switch

Unit-mounted line voltage thermostat

provide wall heaters of one of the following:

Provide equipment grounding connections for electric heating terminals as indicated. Tighten connections to comply with tightening torque values specified in UL Std 486A to assure permanent and effective grounding.



ELECTRICAL SPECIFICATIONS

The General Provisions of the contract apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract. Include all labor, material, equipment, tools and incidental costs to provide all work in contract documents. Apply for, secure and pay for all required permits. All materials and methods shall be in accordance with applicable codes, regulations and/or ordinances and meet the approval of local inspection authority having jurisdiction. The latest edition of NFPA 70 (National Electrical Code, NEC) and NFPA 72 shall be the minimum requirement for all work.

All materials and equipment shall be new and shall bear a UL listing or similar testing agency listing. Material and equipment shall be suitable for installed environment, temperature range, strength, durability, voltage, etc. Install all equipment with code required and manufacturer recommended minimum clearances for operation and maintenance.

Perform work under this contract in close harmony with other contractors so completed work shall present a neat and workmanlike installation. Consult all other disciplines drawings and coordinate with contractors in field before performing work so that this work will not interfere with other disciplines work.

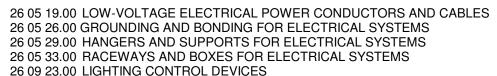
Exposed finished materials and equipment shall be carefully cleaned and wiped to remove grease, smudges, fingerprints, dust and other spots. During the progress of the work, the electrical sub-contractor shall carefully clean the job site and shall leave the premises and all portions of the building in which he is working free of debris and in a clean and safe condition.

Neatly provide all cutting and patching required for the admission of work. Patching shall match quality of surroundings to owner's satisfaction. Seal all new floor, ceiling, wall, slab, etc. penetrations to match or exceed existing assembly fire ratings.

Provide two clean sets of contract drawings reserved for showing a complete picture of the work as actually installed at completion of project. Provide two neatly bound and tabbed copies of all maintenance books, instruction books and parts list pertaining to all equipment furnished.

All work, materials, and equipment shall have a one year warranty after acceptance of the work by the Owner. Any defective items shall be removed and replaced at the electrical sub-contractor's expense and to the satisfaction of the engineer and owner's representative. Train the owner's representatives of each system to the satisfaction of the owner's representative.

Provide product data submittals for each of the following sections. Provide submittals as individual PDFs by section. Provide cover sheet for and naming of each submittal per http://www.klhengrs.com/the-firm/contractor-resources.html



26 24 16.00 PANELBOARDS 26 27 13.00 ELECTRICITY METERING

26 27 26.00 WIRING DEVICES 26 29 13.13 ACROSS-THE-LINE MOTOR CONTROLLERS

26 51 00.00 LIGHTING 28 46 21.25 FIRE ALARM SYSTEM EXTENSION

All metallic conduit, surface raceways, wireways, supports, cabinet and equipment shall be grounded per NEC.

Provide temporary lighting, power and life safety measures in areas affected by construction.

Where demolition is required, selectively demolish equipment, conduit, wiring, devices, etc. to accommodate project demolition and as required to accommodate new construction. Restore power to all downstream devices not affected by demolition. Reinstall work that is intended to be operational after demolition and construction is complete. Appropriately and legally dispose of items demolished.

Provide 600V rated conductors (#12 AWG minimum) wire with color coded insulation/jacket to identify phases, grounded conductor and ing conductor. Insulation shall be THHIV/THWIV-2 unless installed underground or subject to moisture where it shall be XHHW-2. Provide copper conductors unless stated otherwise on drawings. Provide insulated equipment grounding conductor for each branch circuit. Do not share neutrals. Provide copper jumpers for final terminations of aluminum conductors where required by equipment.

Provide Type MC cable for feeders and branch circuits indoors, Schedule 40 PVC conduit for underground wiring, and EMT conduit for other applications. Conduit and cable shall be independently supported directly from structural members by approved straps, fasteners and hangers. Conduit and cables shall be neatly installed parallel and perpendicular to structural members. Noncompliant work shall be removed and replaced to satisfaction of owner. Do not support conduit or cables from roof deck or install within 4" of roof deck. Provide flexible conduit or fittings, and leave slack in cables, at all expansion joints. Provide separate raceways for normal and emergency branches of power compliant. Install raceways and cables concealed in new construction. Provide surface raceway for existing surfaces. Recessed steel boxes shall not be less than 4" x 1-1/2" deep. No ganged boxes. Cut in box neatly. Verify all box/device mounting heights

and locations in field with Owners representative. Where technology devices shown on plan, provide 4" x 2-1/8" deep square box, with at least (1) 1" conduit (with plastic bushings or

insulated throats at end fittings) to above accessible ceiling and pull string to facilitate future cable installation. Where no accessible ceiling route to technology room. Provide blank wall plates for boxes that are not immediately deviced.

Provide engraved plastic laminate naming identification for all electrical equipment and circuit identification for junction boxes and conductors. Provide accurate typed panel schedules.

Provide all necessary electrically related work as required to render all fire protection, plumbing, mechanical, electrical, technology, architectural and Owner equipment fully operational and fully compliant with manufacturer instructions and codes. Review equipment submittal data and coordinate with installing contractors to ensure the correct size, rating and quantity of conductors and overcurrent protective devices (OCP's) are provided. Provide electrical disconnect ahead of all equipment. Locate electrical equipment to maintain clearances required by respective manufacturers and by NEC 110.26. Provide boxes and conduits to controlled equipment for control and monitor devices of other trades (thermostats, other environmental control devices, alarms, etc.).

Provide exterior photocells equal to Tork 210# series for surface mount and Tork 30## for flush applications.

Provide occupancy sensor switches equal to Wattstopper DW-100-24. Provide ceiling mounted occupancy sensors equal to Wattstopper DT-300. Provide enough sensors for 100% coverage without nuisance tripping. Provide BZ-150 power packs and other accessories for a complete system.

Provide specification grade wiring devices. Provide WR type and NEMA 3R while-in-use covers for wiring devices installed outdoors and other areas exposed to water. All GFCI receptacles shall be accessible or protect the circuit with a GFCI circuit breaker. Device colors shall be ivory. Provide standard size stainless steelwall plates. Provide neutral in each switch box. Unless noted otherwise, install receptacles 18" to center and switches 46" to center. Ensure that lighting control devices are fully compatible with luminaires controlled.

Provide motor starters, manual or combination type, of sizes, ratings and control types as required per coordination schedules and per requirements of equipment that will actually be provided.

Provide luminaires and/or luminaire outlet boxes to properly support luminaire weight. All luminaires installed in suspended ceiling systems shall be independently supported directly to the building structural system. Connect all emergency lighting ahead of switching providing additional unswitched "hots" where required for operation.

Provide all work in strict compliance with all prevailing codes, standards and ordinances. Provide a complete multiplexed intelligent addressable fire alarm system throughout the building. All equipment and devices shall be UL listed and labeled. Provide the final Fire Alarm System design completed by an approved and certified Fire Alarm System contractor, who shall coordinate the final design with all national and local codes, regulations and AHJ (Authority/Authorities Having Jurisdiction). Fire alarm contractor with system manufacturer shall provide detailed shop drawings including floor plans, wiring diagrams, risers, battery calculations and product data. Demonstrate testing to AHJ as required for occupancy. Provide 120V power to new battery cabinets. Furnish and wire duct smoke detectors where shown, interlock to shutdown mechanical equipment, and programmed to report as alarm or supervisory signal to the fire alarm system and monitoring central station based on prevailing codes and direction from AHJ – verify in field with AHJ). For smoke or fire/smoke dampers, provide 120V power and smoke detector interlocked to damper. Receive, install, wire, connect and test ownerfurnished digital communicator - programmed to report to the owner's UL approved Central Station monitoring agency. Install new wiring in EMT unless special permission granted from Owner to "free-air" cable using J-hooks. Provide all specified items, plus all incidentals and required items necessary to provide a complete and working system, installed in a professional manner, and in accordance with applicable codes and industry accepted "best practices", including all monitoring and alarming associated with fire suppression systems. Provide isolation modules and wiring configurations (using Class A, or Class A and B, pathways) for fault isolation so that any one fault will not cause any part of the system to go down other than the zone of the fault; provide zoning compliant with prevailing codes, with at least one zone per floor (more if areas are subdivided into multiple zones by fire and/or smoke barriers). Initiating Device, Notification Appliance and Signaling Line Circuits: Class A or Class A and B (provide Class A for circuits that provide isolation module protection for zones). Provide power-limited cables that have a temperature rating of at least 60 degrees C; provide additional marking for conductor size and temperature ratings for cables rated in excess of 60 °C (140 °F). Program detailed device and room descriptions so that any trouble, supervisory or alarm condition clearly annunciates floor level, room number, room name, device, and indication of normal, alarm, trouble and supervisory status at fire alarm control panel(s), at fire alarm annunciator panel(s) and at the supervising central station. Provide documentation (hard-copy and digital) of fire alarm system documentation, and provide a single documentation cabinet at the main fire alarm control unit, including Chapter 7. Qualifications of system designers, installers, programming personnel, inspection personnel, testing personnel and maintenance personnel shall be trained and certified by manufacturer for installation of units required for this Project, and shall be qualified in compliance with requirements prevailing codes, standards and authorities. Refer to Division 26 sections for requirements associated with all electrical work not specifically defined in this section, which shall be considered additional and concurrent scope of work that is associated with work of this section. Provide submittals for equipment, materials and systems specified in this section. Include cuts, descriptive information, technical data, wiring diagrams, plan-view lavouts, legend, point-to-point wiring, etc. Identify all information that is specific to this project. Submit to applicable authority or authorities having jurisdiction and obtain fire alarm permit prior to submitting to consultant for review.

Provide conventional photoelectric duct smoke detector with sampling tube. Install the duct detector in an indoor accessible location. Provide sampling tube, test station and all other required accessories.

Install all duct smoke detectors in the return air duct/plenum of the respective air handling equipment, or in multiple locations of the return duct branches if necessary to meet the minimum straight distances that are required by manufacturer of smoke duct detectors. Refer to HVAC ductwork drawings, and to HVAC installer's coordination drawings, for configurations when determining actual locations and quantities of duct smoke detectors. Where more than one detector is already indicated associated with a particular piece of air handling equipment, there are special reasons for the additional detectors (i.e. split returns, return risers serving multiple floors, etc.); coordinate all locations for same with the HVAC installer. Provide all required power and control wiring so that upon detection of smoke, the following sequence of operations occurs: An alarm signal is sent to alarm system (fire alarm system or remote test station or both as applicable); The HVAC unit shut down (including

Provide keyed test/monitor station (with status/alarm/trouble indicating LED's) on the ceiling or wall (flush in finished areas) beneath the duct detector at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each remote station to read: "#### Duct Smoke Detector", where #### is the equipment identification used on drawings. Connect to fire alarm system.

applicable dampers); Associated smoke dampers close, if present (wired to automatically re-open on duct detector reset).

If required by authority having jurisdiction, provide identified key-operated air handler reset station on the ceiling or wall (flush in finished areas) beneath the air handler at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each reset station to read: "#### Reset Switch to reset #### after a duct smoke detection event has been cleared and the fire alarm system has been reset.", where #### is the equipment identification used on drawings. Coordinate with authority having jurisdiction for verification of, or required modification to, the language to be engraved. Connect to fire alarm system.

Provide 20A/120VAC power as required to energize components. This requirement applies whether or not such power work is shown on the drawings. Dedicate branch circuits serving fire alarm related equipment to fire alarm related equipment only.

Properly identify system components, wiring, cabling, and terminals. Install framed instructions in a location visible from fire-alarm control unit. Provide red color on jacket of all fire alarm cables associated with the fire alarm system. Provide red-colored breaker handle and red-colored lock-on device at source circuit breakers that feed fire alarm related equipment. Provide red coloring for all fire alarm system junction boxes, along with identification.

	TECHNOLOGY LEGEND		ELECTRIC LEGEND		ELECTRIC	LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL		DESCRIPTION	
·	TECHNOLOGY (ROUGH-IN ONLY)		LIGHTING AND LIGHTING CONTROLS		SINGLE LIN	E DIAGRAM	
COORDINATE WITH SY	STEM INSTALLERS PRIOR TO INSTALLATION FOR LOCATIONS, HEIGHTS, CONDUIT TERMINATIONS, ET ALL OUTLET BOXES FOR ROUGH-IN SHALL BE MINIMUM 2-1/4" DEEP.	^{.c.} •ቀያጃ፻፬፬©©	LUMINAIRE (REFER TO THE LUMINAIRE SCHEDULE) NOTE THAT OTHER SHAPES MAY ALSO BE USED TO REPRESENT LUMINAIRES		HEAVY DUTY DISCONNECT SWITCH (NO SIZES MAY BE SHOWN ONLY IN SCHEDU	DN-FUSED)(LEFT) (FUSED)(RIGHT) LE	
$\blacksquare \bowtie \blacksquare$	COMMUNICATION OUTLET - VOICE, DATA, VOICE/DATA RESPECTIVELY LEFT TO RIGHT - PROVIDE 4"X4 BOX WITH 1-GANG RING AND (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHER	4" OUTLET • • •	SHADED LUMINAIRES DENOTE THOSE CONNECTED TO EMERGENCY OR STANDBY POWER AS APPLICABLE (UNSWITCHED LUMINAIRES ARE EGRESS LIGHTS AND/OR NIGHT-LIGHTS THAT OPERATE 24/7)	PANEL NAME	ELECTRICAL PANELBOARD OR DISTRIBU	ITION BOARD	
			SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CONFIGURE ARROWS TO INDICATE DIRECTION OF EGRESS TRAVEL		SURGE PROTECTIVE DEVICE		
	GENERAL ELECTRICAL NOTES	•=• 날 후 •2	EMERGENCY LIGHTING UNIT WITH 90-MINUTE BATTERY BACKUP AND ASSOCIATED REMOTE HEADS WHERE APPLICABLE. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING		WIRE / CABL	E / RACEWAY	
	A. BEFORE SUBMITTING THE BID PROPOSAL, THE CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY ACQUAINT HIMSELF WITH THE JOB CONDITIONS AND VERIFY SERVICE CONNECTIONS, INCLUDING ALL	A NL a EL	A = LUMINAIRE TYPE, NL = NIGHT-LIGHT (UNSWITCHED), a = SWITCHING DESIGNATION, EL = EGRESS LUMINAIRE (ILLUMINATES PATH OF EGRESS, ON ALL TIMES SPACE IS OCCUPIED)	LPA-1,3	BRANCH CIRCUIT HOME RUN WITH PANI	EL NAME AND CIRCUIT NUMBER(S)	
	NECESSARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND CONDUCTORS, SWITCH GEAR, METERING, CABLE CHARGES ETC.,	\$	LIGHTING SWITCH (KEYS: 2 = 2-POLE, 3 = 3-WAY, 4 = 4-WAY, D=DIMMER, K=KEYED, LV = LOW VOLTAGE M = MOMENTARY-CONTACT 1PDT W/CENTER-REST, P = SWITCH W/PILOT LIGHT, T = TIMER SWITCH)		CABLING / RACEWAY INSTALLED CONCE	ALED IN WALLS OR ABOVE CEILING	
	WHETHER SHOWN ON DRAWINGS OR NOT BUT REQUIRED BY SERVICE UTILITY CO. TO MAKE A COMPLETE AND OPERATING ELECTRICAL SERVICE WITHOUT ADDITIONAL COST TO THE TENANT. VERIFY	TYPE	CEILING-MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR" = INFRARED, TYPE "US" = ULTRASONIC		CABLING / RACEWAY INSTALLED BELOW	FLOOR OR GRADE	
	SERVICE WITHOUT ADDITIONAL COST TO THE TENANT. VERIFY SERVICES AND CHARGES WITH POWER AND TELEPHONE COMPANIES. B. CONTRACTOR SHALL VERIFY ALL REQUIREMENTS OF MECHANICAL	TYPE#	WALL-MOUNTED OCCUPANCY SENSOR SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR"=INFRARED, TYPE "US"=ULTRASONIC, "V"=VACANCY SENSOR, "#" = CONTROLLED CIRCUITS.		CABLE TRAY		
	EQUIPMENT WITH MECHANICAL DRAWINGS AND SPECIFICATIONS, AND SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED BY THE		LIGHTING CONTROL PANEL	0	JUNCTION BOX ABOVE ACCESSIBLE CEI JUNCTION BOX AT OVERHEAD STRUCTU		
	CONTRACTOR FOR COMPLETE INSTALLATION. C. VERIFY LOCATION AND REQUIREMENTS OF MECHANICAL EQUIPMENT WITH CONTRACTOR, (DOOR HEATERS, UNIT HEATERS, ROOF TOP		ECEPTACLES AND MISCELLANEOUS OUTLETS	J	FLUSH MOUNTED JUNCTION BOX OR PU	LL BOX AS APPLICABLE FOR APPLICATION	
	UNITS, TRANSFER FANS, ETC.). D. ELECTRICAL WORK AND MATERIALS SHALL COMPLY WITH LATEST	ΦΦ Φ	SINGLE ("SIMPLEX"), DUPLEX, AND DOUBLE DUPLEX ("QUAD") RECEPTACLE RESPECTIVELY	Р	FLUSH MOUNTED PULL BOX		
	'N.E.C.' AND ALL LOCAL CODES AND ORDINANCES. IN CASES OF CONFLICT AMONG REQUIREMENTS, THE MOST RESTRICTIVE SHALL APPLY.	• • •	GFI/ GFCI RECEPTACLES		SINGLE-SERVICE SURFACE RACEWAY (DNE COMPARTMENT - POWER)	
	E. ALL CONDUCTORS SHALL BE # 12 AWG COPPER. EXCEPT AS OTHERWISE NOTED OR AS REQUIRED FOR VOLTAGE DROP (SEE	(+) (+) (+) (+) (+) (+) (+) (+) (+) (+)	ISOLATED GROUND RECEPTACLES		MULTI-SERVICE SURFACE RACEWAY (T)	VO COMPARTMENT - POWER AND TECHNOLO	GY)
	SPECS.). ALL CONDUIT SHALL BE 1/2" MINIMUM EXCEPT AS OTHERWIS NOTED OR AS REQUIRED FOR CONDUCTORS. F. TENANT'S ELECTRICAL EQUIPMENT SHALL BE RELOCATED AS	Ĕ Ó †	FULL SWITCHED RECEPTACLES		SERVICE POLE - POWER AND TECHNOL	OGY WHERE APPLICABLE.	
	REQUIRED TO MINIMIZE LENGTH OF CONDUIT/CONDUCTOR BETWEEN SERVICE DISCONNECT SWITCH AND PANEL "MDP". OBTAIN APPROVAL	● ● ●	CEILING MOUNTED RECEPTACLES	UP O DN	CONDUIT UP OR DOWN		
	FROM TENANT'S ARCHITECTURAL DEPARTMENT OF PROPOSED LOCATION PRIOR TO INSTALLATION. COST CLAIMS FOR CONDUIT/CONDUCTOR IN EXCESS OF BASE BID WILL NOT BE	Ф ^н ф ^с	RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS HEIGHT ABOVE GRADE / FINISHED FLOOR		ABBREV	IATIONS	
	CONSIDERED IF PANEL RELOCATION IS NOT PROPOSED TO MINIMIZE THESE COSTS PRIOR TO INSTALLATION.	[⊤] ф ^{42"} ₩	C = INSTALL ABOVE COUNTER AND BACKSPLASH H = INSTALL RECEPTACLE HORIZONTALLY L = LIT (PROVIDE ILLUMINATED FACE OR INDICATOR LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE)			IG ISOLATED GROUND	
	 G. TELEPHONE: FURNISH AND INSTALL ALL NECESSARY CONDUIT, DEVICE BOXES AND PLATES. H. NEW TELEPHONE SERVICE TO TENANT'S SPACE. NEW TELEPHONE 	$\overset{E}{\square}$ $\varphi^{sw} \varphi^{L}$	SW = SPLIT WIRED T = TAMPER-RESISTANT W = WEATHER PROOF WHILE IN USE COVER AND WEATHER RESISTANT RECEPTACLE	42 ["] DIST PAV	OCATE FIXTURE, EQUIPMENT OR DEVICE FANCE ABOVE FINISHED FLOOR / GRADE / EMENT	LR LEGALLY REQUIRED ST LI LONG - INSTANTANEOU	IS
	EQUIPMENT BOARD. COORDINATE WITH LANDLORD AND TELEPHONE CO. AS REQUIRED FOR INSTALLING THIS SERVICE.		DOOR OPERATORS/DEVICES	BRE	P FRAME OF FUSED SWITCH OR CIRCUIT AKER -FAULT CIRCUIT INTERRUPTER	LSI LONG - SHORT - INSTAN LSIG LONG - SHORT - INSTAN FAULT	NTANEOUS -
	I. FURNISH AND INSTALL 3/4" CONDUIT FROM EACH TELEPHONE OUTLET 1'-0" INTO CEILING CAVITY, OR UP TO JOIST WHERE NO CEILING IS INSTALLED.		ELECTRIC DOOR OPERATOR MANUAL (LEFT) AUTOMATIC (RIGHT)	AIC AMF AT AMF	PS INTERRUPTING CURRENT P TRIP OF FUSED SWITCH OR CIRCUIT AKER	MCB MAIN CIRCUIT BREAKEF MFR MANUFACTURER	{
	J. FIRE ALARM SYSTEM: a. IF THERE IS NO EXISTING FIRE ALARM SYSTEM AND THE		PUSH PLATE FOR MANUAL CONTROL OF ELECTRIC DOOR OPERATOR	ATS AUT	OMATIC TRANSFER SWITCH	MLO MAIN LUGS ONLY MTS MANUAL TRANSFER SW MW MICROWAVE OVEN	ITCH
	NATIONAL, STATE, OR LOCAL CODES, OR LOCAL FIRE AUTHORITY HAVING JURISDICTION NOW REQUIRES A FIRE		DOOR BELL WITH TRANSFORMER & PUSHBUTTONS	C.T.C. WOI	RK UNDER DIVISION 27 OR 28 AS	NIC NOT IN CONTRACT (SHO ONLY)	
	ALARM SYSTEM. FURNISH AND INSTALL DEVICES, COMPONENTS, ETC., AS DIRECTED BY ENFORCING AGENCY. • CONNECT ALARM CONTACT(S) OF SPRINKLER SYSTEM		MISCELLANEOUS	C/B CIRC CH COL	LICABLE CUIT BREAKER INTER HEIGHT OR SPECIAL HEIGHT DEVICE	NTS NOT TO SCALE	
	FLOW SWITCH AND SUPERVISED VALVE AND AIR DUCT DETECTORS TO FIRE ALARM SYSTEM AS REQUIRED.		INDICATES DIRECT CONNECTION TO EQUIPMENT	E EME	HWASHER ERGENCY		VIRED BY E.C
	IF REQUIRED, CONNECT FIRE ALARM DEVICES (AIR DUCT DETECTORS, ETC.) AND ANY OTHER ASSOCIATED EQUIPMENT TO DEDICATED 120V CIRCUIT.	S S ^{MS} S ^{MSR}	MOTOR RATED TOGGLE SWITCH, MANUAL STARTER WITH PILOT LIGHT, AND MANUAL STARTER WITH PILOT LIGHT WITH EXTERNAL RELAY FOR CONTROL OR MONITORING RESPECTIVELY - ALL MAY BE KEYED "K"	EMS ENE	RK UNDER DIVISION 26 RGY MANAGEMENT SYSTEM RGENCY POWER OFF	P.C. WORK UNDER DIVISION	
	PROVIDE LOCAL STATUS INDICATOR AND ALARM FOR ALARM DEVICES WHERE NOT CONNECTED TO FIRE		HEAVY DUTY DISCONNECT SWITCH (NON-FUSED) (LEFT) HEAVY DUTY DISCONNECT SWITCH (FUSED) (RIGHT)	ER EQU ERM ENE	JIPMENT ROOM RGY REDUCTION MAINTENANCE SWITCH RGENCY STANDBY RATING	S.C. WORK UNDER DIVISION SCCR SHORT CIRCUIT CURRE SPD SURGE PROTECTIVE DI	NT RATING
	ALARM SYSTEM. b. VERIFY ALL REQUIREMENTS AND FURNISH AND INSTALL IN ACCORDANCE WITH NFPA, NATIONAL, STATE, LOCAL CODES,		HAND DRYER	ETR EXIS	STING TO REMAIN CTRIC WATER COOLER STING	ST SHUNT TRIP TAAC TO ABOVE ACCESSIBLE	E CEILING
	LOCAL FIRE AUTHORITY HAVING JURISDICTION AND LANDLORD REQUIREMENTS.)	PLYWOOD EQUIPMENT BOARD	FBO FUR	NISHED BY OTHERS - INSTALLED AND ED BY E.C.	TR TAMPER RESISTANT TTB TELEPHONE TERMINAL TYP TYPICAL	BOARD
			ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD (DIMENSIONS MAY VARY / FLUSH OR SURFACE MOUNTED AS INDICATED)	FIBO FUR WIR	NISHED AND INSTALLED BY OTHERS - ED BY E.C.	UCR UNDER COUNTER REFF UL UNDERWRITER'S LABO	
			OIL FILLED TRANSFORMER	DISF FWE FUR	EPTACLE TO BE USED FOR A FLAT PANEL PLAY. NISHED WITH EQUIPMENT BY OTHERS -	U.L.S.E. LISTED FOR SERVICE E UNO UNLESS NOTED OR IND	NTRANCE
			LOW VOLTAGE THERMOSTAT (LEFT) AND TEMPERATURE SENSOR (RIGHT)	GD GAF	FALLED AND WIRED BY E.C. RBAGE DISPOSAL		
		L B	LINE VOLTAGE THERMOSTAT (LEFT) AND REVERSE ACTING THERMOSTAT (RIGHT)	GFI / GFCI GRC	OUND FAULT EQUIPMENT PROTECTION OUND FAULT CIRCUIT INTERRUPTER DEVICE OUND	VFD / VSD VARIABLE FREQUENCY VIF VERIFY IN FIELD VM VENDING MACHINE	1 SPEED DR
		E E	HUMIDITY STAT (LEFT) AND HUMIDITY SENSOR (RIGHT)	H.C. WOI	RK UNDER DIVISION 23 ND - OFF - AUTO" SWITCH	VP VANDAL PROOF W/WP WEATHERPROOF	
		P PS	PRESSURE STAT (LEFT) AND PRESSURE SENSOR (RIGHT)			WG WIRE GUARD WR WEATHER RESISTANT	
				-		RAPHIC LINE TYPES	
	Г			(UNLESS OTHERWISE	,		
			ELECTRIC DESIGN CRITERIA	(UNLESS OTHERWISE	,		
				WORK SHOWN BOLD- (UNLESS OTHERWISE	DASHED INDICATES SELECTIVE DEMOLITION \ INDICATED)	VORK	
			APPLICABLE BUILDING CODES				
	F						

EXISTING CONDITIONS - GENERAL NOTES

- INTENT OF DOCUMENTS: EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON VISUAL FIELD OBSERVATIONS AND THE REVIEW OF PREVIOUS DRAWINGS THAT MAY NOT HAVE BEEN CERTIFIED "AS-BUILTS". IT IS NOT THE INTENT OF THE ELECTRICAL DOCUMENTS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING ELECTRICAL WORK IS SHOWN TO A VERY LIMITED EXTENT ON THE DRAWINGS AND IS SHOWN FOR GENERAL PLANNING REFERENCE ONLY
- PRE-BID SURVEY: PERFORM A DETAILED PRE-BID WALK-THROUGH FIELD INSPECTION AND SURVEY TO REVIEW THE XISTING STRUCTURES AND PREMISES, TO ACCURATELY DETERMINE EXISTING CONDITIONS, AND TO DETERMINE SCOPE OF REQUIRED ELECTRICALLY RELATED WORK. INCLUDE APPLICABLE ACCESSIBLE CEILING CAVITY AREAS IN THIS INSPECTION.
- REUSE OF REMOVED MATERIALS: DO NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY INDICATED IN PROJECT DOCUMENTS. EXISTING WIRING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED IN PROJECT DOCUMENTS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE IN FIELD. EXISTING POWER DISTRIBUTION EQUIPMENT: WHERE MODIFICATIONS ARE MADE TO EXISTING POWER DISTRIBUTION EQUIPMENT, COMPLETELY RE-TYPE PANELBOARD DIRECTORIES USING ACCURATE "AS-BUILT" INFORMATION. WHEN ADDING COMPONENTS TO EXISTING POWER DISTRIBUTION EQUIPMENT, PROVIDE FULL SIZE (NO SPLIT OR TANDEM DEVICES) OVERCURRENT PROTECTION DEVICES (OCPs) TO MATCH THOSE ALREADY IN PLACE, INCLUDING MANUFACTURER, MODEL/SERIES, SHORT CIRCUIT CURRENT (SCCR/AIC) RATINGS. PROVIDE COMMON TRIPS (NO FIELD-INSTALLED HANDLE TIES) IN THE SAME GUTTER FOR MULTI-POLE DEVICES. PROVIDE SWITCHING DUTY (SWD), HACR AND HID RATINGS WHERE APPLICABLE FOR LOADS. PROVIDE HANDLE LOCK-ON DEVICES FOR EMERGENCY AND
- CRITICAL LOADS. EXISTING BRANCH CIRCUITS: MAINTAIN, AND RECONNECT IF REQUIRED, BRANCH CIRCUITS THAT ARE EXISTING TO REMAIN. UNLESS NOTED OTHERWISE, ALL CIRCUIT DESIGNATIONS SHOWN ON THE DRAWINGS INDICATE NEW CIRCUIT ASSIGNMENTS, NOT EXISTING. WHERE COLOR CODING OF BRANCH CIRCUIT CONDUCTORS DOES NOT COMPLY WITH NFPA 70 OR IS NOT CONSISTENT WITH EXISTING CONDITIONS, MODIFY TO COMPLY. ADDED LOADS TO EXISTING CIRCUITS: IN CASES WHERE NEW LOADS ARE INDICATED TO BE CONNECTED TO EXISTING CIRCUITS WITH EXISTING LOADS, METER THE EXISTING CIRCUIT IN ADVANCE AND ENSURE THE EXISTING PLUS ADDED
- LOAD DOES NOT EXCEED 80 PERCENT OF THE SOURCE CIRCUIT BREAKER AMPERE RATING. IF THAT LOAD IS EXCEEDED, NOTIFY DESIGN PROFESSIONAL. REASSIGNMENT OF EXISTING CIRCUITS: IN CASES WHERE EXISTING CIRCUITS ARE REUSED (BASED ON INFORMATION SHOWN ON DRAWINGS OR BASED ON FIELD CONDITIONS) BUT MUST BE CONNECTED TO BREAKERS OTHER THAN THEIR ORIGINAL BREAKER, MODIFY COLOR-CODING AS REQUIRED IF THE NEW BREAKER ASSIGNMENT IS CONNECTED TO A DIFFERENT LINE/PHASE THAN THE ORIGINAL ONE. USE MEANS AND METHODS COMPLIANT WITH NFPA 70 AND WITH AUTHORITIES HAVING JURISDICTION. ELECTRICAL WORK TO REMAIN OR BE RELOCATED: IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES OR WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO
- REMAIN OR TO BE RELOCATED. PROTECTIVE BARRIERS: PROVIDE AND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT FINISHED AREAS AND OTHER SYSTEM COMPONENTS. PROTECT ADJACENT INSTALLATIONS DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE. PREVENT AIRBORNE DUST AND PARTICULATE MATTER RESULTING FROM ELECTRICAL WORK FROM ENTERING OCCUPIED SPACES, AND FROM ENTERING AIR INTAKES TO OPERATING HVAC SYSTEMS. MEET WITH OWNER AND HVAC INSTALLER TO DETERMINE SPECIAL INDOOR AIR QUALITY (IAQ) REQUIREMENTS RELATED TO ELECTRICAL THAT MAY APPLY TO THIS PROJECT. COOPERATE FULLY WITH HVAC AQ REQUIREMENTS THAT AFFECT ELECTRICAL WORK AND ARE AFFECTED BY ELECTRICAL WORK.
- PENETRATIONS: MAKE REQUIRED ELECTRICAL OPENINGS THROUGH WALLS, FLOORS, ETC. IMMEDIATELY PRIOR TO INSTALLATION OF WORK. PROPERLY AND PERMANENTLY SEAL ELECTRICAL OPENINGS IMMEDIATELY AFTER INSTALLATION OF WORK. PROVIDE TEMPORARY SEALS FOR APPLICATIONS WHERE PENETRATIONS ARE MADE BUT CANNOT BE PERMANENTLY SEALED WITHIN FOUR HOURS. PRE-EXISTING CODE VIOLATIONS: INSPECT EXISTING ELECTRICAL WORK IN AREAS ACCESSED UNDER THIS PROJECT AND BRING INTO COMPLIANCE WITH NEPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVEREI IN THE IMMEDIATE PROJECT AREAS AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT THAT IT APPLIES TO PRE-EXISTING GENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN JUNCTION BOX KNOCKOUT, MINOR CONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE
- EXTENSIVE CODE OR SAFETY VIOLATIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE (DETAILED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT (IF ANY) ON THE CONSTRUCTION SCHEDULE. TEMPORARY LIGHTING AND POWER: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER PREVAILING CODES. PROVIDE SUFFICIENT LIGHTING AND POWER CENTERS THROUGHOUT INTERIOR OF NEW WORK OR RENOVATION SCOPE. PROVIDE GFCI PROTECTION FOR ALL WORK. COORDINATE WITH GENERAL CONTRACTOR AND OTHER TRADES, AND PROVIDE ANY ADDITIONAL TEMPORARY ELECTRICAL NEEDS THAT ARE REQUIRED. FULLY DEMOLISH TEMPORARY ELECTRIC BY END OF PROJECT LIPON RECEIVING WRITTEN PERMISSION FROM OWNER'S
- REPRESENTATIVE. TEMPORARY ELECTRICAL SERVICE(S) MAY BE DERIVED FROM EXISTING BUILDING ENERGIZED SERVICE. PROVIDE OVERCURRENT PROTECTION, DISCONNECTS, CABLES, CONDUCTORS, RACEWAY, ETC. ACCORDINGLY. PROVIDE TEMPORARY SERVICE FROM UTILITY IF PERMISSION TO USE EXISTING BUILDING POWER IS NOT GRANTED BY OWNER'S REPRESENTATIVE; ARRANGE WITH LOCAL UTILITY FOR TEMPORARY SERVICE AND PAY ASSOCIATED FEES FOR INSPECTIONS, CONNECTIONS, ETC., AND PAY FOR UTILITY ELECTRIC USAGE/CONSUMPTION COSTS. RESTORE ASSOCIATED SITE AND BUILDING MATERIALS TO THEIR PRE-CONSTRUCTION STATE AND CONDITION AFTER TEMPORARY LIGHTING AND POWER IS NO LONGER NEEDED. INTERIM LIFE-SAFETY PROVISIONS: PROVIDE INTERIM FIRE ALARM AND CODE MINIMUM LIGHTING IN DEMOLITION AND CONSTRUCTION AREAS. PROVIDE TEMPORARY PLASTIC COVERS, OBTAINED FROM SMOKE DETECTOR MANUFACTURER OR OBTAINED FROM A THIRD PARTY AND SPECIFICALLY APPROVED FOR SUCH USE BY SMOKE DETECTOR MANUFACTURER, OVER EXISTING SMOKE DETECTORS WITHIN PROJECT AREA, AND IN ADJACENT AREAS THAT ARE EXPOSED TO CONSTRUCTION-RELATED DUST OR AIRBORNE PARTICULATES. RÉMOVE ALL TEMPORARY LIFE SAFETY WORK WHEN NO LONGER NEEDED.
- INTERIM EGRESS PATH PROVISIONS: PROVIDE TEMPORARY UL 924 COMPLIANT EXIT AND/OR EGRESS LIGHTING ALONG EGRESS ROUTES THAT MUST REMAIN ACCESSIBLE DURING CONSTRUCTION. PROVIDE TEMPORARY FIRE ALARM SYSTEM PULL STATIONS AND AUDIO/VISUAL ALARM NOTIFICATION DEVICES ALONG ALL AFFECTED EGRESS ROUTES. REMOVE THIS SCOPE WHEN NO LONGER NEEDED.

2022 NEW YORK STATE BUILDING CODE (BASED ON THE 2015 INTERNATIONAL BUILDING CODE) 2017 NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) 2016 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

TESTING/COMMISSIONING FOR LIGHTING CONTROLS

LIGHTING CONTROL DEVICES AND SYSTEMS SHALL BE TESTED TO ENSURE THE HARDWARE AND SOFTWARE IS CALIBRATED, PROGRAMMED, AND IN PROPER WORKING ORDER. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED INSTALLATION CERTIFICATES AND SHALL PROVIDE MANUALS FOR LIGHTING CONTROL DEVICES TO OWNER PRIOR TO PROJECT CLOSE-OUT. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING WITH APPROPRIATE PARTIES TO ARRANGE FOR TESTING/COMMISSIONING OF THE LIGHTING CONTROL SYSTEMS AND SHALL BE RESPONSIBLE FOR ENSURING ALL REQUIRED FUNCTIONAL TESTING FORMS ARE COMPLETED AND SUBMITTED TO THE OWNER AND LOCAL AHJ PRIOR TO PROJECT CLOSE-OUT

COORDINATE UTILITY SERVICE WORK CONTAINED WITHIN THIS DRAWING SET WITH RESPECTIVE LOCAL UTILITY COMPANY. UTILITY COORDINATION HAS NOT BEEN PERFORMED AS PART OF THIS DRAWING SET. FAULT CURRENT VALUES SHOWN ON THE DRAWINGS ARE ASSUMED VALUES BASED ON SERVICE SIZE, AND EXPECTED UTILITY TRANSFORMER SIZE. VERIFY THE AVAILABLE FAULT CURRENT AND NOTIFY ENGINEER OF ANY DISCREPANCIES. OBTAIN AND COMPLY WITH ALL UTILITY INSTALLATION DETAILS AND STANDARDS.

CONTACT 811 "CALL BEFORE YOU DIG" SERVICE PRIOR TO COMMENCING WITH ANY UNDERGROUND WORK.

EXISTING CONDITIONS - DEMOLITION NOTES

- MEAN "DEMOLITION" OR "SELECTIVE DEMOLITION" AS APPLICABLE FOR THE RESPECTIVE SCOPE OF WORK. WHERE THE TERM "DEMOLISH". "REMOVE" OR SIMILAR TERMS ARE USED IN ELECTRICAL DOCUMENTS, INTERPRET TO MEAN "DISCONNECT, REMOVE, DISPOSE OF, AND REMOVE ALL RELATED ELECTRICAL CONDUIT, RACEWAYS, WIRING, CABLES, BOXES, SUPPORTS, ETC.
- GENERAL ACCOMMODATIONS: PROVIDE ELECTRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE. COORDINATE PHASING OF WORK CAREFULLY WITH OWNER PRIOR TO BEGINNING ELECTRICAL DEMOLITION WORK.
- REMOVAL OF ABANDONED WORK: REMOVE ACCESSIBLE ABANDONED, INACTIVE AND OBSOLETE RACEWAY SYSTEMS. EQUIPMENT, LUMINAIRES, DEVICES, CONDUIT, WIRING, CABLES, BOXES, SUPPORTS, CONTROLS, ETC. ABANDONED RACEWAYS EMBEDDED IN FLOORS, WALLS, AND CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH NEW INSTALLATIONS. THIS APPLIES FOR ALL ELECTRICAL WORK, AND ALL COMMUNICATIONS AND INFORMATION FECHNOLOGY TYPE WORK, INCLUDING ALL SUCH WORK ABOVE CEILINGS, ETC. REMOVE RELATED ABANDONED UNUSED RACEWAY BACK TO THE NEAREST RESPECTIVE "UPSTREAM" JUNCTION BOX THAT REMAINS ACTIVE EVEN IF OUTSIDE OF THE CONFINES OF THE PROJECT AREA. REMOVE ABANDONED UNUSED WIRING AND CABLES BACK TO
- RESPECTIVE SOURCES SOURCE EVEN IF SOURCES ARE OUTSIDE THE CONFINES OF THE PROJECT AREA. DE LIGE OF EVICTING COND EXISTING BRANCH CIRCUIT AND SYS CONSTRUCTION AND NOT CONFLICTING WITH OVERHEAD OR CEILING CAVITY REQUIREMENTS. MAY BE RE-USED AT THE DISCRETION OF THE ELECTRICAL INSTALLER IF IT COMPLIES WITH THESE CONTRACT DOCUMENTS AFTER ALL ABANDONED CONDUCTORS AND CABLES HAVE BEEN REMOVED FROM THEM. DO NOT EXCEED NFPA 70 REQUIRED CONDUIT FILL AND DO NOT INSTALL WIRING FED FROM DIFFERENT SOURCES IN COMMON CONDUIT.
- MODIFICATIONS TO ACCOMMODATE NEW WORK: REMOVE AND RELOCATE EQUIPMENT, LUMINAIRES, DEVICES, ONDUIT, RACEWAYS, WIRING, CABLES, BOXES, SUPPORTS, ETC. THAT CONFLICT WITH CONSTRUCTION RELATED WORK OF ALL TRADES AS NECESSARY TO ACCOMMODATE NEW WORK OF RESPECTIVE TRADES. REWORK AND EXTEND RACEWAY AND WIRING AS REQUIRED TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK. MAINTAIN (OR RECONNECT IF APPLICABLE) REMAINING WIRING. PROVIDE ELECTRICAL DISCONNECTIONS, AND RECONNECTIONS WHERE APPLICABLE, FOR EQUIPMENT TO BE REMOVED (OR RELOCATED) BY OTHER TRADES.
- CUTTING AND PATCHING: PERFORM CUTTING AND PATCHING REQUIRED FOR DEMOLITION, RESTORED TO MATCH SURROUNDING REMAINING SURFACES, INCLUDING FIRE/SMOKE RATINGS. LUMINAIRES: FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED FOR REUSE. REMOVE FROM EXISTING CEILINGS DURING DEMOLITION: PROTECT DURING CONSTRUCTION: CLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO MATCH BUILDING STANDARD) AND REINSTALL AT LOCATIONS INDICATED. FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED TO BE REMOVED AND TURNED OVER TO OWNER, THE LUMINAIRES SHALL BE DISCONNECTED, CAREFULLY REMOVED AND TURNED OVER TO OWNER. TRANSFER SUCH LUMINAIRES TO STORAGE AREA AS
- DIRECTED IN FIELD. DISPOSAL OF MATERIALS: REFER TO OWNER'S REPRESENTATIVE FOR DISPOSAL INSTRUCTIONS FOR ABANDONED ELECTRICAL MATERIALS REMOVED DURING DEMOLITION AND THEREAFTER. NEATLY STORE ELECTRICAL MATERIALS THAT THE OWNER ELECTS TO RETAIN AT THE SITE AS DESIGNATED BY THE OWNER'S REPRESENTATIVE. LEGALLY DISPOSE OF MATERIALS THAT THE OWNER ELECTS NOT TO RETAIN. DISCONNECT AND REMOVE ELECTRICAL MATERIALS DESIGNATED FOR SALVAGE (REMOVAL AND REUSE, OR FOR TURNING OVER TO OWNER) UNDAMAGED. DISCONNECT AND REMOVE WIRING AND "WHIPS" FROM EQUIPMENT TERMINAL POINTS, CAREFULLY TRANSPORT SALVAGED ELECTRICAL MATERIALS TO A PROTECTED ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD AND NEATLY STORE THEM GROUPED BY SYSTEM TYPE.
- CLEANING OF REUSED COMPONENTS: CLEAN COMPONENTS TO BE REUSED INSIDE AND OUT, AND REINSTALL WHERE INDICATED ON DRAWINGS. MODIFY AND EXTEND RELATED EXISTING WIRING IN CONDUIT ACCORDINGLY.

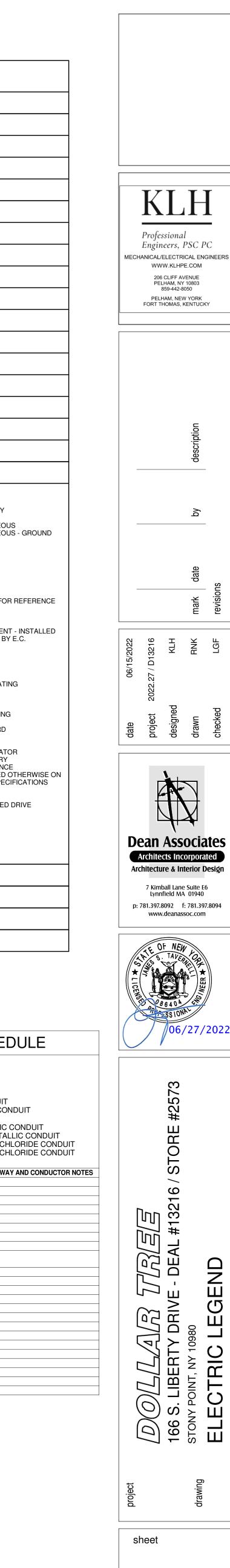
UTILITY COORDINATION - CONTRACTOR RESPONSIBILITY

DEFINITION OF DEMOLITION: WHERE THE TERM "DEMOLITION" IS USED IN ELECTRICAL DOCUMENTS, INTERPRET IT TO

ELECTRIC CONDUIT AND WIRE MATERIAL SCHEDULE

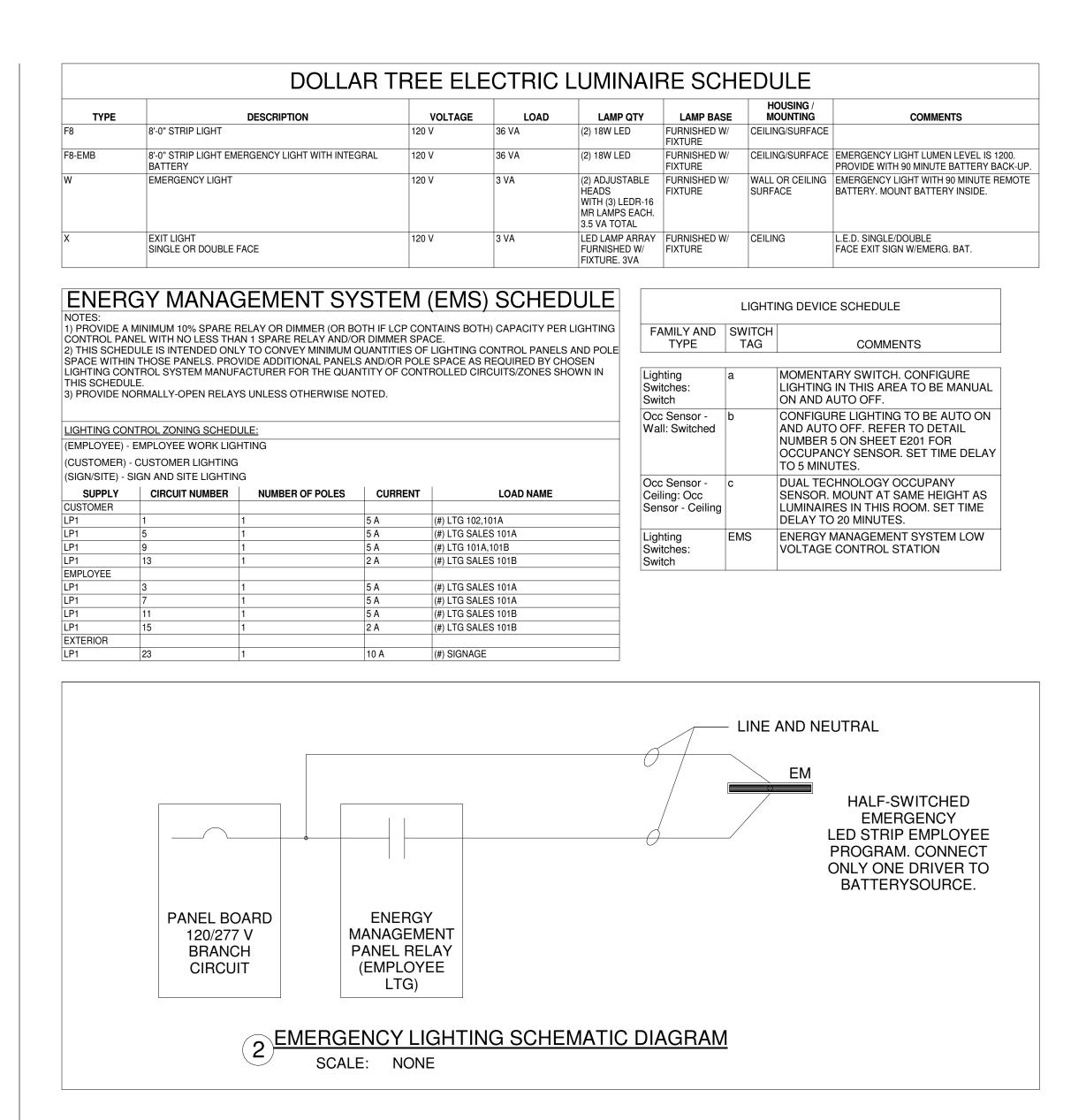
- MC METAL CLAD CABLE MI - MINERAL INSULATED CABLE
- HMC HEALTHCARE METAL CLAD CABLE USE - UNDERGROUND SERVICE ENTRANCE CABLE
- SE SERVICE ENTRANCE CABLE UF - UNDERGROUND FEEDER
- NM NON-METALLIC SHEATHED CABLE RMC - RIGID METAL CONDUIT RNC - RIGID NON-METALLIC CONDUIT
- RTRC REINFORCED THERMOSETTING RESIN CONDUIT LIM - LINE ISOLATION MONITOR
- ARC ALUMINUM RIGID CONDUIT EMT - ELECTRIC METALLIC TUBING ENT - ELECTRIC NON-METALLIC TUBING FMC - FLEXIBLE METALLIC CONDUIT GRC - GALVANIZED RIGID STEEL CONDUIT HDPE - HIGH DENSITY POLYETHYLENE CONDUIT IMC - INTERMEDIATE METAL CONDUIT LFMC - LIQUID-TIGHT FLEXIBILE METALLIC CONDUIT LFNC - LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT SCH 40 PVC - SCHEDULE 40 POLYVINYL CHLORIDE CONDUIT SCH 80 PVC - SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT

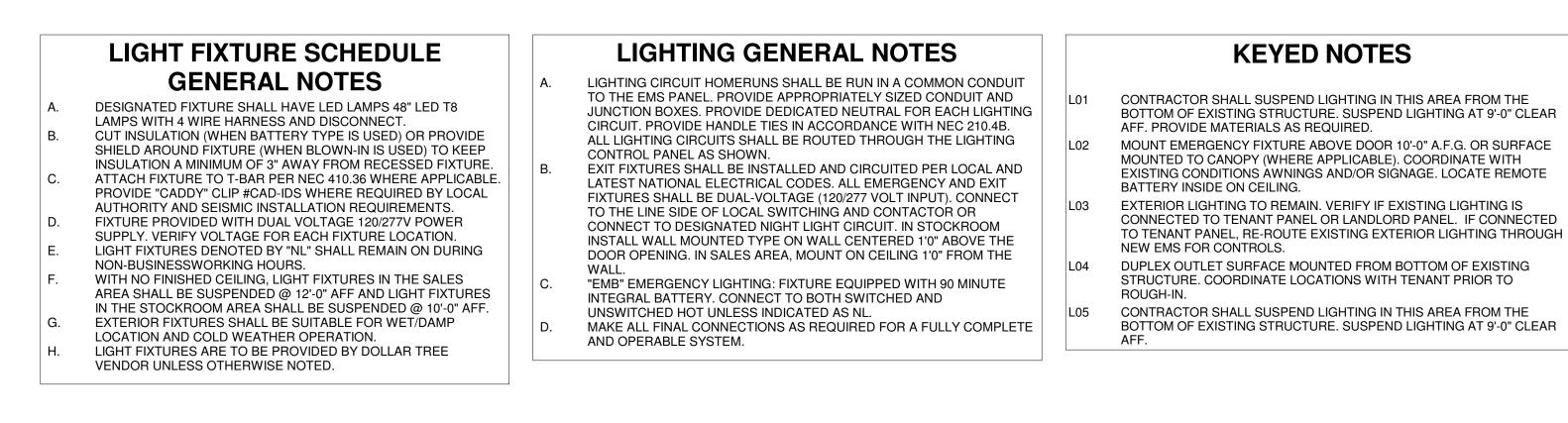
CONDUIT APPLICATION	CONDUCTOR TYPE	RACEWAY TYPE	RACEWAY
FIRE ALARM			
EXISTING HOLLOW PARTITIONS	NON-PLENUM RATED	EMT	
CONCEALED	NON-PLENUM RATED	EMT	
EXPOSED	NON-PLENUM RATED	EMT	
POWER - INDOOR			
EXISTING HOLLOW PARTITIONS	THHN	MC	
CONCEALED	THHN	MC	
VERTICAL RISERS FROM BELOW GRADE INCLUDING ELBOW	XHHW-2	RMC (GRC)	
CONNECTION TO SYSTEMS FURNITURE	THHN	LFMC	
LUMINAIRE WHIPS IN ACCESSIBLE CEILING, 72" MAX	THHN	MC	
CONNECTION TO VIBRATING EQUIPMENT, 72" MAX	THHN	LFMC	
EXPOSED	THHN	EMT	
UNDERGROUND	XHHW-2	RNC (SCH 40 PVC)	
POWER - OUTDOOR			
EXPOSED	XHHW-2	RMC (GRC)	
EXPOSED TO DIRECT SUNLIGHT, ROOF	XHHW-2	RMC (GRC)	
TECHNOLOGY			
EXISTING HOLLOW PARTITIONS	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE INACCESSIBLE CEILINGS	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE ACCESSIBLE CEILINGS	PLENUM RATED	J-HOOKS	

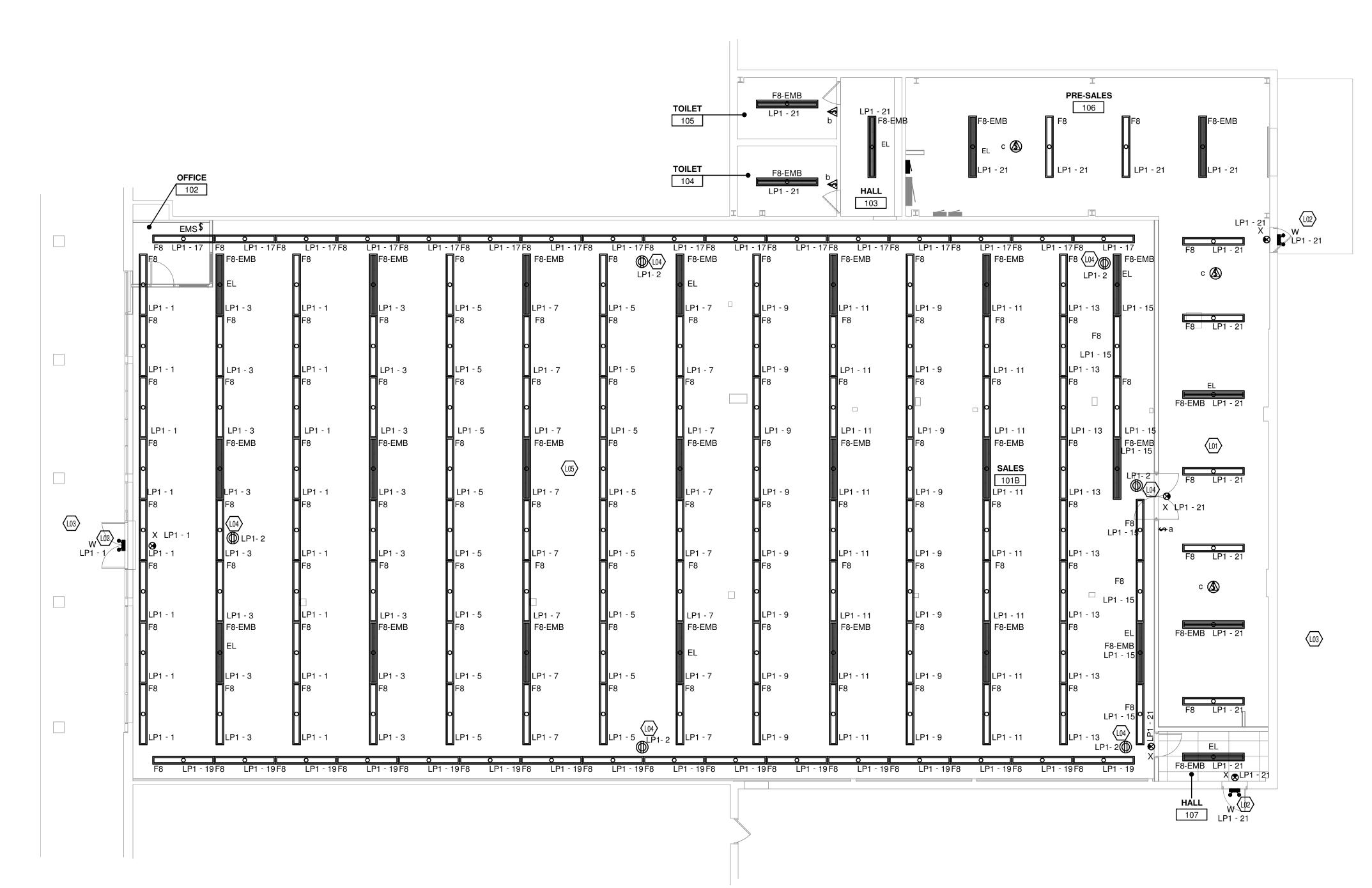


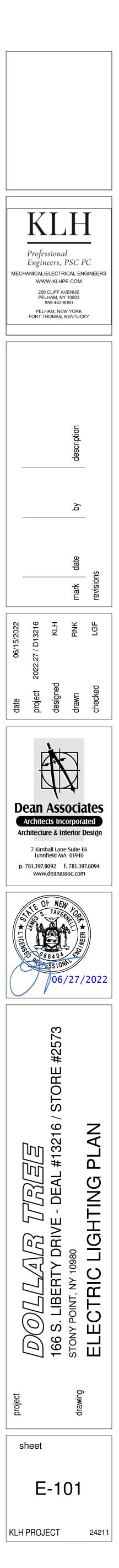
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KLH PROJECT







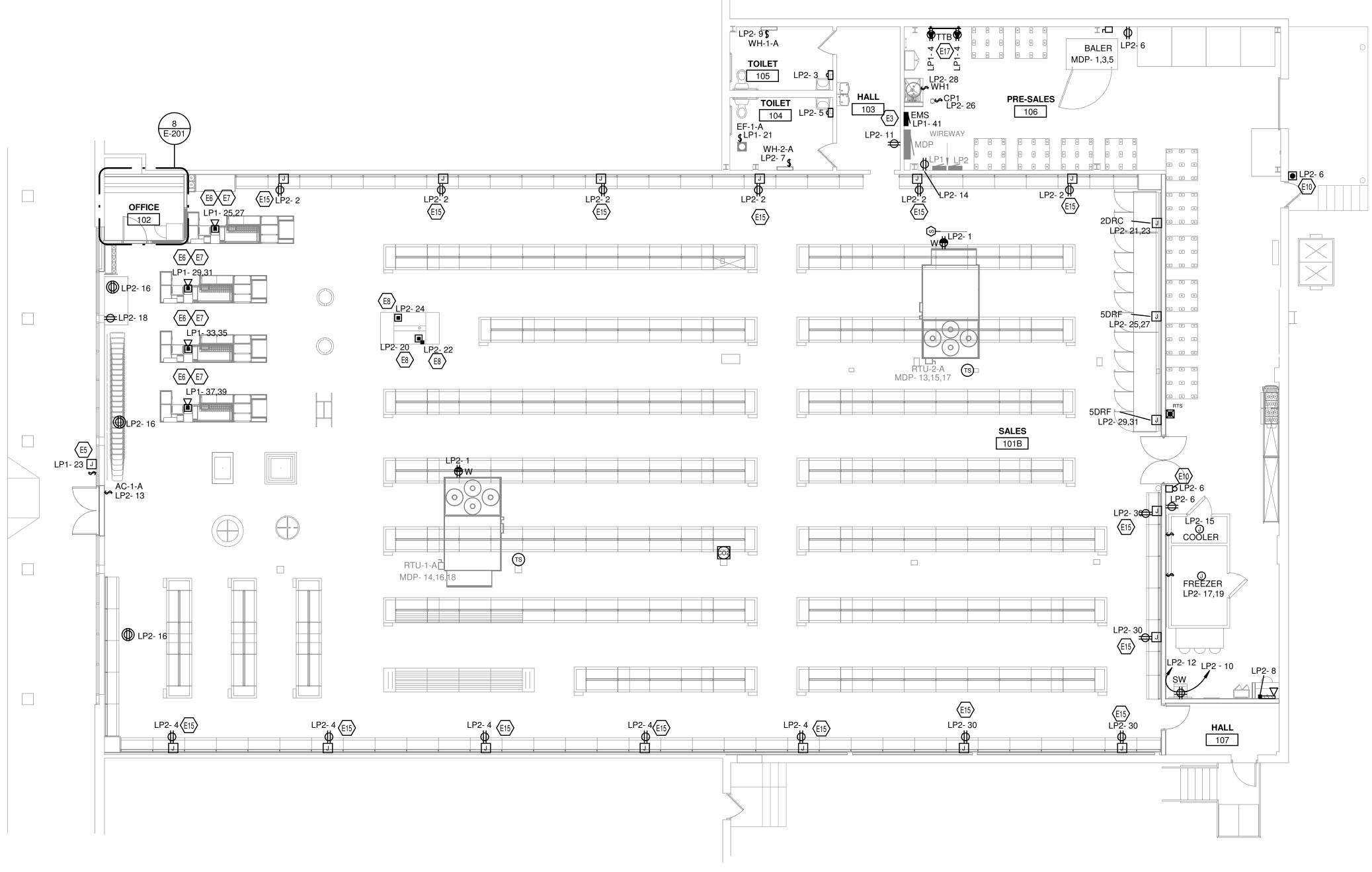




										ELE	CT	RIC		20	ORE	DINA		I SC
ABBREVIATIONS					CON	TRACTC	OR TYPE								мото	R CONTI	ROL TYPE	
MC MOTO SD DUCT CN CONT TS TOGG C/B H.A.C. FUSE FUSE FLA OPER MCA MINIM	L DISCONNECT R CONTROL (POV SMOKE DETECTO ROLS LE SWITCH R. CIRCUIT BREA AT LOCAL DISCO ATING FULL LOAI UM CIRCUIT AMP AND PLUG CONN	OR KER AT SOUF NNECT (VERI D AMPS ACITY			EC EX FC GC HC MFR PC OR	E F C H F	EXISTING FIRE PRC GENERAI HVAC CC MANUFAO PLUMBIN		CONTRAC CTOR DR ACTOR	TOR					CS MCC MG MS VFD MSR OV	MOT MAG MAN VARI MAN	BINATION OR CONTF NETIC STA JAL STAR ABLE FRE(UAL STAR RCURREN	ROL STAF RTER OF FER QUENCY FER W/ C
	DESCRI	PTION	VOLTAGE	PHASE	EMERGE	INCY	HP	WATTS	нтск	W FI	LA	MCA	oc	P	FED F	ROM	DC FURN	DC INS
AC-1-A	Air Curtain w/No F	-	120 V	1								6				-	EC	EC
EF-1-A	HVAC Fan		120 V	1		0).25										EC	EC
RTU-1-A	Packaged Rooftop			3								24	150					
RTU-2-A	Packaged Rooftop			3					4.5			24	150					EX
WH-1-A WH-2-A	Electric Unit Heate Electric Unit Heate		120 V 120 V	1					1.5 1.5			2.5 2.5					EC EC	EC EC
		//	120 1	1					1.5		1	2.0					-0	120
CN CONT TS TOGG C/B H.A.C. FUSE FUSE FLA OPER MCA MINIM	SMOKE DETECTO ROLS ILE SWITCH R. CIRCUIT BREA AT LOCAL DISCO ATING FULL LOAI UM CIRCUIT AMP AND PLUG CONI	KER AT SOUF NNECT (VERI D AMPS PACITY			FC GC HC MFR PC OR	gen HVA Man Plu	NERAL C AC CONT NUFACTU JMBING (ONTRACT RACTOR						MG MS VFD MSR OV	N V N	/ANUAL /ARIABLE //ANUAL	C STARTE STARTER E FREQUEN STARTER \ RRENT PR(NCY DRIN N/ CONT
EQUIPMENT MAR	R .	DESCRIP	TION		VOLTS (V)	PHAS	E EME	RGENCY	BHP (HP)		HTG	KW (kW)	WATTS	S (W)	FLA (A)	MCA (A) OCP (A)	DC
CP1					120	1				1/40	_				.52			
DF1 WH1		LECTRIC WATE		HEATER	120 120	1					2							
FIXTURE ID	DESCRIPTION		P	_EC ⁻	VOLT		00	P			CC	OMMENTS	;				FOUR	E
FREEZER	WALK-IN FREEZER	5/19 VA	2		208 V		30	-	VIDE 4"X4" INECTION T		-	-			-		MARI	ent suf K fr
								TER	MINATE AT	THIS JUN	CTION B	OX. PROV	IDE LOC	CAL DIS	SCONNEC	T FOR	AC-1-A	LP2
									EZER REFF								EF-1-A	LP1
									FINAL CON								WH-1-A	LP2
								OFS	START-UP.								WH-2-A	LP2
COOLER	WALK-IN COOLER		1		120 V		20		ER TO FRE		-							
2DRC	REACH-IN 2-DR COOLER	3391 VA	2		208 V		20	DISC 15' L MAN CON	VIDE NEUT Connect F Long Whip Nufacture Nection T RT-UP.	or unit. From Bo R's Repr	PROVID X FOR C RESENTA	E JUNCTIO	ON BOX (ON TO E L MAKE	AT 100 QUIPN THE FI)" AFF. PR(MENT. THE NAL			
5DRF	REACH-IN 5-DR FREEZER	6240 VA	2		208 V		30	DISC 15' L MAN CON	DVIDE NEUT CONNECT F LONG WHIP NUFACTURE INECTION T RT-UP.	or Unit. From Bo R's Repr	PROVID X FOR C RESENTA	E JUNCTIO	ON BOX (ON TO E L MAKE ⁻	AT 100 QUIPN THE FI)" AFF. PR(MENT. THE NAL			
5DRF	REACH-IN 5-DR FREEZER	6240 VA	2		208 V		30	DISC 15' L MAN CON	DVIDE NEUT CONNECT F LONG WHIP NUFACTURE INECTION T RT-UP.	or unit. From Bo R's Repr	PROVID X FOR C RESENTA	E JUNCTIO	ON BOX . ON TO E L MAKE	AT 100 QUIPN THE FI)" AFF. PRO MENT. THE NAL			

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ы	DC WIRE	МС ТҮР	PE MC	URN		√ST	MC W	/IRE	CN TYPE	CN FU	RN C	CN INST	CN WIR	E FA	SHUTDOW	AVAILABLI
	EC	MG	MFR	-	MFR		MFR	L	INE	HC	EC)	EC	NA		1044
	EC	MG	MFR		MFR		MFR	Ν	/AN	EC	EC		EC	NA		2791
	EX	EX	EX		EX		MFR		BAS	OR	OF		OR	NA		0
	EX	EX	EX		EX		EX		BAS	OR	OF		OR	NA		0
	EC	MG	MFR		MFR		MFR		NT	MFR	MF		MFR	NA		1331
	EC	MG	MFR		MFR		MFR		NT	MFR	MF		MFR	NA		2125
NTA	ACT							TC CPT BAS LOW LINE	CC BU LC	JILDING / W VOLT	POWE AUTOM AGE C	R TRANS MATION S ONTROL ONTROL	S			
ROI	_ RELAY							RLINI MAN FA CO INT	MA FIF CA	ANUAL RE ALAR ARBON M	ACTINO M ONOX	G LINE V (IDE SEN QUIPMEN		THERM	NOSTAT	
ROI N	PE DC		DC INST	-				RLIN MAN FA CO INT	MA FIF CA IN	ANUAL RE ALAR ARBON M TEGRAL	ACTINO M ONOX TO EQ	IDE SEN UIPMEN	SOR T PE CN	THERN FURN	CN INST	
ROI N	YE DC EC	ł	EC	EC	١	MG	1	RLIN MAN FA CO INT MC FU MFR	MA FIF CA IN RN MCI MFR	ANUAL RE ALAR ARBON M TEGRAL INST M MF	ACTINO M ONOX TO EQ C WIRE R	IDE SEN UIPMEN	SOR T PE CN PC	FURN	CN INST PC	PC
ROI N	PE DC EC EC	1	EC EC	EC EC	1	MG MG	1	RLIN MAN FA CO INT	MA FIF CA IN	ANUAL RE ALAR ARBON M TEGRAL	ACTINO M ONOX TO EQ C WIRE R	IDE SEN UIPMEN E CN TY LINE INT	SOR T PE CN PC MFR	FURN	CN INST PC MFR	PC MFR
TYP	YE DC EC	F	EC EC EC	EC EC EC	 	MG MG 	-	RLINI MAN FA CO INT MC FU MFR MFR	MA FIF CA IN ⁻ RN MC I MFR MFR 	ANUAL RE ALAR ARBON M TEGRAL MF MF	ACTINO M ONOX TO EQ C WIRE R R	IDE SEN DUIPMEN E CN TY LINE INT INT	SOR T PE CN PC MFR MFR	FURN	CN INST PC MFR	PC
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	ре DC EC EC EC FC FC FC Y		EC EC EQ G. (KV	EC EC UIF	PME /AILABI FAULT :URREN 44	MG MG EN		RLINI MAN FA CO INT MFR MFR MFR	RN MC I CA IN MFR MFR PPL HTG	ANUAL RE ALAR ARBON M TEGRAL MF MF 	ACTINO MONOX TO EQ CHIER R R P (A	E CN TY LINE INT E CN TY LINE INT EDL	SOR T PC MFR MFR	FURN BREA RATIN	CN INST PC MFR MFR	PC MFR
	РЕ DC EC EC EC FC FC Y CKT 13		EC EC EC G. (KV 1.73	EC EC UIF AV A) C	PME FAULT CURREN 44 91	MG MG EN LE IT V 12	IT S 20 V	RLINI MAN FA CO INT MFR MFR MFR SUI	RN MA FIF CA IN MFR MFR PPL HTG	NUAL RE ALAR RBON M TEGRAL MF MF Y S(ACTINO MONOX TO EQ CHIER R R P (A	E CN TY LINE INT E CN TY LINE INT EDL	SOR T PC MFR MFR	FURN BREA RATIN 20	CN INST PC MFR MFR	PC MFR

	GE	NERAL ELECTRICAL NOTES
۹.	VISIT T	E SUBMITTING THE BID PROPOSAL, THE CONTRACTOR SHALL THE JOB SITE AND FULLY ACQUAINT HIMSELF WITH THE JOB TIONS AND VERIFY SERVICE CONNECTIONS, INCLUDING ALL
	NECES	SARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND JCTORS, SWITCH GEAR, METERING, CABLE CHARGES ETC.,
	WHETH	HER SHOWN ON DRAWINGS OR NOT BUT REQUIRED BY SERVIC Y CO. TO MAKE A COMPLETE AND OPERATING ELECTRICAL
	SERVIO	CE WITHOUT ADDITIONAL COST TO THE TENANT. VERIFY CES AND CHARGES WITH POWER AND TELEPHONE COMPANIES
3.	CONTF	RACTOR SHALL VERIFY ALL REQUIREMENTS OF MECHANICAL MENT WITH MECHANICAL DRAWINGS AND SPECIFICATIONS, AN
	SHALL	FURNISH AND INSTALL ALL ITEMS REQUIRED BY THE RACTOR FOR COMPLETE INSTALLATION.
).	VERIFY WITH C	(LOCATION AND REQUIREMENTS OF MECHANICAL EQUIPMENT CONTRACTOR, (DOOR HEATERS, UNIT HEATERS, ROOF TOP TRANSFER FANS, ETC.).
).	ELECT	RICAL WORK AND MATERIALS SHALL COMPLY WITH LATEST AND ALL LOCAL CODES AND ORDINANCES. IN CASES OF
	CONFL APPLY	ICT AMONG REQUIREMENTS, THE MOST RESTRICTIVE SHALL
	OTHEF	DNDUCTORS SHALL BE # 12 AWG COPPER. EXCEPT AS RWISE NOTED OR AS REQUIRED FOR VOLTAGE DROP (SEE S.). ALL CONDUIT SHALL BE 1/2" MINIMUM EXCEPT AS OTHERWI
	NOTED	O OR AS REQUIRED FOR CONDUCTORS. IT'S ELECTRICAL EQUIPMENT SHALL BE RELOCATED AS
	REQUI	RED TO MINIMIZE LENGTH OF CONDUIT/CONDUCTOR BETWEEN CE DISCONNECT SWITCH AND PANEL "MDP". OBTAIN APPROVA
	FROM	TENANT'S ARCHITECTURAL DEPARTMENT OF PROPOSED ION PRIOR TO INSTALLATION. COST CLAIMS FOR
		JIT/CONDUCTOR IN EXCESS OF BASE BID WILL NOT BE DERED IF PANEL RELOCATION IS NOT PROPOSED TO MINIMIZE
à.		COSTS PRIOR TO INSTALLATION. HONE: FURNISH AND INSTALL ALL NECESSARY CONDUIT, DEVIC
ł.	NEW T	S AND PLATES. ELEPHONE SERVICE TO TENANT'S SPACE. NEW TELEPHONE
	CO. AS	MENT BOARD. COORDINATE WITH LANDLORD AND TELEPHONE © REQUIRED FOR INSTALLING THIS SERVICE.
		SH AND INSTALL 3/4" CONDUIT FROM EACH TELEPHONE OUTLE TO CEILING CAVITY, OR UP TO JOIST WHERE NO CEILING IS I ED.
•	-	LARM SYSTEM: IF THERE IS NO EXISTING FIRE ALARM SYSTEM AND THE
	u.	NATIONAL, STATE, OR LOCAL CODES, OR LOCAL FIRE AUTHORITY HAVING JURISDICTION NOW REQUIRES A FIRE
		ALARM SYSTEM. FURNISH AND INSTALL DEVICES, COMPONENTS, ETC., AS DIRECTED BY ENFORCING AGENCY.
		CONNECT ALARM CONTACT(S) OF SPRINKLER SYSTEM FLOW SWITCH AND SUPERVISED VALVE AND AIR DUC
		 DETECTORS TO FIRE ALARM SYSTEM AS REQUIRED. IF REQUIRED, CONNECT FIRE ALARM DEVICES (AIR
		DUCT DETECTORS, ETC.) AND ANY OTHER ASSOCIATE EQUIPMENT TO DEDICATED 120V CIRCUIT.
		 PROVIDE LOCAL STATUS INDICATOR AND ALARM FOR ALARM DEVICES WHERE NOT CONNECTED TO FIRE ALARM SYSTEM.
	b.	VERIFY ALL REQUIREMENTS AND FURNISH AND INSTALL IN ACCORDANCE WITH NFPA, NATIONAL, STATE, LOCAL CODES,
		LOCAL FIRE AUTHORITY HAVING JURISDICTION AND LANDLOF REQUIREMENTS.



RICAL NOTES

- JAINT HIMSELF WITH THE JOB ONNECTIONS, INCLUDING ALL NUMBER OF CONDUITS AND RING, CABLE CHARGES ETC., OR NOT BUT REQUIRED BY SERVICE AND OPERATING ELECTRICAL TO THE TENANT. VERIFY VER AND TELEPHONE COMPANIES. QUIREMENTS OF MECHANICAL WINGS AND SPECIFICATIONS, AND EMS REQUIRED BY THE
- ALLATION. ITS OF MECHANICAL EQUIPMENT RS, UNIT HEATERS, ROOF TOP SHALL COMPLY WITH LATEST ORDINANCES. IN CASES OF THE MOST RESTRICTIVE SHALL
- NG COPPER. EXCEPT AS ED FOR VOLTAGE DROP (SEE " MINIMUM EXCEPT AS OTHERWISE UCTORS.
- SHALL BE RELOCATED AS CONDUIT/CONDUCTOR BETWEEN PANEL "MDP". OBTAIN APPROVAL EPARTMENT OF PROPOSED COST CLAIMS FOR F BASE BID WILL NOT BE IS NOT PROPOSED TO MINIMIZE
- ALL NECESSARY CONDUIT, DEVICE ANT'S SPACE. NEW TELEPHONE ITH LANDLORD AND TELEPHONE HIS SERVICE.
- FROM EACH TELEPHONE OUTLET O JOIST WHERE NO CEILING IS E ALARM SYSTEM AND THE
- CODES, OR LOCAL FIRE CTION NOW REQUIRES A FIRE ID INSTALL DEVICES, CTED BY ENFORCING AGENCY. NTACT(S) OF SPRINKLER SYSTEM UPERVISED VALVE AND AIR DUCT E ALARM SYSTEM AS REQUIRED. ECT FIRE ALARM DEVICES (AIR TC.) AND ANY OTHER ASSOCIATED CATED 120V CIRCUIT. TUS INDICATOR AND ALARM FOR IERE NOT CONNECTED TO FIRE
- AND FURNISH AND INSTALL IN NATIONAL, STATE, LOCAL CODES, ING JURISDICTION AND LANDLORD

GENERAL POWER PLAN NOTES

- A. <u>EQUIPMENT COORDINATION SCHEDULES</u>: REFER TO EQUIPMENT COORDINATION SCHEDULES FOR REQUIREMENTS ASSOCIATED WITH EQUIPMENT CIRCUITING, CONNECTIONS, ANCILLARY DEVICES AND EQUIPMENT, ETC. COORDINATE LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT WITH RESPECTIVE EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO ORDERING ANY RELATED MATERIALS OR COMMENCING WITH ANY RELATED ROUGH-IN WORK.
- TECHNOLOGY SYSTEMS: PROVIDE RACEWAY AND PATHWAY SYSTEMS FOR ALL TECHNOLOGY WORK. INCLUDE OUTLET BOXES, CONDUITS, RACEWAYS, J-HOOKS, CABLE TRAY, ETC. AS REQUIRED FOR COMPLETE OPERATIONAL SYSTEMS. COORDINATE ALL RELATED WORK (INCLUDING ASSOCIATED POWER) WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), FIELD CONDITIONS, FURNITURE INSTALLER(S), TECHNOLOGY INSTALLER(S) AND WORK OF OTHER TRADES AND SUPPLIERS/INSTALLERS AS APPLICABLE. TERMINATE ALL CONDUITS FROM OUTLET BOXES TO NEAREST ACCESSIBLE CEILING CAVITY, OR TO OVERHEAD STRUCTURAL SPACE FOR AREAS WITH NO CEILINGS. PROVIDE CONDUITS WITH SWEEP BENDS, PULL STRINGS, PLASTIC BUSHINGS AND IDENTIFICATION AT OVERHEAD ENDS.
- PROVIDE BLANK WALL PLATES TO MATCH WIRING DEVICE WALL PLATES. STOREFRONT WINDOWS: INSTALL RECEPTACLE(S) INDICATED ABOVE STOREFRONT WINDOWS WITHIN 18 INCHES OF THE TOP OF STOREFRONT WINDOWS, AND INSTALL COMPLIANT WITH NEC, INCLUDING ARTICLE 210.62.
 <u>GFCI PROTECTION</u>: PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL FOR ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS
- INSTALLED IN/FOR THE FOLLOWING LOCATIONS/APPLICATIONS: BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, SINKS (WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FEET FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK), INDOOR WET LOCATIONS, VENDING MACHINES AND AREAS, ELECTRIC WATER COOLERS, LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES, AND GARAGES, SERVICE BAYS, AND SIMILAR AREAS OTHER THAN VEHICLE EXHIBITION HALLS AND SHOWROOMS. PROVIDE GFCI RECEPTACLES AT LOCATIONS THAT ARE AND WILL REMAIN READILY ACCESSIBLE. ELSEWHERE PROVIDE GFCI PROTECTION AT THE RESPECTIVE SOURCE CIRCUIT BREAKER. <u>TRIM AND DOOR FINISHES</u>: PROVIDE FACTORY-PAINTED OR FIELD-PAINTED TRIMS AND DOORS TO MATCH WALL FINISH COLOR FOR ALL PANELBOARDS AND SIMILAR
- EQUIPMENT THAT ARE INSTALLED RECESSED IN FINISHED WALLS. IF FIELD-PAINTED, PAINT ALL SIDES AND EDGES WITH TWO COATS OF PAINT BEFORE INSTALLATION, AND LET DRY BEFORE INSTALLING THEM. SIGNAGE: COORDINATE ALL SIGNAGE REQUIREMENTS WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), SIGNAGE SUPPLIERS AND INSTALLERS, AND ARCHITECT TO DETERMINE SPECIFICS REGARDING LOCATIONS, POWER, CONTROL, AND OTHER PERTINENT INFORMATION. PROVIDE POWER (ON DEDICATED CIRCUIT(S)) FOR SIGNAGE REQUIRING POWER CONNECTIONS. PROVIDE PHOTOCELL AND TIME-BASED CONTROL. CONFIGURED AS DIRECTED BY OWNER. PROVIDE ALL ELECTRICAL WORK. INCLUDING DISCONNECTING MEANS, COMPLIANT WITH ARTICLE 600 OF NFPA

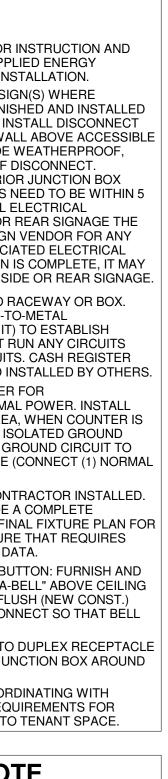
70. COMPLY WITH LANDLORD REQUIREMENTS WHERE APPLICABLE.

		KEYED NOTES
E	Ξ3	CONTRACTOR SHALL REFER TO EMS SHEETS FOR RESPONSIBILITIES FOR INSTALLING TENANT SUPPL MANAGEMENT SYSTEM PRIOR TO BIDDING AND INS
E	5	PROVIDE ROUGH IN FOR TENANT STOREFRONT SIG APPLICABLE. FINAL CONNECTIONS WILL BE FURNIS BY TENANT'S SIGN CONTRACTOR. FURNISH AND INS AND JUNCTION BOXES W/6' WHIP ON INTERIOR WAL CEILING. WHERE INSTALLED OUTDOORS PROVIDE V INSULATED JUNCTION BOX AND WEATHERPROOF D CONTRACTOR SHALL COORDINATE FINAL EXTERIOR LOCATION WITH SIGN VENDOR. JUNCTION BOXES N FEET OF SIGN FOR SIGN VENDOR TO MAKE FINAL E CONNECTION. IF STORE HAS ADDITIONAL SIDE OR F CONTRACTOR SHALL COORDINATE WITH THE SIGN ADDITIONAL EXTERIOR SIGNAGE AND THE ASSOCIA REQUIREMENTS. AFTER THE ELECTRICAL DESIGN I BE DETERMINED THAT CERTAIN SITES REQUIRE SID
E	Ξ6	DO NOT CONNECT "ISOLATED" GROUND WIRE TO R. CONDUIT AND BOX SHALL BE METAL AND METAL-TO CONNECTORS SHALL BE USED (NO FLEX CONDUIT) GROUND PATH FOR BOX AND RACEWAY. DO NOT R WITH CASH REGISTER OR COMPUTER (IG) CIRCUITS DATA SYSTEM CABLE SHALL BE FURNISHED AND IN
E	27	THREE-CHANNEL TELEPOWER POLE WITH DIVIDER TELEPHONE/DATA, ISOLATED POWER, AND NORMAI TELEPOWER POLE AS SHOWN AT CHECKOUT AREA SET. POWER POLE WILL BE FURNISHED WITH (1) ISO TWIST LOCK RECEPTACLE (CONNECT ISOLATED GF THIS RECEPTACLE) AND (1) DUPLEX RECEPTACLE (POWER CIRCUIT TO THIS RECEPTACLE).
E	Ξ8	POWER POLES ARE OWNER FURNISHED AND CONT PROVIDE ALL NECESSARY MATERIAL TO PROVIDE A INSTALLATION. CONTRACTOR SHALL REFER TO FIN SNACK ZONE, CHECKOUT AND ANY OTHER FIXTURE POWER PRIOR TO INSTALLING ELECTRICAL AND DA
E	∃10	SIGNAL SYSTEMS: REAR DOOR BELL AND PUSH-BU INSTALL AN EDWARDS #55-6G5, 24V AC "ADAPT-A-E AND A #852 WEATHERPROOF PUSH-BUTTON IN FLL SWITCH BOX AT TENANT SPACE BACK DOOR. CONI SOUNDS WHEN PUSH-BUTTON IS PRESSED.
E	Ξ15	MOUNT ON FLOOR AND MAKE MC CONNECTION TO INSTALLED IN FIXTURE KICK PLATE. ASSEMBLE JUN INSTALLED FIXTURE.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH E17 LANDLORD AND/OR LOCAL UTILITY COMPANY REQUIREMENTS FOR BRINGING A COMPLETE TELEPHONE SERVICE INTO TENANT SPACE.

BID ALTERNATE NOTE

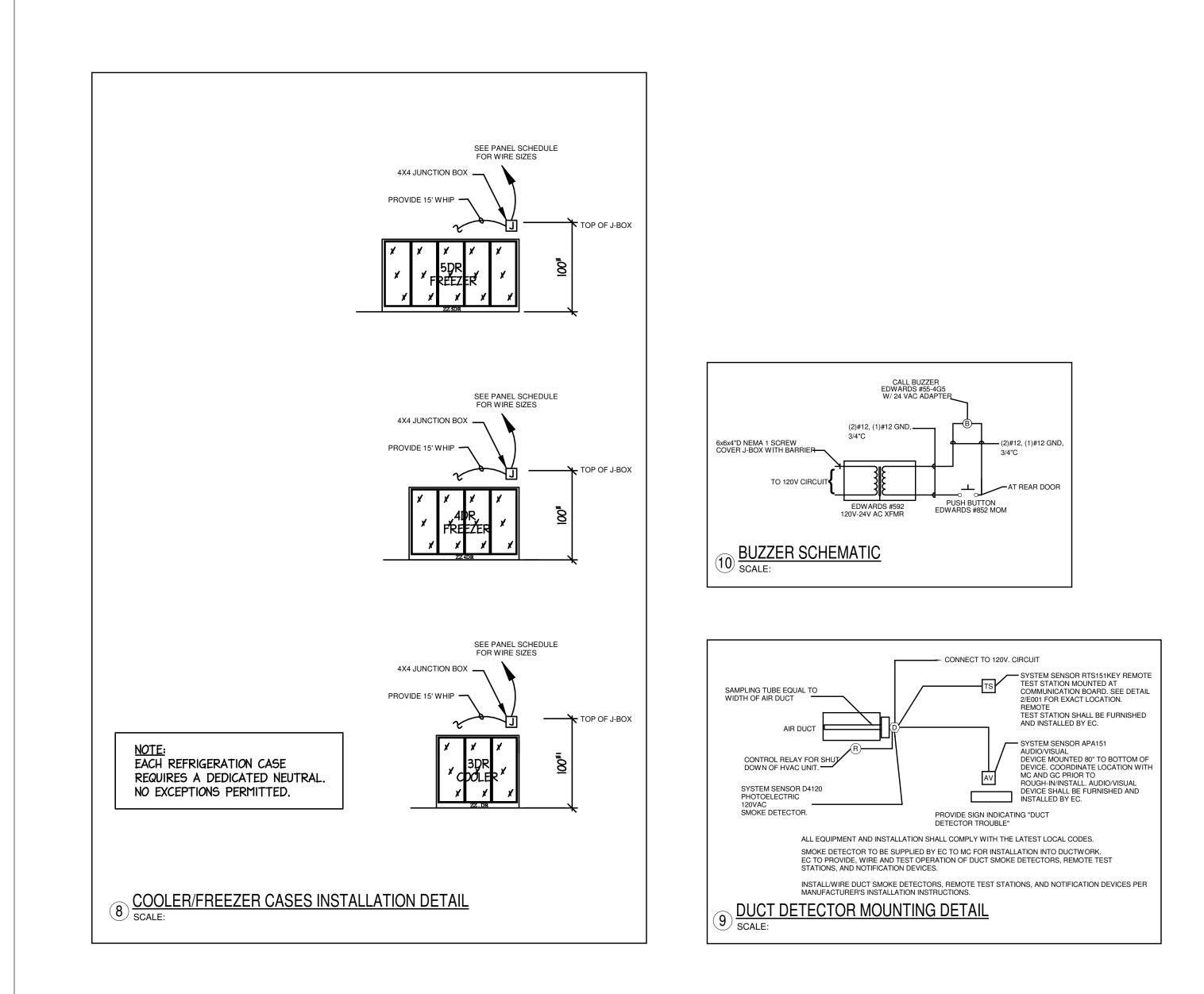
DISCONNECT D2 AND THE WIREWAY AND RE-FEEDING THE WIREWAY FROM A NEW 200A/3P BREAKER IN PANEL MDP.

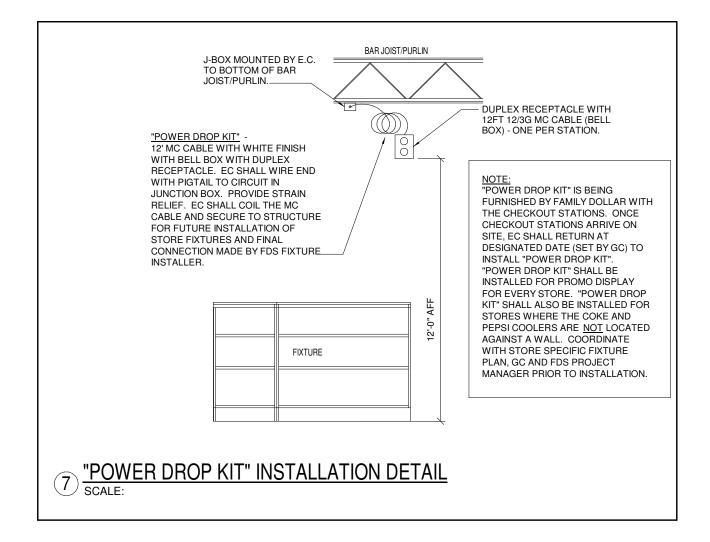


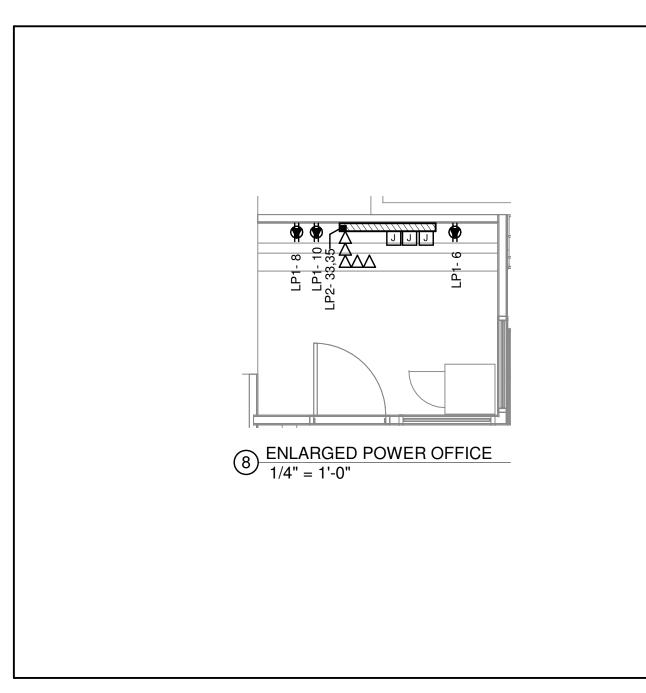










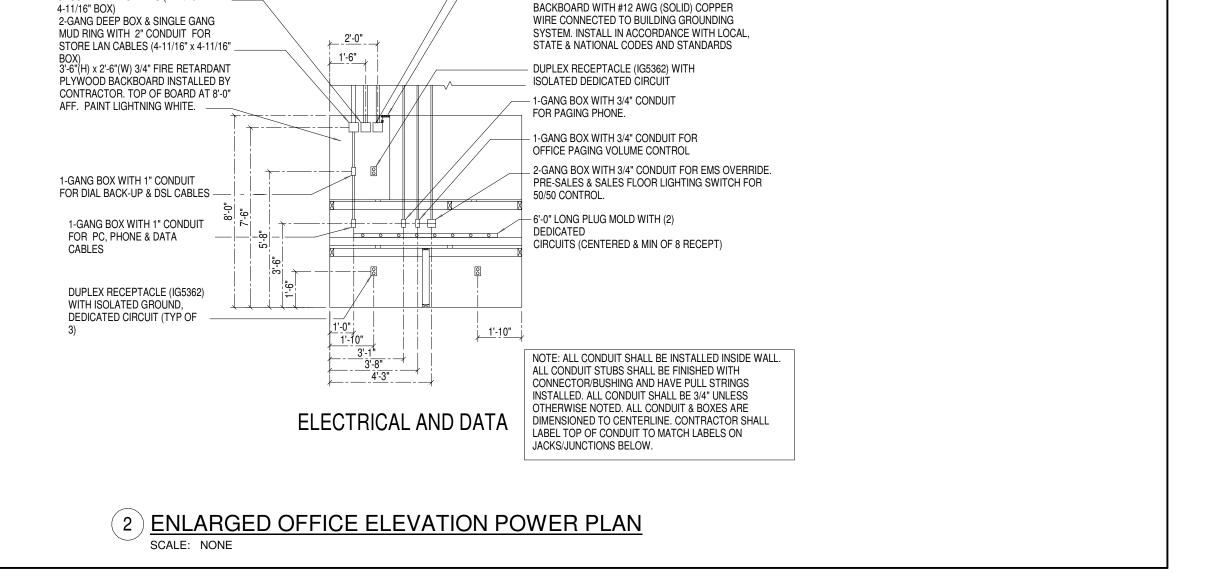


2-GANG DEEP BOX & SINGLE GANG

MUD RING WITH 2" CONDUIT FOR

SECURITY LAN CABLES (4-11/16" x

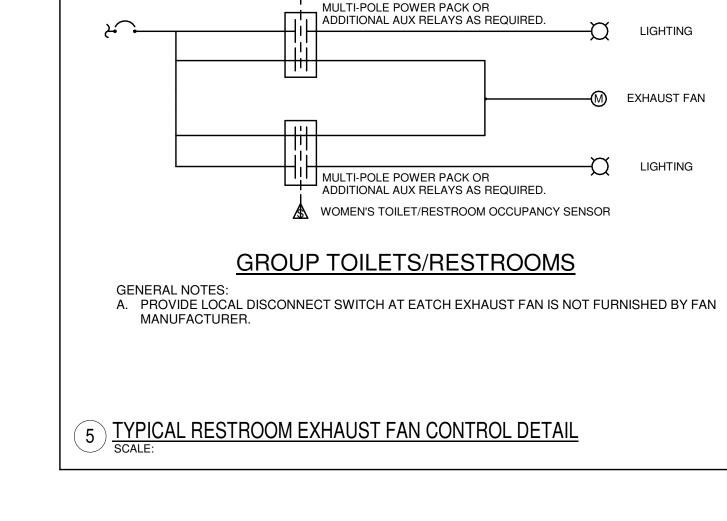
BS i OWNERSHIP OF INSTRUMENTS OF SERVICE All reports, plans, specifications, computer files, field data, notes an service shall remain the property of the Consultant. The Consultant limitation, the copyright thereto.

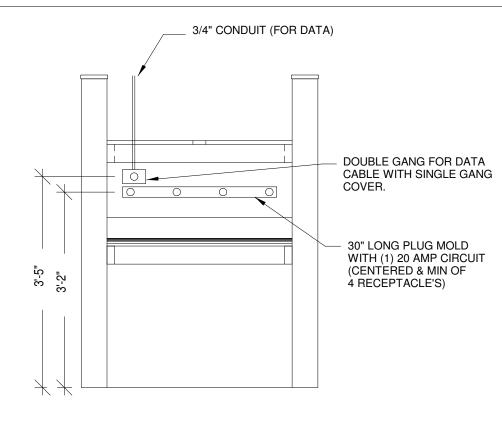


2-GANG BOX WITH 1-1/2" CONDUIT FOR

GROUNDING BUS BAR 1" FROM RIGHT EDGE OF

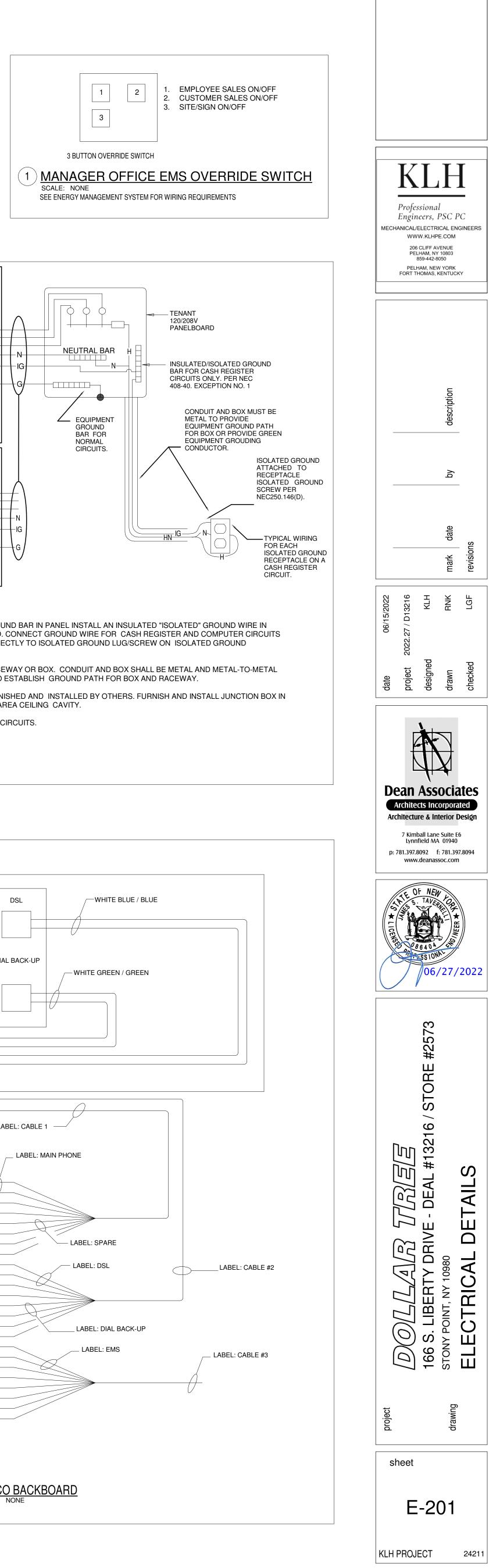
STORE PAGING CABLES (4-11/16" x 4-11/16" BOX)

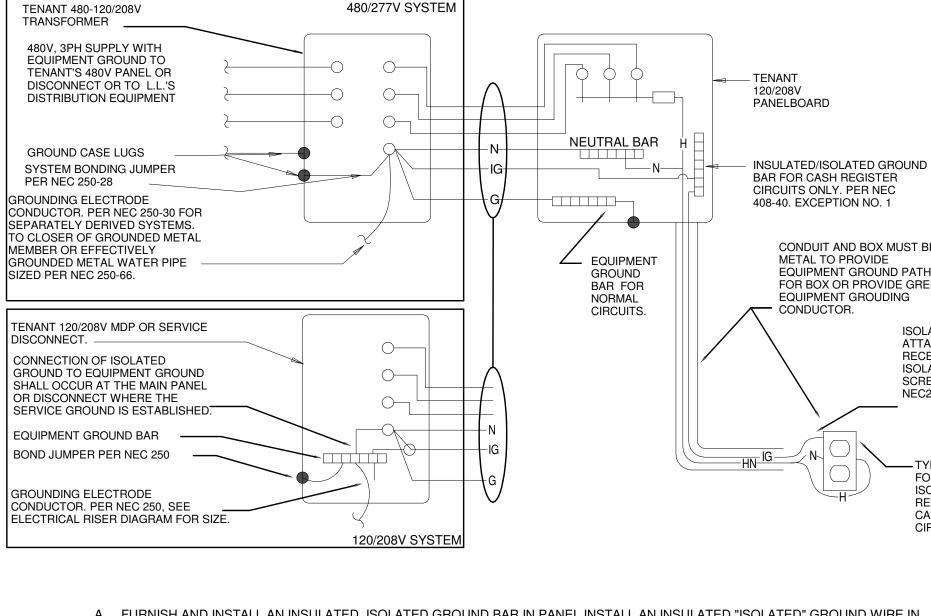




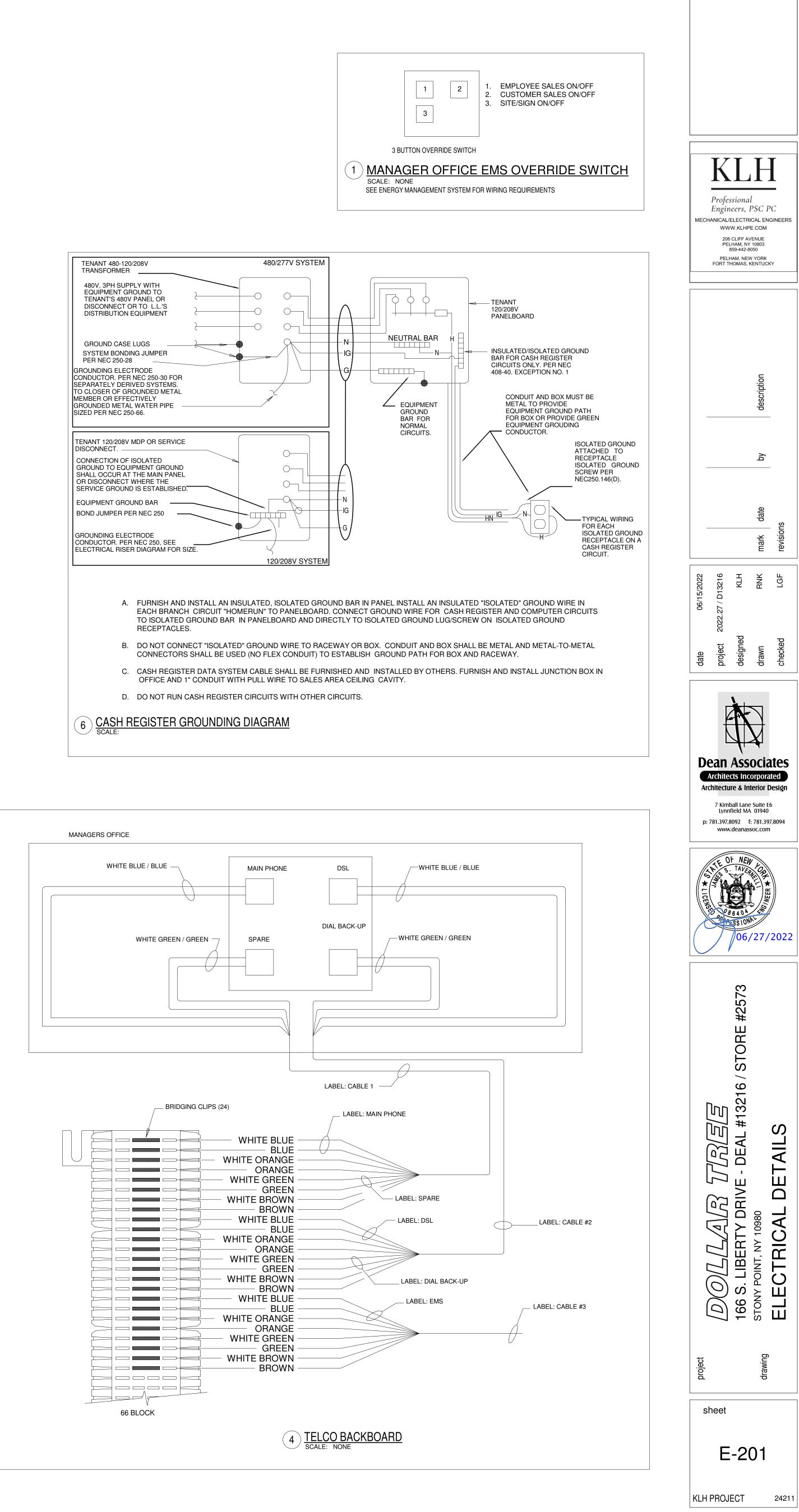
3 EMPLOYEE ROOM DESK ELEVATION SCALE: NONE

MEN'S TOILET/RESTROOM OCCUPANCY SENSOR





- TO ISOLATED GROUND BAR IN PANELBOARD AND DIRECTLY TO ISOLATED GROUND LUG/SCREW ON ISOLATED GROUND RECEPTACLES.
- CONNECTORS SHALL BE USED (NO FLEX CONDUIT) TO ESTABLISH GROUND PATH FOR BOX AND RACEWAY.
- OFFICE AND 1" CONDUIT WITH PULL WIRE TO SALES AREA CEILING CAVITY.



	LOCATI	DM: WIREWAY ON: PRE-SALES 106 EM: 208/120V 3PH 4W			MAIN	MAIN	ING (A): S TYPE: DER ID:	MAIN	LUGS	ONLY			SHOR		UIT RA	RENT (A ATING (A GS TYP): EXI				SI	URGE SU 200%
	FEED	ER: EXISTING FEEDER, AT	RATING	g indi	CATE), TO F	REMAIN L	INLES	S NOTI	ED OT	HERW	ISE		ENG	CLOSU	RE TYP	E: NEM	<i>I</i> A 1			I	ISOLATEI
СКТ	CIRCUIT D	DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	ļ	4	E	3	0	;	POLE	FRAME	TRIP	GND	AWG	VD%		CIRC
1	(#) LTG 102,101A		1.577	#12	#12	20 A	20 A	1	0.58	1.08					1	20 A	20 A	#12	#12	1.008	(#) RCPT 1	01B,101A
3	(#) LTG SALES 101A		1.397	#12	#12	20 A	20 A	1			0.58	0.36			1	20 A	20 A	#12	#12	0.219	(IG) TTB F	RCPT PRE
5	(#) LTG SALES 101A		0.905	#12	#12	20 A	20 A	1					0.58	0.18	1	20 A	20 A	#12	#12	0.514	(IG) RCPT	OFFICE
7	(#) LTG SALES 101A		0.741	#12	#12	20 A	20 A	1	0.58	0.18					1	20 A	20 A	#12	#12	0.547	(IG) RCPT	OFFICE
9	(#) LTG 101A,101B		0.25	#12	#12	20 A	20 A	1			0.58	0.18			1	20 A	20 A	#12	#12	0.543	(IG) RCPT	OFFICE
11	(#) LTG SALES 101B		0.272	#12	#12	20 A	20 A	1					0.58	0.00	1		20 A				(#) SPARE	
13	(#) LTG SALES 101B		0.218	#12	#12	20 A	20 A	1	0.29	0.00					1		20 A				(#) SPARE	
15	(#) LTG SALES 101B		0.275	#12	#12	20 A	20 A	1			0.29	0.00			1		20 A				(#) SPARE	
17	(#) LTG 101A,101B		0.161	#12	#12	20 A	20 A	1					0.58	0.00	1		20 A				(#) SPARE	
19	(#) LTG 101A,101B		1.275	#12	#12	20 A	20 A	1	0.58	0.00					1		20 A				SPARE	
21	(#) EF-1-A LTG 106,103,1	05,104,107	0.491	*#10	*#10	20 A	20 A	1			1.25	0.00			1		20 A				SPARE	
23	(#) SIGNAGE		2.951	*#10	*#10	20 A	20 A	1					1.20	0.00	1		20 A				SPARE	
25	()								0.20	0.00					1		20 A				SPARE	
27	(IG) CHECK LANE NON-(CONT.	0.389	#12	#12	20 A	20 A	2			0.20	0.00			1		20 A				SPARE	
29													0.20	0.00	1		20 A				(#) SPARE	
31	(IG) CHECK LANE NON-(CONT.	0.43	#12	#12	20 A	20 A	2	0.20	0.00					1		20 A				(#) SPARE	
33											0.20	0.00			1		20 A				SPARE	
35	(IG) CHECK LANE NON-	CONT.	0.459	#12	#12	20 A	20 A	2			0.20		0.20	0.00	1		20 A				SPARE	
37									0.20	0.00			0.20	0.00	1		20 A				SPARE	
39	(IG) CHECK LANE NON-	CONT.	0.487	#12	#12	20 A	20 A	2	0.20	0.00	0.20	0.00			1		20 A				SPARE	
	(L) NON-CONT. PRE-SAL	=5 106	0.066	#12	#12	20 A	20 A	1			0.20	0.00	0.20	0.00	1		20 A				SPARE	
71			0.000				ECTED L		3.9	k\/Δ	3.8	 k\/Δ	3.7				2077					
ΙΟΑΓ	CLASSIFICATION	CONNECTED LOA	ח				MAND FA				0.0		ATED								ΡΑ	NEL TOT
	nuous	1200 VA	-				125.009		·				1500				E	XISTIN	IG CO	NNECT	ED LOAD:	
Coolii	ng	0 VA					0.00%	1					0 V.	A			EXISTI	NG LC	AD DE	EMAND	FACTOR:	
Eleva	tor	0 VA					0.00%	1					0 V.	A				ADD	ED CO	NNECT	ED LOAD:	11424 V
Heati	ng	0 VA					0.00%	1					0 V.	A			DEM			ιι ατις	N NOTES:	
	en Equipment	0 VA					0.00%						0 V.									
Lighti	-	5748 VA					125.00%						7185						•	TOTAL	DEMAND:	13335.0
Motor		696 VA					125.009						870					_				
	Continuous	1800 VA					100.009						1800					٦	OTAL	DEMA	ND AMPS:	37 A
Rece	otacle	1980 VA					100.009	%					1980	VA								
NOTE	•									. I –					IEW ON	11 \ \						

	DISTRIBUTION SYST	ROM: D1 ION: PRE-SALES 106 IFEM: 208/120V 3PH 4W	MAINS RATING (A): 400 FAULT CURRENT (A): 15472 MAINS TYPE: MAIN LUGS ONLY SHORT CIRCUIT RATING (A): EXISTING FEEDER ID: X400 LUGS TYPE: AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE ENCLOSURE TYPE: NEMA 1 VD% AWG GND TRAME POLE A B C POLE FRAME FRAME TRIP MAINS TYPE: AWG MAINS TYPE: NEMA 1												PHASE: Existing SURGE SUPRESSION: ULSE: 200% NEUTRAL: ISOLATED GROUND:								
скт	CIRCUIT	DESCRIPTION	VD% A	NG	GND	TRIP	FRAME	POLE	A		В		(5	POLE	FRAME	TRIP	GND	AWG	VD%	, D	CIRCUIT DESCRIPTION	Cł
1 3 5	BALER MOTOR PRE-SA	ALES 106	0.543 ə	‡ 4	#10	60 A	60 A	3	5.76	0.02	5.76		5.76	0.02	3	20 A	20 A	#12	#12	0.00	1 PHASE LO	SS MONITOR NON-CONT. PRE-SALES	106 4
7 9 11	(#) SPARE					70 A		3	0.00	0.00	0.00		0.00	0.00	3		100 A				(#) SPARE		٤ 1 1
13 15 17	(EX) RTU-2-A MOTOR S	GALES 101B				150 A	150 A	3	13.40	13.40	13.40		13.40	13.40	3	150 A	150 A				(EX) RTU-1	I-A MOTOR SALES 101A	1. 1. 1.
				Т	OTAL	CONN	ECTED I	OAD:	32.6	kVA	32.6		32.6					-					
-	D CLASSIFICATION	CONNECTED LOA	D			DEI	MAND FA		2			ESTIM		DEMA	ND							NEL TOTALS	
	nuous	0 VA					0.00%						0 V								TED LOAD:		
Cooli Eleva	•	0 VA 0 VA					0.00%						0 V 0 V				EXIST				ID FACTOR: TED LOAD:	07740.\/A	
-leva -leati		0 VA					0.00%						0 V					ADD		ININEC	TED LUAD:	97740 VA	
	en Equipment	0 VA					0.00%						0 V				DEN	IAND	CALC	ULATI	ON NOTES:		
Lighti		0 VA					0.00%						0 V							ΤΟΤΑ	L DEMAND:	107791.2 VA	
Moto	-	97690 VA					110.29						10774										
	Continuous	50 VA					100.00						50 \						TOTAL	DEM	AND AMPS:	299 A	
	ptacle	0 VA					0.00%	D					0 V										
NOTES:											3 REAKI 1) 20A /			· ·	EW OI	NLY)							

(->) =

**

ΡΑ	NEL	SC
(EX)	=	EXIST
(#)	=	NEW
(G)	=	PRO\
(GE)	=	PRO\
(ST)	=	PRO\
(A)	=	PRO\
(L)	=	PRO\

CHEDULE LEGEND STING CIRCUIT TO REMAIN

V CIRCUIT TO EXISTING CIRCUIT BREAKER

OVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER DVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKER * =

OVIDE SHUNT TRIP CIRCUIT BREAKER OVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER VIDE LOCK-ON DEVICE

(LT) = PROVIDE LOCK-OUT/TAG-OUT DEVICE CONNECT BRANCH CIRCUIT, WHICH W SOURCE AS PART OF SELECTIVE DEMO DETERMINE EXACT POLE ASSIGNMENT OF THE BRANCH CIRCUIT CONDUCTOF REQUIRED. WIRE SIZED TO COMPENSATE FOR VOL = REFER TO DRAWINGS FOR SPECIFICAT SL = SEE THE SINGLE LINE DIAGRAM / SCHE

NOTES: ALL CONDUIT SIZES INDIC ACCOMMODATE CONDUC
"CU" = COPPER CONDUC"

EQUIPMEN WIREWAY

PHASE: Existing SUPRESSION: ULSE: 1% NEUTRAL: ED GROUND:	
RCUIT DESCRIPTION	СКТ
A	2
RE-SALES 106	4
E 102	6
E 102	8
E 102	10
	12
	14
	16
	18
	20
	22
	24
	26
	28
	30
	32
	34
	36
	38
	40
	42
	-
DTALS	
VA	
0 VA	
U W/N	

	SUPPLY FROM: WIREWAY LOCATION: PRE-SALES 106 DISTRIBUTION SYSTEM: 208/120V 3PH 4W FEEDER: EXISTING FEEDER, A ⁻	RATIN	ig indi		MAIN FEE	ing (a): S type: Der ID: Emain (MAIN X225			HERWI		SHOR ⁻	T CIRC	UIT RA	RENT (A ATING (A IGS TYPI JRE TYPI): EXIS E:	STING				PHASE: Existing URGE SUPRESSION: ULSE: 200% NEUTRAL: ISOLATED GROUND:	
СКТ	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE		۹.	B	5	(2	POLE	FRAME	TRIP	GND	AWG	VD%		CIRCUIT DESCRIPTION	СКТ
1 (;	#) RCPT 101A,101B	0.142	2 #12	#12	20 A	20 A	1	0.36	1.08					1	20 A					(#) RCPT 1		2
· ·	G)(LT) HAND DRYER NON-CONT. TOILET 105	1.405	5 #12	#12	20 A	20 A	1			1.80	0.90			1	20 A					(#) RCPT 1		4
	G)(LT) HAND DRYER NON-CONT. TOILET 104	1.163			20 A	20 A	1					1.80	0.44	1	20 A						BELL RCPT, NON-CONT. PRE-SALES 106	6
	#) WH-2-A HEATING TOILET 104	1.074			20 A	20 A	1	1.50	0.40					1	20 A					. ,	YEE AREA PLUGMOLD NON-CONT	8
`	#) WH-1-A HEATING TOILET 105	1.931				20 A	1			1.50	0.18			1	20 A					. ,	PRE-SALES 106	10
`	#) RCPT HALL 103	0.066			20 A	20 A	1					0.18	0 18	1	20 A					. ,	PRE-SALES 106	12
	#) AC-1-A MOTOR SALES 101A	2.956	-	*#8	20 A	20 A	1	173	0.18					1	20 A	20 A				. ,	PRE-SALES 106	14
	#) WALK-IN COOLER NON-CONT. PRE-SALES 106		5 *#10			20 A	1			1.55	0.54			1	20 A	-				(#) RCPT S		16
17		2.120	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	110	2077	2071				1.00	0.01	2.86	0.18	1	20 A					. ,	EAM BUNKER RCPT	18
19 V	VALK-IN FREEZER NON-CONT. PRE-SALES 106	2.816	6 #10	#10	30 A	30 A	2	2.86	0.20			2.00	0.10	1	20 A					. ,	ZONE NON-CONT.	20
21								2.00	0.20	1.70	0.20			1	20 A					. ,	ZONE NON-CONT. SALES 101A	20
21 23	REACH-IN 2-DR COOLER NON-CONT. SALES 101B	1.05	#12	#12	20 A	20 A	2			1.70	0.20	1.70	0.20	1	20 A					. ,	ZONE NON-CONT. SALES 101A	24
25	EACH-IN 5-DR FREEZER NON-CONT. SALES 101E	1.039	#8	#10	30 A	30 A	2	3.12	0.52					1	20 A	-		-		. ,	IOTOR PRE-SALES 106	26
27	EACH-IN 3-DR FREEZER NON-CONT. SALES TOTE	1.055	#0	#10	30 A	30 A	2			3.12	2.00			1	20 A	20 A	#12	#12	1.044	(#) WH1 C	CONTINUOUS PRE-SALES 106	28
29		1.343	#8	#10	30 A	30 A	2					3.12	0.72	1	20 A	20 A	#12	#12	1.444	RCPT SAL	ES 101B	30
31	REACH-IN 5-DR FREEZER NON-CONT. SALES 101E	1.545) #0	#10	30 A	30 A	2	3.12	0.00					1		20 A				(#) SPARE		32
33		0.410	#12	#10	20 A	20.4	0			0.20	0.00			1		20 A				(#) SPARE		34
35	LUG MOLD NON-CONT. OFFICE 102	0.412	#12	#12	20 A	20 A	2					0.20	0.00	1		20 A				(#) SPARE		36
37 (;	#) SPARE				20 A		1	0.00	0.00					1		20 A				(#) SPARE		38
39 (;	#) SPARE				20 A		1			0.00	0.00			1		20 A				(#) SPARE		40
41 (;	#) SPARE				20 A		1					0.00	0.00	1		20 A				(#) SPARE		42
			1	TOTAL	CONN	ECTED I	OAD:	15.1	kVA	13.7	kVA	11.6	kVA									
LOAD	CLASSIFICATION CONNECTED LO	٨D			DEI	MAND FA		2			ESTIN	IATED		AND						PA	NEL TOTALS	
Continu						125.00						2500								TED LOAD:		
Cooling						0.00%						0 V				EXISTI				D FACTOR:	100001/1	
Elevato						0.00%						0 V					ADDE	ED CO	NNEC	TED LOAD:	40326 VA	
Heating						100.00						3000 0 V				DEN	IAND	CALCI	JLATI	ON NOTES:		
Lighting	Equipment 0 VA 0 VA 0 VA					0.00%						0 V.							τοται		41258.0 VA	
Motor	2248 VA					119.22						2680								DEIWAND:	412JO.U VA	
	ntinuous 28218 VA					100.00						28218					٦	ΟΤΔΙ	DFM4	AND AMPS:	115 A	
Recept						100.00						4860							50111			
NOTES									E	BREAK	ER QU			IEW O	NLY)							
															(2) 20A	/ 2P.	(3) 30	A / 2P				

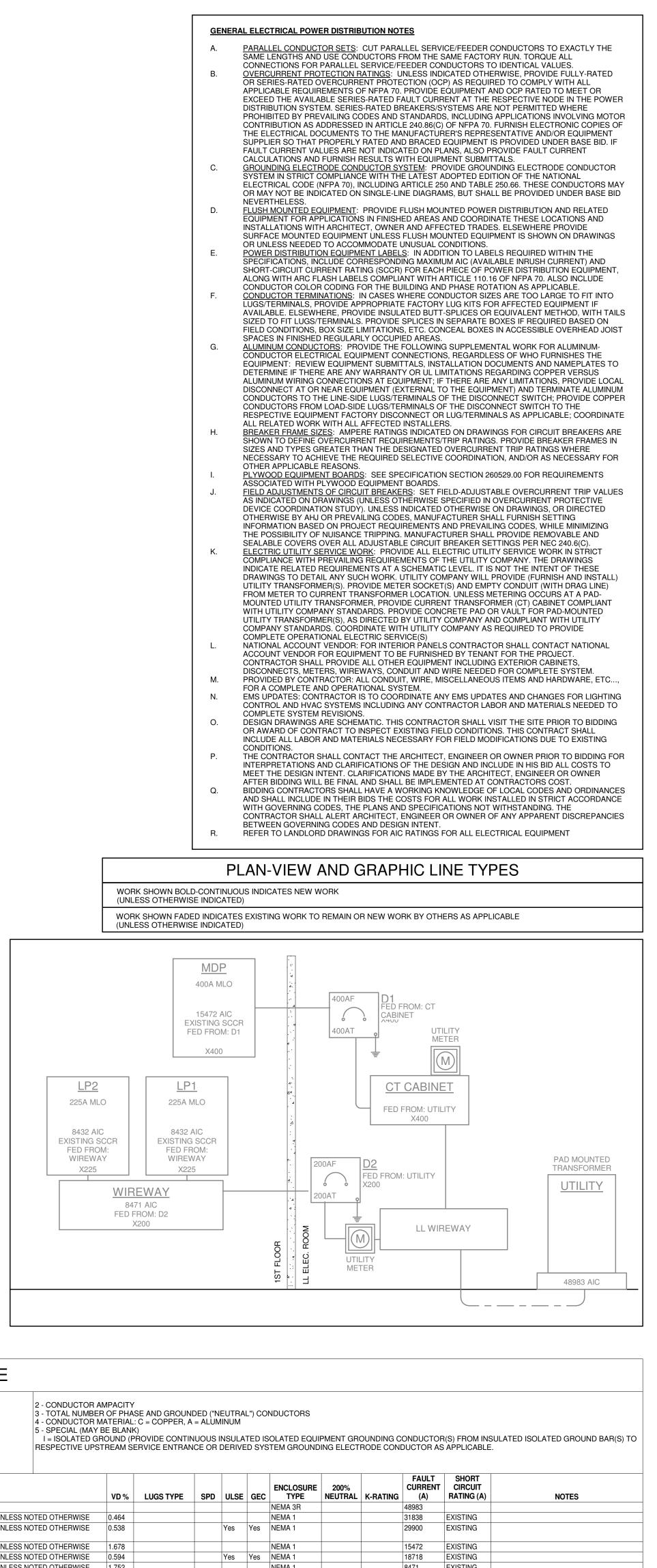
E WAS DISCONNECTED FROM ANOTHER	PAI	NEL SCHEDULE GENERAL NOTES
MOLITION, TO POLE SPACE(S) INDICATED,	Α.	PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS.
NT(S) BASED ON EXISTING COLOR-CODING	В.	ALL CONDUCTORS SHOWN ARE COPPER.
OR INSULATION. PROVIDE NEW BREAKER IF	C.	ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL
		VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE LENGTH.
OLTAGE DROP	D.	VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS ONLY. FOR
ATIONS		CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE
HEDULE FOR WIRE SIZE AND VOLTAGE DROP		MINIMUM SIZE REQUIRED BY THE NEC BASED ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN
	_	INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO NEVER EXCEED 5%.
	E.	RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10kVA, 50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR, 100% OF ALL OTHER MOTORS.

AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

							DOLLA	R TRE		CTRIC SINGLE	LINE	EQUIPMENT SCHEDULE										
IDUCTOR PU	RE MINIMUM SIZES. INCREASE SIZES AS LLING EASE, FIELD CONDITIONS, ETC. T = ALUMINUM CONDUCTOR	REQUIRED TO	TYPICAL EQUIPMENT NAME 1 - POWER DISTRIBUTION SY 2 - DESCRIPTION (H - 480Y/2' 3 - FLOOR / LEVEL 4 - SEQUENCE	YSTEM (BLAN	IK - NORMAL, E - EN	IERGENCY, S - STA	ANDBY, L - LIFE SA	AFETY)	* - INDI(1 - GRC U = E P = F X = E	R ID NOMENCLATURE: CATES FEEDER SIZED TO COMPE OUND TYPE (MAY BE BLANK) EQUIPMENT GROUND CONDUCT(PARITY-SIZED EQUIPMENT GROU EXISTING FEEDER TO REMAIN UN IPSIZED GROUND CONDUCTORS	OR REMOVE	D FOR SERVICE ENTRANCE FROM UTILITY CTOR RWISE NOTED	2 - CONDUCTOR AMPACITY 3 - TOTAL NUMBER OF PHASE AND GROUNDED ("NEUTRAL") CONDUCTORS 4 - CONDUCTOR MATERIAL: C = COPPER, A = ALUMINUM 5 - SPECIAL (MAY BE BLANK) I = ISOLATED GROUND (PROVIDE CONTINUOUS INSULATED ISOLATED EQUIPMENT GROUNDING CONDUCTOR(S) FROM INSULATED ISOLATED GROUND BAR(S) TO RESPECTIVE UPSTREAM SERVICE ENTRANCE OR DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR AS APPLICABLE.									
PHASE	EQUIPMENT TYPE	SUPPLY SPA FROM NUM	CE BER SPACE NAME	VOLTAG	E POLES WIRES	5 DEMAND (kVA)) DEMAND (A)	MAINS RATING (A	MAINS FRAME	MAINS TYPE	FEEDER	D FEEDER		VD % LUGS TYPE	SPD ULS	E GEC	ENCLOSURE TYPE	200% NEUTRAL	FAULT CURRENT K-RATING (A)	SHORT CIRCUIT RATING (A)	NOTES	
Existing	Pad Mounted			208	3												NEMA 3R		48983			
Existing	32 x 24 x 10	UTILITY		208	3 4	107.8 kVA	299 A	400	400		X400	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	0.464			NEMA 1		31838	EXISTING		
Existing	Enclosed Circuit Breaker	CT CABINET		208	3 4	107.8 kVA	299 A	400	400	FUSED	X400	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	0.538	Yes	Yes	NEMA 1		29900	EXISTING		
Existing	Distribution Panelboard	D1 106	PRE-SALES	208	3 4	107.8 kVA	299 A	400	400	MAIN LUGS ONLY	X400	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	1.678			NEMA 1		15472	EXISTING		
Existing	Enclosed Circuit Breaker	UTILITY		208	3 4	54.4 kVA	151 A	200	200	FUSED	X200	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	0.594	Yes	Yes	NEMA 1		18718	EXISTING		
Existing	WireWay	D2 106	PRE-SALES	208	3 4	54.4 kVA	151 A	200	200	THERMAL MAGNETIC	X200	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	1.752			NEMA 1		8471	EXISTING		
Existing	Branch Panelboard	WIREWAY 106	PRE-SALES	208	3 4	13.3 kVA	37 A	225	225	MAIN LUGS ONLY	X225	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	1.754			NEMA 1		8432	EXISTING		
Existing	Branch Panelboard	WIREWAY 106	PRE-SALES	208	3 4	41.3 kVA	115 A	225	225	MAIN LUGS ONLY	X225	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS	S NOTED OTHERWISE	1.759			NEMA 1		8432	EXISTING		

GENERAL ELECTRICAL POWER DISTRIBUTION NOTES Α. В. CALCULATIONS AND FURNISH RESULTS WITH EQUIPMENT SUBMITTALS. NEVERTHELESS. OR UNLESS NEEDED TO ACCOMMODATE UNUSUAL CONDITIONS. SPACES IN FINISHED REGULARLY OCCUPIED AREAS. G. ALL RELATED WORK WITH ALL AFFECTED INSTALLERS. OTHER APPLICABLE REASONS. COMPLETE OPERATIONAL ELECTRIC SERVICE(S) М. FOR A COMPLETE AND OPERATIONAL SYSTEM. N. COMPLETE SYSTEM REVISIONS.

- CONDITIONS. AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
- BETWEEN GOVERNING CODES AND DESIGN INTENT. REFER TO LANDLORD DRAWINGS FOR AIC RATINGS FOR ALL ELECTRICAL EQUIPMENT R.



FAULT CURRENT CALCULATIONS

FAULT CURRENT CALCULATIONS ARE BASED ON A 300 KVA UTILITY TRANSFORMER AT 1.7% IMPEDANCE. VERIFY THE AVAILABLE FAULT CURRENT

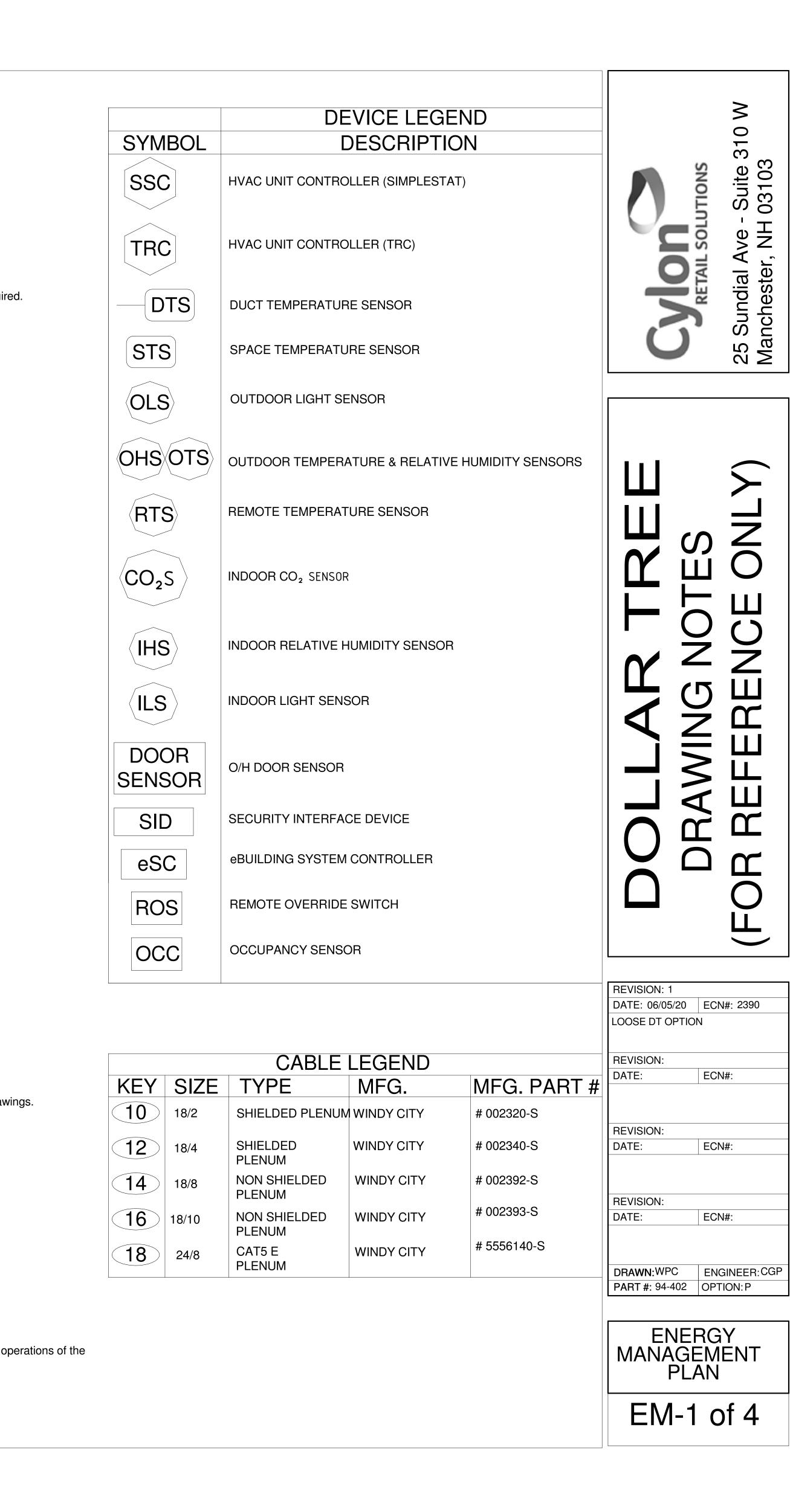


<u>GENERAL CONTRACTOR'S RESPONSIBILITIES:</u> a. Read Cylon Retail Solutions (CRS) / Dollar Tree (DT) Documentation Package.

b. Review all DT drawings.

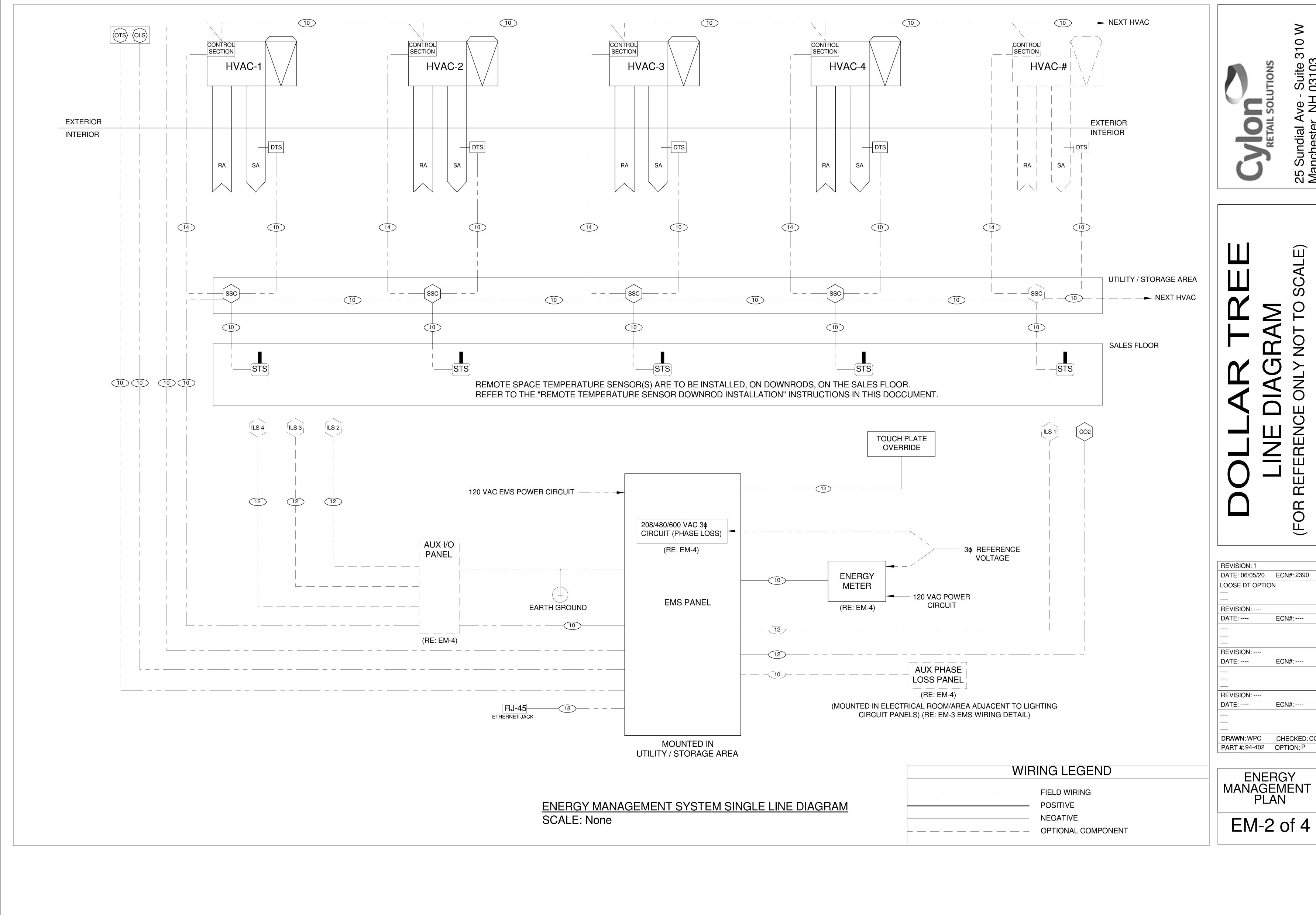
 Contact Cylon Retail Solutions Inc. at (888) 211-6789 and submit a fully completed EMS Installation Survey.
 Confirm CRS Survey Form is fully completed and EMAILED to CRS National Account Team at <u>Surveys@Cylon.com</u> or FAXED to (855) 224-0879, <u>24 Hours Prior to scheduling the EMS</u> Commissioning.
 EMS Commissioning dates cannot be scheduled until fully completed EMS Installation Surveys have been received and approved by the CRS National Deployment Team. c. Schedule remote EMS commissioning <u>24 hours prior</u> to the requested commissioning date.

II. ELECTRICAL RESPONSIBILITIES: Power to all EMS equipment and devices must be OFF while terminations are made a. Provide all labor and installation material, as required, for a complete and operational EMS for this DT store location. b. Receive and store all CRS material in a dry and secure place until the EMS installation is completed.
c. The EMS equipment will be supplied by CRS and installed by an approved DT contractor. d. Review the entire set of plans, perform a job site survey and inventory the CRS equipment to ensure the proper equipment has been ordered and received for a complete and operational CRS EMS. e. If any material is missing or additional equipment is required, immediately call CRS at (888) 211-6789 to request an order. f. Approved Contractor shall verify number of controlled lighting circuits against the design, report discrepancies, which cannot be resolved in the field, to the CRS National Account Support Team at (888) 211-6789 and wait for resolution instructions. g. Coordinate the EMS installation with the Mechanical Contractor to avoid any interference that may delay progress during construction. h. Perform all work in accordance with all National, State and Local Codes for this project i. All EMS cables are to be installed per National and Local Codes. It is the Electrical Contractor's responsibility to determine if National and Local Codes permit Class 2 cables to be installed exposed within the building structure or if a full conduit system is required. j. EMT connectors and bushings are to be installed at the top of every conduit sleeve and threaded connector to protect EMS cables from abrasions. k. All cables are to be clearly and distinctly labeled within one foot of both ends. I. Furnish and install all required conduit, boxes, wire ways, fittings, straps, hangers and wiring for a complete and operational EMS as required. m.Furnish and install a dedicated 120 VAC circuit with breaker lock for the EMS Panel. i. Label breaker: DO NOT TURN OFF / EMS ii. Confirm wiring is completed as per this documentation package before applying power. Improper wiring will cause damage to equipment. n. Mount the EMS Panel adjacent to the electrical panels. o. Install an Ethernet cable run from the eSCi RJ-45 jack located in the EMS Panel to the network switch specified by the DT networking team. p. Call CRS at 888.211.6789 to verify Network Connectivity before proceeding with the EMS installation.
q. Install and terminate the CRS BACnet communication trunk, in a daisy chain fashion, from the EMS Panel to each of the Thermostat Controls and all other BACnet devices. (see this documentation package for requirements)
r. When applicable, mount the Auxiliary I/O Panel adjacent to the EMS Panel and ensure both panels are connected to the same Earth Ground.
s. When applicable, ensure the Auxiliary I/O panel is connected in series with the other BACnet devices on the BACnet communications trunk. t. Mount and terminate the Outdoor Sensor Assembly (OSA) on the HVAC unit that resides closest to the EMS Panel. When installing, make sure OSA enclosure is: i. Mounted on a 1" rigid riser with an 'LB' secured to the back of the OSA (Refer to OTS/OLS Detail as shown on EM-4) ii. Mounted 3 feet above the HVAC unit iii. Mounted facing north, away from the combustion heat blower and condenser fan iv. Weather-proofed v. Mounted with the white PVC sensor pointed downward vi.Positioned to allow the Outdoor Light Sensor exposure to full ambient daylight but is not shadowed or exposed to any artificial illumination u. When applicable, mount and terminate the CO2 Sensor as per the location specified by the DT drawings and this documentation package. v. Mount and terminate the Override Button assembly as per the location specified by the DT drawings and this documentation package. w. Do not adjust the DIP Switches for the EMS Override Buttons. They are factory preset for: i. MSTP Address = 35 ii. Baud Rate = 19200 iii. Network Termination = Off x. When applicable, mount and terminate the Indoor Ambient Light Sensor(s) as per the location specified by the DT drawings and the Special Instructions in this documentation package. y. Install and wire load sides of lighting contactors for designated lighting loads and zones as required by DT and this documentation package Employee Zone = 40% of Sales floor and 100% of all Stockroom areas Customer Zone = Remaining 60% of Sales Floor iii. Exterior Zone = Building Exterior and Parking lights iv. When applicable, Daylight Zone = First two (2) rows of lights along the store-front windows. z. Furnish and install a 3-pole, 20-amp breaker/disconnect at the Main Electrical Distribution Panel (MDP) for the Phase Loss Power Monitor and Energy Meter. aa. When applicable, furnish and install a 3-pole, 20-amp breaker/disconnect at each Electrical Distribution Panel for each additional Phase Loss Power Monitor bb.Terminate wiring as specified in this documentation package. i. Label Main Electrical Distribution Panel breaker/disconnect: DO NOT TURN OFF / PHASE FAILURE & ENERGY METER ii. When applicable, label auxiliary Electrical Distribution Panel breaker/disconnect: DO NOT TURN OFF / PHASE FAILURE iii. Confirm wiring is completed as per this documentation package before applying power. Improper wiring will cause damage to equipment. cc. Install and terminate the CRS Modbus communication trunk from the eSCi Controller to the Energy Meter. (Refer to OEM instructions and this documentation package for requirements) dd.Permanently mount and terminate the Electrical Meter in close proximity to the main utility power feed. ee.Permanently mount the 3 Current Sensors, one each, around the 3 phases of the main utility feed. ff. Terminate the 3 Current Sensors to the Energy Meter, correctly maintaining Electrical Phase and Meter Input relationships. gg.Using the OEM Instructions, configure the EMS Energy Meter for: i. Proper Current Transformer (CT) Ratio - Current Sensor Primary (Ct) = 400 - 1500 Amp ii. Nominal Line to Line Voltage = 480 Vac iii. Baud Rate = 19200 iv. Address = 1 v. Voltage Input Mode = True 3 Phase vi.CT Auto Rotation = Auto Rotate Note: The EMS is designed to monitor a single primary 3 phase power feed. Contact CRS for support when attempting to monitor multiple power feeds hh.Provide a technician, on site, for an approximate 2-hour remote telephone checkout with CRS. ii. Coordinate with the Mechanical Contractor to verify HVAC control during the CRS remote telephone checkout.
jj. Prior to scheduling the Remote Commissioning Checkout, the Electrical Contractor will:
i. Confirm CRS Survey Form is completed and EMAILED to CRS National Account Team at <u>Surveys@Cylon.com</u> or FAXED to (855) 224-0879, <u>24 Hours Prior to scheduling the EMS Commissioning</u>.
ii. Confirm the Mechanical Contractor will be present during the CRS Remote Commissioning Checkout. iii. Contact CRS to schedule the EMS Commissioning, 24 hours prior at (888) 211-6789. III. MECHANICAL RESPONSIBILITIES: Power to all EMS equipment and devices must be OFF while terminations are made. a. Provide labor and installation material, as required, for a complete and operational EMS for this DT store location. b. Verify number and type of HVAC units against the design, report discrepancies, which cannot be resolved in the field, to the CRS National Account Support Team at (888) 211-6789 and wait for resolution instructions. c. Perform all work in accordance with all National, State and Local Codes for this project. d. Mount and terminate the SimpleSTAT module(s) as per the location(s) specified by the DT drawings and this documentation package. e. Utilizing 18/8 cable between the SimpleSTAT module and HVAC unit. i. Terminate C, R, G, Y1, Y2, W1 and W2 on the HVAC unit for control of fan, cooling and heating.
 ii. Terminate the communications cables to the SimpleSTAT(s) as shown in this documentation package.
 f. Set address on the SimpleSTAT module, as shown in the SimpleSTAT installation instructions. When communications to the EMS is in a failed state, the SimpleSTAT will operate 24/7 as a stand-alone STAT using the following temperature setpoints: i. Default Cooling Setpoint = 72.0 °F ii. Default Heating Setpoint = 68.0 °F g. Utilizing the Downrods and associated hardware, specified by the DT drawings and the "Special Instructions" section of this documentation package, mount and terminate the Remote Space Temperature Sensor(s) as per the location(s) specified by the DT drawings. i. In close proximity to the zone return air grille and away from supply air drafts. ii. Install and secure the Remote Temperature Sensor wire to the Thermostat Controller. h. Mount the Supply Duct Temperature sensor of each HVAC unit. i. The remote Supply Duct Temperature Sensor should be mounted in the main Supply Air Duct on the interior side of the HVAC unit's building penetration. ii. Utilizing 18/2 wire, terminate the supply duct temperature sensor wire to the Thermostat module as shown in this documentation package. i. Provide Electrical Contractor with roof plan layout, showing location of HVAC Units on the roof. Provide a technician, on site, for an approximate 2-hour remote telephone checkout with CRS. k. Coordinate with the Electrical Contractor to verify proper HVAC control during the CRS Remote Commissioning Checkout. IV. CYLON RETAIL SOLUTIONS RESPONSIBILITIES a. The following services will be supplied by CRS: i. Shipping of all contracted EMS components for the job.
ii. Programming and downloading of CRS equipment and software.
iii. Provide telephone technical support at (888) 211-6789. iv. Remote system checkout with installing contractor b. Verification of proper operation of the following items by exercising the controlled load:
i. Timed operation of all applicable EMS lighting loads - Interior and Exterior.
ii. Outside light level control of all applicable EMS lighting loads - Interior and Exterior.
iii. Operation of HVAC heating stages, as indoor environment allows. iv. Operation of HVAC cooling stages, as indoor and outdoor environments allow. v. Verification of HVAC unit sensor readings - space and supply temperatures. c. If any end unit (e.g. lighting, HVAC unit, supply air fan, etc.) cannot be operated for mechanical or electrical reasons, CRS will verify the proper operation of the EMS control devices (e.g. contactors, discrete I/O) leading up to the unit, in order to fully verify the operations of the d. CRS will issue an "EMS Check-Out Number" once all store systems are verified as operational.



KEY	SIZE	TYPE	MFG.	MFG. PART #	DATE.	
(10)	18/2	SHIELDED PLENUM	WINDY CITY	# 002320-S		
					REVISION:	
12	18/4	SHIELDED PLENUM	WINDY CITY	# 002340-S	DATE:	ECI
14	18/8	NON SHIELDED PLENUM	WINDY CITY	# 002392-S		
		_		# 002393-S	REVISION:	
(16)	18/10	NON SHIELDED PLENUM	WINDY CITY	# 002393-3	DATE:	ECI
18	24/8	CAT5 E PLENUM	WINDY CITY	# 5556140-S		
					DRAWN:WPC	EN
					DADT // 04 400	

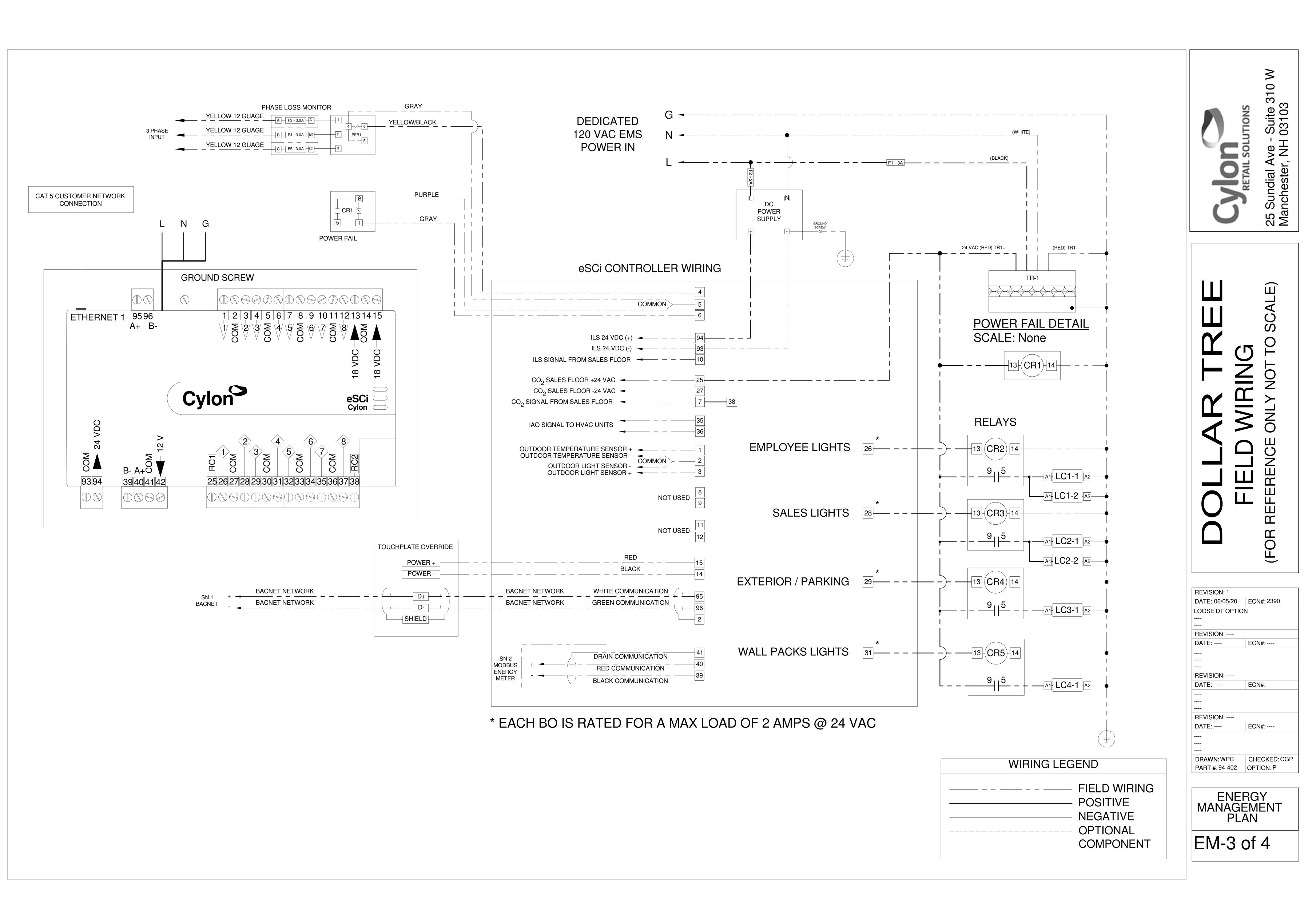




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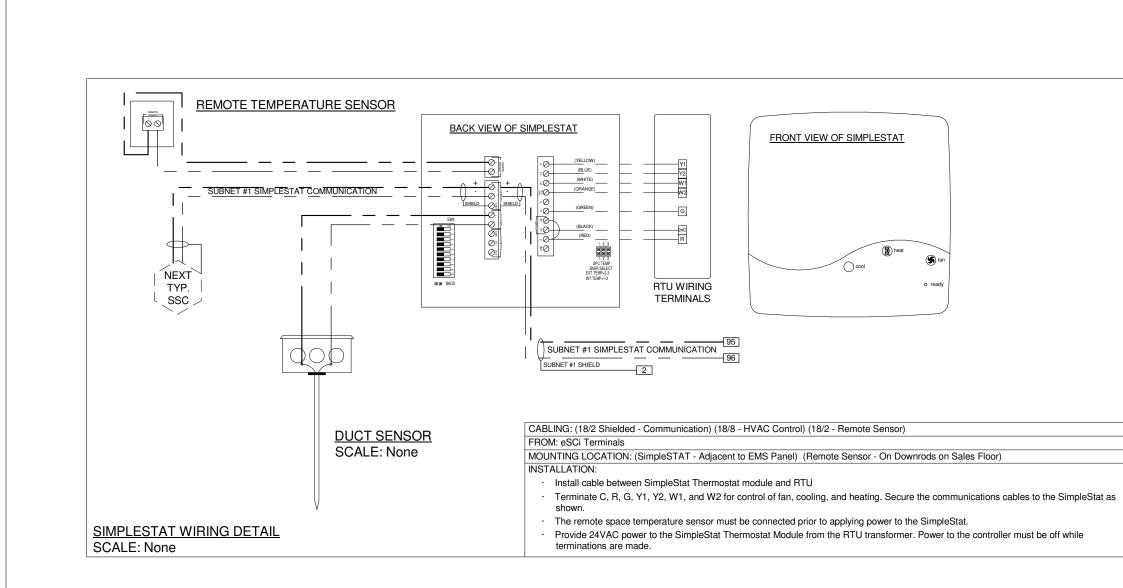


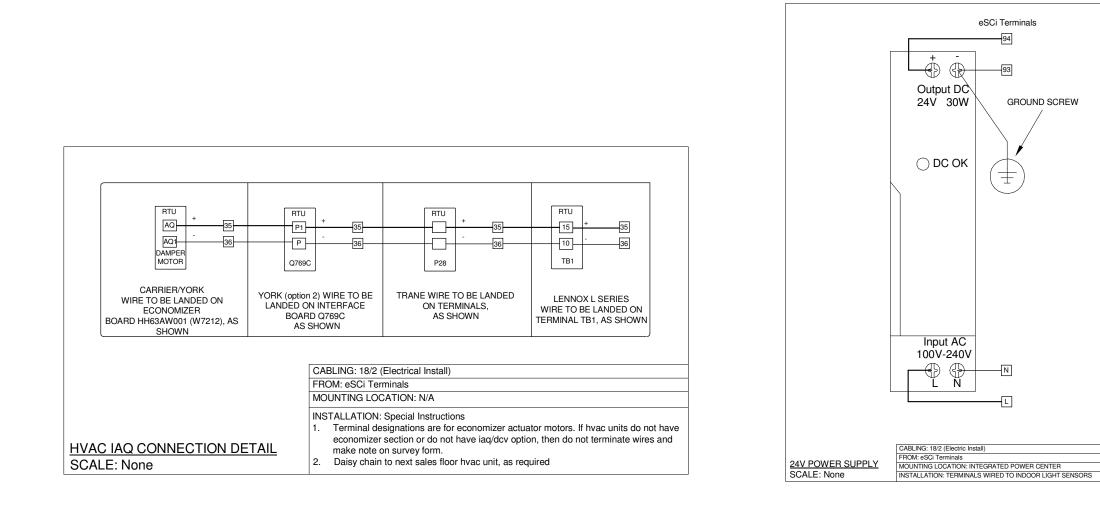


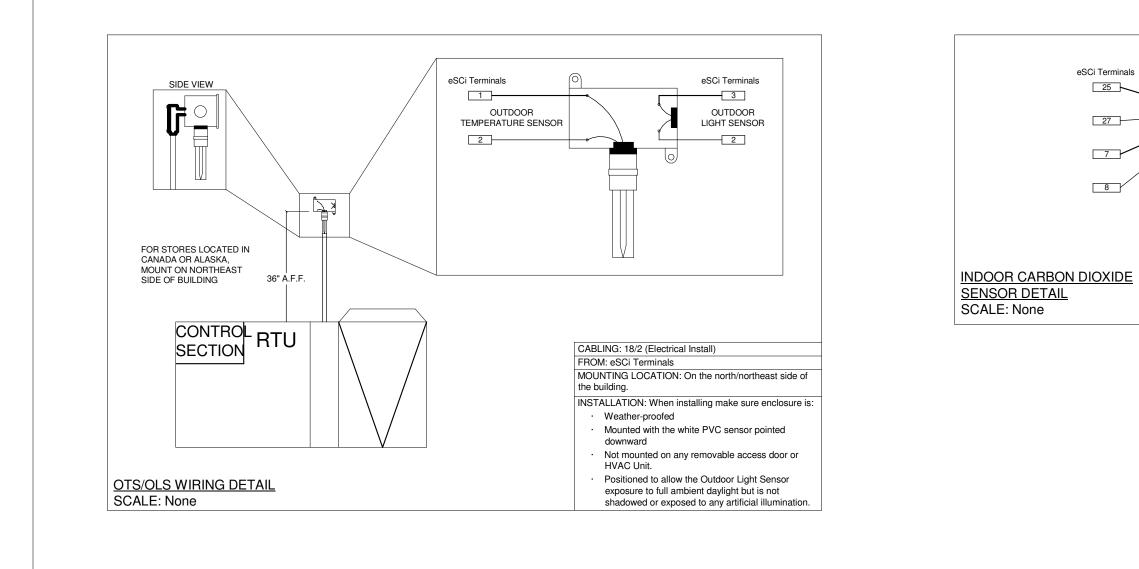


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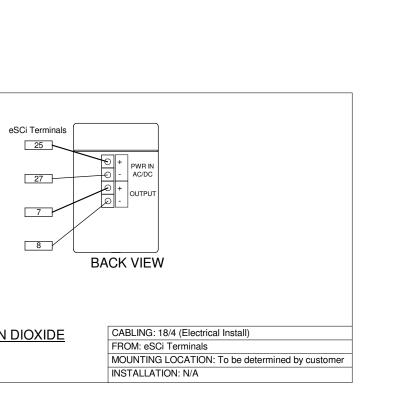


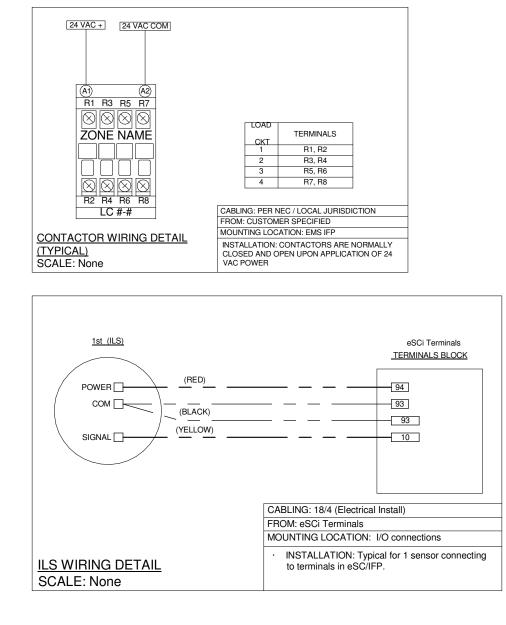


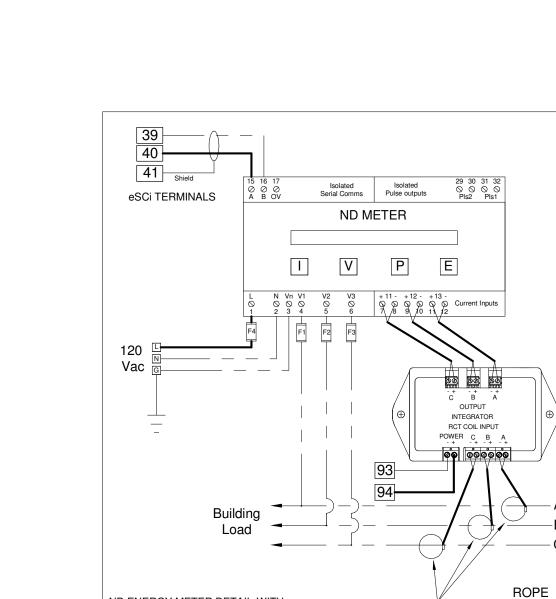




of notes OWNERSHIP OF INSTRUMENTS OF SERVICE All reports, plans, specifications, computer files, field data, service shall remain the property of the Consultant. The C limitation, the copyright thereto.







ND ENERGY METER DETAIL WITH

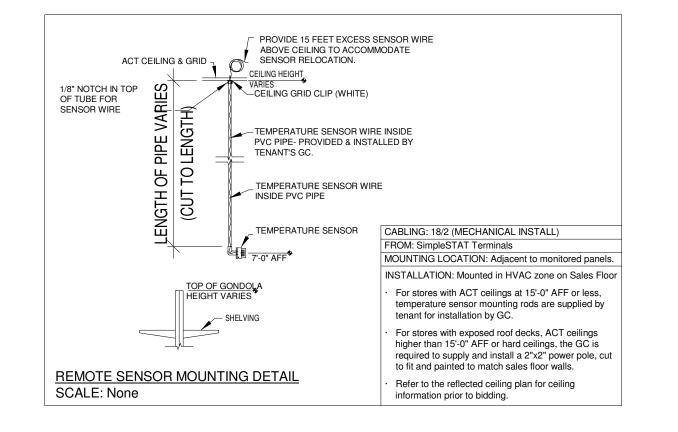
SCALE: None

3 PHASE ROPE CURRENT SENSORS

-B UTILITY

CT's

LINE #1



TR-1

170vA

FRANSFORMER 1

WIRING DETAIL SCALE: None

24 🚽

VAC 🗕

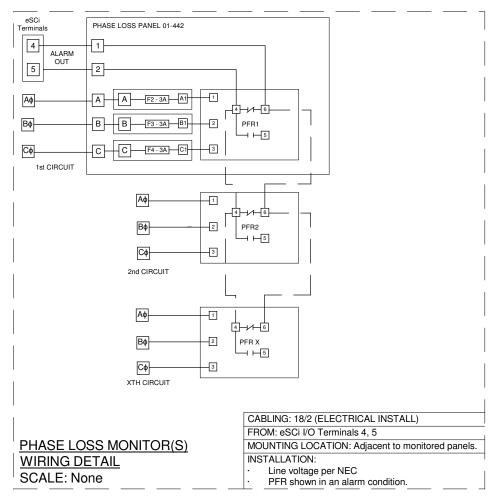
120:24 VAC

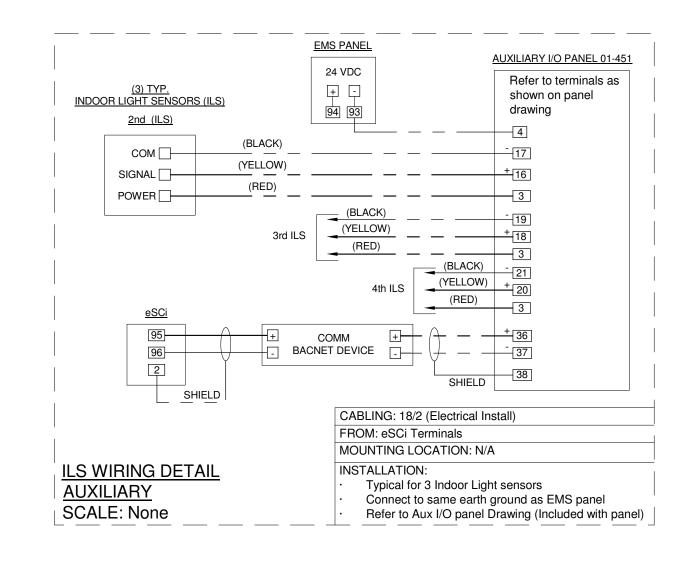
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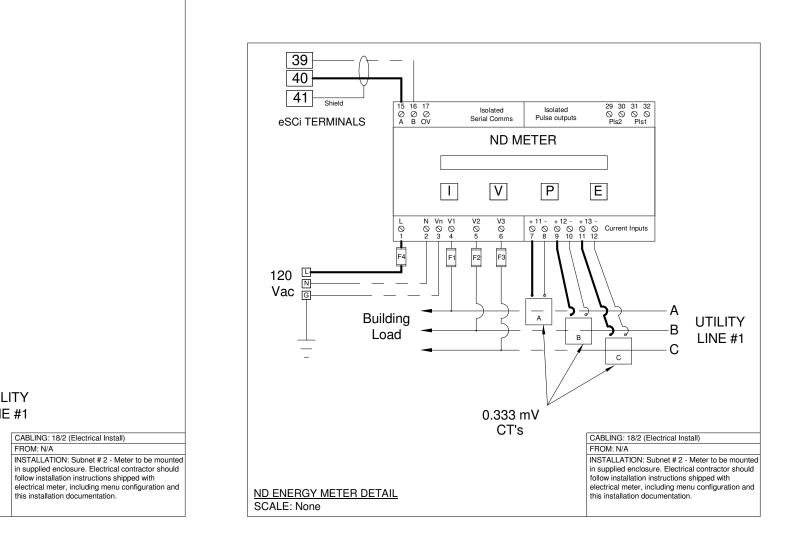
CABLING: 18/2 (ELECTRICAL INSTALL)

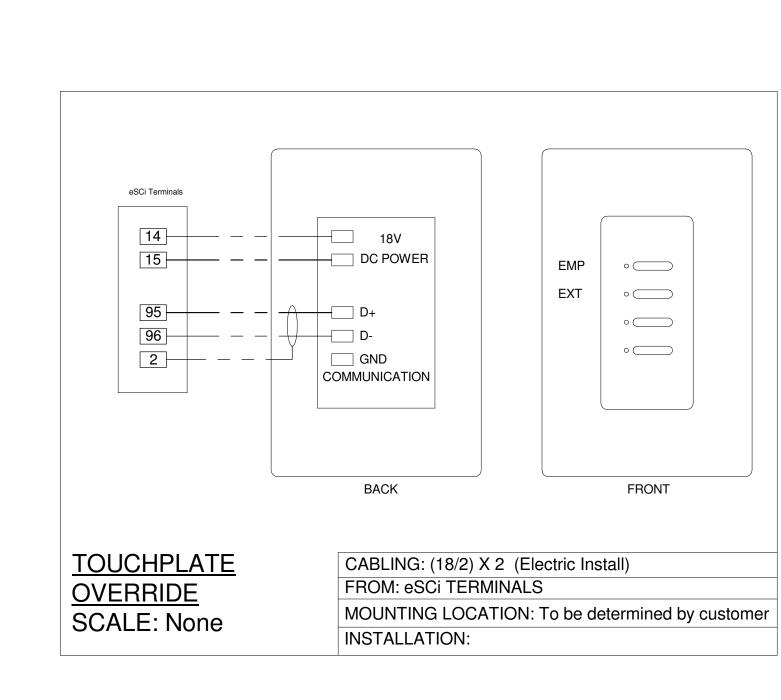
MOUNTING LOCATION: I/O connections INSTALLATION:

FROM: 120 VAC / eSCi TERMINALS











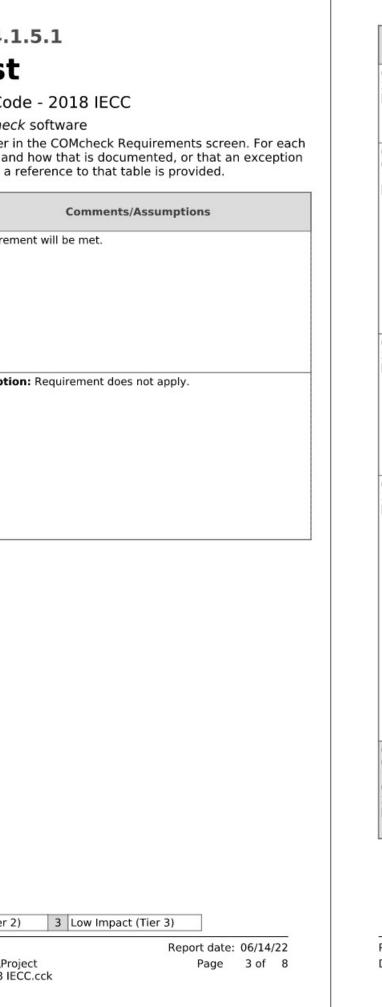


REVISION: 1	
DATE: 06/05/20	E
LOOSE DT OPTION	N
REVISION:	
DATE:	E
REVISION:	
DATE:	E
REVISION:	
DATE:	E
DRAWN: WPC	C
PART #:94-402	O
ENEF	R (
MANAGE	
PL/	1
EM-4 (7
	J



Project In	formation									
Energy Code Project Title: Project Type			Stretch Energy Code BERTY DRIVE - DE		ORE #2573	l.				In
Construction	n Site:	Owner	/Agent:		Designer/C	ontractor:				in Co
						neers xandria Pike nas, KY 410				bu sy ar
Allowed I	nterior Lighting Powe	er						_		Na
	Area	A Category		B Floor A (ft2		C Allowed Watts / ft2		D wed Watts (B X C)	5	
	(Common Space Types:Cor 02 (Common Space Types:C				93 80	0.58 0.85		54 68	_	
	1B (Retail:Sales Area) ES 106 (Common Space Typ	pes:Storage)		32 18	272 804	1.06 0.63		3468 1136		
-TOILET 10	05 (Common Space Types:F 04 (Common Space Types:F	Restrooms)			03 18	0.75 0.75		77 89		
	(Common Space Types:Cor 1A (Retail:Sales Area)	rridor/Transition <	8 ft wide)	1 63		0.58 1.06		84 6757	_	
Proposed	I Interior Lighting Pov	wer				al Allowed W		11733		
	Fixture ID : Description	A n / Lamp / Watt	tage Per Lamp / Ba	allast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)		
	(Common Space Types: F8-EMB: 8'0" STRIP LIGHT			<u>q.ft.)</u>	2	1	36	36	_	
F8: F8: 8'	02 (Common Space Type 0" STRIP LIGHT: Other:		<u>osed 80 sq.ft.)</u>		2	1	36	36		
F8: F8: 8'	IB (Retail:Sales Area 32 0" STRIP LIGHT: Other: F8-EMB: 8'0" STRIP LIGHT		IG: Other:		2	46 6	36 36	1656 216		
PRE-SALE F8: F8: 8'	S 106 (Common Space 0" STRIP LIGHT: Other:	Types:Storage	<u>1804 sq.ft.)</u>		2	7	36	252		
TOILET 10	F8-EMB: 8'0" STRIP LIGHT 5 (Common Space Type	es:Restrooms 1	<u>03 sq.ft.)</u>		2	4	36	144		
	F8-EMB: 8'0" STRIP LIGHT 4 (Common Space Type				2	1	36	36		
F8-EMB: IALL 103 (Project Title	F8-EMB: 8'0" STRIP LIGHT (Common Space Types: e: 166 S. LIBERTY DRI me: \\klhfs01.klhengrs.c Data\Energy\Compl	Corridor/Transit VE - DEAL #132 com\g\24000-24	tion <8 ft wide 144 s 216 / STORE #2573	3 \24211\Project	2	1 F	36 Report da Pag	36 ate: 06/14/2 e 1 of		Pri Da
F8-EMB: HALL 103 (Project Title	(Common Space Types: e: 166 S. LIBERTY DRI me: \\klhfs01.klhengrs.c Data\Energy\Compl	Corridor/Transi VE - DEAL #132 com\g\24000-24 liance\ELECTRIC	tion <8 ft wide 144 s 216 / STORE #2573 1999\24200-24299\ CAL 2020 NYStretch	3 \24211\Project		F	Report da Pag	ite: 06/14/2		
F8-EMB: HALL 103 (Project Title Data filena Section # & Req.ID C405.2.3,	(Common Space Types: e: 166 S. LIBERTY DRI me: \\klhfs01.klhengrs.c Data\Energy\Compl Rough-In Electrical	Corridor/Transi VE - DEAL #132 com\g\24000-24 liance\ELECTRIC	tion <8 ft wide 144 s 216 / STORE #2573 1999\24200-24299\ CAL 2020 NYStretch CAL 2020 NYStretch	3 \24211\Project h - 2018 IECC.cck	Comme	F nts/Assum	Report da Pag	ite: 06/14/2 e 1 of	8	Da S C:
F8-EMB: HALL 103 (Project Title Data filena Section # & Req.ID C405.2.3. 1, C405.2.3. 2	Common Space Types: E: 166 S. LIBERTY DRI [®] me: \\klhfs01.klhengrs.c Data\Energy\Compl Energy\Compl Energ	Corridor/Transit	tion <8 ft wide 144 s 216 / STORE #2573 1999\24200-24299\ CAL 2020 NYStretch CAL 2020 NYStretch	3 \24211\Project h - 2018 IECC.cck Exception: Side occupancies.	Comme	F nts/Assum	Report da Pag	ite: 06/14/2 e 1 of	8	Da
F8-EMB: HALL 103 (Project Title Data filena Section # & Req.ID C405.2.3, C405.2.3. 1, C405.2.3. 2 [EL23] ² C405.2.4 [EL26] ¹	e: 166 S. LIBERTY DRI me: \\klhfs01.klhengrs.c Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Data\Energy\Compl Selighting within daylight following spaces: 1. Spa total of more than 100 v general lighting within s complying with Section General lighting does not lighting that is required specific application cont accordance with Section Spaces with a total of m watts of general lighting zones complying with Section Spaces with a total of m watts of general lighting zones complying with Section Spaces with a total of m watts of general lighting zones complying with Section Spaces with a total of m watts of general lighting zones complying with Section Spaces installed p lighting plans.	Corridor/Transit	tion <8 ft wide 144 s	B 24211\Project h - 2018 IECC.cck Exception: Side occupancies. Requirement wil	Comme elit zones o Il be met.	F nts/Assum	Report da Pag	ite: 06/14/2 e 1 of	8	Da S S C: C: C: C: C: C: C: C: C: C: C: C: C:
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r Lig	hting PASSES				Total Propo	osed Watts =	5724					zed in a separat
-	hting Compliance Statement Statement: The proposed interior ligh	ting alteration proje	ect represented	l in this docu	ument is co	onsistent w	ith the	# & Req.ID C103.2	Plans, speci	Plan Review		Complies?
g plans s have	s, specifications, and other calculation e been designed to meet the 2020 NY ly with any applicable mandatory requ	ns submitted with th Stretch Energy Cod	nis permit appli e - 2018 IECC r	ication. The requirements	proposed i	interior ligh	ting		calculations with which	provide all inform compliance can b for the interior line	mation be	Does Not Not Observab
Title		Signature			Dat	e			and electric and docume	al systems and e ent where except d are claimed. Inf	equipment tions to	□Not Applicable
									lighting pow bulbs and b	ould include inter ver calculations, v allasts, transform	wattage of	
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									parking spa Panel capac	ig, and with 10 or ces, provide eithe ity and conduit fo	er: 1. or the	□Not Observab □Not Applicable
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				Comme	ents/Assu	mptions						
5. S	urnished O&M instructions for ystems and equipment to the		Requirement v		ents/Assu	mptions						
b	urnished O&M instructions for ystems and equipment to the wilding owner or designated epresentative.		Requirement v		ents/Assu	mptions						
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1 Ir lig ja w 1 B d	ystems and equipment to the puilding owner or designated epresentative. nterior installed lamp and fixture ghting power is consistent with what s shown on the approved lighting plans, demonstrating proposed watts re less than or equal to allowed watts. Building operations and maintenance locuments will be provided to the	Complies Complies Complies Complies Complies Not Observable Not Observable Not Observable Complicable Complies Complies Complies Does Not		will be met. Lighting fixtur								
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# & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2. 2 [EL22] ¹	Spaces required to have light- reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Lighting that is related to means of egress in stairways, ramps, corridors, or emergency routes.
C405.2.1, C405.2.1. 1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, corridor/transition areas, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1. 2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C405.2.1. 3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting only when occupancy for the same area is detected.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.2, C405.2.2. 1, C405.2.2. 2 [EL21] ²	Each area not served by occupancy sensors (per C405.2.1) have time- switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.



	eck Software Version anical Complian	
Project Information		
Energy Code:	2020 NYStretch Energy Code -	2018 IECC
Project Title:	Dollar Tree	
Location:	Stony Point (Rockland), New Yo	ork
Climate Zone:	5a	
Project Type:	Alteration	
Construction Site: 166 S. Liberty Drive Stony Point, NY 10980	Owner/Agent:	Designer/Contractor: KLH Engineers 1538 Alexandria Pike Suite 11 Fort Thomas, KY 41075

Mechanical Systems List Quantity System Type & Description

Additional Comments/Assumptions:

1 Water Heater 1: Electric Storage Water Heater, Capacity: 10 gallons w/ Circulation Pump Proposed Efficiency: 0.98 SL, %/h (if > 12 kW), Required Efficiency: 3.00 SL, %/h (if > 12 kW)

Mechanical Compliance Statement Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2020 NYStretch Energy Code - 2018 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Date

Name - Title

Signature

Project Title: Dollar Tree Report date: 06/21/22 Data filename: G:\24000-24999\24200-24299\24211\Project Data\Energy\Compliance\Mechanical 2020 Page 1 of 7 NYStretch - 2018 IECC.cck

Section # Rough-In Electrical Inspection Complies? **Comments/Assumptions** & Req.ID C405.6 Low-voltage dry-type distribution [EL26]² electric transformers meet the LComplies Requirement will be met. Does Not minimum efficiency requirements of □Not Observable Table C405.6. □Not Applicable C405.7 Electric motors meet the minimum Complies Requirement will be met. [EL27]² efficiency requirements of Tables Does Not Efficiency verified through certification Into Observable program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). C405.8.2 Escalators and moving walks comply Complies Exception: Requirement does not apply. [EL28]² with ASME A17.1/CSA B44 and have Does Not automatic controls configured to □Not Observable reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers. C405.9 Total voltage drop across the Complies Requirement will be met. [EL29]² combination of feeders and branch Does Not circuits <= 5%. □Not Observable □Not Applicable

	1 High Impact (Tier 1) 2 Medium	Impact (Tier 2) 3	Low Impact (Tier 3)		
Project Title:	Dollar Tree		Repo	rt date: 06/21/22	2
Data filename:	G:\24000-24999\24200-24299\24211\Project Data NYStretch - 2018 IECC.cck	a\Energy\Compliance\M	lechanical 2020	Page 5 of 3	7



Inspection Checklist

Energy Code: 2020 NYStretch Energy Code - 2018 IECC

Plumbing Rough-In Inspection Complies? & Req.ID C404.5, Heated water supply piping conforms C404.5.1, to pipe length and volume C404.5.2 [PL6]³ Complies Does Not Not Observable Not Applicable C404.6.1, Automatic time switches installed to Complies Does Not C404.6.2 automatically switch off the [PL3]¹ recirculating hot-water system or heat trace. Not Applicable C404.6.3 Pumps that circulate water between a Complies [PL7]³ heater and storage tank have controls Does Not that limit operation from startup to <= 5 minutes after end of heating □Not Applicable cycle. C404.7 Demand recirculation water systems Complies [PL8]³ have controls that start the pump Does Not upon receiving a signal from the ☐Not Observable action of a user of a fixture or appliance and limits the temperature

Section

of the water entering the cold-water piping to 104°F. Additional Comments/Assumptions:

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

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.11 [PR38] ³	New parking garages and new parking lots powered by the energy services for a building, and with 10 or greater parking spaces, provide either: 1. Panel capacity and conduit for the future installation of minimum 208/240V 40-amp outlets for 5 percent of the total parking spaces and not less than two parking spaces; or 2. Minimum 208/240V 40-amp outlets for 5 percent of the total parking spaces and not less than two parking spaces	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.

parking spaces. Additional Comments/Assumptions:

	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier	3)		
Project Title:	Dollar Tree	Report date	: 06/21/	22
Data filename:	G:\24000-24999\24200-24299\24211\Project Data\Energy\Compliance\Mechanical 2020 NYStretch - 2018 IECC.cck	Page	2 of	7

	1 High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier	3)			
Project Title:	Dollar Tree					Report dat	e:	06/21/	22
Data filename:	G:\24000-24999\24200-24299\2421 NYStretch - 2018 IECC.cck	1\Pr	oject Data\Energy\Complianc	e\№	lechanical 2020	Page		3 of	7

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C404.3 [FI11] ³	Heat traps installed on supply and discharge piping of non-circulating systems.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C404.4 [FI25] ²	All piping insulated in accordance with section details and Table C403.11.3.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C404.6.1 [FI12] ³	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Dollar Tree Report date: 06/21/22 Data filename: G:\24000-24999\24200-24299\24211\Project Data\Energy\Compliance\Mechanical 2020 Page 6 of 7 NYStretch - 2018 IECC.cck

Project Title: Dollar Tree Data filename: G:\24000-24999\24200-24299\24211\Project Data\Energy\Compliance\Mechanical 2020 Page 7 of 7 NYStretch - 2018 IECC.cck

	Comments/Assumptions
e	Requirement will be met.

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41] ³	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.8.1. 1 [ME36] ³	New traction elevators with a rise of 75 feet or more have a power conversion system that complies as follows: C405.8.1.1.1 Induction motors with a Class IE2 efficiency ratings are be used. C405.8.1.1.2 Transmissions does not reduce the efficiency of the combined motor/transmission below that shown for the Class IE2 motor for elevators with capacities below 4,000 lbs. C405.8.1.1.3 Potential energy released during motion recovered with a regenerative drive that supplies electrical energy to the building electrical system.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C405.10 [ME37] ³	Commercial kitchen equipment shall comply with the minimum efficiency requirements of Tables C405.9(1) through table C405.9(5).	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.7.2 [ME115] ³	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.7.5 [ME116] ³	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria. See section details.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.4.1. 4 [ME63] ²	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 85F.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
,	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Report date: 06/21/22

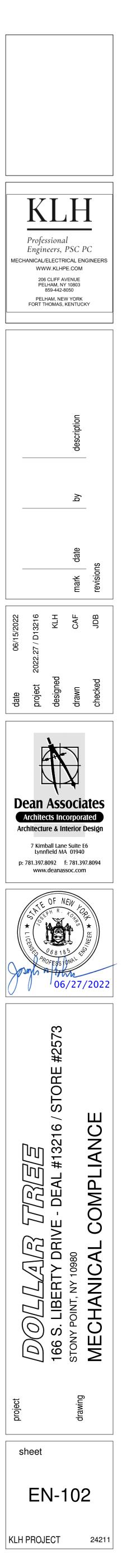
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

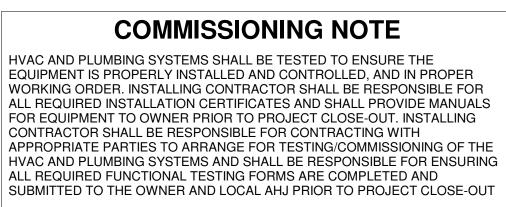
Report date: 06/21/22

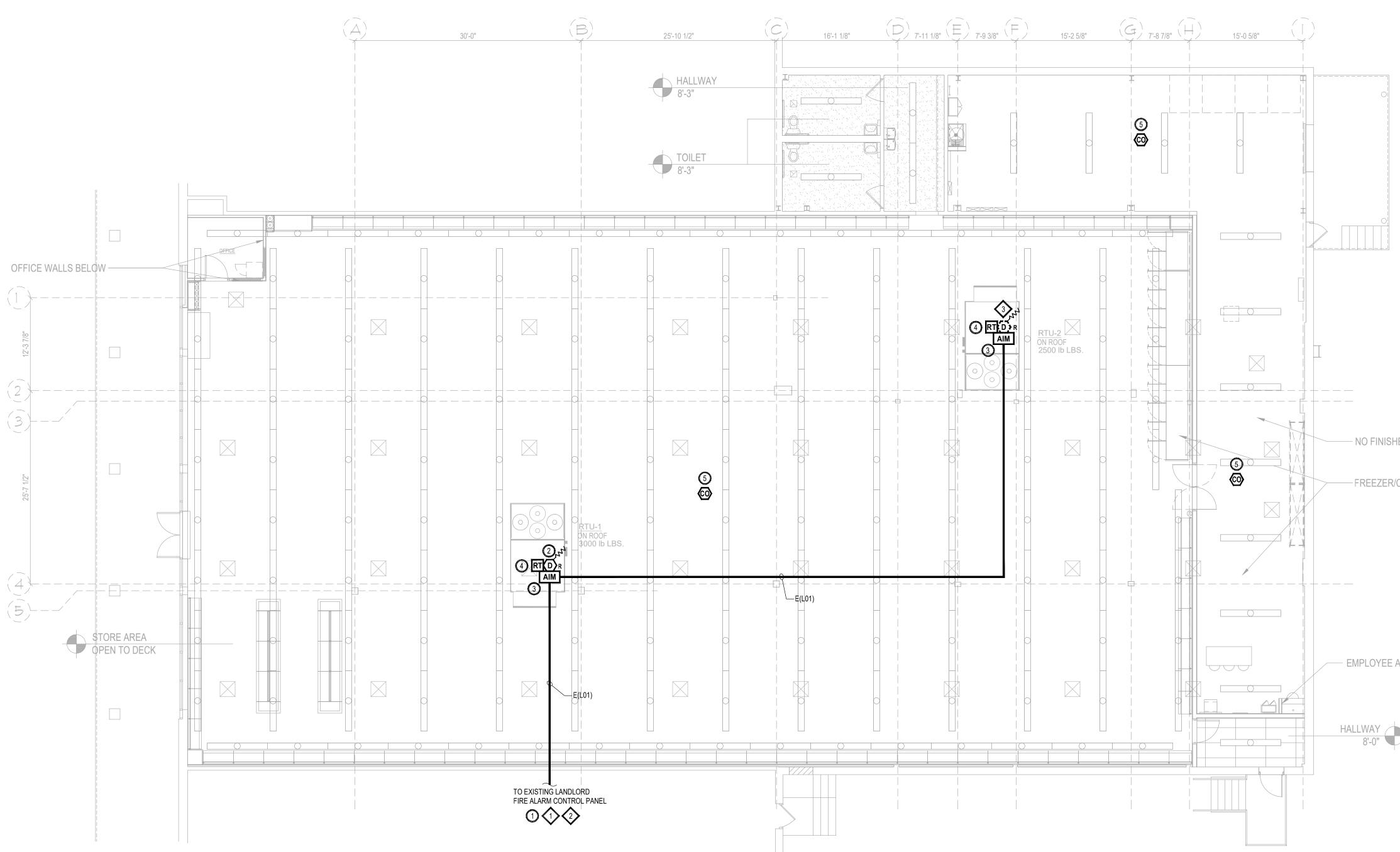
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COMMISSIONING NOTE

WORKING ORDER. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED INSTALLATION CERTIFICATES AND SHALL PROVIDE MANUALS FOR EQUIPMENT TO OWNER PRIOR TO PROJECT CLOSE-OUT. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING WITH APPROPRIATE PARTIES TO ARRANGE FOR TESTING/COMMISSIONING OF THE HVAC AND PLUMBING SYSTEMS AND SHALL BE RESPONSIBLE FOR ENSURING ALL REQUIRED FUNCTIONAL TESTING FORMS ARE COMPLETED AND







FIRE ALARM PLAN - NEW WORK

CONDUCTOR TYPE /-- CIRCUIT DESIGNATION SHOULD MANUFACTURER OF FIRE ALARM EQUIPMENT REQUIRE A DIFFERENT TYPE OR SIZE OF CABLE THAN HEREIN SPECIFIED, THE LARGER OR MORE STRINGENT TYPE OF

CIRCUIT DESIGNATION:

L = INITIATION DATA CIRCUIT

WIRING LEGEND

CABLE SHALL BE USED.

CONDUCTOR TYPE:

E = 18/2 TP FPL

- FIRE ALARM EXISTING TO REMAIN KEYED NOTES (DENOTED AS 🚁)
- . THE EXISTING FIRE ALARM CONTROL PANEL AND ASSOCIATED EQUIPMENT LOCATED OUTSIDE THE DOLLAR TREE SPACE SHALL REMAIN AS CURRENTLY CONFIGURED. ALL NEW FIRE ALARM DEVICES WITHIN THE DOLLAR TREE SPACE SHALL BE CONNECTED DIRECTLY TO THE FIRE ALARM CONTROL PANEL. THE FIRE ALARM CONTROL PANEL SHALL TRANSMIT FIRE ALARM, SUPERVISORY, AND TROUBLE SIGNALS OFF-SITE AS CURRENTLY CONFIGURED.
- THE EXISTING FIRE SPRINKLER RISER SERVING THE DOLLAR TREE SPACE IS CURRENTLY BEING ELECTRONICALLY MONITORED BY THE LANDLORDS FIRE ALARM CONTROL PANEL LOCATED OUTSIDE OF THE PROPOSED DOLLAR TREE SPACE. THE PROPOSED DOLLAR TREE SPACE HAS AN OCCUPANT LOAD OF LESS THAN 500 AND DOES NOT REQUIRE OCCUPANT NOTIFICATION. THEREFORE, A FIRE ALARM SYSTEM IS NOT REQUIRED AND WILL NOT BE PROVIDED WITHIN THE PROPOSED DOLLAR TREE SPACE. THE EXISTING LANDLORD FIRE ALARM SYSTEM SHALL CONTINUE TO MONITOR THE FIRE SPRINKLER SYSTEM AS CURRENTLY
- CONFIGURED THE EXISTING DUCT SMOKE DETECTORS AND ASSOCIATED CABLING/CONDUIT SHALL REMAIN AS CURRENTLY CONFIGURED. FIELD VERIFY THE EXISTING DUCT SMOKE DETECTORS ARE IN GOOD WORKING CONDITION, OPERATIONAL, AND SUPERVISED BY THE FIRE ALARM SYSTEM. IF THE EXISTING DUCT SMOKE DETECTORS ARE NOT IN GOOD WORKING CONDITION, REPLACE THE EXISTING DUCT SMOKE DETECTOR. IF THE EXISTING DUCT SMOKE DETECTORS ARE NOT SUPERVISED BY THE FIRE ALARM SYSTEM, PROVIDE ADDRESSABLE INPUT MODULE

TO INDIVIDUALLY MONITOR EACH EXISTING DUCT DETECTOR. PROVIDE NEW FIRE

ALARM CABLING/CONDUIT AS NEEDED.

PROJECT INFORMATION DOLLAR TREE - STONY POINT, NY PROJECT NAME: 166 S LIBERTY DRIVE LOCATION: STONY POINT, NY 10980 FIRE PROTECTION: 100% SPRINKLERED OCCUPANCY: MERCANTILE (EXISTING) SCOPE OF WORK THE FIRE ALARM SYSTEM WITHIN THE FUTURE DOLLAR TREE SHALL UTILIZE THE EXISTING FIRE ALARM EQUIPMENT AS NEEDED. THE EXISTING FIRE ALARM CONTROL PANEL SHALL REPORT ALL ALARM, SUPERVISORY, AND TROUBLE SIGNAL OFF-SITE AS CURRENTLY CONFIGURED.

APPLICABLE CODES

FOR RESOLUTION.

- OF THE FOLLOWING:

- POWER-LIMITED FIRE ALARM CABLING SHALL BE PROVIDED

THE NEW SCOPE OF WORK ON THE EXISTING FIRE ALARM SYSTEM SHALL CONSIST NEW DUCT SMOKE DETECTOR ON THE RETURN SIDE NEW STAND ALONE CARBON MONOXIDE ALARMS

ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.

2020 NEW YORK STATE BUILDING CODE

- 2020 NEW YORK STATE FIRE CODE
- 2020 NEW YORK STATE MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2016 EDITION NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE

CONFLICTS BETWEEN THE REFERENCE NFPA STANDARDS, FEDERAL OR STATE CODES, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ENGINEER OF RECORD (CCI)

FIRE ALARM KEYED NOTES (DENOTED AS 🍘)

- FIELD VERIFY EXISTING FIRE ALARM CONTROL PANEL (FACP) HAS SUFFICIENT STANDBY SECONDARY BATTERY CAPACITY TO ACCOMMODATE THE NEW FIRE ALARM EQUIPMENT. IF ADEQUATE SECONDARY BATTERY CAPACITY IS NOT PROVIDED, LARGER BATTERIES SHALL BE PROVIDED TO MEET THE SECONDARY BATTERY CAPACITY REQUIREMENTS IN NFPA 72. PROVIDE ALL CHARGING CABLES AND BATTERY CABINET AS NECESSARY. ENSURE THE NEW BATTERIES DO NOT EXCEED CHARGING CAPABILITIES OF EXISTING EQUIPMENT.
- PROVIDE CONVENTIONAL DUCT SMOKE DETECTION ON THE RETURN SIDE OF ALL AIR HANDLING UNITS (AHU) WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM. DUCT SMOKE DETECTORS SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. CONFIGURE THE DUCT SMOKE DETECTOR TO UTILIZE THE AUXILIARY ALARM CONTACTS OF THE DUCT SMOKE DETECTOR TO SHUTDOWN THE RTU THROUGH THE INDIVIDUAL RTU CONTROLLER. PROVIDE ANY REQUIRED INTERMEDIATE RELAYS FOR CONNECTIONS TO HVAC CONTROLS. PROVIDE CABLING AND WIRING CONNECTIONS TO HVAC CONTROLS AND DUCT DETECTOR POWER. FINAL TERMINATIONS TO HVAC CONTROLS AND DUCT DETECTOR POWER ARE BY MECHANICAL OR CONTROLS CONTRACTOR. COORDINATE ALL EQUIPMENT INSTALLATION, POWER, AND INTERFACE CONNECTIONS WITH THE ELECTRICAL, MECHANICAL, AND TEMPERATURE CONTROLS CONTRACTORS.
- PROVIDE AN ADDRESSABLE INPUT MODULES (AIM) FOR MONITORING OF THE RETURN DUCT SMOKE DETECTORS. PROVIDE CONNECTIONS TO THE ALARM AND TROUBLE CONTACTS TO INITIATE WITHOUT BEING AFFECTED BY THE STATUS OF THE TROUBLE CONTACTS. ROUTE CABLING TO DUCT SMOKE DETECTOR THROUGH THE ROOF UTILIZING THE CONDUIT TO THE RTU (PROVIDED BY ELECTRICAL CONTRACTOR). COORDINATE LOCATION OF THE CONDUIT WITH THE ELECTRICAL CONTRACTOR.
- PROVIDE A REMOTE TEST STATION/ANNUNCIATOR FOR EACH DUCT SMOKE DETECTOR. PROVIDE ANY REQUIRED POWER CABLING CONNECTIONS TO DETECTORS AND REMOTE TEST STATION/ANNUNCIATOR. MOUNT THE REMOTE TEST STATION/ANNUNCIATOR ON THE COLUMN NEAREST TO THE RTU. COORDINATE EXACT MOUNTING LOCATIONS WITH THE GENERAL CONTRACTOR, OWNER, AND THE AHJ PRIOR TO INSTALLATION.
- PROVIDE A BATTERY POWERED CARBON MONOXIDE ALARM, AS OUTLINED IN THE DRAWINGS AND SPECIFICATIONS. THE CARBON MONOXIDE ALARM SHALL ACTIVATE AND SOUND A TEMPORAL 4 PATTERN, AS REQUIRED BY NFPA 72 / 720 AND THE NEW YORK STATE BUILDING CODE. CARBON MONOXIDE ALARMS ARE NOT REQUIRED TO BE INTERCONNECTED BETWEEN THE DETECTION ZONE OR WITHIN OTHER DETECTION ZONE(S). MOUNT CARBON MONOXIDE ALARM ON THE BOTTOM OF THE DECK (NOT ON THE BOTTOM OF STRUCTURAL MEMBERS) OR SUSPENDED CEILING AND LOCATED MORE THAN THREE (3) FEET FROM ANY MECHANICAL DIFFUSERS, AS INDICATED IN NFPA 72 / 720. THE CARBON MONOXIDE ALARM AND CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2

INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE

WITH NATIONAL ELECTRICAL CODE.

FIRE ALARM SYMBOL KEY

(v)	EXISTING STAND ALONE CEILING MOUNTED VISUAL TO BE DISCONNECTED AND REMOVED (NOT CONNE
AV	EXISTING STAND ALONE COMBINATION CEILING MOU AUDIBLE/VISUAL APPLIANCE & SMOKE ALARM - TO B DISCONNECTED AND REMOVED (NOT CONNECTED T
€D} _R	EXISTING DUCT TYPE SMOKE DETECTOR TO REMAIL (R = RETURN SIDE)
	DUCT-TYPE PHOTOELECTRIC SMOKE DETECTOR (C (POWERED BY RTU) (R = RETURN SIDE)
\odot	STAND ALONE CARBON MONOXIDE ALARM (10 YEAR BATTERY OPERATED)
AIM	NEW ADDRESSABLE INPUT MODULE (COMPATIBLE WITH EXISTING FACP)
RT	REMOTE TEST STATION / ANNUNCIATOR (SYSTEM SENSOR RTS151KEY)
	FIRE ALARM PLENUM RATED CONDUCTORS (RED IN COLOR)
J	JUNCTION BOX
	END OF LINE RESISTOR

– NO FINISHED CEILING

FREEZER/COOLER BELOW

- EMPLOYEE AREA WALLS BELOW





JACOB P. HEMKE, PE LICENSE NO. 086219 CODE CONSULTANTS Professional Engineers, PC 215 WEST 40TH ST., 10TH FLOOR NEW YORK, NY 10018 PHONE: 212-216-9596 CORPORATE CERTIFICATE OF AUTHORITY NO. 41955 WARNING: IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145, SECTION 7209 FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LOPINGED RODEFERSION ENDINGED OF A LICENSED PROFESSIONAL ENGINEER To alter this document in any way.

ENGINEER OF RECORD:

FIRE ALARM MATRIX

		/
	ACTILIA.	AIES OUL
EXISTING INITIATING DEVICES		
FIRE SPRINKLER SYSTEMS		
- WATERFLOW SWITCH		
- CONTROL VALVE TAMPER SWITCH		
MANUAL PULL STATIONS		
SMOKE DETECTION DEVICES		
- SPOT TYPE		
- AIR HANDLING UNIT - RETURN SIDE		
CARBON MONOXIDE DETECTION DEVICES		
- SPOT TYPE (STAND ALONE BATTERY OPERATED)		
LOSS OF PRIMARY POWER AT THE FACP		
ABNORMAL CIRCUIT (OPEN, GROUND FAULT, SHORT) OR DEVICE		
NOTE:		

THIS MATRIX ONLY INCLUDES THE ITEMS WITHIN THIS SCOPE OF WORK. ALL EXISTING INITIATION DEVICES SHALL REMAIN AS CURRENTLY CONFIGURED. LOCATED IN THE DOLLAR TREE SPACE.

(c) CEILING MOUNTED SEE NOTE 1

SUSPENDED CEILING

CEILING/DECK

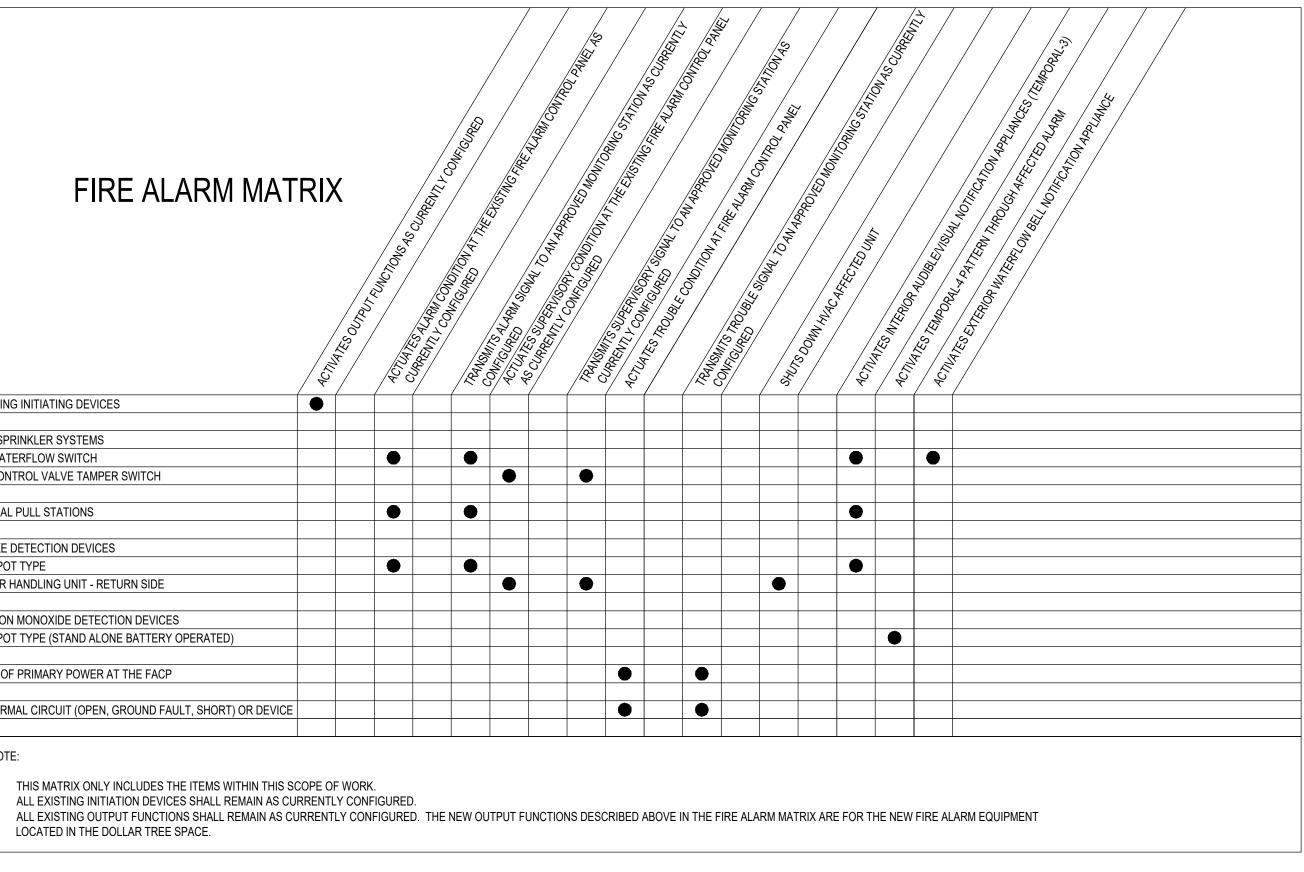
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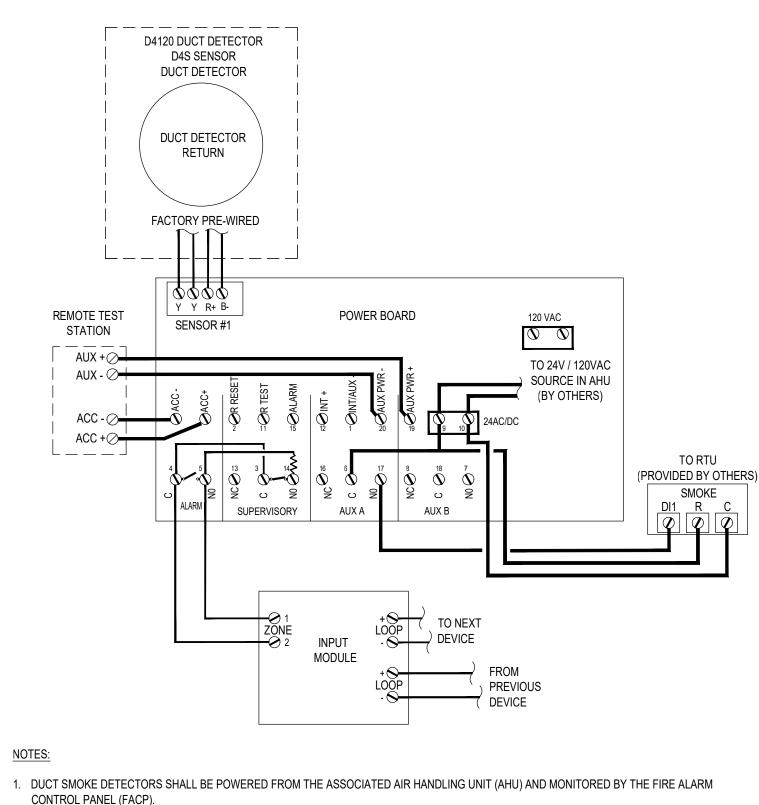
FINISHED FLOOR

1 TYPICAL MOUNTING HEIGHT DETAIL FA2 NOT TO SCALE

(NOT ON BOTTOM OF STRUCTURAL MEMBERS), AND AS INDICATED IN NFPA 72 AND 720.

1. WHERE INDICATED ON THE DRAWINGS - LOCATE CEILING MOUNTED CARBON ALARMS DETECTORS ON THE BOTTOM OF DECK





2. THE FACP SHALL SUPERVISE ALL POWER CONNECTIONS AND TROUBLE CONDITIONS. 3. LOSS OF POWER TO A DUCT DETECTOR (AHU SUPPLIED POWER) SHALL TRANSMIT A TROUBLE CONDITION TO THE FACP.

4. CONFIGURE THE DUCT SMOKE DETECTOR TO UTILIZE THE AUXILIARY ALARM CONTACTS OF THE DUCT SMOKE DETECTOR TO SHUTDOWN THE RTU THROUGH THE INDIVIDUAL RTU CONTROLLER. PROVIDE ANY REQUIRED INTERMEDIATE RELAYS FOR CONNECTIONS TO HVAC CONTROLS. PROVIDE CABLING AND WIRING CONNECTIONS TO HVAC CONTROLS. FINAL TERMINATIONS TO HVAC CONTROLS ARE BY MECHANICAL OR CONTROLS CONTRACTOR.

2 DUCT DETECTOR WIRING DETAIL FA2 NOT TO SCALE

ALL WORK SHALL BE IN ACCORDANCE WITH NFPA STANDARDS AND ALL LOCAL ADOPTED CODES. FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE. SHOULD MANUFACTURER OF FIRE ALARM EQUIPMENT REQUIRE DIFFERENT TYPE OR SIZE OF CABLE THAN HEREIN SPECIFIED, THE LARGER OR MORE STRINGENT TYPE OF CABLE SHALL BE USED. ALL FIRE ALARM CABLING SHALL BE FIRE POWER LIMITED TYPE FPL, FPLR, OR FPLP AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. SEE WIRING LEGEND FOR CABLE TYPES AND SIZES PROVIDE ALL REQUIRED CONDUIT, BACKBOXES, AND FITTINGS FOR THE FIRE ALARM SYSTEM CABLING. 5. FIRE ALARM CABLING SHALL BE RED IN COLOR. 6. FIRE ALARM CABLING SHALL NOT BE PAINTED. CABLE ROUTING SHOWN ON DRAWINGS IS FOR INTENT. EXACT ROUTING SHALL BE COORDINATED WITH OTHER TRADES IN THE FIELD. SEE DRAWING NOTES AND DETAILS FOR ACCEPTABLE INSTALLATION METHODS. ALL CABLE RUNS SHALL BE NEATLY BUNDLED, WRAPPED TIGHT AND PROPERLY SECURED. ANY CABLING NOT INSTALLED IN A NEAT AND PROFESSIONAL MANNER SHALL BE PULLED OUT AND RE-RUN BY INSTALLER AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RUNNING CABLING MUST MARK BOTH ENDS OF CABLING, PROVIDE A WIRE LEGEND FOR ALL LOCATIONS, AND PROVIDE A CONTINUITY TEST LOG FOR EACH CABLE. 0. EXPOSED CABLING SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. EXPOSED CABLING SHALL NOT BE RUN IN A "SPAN" FASHION BETWEEN BAR JOISTS OR BEAMS (I.E.: CABLING SHALL BE ROUTED ALONG PATH OF JOISTS AND BEAMS). ALL CABLING SHALL BE SECURED TO THE STRUCTURAL CEILING BETWEEN JOISTS OR BEAMS. ALL CABLING SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND NOT FROM GRID, TILES OR SUPPORT WIRES. EXPOSED CABLING SHALL BE SUPPORTED BY BUILDING STRUCTURE AT NO MORE THAN FIVE (5) FOOT INTERVALS USING APPROVED "O" RINGS AND "J" HOOKS. 12. ALL FIRE ALARM CABLING BELOW THE STRUCTURE, IN ELECTRICAL AND MECHANICAL ROOMS (SUBJECT TO PHYSICAL DAMAGE), CONCEALED ABOVE CEILINGS OR IN PARTITIONS (SUBJECT TO PHYSICAL DAMAGE) SHALL BE INSTALLED IN METALLIC CONDUIT. 3. ALL POWER LIMITED FIRE ALARM CABLING ABOVE THE STRUCTURE, ABOVE LAY-IN CEILINGS, OR CONCEALED ABOVE CEILINGS OR IN PARTITIONS (NOT SUBJECT TO PHYSICAL DAMAGE) ARE NOT REQUIRED TO BE INSTALLED IN CONDUIT. 14. ALL NON-POWER LIMITED FIRE ALARM CABLING FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONDUIT. 15. ALL CONDUIT SHALL BE TERMINATED AT THE BAR JOIST LEVEL WITH SOME FORM OF GROMMET OR BOX CONNECTOR. 16. ALL CONDUIT LOCATED IN DRYWALL SHALL BE TERMINATED NO LESS THAN SIX (6) INCHES ABOVE THE CEILING TILE. 17. FOR DRYWALL APPLICATIONS, ALL CONDUIT AND BACKBOXES SHALL BE RECESSED INSIDE THE WALL. 18. ALL FIRE ALARM CABLING IN FINISHED AREAS SHALL BE CONCEALED. 19. COORDINATE DRILLING OF ANY HOLES (I.E. COLUMN PENETRATIONS) WITH THE

INSTALLATION NOTES

- OWNER'S REPRESENTATIVE AND ALL OTHER TRADES PRIOR TO INSTALLATION. 20. ALL FIRE ALARM DEVICES AND APPLIANCES SHALL BE INSTALLED IN OR ON A PROPER BACKBOX. NO DEVICES OR APPLIANCE SHALL BE INSTALLED WITHOUT A
- BACKBOX. . ALL CABLING, CONDUIT, AND BACKBOXES SHALL BE PROPERLY SUPPORTED AND SEISMICALLY BRACED, AS REQUIRED BY ALL APPLICABLE CODES AND THE LOCAL JURISDICTION.
- 22. ALL WIRING CONDUCTORS ENTERING FIRE ALARM PANEL(S) SHALL BE IN CONDUIT AND ENTER FROM THE SIDE OF THE FIRE ALARM PANEL(S).
- 23. CONDUIT FILL SHALL NOT EXCEED 40%.
- 24. ALL FIRE ALARM JUNCTION BOXES SHALL BE RED IN COLOR.
- 25. ALL FIRE ALARM CABLING RISERS SHALL BE INSTALLED IN EMT CONDUIT.

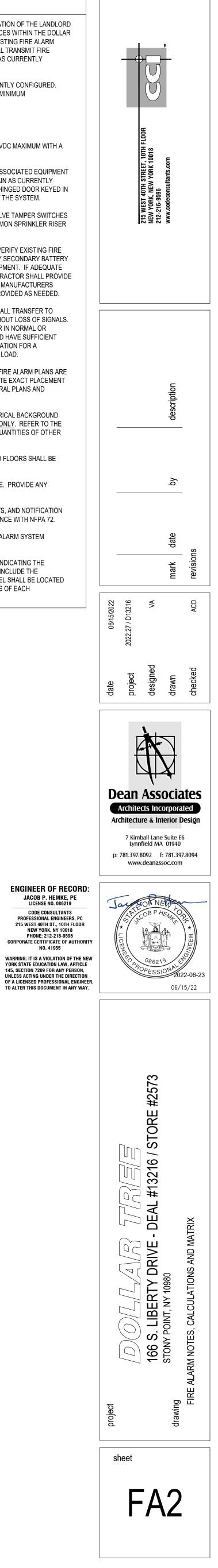
GENERAL PROGRAMMING NOTES

COORDINATE SPECIFIC ALPHANUMERIC DESCRIPTIONS WITH THE OWNER PRIOR TO SYSTEM PROGRAMMING.

FIRESTOP NOTES

- ALL THROUGH-PENETRATIONS OF FIRE-RATED WALLS AND FLOORS SHALL BE FIRE-STOPPED.
- FIRE-RATED GYPSUM BOARD WALLS CONSTRUCTED AS DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGNS IN THE U.L. FIRE RESISTANCE DIRECTORY (GENERALLY DOUBLE THICKNESS WALLBOARD) SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.
- ALL REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOORS OR WALLS, AND ALL U.L. CLASSIFIED CONCRETE BLOCK WALLS SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.

- **GENERAL NOTES**
- THE FIRE ALARM SYSTEM SHALL OPERATE AS A CONTINUATION OF THE LANDLORD FIRE ALARM CONTROL PANEL. ALL NEW FIRE ALARM DEVICES WITHIN THE DOLLAR TREE SPACE SHALL BE CONNECTED DIRECTLY TO THE EXISTING FIRE ALARM CONTROL PANEL. THE FIRE ALARM CONTROL PANEL SHALL TRANSMIT FIRE ALARM, SUPERVISORY, AND TROUBLE SIGNALS OFF-SITE AS CURRENTLY CONFIGURED.
- EXISTING FIRE ALARM CIRCUITS SHALL REMAIN AS CURRENTLY CONFIGURED. NEW FIRE ALARM CIRCUITS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
- SUPERVISORY CIRCUITS CLASS B • SIGNALING LINE CIRCUITS (SLC) - CLASS B
- AUXILIARY CIRCUITS CLASS B NOTIFICATION APPLIANCE CIRCUITS (NAC) - CLASS B
- CIRCUITS FOR RELAY COIL OPERATION SHALL BE 24 VDC MAXIMUM WITH A SEPARATE OR INTEGRAL FIELD COLLAPSING DIODE.
- THE EXISTING FIRE ALARM CONTROL PANEL (FACP) AND ASSOCIATED EQUIPMENT LOCATED OUTSIDE THE DOLLAR TREE SPACE SHALL REMAIN AS CURRENTLY CONFIGURED. FIELD VERIFY THAT ALL CABINETS HAVE A HINGED DOOR KEYED IN COMMON WITH ALL OTHER KEYED DEVICES THROUGHOUT THE SYSTEM.
- THE EXISTING SPRINKLER WATERFLOW AND CONTROL VALVE TAMPER SWITCHES SERVING DOLLAR TREE SPACE ARE LOCATED IN THE COMMON SPRINKLER RISER ROOM AND SHALL REMAIN AS CURRENTLY CONFIGURED.
- THE INSTALLING FIRE ALARM CONTRACTOR SHALL FIELD VERIFY EXISTING FIRE ALARM CONTROL PANEL (FACP) HAS SUFFICIENT STANDBY SECONDARY BATTERY CAPACITY TO ACCOMMODATE THE NEW FIRE ALARM EQUIPMENT. IF ADEQUATE SECONDARY BATTERY CAPACITY IS NOT PROVIDED, CONTRACTOR SHALL PROVIDE LARGER BATTERIES WITHOUT EXCEEDING EXISTING FACP MANUFACTURERS CHARGING CAPABILITIES. BATTERY CABINET SHALL BE PROVIDED AS NEEDED.
- UPON LOSS OF BUILDING POWER, THE ENTIRE SYSTEM SHALL TRANSFER TO SECONDARY POWER WITHIN TEN (10) SECONDS, AND WITHOUT LOSS OF SIGNALS. THE SYSTEM SHALL OPERATE UNDER SECONDARY POWER IN NORMAL OR TROUBLE CONDITIONS FOR TWENTY-FOUR (24) HOURS AND HAVE SUFFICIENT POWER TO SUPPORT COMPLETE ALARM CONDITION OPERATION FOR A SUBSEQUENT FIVE (5) MINUTES AT MAXIMUM CONNECTED LOAD.
- DEVICES AND APPLIANCE LOCATIONS AS SHOWN ON THE FIRE ALARM PLANS ARE NOT DIMENSIONED FOR EXACT INSTALLATION. COORDINATE EXACT PLACEMENT OF ALL DEVICES AND APPLIANCES WITH THE ARCHITECTURAL PLANS AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL BACKGROUND INFORMATION IS SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO THE PROPER DRAWINGS FOR EXACT LOCATIONS, SIZES AND QUANTITIES OF OTHER TRADES' WORK.
- ALL THROUGH-PENETRATIONS OF FIRE-RATED WALLS AND FLOORS SHALL BE FIRE-STOPPED.
- 10. ALL JUNCTION BOXES SHALL BE ACCESSIBLE FOR SERVICE. PROVIDE ANY REQUIRED ACCESS PANELS.
- 1. ALL SIGNALING LINE CIRCUITS, INITIATING DEVICE CIRCUITS, AND NOTIFICATION APPLIANCE CIRCUITS SHALL BE SUPERVISED IN ACCORDANCE WITH NFPA 72.
- 2. PROVIDE ANY REQUIRED SEISMIC BRACING FOR ALL FIRE ALARM SYSTEM DEVICES, CONDUIT AND BACKBOXES.
- 3. PROVIDE A PRINTED LABEL FOR EACH INITIATING DEVICE INDICATING THE SPECIFIC ADDRESS FOR THAT DEVICE. THE LABEL SHALL INCLUDE THE PROGRAMMING ADDRESS AND DEVICE NUMBER. THE LABEL SHALL BE LOCATED ON THE BASE OF ALL DETECTORS AND THE COVER PLATES OF EACH ADDRESSABLE DEVICE.



PART 1 — GENERAL

SECTION 16720/283111 - FIRE ALARM SYSTEMS

- 1.01 RELATED DOCUMENTS A. CONDITIONS OF THE CONTRACT, DRAWINGS, GENERAL REQUIREMENTS CONDITIONS AND DIVISION 1 SPECIFICATION APPLY TO THE WORK OF THIS SECTION. 1.02 SUMMARY A. PROVIDE ALL REQUIRED LABOR, WARRANTY LABOR, MATERIALS, EQUIPMENT, SYSTEM PROGRAMMING, TESTING, SUBMITTALS AND SERVICES NECESSARY FOR A COMPLETE AND OPERATIONAL FIRE ALARM
- SYSTEM AS HEREINAFTER DESCRIBED, AND AS SHOWN ON THE ENGINEERING DRAWINGS. B. WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
- 1. CONNECTIONS TO EXISTING FACP
- 2. DATA CIRCUITS 3. INITIATION CIRCUITS
- 4. HVAC SHUTDOWN DETECTION DEVICES
- 6. CARBON MONOXIDE ALARMS
- C. PROVIDE A MINIMUM OF ONE (1) HOUR TRAINING, FOR STAFF PERSONNEL, IN THE OPERATION AND USE OF THE SYSTEM.
- D. IT IS INTENDED THAT THE ENGINEERING DRAWINGS AND SPECIFICATIONS SHALL DESCRIBE AND PROVIDE FOR A WORKING INSTALLATION COMPLETE IN EVERY DETAIL AND ALL ITEMS NECESSARY FOR SUCH COMPLETE INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE ENGINEERING DRAWINGS.
- 1.03 DEFINITIONS
- A. DEFINITIONS REFERENCED IN THESE SPECIFICATIONS ARE AS FOLLOWS:
- 1. AHJ: AUTHORITY HAVING JURISDICTION 2. FACP: FIRE ALARM CONTROL PANEL
- 3. UL: UNDERWRITERS LABORATORIES, INC. 4. LED: LIGHT-EMITTING DIODE
- 5. NICET: NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES 6. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
- 7. FAEM: FIRE ALARM EQUIPMENT MANUFACTURER 8. NRTL: NATIONALLY RECOGNIZED TESTING LABORATORY
- 1.04 <u>REFERENCES</u>
- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.
- B. IF THERE IS A CONFLICT BETWEEN THE APPLICABLE CODES, REFERENCED DESIGN STANDARDS, OR LOCAL AMENDMENTS AND THIS SPECIFICATION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY BRING THE CONFLICT TO THE ENGINEER FOR RESOLUTION.
- 1.05 SYSTEM DESCRIPTION
- A. THE SYSTEM SHALL CONTINUE TO OPERATE AS A LOW VOLTAGE FIRE ALARM SYSTEM AND SUPERVISED FIRE ALARM SYSTEM AS HEREINAFTER SPECIFIED. THE EXISTING FIRE ALARM CONTROL PANEL AND DEVICES SHALL REMAIN AND BE REUSED AS CURRENTLY CONFIGURED. NEW INITIATING DEVICE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. NEW NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. NEW SIGNALING LINE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. CIRCUITS FOR RELAY COIL OPERATION SHALL BE 24 VOLT MAXIMUM WITH A SEPARATE OR INTEGRAL FIELD COLLAPSING DIODE.
- B. UPON LOSS OF BUILDING POWER, THE ENTIRE SYSTEM SHALL TRANSFER TO WITHIN TEN (10) SECONDS, AND WITHOUT LOSS OF SIGNALS. THE SYSTEM SHALL OPERATE UNDER SECONDARY POWER IN NORMAL OR TROUBLE CONDITIONS FOR TWENTY-FOUR (24) HOURS AND HAVE SUFFICIENT POWER TO SUPPORT COMPLETE ALARM CONDITION OPERATION FOR A SUBSEQUENT FIVE (5) MINUTES. C. SYSTEM OPERATION SHALL BE AS FOLLOWS:
- ABNORMAL CIRCUIT CONDITIONS OR DEVICES, AS REQUIRED FOR THE CLASS OF THE CIRCUIT, SHALL INITIATE A "TROUBLE" CONDITION AT THE CONTROL PANEL FOR THAT SPECIFIC CIRCUIT OR DEVICE. THE "TROUBLE" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION ON THE AFFECTED CIRCUIT OR DEVICE. THE FIRE ALARM SYSTEM SHALL TRANSMIT A "TROUBLE" CONDITION OFF-SITE AS CURRENTLY CONFIGURED
- ACTIVATION OF ANY SUPERVISORY DEVICE AS INDICATED ON THE ENGINEERING DRAWINGS SHALL INITIATE A "SUPERVISORY" CONDITION AT THE CONTROL FOR THAT SPECIFIC DEVICE. THE "SUPERVISORY" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION AND SPECIFIC ADDRESS AND ALPHANUMERIC DESCRIPTION OF THE DEVICE AFFECTED. THE FIRE ALARM
- SYSTEM SHALL TRANSMIT A "SUPERVISORY" CONDITION OFF-SITE AS CURRENTLY CONFIGURED 3. ACTIVATION OF ANY ALARM DEVICE AS INDICATED ON THE ENGINEERING DRAWINGS SHALL INITIATE AN "ALARM" CONDITION AT THE CONTROL PANEL FOR THAT SPECIFIC DEVICE. THE "ALARM" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION AND SPECIFIC ADDRESS AND ALPHANUMERIC DESCRIPTION OF THE DEVICE AFFECTED. THE FIRE ALARM SYSTEM SHALL
- TRANSMIT AN "ALARM" CONDITION OFF-SITE AS CURRENTLY CONFIGURED. 4. INITIATION OF AN "ALARM" CONDITION SHALL RESULT IN THE FOLLOWING FUNCTIONS TO BE PERFORMED BY THE SYSTEM: a. INITIATE AN ALARM INDICATION ON THE CONTROL PANEL BY TONE AND ILLUMINATE THE
- CORRESPONDING DEVICE SPECIFIC ALPHANUMERIC LCD DESCRIPTION, MANUALLY ACTIVATING THE "ALARM SILENCE" SHALL SILENCE THE TONE AT THE PANEL. THE ALARM ALPHANUMERIC DISPLAY SHALL REMAIN "ON" AT THE CONTROL PANEL UNTIL THE CONDITION CAUSING THE ALARM HAS BEEN CLEARED AND RESET. AN ADDITIONAL ALARM REPORTED TO THE PANEL SUBSEQUENT TO ACTIVATING THE "ALARM SILENCE" SHALL REACTIVATE THE CONTROL PANEL TONE.
- b. THE EXISTING FIRE ALARM CONTROL PANEL SHALL TRANSMIT AN "ALARM" SIGNAL APPROVED OFF-SITE MONITORING FACILITY.
- 5. ACTUATION OF ALARM NOTIFICATION APPLIANCES, FIRE SAFETY FUNCTIONS, AND ANNUNCIATION AT THE PROTECTED PREMISES SHALL OCCUR WITHIN TEN (10) SECONDS AFTER THE ACTIVATION OF AN INITIATING DEVICE. 1.06 QUALITY ASSURANCE
- A. ALL WORK SHALL MEET THE REQUIREMENTS OF THE OWNER, ARCHITECT, ENGINEER AND AUTHORITY HAVING JURISDICTION (AHJ).
- B. ALL EQUIPMENT AND COMPONENTS SHALL BE UL LISTED, FOR THE ACTUAL INTENDED USE, UNLESS HEREINAFTER SPECIFICALLY EXCLUDED FROM SUCH A LISTING.
- INSTALLATION AND SUPERVISION OF INSTALLATION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE REGULATIONS, LICENSES, AND PERMITS FOR FIRE ALARM SYSTEM INSTALLERS IN THIS JURISDICTION
- D. INSTALLER MUST HAVE BEEN ACTIVELY ENGAGED IN THE BUSINESS OF SELLING, INSTALLING, AND SERVICING FIRE ALARM SYSTEMS FOR AT LEAST FIVE (5) YEARS.
- INSTALLER MUST BE AN AUTHORIZED REPRESENTATIVE OF THE FIRE ALARM EQUIPMENT MANUFACTURER (FAEM) AND HAVE TECHNICAL FACTORY TRAINING SPECIFICALLY FOR THE SYSTEM PROPOSED F. THE FAEM SHALL HAVE A REPRESENTATIVE SUPERVISE THE FINAL CONNECTION OF DEVICES, WIRING,
- AND PROGRAMMING OF THE CONTROL PANELS. THE FAEM REPRESENTATIVE SHALL BE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET) CERTIFIED AS LEVEL II OR HIGHER FIRE ALARM PROTECTION / FIRE ALARM SYSTEMS ENGINEERING TECHNICIAN. 1.07 <u>REGULATORY REQUIREMENTS</u>
- A. ALL WORK SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.
- B. NO APPROVALS OR INTERPRETATIONS OF THE DESIGN DOCUMENTS SHALL BE PURSUED EXCEPT THROUGH THE ENGINEER. C. ANY WORK PERFORMED PRIOR TO THE SATISFACTORY REVIEW OF THE SHOP DRAWINGS BY THE
- ENGINEER, APPROVAL BY THE AHJ, AND DETERMINED TO BE NONCOMPLIANT WITH THE CONTRACT DOCUMENTS OR APPLICABLE CODES BY THE OWNER OR AHJ WILL BE REPLACED AT THE CONTRACTORS' EXPENSE
- D. THE SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE INSPECTION AND TESTING FORM HAS BEEN OBTAINED. 1.08 SUBMITTALS
- A. THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THESE DOCUMENTS WILL BE
- MADE AVAILABLE EITHER IN ELECTRONIC OR HARD COPY FORM. UTILIZATION OF THESE DOCUMENTS FOR THE DEVELOPMENT OF SHOP DRAWINGS AND SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITIES REQUIRED HEREIN. B. IN THE SUBMITTALS, THE CONTRACTOR MUST CLEARLY IDENTIFY ALL AREAS AND SECTIONS OF THIS
- SPECIFICATION TO WHICH THEY TAKE EXCEPTION OR ARE NOT CAPABLE OF PROVIDING. C. SUBMITTALS WILL BE DISAPPROVED UNLESS REQUIRED EQUIPMENT LITERATURE, CALCULATIONS, AND COMPLETE SHOP DRAWINGS ARE SUBMITTED TOGETHER AS ONE PACKAGE FOR REVIEW.
- D. THE ENGINEER SHALL REVIEW THE CONTRACTOR'S SUBMITTALS TO VERIFY CONFORMANCE TO THE PROJECT SPECIFICATIONS AND DESIGN CONCEPTS EXPRESSED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF SUCH
- SUBMITTALS IS NOT CONDUCTED FOR THE PURPOSE OF DETERMINING THE ACCURACY AND COMPLETENESS OF DETAILS AND DIMENSIONS, OR SUBSTANTIATING INSTALLATION OR PERFORMANCE OF EQUIPMENT AND SYSTEMS DESIGNED BY THE CONTRACTOR. ALL OF WHICH REMAIN THE CONTRACTOR'S RESPONSIBILITY TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT CONSTITUTE APPROVAL OF SAFETY PRECAUTIONS OF CONSTRUCTION, MEANS, METHODS, TECHNIQUES, SEQUENCES OF PROCEDURES, OR APPROVAL OF A
- SPECIFIC ASSEMBLY. E. PRIOR TO RELEASE OF EQUIPMENT FOR SHIPMENT OR INSTALLATION, SUBMIT TO THE ENGINEER THE FOLLOWING:
- 1. SHOP DRAWINGS. THE SPECIFIC QUANTITY TO BE SUBMITTED SHALL BE CONFIRMED WITH THE GENERAL CONTRACTOR AND OWNER. ELECTRONIC SUBMITTALS ARE ACCEPTABLE. SUBMITTAL MUST BE COMPREHENSIVE OF THE ENTIRE PROJECT, COMPLETE IN ALL DETAIL, AND INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

MAINTAINING A VOLTAGE HIGHER THAN 20.4 VDC. REJECTED. F. THE ENGINEER SHALL REVIEW FOR ACCURACY ALL SUBMITTALS REQUIRED TO BE RECEIVED BY THE

GENERATED.

MODULE

NUMBER.

- PRIOR TO INSTALLATION.
- 1.09 PROJECT RECORD DOCUMENTS
- DOCUMENTATION SHALL INCLUDE:
- MODIFICATIONS HIGHLIGHTED.

- SERVICE
- E. EACH REVISION TO THE SOFTWARE SHALL BE IDENTIFIED BY A UNIQUE VERSION NUMBER AND DATE.

- 5. SUBMIT TO THE ENGINEER A COPY OF THE TRANSMITTAL TO THE OWNER'S REPRESENTATIVE FOR
- INSTALLATION AND INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING INFORMATION:

- EQUIPMENT INSTALLED.

- 1.10 WARRANTY
- A. REPAIR ALL DEFECTIVE WORKMANSHIP OR REPLACE ALL DEFECTIVE MATERIALS FOR A PERIOD OF
- ADDITIONAL COST TO THE OWNER. B. THE WARRANTY OR ANY PART OF THE WARRANTY SHALL NOT BE MADE VOID BY ANY REQUIRED
- PART 2 PRODUCTS 2.01 CONTROL PANELS
 - IS EXISTING TO REMAIN.

- PIECE OF EQUIPMENT ON THE LIST.

- ADJACENT TO THE CONTROL PANEL.

a. FLOOR PLANS SHOWING EQUIPMENT PLACEMENT, POINT TO POINT WIRING, WIRING TYPES AND SIZES, CONDUIT TYPES AND SIZES, WIRING AND RACEWAY ROUTES, AND PROPOSED MOUNTING METHODS FOR CONDUIT AND BACKBOXES. FLOOR PLANS SHALL BE AUTOCAD

b. SEQUENCE OF OPERATIONS IN MATRIX FORM TO INCLUDE A DETAILED DESCRIPTION OF THE OPERATION OF EACH SYSTEM FUNCTION FOR ALL POSSIBLE CONDITIONS. c. RISER DIAGRAM SHOWING TYPICAL WIRING CONNECTIONS FOR EACH TYPE OF DEVICE AND

d. SUPERVISORY AND ALARM CURRENT CALCULATIONS FOR PRIMARY POWER AND EMERGENCY BATTERY SIZING OF ALL CONTROL PANELS AND AUXILIARY POWER SUPPLIES. 1) BATTERY CALCULATIONS SHALL LIST THE TYPE OF DEVICES AND MODULES. QUANTITIES, AMPERAGE DRAW FOR STANDBY AND ALARM CONDITIONS FOR EACH DEVICE, THE TOTAL AMPERAGE DRAW FOR EACH PANEL, AND EACH PANEL'S BATTERY AMP/HOUR RATING

2) THE CALCULATED LOAD SHALL BE THE DESIGN LOAD, INCLUDING ALL REQUIRED SPARE CAPACITY.

3) THE BATTERY CAPACITY USED TO MEET THE CALCULATED LOAD SHALL BE A MAXIMUM OF EIGHTY (80) PERCENT OF THE AMP/HOUR LISTED BY THE MANUFACTURER. e. A COMPLETE LIST OF ALL PROPOSED DEVICES AND THEIR ASSOCIATED ZONES AND CIRCUIT

f. VOLTAGE DROP CALCULATIONS FOR ALL NOTIFICATION APPLIANCE CIRCUITS. 1) CALCULATIONS SHALL FOLLOW THE VOLTAGE DROP CALCULATION CRITERIA AS OUTLINED IN NFPA 72 AND UL 864.

> CALCULATIONS SHALL USE THE WORST-CASE OPERATING VOLTAGE OF EACH CONTROL PANEL OR POWER SUPPLY AS A STARTING VOLTAGE. THE STARTING VOLTAGE SHALL BE 20.4 VDC UNLESS WRITTEN DOCUMENTATION IS PROVIDED CONFIRMING THAT THE SPECIFIC CONTROL PANEL OR POWER SUPPLY IS CAPABLE OF

3) CALCULATIONS SHALL USE THE LOWEST OPERATING VOLTAGE OF THE NOTIFICATION APPLIANCES AND THE ASSOCIATED INCREASED CURRENT DRAW. THE LOWEST OPERATING VOLTAGE SHALL BE THE UL STANDARD OPERATING VOLTAGE OF 16 VDC, UNLESS APPROVED OTHERWISE BY THE ENGINEER.

2. MANUFACTURER'S LITERATURE ON ALL SYSTEM EQUIPMENT. THE SPECIFIC QUANTITY TO BE SUBMITTED SHALL BE CONFIRMED WITH THE GENERAL CONTRACTOR AND OWNER. ELECTRONIC SUBMITTALS ARE ACCEPTABLE. LITERATURE WHICH IS NOT CLEARLY IDENTIFIED WILL BE

a. LITERATURE SHALL INCLUDE SPECIFICATION AND DESCRIPTION OF RECOMMENDED SUPPORTING METHODS, ENCLOSURES OR BOXES, AND WIRING CONNECTIONS. b. THE EXACT COMPONENTS TO BE UTILIZED ON THIS SPECIFIC PROJECT SHALL BE INDICATED

BY HIGHLIGHTING OR ARROWS, ON EACH DATA SHEET OF THE EQUIPMENT LITERATURE. 3. QUALIFICATIONS AND AUTHORIZATION OF THE REPRESENTATIVE OF THE FAEM.

ENGINEER PRIOR TO EQUIPMENT RELEASE OR INSTALLATION. THE OWNER, OWNER'S REPRESENTATIVE, OR DESIGN FIRMS RETAINED BY THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RESULTING FROM REPLACEMENT OF EQUIPMENT OR MATERIALS NOT REVIEWED

G. AFTER SATISFACTORY REVIEW OF THE SUBMITTALS BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT ALL REQUIRED DRAWINGS, MANUFACTURERS' LITERATURE, CALCULATIONS AND ANY OTHER MATERIALS REQUIRED BY THE AHJ TO OBTAIN A PERMIT TO THE APPROPRIATE PARTY FOR REVIEW.

H. FORWARD TO THE ENGINEER A COPY OF THE TRANSMITTAL OF THE PERMIT APPLICATION. FORWARD TO THE ENGINEER, IN WRITING, ANY COMMENTS FROM THE AHJ OR THE INSURANCE UNDERWRITER WITHIN FIVE (5) WORKING DAYS AFTER THE RECEIPT OF THEIR COMMENTS.

A. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ON SITE AN UP-TO-DATE RECORD SET OF SATISFACTORY SHOP DRAWINGS WHICH SHALL BE MARKED TO SHOW EACH, AND EVERY CHANGE MADE TO THE FIRE ALARM SYSTEM FROM THE ORIGINAL APPROVED SHOP DRAWINGS. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION TO DEVIATE FROM OR MAKE CHANGES TO THE SHOP DRAW REVIEWED BY THE ENGINEER WITHOUT WRITTEN INSTRUCTIONS FROM THE ENGINEER IN EACH CASE. THIS SET OF DRAWINGS SHALL BE ISSUED ONLY AS A RECORD SET. THESE DRAWINGS SHALL BE MADE AVAILABLE TO THE OWNER, OR THE OWNER'S REPRESENTATIVE, UPON REQUEST.

B. THE CONTRACTOR SHALL CONTINUALLY DOCUMENT SOFTWARE AND PROGRAMMING CHANGES. THIS

1. A COMPLETE PRINTOUT OF THE SYSTEM PRIOR TO THE CHANGE. 2. A COMPLETE PRINTOUT OF THE SYSTEM PROGRAM SUBSEQUENT TO THE CHANGE, WITH ALL

3. A LETTER PREPARED AND SIGNED BY THE INDIVIDUAL WHO MADE THE CHANGES, DESCRIBING EACH CHANGE MADE AND THE REASON FOR THE CHANGE. THIS LETTER SHALL CERTIFY THAT THE PROGRAMMER HAS PERSONALLY REVIEWED AND COMPARED THE BEFORE AND AFTER PROGRAM PRINTOUT AND VERIFIED THE CORRECTNESS OF THE MODIFICATION(S).

4. AN EQUIVALENT MEANS PERFORMED AUTOMATICALLY IN COMPUTER SOFTWARE, WHICH VERIFIED THE RESULTS OF CHANGES MADE IS ACCEPTABLE. C. ONCE THE FIRE ALARM SYSTEM IS PUT INTO SERVICE, IN WHOLE OR IN PART, AND THE ASSOCIATED

BUILDING(S) ARE PARTIALLY OR WHOLLY OCCUPIED, NO SOFTWARE CHANGES SHALL BE PERFORMED WITHOUT PRIOR WRITTEN PERMISSION OF THE OWNER, OR OWNER'S REPRESENTATIVE. D. ONLY A CERTIFIED MANUFACTURER'S REPRESENTATIVE TRAINED IN THE SPECIFIC PROGRAMMING

SOFTWARE SHALL MAKE CHANGES TO THE FIRE ALARM SYSTEM SOFTWARE ONCE THE SYSTEM IS IN

F. PRIOR TO FINAL PAYMENT FOR THE FIRE ALARM SYSTEM AND THE BEGINNING OF THE WARRANTY PERIOD, SUBMIT A CD ROM AND TWO (2) SETS (OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE) OF THE FOLLOWING COMPLETED PROJECT RECORD DOCUMENTS TO THE OWNER'S REPRESENTATIVE: 1. COPIES OF ALL TEST AND INSPECTION REPORTS AS REQUIRED BY THE AHJ AND NFPA 72: a. THE RECORD OF COMPLETION FORM SHALL BE IN THE FORMAT AS OUTLINED IN NFPA 72. b. THE INSPECTION AND TESTING FORM SHALL BE IN THE FORMAT AS OUTLINED IN NFPA 72.

2. ALL PERMITS AND LICENSES REQUIRED TO BE IN THE POSSESSION OF THE OWNER BY THE AHJ. ACCURATE RECORD (AS-BUILT) DRAWINGS OF THE COMPLETE INSTALLATION TO INCLUDE, BUT NOT BE LIMITED TO, THE INFORMATION REQUIRED FOR THE SHOP DRAWINGS. RECORD DRAWINGS OF THE FLOOR PLANS SHALL BE AUTOCAD GENERATED.

4. ORIGINAL WARRANTY DOCUMENTS INCLUDING, BUT NOT LIMITED TO, THOSE OF THE FAEM. WARRANTY DOCUMENTS SHALL REFERENCE AND BE BINDING TO THE WARRANTY PROVISIONS SPECIFIED IN THE WARRANT PORTION OF THIS SPECIFICATION.

ALL FINAL COMPLETE PROJECT RECORD DOCUMENTS. G. UPON COMPLETION OF CONSTRUCTION, SUBMIT TWO (2) SETS AND A CD ROM OF EQUIPMENT WARRANTIES AND TWO (2) SETS AND A CD ROM OF INSTALLATION, OPERATIONS AND MAINTENANCE INSTRUCTIONS TO THE OWNER'S REPRESENTATIVE. THIS MANUAL SHALL REFLECT THE COMPLETED

1. A DETAILED NARRATIVE DESCRIPTION OF THE SYSTEMS ARCHITECTURE, INPUTS, EVACUATION SIGNALING, AUXILIARY FUNCTIONS, ANNUNCIATION, SEQUENCE OF OPERATION, EXPANSION CAPABILITY, APPLICATION CONSIDERATIONS AND LIMITATIONS.

2. A DETAILED DESCRIPTION OF ROUTINE MAINTENANCE REQUIRED OR RECOMMENDED, OR AS WOULD BE PROVIDED UNDER A MAINTENANCE CONTRACT, INCLUDING A TESTING SCHEDULE AND DETAILED MAINTENANCE INSTRUCTIONS FOR EACH TYPE OF DEVICE INSTALLED.

DETAILED TROUBLESHOOTING INSTRUCTIONS FOR EACH POSSIBLE TROUBLE CONDITION. 4. AN EQUIPMENT LIST/SCHEDULE DETAILING ALL EQUIPMENT AND QUANTITIES INSTALLED. THE MANUFACTURER'S PRODUCT MODEL/IDENTIFICATION NUMBER SHALL BE SHOWN NEXT TO EACH

5. UPDATED MANUFACTURER'S DATA SHEETS AND INSTALLATION MANUALS/INSTRUCTIONS FOR ALL

6. UPDATED LIST OF SPARE PARTS AND ACCESSORIES RECOMMENDED BY THE MANUFACTURER SHALL BE STOCKED FOR MAINTENANCE OF THE SYSTEM. 7. A DETAILED DESCRIPTION OF THE OPERATION OF THE SYSTEMS, INCLUDING OPERATOR

RESPONSES. COPIES OF THE APPROVED SEQUENCE OF OPERATION SHALL BE PLACED IN, OR H. A COPY OF ALL SOFTWARE DOCUMENTATION REQUIRED BY THIS SECTION SHALL BE MAINTAINED ON-SITE BY THE CONTRACTOR. IN A BINDER, ARRANGED IN CHRONOLOGICAL ORDER. THIS BINDER

SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT.

ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. WORKMANSHIP OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE REPLACED AT NO

OPERATION OR INSPECTION OF THE SYSTEM AFTER ACCEPTANCE DURING THE WARRANTY PERIOD. THE OWNER MAY SELECT QUALIFIED FIRMS OTHER THAN WARRANTOR TO PROVIDE REQUIRED TESTS AND INSPECTIONS. SYSTEM TESTING AND INSPECTIONS WILL BE CONDUCTED ONLY BY A DULY LICENSED COMPANY UNDER CONTRACT WITH THE OWNER TO PERFORM SCHEDULED TESTING AND INSPECTIONS AS REQUIRED BY THE AHJ. THE OWNER MAY ELECT TO HAVE A REPRESENTATIVE PRESENT AT THE SCHEDULED TESTING DURING THE WARRANTY PERIOD.

A. THE EXISTING LANLORDS FIRE ALARM CONTROL PANEL FIRELITE SERVICING THE DOLLAR TREE SPACE

2.02 ADDRESSABLE MONITOR MODULES

- A. PROVIDE ADDRESSABLE MONITOR MODULES WHERE REQUIRED TO INTERFACE WITH CONTACT ALARM DEVICES, OR TO CONNECT A SUPERVISED ZONE OF CONVENTIONAL INITIATING DEVICES (ANY NORMALLY OPEN DRY CONTACT DEVICE) TO AN INTELLIGENT SLC LOOP.
- B. PROVIDE ADDRESS-SETTING MEANS AND STORE AN INTERNAL IDENTIFICATION CODE WHICH THE CONTROL PANEL SHALL USE TO IDENTIFY THE TYPE OF DEVICE. FLASH STATUS/POWER LED UNDER NORMAL CONDITIONS, INDICATING THAT THE MONITOR MODULE IS OPERATIONAL AND IN REGULAR COMMUNICATION WITH THE CONTROL PANEL.

THE LED MAY BE PLACED INTO STEADY ILLUMINATION BY THE CONTROL PANEL, INDICATING THAT AN ALARM CONDITION HAS BEEN DETECTED. WHERE STATUS LED IS PROVIDED, MANUFACTURER PROVIDED COVER PLATE WITH VIEWING HOLE SHALL BE PROVIDED

- C. PROVIDE AN AUTOMATIC TEST FEATURE TO PERMIT FUNCTIONAL TESTING OF THE DEVICE FROM THE MAIN CONTROL PANEL. INDICATE RESULTS OF THE TEST ON THE LCD DISPLAY AT THE CONTROL PANEL.
- D. MONITOR MODULES WITH MULTIPLE INPUT CONTACT CONNECTIONS ARE ACCEPTABLE IF EACH INPUT IS CAPABLE OF INDEPENDENT PROGRAMMING AND FUNCTIONAL OPERATION.
- E. COMPATIBLE WITH THE LANDLORD FIRE ALARM CONTROL PANEL.

2.03 REMOTE TEST STATIONS

- PROVIDE A REMOTE TEST STATION WITH TEST SWITCH AND INDICATING LED LIGHTS FOR EACH DUCT DETECTOR. LOCATE KEY TEST STATIONS IN PAIN VIEW ON WALLS SO THAT THEY CAN BE OBSERVED AND OPERATED FROM A NORMAL STANDING POSITION.
- B. REMOTE TEST STATIONS, WHERE INDICATED ON THE PLANS, SHALL CONSIST OF A KEY OPERATED SWITCH AND INDICATING LED. THE REMOTE TEST STATION SHALL BE LISTED FOR USE WITH THE DUCT SMOKE DETECTOR
- C. COMPATIBLE WITH THE LANDLORD FIRE ALARM CONTROL PANEL. ACCEPTABLE MANUFACTURE IS SYSTEM SENSOR'S REMOTE TEST STATION (RTS-151KEY).

2.04 CONVENTIONAL PHOTOELECTRIC SMOKE DETECTORS FOR DUCT APPLICATIONS

- A. PROVIDE CONVENTIONAL TYPE PHOTOELECTRIC SMOKE DETECTORS FOR DUCT APPLICATIONS WITH THE ABILITY TO BE MONITORED BY THE CONTROL PANEL. B. PROVIDE DETECTORS OPERATING IN AIR VELOCITIES OF ONE HUNDRED (100) FPM TO FOUR THOUSAND
- (4,000) FPM WITHOUT ADVERSE EFFECTS ON DETECTOR SENSITIVITY.
- C. PROVIDE A FIELD TEST METHOD TO DETERMINE THE SENSITIVITY OF THE DETECTOR. D. PROVIDE MULTI-FUNCTION ALARM/POWER STATUS LED. FLASH STATUS LED UNDER NORMAL CONDITIONS, INDICATING THAT THE DETECTOR IS OPERATIONAL AND IN REGULAR COMMUNICATION WITH THE CONTROL PANEL. THE LED MAY BE PLACED INTO STEADY ILLUMINATION, INDICATING THAT AN ALARM CONDITION HAS BEEN DETECTED AND VERIFIED.
- E. PROVIDE CAPABILITY TO CONNECT A REMOTE LED ANNUNCIATOR.
- F. PROVIDE A MOLDED PLASTIC ENCLOSURE WITH INTEGRAL CONDUIT KNOCKOUTS. PROVIDE HOUSING WITH GASKET SEALS TO INSURE PROPER SEATING OF THE HOUSING TO THE ASSOCIATED DUCTWORK. PROVIDE SAMPLING TUBES THAT EXTEND ACROSS THE WIDTH OF THE DUCT AND IN COMPLIANCE WITH THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- G. PROVIDE A SEPARATE SELF-CONTAINED RELAY FOR ANY ASSOCIATED CONTROL FUNCTIONS. MINIMUM RATING OF FORM C CONTACTS SHALL BE TWO (2.0) AMPERES AT 24 VOLTS AND ONE HALF (0.5) AMPERES AT 120 VOLTS AC.
- H. REMOTE TEST STATIONS, WHERE INDICATED ON THE ENGINEERING DRAWINGS, SHALL CONSIST OF A KEY OPERATED SWITCH AND INDICATING LED. THE REMOTE TEST STATION SHALL BE LISTED FOR USE WITH THE DUCT SMOKE DETECTOR. I. COMPATIBLE WITH LANDLORD FIRE ALARM SYSTEM.
- 2.05 BATTERY-OPERTED CARBON MONOXIDE ALARMS
- A. CO ALARM SHALL MEET UL STANDARDS 2034.
- B. CO ALARM SHALL BE POWERED BY A SEALED LITHIUM BATTERY.
- C. UNIT SHALL BE EQUIPPED WITH STATUS LEDS THAT INDICATE NORMAL, ALARM CONDITION AND DETECTOR END OF LIFE. D. INTEGRAL ALARM HORN SHALL BE RATED AT 85 DECIBELS AT 10 FEET
- E. AUDIBLE ALARM SIGNAL SHALL PRODUCE A TEMPORAL 4 PATTERN.
- F. UNIT SHALL PRODUCE AN AUDIBLE WARNING SIGNAL AT 10-YEAR PRODUCT END-OF-LIFE.
- 2.06 CONDUCTORS
- A. INITIATION, NOTIFICATION AND AUXILIARY DEVICE CIRCUIT CONDUCTORS FOR POWER LIMITED CIRCUITS SHALL BE TYPE FPL, FPLP, OR FPLR. WHERE CONDUCTORS ARE INSTALLED IN COMPLETE RACEWAY SYSTEMS. TYPE THHN OR TFFN MAY BE USED IF APPROVED BY THE MANUFACTURER. WHERE THE SIZE OR TYPE OF CONDUCTOR HEREINAFTER SPECIFIED CONFLICTS WITH THE FAEM'S REQUIREMENTS, THE LARGER SIZE OR MORE SPECIALIZED CONDUCTOR TYPE WILL BE USED.
- B. CONDUCTORS FOR ANY NON-POWER LIMITED CIRCUITS SHALL BE TYPE NPLF, NPLFP, NPLFR OR THHN. C. CONDUCTORS FOR WET LOCATIONS SHALL BE AS FOLLOWS: 1. TYPES RHW, TW, THW, THHW, THWN, XHHW OR OTHER TYPE LISTED FOR USE IN WET LOCATIONS.
- 2. TYPE LISTED FOR DIRECT BURIAL. D. ALL ELECTRICAL CHARACTERISTICS (CONDUCTOR-TO-CONDUCTOR CAPACITANCE, DC RESISTANCE,
- ETC.) OF THE FIRE ALARM CONDUCTORS SHALL MEET THE REQUIREMENTS OF THE SELECTED FAEM FOR THE INTENDED APPLICATION.
- E. ALL FIRE ALARM CONDUCTORS SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE, AND ALL LOCAL CODES AND STANDARDS. 2.07 RACEWAY
- A. THE FOLLOWING RACEWAY TYPES SHALL BE PERMITTED
- 1. EMT CONDUIT (3/4 INCH MINIMUM).
- RIGID CONDUIT (3/4 INCH MINIMUM).
- 3. NON-METALLIC CONDUIT FOR WET LOCATIONS (3/4 INCH MINIMUM).
- 4. SURFACE MOUNTED METALLIC RACEWAY WITH A MINIMUM SIZE EQUIVALENT TO THREE QUARTER (3/4) INCH NOMINAL CONDUIT.
- B. ALL RACEWAY TYPES SHALL BE NEW. INSTALLING USED RACEWAY IS UNACCEPTABLE
- C. USING EXISTING RACEWAY IS UNACCEPTABLE WITHOUT PRIOR WRITTEN PERMISSION OF THE ENGINEER OR OWNER'S REPRESENTATIVE.
- D. BOXES, SUPPORTS, AND OTHER ACCESSORIES FOR THE RACEWAY INSTALLATION SHALL BE LISTED FOR THE INTENDED APPLICATION.
- PART 3 EXECUTION

3.01 COORDINATION WITH OTHER TRADES

- A. COORDINATE CLOSELY WITH ALL OTHER TRADES TO EXPEDITE CONSTRUCTION, ACCURATELY INTERFACE WITH RELATED SYSTEMS AND AVOID INTERFERENCES.
- 3.02 INSTALLATION / APPLICATION A. FURNISH AND INSTALL ALL CONTROL WIRING, RACEWAY AND OUTLET BOXES FOR THE FIRE ALARM SYSTEM.
- B. FURNISH AND INSTALL ALL BACKBOXES, EQUIPMENT AND DEVICES FOR THE FIRE ALARM SYSTEM. 1. BACKBOXES SHALL BE OF THE EXACT TYPE RECOMMENDED BY THE FAEM AS SHOWN ON THE
- EQUIPMENT AND DEVICE SUBMITTALS.
- 2. BACKBOXES SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS
- 3. DEVICES AND EQUIPMENT MUST BE INSTALLED BY PERSONNEL LEGALLY PERMITTED AND CURRENTLY LICENSED TO INSTALL THE DEVICES AND EQUIPMENT. THE COST OF INSTALLATION, WARRANTY OF INSTALLATION AND EQUIPMENT, COORDINATION OF THE INSTALLATION, AND SUPERVISION OF THE INSTALLATION ARE RESPONSIBILITIES OF THE CONTRACTOR.
- ALL FIRE ALARM CONDUIT, JUNCTION BOXES, PULL BOXES, CABLE SPLICES AND TERMINAL CABINETS SHALL BE ACCESSIBLE, PAINTED RED OR CLEARLY MARKED "FIRE ALARM." THE CONTRACTOR SHALL COMPLY WITH ANY LOCAL CODES OR AHJ REQUIREMENTS FOR CIRCUIT IDENTIFICATION. ANY ACCESS PANELS REQUIRED FOR THE ACCESSIBILITY TO THE JUNCTION BOXES, PULL BOXES, CABLE SPLICES AND TERMINAL CABINETS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM CONTRACTOR.
- D. ALL WIRING CONDUCTORS AND CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER AT RIGHT ANGLES TO THE BUILDING WALLS, FLOORS AND CEILINGS, AND SUPPORTED FROM THE BUILDING STRUCTURE AT INTERVALS COMPLIANT WITH NEC REQUIREMENTS.
- E. ALL POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONDUIT IN THE FOLLOWING LOCATIONS: 1. SEVEN (7) FEET OR LESS ABOVE THE FINISHED FLOOR.
- 2. ELECTRICAL AND MECHANICAL ROOMS.
- 3. ELEVATOR HOISTWAYS AND ELEVATOR MACHINE ROOMS. 4. CONCEALED ABOVE CEILINGS OR IN PARTITIONS.
- AREAS SUBJECT TO PHYSICAL DAMAGE. 6. WHERE REQUIRED BY APPLICABLE CODES.
- 7. WIRING CONDUCTORS IN FINISHED AREAS THAT CANNOT BE CONCEALED ARE ALLOWED TO BE INSTALLED IN SURFACE-MOUNTED METALLIC RACEWAY ONLY UPON APPROVAL OF THE OWNER'S REPRESENTATIVE.
- F. ALL NON-POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONDUIT G. POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM ARE NOT REQUIRED TO BE
- INSTALLED IN CONDUIT IN THE FOLLOWING LOCATIONS:
- 1. MORE THAN SEVEN (7) FEET ABOVE THE FINISHED FLOOR. 2. ABOVE LAY-IN CEILINGS.
- CONCEALED IN CEILINGS OR PARTITIONS NOT SUBJECT TO DAMAGE.

- H. EXPOSED WIRING CONDUCTORS AND CONDUITS SHALL BE CONCEALED FROM PUBLIC VIEW AT ALL LOCATIONS BY ROUTING ON THE INSIDE OF JOISTS, ABOVE LAY-IN CEILINGS, OVER GIRDERS, WITHIN PARTITIONS OR IN ANY OTHER MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. WIRING CONDUCTORS AND CONDUITS INSTALLED ABOVE LAY-IN CEILINGS SHALL BE SUPPORTED FROM
- THE BUILDING STRUCTURE AND SHALL NOT BE PERMITTED LESS THAN NINE (9) INCHES ABOVE OR BEHIND REMOVABLE PANELS OR CEILING TILES.
- J. EXPOSED WIRING CONDUCTORS SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AT INTERVALS OF NO MORE THAN FIVE (5) FEET.
- K. ALL WIRING CONDUCTORS SHALL BE TAGGED AT ALL JUNCTION POINTS AND SHALL TEST FREE FROM GROUNDS OR CROSSES BETWEEN CONDUCTORS.
- POWER-LIMITED WIRING CONDUCTORS SHALL NOT BE INSTALLED IN CONDUITS WITH ELECTRIC LIGHT, POWER CLASS 1, NON-POWER-LIMITED FIRE ALARM AND MEDIUM POWER NETWORK-POWERED BROADBAND COMMUNICATIONS CIRCUITS.
- M. FINAL CONNECTIONS BETWEEN EQUIPMENT AND THE WIRING SYSTEM SHALL BE MADE UNDER DIRECT SUPERVISION OF A REPRESENTATIVE OF THE FAEM. IF OTHER PERSONNEL ARE REQUIRED BY THE AHJ TO BE PRESENT DURING FINAL CONNECTIONS, THIS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING A REPRESENTATIVE OF THE FAEM FOR DIRECT SUPERVISION. N. FIRE ALARM CABLING SHALL NOT BE PAINTED.
- O. CONDUITS SHALL ENTER THE CONTROL PANEL ENCLOSURES ONLY IN THE APPROVED LOCATIONS, AS IDENTIFIED IN THE FAEM INSTALLATION INSTRUCTIONS.
- P. INSTALL ALL HANGERS, CLAMPS, CONDUIT, AND BACKBOXES FOR THE FIRE ALARM SYSTEM PRIOR TO THE APPLICATION OF FIREPROOFING ON STRUCTURAL MEMBERS. THE HANGERS, CLAMPS, CONDUIT, AND BACKBOXES FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED ON THE EDGE OF ANY BEAM REQUIRING FIREPROOFING, BACKBOXES SHALL BE FASTENED TO THE FLANGE OF THE BEAM UTILIZING BEAM CLAMPS AND SHALL NOT BE ATTACHED DIRECTLY TO THE BEAM. VERIFY THE LOCATIONS OF ALL FIREPROOFING, PRIOR TO THE INSTALLATION OF ANY FIRE ALARM CONDUIT OR BACKBOXES.
- Q. ANY DAMAGE TO FIREPROOFING ON THE BUILDING STRUCTURE AS A RESULT OF THE FIRE ALARM SYSTEM INSTALLATION SHALL BE REPAIRED BY A QUALIFIED FIREPROOFING CONTRACTOR. ALL DAMAGE AND REPAIR OF FIREPROOFING SHALL BE REPORTED TO AND COORDINATED THROUGH THE GENERAL CONTRACTOR. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIREPROOFING REPAIRS AT NO ADDITIONAL COST TO THE OWNER.

3.03 EQUIPMENT MOUNTING

- A. COMPLY WITH NFPA 72 FOR INSTALLATION OF FIRE ALARM EQUIPMENT.
- B. CARBON MONOXIDE ALARMS DUCT SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP OF ALL TRADES IS COMPLETE AND FINAL. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED IN ACCORDANCE WITH NFPA 72.
- REMOTE TEST STATIONS, WHERE REQUIRED, SHALL BE MOUNTED IN PROXIMITY OF THE ASSOCIATED DEVICE OR UNIT, WHERE VISIBLE IN NORMALLY OCCUPIED AREAS, NOT HIGHER THAN SEVENTY-TWO (72) INCHES ABOVE THE FINISHED FLOOR AND WITH THE FINAL LOCATIONS ACCEPTABLE TO THE AHJ.
- D. DEVICES AND APPLIANCES SHALL NOT BE SUPPORTED BY CEILING TILES. DEVICES AND APPLIANCES MUST BE ATTACHED TO BACKBOX SUPPORTED BY THE CEILING GRID.
- E. ALL INITIATING DEVICES SHALL BE MOUNTED IN A LOCATION ACCESSIBLE FOR TESTING AND MAINTENANCE
- F. PROVIDE A PRINTED LABEL FOR EACH INITIATING DEVICE INDICATING THE SPECIFIC ADDRESS FOR THAT DEVICE. THE LABEL SHALL INCLUDE THE PROGRAMMING ADDRESS AND DEVICE NUMBER. THE LABEL SHALL BE LOCATED ON THE BASE OF ALL DETECTORS AND THE COVER PLATES OF EACH ADDRESSABLE DEVICE.

3.04 <u>RESTORATION OF SITE</u>

A. WHERE SIDEWALKS, CURBS, AND LAWNS ARE EXCAVATED BY THE FIRE ALARM CONTRACTOR, THESE AREAS SHALL BE BACKFILLED AND REPLACED TO THE ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND AHJ.

3.05 PAINTING AND PATCHING

- A. ALL FIRE ALARM CONDUIT SHALL BE THOROUGHLY CLEANED, REMOVING ALL DIRT, OIL, ETC. AND MADE READY TO RECEIVE PAINT.
- B. HOLES IN WALLS OR FLOORS CUT DURING THE PERFORMANCE OF THIS WORK SHALL BE PATCHED OR COVERED WITH STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE CUTS WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- HOLES IN WALLS AND CEILINGS CREATED BY THE REMOVAL OF FIRE ALARM EQUIPMENT NO LONGER USED SHALL BE PATCHED AND PAINTED TO MATCH THE EXISTING WALLS AND CEILINGS OR COVERED WITH STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE "HOLES" WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- D. ALL PENETRATIONS OF FIRE RATED ASSEMBLIES (WALL OR FLOOR CONSTRUCTION) SHALL BE FIRE STOPPED TO PRESERVE THE ORIGINAL FIRE RESISTANCE AND SMOKE TIGHT INTEGRITY OF THE ASSEMBLY. ALL FIRESTOPPING METHODS SHALL BE UL LISTED THROUGH PENETRATION FIRESTOP SYSTEMS OR OTHERWISE APPROVED BY THE OWNER, ARCHITECT, ENGINEER, AND AHJ. SPECIFIC FIRESTOP ASSEMBLY SHALL BE IDENTIFIED AT THE PENETRATION LOCATION WITH A STICKER OR OTHER APPROVED IDENTIFICATION MEANS.

3.06 SYSTEM TESTS

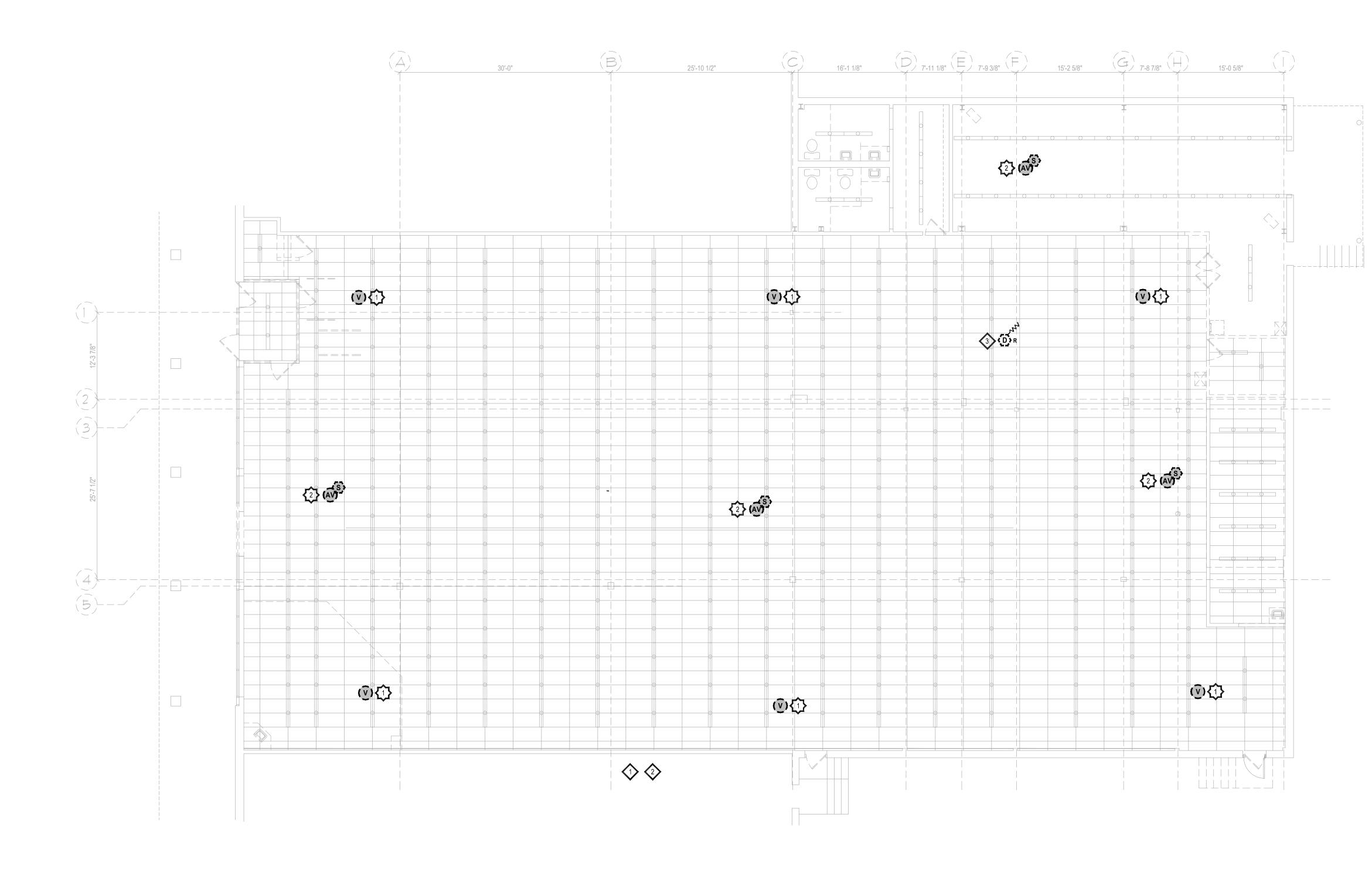
- A. ALL TEST AND INSPECTIONS SPECIFIED IN THIS SECTION SHALL BE REPORTED IN WRITING AND SUBMITTED IN ACCORDANCE WITH THIS SPECIFICATION SECTION. B. THE SYSTEM SHALL MEET ALL THE REQUIREMENTS OF THE LISTED APPLICABLE CODES AND THE
- REQUIREMENTS OF THE AHJ. THE SYSTEM TESTS AND TEST DOCUMENTS. INCLUDING THOSE REQUIRED FOR AND BY THE APPROVED REMOTE MONITORING STATION, SHALL MEET THE REQUIREMENTS OF THE AHJ. PROVIDE ONE HUNDRED (100) PERCENT INITIAL ACCEPTANCE TESTING OF THE ENTIRE FIRE ALARM
- SYSTEM PRIOR TO THE REQUIRED AHJ ACCEPTANCE TESTING. BEFORE REQUESTING THE AHJ ACCEPTANCE TESTING, FURNISH A WRITTEN STATEMENT TO THE OWNER'S REPRESENTATIVE INDICATING THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED DOCUMENTS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPLICABLE NFPA REQUIREMENTS. THE RECORD OF COMPLETION SHALL BE COMPLETED AND SUBMITTED AS PART OF THE WRITTEN STATEMENT.
- ALL TESTING, INSPECTION AND RETESTING REQUIRED FOR CERTIFICATION AND REQUIRED FOR ALL WARRANTY WORK OR REPLACEMENTS SHALL MEET THE REQUIREMENTS OF THE AHJ. THIS CERTIFICATION, INSPECTION, OR TESTING SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE
- E. PROVIDE THE TESTING DATE IN WRITING TO THE OWNER A MINIMUM OF TWO (2) WEEKS BEFORE THE DATE. THE OWNER MAY ELECT TO HAVE A REPRESENTATIVE PRESENT FOR TESTING. F. THE FIRE ALARM SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE
- TESTING CERTIFICATES HAVE BEEN OBTAINED. G. A PROPOSAL TO PERFORM ANNUAL TESTING AND/OR INSPECTION SERVICES SHALL BE SUBMITTED TO THE OWNER A MINIMUM OF THREE (3) WEEKS BEFORE THE DATE OF INITIAL ACCEPTANCE TESTING. THE PROPOSAL SHALL INCLUDE ALL TESTING AND/OR INSPECTION SERVICES REQUIRED BY THE AHJ FOR THE TWO (2) YEAR PERIOD BEGINNING AT FINAL ACCEPTANCE OF THE SYSTEM. THE OWNER HAS THE OPTION TO ACCEPT OR REJECT THE PROPOSAL.

END OF SECTION 16720/283111



JACOB P. HEMKE. PE ICENSE NO. 086219 CODE CONSULTANTS PROFESSIONAL ENGINEERS, F 215 WEST 40TH ST., 10TH ELOOP NEW YORK, NY 10018 PHONE: 212-216-9590 CORPORATE CERTIFICATE OF AUTHORITY NO. 41955 WARNING: IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145. SECTION 7209 FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEE TO ALTER THIS DOCUMENT IN ANY WAY.

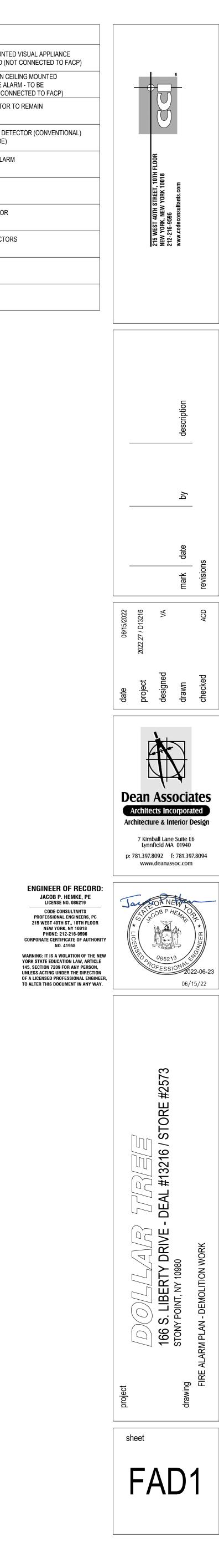
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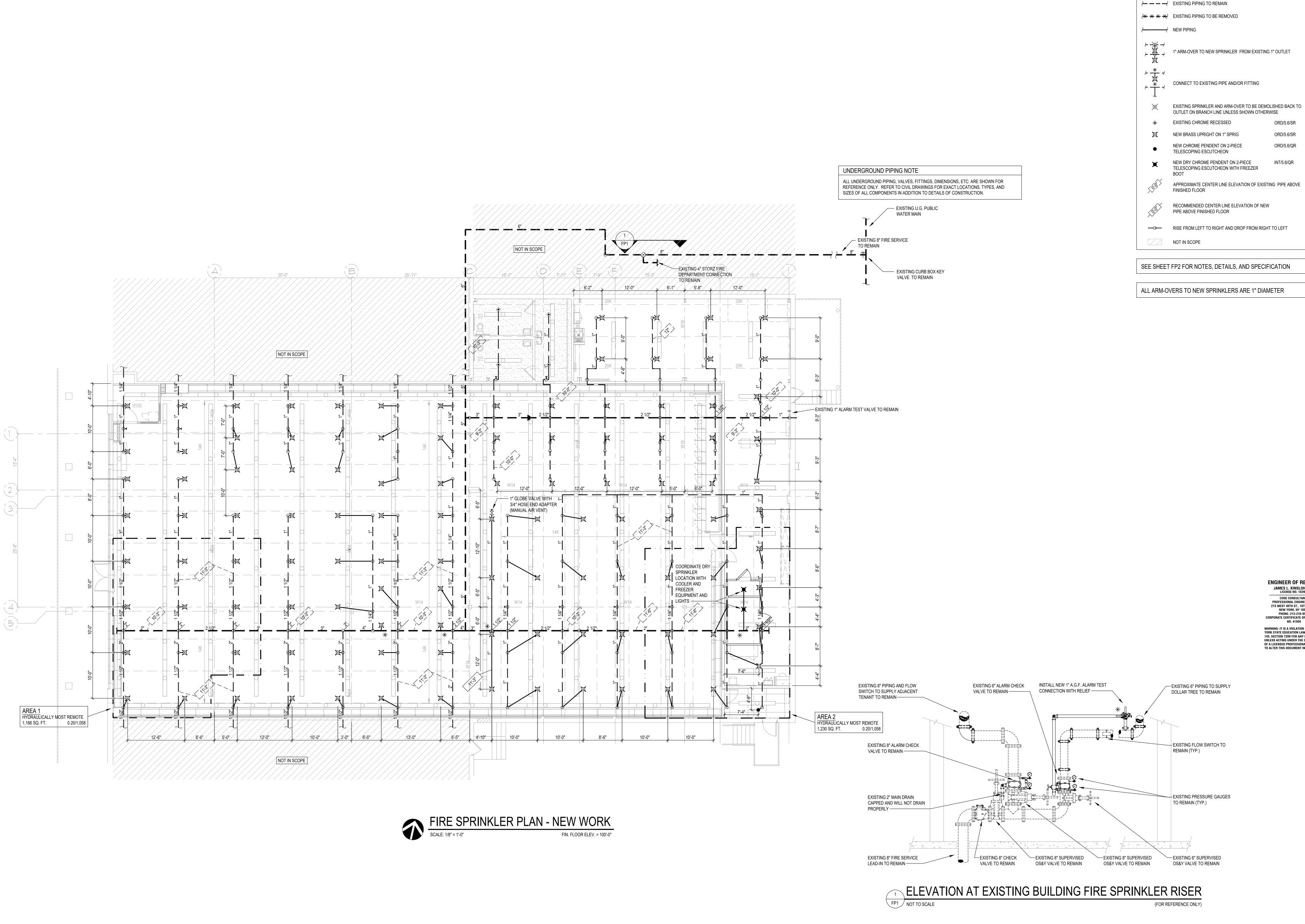




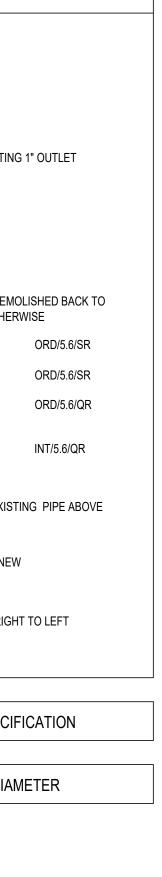
FIRE ALARM PLAN - DEMOLITION WORK

FIF	RE ALARM DEMOLITION KEYED NOTES (DENOTED AS 🏟)		FIRE ALA	RM SYMBOL KEY
1.	THE EXISTING STAND ALONE OCCUPANT NOTIFICATION APPLIANCE AND THE ASSOCIATED CABLING/CONDUIT SHALL BE DEMOLISHED AND BE COMPLETELY		(V)	EXISTING STAND ALONE CEILING MOUNTED TO BE DISCONNECTED AND REMOVED (NC
	REMOVED FROM THE FUTURE DOLLAR TREE SPACE. PROPERLY DISPOSE OF THE OCCUPANT NOTIFICATION APPLIANCE. EXISTING OCCUPANT NOTIFICATION APPLIANCE IS NOT CONNECTER TO THE FIRE ALARM SYSTEM		(AV)	EXISTING STAND ALONE COMBINATION CE AUDIBLE/VISUAL APPLIANCE & SMOKE ALA DISCONNECTED AND REMOVED (NOT CON
•	THE EXISTING STAND ALONE COMBINATION SMOKE / OCCUPANT NOTIFICATION APPLIANCE AND THE ASSOCIATED CABLING/CONDUIT SHALL BE DEMOLISHED AND BE COMPLETELY REMOVED FROM THE FUTURE DOLLAR TREE SPACE. PROPERLY		¢D> _R	EXISTING DUCT TYPE SMOKE DETECTOR (R = RETURN SIDE)
	DISPOSE OF THE SMOKE / OCCUPANT NOTIFICATION APPLIANCE. EXISTING COMBINATION SMOKE / OCCUPANT NOTIFICATION APPLIANCE IS NOT CONNECTER TO THE FIRE ALARM SYSTEM.			DUCT-TYPE PHOTOELECTRIC SMOKE DET (POWERED BY RTU) (R = RETURN SIDE)
]	Ô	STAND ALONE CARBON MONOXIDE ALARM (10 YEAR BATTERY OPERATED)
FIF	RE ALARM EXISTING TO REMAIN KEYED NOTES (DENOTED AS $\langle \!$		AIM	NEW ADDRESSABLE INPUT MODULE (COMPATIBLE WITH EXISTING FACP)
1.	THE EXISTING FIRE ALARM CONTROL PANEL AND ASSOCIATED EQUIPMENT LOCATED OUTSIDE HE DOLLAR TREE SPACE SHALL REMAIN AS CURRENTLY CONFIGURED. THE FIRE ALARM CONTROL PANEL SHALL TRANSMIT FIRE ALARM, SUPERVISORY, AND TROUBLE SIGNALS OFF-SITE AS CURRENTLY CONFIGURED.		RT	REMOTE TEST STATION / ANNUNCIATOR (SYSTEM SENSOR RTS151KEY)
2.	THE EXISTING FIRE SPRINKLER RISER SERVING THE DOLLAR TREE SPACE IS CURRENTLY LOCATED OUTSIDE OF THE PROPOSED DOLLAR TREE SPACE			FIRE ALARM PLENUM RATED CONDUCTOR (RED IN COLOR)
	ELECTRONICALLY MONITORED BY THE LANDLORDS FIRE ALARM CONTROL PANEL AND SHALL REMAIN AS CURRENTLY CONFGIURED.		IJ	JUNCTION BOX
3.	THE EXISTING DUCT SMOKE DETECTORS ARE ELECTRONICALLY SUPERVISED BY THE FIRE ALARM SYSTEM. THE ADDRESSABLE INPUT MODULES AND ASSOCIATED CABLING/CONDUIT SHALL REMAIN AS CURRENTLY CONFIGURED.		-~~	END OF LINE RESISTOR





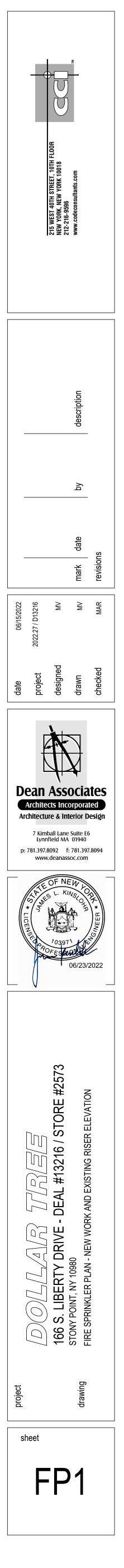




SYMBOL KEY

ENGINEER OF RECORD JAMES L. KINSLOHR, PE License No. 103971 CODE CONSULTANTS PROFESSIONAL ENGINEERS, PC 215 WEST 40TH ST., 10TH FLOOR NEW YORK, NY 10018 PHONE: 212-216-9596 CORPORATE CERTIFICATE OF AUTHORITY

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SECTION 15300 - FIRE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

- A. RELATED DOCUMENTS: CONDITIONS OF THE CONTRACT, DIVISION 1 GENERAL REQUIREMENTS AND DRAWINGS APPLY TO THE WORK OF THIS SECTION.
- 1.02 DESCRIPTION OF WORK
- A. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, TESTING AND SERVICES NECESSARY FOR A COMPLETE AND OPERATIONAL REMODELED FIRE PROTECTION SYSTEM FOR THE PROPOSED DOLLAR TREE AS HEREINAFTER DESCRIBED AND AS SHOWN ON THE ENGINEERING DRAWINGS.
- B. WORK SHALL BEGIN AT EXISTING OVERHEAD FIRE SPRINKLER SYSTEM AND SHALL INCLUDE THE FOLLOWING: 1. REMODELED WET PIPE FIRE SPRINKLER SYSTEM FOR PROPOSED DOLLAR
- TREE
- 2. COORDINATION OF WORK AND SCHEDULES WITH OTHER TRADES.
- C. INTERIOR WORK PROVIDE THE FOLLOWING:
- 1. OVERHEAD PIPE, FITTINGS, HANGERS AND SPRINKLERS.
- 2. AUXILIARY DRAINS.
- D. IT IS INTENDED THAT THE ENGINEERING DRAWINGS AND SPECIFICATION SHALL DESCRIBE AND PROVIDE FOR A WORKING INSTALLATION COMPLETE IN EVERY DETAIL AND ALL ITEMS NECESSARY FOR SUCH COMPLETE INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE ENGINEERING DRAWINGS.

1.03 <u>REFERENCES</u>

- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS:
- 1. NEW YORK STATE BUILDING CODE 2020 EDITION 2. NEW YORK STATE FIRE CODE - 2020 EDITION
- 3. NFPA 13, SPRINKLER SYSTEMS 2016 EDITION

1.04 SYSTEM DESCRIPTION

- A. REMODELED FIRE SPRINKLER SYSTEM DESIGN CRITERIA SHALL BE STRICTLY PER THIS SPECIFICATION.
- B. REMODELED FIRE SPRINKLER SYSTEM TO PROVIDE FIRE PROTECTION FOR THE AREAS INDICATED ON THE ENGINEERING DRAWINGS.
- C. INTERFACE REMODELED FIRE SPRINKLER SYSTEM WITH BUILDING FIRE AND SMOKE ALARM SYSTEMS.
- D. OFFICE AREAS (LIGHT HAZARD WET PIPE FIRE SPRINKLER SYSTEM):
- DENSITY 0.10 GPM/SQ FT
- OPERATING AREA 1,058 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD / 5.6 / QR
- HOSE STREAM ALLOWANCE 100 GPM
- DURATION 0.50 HR
- E. <u>SALES AREA</u> (ORDINARY HAZARD GROUP 2 WET PIPE FIRE SPRINKLER SYSTEM):
- DENSITY 0.20 GPM/SQ FT
- OPERATING AREA 1,058 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD / 5.6 / QR
- HOSE STREAM ALLOWANCE 250 GPM
- DURATION 1.0 HR

. <u>STOCK ROOM AND RECEIVING</u> (ORDINARY HAZARD GROUP 2 WET PIPE FIRE SPRINKLER SYSTEM):

- DENSITY 0.20 GPM/SQ FT
- OPERATING AREA 1,058 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD / 5.6 / QR
- HOSE STREAM ALLOWANCE 250 GPM
- DURATION 1.0 HR
- G. WATER SUPPLY:

THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR SHALL PERFORM A WATERFLOW TEST AND FORWARD A REPORT OF THE TEST RESULTS TO DOLLAR TREE AND CODE CONSULTANTS, INC. SPRINKLER CONTRACTOR SHALL PROVIDE HYDRAULIC REINFORCEMENT AS REQUIRED TO PROVIDE A REMODELED FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13. A SAFETY FACTOR OF A MINIMUM 10% OF THE STATIC PRESSURE SHALL BE APPLIED TO BOTH THE STATIC AND RESIDUAL PRESSURES FOR THE PURPOSE OF HYDRAULIC CALCULATION. PROVIDE LOCATION AND ELEVATION DIFFERENCES BETWEEN THE FLOW TEST AND THE FINISHED FLOOR OF DOLLAR TREE SPACE.

- H. EXISTING FIRE DEPARTMENT CONNECTION SHALL REMAIN.
- I. PROVIDE ALL NECESSARY OFFSETS, RAISES OR DROPS IN MAIN OR BRANCH LINE PIPING AND AUXILIARY DRAINS REQUIRED BY BUILDING CONDITIONS WHETHER OR NOT SHOWN ON THE ENGINEERING DRAWINGS.
- J. EXAMINE THE JOB CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC.
- K. IT IS UNDERSTOOD, UNLESS SPECIFICALLY INDICATED OTHERWISE, THAT THE PIPE SIZES AS SHOWN ON THE ENGINEERING DRAWINGS WILL BE USED.

1.05 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS:
- 1. INSTALLER'S RESPONSIBILITIES INCLUDE PREPARING SHOP DRAWING SUBMITTAL, FABRICATING AND INSTALLING SPRINKLER SYSTEMS. BASE CALCULATIONS ON WATER SUPPLY COORDINATES PROVIDED HEREIN.
- B. INSTALLER SHALL BE STATE AND LOCALLY LICENSED.
- C. EQUIPMENT AND COMPONENTS NOT SPECIFICALLY SPECIFIED SHALL BE LISTED BY
- UNDERWRITERS LABORATORIES INC. FOR FIRE PROTECTION SYSTEMS INSTALLATION. D. ALL FIRE SPRINKLER SYSTEM COMPONENTS SHALL BE INSTALLED FREE OF ANY RUST, CORROSION OR VISIBLE DAMAGE. ALL ITEMS NOT COMPLYING WITH THIS

REQUIREMENT SHALL BE REPLACED WITHOUT COST TO THE OWNER.

- 1.06 PROJECT CONDITIONS
- A. INTERRUPTION OF EXISTING SPRINKLER SERVICE: DO NOT INTERRUPT SPRINKLER SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SPRINKLER SERVICE ACCORDING TO REQUIREMENTS INDICATED:
- 1. NOTIFY CONSTRUCTION MANAGER IN ADVANCE OF PROPOSED INTERRUPTION OF SPRINKLER SERVICE.
- 2. DO NOT PROCEED WITH INTERRUPTION OF SPRINKLER SERVICE WITHOUT CONSTRUCTION MANAGER'S WRITTEN PERMISSION.
- 3. PROVIDE TEMPORARY PIPING, FITTINGS AND VALVES AS REQUIRED TO MAINTAIN SPRINKLER SERVICE.
- 1.07 <u>REGULATORY REQUIREMENTS</u>
- A. ALL WORK SHALL MEET THE REQUIREMENTS OF SECTION 1.03.
- B. THE FIRE SPRINKLER CONTRACTOR SHALL NOT PURSUE ANY APPROVALS OR INTERPRETATIONS OF CCI'S CONSTRUCTION DOCUMENTS EXCEPT THROUGH CCI. C. SPRINKLER PIPING SHALL NOT BE CONCEALED WHERE IT IS INACCESSIBLE UNLESS
- IT IS FIRST INSPECTED AND ACCEPTED BY A REPRESENTATIVE OF THE AUTHORITY HAVING JURISDICTION. D. ANY WORK PERFORMED PRIOR TO THE SATISFACTORY REVIEW BY CCI AND
- APPROVAL BY THE AUTHORITY HAVING JURISDICTION AND THE INSURANCE UNDERWRITER WILL BE SOLELY AT THE FIRE SPRINKLER CONTRACTOR'S RISK.
- E. THE SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE HAS BEEN OBTAINED.
- 1.08 SUBMITTALS
- A. THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THE ENGINEERING DRAWINGS ARE 100% CAD. THESE DOCUMENTS WILL BE MADE AVAILABLE TO THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR IN EITHER ELECTRONIC FORM OR HARD COPY. UTILIZATION OF THESE DOCUMENTS FOR THE DEVELOPMENT OF SHOP DRAWINGS AND SUBMITTALS DOES NOT RELIEVE THE FIRE SPRINKLER CONTRACTOR FROM ANY OF HIS RESPONSIBILITIES REQUIRED HEREIN.
- B. SUBMIT THE FOLLOWING:
- 1. SHOP DRAWINGS. SUBMIT IN .PDF FORMAT OR TWO (2) HARD COPIES OF EACH DRAWING. DRAWINGS WILL BE RETURNED IN THE SAME FORMAT RECEIVED. SUBMITTAL MUST BE COMPREHENSIVE OF ENTIRE PROJECT, COMPLETE IN ALL DETAIL AND THE SAME SCALE AS THE ENGINEERING DRAWINGS.
- 2. HYDRAULIC CALCULATIONS. SUBMIT IN .PDF FORMAT OR TWO (2) HARD COPIES OR EACH CALCULATION. CALCULATIONS WILL BE RETURNED IN THE SAME FORMAT RECEIVED. CALCULATIONS SHALL INCLUDE PEAKING INFORMATION.
- 3. MANUFACTURER'S LITERATURE ON ALL SYSTEM EQUIPMENT. SUBMIT IN .PDF FORMAT OR TWO (2) HARD COPIES OF THE LITERATURE. LITERATURE WILL BE RETURN IN THE SAME FORMAT AS RECEIVED. LITERATURE SHALL CLEARLY IDENTIFY EXACTLY WHAT COMPONENTS ARE BEING PROVIDED WHICH SHALL INCLUDE: FINISH, SIZE, TYPE, OPTIONS, ETC. LITERATURE WHICH IS NOT CLEARLY IDENTIFIED WILL BE REJECTED.
- C. CCI WILL REVIEW THIS SUBMITTAL FOR CONSISTENCY WITH CCI'S CONSTRUCTION DOCUMENTS.
- D. AFTER THE SATISFACTORY REVIEW BY CCI, PROVIDE SUBMITTALS TO THE AUTHORITY HAVING JURISDICTION AND THE INSURANCE UNDERWRITER FOR APPROVAL.
- E. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR RESPONDING, IN WRITING. TO ANY COMMENTS FROM THE AUTHORITY HAVING JURISDICTION OR THE INSURANCE UNDERWRITER WITHIN TEN (10) WORKING DAYS AFTER THE RECEIPT OF THEIR COMMENTS. COPIES OF THE RESPONSE SHALL BE SENT TO THE GENERAL CONTRACTOR AND CCI.

1.09 AS-BUILT DRAWINGS

A. PROVIDE AS-BUILT DRAWINGS IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL CONDITIONS OF THE CONTRACT AND NFPA 13. 1.10 OPERATION AND MAINTENANCE DATA

- A. PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS TO THE OWNER IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL CONDITIONS OF THE CONTRACT AND NFPA 13.
- 1.11 WARRANTY
- A. REPAIR ALL DEFECTIVE WORKMANSHIP OR REPLACE ALL DEFECTIVE MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. WORKMANSHIP OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE REPLACED WITHOUT COST TO THE OWNER.
- PART 2 PRODUCTS
- 2.01 <u>PIPING</u>
- A. UNDERGROUND PIPING: NONE. B. OVERHEAD PIPE: PER LOCAL REQUIREMENTS AND NFPA 13. ALL PIPE SHALL HAVE A CORROSION RESISTANCE RATIO (CRR) EQUAL TO OR GREATER THAN 1.00. REFER
- C. ALL WET PIPE SYSTEM RISERS, FEED AND CROSS MAINS SHALL HAVE HYDRAULIC
- TO THE CURRENT UL FIRE PROTECTION EQUIPMENT DIRECTORY STEEL SPRINKLER PIPE FOR ACCEPTABLE MANUFACTURERS, SIZES, AND JOINING METHODS.
- CHARACTERISTICS EQUAL TO OR GREATER THAN SCHEDULE 40 PIPE.

- 2.02 JOINING OF PIPE AND FITTINGS
- A. ALL PIPE SHALL BE JOINED IN ACCORDANCE WITH NFPA 13 AND MANUFACTURER'S RECOMMENDATIONS.
- B. FITTINGS SHALL BE 175 PSI SCREWED OR FLANGED BLACK CAST IRON OR APPROVED EQUAL SUCH AS MECHANICAL, GROOVED, PLAIN END OR WELDED CONNECTIONS. WHERE GROOVED FITTINGS AND COUPLINGS ARE USED TOGETHER, THEY SHALL BE OF THE SAME MANUFACTURER.
- C. BUSHINGS SHALL NOT BE USED.
- D. FLEXIBLE COUPLINGS SHALL BE IDENTIFIED ON THE SHOP DRAWINGS.

2.03 HANGERS AND SLEEVES

- A. SLEEVES SHALL BE SET FOR ALL PIPES PASSING THROUGH CONCRETE FLOORS, FOUNDATIONS AND MASONRY WALLS.
- B. PROVIDE PRIMED ESCUTCHEON PLATES AT ALL WALL PENETRATIONS WHERE THE HOLE WOULD OTHERWISE BE EXPOSED TO VIEW.
- C. ALL HANGERS TO BE OF APPROVED MATERIALS AND SPACED IN ACCORDANCE WITH
- NFPA 13 AND THE PIPING MANUFACTURER'S SPECIFICATIONS.
- D. THE SECTION MODULUS REQUIRED BY NFPA 13 SHALL BE PROVIDED FOR ALL TRAPEZE MEMBERS SUPPORTING PIPING.

2.04 VALVES

- A. INTERIOR VALVES:
- 1. GLOBE VALVE: BRONZE THREADED; RENEWABLE COMPOSITION DISC; 175 PSI RATED WORKING PRESSURE.
- a. ACCEPTABLE MANUFACTURERS: CRANE, MILWAUKEE, NIBCO, STOCKHAM OR APPROVED EQUAL

2.05 SPRINKLERS

- A. TYPES:
- 1. CHROME PENDENT GLASS BULB QUICK RESPONSE PENDENT SPRINKLER WITH POLISHED CHROME 2-PIECE TELESCOPING ESCUTCHEON.
- 2. BRASS UPRIGHT GLASS BULB QUICK RESPONSE UPRIGHT SPRINKLER
- 3. CHROME DRY PENDENT GLASS BULB QUICK RESPONSE DRY PENDENT SPRINKLER WITH POLISHED CHROME 2-PIECE TELESCOPING ESCUTCHEON WITH FREEZER BOOT.
- B. ACCEPTABLE MANUFACTURERS: GLOBE, RELIABLE, TYCO, VICTAULIC AND VIKING.
- C. ONLY SPRINKLERS MANUFACTURED AFTER JANUARY 1, 2021 WILL BE ACCEPTED FOR USE.
- D. ONLY SPRINKLERS MANUFACTURED UTILIZING BELLEVILLE SPRING SEALS WILL BE ACCEPTABLE FOR USE.
- E. PROVIDE AT THE RISER ONE (1) TWELVE (12) HEAD SPARE SPRINKLER CABINET STOCKED WITH SPRINKLERS AND ESCUTCHEON ASSEMBLIES PROPORTIONATE TO THOSE PROVIDED IN THE BUILDING AND ALL NECESSARY SPRINKLER WRENCHES.

2.06 SIGNS

- A. APPROVED ENAMELED METAL SIGNS SHALL BE SECURELY ATTACHED AT ALL MAIN DRAINS. AUXILIARY DRAINS ALARM TEST CONNECTIONS AND CONTROL VALVES. (SIGNS SHALL INDICATE WHICH ZONE THEY SERVE.)
- B. PROVIDE A PERMANENTLY ATTACHED PLACARD INDICATING GENERAL INFORMATION IN ACCORDANCE WITH NFPA 13 AND PLACED AT THE EXISTING RISER. A MOCK-UP OF PLACARD SHALL BE INCLUDED WITH EQUIPMENT LITERATURE.
- PROVIDE AT THE EXISTING RISER THE LOCATION OF THE LOW POINT OR AUXILIARY DRAIN VALVE. THE PLAN SHALL CLEARLY IDENTIFY THE SYSTEM ASSOCIATED WITH EACH LOW POINT AND AUXILIARY DRAIN VALVE. THIS PLAN SHALL BE FRAMED WITH A PLEXIGLASS COVER AND SHALL BE PERMANENTLY ATTACHED TO A WALL. PLAN SHALL BE LARGE ENOUGH TO CLEARLY DEFINE THE AREAS PROTECTED BY EACH SYSTEM.

2.07 DRAIN CONNECTIONS

A. AUXILIARY DRAINS CONSISTING OF PLUGS, OR GLOBE VALVES AND PLUGS WHERE CAPACITY OF TRAPPED PIPE SECTION EXCEEDS 5 GALLONS, SHALL BE PROVIDED TO DRAIN ALL POINTS IN THE SYSTEM THAT CANNOT BE DRAINED BACK TO MAIN RISER.

PART 3 - EXECUTION

3.01 COORDINATION WITH OTHER TRADES A. COORDINATE CLOSELY WITH ALL OTHER TRADES TO EXPEDITE CONSTRUCTION AND

3.02 PAINTING AND PATCHING

AVOID INTERFERENCE.

- A. PAINTING OF SPRINKLER PIPING IS NOT INCLUDED IN THIS CONTRACT. ALL EXPOSED SPRINKLER PIPING SHALL BE THOROUGHLY CLEANED, REMOVING ALL DIRT, OIL, ETC. AND MADE READY TO RECEIVE PAINT IN ACCORDANCE WITH THE GENERAL CONDITIONS OF THE CONTRACT.
- B. HOLES IN WALLS OR FLOORS CUT DURING THE PERFORMANCE OF THIS WORK SHALL BE PATCHED IF THE HOLES CANNOT BE COVERED BY STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE CUTS WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- C. FIRE STOP ALL PENETRATIONS OF FIRE RATED ASSEMBLIES.

3.03 SYSTEM TESTS

- A. HYDROSTATICALLY TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 13.
- B. TEST SHALL BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION AND OWNER'S AUTHORIZED AGENT.
- C. PRELIMINARY TESTING PROCEDURES SHALL BE CONDUCTED AS MENTIONED ABOVE TO ASSURE PROPER OPERATION WHEN THE FINAL TESTING IS PERFORMED.
- D. THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATES AS SHOWN IN NFPA 13 MUST BE COMPLETED AND SUBMITTED TO THE ENGINEER BEFORE FINAL ACCEPTANCE MAY BE GIVEN.
- E. WHEN THE SYSTEMS ARE INITIALLY COMMISSIONED (FILLED WITH WATER), USE THE MANUAL AIR VENT AND HOSE END ADAPTER AT THE END OF EACH SYSTEM, ATTACH A HOSE TO THE EXTERIOR AND OPEN THE VALVE UNTIL WATER IS DISCHARGED THROUGH THE HOSE. REPEAT THIS PROCEDURE FOR EACH SYSTEM AND ANY TIME THE SYSTEM IS DRAINED AND REFILLED.

END OF SECTION

HANGER NOTES ALL HANGERS TO BE OF APPROVED MATERIALS AND SPACED IN ACCORDANCE WITH NFPA 13 AND THE PIPING MANUFACTURER'S SPECIFICATIONS.

SPRINKLER BELOW DUCT NOTE

PROVIDE SPRINKLER PROTECTION BELOW DUCTS IN EXPOSED STRUCTURE AREAS PER NFPA 13.

CONSTRUCTION NOTES

- DURING CONSTRUCTION, FIRE SPRINKLER CONTRACTOR SHALL KEEP FIRE SPRINKLER SYSTEM OUT OF CONSTRUCTION AREA FULLY CHARGED AND OPERATIONAL DURING BUSINESS HOURS.
- COORDINATE REQUIRED SHUT-DOWN OF THE EXISTING SYSTEMS WITH THE OWNER, INSURANCE UNDERWRITER, AND FIRE DEPARTMENT.
- PROVIDE TEMPORARY PIPING, VALVES, AND FITTINGS AS REQUIRED TO MAINTAIN SERVICE TO FIRE SPRINKLER SYSTEMS DURING CONSTRUCTION.
- 4. COORDINATE CONSTRUCTION PHASES WITH OWNER AND GENERAL CONTRACTOR.

GENERAL NOTES

- PROVIDE ALL NECESSARY OFFSETS, RAISES OR DROPS IN PIPING AND AUXILIARY DRAINS REQUIRED BY BUILDING CONDITIONS WHETHER OR NOT SHOWN ON THE DRAWINGS
- EXAMINE THE JOB CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC.
- ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL BACKGROUND INFORMATION IS SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO THE PROPER DRAWINGS FOR EXACT LOCATIONS, SIZES, AND QUANTITIES OF OTHER TRADES' WORK.
- THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THE DRAWINGS ARE 100% CAD. THESE DOCUMENTS WILL BE MADE AVAILABLE TO THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR IN EITHER ELECTRONIC FORM OR HARD COPY.
- SUPPLY ONLY ONE (1) SPRINKLER FROM A SINGLE BRANCH LINE OUTLET. PROVIDE NEW BRANCH LINES AS REQUIRED.
- SPRINKLERS NEAR A HEAT SOURCE (UNIT HEATERS, DIFFUSERS, STEAM MAINS, SKYLIGHTS, ETC.) SHALL HAVE TEMPERATURE RATINGS IN ACCORDANCE WITH NFPA 13.
- ALL UNUSED OUTLETS ON EXISTING BRANCH LINES SHALL BE PLUGGED.

MAXIMUM HANGER SPACING

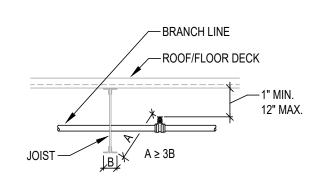
1" - 1 1/4" BLACK STEEL PIPE - 12 FT MAXIMUM HANGER SPACING 1 1/2" - 3" BLACK STEEL PIPE - 15 FT MAXIMUM HANGER SPACING

SPRINKLER NOTES

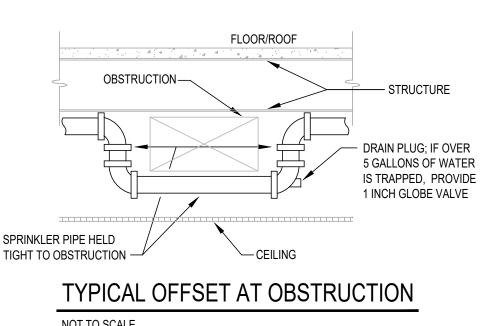
- ALL SPRINKLERS ARE AS NOTED.
- SPRINKLER SPACING IN LIGHT HAZARD AREAS MAX 225 SQ FT PER SPRINKLER AND MAX 15 FT BETWEEN SPRINKLERS.
- SPRINKLER SPACING IN ORDINARY HAZARD AREAS (STANDARD COVERAGE SPRINKLERS) - MAX 130 SQ FT PER SPRINKLER & MAX 15 FT BETWEEN SPRINKLERS

LOCK NUT REQ'D VIEW A-A BEAM CLAMP —— FIG. 100 ALL THREAD ROD — FIG. 200 ADJUSTABLE RING HANGER

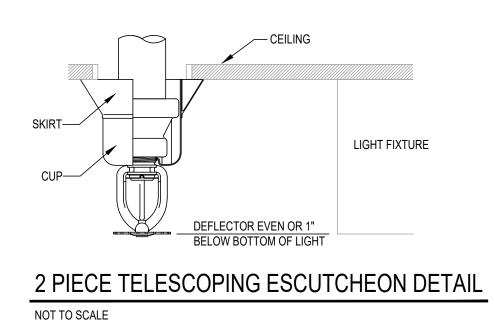
TOP BEAM CLAMP, ROD AND RING NOT TO SCALE

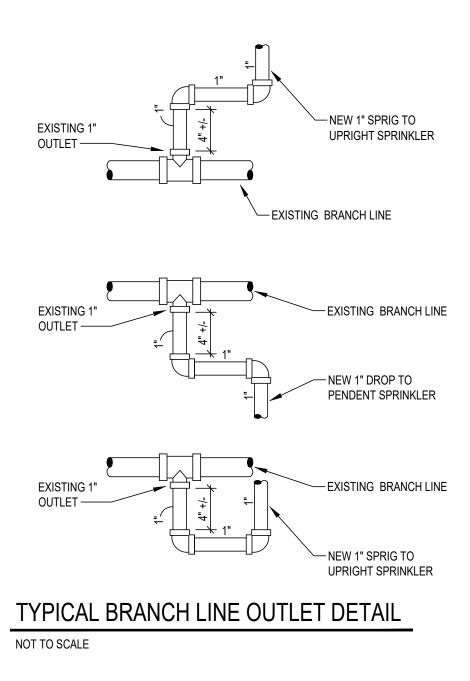


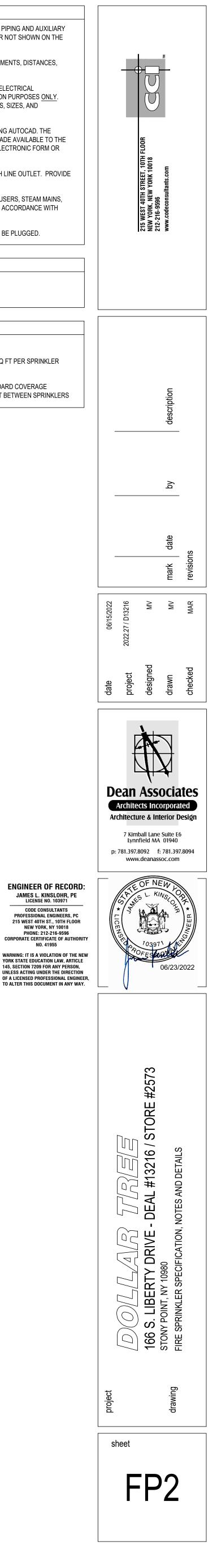
TYPICAL JOIST CLEARANCE REQUIREMENTS FOR UPRIGHT SPRINKLERS NOT TO SCALE

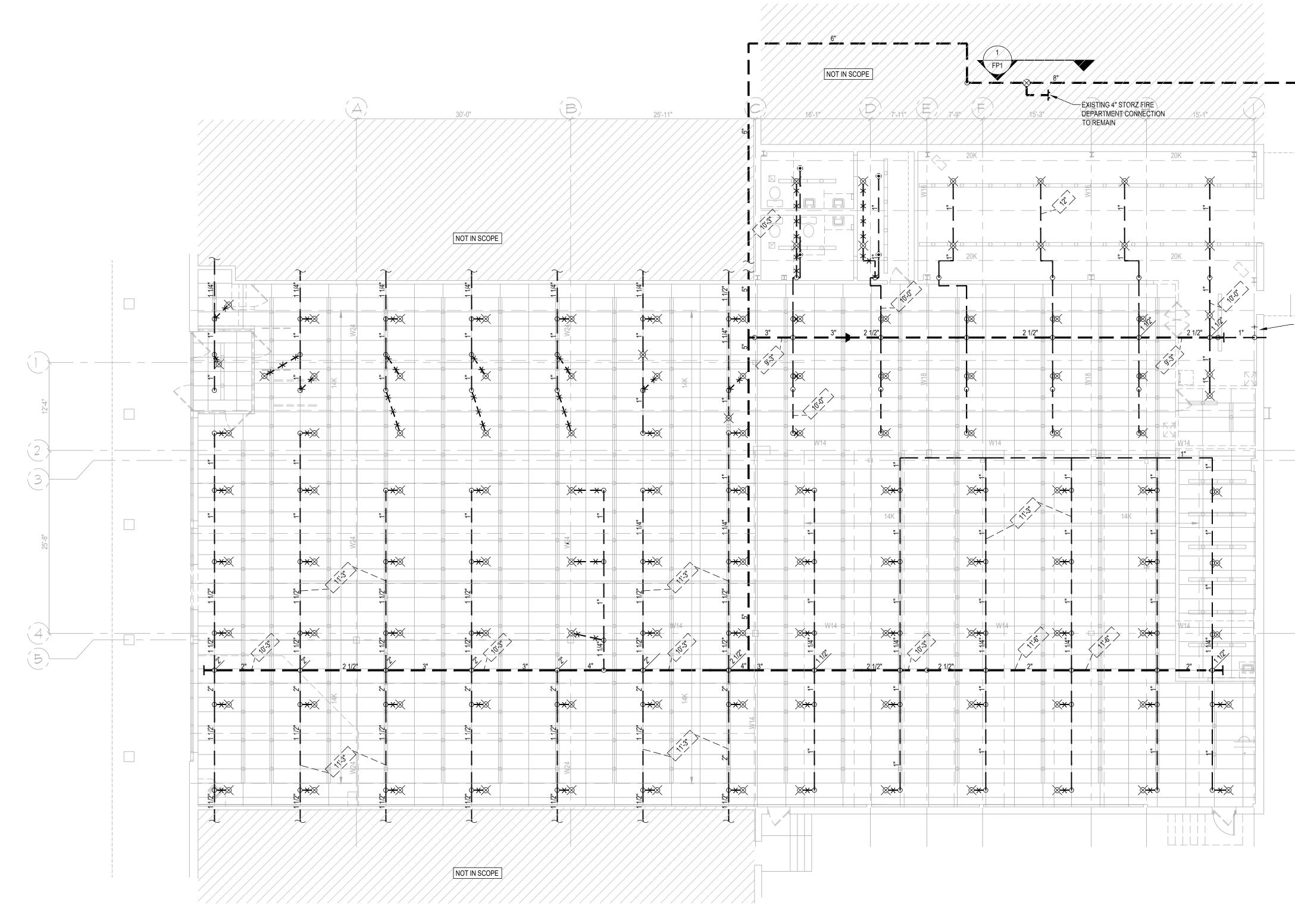




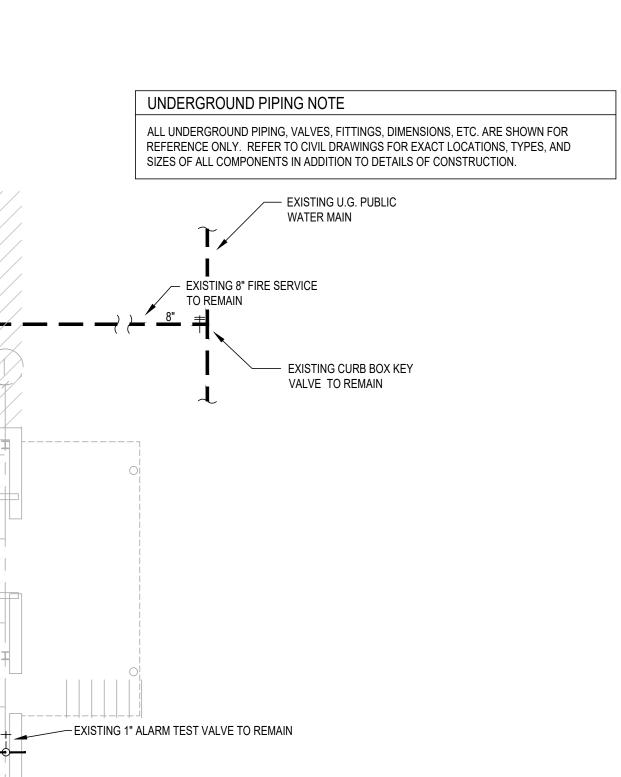








FIRE SPRINKLER PLAN - DEMOLITION WORK

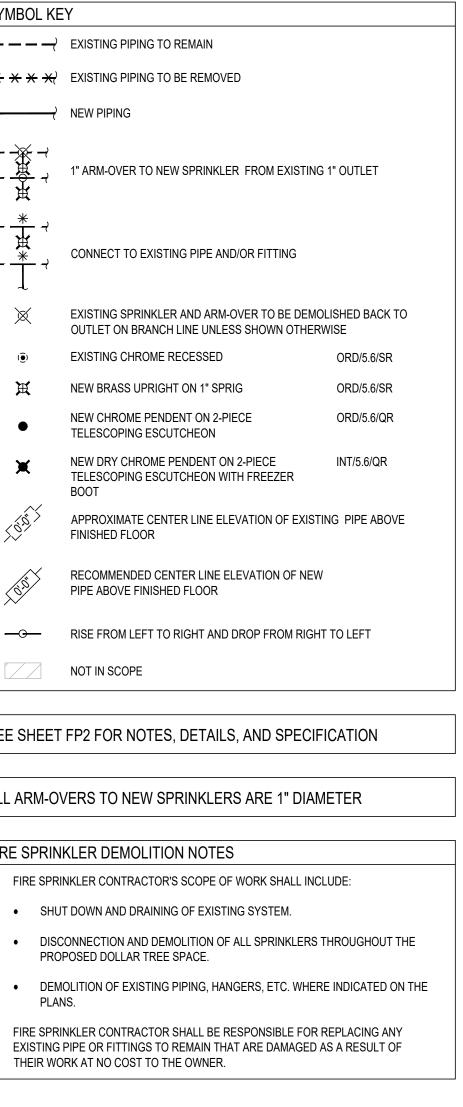


SYMBOL KE	Y
$\succ _ _ _ \rightharpoonup$	EXISTING PIPING TO REMAIN
≷ × × × × ?	EXISTING PIPING TO BE REMOVED
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	NEW PIPING
	1" ARM-OVER TO NEW SPRINKLER FROM EXISTIN
┝╶╫ ┝╶╫ ┍╶╢	CONNECT TO EXISTING PIPE AND/OR FITTING
×	EXISTING SPRINKLER AND ARM-OVER TO BE DEM OUTLET ON BRANCH LINE UNLESS SHOWN OTHE
()	EXISTING CHROME RECESSED
X	NEW BRASS UPRIGHT ON 1" SPRIG
•	NEW CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON
×	NEW DRY CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON WITH FREEZER BOOT
50 ⁰	APPROXIMATE CENTER LINE ELEVATION OF EXIS FINISHED FLOOR
S.S.	RECOMMENDED CENTER LINE ELEVATION OF NEW PIPE ABOVE FINISHED FLOOR
— <u>O</u> —	RISE FROM LEFT TO RIGHT AND DROP FROM RIG
	NOT IN SCOPE
SEE SHEET	FP2 FOR NOTES, DETAILS, AND SPECI
ALL ARM-O	ERS TO NEW SPRINKLERS ARE 1" DIA
	KLER DEMOLITION NOTES
	NKLER CONTRACTOR'S SCOPE OF WORK SHALL IN
<ul> <li>SHUT</li> </ul>	DOWN AND DRAINING OF EXISTING SYSTEM.

SHUT DOWN AND DRAINING OF EXISTING SYSTEM. DISCONNECTION AND DEMOLITION OF ALL SPRINKLERS THROUGHOUT THE PROPOSED DOLLAR TREE SPACE.

• DEMOLITION OF EXISTING PIPING, HANGERS, ETC. WHERE INDICATED ON THE PLANS. FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY

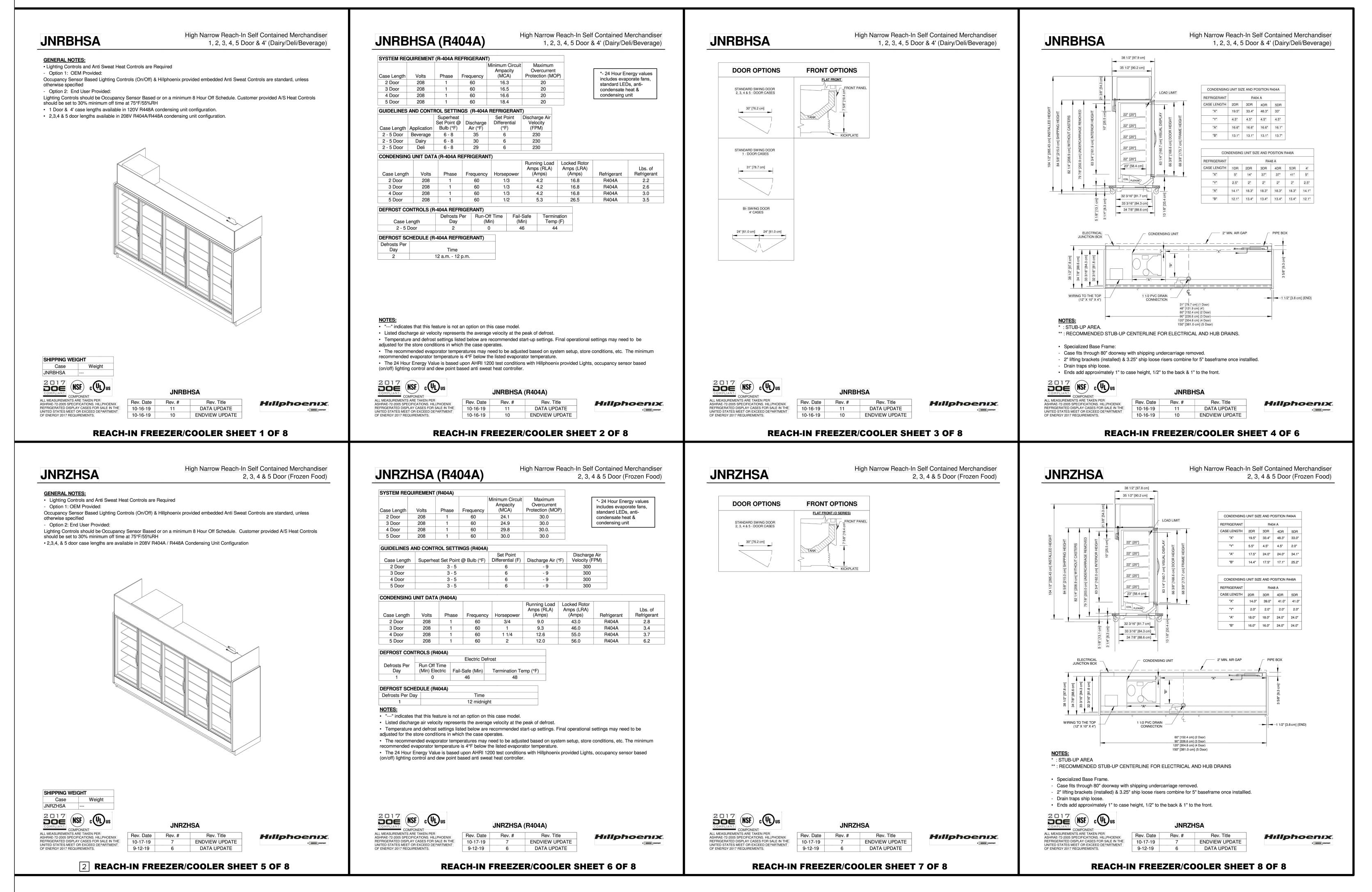
THEIR WORK AT NO COST TO THE OWNER.



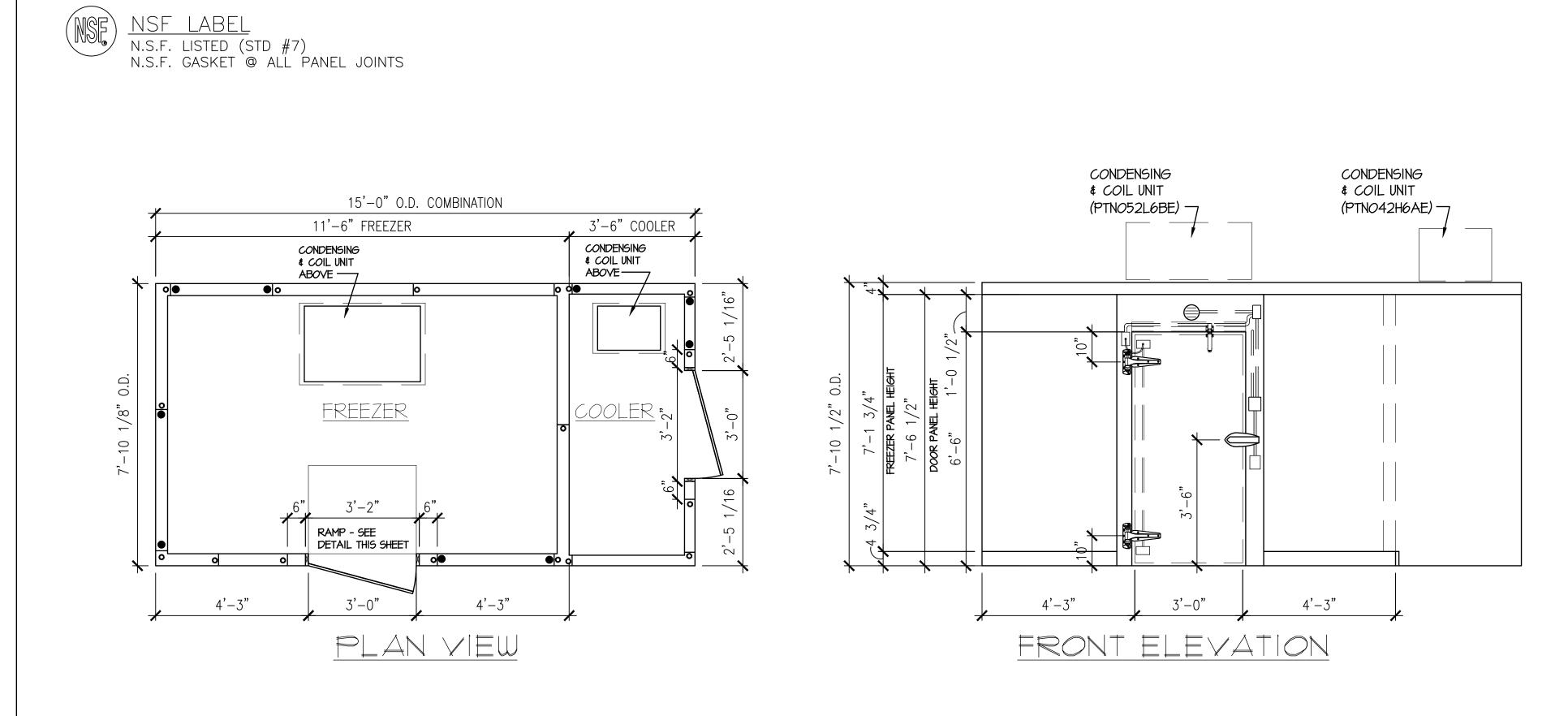


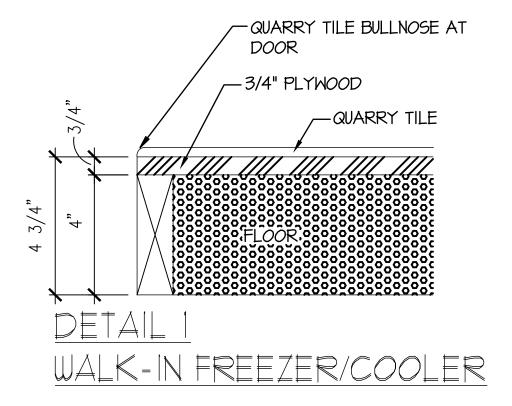
ENGINEER OF RECORD: JAMES L. KINSLOHR, PE LICENSE NO. 103971

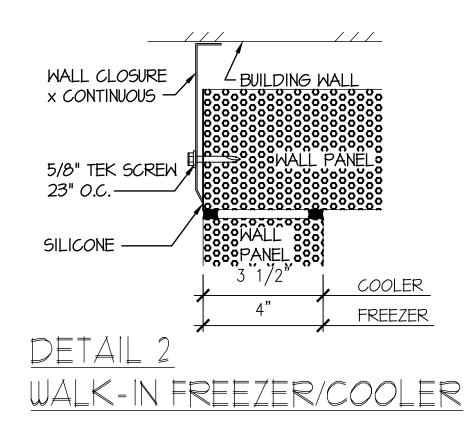
LICENSE NO. 103971 CODE CONSULTANTS PROFESSIONAL ENGINEERS, PC 215 WEST 40TH ST., 10TH FLOOR NEW YORK, NY 10018 PHONE: 212-216-9596 CORPORATE CERTIFICATE OF AUTHORITY NO. 41955 WARNING: IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145, SECTION 7209 FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY.



	_			description	
	_			mark date by	revisions
	date xx/xx/xx	project ^{52XXXX}	designed		checked
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	project		SHOPPING CENTER NAME	drawing DEACH INTINITS DETAILS AND SPECIFICATIONS	
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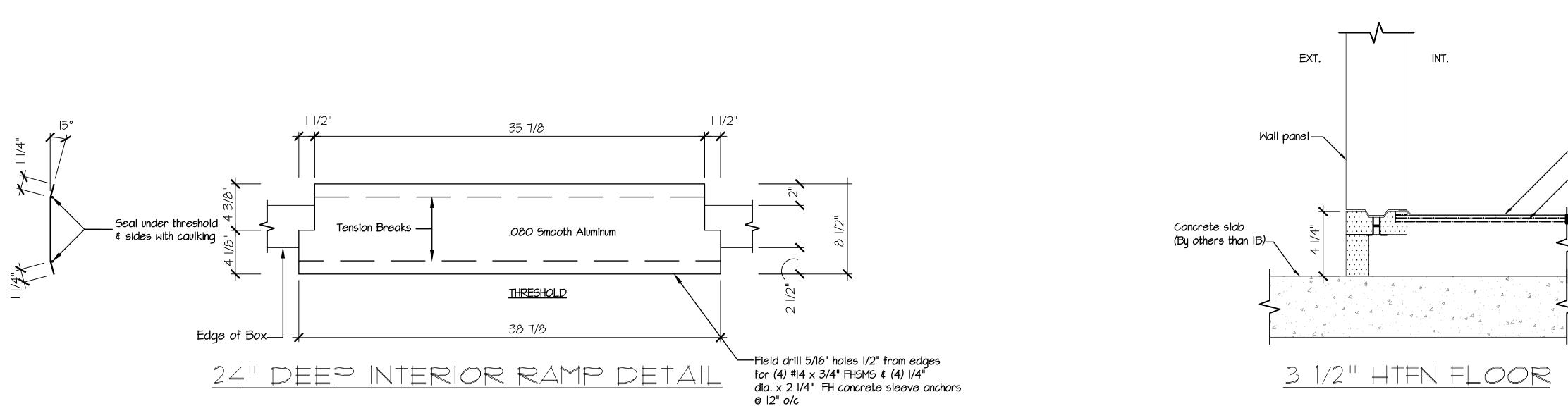


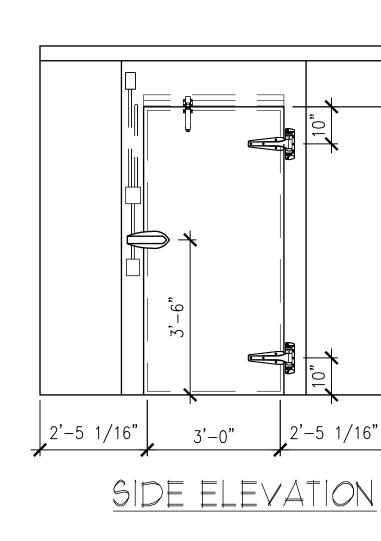


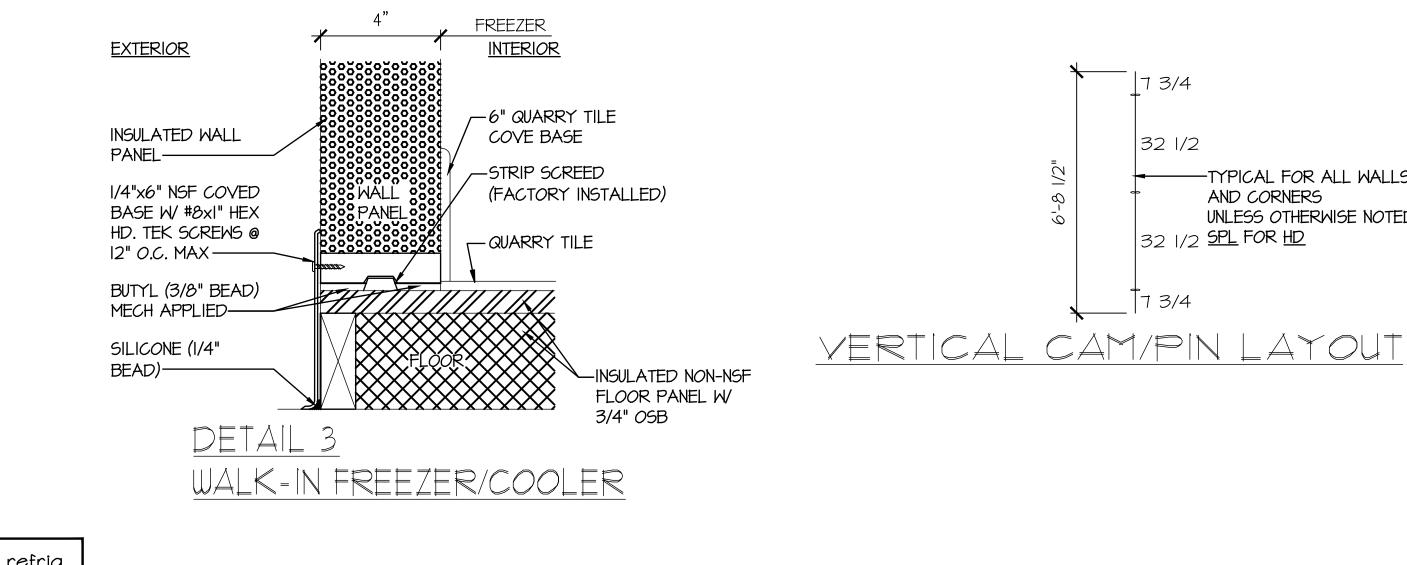
### <u>NOTE</u>:

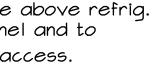
Packaged refrigeration systems need proper ventilation to operate correctly. A minimum of 1,000 cfm per compressor horsepower of make up air and exhaust air is required for proper cooling. Failing to provide adequate ventilation can cause premature compressor failure and may void compressor warranty. Contact manufacturer for additional details.

Allow 2 feet clearance above refriq. unit to remove top panel and to allow service access.









STUCCO GALV. STEEL INTERIOR STUCCO GALV. STEEL EXTERIOR STUCCO GALV. STEEL EXTERIOR FLOOR QUARRY TILE FLOOR FINISH (WIC & WIF)

FINISH

#### SPECIFICATIONS Indoor freezer (with floor)

Vinyl NSF gasket (1/16" joint thickness), Cam-lock layout SNI

SPECIAL INSTRUCTIONS Standard crating

### WALL PANELS

- Construction: 4" urethane
- Exterior Finish: Stucco galvalume Interior Finish: Stucco galvalume
- Ceiling connections: Camlock

Floor connections: Camlock

#### <u>CEILING PANELS</u>

- Construction: 4" high density urethane Exterior Finish: Metal
- Interior Finish: Stucco galvalume
- Ceiling Caps: Factory mounted Live Load: 10 psf

#### FLOOR PANELS

 $\mathbf{h}$ 

Model: Hand-Truck Floor panels model #HTFN (NSF)

Construction: 3 1/2" high density urethane w/ .063 aluminum diamond tread (low profile) @ interior

- over 1/2" plywood
- w/ Metal @ exterior
- <u>DOORS</u>
- [A]: 36" x 75 1/4" flush model G3 self-closing freezer door *** ELECTRICAL COMPONENTS PRE-WIRED ***
- Frame: 4" high density urethane, 3-sided
  - w/ Stucco galvalume both sides
  - w/ 24 ga. stainless steel 430 (magnetic) liners
  - w/ 4-sided heat cable in frame [FL-4-116W] (24'-11 1/2" x 5 ohms/ft (125 total ohms) @ 4.7 watts/ft + Pepi - 120V, 1A)
- Leaf: 4" thick, 3-side lap, raised 1/4"
- w/ Stucco galvalume both sides
- w/ Magnetić gasket (2) Component Hardware #W59 spring assisted adjustable hinge
- (1) Kason #1229 handle only
- (1) Kason #1094 hydraulic door closer (1) Weiss XWAIIV temperature monitor w/external buzzer
- (2) Terminal J-box @ int.
- (1) Kason 1832 heated air vent (23W, 120V, .2A)
- (1) .080 smooth aluminum threshold for interior ramp

<u>REFRIGERATION</u>

- (1) ea. Freezer Indoor R404a self-contained system
  - 7059 BTU/H @ 10°F TD with 14.7 hr runtime @ -10°F inside/95°F outside room 95°F @ cond. unit, 1289ft altitude
  - (I) Climate Control R404a air cooled self contained unit #PTN052L6BE
  - 208-230V/1ø/60Hz/3HP Pro3 compressor
  - MCA=24, MOPD =30
  - 42W x 52D x 19H x 280lbs. Opening: 25W x 38.5D
- <u>NOTES</u>

Meets 2009 Federal Energy Independence and Security Act Requirements.

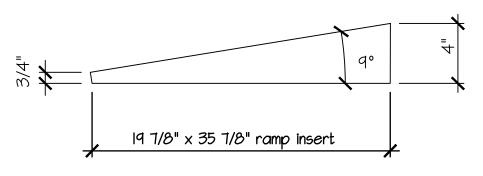
#### STANDARD NOTES

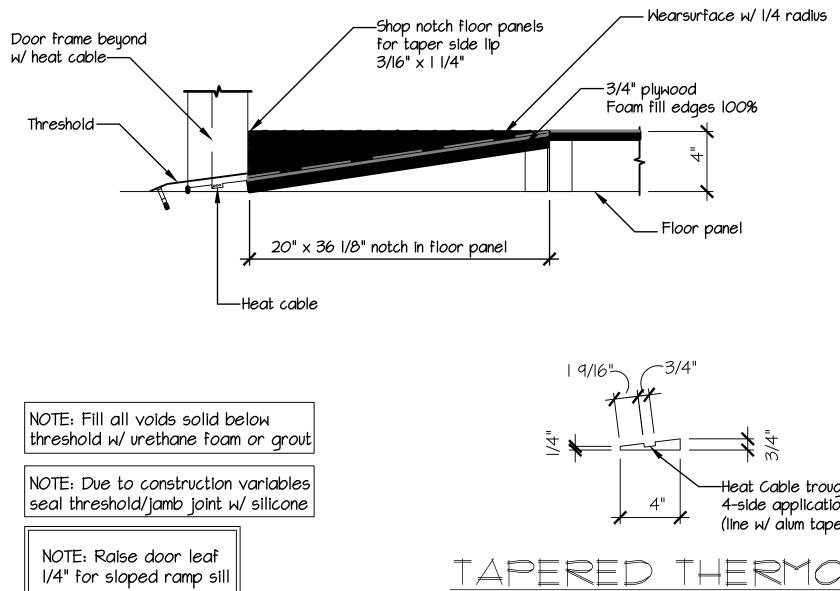
- I. To prevent condensation, a minimum 2" from the walk-in exterior surface is required. High humidity c may require force ventilation in addition to clearance.
- 2. Installation site floor must be true and level within 3/16" per 10' or additional costs may be incurred
- 3. Imperial Brown's sliding and vertical lift doors shall not be considered means of egress. Check coc egress requirements for your application.

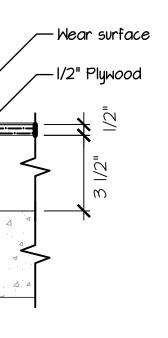
#### <u>ELECTRICAL</u>

Field electrician to verify maximum acceptable load for light switches. If load is too high, then relay type should be used. After wiring devices, ALL conduits must be sealed to stop moisture transfer through electrical raceway Failure to seal device per NEC codes WILL VOID WARRANTY.

#### REVISIONS OI 05/22/2019 process order



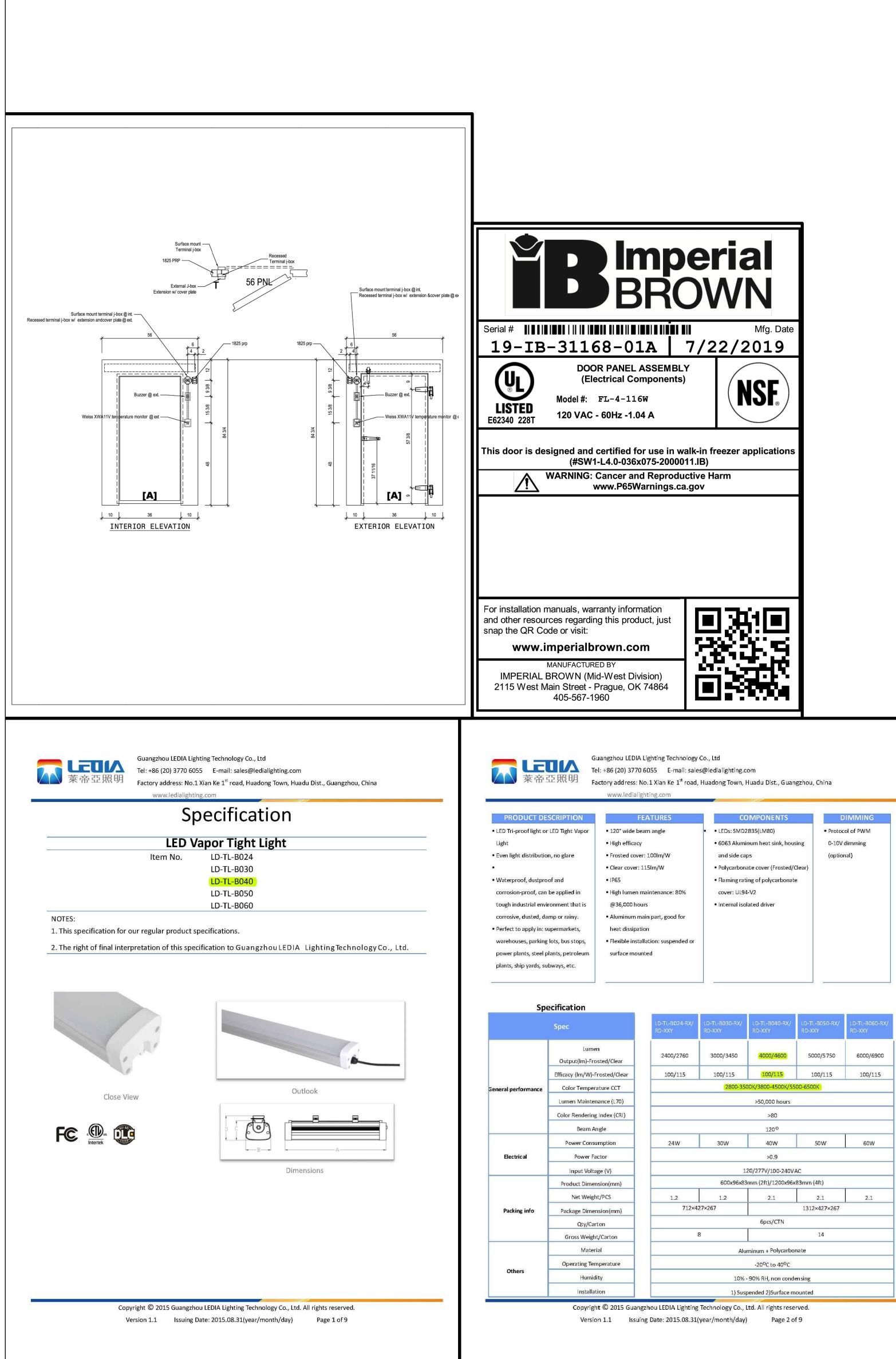




7 3/4 32 1/2 TYPICAL FOR ALL WALLS AND CORNERS UNLESS OTHERWISE NOTED. 32 1/2 SPL FOR HD 7 3/4

2'-5 1/16"

	by description
	xx/xx/xx 52xxxx mark date revisions
conditions d. de	date project designed drawn checked
e controls ys.	PROFESSIONAL OF RECORD
	PHONE: 314-821-1100
gh on only ≥)	project <i>DOLLAR TREE SHOPPING CENTER NAME</i> ADDRESS drawing walk-IN DETAILS AND SPECIFICATIONS
	ة DS2



		<b>rial</b> NN
1a	∥ 7/2	Mfg. Date
ASSEMBL` omponents) .6₩ 04 A		<b>NSF</b> ®
for use in wa 5x075-20000 nd Reprodu Varnings.ca	11.IB) ctive Ha	reezer applications arm
mation		1.274/221
duct, just <b>om</b>	5	
ivision) K 74864		

FEATURES	COMPONENTS	DIMMING
e beam angle acy over: 100lm/W er: 115lm/W	<ul> <li>LEDs: SMD2835(LM80)</li> <li>6063 Aluminum heat sink, housing and side caps</li> <li>Polycarbonate cover (Frosted/Clear)</li> </ul>	<ul> <li>Protocol of PWM</li> <li>0-10V dimming</li> <li>(optional)</li> </ul>
en maintenance: 80% hours n main part, good for pation istallation: suspended or iounted	<ul> <li>Flaming rating of polycarbonate cover: UL94-V2</li> <li>Internal isolated driver</li> </ul>	

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100 00	on: Various				Submi	tted by: 🛛 🛚	Mike S. Jar	rrell		
Custom	50000 11970					DATE: 7	7/9/2015			
Identity	'#: ag: Freezer			-	For Recor For Approv					
		PHYSICAL	& ELEC		AL & CAPA	CITY DATA	l			
REFRIGERANT	EVAPORATOR CFM	POWER SUPPLY Volts / Ph / Hz	MCA	4+	MOP‡	Unit Amps	NEMA Recepta	5.0	APPROX. NET WEIGHT	Re Ch ((
R404A	900	208- 230/1/60	18.	1	20	15.3	6-20F	R	275	z
+35°F Room	+38°F Room	CA 0°F Room	PACITY	99 	‡MOP = M;	imum Circuit aximum Over			BIENT TEMP	
	+38 F Room	7000			5360	32 - 940 IV 3	10	(	CAPACITY BTUH) at °F Ambient	
		- A	• •				B		→ C	(YL
A B C 52 42 19	DIMENSIONS       (inch         D       E       F         4       24.75       38.3         SIONS       (inches)         R       S       T       U         N       I       I       I	G H J	K							

#### WALK-IN FREEZER SHEET 1 OF 2

A Brand of Heatcraft Refrige 2175 West Park Place Bouler Stone Mountain, GA 30087 800.537.7775 Www.larkinproducts.com	vard	PTN052L6BE	
Project: Dollar Tree Stores	QUOTATIO	DN:	
Location: Various	Submitted		
Customer:	DA	TE: 7/9/2015	
Identity #:	For Record	Ву:	
Tag: <b>Freezer</b>	For Approval	Date:	
ST/	ANDARD FEATURES		
<ul> <li>Top mount design with evaporator grill flush to ceiling</li> <li>Electronic controls for accurate temperature control</li> <li>Liquid-line drier on medium and large cabinet models</li> <li>System is factory assembled, evacuated, charged, run tested a wired – no piping or loose components to install</li> <li>Cabinet panels are fabricated from heavy-gauge aluminum</li> <li>2-year product warranty</li> <li>Fans:</li> <li>Direct drive fan motors</li> <li>PSC fan motor in condensing unit section</li> <li>EC evaporator fan motor.</li> </ul>	<ul> <li>Condensate ev <ul> <li>Pre-wired pow</li> </ul> </li> </ul>	ter	
	OPTIONS		
Mounted Options:			
Ship Loose Options:			
None	T		
Top View Side View Section W Min. Evaporator Airflow Evaporator Airflow Evaporator Airflow Evaporator Airflow	Allow 2 feet clearance above unit to remove top panel and to allow service access. Mounting ralls may be used to attach unit to celling. Through- bolts should be insulated or non-conductive to prevent sweating.		

3. INSTALLATION OF THESE NSF, ETL & UL

STATE AND LOCAL CODES PER

LISTED UNITS SHALL COMPLY WITH ALL

GENERAL NOTES:

I. THE PROPOSED FREEZER/COOLER UNIT

SIZE IS INDICATED ON FLOOR PLAN.

