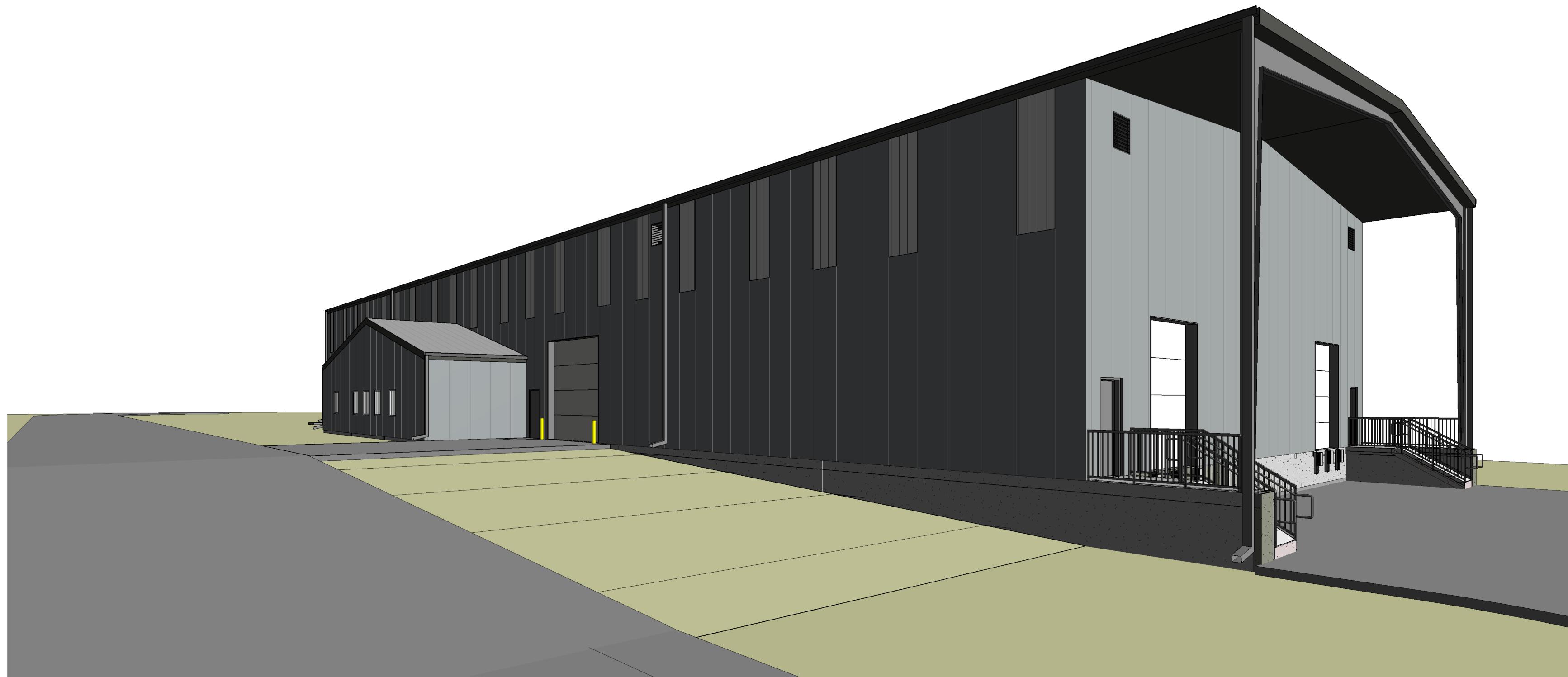
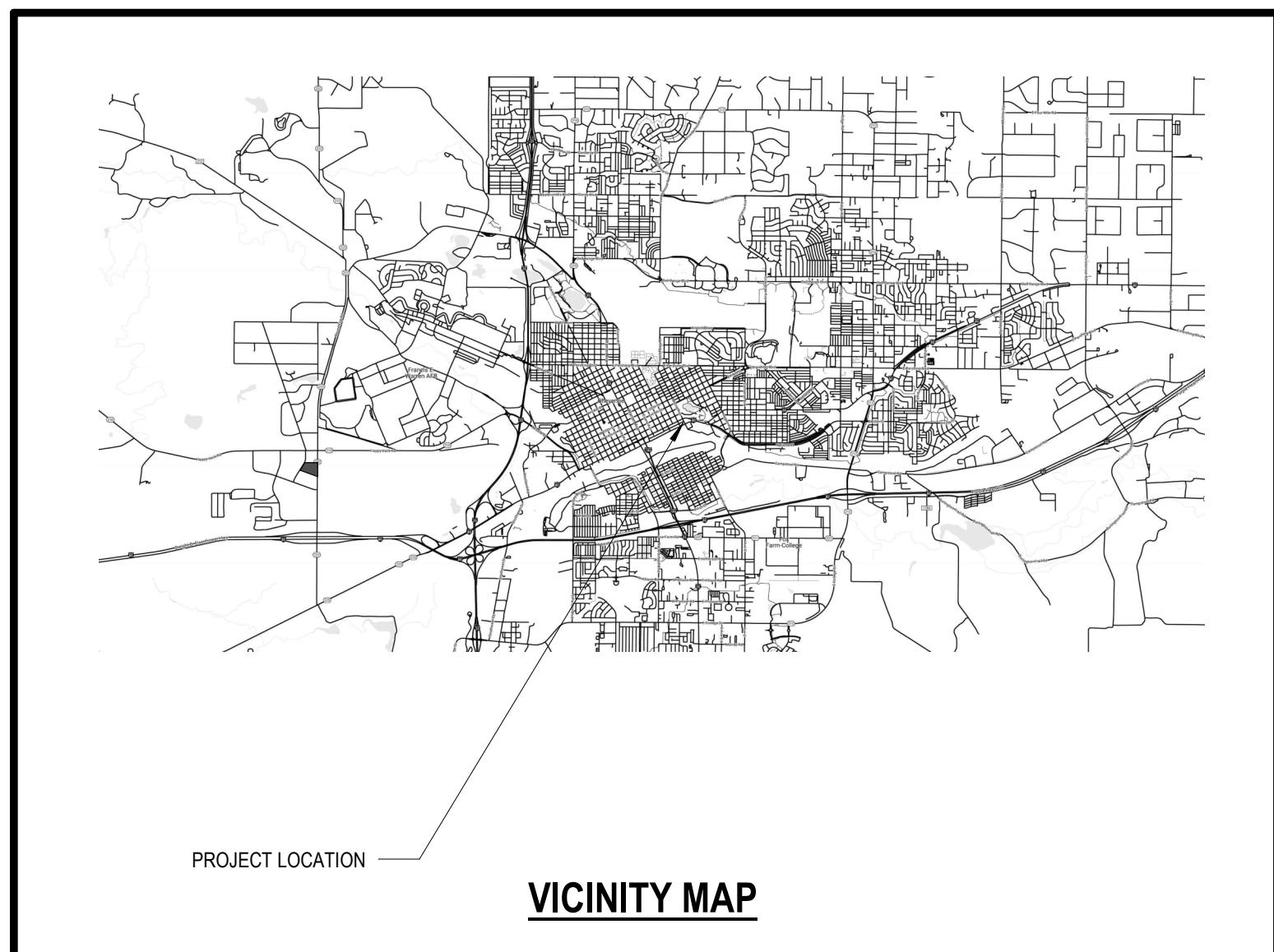


UMC CHEYENNE FACILITY

UMC PROPERTIES LLC

NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY



ARCHITECT

WINTERS | GRIFFITH
ARCHITECTS

211 E 19TH STREET, CHEYENNE, WY 82001 | (307) 632-2705 | ©2023

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CIVIL

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ABBREVIATIONS

AB	ANCHOR BOLT	KIP	1000 POUNDS
AC	AIR CONDITIONING	KLF	1000 POUNDS PER LINEAL FOOT
ACT	ACOUSTICAL CEILING TILE	L	LENGTH
ADM	ADMIRALTY CONTAINING MATERIAL	LAM	LAMINATED
ADDNL	ADDITIONAL	LAV	LAVATORY
AFF	ABOVE FINISH FLOOR	LBS	POUNDS
ALT	ALTERNATE	LF	LINEAR FOOT
ALUM	ALUMINUM	LVL	LAMINATED VENEER LUMBER
APPROX	APPROXIMATE	MAT.	MATERIAL
ARCH	ARCHITECT/ARCHITECTURAL	MAX.	MAXIMUM
AUTO	AUTOMATIC	MECH	MEDICAL
B&F	BOX-BOX-FILE DRAWERS	MFR	MANUFACTURER
BD	BOARD	MIN.	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BRG	BEARING	MTL	METAL
BS	BUSINESSES		
BSMT	BASEMENT		
BTWN	BETWEEN		
		(N)	NEW
		N	NORTH
		NA	NOT APPLICABLE
		NIC	NOT IN CONTRACT
		NO.	NUMBER
		NOM.	NOMINAL
		NS	NEAR SIDE
		NTS	NOT TO SCALE
CAB	CABINET	OC	ON CENTER
CBB	CEMENTITIOUS BACKER BOARD	OD	OUTSIDE DIAMETER
CG	CORNER GUARD	OPEN	OPENING
CJ	CONSTRUCTION / CONTROL JOINT	ORB	OIL-RUBBED BRONZE
CL	CENTERLINE	OSCI	OWNER SUPPLIED, CONTRACTOR INSTALLED
CLG	CEILING	OSCO	OWNER SUPPLIED, OWNER INSTALLED
CMU	CONCRETE MASONRY UNIT	PL	PLATE
COL	COLUMN	PLAM	PLASTIC LAMINATE
CONC	CONCRETE	PLWD	PLASTERWOOD
CONT	CONTINUOUS	PREFAB	PREFABRICATED
COORD	COORDINATE	PT	PAINT
CT	COUNTERTOP	PVC	POLYVINYL CHLORIDE
D	DEPTH	RAD	RADIUS
DBL	DOUBLE	RCP	REFLECTED CEILING PLAN
DEMO	DEMOLITION	RD	ROOF DRAIN
DEPT.	DEPARTMENT	RE:	REFER/REFERENCE
DF	DRAUGHTING FOUNTAIN	REINF.	REINFORCEMENT
DIM	DIMENSION	REQ.	REQUIRED
DISP	DISPENSER	REV	REVISION
DN	DOWNSPROUT	RM	ROUGH OPENING
DS	DRIP-TRAP	RTU	ROOF TOP UNIT
DTL	DETAIL	RWB	RUBBER WALL BASE
DW	DISHWASHER	SAT	SUSPENDED ACOUSTICAL TILE
DWGS	DRAWINGS	SCHED.	SCHEDULE
		SECT.	SECTION
EA	EACH	SECT.	SECTION
EF	EACH FACE	SFT	SQUARE FOOT/FEET
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	SHT	SHIRT
ELEC	ELECTRICAL	SLG	SLAB ON GRADE
ELEV	ELEVATION	SPEC.	SPECIFICATION(S)
EQ	EQUAL	SD	SCREWDRIVER
EQUIP	EQUIPMENT	SS	STAINLESS STEEL
EW	EACH WAY	STC	_SOUND TRANSMISSION CLASS
EX	EXTINGUISH	STD.	STANDARD
EXP	EXPANSION	STL	STEEL
EXT	EXTERIOR	STRUCT	STRUCTURAL
FD	FLOOR DRAIN	SUBLR	SUBFLOOR
FDN	FOUNDATION	SW	SIDE WALK
FE	FIRE EXTINGUISHER	SYM	SYMMETRICAL
FF	FINISHED FLOOR	T&G	TONGUE AND GROOVE
FF&E	FURNITURE FIXTURES AND EQUIPMENT	T.O.C.	TOP OF CONCRETE
FLR	FLOOR	TBD	TO BE DETERMINED
FRP	FIBER REINFORCED PANEL	TEMP.	TEMPERATURE
FS	FAR SIDE	TV	TELEVISION
FT	FOOTFEET	TP	TYPICAL
FTG	FOOTING	TYPE X	FIRE RATED GYPSUM BOARD
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
GA	GALVANIZE	VAR.	VARIES
GB	GEAR/GEAR	VERT.	VERTICAL
GC	GENERAL CONTRACTOR	VIF	VERIFY IN FIELD
GEN	GENERAL	W	WIDTH
GL	GLASS	W/	WITH
GLUCLAM	GLUE LAMINATED WOOD	W/O	WITHOUT
GYP	GYPSUM BOARD	WC	WATER CLOSET
GWB	GYPSUM WALL BOARD	WD	WOOD
HB	HOSE BIB	WH	WATER HEATER
HC	HANDICAPPED	WWF	WELDED WIRE FABRIC
HDR	HEADER		
HDWR	HARDWARE		
HOMR	HOLLOW METAL		
HGT	HORIZONTAL HEIGHT		
HVAC	HEATING VENTILATION AND AIR CONDITIONING		
IBC	INTERNATIONAL BUILDING CODE		
IF	INSIDE FACE		
INSUL.	INSULATION		
INT.	INTERIOR		
JC	JANITOR CLOSET		
JT	JOINT		

DATE

DESCRIPTION

REVISION SCHEDULE

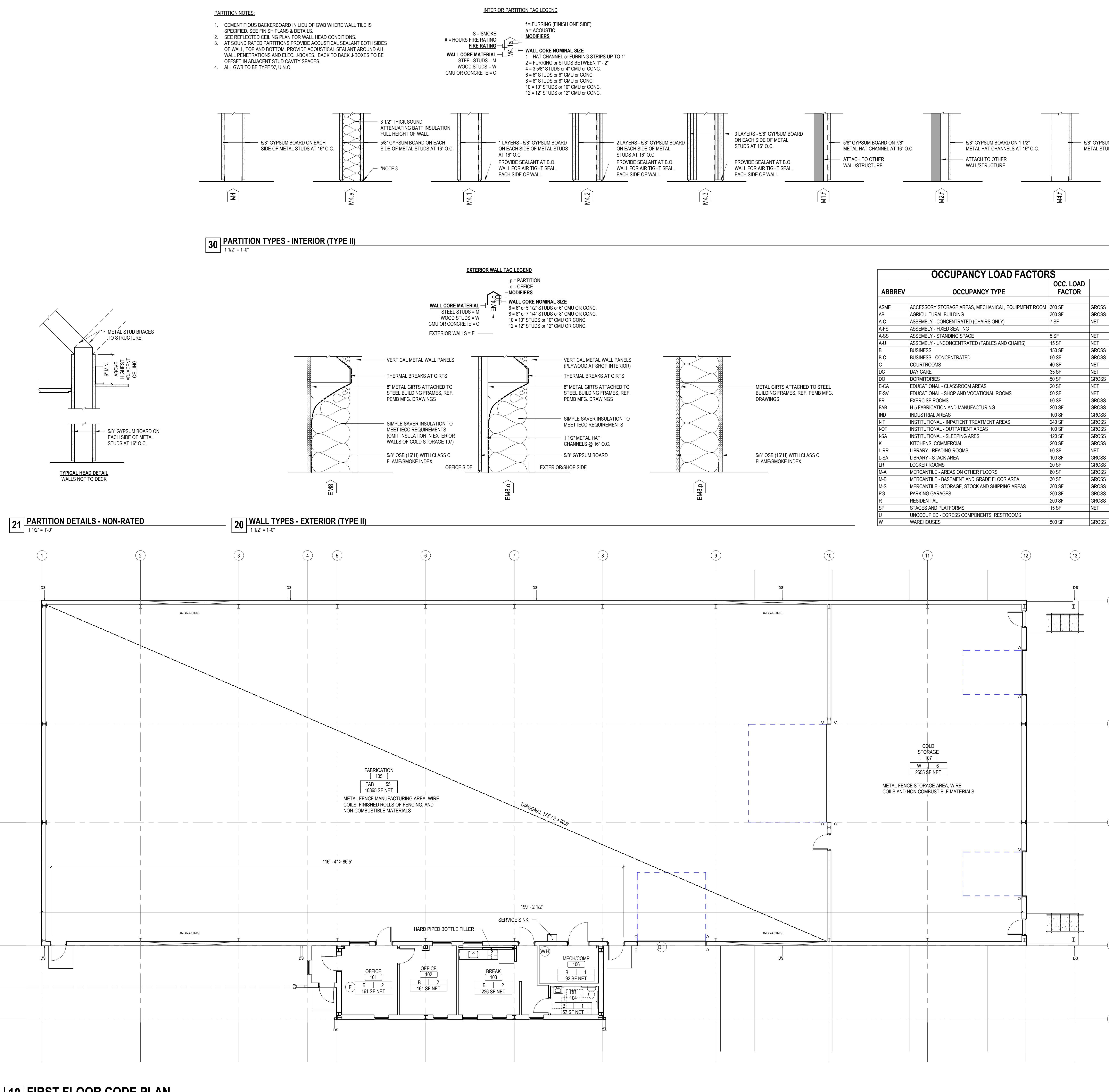
NO.

CONSTRUCTION DOCUMENTS

DATE:

2/6/2024

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BUILDING STATISTICS		
AREA (GROSS SQUARE FOOTAGE)		
FIRST FLOOR		14,900 SF
OCCUPIED SPACE TOTAL		14,900 SF
NUMBER OF STORIES		1
HEIGHT		32'
CODE SUMMARY		
APPLICABLE CODES		
BUILDING	INTERNATIONAL BUILDING CODE - 2021	
FIRE	INTERNATIONAL FIRE CODE - 2021	
MECHANICAL	INTERNATIONAL MECHANICAL CODE - 2021	
PLUMBING	INTERNATIONAL PLUMBING CODE - 2021	
ELECTRICAL	NATIONAL ELECTRICAL CODE - 2020	
ACCESSIBILITY	ICC A11.1 Accessible and Usable Buildings and Facilities	
OCCUPANCY GROUP	F-2, S-2, B, MIXED, NON-SEPARATED [508.3]	
TYPE OF CONSTRUCTION	TYPE II-B	
HEIGHT AND AREA LIMITS		
MAXIMUM ALLOWED HEIGHT	55'	
MAXIMUM ALLOWED STOREYS	3	
BASE ALLOWED AREA	23,000 SF	
MAX AREA WITH FRONTAGE INCREASE	40,250 SF (75%+ FRONTAGE)	
MIXED USE SEPARATIONS	NO [508.3]	
EXTERIOR WALL OPENING LIMITS	N/A	
FIRE PROTECTIVE SYSTEMS		
AUTO FIRE SUPPRESSION	NO	
EXTERIOR WALLS	RATING (HOURS)	CODE REFERENCE
LOAD BEARING WALLS	0 HOURS	TABLE 601
NON-LOAD BEARING WALLS	0 HOURS	TABLE 601
PRIMARY STRUCTURAL FRAME	0 HOURS	TABLE 601
INTERIOR WALLS	RATING (HOURS)	CODE REFERENCE
EXIT CORRIDORS	0 HOURS	TABLE 1020.2
SHAFTS/ HOISTWAYS	1 HOURS	713.4
LOAD BEARING WALLS	0 HOURS	TABLE 601
FLOOR CONSTRUCTION	0 HOURS	TABLE 601
ROOF CONSTRUCTION	0 HOURS/CLASS B	TABLE 601
PLUMBING FIXTURES		
[OCCUPANCY F-2, S-2, B]		
64 TOTAL OCCUPANTS	REQUIRED	PROVIDED
WATER CLOSETS/URINALS	1	1
LAVATORIES	1	1
DRINKING FOUNTAINS	1	1*
SERVICE SINKS	1	1
*SUBMITTING HARD PIPED BOTTLE FILLER TO FULFILL DRINKING FOUNTAIN REQUIREMENT.		



FIRST FLOOR PLAN

DATE

REVISION SCHEDULE

DESCRIPTION

NO

CONSTRUCTION DOCUMENTS

STATUS:

DATE: 2/6/2024

2/6/2024

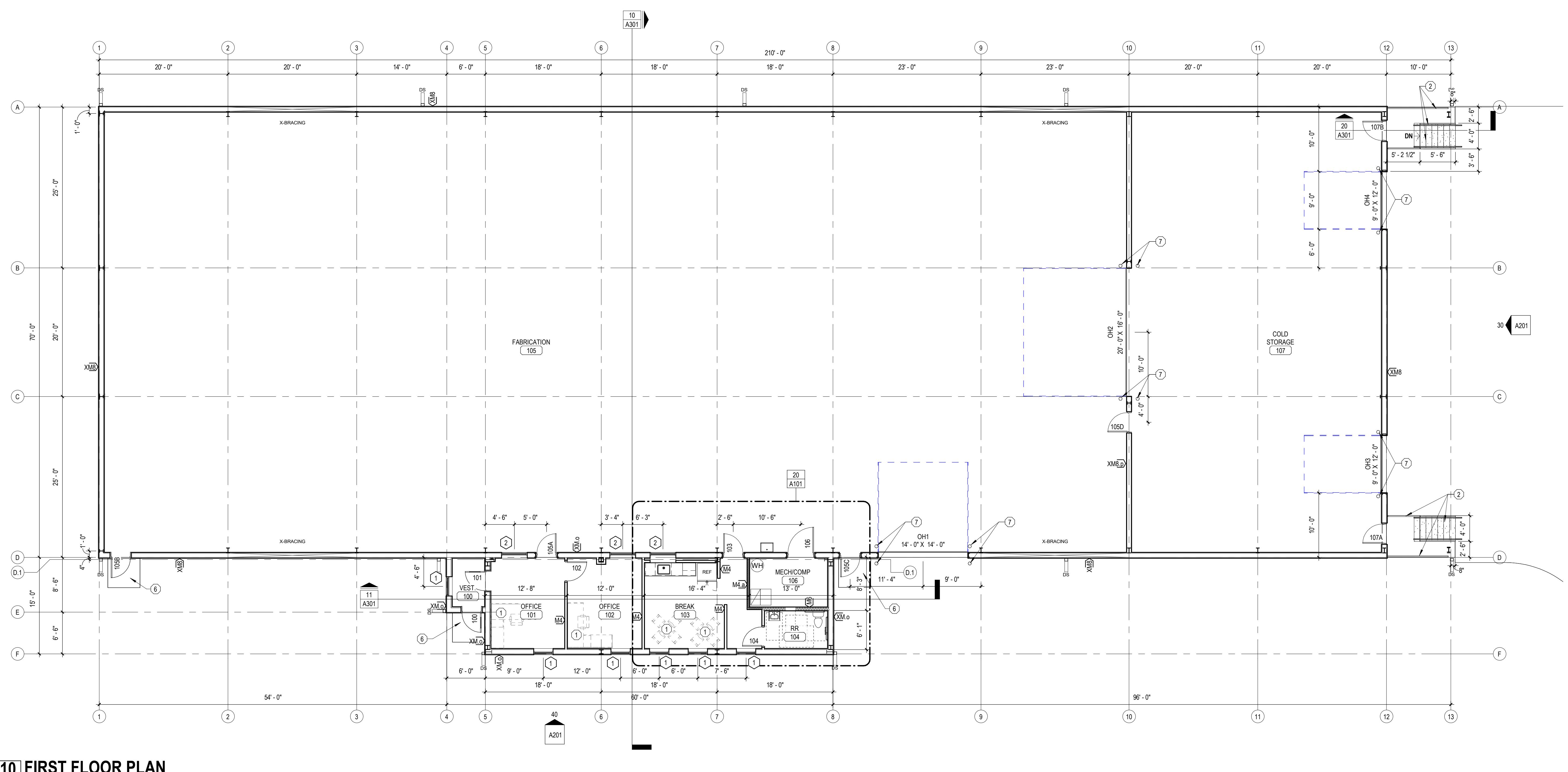
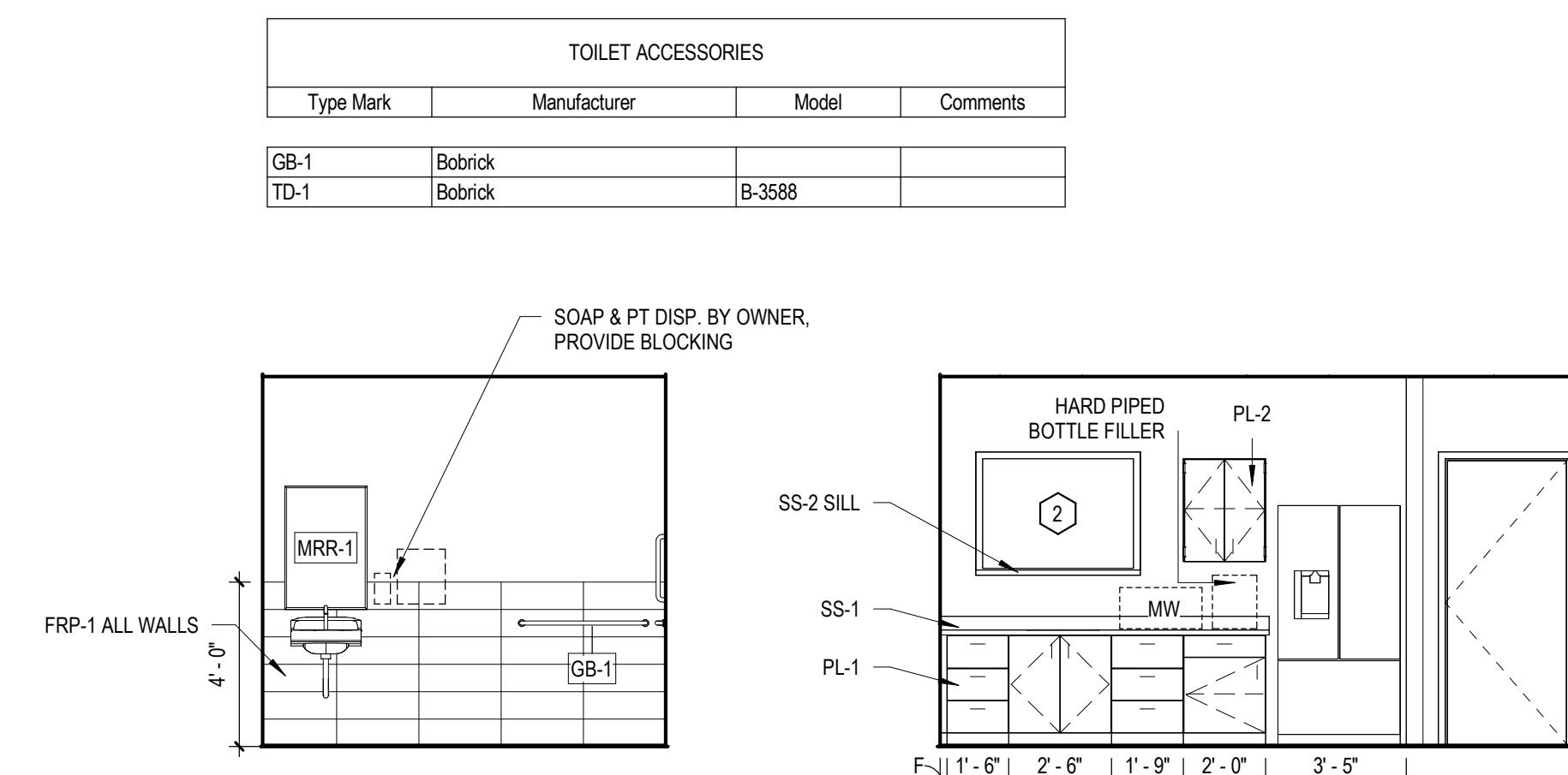
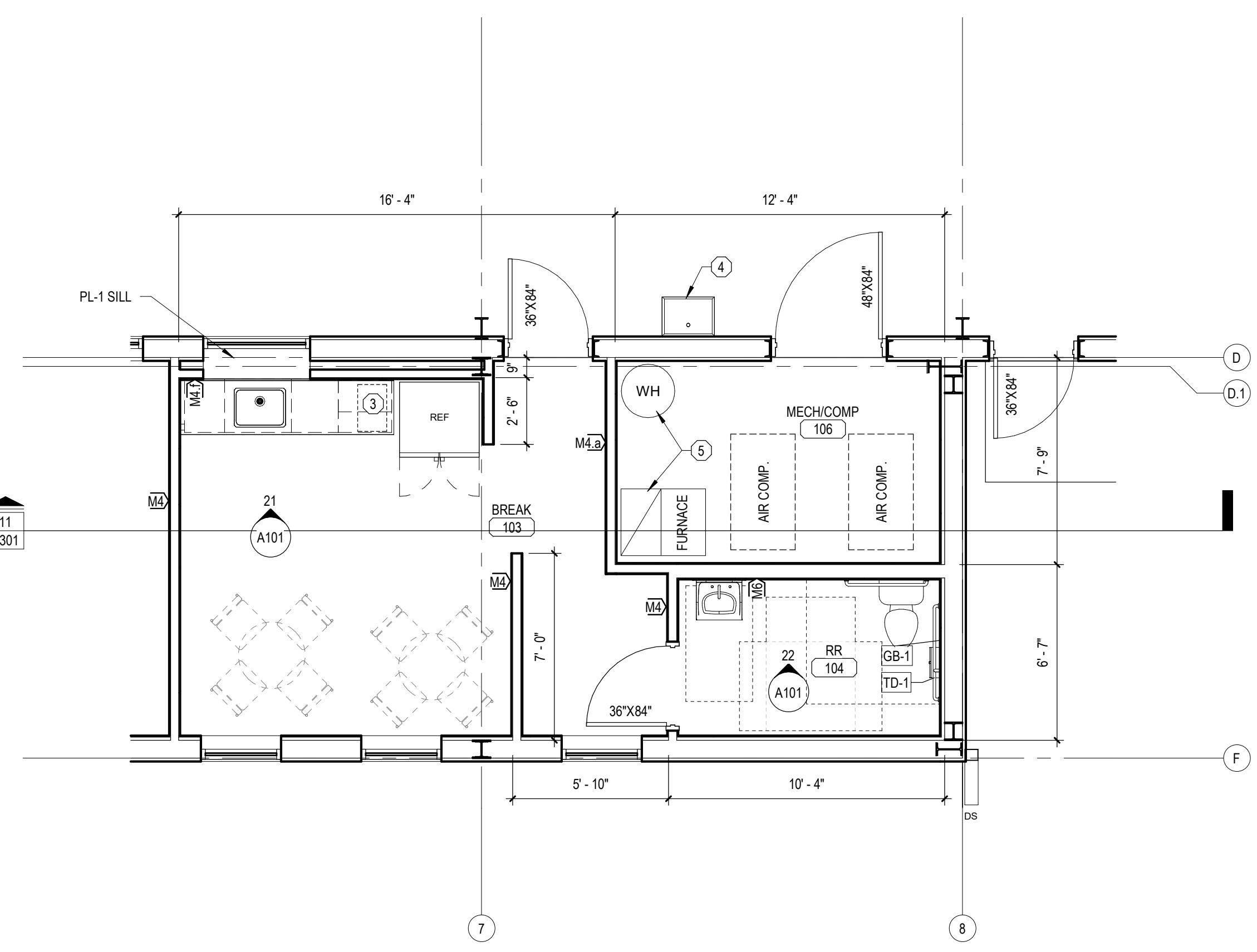
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PLAN KEYNOTES

1. FURNITURE, N.I.C.
2. CONCRETE STAIRS WITH PAINTED STEEL HANDRAILS.
3. COUNTERTOP BOTTLE FILLER, REF. PLUMBING.
4. SERVICE SINK, REF. PLUMBING.
5. FURNACE AND WATER HEATER, REF. PLUMBING & HVAC.
6. FROST PROTECTED STOOP, REF. STRUCTURAL.
7. 4" PIPE BOLLARD, FILL WITH CONC. WITH YELLOW PAINT OR PLASTIC COVER.



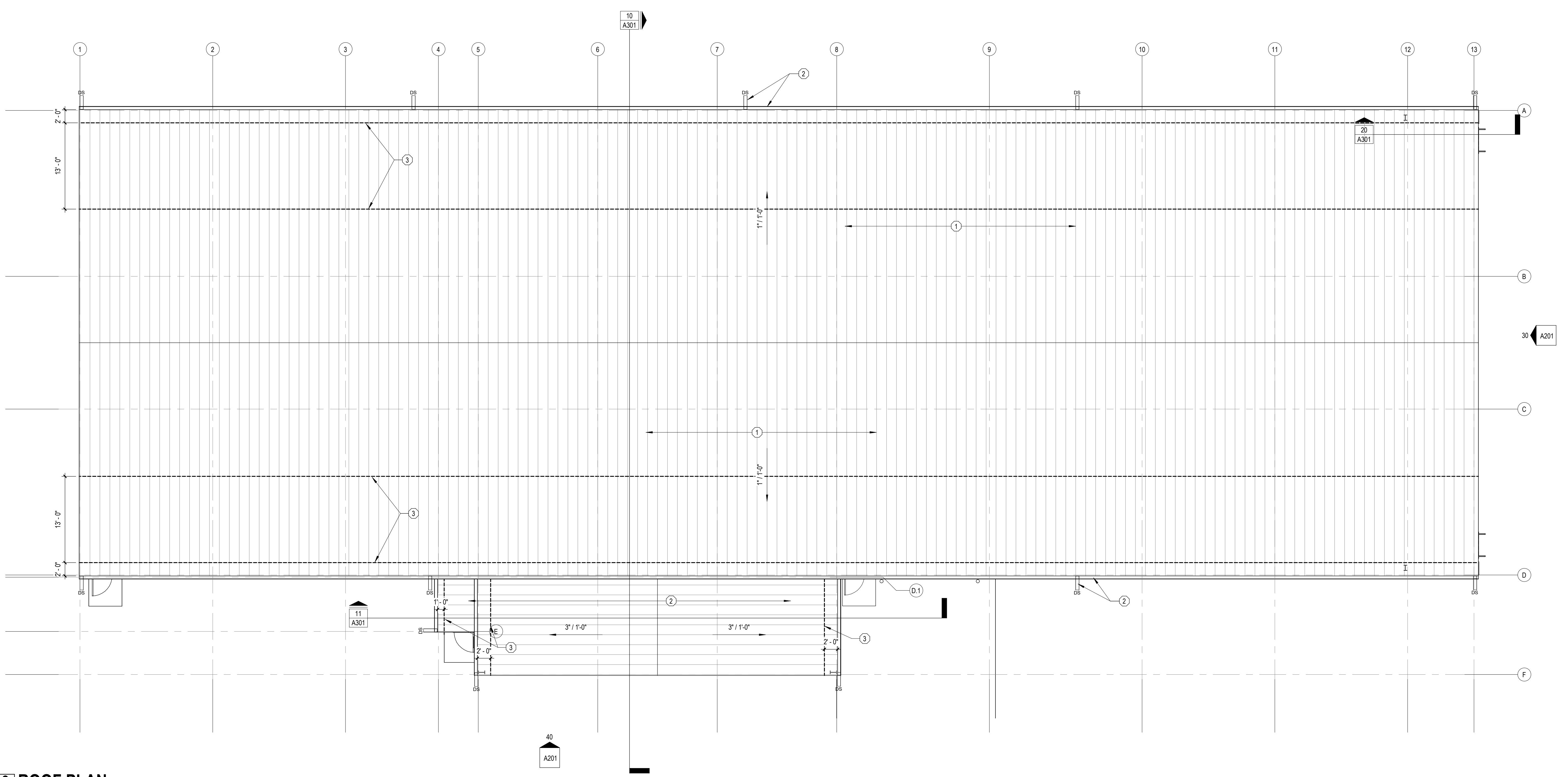


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NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

ROOF PLAN





REFLECTED CEILING PLAN

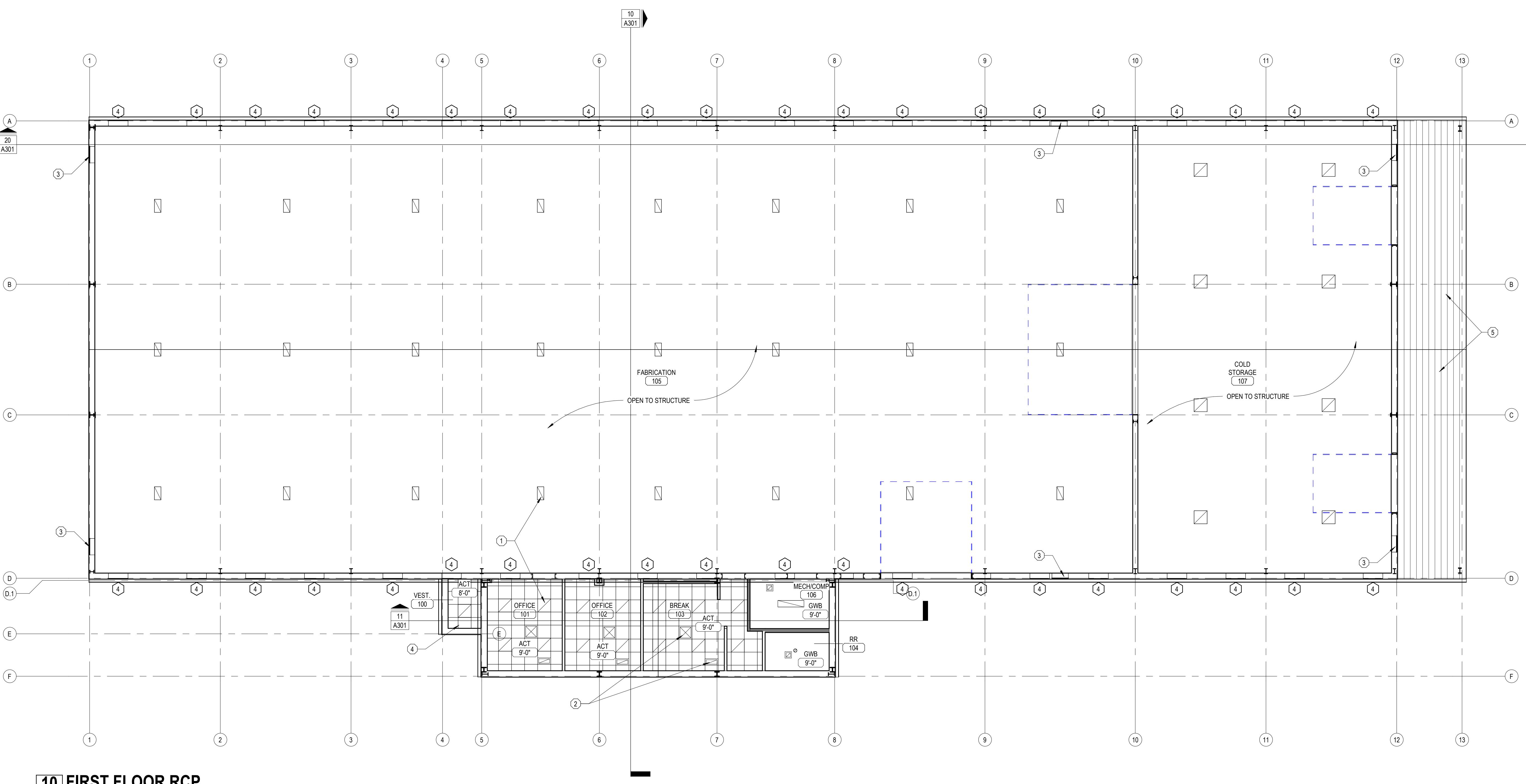
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NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

REFLECTED CEILING PLAN KEYNOTES

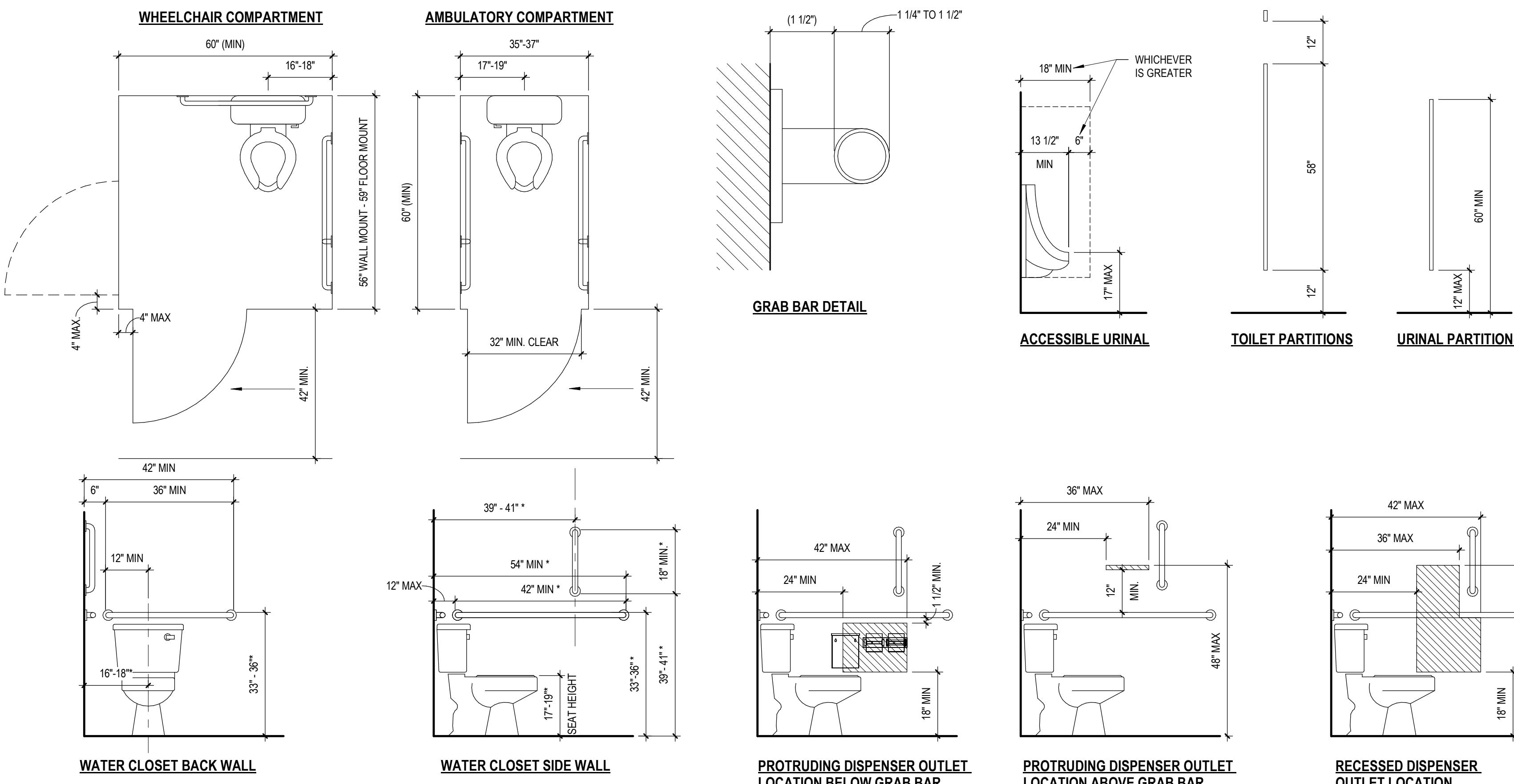
1. LIGHT FIXTURES TYP., REF. ELECTRICAL
2. HVAC TERMINALS TYP., REF. MECHANICAL
3. INTAKE/EXHAUST LOUVER, REF. MECHANICAL
4. PROVIDE ACT HOLD DOWN CLIPS IN VEST 100.
5. EXPOSED FASTENER METAL PANELS AT SOFFIT.



FINISH PLAN LEGEND

ROOM FINISH TAG	
NAME RM #	ROOM NUMBER
FLOOR FINISH CPT-1	RB-1 BASE FINISH
MAIN WALL FINISH PT-1	PT-1

NOTE: SEE FINISH MATERIAL SCHEDULE AND FINISH PLANS & INTERIOR ELEVATION FOR DETAILED FINISH NOTES AND CALLOUTS

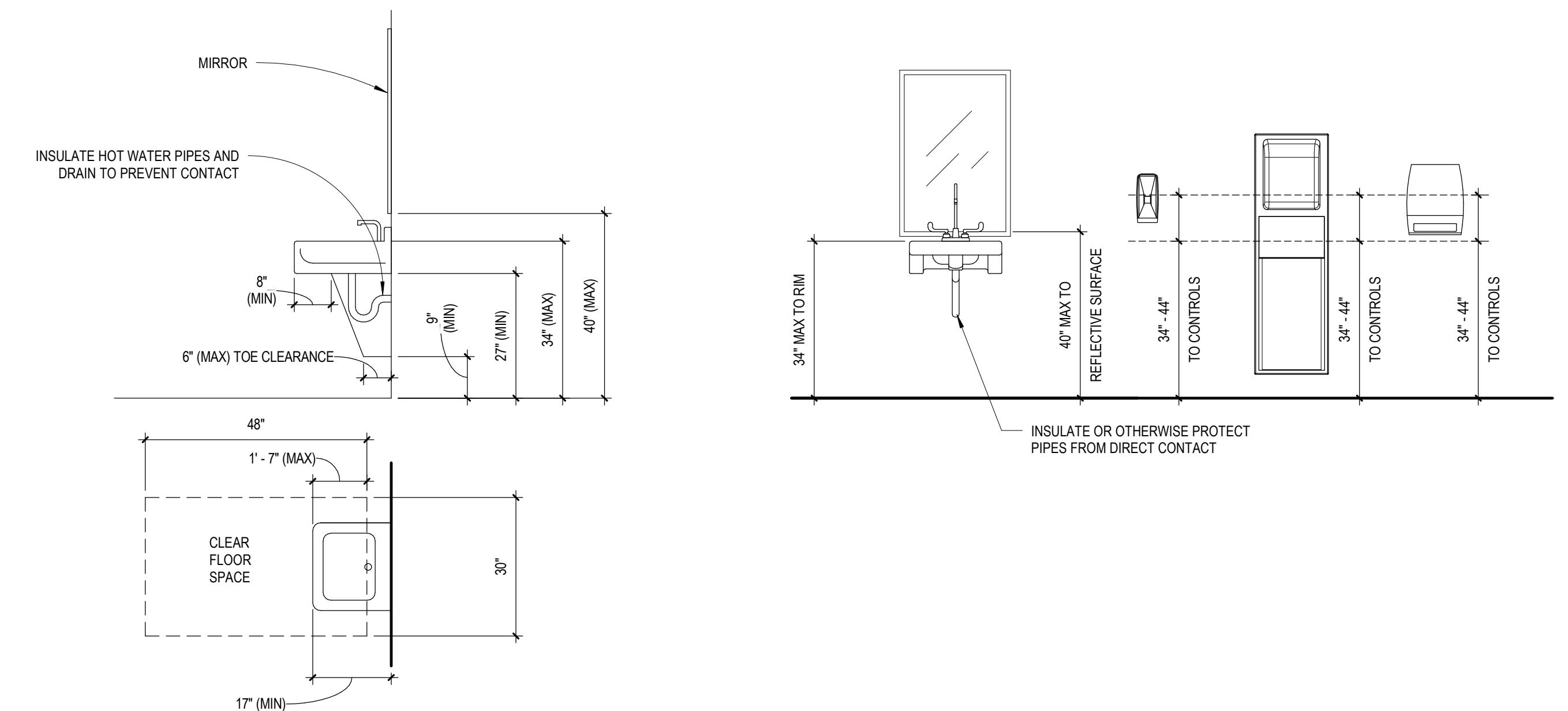


*SEE ICC A117.1 SECTIONS 604.11 & 609.4.2
GUIDELINES FOR MOUNTING DIMENSIONS FOR
EQUIPMENT PRIMARILY SERVING CHILDREN.

21 A117.1 WATER CLOSET DETAILS
1/2" = 1'-0"

GENERAL RESTROOM ACCESSORY NOTES:
a. REFER TO SPECIFICATIONS FOR INFORMATION ON CONTRACTOR PROVIDED
ACCESSORIES.
b. PLUMBING FIXTURES AND ACCESSORY ITEMS SHOWN FOR REFERENCE
ONLY AND MAY NOT BE REPRESENTATIVE OF WHAT IS ACTUALLY SPECIFIED
FOR THIS PROJECT. REFER TO PLUMBING FIXTURE SPECIFICATIONS.
c. PROVIDE BLOCKING FOR ALL WALL MOUNTED EQUIPMENT.

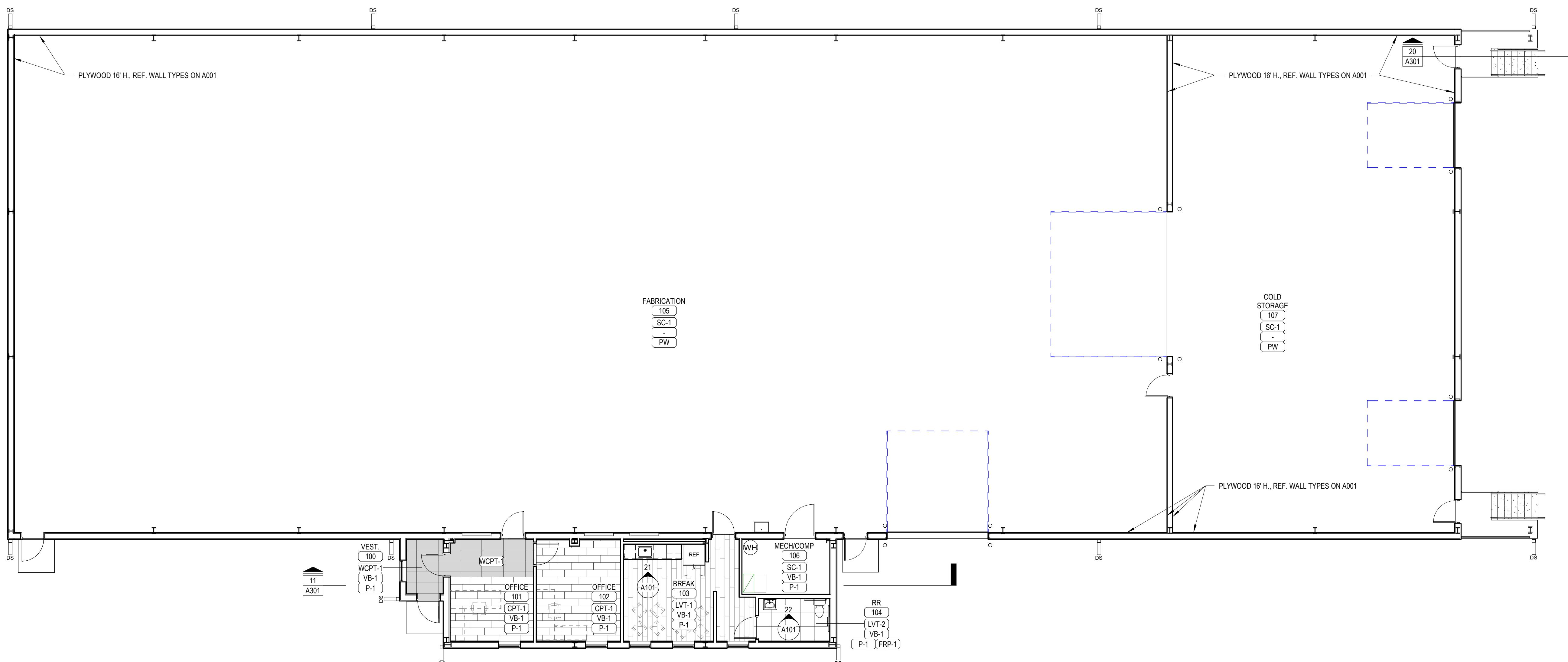
ITEMS PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR:
SN - SANITARY TRAP DISPOSAL
TD - TOILET PAPER DISPENSER
SD - SOAP DISPENSER
PT - PAPER TOWEL DISPENSER



20 A117.1 LAVATORY DETAIL
1/2" = 1'-0"

FINISH MATERIAL SCHEDULE

MARK	MATERIAL	MANUFACTURER	STYLE	COLOR	SIZE/FINISH	REMARKS/LOCATION
CPT-1	CARPET TILE	MOHAWK GROUP	TIMELESS TAILED COLLECTION/DISTRESSED	949 MINERAL	12" X 36"	BRICK ASHLAR INSTALLATION/OFFICES
FRP-1	FIBERGLASS REINFORCED PLASTIC	MARLITE	SYMMETRIX SMARTSEAM SUBWALL HORIZONTAL	WHITE PANEL W/ GREY GROUT LINES	6" X 3" TILE CONFIGURATION	UP TO 48" ON ALL WALLS OF RESTROOMS
LVT-1	LUXURY VINYL TILE	TAI FLOORING	SELECT COLLECTON	NVF-2531 DUSKY GRAY	7" X 48"	BREAK ROOM FLOORING
LVT-2	LUXURY VINYL TILE	SHAW CONTRACT	COMPOUND 2.5 MM (4074V)	FOUNDATION	24" X 24"	RESTROOM FLOORING
P-1	PAINT	SHERWIN WILLIAMS	SW 6252	ICE CUBE	EG-SHEL	RE: FINISH PLAN
PL-1	PLASTIC LAMINATE	FORMICA	STAINLESS	9319-BH	BRUSH FINISH	BREAK ROOM BASE CABINETS
PL-2	PLASTIC LAMINATE	FORMICA	TERRA	2296-PX	PLEX FINISH	BREAK ROOM COUNTER TOP
SC-1	SEALED CONCRETE	WILMADOWS	PENTREAT 244-20 WB	www.wilmadows.com/pentreat-244-20-wb/		
SS-1	SOLID SURFACE	WILMADW	BROOKLYN CONCRETE	929GS		
VB-1	VINYL WALL BASE	MANNINGTON	BURKE WALL BASE COLLECTION/ACCORD COLORS	650 ROCKY	4" COVE/TYPE TV	RE: FINISH PLAN
WCPT-1	WALK-OFF CARPET TILE	MANNINGTON	RIXITION	SLIDE (34368)	18" X 36"	HORIZONTAL BRICK ASHLAR INSTALLATION/VESTIBULE & OFFICE 101



10 FIRST FLOOR FINISH PLAN
A121 1/8" = 1'-0"

FIRST FLOOR FINISH PLAN

REVISION SCHEDULE
DESCRIPTION

NO

CONSTRUCTION DOCUMENTS
DATE: 2/6/2024

STATUS:

DATE:

A121

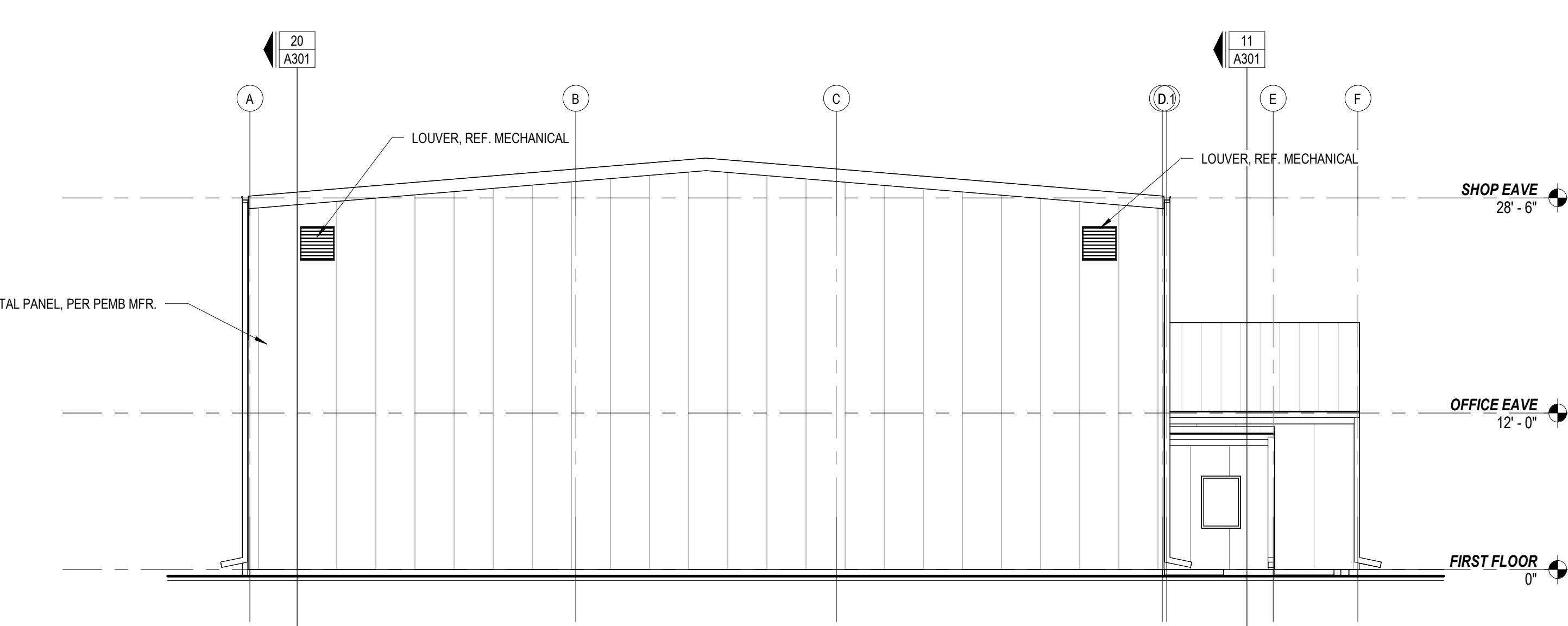
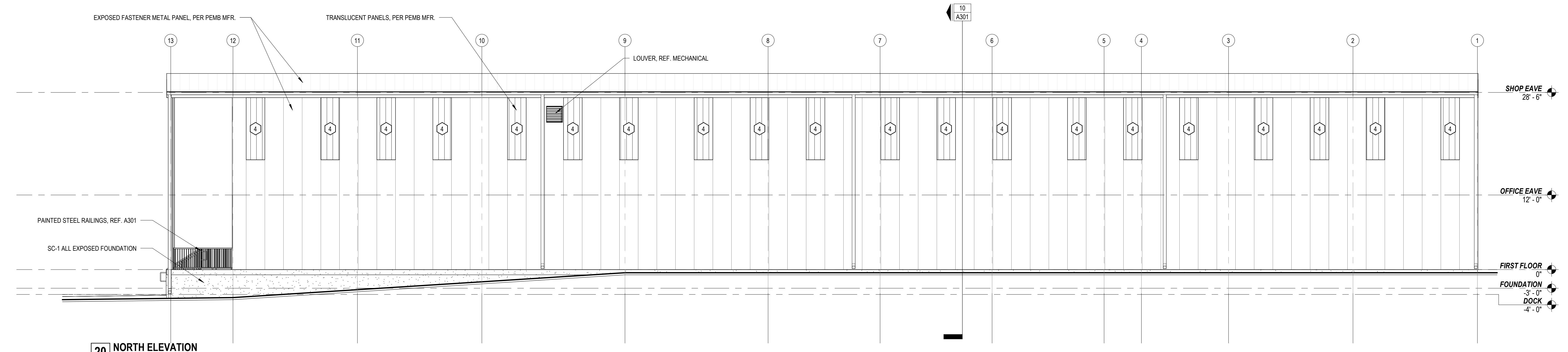
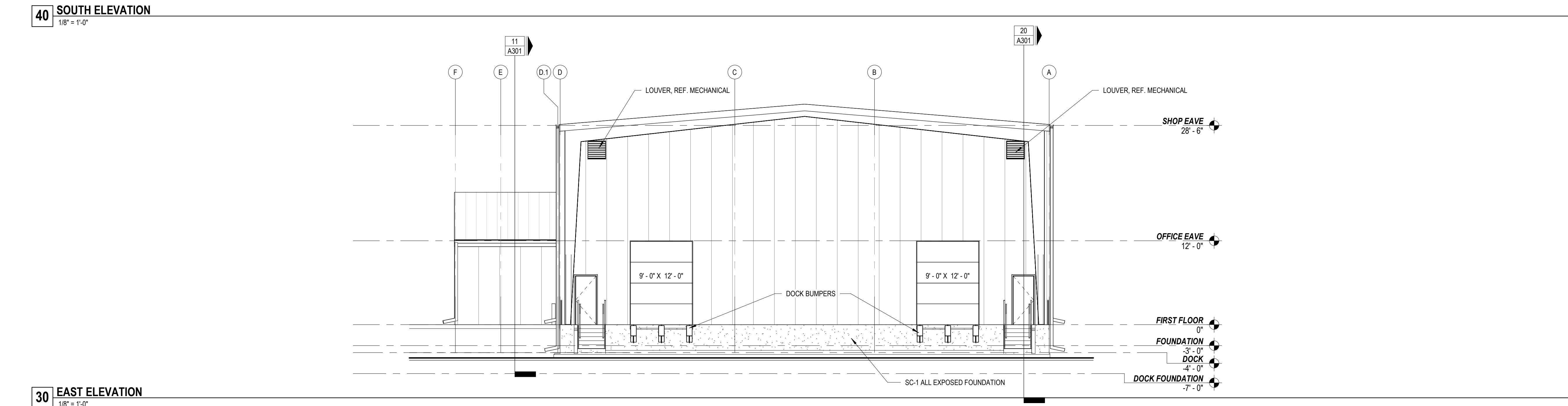
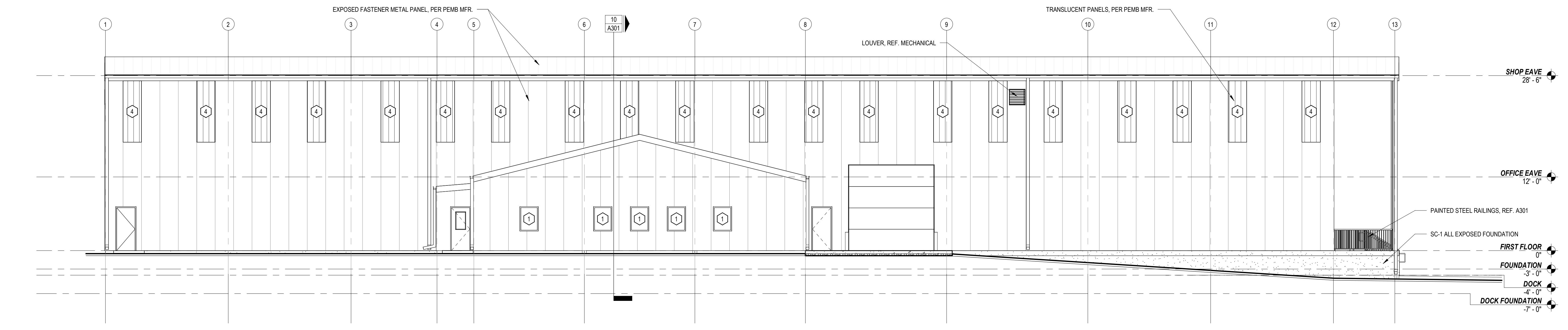


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NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

EXTERIOR ELEVATIONS



NO.	CONSTRUCTION DOCUMENTS	DATE
1	CONSTRUCTION DOCUMENTS	2/6/2024

STATUS: CONSTRUCTION DOCUMENTS

DATE: 2/6/2024

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REVISION SCHEDULE

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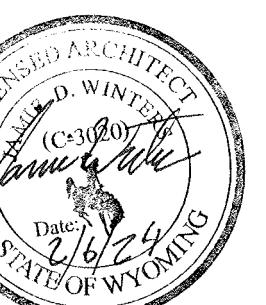
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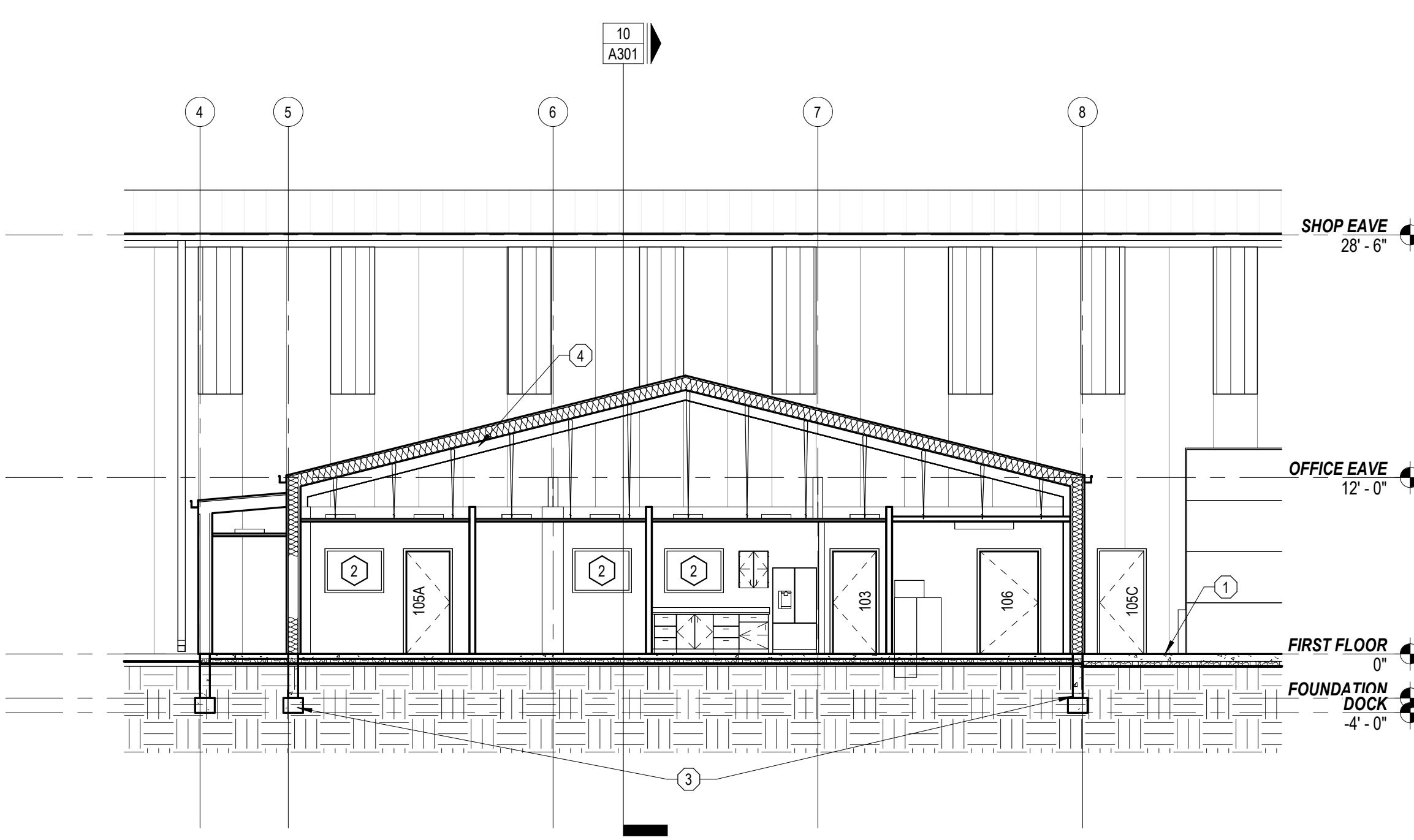
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NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

BUILDING SECTIONS

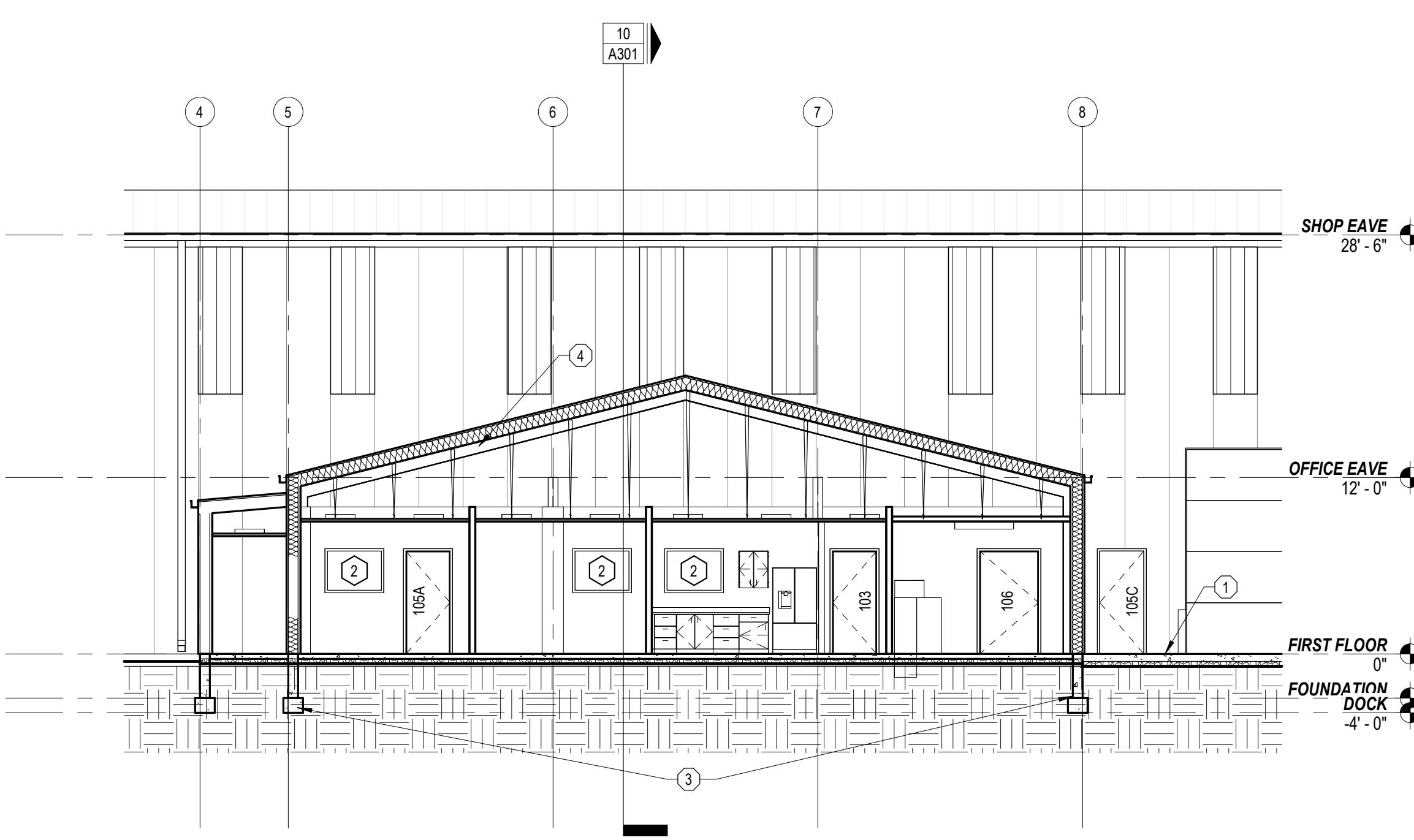
20 Section 1

1/8" = 1'-0"



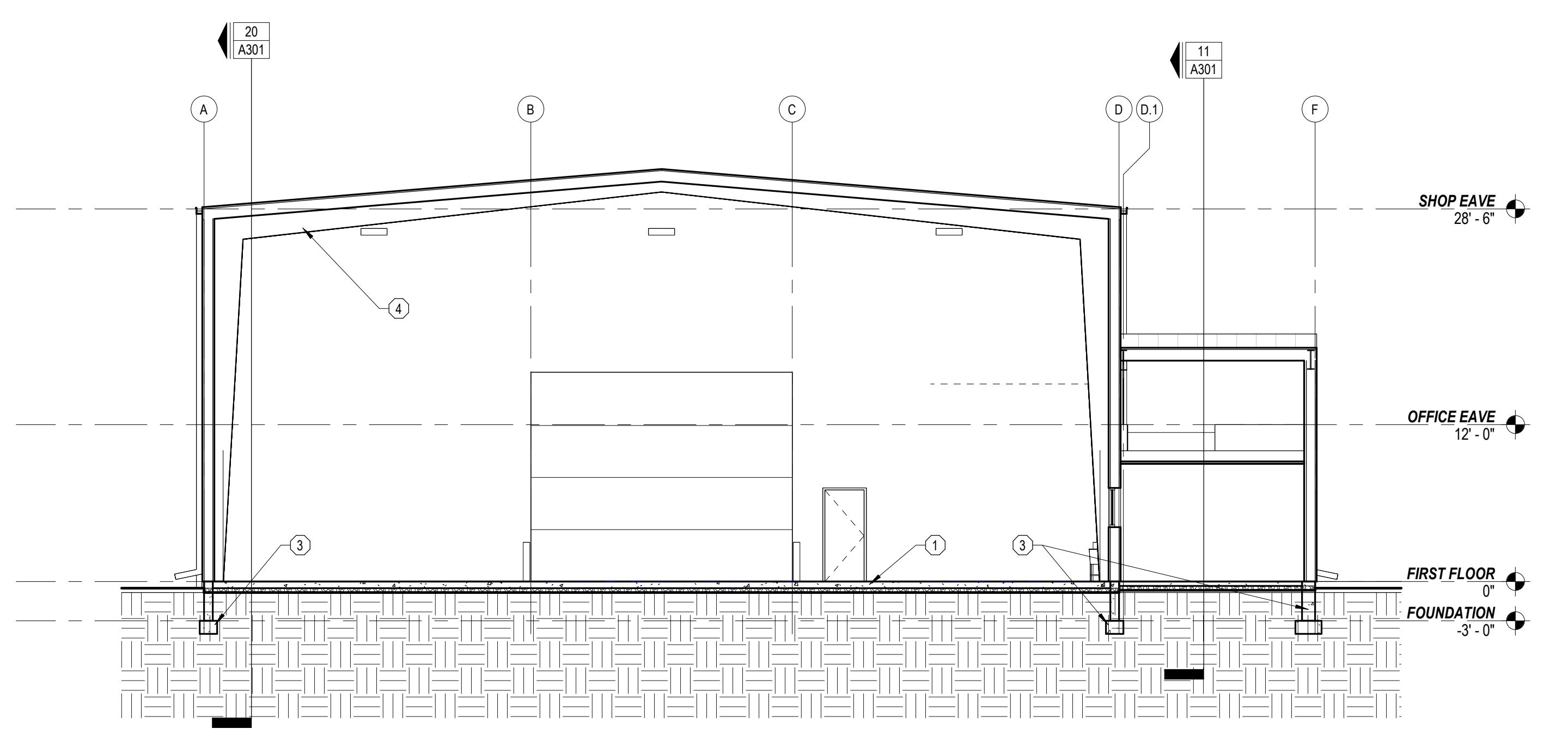
11 Section 3

1/8" = 1'-0"



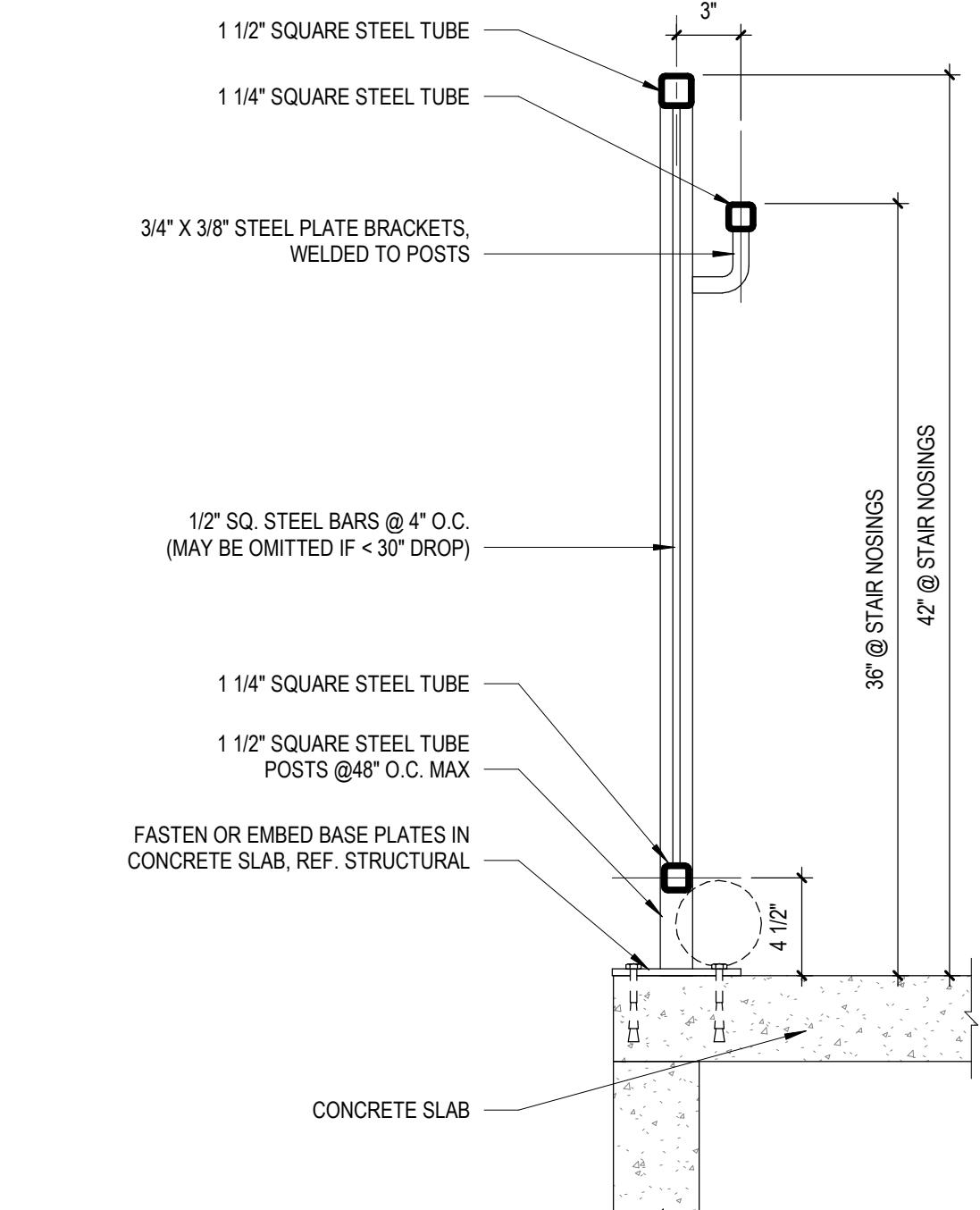
10 Section 2

1/8" = 1'-0"



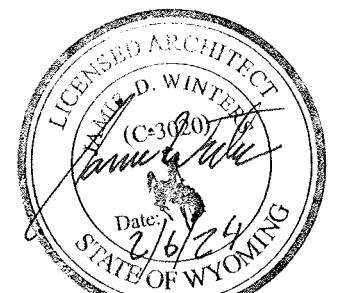
PLAN KEYNOTES

1. 6" CONCRETE SLAB OVER 4" GRANULAR BASE, REF. STRUCTURAL.
2. CONCRETE STAIRS WITH PAINTED STEEL HANDRAILS.
3. FOUNDATIONS, REF. STRUCTURAL.
4. PRE-ENGINEERED METAL BUILDING STRUCTURE, REF. MANUFACTURER DRAWINGS.

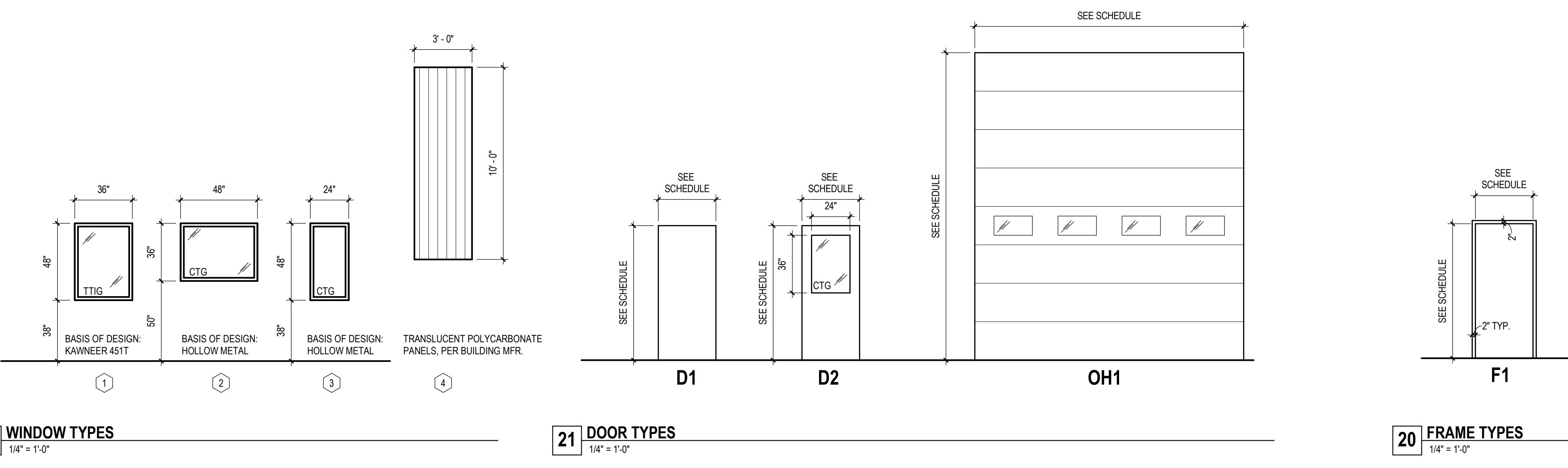


30 TYPICAL HANDRAIL DETAIL @ CONCRETE

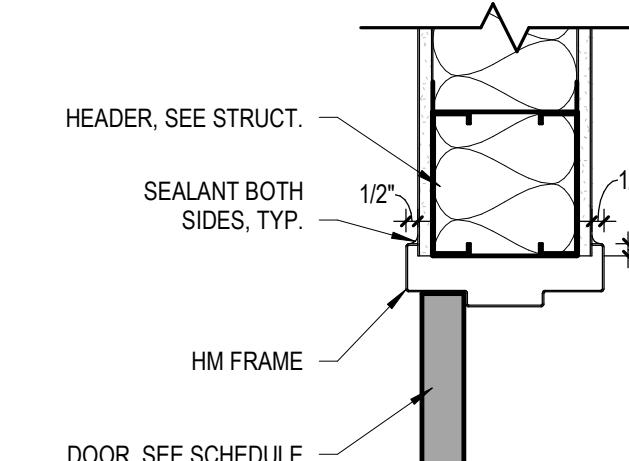
1 1/2" = 1'-0"



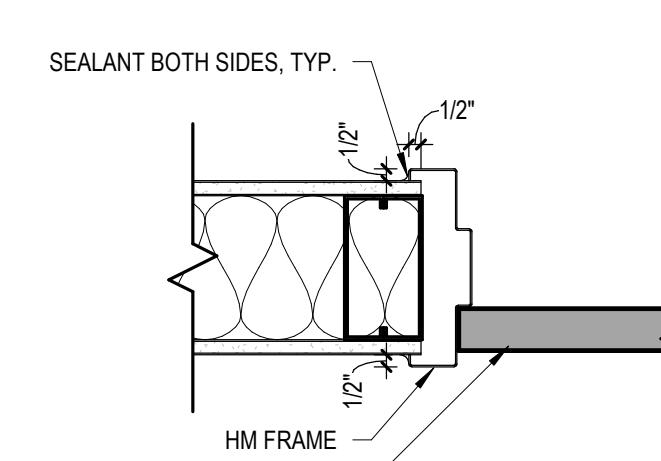
MARK	DOOR				DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FIRE RATING	GLAZING	HARDWARE FUNCTION	SCHEDULE NOTES
	WIDTH	HEIGHT	THICKNESS	DOOR TYPE							
100	3'-0"	7'-0"	1 3/4"	D2	HM	F1	HM	TTG	ENTRY		
101	3'-0"	7'-0"	1 3/4"	D2	HM	F1	HM	CTG	ENTRY		
102	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM		OFFICE		
103	3'-0"	7'-0"	1 3/4"	D2	HM	F1	HM		CTG	PASSAGE	
104	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			PRIVACY	
105A	3'-0"	7'-0"	1 3/4"	D2	HM	F1	HM			PASSAGE	
105B	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			ENTRY	
105C	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			ENTRY	
105D	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			PASSAGE	
106	4'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			STORAGE	
107A	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			ENTRY	
107B	3'-0"	7'-0"	1 3/4"	D1	HM	F1	HM			ENTRY	
OH1	14'-0"	14'-0"	1 1/2"	OH1	STEEL						
OH2	20'-0"	16'-0"	1 1/2"	OH1	STEEL						
OH3	9'-0"	12'-0"	1 1/2"	OH1	STEEL						
OH4	9'-0"	12'-0"	1 1/2"	OH1	STEEL						



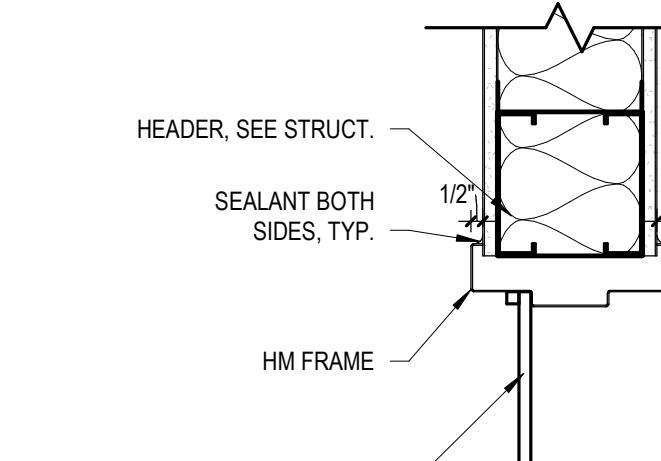
INTERIOR WALLS



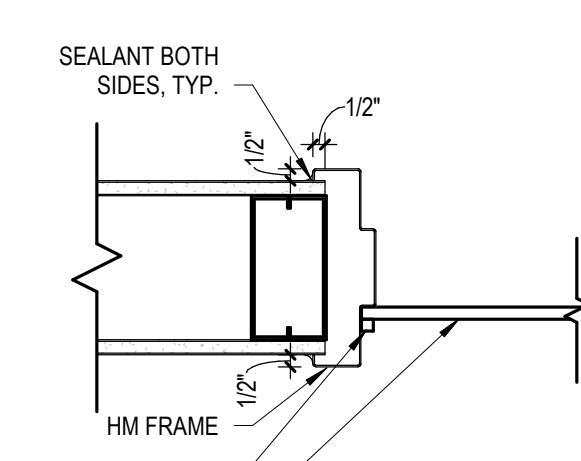
① HM DOOR HEAD DETAIL



② HM DOOR JAMB DETAIL

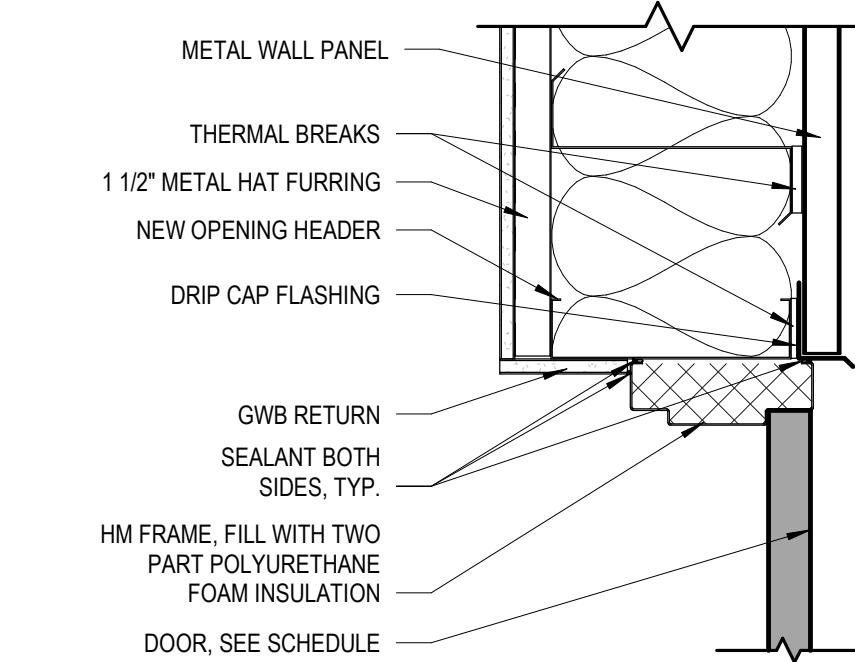


③ HM WINDOW HEAD DETAIL

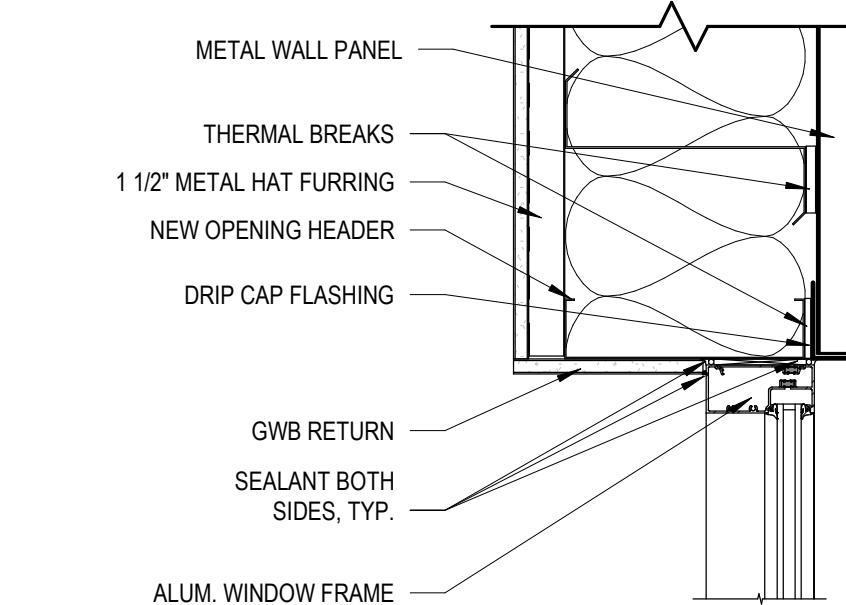


④ HM WINDOW JAMB DETAIL

EXTERIOR WALLS



⑤ HM DOOR HEAD @ METAL BLD.
JAMB SIM.



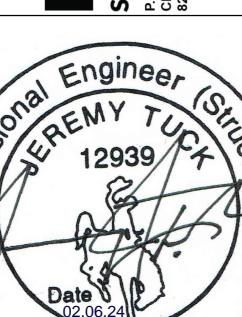
⑥ HM WIN. HEAD @ P.E. MTL. BLD.

10 DOOR & WINDOW DETAILS
1 1/2" = 1'-0"

REVISION SCHEDULE
DESCRIPTION

NO
CONSTRUCTION DOCUMENTS
DATE: 2/6/2024

A601



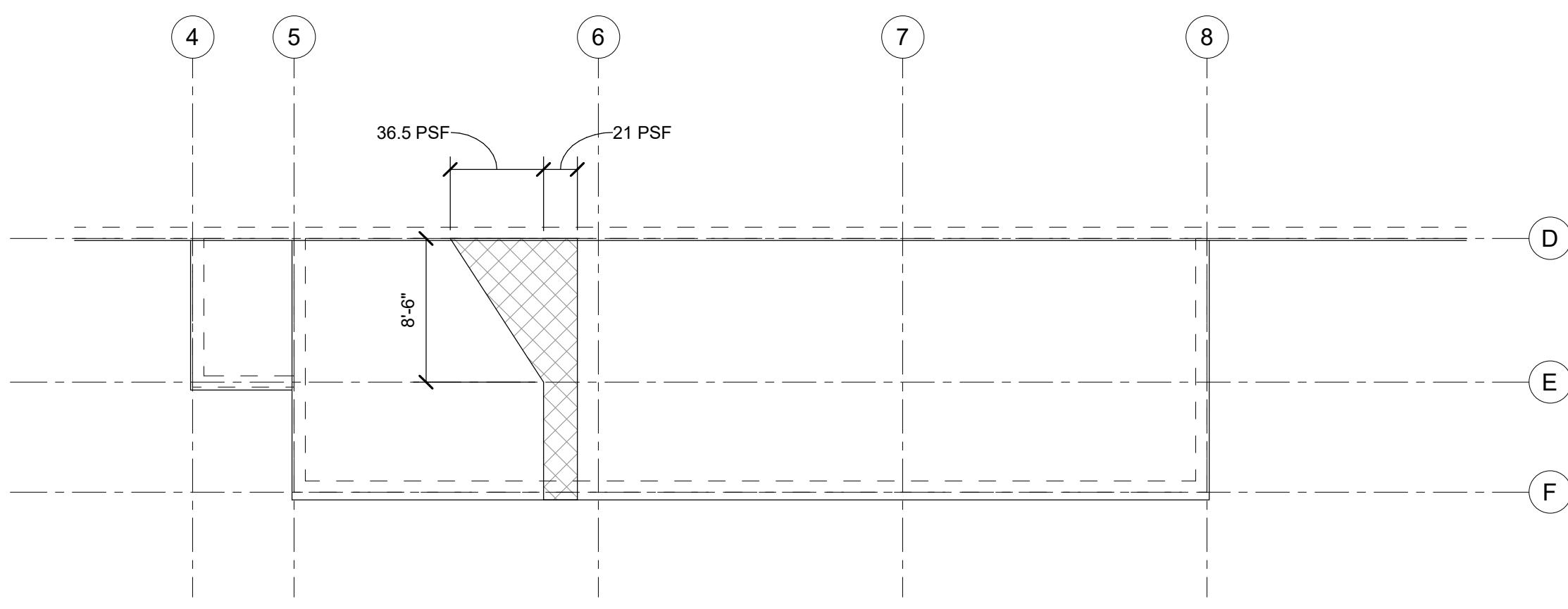
DESIGN CRITERIA

- STRUCTURAL DRAWINGS ARE INTENDED TO DEFINE THE FOUNDATION SYSTEM ONLY. ELEVATION STRUCTURAL DESIGN LLC IS NOT RESPONSIBLE FOR ANY OTHER STRUCTURAL COMPONENT CONSTRUCTED, OR ERECTED, AS PART OF THIS PROJECT.
- FOUNDATION DESIGN IS BASED ON RIGID FRAME AND END WALL COLUMN LOCATIONS SHOWN IN THE METAL BUILDING FRAMING DIAGRAM IN THESE PLANS. IF AT ANY TIME, THE LOADING, GEOMETRY OR DETAILING OF THE PRE-ENGINEERED METAL BUILDING SYSTEM IS MODIFIED FROM THAT SHOWN IN THE DRAWINGS, CONTACT ECR PRIOR TO PROCEEDING WITH THE WORK.
- CODES AND STANDARDS:
 - INTERNATIONAL BUILDING CODE (IBC) 2021
 - ASCE/SEI 7-16 'MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES'
 - ASCE 318-19 'BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE'
 - ASCE 59-16 'MINIMUM DESIGN LOADS FOR SNOW LOADS'
 - ASCE 7-16 'MINIMUM DESIGN LOADS FOR SNOW LOADS'
 - FOR DEAD AND LIVE LOADS, REFER TO GRAVITY LOADS TABLE BELOW. SNOW LOADS WERE CALCULATED USING THE FOLLOWING DESIGN CRITERIA:
 - GROUND SNOW LOAD, Pg = 30 PSF
 - TERRAIN CATEGORY = C
 - SNOW EXPOSURE FACTOR, Ce = 1.0
 - SNOW DURATION FACTOR, Ds = 1.0
 - SNOW IMPORTANCE FACTOR, Is = 1.0
 - UNIFORM ROOF DESIGN SNOW LOAD, Pf = 30 PSF
 - FOR SNOW DRIFT LOADS AND LOCATIONS, REFER TO SNOW DRIFT PLAN BELOW.

GRAVITY LOADS TABLE

LOCATION	DEAD LOAD (DL)	LIVE LOAD (LL)	NOTES
SHOP FLOOR	NA	100 PSF (LL)	N/A
OFFICE FLOOR	NA	100 PSF (LL)	N/A
ROOF	20 PSF	30 PSF (SL)	N/A

- WIND AND SEISMIC LOADS:
 - THE LATERAL LOAD RESISTING SYSTEM IS COMPRISED OF METAL BUILDING RIGID FRAMES, X-BRACING AND END WALL COLUMNS AS SHOWN ON THE DRAWINGS. ALL LATERAL ELEMENTS SHALL BE PROVIDED BY THE METAL BUILDING MANUFACTURER.
 - NON-SHRINKAGE RESISTING SYSTEM (NSRS) AND COMPONENTS & CLADDING (C&C) PRESSURES SHALL BE CALCULATED USING THE FOLLOWING DESIGN CRITERIA:
 - RISK CATEGORY = II
 - BASIC NOMINAL WIND SPEED = 145 MPH
 - BASIC NOMINAL WIND SPEED = 89 MPH
 - EXPOSURE CATEGORY = C
 - INTERNAL PRESSURE COEFFICIENT = +/- 0.18
 - SEISMIC LOADS SHALL BE CALCULATED USING THE FOLLOWING DESIGN CRITERIA:
 - RISK CATEGORY = II
 - SEISMIC IMPACTANCE FACTOR, Is = 1.0
 - SHORT PERIOD SPECTRAL RESPONSE, Ss = 0.029
 - 1-SEC SPECTRAL RESPONSE, S1 = 0.051g
 - SHORT PERIOD SPECTRAL RESPONSE, SDs = 0.172g
 - 1-SEC SPECTRAL RESPONSE, SD1 = 0.082g
 - SEISMIC DESIGN CATEGORY = B (ASSUMED)
 - SEISMIC ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-16



SNOW DRIFT PLAN

1/8" = 1'-0"

FOUNDATIONS

- FOUNDATION DESIGN CRITERIA:
 - FOUNDATIONS ARE DESIGNED ON THE PRESUMPTIVE LOAD BEARING VALUES OF SOILS AS PRESCRIBED BY THE GEOTECHNICAL ENGINEERING REPORT PROVIDED BY JE ENGINEERS - PROJ #01-23144, DATED 10/16/2023.
 - ALLOWABLE BEARING PRESSURE = 2500 PSF
 - FROST DEPTH = 36 INCHES
 - SITE CLASS = D
- EXISTING SITE CONDITIONS:
 - ALL UTILITIES SHALL BE LOCATED PRIOR TO EXCAVATION. IF UTILITIES ARE DISCOVERED WITHIN THE BUILDING PAD FOOTPRINT, CONTACT ARCHITECT & ENGINEER PRIOR TO EXCAVATING AND DETERMINE A COURSE OF ACTION.
 - ALL EXISTING SOILS CONTAINING VEGETATION, ORGANIC MATTER OR OTHER FOREIGN DEBRIS SHALL BE REMOVED FROM THE BUILDING PAD FOOTPRINT.
- SUBGRADE PREPARATION:
 - ALL FOUNDATIONS SHALL BE BUILT ON PROPERLY COMPACTED STRUCTURAL FILL. REFER TO THE PROJECT'S GEOTECHNICAL REPORT FOR STRUCTURAL FILL & COMPACTION REQUIREMENTS.
 - ALL SLABS ON GRADE WITHIN THE BUILDING FOOTPRINT SHALL BEAR ON A 0'-6" MINIMUM THICKNESS OF PROPERLY COMPACTED STRUCTURAL FILL. REFER TO THE PROJECT'S GEOTECHNICAL REPORT FOR STRUCTURAL FILL & COMPACTION REQUIREMENTS.
- OPEN HOLE INSPECTIONS:
 - OPEN HOLE INSPECTIONS ARE NOT PROVIDED BY ELEVATION STRUCTURAL DESIGN AND ARE THE RESPONSIBILITY OF THE CONTRACTOR OR OWNER.
 - AN ENGINEER LICENSED IN THE STATE OF WYOMING, SHALL BE OBTAINED TO PROVIDE THE OPEN HOLE INSPECTION AND VERIFY THAT THE ON-SITE SOIL CONDITIONS MEET DESIGN REQUIREMENTS FOR THE FOUNDATION DESIGN SHOWN ABOVE. IF THE ON-SITE SOIL CONDITIONS DO NOT MEET OR EXCEED THE FOUNDATION DESIGN CRITERIA, CONTACT THE ARCHITECT & ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

GENERAL NOTES & REQUIREMENTS

- GENERAL:
 - REFERENCES TO ENGINEER ON THE STRUCTURAL DRAWINGS SHALL MEAN STRUCTURAL ENGINEER OF RECORD.
 - REFERENCES TO CONTRACTOR ON THE STRUCTURAL DRAWINGS SHALL MEAN THE GENERAL CONTRACTOR, OR THE GENERAL CONTRACTORS SUB-CONTRACTORS.
 - THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. NOTHING SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE INFERRED TO ALLEVIATE THE NEED FOR:
 - THE CONTRACTOR TO COMPLY WITH ALL OSHA REQUIREMENTS, OR
 - THE CONTRACTOR TO FAIL TO PROVIDE ANY TEMPORARY SUPPORT (I.E. BRACING, SHORING, ETC.) FOR ANY TEMPORARY CONDITIONS WHICH MAY ARISE FROM THEIR CONSTRUCTION MEANS, METHODS AND/OR SEQUENCES, REFER TO THE LATERAL LOAD RESISTING SYSTEM DESCRIPTION FOR MORE INFORMATION.
- COORDINATION AND USE OF DRAWINGS:
 - STRUCTURAL DRAWINGS ARE NOT STAND ALONE DOCUMENTS AND ARE INTENDED TO BE USED IN CONJUNCTION AND COORDINATED WITH DRAWINGS SUPPLIED BY OTHER DISCIPLINES (E.G. ARCHITECTURE, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, ETC.). THE CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS SHOWN WITH THE CONTRACT DOCUMENTS INTO SUBMITTALS, SHOP DRAWINGS AND WORK.
 - WHEN CONSTRUCTION DRAWINGS EXIST WITHIN THE STRUCTURAL DRAWINGS, OR BETWEEN THE STRUCTURAL DRAWINGS AND DRAWINGS SUPPLIED BY OTHER TRADES, THE CONTRACTOR SHALL SUBMIT, IN WRITING, A REQUEST FOR INFORMATION PRIOR TO PROCEEDING WITH THE WORK.
 - WHEN CONSTRUCTION DRAWINGS EXIST WITHIN THE STRUCTURAL DRAWINGS, OR BETWEEN THE STRUCTURAL DRAWINGS AND DRAWINGS SUPPLIED BY OTHER TRADES, THE CONTRACTOR SHALL SUBMIT, IN WRITING, A REQUEST FOR INFORMATION PRIOR TO PROCEEDING WITH THE WORK.
- SUBMITTALS AND SUBSTITUTIONS:
 - ALL SUBMITTALS AND PRODUCT SUBMITTALS SHALL BE SUBMITTED TO THE ENGINEER IN ELECTRONIC FORMAT ONLY.
 - CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE IN SHOP DRAWINGS AND/OR OTHER SUBMITTALS.
 - SHOP DRAWINGS SHALL REFERENCED THE SHEET AND DETAIL NUMBER OF THE SHOP DRAWING SUBMITTAL.
 - ALL SUBMITTALS SHALL BE REVIEWED AND APPROVED BY THE ARCHITECT AND ENGINEER PRIOR TO PERFORMING THE WORK.
 - RECOMMENDED SUBMITTALS:
 - CONCRETE MIX DESIGN SUBMITTALS (INCLUDING ASR TESTING)
 - CONCRETE REINFORCING SHOP DRAWINGS
 - PRECAST CONCRETE SUBMITTALS FOR PRECAST CONCRETE SYSTEMS
 - METAL BUILDING SYSTEM SHOP DRAWINGS
- SPECIAL INSPECTIONS AND TESTING:
 - THE OWNER SHALL ENGAGE A QUALIFIED, INDEPENDENT AGENCY TO PERFORM SPECIAL INSPECTIONS AND TESTING AS REQUIRED FOR THIS PROJECT AS REQUIRED BY SECTION 1704 OF THE 2021 IBC AND/OR THE LOCAL BUILDING OFFICIAL.
 - SPECIAL INSPECTIONS AND TESTING REQUIRED FOR THIS PROJECT ARE LISTED IN THE SPECIAL INSPECTIONS AND TESTING TABLE BELOW.
 - SPONSOR OF INSPECTION SHALL PROVIDE A KEYED JOINT TO THE BUILDING OFFICIAL AND TO THE ARCHITECT AND ENGINEER. REPORTS SHALL INDICATE WHETHER OR NOT THE WORK WAS COMPLETED IN CONFORMANCE WITH THE APPROVED CONTRACT DOCUMENTS.
 - ALL SPECIAL INSPECTIONS SHALL BE IMMEDIATELY CORRECTED AND BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR REPAIR AND TO THE ATTENTION OF THE ARCHITECT, ENGINEER AND BUILDING OFFICIAL.

REQUIRED SPECIAL INSPECTIONS & TESTING

DESCRIPTION OF WORK	INSPECTION		TESTING		NOTES
	YES	NO	YES	NO	
SOILS SUPPORTING STRUCTURE					
DEPTH OF EXCAVATION	P			●	2A
BEARING MATERIALS	P			●	
STRUCTURAL FILL & COMPACTION	C		C		
CONCRETE CONSTRUCTION					
CONCRETE		●	C		3B
REINFORCEMENT: SIZE & SPACING	P			●	
CAST-IN-PLACE ANCHORS	P			●	
POST-INSTALLED ANCHORS	C		C		

SPECIAL INSPECTIONS & TESTING NOTES

- FREQUENCY OF INSPECTIONS
 - = YES - or - NO
 - P = PERIODIC
 - C = CONTINUOUS
- SOILS:
 - REFER TO TABLE 1705.6 OF THE 2021 IBC FOR ADDITIONAL INFORMATION.
- CONCRETE:
 - REFER TO TABLE 1705.3 OF THE 2021 IBC FOR ADDITIONAL INFORMATION.
 - PROVIDE SLUMP, AIR & COMPRESSIVE STRENGTH TESTS PRIOR TO PLACEMENT EACH DAY.

CONCRETE NOTES & SPECIFICATIONS

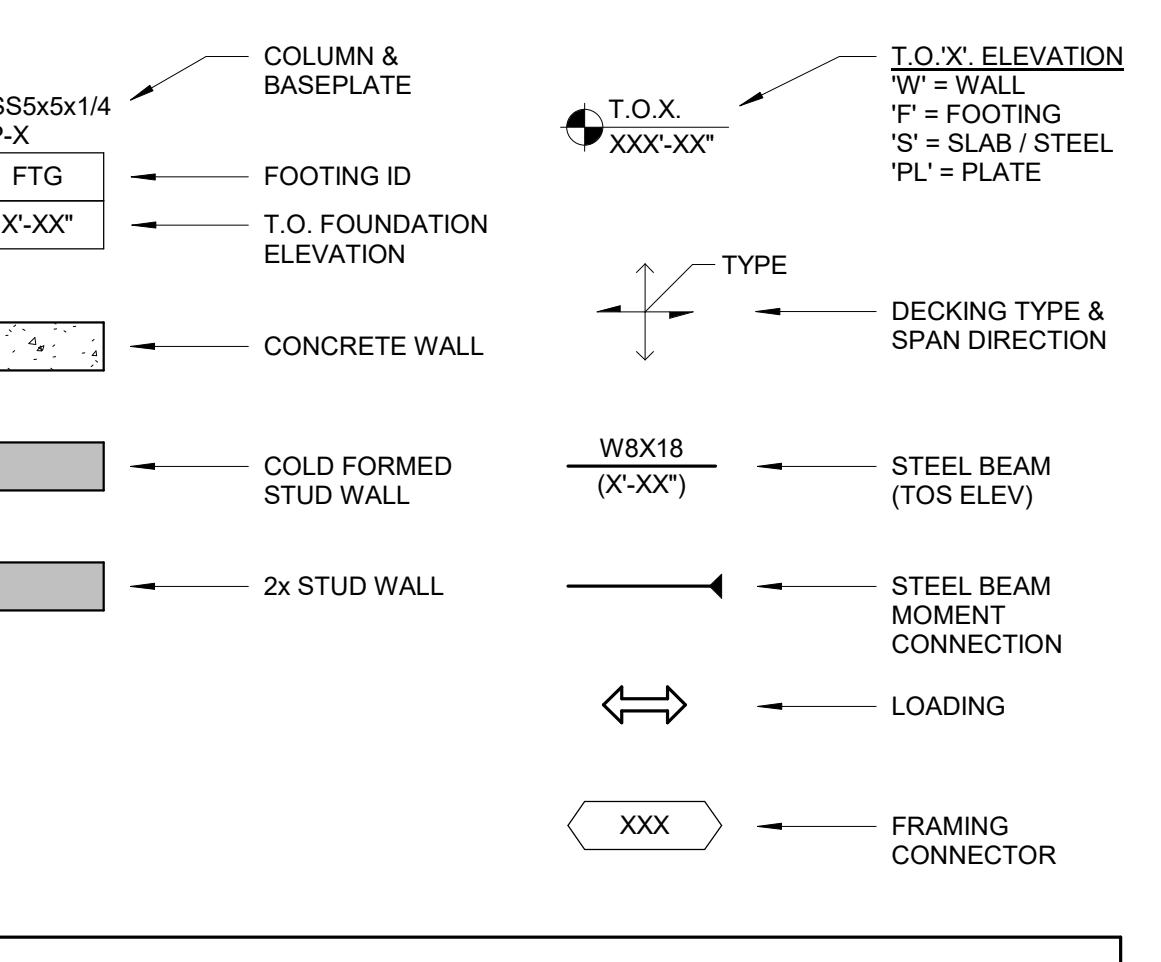
- GENERAL:
 - A. ALL WORK SHALL CONFORM WITH ACI 301, LATEST EDITION.
- CONCRETE MATERIALS AND MIX DESIGNS:
 - CONCRETE MIX DESIGNS FOR FOOTINGS & FOUNDATION WALLS SHALL MEET THE FOLLOWING REQUIREMENTS:
 - MINIMUM COMPRESSIVE STRENGTH (fc) = 4000 PSI AT (28) DAYS
 - PORTLAND CEMENT (ASTM C150) = TYPE III
 - NORMAL WEIGHT AGGREGATES (ASTM C33) = 3/4" MAX
 - AIR CONTENT = 6% ± 1%
 - CONCRETE MIX DESIGNS FOR SLABS ON GRADE SHALL MEET THE FOLLOWING REQUIREMENTS:
 - MINIMUM COMPRESSIVE STRENGTH (fc) = 3500 PSI AT (28) DAYS
 - PORTLAND CEMENT (ASTM C150) = TYPE III
 - NORMAL WEIGHT AGGREGATES (ASTM C33) = 3/4" MAX
 - AIR CONTENT = NO ENTRAINED AIR
- CONCRETE MIX DESIGN NOTES:
 - THE CONTRACTOR SHALL PROPORTION MIX DESIGNS TO CONFORM WITH THE REQUIREMENTS SHOWN IN THE CONCRETE MIX DESIGN TABLE. IF REQUIRED, ADJUSTMENTS SHALL BE MADE TO THE CONCRETE MIX DESIGN TO CONFORM WITH THE REQUIREMENTS SHOWN IN THE CONCRETE MIX DESIGN TABLE.
 - PROVIDE TYPE III PORTLAND CEMENT ALONE. MIX DESIGNS UNLESS NOTED OTHERWISE SHALL BE SUBMITTED TO THE CONTRACTOR FOR APPROVAL. OTHER CEMENTS SHALL NOT BE USED UNLESS APPROVED BY THE CONTRACTOR.
 - IT IS PERMISSIBLE TO PROVIDE FLY ASH IN MIX DESIGNS. DO NOT EXCEED 25% OF TOTAL CEMENTITIOUS MATERIALS. FLY ASH SHALL CONFORM TO ASTM C618.
 - PROVIDE NORMAL WEIGHT AGGREGATE, CONFORMING TO ASTM C33, FOR ALL MIX DESIGNS UNLESS NOTED OTHERWISE.
 - AGGREGATES USED SHALL BE EVALUATED FOR THE POTENTIAL FOR ALKALI-SILICA REACTIVITY. IF AGGREGATES ARE FOUND TO BE POTENTIALLY REACTIVE, THE CONTRACTOR SHALL SUBMIT TESTS TO CONTROL ACTIVITY. REFER TO THE PORTLAND CEMENT ASSOCIATION'S GUIDE SPECIFICATION FOR CONCRETE SUBJECT TO ALKALI-SILICA REACTION.
- THE USE OF ENTRAINED AIR ADMIXTURES IS NOT PERMITTED IN SLABS ON GRADE.
- NON-SHRINK GROUT: 6000 PSI AT 28 DAYS = ASTM C1107 GR. B OR C

CONCRETE NOTES & SPECIFICATIONS (CONT)

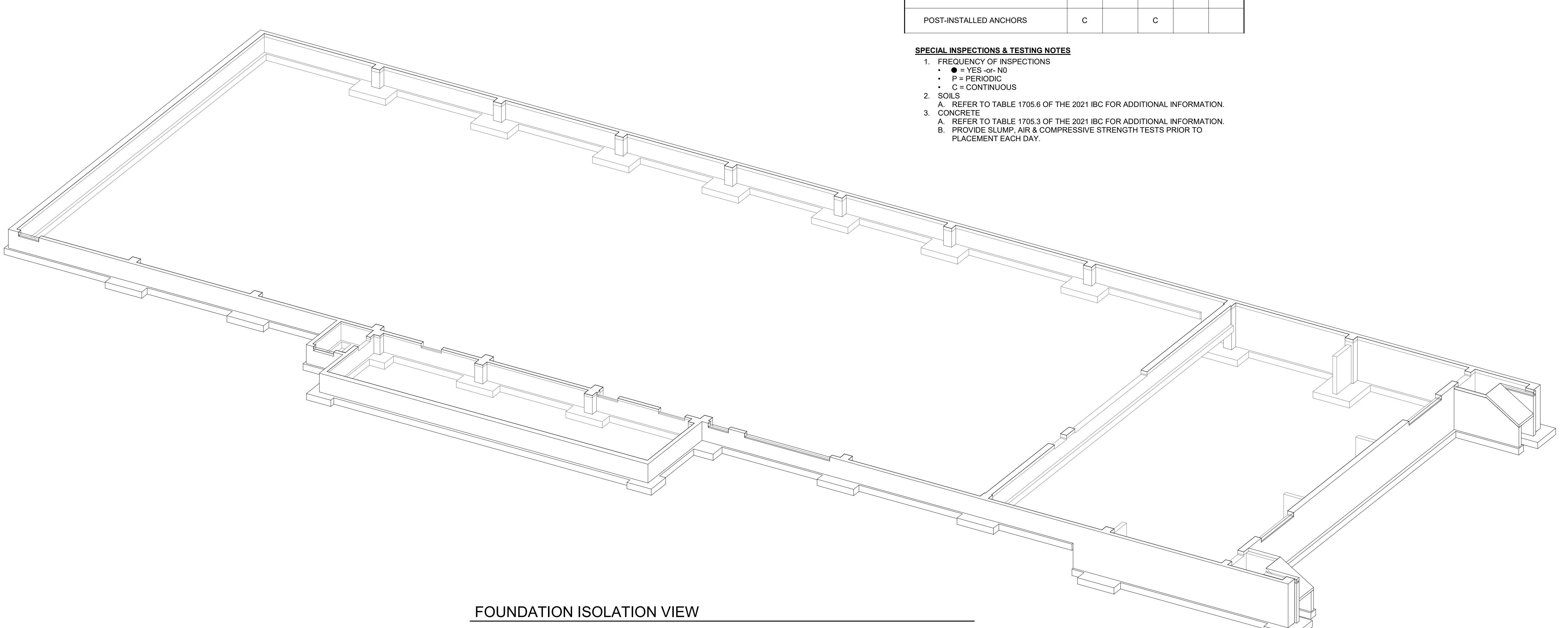
- CONCRETE FINISHING AND CURING:
 - FORMED SURFACES
 - PROVIDE EXPOSED ROUGH FORM FINISH. REMOVE ALL FINS, PROJECTIONS AND REPAIR ALL OTHER DEFECTS INCLUDING ROCK, ROCKETS THROWN, ETC.
 - PROVIDE SLAB & GLASS RECEIVING ADHESIVE FLOORING
- EXPANDABLE CONCRETE:
 - PROVIDE SLAB & GLASS RECEIVING ADHESIVE FLOORING. PROVIDE STEEL TROWEL FINISH; CONTINUE TROWELING PASSES UNTIL SURFACE IS UNIFORM AND FREE OF TROWEL MARKS. GRIND DOWN ANY SURFACE DEFECTS TO SATISFACTION OF ARCHITECT & OWNER.
- SLABS RECEIVING BROOM FINISH:
 - PROVIDE SLAB & GLASS RECEIVING ADHESIVE FLOORING. IMMEDIATELY AFTER FLOOR FINISHING, SLIGHTLY ROUGHEN CONCRETE SURFACE FIBRE-BRISTLE BROOM PERPENDICULAR TO MAIN TRAFFIC PATTERN. COORDINATE FINAL FINISH WITH ARCHITECT.
- CONCRETE CURING:
 - PROVIDE CONCRETE FROM PREMATURE DRYING AND EXCESSIVELY HOT OR COLD TEMPERATURES.
 - FORMED SURFACES
 - SLAB & GLASS RECEIVING ADHESIVE FLOORING
 - MOISTURE CURING: PROVIDE MOISTURE RETAINING COVER CURING MATERIAL.
 - DO NOT USE SPRAY APPLIED CURING COMPOUNDS UNLESS SPECIFICALLY APPROVED BY THE FLOORING MANUFACTURER.
- EXPOSED SLABS:
 - PROVIDE CURING COMPOUND OR CURING AND SEALING COMPOUND. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

- SLABS ON GRADE:
 - PROVIDE SLAB CUT CONTROL JOINTS AT 15'-0" OC MAX. EACH DIRECTION. SLAB SECTIONS DEFINED BY CONTROL JOINTS SHALL HAVE AN ASPECT RATIO NO GREATER THAN 1:1.
 - CUT CONTROL JOINTS IN SLAB ON GRADE CONSTRUCTION SHALL BE LOCATED TO ACCOMMODATE THE MAXIMUM AREA THE CONTRACTOR CAN PLACE, FINISH AND CUT CONTROL JOINTS ON THE SAME DAY.
- THE CONTRACTOR SHALL COORDINATE SLAB SLOPES, DEPRESSIONS, STEPS, CURBINGS, ETC. WITH THE ARCHITECT AND ENGINEER.
- THE CONTRACTOR SHALL COORDINATE SLAB RETARDERS/BARRIERS REQUIREMENTS AND LOCATIONS WITH ARCH DRAWINGS. VAPOR RETARDERS/BARRIERS SHALL BE INSTALLED PER THE RECOMMENDATIONS OF ACI 302.1R-04.
- THE MAXIMUM GAP UNDER A 10'-0" STRAIGHT EDGE, MEASURED BETWEEN SUPPORT POINTS, SHALL BE 1/4" MAXIMUM FOR A FLAT, RANDOM TRAFFIC FLOOR SLAB.

SYMBOLS LEGEND




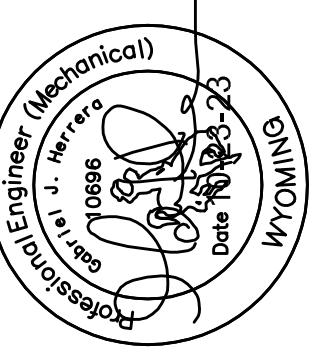
DRAWING SHEET INDEX - STRUCTURAL	
SHEET NUMBER	SHEET TITLE
S0101	GENERAL NOTES
S300	FOUNDATION PLAN
S300	FOUNDATION DETAILS
Total Number of Sheets: 3	



FOUNDATION ISOLATION VIEW







SEQUENCE OF OPERATION - FURNACE:

THE SPLIT-SYSTEM FURNACE SHALL BE CONTROLLED BY A 7-DAY PROGRAMMABLE THERMOSTAT WITH LCD TOUCHSCREEN, TRANE 802. THE THERMOSTAT SHALL BE WIRED TO THE FURNACE OUTSIDE AIR DAMPER TO OPEN/CLOSE PER OCCUPIED/UNOCCUPIED SCHEDULE. COORDINATE WITH THE OWNER TO SET UP THE OCCUPIED/UNOCCUPIED SCHEDULE.

OCCUPIED MODE:

- THE FAN SHALL START AND RUN CONTINUOUSLY. (50% OF TOTAL) THE OUTSIDE AIR DAMPER SHALL OPEN TO THE MINIMUM OUTSIDE AIR POSITION. F-1.
- ON A RISE IN ROOM TEMPERATURE ABOVE THE COOLING SET POINT, THE DX COOLING SHALL CYCLE AS REQUIRED TO MAINTAIN THE COOLING SET POINT AND THE GAS HEATING SHALL BE OFF. FAN SHALL RAMP UP TO MEET SET POINT.
- ON A DROP IN ROOM TEMPERATURE BELOW THE HEATING SET POINT, THE GAS HEATING SHALL STAGE AS REQUIRED TO MAINTAIN THE HEATING SET POINT AND THE DX COOLING SHALL BE OFF. FAN SHALL RAMP UP TO MEET SET POINT.
- COOLING SET POINT = 75 DEGREES F (ADJ.), HEATING SET POINT = 70 DEGREES F (ADJ.).

UNOCCUPIED MODE:

- THE SUPPLY FAN SHALL BE OFF AND THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
- ON A RISE IN ROOM TEMPERATURE ABOVE THE COOLING SET POINT, THE FAN SHALL CYCLE ON AND THE DX COOLING SHALL CYCLE AS REQUIRED TO MAINTAIN THE COOLING SET POINT AND THE GAS HEATING SHALL BE OFF.
- ON A DROP IN ROOM TEMPERATURE BELOW THE HEATING SET POINT, THE FAN SHALL CYCLE ON AND THE GAS HEATING SHALL STAGE AS REQUIRED TO MAINTAIN THE HEATING SET POINT AND THE DX COOLING SHALL BE OFF.
- COOLING SET POINT = 80 DEGREES F (ADJ.), HEATING SET POINT = 65 DEGREES F (ADJ.).

PROVIDE TRAINING FOR THE OWNER ON HOW TO MODIFY THE CONTROL SET POINTS AND SCHEDULE.

NATURAL GAS FIRED FURNACE SCHEDULE

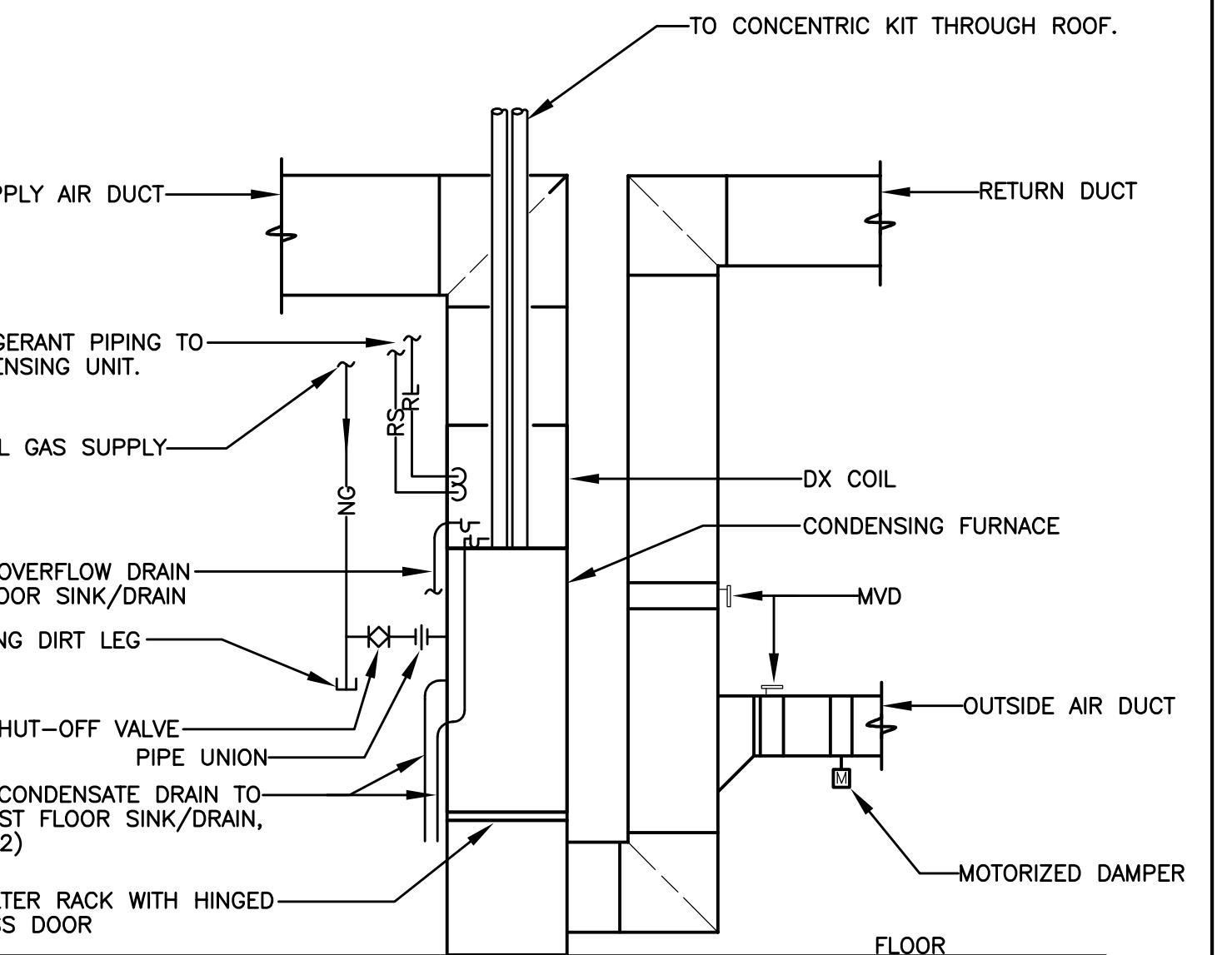
TAG	MAKE	MODEL	SUPPLY AIR FAN DATA				GAS HEAT DATA			DX COOLING DATA		NOTES	
			CFM	MIN. OSA CFM	DRIVE	ESP IN W.C.	FAN HP	FUEL	STAGES	HEAT INPUT (MBH)	AFUI	MODEL	
F-1	TRANE	S9V2	800	160	DIRECT	.75	3/4	NG	1	60	95%	4PXC	24,000
													ALL

NOTES: 1. 7-DAY PROGRAMMABLE THERMOSTAT.
2. WALL MOUNT CONCENTRIC KIT - BAYVENT200B.
3. HIGH ALTITUDE KIT.
4. 1" FILTER RACK.
5. NG-NATURAL GAS

CONDENSING UNIT SCHEDULE

TAG	MAKE	MODEL	NOMINAL TONS	SEER	REF	ELECTRICAL		NOTES
						VOLTAGE PHASE	MAX FUSE	
CU-1	TRANE	4TRR	2	16	410A	208-3	60	ALL

NOTES: 1. LOUVERED HAIL GUARDS.
2. HIGH PRESSURE SWITCH.
3. HARD START KIT.



EXHAUST FAN SCHEDULE

ITEM	TYPE	CFM	TSP	ELECTRICAL		MAKE	MODEL	CONTROL
				VOLTAGE PHASE	AMPS			
EF-1	INLINE	150	.50	120/1	5.1W	PANASONIC	WHISPER	LIGHTS
EF-2	INLINE	150	.50	120/1	5.1W	PANASONIC	WHISPER	OCC. SENSOR
EF-3 THRU EF-5	INLINE	1800	.50	120/1	1/4HP	COOK	XMW	TIME CLOCK BY ELEC,

NOTE: EF-3 THRU EF-5: PROVIDE WITH LOW-LEAK MOTORIZED DAMPER WITH 120-1PH ACTUATOR WALL HOUSING AND OSHA GUARD.

LOUVER SCHEDULE

ITEM	CFM	SIZE INCHES W x H	MANUFACTURE	MODEL	NOTES
EL-1	1800	30x30	RUSKIN	ELC6375	1
IL-1	1800	30x30	RUSKIN	ELC6375	1,2

NOTES: 1. COLOR BY ARCHITECT.
2. PROVIDE WITH LOW-LEAK DAMPER AND 120V ACTUATOR.

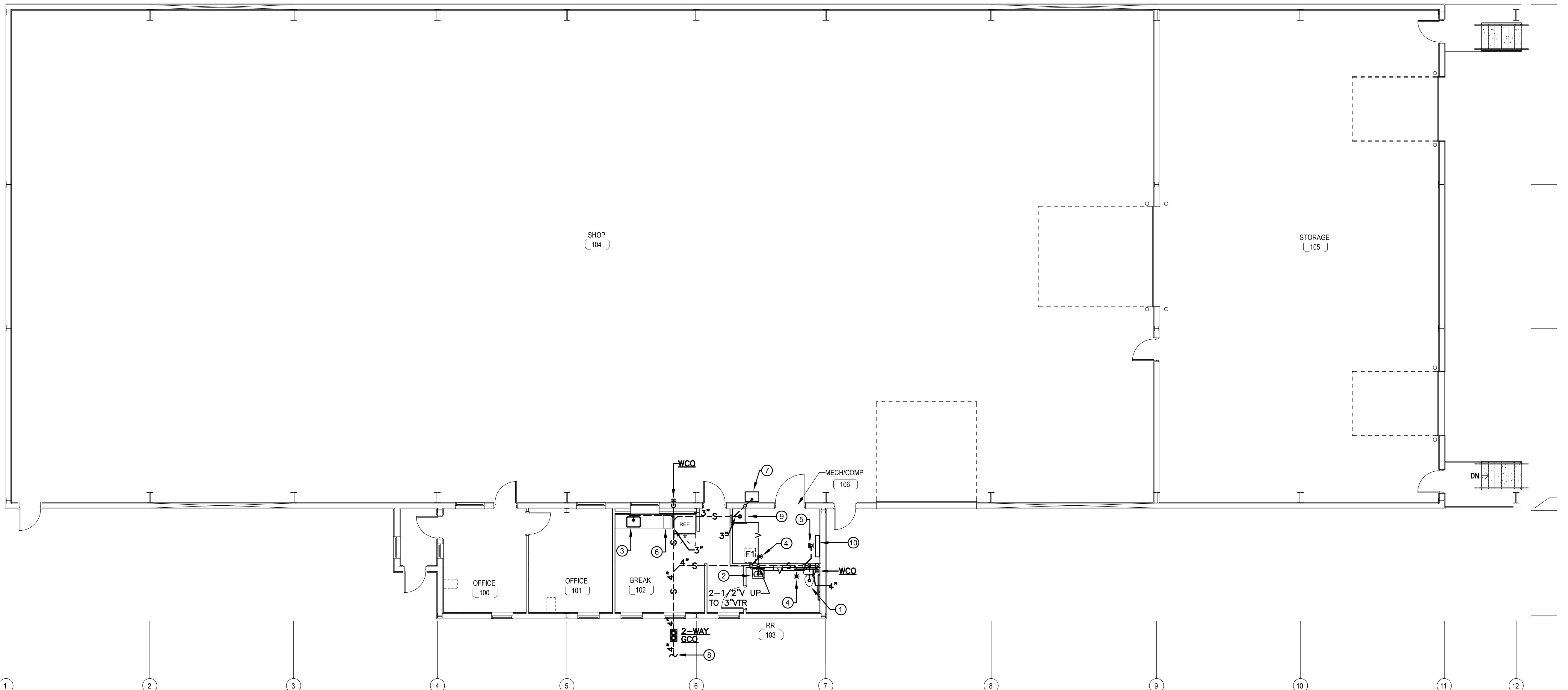
SANITARY WASTE AND VENT

GENERAL NOTES:

- SEE SPECIFICATIONS, DETAILS, FIXTURE CONNECTION SCHEDULE, NOTES AND OTHER DRAWINGS FOR ADDITIONAL INFORMATION.
- REFERENCE ARCHITECTURAL DRAWINGS FOR WALL DIMENSIONS TO LOCATE ALL PLUMBING FIXTURES.
- REFERENCE PLUMBING DETAIL DRAWINGS, PLUMBING FIXTURE SCHEDULE DRAWING AND PLUMBING SPECIFICATION DRAWING FOR INFORMATION ON PLUMBING FIXTURES AND EQUIPMENT AND METHODS.
- FIRE CAULK ALL PENETRATIONS OF FIRE RATED CORRIDORS, WALLS, FLOORS, GYPSUM CEILINGS AND RATED ASSEMBLIES, OR OTHER AREAS REQUIRED BY CODE AUTHORITY. THE MINIMUM SPACE AROUND PIPING SHALL BE 1/2" OR AS REQUIRED BY LOCAL AND NATIONAL CODES. SEE ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- PROVIDE SLEEVES AT ALL PIPE PENETRATIONS AT WALLS AND FLOORS. SLEEVES SHALL BE EITHER DUCTILE IRON OR PVC SIZED AT LEAST 1" LARGER THAN PIPE SIZE. AFTER PIPE IS INSTALLED, CAULK AND SEAL SLEEVE FULL DEPTH TO MAKE WATER TIGHT AND MEET FIRE CODE REQUIREMENTS.
- PLUMBING VENT PIPING SHOWN WITH DASHED LINES IS LOCATED BELOW FLOOR SLAB, CONCRETE, ASPHALT PAVING, ETC.
- COORDINATE LOCATION AND ROUTING OF ALL SANITARY AND VENT PIPING WITH LOCATIONS OF BEAMS, COLUMNS, PILASTERS, FOOTERS, EQUIPMENT AND OTHER TRADES. RE-ROUTE PIPING AS NECESSARY TO AVOID ANY OF THESE ITEMS OR CONFLICTS.

FLAG NOTES:

- WC-1, WATER CLOSET. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- L-1, LAVATORY. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- S-1, BREAKROOM SINK. CONNECT AIR ADMITTANCE DEVICE MANUFACTURE STUDOR OR EQUAL, SIZED FOR A MINIMUM OF 5 FIXTURE UNITS TO WASTE LINE AND EXTEND UP INSIDE CABINET. SECURE VERTICAL PIPE AND AIR ADMITTANCE DEVICE TO MAKE SECURE INSIDE CABINET, TYPICAL. SEE PLUMBING FIXTURE SCHEDULE.
- FD-1, FLOOR DRAIN. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- FS-1, FLOOR SINK. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- BF-1, BOTTLE FILLER. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- S-2, WASH SINK. SEE PLUMBING FIXTURE SCHEDULE.
- CONTINUED BY CIVIL DIVISION.
- MSB-1, MOP SERVICE BASIN. SEE PLUMBING FIXTURE SCHEDULE.
- DOMESTIC WATER ENTRY.



1 FIRST FLOOR PLAN PLUMBING WASTE
P101 1/8" = 1'-0"

UMC CHEYENNE FACILITY

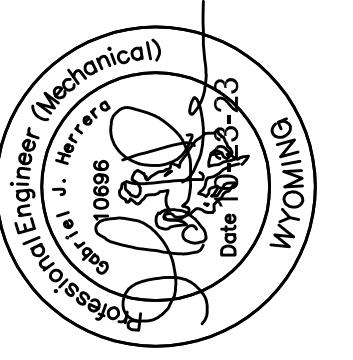
ULLRICH MACHINERY COMPANY

NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

FIRST FLOOR PLAN PLUMBING WASTE

No.	Description	Revision Schedule	Date

STATUS: PERMIT SET
DATE: 10/23/2023



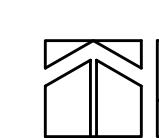
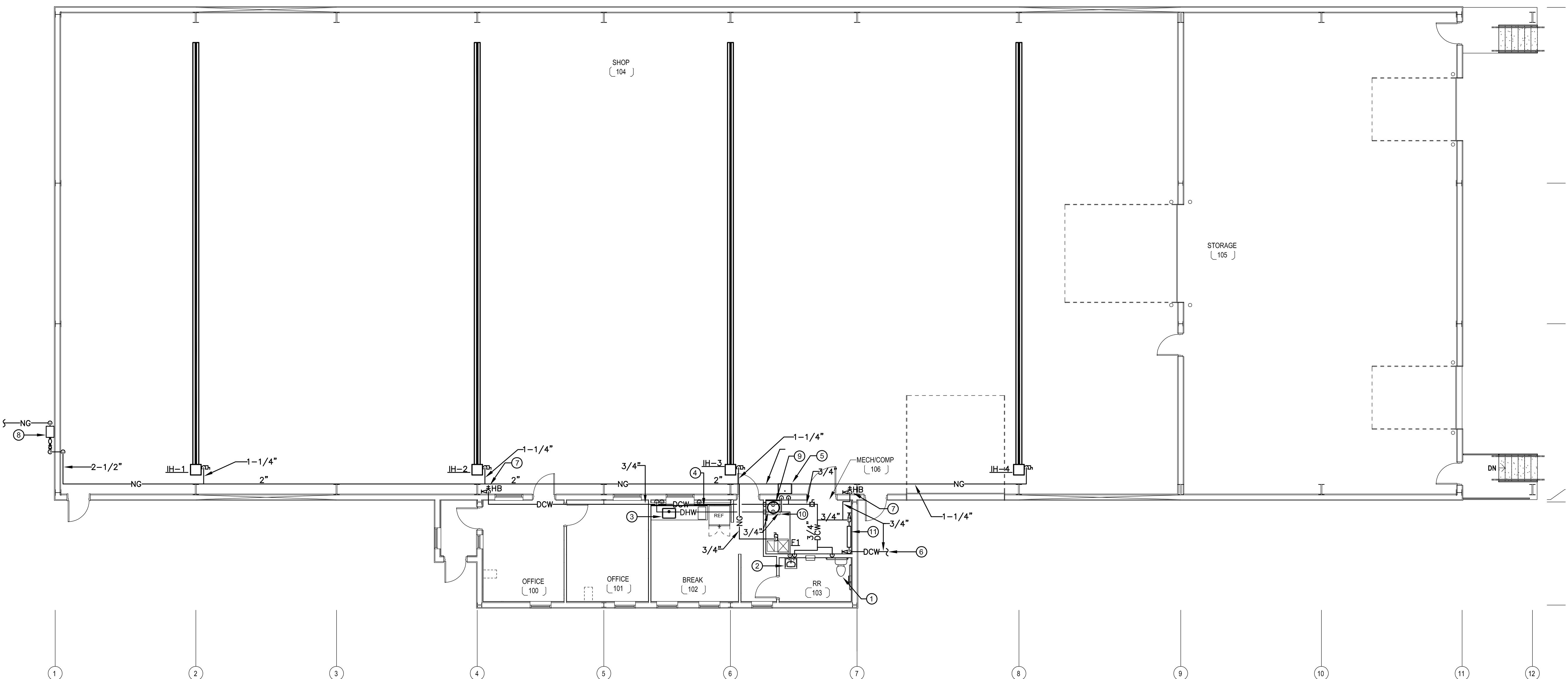
DOMESTIC WATER-NATURAL GAS

GENERAL NOTES:

- SEE SPECIFICATIONS, DETAILS, FIXTURE CONNECTION SCHEDULE, NOTES AND OTHER DRAWINGS FOR ADDITIONAL INFORMATION.
- REFERENCE ARCHITECTURAL DRAWINGS FOR WALL DIMENSIONS TO LOCATE ALL PLUMBING FIXTURES.
- REFERENCE PLUMBING DETAIL DRAWINGS, PLUMBING FIXTURE SCHEDULE DRAWING AND PLUMBING SPECIFICATION DRAWING FOR INFORMATION ON PLUMBING FIXTURES AND EQUIPMENT AND METHODS.
- FIRE CAULK ALL PENETRATIONS OF FIRE RATED CORRIDORS, WALLS, FLOORS, GYPSUM CEILINGS AND RATED ASSEMBLIES, OR OTHER AREAS REQUIRED BY CODE AUTHORITY. THE MINIMUM SPACE AROUND PIPING SHALL BE $1/2"$ OR AS REQUIRED BY LOCAL AND NATIONAL CODES. SEE ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- PROVIDE SLEEVES AT ALL PIPE PENETRATIONS AT WALLS AND FLOORS. SLEEVES SHALL BE EITHER DUCTILE IRON OR PVC SIZED AT LEAST 1" LARGER THAN PIPE SIZE. AFTER PIPE IS INSTALLED, CAULK AND SEAL SLEEVE FULL DEPTH TO MAKE WATER TIGHT AND MEET FIRE CODE REQUIREMENTS.
- COORDINATE LOCATION AND ROUTING OF ALL WATER PIPING WITH LOCATIONS OF BEAMS, COLUMNS, PILASTERS, FOOTERS, EQUIPMENT AND OTHER TRADES. RE-ROUTE PIPING AS NECESSARY TO AVOID ANY OF THESE ITEMS OR CONFLICTS.

FLAG NOTES:

- WC-1, WATER CLOSET. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- L-1, LAVATORY. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- S-1, BREAKROOM SINK. SEE PLUMBING FIXTURE CONNECTION SCHEDULE.
- BF-1, BOTTLE FILLER. SEE PLUMBING FIXTURE SCHEDULE.
- S-2, WASH SINK. SEE PLUMBING FIXTURE SCHEDULE.
- CONTINUED BY CIVIL DIVISION.
- HB-1, HOSE BIBB. MOUNT AT +48" AFF. SEE PLUMBING FIXTURE SCHEDULE.
- NATURAL GAS SERVICE AND METER BY LOCAL UTILITY COMPANY. COORDINATE WITH LOCAL UTILITY FOR A NATURAL GAS LOAD OF 880 CFH. IF GAS METER LOCATION WILL NOT BE AS SHOWN ON THIS DRAWING, THEN PIPING LAYOUT AND SIZING MAY NEED TO BE REVIEWED AND MODIFIED.
- DWH-1, ELECTRIC WATER HEATER. SEE PLUMBING FIXTURE SCHEDULE AND DETAIL.
- MSB-1, MOP SERVICE BASIN. SEE PLUMBING FIXTURE SCHEDULE.
- DOMESTIC WATER ENTRY. SEE PLUMBING FIXTURE SCHEDULE AND DETAIL.



1 FIRST FLOOR PLAN PLUMBING SUPPLY
P102 1/8" = 1'-0"

FIRST FLOOR PLAN PLUMBING SUPPLY

UMC CHEYENNE FACILITY

ULLRICH MACHINERY COMPANY

NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

Revision Schedule	Description	Date

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PLUMBING FIXTURE SCHEDULE										
FIX. TAG	Fixture Type	Manufacturer and Model No.	Color	Specifications	DCW	DHW	Vent	Waste	Flow Rate	Comments
WC-1	WATER CLOSET (ADA)	AMERICAN STANDARD CADY PRO RIGHT HEIGHT ELONGATED TOILET: 2467.016 OR EQUIVALENT	WHITE	FLOOR MOUNT, VITREOUS CHINA, 1.6 GPF. TOILET SEAT: AMERICAN STANDARD 5901.100SS ELONGATED. PROVIDE SUPPLY AND QUARTER TURN STOP VALVE, WAX RING, AND ALL OTHER REQUIRED COMPONENTS TO MAKE A COMPLETE WORKING SYSTEM.	1/2"	—	2"	4"	1.6 GPF	SEE NOTE 3
L-1	LAVATORY (ADA)	AMERICAN STANDARD 0355.012 OR EQUIVALENT	WHITE	WALL HUNG, WHITE VITREOUS CHINA, 4" CENTERS, CHROME PLATED OFFSET DRAIN AND TAILPIECE, CHROME PLATED ESCUTCHEON PLATE AT WALL. PROVIDE SUPPLIES AND QUARTER TURN STOP VALVES, AND ALL OTHER COMPONENTS REQUIRED. PROVIDE AND INSTALL CONCEALED ARM SUPPORT APPROPRIATE FOR LAVATORY USED. PROVIDE AND INSTALL INSULATION GUARD KIT FOR DRAIN PIPE, P-TRAP, HOT AND COLD WATER SUPPLIES AND STOP VALVES AS MANUFACTURED BY TRUEBRO OR EQUIVALENT. MOUNT AT CODE REQUIRED HEIGHT FOR ADA.	—	—	1-1/2"	2"	—	SEE NOTES 2,3
	FAUCET (ADA)	DELTA FAUCET 523LF-HGMHDF OR EQUIVALENT	POLISHED CHROME	4" CENTERSET, SINGLE LEVER HANDLE, OFFSET METAL GRID STRAINER, CHROME PLATED DECK MOUNT. 0.5 GPM FLOW.	1/2"	1/2"	—	—	0.5GPM	
MSB-1	MOP SERVICE BASIN	FIAT PRODUCTS MSB TSBC 1610 OR EQUIVALENT	GRAY	MOP SERVICE BASIN WITH DROP FRONT WITH STAINLESS STEEL CAPS AND INTEGRAL DRAIN FOR 3" SANITARY SEWER PIPE CONNECTION. 24"x24"x12"	—	—	2"	3"	—	
	MOP SERVICE BASIN FAUCET	CHICAGO FAUCET 897-CP OR EQUIVALENT	CHROME PLATED	WALL MOUNT, HOT AND COLD FAUCET, ATMOSPHERIC VACUUM BREAKER SPOUT, WITH LEVER HANDLES, PAIL HOOK, 3/4" HOSE END AND BRACE. POLISHED CHROME PLATED FINISH. (ADA). SECURE FAUCET TO WALL AS REQUIRED TO MAKE A SECURE AND RIGID INSTALLATION.	1/2"	1/2"	—	—	—	
ET-1	EXPANSION TANK	WATTS PLT5	—	THERMAL EXPANSION ABSORBER. INSTALL PER MANUFACTURE AND CODE REQUIREMENTS.	—	—	—	—	—	
FD-1	FLOOR DRAIN	WADE 1100-A	—	TOILET ROOM, CAST IRON BODY, FLASHING COLLAR, ADJUSTABLE TOP, NICKEL BRONZE STRAINER, ROUND GRATE.	—	—	2"	2"	—	SEE NOTES 1,4
BFP-1	DOUBLE CHECK BACKFLOW PREVENTER	WATTS LF 007S	—	BACKFLOW PREVENTER ASSEMBLY TO INCLUDE ALL BALL VALVES, UNIONS, TEST PORTS, STRAINER.	SIZE AS SHOWN ON DRAWINGS	—	—	—	—	INSTALL ON DOMESTIC WATER SERVICE LINE AFTER PRESSURE REDUCING VALVE.
PRV-1	WATER PRESSURE REDUCING VALVE	WATTS SERIES LFU5B	—	ALL BRONZE, SPRING AND DIAPHRAGM, MANUAL ADJUSTMENT FOR OUTLET WATER PRESSURE, FEMALE THREAD CONNECTIONS, IN-LINE INLET WATER STRAINER. 300 PSI INLET WATER PRESSURE RATING. MANUFACTURE: WATTS, WILKINS OR EQUIVALENT		1-1/2"	—	—	—	
FS-1	FLOOR SINK	WADE 9110	—	SQUARE CAST IRON BODY WITH FLASHING COLLAR, PORCELAIN ENAMELED INTERIOR, 6" DEEP X 8" SQUARE, NICKEL BRONZE RIM AND 3/4" GRATE, BOTTOM WASTE OUTLET FOR CONNECTION TO SANITARY WASTE PIPING. PROVIDE AND INSTALL TRAP GUARD AS MANUFACTURED BY SURESEAL OR APPROVED EQUIVALENT	—	—	2"	3"	—	SEE NOTES 1,4
S-1	SINK	ELKAY LRAD 221965PD	SS	WITH PERFECT DRAIN AND STRAINER. (3) 1-1/2" FAUCET HOLES AT 4" CENTERS. PROVIDE COMPLETE SINK ASSEMBLY. PROVIDE STOP VALVES, FLEX SUPPLIES, ESCUTCHEONS, ETC.	—	—	1-1/2"	2"	—	SEE NOTES 1,2,3
	SINK FAUCET	CHICAGO FAUCET 201-AGN8AE35VPABCP	POLISHED CHROME	8" CENTERSET, 8" RIGID/SWING GOOSENECK SPOUT, VANDAL PROOF AERATOR, LEVER HANDLES, CHROME PLATED DECK MOUNT.	1/2"	1/2"	—	—	—	
S-2	WASH SINK	ELKAY EWS 2520W4C	SS	WALL MOUNT WITH HANGERS. PROVIDE APPROPRIATE DRAIN AND STRAINER. 2" DRAIN WITH "P" TRAP. PROVIDE COMPLETE SINK ASSEMBLY. PROVIDE STOP VALVES, FLEX SUPPLIES, ESCUTCHEONS, ETC.	—	—	1-1/2"	3"	—	SEE NOTES 3
	SINK FAUCET	ELKAY LK940GN05T4H	POLISHED CHROME	8" CENTERSET, GOOSENECK SPOUT, VANDAL PROOF AERATOR, WRIST BLADE HANDLES, CHROME PLATED. PROVIDE STOP VALVES, FLEX SUPPLIES, ESCUTCHEONS, ETC.	1/2"	1/2"	—	—	—	
BF-1	BOTTLE FILLER	AVALON A8 ABCTBOTTLELSSBLK	BLACK	COUNTERTOP BOTTLE LESS WATER COOLER/HEATER. INCLUDES FILTERS AND INSTALLATION KIT. PROVIDE STOP VALVE, FLEX SUPPLY, ESCUTCHEONS, ETC. 115V-1PH, 520 WATTS. COORDINATE WITH ELECTRICAL FOR GFCI RECEPTACLE.	1/2"	—	—	—	—	

NOTES: 1. PROVIDE WITH TRAP SEAL GUARDS, TRUE SEAL OR EQUIVALENT.

2. IF REQUIRED BY LOCAL CODE AUTHORITY HAVING JURISDICTION, PROVIDE AND INSTALL AT THE ENDS OF THE LAVATORIES DCW AND DHW 3/4" SUPPLIES, WATER HAMMER ARRESTORS, PDI SIZE A SIOUX CHIEF MODEL 652-A. PROVIDE SHUT OFF VALVES AND COORDINATE WITH GC FOR FIXTURE ACCESS.

3. PROVIDE ALL NECESSARY STOP VALVES, FITTINGS, SUPPLY PIPES, ETC., TO MAKE FOR COMPLETE CODE APPROVED WORKING PLUMBING FIXTURES AND SYSTEMS. IF WATER AND WASTE PIPING IS EXPOSED UNDER LAVATORY, PROVIDE AND INSTALL PIPE INSULATION COVER KIT BY TRUEBRO OR EQUIVALENT.
4. VENT PIPING LOCATED BELOW FLOOR SLAB SHALL BE NO SMALL THAN 2" IN DIAMETER.
5. AT ALL LAVATORIES AND SINKS REQUIRING ADA 110° F WATER, INSTALL POINT OF USE 4-PORT THERMOSTATIC TEMPERING VALVE MANUFACTURED BY LEONARD 170A-LF OR ZURN AQUA GUARD THERMOSTATIC MIXING VALVE ZW3870XLT-4P. INSTALL PER CODE AND MANUFACTURE REQUIREMENTS.

ELECTRIC WATER HEATER SCHEDULE										
EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	WATER TEMPERATURE	RECOVERY AT 80° F RISE	TANK CAPACITY	NUMBER OF ELEMENTS	KW INPUT	FLA VOLTAGE	ELECTRICAL DATA PHASE	DISCONNECT FURNISHED BY	NOTES
DWH-1	A.O. SMITH DEL-20	120	23 GPH	20 GAL.	1	4.5 KW	21.6	208	1	EC EC

PROVIDE AND INSTALL THESE ACCESSORIES

1. 125 PSIG PRESSURE AND TEMPERATURE RELIEF VALVE
2. AXIOM INDUSTRIES LTD., MODEL NC-1 CONDENSATE NEUTRALIZATION KIT.
3. EXPANSION TANK.
4. THERMOSTATIC MIXING VALVE, OR POINT OF USE THERMOSTATIC TEMPERING VALVE AS DESCRIBED IN NOTE 5.
5. AT ALL LAVATORIES AND SINKS REQUIRING ADA 110° F WATER, INSTALL POINT OF USE 4-PORT THERMOSTATIC TEMPERING VALVE MANUFACTURED BY LEONARD 170A-LF, OR ZURN AQUA GUARD THERMOSTATIC MIXING VALVE ZW3870XLT-4P. INSTALL PER CODE REQUIREMENTS FOR ADA, AND MANUFACTURE REQUIREMENTS.

PLUMBING LEGEND										
—	BALL VALVE									
—	FLOW ARROW									
—	PIPE BREAK									
—	PIPE CHANGE OF DIRECTION									
—	PIPE CHANGE OF DIRECTION WITH BALL SHUTOFF VALVE.									
—	PIPE CHANGE OF DIRECTION WITH PLUG TYPE SHUTOFF VALVE.									
—	PIPE CAP									
—V	VENT (SANITARY)									
—S	SANITARY WASTE PIPING									
—V(E)	EXISTING VENT (SANITARY)									
—S(E)	EXISTING SANITARY WASTE PIPING									
VTR	VENT THRU ROOF									
CLG	CEILING									
—	PLUG VALVE									
—	PRESSURE GAUGE									
—	PRESSURE REDUCING VALVE									
—	NATURAL GAS PIPING									
—G(E)	NATURAL GAS PIPING STRAINER									
D	DRAIN LINE/PIPE									
CA	COMPRESSED AIR PIPE									
DCW	DOMESTIC COLD WATER									
DHW	DOMESTIC HOT WATER									
DHWC	DOMESTIC HOT WATER CIRCULATING									
DCW(E)	EXISTING DOMESTIC COLD WATER									
DHW(E)	EXISTING DOMESTIC HOT WATER									
DHWC(E)	EXISTING DOMESTIC HOT WATER CIRCULATING									
FCO	FLOOR CLEANOUT									
WCO	WALL CLEANOUT									
GCO	GRADE CLEANOUT									
—	CONNECTION TO EXISTING PIPE									

NOTE:
NOT ALL SYMBOLS ARE NECESSARILY USED

Revision Schedule

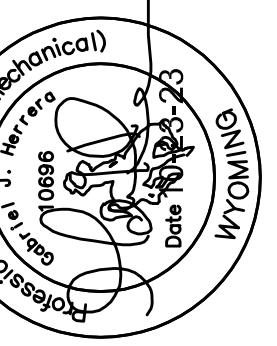
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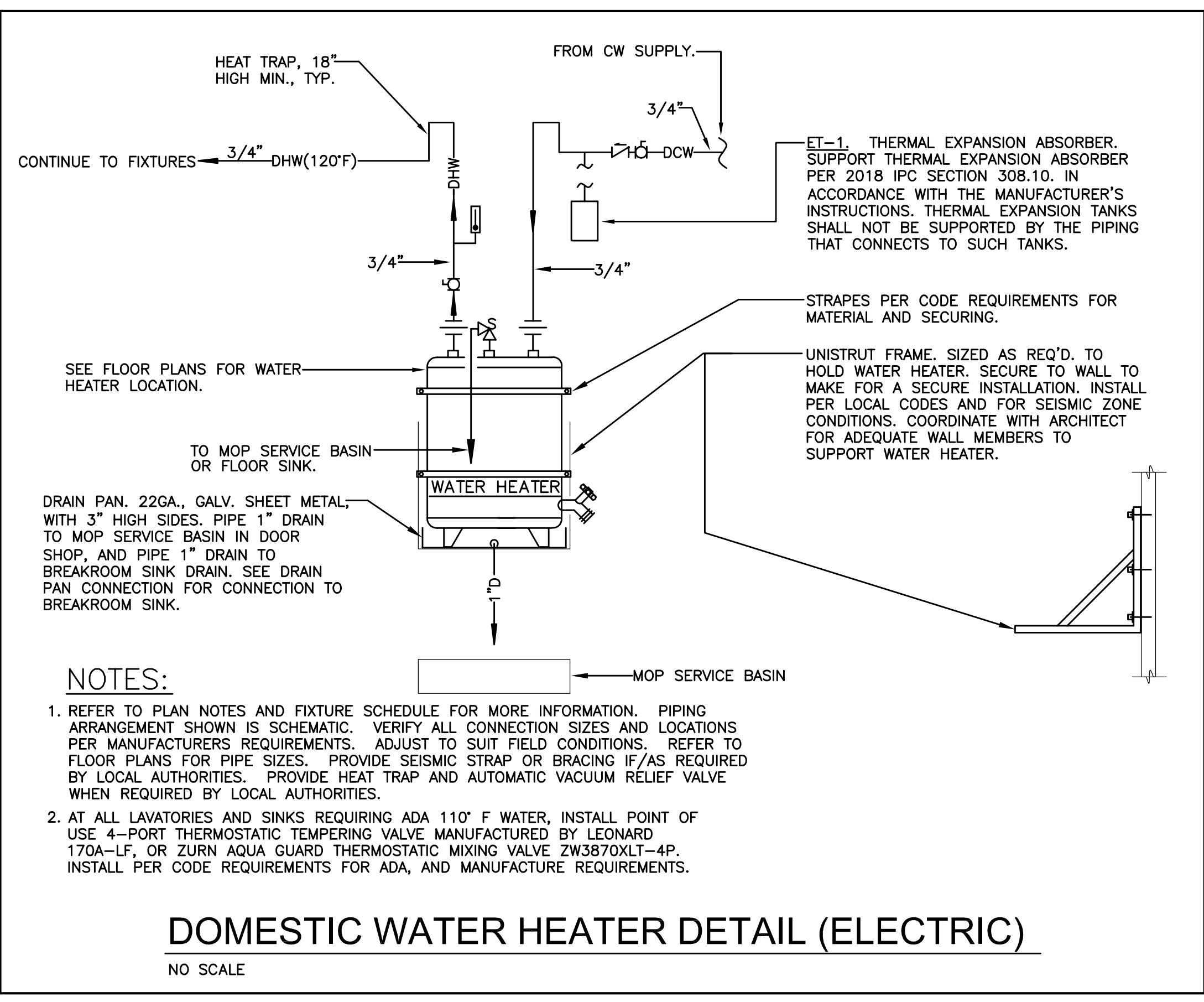
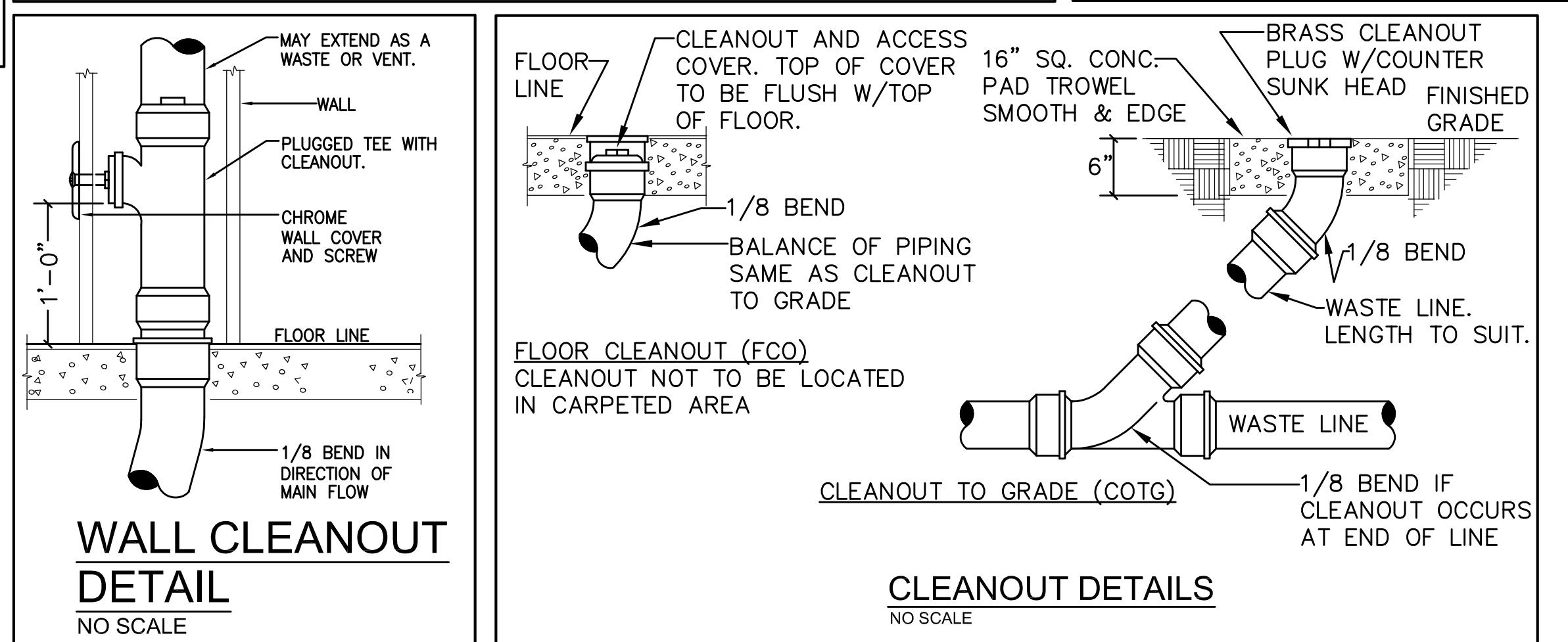
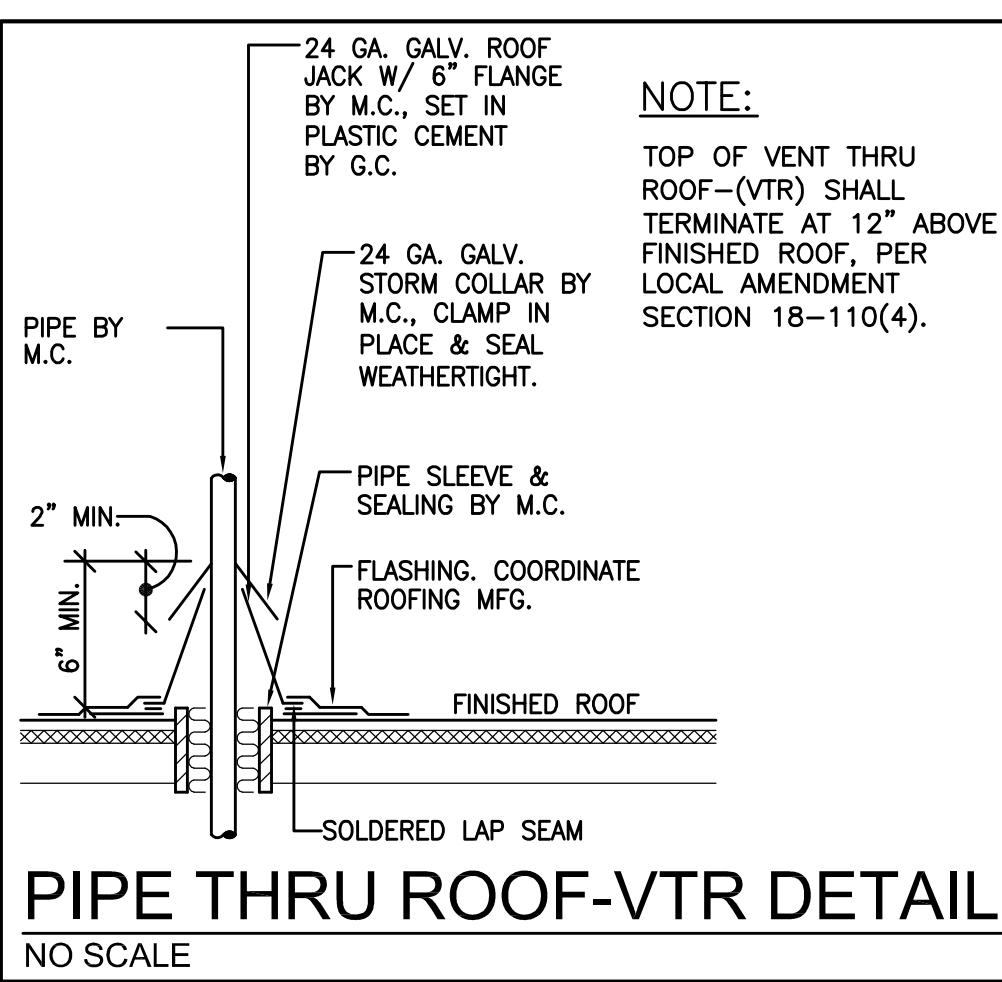
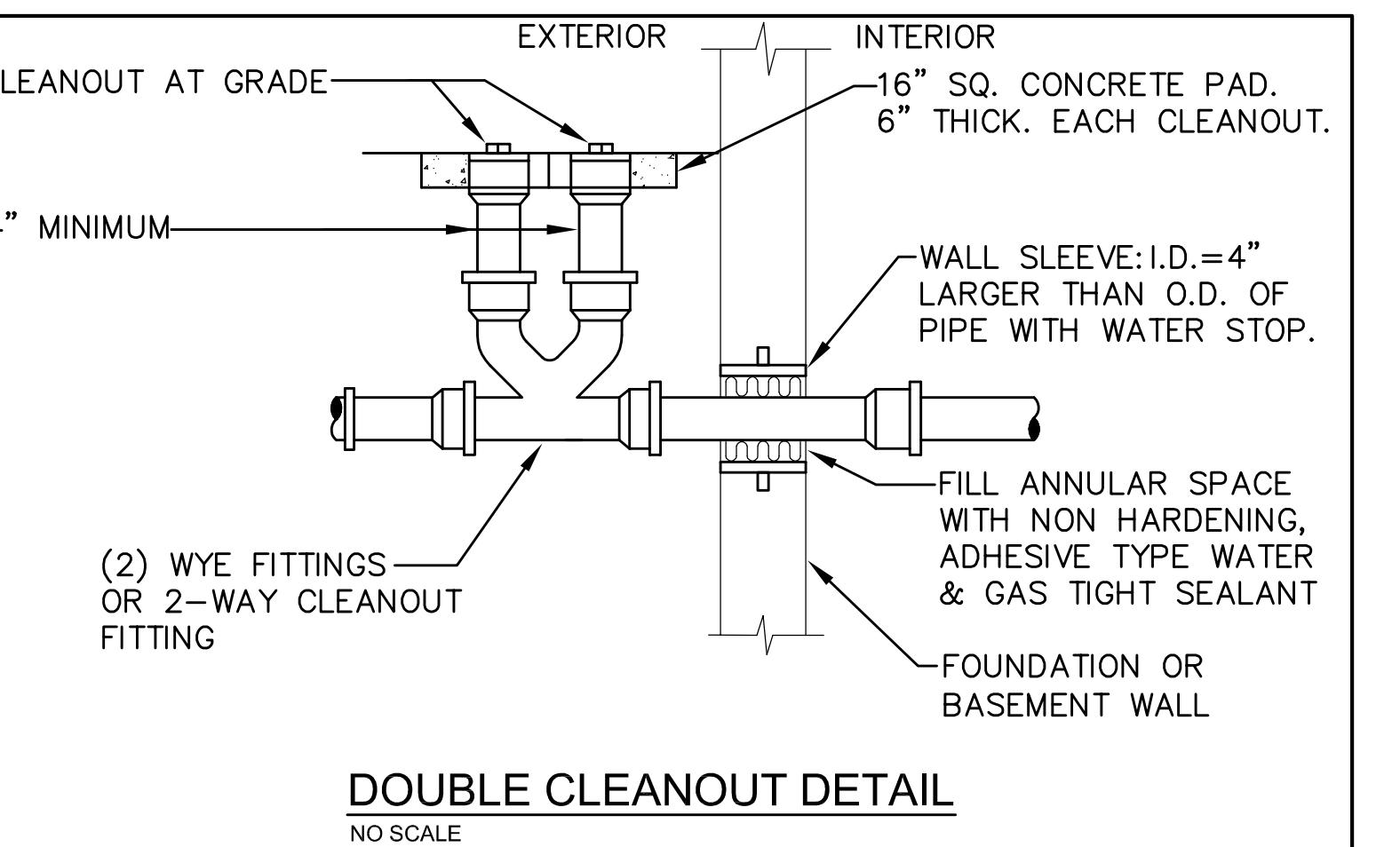
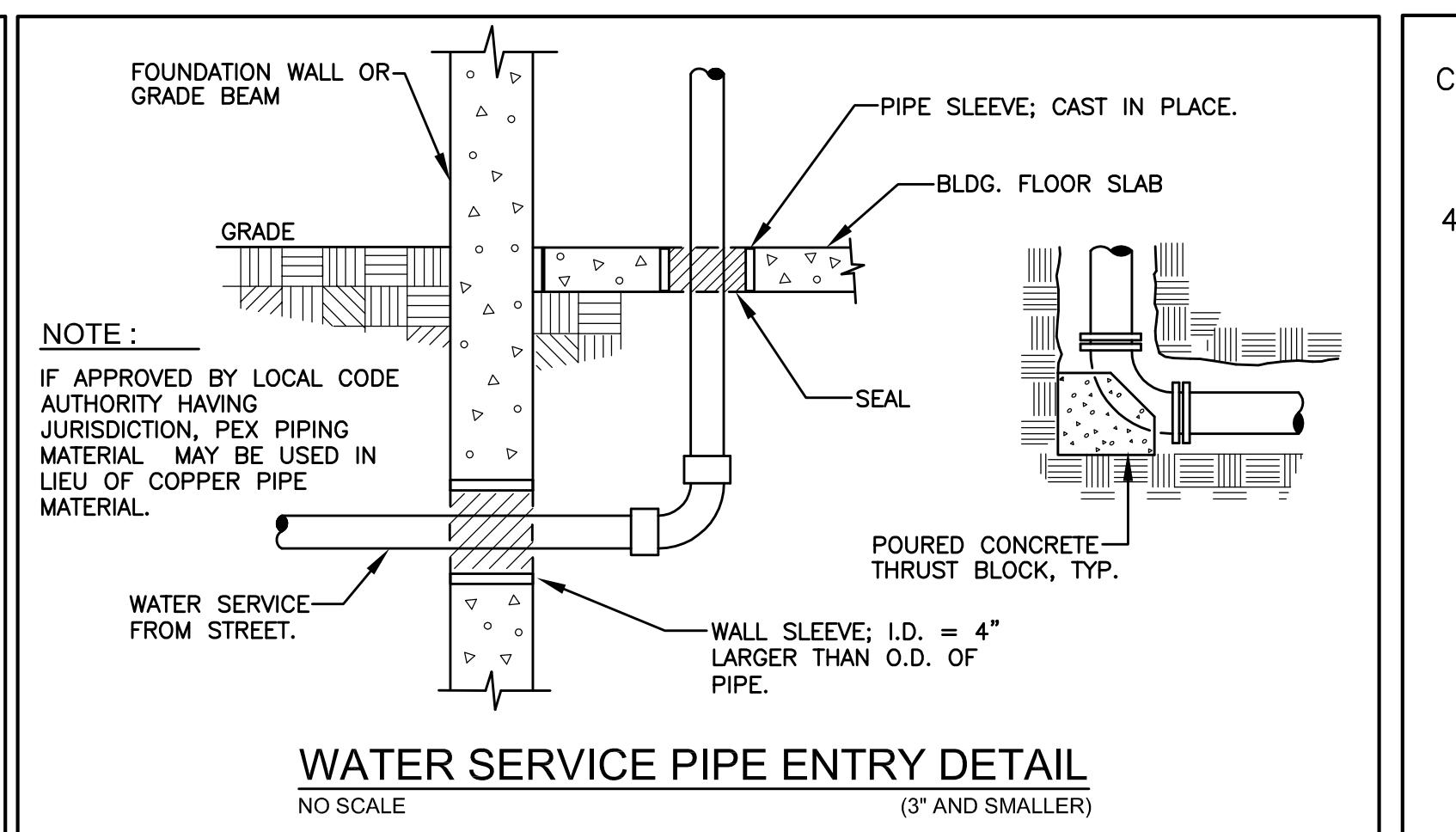
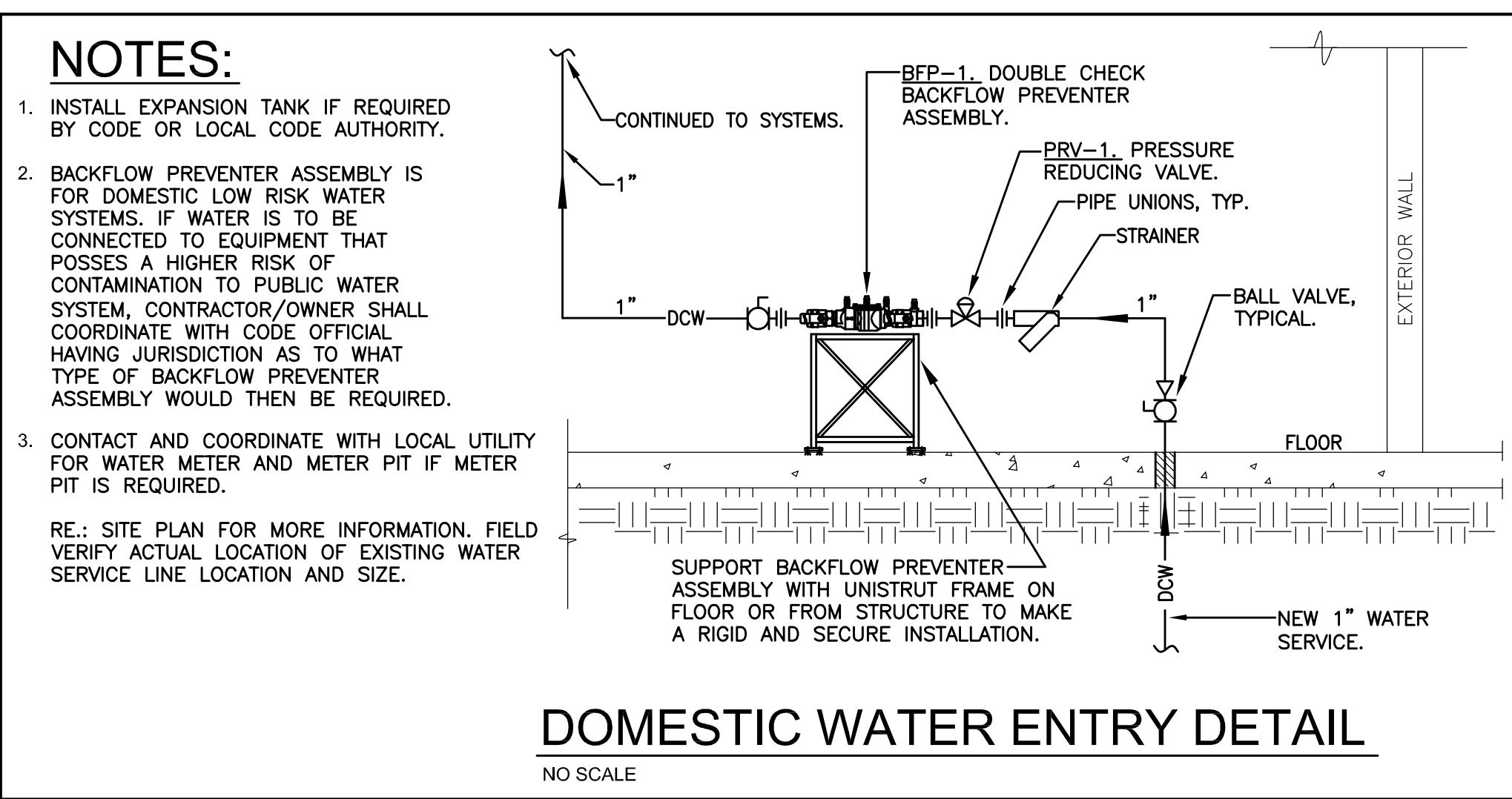
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UMC CHEYENNE FACILITY

NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

PLUMBING SPECIFICATIONS

SPECIFICATIONS:

- THE DRAWINGS AND SPECIFICATIONS ARE PRELIMINARY IN NATURE. THE PURPOSE OF THE DRAWINGS AND SPECIFICATIONS IS TO COMMUNICATE THE GENERAL INTENT OF THE DESIGN. THE LEVEL OF DETAIL IN THE DRAWINGS AND SPECIFICATIONS IS SCHEMATIC, HOWEVER, AND NO ATTEMPT HAS BEEN MADE TO SHOW ALL ITEMS REQUIRED TO FORM COMPLETE AND OPERATIONAL SYSTEMS IN EVERY RESPECT. IT IS INTENDED THAT PRICING SUBMITTED SHALL BE FOR A COMPLETE AND OPERATIONAL INSTALLATION AND SHALL INCLUDE EVERYTHING REQUIRED TO MAKE IT SO, WHETHER SHOWN ON THE SCHEMATIC DRAWINGS AND SPECIFICATIONS OR NOT. THE COST OF RELOCATING EXISTING EQUIPMENT, PIPING, DUCTWORK AND CONDUIT TO ALLOW FOR INSTALLATION OF NEW WORK SHALL BE INCLUDED IN PRICING/BID.
- ALL WORK SHALL BE PERFORMED BY OR DIRECTLY SUPERVISED BY AN EXPERIENCED AND SKILLED CRAFTSMAN. IN THE TRADE, ALL WORK SHALL BE NEAT, CLEAN AND PROFESSIONAL LOOKING. UNSATISFACTORY INSTALLATION IDENTIFIED BY OWNER OR ARCHITECT, GC SHALL REPLACE AT THE CONTRACTOR'S EXPENSE WITHOUT IMPACT TO THE CONSTRUCTION SCHEDULE.
- NEW EQUIPMENT MANUFACTURE AND MODEL NUMBERS LISTED IN SCHEDULES AND NOTES DEFINE PERFORMANCE, PHYSICAL AND QUALITY REQUIREMENTS. THE CONTRACTOR SHALL VERIFY ANY CHANGES TO EQUIPMENT LISTED MEET OR EXCEED THOSE REQUIREMENTS PRIOR TO OBTAINING APPROVAL BY GC AND OWNER OR ARCHITECT FOR ALTERNATE EQUIPMENT AND DEVICES.
- WORK SHALL BE PERFORMED BY A LICENSED AND BONDED CONTRACTOR IN WYOMING UTILIZING TRADESMEN SKILLED IN THE ART AND IN ACCORDANCE WITH ACCEPTABLE PRACTICES.
- PROVIDE AND INSTALL ALL INCIDENTAL ITEMS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.
- FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, CONTRACTOR FURTHER AGREES THAT HE WILL REPLACE OR REPAIR ALL DEFECTIVE EQUIPMENT AND INSTALLATION THAT BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY. THIS DOES NOT INCLUDE EXCESSIVE ABUSE OR DAMAGE INFILCTED BY THE OWNER AND/OR OTHERS.
- PERFORM WORK IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE. THE GOOD APPEARANCE OF THE FINISHED WORK SHALL BE OF EQUAL IMPORTANCE WITH ITS MECHANICAL EFFICIENCY. DESIGN TEAM/OWNER MAY REJECT WORK IF WORKMANSHIP AND APPEARANCE ARE NOT SATISFACTORY.
- STORAGE OF MATERIAL: STORE ALL MATERIALS PROVIDED FOR PROJECT ON PROJECT SITE PROTECTED FROM ENVIRONMENT. STORE MATERIALS OFF OF FINISHED GRADE OR FLOOR. PROVIDE CRIBBING, SHELVING OR STORAGE CONTAINERS AS NECESSARY. PROVIDE PIPE AND DUCT CAPS FOR ALL STORED, STAGED AND HUNG MATERIALS.
- INSTALL ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
- INSTALL EQUIPMENT TO ALLOW SERVICE CLEARANCES AS SUGGESTED BY THE MANUFACTURERS.
- PROVIDE CUT SHEETS, SUBMITTAL DATA, AND ONE O&M DOCUMENTATION IN A BINDER TO OWNER AT SUBSTANTIAL COMPLETION.
- FIRE CAULK ALL PENETRATIONS OF FIRE RATED CORRIDORS, WALLS, FLOORS, GYPSUM CEILINGS AND RATED ASSEMBLIES, OR OTHER AREAS REQUIRED BY CODE AUTHORITY. THE MINIMUM SPACE AROUND PIPING SHALL BE 1/2" OR AS REQUIRED BY LOCAL OR NATIONAL CODES. SEE ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- COORDINATE EXACT LOCATION OF EQUIPMENT AND ROUTES TO AND FROM EQUIPMENT WITH STRUCTURE AND CONDITIONS. CONDITIONS MAY WARRANT DEVIATIONS FROM PLANS. THIS CONTRACTOR IS RESPONSIBLE FOR OFFSETS OF PIPING TO AVOID CONFLICTS. NOT ALL OFFSETS, FITTINGS, EXTENSIONS SHOWN THAT MAY BE REQUIRED DURING CONSTRUCTION.
- INFORMATION ON DRAWINGS HAS BEEN GATHERED FROM ARCHITECTURAL DRAWINGS. THESE DRAWINGS ARE AS ACCURATE AS THE CONDITIONS WOULD ALLOW. CONTRACTOR TO VERIFY ALL EQUIPMENT PRIOR TO ORDERING WITH STRUCTURE AND BUILDING CONDITIONS.
- CONTRACTOR TO COORDINATE AND SCHEDULE WORK WITH OTHER TRADES.
- ALL PIPING AND EQUIPMENT SHALL BE INSTALLED IN A CAREFUL MANNER BY SKILLED CRAFTSMEN. ALL LENGTHS SHALL BE PLUMB WITH STRUCTURE UNLESS SHOWN OTHERWISE.
- THE OWNER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OF THE MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES OR PROCEDURES REQUIRED TO PERFORM HIS WORK.

SPECIFICATIONS:

PIPE HANGERS AND SUPPORTS

FOR PIPE SIZES 2" AND LARGER, PROTECT INSULATED HORIZONTAL PIPE AT POINT OF SUPPORT BY 180 DEGREE, 12" LONG GALVANIZED SHEET METAL SHIELD SURROUNDING 180 DEGREE INSERT OF HIGH DENSITY CALCIUM SILICATE INSULATION OF SAME THICKNESS AS ADJOINING PIPE INSULATION. ON COLD PIPING, EXTEND INSULATION INSERT 1" BEYOND SHEET METAL SHIELD AT EACH END. OVERRSIZE HANGERS TO ACCOMMODATE SHIELDED INSERTS. NO HANGER SHALL PENETRATE OR CRUSH INSULATING MATERIAL. AT CONTRACTOR'S OPTION, PRE-MANUFACTURED THERMAL HANGER SHIELDS WITH INTEGRAL VAPOR BARRIER, EQUIVALENT TO VALUE ENGINEERED PRODUCTS PRO-SHIELD OR PRO-SHIELD N/T, MAY BE UTILIZED. FOR EXTERIOR INSTALLATIONS USE WEATHER SHIELD WITH ALUMINUM JACKET.

PIPE HANGER RODS

THREADED STEEL.

UPPER ATTACHMENTS

STEEL STRUCTURE: BEAM CLAMP, OR C-CLAMP WITH RETAINING STRAP.

CONCRETE STRUCTURE: DROP-IN ANCHOR, ZINC PLATED CARBON STEEL BODY WITH FLANGED TOP, FOUR WAY EXPANSION SLOTS.

WOOD STRUCTURE: ANGLE CLIP - MINIMUM 1-1/2" BY 1-1/2" BY 3/16" THICK WITH TWO LAG OR WOOD SCREWS INTO WOOD MEMBER, PENETRATED A MINIMUM OF 2" INTO WOOD. FOR NOMINAL 2" LUMBER (1-1/2" THICK) THROUGH-BOLT WITH MINIMUM 1/4" DIAMETER MACHINE SCREW AND MINIMUM 1" OD FLAT WASHER EACH SIDE. DOUBLE-NUT THREADED ROD THROUGH ANGLE CLIP.

ANCHORS

USE ANCHORS FOR SUSPENDING HANGERS FROM REINFORCED CONCRETE SLABS, AND SIDES OF REINFORCED CONCRETE BEAMS.

REVIEW ANCHOR LOCATIONS, DEPTHS WITH ARCHITECT AND STRUCTURAL ENGINEER BEFORE INSTALLATION.

INSTALL PER MANUFACTURER'S DESIGN CRITERIA, INSTALLATION INSTRUCTIONS.

PIPE HANGERS AND SUPPORTS

SUPPORT HORIZONTAL PIPING AS FOLLOWS: (OR AS REQUIRED BY CODE AUTHORITY AND LATEST ADOPTED CODE.)

NOMINAL PIPE SIZE	MAXIMUM HANGER SPACING STEEL	MAXIMUM HANGER SPACING COPPER	SCHEDULE 40 PVC	HANGER ROD DIAMETER
1-1/2" AND SMALLER	6'-0"	6'-0"	4'-0"	3/8"
2" TO 4"	10'-0"	10'-0"	4'-0"	3/8"
5" TO 8"	10'-0"	10'-0"	4'-0"	1/2"
10" TO 12"	10'-0"	10'-0"	4'-0"	5/8"

INSTALL HANGERS TO PROVIDE MINIMUM 1/2" CLEAR SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK, EXCEPT WHERE UL LISTING FOR FIRE RATED CEILING REQUIRES 4" MINIMUM SEPARATION.

PLACE HANGER WITHIN 1'-6" OF EACH ELBOW OR TEE.

USE HANGERS WHICH ARE VERTICALLY ADJUSTABLE 1-1/2" MINIMUM AFTER PIPING IS ERECTED.

SUPPORT HORIZONTAL NO-HUB CAST IRON PIPE RUNS AT EACH FITTING AND AT EACH LENGTH OF PIPE LESS THAN 4'-0" WITH AT LEAST ONE HANGER. SUPPORT HORIZONTAL NO-HUB PIPES LONGER THAN 4'-0" ON BOTH SIDES OF EACH JOINT.

SUPPORT EACH BRANCH PIPE TO EQUIPMENT AT TAKE-OFF AND WITHIN 12" OF TERMINATION.

PROVIDE GALVANIZED STEEL INSULATION PROTECTION SADDLES AT ALL SUPPORT POINTS FOR INSULATED PIPES ON TRAPEZE HANGERS.

ANCHOR ALL SUPPORTING LUGS OR GUIDES TO BUILDING STRUCTURE.

REPAIR ANY FIRE RATED COATING TO STRUCTURE DAMAGED DURING INSTALLATION OF ATTACHMENTS.

FLASHING

FLASH AND COUNTERFLASH WHERE MECHANICAL EQUIPMENT PASSES THROUGH WEATHER- OR WATER-PROOFED WALLS, FLOORS, ROOFS.

SLEEVES

PROVIDE PIPE SLEEVES TO APPLICABLE TRADES WITH PRECISE ROUGH-IN LOCATIONS FOR PIPES PASSING THROUGH CONCRETE OR MASONRY CONSTRUCTION. UNLESS OTHERWISE INDICATED, SLEEVES SHALL BE OF SIZE TO PROVIDE FROM 1/4" TO 1" CLEARANCE BETWEEN BARE PIPE AND SLEEVE OR BETWEEN INSULATION JACKET AND SLEEVE. WHERE PIPE PASSES THROUGH CONCRETE FLOOR, EXTEND SLEEVE MINIMUM 1" ABOVE FINISHED FLOOR.

SLEEVES IN BEARING WALLS, WATERPROOF MEMBRANE FLOORS, WET AREAS SHALL BE STEEL PIPE OR CAST IRON PIPE. SLEEVES IN NON-BEARING WALLS, FLOORS, CEILINGS SHALL BE STEEL PIPE, CAST IRON PIPE.

ENCASE ALL INSULATED PIPES PENETRATING FIRE WALLS AND FLOORS IN 360 DEGREE METAL-SHELDDED INSULATION INSERTS AS MANUFACTURED BY VALUE ENGINEERED PRODUCTS OR EQUIVALENT. PACK AND SEAL SPACE BETWEEN SHEILD AND SLEEVE PER PRECEDING PARAGRAPH. EXTEND INSULATION INSERT ON ALL DOMESTIC COLD AND HOT WATER LINES 1" BEYOND SHEET METAL SHEILD.

WHERE PIPE PENETRATIONS OCCUR IN NON-FIRE RATED FLOORS OR WALLS, PACK SPACE BETWEEN PIPE AND SLEEVE OR INSULATION INSERT AND SLEEVE ON EACH END WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL.

PIPE TO SLEEVE CLOSURE FOR PIPES PENETRATING FOUNDATIONS, WATERPROOFING MEMBRANE FLOORS, WET AREAS SHALL BE "LINK-SEAL."

AFTER PAINTING IS COMPLETED, INSTALL CHROME PLATED ESCUTCHEONS ON ALL PIPES PASSING THROUGH FINISHED WALLS AND FLOORS.

EXECUTION

ROUTE PIPING IN ORDERLY MANNER. RUN EXPOSED PIPING PARALLEL TO WALLS. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

MAKE CONNECTIONS TO EQUIPMENT WITH UNIONS OR FLANGES.

PIPE REDUCERS: USE REDUCERS, NOT BUSHINGS, FOR CHANGES IN PIPE SIZES.

REAM PIPE TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.

REMOVE SCALE AND DIRT, INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

REMOVE FOREIGN MATERIAL FROM PIPE AND FITTING MATERIALS.

CLOSE ENDS OF PIPE IMMEDIATELY AFTER INSTALLATION. LEAVE CLOSURE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.

FLUSH EACH PIPING SYSTEM AND PROVE CLEAN.

ALL PIPE MATERIALS SHALL MEET LOCAL CODE AUTHORITY APPROVAL AND REQUIREMENTS.

PIPE TESTING

GENERAL

TEST ALL PIPING SYSTEMS. CORRECT LEAKS BY REMAKING JOINTS. REMOVE EQUIPMENT NOT ABLE TO WITHSTAND TEST PRESSURE FROM SYSTEM DURING TEST. CONSULT GOVERNING COED AUTHORITY FOR SPECIAL SYSTEM REQUIREMENTS.

GIVE AMPLE NOTICE OF DATES WHEN ACCEPTANCE TEST WILL BE CONDUCTED. CONDUCT PRESSURE, PERFORMANCE, OPERATING TESTS IN PRESENCE OF REPRESENTATIVE OF AGENCIES HAVING JURISDICTION. SUBMIT THREE COPIES OF SUCCESSFUL TEST RESULTS TO OWNER.

TEST PIPING BEFORE BEING PERMANENTLY ENCLOSED.

OBTAIN CERTIFICATES OF APPROVAL, ACCEPTANCE, COMPLIANCE WITH REGULATIONS OF AGENCIES HAVING JURISDICTION. SUBMIT TO OWNER.

ALL TESTS RESULTS SHOULD BE REPORTED TO ENGINEER OR ARCHITECT IN WRITING NOTING THE DATE, TIME, DURATION, PORTION TESTED, MATERIAL, METHODS AND RESULTS OF PRESSURE TEST.

GAS PIPE AND PIPE FITTINGS

ALL PIPING MATERIALS SHALL COMPLY WITH LOCAL CODES.

PIPE AND TUBE

STEEL PIPE: SCHEDULE 40, BLACK ANSI/ASTM A53.

PIPE AND TUBE JOINTS AND FITTINGS

THREADED PIPE FITTINGS: MALLEABLE IRON, ANSI/ASME B16.3.

ALL JOINTS FOR GAS PIPING INSTALLED IN CONCEALED SPACES OR PLENUMS SHALL BE WELDED.

UNIONS AND COUPLINGS

DIELECTRIC UNIONS AND FLANGES: EPCO OR EQUAL HAVING PROPER GASKET MATERIAL FOR CONNECTION OF DISSIMILAR METALS.

EXECUTION

ROUTE PIPING IN ORDERLY MANNER. RUN EXPOSED PIPING PARALLEL TO WALLS. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

MAKE CONNECTIONS TO EQUIPMENT WITH UNIONS OR FLANGES.

PIPE REDUCERS: USE REDUCERS, NOT BUSHINGS, FOR CHANGES IN PIPE SIZES.

INSTALL VERTICAL DIRT LEG IN GAS PIPING AHEAD OF ALL GAS-FIRED EQUIPMENT AND APPLIANCES.

REAM PIPE TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.

REMOVE SCALE AND DIRT, INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

REMOVE FOREIGN MATERIAL FROM PIPE AND FITTING MATERIALS.

CLOSE ENDS OF PIPE IMMEDIATELY AFTER INSTALLATION. LEAVE CLOSURE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.

FLUSH EACH PIPING SYSTEM AND PROVE CLEAN.

STEEL PIPE CONNECTIONS

ALL GAS PIPING SHALL BE INSTALLED PER LATEST ADOPTED INTERNATIONAL FUEL CODE REQUIREMENTS, INTERNATIONAL PLUMBING CODE REQUIREMENTS AND LOCAL CODE REQUIREMENTS.

2" AND SMALLER - THREADED. OR WELDED IF OR AS REQUIRED BY CODE.

2 PSI PIPING SHALL BE WELDED WITH WELDED FITTINGS, JOINTS, ETC.

LABEL ALL GAS PIPING "NATURAL GAS" AND 2PSI GAS PIPE "NATURAL GAS 2PSI"

LABEL GAS PIPING WITH FLOW ARROWS.

ALL JOINTS FOR GAS PIPING INSTALLED IN CONCEALED SPACES OR PLENUMS SHALL BE WELDED.

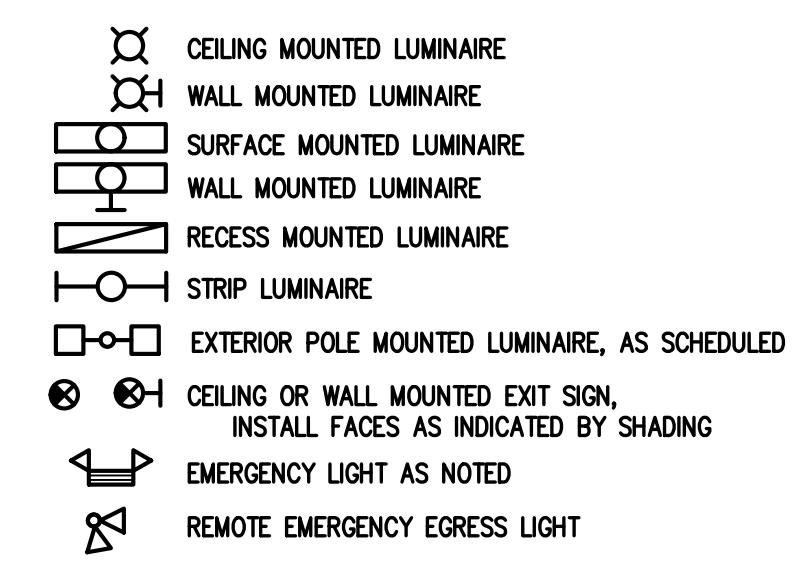
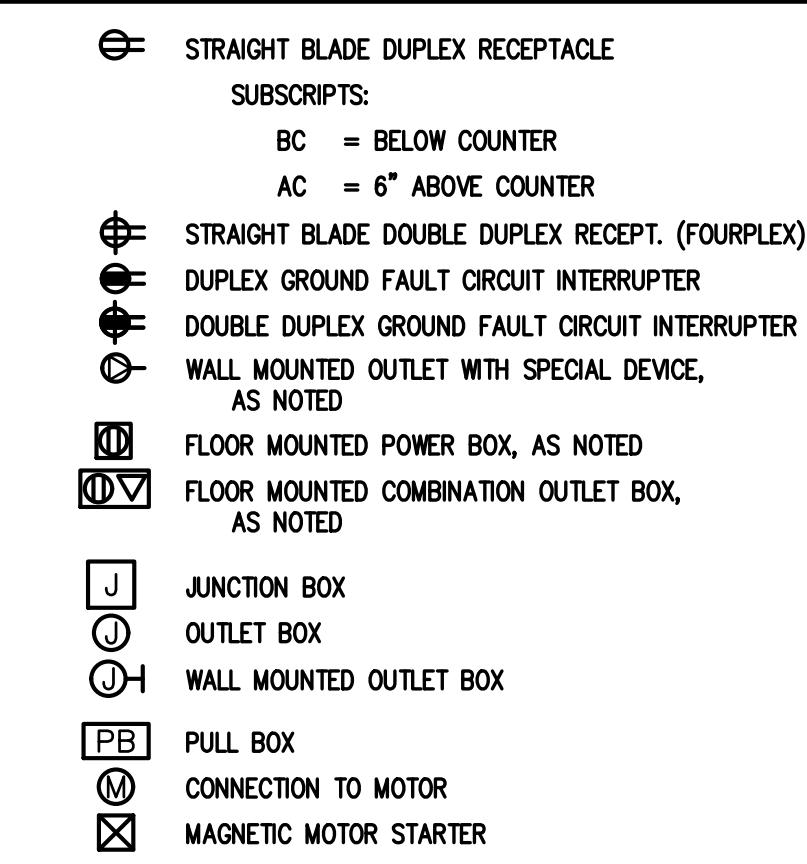
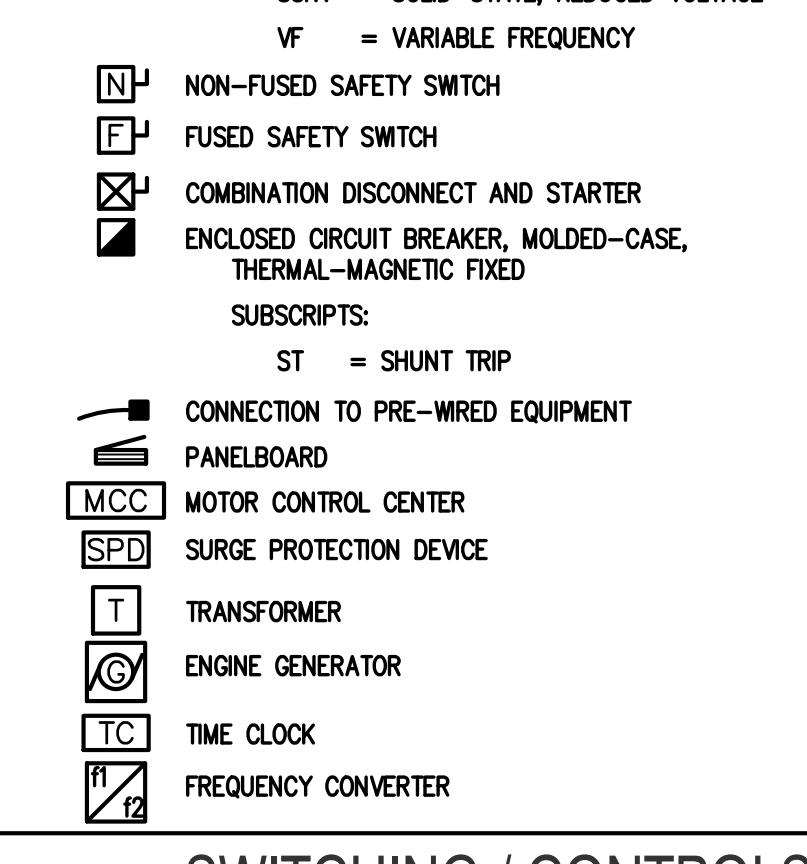
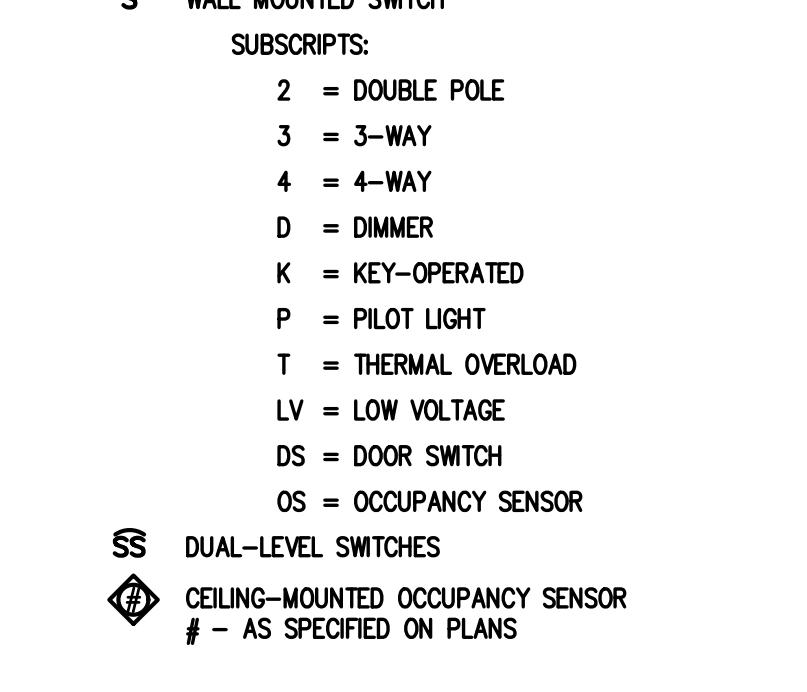
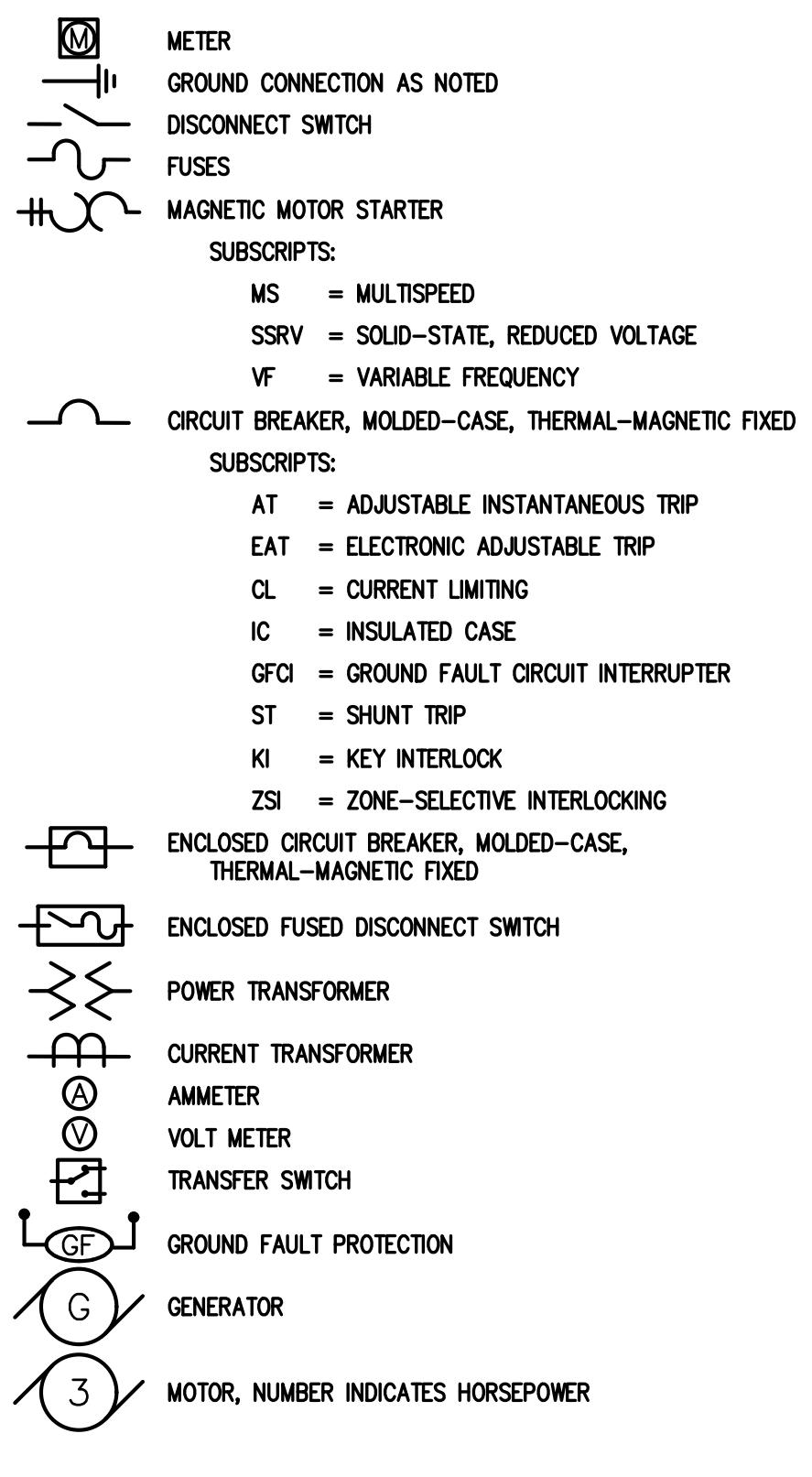
DIE CUT THREADED JOINTS WITH FULL CUT STANDARD TAPER PIPE THREADS WITH 1/2" WIDE WHITE TEFLON PIPE JOINT SEALANT TAPE APPLIED TO MALE THREADS ONLY.

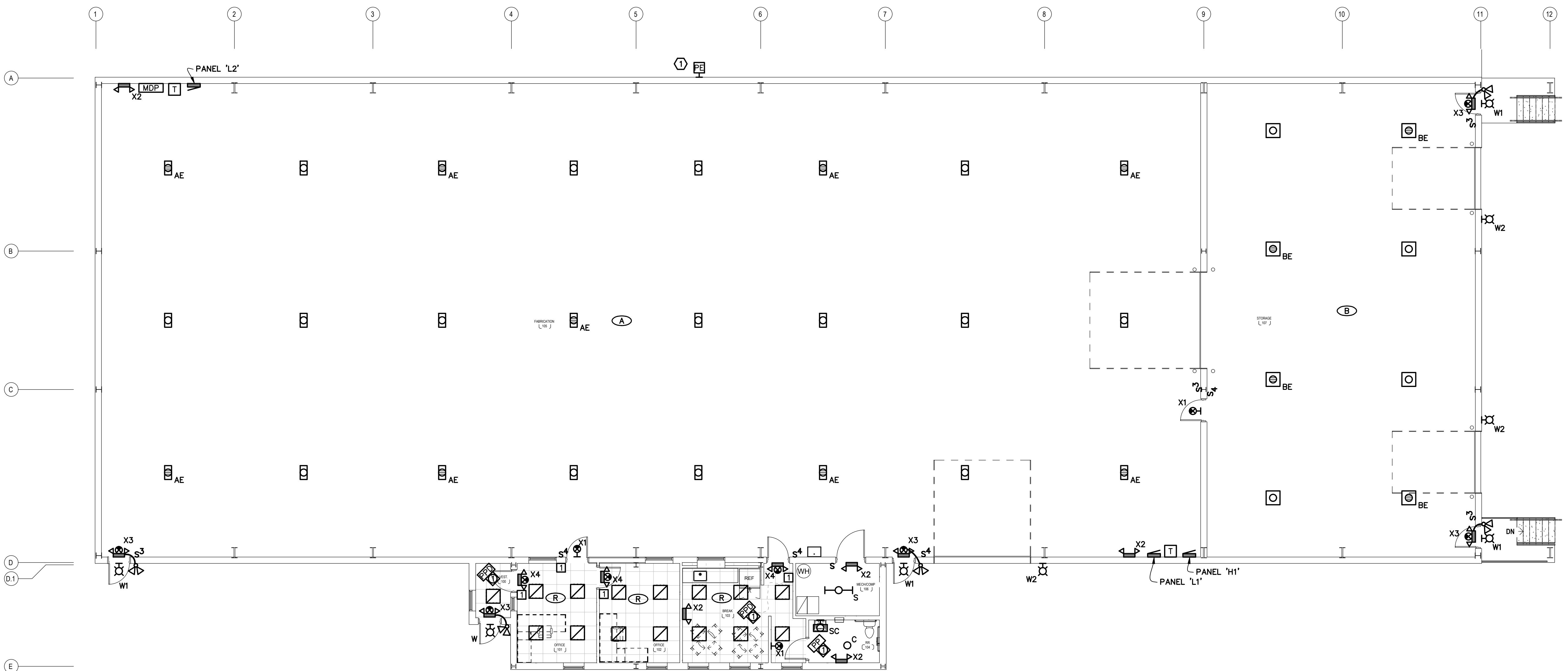
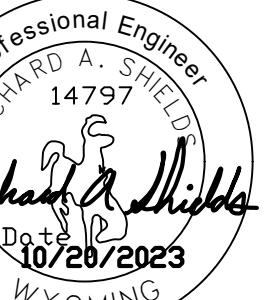
USE ONLY MALLEABLE IRON THREADED PIPE FITTINGS FOR GAS PIPING IN NON-CONCEALED SPACES.

GAS PRESSURE REGULATING VALVES

AGA APPROVED.
SINGLE STAGE, STEEL OR ALUMINUM HOUSING, CORROSION RESISTANT GAS PRESSURE REGULATOR WITH ATMOSPHERIC VENT, VENT KIT, ELEVATION COMPENSATOR, THREADED ENDS FOR 2" AND SMALLER, FLANGES ENDS FOR 2-1/2" AND LARGER.

Revision Schedule
DescriptionNo.
Status: PERMIT SET
Date: 10/23/2023Revision Schedule
DescriptionNo.
Status: PERMIT SET
Date: 10/23/2023

ABBREVIATIONS	LIGHTING SYMBOLS	ONE-LINE SYMBOLS	GENERAL NOTES												
AC ABOVE COUNTER AFC ABOVE FINISHED CEILING AFF ABOVE FINISHED FLOOR AGF ABOVE FINISHED GRADE AJJ AUTHORITY HAVING JURISDICTION ACI AMERICAN CIRCUIT INTERRUPTER CAPACITY AL ALUMINUM AMP AMPERE AWG AMERICAN WIRE GAUGE BD BELOW COUNTER BFG BELOW FINISHED GRADE BLDG BUILDING BOS BOTTOM OF STEEL C CONDUIT, CONDUCTOR CATV CABLE TELEVISION CB CIRCUIT BREAKER CCTV CLOSED CIRCUIT TELEVISION CLG CEILING CPT CIRCUIT POWER TRANSFORMER CR CORROSION RESISTANT CT CURRENT TRANSFORMER CU COPPER DACT DUCT ALARM COMMUNICATOR TRANSMITTER DB DUCT BURIED DISC DISCONNECT DN DRAIN EC ELECTRICAL CONTRACTOR ELR END LINE RESISTOR EM EMERGENCY EMT ELECTRICAL METALIC TUBING ES EMERGENCY STOP ETM ELAPSED TIME METER EWC ELECTRICAL WATER COOLER EOP EQUIPMENT EXIST EXISTING FAA FIRE ALARM ANNUNCIATOR FAP FIRE ALARM CONTROL PANEL FBO FIRE BELL OR BURNT PANEL FOL FURNISHED ON OTHERS FLA FULL LOAD AMPS FLR FLOOR FWR FULL VOLTAGE, NON-REVERSING FVR FULL VOLTAGE, VOLTAGE REVERSING FWE FURNISHED WITH EQUIPMENT FU FUSE GEN GENERATOR GFCI GROUND FAULT CIRCUIT INTERRUPTER GND GROUND GRC GALVANIZED RIGID CONDUIT HOA HAND-OFF-AUTOMATIC HP HORSEPOWER HTR HORN IG ISOLATED GROUND IMC INTERMEDIATE METAL CONDUIT K KILO KWH THOUSAND CIRCULAR MILS KV KILOVOLT KVA KILOVOLT-AMPERE KVAR KILOVOLT-AMPERE REACTIVE KW KILOWATT KWH KILOWATT-HOUR LA LIGHTNING ARRESTOR LC LIGHTING CONTACTOR LOR LOCAL-OFF-REMOTE LS LEVEL SWITCH LT LEVEL THOUGH LTG LIGHTING MC METAL CLAD MCA MINIMUM CIRCUIT AMPACITY MCB MINIMUM CIRCUIT BREAKER MCC MOTOR CONTROL CENTER MCCB MOLDED CASE CIRCUIT BREAKER MFR MANUFACTURER MI MINERAL INSULATED MLO MOLDED ONLY MTD MOUNTED MV MEDIUM VOLTAGE NC NORMALLY CLOSED NEC NATIONAL ELECTRICAL CODE NEI NEMA NEUT NEUTRAL NIC NOT IN CONTRACT NL NIGHT LIGHT NO NOTICE OPEN NTS NOT TO SCALE OCP OVER-CURRENT PROTECTION OC OVERLOAD PF POWER FACTOR PVC POLYVINYL CHLORIDE R ROOM RSC RIGID STEEL CONDUIT RTD REDUCED TEMPERATURE DETECTOR RVNR REDUCED VOLTAGE, NON-REVERSING SN SOLID NEUTRAL SPD SURGE PROTECTION DEVICE STP SHIELDED TWISTED PAIR STT SHIELDED TWISTED TRIPLET SWBD SWITCHBOARD SWG SWITCHGEAR TOS TOP OF STEEL TTB TELEPHONE TERMINAL BOARD TVSS TRANSMISSION VOLTAGE SURGE SUPPRESSOR TYP TYPICAL US UNDERGROUND V VOLT VA VOLT-AMPERE VAR VOLT-AMPERE REACTIVE VFD VARIABLE FREQUENCY DRIVE WG WIREGUARD WM WIRE METER WP WEATHER PROOF XFMR TRANSFORMER XP EXPLOSION PROOF ZS LIMIT OR POSITION SWITCH	 POWER SYMBOLS  COMMUNICATIONS SYMBOLS  SWITCHING / CONTROLS 	 NOTATIONS <p>1 - UPPER CASE LETTER AT LUMINAIRES (A, B, ETC.) INDICATES LUMINAIRE TYPE. (B) = TYPE B LUMINAIRES IN AREA INDICATED.</p> <p>2 - LOWER CASE LETTER AT LUMINAIRES AND SWITCHES (a, b, ETC.) INDICATE ASSOCIATED UNITS FOR SWITCHING.</p> <p>3 - SHADING WITHIN LUMINAIRES DENOTES UNIT WITH EMERGENCY BATTERY PACK.</p> <p>4 - "NL" WITHIN LUMINAIRES DENOTES UNIT ON NIGHT LIGHT CIRCUIT.</p> <p>5 - PLUS (+) SIGN WITH DIMENSION AT OUTLET INDICATES HEIGHT ABOVE FINISHED FLOOR OR GRADE TO CENTERLINE OF OUTLET.</p>	INDEX OF DRAWINGS <table border="1"> <thead> <tr> <th>TITLE</th> <th>DWG NO.</th> </tr> </thead> <tbody> <tr> <td>ELECTRICAL COVER SHEET</td> <td>E000</td> </tr> <tr> <td>LIGHTING PLAN</td> <td>E101</td> </tr> <tr> <td>POWER PLAN</td> <td>E201</td> </tr> <tr> <td>ELECTRICAL ONE-LINE AND SCHEDULES</td> <td>E301</td> </tr> <tr> <td>ELECTRICAL SPECIFICATIONS</td> <td>E401</td> </tr> </tbody> </table>	TITLE	DWG NO.	ELECTRICAL COVER SHEET	E000	LIGHTING PLAN	E101	POWER PLAN	E201	ELECTRICAL ONE-LINE AND SCHEDULES	E301	ELECTRICAL SPECIFICATIONS	E401
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LIGHTING CONTROL LEGEND

- LIGHT: nCM PDT 9 RGB
LOW-VOLTAGE, CEILING-MOUNT DUAL-TECH OCCUPANCY SENSOR
INITIAL SETTING: 20 MINUTE TIME DELAY OFF
- LIGHT: PPP16 EFP
POWER PACK
- LIGHT: PPP160 EFP
POWER PACK: DIMMING AND MULTI-SWITCH CAPABLE
- S SINGLE-POLE WALL SWITCH
- SENSORSWITCH: WSX-D PDT WH
WALL SENSOR SWITCH
- LOW-VOLTAGE CABLING CAT 5e MINIMUM
- LIGHT: nO PC KIT
PHOTOCELL KIT



FIRST FLOOR LIGHTING PLAN

SCALE: 1/8" = 1'-0" 8' 0' 8' 16'

REVISION SCHEDULE
DESCRIPTION
DATE

NO
STATUS: Project Status
DATE: Issue Date

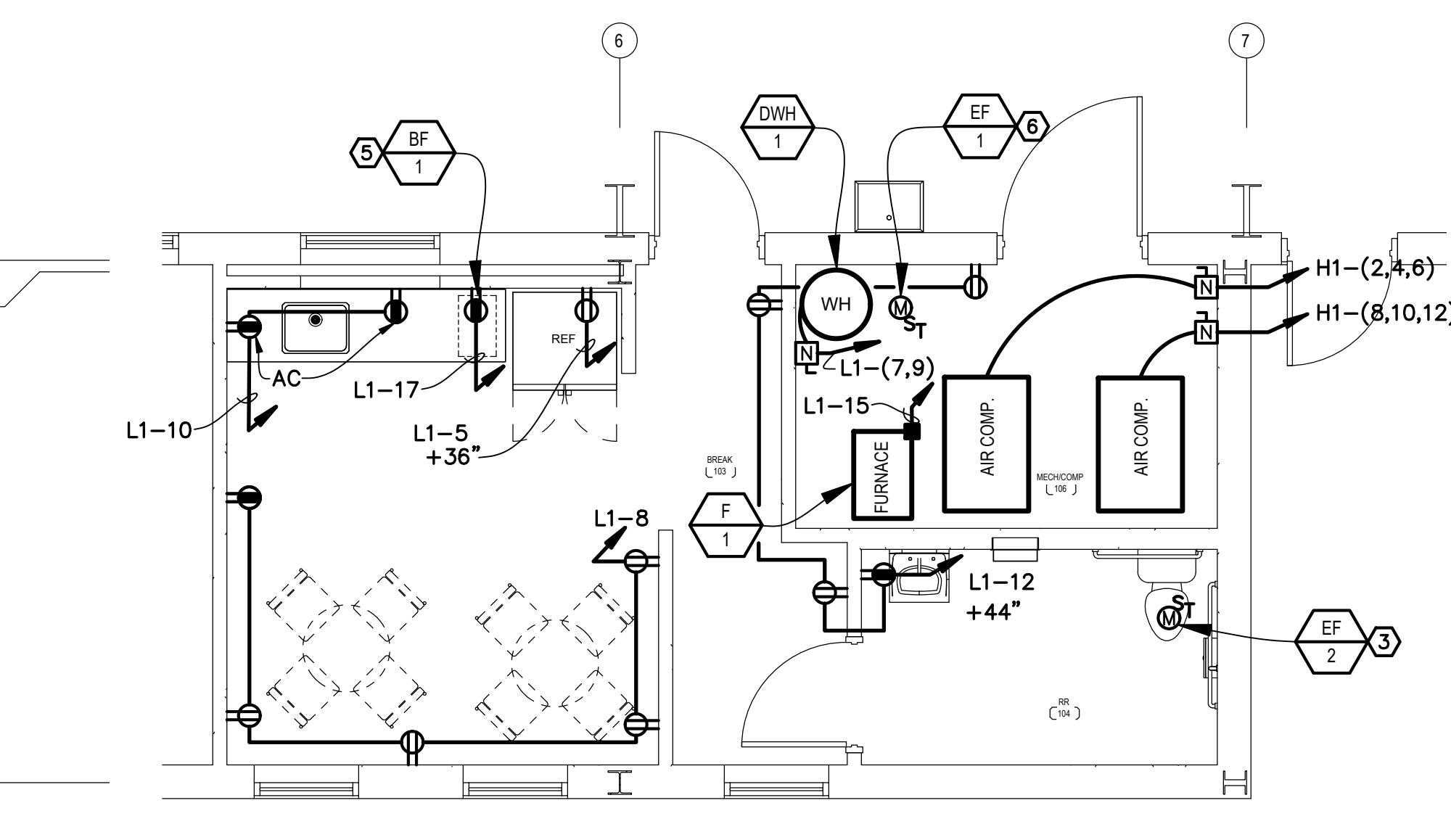
E101

GENERAL NOTES:

A. ALL EXTERIOR RECEPTACLES TO BE WEATHERPROOF WHILE-IN-USE, WITH CAST METAL COVER.
B. ALL RECEPTACLES WITHIN FABRICATION SHOP AND STORAGE TO BE GFCI AT 48" AFF.

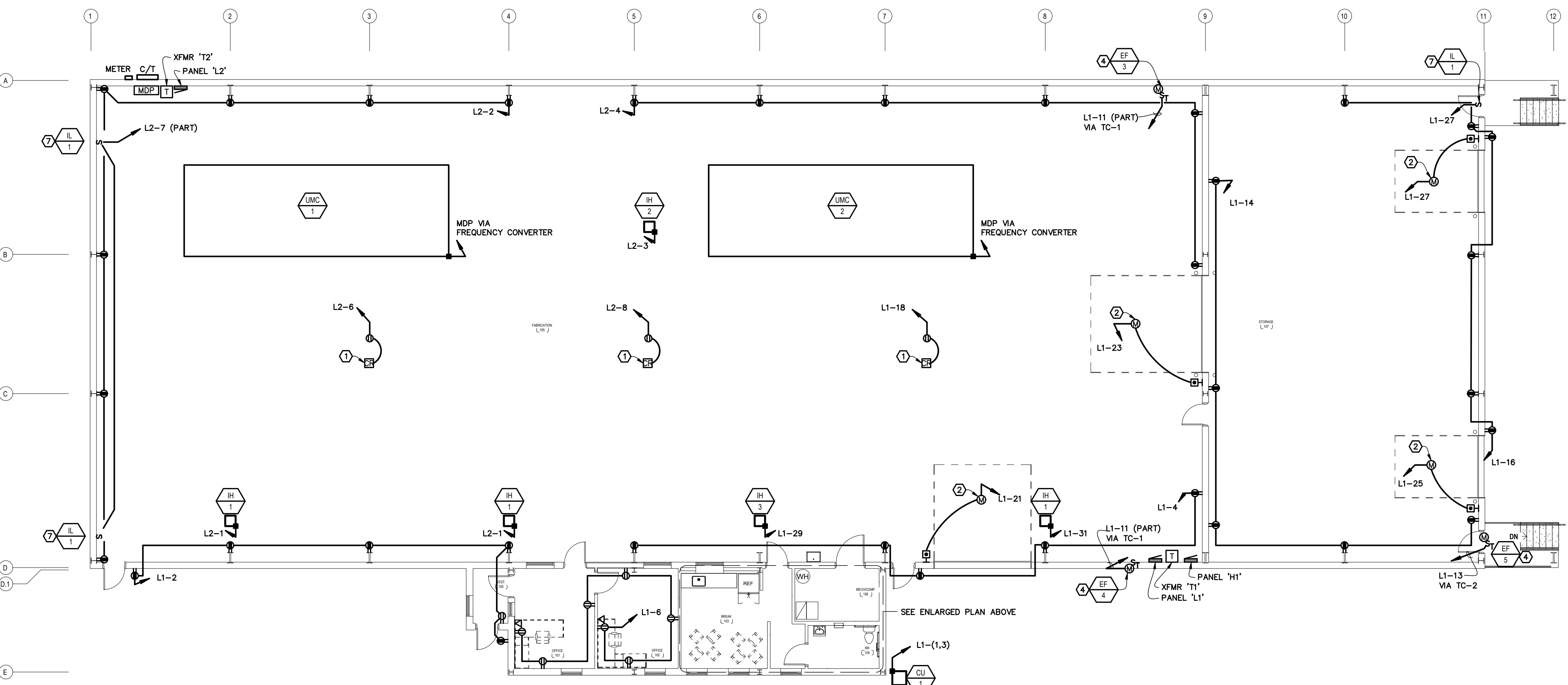
KEYED NOTES: (1)

1. PROVIDE CORD REEL: HUBBELL #HBL45123C20 OR EQUAL WITH NEMA 5-20R CORD END. MOUNT AT CEILING. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. PROVIDE DUPLEX RECEPTACLE AT CEILING TO SERVE CORD REEL.
2. PROVIDE POWER TO DOOR MOTOR. PROVIDE CONDUIT, LV CABLEING, AND MAKE CONNECTIONS TO PUSHBUTTON CONTROLS AND DOOR OPENER.
3. RESTROOM EXHAUST FAN CONNECTED TO ROOM LIGHTING CIRCUIT AND CONTROLLED VIA OCCUPANCY SENSOR.
4. PROVIDE TWO (2) INTRAMATIC ET80150 TIME CLOCKS, OR EQUIVALENT, FOR EXHAUST FAN CONTROL. EF-3 AND EF-4 SHALL BE SERVED FROM TIMECLOCK TC-1, AND EF-5 SHALL BE SERVED FROM TIMECLOCK TC-2. LOCATE TIMECLOCKS ADJACENT TO PANEL L1.
5. COORDINATE MOUNTING HEIGHT FOR BOTTLE FILLER WITH ARCHITECT PRIOR TO ROUGH-IN.
6. MECHANICAL ROOM EXHAUST FAN CONNECTED TO ROOM LIGHT SWITCH.
7. PROVIDE 20A1P SWITCH AND 120V POWER TO MOTORIZED DAMPERS. COORDINATE WITH MECHANICAL.



ENLARGED POWER PLAN

SCALE: 1/4" = 1'-0" 8' 0 4' 4' 8'



FIRST FLOOR POWER PLAN

SCALE: 1/8" = 1'-0" 16' 8' 0 8' 8'

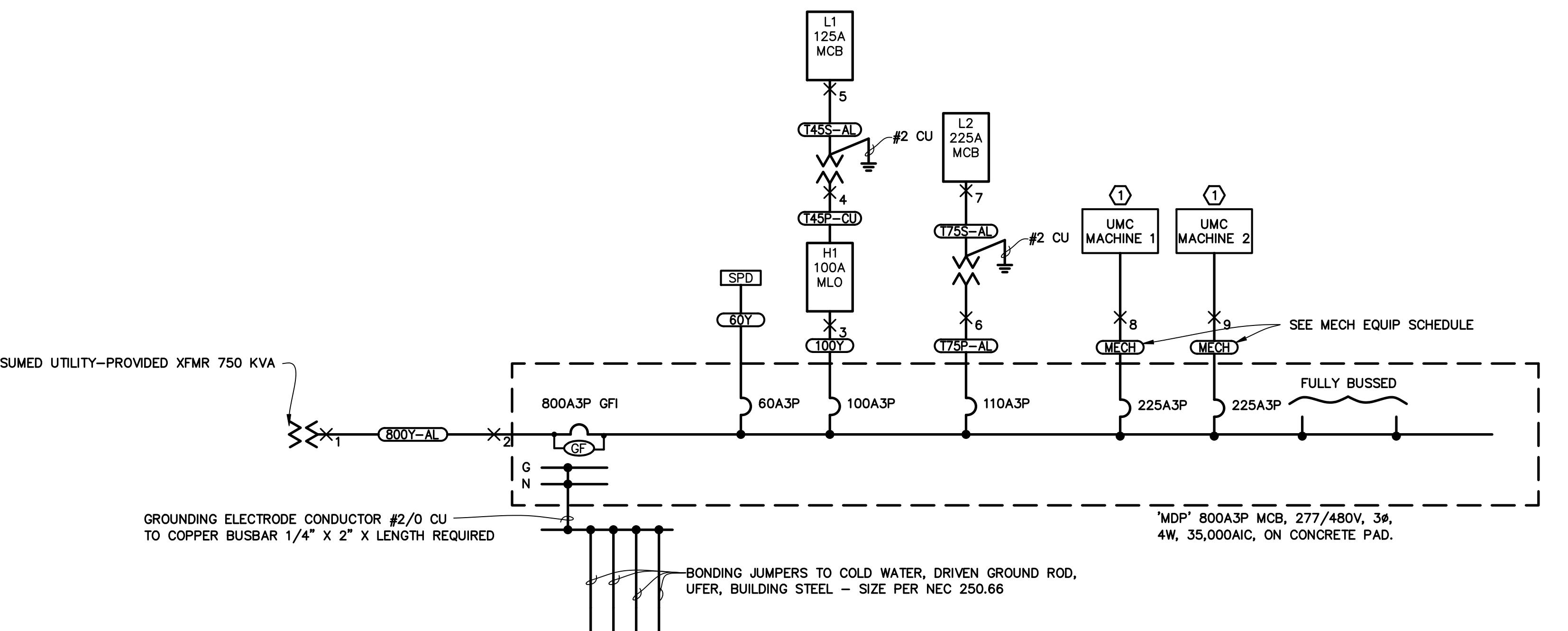
UMC CHEYENNE FACILITY
ULLRICH MACHINERY COMPANY
NORTH RANGE BUSINESS PARK, LOT 2, BLOCK 9, CHEYENNE, WY

FIRST FLOOR POWER
PLAN

REVISION SCHEDULE
DESCRIPTION
DATE

NO.
STATUS: Project Status
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E201



FEEDER SCHEDULE		
KEY	WIRE AND CONDUIT SIZE	LENGTH
60Y	(#4+/#8G)-1-1/4°C	--
100Y	(#1+/#8G)-1-1/2°C	
T45P-CU	(#4+/#8G)-1-1/4°C	
T45S-AL	(#45/0+/#4G)-2°C	
T75P-AL	(#3/2/0+/#4G)-2°C	
T75S-AL	(#4-300KML-#2G)-2-1/2°C	
800Y-AL	[(#4-400KML)*3°C]	

FAULT CURRENT		
KEY	SHORT CIRCUIT AMPERES	LENGTH
X ₁	I _{SC} = 28,672	--
X ₂	I _{SC} = 28,090	10'
X ₃	I _{SC} = < 10,000	245'
X ₄	I _{SC} = < 10,000	10'
X ₅	I _{SC} = < 10,000	10'
X ₆	I _{SC} = 24,618	10'
X ₇	I _{SC} = < 10,000	10'
X ₈	I _{SC} = 17,146	95'
X ₉	I _{SC} = < 10,000	170'

FAULT CURRENT LEVELS ARE BASED ON AN ASSUMED UTILITY TRANSFORMER OF 750KVA AND 3.5% IMPEDANCE. IF TRANSFORMER SIZE OR IMPEDANCE VALUES DIFFER, REPORT VALUES TO ENGINEER.

ELECTRICAL ONE-LINE

SCALE: NO SCALE 277/480V, 3Ø, 4W

KEYED NOTES: ⓘ

1. UMC MACHINES PROVIDED BY OWNER.

MDP LOAD SUMMARY									
FEEDER/PANEL									
LIGHTING	PANEL H1	XFRM T2	UMC 1	UMC 2					
RECEPT. (FIRST 10 KW)	4.8								
RECEPT. (REMAINDER)									
MOTORS	9.1								
LARGEST MOTOR	9.1								
APPLIANCES									
EQUIPMENT									
HEATING									
TRANSFORMER	26.1	4.5							
OTHER									
CONNECTED KVA	4.8	1.25	6.1						
RECEPT. (FIRST 10 KW)	1.00								
RECEPT. (REMAINDER)	0.50								
MOTORS	9.1								
LARGEST MOTOR	9.1								
APPLIANCES	9.1								
EQUIPMENT	277.6	1.00	277.6						
HEATING									
TRANSFORMER	30.6	1.00	30.6						
OTHER	1.00								
800 AMP	800 AMP	277/480V	3Ø	4W					
35000AIC									
100% CONCRETE PAD									
SEE MECH EQUIP SCHEDULE									
FULLY BUSSED									

NOTES:

PANEL "H1"									
227 / 480 VOLT 3 PHASE 4 WIRE SERVICE									
100 AMP	277 / 480 VOLT	3 PHASE	4 WIRE SERVICE						
SEE 1-LINE AIC	100 MAIN LUGS ONLY	GROUND BUS	100% NEUTRAL BUS						
DESCRIPTION	L	R	TISO M/A/E/H	PHASE	L	R	TISO M/A/E/H	DESCRIPTION	
FABRICATION LTG	3552			20 1	2	15		M 3048	AIR COMPRESSOR
COLD STORAGE LTG	904			20 3	4	1		M 3048	
EXTERIOR LTG	388			20 5	6	1		M 3048	
SPR				20 7	8	15		M 3048	AIR COMPRESSOR
SPR				20 8	10	1		M 3048	
SPR				20 11	12	1		M 3048	
SP				20 13	14	1		S 3048	
SP				15	16	1		S 3048	
SP				17	18	1		S 3048	
SP				19	20	1		S 3048	
SP				21	22	1		S 3048	
SP				23	24	1		S 3048	
SP				25	26	1		S 3048	
SP				27	28	1		S 3048	
SP				29	30	1		S 3048	
TOTAL	4844	M	A					M 18288	
		LOADS IN	VOLT-AMPERES					E 26135	TOTAL

PANEL "L1"									
120 / 208 VOLT 3 PHASE 4 WIRE SERVICE									
125 AMP	120 / 208 VOLT	3 PHASE	4 WIRE SERVICE						
SEE 1-LINE AIC	125 MAIN LUGS ONLY	GROUND BUS	100% NEUTRAL BUS						
DESCRIPTION	L	R	TISO M/A/E/H	PHASE	L	R	TISO M/A/E/H	DESCRIPTION	
CONDENSING UNIT	M 1768	25	1	A 2	20	1080	FAB, VEST		
CU-1	M 1768	1	3	B 4	20	900	FAB		
REFRIGERATOR	A 600	20	5	C 6	20	1260	OFFICE		
WATER HEATER	H 2245	30	7	A 8	20	1260	BREAKROOM		
DWH-1	H 2245	1	9	B 10	20	360	KITCHEN		
DWH-4 - FAB	M 1392	20	11	C 12	20	720	REF. RCH, BREAK		
EF-4, FAB	M 695	20	13	A 14	20	1080	STORAGE		
EF-5, STORAGE	M 695	20	15	B 16	20	1080	STORAGE		
FURNACE	M 1080	20	16	C 17	20	1080	STORAGE		
11 BOTTLE FILLER, BF-1	A 300	20	17	C 18	20	180	CORD REEL 3		
OFFICE LTG, EF-1,2	331			20	19	A 20	20	SPR	
FAB OVERHEAD DOOR	M 1000	20	21	B 22	20			SPR	
FAB OVERHEAD DOOR	M 1000	20	23	C 24	20			SPR	



DIVISION 26 - ELECTRICAL SPECIFICATION

SECTION 26.0000 - BASIC ELECTRICAL REQUIREMENTS

1. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS DESCRIBED HEREIN. ALL ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS, GOVERNING AUTHORITIES, NATIONAL, LOCAL AND STATE CODES AND STANDARDS, AND PRACTICES OF ELECTRICIANS IN CONFORMANCE WITH THE STANDARD PRACTICES OF THE ELECTRICAL INDUSTRY. ALL ELECTRICAL SYSTEMS SHALL BE COMPLETE AND OPERATIONAL TO THE BENEFIT OF THE OWNER.

A. GOOD WORKMANSHIP AND APPEARANCE ARE CONSIDERED EQUAL TO PROPER OPERATION.

B. THE CONTRACTOR SHALL PROVIDE ALL FORESEEABLE ELECTRICAL EQUIPMENT AND ACCESSORIES NECESSARY, WHETHER SPECIFICALLY STATED OR NOT, TO MAKE THE REQUIRED ELECTRICAL SYSTEMS COMPLETE AND OPERATIONAL.

2. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS OF THE PROJECT SPECIFICATIONS, ANY BASE BUILDING SPECIFICATIONS AND BUILDING CRITERIA, AND ALL CONTRACT SPECIFICATIONS AND DOCUMENTS.

3. DEFINITIONS AND STANDARDS:

A. "PROVIDE" MEANS CONTRACTOR IS RESPONSIBLE FOR THE FURNISHING AND INSTALLATION OF.

B. "EXPOSED" MEANS WHERE IT CAN BE SEEN AFTER THE BUILDING IS COMPLETED SUCH AS IN EQUIPMENT ROOMS, UNFINISHED AREAS, ACCESSIBLE TUNNELS, ETC. WHERE CONDUIT/EQUIPMENT IS ACCESSIBLE.

C. "CONCEALED" MEANS WHERE IT CANNOT BE SEEN AFTER THE BUILDING IS COMPLETED SUCH AS IN SPACES AS CHASES, TRENCHES, ABOVE CEILINGS, IN WALLS AND BURIED WHERE CONDUIT/WIRE IS INACCESSIBLE WHEN BUILDING IS COMPLETED.

D. STANDARDS FOR MATERIALS: ALL MATERIALS SHALL BE NEW EXCEPT AS OTHERWISE STATED, AND SHALL CONFORM WITH THE CURRENT APPLICABLE INDUSTRY STANDARDS, NEMA STANDARDS AND UNDERWRITERS' LABORATORIES STANDARDS.

4. COORDINATE AND ORDER THE PROGRESS OF ELECTRICAL WORK TO CONFORM TO THE OWNER'S SCHEDULE AND THE PROGRESS OF THE WORK OF THE OTHER TRADES.

5. APPLY FOR AND PAY FOR ALL PERMITS, FEES, LICENSES AND INSPECTIONS FOR THIS DIVISION OF WORK.

6. PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED.

7. VISIT THE PROJECT BEFORE SUBMITTING A BID AS NO EXTRAS WILL BE ALLOWED FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

8. DRAWINGS ARE DIAGRAMMATIC IN NATURE, TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK.

9. COMPLY WITH THE LATEST FEDERAL, STATE AND LOCAL CODES REQUIREMENTS, AND ORDINANCES, WITH THE NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND WITH REQUIREMENTS OF THE POWER AND TELEPHONE COMPANIES FURNISHING SERVICES TO THE PROJECT. THE FOLLOWING IS A BRIEF LIST OF APPLICABLE CODES:

A. NFPA NO. 70 - NATIONAL ELECTRICAL CODE, LATEST EDITION

B. NFPA NO. 72 - FIRE ALARM, LATEST EDITION

C. NFPA NO. 101 - LIFE SAFETY CODE, LATEST EDITION

D. IBC & UBC, LATEST EDITION

E. LOCAL BUILDING CODES, LATEST EDITION

10. ALL EQUIPMENT AND MATERIALS SHALL BE NEW UNLESS NOTED OTHERWISE AND ACCEPTABLE FOR INSTALLATION ONLY IF LABELED OR LISTED AS DEFINED IN NFPA 70, ARTICLE 100, BY UL OR BY A RECOGNIZED TESTING LABORATORY WHERE STANDARDS HAVE BEEN ESTABLISHED AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. LABELED OR LISTED EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ANY INSTRUCTIONS OR LABELING PROVIDED WITH THE EQUIPMENT.

11. PROVIDE ALL CORE DRILLING, CHANNELING, CUTTING, PATCHING, SLEEVES, ETC. AS REQUIRED FOR INSTALLATION OF ELECTRICAL EQUIPMENT. SEAL HOLES, FIREPROOFING WHERE NECESSARY, AND REFINISH ALL REPAIR WORK TO ORIGINAL CONDITION WHERE DAMAGED BY ELECTRICAL WORK.

A. COORDINATE CORE DRILL LOCATIONS WITH STRUCTURAL PRIOR TO WORK.

B. COORDINATE UC SITE UTILITIES WITH APPROPRIATE UTILITY COMPANY PRIOR TO WORK.

12. MAKE PROVISIONS FOR SAFE DELIVERY AND SECURE STORAGE OF ALL MATERIALS.

13. PROVIDE TESTING OF ALL ELECTRICAL SYSTEMS AND COMPONENTS AS REQUIRED BY ALL APPLICABLE BUILDING CODES AND ORDINANCES, UL, NEMA, ANSI, ICA, NECA, ETC., AND AS RECOMMENDED BY THE ELECTRICAL EQUIPMENT MANUFACTURERS.

14. WARRANTIES: PROVIDE A WRITTEN WARRANTY TO THE OWNER, COVERING THE ENTIRE ELECTRICAL WORK TO BE FREE FROM DEFECTIVE MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE. ALL DEFECTIVE EQUIPMENT OR MATERIALS WHICH APPEAR DURING THE WARRANTY PERIOD SHALL BE REPAIRED OR REPLIED BY THE ELECTRICAL CONTRACTOR IN A TIMELY FASHION AT NO COST TO THE OWNER.

15. PRODUCT ALTERATIONS AND SUBSTITUTIONS: SHOULD THE CONTRACTOR WISH TO HAVE PRODUCTS CONSIDERED OTHER THAN THOSE SPECIFIED, CONTRACTOR MUST SUBMIT THOSE ITEMS AS REQUIRED IN DIVISION 1. CONTRACTOR WILL BE REQUIRED TO SUBMIT THE TOTAL SAVINGS (ANTICIPATED SAVINGS) TO THE OWNER.

16. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS AS REQUIRED IN DIVISION 1 FOR ALL MATERIALS AND EQUIPMENT. SUBMITTALS SHALL CLEARLY INDICATE PROPOSED ITEMS BY HIGHLIGHTING, BOXING, ETC. SUBMITTALS OF UNMARKED MANUFACTURER CATALOGS IS NOT ACCEPTABLE AND SUBMITTAL WILL BE REJECTED. IF THE SHOP DRAWINGS DEVIATE FROM THE CONTRACT DOCUMENTS ADVISE THE ENGINEER OF THE DEVIATIONS VIA WRITTEN FORMAT, ACCOMPANYING THE SHOP DRAWINGS. FOR THE REASON (S) FOR THE DEVIATIONS, COORDINATE ALL REQUIRED CHANGES WITH THE OTHER TRADES. IF ANY CHANGES ARE OCCASIONED BY THE CONTRACTOR, THE CONTRACTOR SHALL PAY ANY COSTS INVOLVED. SHOP DRAWINGS SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

A. PRODUCT DATA FOR ELECTRICAL IDENTIFICATION.

B. PRODUCT DATA FOR BOXES, ENCLOSURES AND CABINETS.

C. PRODUCT DATA FOR WIRING DEVICES.

D. PRODUCT DATA FOR LIGHTING CONTROL DEVICES.

E. PRODUCT DATA FOR WIRING SYSTEMS.

F. PRODUCT DATA AND DRAWINGS FOR EXHAUST SWITCHES AND CIRCUIT BREAKERS.

G. PRODUCT DATA AND DRAWINGS FOR TRANSFORMERS.

H. PRODUCT DATA FOR LIGHTING.

I. PRODUCT DATA FOR CONDUIT, TUBING, AND DRAWINGS FOR FIRE ALARM SYSTEM.

J. TEST REPORTS AS REQUIRED.

K. CERTIFICATES OF OPERATION AS REQUIRED.

17. PROJECT RECORD DRAWINGS: AT COMPLETION OF WORK, DELIVER COMPLETED PROJECT RECORD DOCUMENTS TO ARCHITECT/ENGINEER. PROJECT RECORD DOCUMENTS SHALL BE IN ELECTRONIC FORMAT AND SHALL INCLUDE ANY SPECIAL SYSTEMS (FIRE ALARM, ETC.) AND "PROJECT RECORD" SHOP DRAWINGS.

18. OPERATION AND MAINTENANCE MANUALS: SUBMIT IN ELECTRONIC FORMAT FOR APPROVAL PRIOR TO SCHEDULING ANY SYSTEM DEMONSTRATION FOR THE OWNER AND FIFTEEN (15) DAYS PRIOR TO FINAL OBSERVATION. MANUALS SHALL BE ARRANGED IN SEQUENCE TO MATCH THE SPECIFICATION SECTIONS.

SECTION 26.0519 - CONDUCTORS AND CABLES 600-V AND LESS

1. MINIMUM SIZE .12 EXCEPT FOR CONTROL OR SIGNAL CIRCUITS, WHICH MAY BE NO. 14 OR SMALLER. INCREASE CONDUCTOR SIZE AS NECESSARY TO LIMIT BRANCH CIRCUIT VOLTAGE DROP TO 3 PERCENT AND SERVICE/FEEDER VOLTAGE DROP TO 2 PERCENT.

2. ALL WIRING SHALL BE AS FOLLOWS:

A. SERVICE ENTRANCE, EXPOSED FEEDERS, AND FEEDERS CONCEALED IN CEILINGS, WALLS AND PARTITIONS: TYPE THHN, THHN OR XHHW, SINGLE CONDUCTORS IN RACEWAY.

B. FEEDERS CONCEALED IN CONCRETE AND BELOW SLABS-ON-GRADE: TYPE THHN-THHN, SINGLE CONDUCTORS IN RACEWAY.

C. BRANCH CIRCUITS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS, AND CONCEALED IN CONCRETE OR BELOW SLABS-ON-GRADE: TYPE THHN-THHN, SINGLE CONDUCTORS IN RACEWAY.

D. CORD DROPS AND PORTABLE APPLIANCE CONNECTIONS: TYPE SO, HARD SERVICE CORD.

E. FIRE ALARM CIRCUITS: TYPE THHN-THHN, IN RACEWAY OR POWER-LIMITED, FIRE-PROTECTIVE, SIGNALING CIRCUIT CABLE, TYPE NPLFF OR PLPF.

F. CLASS 1 CONTROL CIRCUITS: TYPE THHN-THHN, IN RACEWAY.

G. CLASS 2 CONTROL CIRCUITS: TYPE THHN-THHN, IN RACEWAY OR POWER-LIMITED CABLE.

CONCEALED IN BUILDING FINISHES.

3. ALL CONDUCTORS SHALL BE COPPER; SOLID CONDUCTOR FOR NO. 12 AWG AND SMALLER, STRANDED FOR NO. 10 AWG AND LARGER.
4. SPICES FOR NO. 6 AWG AND SMALLER SHALL BE MADE WITH TWIST-ON WIRE CONNECTORS.
5. SPLICES FOR NO. 4 AWG AND LARGER SHALL BE MADE WITH SOLDERLESS OR COMPRESSION TYPE CU/AL LUGS.
6. WIRING FOR CONTROL SYSTEMS SHALL BE INSTALLED IN CONJUNCTION WITH MECHANICAL AND MISCELLANEOUS EQUIPMENT.
7. INSTALL CONDUCTOR AT EACH OUTLET, WITH AT LEAST 6 INCHES OF SLACK TO ALLOW FOR CONNECTION TO DEVICE.
8. TESTING: PERFORM THE FOLLOWING FIELD QUALITY-CONTROL TESTING:

- A. TORQUE TEST CONDUCTOR CONNECTIONS AND TERMINATIONS TO MANUFACTURER'S RECOMMENDED VALUES.
- B. PERFORM CONTINUITY TEST ON ALL POWER AND EQUIPMENT BRANCH CIRCUIT CONDUCTORS. VERIFY PROPER PHASING CONNECTIONS.

- C. INSULATION TEST: INSURE THE INSULATION OF FEEDER CONDUCTORS. MEASUREMENTS SHALL BE MADE BETWEEN CONDUCTORS AND GROUND, RESISTANCE SHALL BE 1,000,000 OHMS OR MORE WHEN TESTED AT 500 VOLTS BY MEGGER WITHOUT CIRCUIT LOADS.

SECTION 26.0526 - GROUNDING AND BONDING

1. CONDUIT SYSTEMS, SUPPORTS, CABINETS, EQUIPMENT, TRANSFORMERS, FIXTURES, THE GROUNDED CIRCUIT CONDUCTOR, ETC. SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE CURRENT ISSUE OF THE NATIONAL ELECTRICAL CODE. PROVIDE ALL BONDING JUMPERS AND WIRE, GROUNDING BUSHINGS, CLAMPS, ETC. AS REQUIRED FOR COMPLETE GROUNDING.

- A. CONNECTIONS SHALL BE EITHER BOLTED-PRESSURE-TYPE, COMPRESSION TYPE OR EXOTHERMIC-WELDED TYPE.
2. PROVIDE A SEPARATE EQUIPMENT GROUNDBOND CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUITS AND ALL FLEXIBLE AND NONMETALLIC RACEWAYS.

3. GROUND ALL COMMUNICATIONS EQUIPMENT, ALL COMMUNICATION ROOMS, IDF/COM, ETC. SHALL BE PROVIDED WITH A 4" x 2" COPPER GROUND BAR BONDED TO THE MAIN ELECTRICAL SERVICE OR BUILDING STEEL PER ANSI-J-STD-607-A.
4. GROUNDBOND CONDUCTOR MATERIAL: COPPER

5. BOND THE ELECTRICAL SERVICE NEUTRAL AT SERVICE ENTRANCE EQUIPMENTS PER THE CURRENT ISSUE OF THE NATIONAL ELECTRICAL CODE UTILIZING MAIN COLD WATER PIPE, BUILDING STEEL, DRIVEN GROUND ROD, CONCRETE ENCASED ELECTRODE AS APPLICABLE. ROUTE GROUNDBONDING ELECTRODE CONDUCTORS TO PROVIDE THE SHORTEST AND MOST DIRECT PATH TO THE GROUND ELECTRODE SYSTEM.

SECTION 26.0529 - HANGERS AND SUPPORTS

1. PROVIDE HANGERS AND SUPPORTS FOR EQUIPMENT, RACEWAYS AND CABLES, INCLUDING WEIGHT OF WIRE IN RACEWAYS. ALL SYSTEMS CABLEING SHALL BE SUPPORTED BY BRACED RINGS OR SIMILAR MEANS.
2. USE HOT-DIPPED GALVANIZED MATERIAL OR NONMETALLIC, U-CHANNEL SYSTEMS FOR ALL DAMP AND OUTDOOR LOCATIONS.

3. STEEL MATERIAL SHALL BE USED FOR DRY LOCATIONS.

SECTION 26.0553 - ELECTRICAL IDENTIFICATION

1. PROVIDE LABELING FOR RACEWAYS AND CABLES.
2. PROVIDE UNDERGROUND LINE WARNING TAPE FOR ALL UNDERGROUND ELECTRICAL SERVICE POWER COMMUNICATIONS, ETC. SYSTEM RACEWAYS.

3. PROVIDE ENGRAVED NAMEPLATES FOR ALL ELECTRICAL CABINETS, ENCLOSURES, PANELBOARDS, DISTRIBUTION EQUIPMENT, ELECTRICAL EQUIPMENT, BOXES, ETC. NAMEPLATES SHALL BE ENGRAVING STOCK, MELAMINE PLASTIC LAMINATE, MINIMUM 1/8 INCH THICK FOR SIGNS UP TO 20 SQ. IN AND 1/4 INCH THICK FOR LARGER SIZES WITH BLACK LETTERS ON A WHITE FACE OR AS REQUIRED BY CODE OR OWNER.

4. COLOR CODING OF PHASE CONDUCTORS:

- A. CONDUCTORS NO. 8 AWG AND SMALLER SHALL BE FACTORY COLOR CODED. WIRE NO. 6 AWG AND LARGER MAY BE COLOR CODED BY FIELD PAINTING OR COLOR TAPEING A 6-INCH LENGTH OF EXPOSED END.
- B. WIRING FOR CONTROL SYSTEMS SHALL BE COLOR-CODED IN ACCORDANCE WITH THE WIRING DIAGRAMS FURNISHED WITH THE EQUIPMENT.

SECTION 27.0511 & 27.0512 - RACEWAYS

27.0511 - CONDUIT

1. ALL CONDUCTORS SHALL BE ENCLOSED BY CONDUIT SIZED IN ACCORDANCE WITH CHAPTER 9, TABLE 4 OF THE NATIONAL ELECTRICAL CODE. MINIMUM SIZE 1/2 INCH. ALL CONDUITS SHALL BE CONCEALED IN FINISHED AREAS.

2. GALVANIZED RIGID METAL CONDUIT (RMC) AND INTERMEDIATE METAL CONDUIT (IMC) SHALL BE UTILIZED FOR ABOVE AND BELOW GRADE APPLICATIONS IN ACCORDANCE WITH ARTICLES 344 AND 342 OF THE NATIONAL ELECTRICAL CODE. ALL COUPLINGS SHALL BE THREADED.

3. ELECTRICAL METAL TUBING (EMT) SHALL BE UTILIZED FOR ALL DRY, ABOVE GRADE OR ABOVE FLOOR FEEDERS AND BRANCH RACEWAY CIRCUIT APPLICATIONS EXCLUDING HOMERUNS IN ACCORDANCE WITH ARTICLE 352 OF THE NATIONAL ELECTRICAL CODE. COUPLINGS SHALL BE INSIDE SET SCREW TYPE.

4. METAL-CLAD CABLE (MC) WITH SEPARATE GROUND CONDUCTOR SHALL BE PERMITTED FOR ALL CONCEALED, ABOVE GRADE OR ABOVE FLOOR BRANCH CIRCUIT APPLICATIONS EXCLUDING HOMERUNS IN ACCORDANCE WITH ARTICLE 352 OF THE NATIONAL ELECTRICAL CODE. COUPLINGS SHALL BE INSIDE SET SCREW TYPE.

5. FLEXIBLE METAL CONDUIT SHALL BE UTILIZED FOR ALL CONNECTIONS TO VIBRATING EQUIPMENT SUCH AS MOTORS, PUMPS, ETC., MAXIMUM OF 6'-0". CONNECTIONS TO LAY-IN TYPE LIGHT FIXTURES OR IN REMOVABLE AREAS SPECIFICALLY NOTED FOR "FISHING" IN EXISTING WALLS OR NON-ACCESSIBLE CEILINGS.

6. RIGID NONMETALLIC CONDUIT (PVC) SHALL BE UTILIZED FOR ABOVE AND BELOW GRADE APPLICATIONS IN ACCORDANCE WITH ARTICLE 352 OF THE NATIONAL ELECTRICAL CODE. CONNECTIONS TO BE MADE BY USE OF A SUITABLE SOLVENT-TYPE CEMENT.

7. SURFACE METAL RACEWAYS SHALL BE LIMITED TO ONLY AREAS SPECIFICALLY NOTED AND OF SIZE AND TYPE SPECIFIED ON THE DRAWINGS.

8. ALL CONDUITS EXPOSED OR CONCEALED SHALL BE ROUTED PARALLEL OR PERPENDICULAR WITH THE BUILDING WALLS. SUPPORT CONDUIT AS REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

9. PROVIDE EXPANSION TYPE FITTINGS FOR ALL CONDUITS, WHICH CROSS EXPANSION JOINTS.

SECTION 26.0553.2 - BOXES, ENCLOSURES AND CABINETS

1. OUTLET BOXES:

- A. FOUR INCH SQUARE OR OCTAGONAL, ZINC-COATED SHEET STEEL TYPE.
- B. OUTLET BOXES SHALL BE LOCATED SO THAT TRANSMISSION OF SOUND THROUGH COMMON WALLS WILL NOT OCCUR.

- C. ENCLOSURES EXPOSED TO WEATHER OR DAMP LOCATIONS SHALL BE WEATHERPROOF TYPE.

2. PROVIDE COVERS SET TO COME FLUSH WITH FINISHED WALLS.

3. PULL BOXES AND JUNCTION BOXES: JUNCTION BOXES AND PULL BOXES WILL BE PROVIDED AS REQUIRED.