

TORRID

BOWER PLACE

4900 MOLLY BANISTER DR., SPACE NO. 230

RED DEER, AB T4R 1N9

STORE #3532-B

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR	FIN.	FINISH (ED)	PVC.	POLYVINYL CHLORIDE
A.F.C.	ABOVE FINISHED CEILING	F.E.	FIRE EXTINGUISHER	P.M.	PROJECT MANAGER
AC.T.	ACOUSTICAL TILE	FP.	FIREPROOFING	R.A.	RETURN AIR
ADJ.	ADJACENT	F.D.	FLOOR DRAIN	R.C.P.	REFLECTED CEILING PLAN
ALT.	ALTERNATE	FLUOR.	FLUORESCENT	REF.	REFERENCE
APPROX.	APPROXIMATE	F.R.T.	FIRE RETARDANT TREATED	REG.	REGISTER
ARCH.	ARCHITECT (URAL)	FURR.	FURRED (ING)	REINF.	REINFORCE (D), (ING)
BLK.	BLOCK	GA.	GALVE	REQ'D.	REQUIRED (REQ.)
BLKG.	BLOCKING	G.C.	GALVANIZED	REV.	REVISION (S), REVISED
BD.	BOARD	GYP. BD.	GYPSON BOARD	R.O.	ROUGH OPENING
CLG.	CEILING	H.V.A.C.	HEATING/VENTILATION/ AIR CONDITIONING	SHT.	SHEET
CLG.HT.	CEILING HEIGHT	H.C.	HOLLOW CORE	S.C.	SOLID CORE
CLR.	CLEAR (ANCE)	H.M.	HOLLOW METAL	S.S.	STAINLESS STEEL
CLO.	CLOSET	HORIZ.	HORIZONTAL	STD.	STANDARD
COL.	COLUMN	INT.	INTERIOR	STL.	STEEL
C.M.U.	CONCRETE MASONRY UNIT	IN.W.	INCH	STO.	STORAGE
CONST.	CONSTRUCTION	INT.(*)	INTERIOR	S.D.	STORM DRAIN
COORD.	COORDINATE	JOINT	JOINT	STRUCT.	STRUCTURAL
CORR.	CORRIDOR	MFR.	MANUFACTURE (R)	SUSP.	SUSPENDED
C.T.R.	CENTER	MECH.	MECHANIC (AL)	T.B.D.	TO BE DETERMINED
C.T.	CERAMIC TILE	MTL.	METAL	T.D.	TELEPHONE
DET.	DETAIL	MEZZ.	MEZZANINE	T.S.	TUBE STEEL
DIAG.	DIAGONAL	MIN. (')	MINIMUM, MINUTE	TYP.	TYPICAL
DIA.	DIAMETER	MISC.	MISCELLANEOUS	U.N.O.	UNLESS NOTED OTHERWISE
DIF.	DIFFUSER	N.I.C.	NOT IN CONTRACT	VERT.	VERTICAL
DIM.	DIMENSION	N.T.S.	NOT TO SCALE	VEST.	VESTIBULE
DISP.	DISPENSER	NO. or #	NUMBER	V.C.T.	VINYL COMPOSITION TILE
DR.	DOOR	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED	V.I.F.	VERIFY IN FIELD
DWG.	DRAWING	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED	W.C.	WATER CLOSET
ELEC.	ELECTRICAL	O.C.	ON CENTER (S)	WP.	WATERPROOF(ING)
E.P.	ELECTRIC PANEL	OPP.	OPPOSITE	WS.	WEATHER STRIPPING
ELEV.	ELEVATION	P.L.	PLASTIC LAMINATE	W/	WITH
E.W.C.	ELECTRIC WATER COOLER	PLBG.	PLUMBING	W/O	WITHOUT
EXIST.	EXISTING	PWD.	PLYWOOD	WD.	WOOD
EQUIP.	EQUIPMENT				
EXH.	EXHAUST				
EXP. JT.	EXPANSION JOINT				

GRAPHIC SYMBOLS

DETAIL NUMBER		ELEVATION		PARTITION TYPE	
SHEET WHERE DETAIL IS SHOWN		ROOM NUMBER		DOOR NUMBER	
SECTION CUT		KEY NOTE		ELEVATION BENCHMARK	
BUILDING CROSS SECTION		REVISION NUMBER			

GENERAL NOTES

- BEFORE PROCEEDING WITH AND SUBMITTING BID PROPOSALS FOR THE WORK IN THESE SPECIFICATIONS & DRAWINGS, EACH CONTRACTOR / SUBCONTRACTOR SHALL EXAMINE THE SITE AND FAMILIARIZE THEMSELVES WITH ALL EXIST. CONDITIONS. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF A MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED OR LACK OF KNOWLEDGE OF EXISTING CONDITIONS. IN CASE OF ANY INCONSISTENCIES OR DISCREPANCIES BETWEEN DRAWINGS, THE MOST STRINGENT NOTE OR CONDITION SHALL APPLY AND THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF SUCH DISCREPANCIES. NOT REPORTING ANY SUCH UNSUITABLE CONDITION WILL CONSTITUTE ACCEPTANCE OF ALL CONDITIONS BY CONTRACTOR AND/OR SUBCONTRACTOR.
- PERSONALLY SUPERVISE & DIRECT ALL WORK. BE RESPONSIBLE FOR ALL CONSTRUCTION AND INSTALLATION METHODS, TECHNIQUES, SEQUENCES, PROCEDURES AND FOR COORDINATION OF ALL TRADES OF REQUIRED WORK.
- APPROVAL OF SHOP DRAWINGS IS FOR THE GENERAL METHOD OF FABRICATION ONLY. DIMENSIONS & QUANTITIES MAY NOT BE CHECKED, AND APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE W/ THE REQUIREMENT OF THE DRAWINGS & SPECIFICATIONS UNLESS SPECIFICALLY INDICATED IN THE APPROVAL.
- DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS GOVERN. FIELD VERIFY ALL DIMENSIONS AND SITE CONDITIONS.
- ALL DIMENSIONS ARE TO THE FACE OF GYPSUM BOARD FINISH, UNLESS OTHERWISE NOTED.
- WHEREVER EXISTING CONDITIONS ARE TO BE CUT OR DISTURBED TO ALLOW INSTALLATION OF NEW WORK, THIS CONSTRUCTION SHALL BE PATCHED TO MATCH THE ORIGINAL CONSTRUCTION METHOD AND FINISH.
- ALL PENETRATIONS THROUGH FIRE RESISTIVE FLOORS, WALLS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION METHODS THAT CONFORM TO U.L. STANDARDS FOR FIRESTOP SYSTEMS. THE GC SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE ARCHITECT.
- ALL MANUFACTURED ARTICLES, MATERIALS & EQUIPMENT SHALL BE CONDITIONED, USED, INSTALLED, CONNECTED, ERECTED, & CLEANED IN ACCORDANCE W/ THE MANUFACTURER'S WRITTEN SPECIFICATIONS OR INSTRUCTIONS.
- CONTRACTOR'S CARTS, EQUIP. BOXES, ETC., MUST BE EQUIPPED WITH RUBBER WHEELS.

PROJECT DATA

- PROJECT NAME:** TORRID # 3532
- PROJECT DESCRIPTION:** CLOTHING SALES (RETAIL) – NEW TENANT BUILD OUT
- PROJECT LOCATION:** BOWER PLACE
4900 MOLLY BANISTER DR.
RED DEER, AB T4R 1N9
- TENANT:** TORRID
18305 E. SAN JOSE AVENUE
CITY OF INDUSTRY, CALIFORNIA 91748
PHONE # (714) 280-2667
CONTACT: CHRIS CAMMARANO (STORE DESIGN PLANNER)
EMAIL: ccammarano@torrid.com
- LANDLORD:** QUADREAL PROPERTY GROUP
308 4 AVE. SW
CALGARY, AB T2P
PHONE # 403-342-5240
CONTACT: RYAN MATHEWS (OPERATION MANAGER)
EMAIL: ryan.mathews@quadreal.com
- TENANT'S ARCHITECT:** ARCVISION INC.
1950 CRAIG RD. – SUITE 300
ST. LOUIS, MO 63146
PHONE # (800) 489-2233
CONTACT: KATHERINE URBAN
- TENANT'S ENGINEER:** SCHNACKEL ENGINEERS, INC.
3035 SOUTH 72ND ST
OMAHA, NE 68124
PHONE # (402) 391-7680
CONTACT: JOEL EMBURY
- BUILDING DEPARTMENT:** THE CITY OF RED DEER INSPECTIONS AND LICENSING DEPARTMENT
4914 48 AVE.
RED DEER, AB T4N 3T3
PHONE # 403-342-8190
CONTACT: PAUL HOMES (BUILDING INSPECTOR)
- GOVERNING CODES:** ALL WORK SHALL BE IN CONFORMANCE WITH, BUT NOT LIMITED TO, THE REQUIREMENTS OF THE FOLLOWING AND ANY OTHER STATE AND LOCAL CODES HAVING JURISDICTION.
INTERNATIONAL BUILDING CODE (IBC)
BUILDING: 2019 NATIONAL BUILDING CODES ALBERTA EDITION
PLUMBING: 2020 NATIONAL PLUMBING CODE
MECHANICAL: 2019 NATIONAL BUILDING CODES ALBERTA EDITION
FIRE: 2019 NATIONAL FIRE CODE ALBERTA EDITION
ELECTRICAL: 2017 NATIONAL ELECTRICAL CODE ALBERTA EDITION
ENERGY: 2019 NATIONAL ENERGY CODE ALBERTA EDITION
- CONSTRUCTION TYPE:** JI-B
- OCCUPANCY:** E (MERCANTILE)
- GROSS LEASED PREMISES:** 3,092 SQ. FT. / 287.3 SM
- OCCUPANCY LOADS:**
SALES FLOOR 2,253 SQ. FT. / 209.3 SM DIVIDED BY 3.7 = 57
FITTING ROOMS 444 SQ. FT. / 42.2 SM DIVIDED BY 3.7 = 12
STOCK ROOM 330 SQ. FT. / 30.7 DIVIDED BY 46 = 1
TOTAL OCCUPANTS = 70
* TOTAL NUMBER OF EMPLOYEES AT ONE TIME = 4
YES ☒ NO ☐
- FIRE SUPPRESSION SYSTEM:** TENANT'S GENERAL CONTRACTOR SHALL VISIT THE PREMISES AND VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION AND SHALL REPORT ALL DISCREPANCIES TO TENANT'S ARCHITECT. TENANT'S GENERAL CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS REGARDING CONSTRUCTION PROCEDURES, INSURANCE, ETC., AS SET FORTH BY THE LANDLORD.
- MISCELLANEOUS NOTES:** AN AUTOMATIC FIRE SPRINKLER SYSTEM IS EXISTING WITHIN THIS SPACE. THE CONTRACTOR SHALL REWORK AND MODIFY FOR NEW ROOM LAYOUT & CEILING HEIGHTS IN CONFORMANCE WITH N.F.P.A. 13 STANDARDS & LOCAL CODES & REGULATIONS. ALL WORK SHALL BE DONE BY A QUALIFIED SPRINKLER CONTRACTOR WHO SHALL DESIGN & PREPARE SHOP DRAWINGS & SUBMIT THEM TO THE LANDLORD FOR APPROVAL PRIOR TO FABRICATION & INSTALLATION. SPRINKLER CONTRACTOR SHALL BE LANDLORD APPROVED. HEADS IN CEILING TILES TO BE CENTERED IN TILES WHEN IN A PUBLIC AREA.
- FIRE SPRINKLERS:**

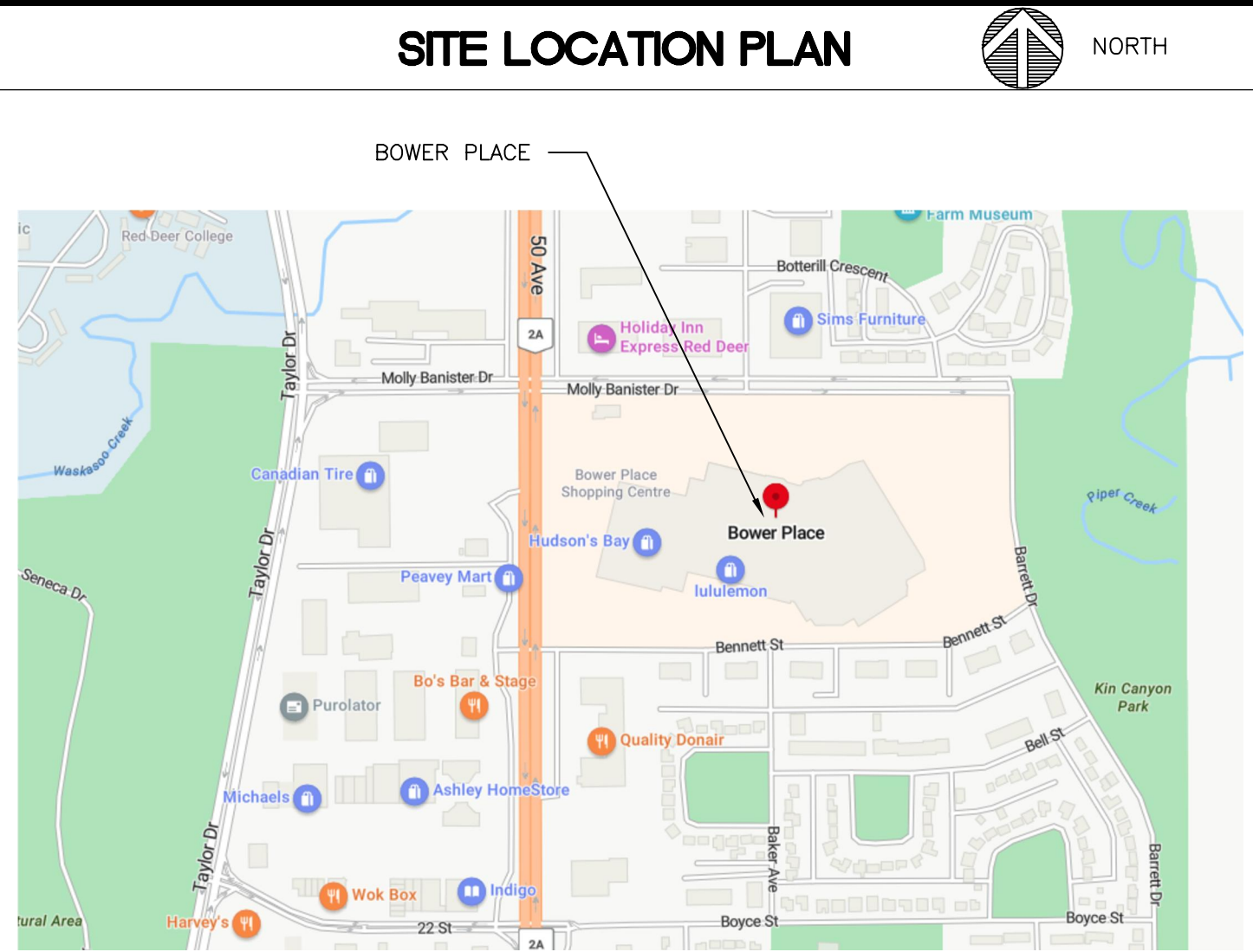
NOTE:

FIRE SPRINKLER DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED BY THE LICENSED FIRE SPRINKLER CONTRACTOR TO THE GOVERNING MUNICIPALITY FOR APPROVAL PRIOR TO ANY WORK BEING PERFORMED.

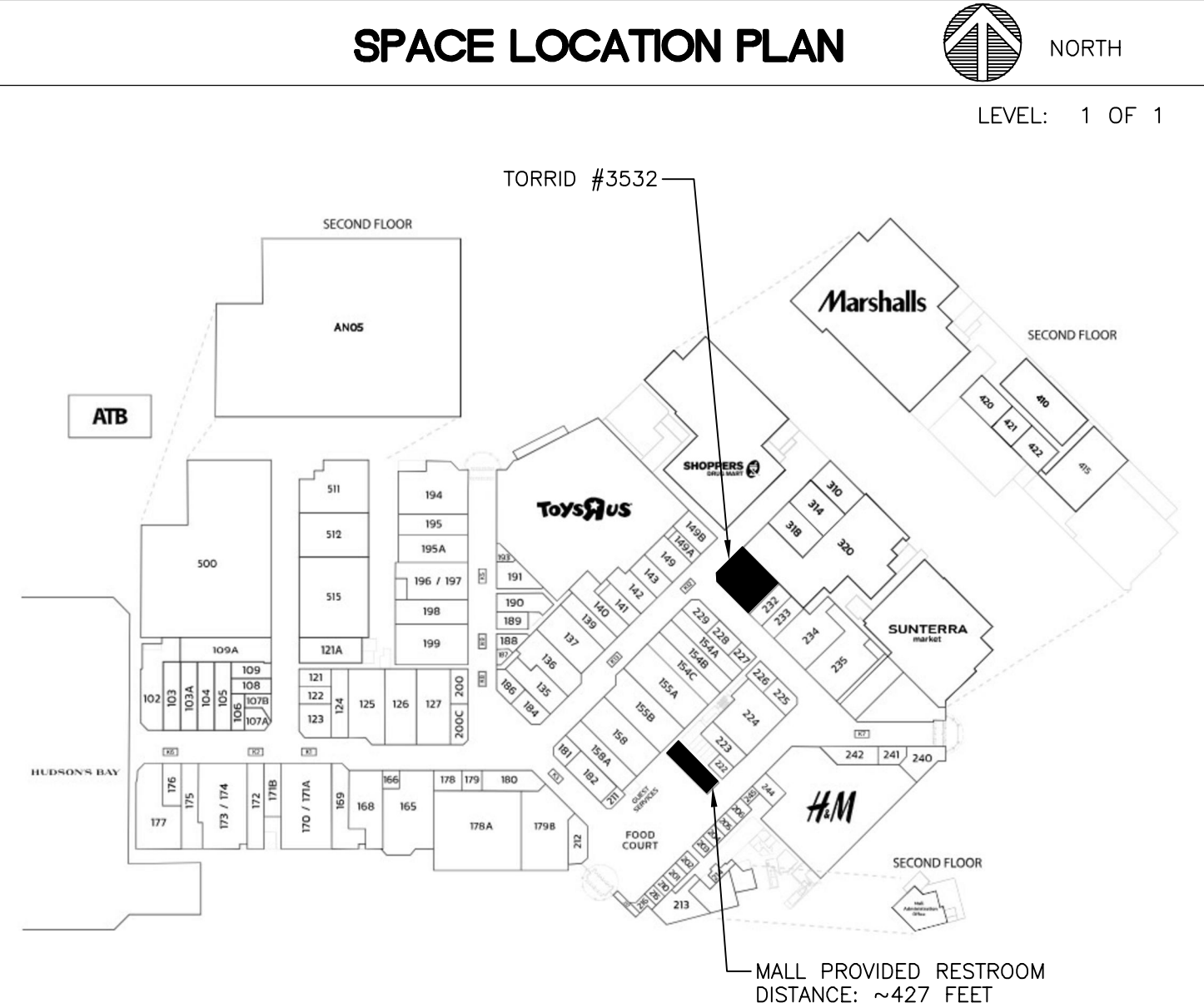
G.C. NOTE:

ALL SUBCONTRACTORS SHALL RECEIVE A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR THEIR COMPLETE SCOPE OF WORK REGARDLESS OF WHERE IN THE DOCUMENT SET THE DESCRIPTION OF WORK APPEARS.

SITE LOCATION PLAN



SPACE LOCATION PLAN



DEFERRED SUBMITTALS

- SIGNAGE
- STRUCTURAL SHELVING

DETAILED SCOPE OF WORK

PROJECT SCOPE: NEW TORRID SPACE TENANT BUILD OUT IN AN EXISTING SHELL BUILDING FOR THE SALE OF RETAIL CLOTHING, SHOES, AND ACCESSORIES. REMOVE NON-LOAD BEARING INTERIOR WALLS & INSTALL NEW NON-LOAD BEARING WALLS. INSTALL TENANT FIXTURES & LIGHTING. REUSE HVAC WITH SOME NEW DUCTS AS PER MECH. SHEETS, WITHIN PREVIOUS TENANT USE/ LEASED PREMISES.

DRAWING INDEX

SHEET	DESCRIPTION	REV	DATE
1	T0.0 TITLE SHEET		
2	T1.0 ARCHITECTURAL SPECIFICATIONS		
3	T2.0 ARCHITECTURAL SCHEDULES		
4	T3.0 EGRESS PLAN		
5	D1.0 DEMOLITION PLAN		
6	A1.0 FLOOR PLAN		
7	A2.0 REFLECTED CEILING PLAN		
8	A3.0 FIXTURE/ FLOOR FINISH PLAN		
9	A3.1 STANDARD DETAILS		
10	A4.0 SALES AREA ELEVATIONS		
11	A4.1 TYPICAL FITTING ROOM DETAILS		
12	A4.2 STOCKROOM ELEVATIONS		
13	A5.0 STOREFRONT PLAN & ELEVATION		
14	A5.1 STOREFRONT PLAN & ELEVATION		
15	A5.2 STOREFRONT PLAN & ELEVATION		
16	A7.0 SECTIONS & DETAILS		
17	M1.0 MECHANICAL PLAN		
18	M2.0 MECHANICAL SCHEDULES AND DETAILS		
19	M3.0 MECHANICAL DETAILS		
20	M4.0 MECHANICAL SPECIFICATIONS		
21	M5.0 MECHANICAL SPECIFICATIONS		
22	P1.0 OVERALL PLUMBING PLAN		
23	P2.0 ENLARGED PLUMBING PLAN		
24	P3.0 PLUMBING DETAILS AND FIXTURE SCHEDULE		
25	P4.0 FIRE SPRINKLER SPECIFICATIONS		
26	P5.0 PLUMBING SPECIFICATIONS		
27	P5.1 PLUMBING SPECIFICATIONS		
28	E1.0 ELECTRICAL POWER AND SYSTEMS PLAN		
29	E2.0 ELECTRICAL LIGHTING PLAN		
30	E3.0 ELECTRICAL ONE-LINE AND SCHEDULES		
31	E4.0 ELECTRICAL SPECIFICATIONS		
32	E4.1 ELECTRICAL SPECIFICATIONS		
33	FP1.0 FIRE PROTECTION PLAN		
34	FP2.0 FIRE PROTECTION DETAILS		
35	FP3.0 FIRE PROTECTION SPECIFICATIONS		

TORRID PRE/POST PUNCHLIST

- FRONT & BACK DOORS TO HAVE A 7-PIN CYLINDER FOR TO PROVIDED CORES.
- IF NOT ALREADY EXISTING, GC TO FURNISH & INSTALL A PEEP HOLE AT 5'-0" AFF IN BACK DOOR.
- GC TO INSTALL A PRY PLATE ON BACKDOOR IF NOT EXISTING.
- GC TO FURNISH AND INSTALL A NEW BATTERY FOR THE DETEX IN BACK DOOR.
- GC TO INSTALL 2 INK TAG DETACHERS IN CASHWRAP.
- CORK BOARDS TO BE INSTALLED IN BACK ROOM/HALLWAY BY GC AT STORE OPERATIONS DISCRETION.
- ADA STICKERS & SIGNS TO BE INSTALLED BY GC ON CASHWRAP, FRONT WINDOW, & FITTING ROOM.
- LOCKING COVER ON THERMOSTAT
- GC TO SUPPLY 8 KEYS FOR FITTING ROOM DOORS (IF MULTIPLE FITTING ROOMS, EACH DOOR IS TO BE KEYED ALIKE)
- GC TO CAULK AROUND FITTING ROOM BENCHES & BASE BOARDS W/CLR. SILICONE
- IF REUSING AN ADA FITTING ROOM, GC TO ADD A FITTING ROOM HOOK AT 48" NEXT TO FITTING ROOM BENCH

REGISTRATION SEAL

PROJECT NO: 230311	DRAWN BY: KSM	CHECKED BY: KEU	ISSUE DATE: 07/31/23
TITLE SHEET			

BOWER PLACE

4900 MOLLY BANISTER DR.
RED DEER, AB T4R 1N9

SPACE #230 STORE #3532-B

TORRID

ARCVISION
MANAGEMENT CONSULTANTS

T0.0

00700 GENERAL CONDITIONS:
AS INDICATED IN THE AID DOCUMENT #A201 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" 1987 EDITION.

00810 MODIFICATIONS TO GENERAL CONDITIONS:

ARTICLE 4
4.4.1 ADD THE FOLLOWING: UTILITIES SHALL INCLUDE A JOB TELEPHONE TO BE INSTALLED WITHIN FIVE (5) WORKING DAYS AFTER COMMENCEMENT OF THE WORK. COORDINATE WITH TENANT UTILITY MANAGER.

4.10.1 ADD THE FOLLOWING: CONTRACTOR SHALL SUPPLY PROJECT MANAGER WITH A COMPLETE LIST OF ALL SUB-CONTRACTORS INVOLVED WITH THE WORK, (NAME, ADDRESS AND TELEPHONE NUMBER) WITH SECOND APPLICATION FOR PAYMENT . SEND TWO COPIES TO THE HOME OFFICE, ATTENTION STORE PLANNING. HVAC AND H.W. HEATER INFORMATION MUST BE NOTED. REFER TO TENANT FORM.

01010 SUMMARY OF WORK:

WORK OF CONTRACT CAN BE SUMMARIZED BY REFERENCE TO THE CONTRACT, GENERAL CONDITIONS, SPECIFICATIONS, DRAWINGS, ADDENDA AND MODIFICATIONS TO THESE DOCUMENTS ISSUED SUBSEQUENT TO THE INITIAL PRINTING OF SAME.

A RESPONSIBILITY SCHEDULE IS INDICATED ON THE PLANS. IT INCLUDES COORDINATION WITH OTHER WORK PERFORMED BY SEPARATE CONTRACTORS OF THE PROJECT.

CONTRACTOR RESPONSIBILITY:

GENERAL CONTRACTOR SHALL PROVIDE AND PAY FOR: LABOR, MATERIAL, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY, WATER, HEAT AND UTILITIES REQUIRED FOR CONSTRUCTION AS WELL AS ANY OTHER FACILITIES AND SERVICE NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK.

GENERAL CONTRACTOR SHALL SECURE AND PAY FOR THE FOLLOWING ITEMS, NECESSARY FOR EXECUTION AND COMPLETION OF THE WORK, AND AS APPLICABLE AT THE TIME OF RECEIPT OF BIDS: PERMITS, FEES, LICENSES, BONDS AND INSURANCE'S REQUIRED BY LOCAL AUTHORITIES AND/OR LANDLORD.

REGULATORY AGENCIES:

ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION, AND IN ACCORDANCE WITH THE "DESIGN CRITERIA FOR TENANT WORK" ISSUED BY THE LANDLORD.

REFERENCE STANDARDS:

COMPLY WITH THE APPLICABLE SPECIFICATIONS AND STANDARDS OF UL, ASTM, ANSI, AWM, NEMA, AIA AND ALL OTHER STANDARDS OF MANUFACTURERS ASSOCIATIONS.

QUALITY ASSURANCE:

THE CONTRACTOR ASSUMES OVERALL RESPONSIBILITY FOR THE WORK OF THIS PROJECT TO ASSURE THAT ALL ASSEMBLES, COMPONENTS AND PARTS INDICATED OR REQUIRED COMPLY WITH CONTRACT DOCUMENTS. ANY SUBSTITUTIONS MADE BY THE CONTRACTOR WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER WILL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR ALSO ASSURES THAT ALL COMPONENTS, SPECIFIED OR REQUIRED TO SATISFACTORILY COMPLETE THE INSTALLATION ARE COMPATIBLE WITH EACH OTHER, WITH ADJOINING SUBSTRATES, MATERIALS AND WORK BY OTHER TRADES, AND WITH THE CONDITIONS OF INSTALLATION AND EXPECTED USE.

FIRE-RATED CONSTRUCTION:

WHEREVER A FIRE RESISTANCE CLASSIFICATION IS INDICATED OR REQUIRED FOR CONSTRUCTION, PROVIDE MATERIALS, ACCESSORIES AND APPLICATION PROCEDURES WHICH COMPLY WITH THE REQUIREMENTS OF UL "FIRE RESISTANCE INDEX" FOR THE UL DESIGN NUMBERS CORRESPONDING WITH THE CONSTRUCTION ASSEMBLIES INDICATED.

01030 SHORT / DAMAGED FREIGHT:

INDICATED BELOW ARE INSTRUCTIONS ON HOW TO HANDLE SHORT, OR DAMAGED FREIGHT:

- BEFORE SIGNING THE FREIGHT BILL, NOTE SPECIFICALLY THE ITEM(S) DAMAGED OR MISSING i.e., ONE LIGHT FIXTURE, TWO PIECES OF SLATWALL, ETC.
- AFTER DAMAGED OR MISSING ITEMS ARE NOTED ON FREIGHT BILL, HAVE CARRIER'S DRIVER ALSO SIGN IT. THIS WILL VERIFY THAT BOTH PARTIES AGREE TO THE EXTENT OF DAMAGED OR MISSING ITEMS.
- THERE ARE TIMES WHEN DAMAGE IS DISCOVERED ONLY UPON UNLOADING THE FREIGHT. IN ORDER TO RECEIVE PAYMENT FROM FREIGHT COMPANY, WE MUST PROVE THAT THE FREIGHT WAS DELIVERED IN DAMAGED CONDITION. THEREFORE, ALL CARTONS MUST BE INSPECTED FOR SIGNS OF DAMAGE OR ABUSE AND THIS IS TO BE NOTED WITHIN 24 HRS.
- PHONE THE TRAFFIC DEPARTMENT AT LAUREL, BLAIR BUCHMAN (858) 461-6600 EXT. 306, AND ADVISE EXTENT OF DAMAGE OR SHORTNESS AND TO RECEIVE DISPOSITION INSTRUCTIONS.
- BE SURE TO CONTACT THE PROJECT MANAGER WITHIN 24 HRS. TO INFORM HIM/HER OF THE LOSS SO THAT, IF NECESSARY, THE ITEM(S) CAN BE REORDERED.

PROTECTION OF MATERIALS / FURNITURE ON SITE:

G.C. IS RESPONSIBLE FOR THE SECURITY, CARE AND DAMAGE PREVENTION OF ALL MATERIALS AFTER DELIVERY TO JOB SITE. G.C. WILL BE BACKCHARGED FOR DAMAGES AND MISSING ITEMS.

01500 EXISTING CONDITIONS:

GENERAL CONTRACTOR IS TO VISIT THE JOB SITE TO INSPECT THE EXISTING CONDITIONS AND TO VERIFY THE AMOUNT OF WORK THAT WILL BE NECESSARY FOR THE PROJECT TO BE COMPLETED ACCORDING TO THE CONSTRUCTION DOCUMENTS.

EXAMINE THE SUBSTRATES AND ADJOINING CONSTRUCTION, AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. DO NOT PROCEED WITH THE WORK UNTIL UNSATISFACTORY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK HAVE BEEN CORRECTED.

BEFORE PERFORMING ANY WORK OR ORDERING ANY MATERIAL, THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING OR NEW WORK AND SHALL BE RESPONSIBLE FOR THEIR ACCURACY. ANY DIFFERENCES FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE PROCEEDING WITH WORK.

01610 PRODUCT HANDLING:

DELIVER AND STORE MATERIALS IN SEALED CONTAINERS AND BUNDLES, FULLY IDENTIFIED WITH MANUFACTURER'S NAME, BRAND, TYPE AND GRADE. PROTECT MATERIALS FROM CORROSION AND DAMAGE. STORE IN A DRY VENTILATED SPACE, OFF THE GROUND. COORDINATE ALL DELIVERIES WITH THE MALL LANDLORD AND TENANT SUPPLYING MATERIAL VENDORS.

GENERAL CONTRACTOR WILL RECEIVE AND UNLOAD ALL FIXTURES FROM THE FIXTURE SUPPLIER, ACCORDING TO THE TERMS AND CONDITIONS IMPOSED BY THE MALL DEVELOPER, I.E. SPECIAL TIMES TO UNLOAD, ETC. FIXTURES TO BE SET BY GENERAL CONTRACTOR.

GENERAL CONTRACTOR WILL NOTIFY TENANT IMMEDIATELY OF ANY MISSING OR DAMAGED ITEMS THAT TENANT SUPPLIES AND GENERAL CONTRACTOR INSTALLS. HE WILL OBTAIN AND FILL ALL NECESSARY PAPERWORK REQUIRED IN ORDER TO FACILITATE TENANT IN HIS ABILITY TO PROPERLY FILE CLAIM FOR DAMAGES OR LOSSES. REFER TO TENANT SHORTAGE/DAMAGED GOODS POLICY INCLUDED IN BID INSTRUCTIONS FROM TENANT.

0710 CLEANING/ADJUSTING/MAINTENANCE/WARRANTIES:

EXECUTE PERIODIC CLEANING DURING PROCESS OF WORK, AND AT COMPLETION OF THE WORK, SO THAT ALL FINISHED SURFACES ARE FREE OF ANY FOREIGN MATERIAL. CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH CODES, ORDINANCES, REGULATIONS, ANTI-POLLUTION LAWS AND LANDLORD REQUIREMENTS. REMOVE GREASE, MASTIC, ADHESIVES, DIRT, STAINS, LABELS AND OTHER FOREIGN MATERIALS FROM SIGHT EXPOSED SURFACES. GENERAL CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS FROM JOBSITE, ON A DAILY BASIS.

PROTECTION:

PROTECT AND MAINTAIN ALL WORK THROUGHOUT CONSTRUCTION SO THAT IT WILL BE FREE OF DAMAGE AT THE TIME OF ACCEPTANCE BY THE TENANT.

COMPLETION:

STORE TO BE READY FOR OCCUPANCY - ALL SURFACES CLEAN.

01700 CLEANING/ADJUSTING/MAINTENANCE/WARRANTIES:

PART 1 - GENERAL

- FINAL CLEANING
 - GENERAL CONTRACTOR TO PROVIDE A PROFESSIONAL CLEANING SERVICE TO EXECUTE FINAL CLEANING PRIOR TO ADJUSTING.
 - ADJUST OPERATING PRODUCTS AND EQUIPMENT TO ENSURE TURN-OVER.
 - OPERATION AND MAINTENANCE DATA
- SUBMIT DATA BOUND IN 8-1/2x11 INCH TEXT PAGES, THREE D PRODUCTS IN QUANTITIES SPECIFIED IN INDIVIDUAL SPECIFICATION SECTIONS.
 - PREPARE BINDER COVER WITH PRINTED TITLE "OPERATION & MAINTENANCE INSTRUCTIONS", TITLE OF PROJECT. SIDE RING BINDER W/ DURABLE PLASTIC COVERS.

PART 2 - PREPARATION / EXECUTION:

- FINAL CLEANING
- CLEAN INTERIOR AND EXTERIOR GLASS, SURFACES EXPOSED TO VIEW: REMOVE TEMPORARY LABELS, STAINS & FOREIGN SUBSTANCES, POLISH TRANSPARENT AND GLOSSY SURFACES, VACUUM CARPETED AND SOFT SURFACES.
- CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED.
- REMOVE WASTE & SURPLUS MATERIALS, RUBBISH & CONSTRUCTION FACILITIES FROM THE SITE.

02050 DEMOLITION:

ANY AND ALL DEMOLITION REQUIRED TO COMPLETE CONSTRUCTION FOR THIS PROJECT MUST BE CONSIDERED PART OF THIS CONTRACT AND SHOULD BE EXECUTED IN ACCORDANCE WITH THE LANDLORD'S REQUIREMENTS. REQUIREMENTS. THE CONSTRUCTION DOCUMENTS INDICATE EXISTING CONDITIONS, WALLS, AREAS TO REMAIN BUT THE ARCHITECT DOES NOT CERTIFY THAT ALL DEMOLITION WORK IS INDICATED ON THE PLANS. ANY ITEMS INDICATED AS EXISTING, TO REMAIN, HAVE TO BE INSPECTED BY THE GENERAL CONTRACTOR TO DETERMINE IF ANY OF THESE ITEMS CAN BE REUSED. AT THE END OF CONSTRUCTION, THE EXISTING WALLS, AREAS, ETC., SHOULD BE LIKE-NEW CONSTRUCTION. ALL DEMOLISHED WORK SHALL BE REMOVED FROM THE PROJECT SITE AND LEGALLY DISPOSED OF. NO CONSTRUCTION MATERIALS ARE TO BE DISPOSED OF IN THE MALL TRASH RECEPTACLES OR DUMPSTERS WITHOUT LANDLORD'S PRIOR APPROVAL. REFER TO DEMOLITION PLAN NOTES.

- SCOPE: FURNISH EQUIPMENT AND PERFORM LABOR REQUIRED TO EXECUTE THIS WORK AS INDICATED ON THE DRAWINGS AND SPECIFIED AND AS NECESSARY TO COMPLETE THE CONTRACT, INCLUDING, BUT NOT LIMITED TO, THESE MAJOR ITEMS.

- PROTECTION OF EXISTING WORK TO REMAIN.
 - DEMOLISH EXISTING CONSTRUCTION WHERE INDICATED ON THE DRAWINGS AND WHERE REQUIRED BY JOB CONDITIONS.
 - REMOVAL OF PARTITIONS, DOORS, FLOOR COVERINGS, AND CEILINGS.
 - REMOVAL AND CAPPING OF MECHANICAL AND ELECTRICAL FIXTURES AND SERVICES.
 - DEBRIS REMOVAL AND DISPOSAL.
- REMOVAL OR CORING OF PORTIONS OF THE EXISTING CONCRETE SLAB AS REQUIRED FOR SERVICE AND EQUIPMENT LINE INSTALLATION. PATCHING SHALL BE ACCEPTABLE TO THE POINT THAT THE FINISH WILL ACCEPT SCHEDULED FINISH MATERIAL WITH NO NOTICEABLE EFFECT OF AN ALTERATION HAVING BEEN MADE.
 - REMOVAL OF ANY EXISTING STOREFRONT, INCLUDING OVERHEAD ROLL-UP GRILLE.

2. GENERAL REQUIREMENTS

- THE CONTRACTORS SHALL BE FULLY RESPONSIBLE FOR THE ADEQUACY AND INSTALLATION OF ALL TEMPORARY SHORING SYSTEMS USED DURING THE REMOVING OF ALL STRUCTURAL ELEMENTS.
- THE DRAWINGS DO NOT NECESSARILY INDICATE THE FULL EXTENT OF THE WORK REQUIRED TO BE PERFORMED. INSPECT THE EXISTING CONSTRUCTION CAREFULLY TO DETERMINE THE FULL EXTENT OF WORK TO BE PERFORMED AND THE PROBLEMS INVOLVED. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF FAILURE TO ESTIMATE THE FULL EXTENT OF THE WORK OR FOR ANY CONTINGENCY ALLOWANCES.
- ALL WORK SHALL BE PERFORMED BY SKILLED AND PROPERLY EQUIPPED PERSONNEL. DEMOLITION AND REMOVAL OF ITS ITEMS SCAFFOLD HIGH OR HIGHER SHALL BE LOWERED BY CONTROLLED METHODS, NOT BY THROWING OR DROPPING. PERFORM CUTTING AND STRIPPING SO THAT THE WORK TO REMAIN IS UNDAMAGED AND IN SUCH A MANNER THAT NEW WORK CAN BE PROPERLY BE CONNECTED WITH IT.
- UNFORESEEN CONDITIONS: INCLUDE IN THE BASE BID MISCELLANEOUS CUTTING AND PATCHING NECESSITATED AS A RESULT OF UNFORESEEN CONDITIONS AND THE REWORKING OF ABUTTING SURFACES AS REQUIRED TO MAKE NEW WORK JOIN AND MATCH EXISTING SURFACES TO REMAIN. NO EXTRA PAYMENTS BASED ON THE PLEA OF UNFORESEEN CONDITIONS WILL BE ALLOWED.
- G.C. TO COORDINATE WITH THE LANDLORD ALL WORK THAT MAY EFFECT NORMAL DAILY OPERATIONS OF THE LANDLORD PREMISES AND COMPLY WITH ALL RESTRICTIONS THE LANDLORD MAY HAVE ON DEMOLITION AND/ORCONSTRUCTION SCHEDULES. COOPERATE FULLY TO THE END THAT CERTAIN FACILITIES AND SERVICES ARE MAINTAINED IN OPERATION UNTIL IMMEDIATELY BEFORE THEIR REMOVAL IS REQUIRED TO PERMIT INSTALLATION OF NEW WORK.
- NOISE CONTROL: CARRY ON ALL WORK IN A MANNER WHICH WILL PRODUCE THE LEAST AMOUNT OF NOISE. INSTRUCT ALL WORKERS IN NOISE CONTROL PROCEDURES.
- PROTECTION OF PERSONNEL: ERECT SIGNS, BARRICADES AND SUCH OTHER FORMS OF WARNING AS MAY BE REQUIRED TO PREVENT PERSONNEL FROM PUTTING THEMSELVES IN THE WAY OF INJURY.
- MECHANICAL, ELECTRICAL, AND PLUMBING
- CAREFULLY REVIEW PLANS AND DETERMINE LINES TO BE REMOVED AND THOSE TO BE KEPT ACTIVE OR TO BE REACTIVATED. PROTECT LINES TO REMAIN. PROVIDE FOR MINIMUM SERVICE INTERRUPTION OF LINES TO REMAIN.
- REMOVE LINES COMPLETELY WHENEVER POSSIBLE. CUT AND CAP OR PLUG TO PREVENT ESCAPE OF GAS, LIQUID, ETC. BEHIND THE BACK OF THE FINISH MATERIAL.
- REPAIR, REPLACE, OR MAKE GOOD DAMAGE TO EXISTING CONSTRUCTION WHICH OCCURS AS A RESULT OF DEMOLITION OPERATIONS, AT NO ADDITIONAL COST TO OWNER, THE ARCHITECT OF RECORD, OR THE LANDLORD. THESE REPAIRS SHALL INCLUDE ANY ROOF PATCHING REQUIRED DUE TO DEMOLITION AND SHALL BE COORDINATED WITH LANDLORD AND LANDLORD'S ROOFING CONTRACTOR.

03010 CONCRETE:

WHEN THE CONCRETE FLOOR SLAB IS EXISTING, PREPARE THE SLAB TO RECEIVE FINISH AS INDICATED ON THE PLANS. WHEN ON A GROUND FLOOR LOCATION, THE CONCRETE SLAB FLOOR SHALL BE SEALED IN THE AREAS TO RECEIVE CARPETING. WHEN SLAB FLOOR IS TO BE EXECUTED AS PART OF THE CONTRACT, FOLLOW LANDLORD'S DIRECTIONS AND SPECIFICATIONS.

03015 FLOOR SLAB MODIFICATIONS:

GENERAL CONTRACTOR SHALL INSPECT THE EXISTING SLAB CONDITIONS TO DETERMINE THE AMOUNT OF CONCRETE FLOOR SLAB TO BE REMOVED AND REPLACED FOR INSTALLATION OF ELECTRICAL, MECHANICAL AND PLUMBING WORK AND STEEL COLUMNS FOR GRILLE SUPPORT. ALL CONCRETE TRENCHING AND RETILING, AS WELL AS ANY AND ALL PENETRATIONS OF THE SLAB, SHALL BE EXECUTED IN ACCORDANCE WITH THE LANDLORD'S REQUIREMENTS.

05010 STRUCTURAL METALS:

THE DESIGN, FABRICATION AND INSTALLATION OF ALL MISCELLANEOUS METAL LINTELS, SUPPORTS AND FRAMING REQUIRED FOR ALL STORE FRONT WORK SHALL BE THE SOLE RESPONSIBILITY OF THE TENANT'S GENERAL CONTRACTOR.

06100 ROUGH CARPENTRY:

ALL WOOD FRAMEWORK, WOOD BLOCKING AND PLYWOOD CONSTRUCTION SHALL BE FIRE RETARDANT TREATED AS REQUIRED BY LOCAL CODES AND LANDLORD REQUIREMENTS. PARTICLE BOARD SHALL BE UL CLASS 1 FIRE-RATED, SANDED AND PREPARED TO RECEIVE PLASTIC LAMINATE OR PAINTED METAL LAMINATE. WOOD FRAMING MEMBERS SHALL BE NO. 1 LIGHT FRAMING DOUGLAS FIR OR NO. 2 OR BETTER YELLOW PINE OF THE DIMENSIONS INDICATED ON THE PLANS. PLYWOOD SHALL BE GRADE B-D DOUGLAS FIR, SANDED AND PREPARED TO RECEIVE PLASTIC LAMINATE, METAL LAMINATE OR PAINT. PLYWOOD BACKING PANELS FOR MOUNTING ELECTRICAL OR TELEPHONE EQUIPMENT SHOULD BE FIRE RETARDANT TREATED PLYWOOD WITH GRADE DESIGNATION, APA C-D NOT LESS THAN 3/4" THICK. PROVIDE FASTENERS AND ANCHORAGE OF THE TYPE, SIZE, MATERIAL AND FINISH AS RECOMMENDED BY APPLICABLE STANDARDS, COMPLYING WITH APPLICABLE FEDERAL SPECIFICATIONS FOR NAILS, STAPLES, SCREWS, BOLTS, NUTS, WASHERS AND ANCHORING DEVICES. PROVIDE BLOCKING AS REQUIRED FOR INSTALLATION OF SHELVING, EQUIPMENT, ACCESSORIES, FIXTURES, AND FINISH HARDWARE OR OTHER HEAVY ITEMS ON WALLS.

06400 ARCHITECTURAL WOODWORK:

FINISHED WOODS SHALL BE OF THE TYPE SPECIFIED IN THE PLANS AND SHOULD COMPLY WITH PREMIUM GRADE WORK AS DESCRIBED IN "ARCHITECTURAL WOODWORK QUALITY STANDARDS" PUBLISHED BY THE ARCHITECTURAL WOODWORD INSTITUTE.

THE WOOD SHALL BE STRAIGHT AND FREE OF BLEMISHES AND OF SUFFICIENT LENGTH TO PERMIT A MINIMUM NUMBER OF JOINTS. CONDITION WOODWORK TO PREVAILING HUMIDITY CONDITIONS IN INSTALLATION AREAS PRIOR TO INSTALLING.

INSTALL WOODWORK PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED USING CONCEALED SHIMS. INSTALL TO A TOLERANCE OF 1/8" IN 8'-0" FOR PLUMB & LEVEL & W/ NO VARIATIONS IN FLUSHNESS OF ADJOINING SURFACES. ANCHOR WOODWORK TO ANCHORS, OR BLOCKING BUILT-IN, OR DIRECTLY ATTACHED TO SUBSTRATE. SECURE W/ CONCEALED FASTENERS.

ALL SURFACES SHALL BE SANDED TO A SMOOTH SURFACE, READY FOR STAINING OR FINISH PAINTING AS PER DETAILS AND SCHEDULES.

06410 HARDWARE:

HARDWARE SHALL BE OF THE TYPE, FINISH AND MANUFACTURER SHOWN. MANUFACTURER'S CATALOG NUMBERS USED HEREIN ARE INTENDED TO INDICATE THE QUALITY REQUIRED. ALTERNATE MANUFACTURERS AND PRODUCTS MAY BE SUBMITTED TO THE TENANT FOR SUBSTITUTION APPROVAL. NO OTHERS SHALL BE ACCEPTABLE.

FURNISH HARDWARE TEMPLATES IN A TIMELY MANNER TO THE VARIOUS AFFECTED TRADES FOR COORDINATION OF THEIR WORK.

07900 SEALANT:

PART 1 - GENERAL

- EXPANSION JOINT MATERIAL, SEALANTS AND JOINT BACKING FOR JOINTS BETWEEN DISSIMILAR MATERIALS.
- SILICONE SEALANTS (TYPE S): ASTM C920, SINGLE COMPONENT, NON-SAGGING, NON-STAINING, NON-BLEEDING; FOR USE AS GENERAL CAULKING; COLOR TO MATCH ADJACENT SURFACES; MANUFACTURER BY GE SILICONES OR EQUAL.
- JOINT BACKING: ROUND, OPEN CELL POLYETHYLENE FOAM ROD.

PART 2 - PREPARATION / EXECUTION

- REMOVE LOOSE MATERIALS AND FOREIGN MATTER WHICH MIGHT IMPAIR ADHESION OF SEALANT.
- CLEAN AND PRIME JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- PROTECT ELEMENTS SURROUNDING THE WORK OF THIS SECTION FROM DAMAGE OR DISFIGURATION.
- INSTALL SEALANT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- INSTALL JOINT BACKING.
- APPLY SEALANT WITHIN RECOMMENDED APPLICATION TEMPERATURE RANGES. CONSULT MANUFACTURER WHEN SEALANT CANNOT BE APPLIED WITHIN THESE TEMPERATURE RANGES.

08210 WOOD DOORS:

ALL INTERIOR WOOD DOORS SHALL BE SOLID CORE (COORDINATE WITH DOOR SCHEDULE) FLUSH CONSTRUCTION, OF THE DIMENSIONS SHOWN, AND SHALL MEET OR EXCEED THE ANSI/NWFA INDUSTRY STANDARD I.S./SERIES & AWM QUALITY STANDARD FOR ARCHITECTURAL FLUSH DOORS.

DOORS FOR PAINTED AND VINYL COVERED SURFACES SHALL BE OF PAINT GRADE. OVERALL THICKNESS OF DOORSKIN SHALL BE 1/8" AND SHOULD BE BELT SANDED FOR PAINT FINISH. FINAL SANDING BY FIELD FINISHER. WHEN REQUIRED BY CODE, FIRE DOORS SHOULD HAVE THE REQUIRED FIRE RATINGS.

WOOD FRAMES: EXAMINE DOOR FRAMES AND VERIFY THAT THE FRAMES ARE THE CORRECT TYPE AND HAVE BEEN INSTALLED AS REQUIRED FOR PROPER HANGING OF CORRESPONDING DOORS. ALIGN AND FIT THE DOORS IN THE FRAMES WITH THE FOLLOWING UNIFORM CLEARANCES AND BEVELS. TRIM STILES AND RAILS ONLY TO THE EXTENT PERMITTED BY LABELING AGENCY.

FOR NON-RATED DOORS, PROVIDE CLEARANCES OF 1/8" AT JAMBS AND HEADS, AND 1/8" FROM THE BOTTOM OF THE DOOR TO THE TOP OF THE FINISH OR COVERING. FOR FIRE-RATED DOORS, PROVIDE CLEARANCES AND CORRESPONDING FIRE-RATED FRAMES IN ACCORDANCE WITH REQUIREMENTS OF NFPA NO. 80

EXISTING DOORS:

WHEN EXISTING DOOR IS TO REMAIN IN SERVICE, DOOR AND FRAME MUST BE RAISED 3/8" FROM EXISTING FLOOR TO PROVIDE FOR DOOR CLEARANCE IF OVER NEW CARPET.

- KEYING
 - GENERAL CONTRACTOR TO COORDINATE KEYING AND MASTER KEYING WITH CONSTRUCTION MANAGER.
 - GENERAL CONTRACTOR TO INSTALL CONSTRUCTION CORES DURING CONSTRUCTION AND REPLACE WITH PERMANENT AT END OF JOB PRIOR TO TURN-OVER.
 - PROVIDE COMMERCIAL GRADE HARDWARE, COMPLYING WITH PROJECT SPECIFICATIONS, IN SETS ACCORDING TO THE SCHEDULE HEREIN AND ON DOOR SCHEDULE DRAWING. REFER TO DOOR SCHEDULE HARDWARE.
- PART 2 - PREPARATION / EXECUTION**
- COORDINATE THE WORK WITH OTHER DIRECTLY AFFECTED SECTIONS INVOLVING FABRICATION OF WALL INT. REINFORCEMENT FOR DOOR HARDWARE & RECESSED ITEMS.
 - VERIFY THAT DOORS AND FRAMES ARE READY TO RECEIVE WORK AND DIMENSIONS ARE AS INDICATED.
 - INSTALL HARDWARE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - USE TEMPLATES PROVIDED BY HARDWARE ITEM MANUFACTURER.
 - WHEREVER CUTTING AND FITTING IS REQUIRED TO INSTALL HARDWARE ONTO OR INTO SURFACES WHICH ARE LATER TO BE PAINTED OR OTHERWISE FINISHED, INSTALL EACH ITEM COMPLETELY, THEN REMOVE AND STORE DURING APPLICATION OF FINISHES. REINSTALL UPON COMPLETION OF FINISHING OPERATIONS. SPACE FASTENERS AND ANCHORAGES AS INDICATED OR IN ACCORDANCE WITH FACTORY STANDARDS.
 - ADJUST HARDWARE FOR SMOOTH OPERATION.

08710 DOOR HARDWARE:

PART 1 - GENERAL

- FURNISH & INSTALL FINISH HARDWARE FOR INTERIOR & EXTERIOR DOORS WHEN CALLED FOR ON PLAN
- SEE DOOR SCHEDULE FOR SPECIFIC ITEMS, MANUFACTURERS AND MODEL NUMBERS. TEMPLATES SHALL BE FURNISHED FOR USE IN FIELD.
- FOLLOW DHI (DOOR AND HARDWARE INSTITUTE) STANDARDS & GUIDELINES AND AWM (AMERICAN WOODWORKING INSTITUTE) STANDARDS FOR HARDWARE INSTALLED ON WOOD DOORS.
- FURNISH OWNER WITH MAINTENANCE DATA, MAINTENANCE PROCEDURES, MANUFACTURERS WARRANTIES AND SPECIAL TOOLS.
- FINISHES: PER HARDWARE SCHEDULE

09250 GYPSUM DRYWALL SYSTEMS:

PROVIDE ALL GYPSUM DRYWALL MATERIALS THROUGHOUT THE WORK PRODUCED BY ONE MANUFACTURER. PROVIDE METAL STUDS AND FRAMING MEMBERS OF TYPES, GAUGES, SIZES AND CORROSIVE RESISTIVE TREATMENTS AS SHOWN.

STUDS AND FRAMING: ROLL FORMED CHANNEL STUDS AND RUNNERS: ASTM C-645, FABRICATED OF

GALVANIZED STEEL PER ASTM WITH FLANGES NOT LESS THAN 1 1/4" OF THE SIZES AND GAUGES SHOWN.

METAL FURRING CHANNELS: HAT SHAPED, 7/8" HIGH, 25 GAUGE GALVANIZED.

BACKER PILES: 20 GAUGE GALVANIZED.

HANGER WIRE: GALVANIZED, SOFT TEMPER STEEL WIRE, SIZED IN ACCORDANCE WITH ASTM C-754.

HANGER ANCHORAGE: PROVIDE CONCRETE INSERTS, CLIPS, BOLTS, SCREWS AND OTHER DEVICES APPLICABLE TO THE INDICATED METHOD OF STRUCTURAL ANCHORAGE FOR CEILING HANGERS.

FURRING ANCHORAGE'S: 16 GAUGE GALVANIZED WIRE TIES, MANUFACTURER'S STANDARD WIRE-TYPE CLIPS, BOLTS, NAILS OR SCREWS, IN ACCORDANCE WITH ASTM C-754.

METAL TO METAL WITHIN THE DRYWALL SYSTEM: 3/8" TYPE "S" OR 5-12, PAN HAD. ADHESIVES: AS RECOMMENDED BY THE GYPSUM BOARD MANUFACTURER.

TRIM ACCESSORIES:

PROVIDE TRIM ACCESSORIES OF THE SIZES REQUIRED FOR THE DRYWALL APPLICATIONS SHOWN SPECIFIED, FABRICATED FROM GALVANIZED STEEL & OF THE FOLLOWING TYPE: PROVIDE DRYWALL MOLDING OF THE TYPE AND SIZE INDICATED. PROVIDE METAL CORNER BEAD AT EXTERIOR CORNERS WITH SMOOTH ROUNO NOSE AND PERFORATED AND KNURLED FLANGES. CONCEAL FLANGES WITH AT LEAST 2 COATS OF JOINT COMPOUND FEATHERED OUT APPROXIMATELY 9" ON BOTH SIDES OF THE EXPOSED METAL.

WHERE DRYWALL ABUTS OR INTERSECTS DISSIMILAR CONSTRUCTION, PROVIDE SQUARE EDGE SEMI-FINISHING CASING BEAD (NO JOINT COMPOUND TREATMENT NECESSARY).

TAPE AND JOINT MATERIAL SHALL BE APPLIED TO THE JOINTS. THE JOINT COMPOUND SHALL BE SMOOTHED OUT APPROXIMATELY 4" WIDE. THIS IS TO BE IN THE NORMAL THREE-COAT PROCESS, ALLOWING 24 HOURS DRYING TIME BETWEEN COATS. ALL NAILS, SCREWS, HEADS OR DIMPLES SHALL ALSO RECEIVE A THREE-COAT FINISH USING THE SAME MATERIAL AND MANNER NAILS, SCREWS, HEADS OR DIMPLES SHALL ALSO RECEIVE A THREE-COAT FINISH USING THE SAME MATERIAL AND MANNER AS THAT FOR AS THAT FOR THE JOINTS. SAND SMOOTH ALL JOINTS AND SURFACES AND HAVE THEM READY TO RECEIVE THE WALL FINISH. VERIFY SAND SMOOTH ALL JOINTS AND SURFACES AND HAVE THEM READY TO RECEIVE THE WALL FINISH. VERIFY THAT THE EXISTING WALL THAT THE EXISTING WALL SURFACES, IF ANY, ARE SMOOTH AND SUITABLE, AS A SUBSTRATE FOR THE FINISHES SCHEDULED.

GYPSUM BOARD:

5/8" THICK UNLESS NOTED OTHERWISE.
ASTM C36, TAPERED EDGES. PROVIDE "TYPE X" (FIRE RETARDANT) WHERE SHOWN AND AT DEMISING WALLS.

WATER RESISTANT GYPSUM BOARD (GREENBOARD) ASTM C-630 TYPE "W". PROVIDE FOR WET WALLS IN TOILETS. USE "DURLOCK" BEHIND ALL CERAMIC TILE AND MARBLE ON WALLS.

PART 1 - GENERAL

- FURNISH AND INSTALL ALL GYPSUM DRYWALL AND SYSTEMS COMPLETE WITH PARTITION FRAMING, CEILING SUSPENSION SYSTEMS AND RELATED ACCESSORIES, PARTS, MATERIALS, ETC. AS SHOWN ON DRAWINGS AND AS SPECIFIED. INSTALL ALL MATERIALS PER MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.
- GYPSUM DRYWALL: ALL GYPSUM BOARD TO BE 5/8" TYPE "X" AS NOTED ON SHEET A1.0 (CONSTRUCTION PLAN). RESTROOMS TO RECEIVE MOISTURE RESISTANT GYPSUM BOARD.
- FASTENERS: DRYWALL SCREWS OF PROPER SIZE AND TYPE PER MANUFACTURERS RECOMMENDATIONS.
- PROVIDE MATERIALS, JOINT COMPOUNDS, TRIM, EDGES, BEADS, ETC. FROM A SINGLE SOURCE SUPPLIER. ALL TRIM SHALL CONSIST OF A TAPERED, GROOVED, AND PREPUNCHED FIN FOR SCREW ATTACHMENT AND TO ACCEPT BONDING AGENT. ALL BUTT JOINTS ARE TO BE NEAT WITH TIGHT JOINTS, AND ALL CORNERS ARE TO BE MITERED. ALL EDGES, BEADS AND TRIM TO BE PRE-FINISH ALUMINUM.

ACCESS PANELS:

- G.C. SHALL PROVIDE AND INSTALL ACCESS PANELS AS REQUIRED BY LANDLORD AND SITE CONDITIONS (COORDINATE SIZE REQUIREMENTS, NUMBER OF PANELS REQUIRED AND LOCATIONS WITH LANDLORD AND ALL MECHANICAL TRADES).
- ACCESS PANELS SHALL BE FLUSH TYPE (NO EXPOSED FLANGES) STYLE "DW" AS MANUFACTURED BY: MILCOR, 1101 EAST KIBBY, LIMA, OHIO, 45804. PHONE NUMBER: 419-227-6859 (SIZE AS REQUIRED)
- PANELS TO BE FACTORY PRIMED (WHITE) READY TO RECEIVE FINAL FINISH (PAINT) BY G.C.

09300 PORCELAIN TILE:

SECTION 1-PRODUCTS

- CERAMIC TILE SHALL CONFORM TO REQUIREMENTS OF ANSI A137.1-1988
TYPE: CERAMIC TILE. REFER TO MATERIALS SCHEDULE.
SIZE: CERAMIC TILE SHALL BE MANUFACTURED TO SPECIFIC SIZE AFTER FIRING AND SHALL BE NOMINAL SIZE, REFER TO MATERIALS SCHEDULE.
THICKNESS: CERAMIC TILE SHALL BE MANUFACTURED TO SPECIFIC THICKNESS AFTER FIRING AND SHALL BE NOMINAL, REFER TO MATERIALS SCHEDULE.
COLOR: REFER TO MATERIALS SCHEDULE.
- SETTING MATERIALS: USE APPROPRIATE INSTALLATION MORTARS ACCORDING TO ANSI A118. SERIES OR A136.1992 TYPE 1.
- GROUTING MATERIALS: SELECT GROUT PER ANSI A118.3, A118.5, A118.6 OR A118.8- 1992. POLYBLEND NON-SANDED GROUT. MANUF. : BONSLA CO. COLOR: HONEY.
- WATERPROOFING/ANTI-FRACTURE MEMBRANE: SELECT PER ANSI A118.10-1993 AS REQUIRED.
- GROUT SEALER: BONSLA OR EQUAL.

SECTION 2-INSTALLATION

- ACCEPTABILITY OF SURFACES
- BEFORE TILING, VERIFY THAT ALL SURFACES TO BE TILED ARE STRUCTURALLY SOUND TRUE TO PLANE, AND FALL WITHIN MAXIMUM VARIATIONS SHOWN BELOW:
WALLS FLOORS 1/8" IN 8' 1/8" IN 10'
REPORT ALL UNACCEPTABLE SURFACES TO THE ARCHITECT IN WRITING, AND DO NOT TILE SUCH SURFACES UNTIL THEY ARE LEVELED ENOUGH TO MEET ABOVE REQUIREMENTS.

- BEFORE TILING, ALL SURFACES MUST BE FREE OF CURING COMPOUNDS, OIL, GREASE, WAX, DIRT, DUST, FORM RELEASES OR OTHER SUBSTANCES THAT WOULD INTERFERE WITH PROPER BOND OF SETTING MATERIALS. IF TILE IS INSTALLED BY THE THIN-SET METHOD, CONCRETE SLABS SHALL BE STEEL TROWEL OR LIGHT BROOM FINISH.

2.2 SETTING METHODS: COMPLY WITH APPROPRIATE ANSI A108 SPECIFICATION CURRENT AND TILE COUNCIL OF AMERICA HANDBOOK FOR APPROPRIATE METHOD OF INSTALLATION FOR EACH SPECIFICATION. FOR ADHESIVE MORTAR APPLICATION USE FOLLOWING: WITH FLAT SIDE OF TROWEL, KEY MORTAR INTO SUBSTRATE. USING THE APPROPRIATE SIZE TROWEL, COMB MORTAR IN ONE DIRECTION WITH NOTCHED SIDE OF TROWEL. SET TILE WITH A SLIDING MOTION, PERPENDICULAR TO THE MORTAR % COVERAGE AS POSSIBLE OF MORTAR TO TILE RIDGES. OBTAIN AS NEAR AS 100 MORTAR MUST BE SUFFICIENTLY DISTRIBUTED TO GIVE FULL SUPPORT UNDER ALL CORNERS AND EDGES OF THE TILE. PERIODICALLY REMOVE SHEETS OR INDIVIDUAL TILES TO ASSURE PROPER BOND COVERAGE CONSISTENT WITH INDUSTRY SPECIFICATIONS.

2.3 MAX. GROUT JOINT = 1/8".

2.4 EXPANSION JOINTS: INSTALL ARCHITECTURALLY DESIGNED EXPANSION JOINTS AS PER CURRENT TCA DETAIL EJ171. PREFABRICATED EXPANSION JOINT STRIPS CAN ALSO BE USED WHEN SUITABLE.

2.5 GROUTING METHODS: FOLLOW EXACTLY GROUT MANUFACTURES INSTRUCTIONS AND COMPLY WITH APPROPRIATE ANSI A108 SPECIFICATION DEPENDING ON TYPE OF GROUT SELECTED. GROUTING IS NOT COMPLETE UNTIL ALL GROUT HAZE AND RESIDUES ARE REMOVED FROM THE SURFACE OF THE TILE.

2.6 GROUT SEALER: COMPLY WITH MANUFACTURES INSTRUCTIONS AND APPROPRIATE ANSI SPECIFICATIONS FOR PRODUCT SELECTED.

2.7 CLEANING AND PROTECTION

- LEAVE FINISHED INSTALLATION FREE OF CRACKED, CHIPPED, BROKEN, UNBONDED OR OTHERWISE DEFECTIVE TILE WORK.
- PROTECT ALL FLOOR TILE INSTALLATIONS WITH CLEAN CONSTRUCTION PAPER OR OTHER HEAVY COVERING DURING CONSTRUCTION PERIOD TO PREVENT STAINING OR DAMAGE. NO FOOT OR WHEEL TRAFFIC PERMITTED ON FLOOR FOR AT LEAST THREE (3) DAYS AFTER GROUTING.

09900 PAINTING:

PROVIDE PAINTING AS SHOWN OR SPECIFIED. THE TERM "PAINT" INCLUDES ALL OPAQUE OR NATURAL, PRIME, INTERMEDIATE OR FINISH COATS OF FIELD APPLIED COATINGS. APPLY PAINT IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS. USE APPLICATORS AND TECHNIQUES BEST SUITED FOR SUBSTRATE AND TYPE OF MATERIAL BEING APPLIED. PROVIDE TOP-OF-THE-LINE PAINT PRODUCTS MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS: ALL DESCRIPTIONS BASED ON SHERWIN-WILLIAMS:

BENJAMIN MOORE, PPG INDUSTRIES, SHERWIN-WILLIAMS, PRATT & LAMBERT, GLODDEN, NAPCO, BUTE

PROVIDE SUITABLE COVERING TO PROTECT WORK, THE WORK OF OTHERS AND ADJACENT SURFACES AND OBJECTS. REMOVE OR PROTECT SUCH ITEMS AS HARDWARE, ACCESSORIES, PLATES, LIGHT FIXTURES AND SIMILAR ITEMS PLACED PRIOR TO PAINTING. REPOSITION OR REMOVE PROTECTION UPON COMPLETION OF EACH SPACE.

PREPARE SURFACES TO RECEIVE PAINT: THOROUGHLY CLEAN OFF GRIME, GREASE, DIRT, CHALK, DUST, LOOSE MATERIAL AND OTHER SUBSTANCES THAT MAY INTERFERE WITH PROPER ADHESION OF PAINT. PAINT DRY SURFACE ONLY. SAND LIGHT

FINISH SCHEDULE	
PANT ALL WALLS: FITTING DOORS/TRIM/CUSTOM MIRROR FRAMES: NON-FITTING DOORS/FRAMES: ALL CEILING/DECK:	EGGSHELL FLAME SPREAD CLASS 1/A HIGH-GLOSS ALKYD FLAME SPREAD CLASS 1/A SEM-GLOSS FLAME SPREAD CLASS 1/A FLAT LATEX FLAME SPREAD CLASS 1/A
INSTALLATION: GYPSUM BOARD TO RECEIVE LATEX PAINT TO BE PRIMED WITH (1) COAT OF VINYL PLASTIC SEALER PRIOR TO RECEIVING (2) COATS OF PAINT. WOOD TRIM TO RECEIVE ALKYD OR ENAMEL PAINT TO BE PRIMED W/ ONE COAT OF ENAMEL UNDERCOATER PRIOR TO RECEIVING (2) COATS OF PAINT. PAINT ALL WIRES, RETURN AIR GRILLE, & SUPPLY AIR GRILLE TO MATCH ADJACENT CEILING AREAS. G.C. TO DO "TOUCH-UP" PAINTING AT DAY OF STORE OPENING.	
P-1	SHERWIN WILLIAMS #7005 "PURE WHITE"
P-2	BENJAMIN MOORE #1614 "DELRAY GRAY"
P-3	BENJAMIN MOORE #CC-544 "OVERCOAT" - OUTLET ONLY
CORNER GUARDS	
CG-1	ALUMINUM CORNER GUARD 94"x1"x1" 90° 060 TYPE 5052 SATIN #4 BRUSHED FINISH
FLOORING *** IN THE EVENT THAT G.C. IS DIRECTED TO OVERLAY EXISTING FLOOR, NEW FLOORING SHALL HAVE A SMOOTH TROWEL FINISH***	
CS-1	SURTECH - #CS-672 W/ #575 CONCRETE SEALER APPLICATION. - GRIND FLOOR W/ 80 GRIT DIAMOND PAD - FILL JOINTS AND CRACKS W/ URETHANE BASED CAULK - PATCH AREAS OF DAMAGED SLAB W/ "CGM BUILDING PRODUCTS" - LEV-L-ASTIC COMPOUND - SAND SMOOTH ANY AREAS THAT WERE PATCHED AND REMOVE DUST - APPLY TWO (2) COATS PRIMER AND THREE (3) COATS SEALANT
PT-1	CONCEPT SURFACE - ICON "DOVE GREY" - 12"x24" SATIN FINISH. INSTALL IN RUNNING BOND PATTERN. GROUT JOINTS TO BE 1/16" MAX.
VF-1	ARMSTRONG CONNECTION. TILE VINYL FLOORING, CORLON #88712 "LIMESTONE", OR APPROVED EQUAL. SEE DETAIL ON SHEET A3.1. HEAT WELDED SEAMS & 6" COVERED SELF BASE. FLAME SPREAD CLASS 1/A - USE MFR'S RECOMMENDED ADHESIVE.
VF-2	MATS INC. - PLANK COLLECTION, ASH #W7500 GRAY ASH, 6"x36" PLANK. FURNISHED BY TENANT, INSTALLED BY G.C. FLOOR MOISTURE READING MUST BE COMPLETED PRIOR TO INSTALLATION. SEE MANUFACTURER'S SPECIFICATION SHEETS FOR RECOMMENDED MOISTURE LIMITS.
BASE	
B-1	HARDWOOD BASE - 6" HIGH. PAINT "P-2" AT SALES AREA U.O.N. AND PAINT "P-1" AT FITTING ROOMS AND ALCOVE. SEE DETAIL ON A3.1.
B-2	JOHNSONITE - #40 "BLACK", 4" HIGH RUBBER COVERED BASE. FLAME SPREAD CLASS 1/A PROVIDE 90 DEGREE CORNERS WHERE REQ'D. SEE DETAIL ON A3.1.
CEILING	
ACT-1	ARMSTRONG - 24"x48"x3/4" WHITE "CORTEGA" SECOND LOOK II ITEM #2767 REGULAR ANGLED TILE. - WHITE PRELUDE 15/16" EXPOSED TEE GRID - SALES AREA PAINTED "P-2". FLAME SPREAD INDEX OF 25 OR LESS, SMOKE DEVELOPED INDEX OF 50 OR LESS.
WALLCOVERING	
WC-1	DENVOO WALL* POPOLO "STEEL BEAM" #002-POP-06. FURNISHED BY TENANT, INSTALLED BY G.C.
WC-2	DENVOO WALL* POPOLO "VANILLA ICE" #002-POP-04. FURNISHED BY TENANT, INSTALLED BY G.C.
WC-3	FRP WAINSCOT - WHITE W/SMOOTH FINISH - INCLUDE ALL REQ'D. TRIM/CAPS. FLAME SPREAD CLASS 3/0
METAL	
MTL	BRAKE METAL PANEL. MINIMUM 18 GA. REQUIRED. POWDER COATED WHITE, RAL #9003, GLOSS FINISH.
TRIM	
HT-1	1x3 HARDWOOD PERIMETER TRIM. PAINT "P-1". SEE ELEVATIONS ON SHEET A4.0 AND DETAIL ON 13/A7.0

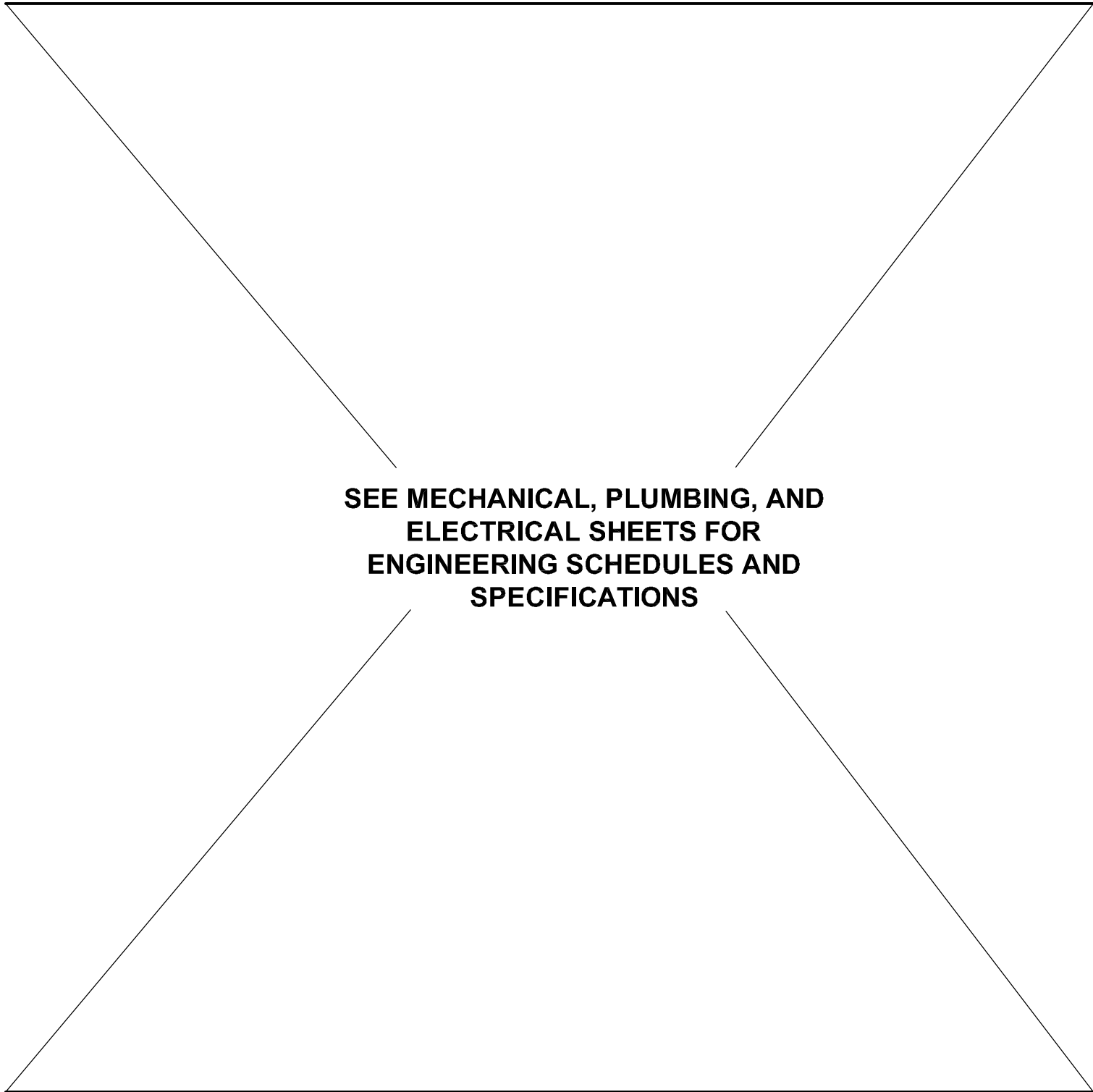
TOILET ACCESSORIES	
NOTE: IF ITEMS ARE EXISTING, REPLACE DAMAGED OR MISSING ITEMS AS SHOWN HERE.	
AC-1	TOILET - SEE SHEET P1. - FURNISH NEW TOILET SEAT - F.C.I.C.
AC-2	LAVATORY - SEE SHEET P1. - F.C.I.C.
AC-3	18" GRAB BAR - BOBRICK #B-6106 X 18 - SURFACE MOUNTED. PROVIDE SOLID BLOCKING IN WALL - F.C.I.C.
AC-4	36" GRAB BAR - BOBRICK #B-6106 X 36 - SURFACE MOUNTED. PROVIDE SOLID BLOCKING IN WALL - REAR BAR TO EXTEND 12" BEYOND CENTER OF THE WATER CLOSET TOWARD THE SIDE WALL AT LEAST 24" TOWARD THE OPEN SIDE OF THE WATER CLOSET AND MOUNTED NO MORE THAN 9" BEHIND THE WATER CLOSET SEAT. - F.C.I.C.
AC-5	42" GRAB BAR - BOBRICK #B-6106 X 42 - SURFACE MOUNTED. PROVIDE SOLID BLOCKING IN WALL - F.C.I.C.
AC-6	TOILET PAPER DISPENSER - CENTERED @ 19" A.F.F., MIN. - SURFACE MOUNTED. - F.T.I.C. GEORGIA-PACIFIC: SOFPUL CENTERPULL DISPENSER - MFG. PART #56501 COLOR: SMOKE GEORGIA-PACIFIC: SOFPUL CENTERPULL ADA NOZZLE - MFG. PART #56505
AC-7	WALL MOUNTED 24"x36" MIRROR - WITH BOTTOM OF REFLECTIVE SURFACE AT +40" A.F.F. BOBRICK #B-240-2436 - CLEAR CAULK AROUND MIRROR FOR TURNOVER. - F.C.I.C.
AC-8	AUTOMATED ROLL TOWEL DISPENSER - GEORGIA-PACIFIC: SOFPUL AUTOMATED DISPENSER - MFG. PART #59010 COLOR: BLACK - F.T.I.C.
AC-9	WATER HEATER MOUNTED ABOVE MOP SINK - SEE SHEET P1. - F.C.I.C.
AC-10	SHELVING SYSTEM - PROVIDED & INSTALLED BY MOBILE MEDIA
AC-11	SIGN WITH RAISED BRAILLE LETTERS - MOUNTED AT +60 A.F.F. - F.C.I.C.
AC-12	MOP SINK - SEE SHEET P1. - F.C.I.C.
AC-13	DRINKING FOUNTAIN - SEE SHEET P1. - F.C.I.C.
AC-14	SOAP DISPENSER - BRIGHTON PROFESSIONAL (800mL) - MFG. ITEM #26463 COLOR: BLACK - F.T.I.C.
AC-15	TOILET SEAT COVER DISPENSER - BRIGHTON PROFESSIONAL - MFG. ITEM #BPR24778 - COLOR: WHITE - F.T.I.C.

ABBREVIATIONS	
FURNISHED BY TENANT, INSTALLED BY CONTRACTOR -	(F.T.I.C.)
FURNISHED BY CONTRACTOR, INSTALLED BY CONTRACTOR -	(F.C.I.C.)
FURNISHED BY LANDLORD, INSTALLED BY CONTRACTOR -	(F.L.I.C.)
FURNISHED BY LANDLORD, INSTALLED BY LANDLORD -	(F.L.I.L.)
DOOR NOTES	
*EXIT DOORS SHALL BE OPERABLE FROM WITHIN WITHOUT USE OF ANY SPECIAL KNOWLEDGE OR EFFORT WHEN THE SPACE IS OCCUPIED.	
*MAXIMUM PULL FORCES FOR INTERIOR AND EXTERIOR DOOR SHALL NOT EXCEED: 5 LBS. FOR INTERIOR DOORS / 5 LBS. FOR EXTERIOR DOORS / 15 LBS. FORCE FOR FIRE RATED DOORS.	
*G.C. TO USE HARDWARE MOUNTING KIT FOR TORRID	
*LEVER HANDLED HARDWARE SHOULD NOT REQUIRE TIGHT GRASPING, ETC. PULL FORCES SHALL NOT EXCEED: 5 LBS. FOR INT. DOORS / 5 LBS. FOR EXT. DOORS / 15 LBS. FORCE FOR FIRE RATED DOORS.	
*ROOM IDENTIFICATION SIGNAGE, WHEN PROVIDED, SHALL COMPLY W/LOCAL AUTHORITY	
*BOTTOM 10" AT ALL DOORS, EXCEPT AUTOMATIC DOORS, SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE.	
*G.C. TO SUBMIT SHOP DRAWINGS FOR DOOR HARDWARE TO PROJECT MANAGER FOR APPROVAL PRIOR TO ORDERING.	
*HAND ACTIVATED DOOR OPENING HARDWARE TO BE MOUNTED AT 38" A.F.F. AND OPERATED WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE.	
*ALIGNMENT OF DOOR HEADS SHALL BE AT A CONSTANT LEVEL AND NOT FOLLOW POTENTIAL VARIATIONS IN THE FLOOR PLANS.	
*UNDER CUT DOOR 3/4" MINIMUM.	

VENDOR SCHEDULE			
COMPANY	CONTACT	PHONE NUMBER	EMAIL ADDRESS
APEX SIGN GROUP	DAN MURPHY	(610) 715-3369	dan.murphy@apexsigngroup.com
BOSTON BARRICADE	JOY WILD	(772) 257-7313	jwild@bostonrs.com
CASTLE DESIGN	GARY HUNTER	(818) 848-1303	gary@castledesignfab.com
MIDWEST LIGHTING	ANO GULASARIAN	(323) 957-6031	ano@midwestlighting.com
MOBILE MEDIA	LINDA LUONGO	(800) 784-8080	lteam@mobilemediastorage.com
ONSITE MEDIA SOLUTION	DANIEL VIGNOLA	(435) 214-4956	hottopic@onsitemedia.com
QUAD GROUP		(262) 289-2671	lorridsupport@qg.com
SENSORMATIC	CECILIA MORENO	(310) 347-7351	cecilia.moreno@jci.com
SHOPPER TRAK		(312) 529-5411	orders@shoppertrak.com
REEVE	FRANK MACHUCA	(562) 949-2535	hottopic@reeveco.com
WORLDBLINK	DAREN HARVEY	(949) 861-2830 EXT. 226	construction@worldlinkintegration.com
POLLOCK ORORA	MONICA FRANKS	(972) 337-3645	hottopic@pollock.com
RADIANT FREIGHT	NATHANIEL BROWN		hottopic@radiantdelivers.com
KASTON	JOHN STEGER	(866) 943-5334	johnc@kastongroup.com
MATS INC.	MARY CRANE	(781) 573-0265	mcrane@matstinc.com
CIS INTERNET	TOM BUSHMAN/ NANCY BENNETT	(626) 839-4681 EXT. 2879	pm@cispn.com
VISUAL CREATIONS	KRISTEN DUFFY	(401) 588-5151 EXT. 257	customerservice@rosedisplays.com
NCR	RYAN TUCKER	(770) 212-6056	ryan.tucker@ncr.com
WEST TECH	NICK LEE	(818) 357-9842	nick@westechtrading.com
SITE CREW INC.			ht@sitecrewin.com
STAPLES	YVONNE CARSTEN	(303) 664-2331	yvonne.carsten@staples.com
BUNZL RETAIL SERVICES	JOSH BALLEW	(612) 217-6312	jballew@ddsjit.com
GRENEKER	SUSAN ARICA	(323) 263-9000 EXT. 3308	torrid@greneker.com
KOROSEAL	JESSICA COOPER	(866) 628-2280 EXT. 1	na@koroseal.com
FLOR STORE	MELISSA JONGEBLOED	(312) 350-5853	flororders@flor.com

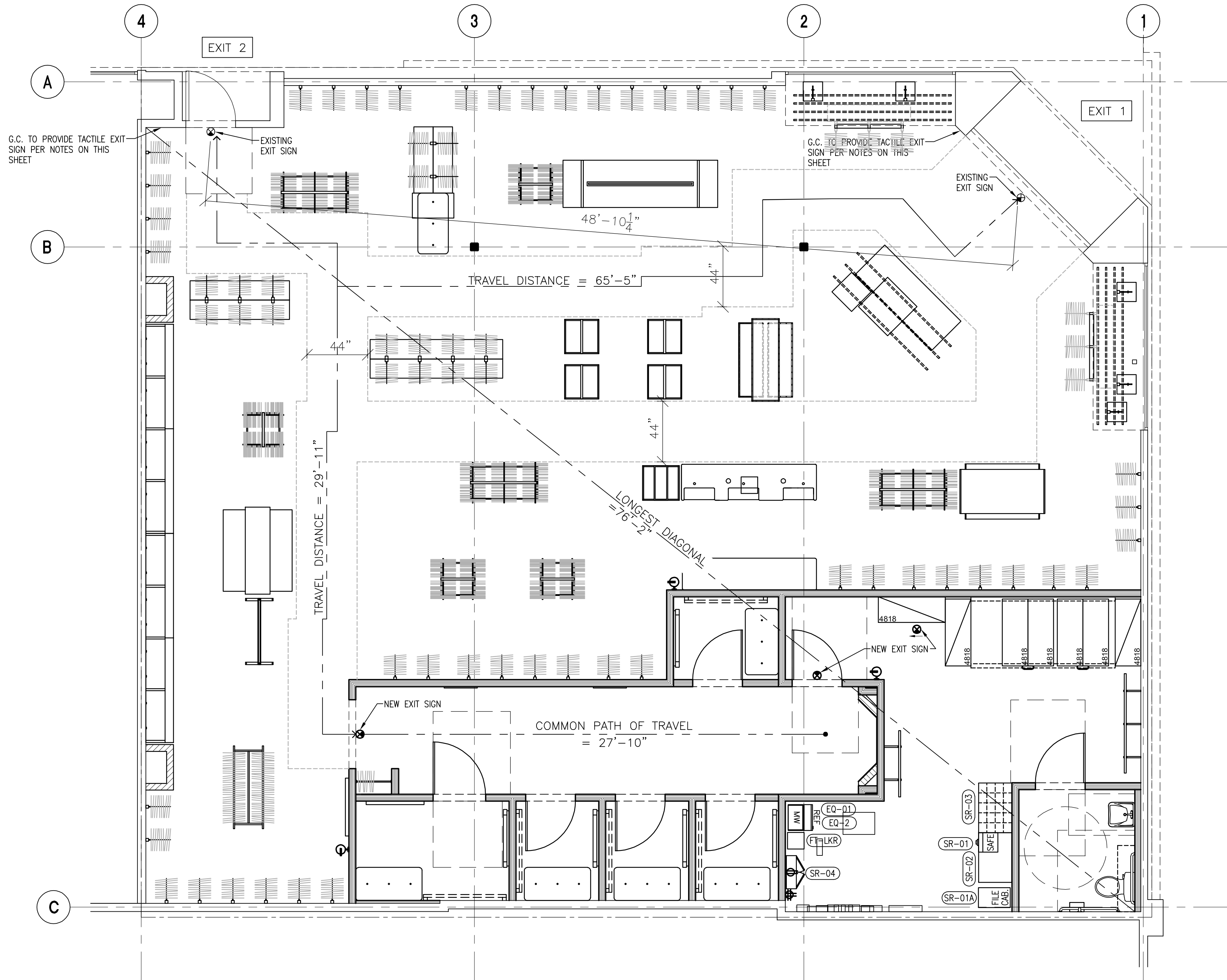
DOOR SCHEDULE	
KEY	DESCRIPTION
1	STOREFRONT ROLLING GRILLE: <input type="checkbox"/> NEW <input checked="" type="checkbox"/> EXISTING - REPAIR TO "LIKE NEW" CONDITION. REPLACE IF DAMAGED OR IRREPARABLE GRILLE: 10'W x 8'-5" H ROLLING GRILLE LOCK: LOCK CYLINDERS & THUMB TURN BY G.C., TO FIT 7-PIN FALCON CORES, BY OWNER SIGNAGE: PROVIDE - SIGN ABOVE DOOR IN 1" HIGH LETTERS ON A CONTRASTING BACKGROUND STATING "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED" WHEN REQUIRED BY CODE
2	ACCESSIBLE FITTING ROOM DOOR: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> EXISTING - PROVIDE AS NOTED BELOW IF EXISTING IS UNSUITABLE. DOOR: 3'-2" x 5'-0" x 1 3/4" DOOR SUPPLIED BY TENANT & INSTALLED BY G.C. FRAME (BY G.C.): 1" x 3" WOOD CASING & JAMB. PROVIDE 3 WOOD JAMB ANCHORS PER JAMB - PAINT "P-1" - F.C.I.C. HINGES: SCHLAGE RHODES (2) SC3P1012F-619E 3.5" x 3.5" SATIN NICKEL, #626, 1/4" RADIUS CORNER MORTISE HINGE, PART #70-402954. USE #12 X 1 1/4" WD. SCREWS @ DOOR AND #12 (24) X 1/2" MACHINE SCREW @ FRAME, SUPPLIED BY TENANT. LOOKS / LATCHES: SCHLAGE RHODES N80P0 - STOREROOM TYPE, #626. DOOR STOP: HINGE MOUNTED DOOR STOP - F.T.I.C. NOTES: • (8) KEYS TO BE FURNISHED PER DOOR, ALL DOORS KEYPED ALIKE, SUPPLIED BY TENANT. • ROUGH OPENING TO BE 38" WIDE. TORRID G.C. TO PROVIDE DOOR FRAME, DOOR TRIM, BORE AND MORTISE DOOR AND INSTALL BOTTOM OF DOOR @ 12" A.F.F.
3	FITTING ROOM DOOR: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> EXISTING - PROVIDE AS NOTED BELOW IF EXISTING IS UNSUITABLE. DOOR: 3'-0" x 5'-0" x 1 3/4" DOOR SUPPLIED BY TENANT & INSTALLED BY G.C. FRAME (BY G.C.): 1" x 3" WOOD CASING & JAMB. PROVIDE 3 WOOD JAMB ANCHORS PER JAMB - PAINT "P-1" - F.C.I.C. HINGES: SCHLAGE RHODES (2) SC3P1012F-619E 3.5" x 3.5" SATIN NICKEL, #626, 1/4" RADIUS CORNER MORTISE HINGE, PART #70-402954. USE #12 X 1 1/4" WD. SCREWS @ DOOR AND #12 (24) X 1/2" MACHINE SCREW @ FRAME, SUPPLIED BY TENANT. LOOKS / LATCHES: SCHLAGE RHODES N80P0 - STOREROOM TYPE, #626. DOOR STOP: HINGE MOUNTED DOOR STOP - F.T.I.C. NOTES: • (8) KEYS TO BE FURNISHED PER DOOR, ALL DOORS KEYPED ALIKE, SUPPLIED BY TENANT. • ROUGH OPENING TO BE 38" WIDE. TORRID G.C. TO PROVIDE DOOR FRAME, DOOR TRIM, BORE AND MORTISE DOOR AND INSTALL BOTTOM OF DOOR @ 12" A.F.F.
4	FITTING ALCOVE TO STOCKROOM DOOR: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> EXISTING - PROVIDE AS NOTED BELOW IF EXISTING IS UNSUITABLE. DOOR: 3'-0" x 7'-0" x 1-3/4" HOLLOW METAL DOOR. PAINT "P-1" FRAME: 3'-0" x 7'-0" HM DRYWALL FRAME - PAINT "P-1" HINGES: 1 1/2" PAIR 4" x 4" (3/BOX) - #US26 LOOKS / LATCHES: SCHLAGE N80P0 RHO - HEAVY DUTY STOCKROOM LEVER LOCK WITH CYLINDER CLOSER: NORTON NO. 1603 ALUMINUM DOOR CLOSURE. W/ 90° HOLD OPEN FLOOR STOP: IVES FS13, OR EQUAL - #US26 NOTES: • PROVIDE DOOR BUMPER "QUALITY" NO. 302. (VERIFY W/ PLAN WHEN DOOR SWINGS TO WALL) • PROVIDE 30" x 34" STAINLESS STEEL ARMOR PLATE. SEE INTERIOR ELEVATIONS. • GC TO PROVIDE/INSTALL WIRELESS ENTRY ALERT CHIME WITH RECEIVER BY SAFETY TECHNOLOGY INTERNATIONAL TO STOCK SIDE OF DOOR, CONFIRM LOCATION OF PLUG IN CHIME @ CASHWRAP WITH PM
5	STOCKROOM TO TOILET ROOM DOOR: <input checked="" type="checkbox"/> NEW <input type="checkbox"/> EXISTING - PROVIDE AS NOTED BELOW IF EXISTING IS UNSUITABLE. DOOR: 3'-0" x 7'-0" x 1 3/4" HOLLOW METAL DOOR. PAINT "P-1" FRAME: 3'-0" x 7'-0" HM DRYWALL FRAME - PAINT "P-1" HINGES: 1 1/2" PAIR 4" x 4" (3/BOX) - #US26 LOOKS / LATCHES: FALCON B301-D LEVER TYPE PRIVACY SET - #626 SIGNAGE: PROVIDE INTERNATIONAL SYMBOL OF ACCESSIBILITY AS REQUIRED BY CODE CLOSER: NORTON NO. 1603 ALUMINUM DOOR CLOSURE. W/ 90° HOLD OPEN NOTES: • PROVIDE DOOR BUMPER "QUALITY" NO. 302. (VERIFY W/ PLAN WHEN DOOR SWINGS TO WALL) • PROVIDE 30" x 34" STAINLESS STEEL ARMOR PLATE AT STOCKROOM/ HALLWAY SIDE ONLY.
6	REAR SERVICE DOOR: <input type="checkbox"/> NEW <input type="checkbox"/> NOT USED <input checked="" type="checkbox"/> EXISTING - PROVIDE AS NOTED BELOW IF EXISTING IS UNSUITABLE. DOOR: 3'-0" x 7'-0" METAL DOOR AND FRAME, V.I.F. INSTALL DOOR SWEEP ON EXTERIOR SIDE OF DOOR, IF NOT EXISTING. EXISTING THRESHOLD AND WEATHERSTRIPPING TO BE REPAIRED OR REPLACED, AS NEEDED. LOOKS / LATCHES: ALARM LOCK #700 OR DETEX PANIC/ ALARM HARDWARE W/ 7-PIN MORTISE CYLINDER & SATIN CHROME STRIKE. (ALWAYS PROVIDE THIS UNLESS SUITABLE EXISTS) G.C. TO INSTALL PRY PLATE AT EXTERIOR, NO HANDLE ALLOWED. SIGNAGE: LABEL WALL SIDE WITH TENANT'S NAME AND SPACE NO. PER LANDLORD'S REQUIREMENTS CLOSER: NORTON NO. 1603 ALUMINUM DOOR CLOSURE. W/ 90° HOLD OPEN VIEWER: BLACK OR NICKEL DOOR VIEWER @ 5'-0" A.F.F. - FIRE RATED, AS REQUIRED. NOTES: • TENANT'S G.C. SHALL MAINTAIN TIGHT FITTING SMOKE AND DRAFT CONTROL ASSEMBLY HAVING A FIRE RATING OF NOT LESS THAN 90 MIN. WHEN TESTED. INSTALL GASKET MATERIAL AS TO PROVIDE A SEAL WHERE DOOR MEETS THE STOP ON ALL SIDES. • PAINT MALL SIDE OF DOOR AND FRAME TO MATCH ADJACENT MALL'S FINISH OR AS DIRECTED BY THE MALL'S ON-SITE REPRESENTATIVE.

RESPONSIBILITY SCHEDULE									
ITEM	FURNISHED		INSTALLED		EXIST.	REMARKS			
	LANDLORD	TENANT	CONTRACTOR	LANDLORD	TENANT	CONTRACTOR	NO CHANGE	SPL. ACTION	
SIGNAGE									
STOREFRONT ILLUMINATED SIGN		●		●					"TORRID" LOGO LETTER SIGN
ANNING		●	●	●	●	●			G.C. TO REPLACE OR REPAIR AS REQUIRED.
BLADE SIGN & BRACKETS		●		●					PER LANDLORD'S CRITERIA
REAR DOOR SIGNAGE		●		●					PER LANDLORD'S CRITERIA
VINYL WINDOW GRAPHICS		●		●					AT 36" A.F.F. AT STOREFRONT
BARRICADE GRAPHICS		●		●					PER LANDLORD'S CRITERIA
CODE-RELATED SIGNAGE AT ANY DOOR		●		●					PER INSPECTOR'S REQUIREMENTS
SIGN PERMIT & APPL.		●		●					WHEN REQUIRED
EXISTING SIGNAGE REMOVAL		●		●					WHEN REQUIRED
TOILET ROOM									
	L	T	C	L	T	C	N	S	
WATER CLOSET			●		●				SEE SHEET P1
LAVATORY			●		●				SEE SHEET P1
MOP SINK			●		●				SEE SHEET P1
DRINKING FOUNTAIN			●		●				SEE SHEET P1
TOILET PAPER DISPENSER		●			●				
PAPER TOWEL DISPENSER		●			●				
GRAB BARS		●			●				G.C. TO REPLACE OR REPAIR AS REQUIRED.
MIRROR(S)		●			●				G.C. TO REPLACE OR REPAIR AS REQUIRED.
MARLITE PANELS/J-MOLDING		●			●				REPLACE AS REQUIRED - SEE FINISH SCHED.
BACKING FOR ALL ITEMS LISTED ABOVE AS REQ.		●			●				
TRASH CAN		●			●				
SOAP DISPENSER		●			●				
SHELVING / HANGING		●			●				INCL. SHELVES, STANDARDS AND BRACKETS
TOILET SEAT COVER DISPENSER		●			●				
WATER HEATER		●			●				SEE SHEET P1
WATERPROOFING		●			●				PER LANDLORD'S CRITERIA
M.E.P.									
	L	T	C	L	T	C	N	S	



MISCELLANEOUS									
	L	T	C	L	T	C	N	S	
PICK-UP PERMIT/ PAY PERMIT FEES		●			●			●	PROVIDE INFORMATION TO TORRID AND ARCHITECT
CONSTRUCTION SITE PHONE AND FAX		●			●			●	PROVIDE WEEKLY E-MAIL PHOTOS TO TORRID
CONSTRUCTION SITE DIGITAL CAMERA		●			●			●	
OBTAIN C/O APPROVALS IN WRITING A.W.A.		●			●			●	CHANGE ORDERS NOT PROCESSED WITHOUT A.W.A. #'S.
SPRINKLER SYS. PLANS/ PLANS/ PERMIT/ FEES		●			●			●	VERIFY MALL'S REQUIRED CONTRACTOR
MODIFY SPRINKLER SYS.		●			●			●	
MALL DEPOSIT/ INSURANCE WAIVERS		●			●			●	
JANITORIAL SERVICE/ FINAL CLEANING		●			●			●	TWO CLEANINGS: FIRST AT PUNCHLIST. SECOND CLEANING DAY PRIOR TO OPENING.
TRASH REMOVAL/ DUMPSTER RENTAL		●			●			●	PROVIDE EXTRA 30 YD DUMPSTER THE DAY PRIOR TO TURNOVER FOR TENANT DEBRIS
FIRE EXTINGUISHERS		●			●			●	AS REQUIRED BY CODE AND LOCAL AUTHORITIES
INSPECTIONS		●			●			●	AS REQUIRED BY LOCAL AUTHORITIES
"COMING SOON" GRAPHIC		●			●			●	COORDINATE WITH TENANT AND LANDLORD
HAZ-MAT ABATEMENT		●			●			●	AS REQUIRED
FLOOR PREPARATION		●			●			●	
ROOF PENETRATIONS		●			●			●	VERIFY MALL'S REQUIRED CONTRACTOR
DEMOLITION/ PERMIT AND FEES AS REQUIRED		●			●			●	
OBTAIN INSPECTIONS/ PROVIDE STATUS REPORT		●			●			●	PROVIDE (2) COPIES
PROVIDE AS-BUILT COPY OF JOB SITE PLANS		●			●			●	
RECEIVE/ UNLOAD ALL TENANT SUPPLIED ITEMS		●			●			●	
SUB-CONTRACTOR LIST AND WARRANTIES		●			●			●	PROVIDE TO OWNER AT TURNOVER
TEMPORARY BARRICADE		●			●			●	COORDINATE WITH LANDLORD AND MALL.
G.C. PROJECT MGR. SITE VISITS DURING CONST.		●			●			●	
COMPLIANCE TO TENANT TURNOVER REQUIREMENTS		●			●			●	AS REQUIRED: MINIMUM (1) AT FIELD REPORT.
AUDIO SYSTEM		●			●			●	COORD. CLOSELY WITH TENANTS VENDOR FOR INSTALLATION SCOPE.
CONDUITS & PULL STRING POWER AUDIO SYS./DATA/ALARMS/ETC.		●			●			●	G.C. TO PROVIDE CONDUIT W/ PULL STRING COORDINATE W/ APPLICABLE VENDORS.
P.O.S. SYS. / DATA AND SHELVING EQUIPMENT		●			●			●	G.C. TO ASSIST BY INSTALLING EQUIPMENT AT CASHWRAP.
DE-BRANDING OF EXISTING TORRID STORE		●			●			●	WHEN STORE IS A RELOCATION GC TO DEBRAND EXISTING STORE. CONFIRM REQUIREMENTS W/ TORRID P.M.

RESPONSIBILITY SCHEDULE									
ITEM	FURNISHED			INSTALLED			EXIST.	REMARKS	
	LANDLORD	TENANT	CONTRACTOR	LANDLORD	TENANT	CONTRACTOR	NO CHANGE	SPL. ACTION	RESPONSIBILITY SCHEDULE IS GENERAL IN NATURE AND DOES NOT REFLECT EVERY COMPONENT OR RESPONSIBILITY. U.O.N. RESPONSIBILITY IS G.C. FURNISHED AND INSTALLED.
STOREFRONT									
NEUTRAL PIERS							●		VERIFY DETAILS WITH LANDLORD
CONTINUOUS REVEALS			●			●			3/4" METAL REVEAL
STOREFRONT FRAMING							●		SEE SHEET A5.0
PR. ENTRY DRG/ HARDWARE							●		SEE DOOR SCHEDULE
WINDOW FILM			●			●			G.C. TO COORD. W/ OWNERS VENDOR
FLOORING / BASE									
	L	T	C	L	T	C	N	S	
FLOOR CORING/ CONC. INFIL/ PATCH EXIST.			●			●			G.C. TO COORD. W/ OWNERS VENDOR
CONCRETE SEALER									SEE FINISH SCHEDULE
SHT. VINYL @ TOILET RM.			●			●			SEE FINISH SCHEDULE
FLOOR TRANSITIONS			●			●			
RUBBER BASE			●			●			NON-PUBLIC AREAS ONLY, SEE FINISH SCHEDULE
WOOD BASE			●			●			G.C. TO SCRIBE TO FLOOR, SEE FINISH SCHEDULE
CARPET TILE		●				●			SEE FINISH SCHEDULE
SALES FLOOR FLOORING		●				●			SEE FINISH SCHEDULE
WALLS									
	L	T	C	L	T	C	N	S	
DEMISING PART. STUDS							●		MAINTAIN AND REPAIR AS REQUIRED
DEMISING PART. DRYWALL			●			●		●	PATCH, REPAIR, & REPLACE AS REQUIRED
NEW WALLS FRAMING/ BLOCKING/ GYP. BD.			●			●			
TOILET ROOM FRAMING/ BLOCKING/ GYP. BD.			●			●			
FURRING AROUND COLUMNS AT DEMISE			●			●		●	PATCH, REPAIR, & REPLACE AS REQUIRED
INTERIOR COLUMN FURRING			●			●			
BLOCKING FOR DOORS			●			●			
WALL PREP. AND PAINT			●			●			
CORNER GUARDS			●			●			G.C. TO CUT DOWN IN FIELD AS NEEDED
CEILINGS									
	L	T	C	L	T	C	N	S	
GYP. BD. CEILINGS OR SOFFITS							●		
PAINT AT EXPOSED DECK AT PUBLIC AREAS						●			
THREADED ROD / UNISTRUT/ AIRCRAFT CABLE						●			AS REQUIRED
DEMO/ PREP. OF EXPOSED DECK READY TO PAINT						●			
SUSPENDED ACT CEILING			●			●			WHEN REQUIRED
DOORS									
	L	T	C	L	T	C	N	S	
FITTING ROOM FRAME / TRIM			●			●			SEE DOOR SCHEDULE
ALCOVE & STOCK ROOM DOOR/ FRAME/ HARDWARE			●			●			SEE DOOR SCHEDULE
TOILET ROOM DOOR/ FRAME/ HARDWARE			●			●			SEE DOOR SCHEDULE
REAR DOOR AND FRAME									G.C. TO REPLACE.
REAR DOOR PANIC BAR/ 7 PIN RM CYLINDER			●			●	●		G.C. TO REPLACE.
KEY ALL DOORS ALIKE @ TURNOVER		●							
ACCESS PANELS AS REQ'D FOR MOTORS/AV/ETC.									AS REQUIRED
FITTING ROOMS & ALCOVE									
	L	T	C	L	T	C	N	S	
HOOKS		●				●			
MIRRORS		●							
ADA MIRROR(S) & 3-WAY			●			●			
CAULKS/SILICONES/ MASTICS/ADHESIVES									EACH TRADE TO PROVIDE, AS REQUIRED
BENCHES		●				●			
METAL MESH/ FRAMES		●				●			
DOORS/ HARDWARE									
SALES AREA & FIXTURES									
	L	T	C	L	T	C	N	S	
FREESTANDING FLOOR FIXTURES		●				●			G.C. TO ASSEMBLE AS REQUIRED
WALL STANDARDS		●				●			POWDER COATED SCREWS INCLUDED
CASH WRAP/ COUNTERS		●				●			G.C. TO ASSEMBLE AS REQUIRED
WALL & DISPLAY FIXTURES		●				●			
MISC. SALES WOOD TRIM			●			●			G.C. TO ASSEMBLE AS REQUIRED
MIRRORS						●			
LOOSE HARDWARE AND SHELVING		●				●			G.C. TO CLEAN AND INSTALL
RECEIVING HARDWARE/ FIXTURES INTO STORE			●			●			
UNPACK/ DISPOSE OF FIXTURE WRAPPINGS			●			●			OFFLOAD FROM TRUCK
STOCKROOM									
	L	T	C	L	T	C	N	S	
CORNER GUARDS			●			●			REQUIREMENTS TO BE DETERMINED IN FIELD
BULLETIN BOARDS AND MISC. ITEMS		●				●			
STRUCTURAL SUPPORT FOR XMR. IF REQ'D.			●						
TABLE/FILE CABINET		●				●			
LOCKER/ MICRO./ FRIG.		●			●				
MOBILE SHELVING SYSTEM					●				
SHELVING / HANGING		●				●			VENDOR TO INCL SHELVES/ STANDARDS/ BRACKETS
BACKING FOR ALL ITEMS LISTED ABOVE.		●				●			AS REQUIRED FOR SECURE ATTACHMENT



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

LIFE SAFETY/EGRESS NOTES

- CONTRACTOR TO FIELD VERIFY THE PRESENCE OF A DUCT SMOKE DETECTOR & THAT IT IS IN COMPLIANCE WITH IBC 2015 MECHANICAL SECTION 606 AND NFPA 90A. SEE MECHANICAL SHEETS FOR ADDITIONAL INFORMATION.
- SEE REFLECTED CEILING PLAN AND ELECTRICAL LIGHTING PLAN FOR DESCRIPTION OF LIGHT FIXTURES SHOWN.
- PROVIDE (1) TYPE-ABC FIRE EXTINGUISHER FOR EACH 2,500 S.F. AND NOT MORE THAN 75 FEET APART.
- FIRE EXTINGUISHERS SHALL BE VISIBLE AND ACCESSIBLE AT ALL TIMES DURING REMODELING.
- ALL EXIT WAYS SHALL BE KEPT FREE AND CLEAR FOR EXITING AND ENTERING PURPOSES.
- REFER TO DOOR SCHEDULE ON A100 FOR MORE INFORMATION ON DOOR HARDWARE ALONG EGRESS ROUTE.
- EXIT SIGNS & EMERGENCY LIGHTING REQUIRED IN ALL ROOMS, INCLUDING RESTROOMS. REFERENCE ELECTRICAL SHEETS FOR MORE INFORMATION.

☒ DENOTES 5LB ABC FIRE EXTINGUISHER

MEANS OF EGRESS

NO. OF EXITS: (2 REQ'D BY 2019 IBC)	TOTAL: 2
EXIT WIDTH PROVIDED: (EXIT WIDTH REQ'D (OCC. LOAD x FACTOR (0.27))	156" 32" MIN.
MAXIMUM DISTANCE TO EXITS: (MAXIMUM ALLOWED - 250')	95'-4"
COMMON PATH OF TRAVEL:	27'-10"
EXIT SEPARATION LONGEST DIAGONAL REQUIRED (NON SPRINKLERED) PROVIDED	76'-2" 38'-1" 48'-10"

PROJECT NO: 230311
DRAWN BY: KSM
CHECKED BY: KEU
ISSUE DATE:
07/31/23

EGRESS PLAN

T3.0

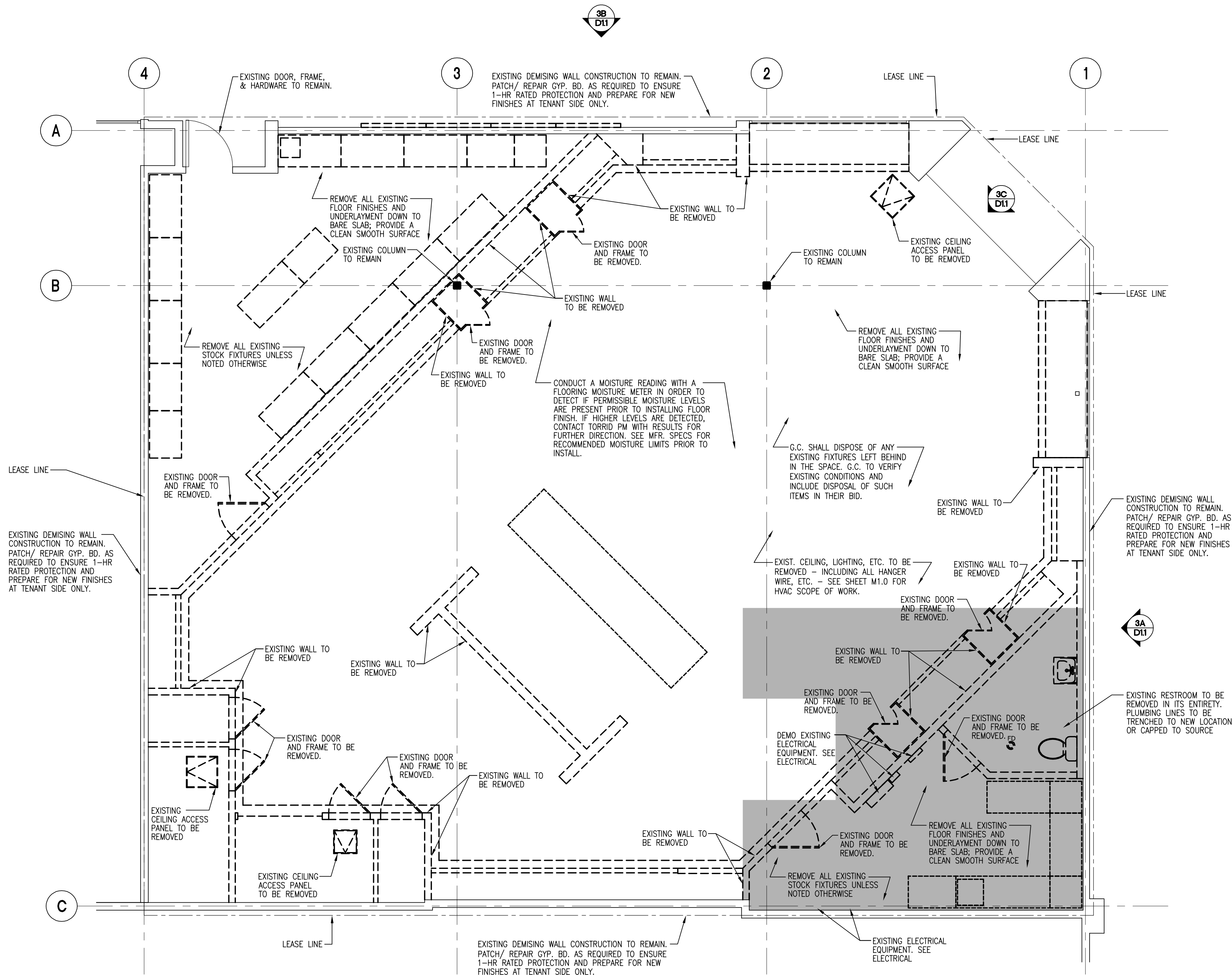
BOWER PLACE
4900 MOLLY BANISTER DR.
RED DEER, AB T4R 1N9

SPACE #230 STORE #3532-B

ARCVISION
MANAGEMENT CONSULTANTS

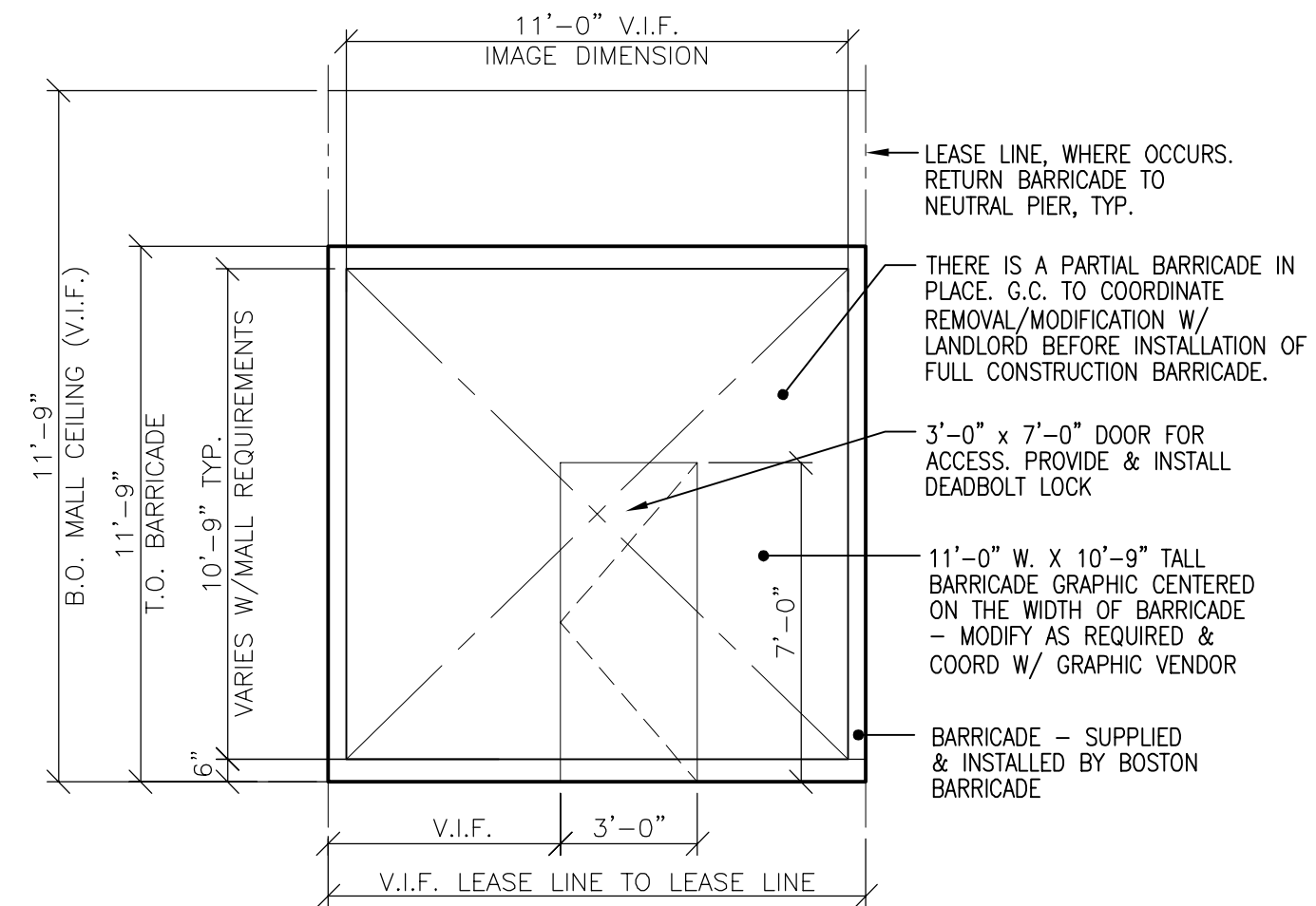
TORRID

REGISTRATION SEAL



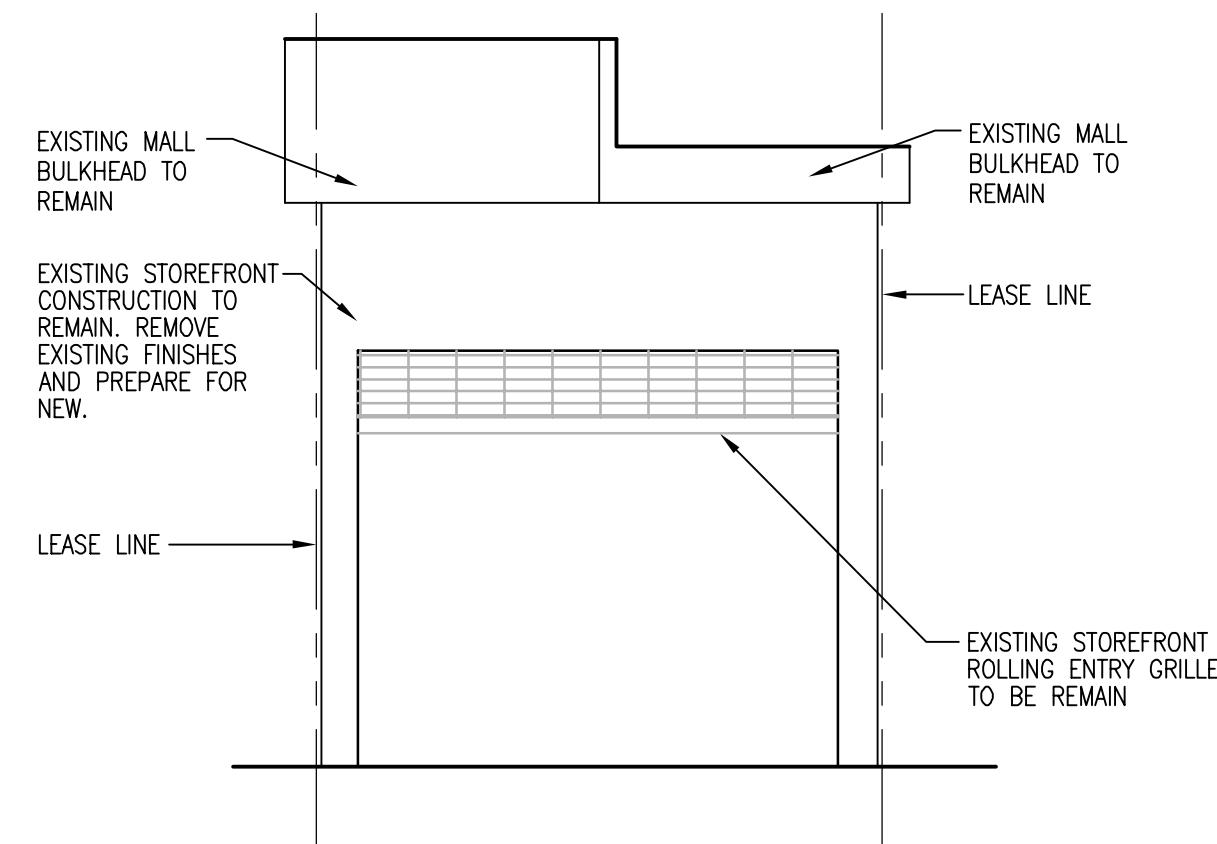
1 DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

- NOTES:**
- G.C. TO VERIFY ALL DIMENSIONS WITHIN (1) WEEK OF START OF PROJECT &/OR BEFORE ANY NEW CONSTRUCTION BEGINS. ANY DISCREPANCIES TO BE RESOLVED WITH TORRID PROJECT MANAGER PRIOR TO START OF FRAMING OR ROUGH-IN.
 - G.C. TO INSTALL TENANT PROVIDED GRAPHICS 48 HOURS AFTER START DATE, BARRICADE CONSTRUCTION OR RECEIPT OF GRAPHICS.
 - CONTRACTOR TO VERIFY, PRIOR TO BIDDING, COMPLETE SCOPE OF DEMOLITION. ALL REQUIRED DEMOLITION TO BE INCLUDED IN THE BASE BID. DEMOLITION PLAN IS ONLY AN ESTIMATE OF SCOPE OF WORK.
 - ALL DEMOLITION WORK IS BY G.C. UNLESS NOTED OTHERWISE.
 - G.C. SHALL CONTACT THE MALL OPERATIONS MANAGER & CONFIRM THE REQUIREMENTS FOR THE STOREFRONT BARRICADE & PROVIDE ACCORDINGLY
 - G.C. TO VERIFY IF THERE ARE ANY OBSTACLES WITHIN FIRST WEEK. IF THERE ARE ANY OBSTACLES IN OBTAINING PROPER HEIGHTS FOR FIXTURES OR FINISHES CONTACT TORRID PROJECT MANAGER IMMEDIATELY.
 - WHERE COMMUNICATION, COMPUTER, SECURITY, OR TELEPHONE LINES ARE (RE)LOCATED, COORDINATE WITH TORRID PM FOR ROUTING AND TIMING OF NEW LINES TO SERVICE REGISTERS AND SECURITY/ SOUND. ABANDONED TELEPHONE AND COMMUNICATION LINES ARE TO BE IDENTIFIED, MARKED AND CAPPED AS REQUIRED TO NEAREST AVAILABLE JUNCTION BOX OR SOURCE AND/OR REMOVED BY G.C. V.I.F.
 - FIELD VERIFY FOR ANY RECESSED STANDARDS. IF EXISTING, CONTACT TORRID PM IMMEDIATELY.
 - CONSTRUCTION SITE TO BE A NON-SMOKING ENVIRONMENT AT ALL TIMES.
 - SUPERINTENDENT TO HAVE A WALK THROUGH WITH ELECTRICAL CONTRACTOR AND DEMOLITION CONTRACTOR PRIOR TO DEMOLITION TO IDENTIFY CIRCUITS AND WIRING THAT CAN BE RETAINED FOR THE NEW LAYOUT.
- DEMOLITION NOTES:**
- EXISTING DEMISING WALLS - REMOVE ALL EXISTING FIXTURES ON WALLS - REPAIR, REPLACE OR INSTALL NEW 5/8" TYPE "X" GYPSUM BOARD.
 - REMOVE ANY EXISTING FIXTURES AND MATERIALS IN SPACE. REMOVE EXISTING CEILING AND GRID, AS NECESSARY. UNLESS OTHERWISE NOTED.
 - CONTRACTOR TO VERIFY CONDITION OF ANY EXISTING DOORS TO REMAIN. VERIFY CONDITION OF HARDWARE. REPLACE IF NECESSARY. PROVIDE HARDWARE AS SPEC'D ON DRAWINGS.
 - SEE MECH. & ELECTRICAL DRAWINGS FOR FURTHER DEMOLITION WORK.
 - G.C. TO VERIFY AND REMOVE ADDITIONAL ITEMS PER PLANS AS REQ'D.
 - GENERAL CONTRACTOR TO MAINTAIN THE INTEGRITY OF ALL FIRE-RATED CONSTRUCTION. G.C. TO REPLACE OR RELOCATE, IN ACCORDANCE W/ LOCAL CODES, ALL FIRE SUPPRESSION & FIRE ALARM EQUIPMENT DISTURBED BY DEMOLITION OR CONSTRUCTION.
 - REMOVE ALL DEMOLITION MATERIALS INCLUDING RUBBISH AND DEBRIS PRIOR TO NEW CONSTRUCTION.
 - G.C. TO REMOVE ALL FLOORING & SUB-FLOORING MATERIAL DOWN TO THE SLAB - PROVIDE SMOOTH LEVEL SLAB FOR SCHEDULED FINISHES AND REMOVE ALL ADHESIVES, SOLVENTS OR OTHER COMPOUNDS - CHEMICAL PREPARATION OF THE SLAB IS NOT ACCEPTABLE - REFER TO MANUFACTURER'S INSTALLATION DIRECTIONS FOR FURTHER REQUIREMENTS.
 - FIRE RATING OF EXISTING FIREPROOFING TO BE MAINTAINED AT FLOOR/CEILING AREAS, INCLUDING PATCHING OF DISTURBED AREAS, AND EXISTING STRUCTURAL ASSEMBLIES.

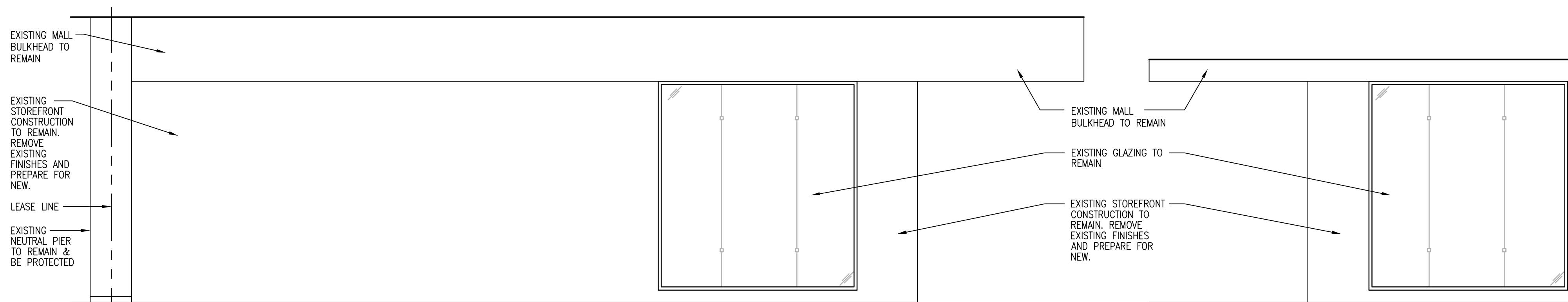


2 BARRICADE ELEVATION
SCALE: 1/4" = 1'-0"

- NOTES:**
- CONTRACTOR TO VERIFY BARRICADE REQUIREMENTS & COORDINATE INSTALLATION W/MALL MANAGEMENT & BOSTON BARRICADE

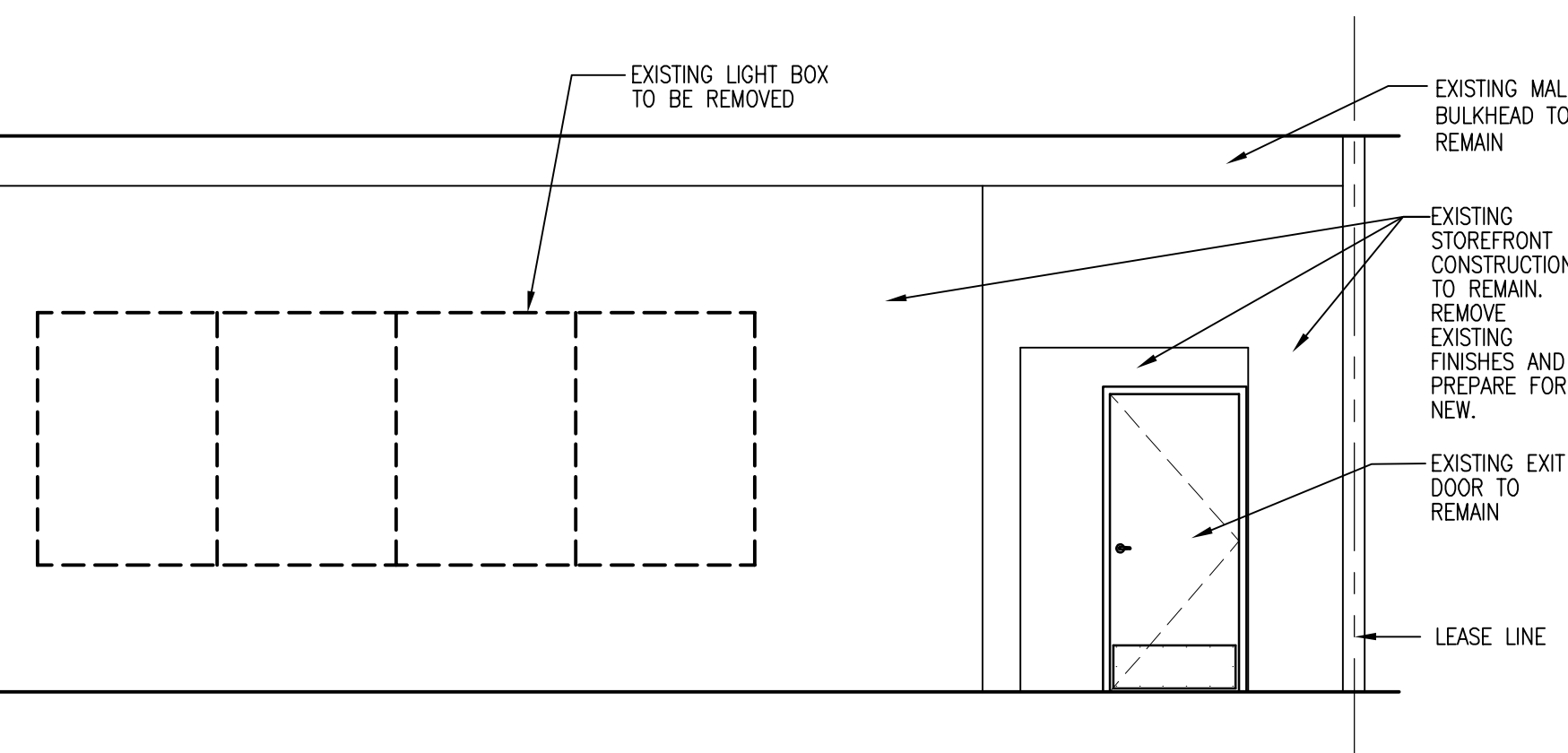


3C DEMOLITION ELEVATION
SCALE: 1/4" = 1'-0"



3A DEMOLITION ELEVATION
SCALE: 1/4" = 1'-0"

3B DEMOLITION ELEVATION
SCALE: 1/4" = 1'-0"



REGISTRATION SEAL

ARCVISION

MANAGEMENT CONSULTANTS

BOWER PLACE

4900 MOLLY BANISTER DR.

RED DEER, AB T4R 1N9

SPACE #230 STORE #5332-B

REV	DATE	DESCRIPTION

PROJECT NO: 230311

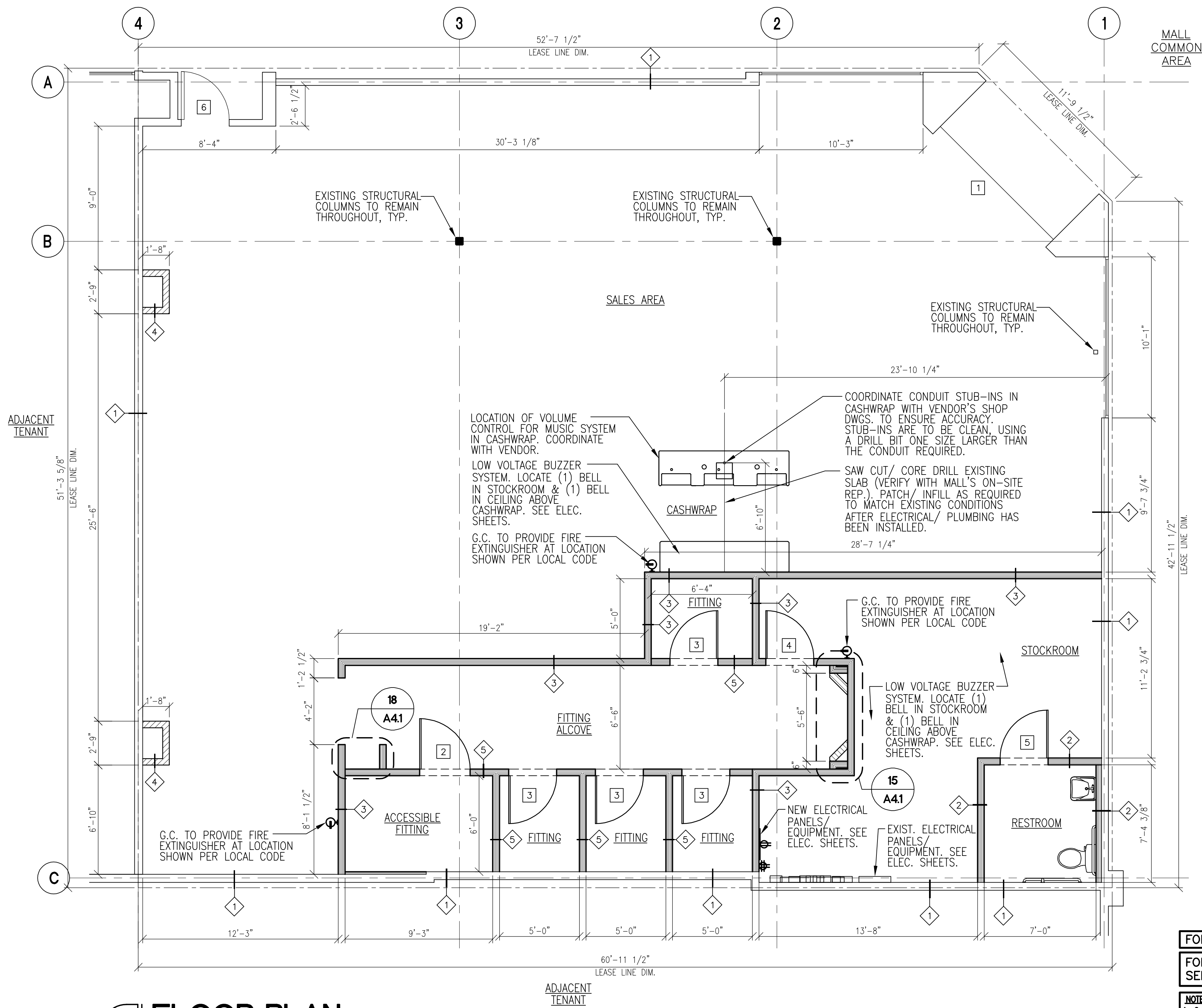
DRAWN BY: KSM

CHECKED BY: KEU

ISSUE DATE: 07/31/23

DEMOLITION PLAN

D1.0



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

FOR FINISH SCHEDULE SEE SHEET T2.0

FOR DOOR DESCRIPTION(S)
SEE DOOR SCHEDULE, SHEET T2.0

NOTE:
1. G.C. TO VERIFY ALL DIMENSIONS WITHIN (1) WEEK OF START OF PROJECT &/OR BEFORE ANY NEW CONSTRUCTION BEGINS. ANY DISCREPANCIES TO BE RESOLVED WITH TORRID P.M. PRIOR TO START OF FRAMING OR ROUGH-IN.
2. G.C. TO VERIFY FINAL FIXTURE LAYOUT AS WELL AS FINAL STANDARD LAYOUT WITH TORRID P.M. PRIOR TO INSTALLATION.

SQUARE FOOTAGES

SALES: 2,253 SQ.FT.
FITTING ROOMS: 444 SQ.FT.
STOCKROOM: 330 SQ.FT.
RESTROOMS: 65 SQ.FT.
TOTAL BUILDING: 3,092 SQ.FT.

GENERAL NOTES:

- CONTRACTOR TO INCLUDE IN BASE BID TO PATCH, FLOAT OR REPLACE GYP. BD. ON DEMISING WALLS WHERE DAMAGED, UNSIGHTLY, OR MISSING FOR AN "AS NEW" FINISHED SURFACE.
- WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.

WALL PARTITION LEGEND

ITEM	DESCRIPTION		
---	LEASE LINE		NEW FULL HEIGHT PARTITION, MTL. STUDS & FINISH TO CEILING OR DECK
---	EXISTING DEMISING PARTITION		NEW PARTITION, MTL. STUDS AND GYP. BD. STOPS SHORT OF CEILING OR DECK
---	NEW DEMISING PARTITION - PER MALL CRITERIA BY LANDLORD'S G.C.		NEW ONE-HOUR PARTITION
---	EXISTING PARTITION TO REMAIN		PARTITION TYPE - SEE SHEET A1.0
---	EXISTING MASONRY DEMISING PARTITION		DOOR TYPE - SEE SHEET T2.0

PARTITION TYPE	PARTITION TYPE	PARTITION TYPE	PARTITION TYPE	PARTITION TYPE	PARTITION TYPE	STUD GA. LIMITING HT. SCHEDULE																																																																															
<p>STRUCTURE 16'-5" @ MAX. 15'-3" @ MIN.</p> <p>G.C. TO PATCH & FLOAT 5/8" TYPE "X" GYP. BD. TO MAKE LIKE NEW, MAINTAIN ALL FIRE RATING REQUIREMENTS.</p> <p>CEILING AS SCHEDULED</p> <p>EXISTING DEMISING WALL TO REMAIN.</p> <p>TENANT SPACE</p> <p>ADJACENT TENANT WALL CORRIDOR</p> <p>NOTE: ONE-HOUR WALL PER ULC #U465</p> <p>FINISH FLOOR</p>	<p>STRUCTURE 16'-5" @ MAX. 15'-3" @ MIN.</p> <p>5/8" GYP. BD. TO CLG. ON 6" @ 20 GA. MTL. STUDS @ 16" O.C. BY G.C.</p> <p>6" MTL. STUDS AT 16" O.C. BY G.C.</p> <p>ADJ. TENANT/ STOCKROOM WALL CORRIDOR</p> <p>NOTE: ONE-HOUR WALL PER ULC #U465</p> <p>RESTROOM</p> <p>FINISH FLOOR</p>	<p>STRUCTURE 16'-5" @ MAX. 15'-3" @ MIN.</p> <p>3/8 A70</p> <p>CEILING AS SCHEDULED</p> <p>3 5/8" MTL. STUDS AT 16" O.C. BY G.C.</p> <p>5/8" GYP. BD. TO 6" ABOVE CLG.</p> <p>5/8" GYP. BD. TO 6" ABOVE CLG.</p> <p>SALES AREA</p> <p>SECURE BOTTOM TRACK TO CONCRETE SLAB USING POWER DRIVEN FASTENERS MIN. .145 AT 18" O.C.</p> <p>FINISH FLOOR</p>	<p>STRUCTURE 16'-5" @ MAX. 15'-3" @ MIN.</p> <p>CEILING AS SCHEDULED</p> <p>NEW 5/8" GYP. BD. TO 6" ABOVE CLG.</p> <p>WALL PER PLAN</p> <p>SALES AREA</p> <p>NEW 3 5/8" METAL STUD FURRING TO DECK BY G.C.</p> <p>SECURE BOTTOM TRACK TO CONCRETE SLAB USING POWER DRIVEN FASTENERS MIN. .145 AT 18" O.C.</p> <p>FINISH FLOOR</p>	<p>STRUCTURE 16'-5" @ MAX. 15'-3" @ MIN.</p> <p>3/8 A70</p> <p>CEILING AS SCHEDULED</p> <p>3 5/8" MTL. STUDS AT 16" O.C. BY G.C.</p> <p>5/8" GYP. BD. TO 6" ABOVE CLG.</p> <p>5/8" GYP. BD. TO 6" ABOVE CLG.</p> <p>SECURE BOTTOM TRACK TO CONCRETE SLAB USING POWER DRIVEN FASTENERS MIN. .145 AT 18" O.C.</p> <p>FINISH FLOOR</p>	<p>A. TABLE BELOW IS BASED ON THE STEEL STUD MANUFACTURERS ASSOCIATION 2015 IBC TECHNICAL INFORMATION CATALOG (INTERIOR WALL LIMITING HEIGHTS - NON-COMPOSITE - FULL BRACED). REQUIREMENT FOR 5 PSF LATERAL PRESSURE AND 1/240 ALLOWABLE DEFLECTION FOR FLEXIBLE FINISHES, WITH 1 LAYER OF GYP. BD. PER SIDE OF STUD.</p> <p>B. SCHEDULED HEIGHTS MAY BE INCREASED BY 50% WHERE THE STUDS ARE DIAGONALLY BRACED AT THE MAXIMUM HEIGHT POINT TO THE STRUCTURE ABOVE @ 4'-0" O.C.</p> <p>C. CAUTION: WHEN USING STUDS MANUFACTURED BY A COMPANY GENERAL CONTRACTOR TO VERIFY MANUFACTURERS STUD STRENGTH AND LIMITING HEIGHT, ADJUST GAUGE AND MAXIMUM HEIGHT RECOMMENDED BY MANUFACTURER'S CURRENT PRINTED SPECIFICATION.</p> <table><tr><th>Stud Width</th><th>Stud Type</th><th>Stud Gauge</th><th>Stud Spacing</th><th>Maximum Height</th></tr><tr><td>1-5/8"</td><td>162S125-30</td><td>20 GA. DRYWALL</td><td>16"</td><td>8'-5"</td></tr><tr><td></td><td>162S125-33</td><td>20 GA. STRUCTURAL</td><td>16"</td><td>8'-8"</td></tr><tr><td>2-1/2"</td><td>250S125-30</td><td>20 GA. DRYWALL</td><td>16"</td><td>11'-7"</td></tr><tr><td></td><td>250S125-33</td><td>20 GA. STRUCTURAL</td><td>16"</td><td>12'-0"</td></tr><tr><td></td><td>250S125-43</td><td>18 GA.</td><td>16"</td><td>13'-0"</td></tr><tr><td>3-5/8"</td><td>362S125-30</td><td>20 GA. DRYWALL</td><td>16"</td><td>15'-6"</td></tr><tr><td></td><td>362S125-33</td><td>20 GA. STRUCTURAL</td><td>16"</td><td>16'-0"</td></tr><tr><td></td><td>362S125-43</td><td>18 GA.</td><td>16"</td><td>17'-5"</td></tr><tr><td></td><td>362S125-54</td><td>16 GA.</td><td>16"</td><td>18'-7"</td></tr><tr><td></td><td>362S125-68</td><td>14 GA.</td><td>16"</td><td>19'-11"</td></tr><tr><td>6"</td><td>600S125-30</td><td>20 GA. DRYWALL</td><td>16"</td><td>22'-11"</td></tr><tr><td></td><td>600S125-33</td><td>20 GA. STRUCTURAL</td><td>16"</td><td>23'-9"</td></tr><tr><td></td><td>600S125-43</td><td>18 GA.</td><td>16"</td><td>26'-1"</td></tr><tr><td></td><td>600S125-54</td><td>16 GA.</td><td>16"</td><td>27'-11"</td></tr><tr><td></td><td>600S125-68</td><td>14 GA.</td><td>16"</td><td>30'-0"</td></tr></table> <p>NESTED STUD COLUMNS: SEE PLAN FOR SIZES AND GAUGE. NESTED STUD BEAMS: SEE PLANS FOR SIZES AND GAUGE.</p>	Stud Width	Stud Type	Stud Gauge	Stud Spacing	Maximum Height	1-5/8"	162S125-30	20 GA. DRYWALL	16"	8'-5"		162S125-33	20 GA. STRUCTURAL	16"	8'-8"	2-1/2"	250S125-30	20 GA. DRYWALL	16"	11'-7"		250S125-33	20 GA. STRUCTURAL	16"	12'-0"		250S125-43	18 GA.	16"	13'-0"	3-5/8"	362S125-30	20 GA. DRYWALL	16"	15'-6"		362S125-33	20 GA. STRUCTURAL	16"	16'-0"		362S125-43	18 GA.	16"	17'-5"		362S125-54	16 GA.	16"	18'-7"		362S125-68	14 GA.	16"	19'-11"	6"	600S125-30	20 GA. DRYWALL	16"	22'-11"		600S125-33	20 GA. STRUCTURAL	16"	23'-9"		600S125-43	18 GA.	16"	26'-1"		600S125-54	16 GA.	16"	27'-11"		600S125-68	14 GA.	16"	30'-0"
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1 EXISTING ONE-HOUR RATED DEMISING WALL PARTITION N.T.S.	2 RESTROOM PARTITION N.T.S.	3 WALL PARTITION N.T.S.	4 WALL PARTITION N.T.S.	5 WALL PARTITION N.T.S.																																																																																	

REGISTRATION SEAL

TORRID

ARCVISION
MANAGEMENT CONSULTANTS

BOWER PLACE

4900 MOLLY BANISTER DR.

RED DEER, AB T4R 1N9

SPACE #230 STORE #532-B

NAME

DESCRIPTION

REV

DATE

PROJECT NO: 230311

DRAWN BY: KSM

CHECKED BY: KEU

ISSUE DATE: 07/31/23

FLOOR PLAN

A1.0

CEILING TYPE SCHEDULE	
SYMBOL	DESCRIPTION
CL-1	5/8" GYP. BD. OVER 3 5/8" X 18 GA. MTL. STUDS (362S162-43) @ 16" O.C. PREPARE FOR PAINT OR OTHER FINISHES, AS NOTED. HEIGHT PER PLAN.
CL-2	ACOUSTICAL CEILING SYSTEM. ENSURE GRID AND TILES ARE COMPATIBLE PRIOR TO ORDERING. ALL PIPES/ CONDUIT/ DUCTWORK, ETC. TO BE ABOVE CEILING. IF POSSIBLE, ANY COMPONENTS THAT ARE BELOW CEILING ARE TO BE GANGED, PARALLEL & PERPENDICULAR TO LEASE LINES.
CL-3	TO REMAIN OPEN TO DECK ABOVE. ALL CONDUITS SHALL BE GANGED, PARALLEL & PERPENDICULAR TO LEASE LINES. ALL PIPES, DUCTS & FIXTURES SHALL BE SUPPORTED FROM HANGRODS, NOT WIRE. REMOVE ANY UNUSED ITEMS. VERIFY HEIGHT IN FIELD.
CL-4	EXISTING GYP. BD. SOFFIT/ CEILING. PATCH/ REPAIR/ REPLACE AS REQUIRED FOR NEW FINISHES.
CL-5	EXISTING ACOUSTICAL CEILING SYSTEM. PATCH/ REPAIR/ REPLACE AS REQUIRED TO MATCH EXISTING. PROVIDE NEW A.C.T. WHERE REQUIRED. V.I.F. TYPE BEFORE ORDERING.

EMERGENCY LIGHTING NOTE:

1. G.C. TO COORDINATE LOCATION OF STOCKROOM EMERGENCY LIGHTING LOCATED ADJACENT TO SHELVING UNITS AND CLEAR SHELVING. VERIFY W/ TORRID P.M.

LIGHTING NOTE:

1. FINAL LOCATIONS OF ALL TRACK LIGHTING IN SALES AREA TO BE APPROVED BY TORRID P.M. G.C. TO COORDINATE LOCATIONS WITH FINAL STORE FIXTURE LAYOUT.

FIRE PROTECTION NOTES:

1. FIRE SPRINKLER/ ALARM DESIGN, IF REQUIRED, SHALL BE CONDUCTED BY A STATE CERTIFIED DESIGNER.
2. FIRE SPRINKLER/ ALARM CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO LANDLORD AND ALL APPLICABLE CODE OFFICIALS, AS REQUIRED, FOR APPROVAL/ PERMITS.
3. FIRE SPRINKLER/ ALARM CONTRACTOR SHALL USE CEILING PLANS FOR LAYOUT TO COORDINATE SPRINKLER HEAD LOCATIONS AND ALTERATIONS OF EXISTING SYSTEM TO AVOID CONFLICTS WITH EXISTING CONDITIONS OR MECHANICAL AND ELECTRICAL SYSTEMS.
4. IT IS THE INTENT THAT SPRINKLER MAIN AND BRANCH LINES WILL NOT BE RELOCATED. HEADS WILL NEED TO BE (RE)LOCATED AS REQ'D. BY CHANGES IN THE CEILING DESIGN FROM CURRENT LAYOUT PER NFPA STANDARDS.
5. REPLACE HEADS WITH FULLY RECESSED HEADS WITH WHITE CAPS IN AN EXISTING A.C.T. OR GYP. BD. CEILING, WHERE NOT EXISTING.

REFLECTED CEILING PLAN NOTES:

1. THE REFLECTED CEILING PLAN SHALL GOVERN ALL CEILING PENETRATION LOCATIONS. MECHANICAL DUCTWORK & ALL ELECTRICAL CONDUITS SHALL BE RUN TO AVOID CONFLICT WITH THE REFLECTED CEILING PLAN. G.C. SHALL NOTIFY TENANT UPON THE START OF PROJECT OF EXISTING DUCTWORK, CONDUIT OR OTHER EXISTING SYSTEMS WILL CONFLICT WITH THE PROPOSED REFLECTED CEILING PLAN. NO MODIFICATIONS TO THE REFLECTED CEILING PLAN WILL BE ACCEPTED DUE TO INSTALLATION OF CONTRACTOR PROVIDED SYSTEMS OR EQUIPMENT.
2. PROVIDE CEILING ACCESS PANELS IN GYP. BD. CEILINGS, AS REQUIRED BY ENGINEERS & FOR ANY EXISTING LANDLORD EQUIPMENT. PAINT TO MATCH ADJACENT CEILING FINISHES.
3. PROVIDE ADEQUATE CLEARANCES FOR DUCTS & RELATED APPURTENANCE ITEMS NECESSARY TO MAINTAIN THE SPECIFIED HEIGHTS FOR CEILING SYSTEMS AND LIGHT FIXTURES ABOVE THE FINISHED FLOOR.
4. TRACK LIGHTS/ BIAIX FIXTURES TO BE ALIGNED IN GRID PATTERN AND LENGTH OF TRACK TO BE OFFSET 2" PARALLEL TO GRID. AIM PER TENANT'S DIRECTION.
5. G.C. TO COORDINATE EXACT LOCATION OF SPEAKERS WITH VENDOR.
6. CEILING COMPONENTS IN SALES AREA INCLUDING A.C.T. GRID, MECH. DIFFUSERS AND CEILING GRATES TO BE PAINTED "P-2". COORDINATE WITH TENANT.

CONTRACTOR'S NOTE:

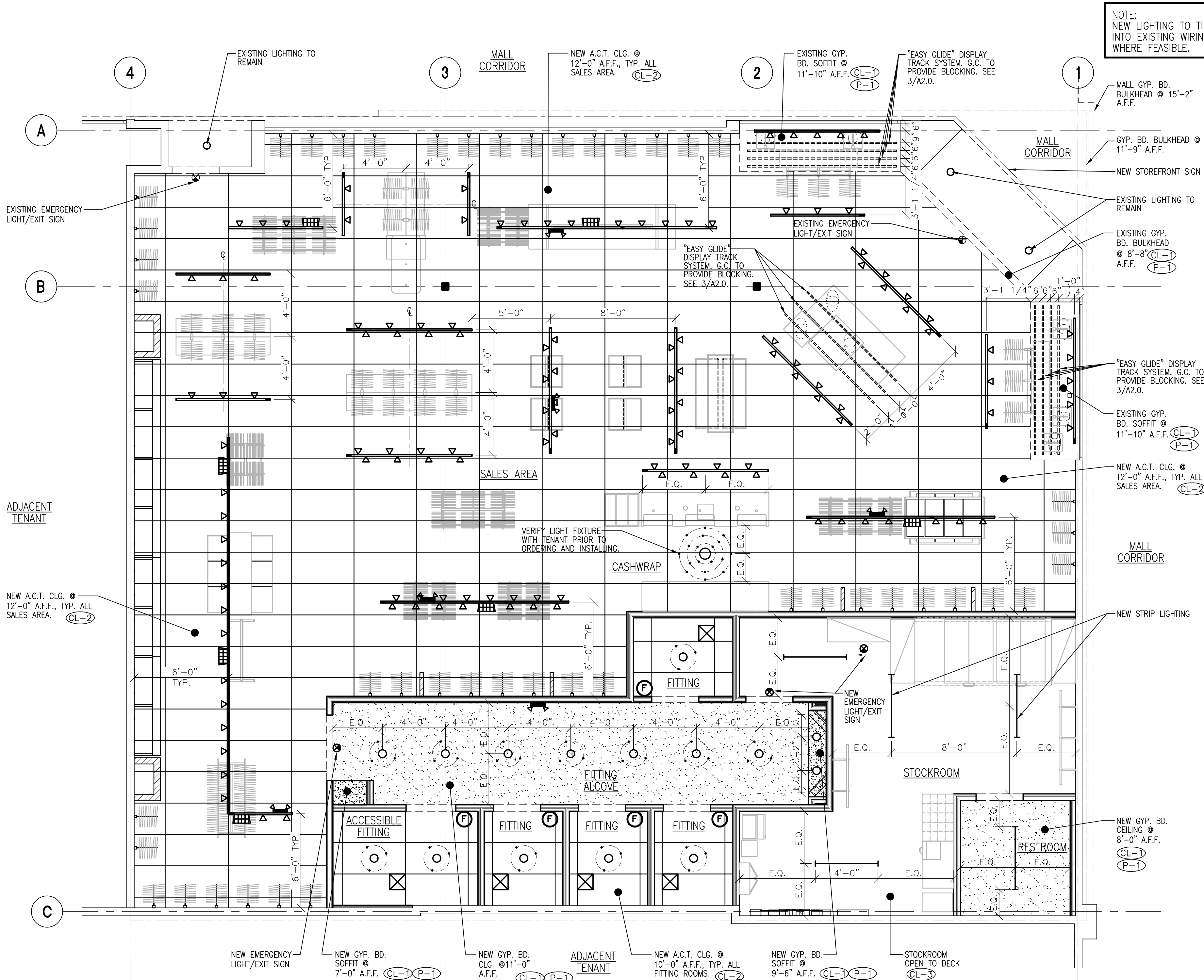
1. WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS & DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF, TO TENANT REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. EXTRAS WILL NOT BE ALLOWED FOR JOB OR CODE COMPLIANCE CONDITIONS AFTER COMMENCEMENT OF CONSTRUCTION.

LIGHT FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURER	CATALOG NO.	DESCRIPTION	BULB	MOUNT	REF NOTES
○	A	INDY	CV6T-126/42T-MVOLT-NDB/ CV6T-OR-CS-PF	6" VERTICAL CFL DOWNLIGHT	--	RECESSED	1
■	C	JUNO	T259L-30K-WH	TRAC-MASTER LED WALL WASH/ FLOOD	--	TRACK	1
▽	D	JUNO	T689-WH	TRAC-MASTER SPOTLIGHT W/ LED PAR30 LAMP	--	TRACK	1
—	E2	JUNO	--	TRAC-MASTER SINGLE CIRCUIT TRACK 2'-0" - WHITE FINISH	--	SUSPEND @ 12'-0" A.F.F.	1
—	E4	JUNO	--	TRAC-MASTER SINGLE CIRCUIT TRACK 4'-0" - WHITE FINISH	--	SUSPEND @ 12'-0" A.F.F.	1
—	E6	JUNO	--	TRAC-MASTER SINGLE CIRCUIT TRACK 6'-0" - WHITE FINISH	--	SUSPEND @ 12'-0" A.F.F.	1
—	E8	JUNO	--	TRAC-MASTER SINGLE CIRCUIT TRACK 8'-0" - WHITE FINISH	--	SUSPEND @ 12'-0" A.F.F.	1
○	F	JUNO	CV8-126/32/42T-820C-WH	8" VERTICAL CFL DOWNLIGHT	--	RECESSED	9
⊙	H	TROY LIGHTING	KF17414, LED4E12B-1127K CANDELABRA	CEILING PENDANT - POLISHED STAINLESS STEEL FINISH	(30) 4W LED TORPEDO	SUSPEND B.O. FIXT. @ 7'-9" A.F.F.	1
⊙	I	TROY LIGHTING	KF17414-20-1, LED4E12B-1127K CANDELABRA	FITTING - CEILING PENDANT - POLISHED STAINLESS STEEL FINISH	(8) 15W E14 CLR	SUSPEND B.O. FIXT. @ 8'-0" A.F.F.	1
—	J	LITHONIA	ZLIN L48 5000LM FST MVOLT 30K 80CR1 WH	48"L LED STRIP - WHITE FINISH	--	SUSPEND @ 13'-0" A.F.F./ SURFACE	1
--	P	SUMILITE	--	BACKLIT MIRROR LIGHTING	(2) 58" XL T5	PREMOUNTED ON FIXT.	1
⊙	R	--	--	FITTING ROOM FAN SEE ELECTRICAL SHEETS	--	--	9
⊙	W	JUNO	--	EXIT SIGN W/ REQUIRED LETTERS	--	DIRECTLY BELOW CLG OR B.O. FIXT. @ 12'-0"	1
⊙	Y	LITHONIA	ELM6L-UVOLT-LTP-SORT	SALES/ FITTING ALCOVE: EMERGENCY WALL PACK W/90 MIN BATTERY BACKUP	--	CLG OR B.O. FIXT. @ 12'-0"	1,6,7
⊙	YY	MAXILUME	ELM-LED-803	STOCK/HALL/RESTROOM: EMERGENCY WALL PACK W/90 MIN BATTERY BACKUP	--	WALL @ 8'-0" A.F.F.	1,6,7
⊙	Z	--	--	EXHAUST FAN SEE MECHANICAL SHEETS	--	RECESSED/ SURFACE	1

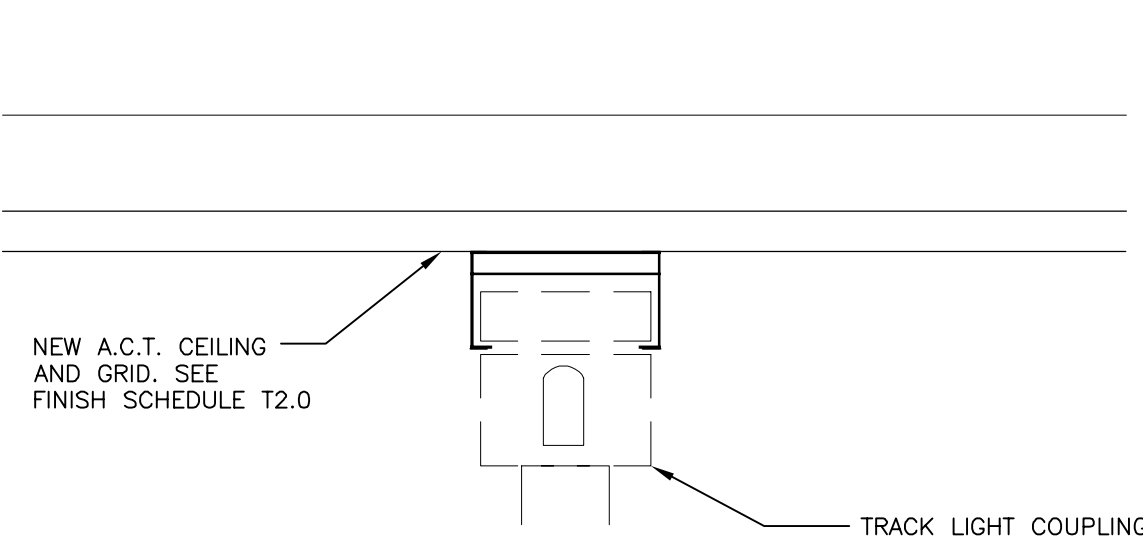
NOTES:

1. FIXTURES AND LAMPS SUPPLIED BY TENANT'S VENDOR AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
2. LIGHTING VENDOR IS RESPONSIBLE FOR VERIFYING CORRECT NUMBER OF FIXTURES/LAMPS REQUIRED.
3. ALL STOREFRONT LIGHTS AND SIGNAGE ARE TO BE ON A 24-HR TIMER SET BY G.C. COORDINATE REQUIRED HOURS WITH LANDLORD.
4. "N/L" INDICATES NIGHT LIGHT FIXTURES. COORDINATE WITH ELECTRICAL SHEETS.
5. "R" INDICATES EXISTING LIGHT FIXTURES TO BE RELOCATED. COORDINATE WITH ELECTRICAL SHEETS.
6. FIXTURES USED FOR EXIT, EMERGENCY, OR NIGHT LIGHTING TO BE ON LOCKOUT CIRCUIT.
7. ALL FIXTURES USED FOR EXIT, OR EMERGENCY LIGHTS TO HAVE 90 MINUTE BATTERY BACK UP.
8. ALL FIXTURES EXISTING TO REMAIN ARE TO BE CLEANED TO "LIKE-NEW" & RELAMPED BY G.C. REBALLAST FIXTURES ONLY AS REQUIRED.
9. FAN IS TO BE CEILING MOUNTED AND ORIENTED SO THAT AIR FLOW IS DIRECTED TOWARD FITTING ROOM BENCH. PROVIDE BLOCKING IN CLG FOR ADEQUATE SUPPORT OF FAN. REFER TO CUT SHEET ON TORRID PROCORE SITE AND ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.
10. WHEN REQUIRED - LIGHTING CONTROLS ARE SUPPLIED BY TENANT'S VENDOR AND INSTALLED BY ELECTRICAL CONTRACTOR.



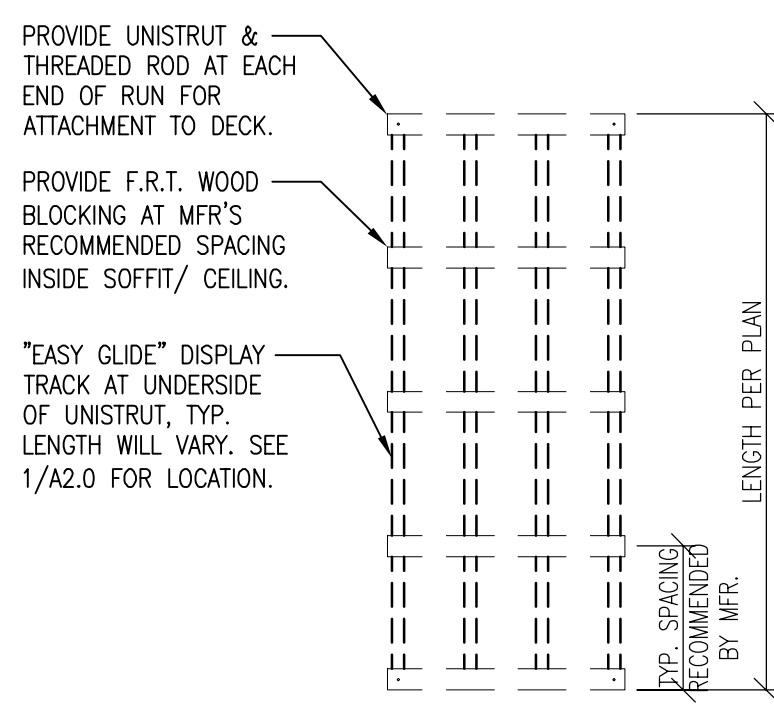
1 REFLECTED CEILING PLAN

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



2 SUSPENDED TRACK LIGHT DETAIL

SCALE: 1" = 1'-0"



3 DISPLAY TRACK DETAIL

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

REGISTRATION SEAL

BOWER PLACE

4900 MOLLY BANISTER DR.

RED DEER, AB T4R 1N9

SPACE #230 STORE #532-B

NAME

DESCRIPTION

REV. DATE

PROJECT NO: 230311

DRAWN BY: MML

CHECKED BY: KEU

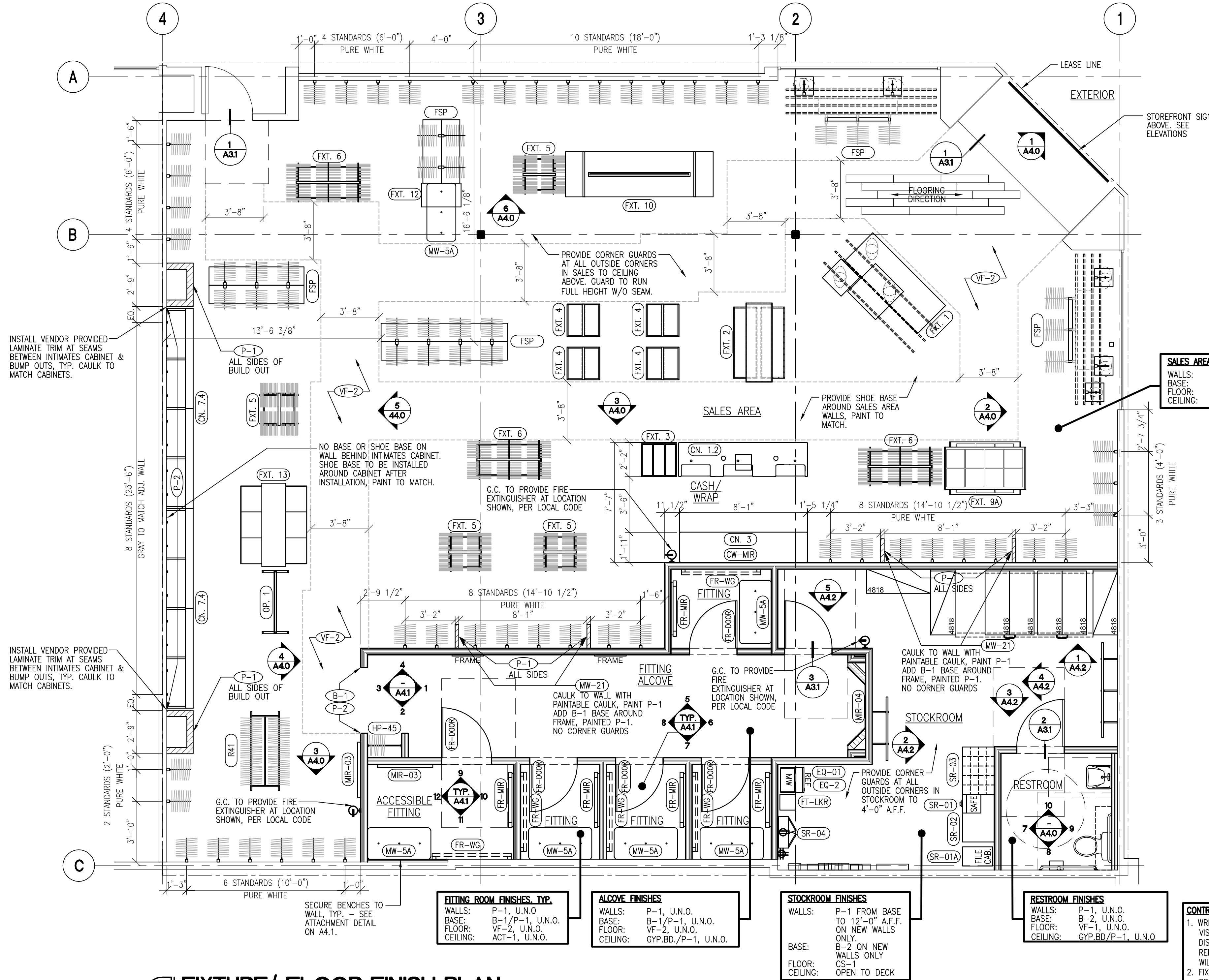
ISSUE DATE: 07/31/23

REFLECTED CEILING PLAN

A2.0

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SALES AREA FINISHES
WALLS: P-1 FROM BASE TO CLG., U.N.O.
BASE: B-1 U.N.O.
FLOOR: VF-2 U.N.O.
CEILING: ACT-1, U.N.O.

FITTING ROOM FINISHES, TYP.
WALLS: P-1, U.N.O.
BASE: B-1/P-1, U.N.O.
FLOOR: VF-2, U.N.O.
CEILING: ACT-1, U.N.O.

ALCOVE FINISHES
WALLS: P-1, U.N.O.
BASE: B-1/P-1, U.N.O.
FLOOR: VF-2, U.N.O.
CEILING: GYP.BD./P-1, U.N.O.

STOCKROOM FINISHES
WALLS: P-1 FROM BASE TO 12'-0" A.F.F. ON NEW WALLS ONLY.
BASE: B-2 ON NEW WALLS ONLY.
FLOOR: CS-1
CEILING: OPEN TO DECK

RESTROOM FINISHES
WALLS: P-1 U.N.O.
BASE: B-2, U.N.O.
FLOOR: VF-1, U.N.O.
CEILING: GYP.BD./P-1, U.N.O.

CONTRACTOR'S NOTE:

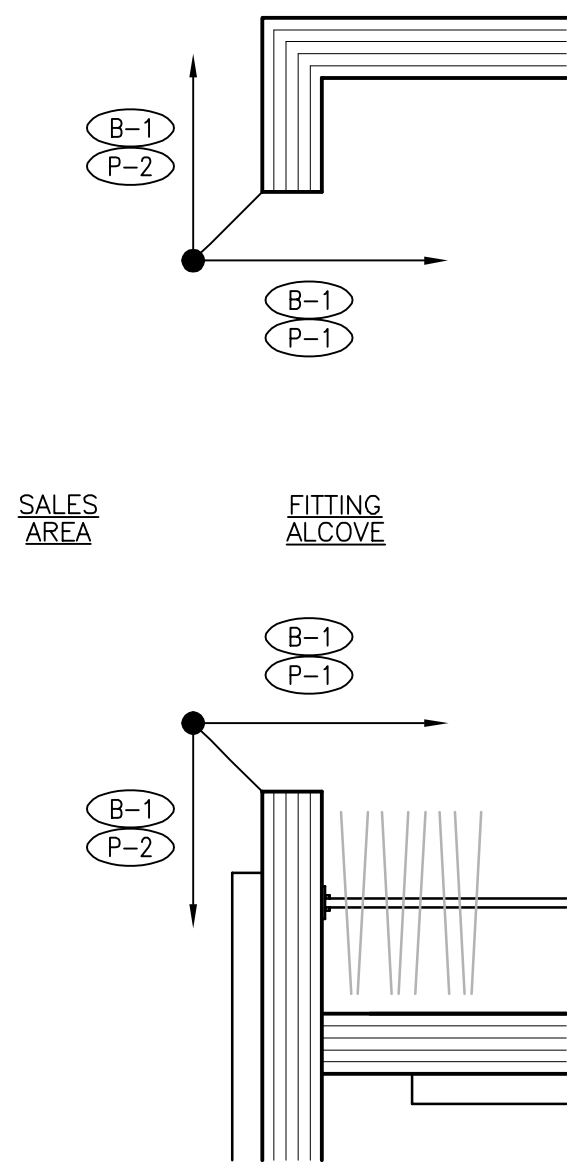
1. WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS & DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF, TO TENANT REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. EXTRAS WILL NOT BE ALLOWED FOR JOB OR CODE COMPLIANCE CONDITIONS AFTER COMMENCEMENT OF CONSTRUCTION.
2. FURNITURE PLAN, FLOOR PLAN, INTERIOR ELEVATION SHEET, REFLECTED CEILING PLAN, DEMOLITION PLAN ARE OF THE SPECIFIC STORE. DETAIL SHEETS ARE GENERAL AND MAY OR MAY NOT BE STORE SPECIFIC.

FURNITURE SCHEDULE

QUANTITY	SYMBOL	DESCRIPTION	SUPPLIED BY	INSTALLED BY	QUANTITY	SYMBOL	DESCRIPTION	SUPPLIED BY	INSTALLED BY
11	(FSP)	FREE-STANDING POST, 2-SIDED	TENANT	G.C.	1	(MIR-D4)	3-WAY MIRROR	G.C.	G.C.
1	(FXT. 2)	(TD-FXT-2) JEWELRY TABLE	TENANT	G.C.	1	(FXT. 3)	(TD-FXT-3) IMPULSE FIXTURE	TENANT	G.C.
1	(OP. 1)	(TD-OP-1) ROLLING RACK	TENANT	G.C.	1	(EQ-01)	DANBY 0.7 CU FT COUNTERTOP MICROWAVE OVEN - DMW07AA2DB	TENANT	G.C.
1	(R41)	(R41) CLEARANCE RACK	TENANT	G.C.	1	(EQ-02)	DANBY 3.2 CU FT COMPACT REFRIGERATOR - DCR032C1WDB	TENANT	G.C.
1	(HP-45)	GO-BACK BAR	TENANT	G.C.	5	(FR-WG)	(FR-WG) FITTING ROOM GRID	TENANT	G.C.
5	(MW-5A)	(TRD-MW5A) FR SOFA	TENANT	G.C.	5	(FR-MIR)	(FR-MIR) FITTING ROOM MIRROR - CUSTOM FRAMED - BACKLIT	TENANT	G.C.
1	(MW-5A)	(TRD-MW5A) SHOE SOFA	TENANT	G.C.	5	(FR-DOOR)	(FR-DOOR) FITTING ROOM DOOR	TENANT	G.C.
2	(MW-21)	PERIMETER WALL FRAME	TENANT	G.C.	1	(SR-01)	SAFE	TENANT	TENANT'S VENDOR
2	(CN. 7.4)	(TD-CN-7-4) 4-BAY INTIMATES BACK WALL CABINET	TENANT	G.C.	1	(SR-01A)	FILE CABINET	TENANT	G.C.
-	(CN. 7.1)	(TD-CN-7-1) INTIMATES BACK WALL SINGLE CABINET	TENANT	G.C.	1	(SR-02)	MANAGER'S DESK	TENANT	TENANT'S VENDOR
1	(FXT. 13)	(TD-FXT-13) PANTY TABLE	TENANT	G.C.	1	(SR-03)	TUBE STORAGE	TENANT	TENANT'S VENDOR
1	(CN. 3)	(TD-CN-3) BACK WRAP	TENANT	G.C.	1	(SR-04)	IT CABINET @ 7'-6" A.F.F.	TENANT	G.C.
1	(CN. 1.2)	(TD-CN-1-2) CASH WRAP	TENANT	G.C.	1	(FT-LKR)	LOCKER	TENANT	VENDOR
-	(CN. 2.2)	(TD-CN-2-2) CASH WRAP - ADA SIDE	TENANT	G.C.	45	--	SURFACE MOUNTED STANDARDS - SALES AREA, POWDER COATED PURE WHITE	TENANT	G.C.
9	(CW-MIR)	(TD-CWMIR) BACK WRAP MIRRORS	TENANT	G.C.	16	--	SURFACE MOUNTED STANDARDS - INTIMATES CABINET, POWDER COATED GRAY	TENANT	G.C.
1	(FXT. 10)	(TD-FXT-10) DENIM TABLE	TENANT	G.C.	--	--	CUP	TENANT	G.C.
4	(FXT. 4)	(TD-FXT-4) H RACK - ACCESSORY	TENANT	G.C.	--	--	BULLETIN BOARD	TENANT	G.C.
4	(FXT. 5)	(TD-FXT-5) DOUBLE GONDOLA	TENANT	G.C.	--	--	DETAGGER	TENANT	G.C.
3	(FXT. 6)	(TD-FXT-6) TRIPLE GONDOLA	TENANT	G.C.	4	--	MOBILE SHELVING UNITS	TENANT	TENANT'S VENDOR
1	(FXT. 9A)	(TD-FXT-9A) NESTING TABLE	TENANT	G.C.	2	--	FIXED SHELVING UNITS	TENANT	G.C. TO RELOCATE
1	(FXT. 1)	(TD-FXT-1) ENTRY TABLE	TENANT	G.C.	--	--	HANGING ROD - SIZE PER PLAN	TENANT	TENANT'S VENDOR
1	(FXT. 12)	(TD-FXT-12) SHOE TABLE	TENANT	G.C.	--	--	HANGING ROD - HANGER MANAGEMENT	TENANT	TENANT'S VENDOR
-	(MIR-01)	MIRROR - CUSTOM FRAMED	G.C.	G.C.					
-	(MIR-02)	MIRROR - CUSTOM FRAMED	G.C.	G.C.					
2	(MIR-03)	FITTING ROOM MIRROR - CUSTOM FRAMED - NON BACKLIT	G.C.	G.C.					

NOTE: STANDARDS FOR HANGING RODS FURNISHED BY VENDOR. WOOD MOUNTING STRIPS, HANGROD, FASTENERS AND INSTALLATION BY VENDOR.

2 BASE TRANSITION DETAIL
SCALE: 3/4" = 1'-0"



G.C. MISC. & TURNOVER NOTES:

1. G.C. TO REVIEW BILL OF LADING UPON RECEIPT OF ALL SHIPMENTS. ANY DAMAGES OR SHORTAGES ARE TO BE INDICATED AT RECEIPT OR WITHIN 24 HOURS. FAILURE TO DO SO WILL REQUIRE G.C. TO CONTACT VENDORS LISTED AND PURCHASE SAID ITEMS AT G.C. COST.
2. ALL OVERAGES OF TENANT SUPPLIED ITEMS ARE TO BE STORED IN STOCKROOM.
3. G.C. TO PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY CODE. G.C. TO ALSO PROVIDE THE FIRST SERVICE TAG WITH DATE PRIOR TO TURNOVER.
4. G.C. TO REPORT ANY MISSING PIECES OF VENDOR SUPPLIED SHELVING WITHIN 48 HOURS OF RECEIVING ORDER, FAILURE TO DO SO WILL RESULT IN G.C. HAVING TO REPLACE AT OWN EXPENSE.
5. VENDOR TO BOLT THE SAFE TO THE FLOOR, UNDERNEATH THE MANAGER'S DESK. COORDINATE WITH TORRID PROJECT MANAGER.
6. MEET PHONE COMPANY FOR PHONE LINES AND JACK INSTALLATION:
 - A. CALL IN ADVANCE TO FIND OUT EXPECTED TIME OF ARRIVAL.
 - B. INSTRUCT PHONE TECH TO INSTALL (1) JACK AT #1 CASH REGISTER LOCATION.
 - C. EVERY JACK SHOULD BE CLEARLY LABELED WITH PHONE NUMBER.
 - D. CALL NANCY @ (626) 839-4681 TO VERIFY INSTALLATION IS COMPLETE.
7. CONDUCT FINAL WALK THROUGH WITH DM:
 - A. BE SURE THEY HAVE ALL KEYS TO THE STORE.
 - B. WRITE DOWN ANY EXTRA REQUESTS FROM DM ON STORE INSPECTION SHEET.
 - C. VERIFY THE LIST IS COMPLETED BEFORE YOU LEAVE THE JOB SITE.
 - D. DM MUST SIGN OFF ON THIS PORTION OF G.C.'S DUTIES FOR COMPLETION OF PUNCH LIST.
8. TRUCK ARRIVAL: TRUCK WILL ARRIVE ON FRIDAY AT 7:00 AM.
9. BE PRESENT TO CORRECT ANY PROBLEMS THAT MAY ARISE DURING CONNECTIVITY TEST TO CATS WIRING CONDUCTED BY TORRID P.M.
10. COVER AND PROTECT CARPET TILES AFTER INSTALLATION.
11. PROVIDE SECOND DUMPSTER AT TURNOVER FOR TENANT REFUSE.
12. PLACE PLASTIC PIECES FOR DISPLAY TRACK IN CASHWRAP DRAWER AT TURNOVER.
13. ALL SHELVES TO BE INSTALLED IN CASHWRAP FOR TURNOVER.
14. SENSOR DETAGGERS TO BE INSTALLED ON CASHWRAP, NOT BACKWRAP (CONFIRM PLACEMENT WITH TORRID P.M.)
15. ALL HARDWARE BOXES TO BE STAGED FOR TURNOVER UNDER CORRECTLY PLACED TABLES; MUST BE DUST FREE AND STACKED BY LIKENESS.
16. OWNER SUPPLIED FITTING ROOM HOOKS TO BE INSTALLED PER ELEVATIONS.
17. MANAGER'S DESK AND MARKETING UNIT TO BE SUPPLIED AND INSTALLED BY TENANT PER LAYOUT. NO CHANGES ALLOWED WITHOUT APPROVAL.
18. ROLLER RACKING TO BE SUPPLIED AND INSTALLED BY TENANT PER THE SUPPLIED INSTRUCTIONS. NO CHANGES ALLOWED WITHOUT APPROVAL.
19. ALL 5 PALLETS OF OFFICE SUPPLIES RECEIVED FROM DDS TO BE STAGED BACK TO BACK STARTING AT THE CENTER FLOOR-TO-CEILING POST WITH BOX NUMBERS FACING FORWARD. MUST CONFIRM ALL BOXES RECEIVED AND WITHOUT DAMAGE BEFORE THE DRIVER LEAVES THE SITE.
20. PROVIDE ASSEMBLY REQUIRED UPON DELIVERY OF THE FOLLOWING:
 - A. ALL SALES FLOOR TABLES
 - B. ALL GONDOLAS AND ACCESSORY FIXTURES
 - C. ALL FLOOR-TO-CEILING POSTS
 - D. ALL INTIMATE CABINETS
21. INSTALL BULLETIN BOARDS AND OTHER MISC. OWNER SUPPLIED ITEMS PER PM/DM DIRECTION.
22. SUPPLY FITTING ROOM DOOR FRAMES. FITTING ROOM DOORS TO BE MORTISED BY G.C.
23. UNBOX ALL SHELVES AND SPREAD EVENLY AROUND PERIMETER OF SALES FOR TURNOVER. BROWN SHELVES BY DENIM TABLE. ALL PALLETS AND BOXES ARE TO BE DISCARDED.
24. LEAVE ALL HARDWARE IN BOXES AND PLACE ON EACH SIDE OF THE CENTER POST FIXTURE AND STACKED BY LIKENESS.
25. PROVIDE A FORKLIFT WITH EXTENSION AND PALLET JACK-REQUIRED TO UNLOAD TWO DELIVERIES OF FIXTURES.

PROJECT NO: 230311
DRAWN BY: LAM
CHECKED BY: KEU
ISSUE DATE: 07/31/23

A3.0

TORRID

ARCVISION
MANAGEMENT CONSULTANTS

BOWER PLACE
4900 MOLLY BANISTER DR.
RED DEER, AB T4P 1N9

SPACE #230 STORE #0532-B

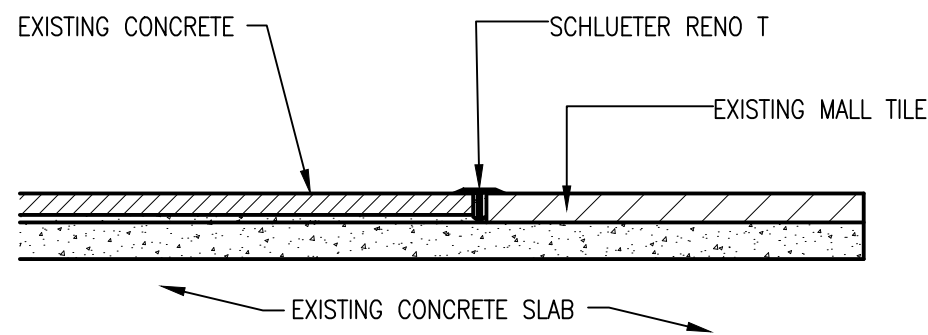
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DESCRIPTION

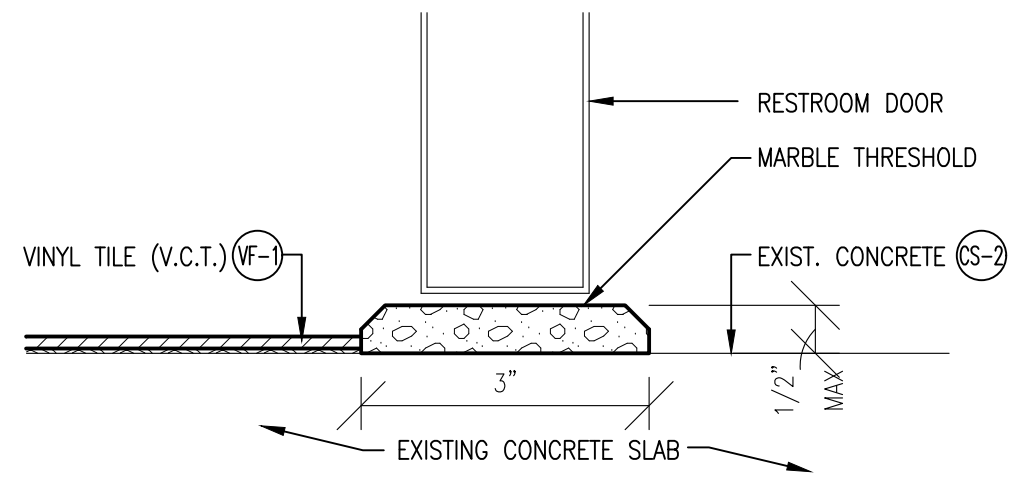
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DATE

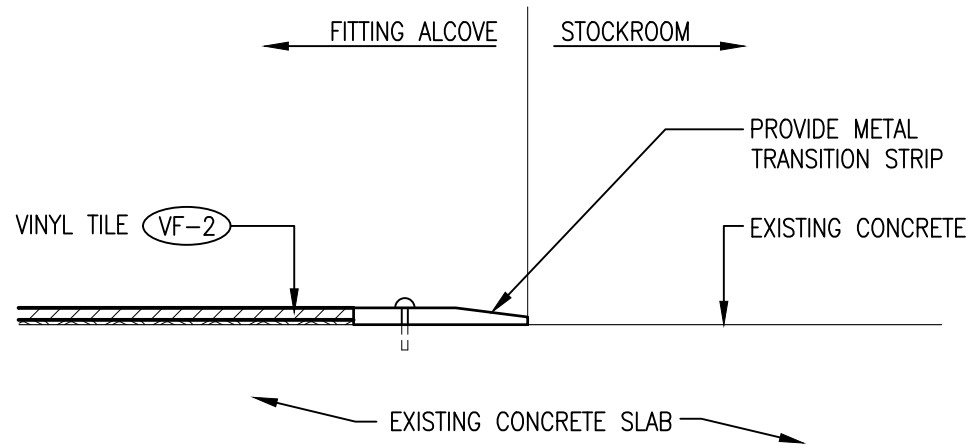
REGISTRATION SEAL



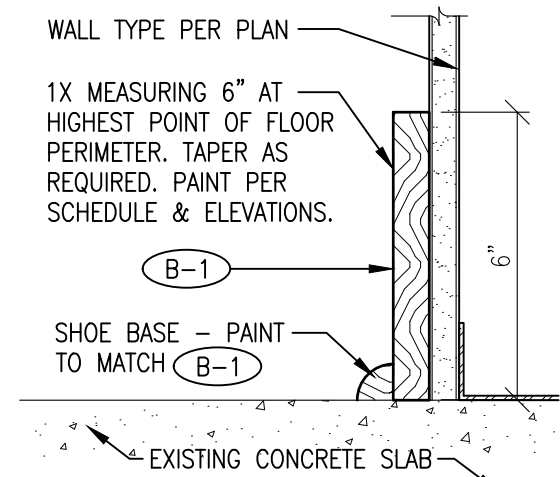
1 MALL TILE TO VINYL
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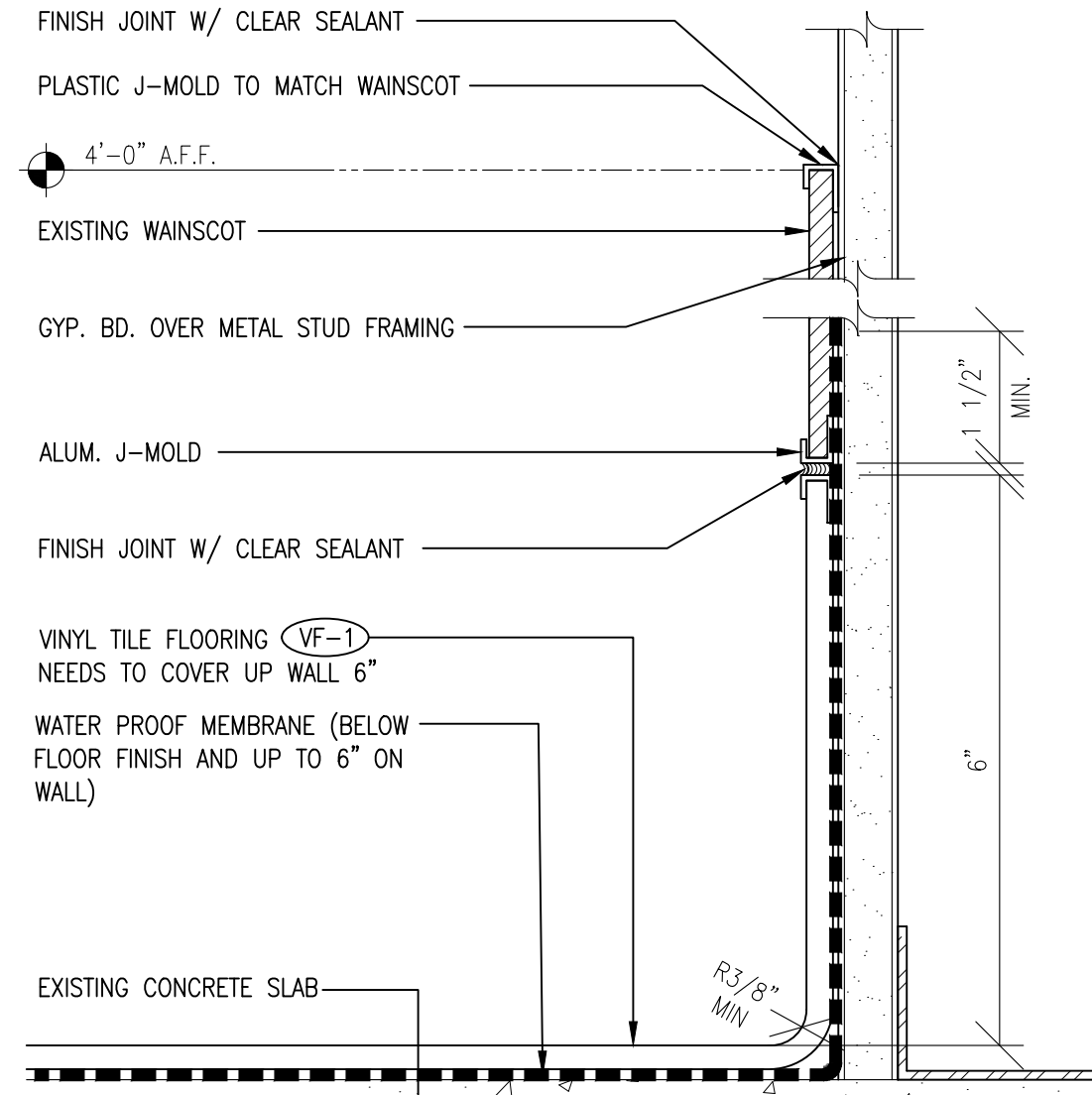
2 VINYL TILE/ CONC. DTL.
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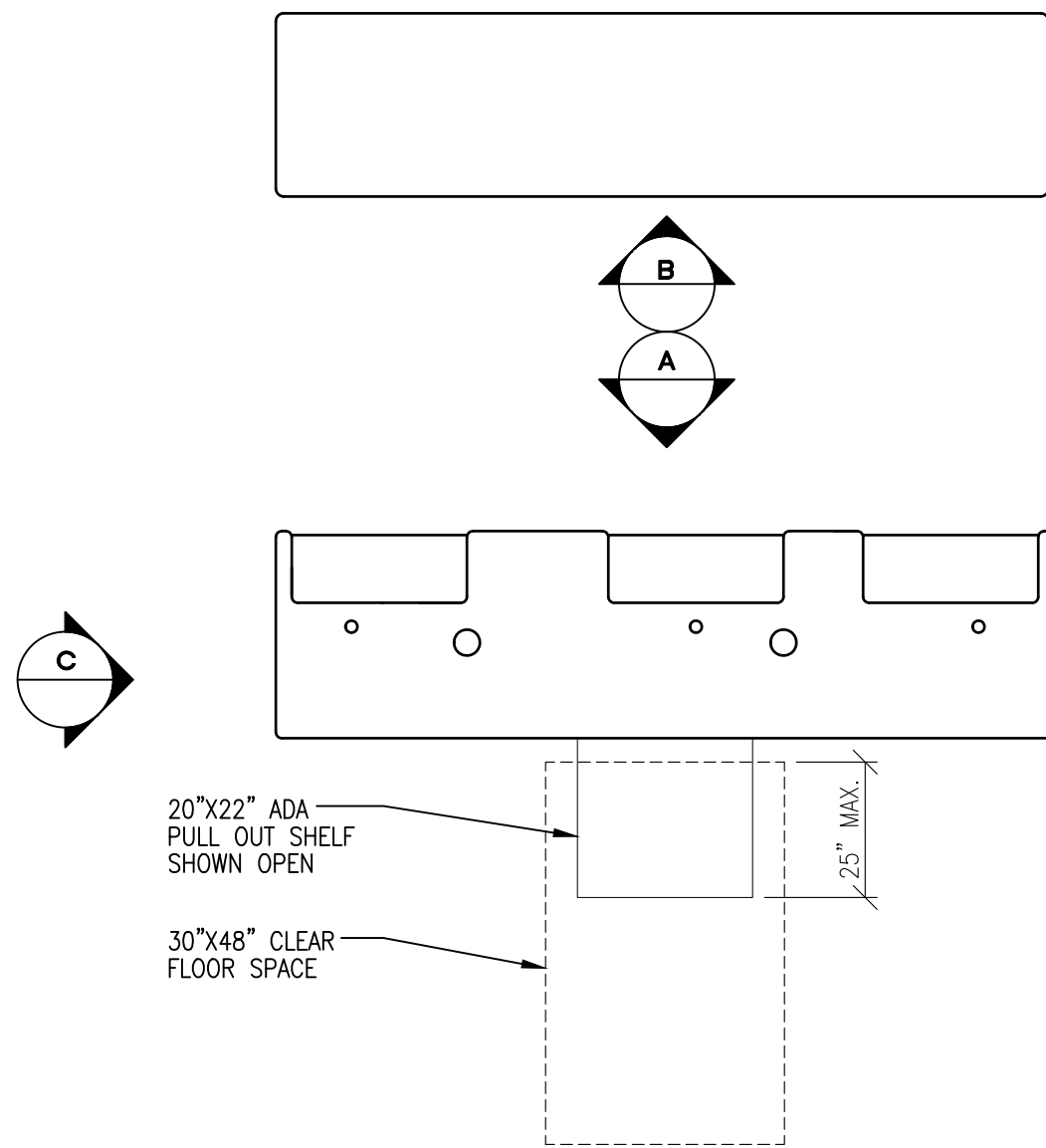
3 VINYL TILE/ CONC. DTL.
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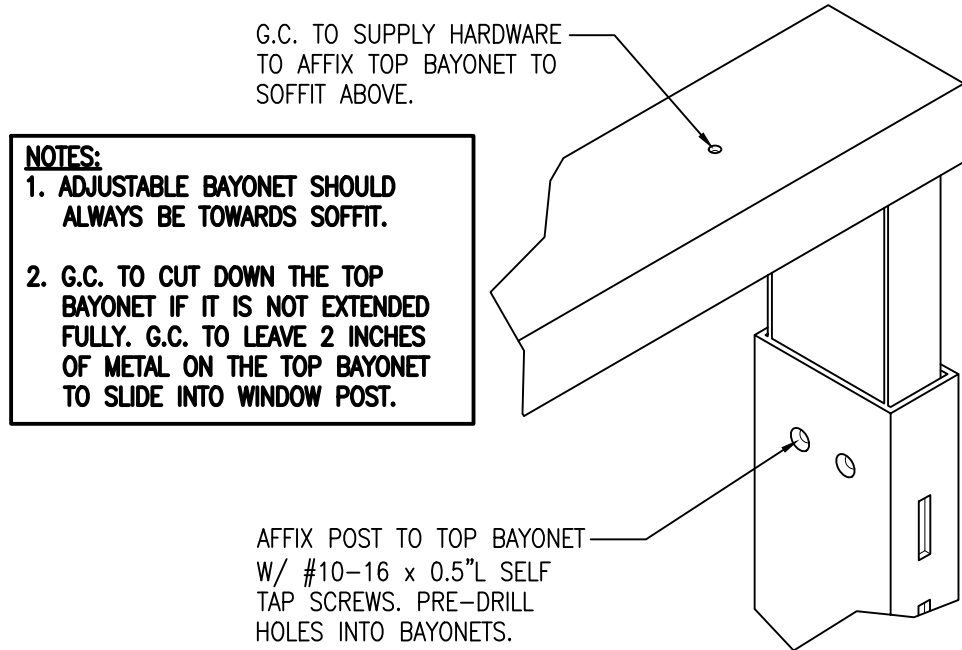
4 WOOD BASE DETAIL
SCALE: 3" = 1'-0"



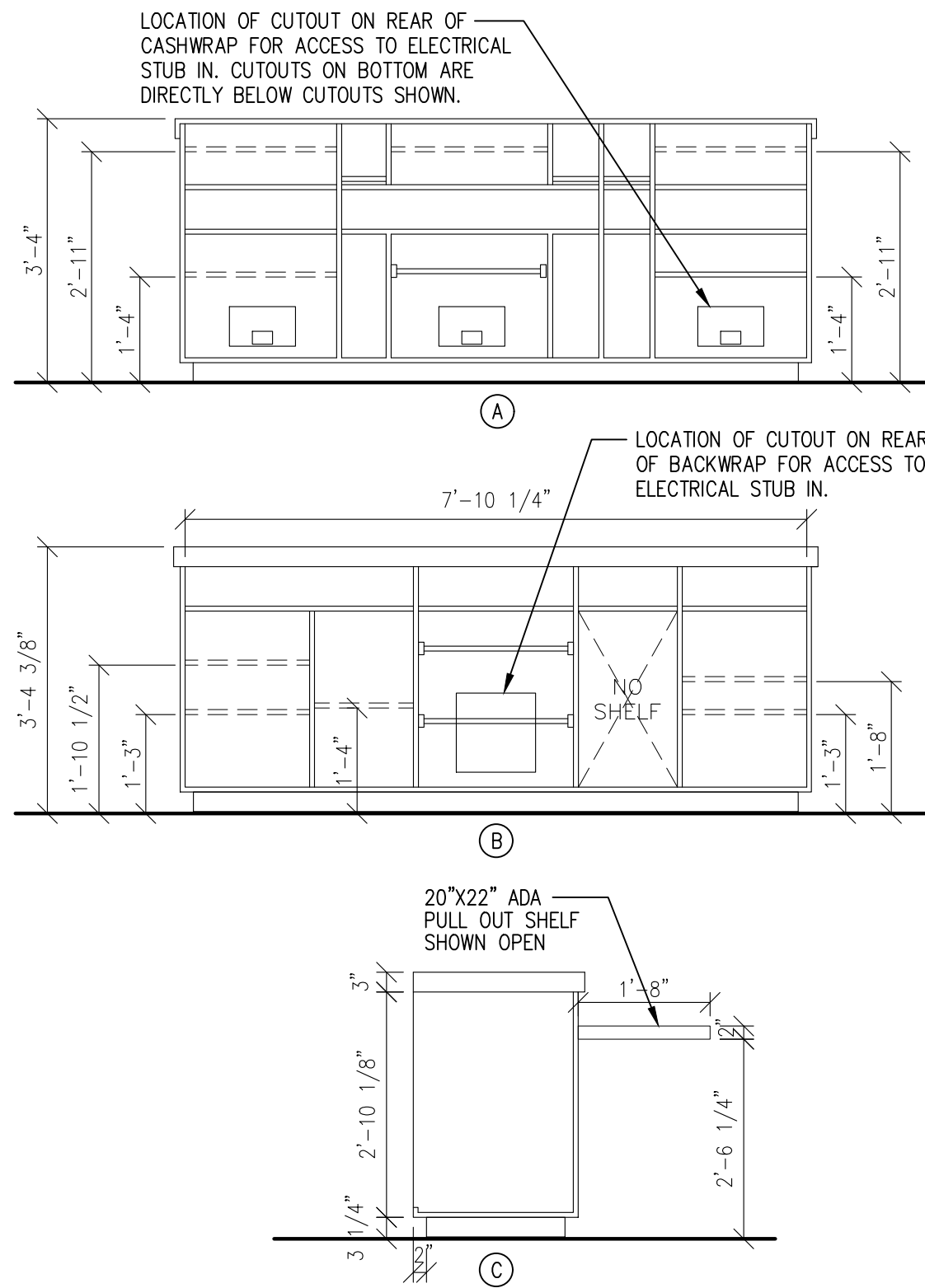
5 RESTROOM WAINSCOT DTL.
SCALE: 6" = 1'-0" *WHEN REQUIRED*



6 CASHWRAP + ADA SHELF
SCALE: 1/2" = 1'-0"



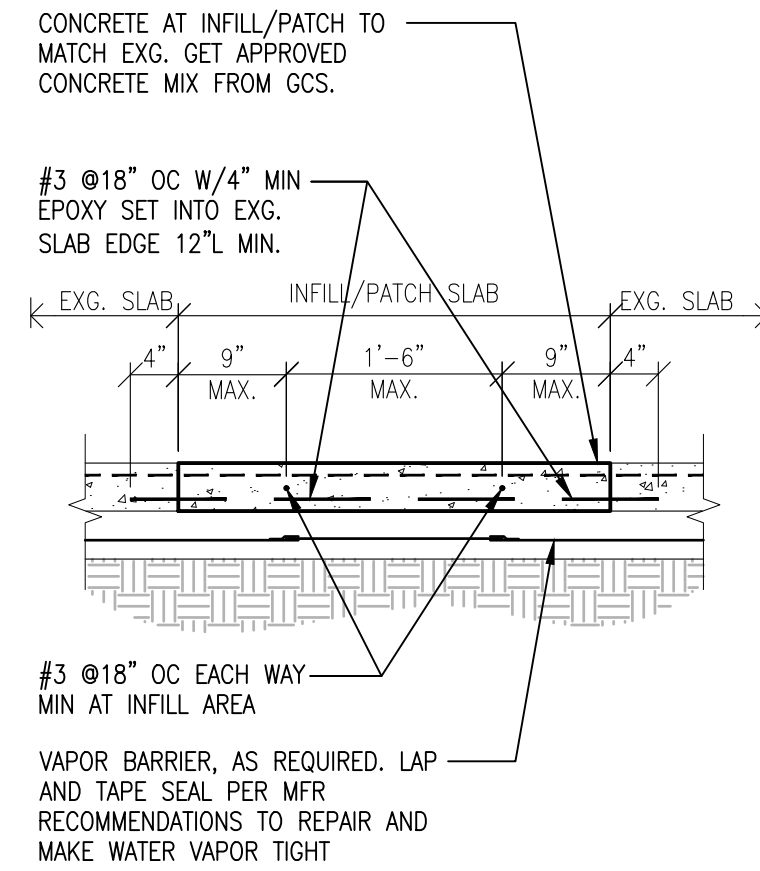
7 POST DETAIL • SOFFIT
SCALE: N.T.S



8 POST DETAIL • FLOOR
SCALE: N.T.S

DETAIL
NOT
CURRENTLY
USED

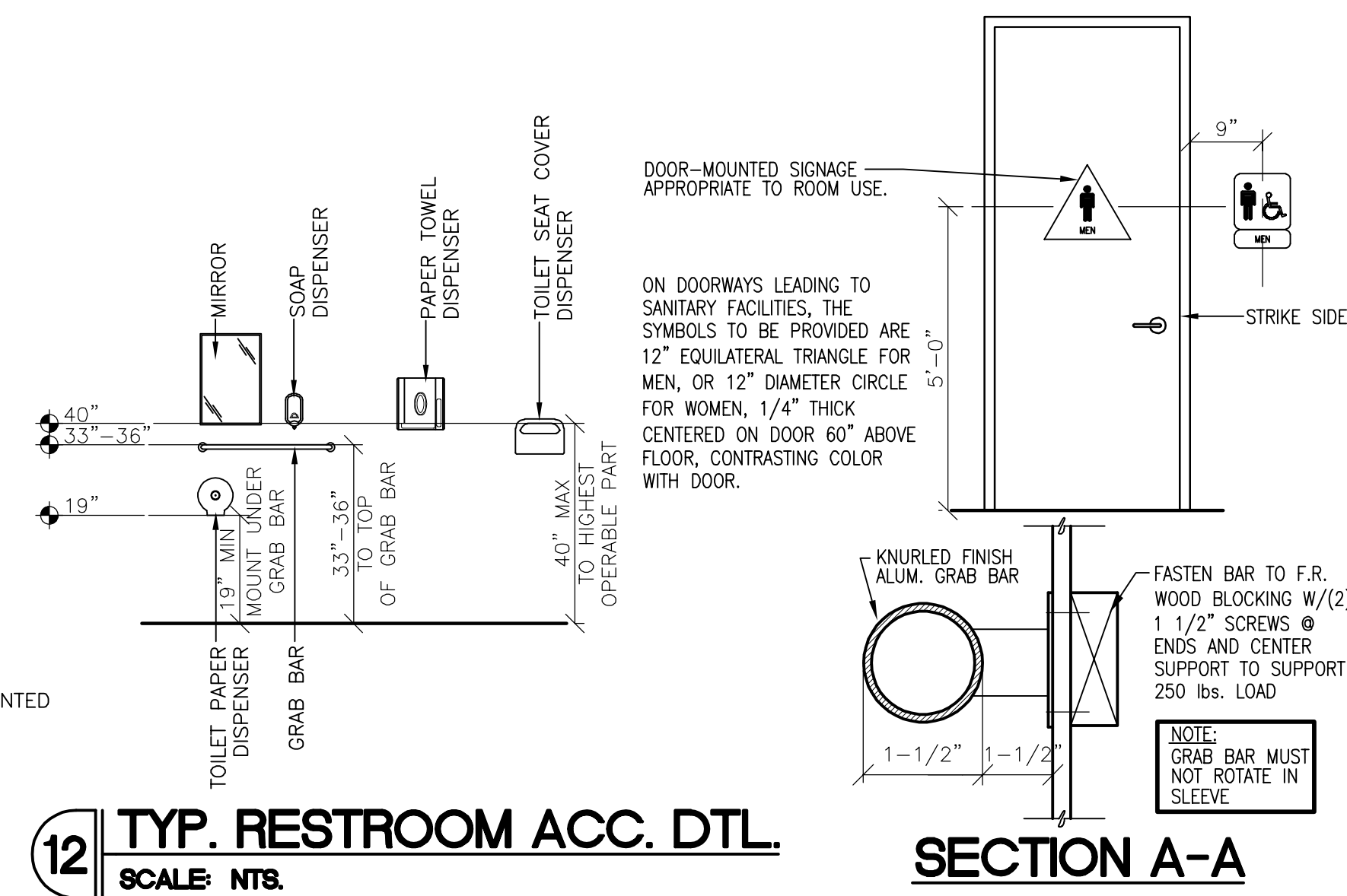
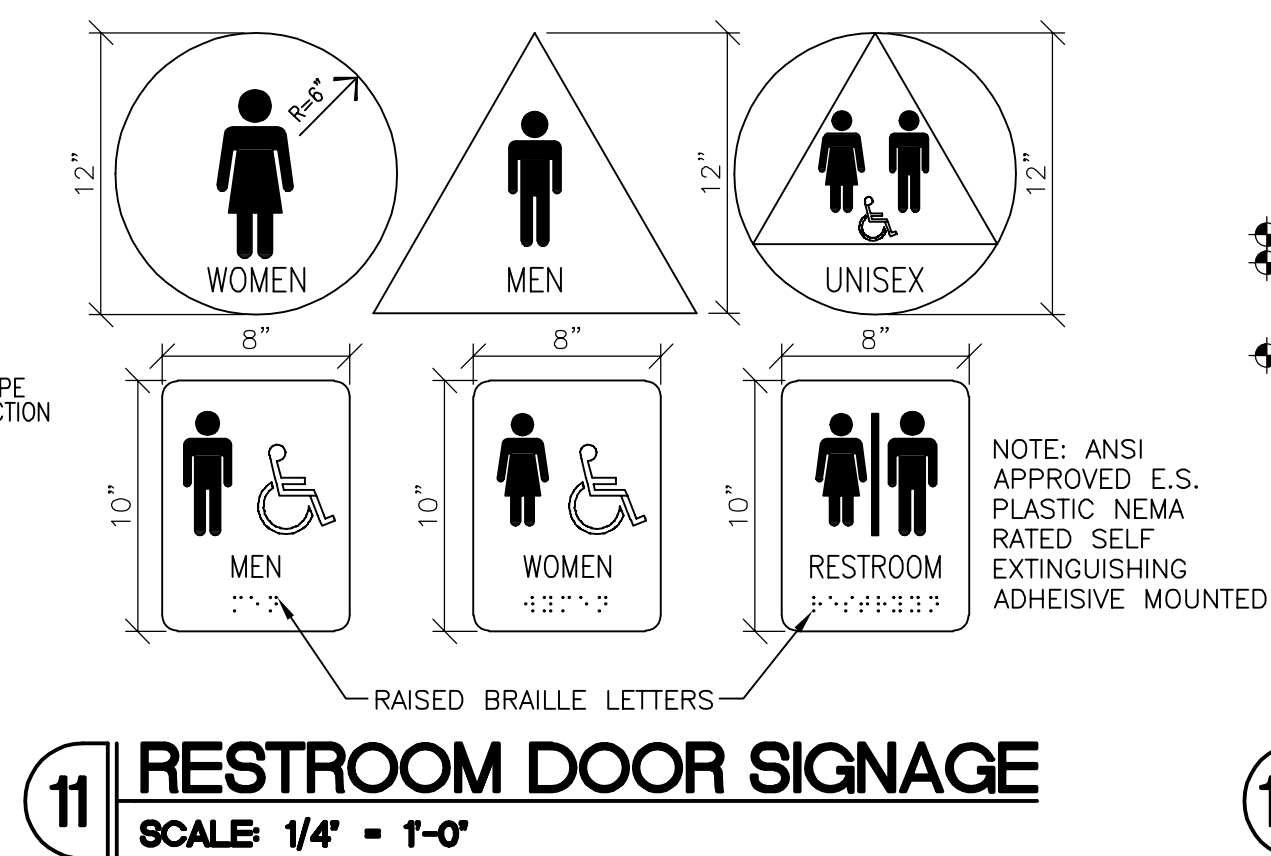
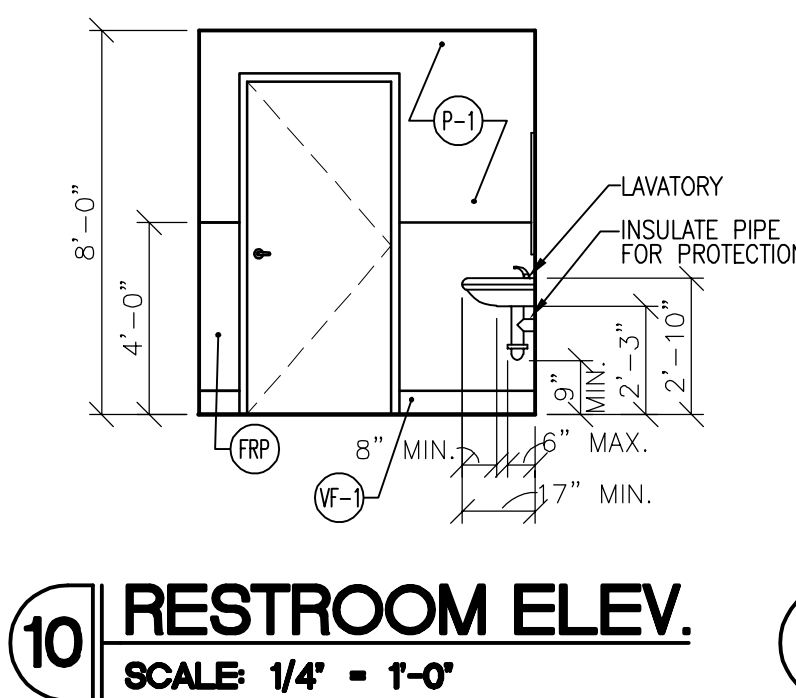
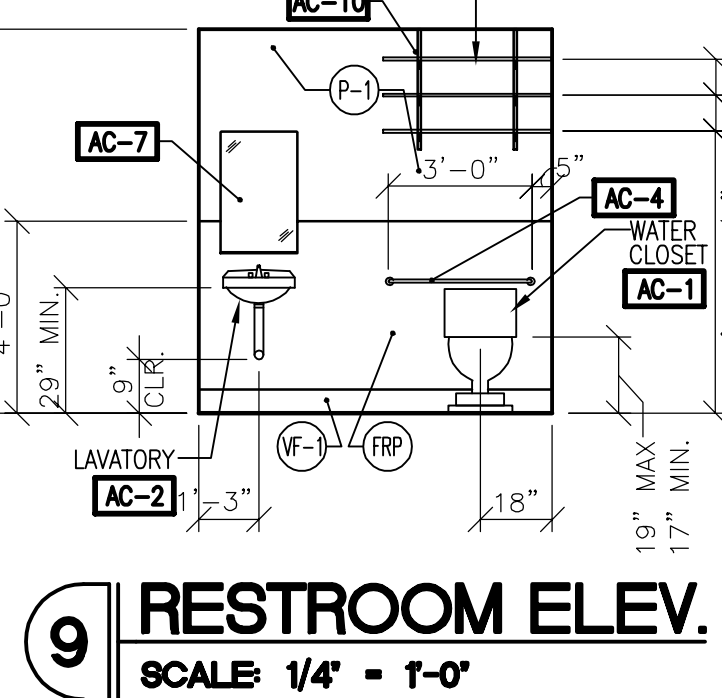
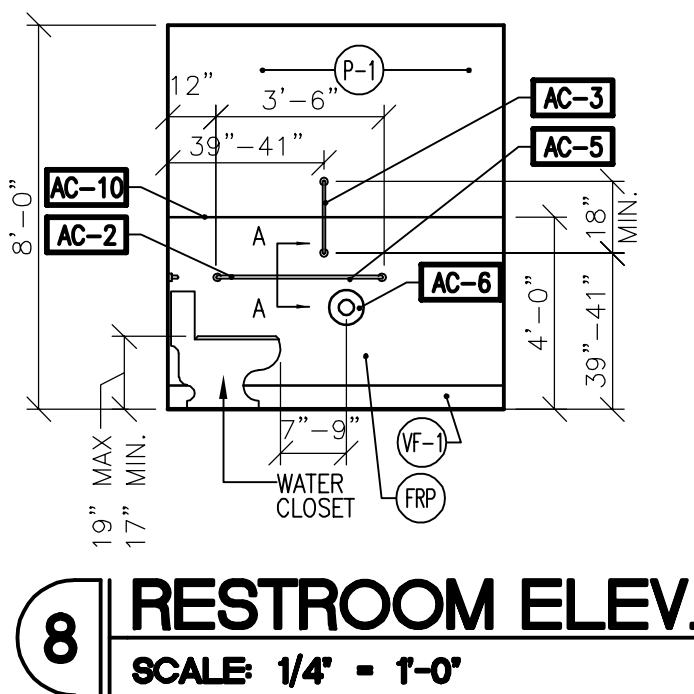
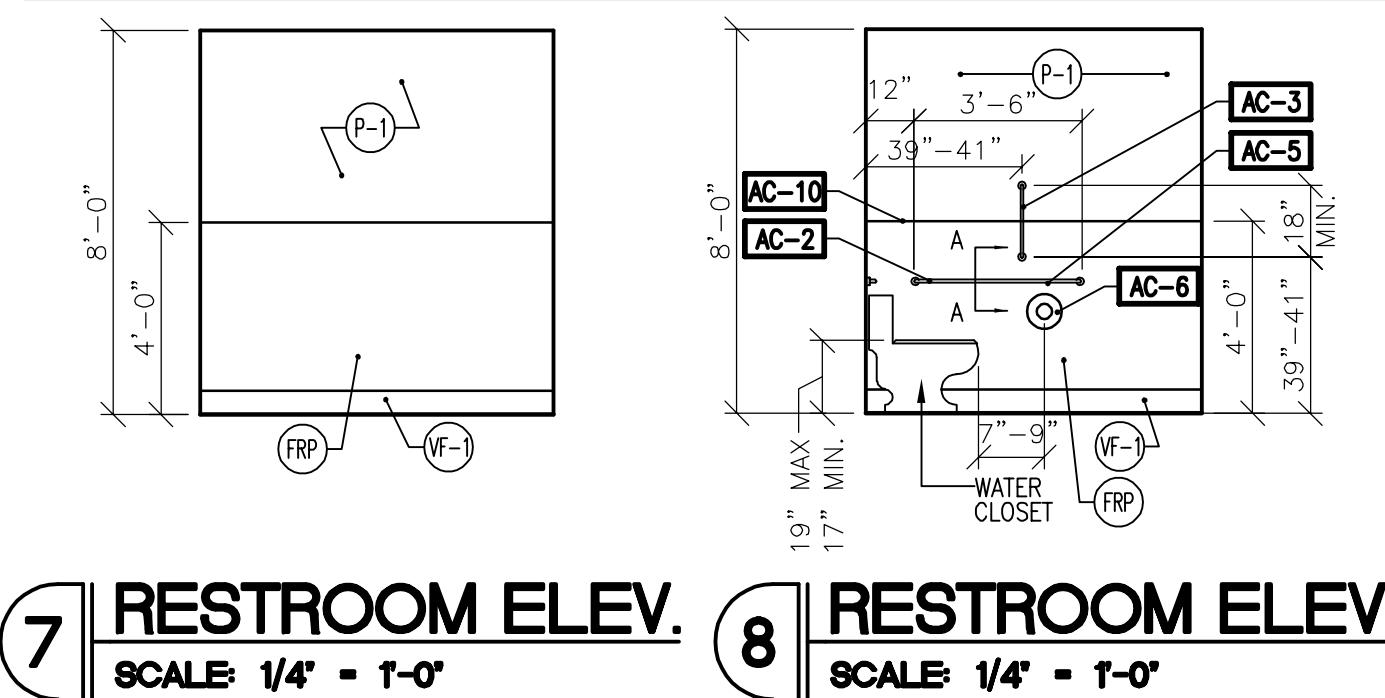
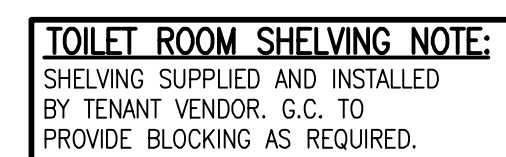
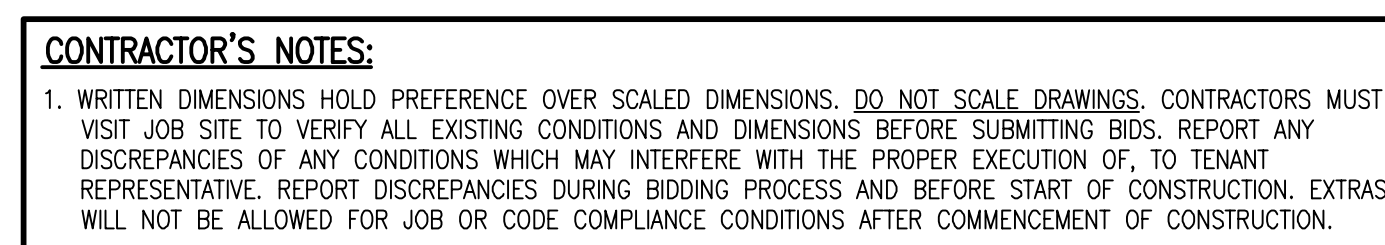
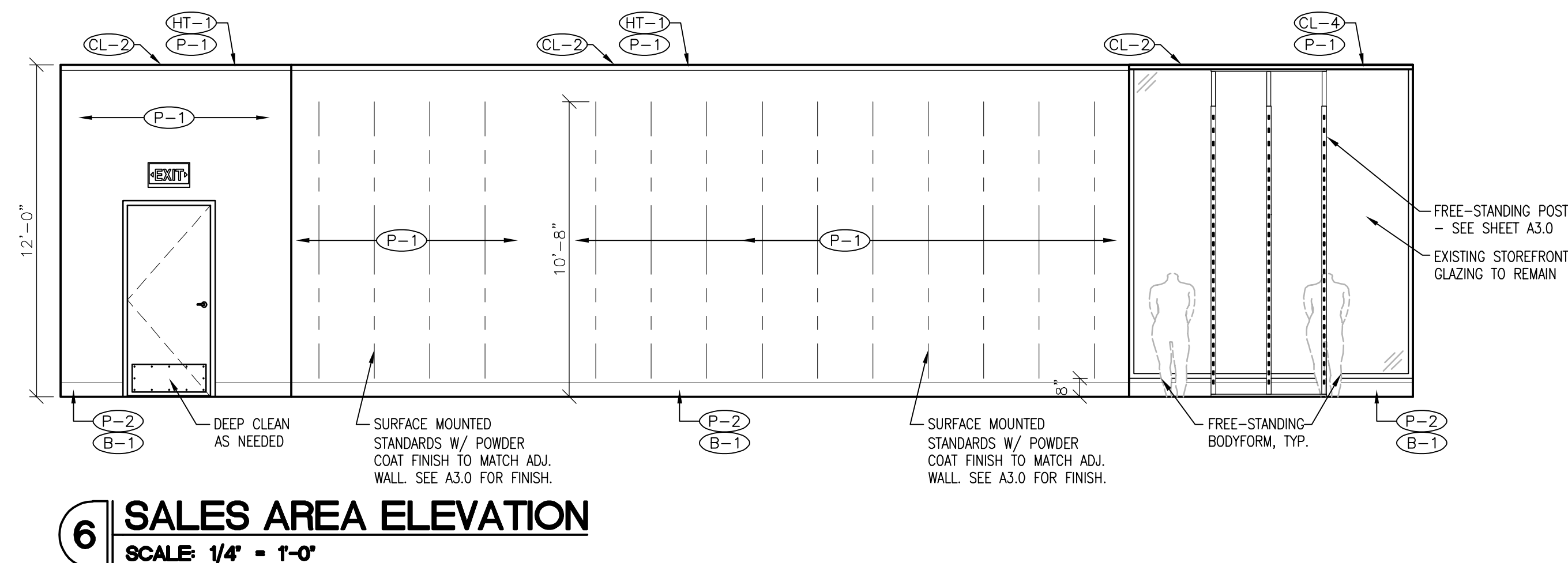
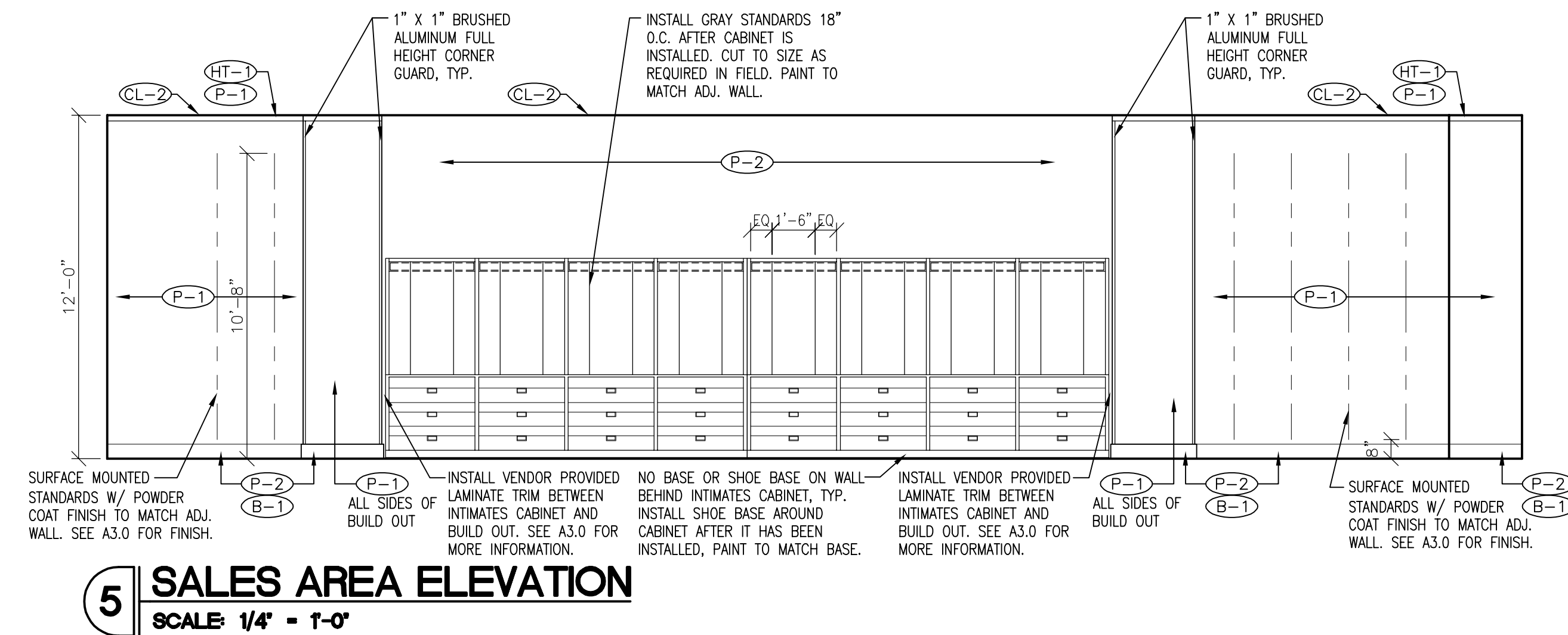
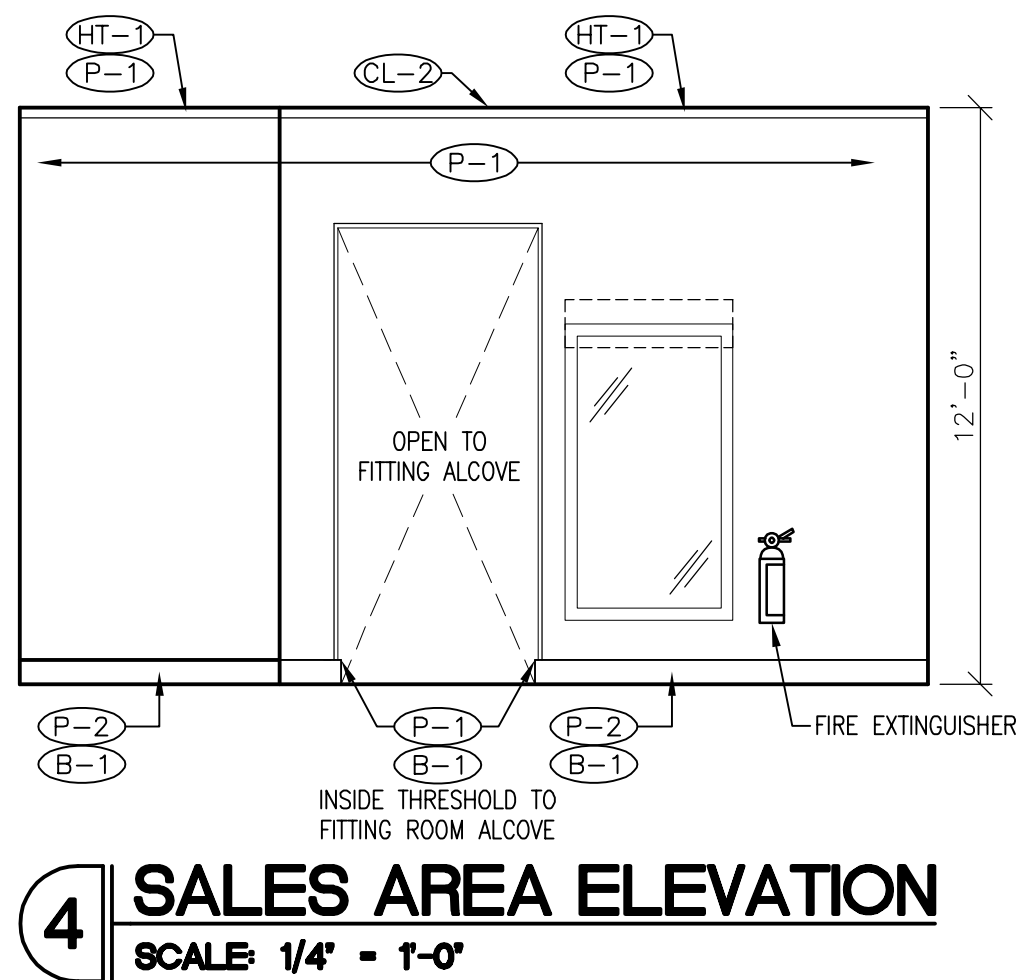
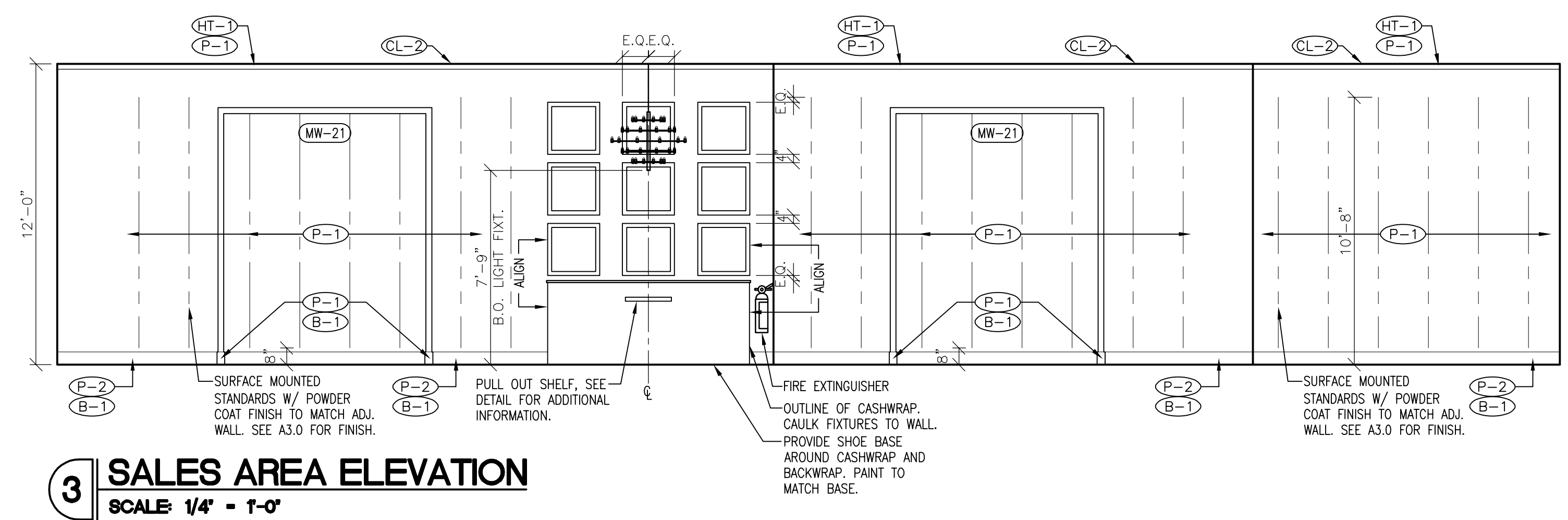
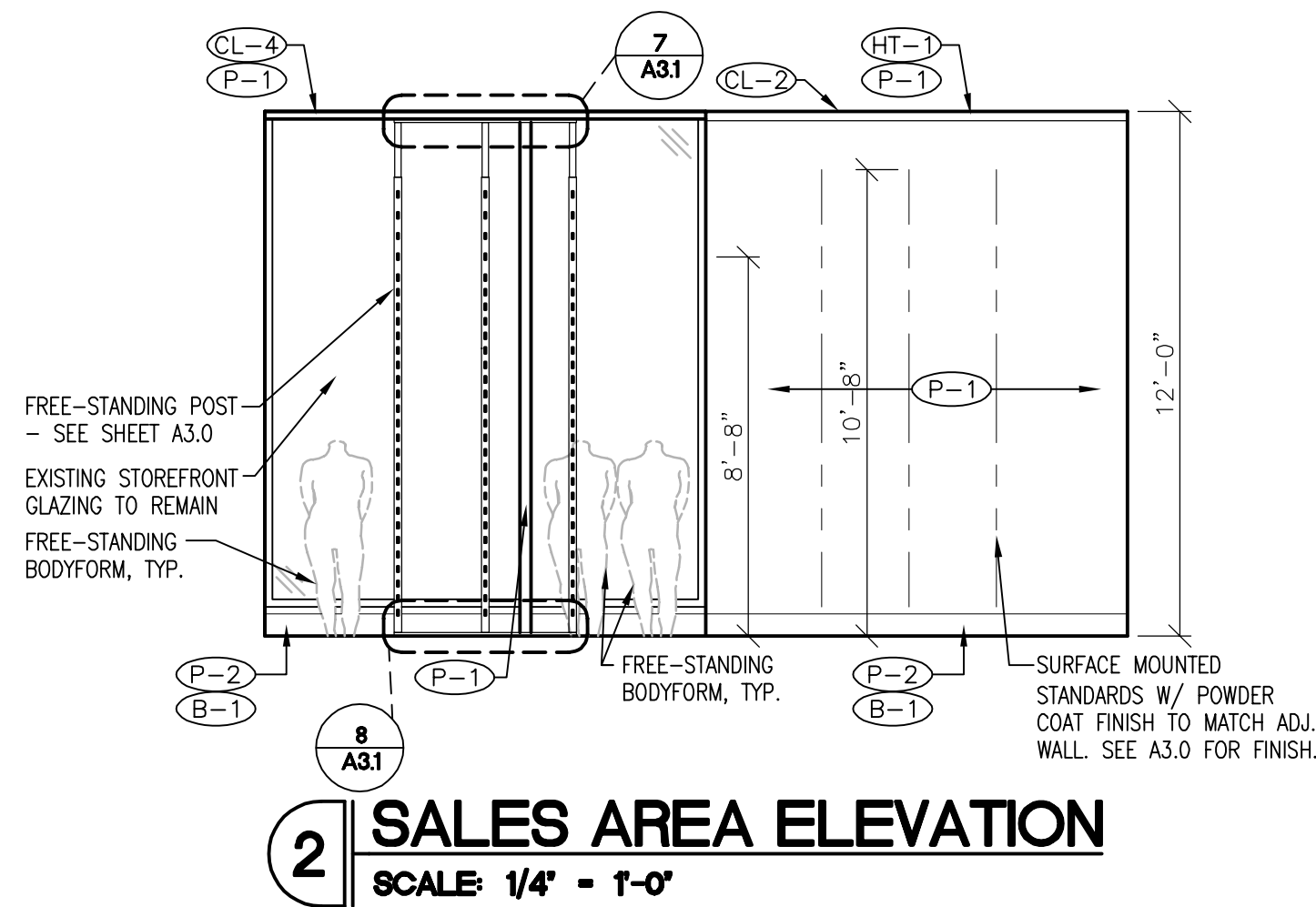
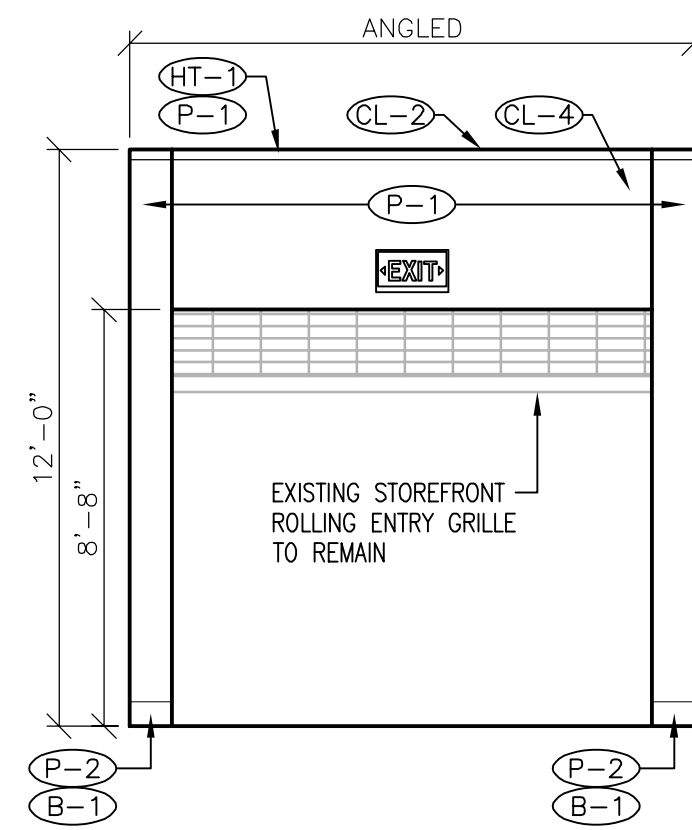
9 CONCRETE SLAB DETAIL
SCALE: N.T.S

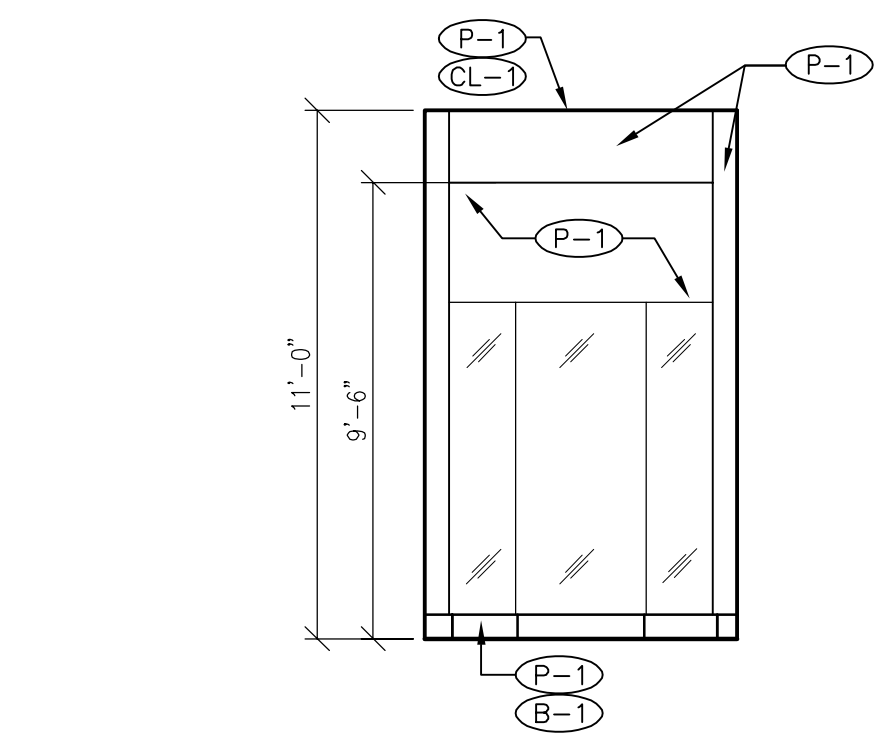


10 SLAB REPAIR DETAIL
SCALE: 3/4" = 1'-0"

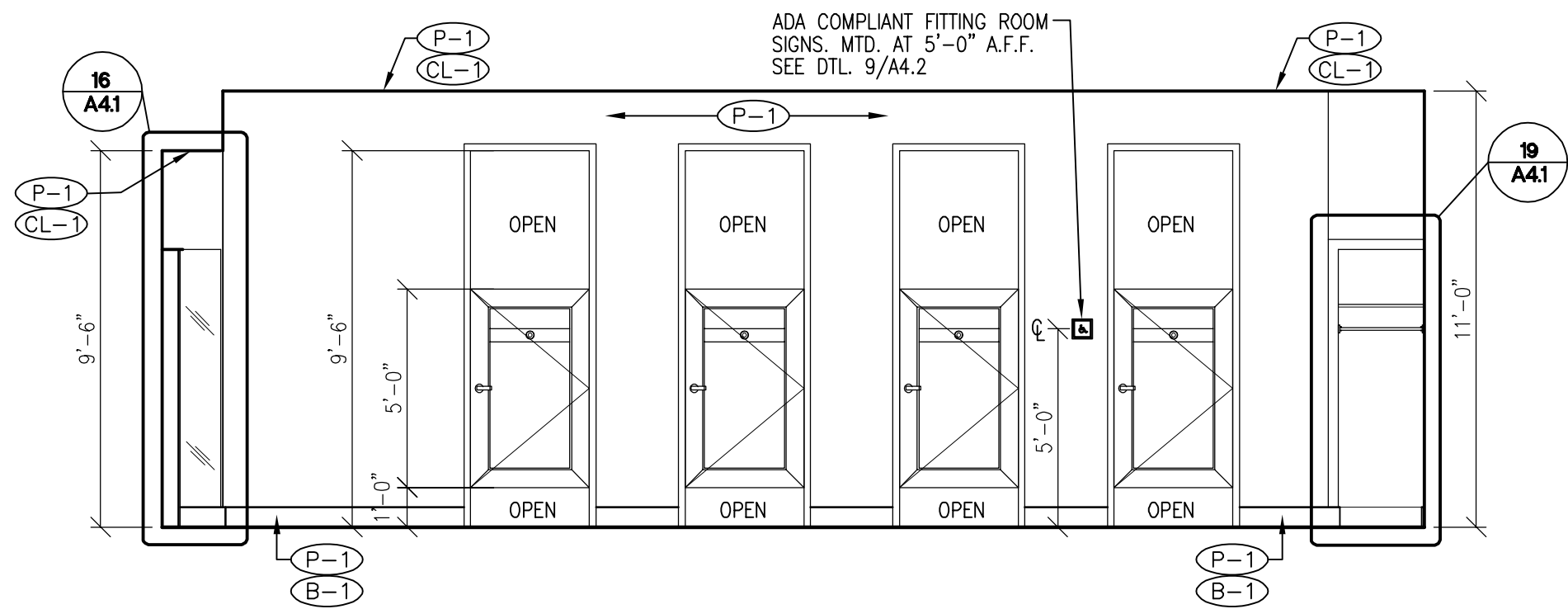
CONTRACTOR'S NOTES:

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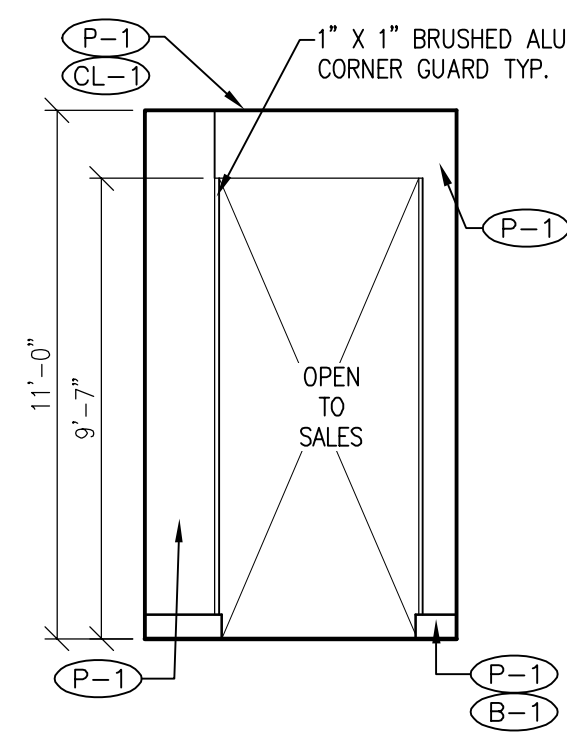




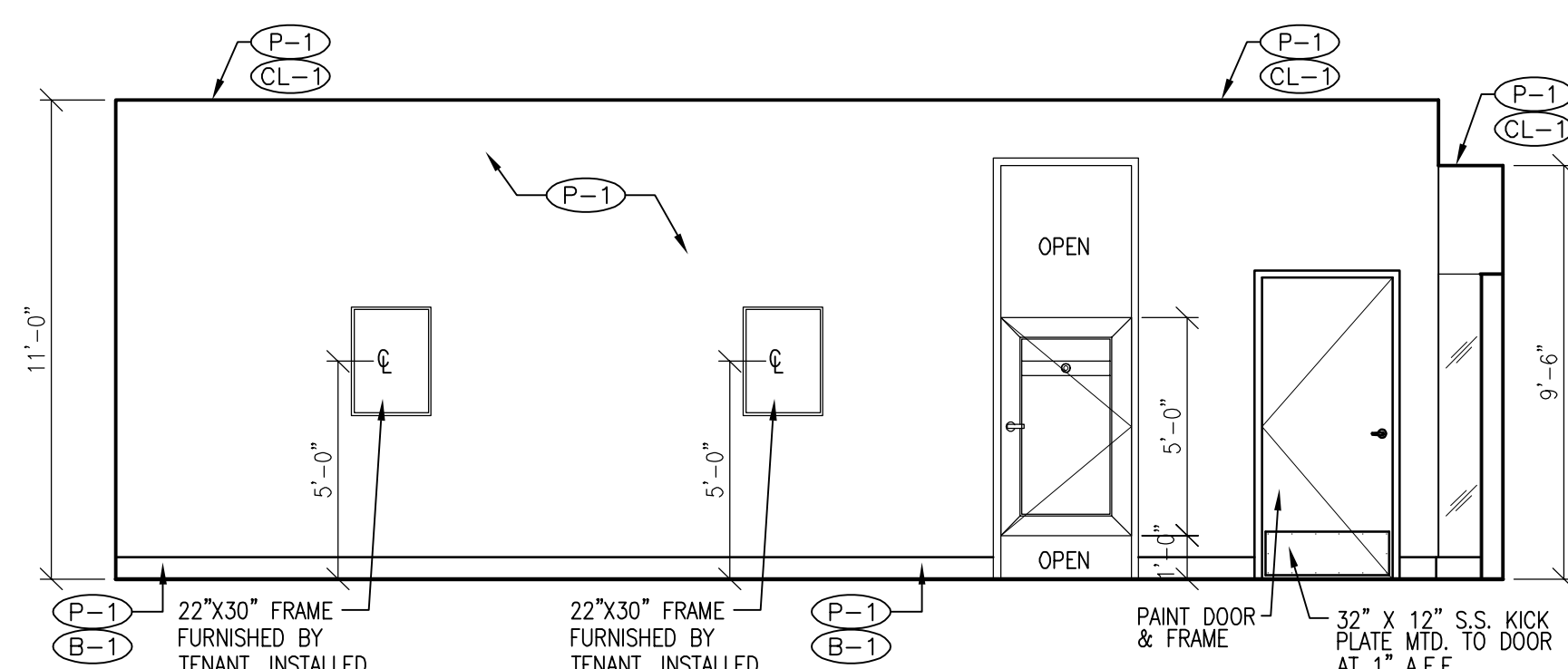
1 FITTING ALCOVE ELEVATION
SCALE: 1/4" = 1'-0"



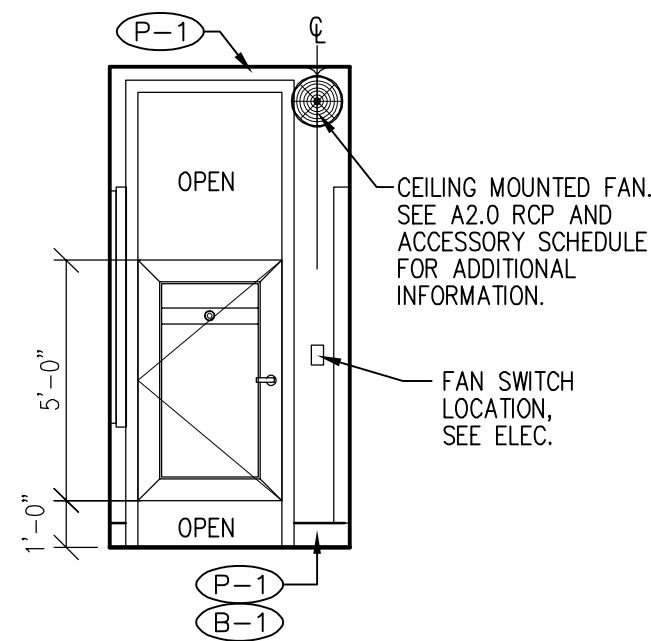
2 FITTING ALCOVE ELEVATION
SCALE: 1/4" = 1'-0"



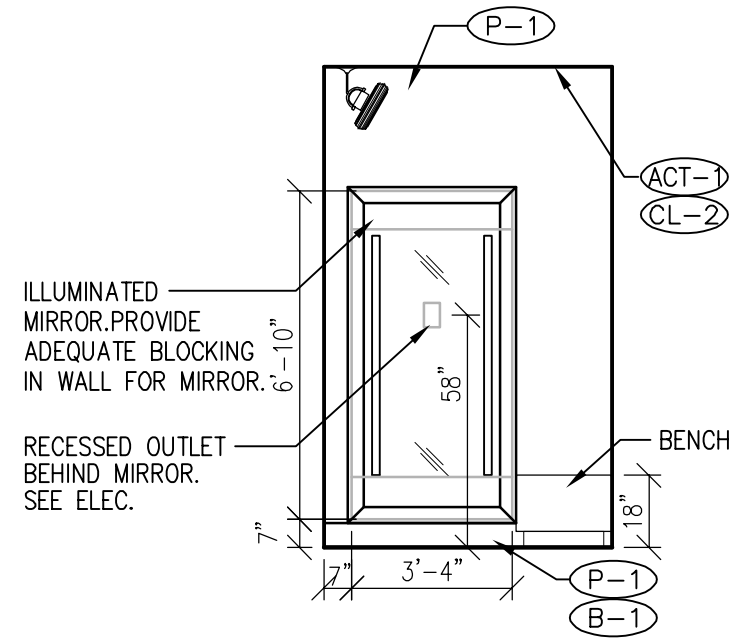
3 FITTING ALCOVE ELEVATION
SCALE: 1/4" = 1'-0"



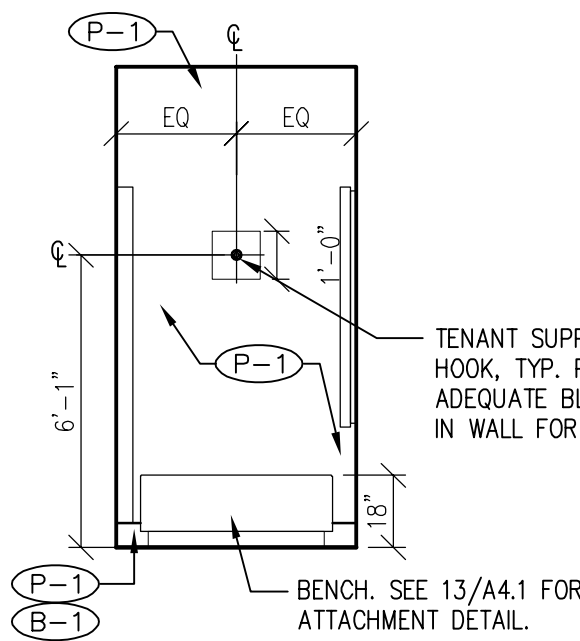
4 FITTING ALCOVE ELEVATION
SCALE: 1/4" = 1'-0"



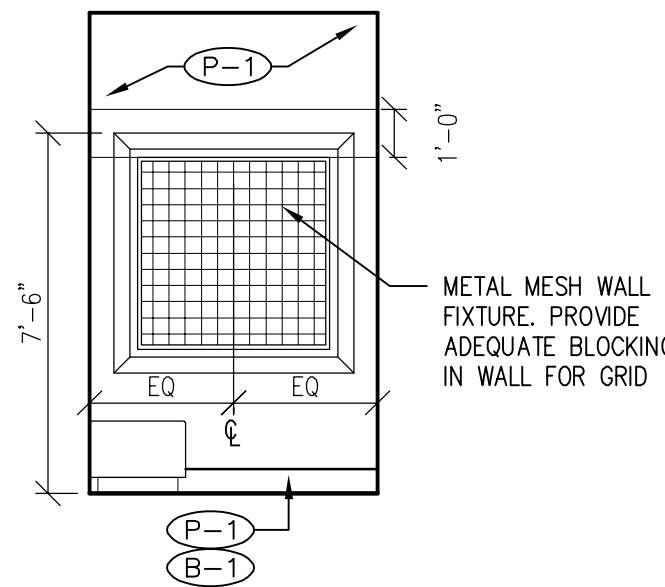
5 FITTING ROOM ELEVATION
SCALE: 1/4" = 1'-0"



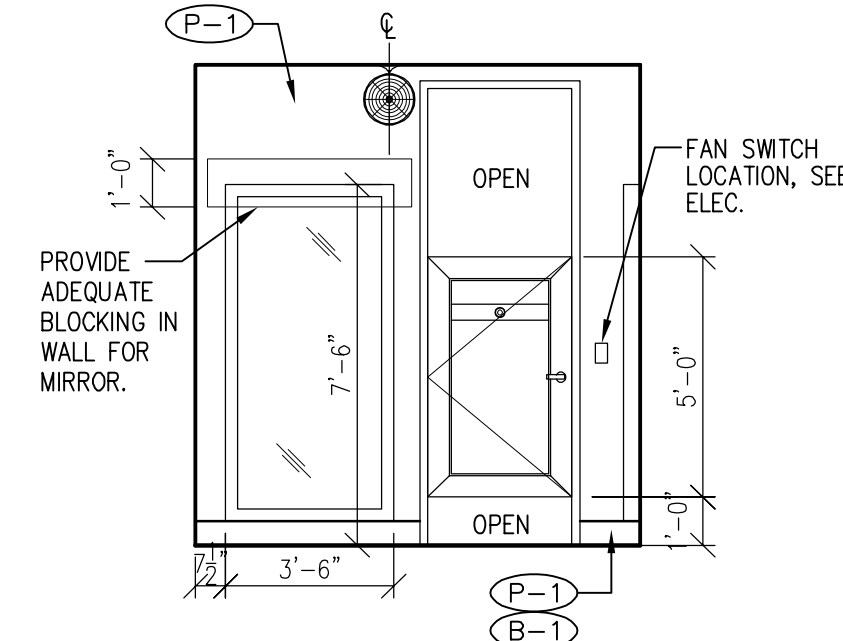
6 FITTING ROOM ELEVATION
SCALE: 1/4" = 1'-0"



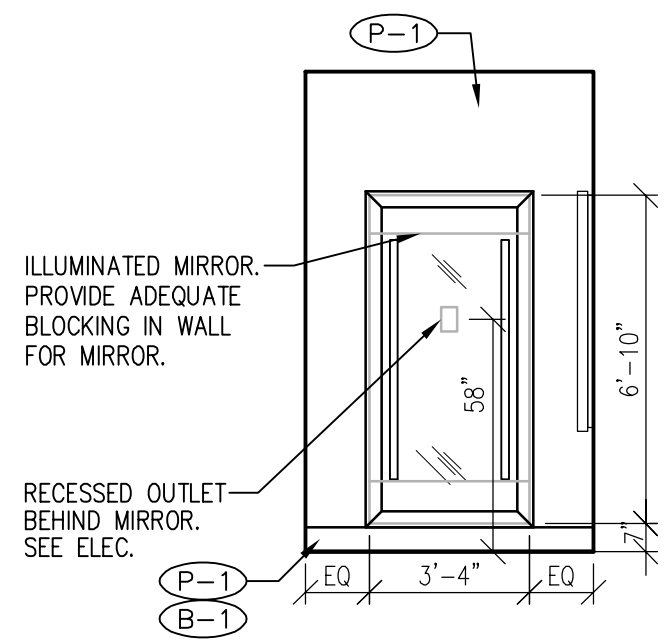
7 FITTING ROOM ELEVATION
SCALE: 1/4" = 1'-0"



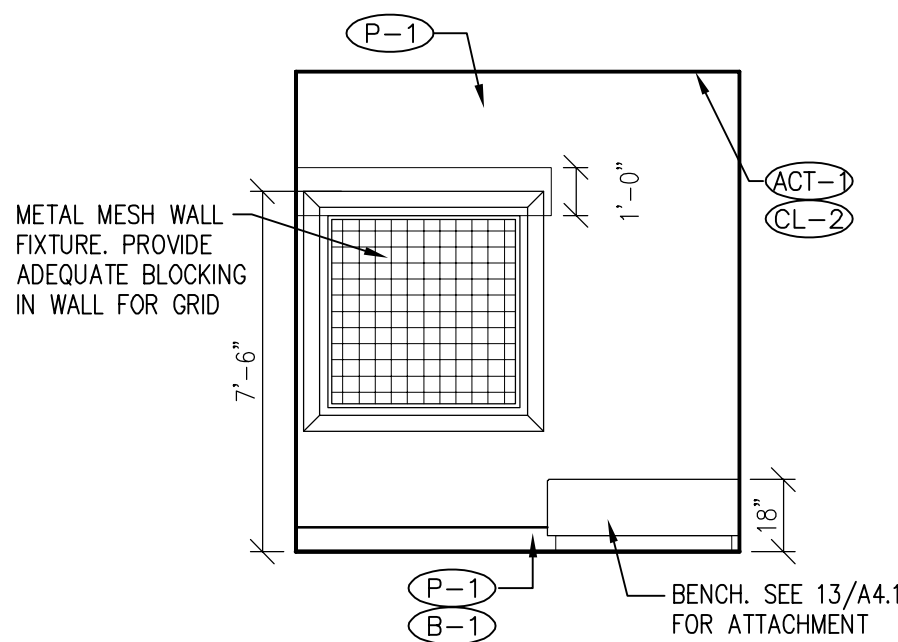
8 FITTING ROOM ELEVATION
SCALE: 1/4" = 1'-0"



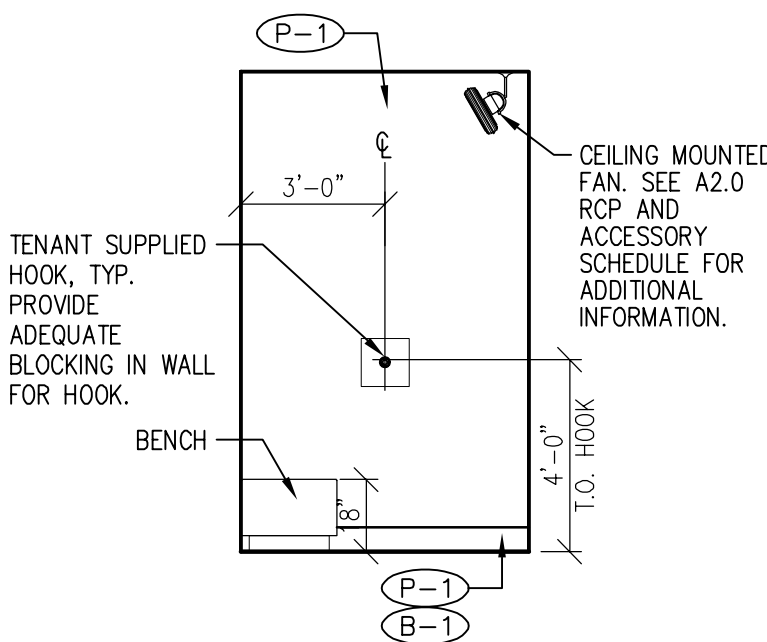
9 ADA FITTING ROOM ELEV.
SCALE: 1/4" = 1'-0"



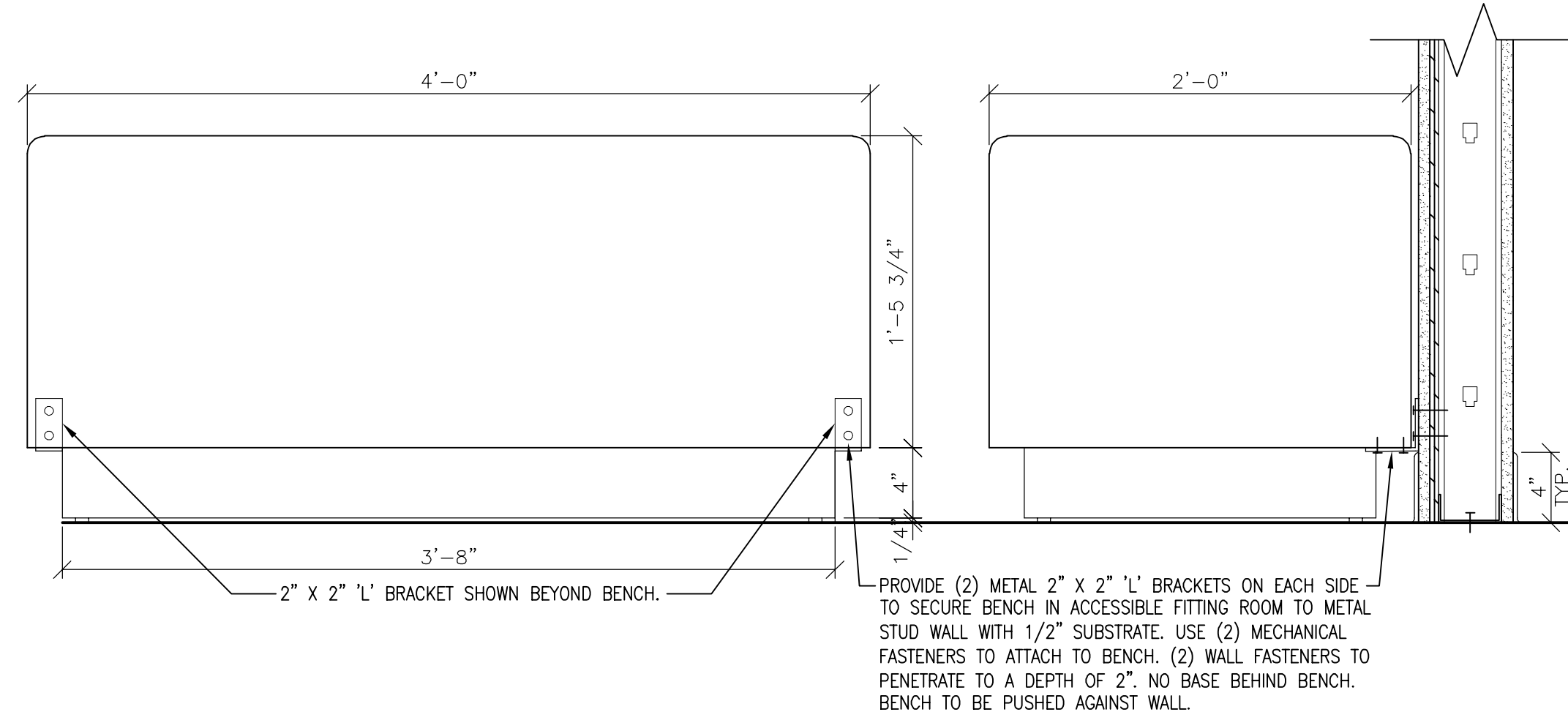
10 ADA FITTING ROOM ELEV.
SCALE: 1/4" = 1'-0"



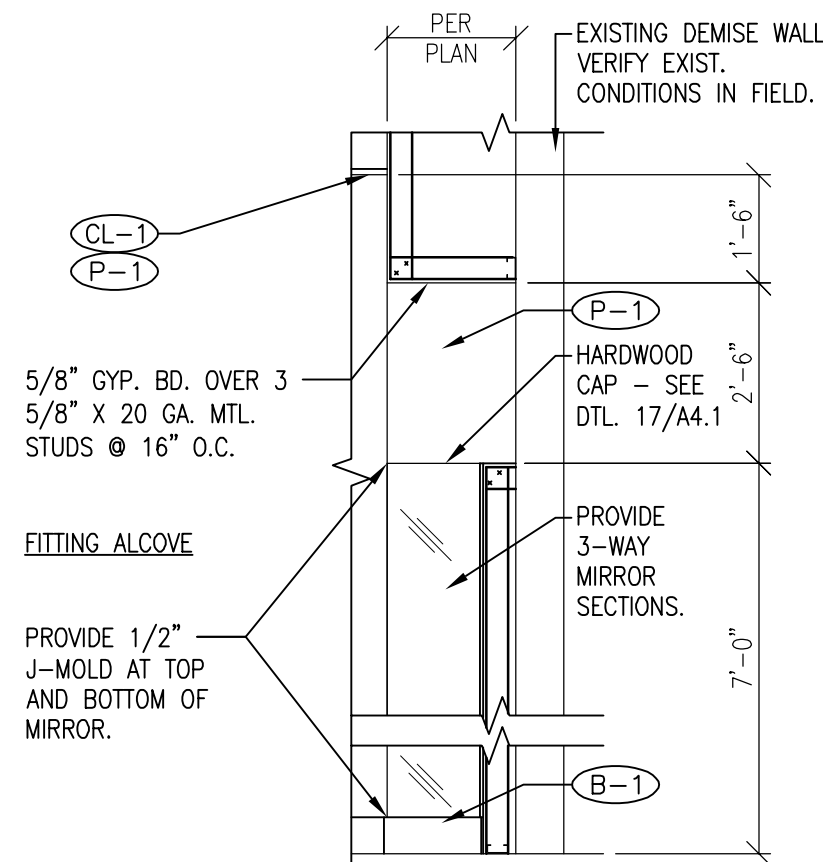
11 ADA FITTING ROOM ELEV.
SCALE: 1/4" = 1'-0"



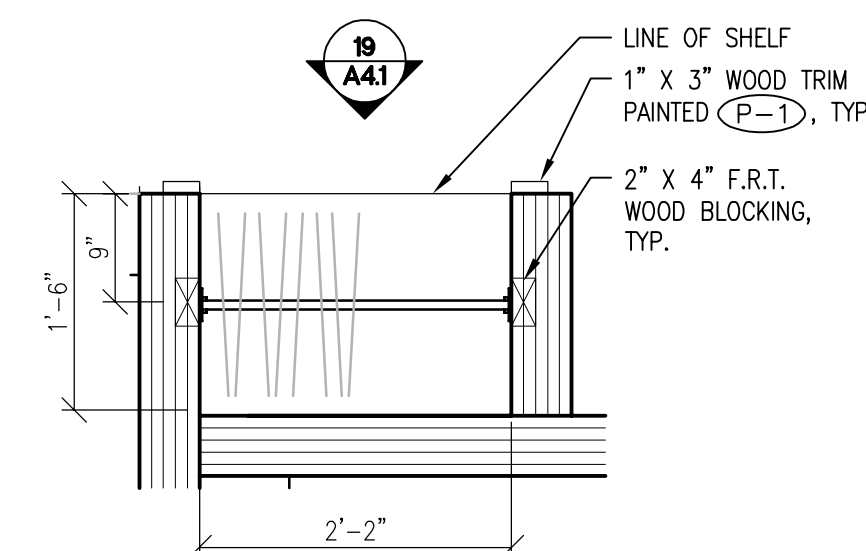
12 ADA FITTING ROOM ELEV.
SCALE: 1/4" = 1'-0"



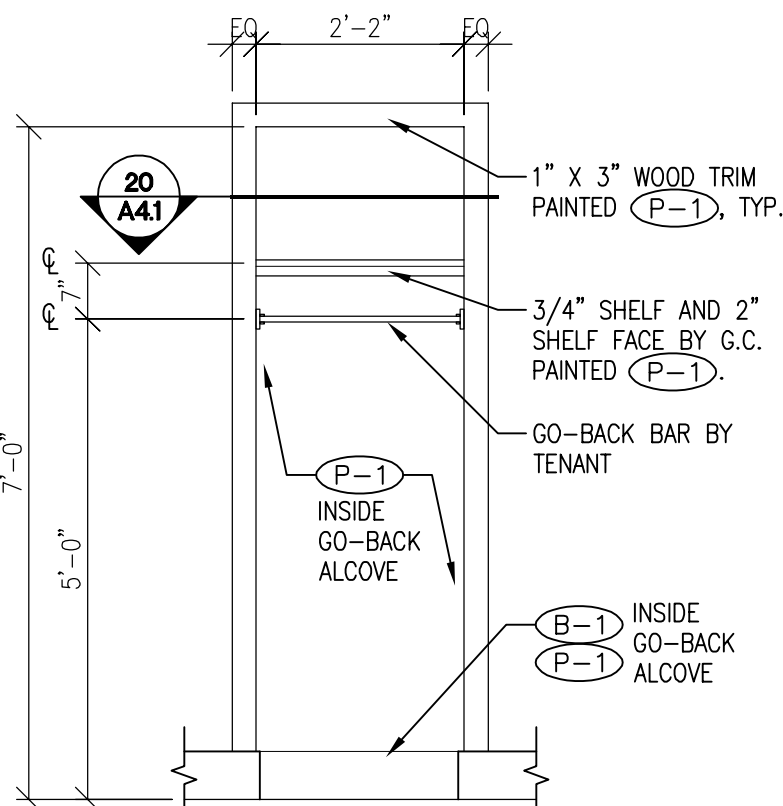
13 BENCH ATTACHMENT DETAIL
SCALE: 1 1/2" = 1'-0"



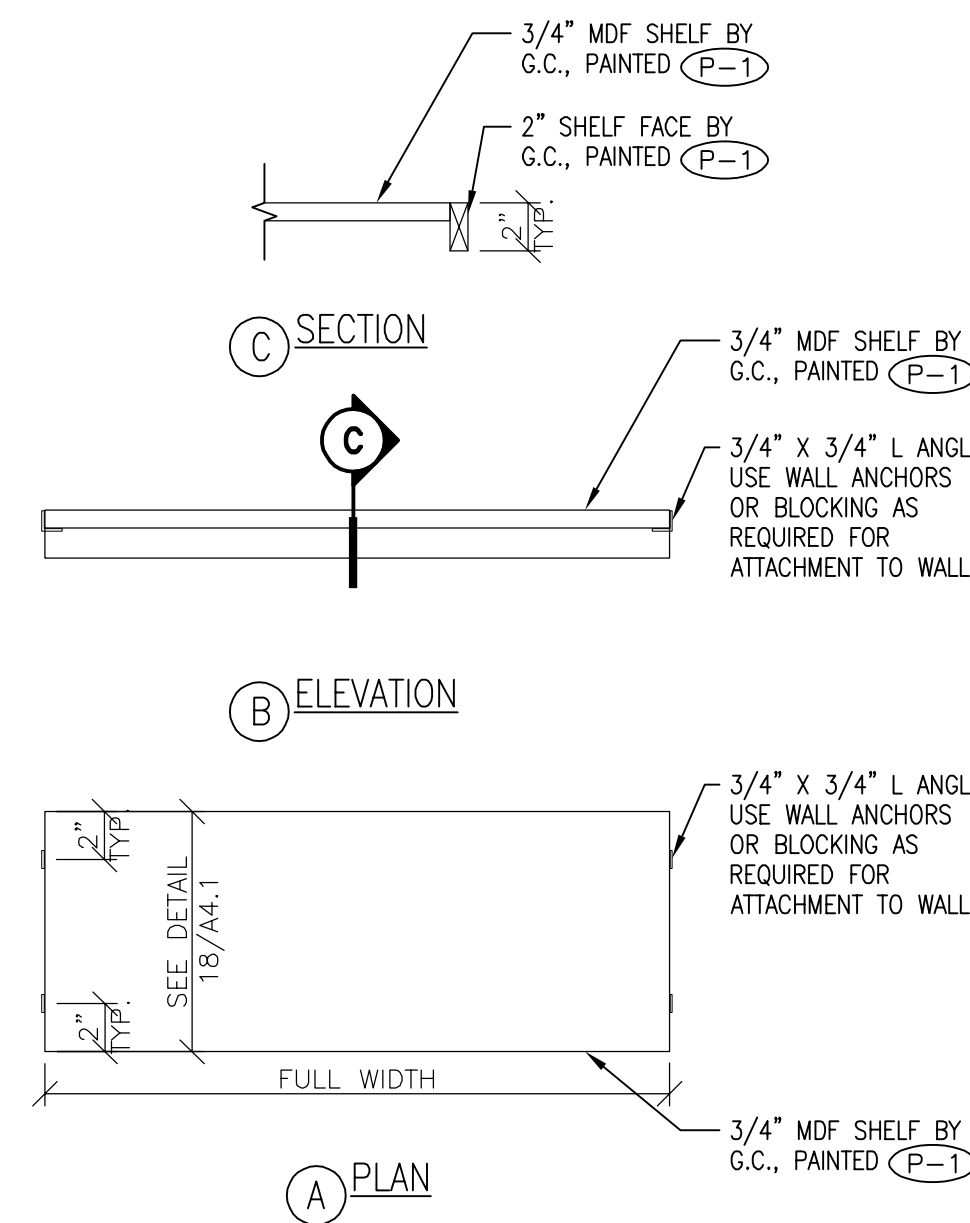
16 3-WAY MIRROR SECTION
SCALE: 3/8" = 1'-0"



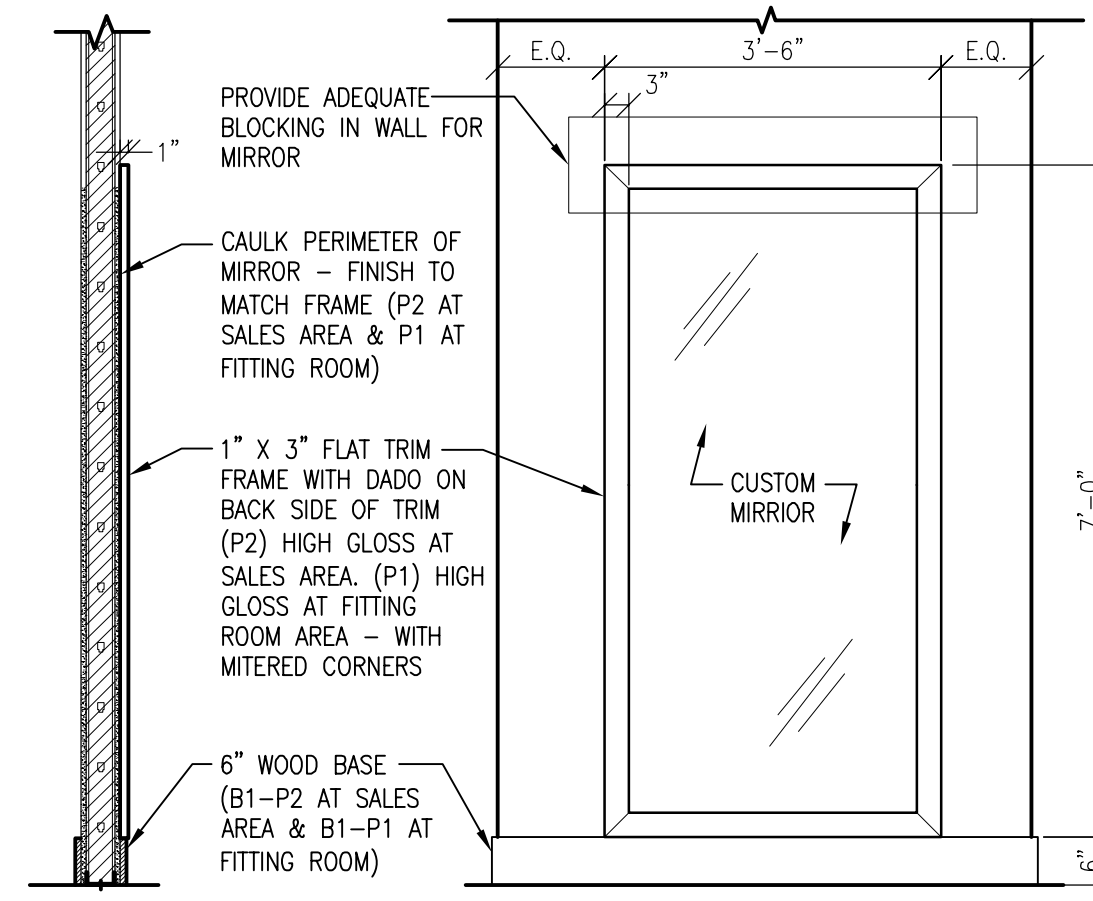
18 GO-BACK BAR
SCALE: 3/4" = 1'-0"



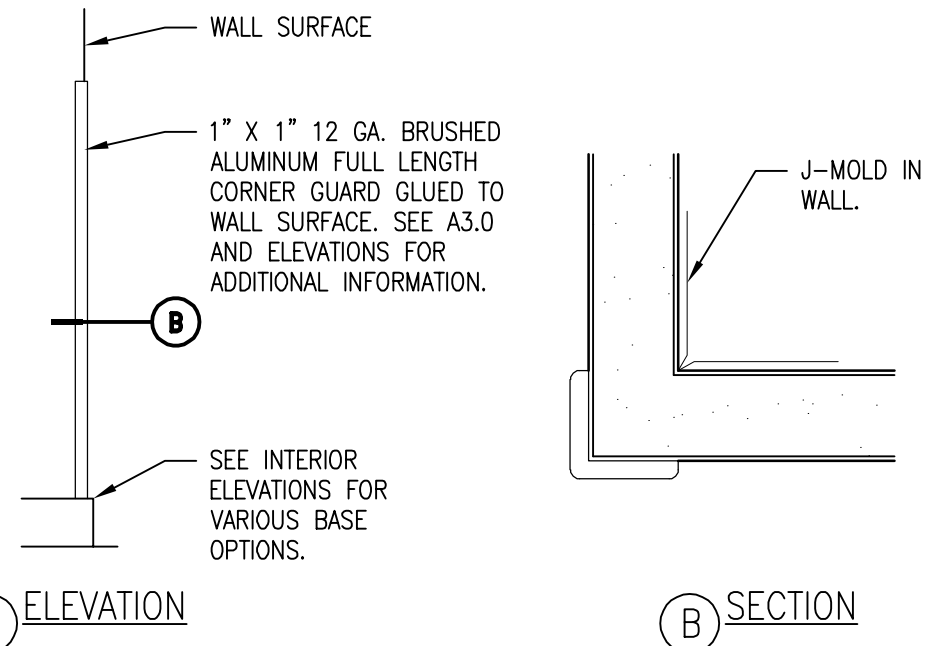
19 GO-BACK ELEV.
SCALE: 1/2" = 1'-0"



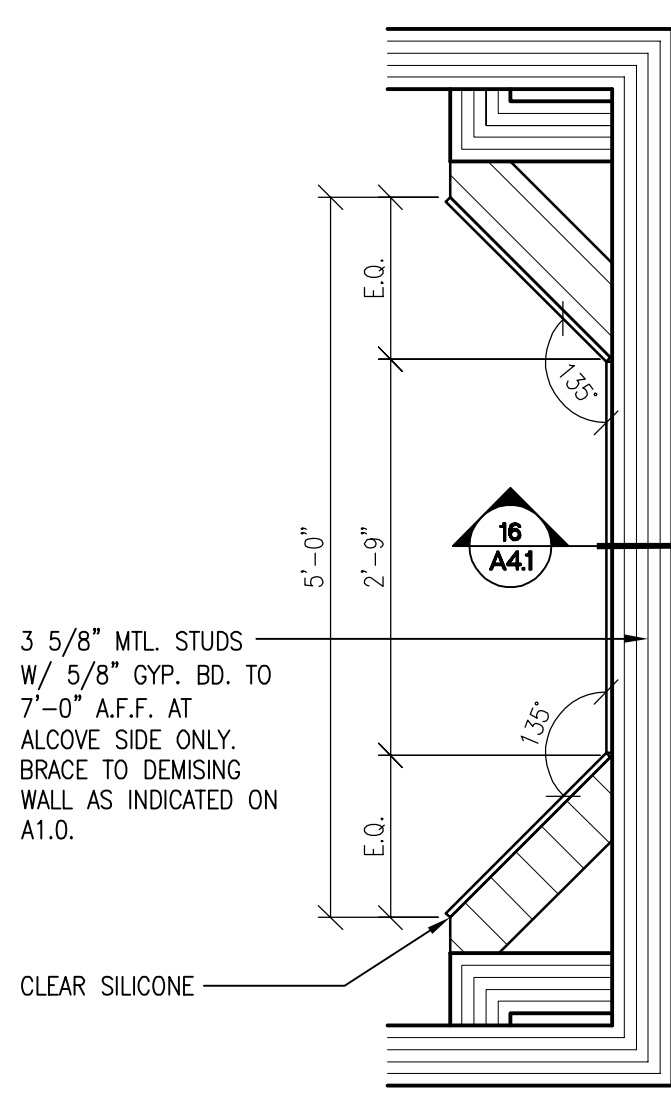
20 GO-BACK BAR SHELF DETAIL
SCALE: 1 1/2" = 1'-0"



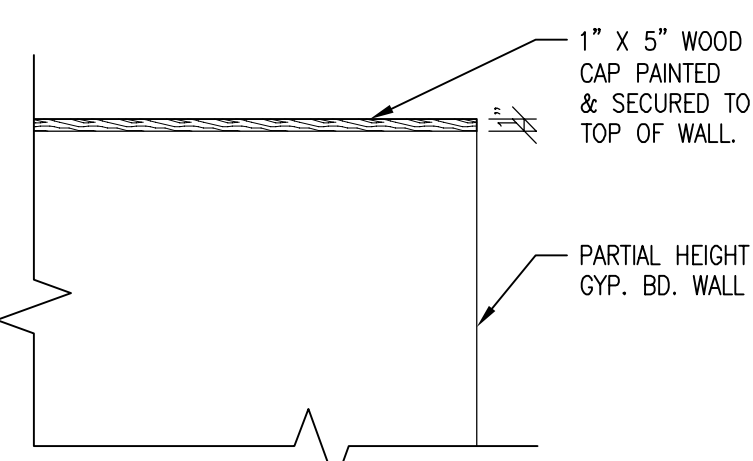
21 CUSTOM FRAME MIRROR
SCALE: 1/2" = 1'-0"



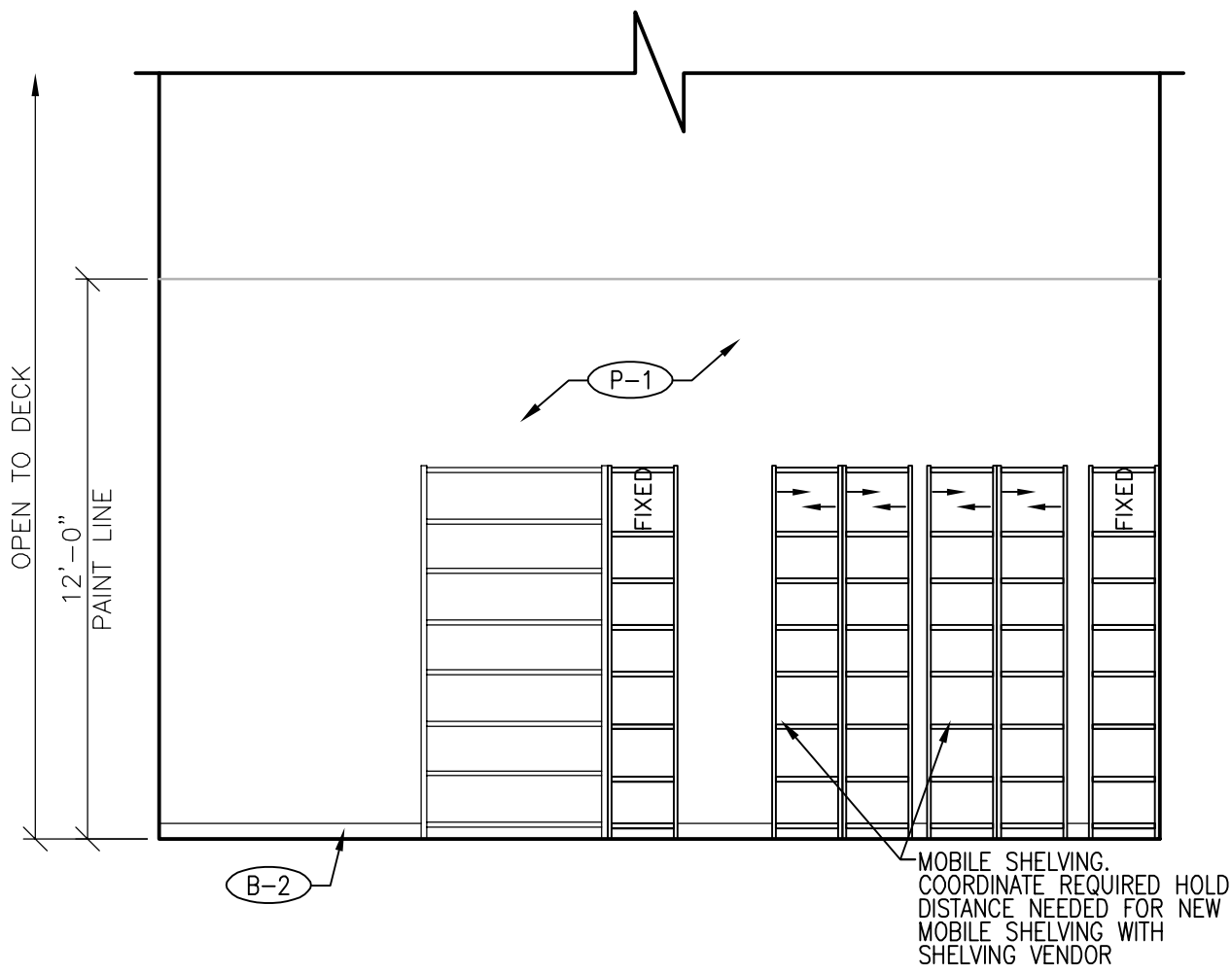
14 ALUMINUM CORNER GUARD
SCALE: 3/4" = 1'-0"



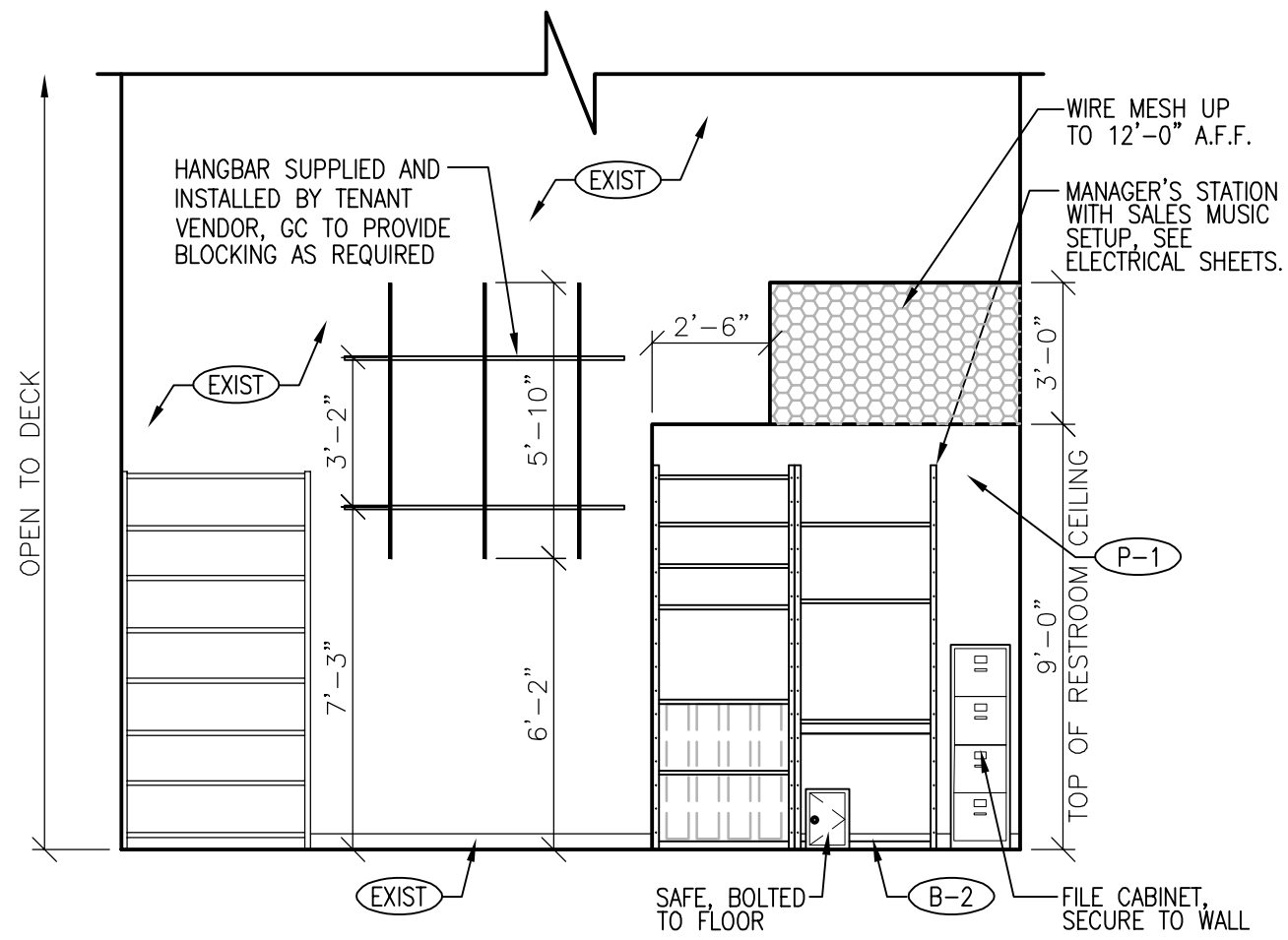
15 3-WAY MIRROR DETAIL
SCALE: 3/4" = 1'-0"



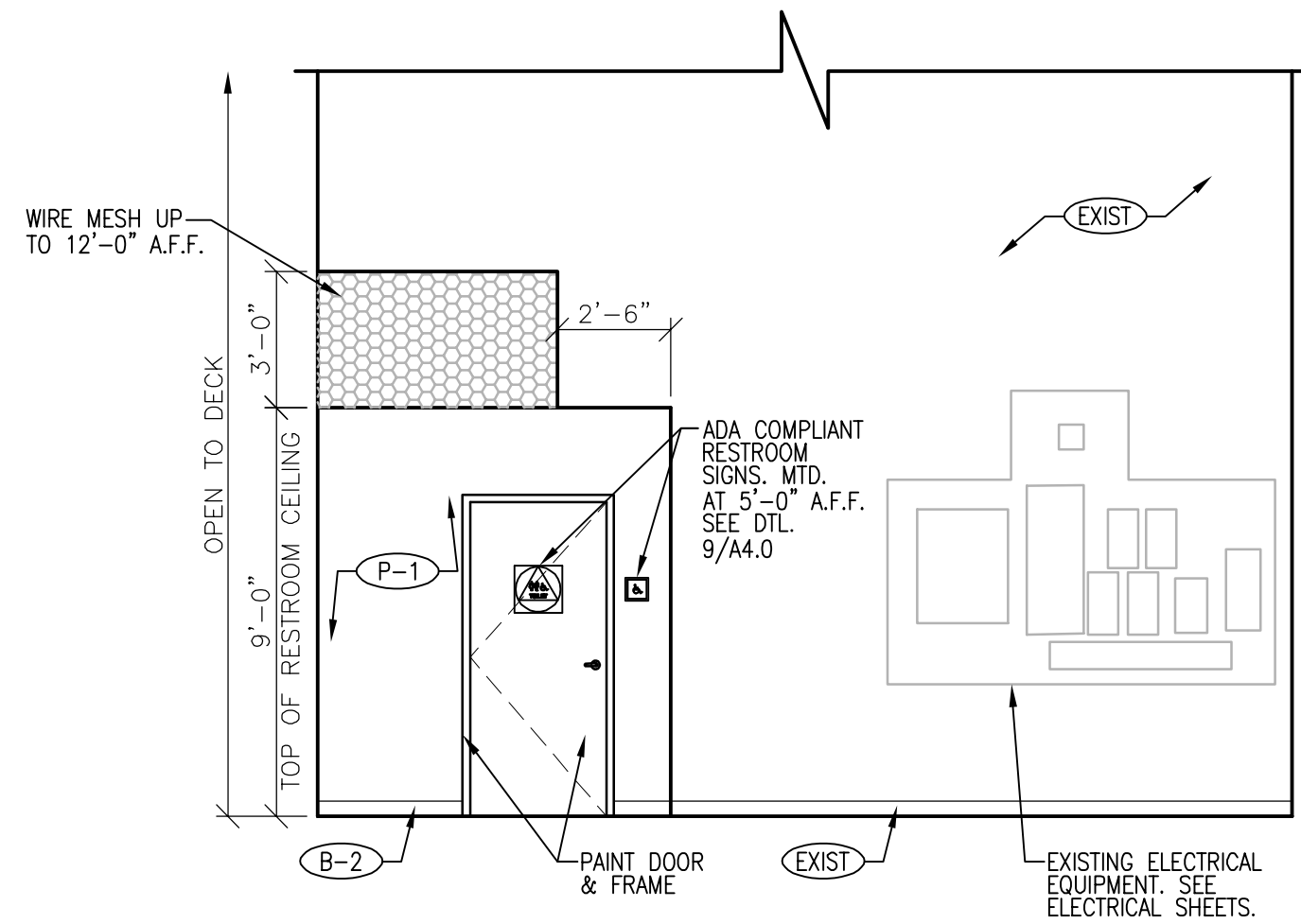
17 HARDWOOD CAP
SCALE: 3/4" = 1'-0"



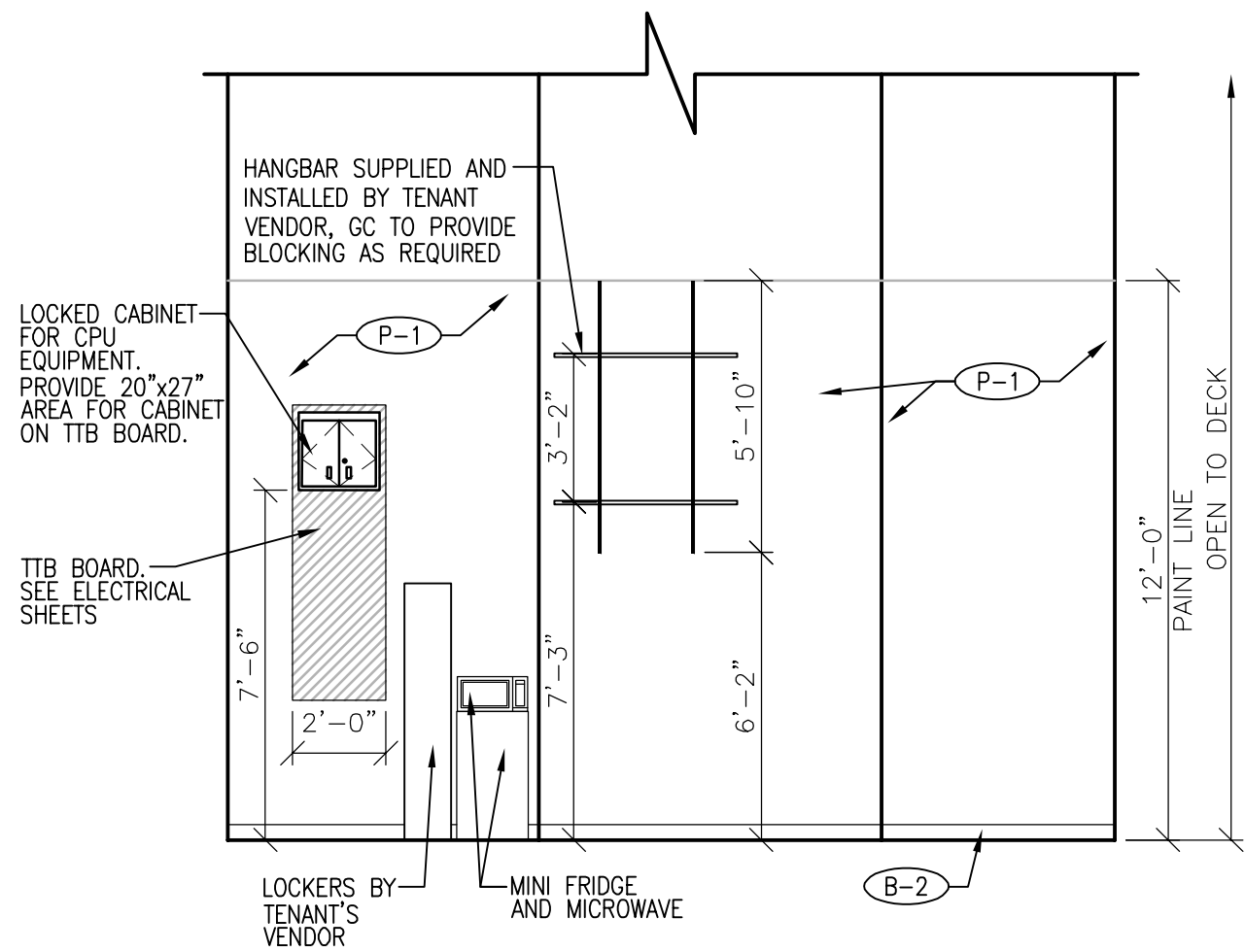
1 STOCKROOM ELEVATION
SCALE: 1/4" = 1'-0"



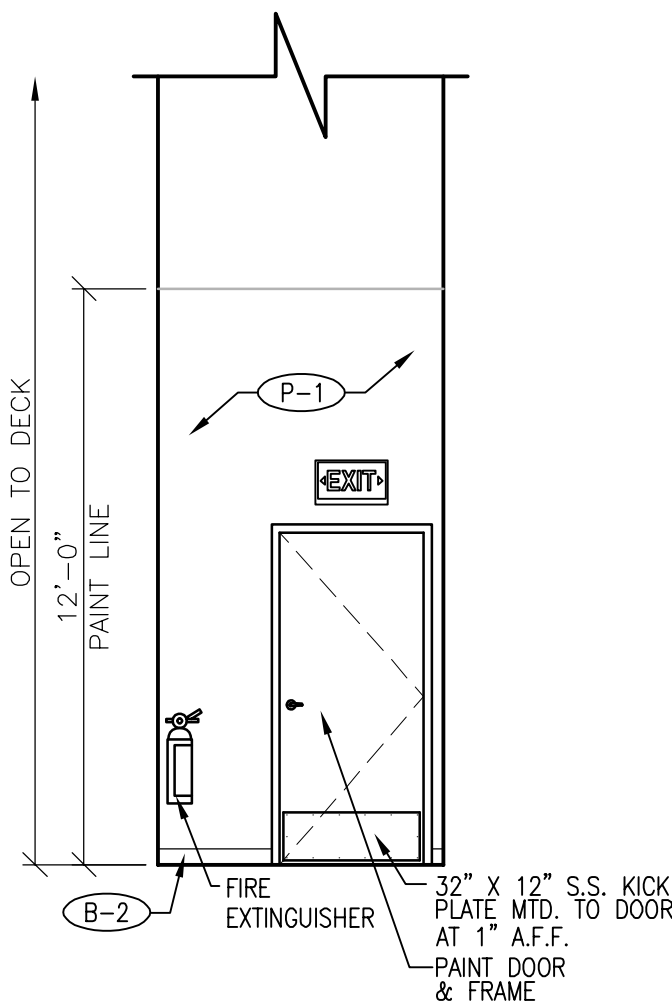
2 STOCKROOM ELEVATION
SCALE: 1/4" = 1'-0"



3 STOCKROOM ELEVATION
SCALE: 1/4" = 1'-0"

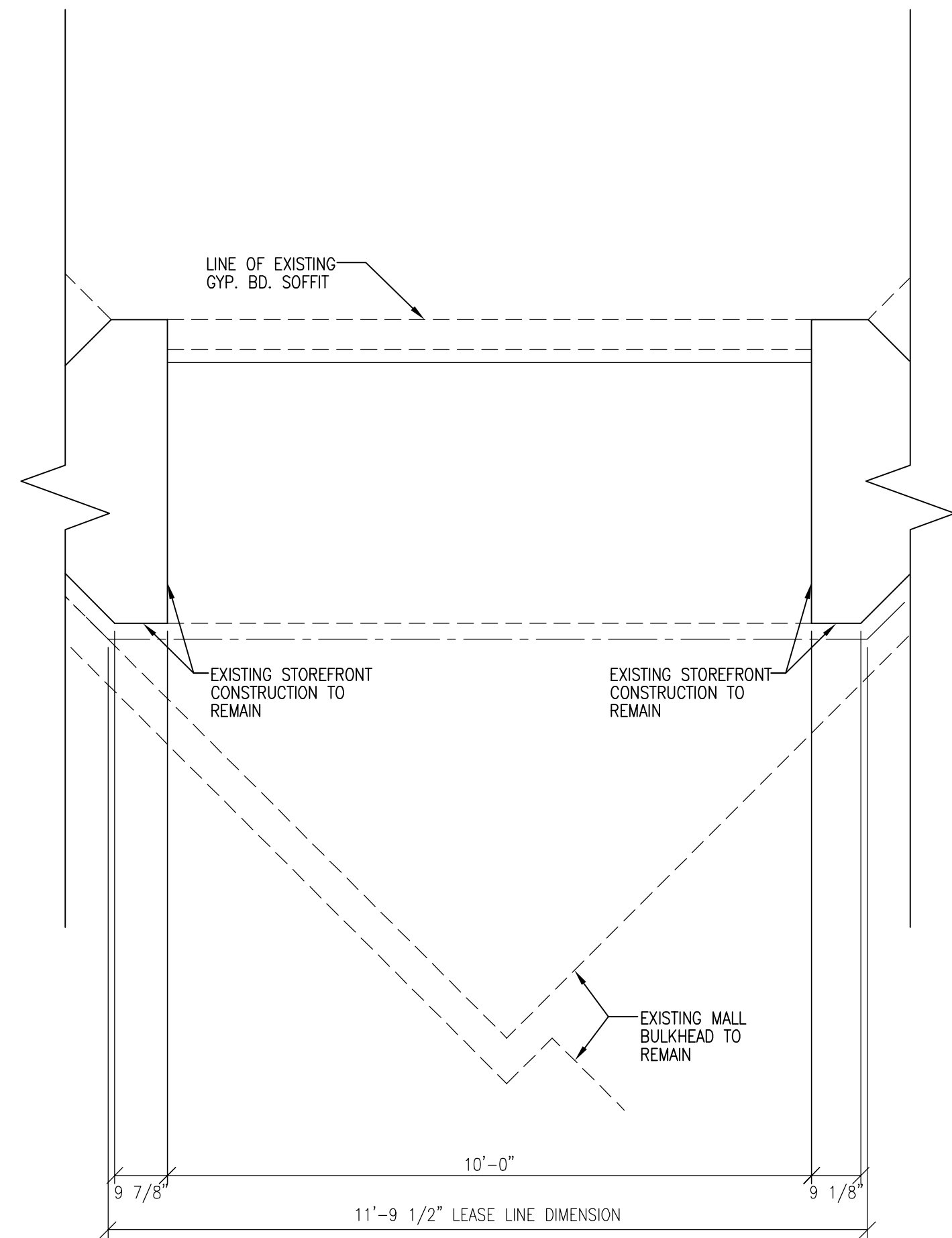


4 STOCKROOM ELEVATION
SCALE: 1/4" = 1'-0"

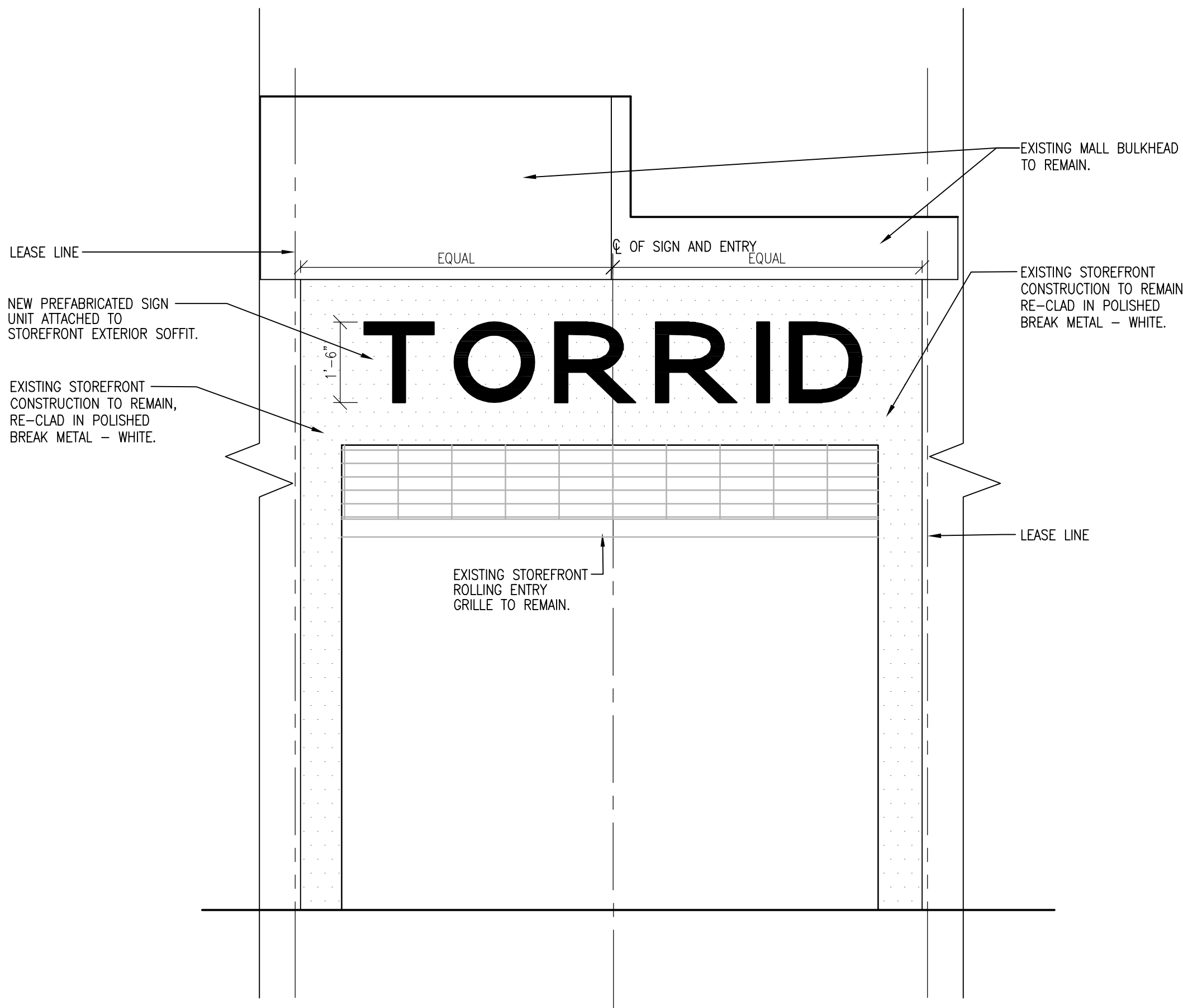


5 STOCKROOM ELEVATION
SCALE: 1/4" = 1'-0"



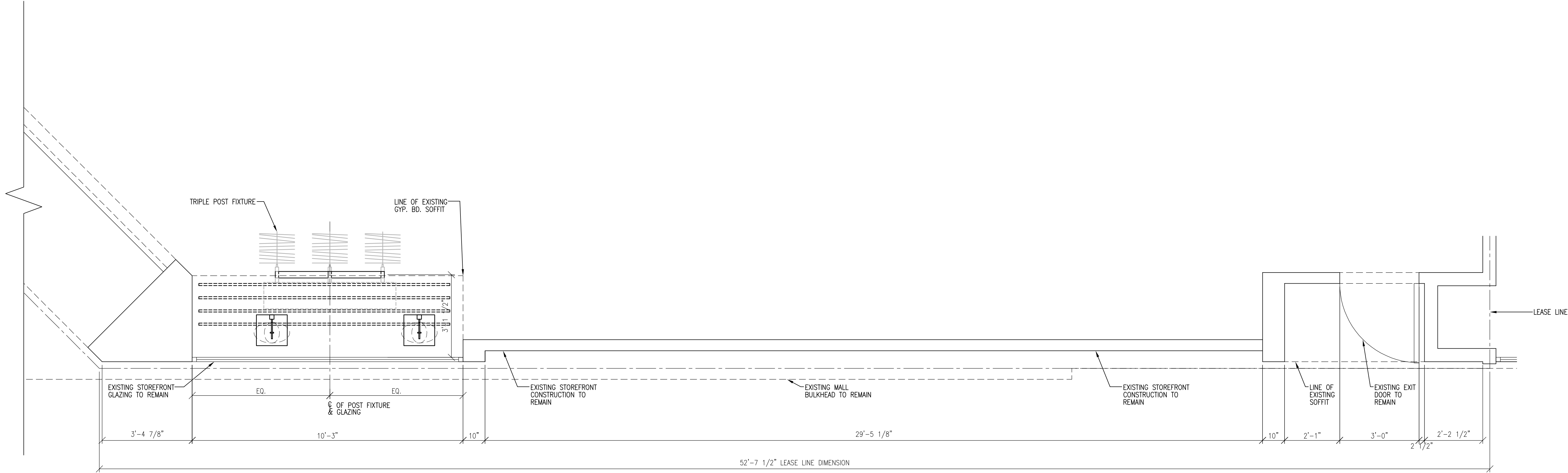


1 STOREFRONT FLOOR PLAN
SCALE: 1/2" = 1'-0"

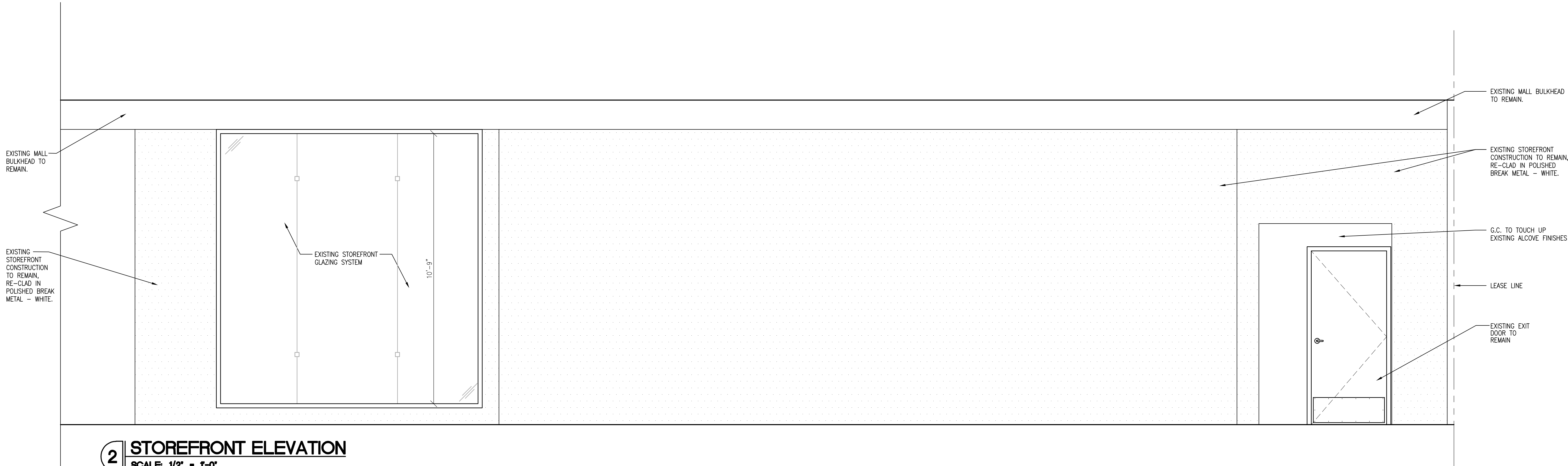


2 STOREFRONT ELEVATION
SCALE: 1/2" = 1'-0"

PROJECT NO: 230311		NAME		REGISTRATION SEAL	
DRAWN BY: MML	DATE	DESCRIPTION			
CHECKED BY: KEU					
ISSUE DATE: 07/31/23					
STOREFRONT PLAN + ELEVATION			TORRID		
BOWER PLACE			4900 MOLLY BANISTER DR.		
RED DEER, AB T4R 1N9			SPACE #230 STORE #3532-B		
A5.1			ARCVISION MANAGEMENT CONSULTANTS		



1 **STOREFRONT FLOOR PLAN**
SCALE: 1/2" = 1'-0"



2 **STOREFRONT ELEVATION**
SCALE: 1/2" = 1'-0"

REGISTRATION SEAL

ARCVISION

MANAGEMENT CONSULTANTS

TORRID

BOWER PLACE

4900 MOLLY BANISTER DR.

RED DEER, AB T4R 1N9

SPACE #230 STORE #3532-B

REV	DATE	DESCRIPTION	NAME

PROJECT NO: 230311

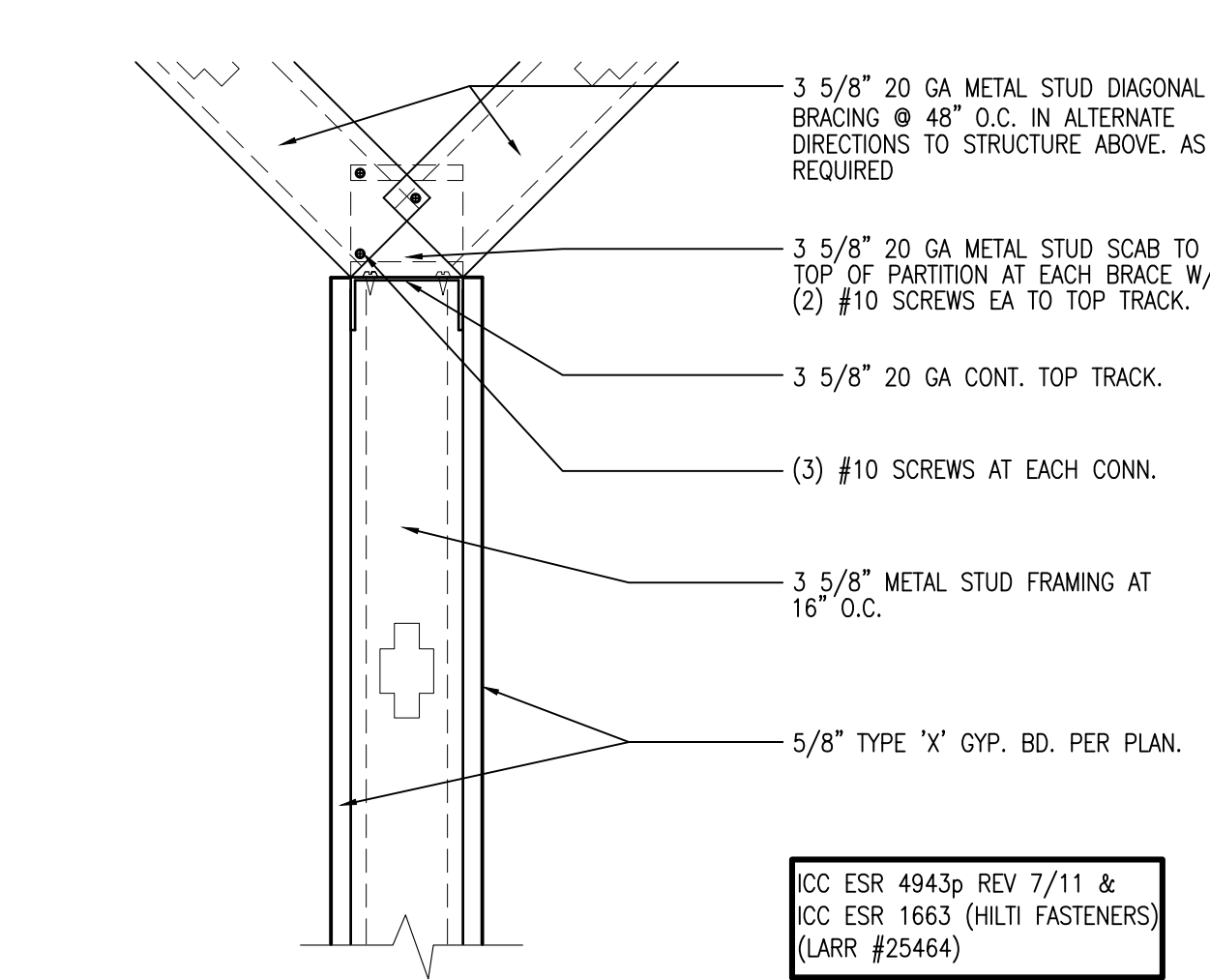
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CHECKED BY: KEU

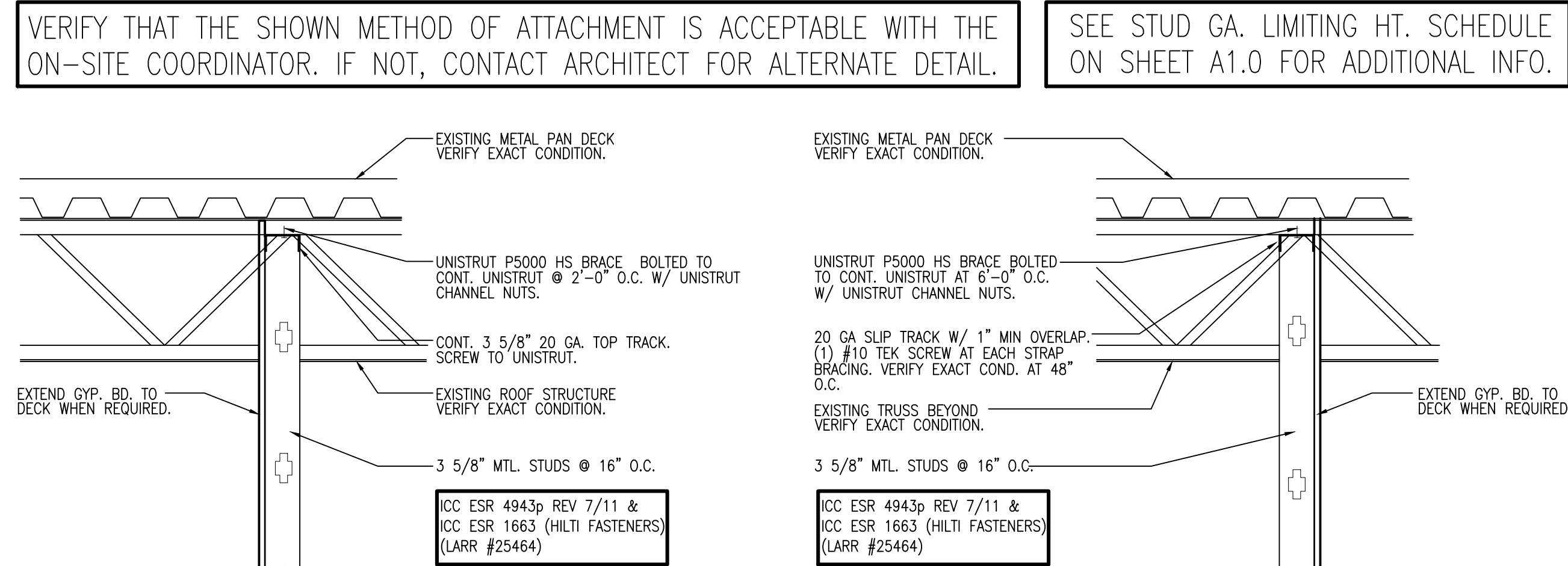
ISSUE DATE: 07/31/23

STOREFRONT PLAN + ELEVATION

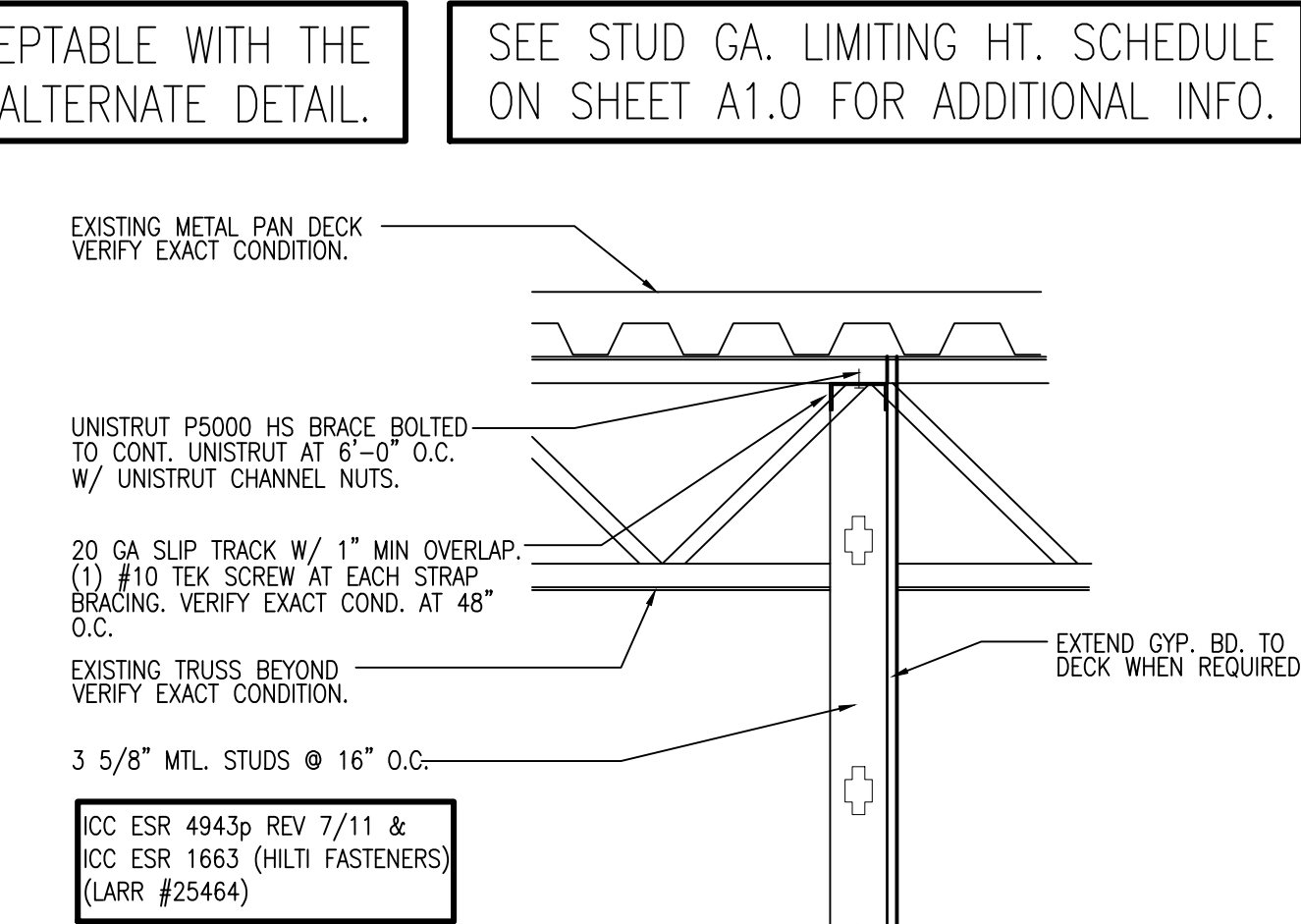
A5.2



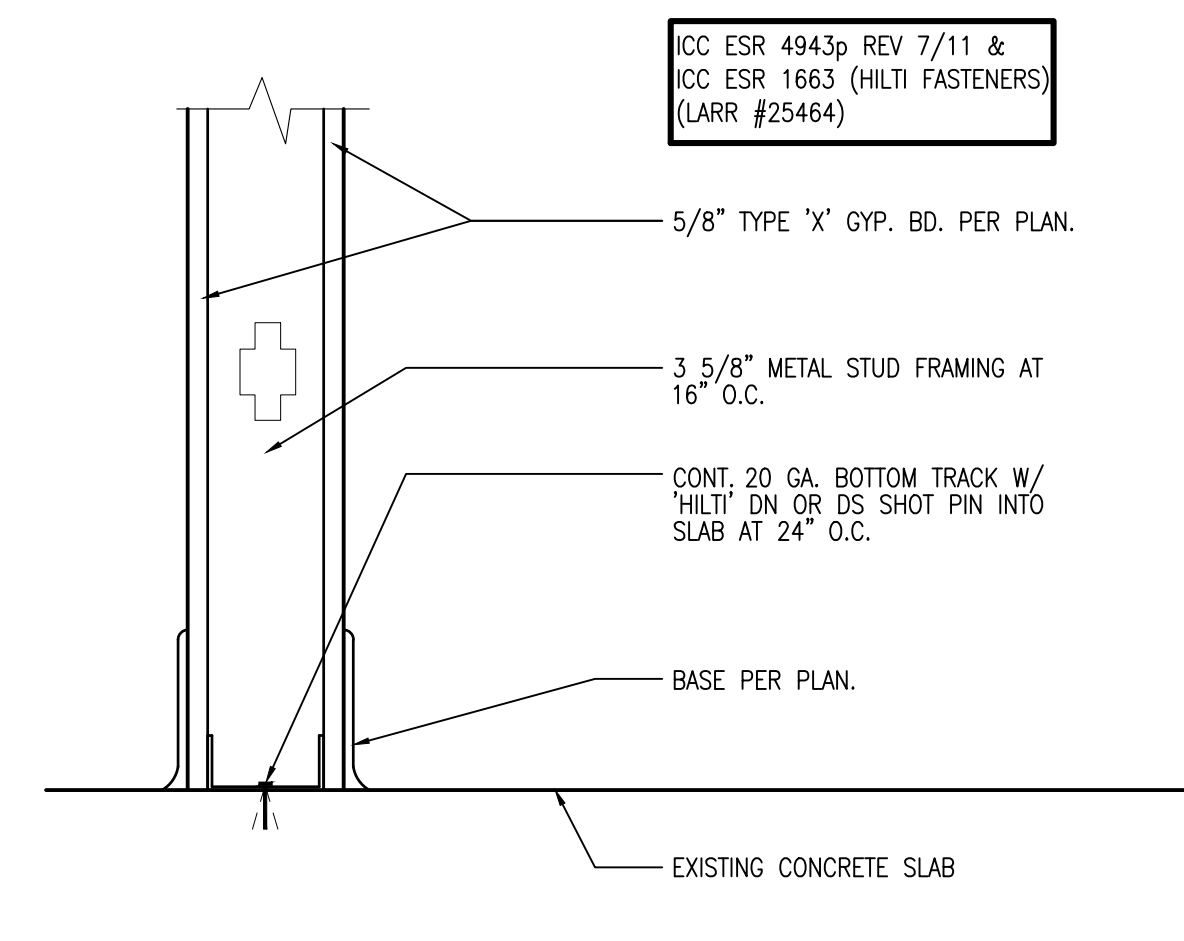
1 TYP. INTERIOR PARTITION AT TOP
SCALE: 1" = 1'-0"



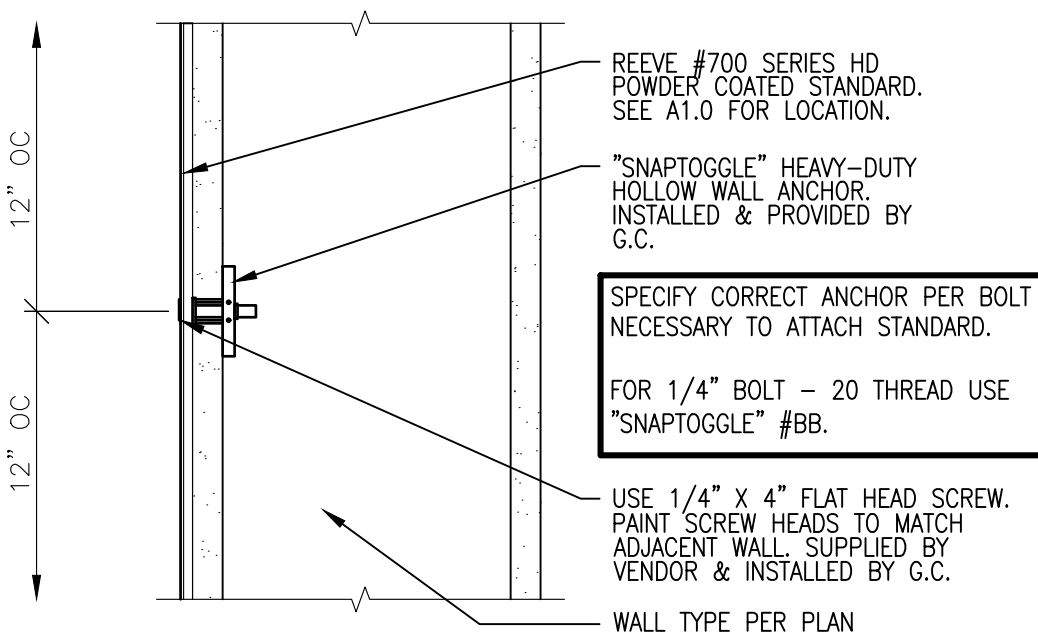
2 SOFFIT CONNECTION
SCALE: 1" = 1'-0"



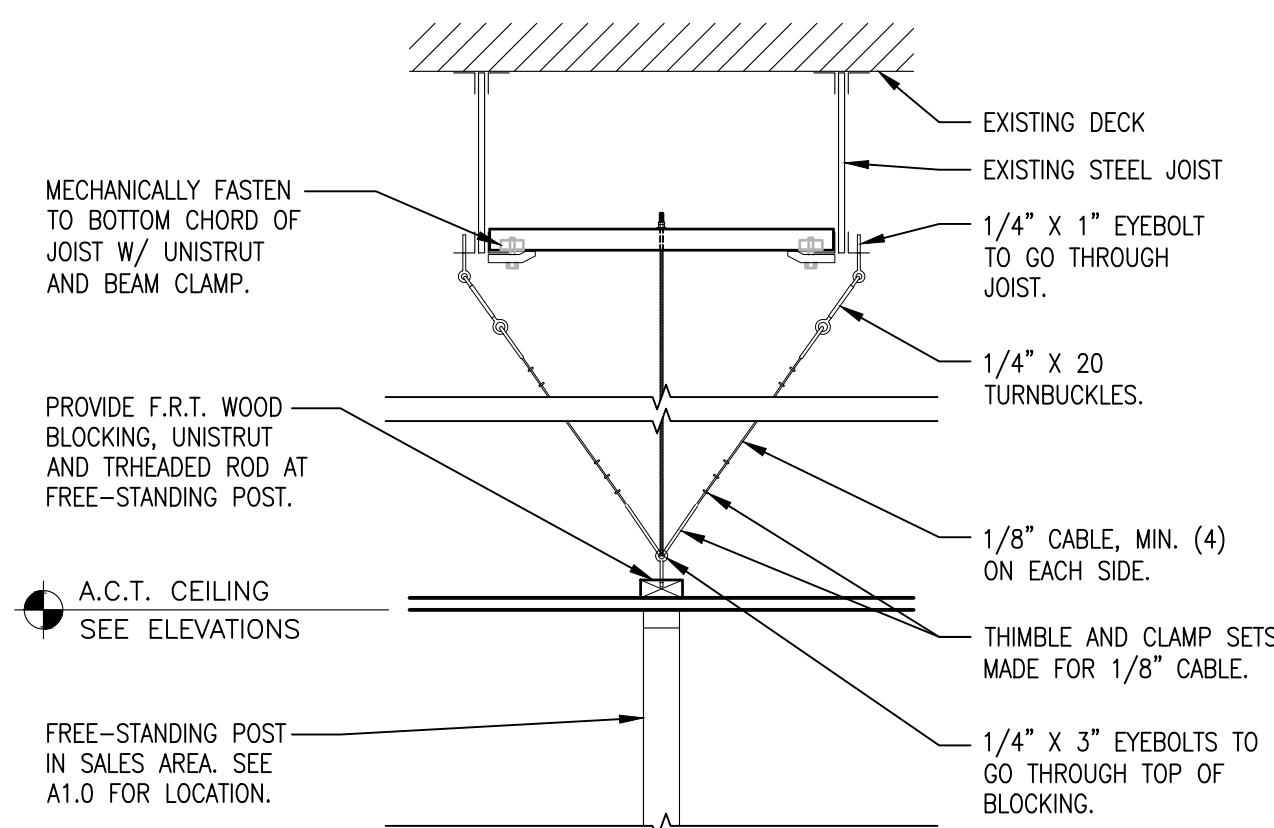
3 TOP OF FULL HEIGHT. INT. PARTITION
SCALE: 1" = 1'-0"



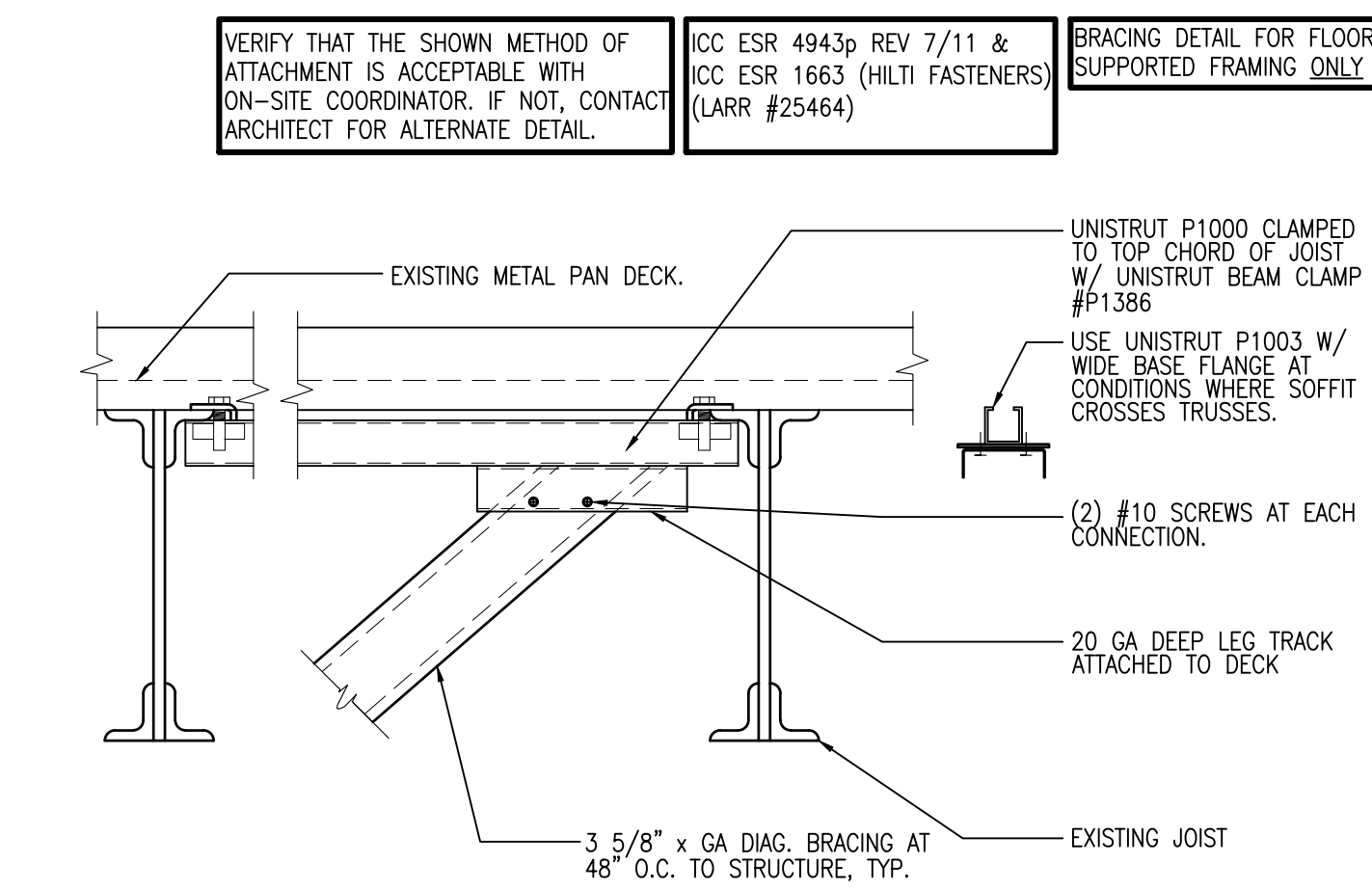
4 BOTTOM OF INTERIOR PARTITION
SCALE: 1 1/2" = 1'-0"



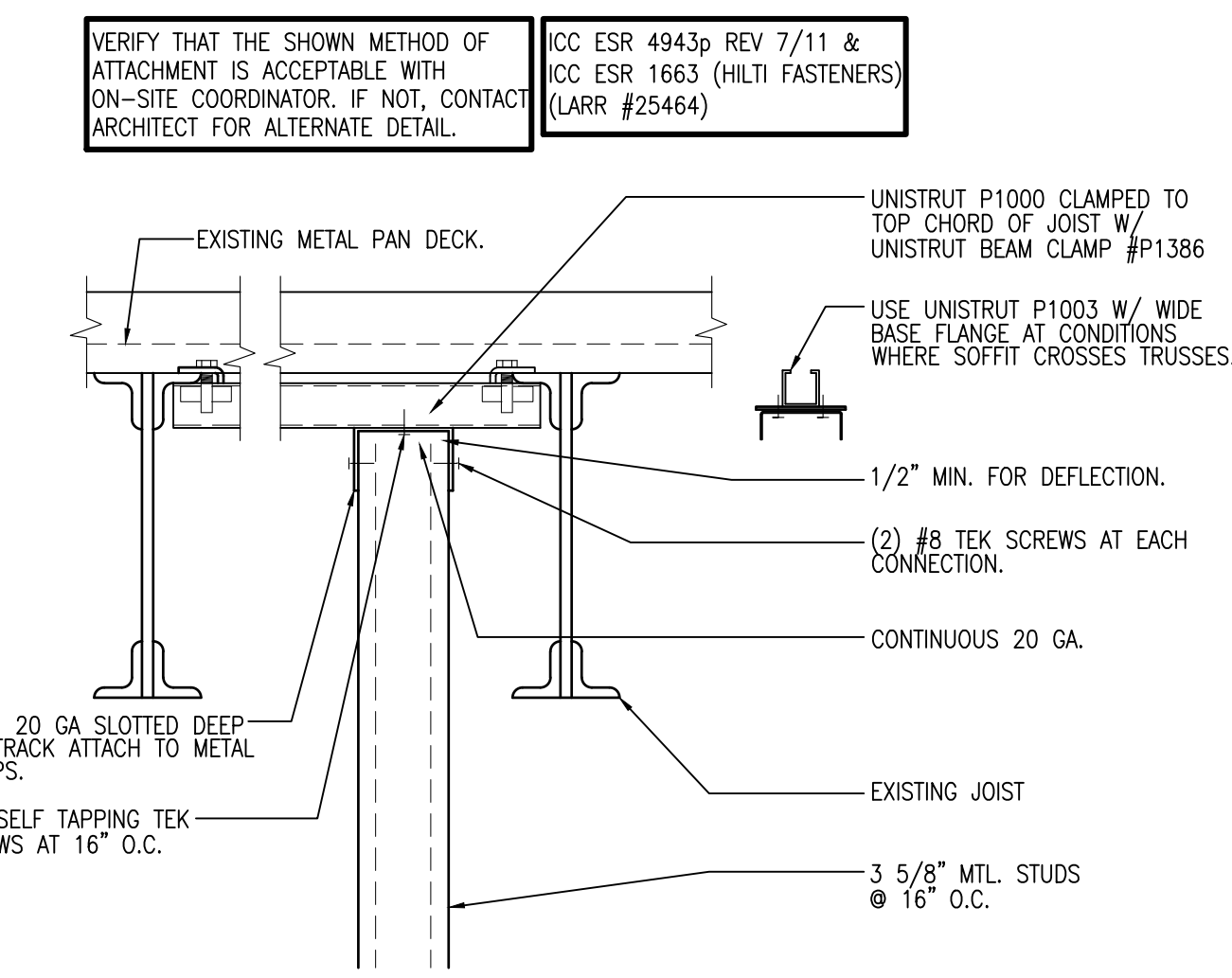
5 TOGGLE BOLT • SALES STANDARD
SCALE: 3" = 1'-0"



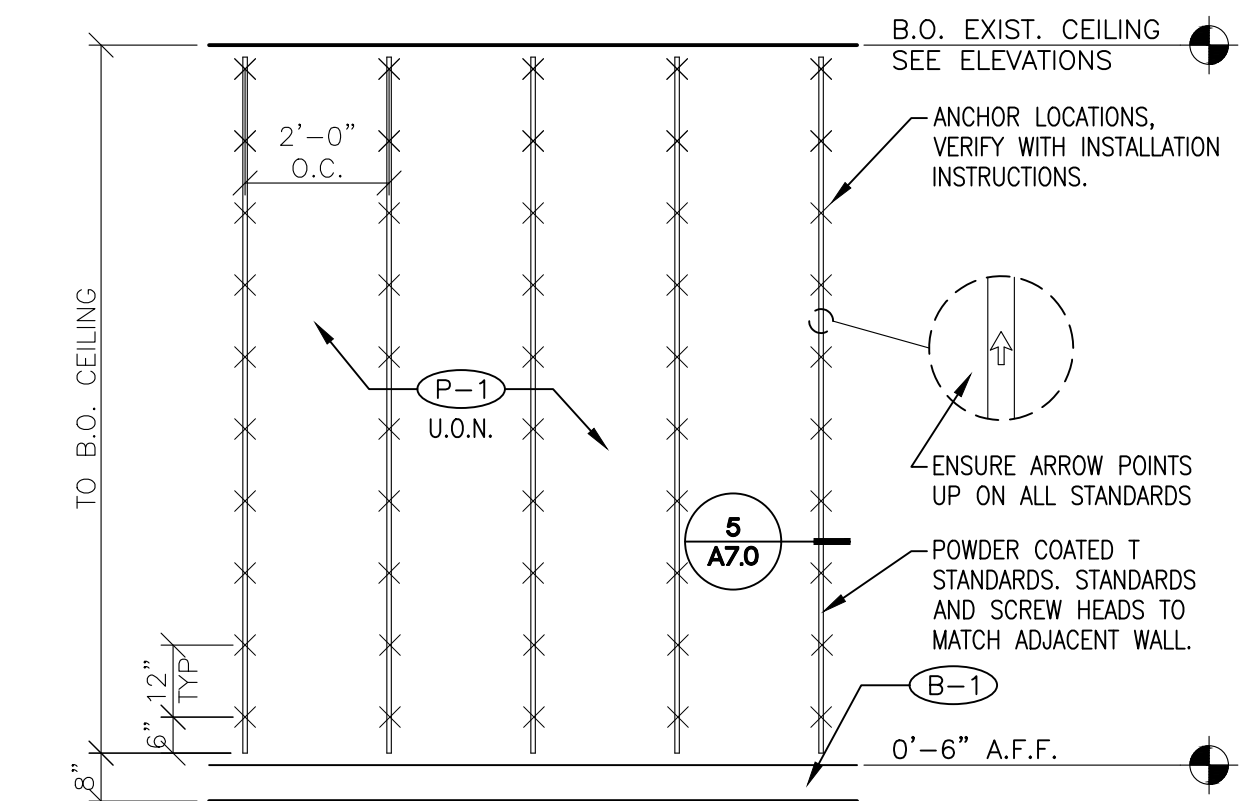
6 BLOCKING AT FREE-STANDING POST
SCALE: 3/4" = 1'-0"



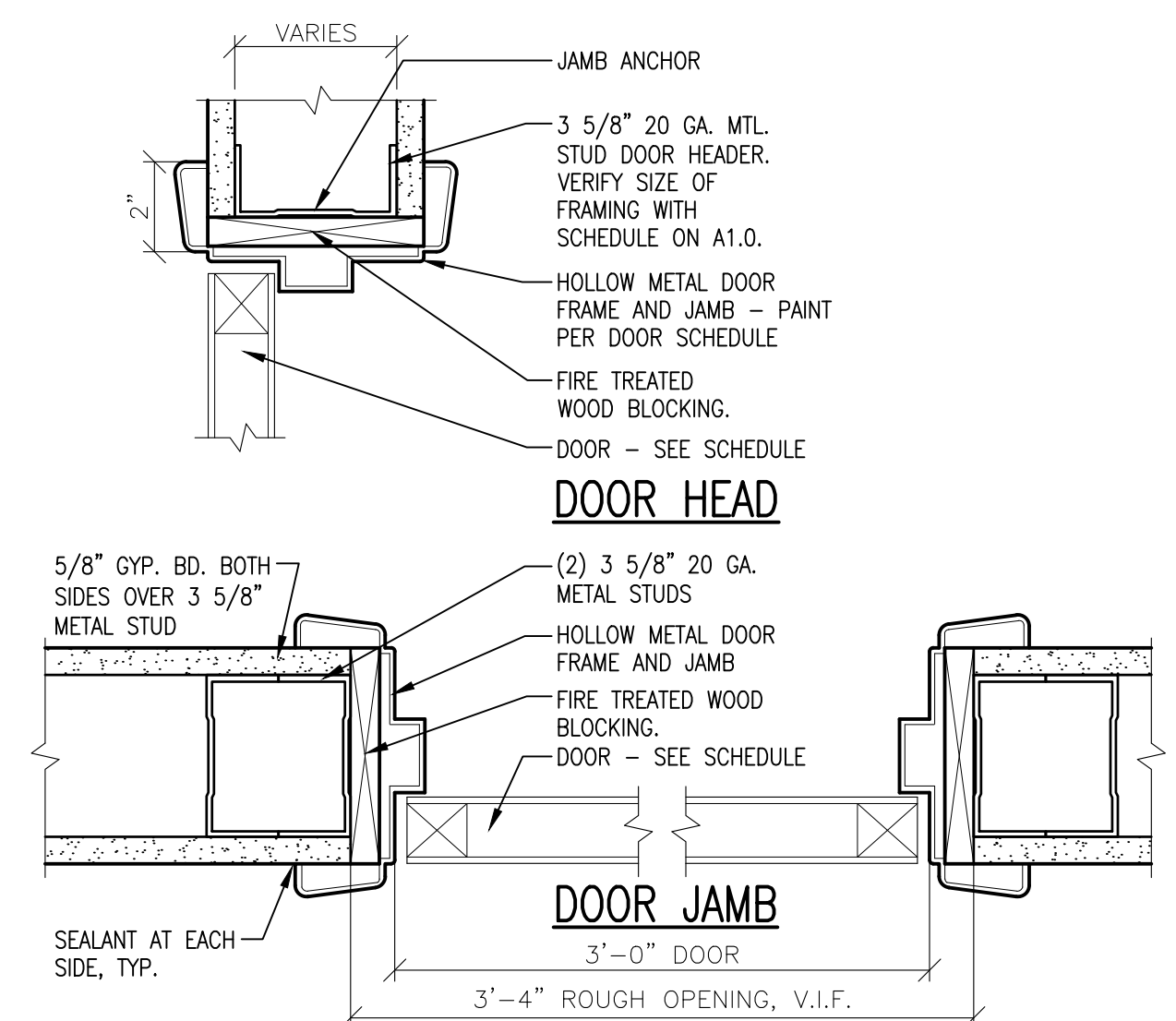
7 TYP. DIAG. BRACING CONN. TO DECK
SCALE: 1" = 1'-0"



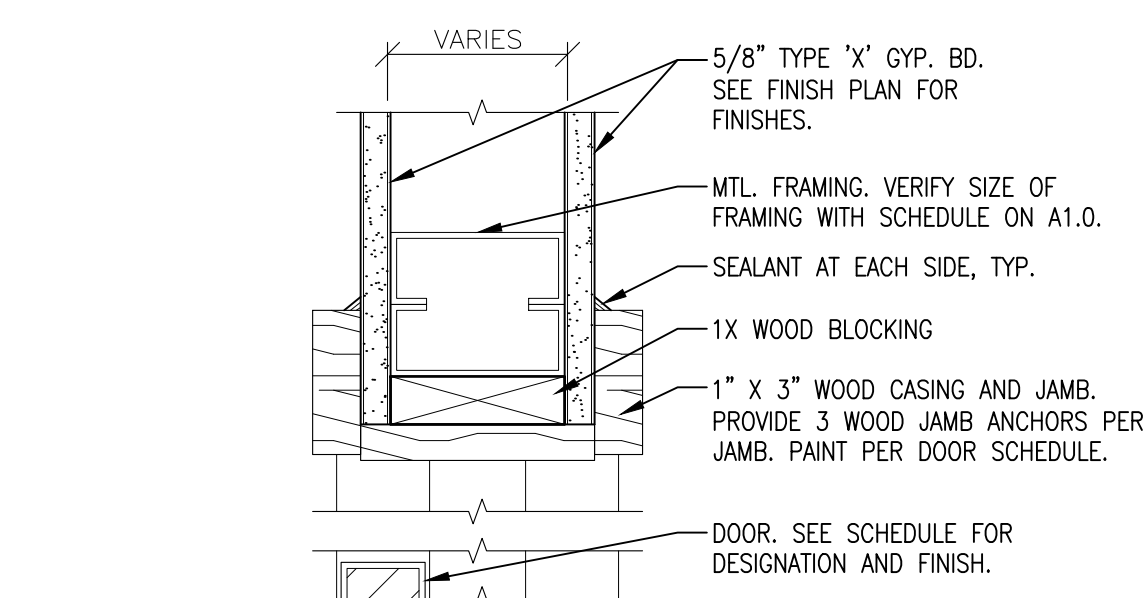
8 TOP OF INT. WALL TO STRUCTURE
SCALE: 1" = 1'-0"



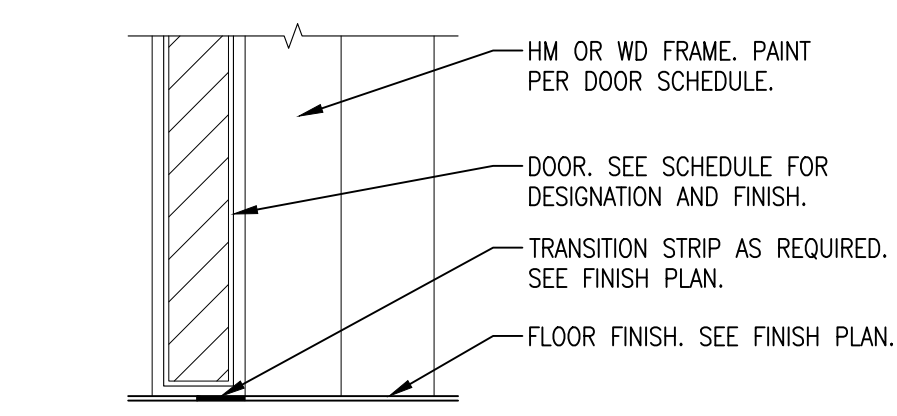
9 ELEVATION AT SALES STANDARDS
SCALE: 3/8" = 1'-0"



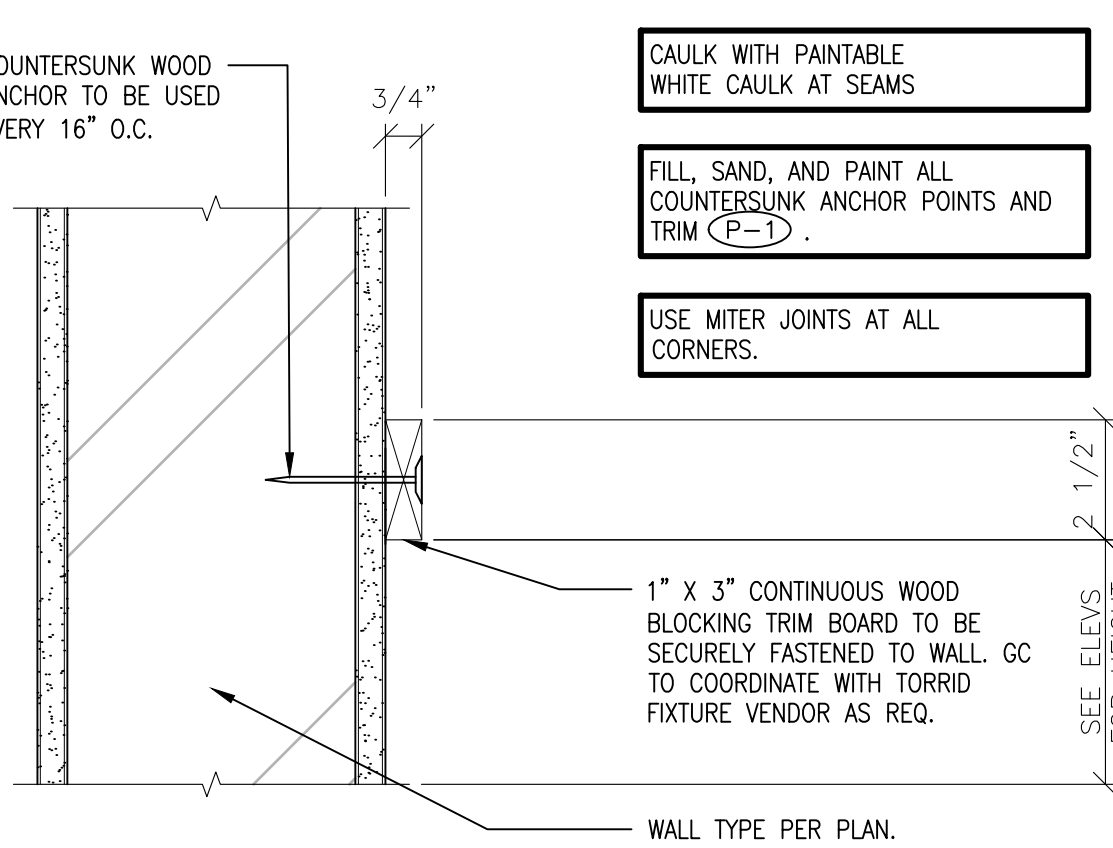
10 TYP. H.M. DOOR JAMB/HEAD DETAIL
SCALE: 3" = 1'-0"



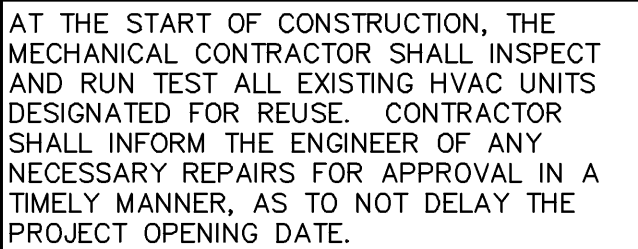
11 TYP. WD. DOOR JAMB/HEAD DETAIL
SCALE: 3" = 1'-0"

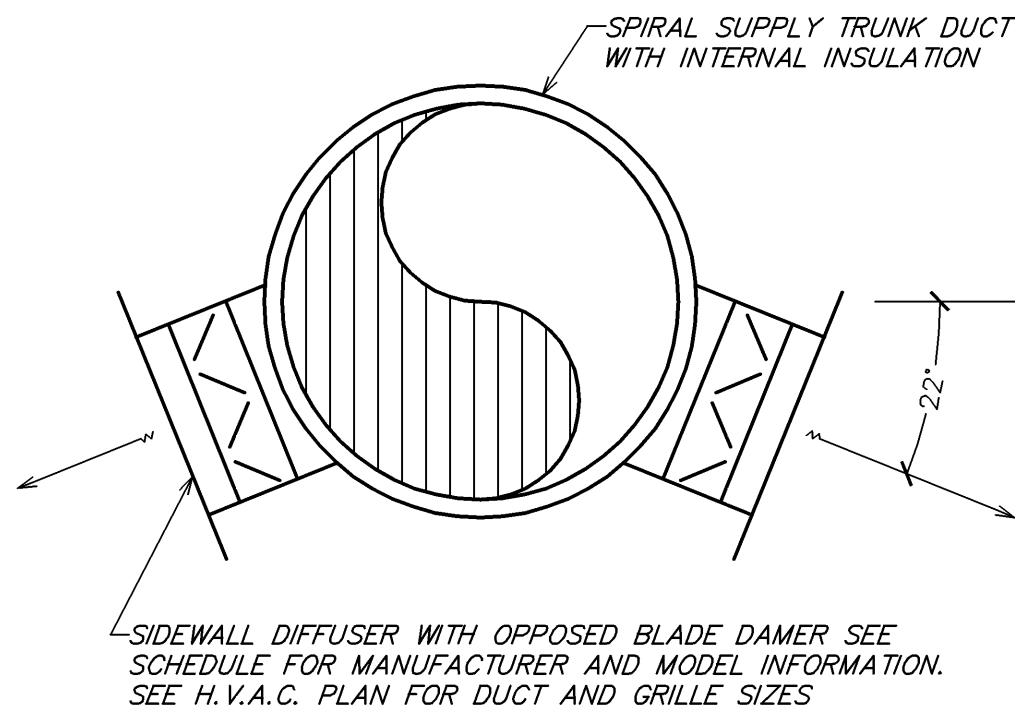


12 TYP. DOOR SILL DETAIL
SCALE: 3" = 1'-0"



13 PERIMETER TRIM
SCALE: 3" = 1'-0"





DUCT MOUNTED DIFFUSER DETAIL

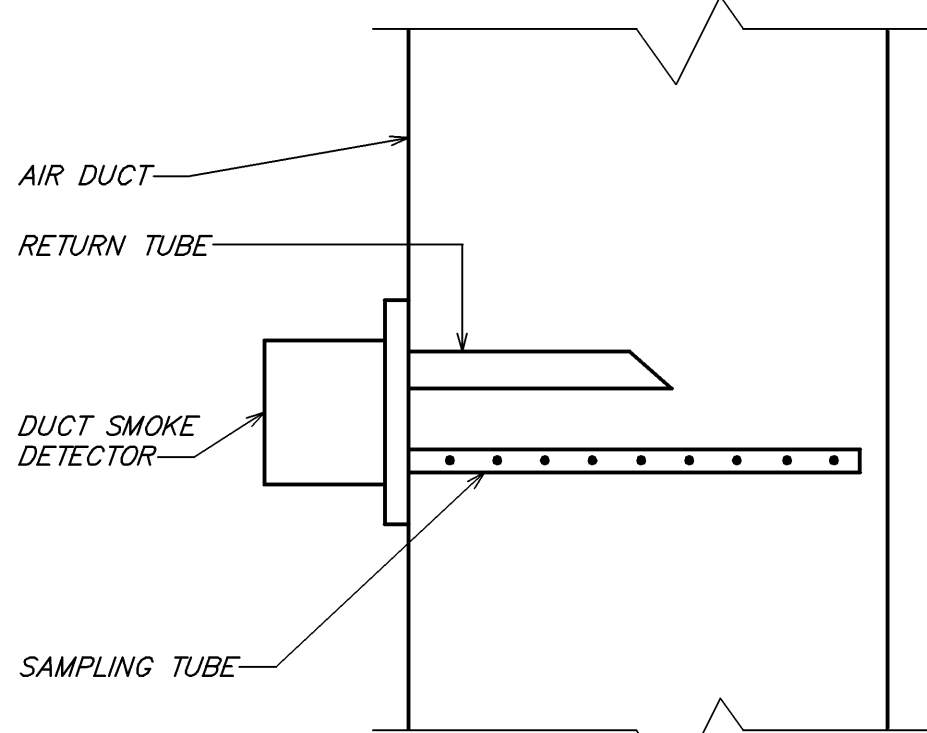
7 NOT TO SCALE

DIA.	WIRE DIA.	ROD	STRAP
10" DN	ONE 12 GA.	1/4"	1" x 22 GA.
11-18"	TWO 12 GA. OR ONE 8 GA.	1/4"	1" x 22 GA.
19-24"	TWO 10 GA.	1/4"	1" x 22 GA.
25-36"	TWO 8 GA.	3/8"	1" x 20 GA.
37-50"	-	TWO 3/8"	TWO 1" x 20 GA.
51-60"	-	TWO 3/8"	TWO 1" x 18 GA.
61-84"	-	TWO 3/8"	TWO 1" x 16 GA.
85-96"	-	TWO 1/2"	TWO 1 1/2" x 16 GA.

NOTES:
1. STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED STEEL. ALL ARE ALTERNATIVES.
2. TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS.

ROUND DUCT HANGER TABLE

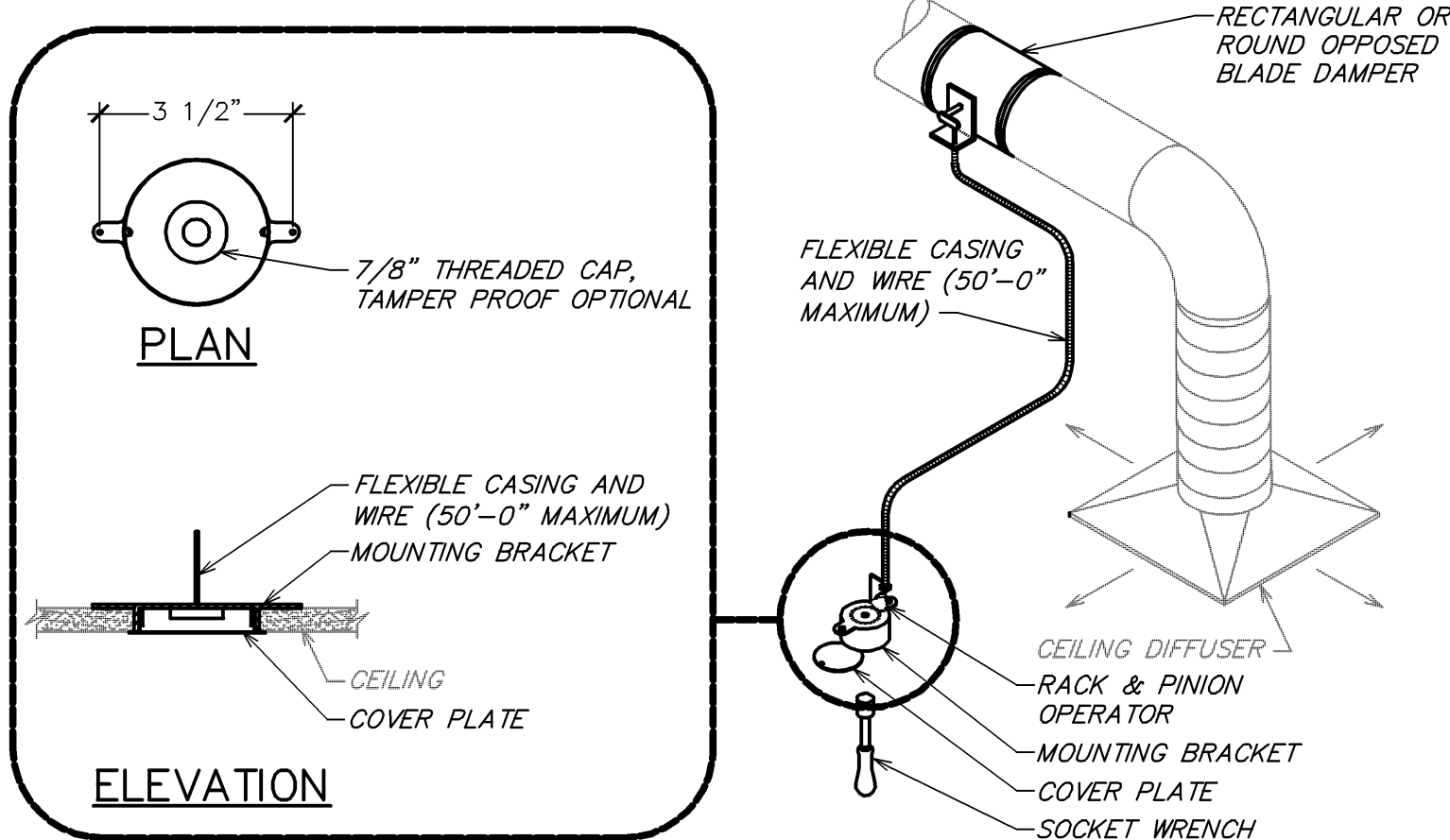
6 NOT TO SCALE



NOTE:
1. DUCT SMOKE DETECTOR ON RETURN AND/OR SUPPLY SIDE DUCT AND SHUTDOWN RELAY SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.

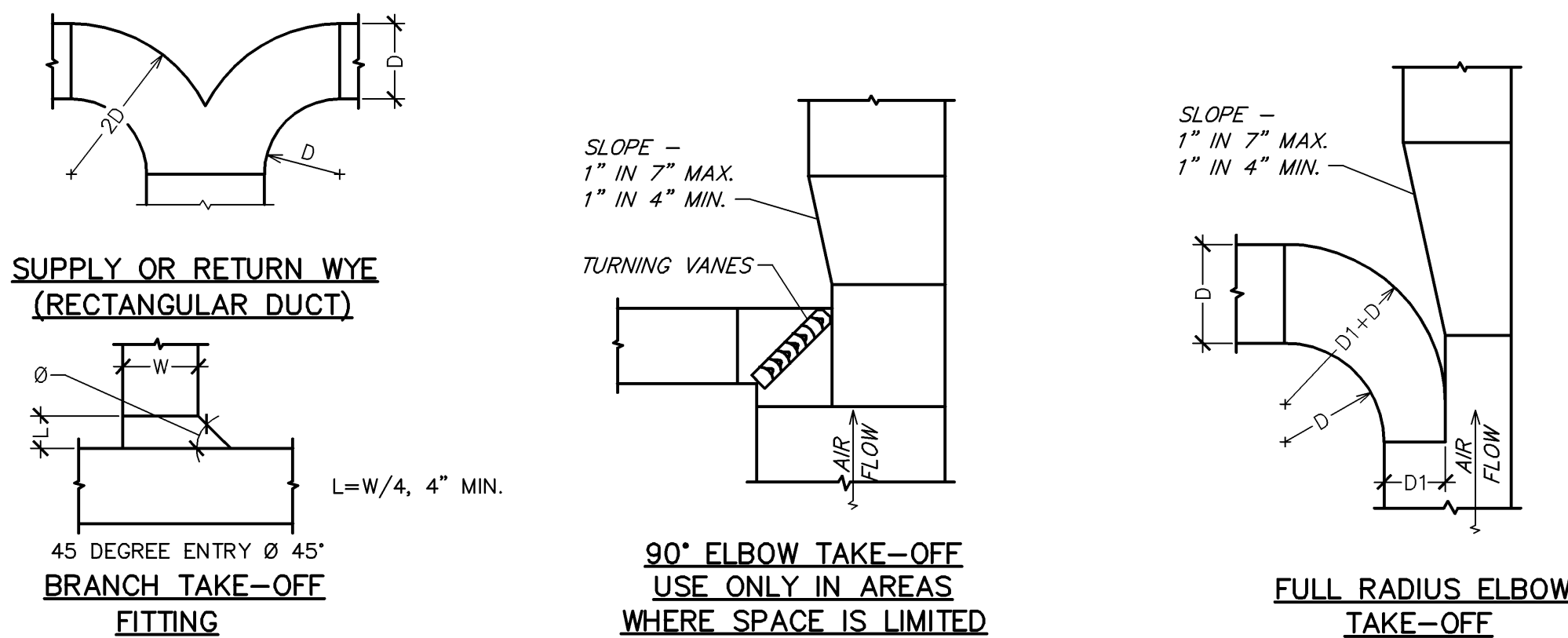
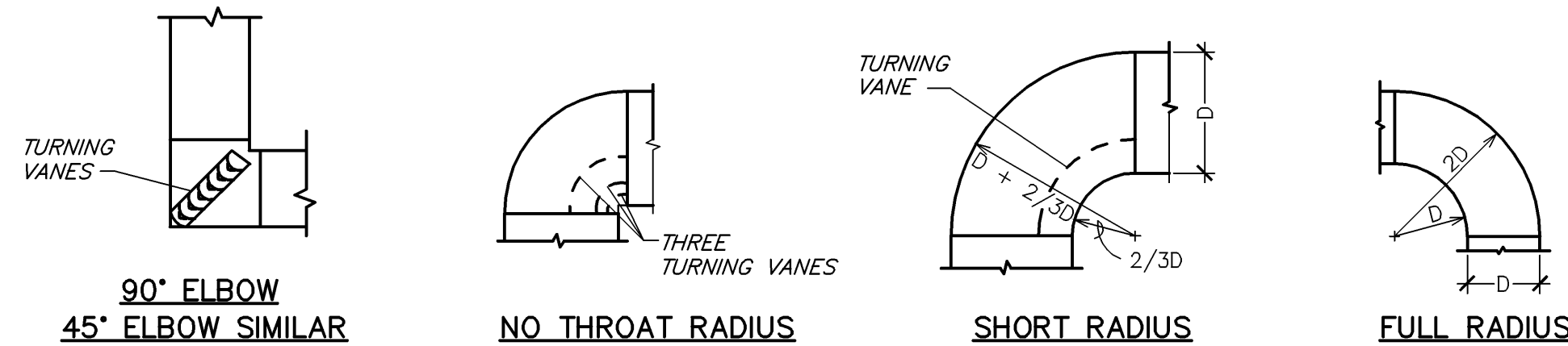
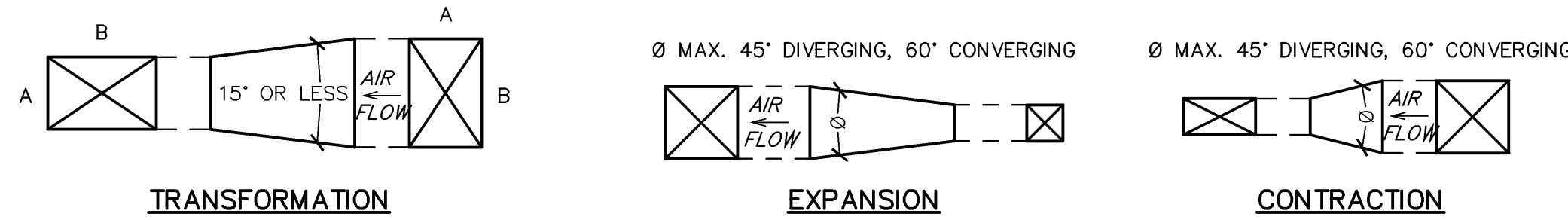
DUCT SMOKE DETECTOR DETAIL

5 NOT TO SCALE



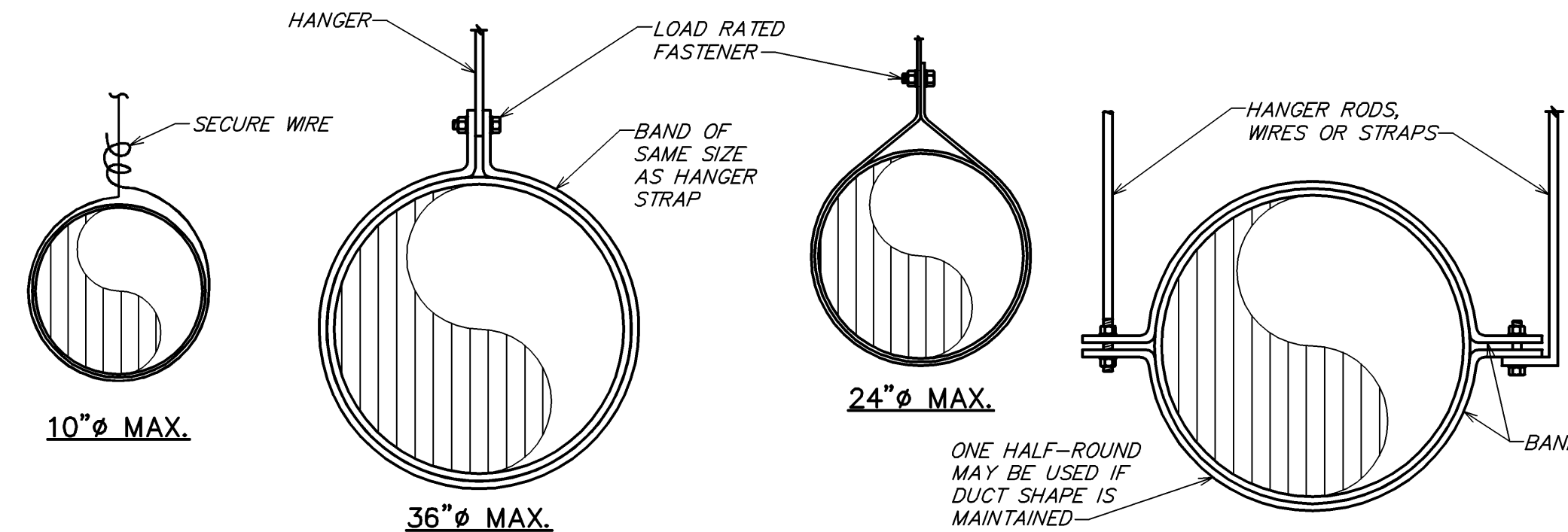
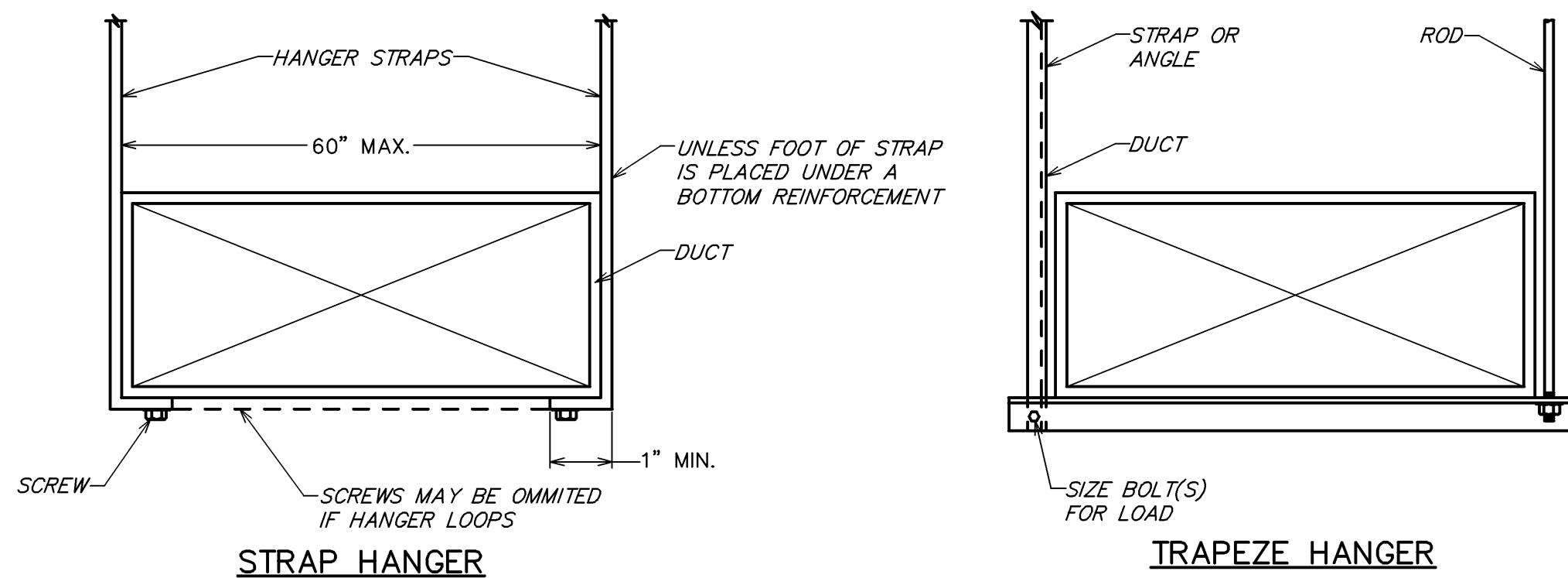
REMOTE VOLUME DAMPER CONTROLLER

4 NOT TO SCALE



DUCTWORK DETAILS

3 NOT TO SCALE



NOTE: HANGERS MUST NOT DEFORM DUCT SHAPE

DUCT HANGER DETAIL

2 NOT TO SCALE

DIFFUSERS, GRILLES AND REGISTERS

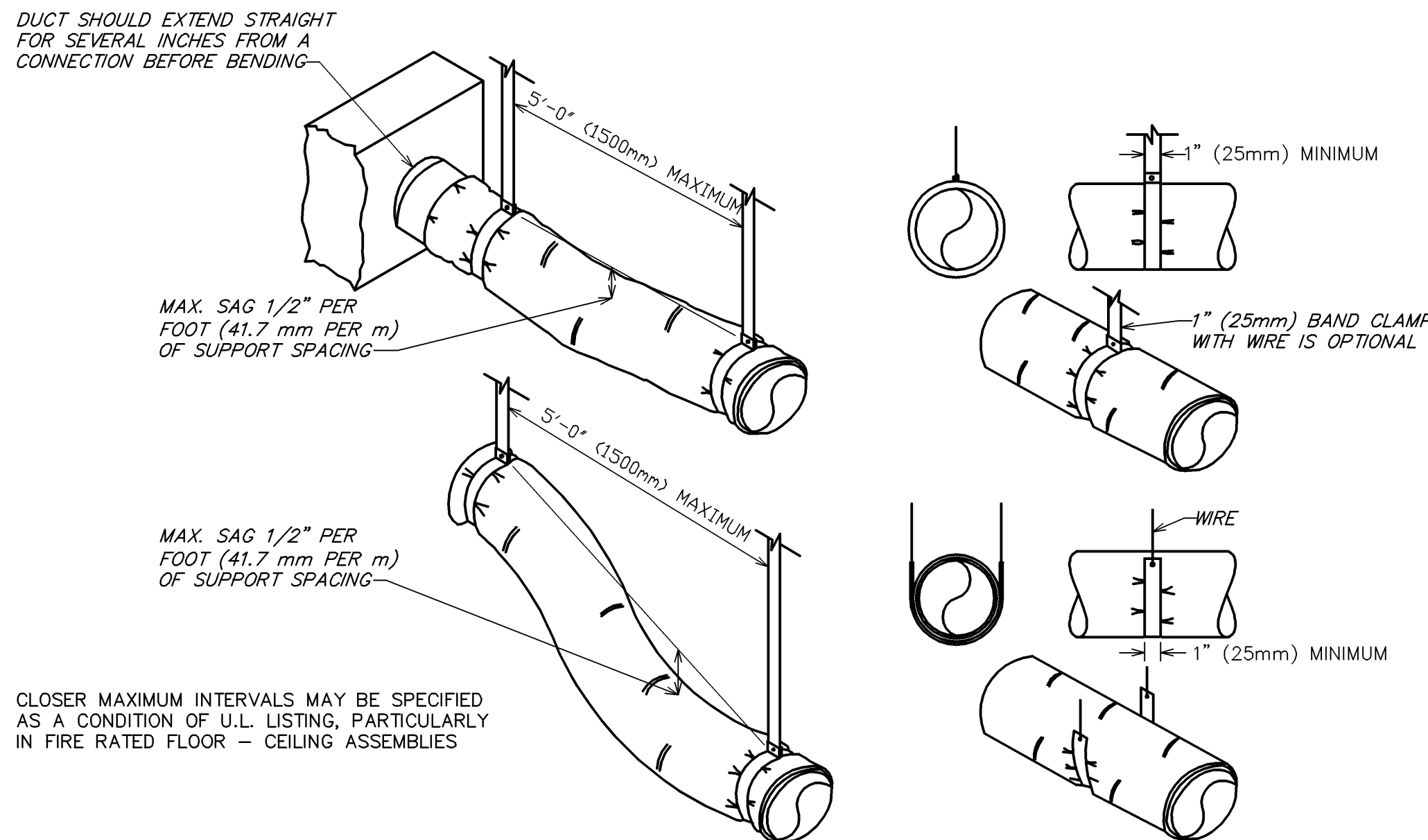
MARK	SERVICE	LOCATION	CEILING TYPE	MOUNTING TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	OMNI X 3 24x24 26 D-75	(1-2)
D-2	SUPPLY	CEILING	AC TILE	LAY-IN	TITUS	OMNI X 3 12x12 26 D-75	(1,2,4)
D-3	SUPPLY	CEILING	GYP. BOARD	LAY-IN	TITUS	OMNI X 3 12x12 26 D-75	(1,2,4)
D-4	SUPPLY	DUCT	NA	SURFACE	TITUS	300 R L X X 1 26	(1-2)
G-1	RETURN/TRANS	CEILING	AC TILE	LAY-IN	TITUS	50F X X X 3 26	(1-3)
G-2	TRANSFER	WALL	NA	SURFACE	TITUS	350 R L X X X 1 26	(1-2)

REMARKS:
1. TITUS IS THE BASE OF DESIGN. KRUEGER, PRICE, NAILOR, CARNES ARE EQUAL. NO EXCEPTIONS.
2. SEE PLAN FOR NECK SIZE.
3. PROVIDE 1/2" X 1/2" X 1" CORE.
4. PROVIDE WITH MODEL TRM FRAME.

EXHAUST FANS

MARK	LOCATION	SERVICE	AIRFLOW (CFM)	EXTERNAL STATIC (IN H2O)	SONES	MOTOR DATA FAN (HP) VOLT PH	RPM	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1	CEILING	RESTROOM	100	0.50	2.0	128 W 115 1	1,050	GREENHECK	SP-B150	(1-5)

REMARKS:
1. FAN SHALL BE UL/CUL 507 LISTED.
2. PROVIDE FAN WITH SOLID STATE SPEED CONTROL.
3. FAN SHALL HAVE ROUND DUCT CONNECTION.
4. PROVIDE WITH BACKDRAFT DAMPER.
5. PROVIDE WITH GPI 14 INCH HEIGHT ROOF CURB AND RCC-7 ROOF CAP.

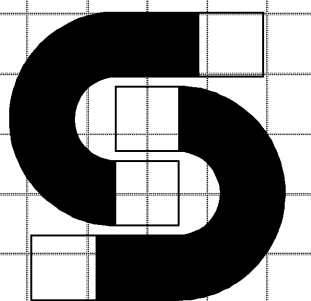
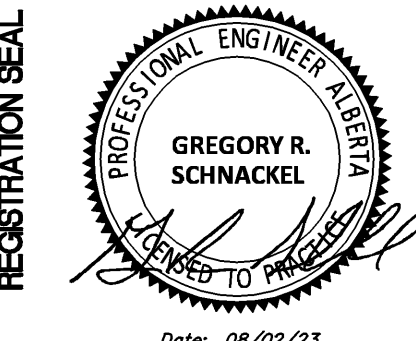


FLEXIBLE DUCT SUPPORTS

1 NOT TO SCALE

SYMBOLS			
HEATING-VENTILATING-AIR CONDITIONING			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	STEAM (LOW PRESSURE)		AUTOMATIC CONTROL VALVE
	STEAM (HIGH PRESSURE)		PRESSURE REGULATING VALVE (PRV)
	CONDENSATE (LOW PRESSURE)		SAFETY RELIEF VALVE
	CONDENSATE (HIGH PRESSURE)		BLOW OFF VALVE
	HOT WATER SUPPLY (HEATING)		F AND T TRAP (CAP. #/HR)
	HOT WATER RETURN (HEATING)		THERMOSTATIC TRAP
	ETHYLENE GLYCOL SUPPLY		STATIC PRESSURE
	ETHYLENE GLYCOL RETURN		CIRCUIT SETTER FLOW CONTROL VALVE
	CHILLED WATER RETURN		AIR BLEEDER VALVE (RADIANT PANEL)
	CONDENSATE OR VACUUM PUMP DISCHARGE		AIR ELIMINATOR
	HUMIDIFICATION LINE		AUTOMATIC BALANCING VALVE
	FUEL OIL SUPPLY		SOLENOID VALVE (REFRIGERANT)
	FUEL OIL RETURN		THERMOSTATIC EXPANSION VALVE (REFR.)
	FUEL OIL VENT		BACK PRESSURE VALVE
	GAS LINE		SIGHT GLASS
	REFRIGERANT LIQUID LINE		ROUND DUCT RISER
	REFRIGERANT SUCTION LINE		FAN COIL UNIT AND MARK
	REFRIGERANT HOT GAS DISCHARGE LINE		UNIT HEATER-PROPELLER TYPE & MARK
	CONDENSER WATER		CABINET UNIT HEATER & MARK
	CONDENSER WATER RETURN		FIN TUBE, MARK AND CAPACITY
	BOILER BLOW OFF		CONVECTOR AND MARK
	EXHAUST STEAM		UNIT VENTILATOR AND MARK
	CONCENTRIC REDUCER		RECTANGULAR DUCT FIRST FIGURE IS SIDE SHOWN
	ECCENTRIC REDUCER		ROUND DUCT
	UNION		CANVAS CONNECTION
	EXPANSION JOINT		VOLUME DAMPER (ELEV AND PLAN)
	THERMOMETER		TURNING VANES
	PRESSURE GAGE		EXTRACTOR
	SUPPLY OR FRESH AIR DUCT (GA OR FA)		RETURN OR EXHAUST DUCT (RA OR EA)
	SOUND TRAP		RETURN REGISTER OR GRILLE (R OR G)
	SUPPLY REGISTER OR GRILLE (R OR G)		FRESH AIR INTAKE (FA)
	ROUND CEILING DIFFUSER (SUPPLY)		ROUND CEILING DIFFUSER (SUPPLY AND RETURN)
	SQUARE CEILING DIFFUSER (SUPPLY)		SQUARE CEILING DIFFUSER THREE WAY THROW
	SQUARE CEILING DIFFUSER TWO WAY THROW		GRAVITY DAMPER
	BASEBOARD DIFFUSER		MOTORIZED DAMPER
	HEATING RISER NUMBER		FIRE DAMPER
	EXHAUST FAN RISER NUMBER		SMOKE DAMPER
	BASEBOARD RADIATION		FIRE AND SMOKE DAMPER
	REMOTE SENSOR		REMOTE SENSOR
	THERMOSTAT		THERMOSTAT

NOTE:
1. NOT EVERY SYMBOL ON THIS SCHEDULE APPEARS ON THIS PROJECT.



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TORRID

BOWER PLACE

4900 MOLLY BANISTER DR.

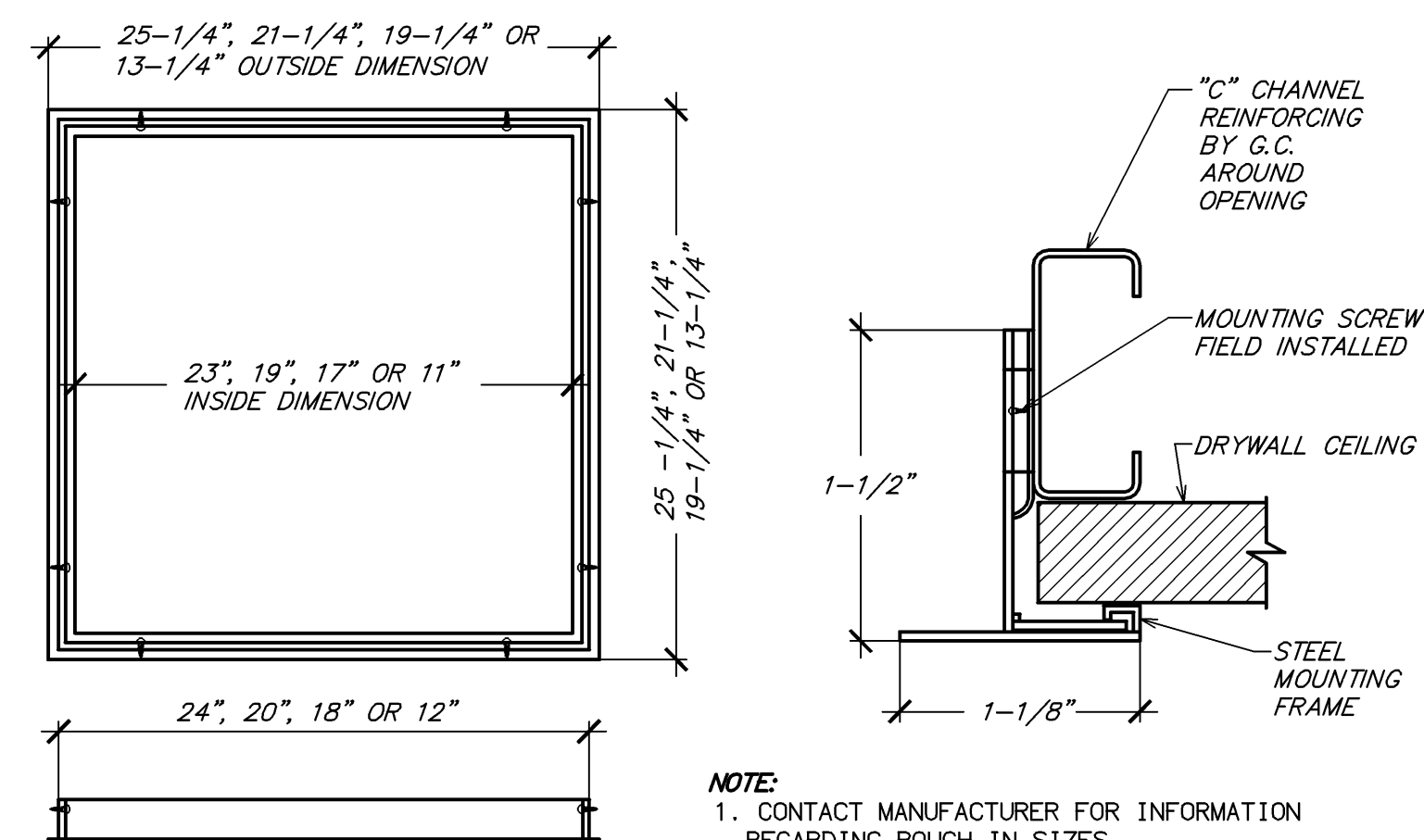
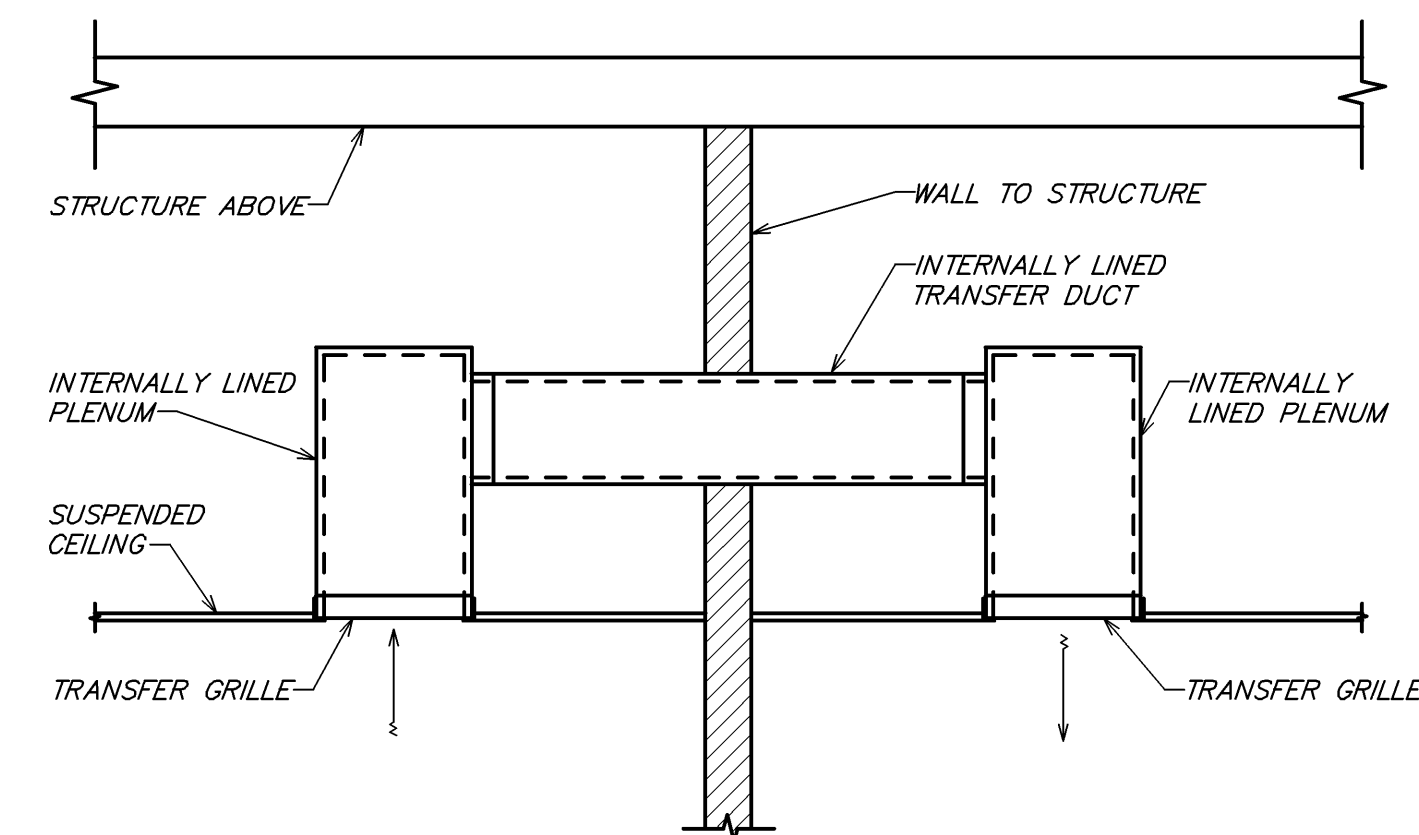
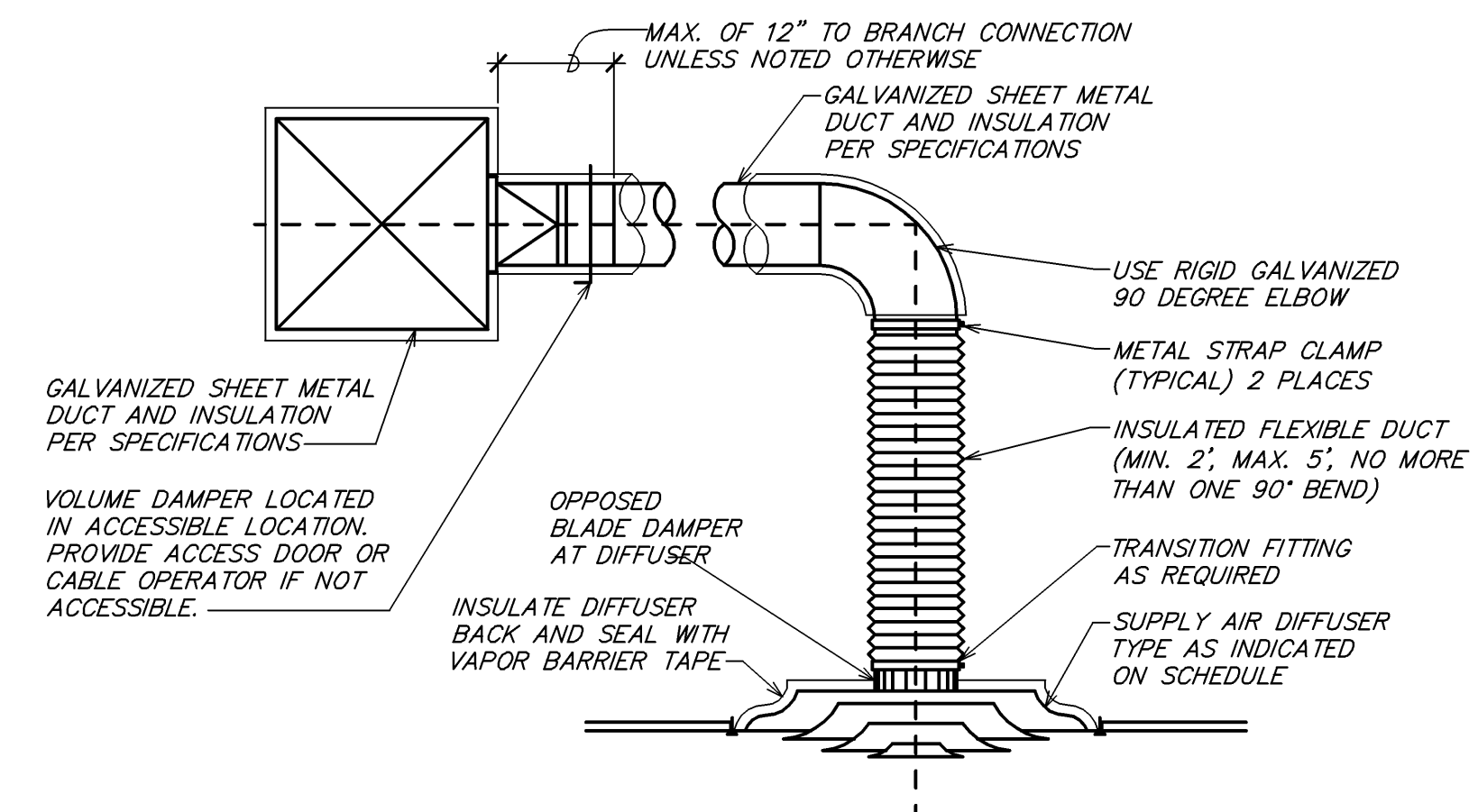
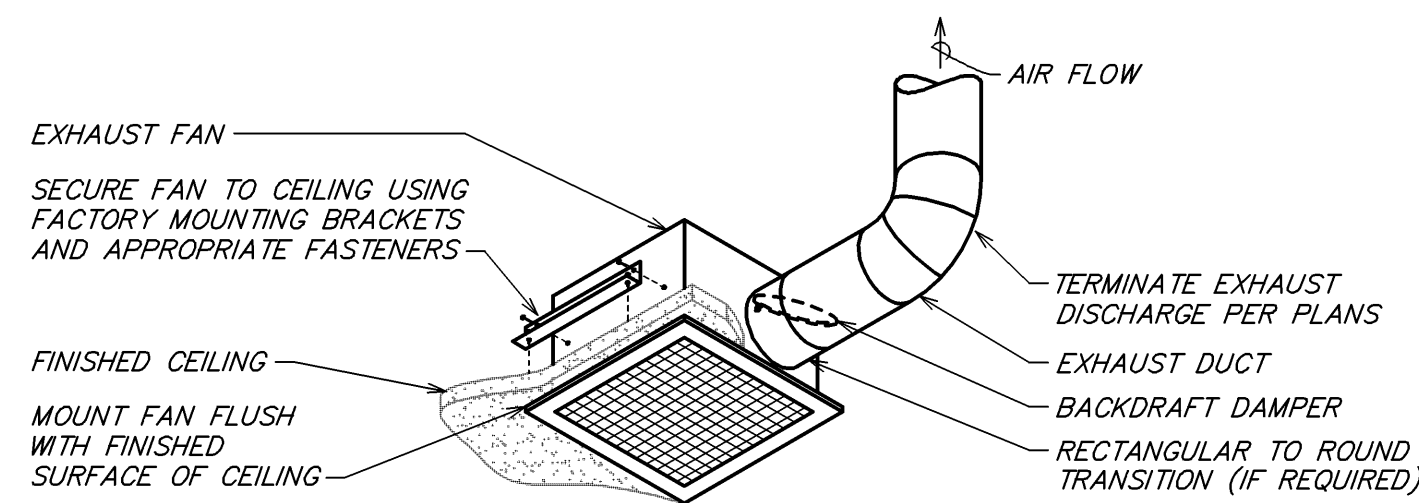
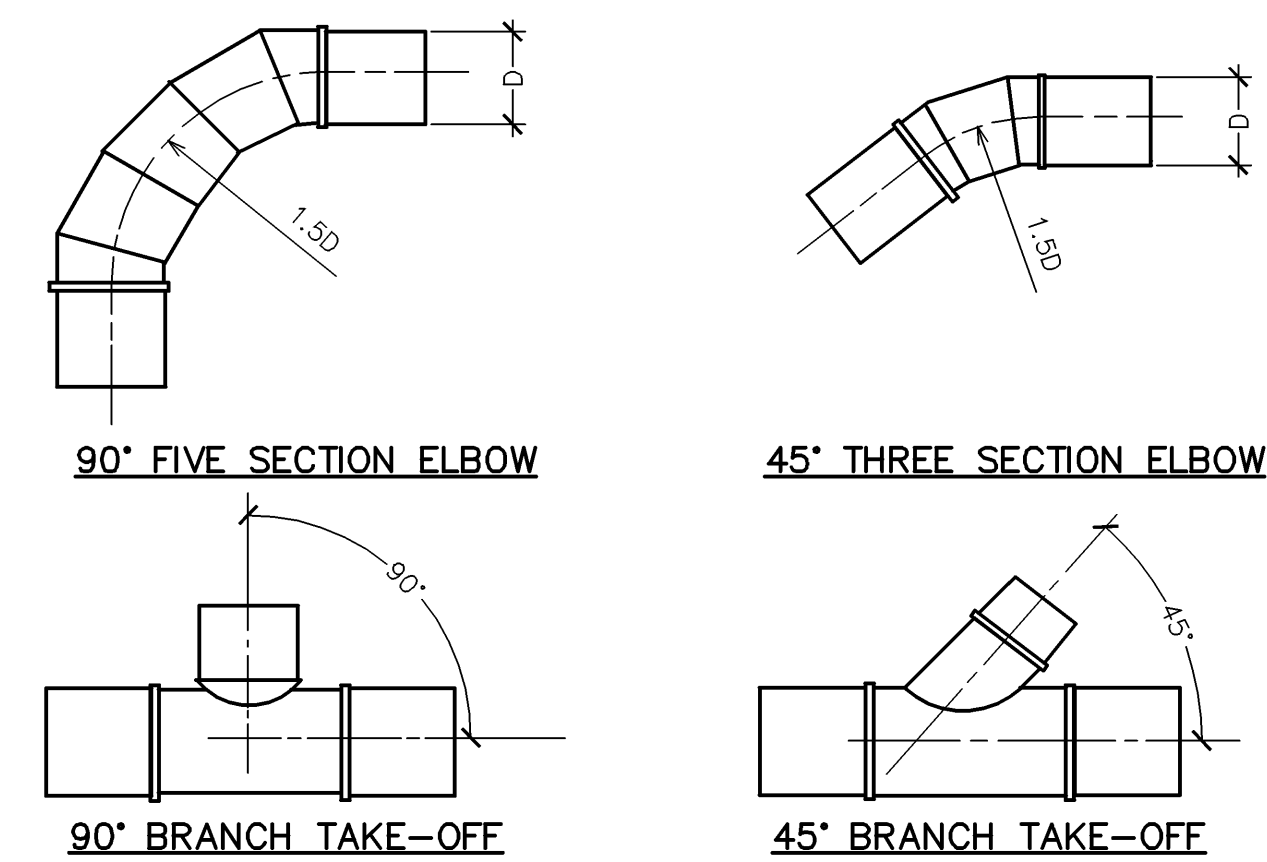
RED DEER, AB T4P 1N9

SPACE #230 STORE #5532-B

HVAC SCHEDULES AND DETAILS

PROJECT NO.	DATE	REV.	DESCRIPTION
230311			
SET			
GRS			
07/31/23			

M2.0

[illegible]

SECTION 230000 - HVAC GENERAL CONDITIONS

PART 1 GENERAL

1.01 ACQUIRABILITY

A. This section supplements all sections of the Specifications for Division 23 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved HVAC systems.

1.02 DEFINITIONS

A. "Work" is hereby defined as, "The construction and services required by the Contract Documents whether completed or partially completed and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project."

B. "Finish" is hereby defined as, "To supply and deliver, unload, and inspect for damage."

C. "Install" is hereby defined as, "To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work."

D. "Provide" is hereby defined as, "To furnish and install."

E. "Connect" is hereby defined as, "To join service to the equipment and make final attachment including necessary ductwork, piping, wiring, etc."

F. "Concealed" is hereby defined as, "Hidden from sight in chases, furled spaces, shafts, hung ceilings, or otherwise."

G. "Exposed" is hereby defined as, "Not installed underground nor concealed as defined by the Specifications."

H. "Drawings" is hereby defined as, "All plans, details, equipment schedules, diagrams, sketches, etc., issued for the construction of the work."

1.03 CODES AND STANDARDS

A. Recognized standards in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with the Americans with Disabilities Act (ADA) and the Authority Having Jurisdiction (AHJ) including the Fire Marshal's (S).

B. Perform work in accordance with Landlord requirements, including any Tenant Criteria Manuals and Lease Exhibits, where applicable.

C. Perform work in accordance with the applicable codes of utility companies serving the project. Make all arrangements with the utility companies for proper coordination of the work.

D. Recognized standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of Underwriters Laboratories Inc. (U.L.), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and National Electrical Code (NEC), National Fire Protection Association (NFPA), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

E. The Contract Documents shall take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES

A. Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.

1.05 CONTRACT DRAWINGS

A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of contract documents including the drawings and schedule and all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents submitted to the Contractor for review and approval.

B. Work under these sections is diagrammatic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of ductwork, piping, equipment, and accessories. Follow these drawings in laying out the work and verify the work with the installation of utility companies. Wherever a question exists as to the exact intended location of ductwork, piping, or equipment, obtain instructions from the Architect before proceeding with the work.

C. Notify the Architect for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect of discrepancies shall constitute acceptance in the work. The Contractor shall be responsible and subject to the Architect's review and possible rejection. Should the Architect reject a discrepancy resolution of which they were not notified, the Contractor shall be responsible for the cost of the discrepancy, including all associated costs, until approval of the installation is given by the Architect.

1.06 EXISTING CONDITIONS

A. Verify all existing conditions prior to beginning work.

B. Any existing conditions indicated in the Contract Documents are based on information drawings provided by others and possibly limited field verification. The Contractor shall adjust for actual field conditions at no additional expense to the Owner.

C. The Contractor shall visit the project site, review existing conditions against the Contract Documents, and submit a written report to the Architect before the start of the work. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.

D. The Contractor shall be responsible for any and all changes, including writing to the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect is not informed.

1.07 SUBMITTALS

A. Shop Drawings:

- Furnish the following submittals to the Architect for review by the Engineer:
 - Provide product data and shop drawings for vibration isolation
 - Provide balancing firm qualifications and final test report for Testing, Adjusting, and Balancing.
 - Provide product data for duct installation.
 - Provide product data for grease duct fireproofing (if specified).
 - Provide product data for HVAC piping insulation.
 - Provide product data and shop drawings for ductwork.
 - Provide product data for air duct accessories.
 - Provide product data and shop drawings for HVAC power ventilators.
 - Provide product data and shop drawings for ductwork, hangers, and inlets.
 - Provide product data and shop drawings for packaged rooftop units.
- Submittals other than those listed above will not be reviewed and will be returned stating as such.
- Shop drawings shall be prepared by a manufacturer's representative, and shall contain names of the manufacturer and cut sheets of equipment to be used on the project. Use manufacturer's specification sheets identified by number indicated on drawings. Do not use generic equipment or materials on the cut sheets. As applicable, provide construction data, weight and dimensional data, voltage ratings, performance data, listing data, pump curves, fan curves and sound data as part of the shop drawing submittal.
- Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. The Contractor shall be responsible for the quality of the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.
- Electrical Characteristics: Verify that proper power supply is available prior to order and installation. Verify and certify the voltage, phase and current rating of power supply and inform Engineer of any deviations prior to order. Connection of equipment or start-up. Responsibility for verification of proper power supply voltage and any product returns or damage resulting from incorrect connections shall rest with this Contractor.

B. Test Reports: Provide Testing, Adjusting, and Balancing (TAB) and Commissioning reports to the Architect for review by the Engineer. All other reports shall be provided to the Owner.

1.08 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.

B. Installer Qualifications: Company specializing in performing the work of this section, with minimum five years experience.

1.09 PRODUCTS

A. Products:

- Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- All equipment and materials shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.
- Equipment and materials specified shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. The Contractor shall be responsible for the quality of the Contractor of the responsibility for providing all materials, equipment and accessories reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.
- Code or utility company requirements shall supersede any conflicting requirements of this section.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Rooftop Equipment: Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage by storing off site until ready for installation.

C. Protect dampers and accessories from damage to operating linkages, blades and finishes.

D. Provide temporary and caps and closures on piping and fittings. Maintain in place until installation.

E. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather-proofing. For extended outdoor storage, remove motors from equipment and store separately.

1.11 WARRANTY AND GUARANTEE

A. Submittal manufacturer's warranty and ensure forms have been filled out in Owner's name and related with manufacturer.

B. Provide one year manufacturer warranty for pumps.

C. Provide three year manufacturers warranty for solid state ignition modules.

D. Provide five year warranty for manufacturers warranty for compressors, heat exchangers, condensing units, and electronic air cleaners.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. The products of other manufacturers shall meet or exceed all requirements of the Contract Documents. The Contractor shall be responsible for the quality of the Contractor of the responsibility for providing all materials, equipment, and accessories reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents. The Contractor shall be responsible for the quality of the Contractor of the responsibility for providing all materials, equipment, and accessories reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents. The Contractor shall be responsible for the quality of the Contractor of the responsibility for providing all materials, equipment, and accessories reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.

B. The Contractor may use any of the following ductwork, piping or insulation

materials at his option, provided the selected material meets with the approval of all State, local authorities and any utility company requirements. Verification of compliance of the selected material is the sole responsibility of the installing Contractor.

PART 3 EXECUTION

3.01 COORDINATION OF WORK

A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.

B. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent prompt and proper installation, or make it unsuitable for the work, with the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.

C. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required. The HVAC system layout may be altered to suit the conditions with engineer approval, prior to the installation of any work and without additional cost to the Owner. Conflicts arising from lack of coordination shall be this Contractor's responsibility.

D. Perform all work in conformity with the Contract Documents and afford other trades reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.

E. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.

F. All temperature control wiring, thermostat wiring, damper interlock wiring, control panel interlock wiring and miscellaneous low voltage wiring associated with the equipment furnished or installed under this contract shall be furnished and installed by the mechanical contractor or his sub-contractor. All wiring installed under this contract shall be in full compliance with the National Electrical Code, all State and local codes and requirements of the Electrical Specifications for this project.

3.02 EXAMINATION

A. Verify field measurements are as indicated on the Drawings.

B. Verify all equipment locations prior to rough-in. Maintain adequate equipment service clearance per manufacturer and code.

C. Verify routing of all ductwork and piping in field prior to fabrication or installation, including adequate clearance with structure, light fixtures, and ceiling heights.

D. Verify that proper fuel and power supply is available for connection.

3.03 INTERFERENCE WITH OTHER PRODUCTS

A. Install all ductwork, pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified in this Contractor's expense.

3.04 FIELD QUALITY CONTROL

A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted under the supervision of the Architect.

3.05 CLEANING AND REPAIR

A. Clean fire suppression parts to remove harmful materials.

B. Clean exposed ductwork, piping, equipment, and accessories of all dirt, debris, splatter, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.

C. Repair or replace damaged ductwork, pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where marring or disfigurement has occurred. All pipe, equipment, and accessories shall be new.

3.06 PROJECT CLOSEOUT

A. Project Record Documents: At project closeout, provide one printed copy and one electronic copy of the project record documents to the Owner. Record documents will not be reviewed by the Engineer.

B. Record Drawings: Information contained on project record drawings shall include, as a minimum:

1. Actual locations of all equipment, ductwork, air inlets/outlets, accessories, etc.
2. Actual routing of ductwork with sizes and elevations.
3. Actual locations of control devices including valves and volume dampers.

C. Operation and Maintenance Data: Provide descriptive literature, maintenance and operation data for all equipment, control systems, accessories, and materials used. Include maintenance procedures, intervals, and parts list of each item installed under this contract. Include all manufacturer's guarantees and warranties.

D. Maintenance Materials: At project closeout, furnish to the Owner the following:

1. One set of replacement filters for all hvac equipment.
2. The maintenance contract for the hvac system, if applicable.

E. Test Reports: Submit to the Owner all testing reports.

END OF SECTION

SECTION 230501 - MECHANICAL DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mechanical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections of the architectural specifications.

PART 3 EXECUTION

3.01 EXAMINATION

A. The demolition work indicated on the Drawings is intended to convey the scope of the demolition work involved. Remove all items shown hatched on the Drawings including all miscellaneous appurtenances and accessory items. Remove all incidental items not necessary for the completion of the new work and systems. Cap all remaining openings in existing hvac system.

B. Verify field measurements and piping or duct arrangements are as shown on Drawings.

C. Verify that abandoned piping and equipment serve only abandoned facilities.

D. Demolition drawings are based on casual field observation and existing record documents when available.

E. The existing buildings, structure and utility information indicated on the Drawings are based on as-built information and survey documents provided by the Owner. The Contractor shall adjust for minor field variations without additional expense to the project. If major discrepancies are found the Contractor shall advise the Engineer of such variations in writing so that the appropriate modifications to the design can be made without delay to the Project.

F. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

A. Disconnect mechanical systems in walls, floors, and ceilings to be removed.

B. Coordinate utility service outages with utility company and the Owner.

C. Provide temporary piping, duct and connections to maintain existing systems in service during construction as required for the sequencing of the work or the Owner's need for continued operations. When work must be performed on active equipment or systems, use personnel experienced in such operations.

D. Existing utility services: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

1. Obtain permission from Owner at least 48 hours before partially or completely disabling system.
2. Make temporary connections to maintain service in areas adjacent to work area.

3.03 DEMOLITION AND EXTENSION OF EXISTING MECHANICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned systems to source of supply.

C. Remove exposed abandoned pipe and ductwork, including abandoned items above accessible ceiling finishes. Cut pipes or ducts flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove equipment. Remove abandoned equipment if systems servicing them is abandoned and removed.

E. Disconnect and remove all abandoned mechanical equipment.

F. Disconnect and remove mechanical devices and equipment serving utilization equipment that has been removed.

G. Repair adjacent construction and finishes damaged during demolition and extension work.

H. Maintain access to existing installations which remain active. Modify installation or provide access panel as appropriate.

I. Extend existing installations using materials and methods compatible with the existing systems and materials as specified and required by code.

3.04 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment which remain or are to be reused. Provide new components or parts as required to restore operating conditions.

END OF SECTION

SECTION 230548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vibration isolators.

B. Equipment:

1. Fans, axial and centrifugal
2. Packaged roof top equipment

1.02 SUBMITTALS

A. Product Data: Provide schedule of vibration isolator type with location and load on each.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Isolation Technology, Inc.; Kinetics Noise Control, Inc.; Mason Industries.

2.02 VIBRATION ISOLATORS

A. Restrained Open Spring Isolators:

1. Springs: Minimum horizontal stiffness equal to 75% percent vertical stiffness with variation in writing so that the maximum deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.

2. Spring Mounts: Provide with leveling devices, minimum 0.25 inch thick neoprene sound pads, and zinc chromate plated hardware.

3. Sound Pads: Size for minimum deflection of 0.05 inch; meet requirements for neoprene pad isolators.

4. Restraint: Provide heavy mounting frame and limit stops.

5. For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

B. Spring Hanger:

1. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
2. Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators.
3. Misalignment: Capable of 20 degree hanger rod misalignment.
4. For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

C. Neoprene Pad Isolators:

1. Rubber or neoprene waffle pads.
 - a. Hardness: 30 durometer.
 - b. Thickness: Minimum 1/2 inch.
 - c. Maximum Loading: 50 psi.
 - d. Rib Height: Maximum 0.7 times width.
2. Configuration: Single layer.

D. Rubber Mount or Hanger: Molded rubber designed for 0.4 inch deflection with threaded insert.

E. Glass Fiber Pads: Neoprene jacketed pre-compressed molded glass fiber.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. On closed spring isolators, adjust so side stabilizers are clear under normal operating condition.
- C. Prior to making piping connections to equipment with operating weights substantially different from installed weights, block up equipment with temporary shims to final height. When full load is applied, adjust isolators to load to allow shim removal.
- D. Support piping connections to equipment mounted on isolators using isolators or resilient hangers to meet flexible duct and/or cooling equipment connections.
- E. Provide flexible connections on all piping and ductwork connections to equipment. Refer to other sections of this Specification for the acceptable types of flexible connections.
- F. Selection of type, thickness and deflection of vibration isolation shall be by the vibration control manufacturer based on the specific equipment type and size, as scheduled on the Drawings and indicated below.

3.02 SCHEDULES

- A. Equipment Isolation Schedule: (Minimum deflection as sized by the isolation equipment manufacturer).
 1. Fans, axial and centrifugal.
 - a. Small fans up to 22" diameter wheel:
 - i. Rubber Mount or Hanger
 - b. Packaged roof top equipment:
 - i. Above grade roof structures:
 - i. Base: Roof Curb.
 2. Isolation: Full perimeter Neoprene Pad between curb and units. Provide restrained spring vibration isolation curbs when indicated on the Drawings.

END OF SECTION

SECTION 230563 -- TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Testing, adjusting, and balancing of air systems.
 1. Air handling units, Packaged cooling equipment: Fans. (Exhaust and supply); Coils; Terminal equipment; Air inlets and outlets. (Diffusers, grilles, louvers, etc.)
- B. Measurement of final operating condition of HVAC systems.
- C. Independent agency requirements.

1.02 SUBMITTALS

- A. Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract. Provide TAB Agency qualifications.
- B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
 1. Submit to the Construction Manager within two weeks after completion of testing, adjusting, and balancing of systems and equipment.
 2. Provide reports in bound manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat and equipment locations.
 3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
 4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
 5. Include the following on the title page of each report:
 - a. Name, address and telephone number of Testing, Adjusting, and Balancing Agency.
 - b. Project: Name; location; Engineer; Contractor; Report date.

1.03 WARRANTY

- A. The Balancing Contractor shall be prepared to return to the site at no additional cost to re-adjust air quantities as required to provide uniform temperatures, eliminate drafts, and maintain operational control during the first year of occupancy including one full heating and one full cooling season, after the acceptance of the final balancing report.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Perform total system balance in accordance with one of the following:
 1. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
 2. NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
 3. SMACNA HVAC Systems Testing, Adjusting, and Balancing.
- B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the Project.
- C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.

TAB Agency Qualifications:

1. Company specializing in the testing, adjusting, and balancing of systems specified in this Section with a minimum of five years experience.
2. Certified by one of the following:
 - a. ASBC, Associated Air Conditioning Council; upon completion submit ASBC National Performance Warranty.
 - b. NEBB, National Environmental Balancing Bureau.
 - c. TABS, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute.
3. The TAB Agency must be a completely independent, third party balancing contractor with no financial, common owners or other ties to the installing contractors.

TAB Supervisor and Technician Qualifications: Certified by some organization as TAB agency.

3.02 ADJUSTMENT TOLERANCES

- A. Air Handling Systems; Air Outlets and Inlets; Hydronic Systems: Adjust to within plus or minus 15 percent of design.
- B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

3.03 RECORDING AND ADJUSTING

- A. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- B. Work on the Drawings, the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

3.04 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.
- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters. Do not use diffuser, grille, or register type dampers for balancing adjustments unless the plans do not indicate duct mounted devices.
- F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required at additional expense to the Owner. Vary branch air quantities by damper regulation.
- G. Measure static air pressure conditions on air supply units, including filter and coil pressure drops and total pressure across the fan. Make allowances for 50 percent loading of filters.
- H. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions in all operating modes as indicated in the sequence of control.
- I. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.
- J. Where modulating dampers are provided, take measurements and balance at extreme conditions and at all intermediate operating conditions specified in the sequence of control. Balance variable volume systems at maximum air flow rate, full cooling, and at minimum air flow rate, full heating.

3.05 SCOPE

- A. Equipment Requiring Testing, Adjusting, and Balancing (if present on the project):
 1. HVAC Pumps; Boilers; All Air Handling Equipment; All Packaged Heating and/or Cooling Equipment; All Coil; All Heat Exchangers; Terminal Heat Transfer Units; Air Terminal Units; Air Inlets and Outlets

3.06 MINIMUM DATA TO BE REPORTED

- A. Report (as applicable to the project):
 1. Summary Comments:
 - a. Design versus final performance
 - b. Notable characteristics of system
 - c. Summary of outdoor and exhaust flows to indicate amount of building

pressurization
d. Nomenclature used throughout report and test conditions.

B. Electric Motors and Drives:
1. Manufacturer; Model Form: HP/BHP; Phase, voltage, amperage; nameplate, actual, no load; RPM; Service factor; Sheave Make/Size/Bore.
2. V-Belt Drives: Identification/location; Required driven RPM; Driven sheave, diameter and RPM; Belt, size and quantity;
C. Cooling and Heating Coils:
1. Identification/number; Manufacturer
2. Air flow, design and actual
3. Air pressure drop, design and actual
4. Entering and leaving air DB and WB temperature, design and actual
5. Water flow, design and actual (if applicable)
6. Water pressure drop, design and actual (if applicable)
7. Entering and leaving water temperature, design and actual (if applicable)
D. Air Moving Equipment:
1. Manufacturer; Model number; Serial number; Arrangement/Class/Discharge
2. Air flow, specified and actual
3. Inlet; Discharge; Total static pressure (total external), specified and actual
E. Air Distribution Tests:
1. Air terminal number
2. Room number/location
3. Terminal type
4. Terminal size
5. Area factor
6. Design velocity
7. Design air flow
8. Test (final) velocity
9. Test (final) air flow
10. Percent of design air flow

END OF SECTION

SECTION 230713 – DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Duct insulation.
B. Duct liner.
C. Insulation jackets.
D. Supply, return or exhaust ducts in ceiling spaces.
E. Supply, return or exhaust ducts in interior unconditioned areas.
F. Supply, return or exhaust ducts in exposed locations.

1.02 FIELD CONDITIONS
A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, test equipment and insulation cements.
B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.
B. Manufacturer: Knauf Fiber Glass; Johns Manville Corporation; Owens Corning Corp.; CertainTeed Corporation.

2.02 GLASS FIBER, FLEXIBLE
A. Insulation: ASTM C 535; flexible, noncombustible blanket.
1. "K" value: 0.31 at 75 degrees F, when tested in accordance with ASTM C 518.
2. Maximum Service Temperature: 450 degrees F.
3. Maximum Water Vapor Sorption: 5.0 percent by weight.
B. Vapor Barrier Jacket:
1. Kraft paper with glass fiber yarn and bonded to aluminumized film.
2. Moisture Vapor Permeability: 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E 96/E 96M.
3. Secure with pressure sensitive tape.
C. Vapor Barrier Tape:
1. Kraft paper reinforced with glass fiber yarn and bonded to aluminumized film, with pressure sensitive rubber based adhesive.
D. Outdoor Vapor Barrier Mastic:
1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
E. Tie Wire: Annealed steel, 16 gage.

2.03 DUCT LINER
A. Insulation: Incombustible glass fiber complying with ASTM C 1071; flexible blanket, rigid board and preformed round liner board; impregnated surface and edges coated with acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.
1. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
2. Service Temperature: Up to 250 degrees F.
3. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
4. Minimum Noise Reduction Coefficients:
a. 1/2 inch Thickness: 0.30.
b. 1 inch Thickness: 0.45.
c. 1-1/2 inches Thickness: 0.50 to 0.60.
d. 2 inch Thickness: 0.70.
B. Adhesive: Waterproof, fire-retardant type.
C. Liner Fasteners: Galvanized steel, self-adhesive pad or Impact applied with integral, or press-on head.

PART 3 EXECUTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions and NAIMA National Insulation Standards.
B. Insulated ducts conveying air below ambient temperature:
1. Provide insulation with vapor barrier jackets.
2. Finish with tape and vapor barrier.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
C. Insulated ducts conveying air above ambient temperature:
1. Provide with or without standard vapor barrier jacket.
2. Insulate fittings and joints where service access is required, bevel and seal ends of insulation.
D. External Duct Insulation Application:
1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
2. Secure insulation without vapor barrier with staples, tape, or wires.
3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.
E. Duct and Plenum Liner Application:
1. Adhere insulation with adhesive for 90 percent coverage.
2. Secure insulation with mechanical liner fasteners. Refer to SMAGNA HVAC Duct Construction Standards – Metal and Flexible for spacing.
3. Seal and smooth joints. Seal and coat transverse joints.
4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated on net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

3.02 SCHEDULES
A. The Contractor may use any of the following insulating materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating material and thickness with all State and local codes and utility company requirements is the sole responsibility of the installing Contractor.
B. Supply air ducts in ceiling spaces:
1. Flexible Glass Fiber Duct Insulation: 1-1/2 inches thick.
2. Flexible Glass Fiber Duct Liner Insulation: 1 inches thick.
C. Supply, return or exhaust air ducts in crawl spaces, attics or other unconditioned or less:
1. Flexible Glass Fiber Duct Insulation: 3 inches thick.
D. Supply air ducts exposed in finished areas:
1. Flexible Glass Fiber Duct Liner Insulation: 1 inches thick.
E. Return or exhaust air ducts exposed in finished areas: None.

END OF SECTION

SECTION 233100 – HVAC DUCTS AND CASINGS



PART 1 GENERAL

1.01 SECTION INCLUDES
A. Metal ductwork.
B. Nonmetal ductwork.
C. Round spiral ductwork.
D. Duct cleaning.

1.02 PERFORMANCE REQUIREMENTS
A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts, only after approval of the Engineer. Sizes shown on design drawings are air dimensions. Contractor may increase duct size after engineer approval, provided all ceiling and shaft clearances can be maintained. Additional charges for increased duct size will not be accepted by the owner.
B. Report all ducts, duct structure or other obstructions, prior to fabrication of any ductwork. Suitable adjustments in the sizes of ducts shall be accommodated without any additional expense to the Owner.

1.03 SUBMITTALS
A. Shop Drawings: Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for all systems. No ductwork shall be fabricated until an engineer-approved shop drawings have been received by the Contractor. Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.
B. Test Reports: Indicate pressure tests performed. Include date, section tested, test pressure, and leakage rate, following SMAGNA (LEAK) – HVAC Air Duct Leakage Test Manual.

1.04 REGULATORY REQUIREMENTS
A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts, only after approval of the Engineer. Sizes shown on design drawings are air dimensions. Contractor may increase duct size after engineer approval, provided all ceiling and shaft clearances can be maintained. Additional charges for increased duct size will not be accepted by the owner.
B. Code or utility company requirements shall supersede any conflicting requirements.

REGISTRATION SEAL  Date: 06/02/23 COA # 4679 P/E # 15801		 Schnackel engineers		New York • Miami • Chicago • Los Angeles • Seattle • Honolulu 800-581-0963 www.schnackel.com	
TORRID					
BOWER PLACE		4900 MOLLY BANISTER DR. RED DEER, AB T4R 1N9		SPACE #230 STORE #3532-B	
REV	DATE	DESCRIPTION	NAME	HVAC SPECIFICATIONS	
PROJECT NO: 220311		DRAWN BY: SEI		07/31/23	
CHECKED BY: GRS		ISSUE DATE:			
M4.0					

- 1.05 FIELD CONDITIONS
- Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
 - Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.01 MATERIALS

- Galvanized Steel Ducts: Hot-dipped galvanized steel sheet, ASTM A 653/A 653M FS Type B, with G90/Z275 zincing.
 - Steel Ducts: ASTM A 1008/A 1008M, Designation CS, cold-rolled commercial steel.
 - Aluminum Ducts: ASTM B 209 (ASTM B 209M); aluminum sheet, alloy 3003-H14.
 - Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.
 - Insulated Flexible Ducts:
 - The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected ductwork material is the sole responsibility of the installing Contractor.
 - Two ply vinyl film supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
 - Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 - Maximum Velocity: 4000 fpm.
 - Temperature Range: -10 degrees F to 160 degrees F.
 - Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - Black polymer film supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
 - Pressure Rating: 4 inches WG positive and 0.5 inches WG negative.
 - Maximum Velocity: 4000 fpm.
 - Temperature Range: -20 degrees F to 175 degrees F.
 - Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - Multiple layers of aluminum laminate supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
 - Pressure Rating: 10 inches WG positive and 1.0 inches negative.
 - Maximum Velocity: 4000 fpm.
 - Temperature Range: -20 degrees F to 210 degrees F.
 - Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
 - Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 - Maximum Velocity: 4000 fpm.
 - Temperature Range: -20 degrees F to 210 degrees F.
 - Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - UL 181, Class 0, interlocking spiral of aluminum foil; fiberglass insulation; aluminized vapor barrier film.
 - Pressure Rating: 8 inches WG positive or negative.
 - Maximum Velocity: 5000 fpm.
 - Temperature Range: -20 degrees F to 250 degrees F.
 - Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
- Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
- Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - VOC Content: Not more than 250 g/L, excluding water.
 - Surface Burning Characteristics: Flame spread of zero, smoke developed of zero, when tested in accordance with ASTM E 84.
 - For Use With Flexible Ducts: UL labeled.
 - Ductwork Exposed to the Weather: Hard coat VersaGrip 102, (VG-102), UL 181-AM compliant duct joint sealer, as manufactured by Carlisle, with fiberglass scrim tape reinforcement on all seams and joints, lateral and longitudinal.
- Hangar Rod: ASTM A 36/A 36M, steel; threaded both ends, threaded one end, or continuously threaded.

2.02 DUCTWORK FABRICATION

- Fabricate, support and seal in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
 - Construct tees, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.
 - Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
 - Fabricate continuously welded round and oval duct fittings two gages heavier than duct gages indicated in SMACNA Standard. Joints shall be minimum 4 inch cemented slip joint, brazed or electric welded. Prime coat welded joints.
 - Provide standard 45 degree lateral eye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.
 - Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.
- DUCT MANUFACTURERS
- Met-Fab, Inc.; SEMCO Incorporated; United McGill Corporation.
- MANUFACTURED METAL DUCTWORK AND FITTINGS
- Manufacture in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
 - Round Spiral Ducts: Machine made from round spiral lockseam duct with light reinforcing corrugations; fittings manufactured of at least two gages heavier metal than duct.
 - Double Wall Insulated Round Ducts: Round spiral lockseam duct with galvanized steel outer wall, 1 inch thick fiberglass insulation, perforated galvanized steel inner wall; fitting with solid inner wall.
 - Transverse Duct Connection System: SMACNA "E" rated rigidly class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips.

PART 3 EXECUTION

3.01 EXAMINATION

- Examine drawings for the Architectural, Structural, Electrical and all other trades prior to preparation of ductwork shop drawings and prior to the fabrication of any ductwork.
- Resolve any conflicts encountered with the Engineer prior to fabrication.
- Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.

3.02 INSTALLATION

- Install in accordance with manufacturer's instructions.
- Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
- Use double nuts and lock washers on threaded rod supports.
- Connect flexible ducts to metal ducts with draw bands.
- Support flexible duct runs every five feet in the horizontal direction to avoid dips and sags.
- Connect terminal units to supply ducts with one foot maximum length of flexible duct. Do not use flexible duct to change direction.
- Connect diffusers to low pressure ducts directly or with 5 feet maximum length of flexible duct held in place with strap or clamp. Longer duct lengths are acceptable if depicted on the design drawings and allowed per local code. A maximum of one 90 degree bend, or equivalent, will be allowed in flexible duct runs.
- During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- All exposed ducts in finished areas must be completely free from oil dents or imperfections in the galvanized coating and shall be sealed CAREFULLY AND NEATLY with duct sealer completely contained within the joint. Duct wrap will not be permitted in exposed locations.

3.03 CLEANING

- Clean duct system and force air at high velocity through duct to remove accumulated dust or clean with high power vacuum machines. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

3.04 SCHEDULES

- Ductwork Material:
- The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.
 - Low Velocity Supply (Heating Systems): Galvanized Steel, Aluminum.
 - Low Velocity Supply (Systems with Cooling): Galvanized Steel, Aluminum.
 - Return and Relief: Galvanized Steel, Aluminum.
 - General Exhaust: Galvanized Steel, Aluminum.
 - Outside Air Intake: Galvanized Steel.
- Ductwork Pressure Class:
 - Low Velocity Supply (Heating Systems): Scheduled System ESP+0.25", round up to next higher pressure class.
 - Low Velocity Supply (Systems with Cooling): Scheduled System ESP +0.5", round up to next higher pressure class.
 - Return and Relief: 1 inch.
 - General Exhaust: Scheduled System ESP +1.0", round up to next higher pressure class.
 - Outside Air Intake: 1 inch.

END OF SECTION

SECTION 233300 - AIR DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- Air turning devices/extractors.
- Volume control dampers.
- Flexible duct connections.
- Duct access doors.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS

- Manufacturers: Krueger; Ruskin Company; Titus.
 - Multi-blade device with blades aligned in short dimension; steel or aluminum construction with individually adjustable blades, mounting straps.
- VOLUME CONTROL DAMPERS
- Manufacturers: Louvers & Dampers, Inc.; Nailor Industries Inc.; Ruskin Company; Prefco Inc.
 - Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
 - Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
 - Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
 - End Bearings: Except in round ducts 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon or sintered bronze bearings.
 - The contractor shall provide either a mechanical or electrical cable operated system wherever dampers are located in non-accessible areas.
 - Mechanical cable operator system shall be similar and equal to Young Regulator Company, "Bowden Cable Control" system including damper, flexible cable with casing and concealed ceiling regulator control.
 - Electrically operated damper control system shall be similar and equal to United Enertech Corporation, "Power Balance" system including motor operated damper, Ru-11 plenum rated cabling and flush ceiling or wall mounted Ru-11 jack in remote plate. Include one hand held battery pack operator pack to be delivered to the Owner upon completion of the balancing.

2.03 FLEXIBLE DUCT CONNECTIONS

- Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- Flexible Duct Connections: Fabric crimped into metal edging strip.
 - Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.
 - Net Fabric Width: Approximately 2 inches wide.
 - Metol: 3 inches wide, 24 gage thick galvanized steel.

2.04 DUCT ACCESS DOORS

- Manufacturers: Accudor Products Inc.; Nailor Industries Inc.; Ruskin Company; SEMCO Incorporated.
- Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- Flexible Duct Connections: Fabric crimped into metal edging strip.
 - Less Than 12 inches Square: Secure with sash locks.
 - Up to 18 inches Square: Provide two hinges and two sash locks.
- Access doors with sheet metal screw fasteners are not acceptable.

PART 3 EXECUTION

3.01 INSTALLATION

- Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards - Metal and Flexible. Duct construction and pressure class.
- Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide minimum 8 x 8 inch size for hand motor or direct drive actuator as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.
- Locate all dampers and control elements in accessible areas wherever possible to avoid access doors. Provide ceiling access doors for access to all dampers and control elements located above inaccessible ceiling areas. Provide minimum 12 x 12 inch size for hand access, 18 x 18 inch size for shoulder access, and as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.
- Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.
- Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly. Do not locate duct dampers closer than 5 feet or 10 duct diameters from the air terminal device, whichever is greater.
- At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
- At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment.

END OF SECTION

SECTION 233423 - HVAC POWER VENTILATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- Cabinet and ceiling fans.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- Greenheck; Loren Cook Company; PennBarry; CaptiveAire.

2.02 POWER VENTILATORS - GENERAL

- Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.
- Sound Ratings: AMCA 301, tested to AMCA 300, and bearing AMCA Certified Sound Rating Seal.
- Fabrication: Conform to AMCA 99.
- UL Compliance: UL listed and labeled, designed, manufactured, and tested as suitable for the purpose specified and indicated.

2.03 CABINET AND CEILING FANS

- Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.
- Disconnect Switch: Cord and plug in housing for thermal overload protected motor.
- Grille: Aluminum with baked white enamel finish or molded white plastic as specified on the Drawings.
- Backdraft Damper: Gravity actuated, aluminum blade construction, felt edged with offset hinge pin, nylon bearings, blades linked.
- Shaft: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor shafts selected as required rpm is obtained with shafts set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

PART 3 EXECUTION

3.01 INSTALLATION

- Install in accordance with manufacturer's instructions.
- Provide shafts required for final air balance at no additional expense to the project.
- Hung Cabinet Fans:
 - Install fans with resilient mountings and flexible electrical leads.
 - Install flexible connections specified between fan and ductwork. Ensure metal bands of connectors are parallel with minimum one inch flex between ductwork and fan while running.
- Provide gravity backdraft dampers on outlet from cabinet and ceiling fans and as indicated.

END OF SECTION

SECTION 233700 - AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 SECTION INCLUDES

- Rectangular ceiling diffusers.
- Grid core exhaust and return grilles.
- Wall registers and grilles.

1.02 SUBMITTALS

- Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, accessories, and noise level.

1.03 QUALITY ASSURANCE

- Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.
- Test and rate lower performance in accordance with AMCA 500-L.
- Code requirements shall supersede any conflicting requirements of this Section.

1.04 QUALIFICATIONS

- Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this Section, with minimum five years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- Titus; Krueger; Price Industries; Nailor Industries Inc.; Hart & Cooley; Ruskin, Greenheck.
- RECTANGULAR CEILING DIFFUSERS
- Type: Square, adjustable pattern, stamped, multi-core, or architectural plaque diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
 - Frame: Inverted T-bar type. In plaster ceilings, provide plaster frame and ceiling frame. (To allow lift-out removal of the diffuser without removal of the plaster frame.)
 - Fabrication: Steel with baked enamel off-white finish.
 - Accessories: Opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.03 GRID CORE EXHAUST AND RETURN GRILLES

- Type: Fixed grilles of 1/2 x 1/2 x 1 inch louvers.
- Fabrication: Aluminum with factory off-white enamel finish.
- Frame: 1-1/4 inch margin with countersunk screw mounting.

- Frame: Channel lay-in frame for suspended grid ceilings where face size exceeds 18 x 18 inch.
 - Damper (if specified on drawings): Integral, gang-operated, opposed blade type with removable key operator, operable from face.
- WALL SUPPLY REGISTERS/GRILLES
- Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, horizontal face, double deflection.
 - Frame: 1-1/4 inch margin with countersunk screw mounting and gasket.
 - Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory off-white enamel finish.
 - Damper: Integral, gang-operated opposed blade type with removable key operator, operable from face.
 - Rough Service: Provide front pivoted or welded in place blades, securely fastened to be immovable.

PART 3 EXECUTION

3.01 INSTALLATION

- Install in accordance with manufacturer's instructions.
- Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- Install diffusers to ductwork with air tight connection.
- Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille or register assembly.
- Paint ductwork visible behind air outlets and inlets matte black.

END OF SECTION

SECTION 237413 - PACKAGED OUTDOOR ROOF TOP UNITS - GAS FIRED - FOR REFERENCE ONLY

PART 1 GENERAL

1.01 SECTION INCLUDES

- Packaged roof top units.
- Thermostat controls.
- Roof mounting curb and base.
- Economizer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- Carrier Corporation; Trane Inc.; Lennox Industries; York; AAOB Incorporated.

2.02 AIR CONDITIONING UNITS

- General: Roof mounted units having gas burner and electric refrigeration.
- Description: Self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, heat exchanger and burner, controls, air filters, refrigerant cooling coil and compressor, dry bulb economizer and power exhaust fan where indicated on the Drawings, condenser coil and condenser fan.
- Electrical Characteristics: As scheduled on the Drawings.
- Disconnect Switch: Factory mount disconnect switch on equipment.

2.03 FABRICATION

- Cabinet: Steel with baked enamel finish, including access panels with screwdriver operated flush cam fasteners or doors with piano hinges with locking handles. Structural members shall be minimum 18 gage, with access doors or panels of minimum 20 gage.
- Insulation: one inch thick neoprene coated glass fiber with edges protected from erosion.
- Heat Exchangers: Aluminized steel or stainless steel where indicated on the Drawings, welded construction.
- Supply Fan: Forward curved centrifugal type, resiliently mounted with V-belt drive, adjustable variable pitch motor pulley, and rubber isolated hinge mounted motor or direct drive actuator as indicated. Isolate complete fan assembly.
 - Fans for units with a mechanical cooling capacity greater than or equal to 65,000 Btu/h shall have not fewer than two stages of fan control.
- Air Filters: 2 inch thick disposable media in metal frames.
- Roof Mounting Curb: Galvanized steel, channel frame, insulated with gaskets, nailer strips. Provide roof curb of adequate height to provide a unit mounting height of 12" or greater above the top of the roof surface with the curb mounted to the building structure. Roof curb height must compensate for the roof insulation thickness to meet this requirement.
- Vibration Isolation Curb: Only when indicated on the Drawings.

2.04 BURNER

- Gas Burner: Induced draft or forced draft type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut-off or failoil.
- Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignitor failure, energize blower motor, and after air flow proven and slight delay, allow gas valve to open.
- High Limit Control: Temperature sensor with fixed stop at maximum permissible setting, de-energize burner on excessive bonnet temperature and energize burner when temperature drops to lower safe value.
- Supply Fan Control: Temperature sensor sensing bonnet temperatures and independent of burner controls, with provisions for continuous fan operation.

2.05 EVAPORATOR COIL

- Provide copper tube aluminum fin coil assembly with galvanized drain pan and connection.
- Provide capillary tubes or thermostatic expansion valves for units of 6 tons capacity and less, and thermostatic expansion valves and alternate row circulating for units 7.5 tons cooling capacity and larger.

2.06 COMPRESSOR

- Provide hermetic or semi-hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gage ports, and filter drier.
- Five minute timed off circuit to delay compressor start.
- Outdoor thermostat to energize compressor above 35 degrees F ambient.

2.07 CONDENSER COIL

- Provide copper tube aluminum fin coil assembly with subcooling fans and coil guard.
 - Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor.
- MIXED AIR CASING
- Dampers: Provide outside, return, and relief dampers with damper operator and control package to automatically vary outside air quantity. Outside air damper to fail to closed position. Relief dampers may be gravity balanced.
 - Gaskets: Provide tight fitting dampers with edge gaskets maximum leakage 5 percent at 2 inches pressure differential.
 - Damper Operator: 24 volt with gear train sealed in oil.
 - Damper Operator, Units 7.5 Ton Cooling Capacity and Larger: 24 volt with gear train sealed in oil with spring return.
 - Mixed Air Controls: Maintain selected supply air temperature and return dampers to minimum position on call for heating and above 75 degrees F ambient, or when ambient air temperature exceeds return air temperature.

2.09 INTEGRATED ECONOMIZER

- Economizer shall be furnished and installed complete with outside air and relief dampers and controls.
- Provide low-leakage, opposed blade dampers
 - Meet all leakage requirements of applicable energy code.
- Economizer shall be capable of introducing up to 100% outdoor air for minimum ventilation as well as free cooling.
- Damper actuator shall be electronic, fully modulating design.
- Economizer outdoor hood shall be pre-painted and fully integrated with the unit.
- Dry Bulb Control: Provide dry bulb sensor capable of measuring temperature of outdoor air and controlling economizer cut-in point at the most economical level. High level cutoff shall be set per applicable energy code.
- Provide economizer Fault Detection and Diagnostics (FDD).

2.10 WATER LEVEL MONITORING DEVICE

- A water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

2.11 OPERATING CONTROLS

- Provide low voltage, adjustable thermostat to control heater stages in sequence with delay between stages, compressor and condenser fan, and supply fan to maintain temperature setting.
 - Include system selector switch (off-heat-auto-cool) and fan control switch (auto-on).
- The Mechanical Contractor shall provide all control wiring between thermostat and unit control panel and any required remote sensors.
- Locate thermostat room air sensor above the ceiling.
- Electric solid state microcomputer based room thermostat, located as indicated. Provide remote sensors when indicated on the Drawings.
 - Room thermostat shall incorporate:
 - Automatic switching from heating to cooling.
 - Preferential rate control to minimize overshoot and deviation from set point.
 - Automatic Start Capabilities: Controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.
 - Set-up for four separate temperatures per day.
 - Instant override of set point for continuous or timed period from one hour to 31 days.
 - Short cycle protection.
 - Programming based on weekdays, Saturday and Sunday.
 - Switch selection features including imperial or metric display, 12 or 24 hour clock, keyboard disable, remote sensor, fan on-auto.
 - Room thermostat display shall include:
 - Time of day.
 - Actual room temperature.
 - Programmed temperature.
 - Day of week.
 - System mode indication: heating, cooling, auto, off, fan auto, fan on.
 - Stage (heating or cooling) operation.

PART 3 EXECUTION

3.01 INSTALLATION

- Install in accordance with manufacturer's instructions and NFPA 90A.
- Mount units on factory built roof mounting curb providing watertight enclosure to protect ductwork and utility service lines. Install roof mounting curb so that it bears on the building structure, not on top of the roof deck or roofing materials. Provide restraints where required by local codes.

REGISTRATION SEAL

PROFESSIONAL ENGINEER
STATE OF NEW YORK
GREGORY R. SCHNACKEL
NO. 08109631
EXP. 12/31/2023

Date: 08/02/23
COA # 4679 Proj # 15801

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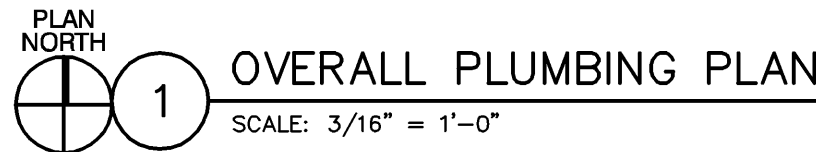
TORRID

BOWER PLACE
4900 MOLLY BANISTER DR.
RED DEER, AB T4P 1N9
SPACE #230 STORE #552-B

NAME	DESCRIPTION	REV	DATE
PROJECT NO. 230311	DRAWN BY: SEI		
CHECKED BY: GRS			
ISSUE DATE:			
07/31/23			

HVAC SPECIFICATIONS

M5.0



- A. THE EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS AND/OR LIMITED FIELD VERIFICATIONS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AND ADDITIONAL EXPENSE TO THE PROJECT, NO ADDITIONAL COMPENSATION WILL BE PAID FOR ANY EXTRA WORK TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE AND/OR PREDETERMINATION OF EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION.
- B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION OF THE PROJECT PRIOR TO THE START OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL EXISTING EQUIPMENT AS REQUIRED FOR THE INSTALLATION/CONSTRUCTION OF NEW WORK.
- C. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL CODE REQUIREMENTS.
- D. PROVIDE ACCESS PANELS AS REQUIRED TO ALLOW ACCESS TO VALVES, EQUIPMENT, AND/OR ACCESS TO ABOVE-GRADE DRAIN LINES AND WALL CAVITIES.
- E. ALL SANITARY LINES AND PLUMBING FIXTURES ON THE PROJECT SHALL HAVE AN APPROVED MEANS OF SEWAGE BACKFLOW PREVENTION. FIXTURE SPECIFIC BACKFLOW PREVENTION INCLUDING AIR GAPS AND VACUUM BREAKERS ARE AN ACCEPTABLE MEANS OF BACKFLOW PREVENTION.
- F. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE WITH SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.
- G. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
- H. MAINTAIN SEPARATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.
- I. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
- J. THE CONTRACTOR SHALL PROVIDE A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
- K. PROVIDE TEMPORARY PROTECTIVE COVERS TO ALL OPEN SANITARY SEWER SYSTEM THROUGHOUT THE DURATION OF CONSTRUCTION. RAG MATS, DUCT TAPE, OR OTHER SIMILAR METHODS OF TEMPORARY COVERS SHALL NOT BE UTILIZED. UPON COMPLETION OF CONSTRUCTION, COMPLETELY REMOVE ANY AND ALL OBSTRUCTIONS INSIDE THE ENTIRE SYSTEM BY SNAKING, RODING, OR JETTING THE SYSTEM IMMEDIATELY PRIOR TO PROJECT TURNOVER TO THE OWNER.
- L. ALL SLOPE GRAD SANITARY LINES SHALL BE A MINIMUM OF 2" OR IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
- M. SANITARY TEE FITTINGS SHALL NOT BE INSTALLED IN DRAIN, WASTE, AND VENT (DWV) SYSTEMS.
- N. INSTALL SANITARY PIPING 3" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING 4" AND LARGER AT A SLOPE OF 1/8" PER FOOT.
- O. INSTALL SANITARY PIPING 2" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING 2 1/2" AND LARGER AT A SLOPE OF 1/8" PER FOOT.
- P. ALL HANDICAPPED ACCESSIBLE WATER CLOSETS SHALL HAVE THE FLUSHING HANDLE ON THE WIDE SIDE OF THE HANDICAPPED ACCESSIBLE STALL AS REQUIRED BY ADA REQUIREMENTS.
- Q. SUBS TO USE LAVATORY FAUCETS SHALL HAVE AN AUTOMATIC SAFETY WATER MIXING DEVICE IN ACCORDANCE WITH ANSI/ASSE 1017 OR 1070 AS APPLICABLE.
- R. THE ENTIRE AREA UNDER CONSTRUCTION SHALL BE PROVIDED WITH A COMPLETE FIRE SPRINKLER SYSTEM IN ALL RESPECTS. RELOCATE/ADD NEW SPRINKLER DROPS TO EXISTING SYSTEMS WHERE REQUIRED TO PROVIDE COMPLETE COVERAGE THROUGHOUT THE CONSTRUCTION. COORDINATE FIRE SPRINKLER PIPING AND HEAD LOCATIONS WITH ALL TRADES PRIOR TO FABRICATION AND/OR INSTALLATION. IF CONFLICTS OCCUR BETWEEN FIRE SPRINKLER PIPING/HEADS AND LIGHTS, DIFFUSERS, DUCTWORK, ETC., THE FIRE SPRINKLER PIPING/HEADS SHALL BE RELOCATED OR DEROUTED AT NO ADDITIONAL EXPENSE TO THE PROJECT. AN ADEQUATE SUPPLY OF EXTRA PIPING AND FITTINGS SHALL BE MAINTAINED ON SITE TO ALLOW FOR ANY ADDITIONAL FITTINGS, PIPING, OR CALCULATIONS AS REQUIRED BY NFPA, LOCAL, STATE CODES, AND THE OWNER'S INSURANCE AGENCY. APPROVED SHOP DRAWINGS DO NOT PRECLUDE ROUTING IF SO REQUIRED BY THE ARCHITECT/ENGINEER.

1. THIS SPACE IS RESERVED FOR ELECTRICAL EQUIPMENT. NO PIPING SHALL PASS BELOW, ABOVE, OR AROUND ELECTRICAL EQUIPMENT. PROVIDE CODE REQUIRED MINIMUM CLEARANCE ABOVE ELECTRICAL EQUIPMENT ACCESS SPACE.

	REV	DATE	DESCRIPTION	NAME
PROJECT NO: 200311 DRAWN BY: SEI CHECKED BY: GRS				
ISSUE DATE:				07/31/23

P1.0

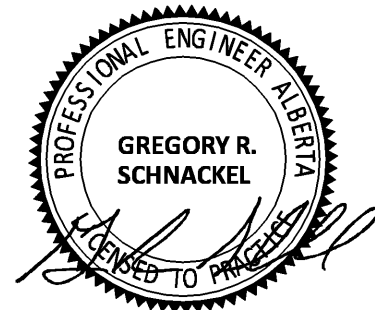
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RED DEER. AB T4R 1N9

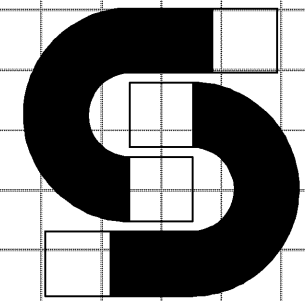
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OVERALL PLUMBING PLAN

REGISTRATION SEAL



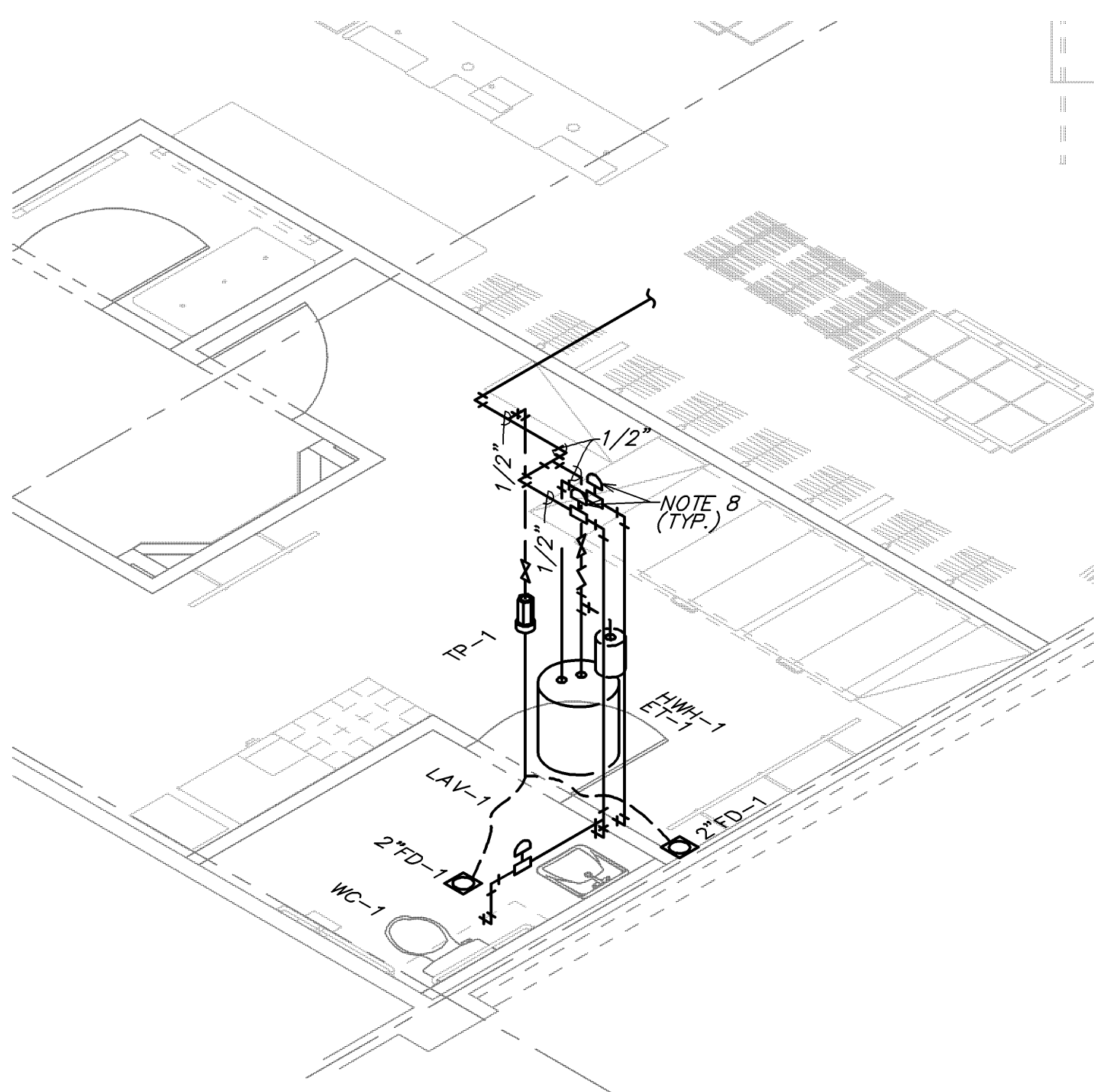
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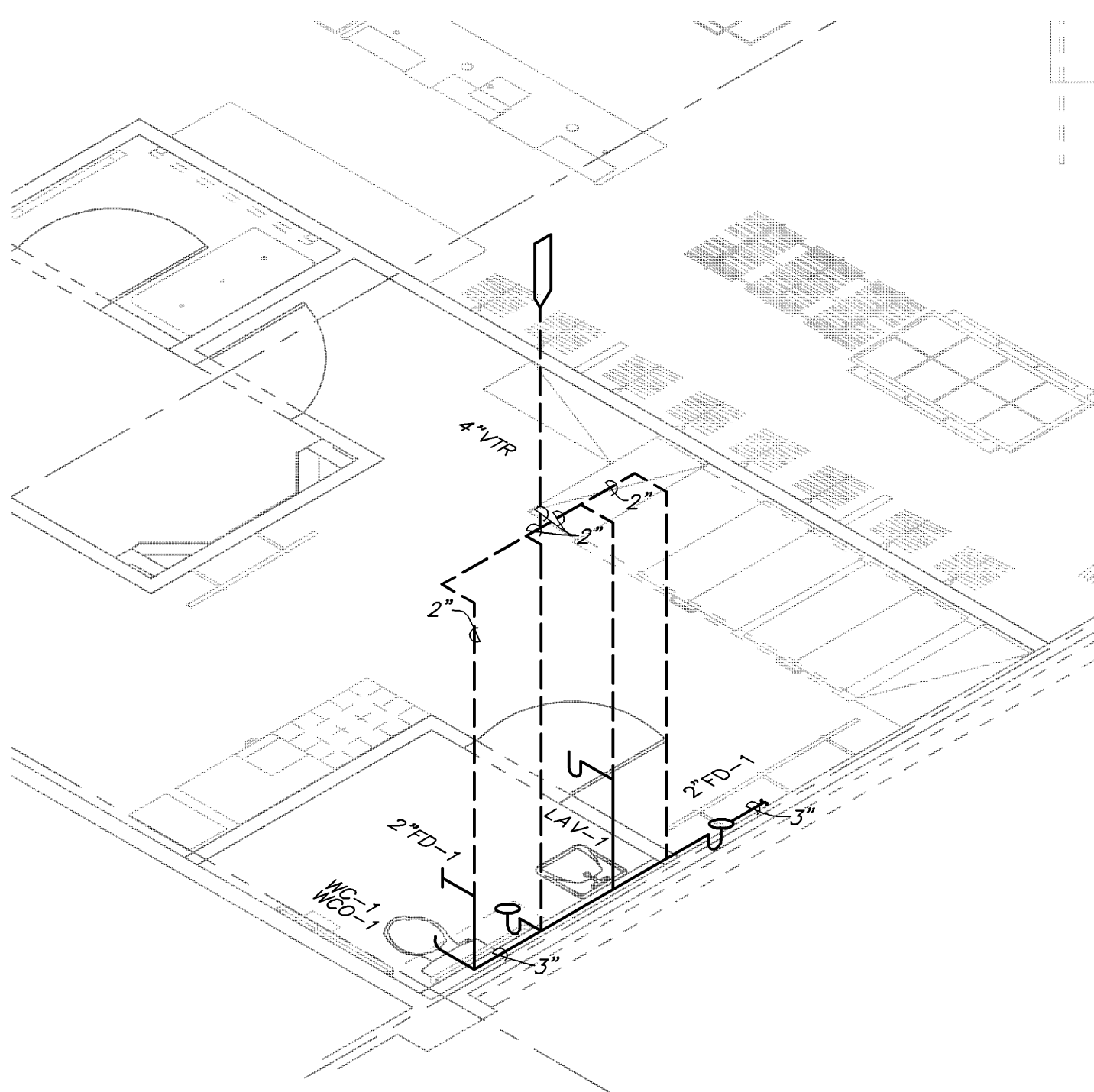
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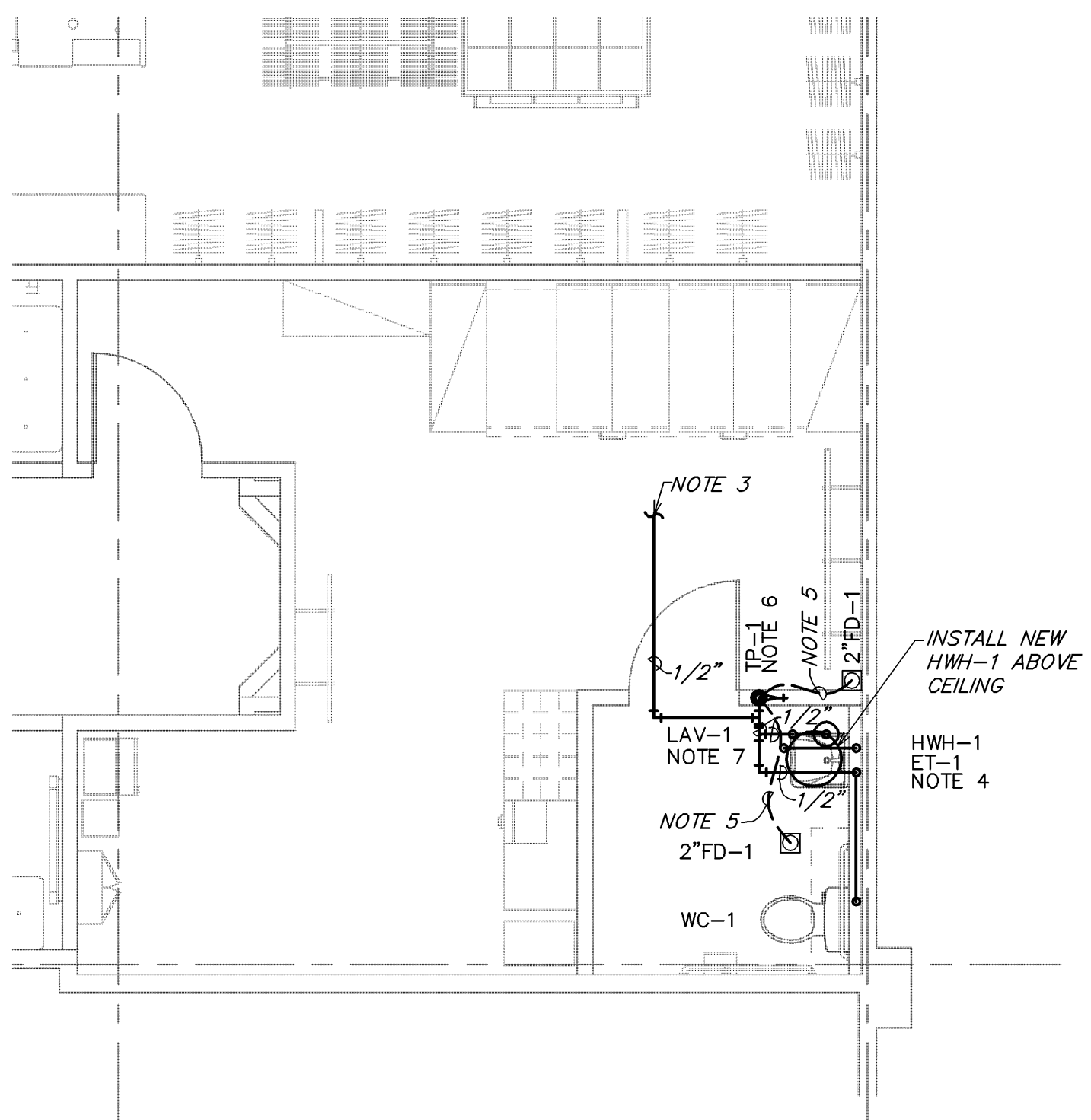
TORRID



4 WATER RISER DIAGRAM
NOT TO SCALE



2 SANITARY RISER DIAGRAM
NOT TO SCALE

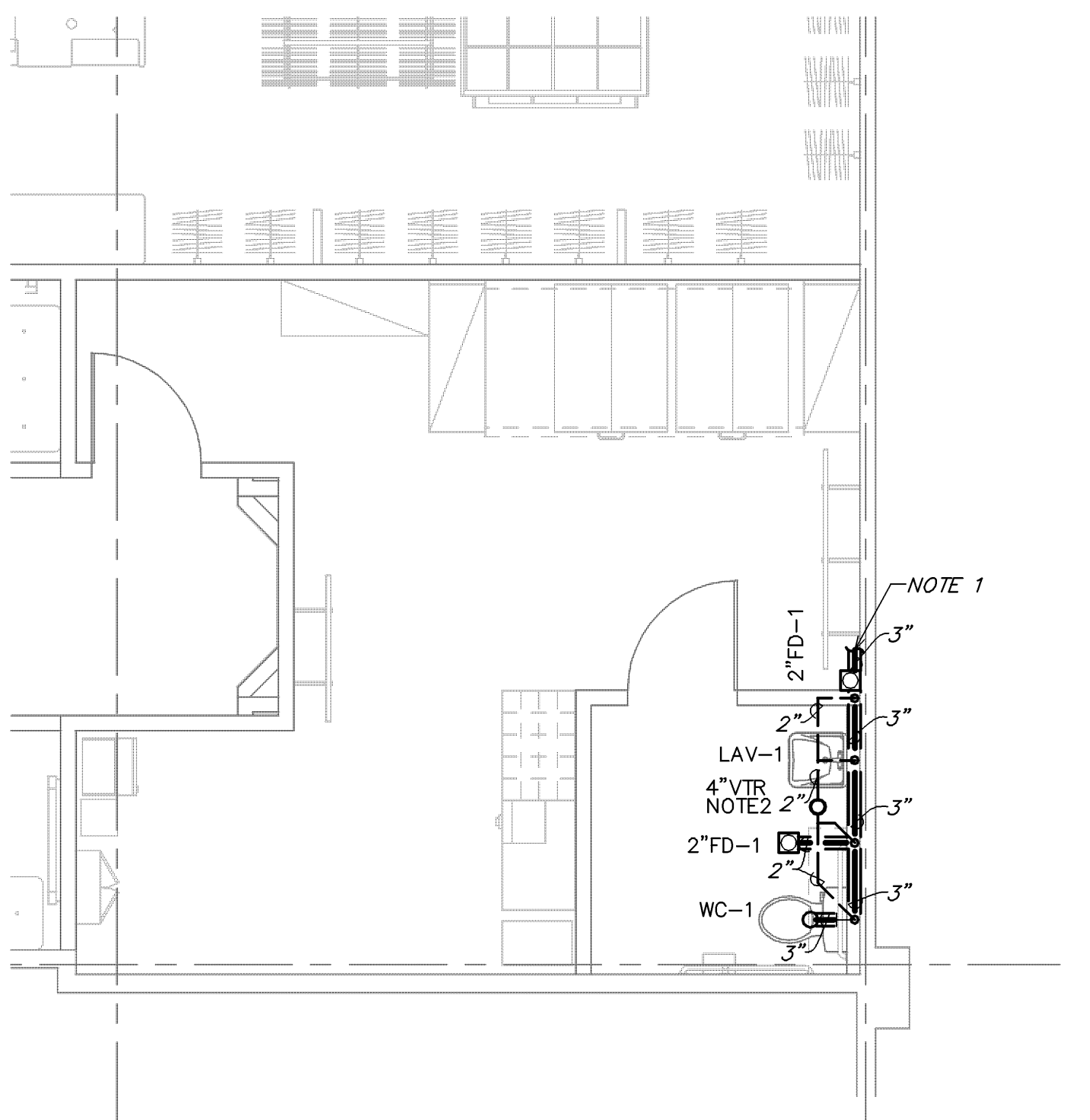


PLAN NORTH

3

ENLARGED WATER PLAN

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



PLAN
NORTH

1

ENLARGED WASTE & VENT PLAN

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

- GENERAL NOTES:**
- A. THE EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS AND/OR LIMITED FIELD VERIFICATIONS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXISTING DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE SITE AND/OR PREDETERMINATION OF EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION.
 - B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION WORK PRIOR TO BIDDING AND COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL EXISTING EQUIPMENT AS REQUIRED FOR THE INSTALLATION OF NEW WORK.
 - C. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL CODE REQUIREMENTS.
 - D. PROVIDE ACCESS PANELS AS REQUIRED TO ALLOW ACCESS TO VALVES, EQUIPMENT, ETC. LOCATED ABOVE INACCESSIBLE CEILINGS AND WALL CAVITIES.
 - E. ALL SANITARY LINES AND PLUMBING FIXTURES ON THE PROJECT SHALL HAVE AN APPROVED MEANS OF BACKFLOW PREVENTION. PLUMBING FIXTURE SPECIFIC BACKFLOW PREVENTION INCLUDING AIR GAPS AND VACUUM BREAKERS ARE AN ACCEPTABLE MEANS OF BACKFLOW PREVENTION.
 - F. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.
 - G. REFER TO THE PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL PLUMBING FIXTURE CONNECTION SIZE REQUIREMENTS.
 - H. COORDINATE ALL SLAB PENETRATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.
 - I. SLOPE OF CORNER SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
 - J. THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
 - K. PROVIDE TEMPORARY COVERS, CAPS, OR PLUGS ON SANITARY SEWER SYSTEM THROUGHOUT THE DURATION OF CONSTRUCTION. RAG WADS, DUCT TAPE, OR OTHER SIMILAR METHODS OF TEMPORARY COVERS SHALL NOT BE UTILIZED. UPON COMPLETION OF CONSTRUCTION, COMPLETELY REMOVE ANY AND ALL OBSTRUCTIONS INSIDE THE EXISTING SYSTEM, SMOKESTACK, RATING, OR SETTING THE SYSTEM IMMEDIATELY PRIOR TO PROJECT TURNOVER TO THE OWNER.
 - L. ALL BELOW GRADE SANITARY LINES SHALL BE A MINIMUM OF 2" OR IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
 - M. SANITARY TEE FITTINGS SHALL NOT BE INSTALLED IN DRAIN, WASTE, AND VENT (DWV) SYSTEMS.
 - N. INSTALL SANITARY PIPING 3" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING 4" AND LARGER AT A SLOPE OF 1/8" PER FOOT.
 - O. INSTALL SANITARY PIPING 2" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING 2 1/2" AND LARGER AT A SLOPE OF 1/8" PER FOOT.
 - P. ALL HANDICAPPED ACCESSIBLE WALL CLOSETS SHALL HAVE THE FLUSHING HANDLE ON THE WIDE SIDE OF THE HANDICAPPED ACCESSIBLE STALL AS REQUIRED BY ADA REQUIREMENTS.
 - Q. ALL PUBLIC USE LAVATORY FAUCETS SHALL HAVE AN AUTOMATIC SAFETY WATER MIXING DEVICE IN ACCORDANCE WITH ANSI/ASSE 1017 OR 1070 AS APPLICABLE.
 - R. THE ENTIRE AREA UNDER CONSTRUCTION SHALL BE PROVIDED WITH A COMPLETE FIRE SPRINKLER SYSTEM IN ALL RESPECTS. RELOCATE/ADD NEW SPRINKLER DROPS TO EXISTING SYSTEMS WHERE REQUIRED TO PROVIDE COMPLETE COVERAGE THROUGHOUT THE AREA OF CONSTRUCTION. COORDINATE FIRE SPRINKLER PIPING AND HEAD LOCATIONS WITH ALL TRADE PRIOR TO FABRICATION AND/OR INSTALLATION. IF CONFLICTS OCCUR BETWEEN FIRE SPRINKLER PIPING/HEADS AND LIGHTS, DIFFUSERS, DUCTWORK, ETC., THE FIRE SPRINKLER PIPING/HEADS SHALL BE RELOCATED OR REROUTED AT NO ADDITIONAL EXPENSE TO THE PROJECT. AN ADEQUATE SUPPLY OF EXTRA PIPING AND FITTINGS SHALL BE MAINTAINED ON SITE TO ALLOW FOR FIELD MODIFICATIONS. PERFORM HYDRAULIC CALCULATIONS AS REQUIRED TO DETERMINE THE SYSTEM CAPACITY. AND THE OWNER'S INSURANCE AGENCY. APPROVED SHOP DRAWINGS DO NOT PRECLUDE REWORKING IF SO REQUIRED BY THE ARCHITECT/ENGINEER.

- ### PLUMBING NOTES:
1. CONNECT THE NEW SANITARY SEWER TO THE EXISTING SANITARY SEWER OF EQUAL OR GREATER SIZE. FIELD VERIFY THE EXACT LOCATION, SIZE, AND INVERT ELEVATION OF THE EXISTING SANITARY SEWER PRIOR TO CONSTRUCTION. ADJUST THE NEW SANITARY SEWER AS REQUIRED TO ALLOW FOR CONNECTION TO THE EXISTING SANITARY SEWER SYSTEM. MAINTAIN CODE MINIMUM PIPE SLOPES. UP TO 4" VENT THROUGH ROOF. INSTALL VENT THROUGH ROOF A MINIMUM DISTANCE OF 15'-0" FROM ALL FRESH AIR INLETS AND BUILDING OPENINGS.
 2. CONNECT THE NEW DOMESTIC COLD WATER LINE TO AN EXISTING COLD WATER LINE OF EQUAL OR GREATER SIZE. FIELD VERIFY THE EXACT LOCATION AND SIZE OF THE EXISTING WATER LINE PRIOR TO CONSTRUCTION. ADJUST THE NEW WATER LAYERS AS REQUIRED TO ALLOW FOR CONNECTION TO THE EXISTING WATER SYSTEM.
 3. FURNISH AND INSTALL WATER HEATER AND EXPANSION TANK AS INDICATED ON THE PLANS. REFER TO ARCHITECTURAL PLANS FOR WATER HEATER SHELF REQUIREMENTS AND EXACT LOCATION. PIPE WATER HEATER RELIEF AND SECONDARY DRAIN PAN DISCHARGE TO THE NEAREST SINK OR FLOOR DRAIN BELOW THE WATER HEATER. PROVIDE APPROVED AIR GAP ON DISCHARGE FROM THE WATER HEATER RELIEF AND SECONDARY DRAIN. REFER TO DETAILS SHEET FOR ADDITIONAL INFORMATION.
 4. 1/2" FLEXIBLE CONTINUOUS TYPE "K" COPPER TUBING BELOW GRADE FROM TRAP PRIMER TO FLOOR DRAIN. NO FITTINGS OR SPLICES ARE ALLOWED BELOW GRADE.
 5. INSTALL TRAP PRIMER PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXACT LOCATION IN THE FIELD. FURNISH AND INSTALL A LOCKABLE, METAL ACCESS PANEL AS NECESSARY TO MAINTAIN EQUIPMENT.
 6. PROVIDE THERMOSTATIC MIXING VALVE, POWERVALVE #LF480 OR EQUAL, BELOW FIXTURE. SET TEMPERATURE AS REQUIRED BY LOCAL JURISDICTION.
 7. THERMOSTATIC MIXING VALVE SHALL BE IN ACCORDANCE WITH ANSI/ASSE 1070.
 8. WATER HAMMER ARRESTOR SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. LOCATIONS SHOWN ARE FOR REFERENCE PURPOSES ONLY.

1. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.
- 1.02 FIELD CONDITIONS
- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.
- B. The Contractor may use any of the following insulating/jacketing materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating/jacketing material is the sole responsibility of the installing Contractor.
- 2.02 GLASS FIBER
- A. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
- B. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, and grain adhered to jacket.
1. K (ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminumized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches (0.029 ng/Pa s).
- D. Vapor Barrier Lap Adhesive: Compatible with insulation.
- E. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.
- F. Fibrous Glass Fabric:
1. Cloth: Untreated; 9 oz/sq yd (305 g/sq m) weight.
2. Blanket: 1.0 lb/cu ft (16 kg/cu m) density.
3. Weave: 5 by 5.
- G. Indoor Vapor Barrier Finish:
1. Vinyl emulsion type acrylic, compatible with insulation, white color.
- H. Outdoor Vapor Barrier Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
- I. Outdoor Breather Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
- J. Insulating Cement: ASTM C449.

- 2.03 FLEXIBLE ELASTOMERIC CELLULAR INSULATION
- A. Insulation: Formed flexible elastomeric cellular rubber insulation complying with ASTM C 534 Grade I; use molded tubular material wherever possible.
1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
2. Maximum Service Temperature: 220 degrees F (104 degrees C).
3. Connection: Waterproof vapor barrier adhesive.
- B. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

2.04 JACKETS

- A. PVC Plastic:
1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
- a. Minimum Service Temperature: 0 degrees F (Minus 18 degrees C).
- b. Maximum Service Temperature: 150 degrees F (66 degrees C).
- c. Moisture Vapor Permeability: 0.002 perm inch (0.0029 ng/Pa s m), maximum, when tested in accordance with ASTM E96/E96M.
- d. Thickness: 10 mil (0.25 mm).
- e. Connections: Brush on welding adhesive.
- f. Covering Adhesive Mastic: Compatible with insulation.
- B. ABS Plastic:
1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
- a. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
- b. Maximum Service Temperature: 180 degrees F (82 degrees C).
- c. Moisture Vapor Permeability: 0.010 perm inch (0.018 ng/Pa s m), when tested in accordance with ASTM E96/E96M.
- d. Thickness: 30 mil (0.76 mm).
- e. Connections: Brush on welding adhesive.
- C. Aluminum Jacket: ASTM B209 (ASTM B209M) formed aluminum sheet.
1. Thickness: 0.016 inch (0.40 mm) sheet.
2. Finish: Embossed.
3. Joining: Longitudinal slip joints and 2 inch (50 mm) laps.
4. Fittings: 0.016 inch (0.4 mm) thick die shaped fitting covers with factory attached protective liner.
5. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.015 inch (0.38 mm) thick aluminum.
6. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.010 inch (0.25 mm) thick stainless steel.
- D. Stainless Steel Jacket: ASTM A666, Type 304 stainless steel.
1. Thickness: 0.010 inch (0.25 mm).
2. Finish: Smooth.
3. Metal Jacket Bands: 3/8 inch (10 mm) wide; 0.010 inch (0.25 mm) thick stainless steel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.
- C. Verify that the installation of all heat trace systems have been completed and tested before applying insulation materials.

3.02 INSTALLATION

- A. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
- B. Exposed Piping: Locate insulation and cover seams in least visible locations.
- C. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- D. Glass fiber insulated pipes conveying fluids below ambient temperature:
1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjoining pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
3. Vapor barriers shall be continuous at all joints, fittings, valves, equipment and headroom ends or edges of insulation at all locations.
4. Seal all exposed ends or edges of insulation at all locations including hangers and supports with insulating cement to prevent water vapor from entering insulation material beneath the vapor barrier jacket.
- E. For hot piping conveying fluids 140 degrees F (60 degrees C) or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- F. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.
- G. Glass fiber insulated pipes conveying fluids above ambient temperature:
1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- H. Inserts and Shields:
1. Application: Piping 2 inches (50 mm) diameter or larger.
2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
3. Insert Location: Between support shield and piping and under the finish jacket.
4. Insert Configuration: Minimum 6 inches (150 mm) long, of same thickness and contour as adjoining insulation; may be factory fabricated.
5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.

- I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations, and finish at supports, protrusions, and interruptions. At fire separations, fire stop penetrations to meet local code requirements.
- J. Pipe Exposed in Finished Spaces (less than 10 feet (3 meters) above finished floor): Finish with Aluminum, Stainless Steel, ABS or PVC jacket and fitting covers.

3.03 SCHEDULES

- A. Plumbing Systems:
1. Domestic Cold Water:
- a. Glass Fiber Insulation:
1. Pipe Size Range: All Sizes.
2. Thickness: 1/2 inch (13 mm).
- b. Flexible Elastomeric Cellular Foam Insulation:
1. Pipe Size Range: All Sizes.
2. Thickness: 1/2 inch (13 mm).

SECTION 221005 - PLUMBING PIPING

PART 1 GENERAL

1.01 QUALITY ASSURANCE

- A. Valves: Manufacturer's name and pressure rating marked on valve body.
- B. Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.
- C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.
- D. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, and pressure rating.

1.02 FIELD CONDITIONS

- A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- 2.02 THE CONTRACTOR MAY USE ANY OF THE FOLLOWING PIPING MATERIALS, AT HIS OPTION, PROVIDED THE SELECTED MATERIAL MEETS WITH THE APPROVAL OF ALL STATE AND LOCAL AUTHORITIES AND UTILITY COMPANY REQUIREMENTS. VERIFICATION OF COMPLIANCE OF THE SELECTED PIPING MATERIAL WITH LOCAL REQUIREMENTS IS THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. VERIFY THE USE OF PLASTIC PIPING SYSTEMS WITH THE LOCAL JURISDICTION. NON-METALLIC PIPING SYSTEMS MAY NOT BE USED IN ANY RETURN AIR PLENUM CEILING SPACES. FIRE-RATED OR NON-COMBUSTIBLE LOCATIONS. NO EXCEPTIONS.
- 2.03 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING
- A. Cast Iron Pipe: ASTM A74 service weight.
1. Fittings: Cast iron.
2. Joints: Hub-and-spigot, CISP1 HSN compression type with ASTM C564 neoprene gaskets or lead and oakum.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
- B. Cast Iron Pipe: ASTM A 888 and CISP1 301, hubless.
1. Fittings: Cast iron.
2. Joints: ASTM A 774 and CISP1 310, neoprene gasket and stainless steel clamp and shield assemblies.
3. Encasement: Provide 8 mil minimum polyethylene encasement pipe wrap on all cast iron pipe installed in corrosive soils.
4. Markings: All pipe and fittings shall be marked with CISP1 and NSF trademark.
- C. ABS Pipe: ASTM D2661.
1. Fittings: ABS.
2. Joints: Solvent welded with ASTM D2235 cement.
- D. PVC Pipe: ASTM D 2665 or ASTM F 679.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement or Push-on, using ASTM F477 elastomeric gaskets.

2.04 SANITARY SEWER PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A74, service weight.
1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
- B. Cast Iron Pipe: ASTM A 888 and CISP1 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: ASTM A 774 or CISP1 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
3. Markings: All pipe and fittings shall be marked with CISP1 and NSF trademark.
- C. PVC Pipe: ASTM D2665.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.
- 2.05 DOMESTIC WATER PIPING, ABOVE GRADE
- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
1. Fittings: ASME B16-18, cast copper alloy or ASME B16-22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Joints: Grooved mechanical couplings.
4. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.

2.06 FLANGES, UNIONS, AND COUPLINGS

- A. Unions: For Pipe Sizes 3 Inches (80 mm) and Under:
1. Flange and Pipe: Class 150 malleable iron threaded unions.
2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.
- B. Flanges for Pipe Size Over 1 Inch (25 mm):
1. Flange and Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
1. Dimensions and Testing: In accordance with ANWA C066.
2. Housing Material: Provide ASTM A47/A47M malleable iron or ductile iron, galvanized.
3. Gasket Material: EPDM suitable for operating temperature range from minus 30 degrees F (minus 34 degrees C) to 230 degrees F (110 degrees C).
4. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
5. Flange and Pipe: Grooved mechanical couplings.
- D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.07 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
- B. Plumbing Piping - Drain, Waste, and Vent:
1. Conform to MSS SP-58.
2. Hangers for Pipe Sizes 1/2 Inch (15 mm) to 1-1/2 Inches (40 mm): Malleable iron, adjustable swivel, split ring.
3. Hangers for Pipe Sizes 2 Inches (50 mm) and Over: Carbon steel, adjustable, clevis.
4. Multiple or Trapeze Hangers: Steel channels with welded supports and hanger rods.
5. Support for Pipe Sizes 3 Inches (80 mm): Cast iron hook.
6. Wall Support for Pipe Sizes 4 Inches (100 mm) and Over: Welded steel bracket and wrought steel clamp.
7. Vertical Support: Steel riser clamp.
8. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
9. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- C. Plumbing Piping - Water and Gas:
1. Conform to MSS SP-58.
2. Hangers for Pipe Sizes 1/2 Inch (15 mm) to 1-1/2 Inches (40 mm): Malleable iron, adjustable swivel, split ring.
3. Hangers for Cold Pipe Sizes 2 Inches (50 mm) and Over: Carbon steel, adjustable, clevis.
4. Hangers for Hot Pipe Sizes 2 Inches (50 mm) to 4 Inches (100 mm): Carbon steel, adjustable, clevis.
5. Hangers for Hot Pipe Sizes 6 Inches (150 mm) and Over: Adjustable steel yoke, cast iron pipe roll, double hanger.
6. Multiple or Trapeze Hangers: Steel channels with welded supports or spacers and hanger rods.
7. Multiple or Trapeze Hangers for Hot Pipe Sizes 6 Inches (150 mm) and Over: Steel channels with weld supports or spacers and hanger rods; cast iron roll.
8. Wall Support for Pipe Sizes 3 to 3 Inches (80 mm): Cast iron hook.
9. Wall Support for Pipe Sizes 4 Inches (100 mm) and Over: Welded steel bracket and wrought steel clamp.
10. Wall Support for Hot Pipe Sizes 6 Inches (150 mm) and Over: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron pipe roll.
11. Vertical Support: Steel riser clamp.
12. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
13. Floor Support for Hot Pipe Sizes to 4 Inches (100 mm): Cast iron adjustable pipe saddle, locknut, nipple, floor flange, and concrete pier or steel support.
14. Floor Support for Hot Pipe Sizes 6 Inches (150 mm) and Over: Adjustable cast iron pipe roll and stand, steel screws, and concrete pier or steel support.
15. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- D. Hanger Fasteners: Attach hangers to structure using appropriate fasteners.
- E. Utilize galvanized steel pipe hangers and supports in all wet, damp and corrosive environments, including all exterior locations.

2.08 BALL VALVES

- A. Construction, 4 Inches (100 mm) and Smaller: MSS SP-110, Class 150, 400 psi (2760 kPa) QWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that excavations are to be required grade, dry, and not over-excavated.
- 3.02 PREPARATION
- A. Remove pipe and tube ends. Remove burrs. Bevel blind end and ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- C. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- D. Group piping whenever practical at common elevations.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 0516.
- F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- G. Locate all valves and control elements in accessible areas wherever possible to avoid access doors. Provide access where valves and fittings are not exposed or located in accessible areas. Provide ceiling access doors for access to all valves and control elements located above inaccessible ceiling areas. Provide minimum 12 x 12 inch (300 x 300 mm) size for hand access, 18 x 18 inch (450 x 450 mm) size for shoulder access, and as indicated for 24 x 4 inch (100 x 100 mm) for shut off valves only. Provide rated access doors when installed in fire rated construction. Review locations prior to fabrication.
- H. Establish elevations of buried piping outside the building to ensure not less than the maximum local frost depth cover. Install tracer wire on all plastic piping outside the building.
- I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.

- J. All sanitary vent system terminations shall be a minimum of ten feet from any fresh air intake and twenty-five feet on medical facilities (hospitals, clinics, etc.).

- K. Where pipe support members are needed to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer before welding.
- L. Provide support for utility meters in accordance with requirements of utility companies.
- M. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting.
- N. Point all exterior above grade piping with a minimum of two coats of paint, color to match roof or surface to which it is attached.
1. Copper pipe Apply vinyl etch primer immediately following cleaning. EXT 5.5A Alkyd: Vinyl Wash Primer #80, Alkyd MPI #8, 9 or 94, Semi-gloss.
2. Steel pipe: Apply alkyd metal primer immediately following cleaning. EXT 5.1D Alkyd: Alkyd Metal Primer #79, Alkyd MPI #94, semi-gloss.
3. Plastic pipe: Apply alkyd bonding primer immediately following cleaning. EXT 6.8B Alkyd: Bonding Primer MPI #17 or 69, Alkyd MPI #8, 9 or 94.
- O. Excavate, bedding and backfill shall be in accordance with applicable sections of this Specification.
- P. The use of sanitary tee fittings will not be permitted. Utilize wye fittings in lieu of tee fittings at all intersections of drainage piping.
- Q. Sleeve pipes passing through partitions, walls, and floors.
- R. Provide sleeves when penetrating footings, masonry walls and floors. Seal and fire stop pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required. All penetrations through footings and floors shall be sealed water tight.
- S. If piping is located within 1.5 inches (38 mm) of the nearest edge of studs, joists, rafters or similar members, provide minimum 0.082 inch (1.6 mm) thick steel protective shield plates extending 2" above and below the pipe being protected. Shield plates may be omitted on cast iron piping only.
- T. Inserts:
1. Provide inserts for placement in concrete formwork.
2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches (100 mm).
4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

U. Pipe Hangers and Supports:

1. Install in accordance with ASME B31.9.
2. Support horizontal piping as indicated.
3. Install hanger supports at minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
5. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
8. Provide copper plated hangers and supports for copper piping.
9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
10. Provide hangers adjacent to motor-driven equipment with vibration isolation; refer to Section 22 0548.
11. Support cast iron drainage piping at every joint.
- V. Manufactured Sleeve-Seal System:
1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
3. Locate piping in center of sleeve or penetration.
4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
5. Tighten bolting for a watertight seal.
6. Install in accordance with manufacturer's recommendations.
7. When installing more than one pipe in sleeve material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

3.04 APPLICATION

- A. Use grooved mechanical couplings and fasteners only in accessible locations.
- B. Install unions downstream of valves and at dead-end apparatus connections.
- C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- D. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or critical risers.
- E. Install globe, ball, or butterfly valves for throttling, bypass, or manual flow control services.
- F. Provide lug and butterfly valves adjacent to equipment when provided to isolate equipment.
- G. Provide spring-loaded check valves on discharge of water pumps.
- H. Provide automatic flow controls valves with manual recirculating systems where indicated. Utilize 0.5 gpm flow unless otherwise indicated on the drawings.
- 3.05 TOLERANCES
- A. Interior Drainage Piping: Establish invert elevations within 1/2 inch (10 mm) vertically of location indicated and slope to drain at minimum of 1/4 inch per foot (1:50) slope, unless noted otherwise on the Drawings.
- B. Water Piping: Slope at minimum of 1/32 inch per foot (1:400) and arrange to drain to low points.
- 3.06 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM
- A. Prior to starting work, verify system is complete, flushed, and clean.
- B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.
- D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.
- F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- H. Samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with ANWA C651.

3.07 SCHEDULES

- A. Pipe Hanger Spacing:
1. Metal Piping:
- a. Pipe Size: 1/2 inches (15 mm) to 1-1/4 inches (32 mm): Maximum Hanger Spacing: 6 ft (1.8 m).
- b. Pipe Size: 1-1/2 inches (40 mm) to 2 inches (50 mm): Maximum Hanger Spacing: 8 ft (2.4 m).
- c. Pipe Size: 2-1/2 inches (65 mm) to 3 inches (75 mm): Maximum Hanger Spacing: 10 ft (3 m).
- d. Pipe Size: 4 inches (100 mm) to 6 inches (150 mm): Maximum Hanger Spacing: 12 ft (3.7 m).
2. Plastic Piping:
- a. Pipe size: 1/2 inches (15 mm) to 6 inches (150 mm): Maximum Hanger Spacing: 6 ft (1.8 m).
- b. 2. Hanger Rod Diameter: 3/8 inch (9 mm).

END OF SECTION

SECTION 221008 - PLUMBING PIPING SPECIALTIES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Provide the following for Architect/Engineer review:
1. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions, and safety and support requirements.
2. Operation Data: Indicate frequency of treatment required for interceptors.
3. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.
4. Project Record Documents: Record actual locations of equipment, cleanouts, backflow preventers, water hammer arrestors.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.
- B. Fixtures and accessories shall be as scheduled on the Drawings.
- 2.02 WATER HAMMER ARRESTORS
- A. Stainless steel or copper construction, bellows type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range 34 to 250 degrees F (1 to 120 degrees C) and maximum 150 psi (1000 kPa) working pressure.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide cleanouts as shown on construction documents and per local code requirements.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Increase exterior floor drains in concrete flush with grade.
- D. Install floor cleanouts at elevation to accommodate finished floor for a completely flush installation.

- E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, drink mixing stations, interior and exterior hose bibbs and all other locations required by Codes.
- F. Pipe relief from backflow preventer to nearest drain.
- G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks, washing machine outlets, or quick-closing valves.

END OF SECTION

SECTION 223000 - PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

- A. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.02 SUBMITTALS

- A. Provide the following for Architect/Engineer review:
1. Product Data:
- a. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
- b. Indicate pump type, capacity, power requirements.
- c. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NSF curve when applicable.
- d. Provide electrical characteristics and connection requirements.
- B. Provide the following to the Owner upon project closeout:
1. Project Record Documents: Record actual locations of components.
2. Operation and Maintenance Data: Include operation, maintenance, and inspection data, part numbers and availability, and service depot location and telephone number.

1.03 QUALITY ASSURANCE

- A. Certifications:
1. Water Heaters: NSF approved.
2. Gas Water Heaters: Certified by CSA International to ANSI Z21.10.1, as applicable, in addition to requirements specified elsewhere.
3. Electric Water Heaters: UL listed and labeled to UL 174.
4. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and as indicated.
- B. Identification: Provide equipment with manufacturer's name, model number, and rating/capacity identified by permanently attached label.
- C. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.04 WARRANTY

- A. Provide five year manufacturer warranty for domestic water heaters, water storage tanks, and packaged water heating systems.
- B. Provide one year manufacturer warranty for pumps.

PART 2 PRODUCTS

2.01 ELECTRICAL WORK

- A. Provide electrical motor driven equipment specified complete with motors, motor starters, controls, and wiring.
- B. Electrical characteristics to be as specified or indicated.
- C. Furnish motor starters complete with thermal overload protection and other appurtenances necessary for the motor control specified.
- D. Supply manual operation and control of protection signal devices required for the operation specified, and any control wiring required for controls and devices not shown.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide concrete equipment bases for all floor mounted plumbing equipment.
- B. Coordinate with plumbing piping and related fuel piping, gas venting, and electrical work as applicable to achieve operating system.

END OF SECTION

SECTION 224000 - PLUMBING FIXTURES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Provide the following for Architect/Engineer review:
1. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- B. Provide the following to the Owner upon project closeout:
1. Manufacturer's Instructions: Indicate installation methods and procedures.
2. Maintenance Data: Include fixture trim exploded view and replacement parts lists.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content in pipe and fittings.

2.02 FIXTURES AND ACCESSORIES SHALL BE AS SCHEDULED ON THE DRAWINGS.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Install each fixture using brass angle ball stop valves for hot and cold water connections applicable. Non-metallic valves or non-ball valve type stops will not be accepted.
- C. Provide chrome plated rigid or flexible supplies to fixtures with specified stops, reducers, and escutcheons.
- D. Install components level and plumb.
- E. Install and secure fixtures in place with wall carriers, wall supports and bolts.
- F. Solidly attach floor mounted water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.
- G. Install each fixture with trap, easily removable for servicing and cleaning.
- H. Install fixtures and fittings in accordance with the manufacturer's instructions and in accordance with the ICC (IPC).
- I. When fixtures require both hot water and cold water supplies, provide the hot water supply to the left of the cold water supply.
- J. Install off-the-floor supports to conform to ASME A112.6.1W.
- K. For floor drain/sink installations above slab on grade, provide adjustable collar with seepage slots, invertible non-puncturing membrane clamp, and 24" x 24" waterproof membrane.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

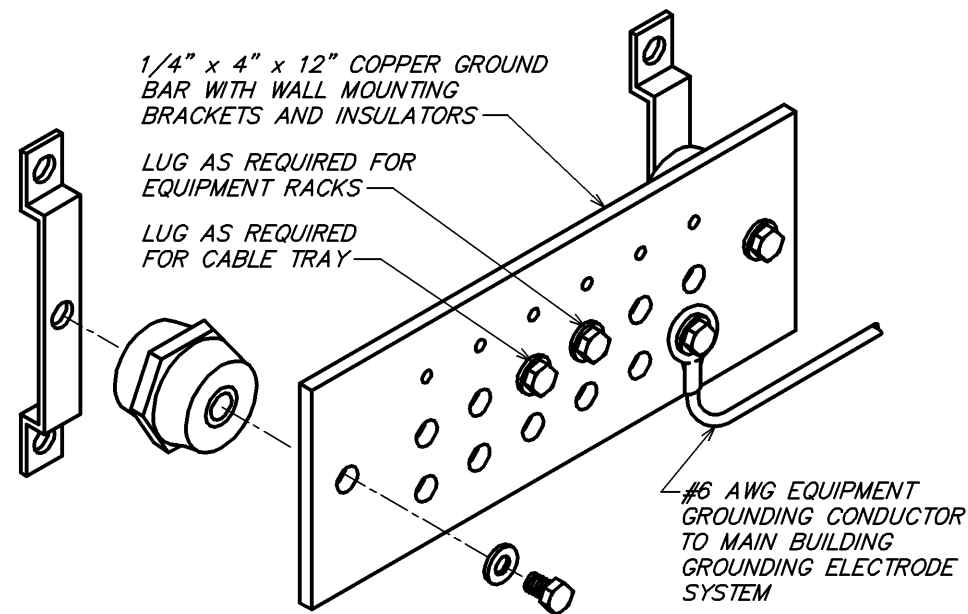
- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

- A. Clean plumbing fixtures and equipment.

3.07 PROTECTION

- A. Protect installed products from damage due to



GENERAL NOTES APPLICABLE TO THIS DETAIL:
A. NOT ALL PARTS AND PART NUMBERS ARE SHOWN IN THE DETAIL. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR A COMPLETE WORKING INSTALLATION, INCLUDING MISCELLANEOUS APERTURANCES REQUIRED BUT NOT SHOWN.

3 GROUND BAR DETAIL
NOT TO SCALE

Antenna Overview

Part of an Ultra*Max® EAS security system, Digital Door-Max antennas attach to the wall or doorframe surrounding an exit. Up to two Door-Max antennas (Figure 1) can be used as transmitters, receivers, or transceivers by connecting them to either a Digital 216 or Ultra*Post Plus controller.

- Wide exits can be covered when a FloorMax Plus antenna is added.
- Antenna configurations are listed in Table 1. Other antenna configurations or additional antennas require the use of a second controller.

Figure 1. Digital Door-Max antenna locations

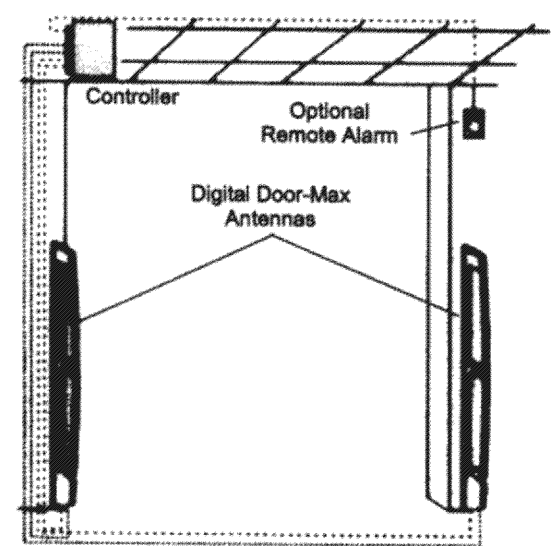


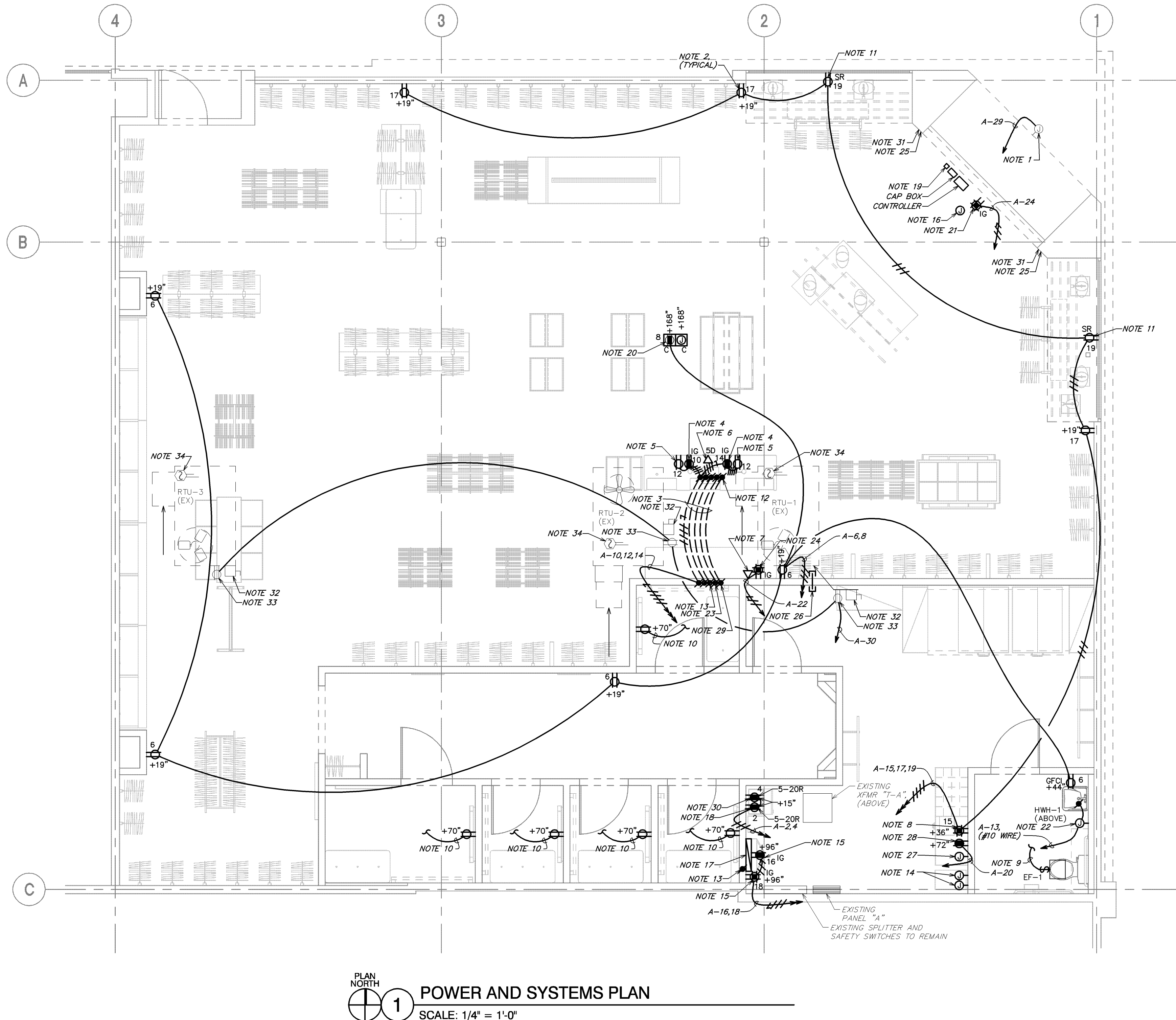
Table 1. Antenna configurations

Door-Max Antenna w/Digital 216 Controller	
System	Components Supplied
1 Door-Max (ZADDM-1)	A, F, H, I
1 Door-Max w/Rangers (ZADDM-1-R)	A, C, F, H, I
1 Door-Max w/Satellite Receiver (ZADDM-1-SR)	A, D, F, H, I
2 Door-Max (ZADDM-2)	B, F, H, J

Door-Max Antenna w/Ultra*Post Plus Controller	
System	Components Supplied
1 Door-Max Transceiver	A, G, H, K, L, M, N
1 Door-Max Transceiver with 1 Satellite Receiver	A, D, G, H, K, L, M, N
1 Door-Max Transceiver with 1 Ranger Receiver	A, C, G, H, K, L, M, N
2 Door-Max Transceivers	B, G, H, K, L, M, N
2 Door-Max Receivers with 1 FloorMax Plus Transmitter	B, E, G, H, K, L, M, N

- A. 1 Digital Door-Max Antenna (ZSDDM)
B. 2 Digital Door-Max Antennas (ZSDDM)
C. 1 Pair Ranger Antennas (ZKRANGER-1)
D. 1 Satellite Receiver (ZSDMULLMT)
E. 1 FloorMax Plus Antenna
F. 1 Digital 216 Controller (ZED216)
G. 1 Ultra*Post Plus Controller (ZELUPPUS-E3) and 1 Enclosure Assembly (ZPDPM-E)
H. 1 Power Cord
• EMC USA 125 V Power Cord (0351-2178-01)
• "B" Schuko (EUR) 250V Power Cord (0351-0547-02)
• "D" UK 250V Power Cord (0351-0547-03)
• "J" Japan 125 V Power Cord (0351-0547-04)
• Australia to IEC 32 Power Cord (0351-0547-07)
I. 1 Mounting Kit (ZPDMM-M1 or ZPDMM-M2)
J. 2 Mounting Kits (ZPDMM-M1 or ZPDMM-M2)
K. 8 Contact Sockets (2109-0262-26)
L. 2 Connectors, HSG, 4-Pin (2109-0262-04)
M. 2 TM, OD, 1/4x.032, RCP, INS, 22-18 (2103-0098-01)
N. Filter, EMI, FR, 10MID, 2000 (2700-0034-01)

2 DIGITAL DOOR-MAX SYSTEM DETAIL
NOT TO SCALE



1 POWER AND SYSTEMS PLAN
SCALE: 1/4\"/>

EXISTING CONDITION NOTES		GENERAL ELECTRICAL NOTES	KEYED NOTES
<p>A. ANY EXISTING CONDITIONS INDICATED IN THIS SET OF DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS AND POSSIBLE LIMITED FIELD VERIFICATION. ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.</p> <p>B. VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE CONTRACT DOCUMENTS, AND BECOME FAMILIAR WITH THE WORK PRIOR TO BIDDING AND START OF THE WORK. THE CONTRACTOR IS AN ACKNOWLEDGMENT THAT THE SITE VISIT HAS BEEN COMPLETED AND THE EXISTING CONDITIONS ARE ACCEPTED.</p> <p>C. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR INSTALLATION AND CONSTRUCTION OF THE NEW WORK. REMOVE ALL EQUIPMENT, DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.</p> <p>D. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR INSTALLATION AND CONSTRUCTION OF THE NEW WORK. REMOVE ALL EQUIPMENT, DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.</p> <p>E. THE OWNER SHALL HAVE SALVAGE RIGHTS TO ANY ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.</p> <p>F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINAIRES, OR DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATION AS REQUIRED TO MAINTAIN THOSE AREAS IN COMPLETE OPERATION.</p> <p>G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE POWER TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BEING REMOVED.</p> <p>H. PROVIDE BLANK COVERPLATES FOR EXISTING EMPTY DEVICE BOXES OR JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS.</p> <p>I. WHERE ELECTRICAL DISTRIBUTION EQUIPMENT (PANELBOARDS, SWITCHBOARDS, ETC.) IS TO BE REMOVED OR RELOCATED, ALL EXISTING CIRCUITS THAT ARE TO REMAIN SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DISTRIBUTION EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE EXISTING CIRCUITS. INTERCEPT AND EXTEND ALL EXISTING CIRCUITS AS REQUIRED.</p> <p>J. REMOVE ALL ABANDONED TELECOMMUNICATIONS CABLING.</p>		<p>A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILING DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM RETURN CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF 25/50 AND BE APPROVED FOR USE IN PLENUM RETURN CEILING. COORDINATE PLENUM CEILING LOCATIONS WITH THE MECHANICAL CONTRACTOR. LUMINAIRES THAT ARE MANUFACTURED WITH A METAL HOUSING MEET THIS REQUIREMENT AND ARE NOT REQUIRED TO BE PLENUM RATED UNLESS INDICATED OTHERWISE.</p> <p>B. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN ANY MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.</p> <p>C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.</p> <p>D. SEE PANEL SCHEDULES FOR INFORMATION ON CIRCUITS THAT ARE TO BE ROUTED THROUGH CONTACTORS OR RELAYS FOR CONTROL.</p> <p>E. ALL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).</p> <p>F. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.</p> <p>G. COORDINATE WITH ALL OTHER TRADES TO PROVIDE ALL CODE-REQUIRED CLEARANCES AROUND ELECTRICAL CONNECTION AND CONTROLS COMPARTMENTS IN ALL EQUIPMENT WHICH IS PROVIDED BY OTHERS AND CONNECTED BY THE ELECTRICAL CONTRACTOR SUCH AS, BUT NOT LIMITED TO, HVAC EQUIPMENT.</p>	<p>1. UTILIZE EXISTING JUNCTION BOX AND CONDUIT FOR FINAL CONNECTION TO SIGN. COORDINATE EXACT CONFIGURATION WITH TENANT REPRESENTATIVE. E.G. SHALL FIELD VERIFY AND, IF NOT PRESENT, INSTALL DISCONNECT SWITCH FOR SIGNAGE CIRCUIT(S) AS REQUIRED. REFER TO PLANS FOR NUMBER OF CIRCUITS REQUIRED. VERIFY EXACT LOCATION IN FIELD.</p> <p>2. DEDICATED DUPLEX RECEPTACLE FLUSH MOUNTED IN WALL AT 18\"/></p>

LEGEND	
—	EXISTING
—	NEW WORK
—	NEW TO EXISTING CONNECTION

PROFESSIONAL ENGINEER
GREGORY R. SCHNACKEL
REGISTERED TO PRACTICE
Date: 08/02/23
COA # 4679
Exp# 15801

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Schnackel
engineers

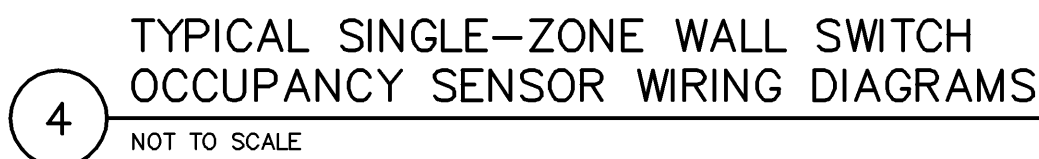
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BOWER PLACE
4900 MOLLY BANISTER DR.
RED DEER, AB T4P 1N9
SPACE #230 STORE #5532-B

POWER AND SYSTEMS PLAN

PROJECT NO: 230311
DRAWN BY: SEI
CHECKED BY: GRS
ISSUE DATE: 07/31/23

E1.0



- A. SEE PANEL SCHEDULES FOR CIRCUITS THAT ARE TO BE CONTROLLED BY EACH CONTACTOR.
- B. EACH CONTACTOR CONSTITUTES A CONTROL ZONE. ALTHOUGH NOT SPECIFICALLY SHOWN ON THIS DETAIL, PROVIDE MULTIPLE CONTACTORS WIRED IN PARALLEL WHEN THE NUMBER OF CIRCUITS IN A CONTROL ZONE EXCEEDS THE MAXIMUM NUMBER OF POLES AVAILABLE ON A SINGLE CONTACTOR. PROVIDE A MINIMUM OF 2 SPARE CONTACTOR POLES FOR EACH CONTROL ZONE.
- C. ALL CONTACTORS SHALL BE PROVIDED WITH NORMALLY CLOSED CONTACTS. THE CONTACTORS SHALL BE DELIVERED FROM THE FACTORY WITH NORMALLY CLOSED CONTACTS OR WITH FIELD-CONVERTIBLE CONTACTS. THE CONTACTOR SHALL FIELD-CONVERTIBLE CONTACTS BE NORMALLY CLOSED WHEN FIELD-CONVERTIBLE NORMALLY OPEN CONTACTS ARE PROVIDED.
- D. ANY LOCAL SWITCHING INDICATED ON THE PLANS SHALL BE ON THE LOAD SIDE OF THE CONTACTOR.
- E. THE ELECTRICAL CONTRACTOR SHALL PROGRAM ALL TIMELOCKS AND INDIVIDUAL DIGITAL TIMELOCK CHANNELS. COORDINATE ALL ON, OFF, AND HOLIDAY SETTINGS WITH THE OWNER. INTERIOR CONTROL ZONES SHALL HAVE THE ASTRONOMIC FUNCTION TIMELOCK CHANNEL TURNED OFF. EXTERIOR CONTROL ZONES SHALL HAVE THE ASTRONOMIC FUNCTION FOR THE CHANNEL TURNED ON.
- F. MOUNT TIMELOCK, RELAYS, AND CONTACTORS ADJACENT TO THE ASSOCIATED PANELBOARD(S). ALL CONTACTORS AND RELAYS SHALL BE PROVIDED WITH INDIVIDUAL TIMELOCK CHANNELS. ALL CONTACTORS AND RELAYS AND CONTACTORS ARE PERMITTED WHEN MOUNTED WITHIN A COMMON ENCLOSURE.
- G. COORDINATE MOUNTING LOCATION OF OVERRIDE SWITCH WITH THE OWNER.
- H. PROVIDE TO THE OWNER A VOLUNTARY BID ALTERNATE TO UTILIZE A RELAY PANEL BOARD WITH TIMELOCK AND OVERRIDE SWITCH INSTEAD OF THE RELAY PANEL COMPONENTS SHOWN WITHIN THIS DETAIL.

NOT TO SCALE



THE ORBIT 5 UNIT WILL BE INSTALLED CENTERED ABOVE THE DOORWAY. THE DISTANCE IN FROM THE DOORWAY WILL VARY DEPENDING ON WHETHER OR NOT THERE IS A DOOR THAT IS USED DURING THE DAY, AND WHICH DIRECTION THE DOOR SWINGS:

SEE
ARCHITECTURAL
FOR MOUNTING
LOCATION.

- A. IF THERE IS NO DOOR AT THE DOORWAY, OR THE DOORS WILL BE PROPPED OPEN DURING THE DAY THE ORBIT 5 WILL BE MOUNTED 6"-12" INSIDE OF THE DOORWAY.
- B. IF THERE IS A DOOR THAT SWINGS OUT, THE ORBIT 5 WILL BE MOUNTED 12"-18" INSIDE THE DOORWAY.
- C. IF THERE IS A DOOR THAT SWINGS IN, THE ORBIT 5 WILL BE MOUNTED 4"-6" IN FROM THE FURTHEST IN-SWING OF THE DOOR.

1. IF THE CEILING/SOFFIT IS 15" A.F.F. OR LESS AT THE MOUNTING LOCATION SPECIFIED ABOVE, ORBIT 5 WILL BE ATTACHED DIRECTLY TO THE CEILING. FOR CEILING/SOFFITS HIGHER THAN 15", SHOPPER TRUCK WILL INSTALL A MOUNTING BRACKET THAT ATTACHES TO THE WALL ABOVE THE DOOR AND THE ORBIT WILL BE MOUNTED TO THE BRACKET AND POSITION THE UNIT 2" TO THE STORE. THE MOUNTING BRACKET WILL GENERALLY BE INSTALLED AT 12" A.F.F., UNLESS CONSTRUCTION CONDITIONS PREVENT THIS.
2. IF THE CEILING HEIGHT IS GREATER THAN 15' A.F.F., AND THE UNIT CANNOT BE MOUNTED BELOW 15" USING A BRACKET ATTACHED TO THE WALL ABOVE THE DOOR BECAUSE OF GLASSING, MILLION-FREE GLAZING OR WALL GLAZING THAT EXTENDS TO THE CEILING, AN ORBIT WITH A SPECIAL TELEPHOTO LENS WILL BE INSTALLED AT THE CEILING LEVEL. THE TELEPHOTO LENS IS NOT EFFECTIVE ABOVE 30' A.F.F.
3. IF THE STORE HAS A VESTIBULE, THE ORBIT WILL BE MOUNTED INSIDE OF THE STORE ITSELF, RATHER THAN IN THE VESTIBULE.
4. IF THE STORE WILL HAVE A HARD (PLASTER OR SHEETROCK) CEILING, INSTALL A JUNCTION BOX AT THE RECOMMENDED ORBIT LOCATION (SPECIFIED ABOVE).
5. PROVIDE 1/2" CONDUIT W/PULL STRING FROM THE COMMUNICATIONS STRUCTURE TO A LOCATION ABOVE ENTRY SOFFIT. LOOP CONDUIT TO OTHER DOORS AS REQUIRED.

1. FOR SINGLE ORBIT 5 INSTALLATIONS, A CATEGORY 5 CABLE MUST BE RUN FROM THE STORE CONTROLLER/SP TO THE FRONT DOOR (MAIN CUSTOMER ENTRANCE). IF A STORE HAS MULTIPLE CONTROLLERS, PLEASE CALL SHOPPER TRAK OR THE CLIENTS STORES SYSTEMS GROUP TO DETERMINE WHICH ONE WILL BE USED.
2. PROVIDE 15'-20' OF CABLE COILED UP AT EACH END OF THE RUN. AT THE FRONT DOOR LEAVE THE CABLE COIL IN A LOCATION THAT CAN BE REACHED USING AN 8' LADDER.

NOT TO SCALE



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

ANY EXISTING CONDITIONS INDICATED IN THIS SET OF DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS AND POSSIBLE LIMITED FIELD VERIFICATION. ADJUST FOR ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL INFORMATION.

B. REMOVE EXISTING CONDITIONS AGAINST THE CONTRACT DOCUMENTS, AND BECOME FAMILIAR WITH THE WORK PRIOR TO BIDDING AND START OF THE WORK. SIGNING THE CONTRACT IS AN ACKNOWLEDGMENT THAT THE SITE VISIT HAS BEEN COMPLETED AND THE EXISTING CONDITIONS ARE ACCEPTED.

C. DEMOLISH ANY EXISTING EQUIPMENT, DEVICES, AND LUMINAIRES AS INDICATED AND/OR AS REQUIRED TO ALLOW FOR THE INSTALLATION OF NEW EQUIPMENT, DEVICES, AND LUMINAIRES. ALL EXISTING DEVICES, LUMINAIRES, CONDUITS, SUPPORTS, HANGERS, ETC. THAT ARE NOT SHOWN AND ARE REQUIRED TO BE REMOVED IN ORDER TO COMPLETE THE NEW WORK.

D. STRUCTURAL MEMBERS SHALL BE REMOVED IN THE MANNER AND LOCATION SPECIFIED IN THE CONTRACT DOCUMENTS. CONDUCTORS SHALL BE REMOVED FROM THE ITEM TO BE DEMOLISHED TO THE SOURCE OVERCURRENT DEVICE. RACEWAYS WHICH ARE INSTALLED IN OR BELOW FLOORS OR WITHIN WALLS MAY BE REMOVED IN PLACE, BUT SHALL BE CUT OR CHISELED AT LEAST 2" INTO THE WALL OR FLOOR AND THE OPENING GROUDED SMOOTH.

E. REMOVE ALL EXISTING ITEMS THAT ARE TO BE DEMOLISHED. THOSE ITEMS THAT THE OWNER WISHES TO SALVAGE SHALL BE CAREFULLY REMOVED AND STORED IN A LOCATION AS DIRECTED BY THE OWNER. ALL OTHER ITEMS OF DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.

F. PROVIDE TEMPORARY CIRCUITS AND CONNECTIONS TO EQUIPMENT, LUMINAIRES, OR DEVICES IN AREAS OF THE FACILITY THAT ARE TO REMAIN IN OPERATION AS REQUIRED TO MAINTAIN THOSE AREAS IN OPERATION.

G. MAINTAIN CONTINUITY OF EXISTING CIRCUITS AS REQUIRED TO PROVIDE POWER TO REMAINING EQUIPMENT, DEVICES, AND LUMINAIRES THAT ARE NOT BEING REMOVED.

H. REMAINING ELECTRICAL PANELS, DISCONNECTS, AND JUNCTION BOXES THAT MUST REMAIN, SUCH AS FOR CIRCUITS THAT MUST BE MAINTAINED TO OTHER AREAS, SHALL BE RELOCATED TO THE NEAREST AVAILABLE LOCATION. ALL EXISTING CIRCUITS SHALL BE RECONNECTED TO NEW OR RELOCATED ELECTRICAL DISTRIBUTION EQUIPMENT TO MAINTAIN THE CONTINUITY OF THOSE CIRCUITS. ALL EXISTING CIRCUITS SHALL BE IDENTIFIED BY THE CONTRACTOR.

I. LUMINAIRES MARKED "EX" ARE EXISTING LUMINAIRES THAT ARE TO REMAIN IN PLACE. ALL EXISTING LUMINAIRES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REPAIRED TO A LIKE-NEW CONDITION. THOSE LUMINAIRES NOT WITHIN THE LIMITS OF CONSTRUCTION THAT ARE DAMAGED BEYOND REPAIR SHALL BE REPLACED WITH AN IDENTICAL LUMINAIRE.

- A. WHERE THE MECHANICAL DESIGN UTILIZES A PLENUM RETURN AIR CEILING DESIGN, ALL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE PLENUM RETURN CEILING MUST MEET THE FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF 25/30 AND BE APPROVED FOR USE IN PLENUM RETURN CEILINGS. PROVIDE THE PLENUM RETURN CEILING EQUIPMENT CONTRACTOR WITH THE EQUIPMENT CONTRACTOR THAT ARE MANUFACTURED WITH A METAL HOUSING MEET THIS REQUIREMENT AND ARE NOT REQUIRED TO BE PLENUM RATED (UNLESS INDICATED OTHERWISE).
- B. PROVIDE ALL EQUIPMENT WITH A RATED CORD ROUTING WITHIN ANY MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
- C. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDED BY OTHERS TO RATHER THAN THE OTHERS. THIS INCLUDES, BUT IS NOT LIMITED TO, MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AUDIO/VISUAL EQUIPMENT, FIRE SUPPRESSION SYSTEM EQUIPMENT, FIRE ALARM EQUIPMENT, ETC. PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR EACH EQUIPMENT. PROVIDE THE CONTRACTOR WITH THE EQUIPMENT CONTRACTOR THAT ARE MANUFACTURED. THE CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
- D. PROVIDE ALL EQUIPMENT WITH INFORMATION ON CORDS THAT ARE TO BE ROUTED THROUGH OTHERS OR RELAYS FOR CONTROL.
- E. ALL EQUIPMENT, DEVICES AND LUMINAIRES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE LOCATED. EQUIPMENT LOCATED IN DRY LOCATIONS SHALL BE SUITABLE FOR UNHUMIDIFIED DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTABLES RATED 15- OR 20-AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE GROUNDING DEVICE.
- F. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREE C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREE C CONDUCTORS ARE NOT PERMITTED.
- G. CIRCUITS SERVING EMERGENCY LIGHTING EQUIPMENT SUCH AS EMERGENCY BATTERIES SHALL NOT SHARE A NEUTRAL (SHALL NOT BE PART OF A MULTIWIRE BRANCH CIRCUIT) WITH ANY OTHER CIRCUIT. PROVIDE A SEPARATE NEUTRAL FOR EVERY CIRCUIT THAT SERVES EMERGENCY LIGHTING EQUIPMENT.
- H. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED LOW VOLTAGE POWER FOR THE MANUFACTURER'S RECOMMENDATIONS, FOR A COMPLETE, FUNCTIONAL LIGHTING CONTROL SYSTEM.
- I. ALTHOUGH NOT SPECIFICALLY SHOWN, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED LOW VOLTAGE DIMMING FOR THE MANUFACTURER'S RECOMMENDATIONS, FOR A COMPLETE, FUNCTIONAL DIMMING SYSTEM.

1. CONNECT FIXTURE TO UNWITHEDED LEG OF CIRCUIT INDICATED TO RENDER OPERATIONAL 24HRS A DAY.
2. LOCATION OF SHOPPER TRUCK, PROVIDE 1/2" CONDUIT W/4" WALL STRING FROM THE IT CABINET/DATA CENTER TO A LOCATION ABOVE ENTRY SOFFIT. SEE DETAIL 3/2-0 FOR MORE DETAIL.
3. OCCUPANCY WALL SWITCH MATTSSTOPPER-05W-3018 SUPPLIED BY VENDOR INSTALLED BY E.C.
4. CONNECT TO RECESSED DUPLEX RECEPTACLE FOR MIRROR LIGHT WITHIN THIS ROOM. REFER TO SHEET 10-100 FOR MORE DETAIL.
5. J-BOX FOR SPEAKER TO BE INSTALLED AT 13'-0" A.F.F. TO BOTTOM OF J-BOX. FIELD VERIFY LOCATION WITH PROJECT MANAGER.
6. PROVIDE 2-20 AMP CIRCUIT BREAKERS FOR AUTOMATIC SHUT-OFF REQUIREMENTS. SEE LIGHTING CONTROL DETAIL 3/2-0 FOR ADDITIONAL INFORMATION.
7. PROVIDE J-BOX AND WALL SWITCH FOR CEILING MOUNTED OSCILLATING FANS. FANS TO HAVE INDIVIDUAL 20 AMP CIRCUIT BREAKERS.
8. CONNECT TO EXHAUST FAN SERVING THIS ROOM. REFER TO SHEET E1.0 FOR ADDITIONAL INFORMATION.
9. PROVIDE LIGHTING CONTROL SWITCHBANK(S). SEE SWITCHBANK SCHEDULE(S) FOR ADDITIONAL INFORMATION. LOWERCASE LETTERS ADJACENT TO LUMINAIRIES ON PLANS CORRESPOND TO THE ASSOCIATED SWITCH ON THE SWITCHBANK SCHEDULE. CONFIRM SWITCHBANK(S) WILL FIT WITHIN THE INDICATED SWITCHBANK SCHEDULE. IF THE SWITCHBANK(S) DOES NOT FIT WITHIN THE INDICATED SWITCHBANK SCHEDULE, THE CONTRACTOR SHALL PROVIDE THE SWITCHBANK(S) WITHIN THE INDICATED SWITCHBANK SCHEDULE. IF A SINGLE SWITCHBANK WILL NOT FIT WITHIN THIS DESIGNATED AREA.

SWITCHBANK "SB" SCHEDULE		
SWITCH TAG	ZONE DESCRIPTION	CONTROL TYPE
a	SALES AREA TRACK LIGHTING	SPST TOGGLE SWITCH
b	SALES AREA TRACK LIGHTING	SPST TOGGLE SWITCH
c	STOCKROOM LIGHTING	SPST TOGGLE SWITCH
d	CASHWRAP ACCENT LIGHTING	SPST TOGGLE SWITCH
e	FITTING ROOM AREA LIGHTING	SPST TOGGLE SWITCH
f	ENTRY LIGHTING	SPST TOGGLE SWITCH

GENERAL NOTES:
A. PROVIDE BOX PARTITIONS BETWEEN CONTROLS OF DIFFERING VOLTAGES.

REGISTRATION SEAL

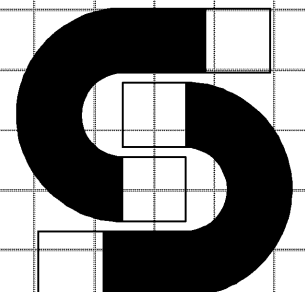
PROFESSIONAL ENGINEER ALBERTA

GREGORY R. SCHNACKEL

[Signature]

DATE: 08/02/23

COA # 4679 PTO # 15801



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SPACE #230 STORE #3532-B

	REV	DATE	DESCRIPTION	NAME
PROJECT NO: 230311 DRAWN BY: SEI CHECKED BY: GRS				
ISSUE DATE: 07/31/23				

LIGHTING PLAN

E2.0

LEGEND
 — EXISTING
 — NEW WORK
 (N) NEW TO EXISTING CONNECTION

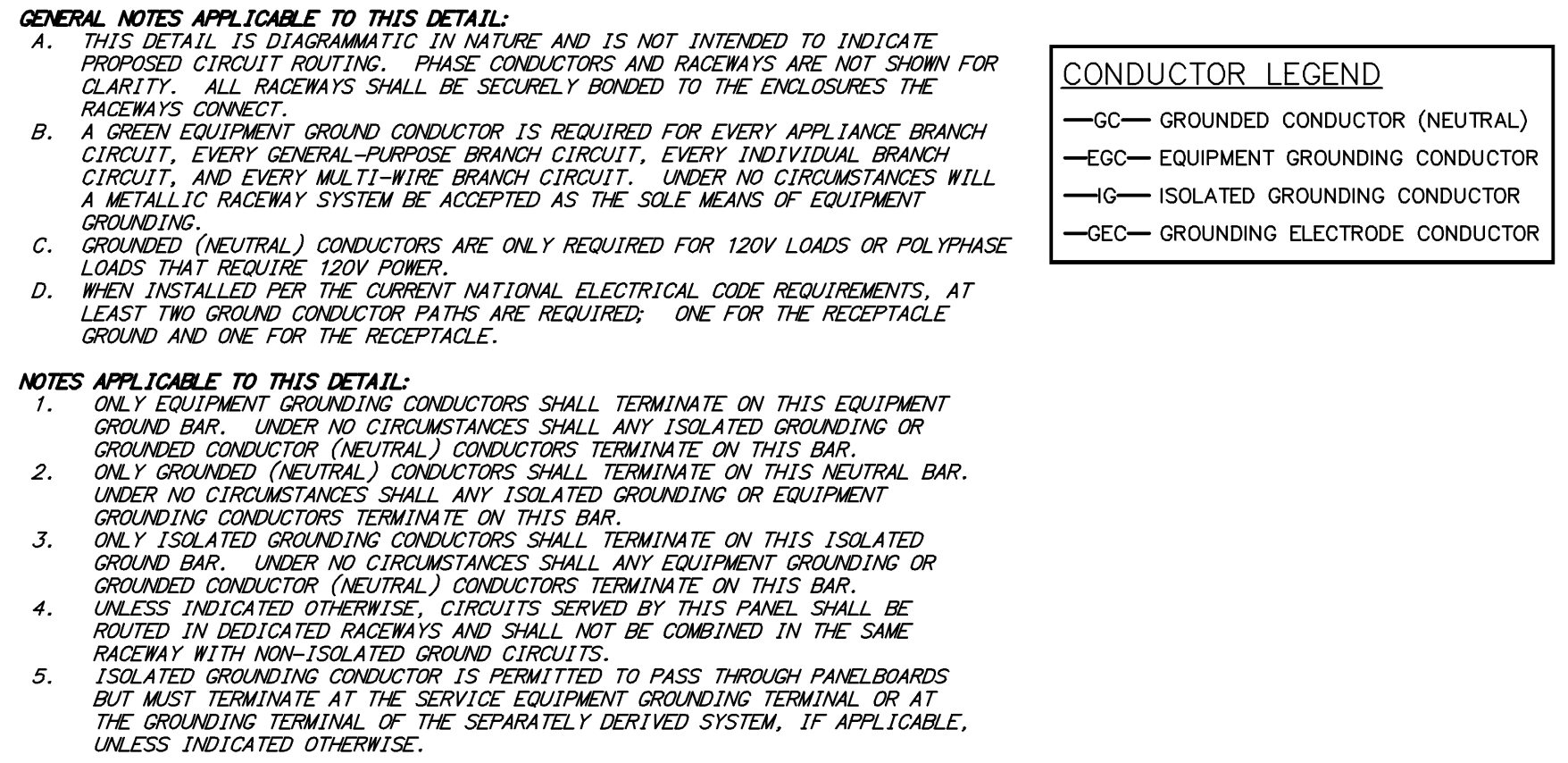
LUMINAIRE SCHEDULE GENERAL NOTES:









































- A. LUMINAIRE SYMBOLS THAT ARE SHOWN HALF-SHADED, OR LABELED "EM", ON THE PLAN(S) INDICATE LUMINAIRES THAT SERVE AS EMERGENCY LIGHTING. UNLESS SERVED BY A CIRCUIT ORIGINATING AT AN EMERGENCY PANELBOARD OR CENTRAL LIGHTING INVERTER, EMERGENCY LIGHTING LUMINAIRES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY. SEE THE SPECIFICATIONS FOR MINIMUM EMERGENCY BATTERY REQUIREMENTS.
- B. PROPOSED SUBSTITUTIONS FOR LUMINAIRES THAT ARE SELECTED BY OTHERS REQUIRE THE APPROVAL OF THE INDIVIDUAL THAT SELECTED THE LUMINAIRE.
- C. LUMINAIRES AND LAMPS ARE FURNISHED BY TENANT'S VENDOR FOR INSTALLATION BY ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE.

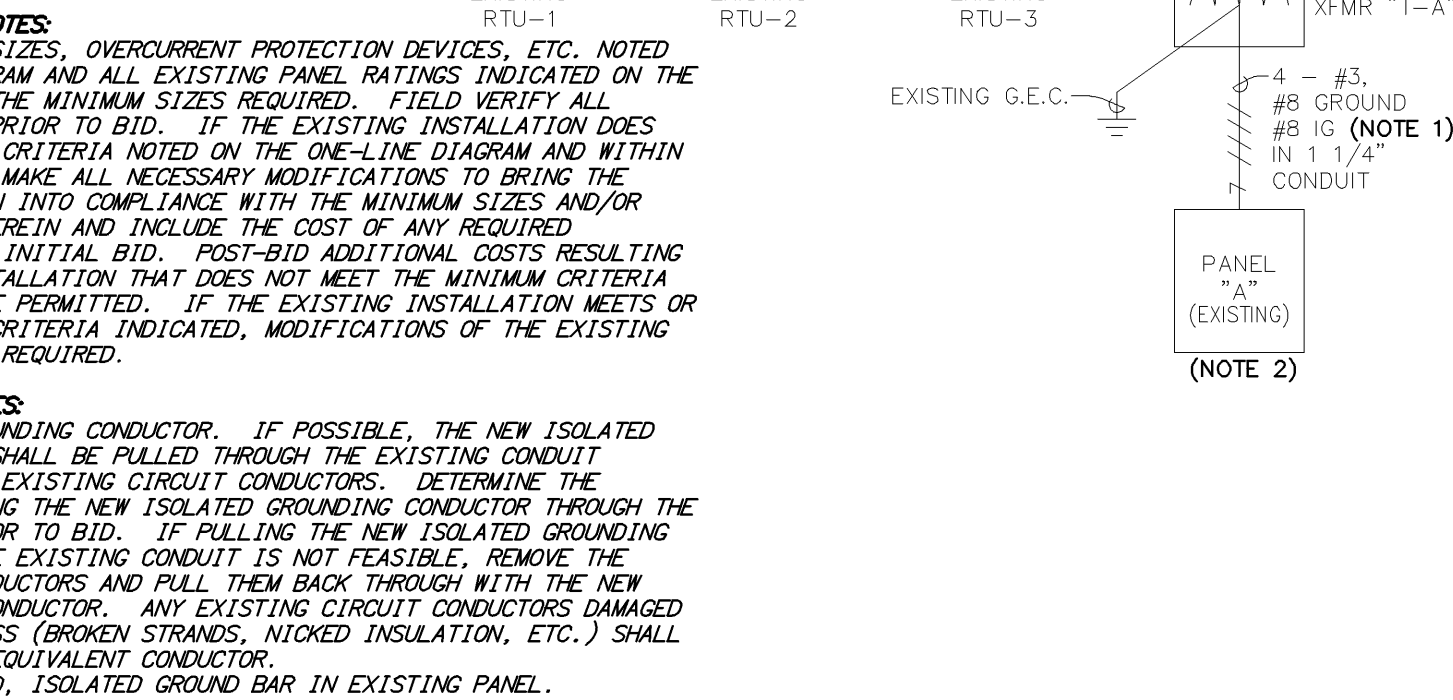
LUMINAIRE SCHEDULE KEYED NOTES:

- 1. PROVIDE WITH ALL TRACK SECTIONS AND ACCESSORIES REQUIRED FOR A COMPLETE AND FUNCTIONAL LIGHTING SYSTEM.

LOAD ANALYSIS FOR PANEL "A" (INCLUDING SUBFEEDS)									
LOAD DESCRIPTION	DEMAND FACTOR	PHASE A (VA)		PHASE B (VA)		PHASE C (VA)		TOTAL (VA)	
		CONNECT	DEMAND	CONNECT	DEMAND	CONNECT	DEMAND	CONNECT	DEMAND
LIGHTING:	125%	2173	2717	3153	3942	1860	2325	7186	8983
RECEPTACLE:	100%	900	900	1080	1080	3060	3060	5040	5040
OTHER CONTINUOUS:	125%	0	0	0	0	1200	1500	1200	1500
OTHER NONCONTINUOUS:	100%	750	750	1500	1500	0	0	2250	2250
WATER HEATING:	100%	2000	2000	0	0	0	0	2000	2000
TOTAL:		5823	6367	5733	6522	6120	6885	17676	19773
EQUIVALENT AMPS:		49	54	48	55	51	58	50	55
PHASE BALANCE:		-3.41%		-1.06%		4.46%			




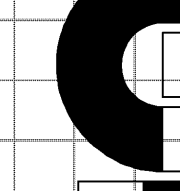
TELECOMMUNICATIONS SIGNAL		BELL		CHIME
		BUZZER		ROTATING BEACON
		WALL MOUNTED TELEPHONE OUTLET; *P* DENOTES NUMBER OF TELEPHONE PORTS		WALL MOUNTED DATA OUTLET; *D* DENOTES NUMBER OF DATA PORTS
		FLUSH FLOOR MOUNTED TELEPHONE OUTLET; *P* DENOTES NUMBER OF TELEPHONE PORTS		FLUSH FLOOR MOUNTED DATA OUTLET; *D* DENOTES NUMBER OF DATA PORTS
		CEILING MOUNTED TELEPHONE OUTLET; *P* DENOTES NUMBER OF TELEPHONE PORTS		CEILING MOUNTED DATA OUTLET; *D* DENOTES NUMBER OF DATA PORTS
		WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P*/*D* DENOTES NUMBER OF TELEPHONE/DATA PORTS		FLUSH FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P*/*D* DENOTES NUMBER OF TELEPHONE/DATA PORTS
		CEILING MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P*/*D* DENOTES NUMBER OF TELEPHONE/DATA PORTS		CEILING MOUNTED COMBINATION TELEPHONE AND DATA OUTLET; *P*/*D* DENOTES NUMBER OF TELEPHONE/DATA PORTS
		WIRELESS ACCESS POINT		
		CIRCUITRY, CONCEALED IN WALL OR CEILING		POWER POLE
		CIRCUITRY, CONCEALED IN OR UNDER FLOOR		TELECOMMUNICATIONS POLE
RACEWAYS AND CIRCUITY		CIRCUITRY, EXPOSED		TWO-CHANNEL TELECOMMUNICATIONS AND POWER POLE
		CIRCUIT OVERHUNG. THE NUMBER OF ARROWS INDICATES THE NUMBER OF CIRCUITS. TWO WIRES UNLESS NOTED OTHERWISE; SLASHES INDICATE NUMBER OF WIRES. EQUIPMENT GROUND WIRE IS REQUIRED, BUT NOT INDICATED. A 7) INDICATES ISOLATED GROUND CONDUCTOR.		---UCP--- UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, POWER
				---UCT--- UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, TELEPHONE
				---UCD--- UNDERCARPET FLAT CONDUCTOR CABLE WIRING SYSTEM, DATA
		CONDUIT SUB		WIRE LOOP FOR FUTURE CONNECTION, 10'-0" MINIMUM SLACK
MISCELLANEOUS		CONDUIT/CIRCUIT BREAK AND CONTINUED ELSEWHERE		VERTICAL CONDUIT/CIRCUIT
		METER AND SOCKET		MOTOR
		LIGHTING AND APPLIANCE PANELBOARD, SURFACE MOUNTED		REMOTE LIGHTING POWER SUPPLY/TRANSFORMER; (XX = WATT RATING)
		LIGHTING AND APPLIANCE PANELBOARD, FLUSH MOUNTED		TRACK LIGHTING END FEED; (XX = CURRENT LIMITER RATING, IF APPLICABLE)
		OTHER EQUIPMENT AS NOTED		LOW VOLTAGE CONTROL TRANSFORMER



GENERAL SYMBOL MODIFIERS (APPLY TO ALL)		SWITCHES AND CONTROLS MODIFIERS		GENERAL ACRONYMS AND ABBREVIATIONS	
+XX	MOUNTING HEIGHT TO CENTER OF BOX (OVERRIDES DEFAULT MOUNTING HEIGHT)	2	DPST	AHJ	AUTHORITY HAVING JURISDICTION
ACH	6 INCHES ABOVE COUNTERTOP/BACKSPLASH TO CENTER OF BOX	3	THREE-WAY	AFP	ABOVE FINISHED FLOOR
EM	EMERGENCY	4	FOUR-WAY	EGC	EQUIPMENT GROUNDING CONDUCTOR
GFI	GROUND-FAULT CIRCUIT INTERRUPTER (4 TO 6 MILLIAMPS TRIP)	a,b,c,...	CONTROL AND LOAD ASSOCIATION	ERMS	ARC ENERGY REDUCING MAINTENANCE SWITCH ELECTRO-TRIP LUGS (SUBFED LUGS ARE ALSO ACCEPTABLE)
H	HORIZONTAL MOUNT	D	DIMMER	GEQ	GROUNDING ELECTRODE CONDUCTOR
PT	POKE-THROUGH	DTO	SPDT, CENTER OFF, MAINTAINED CONTACT	GPFE	GROUND-FAULT PROTECTION OF EQUIPMENT
WP	WEATHERPROOF	DTM	SPDT, CENTER OFF, MOMENTARY CONTACT	GND	GROUND
		F	BOX COVER UNIT, BUSSMANN SSU SERIES	N.F.	NOT FUSED
		G	GLOW HANDLE (HANDLE GLOWS WHEN SWITCH IS OFF)	NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
		K	KEY OPERATED	NC	NOT IN CONTRACT
		LV	LOW VOLTAGE	NL	NIGHTLIGHT
		LVD	LOW VOLTAGE DIMMER	ST	SHUNT TRIP
		M	MANUAL MOTOR CONTROLLER WITH OVERLOAD HEATER	UNO	UNLESS NOTED OTHERWISE
CR	CONTROLLED	OR	OVERRIDE WITH TIMER	SPST	SINGLE POLE, SINGLE THROW
HG	HOSPITAL GRADE	OS1	SINGLE-RELAY OCCUPANCY SENSOR	DPST	DOUBLE POLE, SINGLE THROW
IG	ISOLATED GROUND	OS2	DUAL-RELAY OCCUPANCY SENSOR	3PST	THREE POLE, SINGLE THROW
SR	SURGE PROTECTION	OSD	DIAGNOSTICALLY MONITORED DIMMING OCCUPANCY SENSOR	4PST	FOUR POLE, SINGLE THROW
SR	SHOW WINDOW, MOUNTED WITHIN 18 INCHES OF TOP OF SHOW WINDOW	PILOT	PILOT LAMP (PILOT ON WHEN SWITCH IS ON)	SPDT	SINGLE POLE, DOUBLE THROW
TR	TRANSFORMER	SB	SWITCH BANK (GANGED SWITCHES)	DPDT	DOUBLE POLE, DOUBLE THROW
USB	DEVICE WITH USB PORT(S)	T	TIMER	3PDT	THREE POLE, DOUBLE THROW
				4PDT	FOUR POLE, DOUBLE THROW
				NO	NORMALLY OPEN
				NC	NORMALLY CLOSED

ONE-LINE DIAGRAM
NOT TO SCALE

LEGEND
— EXISTING
— NEW WORK
 NEW TO EXISTING CONNECTION



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SPACE #230 STOP

REV	DATE	DESCRIPTION	NAME
PROJECT NO: 230311			
		DRAWN BY: SD	
		CHECKED BY: GRS	
ISSUE DATE: 07/31/23			
ONE-LINE AND SCHEDULES			

E3.0

SECTION 260923 - LIGHTING CONTROL DEVICES	
PART 1 GENERAL	
1.01 PREPARATION	
A. Hold meeting with the Owner prior to commencing work.	
B. Review zoning and make adjustments requested by the Owner.	
C. Determine all timeclock settings such as ON and OFF times for each day of the week, holiday settings, latitude and longitude of the project site for astronomical	
D. Provide faceless GFCI receptacles in a readily accessible location.	
E. Determine all control settings such as on and off triggers, blink warnings, sweep settings, switch programming, etc.	
PART 2 PRODUCTS	
2.01 ALL LIGHTING CONTROL DEVICES	
A. Provide all required conduit, wiring, connectors, hardware, components, accessories, etc.	
B. Dimmers: do not require a complete operating system.	
C. All sensors shall be suitable for the geometrical and environmental characteristics of the associated space and be suitable for the floor area to be covered. Provide multiple sensors when necessary to meet the required room coverage.	
2.02 INDOOR OCCUPANCY SENSORS	
A. Wall Switch:	
1. Single-Relay: Wattstopper #DSW-301 unless indicated otherwise.	
2. Dual-Relay: Wattstopper #DSW-302 unless indicated otherwise.	
3. Finish: As selected by the Architect.	
B. Combination Wall Switch / Dimmer:	
1. 0-10V Dimming: Wattstopper #DW-311 unless indicated otherwise; finish as selected by the Architect.	
C. Wall-Mounted:	
1. Sensor: Wattstopper #WT-200 unless indicated otherwise.	
2. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.	
3. Finish: White.	
D. Ceiling-Mounted:	
1. Sensor: Wattstopper #WT-300 unless indicated otherwise.	
2. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.	
3. Finish: White.	
E. Accessories: Provide heavy duty coated steel wire protective guards compatible with specified occupancy sensors where subject to impact.	
2.03 TIMECLOCKS	
A. Torq DZS series unless indicated otherwise.	
B. Input Voltage: Coordinate with the voltage of the control circuit.	
C. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the timeclock is installed.	
2.04 TIMER SWITCHES: Torq #SS403 unless indicated otherwise.	

SECTION 262416 - PANELBOARDS	
PART 1 GENERAL - NOT USED	
PART 2 PRODUCTS	
2.01 LIGHTING AND APPLIANCE PANELBOARDS	
A. Circuit Breakers:	
1. Bolt-on thermal-magnetic molded case circuit breakers with common trip handle for all poles.	
a. Provide Type SMD for lighting circuits.	
b. Provide Type HACR for heating, air-conditioning, and refrigeration equipment circuits.	
c. Provide Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.	
d. Provide ground-fault protection of equipment (GFPE) where serving heat tracing or otherwise required.	
e. Provide combination type arc-fault circuit interrupter (AFCI) where indicated or otherwise required.	
f. Provide dual-rated combination type arc-fault circuit interrupter (AFCI) and Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.	
2. Accessories:	
a. Provide handle ties for circuit breakers serving multiwire branch circuits.	
b. Provide Square D #HLO handle clamps for circuit breakers denoted as "HLO" and for all fire protection and fire alarm equipment and all circuits serving emergency lighting.	
c. Provide Square D #QOAPF fixed handle padlock attachment for circuit breakers denoted as "HPL" and for appliances without a local disconnecting means.	
d. Provide shunt trip were denoted as "ST" or otherwise required.	
3. Amp Interrupting Capacity (AIC) Rating: No less than the available fault current; fully rated or manufacturer tested series combination. The Contractor shall determine the available fault current where not indicated on the Drawings.	
4. Do not use multi-pole circuit breakers that mount in a 1-pole circuit breaker space (i.e. half-size circuit breakers).	
2.02 LOAD CENTERS	
A. Circuit Breakers:	
1. Plug-on thermal-magnetic molded case circuit breakers with common trip handle for all poles.	
a. Provide Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.	
b. Provide combination type arc-fault circuit interrupter (AFCI) where indicated or otherwise required.	
c. Provide dual-rated combination type arc-fault circuit interrupter (AFCI) and Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.	
2. Accessories:	
a. Provide handle ties for circuit breakers serving multiwire branch circuits.	
b. Provide Square D #HLO handle clamps for circuit breakers denoted as "HLO" and for all fire protection and fire alarm equipment and all circuits serving emergency lighting.	
c. Provide Square D #QOAPF fixed handle padlock attachment for circuit breakers denoted as "HPL" and for appliances without a local disconnecting means.	
d. Provide shunt trip were denoted as "ST" or otherwise required.	
3. Amp Interrupting Capacity (AIC) Rating: No less than the available fault current; fully rated or manufacturer tested series combination. The Contractor shall determine the available fault current where not indicated on the Drawings.	
4. Do not use multi-pole circuit breakers that mount in a 1-pole circuit breaker space (i.e. half-size circuit breakers).	

SECTION 262717 - EQUIPMENT WIRING	
PART 1 GENERAL	
1.01 COORDINATION WITH OTHER TRADES	
A. Meet with all other trades before commencing any work and obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other Sections.	
B. Determine installation locations and requirements and verify that proper power supply is available prior to subcontractor's ordering equipment.	
C. Calculate the available fault current at any equipment required to carry a short-circuit current rating (SCCR) plates and the minimum SCCR required to the contractor supplying the equipment prior to the equipment being ordered.	
D. Sequence rough-in of electrical connections to coordinate with installation of equipment.	
E. Sequence electrical connections to coordinate with start-up of equipment.	
PART 2 EXECUTION	
3.01 INSTALLATION	
A. Install panelboards 1.8 meters top of panelboard but no less than 100 mm above floor.	
B. Provide 100 mm thick concrete housekeeping pad for surface-mounted panelboards installed within 100 mm of the floor.	
C. Provide filler plates for unused spaces in panelboards.	
D. Provide typed circuit directory and nameplate for each panelboard. Revise directory to reflect circulating changes required to balance phase loads.	
E. Provide five 27 mm spare conduits out of each flush-mounted panelboard to an accessible location above ceiling. Identify each as SPARE.	
F. Measure steady state load currents at each panelboard feeder and rearrange circuits as required to balance the phase loads to within 10 percent maximum imbalance. Maintain proper phasing for multiwire branch circuits.	
G. Provide nameplate indicating panelboard equipment designation for each panelboard.	

SECTION 262717 - EQUIPMENT WIRING	
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B. Provide 100 mm thick concrete housekeeping pad for surface-mounted panelboards installed within 100 mm of the floor.	
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F. Measure steady state load currents at each panelboard feeder and rearrange circuits as required to balance the phase loads to within 10 percent maximum imbalance. Maintain proper phasing for multiwire branch circuits.	
G. Provide nameplate indicating panelboard equipment designation for each panelboard.	

SECTION 262813 - FUSES	
PART 1 GENERAL - NOT USED	
PART 2 PRODUCTS	
2.01 FUSES	
A. Up to 600 Amps: Dual-element time-delay Class RK1 unless indicated otherwise or otherwise required for the switch in which the fuse is installed.	
B. Greater than 600 Amps: Dual-element time-delay Class L unless indicated otherwise.	
C. Site Lighting: Class CC with in-line fuseholder.	
PART 3 EXECUTION	
3.01 INSTALLATION	
A. Install fuses with label oriented such that manufacturer, type, and size are easily read.	

SECTION 262816 - ENCLOSED SWITCHES	
PART 1 GENERAL - NOT USED	
PART 2 PRODUCTS	
2.01 SAFETY SWITCHES	
A. 240 Volt Class: Square D Class 3130 general duty unless indicated otherwise.	
B. 600 Volt Class: Square D Class 3110 heavy duty unless indicated otherwise.	
C. Voltage, Phase, and Current: As indicated or otherwise required.	
D. Fuse Clips: Class R cartridge fuse clips where fuses are installed.	
E. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the switch is installed.	
F. Accessories: Provide grounding kit for all enclosed switches.	
2.02 BOX COVER UNITS: Bussmann #SSU unless indicated otherwise.	
PART 3 EXECUTION	
3.01 INSTALLATION	
A. All Enclosed Switches:	
1. Install in locations that provide all working space required by CSA C22.1 PART 1.	
2. Install 1.5 meters to the operating handle.	
3. Install fuses in fusible disconnect switches.	
4. Provide nameplate indicating equipment designation, NEMA fuse class, and fuse size installed.	

SECTION 265100 - INTERIOR LIGHTING	
PART 1 GENERAL	
1.01 QUALITY ASSURANCE	
A. Verify all ceiling systems for proper coordination of luminaires and accessories including any drywall, frames, bar hangers, flanges, trim rings, etc. required for a complete, finished installation.	
B. Provide only luminaires that are listed for the environment in which they are installed.	
1. Luminaires shall carry damp location and/or wet location ratings as required.	
2. Luminaires shall carry fire-resistance ratings (FRT) as required for fire-rated ceilings; coordinate locations of all insulated ceilings with the Architectural plans.	
C. Coordinate exact locations of all luminaires with the Architectural Reflected Ceiling Plan(s); luminaire locations on the Architectural Reflected Ceiling Plan(s) take precedence over locations indicated on the electrical lighting plans.	
D. Coordinate mounting heights of all wall-mounted luminaires with the Architect prior to rough-in.	
E. Confirm all luminaire and accessory finishes with the Architect prior to ordering.	
F. Coordinate luminaire dimensions with the wall and/or ceiling thickness prior to ordering.	
G. Coordinate mounting location, number of faces, and directional arrows of exit signs as required to mark paths of egress to the satisfaction of the Authority Having Jurisdiction.	
PART 2 PRODUCTS	
2.01 LUMINAIRES	
A. Provide as indicated on the Drawings.	
B. The acceptability of any substitute fixtures lies solely with the Architect and Engineer.	
C. The specified luminaire shall be provided at no additional cost where a substitute fixture is indicated within the specified luminaire's catalog number.	
2.02 NON-DIMMING BALLASTS, TRANSFORMERS, AND DRIVERS	
A. LED Drivers: As required for and compatible with the associated LED module.	
2.03 DIMMING BALLASTS AND DRIVERS	
A. All Dimming Ballasts and Drivers:	
1. Provide appropriate dimming ballasts/drivers in all fluorescent and LED luminaires controlled by wallbox dimmer switches or dimming systems whether or not specifically indicated within the specified luminaire's catalog number.	
2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.	
3. Dimming Range: 100 percent.	
4. Voltage: Universal (120 through 277 volts).	
5. Power Factor: Greater than 0.95.	
6. Total Harmonic Distortion: Less than 10 percent.	
7. Sound Level Rating: Class A.	
8. LED Dimming Drivers: Advance Xitanium series or equal.	
2.04 EMERGENCY POWER SUPPLIES	
A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.	
1. Battery Type: Sealed nickel calcium (NiCad) with 7-year, minimum, life expectancy.	
2. Illumination Time: 90 minutes minimum.	
3. Voltage: Universal (120 through 277 volts).	
a. Test Switch: Test with LED Indicator.	
5. Lamp Operation: Two-lamp operation for luminaires equipped with more than one lamp.	
6. Minimum Initial Illumination Rating:	
a. Luminaires with LEDs:	
1. Not less than 50 percent of the luminaire's lumen rating for luminaires rated 2000 lumens or less.	
2. Not less than minimum power rating for luminaires rated at greater than 2000 lumens.	

SECTION 265100 - INTERIOR LIGHTING	
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2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.	
3. Dimming Range: 100 percent.	
4. Voltage: Universal (120 through 277 volts).	
5. Power Factor: Greater than 0.95.	
6. Total Harmonic Distortion: Less than 10 percent.	
7. Sound Level Rating: Class A.	
8. LED Dimming Drivers: Advance Xitanium series or equal.	
2.04 EMERGENCY POWER SUPPLIES	
A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.	
1. Battery Type: Sealed nickel calcium (NiCad) with 7-year, minimum, life expectancy.	
2. Illumination Time: 90 minutes minimum.	
3. Voltage: Universal (120 through 277 volts).	
a. Test Switch: Test with LED Indicator.	
5. Lamp Operation: Two-lamp operation for luminaires equipped with more than one lamp.	
6. Minimum Initial Illumination Rating:	
a. Luminaires with LEDs:	
1. Not less than 50 percent of the luminaire's lumen rating for luminaires rated 2000 lumens or less.	
2. Not less than minimum power rating for luminaires rated at greater than 2000 lumens.	

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2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.	
3. Dimming Range: 100 percent.	
4. Voltage: Universal (120 through 277 volts).	
5. Power Factor: Greater than 0.95.	
6. Total Harmonic Distortion: Less than 10 percent.	
7. Sound Level Rating: Class A.	
8. LED Dimming Drivers: Advance Xitanium series or equal.	
2.04 EMERGENCY POWER SUPPLIES	
A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.	
1. Battery Type: Sealed nickel calcium (NiCad) with 7-year, minimum, life expectancy.	
2. Illumination Time: 90 minutes minimum.	
3. Voltage: Universal (120 through 277 volts).	
a. Test Switch: Test with LED Indicator.	
5. Lamp Operation: Two-lamp operation for luminaires equipped with more than one lamp.	
6. Minimum Initial Illumination Rating:	
a. Luminaires with LEDs:	
1. Not less than 50 percent of the luminaire's lumen rating for luminaires rated 2000 lumens or less.	
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2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.	
3. Dimming Range: 100 percent.	
4. Voltage: Universal (120 through 277 volts).	
5. Power Factor: Greater than 0.95.	
6. Total Harmonic Distortion: Less than 10 percent.	
7. Sound Level Rating: Class A.	
8. LED Dimming Drivers: Advance Xitanium series or equal.	
2.04 EMERGENCY POWER SUPPLIES	
A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.	
1. Battery Type: Sealed nickel calcium (NiCad) with 7-year, minimum, life expectancy.	
2. Illumination Time: 90 minutes minimum.	
3. Voltage: Universal (120 through 277 volts).	
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5. Lamp Operation: Two-lamp operation for luminaires equipped with more than one lamp.	
6. Minimum Initial Illumination Rating:	
a. Luminaires with LEDs:	
1. Not less than 50 percent of the luminaire's lumen rating for luminaires rated 2000 lumens or less.	
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2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.	
3. Dimming Range: 100 percent.	
4. Voltage: Universal (120 through 277 volts).	
5. Power Factor: Greater than 0.95.	
6. Total Harmonic Distortion: Less than 10 percent.	
7. Sound Level Rating: Class A.	
8. LED Dimming Drivers: Advance Xitanium series or equal.	
2.04 EMERGENCY POWER SUPPLIES	
A. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.	
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END OF SECTION	
SECTION 262813 - FUSES	
PART 1 GENERAL - NOT USED	
PART 2 PRODUCTS	
2.01 FUSES:	
A.	Up to 600 Amps: Dual-element time-delay Class RK1 unless indicated otherwise or otherwise required for the switch in which the fuse is installed.
B.	Greater than 600 Amps: Dual-element time-delay Class L unless indicated otherwise indicated otherwise or otherwise required for the switch in which the fuse is installed.
C.	Site Lighting: Class CC with in-line fuseholder.

FOR REFERENCE ONLY:
FIRE SPRINKLER PLANS, DETAILS, AND SPECIFICATIONS PROVIDED BY SCHNACKEL ENGINEERS, INC. ARE CONTRACT DOCUMENTS ONLY. SAID DOCUMENTS ARE NOT INTENDED TO BE SUBMITTED FOR FIRE SPRINKLER WORK PERMITTING. THE LICENSED INSTALLING FIRE SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS TO THE AUTHORITY HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS, AS REQUIRED FOR APPROVAL UNDER A DEFERRED SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR FINAL SPRINKLER HEAD QUANTITIES, LOCATIONS, AND TEMPERATURES.



1. EXISTING PENDENT SPRINKLER HEADS AT CEILING TO REMAIN AS-IS. FIRE SPRINKLER CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LOCATIONS, TYPES, AND TEMPERATURES AND MAKE ADJUSTMENTS AS REQUIRED FOR A CODE COMPLIANT SYSTEM.
NEW PENDENT SPRINKLER HEAD FOR PROPER COVERAGE. USE NEW "1" PIPE AND FITTINGS TO CONNECT NEW SPRINKLER HEAD TO EXISTING PIPE. COORDINATE HEAD LOCATIONS WITH CEILING LIGHTING PLAN AND THE DUCT DISTRIBUTION SYSTEM ABOVE AS NECESSARY. FIRE SPRINKLER CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LOCATIONS, TYPES, AND TEMPERATURES AND MAKE ADJUSTMENTS AS REQUIRED FOR A CODE COMPLIANT SYSTEM.
3. NEW UPRIGHT SPRINKLER HEAD FOR PROPER COVERAGE. USE NEW "1" PIPE AND FITTINGS TO CONNECT NEW SPRINKLER HEAD TO EXISTING PIPE AS NECESSARY. COORDINATE HEAD LOCATIONS WITH CEILING LIGHTING PLAN AND THE DUCT DISTRIBUTION SYSTEM ABOVE AS NECESSARY. FIRE SPRINKLER CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LOCATIONS, TYPES, AND TEMPERATURES AND MAKE ADJUSTMENTS AS REQUIRED FOR A CODE COMPLIANT SYSTEM.

FP1.0

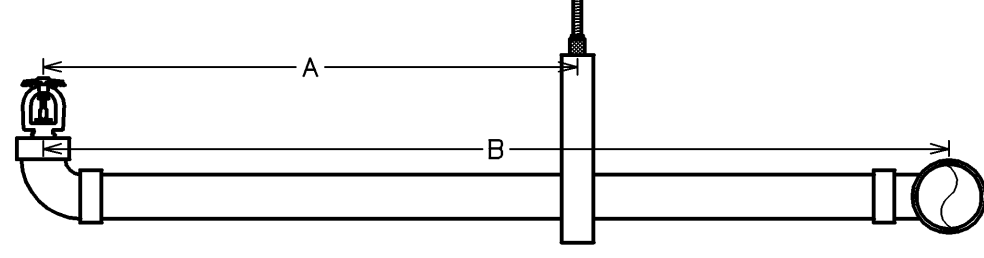
SYMBOLS					
FIRE PROTECTION					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ELEVATION CHANGE		BALL VALVE		FIRE HYDRANT
	PIPE CAP		CHECK VALVE		VALVE IN RISE
	PIPE COUPLING		PRESSURE REGULATING VALVE (PRV)		CAST IRON
	HYDRAULIC NODE POINT		POST INDICATOR VALVE		INVERT ELEVATION
	FINISHED CEILING ELEVATION		RISER NIPPLE (RN)		FIRE DEPARTMENT CONNECTION
					FIRE HOSE VALVE

SPARE SPRINKLER CABINET CONTENTS					
SIZE OF FACILITY	MIN HEAD QTY	MIN HEADS PER TYPE	WRENCH PER HEAD TYPE	LIST OF SPRINKLERS INSTALLED	SPRINKLER ESCUTCHEONS PER TYPE
0-300 SPRINKLERS	6	2	1	1	2
300-1000 SPRINKLERS	12	2	1	1	2
+1000 SPRINKLERS	24	2	1	1	2

NOTE: SPRINKLERS SHALL BE KEPT WHERE TEMPERATURE DOES NOT EXCEED 100°F.

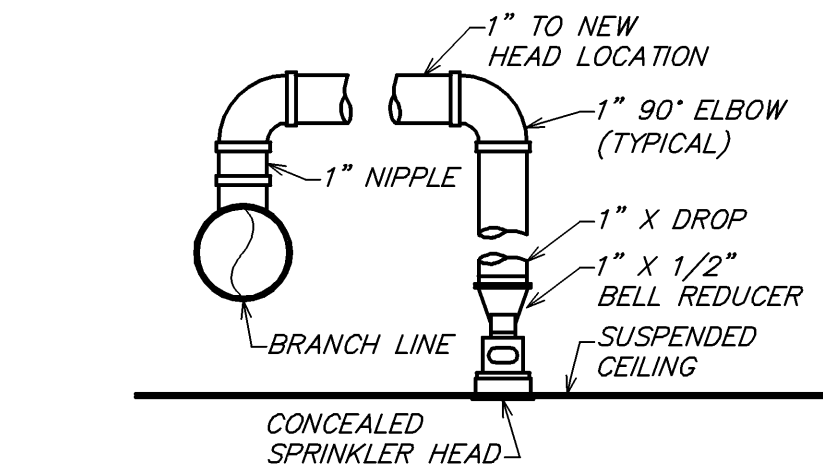
MAXIMUM PROTECTION AREAS AND MAXIMUM SPACING FOR STANDARD SPRAY UPRIGHT & PENDENT HEADS				
CONSTRUCTION TYPE	SYSTEM TYPE	PROTECTION AREA MAX (SQ.FT.)	MAX SPACING	MAX DISTANCE TO WALL (FT)
LIGHT HAZARD:				
NONCOMBUSTIBLE OBSTRUCTED + UNOBSTRUCTED & COMBUSTIBLE UNOBSTRUCTED WITH MEMBERS 3FT OR MORE O.C.	PIPE SCHEDULE	200	15'-0"	7'-6"
	HYD. CALC.	225	15'-0"	7'-6"
COMBUSTIBLE OBSTRUCTED WITH MEMBERS 3FT OR MORE O.C.	ALL	168	15'-0"	7'-6"
COMBUSTIBLE OBSTRUCTED + UNOBSTRUCTED WITH MEMBERS LESS THAN 3FT O.C.	ALL	130	15'-0"	7'-6"
COMBUSTIBLE CONCEALED SPACE UNDER A PITCHED ROOF HAVING COMBUSTIBLE WOOD JOIST OR WOOD TRUSS CONSTRUCTION WITH MEMBERS LESS THAN 3FT O.C. WITH SLOPES HAVING A PITCH OF 4:12 OR GREATER	ALL	120	15'-0" PARALLEL TO SLOPE	7'-6" PARALLEL TO SLOPE
			10'-0" PERP. TO SLOPE	5'-0" PERP. TO SLOPE
ORDINARY HAZARD:				
ALL	ALL	130	15'-0"	7'-6"
EXTRA HAZARD:				
ALL	PIPE SCHEDULE	90	12'-0"	6'-0"
	HYD. CALC. DENSITY= .25+	100	12'-0"	6'-0"
	HYD. CALC. DENSITY<.25	130	15'-0"	7'-6"

HANGER LOCATIONS (MAX PRESSURE < 100 PSI)				HANGER ROD SIZES		HANGER LOCATIONS (MAX PRESSURE > 100 PSI)			
PIPE SIZE	A (MAX)	A (MIN)	B (MAX)	PIPE SIZE	DIAMETER	PIPE SIZE	A (MAX)	A (MIN)	B (MAX)
1"	36"	3"	24"	UP TO 4"	3/8"	1"	12"	3"	12"
1 1/4"	48"	3"	24"	5" TO 8"	1/2"	1 1/4"	12"	3"	12"
≥ 1 1/2"	60"	3"	24"	10" & 12"	5/8"	≥ 1 1/2"	12"	3"	12"



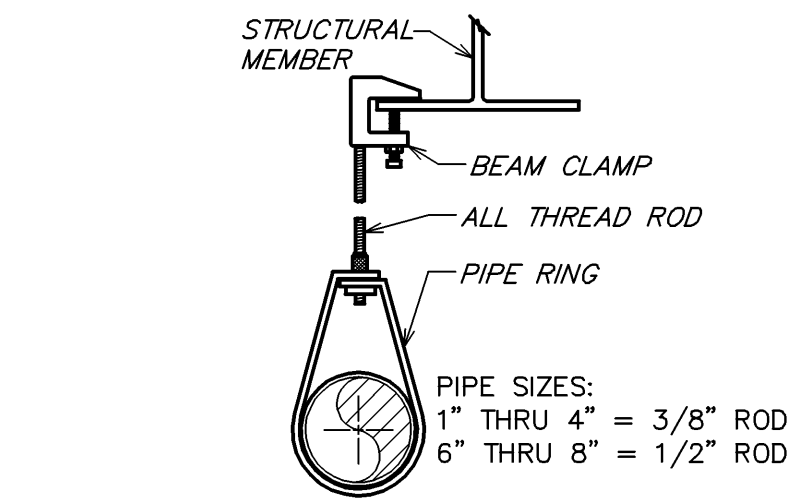
STEEL PIPE ONLY

MAXIMUM DISTANCE BETWEEN HANGERS (FT. – IN.)												
PIPE TYPE	NOMINAL PIPE SIZE (IN)											
	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
STEEL PIPE EXCEPT THREADED LIGHT-WALL	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHT WALL STEEL PIPE	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A	N/A	N/A



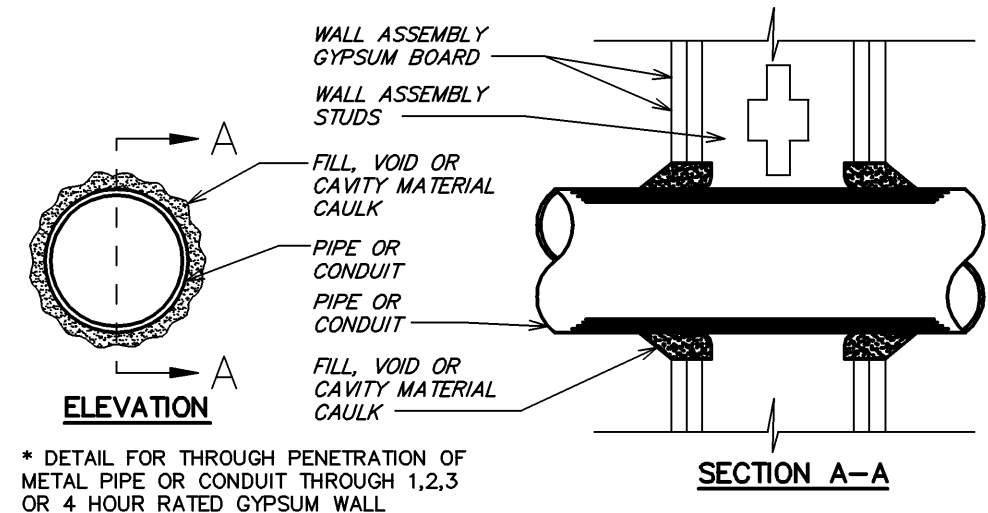
10 ARMOVER ASSEMBLY DETAIL

NOT TO SCALE



9 PIPE HANGER
BEAM CLAMP

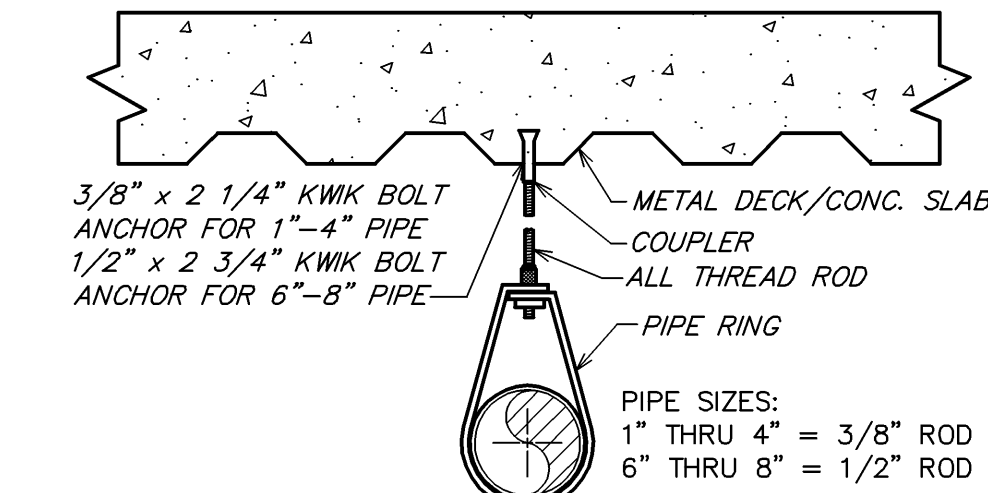
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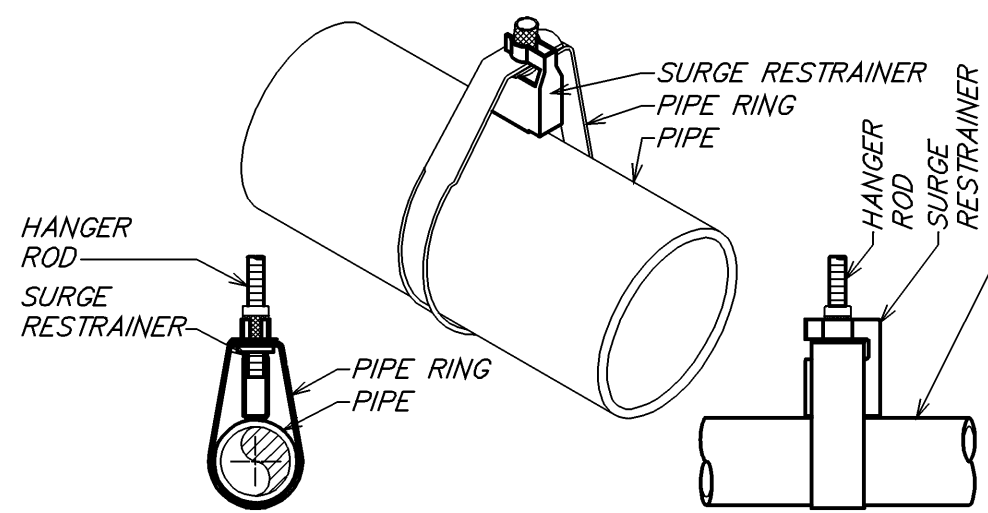
RATED
PENETRATION DETAIL

8

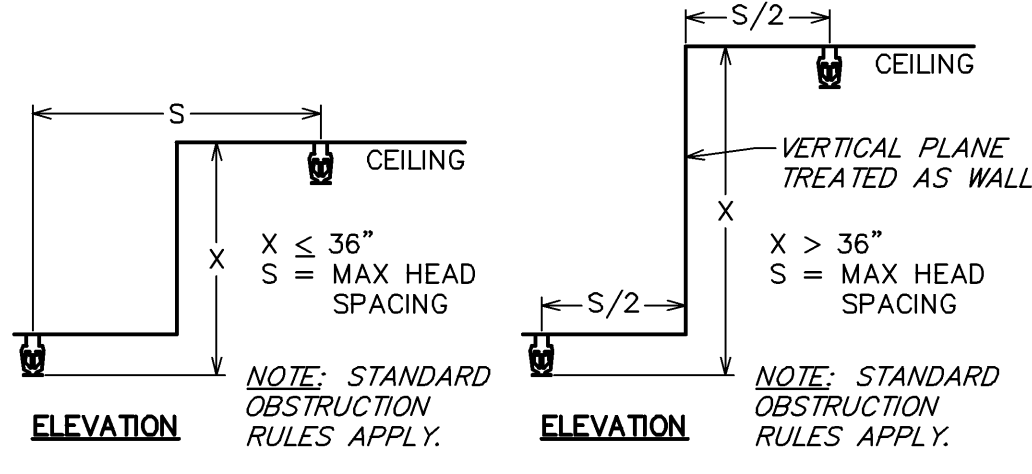
NOT TO SCALE



7 PIPE HANGER
CONCRETE DECK
NOT TO SCALE

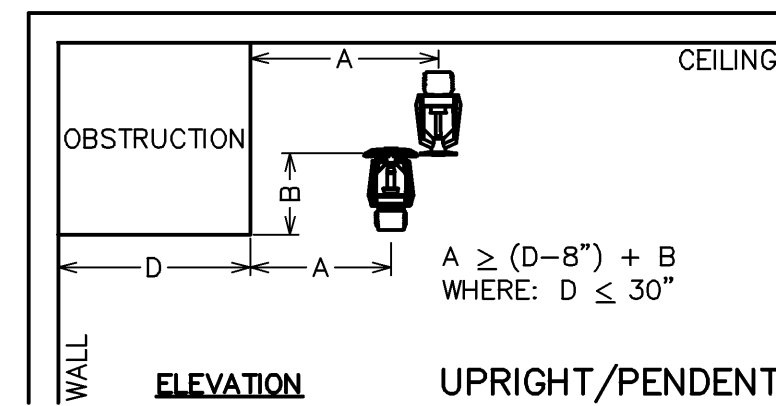


6 SURGE RESTRAINER
NOT TO SCALE



VERTICAL
CEILING CHANGE RULE

5 NOT TO SCALE



4 SOFFIT OBSTRUCTION RULE
NOT TO SCALE

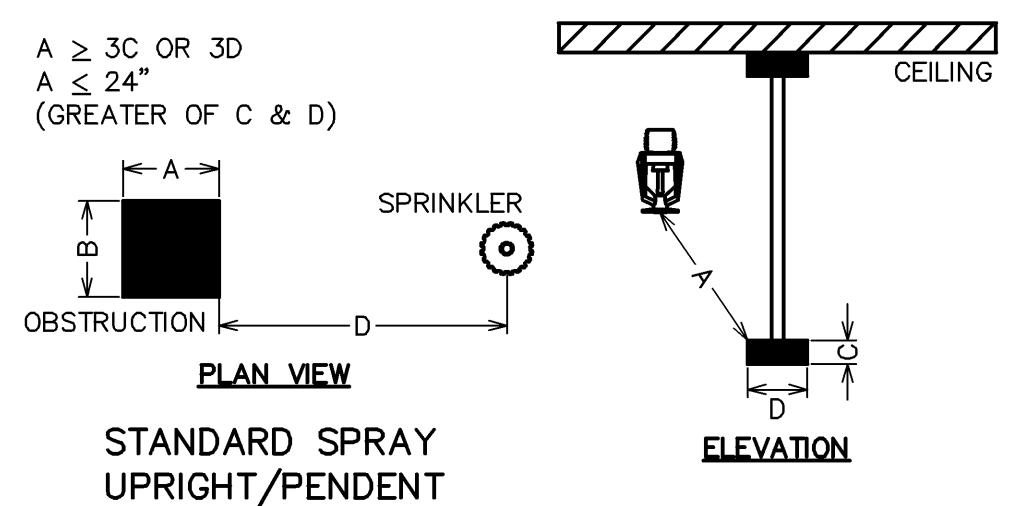
TYPE OF CONSTRUCTION	DISTANCE BELOW CEILING (A)	DISTANCE BELOW STRUCTURAL MEMBER (B)
UNOBSTRUCTED	1" – 12"	N/A
OBSTRUCTED	22" MAX.	1" – 6"

NOTE: OR IN ACCORDANCE WITH SPECIFIC SPRINKLER HEAD MANUFACTURER LISTING

ELEVATION

UPRIGHT/PENDENT

3 DEFLECTOR DISTANCE
NOT TO SCALE



2 OBSTRUCTION DISTANCE
NOT TO SCALE

DISTANCE FROM SPRINKLER TO SIDE OF OBSTRUCTION (A)	MAXIMUM DISTANCE OF DEFLECTOR ABOVE OBSTRUCTION (in.) (B)
< 1'-0"	0
1'-0" < 1'-6"	2.5
1'-6" < 2'-0"	3.5
2'-0" < 2'-6"	5.5
2'-6" < 3'-0"	7.5
3'-0" < 3'-6"	9.5
3'-6" < 4'-0"	12
4'-0" < 4'-6"	14
4'-6" < 5'-0"	16.5
5'-0" < 5'-6"	18
5'-6" < 6'-0"	20
6'-0" < 6'-6"	24
6'-6" < 7'-0"	30
7'-0" < 7'-6"	35

Diagram illustrating the installation of a standard spray upright/pendent sprinkler. The diagram shows a ceiling, a sprinkler, and an obstruction. The distance from the sprinkler to the side of the obstruction is labeled 'A'. The distance from the obstruction to the ceiling is labeled 'B'. The obstruction is labeled 'OBSTRUCTION'. The ceiling is labeled 'CEILING'. The sprinkler is labeled 'ELEVATION'.

**STANDARD SPRAY
UPRIGHT/PENDENT**

1 OBSTRUCTION RULE
NOT TO SCALE

SECTION 21000 - FIRE SUPPRESSION GENERAL CONDITIONS

PART 1 GENERAL

1.01 APPLICABILITY

- A. This section supplements all sections of the Specifications for Division 21 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved fire suppression systems. The Drawings and General Conditions and General Provisions of the Contract apply to this section and the other sections of Division 21 of the specifications. Where conflicts arise between these documents, the more stringent provision will be applicable, subject to the interpretation of the Engineer.
- C. Furnish all labor, material, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all materials and electrical equipment and accessories specified in either location shown on the Drawings, and its delivery to the Owner, complete in all respects and ready for use.
- D. Products furnished but not installed under this section:
1. Where plans indicate fixtures or equipment will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, complete in all respects and ready for installation.
 2. Drawings, instructions, and manuals supplied with equipment furnished under Division 21, but not installed under other Divisions shall be carefully preserved and turned over to the Architect.
- E. Products installed but not furnished under this section:
1. Where plans indicate fixtures or equipment will be furnished by others, this Contractor shall provide all rough-in and supplies and shall connect such equipment to the fire suppression systems.
 2. Drawings, instructions, and manuals supplied with equipment furnished under separate Divisions but installed under Division 22 shall be carefully preserved and turned over to the Architect.

1.02 DEFINITIONS

- A. "Work" is hereby defined as, "The construction and services required by the Contract Documents which completed or partially completed and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project.
- B. "Furnish" is hereby defined as, "To supply and deliver, unload, and inspect for damage."
- C. "Install" is hereby defined as, "To place, assemble, erect, apply, place, finish, cure, protect, clean, connect, and to take into operation into the work."
- D. "Provide" is hereby defined as, "To furnish and install."
- E. "Connect" is hereby defined as, "To be responsible for the equipment and make final attachment including necessary switches, outlets, buses, terminations, etc."
- F. "Concealed" is hereby defined as, "Hidden from sight in chases, buried spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or furred in."
- G. "Exposed" is hereby defined as, "Not installed underground nor concealed as defined by the Specifications."
- H. "Drawings" is hereby defined as, "All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work."
- I. Subgrade Elevations: 4 inches below finish grade elevations indicated on drawings, unless otherwise indicated.
- J. Finish Grade Elevations: 4 inches above subgrade elevations indicated on drawings, unless otherwise indicated.

1.03 CODES AND STANDARDS

- A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with the Americans with Disabilities Act (ADA) and the Authority Having Jurisdiction (AHJ) including Fire Marshals(s).
- B. Perform work in accordance with Landlord requirements, including any Tenant Criteria Manuals and Lease Exhibits, where applicable.
- C. Perform work in accordance with the applicable utility companies serving the project. Make all arrangements with the utility companies for proper coordination of the work.
- D. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of National Fire Protection Association (NFPA), Factory Mutual Global, where applicable (FMG), Underwriters Laboratories, Inc. (U.L.), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), National Electrical Code (NEC), and National Electrical Safety Code (NESC).
- E. The Contract Documents shall take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES

- A. Permit fees, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.
- B. All fees and scheduling associated with obtaining an accurate water flow test shall be at the Contractor's expense.

1.05 CONTRACT DRAWINGS

- A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents are the Contractor's sole responsibility.
- B. Work under these sections is diagrammatic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of piping, equipment, and accessories. Follow these drawings in laying out the work and verify spaces for the installation of these materials and equipment. Wherever a question exists as to the exact intended location of pipe, sprinklers, or equipment, obtain clarification from the Architect before proceeding with the work.
- C. Notify the Architect/Engineer for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect/Engineer of discrepancies shall constitute acceptance of the design and the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.06 EXISTING CONDITIONS

- A. Verify all existing conditions prior to beginning work.
- B. Any existing conditions indicated in the Contract Documents are based on information drawings provided by others and possibly limited field verification. The Contractor shall adjust for actual field conditions at no additional expense to the Owner.
- C. The Contractor shall visit the project site, review existing conditions against the Contract Documents, and coordinate with the Owner prior to bidding and start of the work. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.
- D. The Contractor shall notify the Architect of major discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect is not informed.
- E. The Owner shall have first salvage right on all demolished equipment and materials. The Contractor shall dispose of all demolished equipment and materials the Owner rejects.
- F. The Contractor shall notify the Architect/Engineer of field discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect/Engineer is not informed.
- G. Where connections are made between new work and existing work, the connections shall be made by using materials and methods to suit the actual conditions.
- H. Where existing conditions are shown to be removed by a hatched pattern, on the Drawings, this Contractor shall perform all work required for removal. Existing pipe run-outs shall be removed all the way back to mains and capped using appropriate methods.
- I. Where existing work is to be modified, it shall be done in conformance with these specifications. Materials used shall be same as existing except where specified otherwise.

1.07 SUBMITTALS

- A. Shop Drawings:
1. Furnish the Architect/Engineer shop drawing portfolios containing names of manufacturer and cut sheets of equipment to be used on the project. Use manufacturer's specification sheets identified by number indicated on drawings or schedules. Indicate cut sheet number on the cut sheets. As applicable, provide construction data, weight and dimensions data, and performance data and listing data as part of the shop drawing submittal. Provide shop drawings for:
 - a. Fire Protection fixtures and equipment.
 - b. Fire Protection materials and accessories.
 - c. Product Data: Provide manufacturer's catalogue information. Indicate valve data and ratings.
 2. Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substitution of materials and equipment lies solely with the substituting Contractor.
 3. Approval shall not relieve the Contractor from responsibility for errors on the shop drawings.
 4. If the shop drawings deviate from the contract documents, the Contractor shall advise the Engineer of the deviations in writing accompanying the shop drawings, including the reasons for the deviations.
- B. Project Record Documents: Record actual locations of components and tag numbering.
- C. Operation and Maintenance Data: Include installation instructions and spare parts lists.
- D. Maintenance Data: Include assembly drawings, bearing data including replacement sizes, and lubrication instructions.

1.08 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years experience, approved by manufacturer.
- C. Products:
1. Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
 2. Listed and classified by the local Department of Buildings and furnished with

- an acceptance number, where applicable.
 - Listed and classified by the Landlord's and/or Owner's insurance carrier, where applicable.
 - All equipment and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.
 - Equipment performance and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to be required, although such components may or may not be specifically indicated in the Contract Documents.
 - Code or utility company requirements shall supersede any conflicting requirements of this section.
 - Fill Compliance Test Reports: Results of laboratory tests on actual materials used; Compression Density Test Reports.
- 1.09 DELIVERY, STORAGE, AND HANDLING
- A. Deliver and store valves in shipping containers, with labeling in place.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather-proof covering. For extended outdoor storage, remove motors from equipment and store separately.
- E. Equipment: Protect equipment from physical damage by storing off site until the project is ready for immediate installation. Provide temporary caps on all pipes to prevent debris from entering the pipe.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawings and results reported back to the Architect/Engineer for review. The products of other manufacturers shall meet or exceed all requirements of the Contract Documents. The Contractor accepts all responsibility for costs and coordination issues arising out of the substitution of materials, equipment, and the coordination of such substitutions with all other contractors and subcontractors.
- B. Sprinkler Systems: Conform work to NFPA 13 and all local requirements.
- C. Standpipes and Hose Systems: Conform to NFPA 14 and all local requirements.
- D. Welding Materials and Procedures: Conform to ASME Code.

PART 3 EXECUTION

3.01 COORDINATION OF WORK

- A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.
- B. Work lines and established heights shall be in strict accordance with architectural drawings and specifications insofar as these drawings and specifications extend. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
- C. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent prompt and proper installation, or make it unavailable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
- D. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress. Infer all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required. The fire suppression system layout may be altered to suit the conditions, prior to the installation of the work and without affecting the Contractor's responsibility arising from lack of coordination shall be this Contractor's responsibility.
- E. Wherever pipe runs in or above ceilings or walls, the Contractor shall arrange the run of pipe in such a manner as to avoid interference with grilles, diffusers, outlet boxes, luminaires, or other ceiling mounted items.
- F. Install systems, materials and equipment to provide for maximum headroom, where no ceiling height is established or indicated on the Drawings. Maintain access to equipment requiring service when selecting mounting elevations.
- G. Install systems, materials and equipment level and plumb, parallel and perpendicular to building lines where exposed to view, unless otherwise indicated.
- H. Conflicts arising from lack of coordination shall be the Contractor's responsibility. The Fire Suppression Contractor shall pay for all extra cutting and patching made necessary by his failure to properly direct such work at the correct time.
- I. Perform all work in conformity with the Contract Documents and afford other trades reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.
- J. Manufacturer's instruction sheets shall be followed explicitly in the installation of all equipment. Where manufacturer's instruction sheets conflict with requirements of these specifications or the Drawings, such conflicts shall be brought to the attention of the Architect/Engineer for clarification.
- K. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
- L. Although all such work is not specifically indicated, furnish and install all equipment, factory or miscellaneous, and all tools, appliances and devices incidental to or necessary for a sound, secure and complete installation.
- M. Verify and coordinate all requirements and installation details of all materials and equipment furnished under other Divisions prior to beginning work.
- N. Connected under Division 22 prior to rough-in. Conflicts arising from lack of coordination shall be this Contractor's responsibility. As such, the Contractor is responsible to:
1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
 2. Determine connection locations and requirements.
 3. Sequence rough-in of fire suppression connections to coordinate with installation of equipment.

3.02 COORDINATION

- A. Prepare coordination drawings to a scale of 1/4"=1'-0" or larger; detailing major elements, components, and systems of fire suppression equipment and materials in relationship with the work of other trades. Show all penetrations and locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the work, including, but not limited to, the following:
- a. Indicate the proposed locations of conduits, equipment, and materials. Include the following:
 - i. Clearances required for maintaining code required working space.
 - ii. Equipment connections and support details.
 - iii. Exterior wall and foundation penetrations.
 - iv. Fire-rated wall and floor penetrations.
 - v. Sizes and location of required concrete pads and bases.
 - vi. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
 - b. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

3.03 EXAMINATION

- A. Verify field measurements are as indicated on the Drawings.
- B. Verify all pipe locations and sizes in field prior to fabrication or installation.
- C. Verify all equipment locations in field prior to installation. Coordinate final locations with all trades.

3.04 INTERFACE WITH OTHER PRODUCTS

- A. Install all pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.05 FIELD QUALITY CONTROL

- A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted under the supervision of the Architect.
- B. Install all equipment, devices, pipe, and materials securely and in a neat and workmanlike manner. Provide framing members of standard rolled steel shapes, A-36 steel. Provide members welded to structural members equal to the specification for the main structural member. Provide "simple beam" type framing with end connections welded or bolted for shear loads. Use cantilevers when detailed or specifically approved by the Architect/Engineer. The Architect/Engineer's approval is required for location of supplementary framing. Use only certified welders. Design framing members for their actual loads, with allowable stresses specified by AISC, without excessive deflection and with consideration for a rigidity under vibration, in accordance with standard structural engineering practices. Show on shop drawings the supplementary framing, including design loads, member size and location.

3.06 ERECTION

- A. Rigging:
1. The Fire Suppression Contractor shall arrange for all labor and equipment required for the proper installation of the Fire Suppression equipment in the locations indicated on the Drawings. Where crane rental or other erection is required, such costs shall be included in the Fire Suppression Contract, unless specific arrangements are made with the General Contractor to cover these costs.
- B. Supplemental Framing:
1. Provide the design, fabrication, and erection of supplementary structural framing required for attachment of hangers or other devices supporting fire suppression equipment. Provide framing members of standard rolled steel shapes, A-36 steel. Provide members welded to structural members equal to the specification for the main structural member. Provide "simple beam" type framing with end connections welded or bolted for shear loads. Use cantilevers when detailed or specifically approved by the Architect/Engineer. The Architect/Engineer's approval is required for location of supplementary framing. Use only certified welders. Design framing members for their actual loads, with allowable stresses specified by AISC, without excessive deflection and with consideration for a rigidity under vibration, in accordance with standard structural engineering practices. Show on shop drawings the supplementary framing, including design loads, member size and location.

3.07 CUTTING, PATCHING, AND PIERCING

- A. Cutting of openings and installation of sleeves or frames through walls and surfaces shall be done in a neat workmanlike manner. Openings shall be cut only as large as required for the installation; sleeves and/or frames installed flush with finished surfaces and grouted in place. Surfaces around openings shall be left smooth and finished to match surrounding surface.
- B. Obtain written permission of the Architect/Engineer before cutting or piercing structural members. Use careful planning and the following methods for cutting, fitting, repairing, patching of plaster, and finishing of materials including carpentry work, metal work or concrete work required for this work. Do not weaken walls, partitions, or floors with cutting. Repairs required to be cut in floors must be drilled without breaking out around the holes. The Architect/Engineer will determine suitability of patching and/or refinishing requirements.
- C. The Fire Suppression Contractor is responsible for patching of all openings resulting from the installation or removal of fire suppression equipment or materials.
- D. Acquire and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
- E. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Subcontractors.
- F. Fire and Smoke Partition Penetrations: The Contractor shall familiarize himself with all fire rated construction and install his work so as to maintain the integrity of the fire-rated construction. Maintain ratings of fire-rated construction. Seal annular space around conduits. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains fire rated wall and floor integrity.
- 3.08 CLEANING AND REPAIR
- A. Clean fire suppression parts to remove harmful materials.
- B. Clean exposed surfaces of all pipe, equipment, and accessories of all dirt, debris, plaster, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.
- C. Repair or replace damaged pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where wear or disfigurement has occurred. All pipe, equipment, and accessories shall be new.
- 3.09 TESTING AND INSPECTION
- A. Upon completion, the entire system shall be tested under operating conditions.
1. All equipment shall be tested under service conditions and proven to operate properly and noiselessly.
 2. All additional tests as required throughout this Specification shall be completed and results reported back to the Architect/Engineer for review.
- B. Operate all equipment, after installation and connection. Inspect for improper connections and operation and correct deficiencies as required.
- C. Inspection:
1. Upon completion of the work, the Contractor shall obtain certificates of inspection and approval from all City and State Authorities Having Jurisdiction.

- 3.10 PROJECT CLOSEOUT
- A. Project Record Documents: At project closeout, provide one printed copy and one electronic copy of project record drawings to the Owner. Information contained on project record drawings shall include, as a minimum:
1. Actual locations of all pipe, equipment, accessories, etc.
 2. Actual pipe sizes and elevations.
 3. Actual locations of all underfloor or below grade piping.
 4. Hydraulic calculation remote area data and associated flow test information.
- B. Operation and Maintenance Data: At project closeout, submit to the Architect two copies of descriptive literature, maintenance and operation data for all piping, equipment, accessories, and materials used. Include maintenance procedures, intervals, and parts list of each item installed under this contract. Include all manufacturer's guarantees and warranties. Also include:

END OF SECTION

SECTION 21054B - VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete heavykeeping pads; Inertia bases for fire pumps; Vibration isolators; Seismic restraints.
- 2.01 MANUFACTURERS
- A. Kinetics Technology, Inc.; Kinetics Noise Control, Inc.; Mason Industries.
- 2.02 SEISMIC RESTRAINTS
- A. Type: Non-directional and double acting unit consisting of interlocking steel members restrained by neoprene elements.
- B. Elements: Replaceable neoprene, minimum of 0.75 inch thick with minimum 1/8 inch oil gap.
- C. Capacity: 4 times load assigned to mount groupings at 0.4 inch deflection.
- D. Attachment Points and Fasteners: Capable of withstanding 3 times rated load capacity of seismic snubber.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 SEISMIC RESTRAINTS

- A. Type: Non-directional and double acting unit consisting of interlocking steel members restrained by neoprene elements.
- B. Elements: Replaceable neoprene, minimum of 0.75 inch thick with minimum 1/8 inch oil gap.
- C. Capacity: 4 times load assigned to mount groupings at 0.4 inch deflection.
- D. Attachment Points and Fasteners: Capable of withstanding 3 times rated load capacity of seismic snubber.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. On closed spring isolators, adjust so side stabilizers are clear under normal operating conditions.
- C. Support piping connections to equipment mounted on isolators using isolators or resilient hangers for scheduled distance. Up to 4 inches Pipe Size: First three points of support; 5 to 8 inches Pipe Size: First four points of support; 10 inches Pipe Size and Over: First six points of support. Select three hangers closest to vibration source for minimum 1.0 inch static deflection or static deflection of isolated equipment. Select remaining isolators for minimum 1.0 inch static deflection or 1/2 inch static deflection of isolated equipment.

END OF SECTION

SECTION 210500 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe, fittings, valves, and connections for systems as applicable to this project. Sprinkler systems; Standpipe systems; Dry pipe systems; Wet pipe systems; Standpipe/hose systems; Below ground piping; Above ground piping.

PART 2 PRODUCTS

2.01 FIRE PROTECTION SYSTEMS

- A. Material Supply: Perform for All Systems: Perform tests of all supply water sources to determine the potential for corrosion in the fire protection system including tests for microbes most commonly associated with Microbiologically Influenced Corrosion (MIC). Water samples shall be collected as directed by the product literature of the testing laboratory within 72 hours of the time the water sample is obtained. Test results shall be forwarded to the Owner and Engineer along with a report summarizing the recommended corrective action to mitigate the potential for MIC or other types of corrosion.
- B. The Contractor may use any of the following piping materials, at his option, provided the selected material meets with the approval of the State and local authorities and any utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.

2.02 ABOVE GROUND PIPING

- A. Steel Pipe: ASTM A 795 Schedule 10, ASTM A 53 Schedule 40, ASTM A 135 Schedule 10, ASTM A 135 UL listed light wall type, or ASTM A 795 Schedule 40, black. Steel Fittings: ASME B16.9, wrought steel, butt welded; ASME B16.5, butt welded and ASME A 234/A 234M, wrought carbon steel or alloy steel, ASME B16.5, steel flanges and fittings, or ASME B16.11, forged steel socket welded and threaded. Mechanical gaskets: Follow these drawings in laying out the work and verify spaces for the installation of these materials and equipment. Wherever a question exists as to the exact intended location of pipe, sprinklers, or equipment, obtain clarification from the Architect before proceeding with the work.
- B. Copper Tube: ASTM B 75 (ASTM B 75M) or ASTM B 88 (ASTM B 88M), H88 drum temper; Type: Type M (C); Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze solder joint, pressure type; Joints: Joints AS 803. Classification B04P-3 or B04P-4; Copper/Steel or ASME B 32, 1/2 inch S995 solder.
- C. CPVC Pipe: ASTM F 442/F 442M, SDR 13.5, (Not permitted in plenum return air ceiling spaces.); Fittings: ASTM F 439 Schedule 40, or ASTM F 439 schedule 80, CPVC; Joints: Solvent welded, using ASTM F 493 cement.

2.03 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Male/brake iron, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- C. Wall Support for Pipe Sizes 1/2 to 1-1/2 inch: Steel channels with wall hangers and hanger rods.
- D. Wall Support for Pipe Sizes 2 to 3 inches: Cast iron hook.
- E. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- F. Vertical Support: Steel riser clamp.
- G. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.04 GATE VALVES

- A. Up to and including 2 inches: Bronze body, bronze trim, rising stem, handwheel, sizes and location of required concrete pads and bases.
- B. Over 2 inches: Iron body, bronze trim, rising stem pre-grooved for mounting tap switch, handwheel, OS&Y, solid bronze or cast iron wedge, flanged or grooved ends.
- C. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

2.05 BUTTERFLY VALVES

- A. Bronze Body: Stainless steel disc, resilient replaceable seat, threaded or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and built-in tamper proof switch rated 10 amp at 115 volt AC.
- B. Cast or Ductile Iron Body: Cast or ductile iron, chrome or nickel plated ductile iron or aluminum bronze disc, resilient replaceable EPDM seat, wder, lug, or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and internal tamper switch rated 10 amp at 115 volt AC.

2.06 CHECK VALVES

- A. Up to and including 2 inches: Bronze body and swing disc, rubber seat, threaded ends.
- B. Over 2 inches: Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends.
- C. 4 inches and Over: Iron body, bronze disc, stainless steel spring, resilient seal, extended neck, wafer, or flanged ends.
- D. Compression Stop: Bronze with hose thread nipple and cap.
- E. Ball Valve: Brass with cap and chain, 3/4 inch hose thread.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe. Remove scale and foreign material, from inside and outside, before assembly. Prepare pipe and connections to equipment with flanges or unions.

3.02 INSTALLATION

- A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
- B. Install standpipe piping, hangers, and supports in accordance with NFPA 14.
- C. Comply with all materials, design and installation requirements of Factory Mutual.
- D. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- E. Install piping to concrete building space, do not interfere with use of space and other work.
- F. Group piping whenever practical at common elevations.
- G. Sleeve pipes passing through partitions, walls, and floors.
- H. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- I. Inserts: Provide inserts for placement in concrete formwork; Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams. Provide hooked rod to concrete reinforcement. Show on shop drawings the pipe over 4 inches; Where concrete slabs form finished ceiling, locate inserts flush with slab surface. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut.
- J. Pipe Hangers and Supports: Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work; Place hangers within 12 inches of each horizontal elbow. Use hangers with 1-1/2 inch minimum vertical adjustment. Design

- hangers for pipe movement without disengagement of supported pipe. Support vertical structural members. Use carbon steel pipe. Support riser piping independently of connected horizontal piping. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers. Provide copper plated hangers and supports for copper piping.
- K. Slope piping and drainage systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- L. Where exposed to view in finished areas, prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- M. Do not penetrate building structural members unless indicated or where approval from the project Structural Engineer has been given in writing.
- N. Provide sleeves when penetrating footings and floors. Seal and fire stop pipe and provide sealant to achieve fire resistance equivalent to fire separation required.
- O. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- P. Install valves with stems upright or horizontal, not inverted. Remove protective coatings prior to installation.
- Q. Provide drain valves at main shut-off valves, low points of piping and apparatus.

END OF SECTION

SECTION 210565 - IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete heavykeeping pads; Inertia bases for fire pumps; Vibration isolators; Seismic restraints.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Kinetics Technology, Inc.; Kinetics Noise Control, Inc.; Mason Industries.
- 2.02 SEISMIC RESTRAINTS
- A. Type: Non-directional and double acting unit consisting of interlocking steel members restrained by neoprene elements.
- B. Elements: Replaceable neoprene, minimum of 0.75 inch thick with minimum 1/8 inch oil gap.
- C. Capacity: 4 times load assigned to mount groupings at 0.4 inch deflection.
- D. Attachment Points and Fasteners: Capable of withstanding 3 times rated load capacity of seismic snubber.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. On closed spring isolators, adjust so side stabilizers are clear under normal operating conditions.
- C. Support piping connections to equipment mounted on isolators using isolators or resilient hangers for scheduled distance. Up to 4 inches Pipe Size: First three points of support; 5 to 8 inches Pipe Size: First four points of support; 10 inches Pipe Size and Over: First six points of support. Select three hangers closest to vibration source for minimum 1.0 inch static deflection or static deflection of isolated equipment. Select remaining isolators for minimum 1.0 inch static deflection or 1/2 inch static deflection of isolated equipment.

END OF SECTION

SECTION 210555 - IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nameplates; Tags; Stencils; Pipe Markers.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Brady Corporation; Champion America, Inc.; Seton Identification Products.
- 2.02 NAMEPLATES
- A. Description: Laminated three-layer plastic with engraved letters: Letter Color: White; Letter Height: 1/4 inch; Background Color: Black.
- 2.03 TAGS
- A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.
- B. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with tooth edges.

2.04 STENCILS

- A. Stencils: With clean cut symbols and letters of following size:
1. 1/2 inch high letters.
 2. 1-1/2 to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field; 2-1/2 to 6 inch high letters.
 3. 2-1/2 to 6 inch Outside Diameter of Insulation or Pipe: 12 inch long color field; 1-1/4 inch high letters.
 4. 8 to 10 inch Outside Diameter of Insulation or Pipe: 24 inch long color field; 2-1/2 inch high letters.
 5. Equipment: 2-1/2 inch high letters.
- B. Semi-gloss enamel, colors conforming to ASME A13.1.

2.05 PIPE MARKERS

- A. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction and flow status. Markers shall be made of plastic with adhesive backing and printed markings.
- B. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install plastic and plastic tape pipe markers in accordance with manufacturer's instructions.
- B. Identify pumps and valves with plastic nameplates. Small devices, such as in-line pumps, shall be identified with tags.
- C. Identify valves in main and branch piping with tags.

END OF SECTION

SECTION 210565 - FIRE STOPPING FOR FIRE SUPPRESSION SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping materials and Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on the Drawings, and other openings indicated.

PART 2 PRODUCTS

2.01 FIRESTOPPING ASSEMBLIES

- A. Firestopping: Any material meeting requirements: Fire Ratings: Use any system listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that has F Rating and meets all other specified requirements.
- 2.02 MATERIALS
- A. Elastomeric Silicone Firestopping: Single or multiple component silicone elastomeric compound and compatible silicone sealant, conforming to the following: Durability and Longevity: Permanent; Color: Manufacturer's standard color; Manufacturers: AJO Fire Protection Systems Inc.; 3M Fire Protection Products; Specified Technologies, Inc.
- B. Foam Firestopping: Single or multiple component foam compound; conforming to the following: Durability and Longevity: Permanent; Color: Manufacturer's standard color; Durability and Longevity: Permanent; Manufacturers: AJO Fire Protection Systems Inc.; Gaco Construction Products; 3M Fire Protection Products; Nelson Firestop Products; Specified Technologies, Inc.
- C. Fiber Packing Material: Mineral or ceramic fiber packing insulation; conforming to the following: Durability and Longevity: Permanent; Manufacturers: AJO Fire Protection Systems Inc.; 3M Fire Protection Products; Pecora Corporation; Specified Technologies, Inc.; USG.
- D. Fire