

Ogden Regional Medical Center Psych Exam Remodel

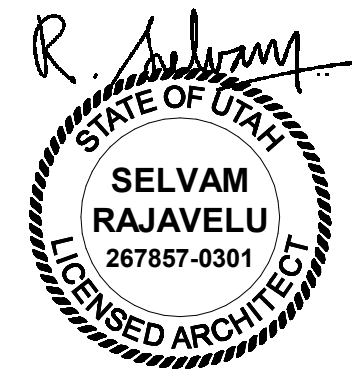
5475 South 500 East
Ogden, UT 84405

Construction Documents

DESIGN TEAM	
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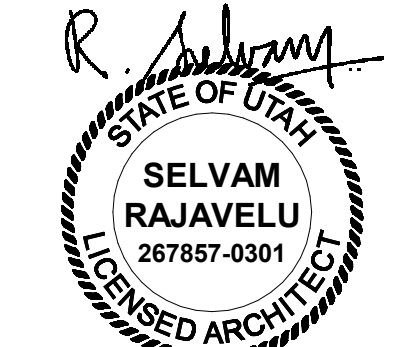
Ogden Regional Medical Center
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5475 South 500 East
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NJRA Project # 19301.00
Construction Documents Feb 19, 2020

Cover Sheet

G001



INTERIM LIFE SAFETY MEASURES

IMPLEMENTATION OF INTERIM LIFE SAFETY MEASURES (ILSM) IS REQUIRED IN OR ADJACENT TO ALL CONSTRUCTION AREAS AND THROUGHOUT BUILDINGS WITH EXISTING LSC DEFICIENCIES. ILSM APPLY TO ALL PERSONNEL INCLUDING CONSTRUCTION WORKERS. MUST BE IMPLEMENTED UPON PROJECT DEVELOPMENT, AND CONTINUOUSLY ENFORCED THROUGH PROJECT COMPLETION. ILSM ARE INTENDED TO PROVIDE A LEVEL OF LIFE SAFETY COMPARABLE TO THAT DESCRIBED IN CHAPTERS 1 THROUGH 7.31 AND THE APPLICABLE OCCUPANCY CHAPTERS OF THE LSC. EACH ILSM ACTION MUST BE DOCUMENTED THROUGH WRITTEN POLICIES AND PROCEDURES. EXCEPT AS STATED BELOW, FREQUENCIES FOR INSPECTION, TESTING, TRAINING, AND ILSM CONSIST OF THE FOLLOWING ACTIONS:

- ENSURING EXITS PROVIDE FREE AND UNOBSTRUCTED EGRESS. PERSONNEL SHALL RECEIVE TRAINING IF ALTERNATIVE EXITS MUST BE DESIGNATED. BUILDINGS OR AREAS UNDER CONSTRUCTION MUST MAINTAIN ESCAPE FACILITIES FOR CONSTRUCTION WORKERS AT ALL TIMES. MEANS OF EGRESS IN CONSTRUCTION AREAS MUST BE INSPECTED DAILY.
- ENSURING FREE AND UNOBSTRUCTED ACCESS TO EMERGENCY DEPARTMENTS/ SERVICES AND FOR EMERGENCY FORCES.
- ENSURE FIRE ALARM, DETECTION, AND SUPPRESSION SYSTEMS ARE NOT IMPAIRED. A TEMPORARY, BUT EQUIVALENT, SYSTEM SHALL BE PROVIDED WHEN ANY FIRE SYSTEM IS IMPAIRED. TEMPORARY SYSTEMS MUST BE INSPECTED AND TESTED MONTHLY.
- ENSURING TEMPORARY CONSTRUCTION PARTITIONS ARE SMOKE TIGHT AND BUILT OF NONCOM OR LIMITED COMBUSTIBLE MATERIALS THAT WILL NOT CONTRIBUTE TO THE DEVELOPMENT OR SPREAD OF FIRE.
- PROVIDING ADDITIONAL FIRE-FIGHTING EQUIPMENT AND USE TRAINING OF PERSONNEL.
- PROHIBITING SMOKING IN ACCORDANCE WITH MA.1.3.1.5 AND IN OR ADJACENT TO ALL CONSTRUCTION AREAS.
- DEVELOPING AND ENFORCING STORAGE, HOUSEKEEPING, AND DEBRIS REMOVAL PRACTICES THAT REDUCE THE FLAMMABLE AND COMBUSTIBLE FIRE LOAD OF THE BUILDING TO THE LOWEST LEVEL NECESSARY FOR DAILY OPERATIONS.
- CONDUCTING A MINIMUM OF TWO FIRE DRILLS PER SHIFT PER QUARTER.
- INCREASING HAZARD SURVEILLANCE OF BUILDINGS, GROUNDS, AND EQUIPMENT WITH SPECIAL ATTENTION TO EXCAVATIONS, CONSTRUCTION AREAS CONSTRUCTION STORAGE, AND FIELD OFFICES.
- TRAINING PERSONNEL WHEN STRUCTURAL OR COMPARTMENT FEATURES OF FIRE SAFETY ARE COMPROMISED.
- CONDUCTING ORGANIZATION WIDE SAFETY EDUCATION PROGRAMS TO ENSURE AWARENESS OF ANY LSC DEFICIENCIES, CONSTRUCTION HAZARDS, AND THESE ILSM.

PROJECT DESCRIPTION

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

- PROJECT INCLUDES REMODEL OF EXISTING EXAM ROOM LOCATED IN THE EMERGENCY DEPARTMENT AT THE HOSPITAL TO ACCOMMODATE PSYCHIATRIC PATIENTS.

APPROVALS

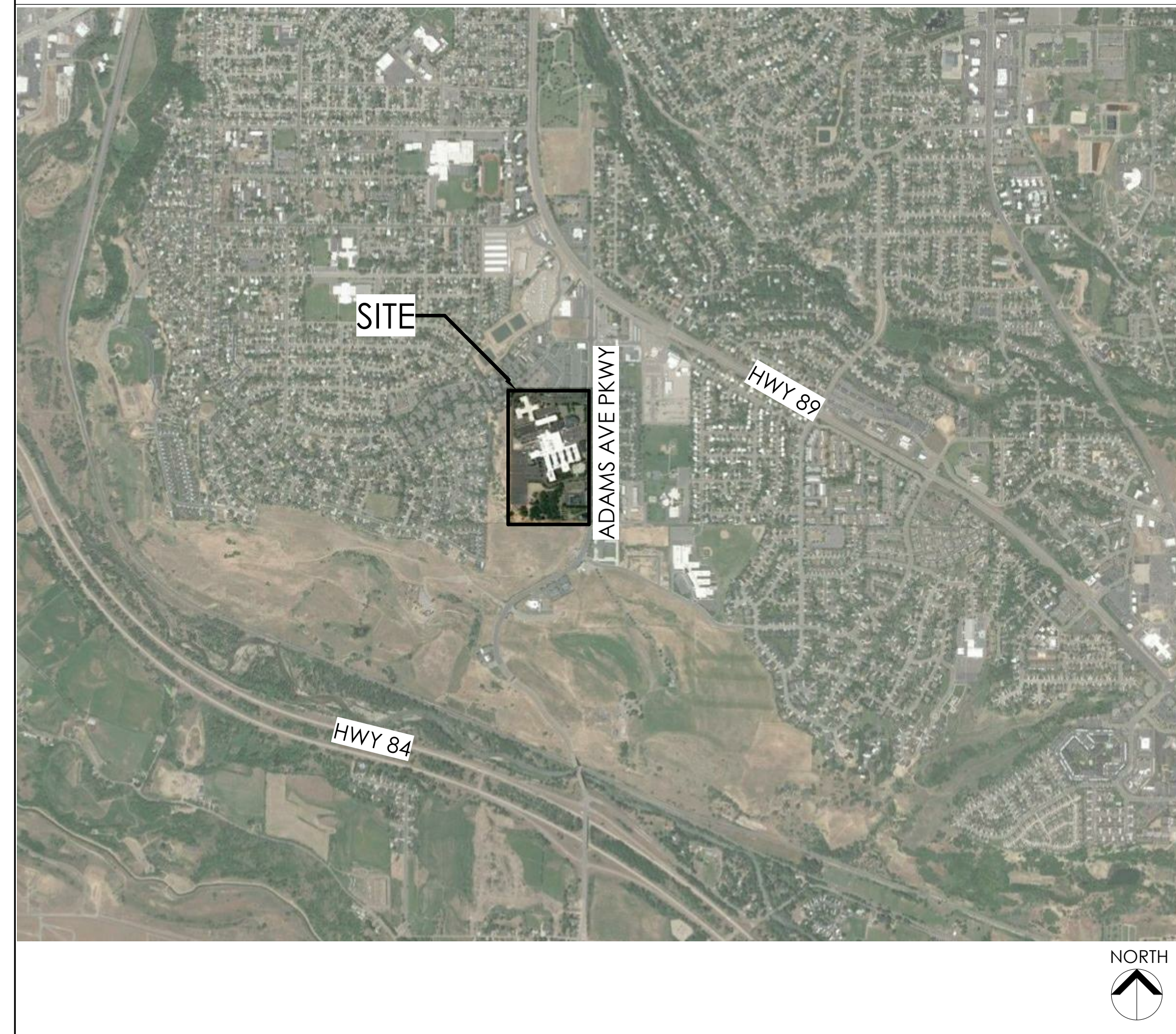
Approver Name, Title Date

Approver Name, Title Date

Approver Name, Title Date

Approver Name, Title Date

VICINITY MAP



INFECTION CONTROL RISK ASSESSMENT

CONSTRUCTION ACTIVITY TYPE

Type D:
Major demolition or construction that creates major disruption, i.e. noise, dust, vibration, odor, or mechanical systems includes, but not limited to:
• heavy demolition or removal of a complete cabling system
• new construction or build-out of shelved space

INFECTION CONTROL RISK GROUP

Highest:
• Exam Room

CONSTRUCTION CLASS

Construction Activity Type:

IC Risk Group	Type A	Type B	Type C	Type D
Lowest	Class I	Class II	Class III	Class IV
Medium	Class I	Class II	Class III	Class IV
High	Class I	Class II	Class III	Class IV
Highest	Class II	Class IV	Class IV	Class IV

INFECTION CONTROL PROTOCOLS

- During Construction (Class IV):
- Platform work using methods to minimize raising dust or tracking dust into other areas.
 - Immediately replace ceiling tile upon completion of inspection.
 - Use active dust control measures.
 - Use water mist to control dust while cutting.
 - Seal doors, ducts, vents and HVAC units.
 - Place dust control mats at entries to work area; keep them clean and effective.
 - Remove debris only in tightly covered containers.
 - Construct barriers to prevent dust and other contaminant migration prior to beginning work.
 - Maintain negative air pressure in work space using HEPA filtration units.
 - Seal all pipes, conduits and penetrations.
 - Construct and use anteroom for all entry to work area; HEPA vacuum all personnel, or have them change clothing before they leave the work area.
 - All personnel wear shoe covers while in the work area and remove them before entering the hospital.
- Upon Completion (Class IV):
- Clean work area.
 - Wipe all horizontal surfaces with disinfectant.
 - Remove final debris only in tightly covered containers.
 - Vacuum using HEPA filtered vacuum; mop with disinfectant as appropriate.
 - Remove oil seeds from doors, ducts, vents and HVAC units.
 - Remove construction barriers in a manner that minimizes the spread of dust and debris.
- See Completed ICRA by Hospital Infection Control Committee for more information

ABBREVIATIONS

&	AND	DISP.	DISPENSER	INSUL.	INSULATION	P.S.F.	POUNDS PER SQUARE FOOT	V.C.T.	VINYL COMPOSITION TILE
@	AT	DWL.	DOWL	INT.	INTERIOR	RAO.	RADIUS	W.C.	WATER CLOSET
Ø	DIAMETER	DN.	DOWN	INV.	INVERT	REC.	RECOMMENDATION	W.H.	WATER HEATER
(E), EXIST.	EXISTING	D.S.	DOWN SPOUT	J.	JOINT	REG.	REGISTER	W.R.	WATER RESISTANT
(N)	NEW	D.W.V.	DRAINAGE WASTE VENT	J.T.	JOIST	REQ'D	REQUIRED	W.P.	WATERPROOF
d	PENNY	DWG.	DRAWING	J.S.T.	JOIST	R.A.	RETURN AIR	W.W.F.	WELDED WIRE FABRIC
#	POUND OR NUMBER	E	EACH	L	LAMINATED	REV.	REVISION	R.D.	ROOF DRAIN
A	ACOUSTIC	E.W.C.	ELEC. WATER COOLER	EL.	ELECTRIC	RFG.	ROOFING	WDW.	WINDOW
AC	ACQUSTIC	ELEV.	ELEVATION	LDG.	LANDING	RM.	ROOM	W/	WITH
ADD	ADDENDUM	EQ.	EQUAL	LAV.	LAVATORY	RGH.	ROUGH	W/O	WITHOUT
A/C	AIR CONDITIONING	EQIP.	EQUIPMENT	LT.	LIGHT	RND.	ROUND	WD.	WOOD
ALT.	ALTERNATE	EXH.	EXHAUST	L.W.C.	LIGHT WEIGHT CONCRETE				
AL	ALUMINUM	EXIST.	EXISTING	LVR.	LOUVER				
A.B.	ANCHOR BOLT	E.J.	EXPANSION JOINT	M	MACHINE BOLT	SCR.	SCREW	SECT.	SECTION
ARCH	ARCHITECT(JURAL)	EXT.	EXTERIOR	M.F.R.	MANUFACTURER	SEL.	SELECT	SHT.	SHEET
ASP.	ASPHALT	F	FEET	M.O.	MASONRY OPENING	SIM.	SIMILAR	SLDG.	SLIDING
B	BASMENT	FIN.	FINISH(ED)	MATL.	MATERIAL	S.M.	SMOOTH	SPEC.	SPECIFICATION
B.SMT.	BASEMENT	F.E.	FIRE EXTINGUISHER	MECH.	MECHANICAL	SPL.	SPLASH	SG.	SQUARE
B.M.	BENCHMARK	F.E.C.	FIRE EXTINGUISHER CABINET	MTL.	METAL	SG.	SQUARE	S.S.	STAINLESS STEEL
BLKG.	BLOCKING	FIXT.	FIXTURE	MIN.	MINIMUM	STD.	STANDARD	STRUC.	STRUCTURE
BD.	BOARD	FL.	FLASHING	M.LDG.	MOLDING	S.A.	SUPPLY AIR	SUSP.	SUSPENDED
B.O.	BOTTOM OF	G	GALVANIZED	MULL.	MULLION	SW.BD.	SWITCHBOARD	T	TELEPHONE COMPANY
BLDG.	BUILDING	GALV.	GALVANIZED	N	NATURAL GRADE			T&G	TONGUE & GROOVE
C	CABINET	GA.	GAUGE	N.G.	NATURAL GRADE			T&B	TOP & BOTTOM
C.B.T.	CAST IN PLACE	G.C.	GENERAL CONTRACTOR	NOM.	NOMINAL			T.O.	TOP OF
C.B.	CATCH BASIN	G.S.N.	GENERAL STRUCTURAL NOTES	NOM.	NOMINAL			T.O.C.	TOP OF CURB
CLG.	CEILING	GL.	GLASS	N/A	NOT APPLICABLE			T.O.D.	TOP OF DECK
CL	CENTER LINE	GRD.	GRADE	N.I.C.	NOT IN CONTRACT			T.O.P.	TOP OF PARAPET
C.T.	CERAMIC TILE	GYP.	GYP.SUM	N.T.S.	NOT TO SCALE			TYP.	TYPICAL
CH	CHANNEL	H	HARDWARE	O	ON CENTER			U	UNLESS NOTED OTHERWISE
C.O.	CLEAN OUT	HDWD.	HARDWOOD	O.C.	ON CENTER			V	VENT
CLR.	CLEAR	HTR.	HEATER	O.D.	OUTSIDE DIAMETER			V.I.R.	VENT THROUGH ROOF
CL.	CLOSE	HE.	HEIGHT	O.F.S.	OVERFLOW SCUPPER			VERT.	VERTICAL
COL.	COLUMN	H.P.	HIGH POINT	O.F.C.I.	OWNER FURNISHED, CONTRACTOR INSTALLED			V.G.	VERTICAL GRAIN
CONC.	CONCRETE	H.M.	HOLLOW METAL	P	PAINT			VEST.	VESTIBULE
CMU	CONCRETE MASONRY UNIT	HORIZ.	HORIZONTAL	PTD.	PAINTED				
COND.	CONDITION	H.B.	HOSE BIB	PR.	PAIR				
CONN.	CONNECTION	HR.	HOUR	PNL.	PANEL				
CONST.	CONSTRUCTION	H.W.	HOT WATER	d	PENNY				
CONT.	CONTINUOUS	I	INCH	P.L.	PLATE				
CJ	CONTROL JOINT	I.D.	INSIDE DIAMETER	PLBG.	PLUMBING				
D	DAMP PROOFING			P.S.I.	POUND PER SQUARE INCH				
D.P.	DAMP PROOFING								
D.B.	DECK BEARING								
DIAG.	DIAGONAL								
DIA.	DIAMETER								
DIM.	DIMENSION								

DEFERRED SUBMITTALS

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE BUILDING OFFICIAL FOR REVIEW WITH AN ACCOMPANYING LETTER FROM THE ARCHITECT STATING THAT THE CONTENTS OF THE SUBMITTAL ARE IN CONFORMANCE WITH THE DESIGN. WORK RELATED TO THE DEFERRED SUBMITTAL IS NOT TO COMMENCE UNTIL THE BUILDING OFFICIAL HAS APPROVED THE SUBMITTAL.

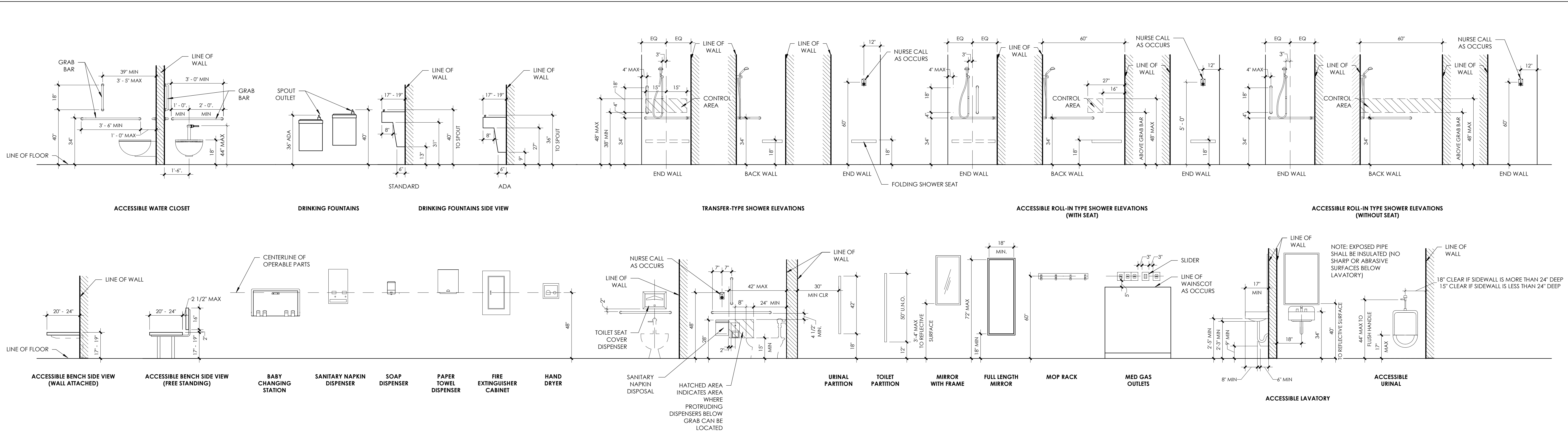
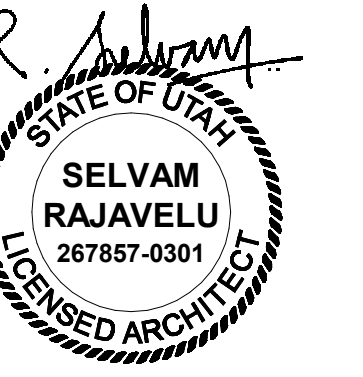
- DETAILS AND ENGINEERING CALCULATIONS FOR ALL NONSTRUCTURAL COMPONENTS THAT ARE PERMANENTLY ATTACHED TO STRUCTURES AND THEIR SUPPORTS AND ATTACHMENTS. THESE SHALL BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF EARTHQUAKE MOTIONS IN ACCORDANCE WITH ASCE 7-05. REFERENCE IBC SECTION 1613.1. THIS INCLUDES:
 - ELECTRICAL SYSTEMS
 - MECHANICAL SYSTEMS
 - PLUMBING SYSTEMS
 - DECORATIVE ARCHITECTURAL COMPONENTS.
- DETAILS AND ENGINEERING CALCULATIONS FOR THE FIRE SPRINKLER AND FIRE DETECTION SYSTEMS, WHICH ARE TO BE DESIGN-BUILD BY THE CONTRACTOR TO COMPLY WITH NFPA 13 AND SHALL INCLUDE:
 - FIRE ALARM PLANS (INCLUDING CO DETECTOR LOCATIONS)
 - AUTOMATIC FIRE SPRINKLER PLANS
 - HOOD FIRE SUPPRESSION
 - CLASS "K" FIRE EXTINGUISHER LOCATION(S)
- STRUCTURAL TRUSS AND JOIST DESIGNS (AS LISTED IN THE STRUCTURAL DRAWINGS).

SPECIAL INSPECTIONS

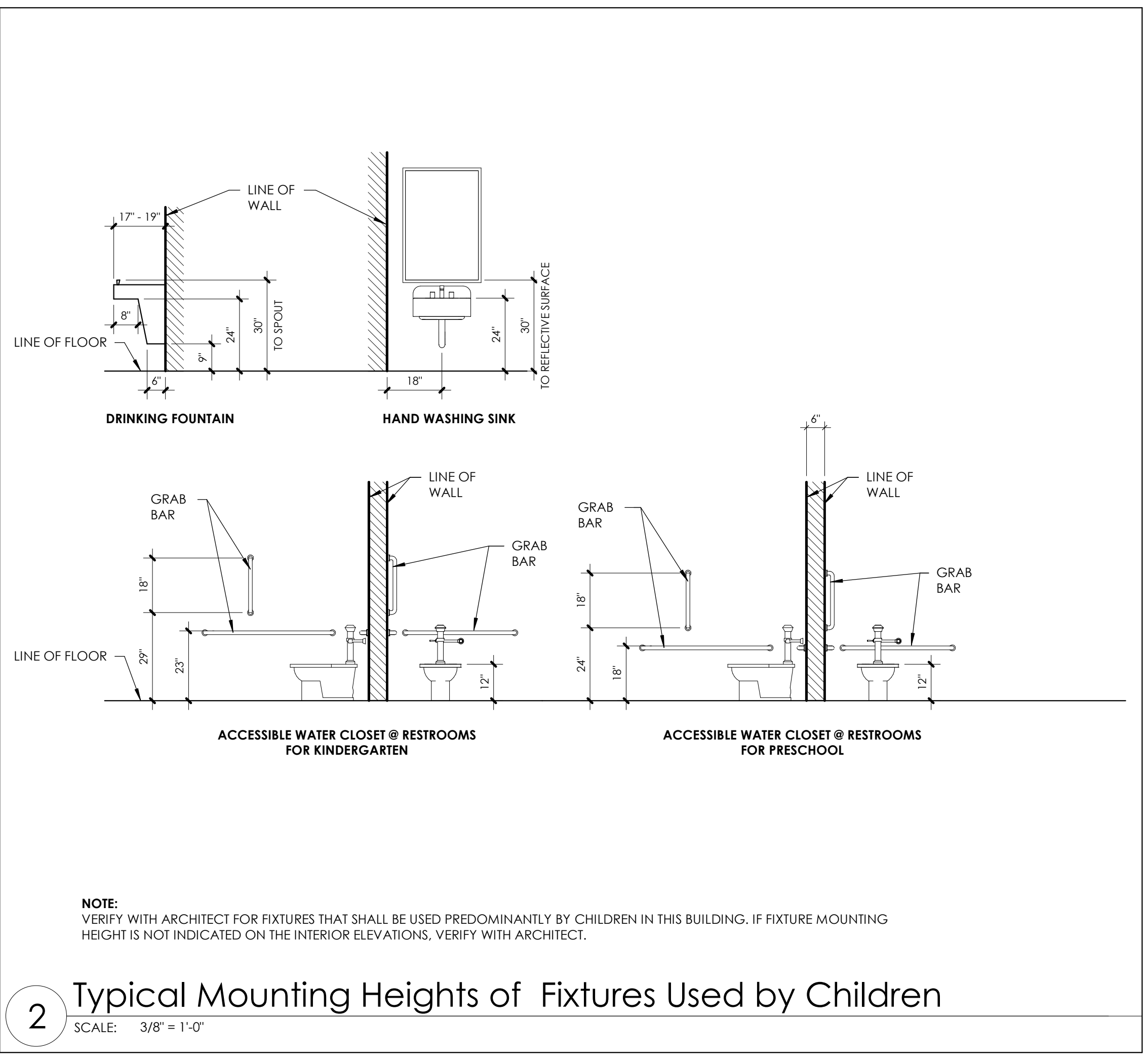
SEE STRUCTURAL DRAWINGS FOR SPECIAL INSPECTIONS REQUIRED.

DEFINITIONS

- GENERAL: BASIC CONTRACT DEFINITIONS ARE INCLUDED IN THE CONDITIONS OF THE CONTRACT.
- "APPROVED": WHEN USED TO CONVEY ARCHITECT'S ACTION ON CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, "APPROVED" IS LIMITED TO ARCHITECT'S DUTIES AND RESPONSIBILITIES AS STATED IN THE CONDITIONS OF THE CONTRACT.
- "DIRECTED": A COMMAND OR INSTRUCTION BY ARCHITECT, OTHER TERMS INCLUDING "REQUESTED," "AUTHORIZED," "SELECTED," "REQUIRED," AND "PERMITTED" HAVE THE SAME MEANING AS "DIRECTED."
- "INDICATED": REQUIREMENTS EXPRESSED BY GRAPHIC REPRESENTATIONS OR IN WRITTEN FORM ON DRAWINGS, IN SPECIFICATIONS, AND IN OTHER CONTRACT DOCUMENTS, OTHER TERMS INCLUDING "SHOWN," "NOTED," "SCHEDULED," AND "SPECIFIED" HAVE THE SAME MEANING AS "INDICATED."
- "REGULATIONS": LAWS, ORDINANCES, STATUTES, AND LAWFUL ORDERS ISSUED BY AUTHORITIES HAVING JURISDICTION, AND RULES, CONVENTIONS, AND AGREEMENTS WITHIN THE CONSTRUCTION INDUSTRY THAT CONTROL PERFORMANCE OF THE WORK.
- "TURNISH": SUPPLY AND DELIVER TO PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS.
- "INSTALL": UNLOAD, TEMPORARILY STORE, UNPACK, ASSEMBLE, ERECT, PLACE, ANCHOR, APPLY, WORK TO DIMENSION, FINISH, CURE, PROTECT, CLEAN, AND SIMILAR OPERATIONS AT PROJECT SITE.
- "PROVIDE": FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
- "PROJECT SITE": SPACE AVAILABLE FOR PERFORMING CONSTRUCTION ACTIVITIES. THE EXTENT OF PROJECT SITE IS SHOWN ON DRAWINGS AND MAY OR MAY NOT BE IDENTICAL WITH THE DESCRIPTION OF THE LAND ON WHICH PROJECT IS TO BE BUILT.



1 Typical Mounting Heights
SCALE: 3/8" = 1'-0"



2 Typical Mounting Heights of Fixtures Used by Children
SCALE: 3/8" = 1'-0"

LEGEND - MATERIALS

HATCH PATTERN BELOW INDICATES REPRESENTATION OF BUILDING MATERIALS IN BUILDING SECTIONS, WALL SECTIONS AND DETAILS.

	Concrete		Finish Wood
	Gypsum Board		Blocking
	Steel		Stone
	Earth		Gravel
	Masonry Concrete Block		Ball Insulation
	Masonry Brick		Insulation Rigid

GENERAL INFORMATION SYMBOLS & TAGS

<p>SHEET NUMBERING SYSTEM</p> <p>A100A</p> <ul style="list-style-type: none"> A: PROJECT AREA 100: SHEET NUMBER SEQUENCE 0: SHEET TYPE A: DISCIPLINE 	<p>ROOM TAG</p> <p>OFFICE 4 155 SF (O.L. 992)</p> <ul style="list-style-type: none"> OFFICE: ROOM NAME 4: ROOM COUNT DESIGNATION 155 SF: DENOTES ROOM AREA OF 155 SQUARE FEET (O.L. 992): DENOTES OCCUPANT LOAD IN CODE COMPLIANCE PLANS. 	<p>DOOR TAG</p> <p>A124C</p> <ul style="list-style-type: none"> A: THE FIRST LETTER "A" AND THE FOLLOWING THREE DIGITS "124" DENOTES ROOM NUMBER C: SUFFIX "C" DENOTES SEQUENCE OF DOOR ACCESSING THE ROOM.
<p>GRID TAG</p> <p>GRID REFERENCE LETTER - A, B, C, ETC. (USED FOR HORIZONTAL GRID SEQUENCE, TYPICALLY FROM LEFT TO RIGHT)</p> <p>1, 2: GRID REFERENCE NUMBER - 1, 2, 3, ETC. (USED FOR VERTICAL GRID SEQUENCE, TYPICALLY FROM TOP TO BOTTOM)</p>	<p>DATUM POINT TAG</p> <p>↑</p>	<p>WINDOW TAG</p> <p>A</p>
<p>NORTH ARROW</p> <p>↑</p>	<p>CEILING HEIGHT TAG</p> <p>9'-0" B.O.C.</p> <p>B.O.C. BOTTOM OF CEILING B.O.H. BOTTOM OF HEADER</p>	<p>FLOOR FINISH TAG</p> <p>F2</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR FLOOR COVERING AND FINISHES REQUIRED.</p>
<p>BUILDING SECTIONS</p> <p>SECTION TAGS ARE INDICATED ON OVERALL DIMENSION FLOOR PLANS</p> <p>A101</p> <p>1: BUILDING SECTION 2: SHEET WHERE DRAWN</p>	<p>SPOT ELEVATION</p> <p>T.O.W. 100'-0"</p> <p>T.O.W. TOP OF WALL T.O.C. TOP OF CURB D.B.E. DECK BEARING ELEVATION F.F.E. FINISH FLOOR ELEVATION B.O.V. BOTTOM OF VENEER T.O.S. TOP OF SIDEWALK T.O.C. TOP OF CURB</p>	<p>WALL FINISH TAG</p> <p>W3</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR WALL FINISHES REQUIRED.</p>
<p>WALL SECTIONS</p> <p>SECTION TAGS ARE INDICATED ON DIMENSION FLOOR PLANS</p> <p>A101</p> <p>1: WALL SECTION 2: SHEET WHERE DRAWN</p>	<p>VERTICAL ELEVATION</p> <p>↑</p> <p>LEVEL ELEVATION</p>	<p>WALL BASE TAG</p> <p>W1</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR WALL BASE TYPE.</p>
<p>DETAIL TAGS</p> <p>A506</p> <p>1: DETAIL NUMBER 2: SHEET WHERE DRAWN</p>	<p>CENTER LINE</p> <p>⊥</p>	<p>WALL FINISH TAG</p> <p>W3</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR WALL FINISHES REQUIRED.</p>
<p>DETAIL TAGS</p> <p>A506</p> <p>1: DETAIL NUMBER 2: SHEET WHERE DRAWN</p>	<p>FLOOR FINISH TAG</p> <p>F2</p> <p>TAGS ARE INDICATED ON REFLECTED CEILING PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR CEILING FINISHES REQUIRED.</p>	<p>CEILING FINISH TAG</p> <p>C3</p> <p>TAGS ARE INDICATED ON REFLECTED CEILING PLAN. SEE FINISH SCHEDULE, SHEET A603A, FOR CEILING FINISHES REQUIRED.</p>
<p>EXTERIOR ELEVATION TAGS</p> <p>TAGS ARE INDICATED ON OVERALL DIMENSION FLOOR PLANS AND KEY PLAN</p> <p>A202</p> <p>2: EXTERIOR ELEVATION NUMBER 2: SHEET WHERE DRAWN</p>	<p>FLOW ARROW</p> <p>→</p> <p>WATER DRAINAGE DIRECTION SHOWN ON SITE AND ROOF PLANS FROM HIGH TO LOW POINT.</p>	<p>OTHER FINISH TAG</p> <p>(MS)(MM)(WP)(PL)(WC)</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN & INTERIOR ELEVATIONS. SEE FINISH SCHEDULE, SHEET A603A, FOR FINISHES REQUIRED.</p>
<p>INTERIOR ELEVATION TAGS</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLANS</p> <p>A232</p> <p>1: INTERIOR ELEVATION NUMBER 2: SHEET WHERE DRAWN</p>	<p>REVISION TAG</p> <p>CLOUD INDICATES REVISION AREA</p> <p>1: REVISION NUMBER</p>	<p>CABINET TAG</p> <p>W14</p> <p>CABINET TYPES ARE INDICATED ON INTERIOR ELEVATIONS & CABINET LEGEND, SHEET A505A.</p>
<p>KEYED NOTES - PROJECT SPECIFIC</p> <p>KEYED NOTES THAT ARE PROJECT SPECIFIC AS INDICATED ON PLANS, SECTIONS AND ELEVATIONS</p> <p>0000</p> <p>0000: DIVISION # 0000: DIVISION NOTE</p>	<p>KEYED NOTES - GENERIC</p> <p>KEYED NOTES THAT ARE NOT PROJECT SPECIFIC AS INDICATED ON GENERIC, TYPICAL DETAILS.</p> <p>02</p>	<p>SIGN TAG</p> <p>S2</p> <p>TAGS ARE INDICATED ON FINISH FLOOR PLAN. SEE SIGN TYPE DETAIL 1/A506A</p>
<p>WALL TAG</p> <p>WALL TAGS ARE INDICATED ON DIMENSION FLOOR PLANS. WALL TYPES ARE INDICATED IN SHEET A501A.</p> <p>A1</p>		

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Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents Feb 19, 2020

General Information

G003

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DOORS AND DOORWAYS

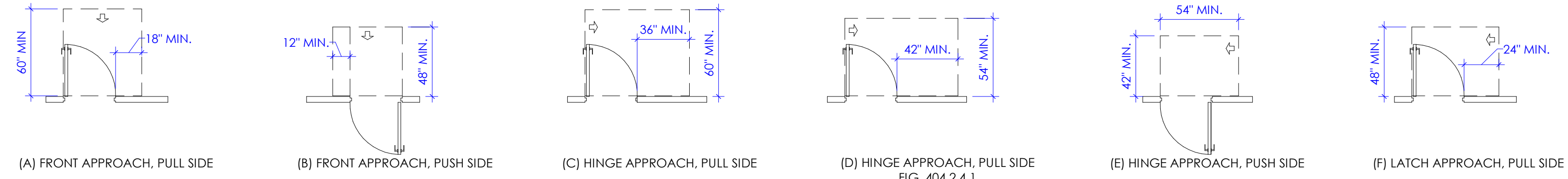
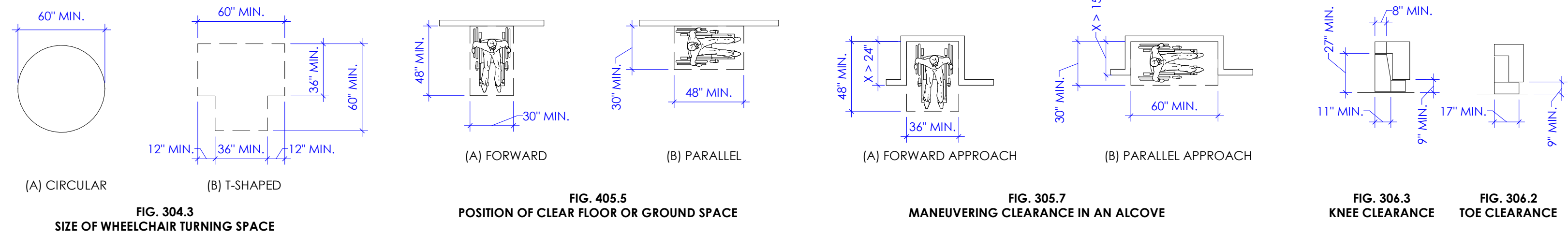


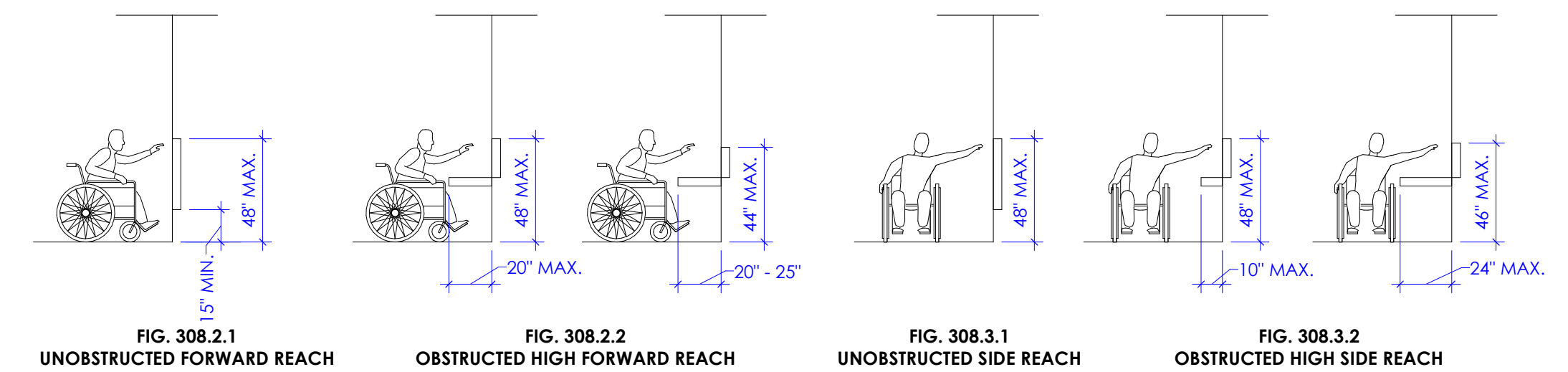
FIG. 404.2.4
TWO DOORS IN A SERIES

FIG. 404.2.4.2
MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS

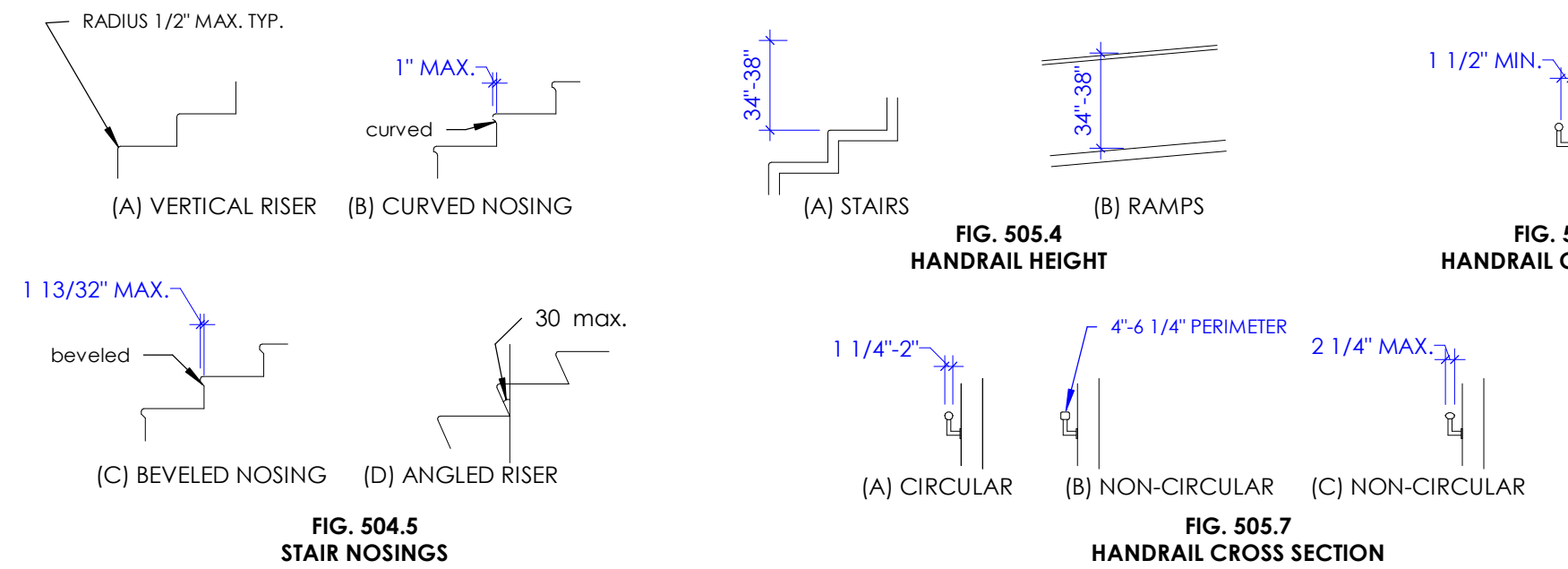
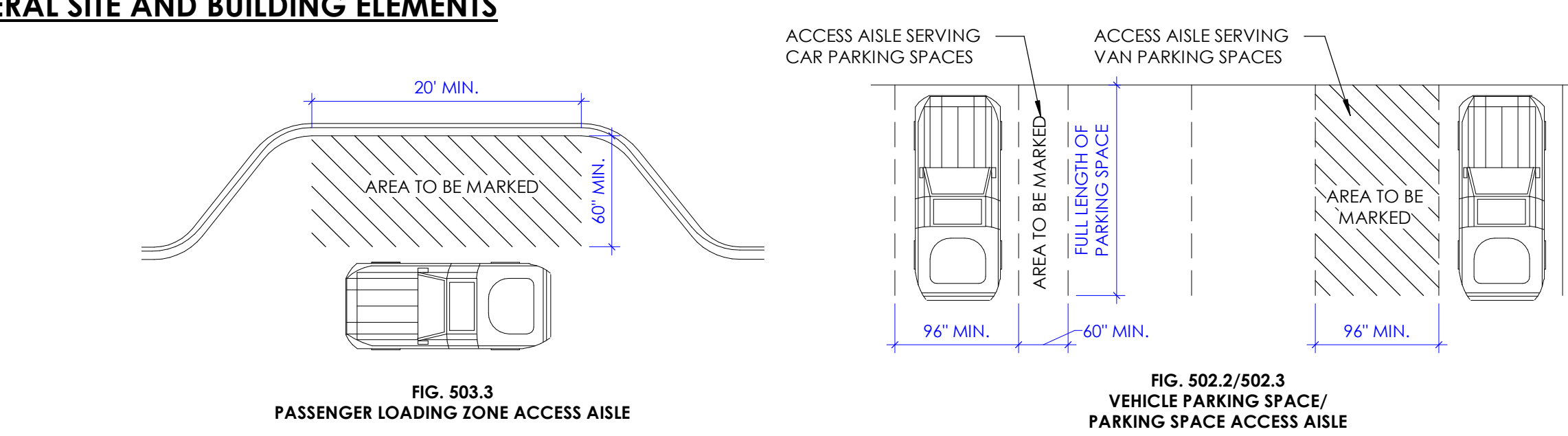
CLEAR FLOOR SPACE



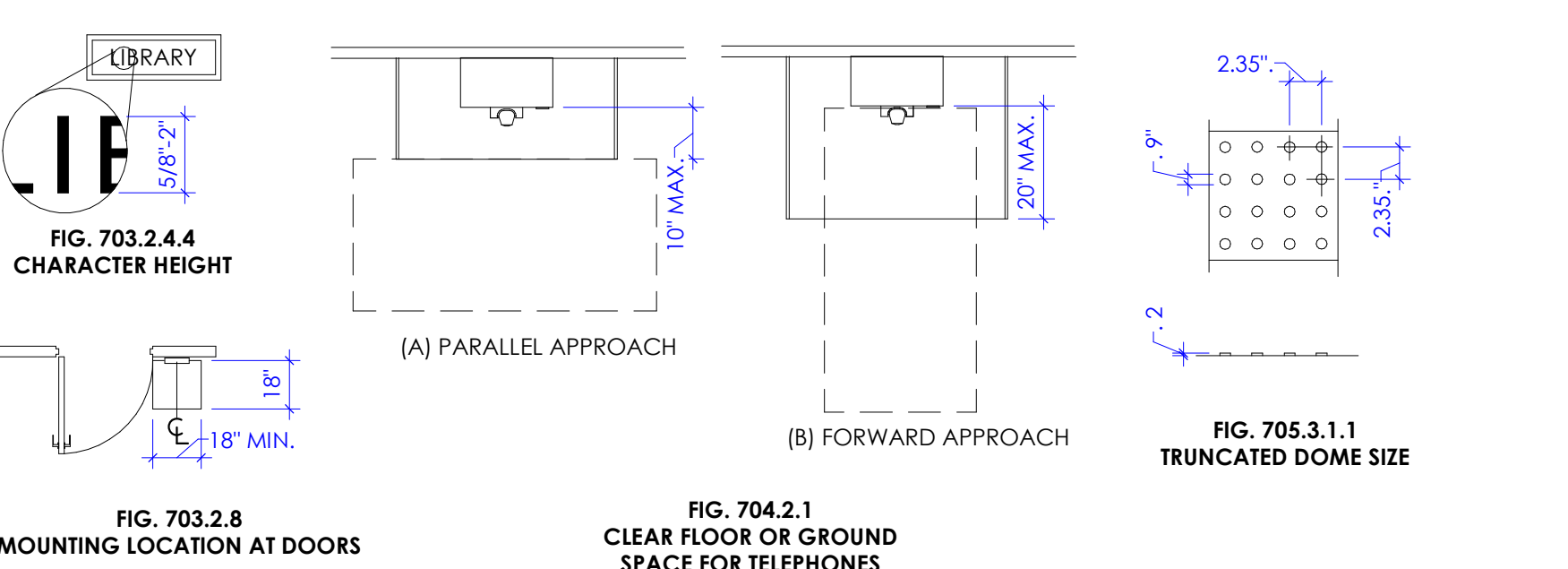
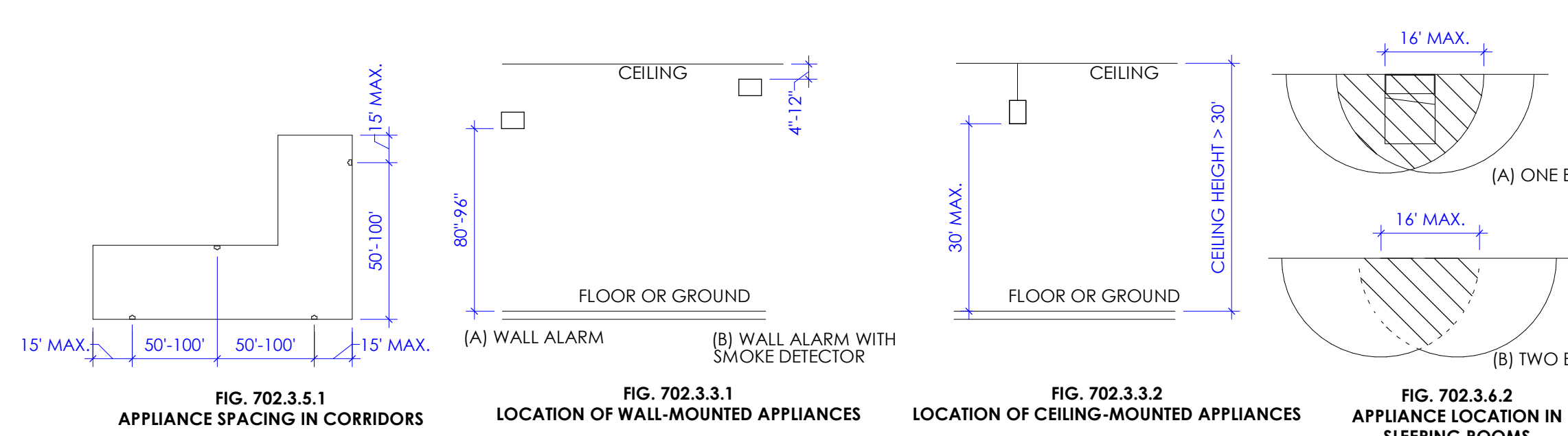
REACH RANGES



GENERAL SITE AND BUILDING ELEMENTS



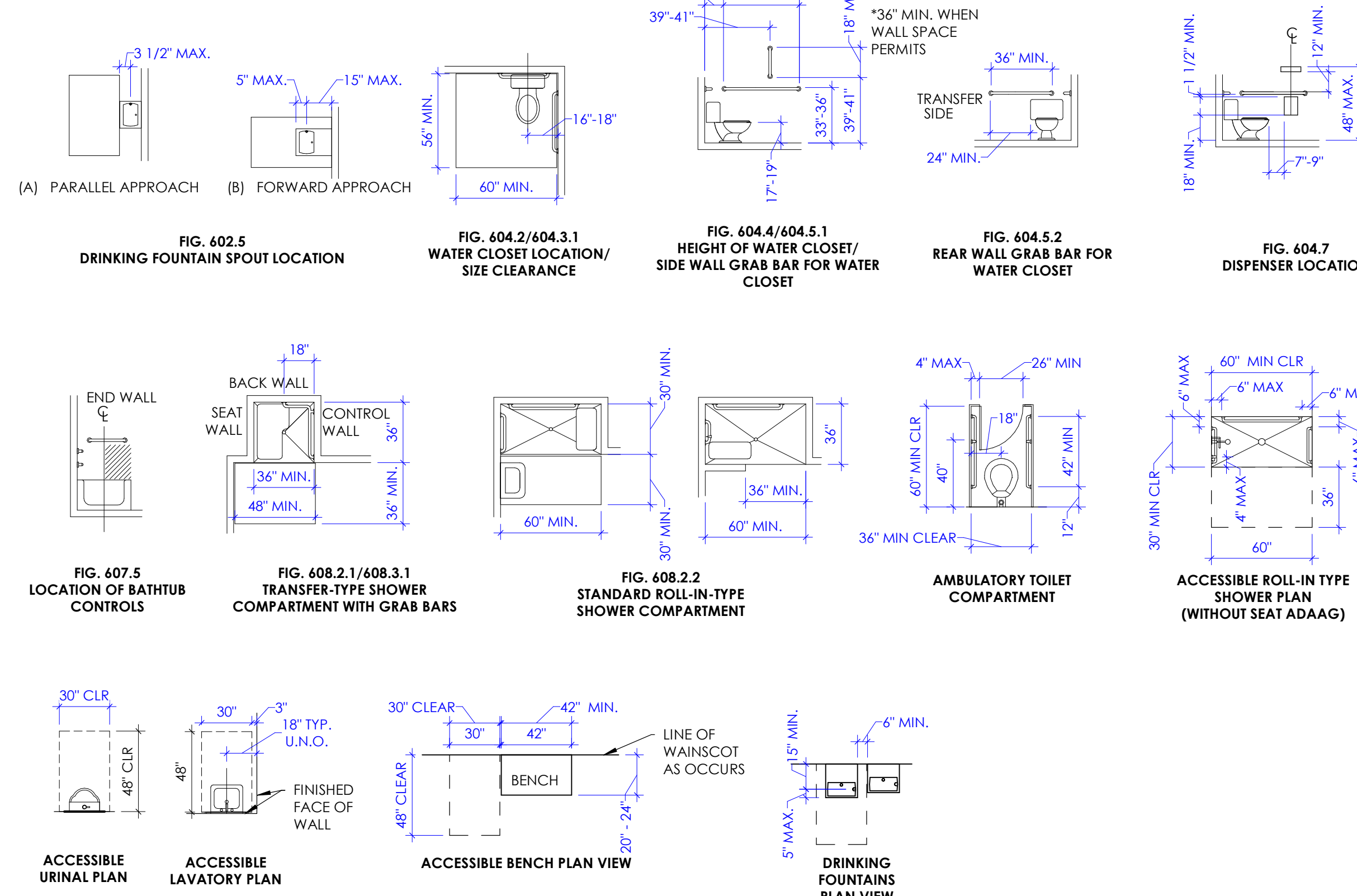
COMMUNICATION ELEMENTS AND FEATURES



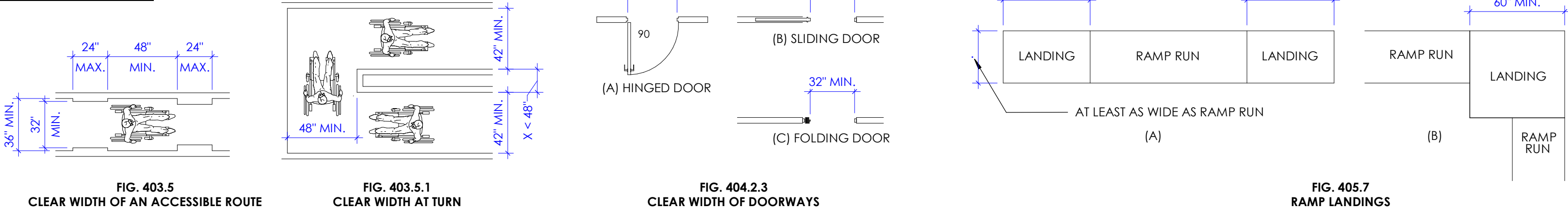
BUILDING BLOCKS

PROTRUDING OBJECTS

PLUMBING ELEMENTS AND FACILITIES



ACCESSIBLE ROUTES



OPENINGS IN FLOOR OR GROUND SURFACES

LIMITS OF PROTRUDING OBJECTS

BEVELED CHANGES IN LEVEL

HEIGHT OF LAVATORIES AND SINKS

GRAB BARS IN ROLL-IN-TYPE SHOWERS

GRAB BARS FOR BATHROOMS WITH PERMANENT SEATS (WITH FIG. 407.2 CLEARANCES)

GRAB BARS FOR BATHROOMS WITHOUT PERMANENT SEATS (WITH FIG. 407.2 CLEARANCES)

CONTROLS IN TRANSFER-TYPE SHOWERS

RECTANGULAR SHOWER COMPARTMENT SEAT

L-SHAPED SHOWER COMPARTMENT SEAT

LOCATION OF SHOWER SPRAY UNIT

FLARED SIDES 1:10 MAX. SLOPE

FLARED SIDES 1:12 MAX. SLOPE

RETURNED CURB

EXTENDED SURFACE

CURB OR BARRIER

CUT THROUGH AT ISLAND

CURB RAMP AT ISLAND

ISLANDS

SIDES OF CURB RAMP

DIAGONAL CURB RAMP

ELEVATOR CALL BUTTONS

HEIGHT OF ELEVATOR VISIBLE SIGNALS

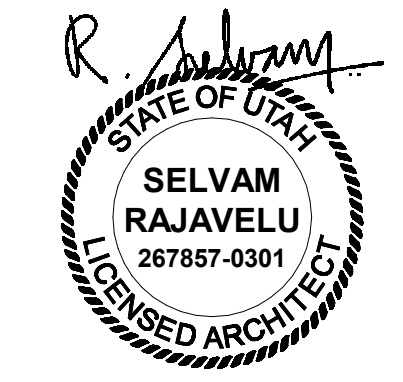
Ogden Regional Medical Center
Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents Feb 19, 2020

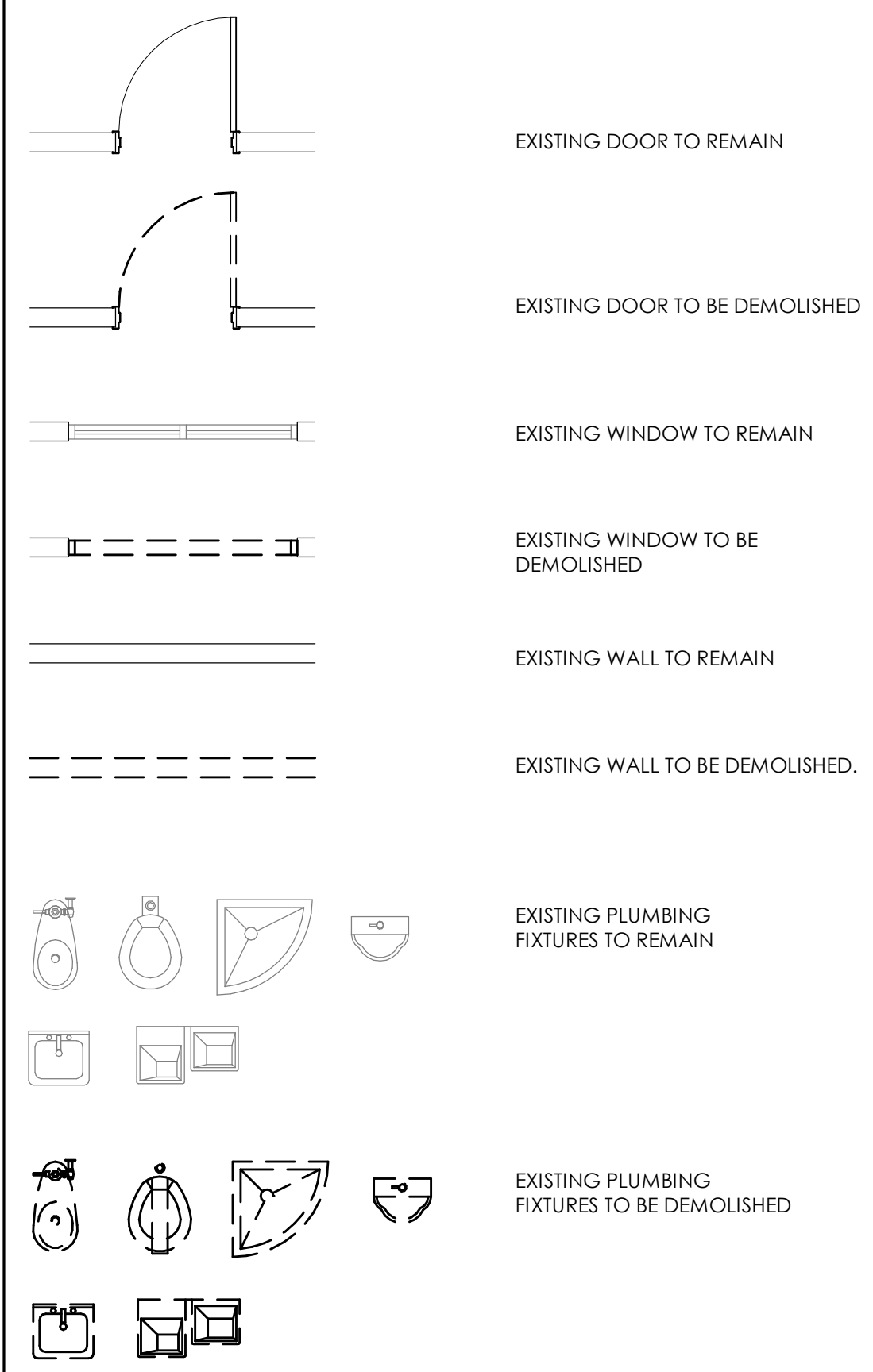
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LEGEND - DEMOLITION FLOOR PLAN

BUILDING COMPONENTS (DOORS, WALLS, ETC.) INDICATED BELOW IN THIS LEGEND ARE DRAWN AT 1/4" = 1'-0" SCALE. COMPONENTS SHALL APPEAR HALF THE SIZE (SMALLER) ON PLANS DRAWN AT 1/8" = 1'-0" SCALE.

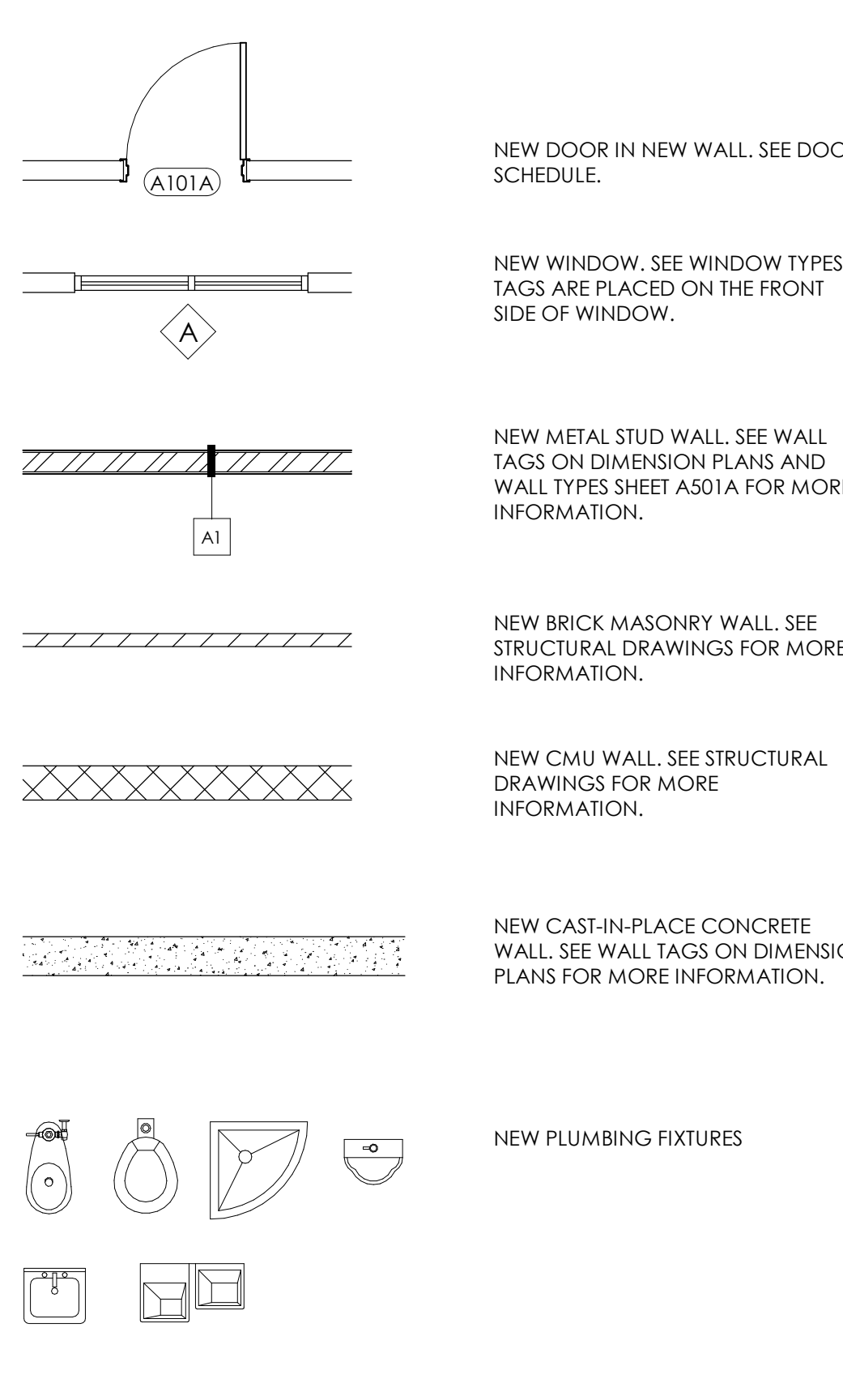


GENERAL NOTES - DEMOLITION FLOOR PLAN

- CONTRACTOR SHALL VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS INCLUDING UNDERGROUND UTILITIES AND SERVICE LINES, IRRIGATION LINES AND SUB-SURFACE STRUCTURES AND ALL OTHER EXISTING CONSTRUCTION BOTH ABOVE AND BELOW GRADE.
- PRIOR TO REMOVAL OF EXISTING BUILDING MATERIALS INCLUDING WALLS, DOORS, WINDOWS, CEILING, ETC. INDICATED IN THE DEMOLITION PLANS, CONTRACTOR SHALL THOROUGHLY COORDINATE ARCHITECTURAL FLOOR PLANS, CEILING PLANS, FINISH SCHEDULES AND ALL CONSULTANT DRAWINGS TO DETERMINE EXACT EXTENT OF REMOVAL.
- COORDINATE WITH OWNER'S REPRESENTATIVE REGARDING ITEMS SHOWN TO BE REMOVED THAT WILL BECOME PROPERTY OF THE OWNER. CAREFULLY REMOVE SUCH ITEMS SO AS NOT TO DAMAGE THEM.
- IN EXISTING WALLS THAT ARE NOTED TO REMAIN, ANY NAILS, SCREWS, OR OPENINGS THAT REMAIN AS A RESULT OF EXISTING EQUIPMENT REMOVAL OR WALL REMOVAL SHALL BE PATCHED WITH SMOOTH, EVEN, INVISIBLE TRANSITION. IN PLACES WHERE THE EXISTING WALL IS CUT FOR INSTALLATION OF POWER OUTLETS, SWITCH, THERMOSTAT, ETC. PATCH OPENING IN WALL WITH GYPSUM BOARD. PROVIDE SMOOTH, EVEN, INVISIBLE TRANSITION BETWEEN NEW AND EXISTING WALL FINISH.
- THE OWNERS STAFF WILL CONTINUE TO OCCUPY AREAS DIRECTLY ADJACENT TO THE CONSTRUCTION AREA. THE CONTRACTOR AND SUB-CONTRACTORS SHALL TAKE ALL NECESSARY MEASURES TO MINIMIZE DISRUPTION ACTIVITIES CONDUCTED BY THE OWNERS STAFF. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF NOISY ACTIVITIES, SHUT-DOWNS, AND ANY OTHER ACTIVITIES WHICH MAY DISRUPT NORMAL OPERATIONS PRIOR TO PERFORMING THE WORK.
- ONCE FLOORING DEMOLITION HAS OCCURRED, CLEAN AND PREPARE FLOOR TO RECEIVE NEW FLOOR COVERINGS. THIS SHALL BE COORDINATED WITH THE FINISH SCHEDULE AND MANUFACTURER OF NEW PRODUCTS FOR FLOOR PREPARATION REQUIREMENTS.
- ITEMS SHOWN ON THESE FLOOR PLANS FOR REMOVAL ARE BUILT-IN ITEMS, EQUIPMENT, FURNITURE, & OTHER ITEMS EXISTING IN THE SPACE THAT ARE NOT BUILT-IN SHALL BE REMOVED OR CLEARED TEMPORARILY BY THE OWNER.

LEGEND - FLOOR & DIMENSION PLANS

BUILDING COMPONENTS (DOORS, WALLS, ETC.) INDICATED BELOW IN THIS LEGEND ARE DRAWN AT 1/4" = 1'-0" SCALE. COMPONENTS SHALL APPEAR HALF THE SIZE (SMALLER) ON PLANS DRAWN AT 1/8" = 1'-0" SCALE.



GENERAL NOTES - FLOOR & DIM. PLANS

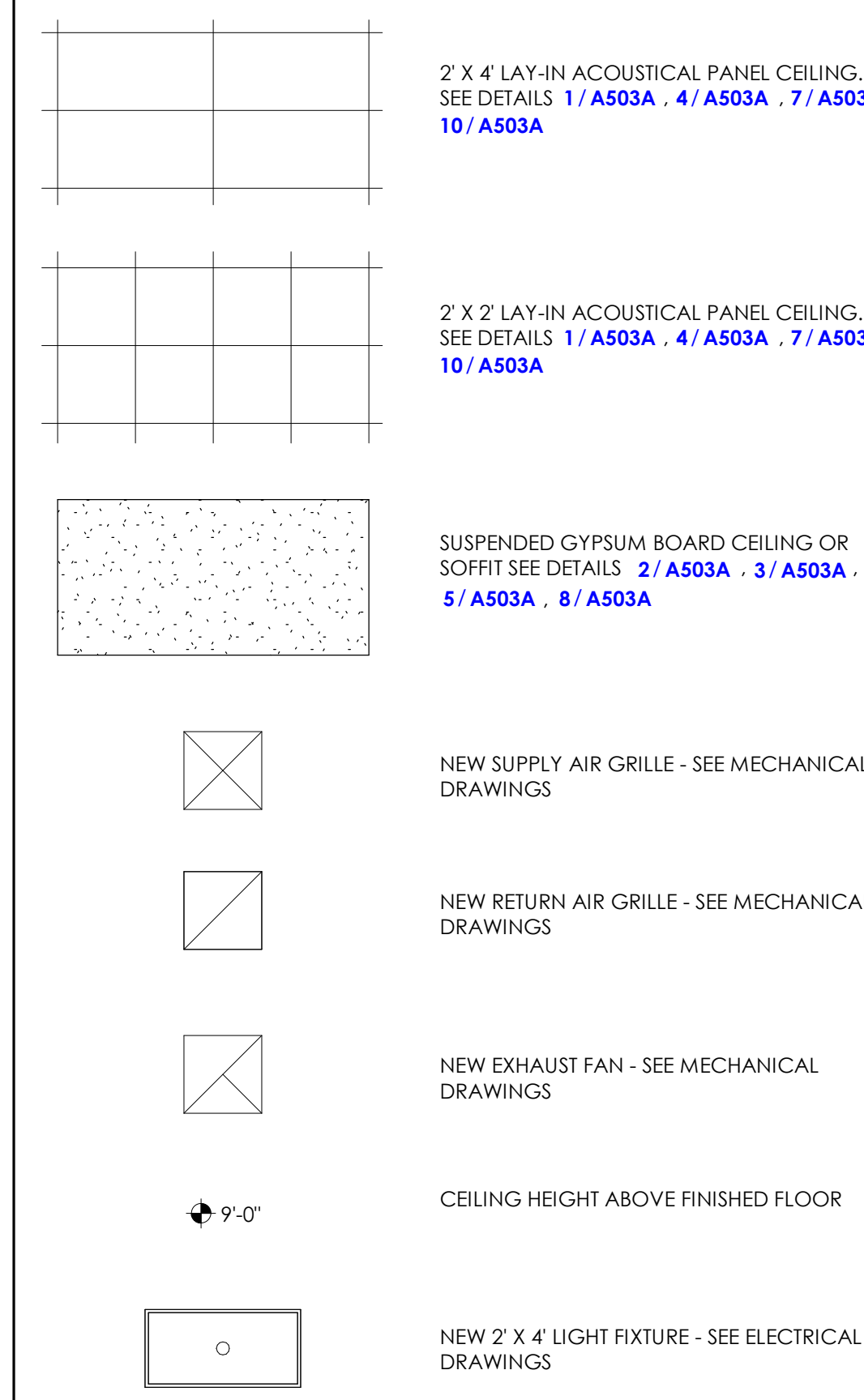
- REFER TO THE CODE COMPLIANCE PLANS FOR INDICATION OF FIRE RATED WALLS.
- AT LOCATIONS WITHOUT CEILING (ROOM IS OPEN TO STRUCTURE ABOVE), EXTEND ALL WALLS, OFFITS, AND HEADERS (INCLUDING ALL STUD FRAMING, GYPSUM BOARD, INSULATION & CMU, WHERE APPLICABLE) TO THE METAL ROOF DECK ABOVE.
- WHEN FLOOR HEIGHT VARIES IN A ROOM, THE CEILING HEIGHT SHOWN IS THE HEIGHT ABOVE THE FLOOR AT THE ENTRY. UNO.
- SEE INTERIOR ELEVATIONS FOR TOILET AND BATHROOM ACCESSORIES (GRAB BARS, MIRRORS, DISPENSERS, ETC.).
- AT ALL VERTICAL EDGES OF INTERIOR CMU WALLS THAT ARE VISIBLE, USE BULLNOSE CMU BLOCKS FROM FINISHED FLOOR ELEVATION TO A HEIGHT OF 7'-4".
- FOR CLARITY SAKE, DIMENSIONS ARE NOT SHOWN AT THE FOLLOWING LOCATIONS:
 - WHERE THE FACE OF WALL COINCIDES WITH THE MAIN GRID LINE OR 4'-0" X 4'-0" SUBGRID.
 - WHERE THE CENTER OF WALL COINCIDES WITH THE MAIN GRID LINE OR 4'-0" X 4'-0" SUBGRID.
- VERIFY WITH ARCHITECT FOR DIMENSIONS NOT SHOWN.
- SEE STRUCTURAL DRAWINGS FOR CMU WALLS, MASONRY COLUMNS, AND MASONRY BEAMS. SEE BUILDING EXTERIOR ELEVATIONS FOR VENEER TYPES. SEE FINISH SCHEDULE FOR CMU THAT IS HONED, SCORED, SEALED, PAINTED, ETC.
- SEE CIVIL, FOOD SERVICE, PLUMBING, AND MECHANICAL DRAWINGS FOR FLOOR SINKS, FLOOR DRAINS, AND OPENINGS IN FLOOR SLABS AND ROOFS FOR DUCTWORK, ETC.
- SEE DOOR AND WINDOW SCHEDULE FOR THE REQUIRED DOOR AND WINDOW OPENING SIZES
- SEE FINISH SCHEDULE AND STRUCTURAL DRAWINGS AND PROVIDE RECESS IN CONCRETE FLOOR SLAB AS REQUIRED TO ACCOMMODATE FLOOR FINISHES. CONCRETE FLOOR SLAB THAT IS ON GRADE, SHALL BE RECESSED AS REQUIRED, FOR A THICK SET MORTAR FOR CERAMIC TILE FINISH. SLOPE SHALL BE AT 1/8" PER FOOT TOWARDS THE FLOOR DRAIN. CONCRETE FLOOR SLAB THAT IS NOT ON GRADE, NEED NOT BE RECESSED. IN SUCH LOCATION, USE THIN SET MORTAR FOR CERAMIC TILE FINISH WITH A GENTLE SLOPE TOWARDS DRAIN.
- ALL PENETRATIONS (PIPES, CONDUITS, JOISTS, ETC.) THROUGH FIRE RATED BARRIER WALLS SHALL BE SEALED COMPLETELY WITH FIRE RATED SEALANTS. FILL GAP BETWEEN FLUTES OF THE METAL DECK AND METAL TRACK TOP RUNNER WITH FIRE RATED SEALANTS. SEAL TIGHTLY AROUND PIPES, CONDUITS, DUCTS, ETC. THAT PENETRATES THE FIRE BARRIER WALL WITH FIRE RATED SEALANTS. APPLY SEALANT AS PER MANUFACTURER'S RECOMMENDATIONS WITH ANY ADDITIONAL MATERIAL AS REQUIRED INSTALLED AROUND PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE WALL. SEE MECHANICAL DRAWINGS FOR FIRE AND SMOKE DAMPERS.
- WALL CABINETS HAVE A DEPTH OF 1'-3" UNLESS NOTED OTHERWISE.
- ALL MASONRY MORTAR JOINTS LOCATED INSIDE THE BUILDING SHALL BE TOOLED JOINTS, UNLESS NOTED OTHERWISE. MASONRY JOINTS ON THE BUILDING EXTERIOR SIDE SHALL BE RAKED JOINTS AS INDICATED IN BUILDING EXTERIOR ELEVATIONS.
- SEE OVERALL FLOOR PLAN SHEETS FOR ANGLES, PIVOT POINT AND DIMENSIONS BETWEEN GRID LINES.
- SEE CODE COMPLIANCE FLOOR PLANS FOR LOCATION OF FIRE BARRIER, NON RATED WALLS, ETC.
- SEE ENLARGED FLOOR PLANS FOR ADDITIONAL DIMENSIONS.
- IN SOME PROJECTS, DUE TO THE LARGE BUILDING FOOTPRINT SIZE, FLOOR PLANS ARE SPLIT AS AREAS A, B, C, ETC. AND EACH AREA IS INDICATED ON SEPARATE SHEETS. MATCH LINES INDICATE THE BOUNDARIES OF EACH AREA. WHEN CONTRACTORS ARE PREPARING BID FOR THE PROJECT, COST SHALL INCLUDE ONLY THE BUILDING ELEMENTS AND ASSOCIATED CONSTRUCTION WORK CALLED OUT WITH KEYED NOTES IN THE AREA INDICATED ON THE SHEET. KEYED NOTES INDICATED OUTSIDE THE MATCH LINE IN ADJACENT FLOOR AREAS SHALL NOT BE COUNTED FOR THAT AREA. THIS AVOIDS DUPLICATION OF BUILDING ELEMENTS AND CONSTRUCTION WORK.

GENERAL NOTES - DOOR SCHEDULE

- SEE PROJECT MANUAL FOR DOOR HARDWARE SCHEDULE.
- SUB-CONTRACTOR UNDER SECTION 'ALUMINUM ENTRANCES AND STOREFRONT', SHALL PROVIDE ALL THE DOOR HARDWARE FOR ALL ALUMINUM DOORS. SEE DOOR SCHEDULE FOR ALUMINUM DOORS AND THE REQUIRED HARDWARE.
- SUB-CONTRACTOR UNDER SECTION 'DOOR HARDWARE', SHALL PROVIDE ALL THE DOOR HARDWARE FOR ALL THE WOOD AND HOLLOW METAL DOORS. SEE DOOR SCHEDULE FOR WOOD AND HOLLOW METAL DOORS AND THE REQUIRED HARDWARE.
- ALL EXTERIOR DOORS SHALL BE INSULATED.
- FIELD VERIFY WINDOW AND DOOR FRAME OPENING SIZES BEFORE FRAME INSTALLATION. OVERALL DIMENSIONS INDICATED FOR EACH FRAME TYPE ARE ROUGH OPENING SIZES IN WALLS. CONTRACTOR SHALL ADJUST INNER DIMENSIONS AS REQUIRED TO MAKE DOORS AND WINDOWS WORK.
- ELECTRICAL DEVICES SUCH AS MAG. LOCKS, CARD READERS AND ALARM SYSTEMS BEING PART OF THE DOOR FUNCTION ARE INCLUDED AS PART OF THE ELECTRICAL PLANS AND THE HARDWARE GROUPS. GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATIONS OF CARD READERS ETC. SHOWN ON ARCHITECTURAL AND ELECTRICAL DRAWINGS WITH ALL TRADES INVOLVED.
- COORDINATE DOORS & GATES OUTSIDE BUILDING WITH SITE PLAN.

LEGEND - REFLECTED CEILING PLAN

BUILDING COMPONENTS (CEILING, LIGHT FIXTURES, ETC.) INDICATED BELOW IN THIS LEGEND ARE DRAWN AT 1/4" = 1'-0" SCALE. COMPONENTS SHALL APPEAR HALF THE SIZE (SMALLER) ON PLANS DRAWN AT 1/8" = 1'-0" SCALE.



GENERAL NOTES - REFLECTED CEILING PLAN

- SEE MECHANICAL DRAWINGS FOR DIFFUSER LOCATIONS IN CEILING. CONTRACTOR SHALL COORDINATE WITH LIGHT FIXTURES (AS INDICATED IN ELECTRICAL DRAWINGS) AND MOVE DIFFUSERS AROUND THE LIGHT FIXTURE IF THERE IS ANY CONFLICT BETWEEN THE TWO.
- SOME OF THE ITEMS ON CEILING INDICATED IN MECHANICAL AND ELECTRICAL DRAWINGS, MAY OR MAY NOT BE INDICATED ON ARCHITECTURAL CEILING PLANS. SEE MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE WITH ARCHITECT FOR ANY REQUIRED CLARIFICATIONS.
- CONTRACTOR SHALL NOT HANG CEILING TILES AND LIGHTS FROM DUCTS. FOR AREAS ABOVE THE CEILING WHERE OVERSIZING DUCTS OCCUR SEE DETAIL.
- PAINT ALL VISIBLE EXPOSED ITEMS LIKE METAL DECK, STEEL ANGLES, STEEL BEAMS, STEEL TRUSSES, MISCELLANEOUS EXPOSED STEEL STRUCTURAL COMPONENTS, HOLLOW METAL DOORS, DOOR FRAMES & WINDOW FRAMES, PAINT EXPOSED SURFACES (WITH COLORS AND ACCENT COLORS AS SELECTED BY ARCHITECT) EXCEPT WHERE NATURAL FINISH OR MATERIAL IS SPECIFICALLY NOTED AS A SURFACE NOT TO BE PAINTED, DO NOT PAINT CONCEALED SURFACES, FINISHED METAL SURFACES, OPERATING PARTS AND FIRE FINISHED ITEMS.

GENERAL NOTES

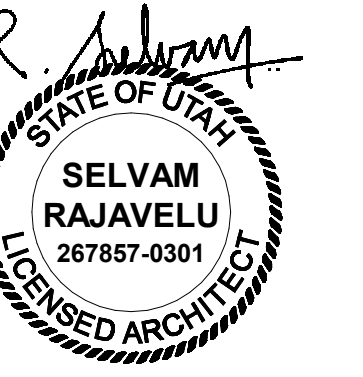
- ALL EXTERIOR WALL FINISHES ARE TO BE 6" ABOVE FINISH GRADE, TYPICAL.
- SEE WINDOW SCHEDULE FOR WINDOW OPENINGS AND SILL HEIGHT (UNLESS NOTED ON THE EXTERIOR ELEVATIONS). SEE DOOR SCHEDULE FOR DOOR OPENING SIZES.
- ALL FINISHES TO BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AND PER SPECIFICATION SECTION IN THE PROJECT MANUAL.
- SEE FINISH FLOOR PLANS FOR AREAS WHERE HONED CMU BLOCKS ARE INDICATED. AT THESE AREAS, THE CONTRACTOR HAS THE OPTION OF USING REGULAR BLOCK IN CONCEALED AREAS AND CEILING SPACES THAT ARE NOT VISIBLE.
- SPACING BETWEEN STRUCTURAL MEMBERS SHALL FOLLOW INDICATIONS GIVEN ON STRUCTURAL PLANS (TYPICAL).
- FIRE PROTECTION ON ASSEMBLIES, ELEMENTS AND MEMBERS SHALL COMPLY WITH ALL THE CODE REQUIREMENTS, TYPICAL - REFER TO CODE COMPLIANCE PLANS.
- WOOD MATERIAL UNDER TYPE IIB CONSTRUCTION SHALL BE FIRE-RETARDANT, PRESSURE-TREATED, TYPICAL, UNO.
- ALL INTERIOR WALLS SHALL BE BUILT FOLLOWING WALL TYPE DETAILS, TYPICAL.
- IN ROOMS/AREAS WHERE HONED, SCORED OR COLORED CMU BLOCKS ARE INDICATED FOR WALLS IN THE FINISH SCHEDULE, CONTRACTOR HAS THE OPTION OF USING REGULAR (LESS EXPENSIVE NATURAL GRAY COLOR) BLOCKS IN CONCEALED AREAS AND CEILING SPACES THAT ARE NOT VISIBLE. THIS DOES NOT APPLY TO AREAS THAT CAN CHANGE OVER THE LIFE OF THE BUILDING SUCH AS WALL LOCATED BEHIND CABINETS, ARTWORK, WHITE BOARD, TACK BOARD, ETC. WHEN OTHER BLOCKS ARE SUBSTITUTED, THE STRUCTURAL INTEGRITY OF THE BLOCK SHALL REMAIN THE SAME AS BLOCK INDICATED IN STRUCTURAL DRAWINGS AND SPECIFICATION SECTION IN THE PROJECT MANUAL.
- AT INTERIOR MASONRY WALL OUTSIDE CORNERS, PROVIDE BULL NOSE BLOCK.
- CORE DRILLING WALLS AND SLABS: CONTRACTOR SHALL USE GROUND PENETRATING RADAR OR OTHER APPROVED METHOD TO SCAN CONCRETE OVER METAL DECK. CONCRETE SUSPENDED SLABS, MASONRY WALLS, AND CONCRETE WALLS TO LOCATE REBAR PRIOR TO CORE DRILLING ANY HOLES. HOLES SHALL BE LOCATED TO AVOID REBAR DETECTED. ALL OPENINGS AND GROUPS OF OPENINGS SHALL BE REINFORCED AS SHOWN ON THE STRUCTURAL DRAWINGS. OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER PRIOR TO DRILLING.

GENERAL NOTES

- STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS (IF PRESENT) ARE SUPPLEMENTAL TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF MECHANICAL AND ELECTRICAL CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND CONSULTING ENGINEERS' DRAWINGS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR CLARIFICATION. ANY CONSTRUCTION INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE GENERAL CONTRACTOR AT HIS/HER OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
- ALL WORK SHALL COMPLY WITH THE CURRENT ADA ACCESSIBILITY GUIDELINES (AMERICANS WITH DISABILITIES ACT).
- REFER TO THE CODE COMPLIANCE PLAN FOR APPLICABLE CODES GOVERNING THIS WORK. CODE REQUIREMENTS AND REGULATIONS SHALL BE CONSIDERED AS MINIMUM, WHERE THE CONTRACT DOCUMENTS EXCEED (WITHOUT VIOLATING) CODE AND REGULATION REQUIREMENTS. CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE. IF CONFLICT EXIST, THE MORE STRINGENT SHALL APPLY. COMPLY WITH REQUIREMENTS OF THE ADOPTED EDITIONS OF THE INTERNATIONAL CODE COUNCIL CODES, THE CODES AND STANDARDS REFERENCED WITHIN THE ICC CODES AND THE AMERICANS WITH DISABILITIES ACT.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE BARRICADES AND PROTECTIVE DEVICES SEPARATING CONSTRUCTION AREAS. TEMPORARY PASSAGES SHALL BE PROVIDED AS REQUIRED, PRIOR TO DELIVERY OF MATERIALS TO CONSTRUCTION ZONE AND REMOVAL OF WASTE FROM SITE. THE CONTRACTOR SHALL CHECK WITH THE OWNER FOR AN ACCEPTABLE ROUTE AND TIME.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LOCATION AND SIZE OF OPENINGS FOR ALL TRADES AND SHALL COORDINATE ALL CONSTRUCTION AS INDICATED BY THE CONTRACT DOCUMENTS, INCLUDING SHOP DRAWINGS REVIEWED BY THE ARCHITECT.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
- FOR ALL REMODEL WORK AS OCCURS, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ALL MEASURES TO ACCOMPLISH THE WORK WITH THE MINIMUM OF INTERRUPTION TO NORMAL BUILDING PROCEDURES. SYSTEM SHUTDOWNS OF HVAC, PLUMBING, ELECTRICAL AND NOISY CONSTRUCTION INCLUDING ROTO HAMMER, SAW CUTTING, CONCRETE ANCHORS, ETC. SHALL BE COORDINATED WITH THE OWNER AT LEAST 72 HOURS PRIOR TO COMMENCEMENT.
- ALL DIMENSIONS ARE SHOWN TO FACE OF GYPSUM BOARD OF NEW CONSTRUCTION OR STRUCTURAL WALL, UNLESS NOTED OTHERWISE.
- ALL DRAWINGS, THOUGH NOTED TO SCALE ARE FOR ILLUSTRATION ONLY. THE CONTRACTOR SHALL NOT SCALE DRAWINGS.
- WHEN A DETAIL IS IDENTIFIED AS TYPICAL, THE CONTRACTOR IS TO APPLY THIS DETAIL IN ESTIMATING AND CONSTRUCTION TO EVERY LIKE CONDITION WHETHER OR NOT THE REFERENCE IS REPEATED IN EVERY INSTANCE.
- DRAWINGS HAVE BEEN DETAILED IN COMPLIANCE WITH U.L. LISTING REQUIREMENTS AND ICBO REPORTS FOR THE MATERIALS SPECIFIED. IF AN ALTERNATE OR SUBSTITUTED MATERIAL IS ACCEPTED AS AN EQUAL BY THE GENERAL CONTRACTOR, HE/SHE WILL ASSUME THE RESPONSIBILITY FOR WHATEVER CONSTRUCTION MODIFICATION AND/OR ADDITIONAL COSTS ARE REQUIRED.
- ALL TRASH SHALL BE REMOVED DAILY. BUILDING MATERIALS MAY NOT BE STORED IN THE CORRIDORS AT ANY TIME. BLOCKAGE OF ANY REQUIRED EXIT IS PROHIBITED.
- ALL PENETRATIONS INTO SOUND OR FIRE RATED PARTITIONS, FLOORS OR CEILING ASSEMBLIES SHALL BE SEALED WITH APPROVED PERMANENT RESILIENT SEALANT. REFER TO IBC CURRENT VERSION FOR REQUIREMENTS FOR OPENINGS IN FIRE RATED WALLS. FOR OPENINGS LESS THAN 1/6 SQUARE INCHES, THE SPACE BETWEEN THE WALL AND ALLOWED PENETRATIONS MUST BE SEALED TO PREVENT THE MOVEMENT OF HOT FLAME OR GASES. ELECTRICAL DEVICES, RECESSED CABINETS, ETC. SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE INTEGRITY OF THE ASSEMBLY. SEE PENETRATION DETAILS.
- ABBREVIATIONS THROUGHOUT THE PLAN ARE THOSE IN COMMON USE. THE ARCHITECT SHALL DEFINE THE INTENT OF ANY IN QUESTION.
- THE CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF WATER AND DRAIN INSTALLATIONS AND OTHER REQUIRED SERVICES WITH EQUIPMENT MANUFACTURERS.
- MAINTAIN ALL EXISTING SPRAY-APPLIED FIRE PROOFING ON STEEL STRUCTURAL MEMBERS, WHERE EXISTING FIRE PROOFING IS REMOVED FOR INSTALLATION OF NEW BEAMS, UNISTRUTS, ETC. THE CONTRACTOR SHALL PATCH AGAIN WITH EQUIVALENT FIRE PROOFING MATERIAL TO MATCH ADJACENT EXISTING MATERIAL.
- ALL WOOD CARITS, MOLDERS, CURBS, ETC. THROUGHOUT JOB SHALL BE FIRE RETARDANT PRESSURE-TREATED, AS PER I.B.C. CURRENT VERSION. SEE RELEVANT DETAILS.
- CONTRACTOR SHALL REFER TO THE PROJECT MANUAL FOR A COMPLETE LIST OF GENERAL CONDITIONS, SPECIAL CONDITIONS AND OTHER NOTES.

GENERAL NOTES - INTERIOR ELEVATIONS

- PROVIDE LOCKS FOR CABINETS AS INDICATED ON THE CABINET LEGEND ON SHEET A505A AND IF INDICATED ON INTERIOR ELEVATIONS.
- IN ROOMS WHERE CABINETS ARE REQUIRED TO BE LOCKED, PROVIDE LOCKS OPERABLE WITH SINGLE KEY.
- FOR TYPICAL MOUNTING HEIGHTS, SEE SHEET G003. FOLLOW THE HEIGHT UNLESS NOTED OTHERWISE IN INTERIOR ELEVATIONS. VERIFY WITH ARCHITECT FOR ITEMS NOT INDICATED.
- CONTRACTOR SHALL VERIFY WITH OWNER FOR OWNER FURNISHED CONTRACTOR INSTALLED ITEMS AND PROVIDE BACKING IN WALL AS REQUIRED FOR INSTALLATION.
- INTERIOR ELEVATIONS OF CERTAIN ROOMS ARE NOT DRAWN AND ARE NOTED AS SIMILAR ELEVATIONS OF ROOMS THAT ARE INDICATED IN THE DRAWINGS.
- CONTRACTOR SHALL PROVIDE FILLER PANELS (PLASTIC LAMINATE WRAPPED OVER 5/8" PARTICLE BOARD) WHEREVER GAP OCCURS BETWEEN CABINETS AND WALL.
- SEE FINISH FLOOR PLANS AND FINISH SCHEDULE A603A FOR WALL, CABINET AND COUNTERTOP FINISHES.
- SEE SHEET A505A FOR CABINET LEGEND (TYPES B1, W1, T1, ETC.), UNLESS NOTED OTHERWISE. ALL THE CABINETS AND COUNTERTOPS IN EACH ROOM SHALL BE OF THE SAME FINISH (PL1, PL2, SS1, ETC.) AS INDICATED ON THE INTERIOR ELEVATION OF EACH ROOM, WHERE MULTIPLE FINISHES ARE REQUIRED FOR CABINETS, WALLS, ETC. IN THE ROOM, EACH FINISH IS INDICATED SEPARATELY. CONTACT ARCHITECT FOR REQUIRED CLARIFICATIONS.
- COUNTERTOPS ARE TYPICALLY SUPPORTED BY WALLS AND BASE CABINETS. IN PLACES WHERE COUNTERTOP SPAN EXCEEDS 4'-0", STEEL SUPPORTS SHALL BE PROVIDED.
- AS INDICATED ON INTERIOR ELEVATIONS, WALL CABINETS AT CERTAIN LOCATIONS MAY REQUIRE A VERTICAL OR A SLOPED FASCIA PANEL.
- AN ENLARGED FLOOR PLAN HAS BEEN INCLUDED ALONG WITH INTERIOR ELEVATIONS FOR ROOMS THAT ARE COMPLEX IN DESIGN. SUCH COMPLEX ROOMS ARE INDICATED ON THE A400 SERIES SHEETS (STARTING WITH SHEET A401). ENLARGED FLOOR PLANS ARE NOT SHOWN FOR ROOMS THAT ARE SIMPLE IN DESIGN. INTERIOR ELEVATIONS OF SUCH SIMPLE ROOMS ARE INDICATED ON THE A250 SERIES SHEETS (STARTING WITH SHEET A251).
- FOR ALL CABINETS PROVIDE BACKING IN WALL AS PER DETAIL 3/A505B.



LEGEND				
SYMBOL	DESCRIPTION	FIRE RESISTANCE RATING	DOOR FIRE RATING	WINDOW FIRE RATING
→	COMMON PATH OF TRAVEL	N/A	N/A	N/A
→	TRAVEL DISTANCE	N/A	N/A	N/A
ROOM NAME SQ. FT. ROOM # O.C. #	OCCUPANT LOAD	N/A	N/A	N/A
SP	SMOKE PARTITION WALL	0 HOUR	SMOKE	SMOKE
SB	SMOKE BARRIER WALL	1 HOUR	1/3 HOUR	1/3 HOUR
◆◆◆◆	1 HOUR FIRE RATED WALL	1 HOUR	3/4 HOUR	3/4 HOUR
◆◆◆◆	2 HOUR FIRE RATED WALL	2 HOUR	1-1/2 HOUR	1-1/2 HOUR
////	SUITE 1	N/A	N/A	N/A
////	SUITE 2	N/A	N/A	N/A
---	SMOKE COMPARTMENT			

KEYED NOTES

CODE REVIEW

APPLICABLE CODES
2018 INTERNATIONAL BUILDING CODE

OCCUPANCY CLASSIFICATION
Occupancy - I2 (Institutional Group)

REQUIRED SEPARATION OF OCCUPANCIES
(No separation requirement)

CHAPTER 4 - SPECIAL DETAILED REQUIREMENTS
406.8.2 Ventilation in accordance with IMC
406.8.3 Floor surface shall be non-combustible and non-absorbent
406.8.4 Heating equipment in accordance with IMC
406.8.5 Gas detection system shall comply with this section
406.8.6 Automatic sprinkler system in accordance with IBC 903.2.9.1

FIRE SPRINKLER SYSTEM
Building is equipped throughout with an automatic sprinkler system.

CONSTRUCTION TYPE
Building: Type I-B

BUILDING HEIGHT
(Existing)

NUMBER OF STORIES
Actual Number of Stories: Existing

FLOOR AREA
Remodel Area: 203 SF

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS
(Table 601, Page 119)
Primary structural frame: 2 hour
Bearing walls - Exterior: 2 hour
Bearing walls - Interior: 2 hour
Nonbearing walls and partitions - Exterior: 0 hour
Nonbearing walls and partitions - Interior: 0 hour
Floor construction and associated secondary members: 2 hour
Roof construction and associated secondary members: 1 hour

FIRE-RESISTANCE RATING REQUIREMENTS FOR INCIDENTAL USES (ROOM OR AREA)
(Table 509, Page 109)
Paint Shop: 1 hour or Automatic Sprinkler System
Boiler Room: 1 hour or Automatic Sprinkler System
Laundry Room: 1 hour or Automatic Sprinkler System

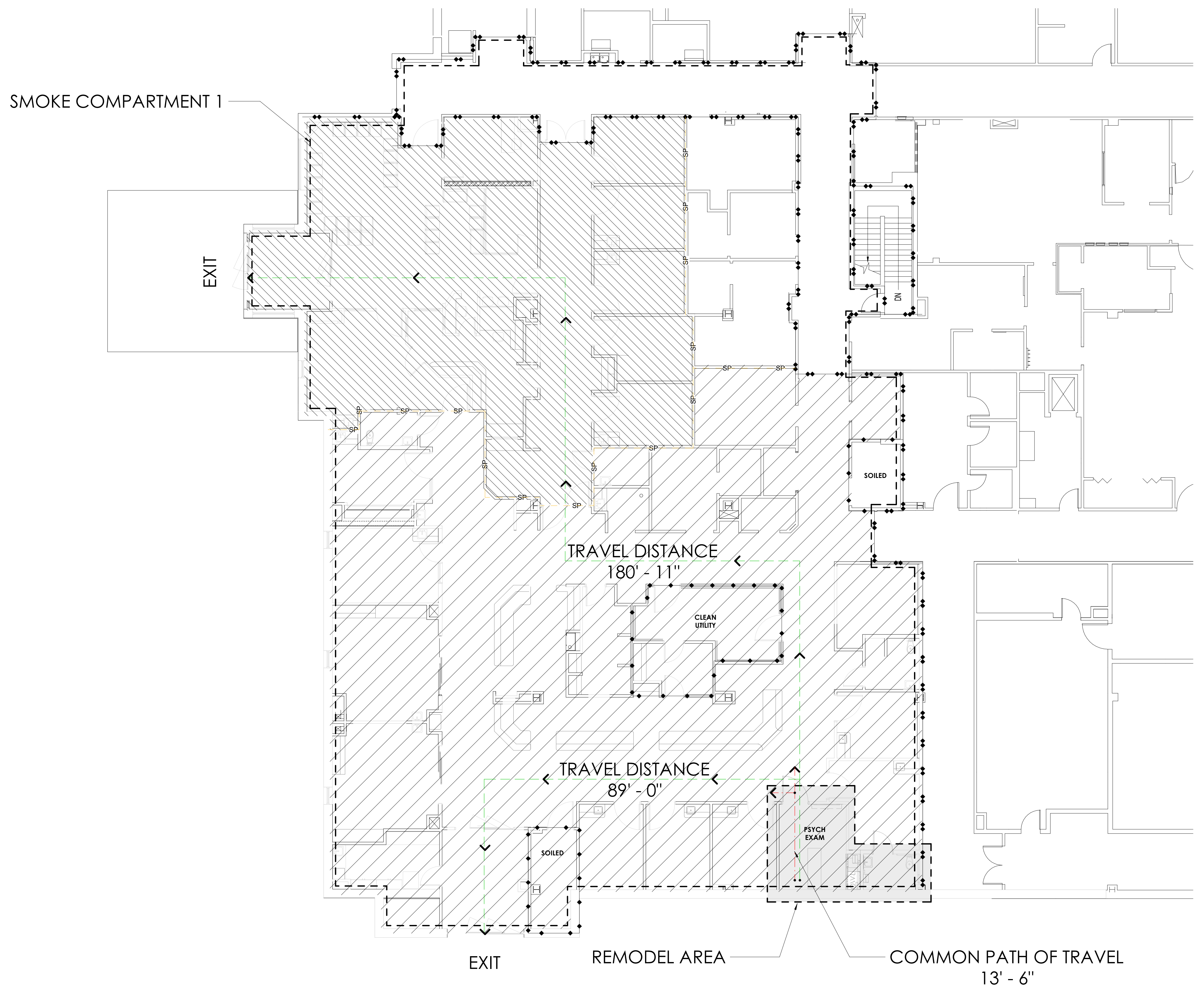
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY
(Table 1006.2.1, Page 254)
Maximum Occupant Load of Space (Occupancy - I2): 10
Common Path of Travel (Occupancy - I2): 75 feet

EXIT ACCESS TRAVEL DISTANCE
(Table 1017.2, Page 277)
Maximum Travel Distance (Occupancy - I2): 200 feet

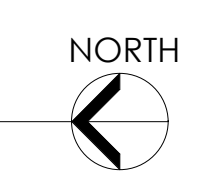
CORRIDOR FIRE-RESISTANCE RATING
(Table 1020.1, Page 287)
Corridor Walls (Occupancies I2): 0 hour

MINIMUM CORRIDOR WIDTH
(Table 1020.2, Page 279)
Minimum corridor width required: 96 inches
Actual corridor width provided: 96 inches

DEAD END CORRIDORS
(Page 279)
Occupancy - I2: Not to exceed 50 feet



Code Compliance Floor Plan
Level 1 - Overall
SCALE: 1/8" = 1'-0"



Ogden Regional Medical Center
Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

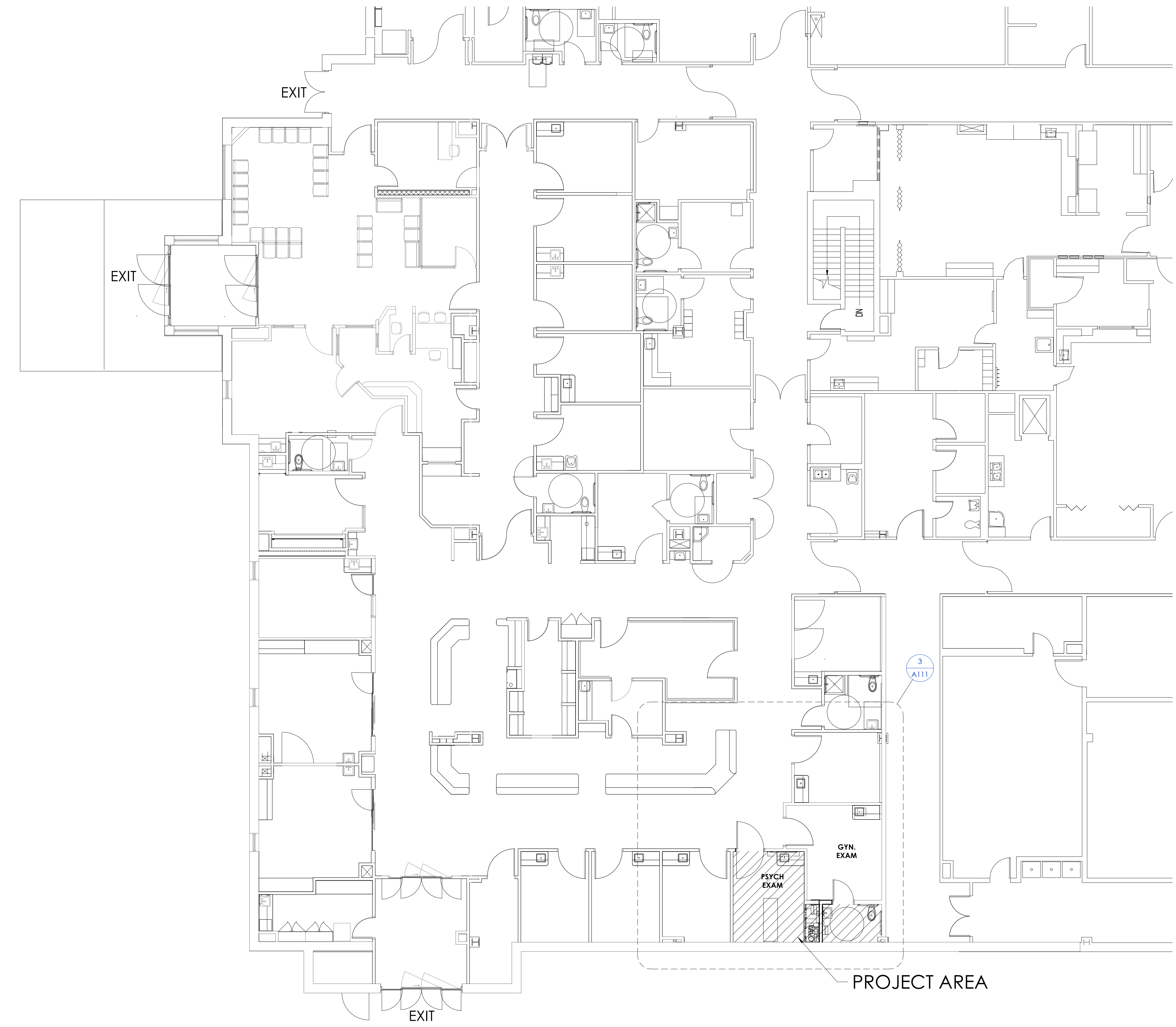
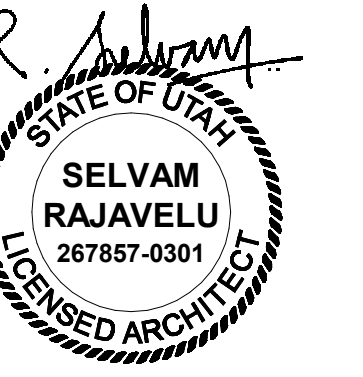
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Construction Documents Feb 19, 2020

Code Compliance
Plan Level 1 - Overall

G111

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1 Floor Plan Level 1 - Overall Emergency Department
SCALE: 1/8" = 1'-0"

KEYED NOTES

GENERAL NOTES

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
- B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.

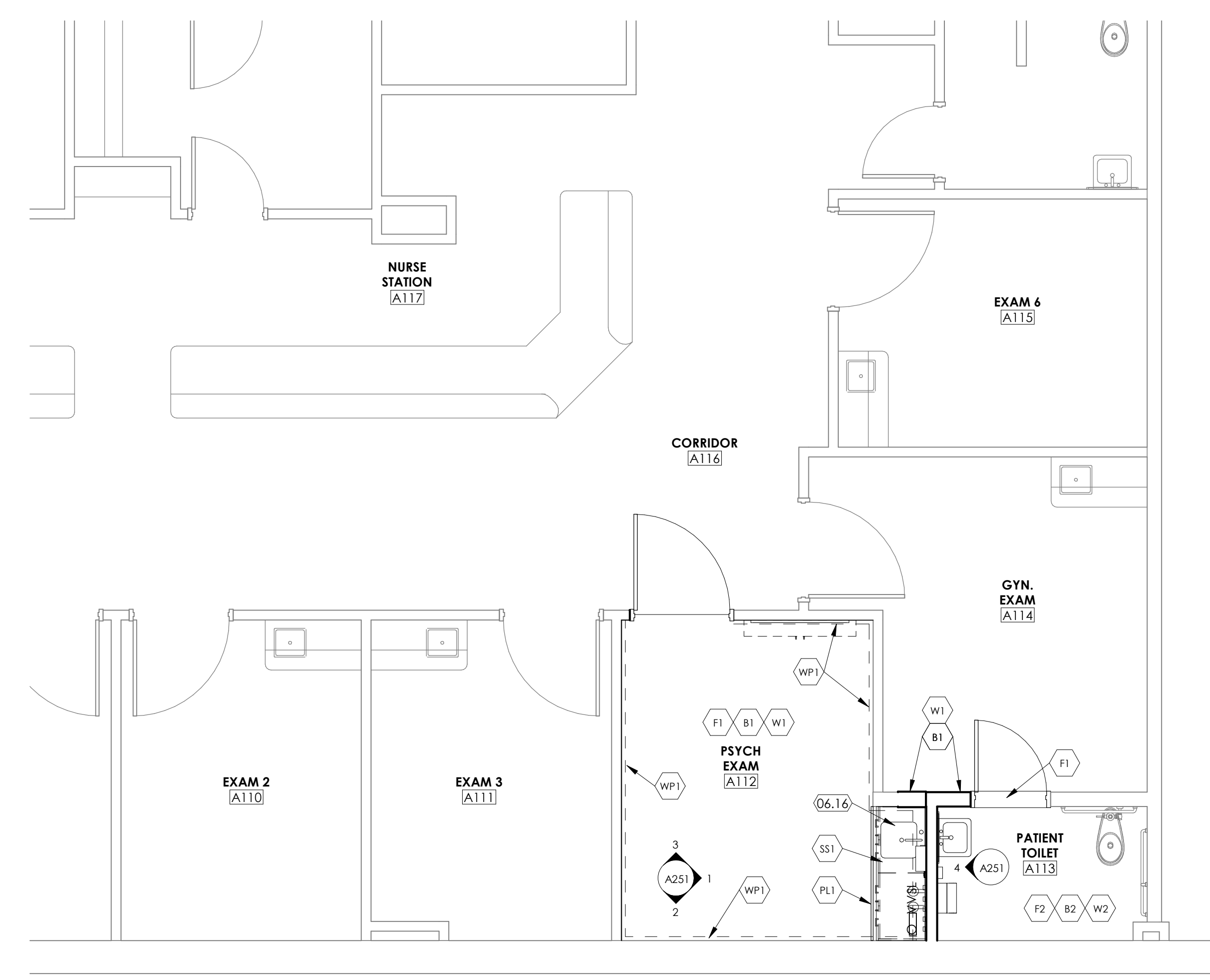
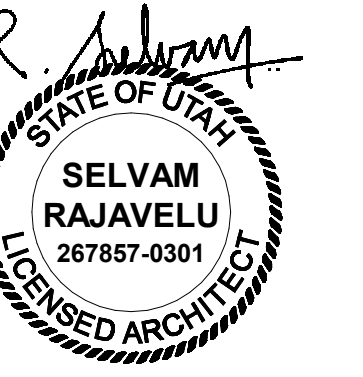
Ogden Regional Medical Center
Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents Feb 19, 2020

Level 1 Floor
Plan - Overall

A110



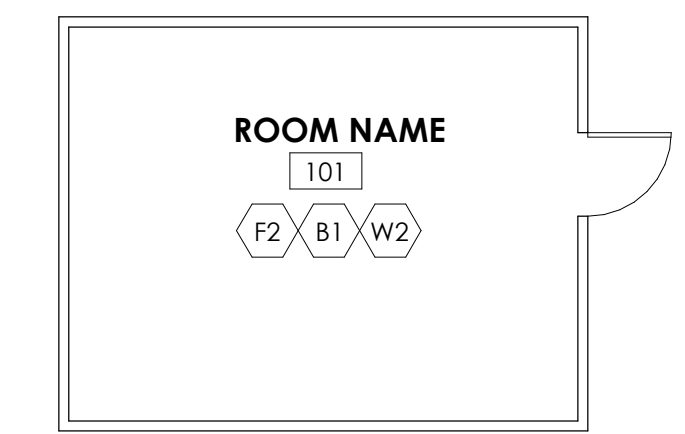
1 Finish Floor Plan Level 1 - Overall
SCALE: 1/4" = 1'-0"

KEYED NOTES

06.16 SOLID SURFACE INTEGRAL SINK. BASIS OF DESIGN: SAMSUNG STARON A1181 SINK, COLOR 'BRIGHT WHITE' BW010. FIELD VERIFY TO MATCH HOSPITAL STANDARD. SEE PLUMBING DRAWINGS FOR PLUMBING LINES, FAUCET AND OTHER REQUIREMENTS.

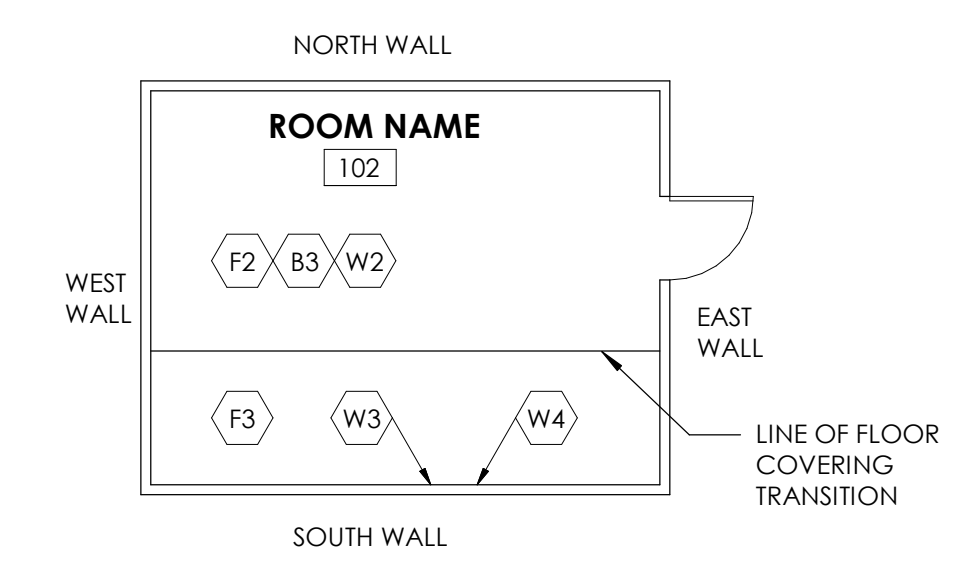
FINISH PLAN - SAMPLE LAYOUT

SAMPLE LAYOUT 1



NOTE: AS INDICATED IN ROOM NUMBER 101, MAJORITY OF THE ROOMS IN THE PROJECT SHALL HAVE A SINGLE TYPE OF FLOOR FINISH, WALL BASE AND WALL FINISH. WALL FINISH INDICATED AS "W2" SHALL APPLY TO ALL FOUR WALLS FROM FLOOR TO CEILING.

SAMPLE LAYOUT 2



NOTE: AS INDICATED IN ROOM NUMBER 102, SOME ROOMS SHALL HAVE MULTIPLE FLOOR AND WALL FINISHES. SEE GENERAL NOTE "C" ON SHEET A603A FOR FLOOR COVERING TRANSITIONS. THE WALL FINISH INDICATED AS "W2" IN THE ROOM (WITHOUT AN ARROW POINTING TO ANY SPECIFIC WALL) SHALL APPLY TO THE WEST, NORTH AND EAST WALL, WHERE WALL FINISHES ARE INDICATED WITH AN ARROW POINTING TO THE SOUTH SIDE. WALL SHALL HAVE MULTIPLE FINISHES SUCH AS "W3" AND "W4". SEE INTERIOR ELEVATIONS FOR TRANSITION DETAILS BETWEEN "W3" AND "W4".

GENERAL NOTES

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
- B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.

FINISH SCHEDULE								
TAG	FINISH TYPE	SIZE	MATERIAL DESCRIPTION	MANUFACTURER	STYLE	MODEL #	COLOR	COMMENTS
F1	FLOOR FINISH		HOMOGENEOUS SHEET VINYL	MANNINGTON COMMERCIAL	-	-	-	1
F2	FLOOR FINISH		CERAMIC TILE (EXISTING)	DALTILE	-	-	-	4
B1	WALL BASE	4" HIGH	COVED HOMOGENEOUS SHEET VINYL	MANNINGTON COMMERCIAL	-	-	-	1
B2	WALL BASE		COVED CERAMIC TILE	DALTILE	-	-	-	2,5
W1	WALL FINISH		PAINT	SHERWIN WILLIAMS	-	-	-	1
W2	WALL FINISH		PAINT - EPOXY TYPE	SHERWIN WILLIAMS	-	-	-	2
WP1	WALL PROTECTION		WAINSCOT PANEL 0.06" THICK RIGID VINYL	CONSTRUCTION SPECIALTIES ACROVYN	-	-	-	3
SS1	SOLID SURFACE		SOLID SURFACE (COUNTERTOP)	CORIAN SOLID SURFACE	-	-	-	1
PL1	PLASTIC LAMINATE FINISH		PLASTIC LAMINATE (VERTICAL) CABINET.	WILSONART	-	-	-	1

COMMENTS

1. NEW FINISH TO MATCH ADJACENT EXISTING EXAM ROOMS.
2. NEW FINISH TO MATCH EXISTING RESTROOM.
3. WALL PROTECTION WAINSCOT TO SPAN FROM TOP OF BASE TO MATCH HEIGHT IN ADJACENT EXISTING EXAM ROOMS.
4. EXISTING CERAMIC FLOOR TILE TO REPAIR, PATCH & REPAIR AS REQUIRED TO MATCH WITH ADJACENT EXISTING.
5. NEW CERAMIC TILE BASE REQUIRED AT NEW WALL LOCATION ONLY.

GENERAL NOTES

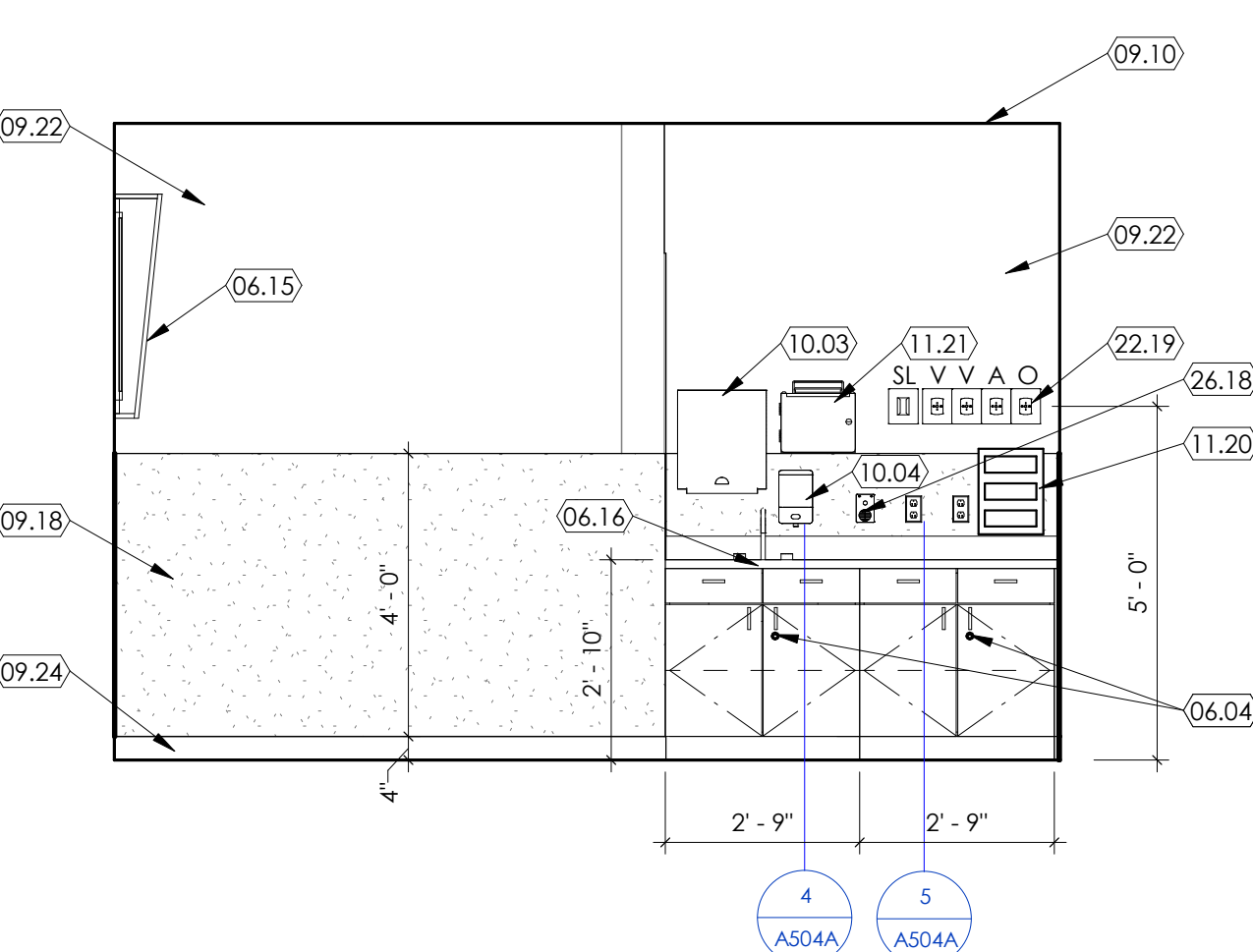
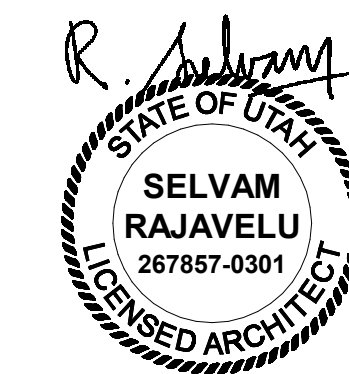
- A. BASIS-OF-DESIGN FOR FINISHES: FINISHES INDICATED ON THE FINISH SCHEDULE ARE BASED ON THE NAMED MANUFACTURER AND THEIR PRODUCTS. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE NAMED PRODUCT OR A COMPARABLE PRODUCT BY ONE OF THE APPROVED MANUFACTURERS LISTED IN THE PROJECT MANUAL. SEE RELEVANT SPECIFICATION SECTION.
- B. SEE "SAMPLE LAYOUTS" INDICATED ON FINISH PLANS FOR CLARIFICATION ON HOW DIFFERENT TYPES OF REQUIRED FINISHES ARE INDICATED WITH FINISH TAGS FOR FLOORS, WALLS, MISCELLANEOUS SURFACE, ETC. SEE FINISH FLOOR PLANS FOR REQUIRED FINISHES (INDICATED WITH FINISH TAGS SUCH AS F1, B1, W1, ETC.).
- C. LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF FLOOR COVERING IS INDICATED ON THE FINISH FLOOR PLANS. IN PLACES WHERE TWO DIFFERENT FLOOR COVERING ABUTS EACH OTHER, CONTRACTOR SHALL FOLLOW THE RELEVANT APPLICABLE "FLOOR COVERING TRANSITION DETAILS" INDICATED IN THIS CONSTRUCTION DOCUMENTS, WHERE TWO ROOMS ARE REQUIRED TO HAVE DIFFERENT FLOOR COVERINGS. LINE OF TRANSITION SHALL TYPICALLY OCCUR BELOW THE CENTER OF THE DOOR (LOCATED BETWEEN THE TWO ROOMS), AS THESE TRANSITION LINES ARE NOT INDICATED BELOW THE DOOR ON THE FINISH FLOOR PLANS. CONTRACTOR SHALL PROVIDE METAL TRANSITION STRIP (MANUFACTURED BY SCHLUTER OR EQUIVALENT) AS REQUIRED. AT EXTERIOR DOORS, PROVIDE ALUMINUM THRESHOLD MATCHING THE DOORWAY. FOR REMODEL PROJECTS, COORDINATE WITH DEMOLITION FLOOR PLAN AND NEW FLOOR PLAN TO DETERMINE WHERE NEW ABUTS EXISTING FLOOR COVERING THAT IS SCHEDULED TO REMAIN.
- D. LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF WALL FINISH IS INDICATED ON THE INTERIOR ELEVATIONS AND FINISH FLOOR PLANS. FOR REQUIRED WALL PROTECTION TYPE (INDICATED WITH TAG WP1, WP2, ETC.), ON WALLS. COORDINATE WITH FINISH FLOOR PLANS AND INTERIOR ELEVATIONS.
- E. THERE ARE MISCELLANEOUS SURFACES THAT ARE EXPOSED AND WILL REQUIRE A FINISH. SUCH MISCELLANEOUS SURFACES ARE INDICATED IN THE DRAWINGS WITH FINISH TAGS SUCH AS MS1, MS2, ETC.
- F. PAINT ALL EXPOSED VISIBLE ITEMS SUCH AS METAL DECK, STEEL ANGLES, STEEL BEAMS, STEEL TRUSSES, MSSC, STEEL ITEMS, PIPES, CONDUITS, ETC. UNLESS SPECIFICALLY NOTED AS A SURFACE NOT TO BE PAINTED, OR IF NATURAL FINISH IS REQUIRED. PAINT SURFACES USING FIELD COLORS AND ACCENT COLORS SPECIFIED BY THE ARCHITECT. DO NOT PAINT COLETTED SURFACES, FINISHED METAL SURFACES, OPERATING PARTS, AND PRE-FINISHED ITEMS. VERIFY PAINTING SURFACE (SUCH AS STEEL, CONCRETE, MASONRY, GYPSUM BOARD, WOOD, ETC.) AND USE THE APPROPRIATE PAINT AND METHOD INDICATED IN THE PROJECT MANUAL UNDER RELEVANT SPECIFICATION SECTION. ALL HOLLOW METAL DOOR AND WINDOW FRAMES SHALL BE PAINTED. USE SEMI-GLOSS FINISH ON DOOR FRAMES.
- G. IN ROOMS AND AREAS WHERE GYPSUM BOARD CEILING IS INDICATED, PAINT CEILING WITH THE SAME COLOR AND TYPE AS ADJACENT WALLS. IN WET ROOMS (LIKE RESTROOM, KITCHEN, ETC.) WHERE EPOXY PAINT IS INDICATED AS A REQUIREMENT ON WALLS, PAINT CEILINGS AND SOFFITS WITH EPOXY TYPE PAINT. ALL GYPSUM BOARD SOFFITS SHALL BE PAINTED. COORDINATE ACCENT COLOR LOCATIONS WITH ARCHITECT WHEREVER INDICATED.
- H. SEE INTERIOR ELEVATIONS FOR PLASTIC LAMINATE FINISHES OVER CABINETS, COUNTERTOPS, WALLS, ETC. PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2, ETC. COUNTERTOPS THAT ARE MONOLITHIC MATERIAL (SUCH AS SOLID SURFACE, QUARTZ, ETC. AND NOT PLASTIC LAMINATE WRAPPED), ARE INDICATED AS MM1, MM2, ETC.
- I. WHERE PORCELAIN AND/OR CERAMIC TILE FINISHES ARE INDICATED, PROVIDE METAL EDGE STRIPS (MANUFACTURED BY SCHLUTER OR EQUIVALENT) AT ALL OUTSIDE VERTICAL CORNERS AND TOP OF WAINSCOT.
- J. IN ROOMS AND AREAS (SUCH AS TOILET ROOMS, SHOWERS, ETC.) WHERE CERAMIC OR PORCELAIN TILES ARE INDICATED FOR WALL AND FLOOR FINISH, INSTALL BOTTOM ROW OF WALL TILE FIRST PER DETAIL 1/A603B. PROVIDE QUARTZ THRESHOLD AT DOORS TO TOILET ROOMS THAT ARE USED BY MULTIPLE USERS. SEE DETAILS 3 & 4 SHEET A603B.
- K. WHERE GYPSUM BOARD WALL ABUTS MASONRY WALL, PROVIDE REVEAL AS PER DETAIL 2/A603B.

Ogden Regional Medical Center
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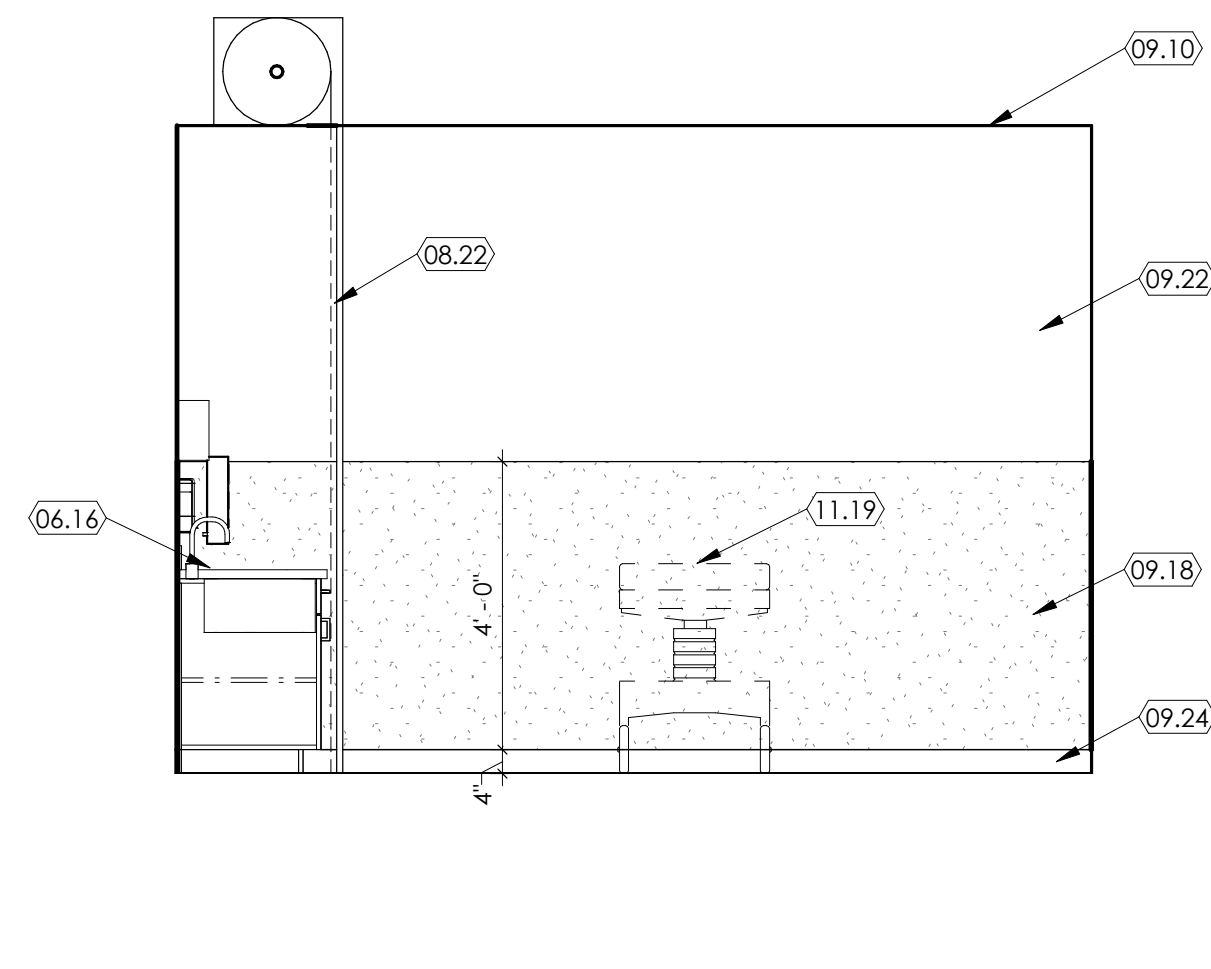
Psych Exam
Finish Floor
Plan

A112



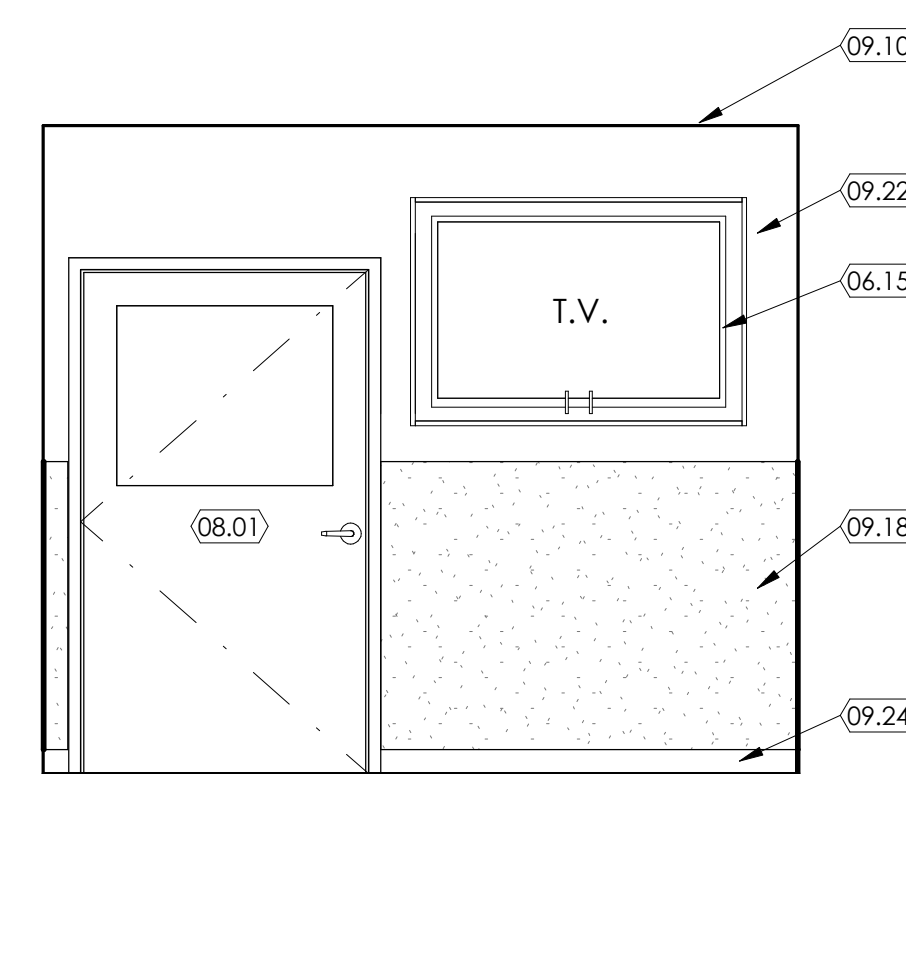
1 Psych Exam

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



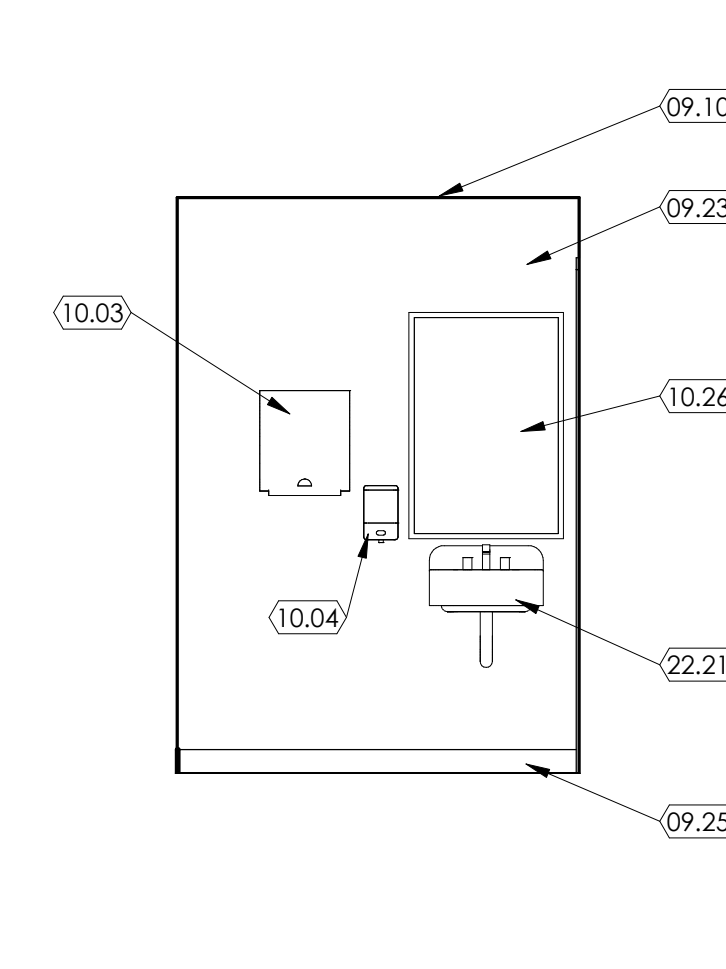
2 Psych Exam

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



3 Psych Exam 3

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



4 Patient Toilet

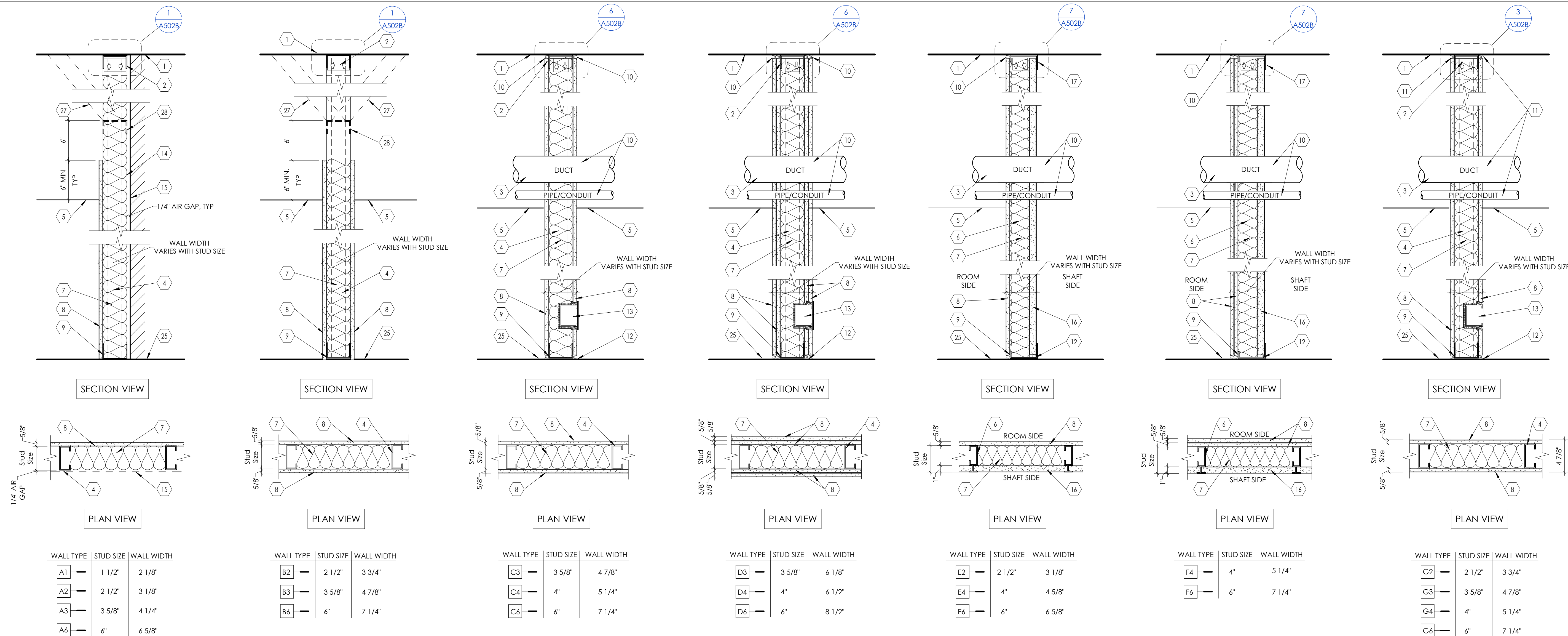
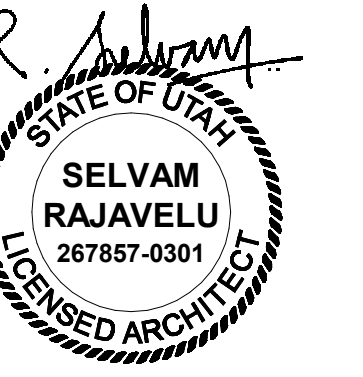
SCALE: 3/8" = 1'-0"

KEYED NOTES

- 06.04 LOCK. PROVIDE KEYPED LOCK FOR THIS CABINET DOOR (OR DRAWER WHERE OCCURS). PROVIDE REQUIRED HARDWARE FOR THE LOCK SYSTEM.
- 06.12 NEW ANTI-LIGATURE T.V. ENCLOSURE, O.F.C.I. COORDINATE WITH THE OWNER.
- 06.16 SOLID SURFACE INTEGRAL SINK. BASIS OF DESIGN: SAMSUNG STARON A1181 SINK. COLOR: BRIGHT WHITE BWD10. FIELD VERIFY TO MATCH HOSPITAL STANDARD. SEE PLUMBING DRAWINGS FOR PLUMBING LINES, FAUCET AND OTHER REQUIREMENTS.
- 08.01 DOOR AND DOOR FRAME. SEE DOOR SCHEDULE.
- 08.22 FULL HEIGHT ROLL-UP LIGATURE FREE ALUMINUM SHUTTER DOOR, ELECTRICALLY OPERATED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SEE SPECIFICATIONS & ELECTRICAL DRAWINGS FOR MORE INFORMATION. POWDER COATED COLOR SHALL MATCH OTHER PSYCH ROOM IN THE SUITE. CONTRACTOR SHALL PROVIDE REQUIRED STRUCTURAL SUPPORT TO ANCHOR DOOR COIL AND HOUSING ABOVE CEILING WITH THREADED ROD ATTACHED TO FLOOR DECK ABOVE. THE DOOR TRACK IS REQUIRED TO BE SECURED AS PER THE REQUIREMENTS OF THE DOOR MANUFACTURER.
- 09.10 NEW PAINTED GYPSUM BOARD CEILING. SEE REFLECTED CEILING PLANS FOR CEILING HEIGHT. SEE CEILING DETAILS AND FINISH SCHEDULE FOR MORE INFORMATION.
- 09.18 WALL PROTECTION. SEE FINISH FLOOR PLAN FOR WAINSCOT, CORNER GUARDS, ETC. INDICATED WITH A TAG AS WP1, WP2, ETC. SEE FINISH SCHEDULE FOR MATERIAL TYPE, SIZE, COLOR, ETC.
- 09.22 PAINTED GYPSUM BOARD WALL. SEE FINISH SCHEDULE.
- 09.23 EPOXY PAINTED GYPSUM BOARD WALL AT PATIENT TOILET. SEE FINISH SCHEDULE.
- 09.24 COVERED SHEET VINYL WALL BASE. SEE FINISH SCHEDULE. SECURE WITH TAMPER PROOF ADHESIVE FOR ANTI-LIGATURE INSTALLATION. DO NOT PROVIDE ALUMINUM STRIP AT THE BASE.
- 09.25 NEW 4" CERAMIC TILE BASE TO MATCH ADJACENT EXISTING. SEE FINISH SCHEDULE.
- 10.03 RE-INSTALL EXISTING PAPER TOWEL DISPENSER. OWNER FURNISHED. CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING IN WALL AS REQUIRED. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION, ETC.
- 10.04 RE-INSTALL EXISTING SOAP DISPENSER. OWNER FURNISHED. CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING FOR ALL OWNER FURNISHED ITEMS. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION, ETC.
- 10.26 RE-INSTALL EXISTING WALL MOUNTED MIRROR. OWNER FURNISHED. CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING FOR ALL OWNER FURNISHED ITEMS. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION, ETC.
- 11.19 PATIENT BED, O.F.C.I.
- 11.20 GLOVE DISPENSER, O.F.C.I.
- 11.21 SHARPS DISPOSAL CONTAINER, O.F.C.I.
- 22.19 RELOCATED MEDICAL GAS OUTLETS. SEE MECHANICAL AND PLUMBING DRAWINGS FOR MORE INFORMATION.
- 22.21 RELOCATED SINK, FAUCET AND PLUMBING FIXTURE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION.
- 26.18 NURSE CALL/ CODE BLUE. SEE ELECTRICAL DRAWINGS.

GENERAL NOTES

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
- B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.



Type - A
Metal Stud
Furring Wall

Type - B
Typical Metal
Stud Wall

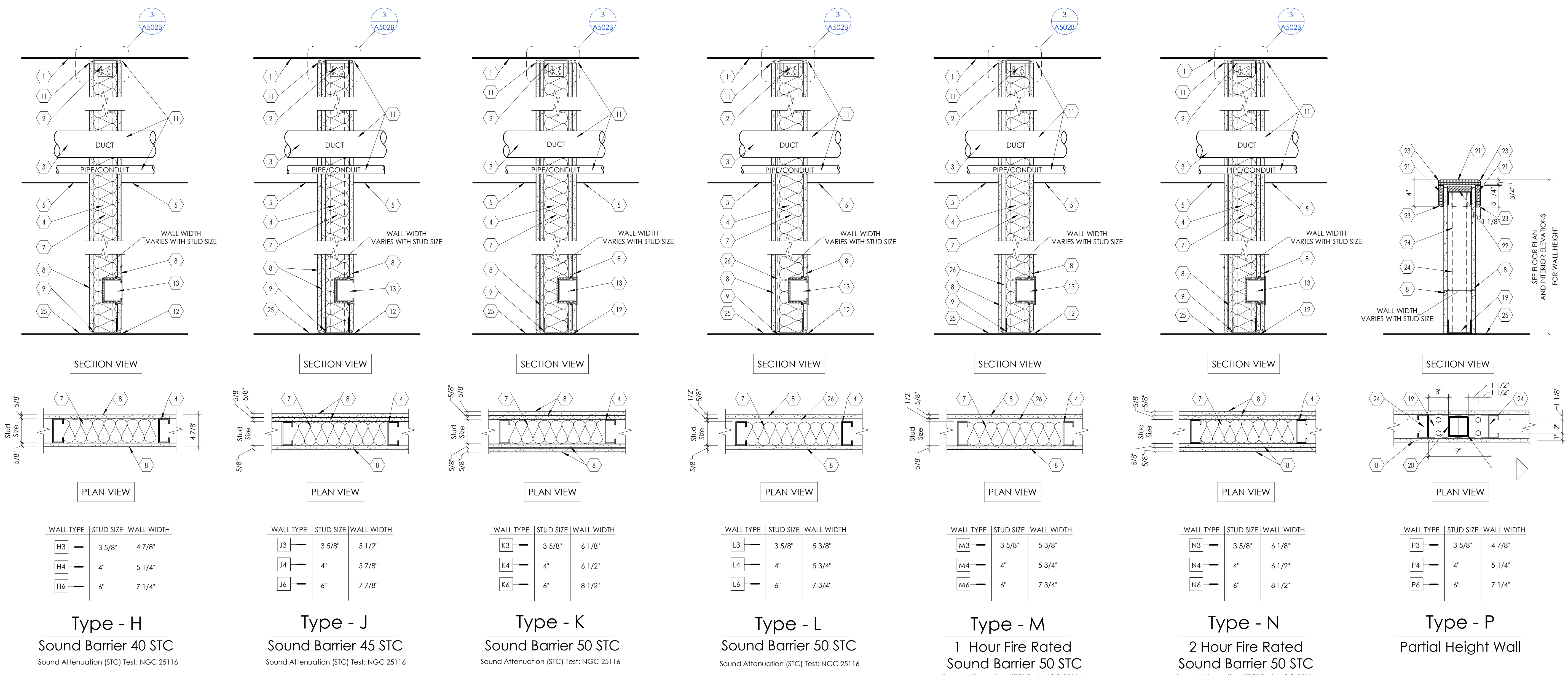
Type - C
1 Hour Fire Rated
UL DESIGN #: U465

Type - D
2 Hour Fire Rated
UL DESIGN #: U411

Type - E
1 Hour Fire Rated
Shaft Wall
UL DESIGN #: U415 SYS. A

Type - F
2 Hour Fire Rated
Shaft Wall
UL DESIGN #: U415 SYS. A

Type - G
Smoke Partition



Type - H
Sound Barrier 40 STC
Sound Attenuation (STC) Test: NGC 25116

Type - J
Sound Barrier 45 STC
Sound Attenuation (STC) Test: NGC 25116

Type - K
Sound Barrier 50 STC
Sound Attenuation (STC) Test: NGC 25116

Type - L
Sound Barrier 50 STC
Sound Attenuation (STC) Test: NGC 25116

Type - M
1 Hour Fire Rated
Sound Barrier 50 STC
Sound Attenuation (STC) Test: NGC 25116

Type - N
2 Hour Fire Rated
Sound Barrier 50 STC
Sound Attenuation (STC) Test: NGC 25116

Type - P
Partial Height Wall

KEYED NOTE

- LINE OF FLOOR OR ROOF DECK AS OCCURS.
- TO ACCOMMODATE FOR STRUCTURE DEFLECTION, PROVIDE SLIP CONNECTION BETWEEN TOP RUNNER TRACK AND METAL STUD FRAMING. SEE DETAIL 9 / A502A
- STUD FRAMING AROUND DUCT OPENINGS. SEE DETAIL 11 / A502A
- METAL STUDS, 20 GA STRUCTURAL (33 MILS) AT 16" O.C. U.N.O. BASED ON WALL TYPES INDICATED IN FLOOR PLAN. PROVIDE STUD SIZE AS INDICATED IN WALL TYPES WITH TRACK RUNNERS AT TOP AND BOTTOM. FOR STUD FRAMING AROUND DOOR AND WINDOW OPENINGS. SEE DETAIL 11 / A502A
- LINE OF CEILING AS OCCURS. SEE REFLECTED CEILING PLAN.
- STEEL STUDS: C-H SHAPED, 20 GA STRUCTURAL AT 24" O.C.
- PROVIDE ACOUSTIC INSULATION BLANKET FOR FULL DEPTH OF THE STUD CAVITY THROUGHOUT. UNO. FOR 4" & 3 5/8" STUDS PROVIDE R-13 UNFACED BATT INSULATION AND FOR 6" STUDS PROVIDE R-19 UNFACED BATT INSULATION. PROVIDE KRAFT FACED INSULATION FOR ALL APPLICATIONS AT EXTERIOR WALLS.
- GYPSUM BOARD, 5/8" THICK, TYPE 'X', U.N.O. ATTACHED TO METAL STUD FRAMING. SEE GENERAL NOTE 'B' BELOW.
- ANCHOR BASE TRACK TO CONCRETE FLOOR BELOW. SEE DETAIL 8 / A502A
- FILL GAP BETWEEN DECK AND METAL TRACK TOP RUNNER WITH FIRESTOP SEALANT, SEAL TIGHTLY AROUND ALL PIPES, CONDUITS, DUCTS, ETC., ON EACH SIDE OF THE FIRE BARRIER WALL (CONTINUOUS) WITH APPROVED FIRESTOP SEALANT INSTALLED AROUND ALL PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE BARRIER.
- FILL GAP BETWEEN DECK AND METAL TRACK TOP RUNNER WITH ACOUSTIC SEALANT, SEAL TIGHTLY AROUND ALL PIPES, CONDUITS, DUCTS, ETC., ON EACH SIDE OF THE WALL (CONTINUOUS) AND AROUND ALL PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE WALL.
- STOP GYPSUM BOARD 1/4" ABOVE THE FLOOR TYP. ON EACH SIDE OF WALL. PROVIDE ACOUSTIC SEALANT AT SOUND WALLS AND FIRESTOP SEALANT AT RATED WALLS ON EACH SIDE OF THE WALL (CONTINUOUS).
- OUTLET BOX AS OCCURS. PROVIDE FIRE BARRIER MOLDABLE PUTTY PADS AND FIRESTOP SEALANT AROUND ELECTRICAL BOXES AT ALL RATED WALLS AND SOUND BARRIER WALLS AND AT BACK TO BACK ELECTRICAL BOXES AT SMOKE PARTITION WALLS TYP.
- PROVIDE STRAPPING AND BLOCKING AT FURRING WALL. SEE DETAIL 12 / A502A
- LINE INDICATES EXISTING WALL OR STRUCTURE. PROVIDE 1/4" AIR GAP.
- GYPSUM BOARD SHAFT LINER PANEL, 1" THICK, TYPE 'X', ATTACHED TO C-H STUDS.
- STEEL RUNNER, 1" SHAPED WITH UNEQUAL LEGS OF 1" AND 2", 20 GA., ATTACHED TO FLOOR AND STRUCTURE ABOVE WITH FASTENERS LOCATED NO GREATER THAN 2" FROM ENDS AND NO MORE THAN 24" O.C. RUNNERS SHOULD BE POSITIONED WITH SHORT LEG TO FINISHED SIDE OF WALL.
- STOP STUD RUNNER AT BASE PLATES.
- STEEL PLATE, 3/8" THICK WITH 4-1/2" DIA. HILTI-HY200 EPOXY ANCHORS WITH 2-3/8" HILTI-HIT-2 ANCHORS. EMBED INTO CONCRETE 2-3/8".
- TUBE STEEL 3" x 3" x 3/16" AT 4'-0" O.C.
- WALL CAP, SOLID SURFACE MATERIAL ATTACHED TO WALL BELOW.
- PLYWOOD, 3/4" THICK, CONTINUOUS FIRE TREATED. ATTACH PLYWOOD TO VERTICAL STEEL TUBE POST WITH L SHAPED METAL CLIPS AND FASTENERS.
- PROVIDE 1/4" RADIUS ROUNDED EDGE, CONTINUOUS.
- METAL STUDS 16 GA STRUCTURAL (33 MIL) AT 16" O.C. PROVIDE RUNNERS AT TOP AND BOTTOM. ATTACH TOP RUNNER TO PLYWOOD AND VERTICAL STEEL POST.
- LINE OF FLOOR.
- RESILIENT CHANNEL, 2" x 1/2", INSTALLED HORIZONTALLY AND SPACED AT 24" O.C.
- WHERE CONDITIONS PROHIBIT EXTENDING STUDS TO DECK, PROVIDE CROSS BRACING FROM TOP RUNNER OF WALL TO STRUCTURE ABOVE WITH 5/8" 20 GA STUDS AT 4'-0" O.C. ALTERNATE DIRECTION OF BRACING TO STRUCTURE EVERY 48" AS CONDITIONS ALLOW.
- TOP TRACK, 18 GA. REQUIRED AT CROSS-BRACED WALLS.

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ITEMS LIKE SEMI OR FULLY RECESSED MISCELLANEOUS BOXES, PANELS, PLUMBING LINES, CONDUITS, PIPES, ETC. THAT ARE CONCEALED IN THE WALL IF 5/8" METAL STUDS ARE INADEQUATE. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND USE 6" STUDS. COORDINATE WITH ALL THE CONSULTANT DRAWINGS PRIOR TO WALL CONSTRUCTION AND USE 6" OR 8", 20 GAUGE METAL STUDS FOR FRAMING IN LIEU OF 5/8" METAL STUDS.
- USE 5/8" CEMENTITIOUS BOARD IF CERAMIC OR PORCELAIN WALL TILES ARE INDICATED IN THE FINISH SCHEDULE AS WALL FINISH. CEMENTITIOUS BOARD SHALL EXTEND FROM FINISHED FLOOR TO HEIGHT OF TILE. 5/8" WATER RESISTANT GYPSUM BOARD TO BE USED ABOVE TILE HEIGHT IN RESTROOMS. SEE FLOOR PLANS FOR CERTAIN UNIQUE LOCATIONS THAT REQUIRE LEAD LINED GYPSUM BOARD, IMPACT RESISTANT GYPSUM BOARD, SOUND ATTENUATION GYPSUM BOARD, ETC.
- PROVIDE CONTROL JOINT AS PER DETAIL 14 / A502A WHEN LENGTH OF GYPSUM BOARD EXCEEDS 50' IN ONE DIRECTION OR AS DIRECTED BY ARCHITECT. COORDINATE WITH ARCHITECT FOR CONTROL JOINT LOCATIONS. WHEN GYPSUM BOARD OR CEMENTITIOUS BOARD IS ATTACHED VERTICALLY, USE 1" LONG #6 DRYWALL SCREWS TO EACH STUD. SCREWS ARE 8" O.C. AT PERIMETER AND 12" AT INTERMEDIATE STUD. WHEN GYPSUM BOARD IS ATTACHED HORIZONTALLY TO STUDS, HORIZONTAL JOINTS SHALL BE STAGGERED WITH THOSE ON THE OPPOSITE SIDE. SCREWS FOR HORIZONTAL APPLICATION SHALL BE 8" O.C. AT VERTICAL EDGES AND 12" O.C. AT INTERMEDIATE STUDS.
- FOR LOCATION OF FIRE RATED WALLS AND SMOKE PARTITION WALLS SEE CODE COMPLIANCE PLAN.
- SEE DIMENSION FLOOR PLANS FOR WALL TYPES USED IN THIS PROJECT. SOME WALL TYPES MAY NOT BE USED IN THIS PROJECT.
- WHERE LEAD LINED WALLS ARE INDICATED ON THE DRAWINGS, USE 16 GA STUDS IN LIEU OF THE GAUGE OF STUDS CALLED OUT IN THE WALL TYPES.
- IN PLACES WHERE MECHANICAL DUCTS ARE DESIGNED TO PENETRATE THE FLOOR, TOP OF THE REQUIREMENTS OF FIRE RATING, PROVIDE A TWO-HOUR FIRE RATED ENCLOSURE AT TOP AND BOTTOM OF SHAFT AS INDICATED IN DETAILS 5 / A502B AND 6 / A502B
- IN PLACES WHERE A TWO-HOUR HORIZONTAL ENCLOSURE IS REQUIRED TO SEPARATE THE DUCTS FROM THE SPACE BELOW, PROVIDE A TWO-HOUR FIRE RATED HORIZONTAL ASSEMBLY AS PER DETAILS 5 / A502B AND 6 / A502B
- IN PLACES WHERE BACKING IS REQUIRED IN WALLS TO SUPPORT WALL HUNG EQUIPMENT, CABINETS, ETC. PROVIDE BACKING IN WALL PER DETAILS 5 / A502A AND 13 / A502A

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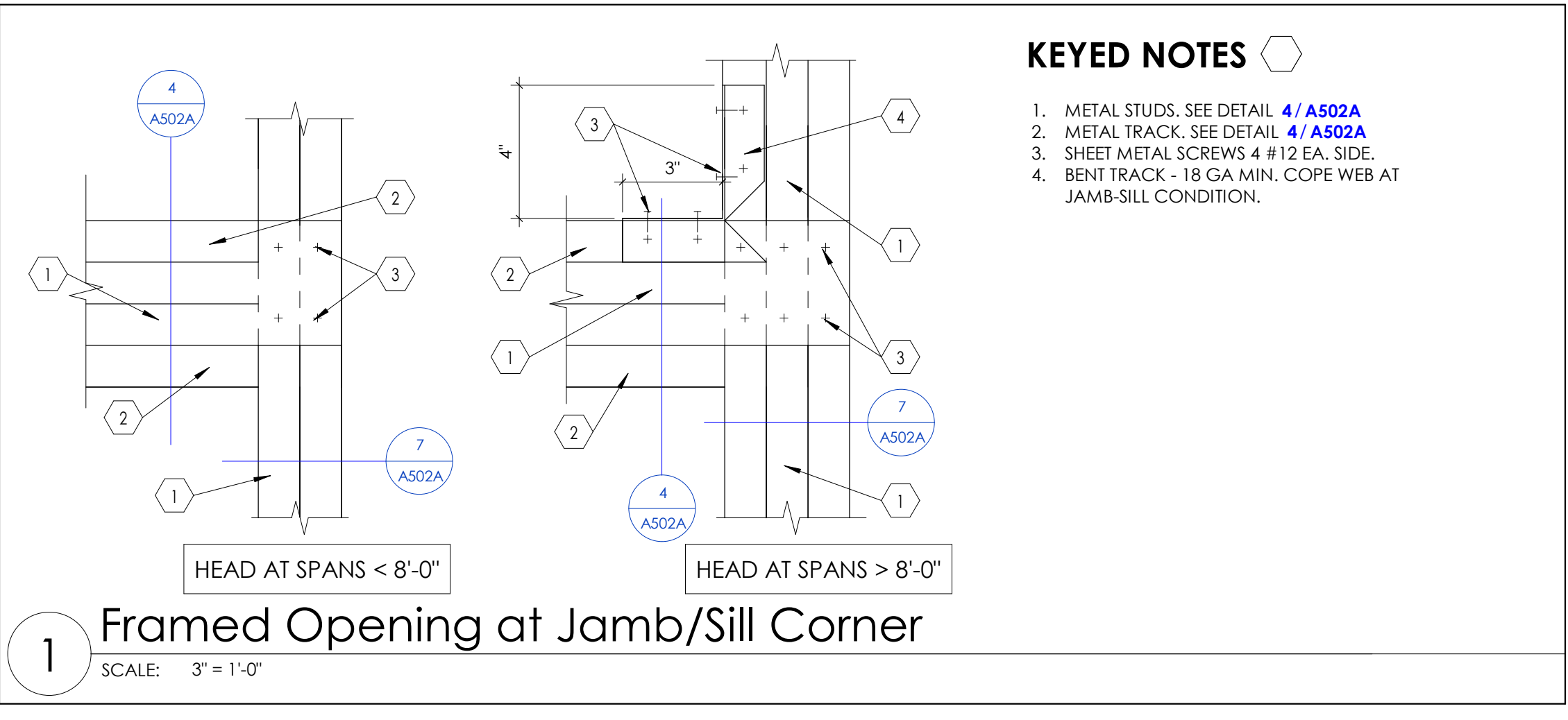
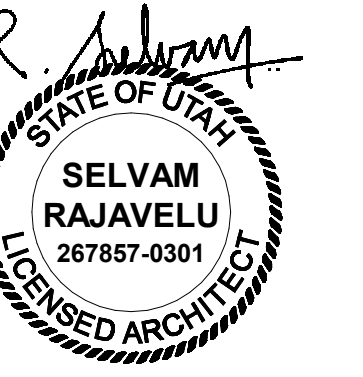
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Construction Documents Feb 19, 2020

Wall Types

A501A

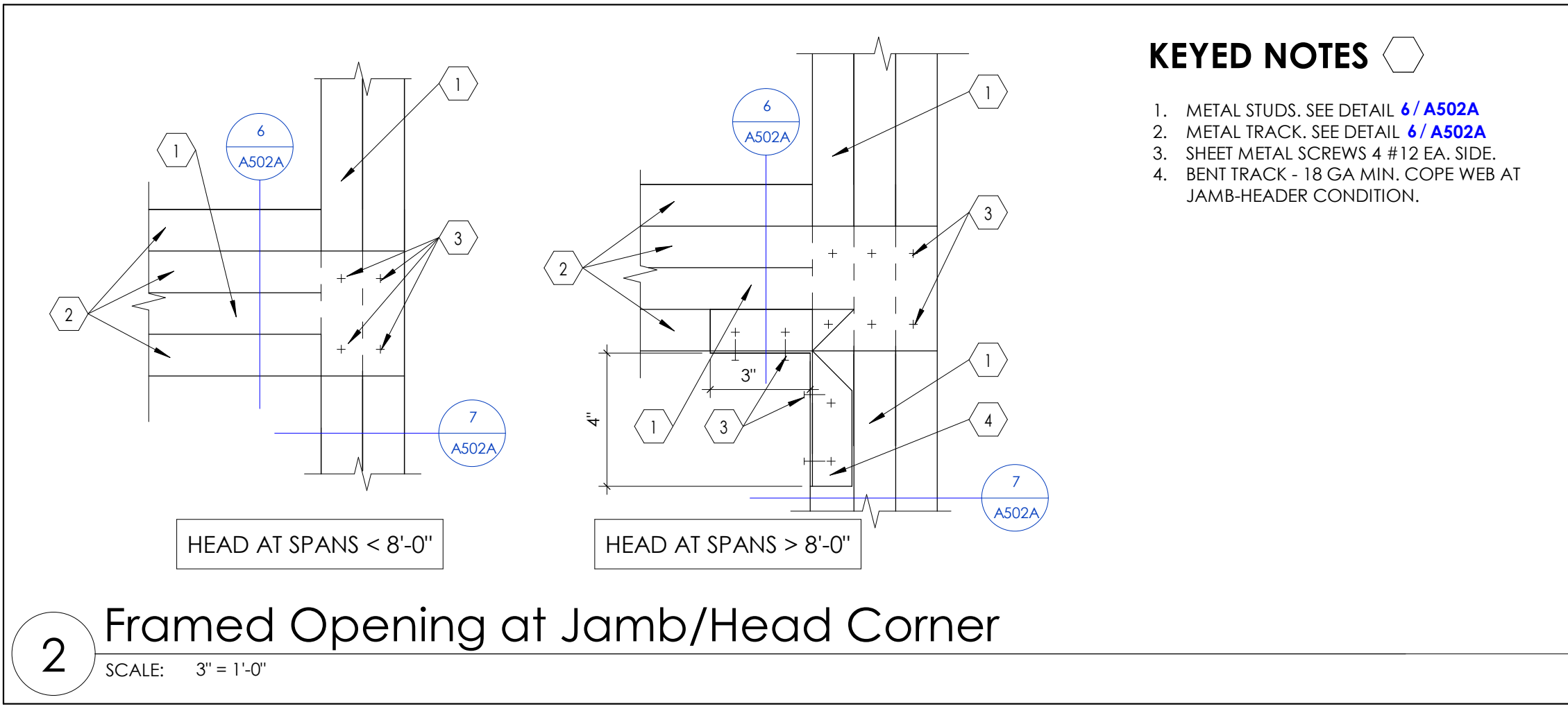
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1 Wall Types (Note: See dimension floor plans for locations of wall types used in this project. Some wall types shown above may not be used in this project.)
SCALE: 1 1/2" = 1'-0"



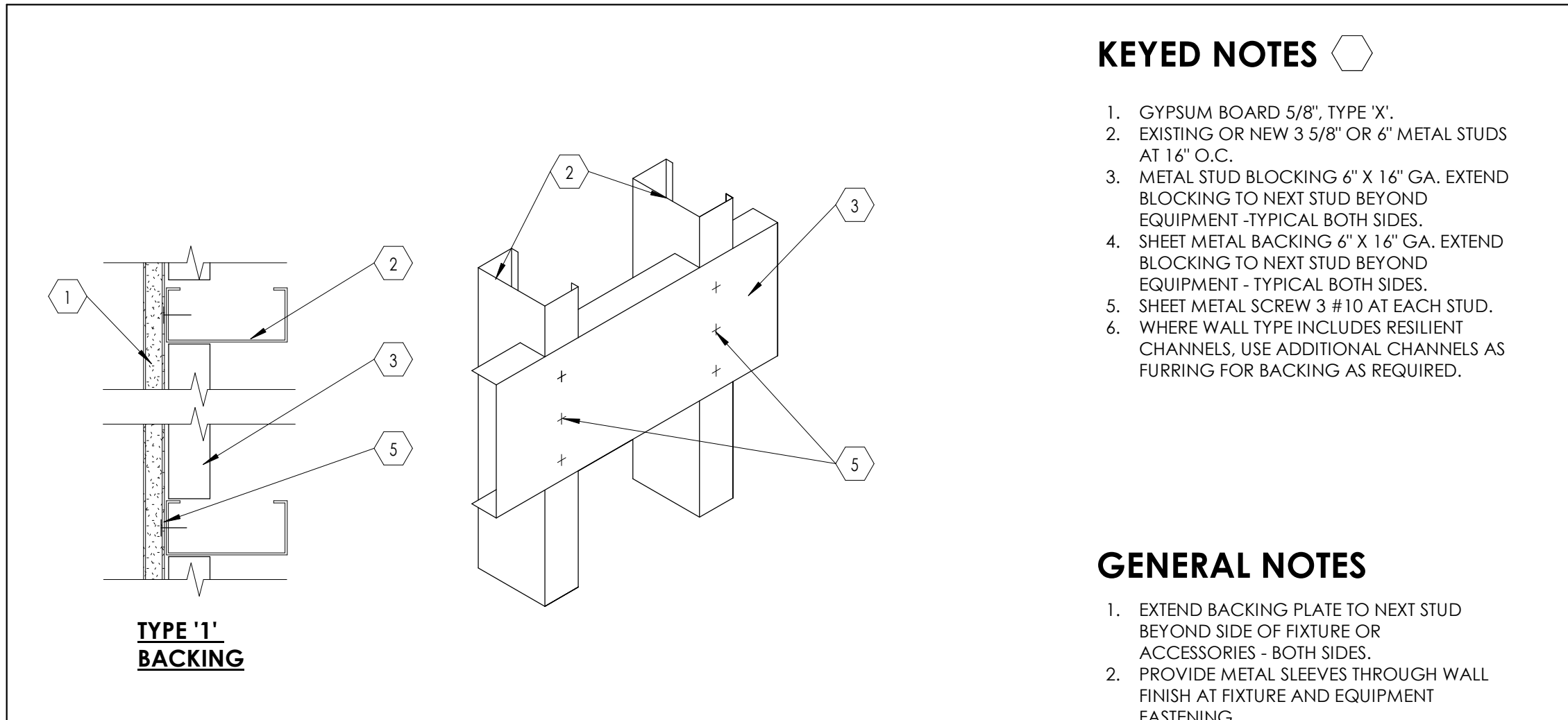
- KEYED NOTES**
- METAL STUDS, SEE DETAIL 4 / A502A
 - METAL TRACK, SEE DETAIL 4 / A502A
 - SHEET METAL SCREWS #12 EA, SIDE
 - BENT TRACK - 18 GA MIN. COPE WEB AT JAMB-SILL CONDITION.

1 Framed Opening at Jamb/Sill Corner
SCALE: 3" = 1'-0"



- KEYED NOTES**
- METAL STUDS, SEE DETAIL 6 / A502A
 - METAL TRACK, SEE DETAIL 6 / A502A
 - SHEET METAL SCREWS #12 EA, SIDE
 - BENT TRACK - 18 GA MIN. COPE WEB AT JAMB-HEADER CONDITION.

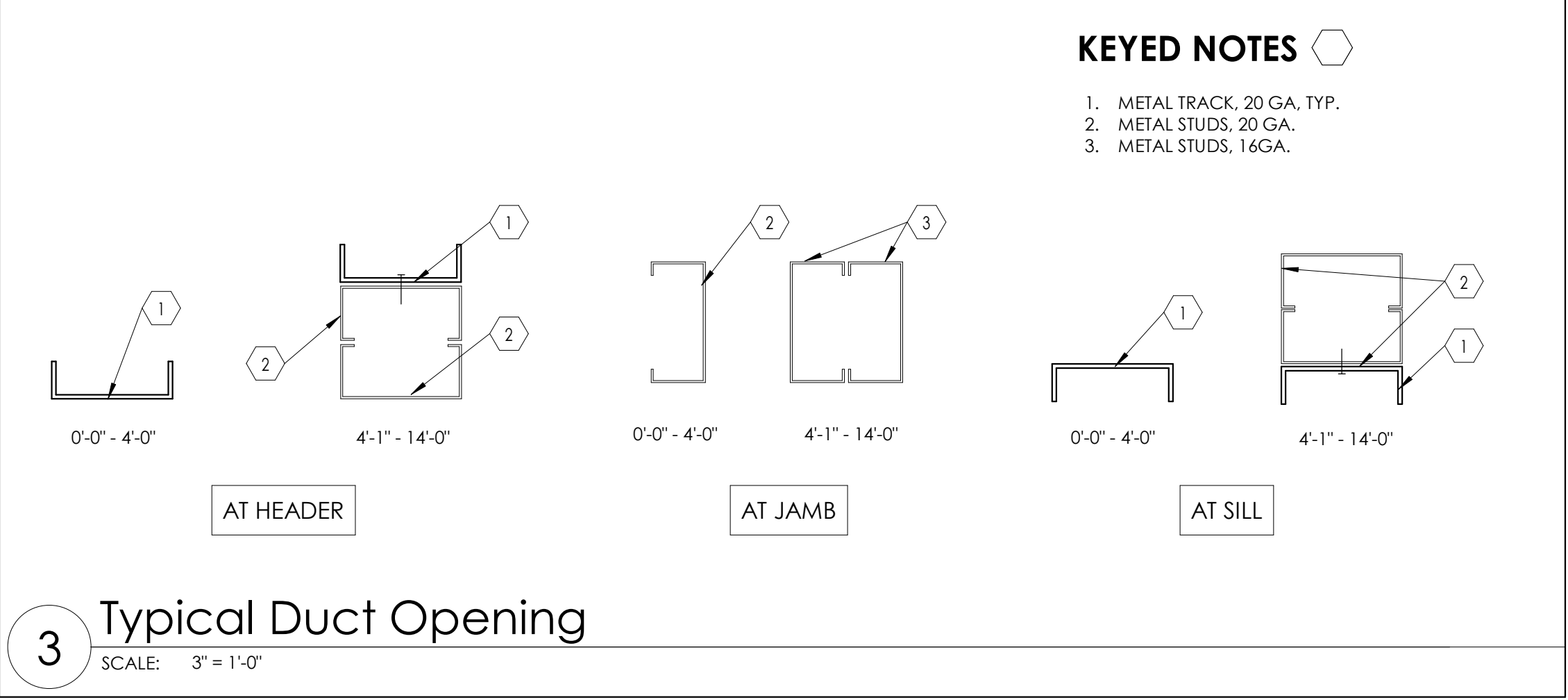
2 Framed Opening at Jamb/Head Corner
SCALE: 3" = 1'-0"



- KEYED NOTES**
- GYPSUM BOARD 5/8" TYPE 'X'
 - EXISTING OR NEW 3 5/8" OR 6" METAL STUDS AT 16" O.C.
 - METAL STUD BLOCKING 6" X 16" GA. EXTEND BLOCKING TO NEXT STUD BEYOND EQUIPMENT - TYPICAL BOTH SIDES.
 - SHEET METAL BACKING 6" X 16" GA. EXTEND BLOCKING TO NEXT STUD BEYOND EQUIPMENT - TYPICAL BOTH SIDES.
 - SHEET METAL SCREW #10 AT EACH STUD.
 - WHERE WALL TYPE INCLUDES RESILIENT CHANNELS, USE ADDITIONAL CHANNELS AS FURRING FOR BACKING AS REQUIRED.

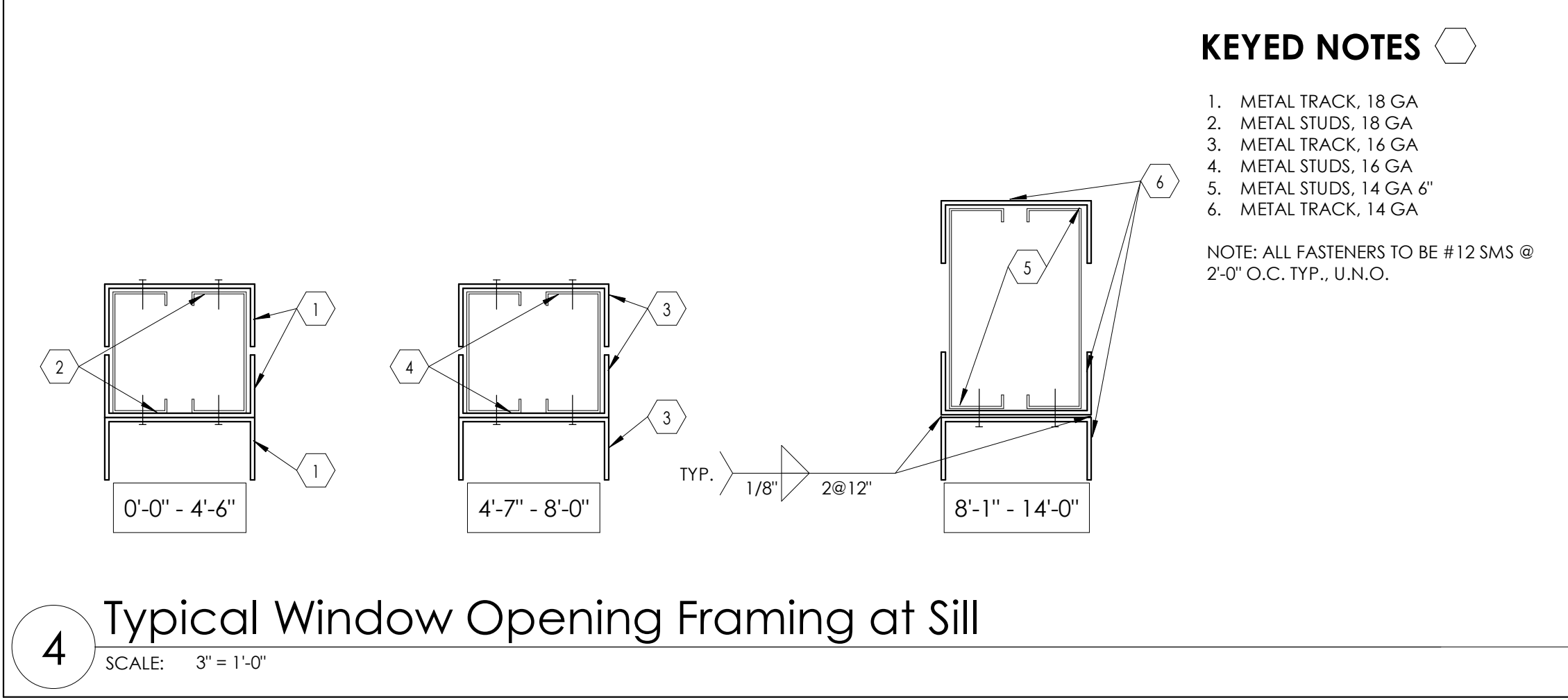
- GENERAL NOTES**
- EXTEND BACKING PLATE TO NEXT STUD BEYOND SIDE OF FIXTURE OR ACCESSORIES - BOTH SIDES.
 - PROVIDE METAL SLEEVES THROUGH WALL FINISH AT FIXTURE AND EQUIPMENT FASTENING.
 - FOR MECHANICAL WORK, ANCHORAGE SEE MECHANICAL DRAWINGS.

5 Backing Plate Schedule
SCALE: 3" = 1'-0"



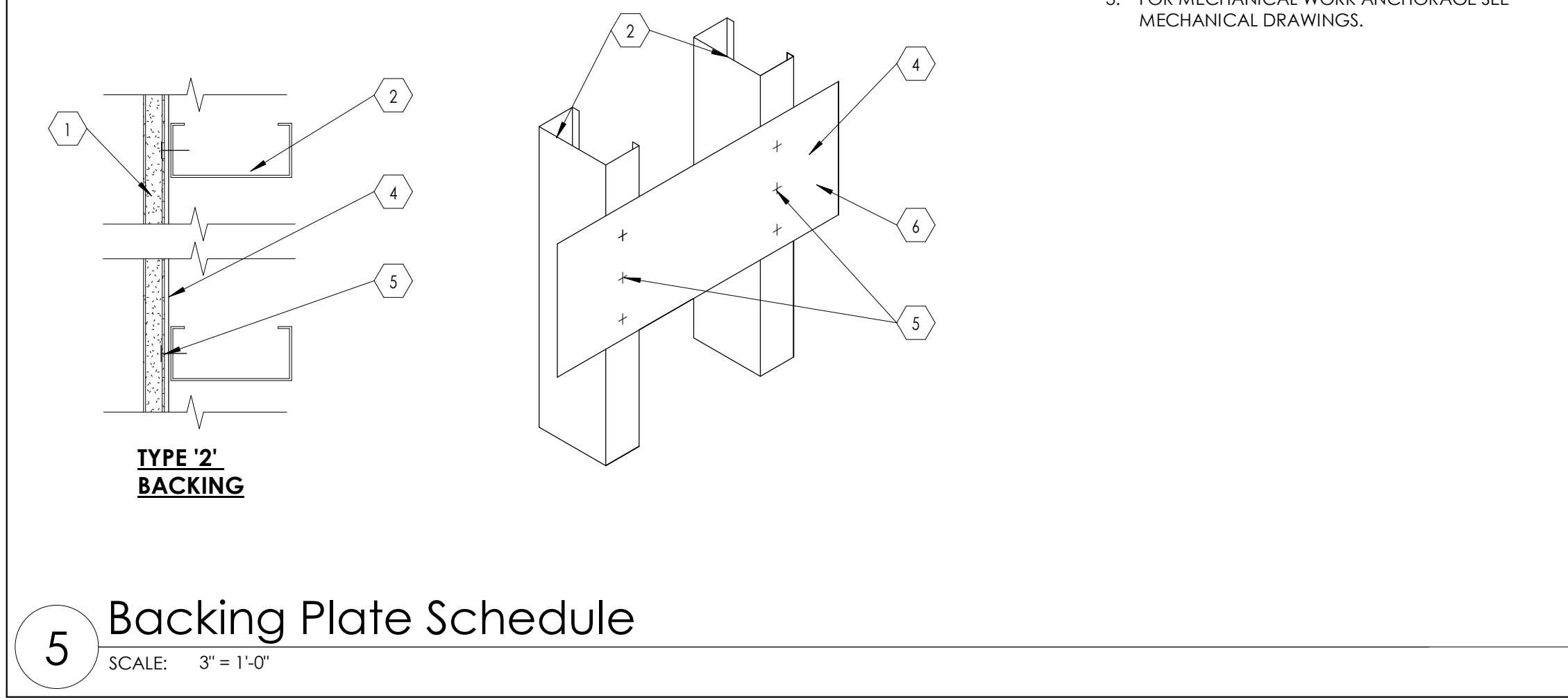
- KEYED NOTES**
- METAL TRACK, 20 GA. TYP.
 - METAL STUDS, 20 GA.
 - METAL STUDS, 16GA.

3 Typical Duct Opening
SCALE: 3" = 1'-0"



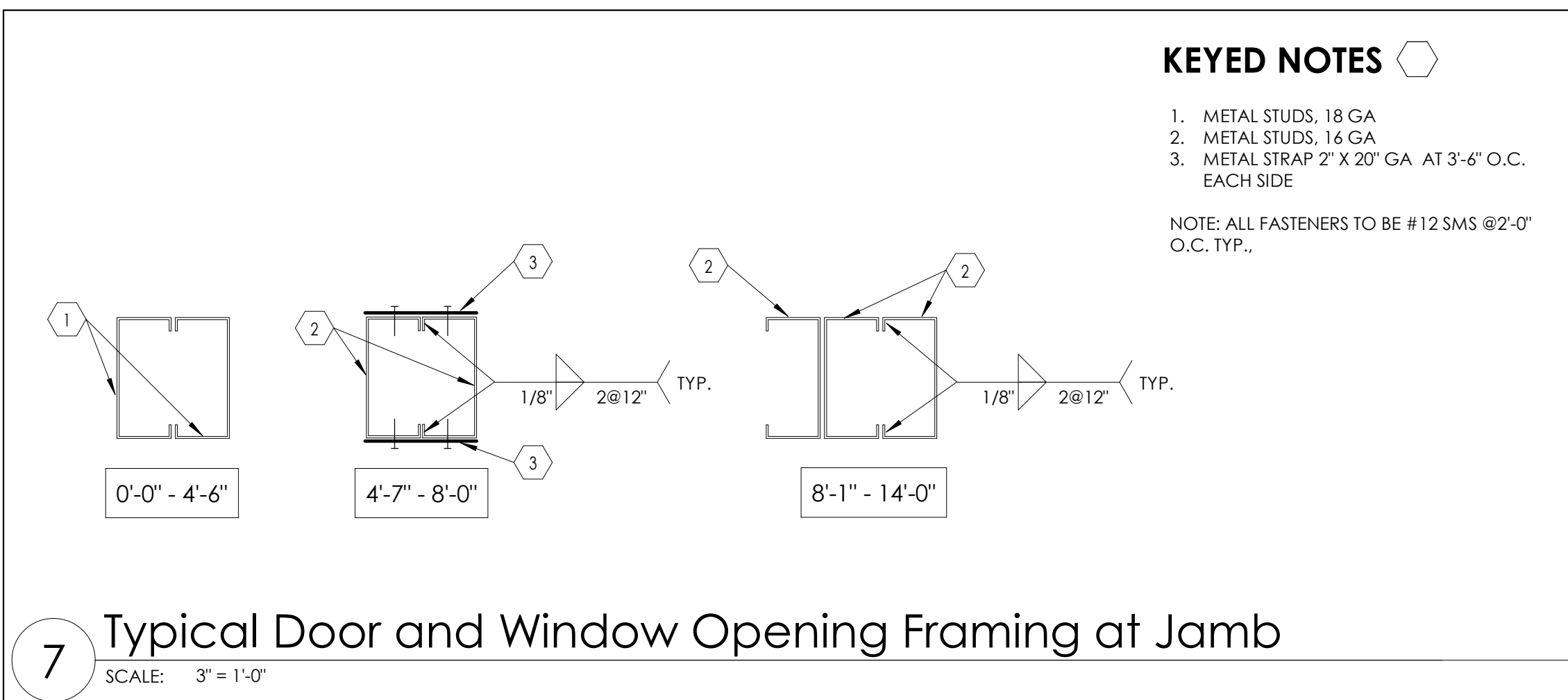
- KEYED NOTES**
- METAL TRACK, 18 GA
 - METAL STUDS, 18 GA
 - METAL TRACK, 16 GA
 - METAL STUDS, 16 GA
 - METAL STUDS, 14 GA 6"
 - METAL TRACK, 14 GA
- NOTE: ALL FASTENERS TO BE #12 SMS @ 2'-0" O.C. TYP., U.N.O.

4 Typical Window Opening Framing at Sill
SCALE: 3" = 1'-0"



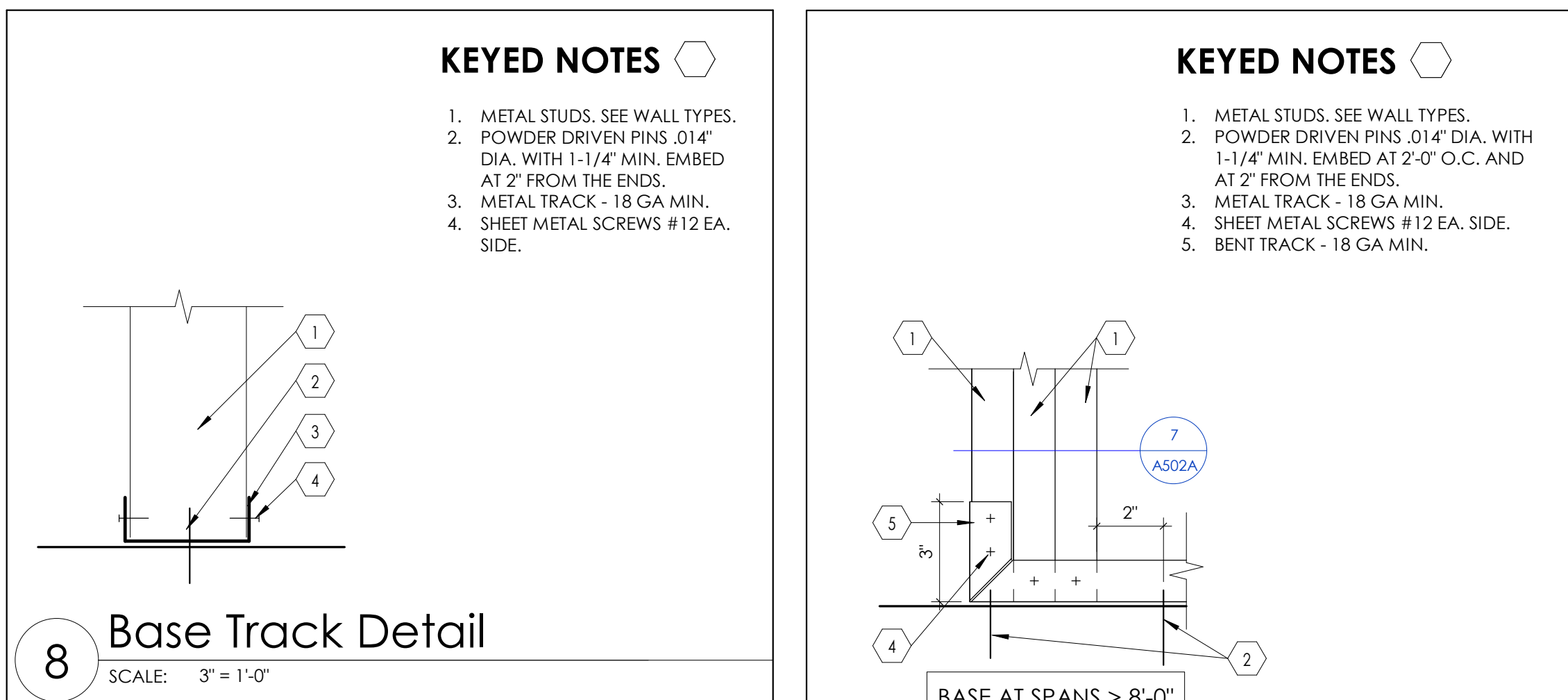
- KEYED NOTES**
- METAL TRACK, 18 GA
 - METAL STUDS, 18 GA
 - METAL TRACK, 16 GA
 - METAL STUDS, 16 GA
 - METAL STUDS, 14 GA 6"
 - METAL TRACK, 14 GA
- NOTE: ALL FASTENERS TO BE #12 SMS @ 2'-0" O.C. TYP., U.N.O.

6 Typical Door and Window Opening Framing at Header
SCALE: 3" = 1'-0"



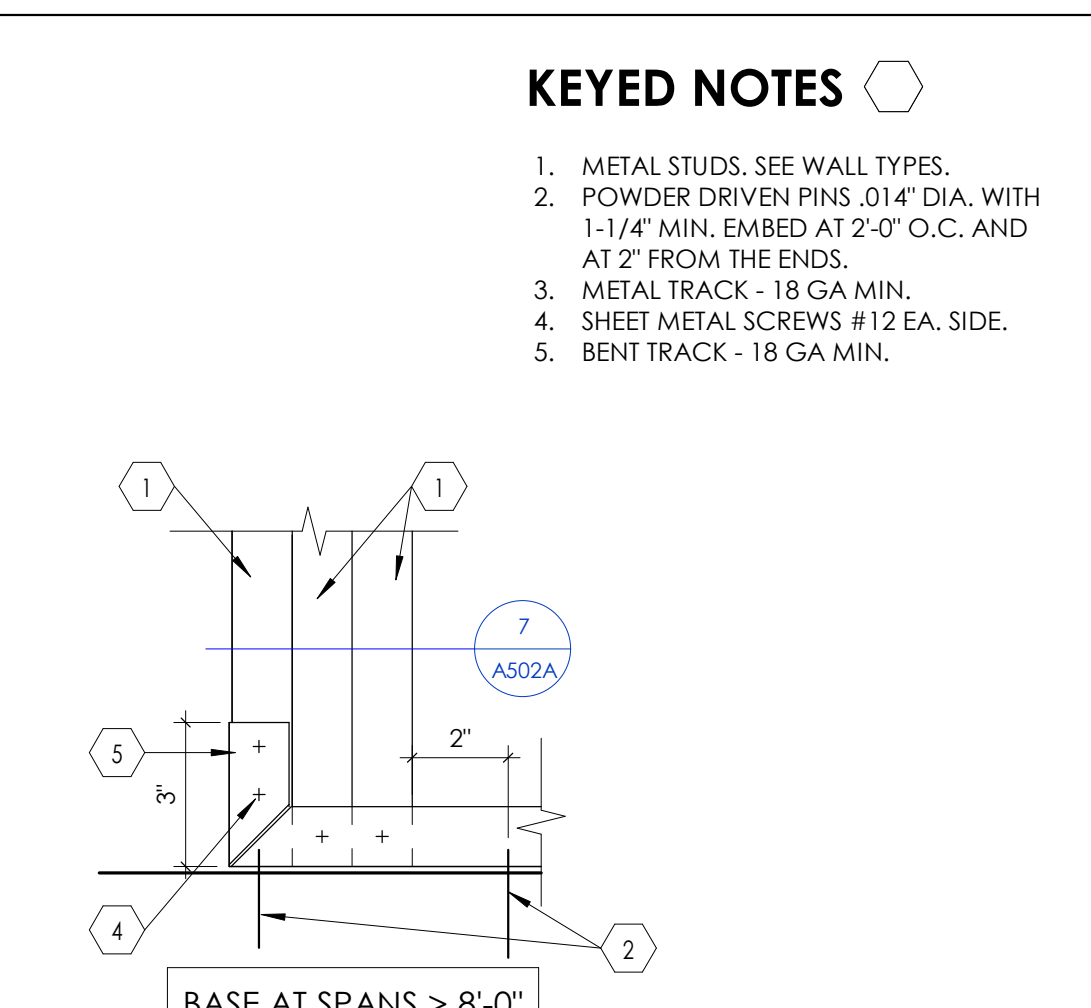
- KEYED NOTES**
- METAL STUDS, 18 GA
 - METAL STUDS, 16 GA
 - METAL STRAP 2" X 20" GA. AT 3'-6" O.C. EACH SIDE
- NOTE: ALL FASTENERS TO BE #12 SMS @ 2'-0" O.C. TYP., U.N.O.

7 Typical Door and Window Opening Framing at Jamb
SCALE: 3" = 1'-0"



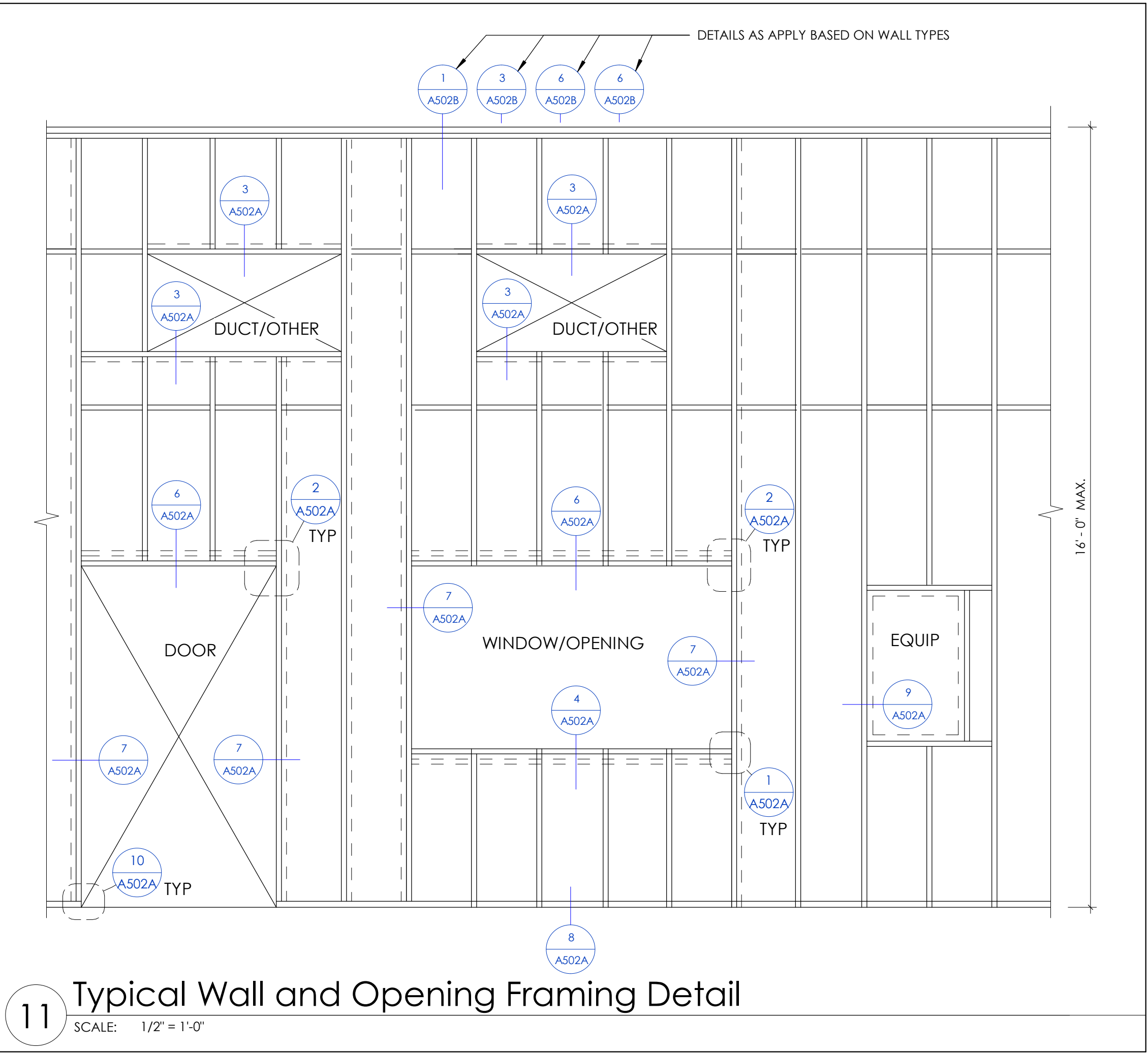
- KEYED NOTES**
- METAL STUDS, SEE WALL TYPES.
 - POWDER DRIVEN PINS .014" DIA. WITH 1-1/4" MIN. EMBED AT 2" FROM THE ENDS.
 - METAL TRACK - 18 GA MIN.
 - SHEET METAL SCREWS #12 EA, SIDE.

8 Base Track Detail
SCALE: 3" = 1'-0"

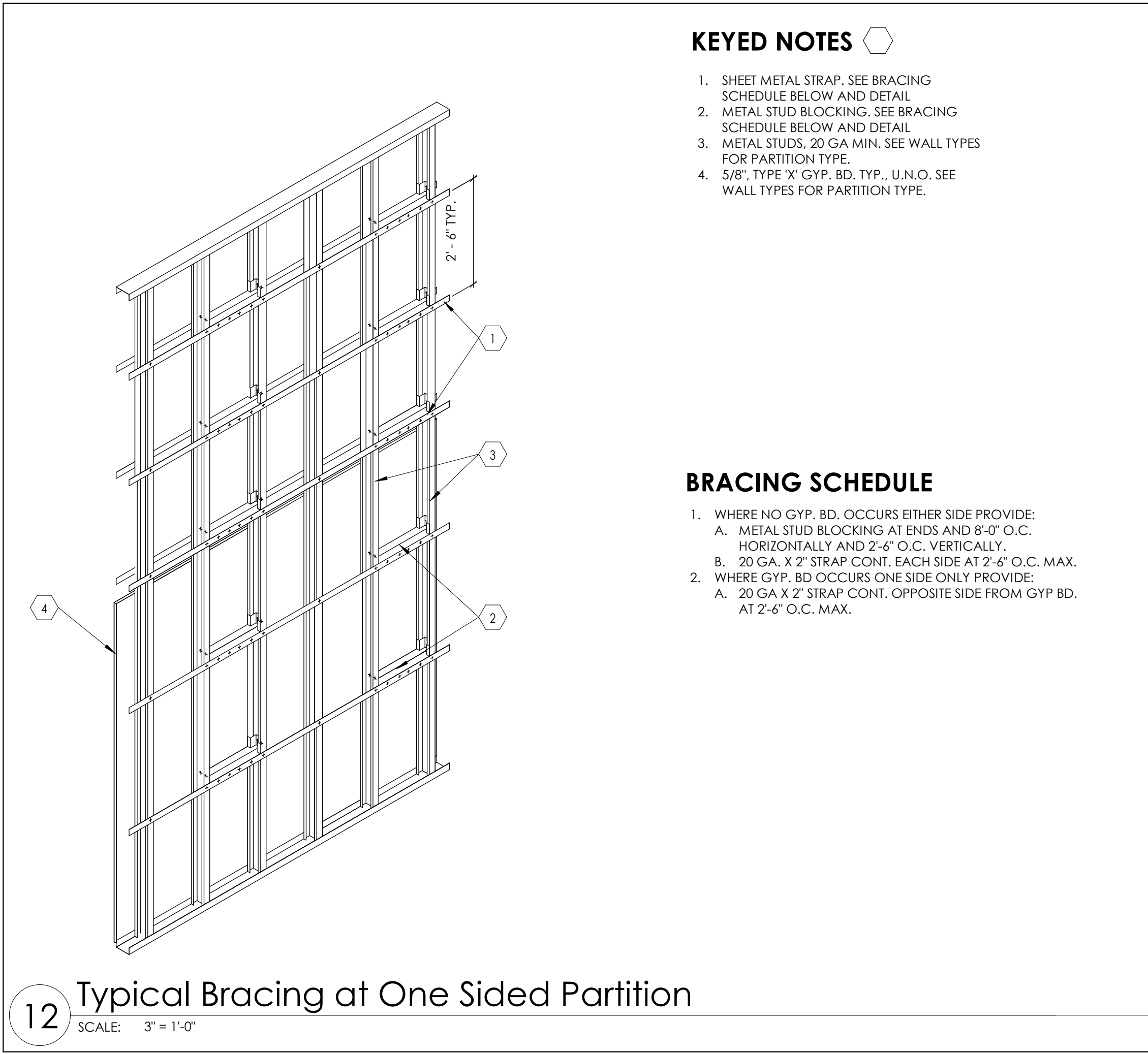


- KEYED NOTES**
- METAL STUDS, SEE WALL TYPES.
 - POWDER DRIVEN PINS .014" DIA. WITH 1-1/4" MIN. EMBED AT 2'-0" O.C. AND AT 2" FROM THE ENDS.
 - METAL TRACK - 18 GA MIN.
 - SHEET METAL SCREWS #12 EA, SIDE.
 - BENT TRACK - 18 GA MIN.

10 Framed Opening at Jamb
SCALE: 3" = 1'-0"



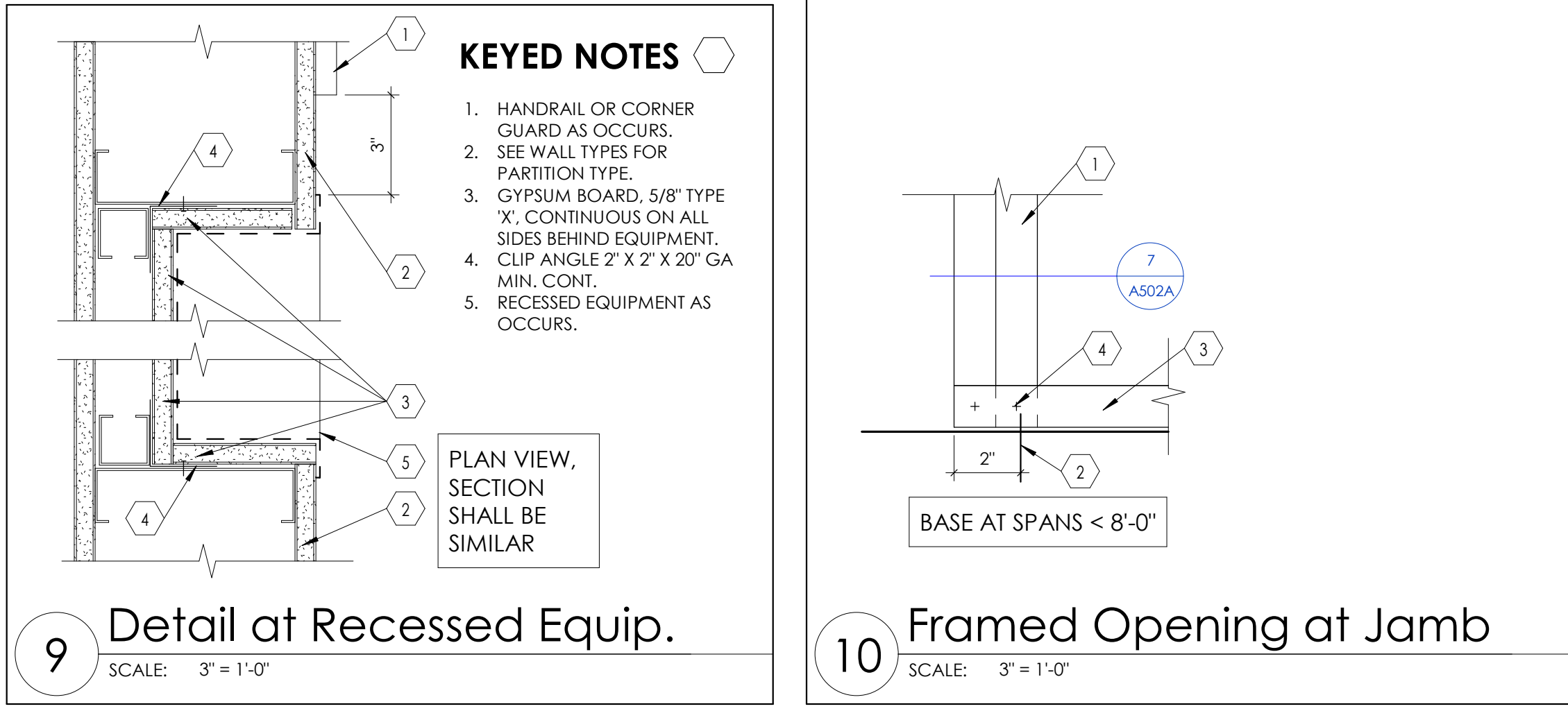
11 Typical Wall and Opening Framing Detail
SCALE: 1/2" = 1'-0"



- KEYED NOTES**
- SHEET METAL STRAP, SEE BRACING SCHEDULE BELOW AND DETAIL
 - METAL STUD BLOCKING, SEE BRACING SCHEDULE BELOW AND DETAIL
 - METAL STUDS, 20 GA MIN. SEE WALL TYPES FOR PARTITION TYPE.
 - 5/8" TYPE 'X' GYP. BD. TYP., U.N.O. SEE WALL TYPES FOR PARTITION TYPE.

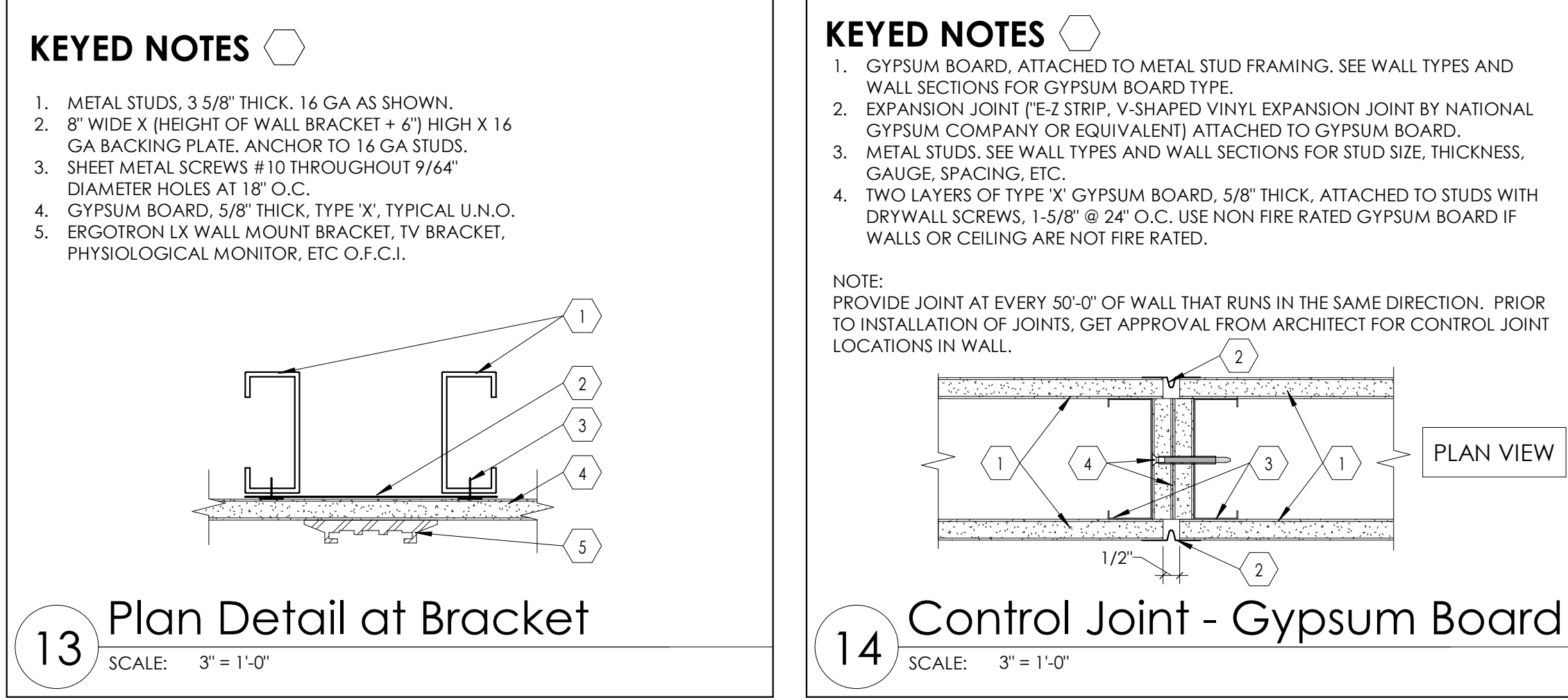
- BRACING SCHEDULE**
- WHERE NO GYP. BD. OCCURS EITHER SIDE PROVIDE:
 - METAL STUD BLOCKING AT ENDS AND 8'-0" O.C. HORIZONTALLY AND 2'-6" O.C. VERTICALLY.
 - 20 GA. X 2" STRAP CONT. EACH SIDE AT 2'-6" O.C. MAX.
 - WHERE GYP. BD OCCURS ONE SIDE ONLY PROVIDE:
 - 20 GA X 2" STRAP CONT. OPPOSITE SIDE FROM GYP BD. AT 2'-6" O.C. MAX.

12 Typical Bracing at One Sided Partition
SCALE: 3" = 1'-0"



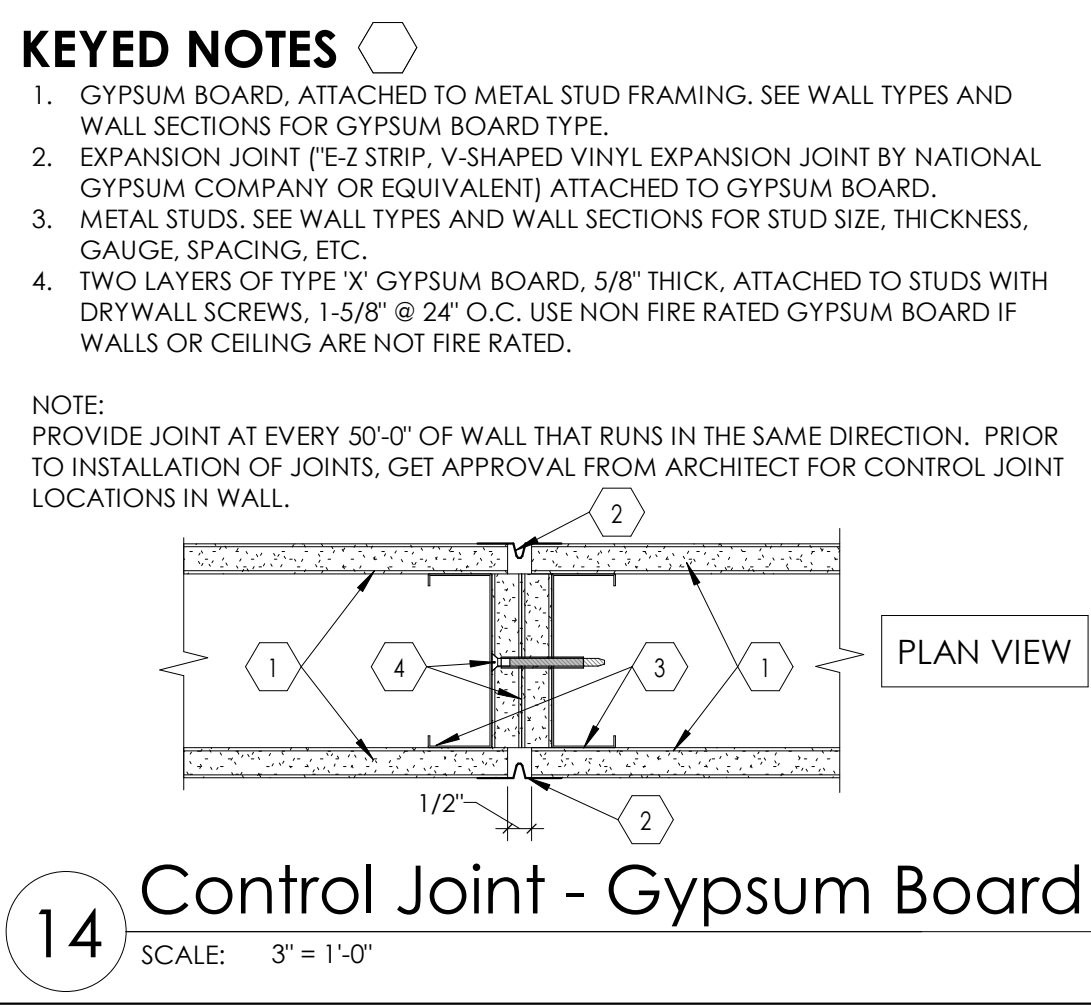
- KEYED NOTES**
- HANDRAIL OR CORNER GUARD AS OCCURS.
 - SEE WALL TYPES FOR PARTITION TYPE.
 - GYPSUM BOARD, 5/8" TYPE 'X', CONTINUOUS ON ALL SIDES BEHIND EQUIPMENT.
 - CLIP ANGLE 2" X 2" X 20" GA MIN. CONT.
 - RECESSED EQUIPMENT AS OCCURS.
- PLAN VIEW, SECTION SHALL BE SIMILAR

9 Detail at Recessed Equip.
SCALE: 3" = 1'-0"



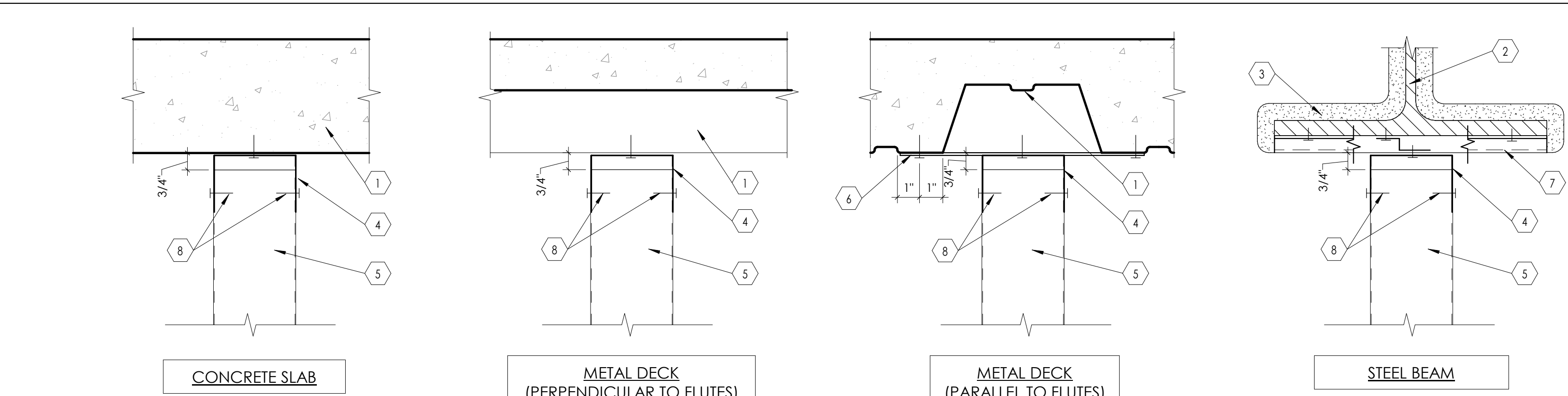
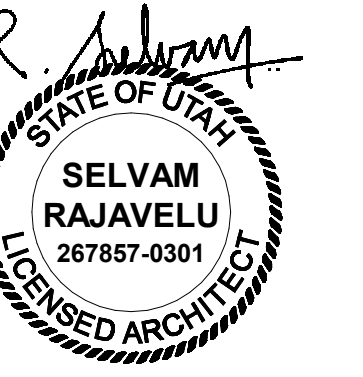
- KEYED NOTES**
- METAL STUDS, 3 5/8" THICK, 16 GA AS SHOWN.
 - 8" WIDE X (HEIGHT OF WALL BRACKET + 6") HIGH X 16 GA BACKING PLATE, ANCHOR TO 16 GA STUDS.
 - SHEET METAL SCREWS #10 THROUGHOUT 9/64" DIAMETER HOLES AT 18" O.C.
 - GYPSUM BOARD, 5/8" THICK, TYPE 'X', TYPICAL U.N.O.
 - ERGOTRON LX WALL MOUNT BRACKET, TV BRACKET, PHYSIOLOGICAL MONITOR, ETC O.F.C.I.

13 Plan Detail at Bracket
SCALE: 3" = 1'-0"



- KEYED NOTES**
- GYPSUM BOARD, ATTACHED TO METAL STUD FRAMING. SEE WALL TYPES AND WALL SECTIONS FOR GYPSUM BOARD TYPE.
 - EXPANSION JOINT (E-Z STRIP, V-SHAPED VINYL EXPANSION JOINT BY NATIONAL GYPSUM COMPANY OR EQUIVALENT) ATTACHED TO GYPSUM BOARD.
 - METAL STUDS, SEE WALL TYPES AND WALL SECTIONS FOR STUD SIZE, THICKNESS, GAUGE, SPACING, ETC.
 - TWO LAYERS OF TYPE 'X' GYPSUM BOARD, 5/8" THICK, ATTACHED TO STUDS WITH DRYWALL SCREWS, 1-5/8" @ 24" O.C. USE NON FIRE RATED GYPSUM BOARD IF WALLS OR CEILING ARE NOT FIRE RATED.
- NOTE: PROVIDE JOINT AT EVERY 50'-0" OF WALL THAT RUNS IN THE SAME DIRECTION. PRIOR TO INSTALLATION OF JOINTS, GET APPROVAL FROM ARCHITECT FOR CONTROL JOINT LOCATIONS IN WALL.

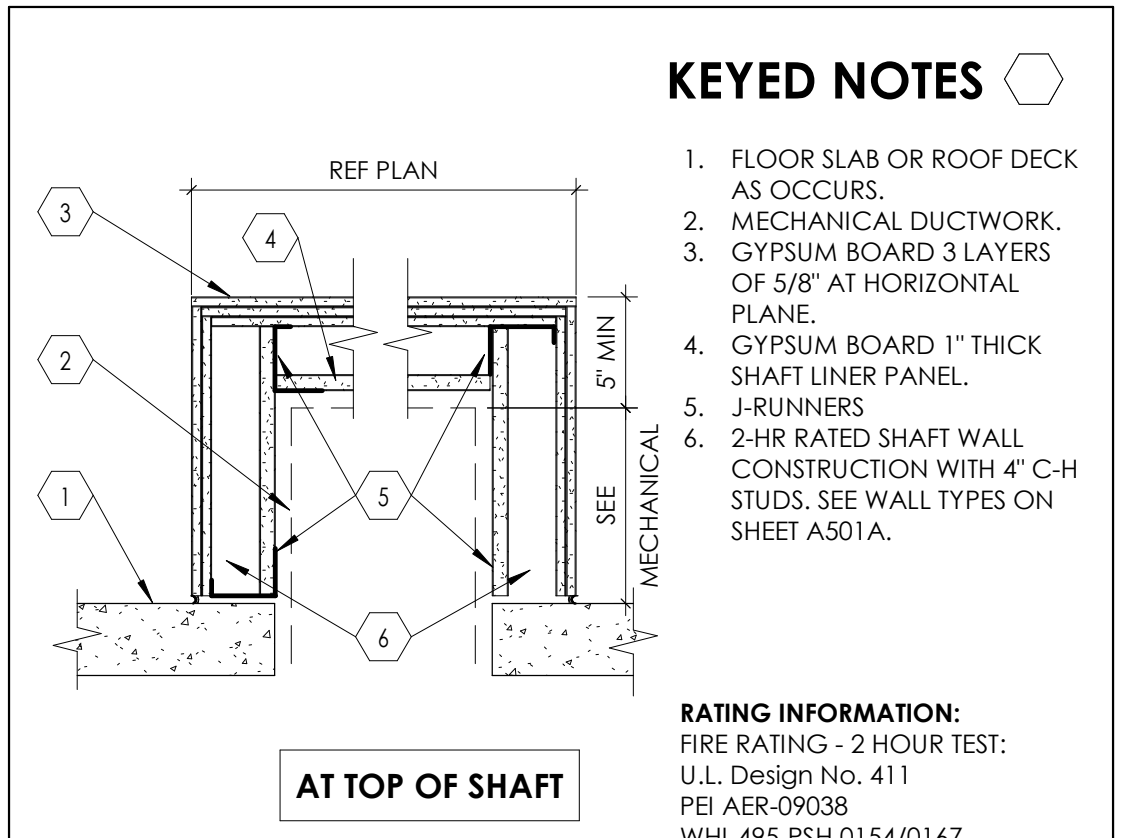
14 Control Joint - Gypsum Board
SCALE: 3" = 1'-0"



1 Head Condition at Non Fire Rated, Non Smoke Rated and Non Sound Barrier Partitions
SCALE: 3" = 1'-0"

KEYED NOTES

- FLOOR OR ROOF DECK AS OCCURS.
- STEEL BEAM AS OCCURS. SEE STRUCTURAL DRAWINGS.
- SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM).
- SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9 / A502B
- METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL INFORMATION.
- STRAPS 2" x 18" GA AT 16" O.C.
- Z-BARS 20 GA TO ACCOMMODATE SFRM THICKNESS.

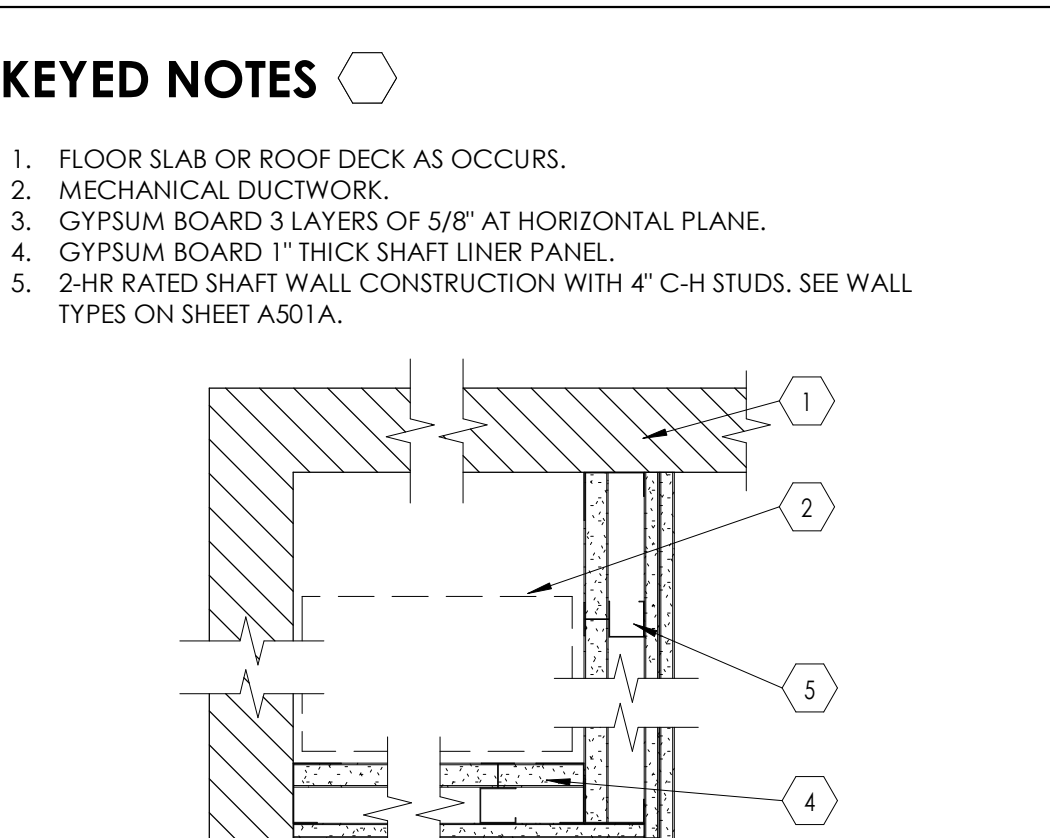


2 2-HR Enclosure at Top of Shaft
SCALE: 1" = 1'-0"

KEYED NOTES

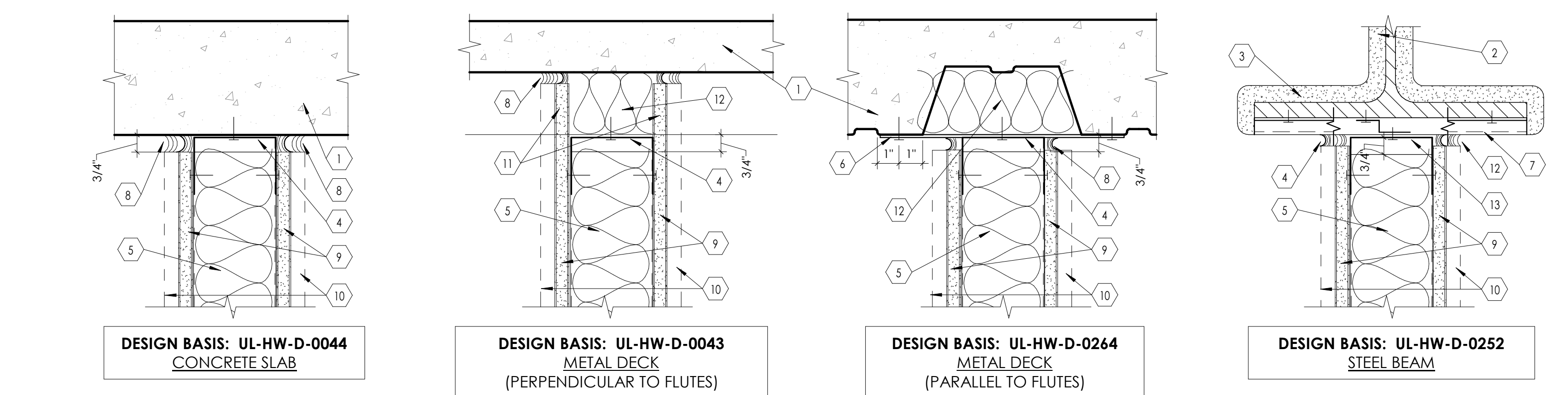
- FLOOR SLAB OR ROOF DECK AS OCCURS.
- MECHANICAL DUCTWORK.
- GYPSON BOARD 3 LAYERS OF 5/8" AT HORIZONTAL PLANE.
- GYPSON BOARD 1" THICK SHAFT LINER PANEL.
- J-RUNNERS
- 2-HR RATED SHAFT WALL CONSTRUCTION WITH 4" C-H STUDS. SEE WALL TYPES ON SHEET A501A.

RATING INFORMATION:
FIRE RATING - 2 HOUR TEST:
U.L. Design No. 411
PEI AER-09038
WHI-495-PSH 0154/0167



5 2-HR Horizontal Assembly
SCALE: 1 1/2" = 1'-0"

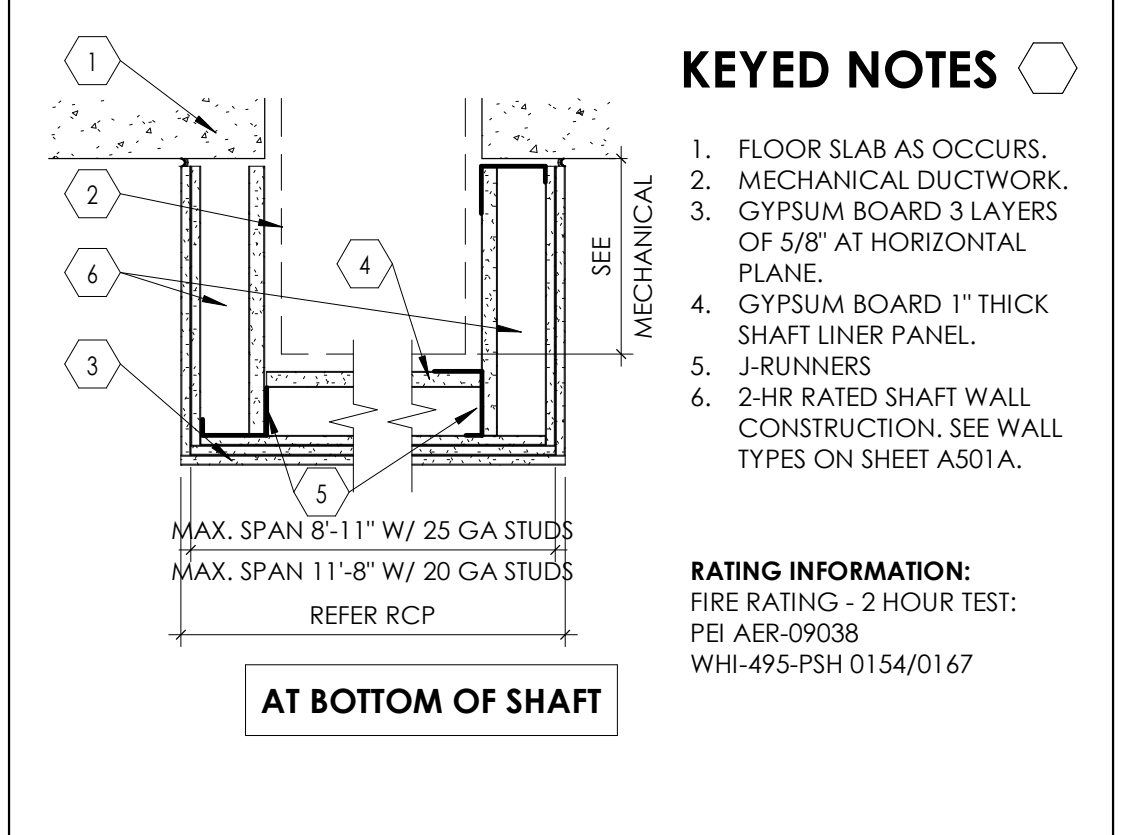
RATING INFORMATION:
HORIZONTAL FIRE RATING - 2 HOUR TEST:
WHI-495-PSH 0154/0167



3 Head Condition at Smoke Partitions and Sound Barrier Walls
SCALE: 3" = 1'-0"

KEYED NOTES

- FLOOR OR ROOF DECK AS OCCURS.
- STEEL BEAM AS OCCURS. SEE STRUCTURAL DRAWINGS.
- SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM).
- SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9 / A502B
- METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL INFORMATION.
- STRAPS 2" x 18" GA AT 16" O.C.
- Z-BARS, 20 GA TO ACCOMMODATE SFRM THICKNESS.
- ACOUSTIC SEALANT, CONTINUOUS.
- GYPSON BOARD, 5/8" THICK. SEE WALL TYPES ON SHEET A501 FOR ADDITIONAL INFORMATION.
- ADDITIONAL LAYER OF GYP. BD. WHERE OCCURS.
- GYPSON BOARD CUT TO FOLLOW PROFILE OF DECKING AT SMOKE PARTITION BOTH AT SOUND WALLS.
- FILL FLUTE VOID WITH BATT INSULATION.

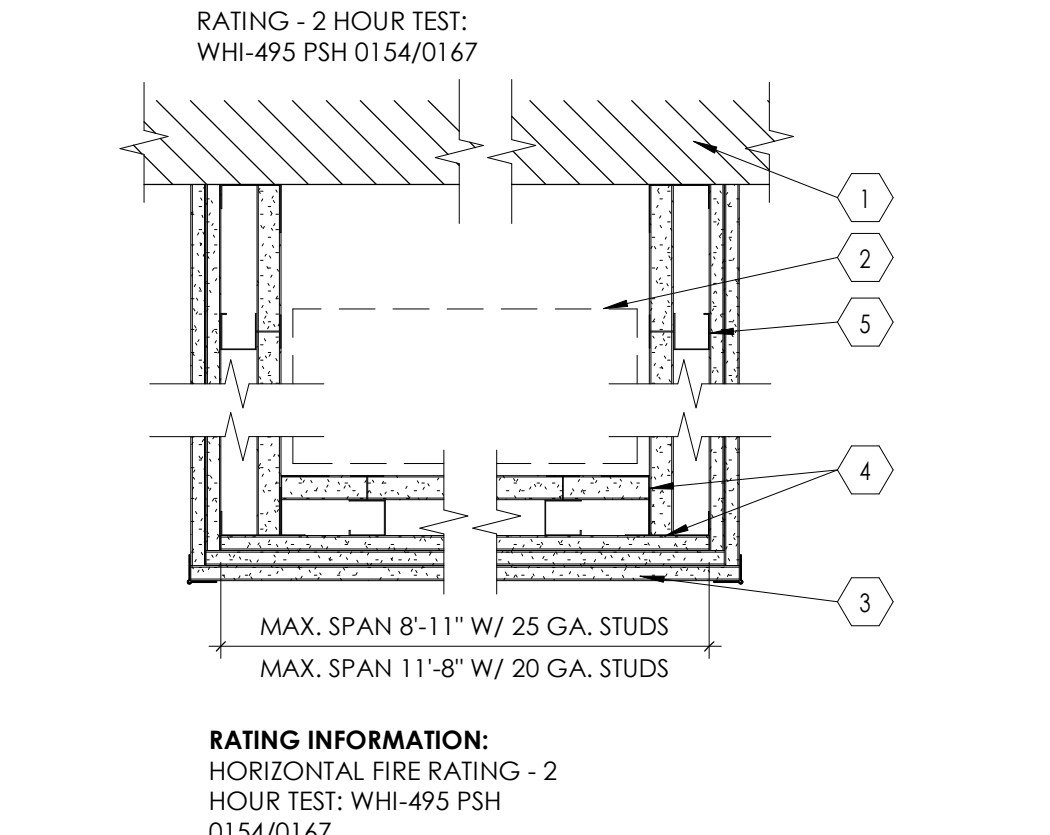


4 2-HR Enclosure at B.O. Shaft
SCALE: 1" = 1'-0"

KEYED NOTES

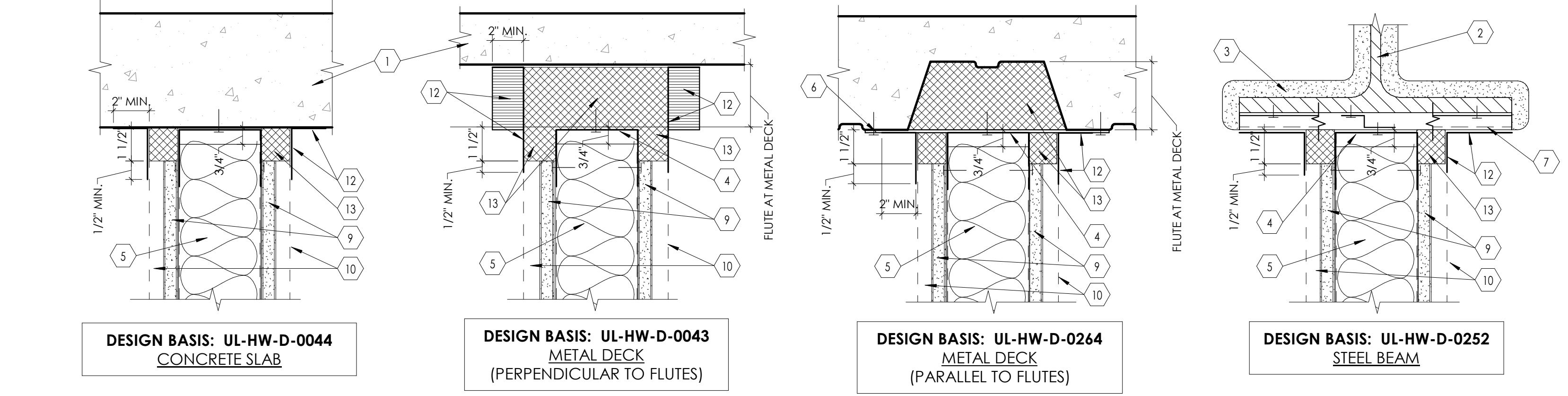
- FLOOR SLAB AS OCCURS.
- MECHANICAL DUCTWORK.
- GYPSON BOARD 3 LAYERS OF 5/8" AT HORIZONTAL PLANE.
- GYPSON BOARD 1" THICK SHAFT LINER PANEL.
- J-RUNNERS
- 2-HR RATED SHAFT WALL CONSTRUCTION. SEE WALL TYPES ON SHEET A501A.

RATING INFORMATION:
FIRE RATING - 2 HOUR TEST:
PEI AER-09038
WHI-495-PSH 0154/0167



5 2-HR Horizontal Assembly
SCALE: 1 1/2" = 1'-0"

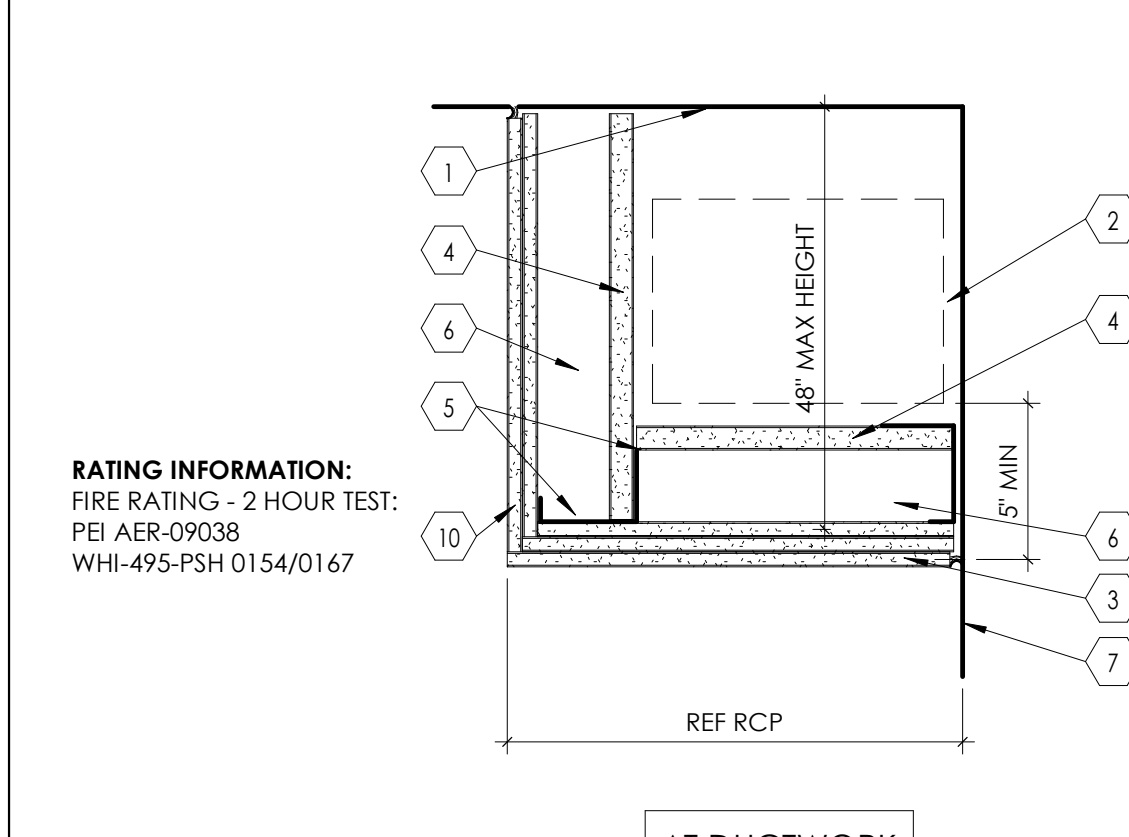
RATING INFORMATION:
HORIZONTAL FIRE RATING - 2 HOUR TEST:
WHI-495-PSH 0154/0167



6 Head Condition at Fire Rated Partitions
SCALE: 3" = 1'-0"

KEYED NOTES

- FLOOR OR ROOF DECK AS OCCURS.
- STEEL BEAM AS OCCURS. SEE STRUCTURAL DRAWINGS.
- SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM).
- SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9 / A502B
- METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL INFORMATION.
- STRAPS 2" x 18" GA AT 16" O.C.
- Z-BARS, 20 GA TO ACCOMMODATE SFRM THICKNESS.
- ACOUSTIC SEALANT, CONTINUOUS.
- GYPSON BOARD, 5/8" THICK, TYPE 'X'.
- ADDITIONAL LAYER OF GYP. BD. AT 2-HR RATED WALLS.
- GYPSON BOARD CUT TO FOLLOW PROFILE OF DECKING AT SMOKE PARTITION BOTH AT SOUND WALLS.
- FIRE STOP JOINT SPRAY.
- MINERAL WOOL 4 LB. FRICTION FIT BETWEEN TOP TRACK AND FLUTE.

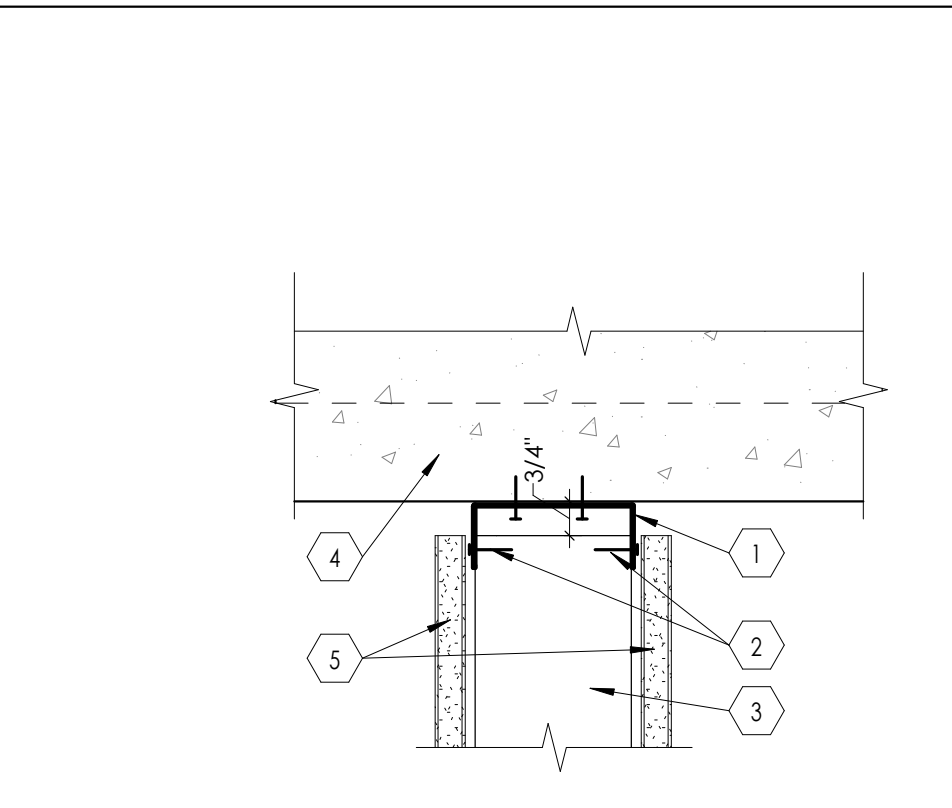


8 2-HR Horizontal Enclosure
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

- FLOOR SLAB OR ROOF DECK AS OCCURS.
- MECHANICAL DUCTWORK.
- GYPSON BOARD 3 LAYERS OF 5/8" AT HORIZONTAL PLANE.
- GYPSON BOARD 1" THICK SHAFT LINER PANEL.
- J-RUNNERS
- 2-HR RATED SHAFT WALL CONSTRUCTION WITH 4" C-H STUDS. SEE WALL TYPES ON SHEET A501A.
- WALL BEYOND.
- METAL STUD FRAMING. SEE PLANS FOR STUD SIZE.
- SHAFT WALL FRAMING WITH 1 1/2" C-H STUDS.
- GYPSON BOARD 2 LAYERS OF 5/8".

RATING INFORMATION:
FIRE RATING - 2 HOUR TEST:
PEI AER-09038
WHI-495-PSH 0154/0167



9 Slip Connection Detail
SCALE: 3" = 1'-0"

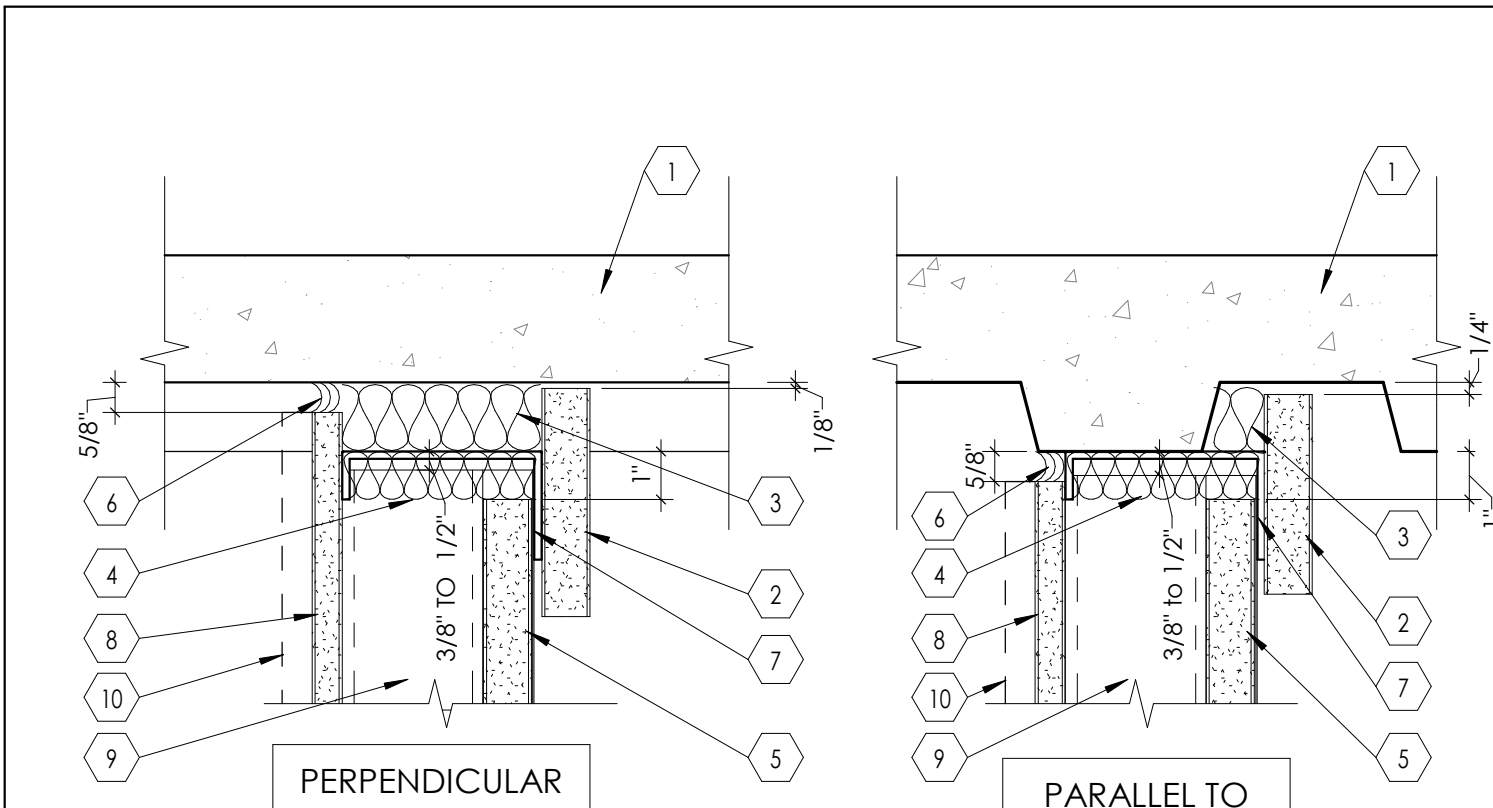
KEYED NOTES

- SLOTTED DEEP LEG DEFLECTION TRACK, 1/4" CONTINUOUS. SECURE TO SUPERSTRUCTURE ABOVE IN A WAY THAT PROVIDES LATERAL STABILITY (PERPENDICULAR-TO AND IN-PLANE WITH WALL) YET ALLOWING FOR A MINIMUM OF 3/4" OF VERTICAL DEFLECTION OF THE SUPERSTRUCTURE.
- SLIP CONNECTION. SECURE VERTICAL STUDS TO SLOTTED TOP TRACK AT MID-HEIGHT OF VERTICAL SLOTS IN TRACK. COMPONENTS INTENDED TO SLIDE VERTICALLY AS SUPERSTRUCTURE DEFLECTS.
- VERTICAL STUD. SEE INTERIOR WALL TYPES ON SHEET A501A.
- FLOOR OR ROOF DECK AS OCCURS.
- GYPSON BOARD, 5/8" THICK, TYPE 'X'. TYPICAL. DO NOT SCREW GYPSON WALLBOARD TO TOP TRACK OR SUPERSTRUCTURE. GWS SCREWS INTO THE STUDS MUST BE AT LEAST 1" BELOW THE BOTTOM OF THE TOP TRACK.

GENERAL NOTES

- CONDITIONS INDICATED SHOW DESIGN INTENT, ESPECIALLY IN REGARD TO ACCOMMODATION OF STRUCTURAL DEFLECTION AND CONTINUITY OF INTEGRITY OF SOUND, SMOKE AND FIRE WALLS.
- DESIGN INTENT DETAILS MAY NOT SHOW ALL CONDITIONS TO BE ENCOUNTERED ON A PROJECT.
- RIGIDLY SECURE SLOTTED TOP TRACK TO BUILDING SUPERSTRUCTURE IN AN APPROVED MANNER. EMPLOY Z-BARS, COLD-ROLLED CHANNELS OR SIMILAR SPACER TO ACCOMMODATE THICKNESS OF SPRAY-APPLIED FIRE-RESISTIVE MATERIALS (SFRM).
- SLOTTED TOP TRACK, INDICATED ON THESE DETAILS, IS THE BASIS FOR DESIGN AND REFERS TO DEEP-LEG TRACKS WITH VERTICALLY SLOTTED HOLES.
- REFER TO PARTITION STANDARDS FOR SPECIFIC WALL TYPES.
- AT FIRE-RATED WALLS REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING HEAD-OF-WALL CONDITIONS.
- MAINTAIN ACOUSTIC RATING WHERE SOUND-CONTROL WALLS ARE INDICATED.
- FIRESTOPPING AND ACOUSTICAL SEALANTS SHALL AUTOBOND. PROVIDE EXPOSED CLEAN SEALANT (TO CONCEAL FIRESTOPPING) AT FOOD SERVICE FACILITIES, KITCHEN, BIOLOGICAL CONTAINMENT AND CLEAN ROOM APPLICATIONS.
- WHERE A WALL IS DESIGNATED AS BOTH A SOUND-CONTROL WALL AND A FIRE-RATED WALL. REFER TO FIRE-RATED HEAD-OF-WALL CONDITIONS.
- WHERE A WALL IS DESIGNATED AS A SOUND-CONTROL WALL. FILL ALL VOIDS WITH SOUND ATTENUATION BATTS (SAB).
- AT SMOKE PARTITIONS AND SOUND-CONTROL WALLS EXTEND GWS ON BOTH SIDES INTO THE FLUTES, CUT TO FOLLOW UNUNDULATING SURFACES OF THE SUPERSTRUCTURE INCLUDING, BUT NOT LIMITED TO, FLUTES IN METAL DECKING. PROVIDE A CONTINUOUS BEAD OF SEALANT (AS SPECIFIED) TO SUPERSTRUCTURE.

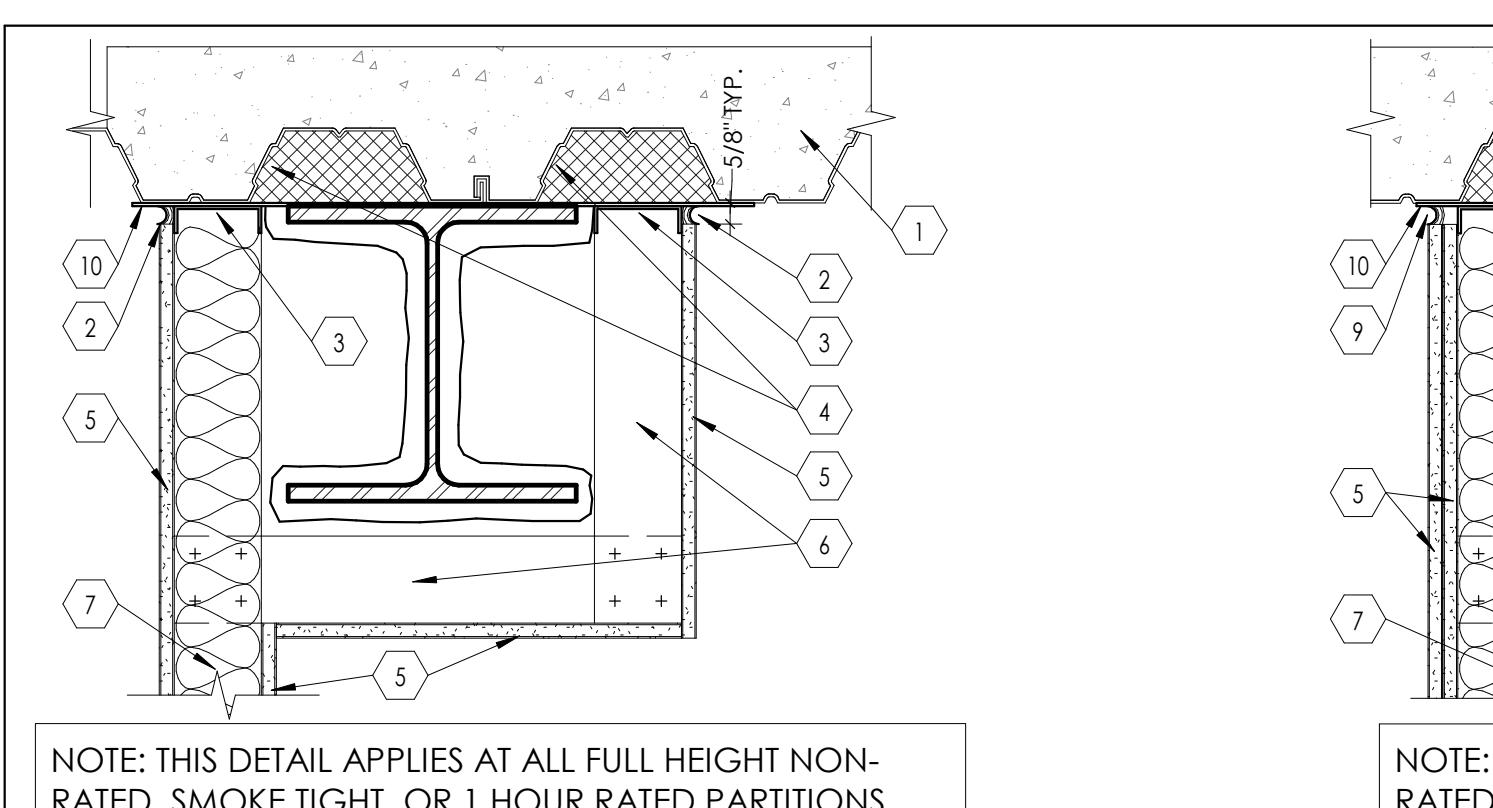
ISOMETRIC VIEW OF SLOTTED TOP TRACK



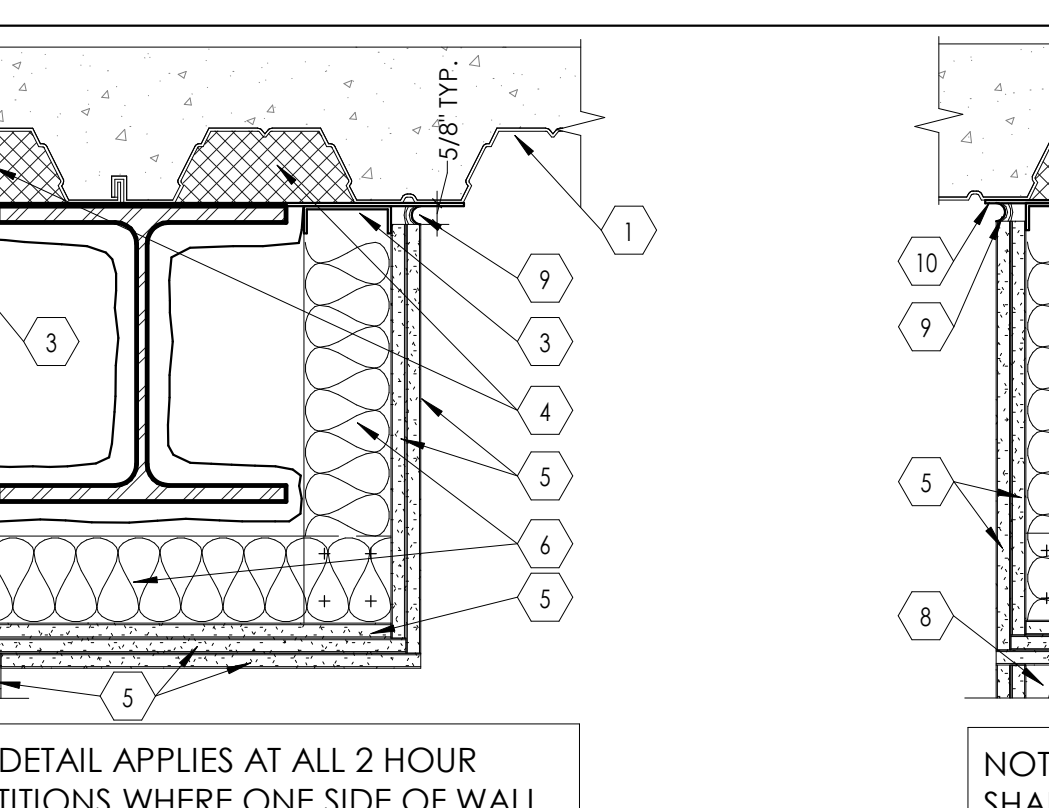
7 Head Detail at Shaft Wall
SCALE: 3" = 1'-0"

KEYED NOTES

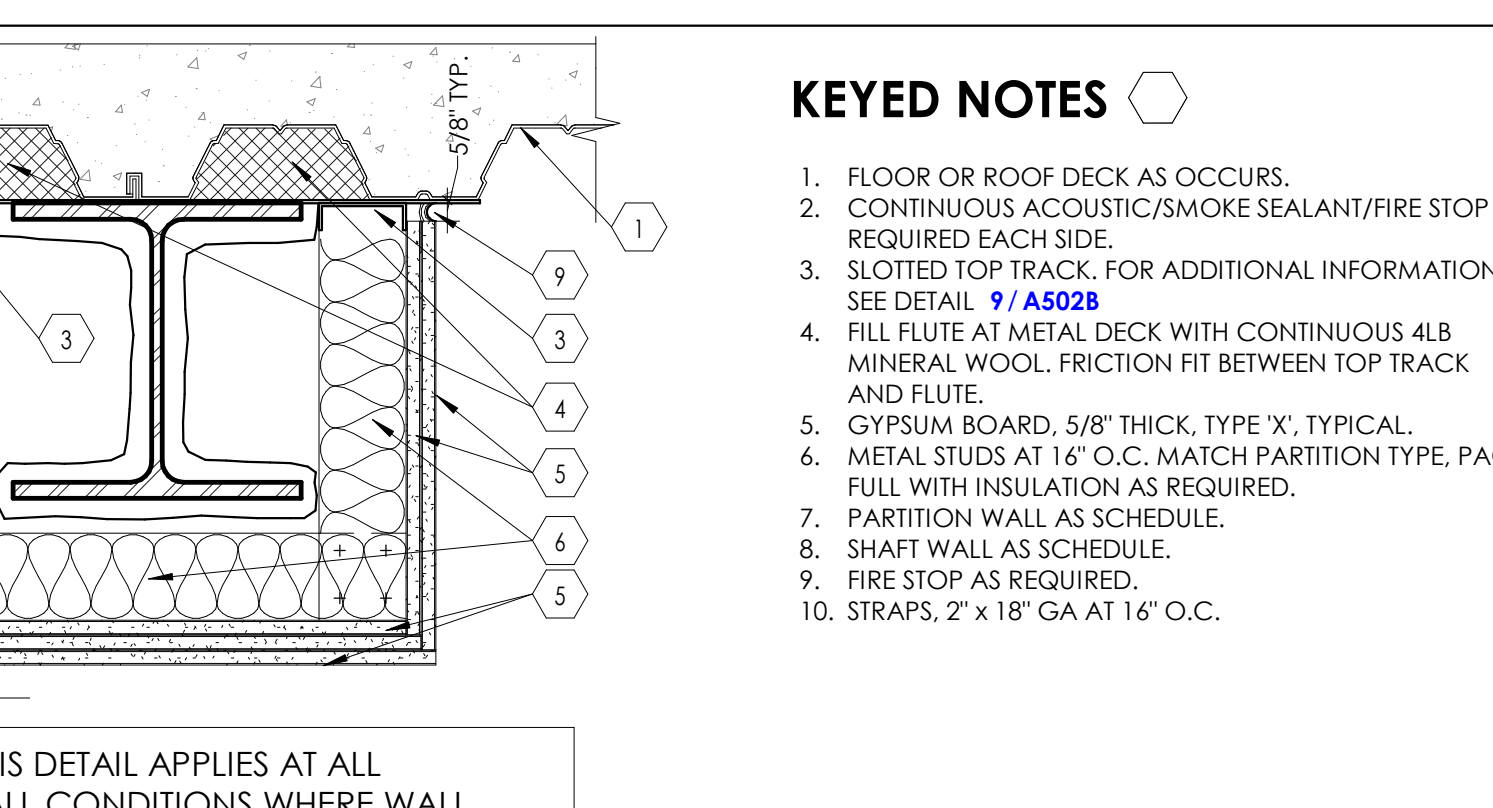
- FLOOR OR ROOF DECK AS OCCURS.
- GYPSON BOARD 1" SHAFT LINER PANEL 6" HIGH MIN. CUT TO FLUTED DECK CONTOUR.
- MINERAL WOOL 3" 4 LB MIN. FRICTION FITTED BETWEEN J TRACK AND FLUTE.
- MINERAL WOOL 1" 4 LB MIN. FRICTION FITTED INSIDE J TRACK CAVITY.
- GYPSON BOARD 1" SHAFT LINER PANEL STOP AT 1" BELOW THE BOTTOM OF DECK.
- ACOUSTICAL SEALANT 5/8" x CONT.
- J TRACK SEE WALL TYPES.
- GYPSON BOARD 5/8" THICK, TYPE 'X'. PANELS CUT TO FLUTED DECK CONTOUR. SEE WALL TYPES.
- C-H STUDS @ 24" O.C. MAX. SEE WALL TYPES FOR SIZE.
- ADDITIONAL LAYER OF GYPSON BOARD AT 2-HR RATED SHAFT WALL SHOWN DASHED. SEE WALL TYPES ON SHEET A501A.



10 Alternate Framing Details at Rated Walls
SCALE: 1 1/2" = 1'-0"



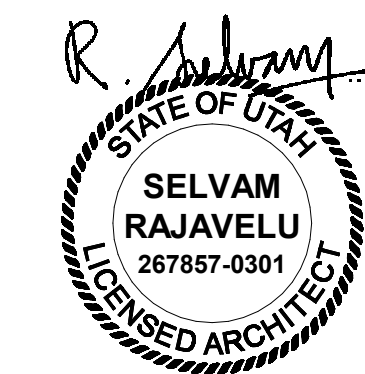
NOTE: THIS DETAIL APPLIES AT ALL 2 HOUR RATED PARTITIONS WHERE ONE SIDE OF WALL IS OBSTRUCTED. U.N.O.



NOTE: THIS DETAIL APPLIES AT ALL SHAFTWALL CONDITIONS WHERE WALL CANNOT EXTEND FULLY TO DECK. U.N.O.

KEYED NOTES

- FLOOR OR ROOF DECK AS OCCURS.
- CONTINUOUS ACOUSTIC/SMOKE SEALANT/FIRE STOP AS REQUIRED EACH SIDE.
- SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9 / A502B
- FILL FLUTE AT METAL DECK WITH CONTINUOUS 4LB MINERAL WOOL. FRICTION FIT BETWEEN TOP TRACK AND FLUTE.
- GYPSON BOARD, 5/8" THICK, TYPE 'X'. TYPICAL.
- METAL STUDS AT 16" O.C. MATCH PARTITION TYPE, PACT FULL WITH INSULATION AS REQUIRED.
- PARTITION WALL AS SCHEDULE.
- SHAFT WALL AS SCHEDULE.
- FIRE STOP AS REQUIRED.
- STRAPS, 2" x 18" GA AT 16" O.C.



KEYED NOTES

1. EXPOSED CROSS GRID MEMBER @ 2'-0" O.C.
2. EXPOSED MAIN GRID MEMBER @ 4'-0"
3. HANGER WIRE 12 GA. @ 4'-0" O.C. MAX EACH WAY.
4. SEISMIC RESTRAINT. SEE DETAIL 7 / A503A
5. SLOTTED ANGLE SPACER.

NOTE: EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, SPRINKLER HEADS AND OTHER PENETRATIONS SHALL HAVE A 2" OVERSIZE RING, SLEEVE, OR ADAPTER THROUGH THE CEILING TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS.

1 Typical Acoustical Ceiling Suspension
SCALE: 1/8" = 1'-0"

KEYED NOTES

1. MAIN RUNNER 1 1/2" @ 4'-0" O.C.
2. FURRING CHANNEL @ 1'-4" O.C.
3. HANGER WIRE 8 GA. @ 4'-0" O.C. MAX EACH WAY
4. SEISMIC RESTRAINT. SEE DETAIL 8 / A503A

2 Typical Gypsum Bd Ceiling Suspension
SCALE: 1/8" = 1'-0"

KEYED NOTES

1. CONCRETE OVER METAL DECK OR CONCRETE PAN & JOIST SYSTEM.
2. CONTINUOUS METAL PLATE 10 GA X 1'-4" WIDE WITH (2) 1/4" EXPANSION BOLTS.
3. LONG LEG TRACK 16 GA WITH (2) #12 S.M.S. @ 16" O.C.
4. METAL STUD 18 GA MIN. 3-5/8" @ 4'-0" O.C.
5. PL WASHER 1/8" X 3" X 3"

CONTRACTORS OPTION IN LIEU OF E.B. 1/8"

CONTRACTORS OPTION IN LIEU OF E.B. WHEN STUD IS BELOW DECK PLATE 1/8"

3 Typical Suspended Stud Attachment To Concrete Deck
SCALE: 3" = 1'-0"

KEYED NOTES

1. CLASS 1 ZINC COATED, SOFT TEMPERED WIRES, 12 GAUGE MIN.
2. PROVIDE 3/4" GAP BETWEEN CEILING GRID AND ANGLE ON TWO ADJACENT SIDES OF THE ROOM. DO NOT ATTACH CEILING GRID TO WALL ANGLE.
3. ATTACH CEILING GRID TO WALL ANGLE ON TWO ADJACENT SIDES OF THE ROOM (FIXED SIDES).
4. EXPOSED CROSS RUNNER ATTACHED TO MAIN RUNNERS.
5. ACOUSTICAL CEILING TILES. SEE CEILING PLANS.
6. 7/8" SUPPORTING CLOSURE ANGLE AT CEILING PERIMETER ATTACHED TO WALL.
7. EXPOSED MAIN RUNNER SHALL BE HEAVY DUTY T-BAR GRID SYSTEM SUSPENDED FROM STRUCTURE ABOVE. THIS END OF THE GRID SHALL REST UPON AND BE FREE TO SLIDE ON THE CLOSURE ANGLE.
8. LINE OF WALL.
9. SEISMIC CLIPS. BASIS OF DESIGN ARMSTRONG BERC 2 CLIPS IN LIEU OF 2" WALL ANGLE PER ICC-ESR 1308.

NOTE: EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, SPRINKLER HEADS AND OTHER PENETRATIONS SHALL HAVE A 2" OVERSIZE RING, SLEEVE, OR ADAPTER THROUGH THE CEILING TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS.

4 Ceiling Grid Detail
SCALE: 3" = 1'-0"

KEYED NOTES

1. LINE OF STRUCTURE ABOVE.
2. LINE OF WALL.
3. METAL STUD FRAMING (3-5/8" THICK, 18 GAUGE, METAL STUDS AT 16" O.C.) SUSPENDED FROM STRUCTURE ABOVE (OR WALL WHERE OCCURS). CROSS BRACE FRAMING AS REQUIRED FOR STRUCTURAL RIGIDITY.
4. ATTACH 5/8" THICK, TYPE 'X', GYPSUM BOARD TO METAL STUD FRAMING.

5 Ceiling Detail
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. METAL STUD FRAMING 3 5/8" X 18 GA STUDS, SUSPENDED FROM STRUCTURE ABOVE @ 16" O.C. SEE DETAIL 3 / A503A
2. METAL STUD 3-5/8" X 18 GA LATERAL (45 DEGREE) BRACING AT 4'-0" O.C. CONNECT TO STRUCTURE ABOVE.
3. SHEET METAL SCREWS (4) #10.
4. ACOUSTICAL CEILING PANEL. SEE REFLECTED CEILING PLANS.
5. PERIMETER ANGLE MOLDING. SEE DETAIL 4 / A503A
6. GYPSUM BOARD 5/8" TYPE 'X', TYP.
7. HANGER WIRES 12 GA, TYP.

6 Gypsum Board Header
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. RIGID HORIZONTAL RESTRAINT FROM CEILING GRID TO STRUCTURE ABOVE.
2. CLASS 1 ZINC COATED, SOFT TEMPERED WIRES, 12 GAUGE MIN.

NOTE: EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, SPRINKLER HEADS AND OTHER PENETRATIONS SHALL HAVE A 2" OVERSIZE RING, SLEEVE, OR ADAPTER THROUGH THE CEILING TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS.

7 Ceiling Detail
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. SHEET METAL #12 SCREWS
2. METAL CLIP 12 GA MIN X 3/4" W.
3. MACHINE BOLT 1/2" DIA. MIN.
4. ANGLE STRUT OR CHANNEL
5. METAL CLIP 1" W X 2" X 12 GA. MIN.
6. DIAGONAL HANGER WIRES 12 GA MIN. - 4 SIDES.
7. FURRING CHANNEL, 7/8" THICK, @ 1'-4" O.C. MAXIMUM.
8. METAL RUNNER CHANNELS, 1 1/2" THICK AT 48" O.C.
9. GYPSUM BOARD 5/8" THICK ATTACHED TO METAL FURRING CHANNEL.

8 Gypsum Board Ceiling Seismic Restraint Detail
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. GYPSUM BOARD, 5/8" THICK (USE TYPE 'X' IF WALLS ARE FIRE RATED) ATTACHED TO METAL STUD FRAMING.
2. LINE OF WALL.
3. LINE OF CEILING AS OCCURS. SEE REFLECTED CEILING PLAN FOR CEILING TYPE.
4. METAL STUD FRAMING 3 5/8" THICK, 20 GAUGE STUDS, SUSPENDED FROM STRUCTURE ABOVE. STUDS SHALL BE AT 16" O.C.
5. LINE OF STRUCTURE ABOVE.

9 Gypsum Board Soffit
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. EXPANSION SLEEVES 4"x1 1/2", BASIS OF DESIGN: ARMSTRONG E54. COLOR: WHITE.
2. MAIN BEAM, BASIS OF DESIGN: ARMSTRONG PRELUDE 15/16" XL EXPOSED TEE SYSTEM.
3. SEISMIC SEPARATION JOINT CLIP, BASIS OF DESIGN: ARMSTRONG SJMR-4"x1".
4. SEISMIC SEPARATION JOINT CLIP, BASIS OF DESIGN: ARMSTRONG SJCS-5"x1 1/2".
5. CROSS TEES, BASIS OF DESIGN: ARMSTRONG PRELUDE 15/16" XL EXPOSED TEE SYSTEM.

10 Seismic Separation Joint Clip Detail
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

1. STEEL BEAM AS OCCURS.
2. STEEL JOIST AS OCCURS.
3. MECHANICAL DUCTS, SEE MECHANICAL DRAWINGS
4. LINE OF WALL.
5. UNISTRUT F1000, 4" LONG SUSPENDED FROM STRUCTURE ABOVE
6. THREADED ROD, 5/8" THICK. PROVIDE NUTS, WASHERS, CLAMPS, ETC. AS REQUIRED FOR COMPLETE INSTALLATION.
7. UNISTRUT, F1000, CROSS BRACE TO STRUCTURE. PROVIDE NUTS, WASHERS, CLAMPS, ETC. AS REQUIRED FOR COMPLETE INSTALLATION.
8. UNISTRUT, F1001 @ 2'-0" O.C. SUSPENDED FROM STRUCTURE ABOVE.
9. LIGHT FIXTURE SUSPENDED FROM UNISTRUT ONLY. DO NOT HANG FIXTURES FROM DUCTS.
10. CEILING SEE RFP FOR HEIGHT. SUSPEND CEILING GRID FROM UNISTRUT ONLY. CONTRACTOR SHALL NOT SUSPEND LIGHTS, GRIDS, ETC. FROM DUCTS.

NOTE: CONTRACTOR SHALL PROVIDE UNISTRUTS AS INDICATED IN THIS DETAIL WHEREVER DUCT INTERFERES WITH CEILING SUSPENSION SYSTEM.

11 Suspended Ceiling Trapeze Detail
SCALE: 1/2" = 1'-0"

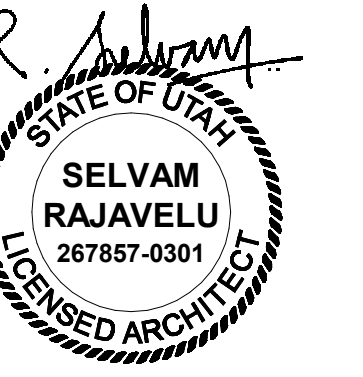
Ogden Regional Medical Center
Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents Feb 19, 2020

Ceiling Details

A503A



KEYED NOTES

- CONTINUOUS SEALANT ON BOTH SIDES OF THE FRAME.
- DOOR FRAME SEEN BEYOND.
- DOOR, SEE DOOR SCHEDULE FOR DOOR TYPE.
- GYP/SUM BOARD, 5/8" THICK, TYPE 'X', ATTACH TO METAL STUD FRAMING. SEE WALL TYPES.
- STEEL RUNNER (18 GAUGE) FASTENED WITH SCREWS TO STUD STUDS AT EACH END. SEE DETAIL 4 / A502A.
- HOLLOW METAL DOOR FRAME, FRAME THICKNESS VARIES WITH WALL THICKNESS. SEE FLOOR PLAN AND WALL SECTIONS, PAINT FRAME.
- SEE WALL TYPES FOR WALL WIDTH AND STUD SIZE.
- FRAME DEPTH SHALL BE WALL WIDTH PLUS 1".
- LINE OF WALL, AS OCCURS.
- PROVIDE DOUBLE METAL STUDS AT FRAME JAMBS, WALL ENDS, ETC. PROVIDE STEEL STRAPS (6" HIGH 1/2" GAUGE STRAPS AT 2'-0" O.C.) SEE DETAIL 7 / A502A.
- DOOR HINGE AS OCCURS. SEE DOOR AND HARDWARE SCHEDULE. SEE FLOOR PLAN FOR DOOR SWING.

1 Door Frame in Stud Wall
SCALE: 3" = 1'-0"

KEYED NOTES

- STAINLESS STEEL SINK. SEE PLUMBING DRAWINGS AND ARCHITECTURAL DRAWINGS FOR INTERIOR DIMENSIONS AND LOCATION.
- INTEGRAL MONOLITHIC MATERIAL SINK. SEE PLUMBING DRAWINGS AND ARCHITECTURAL DRAWINGS FOR INTERIOR DIMENSIONS AND LOCATION.
- COUNTERTOP. SEE FINISH FLOOR PLAN AND INTERIOR ELEVATIONS FOR REQUIRED MATERIAL AT DIFFERENT LOCATIONS. SEE TYPICAL COUNTERTOP DETAIL 3 / A504A.
- BASE CABINET OR FASCIA PANEL AS OCCURS. SEE INTERIOR ELEVATIONS.
- LINE OF WALL.
- SEAL EXPOSED CUT EDGE OF COUNTERTOP WITH SEALER TO PREVENT WATER DAMAGE.
- PROVIDE SMOOTH AND SEAMLESS TRANSITION WHERE SINK IS ATTACHED TO COUNTERTOP. UNLESS NOTED OTHERWISE, SINK COLOR SHALL MATCH COUNTERTOP COLOR. VERIFY WITH ARCHITECT FOR SINK COLOR IF A MATCHING PREFORMED SINK IS NOT AVAILABLE.

2 Typical Sink Detail
SCALE: 1" = 1'-0"

KEYED NOTES

- SIDE PANEL OF BASE CABINET, AS OCCURS.
- SOLID SURFACE, CONTINUOUS / INTEGRAL COUNTERTOP & BACKSPLASH. AT SINK LOCATIONS ALSO PROVIDE 4" HIGH INTEGRAL SIDE SPLASH, TYPICAL.
- 3/4" THICK X CONTINUOUS FIRE TREATED PLYWOOD.

3 Solid Surface Countertop Detail
SCALE: 3" = 1'-0"

KEYED NOTES

- LINE OF WALL, AS OCCURS. IF CABINET IS LOCATED AT AN ISLAND, PROVIDE PLASTIC LAMINATE COVERED BACK PANEL, WHERE EXPOSED. NO BACKSPLASH IS NECESSARY.
- DOOR PULL. SEE SPECIFICATIONS IN PROJECT MANUAL.
- PLASTIC LAMINATE CABINET DOOR.
- WALL BASE. SEE FINISH SCHEDULE.
- CABINET BASE. COORDINATE WITH ELECTRICAL DRAWINGS FOR POWER, DATA, OUTLETS THAT ARE LOCATED HERE.
- LINE OF FLOOR.
- SEAL TIGHTLY AROUND PIPE PENETRATIONS WITH CAULKING. PROVIDE STAINLESS STEEL ESCUTCHEON PLATE AROUND DRAIN AND WATER LINES.
- BACKSPLASH. SEE TYPICAL COUNTERTOP DETAIL 2 / A504A.
- SINK. SEE PLUMBING DRAWINGS AND ARCHITECTURAL DRAWINGS FOR INTERIOR DIMENSIONS AND LOCATION.
- COUNTERTOP. SEE FINISH FLOOR PLAN AND INTERIOR ELEVATIONS FOR REQUIRED MATERIAL AT DIFFERENT LOCATIONS. SEE TYPICAL COUNTERTOP DETAIL 3 / A504A.
- CABINET BODY. ATTACH TO WALL PER TYPICAL DETAIL 6 / A504A.

4 Sink with Base Cabinet
SCALE: 1" = 1'-0"

KEYED NOTES

- LINE OF WALL, AS OCCURS. IF CABINET IS LOCATED AT AN ISLAND, PROVIDE PLASTIC LAMINATE COVERED BACK PANEL, WHERE EXPOSED. NO BACKSPLASH IS NECESSARY.
- DOOR OR DRAWER PULL. SEE SPECIFICATIONS IN PROJECT MANUAL.
- PLASTIC LAMINATE CABINET DOOR.
- COUNTERTOP. SEE FINISH FLOOR PLAN AND INTERIOR ELEVATIONS FOR REQUIRED MATERIAL AT DIFFERENT LOCATIONS. SEE TYPICAL COUNTERTOP DETAIL 3 / A504A.
- DRAWER. SEE SPECIFICATIONS IN PROJECT MANUAL FOR TYPICAL DRAWER CONSTRUCTION.
- WALL BASE. SEE FINISH SCHEDULE.
- CABINET BASE. COORDINATE WITH ELECTRICAL DRAWINGS FOR POWER, DATA, OUTLETS THAT ARE LOCATED HERE.
- LINE OF FLOOR.
- ADJUSTABLE SHELF. UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS, PROVIDE A MINIMUM OF TWO SHELVES, NOTCH SHELF 1/8" AT SUPPORTS TO PREVENT SLIDE OUT.
- DRAWER BOTTOM PANEL. SEE SPECIFICATIONS IN PROJECT MANUAL FOR TYPICAL DRAWER CONSTRUCTION.
- BACKSPLASH. SEE TYPICAL COUNTERTOP DETAIL 3 / A504A.
- CABINET BODY. ATTACH TO WALL PER TYPICAL DETAIL 6 / A504A.

5 Base Cabinet with Drawer and Door
SCALE: 1" = 1'-0"

KEYED NOTES

- LINE OF WALL.
- FASTENERS AS REQUIRED. ALIGN WITH STUDS WHERE POSSIBLE.
- STEEL BACKING PLATE. PLATE SHALL BE 1/2" GAUGE, 6" WIDE WITH REQUIRED LENGTH TO COVER CABINETS.
- SOLID WOOD BLOCKING. TYPICALLY ATTACHED TO CABINET BODY.
- COUNTERTOP AND BACKSPLASH. SEE TYPICAL COUNTERTOP DETAIL 3 / A504A.
- CABINET BASE BOX. BOX SHALL BE BUILT WITH PLYWOOD, 3/4" THICK, PRESSURE TREATED. BASE BOX SHALL BE ANCHORED TO FLOOR WITH STEEL 'L' CLIPS AND FASTENERS AS REQUIRED. BASE CABINET SHALL BE ATTACHED TO THE BASE BOX.
- LINE OF FLOOR.
- NEW WALL (OR EXISTING WALL WHERE OCCURS). SEE WALL TYPE FOR WALL CONSTRUCTION.

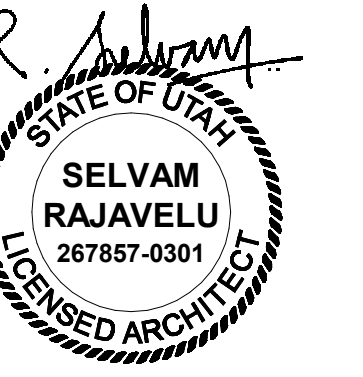
NOTE: WHEN CABINETS ARE MOUNTED TO CONCRETE WALL OR MASONRY (CMU BLOCKS) WALL, BACKING PLATES ARE NOT REQUIRED. PROVIDE COMPATIBLE MASONRY WALL ANCHORS AND FASTENERS TO ATTACH THE CABINETS.

6 Typical Cabinet Body Attachment to Walls
SCALE: 1" = 1'-0"

KEY NOTES

- EXISTING CONCRETE SLAB TO REMAIN V.J.F.
- EXISTING DRAINAGE COURSE TO REMAIN V.J.F.
- NEW CONCRETE SLAB TO MATCH EXISTING.
- #3 EPOXY DOWEL TYP. PROVIDE 4" MIN. EMBEDMENT.
- NEW DRAINAGE COURSE MATCH EXISTING.
- NEW PLUMBING LINE OR CONDUIT AS OCCURS SEE PLUMBING DRAWINGS.
- NEW SAND BED PROVIDE 3" MIN. COVER ALL AROUND NEW PLUMBING LINE / CONDUIT TYP.

7 Slab Trenching Repair Detail
SCALE: 1 1/2" = 1'-0"

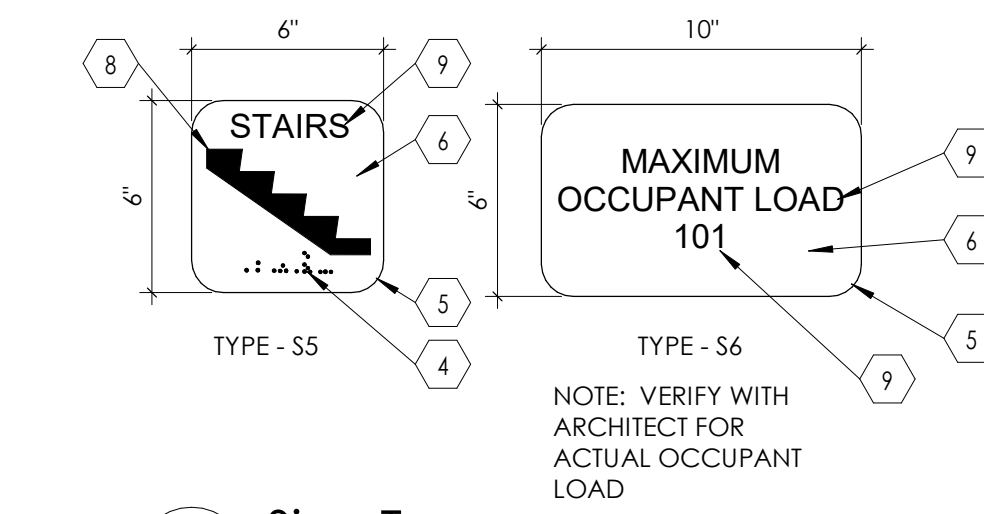
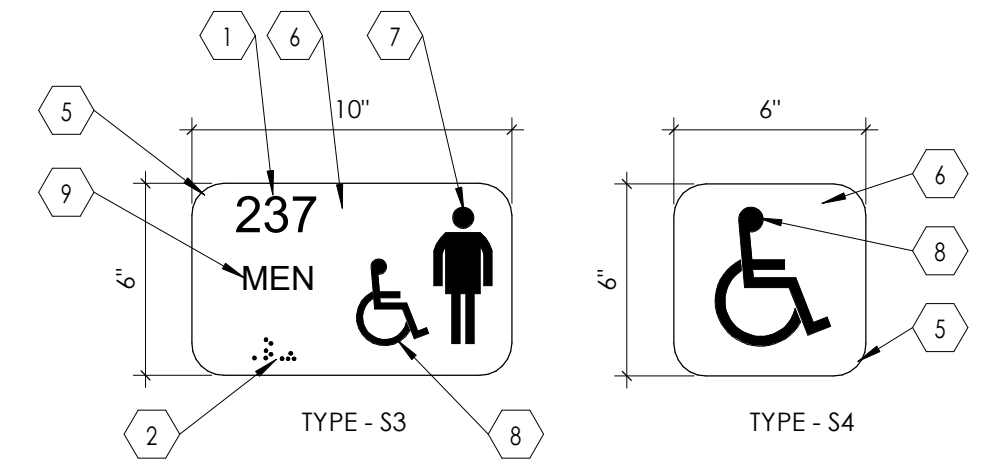
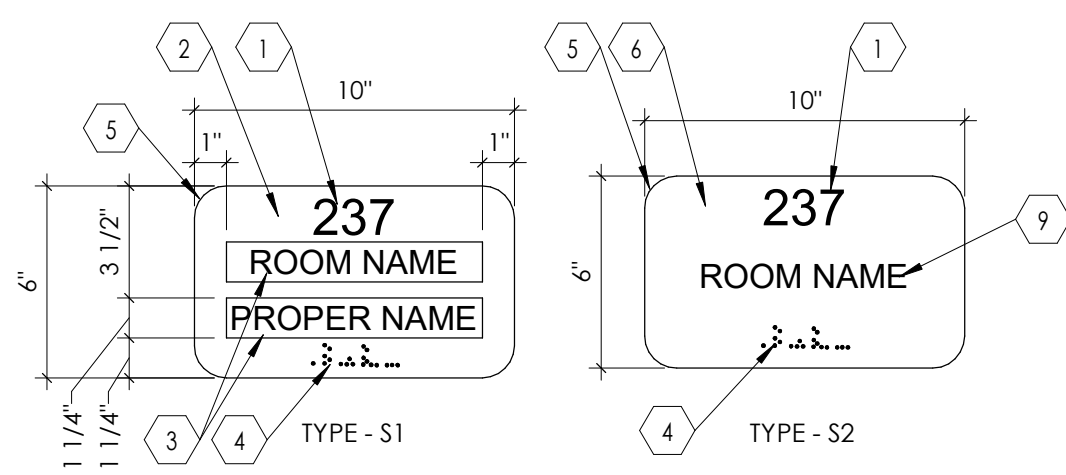


KEYED NOTES

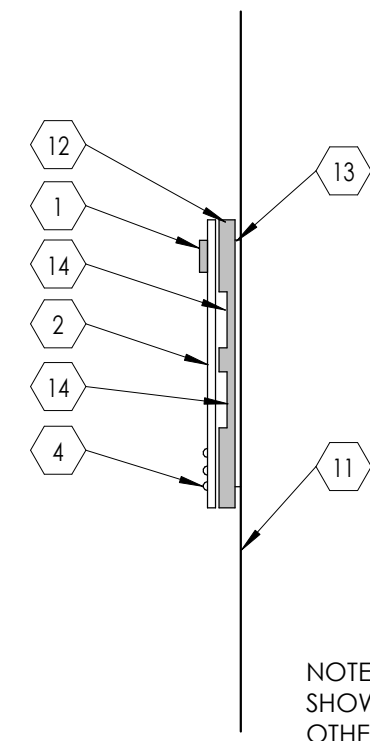
1. ROOM NUMBER (1/32" RAISED TEXT CHARACTERS, HELVETICA FONT, MATTE FINISHED OPAQUE ACRYLIC SHEET) ATTACHED TO FRONT PANEL.
2. MATTE FINISHED OPAQUE ACRYLIC FRONT PANEL (WITH TRANSPARENT WINDOW) ATTACHED TO BASE PANEL.
3. TRANSPARENT WINDOW FOR TEXT INSERT (HELVETICA FONT). TEXT INSERT SHALL BE FURNISHED AND INSTALLED BY SIGN CONTRACTOR.
4. BRAILLE CHARACTERS AS PER ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS DENOTING ROOM NUMBER AND NAME.
5. RADIUS CORNER: 1" TYPICAL.
6. MATTE FINISHED OPAQUE ACRYLIC FRONT PANEL ATTACHED TO BASE PANEL.
7. PROVIDE APPROPRIATE SYMBOL FOR MEN, WOMEN, UNISEX, BOYS AND GIRLS TOILET ROOM AS OCCURS.
8. PROVIDE APPROPRIATE SYMBOL FOR STAIR, DISABLED SIGN, ETC. AS INDICATED.
9. ROOM NAME (1/32" RAISED TEXT CHARACTERS, HELVETICA FONT, MATTE FINISHED OPAQUE ACRYLIC SHEET) ATTACHED TO FRONT PANEL.
10. PROVIDE DISABLED SYMBOL AS INDICATED IN THE SIGN FOR ALL ROOMS THAT ARE WHEEL CHAIR ACCESSIBLE.
11. LINE OF WALL.
12. MATTE FINISHED, OPAQUE ACRYLIC SHEET BASE PANEL ATTACHED TO SHIM PLATE.
13. SHIM PLATE: ALUMINUM, 1/4" THICK, CONCEALED, WITH PRE-DRILLED HOLES FOR COUNTERSUNK FASTENERS. USE APPROPRIATE FASTENERS DEPENDING ON THE SUBSTRATE.
14. RECESS 1/16" FOR TEXT INSERT, FOR SIGN "TYPE - S1" ONLY.
15. SIGNAGE, O.F.O.I.
16. SIGN AT ALL ACCESSIBLE LOCATION, O.F.O.I.
17. DOOR FRAME, SEE DOOR SCHEDULE.
18. DOOR, SEE DOOR SCHEDULE.
19. OPENING IN WALL.
20. LINE OF FLOOR.

NOTE:

- A. PROVIDE ROOM SIGN AT EACH DOORWAY OR A WALL OPENING LEADING TO A ROOM. SEE FINISH FLOOR PLAN FOR REQUIRED NUMBER OF SIGNS, SIGN TYPE, ROOM NAMES, ETC.
- B. SIGN CONTRACTOR SHALL COORDINATE WITH OWNER AND PROVIDE TEXT INSERTS FOR OCCUPANTS PROPER NAME FOR ALL "TYPE S1" WALL SIGNS.
- C. ALL COLORS SHALL BE SELECTED BY ARCHITECT AND MOUNTED ON WALL OR DOOR PER DETAIL "B".

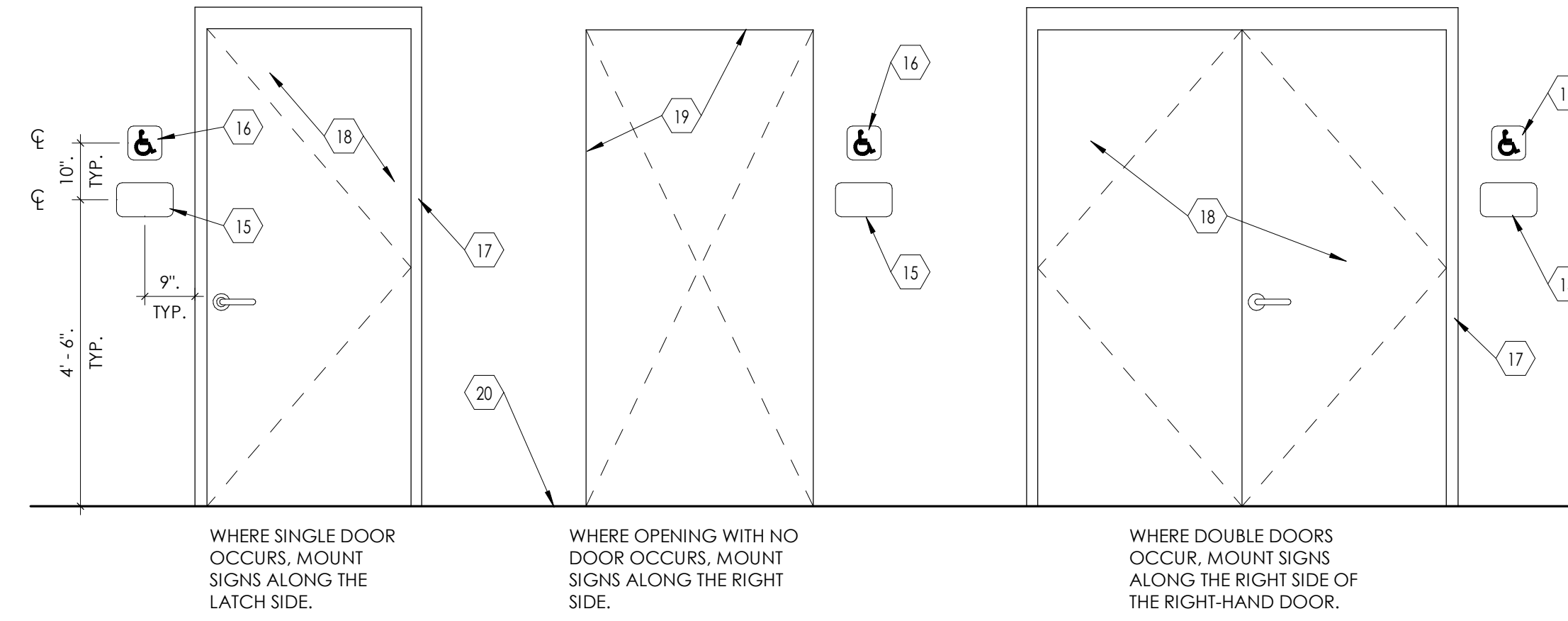


A Sign Types
SCALE: 2" = 1'-0"



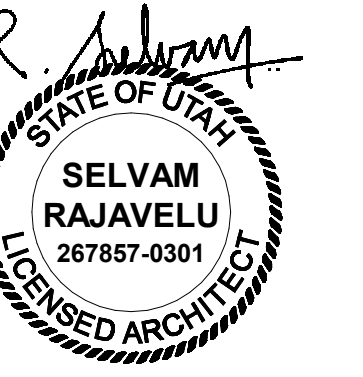
NOTE: "TYPE - S1" SIGN SHOWN. MOUNTING FOR OTHER SIGN TYPES SHALL BE SIMILAR.

B Sign Mounting
SCALE: 3" = 1'-0"



C Sign Mounting Elevations
SCALE: 1/2" = 1'-0"

1 Room Signage Detail
SCALE: N.T.S.



DOOR SCHEDULE

DOOR #	# OF PANELS	DOOR				FRAME			DETAILS				DOOR #	FIRE RATING (MINUTES)	HARDWARE GROUP	COMMENTS
		W1	W2	HEIGHT	THICKNESS	MATERIAL	TYPE (1/A601A)	DEPTH	MATERIAL	JAMB	HEAD	THRESHOLD				
A112	1	4'-0"		7'-0"	1 3/4"	WD	D	1	5 7/8"	HM			A112		1	
A113	1	3'-0"		7'-0"	1 3/4"	WD	A	1	8 1/4"	HM			A113		2	
A129	MFR	5'-7"		9'-0"		ALUM	OH			ALUM			A129		MFR	1, 2

COMMENTS:

- MOTORIZED ALUMINUM ROLL UP COILING DOOR.
- PROVIDE MANUFACTURER APPROVED ANTI-LIGATURE LOCK AND HARDWARE AT THIS DOOR.

DOOR HARDWARE SCHEDULE

HARDWARE GROUP 1

DOORS: A112

QTY	HARDWARE	MODEL	
1	CONTINUOUS HINGE	FM300	US26D
1	PRIVACY SET LOCKSET	195SS x L	US32D
1	DOOR CLOSER	4040 XP	689
1	KICK PLATE	12" x 2" LDW	630
1	SILENCERS	608	

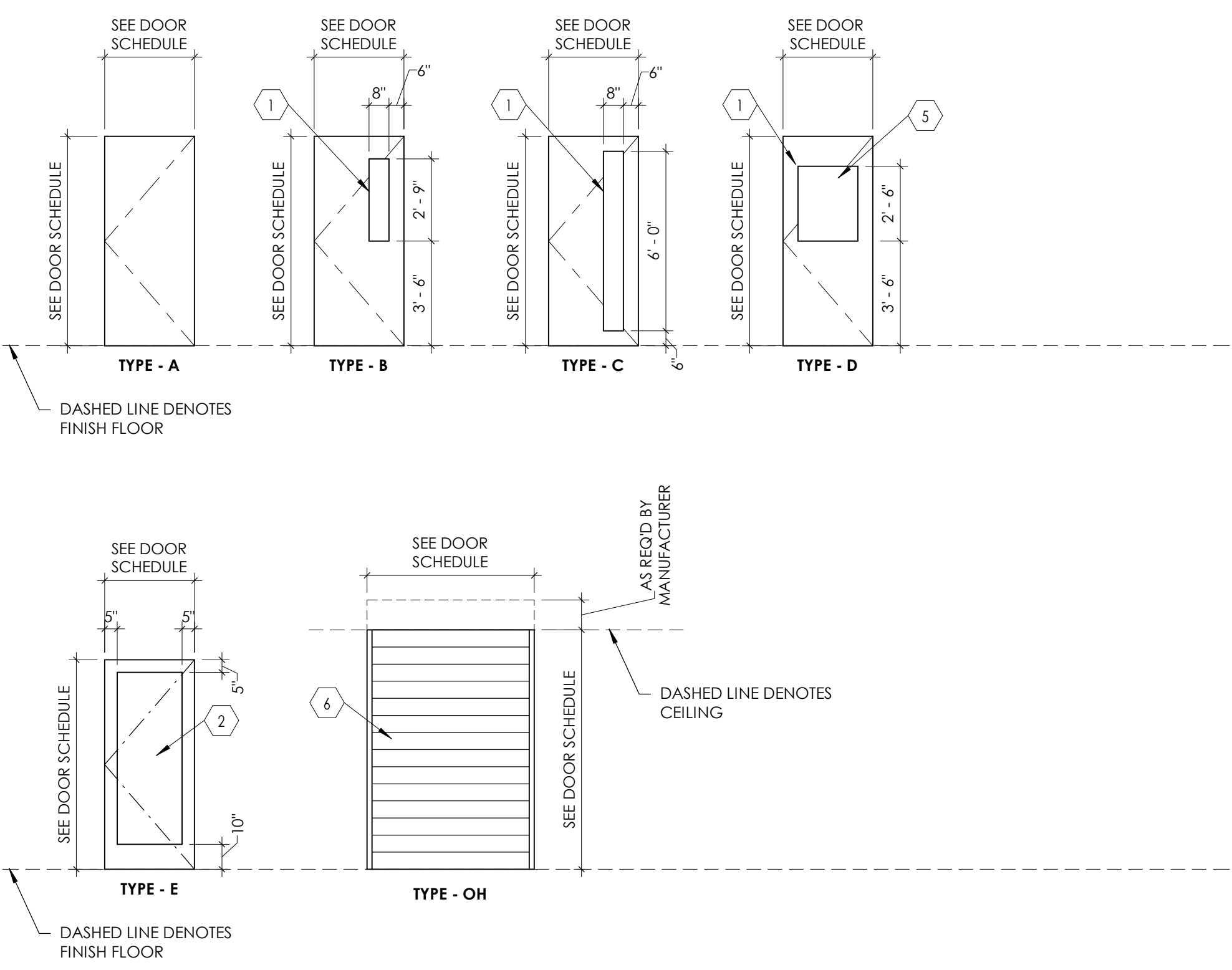
HARDWARE GROUP 2

DOORS: A113

RE-USE EXISTING HARDWARE.

KEYED NOTES

- VISION PANEL, GLAZING IN VISION PANEL SHALL BE 1" THICK, CLEAR, LAMINATED, TEMPERED. GLAZING FOR WOOD DOOR, PROVIDE WOOD TRIM FRAME FLUSH WITH THE FACE OF THE DOOR. AROUND THE VISION PANEL OPENING, STAIN AND SPECIES OF WOOD TRIM SHALL MATCH WOOD DOOR. FOR HOLLOW METAL DOOR, PROVIDE METAL TRIM AROUND VISION PANEL. GLAZING SHALL BE FIRE RATED IF DOORS ARE REQUIRED TO BE FIRE RATED.
- FOR EXTERIOR DOORS OF THIS TYPE, GLAZING SHALL BE TINTED, INSULATED, TEMPERED, LOW E, AND 1" THICK. FOR INTERIOR DOORS OF THIS TYPE, GLAZING SHALL BE CLEAR, TEMPERED AND 1/4" THICK.
- STAINLESS STEEL WELDED WIRE MESH (15 GAUGE) ATTACHED TO DOOR, PROVIDE FRAME AROUND THE OPENING IN DOOR TO SECURE THE MESH IN PLACE.
- METAL LOUVER IN DOOR FOR VENTILATION.
- INTEGRAL BLIND REQUIRED IN GLAZING AT THIS DOOR WITH CONTROLS ON HALLWAY SIDE.
- MOTORIZED ALUMINUM ROLL UP DOOR, PROVIDE LOCK & REQUIRED DOOR HARDWARE, CONCEAL DOOR HOUSING & MOTOR ABOVE CEILING. SEE ELECTRICAL DRAWINGS, SECURED DOOR & HOUSING TO STRUCTURE ABOVE AS REQUIRED BY THE DOOR MANUFACTURER.



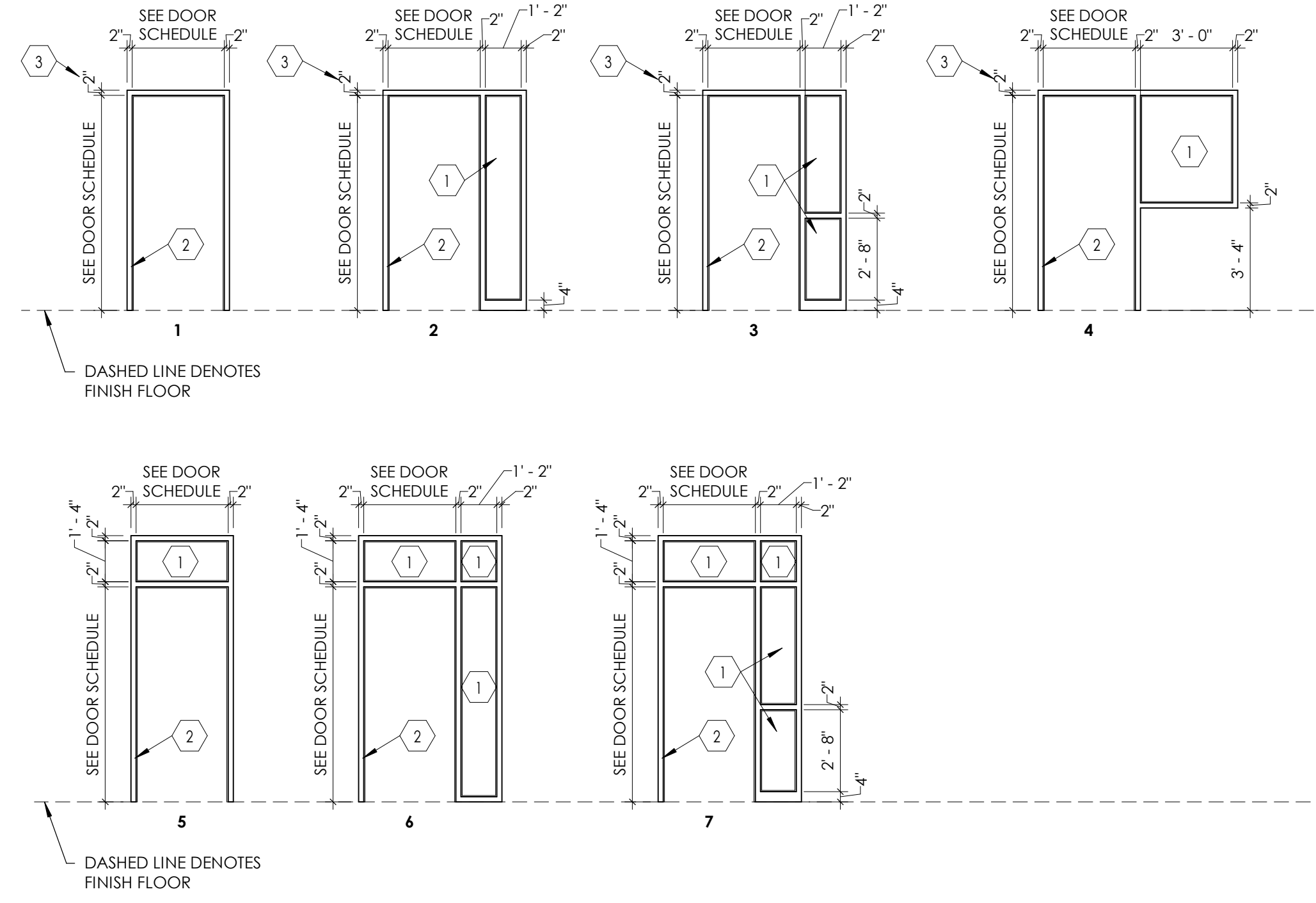
1 Door Types

NOTE: REFER TO "DOOR SCHEDULE" TABLE FOR DOOR TYPES REQUIRED FOR THIS PROJECT. SOME DOOR TYPE ELEVATIONS INDICATED ABOVE, MAY NOT BE APPLICABLE TO THIS PROJECT.

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

KEYED NOTES

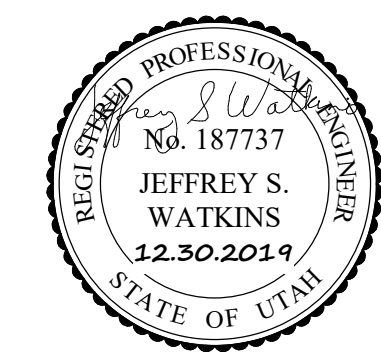
- GLAZING SHALL BE CLEAR, TEMPERED, AND 1/4" THICK.
- DOOR FRAME, SEE DOOR SCHEDULE.
- WHERE DOOR OCCURS AT MASONRY WALL (8" HIGH, C.M.U. BLOCKS), AND WITH A TYPICAL DOOR HEIGHT OF 7'-0", USE 4" FRAME AS FRAME HEAD INSTEAD OF THE STANDARD 2" FRAME.



2 Frame Types

NOTE: REFER TO "DOOR SCHEDULE" FOR FRAME TYPES REQUIRED FOR THIS PROJECT. SOME FRAME TYPE ELEVATIONS INDICATED ABOVE MAY NOT BE APPLICABLE TO THIS PROJECT.

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



LEGEND OF MECHANICAL SYMBOLS AND ABBREVIATIONS

DUCTWORK/GRILLES

	POSITIVE PRESSURE DUCT - RISE
	POSITIVE PRESSURE DUCT - DROP
	NEGATIVE PRESSURE DUCT - RISE
	NEGATIVE PRESSURE DUCT - DROP
	ROUND DUCT - RISE
	ROUND DUCT - DROP
	UNDER FLOOR DUCT
	TURNING VANES
	FRESH AIR LOUVER
	RELIEF AIR OR EXHAUST AIR LOUVER
	CEILING SUPPLY DIFFUSER
	CEILING RETURN REGISTER
	CEILING EXHAUST REGISTER (BALANCE TO MATCH SUPPLY IF RETURN CFM IS NOT SHOWN)
	SIDEWALL SUPPLY REGISTER
	SIDEWALL EXHAUST OR RETURN REGISTER
	CEILING SUPPLY DIFFUSER WITH FLEXIBLE DUCT
	CEILING AIR GRILLE WITH FLEXIBLE DUCT
	CEILING RETURN AIR GRILLE W/ SOUND BOOT
	LINEAR DIFFUSER WITH PLENUM AND FLEXIBLE DUCT CONNECTION. NO. OF SLOTS & SIZE OF SLOT ON TOP, ACTIVE LENGTH AND CFM ON BOTTOM
	FLEXIBLE DUCT CONNECTION
	FLEXIBLE DUCT
	FLAT OVAL DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
	RECTANGULAR DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
	ROUND DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
	INCLINED RISE
	INCLINED DROP
	RW=1. ROUND DUCT SIMILAR TO RECTANGULAR
	RECTANGULAR TO ROUND DUCT TRANSFORMATION MAXIMUM 15° INCLUDED ANGLE EXCEPT WHERE SHOWN OTHERWISE.
	BRANCH DUCT SPLIT WITH 6" WIDTH AND MIN. R=WIDTH OF BRANCH DUCT DOWNSTREAM. ELBOW TURNING VANE OPTIONAL.
	TAP ENTRY AREA EQUALS 150% OF BRANCH AREA
	HIGH EFFICIENCY FITTING
	MANUAL VOLUME DAMPER
	FIRE DAMPER IN DUCT, W/ ACCESS PANEL REQ'D.
	COMBINATION FIRE/SMOKE DAMPER W/ ACCESS PANEL
	SMOKE DAMPER W/ ACCESS PANEL
	BACK DRAFT DAMPER
	ATC DAMPER
	ACCESS PANEL IN DUCT OR PLENUM
	HEATING OR COOLING COIL IN DUCT
	SINGLE DUCT AIR TERMINAL BOX VARIABLE OR CONSTANT VOLUME. MIN. 1-1/2" TERMINAL INLET SIZE STRAIGHT DUCT AT TERMINAL INLET.
	4-WAY BLOW PATTERN
	3-WAY BLOW PATTERN
	2-WAY BLOW PATTERN
	2-WAY BLOW PATTERN
	1-WAY BLOW PATTERN
	DUCT SMOKE DETECTOR

TOP FIGURES INDICATE NECK SIZE. BOTTOM FIGURE INDICATES CFM.

PIPING

	SHUT OFF VALVE
	BALL VALVE
	BUTTERFLY VALVE
	MOTOR OPERATED BUTTERFLY VALVE
	GATE VALVE
	GATE VALVE - NON RISING STEM
	ANGLE VALVE
	GLOBE VALVE
	PLUG VALVE
	SHUT OFF PLUG VALVE FOR USE WITH PRESSURE GAUGE
	CHECK VALVE
	LATERAL STRAINER WITH BLOW-OFF VALVE. PROVIDE HOSE END WITH CAP WHERE DISCHARGE IS NOT PIPED TO DRAIN
	F&T-FLOAT & THERMOSTATIC
	REDUCED PRESSURE BACKFLOW PREVENTOR W/ DRAIN PAN
	PRESSURE REDUCING VALVE EXTERNAL PRESSURE
	PRESSURE REDUCING VALVE SELF CONTAINED
	ATC - 2 WAY VALVE
	ATC - 3 WAY VALVE
	SOLENOID VALVE
	CALIBRATED BALANCING VALVE WITH GPM INDICATED
	VENTURI FLOW METER
	FLOW METER ORIFICE
	RELIEF VALVE
	AIR VENT-MANUAL
	AIR VENT-AUTO
	FLOW SWITCH
	PRESSURE SWITCH
	TEMPERATURE AND PRESSURE TEST PORT
	THERMOMETER WELL
	THERMOMETER - TEMP RANGE AS INDICATED
	PRESSURE GAUGE WITH SHUT OFF PLUG VALVE
	PRESSURE GAUGE WITH PIGTAIL
	UNION
	FLANGE
	FLEXIBLE EXPANSION JOINT
	REDUCER
	ECCENTRIC REDUCER
	BRANCH - BOTTOM CONNECTION
	BRANCH - TOP CONNECTION
	BRANCH - SIDE CONNECTION
	RISE OR DROP
	RISER - DOWN (ELBOW)
	RISER - UP (ELBOW)
	PIPE CAP
	ARROW INDICATES DIRECTION OF FLOW IN PIPE
	LEADER INDICATES DOWNWARD SLOPE
	VALVE IN RISE
	90° ELBOW
	45° ELBOW
	ALIGNMENT GUIDE
	ANCHOR

PLUMBING

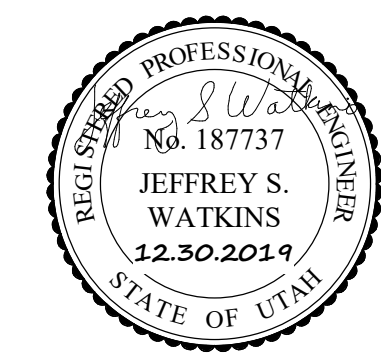
	THERMOSTATIC MIXING VALVE
	HOSE BIBB
	FLOOR SINK
	FLOOR DRAIN
	FLOOR CLEAN-OUT OR CLEAN-OUT TO GRADE
	ROOF DRAIN
	DOWNSPOUT NOZZLE
	VENT THRU ROOF
	WATER HAMMER ARRESTOR
	CLEAN-OUT
	FILL PORT
	DRAIN PAN AND P-TRAP
	FIXTURE FROM LEVEL ABOVE
	DEMOLITION

ANNOTATIONS

	P-1 PLUMBING FIXTURES
	POINT OF CONNECTION
	SECTION TAG - TOP FIGURE IS SECTION NO. BOTTOM FIGURE IS SHEET NO.
	DETAIL TAG - TOP FIGURE IS DETAIL NO. BOTTOM FIGURE IS SHEET NO.
	EQUIPMENT IDENTIFICATION
	KEYED NOTE IDENTIFICATION
	SWITCH
	SENSOR
	THERMOSTAT
	NIGHT THERMOSTAT

LINETYPES

	AIR
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	DOMESTIC HOT WATER RETURN (DHW-R)
	EXISTING PIPING
	EXISTING PIPING TO BE REMOVED
	MEDICAL AIR
	OXYGEN
	SEWER (BELOW GRADE)
	SEWER (ABOVE GRADE)
	VACUUM
	VENT (SEWER)



MEDICAL GAS GENERAL NOTES

- MEDICAL GAS PIPING IS TO BE RUN ABOVE THE CEILING, UNLESS NOTED OTHERWISE. COORDINATE PIPING ROUTING WITH ALL OTHER POSSIBLE CONFLICTS SUCH AS DUCTWORK, DIFFUSERS, OTHER PIPING, LIGHTS, CONDUIT, STRUCTURE, ETC.
- ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.
- SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED.
- MEDICAL GAS PIPING IS SCHEMATIC IN NATURE. FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES.
- NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
- MOUNT ALL SERVICE VALVES NEAR CEILING HEIGHT FOR ACCESSIBILITY.

FIRE PROTECTION GENERAL NOTES

- NO FIRE PROTECTION LINE SHALL BE DESIGNED OR INSTALLED PRIOR TO CLOSE COORDINATION WITH ALL OTHER DISCIPLINES. DUCTWORK, MECHANICAL PIPING AND PLUMBING TAKE SPACE PRECEDENCE OVER FIRE PROTECTION PIPING. FAILURE TO COMPLY WILL RESULT IN THE FIRE PROTECTION REMOVAL AND REINSTALLATION AT THE FIRE PROTECTION CONTRACTORS EXPENSE.
- ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING SURROUNDING AREA.
- COORDINATE EXACT LOCATION OF PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND PLUMBING PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.
- FIRE SUPPRESSION CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND/OR REROUTE ANY AND ALL FIRE PROTECTION PIPING, VALVING, SUPPORTS OR SYSTEMS, OTHERWISE WITHIN THE FIRE SUPPRESSION DISCIPLINE REGARDLESS OF WHO INSTALLED THEM OR WHEN THEY WERE INSTALLED, IN ORDER TO ACCOMMODATE MECHANICAL, PLUMBING, ELECTRICAL OR OTHER SYSTEMS. COORDINATE WORK WITH MECHANICAL, ELECTRICAL, PLUMBING OR OTHER CONTRACTORS UNTIL SUBSTANTIAL COMPLETION OF PROJECT.

PLUMBING GENERAL NOTES

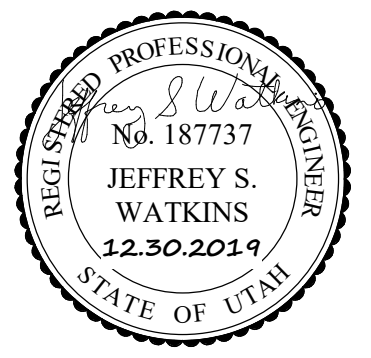
- UNLESS OTHERWISE NOTED, SLOPE PIPE AS FOLLOWS: WASTE BRANCHES: 1/4" PER FOOT; WASTE MAINS: 1/4" PER FOOT; ROOF DRAIN/ROOF DRAIN OVERFLOW: 1/8" PER FOOT.
- ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING AREAS ON FLOORS BELOW.
- PLUMBING DRAWINGS ARE SCHEMATIC IN NATURE. FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES.
- ALL PIPING IN PLUMBING CHASES SHALL BE ARRANGED TO ALLOW MAINTENANCE ACCESS.
- NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
- COORDINATE FAN ROOM FLOOR DRAIN AND FLOOR SINK LOCATIONS WITH COOLING COIL, EVAPORATIVE SECTION, AND HEATING COIL LOCATIONS.
- CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.
- PIPING AND ROUTING SHOWN, INCLUDING ALL BELOW FLOOR DECK PIPING, IS APPROXIMATE. IT IS UP TO THE CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND SIZE OF ALL PIPING.
- REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS, DIMENSIONS, AND OTHER REQUIREMENTS.
- CONTRACTOR TO VERIFY CONNECTION SIDE OF ADA FIXTURES AND ADJUST ACCORDINGLY. INSTALL FLUSH VALVES HANDLES ON WIDE SIDE OF ALL FIXTURES.
- LOCATE ALL VENTS MINIMUM 25' AWAY FROM AIR INTAKES.
- INSTALL ALL DOMESTIC WATER LINES BELOW DUCTWORK.
- INSTALL A 24" X 24" ACCESS DOOR BELOW ALL ISOLATION VALVES, BALANCING VALVES AND WATER HAMMER ARRESTORS WHERE MOUNTED ABOVE HARD CEILINGS.
- MOUNT ALL ISOLATION VALVES, CONTROL VALVES, BALANCING VALVES, ETC. NEAR CEILING HEIGHT FOR ACCESSIBILITY.
- INSTALL ALL EQUIPMENT WITH SUFFICIENT CLEARANCE FOR MAINTENANCE PER MANUFACTURERS RECOMMENDATION.
- COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL AND PROVIDE SLEEVES AS NECESSARY.
- COORDINATE EXACT LOCATION OF PLUMBING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING, CABLE TRAY, DUCTWORK, MECHANICAL PIPING, MEDICAL GASES, FIRE PROTECTION AND OTHER TRADES, TYPICAL.
- COORDINATE THE LOCATION OF THE FLOOR DRAIN, SHOWER DRAIN, OR FLOOR SINK WITH ARCHITECTURAL AND STRUCTURAL, TYPICAL.
- ACCESS DOORS SHALL BE PROVIDED TO ALL WATER HAMMER ARRESTORS IN WALLS OR ABOVE CEILINGS.
- SEE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES OF WASTE, VENT AND DOMESTIC WATER TO/FROM SINGLE FIXTURE.
- HOSE BIBBS SHOWN AT LAVATORIES ARE TO BE MOUNTED AT AN ACCESSIBLE LOCATION UNDER THE LAVATORY.
- COORDINATE EXACT LOCATION OF PLUMBING PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND FIRE PROTECTION PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.
- LOCATE CIRCUIT SETTERS, VALVES, WATER HAMMER ARRESTORS, ETC. IN ACCESSIBLE LOCATIONS. PROVIDE 24"X24" ACCESS PANEL WHERE ITEM IS LOCATED ABOVE A HARD CEILING.
- ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.
- INSTALL CLEANOUTS IN DRAIN PIPING AS INDICATED, AND WHERE NOT INDICATED, ACCORDING TO THE FOLLOWING.
 - SIZE SAME AS DRAINAGE PIPING UP TO 4" NPS. USE 4" NPS FOR LARGER. DRAINAGE PIPING UNLESS LARGER CLEANOUT IS INDICATED.
 - LOCATE AT MINIMUM INTERVALS OF 50 FT FOR PIPING 4" NPS AND SMALLER AND 100 FT FOR LARGER PIPING.
 - LOCATE AT THE BASE OF EACH VERTICAL STACK.

MECHANICAL PIPING GENERAL NOTES

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- UNLESS OTHERWISE NOTED: ALL MECHANICAL PIPING IS OVERHEAD TO RUN ABOVE DUCTWORK AND TIGHT TO UNDERSIDE OF STRUCTURE.
- WHERE VALVING OR EQUIPMENT IS LOCATED ABOVE HARD CEILINGS PROVIDE AN ACCESS DOOR IN CEILING. MINIMUM ACCESS DOOR SIZE OF 24"X24".
- NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
- SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED.
- INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
- ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
- PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEM.
- INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.
- PROVIDE ISOLATION VALVES AT EACH EXIT/ENTRANCE INTO SHAFT WHETHER OR NOT SHOWN.
- ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.
- COORDINATE LOCATION OF THERMOSTAT WITH ARCHITECTURAL FURNISHING PLANS. MOUNT THERMOSTAT AT HEIGHT AS SPECIFIED ON ARCHITECTURAL.
- CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.

MECHANICAL GENERAL NOTES

- COORDINATE EXACT PLACEMENT OF DIFFUSERS, GRILLES, AND REGISTERS WITH ARCHITECTURAL REFLECTED CEILING PLAN, TYPICAL.
- SEE DETAIL FOR DIFFUSER CONNECTIONS TO DUCTWORK, TYPICAL.
- BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE NECK INLET SIZE OF THE DIFFUSERS, REGISTER OR GRILLE IF SERVES UNLESS NOTED OTHERWISE, TYPICAL.
- COORDINATE EXACT MOUNTING LOCATION OF ALL THERMOSTATS WITH LATEST REVISION OF ARCHITECTURAL ELEVATION AND FURNISHINGS PLANS, TYPICAL.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CAULKING AND SEALING ALL PENETRATIONS IN FIRE AND SMOKE RATED PARTITIONS TO MAINTAIN RATINGS. SEE SPECIFICATION, TYPICAL.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE FIRE, SMOKE OR COMBINATION FIRE/SMOKE DAMPERS AT ALL LOCATIONS SHOWN ON THE CONTRACT DOCUMENTS AND AS REQUIRED TO MEET THE INTEGRITY OF ALL SMOKE AND FIRE PARTITIONS. THE CONTRACTOR SHALL REFER TO THE LATEST ARCHITECTURAL LIFE SAFETY PLANS FOR ALL FIRE AND SMOKE PARTITION LOCATIONS. DAMPERS ARE TO BE PROVIDED WITH SHUTOFF/TEST SWITCH AT EACH LOCATION.
- PROVIDE AND INSTALL TURNING VANES IN ALL SQUARE LOW PRESSURE DUCTWORK AT ELBOWS OR TEES, TYPICAL.
- INSTALL ALL TERMINAL BOXES IN EASILY ACCESSIBLE AND SERVICEABLE LOCATIONS, MEETING ALL MANUFACTURERS REQUIRED CLEARANCES ON EACH SIDE, SEE DETAILS, TYPICAL.
- CONTRACTOR SHALL OFF-SET, TRANSITION AND PROVIDE CHANGES AS REQUIRED FOR COORDINATION WITH OTHER TRADES, TYPICAL.
- DUCTWORK SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. REFER TO MECHANICAL SPECIFICATIONS FOR EXTENT OF DUCT INSULATION AND LINER.
- PROVIDE AND INSTALL REMOTE DAMPER OPERATORS FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILINGS, SEE MECHANICAL SPECIFICATIONS FOR EQUIPMENT REQUIREMENTS, TYPICAL.
- PROVIDE AND INSTALL HIGH EFFICIENCY TAKE-OFF FITTINGS AND BALANCING DAMPER AT ALL BRANCH CONNECTIONS TO LOW PRESSURE DUCTWORK.
- PROVIDE AND INSTALL HIGH EFFICIENCY OR CONICAL TAKE-OFFS AT ALL BRANCH CONNECTIONS TO MEDIUM PRESSURE DUCTWORK.
- WHERE DUCTWORK CROSSES, SUPPLY DUCTWORK IS USUALLY BELOW RETURN AND EXHAUST DUCT. RETURN DUCTWORK IS USUALLY BELOW EXHAUST DUCTS.
- AT LOCATIONS WHERE DIFFUSERS OR GRILLES ARE UNDER DUCTWORK, CONTRACTOR TO FABRICATE TRANSITION BOOT FROM FLEX CONNECTION TO DIFFUSER OR GRILLE WITH BALANCING DAMPER, TYPICAL.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE CEILING MOUNTED ACCESS DOORS FOR ALL FIRE, SMOKE AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING. FIELD VERIFY EXACT INSTALLATION LOCATIONS PRIOR TO COMMENCING WORK AND COORDINATE INSTALLATIONS WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS.
- MECHANICAL CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROVIDED AND INSTALLED WITH CLEARANCES PER MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL MAINTAIN PROPER SERVICE SPACE FOR COIL PULLS, BAS DEVICES, MAINTENANCE ACCESS, ETC.
- ALL VAV BOXES TO HAVE REHEAT COILS, EXCEPT AS NOTED. PROVIDE A MINIMUM OF TWO DUCT DIAMETERS OF STRAIGHT ROUND DUCT TO INLET OF VAV BOX. BOX SHALL BE HARD CONNECTED (CONICAL) TO MEDIUM PRESSURE DUCT, TYPICAL.
- PROVIDE ACCESS DOORS TO ACCESS VAV BOX CONTROLS ABOVE HARD CEILINGS. PROVIDE MIN. 24" X 24".
- ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.
- ALL DUCTWORK ABOVE HARD CEILINGS SHALL BE EXTENDED ALL THE WAY TO THE SUPPLY DIFFUSERS, RETURN GRILLS OR EXHAUST GRILLS WHETHER OR NOT HARD DUCT OR FLEX DUCT IS SHOWN ON PLANS. FLEX DUCT WILL NOT BE ALLOWED TO DIFFUSERS OR GRILLS ABOVE HARD CEILINGS. FLEX DUCT WILL BE REQUIRED IN AREAS ABOVE T-BAR CEILINGS.
- NEW DUCTWORK, PIPING AND EQUIPMENT SHALL BE COORDINATED WITH STRUCTURE, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUIT, PLUMBING, MECHANICAL AND FIRE PROTECTION PIPING, MEDICAL GASES, ALL OTHER TRADES AND ALL OTHER EXISTING CONDITIONS.
- THE CONTRACTOR SHALL INFORM THE DESIGNER OF ANY PROPOSED DEVIATIONS FROM THE CONTRACT DOCUMENTS.
- PROVIDE ACCESS TO ALL TEMPERATURE CONTROLS ABOVE CEILING. LOCATE IN ACCESSIBLE LOCATION. WHERE THERE ARE HARD CEILINGS THE CONTRACTOR SHALL PROVIDE 24"X24" ACCESS DOOR.



M2.05 PIPE HANGERS

A. ALL NECESSARY STRUCTURAL MEMBERS, HANGERS, AND SUPPORTS OF APPROVED DESIGN SHALL BE PROVIDED TO KEEP PIPING IN PROPER ALIGNMENT AND TO PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. PIPE HANGERS SHALL GENERALLY BE OF THE CLEVIS PIPE-CLAMP TYPE WITH SUSPENSION BOLTS. ALL BOLTS SHALL HAVE PROVISION FOR VERTICAL ADJUSTMENT AND SHALL BE EQUIPPED WITH LOCKNUTS.

B. NO HANGER SHALL BE WELDED DIRECTLY TO STEEL JOISTS. WHERE JOISTS OCCUR, CLIPS SHALL BE INSTALLED AND HANGER ROD ATTACHED TO CLIPS. ALL PIPING HUNG FROM JOISTS SHALL BE HUNG FROM JOIST PANEL POINTS. PROTECTIVE SADDLES SHALL BE PROVIDED ON ALL INSULATED PIPING AT POINT OF HANGER. HANGERS SHALL NOT CONTACT PIPE WHERE PIPE IS SPECIFIED TO BE INSULATED AND HANGERS SHALL NOT PENETRATE INSULATION.

C. THE FOLLOWING IS A SCHEDULE OF MAXIMUM SPACING FOR HANGERS OR OTHER SUPPORTS AND SIZES OF SUSPENSION RODS FOR PIPING. IN ADDITION TO THE SPACING LISTED, AN ADDITIONAL HANGER SHALL BE PROVIDED 1 FOOT 0 INCHES FROM EACH PIPE DROP, RISE, OR TURN.

PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING
1-1/4 IN. AND 1/2 IN.	6 FT.	SMALLER

D. PIPE HANGERS SHALL NOT BE WELDED TO METAL PAN FLOOR. PIPE HANGERS SHALL BE CONCRETE INSERTS INSTALLED IN HOLES DRILLED IN CONCRETE.

E. ALL HANGERS, SUPPORTS, AND ANCHORS SHALL BE ASSEMBLED WITH HEAVY PATTERN, HEXAGON CARBON STEEL NUTS.

F. PERFORATED METAL STRAP SHALL NOT BE PERMITTED.

G. ALL PIPE HANGERS, INSERTS, TRAPEZES, ETC., AND ALL NECESSARY ACCESSORIES REQUIRED TO SUPPORT THE PIPING SHALL BE PROVIDED BY THIS CONTRACTOR.

H. ALL PIPE HANGERS SHALL BE INSTALLED OUTSIDE OF INSULATION ON ALL INSULATED LINES.

I. MANUFACTURERS MAY BE BLAW-KNOX, GRINNELL, OR PIPE SHIELDS, INC.

M2.02 DUCTS AND SHEET METAL WORK

A. PROVIDE DUCTS, PLENUMS, ACCESS DOORS, FRESH AIR INTAKES, AND EXHAUSTS AS INDICATED AND REQUIRED. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. PROVIDE PREFABRICATED SPIRAL LOCKSEAM DUCTS AND FITTINGS AND RECTANGULAR DUCTS OF GALVANIZED STEEL, ALUMINUM FLEXIBLE DUCTWORK OR GYPSUM BOARD DUCTWORK IS NOT ACCEPTABLE.

B. ALL CONNECTIONS TO MAIN DUCTS SHALL BE MADE WITH LOW LOSS FITTINGS.

C. FLAT DUCT SURFACES SHALL BE CRIMPED DIAGONALLY REGARDLESS OF SIZE. LONGITUDINAL JOINTS IN ALL DUCT SIZES MAY BE FLAT LOCK JOINTS. TRANSVERSE JOINTS AND INTERMEDIATE BRACING SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL OR GALVANIZED STRUCTURAL ANGLES IN ACCORDANCE WITH REQUIREMENTS OF ASHRAE GUIDE AND PUBLIC AUTHORITIES HAVING JURISDICTION.

D. TRANSVERSE JOINTS ON ALL DUCTS SHALL BE SEALED WITH MASTIC OR TAPE.

E. LONGITUDINAL JOINTS ON DUCTS WITH INTERNAL STATIC PRESSURES IN EXCESS OF 0.75 INCHES OF WATER PRESSURE SHALL BE SEALED WITH MASTIC OR TAPE.

F. LOCK JOINTS SHALL BE HAMMERED TO MAKE THEM AIRTIGHT. INSIDE OF DUCT SHALL PRESENT A SMOOTH SURFACE TO FLOW AIR.

G. CHANGES IN SIZE OF DUCTS SHALL INCREASE GRADUALLY WITH A SLOPE OF NOT MORE THAN 12 INCHES IN 5 FEET WHERE POSSIBLE, BUT NOT MORE THAN 12 INCHES IN 3 FEET IN ANY EVENT.

H. TURNS SHALL BE MADE WITH A THROAT RADIUS OF NOT LESS THAN THE DUCT WIDTH.

I. PLENUMS SHALL BE MADE OF 18 GAUGE GALVANIZED SHEET STEEL REINFORCED HORIZONTALLY ON A MAXIMUM OF 48" CENTERS BY 1-1/2" X 1-1/4" X 1/8" GALVANIZED ANGLES AND REINFORCED VERTICALLY BY 1-1/2" STANDING SEAMS.

M1.01 DESCRIPTION

A. WORK INCLUDED: FURNISH ALL LABOR, MATERIALS, EQUIPMENT, APPLIANCES, AND NECESSARY INCIDENTALS FOR THE COMPLETE INSTALLATION OF ALL HEATING, VENTILATION, AND AIR CONDITIONING AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.

1. AIR CONDITIONING AND HEATING TO EXISTING A/C UNITS AS INDICATED ON PLANS COMPLETE WITH DUCTWORK, AND CONTROLS.

B. RELATED WORK INCLUDED IN THIS SECTION:

1. FURNISHING ELECTRICAL DEVICES NECESSARY FOR MECHANICAL WORK, EXCEPT DISCONNECTS UNLESS INDICATED OTHERWISE.

2. LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS INCLUDING FINAL CONNECTIONS AS INDICATED ON WIRING DIAGRAMS.

3. CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS INDICATED ON WIRING DIAGRAMS.

4. RESPONSIBILITY FOR OBTAINING CLARIFICATION OF DISCREPANCIES BETWEEN MECHANICAL AND ELECTRICAL WORK FROM ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.

5. RESPONSIBILITY FOR PROPER OPERATION OF AUTOMATIC ELECTRICAL CONTROLS AND EQUIPMENT, AND OF ELECTRIC POWER DRIVEN EQUIPMENT FURNISHED UNDER THIS SECTION.

C. RELATED WORK IN OTHER SECTIONS:

1. ELECTRICAL WORK AS FOLLOWS WILL BE PROVIDED UNDER ELECTRICAL DIVISION:

a. CONDUIT FOR LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED EXCEPT CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 26000.

b. LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED HEREIN EXCEPT LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 26000.

c. PROVIDING DISCONNECT SWITCHES.

d. INSTALLING ELECTRICAL DEVICES SUCH AS STARTERS AND DISCONNECTS, AND, WHEN INDICATED, FURNISHING ALL SUCH DEVICES.

D. CODES AND STANDARDS:

1. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:

a. UTAH STATE DIVISION OF FACILITIES CONSTRUCTION MANAGEMENT (DFCM) DESIGN MANUAL, MARCH 2017

b. INTERNATIONAL BUILDING CODE 2018

c. INTERNATIONAL MECHANICAL CODE 2018

d. INTERNATIONAL PLUMBING CODE 2018

e. INTERNATIONAL FIRE CODE 2018

f. INTERNATIONAL ENERGY CONSERVATION CODE 2018

g. FGI GUIDELINES FOR DESIGN AND CONSTRUCTION OF HEALTH CARE FACILITIES 2018

h. ASHRAE STANDARD 170 VENTILATION OF HEALTH CARE FACILITIES 2013

i. ASHRAE STANDARD 90.1 2016

j. ASHRAE STANDARD 62.1 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY 2013

E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE GAS IS LISTED ON THE DRAWINGS.

MG1.01 SUMMARY

A. THIS SECTION INCLUDES PIPING AND RELATED SPECIALTIES FOR THE FOLLOWING MEDICAL GAS SYSTEMS:

1. MEDICAL COMPRESSED-AIR PIPING, DESIGNATED "MEDICAL AIR"; "A".

2. MEDICAL-SURGICAL VACUUM PIPING, DESIGNATED "MEDICAL VACUUM." "V."

B. PRODUCTS INSTALLED BUT NOT SUPPLIED: OWNER WILL SUPPLY THE FOLLOWING PRODUCTS:

1. ROOM OUTLETS FURNISHED BY OTHERS.

2. AIR COMPRESSOR FURNISHED BY OTHERS.

3. WET VACUUM EQUIPMENT FURNISHED BY OTHERS.

4. DENTAL WATER PURIFICATION BY OTHERS.

C. OWNER WILL FURNISH MEDICAL GASES FOR PHASE II TESTING SPECIFIED IN THIS SECTION.

M2.03 MECHANICAL PIPE INSULATION

A. HOT WATER SUPPLY AND RETURN PIPING SHALL BE INSULATED WITH 1/2" THICK OWENS-CORNING ASJ-25 FIBERGLASS PIPE INSULATION WITH VAPOR SEAL JACKET. THE INSULATION SHALL BE APPLIED OVER CLEAN, DRY PIPE WITH ALL JOINTS FIRMLY BUTTED TOGETHER. FITTINGS SHALL BE SIMILARLY INSULATED WITH A FIBERGLASS BLANKET INSULATION COVERED WITH A PREMOLDED PVC COVER. PROVIDE AN ALUMINUM FITTING COVER WHERE PIPE IS COVERED WITH AN ALUMINUM JACKET.

B. PRIOR TO APPLICATION OF INSULATING MATERIALS, SURFACES TO BE INSULATED SHALL BE BRUSHED CLEAN AND MADE FREE FROM RUST, SCALE, GREASE, DIRT, AND OTHER DELETERIOUS MATERIALS. INSULATION SECTIONS OR BLOCKS SHALL BE PLACED SO THE LEAST POSSIBLE DAMAGE TO INSULATION WILL RESULT FROM INSPECTION OR REPAIR OF PIPING.

C. FOR ALL INSULATED PIPING NOT INSTALLED WITH PRE-INSULATED PIPE SUPPORTS, INSTALL HIGH DENSITY INSERTS (CALCIUM SILICATE) AT EACH PIPE SUPPORT OR HANGER. PROVIDE METAL SHIELD UNDER HANGER.

D. FOR ALL HOT WATER SYSTEMS, INSULATION SHALL BE BEVELED TO EXPOSE ALL FLANGES, UNIONS, VALVES, STRAINERS AND SPECIAL ACCESSORIES. RAW ENDS OF INSULATION SHALL BE COVERED WITH FINISHING CEMENT TO PROVIDE A SMOOTH WATER PROOF SURFACE.

E. INSULATION MATERIALS, ADHESIVES, COATINGS AND OTHER ACCESSORIES SHALL HAVE BURNING CHARACTERISTICS AS DETERMINED BY ASTM E 84 AND TESTED WITH UL9C STANDARD 42-1 SHALL HAVE A FLAME SPREAD AND SMOKE CONTRIBUTION AS FOLLOWS: PIPE AND TUBING INSULATION SHALL HAVE A FLAME SPREAD OF 0 TO 25 AND A SMOKE CONTRIBUTION OF 0 TO 50.

M2.01 DIFFUSERS, REGISTERS AND GRILLES

AIR DISTRIBUTION EQUIPMENT SHALL BE OF SIZES AND CAPACITIES INDICATED.

A. REGISTERS, GRILLES, AND DIFFUSERS OF THE SIZES SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN SHALL BE FURNISHED AND INSTALLED. ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL BE COMPLETE WITH FRAMES WITH RUBBER GASKETS SUITABLE FOR THE AREA AND WALL CONSTRUCTION WHERE SHOWN ON THE DRAWINGS.

B. FINISH FOR ALL REGISTERS, DIFFUSERS, GRILLES, ETC., SHALL BE OFF-WHITE UNLESS OTHERWISE SELECTED BY THE OWNER. APPROVED MANUFACTURERS FOR ALL AIR DISTRIBUTION PRODUCTS SHALL BE PRICE INDUSTRIES, NAILOR, METAL AIR, TUTTLE & BAILEY, J&J, CARNES, HART AND COOLEY, OR ANEMOSTAT.

C. SUPPLY AIR SHALL BE INTRODUCED INTO CONDITIONED SPACE IN SUCH A MANNER THAT CONDITIONED AIR AND ROOM AIR IS RAPIDLY AND EVENLY MIXED, RESULTING IN EQUALIZATION OF TEMPERATURE AND DRAFTLESS AIR DISTRIBUTION THROUGHOUT ZONES OF OCCUPANCY WITH TEMPERATURE DIFFERENTIALS UP TO 25 DEGREES F FOR BOTH COOLING AND HEATING AIR. QUANTITIES AND THROWS SHALL BE AS INDICATED.

D. VELOCITY OF MOVING AIR BELOW 5 FOOT LEVEL DURING COOLING CYCLE, SHALL NOT EXCEED LIMITS OF EITHER 50 FPM AT 1.5 DEGREES F BELOW AVERAGE ROOM TEMPERATURE OR 70 FPM AT 1 DEGREE F BELOW AVERAGE ROOM TEMPERATURE. VELOCITY OF MOVING AIR AT THE 1FOOT LEVEL DURING HEATING CYCLE, SHALL NOT BE LESS THAN 10 FPM. TEMPERATURE DIFFERENCE AT OR BELOW THE 5 FOOT LEVEL SHALL NOT EXCEED THE FOLLOWING: 2 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 30 FPM, 1.5 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 50 FPM, 1.0 DEGREES F BELOW AVERAGE ROOM TEMPERATURE AT 70 FPM. SOUND PRESSURE LEVEL IN ALL OCTAVE BANDS FOR EACH DIFFUSER SHALL NOT EXCEED NC35 NOISE CRITERIA CURVE AT TASK LEVEL WHEN UNITS OPERATE AT DESIGNED CAPACITIES.

E. CEILING DIFFUSERS, GRILLES AND REGISTERS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE SO THAT THEY ARE NOT DEPENDING ON THE CEILING FOR SUPPORT.

F. CEILING DIFFUSERS MAY BE ROUND NECKED OR EQUIVALENT SIZE SQUARE NECK. PROVIDE SQUARE TO ROUND NECK ADAPTER AS NECESSARY. FLEX DUCT SHALL TYPICALLY CONNECT DIRECTLY TO THE DIFFUSER USING A 1-1/2" RADIUS FLEXIBLE DUCT ELBOW. IF SPACE DOES NOT ALLOW FOR A FULL 1-1/2" RADIUS TO BE PROVIDED, THEN A LINED SHEET METAL BOOT SHALL BE PROVIDED. THE FLEXIBLE DUCT SHALL BE CONNECTED TO THE SIDE OF THE SHEET METAL BOOT. THE FLEXIBLE DUCT SHALL NOT BE CONNECT TO THE TOP OF THE SHEET METAL BOOT.

MG2.01 PIPE AND TUBE FITTINGS

A. WROUGHT-COPPER FITTINGS: ASME B16.22, SOLDER-JOINT, PRESSURE TYPE. FITTINGS MAY BE FACTORY CLEANED, PURGED, AND SEALED FOR MEDICAL GAS SERVICE ACCORDING TO ASTM B 819 OR FIELD CLEANED, PURGED, AND SEALED AS SPECIFIED IN "PREPARATION" ARTICLE IN PART 3. INCLUDE MARKING OR LABELING "CLEANED FOR MEDICAL GAS SERVICE;" "CLEAN FOR OXYGEN SERVICE;" "NITROGENIZED."

B. BRONZE-TUBE FLANGES: ASME B16.24, CLASS 300.

C. FLEXIBLE CONNECTORS: BRONZE OR STAINLESS-STEEL FLEXIBLE PIPE CONNECTORS AS SPECIFIED IN DIVISION 15 SECTION "VIBRATION CONTROL."

M2.04 MECHANICAL PIPE & FITTING SCHEDULE

A. NO PIPE OF A FOREIGN MANUFACTURER WILL BE ACCEPTABLE.

B. BLACK AND GALVANIZED STEEL PIPE: ASTM A53 ERW GRADE B, STANDARD WEIGHT (SCHEDULE 40).

C. HEATING SYSTEM LINES SHALL BE STANDARD WEIGHT BLACK STEEL PIPE. PIPE 2-1/2 INCH AND LARGER SHALL EITHER HAVE WELDING OR MECHANICALLY GROOVED FITTINGS. PIPE 2-INCH AND SMALLER SHALL EITHER HAVE WELDING FITTINGS, MECHANICALLY GROOVED FITTINGS OR MALLEABLE IRON SCREWED FITTINGS.

D. UNIONS SHALL GENERALLY BE USED ON ALL CONNECTIONS TO AUTOMATIC VALVES AND EQUIPMENT.

E. IN GENERAL, UNIONS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS FOR ALL CONNECTING PIPING: ON EACH PIPE AT HEATING OR COOLING COIL, AT CONNECTIONS TO HEATING OR COOLING EQUIPMENT, ON ALL SIDES OF AUTOMATIC VALVES WHERE VALVES DO NOT HAVE UNION CONNECTIONS.

F. ALL VALVES IN CONNECTION WITH PIPING SHALL BE HAMMOND, MILWAUKEE, KEYSTONE, CRANE, CENTERLINE, WALWORTH, NIBCO, STOCKAM, WATTS, CENTRAL SPRINK, INC. OR GRINNELL. BALL VALVES SHALL BE BRONZE WITH BRONZE BALL, TEFLON SEAT, INDICATOR DIAL, INSULATED HANDLE, AND ADJUSTABLE PACKING. BALL OR GLOBE VALVES MAY BE USED ON ALL WATER PIPING 2 INCHES AND SMALLER. ALL VALVES 2 INCHES AND SMALLER SHALL BE ALL BRONZE CONSTRUCTION. COMPANION FLANGES SHALL BE PROVIDED FOR BUTTERFLY SCREWED CONNECTIONS. COMPANION FLANGES SHALL BE PROVIDED FOR BUTTERFLY VALVES AND NONSLAM CHECK VALVES.

G. VALVES SHALL BE INSTALLED WITH STEMS HORIZONTAL OR ABOVE.

H. GATE VALVES 2 INCHES AND SMALLER SHALL BE MILWAUKEE 1151 OR 1169; GRINNELL 3080 OR 3080SJ; NIBCO #T-134 OR S-134.

I. GLOBE VALVES 2 INCHES AND SMALLER SHALL BE MILWAUKEE 590-T OR 1590-T; CRANE NO. 7 OR NO. 1310; NIBCO #S-235-Y OR T-235-Y; GRINNELL 3240 OR 3240SJ.

J. CALIBRATED BALANCING VALVES 2 INCHES AND SMALLER SHALL BE BELL & GOSSETT CIRCUIT SETTER, EQUIPPED WITH BARCO SHUTOFF VALVES AND QUICK-DISCONNECTS.

K. CHECK VALVES 2 INCHES AND SMALLER SHALL BE MILWAUKEE 509 OR 1509; CRANE NO. 36 OR NO. 1342; NIBCO #T413-B OR S-413-B; GRINNELL 3300 OR 3300SJ.

L. BUTTERFLY VALVE 2" AND SMALLER SHALL BE MILWAUKEE BUTTERBALL BB2-100 OR BB2-350.

M. BALL VALVES SHALL BE MILWAUKEE BA-100 FULL PORTED TWO-PIECE CONSTRUCTION, OR MILWAUKEE BA-300 FULL PORTED THREE PIECE CONSTRUCTION OR WATTS B-6000.

N. BALANCING COCKS 2 INCHES AND SMALLER SHALL BE CRANE NO. 250 OR MILWAUKEE BUTTERBALL BB2-100 OR BB2-350 WITH MEMORY STOP.

O. AIR VENT VALVES SHALL BE CRANE NO. 88 OR MILWAUKEE 600, 200-PSI WORKING PRESSURE, 3/8 INCH BRONZE NEEDLE-POINT GLOBE.

P. VALVE ASSEMBLIES BY FLOWSET MAY BE USED WHERE APPROVED.

Q. FLOW CONTROL VALVES SHALL BE IN-LINE SIZE AND SHALL HAVE A MINIMUM OF 2-PSI PRESSURE DROP FOR FLOW TO 525 GPM AND 8 PSI IN EXCESS OF 525 GPM. VALVES SHALL BE PRESET AT FACTORY FOR FLOW CONDITIONS AND SHALL BE GRISWOLD.

R. STRAINERS SHALL BE KECKLEY, SARCO, VICTAULIC, CENTRAL SPRINK, INC. OR WEBSTER, OF THE SELF-CLEANING TYPE. PERFORATIONS IN STRAINERS SHALL BE 1/16 INCH IN DIAMETER. BLOWOFF BALL VALVES SHALL BE PROVIDED FOR ALL STRAINERS. A THREADED HOSE CONNECTION SHALL BE PROVIDED ON ALL STRAINERS LOCATED ABOVE CEILINGS. PRESSURE RATING OF STRAINERS SHALL BE EQUAL TO BUT IN NO CASE LESS THAN THE PRESSURE TESTING OF ADJOINING VALVES.

S. COMBINATION TEST PLUGS BY UNIVERSAL CONTROL OR TACO SHALL BE INSTALLED.

T. PIPING 2" AND SMALLER SHALL BE SCREWED. ALL CHANGES IN DIRECTION SHALL BE MADE WITH STANDARD THREADED FITTINGS. UNDER NO CONDITIONS WILL PIPING BE NOTCHED, MITERED OR SWAGED.

U. ALL PIPING SHALL BE ACCURATELY SIZED TO MEASUREMENTS ESTABLISHED AT THE BUILDING AND WORKED INTO PLACE WITHOUT SPRINGING OR FORCING. PROPER PROVISIONS SHALL BE MADE FOR THE EXPANSION AND CONTRACTION OF ALL PIPE LINES. SCREW JOINTS SHALL BE MADE WITH A LUBRICANT APPLIED TO THE MALE THREADS ONLY. THREADS SHALL BE FULL CUT AND NOT MORE THAN THREE THREADS ON THE PIPE SHALL REMAIN EXPOSED.

MG3.01 PIPING INSTALLATION, GENERAL

A. INSTALL SUPPORTS AND ANCHORS ACCORDING TO DIVISION 15 SECTION "HANGERS AND SUPPORTS."

1. SPACING BETWEEN HANGERS: AS DESCRIBED IN NFPA 99 AND NFPA 99C.

B. PURGING: PURGE MEDICAL GAS PIPING USING OIL-FREE, DRY NITROGEN DURING BRAZING AND AFTER INSTALLING PIPING BUT BEFORE CONNECTING TO SERVICE-OUTLET VALVES, ALARMS, AND GAGES.

MG3.02 LABELING AND IDENTIFICATION

A. INSTALL LABELING ON VALVES, VALVE-BOX COVERS, AND ALARM PANELS ACCORDING TO REQUIREMENTS OF NFPA 99.

B. CAPTIONS AND COLOR CODING: USE THE FOLLOWING OR SIMILAR MEDICAL GAS CAPTIONS AND COLOR CODING FOR SPECIALTIES, WHEN SPECIFIED AND WHERE REQUIRED BY NFPA 99:

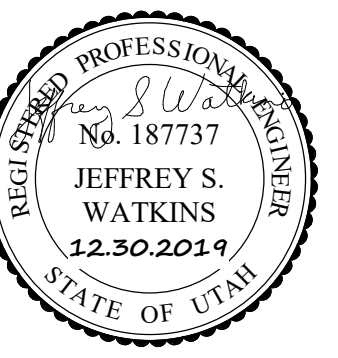
1. OXYGEN: WHITE LETTERS ON GREEN BACKGROUND.

2. MEDICAL AIR: BLACK OR WHITE LETTERS ON YELLOW BACKGROUND.

3. MEDICAL VACUUM: BLACK LETTERS ON WHITE BACKGROUND.

4. NITROUS OXIDE: WHITE LETTERS ON BLUE BACKGROUND.

C. LABELING SHALL APPEAR ON THE PIPING AT 20 FT (MAX) INTERVALS AND AT LEAST ONCE IN EVERY ROOM. PROVIDE STENCILED MARKERS WITH PAINTED, COLOR CODED BANDS COMPLYING WITH ASME A13.1.



F2.01 MATERIALS AND EQUIPMENT

A. NO PIPE OR FITTINGS OF FOREIGN MANUFACTURE ARE ALLOWED. PIPE SHALL BE SCHEDULE 40 OR DYNATHREAD 40 UP TO AND INCLUDING 6" SIZE. PIPE 8" AND LARGER SHALL BE SCHEDULE 30. NO PLAIN END, SLIP, SOCKET OR TEE TYPE FITTINGS ALLOWED. ALL FITTINGS SHALL BE THREADED OR GROOVED. IF MECHANICAL TEE FITTINGS ARE REQUIRED, THEY ARE TO BE VICTAULIC 920 OR 920N SERIES OR ENGINEER APPROVED EQUAL.

B. ALL PARTS AS REQUIRED INCLUDING PIPING, FITTINGS, VALVES, HANGERS AND EARTHQUAKE BRACING, ETC. SHALL BE FACTORY MUTUAL APPROVED FOR USE ON FIRE SPRINKLER SYSTEMS.

F2.02 SPRINKLER

A. HEADS SHALL BE A MINIMUM ORIFICE SIZE OF 1/2". EXTRA LARGE ORIFICE (ELO) HEADS SHALL NOT BE USED UNLESS SPECIFIED. ORIFICES LARGER THAN 1/2" MAY BE USED AS REQUIRED BY DENSITY AND SPACING DEMANDS WHEN SPECIFIED. HEADS SHALL BE AS MANUFACTURED BY RELIABLE, TYCO, VICTAULIC, OR VIKING.

F3.01 PERFORMANCE

A. THIS CONTRACTOR SHALL SUBMIT COMPLETE FABRICATION DRAWINGS, HYDRAULIC CALCULATIONS, AND OTHER REQUIRED DOCUMENTATION TO THE LOCAL AUTHORITY HAVING JURISDICTION AND RECEIVE THEIR APPROVAL BEFORE SUBMITTING SUCH MATERIAL TO THE ENGINEER FOR FINAL APPROVAL.

B. DRAWINGS SUBMITTED FOR REVIEW SHALL BE MADE OF A SCALE EQUAL TO THE ARCHITECT'S REFLECTED CEILING PLAN. DRAWINGS SHALL INCLUDE LOCATION OF LIGHTS, SPEAKERS, CEILING GRID, DIFFUSERS, GRILLES, ACCESS DOORS, RADIANT CEILING PANELS, ETC. FOR COORDINATION OF FIRE SPRINKLER HEAD LOCATIONS.

F3.02 LOCATION OF SPRINKLER HEADS

A. EVERY EFFORT SHALL BE REQUIRED TO INSURE THAT THE HEADS FORM A SYMMETRICAL PATTERN IN THE CEILING WITH THE CEILING GRID, LIGHTS, DIFFUSERS AND GRILLES. OFFSETS SHALL BE MADE IN PIPING TO ACCOMMODATE DUCTWORK IN THE CEILING. HEADS SHOULD BE SYMMETRICAL AND ALL PIPING RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES. IN NO CASE SHALL SPRINKLER HEADS BE INSTALLED CLOSER THAN APPROVED DISTANCES FROM CEILING OBSTRUCTIONS.

B. WHERE LAYOUT OF SPRINKLER HEADS IS SHOWN ON REFLECTED CEILING PLANS THE LOCATIONS SHALL BE FOLLOWED UNLESS APPROVAL IS OBTAINED FROM THE ARCHITECT OR SUCH LOCATIONS SHOWN DO NOT MEET THE REQUIREMENTS OF NFPA-13. IN EITHER CASE, APPROVAL OF THE ARCHITECT SHALL BE OBTAINED IN WRITING BEFORE SPRINKLER HEAD LOCATIONS ARE CHANGED. IF THE INSTALLATION OF ADDITIONAL HEADS ARE NEEDED TO CONFORM TO NFPA 13 REQUIREMENTS IN AREAS WHERE HEADS ARE SHOWN ON REFLECTED CEILING PLANS, THEY SHALL BE INCLUDED IN THE CONTRACT PRICE.

P3.02 PIPE INSTALLATION

A. MAKE PIPE RUNS STRAIGHT AND TRUE. SPRINGING OR FORCING PIPING INTO PLACE IS NOT PERMITTED. INSTALL IN MANNER TO PREVENT ANY UNDUE STRAIN ON EQUIPMENT. MAKE JOINTS SMOOTH AND UNOBSTRUCTED INSIDE AND OUT. AND REAM PIPE ENDS THOROUGHLY TO REMOVE BURRS. CONCEAL PIPING IN FINISHED PORTIONS OF THE BUILDINGS EXCEPT AS OTHERWISE DIRECTED OR INDICATED. CAP OR PLUG ENDS AND OPENINGS IN PIPE AND FITTINGS IMMEDIATELY TO EXCLUDE DIRT UNTIL EQUIPMENT IS INSTALLED OR FINAL CONNECTIONS ARE MADE.

B. INSTALL PIPING TO CLEAR BEAMS UNLESS SLEEVING IS INDICATED. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION. OBTAIN APPROVAL FROM ARCHITECT IF CORING OR CUTTING OF CONCRETE WORK IS NECESSARY DUE TO FAILURE TO INSTALL REQUIRED SLEEVES PRIOR TO THE TIME OF CONCRETE POUR. COST OF CORING AND CUTTING WORK SHALL BE BORNE BY THE SUBCONTRACTOR.

C. EXPOSED PLATED OR ENAMELED PIPE: MAKE CONNECTIONS TO EQUIPMENT WITH SPECIAL CARE. SHOW NO TOOL MARKS OR THREADS.

D. DIELECTRIC UNIONS: MAKE CONNECTIONS BETWEEN TWO DISSIMILAR METAL PIPES WITH DIELECTRIC UNIONS.

E. UNIONS: PROVIDE A UNION ON ONE SIDE OF EACH SHUTOFF VALVE. AT BOTH SIDES OF AUTOMATIC VALVES, AT EQUIPMENT CONNECTIONS AND ELSEWHERE INDICATED OR REQUIRED, UNLESS FLANGES ARE INDICATED.

F. FLOOR, WALL AND CEILING PLATES: PROVIDE WHERE PIPES PIERCE FINISHED SURFACES.

G. NOISE: INSTALL SOIL, WASTE, AND WATER PIPING IN A MANNER THAT PREVENTS ANY UNUSUAL NOISE FROM FLOW OF WATER UNDER NORMAL CONDITIONS.

H. SHUTOFF VALVES: PROVIDE WHERE INDICATED AND REQUIRED FOR ADEQUATE CONTROL OF SYSTEMS AND FOR ISOLATION OF FIXTURE GROUPS AND EQUIPMENT.

I. BURIED PIPING: INSTALL WITH MINIMUM 36 IN. COVERAGE UNLESS OTHERWISE INDICATED. LAY PIPING ACCURATELY TO GRADE WHERE INVERT ELEVATIONS ARE INDICATED. WHEN REQUIRED, PROVIDE THRUST BLOCKS PER MANUFACTURER'S RECOMMENDATIONS.

J. EQUIPMENT AND MATERIALS: INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

K. ACCESSIBILITY: INSTALL WORK READILY ACCESSIBLE FOR NORMAL OPERATION, READING OF INSTRUMENTS, ADJUSTMENT, SERVICE, INSPECTION AND REPAIR. PROVIDE ACCESS PANELS WHERE INDICATED AND REQUIRED.

L. PIPE JOINTS: MAKE SCREWED JOINTS WITH A MINIMUM AMOUNT OF COMPOUND APPLIED TO THE MALE THREAD ONLY. ALL JOINTS SHALL BE MADE PER CODE REQUIREMENTS.

M. PROVIDE PIPE ISOLATION AT ALL HANGERS FOR NON-INSULATED MATERIALS.

N. PIPING ROUGH-IN FOR FIXTURES: SUPPORT OR SECURE TO BUILDING CONSTRUCTION OF FIRMLY ANCHORED WASTE PIPING SO THAT PIPES CANNOT BE DISPLACED. DO NOT SECURE TO WALLS. USE OF MAKESHIFT DEVICES, SUCH AS ROPE, WIRE, TAPE, ETC. IS PROHIBITED.

O. HORIZONTAL DRAINAGE PIPING SHALL BE INSTALLED IN UNIFORM ALIGNMENT AT UNIFORM SLOPES. THE MINIMUM SLOPE OF HORIZONTAL PIPE 4" OR LARGER IN DIAMETER MAY HAVE A SLOPE OF NOT LESS THAN 1% (1/8 INCH PER FOOT). THE MINIMUM SLOPE OF HORIZONTAL PIPE LESS THAN 4" MAY HAVE A SLOPE OF NOT LESS THAN 2% (1/4 INCH PER FOOT).

F1.01 APPLICABLE STANDARDS

A. THE ENTIRE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL CODES AND STANDARDS, BUT IN NO CASE LESS THAN THE FOLLOWING:

- INTERNATIONAL BUILDING CODE
- INTERNATIONAL FIRE CODE
- NFPA 13-2016 INSTALLATION OF SPRINKLER SYSTEM
- NFPA 70-2017 NATIONAL ELECTRICAL CODE
- NFPA 72-2016 NATIONAL FIRE ALARM CODE

B. THE CODES LISTED REPRESENT THE MINIMUM REQUIREMENT. THE DRAWINGS, SPECIFICATIONS, INSURANCE COMPANY OR REGULATORY AGENCIES MAY DESIGNATE MORE STRINGENT REQUIREMENTS.

C. WHERE A CONFLICT BETWEEN CODES, DRAWINGS, INSURANCE COMPANY OR REGULATORY AGENCY OCCURS THE MOST STRINGENT REQUIREMENT SHALL GOVERN. ANY DEVIATIONS FROM THE MINIMUM REQUIREMENTS LISTED OR SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE REGULATORY AGENCY AND THE ENGINEER.

D. A CONTRACTOR NOT LISTED IN THE "PRE-APPROVED CONTRACTORS LIST" MUST RECEIVE PRIOR APPROVAL FROM THE ENGINEER TO BID THIS PROJECT.

F1.02 SCOPE OF WORK

A. THE SCOPE OF WORK INCLUDES THE PROVISION OF ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED ON THE DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR THEIR COMPLETION.

B. SPRINKLER CONTRACTOR SHALL BE PREAPPROVED BY ENGINEER OF RECORD.

C. THE WORK INCLUDES THE REPLACING OF EXISTING FIRE SPRINKLER HEADS IN REMODELED AREAS. PROVIDE QUICK RESPONSE SPRINKLER HEADS.

- NEW SPRINKLERS IN PATIENT TOILET ROOM ARE TO MATCH EXISTING.
- PROVIDE INSTITUTIONAL STYLE SPRINKLER HEADS IN HARD LID CEILING FOR PSYCH EXAM ROOM.

D. DESIGN SPRINKLER PIPING AND OBTAIN APPROVAL FROM AUTHORITIES HAVING JURISDICTION. OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO THE AHJ:

- SPRINKLER OCCUPANCY HAZARD CLASSIFICATIONS: OFFICE, PROCEDURE, AND PUBLIC AREAS- ORDINARY HAZARD, GROUP 1.

D. MAXIMUM PROTECTION AREA OF INDIVIDUAL SPRINKLER OPERATION, MINIMUM SPRINKLER DISCHARGE DENSITY AND MINIMUM AREA OF SPRINKLER OPERATION FOR DESIGN PURPOSES SHALL BE IN ACCORDANCE WITH NFPA-13.

P2.02 CLEANOUTS

A. FULL SIZE CLEANOUTS SHALL BE INSTALLED AT THE BASE OF EACH SOIL WASTE STACK. ALL OTHER CLEANOUTS SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND WHERE REQUIRED BY STATE, LOCAL OR NATIONAL PLUMBING CODES.

B. ALL CLEANOUTS SHALL BE INSTALLED IN LOCATIONS EASILY ACCESSIBLE FOR RODDING. CLEANOUTS IN WALLS SHALL BE JR SMITH 4402, IN FLOORS JR SMITH 4023. CLEANOUTS SHALL BE JR SMITH, ZURN, WADE, OR JOSAM.

P2.03 PIPE HANGERS

A. HANGERS SHALL BE SUPPLIED WITH FACTORY INSTALLED ISOLATION AND DI-CHROMATE FINISH.

B. PIPE 2 IN. AND SMALLER: GRINNEL F69. PIPE 2-1/2 IN. AND LARGER: GRINNEL F65. CONCRETE INSERTS: GRINNEL 281 ANAD 282. RISER CLAMPS FOR COPPER PIPING: GRINNEL 261F. PLASTIC COATED, RISER CLAMPS FOR OTHER PIPING: GRINNEL 261.

C. HANGER RODS SHALL CONFORM TO THE FOLLOWING: PIPE SIZE 2 IN. AND SMALLER: 3/8 IN. RODS. PIPE SIZE 2-1/2 IN. AND 3 IN.: 1/2 IN. RODS. PIPE SIZE 3 IN. AND LARGER: 5/8 IN. RODS.

P2.04 PLUMBING FIXTURES

A. SUPPLIES AND STOPS SHALL BE FROST, BRASSCRAFT, KOHLER, EASTMAN, US BRASS, ROVERT MFG OR EQUAL. P-TRAPS SHALL BE FROST, KOHLER, SANITARY DASH OR EQUAL.

B. ALL FIXTURES SHALL BE CAULKED TO THE FLOOR OR WALL WITH WATER RESISTANT WHITE BUTYL RUBBER CAULKING COMPOUND. TRIM FOR ALL FIXTURES SHALL BE CHROME PLATED AND ALL TRIM SHALL MATCH IN DESIGN. SUPPLY FAUCETS SHALL HAVE RENEWABLE SEATS AND BARRELS.

C. FIXTURES SHALL BE THE WATER SAVER TYPE WITH MAXIMUM USAGE OF 1.6 GALLONS PER FLUSH FOR WATER CLOSETS, 2.5 GALLONS PER MINUTE FOR SHOWERS, 3.0 GALLONS PER MINUTE FOR SERVICE SINKS, 1.0 GALLONS PER MINUTE FOR URINALS, 0.5 GALLONS PER MINUTE FOR LAVATORIES AND 2.0 GALLONS PER MINUTE FOR SINKS.

P2.05 PLUMBING EQUIPMENT APPROVED LIST

PLUMBING EQUIPMENT	MANUFACTURER
FLOOR DRAINS	ZURN, JR SMITH OR EQUAL
CLEANOUTS	ZURN, JR SMITH OR EQUAL
VALVES	WATTS, MILWAUKEE OR NIBCO
PIPE HANGERS & SUPPORTS	GRINNELL, FEE & MASON OR B-LINE
INSULATION	MILVILLIE OR OWNS-CORNING
SINK FAUCETS	MOEN, KOHLER, ELJER OR EQUAL
TOILET SEATS	BEMIS, KOHLER OR CHURCH
PRESSURE REDUCING VALVES	WATTS SERIES 223, ZURN OR WILKINS
WATER HEATERS	EEMAX OR APPROVED EQUAL

P3.01 HANGERS AND SUPPORTS

A. HOLD HORIZONTAL PIPE RUNS FIRMLY IN PLACE USING APPROVED STEEL AND IRON HANGERS, SUPPORTS, AND/OR PIPE RESTS UNLESS OTHERWISE INDICATED. SUSPEND HANGER RODS FROM CONCRETE INSERTS OR FROM APPROVED BRACKETS, CLAMPS OR CLIPS. HANG PIPES INDIVIDUALLY OR IN GROUPS IF SUPPORTING STRUCTURE IS ADEQUATE TO SUPPORT WEIGHT OF PIPING AND FLUID, EXCEPT FOR BURIED PIPING, HANG OR SUPPORT PIPE RUNS SO THAT THEY MAY EXPAND OR CONTRACT FREELY WITHOUT STRAIN TO PIPE OR EQUIPMENT.

- HORIZONTAL STEEL PIPING: PROVIDE HANGERS OR SUPPORTS EVERY 10 FT. EXCEPT EVERY 8 FT. FOR PIPING 1-1/4 IN. AND SMALLER.
- HORIZONTAL COPPER TUBING: FOR 2 IN. DIAMETER AND OVER, PROVIDE HANGERS EVERY 10 FT.; FOR 1-1/2 IN. DIAMETER AND SMALLER, EVERY 6 FT.
- HORIZONTAL CAST-IRON HUB AND SPIGOT PIPING: PROVIDE HANGERS OR SUPPORTS AT EACH HUB.
- HORIZONTAL CAST-IRON NO-HUB PIPING: PROVIDE HANGERS OR SUPPORTS AT EACH SIDE OF NO-HUB FITTINGS. PROVIDE ANTI-SEPARATION BRACING AT EACH 90 DEGREE CHANGE OF DIRECTION.
- VERTICAL PIPING: SUPPORT AT FLOOR WITH IRON PIPE CLAMPS.

B. BRANCHES: PROVIDE SEPARATE HANGERS OR SUPPORTS FOR BRANCH LINES 6 FT. OR MORE IN LENGTH.

C. SOUND AND ELECTROLYSIS ISOLATORS: PROVIDE AT ALL HANGERS AND SUPPORTS FOR HOT AND COLD DOMESTIC WATER LINES. SECURELY ATTACH PIPE TO WALLS, STUDS, ETC. ALL SUCH PIPING ISOLATED FROM STRUCTURE BY "TRISOLATORS".

P1.01 QUALITY ASSURANCE

A. CODES AND STANDARDS

- ALL ITEMS INDICATED ON SITE, ARCHITECTURAL OR MECHANICAL DRAWINGS ARE TO BE PROVIDED COMPLETE FROM POINT OF CONNECTION TO FINISHED FIXTURE IN CONFORMANCE WITH ALL GOVERNING AUTHORITY REQUIREMENTS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK IN VIOLATION OF GOVERNING CODES.
- IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
 - 2018 INTERNATIONAL PLUMBING CODE.
 - 2018 INTERNATIONAL BUILDING CODE.
 - 2018 INTERNATIONAL MECHANICAL CODE.
 - 2018 INTERNATIONAL ENERGY CONSERVATION CODE.

P1.02 MISCELLANEOUS

A. EXAMINATION OF THE SITE: EXERCISE CARE IN EXAMINING THE SITE AND COORDINATE ALL WORK INDICATED ON THE DRAWINGS WITH EXISTING CONDITIONS. REPORT TO ARCHITECT IN WRITING CONDITIONS THAT WILL PREVENT PROPER PROVISIONS OF THIS WORK. VERIFY DEPTH AND LOCATION OF ALL SERVICE LINES WITH SERVING COMPANIES HAVING JURISDICTION BEFORE EXCAVATING. BY SUBMISSION OF THE BID, THE CONTRACTOR WARRANTS THAT HE HAS FAMILIARIZED HIMSELF WITH THE EXISTING CONDITIONS AND WILL PERFORM ALL WORK AS REQUIRED FOR HOOKUP AND AS REQUIRED BY THE CONTRACT DOCUMENTS AT NO ADDITIONAL.

B. PERMITS AND FEES: ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND FEES REQUIRED BY ALL GOVERNING AGENCIES.

C. SERVICE CONNECTIONS: MAKE ALL NECESSARY ARRANGEMENTS WITH APPLICABLE UTILITY COMPANY FOR CONNECTION TO EXISTING SERVICE LINES. PAY ALL FEES ASSOCIATED WITH WORK INCLUDING METERS, HOOKUP CHARGE AND UTILITY ASSESSMENT FEES.

D. DRAWINGS: COORDINATE ALL SPACE REQUIREMENTS WITH OTHER TRADES. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING, EQUIPMENT, AND OTHER ITEMS AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE.

E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.

P1.03 GENERAL

A. PIPE SLEEVES AND WRAPPING: PROVIDE POLISHED CHROMIUM PLATED AND BRASS SET SCREW FLANGES WHERE PLUMBING PIPING PASS THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS IN FINISHED PORTIONS OF BUILDING INCLUDING FLANGES ON PIPES AT FIXTURES. ALL SLEEVES IN CONCRETE AND EXTERIOR WALLS SHALL BE 20 GA. GALVANIZED IRON ONE INCH O.D. LARGER THAN THE PIPE, CAULKED IF BELOW GRADE IN A MOISTUREPROOF MANNER. ALL PIPES PENETRATING THROUGH FIRE WALLS AND FLOORS SHALL BE PROPERLY SAFED WITH DOW CORNING 3-6548 SILICONE RTV FOAM OR EQUAL. INSTALL PER MANUFACTURE'S DIRECTION.

B. PIPE IDENTIFICATION:

- PIPING IDENTIFICATION PER ANSI AND OSHA STANDARDS: EACH INDIVIDUAL PIPELINE SHALL BE MARKED FOR QUICK AND EASY IDENTIFICATION AS TO CONTENTS AND CHARACTER OF MATERIAL CARRIED IN THE PIPES BY SET ON SNA OR STR MARKER.
- MARKERS SHALL BE INSTALLED AND SPACED AT NOT MORE THAN 8 FT. INTERVALS AND SO LOCATED THAT MARKERS SHALL BE VISIBLE WHERE PIPING SYSTEM IS EXPOSED.
- COLOR SCHEME SHALL BE APPROVED. BASE COLOR FOR MARKERS SHALL BE AS FOLLOWS:

DOMESTIC HOT WATER -	YELLOW
DOMESTIC COLD WATER -	GREEN
SANITARY SEWER -	GREEN
SANITARY VENT -	GREEN
CONDENSATE DRAIN -	BLUE

C. ONE MARKER SHALL BE INSTALLED AT EACH SIDE OF VALVES, SPECIAL FITTINGS AND AT BRANCH TAKE-OFF. IN FURRED SPACES INSTALL ONE BAND 2 FT. ABOVE FLOOR AND 19 IN. BELOW CEILING LINE.

D. MATERIALS: MATERIALS WHEN NOT OTHERWISE DEFINITELY SPECIFIED SHALL CONFORM TO THE APPLICABLE ASTM, ASME, AGA, AND ASA STANDARDS.

E. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.

P2.01 PIPE AND FITTING SCHEDULE

PIPE AND FITTINGS:

A. NO PIPE OF A FOREIGN MANUFACTURER WILL BE ACCEPTABLE.

B. ALL PIPING, FITTINGS, FLANGES, ETC. SHALL BE FREE FROM DEFECTS AND SHALL COMPLY WITH THE APPROPRIATE ASTM SPECIFICATIONS.

C. BLACK STEEL PIPE: ASTM A53 ERW GRADE B, STANDARD WEIGHT (SCHEDULE 40) OR EXTRA STRONG (SCHEDULE 80) AS SPECIFIED.

D. COPPER TUBING: ASTM B88, TYPE L OR K AS SPECIFIED.

E. PVC PIPE AND FITTINGS: ASTM D1785 CLASS 150 WITH ASTM D 2853 SOLVENT CEMENT JOINTS UNLESS OTHERWISE SPECIFIED. SCHEDULE 40. PVC PLASTIC PIPE FITTINGS: ASTM F 628, SCHEDULE 40.

F. ACRYLONITRILE BUTADIENE STYRENE (ABS) PLASTIC PIPE: ASTM D 2861, SCHEDULE 40, ASTM F 628, SCHEDULE 40. ABS PLASTIC PIPE FITTINGS: ASTM F 409, ACCESSIBLE AND REPLACEABLE, SOLVENT CEMENT AND THREADED TYPES, DRAIN PATTERN.

G. CAST IRON SOIL PIPE AND FITTINGS: ASTM A74

H. WELDED BLACK STEEL FITTINGS: ASTM A234 GRADE B, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING, OR OF WEIGHT OR SCHEDULE OF MATCHING PIPING.

I. THREADED MALLEABLE IRON FITTINGS: ANSI B16.3, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING, OR OF WEIGHT OR SCHEDULE OF MATCHING PIPING EITHER BLACK OR GALVANIZED TO MATCH PIPING.

J. WELDED FLANGES: ASTM A181 GRADE B, 150-POUND FOR STANDARD WEIGHT PIPING, 300-POUND FOR EXTRA STRONG PIPING OR OF EQUAL WEIGHT OF CONNECTED EQUIPMENT.

K. COPPER FITTINGS: WROUGHT COPPER, ANSI SPECIFICATION B16.22.

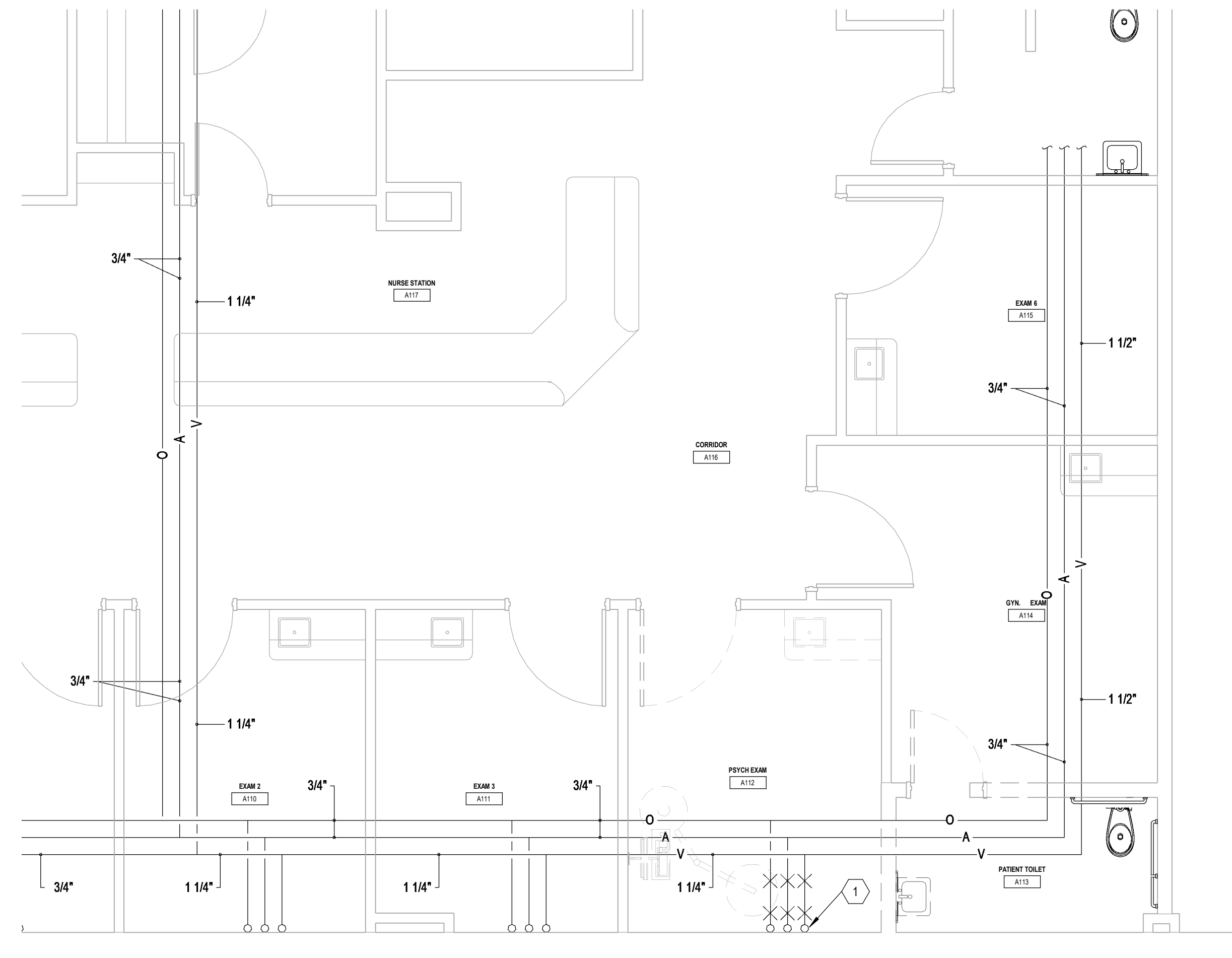
L. BALL VALVES, DOMESTIC WATER: BRONZE, FULLPORT, CLASS 150, THREADED. GRINNELL 3750 OR 171N NIBCO T-585 JAMESBURY 300

M. PARTITION STOP VALVES: T&S B415, LOOSE KEY TYPE WITH WALL FLANGE.

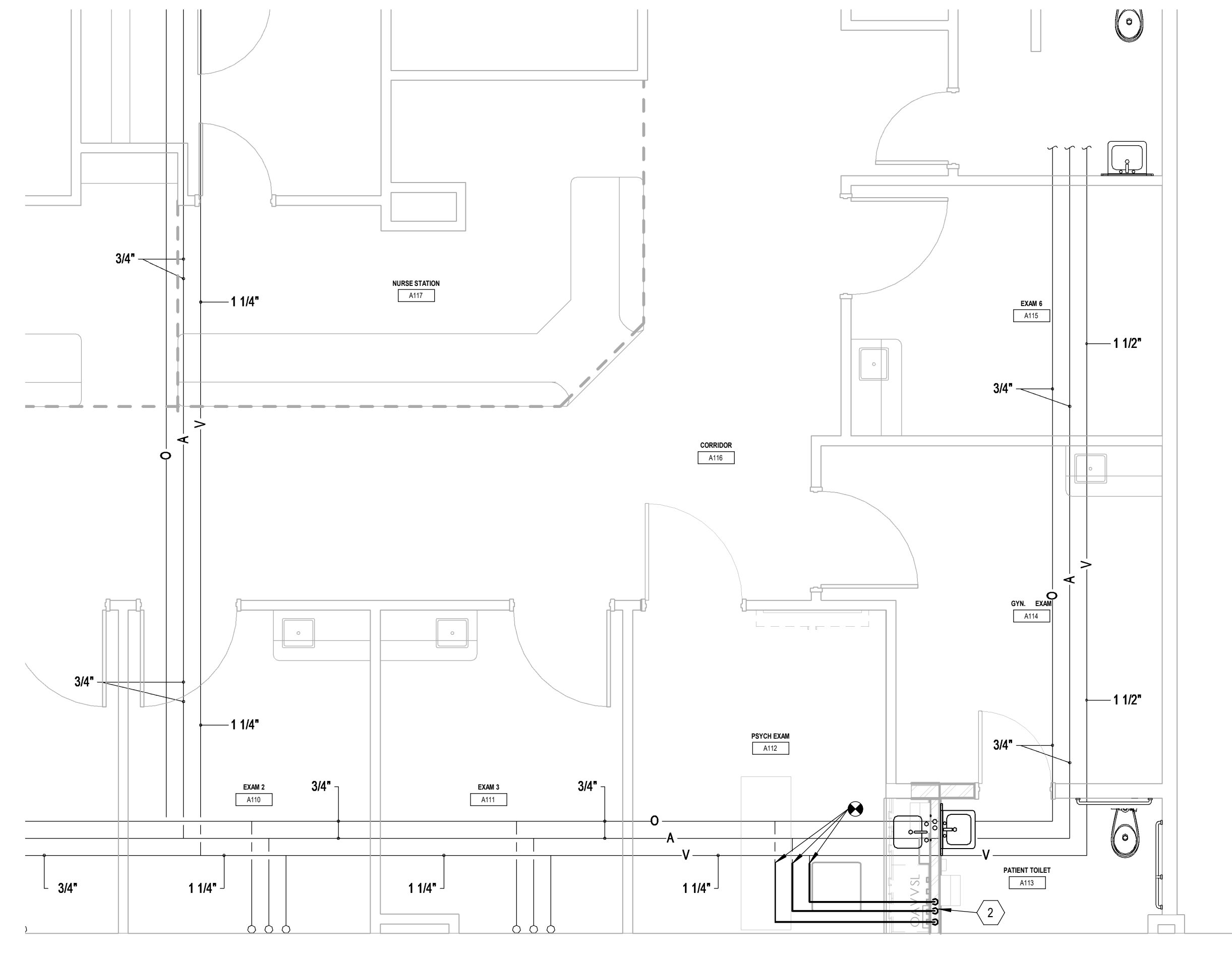
N. BALANCING COCKS 2 INCHES AND SMALLER SHALL BE CRANE NO 250 OR MILWAUKEE BUTTERBALL BB2-100 OR BB2-350 WITH MEMORY STOP.

O. SOLDER:

- JOINTS IN COPPER PIPING ABOVE GRADE SHALL BE STAY SAFE 50 SOLDER OR 95-5 SOLDER SHALL BE SILFOS OR SILVERLOW FOR ALL REFRIGERANT PIPING JOINTS.

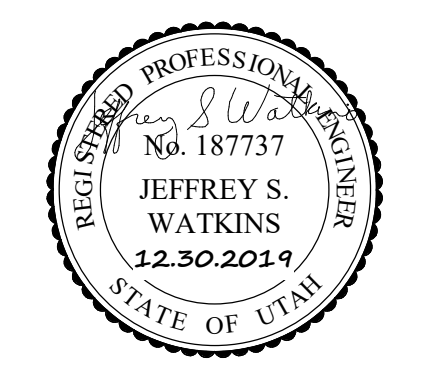


1 PSYCH EXAM MEDICAL GAS DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 NORTH

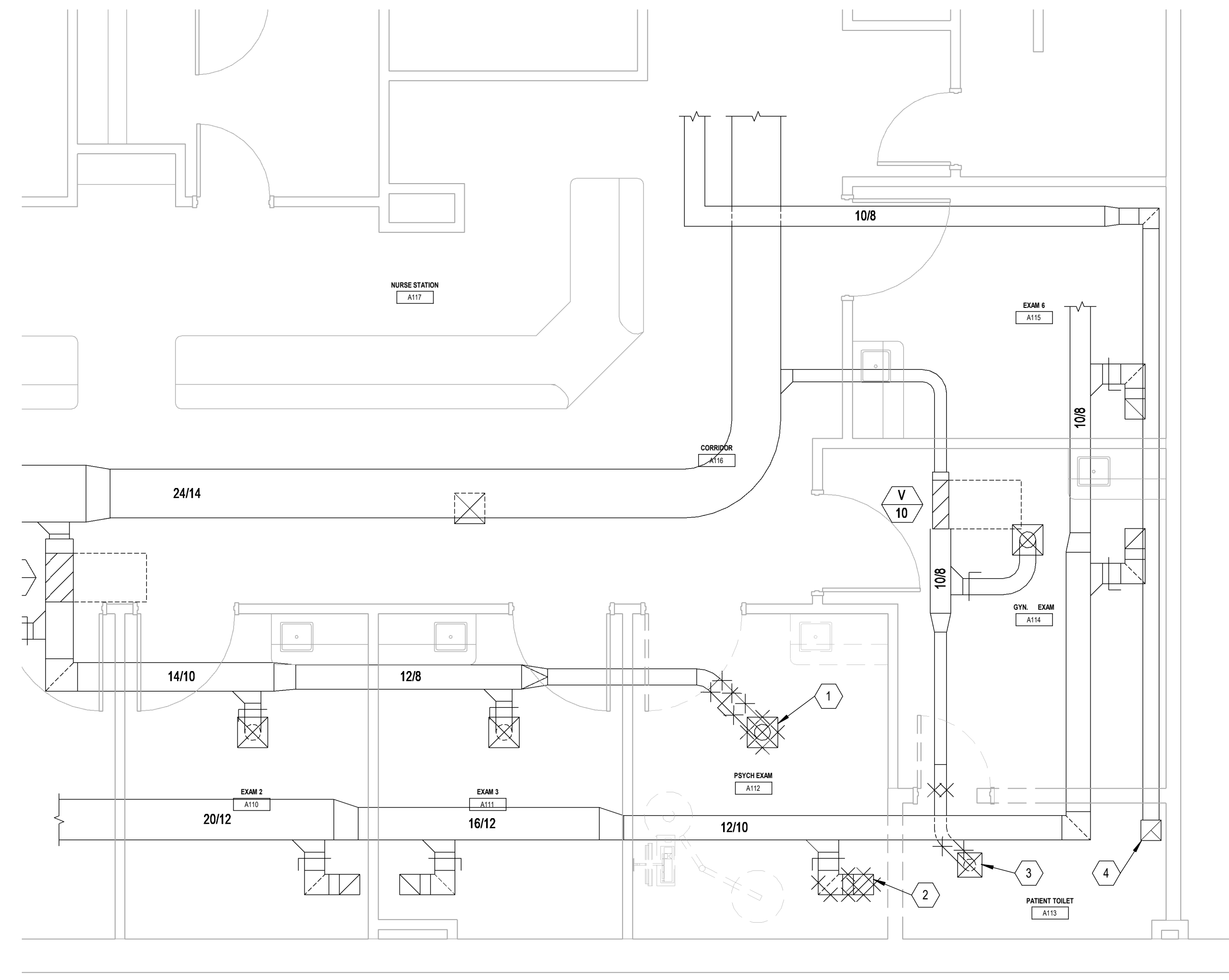


2 PSYCH EXAM MEDICAL GAS PLAN
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 NORTH

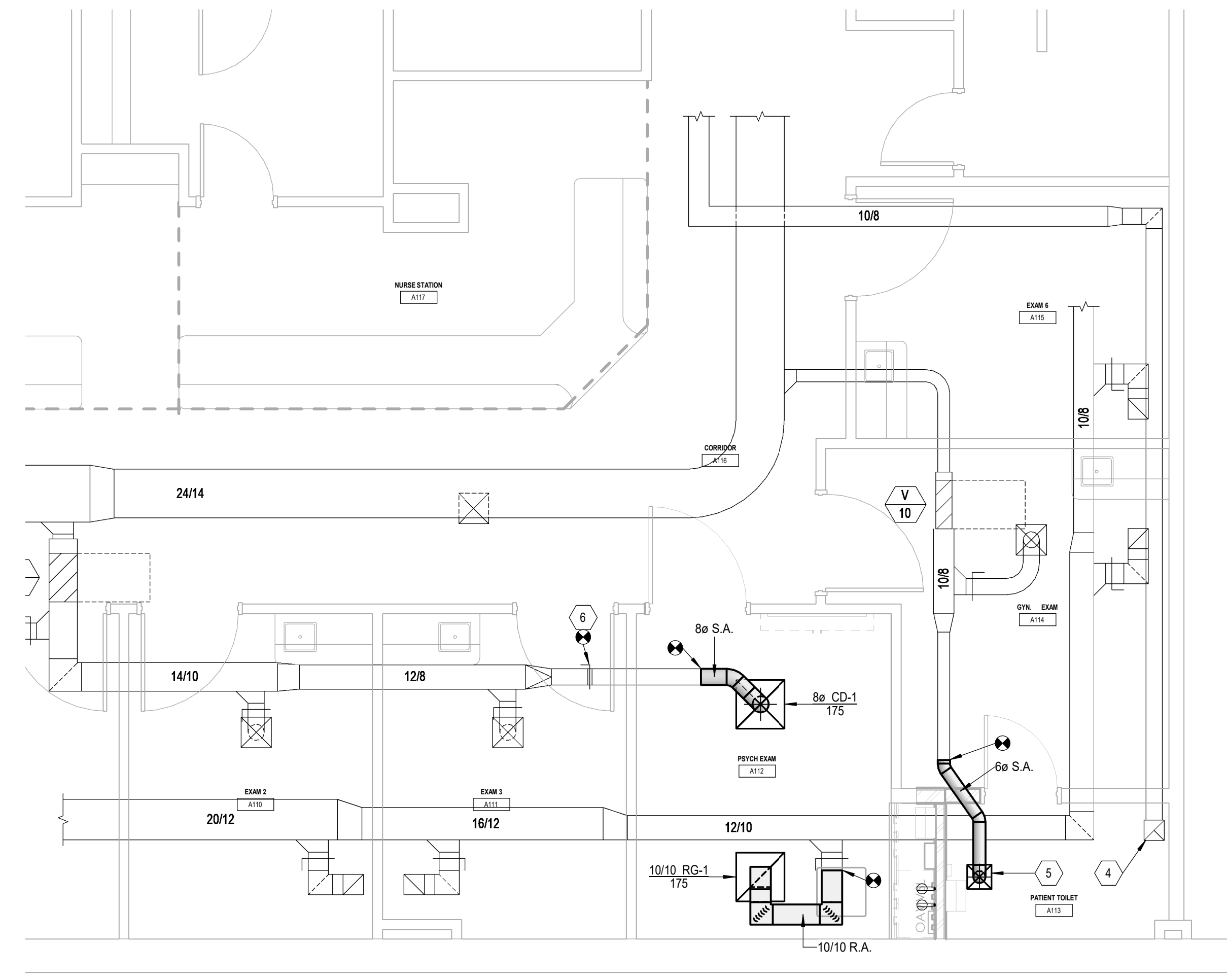
- KEYED NOTES**
- REMOVE THE EXISTING (1) OXYGEN, (1) AIR, & (2) VACUUM MEDICAL GAS OUTLETS IN THIS LOCATION. SALVAGE FOR USE IN NEW LOCATION. DEMOLISH THE MEDICAL GAS PIPING BACK TO THE APPROXIMATE LOCATION SHOWN.
 - REINSTALL THE SALVAGED (1) OXYGEN, (1) AIR, & (2) VACUUM MEDICAL GAS OUTLETS IN THE WALL IN THIS LOCATION.



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

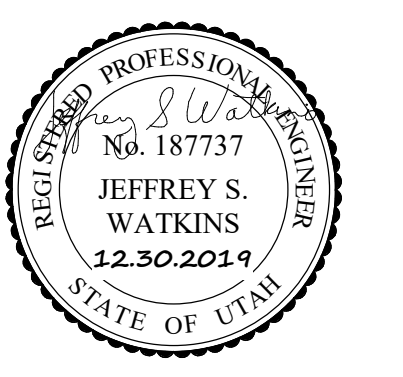


2 PSYCH EXAM MECHANICAL PLAN
 SCALE: 1/4" = 1'-0"
 NORTH

- KEYED NOTES**
- THIS EXISTING SUPPLY DIFFUSER IS TO BE REMOVED. MEASURE THE MAXIMUM AIRFLOW OF THE EXISTING DIFFUSER PRIOR TO REMOVAL. DEMOLISH THE ASSOCIATED SUPPLY AIR DUCTWORK BACK TO THE APPROXIMATE LOCATION SHOWN.
 - THIS EXISTING RETURN GRILLE IS TO BE REMOVED. MEASURE THE MAXIMUM AIRFLOW OF THE EXISTING GRILLE PRIOR TO REMOVAL. DEMOLISH THE ASSOCIATED RETURN AIR DUCTWORK BACK TO THE APPROXIMATE LOCATION SHOWN.
 - THIS EXISTING SUPPLY DIFFUSER IS TO BE REMOVED AND SALVAGED FOR REUSE. PROTECT FROM DAMAGE. MEASURE THE MAXIMUM AIRFLOW OF THE EXISTING DIFFUSER PRIOR TO REMOVAL. DEMOLISH THE ASSOCIATED SUPPLY AIR DUCTWORK BACK TO THE APPROXIMATE LOCATION SHOWN.
 - THIS EXISTING EXHAUST AIR GRILLE IS TO REMAIN IN SERVICE. PROTECT FROM DAMAGE.
 - REINSTALL THE SALVAGED SUPPLY AIR DIFFUSER IN THIS NEW LOCATION. AFTER THE CONSTRUCTION HAS BEEN COMPLETED, REBALANCE THE MAXIMUM AIRFLOW THROUGH THIS DIFFUSER TO THE PREVIOUSLY MEASURED VALUE.
 - INSTALL THE MANUAL BALANCING DAMPER FOR THE SUPPLY DIFFUSER SERVING PSYCH EXAM A112 IN THE DUCTWORK ABOVE THE CEILING IN EXAM 3. THE DIFFUSER AIRFLOW NEEDS TO BE ABLE TO BE BALANCED WITHOUT GOING THROUGH THE HARD LID CEILING IN PSYCH EXAM A112.



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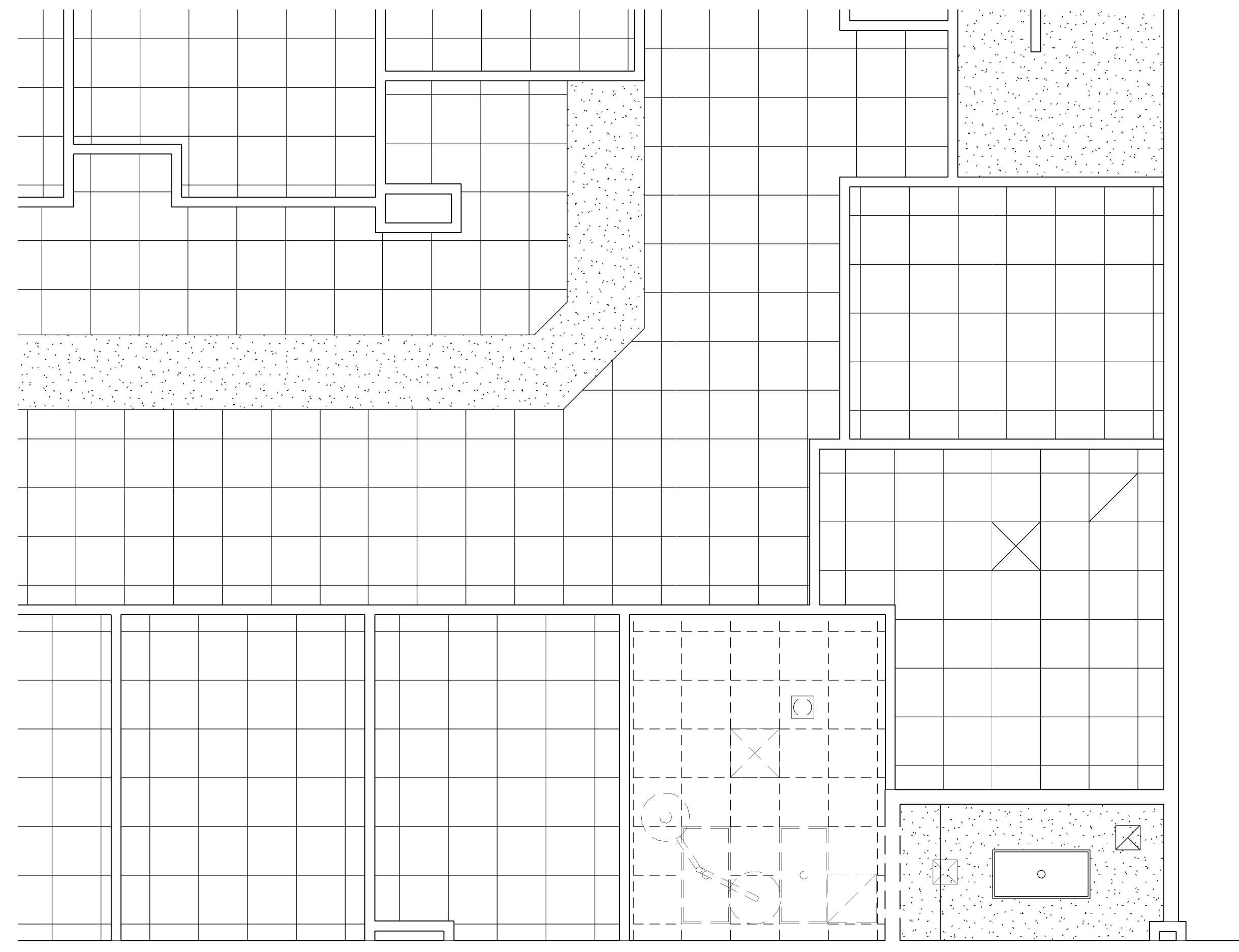
5475 South 500 East
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 Construction Documents 12/30/19

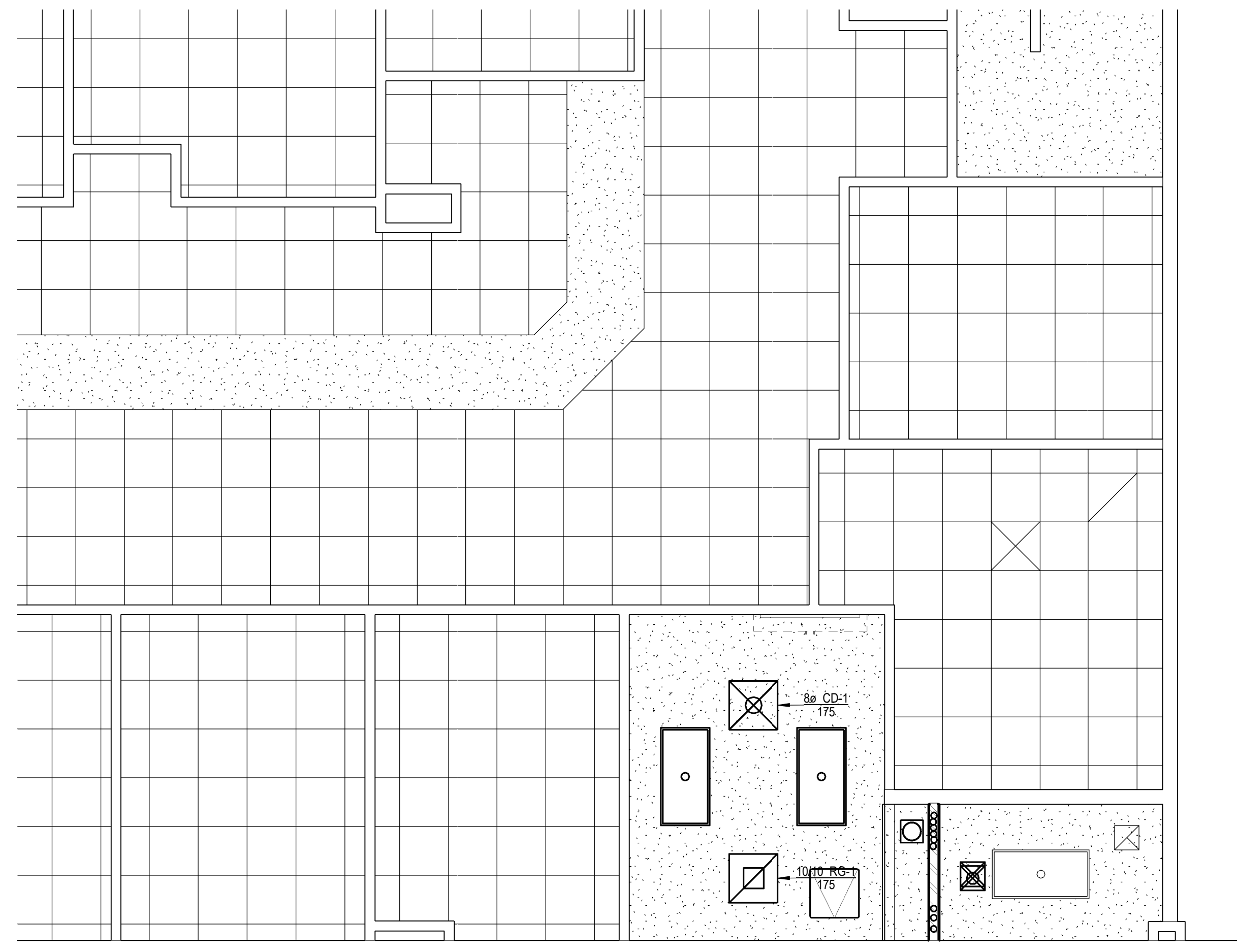
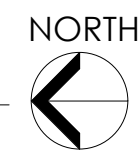
PSYCH EXAM
 MECHANICAL
 PLANS

MH102

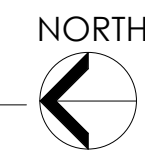
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1 PSYCH EXAM REFLECTED CEILING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



2 PSYCH EXAM REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

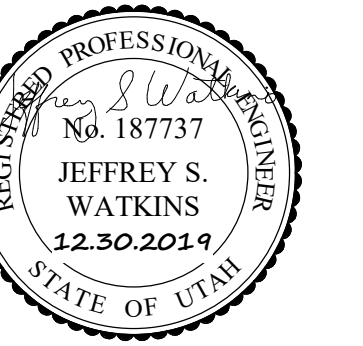


KEYED NOTES

1. ..



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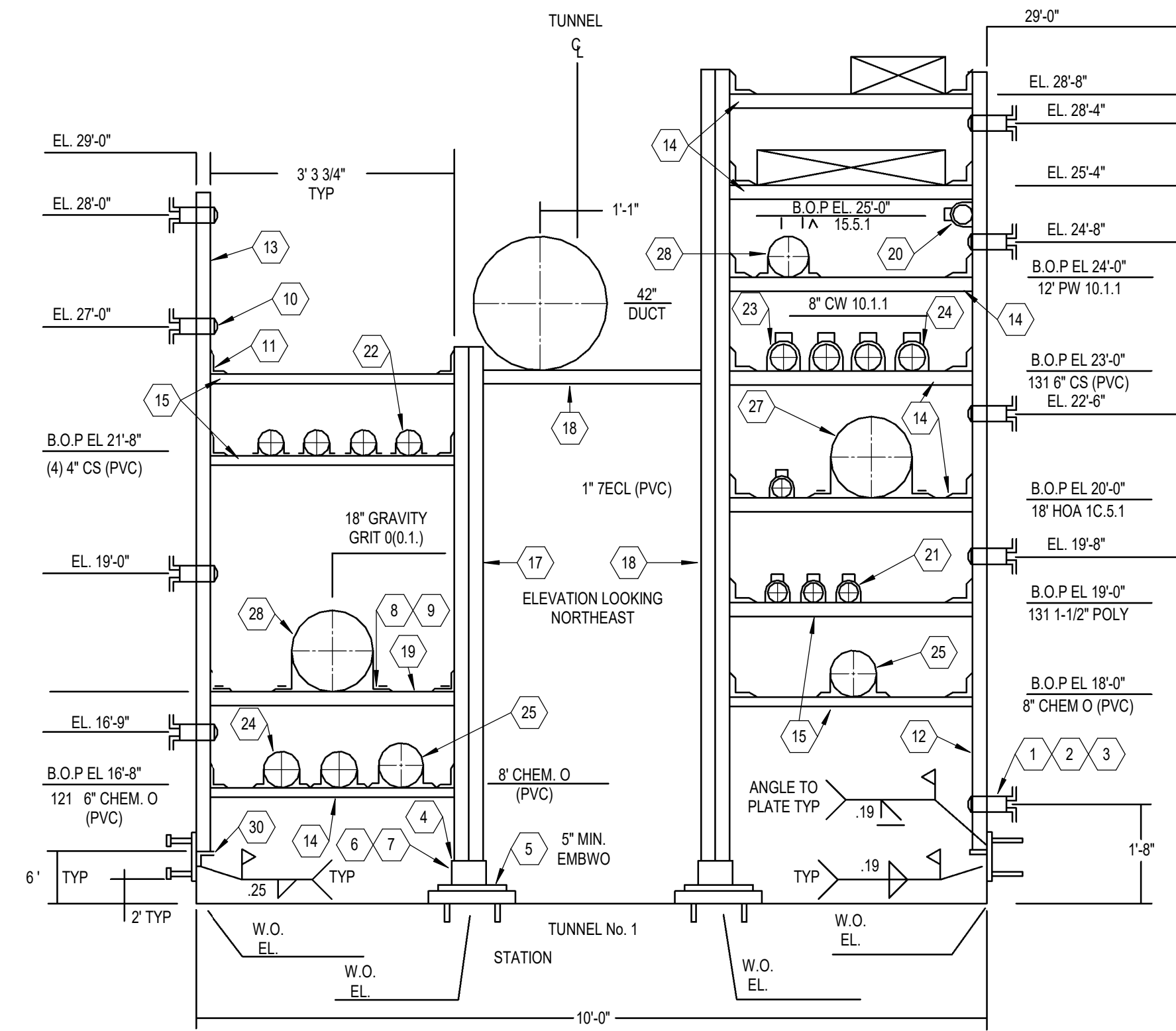
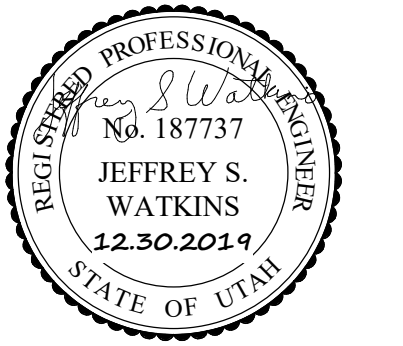
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PSYCH EXAM
REFLECTED
CEILING
PLANS

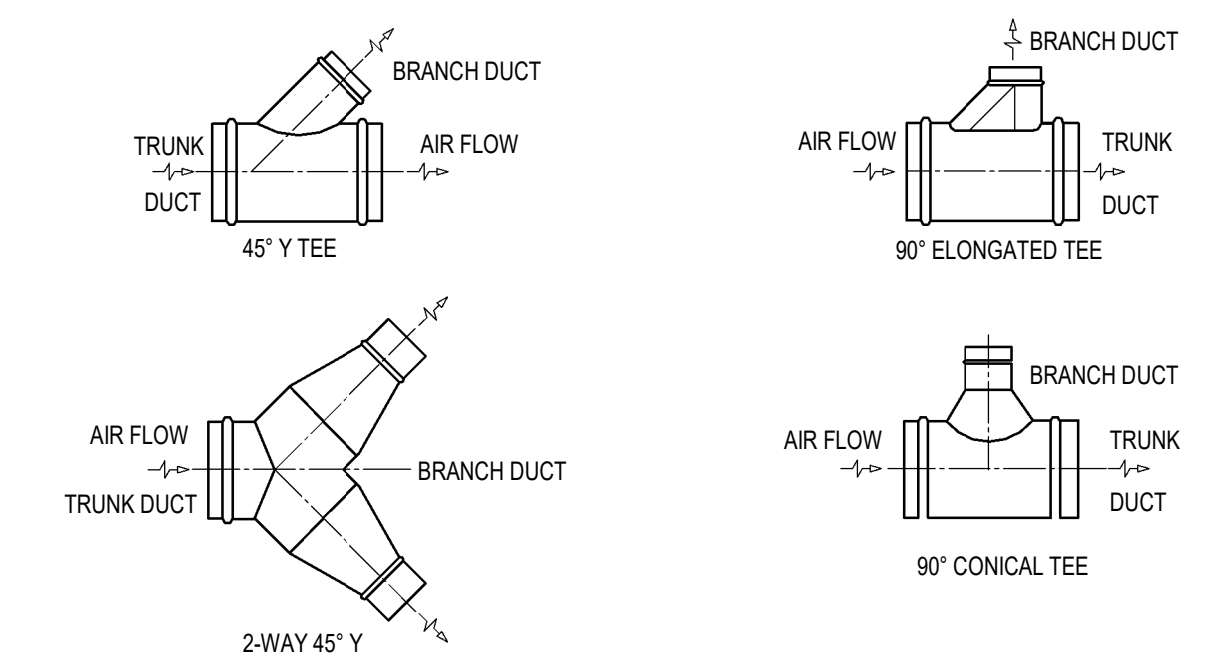
MH202

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ITEM NO.	MATERIALS AND OPERATIONS	QTY
1	PIPE SUPPORT CONSTRUCTION	
1	EMV PLATE 1/4\"/>	

9 PIPE HANGERS AND SUPPORT DETAIL
NOT TO SCALE



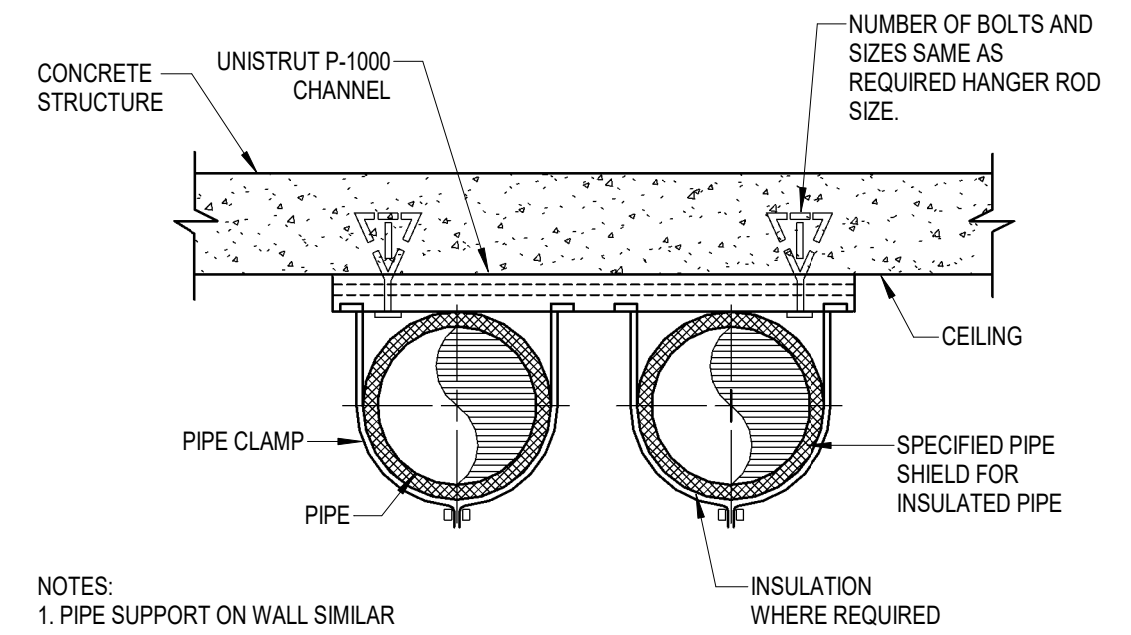
10 ROUND DUCT BRANCH TAKE-OFF DETAILS
NOT TO SCALE

PIPE SEISMIC BRACING SCHEDULE

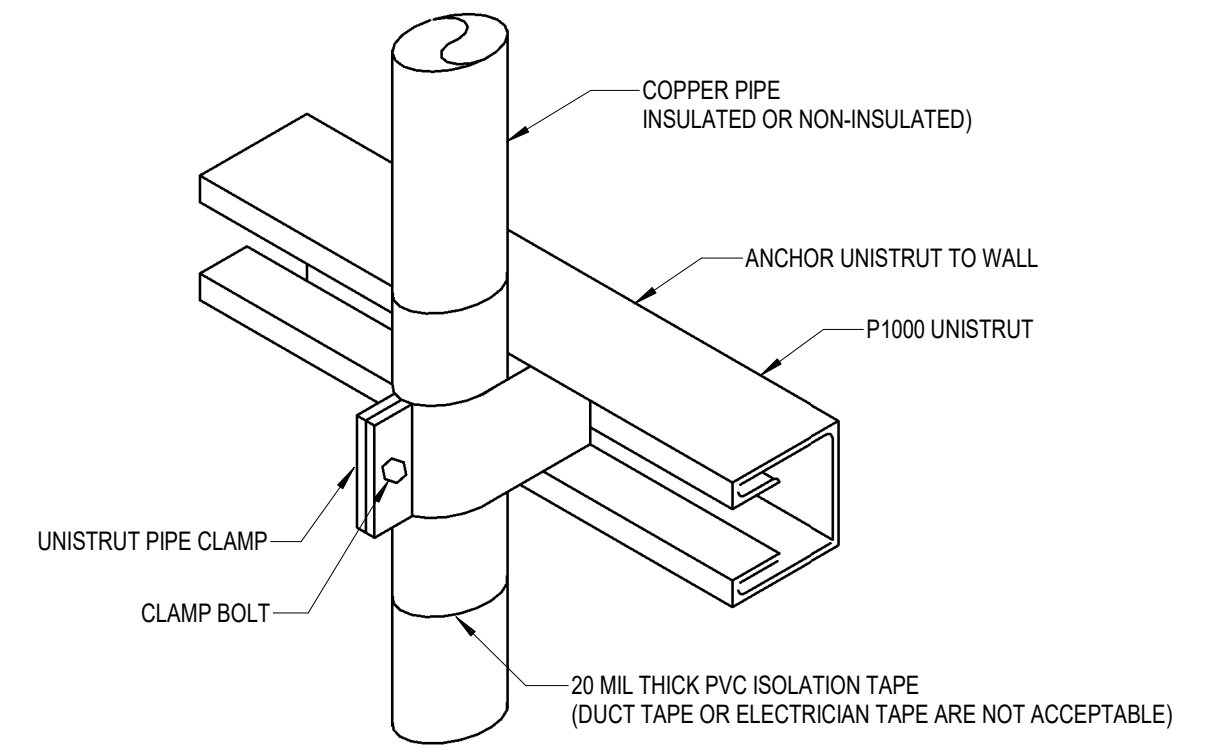
PIPE SIZE	HANGER ROD SIZE	MAX ROD LENGTH	HANGER TYPE	BOLTS TO ANGLE	ANGLE CLIP	ANGLE BRACE	ANCHOR CONN. TYPE	ANCHOR BOLT OR INSERT
1-1/2"	1/2"	25"	CLEVIS	3/8"	3 x 3 x 1/4	2 x 2 x 16 GA	I	3/8"
2"	1/2"	25"	CLEVIS	3/8"	3 x 3 x 1/4	2 x 2 x 16 GA	I	3/8"
2-1/2"	5/8"	31"	CLEVIS	3/8"	3 x 3 x 1/4	2 x 2 x 16 GA	I	3/8"
3"	5/8"	31"	CLEVIS	3/8"	3 x 3 x 1/4	2 1/2 x 2 1/2 x 16 GA	II	1/2"
3-1/2"	5/8"	31"	CLEVIS	3/8"	3 x 3 x 1/4	2 1/2 x 2 1/2 x 16 GA	II	1/2"
4"	3/4"	37"	CLEVIS	3/8"	3 x 3 x 1/4	2 1/2 x 2 1/2 x 16 GA	II	1/2"
5"	3/4"	37"	CLEVIS	1/2"	5 x 3 x 1/2	2 1/2 x 2 1/2 x 16 GA	III	3/4"
6"	3/4"	37"	CLEVIS	5/8"	5 x 3 x 1/2	2 1/2 x 2 1/2 x 16 GA	IV	3/4"
8"	7/8"	43"	CLEVIS	5/8"	(2) 5 x 3 x 1/2	3 x 3 x 12 GA	V	2 5/8"
10"	7/8"	43"	CLEVIS	3/4"	(2) 5 x 3 x 1/2	3 x 3 x 12 GA	VI	2 5/8"

FOR ANCHOR CONNECTIONS SEE LIST.
SEE PIPE BRACING DETAIL.
*1 5/8" x 1 5/8" x 12 GA CHANNEL MAY BE USED

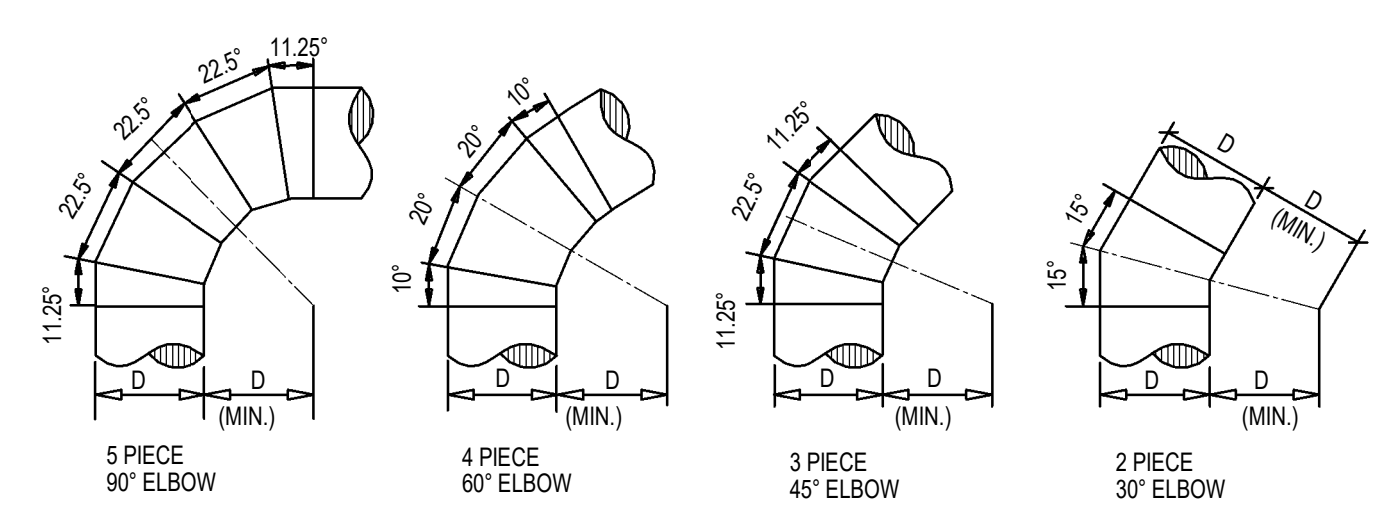
5 PIPE CABLE BRACING SCHEDULE
NOT TO SCALE



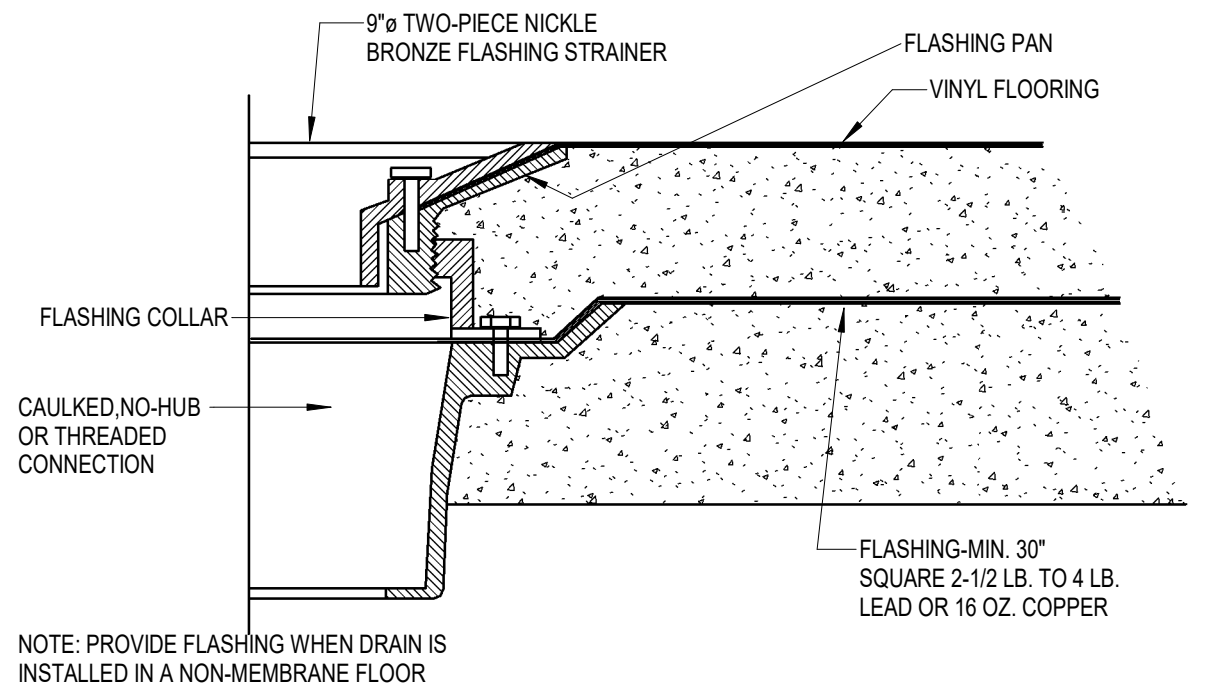
6 PIPE SUPPORT ON CEILING
NOT TO SCALE



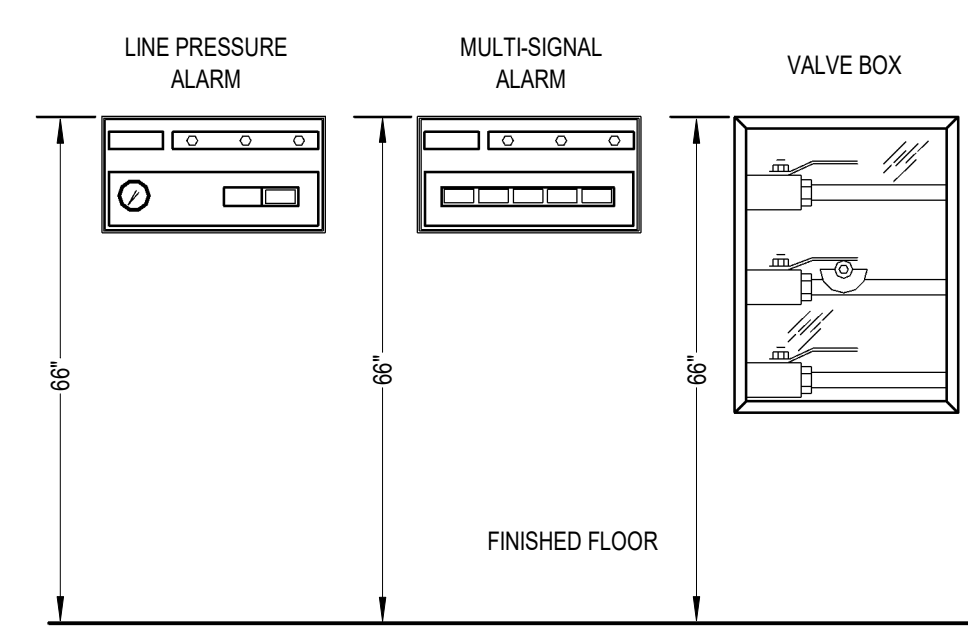
7 PIPE SUPPORT DETAIL
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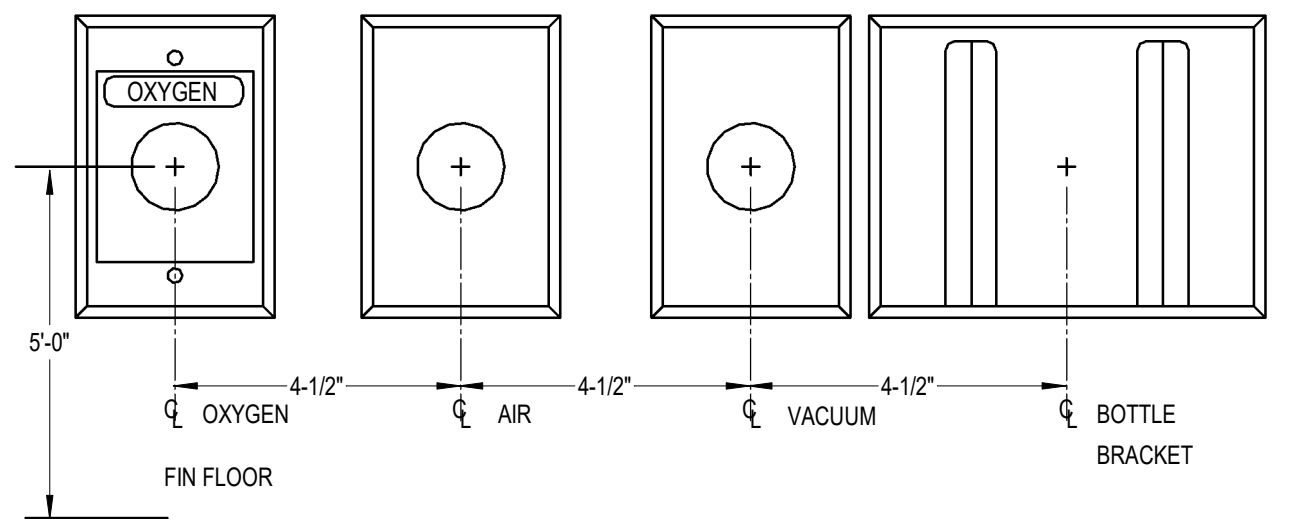
8 ROUND DUCT ELBOW DETAILS
NOT TO SCALE



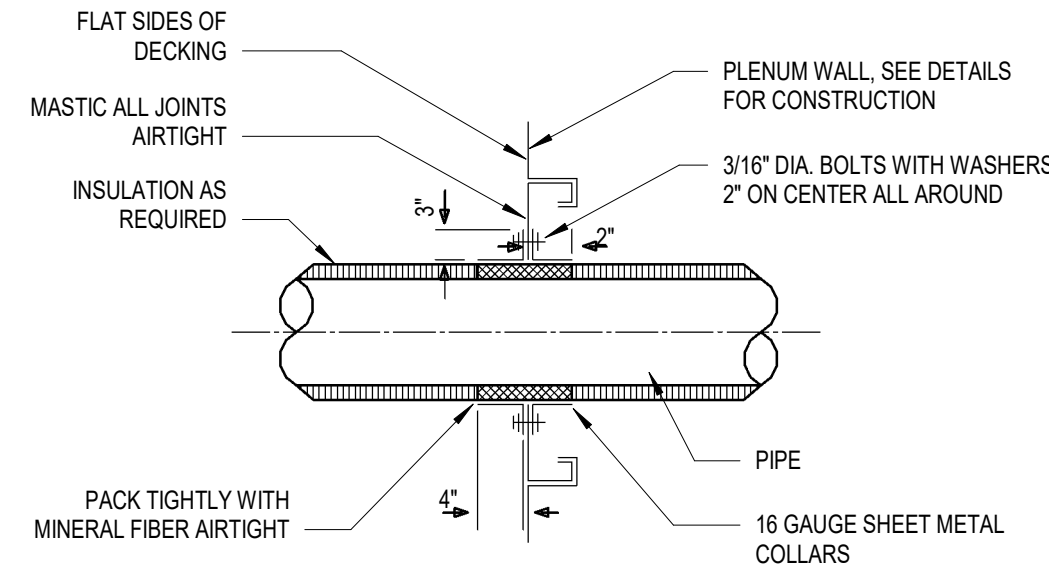
1 FLOOR DRAIN
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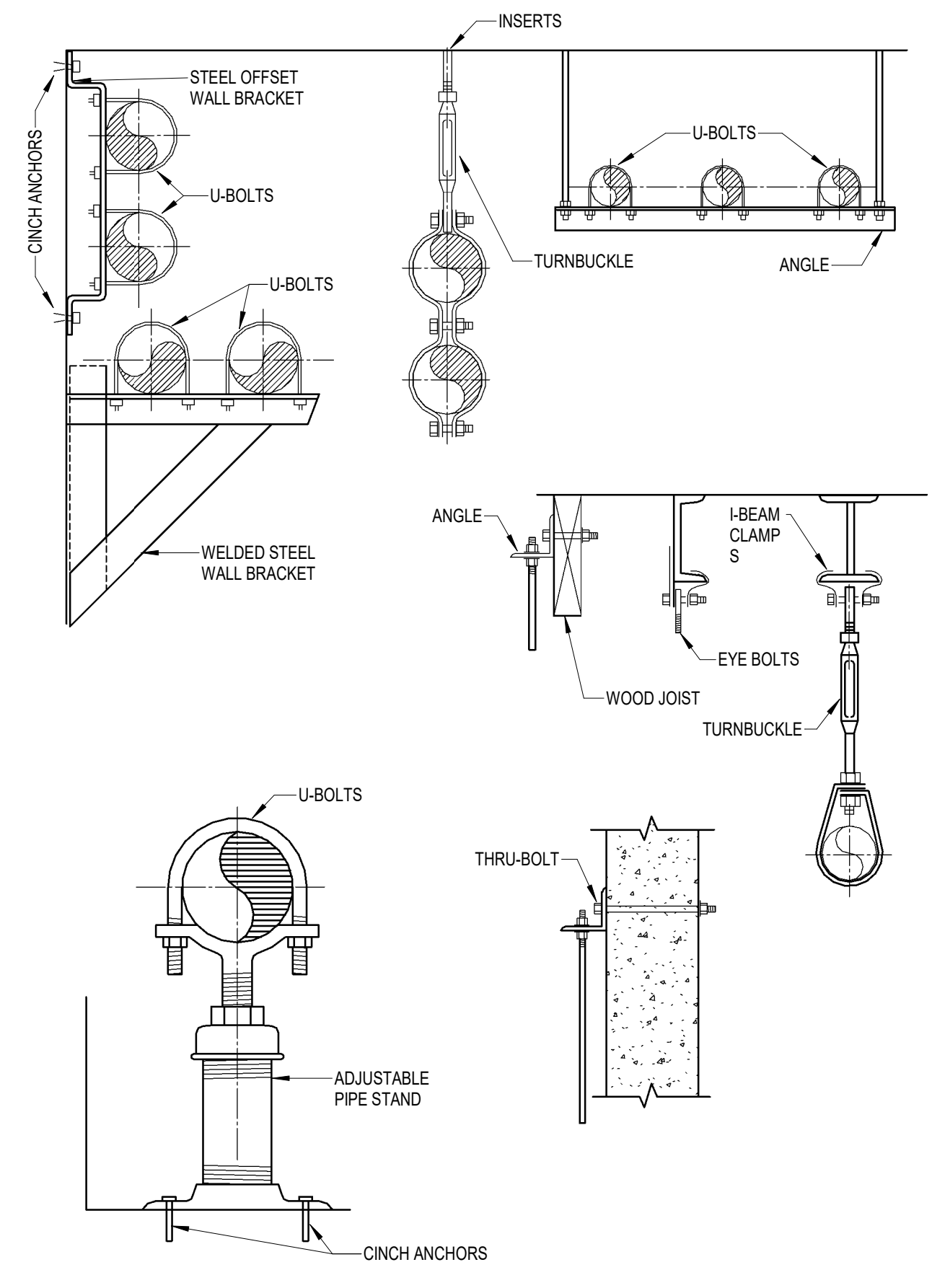
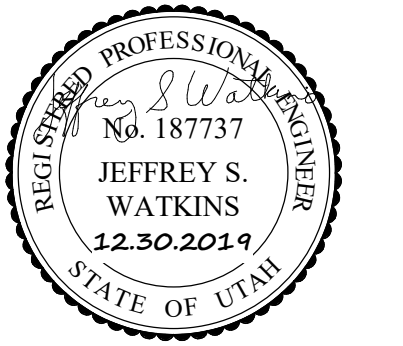
2 MEDICAL GAS MOUNTING HEIGHT DETAIL
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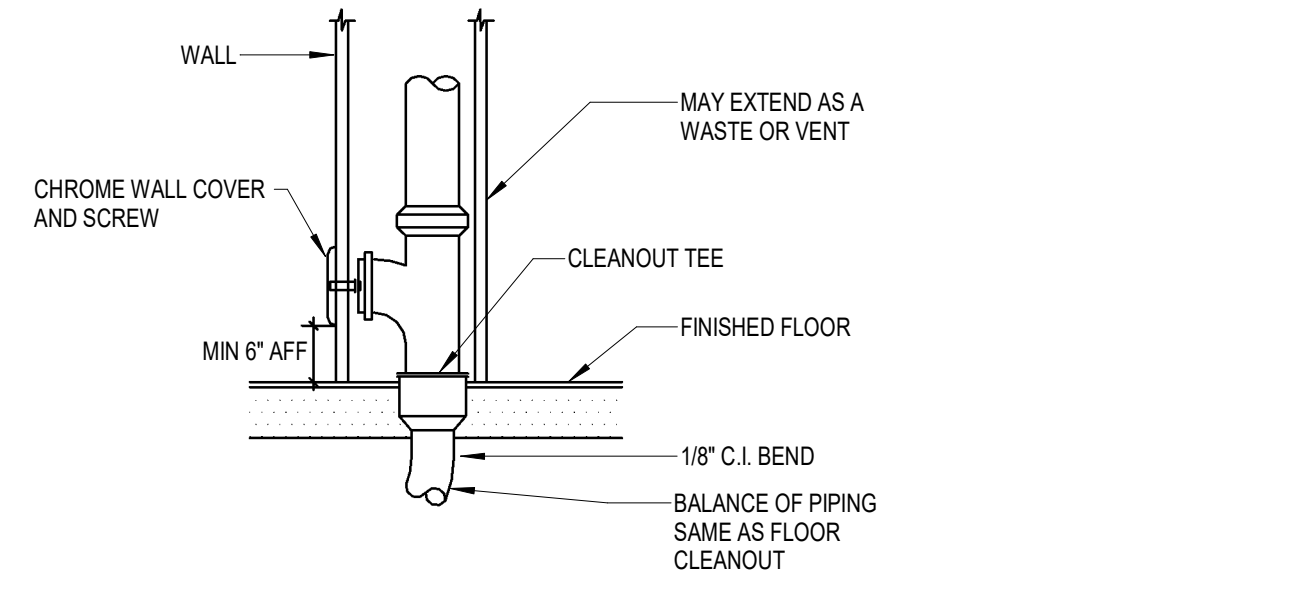
3 OXYGEN, AIR AND VACUUM OUTLET SPACING
NOT TO SCALE



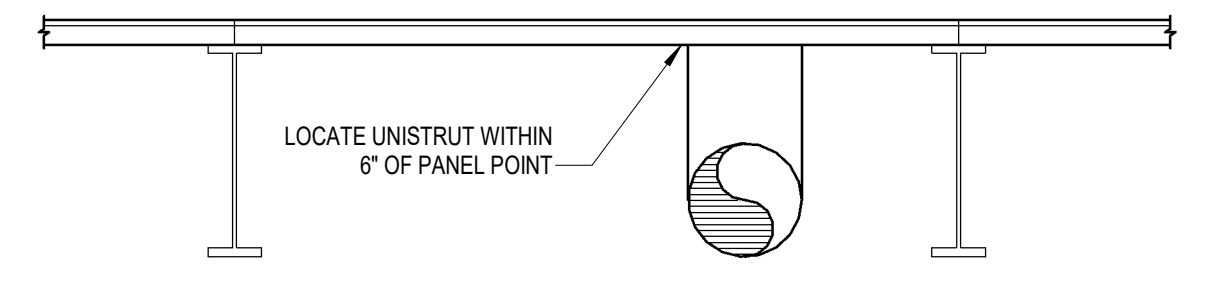
4 PIPE THRU PLENUM WALL
NOT TO SCALE



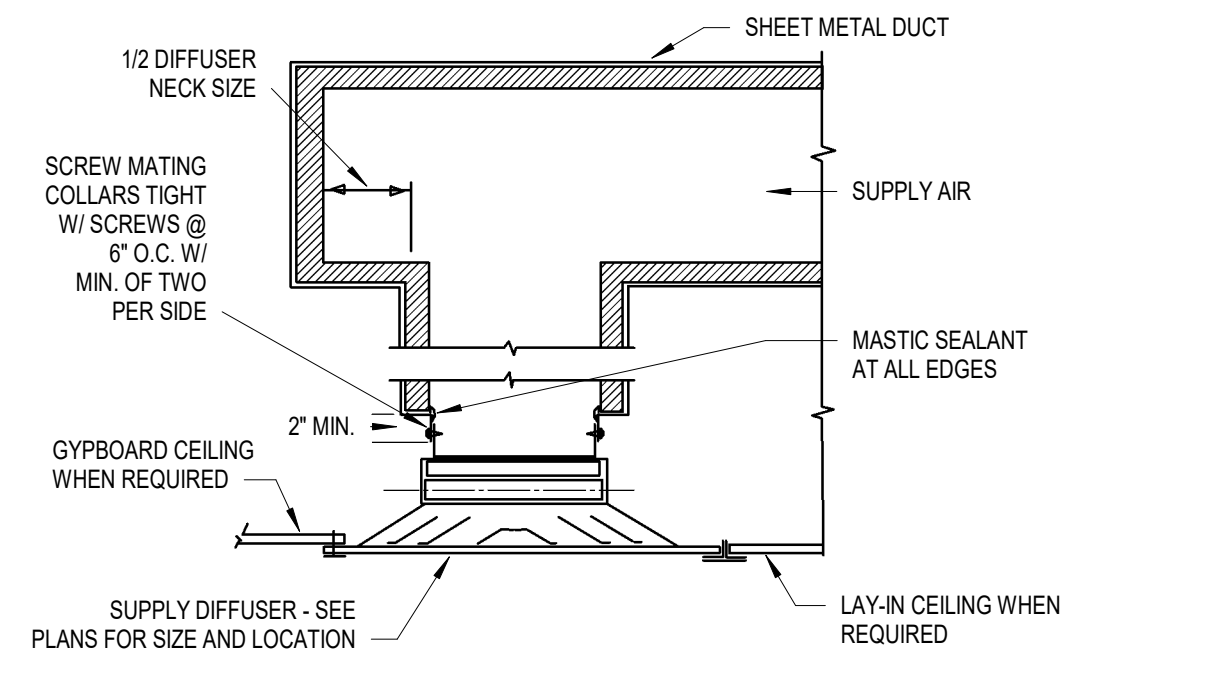
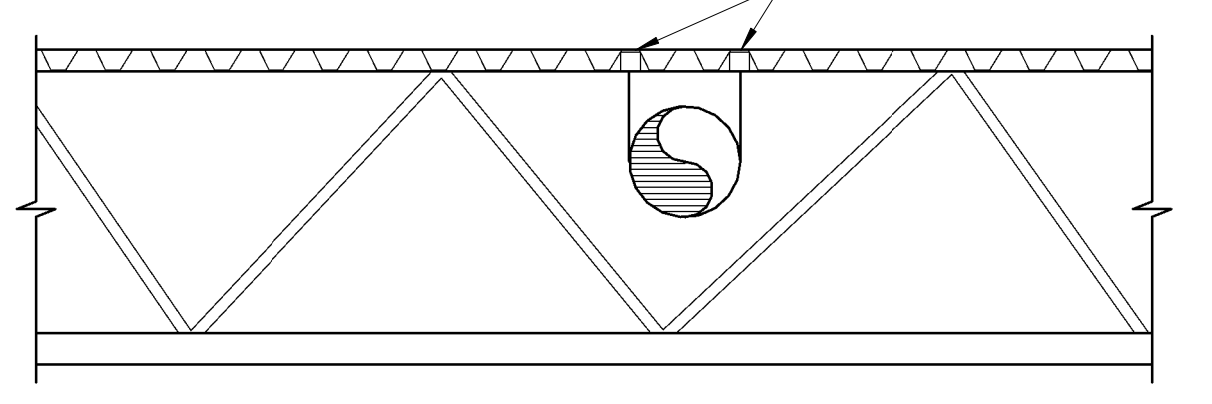
8 TYPICAL PIPE SUPPORT DETAIL
NOT TO SCALE



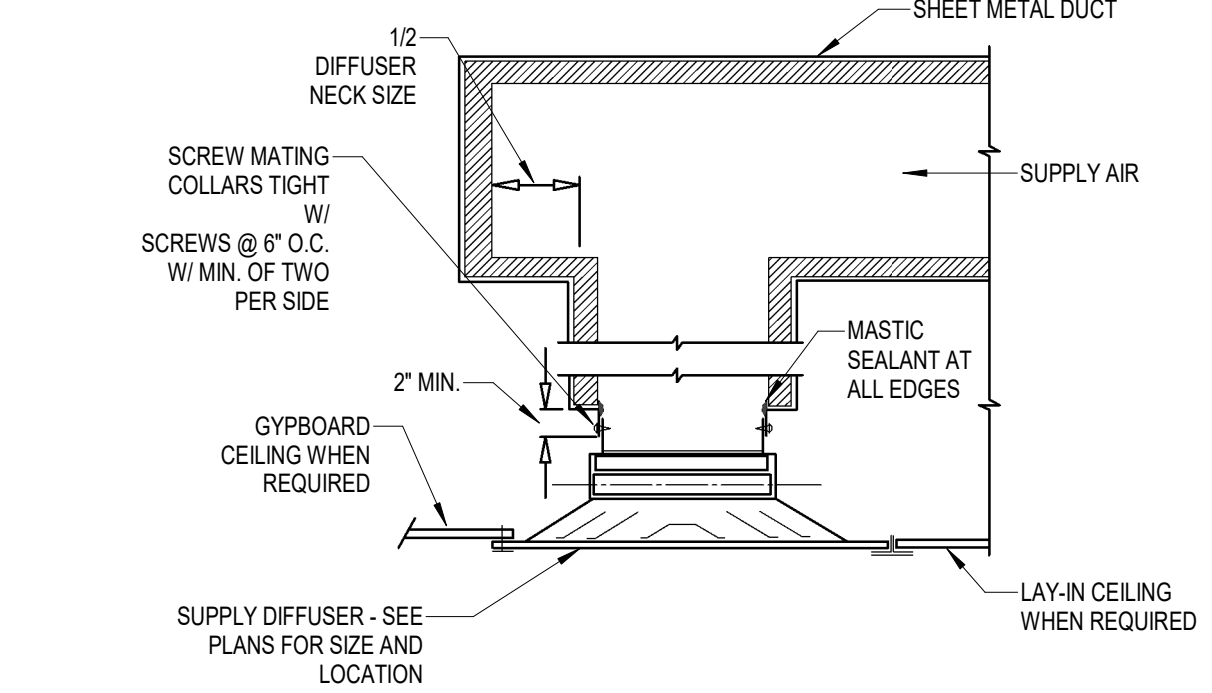
9 WALL CLEANOUT DETAIL
NOT TO SCALE



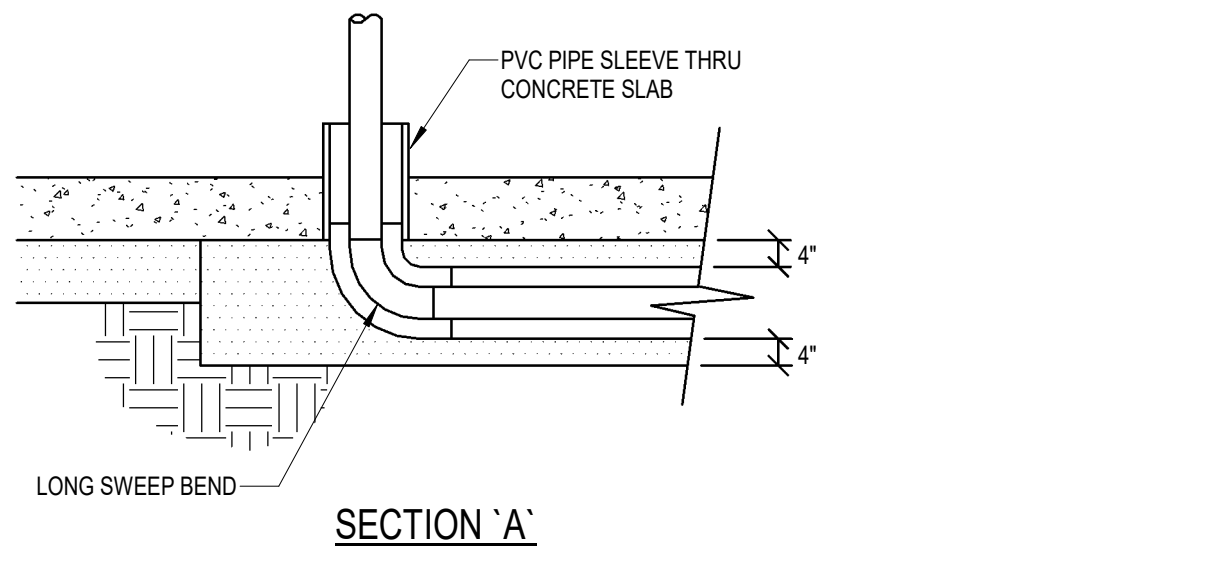
4 SUPPORT DETAIL
NOT TO SCALE



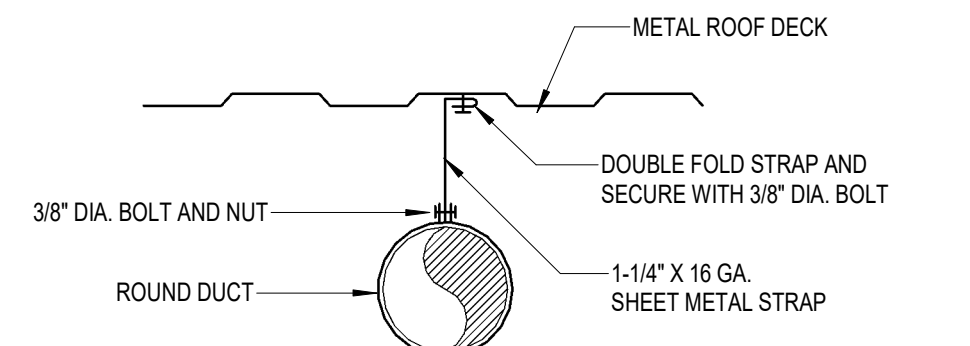
5 TYPICAL CEILING DIFFUSER DETAIL
NOT TO SCALE



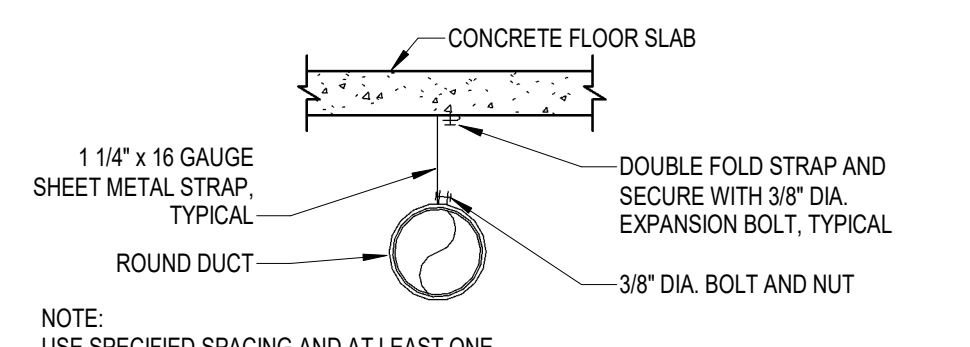
6 TYPICAL EXHAUST GRILLE DETAIL
NOT TO SCALE



7 UNDER-SLAB PIPING DETAIL
NOT TO SCALE



1 ROUND DUCT SUPPORT DETAIL 1
SCALE: 12" = 1'-0"



2 ROUND DUCT SUPPORT DETAIL 2
NOT TO SCALE

SCHEDULE FOR TYPICAL CONNECTIONS TO STRUCTURAL SUPPORTING MEMBERS

TYPE	MAX. LOAD CAPACITY POUNDS	PHILLIPS REDHEAD ANCHORS TO CONC.		CONC. CAST-IN PLACE INSERT	BOLT OF STL BM CLAMP
		LT. WT.	HARD ROCK		
I	500	3/8"	3/8"	3/8"	3/8"
II	1000	3/8"	3/8"	1/2"	3/8"
III	1500	3/8"	3/8"	1/2"	3/8"
IV	2000	1/2"	1/2"	5/8"	1/2"
V	3000	2-1/2"	2-1/2"	2-1/2"	5/8"
VI	4000	2-5/8"	2-5/8"	2-5/8"	5/8"

TYPE	SPREADER SIZE	BOLT THRU WOOD	SPAN- CRETE ROD	ANGLE TO SUPPORTING STRUCTURAL MEMBER	ROD SIZE FOR PIPES
II	CSX6.7	3/4"	3/8"	3-1/2X2-1/2X5/16X0'-3" LLH	1/2"
III	CSX8.5	***	1/2"	3-1/2X2-1/2X2/16X0'-4" LLH	5/8"
IV	CSX11.5	***	1/2"	5X3X1/2X0'-4" LLH	3/4"
V	CSX13.4	***	***	2-3-1/2X2-1/2X7/16X0'-4"	7/8"
VI	C10X15.3	***	***	2-5X3X1/2X0'-4"	7/8"

NOTES:

- FOR SLABS LESS THAN 6" THICK ONLY, THIN SLAB INSERTS MAY BE USED.
- FOR USE W/CONC. CAST-IN PLACE INSERTS OR PHILLIPS REDHEAD IN HARD ROCK ONLY.
- FOR USE WITH CONC. CAST-IN PLACE INSERTS ONLY.
- WHERE TYPE III CONNECTIONS ARE REQUIRED FOR WOOD SYSTEMS, TYPE II CONNECTIONS SHALL BE USED WITH REDUCED RESTRAINT SPACING TO 20 FT. O.C. WHERE TYPE IV CONNECTIONS ARE REQUIRED FOR WOOD SYSTEMS, TYPE II CONNECTIONS SHALL BE USED WITH REDUCED RESTRAINT SPACING TO 15 FT. O.C. WHERE TYPE V CONNECTIONS ARE REQUIRED FOR WOOD SYSTEMS, TYPE II CONNECTIONS SHALL BE USED WITH REDUCED RESTRAINT SPACING TO 10 FT. O.C.
- THE MECHANICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE STRUCTURAL ENGINEER AND THEN TO THE MECHANICAL ENGINEER, SHOWING CONNECTION TYPE AND LOCATION OF ALL RESTRAINT CONNECTIONS TO THE STRUCTURE.
- FOR ESSENTIAL FACILITIES WHERE CONCRETE ANCHOR BOLTS OF THE "REDHEAD" EXPANSION TYPE ARE LOADED IN PULL OUT, 50 PERCENT OF THE BOLTS (ALTERNATE BOLTS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED TO TWICE THE ALLOWABLE LOAD. IF THERE ARE FAILURES, THE IMMEDIATELY ADJACENT BOLTS MUST THEN ALSO BE TESTED.
- "HILTI" AND "RAMSET" ANCHORS ARE EQUAL SUBSTITUTES FOR "REDHEAD".

3 SCHEDULE FOR TYPICAL CONNECTION TO STRUCTURAL SUPPORTING MEMBERS
NOT TO SCALE

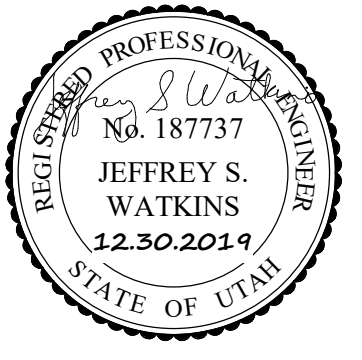
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MECHANICAL
DETAILS

MH502

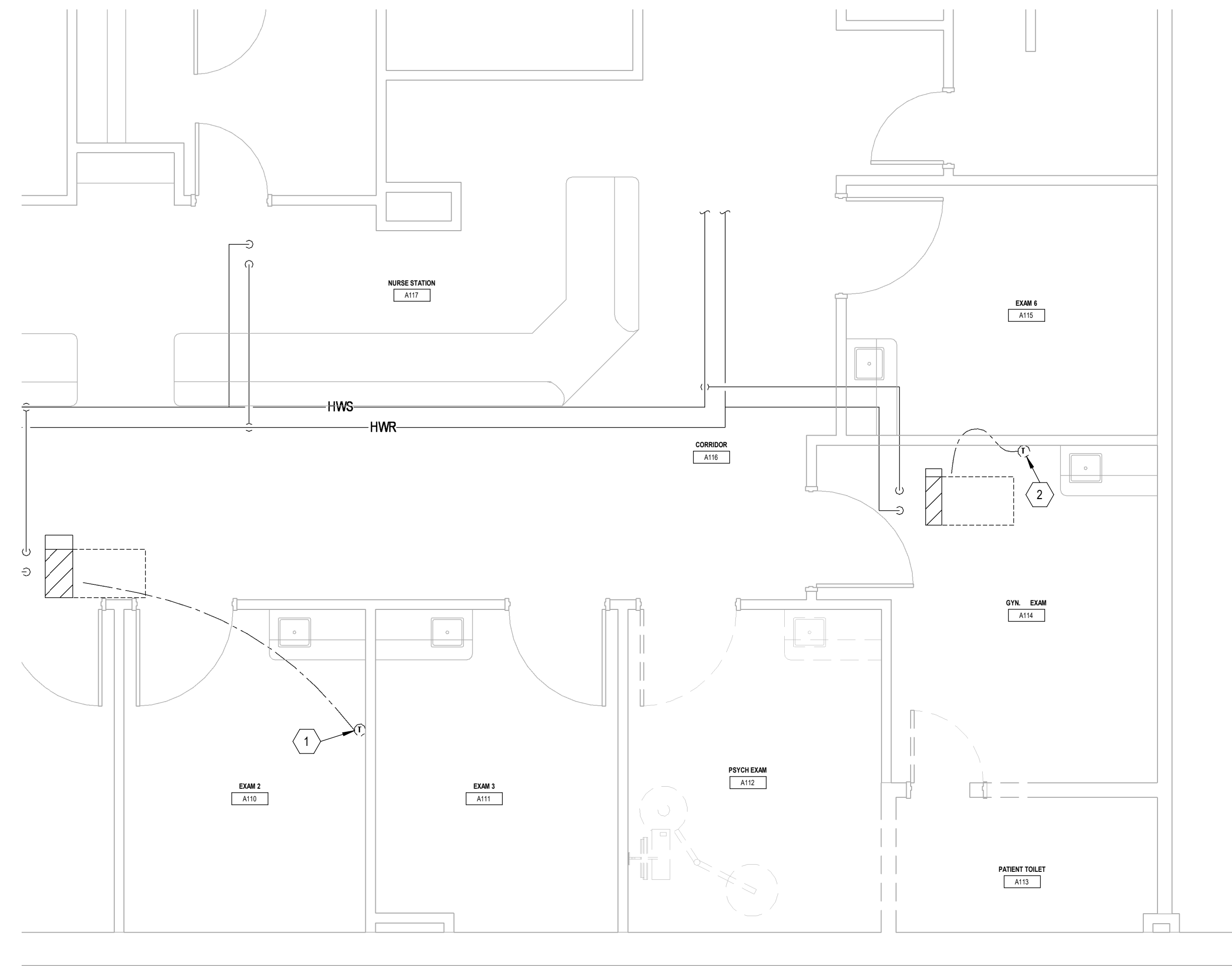


GRILLES, REGISTERS AND DIFFUSERS				
ID	MANUFACTURER	MODEL	MAX NC	DESCRIPTION
CD-1	PRICE	MSRRCD	30	MAXIMUM SECURITY RISK RESISTANT CEILING DIFFUSER. PROVIDE WITH 4-WAY BLOW PATTERN. COUNTERSINK HOLES IN FACE WITH #12 X 2" LONG TAMPER-PROOF SCREWS. 1/2 GAUGE HOT ROLLED STEEL CONSTRUCTION. STANDARD WHITE FINISH. PROVIDE 18/18 GRILLE SIZE. NECK SIZE AS SHOWN ON DRAWINGS. PROVIDE SQUARE TO ROUND ADAPTER.
RG-1	PRICE	MSRRP	30	MAXIMUM SECURITY RISK RESISTANT PERFORATED. FACE PLATE SHALL BE 3/16" HOT ROLLED STEEL WITH 3/16" DIAMETER HOLES STAGGERED 60 DEGREES ON 9/32" CENTERS. CONTINUOUSLY WELDED SEAMS. FASTEN TO CEILING USING #12 X 1-1/2" LONG TAMPER-PROOF SCREWS. OPTION CS 12 SPNR (PLATED STEEL). STANDARD WHITE FINISH. PROVIDE 24 X 24 OR 12 X 24 GRILLE AS SHOWN ON DRAWING. NECK SIZE AS SHOWN ON DRAWINGS. PROVIDE SQUARE TO ROUND ADAPTER.
EG-1	PRICE	MSRRP	30	MAXIMUM SECURITY RISK RESISTANT PERFORATED. FACE PLATE SHALL BE 3/16" HOT ROLLED STEEL WITH 3/16" DIAMETER HOLES STAGGERED 60 DEGREES ON 9/32" CENTERS. CONTINUOUSLY WELDED SEAMS. FASTEN TO CEILING USING #12 X 1-1/2" LONG TAMPER-PROOF SCREWS. OPTION CS 12 SPNR (PLATED STEEL). STANDARD WHITE FINISH. PROVIDE 24 X 24 OR 12 X 24 GRILLE AS SHOWN ON DRAWING. NECK SIZE AS SHOWN ON DRAWINGS. PROVIDE SQUARE TO

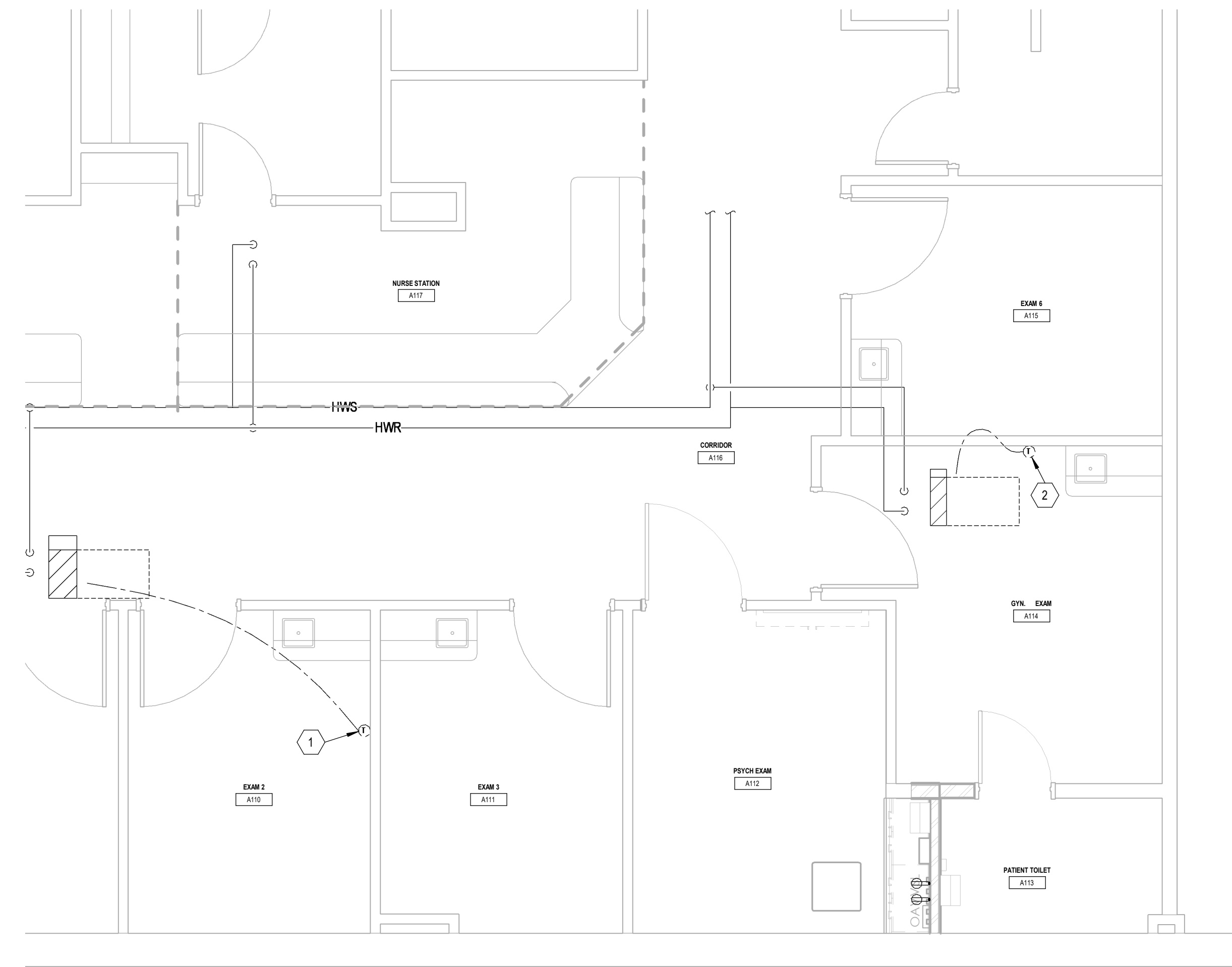
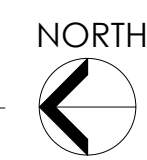
PLUMBING FIXTURE SCHEDULE						
ID	FIXTURE	DCW (IN)	DHW (IN)	W (IN)	V (IN)	DESCRIPTION
S-1	PSYCH EXAM ROOM SINK	1/2	1/2	2	1-1/2	INTEGRAL SINK, ANTI-LIGATURE FAUCET

NOTES
SINK: SOLID SURFACE INTEGRAL SINK PROVIDED BY OTHERS. BSP #SF390 ANTI-LIGATURE SENSOR FAUCET WITH 1.5 GPM FLOW CONTROL. WATTS LFUSG-8-M2 THERMOSTATIC MIXING VALVE WITH SLOAN EFT-470-A CHECK VALVES ON HOT AND COLD LINES. FLEXIBLE STAINLESS STEEL SUPPLIES WITH LOOSE KEY ANGLE STOPS. CHICAGO 327-ADP OPEN GRID STRAINER AND CAST BRASS P-TRAP WITH CLEAN OUT PLUG. COVER ALL EXPOSED PIPING BENEATH THE SINK WITH A W/ SHIELD PROTECTIVE LAVATORY ENCLOSURE BY TRUE-BRO OR EQUIVALENT. INSTALLED WITH TAMPER PROOF SCREWS. COLOR TO BE WHITE.

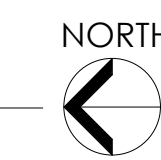
1. ALL UNDER GROUND WASTE AND VENT SHALL BE 2" OR GREATER.



1 PSYCH EXAM MECHANICAL PIPING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



2 PSYCH EXAM MECHANICAL PIPING PLAN
SCALE: 1/4" = 1'-0"

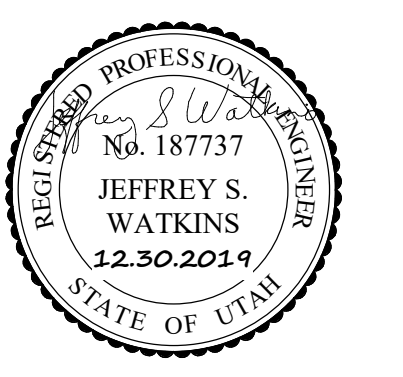


KEYED NOTES

1. THIS EXISTING THERMOSTAT CONTROLLING THE TEMPERATURE IN PSYCH EXAM A112 IS TO REMAIN IN SERVICE. PROTECT FROM DAMAGE.
2. THIS EXISTING THERMOSTAT CONTROLLING THE TEMPERATURE IN PATIENT TOILET A113 IS TO REMAIN IN SERVICE. PROTECT FROM DAMAGE.



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Ogden Regional Medical Center
Psych Exam Remodel

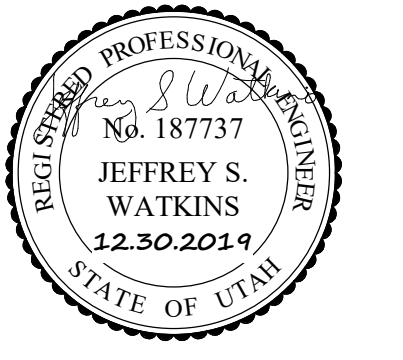
5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents 12/30/19

PSYCH EXAM
MECHANICAL
PIPING PLANS

MP102

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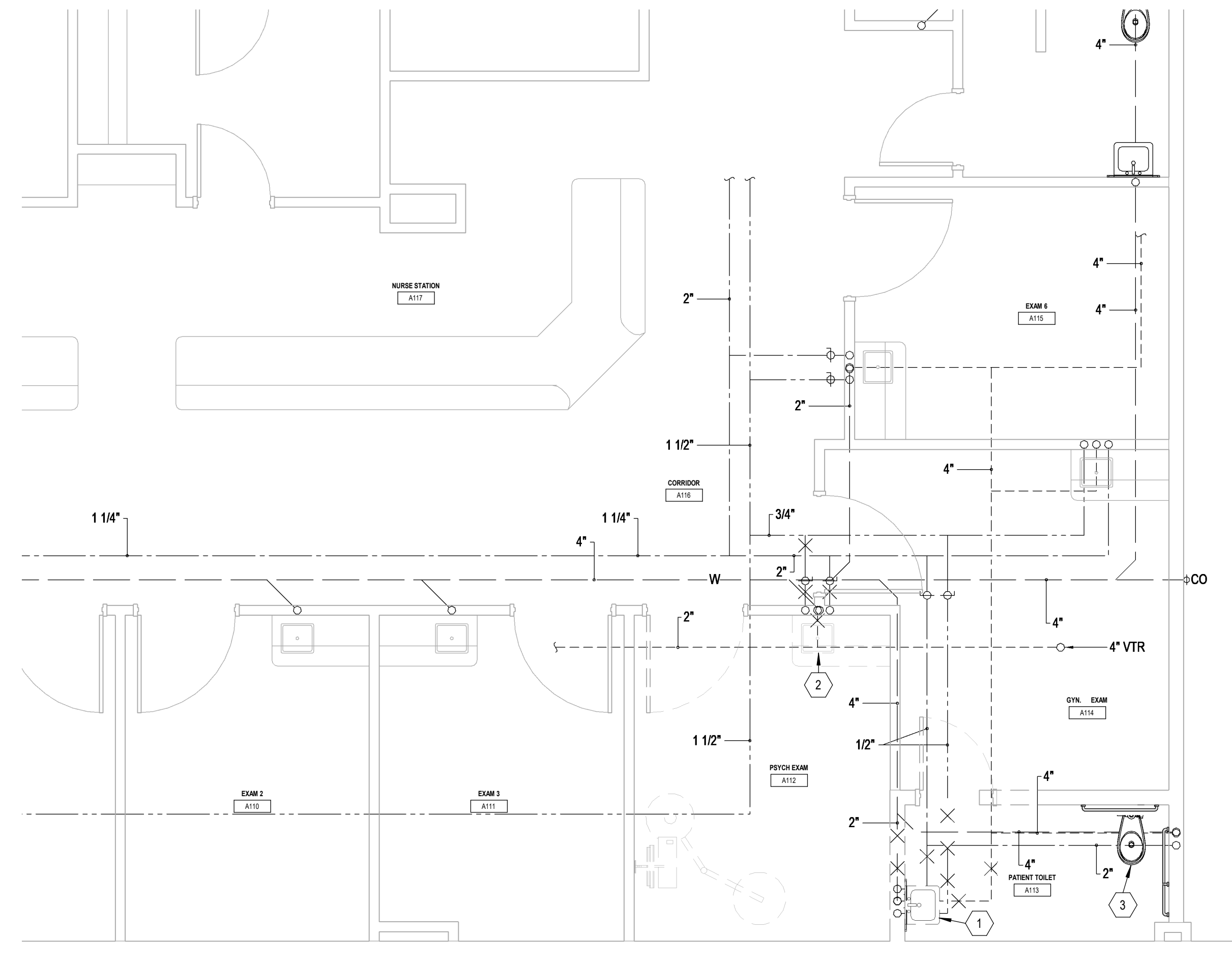


KEYED NOTES

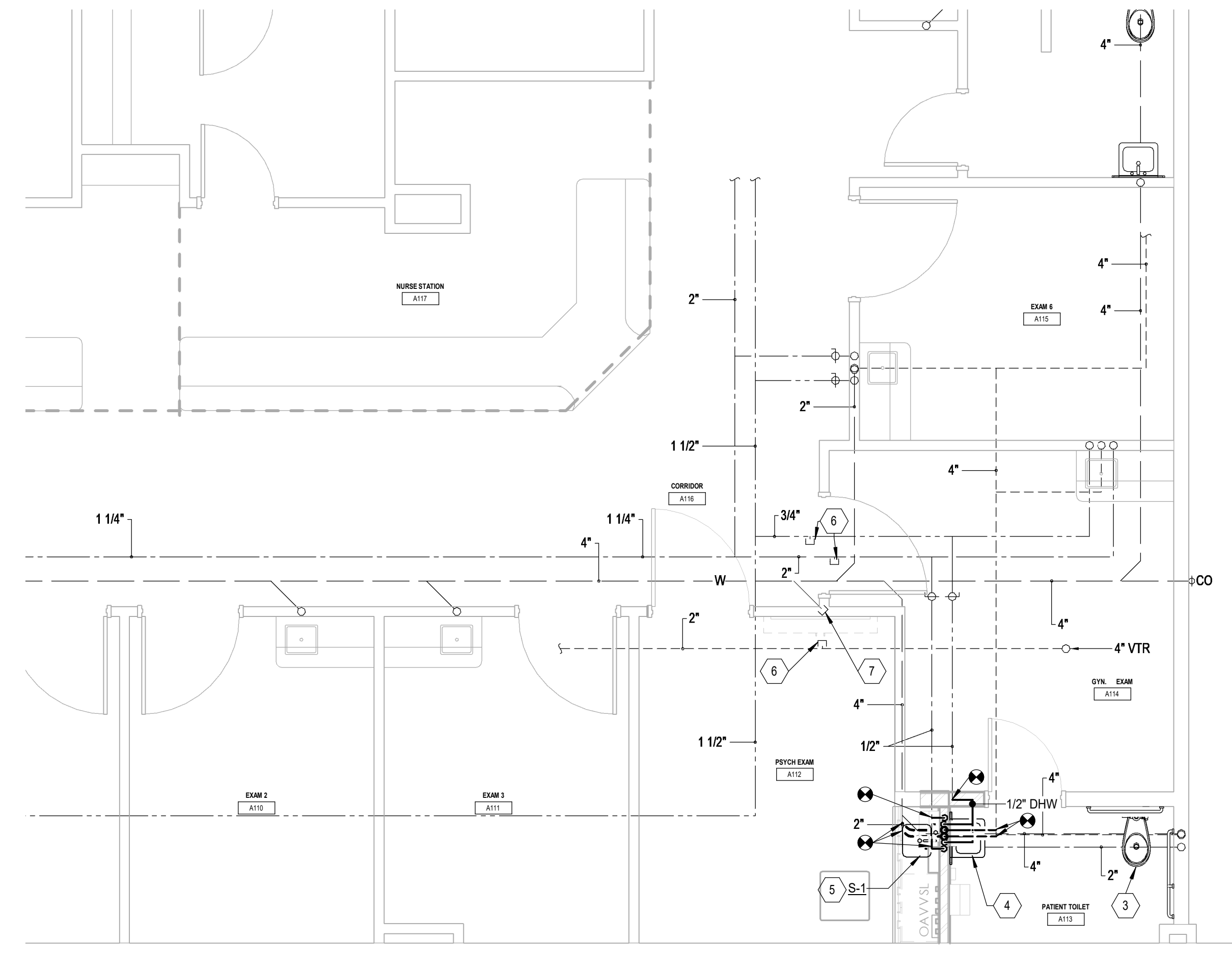
1. THIS EXISTING LAVATORY IS TO BE REMOVED AND REINSTALLED IN A NEW LOCATION IN PATIENT TOILET A113. PROTECT FROM DAMAGE. DEMOLISH THE ASSOCIATED SUPPLY, DRAIN, & VENT PIPING BACK TO THE APPROXIMATE LOCATIONS SHOWN. SAW CUT THE FLOOR AS REQUIRED TO EXTEND THE DRAIN PIPING OVER TO THE SINK'S NEW LOCATION IN PATIENT TOILET A113. FIELD VERIFY THE EXTENT OF WORK.
2. THIS EXISTING SINK IS TO BE REMOVED AND SALVAGED FOR THE OWNER. PROTECT FROM DAMAGE. THIS SINK WILL NOT BE REINSTALLED IN PSYCH ROOM A112. DEMOLISH THE ASSOCIATED SUPPLY, DRAIN, & VENT PIPING BACK TO THE APPROXIMATE LOCATIONS SHOWN.
3. THIS EXISTING WATER CLOSET IS TO REMAIN IN SERVICE. PROTECT FROM DAMAGE.
4. REINSTALL THE SALVAGED LAVATORY IN THIS LOCATION. CONNECT THE SUPPLY, DRAIN, AND VENT PIPING BACK INTO THEIR RESPECTIVE EXISTING MAINS. SAW CUT THE FLOOR AS REQUIRED TO EXTEND THE DRAIN PIPING OVER TO THE SINK'S NEW LOCATION. PATCH AND REPAIR THE FLOOR TO MATCH THE SURROUNDING FLOOR. FIELD VERIFY THE EXTENT OF WORK.
5. NEW SINK TO BE ANTI-LIGATURE WITH AN ANTI-LIGATURE FAUCET, SEE PLUMBING FIXTURE SCHEDULE FOR DETAILS.
6. CAP THE EXISTING SUPPLY & VENT PIPING ABOVE THE CEILING IN THIS APPROXIMATE LOCATION.
7. CAP THE EXISTING DRAIN PIPING IN THE WALL OR BELOW THE FLOOR IN THIS LOCATION. PATCH AND REPAIR THE FLOOR AND WALL TO MATCH THE SURROUNDING FLOOR AND WALL. FIELD VERIFY THE EXTENT OF WORK.

FIRE PROTECTION NOTES

1. REMOVE AND REPLACE SPRINKLER HEADS IN PSYCH EXAM A112 & PATIENT TOILET A133. RELOCATE FIRE SPRINKLER HEADS AS REQUIRED PER NFPA 13 2016. FIELD VERIFY THE EXTENT OF WORK.
2. THE NEW FIRE SPRINKLER HEADS IN PATIENT TOILET A113 ARE TO MATCH EXISTING SPRINKLERS.
3. PROVIDE NEW INSTITUTIONAL STYLE SPRINKLER HEADS IN HARD LID CEILING FOR PSYCH EXAM A112.
4. CONTRACTOR SHALL PROVIDE HYDRAULIC ANALYSIS OF THE SYSTEM. IF THE ORIGINAL DESIGN INTENT IS ALTERED. FOR EXAMPLE, FLEXIBLE DROPS ARE ADDED WHERE HARD PIPE DROPS WERE ORIGINALLY INSTALLED.



1 PSYCH EXAM PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
NORTH



2 PSYCH EXAM PLUMBING PLAN
SCALE: 1/4" = 1'-0"
NORTH



GENERAL ELECTRICAL NOTES

- 1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC. SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION. THE ARCHITECT'S RESPONSE TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT, WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
- 2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING AND STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
- A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
- B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD, JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
- C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE BY RAIN, SNOW, ICE, OR OTHER WEATHER ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
- 3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. FOR RACEWAYS IN CONCEALED AREAS, REFER TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
- 4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
- 5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
- 6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE A/E/J.

DEFINITIONS

- NOTE: ALL DEFINITIONS MAY NOT BE USED.
- INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.
- DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", "AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.
- APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.
- FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."
- INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."
- PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."
- INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.
- TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC....

ELECTRICAL SHEET INDEX

EE001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES
EE201	ELECTRICAL SPECIFICATIONS
EE202	ELECTRICAL SPECIFICATIONS
EE203	ELECTRICAL SPECIFICATIONS
EE204	ELECTRICAL SPECIFICATIONS
EE205	ELECTRICAL SPECIFICATIONS
EE501	ELECTRICAL DETAILS
EE701	TYPICAL MOUNTING HEIGHT DETAILS
EP101	LEVEL 1 POWER PLAN
EL601	INTERIOR LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE	KV	KILOVOLT
1PH	SINGLE-PHASE	KVA	KILOVOLT AMPERE
1WAY	ONE-WAY	KVAR	KILOVOLT AMPERE REACTIVE
2/C	TWO-CONDUCTOR	KW	KILOWATT
2WAY	TWO-WAY	KWH	KILOWATT HOUR
3/C	THREE-CONDUCTOR	LED	LIGHT EMITTING DIODE
3WAY	THREE-WAY	LPMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
4OUT	QUADRUPLE RECEPTACLE OUTLET	LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
4PDT	FOUR-POLE DOUBLE THROW	LPS	LOW PRESSURE SODIUM
4PST	FOUR-POLE SINGLE THROW	LRA	LOCKED ROTOR AMPS
4W	FOUR-WIRE	LTG	LIGHTING
4WAY	FOUR-WAY	LV	LOW VOLTAGE
A	ABOVE COUNTER	LV	LOW VOLTAGE
AC	ARMORED CABLE	MATV	MASTER ANTENNA TELEVISION SYSTEM
ADA	AMERICANS WITH DISABILITIES ACT	MAX	MAXIMUM
ADJ	ADJACENT	MC	METAL CLAD
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPS
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
AIC	AMPERE INTERRUPTING CAPACITY	MCC	MOTOR CONTROL CENTER
ALUM	ALUMINUM	MCP	MOTOR CIRCUIT PROTECTION
AMP	AMPERE	MDP	MAIN DISTRIBUTION PANEL
ANP	ANNUNCIATOR	MG	MOTOR GENERATOR
AP	ACCESS POINT (WIRELESS DATA)	MH	MANHOLE
AR	AS REQUIRED	MNI	MINIMUM
ASC	AMPS SHORT CIRCUIT	MLO	MIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	MOCPP	MAXIMUM OVERCURRENT PROTECTION
AV	AUDIO VISUAL	NA	NOT APPLICABLE
AWG	AMERICAN WIRE GAGE	NC	NORMALLY CLOSED
BB	BUCK-BOOST TRANSFORMER	NEC	NATIONAL ELECTRICAL CODE
CB	CIRCUIT BREAKER	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CBCA	CUSTOM COLOR AS SELECTED BY ARCHITECT	NFC	NATIONAL FIRE CODE
CCTV	CLOSED CIRCUIT TELEVISION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CFCI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	NIC	NOT IN CONTRACT
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED	NO	NO CORRALY OPEN
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	NTS	NOT TO SCALE
CKT	CIRCUIT	OC	ON CENTER
CM	CONSTRUCTION MANAGER	OCF	OWNER CURRENT PROTECTION
CON	CONDUIT	OC/CI	OWNER FURNISHED/CONTRACTOR INSTALLED
CO	CONVENIENCE OUTLET	OF/OI	OWNER FURNISHED/OWNER INSTALLED
COR	CONTRACTING OFFICER'S REPRESENTATIVE	OPF	OBTAIN FROM PLANS
CP	CONTROL PANEL	OR DR	OVERHEAD (COILING) DOOR
CT	CURRENT TRANSFORMER	OL	OVERLOAD
CTV	CABLE TELEVISION	OP	OPENING
CU	COPPER	PF	POWER FACTOR
CSA	CANDELA RATING	PH	PHASE
DBA	DOUBLE POLE, DOUBLE THROW	PNL	PANEL
DPDT	DOUBLE THROW	PT	POTENTIAL TRANSFORMER
DS	DISCONNECT SWITCH	PTZ	PAN/TILT/ZOOM
EA	EACH	QTY	QUANTITY
EM	EMERGENCY	R	REMOVE
EMT	ELECTRICAL METALLIC TUBING	RCP	REFLECTED CEILING PLAN
ENT	ELECTRICAL NONMETALLIC TUBING	RMC	RIGID METAL CONDUIT
EPO	EMERGENCY POWER OFF EQUIPMENT	RNC	RIGID NONMETAL CONDUIT
EQ	EQUIPMENT	RPM	REVOLUTIONS PER MINUTE
EX	EXISTING	RR	REMOVE AND RELOCATE
F	FURNITURE MOUNTED	SIS	START/STOP
FA	FIRE ALARM	SCA	SHORT CIRCUIT AMPS
FCA	FIRE ALARM CONTROL PANEL	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
FLA	FULL LOAD AMPS	SF	SQUARE FOOT (FEET)
FMC	FLEXIBLE METAL CONDUIT	SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
FOB	FREIGHT ON BOARD	SPD	SURGE PROTECTIVE DEVICE
FVNR	FULL VOLTAGE NONREVERSING	SPDT	SINGLE POLE, DOUBLE THROW
FVR	FULL VOLTAGE REVERSING	SPEC	SPECIFICATION
G	GROUND	SPST	SINGLE POLE, SINGLE THROW
GEN	GENERATOR	ST	SWITCHBOARD
GFCI	GROUND FAULT INTERRUPTER	SWB	SWITCHGEAR
GFP	GROUND FAULT PROTECTION	TL	TWIST LOCK
HD	HEAVY DUTY	TP	TELEPHONE POLE
HIA	HIGH INTENSITY DISCHARGE HAND-OFF-AUTOMATIC	TP	TWISTED PAIR
HP	HORSE POWER	TB	TELEPHONE TERMINAL BOARD
HPF	HIGH POWER FACTOR	TV	TELEVISION
HPS	HIGH PRESSURE SODIUM	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HV	HIGH VOLTAGE	TY	TYPICAL
HZ	HERTZ	UF	UNDERFLOOR
I/O	INPUT/OUTPUT	UGND	UNDERGROUND
IG	ISOLATED GROUND	UPS	UNINTERRUPTIBLE POWER SUPPLY
IMC	INTERMEDIATE METAL CONDUIT	V	VOLTS
INIS	INSULATED/ISOLATED	VA	VOLT AMPERE
IR	INFRARED	VFCVFD	VARIABLE FREQUENCY MOTOR CONTROLLER
JBOX	JUNCTION BOX	W	WITH
		W/O	WITHOUT
		WP	WEATHERPROOF
		XFMR	TRANSFORMER

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
FIRE ALARM	
01 [FSA]	FIRE SYSTEM ANNUNCIATOR.
02 [FCP]	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
03 [FPS]	FIRE ALARM NOTIFICATION POWER SUPPLY.
04 [CM]	CONTROL MODULE.
05 [MM]	MONITOR MODULE.
06 [P]	FIRE ALARM MANUAL PULL STATION.
07 [R]	SHUT DOWN RELAY. INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
08 [M]	MAGNETIC DOOR HOLDER.
09 [D]	DETECTOR, SMOKE.
10 [D]	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
11 [D]	DETECTOR, HEAT.
12 [S]	STROBE.
13 [S]	ALARM, HORN/STROBE, ONE ASSEMBLY.
14 [D]	DETECTOR, FLOW SWITCH: FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
15 [D]	DETECTOR, TAMPER SWITCH WITH VALVE: TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
16 [L]	SMOKE DAMPER.
17 [SD]	FIRE AND SMOKE DAMPER.
18 [CO]	DETECTOR, CARBON MONOXIDE.
19 [D]	ALARM, HORN/STROBE, ONE ASSEMBLY, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
20 [D]	ALARM, HORN, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
21 [D]	ALARM, STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
TECHNOLOGY SYSTEMS	
01 [X]	TECHNOLOGY SYSTEM CABLE. SEE SPECIFIC JOB EQUIPMENT LIST FOR APPLICABLE DESIGNATIONS.
EXAMPLES: C = CONTROL CABLE, 10 AWG, 1 CONDUCTOR, GREEN G = INSULATED M = MICROPHONE CABLE S = SPEAKER CABLE, 70 VOLT SYSTEM Z = SPEAKER CABLE, 8 OHM SYSTEM	
02 [S]	SPEAKER, CEILING MOUNTED.
03 [S]	SPEAKER, WALL MOUNTED.
04 [A]	AUDIOVISUAL OUTLET.
NURSE CALL	
01 [Q]	JUNCTION BOX.
02 [L]	CORRIDOR LIGHT.
03 [B]	BATHROOM PULL CORD STATION.
04 [D]	DUTY STATION.
05 [E]	EMERGENCY ASSISTANCE CALL STATION.
06 [E]	EMERGENCY ASSISTANCE CODE BLUE CALL STATION.
07 [P]	PATIENT STATION.
08 [S]	STAFF STATION.
09 [NCM]	TOUCH SCREEN NURSE CALL MASTER STATION.
10 [ZLC]	ZONE LIGHT CONTROLLER.
11 [CU]	NURSE CALL AREA CONTROL UNIT & POWER SUPPLIES.
SECURITY	
01 [X]	SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE TYPE.
02 [ACC]	ACCESS CONTROL HEADEND EQUIPMENT.
03 [CTR]	SECURITY CONTROL PANEL.
04 [SEC]	INTRUSION DETECTION HEADEND EQUIPMENT.
05 [D]	CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE.
06 [CR]	CARD READER.
07 [KCR]	KEYPAD/CARD READER COMBINATION.
TV DISTRIBUTION	
01 [T]	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
02 [TR]	TV DISTRIBUTION CABLE, TRUNK.
03 [CMB]	COMBINER.
04 [DC]	DIRECTIONAL COUPLER.
05 [DA]	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
06 [SPL]	SPLITTER (ONE-LINE DIAGRAM).
07 [O]	TV OUTLET.
08 [A]	SATELLITE ANTENNA.
09 [A]	TV ANTENNA (ONE-LINE DIAGRAM).
10 [-W-]	TERMINATOR, 75 OHM (TV DISTRIBUTION).

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
01 [F]	FUSE WITH RATING (ONE-LINE DIAGRAM).
02 [D]	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
03 [D]	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
04 [D]	DISCONNECT WITH FUSE AND MOTOR STARTER COMBINATION (ONE-LINE DIAGRAM).
05 [S]	OVERLOAD RELAY (ONE-LINE DIAGRAM).
06 [S]	STARTER (ONE-LINE DIAGRAM).
07 [C]	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
08 [C]	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
09 [C]	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
10 [GFP]	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT PROTECTION (ONE-LINE DIAGRAM).
11 [M]	MOTOR.
12 [T]	TRANSFORMER (ONE-LINE DIAGRAM).
13 [T]	TRANSFORMER, CURRENT (ONE-LINE DIAGRAM).
14 [B]	BATTERY (ONE-LINE DIAGRAM).
15 [C]	CAPACITOR (ONE-LINE DIAGRAM).
16 [D]	DELTA CONNECTION (ONE-LINE DIAGRAM).
17 [W]	WYE CONNECTION (ONE-LINE DIAGRAM).
18 [P]	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
19 [P]	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
20 [P]	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
21 [P]	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
22 [P]	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
23 [P]	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
24 [T]	TRANSFER SWITCH (ONE-LINE DIAGRAM).
25 [VFC]	VARIABLE FREQUENCY MOTOR CONTROLLER (ONE-LINE DIAGRAM).
26 [D]	DISCONNECT SWITCH, FUSED.
27 [D]	DISCONNECT SWITCH, UNFUSED.
28 [D]	STARTER, COMBINATION WITH DISCONNECT SWITCH.
29 [D]	STARTER OR MOTOR CONTROLLER.
30 [P]	PUSHBUTTON.
31 [P]	PUSHBUTTONS, MOTOR CONTROL.
32 [P]	PANELBOARD CABINET, FLUSH MOUNTED.
33 [P]	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
34 [P]	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
35 [D]	DISTRIBUTION PANEL OR SWITCHBOARD.
36 [LP]	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
37 [L]	LIGHTING CONTROL STATION.
38 [ST]	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
39 [T]	TRANSFORMER: NUMBER INDICATES KVA.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
WIRING DEVICES	
02 [R]	RECEPTACLE, DUPLEX: NEMA 5-20R. TAMPER RESISTANT.
03 [R]	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R. TAMPER RESISTANT.
04 [R]	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R. TAMPER RESISTANT.
05 [R]	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL. WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
06 [R]	RECEPTACLE, DUPLEX, SWITCHED: NEMA 5-20R. TAMPER RESISTANT.
12 [R]	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R. TAMPER RESISTANT.
13 [R]	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
14 [R]	RECEPTACLE, DUPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
16 [R]	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R. TAMPER RESISTANT.
17 [R]	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R. TAMPER RESISTANT.
18 [R]	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
19 [R]	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
22 [R]	RECEPTACLE, QUADRUPLE: NEMA 5-20R. TAMPER RESISTANT.
23 [R]	RECEPTACLE, QUADRUPLE ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
24 [R]	RECEPTACLE, QUADRUPLE, HOSPITAL GRADE: NEMA 5-20R. TAMPER RESISTANT.
25 [R]	RECEPTACLE, QUADRUPLE, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
27 [R]	RECEPTACLE, QUADRUPLE WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R. TAMPER RESISTANT.
28 [R]	RECEPTACLE, SPECIAL PURPOSE: PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
29 [R]	RECEPTACLE, SPECIAL PURPOSE ON EMERGENCY POWER: PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
33 [D]	MULTI-OUTLET ASSEMBLY: NEMA 5-20R.
34 [D]	DROP COORD. SEE DETAIL.
36 [D]	FLUSH FLOOR BOX. "F" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
39 [D]	SWITCH, DIMMER.
40 [X]	SWITCH, SINGLE-POLE ("X" INDICATES FIXTURES CONTROLLED).
42 [X]	SWITCH, THREE-WAY ("X" INDICATES FIXTURES CONTROLLED).
45 [X]	SWITCH, KEY OPERATED.
47 [M]	SWITCH, MOMENTARY.
53 [R]	RECEPTACLE, QUADRUPLE WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R. TAMPER RESISTANT.
54 [R]	RECEPTACLE, QUADRUPLE WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R. TAMPER RESISTANT.
56 [R]	RECEPTACLE, SINGLE PLEX, WITH USB OUTLET. TAMPER RESISTANT.
57 [R]	RECEPTACLE, DUPLEX, RECESSED, NEMA 5-20R. TAMPER RESISTANT, AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD).
58 [R]	RECEPTACLE, QUADRUPLE, RECESSED, NEMA 5-20R. TAMPER RESISTANT AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD).
59 [R]	INDICATES A RECEPTACLE IS AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD).
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
01 [W-3]	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
02 [W-3]	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
03 [EM]	EMERGENCY.
04 [NL]	NIGHT LIGHT: DO NOT SWITCH.
05 [↑]	EGRESS DIRECTION ARROW (EXIT SIGNS).
07 [↑]	EXIT SIGN: SINGLE FACE, CEILING MOUNTED
08 [↑]	EXIT SIGN: SINGLE FACE, WALL MOUNTED
09 [↑]	EXIT SIGN: DOUBLE FACE, CEILING MOUNTED
10 [↑]	EXIT SIGN: DOUBLE FACE, WALL MOUNTED
LIGHTING CONTROL	
01 [S]	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
02 [S]	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL.
03 [S]	OCCUPANCY SENSOR, DUAL TECHNOLOGY, DIRECTIONAL.
06 [S]	VACANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
07 [S]	VACANCY SENSOR, DUAL TECHNOLOGY, WALL.
18 [a,b]	LOW VOLTAGE DIGITAL LIGHTING CONTROL SWITCH: LETTER "a,b" INDICATES ZONING WHERE SHOWN (REFER TO PLANS, SCHEDULES, AND DETAILS FOR EXACT BUTTON CONFIGURATION AND PROGRAMMING REQUIREMENTS)
19 [DC]	DIGITAL LIGHTING DIMMING CONTROLLER
20 [LC]	DIGITAL PLUG LOAD CONTROLLER
21 [RC]	DIGITAL LIGHTING ROOM CONTROLLER
26 [X]	LIGHTING SPACE CONTROL TYPE: X INDICATES TYPE. SEE SCHEDULE / DIAGRAM.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
01 [A5]	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
02 [A5]	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
03 [A5]	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
04 [100]	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
05 [K]	KEYNOTE INDICATOR.
06 [E]	EQUIPMENT INDICATOR.
07 [CU-1]	REVISION INDICATOR.
09 [B]	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
10 [B]	BREAK, ROUND
12 [H]	NEW LINE: MEDIUM LINE.
13 [H]	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
14 [H]	EXISTING TO REMAIN LINE: THIN LINE.
15 [H]	DEMOLITION LINE: DASHED, MEDIUM LINE.
19 [X-X]	KITCHEN EQUIPMENT INDICATOR: "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XKP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
WIRING METHODS	
04 [A-1.3.5]	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
05 [A-1.3.5]	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
06 [A-1.3.5]	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. SMALL CROSS LINES INDICATE NUMBER OF CONDUCTORS OR CABLES. LARGER CROSS LINE INDICATES EQUIPMENT GROUND. WAVY CROSS LINE INDICATES INSULATED/ ISOLATED GROUND. FOR BRANCH WIRING, CROSS LINES INDICATE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
09 [X]	OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
09 [D]	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
10 [D]	CONDUIT STUB: DIMENSION RECORD DRAWINGS AND MARK.
11 [I]	CONDUCTOR & CONDUIT (CC) SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
12 [HC]	ADA ACCESS PUSH PLATE
13 [J]	JUNCTION BOX.
14 [C]	CABLE TRAY ABOVE ACCESSIBLE CEILING.
21 [G]	EARTH GROUND (ONE-LINE DIAGRAM).
22 [J]	JUNCTION BOX, CEILING.
23 [L]	LADDER RACK.
25 [E]	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
STRUCTURED CABLING	
01 [V]	COMMUNICATIONS DEVICE (1 DATA).
02 [V]	COMMUNICATIONS DEVICE (1 DATA / 1 ANALOG).
03 [V]	COMMUNICATIONS DEVICE (1 DATA WALL PHONE).
04 [V]	COMMUNICATIONS DEVICE (2 DATA).
05 [V]	COMMUNICATIONS DEVICE (3 DATA).
06 [V]	COMMUNICATIONS DEVICE (4 DATA).
07 [V]	COMMUNICATIONS DEVICE (6 DATA).
08 [VM]	COMMUNICATIONS DEVICE PHYSIOLOGICAL MONITOR (1 DATA).
09 [WAP]	COMMUNICATIONS DEVICE WIRELESS ACCESS POINT (2 DATA).
10 [R]	LAN RACK, FLOOR STANDING.
11 [T]	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
CCTV	
01 [P]	CCTV CABLE, POWER.
02 [V]	CCTV CABLE, VIDEO SIGNAL.
03 [ECTV]	CCTV HEADEND EQUIPMENT.
04 [M]	CCTV MONITOR.
05 [C]	CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
06 [PTZ]	CCTV CAMERA WITH PAN, TILT AND ZOOM.
07 [360]	PANNING CAMERA TRANSVERSE ANGLE.

SECTION 260500 – COMMON WORK RESULTS FOR ELECTRICAL

- PART 1 - GENERAL**
- 1.1 RELATED DOCUMENTS**
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- 1.2 SUMMARY**
- A. This Section includes the following:
- Supporting devices for electrical components.
 - Access Panels
 - Demolition
 - Cutting and patching for electrical construction.
 - Touchup painting
 - Temporary Power and Communication
 - Permits and Fees
- 1.3 SUBMITTALS**
- A. Product Data: For electricity-metering equipment.
- B. Shop Drawings: Dimensioned plans and sections or elevation layouts of electricity-metering equipment.
- 1.4 COORDINATION**
- A. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installations that follow.
- Set inserts and sleeves in poured-in-place concrete, masonry work, and other structural components as they are constructed.
- B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning before closing in the building.
- C. Coordinate electrical equipment installation with other building components.
- Verify all dimensions be field measurements.
 - Minimize costs to resolve equipment and other conflicts by successfully concluding preinstallation conferences. Include the following:
 - Review Divisions 21, 22 and 23 shop drawings. Compare equipment electrical specifications with equipment schedule. Prevent Div 21, 22 and 23 equipment encroaching on clearances required by NEC. Request clarification of conflicts prior to installation.
 - Determine whether lighting fixtures and other electrical items conflict with the location of structural members and mechanical or other equipment.
 - Coordinate connecting electrical service to components furnished in other sections of the specification or by the User. Verify electrical requirements including voltage, full load amps, and minimum wire ampacity prior to installing or purchasing the associated electrical equipment and wiring.
 - Review systems furniture electrical specifications and compare with wiring indicated. Request dimensional layout from furniture installer including electrical connection locations. Request clarification of conflicts prior to installation.
- D. Coordinate electrical service connections to components furnished by electric utility companies.
- Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for electricity-metering components.
 - Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.
 - Notify Architect a minimum of seven days in advance of any proposed utility interruption and obtain approval prior to proceeding. Comply with requirements of the Owner, User, and Utility. Include all costs, including Owner, municipal or utility costs that will need to be paid to obtain electric service.

COMMON WORK RESULTS FOR ELECTRICAL 260500 - 1

- C. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, 2 inches (50 mm) below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.
- D. Remove and legally dispose of demolished material from Project site.
- E. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.
- F. Remove conductors from raceway to the first active outlet or branch panels for vacated or unused circuits.
- 3.7 CUTTING AND PATCHING**
- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- Core drilling: X-Ray post-tension slabs prior to core drilling to assure that post-tension cables are not damaged.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Install new fireproofing where existing fireproofing has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.
- 3.8 REFINISHING AND TOUCHUP PAINTING**
- A. Refinish and touch up paint. Paint materials and application requirements are specified in Division 9 Section "Painting."
- Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
 - Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.
 - Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.
- 3.9 CLEANING AND PROTECTION**
- A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burs, dirt, paint spots, and construction debris.
- Remove labels that are not permanent labels.
 - Wipe surfaces of electrical equipment. Remove excess lubrication and other substances.
 - Clean exposed exterior and interior hard-surface finishes to a dust-free condition, free of stains, films and similar foreign substances.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

END OF SECTION 260500

COMMON WORK RESULTS FOR ELECTRICAL 260500 - 5

- E. Coordinate communication service connections to components furnished by communication utility companies.
- Coordinate installation and connection of exterior underground and overhead utilities and services.
 - Comply with requirements of authorities having jurisdiction.
 - Notify Architect a minimum of seven days in advance of any proposed utility interruption and obtain approval prior to proceeding. Comply with requirements of the Owner, User, and Utility. Include all costs, including Owner, municipal or utility costs that will need to be paid to obtain communication services.
- F. Temporary Power and Communication are specified in Division 1 Section "Construction Facilities and Temporary Controls".
- Comply with requirements for temporary electric and communication services with the proper Utility.
 - Comply with Article 305 of the NEC.
- G. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces. Access doors and panels are specified in Division 8 Section "Access Doors."
- H. Coordinate with Authorities Having Jurisdiction including: city, county, state, university, federal and other governmental authorities.
- Obtain all permits (including excavation permits) prior to beginning construction.
 - Pay all fees.
 - Request inspections required by Authorities Having Jurisdiction in a timely manner and in order to comply with sequencing requirements.

PART 2 - PRODUCTS

- 2.1 SUPPORTING DEVICES**
- A. Material: Cold-formed steel, with corrosion-resistant coating acceptable to authorities having jurisdiction.
- B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.
- C. Slotted-Steel Channel Supports: Flange edges turned toward web, and 9/16-inch- (14-mm-) diameter slotted holes at a maximum of 2 inches (50 mm) o.c., in webs.
- Channel Thickness: Selected to suit structural loading.
 - Fittings and Accessories: Products of the same manufacturer as channel supports.
- D. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.
- E. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.
- F. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for nonarmored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.
- G. Expansion Anchors: Carbon-steel wedge or sleeve type.
- H. Toggle Bolts: All-steel springhead type.
- I. Powder-Driven Threaded Studs: Heat-treated steel.

COMMON WORK RESULTS FOR ELECTRICAL 260500 - 2

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS**
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- 1.2 SUMMARY**
- A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.
- 1.3 SUBMITTALS**
- A. Product Data: For each type of product indicated.
- B. Field Quality-Control Test Reports: From Contractor.
- PART 2 - PRODUCTS**
- 2.1 MANUFACTURERS**
- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
- Subject to compliance with requirements, provide products by the manufacturers specified.
- 2.2 CONDUCTORS AND CABLES**
- A. Manufacturers:
- Copper Wire and Cables:
 - Alcan Aluminum Corporation; Alcan Cable Div.
 - American Insulated Wire Corp.; a Leviton Company.
 - General Cable Corporation.
 - Senior Wire & Cable Company.
 - Southwire Company.
 - Refer to Part 3 "Conductor and Insulation Applications" Article for insulation type, cable construction, and ratings.
 - Conductor Material: Copper, minimum size #12 for phase conductors and #14 for control conductors complying with NEMA WC 7; solid conductor for No. 10 AWG and smaller, stranded for No. 8 AWG and larger.
 - Conductor Insulation Types: Type THWN-2, XHHW-2 and SO complying with NEMA WC7.
- 2.3 CONNECTORS AND SPLICES**
- A. Manufacturers:
- AFC Cable Systems, Inc.
 - AMP Incorporated/Tycos International.
 - Burndy.
 - Hubbell/Anderson.
 - Isco.
 - O-Z/Gadney; EGS Electrical Group LLC.
 - 3M Company; Electrical Products Division.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
- PART 3 - EXECUTION**
- 3.1 CONDUCTOR AND INSULATION APPLICATIONS**
- A. Service Entrance: Type THWN-2, single conductors in raceway.
- B. Exposed Feeders: Type THWN-2, single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, and Partitions: Type THWN-2, single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade, and in Crawlspace: Type THWN-2, single conductors in raceway. Exposed Branch Circuits: Type THWN-2, single conductors in raceway.

CONDUCTORS AND CABLES 260519 - 1

- E. Existing Utilities: Locate and identify existing underground utilities in excavation areas or in demolition areas. Maintain services to areas outside demolition limits or excavated areas. When services must be interrupted, install temporary services for affected areas.
- F. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements indicated in the Contract Documents.
- G. Record drawings and Shop Drawings: Mark up drawings daily during construction with changes or deletions in the scope of the project.
- 3.2 ELECTRICAL SUPPORTING DEVICE APPLICATION**
- A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, U-channel system components.
- B. Dry Locations: Steel materials.
- C. Support Clamps for PVC Raceways: Click-type clamp system.
- D. Selection of Supports: Comply with manufacturer's written instructions.
- E. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four; minimum of 200-lb (90-kg) design load.
- 3.3 SUPPORT INSTALLATION**
- A. Install support devices to securely and permanently fasten and support electrical components.
- Comply with NFPA 70. In addition, install supports within 12" of couplings, fittings, and boxes, with a minimum of two supports per 10 foot length of raceway. Install supports at each change of direction. Similarly support cables in cable trays or raceways as indicated; except, provide J-hooks to support cables.
 - Support suspended conduit and cables independently from all other electrical or mechanical systems by attaching directly from building structure, unless prior approval in writing has been obtained from the Architect after engineering calculations have been submitted.
 - Coordinate installation of supports so as not to interfere with the removal of ceiling tiles, the service of mechanical equipment, etc.
 - Install bracing parallel to trusses, beams, joists, bidding, etc.
- B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.
- C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
- D. Support parallel runs of cables together on trapeze or bracket type hangers, either vertically or horizontally.
- E. Size supports for multiple raceway and cable installations so capacity can be increased by a 25 percent minimum in the future.
- F. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.
- G. Install 1/4-inch- (6-mm-) diameter or larger threaded steel hanger rods, unless otherwise indicated.
- H. Ceiling fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch (38-mm) and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.
- I. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.
- J. Simultaneously install vertical conductor supports with conductors.
- K. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If supported directly from the building structure, attach box to framing on opposite sides of the box. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 inches (610 mm) from the box.
- L. Install metal channel racks for mounting cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.

COMMON WORK RESULTS FOR ELECTRICAL 260500 - 3

- E. Branch Circuits Concealed in Concrete and below Slabs-on-Grade: Type THWN-2, single conductors in raceway.
- F. Branch circuits in healthcare occupancies:
- Branch Circuits: Type THHN-2/THWN-2, minimum #12 in raceway
 - Branch Circuits: Type THHN-2/THWN-2 must be installed in non-flexible metallic raceways.
 - Patient Care Area branch circuits: Branch circuit wiring in all areas other than mechanical and electrical rooms shall comply with NEC 517.13 (b). Do not use non-metallic conduits or raceways for branch circuits serving areas other than mechanical and electrical rooms.
- G. Fire Alarm Circuits:
- THWN-2 conductors in raceway for fire alarm power and horn/strobe indicating circuits.
 - Power limited signaling circuit cable in raceway for initiating loops
- H. Emergency circuits: Install in separate raceways from all other wiring, except where they connect to the same equipment for two-source operation.
- I. Class 1 Control Circuits: Type THWN-2, in raceway.
- J. Class 2 Control Circuits: Type THWN-2, in raceway.
- K. Fixture Conductors: Install conductors in lighting fixtures with insulation ratings as recommended by the manufacturer's written instructions or a minimum 90 degrees C, whichever is higher.
- L. Communication Conductors: Install communication conductors in raceway.
- 3.2 INSTALLATION**
- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Multi-wire branch circuits: install no more than three circuits in a raceway, unless specifically shown otherwise. Install #10 conductors for branch circuits for which the distance from panelboard to furthest outlet is more than 100' for 120 volt or more than 140' for 277 volt circuits.
- C. GFI circuit breakers or feed-thru outlets to outlets served: provide separate neutrals.
- D. Panelboards, switchboards, MCCs, switchgear: Do not route conductors through a section which terminate in another section, except for interconnecting control conductors.
- E. Remove existing conductors from raceway before pulling in new wires and cables.
- F. Parallel conductors: Where parallel conductors are installed in parallel raceways, install in each raceway conductors of phase, neutral and/or ground as specified. Carefully cut parallel conductors to identical length for each phase leg. Do not parallel conductors less than #1/0.
- G. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- H. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- I. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- J. Do not install wiring through any part of a transformer vault or elevator equipment room and shaft that does not serve equipment in the respective room. Also, coordinate that piping or other items foreign to the transformer vault, elevator equipment room or shaft is not installed in these spaces.
- K. Support cables according to Division 26 Section "Common Work Results for Electrical."
- L. Seal around cables penetrating fire-rated elements according to Division 7 Section "Through-Penetration Firestop Systems."
- M. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."
- 3.3 CONNECTIONS**
- A. Tighten electrical connectors and terminals according to manufacturer's published torque-lightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Conductor splices: Minimize conductor splices. Do not install in conduit bodies.
- C. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

CONDUCTORS AND CABLES 260519 - 2

- M. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- Install wrapped or coated RMC sleeves with 3 feet extending on each side through penetrations of foundations or concrete walls by RMC.
- N. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Perform fastening according to the following unless other fastening methods are indicated:
- Wood: Fasten with wood screws or screw-type nails.
 - Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
 - New Concrete: Concrete inserts with machine screws and bolts.
 - Existing Concrete: Expansion bolts. Drill holes in concrete so holes do not cut main reinforcing bars. Fill and seal holes drilled in concrete and not used.
 - Obtain prior approval from project structural engineer prior to drilling prestressed or post-tension concrete slabs and beams.
 - Instead of expansion bolts, threaded studs driven by a powder charge and provided with lock washers may be used in existing concrete.
 - Steel: Welded threaded studs or spring-tension clamps on steel.
 - Field Welding: Comply with AWS D1.1.
 - Welding to steel structure may be used only for threaded studs, not for conduits, pipe straps, or other items.
 - Light Steel: Sheet-metal screws.
 - Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load. Do not support electrical equipment or conduits with toggle bolts, moly-bolts, or screws in brick or plaster. Do not support electrical equipment or conduit from tie wires.
 - Do not use wooden plugs in concrete or masonry units for fastening conduits, tubing, boxes, cabinets, etc.
- 3.4 ACCESS DOORS**
- A. Install access panels where required by accessibility requirements of NEC for electrical installations such as junction boxes, ballasts, and other electrical equipment requiring access.
- 3.5 FIRESTOPPING**
- A. Apply firestopping to cable and raceway penetrations of fire-rated floor and wall assemblies to achieve fire-resistance rating of the assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Firestopping."
- B. Gypsum Board Taping: Apply to lighting fixture or electrical equipment penetrations of fire rated floor, ceiling and wall assemblies, unless product is UL listed with integral fire rating Perform taping as specified in appropriate Division 9 section to reestablish the original fire-resistance rating of the assembly at the penetration.
- 3.6 DEMOLITION**
- A. Protect existing electrical equipment and installations indicated to remain. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.
- Relocate existing electrical devices, conduit or equipment that for any reason obstructs construction. Include any equipment having electrical connections that requires disconnecting and reconnection at the same or another location throughout the course of construction.
 - Maintain in working condition all electrical equipment and apparatus in areas not remodeled.
 - Temporary Partitions or Dust Barriers: Prevent the spread of dust and dirt to adjacent areas.
- B. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.
- Include exposed equipment and installations made obsolete by new work.
- END OF SECTION 260519

COMMON WORK RESULTS FOR ELECTRICAL 260500 - 4

1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors. Install compression type connectors for aluminum conductors or copper pigtail adapters for installation in mechanical lugs.
- D. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.
- E. Furniture connections: connect systems furniture to power supply circuits per manufacturer's written instructions.
- F. Panelboard connections: do not splice conductors in panelboards.

END OF SECTION 260519

CONDUCTORS AND CABLES 260519 - 3

SECTION 260524 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

- PART 1 - GENERAL**
1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.
1.3 QUALITY ASSURANCE
 A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 1. Comply with UL 467.
 B. Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
 A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Grounding Conductors, Cables, Connectors, and Rods:
 a. Apache Grounding/Erico Inc.
 b. Boggs, Inc.
 c. Chance/Hubbell
 d. Copperweld Corp.
 e. Dossert Corp.
 f. Erico Inc.; Electrical Products Group.
 g. Framatome Connectors/Bundy Electrical.
 h. Galvan Industries, Inc.
 i. Harger Lightning Protection, Inc.
 j. Hastings Fiber Glass Products, Inc.
 k. Heavy Brothers Lightning Protection Co.
 l. Ideal Industries, Inc.
 m. ILSCO.
 n. Kearney/Cooper Power Systems.
 o. Korns; C. C. Korns Co.; Division of Rabroy Industries.
 p. Lightning Master Corp.
 q. Lyncolex XII Grounding.
 r. O-Z/Gedney Co.; a business of the EGS Electrical Group.
 s. Raco, Inc.; Division of Hubbell.
 t. Robbins Lightning, Inc.
 u. Salisbury; W. H. Salisbury & Co.
 v. Superior Grounding Systems, Inc.
 w. Thomas & Betts, Electrical.
 x. VFC, Inc.
 2.2 GROUNDING CONDUCTORS
 A. For insulated conductors, comply with Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
 B. Material: Copper.
 C. Equipment Grounding Conductors: Insulated with green-colored insulation.
 D. Grounding Electrode Conductors: Stranded cable.
 E. Bare Copper Conductors: Comply with the following:
 1. Solid Conductors: ASTM B 3.
 2. Assembly of Stranded Conductors: ASTM B 8.

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3. Tinned Conductors: ASTM B 33.
 F. Copper Bonding Conductors: As follows:
 1. Bonding Conductor: as noted on the drawings, stranded copper conductor. Comply with NEC minimum requirements.
 2. Tinned Bonding Jumper: Tinned-copper tape, braided copper conductors, terminated with copper ferrules: 1-5/8 inches (42 mm) wide and 1/16 inch (1.5 mm) thick.
 G. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.
 1. 2" X 12" X 1/2" minimum ground bus mounted on insulators.
2.3 CONNECTOR PRODUCTS
 A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.
 B. Bolted Connectors: Bolted-pressure-type connectors, or compression type.
 C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.
PART 3 - EXECUTION
3.1 APPLICATION
 A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.
 B. In raceways, use insulated equipment grounding conductors.
 C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections, except those at test wells.
 1. Use for interconnecting wiring from ground bus to ground bus.
 D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
 E. Ground Rod Clamps at Test Wells: Use bolted pressure clamps with at least two bolts.
 F. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
 1. Use 2" X 12" X 1/2" bus with insulated spacer; space 2 inch (50.8 mm) from wall. Locate 12" above floor, unless otherwise indicated.
 G. Underground Grounding Conductors: Use tinned-copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches (600 mm) below grade or bury 12 inches (300 mm) above duct bank when installed as part of the duct bank.
3.2 EQUIPMENT GROUNDING CONDUCTORS
 A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
 B. Isolated Grounding Receptacle Circuits: Install an insulated equipment-grounding conductor connected to the receptacle-grounding terminal. Isolate grounding conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.
 C. Nonmetallic Raceways: Install an equipment-grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.
 D. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide as noted on the drawings insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
 1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-1/2-inch (6.4-by-50-by-300-mm) grounding bus.
 E. Common Ground Bonding with Lightning Protection System: Bond electrical power system directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

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- 3.3 INSTALLATION**
 A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
 B. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.
 C. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
 D. Bond each aboveground portion of gas piping system upstream from equipment shutoff valve.
 E. Metal Frame of the building where effectively grounded: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to metal frame of building. Exothermically weld grounding conductors to metal frame. Bond metal grounding conductor conduit or sleeve to conductor at each end.
3.4 CONNECTIONS
 A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 1. Use electroplated or hot-dip-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
 2. Make connections with clean, bare metal at points of contact.
 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 4. Make aluminum-galvanized steel connectors with tin-plated copper jumpers and mechanical clamps.
 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
 B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.
 C. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
 D. Non-contact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically non-continuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.
 E. Connections at Test Wells: Use compression-type connectors on conductors and make bolted- and clamped-type connections between conductors and ground rods.
 F. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-lightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.
 G. Compression-Type Connectors: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.
 H. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

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- 3.5 SEPARATELY DERIVED SYSTEMS
 A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of grounding electrode conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
 B. Do not ground system neutral conductor under any circumstances after it has been grounded at the service entrance disconnect except for separately derived systems. Interconnect or bond all grounding systems to the main system ground. Do not used neutral conductors for grounding equipment. Do not bond the neutral bus to distribution cabinets, except for separately derived systems.
 END OF SECTION 260526

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SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

- PART 1 - GENERAL**
1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
1.3 DEFINITIONS
 A. EMT: Electric metallic tubing.
 B. FMC: Flexible metal conduit.
 C. HDPE: High Density Polyethylene.
 D. IMC: Intermediate metal conduit.
 E. LFMC: Liquidtight flexible metal conduit.
 F. LFNC: Liquidtight flexible nonmetallic conduit.
 G. RNC: Rigid nonmetallic conduit.
1.4 SUBMITTALS
 A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
 B. Shop Drawings: Show fabrication and installation details of components for raceways, fittings, boxes, enclosures, and cabinets.
 C. Manufacturer Seismic Qualification Certification: Submit certification that enclosures, cabinets, accessories, and components will withstand seismic forces defined in Division 26 Section "Seismic Controls for Electrical Systems." Include the following:
 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or calculation.
 a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
1.5 COORDINATION
 A. Coordinate layout and installation of raceways, boxes, enclosures, cabinets, and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
 A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
 1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.
2.2 METAL CONDUIT AND TUBING
 A. Manufacturer:
 1. AFC Cable Systems, Inc.
 2. Allflex Inc.
 3. Anamet Electrical, Inc.; Anaconda Metal Hose.
 4. Electri-Flex Co.
 5. Ginnell Co./Tycos International; Allied Tube and Conduit Div.
 6. LTV Steel Tubular Products Company.
 7. Manhattan/CDT/Cole-Flex.

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8. O-Z Gedney; Unit of General Signal.
 9. Wheatland Tube Co.
 B. Rigid Steel Conduit: ANSI C80.1.
 C. EMT and Fittings: ANSI C80.3.
 1. Fittings: Steel Set-screw or compression type. Do not use die-cast fittings.
 D. FMC: Zinc-coated steel.
 E. LFMC: Flexible steel conduit with PVC jacket.
 F. Fittings: NEMA FB 1; compatible with conduit and tubing materials. Do not use die-cast fittings.
2.3 NONMETALLIC CONDUIT AND TUBING
 A. Manufacturer:
 1. American International.
 2. Anamet Electrical, Inc.; Anaconda Metal Hose.
 3. Amco Corp.
 4. Contex Inc.
 5. Certainteed Corp.; Pipe & Plastics Group.
 6. Condux International.
 7. EclSYS, Inc.
 8. Electri-Flex Co.
 9. Lamson & Sessions; Carlon Electrical Products.
 10. Manhattan/CDT/Cole-Flex.
 11. RACO; Division of Hubbell, Inc.
 12. Spiraduct, Inc./AFC Cable Systems, Inc.
 13. Thomas & Betts Corporation.
 B. RNC: NEMA TC 2, Schedule 40 and Schedule 80 PVC.
 C. RNC Fittings: NEMA TC 3; match to conduit or tubing type and material.
 D. LFNC: UL 1640.
 E. HDPE: NEMA TC-7 Smoothwall Collable PE Electrical Plastic Conduit. UL Listed HDPE is compliant with the 2002 NEC Articles 300 and 352, and meets the requirements of UL 651B, EPEC 40 (Schedule 40).
2.4 METAL WIREWAYS
 A. Manufacturer:
 1. Hoffman.
 2. Square D.
 B. Material and Construction: Sheet metal sized and shaped as indicated, NEMA 1 and 3R.
 C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.
 D. Wireway Covers: Screw-cover type.
 E. Finish: Manufacturer's standard enamel finish.
2.5 BOXES, ENCLOSURES, AND CABINETS
 A. Manufacturer:
 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 2. Emerson/General Signal; Appleton Electric Company.
 3. Erickson Electrical Equipment Co.
 4. Hoffman.
 5. Hubbell, Inc.; Killark Electric Manufacturing Co.
 6. O-Z/Gedney; Unit of General Signal.
 7. RACO; Division of Hubbell, Inc.
 8. Rabroy Industries, Inc.; Enclosure Division.
 9. Scott Felzer Co.; Adolex-PLM Division.
 10. Spring City Electrical Manufacturing Co.

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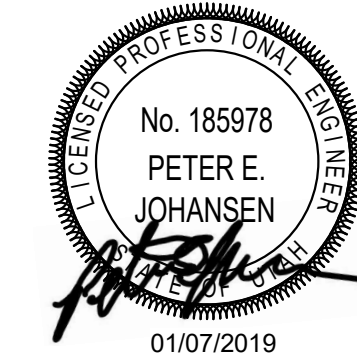
11. Thomas & Betts Corporation.
 12. Walker Systems, Inc.; Wiremod Company (The).
 13. Woodhead, Daniel Company; Woodhead Industries, Inc.; Subsidiary.
 B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
 C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, Type FD, with gasketed cover.
 D. Floor Boxes: Cast metal (on grade) and Sheet metal (above grade); fully adjustable, rectangular.
 E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
 F. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous hinge cover and flush latch.
 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 G. Cabinets: NEMA 250, Type 1; galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage and include accessory feet where required for freestanding equipment.
2.6 EXPANSION FITTINGS:
 A. Manufacturer:
 1. O-Z Gedney; Unit of General Signal.
 B. Expansion Fittings: Malleable Iron, hot dipped galvanized, weatherproof suitable for raceway and applications. Coordinate expansion requirements with Architect.
2.7 FACTORY FINISHES
 A. Finish: provide manufacturer's standard paint applied before shipping to factory-assembled products for:
 1. Surface raceways: To be selected by Architect from manufacturer's standard colors.
 2. Enclosures: Standard Grey in electrical rooms. White in finished areas.
 3. Cabinets: Standard Grey in electrical rooms. White in finished areas.
PART 3 - EXECUTION
3.1 RACEWAY APPLICATION
 A. Indoors:
 1. Exposed:
 a. Above 6' from finished floor: EMT, IMC or Rigid Steel.
 b. Below 6' from finished floor, or subject to mechanical damage: IMC or Rigid Steel.
 2. Underground: refer to underground installation selections in outdoor paragraph above.
 3. Concealed: EMT or Rigid Steel.
 a. Patient Care Applications: EMT or Rigid Steel.
 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, Engine-Driven or Motor-Driven Equipment): LFMC.
 5. Connection to systems furniture: LFMC.
 6. Damp or Wet Locations: Rigid steel conduit.
 7. Boxes and Enclosures: NEMA 250, Type 1, except as follows:
 a. Damp or Wet Locations: NEMA 250, Type 4, stainless steel.
 B. Minimum Raceway Size:
 1. Metallic Conduits: 3/4-inch trade size (DN 14).
 2. Nonmetallic Conduits: 3/4-inch trade size (DN 21).
 C. Raceway Fittings: Compatible with raceways and suitable for use and location.
 1. Rigid Metal Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated. Engage a minimum of five full threads.
 2. Intermediate Metal Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated. Engage a minimum of five full threads.
 3. PVC Externally Coated or wrapped Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.

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4. EMT: set screw or compression for dry interior locations; compression for damp or wet locations; compression with tape for installations in concrete slabs above grade.
 5. Building Expansion joints: use expansion fittings with 36" of wrapped metal raceways on either side of joint.
 D. Do not install aluminum conduits embedded in or in contact with concrete.
3.2 INSTALLATION
 A. Layout of electrical boxes: Do not scale electrical drawings. Refer to mounting height detail sheet.
 1. Coordinate with architectural elevations. Where outlets are not identified on the elevations, refer mounting height decisions to the Architect. If counters or work surfaces are shown refer mounting height decisions, whether above or below counter, to the Architect. Coordinate location of switches with actual door swings.
 2. Verify final locations with field measurements and with the requirements of the actual equipment to be connected as determined from shop drawings.
 B. Outlet Boxes:
 1. Frame construction: 4"x4"x1-1/2" with suitable plaster-ring, except:
 a. 2-1/8" deep for boxes with 3 conduit entrances and for communication outlets
 b. 4-11/16" boxes for boxes with 4 or more conduits.
 2. Masonry or concrete construction: 1g or multiple gang by 3-1/2" deep.
 3. Fixture Outlets: minimum 4" outlet box with 3/8" fixture stud supported adequately for minimum of 200 lbs.
 4. Do not use gangable boxes.
 C. Keep raceways at least 12 inches (300 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
 D. Complete raceway installation before starting conductor installation.
 E. Support raceways as specified in Division 26 Section "Common Work Results for Electrical."
 F. Install temporary closures to prevent foreign matter from entering raceways.
 G. Stub-ups: Embed coupling flush with finished floor. If to remain a spare, the flush plug is to remain in the coupling.
 H. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and keep straight legs of offsets parallel, unless otherwise indicated. Make bends in parallel or banked runs from same centerline to make bends parallel.
 1. Nonmetallic Conduits: Use rigid elbows for all bends 22 degrees or greater.
 2. Communication Systems Raceways: comply with long sweep radius elbows minimum dimensions in Table 5.2-1 of ANSI/TIA/EIA-569A for all bends or offsets for backbone cables.
 I. Raceways below grade: Install RNC or wrapped/coated Rigid Steel minimum 24" below grade, unless specifically noted otherwise. Where noted encase in concrete.
 J. Conceal conduit and EMT within finished walls, ceilings, and floors, except at surface mounted panels and apparatus or unless otherwise indicated. Install surface raceways only where indicated or where directed by Architect.
 1. Install concealed raceways with a minimum of bends in the shortest practical distance, considering type of building construction and obstructions, unless otherwise indicated.
 2. Install surface raceways in rooms where surface mounted panels are indicated or for exposed equipment in mechanical, electrical, or communication rooms.
 K. Raceways Embedded in Slabs: Install in middle 1/3 of slab thickness where practical and leave at least 2 inches (50 mm) of concrete cover.
 1. Maximum conduit size: Lesser of 1-inch trade size (DN 27) or 1/3 the concrete cover.
 a. For conduits larger than 1-inch trade size (DN 27), consult structural engineer for additional structural supports or other options.
 b. Layout: Route conduits without crossovers. Space conduit at least 18" apart. Space raceways laterally to prevent voids in concrete.

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- c. Where concentrations of conduit occur, support slab independent of steel deck. Coordinate with structural engineer.
2. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
3. Install taped compression type fittings or fittings approved for such use.
4. Change from nonmetallic tubing to IMC or Rigid Steel conduit before rising above the floor.
L. Raceways Penetrating foundation walls: Install rigid conduit through the foundation wall or 3' each side.
M. Install exposed raceways parallel or at right angles to nearby surfaces or structural members and follow surface contours as much as possible.
1. Run parallel or banked raceways together on common supports.
2. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
N. Raceway coordination: Do not install raceways in or through (including above ceilings) the following areas that do not serve equipment in those areas:
1. Elevator equipment rooms.
2. Imaging Rooms.
3. Stairwells.
4. Vestibules.
P. Join raceways with fittings designed and approved for that purpose and make joints tight.
1. Use insulating bushings to protect conductors.
Q. Tighten set screws of threadless fittings with suitable tools.
R. Cap open ends of empty conduit to keep out debris until the project is completed.
S. Terminations:
1. Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against box. For RMC and IMC, use two locknuts, one inside and one outside box and a bushing. For EMT, use insulated throats or plastic bushings (except for grounding bushings where required).
2. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into hub so end bears against wire protection shoulder. Where chase nipples are used, align raceways so coupling is square to box; tighten chase nipple so no threads are exposed.
3. Service Conduits or conduits installed in concentric/eccentric knock-outs or reducing washers: terminate raceway with grounding bushings.
T. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb [90-kg] tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Plug empty raceways at both ends.
U. Low Voltage, Telephone, and Signal System Raceways, 2-inch Trade Size (DN 53) and Smaller: In addition to above requirements, install raceways in maximum lengths of 150 feet (45 m) and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements. All structural cabling will be run in raceway minimum size 1" or basket tray.
V. Fire alarm to be installed in raceway
1. Install seals for conduit penetrations of slabs on grade and exterior walls below grade. Tighten sleeve set screws until sealing grommets have expanded to form watertight seal.
X. Roof Penetrations: Install flashings for conduit penetrations of roofs under the direct supervision of the roofing installer.
Y. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where conduits pass through airtight spaces or plenums to prevent air leakage.

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- 3. Where conduits pass from hazardous areas to nonhazardous.
4. Where otherwise required by NFPA 70.
Z. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with finished floor. Extend conductors to equipment with rigid steel conduit; EMT may be used 6 inches (150 mm) above the floor. Install screwdriver-operated, threaded plugs flush with floor for future equipment connections.
AA. Raceway Cleaning: Prevent accumulation of water, dirt or concrete in raceways. Where water or foreign matter have entered raceways, thoroughly clean or replace conduits where such accumulation cannot be removed by methods approved by this Engineer.
BB. Flexible Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use LFMC in damp or wet locations. Install separate ground conductor across flexible connections.
CC. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying raceways to receptacle or fixture ground terminals.
DD. Set floor boxes level and flush with finished floor surface.
EE. Install hinged-cover enclosures and cabinets plumb. Support at each corner.
FF. Spare conduits:
1. Provide 300' of 3/4" C as directed by Architect/Engineer, where not required, credit unused portion.
3.3 PROTECTION
A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.
3.4 CLEANING
A. After completing installation of exposed, factory-finished raceways and boxes, inspect exposed finishes and repair damaged finishes.

END OF SECTION 260533

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SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
Section Includes:
1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Underground-line warning tape.
5. Warning labels and signs.
6. Instruction signs.
7. Equipment identification labels.
8. Miscellaneous identification products.
1.3 ACTION SUBMITTALS
A. Product Data: For each electrical identification product indicated.
B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.
1.4 COORDINATION
A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
C. Coordinate installation of identifying devices with location of access panels and doors.
D. Install identifying devices before installing acoustical ceilings and similar concealment.
PART 2 - PRODUCTS
2.1 POWER AND CONTROL RACEWAY IDENTIFICATION MATERIALS
A. Color coded raceways with factory applied color coating.
B. Colors for Raceways:
1. Normal power circuits: no added color.
2. Emergency power circuits: blue
3. Optional Standby and UPS power circuits: green
4. Fire Alarm wiring: red
5. Access control and CCTV systems wiring: white
6. All other systems: black
2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS
A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
B. Colors for Cables Carrying Circuits at 600 V and Less:
1. Black letters on an orange field.
2. Legend: Indicate voltage and system or service type.
C. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tube with machine-printed identification label. Sized to suit diameter of and shrinks to fit firmly around cable it identifies. Full shrink recovery at a maximum of 200 deg F (93 deg C). Comply with UL 224.

SECTION 262726 - WIRING DEVICES

- PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
Section Includes:
1. Receptacles, receptacles with integral GFCI, and associated device plates.
2. Snap switches and wall-box dimmers.
3. Wall-switch and exterior occupancy sensors.
1.3 DEFINITIONS
A. EMI: Electromagnetic interference.
B. GFCI: Ground-fault circuit interrupter.
C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
D. RFI: Radio-frequency interference.
E. TVSS: Transient voltage surge suppressor.
F. UTP: Unshielded twisted pair.
1.4 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
C. Samples: One for each type of device and wall plate specified, in each color specified.
1.5 INFORMATIONAL SUBMITTALS
A. Field quality-control reports.
1.6 CLOSEOUT SUBMITTALS
A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.
PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Pass & Seymour/LeGrand (Pass & Seymour).
B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.
2.2 GENERAL WIRING-DEVICE REQUIREMENTS
A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Comply with NFPA 70.
C. Use electrical devices with modular plug-in connectors which meet the following requirements:
1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
2. Devices shall comply with the requirements in this Section.
2.3 STRAIGHT-BLADE RECEPTACLES
A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
1. Products: Subject to compliance with requirements, provide one of the following:
a. Pass & Seymour (Plugtail); 5361 (single), 5362 (duplex).

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- 2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS
A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
B. Snap-Around Labels: Silt, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of cable it identifies and to stay in place by gripping action.
2.4 CONDUCTOR IDENTIFICATION MATERIALS
A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils [0.08 mm] thick by 1 to 2 inches [25 to 50 mm] wide.
B. Snap-Around Labels: Silt, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of conductor it identifies and to stay in place by gripping action.
2.5 FLOOR MARKING TAPE
A. 2-inch- (50-mm-) wide, 5-mil [0.125-mm] pressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.
2.6 WARNING LABELS AND SIGNS
A. Comply with NFPA 70 and 29 CFR 1910.145.
B. Metal-Backed, Butyrate Warning Signs:
1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch [1-mm] galvanized-steel backing; and with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal size, 10 by 14 inches (250 by 360 mm).
C. Warning label and sign shall include, but are not limited to, the following legends:
1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."
2.7 EQUIPMENT IDENTIFICATION LABELS
A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch [10 mm].
2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS
A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Verify identity of each item before installing identification products.
B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
C. Apply identification devices to surfaces that require finish after completing finish work.
D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.
G. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.

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- H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
I. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.
J. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.
3.2 IDENTIFICATION SCHEDULE
A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with color coding that matches raceways and self-adhesive vinyl labels with the wiring system legend. For power circuits include the panel and circuit numbers of all conductors contained in the box and the voltage. For fire alarm circuits include the circuit numbering to match shop drawings. For other systems include the system type such as Access Control, CCTV, Overhead Paging, etc. System color coding shall be as follows:
1. Normal power circuits: no added color.
2. Emergency power circuits: blue
3. Optional Standby and UPS power circuits: green
4. Fire Alarm wiring: red
5. Access control and CCTV systems wiring: white
6. All other systems: black
B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.
a. Color shall be factory applied.
b. Colors for 208/120-V Circuits:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
c. Colors for 480/277-V Circuits:
1) Phase A: Orange
2) Phase B: Brown
3) Phase C: Yellow.
C. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-vinyl-film-type labels.
D. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive vinyl labels with the conductor or cable designation, origin, and destination.
E. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source.
F. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
G. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.

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2. Wiring Devices Connected to Emergency Power System: Red.
3. TVSS Devices: Blue.
- B. Wall Plate Color: For plastic covers, match device color.
- PART 3 - EXECUTION**
3.1 **INSTALLATION**
A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
B. Coordination with Other Trades:
1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is frowled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.
C. Conductors:
1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
4. Existing Conductors:
a. Cut back and pigtail, or replace all damaged conductors.
b. Straighten conductors that remain and remove corrosion and foreign matter.
c. Pigtail existing conductors is permitted, provided the outlet box is large enough.
D. Device Installation:
1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.
E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles down, and on horizontal mounted receptacles to the right.
2. Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.
F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
G. Dimmers:

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1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.
- H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.
I. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.
- 3.2 **GFCI RECEPTACLES**
A. Install non-leased-through-type GFCI receptacles where protection of downstream receptacles is not required.
3.3 **IDENTIFICATION**
A. Comply with Section 260553 "Identification for Electrical Systems."
B. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.
- END OF SECTION**

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SECTION 26 5100 - INTERIOR LIGHTING

PART 1 - GENERAL

- 1.1 **RELATED DOCUMENTS**
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 **SUMMARY**
A. Section includes:
1. Interior lighting fixtures, lamps, and ballasts.
2. Emergency lighting units.
3. Exit signs.
4. Lighting fixture supports.
1.3 **SUBMITTALS**
A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
1. Physical description of lighting fixture including dimensions.
2. Emergency lighting units including battery and charger. Integral for all LED fixtures.
3. Energy-efficiency data.
4. Air and Thermal Performance Data: For air-handling lighting fixtures. Furnish data required in "Submittals" Article in Division 23 Section "Diffusers, Registers, and Grilles."
5. Sound Performance Data: For air-handling lighting fixtures. Indicate sound power level and sound transmission class in test reports certified according to standards specified in Division 23 Section "Diffusers, Registers, and Grilles."
6. Life, output (lumens, CCT, and CRI), and energy-efficiency data for lamps.
7. Photometric data and adjustment factors based on laboratory tests, complying with IESNA Lighting Measurements Testing & Calculation Guides, of each lighting fixture type. The adjustment factors shall be for lamps, ballasts, and accessories identical to those indicated for the lighting fixture as applied in this Project.
B. Shop Drawings: For nonstandard or custom lighting fixtures. Include plans, elevations, sections, details, and attachments to other work.
1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Wiring Diagrams: For power, signal, and control wiring.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
C. Installation instructions.
D. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, from manufacturer.
E. Field quality-control reports.
F. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.
G. Warranty: Sample of special warranty.
1.4 **COORDINATION**
A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.
1.5 **WARRANTY**
A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components that fail in materials, quality or workmanship within specified warranty period.

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SECTION 27 1000 - STRUCTURED CABLING (VOICE-DATA) DISTRIBUTION SYSTEMS

PART 1 - GENERAL

- 1.1 **RELATED DOCUMENTS**
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
1.2 **SUMMARY**
A. This Section includes complete installation of voice/data distribution components as an addition to an existing local area network. Install components so system will be fully operational when telephone/data instruments and network/switching equipment are connected. Items that are part of this work include, but are not limited to the following:
1. Cat 6 UTP 4 pair cabling.
2. Telecommunications outlets.
3. Patch panels.
4. Cable Management.
5. Labeling.
6. Patch Cords.
7. Terminations and all accessories.
8. Equipment rack.
B. This section requires that rough-in materials for this section be provided by the Division 26 installer for installation under Division 26. Rough-in materials include but are not limited to conduit, junction boxes, pathways in corridors, and through wall sleeves. Cable, wall cable management, and hooks for this section shall be provided by the Division 27 installer.
1.3 **SUBMITTALS**
A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
B. Product data for system components.
1. Prior to purchasing any equipment or materials, a list of their manufacturers shall be submitted for review.
2. Prior to assembling or installing the telecommunications work, the following shall be submitted for review:
a. Catalog information, factory assembly drawings, and field installation drawings as required for a complete explanation and descriptions of all items and equipment.
C. Record of field tests of system.
D. Shop Drawing Review
1. The Contractor shall submit for approval system shop drawings which include pin configurations, cable runs, punch down blocks, patch panels, conduit, systems/materials, and riser diagrams and workstation or other terminations. The Contractor shall keep all documentation current throughout the installation and build-out process. If changes occur which affect any documentation, the Contractor shall formally re-issue the affected documentation to the Owner at the completion of the installation.
2. The purpose of the review of shop drawings is to maintain the integrity of the design. Unless the contractor clearly points out changes, substitutions, deletions or any other differences between the submission and the Contract Documents in writing on the Contractor's letterhead, approval by the Engineer or Architect does not constitute acceptance. It is not to be assumed that the engineer has read the text nor reviewed the technical data of a manufactured item and its components except where the Vendor has pointed out differences between his product and the specified model.
3. If it is the responsibility of the contractor to confirm all dimensions, quantities, and the coordination of materials and products supplied by him with other trades. Approval of shop drawings containing errors does not relieve the contractor from making corrections at his expense.
4. Substitutions of equipment, systems, materials, must be coordinated by the Contractor with his own or other trades which may be involved with the item, such as, but not limited to, equipment substitutions which change telecommunications or electrical requirements, or hanging or supporting weights or dimensions.
5. Any extra charges or credits which may be generated by other trades due to substitutions will not be accepted unless the Contractor has an agreement in writing with the Owner.
6. Substitutions of equipment, system, etc. requiring approval of local authorities must comply with such regulations and be filed at the expense of the Contractor (should filing be necessary). Substitutions are subject to approval or disapproval by the Engineer. The contractor in offering substitution shall hold the Owner and Engineer harmless if the substituted item is an infringement of patent held by the specified item.
E. The Contractor shall establish cable records during the installation. These records shall correlate workstation number, distribution cable number, punch down block or frame assignments, conduit or duct path and station

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1. Warranty Period for Emergency Lighting Unit Batteries: 10 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining nine years.
2. Warranty Period for Emergency Fluorescent Ballast and Self-Powered Exit Sign Batteries: Seven years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining six years.
3. Acrylic Lenses, Anti-Yellowing: 5 years from date of Substantial Completion if acrylic lenses who any noticeable sign of yellowing.
- 1.6 **EXTRA MATERIALS**
A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
2. Plastic Diffusers and Lenses: One [ten (10 of U Projects)] for every 100 of each type and rating installed. Furnish at least one of each type.
3. Ballasts or drivers: One for every 100 of each type and rating installed. Furnish at least one of each type.
4. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.
- PART 2 - PRODUCTS**
2.1 **MANUFACTURERS**
A. Products: Subject to compliance with requirements, provide one of the products indicated.
2.2 **GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS**
A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.
B. Metal Parts: Free of burrs and sharp corners and edges.
C. Sheet Metal Components: Steel unless otherwise indicated. Form and support to prevent warping and sagging.
D. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
E. Diffusers and Globes:
1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless otherwise indicated.
b. UV stabilized.
2. Glass: Annealed crystal glass unless otherwise indicated.
F. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
1. Label shall include the following lamp and ballast characteristics:
a. "USE ONLY" and include specific lamp type.
b. Lamp diameter code (T-4, T-5, T-8, T-12, etc.), tube configuration (twi, quad, tripe, etc.), base type, and nominal wattage for fluorescent and compact fluorescent luminaires.
c. Lamp type, wattage, bulb type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.
d. Start type (preheat, rapid start, instant start, etc.) for fluorescent and compact fluorescent luminaires.
e. ANSI ballast type (M98, M57, etc.) for HID luminaires.
f. CCT and CRI for all luminaires.

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- 2.3 **LED LAMPS AND DRIVERS:**
A. Minimum CRI 78.
B. Rated life of 50,000 hrs per L70 (IES LM-79).
C. Flicker: No visible or detectable flicker, operate on filtered DC or AC greater than 42KHz.
D. Drivers shall not operate LEDs below 70% of LED manufacturer's recommended drive current.
E. Dimming drivers shall be compatible with the control method shown on the drawings. All dimmed drivers shall use dimming control capable of 1% - 100% dimming, 0-10 vdc, DMX, dali, n-life or Lutron HiLume protocol.
F. Approved Manufacturers:
1. General Electric.
2. Philips.
3. Osram / Sylvania.
4. Cree
2.4 **LIGHTING FIXTURE SUPPORT COMPONENTS**
A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
B. Single-Stem Hangers: 1/2-inch (13-mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
C. Twin-Stem Hangers: Two, 1/2-inch (13-mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage (2.68 mm).
E. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.
F. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

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- 3.2 **IDENTIFICATION**
A. Install labels with panel and circuit numbers on concealed junction and outlet boxes. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
3.3 **ADJUSTING**
A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting aimable luminaires to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose. Some of this work may be required after dark.
1. Adjust aimable luminaires in the presence of Architect.
- END OF SECTION**

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- location. These records shall be updated as the project progresses to reflect any required changes. As built Records/Drawings will be furnished as specified and accepted by Owner.
F. All manufacturer's product data including specifications and installation instructions will be provided to the Owner upon acceptance of the space by the Owner.
1.4 **QUALITY ASSURANCE**
A. All equipment and materials for permanent installation shall be the products of recognized manufacturers and shall be new.
B. Installer Qualifications: Bidder certified and experienced in voice/data distribution system installation similar to that installed for this project and that have a record of successful performance for a period of 5 years minimum.
1. Factory certification: The installer shall have factory trained and certified technicians on the jobsite at all times for the products and installation methods used in this project.
C. New equipment and installation shall comply with the following:
1. ANSI/TIA/EIA -568-C, "Commercial Building Telecommunications Cabling Standard", 2002.
2. ANSI/TIA/EIA -569-C, "Commercial Building Standard for Telecommunications Pathways and Spaces", 2012.
3. ANSI/TIA/EIA -468A, "Administration Standard for the Telecommunications Infrastructure of Commercial Buildings", 1993.
4. ANSI/TIA/EIA -607A, "Commercial Building Grounding and Bonding Requirements for Telecommunications", 1994.
5. NFPA 70, National Electric Code
D. New equipment and installation shall:
1. Be Underwriters Laboratories, Inc. (UL) labeled and/or listed where specifically called for, or where normally subject to such UL labeling and/or listing services.
2. Be clearly labeled identifying the transmission parameters specified (specifically with reference to Category rating).
3. Be without blemish or defect.
4. Be in accordance with the latest applicable standards.
5. Be products which meet with the acceptance of the agency inspecting the telecommunications work.
E. All items of equipment or material of one generic type shall be the product of one manufacturer throughout. It is the intent of these specifications that wherever a manufacturer of a product is specified, and the terms "other approved" or "or approved equal" or "equal" are used, the substitute item must conform in all respects to the specified item. Consideration will not be given to claims that the substituted item meets the performance requirements with lesser construction. Performance as delineated in schedules and in the specifications shall be interpreted as minimum performance.
G. Substituted equipment or optional equipment where permitted and approved, must conform to space requirements. Any substituted equipment that cannot meet space requirements, whether approved or not shall be replaced at the Contractor's expense. Any modifications of related systems as a result of substitutions shall be made at the Contractor's expense.
H. Note that the approval of shop drawings, or other information submitted in accordance with the requirements hereinbefore specified, does not assure that the Engineer, Architect, or any other Owner's Representative, attests to the dimensional accuracy or dimensional suitability of the material or equipment involved or the ability of the material or equipment involved or the mechanical performance of equipment. Approval of Shop Drawing does not invalidate the plans and specifications if in conflict, unless a letter requesting such change is submitted and approved in the Engineer's letterhead.
I. Substitutions of telecommunications equipment for that shown on the schedules or designated by model number in the specifications will not be considered if the item is not a regular cataloged item shown in the current catalog of the manufacturer.
J. Manufacturer's Recommendations: Where installation procedures of any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of the recommendations shall be furnished prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.
K. Connected Equipment Manufacturer Approval: Where cables specified in this Section are used to provide signal paths for systems specified in other sections of these Specifications or for systems furnished under other contracts, obtain review of the cable characteristics and approval for use with the connected system equipment by the connected equipment manufacturers.
L. "Nationally Recognized Testing Laboratory" (NRTL) Listing: Provide materials that are listed and labeled.
1. The Terms "Listed" and "Labeled": As defined in the "National Electrical Codes," Article 100.

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- FCC Regulations: Comply with FCC Part 48, Chapter 1, "US Code of Federal Regulations," Title 47 for all telephone system wire and cable connection components.
- Toxicity: Comply with applicable codes and regulations regarding toxicity of combustion products of materials used in control/signal transmission media.
- Coordination of Work: Coordinate the Work of this Section with the requirements of the Owner's voice/data system supplies, nesting conditions, and any of the off premises utility organizations.
 - Meet jointly with the representatives of the Owner and any utility representatives, to exchange information and agree on details of installation interfaces, any involving existing equipment and the installation of new infrastructure thereto, T568A or B wiring standards, and any other circumstances that impact on the completion of the work of this Section.
 - Record agreements reached in the meeting and distribute the record to the other participants.

- 1.5 DESCRIPTION OF STANDARD TELECOMMUNICATIONS ASSEMBLIES**
- The pair configuration for all twisted-pair cables shall conform to the industry standards for multi-pair cables and shall be color coded using the Western Electric color code scheme.
 - The contractor shall be responsible for insuring that the installation of all equipment be performed in accordance with manufacturer's specifications. The necessity of special conditions required by a particular manufacturer shall be brought to the attention of the engineer prior to the installation of any equipment in the area concerned.

- 1.6 WARRANTY**
- Project Warranty: A written warranty agreeing to replace and install voice/data distribution system components that fail in materials or workmanship, or do not meet manufacturer's official published specifications and performance criteria within the warranty period specified below. This includes both labor and materials. This warranty shall be in addition to, and not a limitation of, other rights and remedies the Owner may have against the Contractor under the Contract Documents.
 - Special Project Warranty Period: 5 years minimum, beginning on the date of Substantial Completion.

- 1.7 DELIVERY, STORAGE, AND HANDLING**
- Deliver cable factory-packaged in containers or reels. Store in clean dry space and protect products from damaging fumes and traffic. Handle wire and cable carefully to avoid damage.

- 1.8 SEQUENCING AND SCHEDULING**
- Coordinate with installation of electrical boxes and fillers, and raceways for subsequent installation of cable/wire.
 - Sequence installation of cabling systems with other work to minimize possibility of damage during construction. Contractor is responsible for replacing and/or repairing damaged materials during installation, such as wall finishes, ceiling tile, grid, etc.

- PART 2 - PRODUCTS**
- 2.1 EQUIPMENT/CABLING LIST**
- The parts referred to in the drawings or specifications are recommended types. Where acceptable substitutes are available from only one vendor, no substitutions will be permitted. The owner or his representative reserve the right to examine and approve any and all parts acquired to satisfy the installation requirements, and to reject these parts without penalty if they do not meet with the specifications.
 - The items indicated by a specific manufacturer that not be construed as a "bill of materials". They represent items of significance used during the design of the cabling installation. Where the items indicated are one portion of an assembly, the entire assembly shall be provided unless specified otherwise. Where items do not have a manufacturer or part number listed, no particular item has been selected at this time.
 - Manufacturers: Subject to compliance with requirements, provide products by the following:
 - Cable:
 - Belden Inc., Electronics Division.
 - Rack Terminal and Connector Components:
 - Belden/CDT.
 - Distribution Racks and Wire Management:
 - B-Line.
 - Chotswarth.
 - Panduit.

2.2 UTP CABLE AND WIRING COMPONENTS	
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- General: Provide cable and wiring components of manufacturer's standard materials as indicated by published product information, designed and constructed as recommended by manufacturer, for a complete installation and for applications indicated. See schedules in drawings and specifications.
- Data Grade System:
 - Cable: Provide 4 pair, 24 gauge, category 6 UTP cable that meets or exceeds the requirements for channel and link performance as stated in ANSI/TIA/EIA 568-C.1 and C.2. Provide plenum rated cable in all areas with RJ45 jacket.
 - Terminations: Unless otherwise indicated, all cable shall be terminated at patch panels and at workstations.
 - Patch Panels: Rack-mounted, modular type with RJ45 connectors. Provide quantity of ports to accommodate the number of outlets shown on drawings plus 25%. Patch panels shall be provided for Category 6 UTP and all equipment shall meet current industry standards.
 - Workstations: Shall be an 8-pin modular jack that mounts to a frame or faceplate. The jacks shall be appropriate to the type and category of UTP cable being installed, i.e., category 6 cable shall have category 6 termination unless otherwise noted.
 - Patch Cables: Category 6, terminated with RJ-45 connectors. Provide one for each station cable terminated to the LAN rack patch panels. Provide length and quantity as necessary to complete interconnection to owner switches based on the rack elevation drawings and submit shop drawings. Minimum length is 6 feet.

- PART 3 - EXECUTION**
- 3.1 INSTALLATION, GENERAL**
- Distribution System: Unless indicated otherwise, provide all terminations and accessories for cables being provided in this project. Install completely as system will be fully operational when telephone/data instruments and switching equipment are connected.
- 3.2 EXAMINATION**
- Examine areas and conditions, with installer present for compliance with requirements for installation and other conditions affecting telephone distribution systems performance. Do not proceed with installation until unsatisfactory conditions have been corrected.
- 3.3 WIRING INSTALLATION**
- General: Install telephone/data distribution systems, cabling and components in accordance with manufacturer's written instructions and in compliance with NEC and applicable ANSI/TIA/EIA requirements. Coordinate installation of transmission media with other work.
 - Install cable without damaging conductors, shield, or jacket. Do not either in handling or installation bend cable to smaller radii than minimum recommended by manufacturer. Ensure that medium manufacturer's recommended pulling tensions are not exceeded. Pull cable simultaneously where more than one is being installed in same raceway. Use pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Use pulling means, including fish tape, cable, rope, and basket weave wire/cable grips that will not damage media or raceway.
 - Wiring Method: Install horizontal cabling in cable management tray and/or hooks. Installations that use the written catalog to support cable will not be accepted.
 - Exposed Cable: Install parallel or perpendicular to surfaces or exposed structural members and follow surface contours where possible.
 - Cable Support: Secure cable to independent supports at intervals not greater than 5 feet to prevent sagging between supports. Use metallic supports with corrosion-resistant finish.
 - No splices are allowed except at indicated termination points.
 - Wiring in Termination Rooms and Cabinets: Install conductors parallel to and at right angles to walls. Bundle, wrap, and train the conductors to terminal points with sufficient service loop. Use wire distribution spools at points where cables are formed or conductors turned. Label each terminal with designators approved by the Owner. Wire on racks, patch panels, and at riser UTP blocks shall be installed through wire-management devices.
 - Conductor Terminations: Terminate conductors of cables on terminal blocks and hardware using tools recommended by the manufacturer.

- 3.4 GROUNDING**
- Provide grounding connections for cable and other system components as required by manufacturer's written instructions and TIA/EIA 607, "Grounding and Bonding of Telecommunications Systems".
 - All ground connectors in the main telecommunications equipment rooms and telecommunications closets shall be written in accordance with the ground bus provided for that purpose as provided for that purpose as provided for that purpose.
 - All metal panels, enclosures, boxes, racks, raceways, etc. in computer rooms, telecommunications equipment rooms and closets shall be grounded.

STRUCTURED CABLING (VOICE-DATA) DISTRIBUTION SYSTEMS	271000 - 4
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- Conductors utilized for grounding and bonding shall not be less than #6 AWG and shall have type TW or better insulation, color coded green.

- 3.5 IDENTIFICATION AND TAGGING FOR TELECOMMUNICATIONS DEVICES**
- A. Identifying Individually:**
- Each and every telecommunications cable.
 - Each outlet (and each port).
 - Each termination block and patch panel (and each termination).
 - Each equipment termination frame and cabinet.
 - Each junction box used for telecommunications wiring.
 - Each system (i.e., voice, data, fiber, etc.) as identified by the engineer.
 - Other items as directed.
- B. The nomenclature used to identify cables, blocks, equipment, etc. shall be as specified on the drawings or elsewhere in this specification. Missing or unclear nomenclature criteria for the items specified above shall not be construed as a reason not to identify the items and shall be brought to the attention of the Owner.**
- C. All materials required for labeling shall be provided by the contractor. All labels shall be permanently adhered, easily visible and shall be resistant to smearing. All text shall be typed (not handwritten). All cables shall be labeled at both ends and minimum.**

- 3.6 FIRE STOPPING:**
- A. Firestopping shall be provided for all penetrations of conduit, wireways, bus ducts, cable trays, etc., through fire-rated walls and floors and other fire-rated separations as follows:**
- Excess space in framed openings through structural floor between conduits and concrete shall be grouted in with concrete to a depth of at least the thickness of the slab plus 2" minimum above the slab.
 - Conduit penetration through poured concrete or masonry walls shall be grouted in with concrete and provided with light fitting esuchutech plates on both sides.
 - Conduit penetrations through fire-rated dry wall shall be sealed with the wall filled with esuchutech plates on both sides with excess openings filled with fire stop material specifically manufactured for the purpose.
 - Excess space within conduit sleeves or stubs through floor slabs or walls where low voltage/telecommunications cables pass through shall be filled with firestopping material specifically manufactured for the purpose.
 - Utilize fire-rated fittings, as specified elsewhere for penetrations through floor slabs for supplying floor outlets.
- B. All conduits/sleeves used for vertical cable passage shall be sealed utilizing suitable material after the installation of cables as follows:**
- The material shall be non-conductive to the cable jacket or insulation that it applies to.
 - The material shall provide for a minimum of three (3) hour fire rating.
 - The material shall be non-shrinking, waterproof and smoke tight. The material shall remain flexible and non-hardening.
 - The material shall be of the type that when installed will not slip through the openings, will stick to the surfaces of the openings and the cable and will not require any pressure to be applied to the cable in order to keep it in place.
 - The material shall be installed in a neat and workmanlike manner and the final installation shall be smooth finished to the top of the sleeve or conduit.
 - The material shall be easily removable without damaging the cables after being set or cured for at least one week.
- C. All horizontal cable penetrations through rated walls shall be sealed in a manner that will provide a fire rating equal to the wall construction.**
- D. Upon completion of the telecommunications work, the contractor will certify that all openings for the cables satisfactorily sealed and fire stopped.**
- E. All materials used for firestopping shall be approved for the purpose and the rating of the wall or floor and all methods employed shall meet with the approval of the local authorities.**
- F. Refer to architectural drawings and specifications for the locations of the rated walls and floors.**

- 3.7 TESTING**
- A. Before an application for final acceptance of the telecommunications work will be considered, all tests deemed necessary by the Owner and Engineer to show proper execution of the voice and data wiring work shall have been performed and completed in the presence of the Owner's representative. Scheduling of all testing procedures shall be arranged to suit the convenience of the Owner.**

STRUCTURED CABLING (VOICE-DATA) DISTRIBUTION SYSTEMS	271000 - 5
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- microprocessor based, but independent of the facility's local area network, with a segmented platform configuration providing that system or equipment failures are locally mitigated without global system shutdowns or resets.
- Equipment: Solid state, modular.
 - Wall-Mounted Component Connection Method: Components connect to system wiring in back boxes with factory-wired plug connectors.

- 2.3 FUNCTIONAL PERFORMANCE**
- A. Patient Station Call:** Activates the call-placed lamp at patient station and corridor dome lights. It sounds a tone and lights the call lights at staff/duty stations and actuates annunciator at the master station. When the calling station is selected at the master station, the patient can converse with the master station without moving and without raising or directing the voice.
- B. Pull-Cord Call Station and Emergency-Call Station Call:** Activates call-placed lamp and corridor dome light. Master station tone pulses with visual display for that room flashes. When master station acknowledges the call, the tone stops but the display and lights continue to function until the call is canceled at the point of origin.
- C. Station Privacy:** No patient, staff, or duty station can be remotely monitored without the lighting of a warning lamp at the monitored station.
- D. Patient Station Cord Set:** When a patient station cord-set plug is removed from the jack in the station faceplate, a patient station call is initiated as described above. When the master station call button for the station is pressed, the tone stops but lights continue to flash until the call is canceled at the point of origin or the plug is reinserted or replaced with a dummy plug.

- 2.4 EQUIPMENT DESCRIPTIONS**
- A. Single-Patient Station:** Each bedside control station shall be capable of the following functions:
- At least 2 programmable call levels (including associated sub-stations).
 - Sound Reproduction: Sound level of 90 db plus or minus 3 db at a distance of 48 inches on the axis without overdriving or distorting any frequencies between 300 and 3000 Hz when installed in an enclosure or in the pillow speaker.
 - Support and supervise up to 2 sub-stations including pull-cord or push-button modules.

- 2.5 MISCELLANEOUS EQUIPMENT COMPONENT DESCRIPTIONS**
- A. Emergency-Call Station:** Locking-type push button, labeled "Push to Call Help"; reset trigger to release push button and cancel call; and call-placed lamp; mounted in a single faceplate.
- B. Pull-Cord Call Station (Bath):** Water-resistant construction. Includes the following, mounted under a single faceplate:
 - Pull-Down Switch: Lever-locking type, labeled "Pull Down to Call Help."
 - Reset trigger.
 - Call-placed lamp.
- C. Call-Button Cord Set:** Plug and 72-inch white cord; equipped with momentary-action, call-button switch:
 - Ethylene oxide, sterilizable.
 - Washable cord.
 - Palladium switch contacts in high-impact white housing with cord-set strain relief.
 - Attachment: Stainless-steel bed clamp with permanently attached Mylar strap.
 - Quantity: 3 cord sets for every 10 patient beds.

- D. Indicator Lamps:** Light-emitting-diode type with 20-year rated life, unless otherwise indicated.
- E. Station Faceplates:** High-impact plastic, color by architect. Molded or machine-engraved labeling identifies indicator lamps and controls.
- F. Corridor Dome Lights:** Two-lamp signal lights (minimum).
 - Lamps: Front replaceable without tools, low voltage with rated life of 7500 hours. Barriers are such that only one color is displayed at a time.
 - Lenses: Heat resistant, shatterproof, translucent polymer that will not deform, discolor, or craze when exposed to hospital cleaning agents.
 - Filters: Two per unit, amber and red.

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- Test specified to be performed in this document are intended to verify the quality of all cabling. This document also establishes a uniform method of reporting the test results for evaluation by the Engineer and Owner.
- All tests are to be performed upon completion of the initial installation.
- Performing the indicated tests does not constitute equipment or circuit acceptance.

- 3.8 TEST EQUIPMENT**
- A. The equipment indicated below represents test equipment utilized to develop this test specification. Substitute test equipment may be used, upon approval by the Engineer, provided the same level and quality of testing is performed.**
- | | |
|-------------------------|---|
| 1. Twisted pair (Cat 6) | PRODUCT NUMBER |
| | Fluke Networks DTX CableAnalyzer |
| | Utilize accessories as required [refer to manufacturer's handbook]. |

- Prior to any testing being performed, the Engineer shall be supplied with a list of test equipment to be used, for his review and approval. If not the equipment identified in this specification, the submittal shall include documentation indicating that the proposed equipment is capable of performing all of the tests as required by this specification.

- 3.9 TESTS TO BE PERFORMED**
- A. Tests are to be performed on the following aspects of the voice/data distribution cabling system:**
- From each Termination Room (TR) termination to each and every workstation termination.
 - Any other telecommunications inter-building or station cable which forms a portion of this installation.
- B. All cable runs for which equipment will not initially be attached must be tested to the same level of compliance as all other cabling.**
- C. Prior to any acceptance testing being performed, a sample test shall be performed for each series of tests (i.e., copper, fiber, etc.). The sample test shall consist of a regular acceptance test on a few sample cables as selected by the contractor. The Engineer shall be given a minimum of one week notice to be and/or his representative may observe the test.**
- D. The Contractor is responsible for testing each telephone and data circuit installed and is to certify that each circuit is fully operational from the workstation to the MIC prior to notifying the Owner that the space is ready for inspection and acceptance. All testing will be in accordance with ANSI/TIA/EIA 568-C standards. The contractor will maintain and provide to the Owner an operational test log. This will provide a chronological list, including but not limited to the following: all significant events, including equipment/facility reactions, meter readings, etc. obtained during the test.**
- E. All wiring, wiring connections and equipment provided by the contractor shall be tested in the presence of a representative of the Owner. The record of the test results will be submitted to the Owner's representative within seven (7) days of said test.**
- F. Testing for certification will not occur until after all construction has been completed, carpet laid to ensure that the installation is not injured after testing.**
- G. Test results and written certification will be entered on forms previously approved by the Owner's Technical Representative and returned to the Owner within seven (7) days after testing.**
- H. Data Grade Cable (Category 6)**
- The following tests shall be performed on all pairs of each UTP cable.
- Test equipment: Fluke Networks DTX CableAnalyzer
 - The test equipment shall be configured to test the maximum transmission performance for which the cable is rated (i.e., Cat 6 = 250 Mbps).
 - The following minimum information shall be provided for each cable and pair to be tested:
 - Length - find the total cable length.
 - Resistance - measured for each cable pair.
 - Noise - measured for each pair at the following frequencies: 10Hz - 150KHz - 16 MHz, - 100MHz - 250MHz.
 - Insertion Loss (dB loss) - measured for each pair at 250 MHz.
 - Near End Cross Talk (NEXT) - measured in dB and the associated frequency.
 - Power Sum NEXT - measured in dB.
 - Attenuation to Cross Talk (ACR) - measured in dB.
 - Far End Cross Talk (ELFEXT) - measured in dB.
 - Power Sum ELFEXT - measured in dB.
 - Return Loss - measured in dB.
 - Wire map - indicate that the wiring at the near end and far end are as specified.

STRUCTURED CABLING (VOICE-DATA) DISTRIBUTION SYSTEMS	271000 - 6
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- Cable: Features include the following, unless otherwise indicated:
 - Conductors: Jacketed single and multiple twisted-pair, copper cables. Sizes and types as recommended by equipment manufacturer. All cable shall be plenum rated.

PART 3 - EXECUTION

- 3.1 INSTALLATION**
- A. Wiring Method:** Install wiring in raceway except within consoles, desks, and counters; and except in accessible ceiling spaces, where cable wiring method may be used. Use UL-listed plenum cable in environmental air spaces including plenum ceilings. Conceal cable and raceway wiring except in unfinished spaces.
- B. Install cables without damaging conductors, shield, or jacket.**
- C. Do not bend cables, in handling or in installing, to smaller radii than minimums recommended by manufacturer.**
- D. Pull cables without exceeding cable manufacturer's recommended pulling tensions.**
- Pull cables simultaneously if more than one is being installed in same raceway.
 - Use pulling compound or lubricant if necessary. Use compounds that will not damage conductor or insulation.
 - Use pulling means, including fish tape, cable, rope, and basket-weave wire or cable grips, that will not damage media or raceway.
- E. Install exposed raceways and cables parallel and perpendicular to surfaces or exposed structural members, and follow surface contours. Secure and support cables by straps, staples, or similar fittings designed and installed so as not to damage cables. Secure cable at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, or fittings.**
- F. Wiring within Enclosures:** Provide adequate length of conductors. Bundle, lace, and train conductors to terminal points with no excess. Provide and use lacing bars in cabinets.
- G. Separation of Wires:** Separate speaker-microphone, line-level, speaker-level, and power-wiring runs. Run in separate raceways or, if exposed or in same enclosure, provide 12-inch minimum separation between conductors to speaker microphones and adjacent parallel power and telephone wiring. Provide separation as recommended by equipment manufacturer for other conductors.
- H. Splices, Taps, and Terminations:** Make splices, taps, and terminations on numbered terminal strips in junction, pull, and outlet boxes, terminal cabinets, and equipment enclosures. Install terminal cabinets where there are splices, taps, or terminations for eight or more conductors.
- I. Impedance and Level Matching:** Carefully match input and output impedances and signal levels at signal interfaces. Provide matching networks if required.
- J. Identification of Conductors and Cables:** Retain color-coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams. Label stations, controls, and indications using approved consistent nomenclature.
- Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
 - Prepare cable administration drawings to show building floor plans with cable administration point labeling. Identify labeling convention and show labels for terminal hardware and positions, cables, stations and devices and equipment grounding conductors.
- K. Configure system to direct call devices to the assigned master station as indicated in the drawings. Duty stations shall reflect all calls in the system regardless of which master station the devices are assigned to or as noted.**

- 3.2 GROUNDING**
- Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other signal impairments.
 - Grounding Provisions: Comply with requirements in Division 16 Section "Grounding."

END OF SECTION 275223	
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c. Installer shall show that the complete installation meets category 6 requirements.

- 3.5 RECORD OF TEST RESULTS**
- A record of all required tests shall be provided to the Engineer and Owner. The information shall be permanent record for the purposes of maintenance and restoration.
 - A brief description outlining the test equipment used and a single line diagram indicating the test setup shall be provided to the Engineer for his review. The level of description should be sufficient enough to allow an individual who is not familiar with the specific test equipment to recreate any portion of the test.
 - Test results to be provided shall contain the following minimum information:
 - Project name.
 - Description of test (i.e., voice riser, workstation cable, etc.)
 - Cable origin.
 - Cable destination.
 - Cable ID.
 - Cable pair/strand.
 - Test date.
 - Tester (individual responsible for conducting the test).
 - Age of _____.
 - Initial block for Owner witness for each separate testing requirement.
 - A signature block for the Owner witness.
 - For copper cables:
 - No shorts, no crosses, no breaks.
 - For the indicated pairs of the cables include:
 - Length.
 - Resistance.
 - Noise @ 10 Hz - 150 KHz
150kHz - 15 Mhz
16 Mhz - 250 Mhz
 - Attenuation (dB) at 10 Mhz
 - Near end cross talk (NEXT) and the associated frequency
 - Wire map
 - Test equipment settings.
- D. While it is recognized that the test results will be completed in the field, it is important to note that they will serve as record documents. Therefore, care should be taken in the recording of the test results. The final product is expected to be done in a neat and legible manner.**
- E. Some test equipment has the ability to record test results to a printer or memory for printing later. Submitting of these printed test forms is preferred in lieu of handwritten forms. Some test equipment also has the ability to store the test results to disk media. The test results are required on disk to associate the information with a cable management database. All test results shall be provided in the following formats:**
- Printed (1 bound copy).
 - Disk or flash media.
- F. A copy of the test results in both electronic and printed formats shall be provided to the Engineer for his review and the Owner for his records.**

- 3.6 CORRECTIVE ACTION**
- Any defects or deficiencies discovered in any of the telecommunications work shall be indicated on the test report and be corrected.
 - Upon completion of testing and problem resolution, all connections tested are to be 100% error free for all horizontal workstations.
 - Any connections determined to be not correctable shall be indicated at each end of the termination as "bad" (in red) - backbone/ riser.

END OF SECTION 271000	
STRUCTURED CABLING (VOICE-DATA) DISTRIBUTION SYSTEMS	271000 - 7

SECTION 275223 - NURSE CALL

PART 1 - GENERAL

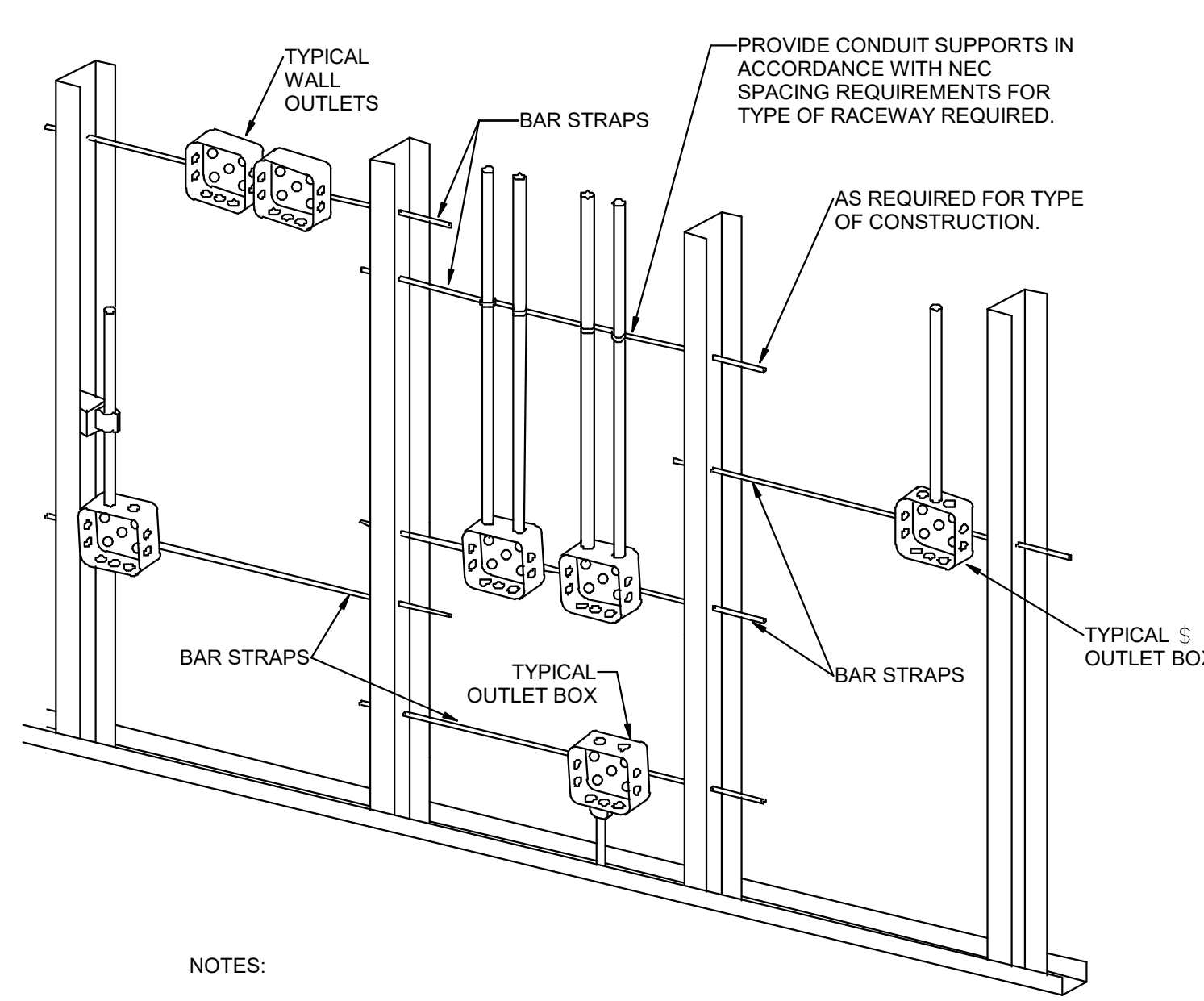
- 1.1 RELATED DOCUMENTS**
- Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section
- 1.2 SUMMARY**
- A. This Section includes system hardware and software that shall consist of a staff/resident emergency communications network comprised of master console, duty stations, dome lights, call cords, pull cord stations, emergency push button stations, and wiring that is independent of the existing nurse call systems. The system shall be a new Rauland Responder V nurse call system. All necessary equipment required to meet the intent of these specifications, whether or not enumerated within these specifications, shall be supplied and installed to provide a complete and operating staff/resident emergency communications network.**
- B. This section requires that rough-in materials for this section be provided by the Division 26 installer for installation under Division 26. Rough-in materials include but are not limited to conduit, junction boxes, alternative raceway, and device enclosures. Cable for this section is to be provided by the installer for this section.**
- 1.3 SUBMITTALS**
- Prior to commencement of work, the supplying contractor shall submit complete submittal sets which shall include the following:
 - Cabling Diagrams: Single-line block diagrams showing cabling interconnection of all components for this specific equipment. Include cable type for each interconnection.
 - Wiring Diagrams: Power, signal, and control wiring.
 - Station Installation Details: For built-in equipment; dimensioned and to scale.
 - Coordination Drawings: Detail system components that fit, match, and line up with provisions made in equipment specified in other Sections or in separate contracts.
 - Patient/Resident station wall elevations.
 - Operation and Maintenance Data: For nurse call equipment to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 "Closeout Procedures" and "Operation and Maintenance Data" include the following:
 - Operating instructions.
 - Troubleshooting guide.
 - Wiring diagrams and terminal identification.
 - Equipment parts list.
 - Product data for types and sizes of wires and cables used.
 - Warranty Statement: Special warranty requirements as specified in this Section.

- 1.4 WARRANTY**
- The installing contractor shall provide a warranty on the system which shall include all necessary labor and equipment to maintain the system(s) in full operation for a period of one year from the date of acceptance.
 - Manufacturer shall provide, free of charge, product firmware/software upgrades throughout the warranty period for any product feature enhancements.

PART 2 - PRODUCTS

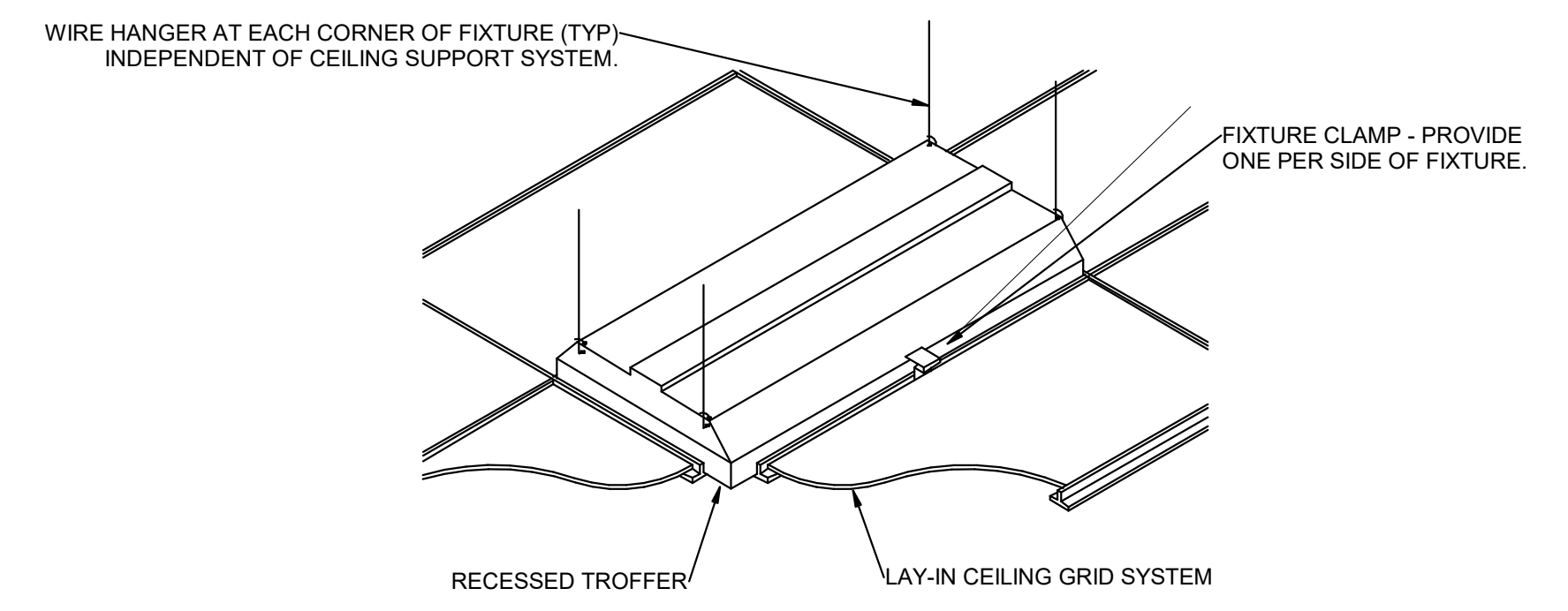
- 2.1 MANUFACTURERS**
- Manufacturers: Subject to compliance with requirements, provide products by the following:
 - Rauland-Borg Corporation.
 - Rauland IV system
- 2.2 SYSTEM REQUIREMENTS**
- Coordinate the features of materials and equipment to form an integrated system. Match components and interconnections for optimum performance of specified functions. System shall be

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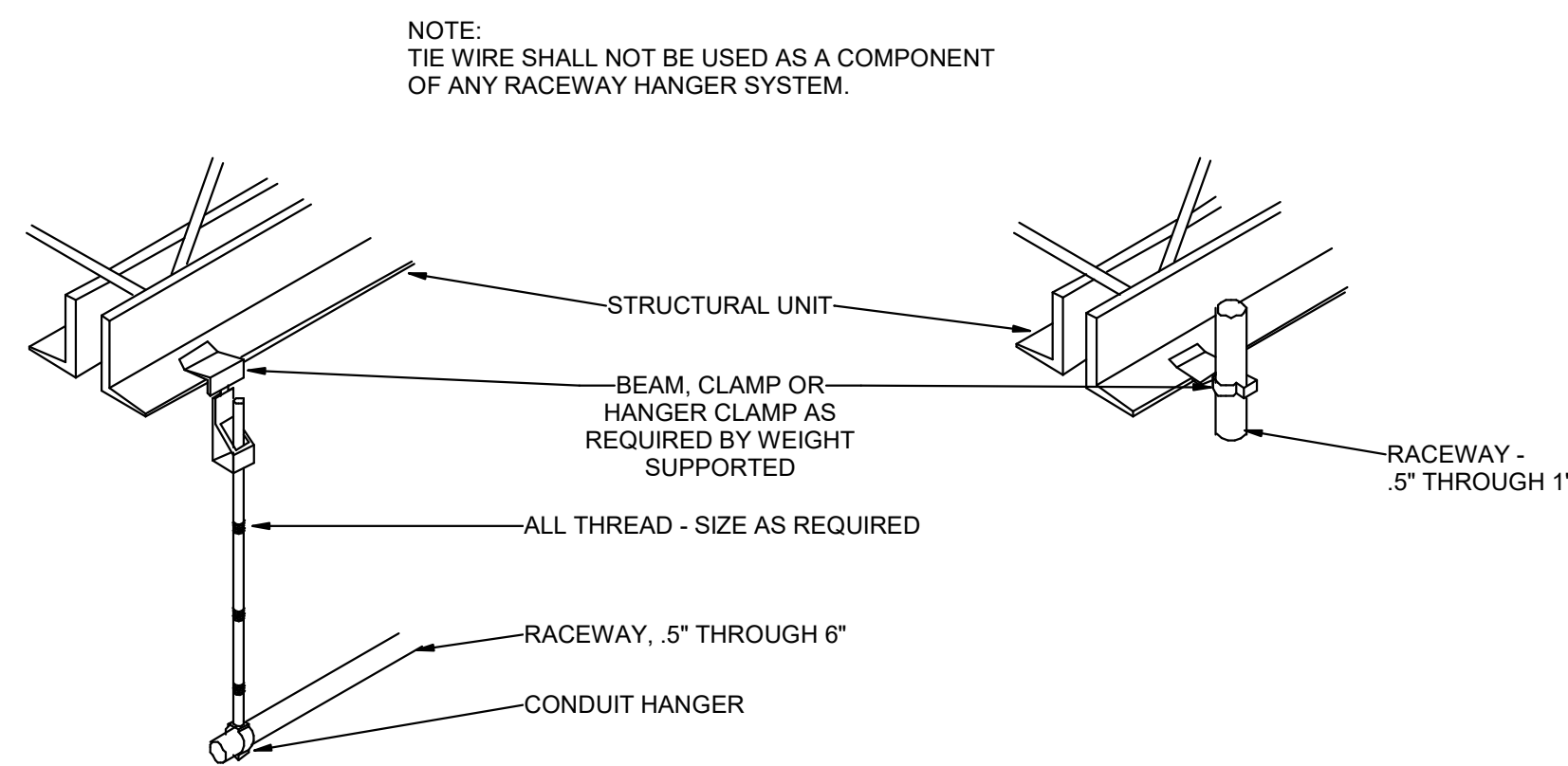


- NOTES:
1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
 2. PLASTER RINGS NOT SHOWN.
 3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
 4. IN ACCORDANCE WITH IBC 714.3.2 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE OR LISTED, SOUND AND FIRE RATED PUTTY PADS SHALL BE USED ON THE OUTLET BOXES.
 5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

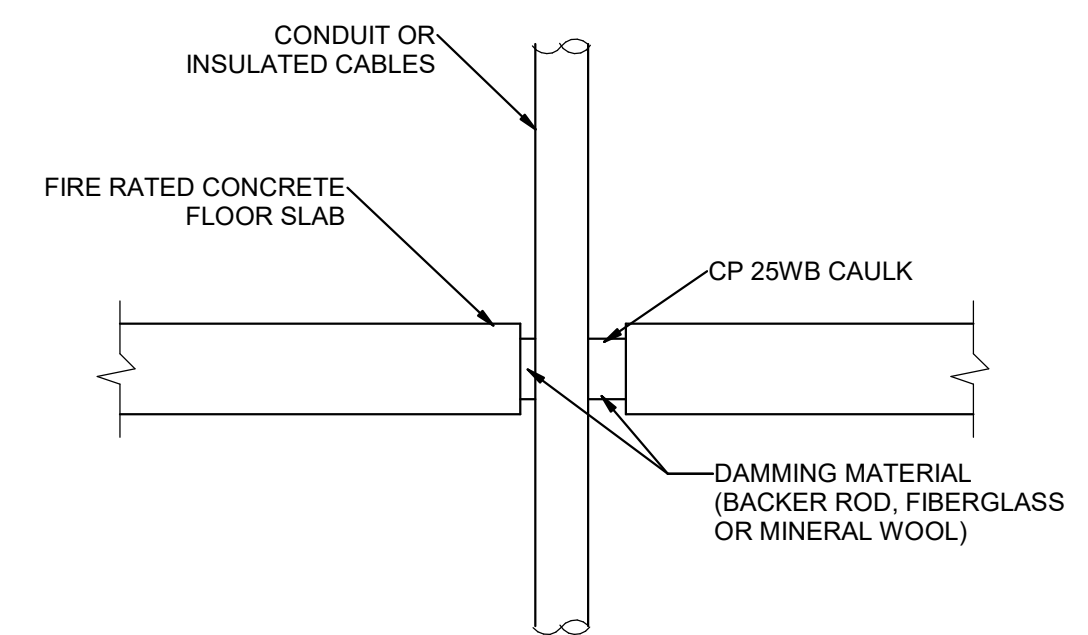
1 TYPICAL ROUGH-IN REQUIREMENTS DETAIL
SCALE: 1/8" = 1'-0"



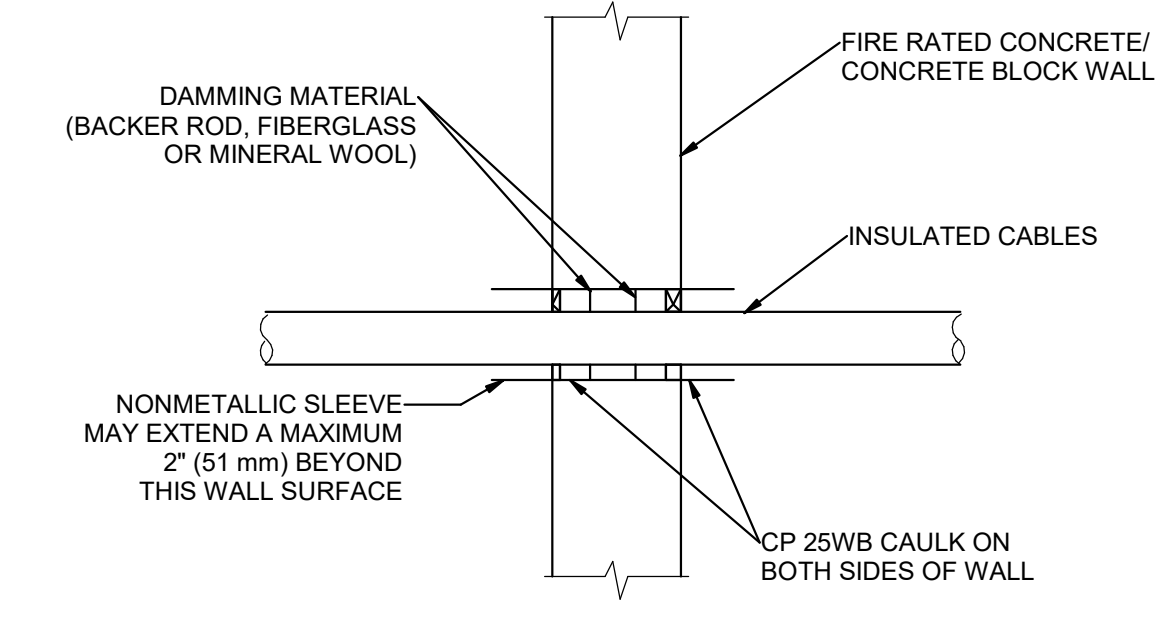
4 RECESSED FIXTURE MOUNTING DETAIL
SCALE: 1/8" = 1'-0"



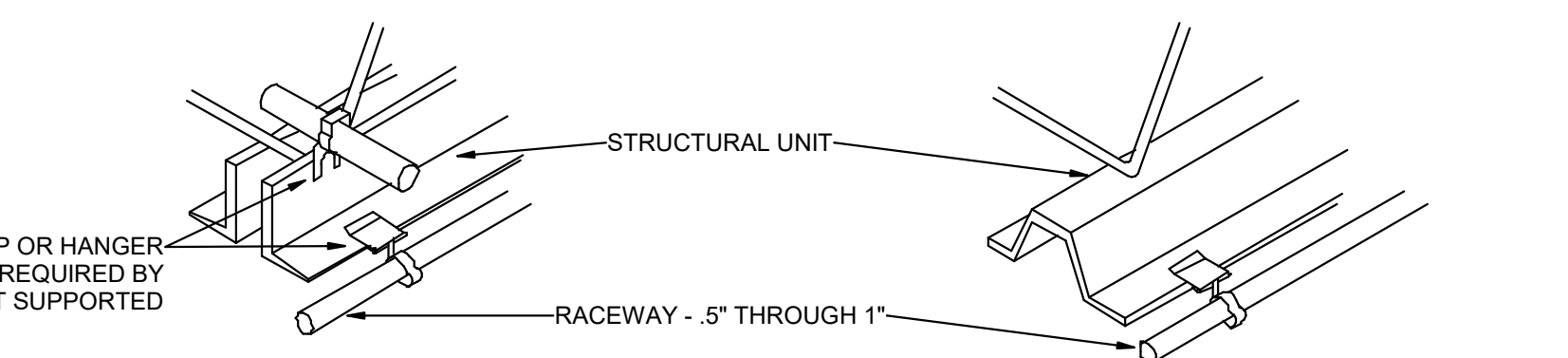
2 TYPICAL RACEWAY SUPPORT METHODS DETAIL
SCALE: 1/8" = 1'-0"



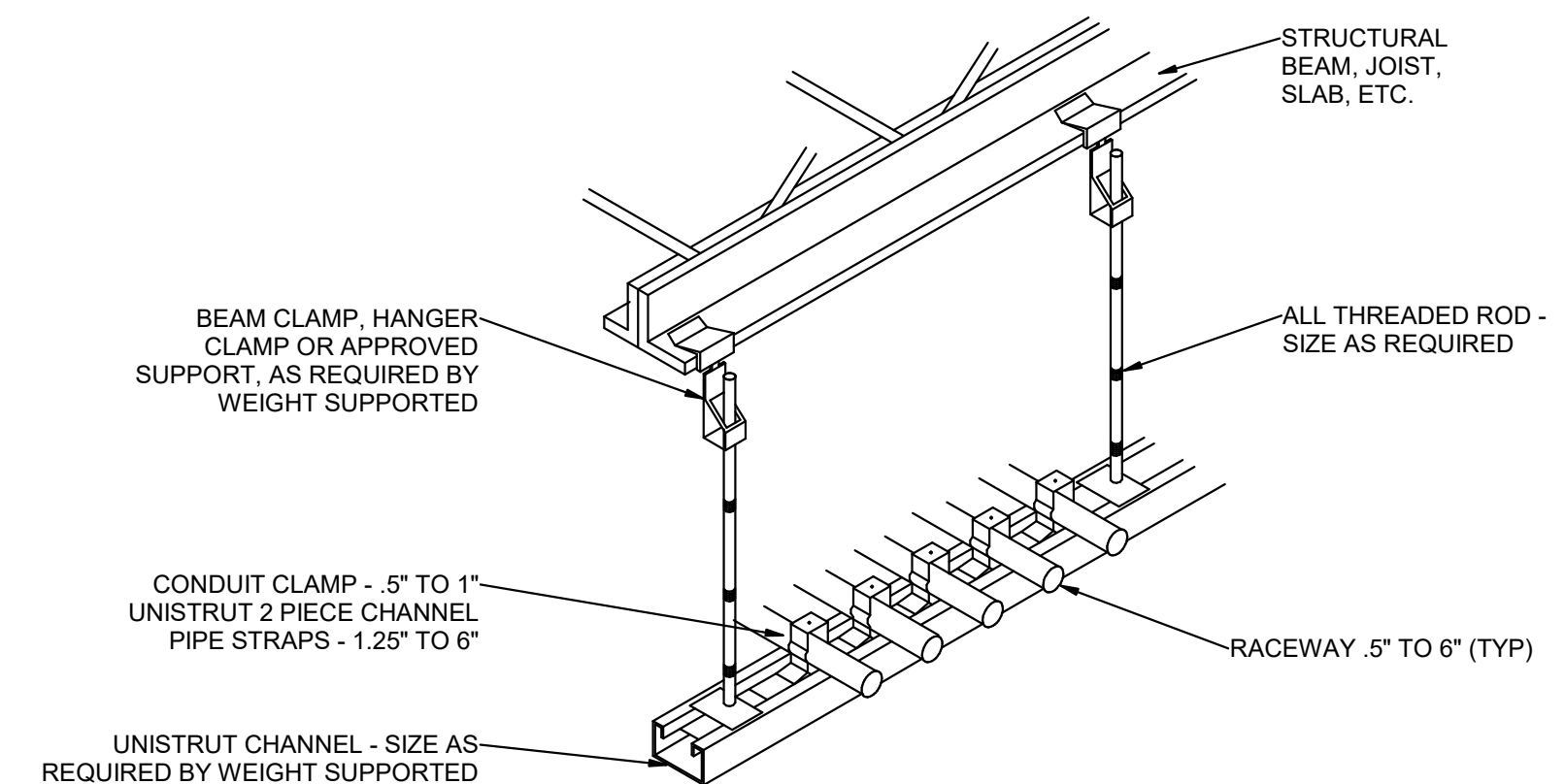
6 TYPICAL FIRE STOP FOR CABLES/CONDUIT THROUGH CONCRETE FLOORING
SCALE: 1/8" = 1'-0"



7 TYPICAL FIRE STOP FOR CABLES/CONDUIT THROUGH CONCRETE WALLS
SCALE: 1/8" = 1'-0"



3 TYPICAL CONDUIT RACK DETAIL
SCALE: 1/8" = 1'-0"



5 FIRE STOP FOR METAL CONDUIT THROUGH GYPSUM WALL BOARD
SCALE: 1/8" = 1'-0"

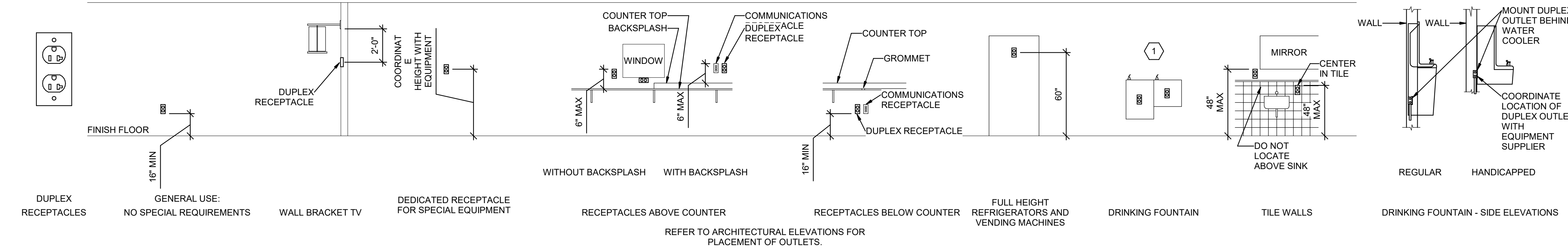


GENERAL SHEET NOTES

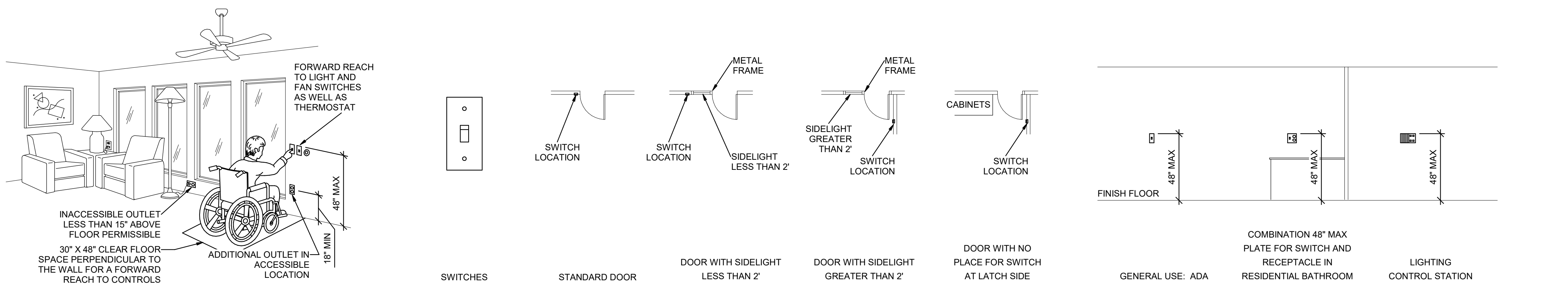
1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:
 - 1 - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC.)
 - 2 - EQUIPMENT SHOP DRAWINGS.
 - 3 - FIELD INSTRUCTIONS.
2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.
9. WHERE DEVICES ARE LOCATED IN CLOSE PROXIMITY OF THE SAME VERTICAL PLANE, ALIGN DEVICES VERTICALLY PER THE TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL, UNLESS OTHERWISE INDICATED.

SHEET KEYNOTES

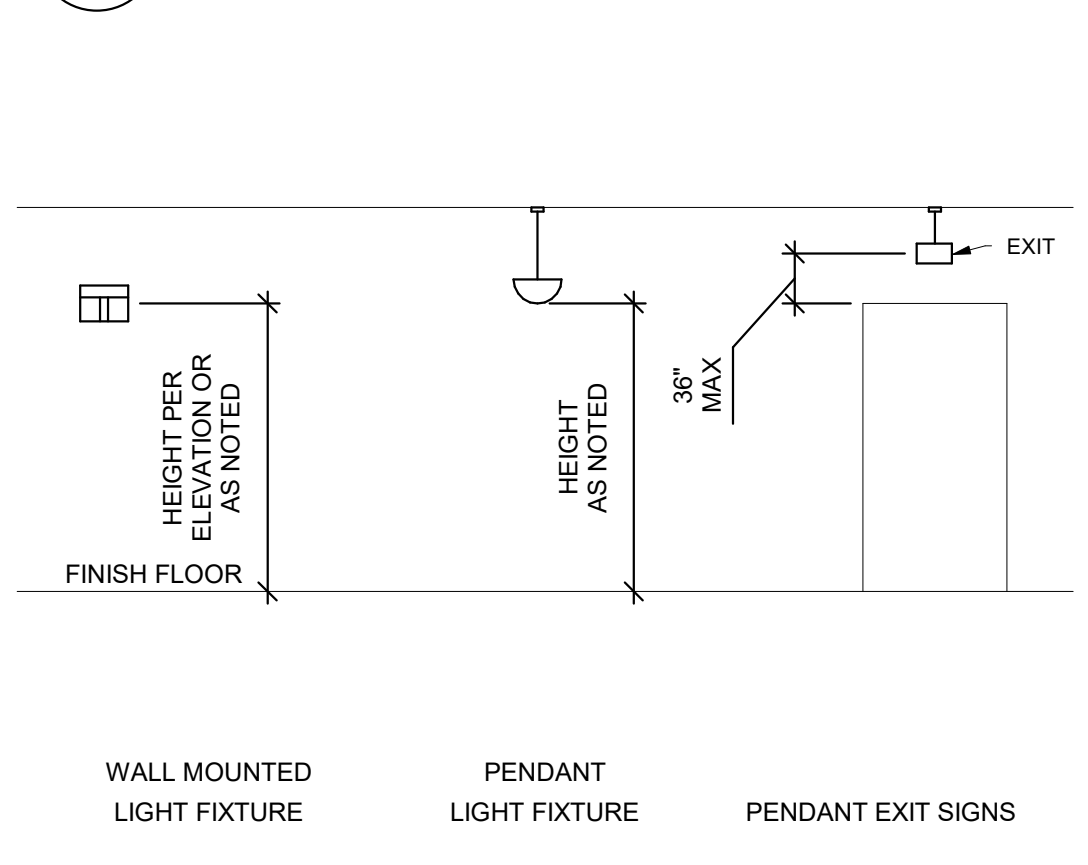
1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY 1/2 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE DETECTOR ANYWHERE IN SHADED AREA BUT NOT IN TOP 4" OF PEAK.
5. LOCATE AT BOTTOM OF BEAMS IF D/H < 1 OR W/H < 4; OTHERWISE, LOCATE IN BEAM POCKET. FOR D > 4 REDUCE SPACING .33 PERPENDICULAR TO BEAMS.



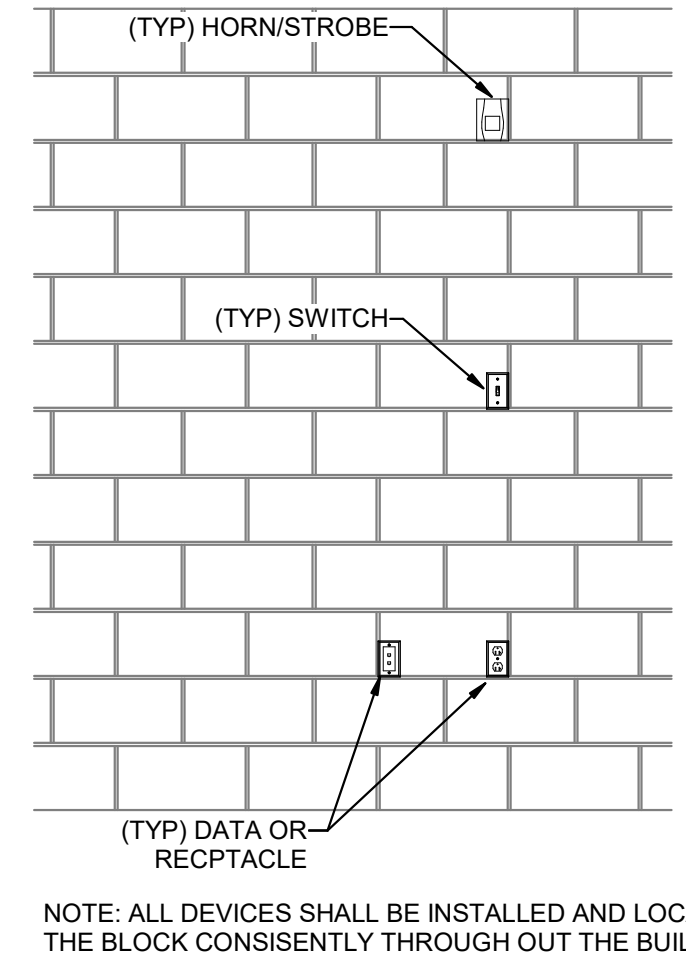
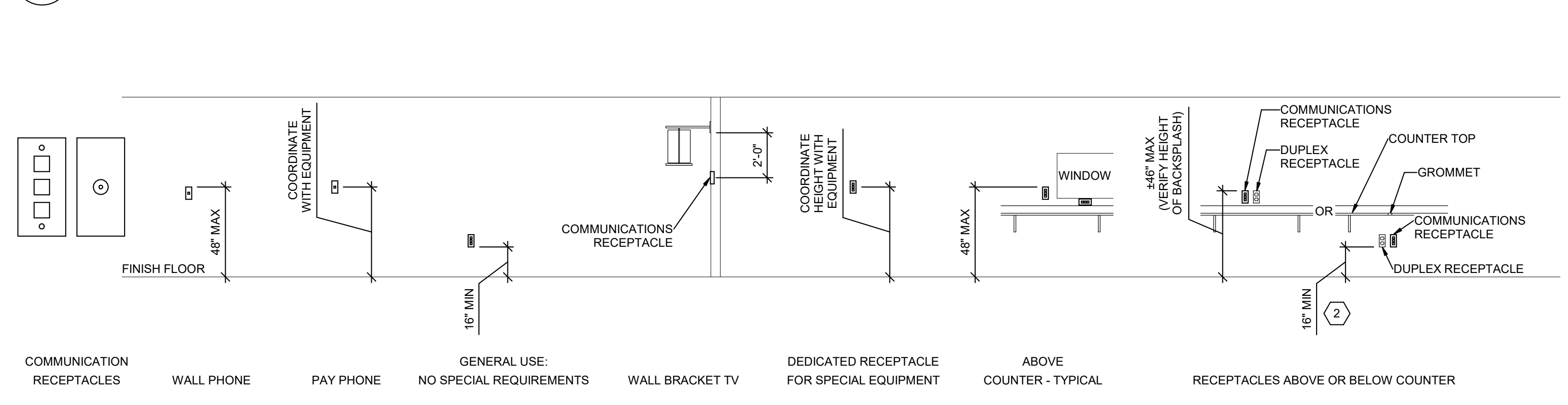
E2 RECEPTACLE MOUNTING DETAILS
SCALE: NTS



D2 ADA DETAIL
SCALE: NTS



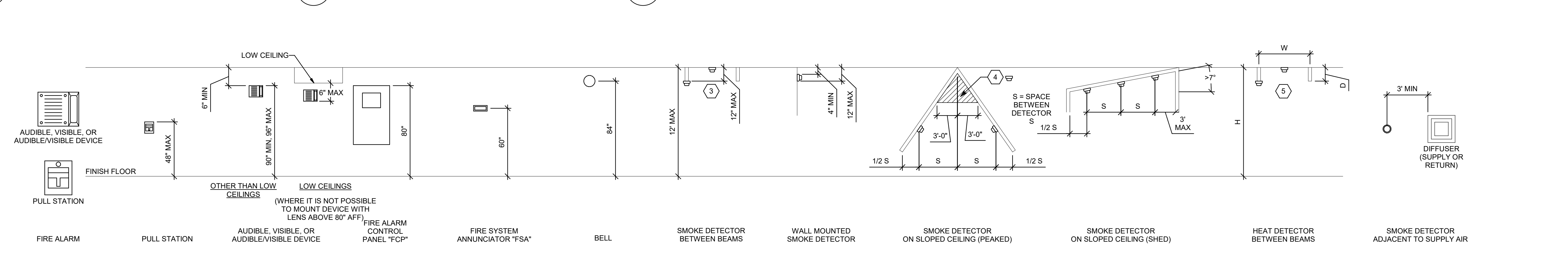
D3 SWITCH MOUNTING DETAILS
SCALE: NTS



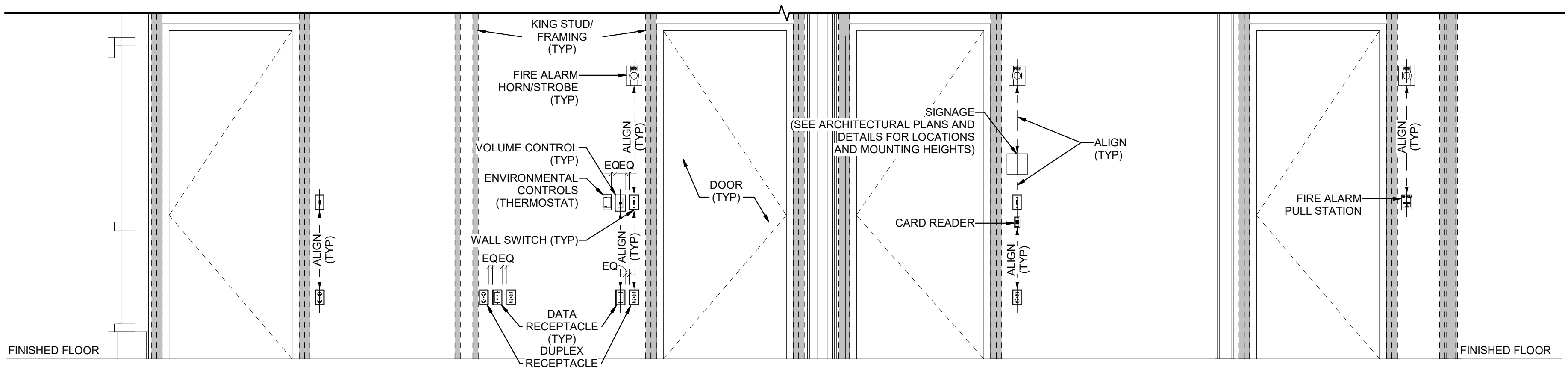
C1 CMU DEVICE MOUNTING ALIGNMENT DETAIL
SCALE: NTS

C2 LIGHTING MOUNTING DETAILS
SCALE: NTS

C3 COMMUNICATIONS MOUNTING DETAILS
SCALE: NTS



B1 FIRE ALARM MOUNTING DETAILS
SCALE: NTS



A2 TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL
SCALE: NTS

A1 BOX MOUNTING DETAILS
SCALE: NTS



Ogden Regional Medical Center
Psych Exam Remodel

5475 South 500 East
Ogden, UT 84405

NJRA Project # 19301.00
Construction Documents Jan 27, 2020

TYPICAL MOUNTING HEIGHT DETAILS

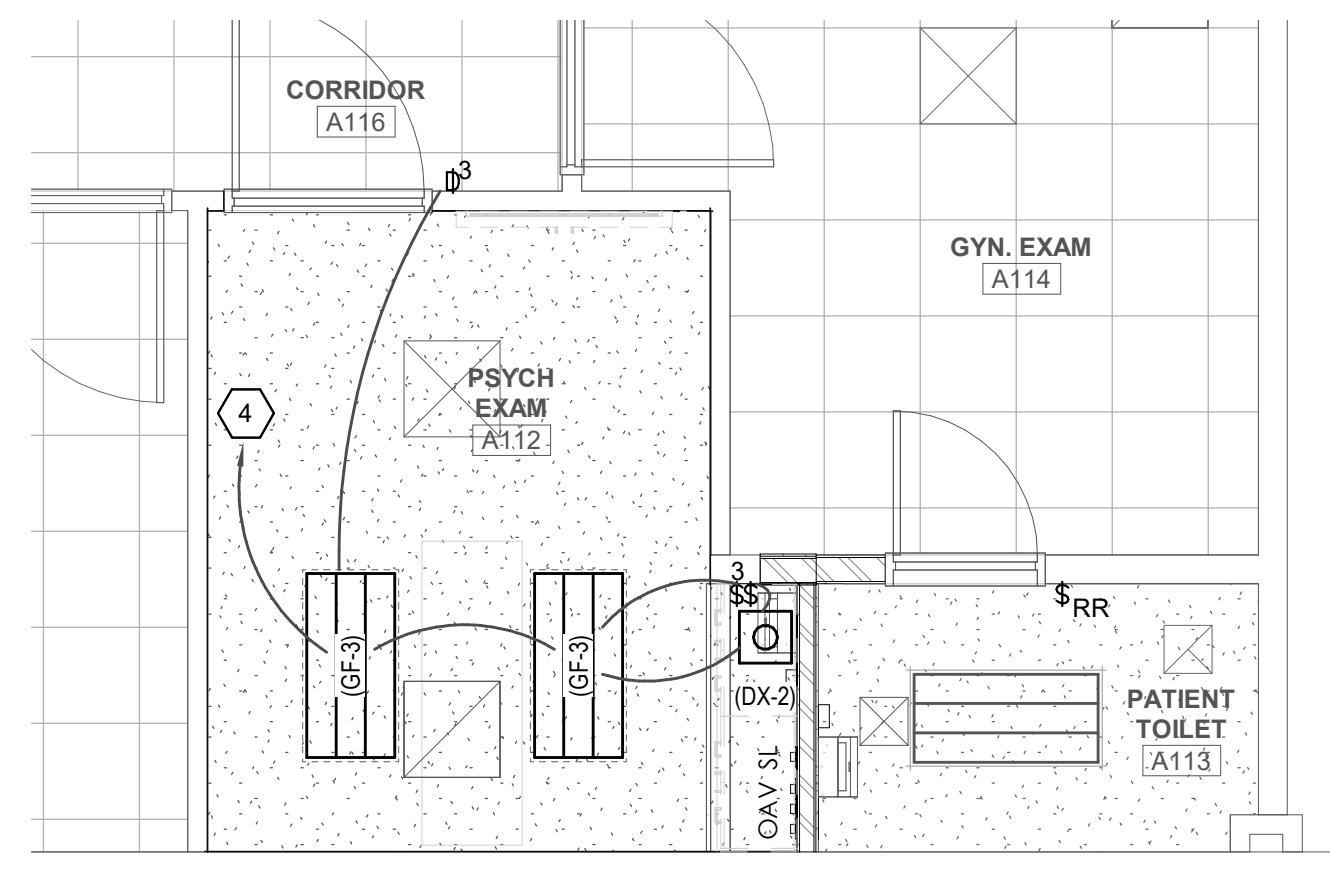
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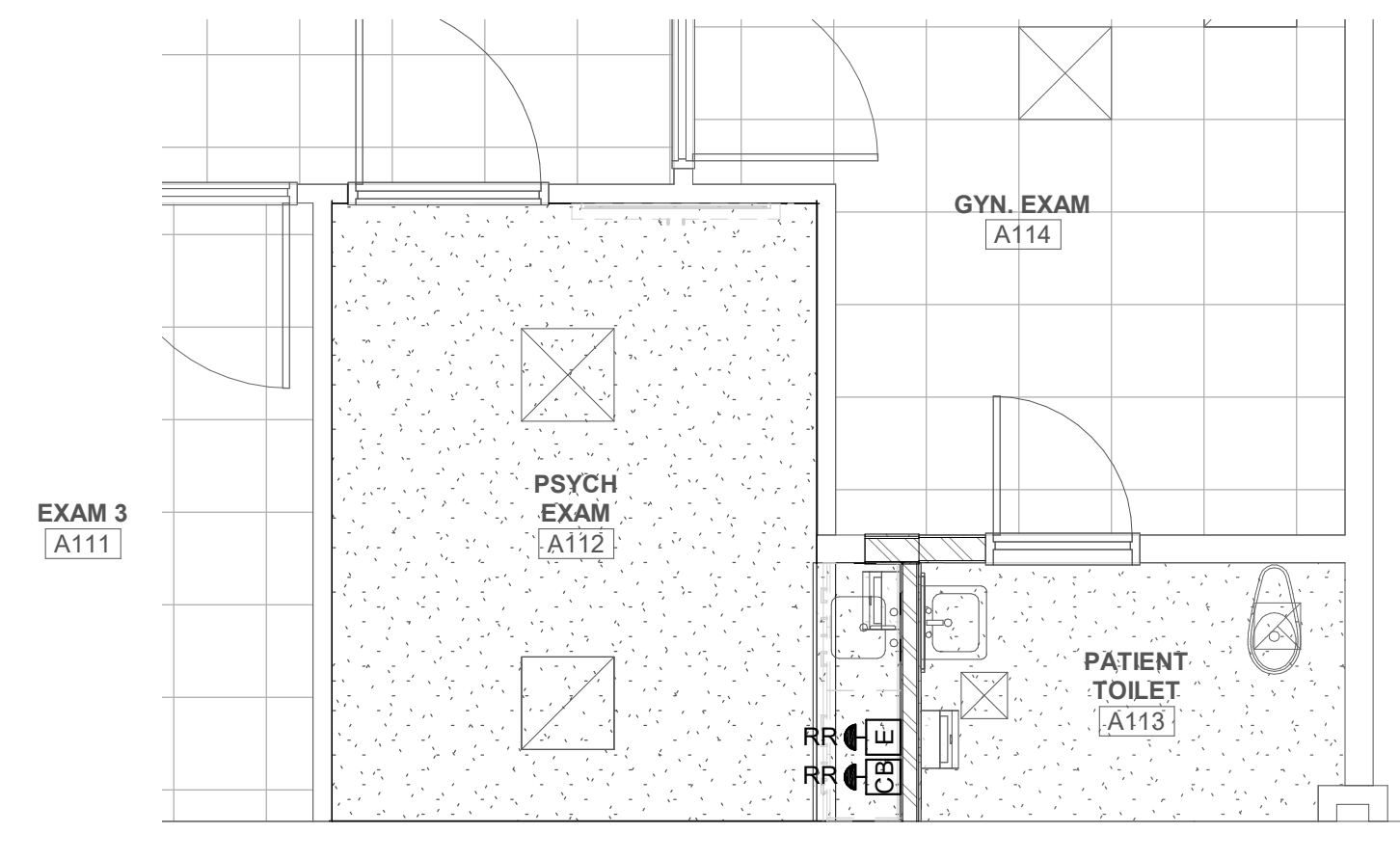
GENERAL SHEET NOTES

SHEET KEYNOTES

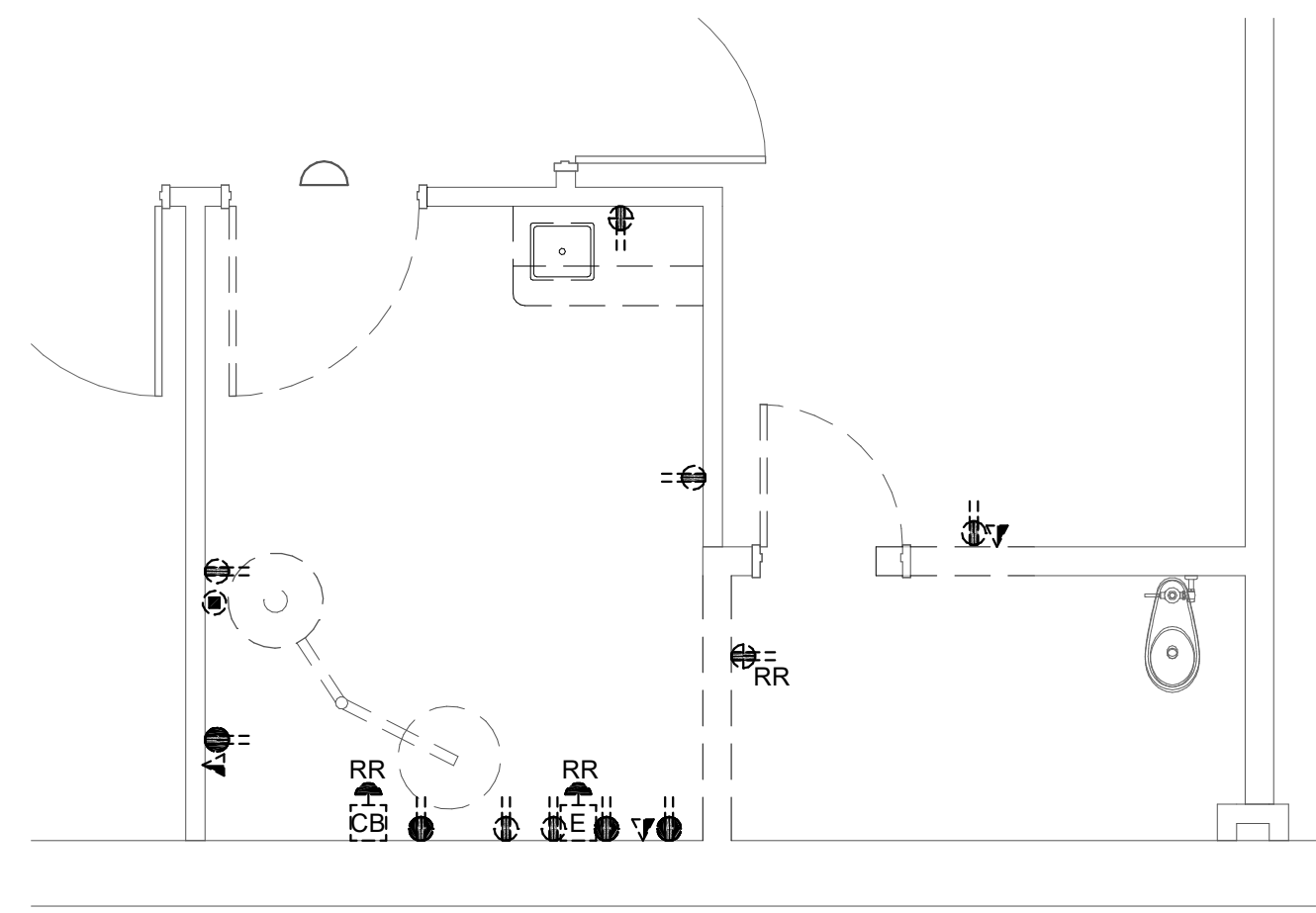
- 1 PROVIDE 120V CIRCUIT FOR ROLL-UP DOOR.
- 2 PROVIDE SINGLE GANG BACKBOX AND .75" CONDUIT RAN TO THE ROLL-UP DOOR FOR THE KEYED SWITCH CONTROL.
- 3 CONNECT TO EXISTING 120V EMERGENCY RECEPTACLE CIRCUIT IN THE ROOM.
- 4 CONNECT TO EXISTING LIGHTING CIRCUIT THAT PREVIOUSLY FED THE LIGHT FIXTURES IN THE ROOM.
- 5 DEMOLISH EXISTING EXAM LIGHT.



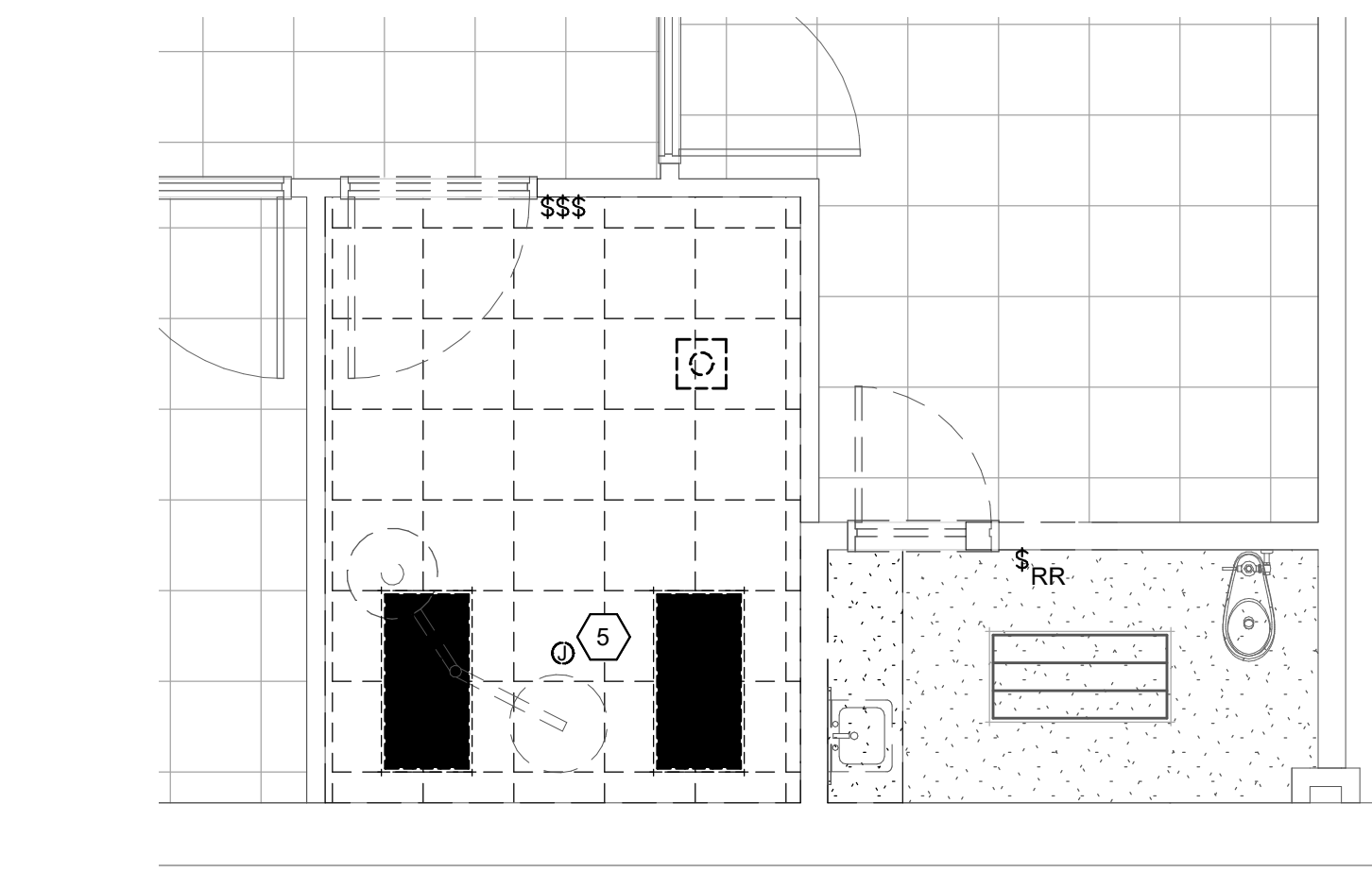
4 LEVEL 1 LIGHTING PLAN
SCALE: 1/4" = 1'-0"



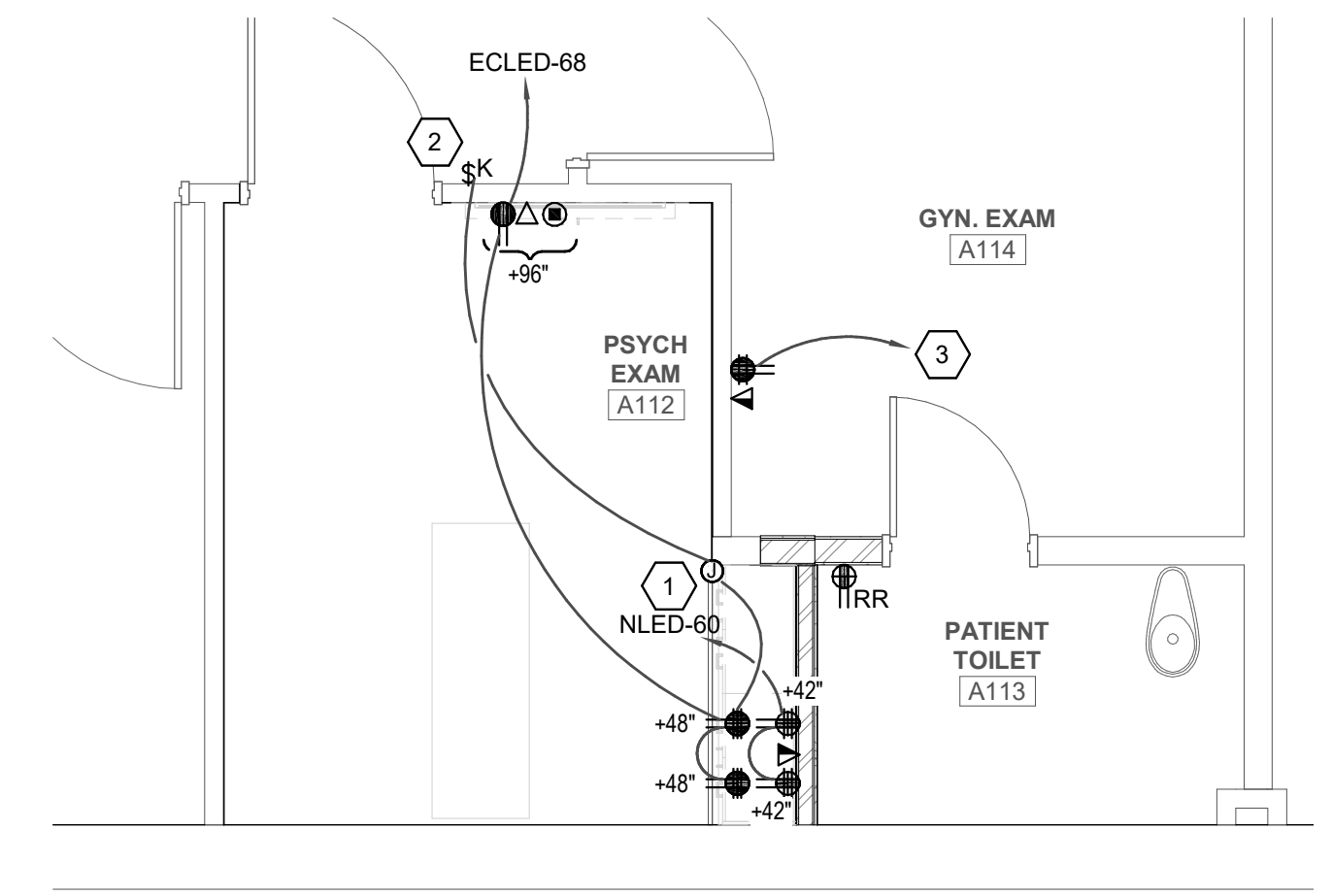
5 LEVEL 1 AUXILIARY PLAN
SCALE: 1/4" = 1'-0"



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



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



3 LEVEL 1 POWER PLAN
SCALE: 1/4" = 1'-0"

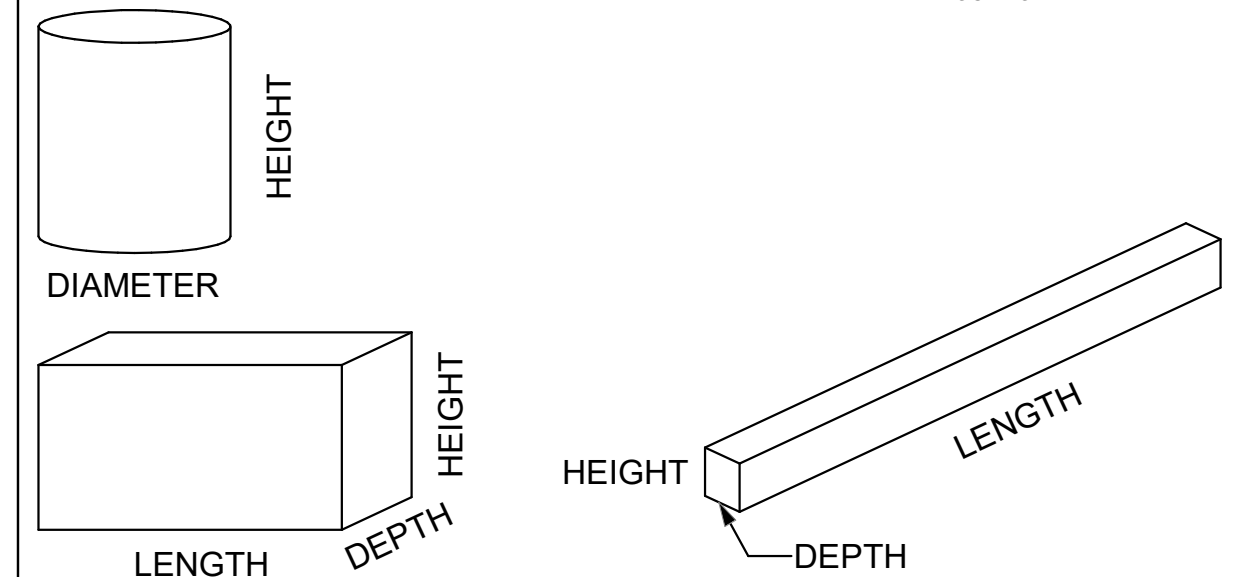
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INTERIOR LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS

MOUNTING	LUMINAIRE OPTIONS	FINISH	DIFFUSER/LENS	REFLECTOR
B - BASE C - CEILING F - FLANGE G - GRID P - PENDANT PL - POLE R - RECESSED S - SURFACE W - WALL	ARHR - AIR RETURN AND HEAT REJECTION DL - DAMP LOCATION EQC - EARTHQUAKE CLIPS F - FUSING HLD - HINGED AND LATCHED DOOR HS - HOUSE SIDE SHIELD PS - PHOTOCELL SWITCH QRS - QUARTZ RESTRIKE ST - STATIC WG - WIRE GUARD WL - WET LOCATION	MW - MATTE WHITE BL - BLACK SL - SILVER GL - GOLD CL - CLEAR PW - PAINTED WHITE EA - EXTRUDED ALUMINUM S - STEEL GS - GALVANIZED STEEL C - CAST CBA - COLOR BY ARCHITECT SCBA - STANDARD COLOR BY ARCHITECT CCA - CUSTOM COLOR BY ARCHITECT FS - MEETS FEDERAL STANDARD 209D TP - THERMALLY PROTECTED FL - FLUSH R - REGRESS M - MITERED	#A - ACRYLIC #THICK #OA - ACRYLIC #THICK (OPAL) GC - GLASS (CLEAR) GO - GLASS (OPAL) GF - GLASS (PROXED) SGL - SOFT GLOW LENS HPL - HIGH PERFORMANCE LENS DO - DROP OPAL COL - CONVEX GLASS LENS S - SATIN LENS	OP - NONE/OPEN SP - SPECULAR SS - SEMI-SPECULAR D - DIFFUSE (WHITE ENAMEL) SC - SPECULAR (COLORED) PR - PRISMATIC FDR - FULL DEPTH REFLECTOR DS - DIFFUSE (SEMI SPECULAR) SILVER LI - LOW IRIDESCENT IR - IRIDESCENT SL - SILVER GL - GOLD CA - CLEAR ALZAK



GENERAL NOTES

- PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER.
- CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED. CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.
- SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING. THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.
- SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.
- ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.
- VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
- COMPLY WITH THE "INTERIOR LIGHTING" SECTION OF THE SPECIFICATIONS.
- REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, DRIVERS, AND LAMPS.
- ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.

ID	DESCRIPTION	NOMINAL SIZE				MOUNTING	TYPE	COLOR TEMP	CRI	DRIVER CONFIGURATION	VOLTAGE	WATTS	FINISH	FIXTURE LUMENS	DIFFUSER/LENS	REFLECTOR	OPTIONS	NOTES	MANUFACTURER (CATALOG SERIES)			
		LENGTH	DEPTH	HEIGHT	DIAMETER/ APERTURE														OPTION 1	OPTION 2	OPTION 3	
(DX-2)	6" ROUND, RECESSED LED DOWNLIGHT, SEMI-SPECULAR REFLECTOR, WHITE TRIM FINISH	-	-	-	0' - 6"	CR	LED	3500K	-	0-10V DIMMING (10%)	120/277	23	-	2000	-	-	-	-	-	GOTHAM (EVO-3520-6AR-WD-LSS-MVOLT-EZ10)	LITON (LHALD625C071-D10/LRALD6SWF151-B60-T35)	PORTFOLIO (LD6B20D10/EUBS10208 LD6SWF151-B60-T35)
(GF-3)	2' X 4' LED FLAT PANEL, FLANGE MOUNT, BEHAVIORAL HEALTH FIXTURE, VANDAL RESISTANT, ANTI-LIGATURE	4' - 0"	2' - 0"	-	-	CR	LED	3500K	-	0-10V DIMMING (10%)	120/277	72	-	6700	-	-	FLANGE KIT	-	-	KENALL (MMAC24-F-B-FA-47L35 K-DCC-DV-AMF)	-	-