

BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PHASE - 1 PORTLAND, MAINE



TAC
Architectural
Group Inc.
40 Summer St., Suite 4 Bangor, ME 04401



Structural
Integrity
Consulting Engineers, Inc.

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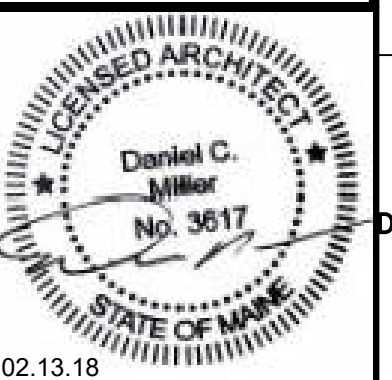
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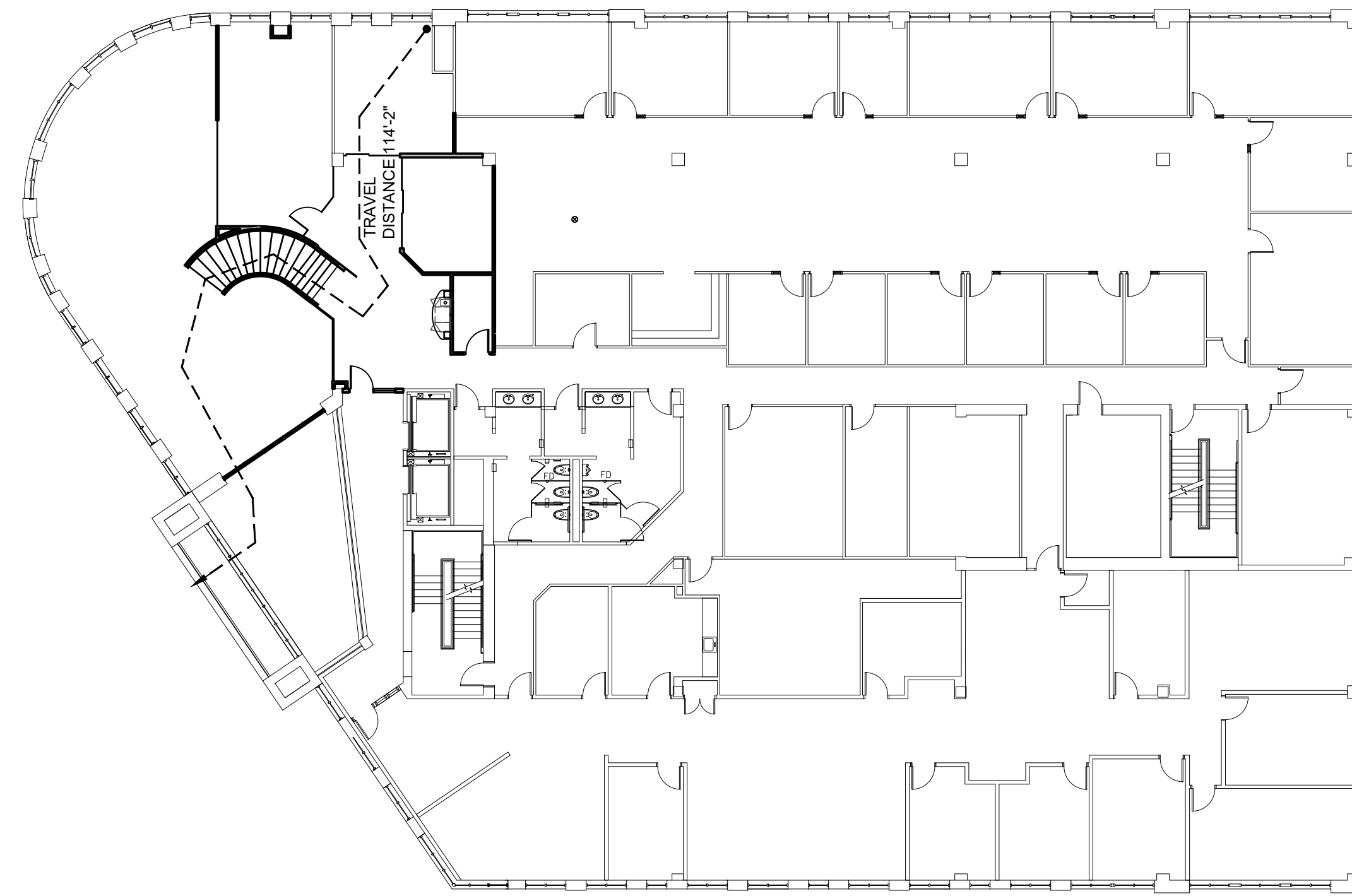


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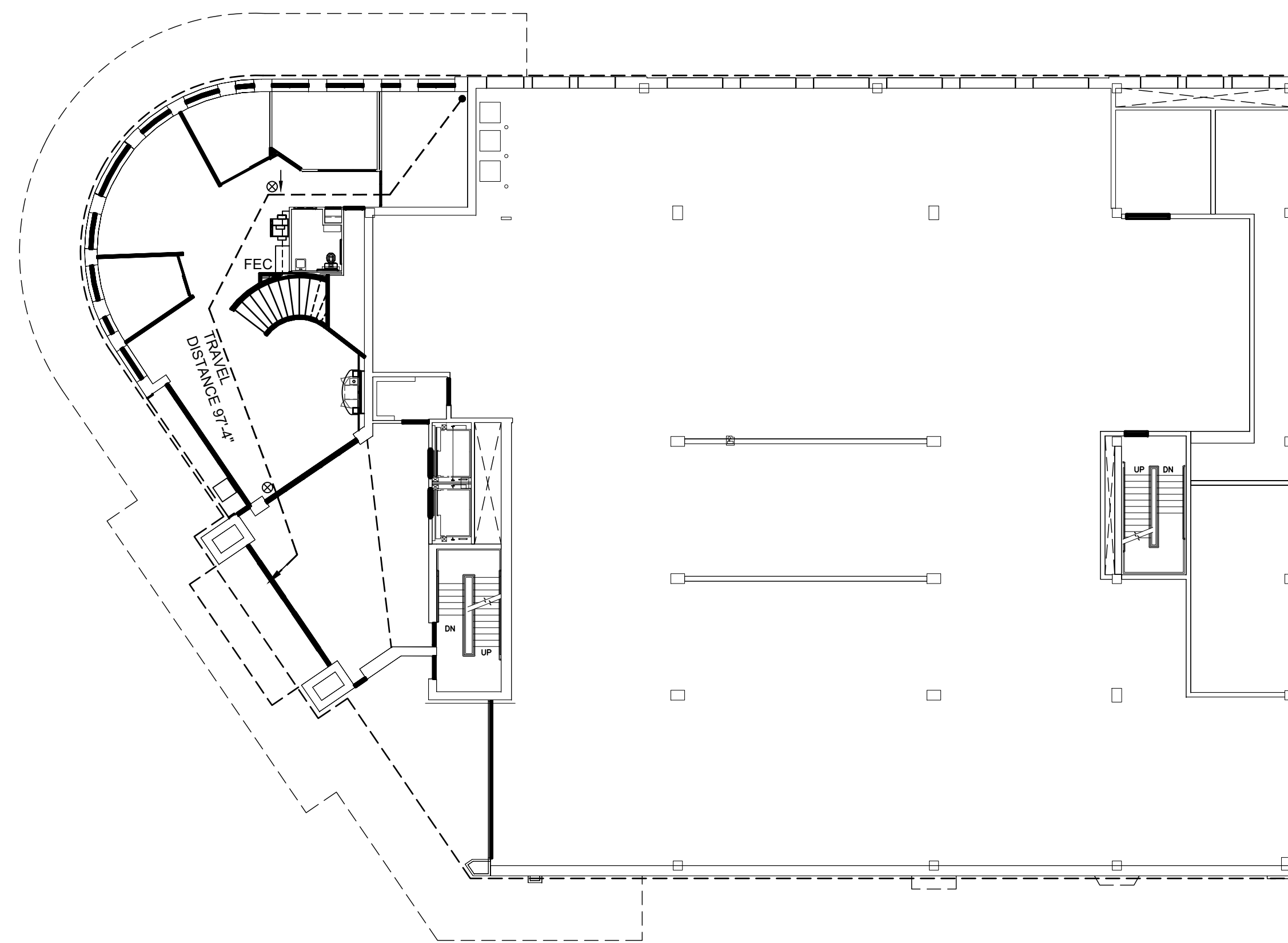
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COVER SHEET & INDEX -
PHASE 1
GI001



G8 SECOND FLOOR CODE COMPLIANCE PLAN
1/16" = 1'-0"

PHASE 1 = 1,678 GROSS SQFT



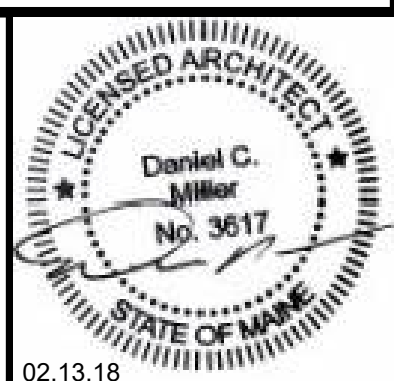
A8 FIRST FLOOR CODE COMPLIANCE PLAN
1/16" = 1'-0"

PHASE 1 = 2,723 GROSS SQFT

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BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

PROJECT NO: 15-014
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SHEET TITLE
CODE PLAN & COMPLIANCE
SUMMARY - PHASE 1

G1002

STRUCTURAL GENERAL NOTES

Bangor Savings Bank, 20 South Street
Bangor, ME

SI Job #: 16-0266

DESIGN LOADS: International Building Code; IBC 2009 Edition, except as noted
Occupancy Category, Table 1604.5

Roofs:		II	Standard
Ground Snow, Pg		80 psf	(used for drifting calculations)
Sloped Roof Snow, Ps		56 psf	
Flat Roof Snow, Pf		56 psf	
Snow Exposure Factor, Ce	Table 1608.3.1	1.0	
Snow importance Factor, Is	Table 1604.5	1.0	
Snow Thermal Factor, Ct	Table 1608.3.2	1.0	

Floors:		
Lobby and Public Spaces		100 psf
Office		50 psf
Corridors above First Floor		80 psf

Lateral:			
Wind	IBC 1603.1.4, ASCE 7-05	Analytic Method	
3 Second Gust Velocity		90 mph	
Importance Factor		1.0	
Building Category and Internal Pressure Coefficient			
IBC 1609.2, ASCE Figure 6-5	Enclosed	Gcpi=0.18	
Exposure		B	
Components and Cladding Pressures	DP 45 uno.	Also see specs	
Seismic Use Group		1	
Importance Factor		1.0	
Spectral Response	Acceleration	Coefficient	
Short Period	Ss	0.294 g	S _{0s} 0.306 g
One Second	S1	0.075 g	S ₀₁ 0.121 g
Soils Site Class	Table 1615.1.1	D	
Design Category	Table 1616.3	B	
Basic Force Resisting System, Table 1617.6.2			
Design Base Shear		109 kips	
Seismic Response Coefficient	Cs	0.042	
Response Modification Coefficient	R	6	
Analysis Procedure		Equivalent Lateral Force	

FOUNDATION DESIGN:
Foundations are designed without an engineer's soil investigation. Foundation design criteria was assumed for purpose of foundation design and shall be confirmed by a soils engineer, at owner's expense, prior to construction. (This procedure may require revisions to foundation design, at additional expense to the owner, if soils engineer determines that such design criteria are inappropriate for this building site.)

REINFORCED CONCRETE:

We encourage the use of blast furnace slag.
Design is based on "Building Code Requirements for Reinforced Concrete"(ACI 318). Concrete work shall conform to "Standard Specifications for Structural Concrete" (ACI 3019).
Structural concrete shall have the following properties:

Intended Use	f'c, psi 28day	Max W/C Ratio	Maximum Aggregate	Slump inches	Entrained Air Percent ±1.5%	Cement Type	Admixtures, Comments
footings	3,000	.6	¾" Stone	4	---	I/II	
walls	4,000	.45	¾" Stone	4	6%	I/II	
exterior slab on grade	4,500	.45	¾" Stone	4	6%	I/II	Fibermesh
interior slabs on grade	3,500	.5	¾" Stone	4	---	I/II	Fibermesh
beams, columns	4,000	.45	¾" Stone	4	6%	I/II	

Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315).

Welded wire fabric shall conform to ASTM A185.

Reinforcing bars shall conform to ASTM A615,

Grade 60,

except ties or bars shown to be field-bent, which shall be Grade 40.

Epoxy coated reinforcing bars shall conform to ASTM 775.

Zinc coated (galvanized) reinforcing bars shall conform to ASTM 767.

Bars to be welded shall conform to ASTM 706.

At splices, lap bars 50 diameters unless noted otherwise.

At corners and intersections, make horizontal bars continuous or provide matching corner bars.

Around openings in walls and slabs, provide 2-#5, extending 2'-0" beyond edge of opening.

In continuous members, splice top bars at mid-span and splice bottom bars over supports.

Provide intermittent shear keys at all construction joints and elsewhere as shown on the drawings.

Except as noted on the drawings, concrete protection for reinforcement in cast-in-place concrete shall be as follows:

- Cast against and permanently exposed to earth: 3"
- Exposed to earth or weather:
 - #6 through #18 bars: 2"
 - #5 bar, W31 or D31 wire, and smaller: 1-1/2"
- Not exposed to weather or in contact with ground:
 - Slabs, walls, joists: #11 bar and smaller: 3/4"
 - Beams, columns:
 - Primary reinforcement: 1-1/2"
 - Stirrups, ties, spirals: 1-1/2"

Fibermesh admixture shall be 100% virgin polypropylene, fibrillated fibers as manufactured by Fibermesh Co. per ASTM C-1116 type 111 4.1.3 and ASTM C-1116 performance level one, 1.5 lbs per cubic yard of concrete.

Anchor bolts and rods for beam and column-bearing plates shall be placed with setting templates.

Permanent corrugated steel forms for concrete floor slabs shall be manufactured and erected according to the "Specifications and Code of Standard Practice" of the Steel Deck Institute.

All concrete work is subject to inspection by a qualified special inspector employed by the owner in accordance with IBC Section 1704.4.

STRUCTURAL STEEL:

Structural steel shall be detailed, fabricated, and erected in accordance with latest AISC Specifications, and Code of Standard Practice. Structural steel wide flange beams shall conform to ASTM A992.

Except as noted, framed beam connections shall be bearing-type with 3/4" diameter, snug tight, A325-N bolts, detailed in conformance with Part 4, Tables II and III, for 0.6 times the allowable uniform loads tabulated in Part 2 of the AISC Manual, 9th Edition. Install bolts in accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

All beams shall have full depth web stiffeners each side of webs above and below columns.

Anchor rods shall conform to ASTM F1554, Grade 55, with weldability supplement S1.

Headed anchor studs (HAS) shall be attached to structural steel with equipment approved by the stud manufacturer according to the stud manufacturer's recommendations.

Welding shall be done by a certified welder in accordance with AISC and AWS specifications and recommendations using E70-electrodes. Where not specifically noted, minimum weld shall be 3/16" fillet by length of contact edge.

All post-installed anchors shall have current ICC Evaluation Report, and shall be installed in accordance with the manufacturer's requirements.

Expansion anchors shall be approved "wedge" type unless specifically noted to be "sleeve" type.

Chemical anchors shall be approved epoxy or similar adhesive type and shall have current ICC Evaluation Report. Where base material is not solid, approved screen tubes shall be used.

Grout beneath column base and beam-bearing plates shall be

minimum 28-day compressive strength of 7,500 psi,

approved pre-bagged, non-metallic, non-gaseous, bleed free,

non-shrink, when tested in accordance with ASTM C1107

Grade B or C at a flow cone fluid consistency of 20 to 30 seconds

LIGHT GAUGE STRUCTURAL STEEL FRAMING:

Member forming shall conform to AISI Cold-Formed Steel Specifications.

All structural framing (studs, joists, track, runners, bracing, and bridging) shall be galvanized sheet steel conforming to ASTM A525, G-60.

Studs and joists 54 mils (16 gauge) and heavier shall be 50 ksi yield.

43 mils (18 gauge) and lighter shall be, 33 ksi yield.

Subcontractor shall provide bridging and blocking at a maximum of 6 foot spacing or as required for stability and stiffness of the final assembly wherever sheathing does not provide adequate bracing.

Supplier shall design required jamps, lintels and headers at openings where not specifically detailed.

Member sizes noted on drawings are in the new SSMA standard nomenclature:

(sd) Style Designation	Member Type	(##) Mils Thickness	Equivalent Gauge
S	Punched C-Section	18	25
J	Unpunched C-Section	27	22
T	Track	30	20 - Drywall
U	Channel	33	20 - Structural
F	Furring Channel	43	18
		54	16
		68	14
		97	12

SHOP DRAWINGS:

Construction Documents are copyrighted and shall not be copied for use as erection plans or shop details.

Use of SI Inc.'s electronic files as base for shop drawings requires prior approval by SI Inc.

signed release of liability by subcontractor.

payment of an administration fee of \$100 per drawing sheet to SI Inc, and

deletion of SI Inc.'s name and Logo from all sheets so used.

The General Contractor and his subcontractors shall submit in writing any requests to modify the plans or specifications.

All shop and erection drawings shall be checked and stamped by the General Contractor prior to submission for Engineer's review.

Unchecked submittals will be returned without review.

Furnish one (1) reproducible and two (2) prints of shop and erection drawings to the Structural Engineer for review prior to fabrication for reinforcing steel, structural steel, and decking.

Submit in a timely manner to permit ten (10) working days for review.

Shop drawings submitted for review do not constitute "in writing" unless specific suggested changes are clearly marked.

In any event, such changes by means of the shop drawing submittal process become the responsibility of the one initiating such change.

FIELD VERIFICATION OF EXISTING CONDITIONS:

Contractor shall thoroughly inspect and survey existing structure to verify conditions that affect the work shown on the drawings.

Contractor shall report any variations or discrepancies to the Architect before proceeding.

STRUCTURAL ERECTION AND BRACING REQUIREMENTS:

The structural drawings illustrate the completed structure with elements in their final positions, properly supported and braced.

These construction documents contain typical and representative details to assist the contractor.

Details shown apply at all similar conditions unless otherwise indicated.

Although due diligence has been applied to make the drawings as complete as possible, not every detail is illustrated, nor is every exceptional condition addressed.

All proprietary connections shall be installed in accordance with the manufacturers' recommendations.

All work shall be accomplished in a workmanlike manner and in accordance with the applicable code and local ordinances.

The general contractor is responsible for coordination of all work, including layout and dimension verification, materials coordination, shop drawing review, and the work of subcontractors.

Any discrepancies or omissions discovered in the course of the work shall be immediately reported to the architect for resolution.

Continuation of work without notification of discrepancies relieves the architect and engineer from all consequences.

Unless otherwise specifically indicated, the drawings do not describe methods of construction.

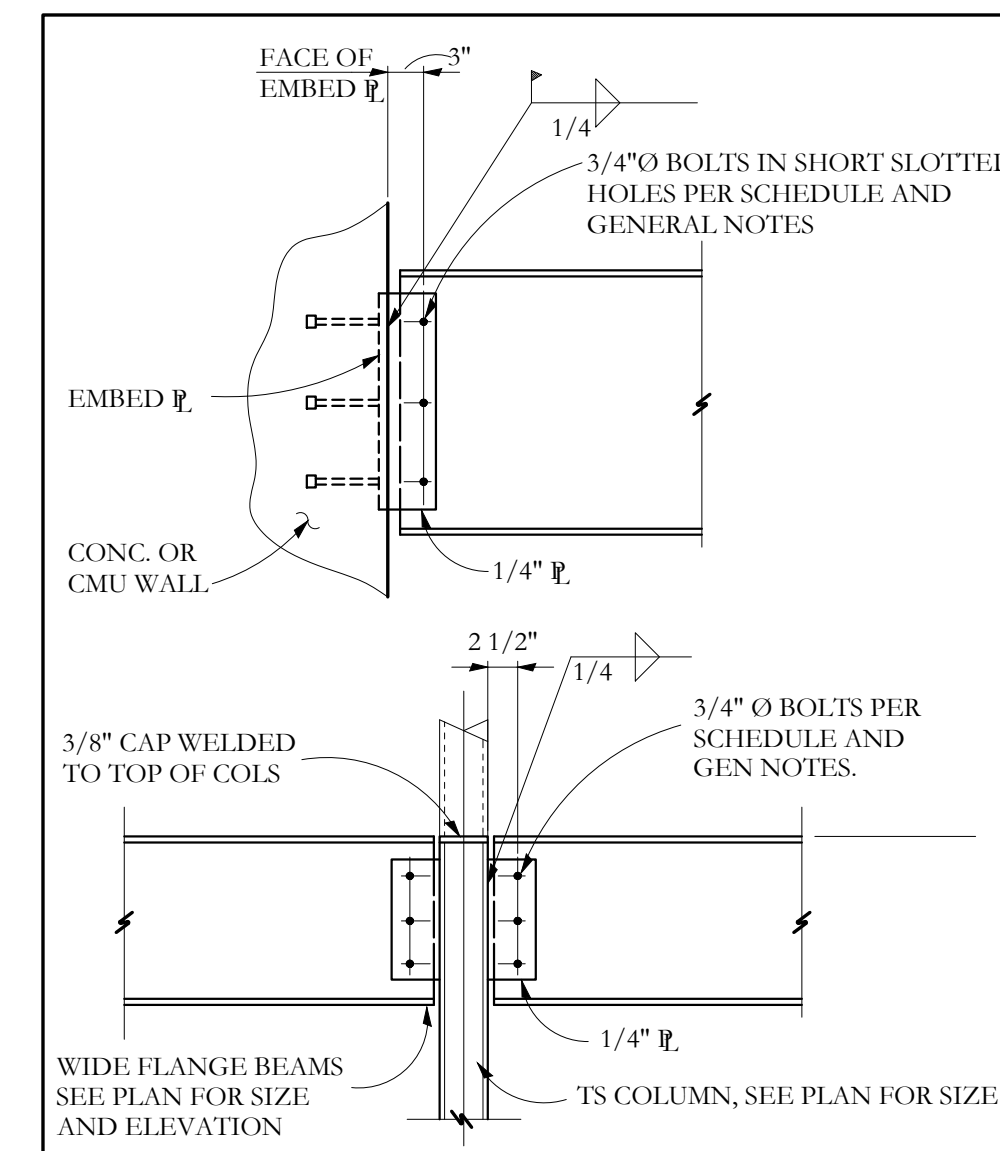
The contractor, in the proper sequence, shall perform or supervise all work necessary to achieve the final completed structure, and to protect the structure, workmen, and others during construction.

Such work shall include, but not be limited to, bracing, shoring for construction equipment, shoring for excavation, formwork, scaffolding, safety devices and programs of all kinds, support and bracing for cranes and other erection equipment.

Do not backfill against basement or retaining walls until supporting slabs and floor framing are in place and securely anchored, unless adequate bracing is provided.

Temporary bracing shall remain in place until all floors, walls, roofs and any other supporting elements are in place.

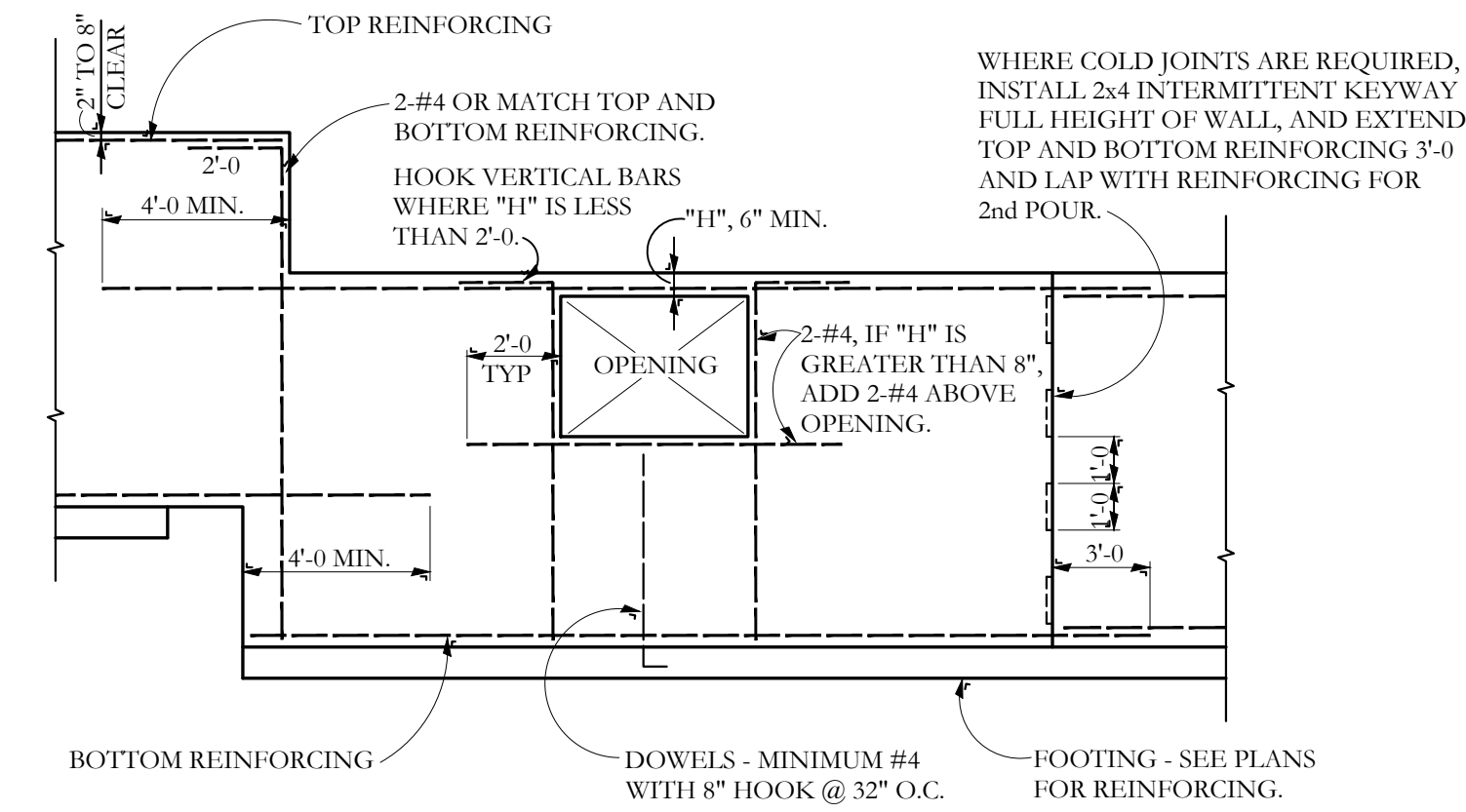
The architect and engineer bear no responsibility for the above items, and observation visits to the site do not in any way include inspection of them.



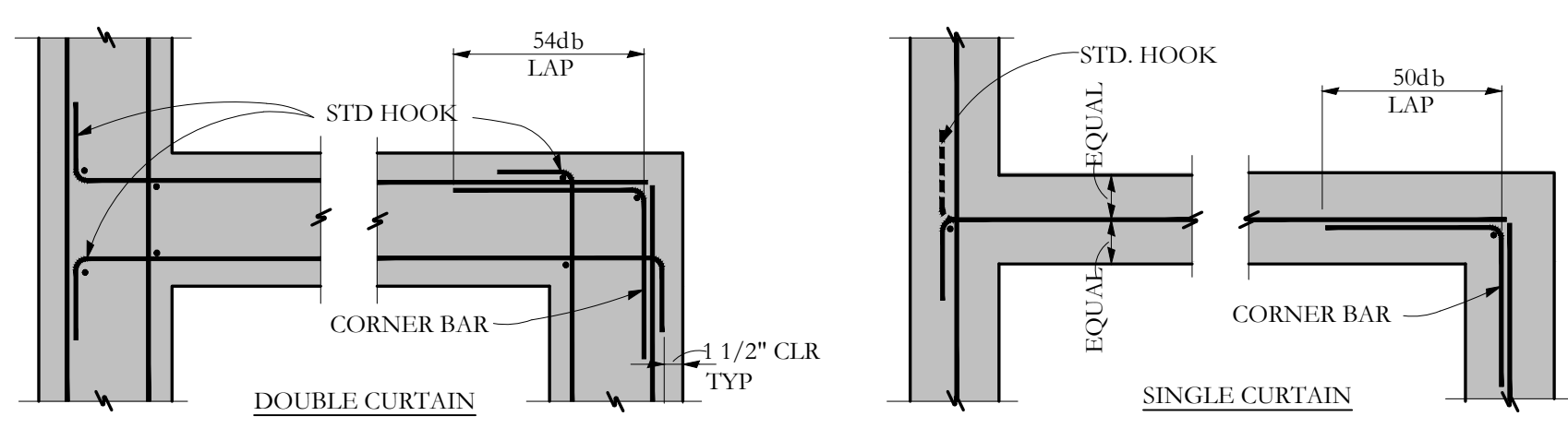
SINGLE-PLATE SHEAR CONNECTION SCHEDULE			
BM. SIZE	# OF 3/4"Ø BOLTS	L (in.)	CONN CAP. (kips)
W8, W10	2	6	16.3
W12, W14	3	9	25.6
W16	4	12	34.8
W18	5	15	43.5
W21	6	18	51.6
W24	7	21	59.7

*ALL BOLTS TO BE ASTM A325-TYP UNO
TYPICAL SINGLE PLATE SHEAR CONNECTION
(PROVIDE SIMILAR BOLTING AT BEAM-TO-BEAM CONNECTION)

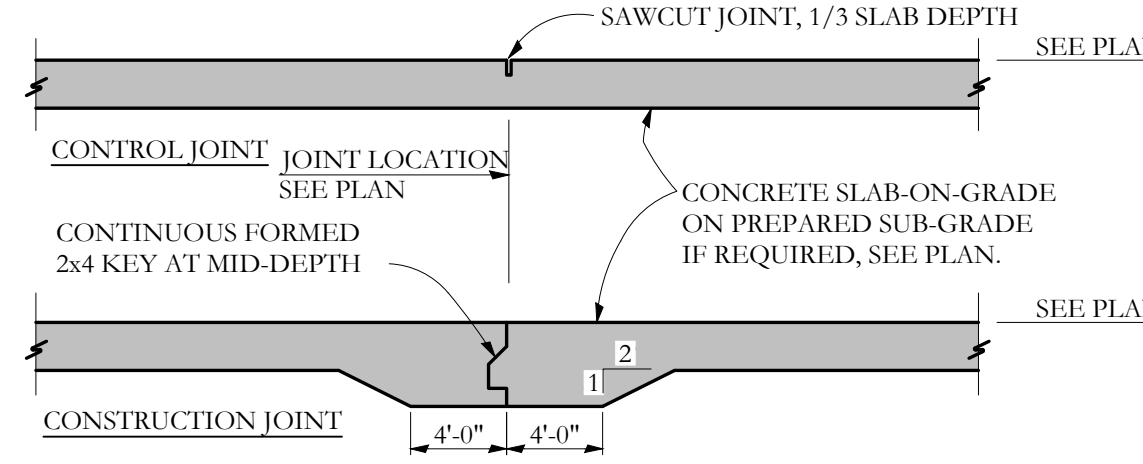
Structural Drawing Index	
S1.0	General Notes, Etc.
S1.1	Foundation and Level One Framing Plans
S1.2	Levels Two and Three Framing Plans
S1.3	Level Four Framing Plan
S2.1	Details



TYPICAL REINFORCING AT STEPS AND OPENINGS
NO SCALE



TYPICAL CONCRETE WALL INTERSECTIONS
NO SCALE



TYPICAL JOINTS AT INTERIOR SLAB-ON-GRADE
NO SCALE

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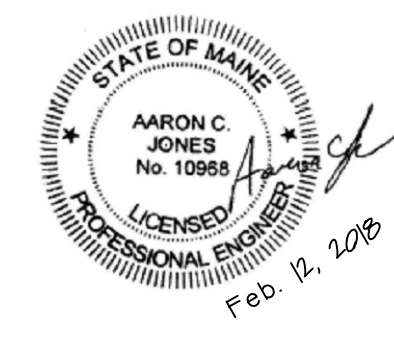
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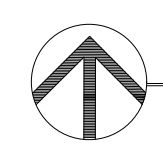
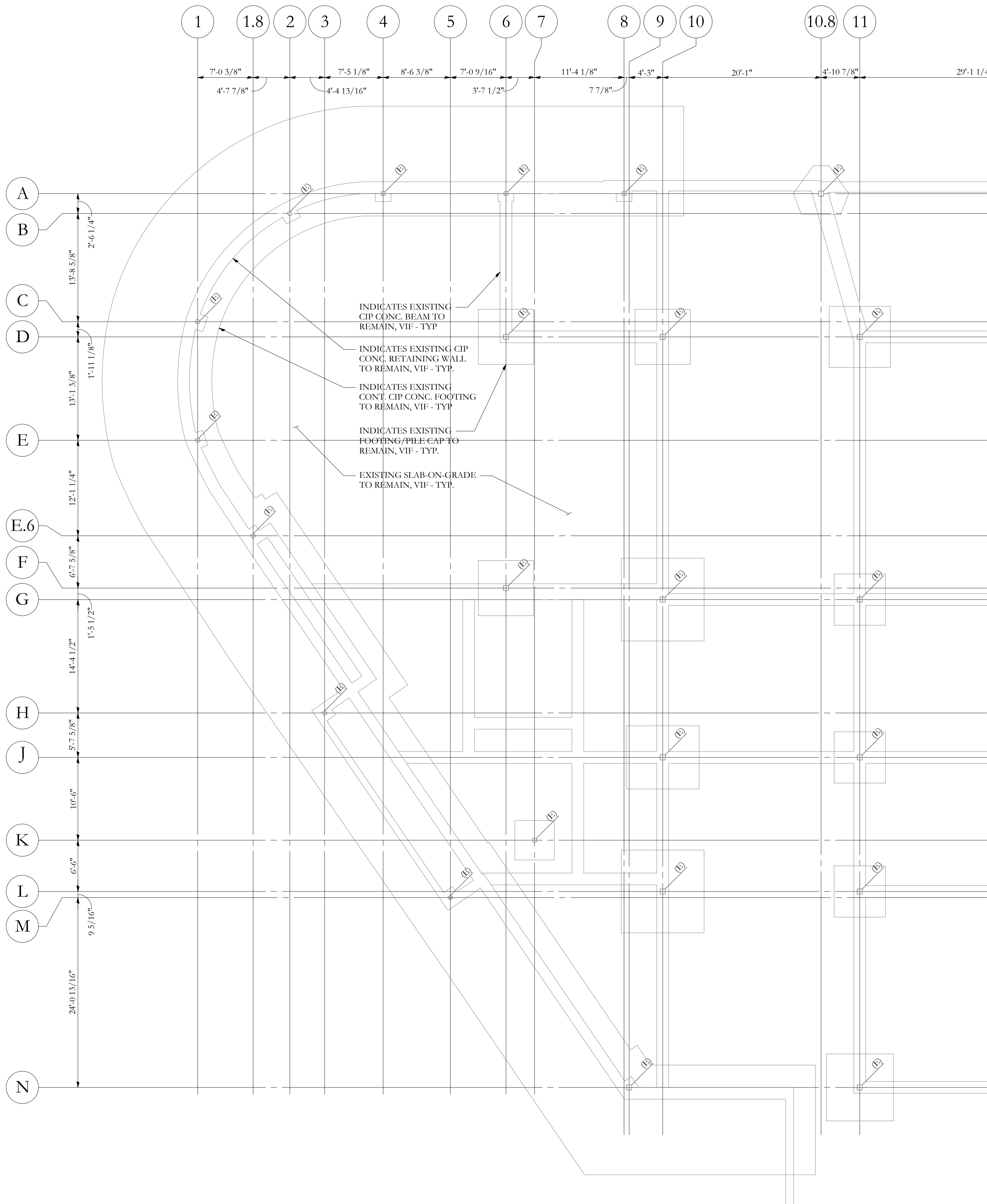
BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET
PORTLAND, MAINE

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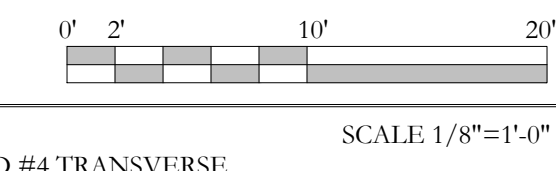
SHEET TITLE
GENERAL NOTES

S1.0

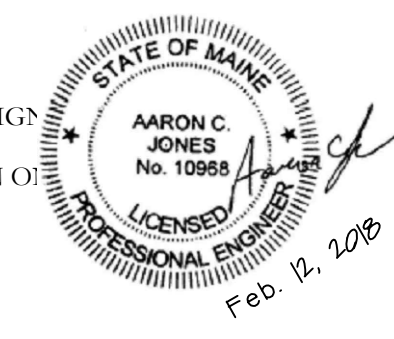




FOUNDATION/ SLAB PLAN



- NOTES:
1. ALL NEW FOOTINGS ARE 10" DEEP x 1'-8" WIDE x CONT. WITH (2) # 5 BARS LONGITUDINAL AND #4 TRANSVERSE BARS @ 32" UNO
 2. STEP IN TOP OF WALL IS INDICATED THUS: AND SHOWS LOWER SIDE OF WALL.
 3. STEP IN TOP OF FOOTING IS INDICATED THUS: AND SHOWS LOWER FOOTING.
 4. TOP OF FOOTING ELEV.=XX'-X", UNLESS INDICATED THUS: (XXX'-XX), COORDINATE BOTTOM OF FOOTING ELEVATION W/ GRADING PLAN AND SOILS REPORT REQUIREMENTS
 5. BOTTOM OF ALL FOOTINGS TO BE 4'-6" MIN BELOW EXTERIOR GRADE -TYP UNO
 6. TOP OF WALL ELEV.=VARIES, INDICATED THUS: TW=XXX'-XX
 7. SEE S1.0 FOR STRUCTURAL GENERAL NOTES
 8. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURE AND ARCHITECTURE FROM DAMAGE DURING CONSTRUCTION
 9. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITION PRIOR TO PERFORMING ANY WORK AND NOTIFY THE DESIGN TEAM OF ANY SIGNIFICANT DEVIATIONS FROM WHAT IS SHOWN ON THE CONTRACT DRAWINGS.
 10. CONTRACTOR IS RESPONSIBLE FOR SHORING ANY EXISTING STRUCTURE AS REQUIRED TO PERFORM WORK SHOWN ON CONTRACT DRAWINGS.



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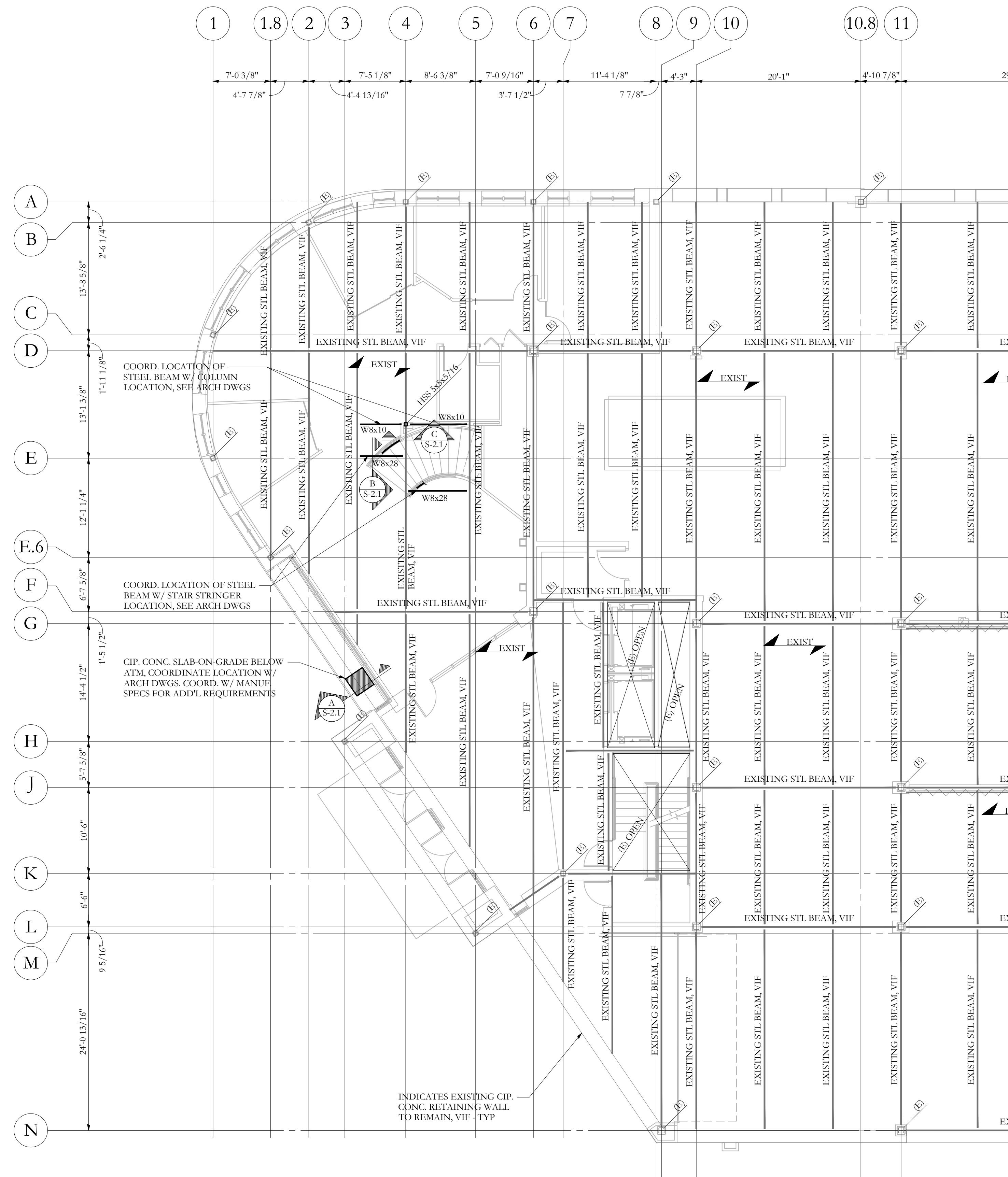


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FOUNDATION PLAN

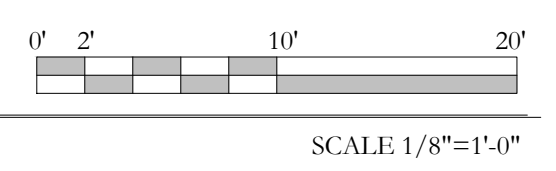
S1.1



FRAMING KEY

	INDICATES DROPPED BEAM -TYP UNO
	INDICATES FLUSH TOP BEAM -TYP UNO
	INDICATES EXISTING DIAGONAL STL BRACE
	INDICATES AN EXISTING STEEL BEAM, VIF
	INDICATES BEAM END W/ MOMENT CONN.
	INDICATES EXIST. STEEL COLUMN TO REMAIN
	INDICATES NEW STEEL COLUMN ABOVE
	INDICATES NEW STEEL COLUMN BELOW
	INDICATES SPAN OF EXISTING CONC. SLAB ON DECK, VIF
	INDICATES SPAN OF NEW CONC. SLAB ON DECK, SEE PLAN NOTES FOR ADD'L INFO.

FIRST FLOOR FRAMING PLAN



- SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES AND ADDITIONAL INFORMATION.
- COORDINATE ALL THRU SLAB PLUMBING & CHASES ETC. W/ ARCH AND MECHANICAL DRAWINGS -TYP.
- ALL SMALL FRAME BEAMS @ OPENINGS ETC. SHALL BE W8x10 -TYP UNO
- ALL STEEL FRAMING, CONNECTIONS, BOLTS ETC. AT EXPOSED GARAGE BELOW TO BE HOT DIP GALV. NOTE: CONC WRAPPED COLUMNS EXCLUDED.
- 6 1/2" TOTAL DEPTH 3,500PSI NORMAL WEIGHT CONCRETE W/ 6x6 W2.1xW2.1 WWF REINFORCING ON 2" VLI 18 GAGE COMPOSITE METAL DECKING SPANNING 8'-0" MAX UNSHORED SPAN. (2 SPAN CONT MIN) UNO
 - ALL FLOOR DECKING SHALL BE 2" VLI 18 STEEL DECK (18GA) W/ 5/8" O PUDDLE WELDS @ 12", (36/4 PATTERN) AND (2) # 10 TEK SCREW SIDE LAP FASTENERS PER SPAN. UNO
- GALV. G30 MIN COATING TOP AND BOT -TYP.
- ALL COMPOSITE BEAMS TO HAVE QUANTITY OF 3/4" Ø x 3 1/2" HAS AS NOTED ON PLANS AS "<#>". MINIMUM (1) 3/4" x 3 1/2" HAS @ 24" O.C. ALONG SPAN -TYP.
- TO STL BEAM ELEV TO MATCH EXISTING ELEVATION, VIF
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURE AND ARCHITECTURE FROM DAMAGE DURING CONSTRUCTION
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITION PRIOR TO PERFORMING ANY WORK AND NOTIFY THE DESIGN TEAM OF ANY SIGNIFICANT DEVIATIONS FROM WHAT IS SHOWN ON THE CONTRACT DRAWINGS.
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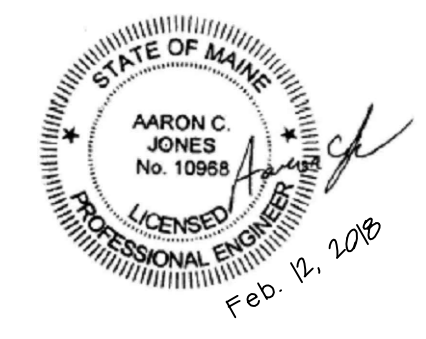
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SHEET TITLE
FIRST FLOOR FRAMING PLAN
 S1.2

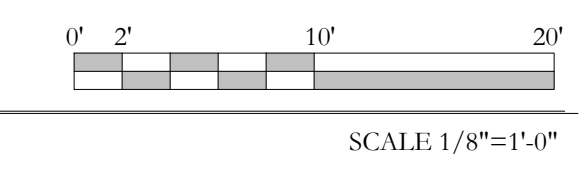




FRAMING KEY

	INDICATES DROPPED BEAM -TYP UNO
	INDICATES FLUSH TOP BEAM -TYP UNO
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	INDICATES AN EXISTING STEEL BEAM, VIF
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	INDICATES EXIST. STEEL COLUMN TO REMAIN
	INDICATES NEW STEEL COLUMN ABOVE
	INDICATES NEW STEEL COLUMN BELOW
	INDICATES SPAN OF EXISTING CONC. SLAB ON DECK, VIF
	INDICATES SPAN OF NEW CONC. SLAB ON DECK, SEE PLAN NOTES FOR ADD'L INFO.

SECOND FLOOR FRAMING PLAN



- SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES AND ADDITIONAL INFORMATION.
- COORDINATE ALL THRU SLAB PLUMBING & CHASES ETC. W/ ARCH AND MECHANICAL DRAWINGS -TYP.
- ALL SMALL FRAME BEAMS @ OPENINGS ETC. SHALL BE W8x10 -TYP UNO
- ALL STEEL FRAMING, CONNECTIONS, BOLTS ETC. AT EXPOSED GARAGE BELOW TO BE HOT DIP GALV. NOTE: CONC WRAPPED COLUMNS EXCLUDED.
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 - ALL FLOOR DECKING SHALL BE 2" VLI 18 STEEL DECK (18GA) W/ 5/8"Ø PUDDLE WELDS @ 12", (36/4 PATTERN) AND (2) # 10 TEK SCREW SIDE LAP FASTENERS PER SPAN. UNO
 - GALV. G30 MIN COATING TOP AND BOT -TYP.
- ALL COMPOSITE BEAMS TO HAVE QUANTITY OF 3/4" Ø x 3 1/2" HAS AS NOTED ON PLANS AS "<#>". MINIMUM (1) 3/4" x 3 1/2" HAS @ 24" O.C. ALONG SPAN -TYP
- T.O. STL BEAM ELEV TO MATCH EXISTING ELEVATION, VIF
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURE AND ARCHITECTURE FROM DAMAGE DURING CONSTRUCTION
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITION PRIOR TO PERFORMING ANY WORK AND NOTIFY THE DESIGN TEAM OF ANY SIGNIFICANT DEVIATIONS FROM WHAT IS SHOWN ON THE CONTRACT DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR SHORING ANY EXISTING STRUCTURE AS REQUIRED TO PERFORM WORK SHOWN ON CONTRACT DRAWINGS.

INDICATES EXISTING CIP. CONC. RETAINING WALL TO REMAIN, VIF -TYP

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Consulting Engineers, Inc.
77 Oak Street
Portland, ME 04101
p. 207-774-4614
f. 866-793-7835
www.structuralintegrity.com

SI # 16-0024

NO.	DATE	DESCRIPTION

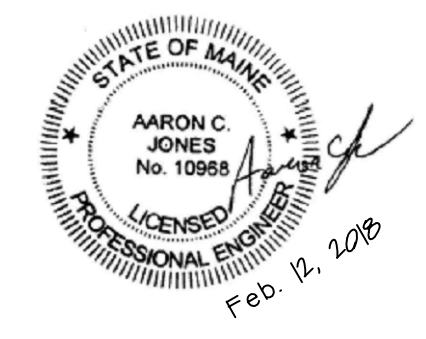
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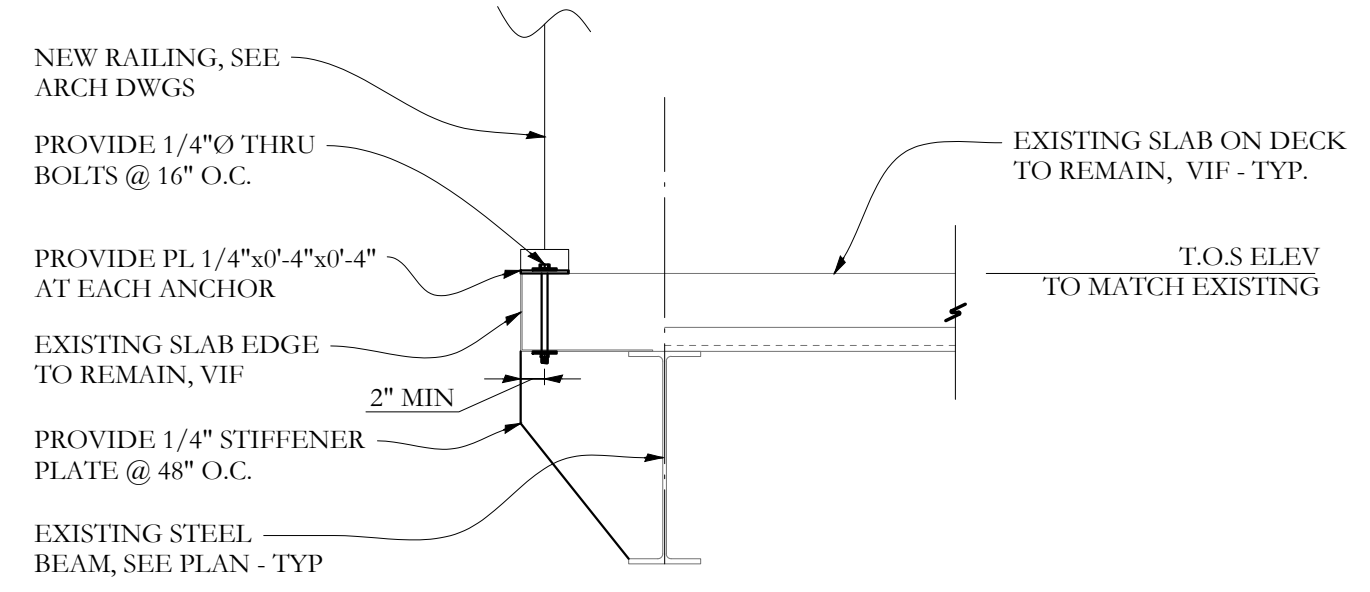
TAC Architectural
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**BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE**

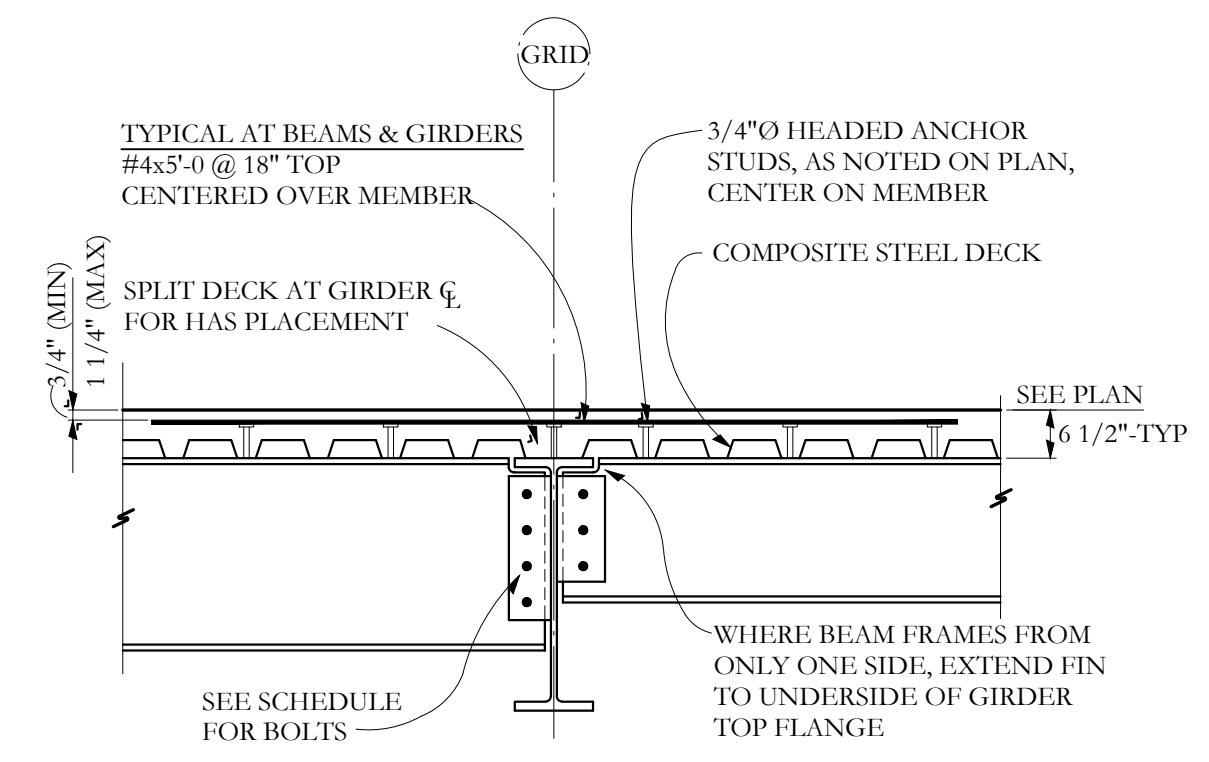
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CAD DWG FILE:	
DRAWN BY:	CJO
CHK'D BY:	ACJ
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SHEET TITLE
**SECOND FLOOR FRAMING
PLAN**
S1.3





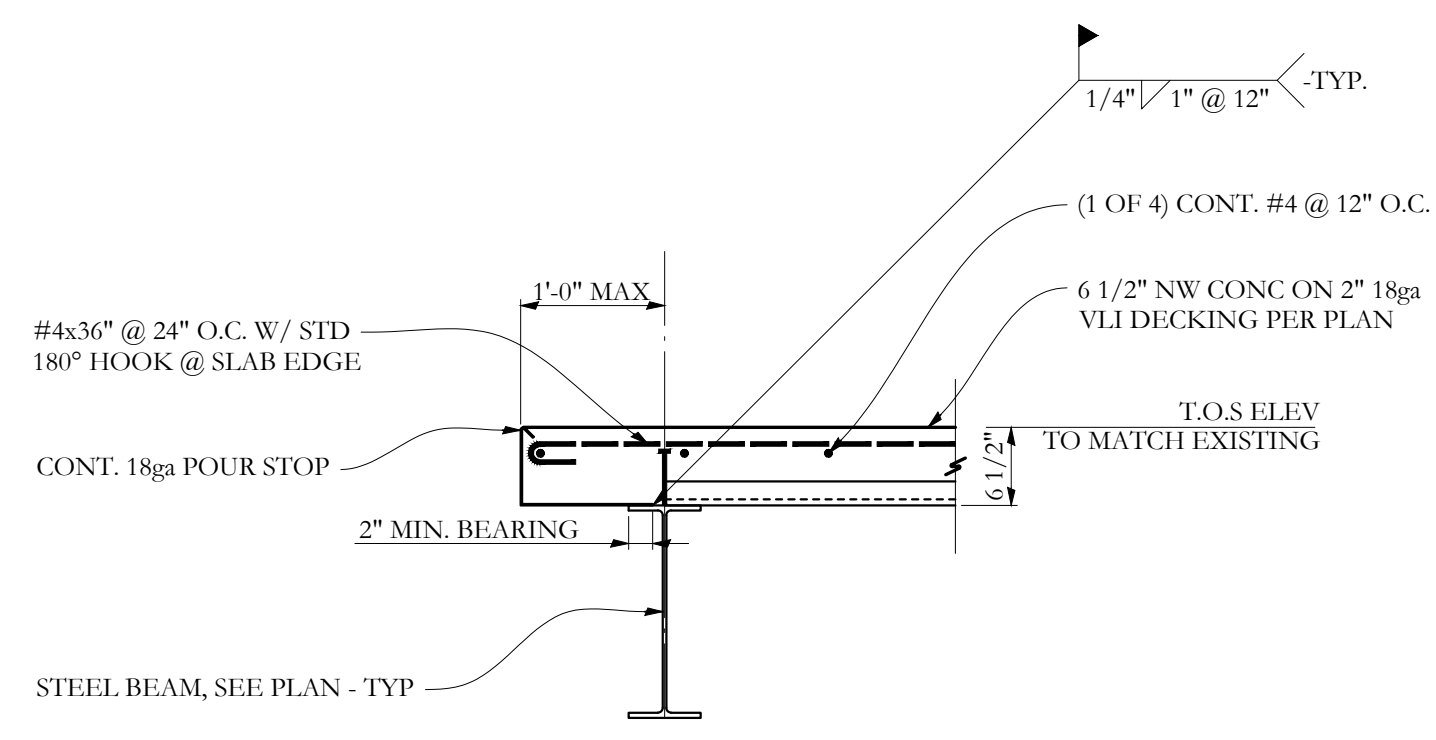
SECTION **G** S-2.1 3/4"=1'-0



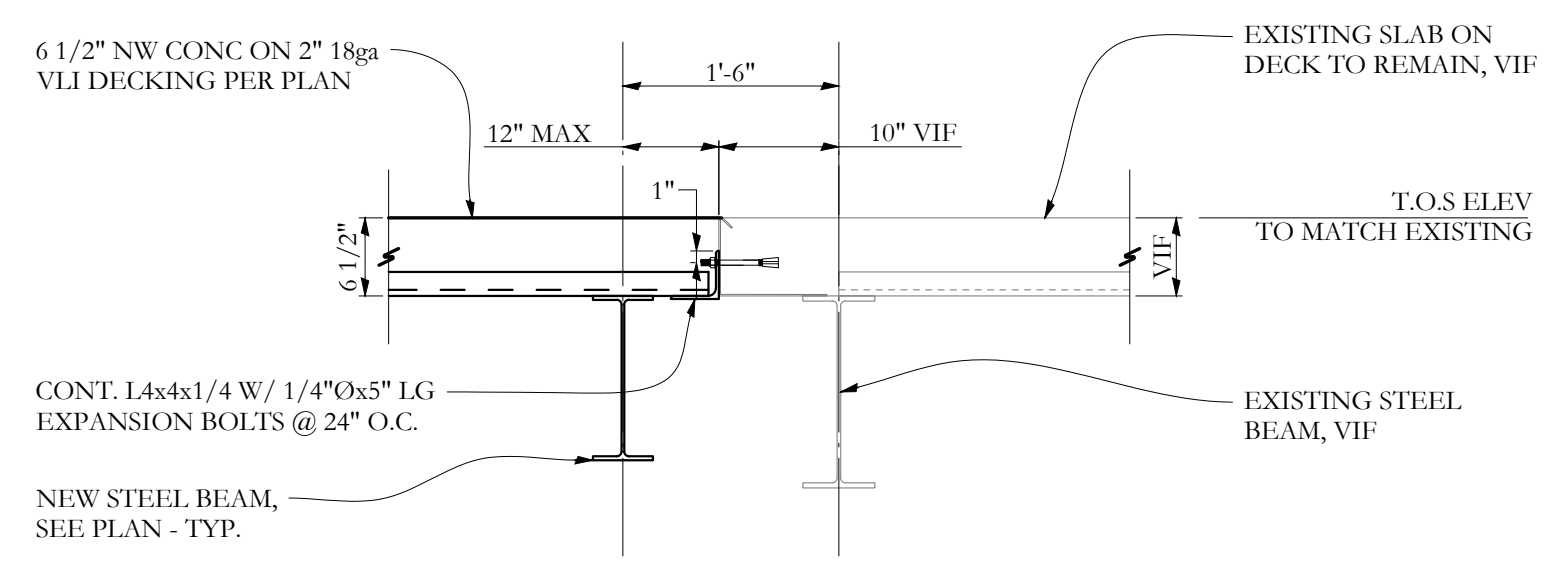
AT GIRDER-TO-GIRDER CONNECTIONS OR WHERE SCHEDULED NUMBER OF BOLTS CANNOT BE INSTALLED AT TYPICAL CONNECTION, PROVIDE DOUBLE L3 1/2"x3 1/2"x3 1/4" BOLTED TO BOTH SUPPORTING & SUPPORTED MEMBERS WEBS

TYPICAL COMPOSITE BEAM AND SLAB ASSEMBLY
SECTION **H** S-2.1 3/4"=1'-0

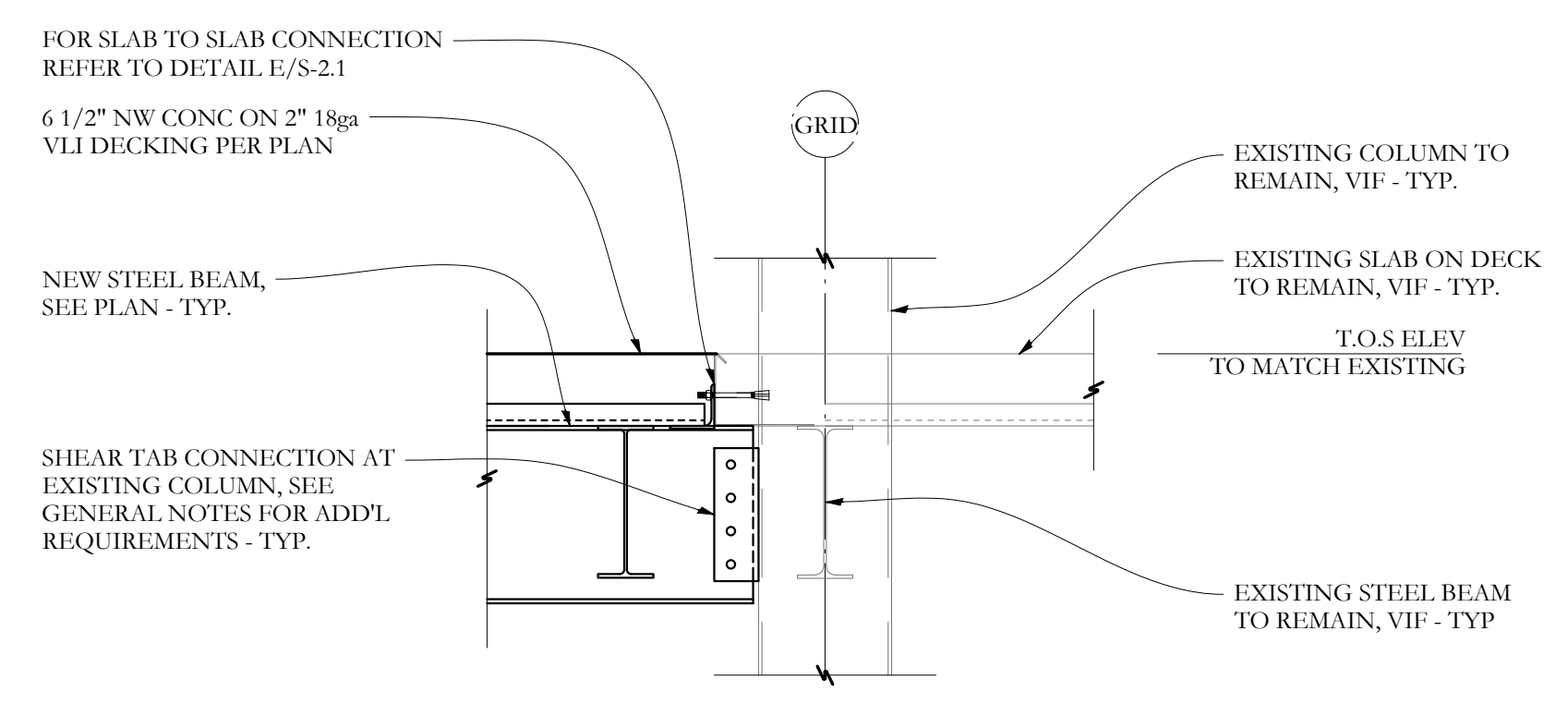
SECTION **J** S-2.1 3/4"=1'-0



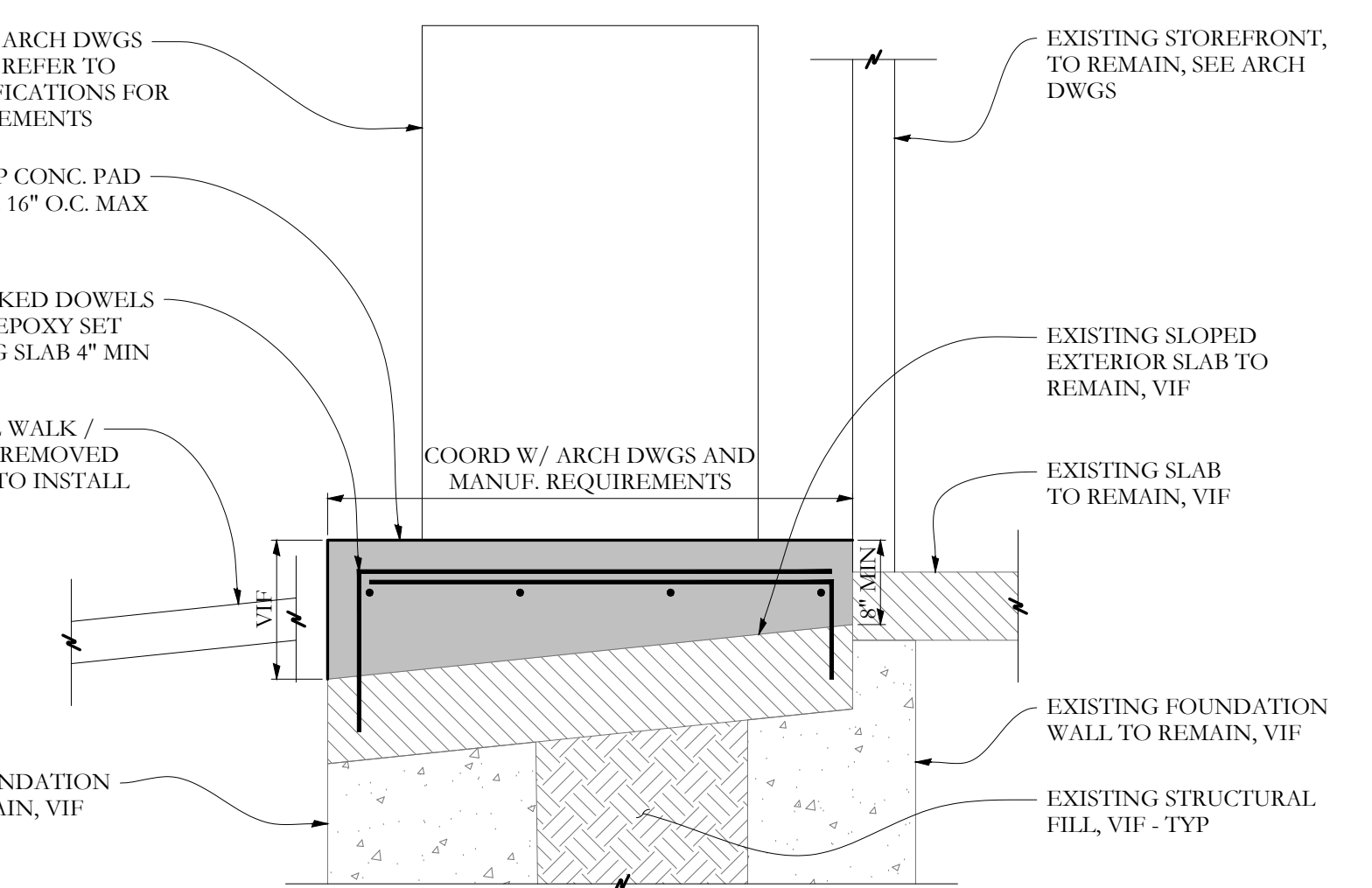
SECTION **D** S-2.1 3/4"=1'-0



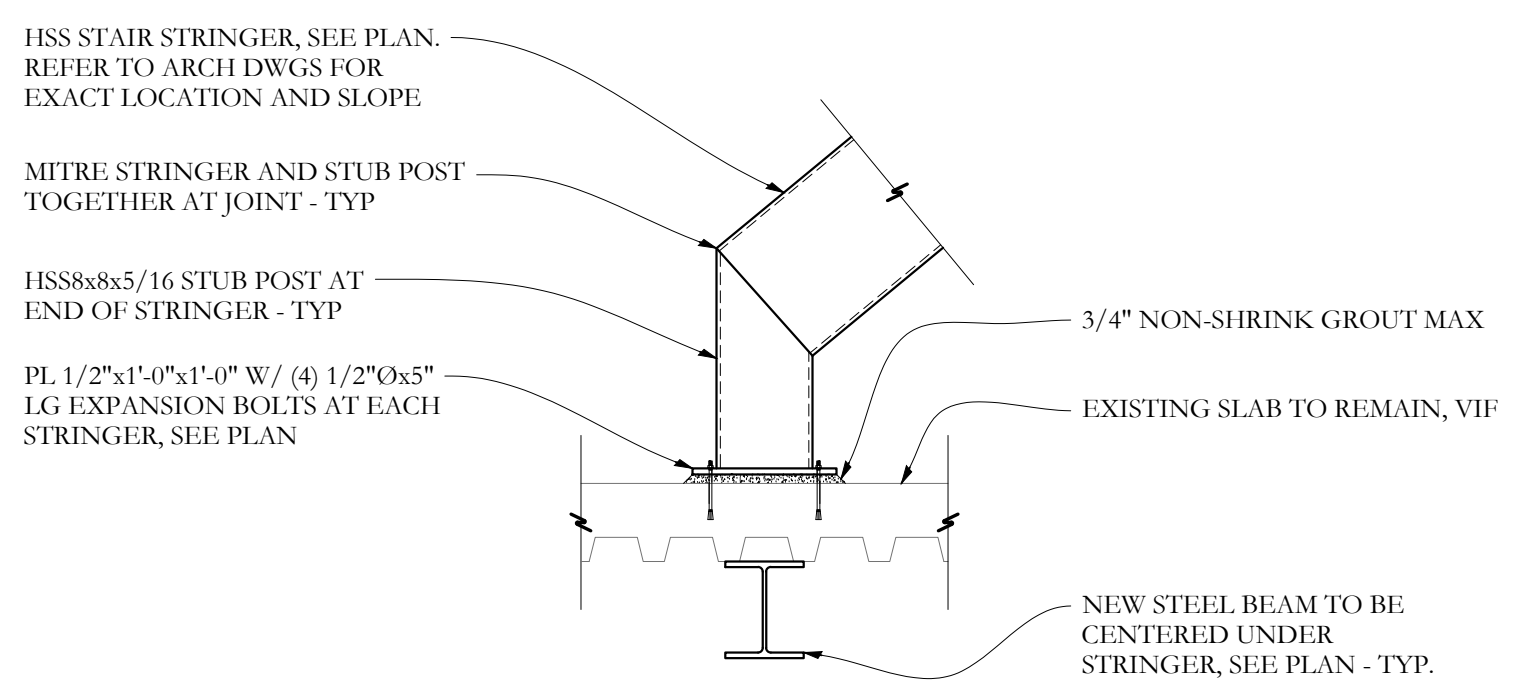
SECTION **E** S-2.1 3/4"=1'-0



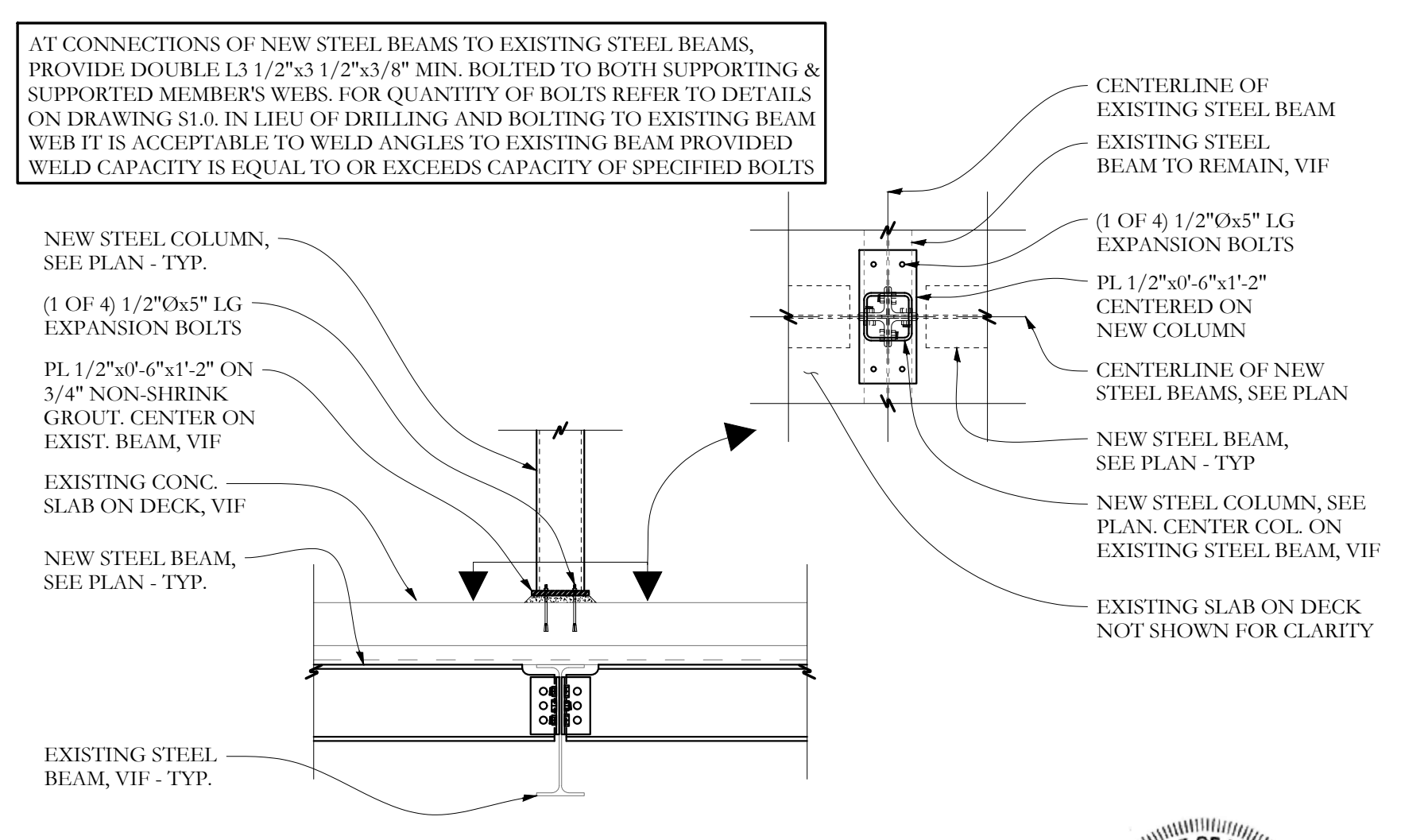
SECTION **F** S-2.1 3/4"=1'-0



SECTION **A** S-2.1 3/4"=1'-0



SECTION **B** S-2.1 3/4"=1'-0



SECTION **C** S-2.1 3/4"=1'-0

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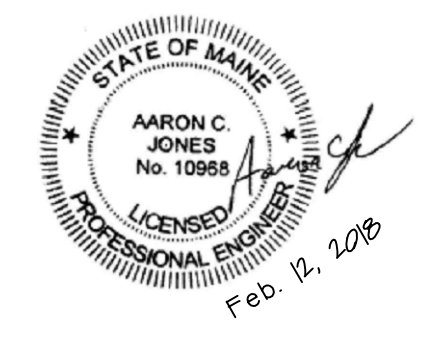
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RENOVATIONS TO 280 FORE
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PROJECT NO:	16-226
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SHEET TITLE
DETAILS
S2.1



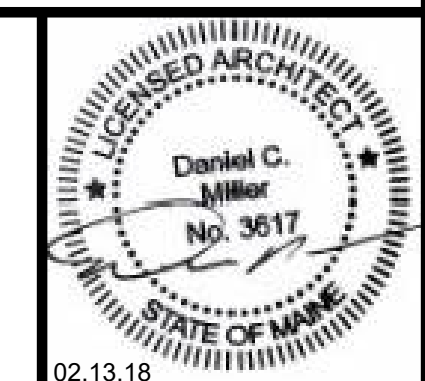
GENERAL REMOVAL NOTES:

1. GENERAL CONTRACTOR (GC) SHALL FIELD VERIFY & REPORT EXISTING CONDITIONS AND DIMENSIONS PRIOR TO REMOVALS. IF DISCREPANCIES ARE FOUND, GC TO NOTIFY ARCHITECT FOR CLARIFICATION BEFORE COMMENCING WITH THE WORK.
2. GC AND SUBCONTRACTORS (SC) FOR EACH TRADE ARE ADVISED THAT INFORMATION PERTINENT TO THEIR WORK MAY BE INDICATED OR DESCRIBED IN OTHER PORTIONS OF THE CONTRACT DOCUMENTS.
3. REFER TO SPECIFIC DRAWINGS FOR PLUMBING, HVAC AND ELECTRICAL REMOVALS WORK.
4. GC AND SC ARE RESPONSIBLE FOR PROVIDING ALL REMOVALS AND PATCHING REQUIRED TO COMPLETE THEIR WORK IN ACCORDANCE WITH THE DESIGN INTENT.
5. THESE REMOVALS DRAWINGS HAVE BEEN PREPARED BASED UPON EXISTING CONSTRUCTION DOCUMENT DRAWINGS AND FIELD OBSERVATIONS. THE EXACT LOCATION OF THE BUILDING STRUCTURAL ELEMENTS (COLUMNS, BEAMS, LOAD BEARING WALLS, ETC.) MAY BE DIFFERENT IN THE FIELD THAN WHAT IS INDICATED OR ASSUMED ON THESE DRAWINGS. GC SHALL FIELD VERIFY THE LOCATION OF ALL BUILDING STRUCTURAL ELEMENTS. ALL BUILDING STRUCTURAL ELEMENTS SHALL REMAIN UNLESS INDICATED TO BE REMOVED ON THE STRUCTURAL DRAWINGS. ANY BUILDING STRUCTURAL ELEMENT INDICATED AS BEING REMOVED ON THIS DRAWING SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO COMMENCING REMOVALS.
6. PROVIDE NEW LINTELS AT NEW OPENINGS IN EXISTING WALLS. SEE STRUCTURAL DRAWINGS FOR INFORMATION ON LINTELS. IF NEW LINTEL IS NOT INDICATED, NOTIFY ARCHITECT FOR DIRECTION PRIOR TO PROCEEDING.
7. GC SHALL PROTECT, REPLACE OR REPAIR ANY EXISTING CONSTRUCTION SCHEDULED TO REMAIN WHICH IS DAMAGED DURING REMOVALS.
8. GC SHALL PROVIDE REQUIRED SHORING OR TEMPORARY BRACING DURING REMOVALS.
9. REMOVE EXISTING CEILINGS AND SUPPORTS WHERE NEW CEILINGS ARE SCHEDULED IN THE ROOM FINISH SCHEDULE.
10. REMOVE PARTITIONS, SHELVING, CABINETS AND ALL MISCELLANEOUS ITEMS SHOWN WITH DASHED LINES.
11. PATCH ALL FLOORS, WALLS, BASE AND CEILINGS WHERE PARTITIONS OR MISCELLANEOUS ITEMS ARE REMOVED.
12. REMOVE DOORS, FRAMES AND SIDELIGHTS SHOWN WITH DASHED LINES, UNLESS OTHERWISE NOTED.
13. REMOVE TOILET PARTITIONS AND CRAB BARS SHOWN WITH DASHED LINES. REPAIR EXISTING CONSTRUCTION SCHEDULED TO REMAIN.
14. REMOVE EXISTING FLOORING WHERE NEW FLOORING IS SCHEDULED IN THE ROOM FINISH SCHEDULE. PREPARE EXISTING FLOOR SURFACES TO RECEIVE NEW FLOORING.
15. CONTRACTOR SHALL VERIFY WITH THE OWNER THOSE REMOVED ITEMS TO BE TURNED OVER TO THE OWNER.

NO.	DATE	DESCRIPTION
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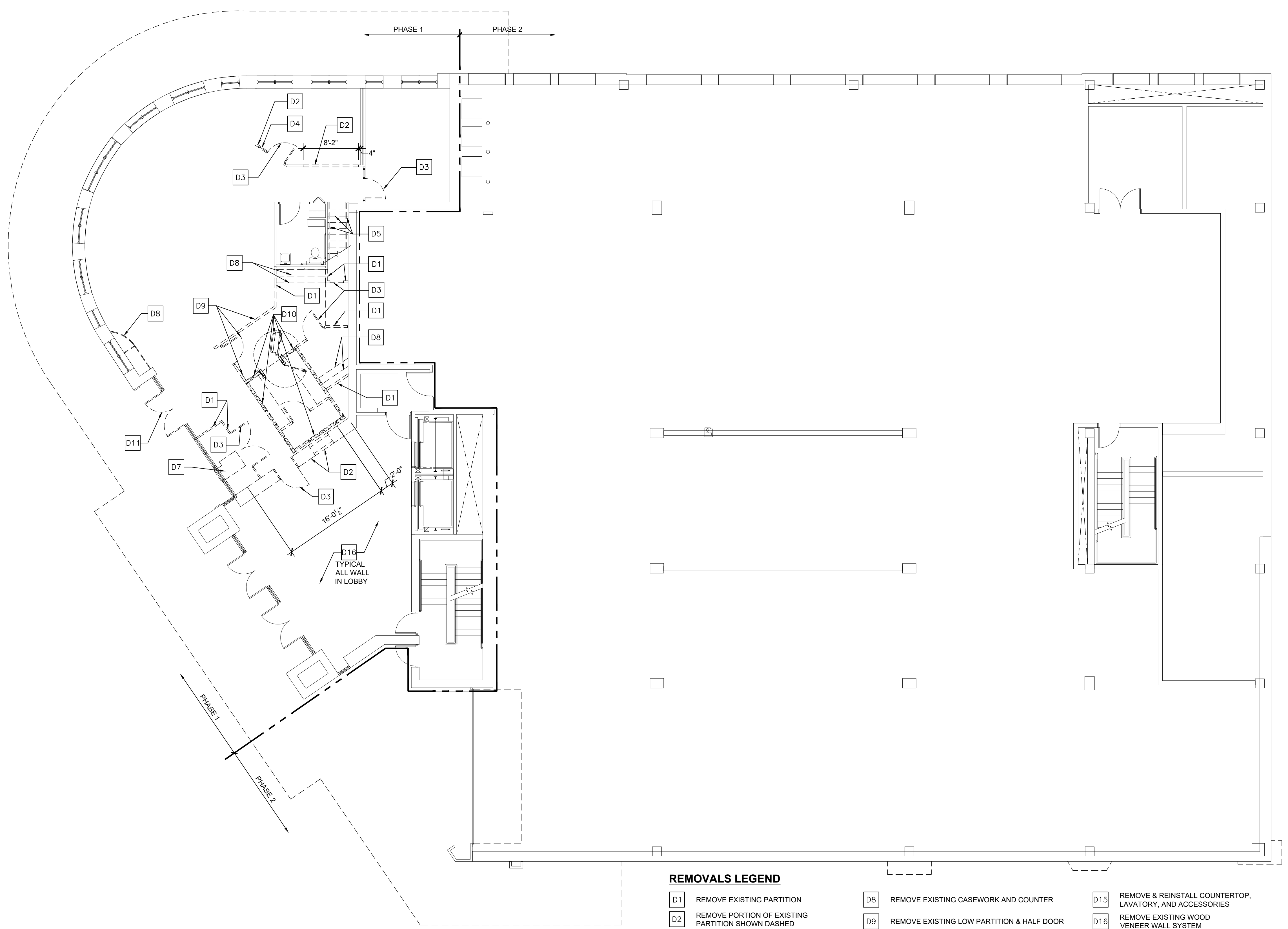


**BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE**

PROJECT NO:	15-014
CAD DWG FILE:	AD101 FIRST FLOOR REMOVALS PLAN - PHASE 1.DWG
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**FIRST FLOOR
REMOVALS PLAN -
PHASE 1**

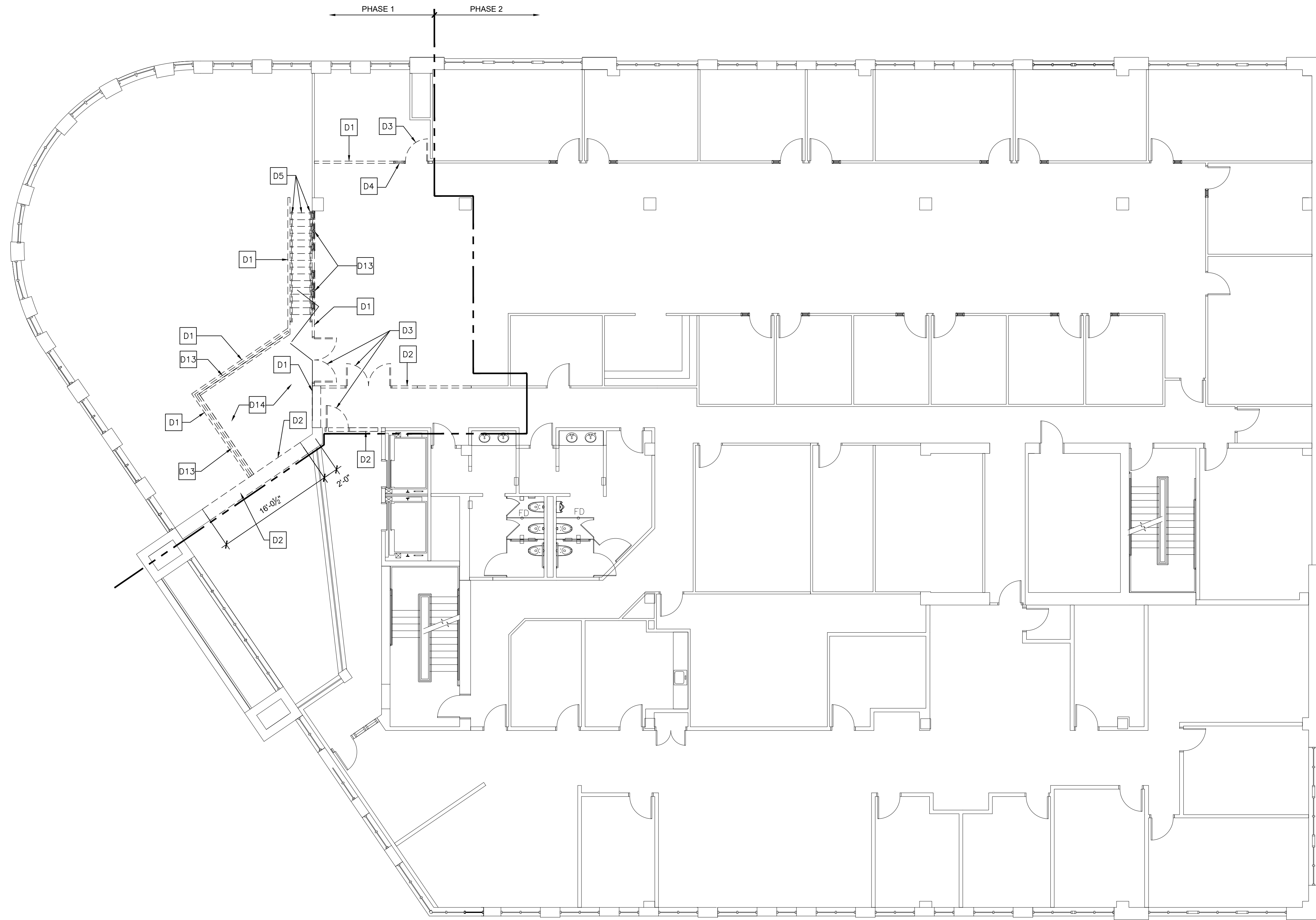
AD101



REMOVALS LEGEND

D1 REMOVE EXISTING PARTITION	D8 REMOVE EXISTING CASEWORK AND COUNTER	D15 REMOVE & REINSTALL COUNTERTOP, LAVATORY, AND ACCESSORIES
D2 REMOVE PORTION OF EXISTING PARTITION SHOWN DASHED	D9 REMOVE EXISTING LOW PARTITION & HALF DOOR	D16 REMOVE EXISTING WOOD VENEER WALL SYSTEM
D3 REMOVE EXISTING DOOR AND FRAME	D10 REMOVE EXISTING VAULT	
D4 REMOVE EXISTING SIDELIGHT	D11 REMOVE EXISTING STOREFRONT DOOR	
D5 REMOVE EXISTING STAIR AND HANDRAILS	D12 REMOVE EXISTING SINK AND COUNTER	
D6 REMOVE EXISTING TOILET FIXTURES	D13 REMOVE EXISTING WINDOW / WINDOWS	
D7 REMOVE EXISTING ATM	D14 REMOVE EXISTING FLOOR AND FRAMING	

A1 FIRST FLOOR REMOVALS PLAN
1/8" = 1'-0"

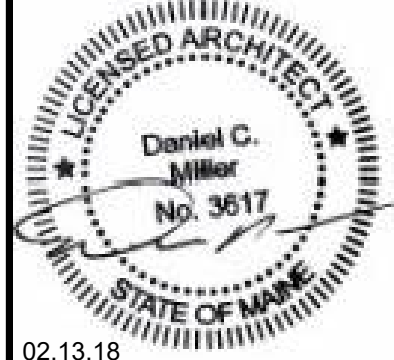


NOTES:
 1. SEE SHEET AD101 FOR GENERAL REMOVAL NOTES AND LEGEND

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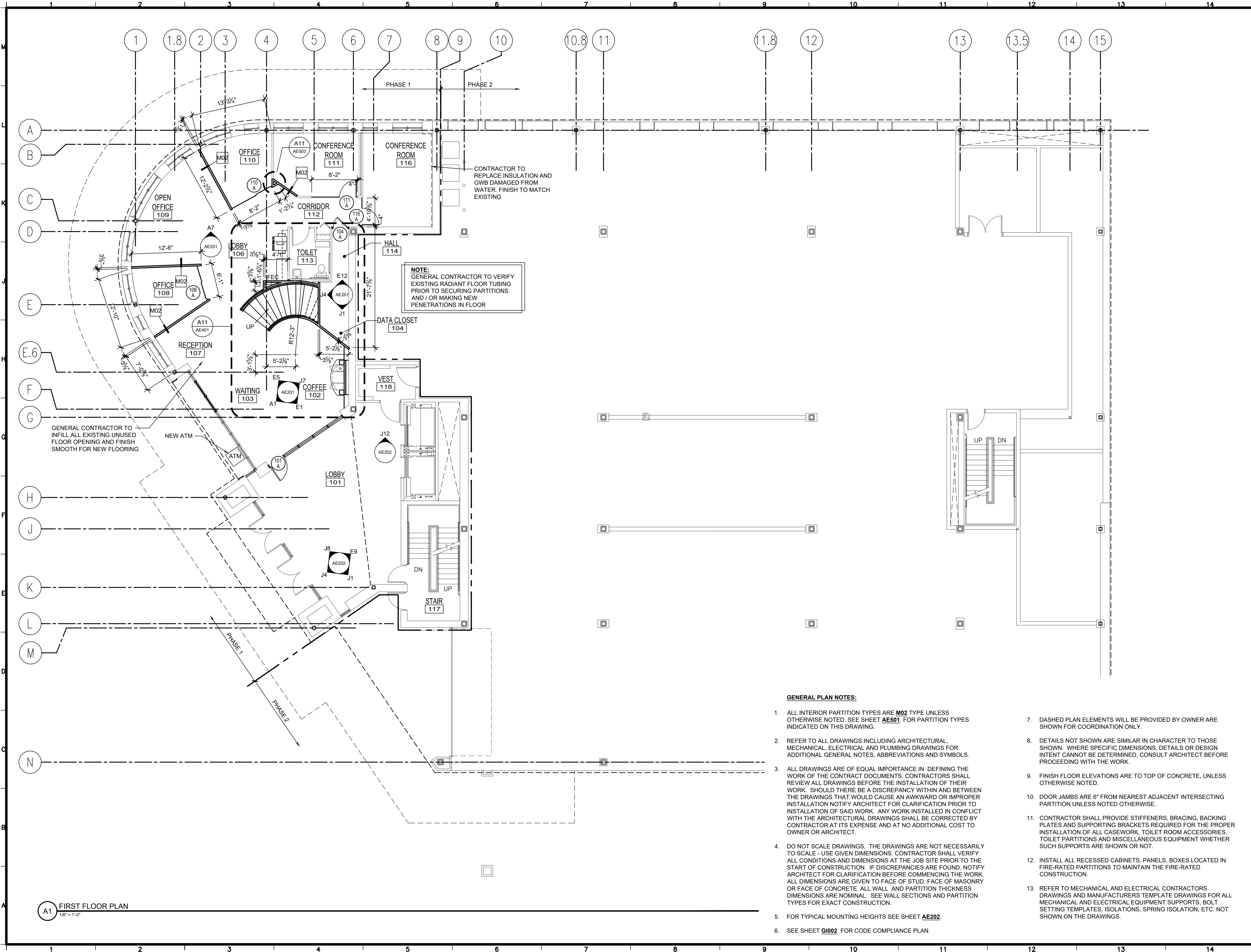
BANGOR SAVINGS BANK -
 RENOVATIONS TO 280 FORE
 STREET
 PORTLAND, MAINE

PROJECT NO: 15-014
 CAD DWG FILE: AD102 SECOND FLOOR REMOVALS PLAN - PHASE 1.DWG
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 CHK'D BY: ###
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SHEET TITLE
 SECOND FLOOR REMOVALS
 PLAN - PHASE 1

AD102

A1 SECOND FLOOR REMOVALS PLAN
 1/8" = 1'-0"



NOTE:
GENERAL CONTRACTOR TO VERIFY EXISTING RADIANT FLOOR TUBING PRIOR TO SECURING PARTITIONS AND / OR MAKING NEW PENETRATIONS IN FLOOR

GENERAL CONTRACTOR TO INFILL ALL EXISTING UNUSED FLOOR OPENING AND FINISH SMOOTH FOR NEW FLOORING

CONTRACTOR TO REPLACE INSULATION AND GWB DAMAGED FROM WATER. FINISH TO MATCH EXISTING

GENERAL PLAN NOTES:

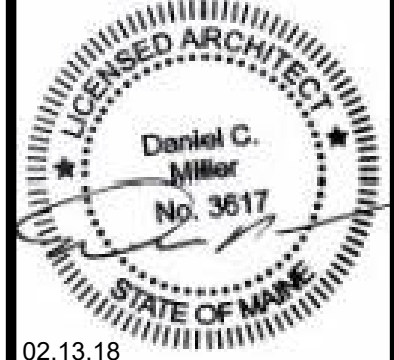
- ALL INTERIOR PARTITION TYPES ARE **M02** TYPE UNLESS OTHERWISE NOTED. SEE SHEET **AE501** FOR PARTITION TYPES INDICATED ON THIS DRAWING.
- REFER TO ALL DRAWINGS INCLUDING ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
- ALL DRAWINGS ARE OF EQUAL IMPORTANCE IN DEFINING THE WORK OF THE CONTRACT DOCUMENTS. CONTRACTORS SHALL REVIEW ALL DRAWINGS BEFORE THE INSTALLATION OF THEIR WORK. SHOULD THERE BE A DISCREPANCY WITHIN AND BETWEEN THE DRAWINGS THAT WOULD CAUSE AN AWKWARD OR IMPROPER INSTALLATION NOTIFY ARCHITECT FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY CONTRACTOR AT ITS EXPENSE AND AT NO ADDITIONAL COST TO OWNER OR ARCHITECT.
- DO NOT SCALE DRAWINGS. THE DRAWINGS ARE NOT NECESSARILY TO SCALE - USE GIVEN DIMENSIONS. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO THE START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, NOTIFY ARCHITECT FOR CLARIFICATION BEFORE COMMENCING THE WORK. ALL DIMENSIONS ARE GIVEN TO FACE OF STUD, FACE OF MASONRY OR FACE OF CONCRETE. ALL WALL AND PARTITION THICKNESS DIMENSIONS ARE NOMINAL. SEE WALL SECTIONS AND PARTITION TYPES FOR EXACT CONSTRUCTION.
- FOR TYPICAL MOUNTING HEIGHTS SEE SHEET **AE202**.
- SEE SHEET **G1002** FOR CODE COMPLIANCE PLAN.
- DASHED PLAN ELEMENTS WILL BE PROVIDED BY OWNER ARE SHOWN FOR COORDINATION ONLY.
- DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT ARCHITECT BEFORE PROCEEDING WITH THE WORK.
- FINISH FLOOR ELEVATIONS ARE TO TOP OF CONCRETE, UNLESS OTHERWISE NOTED.
- DOOR JAMBS ARE 6" FROM NEAREST ADJACENT INTERSECTING PARTITION UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL PROVIDE STIFFENERS, BRACING, BACKING PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE PROPER INSTALLATION OF ALL CASEWORK, TOILET ROOM ACCESSORIES, TOILET PARTITIONS AND MISCELLANEOUS EQUIPMENT WHETHER SUCH SUPPORTS ARE SHOWN OR NOT.
- INSTALL ALL RECESSED CABINETS, PANELS, BOXES LOCATED IN FIRE-RATED PARTITIONS TO MAINTAIN THE FIRE-RATED CONSTRUCTION.
- REFER TO MECHANICAL AND ELECTRICAL CONTRACTORS DRAWINGS AND MANUFACTURERS TEMPLATE DRAWINGS FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, BOLT SETTING TEMPLATES, ISOLATIONS, SPRING ISOLATION, ETC. NOT SHOWN ON THE DRAWINGS.

A1 FIRST FLOOR PLAN
1/8" = 1'-0"

NO.	DATE	DESCRIPTION
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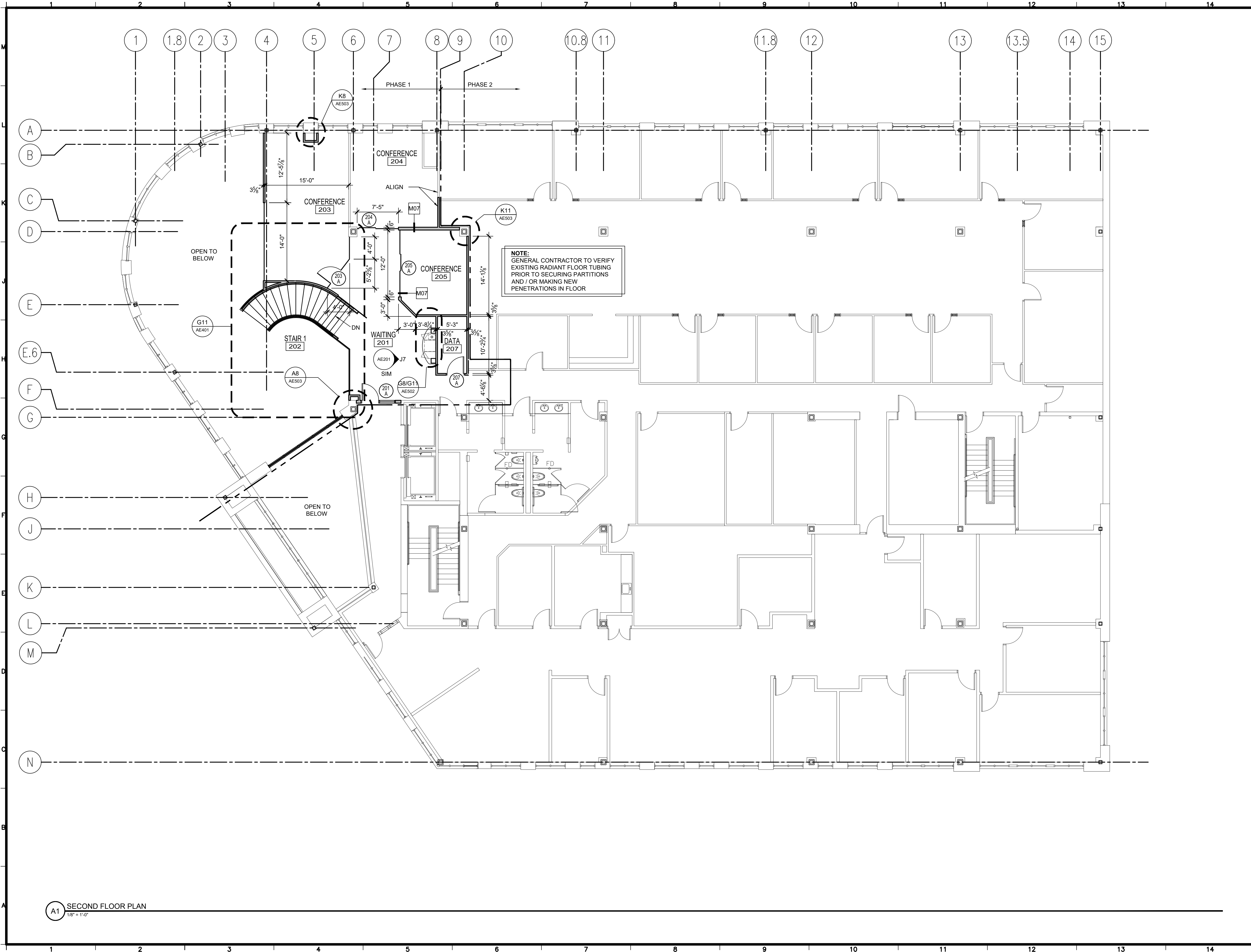


BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

PROJECT NO:	15-014
CAD DWG FILE:	AE101 FIRST FLOOR PLAN - PHASE 1.DWG
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FIRST FLOOR PLAN
- PHASE 1

AE101

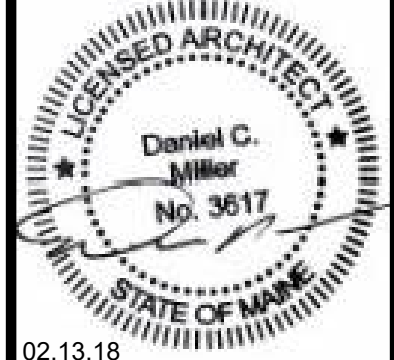


NOTE:
 GENERAL CONTRACTOR TO VERIFY
 EXISTING RADIANT FLOOR TUBING
 PRIOR TO SECURING PARTITIONS
 AND / OR MARKING NEW
 PENETRATIONS IN FLOOR

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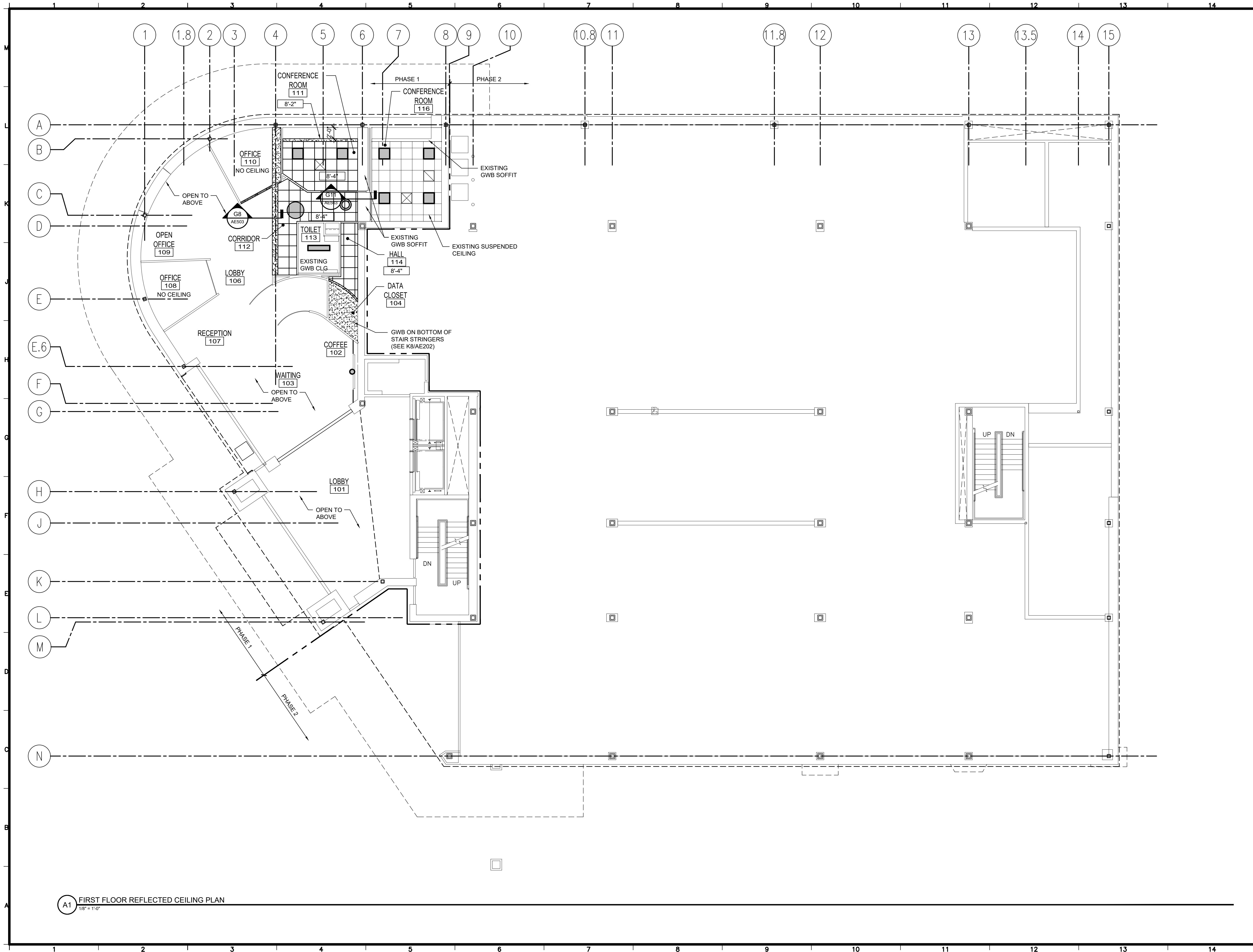
BANGOR SAVINGS BANK -
 RENOVATIONS TO 280 FORE
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PROJECT NO: 15-014
 CAD DWG FILE: AE102 SECOND FLOOR PLAN - PHASE 1.DWG
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SHEET TITLE
 SECOND FLOOR PLAN
 - PHASE 1

AE102

A1 SECOND FLOOR PLAN
 1/8" = 1'-0"

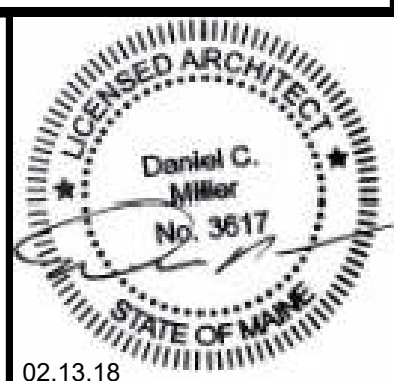


A1 FIRST FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"

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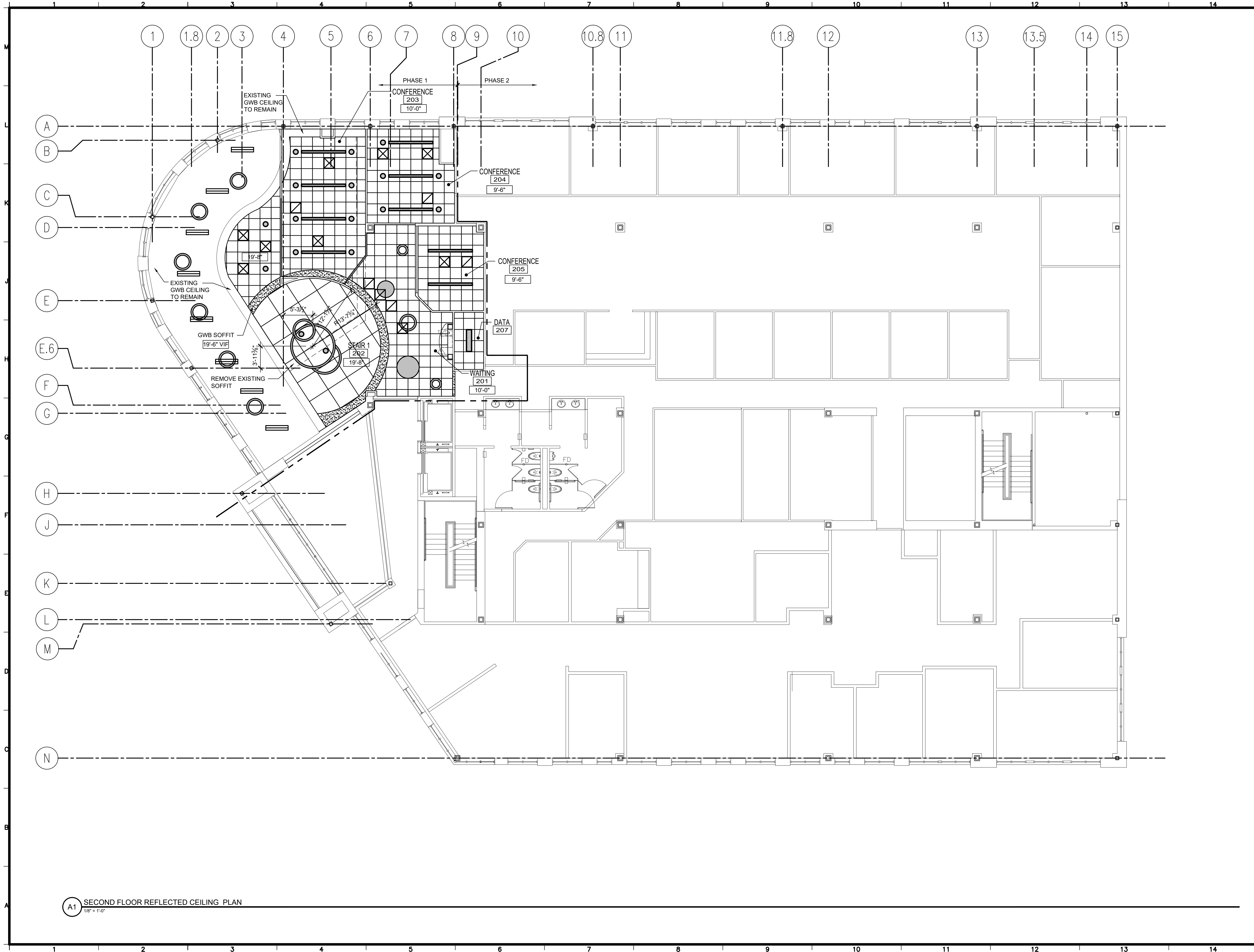


BANGOR SAVINGS BANK - RENOVATIONS
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PORTLAND, MAINE

PROJECT NO: 15-014
CAD DWG FILE: AE103 FIRST FLOOR REFLECTED CEILING PLAN - PHASE 1.DWG
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SHEET TITLE
FIRST FLOOR REFLECTED
CEILING PLAN - PHASE 1

AE103

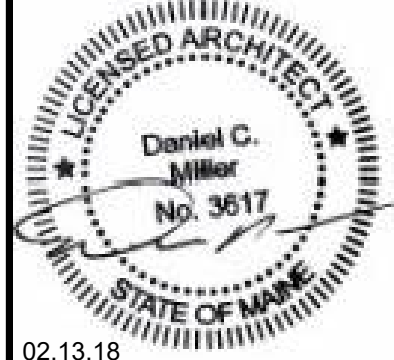


A1 SECOND FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"

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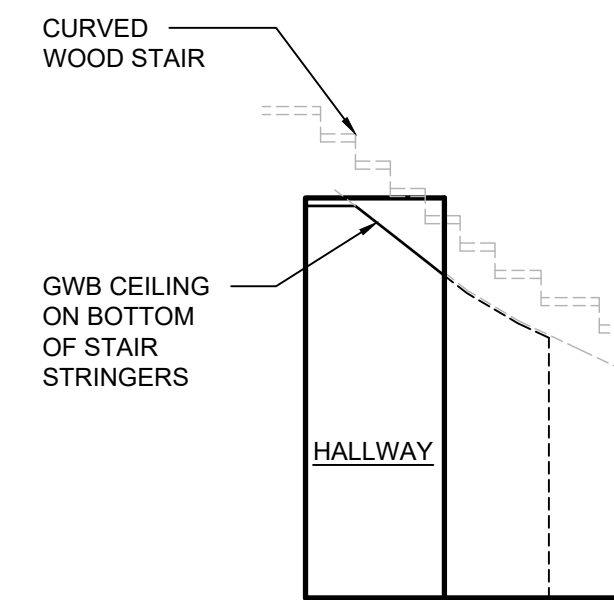


BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

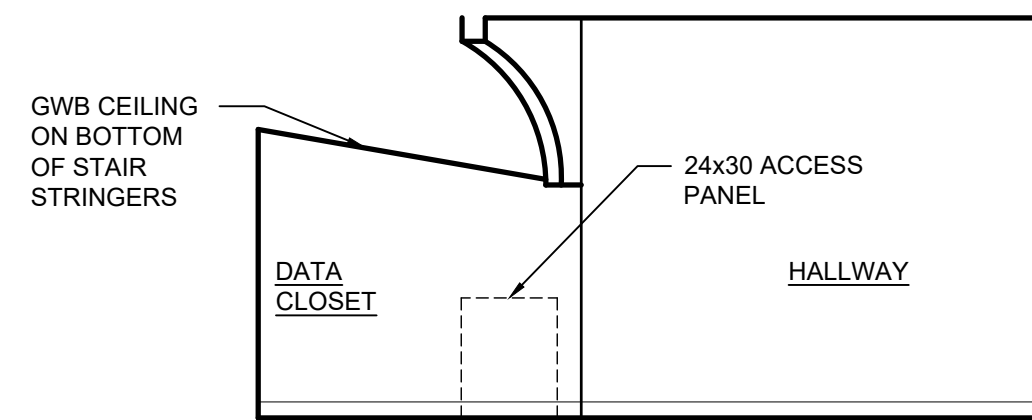
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SHEET TITLE
SECOND FLOOR REFLECTED
CEILING PLAN - PHASE 1

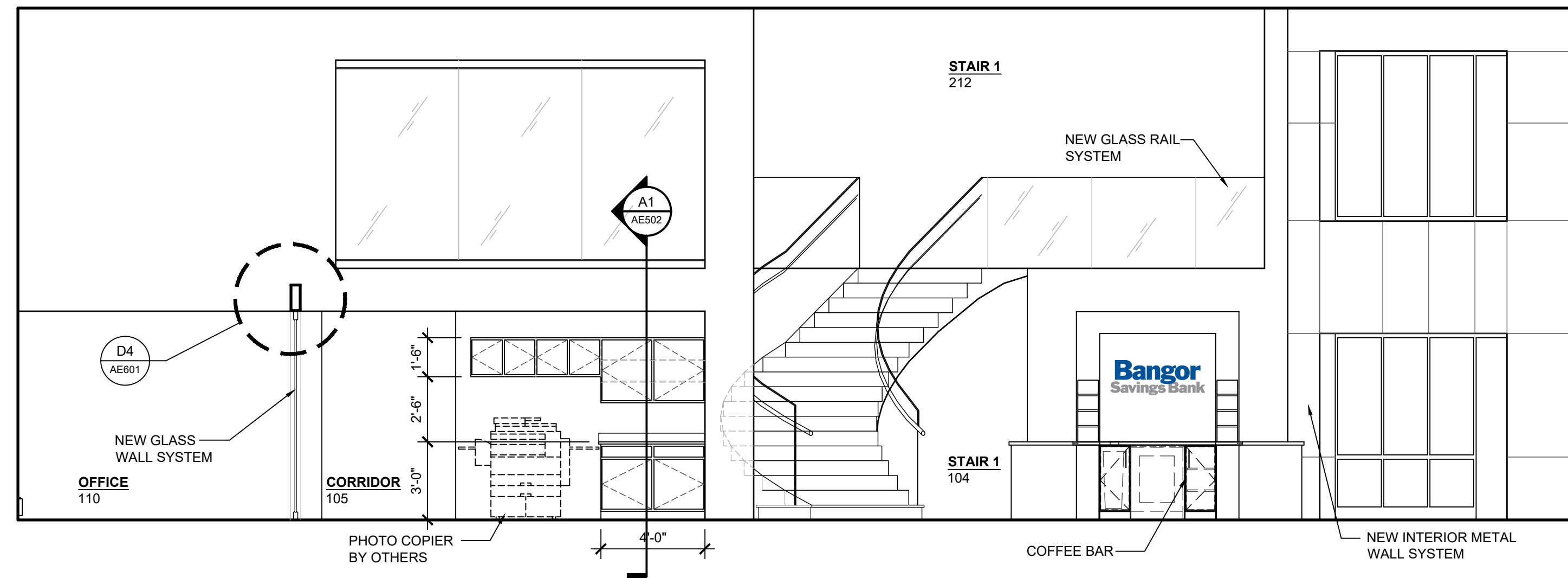
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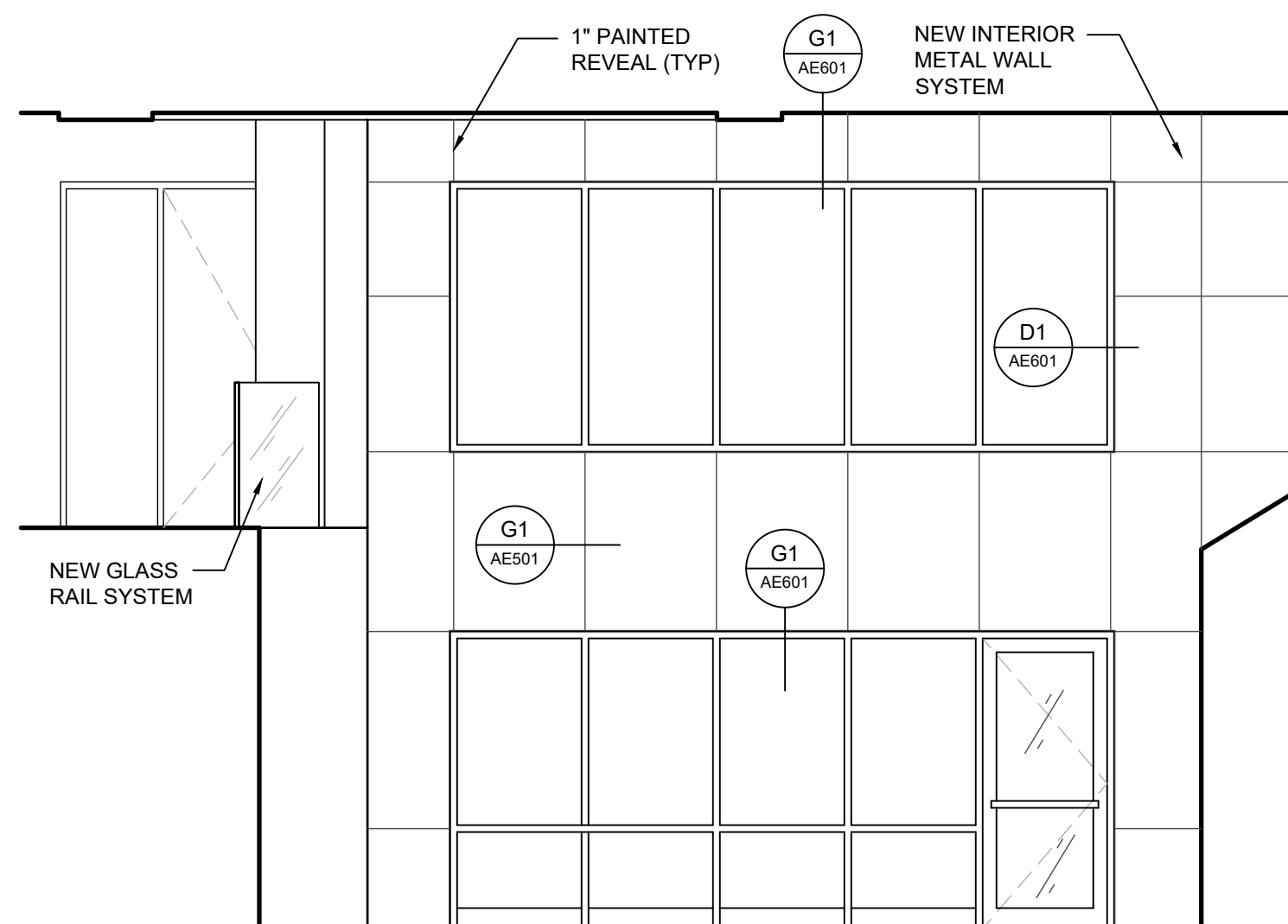
J1 DATA CLOSET
1/4" = 1'-0"



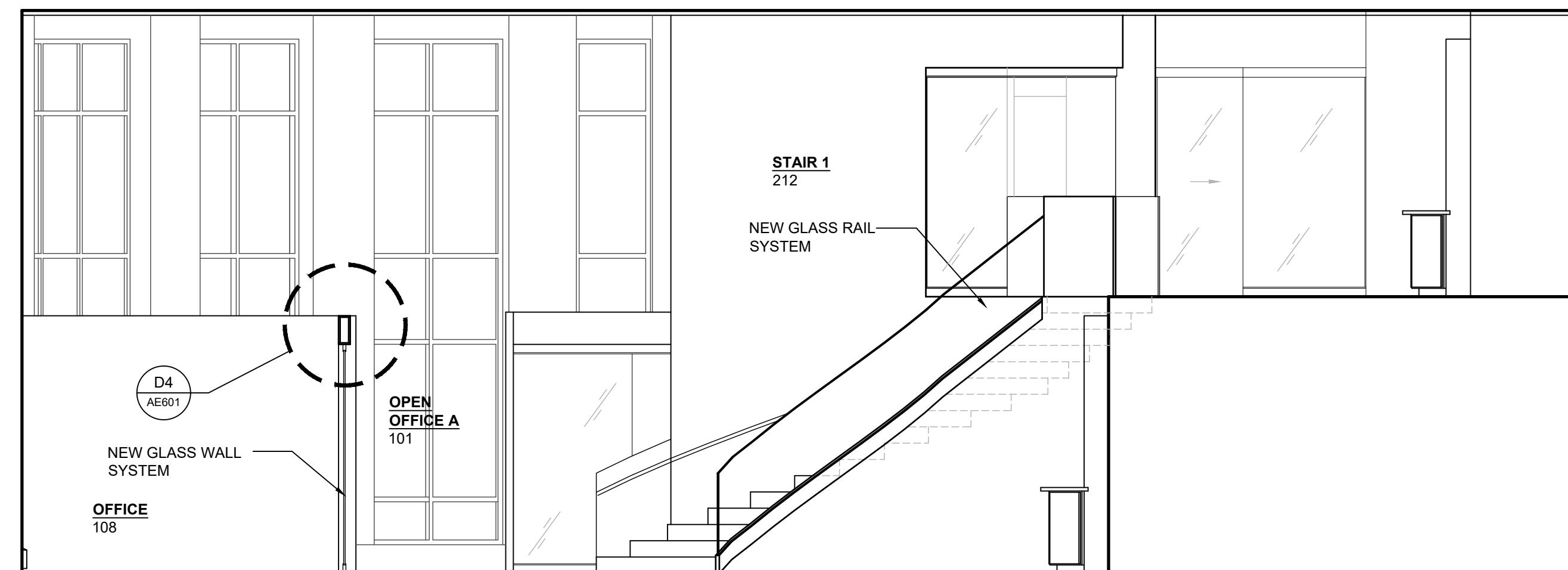
J4 INTERIOR ELEVATION - DATA CLOSET
1/4" = 1'-0"



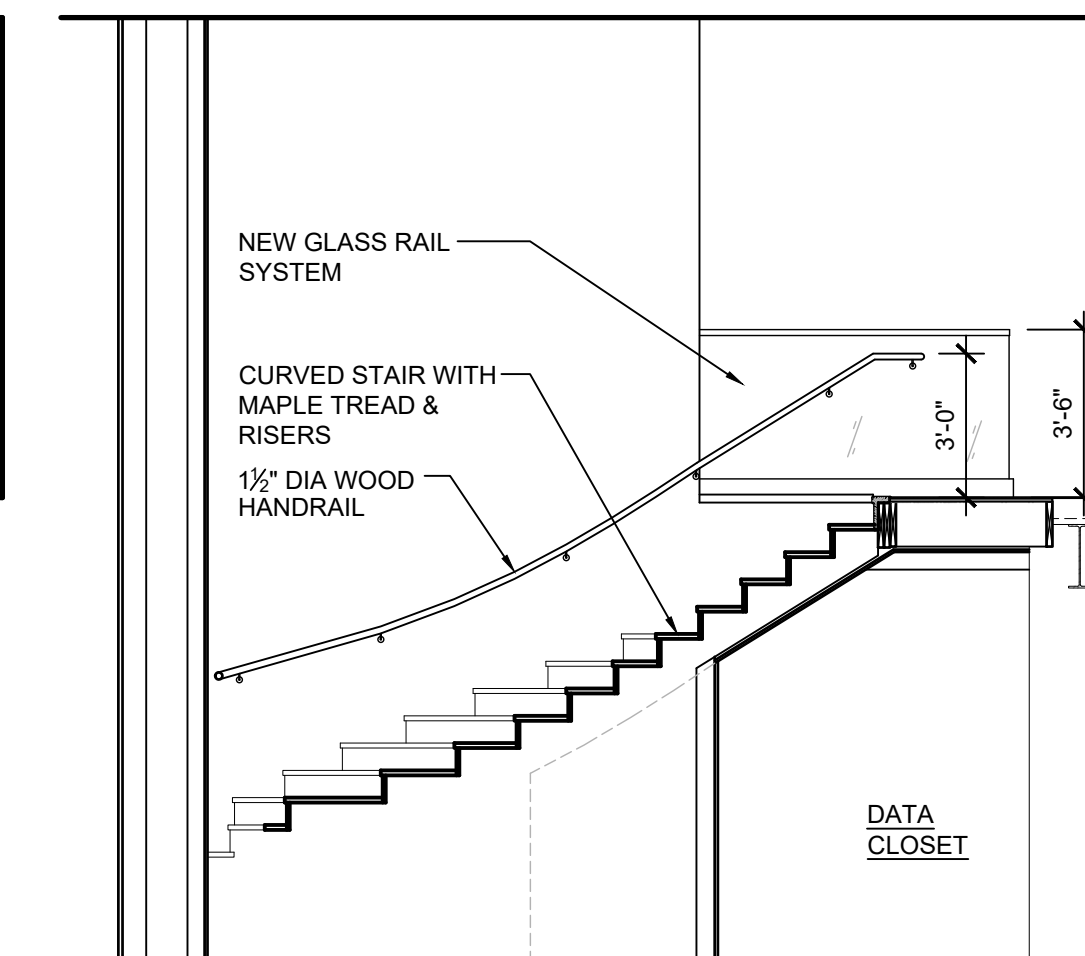
J7 INTERIOR ELEVATION
1/4" = 1'-0"



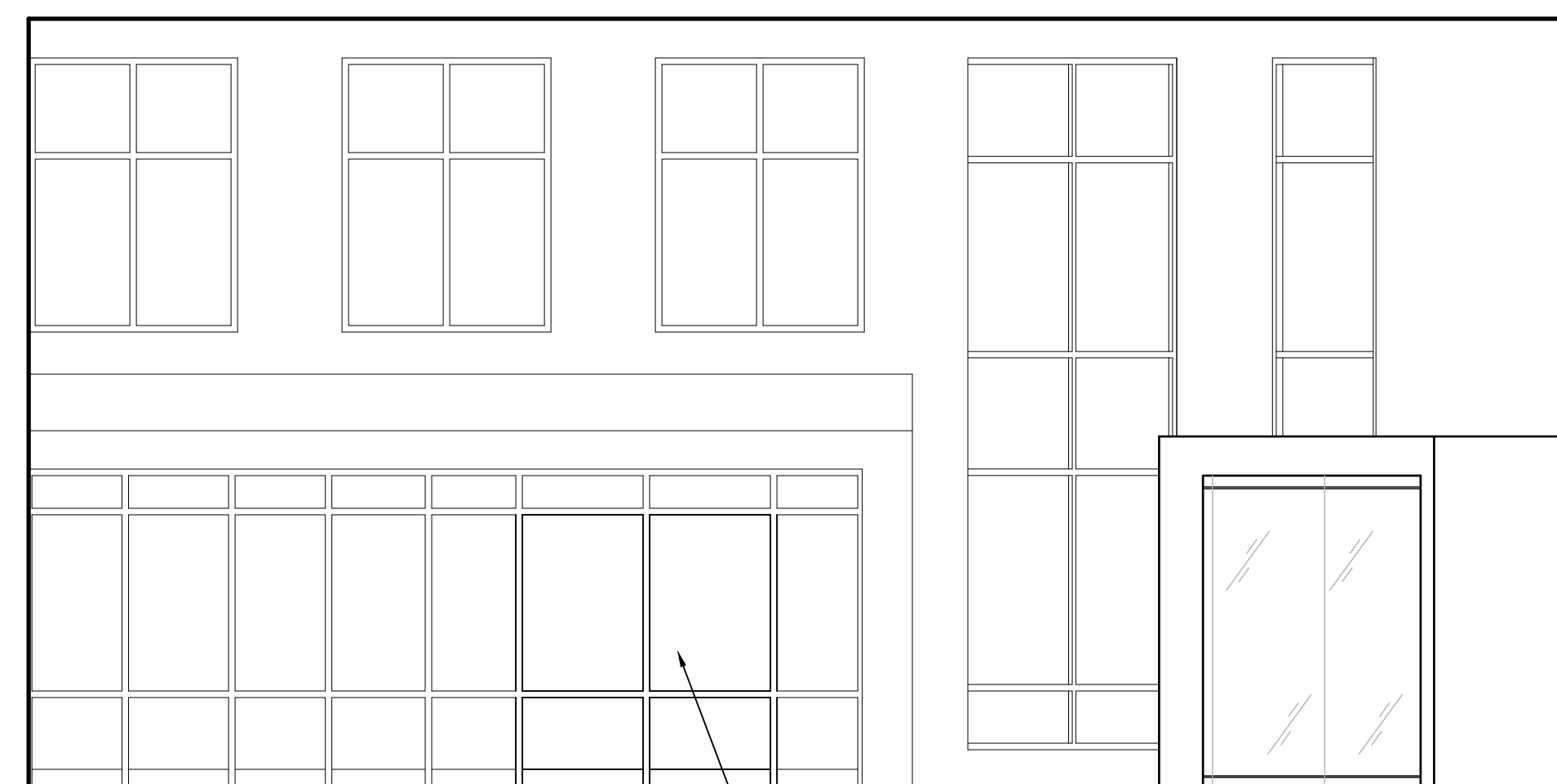
E1 WAITING 103
1/4" = 1'-0"



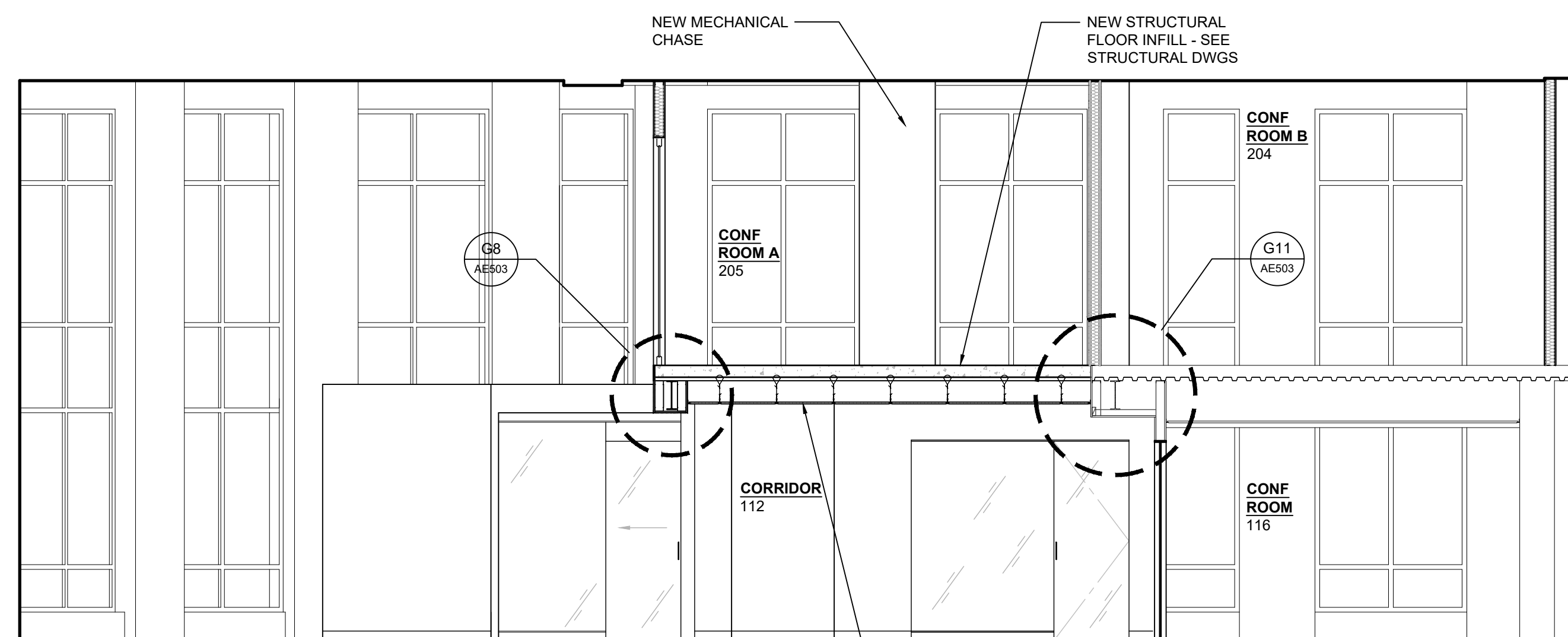
E5 BUILDING SECTION
1/4" = 1'-0"



E12 DATA CLOSET
1/4" = 1'-0"



A1 WAITING 103
1/4" = 1'-0"

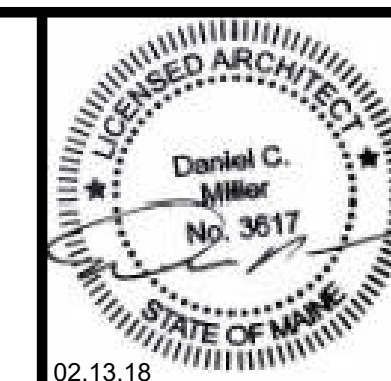


A7 BUILDING SECTION
1/4" = 1'-0"

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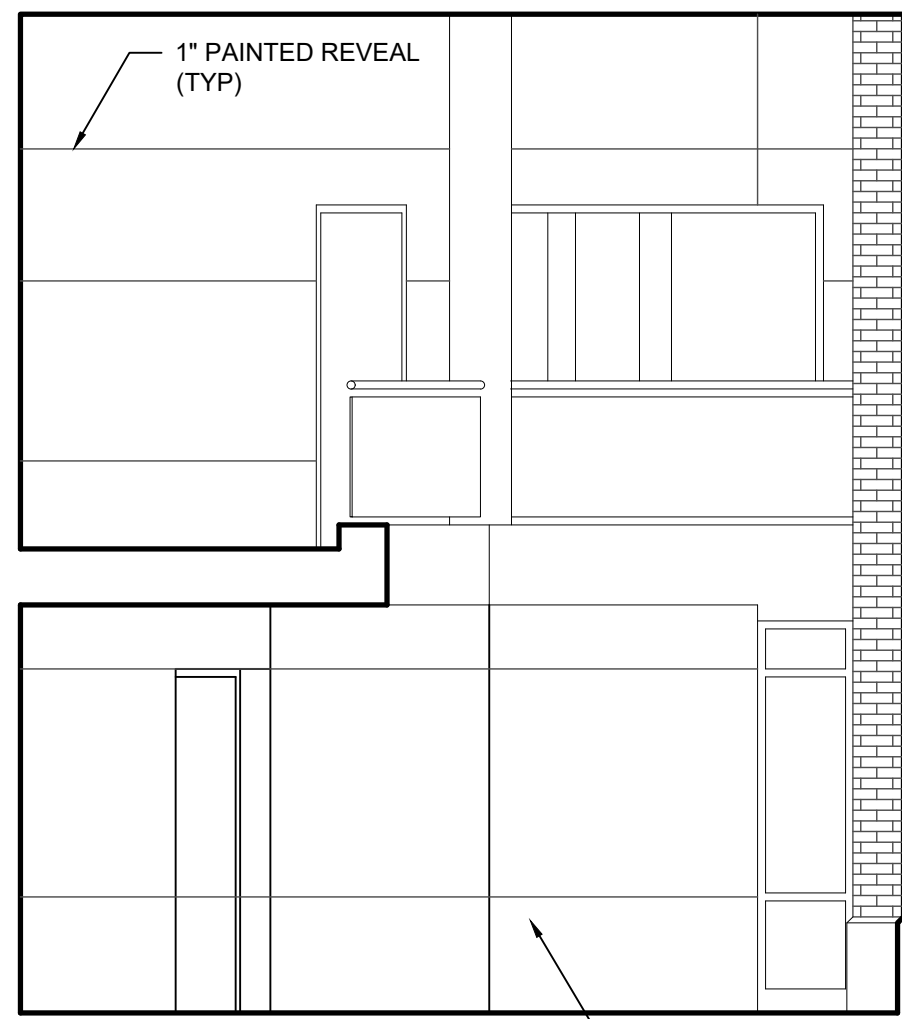


BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

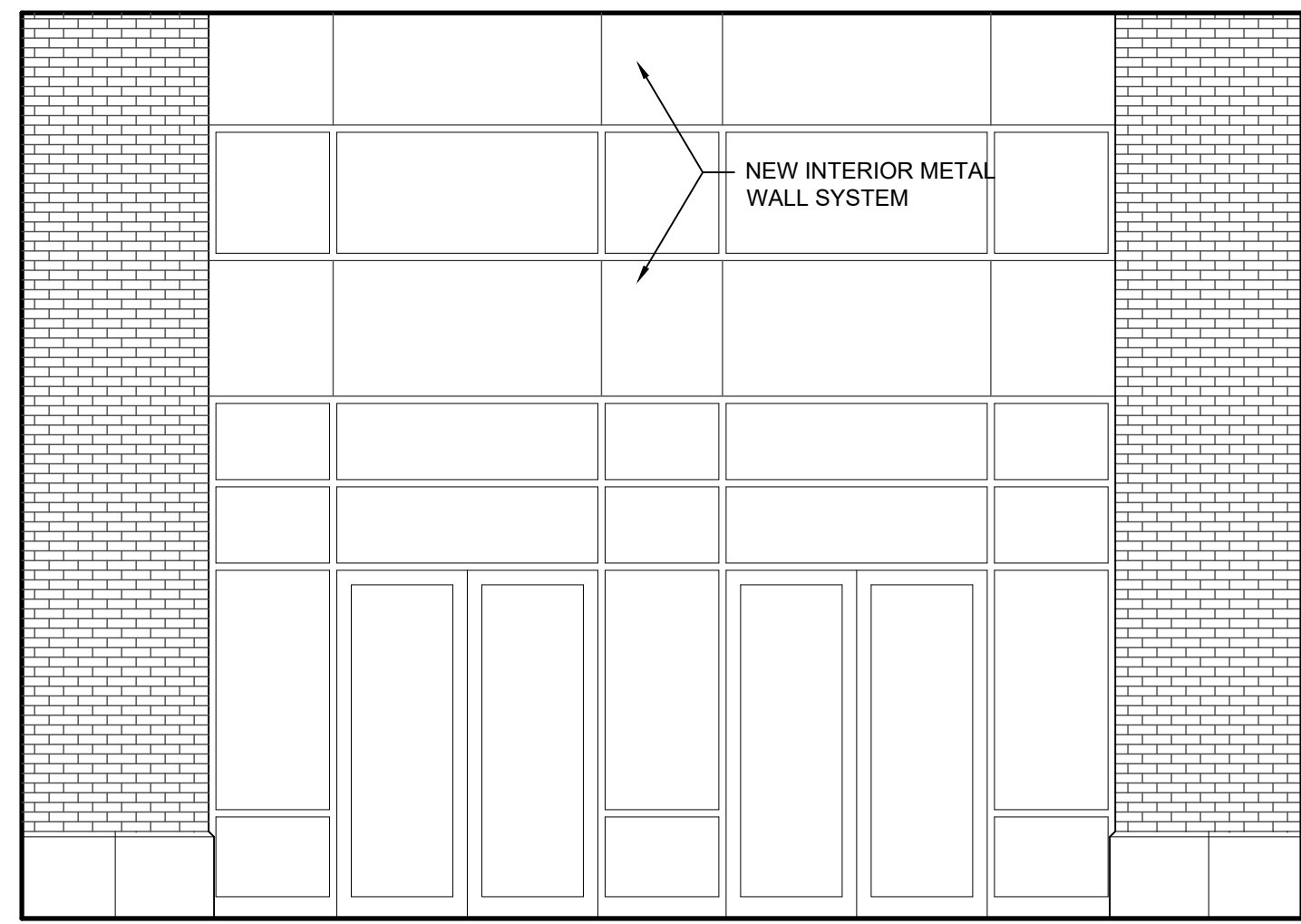
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CAD DWG FILE: AE201 INTERIOR ELEVATIONS - PHASE 1.DWG
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SHEET TITLE
INTERIOR ELEVATIONS -
PHASE 1

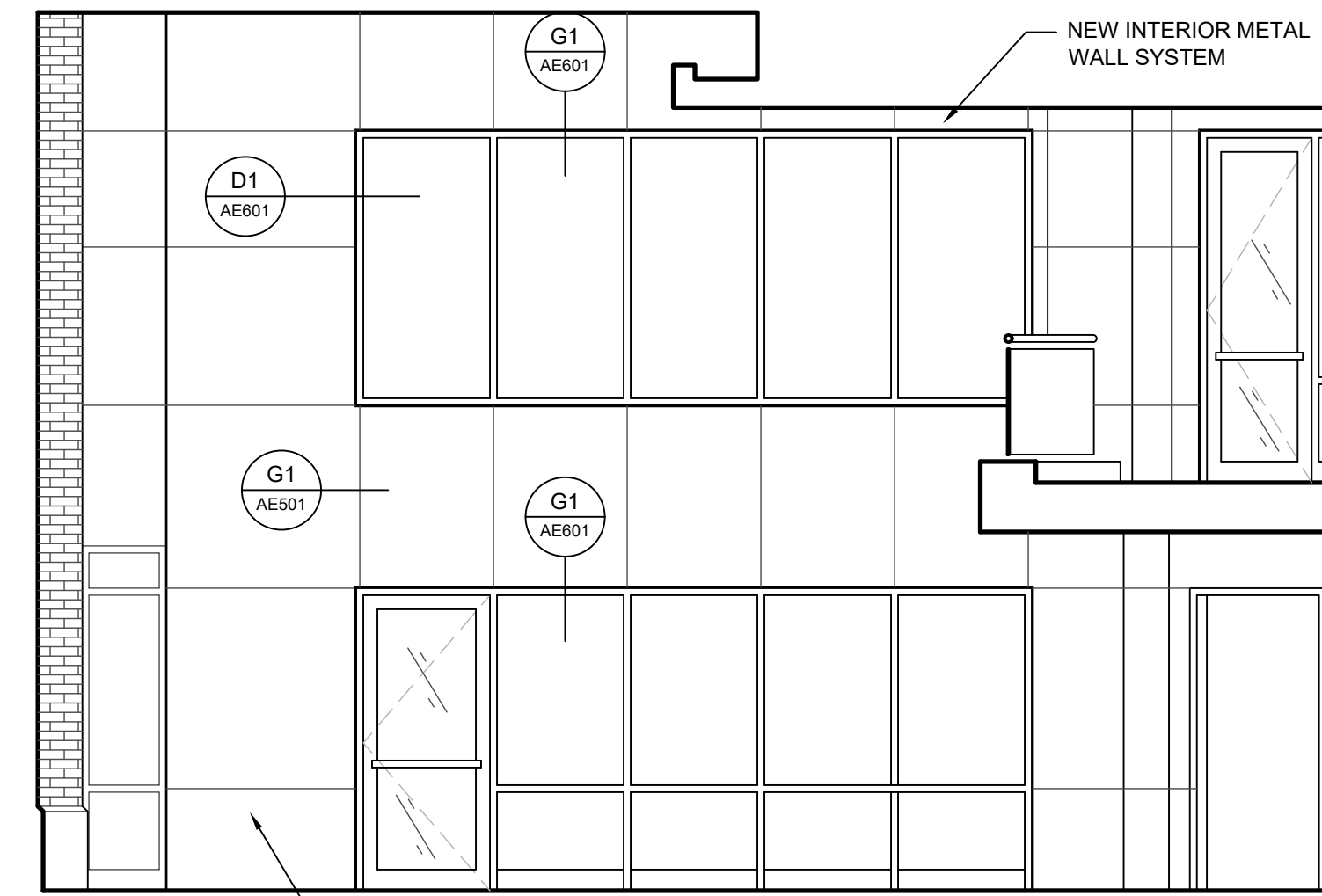
AE201



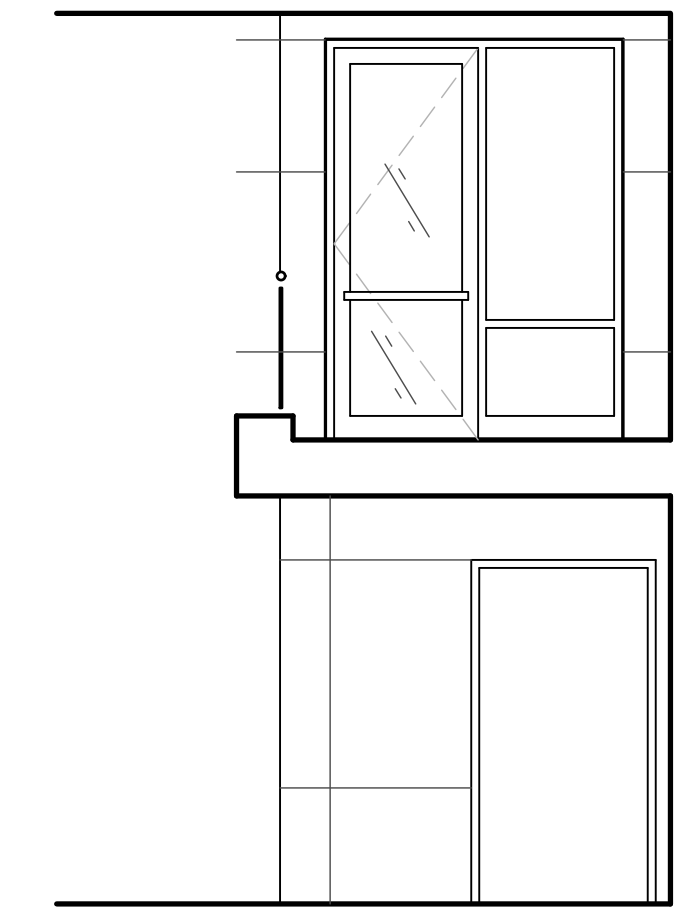
J1 LOBBY ELEVATION
1/4" = 1'-0"



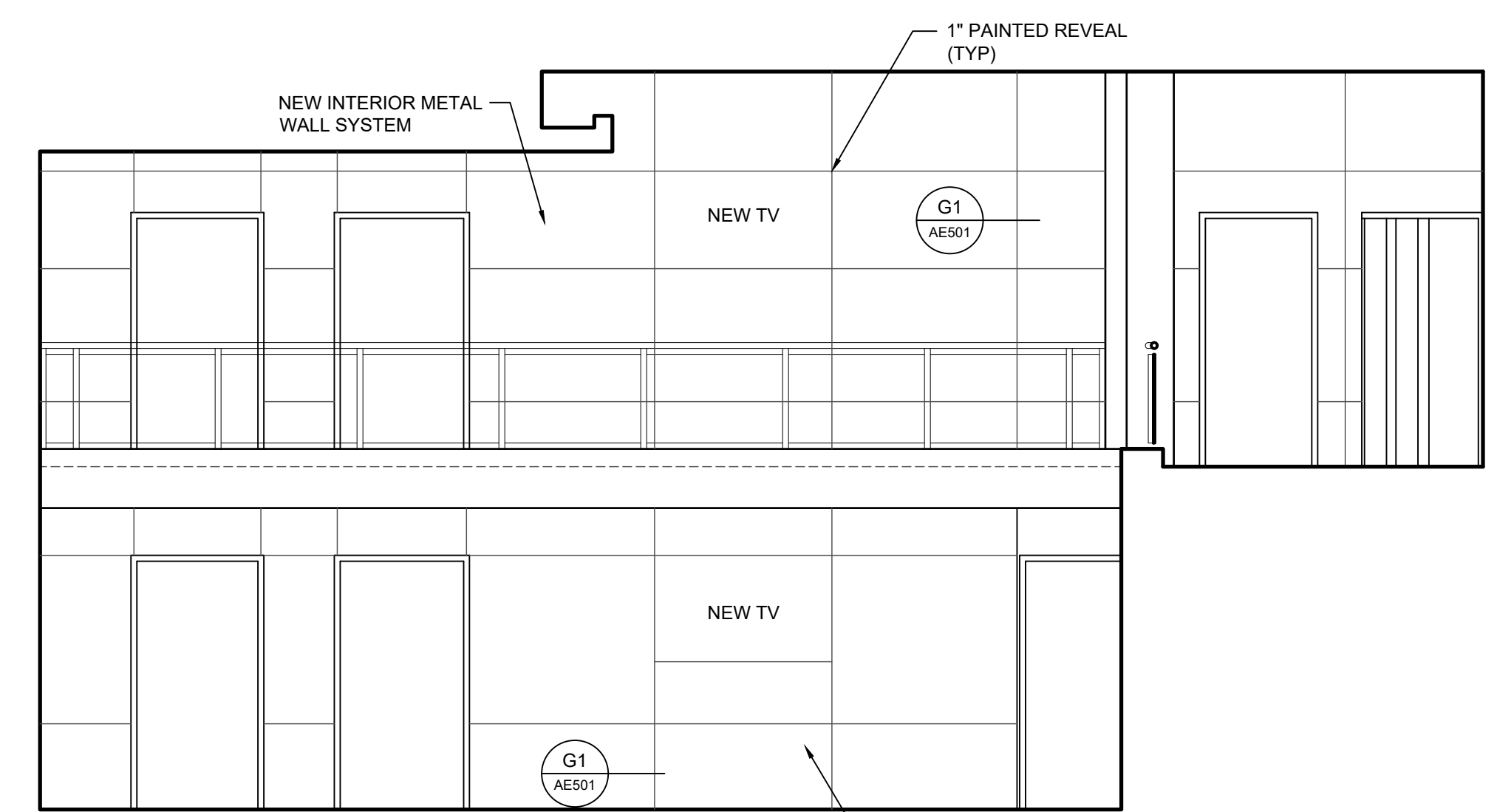
J4 LOBBY ELEVATION
1/4" = 1'-0"



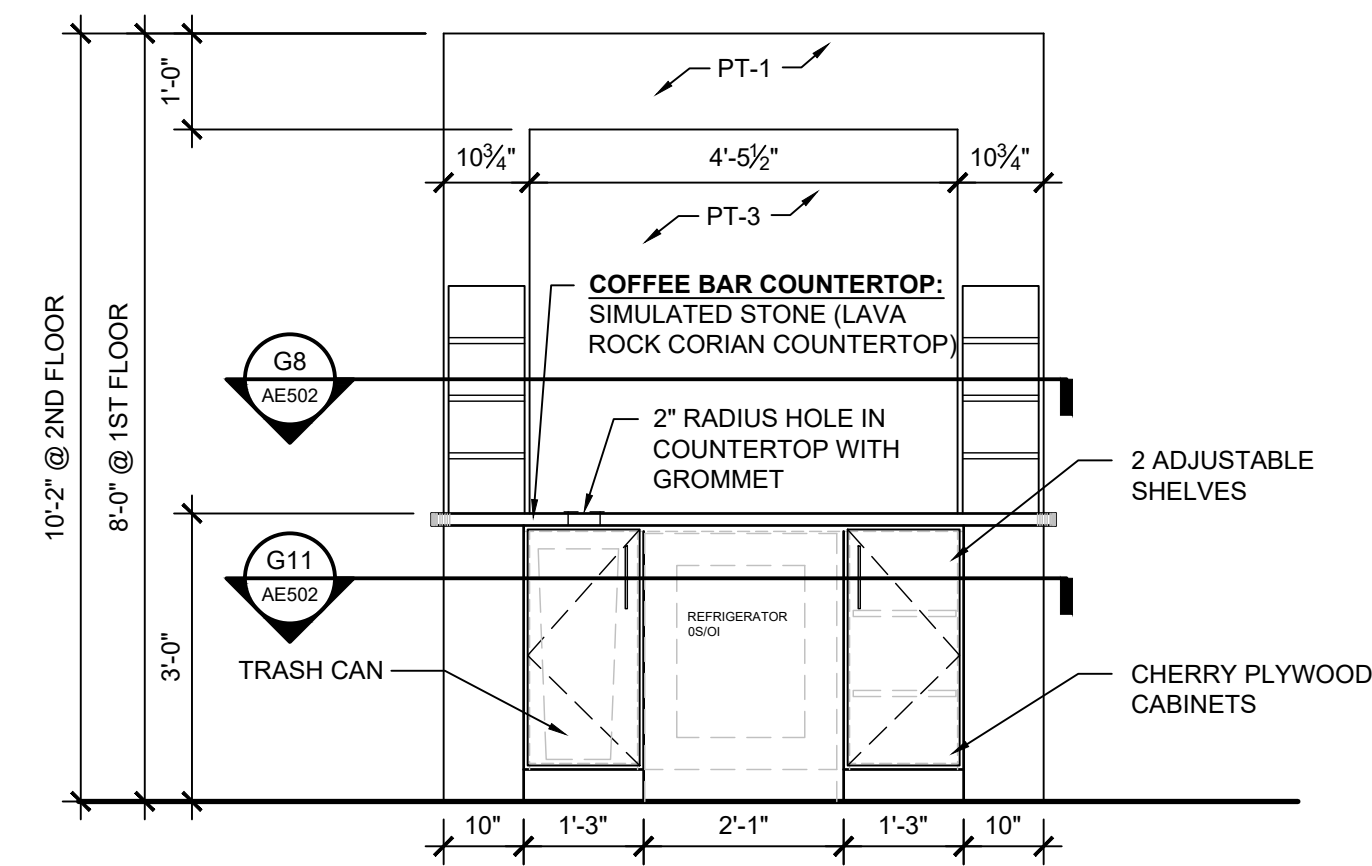
J8 LOBBY ELEVATION
1/4" = 1'-0"



J12 LOBBY ELEVATION
1/4" = 1'-0"



E9 LOBBY ELEVATION
1/4" = 1'-0"

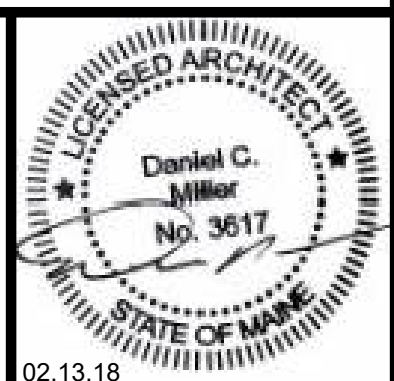


A11 ELEVATION @ COFFEE BAR
1/2" = 1'-0"

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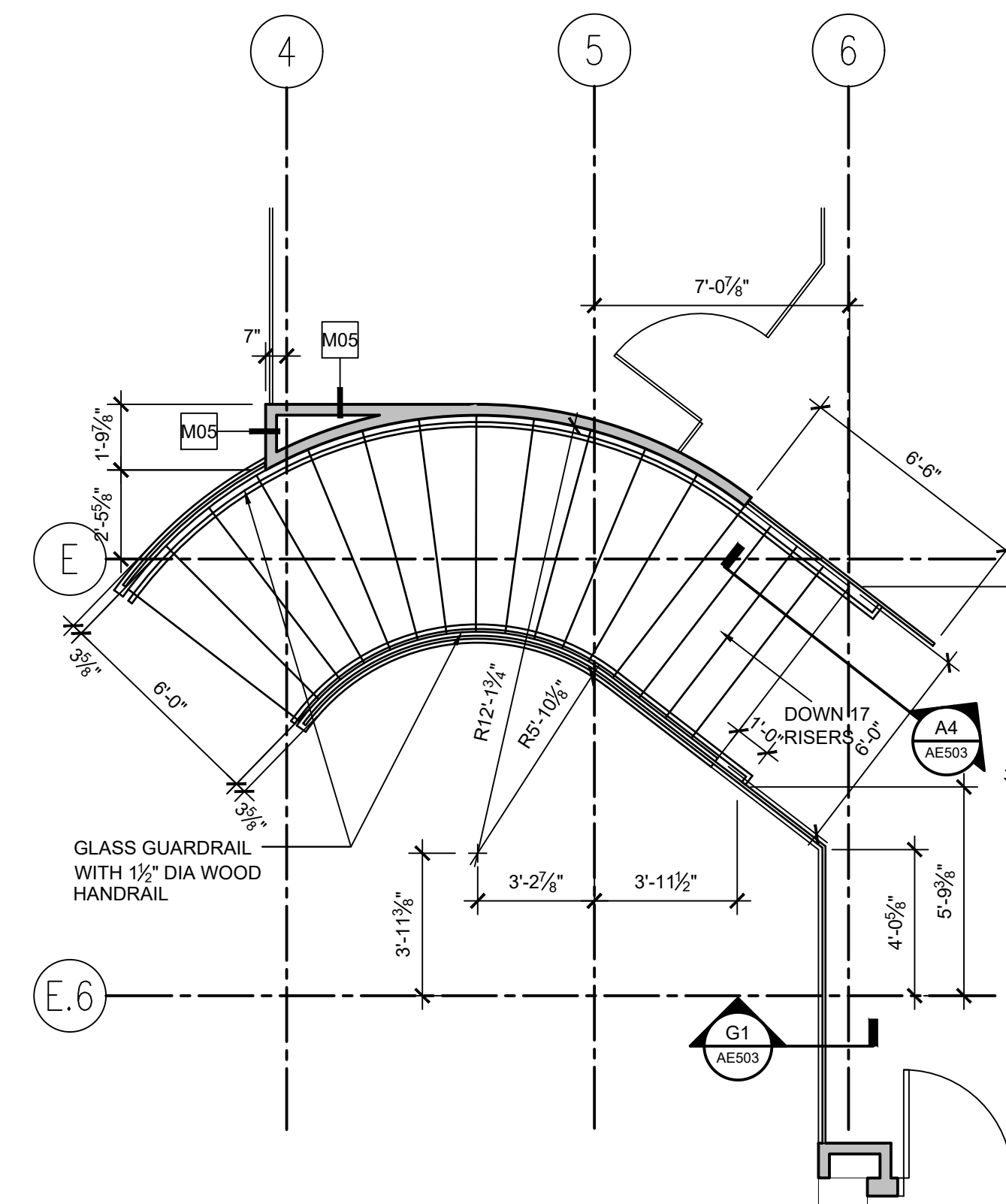


BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

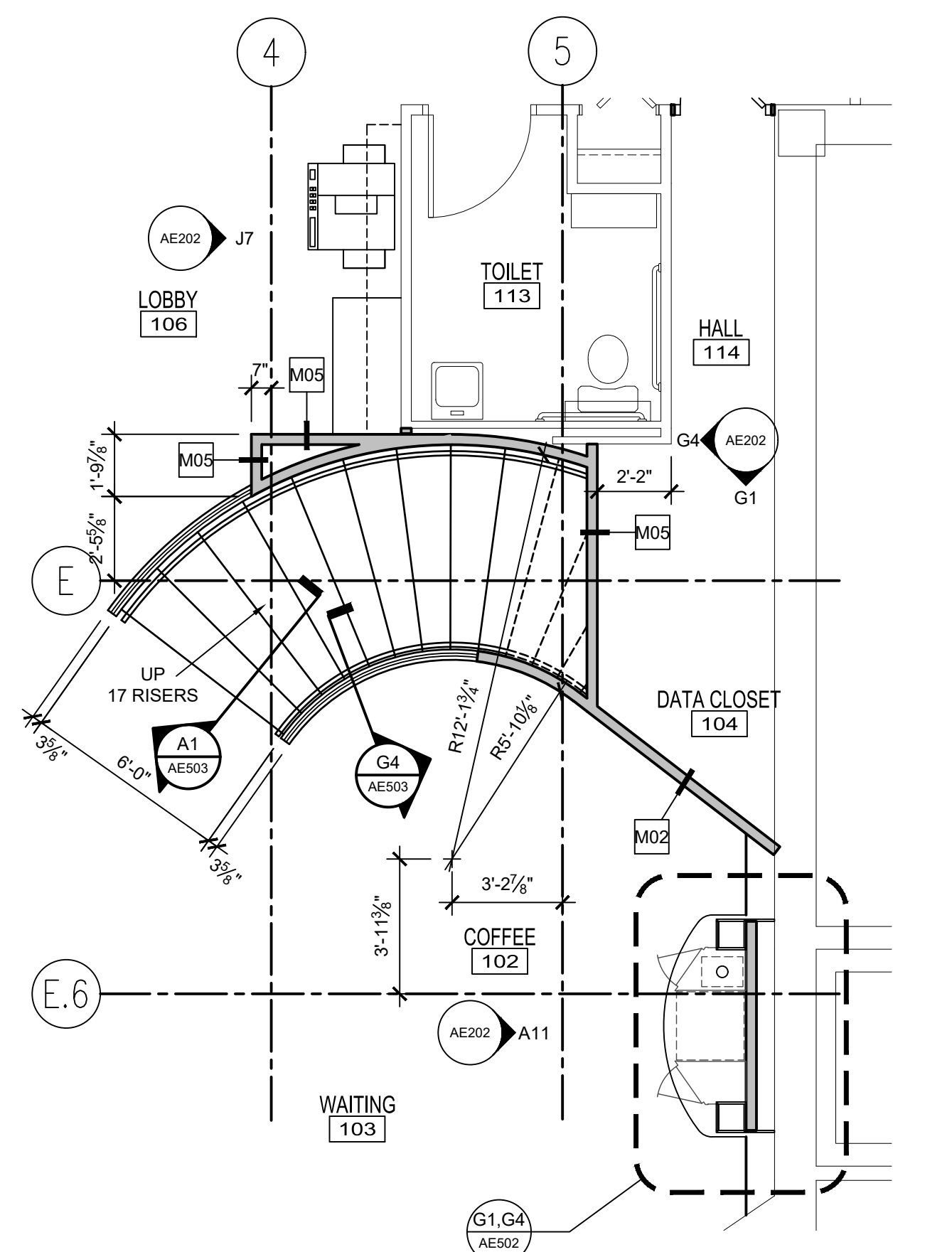
PROJECT NO: 15-014
CAD DWG FILE: AE202 INTERIOR ELEVATIONS - PHASE 1.DWG
DRAWN BY: ###
CHK'D BY: ###
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INTERIOR ELEVATIONS -
PHASE 1

AE202



G11 ENLARGED FLOOR PLAN - SECOND FLOOR
1/4" = 1'-0"

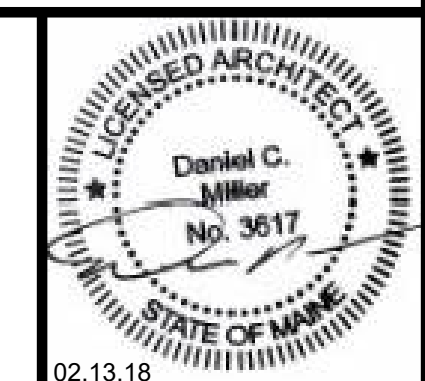


A11 ENLARGED FLOOR PLAN - FIRST FLOOR
1/4" = 1'-0"

NO.	DATE	DESCRIPTION
0	00.00.00	

FOR CONSTRUCTION
02.13.18

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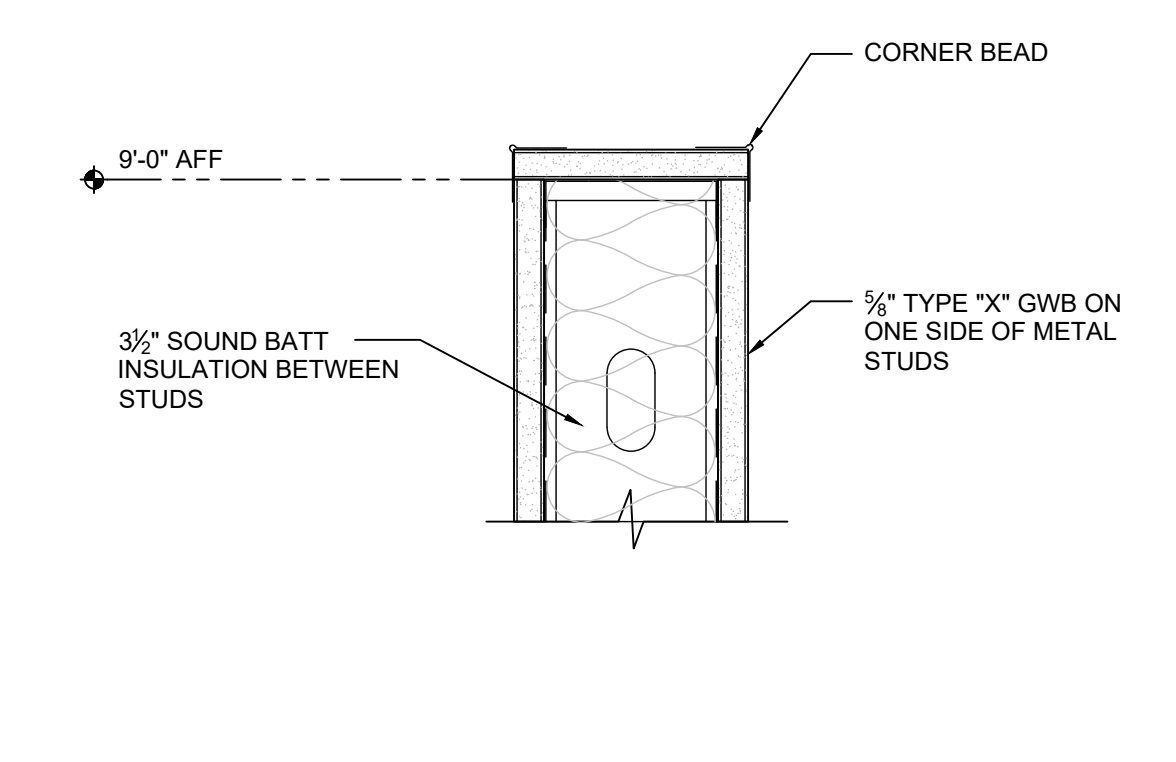


BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

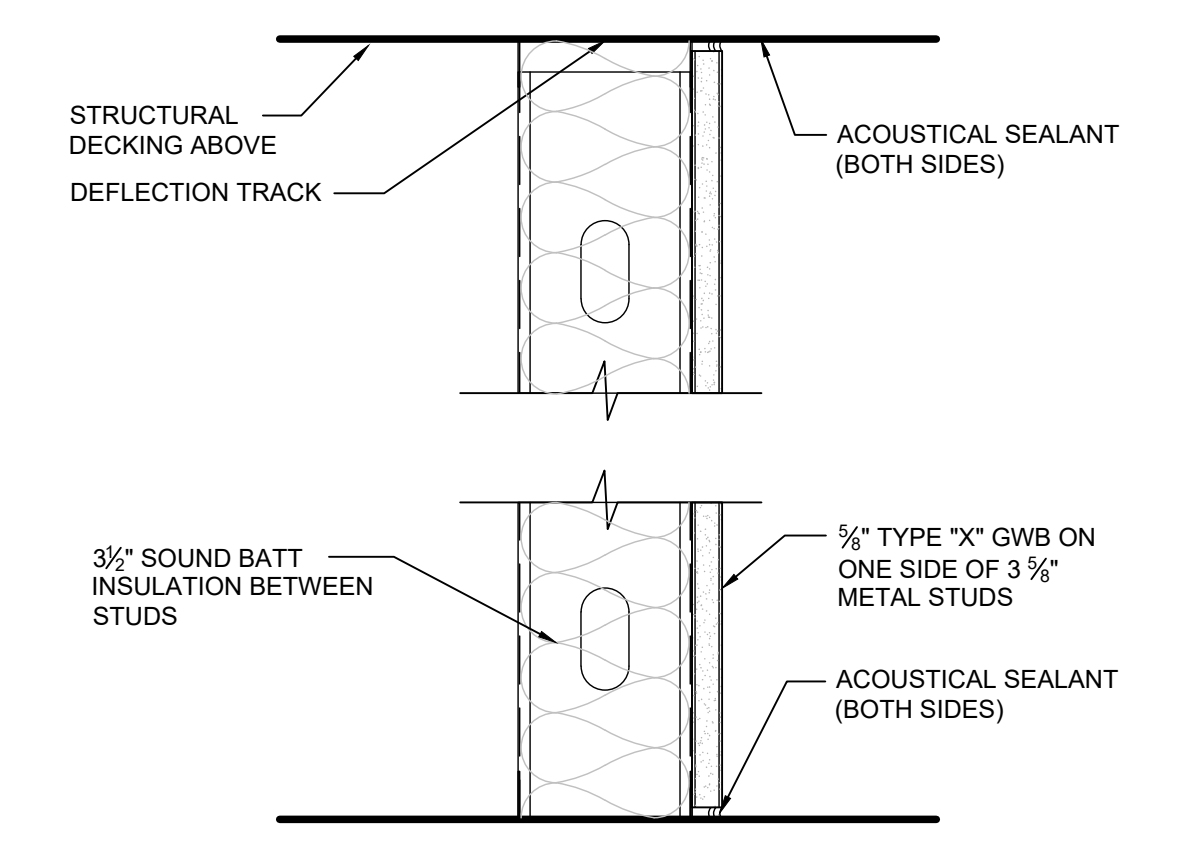
PROJECT NO: 15-014
CAD DWG FILE: AE401 ENLARGED PLANS - PHASE 1.DWG
DRAWN BY: ###
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SHEET TITLE
ENLARGED PLANS
- PHASE 1

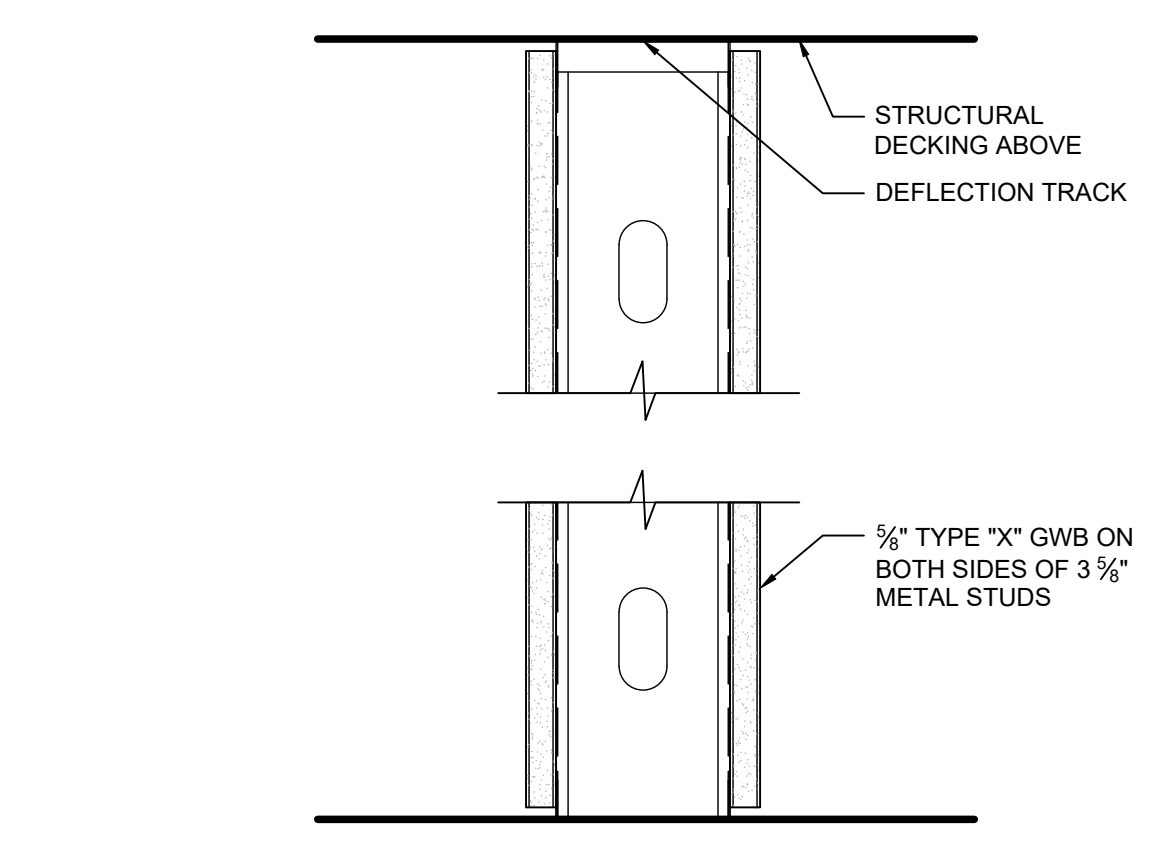
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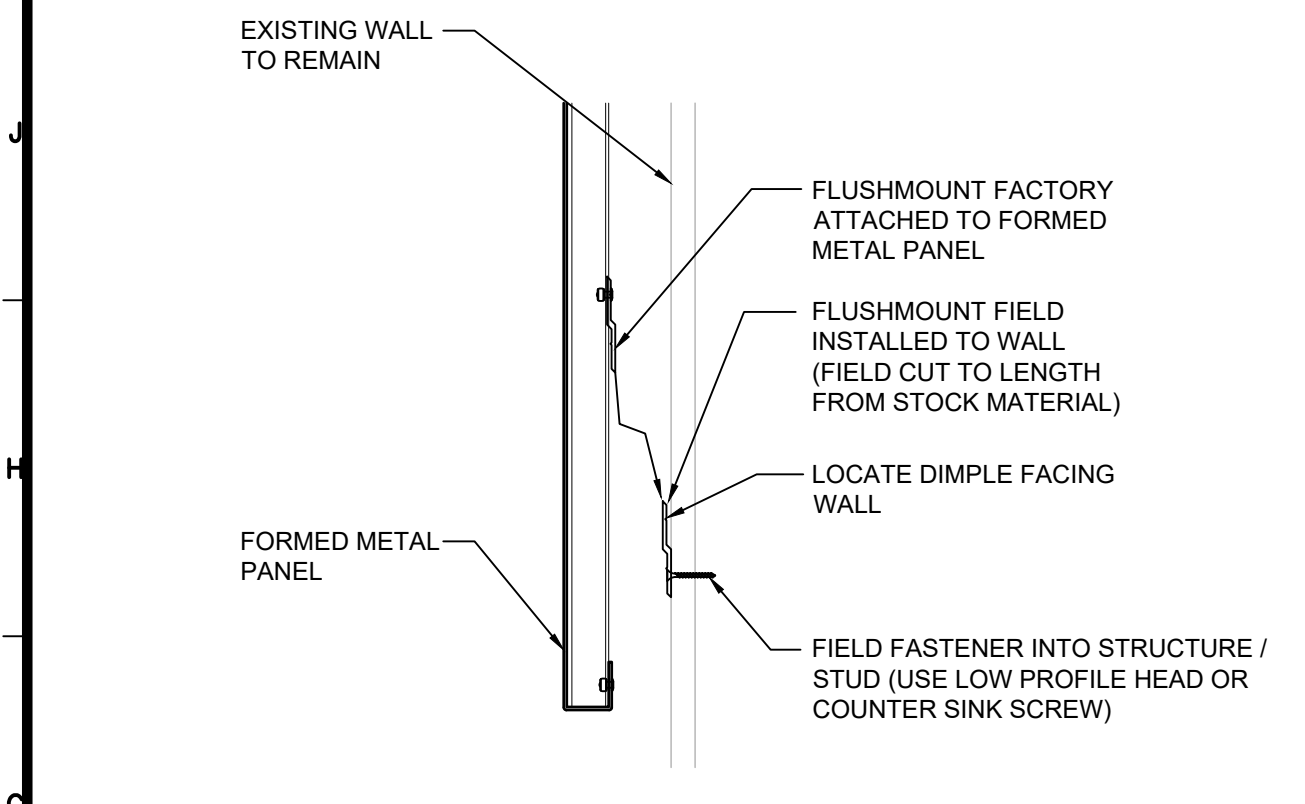
K4 TOP OF WALL DETAIL
3/8" = 1'-0"



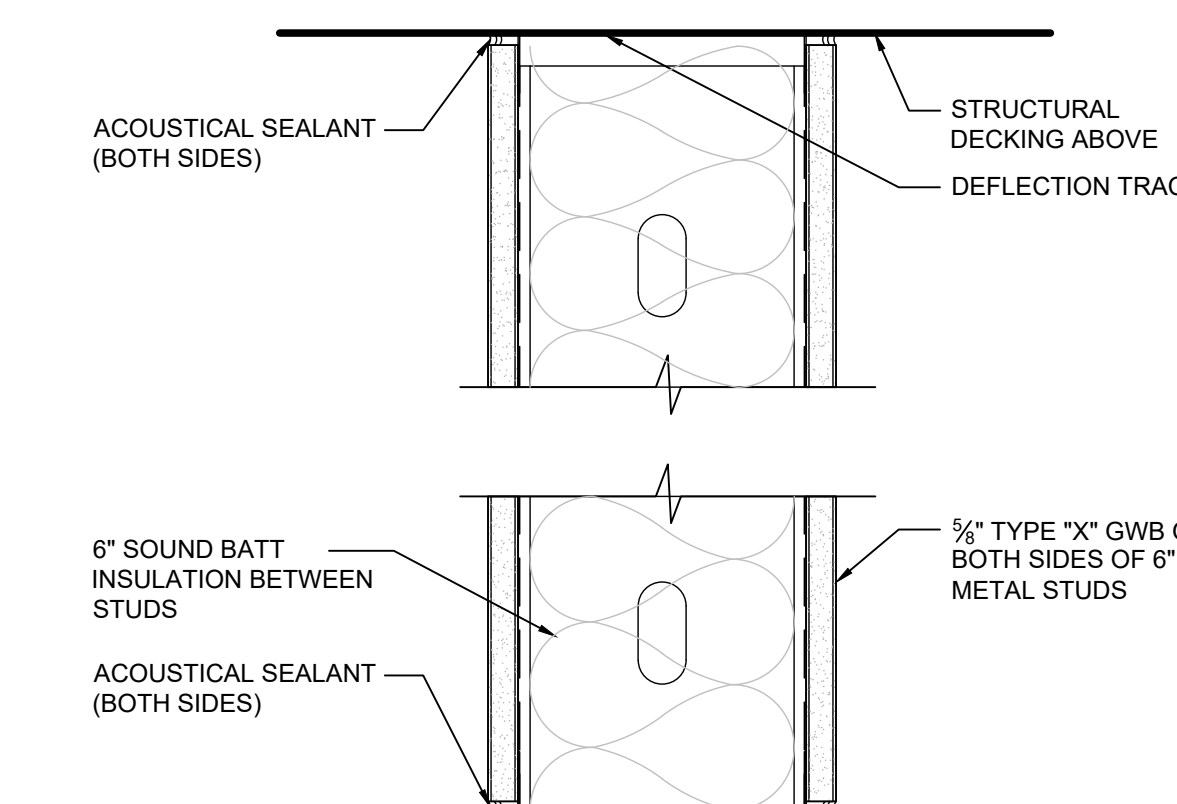
K8 M05 - 3 5/8" METAL STUD CHASE WALL (SOUND)
3/8" = 1'-0"



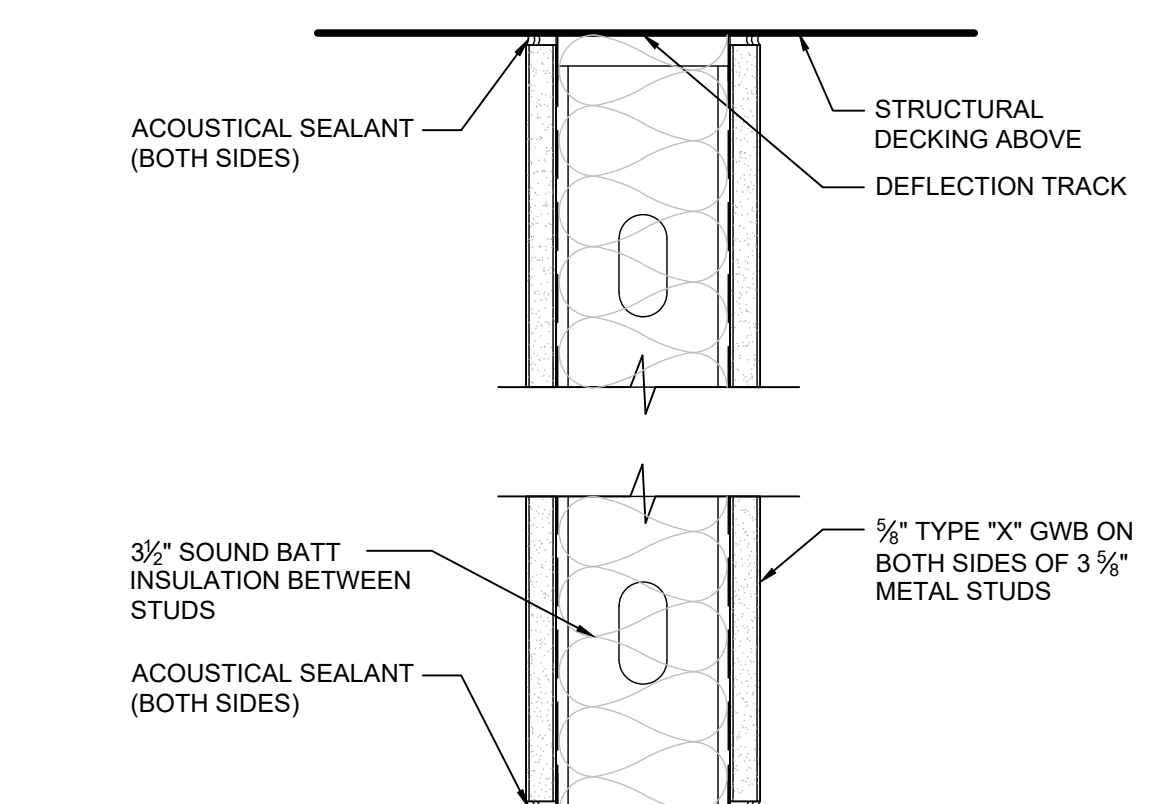
K11 M01 - 3 5/8" METAL STUD WALL
3/8" = 1'-0"



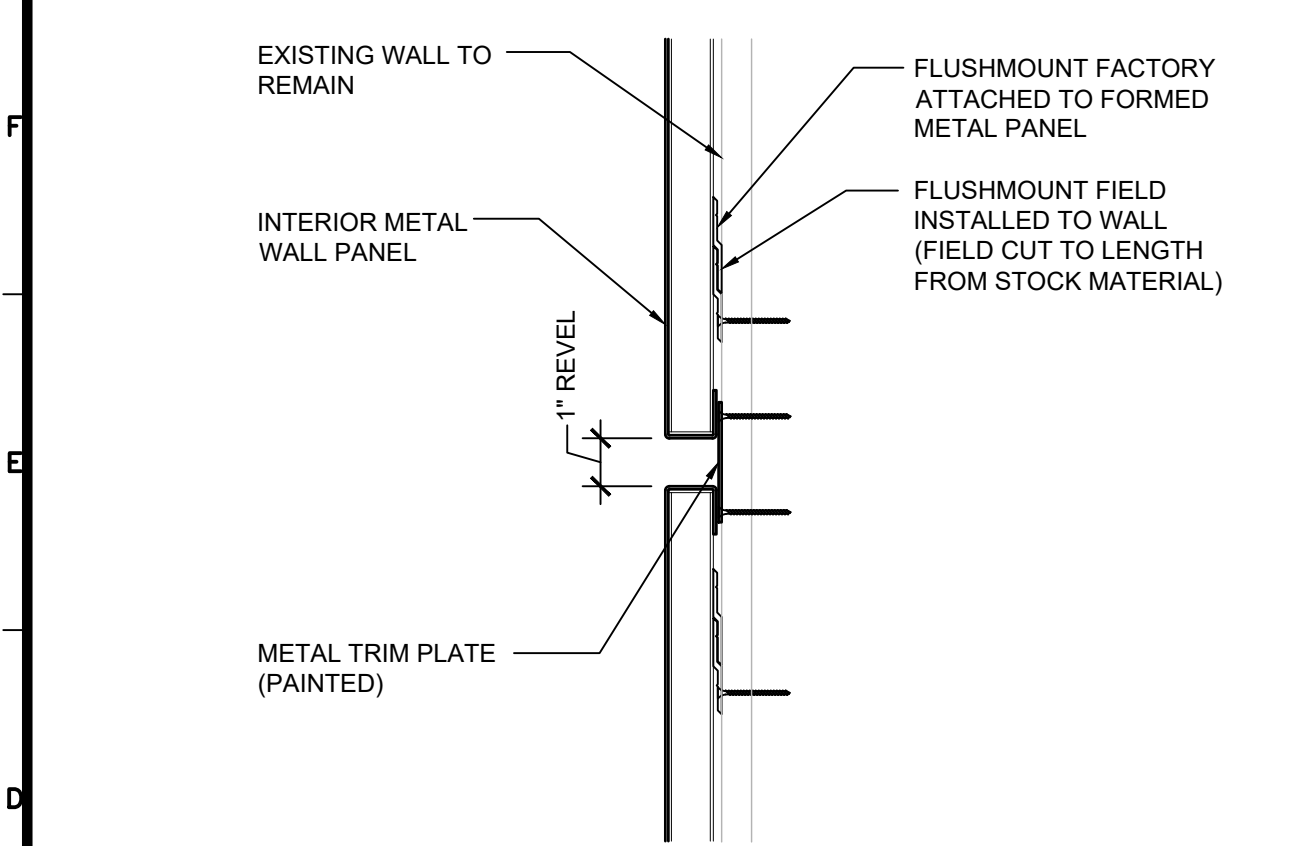
G1 INTERIOR METAL WALL SYSTEM - ATTACHMENT DETAIL
3/8" = 1'-0"



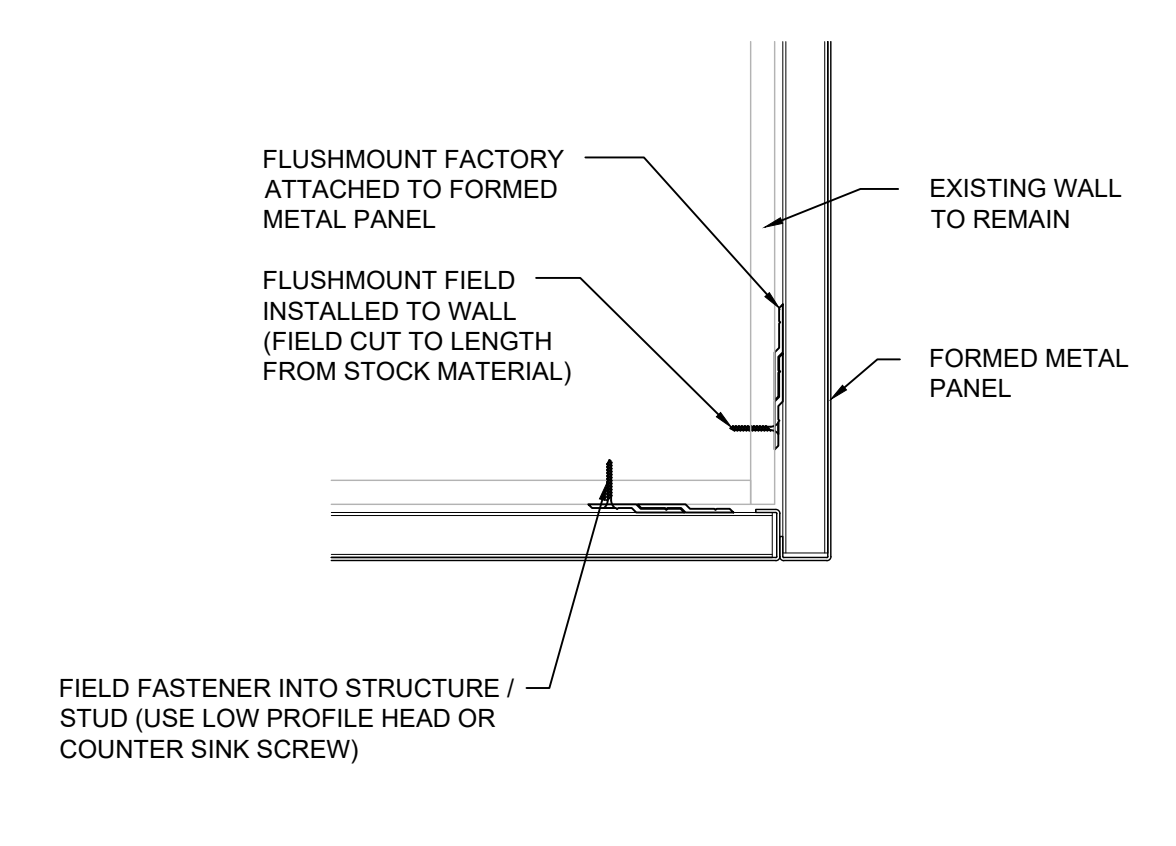
G8 M07 - 6" METAL STUD WALL (SOUND)
3/8" = 1'-0"



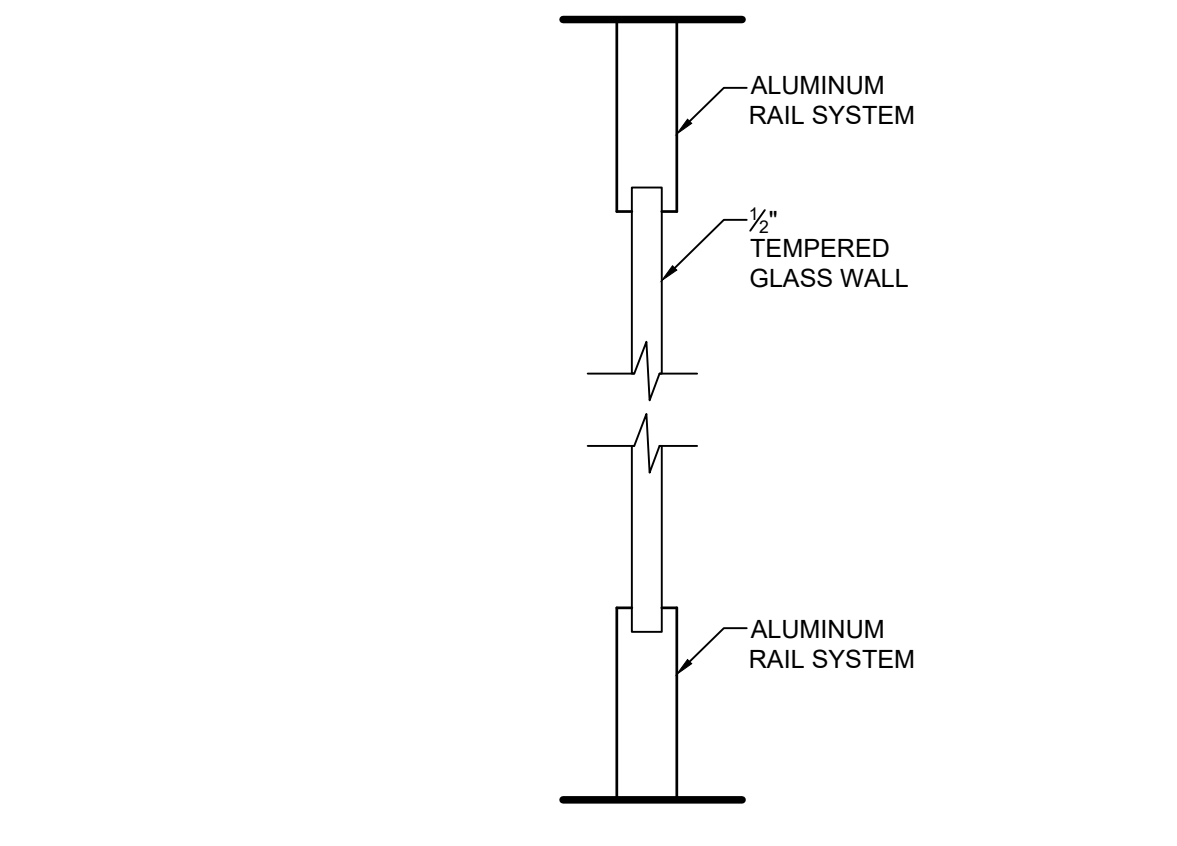
G11 M02 - 3 5/8" METAL STUD WALL (SOUND)
3/8" = 1'-0"



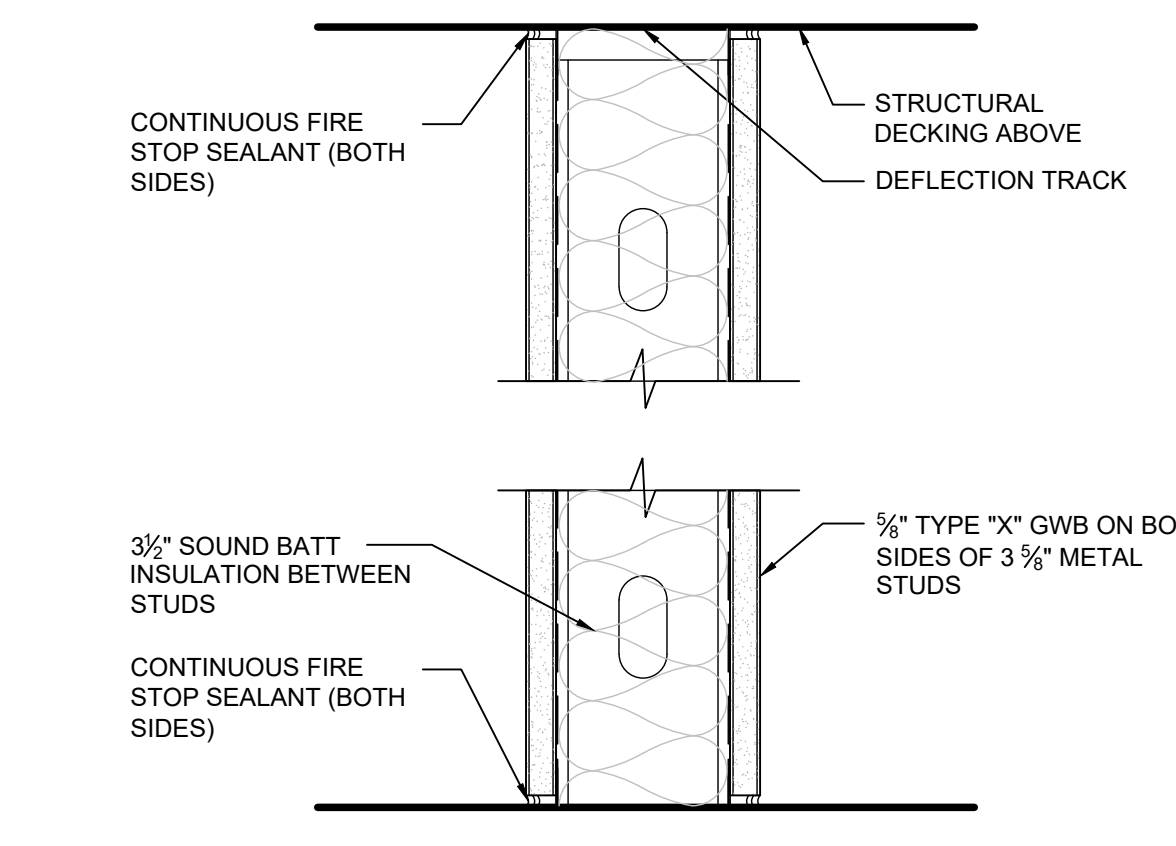
D1 INTERIOR METAL WALL SYSTEM - REVEL DETAIL
3/8" = 1'-0"



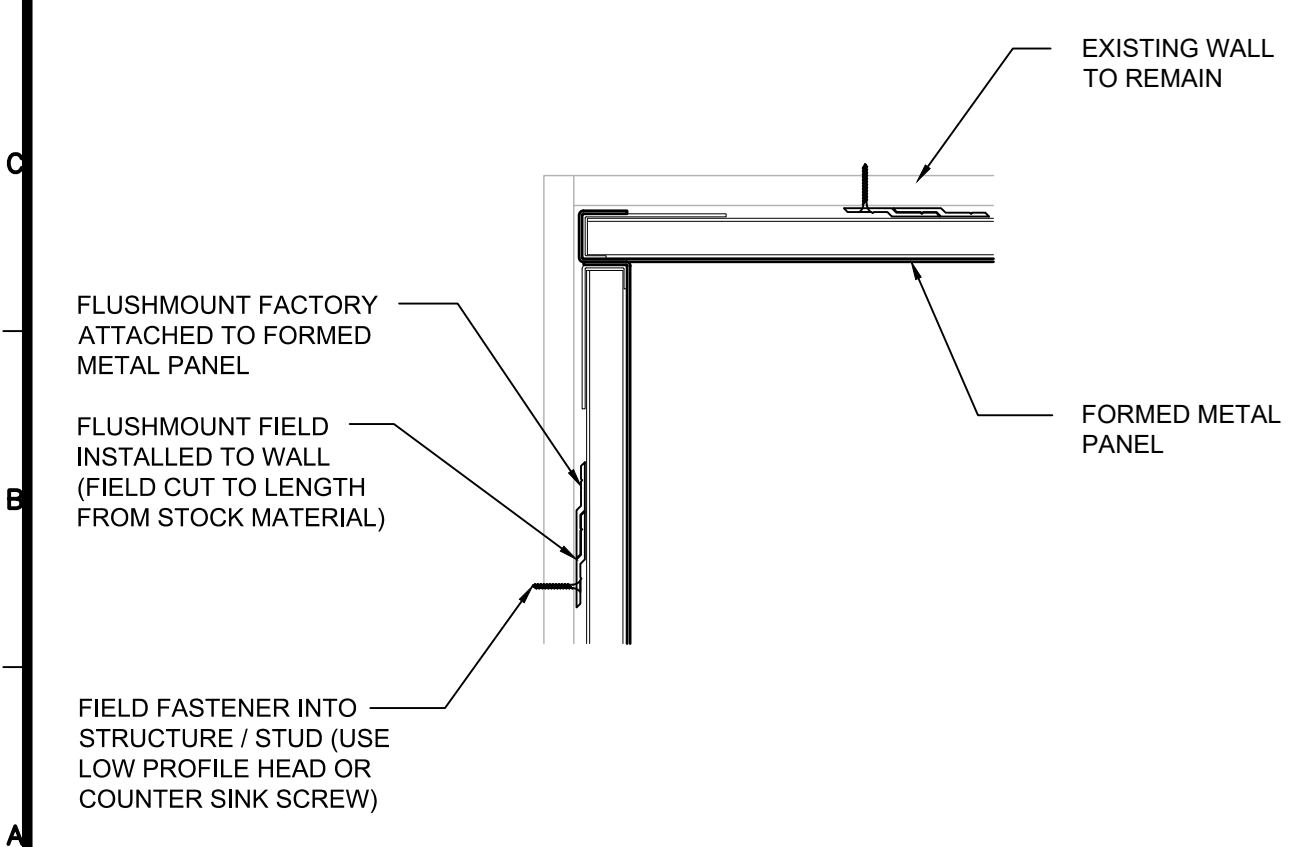
D4 INTERIOR METAL WALL SYSTEM - OUTSIDE CORNER DETAIL
3/8" = 1'-0"



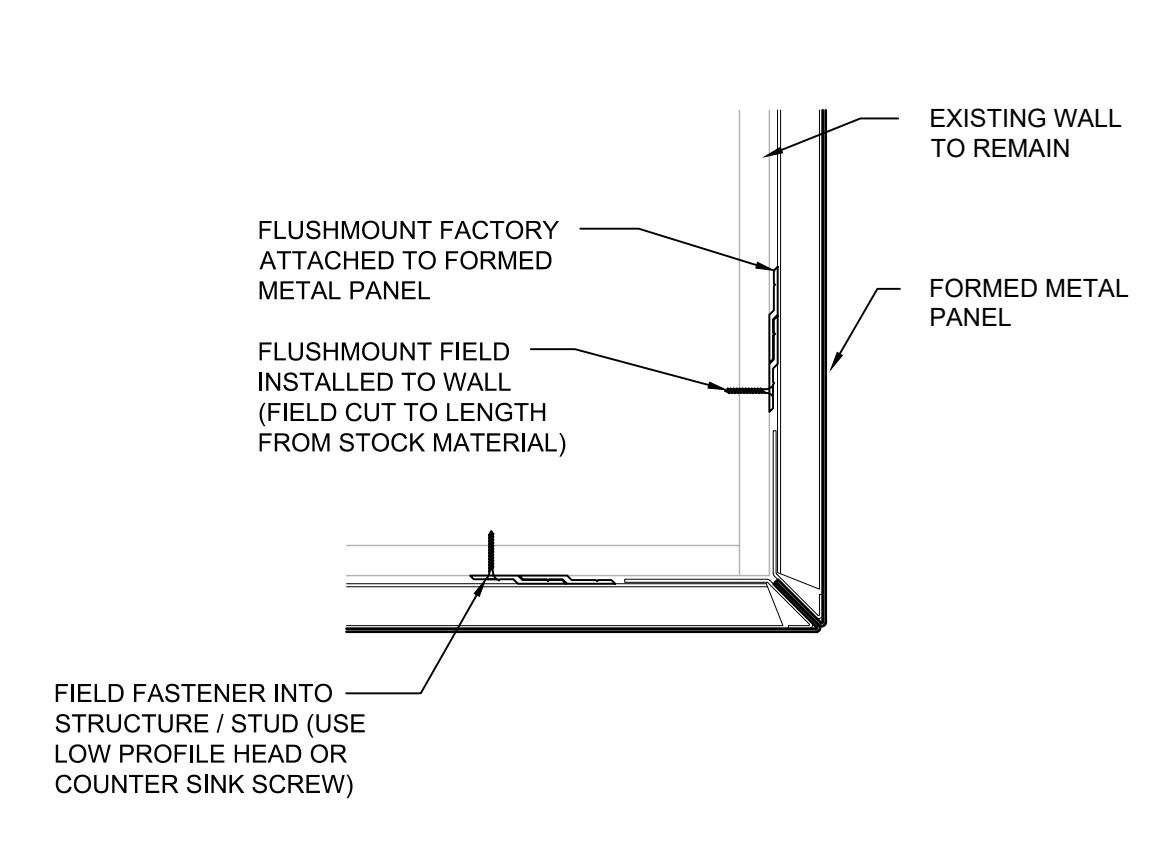
G8 G01 - GLASS WALL - BY OTHERS
3/8" = 1'-0"



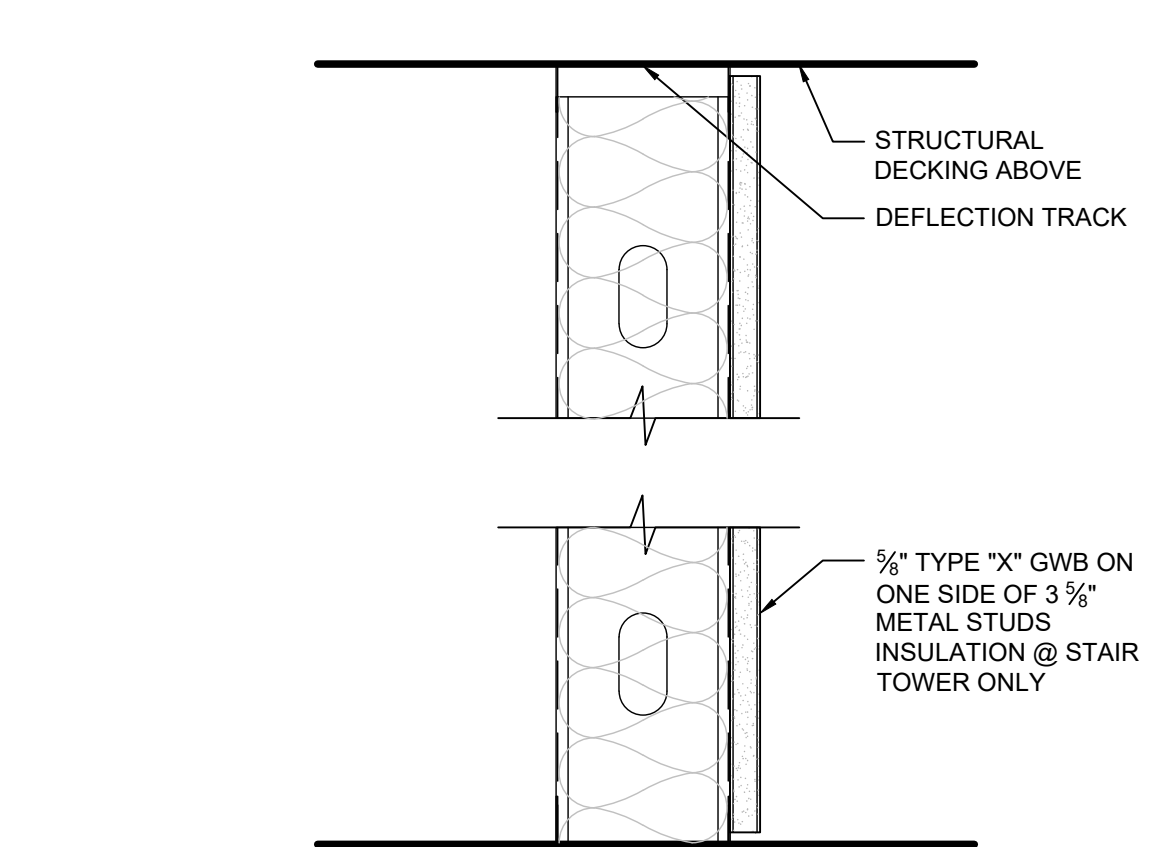
D11 M03 - 3 5/8" METAL STUD WALL (1 HOUR RATED) UL419
3/8" = 1'-0"



A1 INTERIOR METAL WALL SYSTEM - INSIDE CORNER DETAIL
3/8" = 1'-0"



A4 INTERIOR METAL WALL SYSTEM - OUTSIDE CORNER DETAIL
3/8" = 1'-0"

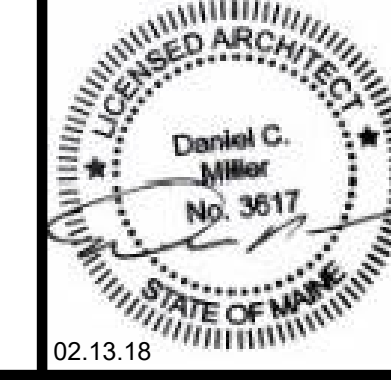


A11 M04 - 3 5/8" METAL STUD CHASE WALL
3/8" = 1'-0"

NO.	DATE	DESCRIPTION
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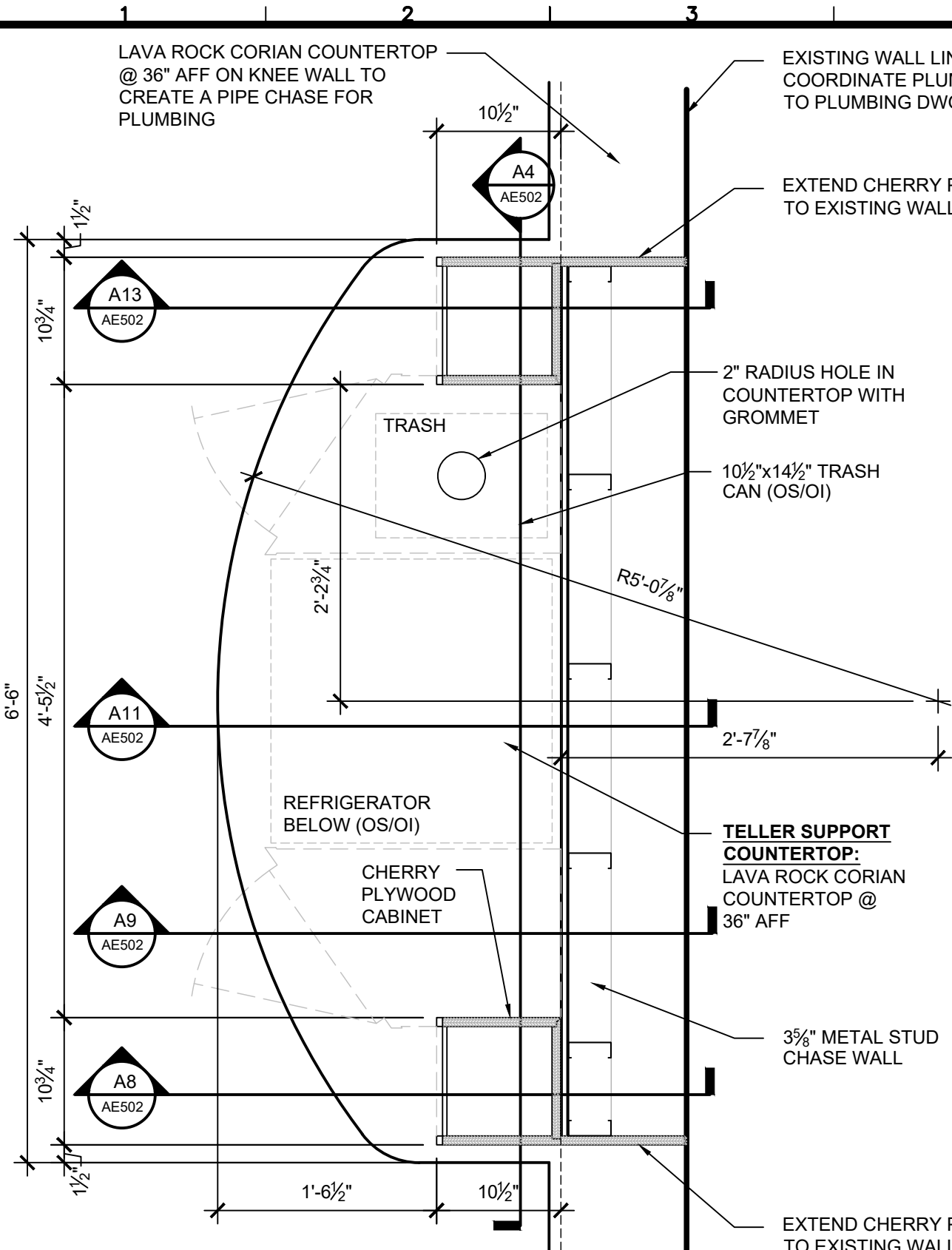


BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

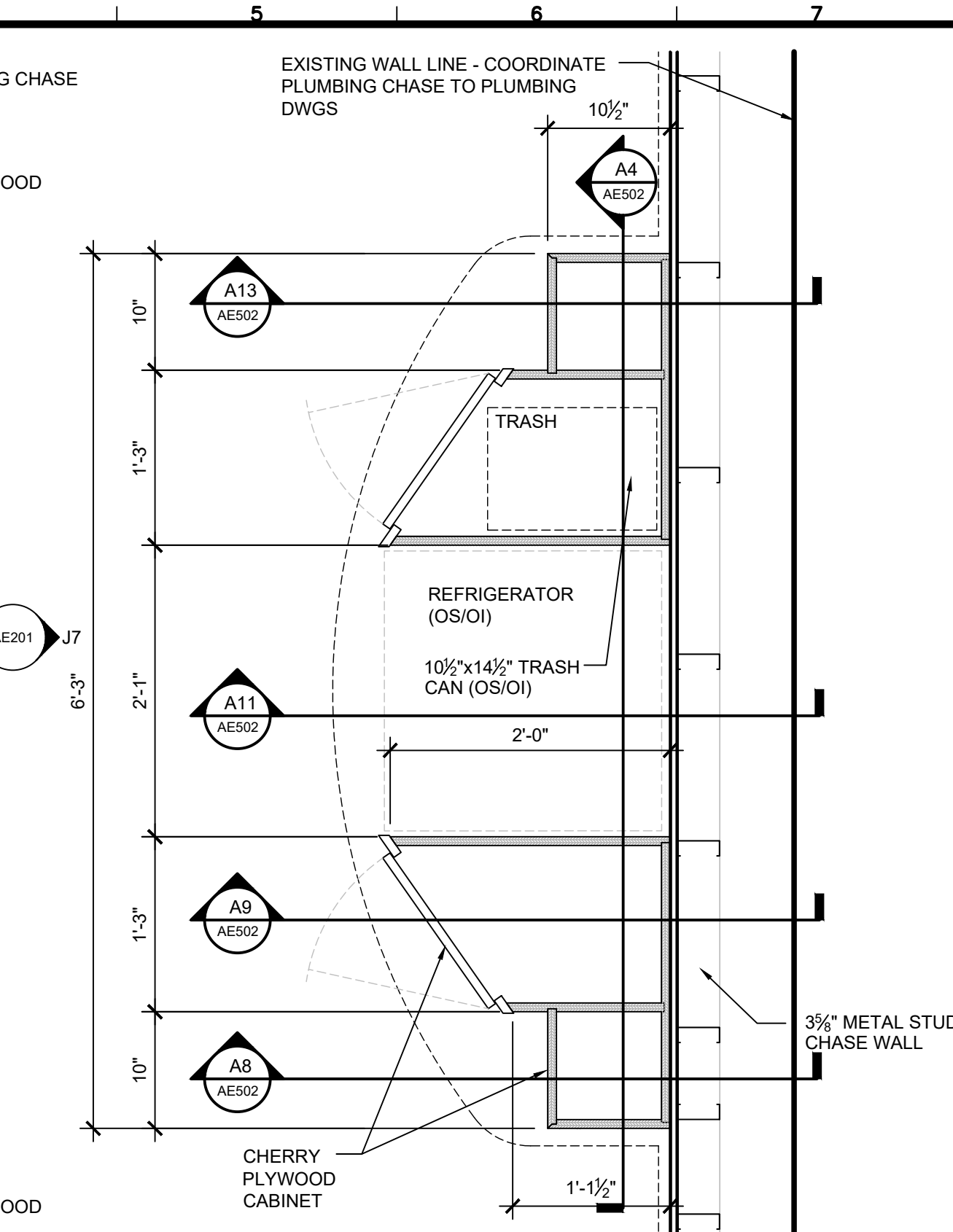
PROJECT NO: 15-014
CAD DWG FILE: AES01 PARTITIONS TYPES AND DETAILS - PHASE 1.DWG
DRAWN BY: ###
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SHEET TITLE
PARTITIONS TYPES AND
DETAILS - PHASE 1

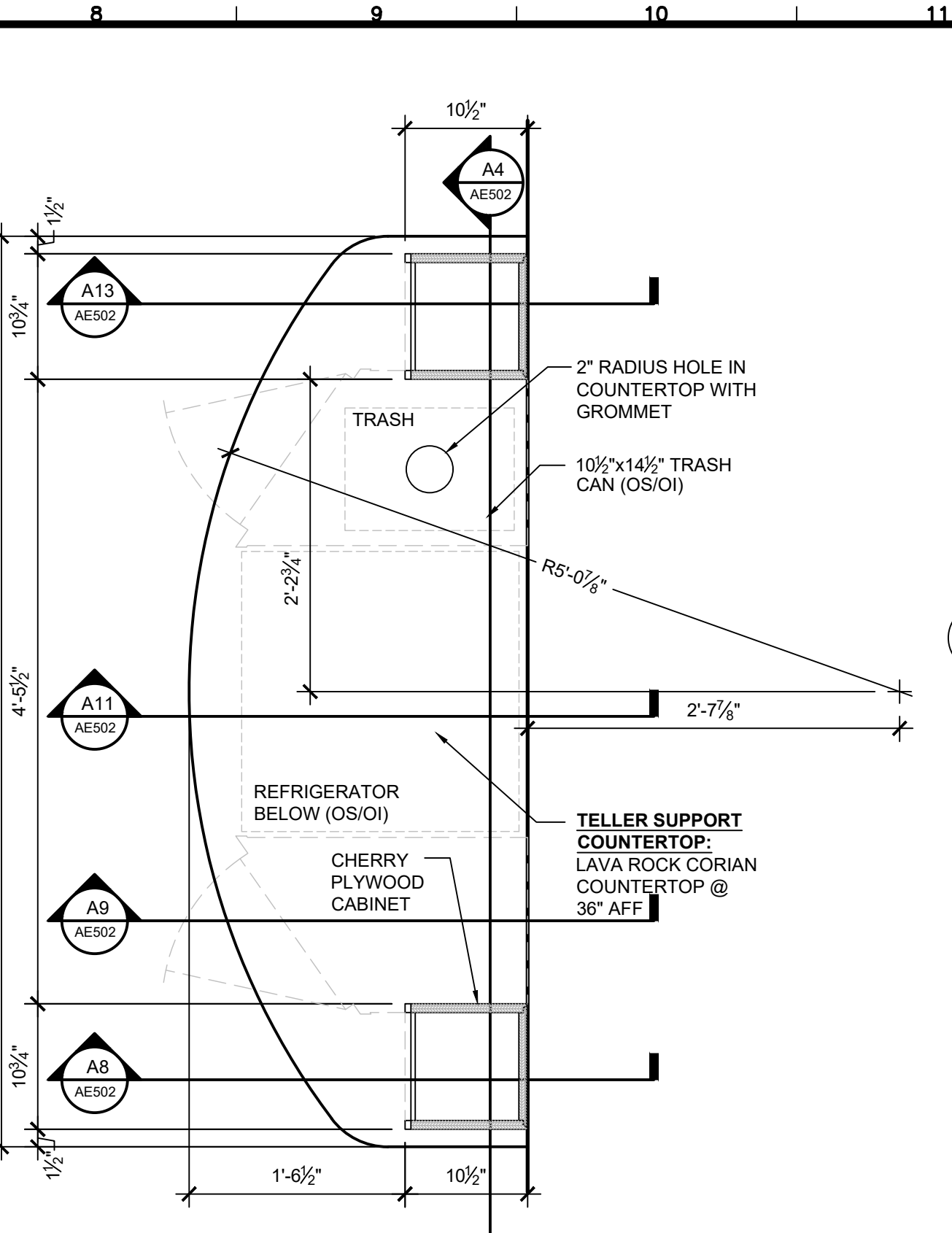
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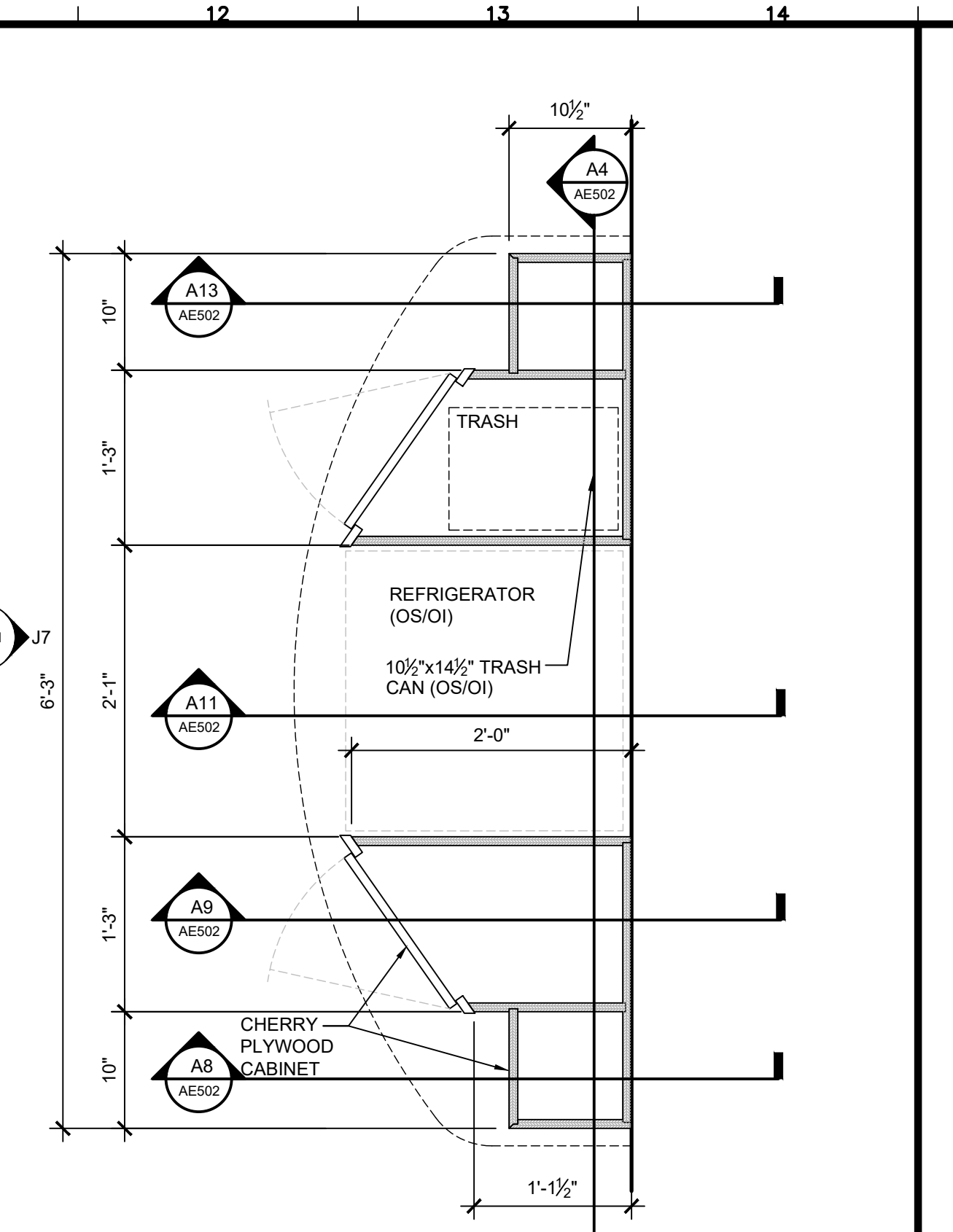
G1 ENLARGED PLAN OF COFFEE BAR - ABOVE COUNTER @ 1st FLOOR
1" = 1'-0"



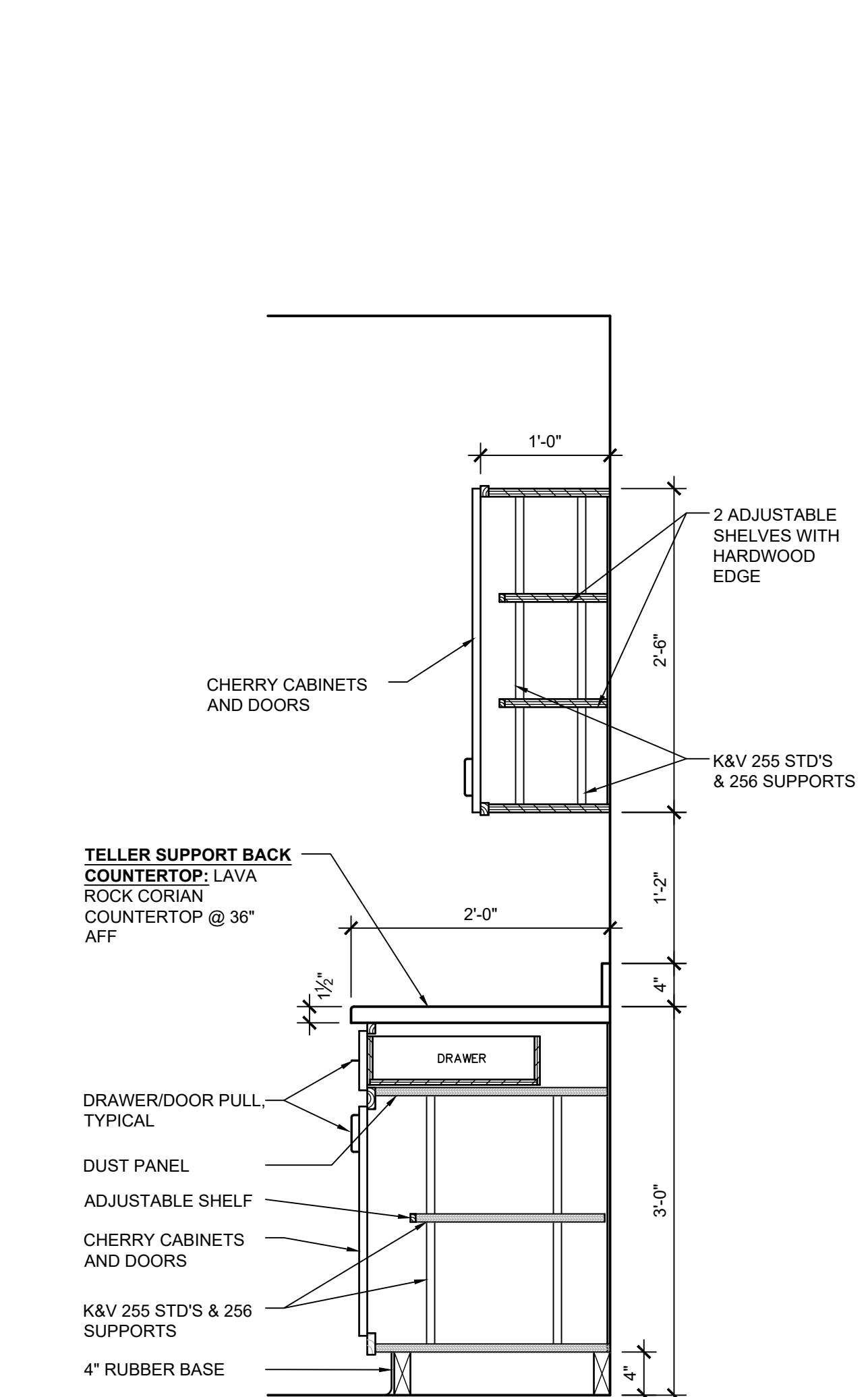
G4 ENLARGED PLAN OF COFFEE BAR - BELOW COUNTER @ 1st FLOOR
1" = 1'-0"



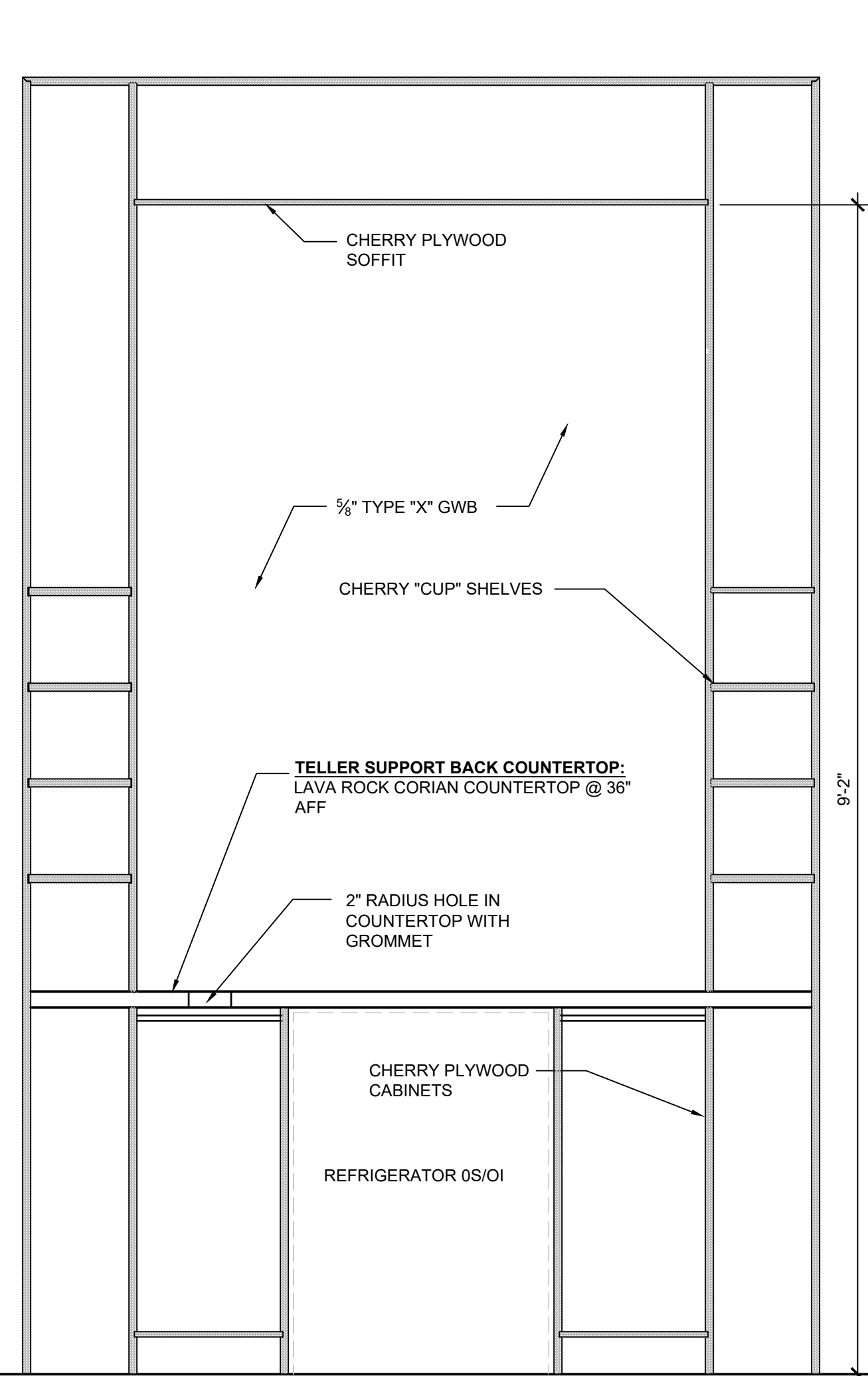
G8 ENLARGED PLAN OF COFFEE BAR - ABOVE COUNTER @ 2nd FLOOR
1" = 1'-0"



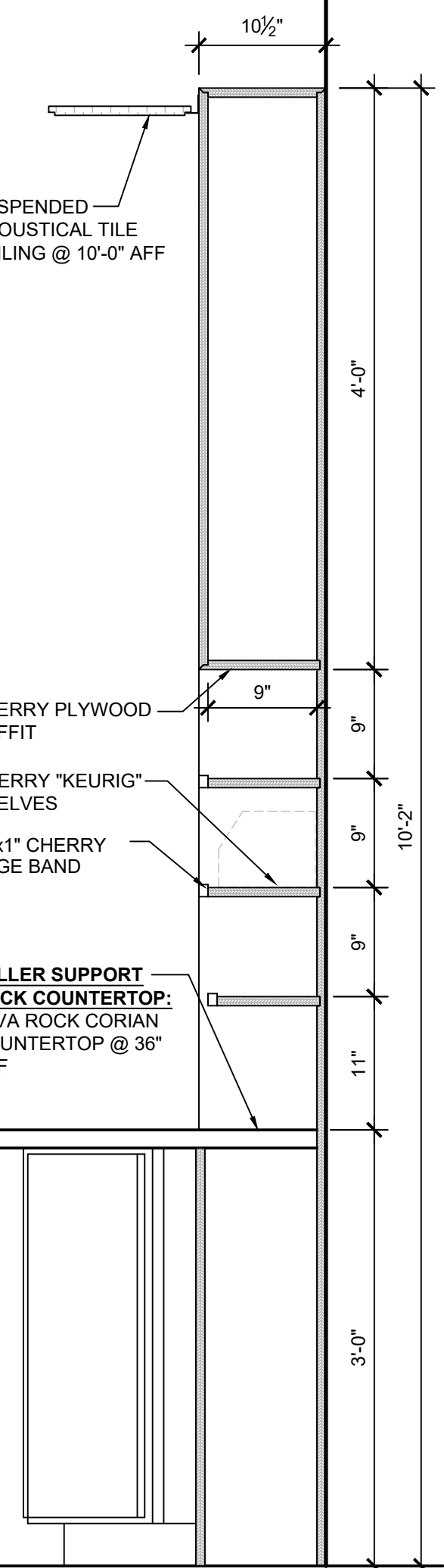
G11 ENLARGED PLAN OF COFFEE BAR - BELOW COUNTER @ 2nd FLOOR
1" = 1'-0"



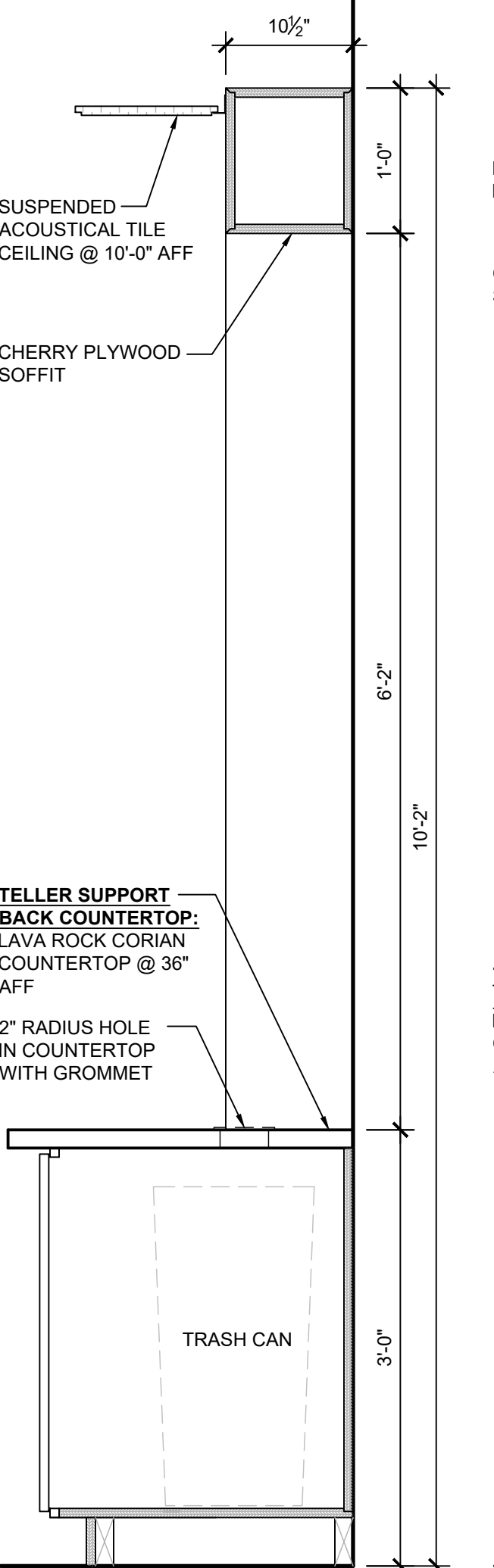
A1 SECTION THRU CASEWORK
1" = 1'-0"



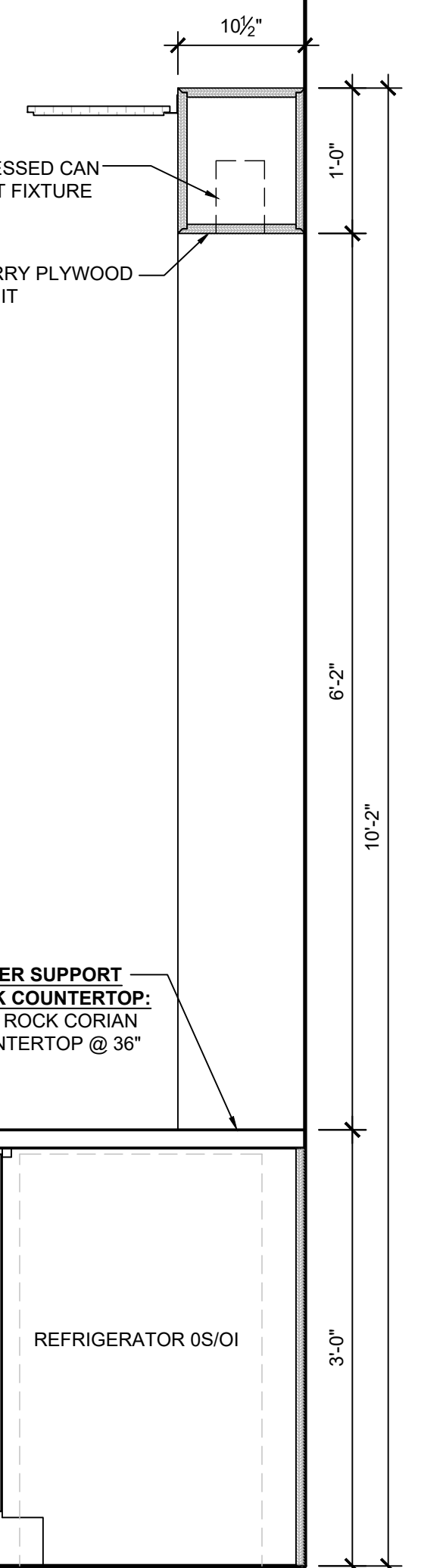
A4 SECTION THRU COFFEE BAR
1" = 1'-0"



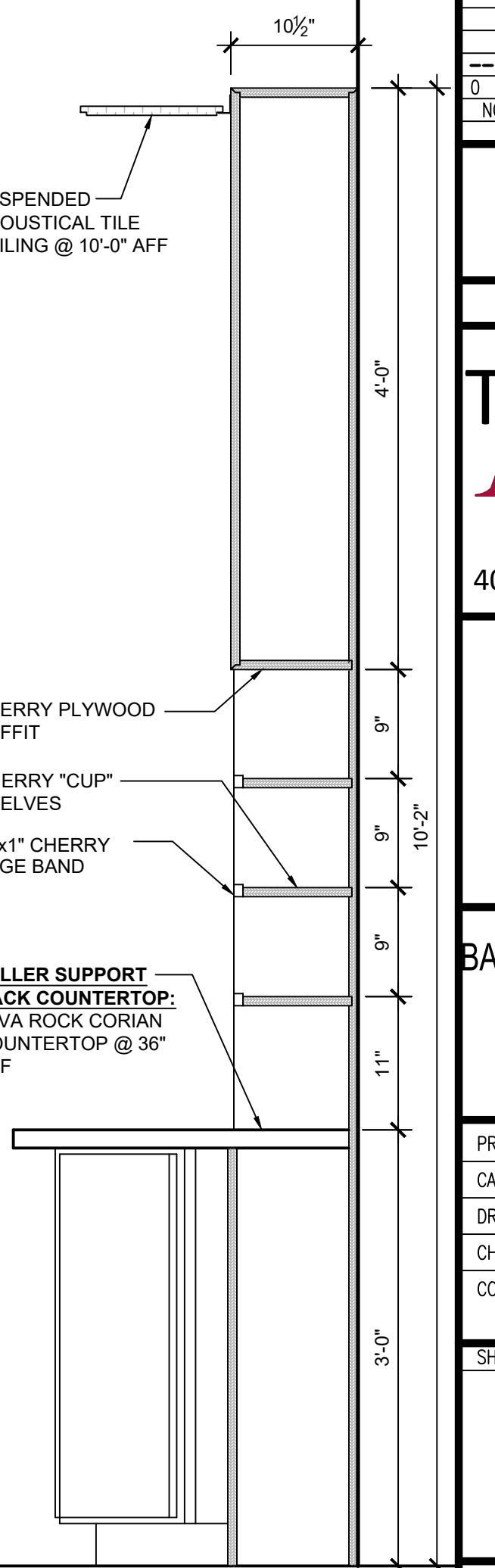
A8 SECTION THRU COFFEE BAR
1" = 1'-0"



A9 SECTION THRU COFFEE BAR
1" = 1'-0"



A11 SECTION THRU COFFEE BAR
1" = 1'-0"



A13 SECTION THRU COFFEE BAR
1" = 1'-0"

NO.	DATE	DESCRIPTION
0	00.00.00	

FOR CONSTRUCTION
02.13.18

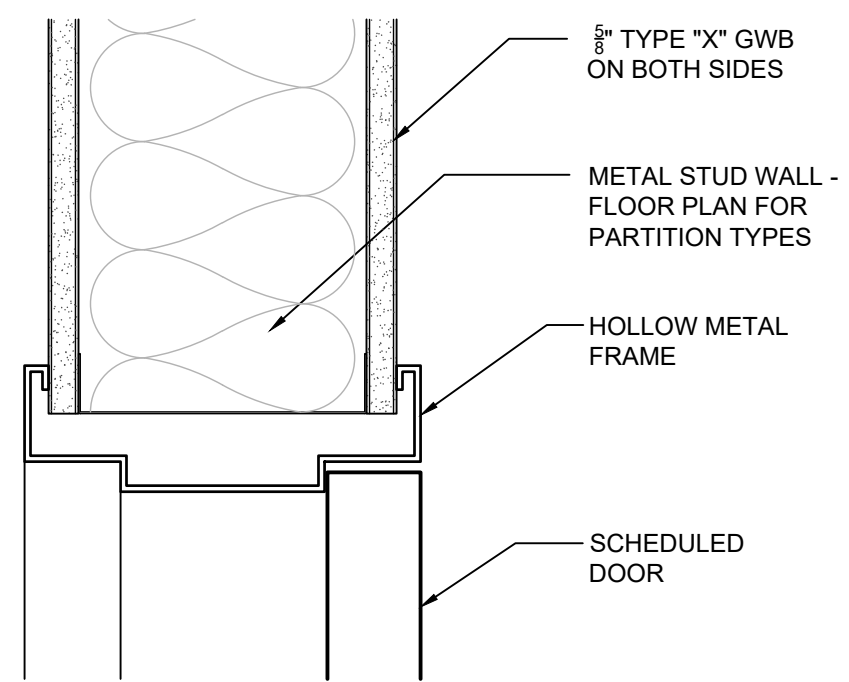
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**BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET**
PORTLAND, MAINE

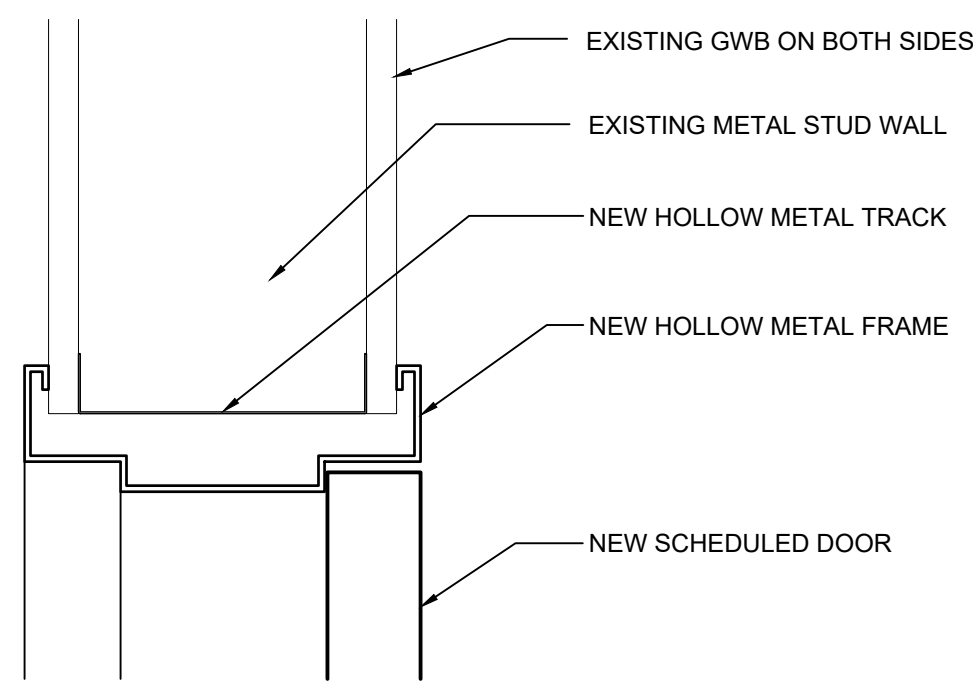
PROJECT NO: 15-014
CAD DWG FILE: AE502 MISC. DETAILS - PHASE 1.DWG
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**MISC. DETAILS
- PHASE 1**

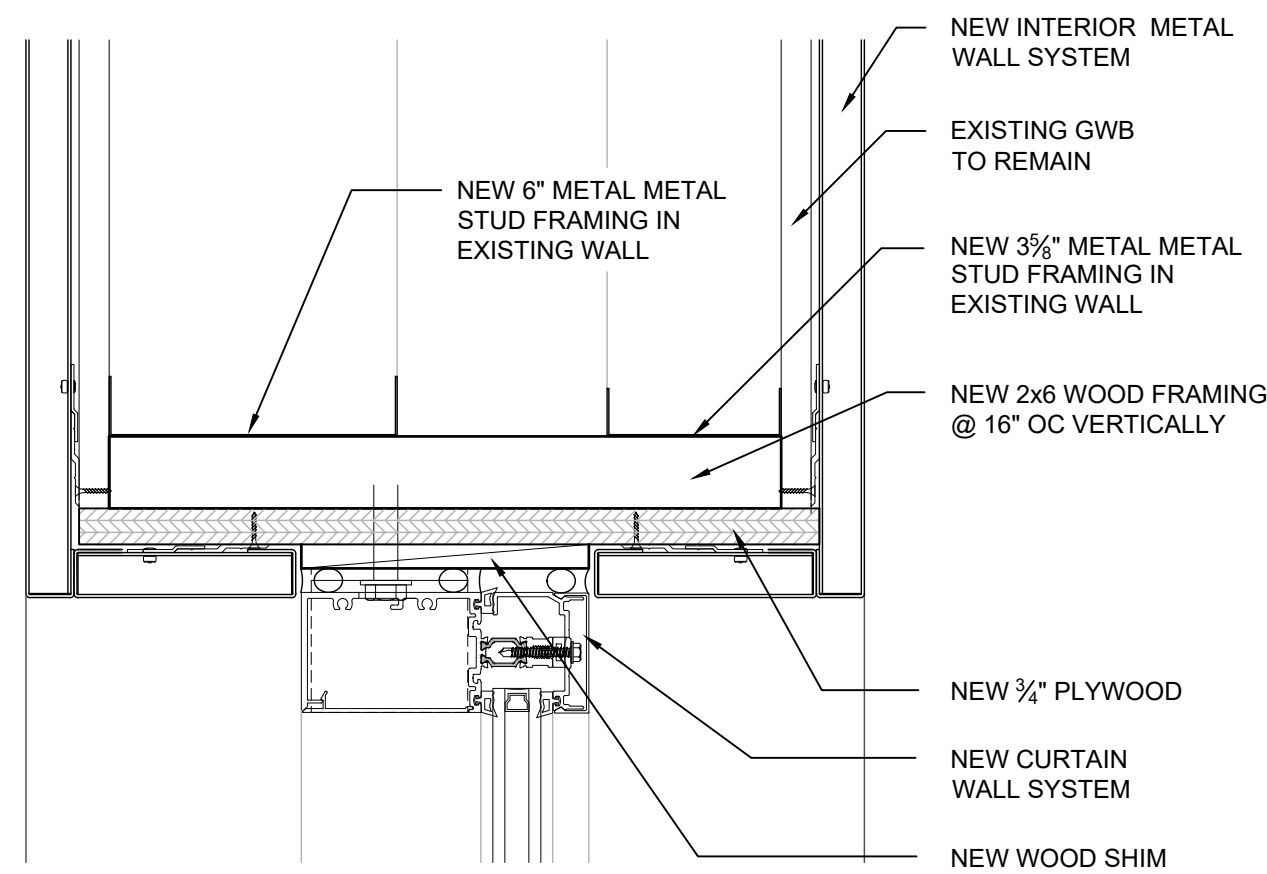
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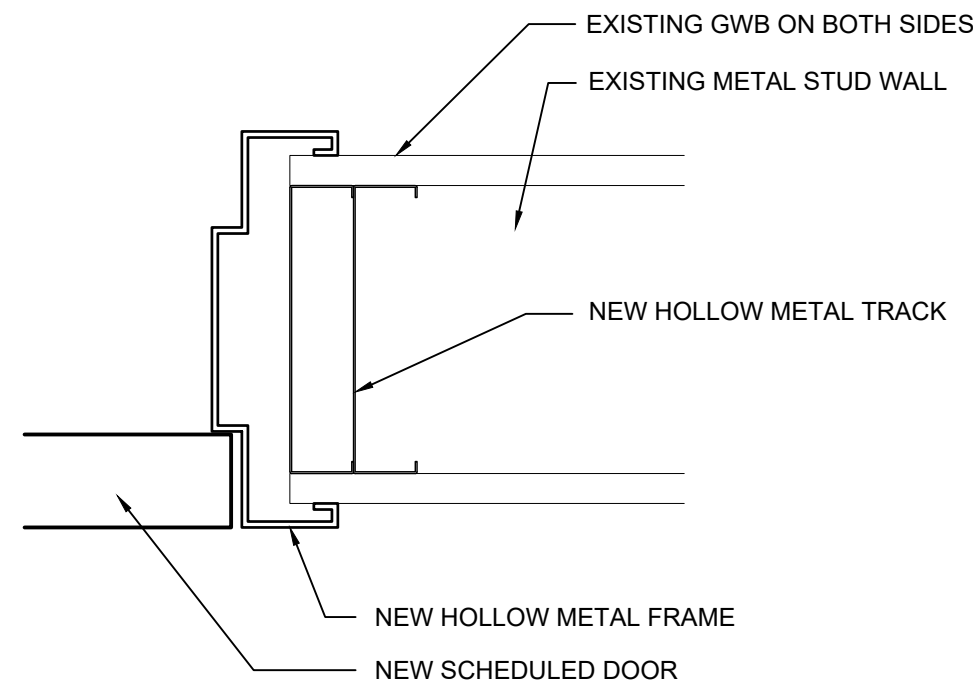
K1 HEAD DETAIL @ HOLLOW METAL FRAME (JAMB DETAIL SIM)
3/8" = 1'-0"



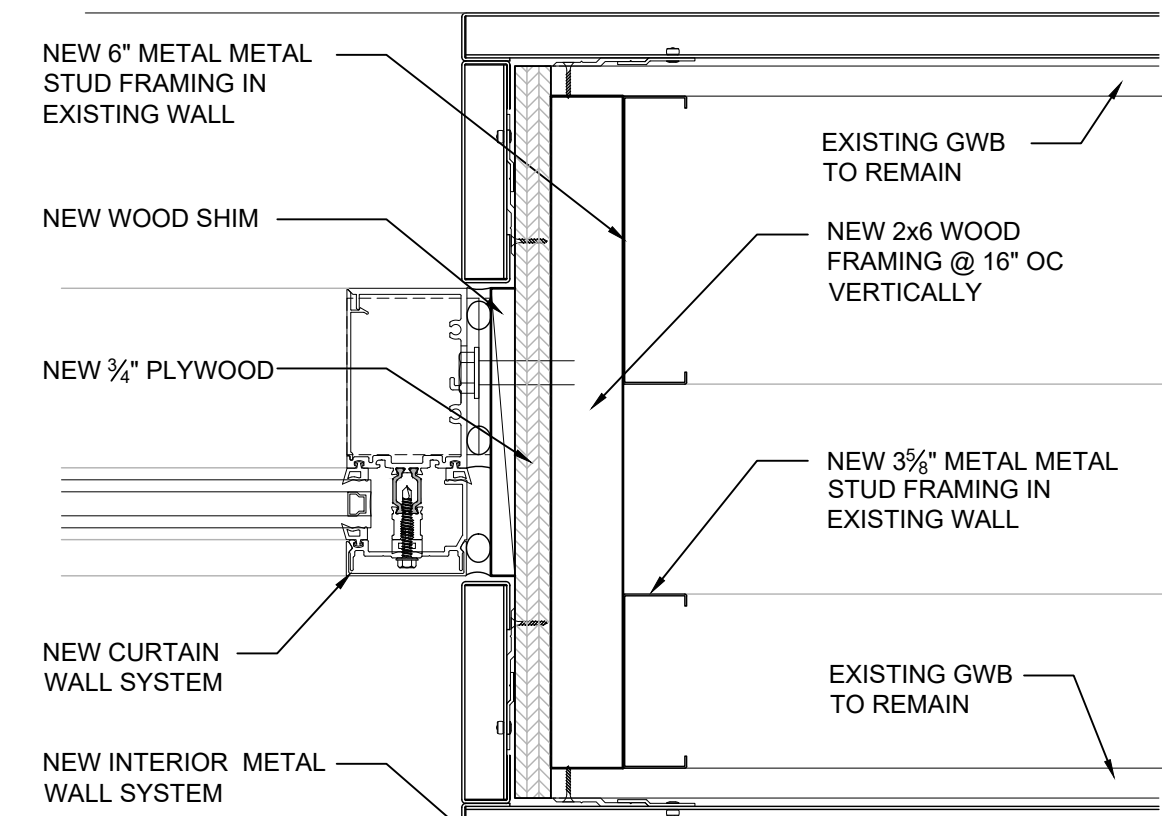
K4 HEAD DETAIL @ HOLLOW METAL FRAME
3/8" = 1'-0"



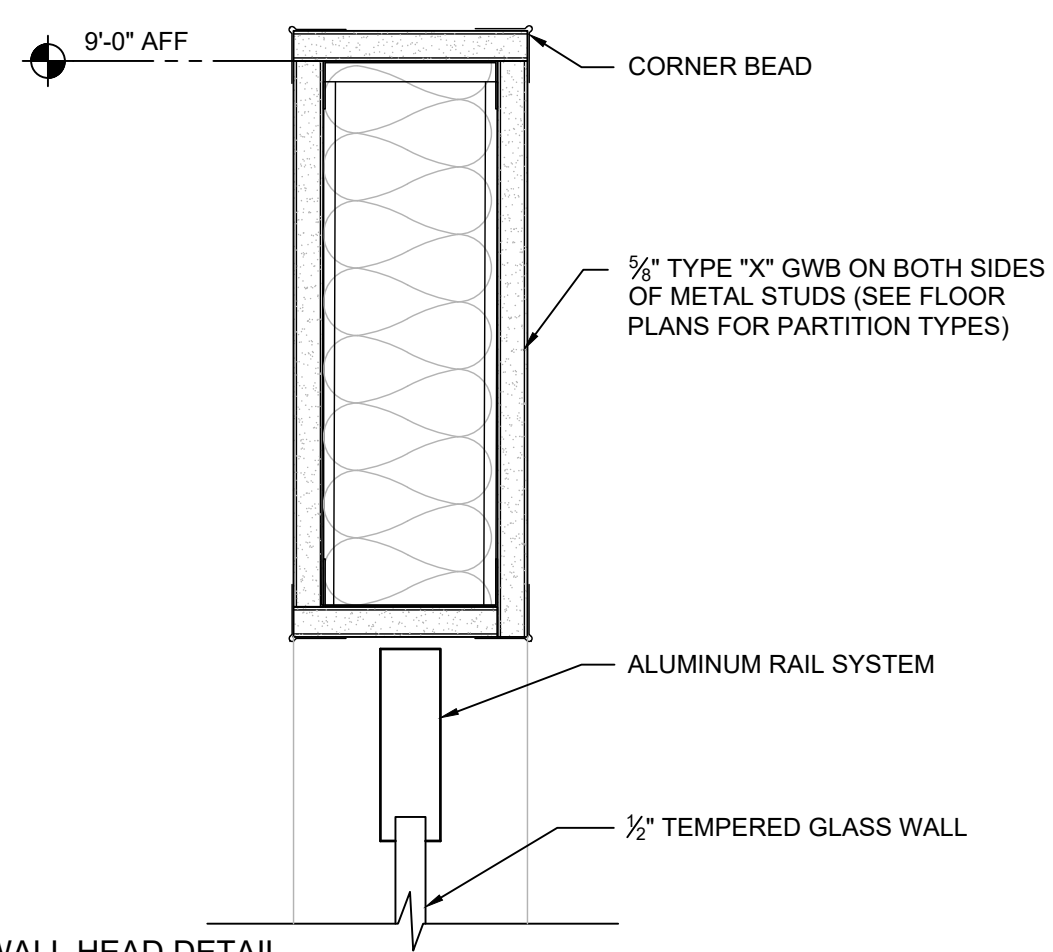
G1 LOBBY CURTAIN WALL - HEAD DETAIL (SILL SIM)
3/8" = 1'-0"



G4 HEAD DETAIL @ HOLLOW METAL FRAME
3/8" = 1'-0"



D1 LOBBY CURTAIN WALL - JAMB DETAIL
3/8" = 1'-0"



D4 GLASS WALL HEAD DETAIL
3/8" = 1'-0"

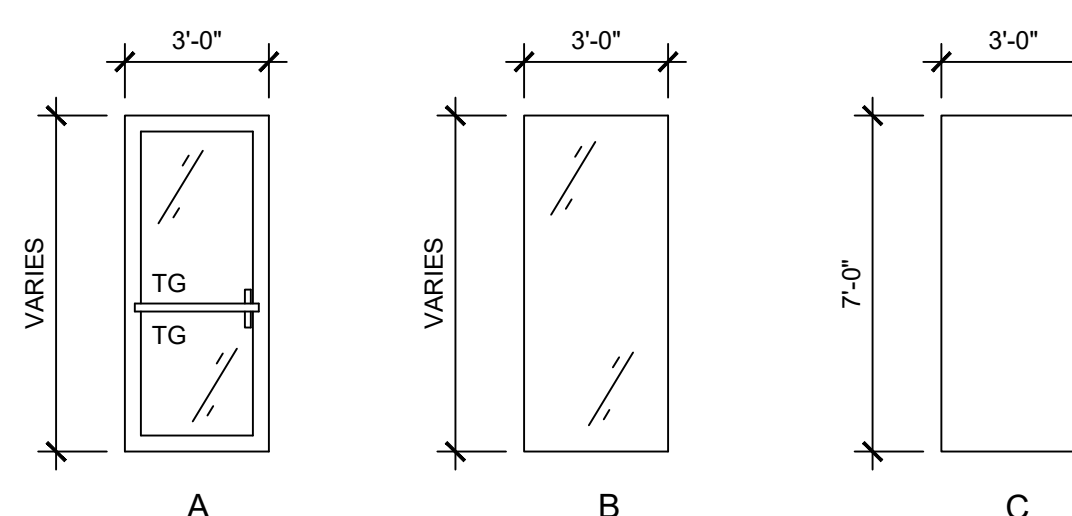
DOOR AND FRAME SCHEDULE - FIRST FLOOR - PHASE 1

No.	ROOM NAME	DOOR						FRAME						GLAZING	FIRE RATING LABEL	HARDWARE		NOTES
		SIZE			TYPE	MATL	FINISH	TYPE	MATL	FINISH	DETAIL					SET NO	KEYSIDE RM NO	
		WD	HGT	THK							HEAD	JAMB	SILL					
101A	LOBBY	3'-0"	7'-0"	1 1/2"	A	ALUM	MANF	3	ALUM	MANF					1		②	
104A	DATA 104	2'-6"	7'-0"	1 1/2"	C	WD	S&V	1	HM	PT					2			
108A	OFFICE 108	3'-0"	8'-0"	1/2"	B	BY	OTHERS	--	--	--					4			
110A	OFFICE 110	3'-0"	8'-0"	1/2"	B	BY	OTHERS	--	--	--					4			
111A	CONFERENCE 111	3'-0"	7'-0"	1/2"	B	BY	OTHERS	--	--	--					3			
116A	CONFERENCE 116	3'-0"	7'-0"	1/2"	B	BY	OTHERS	--	--	--					3			

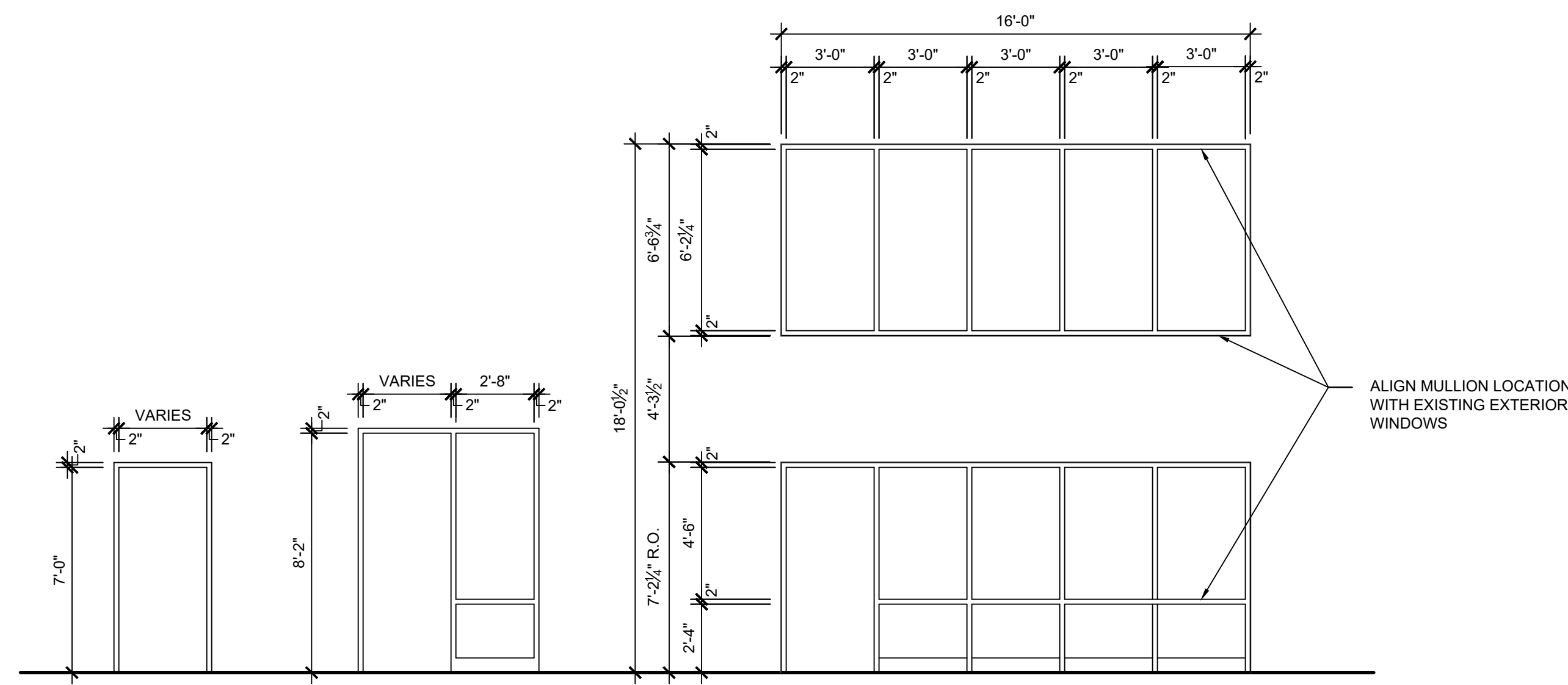
DOOR AND FRAME SCHEDULE - SECOND FLOOR - PHASE 1

No.	ROOM NAME	DOOR						FRAME						GLAZING	FIRE RATING LABEL	HARDWARE		NOTES
		SIZE			TYPE	MATL	FINISH	TYPE	MATL	FINISH	DETAIL					SET NO	KEYSIDE RM NO	
		WD	HGT	THK							HEAD	JAMB	SILL					
201A	WAITING 201	3'-0"	8'-2"	1 1/2"	A	ALUM	MANF	2	ALUM	MANF					1		②	
203A	CONFERENCE 203	3'-0"	8'-0"	1/2"	B	BY	OTHERS	--	--	--					3			
204A	CONFERENCE 204	3'-0"	8'-0"	1/2"	B	BY	OTHERS	--	--	--					4			
205A	CONFERENCE 205	3'-0"	8'-0"	1/2"	B	BY	OTHERS	--	--	--					4			
207A	DATA 207	3'-0"	7'-0"	1 1/2"	C	WD	S&V	1	HM	PT					2			

- NOTES LEGEND
 ① WEATHERSTRIP
 ② CLOSER
 ③ PANIC HARDWARE
 ④ ADA BUTTONS



E8 DOOR TYPES
1/4" = 1'-0"

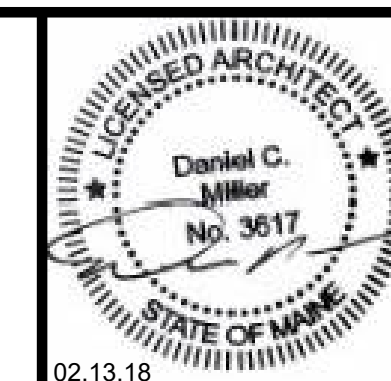


A8 FRAME TYPES
1/4" = 1'-0"

NO.	DATE	DESCRIPTION
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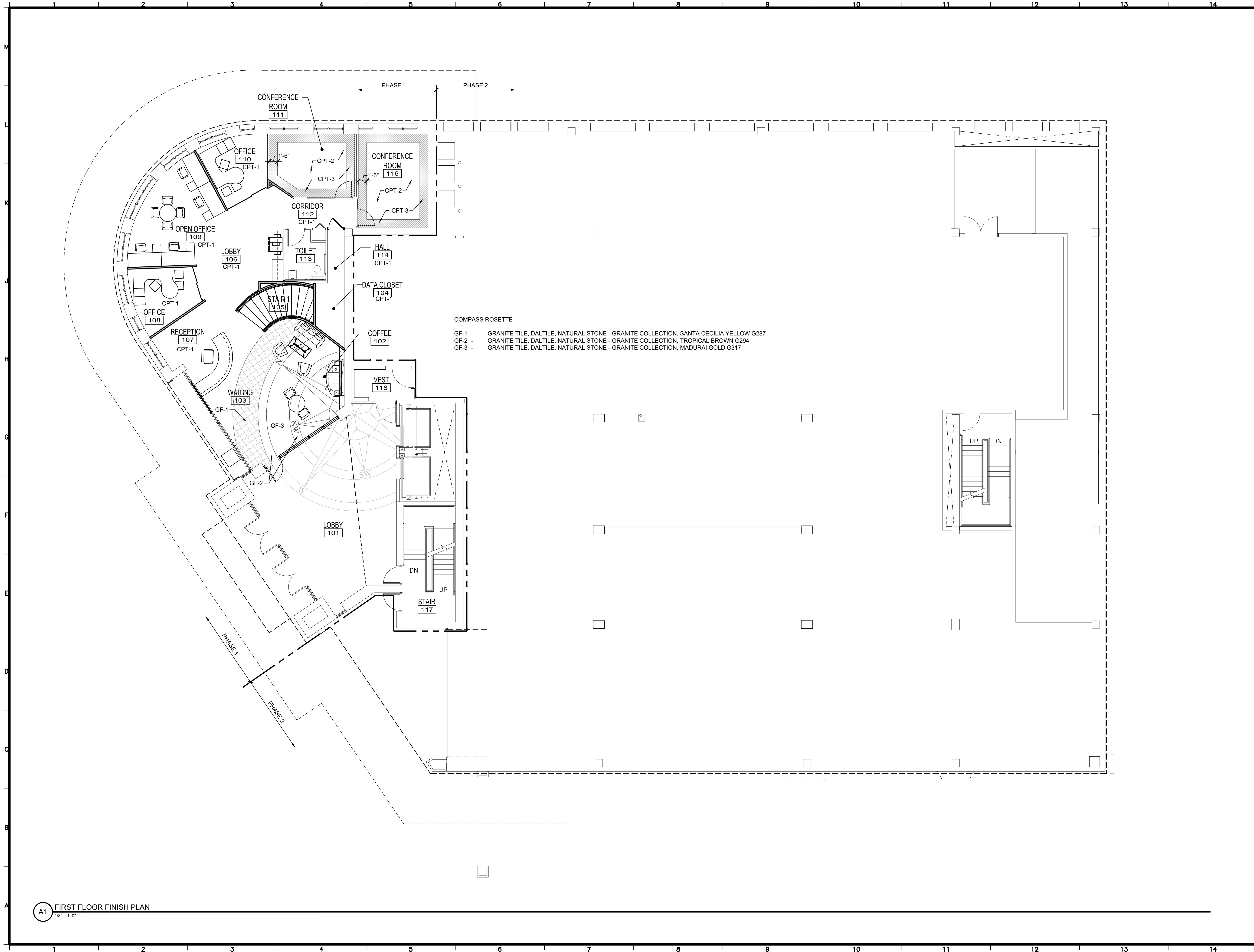


BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

PROJECT NO:	15-014
CAD DWG FILE:	A601 DOOR SCHEDULE AND DETAILS - PHASE 1.DWG
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SHEET TITLE
**DOOR SCHEDULE AND
DETAILS - PHASE 1**

AE601



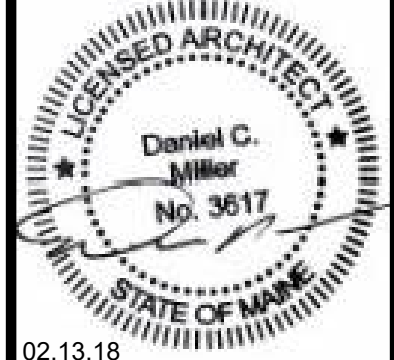
COMPASS ROSETTE

GF-1 - GRANITE TILE, DAL TILE, NATURAL STONE - GRANITE COLLECTION, SANTA CECILIA YELLOW G287
 GF-2 - GRANITE TILE, DAL TILE, NATURAL STONE - GRANITE COLLECTION, TROPICAL BROWN G294
 GF-3 - GRANITE TILE, DAL TILE, NATURAL STONE - GRANITE COLLECTION, MADURAI GOLD G317

NO.	DATE	DESCRIPTION
0	00.00.00	

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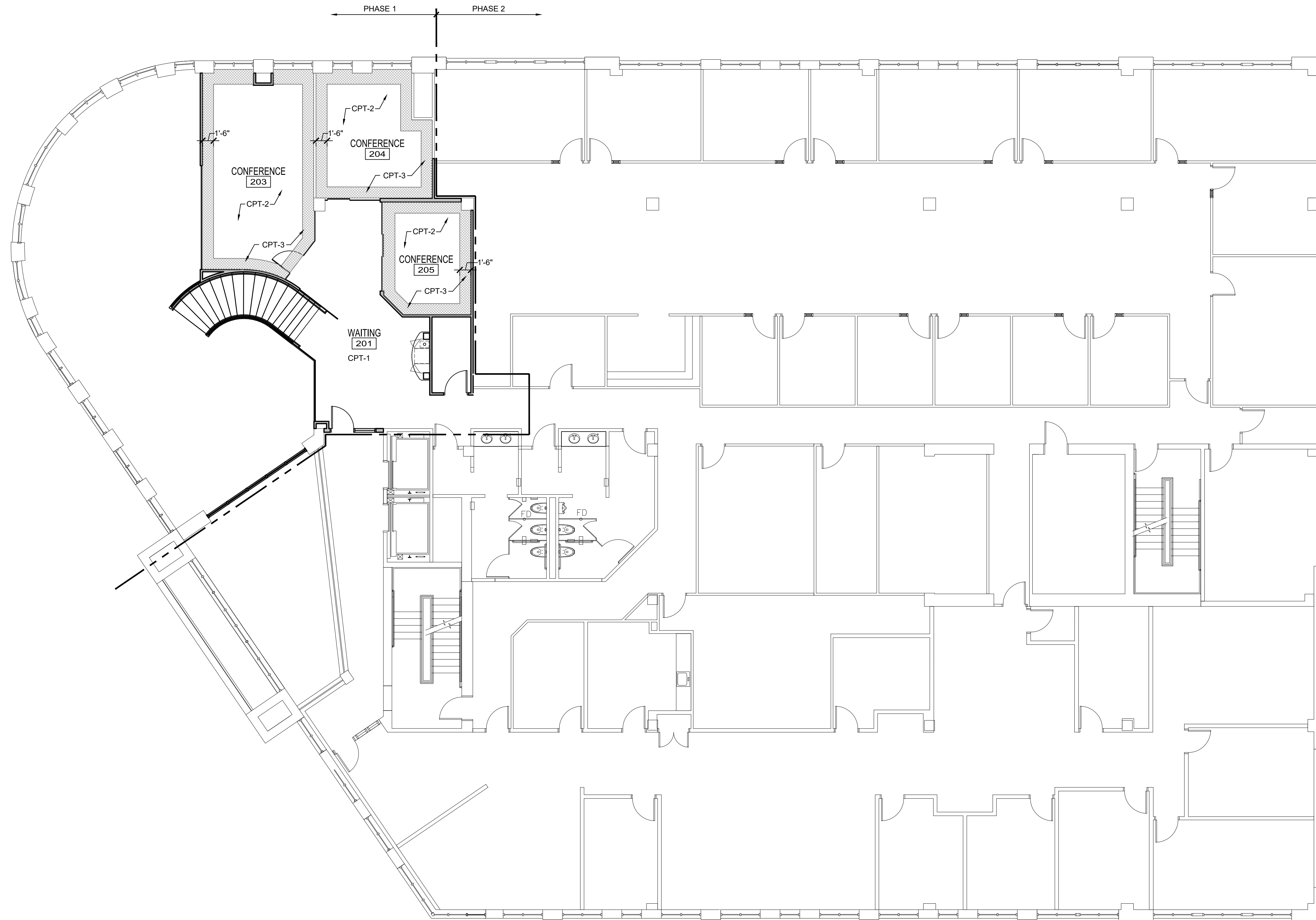
BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

PROJECT NO: 15-014
 CAD DWG FILE: AF1001 FIRST FLOOR FINISH PLAN - PHASE 1.DWG
 DRAWN BY: ###
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SHEET TITLE
FIRST FLOOR FINISH PLAN -
PHASE 1

AF101

A1 FIRST FLOOR FINISH PLAN
1/8" = 1'-0"

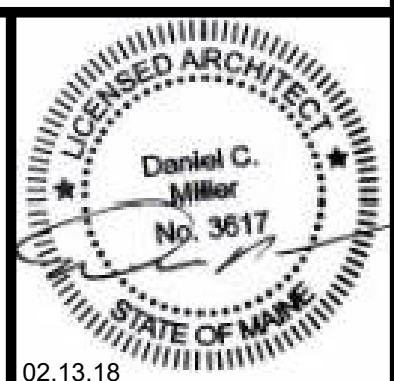


A1 SECOND FLOOR FINISH PLAN
1/8" = 1'-0"

NO.	DATE	DESCRIPTION
0	00.00.00	

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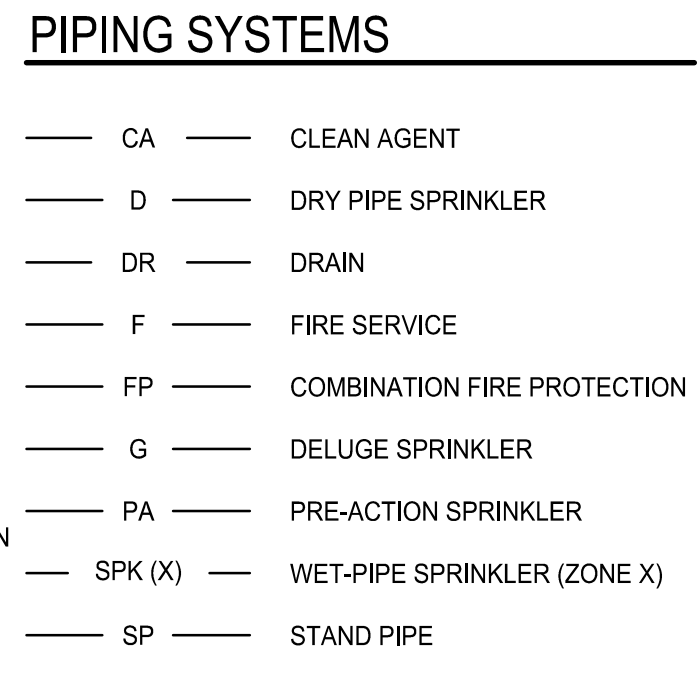
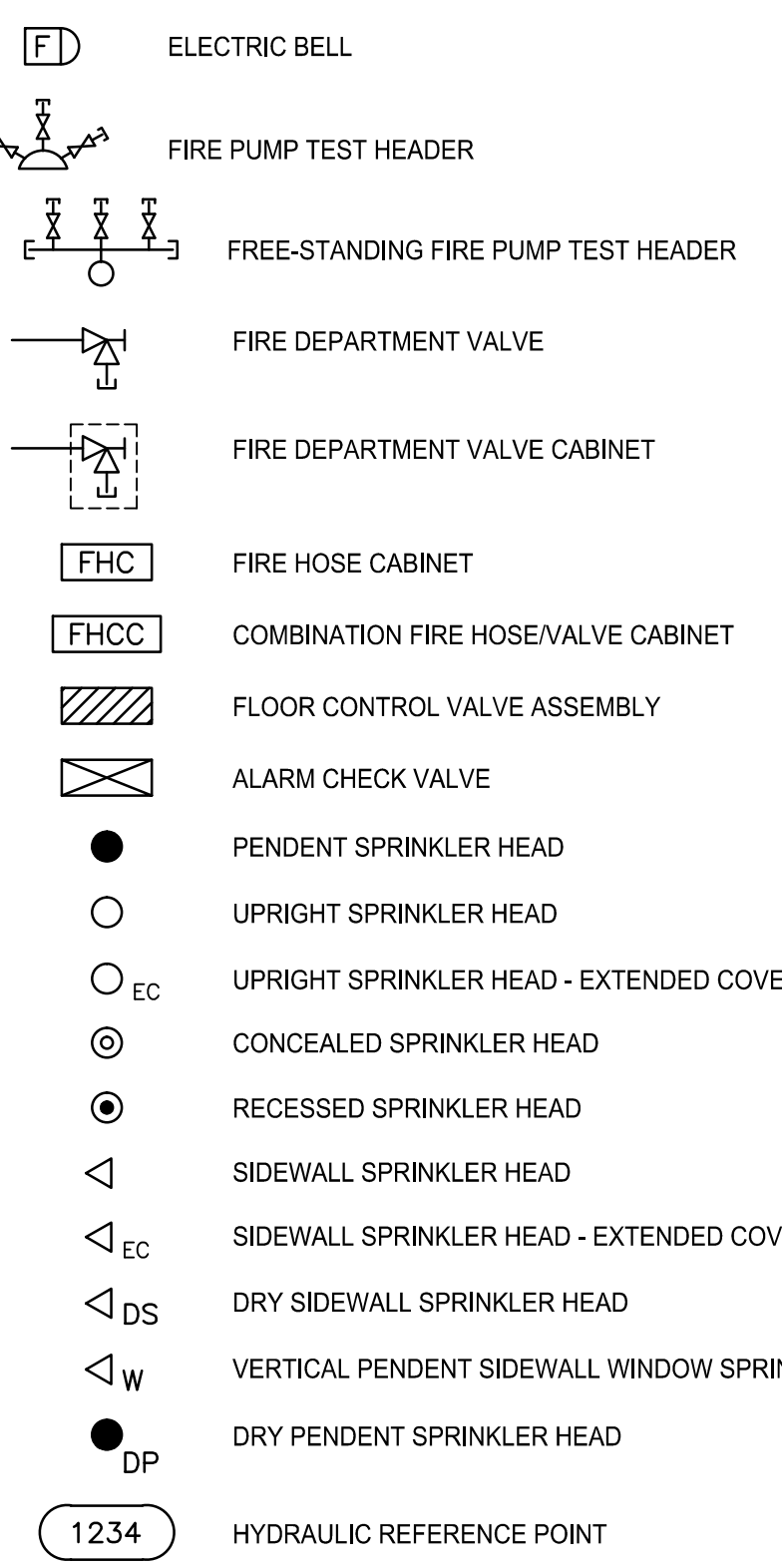
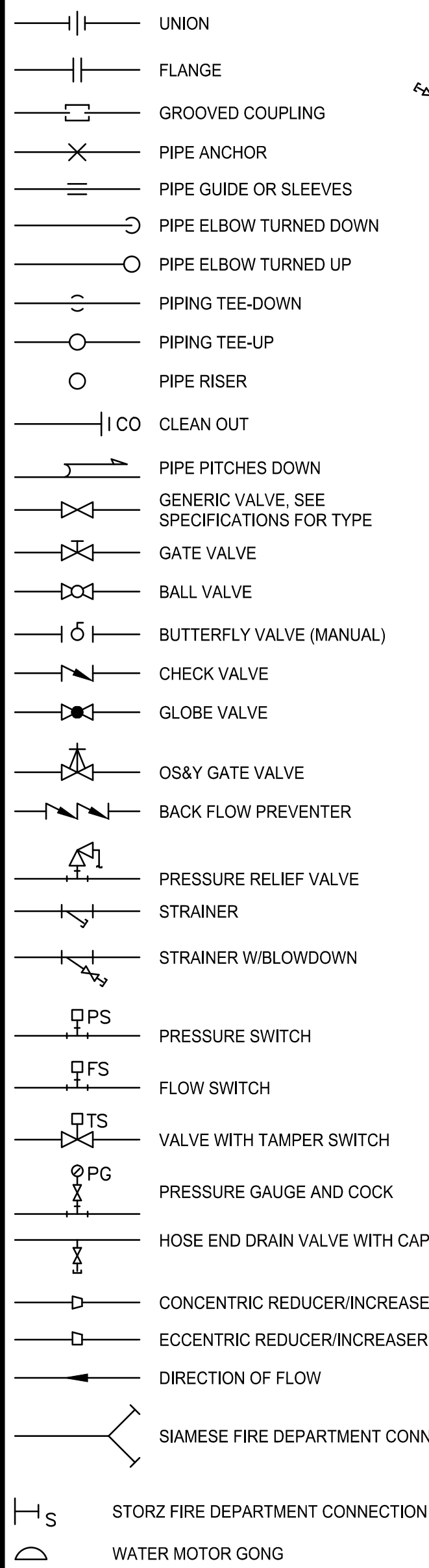
BANGOR SAVINGS BANK - RENOVATIONS
TO 280 FORE STREET
PORTLAND, MAINE

PROJECT NO: 15-014
CAD DWG FILE: AF102 SECOND FLOOR FINISH PLAN - PHASE 1.DWG
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SHEET TITLE
SECOND FLOOR FINISH PLAN -
PHASE 1

AF102

PIPING SYMBOLS



ABBREVIATIONS

AD	ACCESS DOOR	GC	GENERAL CONTRACTOR
AHJ	AUTHORITY HAVING JURISDICTION	GPM	GALLONS PER MINUTE
AP	ACCESS PANEL	HVAC	HEATING, VENTILATING AND AIR CONDITIONING
BFP	BACKFLOW PREVENTER	ITS	INSPECTOR'S TEST STATION
BLDG	BUILDING	LFPC	LIMIT OF FIRE PROTECTION CONTRACT
BOP	BOTTOM OF PIPE	MAX	MAXIMUM
CA	CLEAN AGENT	MFR	MANUFACTURER
CFF	CAPPED FOR FUTURE	MIN	MINIMUM
CLG	CEILING	MTD	MOUNTED
CONT	CONTINUATION	NTS	NOT TO SCALE
COORD	COORDINATE	PACV	PRE-ACTION ALARM CHECK VALVE
CTE	CONNECT TO EXISTING	PC	(FIRE DEPARTMENT) PUMPER CONNECTION
CU	COPPER	PIV	POST INDICATING VALVE
CW	COLD WATER	PLBG	PLUMBING
DACV	DRY PIPE ALARM CHECK VALVE	PRV	PRESSURE REDUCING VALVE
DIA	DIAMETER	PS	PRESSURE SWITCH
DIC	DOWN IN CHASE	(R)	REMOVE
DIW	DOWN IN WALL	(REL.)	RELOCATED
DCVA	DOUBLE CHECK VALVE ASSEMBLY	RM	ROOM
DN	DOWN	RPZ	REDUCED PRESSURE ZONE BFP
DR	DRAIN	RV	RELIEF VALVE
DS	DOWNSPOUT	SACV	(WET PIPE) SPRINKLER ALARM CHECK VALVE
DT	DROP AND TRANSITION	SD	SMOKE DETECTOR
DWG	DRAWING	SP	STAND PIPE
ENC	ENCLOSURE	SPK	SPRINKLER
(E)	EXISTING	TH	(FIRE DEPARTMENT) TEST HEADER
EXIST.	EXISTING	TOP	TOP OF PIPE
FBO	FURNISHED BY OWNER	TS	TAMPER SWITCH
FC	FLEXIBLE CONNECTION	TTS	TIGHT TO STEEL
FCVA	FLOOR CONTROL VALVE ASSEMBLY	TYP	TYPICAL
FDC	FIRE DEPARTMENT CONNECTION	UIC	UP IN CHASE
FDV	FIRE DEPARTMENT VALVE	UIW	UP IN WALL
FDVC	FIRE DEPARTMENT VALVE CABINET	UL	UNDERWRITER'S LABORATORY
FEX	FIRE EXTINGUISHER	VCFF	VALVED AND CAPPED FOR FUTURE
FH	FIRE HOSE	W/	WITH
FHC	FIRE HOSE CABINET	WIV	WALL INDICATING VALVE
FM	FACTORY MUTUAL	WMG	WATER MOTOR GONG
FS	FLOW SWITCH		

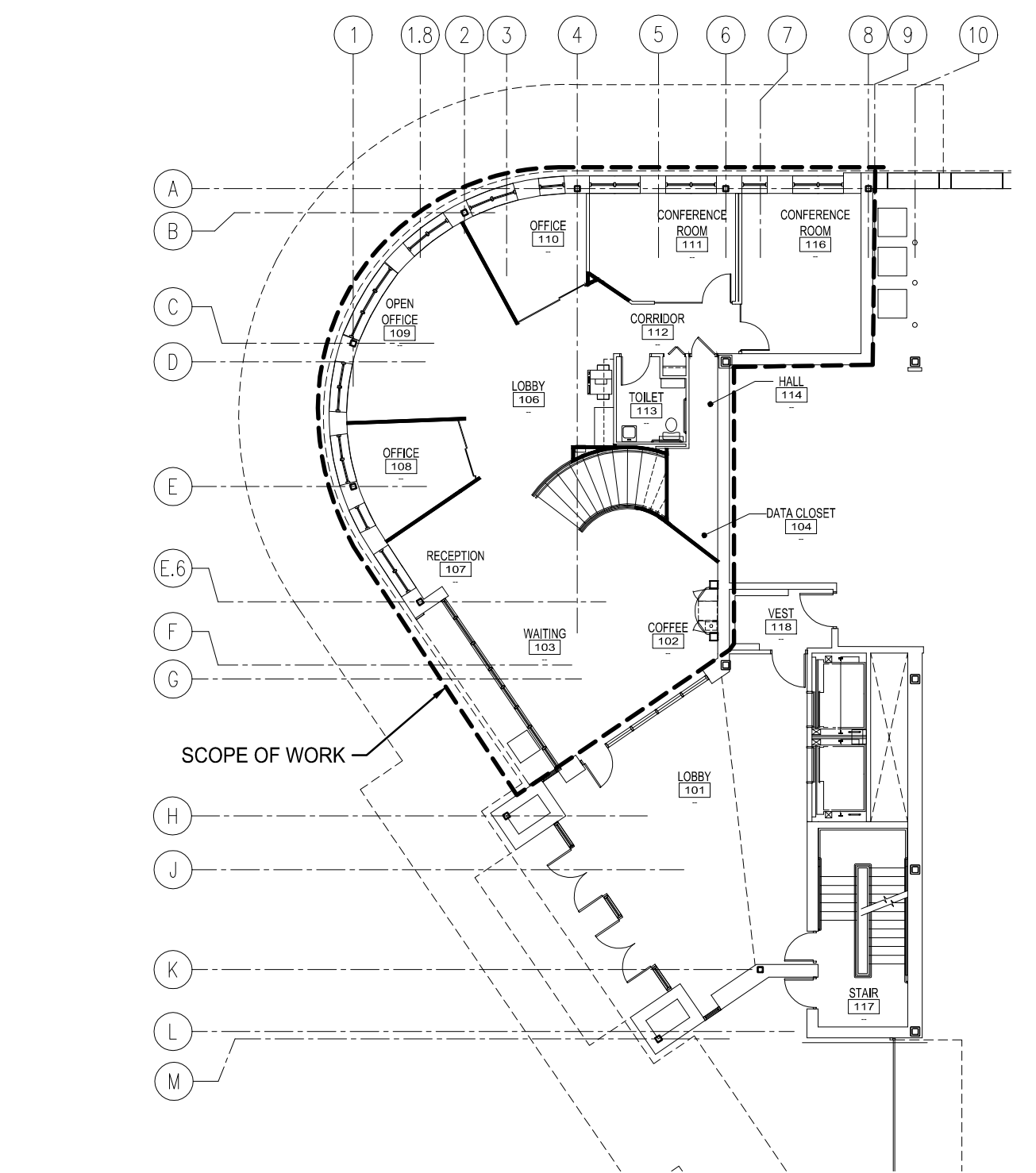
SPECIFICATIONS

- 21 00 00 - GENERAL REQUIREMENTS**
- THE FOLLOWING APPLIES TO FIRE PROTECTION PIPING TRADES.
 - OBTAIN ALL PERMITS AND APPROVALS TO PERFORM THE WORK.
 - VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS IN THE FIELD. GENERAL SCHEMATIC LAYOUT IS INDICATED, ALL OFFSETS, OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED.
 - INSTALL ALL NEW AND RELOCATED EXISTING COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, APPLICABLE CODES AND STANDARDS.
 - COORDINATE WITH OWNER FURNISHED EQUIPMENT AND SYSTEMS.
 - THIS RENOVATION WORK WILL TAKE PLACE IN OCCUPIED SPACE. INSTALLATIONS SHALL NOT AFFECT ONGOING OPERATIONS. COORDINATE HOURS AVAILABLE TO PERFORM WORK WITH THE OWNER AND GENERAL CONTRACTOR.
 - SEAL INTERIOR PIPE PENETRATIONS WITH FIRE SEALANT. SEAL EXTERIOR WALL PIPE PENETRATIONS WATER TIGHT.
 - CUT AND PATCH SURFACES, RESTORING ORIGINAL FINISHES.
 - EQUIPMENT LISTED IS THE BASIS OF DESIGN, OR APPROVED EQUAL.
 - SUBMITTALS, PRE-CONSTRUCTION: SUBMIT CATALOG CUT SHEETS OF PROPOSED EQUIPMENT FOR ENGINEER REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
 - SUBMITTALS, DURING CONSTRUCTION: SUBMIT COPIES OF PIPE ROUGH-IN PRESSURE TESTS AS COMPLETED.
 - SUBMITTALS, POST CONSTRUCTION: SUBMIT COPIES OF FINAL PRESSURE TEST, FLUSHING AND PLUMBING DISINFECTION REPORTS. SUBMIT COPIES OF COMPLETED MANUFACTURER START UP REPORTS FOR EQUIPMENT.
 - OPERATIONS AND MAINTENANCE MANUALS: SUBMIT ALL TESTING DATA AND COPIES OF APPROVED PRODUCT DATA, INCLUDING MAINTENANCE INFORMATION IN A TABBED, NEATLY ORGANIZED THREE RING BINDER. INCLUDE VALVE IDENTIFICATION CHARTS PROVIDE 3 COPIES TO THE OWNER.
 - PIPE IDENTIFICATION; LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS.
 - VALVE IDENTIFICATION; PROVIDE A CIRCULAR BRASS TAG AND CHAIN ON EACH VALVE. TAG TO INCLUDE A DISCRETE NUMBER AND SHALL BE COORDINATED WITH ANY CURRENT FACILITY NUMBERING SCHEME OR STANDARD.
 - RECORD DRAWINGS: MAINTAIN A CURRENT SET OF MARKED UP CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES. PROVIDE A COMPLETE SET OF THESE RECORD MARK-UPS TO THE ARCHITECT AT THE END OF THE PROJECT.
- 21 05 00 - SPRINKLER SYSTEM DESIGN AND GENERAL REQUIREMENTS**
- DESIGN AND PERFORM FIRE SPRINKLER WORK PER THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (WITH MAINE AMENDMENTS) AND NFPA 13 - 2016.
 - DESIGN AND INSTALL COMPLETE SYSTEMS, INCLUDING BUT NOT LIMITED TO: PIPE, FITTINGS, SPRINKLERS AND ACCESSORIES (ESCUTCHEONS AT THRU-WALL PENETRATIONS). PROVIDE FLOW, PRESSURE AND SUPERVISORY DEVICES. COORDINATE SYSTEM SUPERVISION WITH THE FIRE ALARM CONTRACTOR.
 - PROVIDE SUPPORTS PER NFPA 13, INCLUDING SEISMIC BRACING.
 - PROVIDE AUTOCAD GENERATED SHOP/LAYOUT DRAWINGS AND HYDRAULIC CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
 - DESIGN CRITERIA:
 - GENERAL OFFICE SPACE: LIGHT HAZARD OCCUPANCY: 0.1 GPM OVER 1500 SF PLUS 100 GPM HOSE STREAM.
 - BUILDING SERVICE AREAS, MECHANICAL ROOMS, ELECTRICAL ROOM, AND GENERAL STORAGE AREAS: ORDINARY HAZARD, GROUP 1 OCCUPANCY: 0.15 GPM/SF OVER 1500 SF PLUS 250 GPM HOSE ALLOWANCE.
 - ALL OTHER AREAS: IN ACCORDANCE WITH NFPA 13.
 - WATER SUPPLY PERFORMANCE: OBTAIN FLOW TEST DATA AS NECESSARY TO SERVE AS THE BASIS FOR HYDRAULICALLY CALCULATED SYSTEMS.
 - HYDRAULIC DESIGN CRITERIA, GENERAL:
 - MAXIMUM PIPE LINE VELOCITY: 25 FPS
 - MINIMUM CUSHION BETWEEN AVAILABLE WATER SUPPLY AND SYSTEM REQUIREMENTS (FACTOR OF SAFETY) 10 PSIG.
 - INSTALL SYSTEM AS TIGHT TO STRUCTURE AS POSSIBLE TO MAXIMIZE AVAILABLE HEADROOM. ARRANGE SPRINKLERS IN LOGICAL PATTERNS. CENTER HEADS IN CEILING TILES WHERE APPLICABLE.
 - PROVIDE NEW SPRINKLER HEADS WITHIN SCOPE OF WORK AREA. COORDINATE BRANCH PIPE ROUTING WITH ALL MEP SYSTEMS. COORDINATE SPRINKLER HEAD LOCATION WITH CEILING MOUNTED DIFFUSERS, LIGHTS AND OTHER CEILING MOUNTED DEVICES AND PER NFPA 13.

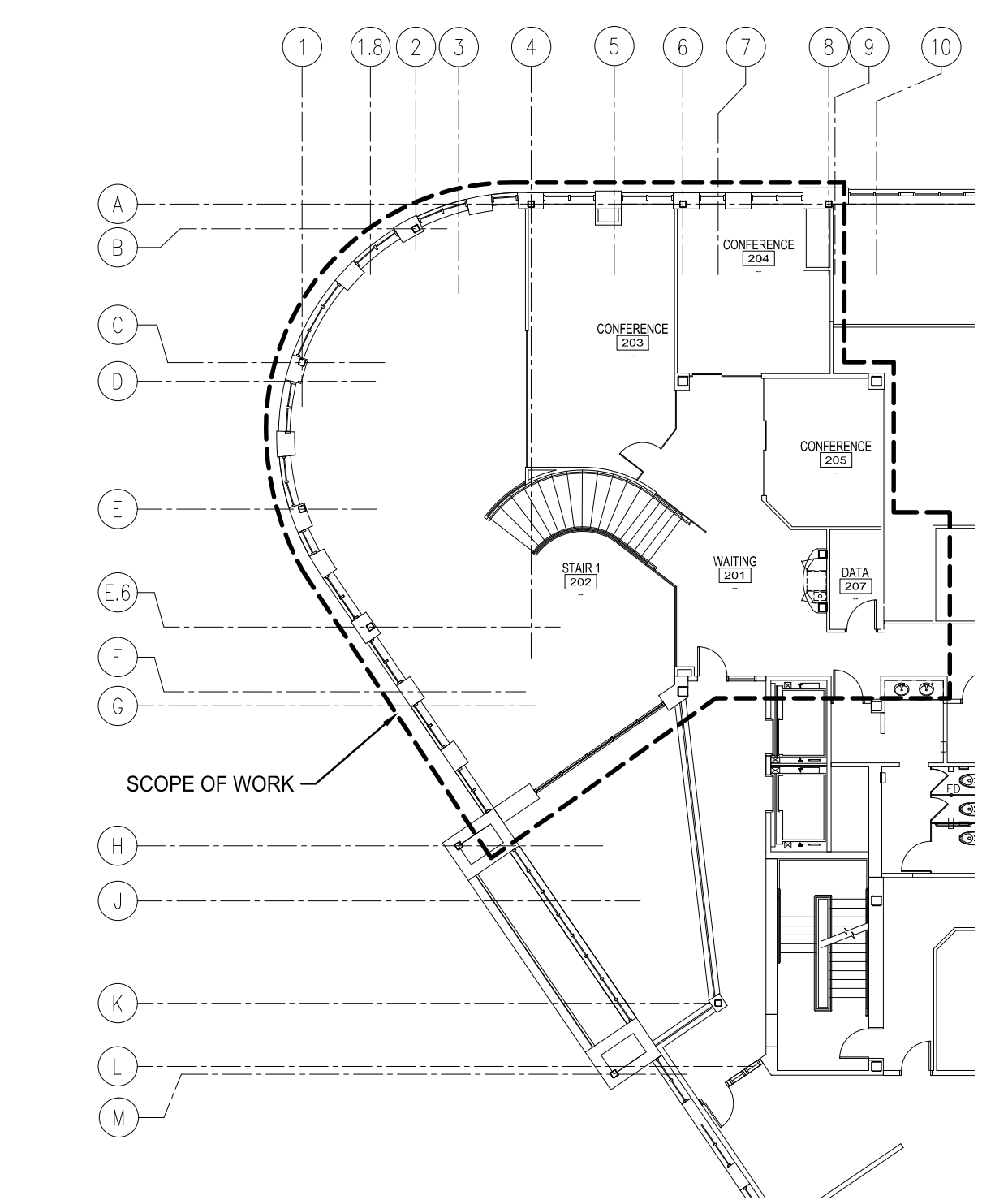
- 21 10 00 - FIRE PROTECTION SPRINKLER PIPING SYSTEMS REQUIREMENTS**
- PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED:
 - FIRE PROTECTION SPRINKLER SYSTEMS: 175 PSIG.
 - SYSTEM COMPONENTS TO BE UL LISTED OR FM APPROVED.
 - ABOVE GRADE WET SYSTEM SPRINKLER PIPING (SPK)
 - PIPING 2-INCH AND SMALLER: SCHEDULE 40 STEEL WITH THREADED IRON FITTINGS.
 - PIPING 2-1/2-INCH AND LARGER: SCHEDULE 10 STEEL WITH GROOVED FITTINGS.
 - DRY PIPE SPRINKLER SYSTEM : SCHEDULE 40 STEEL PIPING THROUGHOUT.
 - SPRINKLER SYSTEM VALVES AND SPECIALTIES: PROVIDE VALVES, INSPECTOR'S TEST STATIONS AND TRIM AS NECESSARY.
 - INCLUDE HYDRAULIC PLACCARDS AND OTHER SIGNAGE AS REQUIRED BY NFPA 13.
 - BUTTERFLY CONTROL VALVES UP TO 2-1/2" VICTAULIC #706 - 300 PSI SERIES.
 - FIRE SPRINKLERS: QUICK RESPONSE SPRINKLERS THROUGHOUT.
 - ROOMS WITH SUSPENDED CEILING: SEMI-RECESS TYPE SPRINKLERS WITH WHITE FINISH TO MATCH EXISTING
 - ROOMS WITHOUT CEILING: UPRIGHT WITH SPRINKLER GUARDS FOR SPRINKLERS SUBJECT TO MECHANICAL DAMAGE.
 - ROOMS WITH HARD DRYWALL CEILING: CONCEALED TYPE SPRINKLERS.
 - PROVIDE SPRINKLERS WITH TEMPERATURE RATINGS IN ACCORDANCE WITH NFPA 13.
 - FIRE SPRINKLER SYSTEM TESTING: TEST SYSTEMS PER NFPA 13 REQUIREMENTS. AND AS DIRECTED BY THE AHJ. MAKE CORRECTIONS AND RETEST AS NECESSARY. PROVIDE NFPA 13 ABOVE-GRADE TEST REPORTS.

FIRE PROTECTION NOTES:

- REWORK EXISTING SPRINKLER LAYOUT TO MATCH NEW FLOOR PLAN AND CEILING GRID (RE: ARCHITECTURAL) WITHIN SCOPE OF WORK AND AREAS OUTSIDE OF SCOPE AFFECTED BY NEW INSTALLATIONS.
- MODIFY AND REWORK EXISTING SPRINKLER SYSTEM TO AVOID CONFLICTS WITH HVAC, CEILING HEIGHT CHANGES AND OTHER NEW INSTALLATIONS.



A8 FIRST FLOOR FIRE PROTECTION PLAN
1/16" = 1'-0"



A11 SECOND FLOOR FIRE PROTECTION PLAN
1/16" = 1'-0"

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PROJECT NORTH:

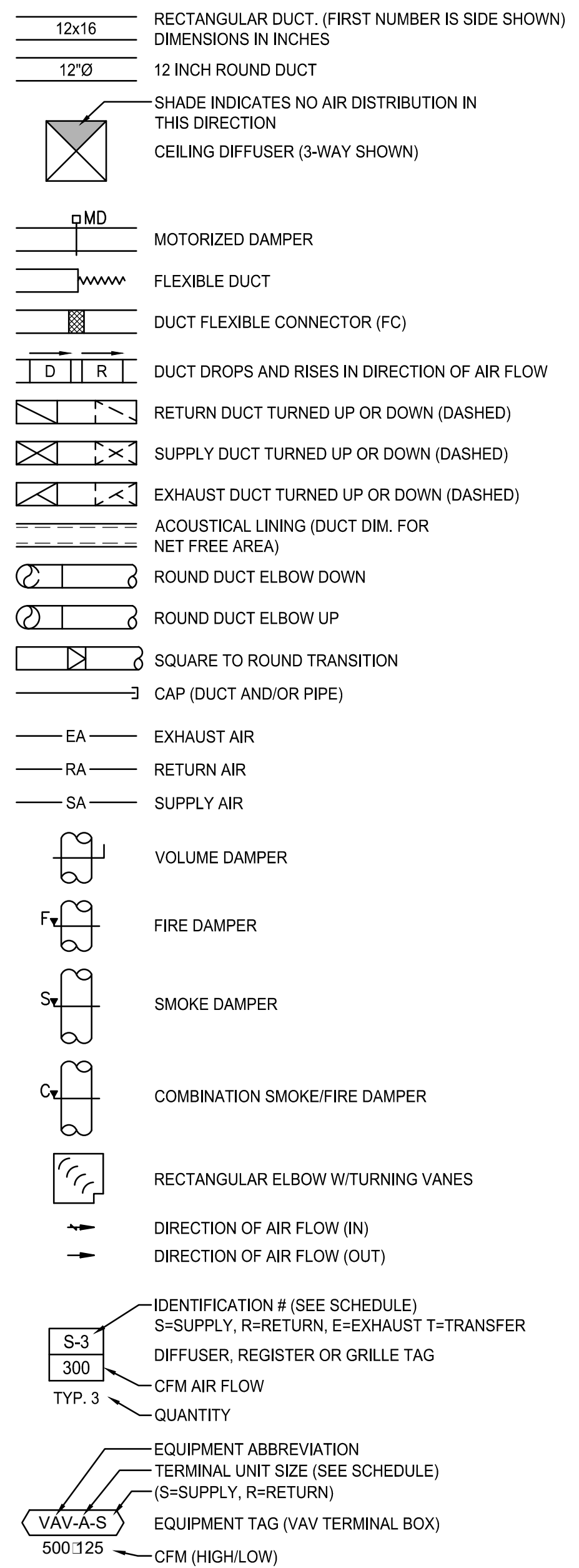
BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

PROJECT NO: **17231**
CAD DWG FILE: **FP001-17231**
DRAWN BY: **ASM**
CHK'D BY: **MJC**
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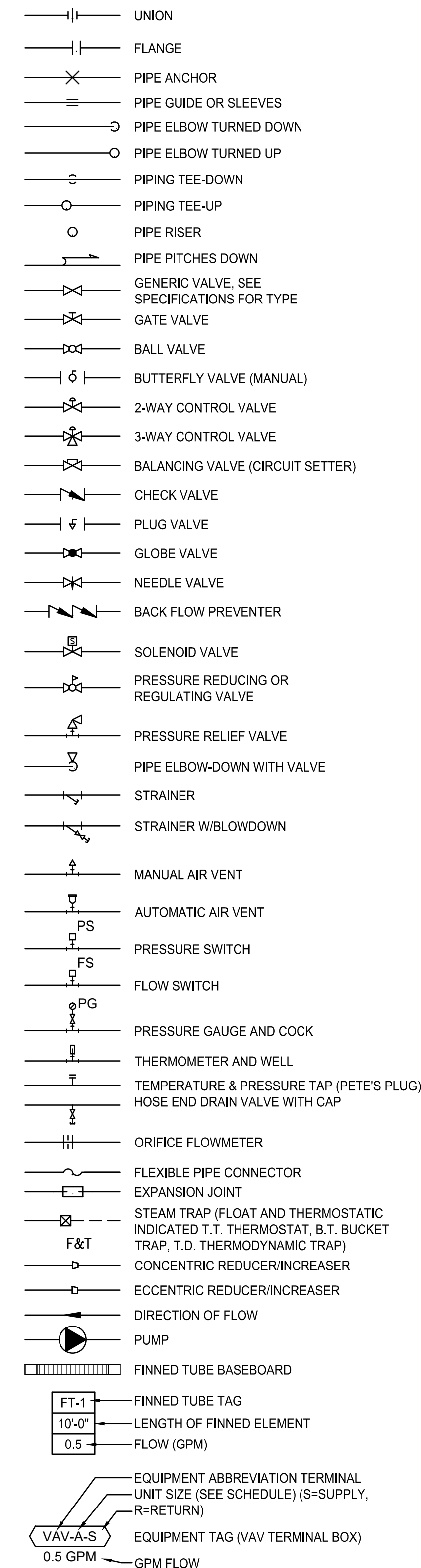
FIRE PROTECTION LEGEND, ABBREVIATIONS, AND SPECIFICATIONS

FP001

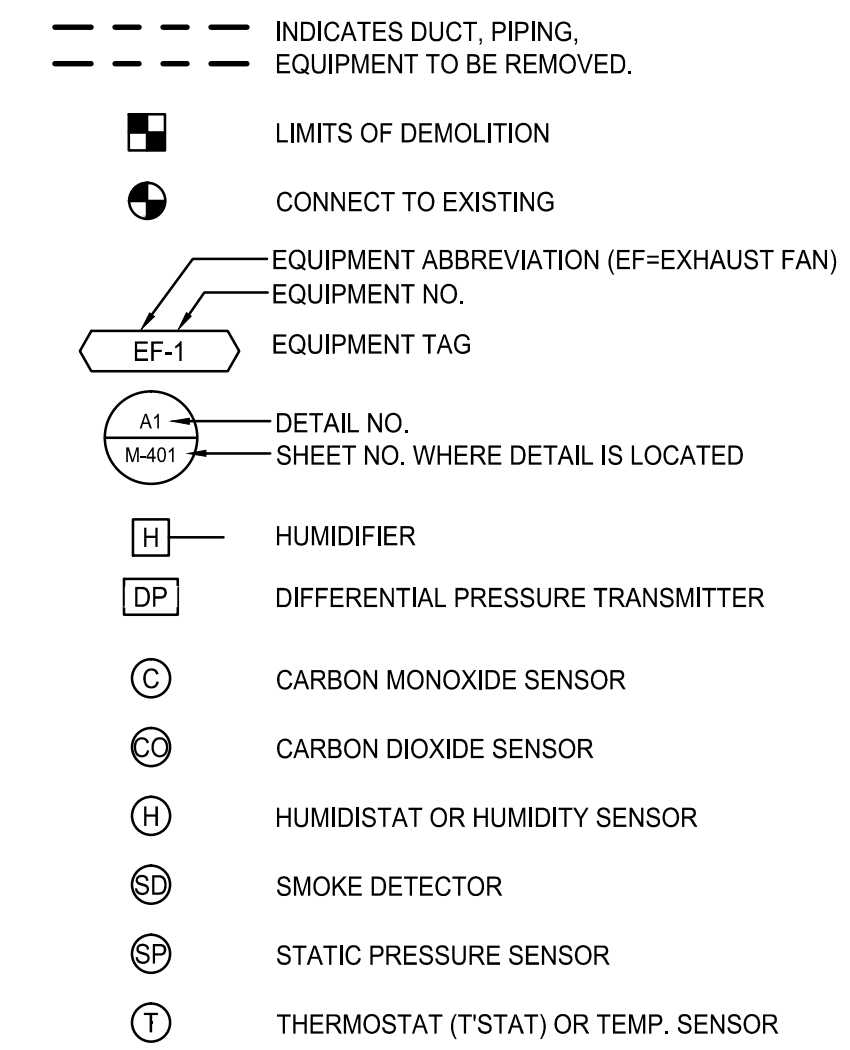
AIR DISTRIBUTION SYMBOLS



PIPING SYMBOLS



GENERAL SYMBOLS



ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	ENC	ENCLOSURE	PSE	PROCESS SOLVENT EXHAUST
ACC	AIR COOLED CONDENSER	ER	EXHAUST REGISTER	PP	POLY-PROPYLENE
ACU	AIR CONDITIONING UNIT	EUH	ELECTRIC UNIT HEATER	PPE	PRE PURCHASED EQUIPMENT
ACV	AUTOMATIC CONTROL VALVE	(E)	EXISTING	PRS	PRESSURE REDUCING STATION
AD	ACCESS DOOR	EXIST.	EXISTING	PRV	PRESSURE REDUCING VALVE
AE	ACID EXHAUST	FBO	FURNISHED BY OWNER	PVD	PNEUMATIC VOLUME DAMPER
AFF	ABOVE FINISHED FLOOR	FBP	FACE AND BYPASS	(R)	REMOVE
AFMS	AIR FLOW MEASURING STATION	FC	FLEXIBLE CONNECTION	RA	RETURN AIR
AHU	AIR HANDLING UNIT	FD	FIRE DAMPER	(REL.)	RELOCATED
ATC	AUTOMATIC TEMPERATURE CONTROL	FG	FIBERGLASS	RF	RETURN FAN
AV	AIR VENT	F & T	FLOAT AND THERMOSTATIC	RG	RETURN GRILLE
BB	BASEBOARD	FO	FLAT OVAL	RHC	REHEAT COIL
BDD	BACKDRAFT DAMPER	FTR	FINNED TUBE RADIATION	RM	ROOM
BG	BLAST GATE	FS	FLOW SWITCH	RR	RETURN REGISTER
BLDG	BUILDING	GC	GENERAL CONTRACTOR	RV	RELIEF VALVE
BOD	BOTTOM OF DUCT	GPM	GALLONS PER MINUTE	SA	SUPPLY AIR
BOP	BOTTOM OF PIPE	H	HUMIDIFIER	SCV	SELF CONTAINED VALVE
BTU	BRITISH THERMAL UNIT	HB	HOSE BIB	SD	SMOKE DETECTOR
CBD	COUNTER BALANCED DAMPER	HRU	HEAT RECOVERY UNIT	SF	SUPPLY FAN
CD	CEILING DIFFUSER	HTR	HEATER	SG	SUPPLY GRILLE
CFF	CAPPED FOR FUTURE	H & V	HEATING AND VENTILATION	SR	SUPPLY REGISTER
CFM	CUBIC FEET PER MINUTE	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	SS	STAINLESS STEEL
CLG	CEILING	HW	HOT WATER	TE	TEMPERATURIZED ELEMENT (SENSOR)
CONT	CONTINUATION	HX	HEAT EXCHANGER	TG	TRANSFER GRILLE
COORD	COORDINATE	IN WG	INCHES WATER GAUGE	TOD	TOP OF DUCT
CP	CONDENSATE PUMP & RECEIVER	LD	LINED DUCT	TOP	TOP OF PIPE
CT	COOLING TOWER	MAU	MAKE UP AIR UNIT	TTS	TIGHT TO STEEL
CTE	CONNECT TO EXISTING	MAX	MAXIMUM	TV	TURNING VANE(S)
CU	COPPER	MBH	1000 BTU/HR.	TYP	TYPICAL
CUH	CABINET UNIT HEATER	ME	MECHANICAL ENGINEER	UH	UNIT HEATER
CV	CONTROL VALVE	MFR	MANUFACTURER	UIC	UP IN CHASE
CW	COLD WATER	MIN	MINIMUM	UIW	UP IN WALL
DC	DOUBLE CONTAINED	MD	MOTOR OPERATED DAMPER	UV	UNIT VENTILATOR
DDC	DIRECT DIGITAL CONTROL	MPV	MULTI-PURPOSE VALVE	VAV	VARIABLE AIR VOLUME BOX
DIA	DIAMETER	MTD	MOUNTED	VB	VACUUM BREAKER
DIC	DOWN IN CHASE	MUA	MAKE UP AIR	VTR	VENT THRU ROOF
DIW	DOWN IN WALL	NPW	NON-POTABLE WATER	VD	MANUAL VOLUME DAMPER
DN	DOWN	NTS	NOT TO SCALE	VCF	VALVED AND CAPPED FOR FUTURE
DT	DROP AND TRANSITION	OA	OUTSIDE AIR	VFD	VARIABLE FREQUENCY DRIVE
DWG	DRAWING	OBD	OPPOSED BLADE DAMPER	VOC	VOLATILE ORGANIC COMPOUNDS
DWH	DOMESTIC WATER HEATER	OED	OPEN ENDED DUCT	W	WITH
EA	EXHAUST AIR	PAE	PROCESS ACID EXHAUST		
EF	EXHAUST FAN	PHE	PROCESS HEAT EXHAUST		

PIPING SYSTEMS

CD	CONDENSATE DRAIN	FOR	FUEL OIL RETURN	HWS	HOT WATER SUPPLY	PC	PUMPED STEAM CONDENSATE
CHWS	CHILLED WATER SUPPLY	FOV	FUEL OIL VENT	HWR	HOT WATER RETURN	PD	PUMPED DISCHARGE
CHWR	CHILLED WATER RETURN	GCR	GRAVITY STEAM CONDENSATE RETURN	LPS	LOW PRESSURE STEAM	PW	POTABLE WATER
CWS	CONDENSER WATER SUPPLY	GLY	GLYCOL	LPR	LOW PRESSURE RETURN	R	RELIEF LINE
CWR	CONDENSER WATER RETURN	HCR	HOT/ CHILLED WATER RETURN	MPS	MEDIUM PRESSURE STEAM	RL	REFRIGERANT LIQUID
DB	DISTRIBUTION VALVE BOX	HCS	HOT/ CHILLED WATER SUPPLY	MPR	MEDIUM PRESSURE RETURN	RS	REFRIGERANT SUCTION
FCS	FREE COOLING SUPPLY	HG	HOT GAS	NPW	NON POTABLE COLD WATER	TWS	TEMPERED CHILLED WATER SUPPLY
FCR	FREE COOLING RETURN	HPS	HIGH PRESSURE STEAM	PCWS	PROCESS COOLING WATER SUPPLY	TWR	TEMPERED CHILLED WATER RETURN
FOS	FUEL OIL SUPPLY	HPR	HIGH PRESSURE CONDENSATE RETURN	PCWR	PROCESS COOLING WATER RETURN	ZB	ZONE VALVE BOX

GENERAL NOTE

1. ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL HVAC AND PLUMBING DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE DESIGN.

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PROJECT NORTH:

BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

PROJECT NO: 17231
CAD DWG FILE: M-001-17231
DRAWN BY: ASM
CHK'D BY: MJC
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MECHANICAL LEGEND AND ABBREVIATIONS

M-001

PART 1 - GENERAL

- 1. GENERAL PROVISIONS: DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK IN CONTRACT.
- 2. DESCRIPTION OF PROJECT: BANGOR SAVING BANK OFFICE RENOVATION
- 3. SCOPE: PERFORM WORK AND PROVIDE NEW MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS. PROVIDE ALL COMPONENTS AND MATERIALS, WHETHER SPECIFICALLY SHOWN OR NOT, THAT ARE NECESSARY TO MAKE THE SYSTEMS COMPLETE AND FULLY OPERATIONAL AS INTENDED IN THE CONSTRUCTION DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE DESIGN INTENT AS ILLUSTRATED ON THESE DRAWINGS AND ALL TESTING AND CERTIFICATIONS NECESSARY FOR COMPLIANCE INCLUDING ANY REQUIRED REMEDIAL ACTIONS AND RETESTING DUE TO FAILURE.
- 4. SITE VISIT: THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO ANY DEMOLITION OR NEW INSTALLATION. VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS THAT MAY AFFECT WORK OF THIS SECTION BEFORE SUBMITTING BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY DISCERNED BY AN EXPERIENCED OBSERVER.
- 5. RELATED WORK: THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND WILL BE PROVIDED UNDER OTHER SECTIONS: 1) TEMPORARY HEAT FOR USE DURING CONSTRUCTION AND TESTING UNLESS SPECIFICALLY NOTED IN OTHER SPECIFICATION SECTIONS, 2) PAINTING, EXCEPT AS SPECIFIED, AND 3) ELECTRICAL POWER WIRING TO ALL EQUIPMENT OTHER THAN AUTOMATIC TEMPERATURE CONTROL PANELS AND COMPONENTS.
- 6. CODES, STANDARDS, AUTHORITIES AND PERMITS: CODES, LAWS AND ORDINANCES PROVIDE A BASIS FOR THE MINIMUM INSTALLATION CRITERIA. THESE DRAWINGS AND SPECIFICATIONS ILLUSTRATE THE SCOPE REQUIRED FOR THIS PROJECT, WHICH MAY EXCEED MINIMUM CODE, LAW AND STANDARDS CRITERIA. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACKCHARGES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION AS REQUIRED FOR THE EXECUTION OF ALL WORK ASSOCIATED WITH THIS PROJECT. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF: 1) THE STATE BUILDING, ELECTRICAL, MECHANICAL, AND ENERGY CODES, 2) SMACNA, NFPA, ANSI/ASHRAE, ASME, UL, AND NEMA STANDARDS, 3) ALL OTHER APPLICABLE CODES, REGULATIONS, STANDARDS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENT AND OTHER AUTHORITIES HAVING JURISDICTION, AND 4) APPLICABLE BASE BUILDING STANDARDS AND SPECIFICATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING VIOLATIONS OF THESE CODES, STANDARDS, AUTHORITIES OR PERMITS SHALL BE CORRECTED BY THE CONTRACTOR.
- 7. INTERPRETATIONS OF DOCUMENTS: DUCTWORK AND PIPING ARE SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURER'S RECOMMENDATIONS, OR ARE UNCLEAR AS TO INTENT, OR REQUIRED MATERIAL QUALITY. ADVISE THE ENGINEER IN WRITING BEFORE PROCEEDING WITH THE WORK. ALL COST FOR REWORK NECESSARY TO RESOLVE DISCREPANCIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

- 8. REQUESTS FOR INFORMATION: ANY RFI FOR RESOLVING AN APPARENT CONFLICT OR UNCLEARITY, OR A REQUEST FOR ADDITIONAL DETAIL, SHALL INCLUDE A SKETCH OR EQUIVALENT DESCRIPTION OF CONTRACTOR'S PROPOSED SOLUTION.
- 9. SUBMITTALS: PROVIDE SPECIFIED ITEMS AND EQUIPMENT UNLESS "EQUAL" OR "APPROVED EQUAL" IS EXPLICITLY INDICATED ON THE DRAWINGS. DEVIATIONS TO SPECIFIED ITEMS SHALL BE AT THE SOLE RISK OF THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR ALL ASSOCIATED CHANGES TO THIS AND OTHER TRADES. REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER SHALL NOT ABSOLVE THE CONTRACTOR FROM MEETING THE FULL DESIGN INTENT OF THE ASSOCIATED SYSTEM(S). SUBMITTALS SHALL INDICATE PRIOR REVIEW AND APPROVAL BY THE RESPONSIBLE CONTRACTOR. SUBMIT SUBMITTALS FOR REVIEW ELECTRONICALLY VIA SMRT'S INFORMATION EXCHANGE PROGRAM OR OTHER MUTUALLY AGREED UPON FILE SHARING SOFTWARE: 1) AIR DISTRIBUTION LAYOUT DRAWINGS AND DETAILS, 2) PIPING DISTRIBUTION LAYOUT DRAWINGS, COMPONENTS, AND DETAILS, 3) ALL EQUIPMENT, 4) CONTROL SCHEMATICS, COMPONENTS, AND SEQUENCES, 5) BALANCING REPORTS, 6) ALL TEST REPORTS, AND 7) ALL CERTIFICATES. ALLOW ENGINEER A MINIMUM OF 10 WORKING DAYS FOR PROCESSING AND REVIEW OF EACH SUBMISSION.
- 10. OPERATION AND MAINTENANCE DATA: SUBMIT (3) SETS OF OPERATING AND MAINTENANCE MANUALS PRIOR TO THE COMPLETION OF THE PROJECT. O&M'S SHALL ACCURATELY INDICATE ALL PROVIDED ITEMS AND COMPONENTS OF THE EQUIPMENT - DO NOT SUBMIT GENERIC O&M WITHOUT INDICATING ALL OPTIONS, ACCESSORIES AND MODEL NUMBERS. PROVIDE ON-SITE DEMONSTRATION OF ALL SYSTEMS TO OWNER AFTER SYSTEMS ARE FULLY OPERATIONAL. O&M MANUALS SHALL INCLUDE ALL COMPONENTS (DIFFUSERS, VALVES, ETC.) AS WELL AS SYSTEM DESCRIPTIONS OF ALL SYSTEMS WITH FLOW DIAGRAMS, WIRING DIAGRAMS, WRITTEN WARRANTIES, RECOMMENDED SPARE PARTS AND ROUTINE MAINTENANCE REQUIREMENTS WITH RECOMMENDED INTERVALS FOR ALL MOVING EQUIPMENT AND CONTROLS.
- 11. RECORD DRAWINGS: CAD RECORD DRAWING FILES SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT SHOWING THE "AS-BUILT" CONDITION INCLUDING WORK INSTALLED AND ALL MODIFICATIONS OR ADDITIONS TO ORIGINAL DESIGN. OBTAIN THE AUTOCAD FILES FOR PREPARATION OF AS-BUILT DRAWINGS FROM THE ARCHITECT. THE ARCHITECT AND ENGINEER ARE NOT GRANTING ANY OWNERSHIP OR PROPERTY INTEREST IN THE CAD DRAWINGS BY THE DELIVERY OF THE CAD FILES. THE USE OF THE CAD FILES AND DRAWINGS ARE LIMITED FOR THE SOLE PURPOSE OF ASSISTING IN THE CONTRACTOR'S PERFORMANCE IN ITS CONTRACTUAL OBLIGATIONS WITH RESPECT TO THIS PROJECT. ANY REUSE AND/OR OTHER USE BY THE CONTRACTOR WILL BE AT THE CONTRACTOR'S SOLE RISK AND WITHOUT LIABILITY TO THE ARCHITECT AND ENGINEER.
- 12. WARRANTIES: WARRANTY INSTALLATION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. WHERE INDIVIDUAL EQUIPMENT SECTIONS SPECIFY LONGER WARRANTIES, PROVIDE THE LONGER WARRANTIES. REPAIR, REPLACE OR PROVIDE TEMPORARY ACCOMMODATIONS FOR DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN 24 HOURS OF NOTIFICATION. WARRANTY SHALL INCLUDE A CONTACT PERSON (NAME AND 24 HOUR TELEPHONE NUMBER) FOR SERVICE REQUESTS. CORRECT DAMAGE CAUSED WHILE MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER WARRANTY PERIOD AT NO ADDITIONAL COST.
- 13. COORDINATION: CONFER WITH ALL OTHER TRADES RELATIVE TO LOCATION OF ALL APPARATUS AND EQUIPMENT TO BE INSTALLED AND SELECT LOCATIONS SO AS NOT TO CONFLICT WITH OR HINDER THE PROGRESS OF THE WORK OF OTHER SECTIONS. WORK INSTALLED THAT CREATES INTERFERENCE OR RESTRICTS ACCESS REQUIRED BY CODE (INCLUDING CLEARANCES TO ELECTRICAL COMPONENTS) OR TO CONDUCT MAINTENANCE AND/OR ADJUSTMENTS SHALL BE MODIFIED AT NO ADDITIONAL COST TO THE OWNER.
- 14. SUPPORTS: INCLUDE ALL STRUCTURAL STEEL SUPPORTS, UNI-STRUT, HANGER BRACKETS, ETC., REQUIRED FOR THE EXECUTION OF THE WORK OF THIS SECTION. THE WELDS AND EDGES OF ALL BRACKETS SHALL BE FILED OR GROUND SMOOTH FOR PAINTING. HANGERS

- SHALL BE STEEL ANGLE IRON, CHANNEL OR STEEL ROD USED WITH APPROVED CLAMPS, INSERTS, ETC. ALL HANGERS SHALL BE GALVANIZED OR PAINTED WITH TWO COATS OF EPOXY RUST-RESISTANT PAINT BEFORE INSTALLATION. APPLY TOUCH-UP PAINT (ZINC GALVANIZING FOR GALVANIZED STEEL) AFTER INSTALLATION. SUPPORTS INSTALLED IN EXTERIOR LOCATIONS SHALL BE PVC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH STAINLESS STEEL HARDWARE.
- 15. CUTTING AND PATCHING: INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THE WORK OF THIS SECTION. STRUCTURAL ELEMENTS SHALL NOT BE CUT WITHOUT WRITTEN APPROVAL OF THE ARCHITECT. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL PRECAUTIONS REQUIRED TO IDENTIFY HIDDEN PIPING, CONDUITS, ETC. BEFORE ANY CORE DRILLING AND/OR CUTTING OF SLABS COMMENCES, INCLUDING X-RAYING THE AFFECTED SLABS. REPAIR AND PATCH AROUND THE WORK SPECIFIED HEREIN TO MATCH THE EXISTING ADJACENT SURFACES TO THE SATISFACTION OF THE ARCHITECT. FILL AND PATCH ALL OPENINGS OR HOLES LEFT IN THE EXISTING STRUCTURES BY THE REMOVAL OF EXISTING EQUIPMENT THAT IS PART OF THIS SECTION OF THE SPECIFICATIONS. PATCH AND SEAL ALL EXISTING OPENINGS IN DUCTWORK AND PIPING NOT UTILIZED FOR NEW LAYOUT. PROVIDE FIRE STOPPING TO MAINTAIN THE FIRE RATING OF THE FIRE RESISTANCE-RATED ASSEMBLY. ALL PENETRATIONS AND ASSOCIATED FIRE STOPPING SHALL BE INSTALLED IN ACCORDANCE WITH THE FIRE STOPPING MANUFACTURER'S LISTED INSTALLATION DETAILS AND BE LISTED BY UL OR FM.
- 16. HOISTING, SCAFFOLDING AND PLANKING: INCLUDE THE FURNISHING, SET-UP AND MAINTENANCE OF ALL HOISTING MACHINERY, CRANES, SCAFFOLDS, STAGING AND PLANKING AS REQUIRED FOR THE EXECUTION OF WORK FOR THIS SECTION.
- 17. SAFETY PRECAUTIONS: LIFE SAFETY AND ACCIDENT PREVENTION SHALL BE A PRIMARY CONSIDERATION. COMPLY WITH ALL OF THE SAFETY REQUIREMENTS OF THE OWNER AND OSHA THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. FURNISH, PLACE AND MAINTAIN PROPER GUARDS AND ANY OTHER NECESSARY CONSTRUCTION REQUIRED TO SECURE SAFETY OF LIFE AND PROPERTY.
- 18. ACCESSIBILITY: ALL WORK PROVIDED UNDER THIS SECTION OF THE SPECIFICATION SHALL BE INSTALLED SO THAT PARTS REQUIRING PERIODIC INSPECTION, MAINTENANCE AND REPAIR ARE READILY ACCESSIBLE. WORK OF THIS TRADE SHALL NOT INFRINGE UPON CLEARANCES REQUIRED BY EQUIPMENT OF OTHER TRADES.
- 19. PROTECTION OF WORK AND PROPERTY: THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND PROTECTION OF ALL WORK INCLUDED UNDER THIS SECTION UNTIL THE COMPLETION AND FINAL ACCEPTANCE OF THIS PROJECT. PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE FROM ALL CAUSES INCLUDING, BUT NOT LIMITED TO, FIRE, VANDALISM AND THEFT. ALL MATERIALS AND EQUIPMENT DAMAGED OR STOLEN SHALL BE REPAIRED OR REPLACED WITH EQUAL MATERIAL OR EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. PROTECT ALL EQUIPMENT, OUTLETS AND OPENINGS, AND ROOF PENETRATIONS WITH TEMPORARY PLUGS, CAPS AND COVERS. PROTECT WORK AND MATERIALS OF OTHER TRADES FROM DAMAGE THAT MIGHT BE CAUSED BY WORK OR WORKMEN UNDER THIS SECTION AND MAKE GOOD DAMAGE THUS CAUSED. DAMAGED MATERIALS ARE TO BE REMOVED FROM THE SITE. NO SITE STORAGE OF DAMAGED MATERIALS WILL BE ALLOWED. ANY DAMAGE TO EXISTING SYSTEMS AND EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.

PART 2 - PRODUCTS

- 1. DUCTWORK: DUCTWORK SHALL BE ASTM A653 GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, AND G90 ZINC COATING. MATERIAL, CONSTRUCTION, AND INSTALLATION SHALL MEET REQUIREMENTS OF MOST RECENT EDITIONS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS, EXCEPT FOR MORE STRINGENT REQUIREMENTS SPECIFIED OR SHOWN ON DRAWINGS. PROVIDE DUCTWORK 4" PRESSURE CLASS "A" AND SEAL CLASS "A". PROVIDE FLEXIBLE CONNECTION ON ALL DUCTS CONNECTING TO FANS AND ROTATING EQUIPMENT. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS. MAXIMUM LENGTH OF FLEXIBLE RUN-OUT TO DIFFUSERS SHALL BE 6 FEET. FOR LONGER RUN-OUTS, ADD RIGID DUCT. DUCTS SHALL BE CONSTRUCTED OF HOT DIPPED GALVANIZED STEEL UNLESS OTHERWISE NOTED. KITCHEN HOOD EXHAUST SHALL BE WELDED BLACK STEEL WHERE HIDDEN AND WELDED STAINLESS STEEL WHERE EXPOSED. DISHWASHER AND SHOWER EXHAUST DUCTWORK SHALL BE STAINLESS STEEL OR ALUMINUM. SEALED WATERTIGHT.
- 2. FIRE DAMPERS: PROVIDE DYNAMIC FIRE DAMPERS THROUGHOUT AIR SYSTEMS FOR ALL DUCTS PENETRATING FIRE RATED WALLS AND AS REQUIRED BY APPLICABLE CODES, STANDARDS, AND AUTHORITIES. STATIC FIRE DAMPERS SHALL ONLY BE ALLOWED ON SYSTEMS WITHOUT FANS. PROVIDE ACCESS DOOR FOR EACH FIRE DAMPER OF SUFFICIENT SIZE TO REPAIR INTERNAL LINK. FIRE DAMPERS SHALL BE AS MANUFACTURED BY GREENHECK, RUSKIN, ARROW, OR APPROVED EQUIV. DAMPER BLADES SHALL BE OUT OF AIR STREAM (UNLESS SIZE IS LARGER THAN AVAILABLE IN CURTAIN TYPE, THEN BLADE TYPE SHALL BE USED, SIMILAR TO FIRE/SMOKE DAMPERS. IF ACTUATORS ARE REQUIRED, MECHANICAL CONTRACTOR SHALL INCLUDE THE WIRING IN HIS COST.). DAMPERS SHALL BEAR 1-1/2 HOUR MINIMUM UL-RATING FIRE DAMPER LABEL AND BE CONSTRUCTED AND INSTALLED AS REQUIRED BY UL 555.
- 3. VOLUME DAMPERS: PROVIDE MANUAL ADJUSTABLE VOLUME DAMPERS, WITH EXTENDED MOUNT, INDICATING AND LOCKING SHROUPTS ON EACH TAKE-OFF TO REGISTER, GRILLE, OR DIFFUSER (NOT ALL MAY BE SHOWN ON DRAWINGS). INSTALL VOLUME DAMPERS IN ACCESSIBLE LOCATIONS BUT AS FAR AWAY FROM THE RGD IT SERVES AS POSSIBLE.
- 4. DIFFUSERS, REGISTERS, AND GRILLES: PROVIDE DIFFUSERS, REGISTERS AND GRILLES FOR SUPPLY, RETURN, AND EXHAUST OUTLETS, OF SIZE, TYPE, AND DESIGN SHOWN AND SCHEDULED ON DRAWINGS. DIFFUSER SIZES SHOWN ARE NECK SIZES; REGISTER AND GRILLE SIZE ARE NOMINAL. ACCEPTABLE MANUFACTURERS: TITUS, ANEMOSTAT, KRUEGER, TUTTLE & BAILEY, PRICE, OR METALFAIR. SOUND PRESSURE LEVELS ARE NOT TO EXCEED NC 30.
- 5. ACOUSTICAL SOUND LINING: MATERIALS AND INSTALLATION SHALL MEET THE FOLLOWING STANDARDS, AS APPLICABLE: NFPA-90A, UL723, NFPA-255; SMACNA DUCT LINER APPLICATIONS STANDARD; SMACNA MECHANICAL FASTENERS STANDARD; ADHESIVE AND SEALANT COUNCIL: ADHESIVES STANDARD FOR DUCT LINER - ASC-A-7001A; ASTM E-84 FIRE HAZARD CLASSIFICATIONS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED, AND 50 FUEL CONTRIBUTED. INSULATION SHALL HAVE A NOMINAL R-VALUE OF 4.0 AT 1" THICKNESS AND SHALL PASS UL 181 TESTS FOR MOLD GROWTH AND AIR EROSION. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. CONTRACTOR SHALL INCREASE DUCT SIZE FOR LINING. PROVIDE MINIMUM 1" THICK ACOUSTICAL LINING. SEAL ALL JOINTS WITH MANUFACTURER APPROVED MASTIC. USE SHEET METAL NOSING AT ALL RAW EDGES. FACTORY FABRICATED DOUBLE-WALL INTERNALLY INSULATED DUCT WITH PERFORATED PANEL MAY BE USED IN PLACE OF LINING. FIBER GLASS LINING SHALL BE JOHN MANVILLE PERMACOTE LINACOUSTIC OR EQUAL BY CERTAIN-TEED, KNAUF, OR OWENS CORNING.
- 7. DUCT INSULATION (EXTERNAL): INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA. MINIMUM DUCTWORK INSULATION THICKNESS SHALL BE AS REQUIRED TO MEET THE MINIMUM R-VALUES AS INDICATED IN THE APPLICABLE STATE BUILDING CODE. FOR CONCEALED INSULATION, USE FIBROUS GLASS DUCT WRAP WITH FOIL-KRAFT FLAME RESISTANT VAPOR BARRIER. WHERE DUCTWORK IS LINED, THE R-VALUE OF THE LINER CAN BE COMBINED WITH THE R-VALUE OF THE EXTERNAL DUCT INSULATION TO ACHIEVE THE STATE CODE MINIMUM.

- 8. WATER PIPING AND VALVES: PIPING 2-1/2" AND LARGER SHALL BE WELDED SCHEDULE 40 STEEL, 2" AND SMALLER SHALL BE SWEATED SCHEDULE 40 STEEL OR 95% SOLDERED TYPE L COPPER. CONDENSATE DRAIN PIPING SHALL BE COPPER, PROVIDE FLEX CONNECTORS (DOUBLE SPHERE) AT ALL CONNECTIONS TO ROTATING EQUIPMENT. PROVIDE DIELECTRIC FITTINGS EQUAL TO PPP CLEARFLOW TO CONNECT DISSIMILAR PIPING MATERIALS. VALVES SHALL HAVE NAME OF MANUFACTURER AND GUARANTEED WORKING PRESSURE CAST OR STAMPED ON BODIES. VALVES AND STRAINERS SHALL BE AS MANUFACTURED BY CRANE, HAMMOND, JENKINS, STOCKHOLM, MUELLER, APOLLO, WATTS, SARCO, OR MILWAUKEE. BALL VALVES SHALL BE USED ON 2" AND SMALLER WATER PIPING, BUTTERFLY USED ON 2-1/2" AND LARGER WATER PIPING. CALIBRATED COMBINATION BALANCING AND SHUT-OFF VALVES SHALL BE BY ARMSTRONG, BELL AND GOSSETT, FLOWSET, MEPCO, AUTOFLOW, MACON, OR TACO. PROVIDE DIFFERENTIAL PRESSURE METER KIT WITH FLOW CALIBRATION CHARTS. PROVIDE DRAIN VALVES AT LOW POINTS IN PIPING AND VALVED VENTS AT HIGH POINTS. STRAINERS SHALL BE "Y" TYPE (ALTERNATIVELY, NON-REDUCING SUCTION DIFFUSERS MAY BE USED ON PUMP INLETS), FULL SIZE OF ENTERING PIPE SIZE AND HAVE A MAXIMUM CLEAN PRESSURE DROP OF ONE PSID. STRAINERS SHALL INCLUDE BLOW DOWN VALVE. CHECK VALVES SHALL BE SWING TYPE EXCEPT. AUTOMATIC FLOW CONTROL VALVES SHALL BE BY GRISWOLD OR AUTOFLOW WHERE INDICATED ON THE DRAWINGS. VALVES SHALL BE FACTORY SET AND SHALL AUTOMATICALLY LIMIT THE RATE OF FLOW TO REQUIRED ENGINEERED CAPACITY WITHIN 5% ACCURACY OVER ITS CONTROL RANGE. PROVIDE DIFFERENTIAL PRESSURE METER KIT.
- 9. PIPE INSULATION: WATER PIPING INSULATION SHALL BE FIBROUS GLASS INSULATION WITH FACTORY-APPLIED FIRE RETARDANT VAPOR BARRIER JACKET WITH K FACTOR OF AT LEAST 0.23 AT 75 DEG. F MEAN TEMPERATURE BY OWENS CORNING, CERTAIN-TEED, MANVILLE, OR KNAUF. REFRIGERANT SUCTION LINES, HOT GAS BYPASS LINES, CONDENSATE DRAIN LINES, AND OUTDOOR LIQUID LINES SHALL BE INSULATED WITH UV RESISTANT RIGID CLOSED CELL FOAM INSULATION, EQUAL TO ARIMACELL APARMAFLEX OR HALSTEAD/NOVACO (INSULTUBE). HEAT PUMP REFRIGERANT PIPING SHALL HAVE BOTH LINES INSULATED, ASTM E-84 FIRE HAZARD RATINGS SHALL BE 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED. INSULATION THICKNESS SHALL BE AS INDICATED IN THE APPLICABLE STATE ENERGY CODE. ALL OUTDOOR PIPING SHALL BE COVERED WITH WEATHERPROOFED ALUMINUM JACKET.
- 10. PIPE HANGERS AND SUPPORTS: PROVIDE PIPE STANDS, SUPPORTS, HANGERS, AND OTHER SUPPORTING APPLIANCES AS NECESSARY TO SUPPORT WORK REQUIRED BY CONTRACT DOCUMENTS. SPACING OF HANGERS SHALL BE INSTRUCTED IN ACCORDANCE WITH APPLICABLE BUILDING AND MECHANICAL CODES. SIZE OF HANGERS SHALL INCLUDE THE PIPE INSULATION WITH SHIELD. WHERE HANGERS ARE USED OUTDOORS, THEY SHALL BE STAINLESS STEEL OR PVC COATED GALVANIZED STEEL.
- 11. FIRESTOPPING: PROVIDE ASBESTOS-FREE FIRESTOPPING MATERIAL CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, GASES, AND TEMPERATURE. PROVIDE NONCOMBUSTIBLE FIRESTOPPING THAT IS NONTOXIC TO HUMAN BEINGS DURING INSTALLATION OR DURING FIRE CONDITIONS. DEVICES AND EQUIPMENT FOR FIRESTOPPING SERVICE SHALL BE UL FRD LISTED OR FM P7825 APPROVED FOR USE WITH APPLICABLE CONSTRUCTION, AND PENETRATING ITEMS. MATERIAL SHALL HAVE A FLAME SPREAD OF 25 OR LESS, A SMOKE DEVELOPED RATING OF 50 OR LESS WHEN TESTED IN ACCORDANCE WITH UL 723 OR UL LISTED AND EXCEPTED. FIRESTOPPING MATERIALS SHALL BE UL FRD LISTED OR FM P7825 APPROVED FOR "F" AND "T" RATING AT LEAST EQUAL TO FIRE-RATING OF FIRE WALL OR FLOOR IN WHICH PENETRATED OPENINGS ARE TO BE PROTECTED, EXCEPT THAT "F" AND "T" RATINGS MAY BE 3 HOURS FOR FIRESTOPPING IN THROUGH-PENETRATIONS OF 4-HOUR FIRE RATED WALL OR FLOOR.
- 12. VARIABLE AIR VOLUME BOXES: PROVIDE BOXES BY PRICE, TITUS, ENVIROTEC, TRANE, KRUEGER, OR ANEMOSTAT. ALL BOXES SHALL HAVE PRESSURE INDEPENDENT CONTROLLERS COMPATIBLE WITH THE CONTROL SYSTEM AND MULTIPLE POINT FLOW SENSORS. UNITS SHALL NOT DEVIATE FROM SET MINIMUM OR MAXIMUM FLOW SETTINGS BY MORE THAN 10%, REGARDLESS OF INLET ANGLE. INLET VELOCITIES SHALL NOT EXCEED 2000 FPM. SOUND DATA SHALL BE CERTIFIED IN ACCORDANCE WITH ADC STANDARD 1062. BOX AIR LEAKAGE SHALL NOT BE MORE THAN 2% OF MAXIMUM AIRFLOW. INSULATION SHALL BE HOSPITAL GRADE FOAM TYPE. PROVIDE INTEGRAL REHEAT COILS OF TYPE AND CAPACITY INDICATED ON DRAWINGS.
- 13. SPLIT SYSTEM DIRECT EXPANSION AIR CONDITIONING: PROVIDE COMPLETE DX SYSTEM FOR CENTRAL STATION AIR CONDITIONING UNITS OF TYPES, SIZES, AND CAPACITIES SHOWN ON SCHEDULES. SYSTEM SHALL CONSIST OF MATCHING AIR COOLED CONDENSING UNITS, COMPRESSORS, INSULATED PIPING (SIZED BY THE MANUFACTURER FOR THE INSTALLATION CONDITIONS - INCLUDING DOUBLE SUCTION RISERS WHERE NEEDED), CONTROLS PER THE SEQUENCES ON THE DRAWINGS, WIRING, AND OTHER ACCESSORIES AND APPURTENANCES NECESSARY TO PROVIDE FULLY AUTOMATICALLY FUNCTIONING SYSTEM. DX AIR CONDITIONING SYSTEM SHALL BE CAPABLE OF STARTING AND OPERATING DOWN TO 0°F AMBIENT. PROVIDE TIME DELAY RELAY FOR TIMED BYPASS OF THE LOW PRESSURE SWITCH OR OTHER MEANS TO START CONDENSING UNIT AT 0 DEG. F WITHOUT NUISANCE SAFETY TRIP UNITS. UNITS SHALL HAVE THE SCHEDULED NUMBER OF STAGES (AT LEAST ONE PER COMPRESSOR) OF COOLING (PLUS, FOR VAV UNITS, HOT GAS BY-PASS FOR EACH REFRIGERANT CIRCUIT). PROVIDE INSULATED REFRIGERANT PIPING BETWEEN AIR-COOLED CONDENSING UNIT AND AIR HANDLING UNIT. PROVIDE ALL NECESSARY AUXILIARIES AND APPURTENANCES.
- 14. AUTOMATIC TEMPERATURE CONTROLS: PROVIDE COMPLETE SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS BY MAINE CONTROLS (DISTECH PRODUCT). CONTROL SYSTEM SHALL BE CAPABLE OF PERFORMING ALL SEQUENCES OF OPERATION SHOWN ON THE DRAWINGS OR DESCRIBED IN THESE SPECIFICATIONS. INDIVIDUAL CONTROL COMPONENTS MAY NOT BE SHOWN ON CONTRACT DOCUMENTS, BUT ATC CONTRACTOR SHALL SUPPLY ALL COMPONENTS AND CONTROL WIRING (INCLUDING POWER WIRING TO ALL PANELS, CONTROLLERS, TRANSFORMERS, ACTUATORS, ETC.) NECESSARY FOR A COMPLETE OPERABLE SYSTEM. COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF LINE VOLTAGE JUNCTION BOX IN EACH MECHANICAL AREA. ATC CONTRACTOR SHALL EXTEND WIRING FROM THESE BOXES) TO ALL CONTROL COMPONENTS AND SHALL BE RESPONSIBLE FOR ALL SYSTEM COMPONENTS, WHETHER HE SUBCONTRACTS ELECTRICAL AND OTHER WORK OR NOT. PROVIDE FRONT END WORKSTATION, INCLUDING MONITOR, TOWER, PRINTER, SOFTWARE, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. DDC SYSTEM SHALL BE PASSWORD PROTECTED WEB-BASED SYSTEM AND BE VIEWABLE VIA ANY COMPUTER THROUGH THE INTERNET. PROVIDE NEW MAIN CONTROLLER(S) AND EQUIPMENT CONTROLLERS, WIRING, SOFTWARE, HARDWARE AND INFRASTRUCTURE CAPABLE OF BEING SCALABLE TO ULTIMATELY CONTROL THE EXISTING BUILDING. GRAPHICALLY SHOW FLOOR PLANS AND ROOMS WITH POINT AND CLICK FUNCTIONS TO SHOW INFORMATION DESCRIBED IN SEQUENCES ON WEB BASED SYSTEM.
- 18. DDC/BUILDING AUTOMATION SYSTEM INTERFACE:
 - 18.1. ALL COMPONENTS MUST BE COMPATIBLE WITH EXISTING OUTPUT DEVICES. PROVIDE HAND HELD OPERATOR TERMINALS FOR LOCAL OUTPUT OF SENSORS WHEN NO OUTPUT DEVICES EXIST. PROVIDE TO OWNER FULL OPERATING AND MAINTENANCE INSTRUCTIONS FOR USE AND/OR ALTERATION OF DDC SYSTEMS.
 - 18.2. LOCAL CONTROL UNITS (LCU'S) (PRIMARY SYSTEMS SUCH AS AHU, VAV, BOILER, WATER SYSTEMS):
 - 18.2.1. ALL LOCAL CONTROL UNITS SHALL USE BACNET/IP PROTOCOL (NOT MS/TP), SHALL COMPLY WITH THE FOLLOWING COMMUNICATION SPECIFICATIONS, AND ACHIEVE PERFORMANCE AS SPECIFIED HEREIN:
 - 18.2.1.1. ALL CONTROLLERS SHALL BE ABLE TO COMMUNICATE PEER-TO-PEER WITHOUT THE NEED FOR A NETWORK CONTROL UNIT (NCU)

- 18.2.1.1. ANY CONTROLLER ON THE ETHERNET DATA LINK/PHYSICAL LAYER SHALL BE ABLE TO ACT AS A MASTER TO ALLOW FOR THE EXCHANGE AND SHARING OF DATA VARIABLES AND MESSAGES WITH ANY OTHER CONTROLLER CONNECTED ON THE SAME COMMUNICATION CABLING. SLAVE CONTROLLERS ARE NOT ACCEPTABLE.
- 18.2.2. THE LOCAL CONTROL UNITS (LCU) SHALL BE 32-BIT MICROPROCESSOR-BASED WITH MINIMUM OF 4GB NON-VOLATILE FLASH. THEY SHALL ALSO BE MULTI-TASKING, REAL-TIME DIGITAL CONTROL PROCESSORS CONSISTING OF MODULAR HARDWARE WITH PLUG-IN ENCLOSED PROCESSORS, COMMUNICATION CONTROLLERS, POWER SUPPLIES AND INPUT/OUTPUT POINT MODULES.
- 18.2.3. THE LCU SHALL CONTINUOUSLY PERFORM SELF-DIAGNOSTICS, COMMUNICATION DIAGNOSIS AND DIAGNOSIS OF ALL PANEL COMPONENTS. THE CONTROLLER SHALL PROVIDE BOTH LOCAL AND REMOTE ANNUNCIATIONS OF ANY DETECTED COMPONENT FAILURES OR REPEATED FAILURE TO ESTABLISH COMMUNICATION.
- 18.2.4. WIRELESS PORT SUPPORTING A WIRELESS TRANSCEIVER FOR COMMUNICATION WITH WIRELESS SENSORS/SWITCHES.
- 18.2.5. BAS SHALL BE INTEGRATED TO THE EXISTING NIAGARA 4 SUPERVISOR SERVER ON THE BANGOR SAVINGS FACILITIES NETWORK
- 18.2.6. ACCEPTABLE PRODUCTS:
- 19. AUTOMATIC TEMPERATURE CONTROL WIRING, CONDUITS AND CABLE
 - A. ALL WIRING SHALL BE COPPER AND MEET THE REQUIREMENTS OF THE NEC.
 - B. RACEWAYS AND CONDUIT: RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE UTILIZED WITH THREADED FITTINGS ONLY. ELECTRICAL METALLIC TUBING (EMT) SHALL BE UTILIZED WITH SET SCREW TYPE FITTINGS.
 - B.A. CONDUIT IN FINISHED AREAS SHALL BE CONCEALED IN CEILING CAVITY SPACES, PLENUMS, FURRED SPACES AND WALL CONSTRUCTION. EXCEPTION: METALLIC SURFACE RACEWAY MAY BE USED IN FINISHED AREAS ON MASONRY WALLS. ALL SURFACE RACEWAY IN FINISHED AREAS MUST BE COLOR MATCHED TO THE EXISTING FINISH WITHIN THE LIMITATIONS OF STANDARD MANUFACTURED COLORS.
 - B.B. CONDUIT IN NON-FINISHED AREAS WHERE POSSIBLE, SHALL BE CONCEALED IN CEILING CAVITY SPACES, PLENUMS, FURRED SPACES, AND WALL CONSTRUCTION. EXPOSED CONDUIT WILL RUN PARALLEL TO OR AT RIGHT ANGLES TO THE BUILDING STRUCTURE.
 - C. ALL EXPOSED RACEWAY THAT IS EXPOSED TO MOISTURE OR LOCATED OUTDOORS SHALL BE INSTALLED IN RIGID METAL CONDUIT WITH FLEXIBLE CONNECTIONS TO ALL MECHANICAL EQUIPMENT UTILIZING LIQUID TIGHT FLEXIBLE METAL CONDUIT NOT TO EXCEED 18". ALL PENETRATIONS OF WEATHER TIGHT BOXES SHALL UTILIZE WEATHERPROOF HUBS. ALL CONDUIT SUPPORTS SHALL BE HOT DIPPED GALVANIZED. EXPOSED HORIZONTAL RUNS SHALL BE MINIMIZED. ALL FASTENERS, MISCELLANEOUS SUPPORTS (UNISTRUT OR EQUAL) AND HARDWARE UTILIZED FOR THE WIRING INSTALLATION SHALL BE STAINLESS STEEL. ALL ROOF PENETRATIONS SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURER'S INSTRUCTIONS TO MAINTAIN THE INTEGRITY AND ANY REMAINING WARRANTY ON THE ROOFING SYSTEM.
 - D. FLEXIBLE METALLIC CONDUIT (MAX. 3 FEET) SHALL BE USED FOR CONNECTIONS TO ACTUATOR MOTORS, CONTROLLERS, AND SENSORS MOUNTED ON VIBRATION PRODUCING EQUIPMENT. LIQUID-TIGHT FLEXIBLE CONDUIT SHALL BE USED IN EXTERIOR LOCATIONS AND INTERIOR LOCATIONS SUBJECT TO MOISTURE.
 - E. JUNCTION BOXES SHALL BE PROVIDED AT ALL CABLE SPLICES. EQUIPMENT TERMINATION, AND TRANSITIONS FROM EMT TO FLEXIBLE CONDUIT, INTERIOR DRY LOCATION J-BOXES SHALL BE GALVANIZED PRESSED STEEL, NOMINAL FOUR-INCH SQUARE WITH BLANK COVER. EXTERIOR AND DAMP LOCATION JH-BOXES SHALL BE CAST ALLOY FS BOXES WITH THREADED HUBS AND GASKETED COVERS.
 - F. WHERE THE SPACE ABOVE THE CEILING IS A SUPPLY OR RETURN AIR PLENUM, THE WIRING SHALL BE PLENUM RATED. TEFLO WIRING CAN BE RUN WITHOUT CONDUIT ABOVE SUSPENDED CEILINGS. EXCEPTION: ANY WIRE RUN IN SUSPENDED CEILINGS THAT IS USED TO CONTROL OUTSIDE AIR DAMPERS OR TO CONNECT THE SYSTEM TO THE FIRE MANAGEMENT OR SMOKE CONTROL SYSTEMS SHALL BE IN CONDUIT.
 - G. COAXIAL CABLE SHALL CONFORM TO RG62 OR RG59 RATING. PROVIDE PLENUM RATED COAXIAL CABLE WHEN RUNNING IN RETURN AIR PLENUMS.
 - H. ETHERNET 10/100 BASE-T NETWORK WIRING SHALL BE EQUIVALENT TO OWNER'S REMISE WIRING OR, AS A MINIMUM, CATEGORY 5E OR 6 CABLING UP TO 300' MAXIMUM RUN. FIBER OPTIC CABLE SHALL BE USED FOR RUNS OVER 300' AND SHALL INCLUDE THE FOLLOWING SIZES: 50/125, 62.5/125 OR 100/140. ONLY GLASS FIBER IS ACCEPTABLE, NO PLASTIC. FIBER OPTIC CABLE SHALL ONLY BE INSTALLED AND TERMINATED BY AN EXPERIENCED CONTRACTOR. THE BAS CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME OF THE INTENDED CONTRACTOR OF THE FIBER OPTIC CABLE WITH HIS SUBMITTAL DOCUMENTS.
 - I. CABLES SHALL BE ATTACHED TO THE BUILDING PROPER AT REGULAR INTERVALS SUCH THAT THERE IS NO DROOP GREATER THAN 2 INCHES BETWEEN SUPPORTS. CABLES SHALL NOT TO BE AFFIXED TO OR SUPPORTED BY PIPES, CONDUITS (UNLESS SPECIFICALLY ALLOWED BY THE NEC), DUCTS, ETC. WIRES SHALL BE KEPT A MINIMUM OF THREE (3) INCHES FROM ALL PIPING.
 - J. WHERE SENSOR WIRES LEAVE THE CONDUIT SYSTEM, THEY ARE TO BE PROTECTED BY A NON-METALLIC BUSHING.
 - K. WIRING SHALL NOT BE ALLOWED TO RUN THROUGH ELEVATOR, TELEPHONE EQUIPMENT, AND ELECTRIC ROOMS.

(CONTINUED ON M-003)

NOTE:

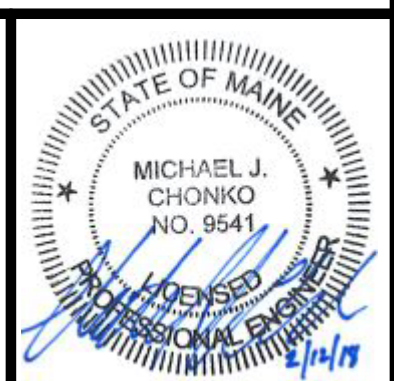
- 1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

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MECHANICAL SPECIFICATIONS
M-002

PART 2 - PRODUCTS - (CONTINUED FROM M-002)

20. PROVIDE AUTOMATIC CONTROL VALVES SUITABLE FOR THE SPECIFIED CONTROLLED MEDIA (WATER OR GLYCOL). PROVIDE VALVES THAT MATE AND MATCH THE MATERIAL OF THE CONNECTED PIPING. EQUIP CONTROL VALVES WITH MATCHING ACTUATORS OF REQUIRED INPUT POWER TYPE AND CONTROL SIGNAL TYPE TO ACCURATELY POSITION THE FLOW CONTROL ELEMENT AND PROVIDE SUFFICIENT FORCE TO CLOSE AGAINST THE MAXIMUM ANTICIPATED PRESSURE. NON-PIACV'S SHALL BE GLOBE, BUTTERFLY (OPEN-CLOSED ONLY), HIGH PERFORMANCE BUTTERFLY (OPEN-CLOSED OR MODULATING WITH CV AT 2/3 OPEN), OR CHARACTERIZED BALL TYPE CONSTRUCTED FOR THE SYSTEMS FLUID AND TEMPERATURE/ PRESSURE LIMITS. VALVES SHALL BE MANUFACTURED BY ONE OF THE LISTED MANUFACTURERS PROVIDING THEY MEET ALL SPECIFIED REQUIREMENTS: BELIMO, BRAY, DELTA P VALVE, GRISWOLD, BELL & GOSSETT, FISHER, HONEYWELL, JOHNSON, OR SIEMENS/STAEFA. EACH PRESSURE INDEPENDENT (PI) AUTOMATIC CONTROL VALVE (ACV) IS A TWO-PART VALVE. THESE VALVES SHALL BE SELF BALANCING (PRESSURE INDEPENDENT) OVER A MINIMUM OPERATING RANGE ACROSS BOTH PARTS OF THE VALVE ASSEMBLY OF 6 TO 45 PSID, WHERE FLOW RATES ARE HIGHER THAN ONE PIACV CAN HANDLE. THE USE OF UP TO 3 PARALLEL PIACV'S TO ACHIEVE THE RATED COIL FLOW SHALL BE PERMITTED PROVIDING EACH IS INSTALLED WITH A UNION AND THE CONTROL OF THE PARALLEL VALVES IS SEQUENTIAL, EITHER BY SOFTWARE WITH A SINGLE OUTPUT OR BY INDIVIDUAL OUTPUTS PER VALVE. PIACV'S SHALL HAVE A MINIMUM 2-YEAR UNCONDITIONAL WARRANTY ON PARTS AND LABOR. TWO-POSITION (OPEN/CLOSE) VALVES SHALL BE FULL LINE SIZED. UNLESS SPECIFIED ELSEWHERE, THE MAXIMUM PRESSURE DROP FOR MODULATING WATER/GLYCOL SYSTEM CONTROL VALVES SHALL BE 6 PSI FOR PIACV'S (INCLUDING BOTH SECTIONS) OR 4 PSI (MINIMUM PRESSURE DROP SHALL BE 1 PSI) FOR NON-PIACV CONTROL VALVES (AS THESE WILL HAVE A SEPARATE BALANCING VALVE PRESSURE DROP).

PART 3 - EXECUTION

1. DEMOLITION: THE EXISTING FACILITY WILL CONTINUE TO OPERATE DURING ALL PHASES OF THE DEMOLITION WORK AND SUBSEQUENT CONSTRUCTION. NO INTERRUPTION OF THE SYSTEMS WILL BE PERMITTED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE. SUBMIT PROPOSED METHODS AND SEQUENCE OF OPERATIONS FOR THE SELECTIVE DEMOLITION WORK TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO THE START OF THE WORK. ANY DEMOLITION SHALL BE COORDINATED WITH OWNER, ARCHITECT, CM/GC, AND ENGINEER. PERFORM ALL DEMOLITION WHILE ENSURING MINIMUM INTERFERENCE WITH ADJACENT OCCUPIED AREAS.
2. INSTALLATION OF EQUIPMENT: INSTALL ALL ITEMS SPECIFIED UNDER PART 2 - PRODUCTS, ACCORDING TO THE MANUFACTURER'S REQUIREMENTS, SHOP DRAWINGS, AND DETAILS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. INSTALL ALL WORK SO THAT PARTS REQUIRING INSPECTION, REPLACEMENT, MAINTENANCE AND REPAIR SHALL BE READILY ACCESSIBLE. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT ANY SUBSTANTIAL CHANGE SHALL NOT BE MADE WITHOUT PRIOR WRITTEN OWNER APPROVAL.
3. IDENTIFICATION: ALL EQUIPMENT, PIPING, VALVES, DUCTWORK, AND FIRE, SMOKE, AND FIRE/SMOKE DAMPERS PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE MARKED FOR EASE OF IDENTIFICATION PER OWNER'S OR INDUSTRY STANDARDS.
4. PIPE EXPANSION: THE EXPANSION OF SUPPLY AND RETURN PIPES SHALL BE PROVIDED FOR BY CHANGES IN THE DIRECTION OF THE RUN OF PIPE, BY EXPANSION LOOPS, OR BY EXPANSION JOINTS AS REQUIRED.
5. CLEANING: DUCTS SHALL BE THOROUGHLY CLEANED SO THAT NO DIRT OR DUST SHALL BE DISCHARGED FROM DIFFUSERS, REGISTERS, OR GRILLES, WHEN SYSTEM IS OPERATED. AFTER ALL WATER PIPING SYSTEMS HAVE BEEN PRESSURE TESTED AND APPROVED FOR TIGHTNESS, CLEAN AND FLUSH PIPING. AFTER COMPLETION OF PROJECT, CLEAN EXTERIOR SURFACES OF ALL EQUIPMENT INCLUDED IN THIS SECTION, INCLUDING REMOVAL OF CONCRETE RESIDUE. AFTER COMPLETION OF PROJECT, REMOVE ALL CONSTRUCTION DEBRIS, TEMPORARY FACILITIES AND EQUIPMENT FROM WORK AREA. CLEAN WORK AREA TO PERMIT OCCUPATION.
6. TESTING AND INSPECTION: PROVIDE QUALIFIED PERSONNEL, EQUIPMENT, APPARATUS, AND SERVICES FOR TESTING AND INSPECTION OF MECHANICAL SYSTEMS. DO NOT COVER OR CONCEAL WORK BEFORE TESTING AND INSPECTION AND OBTAINING APPROVAL. MEDIUM PRESSURE DUCTWORK SHALL BE LEAKAGE TESTED WHERE CALLED FOR ON THE DUCT CONSTRUCTION AND LEAKAGE CLASS SCHEDULE. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT 125% OF DESIGN PRESSURE (125 PSIG MINIMUM). TESTS SHALL BE FOR A FOUR-HOUR DURATION, DURING WHICH TIME PIPING SHALL SHOW NO LEAKS AND DURING WHICH TIME NO SEALING OF LEAKS WILL BE PERMITTED. ANY EQUIPMENT NOT CAPABLE OF WITHSTANDING TEST PRESSURES SHALL BE SUITABLY ISOLATED FROM THE TEST PRESSURE. LEAKS, DAMAGE, AND DEFECTS DISCOVERED OR RESULTING FROM TESTING SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TESTS SHALL BE CONTINUED UNTIL SYSTEMS OPERATE WITHOUT LEAKS OR REPAIRS. REPORT ON INDUSTRY STANDARD REPORTING FORMS, SUBMITTED FOR APPROVAL IN ADVANCE. SUBMIT SIX COPIES OF TESTING REPORTS FOR APPROVAL. CONTRACTOR SHALL FURNISH ALL TEST MEDIUMS AND DISPOSE OF ALL TEST MEDIUMS AT AN APPROVED OFF SITE LOCATION AFTER TESTING IS COMPLETE.
7. CONTROLS START UP AND TESTING: EACH POINT IN THE CONTROL SYSTEM SHALL BE TESTED FOR BOTH HARDWARE AND SOFTWARE FUNCTIONALITY (INCLUDING ALARMS AND GRAPHICS) AND SHALL BE TESTED AGAINST THE APPROPRIATE SEQUENCE OF OPERATION. A WRITTEN REPORT SHALL BE SUBMITTED TO THE OWNER INDICATING THAT THE INSTALLED SYSTEM FUNCTIONS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
8. START UP AND BALANCING: PROVIDE NEBB, AABC, OR NBI CERTIFIED PERSONNEL, EQUIPMENT, APPARATUS, AND SERVICES FOR START-UP AND BALANCING OF MECHANICAL SYSTEMS TO PERFORMANCE DATA SHOWN IN SCHEDULES AND ON DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODES, STANDARDS, REGULATIONS, AND AUTHORITIES HAVING JURISDICTION INCLUDING CITY INSPECTORS. AIR AND WATER FLOWS SHALL BE BALANCED TO +/- 10% OF DESIGN. LEAKS, DAMAGE, AND DEFECTS DISCOVERED OR RESULTING FROM START-UP AND BALANCING SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TESTS SHALL BE CONTINUED UNTIL SYSTEM OPERATES WITHOUT ADJUSTMENTS OR REPAIRS. REPORT DATA ON INDUSTRY STANDARD NEBB, AABC, OR NBI REPORTING FORMS. AIR TERMINAL UNIT DATA SHALL INCLUDE ALL PRIMARY AIRFLOWS (MAXIMUM, MINIMUM AND HEATING). BALANCE CONTRACTOR SHALL COORDINATE WITH ATC CONTRACTOR AND/OR BUILDING ATC OPERATOR TO SIMULATE EXISTING BOXES IN PHASE 2 (FUTURE) OPEN OR CLOSED AS REQUIRED TO BALANCE NEW VAV BOXES AND THEIR SCHEDULED AIRFLOWS. SUBMIT SIX COPIES OF START-UP AND BALANCING REPORTS TO ARCHITECT FOR APPROVAL. PRIOR TO THE START OF DEMOLITION, THE TESTING AND BALANCING CONTRACTOR SHALL TAKE CFM AND STATIC PRESSURE READINGS AT AREAS DESIGNATED ON THE CONTRACT DRAWINGS. READINGS SHALL BE SUBMITTED PRIOR TO START OF NEW WORK.
9. PROJECT CLOSEOUT:
 - 9.1. THE CONTRACTORS SHALL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH PROJECT CLOSEOUT. ALLOW SUFFICIENT TIME IN THE CONSTRUCTION SCHEDULE TO ENSURE THAT THE INSTALLATION IS SUBSTANTIALLY COMPLETE AND ALL REQUIRED TESTING AND ACCURATELY COMPLETED DOCUMENTATION IS DELIVERED

TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO ENGINEER'S SUBSTANTIAL COMPLETION SITE VISIT.

- 9.2. PROVIDE CERTIFICATES OF INSPECTIONS FROM EQUIPMENT MANUFACTURERS FOR ALL COMPRESSORIZED EQUIPMENT, BOILERS AND FLUES, AND EQUIPMENT WITH MOTORS 5 HP AND LARGER STATING THAT THE AUTHORIZED FACTORY REPRESENTATIVES HAVE INSPECTED AND TESTED THE OPERATION OF THEIR RESPECTIVE EQUIPMENT AND FOUND THE EQUIPMENT TO BE IN SATISFACTORY OPERATING CONDITION AND INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTION REQUIREMENTS.
- 9.3. PROVIDE BACKUP DOCUMENTATION TO VERIFY THAT ALL FIRE DAMPERS AND SMOKE/FIRE DAMPERS HAVE BEEN INSTALLED PER MANUFACTURERS REQUIREMENTS AND THAT ALL FUNCTION PROPERLY.
- 9.4. PROVIDE BACKUP DOCUMENTATION TO VERIFY THAT ALL SEQUENCES OF OPERATIONS AND CONTROLS HAVE BEEN INCORPORATED AND ALL SYSTEMS AND EQUIPMENT ARE WORKING PER THE SPECIFIED SEQUENCES OF OPERATIONS.
- 9.5. PROVIDE BACKUP DOCUMENTATION THAT ALL DUCT AND PIPING LEAKAGE AND PRESSURE TESTS HAVE BEEN CONDUCTED AND THAT ALL SYSTEMS HAVE PASSED. PROVIDE START-UP AND BALANCING REPORTS FOR ALL AIR AND WATER SYSTEMS. AIR BALANCING REPORT SHALL VERIFY THE DESIGN OUTDOOR AIR IS BEING SUPPLIED TO THE BUILDING.
- 9.6. SUBSTANTIAL COMPLETION SITE VISIT BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT AND REVIEW OF THE CONTRACTOR'S CERTIFICATE OF COMPLETION AND ALL CODE MANDATED TEST REPORTS AND SUBMISSIONS LISTED ABOVE. SUBSTANTIAL COMPLETION SITE VISITS SHALL NOT BE REQUESTED UNTIL THE PROJECT IS SUBSTANTIALLY COMPLETE.
- 9.7. PREMATURE REQUESTS THAT REQUIRE ADDITIONAL/FOLLOWUP SITE VISITS BY THE ENGINEER OF DEFICIENT ITEMS (AREAS INCOMPLETE, SYSTEMS NOT OPERATIONAL, ETC) WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH ANY ADDED VISITS.

NOTE:

1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

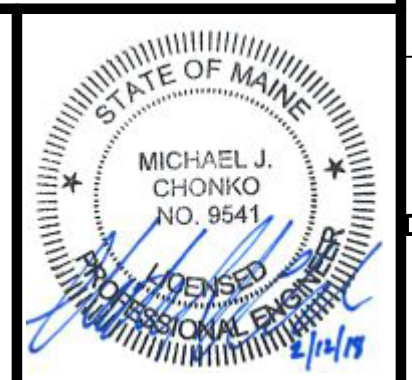
NO.	DATE	DESCRIPTION
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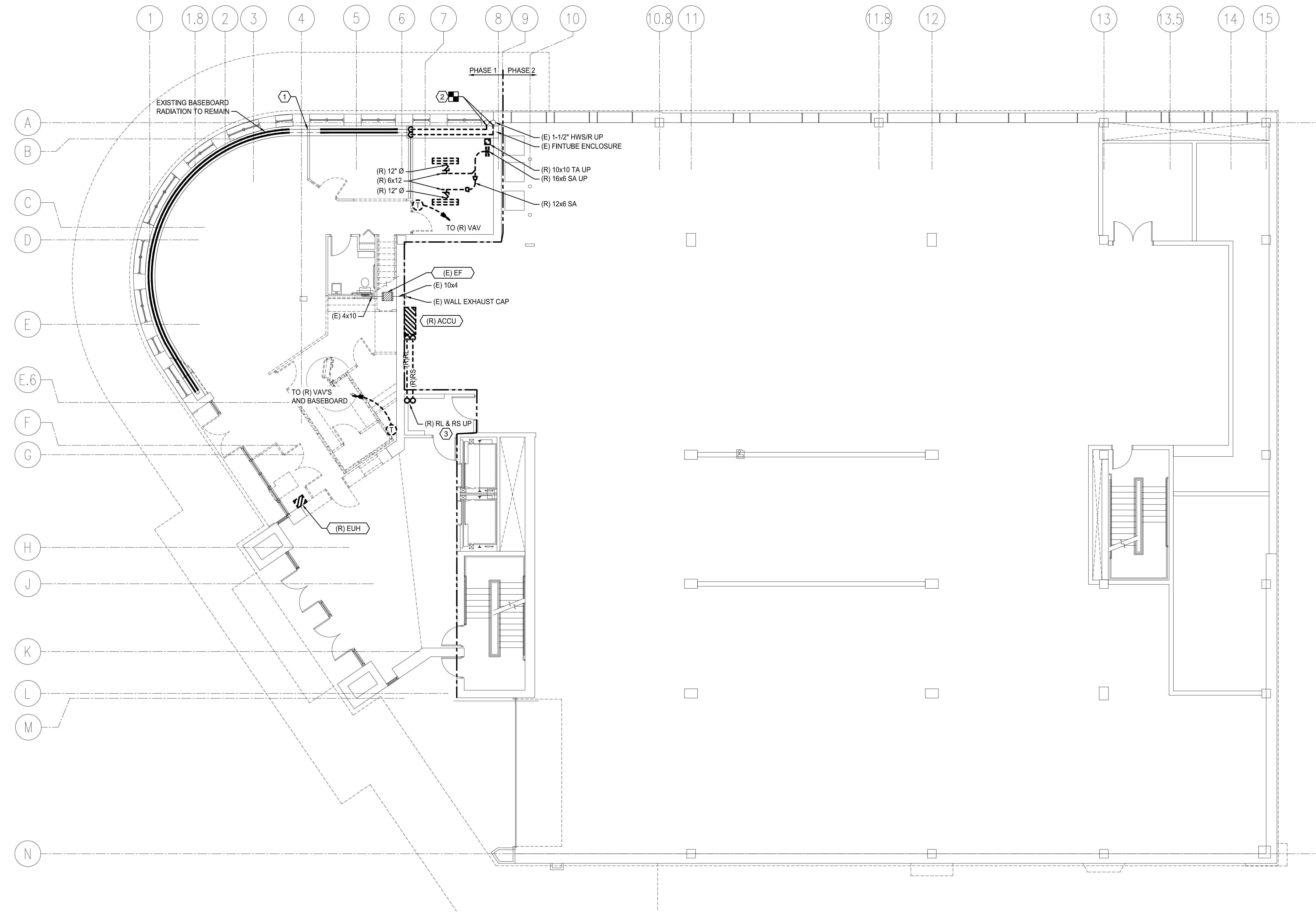


BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

PROJECT NO: 17231
CAD DWG FILE: M-003-17231
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SHEET TITLE
**MECHANICAL
SPECIFICATIONS**

M-003



NOTE:
 1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

DEMOLITION KEYNOTES

KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	DEMOLISH EXISTING POST MOUNT BASEBOARD RADIATION AND 1-1/4" PIPING AS REQUIRED TO ZONE AND PERFORM NEW WORK. (STERLING MODEL "PM" 2 ROW BB3)
2	REMOVE EXISTING 1-1/2" HWS/R PIPING AS REQUIRED TO ZONE AND PERFORM NEW WORK.
3	REMOVE RS & RL PIPING UP INTO CEILING ABOVE AND CAP. CAPTURE ALL EXISTING REFRIGERANT FOR RECYCLING PER EPA STANDARDS.

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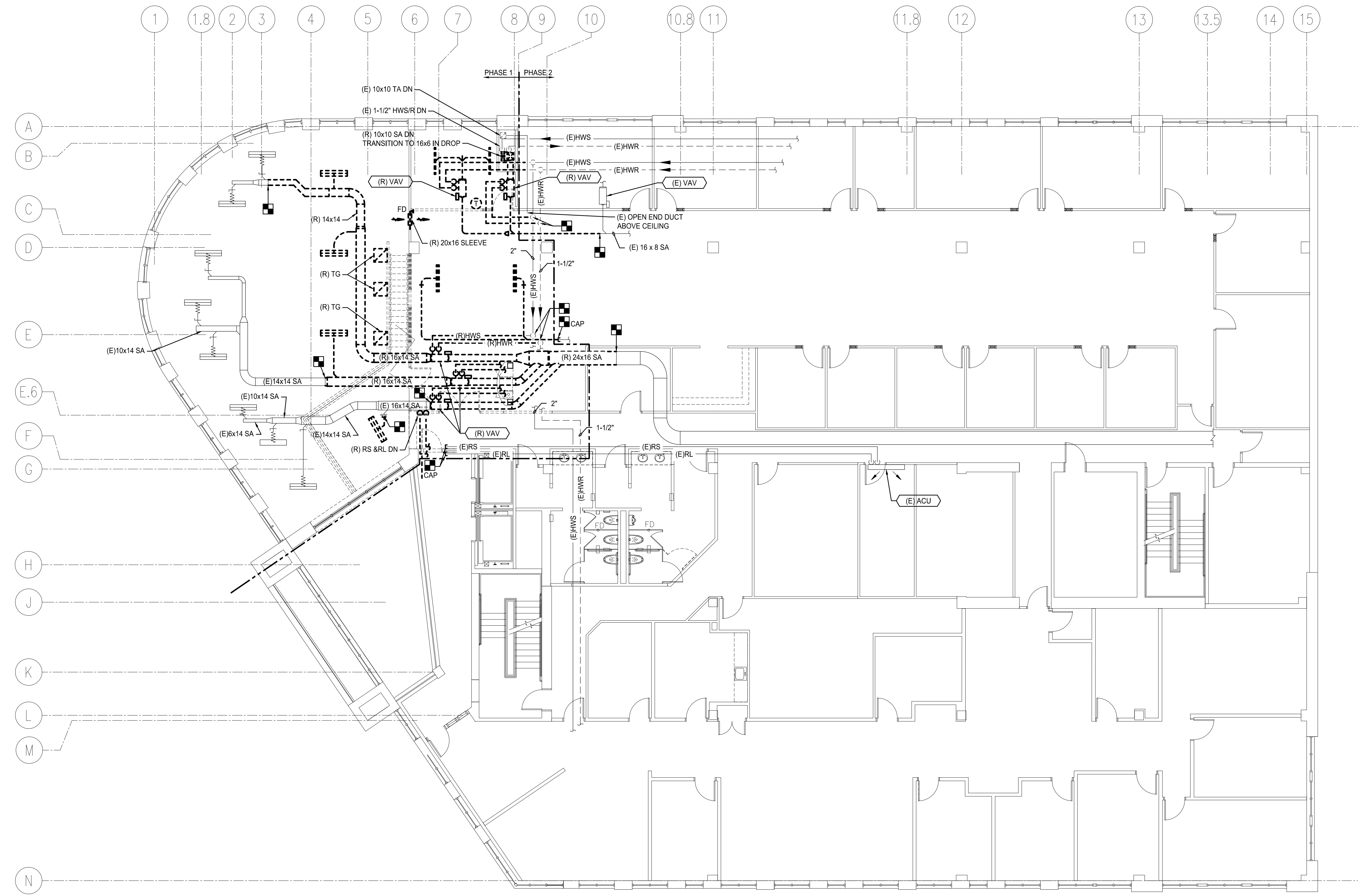
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PROJECT NO: 17231
 CAD DWG FILE: MD101-17231
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SHEET TITLE
FIRST FLOOR MECHANICAL DEMOLITION PLAN - PHASE 1

MD101

A1 FIRST FLOOR MECHANICAL DEMOLITION PLAN
 1/8" = 1'-0"



A1 SECOND FLOOR MECHANICAL DEMOLITION PLAN
1/8" = 1'-0"

NOTE:
1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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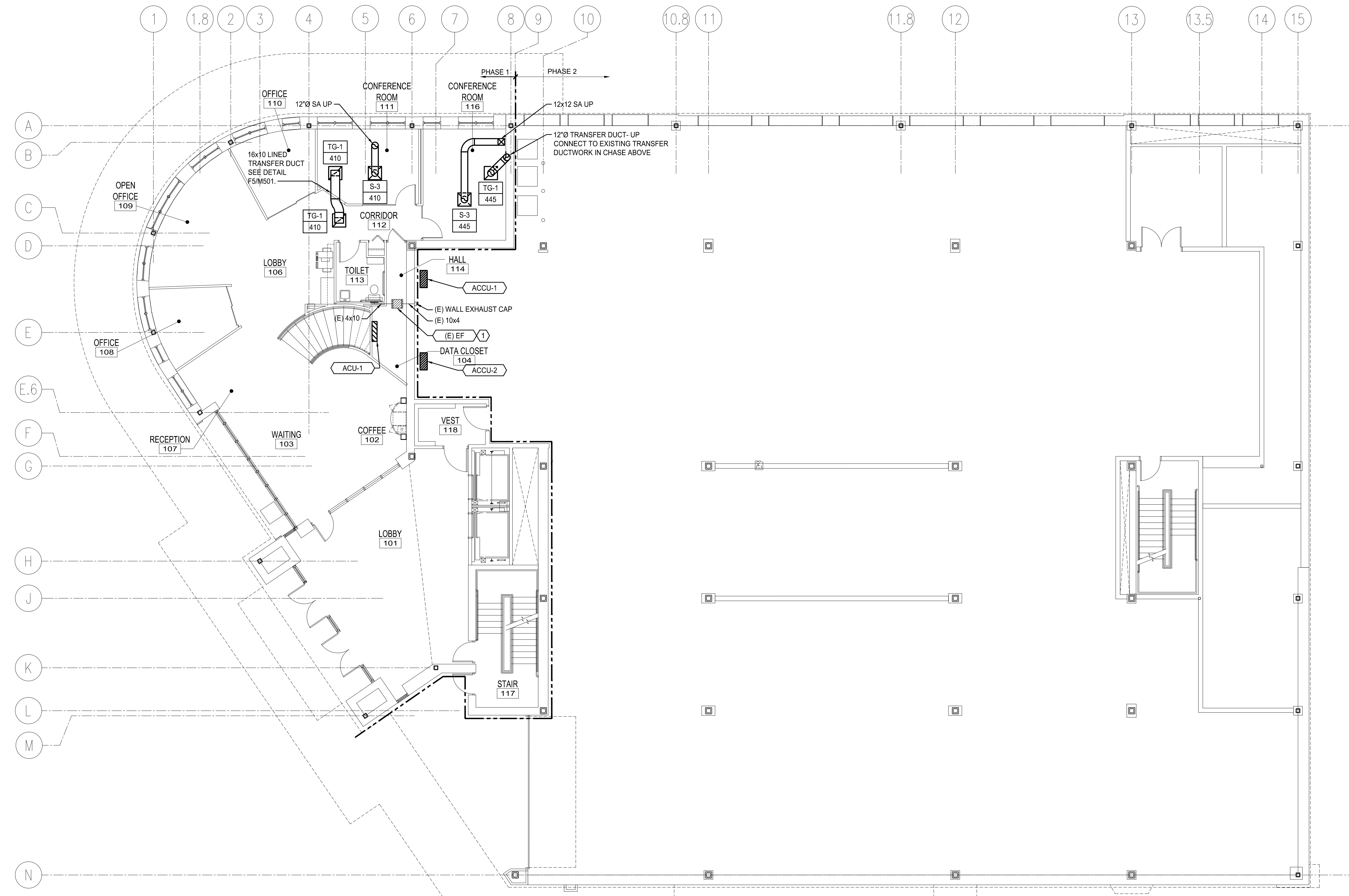
PROJECT NORTH:

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RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE**

PROJECT NO: **17231**
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SHEET TITLE
**SECOND FLOOR
MECHANICAL DEMOLITION
PLAN - PHASE 1**

MD102



NOTE:
 1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

KEYNOTES

KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	MOVE (E) EF-UP AS NECESSARY TO ACCOMMODATE CEILING HEIGHT IN HALL 114.

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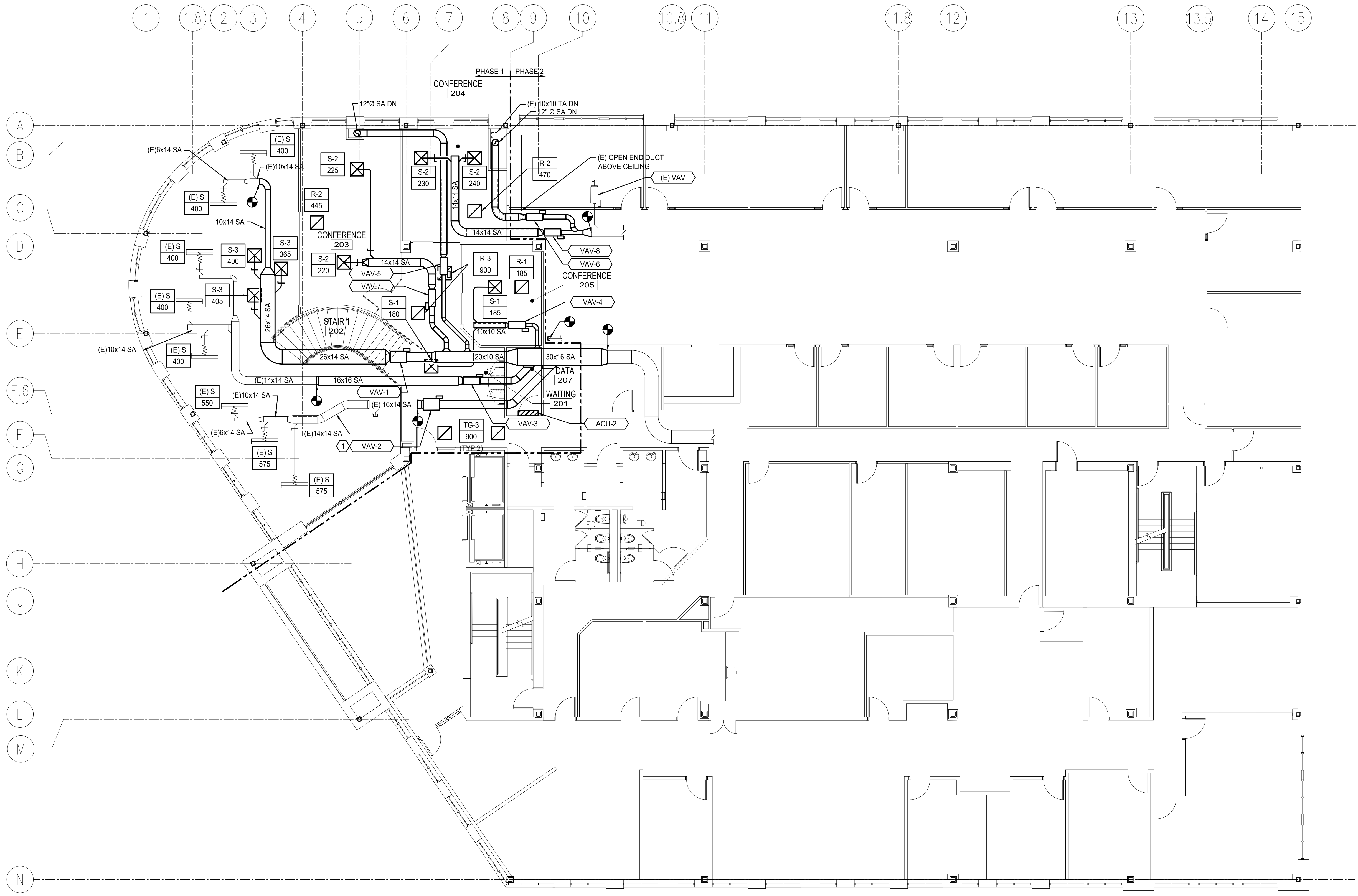
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PROJECT NO: 17231
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SHEET TITLE
FIRST FLOOR MECHANICAL DUCTWORK PLAN - PHASE 1

MH101

A1 FIRST FLOOR MECHANICAL DUCTWORK PLAN
 1/8" = 1'-0"



A1 SECOND FLOOR MECHANICAL DUCTWORK PLAN
1/8" = 1'-0"

NOTE:
1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

KEYNOTES

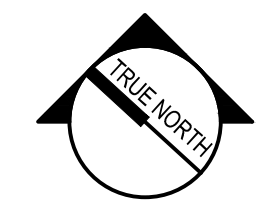
KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	TAB CONTRACTOR AND CONTROLS CONTRACTOR SHALL REFER TO BALANCING AND TESTING PORTION OF SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.


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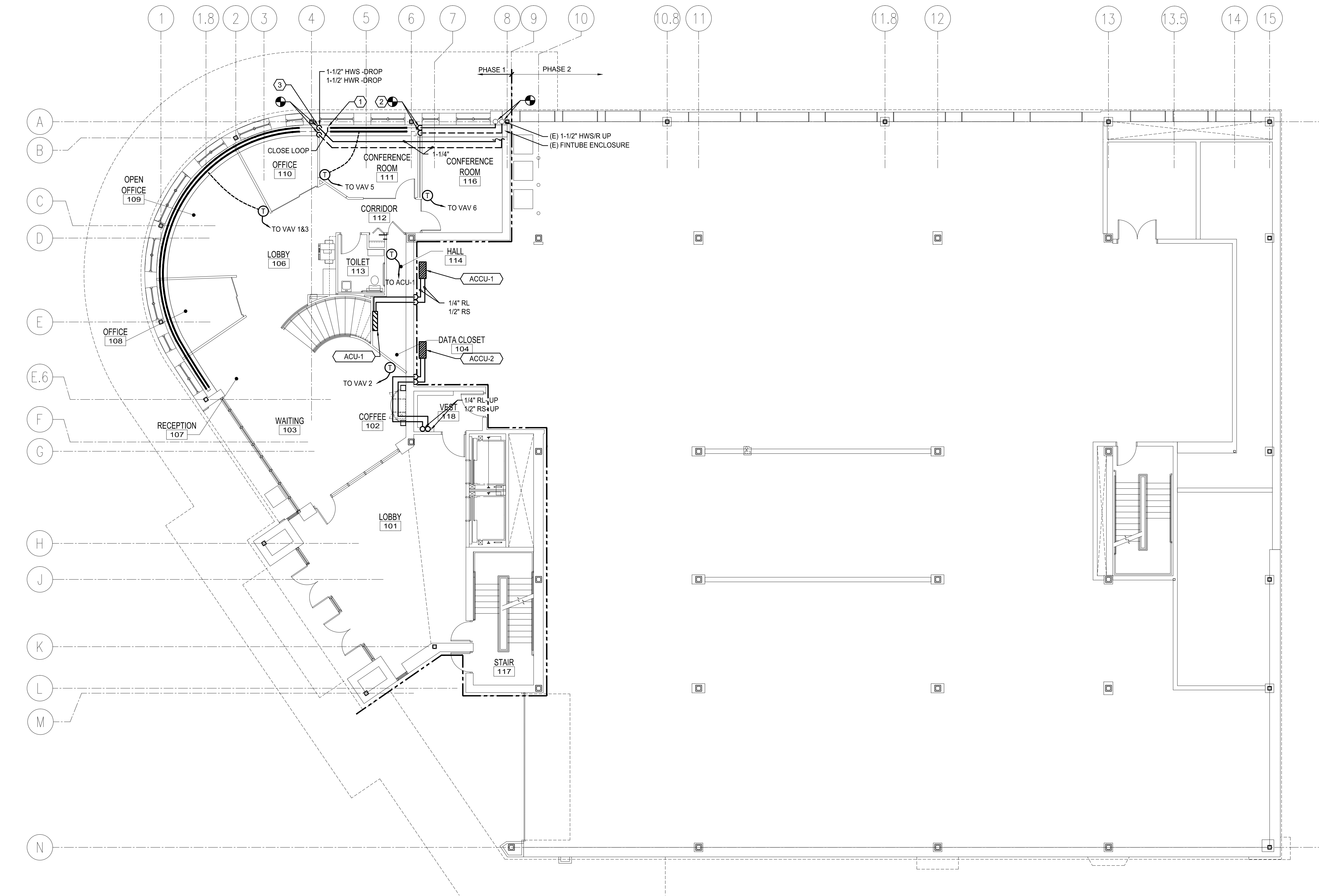


**BANGOR SAVINGS BANK -
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PORTLAND, MAINE**

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SHEET TITLE
**SECOND FLOOR
MECHANICAL DUCTWORK
PLAN - PHASE 1**

MH102



NOTE:
 1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

KEYNOTES	
KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	CONNECT EXISTING 1-1/4" SUPPLY AND RETURN BASEBOARD RADIATION PIPING TO CREATE SINGLE ZONE FOR CONFERENCE ROOM 111.
2	3/4" HWS & HWR - DROP, RECONNECT TO CONFERENCE ROOM 111 RADIANT ZONE. BALANCE CONFERENCE ROOM 111 ZONE TO 1.8 GPM. SEE DETAIL G1/M502.
3	1-1/4" HWS & HWR - DROP, RECONNECT TO EXISTING BASEBOARD AND BALANCE TO 10 GPM. SEE DETAIL G1/M502.

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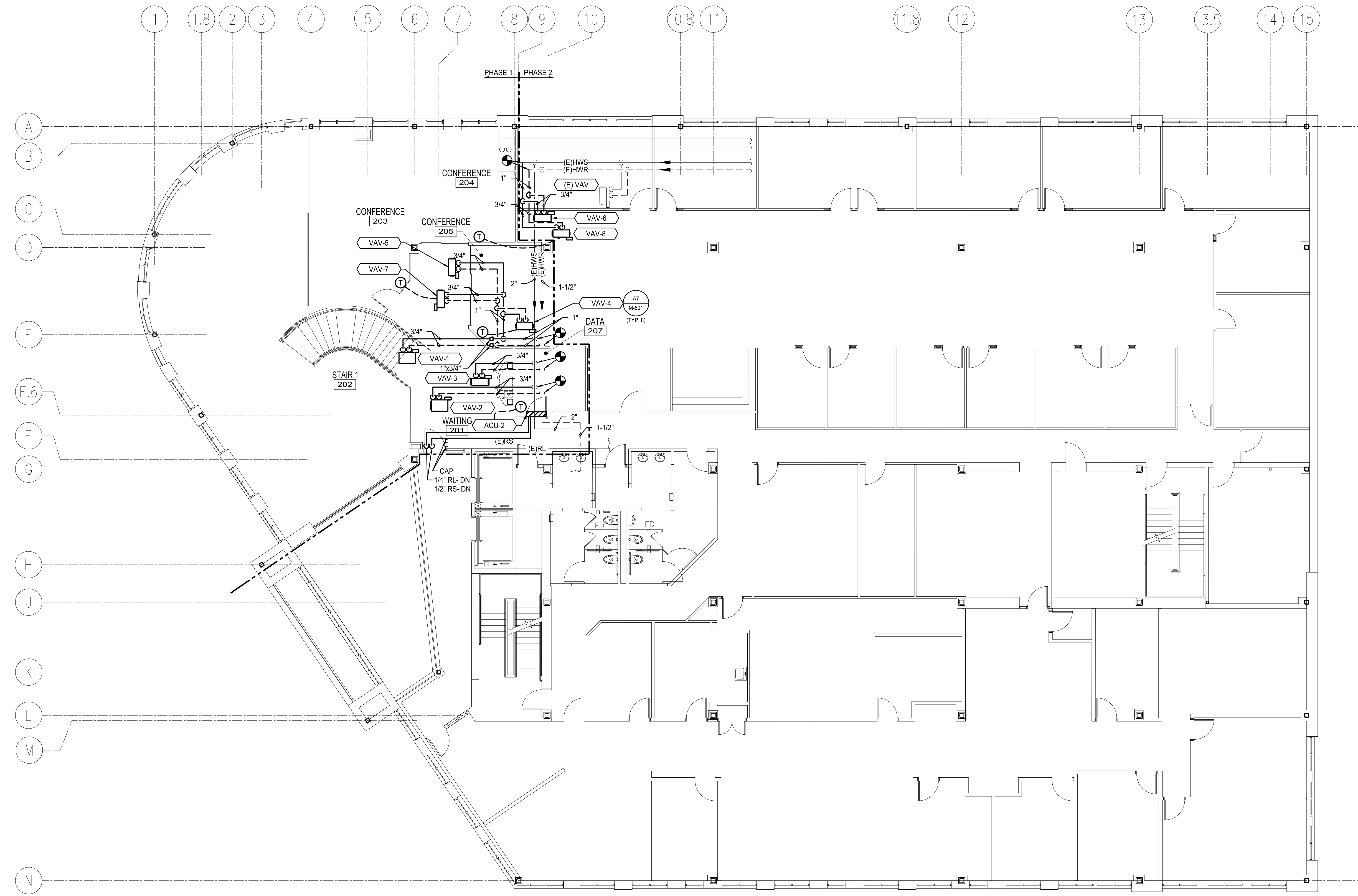
BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

PROJECT NO: 17231
 CAD DWG FILE: MP101-17231
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SHEET TITLE
FIRST FLOOR MECHANICAL PIPING PLAN - PHASE 1

MP101

A1 FIRST FLOOR MECHANICAL PIPING PLAN
 1/8" = 1'-0"



A1 SECOND FLOOR MECHANICAL PIPING PLAN
1/8" = 1'-0"

NOTE:
1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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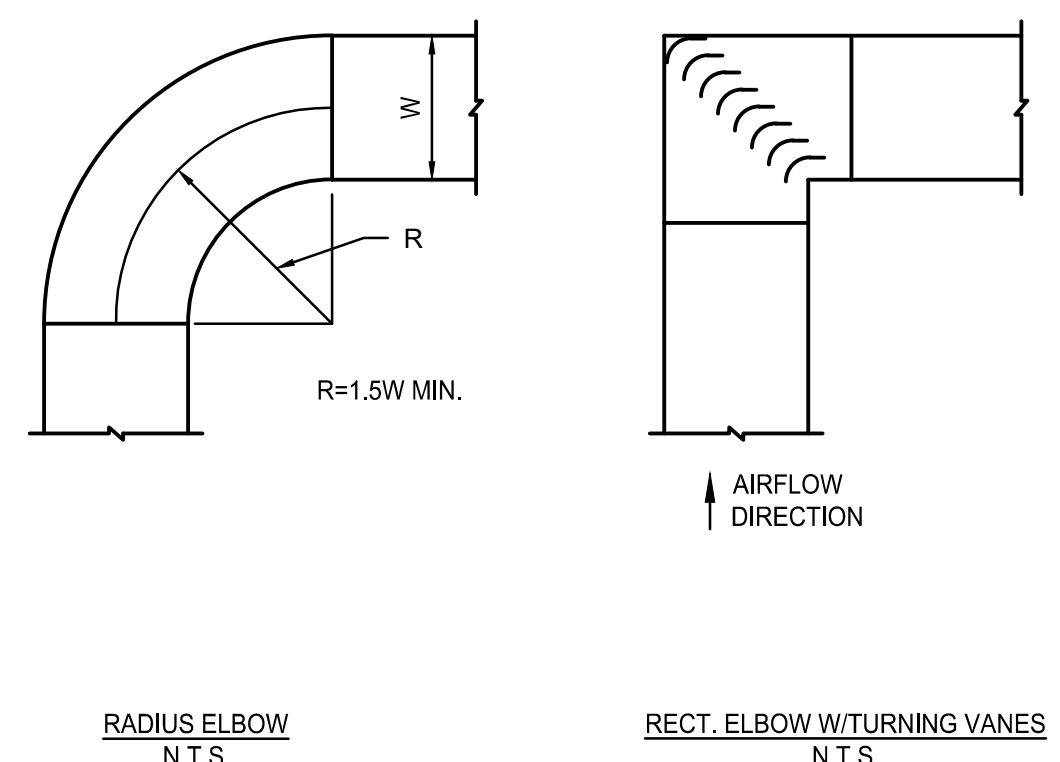
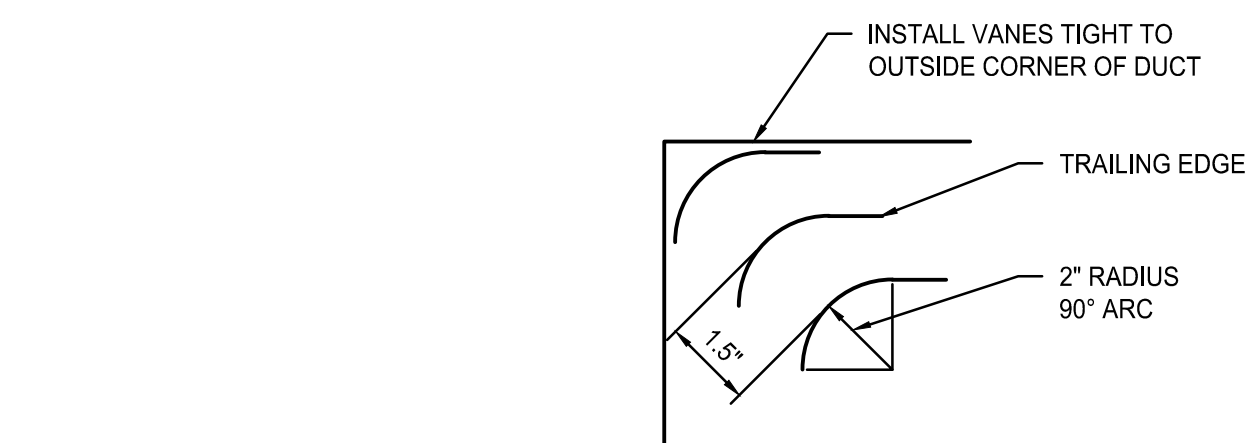
PROJECT NORTH:

BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

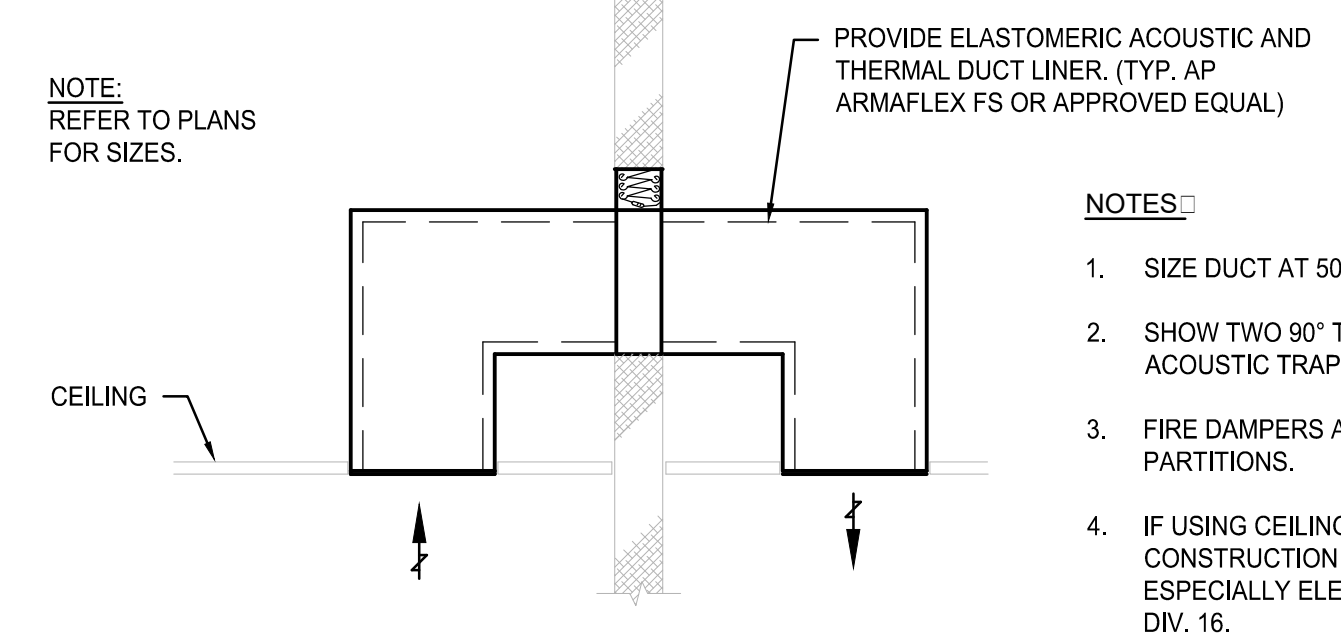
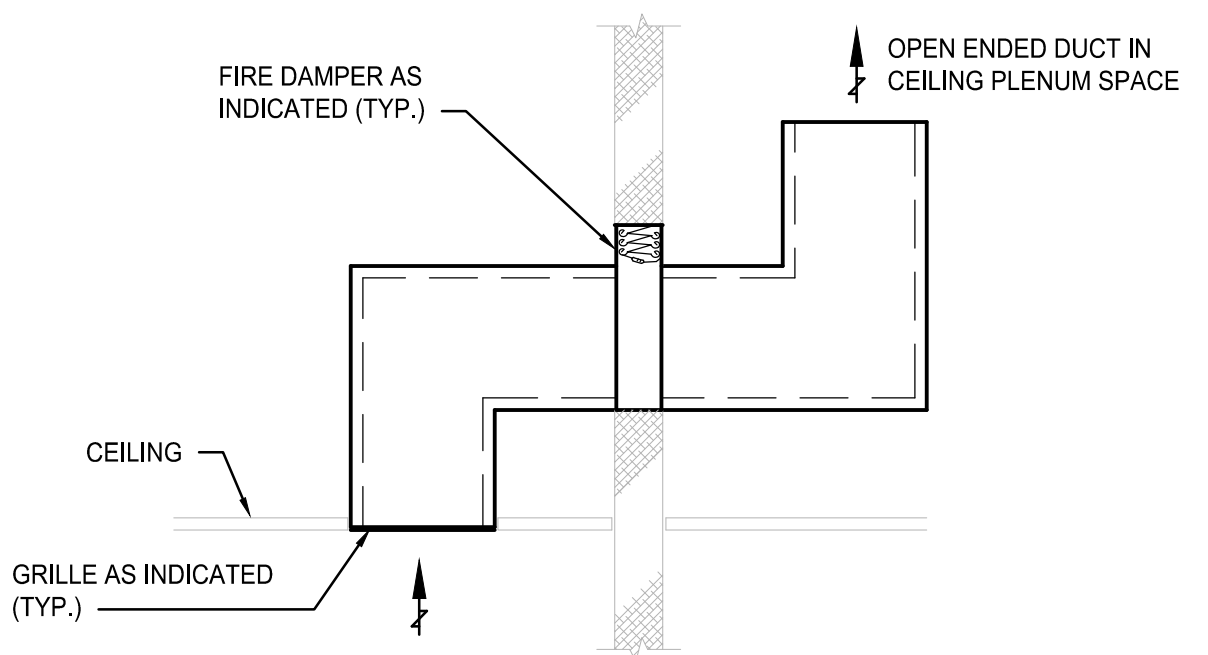
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SHEET TITLE
SECOND FLOOR MECHANICAL PIPING PLAN - PHASE 1

MP102

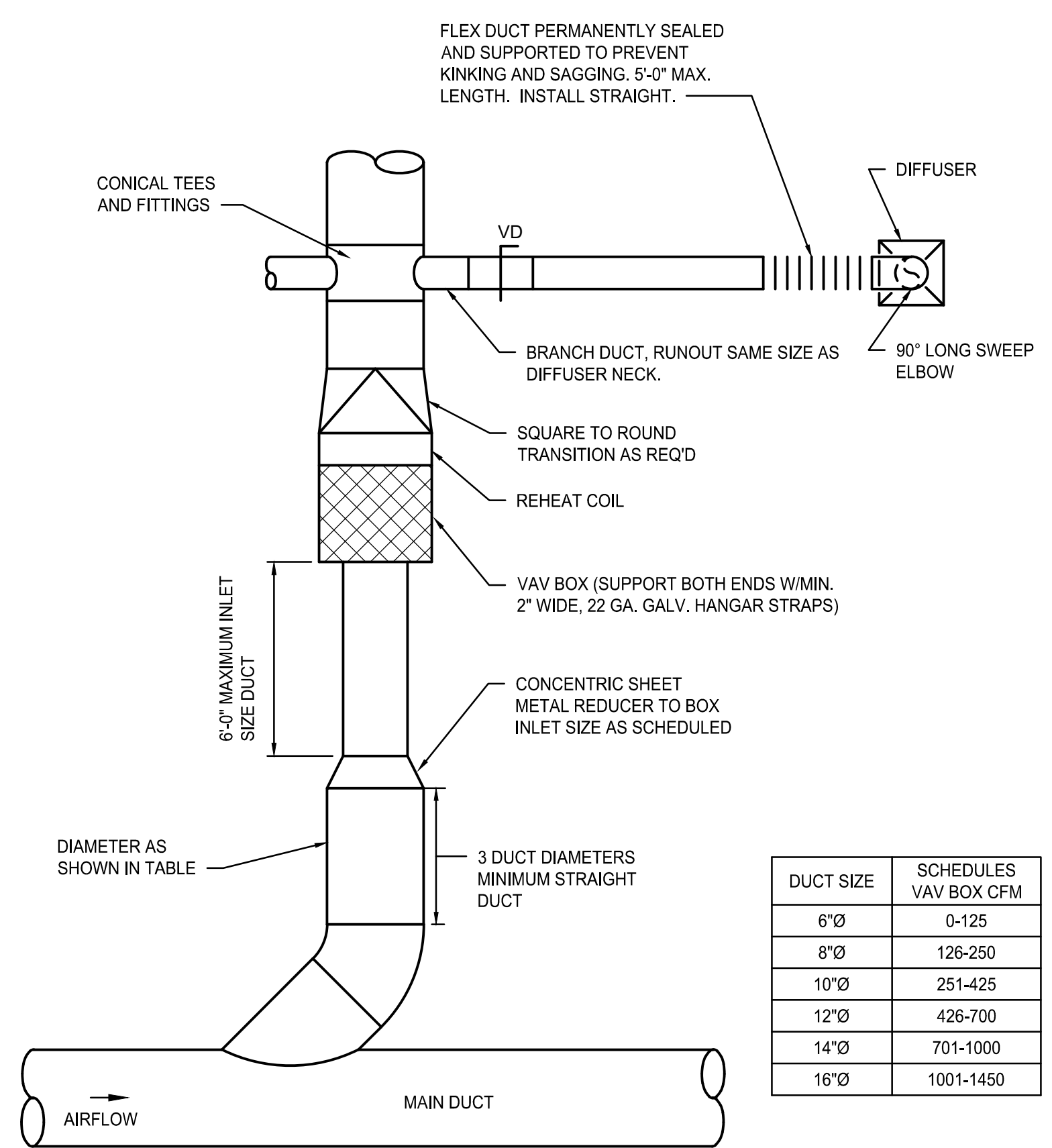


F1 LOW PRESSURE DUCT ELBOWS - TYPICAL DETAIL
NOT TO SCALE



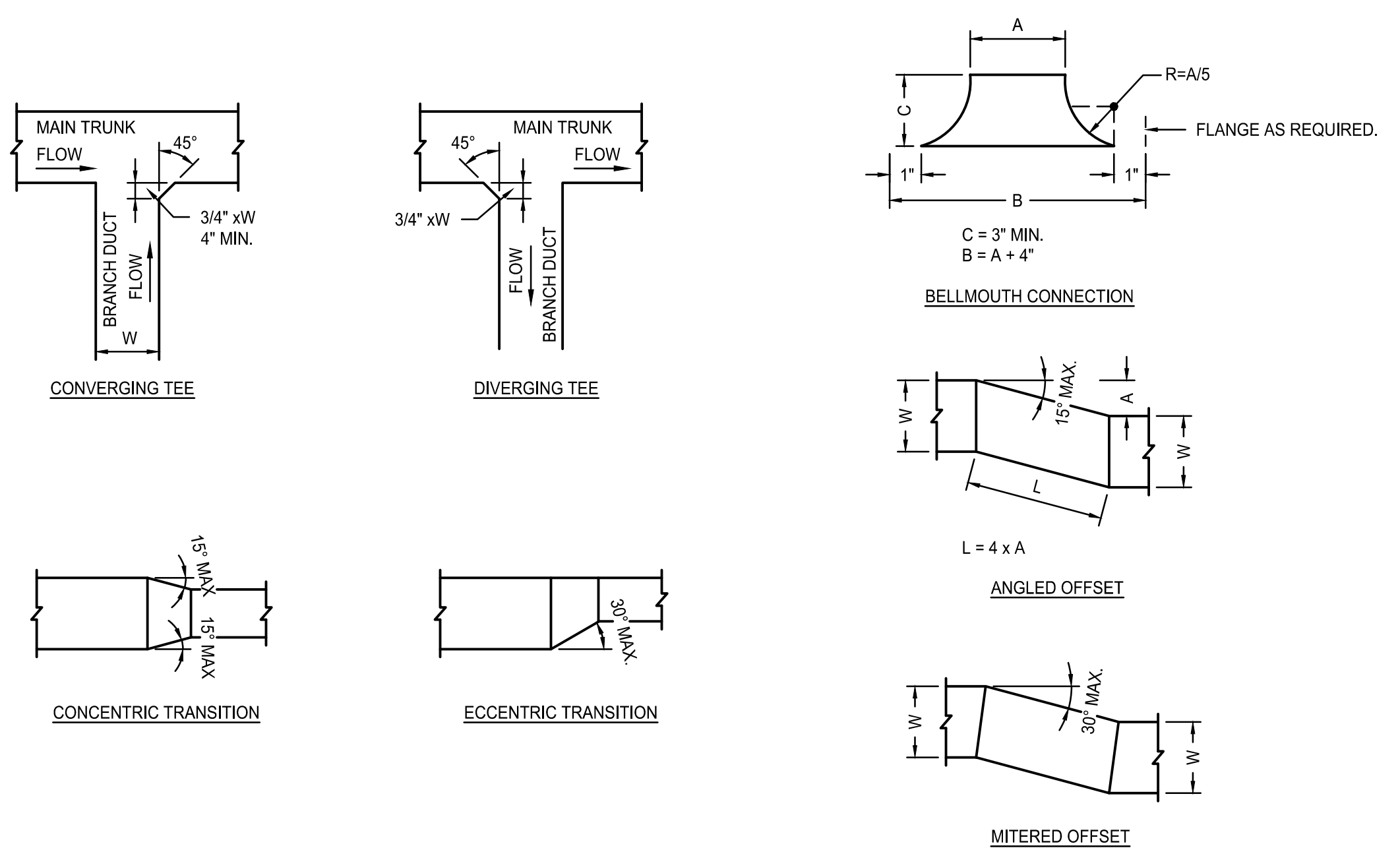
- NOTES:**
1. SIZE DUCT AT 500 FPM.
 2. SHOW TWO 90° TURNS IN PLAN VIEW TO CREATE AN ACOUSTIC TRAP.
 3. FIRE DAMPERS ARE REQUIRED AT FIRE RATED PARTITIONS.
 4. IF USING CEILING PLENUM, MATERIALS OF CONSTRUCTION MUST BE PLENUM RATED, ESPECIALLY ELECTRICAL WIRING. COORDINATE W/ DIV. 16.

F5 TRANSFER DUCT DETAIL
NOT TO SCALE

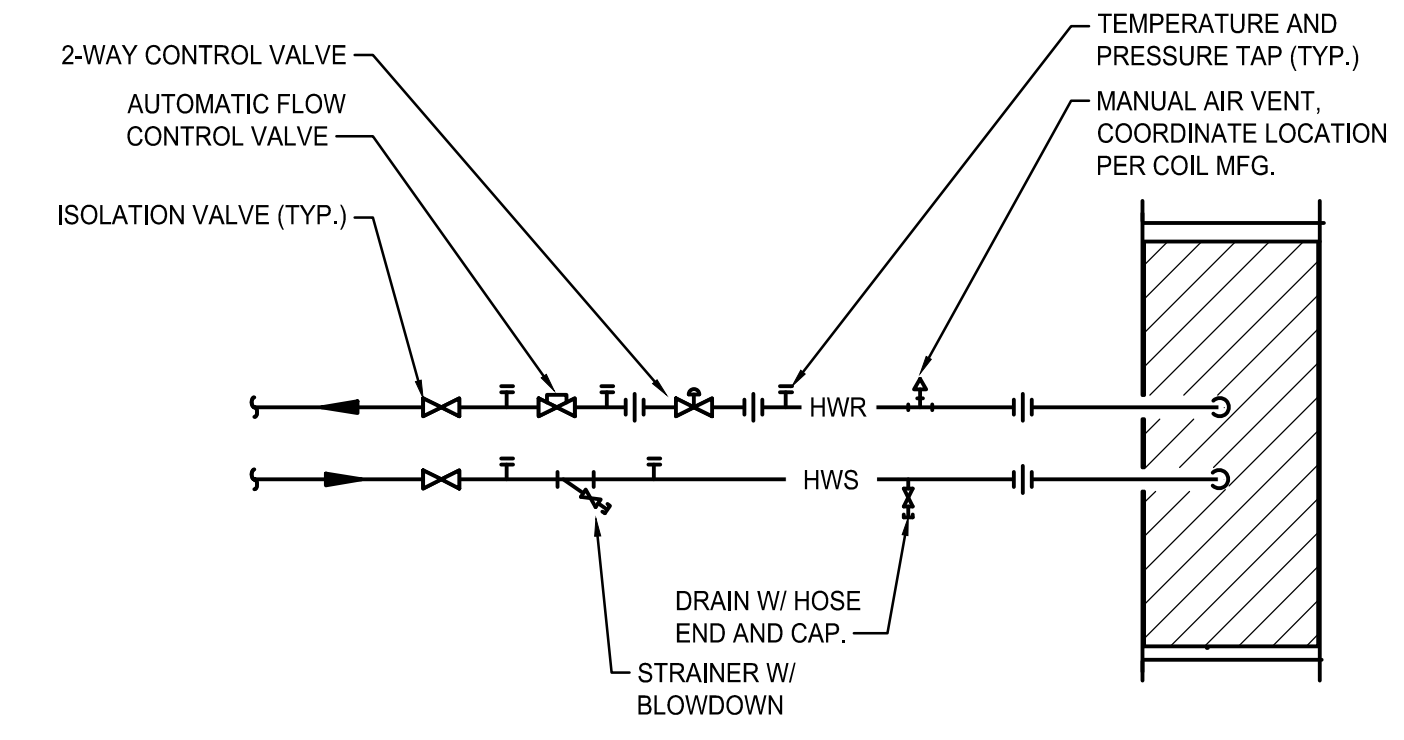


DUCT SIZE	SCHEDULES VAV BOX CFM
6"Ø	0-125
8"Ø	126-250
10"Ø	251-425
12"Ø	426-700
14"Ø	701-1000
16"Ø	1001-1450

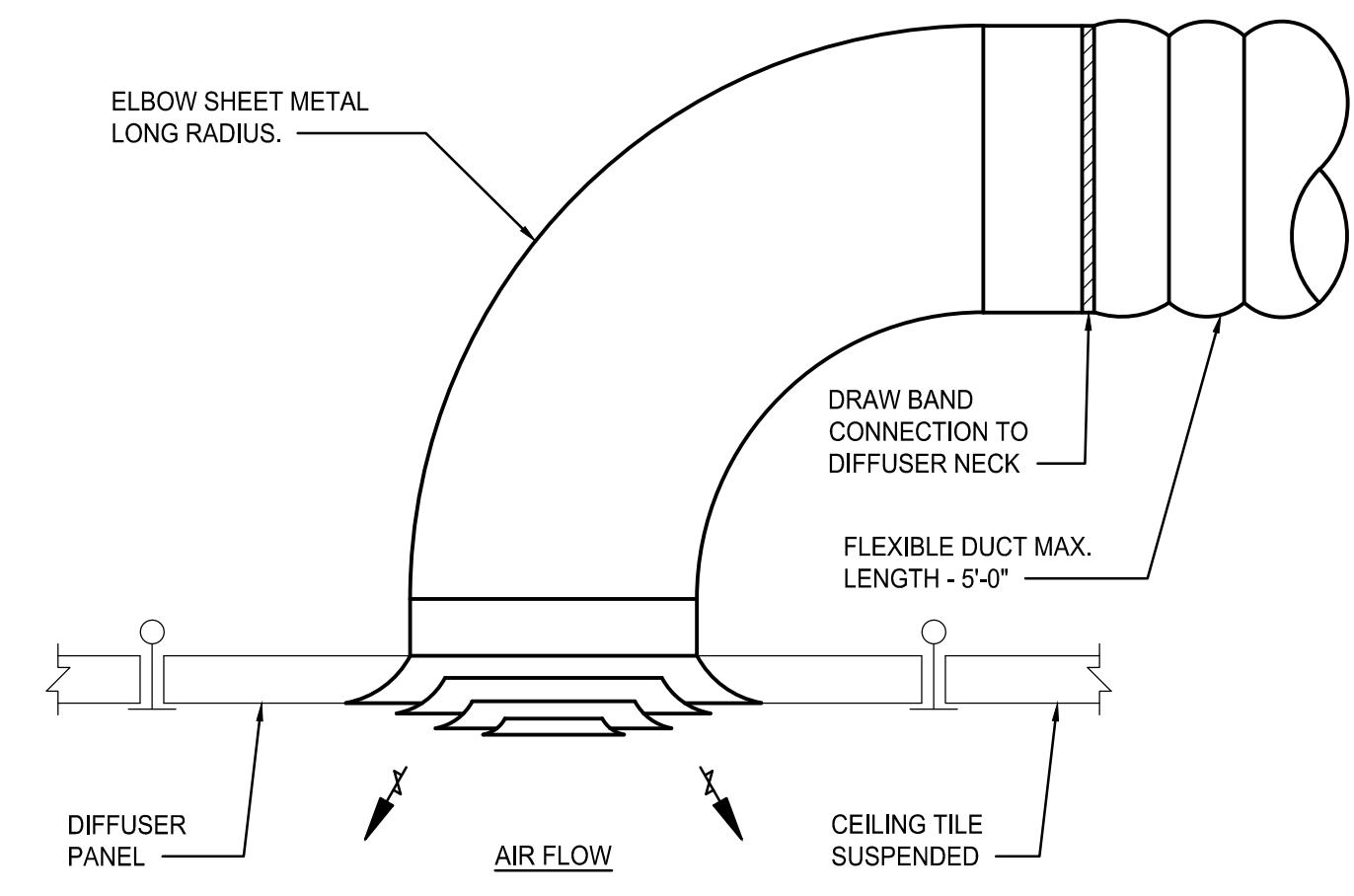
F10 VAV BOX SCHEMATIC
NOT TO SCALE



A1 DUCT TRANSITION DETAILS
NOT TO SCALE



A7 HOT WATER COIL PIPING DETAIL
NOT TO SCALE



A11 DIFFUSER CONNECTION DETAIL
NOT TO SCALE

NOTE:
1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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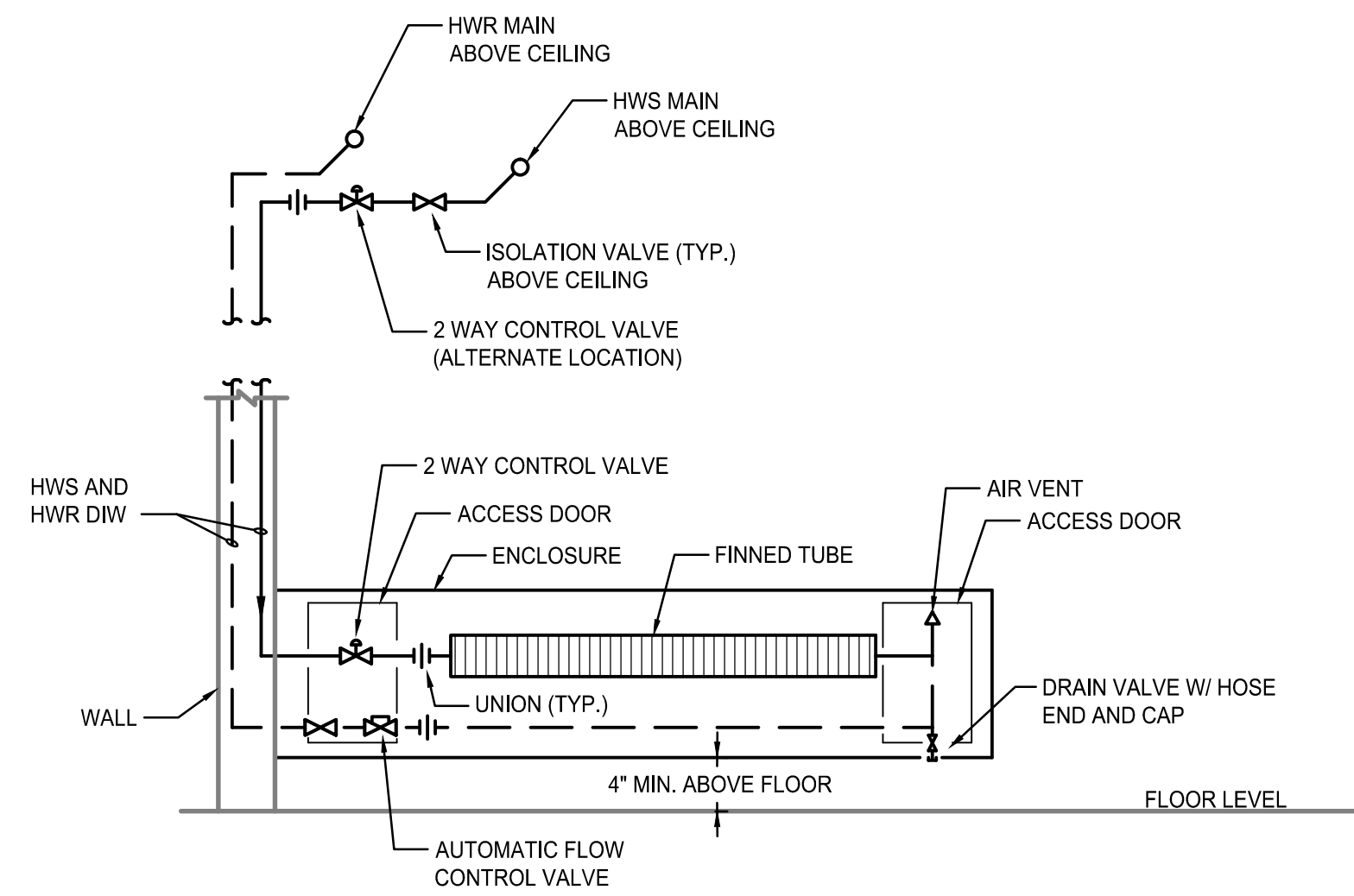


BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

PROJECT NO: 17231
CAD DWG FILE: M-501-17231
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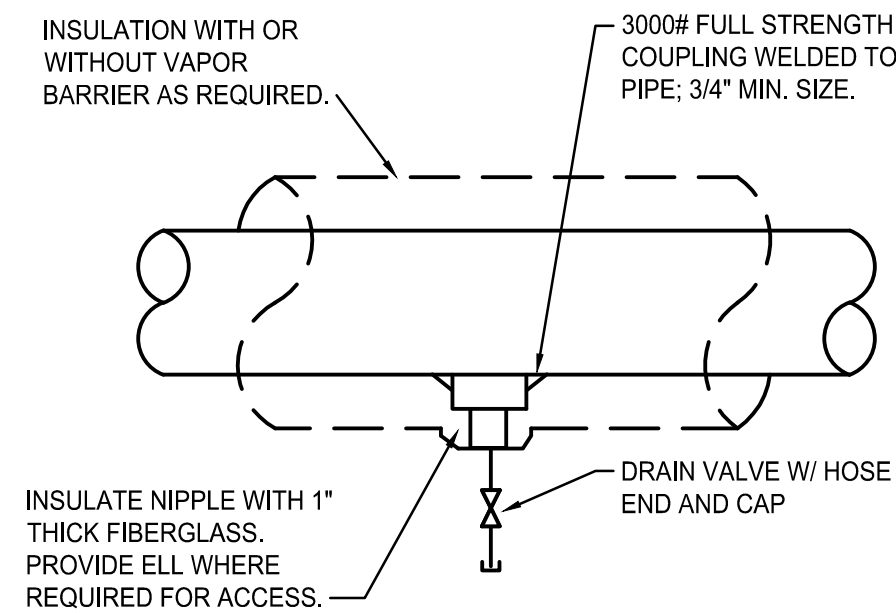
SHEET TITLE
MECHANICAL DETAILS

M-501

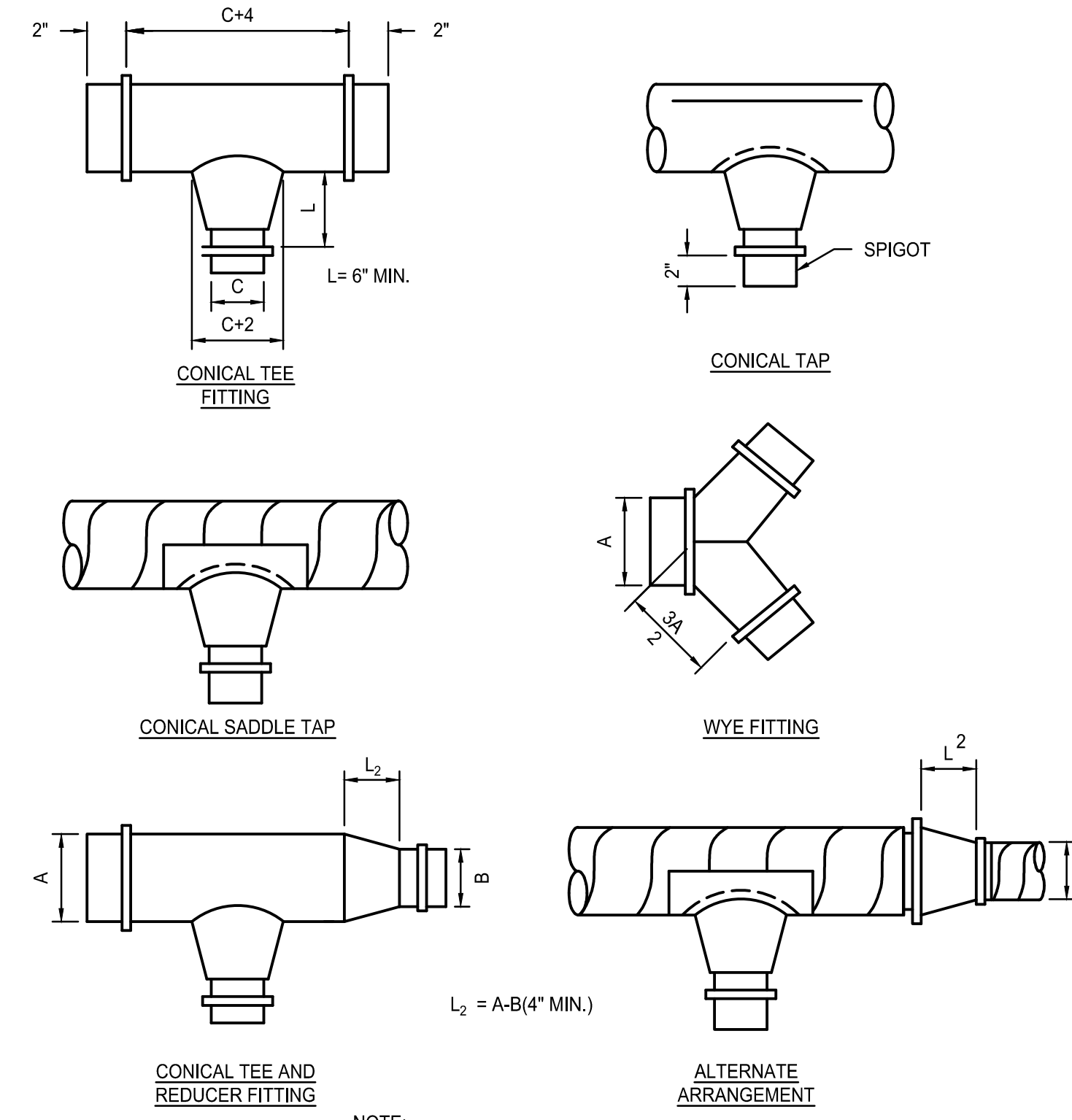


- NOTE:**
1. ALL PIPING SHALL BE CONCEALED.
 2. ALL FITTINGS SHALL BE EASILY ACCESSIBLE.
 3. PIPING AND FITTINGS WITHIN ENCLOSURES DO NOT REQUIRE INSULATION.
 4. ALL RUNOUT PIPING SHALL BE CONCEALED.
 5. SCHEMATICS ARE SHOWN FOR TYP. ARRANGEMENTS AND SHOW REQUIRED FITTINGS. VARIATIONS MAY OCCUR.
 6. ZONE VALVES MAY BE INSTALLED ABOVE ACCESSIBLE CEILINGS WHERE DROPS OR RISERS FEED SINGLE ZONES.
 7. CONVECTOR PIPING SIMILAR.

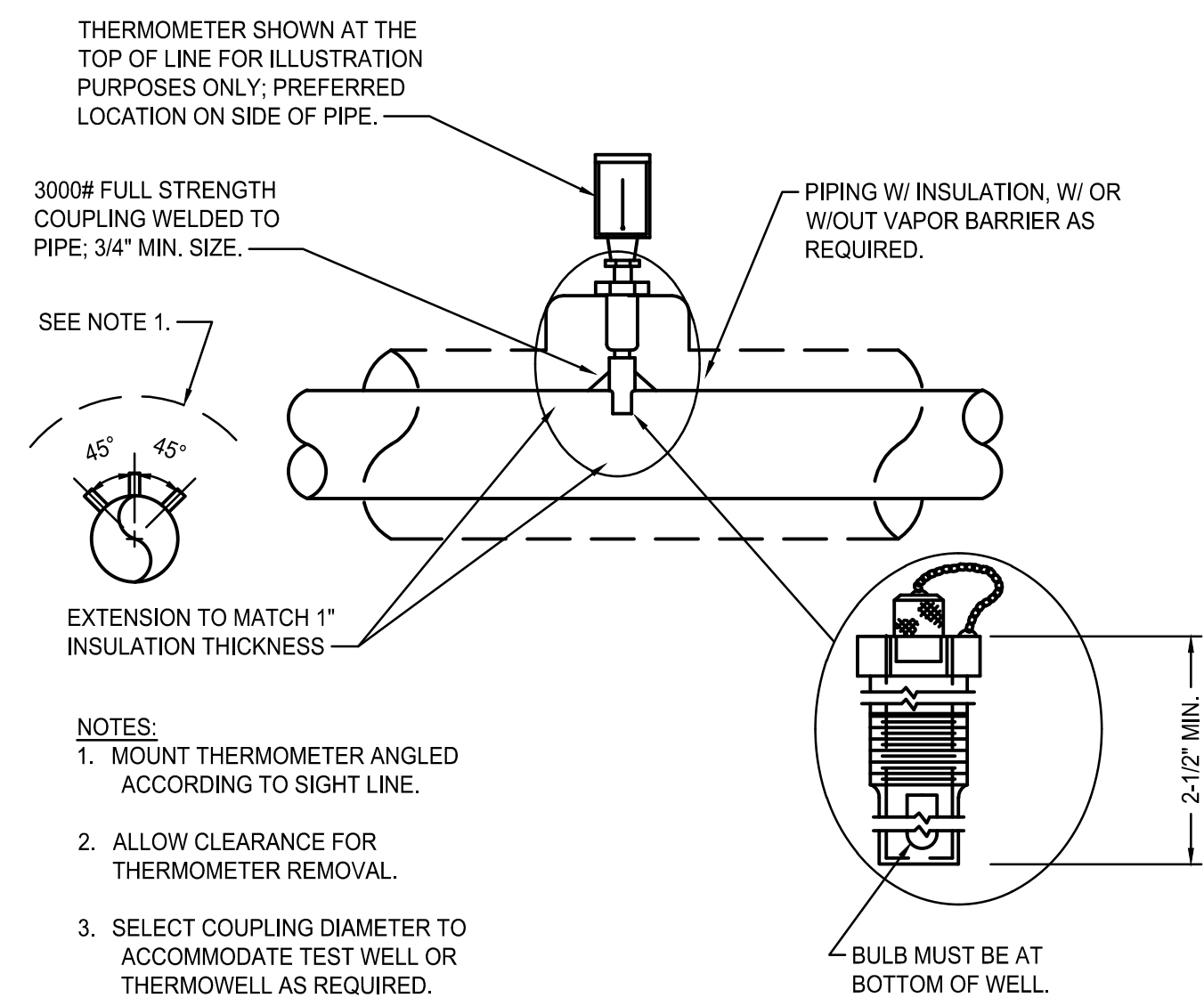
G1 HOT WATER FINNED TUBE PIPING DETAIL
NOT TO SCALE



G5 DRAIN VALVE INSTALLATION DETAIL
NOT TO SCALE

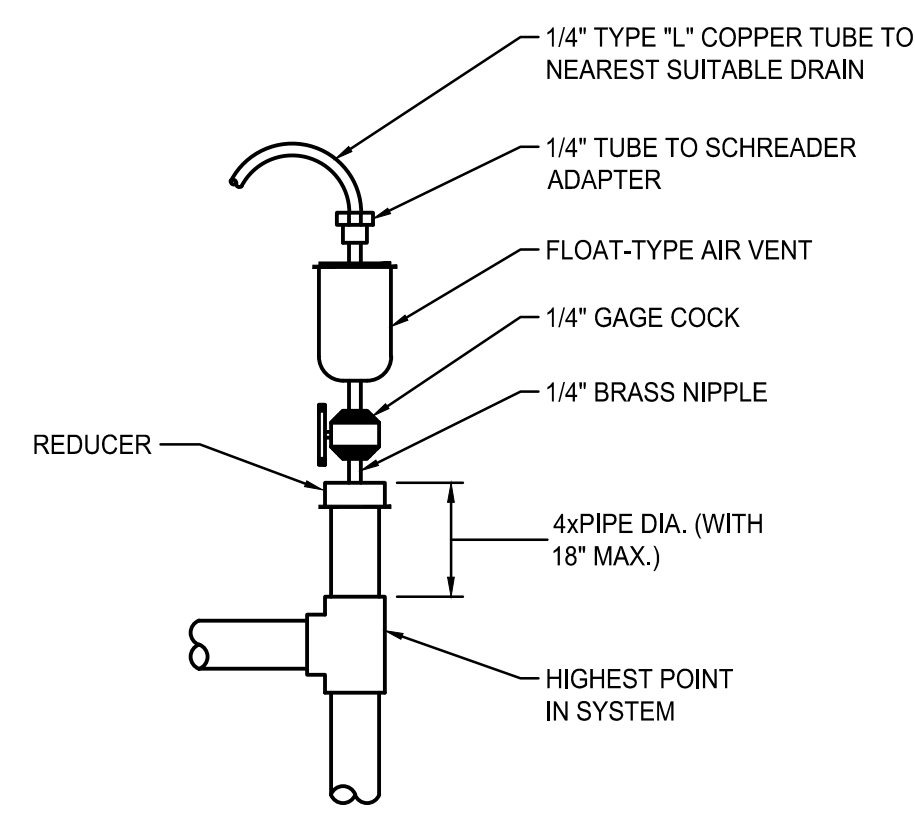


G9 CONICAL TEES DETAIL
NOT TO SCALE

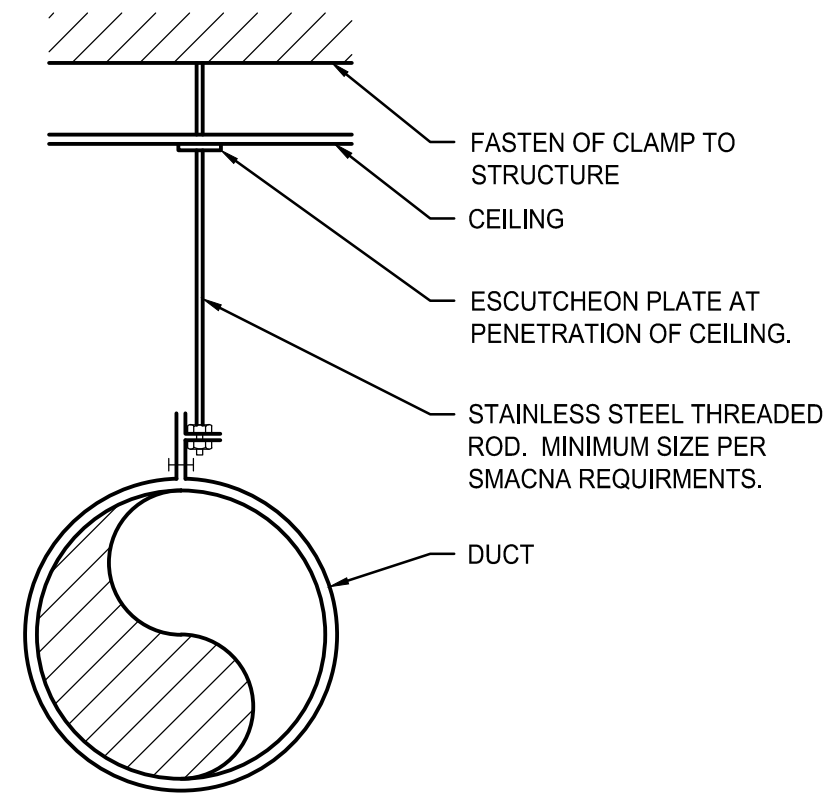


- NOTES:**
1. MOUNT THERMOMETER ANGLED ACCORDING TO SIGHT LINE.
 2. ALLOW CLEARANCE FOR THERMOMETER REMOVAL.
 3. SELECT COUPLING DIAMETER TO ACCOMMODATE TEST WELL OR THERMOWELL AS REQUIRED.

B1 THERMOMETER AND THERMOWELL INSTALLATION DETAIL
NOT TO SCALE



B6 AUTOMATIC AIR VENT ASSEMBLY DETAIL
NOT TO SCALE



B9 DUCT HANGER DETAIL
NOT TO SCALE

NOTE:

1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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MECHANICAL DETAILS

M-502

DUCTLESS SPLIT SYSTEM SCHEDULE																
INDOOR SECTION TAG	OUTDOOR SECTION TAG	TYPE	INDOOR UNIT LOCATION	REFRIGERANT PIPING (LIQUID / GAS)	TOTAL CAPACITY BTU/H	SEER	INDOOR SECTION				OUTDOOR SECTION			OUTDOOR SECTION MODEL NO.	INDOOR SECTION MODEL NO.	NOTES
							CFM (DRY) HI-SPEED	MCA	FLA	V/PHHZ	LOCATION	MCA	V/PHHZ			
ACU-1	ACCU-1	WALL	DATA CLOSET 104	1/4" / 1/2"	12.0	15.2	425	0.33	0.35	208/1 / 60	GARAGE	13	208/1 / 60	mitsubishi PUY-A12NH46	mitsubishi PKA-A12HA6	1-5
ACU-2	ACCU-2	WALL	DATA CLOSET 104	1/4" / 1/2"	12.0	15.2	425	0.33	0.35	208/1 / 60	GARAGE	13	208/1 / 60	mitsubishi PUY-A12NH46	mitsubishi PKA-A12HA6	1-5

NOTES:

- PROVIDE OUTDOOR UNITS WITH ADVANCED WIND BAFFLES FOR LOW AMBIENT COOLING DOWN TO -20°F, DISCONNECT SWITCH AND MOUNTING BASE.
- PROVIDE INDOOR UNITS WITH WIRED THERMOSTAT/CONTROLLER - NO WIRELESS THERMOSTATS PERMITTED.
- PROVIDE UNITS WITH INTERNAL CONDENSATE LIFT MECHANISMS (SAUERMAN B30 OR EQUAL - REQUIRES SEPARATE 115V CONNECTION).
- PROVIDE ALL EXTERIOR INSULATION (BOTH LINES) WITH UV RESISTANT JACKETING.
- INSTALL OUTDOOR UNIT WITH QUICK SLING WALL MOUNTED BRACKET SYSTEM.

VARIABLE AIR VOLUME (VAV) TERMINAL SCHEDULE																		
TAG	INLET SIZE (IN)	OUTLET SIZE WxH (IN)	CFM MAX.	CFM MIN.	INLET STATIC PRESSURE-MAX.	APO MAX.	HOT WATER HEATING COIL										TYPICAL UNIT MFG & MODEL NO.	NOTES
							MBH	MAX CFM	EAT °F	LAT °F	EWTF °F	LWTF °F	GPM	ROWS	WPD FT. HD			
VAV-1	14.0	18x20	1,970	600	0.75	0.17	16.2	600	55	80.0	180	160	2.80	1	2.80	TRANE VCVF	1-3	
VAV-2	14.0	18x20	1,700	510	0.75	0.12	14.0	510	55	80.0	180	160	3.00	1	0.62	TRANE VCVF	1-3	
VAV-3	12.0	14x17	1,200	400	0.75	0.18	10.1	400	55	80.0	180	160	2.25	1	2.67	TRANE VCVF	1-3	
VAV-4	6.0	8x10	365	110	0.75	0.13	5.0	110	55	95.0	180	160	0.65	1	0.76	TRANE VCVF	1-3	
VAV-5	6.0	8x10	410	125	0.75	0.16	3.4	125	55	80.0	180	160	0.70	1	0.86	TRANE VCVF	1-3	
VAV-6	8.0	10x11	445	135	0.75	0.18	20.0	445	55	95.0	180	160	2.65	2	0.52	TRANE VCVF	1-3	
VAV-7	8.0	10x11	445	135	0.75	0.18	20.0	445	55	95.0	180	160	2.65	2	0.52	TRANE VCVF	1-3	
VAV-8	8.0	10x11	470	145	0.75	0.20	15.0	300	55	95.0	180	160	2.10	2	0.33	TRANE VCVF	1-3	

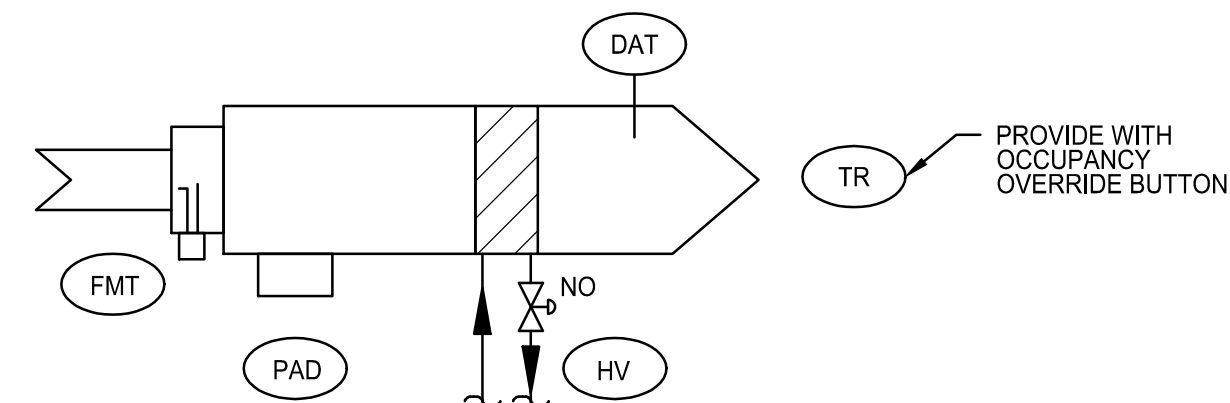
NOTES:

- RUNOUTS TO VAV BOXES SHALL BE THE SAME SIZE AS THE INLET UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL DUCTWORK DOWNSTREAM OF VAV UNITS SHALL BE LINED (MINIMUM 10'-0").
- CONTRACTOR SHALL VERIFY VAV UNIT CONFIGURATIONS WITH FLOOR PLANS AND PRIOR TO ORDERING UNITS.

REGISTER, DIFFUSER & GRILLE SCHEDULE							
TAG	CFM	NECK SIZE (IN)	DIFFUSER SIZE (IN)	TYPE	MAX NC	TYPICAL UNIT MFG & MODEL NO.	NOTES
S-1	130-200	8" ø	24x24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3
S-2	205-325	10" ø	24x24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3
S-3	330-450	12" ø	24x24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3
R-1 / TG-1	305-425	12" ø	24 x 24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3
R-2	425-700	14" ø	24 x 24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3
R-3	700-900	15" ø	24 x 24	LAY-IN SURFACE MOUNT	25	PRICE SPD	1-3

NOTES:

- RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS THE INLET.
- CONFIRM DETERMINE BORDER TYPE (LAY-IN, SURFACE MOUNT) WITH ARCHITECTURAL CEILING PLANS.
- COORDINATE BLOW PATTERNS WITH FLOOR PLANS.



VARIABLE AIR VOLUME BOX AND HOT WATER COIL CONTROLS:

GENERAL

- VAV BOX AND HOT WATER COIL SHALL BE CONTROLLED BY AN APPLICATION SPECIFIC CONTROLLER (ASC - PROVIDED BY THE ATC CONTRACTOR). VAV MANUFACTURER SHALL PROVIDE AIRFLOW MEASURING STATION AND PRIMARY AIR DAMPER/ACTUATOR. ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC.
- ALL TEMPERATURES LISTED ARE FAHRENHEIT AND SHALL BE ADJUSTABLE.
- AIRFLOW SHALL BE MEASURED BY THE FLOW MEASURING TRANSMITTER (FMT) AND DISPLAYED ON THE GRAPHICS AT THE EXISTING FRONT END WORKSTATION.
- DURING THE SCHEDULED OCCUPIED HOURS, THE HEATING SETPOINT SHALL BE 70°F AND THE COOLING SETPOINT SHALL BE 5°F WARMER THAN HEATING SETPOINT. COORDINATE SCHEDULES WITH STAFF.
- COORDINATE WITH FACILITIES WHERE ROOM SETPOINTS SHALL BE ADJUSTABLE IN THE LOCATIONS IN WHICH THEY SERVE AND WHERE MANUAL ADJUSTMENT SHALL BE DISABLED. ALL TEMPERATURE SHALL BE CAPABLE OF BEING OVERRIDDEN AT THE FRONT END WORKSTATION.
- MINIMUM, MAXIMUM AND HEATING PRIMARY AIR FLOWS ARE SHOWN ON SCHEDULES.
- PROVIDE TWO-WAY MODULATING TYPE CONTROL VALVE FOR HEATING COIL.

OCCUPIED COOLING CONTROL

- UPON A CALL FOR COOLING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PAD SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE OCCUPIED COOLING SETPOINT. THE HEATING CONTROL VALVE (HV) SHALL BE CLOSED.

OCCUPIED HEATING CONTROL

- UPON A CALL FOR HEATING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PRIMARY AIR DAMPER (PAD) SHALL MODULATE TO ITS MINIMUM COOLING POSITION THE HEATING CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT. UPON A FURTHER DROP IN TEMPERATURE, THE PAD SHALL MODULATE UP TO THE SCHEDULED HEATING AIRFLOW AND THE HOT WATER CONTROL VALVE (HV) SHALL MODULATE AS REQUIRED. THE DAT SHALL LIMIT THE BOX TO 95°F (ADJ.). THE REVERSE SHALL OCCUR ON A RISE IN SPACE TEMPERATURE.

UNOCCUPIED CONTROL

- IF THE ROOM TEMPERATURE FALLS BELOW 55°F FOR 10 MINUTES OR LONGER, THE AHU-1 SHALL START IN UNOCCUPIED MODE. ALL VAV BOXES SHALL OPEN TO THE SCHEDULED HEATING AIRFLOW AND ALL HW VALVES (HV) SHALL MODULATE TO MAINTAIN A DISCHARGE AIR TEMPERATURE (DAT) OF 95°F. WHEN EACH ROOM TEMPERATURE RISES ABOVE 60°F, THE ASSOCIATED BOX HV SHALL MODULATE TO MAINTAIN 60°F UNTIL ALL ROOMS REACH 60°F. THEN THE BOXES AND ASSOCIATED AIR HANDLER SHALL SHUT DOWN.
- THERE SHALL BE NO UNOCCUPIED COOLING.

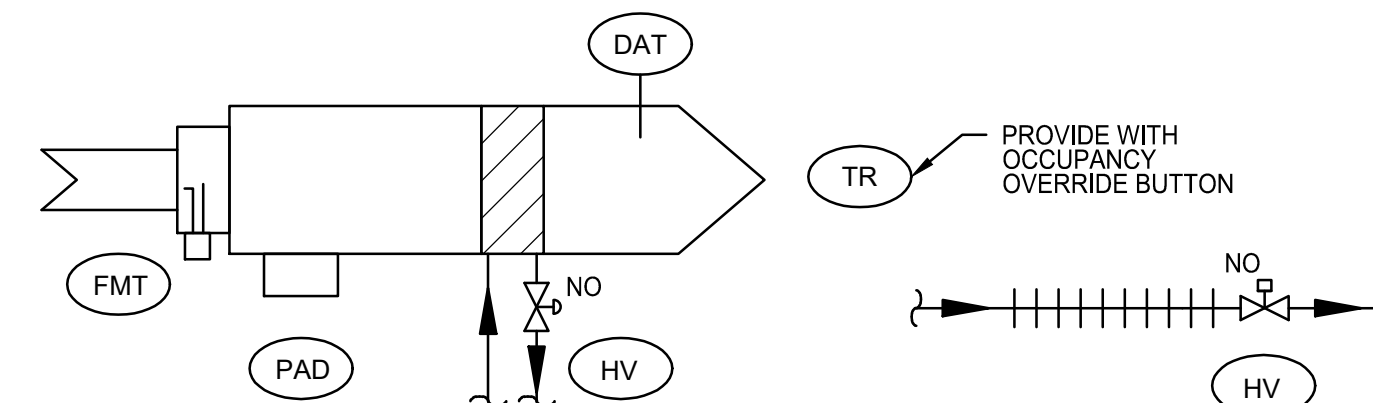
WARM-UP CONTROL

- PROVIDE OPTIMUM START CAPABILITY. IF ROOM TEMPERATURE IS BELOW 63°F, WARM UP SHALL BE DONE WITH HW VALVE (HV) MODULATING TO MAINTAIN A DISCHARGE AIR TEMPERATURE (DAT) OF 100°F. PAD SHALL BE AT ITS MINIMUM HEATING POSITION. WHEN ROOM TEMPERATURE RISES ABOVE 69°F, OCCUPIED MODE SHALL START.

ALARMS

- IF THE ROOM TEMPERATURE SENSOR (TR) SENSES A TEMPERATURE MORE THAN 5°F ABOVE OR BELOW THE SETPOINT FOR 5 MINUTES, THE DDC SYSTEM SHALL GIVE A DETAILED ROOM "HIGH" OR "LOW" TEMPERATURE ALARM SIGNAL TO THE BAS.

A1 VAV W/ REHEAT AND BASEBOARD RADIATION CONTROL SEQUENCE
NOT TO SCALE



VARIABLE AIR VOLUME BOX HOT WATER COIL AND BASEBOARD RADIATION CONTROLS:

GENERAL

- VAV BOX AND HOT WATER COIL SHALL BE CONTROLLED BY AN APPLICATION SPECIFIC CONTROLLER (ASC - PROVIDED BY THE ATC CONTRACTOR). VAV MANUFACTURER SHALL PROVIDE AIRFLOW MEASURING STATION AND PRIMARY AIR DAMPER/ACTUATOR. ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC.
- ALL TEMPERATURES LISTED ARE FAHRENHEIT AND SHALL BE ADJUSTABLE.
- AIRFLOW SHALL BE MEASURED BY THE FLOW MEASURING TRANSMITTER (FMT) AND DISPLAYED ON THE GRAPHICS AT THE FRONT END WORKSTATION.
- THE HEATING SETPOINT SHALL BE 70°F AND THE COOLING SETPOINT SHALL BE 5°F WARMER THAN HEATING SETPOINT. COORDINATE SCHEDULES WITH OWNER.
- COORDINATE WITH FACILITIES WHERE ROOM SETPOINTS SHALL BE ADJUSTABLE IN THE LOCATIONS IN WHICH THEY SERVE AND WHERE MANUAL ADJUSTMENT SHALL BE DISABLED. ALL TEMPERATURE SHALL BE CAPABLE OF BEING OVERRIDDEN AT THE FRONT END WORKSTATION.
- MINIMUM, MAXIMUM AND HEATING PRIMARY AIR FLOWS ARE SHOWN ON SCHEDULES.
- PROVIDE TWO-WAY MODULATING TYPE CONTROL VALVE FOR HEATING COIL.

OCCUPIED COOLING CONTROL

- UPON A CALL FOR COOLING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PAD SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE OCCUPIED COOLING SETPOINT. THE

A8 VAV W/REHEAT CONTROL SEQUENCE
NOT TO SCALE

HEATING CONTROL VALVE (HV) SHALL BE CLOSED.

OCCUPIED HEATING CONTROL

- UPON A CALL FOR HEATING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PRIMARY AIR DAMPER (PAD) SHALL MODULATE TO ITS MINIMUM COOLING POSITION AND THE BASEBOARD RADIATION CONTROL VALVE SHALL OPEN. UPON A FURTHER DROP IN TEMPERATURE, THE VAV BOX CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SETPOINT. UPON A FURTHER DROP TEMPERATURE, THE VAV BOX SHALL MODULATE TO ITS HEATING AIRFLOW AND MODULATE THE CONTROL VALVE AS REQUIRED TO MAINTAIN TEMPERATURE. THE DAT SHALL LIMIT THE BOX TO 90°F (ADJ.). THE OPPOSITE SHALL OCCUR UPON A RISE IN TEMPERATURE.

UNOCCUPIED CONTROL

- IF THE ROOM TEMPERATURE FALLS BELOW 55°F FOR 10 MINUTES OR LONGER, THE BASEBOARD RADIATION CONTROL VALVE SHALL OPEN. WHEN THE TEMPERATURE SENSOR TEMPERATURE RISES ABOVE 60°F, THE HOT WATER VALVE SHALL CLOSE.
- THERE SHALL BE NO UNOCCUPIED COOLING.

WARM-UP CONTROL

- PROVIDE OPTIMUM START CAPABILITY. IF ROOM TEMPERATURE IS BELOW 63°F, WARM UP SHALL BE DONE WITH HW VALVE (HV) MODULATING TO MAINTAIN A DISCHARGE AIR TEMPERATURE (DAT) OF 100°F. PAD SHALL BE AT ITS MINIMUM HEATING POSITION. WHEN ROOM TEMPERATURE RISES ABOVE 69°F, OCCUPIED MODE SHALL START.

ALARMS

- IF THE ROOM TEMPERATURE SENSOR (TR) SENSES A TEMPERATURE MORE THAN 5°F ABOVE OR BELOW THE SETPOINT FOR 5 MINUTES, THE DDC SYSTEM SHALL GIVE A DETAILED ROOM "HIGH" OR "LOW" TEMPERATURE ALARM SIGNAL TO THE BAS.

NOTE:

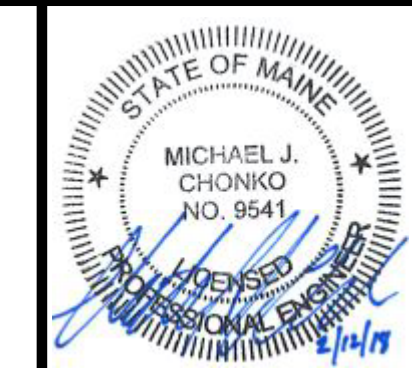
- SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

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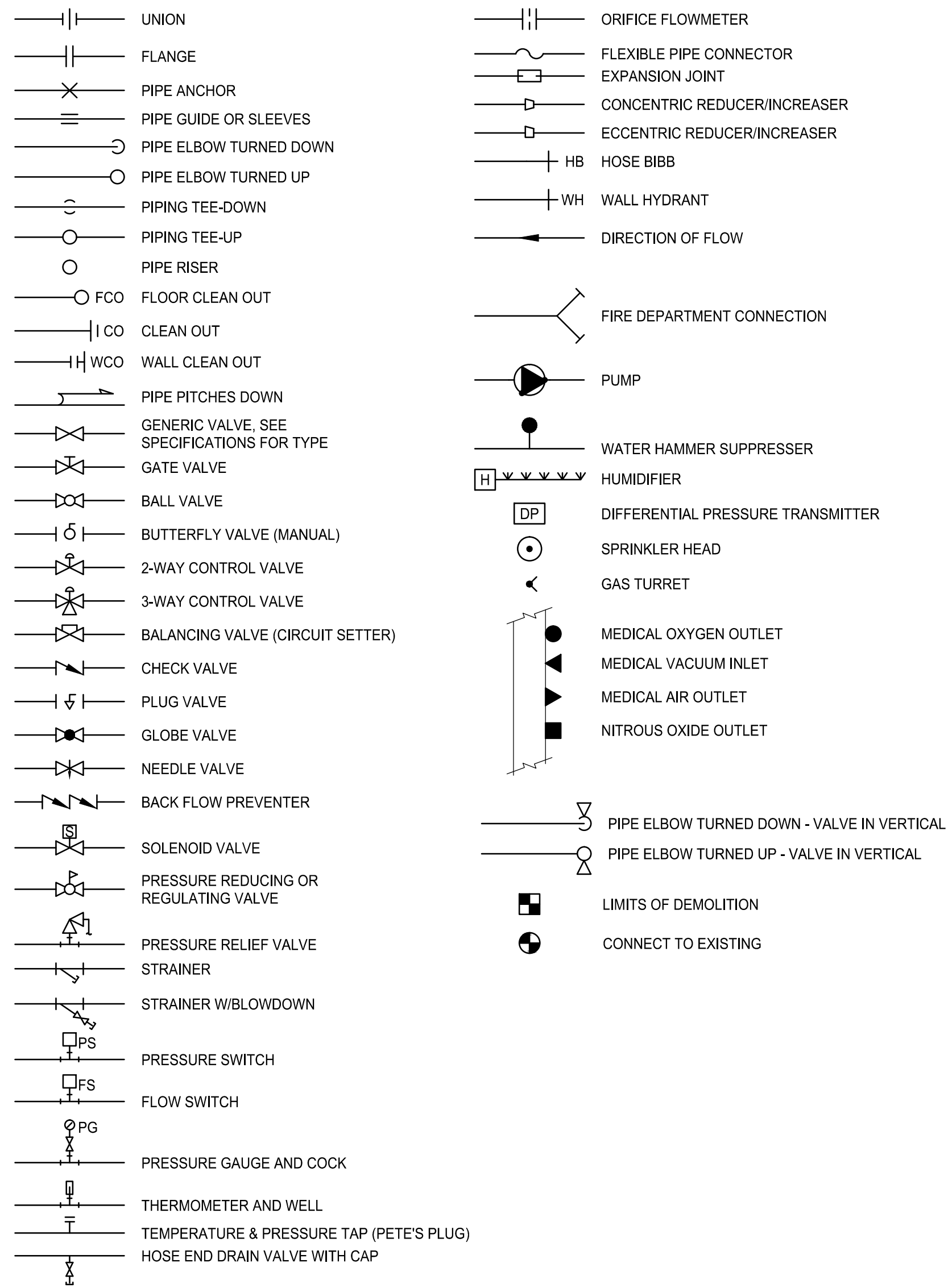
BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

PROJECT NO: **17231**
CAD DWG FILE: **M-601-17231**
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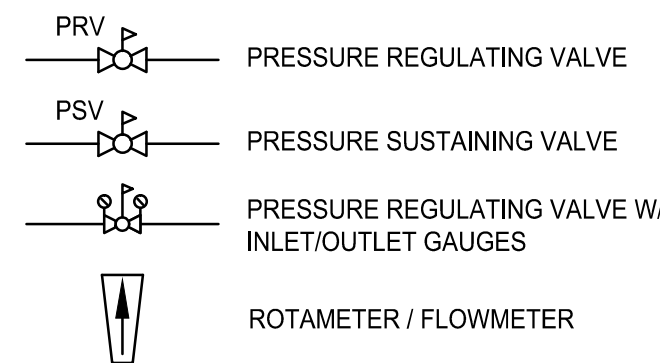
SHEET TITLE
MECHANICAL SCHEDULES
AND CONTROLS

M-601

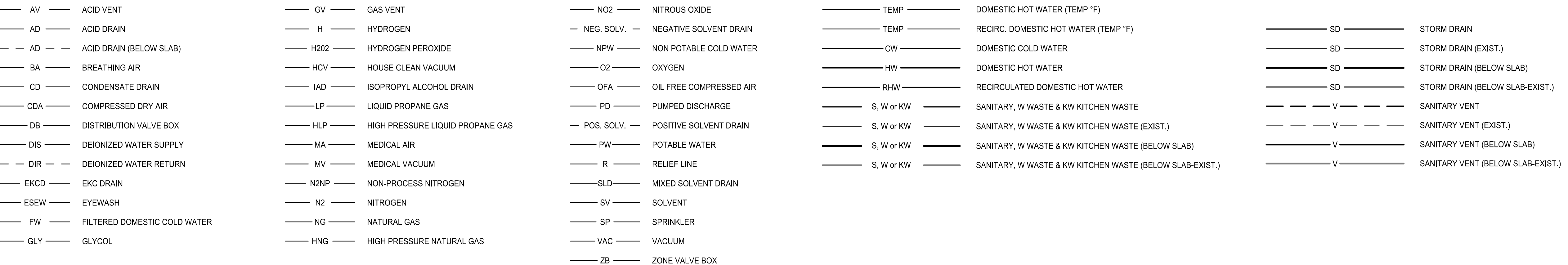
PIPING SYMBOLS



PROCESS INSTRUMENTATION SYMBOLS



PIPING SYSTEMS



ABBREVIATIONS

AAV AUTOMATIC AIR VENT	DWV DRAINAGE, WASTE & VENT	P PUMP
ABD ABANDON	EE EMERGENCY EQUIPMENT	PET THERMAL EXPANSION TANK
AC AIR COMPRESSOR	ENC ENCLOSURE	PP POLY-PROPYLENE
AD ACCESS DOOR	(E) EXISTING	PPE PRE PURCHASED EQUIPMENT
AFF ABOVE FINISHED FLOOR	ESP ELEVATOR SUMP PUMP	PRS PRESSURE REDUCING STATION
AHU AIR HANDLING UNIT	EXIST. EXISTING	PRV PRESSURE REDUCING VALVE
ATC AUTOMATIC TEMPERATURE CONTROL	EWC ELECTRIC WATER COOLER	(R) REMOVE
AV AIR VENT	FBO FURNISHED BY OWNER	(REL.) RELOCATED
BA BREATHING COMPRESSED AIR	FC FLEXIBLE CONNECTION	RD ROOF DRAIN
BFP BACKFLOW PREVENTER	FCO FLOOR CLEANOUT	RHC REHEAT COIL
BLDG BUILDING	FD FLOOR DRAIN	RM ROOM
BOD BOTTOM OF DUCT	FG FIBERGLASS	RP RECIRCULATING PUMP
BOP BOTTOM OF PIPE	FRHB FREEZE RESISTANT HOSE BIBB	RPZ REDUCED PRESSURE ZONE BFP
BP BOOSTER PUMP	FS FLOOR SINK	RV RELIEF VALVE
BT BATHING TUB	GC GENERAL CONTRACTOR	SCV SELF CONTAINED VALVE
BTU BRITISH THERMAL UNIT	GPM GALLONS PER MINUTE	SG STEAM GENERATOR
CFF CAPPED FOR FUTURE	GT GREASE TRAP	SH SHOWER
CFH CUBIC FEET PER HOUR	H HUMIDIFIER	SK SINK
CLG CEILING	HB HOSE BIB	SP SUMP PUMP
CO CLEANOUT	HRU HEAT RECOVERY UNIT	SS STAINLESS STEEL
CONT CONTINUATION	HTR HEATER	ST STORAGE TANK
COORD COORDINATE	H & V HEATING AND VENTILATION	T TANK
CP CONDENSATE PUMP	HVAC HEATING, VENTILATING AND AIR CONDITIONING	TD TRENCH DRAIN
CSRO CENTRAL STERILE PROCESS WATER	HW HOT WATER	TE TEMPERATURIZED ELEMENT (SENSOR)
CTE CONNECT TO EXISTING	HX HEAT EXCHANGER	TOP TOP OF PIPE
CT COOLING TOWER	INT INTERCEPTOR	TTS TIGHT TO STEEL
CU COPPER	IN WG INCHES WATER GAUGE	TYP TYPICAL
CV CONTROL VALVE	LAV LAVATORY	UIC UP IN CHASE
CW COLD WATER	MAC MEDICAL AIR COMPRESSOR	UIW UP IN WALL
CW-P CITY WATER-PROCESS	MAU MAKE UP AIR UNIT	UR URINAL
DC DOUBLE CONTAINED	MAX MAXIMUM	UV UNIT VENTILATOR
DCO DANDY CLEANOUT	MBH 1000 BTU/HR.	VB VACUUM BREAKER
DDC DIRECT DIGITAL CONTROL	ME MECHANICAL ENGINEER	VTR VENT THRU ROOF
DF DRINKING FOUNTAIN	MFR MANUFACTURER	VCFF VALVED AND CAPPED FOR FUTURE
DIA DIAMETER	MIN MINIMUM	VFD VARIABLE FREQUENCY DRIVE
DIC DOWN IN CHASE	MPV MULTI-PURPOSE VALVE	VOC VOLATILE ORGANIC COMPOUNDS
DIRO DIALYSIS PURIFIED WATER	MR MOP RECEPTOR	W WITH
DIW DOWN IN WALL	MTD MOUNTED	WB WALL BOX
DN DOWN	MUA MAKE UP AIR	WC WATER CLOSET
DS DOWNSPOUT	MV MIXING VALVE	WCO WALL CLEANOUT
DT DROP AND TRANSITION	MVP MEDICAL VACUUM	W&T WASTE AND TRAP
DWG DRAWING	NPW NON-POTABLE WATER	WH WALL HYDRANT
DWH DOMESTIC WATER HEATER	NTS NOT TO SCALE	ZUB ZONE VALVE BOX

GENERAL NOTE

ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL PLUMBING DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE DESIGN.

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BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

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PLUMBING LEGEND ABBREVIATIONS

PL001

PLUMBING SPECIFICATIONS

22 00 00 - GENERAL REQUIREMENTS

1. THE FOLLOWING APPLIES TO PLUMBING TRADES.
2. OBTAIN ALL PERMITS AND APPROVALS TO PERFORM THE WORK.
3. VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS IN THE FIELD. GENERAL SCHEMATIC LAYOUT IS INDICATED; ALL OFFSETS OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED.
4. INSTALL ALL NEW AND RELOCATED EXISTING COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, APPLICABLE CODES AND STANDARDS.
5. COORDINATE ELECTRICAL POWER REQUIREMENTS FOR ALL MOTORS.
6. COORDINATE WITH OWNER FURNISHED EQUIPMENT AND SYSTEMS.
7. SEAL INTERIOR PIPE PENETRATIONS WITH FIRE SEALANT. SEAL EXTERIOR WALL PIPE PENETRATIONS WATER TIGHT.
8. CUT AND PATCH SURFACES. RESTORING ORIGINAL FINISHES.
9. EQUIPMENT LISTED IS THE BASIS OF DESIGN. OR ENGINEER APPROVED EQUAL.
10. SUBMITTALS, PRE-CONSTRUCTION: SUBMIT CATALOG CUT SHEETS OF PROPOSED EQUIPMENT FOR ENGINEER REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
11. SUBMITTALS, DURING CONSTRUCTION: SUBMIT COPIES OF PIPE ROUGH-IN PRESSURE TESTS AS COMPLETED.
12. SUBMITTALS, POST CONSTRUCTION: SUBMIT COPIES OF FINAL PRESSURE TEST, FLUSHING AND PLUMBING DISINFECTION REPORTS. SUBMIT COPIES OF COMPLETED MANUFACTURER START UP REPORTS FOR EQUIPMENT.
13. OPERATIONS AND MAINTENANCE MANUALS: SUBMIT ALL TESTING DATA AND COPIES OF APPROVED PRODUCT DATA, INCLUDING MAINTENANCE INFORMATION IN A TABBED, NEATLY ORGANIZED THREE RING BINDER. INCLUDE VALVE IDENTIFICATION CHARTS PROVIDE 3 COPIES TO THE OWNER.
14. PIPE IDENTIFICATION: LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS.
15. VALVE IDENTIFICATION: PROVIDE A CIRCULAR BRASS TAG AND CHAIN ON EACH VALVE. TAG TO INCLUDE A DISCRETE NUMBER AND SHALL BE COORDINATED WITH ANY CURRENT FACILITY NUMBERING SCHEME OR STANDARD.
16. RECORD DRAWINGS: MAINTAIN A CURRENT SET OF MARKED UP CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES. PROVIDE A COMPLETE SET OF THESE RECORD MARK-UPS TO THE ARCHITECT AT THE END OF THE PROJECT.
17. ASTM E84 COMPLIANCE: INSULATION AND OTHER MATERIALS SHALL COMPLY WITH THE FLAME AND SMOKE SPREAD RATINGS.

22 05 00 - PLUMBING PIPING

1. PROVIDE ALL PIPING COMPLETE WITH FITTINGS, VALVES, STRAINERS, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDES, SLEEVES, AND ACCESSORIES.
2. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE.
3. DRAINAGE AND VENT PIPING SHALL BE TESTED. CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10 FT ABOVE THE FLOOR. WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT A 2 HOUR TEST DURATION.
4. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
5. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE JOINED.
6. PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
7. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.
8. ABOVE GRADE SANITARY DRAINAGE AND VENT PIPING: HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH ANCON FOUNDRY HUSKY SERIES 4000 EXTRA WIDE HEAVY DUTY GASKETED HUBLESS COUPLINGS.
9. DOMESTIC CW AND HW PIPING SHALL BE COPPER, TYPE L, HARD DRAWN IN ACCORDANCE WITH ASTM B88, AND LEAD-FREE SOLDER JOINTS.
10. INSPECTIONS AND TESTS SHALL BE PERFORMED ON THE PIPING INSTALLATION AS REQUIRED BY CODE. PITCH SANITARY DRAINAGE PIPING AT 1/4" PER FT. PITCH DOMESTIC CW, HW, AND VENT PIPING TOWARDS SOURCE.

22 07 19 - PIPING INSULATION

1. GENERAL REQUIREMENTS
 - A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS. STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAME SPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
 - B. DEFINITIONS:
 - B.A. EXPOSED: PIPING LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
 - B.B. CONCEALED: INDOOR PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
2. PIPING INSULATION
 - A. INSULATE ALL PIPING IN ACCORDANCE WITH THE FOLLOWING...
 - A.1. SERVICE: LOW TEMP PIPING - 40°F TO 100°F
 - A.1.a. SIZE: UP TO 4"
 - A.1.b. THICKNESS: 1"
 - A.1.c. MATERIAL: P-1
 - A.1.d. FINISH: VAPORSEAL
 - A.2. SERVICE: LOW TEMP FITTINGS AND VALVES
 - A.2.a. SIZE: UP TO 4"
 - A.2.b. THICKNESS: 1"
 - A.2.c. MATERIAL: P-4
 - A.2.d. FINISH: VAPOR SEAL
 - B. PIPING, VALVE AND FITTINGS TO BE INSULATED:
 - B.1. LOW TEMPERATURE PIPING SYSTEMS - 40 TO 100 °F INCLUDING:
 - B.1.a. COLD WATER, NPW AND FW
 - C. MATERIAL:
 - C.1. ALL INSULATION (INCLUDING JACKET, FACING, AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255, AND UL 273; NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.
 - C.2. TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING, ALL SERVICE JACKET. SIMILAR TO OWNENS CORNING 850 ASI.
 - C.3. TYPE P-4: MINIMUM 1 LB DENSITY FIBERGLASS FITTING INSERTS, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO MANVILLE HI LO TEMP INSULATION INSERTS.
3. FINISH
 - A. TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.
4. INSTALLATION:
 - A. BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
 - B. ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED.
 - C. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
 - D. INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

22 11 16 - DOMESTIC AND NON-POTABLE WATER PIPING SYSTEMS

1. APPLICABLE SYSTEMS:
 - A. DOMESTIC COLD (CW)
2. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED.
 - A. ABOVE GROUND WATER PIPING SYSTEMS: 125 PSIG
 - B. BELOW GROUND WATER PIPING SYSTEMS: 150 PSIG
3. ABOVE GRADE DOMESTIC : HARD DRAWN TYPE L SEAMLESS COPPER TUBING, COPPER FITTINGS AND LEAD-FREE SOLDERED JOINTS.
4. WATER PIPING SYSTEM VALVES: BRONZE BODIED VALVES, AS MANF BY HAMMOND, JENKINS, NIBCO.
 - A. SHUT-OFF DUTY: FULL PORT BALL VALVES
 - B. DIRECTIONAL DUTY: SWING STYLE CHECK VALVES.
 - C. HIGH-POINT VENTS AND LOW POINT DRAINS: FULL PORT BALL VALVES WITH CAP AND CHAIN.
 - D. THROTTLING DUTY: FIELD ADJUSTABLE CIRCUIT SETTERS.
5. WATER PIPING SYSTEM INSULATION: PROVIDE FIBERGLASS INSULATION ON ABOVE GRADE WATER PIPING SYSTEMS
 - A. PIPING UP TO 1-1/4-INCH: 1/2-INCH THICK
 - B. PIPING LARGER THAN 1-1/4-INCH: 1-INCH THICK.
6. WATER PIPING SYSTEM FLUSHING AND CLEANING: FLUSH PIPING SYSTEMS WITH WATER. DISINFECT WITH A WATER - CHLORINE SOLUTION (50 PPM CHLORINE) FOR 24 HOURS, OR AS DIRECTED BY PLUMBING OFFICIALS. FLUSH SYSTEMS AND PROVIDE WATER QUALITY REPORTING.
7. PROVIDE CODE COMPLIANT BACKFLOW PREVENTION @ ALL SINKS.

22 13 18 - SANITARY & STORM DRAINAGE, WASTE AND VENT (DWV) PIPING SYSTEMS

1. APPLICABLE SYSTEMS:
 - A. SANITARY WASTE AND VENT
2. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED.
 - A. GRAVITY FLOW DWV PIPING SYSTEMS: 10 FT. HEAD.
3. ABOVE & BELOW GRADE GRAVITY FLOW WASTE AND VENT PIPING SYSTEMS:
 - A. SCHEDULE 40 CAST IRON PIPE, DWV STYLE FITTINGS AND NO-HUB JOINTS, 4 BAND SYSTEM MINIMUM ON COUPLING (ASTM C1277). GASKET PER ASTM C564
 - B. ABOVE GRADE ONLY: TYPE L COPPER FOR VENT TO MATCH EXISTING
 - C. PLUMBING FIXTURE P-TRAPS & TAIL PIPES: CHROME PLATED, CAST BRASS.

22 11 19 - PLUMBING SPECIALTIES


1. CLEANOUTS SHALL BE COMMERCIAL GRADE BRASS. APPROVED MANUFACTURERS INCLUDE ZURN, WADE, J.R. SMITH, JOSAM, OR APPROVED EQUAL.
2. PROVIDE ACCESS AND ACCESS PANELS TO PROVIDE ACCESSIBLE EQUIPMENT AND SPECIALTIES. WHERE NECESSARY, PROVIDE METAL UNITS WITH LOCKS, CONFIGURATION AND TRIM AS REQUIRED BY FINISH WALL SURFACE. APPROVED MANUFACTURERS INCLUDE KARP, MLCOR, NYSTROM, OR APPROVED EQUAL.
3. WALL HYDRANT: SHALL BE MANUFACTURED BY ZURN OR APPROVED EQUAL.
 - 3.A. PROVIDED WITH NON-FREEZE TYPE INTEGRAL BACKFLOW PREVENTER, BRONZE CASING, ALL BRONZE INTERIOR PARTS, NON-TURING OPERATING ROD WITH FREE-FLOATING COMPRESSIONS CLOSURE VALVE, REPLACEABLE BRONZE SEAT AND SEAT WASHER, AND COMBINATION 3/4" FEMALE OR 1" MALE STRAIGHT IP INLET.
4. HEAT TRACE: SHALL BE RAYCHEM 5XL-1 SELF REGULATING HEAT TRACE OR APPROVED EQUAL.
 - 4.A. BUS WIRES: 16AWG NICKEL-PLATED COPPER
 - 4.B. BRAID/OUTER JACKET: TINNED-COPPER BRAID WITH MODIFIED POLYOLEFIN JACKET OR FLUOROPOLYMER JACKET.
 - 4.C. CONNECTION KITS: RAYCHEM RAYCLIC OR FTC CONNECTION KITS MUST BE USED WITH XL-TRACE HEATING CABLES. REFER TO THE PIPE FREEZE PROTECTION AND FLOW MAINTENANCE DESIGN GUIDE FOR PROPER CONNECTION KIT SELECTION.
 - 4.D. GROUND - FAULT PROTECTION: TO MINIMIZE THE DANGER OF FIRE FROM SUSTAINED ELECTRICAL ARCING IF THE HEATING CABLE IS DAMAGED OR IMPROPERLY INSTALLED, AND TO COMPLY WITH THE REQUIREMENTS OF THERMAL MANAGEMENT, AGENCY CERTIFICATION AND NATIONAL ELECTRICAL CODE, GROUND-FAULT EQUIPMENT PROTECTION MUST BE USED ON EACH HEATING CABLE BRANCH CIRCUIT.

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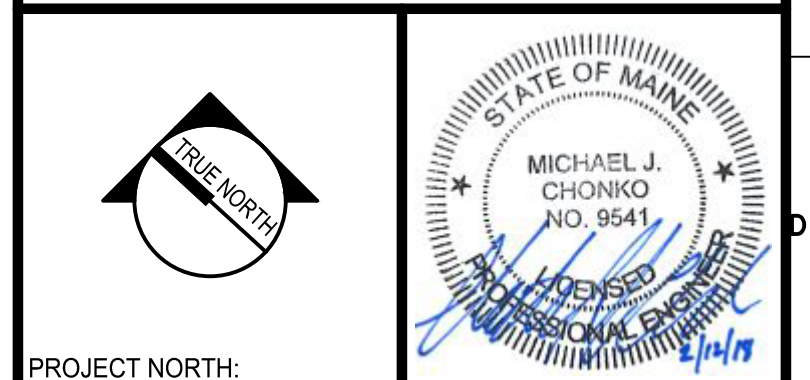
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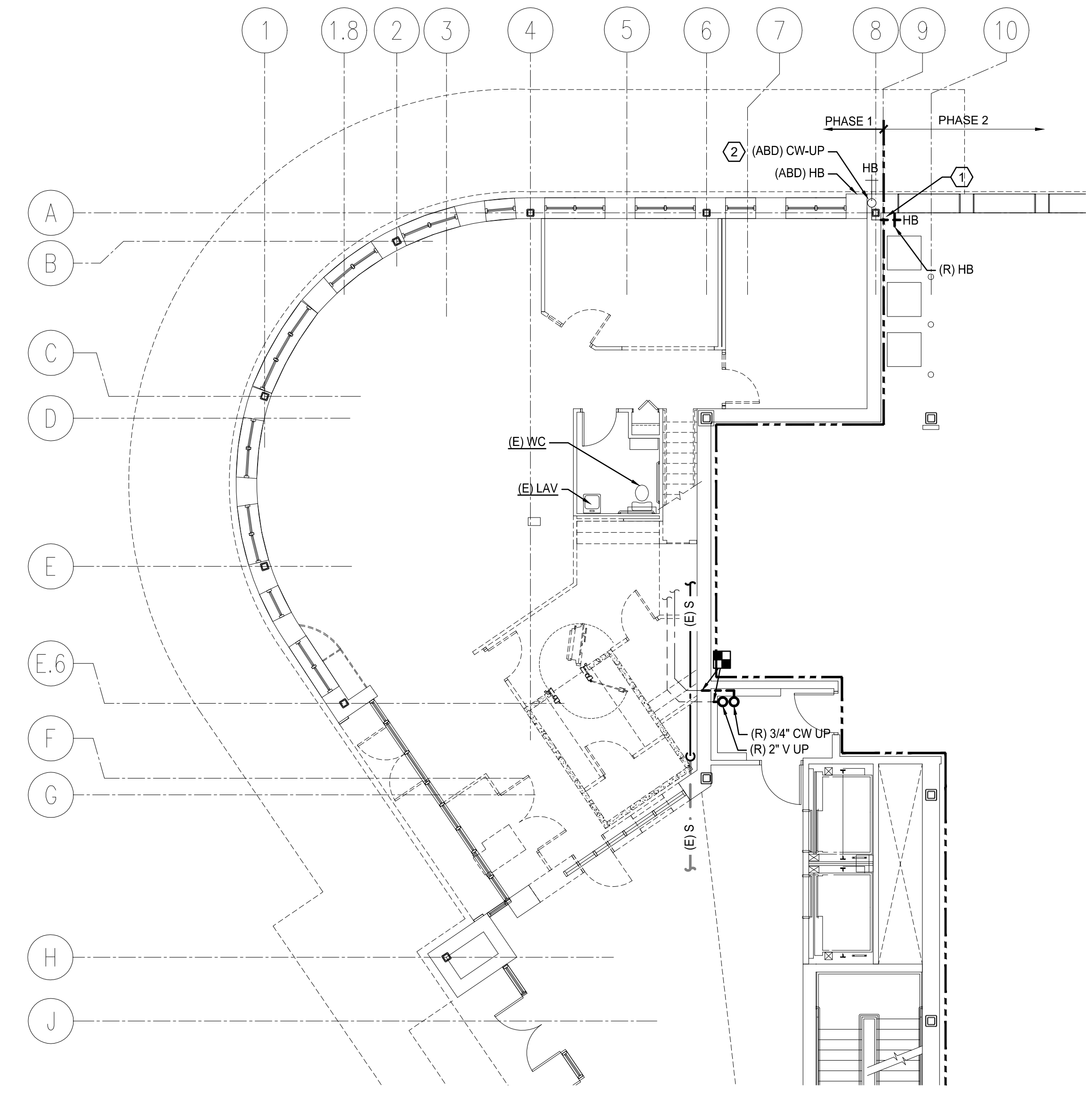


BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

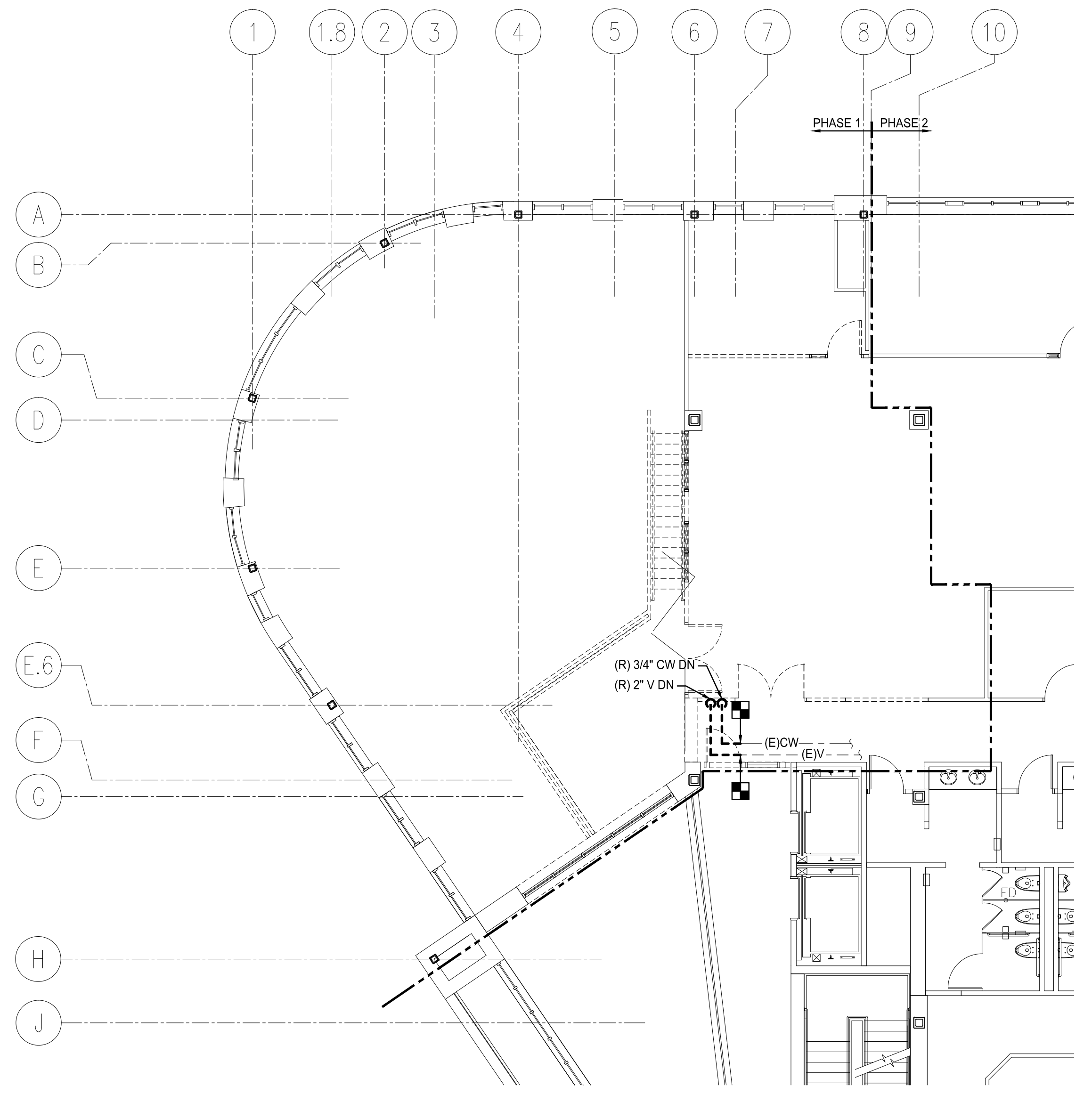
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SHEET TITLE
PLUMBING SPECIFICATIONS

PL002



A1 FIRST FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"



A8 SECOND FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"

NOTE:
1. SEE SHEET M-001 FOR THE LEGEND AND ABBREVIATIONS.

KEYNOTES

KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	REMOVE HOSE BIB AND PATCH WALL TO MATCH EXISTING.
2	CUT CW PIPE IN CEILING ABOVE AND CAP. DRAIN AND ABANDON CW-RISER AND HOSE BIB IN PLACE.

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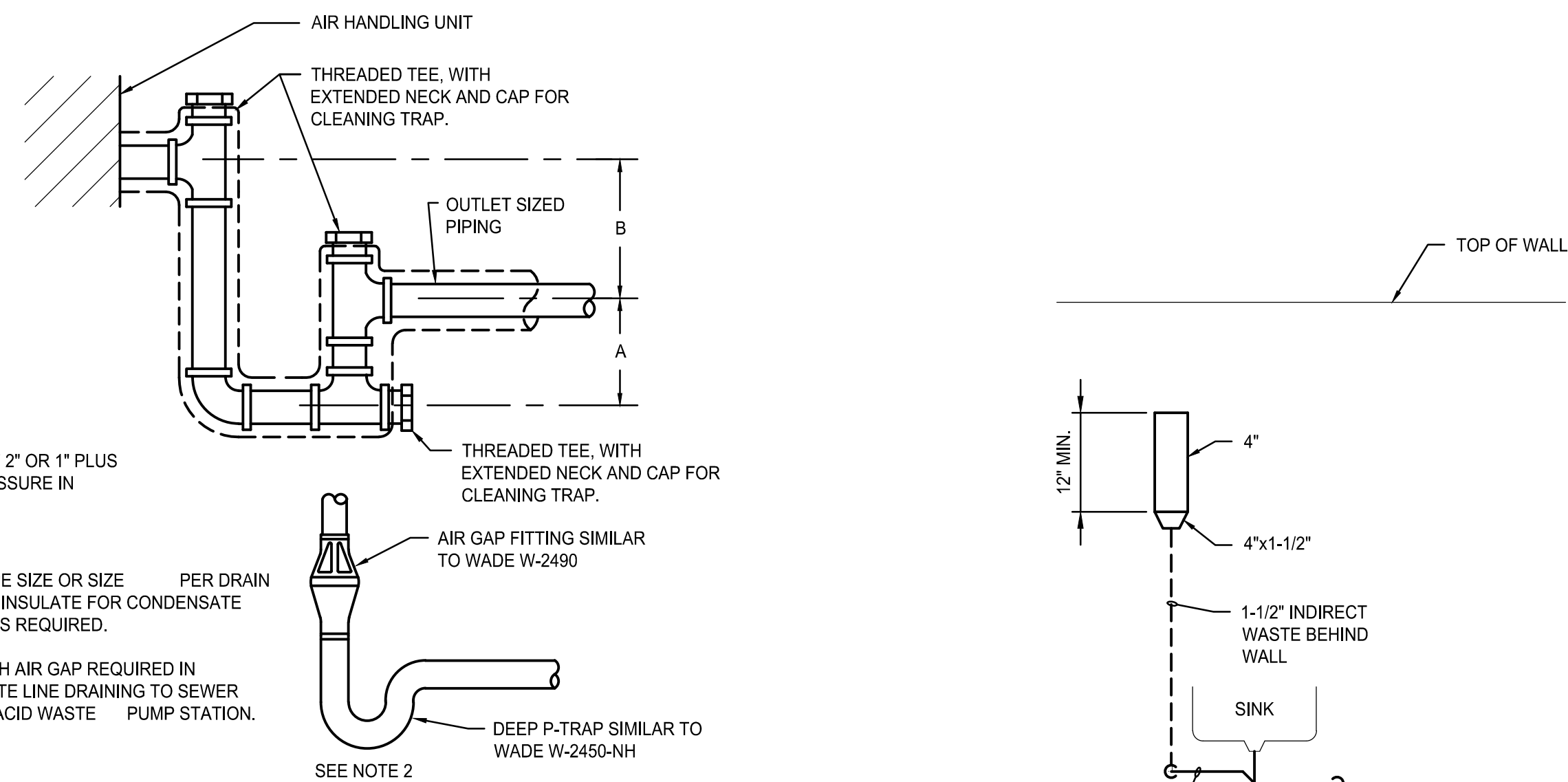
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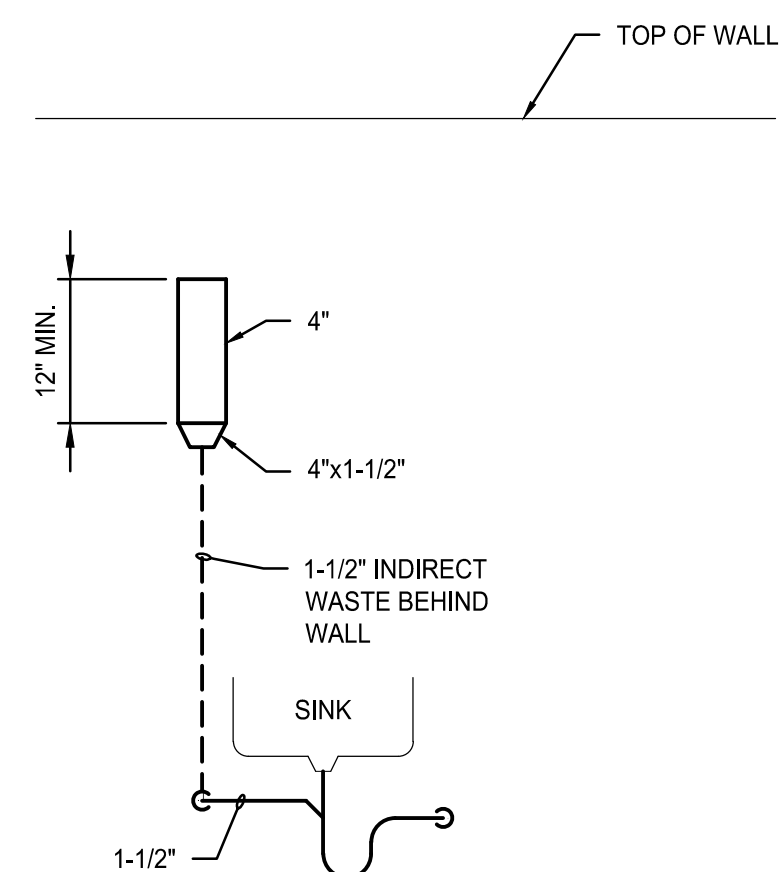
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SHEET TITLE
PLUMBING DEMOLITION PLAN - PHASE 1

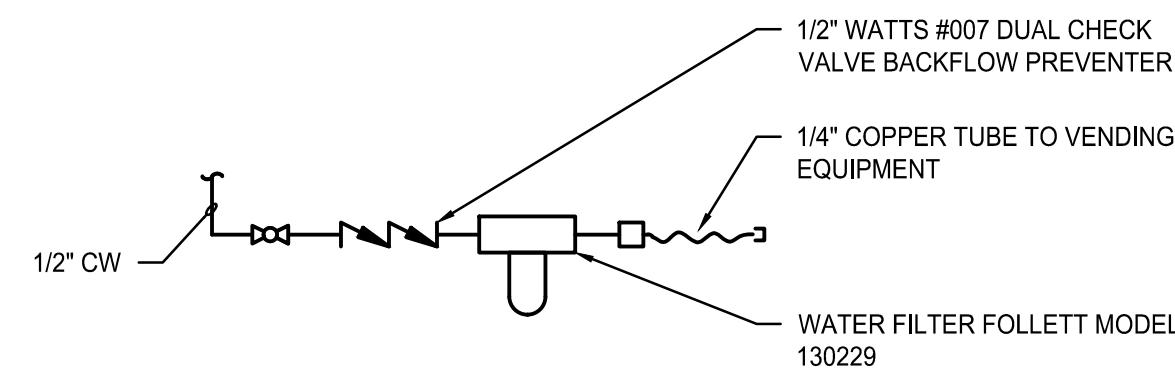
PD101



J1 CONDENSATE DRAIN TRAP DETAIL
NOT TO SCALE



J5 FUNNEL DRAIN DETAIL
NOT TO SCALE



J8 COFFEE MAKER CONNECTION DETAIL
NOT TO SCALE

PLUMBING SPECIALTIES SCHEDULE				
TAG	APPLICATION	TYPICAL UNIT MFG & MODEL NO.	DESCRIPTION	NOTES
WH-A	FREEZE RESISTANT WALL HYDRANT	ZURN #Z-1300-CL-WC-PB	INTEGRAL VACUUM BREAKER, LOOSE KEY, POLISHED BRONZE FACE 3/4" CONNECTION	
NOTES:				

NOTE:
1. SEE SHEET PL001 FOR THE LEGEND AND ABBREVIATIONS

KEYNOTES	
KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	ADJUST EXISTING CW AND VENT PIPING AS NECESSARY TO CONCEAL PIPES.
2	PROVIDE RAYCHEM 5XL-1 HEAT TRACE ON ALL NEW AND EXISTING COLD WATER PIPING IN AND ABOVE VESTIBULE WALL.
3	3/4" CD-DROP, SPILL VIA AIR GAP INTO FUNNEL DRAIN BEHIND WALL. SEE DETAIL J5/PL101.
4	3/4" CD-DROP, SPILL CD TO FUNNEL DRAIN VIA AIR GAP IN CEILING ABOVE. ROUTE INDIRECT WASTE FROM FUNNEL DRAIN IN WALL TO EXISTING SINK, ABOVE EXISTING P-TRAP.

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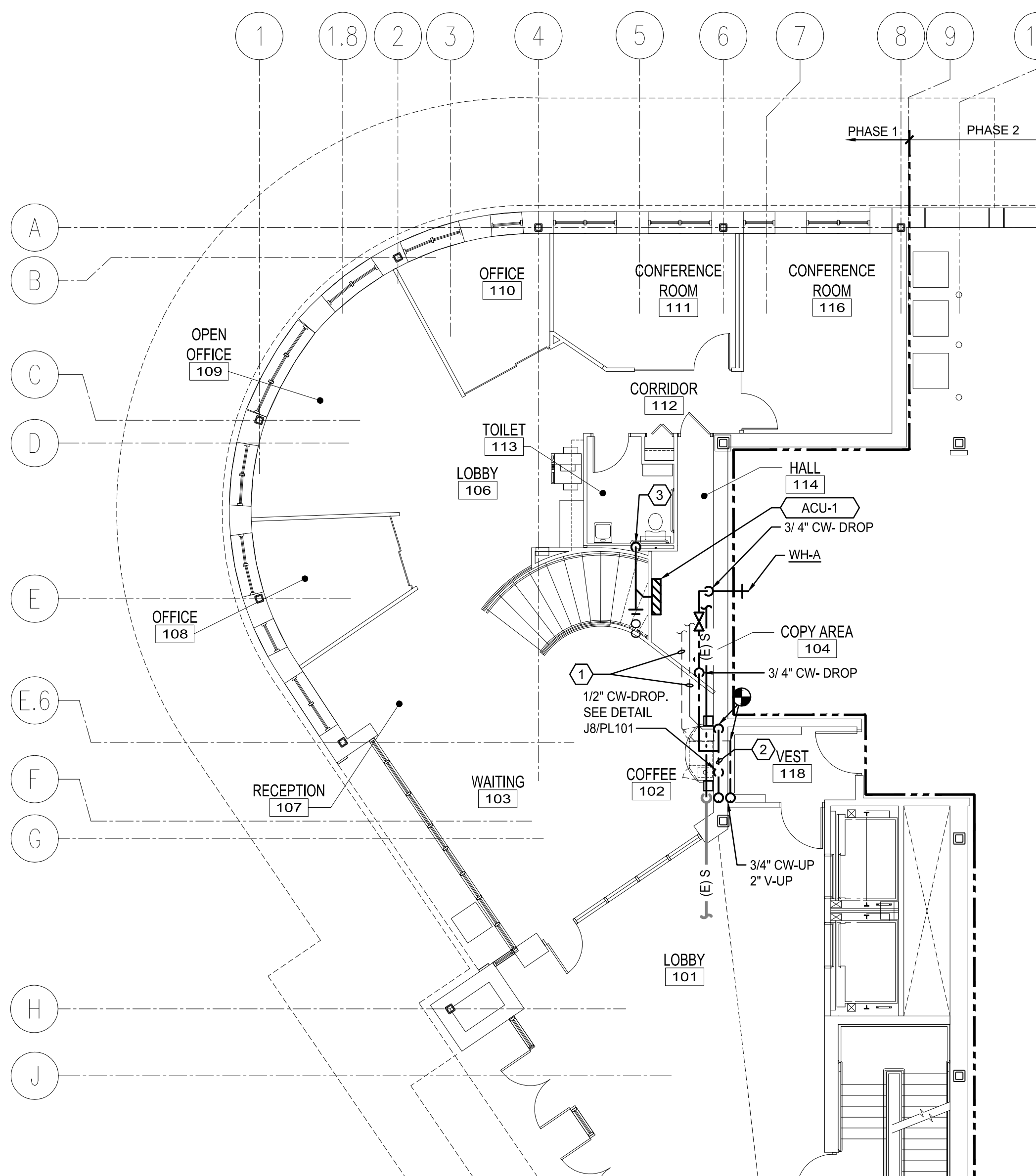
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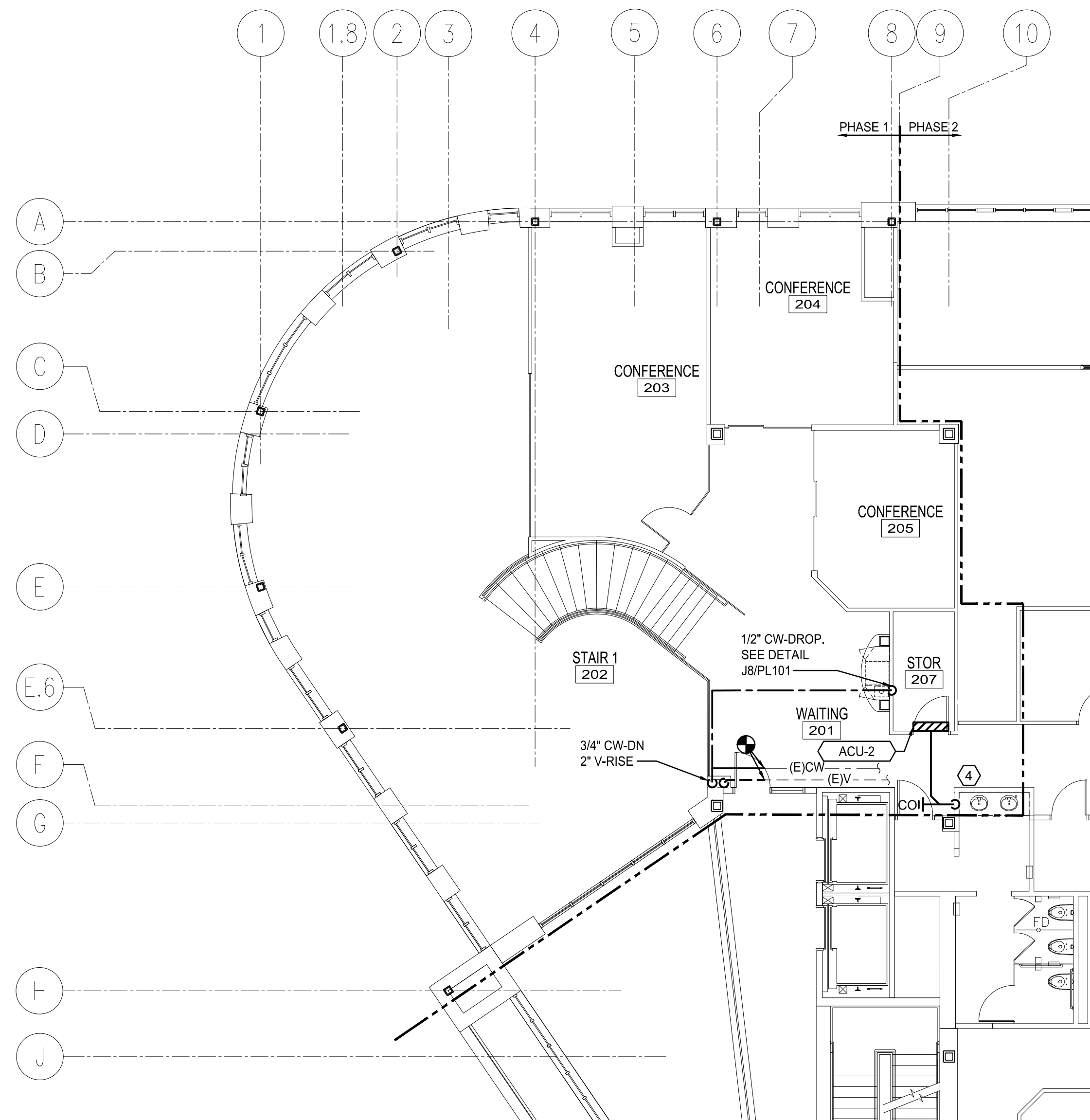
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SHEET TITLE
PLUMBING NEW WORK PLAN - PHASE 1

PL101



A1 FIRST FLOOR PLUMBING NEW WORK PLAN
1/8" = 1'-0"



A8 SECOND FLOOR PLUMBING NEW WORK PLAN
1/8" = 1'-0"

LIGHTING

	2x4 FIXTURE ASSOCIATED CONTROL DEVICE FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
	1x4 FIXTURE
	2x2 FIXTURE
	FIXTURE WIRED TO UNSWITCHED NORMAL CIRCUIT
	FIXTURE WIRED TO UNSWITCHED EMERGENCY CIRCUIT
	FIXTURE WIRED TO SWITCHED EMERGENCY CIRCUIT
	DOWN LIGHT
	INDUSTRIAL STRIP
	WALL MOUNTED FIXTURES
	TRACK LIGHTING
	POLE MOUNTED SITE LIGHTING FIXTURE FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
	FLOOD LIGHT
	WALL WASH LIGHT FIXTURE
	EXIT SIGN, CEILING MOUNTED ARROW INDICATES EGRESS DIRECTION SHADING INDICATES SIGN FACE
	EXIT SIGN, WALL MOUNTED SHADING INDICATES SIGN FACE
	DUAL HEAD EMERGENCY LIGHT BATTERY PACK TD - TIME DELAY RESET
	REMOTE EMERGENCY LIGHTING HEAD
	WALL PACK
	S3 3-WAY TOGGLE SWITCH
	Sa SINGLE POLE TOGGLE SWITCH INDICATES CONTROLLED FIXTURE
	S4 4-WAY TOGGLE SWITCH
	SII DUAL LEVEL SWITCHING
	SD 0-10V DIMMER SWITCH COMPATIBLE WITH LED AS REQUIRED.
	SL LOW VOLTAGE SWITCH CONNECTED TO LIGHTING CONTROL SYSTEM.
	ST TIMER SWITCH, SPRING WOUND
	SDT SINGLE POLE DOUBLE THROW TOGGLE SWITCH, CENTER POSITION OFF
	SWP WEATHER PROOF
	SXP EXPLOSION PROOF
	SVD VACANCY SENSOR W/ INTEGRAL 0-10 DIMMER - MANUAL ON/AUTOMATIC OFF OPERATION
	UNSWITCHED CONTINUATION OF BRANCH CIRCUIT
	HOME RUN
	OCCUPANCY SENSOR a. INDICATES CONTROLLED FIXTURE INDICATES AIMING DIRECTION

COMMUNICATION & DATA SYSTEMS

	TELEPHONE SYSTEM WALL JACK W-INDICATES WALL MOUNTED AT 48" AFF P-INDICATES PAYPHONE (2)-INDICATES 2 OUTLETS, SINGLE BOX
	DATA SYSTEM OUTLET
	COMBINATION VOICE/DATA SYSTEM OUTLET
	UNDERFLOOR TELEPHONE SYSTEM OUTLET
	UNDERFLOOR DATA SYSTEM OUTLET
	UNDERFLOOR VOICE & DATA OUTLET
	CATV CLOSED CIRCUIT TELEVISION OUTLET, MOUNT 18" AFF UNLESS OTHERWISE NOTED
	CCTV CABLE TELEVISION SYSTEM OUTLET, MOUNT 18" AFF UNLESS OTHERWISE NOTED
	PA PAGING SYSTEM CONTROL PANEL AND PAGING AMPLIFIER
	PAGING SYSTEM SPEAKER, CEILING MOUNTED
	PAGING SYSTEM SPEAKER, WALL MOUNT AT 7'-6" 1. FLUSH, 2. SURFACE, 3. HORN, 4. DUAL HORN
	VC VOLUME CONTROL
	HC INTERCOM SYSTEM HAND KEY
	CS CLOCK SPEAKER
	HS INTERCOM SYSTEM HAND SET
	CH WALL MOUNTED CLOCK
	CD CEILING MOUNTED DATA SYSTEM OUTLET
	CDT CEILING MOUNTED TELE/DATA SYSTEM OUTLET

POWER

	NON-FUSED SAFETY SWITCH AMPERE RATING
	NEMA ENCLOSURE RATING
	FUSED SAFETY SWITCH, TOP NUMBER INDICATES SWITCH AMPERE RATING, LOWER NUMBER INDICATES FUSE RATING
	NEMA ENCLOSURE
	MAGNETIC MOTOR STARTER, FVNR UNLESS INDICATED OTHERWISE
	NEMA ENCLOSURE RATING
	NEMA SIZE (TYPICAL)
	COMBINATION CIRCUIT BREAKER/MAGNETIC MOTOR STARTER FIRST NUMBER INDICATES CIRCUIT BREAKER AMPERE RATING SECOND NUMBER INDICATES NEMA STARTER SIZE
	COMBINATION FUSED DISCONNECT/MAGNETIC MOTOR STARTER NUMBERS INDICATE DISCONNECT AMPERE RATING/FUSE RATING/NEMA STARTER SIZE
	NON-FUSED DISCONNECT/MAGNETIC MOTOR STARTER FIRST NUMBER INDICATES CIRCUIT BREAKER AMPERE RATING SECOND NUMBER INDICATES NEMA STARTER SIZE
	M MANUAL MOTOR STARTER, TOGGLE OPERATED, 1,2 OR 3 POLE AS REQUIRED, OVERLOAD PROTECTION
	M MANUAL MOTOR SWITCH, TOGGLE OPERATED, SINGLE PHASE, 1 OR 2 POLE AS REQUIRED (NO OVERLOAD PROTECTION)
	CB ENCLOSED CIRCUIT BREAKER AMPERE RATING
	1/2 ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER RATING
	5 EXPLOSION PROOF MOTOR
	VAV VARIABLE AIR VOLUME CONTROL ACTUATORS
	HS LOCAL SELECTOR SWITCH H/O/A - HAND/OFF/AUTO
	EMO EMERGENCY OFF BREAK GLASS STATION
	J JUNCTION BOX
	T TRANSFORMER
	P POWER POLE
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	EY CONDUIT SEAL
	E DUPLX RECEPTACLE, NEMA 5-20R, INSTALLED ON EMERGENCY CIRCUIT (TYPICAL)
	GFI DUPLX RECEPTACLE, NEMA 5-20R
	HOSPITAL GRADE DUPLX RECEPTACLE, NEMA 5-20R
	HOSPITAL GRADE GFCI DUPLX RECEPTACLE, NEMA 5-20R
	HOSPITAL GRADE ISOLATED GROUND DUPLX RECEPTACLE, NEMA 5-20R
	S SINGLE RECEPTACLE, NEMA 5-20R
	SC SINGLE CEILING RECEPTACLE, NEMA 5-20R UNO
	DC DUPLX CEILING RECEPTACLE, NEMA 5-20R UNO
	DD DOUBLE DUPLX (QUADRUPLX) RECEPTACLE, NEMA 5-20R
	HOSPITAL GRADE DOUBLE DUPLX RECEPTACLE NEMA 5-20R
	SS SWITCHED RECEPTACLE
	FO FLOOR OUTLET, DUPLX RECEPTACLE, NEMA 5-20R
	PR POWER RECEPTACLE, 480 VOLT NEMA CONFIGURATION AS NOTED.
	PR POWER RECEPTACLE, 240 VOLT NEMA CONFIGURATION AS NOTED.
	PB PANELBOARD, NORMAL POWER
	PB PANELBOARD, EMERGENCY POWER
	MOA MULTI OUTLET ASSEMBLY
	CP CONTROL PANEL
	PPA-XX (PAR) BRANCH INDICATES PARTIAL CIRCUIT CIRCUIT NUMBER INDICATES PANEL NAME
	XXX EQUIPMENT TAG
	HOME RUN TO INDICATED PANEL

GROUNDING

	GR GROUND ROD</td
	EW EXOTHERMIC WELD CONNECTION
	BC BOLTED CONNECTION
	CC BARE COPPER CONDUCTOR RUN EXPOSED
	CC BARE COPPER CONDUCTOR EMBEDDED IN CONCRETE OR BURIED

FIRE ALARM

	FACP FIRE ALARM CONTROL PANEL
	FAA FIRE ALARM ANNUNCIATOR
	FAMB FIRE ALARM MASTER BOX
	FAMS FIRE ALARM MANUAL PULL STATION
	FASU FIRE ALARM SPEAKER/STROBE UNIT
	FANA FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCE (GENERAL EVACUATION)
	FANA FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCE CLEAN ROOM NOTIFICATION (LOCAL)
	FANO FIRE ALARM VISIBLE ONLY NOTIFICATION APPLIANCE CANDELA INTENSITY-15/75 UNLESS OTHERWISE NOTED
	PSD PHOTOELECTRIC SMOKE DETECTOR, CEILING MOUNTED INDICATES AUXILIARY CONTACT.
	HTD FIXED TEMPERATURE HEAT DETECTOR, CEILING MOUNTED.
	ISD INDICATES EQUIPMENT INTERLOCKED WITH THE DETECTOR CLEAN ROOM SMOKE DETECTOR
	ISD INDICATES EQUIPMENT INTERLOCKED WITH THE SMOKE DETECTOR
	CRD COMBINATION RATE-OF-RISE/FIXED TEMPERATURE HEAT DETECTOR, CEILING MOUNTED
	EB ELECTRIC BELL
	DSM DUCT SMOKE DETECTOR, PHOTOELECTRIC WITH AUXILIARY CONTACT.
	FS SPRINKLER SYSTEM FLOW SWITCH
	TS SPRINKLER SYSTEM TAMPER SWITCH
	FASMD FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER
	IR INTERLOCK RELAY
	SD SMOKE DAMPER
	RAI REMOTE ALARM INDICATOR
	RTS REMOTE TESTING STATION
	KB KNOX BOX

SECURITY SYSTEMS

	DC DOOR CONTACT
	CR CARD READER
	KP KEY PAD
	CCTV CLOSED CIRCUIT TELEVISION CAMERA
	ES ELECTRIC STRIKE
	ML MAG LOCK
	TC TIME CLOCK

ABBREVIATIONS

A AMP	AMPERE	LA LIGHTNING ARRESTER	LTG LIGHTING
AFF ABOVE FINISHED FLOOR	LTG LIGHTING	MC METAL CLAD	MCB MAIN CIRCUIT BREAKER
AFG ABOVE FINISHED GRADE	MCB MAIN CIRCUIT BREAKER	MFR MANUFACTURER	MI MINERAL INSULATED
AHJ AUTHORITY HAVING JURISDICTION	MFR MANUFACTURER	MLO MAIN LUG ONLY	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MI MINERAL INSULATED	MV MEDIUM VOLTAGE	NC NORMALLY CLOSED
AWG AMERICAN WIRE GAUGE	MLO MAIN LUG ONLY	NEC NATIONAL ELECTRICAL CODE	NEG NEGATIVE
BFG BELOW FINISHED GRADE	MTD MOUNTED	NEUT NEUTRAL	NIC NOT IN CONTRACT
BOS BOTTOM OF STEEL	NC NORMALLY CLOSED	NO NORMALLY OPEN	NTS NOT TO SCALE
C CONDUIT, CONDUCTOR	NEG NEGATIVE	NTS NOT TO SCALE	PF POWER FACTOR
CATV CABLE TELEVISION	NEC NATIONAL ELECTRICAL CODE	NO NORMALLY OPEN	PH PHASE
CB CIRCUIT BREAKER	NEG NEGATIVE	NTS NOT TO SCALE	PVC POLYVINYL CHLORIDE
CC CLOSED CIRCUIT TELEVISION	NEUT NEUTRAL	NTS NOT TO SCALE	RGS RIGID STEEL CONDUIT
CCTV CLOSED CIRCUIT TELEVISION	NIC NOT IN CONTRACT	NO NORMALLY OPEN	RSC RIGID STEEL CONDUIT
CPT CONTROL POWER TRANSFORMER	NO NORMALLY OPEN	NTS NOT TO SCALE	RTD RESISTANCE TEMPERATURE DETECTOR
CT CURRENT TRANSFORMER	NTS NOT TO SCALE	NTS NOT TO SCALE	SN SOLID NEUTRAL
CU COPPER	PF POWER FACTOR	STP SHIELDED TWISTED PAIR	STT SHIELDED TWISTED TRIPLET
DACT DIGITAL ALARM COMMUNICATOR TRANSMITTER	PH PHASE	SWBD SWITCHBOARD	SWGR SWITCHGEAR
DB DIRECT BURIED	PVC POLYVINYL CHLORIDE	TP TOP OF STEEL	TOS TAMPER PROOF
DISC DISCONNECT	RGS RIGID STEEL CONDUIT	TP TAMPER PROOF	TRANSF TRANSFORMER
DN DOWN	RSC RIGID STEEL CONDUIT	TVSS TRANSIENT VOLTAGE SUPPRESSOR	UNO UNLESS NOTED OTHERWISE
EMT ELECTRICAL METALLIC TUBING	RTD RESISTANCE TEMPERATURE DETECTOR	UNO UNLESS NOTED OTHERWISE	V VOLT
EW EXOTHERMIC WELD CONNECTION	SN SOLID NEUTRAL	V VOLT	VA VOLT-AMPERE
IG ISOLATED GROUND	STP SHIELDED TWISTED PAIR	VA VOLT-AMPERE	VAR VOLT-AMPERE REACTIVE
IMC INTERMEDIATE METAL CONDUIT	SWBD SWITCHBOARD	VAR VOLT-AMPERE REACTIVE	WM WATT METER
K KILO	SWGR SWITCHGEAR	WM WATT METER	WP WEATHER PROOF
KCMIL THOUSAND CIRCULAR MILS	TOS TAMPER PROOF	WP WEATHER PROOF	XFMR TRANSFORMER
KV KILOVOLT	TVSS TRANSIENT VOLTAGE SUPPRESSOR	XFMR TRANSFORMER	XP EXPLOSION PROOF
KVA KILOVOLT-AMPERE	UNO UNLESS NOTED OTHERWISE	XP EXPLOSION PROOF	
KVAR KILOVOLT-AMPERE REACTIVE	V VOLT		
KW KILOWATT	VA VOLT-AMPERE		
KWH KILOWATT-HOUR	VAR VOLT-AMPERE REACTIVE		

ONE LINE DIAGRAM

	MVDCB MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
	LVDVDCB LOW VOLTAGE DRAWOUT CIRCUIT BREAKER AF - AMP FRAME AT - AMP TRIP EO - ELECTRICALLY OPERATED
	MCCB MOLDED CASE CIRCUIT BREAKER
	ST SHUNT TRIP GF - GROUND FAULT EO - ELECTRICALLY OPERATED
	DISC DISCONNECT, ISOLATION OR SAFETY SWITCH
	FC FUSED CUTOUT
	FLBS FUSED LOAD BREAK SWITCH
	MVMS MEDIUM VOLTAGE MOTOR STARTER
	MMMS MAGNETIC MOTOR STARTER, NUMERAL INDICATES NEMA SIZE FVNR - FULL VOLTAGE REVERSING RVAT - REDUCING VOLTAGE AUTO TRANSFORMER 2S - TWO SPEED
	VFD VARIABLE FREQUENCY DRIVE
	PT POWER TRANSFORMER OA - LIQUID TYPE SELF COOLED AA - DRY TYPE SELF COOLED FA - FAN COOLED CONNECTION
	SIT SHIELDED ISOLATION TRANSFORMER
	PT POTENTIAL TRANSFORMER -RATIO -NUMBER REQUIRED
	CT CURRENT TRANSFORMER -RATIO -NUMBER REQUIRED
	GFCIT GROUND FAULT CURRENT TRANSFORMER
	M MOTOR, NUMBER INDICATES HORSEPOWER
	G GENERATOR
	ATS - AUTOMATIC TRANSFER SWITCH MTS - MANUAL TRANSFER SWITCH
	M METER A - AMMETER V - VOLTMETER W - WATTMETER WH - WATT HOURMETER KWH - KILOWATT HOUR KVAR - KILOVAR METER VAR - VAR METER HZ - FREQUENCY METER PF - POWER FACTOR METER
	DPM DIGITAL POWER METER
	MTS METER TRANSFER SWITCH AS - AMMETER SWITCH VS - VOLTMETER SWITCH
	LA LIGHTNING ARRESTER
	KI KEY INTERLOCK
	F FUSE
	EPF ELECTRONIC POWER FUSE
	DD DRAWOUT DEVICE
	G GROUND
	GF GROUND FAULT

GENERAL NOTES:

- ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE, AND IN ACCORDANCE WITH ALL APPLICABLE CODES, INCLUDING, BUT NOT LIMITED TO NFPA 70, NFPA 90A, NFPA 99, NFPA 101, AND THE AUTHORITY HAVING JURISDICTION.
- EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRES ELECTRICAL CONNECTION IS SHOWN ON THE MECHANICAL PLANS. ALL MOTOR SAFETY SWITCHES, DISCONNECTS AND MOTOR STARTERS ARE PROVIDED BY DIVISION 26 UNLESS NOTED AS FURNISHED WITH EQUIPMENT (FWE).
- CONTRACTOR SHALL REVIEW ALL TRADES CONTRACT DOCUMENTS, AND FIELD VERIFY TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT AND CONDUITS.
- COORDINATE ARRANGEMENT, MOUNTING, AND SUPPORT OF ELECTRICAL CONDUIT AND EQUIPMENT TO PROVIDE FOR EASE OF DISCONNECTING THE EQUIPMENT WITH MINIMUM INTERFERENCE TO OTHER INSTALLATION, TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT A REQUIRED SLOPE, AND SO CONNECTING RACEWAYS SHALL BE CLEAR OF OBSTRUCTIONS AND OF THE WORKING AND ACCESS SPACE OF OTHER EQUIPMENT.
- UNLESS OTHERWISE NOTED CONVENIENCE RECEPTACLES SHALL BE MOUNTED 18-INCHES AFF, LIGHTING TOGGLE SWITCHES 48-INCHES AFF, DATA SYSTEM OUTLETS 18-INCHES AFF, FIRE ALARM NOTIFICATION DEVICES 80-INCHES AFF OR 6-INCHES BELOW CEILING, WHICHEVER IS LOWER, AND FIRE ALARM MANUAL PULL STATIONS 48-INCHES TO TOP OF DEVICE.
- ALL PENETRATIONS THROUGH FLOORS, RATED WALLS AND PARTITIONS SHALL BE SEALED WITH UL APPROVED FIRE SEALANT MATERIAL TO MAINTAIN THE RATING OF SEPARATION.
- DEVICES SHALL NOT BE INSTALLED BACK-TO-BACK IN ADJACENT ROOMS. ADJUST LOCATIONS AS NECESSARY TO AVOID THIS CONDITION.
- ALL ENCLOSURES, CONDUIT BODIES AND THEIR COVERS CONTAINING FIRE ALARM SYSTEM CONDUCTORS SHALL BE PAINTED RED.
- AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED WITH EVERY FEEDER AND BRANCH CIRCUIT.
- UNLESS OTHERWISE NOTED WIRING SHALL BE #12 AWG CONDUCTORS AND #12 GND. HOME RUNS FED FROM 20A-1P CIRCUITS IN EXCESS OF 100 FEET SHALL BE #10 AWG. RUN A SEPARATE NEUTRAL WIRE FOR EACH DEDICATED BRANCH CIRCUIT SHOWN ON THE PLANS.
- FLEXIBLE CONNECTIONS TO MOTORS SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT, UNLESS OTHERWISE NOTED.
- LIGHTING TOGGLE SWITCHES SHALL BE COMMERCIAL SPECIFICATION GRADE 120/277 VOLT, SIDE WIRED AND PROVIDED WITH GROUNDING SCREW. COORDINATE COLOR WITH ARCHITECT.
- CONVENIENCE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE GROUNDING TYPE NEMA 5-20R, SIDE WIRED. COORDINATE COLOR WITH ARCHITECT.
- PROVIDE WALL PLATES FOR ALL WIRING DEVICES, COLORED SMOOTH TYPE THERMOPLASTIC IN FINISHED AREAS AND GALVANIZED IN UNFINISHED AREAS.
- ALL WIRING SHALL BE 600V, COPPER WITH THHN/THWN INSULATION IN METAL RACEWAY OR TYPE MC CABLE.
- COORDINATE FINAL LOCATION OF FIXTURE AND DEVICES WITH ARCHITECTURAL ELEVATIONS.
- COORDINATE W/ CONTROLS CONTRACTOR TO PROVIDE POWER FOR ALL MISCELLANEOUS CONTROL OPERATORS AND PANELS.
- PROVIDE 3/8" NYLON PULL STRING IN ALL EMPTY RACEWAYS.
- ALL DEVICES SHALL BE LABELED WITH CIRCUIT NUMBER.

LINE TYPES

	EXISTING
	NEW
	DEMOLITION

GENERAL NOTE

- ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.
- ALL DEVICES, FIXTURES, ETC SHALL BE NEW UNLESS DESIGNATED WITH THE FOLLOWING TAGS:
E = EXISTING TO REMAIN
ER = EXISTING DEVICE THAT HAS BEEN RELOCATED
R = EXISTING DEVICE TO BE REMOVED
RR = REMOVE EXISTING DEVICE AND RELOCATE TO NEW LOCATION
- THESE DRAWINGS ARE, IN GENERAL, MADE TO SCALE BUT ALL MEASUREMENTS SHALL BE TAKEN FROM FIGURED DIMENSIONS AND NOT BY SCALING.

GENERAL DEMOLITION NOTES:

- WIRING FOR ALL EXISTING BRANCH CIRCUIT DEVICES TO BE DEMOLISHED AND NOT REUSED SHALL BE REMOVED BACK TO THE PANELBOARD. THE ASSOCIATED CIRCUIT BREAKER SHALL BE TURNED OFF AND MARKED AS SPARE IN THE PANELBOARD DIRECTORY. DO NOT ABANDON BRANCH CIRCUIT WIRING ABOVE CEILINGS OR IN WIREWAYS.
- ALL EXPOSED RACEWAYS AND CABLES IN FINISHED SPACES, NO LONGER IN USE, SHALL BE REMOVED.
- MAINTAIN, OR RESTORE IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CONDUITS, BRANCH CIRCUITS, AND FEEDERS PASSING THROUGH AND SERVICE UNDISTURBED AREAS (SHOWN OR NOT SHOWN.)
- ALL EXISTING CONDUITS STUBBED THROUGH FLOORS OR ROOF SERVING ITEMS TO BE REMOVED (SHOWN OR NOT SHOWN) AND NOT REQUIRED TO BE REUSED SHALL BE CUT OFF FLUSH WITH SLAB OR ROOF DECK AND SEALED.
- IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADES WORK, ALL ELECTRICAL ITEMS WITHIN PATH OF WORK SHALL BE CAREFULLY REMOVED AND STORED. ITEMS SHALL BE REINSTALLED AND RECONNECTED AS REQUIRED TO RESTORE SYSTEM COMPONENT, IN ACCORDANCE WITH PLANS, AND/OR AS DIRECTED AFTER COMPLETION OF OTHER TRADES WORK IN THAT AREA.
- ALL EXISTING FIXTURES AND ELECTRICAL DEVICES TO BE REMOVED AND NOT RELOCATED SHALL BE TURNED OVER TO THE OWNER. IF THE OWNER DECIDES THEY DO NOT WISH TO KEEP REMOVED ITEM, IT IS THE RESPONSIBILITY OF THE EC TO REMOVE FROM SITE.

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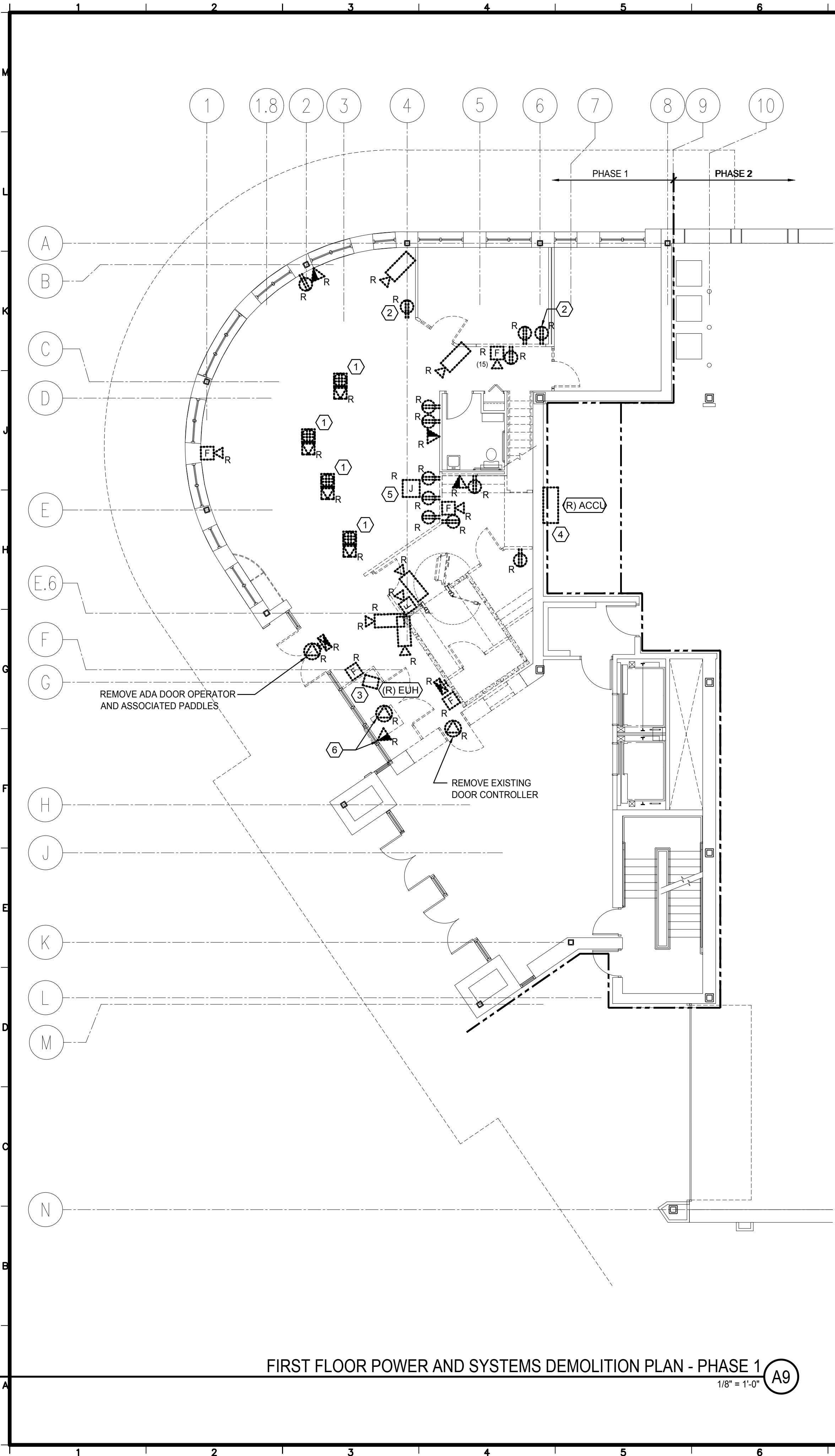


BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

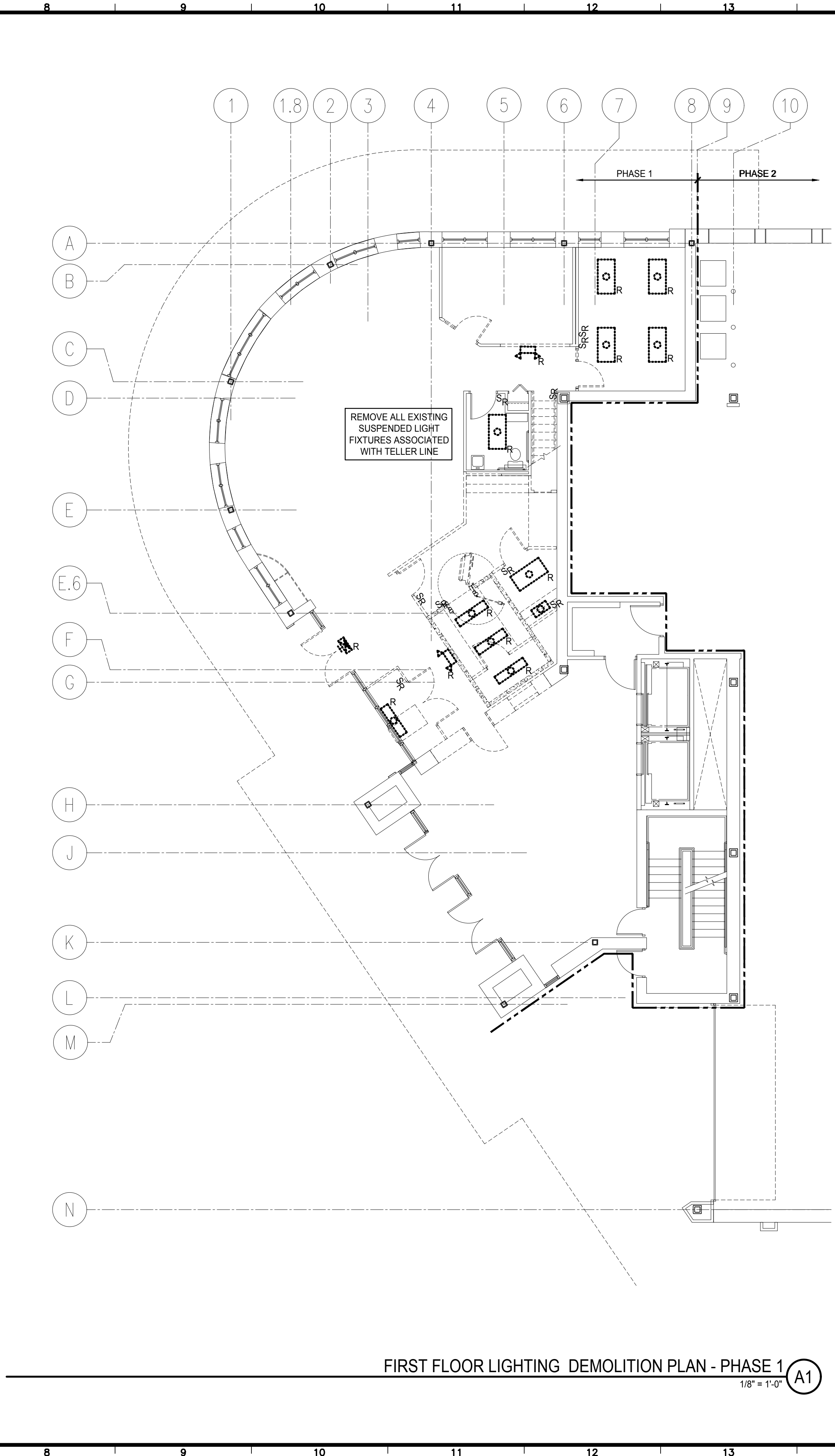
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**ELECTRICAL LEGEND
AND GENERAL NOTES**

E-001



FIRST FLOOR POWER AND SYSTEMS DEMOLITION PLAN - PHASE 1
1/8" = 1'-0" A9



FIRST FLOOR LIGHTING DEMOLITION PLAN - PHASE 1
1/8" = 1'-0" A1

NOTE:

- SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.
- ALL SECURITY DEMOLITION SHALL BE COORDINATED WITH CAYER SECURITY.

KEYED NOTE:

- REMOVE EXISTING FLOOR BOXES IN THEIR ENTIRETY. COMMUNICATION DEVICES SHALL BE REMOVED AND CABLES SHALL BE REMOVED BACK TO PATCH PANEL. ANY RECEPTACLES (REGULAR AND IG RATED) SHALL BE REMOVED WITH ASSOCIATED CONDUCTORS AND CONDUIT BEING REMOVED BACK TO PANELBOARD. ASSOCIATED CIRCUIT BREAKER SHALL BE TURNED OFF AND LABELED SPARE. CONCRETE SHALL BE PATCHED AFTER REMOVAL OF CONDUITS.
- REMOVE RECEPTACLES ASSOCIATED WITH ALARM SYSTEM. FIELD COORDINATE EXACT LOCATION.
- EXISTING ELECTRIC UNIT HEATER TO BE REMOVED - REMOVE ALL ASSOCIATED ELECTRICAL DEVICES (SWITCH, DISCONNECT, ETC.) AND WIRING. CONDUCTORS AND CONDUIT SHALL BE REMOVED BACK TO PANELBOARD. IF THERE IS NO LONGER LOAD CONNECTED TO BREAKER, CIRCUIT BREAKER SHALL BE TURNED OFF AND LABELED SPARE.
- EXISTING CONDENSING UNIT TO BE REMOVED - REMOVE ALL ASSOCIATED ELECTRICAL DEVICES (SWITCH, DISCONNECT, ETC.) AND WIRING. CONDUCTORS AND CONDUIT SHALL BE REMOVED BACK TO PANELBOARD. IF THERE IS NO LONGER LOAD CONNECTED TO BREAKER, CIRCUIT BREAKER SHALL BE TURNED OFF AND LABELED SPARE.
- REMOVE ALL ELECTRICAL CONNECTIONS FORMERLY ASSOCIATED WITH THE REMOTE TELLER STATION.
- EXISTING ATM TO BE REMOVED - REMOVE POWER, DATA, AND SECURITY SERVICES TO MACHINE AND PREPARE FOR EXTENSION TO NEW ATM LOCATION.

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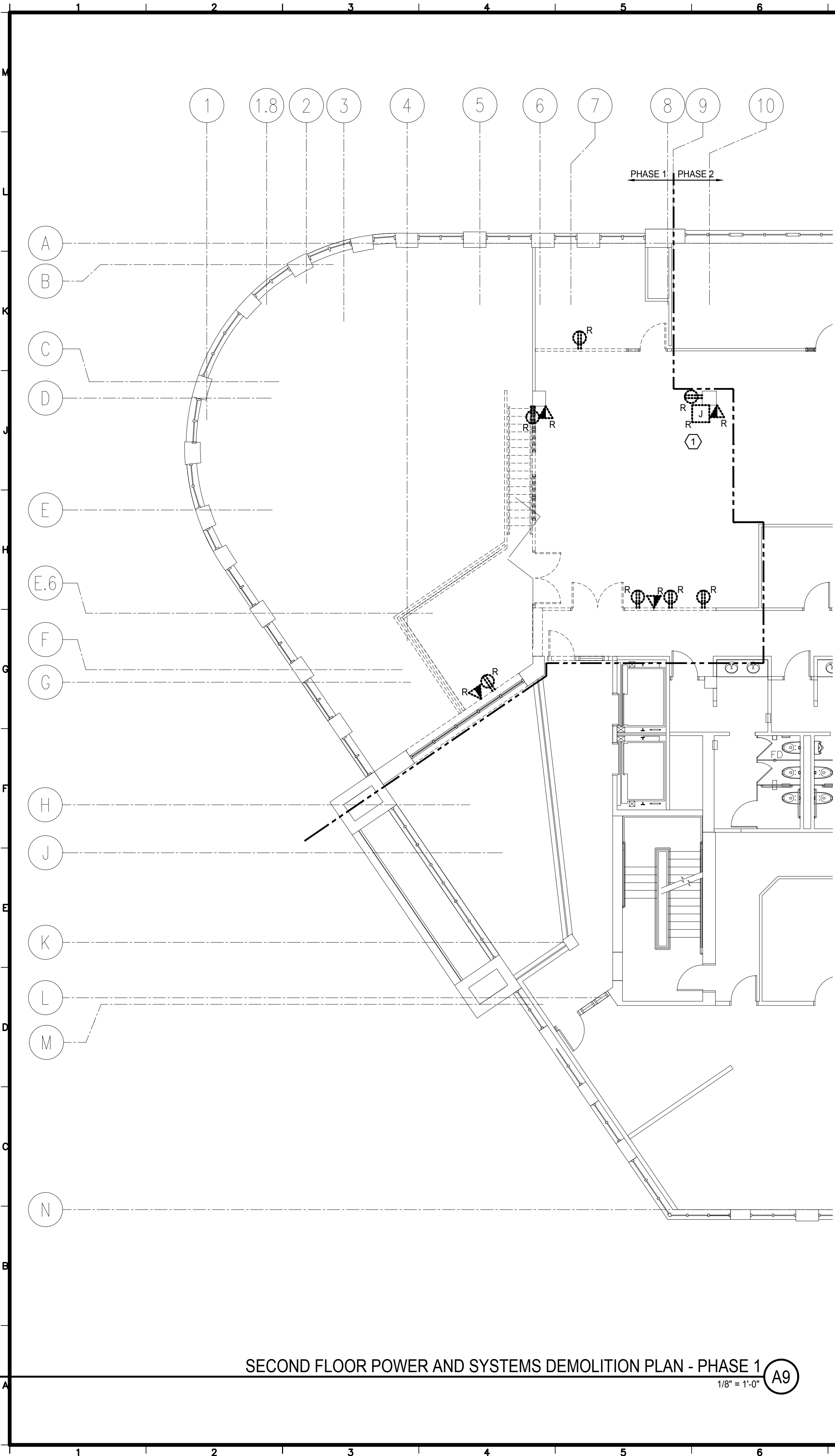
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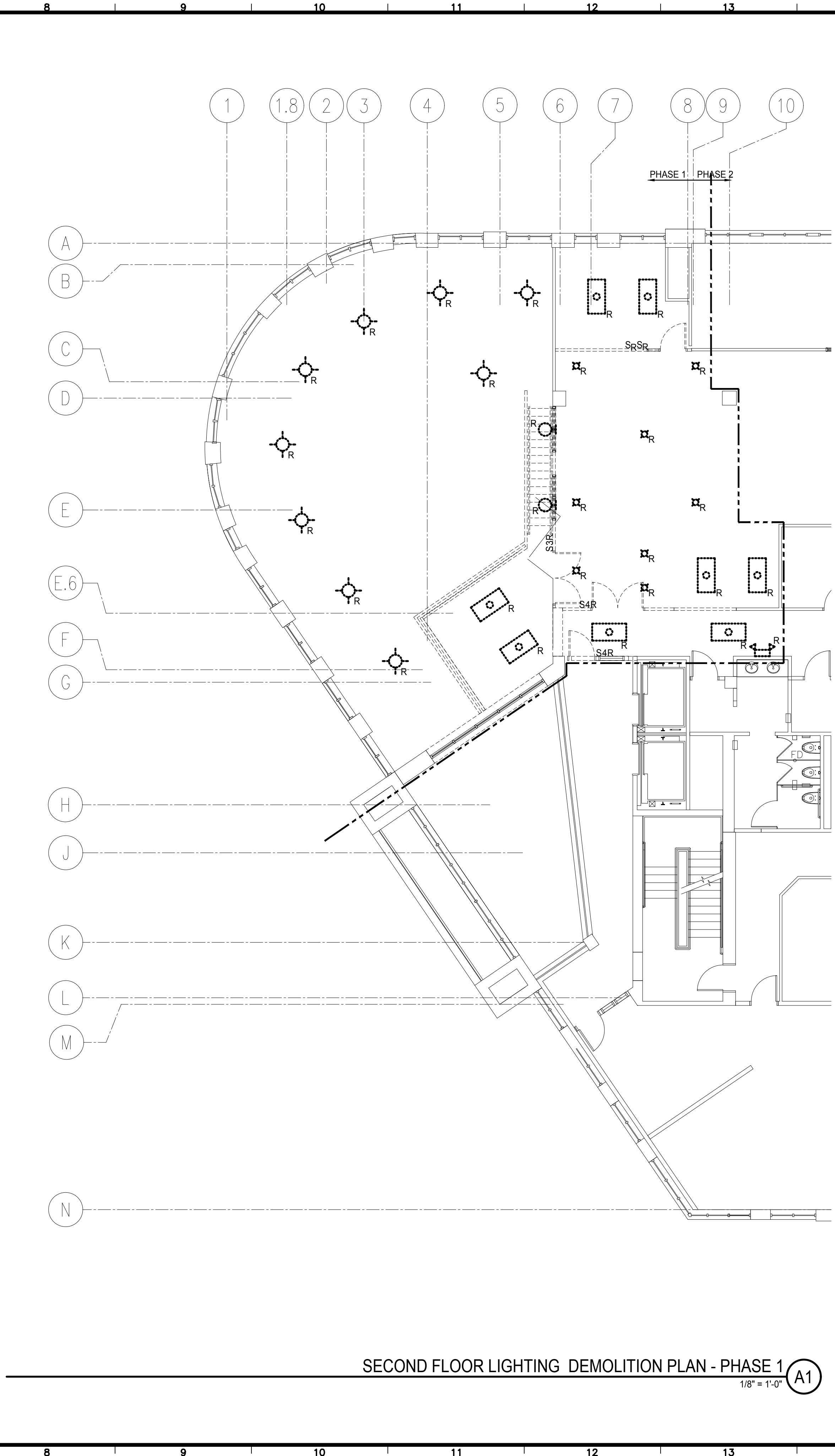
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FIRST FLOOR ELECTRICAL DEMOLITION PLANS - PHASE 1

ED101



SECOND FLOOR POWER AND SYSTEMS DEMOLITION PLAN - PHASE 1
1/8" = 1'-0" (A9)



SECOND FLOOR LIGHTING DEMOLITION PLAN - PHASE 1
1/8" = 1'-0" (A1)

NOTE:
SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.
ALL SECURITY DEMOLITION SHALL BE COORDINATED WITH CAYER SECURITY.

KEYED NOTE:
① REMOVE SYSTEMS FURNITURE POWER CONNECTION.

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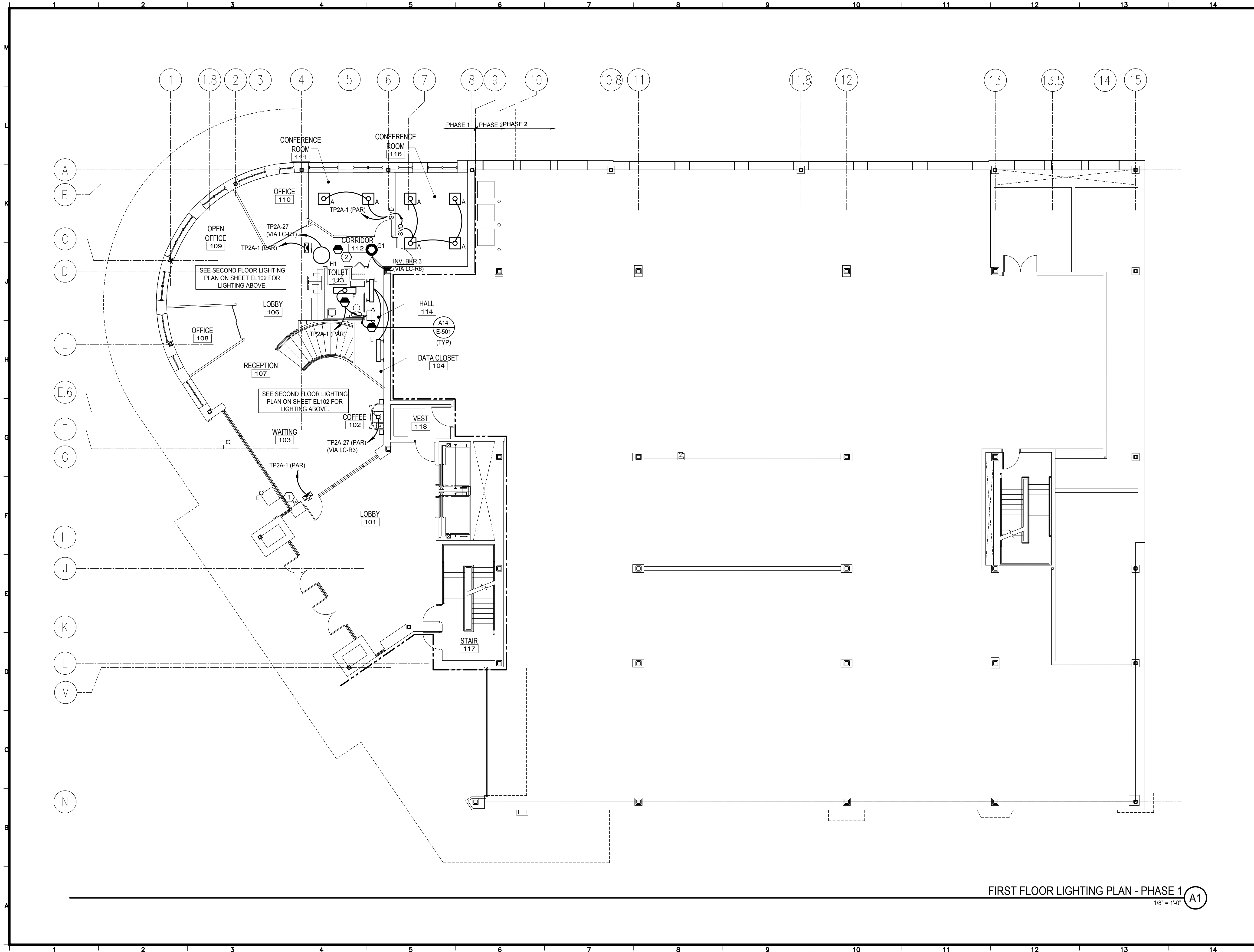
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SECOND FLOOR ELECTRICAL DEMOLITION PLANS - PHASE 1

ED102



NOTE:
 1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

KEYED NOTE:
 ① LOW VOLTAGE SWITCH CONNECTED TO LIGHTING CONTROL SYSTEM - REFER TO DETAIL A9/E-501 FOR ADDITIONAL WIRING INFORMATION.
 ② OCCUPANCY SENSOR CONNECTED TO LIGHTING CONTROL SYSTEM - REFER TO DETAIL A9/E-501 FOR ADDITIONAL WIRING INFORMATION.

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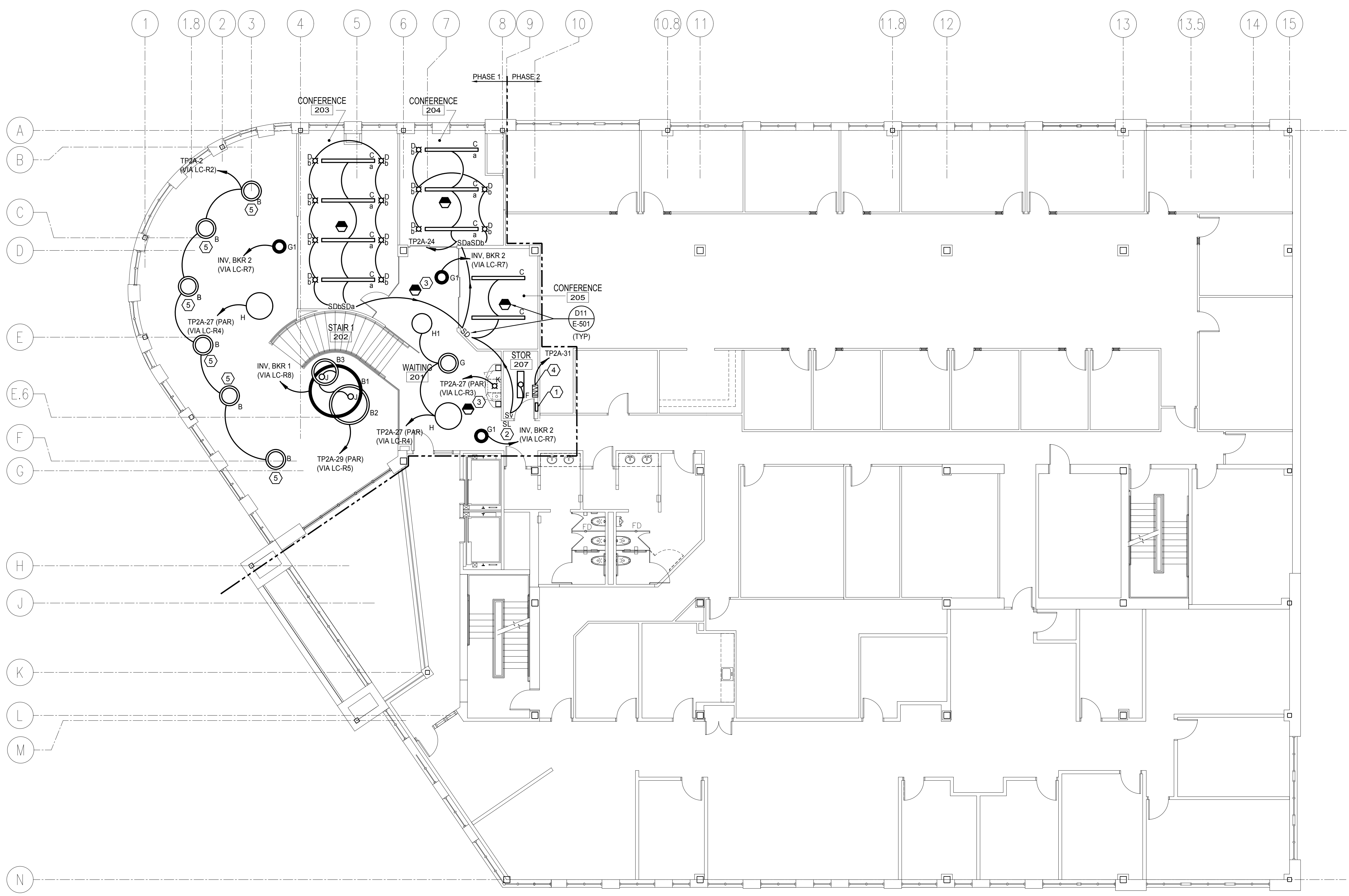
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FIRST FLOOR LIGHTING PLAN PHASE 1

EL101

FIRST FLOOR LIGHTING PLAN - PHASE 1
 1/8" = 1'-0" **A1**



NOTE:
 1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

- KEYED NOTE:**
- ① 8-ZONE LIGHTING CONTROLLER - CONTROLLER SHALL BE WALL MOUNTED @ 8'-0" AFF TO CENTER AND SHALL BE EQUAL TO ETC, CAT. NO. ERM8-TC. REFER TO DETAIL A9/E-501 FOR ADDITIONAL INFORMATION.
 - ② LOW VOLTAGE SWITCH CONNECTED TO LIGHTING CONTROL SYSTEM - REFER TO DETAIL A9/E-501 FOR ADDITIONAL WIRING INFORMATION.
 - ③ OCCUPANCY SENSOR CONNECTED TO LIGHTING CONTROL SYSTEM - REFER TO DETAIL A9/E-501 FOR ADDITIONAL WIRING INFORMATION.
 - ④ 500W CENTRAL LIGHTING INVERTER FOR LOBBY EMERGENCY LIGHTING - INVERTER SHALL BE MOUNTED HIGH ON WALL (12" BELOW CEILING TO TOP). INVERTER SHALL BE EQUAL TO DUAL LITE, CAT. NO. DLS-525-277-B2003U.
 - ⑤ INTENT IS FOR NEW LIGHT FIXTURE TO BE INSTALLED IN THE SAME LOCATION AS EXISTING FIXTURE. FIELD COORDINATE EXACT LOCATION.

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SECOND FLOOR LIGHTING PLAN PHASE 1

EL102

SECOND FLOOR LIGHTING PLAN - PHASE 1
 1/8" = 1'-0" **A1**

KEYED NOTE:

- 8 PROVIDE WIRING TO OUTDOOR CONDENSING UNIT ACCU-1 - REFER TO MANUFACTURER WIRING DIAGRAMS FOR ADDITIONAL INFORMATION

NOTE:

- 1 SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

KEYED NOTE:

- 1 RECONNECT BATHROOM EXHAUST FAN TO NEW LIGHTING CONTROL DEVICE IN BATHROOM - REFER TO DRAWING EL101 FOR ADDITIONAL INFORMATION.
- 2 PROVIDE ATM POWER THROUGH RECESS WITHIN NEW CONCRETE SLAB. POWER CABLES SHALL BE CONNECTED TO ATM VIA LFM (MIN. SIZE 3/4"). COORDINATE WITH ATM MANUFACTURER INSTALLATION INSTRUCTIONS FOR EXACT LOCATION OF CONDUCTOR/CONDUIT ENTRANCE INTO EQUIPMENT. INTENT IS FOR CONDUCTORS TO BE EXTENDED FROM LOCATION OF EXISTING ATM TO BE REMOVED.
- 3 PROVIDE RECESSED FLOOR BOX EQUAL TO WIREMOLD, CAT. NO. EFB45S-OG. FLOOR BOX SHALL BE PROVIDED WITH (2) DUPLEX RECEPTACLES AND (4) CAT. 6 DATA JACKS. DATA JACKS SHALL BE INSTALLED SUCH THAT (2) DATA JACKS ARE LOCATED IN A SINGLE GANG OF THE FLOOR BOX. BOX SHALL BE PROVIDED WITH FLUSH STYLE COVER EQUAL TO WIREMOLD, CAT. NO. EFB45BT** (FINISH TBD BY ARCHITECT). COORDINATE EXACT LOCATION OF FLOOR BOX WITH OWNER AND FURNITURE LAYOUT PRIOR TO ROUGH-IN.
- 4 EXISTING DOMESTIC WATER HEATER (DWH-1) AND ASSOCIATED DISCONNECT SWITCH TO REMAIN.
- 5 RECEPTACLES SHALL BE INSTALLED BEHIND CABINETS FOR COFFEE MAKER AND BEVERAGE COUNTER. COORDINATE INSTALLATION DETAIL WITH ARCHITECTURAL DETAILS.
- 6 CONNECT NEW DEVICE TO EXISTING CIRCUIT.
- 7 HEAT TRACE CONTROLLER AND ASSOCIATED CABLES - CONTROLLER AND HEAT TRACE PROVIDED BY DIV. 22. ALL WIRING ASSOCIATED WITH SYSTEM BY DIV. 26. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.


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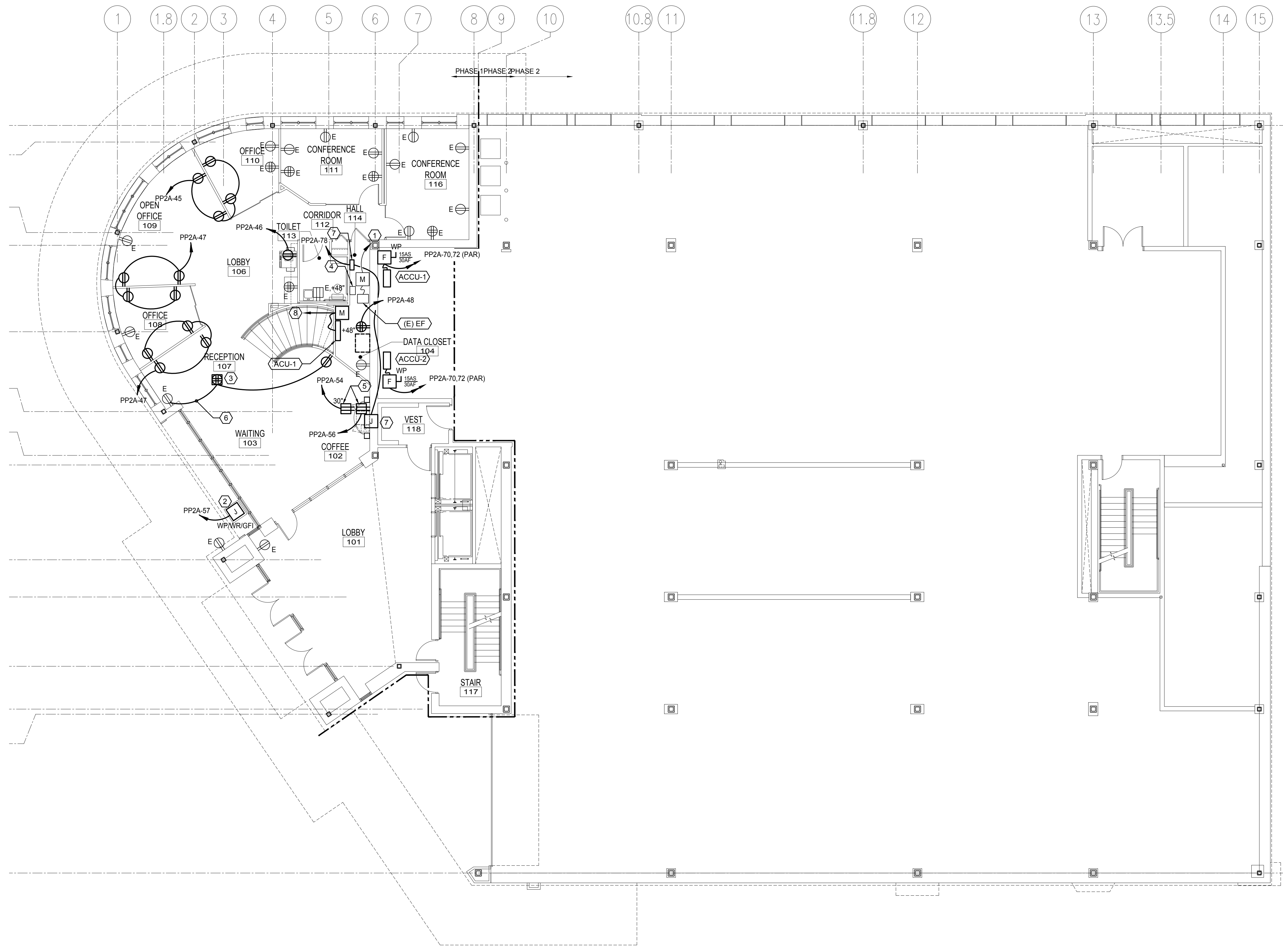
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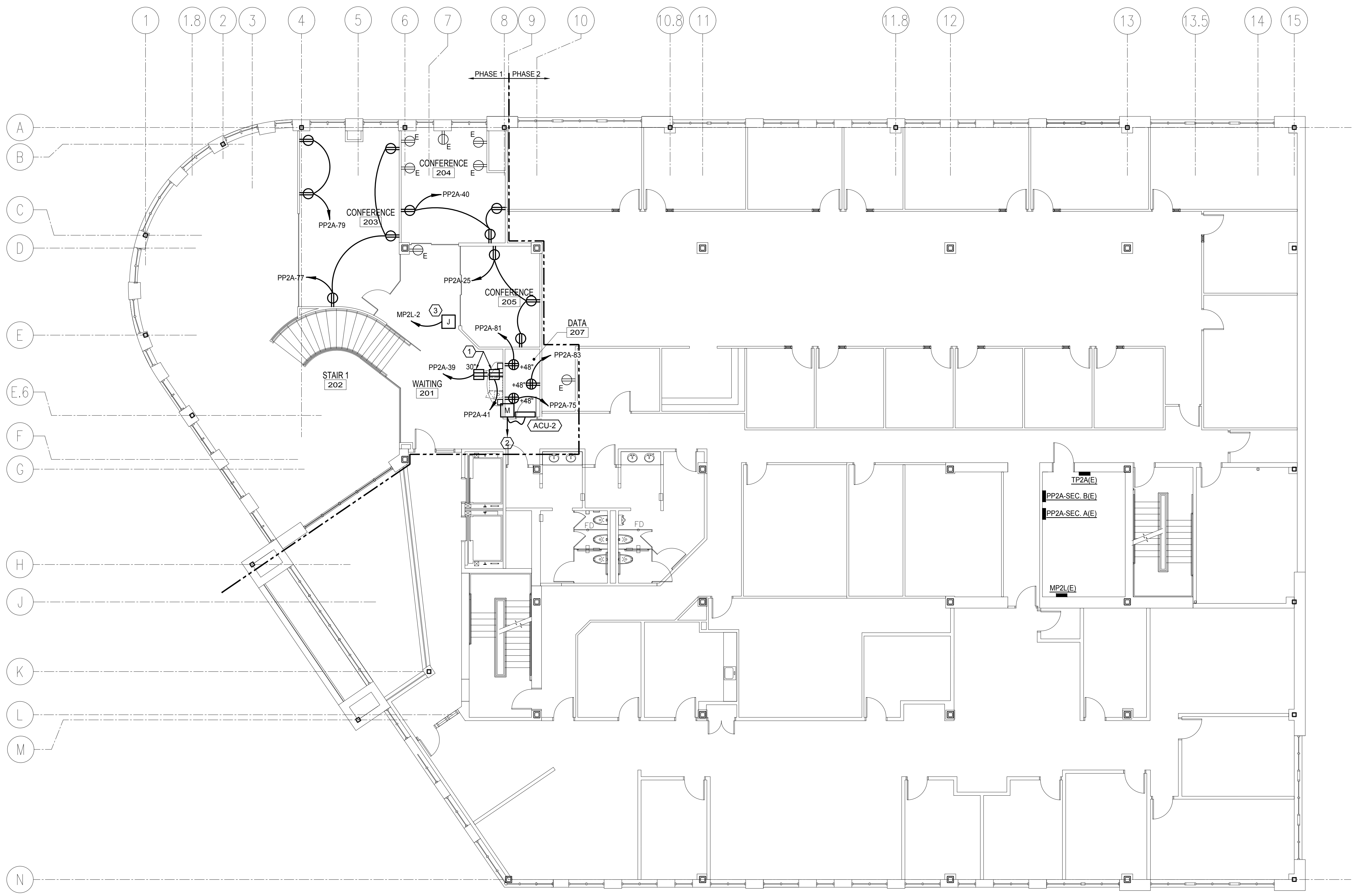
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FIRST FLOOR POWER PLAN - PHASE 1

EP101



FIRST FLOOR POWER PLAN - PHASE 1
1/8" = 1'-0" A1



NOTE:
 1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

- KEYED NOTE:**
- ① RECEPTACLES SHALL BE INSTALLED BEHIND CABINETS FOR COFFEE MAKER AND BEVERAGE COUNTER. COORDINATE INSTALLATION DETAIL WITH ARCHITECTURAL DETAILS.
 - ② PROVIDE WIRING TO OUTDOOR CONDENSING UNIT ACCU-2 - SEE EP101 FOR LOCATION - REFER TO MANUFACTURER WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
 - ③ JUNCTION BOX LOCATED ABOVE ACCESSIBLE CEILING FOR HVAC CONTROL POWER - PROVIDE NEW 1P20 BREAKER IN EXISTING PANELBOARD MP2L SPACE TO FEED CONTROL POWER LOCATION.

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SHEET TITLE
SECOND FLOOR POWER PLAN - PHASE 1

EP102

SECOND FLOOR POWER PLAN - PHASE 1
 1/8" = 1'-0" (A1)

KEYED NOTE:

- ⑦ CEILING RECESSED SOUND MASKING SYSTEM EMITTER - PROVIDE CAT. 6 CABLE TO SOUND MASKING CONTROL MODULE LOCATED IN DATA 207. COORDINATE EXACT PRODUCT REQUIREMENTS WITH OWNER PRIOR TO EQUIPMENT PURCHASE.

NOTE:

- 1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

KEYED NOTE:

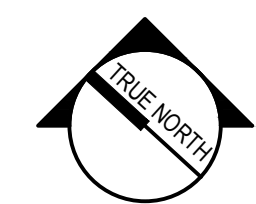
- ① RECESSED FLOOR BOX WITH (4) CAT. 6 DATA JACKS. DATA JACKS SHALL BE INSTALLED SUCH THAT (2) DATA JACKS ARE LOCATED IN A SINGLE GANG OF THE FLOOR BOX. REFER TO DRAWING EP101 FOR ADDITIONAL INFORMATION REGARDING FLOOR BOX.
- ② PROVIDE (2) 1" CONDUITS FROM DATA CLOSET 104 TO RECESS WITHIN NEW CONCRETE SLAB FOR SECURITY AND DATA CONNECTION TO NEW ATM. DATA CONDUIT SHALL CONTAIN (3) CAT. 6 CABLES FROM DATA CLOSET 104. SECURITY CONDUIT SHALL PROVIDED WITH PULL STRING FOR FUTURE WIRING BY OWNER'S SECURITY VENDOR. COORDINATE WITH ATM MANUFACTURER INSTALLATION INSTRUCTIONS FOR EXACT LOCATION OF DATA AND SECURITY CONDUCTOR/CONDUIT ENTRANCE INTO EQUIPMENT.
- ③ 12" W LADDER TRAY - MOUNT AT 8'-0" AFF FOR CABLE MANAGEMENT PURPOSES TO NEW OWNER SUPPLIED TELECOMMUNICATION RACK LOCATION.
- ④ PROVIDE (2) DATA JACKS ABOVE ACCESSIBLE CEILING FOR WIRELESS ACCESS POINT - COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. HORIZONTAL CABLING TO THIS LOCATION SHALL BE CAT. 6A.
- ⑤ PROVIDE SINGLE GANG BOX AND 1" CONDUIT WITH PULL STRING TO ABOVE NEAREST ACCESSIBLE CEILING FOR FUTURE SECURITY DEVICE WIRING BY OWNER'S SECURITY VENDOR.
- ⑥ PROVIDE SINGLE GANG BOX AND 1" CONDUIT WITH PULL STRING TO DATA CLOSET 104 FOR FUTURE SECURITY DEVICE WIRING BY OWNER'S SECURITY VENDOR.

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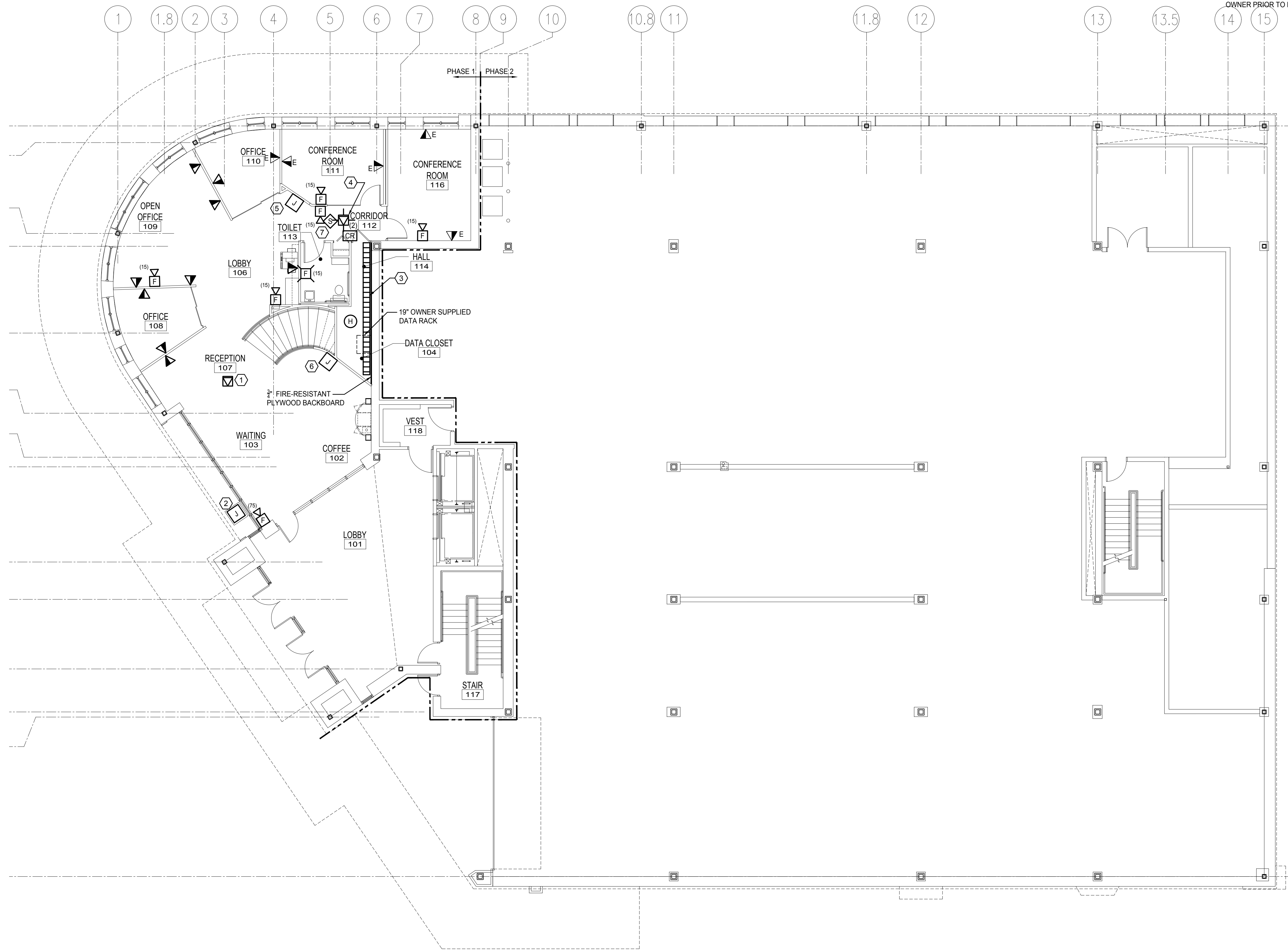
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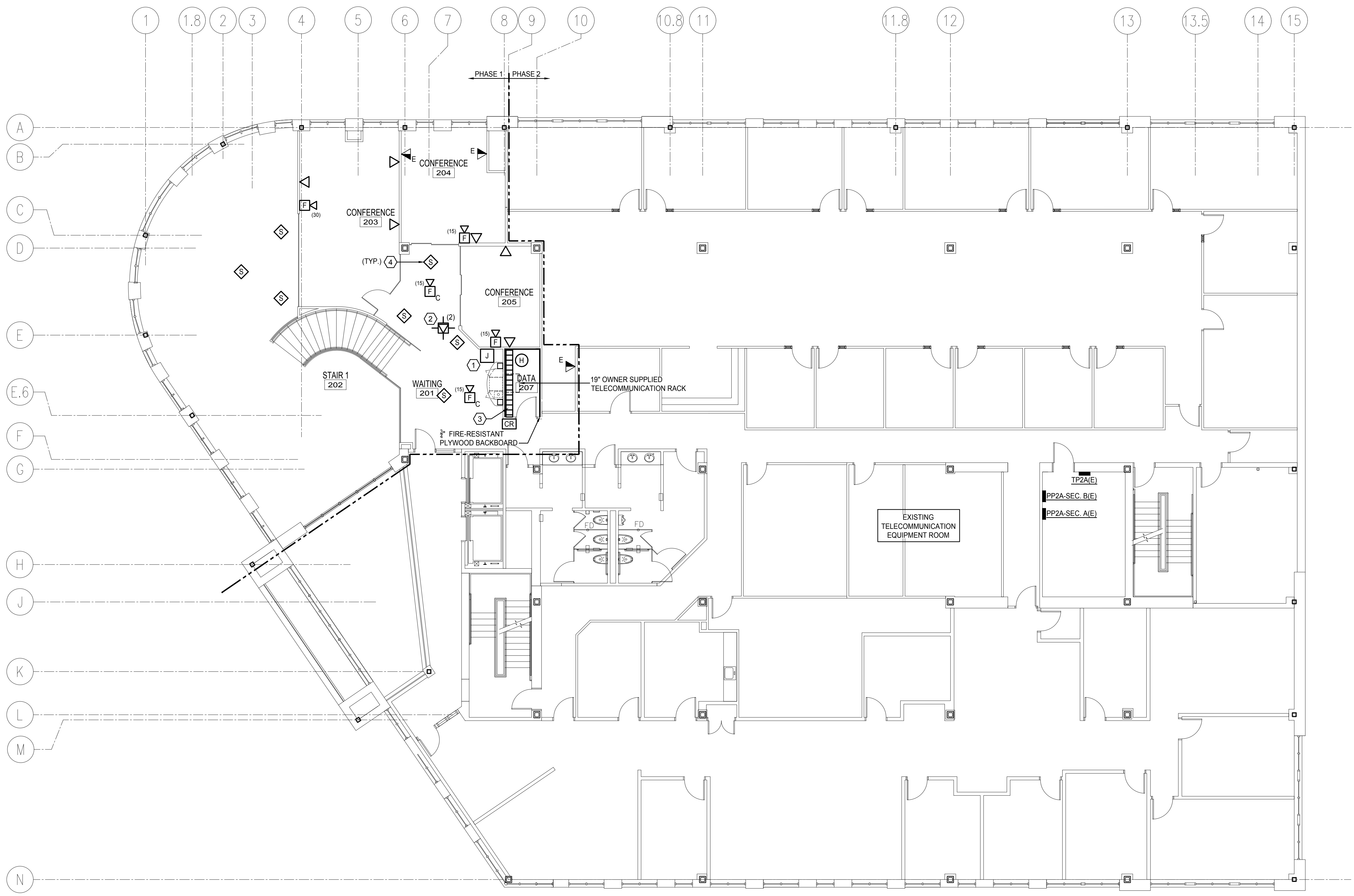
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SHEET TITLE
**FIRST FLOOR
SYSTEMS
PLAN - PHASE 1**

EY101



FIRST FLOOR SYSTEMS PLAN - PHASE 1
1/8" = 1'-0" **A1**



NOTE:
 1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

- KEYED NOTE:**
- ① PROVIDE SINGLE GANG BOX AND 1" CONDUIT WITH PULL STRING TO ABOVE NEAREST ACCESSIBLE CEILING FOR FUTURE SECURITY DEVICE WIRING BY OWNER'S SECURITY VENDOR.
 - ② PROVIDE (2) DATA JACKS ABOVE ACCESSIBLE CEILING FOR WIRELESS ACCESS POINT - COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. HORIZONTAL CABLING TO THIS LOCATION SHALL BE CAT. 6A.
 - ③ 12" W LADDER TRAY - MOUNT AT 8'-0" AFF FOR CABLE MANAGEMENT PURPOSES TO NEW OWNER SUPPLIED TELECOMMUNICATION RACK LOCATION.
 - ④ CEILING RECESSED SOUND MASKING SYSTEM EMITTER - PROVIDE CAT. 6 CABLE TO SOUND MASKING CONTROL MODULE LOCATED IN DATA 207. COORDINATE EXACT PRODUCT REQUIREMENTS WITH OWNER PRIOR TO EQUIPMENT PURCHASE.

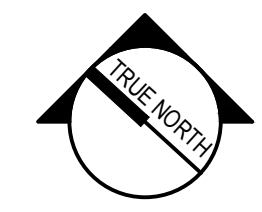
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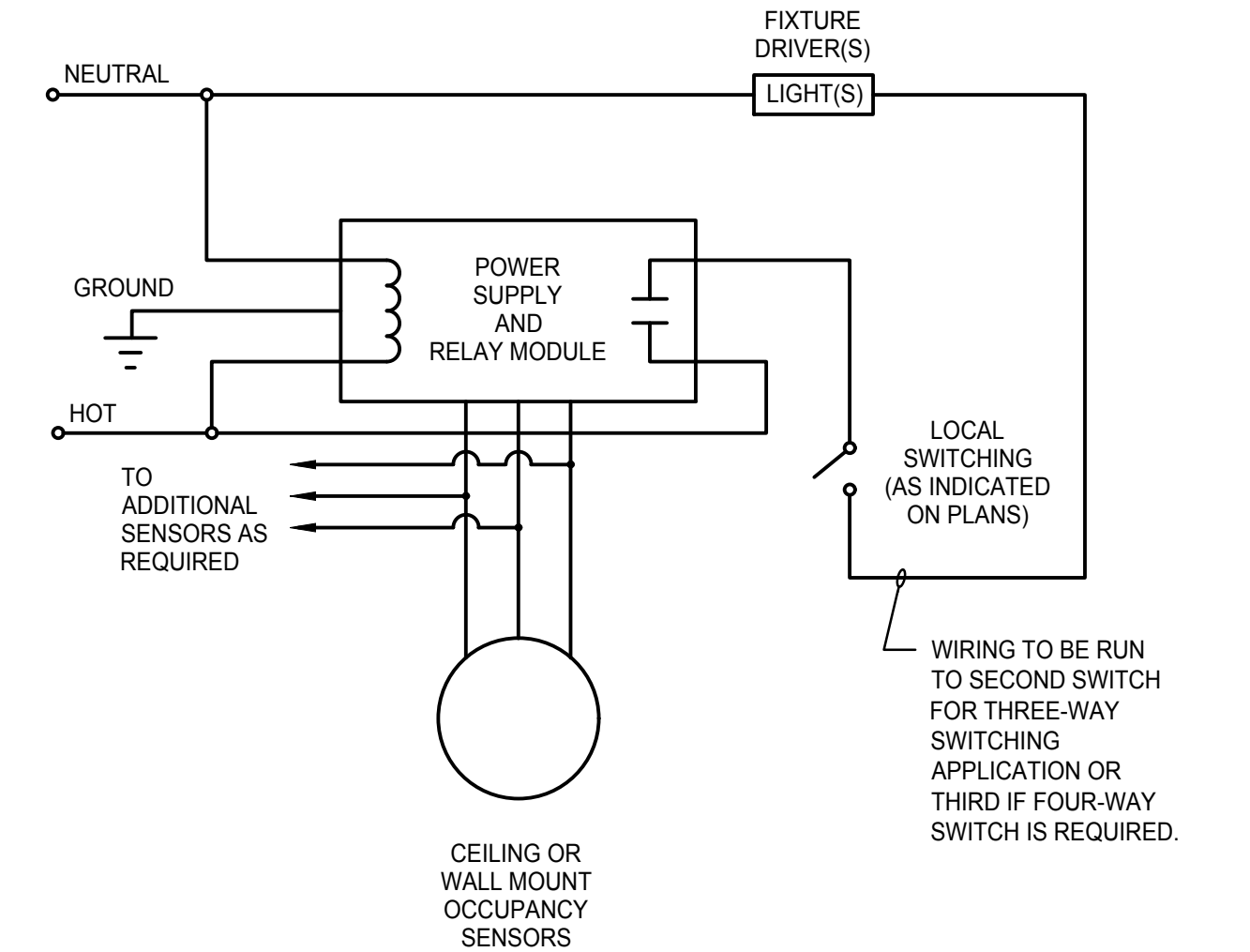
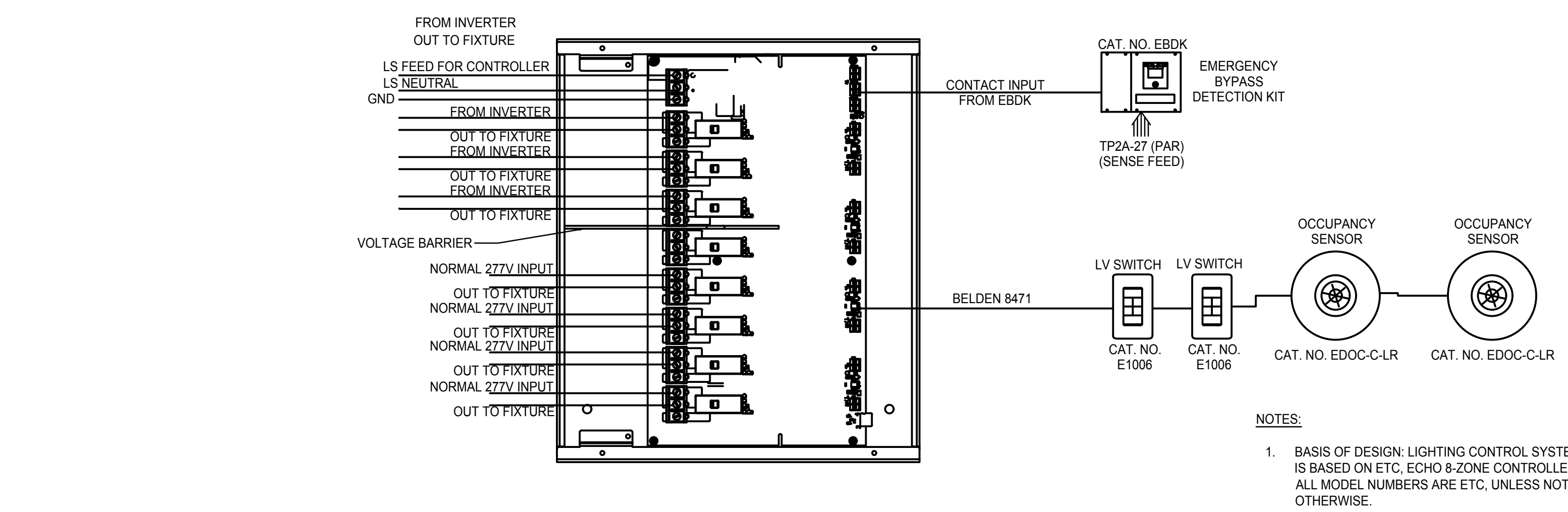
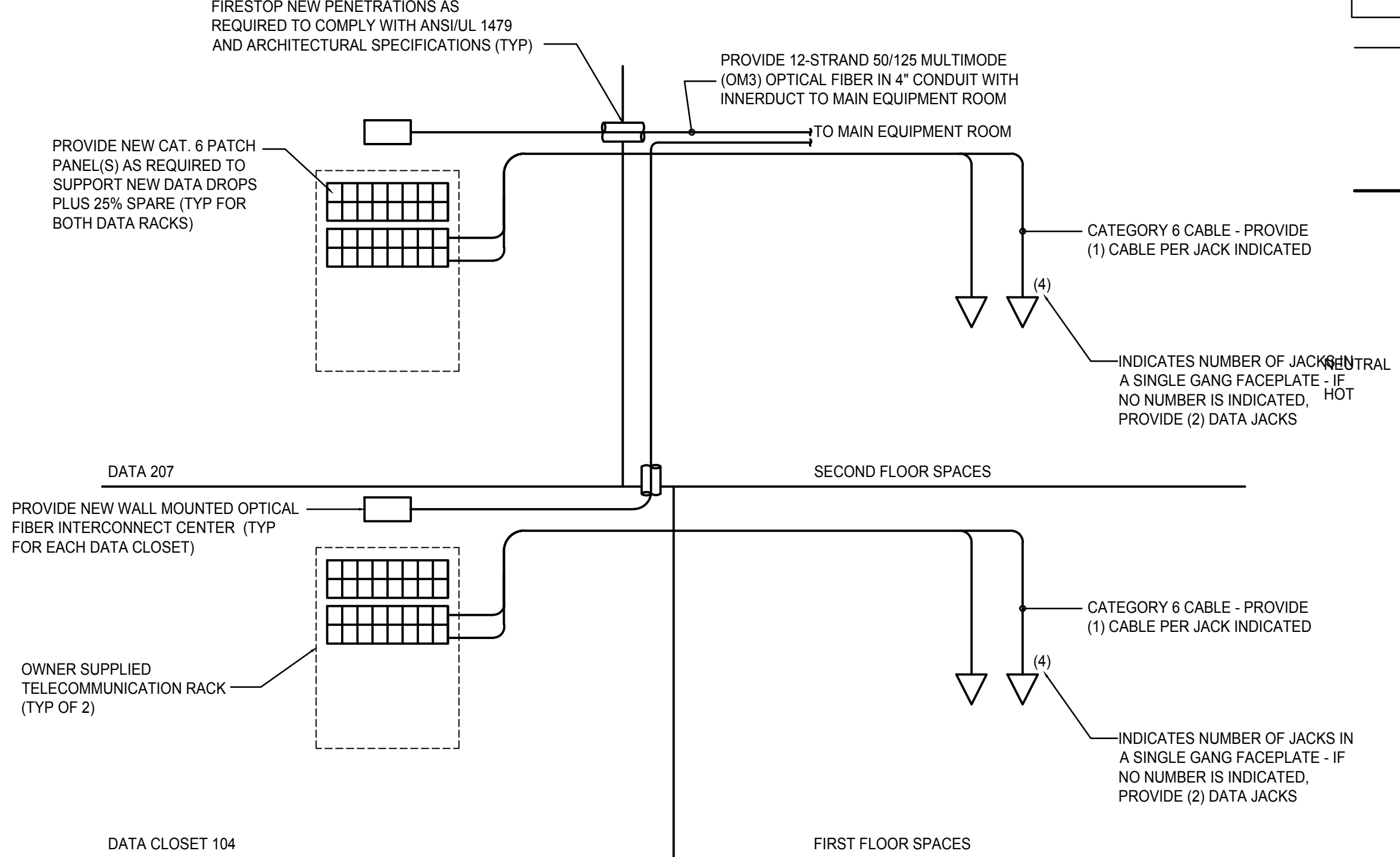
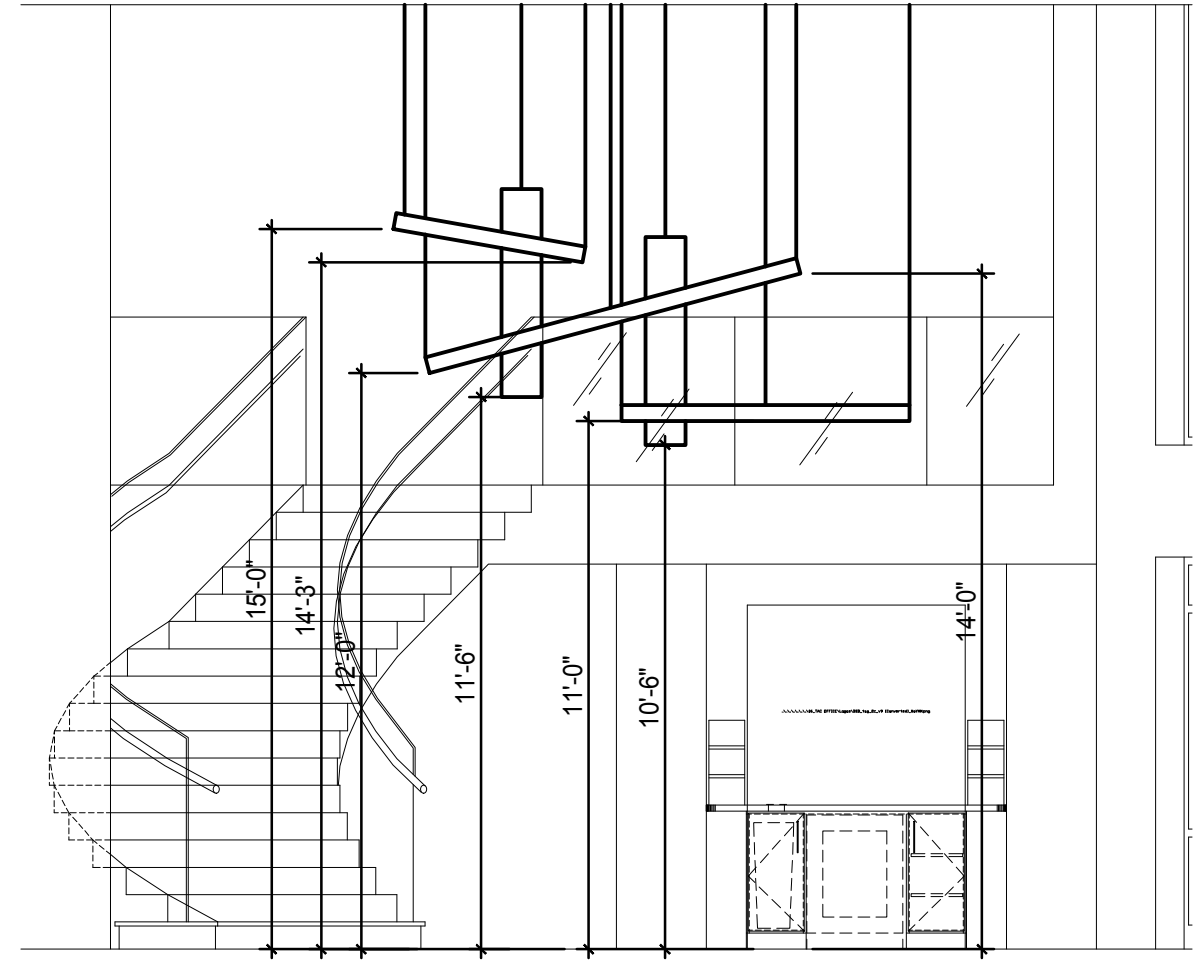
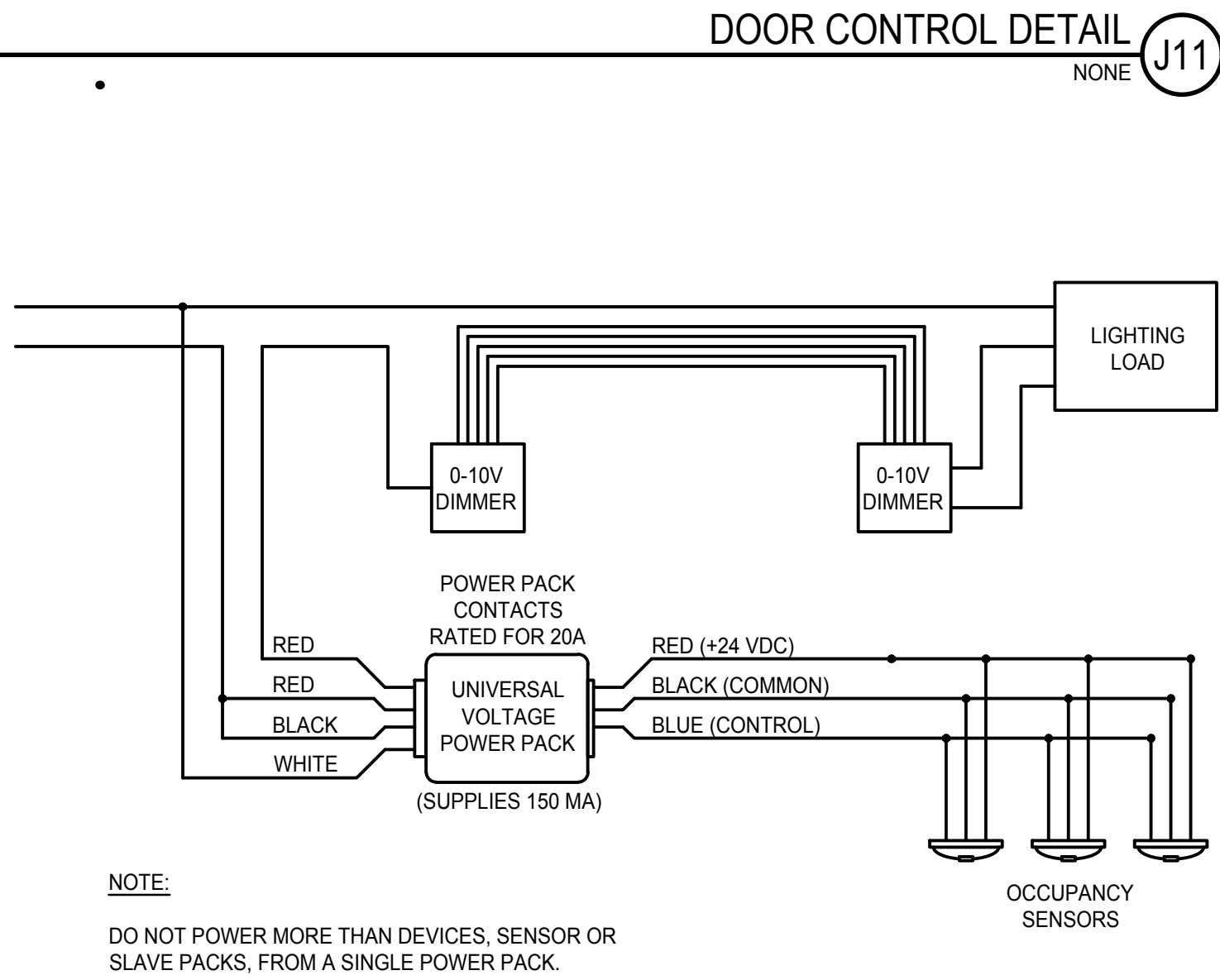
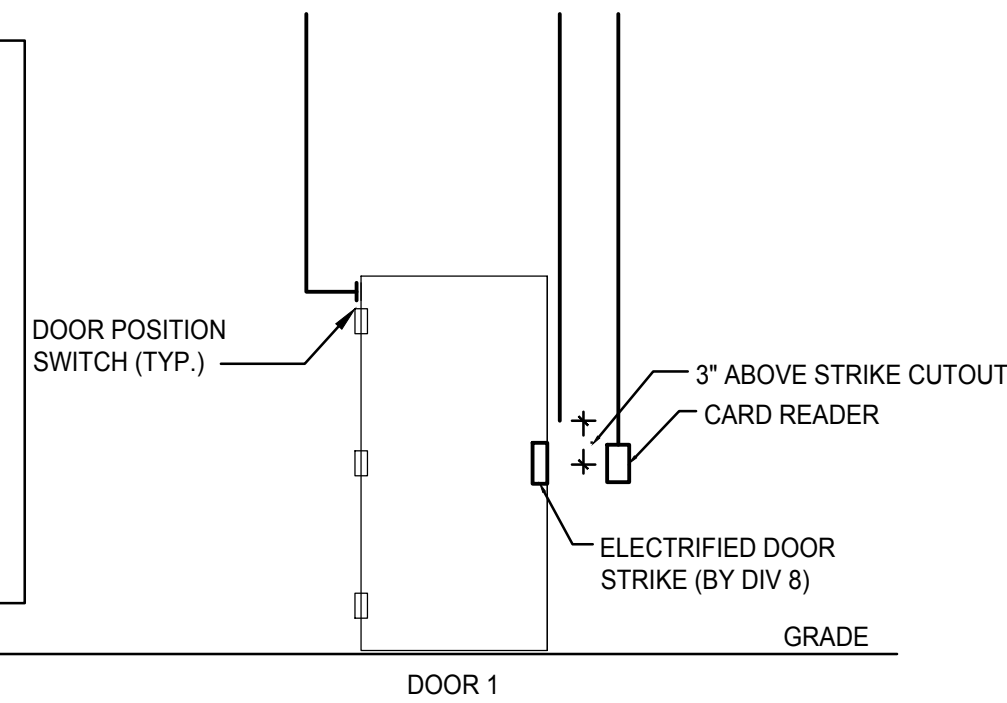
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SECOND FLOOR SYSTEMS PLAN - PHASE 1

EY102

SECOND FLOOR SYSTEMS PLAN - PHASE 1
 1/8" = 1'-0" **A1**

- TELECOMMUNICATION RISER NOTES:**
1. ALL HORIZONTAL CABLING AND ASSOCIATED JACKS (BOTH ENDS) SHALL BE GREEN.
 2. HORIZONTAL CABLING SHALL BE SUPPORT BY CABLE TRAY WITHIN DATA CLOSETS. OTHERWISE, A NON-CONTINUOUS PATHWAY (J-HOOKS) SHALL BE UTILIZED ABOVE ACCESSIBLE CEILING AND CONDUIT SHALL BE USED IN NON-ACCESSIBLE AREAS.
 3. ALL HORIZONTAL AND BACKBONE CABLING SHALL BE PLENUM RATED.
 4. CAT. 6A SHALL BE UTILIZED FOR WIRELESS ACCESS POINT LOCATIONS ONLY.

- DOOR CONTROL NOTES:**
1. COORDINATE WITH OWNER'S SECURITY VENDOR BEFORE DOING ANY WORK.
 2. COORDINATE EXACT LOCATIONS AND MOUNTING REQUIREMENTS ON ALL CONDUITS AND BOXES WITH OWNER'S SECURITY VENDOR.
 3. ELECTRIC DOOR STRIKES WILL BE FURNISHED AND INSTALLED BY THE DOOR HARDWARE CONTRACTOR.
 4. DOOR POSITION SWITCHES, CARD READERS, AND DOOR CONTROL CABLING SHALL BE FURNISHED AND INSTALLED BY OWNER'S SECURITY VENDOR.



NOTE:
1. SEE SHEET E-001 FOR LEGEND AND GENERAL NOTES.

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ELECTRICAL DETAILS

E-501

LIGHT FIXTURE SCHEDULE												
TYPE	DESCRIPTION	SIZE	MANUFACTURER CAT. NO. (2)	LENS/LOUVER	LIGHT SOURCE (1)	DRIVER (1)	LISTING	MINIMUM EFFICACY	LUMEN MAINTENANCE [L70] (HRS)	WATTS PER FIXTURE	VOLT.	NOTES
A	CEILING RECESSED TROFFER	2' X 2'	COLUMBIA LIGHTING LSER22-35VLG-C-EDU	FROSTED ACRYLIC	LED	0-10V DIMMING	DLC STANDARD	103	50,000	42	UNV	
B	CEILING SUSPENDED DECORATIVE PENDANT	36" DIA.	BETA CALCO 95 0010 35 S1 **	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	93	50,000	101	UNV	SUSPEND TO 16" AFF TO BOTTOM UNLESS NOTED OTHERWISE. FINISH TBD BY ARCHITECT.
B1	CEILING SUSPENDED DECORATIVE PENDANT	96" DIA.	BETA CALCO 95 0090 35 S1 ** PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	90	50,000	140	UNV	FINISH TBD BY ARCHITECT. REFER TO LIGHTING SECTION FOR MOUNTING INFORMATION.
B2	CEILING SUSPENDED DECORATIVE PENDANT	72" DIA.	BETA CALCO 95 0080 35 S1 ** PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	92	50,000	108	UNV	FINISH TBD BY ARCHITECT. REFER TO LIGHTING SECTION FOR MOUNTING INFORMATION.
B3	CEILING SUSPENDED DECORATIVE PENDANT	48" DIA.	BETA CALCO 95 0070 35 S1 ** PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	92	50,000	69	UNV	FINISH TBD BY ARCHITECT. REFER TO LIGHTING SECTION FOR MOUNTING INFORMATION.
C	CEILING RECESSED LINEAR ARCHITECTURAL	8' L	FOCAL POINT LIGHTS FSM4L FL 875LF 35K 1C UNV LD1 G* WH 8FT	FROSTED ACRYLIC	LED	0-10V DIMMING	DLC STANDARD	89	61,000	78	UNV	
D	CEILING RECESSED DOWNLIGHT	6" DIA.	PRESCOLITE LF6SL - 6LFSL11L35KSSWT - B24	OPEN	LED	0-10V DIMMING	ENERGY STAR	69	50,000	13	UNV	
E	EXISTING FIXTURE TO REMAIN											
ER	EXISTING RELOCATED FIXTURE											
F	CEILING SURFACE WRAPAROUND	4' L	COLUMBIA LIGHTING LAW4-35MW-EU	PRISMATIC ACRYLIC	LED	FIXED OUTPUT	DLC STANDARD	122	60,000	31	UNV	
G	CEILING SURFACE DECORATIVE	3' DIA.	BETA CALCO 95 6030 35 ** PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	93	50,000	51	UNV	FINISH TBD BY ARCHITECT. FIXTURE SHALL BE PROVIDED WITH 50% REDUCTION IN LUMEN OUTPUT.
G1	CEILING SURFACE DECORATIVE	2' DIA.	BETA CALCO 95 6020 35 ** PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	93	50,000	32	UNV	FINISH TBD BY ARCHITECT. FIXTURE SHALL BE PROVIDED WITH 50% REDUCTION IN LUMEN OUTPUT.
H	CEILING SURFACE DECORATIVE	4' DIA.	BETA CALCO 97 1040 35 ** MODIFY PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	83	50,000	186	UNV	FINISH TBD BY ARCHITECT. FIXTURE SHALL BE PROVIDED WITH 50% REDUCTION IN LUMEN OUTPUT.
H1	CEILING SURFACE DECORATIVE	3' DIA.	BETA CALCO 97 1030 35 ** MODIFY PR1	OPAL POLYCARBONATE	LED	0-10V DIMMING	---	83	50,000	140	UNV	FINISH TBD BY ARCHITECT. FIXTURE SHALL BE PROVIDED WITH 50% REDUCTION IN LUMEN OUTPUT.
J	CEILING SUSPENDED DECORATIVE PENDANT	10" D. X 52" H	BETA CALCO 42 1102 ** CB BL ** MODIFY BLUE LED	OPAL POLYCARBONATE	BLUE LED	0-10V DIMMING	---	CUSTOM	50,000	100	UNV	FINISH TBD BY ARCHITECT. REFER TO LIGHTING SECTION FOR MOUNTING INFORMATION.
K	SOFFIT RECESSED DOWNLIGHT	3.5" DIA.	FOCAL POINT LIGHTS FLC3D RO 700L 277 LD1 T ** LC3 RO 700L 35K DNS WFL ***	OPEN	LED	0-10V DIMMING	---	83	55,000	8	277	FINISH FOR CONE AND FLANGE TBD BY ARCHITECT. COORDINATE MOUNTING HARDWARE REQUIRED FOR RECESSING IN ARCHITECTURAL SOFFIT ABOVE COFFEE BAR.
L	WALL MOUNTED LINEAR	4' L	COLUMBIA LIGHTING CWM4-35MWSM-FRFA-EU	FROSTED ACRYLIC	LED	FIXED OUTPUT	DLC STANDARD	86	60,000	27	UNV	MOUNT @ 7-0" AFF TO BOTTOM, UNLESS NOTED OTHERWISE.
R	EXISTING FIXTURE TO BE REMOVED											
RR	EXISTING FIXTURE TO BE REMOVED AND REINSTALLED IN A DIFFERENT LOCATION											
INV	EMERGENCY LIGHTING INVERTER	--	DUAL LITE DLS-525-277-B2003U	---	---	---	NA	---	---	525	277VAC	
	EMERGENCY BATTERY PACK	--	DUAL LITE EV2I	EYEBALL	LED	---	NA	80	100,000	5	277VAC	
	EXIT SIGNAGE - EDGE LIT	--	DUAL LITE LE*SR*NEI	RED LETTERS	LED	---	NA	---	--	5	UNV	REFER TO PLANS FOR MOUNTING AND NUMBER OF FACES.

NOTES:
(1) ALL FIXTURES (WHERE INDICATED) SHALL BE EITHER DESIGN LIGHT CONSORTIUM (DLC) OR ENERGY STAR (ES) LISTED.

RELAY SCHEDULE						
CAT. NO.	ETC, CAT. NO. ERM08-TC	LOCATION				
RELAY NO.	RELAY DESCRIPTION	UL924 OVERRIDE?	OPERATION CODE	CIRCUIT	APPARENT LOAD (W)	NOTES
R1	FIRST FLOOR - CORRIDOR 112	NO	(2)	TP2A-27	140	
R2	OPEN OFFICE/RECEPTION PENDANTS	NO	(1)	TP2A-2	606	
R3	LOBBY COFFEE BARS	NO	(3)	TP2A-27	16	
R4	SECOND FLOOR - WAITING 201 & LOBBY	NO	(2)	TP2A-27	517	
R5	STAIRWELL FEATURE PENDANT	NO	(4)	TP2A-29	377	
VOLTAGE BARRIER						
R6	FIRST FLOOR - CORRIDOR 112 - EMERGENCY	YES	(2)	TP2A-31	32	EMERGENCY POWER PROVIDED VIA INVERTER
R7	SECOND FLOOR - WAITING 201 & LOBBY - EMERGENCY	YES	(2)	TP2A-31	96	EMERGENCY POWER PROVIDED VIA INVERTER
R8	STAIRWELL FEATURE PENDANT - EMERGENCY	YES	(4)	TP2A-31	140	EMERGENCY POWER PROVIDED VIA INVERTER

RELAY OPERATIONS CODE:
(1) MANUAL ON, TIME CLOCK OFF, 0-10V DIMMING DURING ON.
(2) TIME CLOCK ON/OFF; MANUAL OVERRIDE ON DURING "OFF" HOURS WITH OCCUPANCY SENSOR OFF AFTER 30 MINUTES OF INACTIVITY
(3) TIME CLOCK ON/OFF
(4) ALWAYS ON

ISSUED FOR CONSTRUCTION
02.13.18

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BANGOR SAVINGS BANK -
RENOVATIONS TO 280 FORE
STREET
PORTLAND, MAINE

PROJECT NO: 17231
CAD DWG FILE: E-601-17231
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SHEET TITLE
ELECTRICAL SCHEDULES
PHASE 1

E-601

NOTE	DIRECTORY	KVA LOAD			CKT#	BRKR AMPS/POLES	PHASE	BRKR AMPS/POLES	CKT#	KVA LOAD			DIRECTORY	NOTE	
		A	B	C						A	B	C			
2	REC. - LOBBY 106 COUNTER	0.2			43	20/1	A	20/1	44	0.4			REC. - LOBBY 106 COUNTER	2	
3	REC. - OFFICE 109, 110		0.8		45	20/1	B	20/1	46		1.0		COPIER	3	
3	REC. - OFFICE 108, 109			0.8	47	20/1	C	20/1	48			0.4	REC. - FIRST FLOOR DATA CLOSET	3	
2	REC. - LOBBY 106, CONF 111, 116	1.6			49	20/1	A	20/1	50	0.3			REC. - OFFICE 108, 109	2	
2	REC. - TOILET 107		0.2		51	20/1	B	20/1	52		1.6		REC. - CONFERENCE 111, 116	2	
2	REC. - CONFERENCE 111, 116			1.2	53	20/1	C	20/1	54			1.6	COFFEE MAKER - 1ST FLR LOBBY	3	
2	REC. - OFFICE 108, 109	0.5			55	20/1	A	20/1	56	1.6			BEV COOLER - 1ST FLOOR LOBBY	3	
3	ATM - EXTERIOR		1.6		57	20/1	B	20/1	58		*		REMOTE TELLER	1	
1	RECPS STORAGE ROOM 239			*	59	20/1	C	20/1	60		*		IG RECPS STORAGE RM 239	1	
2	REC. - COPIER ALCOVE	0.2			61	20/1	A	20/1	62	*			IG RECPS STORAGE RM 239	1	
1	ALARM POWER		*		63	20/1	B	20/1	64		*		EVU-1	1	
1	ALARM POWER		*		65	20/1	C	20/1	66		*		COMPUTER EQUIPMENT	1	
1	ALARM POWER	*			67	20/1	A	20/1	68	*			COMPUTER EQUIPMENT	1	
1	ATC POWER		*		69	20/1	B	20/1	70		0.2		ACCU-1/ACU-1	3	
1	DOOR CONTROL POWER		*		71	20/1	C	30/2	72			0.2	ACCU-2/ACU-2	3	
1	RECPS 236, 237	*			73	20/1	A	20/1	74	*			PUMP 3	1	
3	REC. - DATA 207		0.4		75	20/1	B	20/1	76	*			PUMP 1, 2	1	
5	REC. - CONFERENCE 203			0.6	77	20/1	C	20/1 (GFEP)	78			1.6	HEAT TRACE - COFFEE BAR	6	
5	REC. - CONFERENCE 203	0.4			79	20/1	A	20/1	80	*			SPARE	1	
5	REC. - DATA 207		0.4		81	20/1	B	20/1	82	*			SPARE	1	
5	REC. - DATA 207			0.4	83	20/1	C	20/1	84	*			SPARE	1	
SUB-TOTAL		2.9	3.4	3.0				SUB-TOTAL			2.3	2.8	3.8		
VOLTAGE: 208Y/120V 3 PHASE 4 WIRE		225A BUS		TOTAL CONNECTED KVA A-PHASE:		5.2	KVA	PANEL NAME		PP2A - SECTION B (EXISTING)					
MAIN LUGS ONLY		225A MLO		TOTAL CONNECTED KVA B-PHASE:		6.2	KVA	LOCATION		ELECTRICAL ROOM					
MOUNTING: SURFACE				TOTAL CONNECTED KVA C-PHASE:		6.8	KVA								
SC RATING: EXISTING				TOTAL AMPS:		18.2									
				TOTAL AMPS:		50.6									
NOTES: * INDICATES EXISTING UNKNOWN LOAD															

NOTE	DIRECTORY	KVA LOAD			CKT#	BRKR AMPS/POLES	PHASE	BRKR AMPS/POLES	CKT#	KVA LOAD			DIRECTORY	NOTE	
		A	B	C						A	B	C			
3	LTG. - FIRST FLR CONF, TLT	1.0			1	20/1	A	20/1	2	0.8			LTG. - LOBBY/OPEN OFFICE	3	
1	DRIVE UP TELLER LIGHTS		*		3	20/1	B	20/1	4		*		EXIT, EMERGENCY, NIGHT LIGHTS	1	
1	LIGHTS 2ND FLR OPEN OFFICE		*	*	5	20/1	C	20/1	6		*	*	LIGHTS ROOMS 216-224	1	
1	LIGHTS 2ND FLR OPEN OFFICE	*			7	20/1	A	20/1	8	*			LIGHTS RMS 225-231, 233, 234	1	
					9	20/1	B	20/1	10		*	*	LIGHTS RM 237, 228, 239, 240	1	
1	AHU-6 RETURN FAN	*	*	*	11	XXX/3	C		12		*	*			
					13		A	20/3	14	*			CU-6B	1	
					15		B		16	*					
1	AHU-6 SUPPLY FAN	*	*	*	17	XXX/3	C		18		*	*	CU-6A	1	
					19		A	20/3	20	*					
2	DWH-1 (FIRST FLOOR)	*	*	*	21	30/1	B		22	*	*	*			
1	DWH-1	*	*	*	23	40/1	C	20/1	24			1.0	LTG. - SECOND FLR CONF, STOR	5	
1	SIGN SOUTH ELEVATION	*	*	*	25	20/1	A	20/1	26	*			FRONT ENTRANCE LIGHT	1	
5	LTG. - LOBBY - 1ST/2ND FLR WAIT		0.8		27	20/1	B	20/1	28	*	*	*	FRONT ENTRANCE LIGHT	1	
5	LTG. - LOBBY - FEATURE PENDANT	*		0.5	29	20/1	C	20/1	30	*	*	*	ATM SECURITY LIGHT	1	
1	LTG. - LOBBY EMERGENCY LIGHTS	0.3			31	20/1	A	20/1	32	*	*	*	SPARE	1	
1	SPARE	*	*	*	33	20/1	B	20/1	34	*	*	*	SPARE	1	
	SPACE	*	*	*	35	---	C	---	36	*	*	*	SPACE		
	SPACE	*	*	*	37	---	A	---	38	*	*	*			
	SPACE	*	*	*	39	---	B	100/3	40	*	*	*	PANEL PP2A (VIA XFMR)	1	
	SPACE	*	*	*	41	---	C	---	42	*	*	*			
SUB-TOTAL		1.3	0.8	0.5				SUB-TOTAL			0.8	0.0	1.0		
VOLTAGE: 480Y/277V 3 PHASE 4 WIRE		225A BUS		CONNECTED KVA A-PHASE:		2.1	KVA	PANEL NO.		TPA2 (EXISTING)					
MAIN CIRCUIT BREAKER		225A MCB		CONNECTED KVA B-PHASE:		0.8	KVA	LOCATION		ELECTRICAL ROOM					
MOUNTING: SURFACE				CONNECTED KVA C-PHASE:		1.5	KVA								
SC RATING: EXISTING				TOTAL CONNECTED KVA:		4.4									
				TOTAL AMPS:		5.3									
NOTES: * INDICATES EXISTING LOAD															

NOTE	DIRECTORY	KVA LOAD			CKT#	BRKR AMPS/POLES	PHASE	BRKR AMPS/POLES	CKT#	KVA LOAD			DIRECTORY	NOTE	
		A	B	C						A	B	C			
1	RECPS RM 224, 225	*	*	*	1	20/1	A	20/1	2	*	*	*	IG RECPS RM 225	1	
1	RECPS RM 226, 227, 232	*	*	*	3	20/1	B	20/1	4	*	*	*	IG RECPS RM 226, 227	1	
1	RECPS RM 228, 229	*	*	*	5	20/1	C	20/1	6	*	*	*	IG RECPS RM 227, 228	1	
1	RECPS RM 230, 231, 233	*	*	*	7	20/1	A	20/1	8	*	*	*	IG RECPS RM 228, 229	1	
1	RECPS 213, 231, 233, 234	*	*	*	9	20/1	B	20/1	10	*	*	*	IG RECPS RM 229, 230	1	
1	RECPS COPIER RM 232	*	*	*	11	20/1	C	20/1	12	*	*	*	IG RECPS RM 230, 231	1	
2	REC. - CONFERENCE 204	0.6			13	20/1	A	20/1	14	*	*	*	IG RECPS RM 231, 213	1	
2	REC. - WAIT 201, STOR 207, 217/8		1.2		15	20/1	B	20/1	16		0.4		REC. - IG - CONFERENCE 204	2	
1	RECPS RM 218, 219	*	*	*	17	20/1	C	20/1	18	*	*	*	IG RECPS RM 216, 218	1	
1	RECPS RM 220, 221, 222	*	*	*	19	20/1	A	20/1	20	*	*	*	IG RECPS RM 218, 219	1	
1	RECPS RM 219, 220, 221, 222, 232	*	*	*	21	20/1	B	20/1	22	*	*	*	IG RECPS RM 219, 220	1	
1	RECPS RM 222, 223, 234	*	*	*	23	20/1	C	20/1	24	*	*	*	IG RECPS RM 220, 221	1	
3	REC. - CONFERENCE 205	0.6			25	20/1	A	20/1	26	*	*	*	IG RECPS RM 221, 222	1	
1	OFFICE FURN RM 232	*	*	*	27	20/1	B	20/1	28	*	*	*	IG RECPS RM 222, 223	1	
1	OFFICE FURN RM 232	*	*	*	29	20/1	C	20/1	30	*	*	*	IG RECPS RM 224	1	
1	RECPS LUNCH ROOM	*	*	*	31	20/1	A	20/1	32	*	*	*	IG RECPS COMPUTER RM	1	
1	RECPS LUNCH ROOM	*	*	*	33	20/1	B	20/1	34	*	*	*	IG RECPS COMPUTER RM	1	
1	RECPS LUNCH ROOM	*	*	*	35	20/1	C	20/1	36	*	*	*	IG RECPS COMPUTER RM	1	
1	RECPS RM 36, 227, 228, 229, 230	*	*	*	37	20/1	A	20/1	38	*	*	*	IG RECPS OFFICE FURN 232	1	
5	COFFEE MAKER - 2ND FLR LOBBY		1.6		39	20/1	B	20/1	40	*	*	*	REC. - CONFERENCE 204	3	
5	BEV. COOLER - 2ND FLR LOBBY			1.6	41	20/1	C	20/1	42	*	*	*	IG RECPS OFFICE FURN 232	1	
SUB-TOTAL		1.2	2.8	1.6				SUB-TOTAL			0.0	1.0	0.0		
VOLTAGE: 208Y/120V 3 PHASE 4 WIRE		225A BUS		TOTAL CONNECTED KVA A-PHASE:		1.2	KVA	PANEL NAME		PP2A - SECTION A (EXISTING)					
MAIN CIRCUIT BREAKER		225A MCB		TOTAL CONNECTED KVA B-PHASE:		3.8	KVA	LOCATION		ELECTRICAL ROOM					
MOUNTING: SURFACE				TOTAL CONNECTED KVA C-PHASE:		1.6	KVA								
SC RATING: EXISTING				TOTAL CONNECTED KVA:		6.6									
				TOTAL AMPS:		18.3									
NOTES: * INDICATES EXISTING LOAD PANELBOARD PROVIDED WITH FEED-THRU LUGS															

- PANELBOARD NOTES:**
- EXISTING LOAD AND CIRCUIT BREAKER TO REMAIN.
 - UPDATE PANELBOARD DIRECTORY AS SHOWN TO INDICATE PARTIAL LOAD REMOVAL OR NEW LOCATION NAME.
 - EXISTING LOAD REMOVED DURING DEMOLITION. NEW LOAD APPLIED TO EXISTING CIRCUIT BREAKER.
 - EXISTING LOAD REMOVED DURING DEMOLITION. TURN OFF CIRCUIT BREAKER AND LABEL SPARE.
 - NEW LOAD APPLIED TO EXISTING SPARE CIRCUIT BREAKER.
 - EXISTING SPARE BREAKER TO BE REMOVED AND REPLACED WITH NEW CIRCUIT BREAKER AS INDICATED. NEW LOAD CONNECTED.

0 02.13.18 ISSUED FOR CONSTRUCTION
NO. DATE DESCRIPTION

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BANGOR SAVINGS BANK - RENOVATIONS TO 280 FORE STREET PORTLAND, MAINE

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ELECTRICAL SCHEDULES PHASE 1

E-602