

STANLEY MARKETPLACE

UNION STANLEY

2501 DALLAS STREET, UNIT 290, AURORA, CO 80010

PROJECT DATA:

PROJECT ADDRESS: 2501 DALLAS STREET, AURORA, CO 80010

BUILDING CODES: 2009 INTERNATIONAL BUILDING CODE
2014 NATIONAL ELECTRICAL CODE
2009 INTERNATIONAL FIRE CODE
2009 INTERNATIONAL PLUMBING CODE
2009 INTERNATIONAL MECHANICAL CODE
2009 INTERNATIONAL FUEL GAS CODE

OCCUPANCY GROUP: B - BUSINESS

CONSTRUCTION TYPE: TYPE V-B - EXISTING STRUCTURE

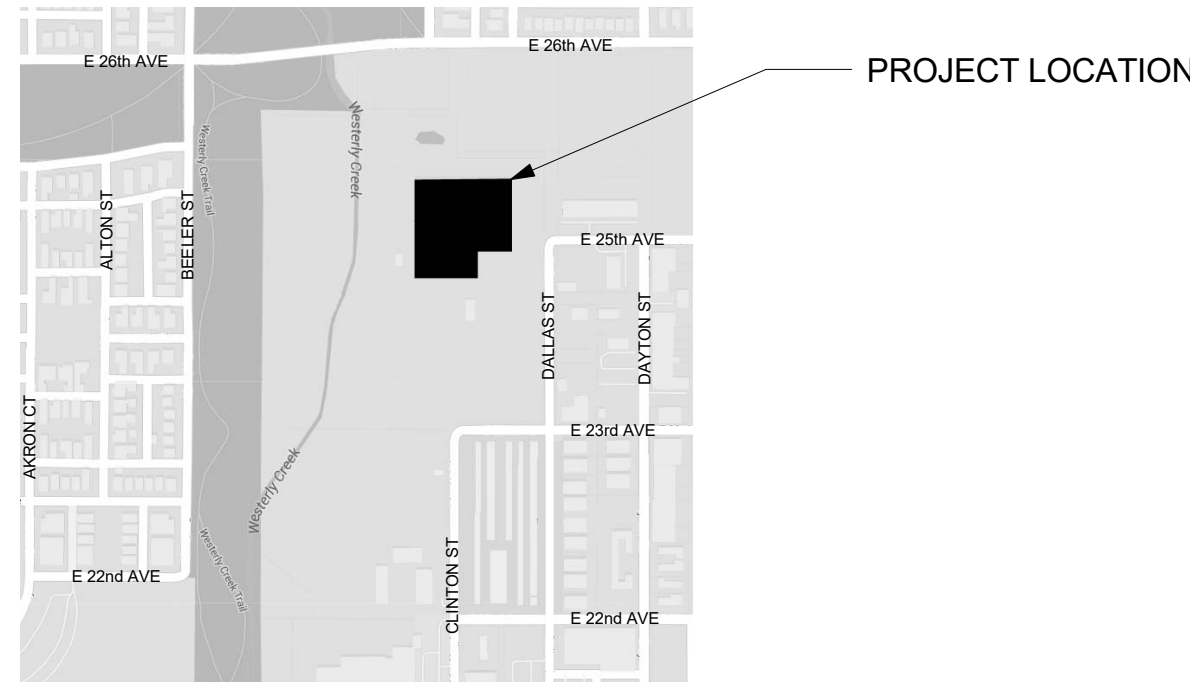
FLOOR AREA: FIRST FLOOR GROSS TENANT AREA: 3533 SF

OCCUPANT LOAD: BUSINESS 3351 SF @ 100 GROSS 47 PERSONS
TABLE 1004.1 BUSINESS 218 SF @ 15 GROSS 15 PERSONS
TOTAL 62 PERSONS

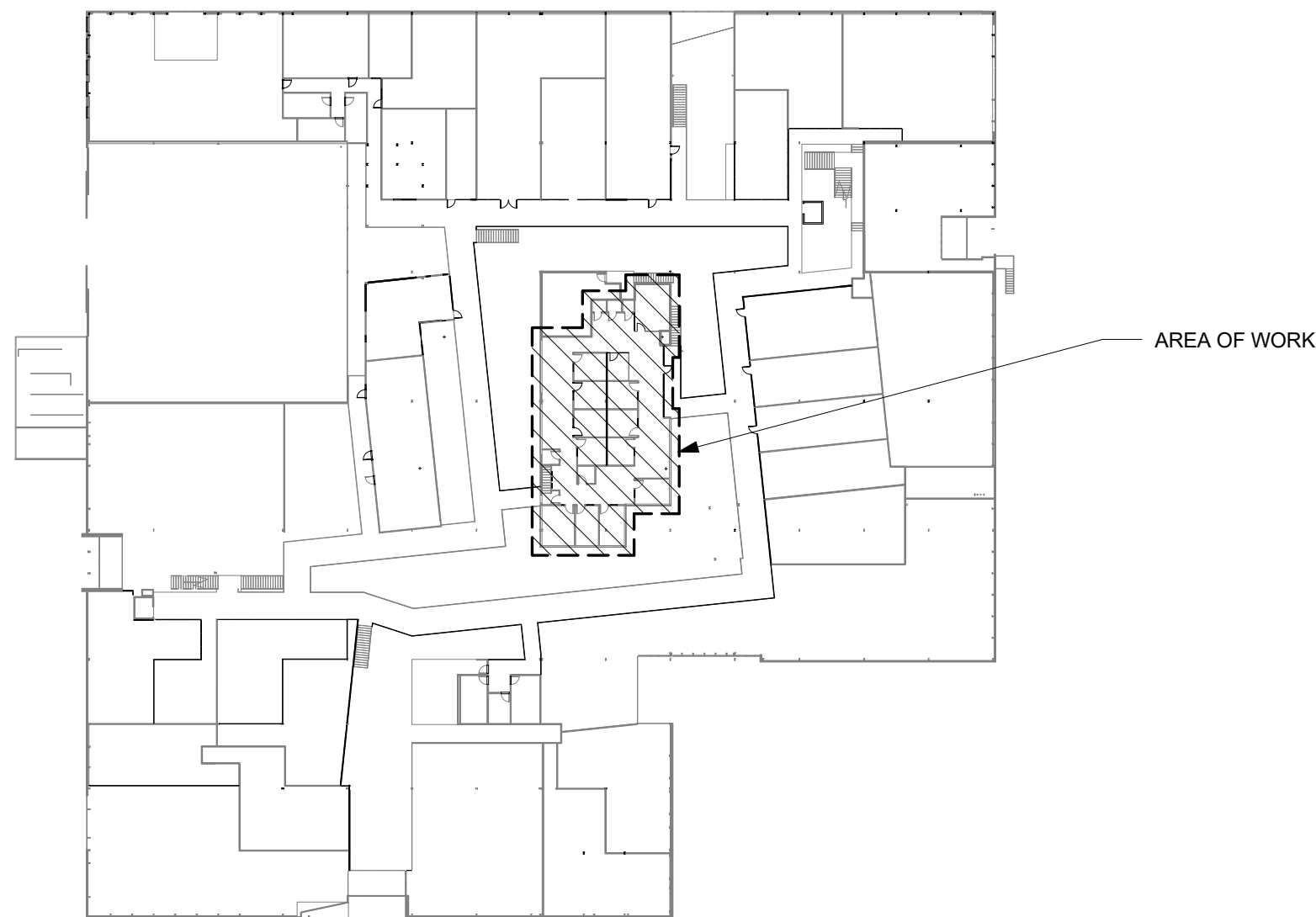
SEPARATION: 1-HR SEPARATION BETWEEN TENANT SPACES

PLUMBING REQUIREMENTS: RESTROOMS & DRINKING FOUNTAINS HAVE BEEN PROVIDED THROUGHOUT STANLEY MARKETPLACE AS PART OF THE CORE & SHELL THROUGHOUT THE BUILDOUT TO ACCOMODATE FUTURE TENANT REQUIREMENTS, PER IBC 2902.

PROJECT SCOPE: TENANT IMPROVEMENT AT EXISTING BUILDING



3
A-290
VICINITY MAP



1
A-290
UNION STANLEY - KEY PLAN
NTS



CONTACT LIST:

CLIENT/ OWNER:
UNION STANLEY
2501 DALLAS ST., #290
AURORA, CO 80010

PROJECT ARCHITECT
MCMICHAEL DESIGN STUDIO
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BRECKENRIDGE, CO 80424

MECHANICAL/ ELECTRICAL/ PLUMBING ENGINEER
M.E. GROUP
707 17th ST, SUITE 3000
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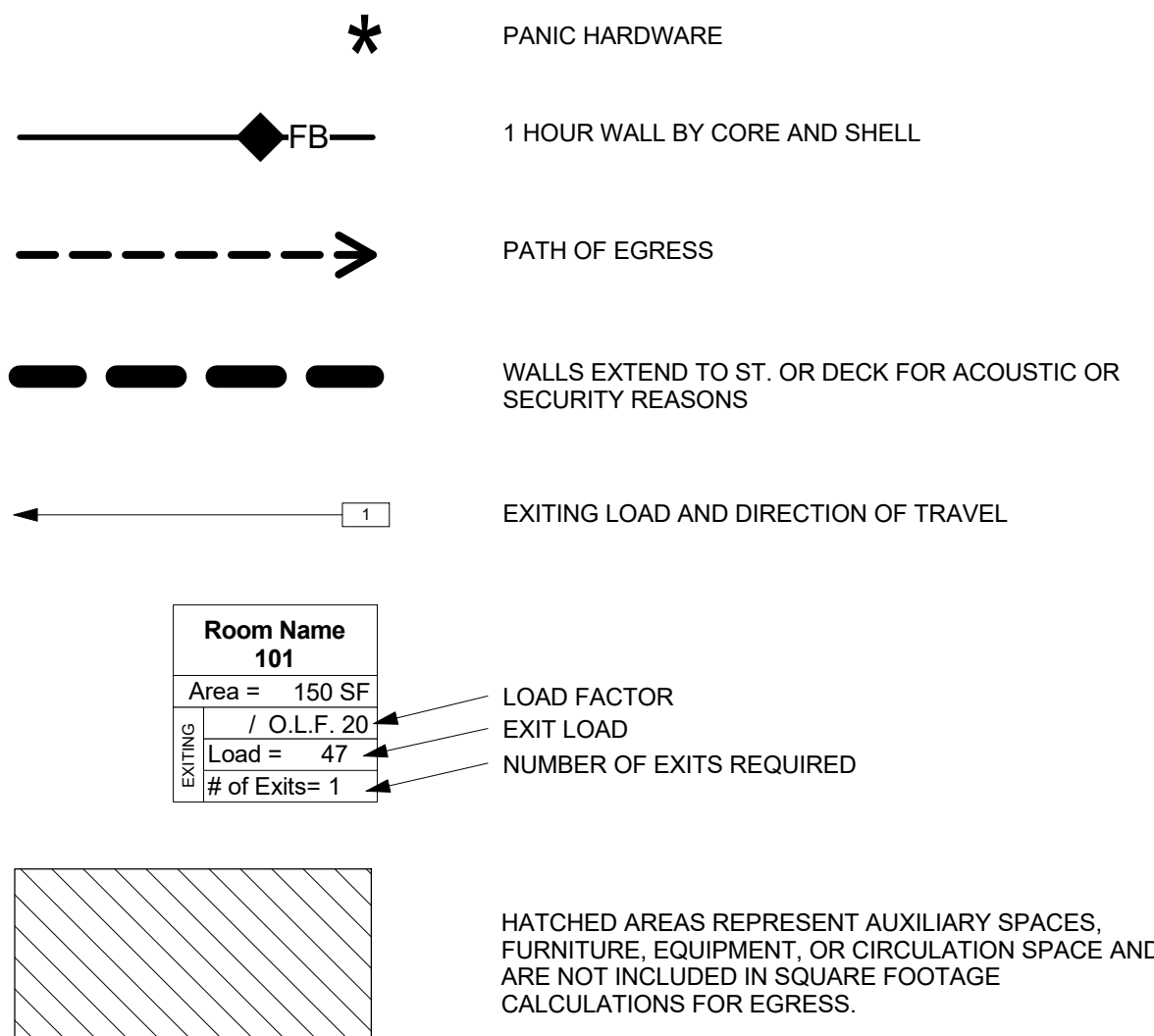
CONTRACTOR:
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CODE PLAN LEGEND:



DRAWING INDEX:

ARCHITECTURAL

A-290.0 ABBREVIATIONS, SYMBOLS & NOTES
A-290.1 WALL, DOOR & WINDOW TYPES & SCHEDULES
A-290.2 FLOOR PLAN/ REFLECTED CEILING PLAN
A-290.3 FINISH PLAN
A-290.4 INTERIOR ELEVATIONS
A-290.5 EXTERIOR ELEVATIONS
A-290.9 PERSPECTIVES

MECHANICAL

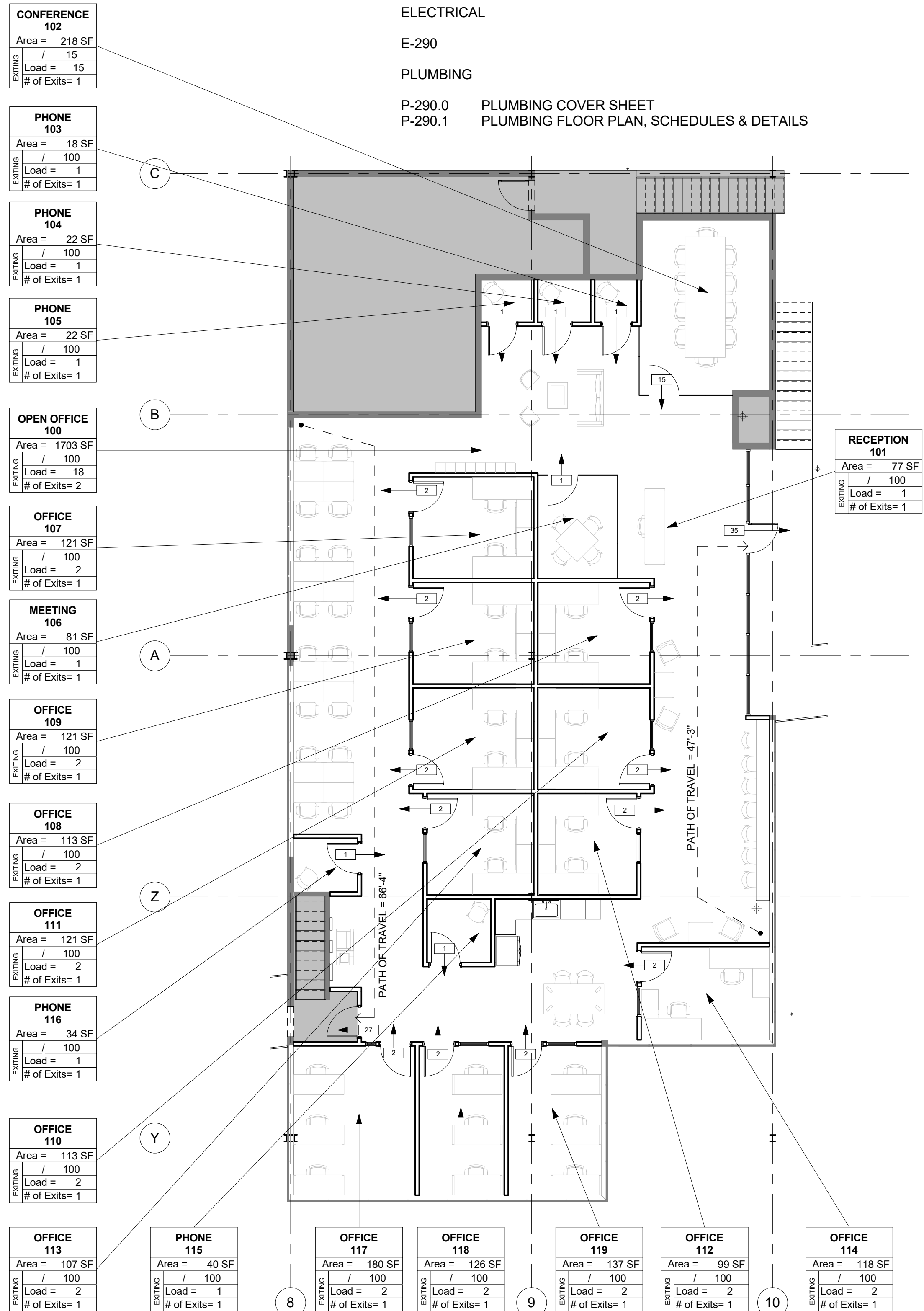
M-290.0 MECHANICAL COVER SHEET
M-290.1 MECHANICAL FLOOR PLAN & SCHEDULES
M-290.2 MECHANICAL DETAILS

ELECTRICAL

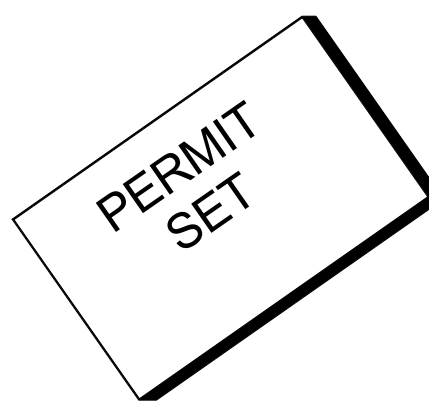
E-290

PLUMBING

P-290.0 PLUMBING COVER SHEET
P-290.1 PLUMBING FLOOR PLAN, SCHEDULES & DETAILS



3
A-290
UNION STANLEY - CODE PLAN
1/8" = 1'-0"



Project Number: 2015.028
Issue: PERMIT SET
Date: 05/19/2016
Drawn By: ZH
Checked By: PLM
Revisions:
No. Date:

Sheet title:
CODE & PROJECT
INFORMATION

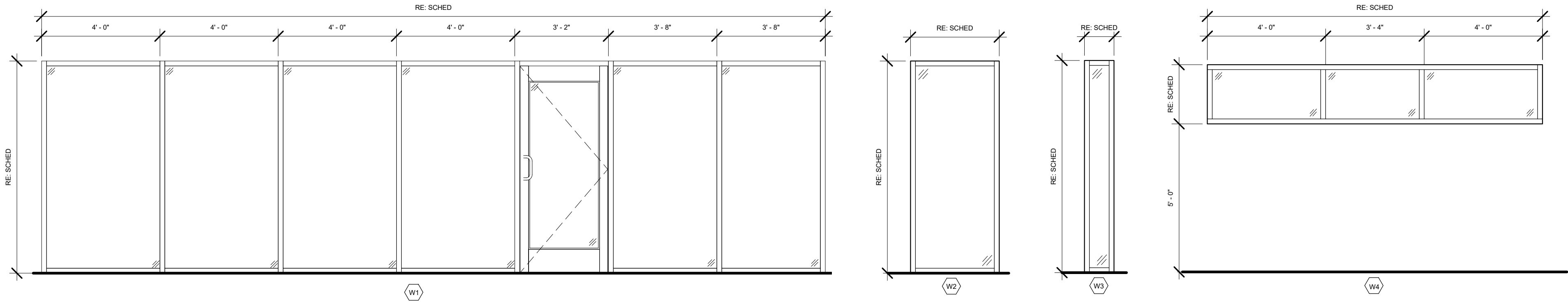
1 ABBREVIATIONS
A-290.0

2 MATERIAL LEGEND

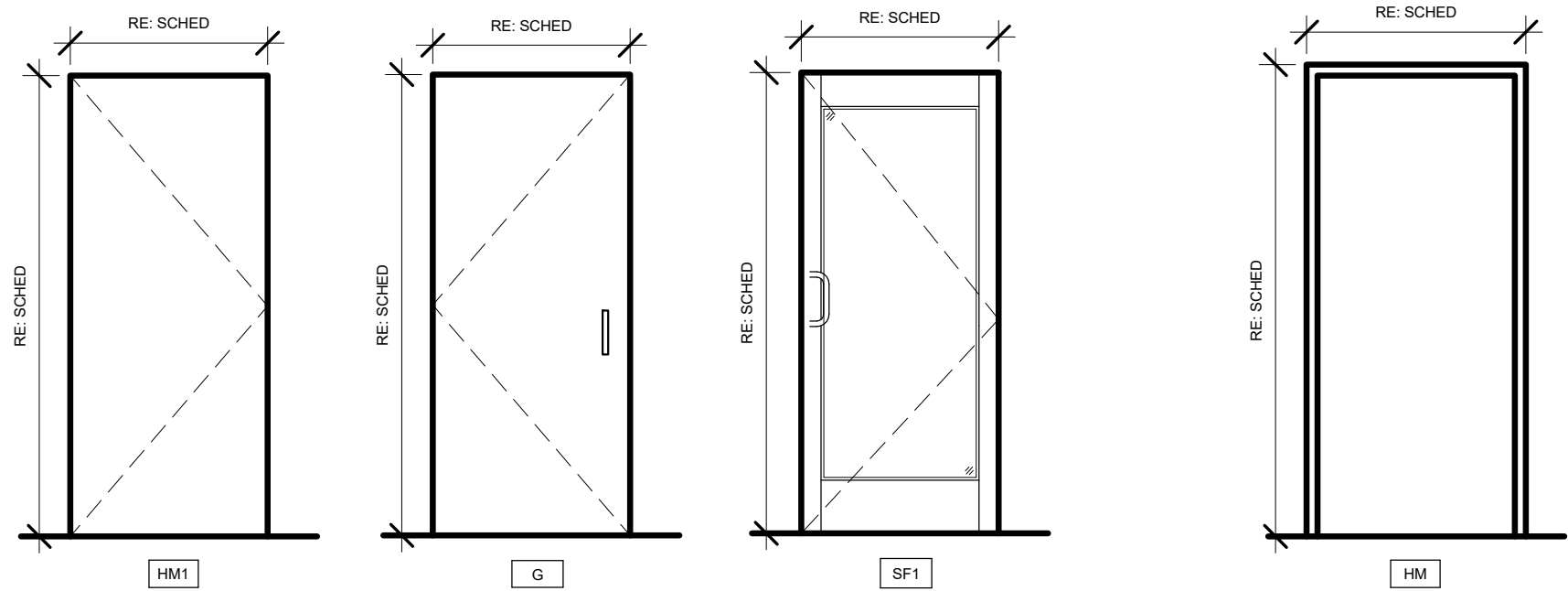
3 GENERAL NOTES
A-290.0

UNION STANLEY - WINDOW SCHEDULE					
Mark	Width	Height	Frame Type	Finish	Comments
W1	26'-6"	7'-2"			
W2	3'-0"	7'-2"			
W3	1'-0"	7'-2"			
W4	11'-4"	2'-0"			

7 WINDOW SCHEDULE
A-290.1



6 WINDOW TYPES
A-290.1 3/8" = 1'-0"

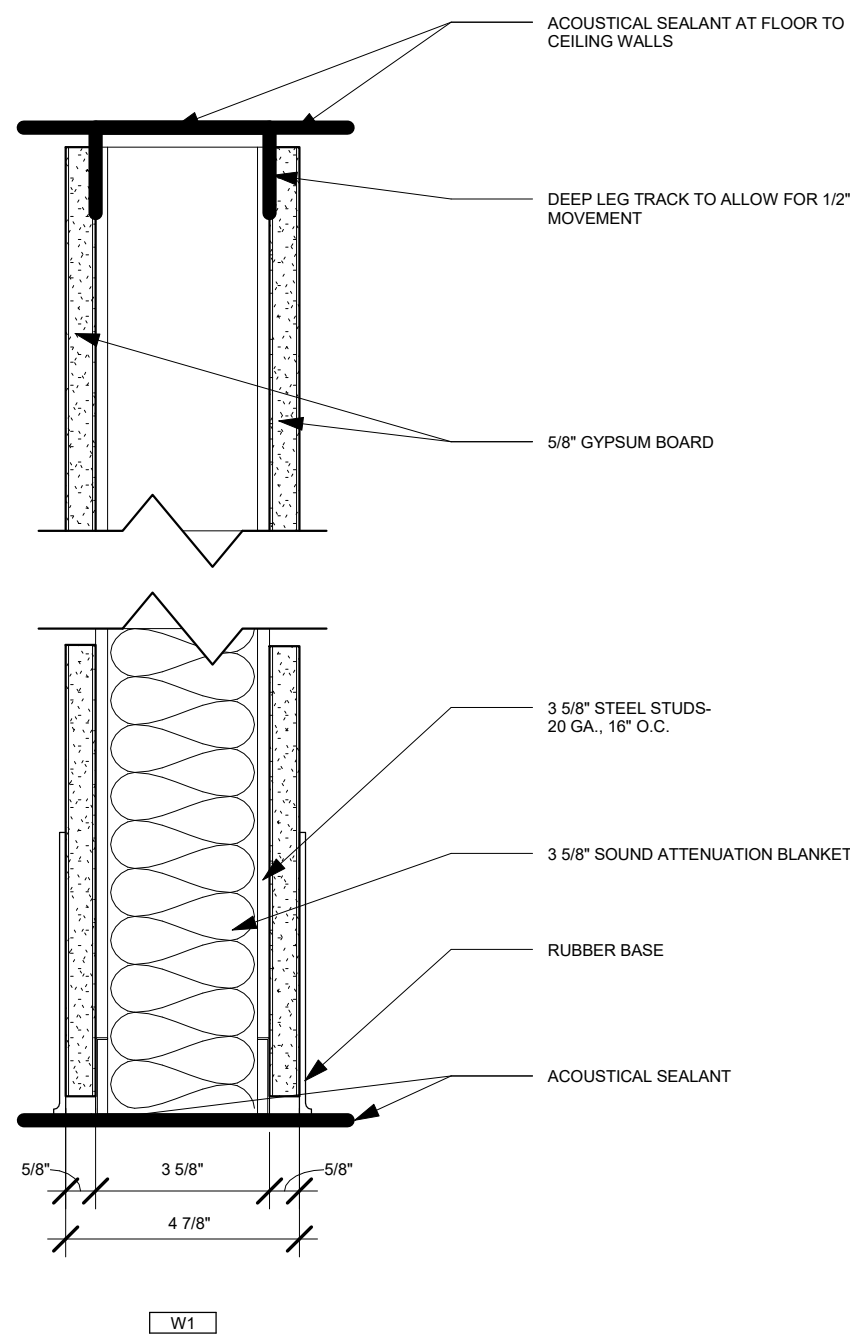


3 DOOR TYPES
A-290.1 3/8" = 1'-0"

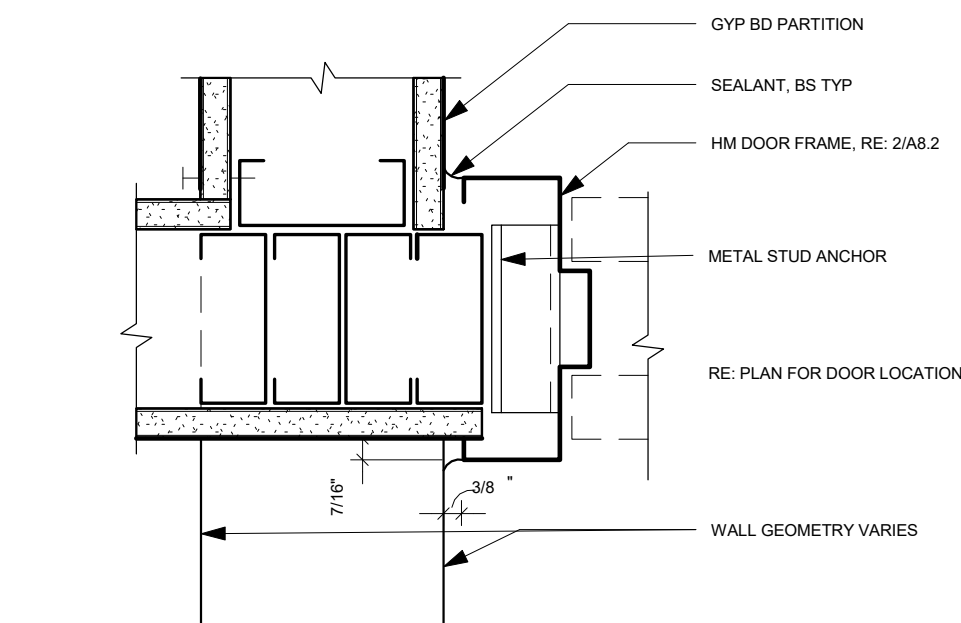
4 FRAME TYPES
A-290.1 3/8" = 1'-0"

UNION STANLEY - DOOR SCHEDULE					
Mark	Door Type	Width	Height	Finish	Comments
100A	SF1	3'-0"	7'-0"		
100B	HM1	3'-0"	7'-0"		
102	G	3'-0"	7'-0"		
103	HM1	2'-10"	7'-0"		
104	HM1	2'-10"	7'-0"		
105	HM1	2'-10"	7'-0"		
106	G	3'-0"	7'-0"		
107	HM1	3'-0"	7'-0"		
108	HM1	3'-0"	7'-0"		
109	HM1	3'-0"	7'-0"		
110	HM1	3'-0"	7'-0"		
111	HM1	3'-0"	7'-0"		
112	HM1	3'-0"	7'-0"		
113	HM1	3'-0"	7'-0"		
114	HM1	3'-0"	7'-0"		
115	HM1	3'-0"	7'-0"		
116	HM1	3'-0"	7'-0"		
117	HM1	3'-0"	7'-0"		
118	HM1	3'-0"	7'-0"		
119	HM1	3'-0"	7'-0"		

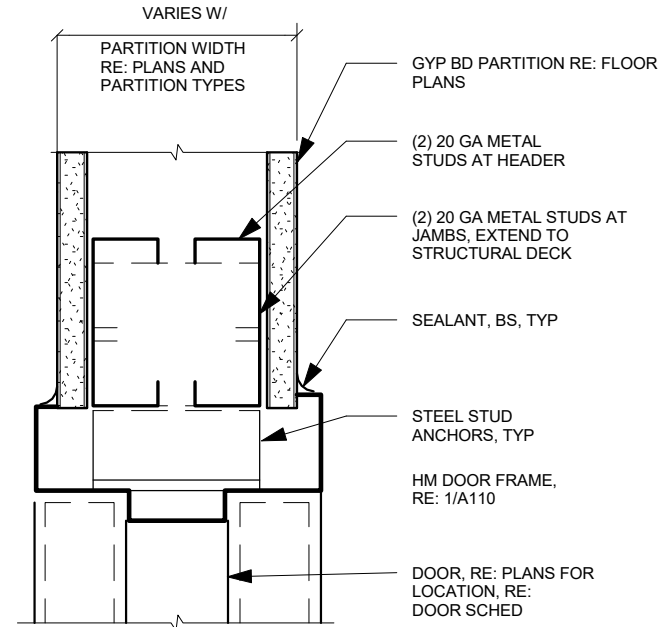
5 DOOR SCHEDULE
A-290.1



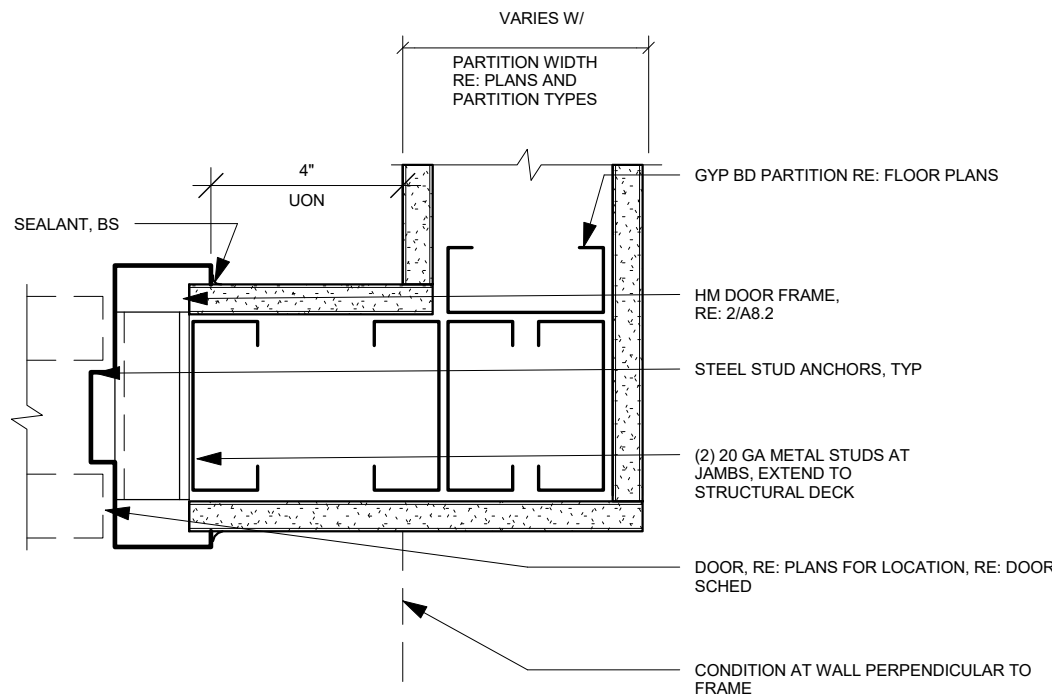
1 WALL TYPES
A-290.1 3" = 1'-0"



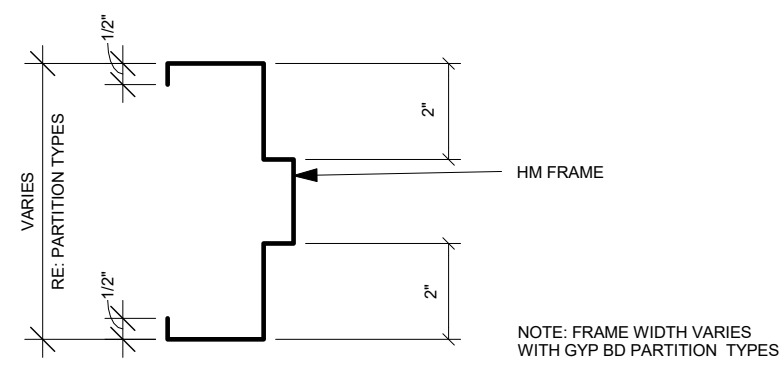
D HM DOOR JAMB



C HM DOOR HEAD/JAMB @ GYP BD WALL

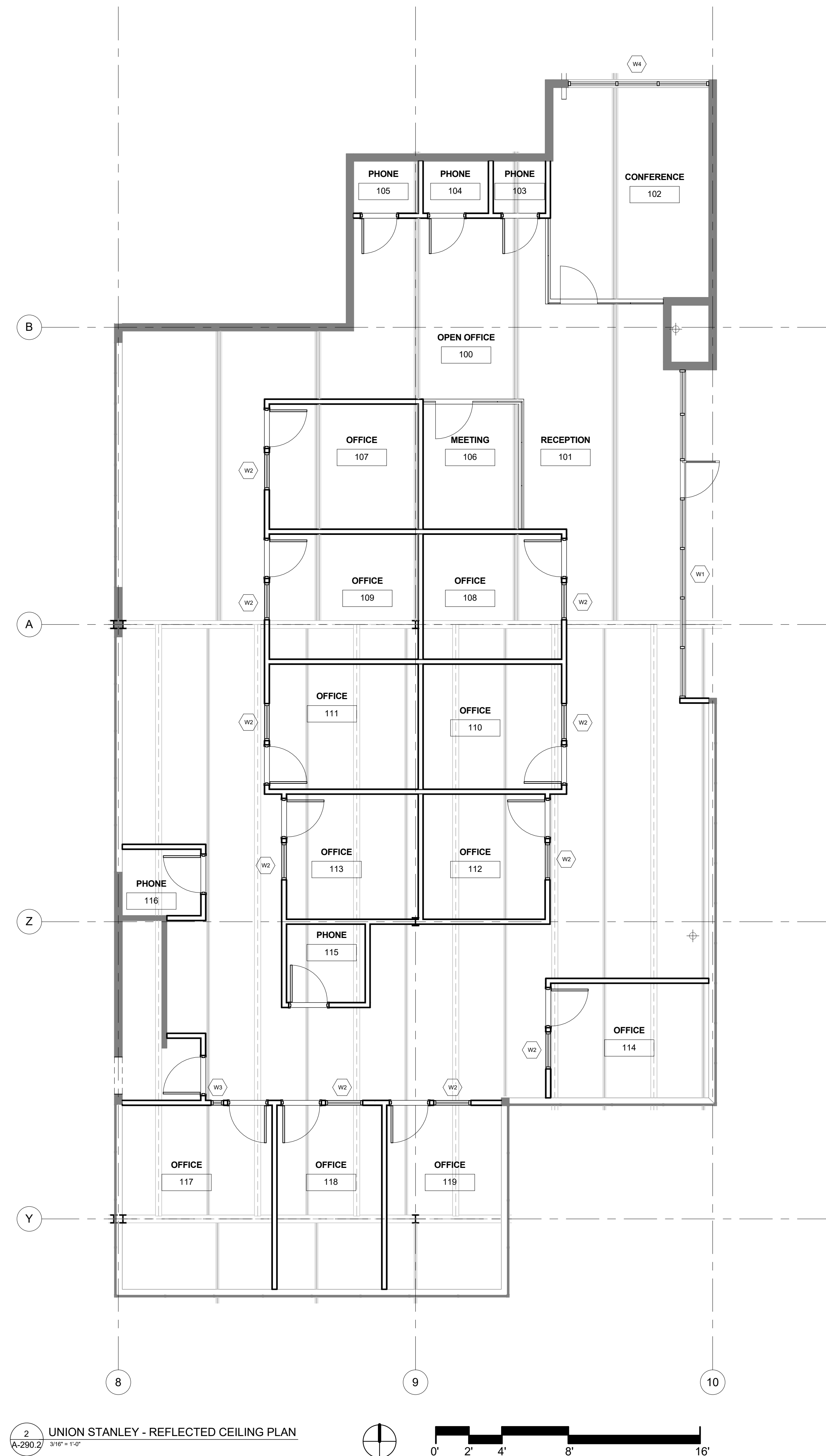
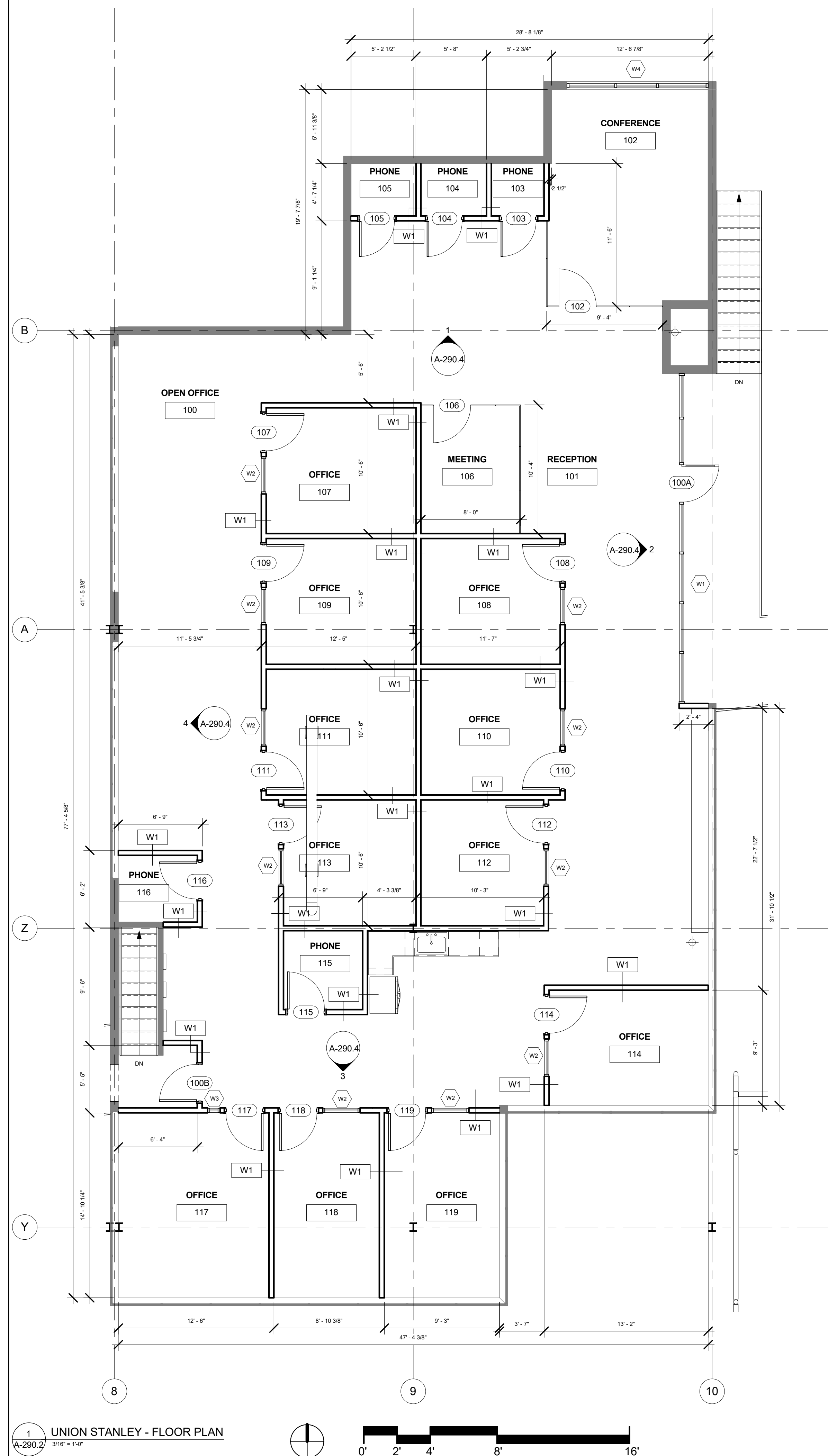


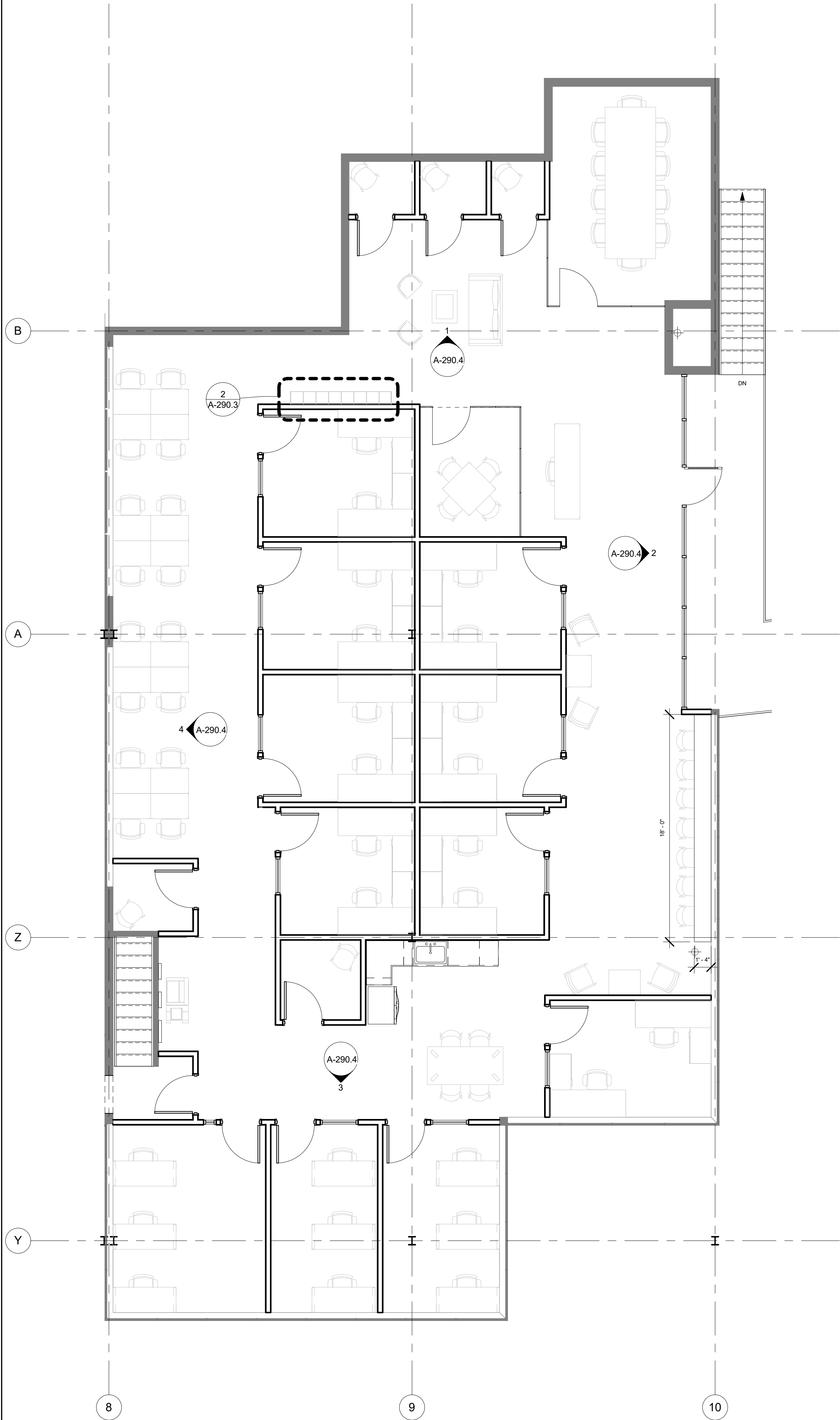
B TYPICAL CORNER HM DOOR JAMB



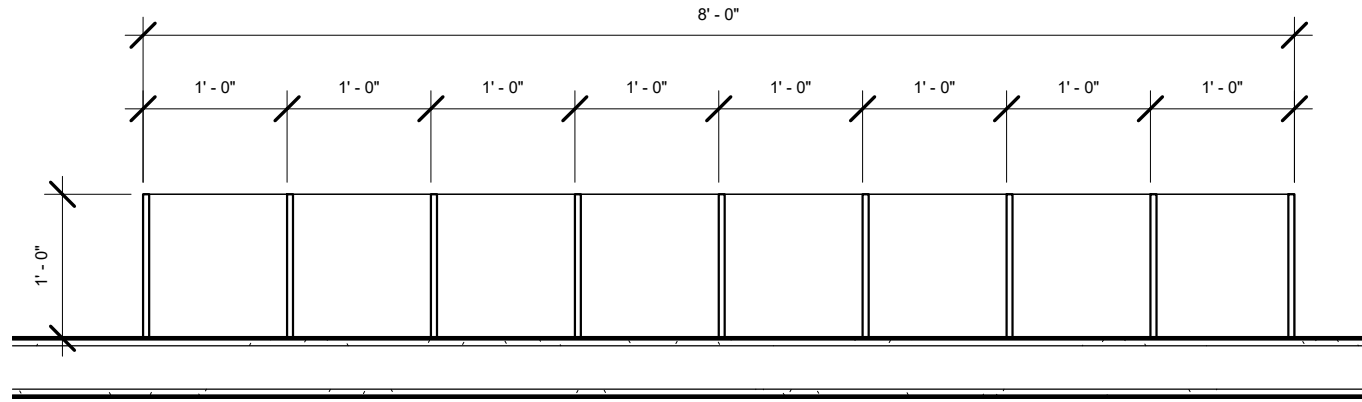
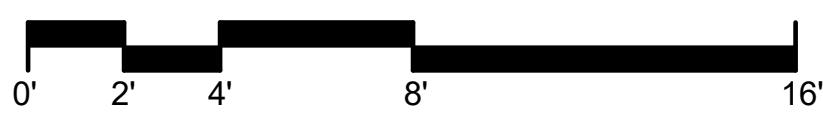
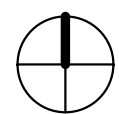
A TYP HM DOOR FRAME

2 DOOR FRAMING DETAILS
A-290.1 3" = 1'-0"

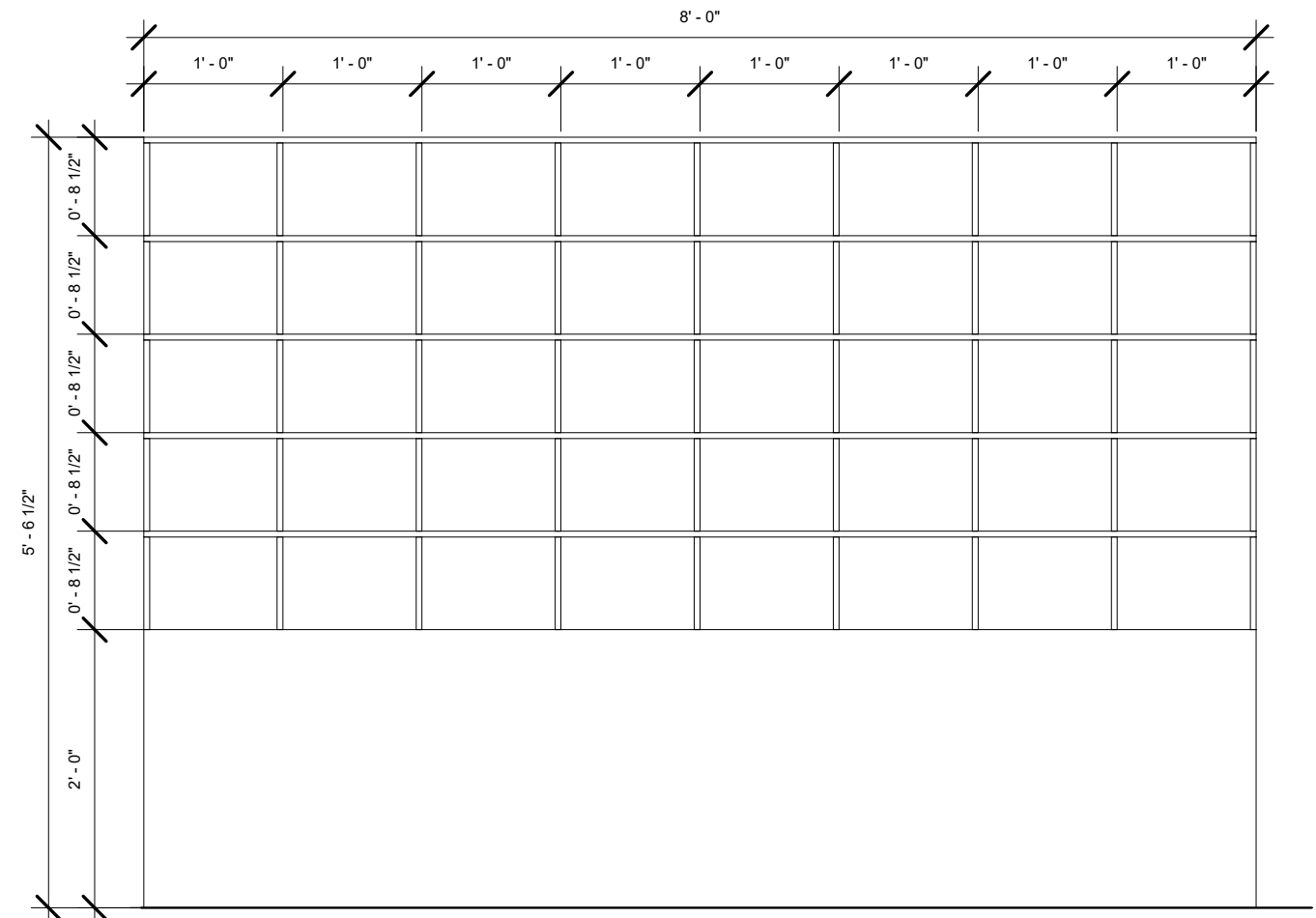




1 UNION STANLEY - FINISH PLAN
3/16" = 1'-0"



2 CABINET DETAIL - PLAN
3/4" = 1'-0"



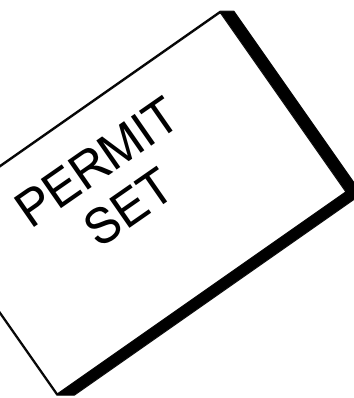
3 CABINET DETAIL - ELEVATION
3/4" = 1'-0"



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Project Number: 2015.028
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Revisions:
No. Date:

Sheet title: FINISH PLAN

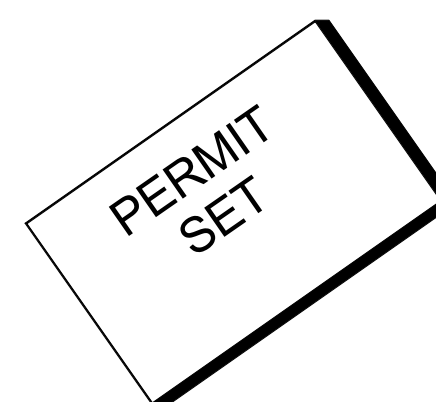
A-290.3

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UNION STANLEY

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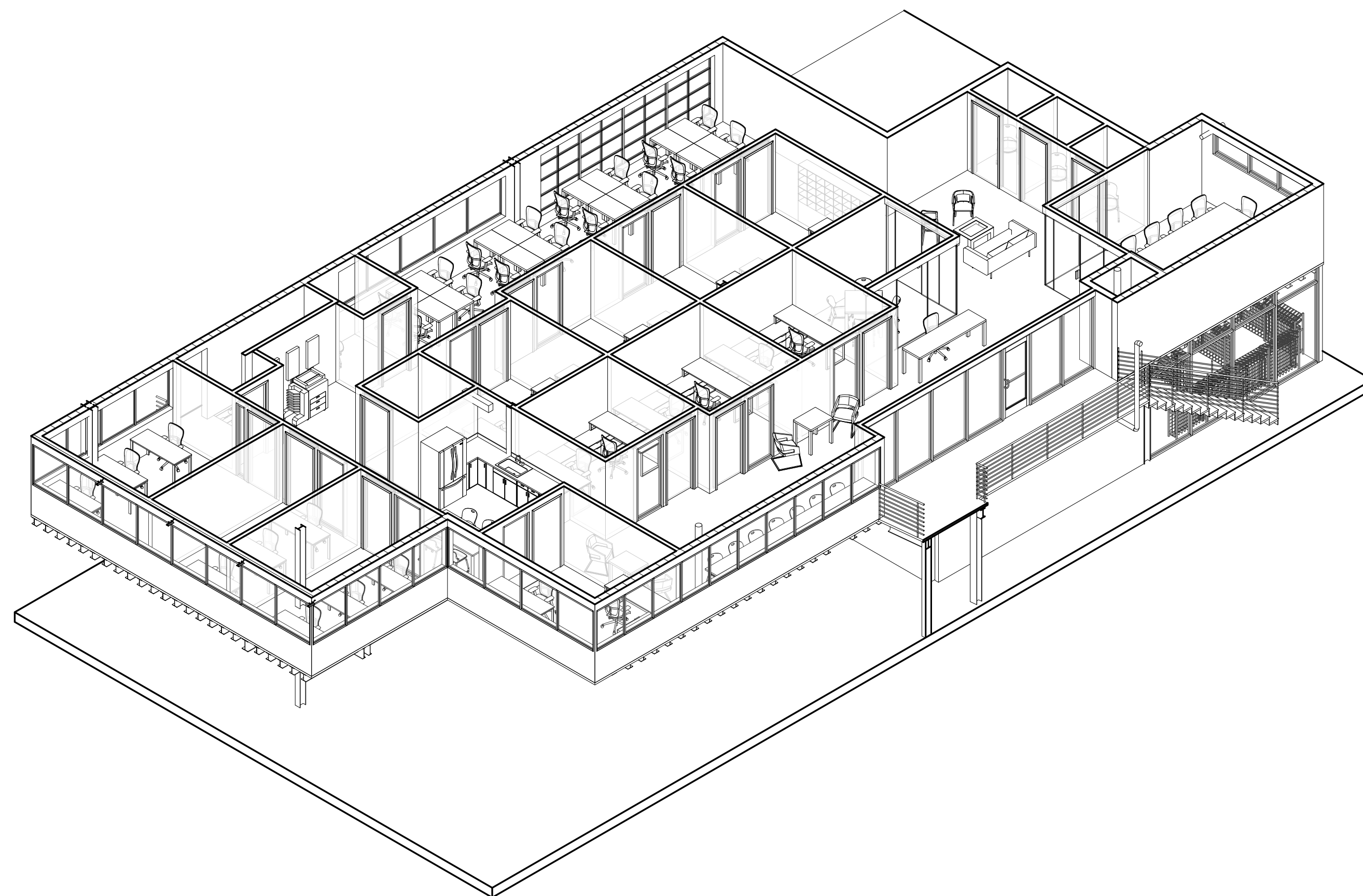


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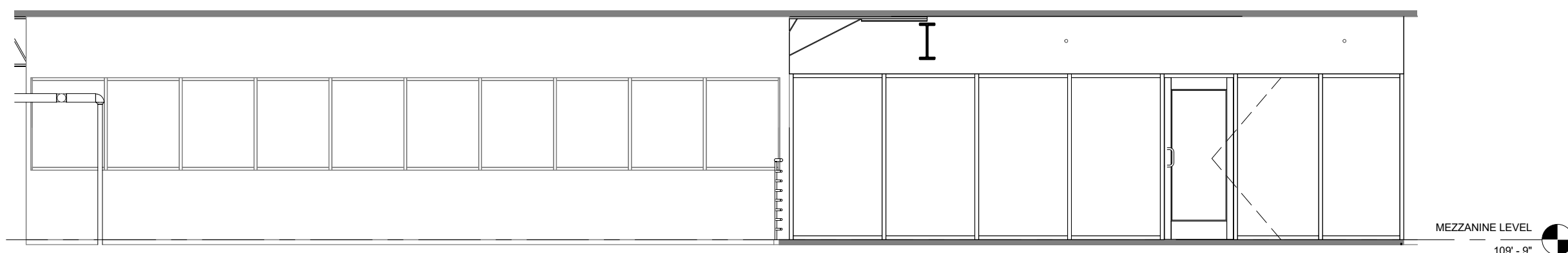
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INTERIOR ELEVATIONS

A-290.4

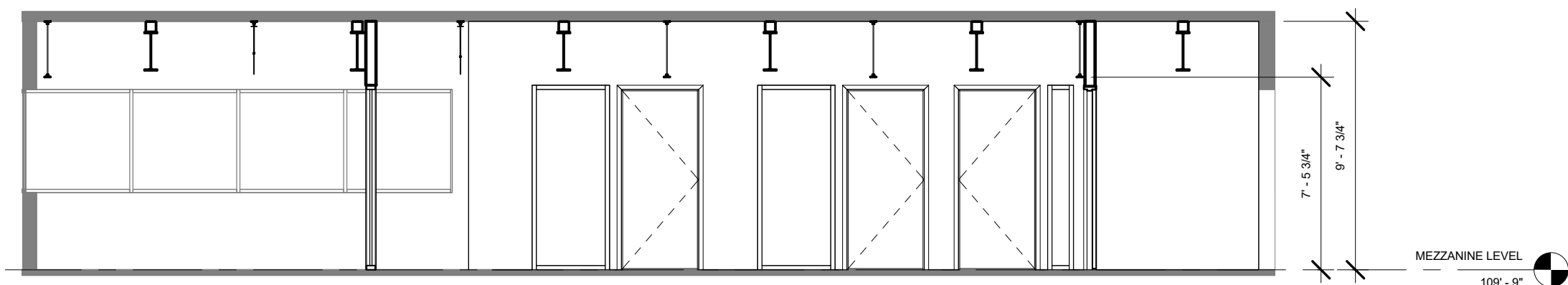
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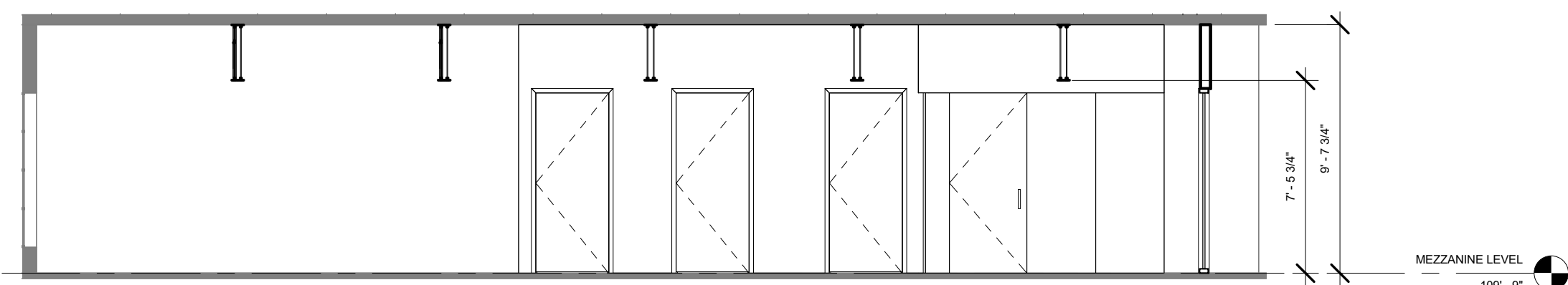
5 UNION STANLEY - ISOMETRIC
A-290.4



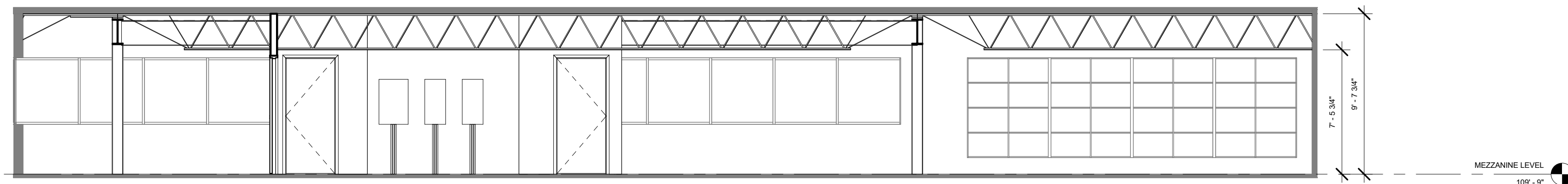
6 UNION STANLEY - ENTRY ELEVATION
A-290.4 3/16" = 1'-0"



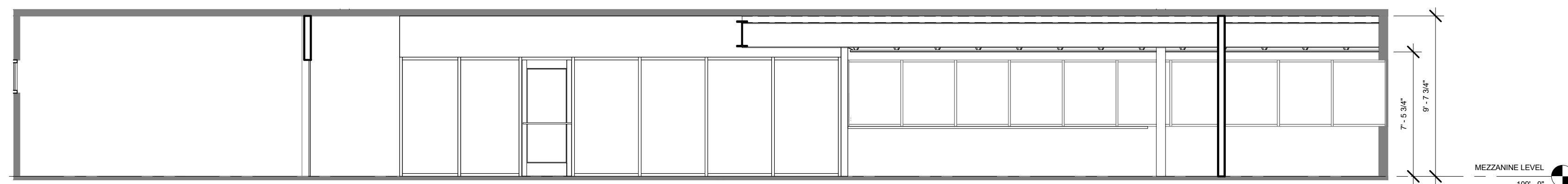
3 UNION STANLEY - SOUTH ELEVATION
A-290.4 3/16" = 1'-0"



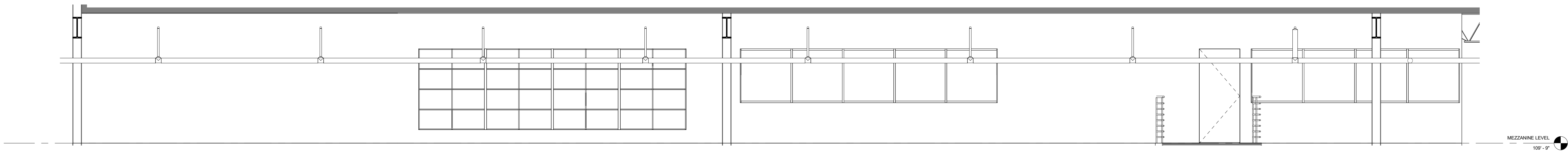
1 UNION STANLEY - NORTH ELEVATION
A-290.4 3/16" = 1'-0"



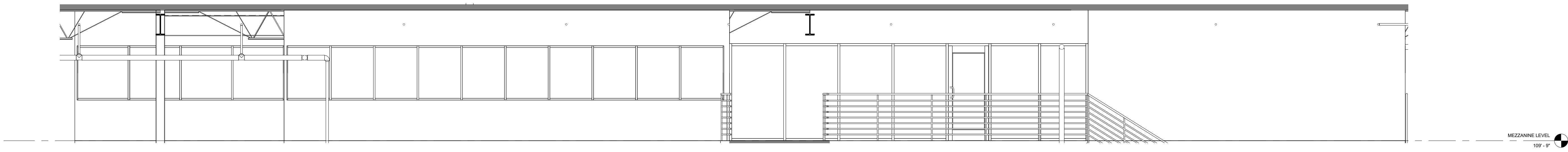
4 UNION STANLEY - WEST ELEVATION
A-290.4 3/16" = 1'-0"



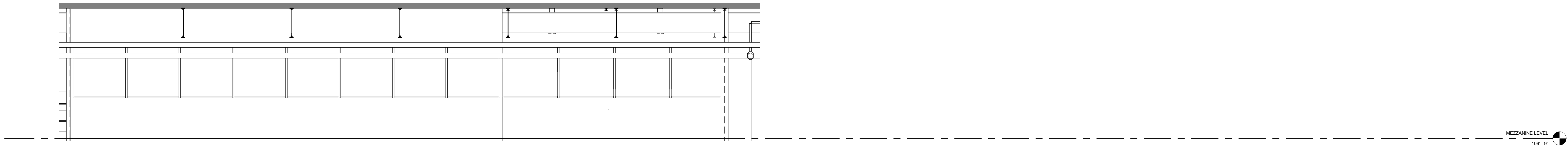
2 UNION STANLEY - EAST ELEVATION
A-290.4 3/16" = 1'-0"



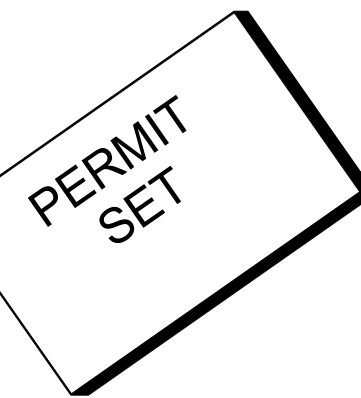
3 UNION STANLEY - EAST EXTERIOR ELEVATION
A-290.5 1/4" = 1'-0"



2 UNION STANLEY - WEST EXTERIOR ELEVATION
A-290.5 1/4" = 1'-0"



1 UNION STANLEY - SOUTH EXTERIOR ELEVATION
A-290.5 1/4" = 1'-0"



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EXTERIOR ELEVATIONS

A-290.5



C



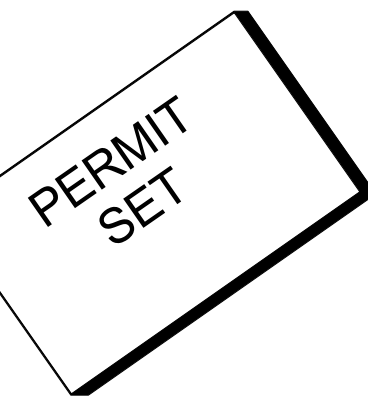
D



A



B



GENERAL NOTES

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE CODES, LOCAL CODES, AND OWNER'S STANDARDS INDICATED BY THE CONSTRUCTION DOCUMENTS.
2. MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
3. CONTRACTOR SHALL COORDINATE WORK INDICATED WITH PLUMBING, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, AND ARCHITECTURAL DIVISIONS. VERIFY FIT OF MECHANICAL SYSTEMS PRIOR TO FABRICATION. COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCKOUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
4. PROVIDE ALL EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS INCLUDING ANY REQUIRED BUT NOT LISTED MISC ITEMS NEEDED TO PROVIDE COMPLETELY OPERATIONAL SYSTEMS AS INDICATED WHETHER SPECIFICALLY CALLED FOR OR NOT. INSTALLATION SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS FOR ALL PROPOSED EQUIPMENT AND MATERIALS TO BE UTILIZED. PROVIDE OPERATION AND MAINTENANCE MANUAL FOR ALL SYSTEMS AND EQUIPMENT AT END OF PROJECT.
5. ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
6. DRAIN PIPING FROM EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD. COORDINATE ACTUAL DRAIN CONNECTIONS WITH PLUMBING CONTRACTOR.
7. ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE.
8. PROVIDE 18" X 18" MINIMUM ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIPMENT AND VALVES REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
9. DUCT SIZES INDICATED ARE OUTSIDE DIMENSIONS, BRANCH RUNOUT DUCTS TO DIFFUSERS AND GRILLES TO BE SAME SIZE AS DIFFUSER OR GRILLE CONNECTION SIZE UNLESS OTHERWISE NOTED.
10. PROVIDE CEILING OPERATORS FOR INACCESSIBLE MVD'S WHERE INDICATED, EQUAL TO YOUNG REGULATOR, REMOTE GEAR OPERATED, WITH CEILING ESCUTCHEON.
11. DUCT MOUNTED SMOKE DETECTORS SHALL BE ZERO VELOCITY TYPE WHERE INDICATED ON DRAWINGS.
12. CEILING DIFFUSERS SHALL BE 36" MINIMUM FROM CEILING MOUNTED SMOKE DETECTORS, COORDINATE WITH DIVISION 16.
13. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATION OF GRILLES, DIFFUSERS, AND ACCESS DOORS IN CEILING. SECURE DIFFUSERS & GRILLES TO T-BAR CEILINGS WHERE APPLICABLE.
14. DUCTWORK VISIBLE BEHIND DIFFUSERS, REGISTERS, OR GRILLES SHALL BE PAINTED FLAT BLACK.
15. AT THE COMPLETION OF WORK, PROVIDE TESTING AND BALANCING SERVICES FOR MECHANICAL SYSTEM. SUBMIT WRITTEN REPORT TO ARCHITECT LISTING SYSTEM AIRFLOWS, ELECTRIC DATA, TEMPERATURES, AND PRESSURE DROPS.
16. WHERE PIPES PASS THROUGH FIRE-RATED FLOOR OR WALLS, SEAL WITH MATERIALS EQUAL TO 3M FIRE BARRIER, MEETING TESTING PER ASTM-E-814 (UL 1479). USE CAULK OR PUTTY TYPE. ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED WATERPROOF.
17. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED.
18. ALL EQUIPMENT, MATERIALS, AND INSTALLATION IS TO BE WARRANTED FOR ONE YEAR TO BE FREE FROM DEFECT. PROVIDE WRITTEN WARRANTY TO OWNER.
19. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK.
20. THIS CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC., PRIOR TO STARTING OF CONSTRUCTION. COORDINATE CONFLICTS WITH THE GENERAL CONTRACTOR.
21. THIS CONTRACTOR SHALL COORDINATE ALL REQUIRED EXISTING BUILDING SERVICE SYSTEM OUTAGES WITH BUILDING MANAGEMENT.
22. ALL MECHANICAL SYSTEMS ARE REQUIRED TO BE INSTALLED PER BASE BUILDING REQUIREMENTS, LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
23. PATCH AND REPAIR TO MATCH EXISTING, ANY WALL/CEILINGS TO BE ACCESSED TO ROUTE PIPING AND DUCTWORK.
24. EXISTING DUCTWORK, PIPING, AND EQUIPMENT TO REMAIN IS SHOWN LIGHT. NEW DUCTWORK, PIPING, AND EQUIPMENT IS SHOWN HEAVY. EXISTING DUCTWORK, PIPING, AND EQUIPMENT TO BE REMOVED IS SHOWN WITH A HATCH OVER THE ITEM.

MECHANICAL SPECIFICATIONS

SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL PER SMACNA DUCT CONSTRUCTION STANDARDS. SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED FOR 2" W.C. STATIC PRESSURE. SPIRAL LOCK-FORMED ROUND DUCT MAY BE UTILIZED WHERE SPACE ALLOWS. TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED AIR-TIGHT WITH MASTIC, MASTIC SHALL BE APPLIED ONLY TO THE INSIDE OF EXPOSED DUCTWORK. RADIUSSED ELBOWS (R/D=1.5) OR MITERED ELBOWS WITH SINGLE THICKNESS TURNING VANES SHALL BE UTILIZED WHERE POSSIBLE. TURNING VANES SHALL BE SUPPORTED AT INTERVALS OF 36" MAXIMUM. TURNING VANE RUNNERS SHALL HAVE A VANE IN EVERY SLOT AND SHALL CONFORM TO SMACNA DUCT CONSTRUCTION STANDARDS FOR STANDARD SPACING.

INSULATED, FACTORY FABRICATED, FLEXIBLE DUCTWORK MAY BE UTILIZED AT RUNOUTS TO AIR DIFFUSERS WHERE DUCTWORK IS CONCEALED ABOVE CEILINGS. FLEXIBLE DUCTWORK SHALL CONSIST OF AN EXTERIOR REINFORCED LAMINATED VAPOR BARRIER, R-6.0 MINIMUM FIBERGLASS INSULATION AND INTERIOR VINYL LINER WITH SPRING STEEL WIRE HELIX. VINYL LINER SHALL NOT BE PERFORMED. FLEXIBLE DUCT ASSEMBLY SHALL HAVE A FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS. FLEXIBLE DUCT TO FLEXIBLE DUCT CONNECTIONS SHALL BE MADE WITH FACTORY FABRICATED STEEL COLLARS. FLEXIBLE DUCT SHALL BE SECURED TO RIGID DUCTWORK AND AIR DEVICES WITH SCREWS AND DRAWBANDS. LENGTH OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5' AND SHALL NOT BE COMPRESSED. FLEXIBLE DUCTWORK SHALL NOT BE USED FOR ELBOWS. FLEXIBLE DUCT SHALL NOT BE USED ABOVE INACCESSIBLE CEILINGS. FLEXIBLE DUCT SHALL NOT PASS THROUGH WALLS.

SUPPLY AND RETURN RECTANGULAR DUCTWORK SHALL BE PROVIDED WITH DUCT LINER (INSIDE THE DUCT): ONE-HALF INCH THICK, RESIN BONDED GLASS FIBER, IMMOBILIZED, EPA-REGISTERED ANTIMICROBIAL AGENT COATING ON AIR STREAM SURFACE, RATED BY MANUFACTURER FOR AT LEAST 4000 FPM AND MEETING THE REQUIREMENTS OF ASTM C1071 TYPE I. FIRE RESISTANCE SHALL MEET REQUIREMENTS OF NFPA 90A. FLAME SPREAD RATING NOT TO EXCEED 25. FUEL CONTRIBUTION AND SMOKE DEVELOPMENT NOT TO EXCEED 50. NOISE REDUCTION COEFFICIENT (NRC) OF NOT LESS THAN 0.60 WHEN TESTED IN ACCORDANCE WITH ASTM C423 USING AN "A" MOUNTING OR A MINIMUM OF 0.70 USING AN "F" MOUNTING. K VALUE NOT MORE THAN 0.26 BTUH PER SQUARE FOOT PER DEG. F AT 75 DEG. F OR AN "R" VALUE OF 4. MAXIMUM ABSOLUTE ROUGHNESS FACTOR PER FOOT OF .004

DUCT HANGERS SHALL BE CONSTRUCTED OF GALVANIZED STEEL. DUCTS SHALL BE SUPPORTED AND CONNECTED TO THE STRUCTURE PER SMACNA DUCT CONSTRUCTION STANDARDS. FLEXIBLE DUCTS SHALL BE SUPPORTED WITH GALVANIZED STRAPS.

HEAVY FLEXIBLE CONNECTIONS SHALL BE FURNISHED AND INSTALLED AT DUCT CONNECTIONS TO FANS AND AIR HANDLING UNITS. FLEXIBLE CONNECTIONS SHALL BE 6" MINIMUM AND 10" MAXIMUM IN LENGTH. MATERIAL FOR INTERIOR INSTALLATIONS SHALL BE VENTFLEX MANUFACTURED BY VENTFABRICS, EXCELOX MANUFACTURED BY DURO-DYNE OR APPROVED EQUAL.

MANUAL VOLUME DAMPERS SHALL BE FURNISHED AND INSTALLED WHERE INDICATED AT SUPPLY AIR DUCT RUNOUTS TO AIR DIFFUSERS AND GRILLES AS NEAR AS POSSIBLE TO THE TRUNK DUCT. MANUAL VOLUME DAMPERS FOR RECTANGULAR DUCT SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL AND BE THE OPPOSED BLADE TYPE. MANUAL VOLUME DAMPERS FOR ROUND DUCT SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL AND BE THE SINGLE BLADE TYPE. DAMPER BEARINGS SHALL BE NYLON. STAND-OFFS TO OUTSIDE OF INSULATION SHALL BE PROVIDED FOR MANUAL VOLUME DAMPERS IN INSULATED DUCT. LOCKING AND INDICATING QUADRANTS SHALL BE PROVIDED WHERE DAMPER IS ACCESSIBLE. REMOTE CEILING OPERATORS SHALL BE FURNISHED AND INSTALLED FOR DAMPERS ABOVE INACCESSIBLE CEILINGS. OPERATORS SHALL BE GEAR AND LINKAGE TYPE EQUAL TO YOUNG REGULATOR WITH CHROME PLATED CEILING ESCUTCHEON AND COVER PLATE.

AIR DEVICES SHALL BE AS SCHEDULED. EXPOSED SCREWS SHALL BE THE FINISHING TYPE AND PAINTED TO MATCH THE AIR DEVICE. SQUARE TO ROUND ADAPTORS SHALL BE PROVIDED WHERE REQUIRED FOR AIR DEVICES IN CEILINGS. AIR DEVICES SHALL BE FINISHED WITH WHITE BAKED ENAMEL UNLESS NOTED OTHERWISE. AIR DEVICES SHALL BE SECURED TO T-BAR CEILINGS WHERE APPLICABLE.

EQUIPMENT AND CONDENSATE DRAINS SHALL BE TYPE M HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS. COPPER TUBING SHALL BE SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER OR BRAZED WITH SILVER BASED FILLER MATERIAL. DRAINS SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD.

PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE OR DUCT SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.

MECHANICAL EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE JURISDICTIONAL BUILDING AND MECHANICAL CODES.

ROOF CURB ASSEMBLIES SHALL CONSIST OF HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION, WITH INTEGRAL BASE PLATE, 3# DENSITY INSULATION AND 2 X 2 NAILER.

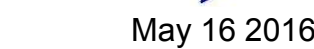
EQUIPMENT RAIL SUPPORTS 18 GA. GALVANIZED STEEL, UTILIZED CONSTRUCTION WITH INTEGRAL BASE PLATE, CONTINUOUS WELDED CORNER SEAMS PRESSURE TREATED WOOD NAILER, COUNTERFLASHING WITH LAG SCREWS. INTERNALLY REINFORCED TO CONFORM WITH LOAD BEARING FACTORS. STANDARD WOOD NAILER SHALL HAVE A OVERHANGING UNLESS OTHERWISE SPECIFIED.

MECHANICAL EQUIPMENT SHALL BE IDENTIFIED WITH BAKELITE NAMEPLATES. COLOR CODING OF NAMEPLATES AND IDENTIFICATION INFORMATION SHALL BE COORDINATED WITH THE OWNER.

AN INDEPENDENT TEST AND BALANCE FIRM WHICH IS AABC OR NEBB CERTIFIED SHALL BE RETAINED FOR CHECK/TEST-START-UP AND TESTING AND BALANCING OF AIR SYSTEMS. THE TEST REPORT SHALL BE IN A FORMAT APPROVED BY AABC FOR SYSTEMS OF THIS TYPE AND COMPLEXITY. QUALIFICATIONS OF INDEPENDENT TEST AND BALANCE FIRM SHALL BE SUBMITTED FOR REVIEW.

[illegible]

LEGEND		
ABBR	SYMBOL	DESCRIPTION
D		DRAIN
PD		PUMPED DRAIN
PG		PRESSURE GAUGE
TH		THERMOMETER
TW		TEST WELL (PETE'S PLUG)
FSW		FLOW SWITCH
T-STAT		THERMOSTAT
S		SPACE SENSOR W/ PLUG-IN PORT
FLFD		FUSIBLE LINK FIRE DAMPER
DD		DUCT MOUNTED SMOKE DETECTOR
FSD		COMBINATION FIRE/SMOKE DAMPER
AUTO D		MOTORIZED DAMPER
MVD		MANUAL VOLUME DAMPER
RE-D		MVD WITH REMOTE CEILING OPERATOR
OBD		OPPOSED BLADE DAMPER
BDD		BACKDRAFT DAMPER
SA		SUPPLY AIR
RA		RETURN AIR
EA		EXHAUST AIR
OA		OUTSIDE AIR
SW		SIDEWALL DIFFUSER
LD		LINED DUCTWORK
DIFF		DIFFUSER
GR		GRILLE
MA		MIXED AIR
AD		ACCESS DOOR
SP		STATIC PRESSURE
GBS		GALVANIZED BIRD SCREEN
ESP		EXTERNAL STATIC PRESSURE
WC		WATER COLUMN
TDH		TOTAL DYNAMIC HEAD
APD		AIR PRESSURE DROP
FG		FIBERGLASS
UNO		UNLESS NOTED OTHERWISE
FC		FORWARD CURVED
AF		AIRFOIL
PL		PLUG FAN
CV		CONSTANT VOLUME
VAV		VARIABLE AIR VOLUME
WP		WORKING PRESSURE
TSP		TOTAL STATIC PRESSURE
WPD		WATER PRESSURE DROP
EMCS		ENERGY MANAGEMENT AND CONTROL SYSTEM
AFF		ABOVE FINISHED FLOOR



Sheet title:
MECHANICAL COVER
SHEET

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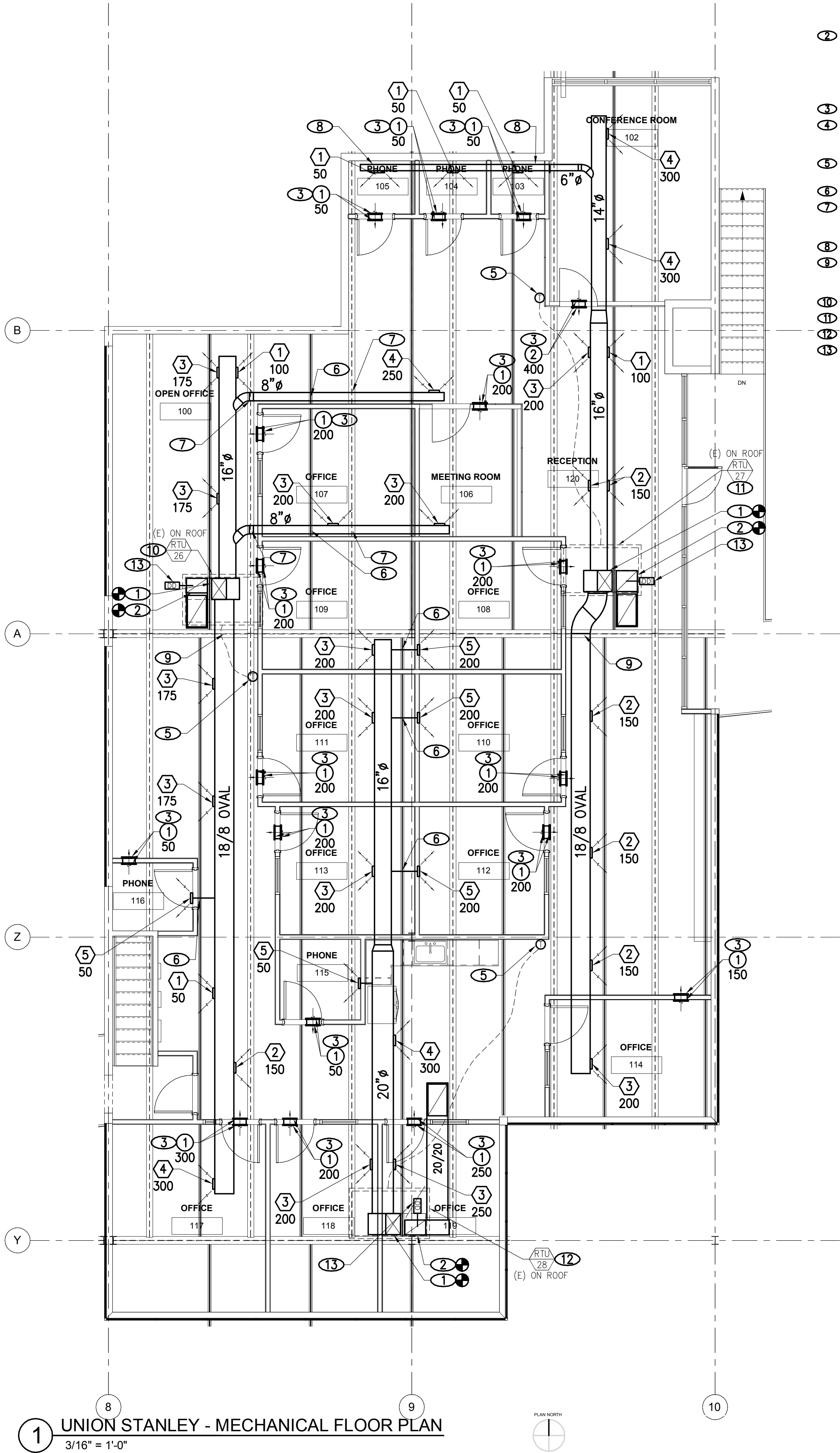
DIFFUSER & REGISTER SCHEDULE							
SUPPLY AIR				RETURN/EXHAUST AIR			
ITEM	NECK SIZE	CFM RANGE	TYPE	ITEM	MODULE-NECK SIZE	CFM RANGE	TYPE
①	10/3	0 – 120	S1	①	12/12	0 – 300	R1
②	10/4	121 – 170	↓	②	18/12	0 – 500	↓
③	10/6	171 – 250					
④	14/6	251 – 340					
⑤	6/6	0 – 200	S2				

DIFFUSER & REGISTER SPECIFICATIONS							
SUPPLY AIR							
TYPE S1: KRUEGER MODEL DMGDU DOUBLE DEFLECTION STEEL DUCT MOUNTED SUPPLY GRILL, 3/4" BLADE SPACING, OBD, CLEAR ANODIZED FINISH.							
TYPE S2: KRUEGER MODEL 880H DOUBLE DEFLECTION STEEL SUPPLY GRILL, 3/4" BLADE SPACING, OBD, WHITE FINISH. USE CONCEALED MOUNTING IN PUBLIC AREAS. BALANCE WITH DEFLECTION VANES ARRANGED TO DIFFUSE AIR WITH HALF OF VANES DISCHARGING AT 45 DEGREE ANGLE TO LEFT AND HALF OF VANES DISCHARGING AT 45 DEGREE ANGLE TO RIGHT. ADJUST VANES TO AVOID SUPPLY AIR JETS DISCHARGING DIRECTLY ON OCCUPANTS OR TEMPERATURE SENSORS.							
RETURN/EXHAUST AIR							
TYPE R1: KRUEGER MODEL S85H, STEEL GRILLE, 1/2" BLADE SPACING, 35° BLADE ANGLE, WHITE FINISH. FRAME 23 FOR LAY IN CEILINGS. CONCEALED MOUNTING FOR GYP. BOARD CEILINGS. PROVIDE OBD IN GRILLE WHERE INDICATED ON DRAWINGS.							

OUTSIDE AIR VENTILATION CALCULATIONS									
PROJECT: STANLEY MARKETPLACE UNION STANLEY, UNIT 290			CODE: 2009 IMC			SYSTEM: EXISTING RTU-26			
		OCCUPANCY			AREA		TOTAL REQD	SUPPLY	
ROOM	AREA (SQFT)	#/1000 SQFT	# PEOPLE	OSA PER (CFM)	CFM/SQFT	E _z	OSA (CFM)	AIR (CFM)	% OSA
OPEN OFFICE AREA	853	5	5	5.0	0.06	0.80	95	1,250	8%
OFFICE 1 #107	122	5	1	5.0	0.06	0.80	15	200	8%
MEETING ROOM #106	78	50	4	5.0	0.06	0.80	31	200	15%
PHONE 5 #116	34	5	1	5.0	0.06	0.80	9	50	18%
OFFICE 9 #117	180	5	1	5.0	0.06	0.80	20	300	7%
TOTALS	1,267		12				170	2,000	
SYSTEM CALCULATIONS									
SUPPLY AIR		2,000 CFM		VENTILATION SYSTEM EFFICIENCY				91%	
TOTAL UNCORRECTED OSA REQD		170 CFM		SYSTEM OCCUPANT DIVERSITY				100%	
AVERAGE OUTDOOR AIR %		9%		CORRECTED SYSTEM MIN OUTDOOR AIR				187 CFM	
NOTES:									

OUTSIDE AIR VENTILATION CALCULATIONS									
PROJECT: STANLEY MARKETPLACE UNION STANLEY, UNIT 290			CODE: 2009 IMC			SYSTEM: EXISTING RTU-27			
ROOM	AREA (SQFT)	#/1000 SQFT	# PEOPLE	OSA PER (CFM)	CFM/SQFT	E _z	TOTAL REQD OSA (CFM)	SUPPLY AIR (CFM)	% OSA
PHONE 1 #105	21	5	1	5.0	0.06	0.80	8	50	16%
PHONE 2 #104	24	5	1	5.0	0.06	0.80	8	50	16%
PHONE 3 #103	18	5	1	5.0	0.06	0.80	8	50	15%
CONFERENCE ROOM #102	215	50	11	5.0	0.06	0.80	85	600	14%
OPEN OFFICE AREA	716	5	4	5.0	0.06	0.80	79	1,050	7%
OFFICE 8 #114	118	5	1	5.0	0.06	0.80	15	200	8%
TOTALS	1,112		19				202	2,000	
SYSTEM CALCULATIONS									
SUPPLY AIR			2,000 CFM		VENTILATION SYSTEM EFFICIENCY			94%	
TOTAL UNCORRECTED OSA REQD			202 CFM		SYSTEM OCCUPANT DIVERSITY			100%	
AVERAGE OUTDOOR AIR %			10%		CORRECTED SYSTEM MIN OUTDOOR AIR			215 CFM	
NOTES:									

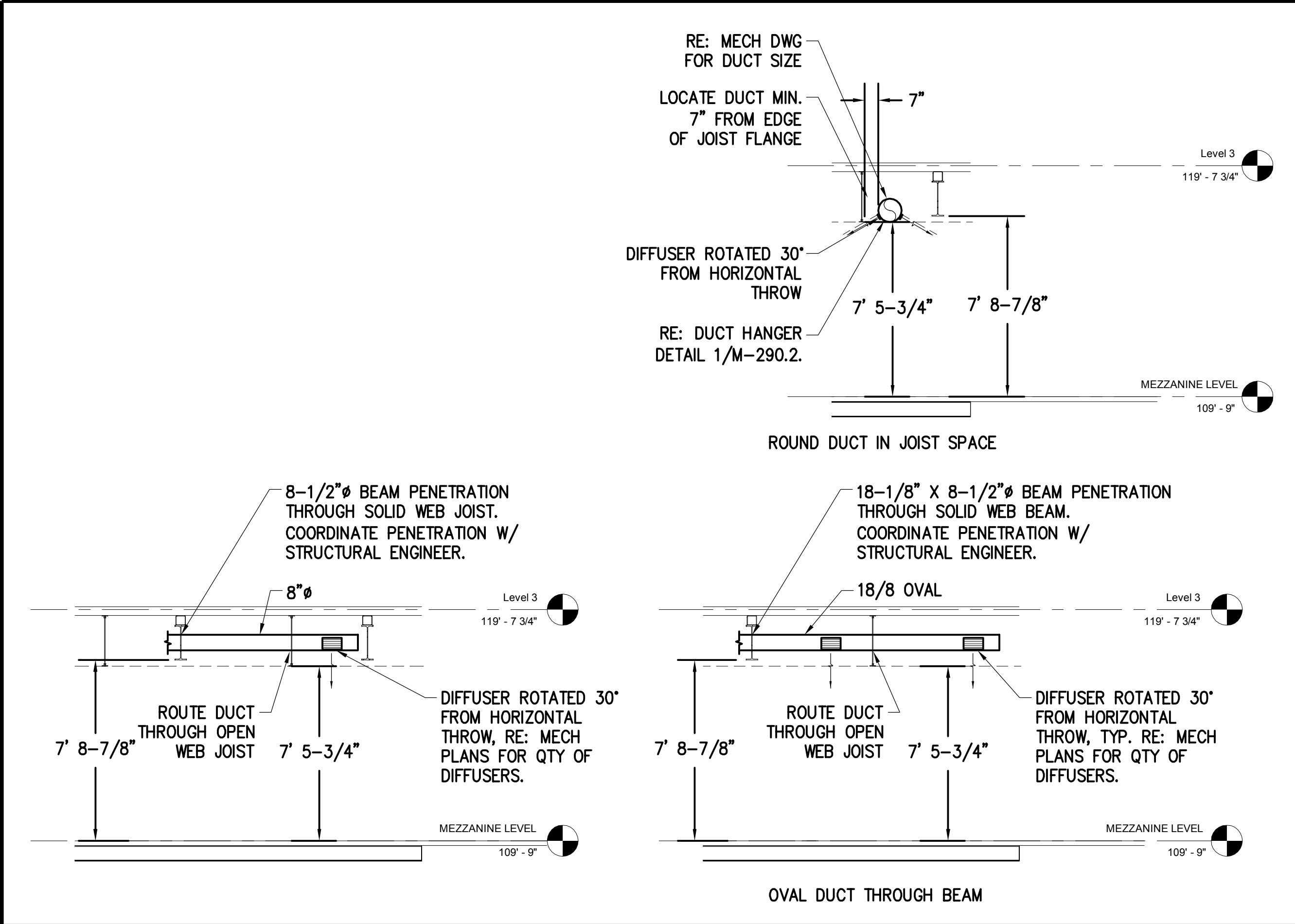
OUTSIDE AIR VENTILATION CALCULATIONS									
PROJECT: STANLEY MARKETPLACE UNION STANLEY, UNIT 290			CODE: 2009 IMC			SYSTEM: EXISTING RTU-28			
ROOM	AREA (SQFT)	#/1000 SQFT	# PEOPLE	OSA PER (CFM)	CFM/SQFT	E _z	TOTAL REQD OSA (CFM)	SUPPLY AIR (CFM)	% OSA
OPEN OFFICE AREA	204	5	2	5.0	0.06	0.80	28	300	9%
OFFICE 2 #109	122	5	1	5.0	0.06	0.80	15	200	8%
OFFICE 3 #108	113	5	1	5.0	0.06	0.80	15	200	7%
OFFICE 5 #110	113	5	1	5.0	0.06	0.80	15	200	7%
OFFICE 4 #111	122	5	1	5.0	0.06	0.80	15	200	8%
OFFICE 6 #113	108	5	1	5.0	0.06	0.80	14	200	7%
OFFICE 7 #112	100	5	1	5.0	0.06	0.80	14	200	7%
PHONE 4 #115	41	5	1	5.0	0.06	0.80	9	50	19%
OFFICE 10 #118	126	5	1	5.0	0.06	0.80	16	200	8%
OFFICE 11 #119	138	5	1	5.0	0.06	0.80	17	250	7%
TOTALS	1,187		11				158	2,000	
SYSTEM CALCULATIONS									
SUPPLY AIR				VENTILATION SYSTEM EFFICIENCY				89%	
TOTAL UNCORRECTED OSA REQD				SYSTEM OCCUPANT DIVERSITY				100%	
AVERAGE OUTDOOR AIR %				CORRECTED SYSTEM MIN OUTDOOR AIR				177 CFM	
NOTES:									



NOTES

- CONNECT NEW 24/20 SA TO EXISTING 14/20 SA VERTICAL DUCT DOWN FROM ROOFTOP UNIT ABOVE WITH FLEXIBLE CONNECTION. FIELD VERIFY EXACT LOCATION AND CONNECTION REQUIREMENTS PRIOR TO ANY FABRICATION.
- CONNECT NEW 20/20 RA TO EXISTING 20/14 RA DOWN FROM ROOFTOP UNIT ABOVE WITH FLEXIBLE CONNECTION, OFFSET TO 20/20 HORIZONTAL RETURN IN JOIST SPACE AND PROVIDE 30/18 OPENING ON TOP OF RA LINED DUCT WITH GALVANIZED BIRD SCREEN AT INLET. FIELD VERIFY EXACT LOCATION AND CONNECTION REQUIREMENTS PRIOR TO ANY FABRICATION.
- PROVIDE TRANSFER AIR GRILLE ON EACH SIDE OF WALL.
- SUPPLY AIR REGISTER MOUNTED TO SIDE OF DUCT ROTATED 30 DEGREES DOWN FROM HORIZONTAL THROW. RE: DUCT HANGER DETAIL 1/M-290.2.
- RELOCATE EXISTING 24/7 PROGRAMMABLE THERMOSTAT PROVIDED UNDER BASE BUILDING. MOUNT THERMOSTAT AT 60" AFF.
- ROUTE 8" SA THROUGH OPEN WEB JOIST.
- ROUTE 8" SA THROUGH 8-1/2" BEAM PENETRATION. COORDINATE BEAM PENETRATION WITH STRUCTURAL ENGINEER. RE: DUCT ROUTING SECTION 2/M-290.2.
- ROUTE 6" SA TIGHT TO BOTTOM OF BAR JOIST.
- ROUTE 18/8 OVAL SA THROUGH 18-1/2" & 8-1/2" OVAL BEAM PENETRATION. COORDINATE BEAM PENETRATION WITH STRUCTURAL ENGINEER. RE: DUCT ROUTING SECTION 2/M-290.2.
- BALANCE EXISTING 5 TON ROOFTOP UNIT TO 187 CFM OA.
- BALANCE EXISTING 5 TON ROOFTOP UNIT TO 215 CFM OA.
- BALANCE EXISTING 5 TON ROOFTOP UNIT TO 177 CFM OA.
- INSTALL DUCT MOUNTED SMOKE DETECTOR FOR AUTOMATIC SHUT-DOWN OF ROOFTOP UNIT. CONNECT SMOKE DETECTOR WIRING TO EXISTING ROOFTOP UNIT. COORDINATE CONNECTION REQUIREMENTS TO FIRE ALARM SYSTEM WITH FIRE ALARM CONTRACTOR.

NOTE: ALL DUCTWORK IS TO BE INSTALLED IN JOIST SPACE WITH THE BOTTOM OF DUCTS ALIGNED TO THE BOTTOM OF THE BEAM FLANGES. MECHANICAL CONTRACTOR TO CONFIRM MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.

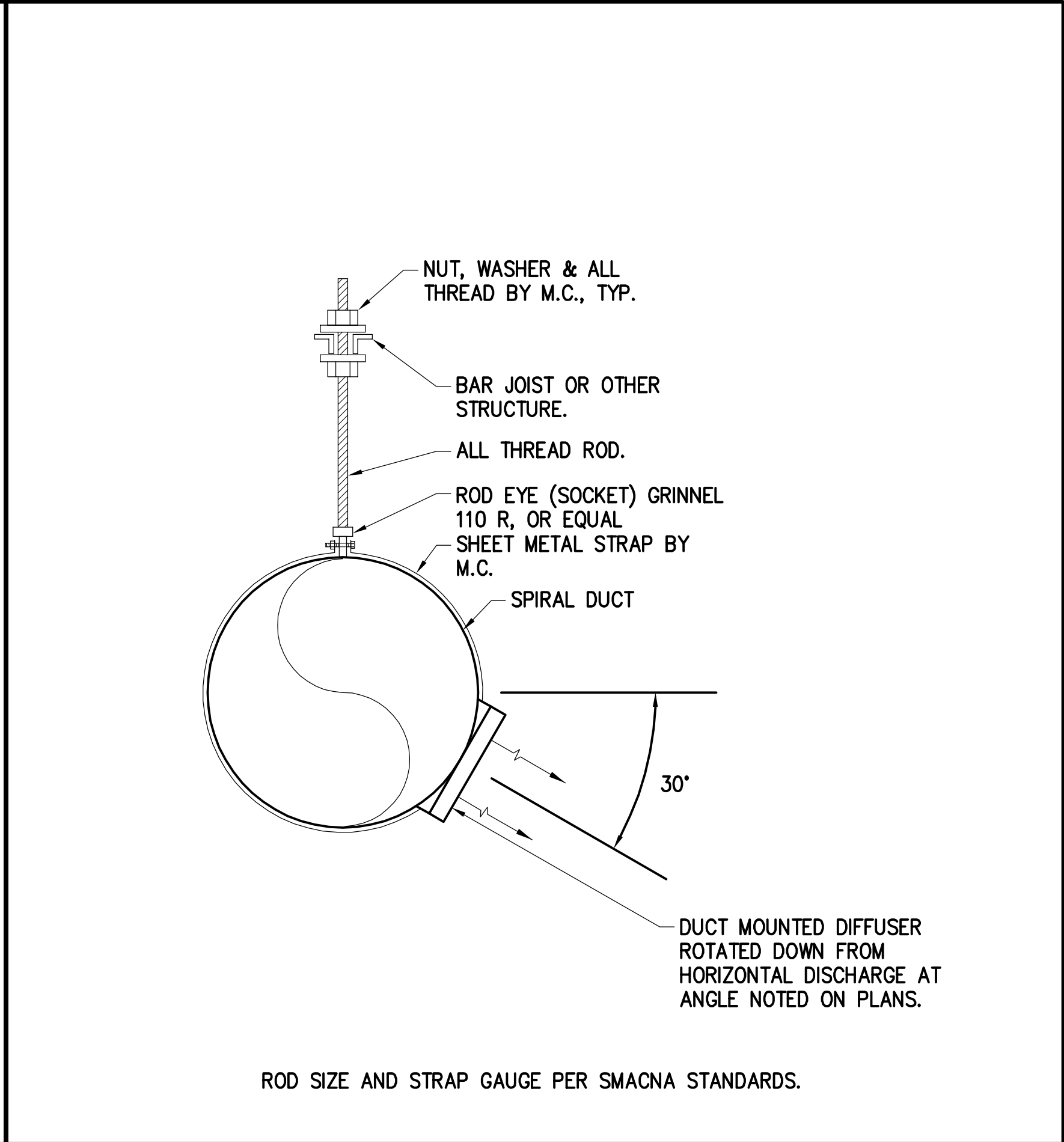


DUCT ROUTING SECTIONS

NO SCALE

2

M-290.2

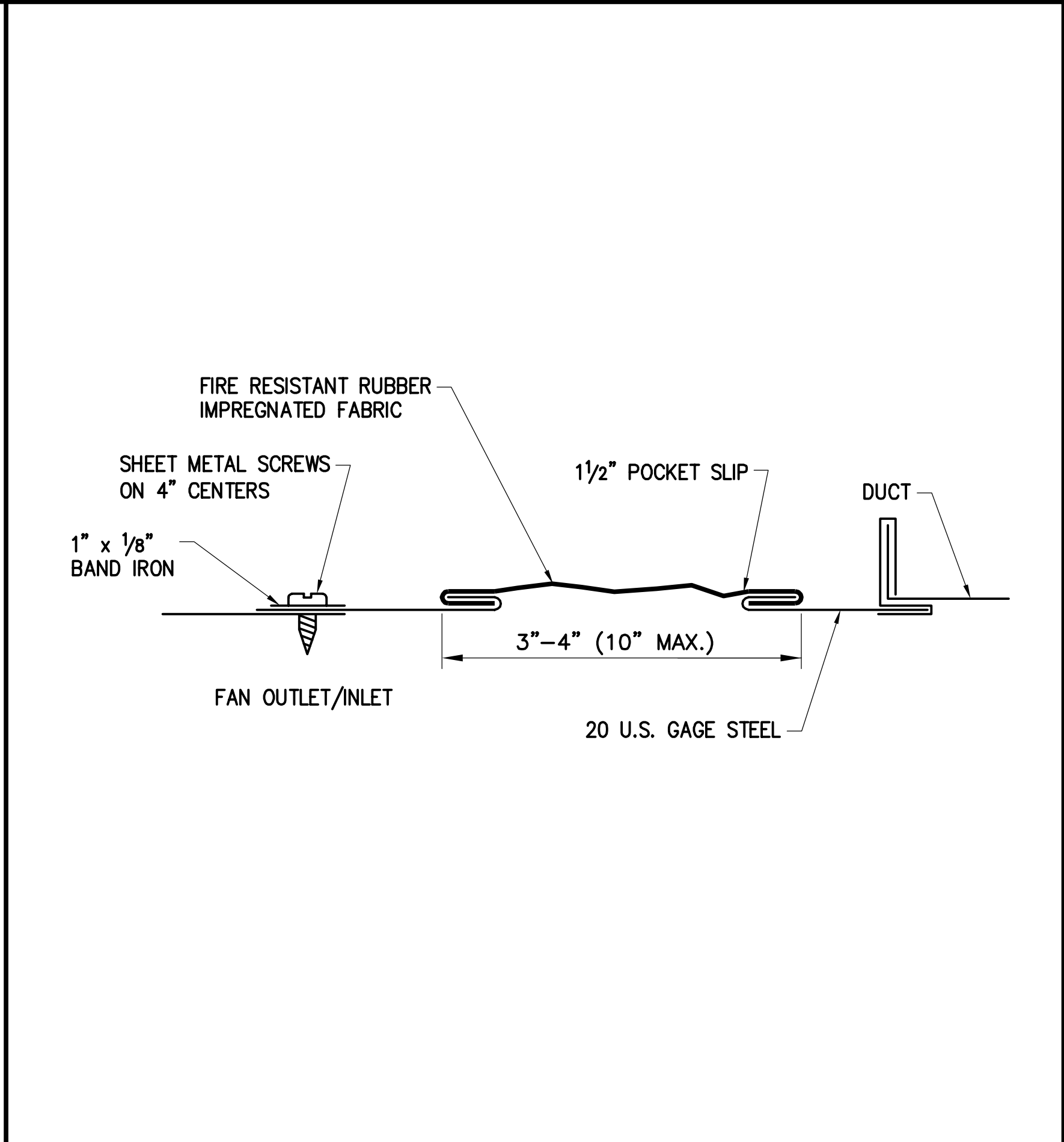


DUCT HANGER DETAIL

NO SCALE

1

M-290.2



FLEXIBLE CONNECTION DETAIL

NO SCALE

3

M-290.2

NOTE: SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS

- ## CODE COMPLIANCE STATEMENT
- THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES
- 2014 NATIONAL ELECTRIC CODE (NEC)
 - 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IE

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- 2014 NATIONAL ELECTRIC CODE (NEC)
- 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IE



SCALE: NTS

ONE LINE DIAGRAM GENERAL NOTES

- 5b. SERVICE EQUIPMENT SHALL BE LABELED WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND DATE PER NEC 110.24(A).
- 5c. WHERE ANY SERIES RATED COMBINATION SYSTEMS ARE UTILIZED, PROVIDE LABEL ON EQUIPMENT CLOSURE INDICATING RATED SYSTEM COMPONENTS INCLUDING FUSE AND BREAKER TYPES AND RATINGS IN ACCORDANCE WITH NEC 110.22(2) AND 110.22(C). CAUTION -- SERIES COMBINATION SYSTEM RATED ____ AMPERES. IDENTIFIED REPLACEMENT COMPONENTS S

The installation shall meet all NEC 250 grounding and bonding requirements. Provide Equipment Ground on Primary Feeder and Separately Derived Grounded System at the Transformer Secondary in accordance with NEC 250.30(A). Provide Grounding Electrode connection to Structural Metal or Metal Water Pipe in accordance with 250.30(A)(4) and sized in accordance with NEC Table 250.66

NOTE: NOT ALL ITEMS APPEAR ON DRAWINGS. SYMBOLS MAY DIFFER FROM EXISTING AND

DEMO WORK OR DEVICES REFERENCED OR SYMBOLS USED FROM DRAWINGS BY OTHERS

 GROUNDED SWITCHED DUPLEX REC

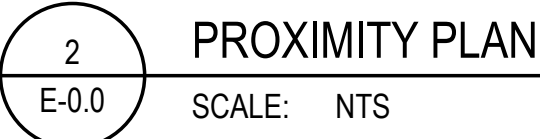
- | | | | |
|---|----------------------------------|---|-------------------------------------|
|  | GROUNDING SPLIT-WIRED RECEPTACLE |  | FLOORING MOUNTED DATA OUTLET |
|  | GROUNDING DUPLEX RECEPTACLE |  | FLOORING MOUNTED TELEPHONE OUTLET |
|  | GROUNDING QUADRUPLEX RECEPTACLE |  | DATA OUTLET |
|  | SPECIAL PURPOSE RECEPTACLE |  | TELEPHONE DATA OUTLET |
|  | FLOORING MOUNTED RECEPTACLE |  | TELEPHONE OUTLET |
|  | JUNCTION BOX |  | CAT/MONITOR AV OUTLET |
|  | WALL MOUNTED JUNCTION BOX |  | SPEAKER |
|  | DISCONNECT SWITCH |  | FIRE ALARM PANEL |
|  | FUSED DISCONNECT SWITCH |  | FIRE ALARM REMOTE ANNUNCIATOR PANEL |
|  | THERMAL OVERLOAD SWITCH |  | SMOKE - HEAT DETECT |
|  | ELECTRICAL PANEL BOARD |  | DUCT FIRE DETECTOR |
| ABBREVIATIONS | | | |

- | | | | |
|--|--|--------|-----------------------------|
| | TRANSFORMER | EW | ELECTRIC WIRE CLOUTER |
| | CIRCUIT "N" NUMBER TO PANEL "X"
(ABSORBING NOT USED IF CIRCUIT
NUMBERS APPEAR NEXT TO DEVICES) | EF | EXHAUST FAN |
| | RECESSED LAMP HOLDER | EL | ELECTRIC FAULT INTERRUPTOR |
| | FLUORESCENT LIGHT FIXTURE | EC | ELECTRIC CABLE INTERRUPTING |
| | SURFACE MOUNT
FLUORESCENT LIGHT FIXTURE | EA | ELECTRICAL CONTROLLER |
| | CEILING FIXTURE | AV | AVOID COUNTER (IF VERB) |
| | WALLWASHER or
ADJUSTABLE DOWNLIGHT | VE | VEHICLE COUNTER (IF VERB) |
| | SINGLE POLE SWITCH, OR POLE | WP | WEATHER PROOF |
| | DIMMER SWITCH | TF | TELEPHONE TERMINAL BOARD |
| | EXIT SIGN | AB | ABOVE FINISH FLOOR |
| | EMERGENCY FIXTURE - SHADED | AW | AUTHORITY WAVING (ARREST) |
| | BATTERY PACK EMERGENCY LIGHT
OR COMBO EXIT - SEE SCHEDULE | (E) | EXISTING TO REMAIN |
| | MOTOR | (EX) | EXISTING TO BE REMOVED |
| | | (R) | EXISTING TO BE RELOCATED |
| | | (R PL) | RELOCATED/RELOCATED |
| | | | REFERENCE SYMBOLS |
| | KEYED NOTE | | |
| | EQUIPMENT - SEE SCHEDULE | | |
| | FEEDER - SEE SCHEDULE | | |
| | TRANSFORMER WITH GROUND
AND OVERCURRENT OF
TRANSFORMER SCHEDULE | | |

FIRE ALARM SYSTEM IS TO BE DESIGN/BUILD
BY THE CONTRACTOR.

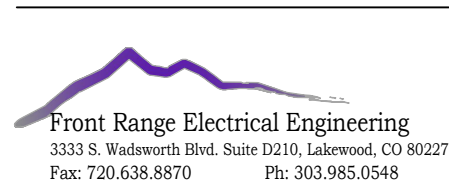
FIRE ALARM SYSTEM IS TO BE DESIGN/BUILD
BY THE CONTRACTOR.

FAULT CURRENT CALCULATION TABLE						May 3, 2016	
500 kVA Utility Transformer			VOLTAGE		AVAILABLE FAULT CURRENT (F)		
			208		77,100		
LOCATION (N)	# of RUNS	CONDUCTOR	VOLTAGE	I_{sc}	C	Total C	F
300A Main	8	500	208	10	26.706	213.649	0.03 0.97
Panel D1N1, L2N4			Secondary of a 225kVA Transformer with Minimum %Z=5.0				74,853 6,250
NOTES: 1. All Calculations use Bussman "Point-To-Point" Method. 2. Variables: $I_{sc} = (1.73 \times V \times I_{sc} \times F) / (C \times \sqrt{\text{runs} \times VOLTAGE})$ Where: I_{sc} = Fault Current in Amperes V = Line-to-Line Voltage (V) I_{sc} = Short-Circuit Current (A) F = Fault Factor (1.0 for bolted, 0.97 for bolted with fuses) C = Conductor Constant (See Table 1) $\sqrt{\text{runs} \times VOLTAGE}$ = Square Root of the Sum of the Squares of the Lengths of the Conductors in Feet (L)							
3. The E.C. shall report any discrepancies to the Engineer. 4. Conductor lengths shall not be less than the values listed. The E.C. shall field verify conductor lengths and contact engineer immediately if conductor lengths are less than the values shown. 5. Conductor Lengths listed in this table are for fault study purposes only and shall not be used for bidding or other calculations. 6. All in-line Utility Meters shall be protected from the Fault Current to more than 10kA at the Meter per the Utility Company requirements. 7. Label and date available fault current value at the main service disconnect per NEC 110.24(A). 8. Provide Arc-Flash Hazard study and labeling for personnel and protective equipment prior to energizing equipment per NEC 110.16 and NFPA 70E.							



SCALE: NTS

1. PLAN SHOWN FOR REFERENCE ONLY. E.C. SHALL FIELD VERIFY EXISTING CONDITIONS.



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Project Number: 2015.028/16-079-05
Issue: PERMIT SET

Date: 05/16/2016
 Drawn By: DK
 Checked By: CF

Revisions:
No. _____ Date: _____

Sheet title:
ONLINE, NOTES AND
SCHEDULES

E-0.0

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PANEL SCHEDULE: LTG1												May 11, 2016
BUS RATING: 150 Amperes 30, 4-WIRE			VOLTAGE L-L: 480									
MAIN C.B.: or M.L.O. 150A			VOLTAGE L-G: 277									
MOUNTING: Flush			S.C.RMS RATING (AIC): 35,000									
COMMENTS: Existing Panelboard												
NO.	AMPS	POLE	LOAD (VA)	NEC Demand	LOAD DESCRIPTION	Phase	LOAD DESCRIPTION	NEC Demand	LOAD (VA)	POLE	AMPS	NO.
1	20	1	3749	1.25	Track Lighting	A	General Lighting	1.25	3223	1	20	2
3	20	1	3527	1.25	General Lighting	B	General Lighting	1.25	2774	1	20	4
5	20	1	4228	1.25	Site Lighting	C	Site Lighting	1.25	1962	1	20	6
7	20	1	2834	1.25	Site Lighting	A	Site Lighting	1.25	1280	1	20	8
9	20	1	500	1.00	Existing Load	B	Existing Load	1.00	500	1	20	10
11	20	1	500	1.00	Existing Load	C	Existing Load	1.00	500	1	20	12
13	20	1	500	1.00	Existing Load	A	Existing Load	1.00	500	1	20	14
15					Bussed Space	B	Bussed Space					16
17					Bussed Space	C	Bussed Space					18
19					Bussed Space	A	Bussed Space					20
21					Bussed Space	B	Bussed Space					22
23					Bussed Space	C	Bussed Space					24
25					Bussed Space	A	Bussed Space					26
27					Bussed Space	B	Bussed Space					28
29					Bussed Space	C	Bussed Space					30
31					Bussed Space	A	Bussed Space					32
33					Bussed Space	B	Bussed Space					34
35					Bussed Space	C	Bussed Space					36
37					Bussed Space	A	LTG2	1.00	11378	3	150	38
39					Bussed Space	B	LTG2	1.00	14530	3	150	40
41					Bussed Space	C	LTG2	1.00	11000	3	150	42
CONNECTED LOAD:						CALCULATED DEMAND LOAD:						
PHASE A (VA): 23,464						PHASE A (VA): 26,235						
PHASE B (VA): 21,831						PHASE B (VA): 23,406						
PHASE C (VA): 18,190						PHASE C (VA): 19,737						
TOTAL LOAD (VA): 63,484						CALCULATED DEMAND LOAD (VA): 69,378				83.45 A		
NOTES:												
1. Not Used.												

PANEL SCHEDULE: LDP1												May 19, 2016
BUS RATING: 800 Amperes 30, 4-WIRE						VOLTAGE L-L: 208						
MAIN C.B.: or M.L.O.: 800A						VOLTAGE L-G: 120						
MOUNTING: Surface						S.C.RMS RATING (AIC): 10,000						
COMMENTS: Existing Panelboard												
NO.	AMPS	POLE	LOAD (VA)	NEC Demand	LOAD DESCRIPTION	Phase	LOAD DESCRIPTION	NEC Demand	LOAD (VA)	POLE	AMPS	NO.
1	150	3	13464	1.00	L1NA	A	L1NB	1.00	0	3	125	2
3	150	3	14804	1.00	L1NA	B	L1NB	1.00	0	3	125	4
5	150	3	11924	1.00	L1NA	C	L1NB	1.00	0	3	125	6
7	125	3	0	1.00	L1NC	A	L2NA	1.00	15185	3	225	8
9	125	3	0	1.00	L1NC	B	L2NA	1.00	13073	3	225	10
11	125	3	0	1.00	L1NC	C	L2NA	1.00	13910	3	225	12
13	60	3	720	1.00	L1NE	A	L1ND	1.00	720	3	60	14
15	60	3	720	1.00	L1NE	B	L1ND	1.00	720	3	60	16
17	60	3	720	1.00	L1NE	C	L1ND	1.00	0	3	60	18
19					Bussed Space	A	Bussed Space					20
21					Bussed Space	B	Bussed Space					22
23					Bussed Space	C	Bussed Space					24
25					Bussed Space	A	Bussed Space					26
27					Bussed Space	B	Bussed Space					28
29					Bussed Space	C	Bussed Space					30
31					Bussed Space	A	Bussed Space					32
33					Bussed Space	B	Bussed Space					34
35					Bussed Space	C	Bussed Space					36
37					Bussed Space	A	Bussed Space					38
39					Bussed Space	B	Bussed Space					40
41					Bussed Space	C	Bussed Space					42
CONNECTED LOAD:						CALCULATED DEMAND LOAD:						
PHASE A (VA): 30,089						PHASE A (VA): 30,089						
PHASE B (VA): 29,317						PHASE B (VA): 29,317						
PHASE C (VA): 26,554						PHASE C (VA): 26,554						
TOTAL LOAD (VA): 85,959						CALCULATED DEMAND LOAD (VA): 85,959						
										238.61	A	
NOTES:												
1. No new work - shown for reference only												

PANEL SCHEDULE: L2NA												May 19, 2016
BUS RATING: 225			Amperes 30, 4-WIRE			VOLTAGE L-L: 208						
MAIN C.B.:			or M.L.O. 225A			VOLTAGE L-G: 120						
MOUNTING: Flush						S.C.RMS RATING (AIC): 10,000						
COMMENTS: Existing Panelboard												
NO.	AMPS	POLE	LOAD (VA)	NEC Demand	LOAD DESCRIPTION	Phase	LOAD DESCRIPTION	NEC Demand	LOAD (VA)	POLE	AMPS	NO.
1	20	1	720	1.00	Convenience Receipt	A	Convenience Receipt	1.00	1080	1	20	2
3	20	1	500	1.00	Refrigerator	B	AC Receipt RM 213	1.00	360	1	20	4
5	20	1	1200	1.00	Garbage Disposal	C	Dishwasher	1.00	800	1	20	6
7	20	1	360	1.00	Restroom Receipt	A	Convenience Receipt	1.00	1080	1	20	8
9	20	1	1080	1.00	Rooftop Receipt	B	2-Way Communications	1.00	500	1	20	10
11	20	1	500	1.00	Restroom Receipt	C	2-Way Communications	1.00	500	1	20	12
13	20	1	540	1.00	Water Coolers	A	Convenience Receipt	1.00	360	1	20	14
15	20	1	500	1.00	Water Coolers	B	Rooftop Receipt	1.00	720	1	20	16
17	20	1			Spare	C	Spare			1	20	18
19	20	1			Spare	A	Spare			1	20	20
21	20	1			Spare	B	Spare			1	20	22
23	20	1			Spare	C	Spare			1	20	24
25	20	1			Spare	A	Spare			1	20	26
27					Bussed Space	B	Office Receipts - 290	1.00	720	1	20	28
29					Bussed Space	C	Office Receipts - 290	1.00	720	1	20	30
31	20	1	1080	1.00	Conf Rm Rcpts - 290	A	Office Receipts - 290	1.00	720	1	20	32
33	20	1	900	1.00	Phone Rm Rcpts - 290	B	Office Receipts - 290	1.00	720	1	20	34
35	20	1	540	1.00	Show Wind Rcpts - 290	C	Office Receipts - 290	1.00	720	1	20	36
37	20	1	540	1.00	Counter Rcpts - 290	A	Office Receipts - 290	1.00	720	1	20	38
39	20	1	1080	1.00	Hallway Rcpts - 290	B	Office Receipts - 290	1.00	720	1	20	40
41	20	1	720	1.00	Table Area Rcpts - 290	C	Office Receipts - 290	1.00	720	1	20	42
43	20	1	720	0.50	Table Area Rcpts - 290	A	Office Receipts - 290	0.50	720	1	20	44
45	20	1	500	1.00	Office Equipment - 290	B	Office Receipts - 290	0.50	540	1	20	46
47	20	1	750	0.65	Refrigerator - 290	C	Office Receipts - 290	0.50	540	1	20	48
49	20	1	1176	0.85	Disposal - 290	A	Office Receipts - 290	0.50	540	1	20	50
51	20	1	900	0.50	Kitchen Rcpts - 290	B	Bussed Space					52
53	20	1	720	0.50	Conf Rm1 Rcpts - 278	C	Lighting - 290	1.25	1804	1	20	54
55	20	1	720	0.50	Conf Rm1 FI Rcpts - 278	A	Tenant Sign - 290	1.00	1200	1	20	56
57	20	1	720	0.50	Conf Rm1 FI Rcpts - 278	B	TTB - 290	0.50	360	1	20	58
59	20	1	900	0.50	Show Windows - 278	C	IT - 290	0.50	360	1	20	60
61	20	1	720	0.50	Conf Rm2 FI Rcpts - 278	A	Floor Rcpts - 276	0.50	720	1	20	62
63	20	1	720	0.50	Conf Rm2 FI Rcpts - 278	B	Ceiling Rcpts - 276	0.50	720	1	20	64
65	20	1	900	0.50	Conf Rm3 Rcpts - 278	C	Ceiling Rcpts - 276	0.50	720	1	20	66
67	20	1	360	0.50	Conf Rm2 Rcpts - 278	A	Ceiling Rcpts - 276	0.50	720	1	20	68
69	20	1	720	0.50	Conf Rm3 FI Rcpts - 278	B	General Rcpts - 276	0.50	720	1	20	70
71	20	1	720	0.50	Conf Rm3 FI Rcpts - 278	C	AC/GFI Rcpts - 276	0.50	360	1	20	72
73	20	1	1080	1.25	Lighting - 278	A	Office Rcpts - 276	0.50	1080	1	20	74
75	20	1	1200	1.00	Tenant Sign - 278	B	Show Windows - 276	0.50	540	1	20	76
77	20	1	1200	1.00	Tenant Sign - 276	C	Refrigerator - 276	0.65	750	1	20	78
79	20	1	595	1.25	Lighting - 276	A	Disposal - 276	0.65	1176	1	20	80
81	20	1	360	0.50	TTB - 276	B	Dishwasher - 276	0.65	650	1	20	82
83	20	1	360	0.50	IT - 276	C	Work Desk Rcpt - 276	0.50	540	1	20	84
CONNECTED LOAD:												CALCULATED DEMAND LOAD:
PHASE A (VA): 18,737												PHASE A (VA): 15,185
PHASE B (VA): 16,450												PHASE B (VA): 13,073
PHASE C (VA): 17,044												PHASE C (VA): 13,910
TOTAL LOAD (VA): 52,231												CALCULATED DEMAND LOAD (VA): 42,167
												117.05 A
NOTES:												
1. New work shown in BOLD												

COMcheck Software Version 4.0.2.0

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title: Stanley Marketplace
Project Type: New Construction

Construction Site: 2501 Dallas Street, Unit 290
2501 Dallas Street, Unit 290
Aurora, CO 80010

Owner/Agent:

Designer/Contractor: Dawn Keller
Front Range Electrical Engineering
3333 S. Wadsworth Blvd.
Suite D210
Lakewood, CO 80227
303.985.0548
Dawn@FREngineer.com

Additional Efficiency Package

High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Shared Office Space (Office)	3800	0.82	3116
Total Allowed Watts =			3116

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Shared Office Space (Office)				
LED 1: D: 6" Dimmable Downlight: Other:	1	5	14	72
LED 2: D1: 6"Cylinder Downlight: Other:	1	8	14	112
LED 3: L: 4' Linear LED: Other:	1	9	45	409
LED 4: L1: 8' Linear LED: Other:	1	14	91	1271
Total Proposed Watts =			1863	

Interior Lighting PASSES: Design 40% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.0.2.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Dawn Keller
Name - Title
Signature
05-19-16
Date

LUMINAIRE SCHEDULE						
Label	Light Fixture Description	Specification	Lamping	Voltage	Mounting	Comment
Interior Lighting						
D	6" Dimmable LED Downlight 900 Lumen LED, White Trim, Haze Reflector	Halo or Equal H750w with ML5609935 and 692H	14.3W LED 3500K(RCRI)	120	Recessed	1
D1	6" Exposed Surface LED Cylinder Downlight White Finish, LED Lamp, Round	Cooper Portfolio LSR6-10-P-EROM6A-10-6-3500	14W LED 3500K(RCRI)	120	Suspended	
L	4' Linear LED DIVIDE	Cooper Corelites DIVIDE DSI-WS-2L35-1D-UNV-AC48-T14-SLT	45.4W 3500K(RCRI)	120	Suspended	
L1	8' Linear LED DIVIDE	Cooper Corelites DIVIDE DSI-WS-2L35-1D-UNV-AC48-T18-SLT	90.8W 3500K(RCRI)	120	Suspended	
Emergency Lighting						
XEM	Combination Exit Sign/Emergency Egress Light Twin Head LED with 90-Minute Battery Pack	Cooper Sure-Lites APC7	(2) 3.6V, 78W LED Included	120/277	Surface 18" on Center	
NOTES: Apply to all fixtures where applicable						
1. EMERGENCY FIXTURES - All Fixtures Indicated as Emergency shall be provided with a 90-Minute Battery Pack and all Fluorescent Fixtures indicated as Emergency shall be provided with a 1300 Lumen, 90-Minute Battery Pack.						
2. VERIFY VOLTAGES - The E.C. shall verify voltages on drawings prior to ordering or any work, the engineer shall be notified of any discrepancies in the voltage of the circuiting on the drawings and the luminaire schedule prior to any purchase or work.						
3. VERIFY LAMPING - The E.C. shall verify lamping with the manufacturer prior to ordering and notify the engineer of any lamping discrepancies.						
4. PROVIDE A COMPLETE INSTALLATION - The E.C. shall provide all labor and material to provide a complete and functional system per the design intent as dictated by the switching type and location (including dimmer switches and compatible ballasts or transformers), ceiling type and location, circuiting, voltages, and lamping types.						
5. BALLAST DISCONNECT - All electric discharge luminaires shall comply with NEC 410.130 and shall have a means of disconnect for the ballast.						
6. DUAL LEVEL SWITCHING - For fixtures with more than one switch designation shown on plans provide fixtures with additional ballasts for dual level light control by separate switching of inboard and outboard lamps as required to conform to IECC Requirements.						
7. OWNER APPROVAL - Approve all light fixture types with tenant/owner before ordering any materials or any work.						

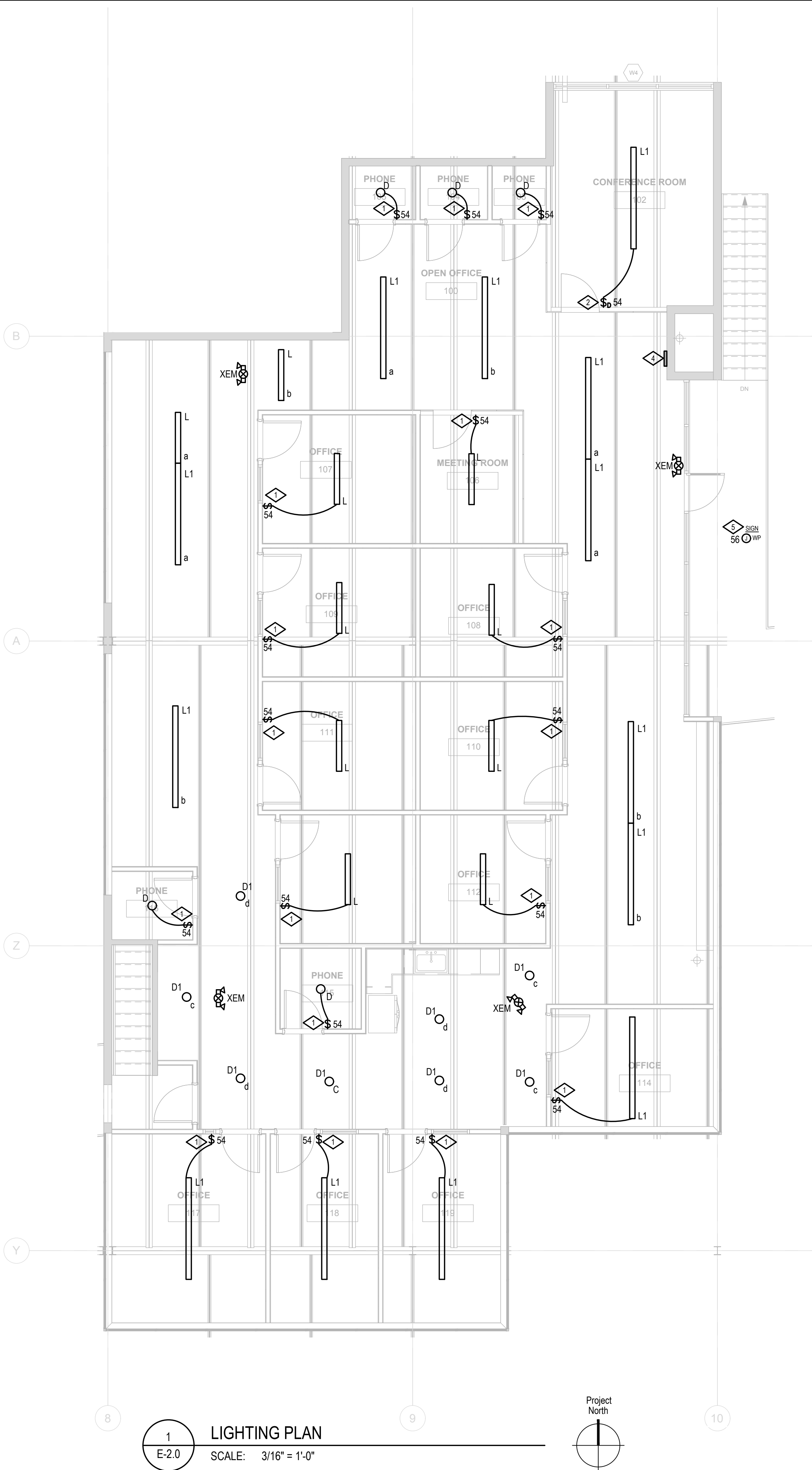
LIGHTING PLAN GENERAL NOTES:

- CONNECT EGRESS LIGHTING FIXTURES AND EXIT SIGNS TO AREA LIGHTING CIRCUIT AHEAD OF ANY SWITCH PER NEC 700-12(F) INCLUDING ANY NIGHT LIGHTS. FIXTURES SHOWN SHADED OR LABELED ARE EMERGENCY EGRESS (EM) WITH BATTERY PACK, NIGHT LIGHT (NL) OR BOTH (EMNL).
- PROVIDE OUTLET IN ACCESSIBLE LOCATION AT TENANT ENTRANCE FOR SIGN PER NEC 600-5.
- NUMBERS NEXT TO DEVICES REFER TO CIRCUIT DESIGNATION IN PANEL L2NA UNLESS NOTED.
- 2x4 LIGHT FIXTURES ARE TYPE 'A' AND DOWNLIGHTS ARE TYPE 'D' UNLESS NOTED.
- EXIT SIGNS TYPE 'X' AND/OR 'XEM' AND EGRESS LIGHTS TYPE 'EM' SHALL BE NEW WITH EMERGENCY BATTERY PACK, MATCH EXISTING BUILDING STANDARD FIXTURES.
- PROVIDE NEUTRAL AND GROUND CONDUCTORS THROUGHOUT ALL LIGHTING BRANCH CIRCUITS INCLUDING ALL SWITCH OR LIGHTING CONTROL DEVICE LOCATIONS IN ACCORDANCE WITH NEC.

LIGHTING PLAN KEYED NOTES:

- WALLSWITCH OCCUPANCY SENSOR - PROVIDE DUAL TECHNOLOGY GREENGATE ONW-D-1001-MV-N-* OR EQUAL.
- WALLSTATION DIMMER SWITCH - PROVIDE GREENGATE DECORA DF107-XX OR EQUAL RATED FOR CONNECTED LOAD TYPE AND WATTAGE COMPATIBLE WITH ALL CONNECTED LIGHT FIXTURES. PROVIDE LOW VOLTAGE WIRING FOR ANY 0-10V DIMMING AS REQUIRED.
- DUAL LEVEL SWITCHING - PROVIDE IN ACCORDANCE WITH IECC REQUIREMENTS. PROVIDE ALL LIGHTING WITH DUAL BALLASTS FOR SEPARATE CONTROL OF INBOARD AND OUTBOARD LAMPS OR CONNECT ALTERNATE FIXTURES TO SEPARATE SWITCH AS INDICATED FOR LIGHT REDUCTION CONTROL BY AT LEAST 50% IN A REASONABLY UNIFORM ILLUMINATION PATTERN.
- SWITCHBANK LOCATION - PROVIDE SWITCHBANK WITH ALL SWITCHES GANGED TOGETHER WITH SINGLE COVERPLATE. FIELD VERIFY QUANTITY OF SWITCHES, SWITCHING ZONES/AREAS, INDEPENDANT SWITCHLEG WIRING, AND FINAL LOCATION OF SWITCHES WITH OWNER BEFORE STARTING ANY WORK.
- TENANT SIGN - PROVIDE DEDICATED CIRCUIT AND FINAL CONNECTIONS AS REQUIRED. FIELD VERIFY ELECTRICAL REQUIREMENTS AND FINAL LOCATION WITH PROVIDER, TENANT AND LANDLORD. PROVIDE PHOTOCELL ON/TIMECLOCK OFF CONTROLS.

54 54 54 54 54 54



GENERAL NOTES

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE CODES, LOCAL CODES, AND OWNER'S STANDARDS INDICATED BY THE CONSTRUCTION DOCUMENTS.
2. PLUMBING DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
3. CONTRACTOR SHALL COORDINATE WORK INDICATED WITH MECHANICAL, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, CIVIL, AND ARCHITECTURAL DIVISIONS. CONTRACTOR SHALL VERIFY SIZE & LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING WORK, COORDINATE WITH OTHER TRADES AND MAKE FINAL CONNECTION. VERIFY FIT OF PLUMBING SYSTEMS PRIOR TO FABRICATION. COORDINATE ALL CHASE, SLEEVE, AND SLAB BLOCK-OUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
4. PROVIDE ALL EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS INCLUDING ANY REQUIRED BUT NOT LISTED MISC ITEMS REQUIRED TO PROVIDE COMPLETE OPERATIONAL SYSTEMS AS INDICATED WHETHER SPECIFICALLY CALLED FOR OR NOT. INSTALLATION SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE SUBMITTALS FOR ALL PROPOSED FIXTURES, EQUIPMENT AND MATERIALS TO BE UTILIZED. PROVIDE OPERATION AND MAINTENANCE MANUAL FOR ALL SYSTEMS AND EQUIPMENT AT END OF PROJECT.
5. ELECTRICAL CHARACTERISTICS OF PLUMBING EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
6. DRAIN PIPING FROM EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD.
7. ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNERS REPRESENTATIVE ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE.
8. VALVES SHALL BE LOCATED WITHIN EASY REACH IN CEILING SPACE.
9. PROVIDE CLEANOUTS WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY JURISDICTIONAL PLUMBING CODE.
10. CLEAN, TEST, AND SANITIZE ALL PLUMBING IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTIONAL PLUMBING AND HEALTH CODES.
11. WHERE PIPES PASS THROUGH FIRE-RATED FLOOR OR WALLS, SEAL WITH MATERIALS EQUAL TO 3M FIRE BARRIER, MEETING TESTING PER ASTM-E-814 (UL 1479). USE CAULK OR PUTTY TYPE.
12. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED.
13. ALL EQUIPMENT, MATERIALS, AND INSTALLATION IS TO BE WARRANTED FOR ONE YEAR TO BE FREE FROM DEFECT. PROVIDE WRITTEN WARRANTY TO OWNER.
14. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS WORK.
15. THIS CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC., PRIOR TO STARTING OF CONSTRUCTION. COORDINATE CONFLICTS WITH THE GENERAL CONTRACTOR.
16. THIS CONTRACTOR SHALL COORDINATE ALL REQUIRED EXISTING BUILDING SERVICE SYSTEM OUTAGES WITH BUILDING MANAGEMENT.
17. ALL PLUMBING SYSTEMS ARE REQUIRED TO BE INSTALLED PER BASE BUILDING REQUIREMENTS, LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
18. SAWCUT/CORE DRILL EXISTING FLOOR AS REQUIRED FOR INSTALLATION OR CAPPING OF WASTE AND VENT PIPING. PATCH AND REPAIR TO MATCH EXISTING.
19. PATCH AND REPAIR TO MATCH EXISTING, ANY WALL/CEILINGS TO BE ACCESSED TO ROUTE PIPING.
20. EXISTING PLUMBING AND EQUIPMENT TO REMAIN IS SHOWN LIGHT. NEW PLUMBING AND EQUIPMENT IS SHOWN HEAVY.

PLUMBING SPECIFICATIONS

ALL WETTED PARTS USED TO CONVEY WATER ANTICIPATED FOR HUMAN CONSUMPTION SHALL BE CERTIFIED LEAD-FREE IN COMPLIANCE WITH NSF/ANSI-372 OR NSF/ANSI 61G.

WATER PIPING ABOVE GRADE SHALL BE TYPE L, HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER OR BRAZED WITH SILVER BASED FILLER METAL.

SHUT-OFF VALVES ARE TO BE BRONZE BALL VALVES, TWO PIECE OR UNI-BODY FULL PORT WITH CHROME PLATED BALL, REINFORCED TFE SEATS AND STUFFING BOX, LEVER HANDLE AND SCREWED OR SOLDER ENDS. 400 PSI W.O.G., 150 PSI SATURATED STEAM.

WATER PIPING SHALL BE TESTED WITH WATER AT 125 PSIG. TEST PRESSURE SHALL BE MAINTAINED FOR A MINIMUM OF 30 MINUTES WITH NO LOSS. DOMESTIC WATER PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE JURISDICTIONAL HEALTH AND PLUMBING CODES.

ABOVE GRADE SOIL, WASTE AND VENT PIPING SHALL BE NO-HUB, CAST IRON. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SOIL AND WASTE PIPING 2-1/2" AND SMALLER SHALL BE SLOPED 1/4" PER FOOT AND PIPING 3" AND LARGER SHALL BE SLOPED 1/8" PER FOOT UNLESS NOTED OTHERWISE ON DRAWINGS.

WALL CLEANOUTS FOR WASTE PIPING SHALL BE FURNISHED AND INSTALLED BELOW SINKS IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE JURISDICTIONAL PLUMBING CODE. FLOOR CLEANOUTS FOR WASTE PIPING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE JURISDICTIONAL PLUMBING CODE.

SOIL, WASTE AND VENT PIPING SHALL BE TESTED WITH WATER UNDER PRESSURE EQUIVALENT TO THE HIGHEST POINT AND 10' MINIMUM. THE SYSTEM OR PORTION THEREOF SHALL BE UNDER PRESSURE FOR A MINIMUM OF 15 MINUTES BEFORE INSPECTION.

DOMESTIC WATER PIPING SHALL BE INSULATED WITH NONCOMBUSTIBLE, PREFORMED, FIBERGLASS, PIPE INSULATION WITH A CONDUCTIVITY (K-VALUE) LESS THAN 0.27 AT 75F AND A FLAME SPREAD/ SMOKE DEVELOPED RATING OF 25/50 OR LESS. INSULATION SHALL HAVE A KRAFT REINFORCED FOIL VAPOR BARRIER WITH SELF-SEALING ADHESIVE JOINTS. INSULATION AT HANGERS AND CLAMPS SHALL BE OF HIGH DENSITY INSULATING MATERIAL. INSULATED PIPING EXPOSED TO VIEW SHALL BE COVERED AND FINISHED WITH A 30 MIL. THICK PVC JACKET.

PIPE INSULATION SCHEDULE

DOMESTIC COLD WATER COPPER PIPING = 1/2" THICK INSULATION
DOMESTIC HOT WATER SUPPLY COPPER PIPING = 1" THICK INSULATION

* RUN-OUTS TO INDIVIDUAL FIXTURES DO NOT NEED TO BE INSULATED

** INSULATE FIRST 8 FEET OF HOT AND COLD WATER PIPING BETWEEN WATER HEATER AND HEAT TRAPS ON NON-RECIRCULATING SYSTEMS WITH 1" THICK INSULATION

WATER HAMMER ARRESTERS EQUAL TO SIOUX CHIEF HYDRA-RESTER SHALL BE FURNISHED AND INSTALLED ON HOT AND COLD WATER PIPING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. WATER HAMMER ARRESTERS SHALL BE PDI CERTIFIED AND ANSI APPROVED.

PIPE HANGERS FOR INSULATED PIPE SIZES 1/2" TO 1-1/2" SHALL BE ADJUSTABLE, STEEL, BAND TYPE. PIPE HANGERS FOR INSULATED PIPE SIZES 2" AND OVER SHALL BE ADJUSTABLE, STEEL CLEVIS TYPE. SHIELDS SHALL BE USED WHERE HANGER SUPPORTS INSULATED PIPE. SHIELDS SHALL BE 18 GAGE GALVANIZED STEEL OVER INSULATION 180 DEGREES AND A MINIMUM OF 12 INCHES LONG. PIPE HANGERS FOR BARE PIPE SHALL BE ADJUSTABLE, MALLEABLE STEEL, SPLIT RING TYPE. BARE COPPER PIPE SHALL BE PROTECTED FROM CORROSION BY TRISOLATOR OR SIMILAR PRODUCT. HANGERS SHALL BE PROVIDED AT INTERVALS IN ACCORDANCE WITH THE JURISDICTIONAL PLUMBING CODE.

PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. PENETRATION SEAL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.

CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT PIPE SLEEVES FOR EXPOSED BARE PIPE.

SHEET INDEX														
ISSUE														
										05-16-16 PERMIT SET				
										05-08-16 PROGRESS SET				
										△ △	SHEET NO.	SHEET DESCRIPTION		
										● ●	P-290.0	PLUMBING COVER SHEET		
										● ●	P-290.1	PLUMBING FLOOR PLAN, SCHEDULES & DETAIL		

PLUMBING LEGEND		
ABBR.	SYMBOL	DESCRIPTION
S OR W		SOIL, WASTE OR SEWER BELOW GRADE OR FLOOR
S OR W		SOIL, WASTE OR SEWER ABOVE GRADE OR FLOOR
FCO/GCO		FLOOR OR GRADE CLEANOUT
CO		CLEANOUT
V		VENT
CW		COLD WATER
HW		HOT WATER
HWR		HOT WATER RETURN
TW		TEMPERED WATER
WHA		WATER HAMMER ARRESTOR
D		DRAIN
OD		OVERFLOW DRAIN
SOV		SHUT-OFF VALVE
TV		THROTTLING VALVE
CV		CONTROL VALVE
STR		STRAINER
U		UNION
PG		PRESSURE GAUGE
SOL V		SOLENOID VALVE
REL V		RELIEF VALVE
RED		REDUCER
HB		HOSE BIBB
BFP		BACKFLOW PREVENTER
G		GAS, LOW PRESSURE
GC		GAS COCK
F		FIRE LINE
TH	(0°-100° RANGE)	THERMOMETER
FD		FLOOR DRAIN
FS		FLOOR SINK
VTR		VENT THRU ROOF
AD		ACCESS DOOR
POC		POINT OF CONNECTION
CP		CHROME PLATED
TDH		TOTAL DYNAMIC HEAD
PC		PIPE CAP
AFF		ABOVE FINISHED FLOOR
UNO		UNLESS NOTED OTHERWISE
AAV		AIR ADMITTANCE VALVE
E		EXISTING
		POINT OF CONNECTION NEW TO EXISTING



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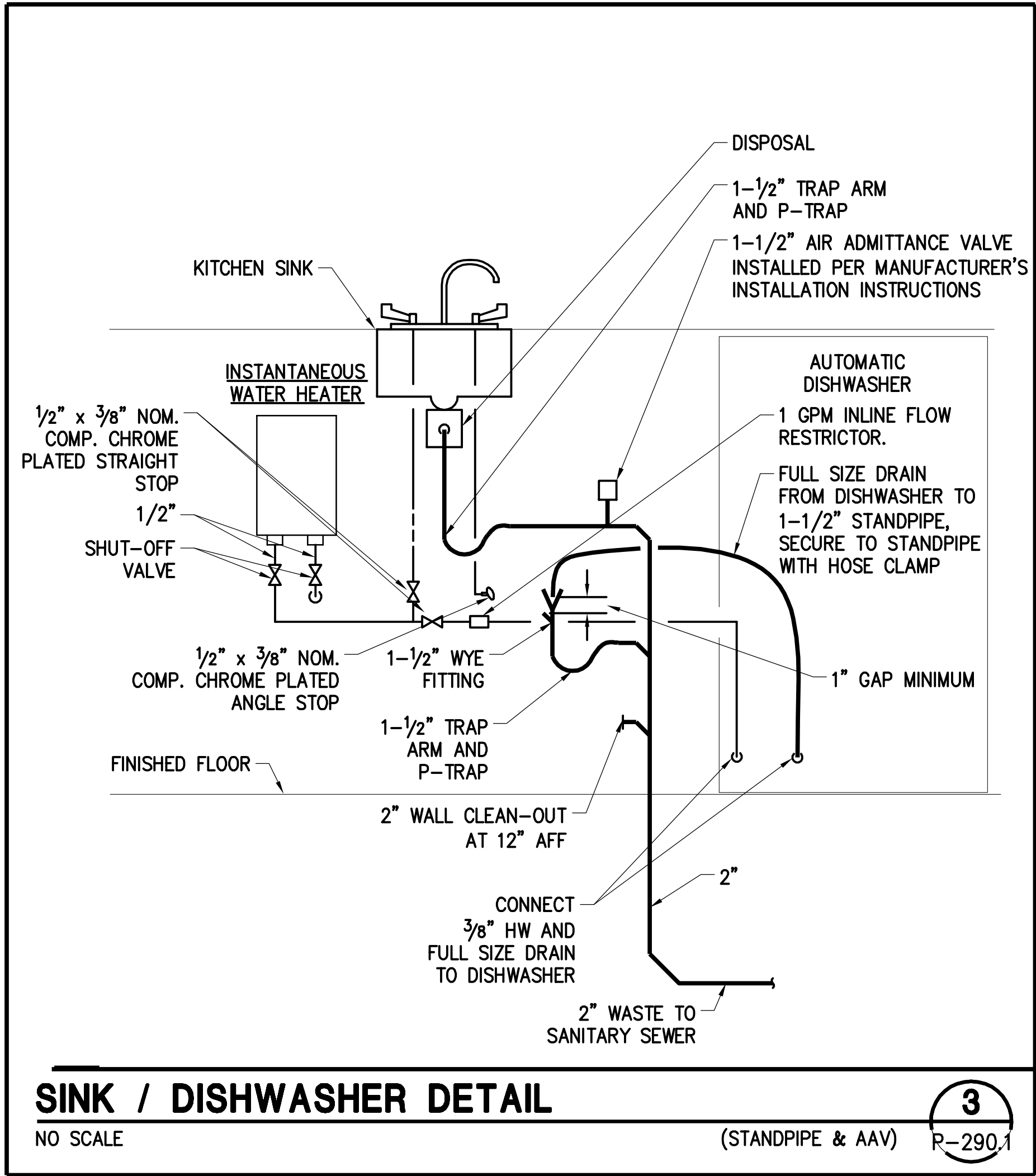


Sheet title:
MECHANICAL COVER
SHEET

P-290.0

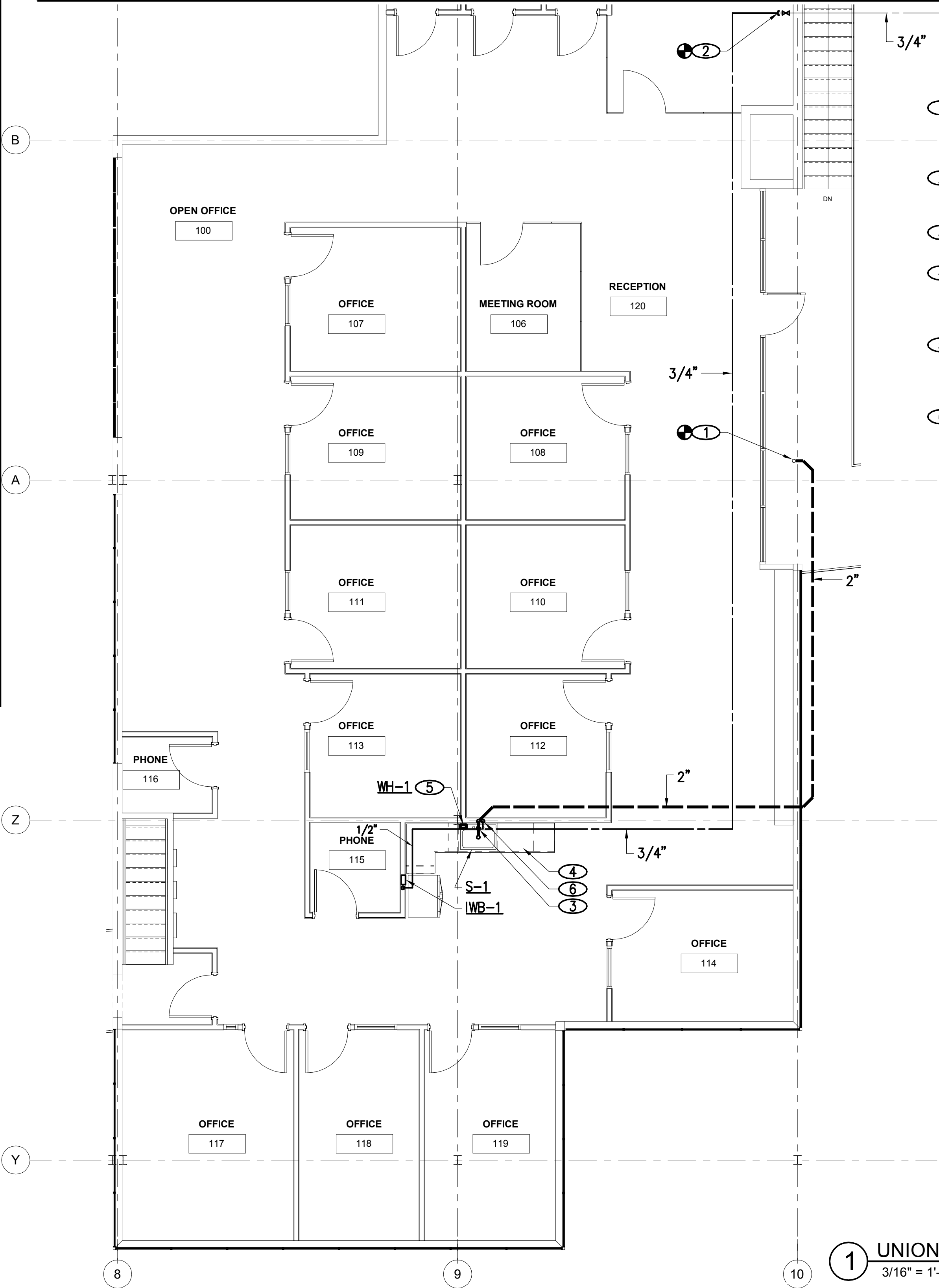
2016 McMichael Design Studio

PLUMBING EQUIPMENT SCHEDULE	
ITEM	DESCRIPTION
WH-1	EEMAX EX100T INSTANTANEOUS ELECTRIC WATER HEATER PROVIDING 1.0 GPM @ 68°F RISE. DIMENSIONS = 5-1/4" LONG X 3" DEEP X 9-3/4" TALL. OPERATING WEIGHT=4LB. ELECTRICAL: 10.0KW, 277/1.



2 UNION STANLEY - WASTE AND VENT ISOMETRIC
NO SCALE

PLUMBING FIXTURE SCHEDULE								
MARK	DESCRIPTION	MFR/MODEL	ROUGH-IN (INCHES)					NOTES
			HW	CW	V	TRAP	S/W	
<u>S-1</u>	ADA APPROVED 22" WIDE X 19" LONG X 6-1/2" DEEP SINGLE COMPARTMENT SELF RIMMING SINK CONSTRUCTED OF 18 GAUGE SOUND DAMPENED STAINLESS STEEL WITH HOLE DRILLINGS TO MEET FAUCET SPECIFICATIONS. PROVIDE CHROME PLATED BRASS P-TRAP AND WASTE ARM, 1/2" NOM. COMP. X 3/8" NOM. COMP. CHROME PLATED ANGLE STOPS WITH WHEEL HANDLES, CHROME PLATED FLEXIBLE SEAMLESS COPPER TUBE SUPPLIES, AND (1) PIECE SET SCREW TYPE CHROME PLATED CAST BRASS ESCUTCHEONS AT WALL PENETRATIONS. FAUCET TO BE OF CHROME PLATED CAST BRASS CONSTRUCTION WITH 1.0 GPM VANDAL RESISTANT AERATOR AND CERAMIC DISK CARTRIDGE TYPE VALVE. ALL TRIM TO BE CHROME PLATED COPPER OR BRASS. PROVIDE CONTINUOUS FEED RUBBER CUSHION MTD. DISPOSER, MOTOR WITH MANUAL RESET OVERLOAD PROTECTION, STAINLESS STEEL STOPPER AND IMPELLERS (SWIVEL TYPE).	SINK = ELKAY #LRAD-2219R OR EQUAL BY JUST, MOEN FAUCET = AMER. STD. #4101.301 W/ #M922991 OR EQUAL BY KOHLER, DELTA, SYMMONS, CHICAGO TRAP AND SUPPLY INSULATION = TRUEBRO #102-E-Z & #402W & #106 E-Z OR EQUAL BY BROCAR, PROFLO DISPOSAL = ISE BADGER 5 OR EQUAL BY WHIRLAWAY, WASTE KING, SINKGUARD	1/2	1/2	AAV	1/2	1/2	DISPOSAL ELECTRICAL LOAD = 115VAC, 60 HZ, 8.1 FLA, CONTROL FROM WALL SWITCH.
<u>IWB-1</u>	COLD ROLLED STEEL RECESSED WALL BOX WITH WHITE POWDER COAT FINISH, DOMESTIC WATER SUPPLY AND SHUT-OFF VALVE FOR COLD WATER SUPPLY.	ICE MACHINE SUPPLY WALL BOX = GUY GRAY MIB OR EQUAL BY SPECIALTY PRODUCTS, SIOUX CHIEF	--	1/2	--	--	--	



NOTES

- CONNECT 2"W TO EXISTING 4"W STACK. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION PRIOR TO ANY INSTALLATION OF THE PLUMBING SYSTEMS. CONFIRM CONNECTION LOCATION WITH LANDLORD.
- CONNECT 3/4"CW TO EXISTING 2"CW VALVED AND CAPPED STUBOUT. FIELD VERIFY EXACT LOCATION PRIOR TO ANY INSTALLATION OF THE PLUMBING SYSTEM.
- PROVIDE AIR ADMITTANCE VALVE ON SINK WASTE ARM BELOW COUNTER.
- CONNECT 1/2"HW AND FULL SIZE DRAIN TO DISHWASHER. EXTEND DRAIN BELOW COUNTER AND CONNECT TO STANDPIPE WITH AIR BREAK ADJACENT SINK BELOW COUNTER. RE: SINK/DISHWASHER DETAIL.
- CONNECT 1/2"H&CW TO INSTANTANEOUS ELECTRIC WATER HEATER MOUNTED ON WALL BELOW SINK IN CABINET. REFER TO ELECTRIC WATER HEATER DETAIL. EXTEND 1/2"HW TO SINK AND 1/2"HW TO DISHWASHER.
- 3/4"CW DOWN IN WALL. PROVIDE 1/2"CW ROUGH-IN FOR SINK WITH ANGLE VALVE AND 1/2"CW ROUGH-IN FOR ELECTRIC WATER HEATER WITH ANGLE VALVE.

NOTE: ALL PIPING IN CEILING SPACE IS TO BE INSTALLED IN OPEN WEB JOIST SPACE. PLUMBING CONTRACTOR TO CONFIRM MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.



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PLUMBING FLOOR PLAN,
SCHEDULES & DETAIL