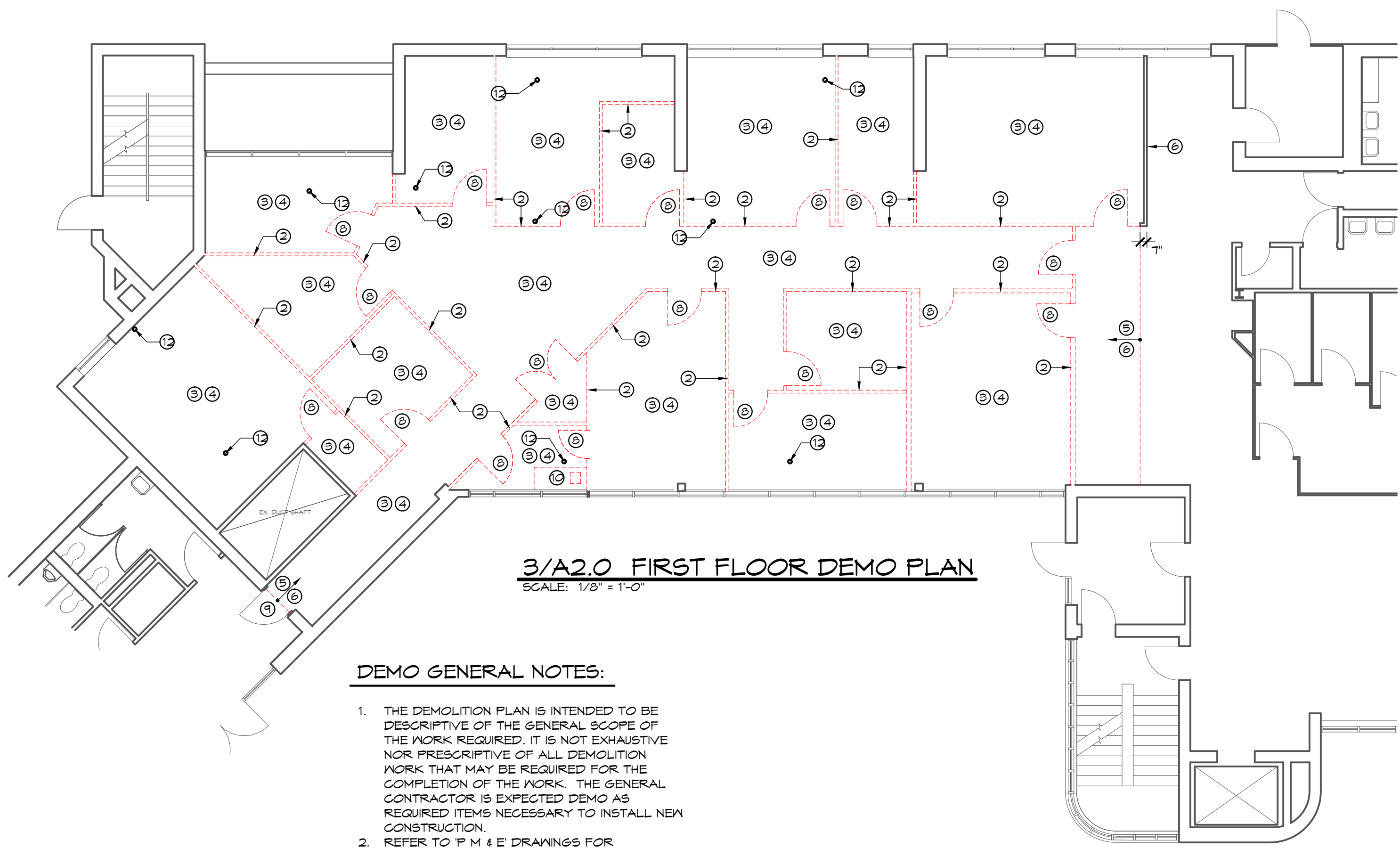


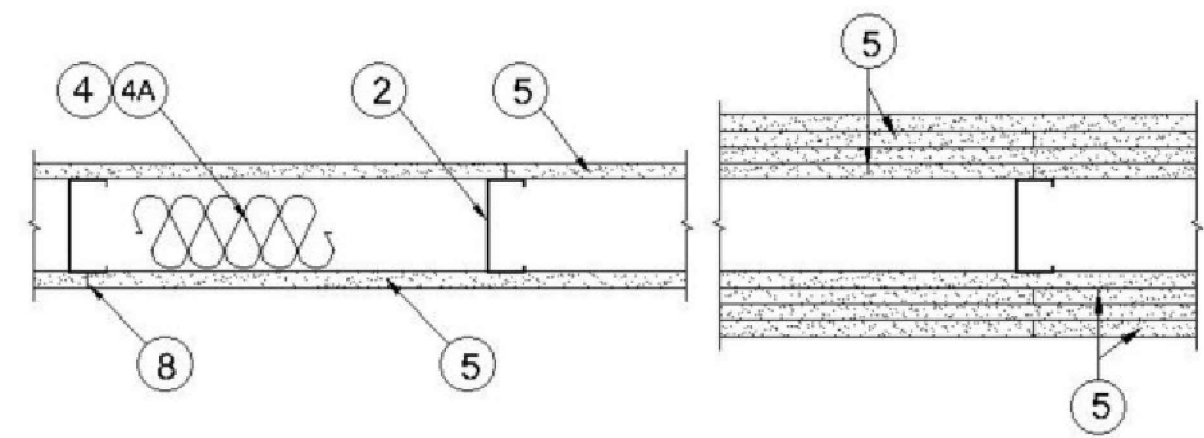
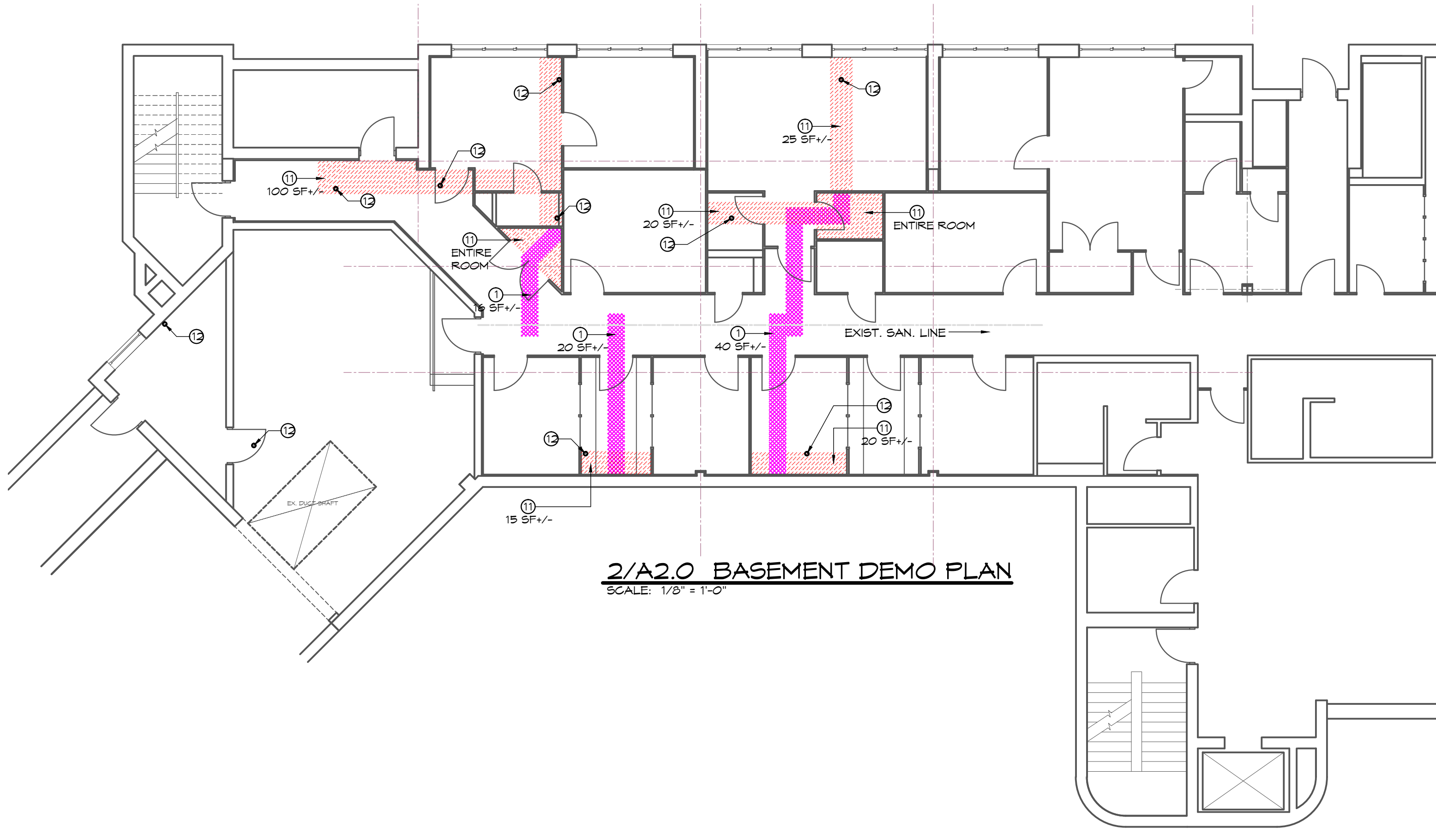


DEMO GENERAL NOTES:

1. THE DEMOLITION PLAN IS INTENDED TO BE DESCRIPTIVE OF THE GENERAL SCOPE OF THE WORK REQUIRED. IT IS NOT EXHAUSTIVE NOR PRESCRIPTIVE OF ALL DEMOLITION WORK THAT MAY BE REQUIRED FOR THE COMPLETION OF THE WORK. THE GENERAL CONTRACTOR IS EXPECTED DEMO AS REQUIRED ITEMS NECESSARY TO INSTALL NEW CONSTRUCTION.
2. REFER TO 'P.M. & E' DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS BY TRADE. THE 'GC' IS RESPONSIBLE TO COORDINATE ALL WORK BETWEEN TRADES.
3. REMOVE ALL FASTENERS, BRACKETS, SUPPORTS, AND ADHESIVES FOR ALL WALLS/FLOORS, FIXTURES, EQUIPMENT, CONDUIT, AND/OR PIPING TO BE DEMOLISHED PRIOR TO CONSTRUCTION.
4. DISCONNECT, RE-ROUTE, AND RECONNECT ALL FIXTURES (INCLUDING CONDUIT) THAT WILL REMAIN OPERATIONAL AFTER DEMOLITION WORK.
5. CARE SHALL BE TAKEN IN THE REMOVAL OF ANY MATERIALS NOTED TO BE SALVAGED. S.C. SHALL BE RESPONSIBLE TO SHORE AND/OR BRACE EXISTING STRUCTURE TO REMAIN IN PLACE UNTIL NEW SUPPORTS ELEMENTS ARE IN PLACE. SEE STRUCT. DRAWINGS FOR ADDITIONAL NOTES.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING CONSTRUCTION THAT WILL REMAIN IN PLACE. MAINTAIN WEATHERTIGHT ROOF & WALL ENCLOSURES AT ALL TIMES DURING DEMOLITION & NEW CONSTRUCTION.

DEMOLITION KEY NOTES:

- ① SAW-CUT & DEMO EXIST. CONC. FLOOR
- ② DEMO EXIST. WALL ENTIRELY
- ③ DEMO FLOOR FINISH, WALL BASE
- ④ DEMO CEILING GRID, TILE, & LIGHTS
- ⑤ DEMO FLOOR FINISH
- ⑥ DEMO WALL BASE
- ⑦ DEMO DOOR ONLY (SALVAGE HARDWARE)
- ⑧ DEMO DOOR AND FRAME
- ⑨ DEMO THRESHOLD, TRANSITION STRIP
- ⑩ DEMO CASEWORK/COUNTERTOPS
- ⑪ DEMO EXIST. CEILING TO INSTALL NEW PLUMBING LINE
- ⑫ CORE DRILL EXIST 1ST FLOOR SLAB (NEW PLUMBING)



DESIGN NO. U419

BEARING WALL RATING — 1 HR.

NONBEARING WALL RATING — 1 HR.

1. FLOOR AND CEILING RUNNERS — (NOT SHOWN) — FOR USE WITH ITEM 2 - CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN DEPTH TO ACCOMMODATE STUD SIZE, WITH MIN 1-1/4 IN. LONG LEGS, ATTACHED TO FLOOR AND CEILING WITH FASTENERS 24 IN. OC MAX.

2. STEEL STUDS — CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN DEPTH AS INDICATED UNDER ITEM 5, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

3. WOOD STRUCTURAL PANEL SHEATHING — (OPTIONAL, FOR USE WITH ITEM 5 ONLY.) - (NOT SHOWN) - 4 FT WIDE, 7/16 IN. THICK ORIENTED STRAND BOARD (OSB) OR 15/32 IN. THICK STRUCTURAL 1 SHEATHING (PLYWOOD) COMPLYING WITH DOC P81 OR P82, OR APA STANDARD PRP-108, MANUFACTURED WITH EXTERIOR GLUE, APPLIED HORIZONTALLY OR VERTICALLY TO THE STEEL STUDS. VERTICAL JOINTS CENTERED ON STUDS, AND STAGGERED ONE STUD SPACE FROM WALLBOARD JOINTS. ATTACHED TO STUDS WITH FLAT-HEAD SELF-DRILLING TAPPING SCREWS WITH A MIN. HEAD DIAM. OF 0.292 IN. AT MAXIMUM 6 IN. OC. IN THE PERIMETER AND 12 IN. OC. IN THE FIELD. WHEN USED, FASTENER LENGTHS FOR GYPSUM PANELS INCREASED BY MIN. 1/2 IN.

4. BATTS AND BLANKETS* — (REQUIRED AS INDICATED UNDER ITEM 5) — MINERAL WOOL BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. MIN NOM THICKNESS AS INDICATED UNDER ITEM 5. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

5. GYPSUM BOARD* — GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED A MIN OF 12 IN. THE THICKNESS AND NUMBER OF LAYERS FOR THE 1 HR, 2 HR, 3 HR AND 4 HR RATINGS ARE AS FOLLOWS: GYPSUM BOARD PROTECTION ON EACH SIDE OF WALL

RATING, HR	MIN STUD DEPTH, IN.	NO. OF LAYERS & THICKS OF PANEL
1	3-1/2	1 LAYER, 5/8 IN. THICK
1	2-1/2	1 LAYER, 1/2 IN. THICK
1	1-5/8	1 LAYER, 3/4 IN. THICK
2	1-5/8	2 LAYERS, 1/2 IN. THICK
2	1-5/8	2 LAYERS, 5/8 IN. THICK
2	3-1/2	1 LAYER, 3/4 IN. THICK
3	1-5/8	3 LAYERS, 1/2 IN. THICK
3	1-5/8	2 LAYERS, 3/4 IN. THICK
3	1-5/8	3 LAYERS, 5/8 IN. THICK
4	1-5/8	4 LAYERS, 5/8 IN. THICK
4	1-5/8	4 LAYERS, 1/2 IN. THICK
4	2-1/2	2 LAYERS, 3/4 IN. THICK

CGG INC — 1/2 IN. THICK TYPE C, IP-X2 OR IFC-AR; WRC, 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IFC-AR, SCX, SHX, WRX OR WRC; 3/4 IN. THICK TYPES IP-X3 OR ULTRACODE
UNITED STATES GYPSUM CO — 1/2 IN. THICK TYPE C, IP-X2, IFC-AR OR WRC; 5/8 IN. THICK TYPE SCX, SGX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IFC-AR; 3/4 IN. THICK TYPES IP-X3 OR ULTRACODE
USG MEXICO S A DE C V — 1/2 IN. THICK TYPE C, IP-X2, IFC-AR OR WRC; 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IFC-AR, SCX, SHX, WRX, WRC OR; 3/4 IN. THICK TYPES IP-X3 OR ULTRACODE
WHEN ITEM 1B, STEEL FRAMING MEMBERS*, IS USED, NONBEARING WALL RATING IS LIMITED TO 1 HR. MIN. STUD DEPTH IS 3-1/2 IN., MIN. THICKNESS OF INSULATION (ITEM 4) IS 3 IN., AND TWO LAYERS OF GYPSUM BOARD PANELS (1/2 IN. OR 5/8 IN. THICK) SHALL BE ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 6. ONE LAYER OF GYPSUM BOARD PANELS (1/2 IN. OR 5/8 IN. THICK) ATTACHED TO OPPOSITE SIDE OF STUD WITHOUT FURRING CHANNELS AS DESCRIBED IN ITEM 6.

5A. GYPSUM BOARD* — (AS AN ALTERNATE TO ITEM 5) — 5/8 IN. THICK, 24 TO 34 IN. WIDE, APPLIED HORIZONTALLY AS THE OUTER LAYER TO ONE SIDE OF THE ASSEMBLY. SECURED AS DESCRIBED IN ITEM 6.
CGG INC — TYPE SHX.
UNITED STATES GYPSUM CO — TYPE FRX-G, SHX.
USG MEXICO S A DE C V — TYPE SHX.

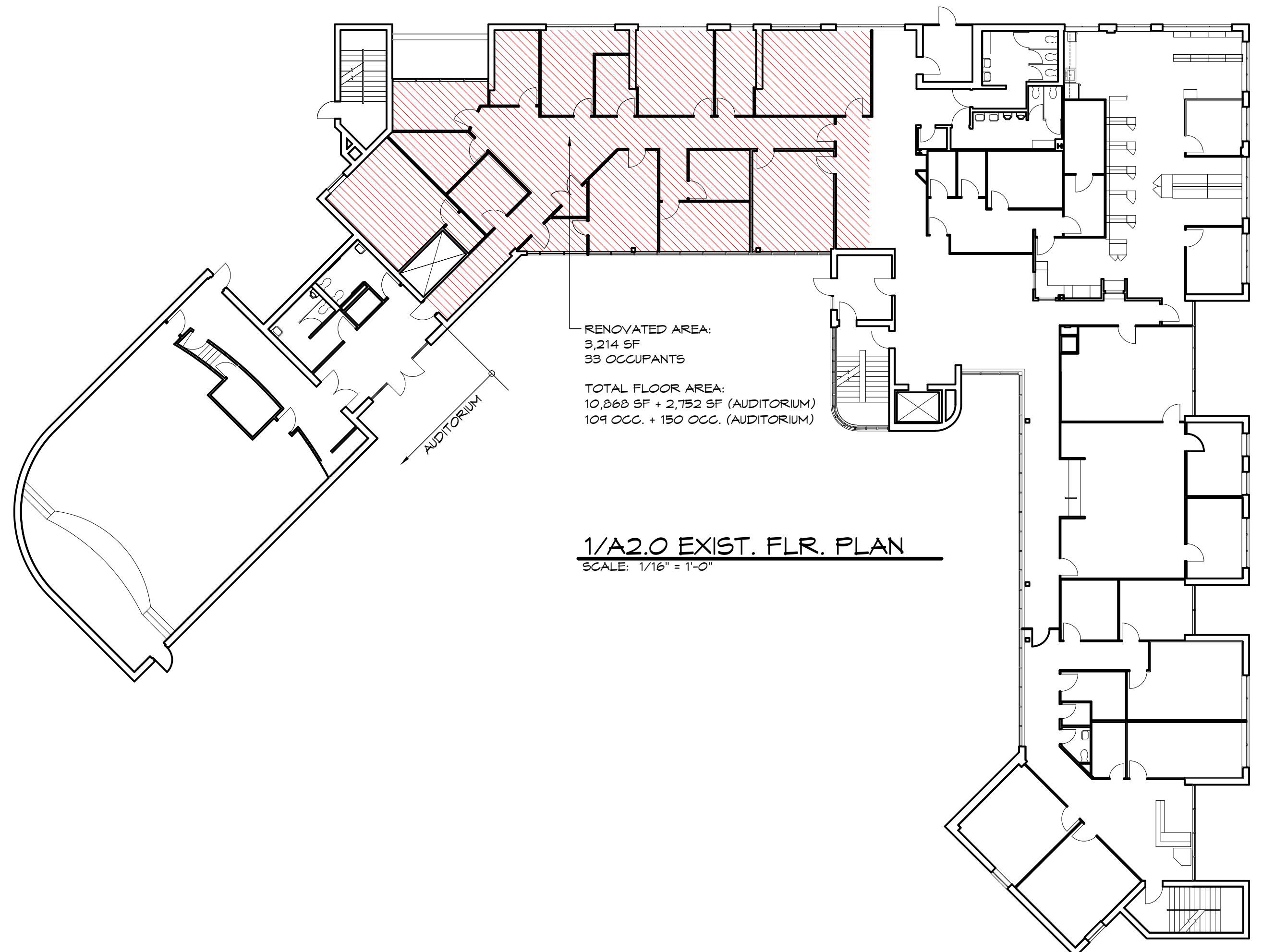
6. FASTENERS — (NOT SHOWN) — FOR USE WITH ITEMS 2 AND 2F - TYPE S OR S-12 STEEL SCREWS USED TO ATTACH PANELS TO STUDS (ITEM 2) OR FURRING CHANNELS (ITEM 7). SINGLE LAYER SYSTEMS: 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 8 IN. OC. WHEN PANELS ARE APPLIED HORIZONTALLY, OR 8 IN. OC. ALONG VERTICAL AND BOTTOM EDGES AND 12 IN. OC. IN THE FIELD WHEN PANELS ARE APPLIED VERTICALLY. TWO LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC. WITH SCREWS OFFSET 8 IN. FROM FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW. FOUR-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 24 IN. OC. FOURTH LAYER- 2-5/8 IN. LONG FOR 1/2 IN. THICK PANELS OR 3 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW.

7. FURRING CHANNELS — (OPTIONAL, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) — RESILIENT FURRING CHANNELS FABRICATED FROM 25 MSG CORROSION-PROTECTED STEEL, SPACED VERTICALLY A MAX OF 24 IN. OC. FLANGE PORTION ATTACHED TO EACH INTERSECTING STUD WITH 1/2 IN. LONG TYPE S-12 STEEL SCREWS. NOT FOR USE WITH ITEM 5A AND 5E.

8. JOINT TAPE AND COMPOUND — VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYER PANELS. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM PANELS ARE SUPPLIED WITH A SQUARE EDGE.

9. SIDING, BRICK OR STUCCO — (OPTIONAL, NOT SHOWN) — ALUMINUM, VINYL OR STEEL SIDING, BRICK VENEER OR STUCCO, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES. INSTALLED OVER GYPSUM PANELS. BRICK VENEER ATTACHED TO STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH STEEL SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK.

10. CAULKING AND SEALANTS* — (OPTIONAL, NOT SHOWN) — A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL. UNITED STATES GYPSUM CO — TYPE AS



Revision

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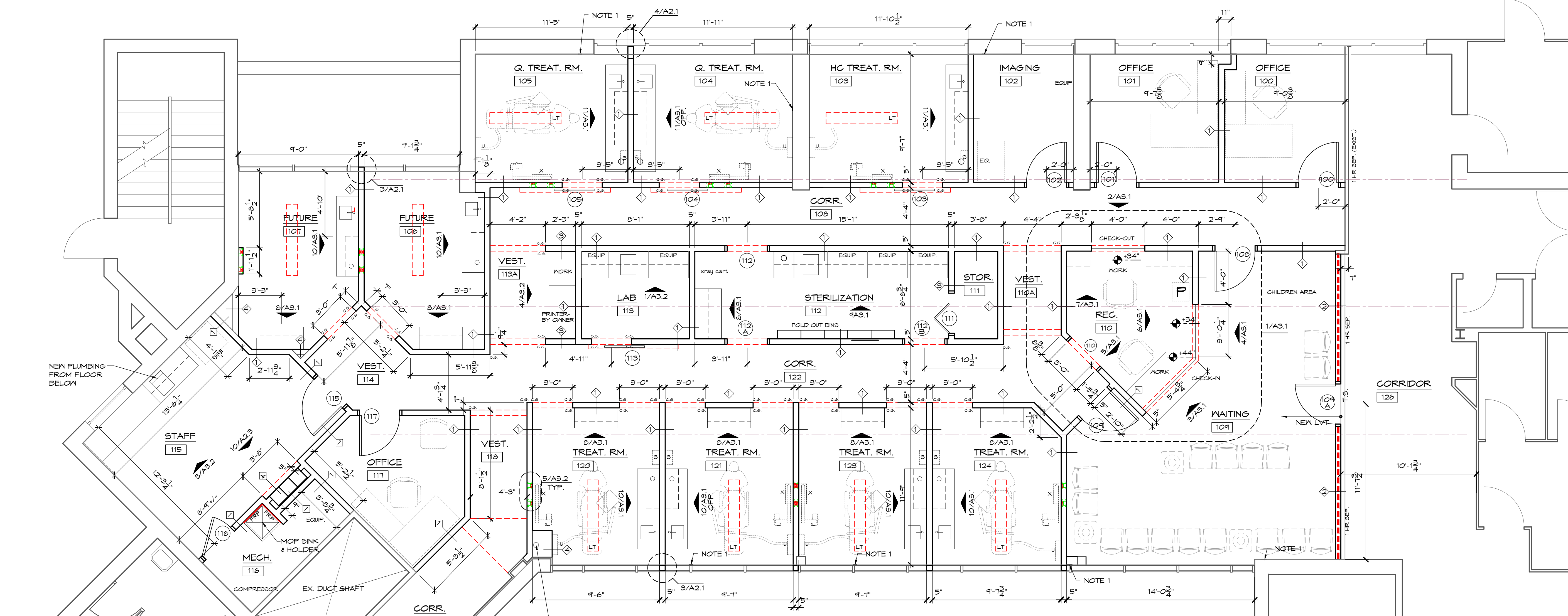
Forsyth County
Health Department

Dental Suite
Alteration

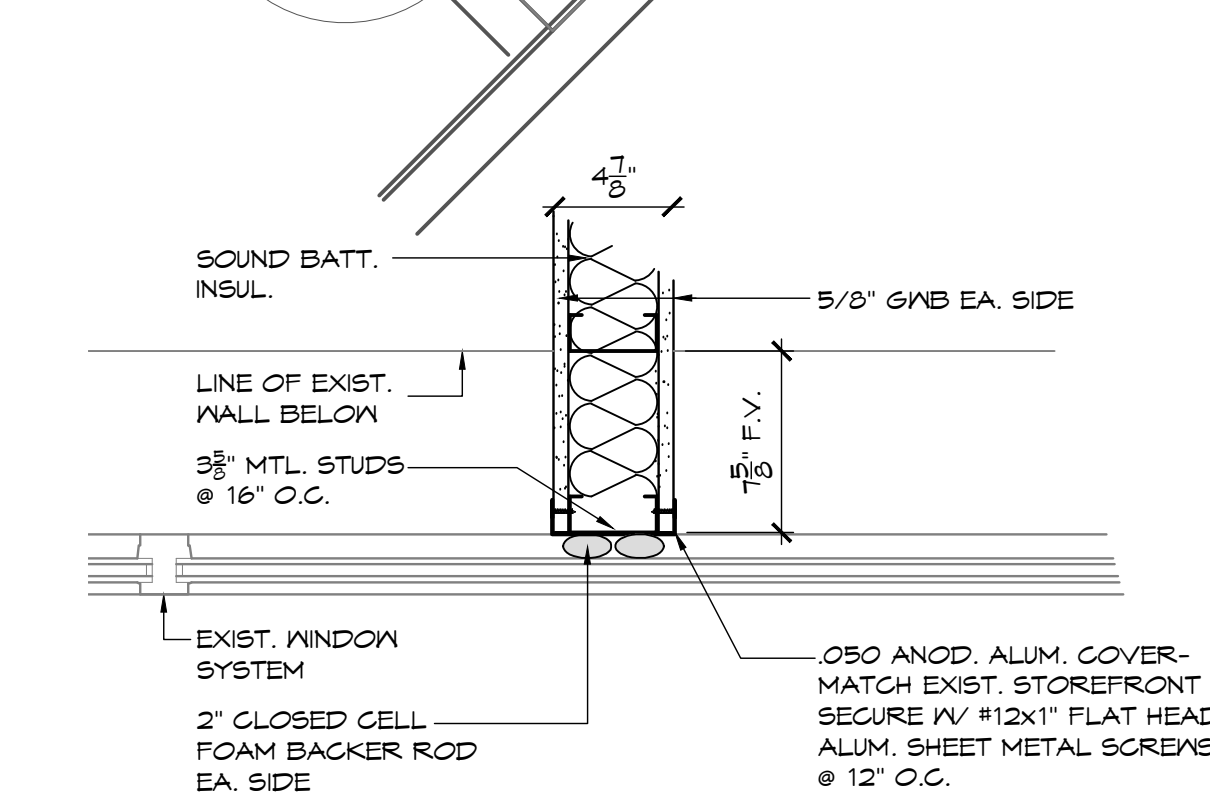
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Drawn By	PAP

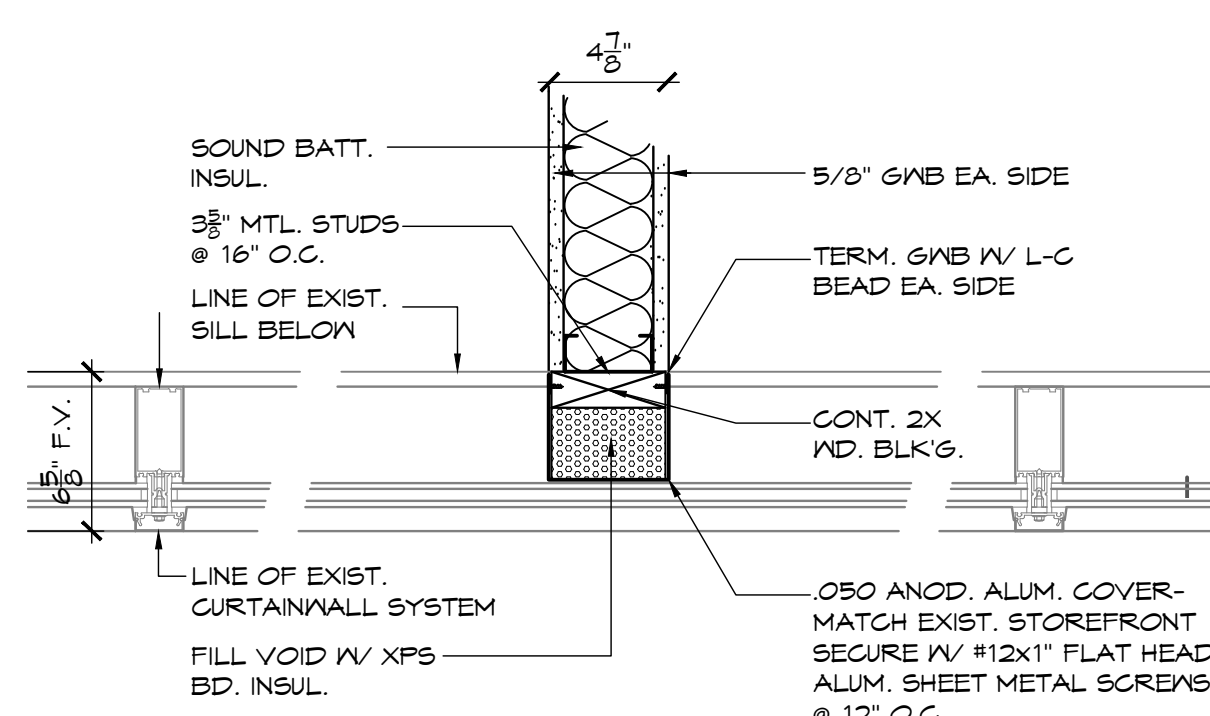
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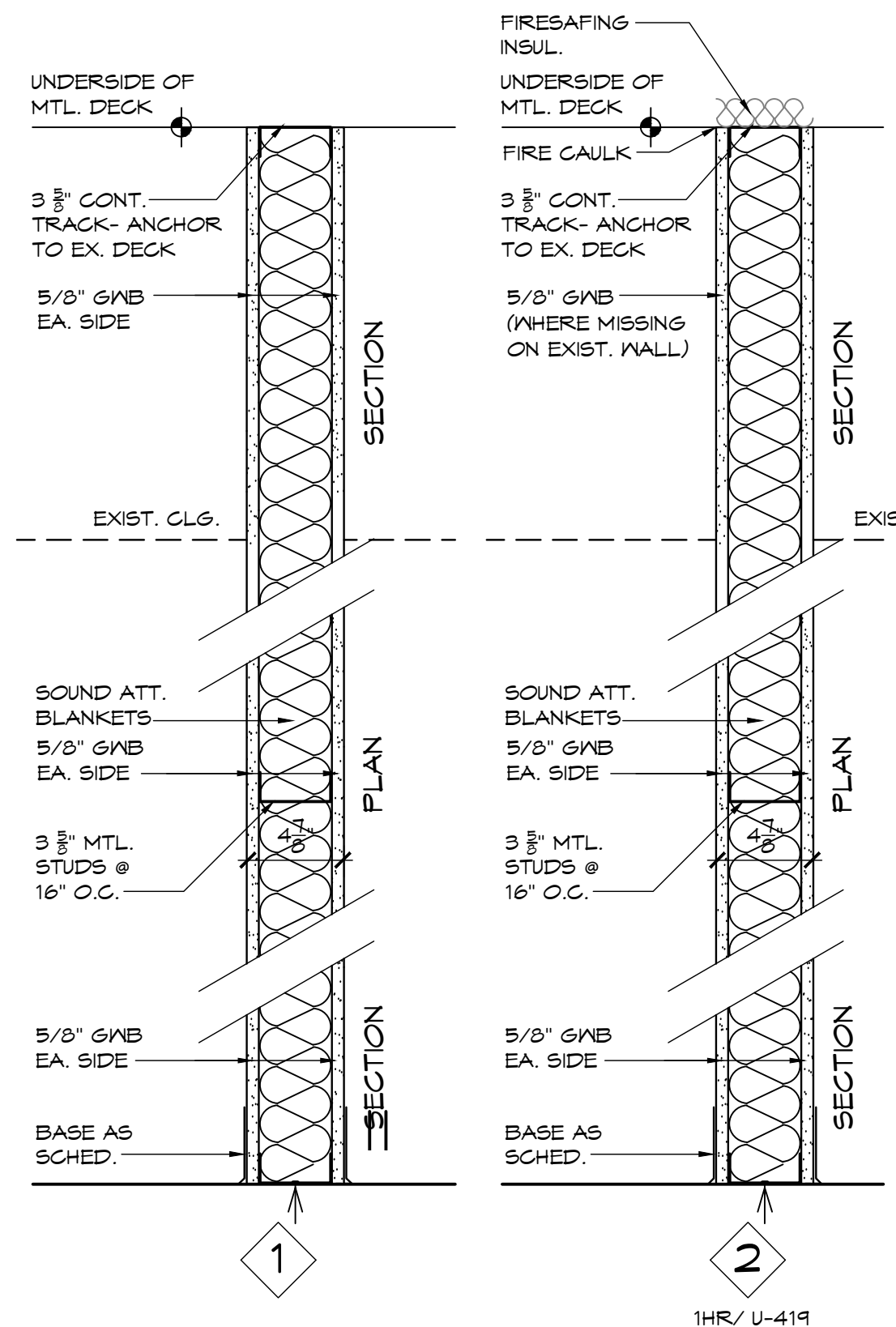
1/A2.1 FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



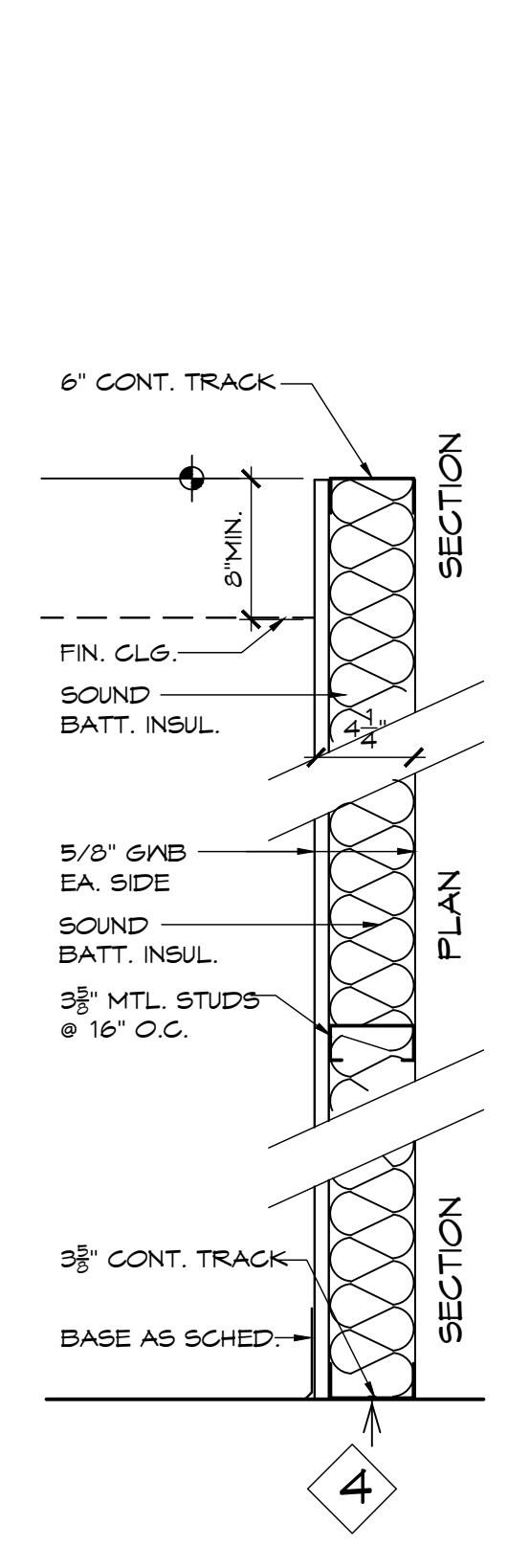
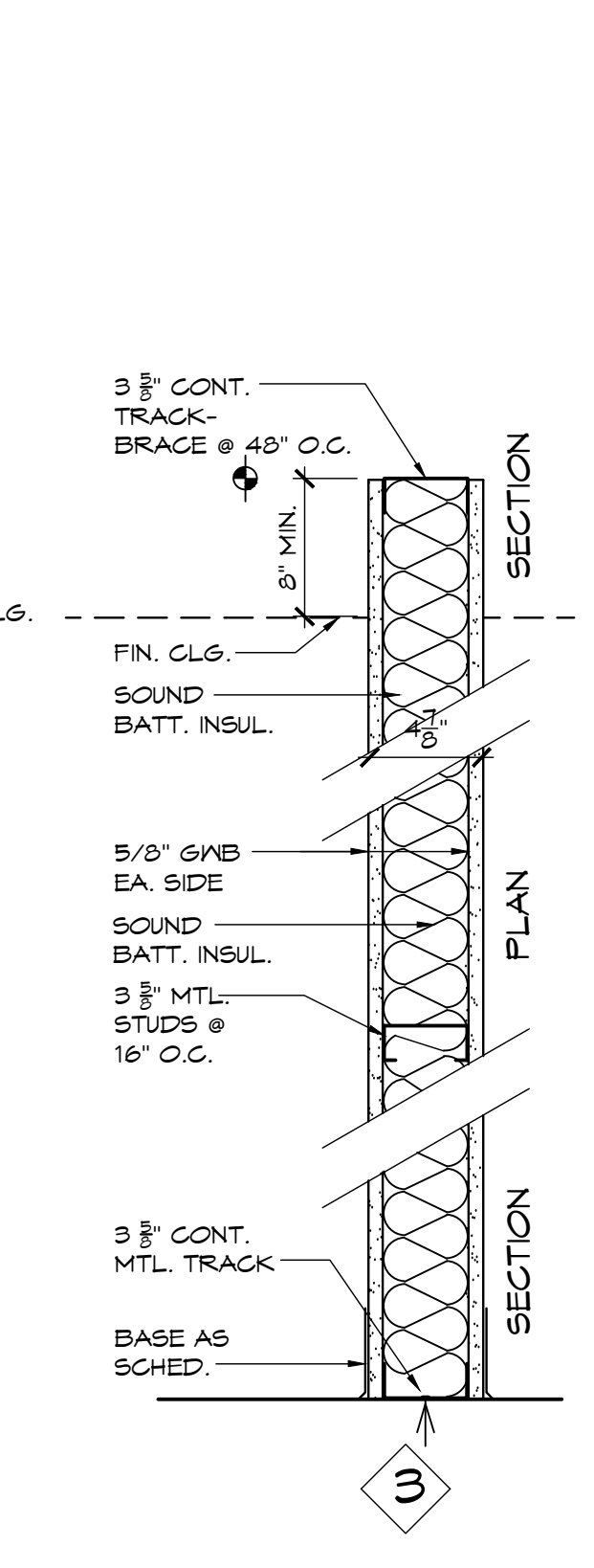
4/A2.1 DETAIL
SCALE: 1 1/2" = 1'-0"



3/A2.1 DETAIL
SCALE: 1 1/2" = 1'-0"



2/A2.1 PARTITION DETAILS
SCALE: 1 1/2" = 1'-0"



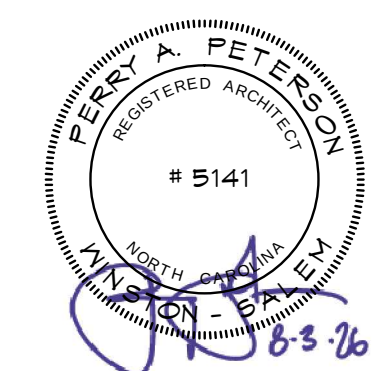
- GENERAL NOTES:**
- 1) ALL DIMS. ARE TO FIN. FACE OF WALL, UNLESS OTHERWISE NOTED (U.O.N.).
 - 2) FLOOR PATTERNS SHALL BE PREPARED OR APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
 - 3) TERMINATE & JOIN ALL DIS-SIMILAR FLOOR MATERIALS W/ TERMINATION STRIPS (TS) AS SPEC.
 - 4) PROVIDE VERT. CONTROL JTS. (C.J.) IN GMB AS SHOWN ON DRAWINGS BUT NOT TO EXCEED GMB MANUF. RECOMMENDATIONS.
 - 5) FURNITURE BY OWNER (N.I.C.), ELECTRICAL & DATA CONNECTIONS BY G.C.
 - 6) PROVIDE SOUND BATTS IN ALL INTERIOR WALLS.
 - 7) PREP/ SKIM COAT INTERIOR GMB WALLS WHERE EXIST. WALL FIN. (V.N.F, TILE, ETC.) IS REMOVED PRIOR TO NEW PAINT.
 - 8) REPAIR/PATCH EXIST. CONDITIONS AT WALL, CLG, FLOORS AFFECTED BY DEMO TO MATCH EXIST.
 - 9) REPAIR/PATCH ANY EXISTING FIREPROOFING AFFECTED BY DEMOLITION OR NEW CONSTRUCTION.

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Health Department

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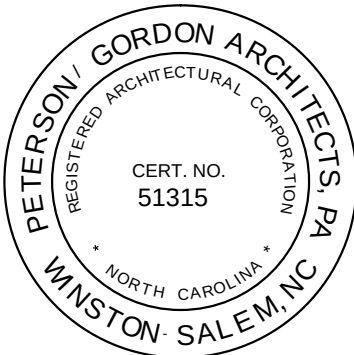
A2.1

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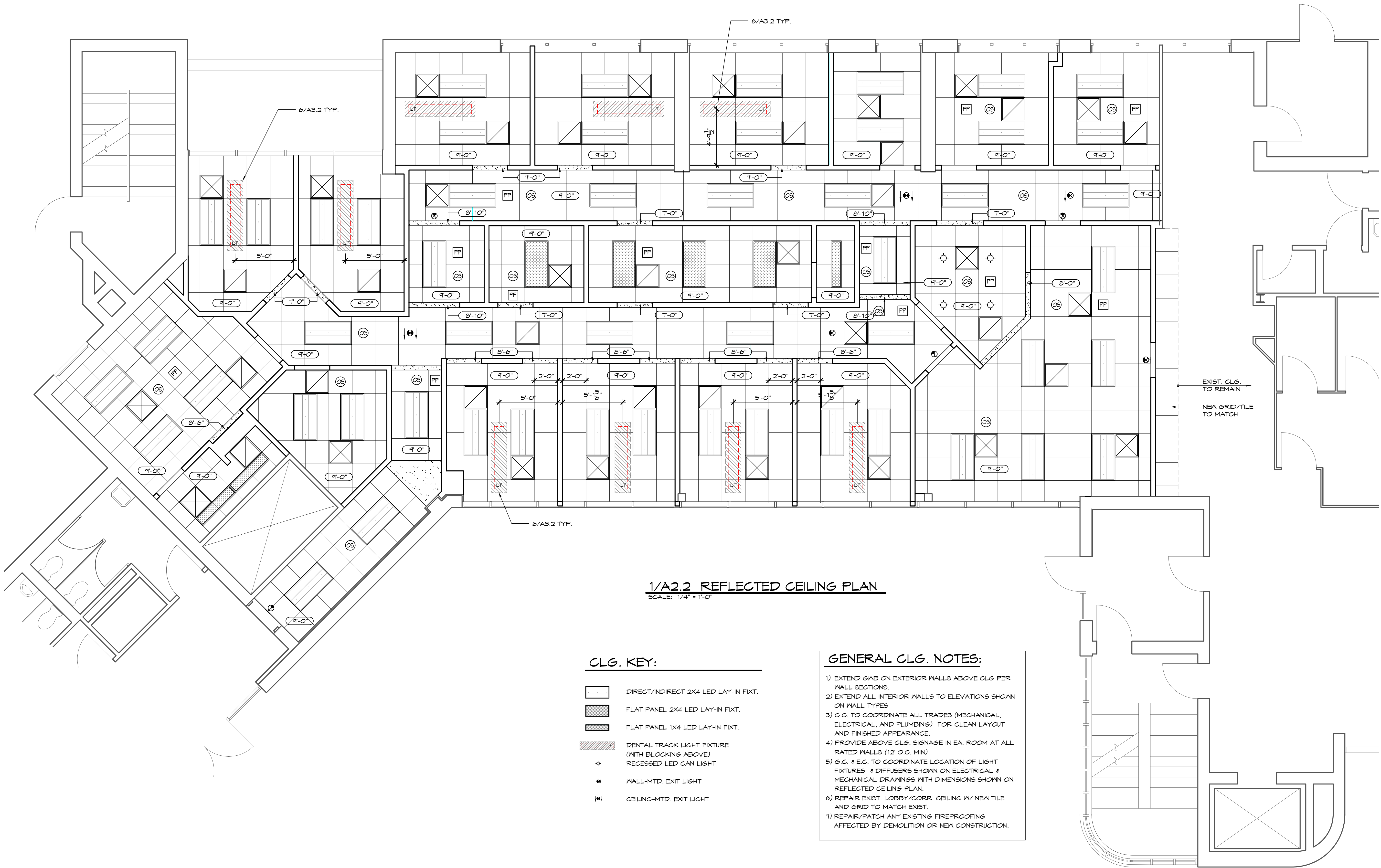
Forsyth County
Health Department

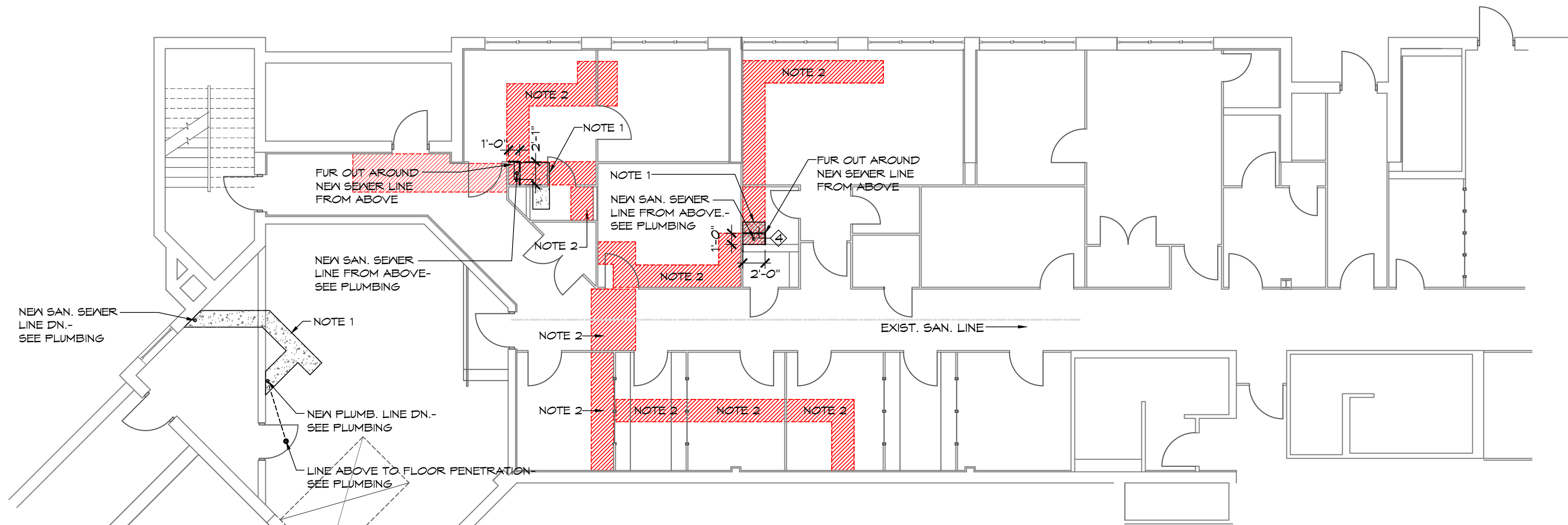
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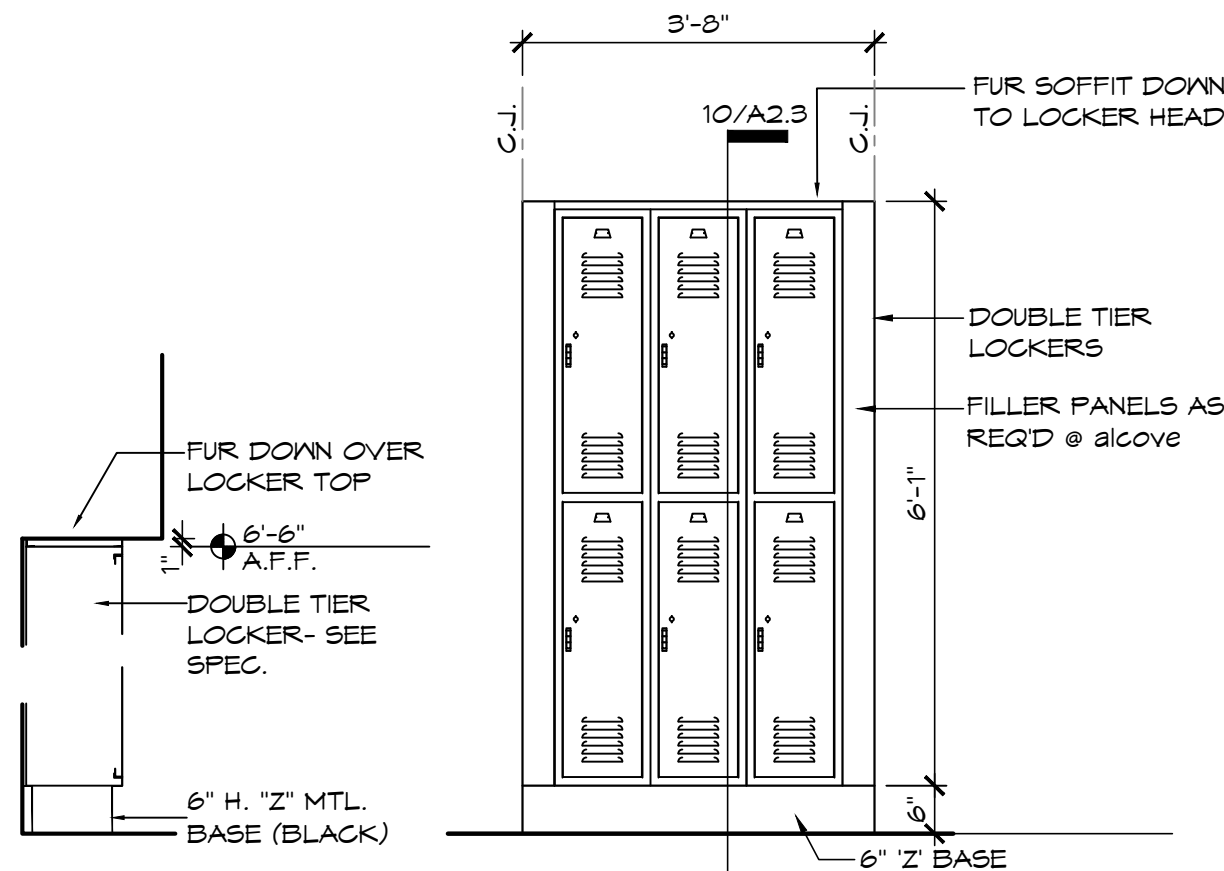


11/A2.3 BASEMENT FLR. PLAN
SCALE: 1/8" = 1'-0"

KEYED NOTES:

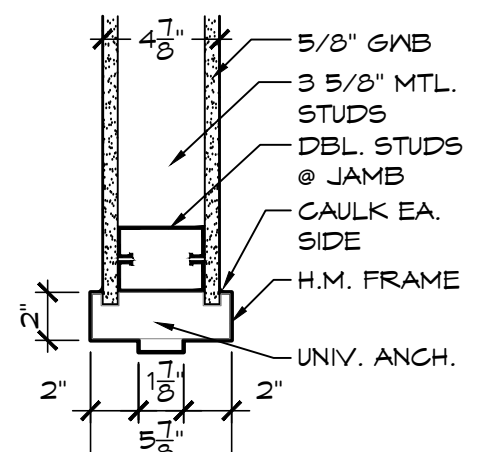
NOTE 1- PATCH CONC. & FIN. FLR. TO MATCH EXIST.

NOTE 2- REMOVE & REINSTALL EXIST. GRID CLG. SYSTEM TO INSTALL NEW OVERHEAD PLUMBING LINES. REPLACE TO MATCH WHERE DAMAGED

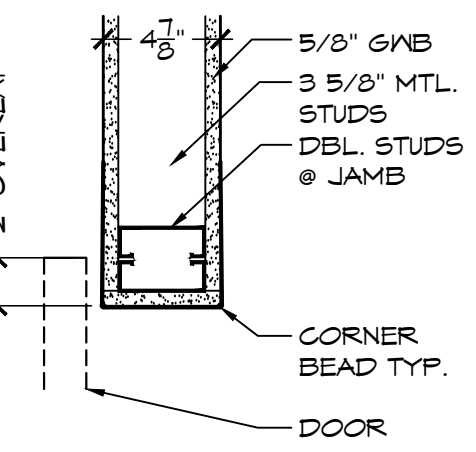


10/A2.3 DETAIL
SCALE: 1/2" = 1'-0"

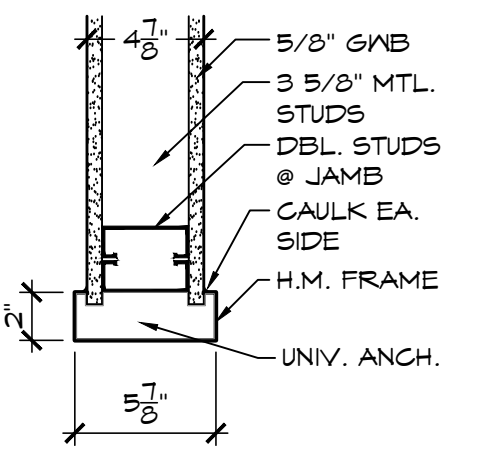
9/A2.3 ELEV.
SCALE: 1/2" = 1'-0"



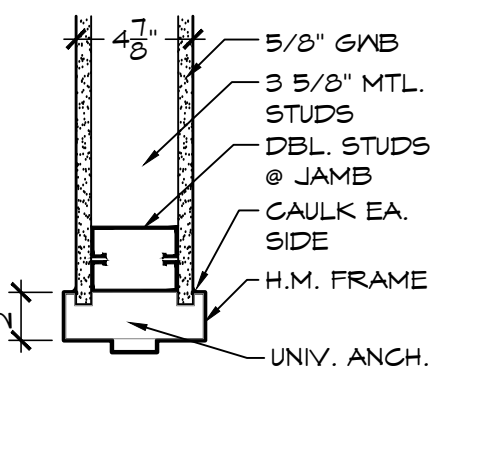
8/A2.3 JAMB
SCALE: 1 1/2" = 1'-0"



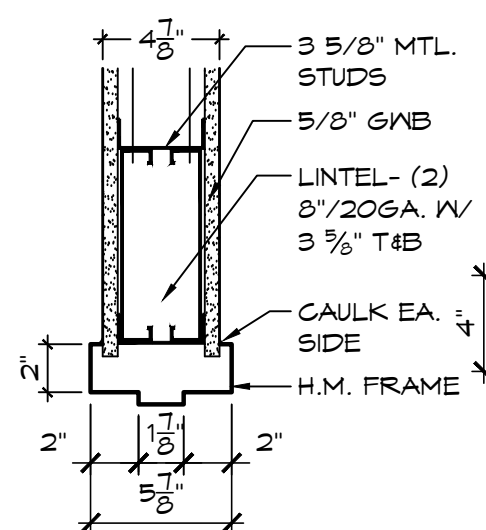
6/A2.3 JAMB
SCALE: 1 1/2" = 1'-0"



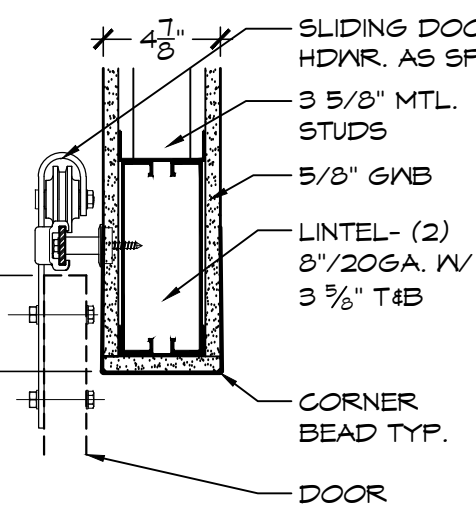
4/A2.3 JAMB
SCALE: 1 1/2" = 1'-0"



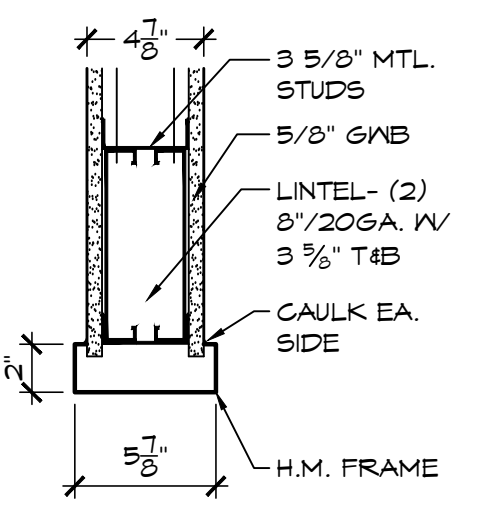
2/A2.3 JAMB
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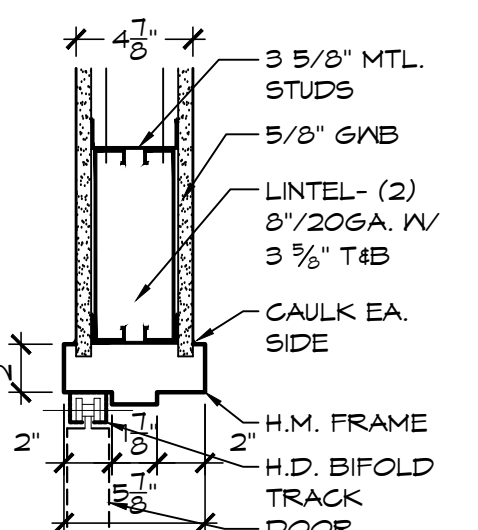
7/A2.3 HEAD
SCALE: 1 1/2" = 1'-0"



5/A2.3 HEAD
SCALE: 1 1/2" = 1'-0"



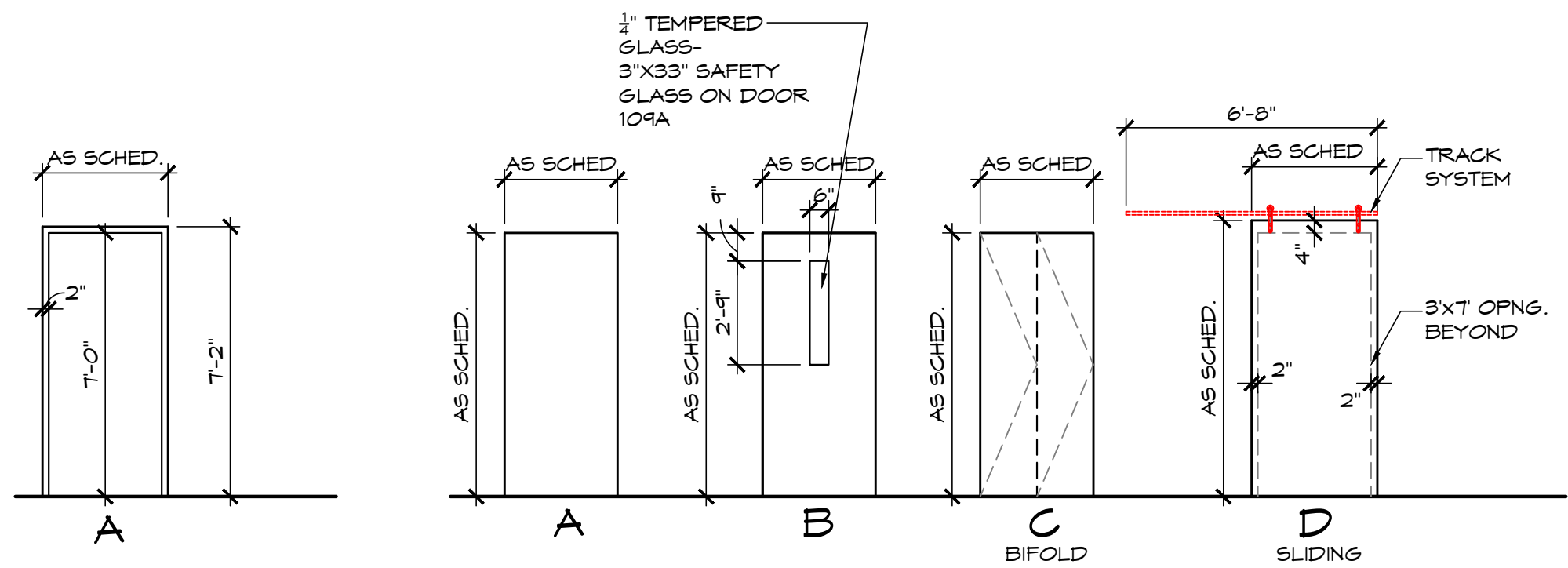
3/A2.3 HEAD
SCALE: 1 1/2" = 1'-0"



1/A2.3 HEAD
SCALE: 1 1/2" = 1'-0"

FINISH SCHEDULE

RM.#	ROOM NAME	FLOOR	BASE	WALLS	CEILING	CLG. HT.	REMARKS
100	OFFICE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
101	OFFICE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
102	IMAGING	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
103	H.C. TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
104	Q. TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
105	Q. TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
106	FUTURE TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
107	FUTURE TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
108	CORRIDOR	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
109	WAITING	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
110	RECEPTION	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
110A	VESTIBULE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
111	STORAGE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
112	STERILIZATION	LVT	RUBBER	PTD. GNB- S.G.	SUSP. VMT- TYPE 2	9'-0"	
113	LAB	LVT	RUBBER	PTD. GNB- S.G.	SUSP. VMT- TYPE 2	9'-0"	
113A	VESTIBULE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
114	VESTIBULE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
115	STAFF	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
116	MECHANICAL	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
117	OFFICE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
118	VESTIBULE	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
119	CORRIDOR	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
120	TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
121	TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
122	CORRIDOR	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
123	TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	
124	TREATMENT RM.	LVT	RUBBER	PTD. GNB- S.G.	SUSP. ACT- TYPE 1	9'-0"	



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

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

DOOR SCHEDULE

DOOR SIZE		THICKNESS	P C	DOOR MAT.	F C	FRAME MAT.	HEAD	JAMB	HARDWARE	FIRE RATING	REMARKS
DR. #	WIDTH X HEIGHT										
100	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	LS, VN, TG		SOLID WOOD
101	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	LS, VN, TG		SOLID WOOD
102	3'-0" x 7'-0"	1 3/4"	A	ND.	A	H.M.	7/A2.3	8/A2.3	PS, KP		SOLID WOOD
103	3'-4" x 7'-4" SL.	1 3/4"	D	ND.	--	--	5/A2.3	6/A2.3	SL, KP, RP		SOLID WOOD- SLIDER
104	3'-4" x 7'-4" SL.	1 3/4"	D	ND.	--	--	5/A2.3	6/A2.3	SL, KP, RP		SOLID WOOD- SLIDER
105	3'-4" x 7'-4" SL.	1 3/4"	D	ND.	--	--	5/A2.3	6/A2.3	SL, KP, RP		SOLID WOOD- SLIDER
106	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	PS, CL, VN, TG, KP		SOLID WOOD
109	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	PS, CL, VN, TG, KP		SOLID WOOD
109A	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	PS, CL, VN, TG, KP	45 MIN.	SOLID WOOD
110	3'-0" x 7'-0" C.O.	1 3/4"	--	--	A	H.M.	3/A2.3	4/A2.3	--		CASED OPNG.
111	3'-0" x 7'-0" B.F.	1 3/4"	C	ND	A	H.M.	1/A2.3	2/A2.3	BF, RP		SOLID WOOD, BI-FOLD
112	3'-0" x 7'-0" C.O.	1 3/4"	--	--	A	H.M.	3/A2.3	4/A2.3	--		CASED OPNG.
112A	3'-0" x 7'-0" C.O.	1 3/4"	--	--	A	H.M.	3/A2.3	4/A2.3	--		CASED OPNG.
112B	3'-0" x 7'-0" C.O.	1 3/4"	--	--	A	H.M.	3/A2.3	4/A2.3	--		CASED OPNG.
113	3'-4" x 7'-4" SL.	1 3/4"	D	ND.	--	--	5/A2.3	6/A2.3	SL, KP, RP		SOLID WOOD- SLIDER
115	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	PS, VN, TG, KP		SOLID WOOD
116	3'-0" x 7'-0"	1 3/4"	A	ND.	A	H.M.	7/A2.3	8/A2.3	LS, KP		SOLID WOOD
117	3'-0" x 7'-0"	1 3/4"	B	ND.	A	H.M.	7/A2.3	8/A2.3	LS, VN, TG		SOLID WOOD

CL: CLOSER
KP: KICKPLATE
LP: LOCK SET
FR: PRIVACY SET

KP: KICK PLATE
AP: ARMOR PLATE
VN: VIEW WINDOW
PS: PASSAGE SET

VG: SAFETY WIRE GLASS
TG: TEMPERED GLASS
SL: SLIDING DOOR HDNR. (BARN DOOR)
BF: BIFOLD DOOR HDNR.

RP: RECESSED DOOR PULL

Revision

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Forsyth County
Health Department

Dental Suite
Alteration

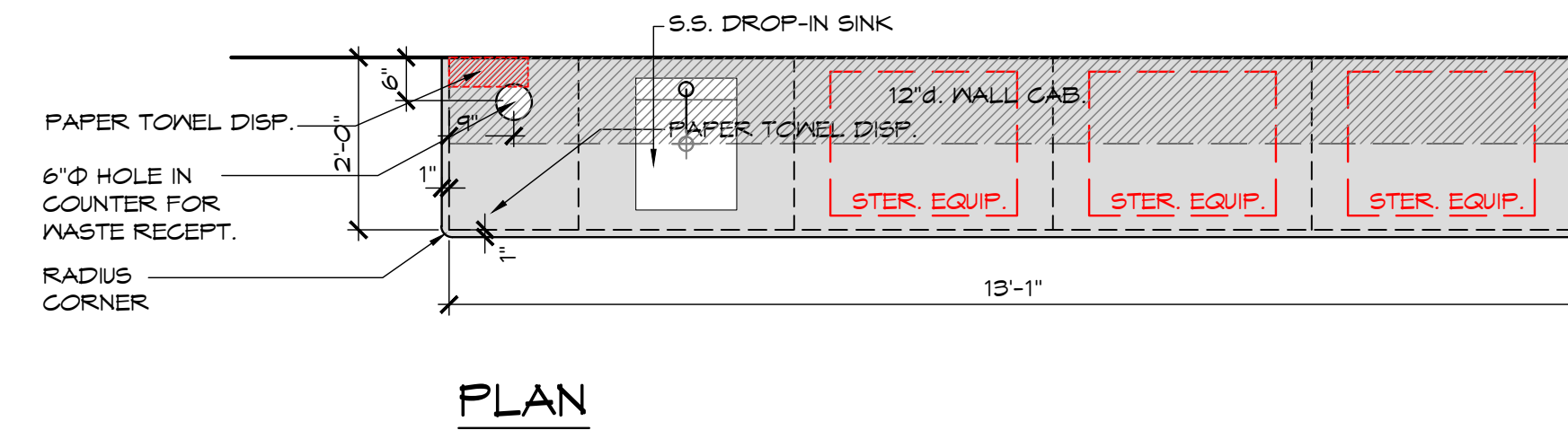
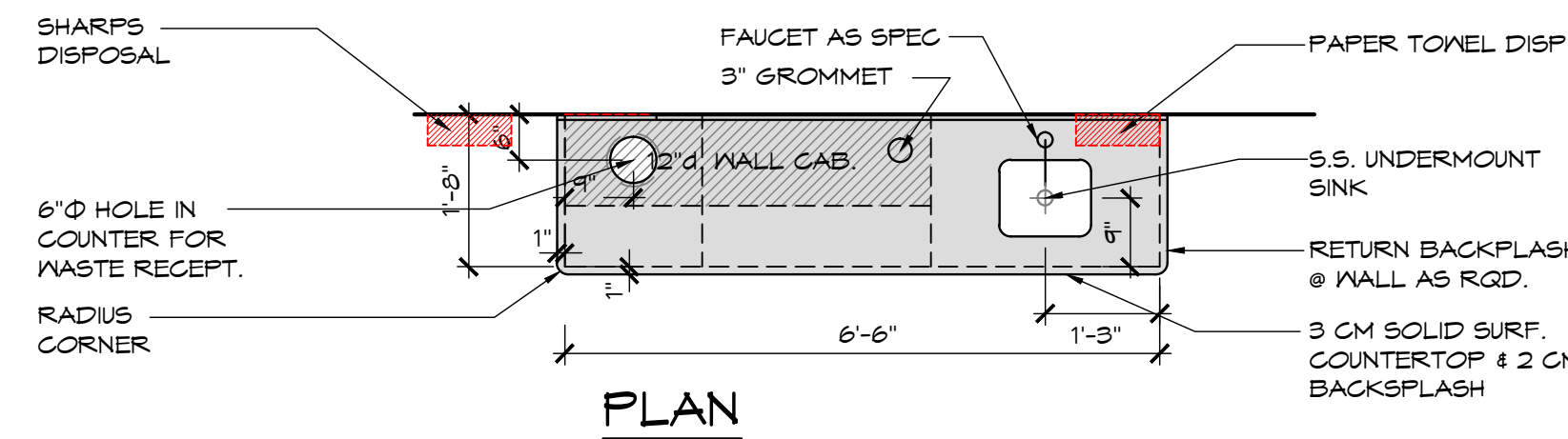
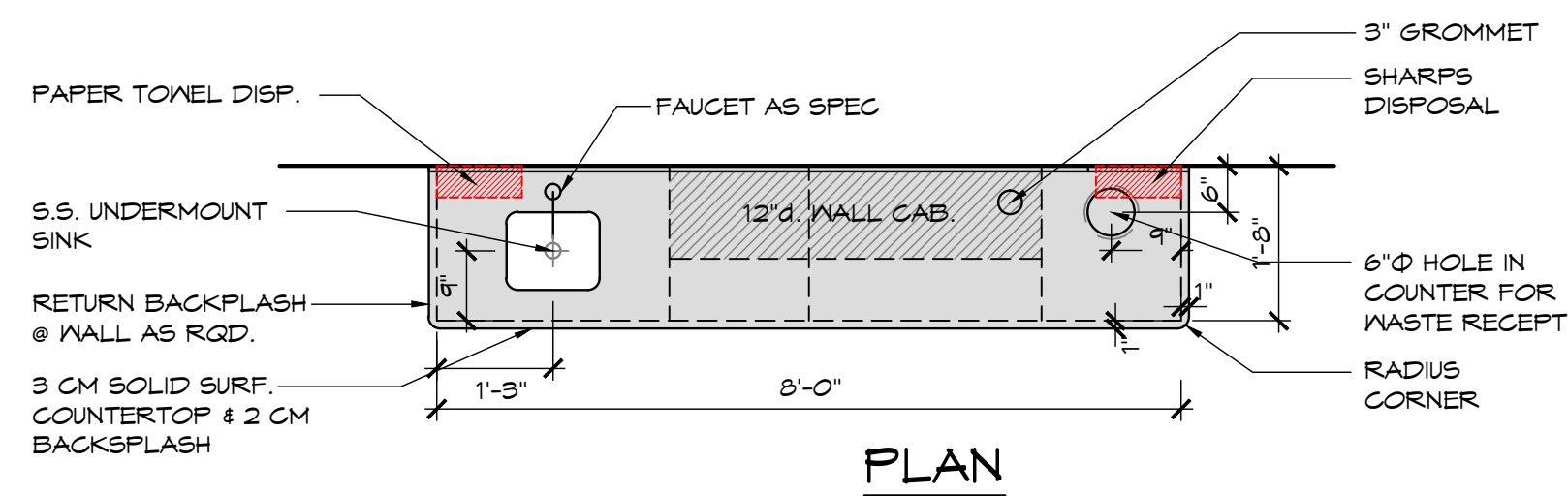
Winston-Salem, NC

Comm. No. 25-380

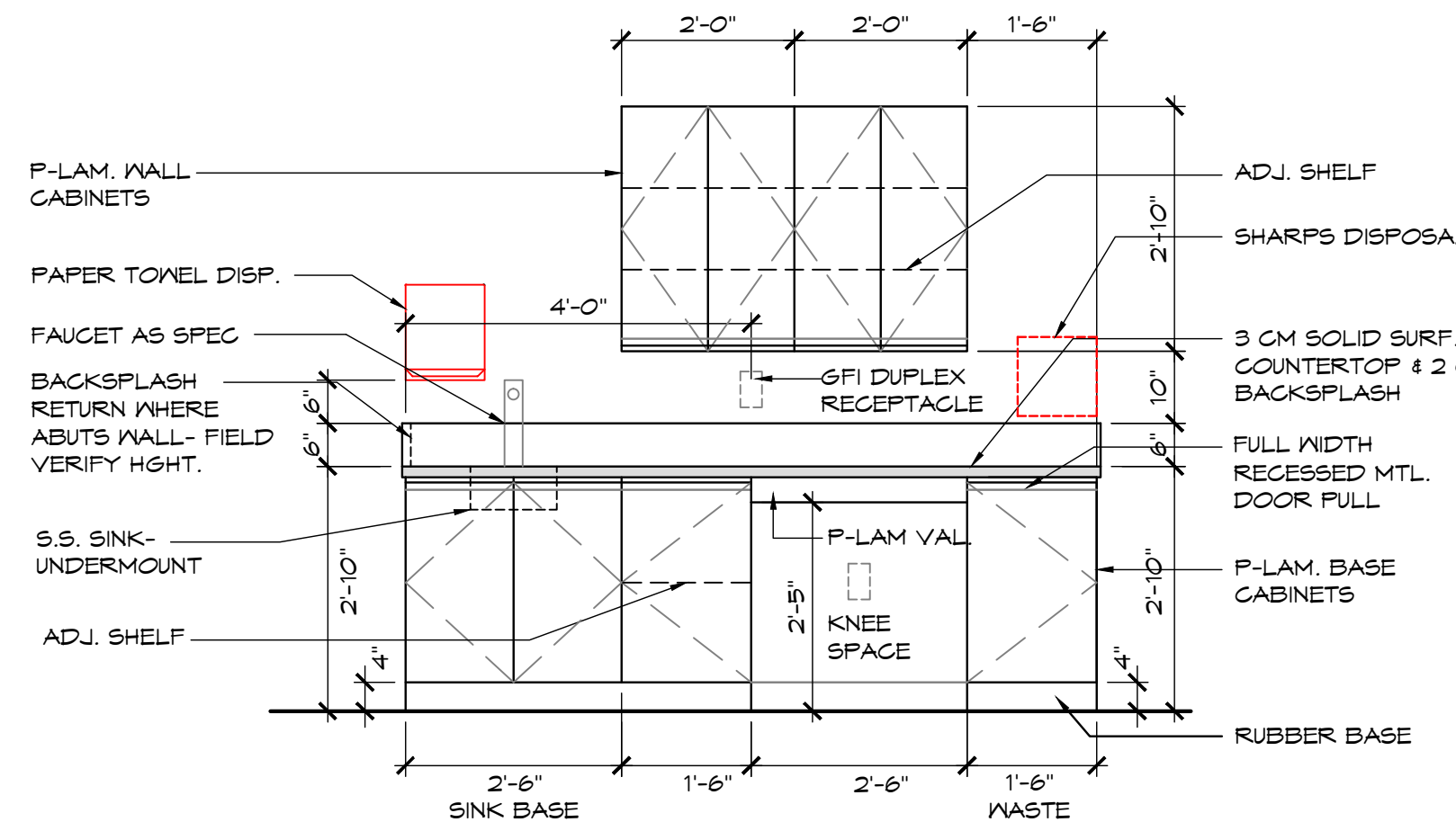
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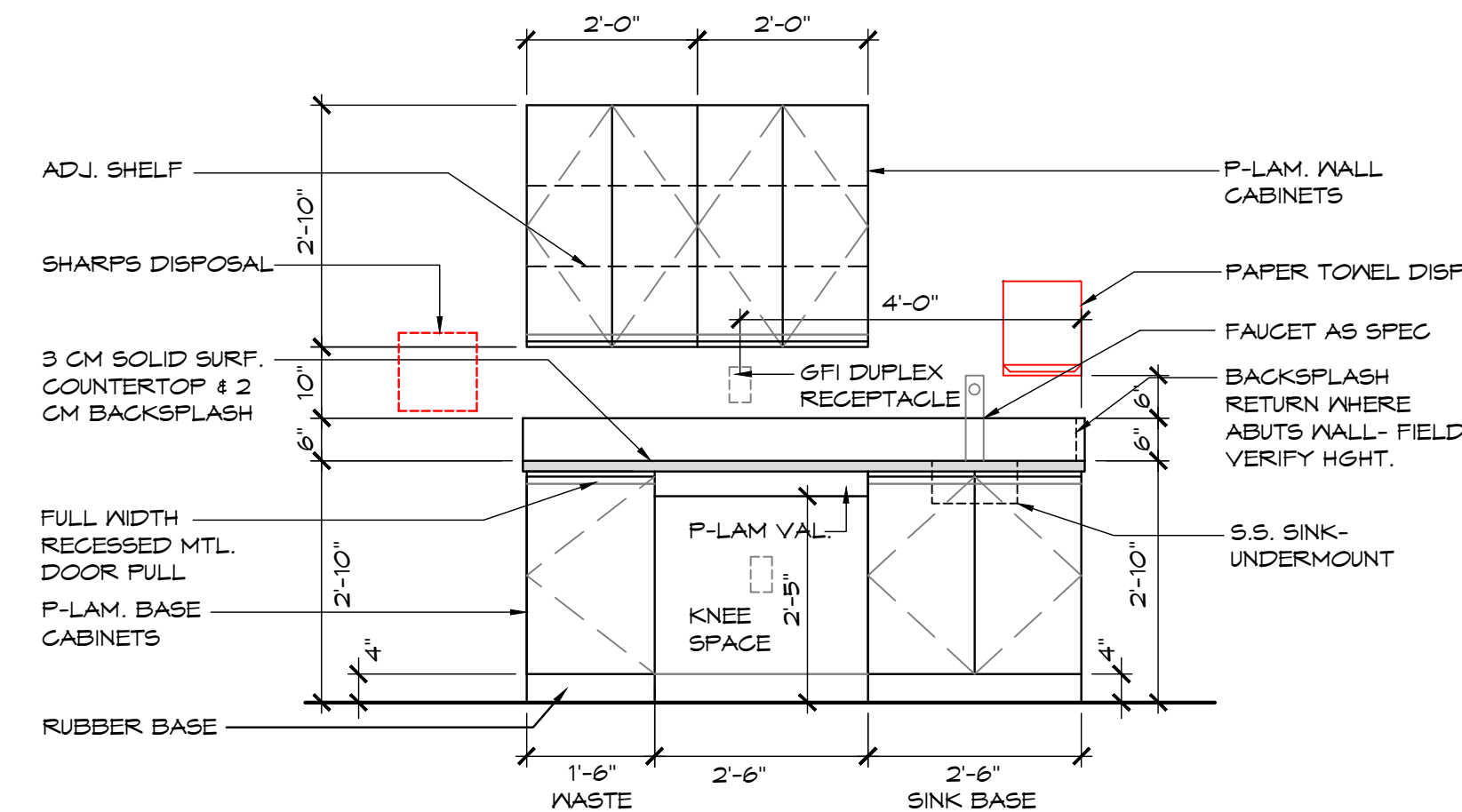
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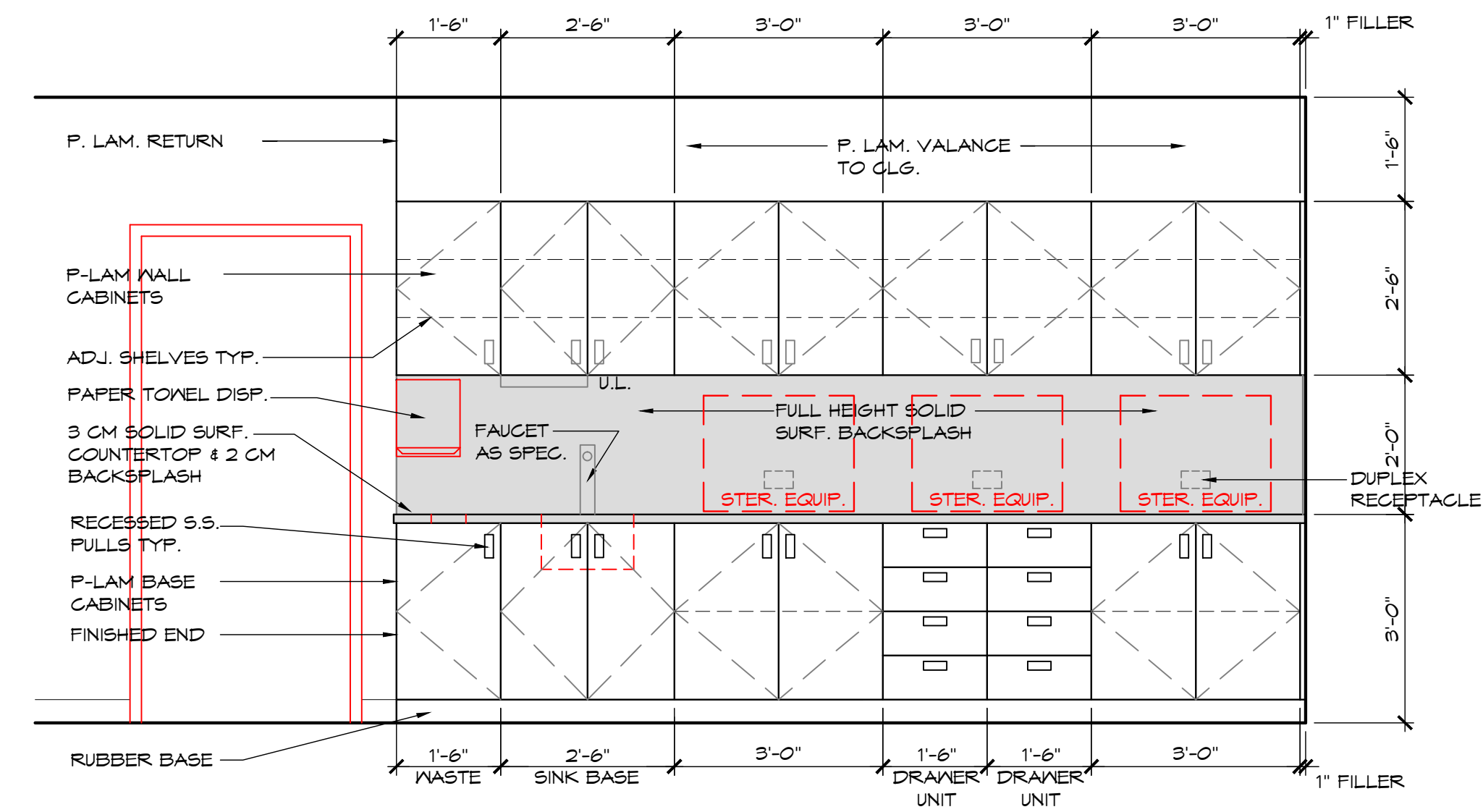
Revision



11/A3.1 ELEV. DETAIL
1/2" = 1'-0"

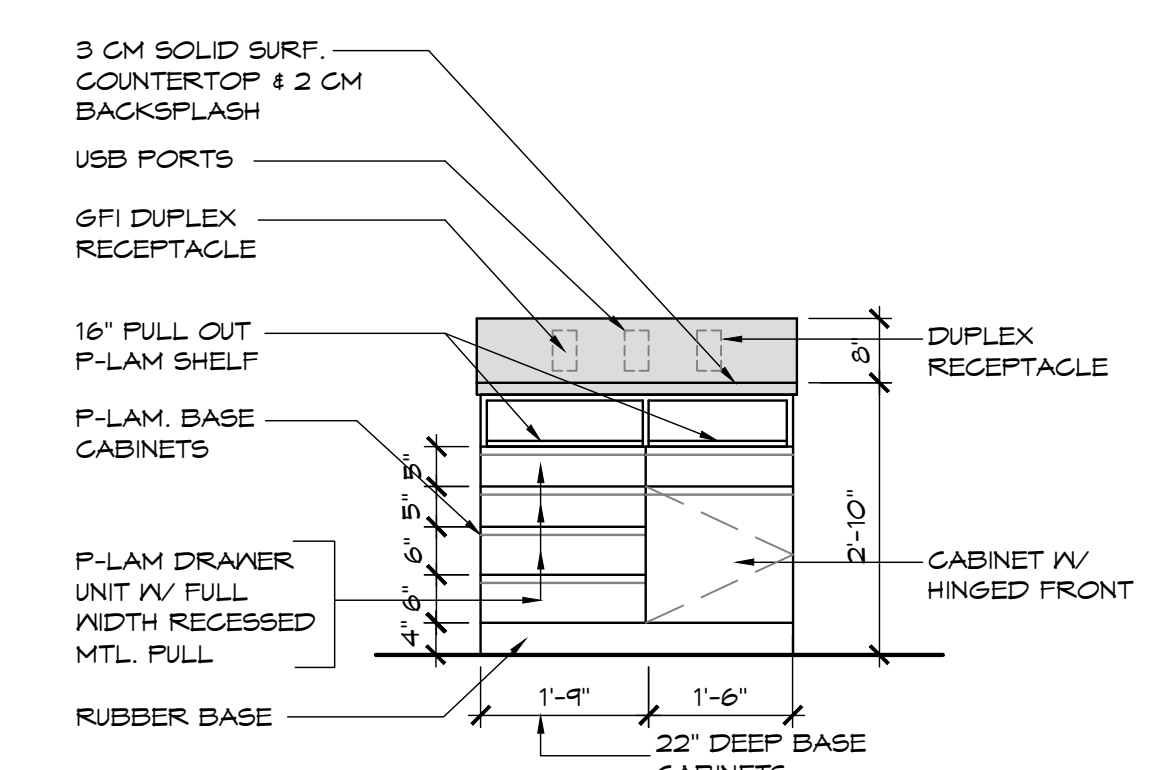


10/A3.1 ELEV. DETAIL
1/2" = 1'-0"

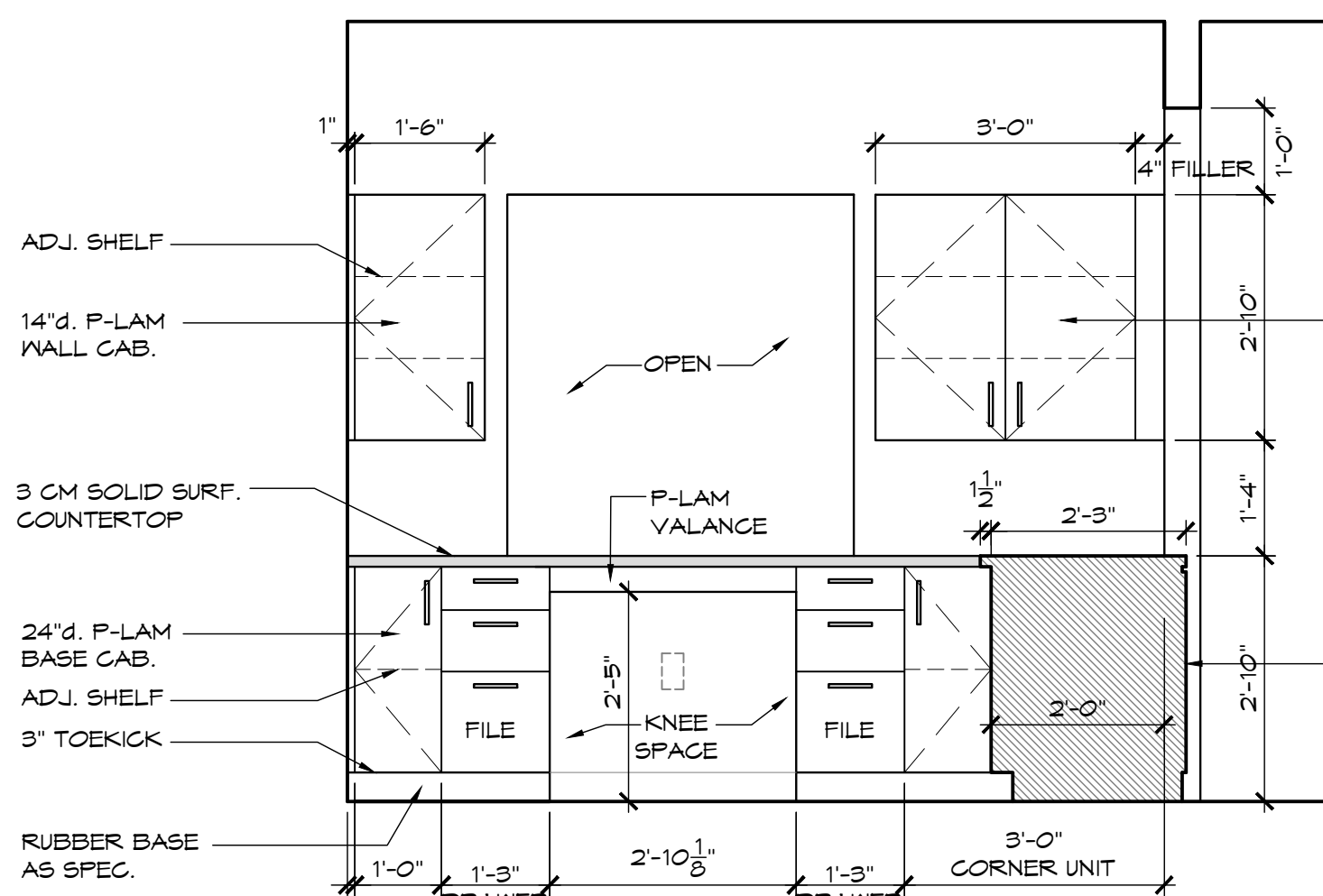


9/A3.1 ELEV. DETAIL
1/2" = 1'-0"

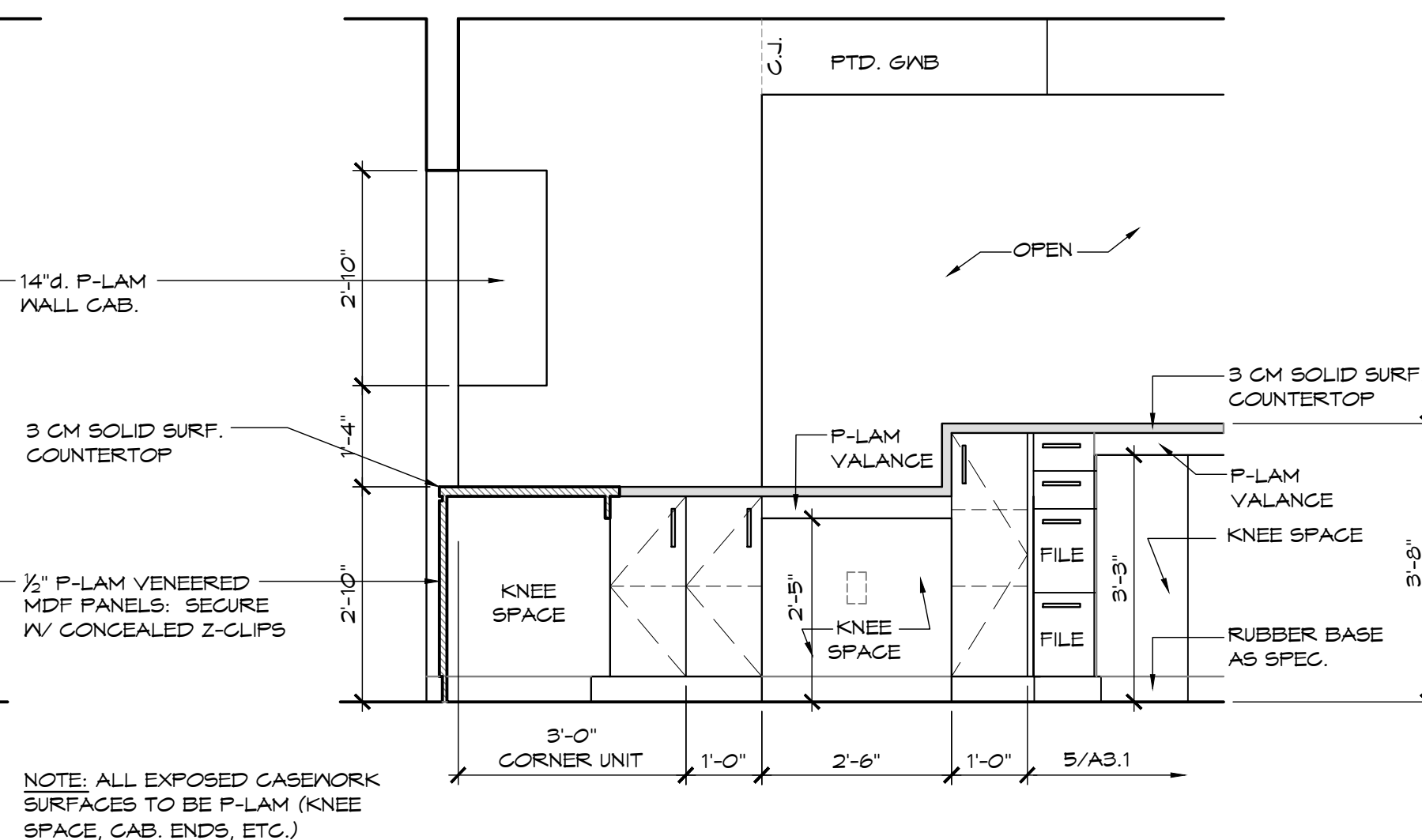
NOTE: CONFIRM POWER, WATER AND WASTE REQ. FOR STERILIZER UNITS



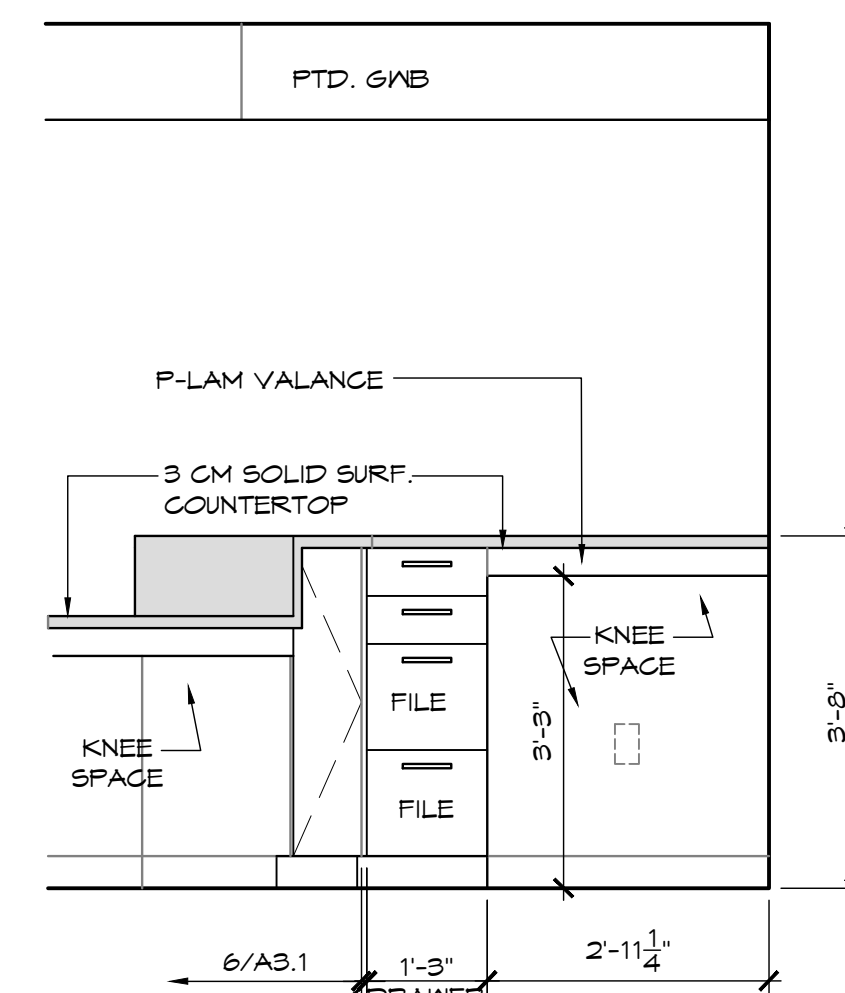
8/A3.1 ELEV. DETAIL
1/2" = 1'-0"



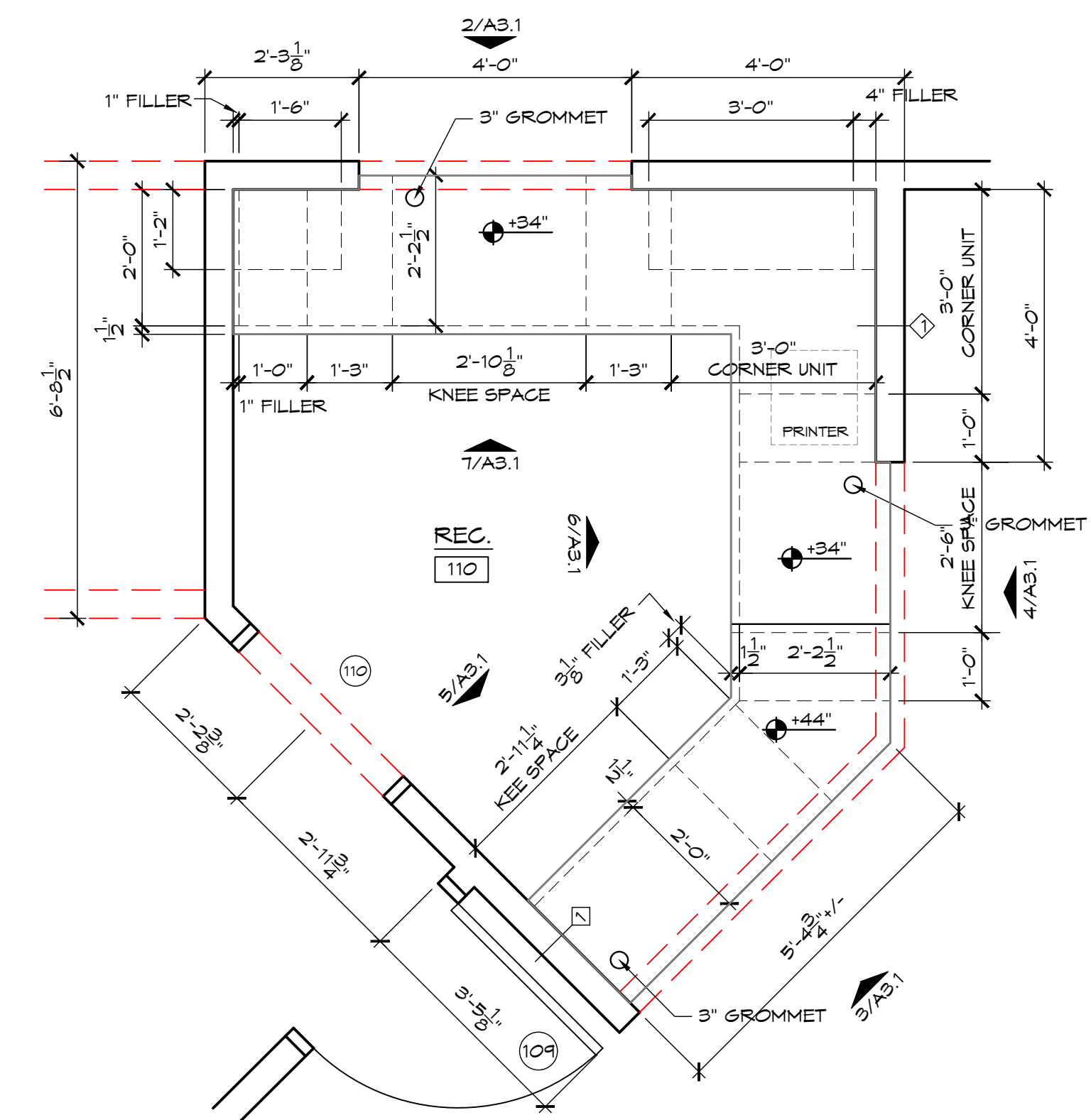
7/A3.1 ELEV. DETAIL
1/2" = 1'-0"



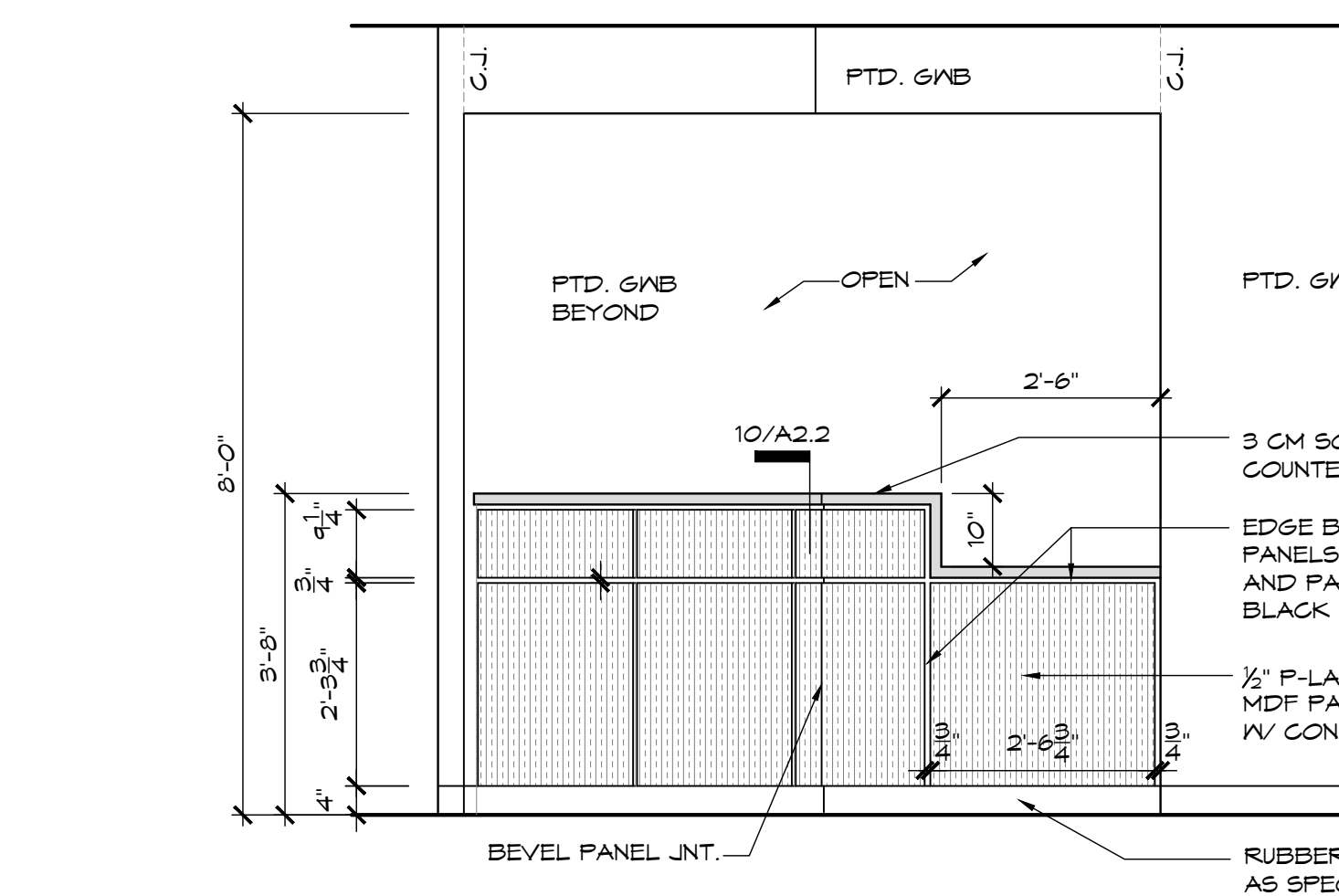
6/A3.1 ELEV. DETAIL
1/2" = 1'-0"



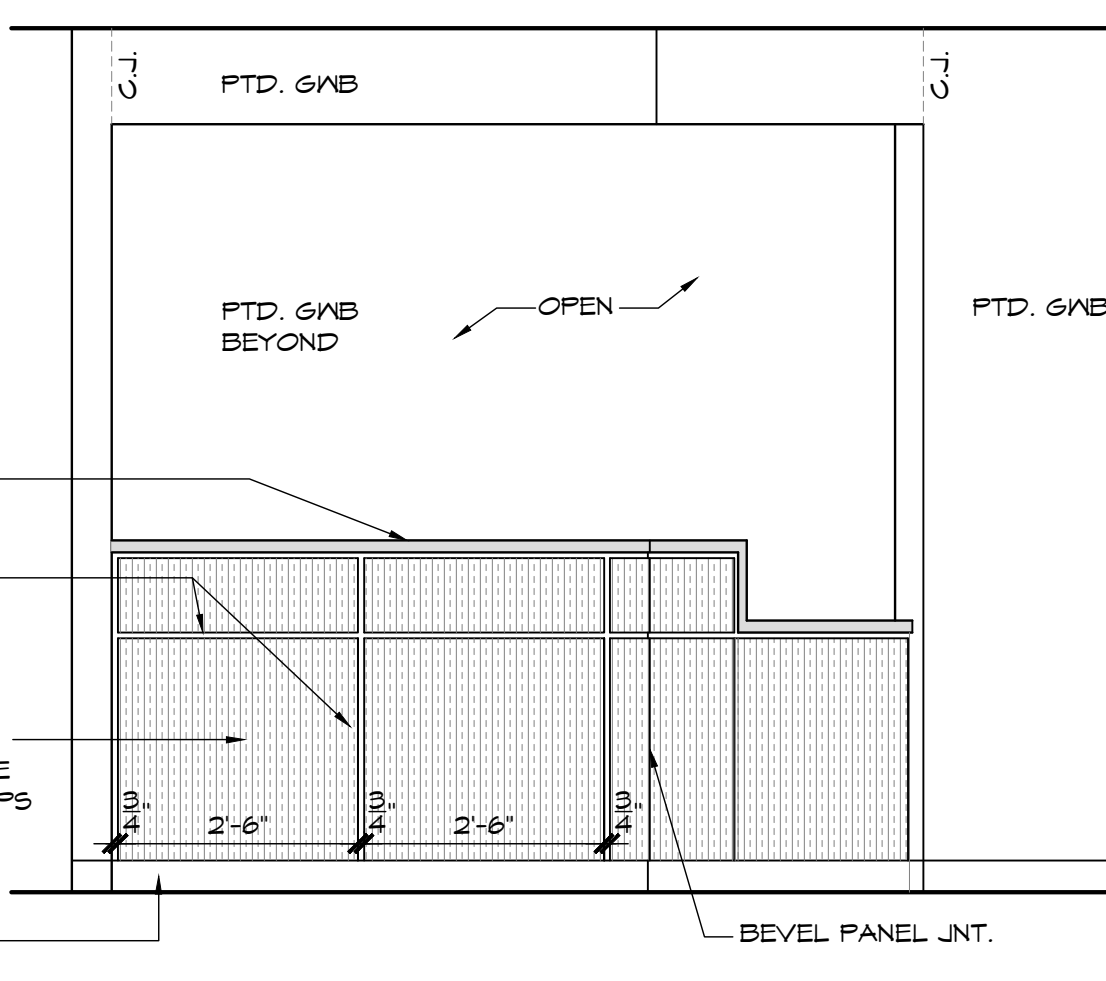
5/A3.1 ELEV. DETAIL
1/2" = 1'-0"



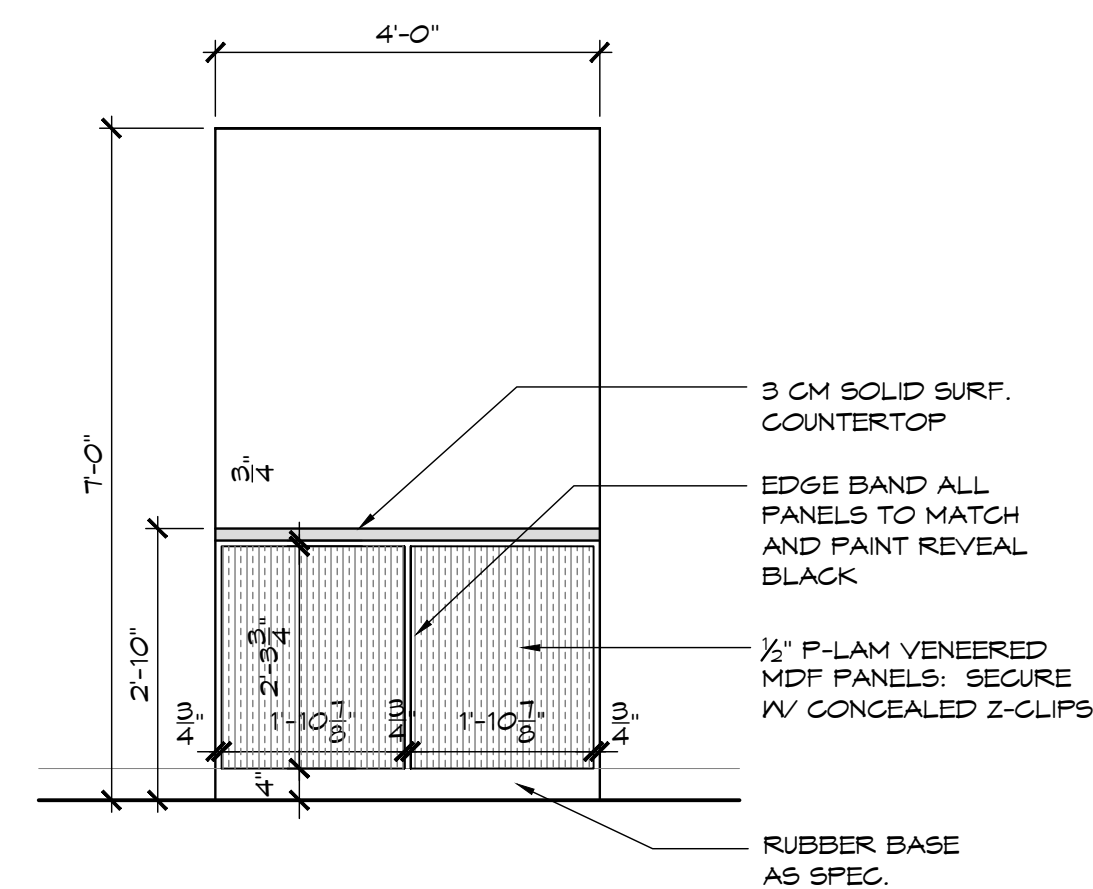
1/A3.1 ENL. FLOOR PLAN
SCALE: 1/2" = 1'-0"



4/A3.1 ELEV. DETAIL
1/2" = 1'-0"



3/A3.1 ELEV. DETAIL
1/2" = 1'-0"

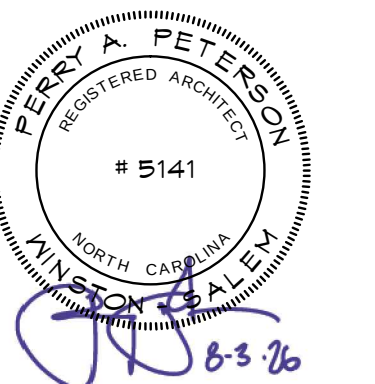
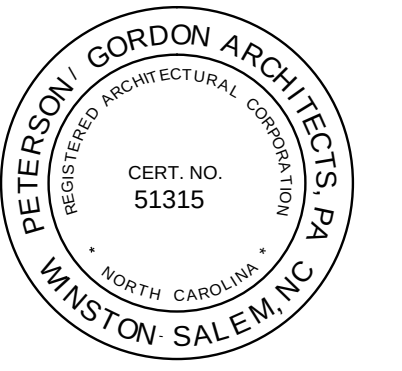


2/A3.1 ELEV. DETAIL
1/2" = 1'-0"

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Comm. No.	25-380
Date	8-3-26
Drawn By	PAP

A3.1

CONTRACTOR RESPONSIBILITIES

PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL PERFORM A THOROUGH REVIEW OF THE CONTRACT DOCUMENTS AND CONDUCT ALL NECESSARY FIELD INVESTIGATIONS TO BECOME FULLY FAMILIAR WITH EXISTING CONDITIONS, ACCESS REQUIREMENTS, UTILITY SYSTEMS, EQUIPMENT, DIMENSIONS, CLEARANCES, AND OTHER FACTORS THAT MAY AFFECT THE WORK.

THE CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, PERMITS, TESTING, COORDINATION, DEMOLITION, MODIFICATIONS, INCIDENTAL WORK, AND MISCELLANEOUS ITEMS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE CODES, AND INDUSTRY STANDARDS.

SUBMISSION OF A BID SHALL CONSTITUTE ACKNOWLEDGMENT THAT THE CONTRACTOR HAS REVIEWED THE CONTRACT DOCUMENTS, VISITED THE SITE, INVESTIGATED READILY OBSERVABLE CONDITIONS, COORDINATED THE WORK WITH ALL TRADES, AND INCLUDED ALL REASONABLY INFERABLE WORK NECESSARY FOR A COMPLETE INSTALLATION.

NO ADDITIONAL COMPENSATION SHALL BE REQUESTED FOR CONDITIONS, REQUIREMENTS, OR COORDINATION ISSUES THAT WERE REASONABLY DISCOVERABLE THROUGH REVIEW OF THE CONTRACT DOCUMENTS, PRE-BID MEETINGS, SITE VISITS, FIELD INVESTIGATIONS, OR INDUSTRY-STANDARD CONSTRUCTION PRACTICES.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER, IN WRITING, OF ANY DISCREPANCIES, CONFLICTS, CONCEALED CONDITIONS, CODE CONCERNS, OR CONDITIONS THAT MAY IMPACT THE COST, SCHEDULE, OR CONSTRUCTABILITY OF THE PROJECT UPON DISCOVERY.

THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR MEANS, METHODS, SEQUENCING, SAFETY, TEMPORARY SYSTEMS, CONSTRUCTION PROCEDURES, AND COORDINATION OF ALL SUBCONTRACTORS AND SUPPLIERS NECESSARY TO COMPLETE THE WORK.

EXISTING CONDITIONS AND VERIFICATION

THE CONTRACT DOCUMENTS ARE BASED UPON AVAILABLE RECORD INFORMATION AND LIMITED FIELD OBSERVATIONS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO CONSTRUCTION. FAILURE TO INVESTIGATE AND VERIFY EXISTING CONDITIONS THAT ARE REASONABLY ACCESSIBLE OR DISCOVERABLE PRIOR TO BIDDING SHALL NOT CONSTITUTE GROUNDS FOR A CHANGE ORDER, CONTRACT ADJUSTMENT, OR CLAIM FOR ADDITIONAL COMPENSATION.

PLUMBING EXISTING CONDITIONS NOTE

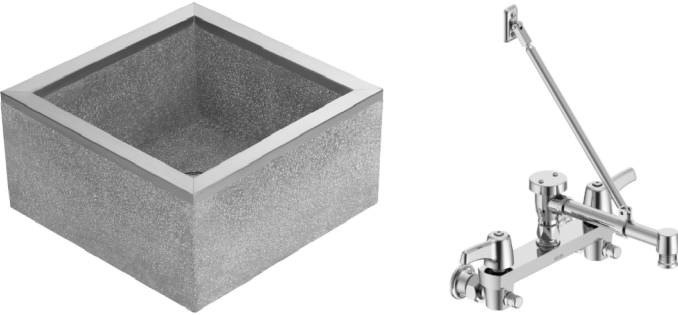
THE FINANCIAL CONSTRAINTS OF THIS PROJECT PRECLUDE ANY UPGRADES TO THE EXISTING PLUMBING SYSTEMS, EXCEPT WHERE INDICATED/IMPLIED IN THE DRAWINGS. THE CURRENT PLUMBING INFRASTRUCTURE, INCLUDING WATER SUPPLY LINES, DRAINAGE SYSTEMS, FIXTURES, AND BACKFLOW PREVENTION DEVICES SERVING THE WORK AREA, IS ASSUMED TO BE OPERATIONAL AND ADEQUATELY MAINTAINED BY THE OWNER.

PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL CONDUCT A COMPREHENSIVE EVALUATION OF THE EXISTING PLUMBING SYSTEMS THAT SERVICE THE PROJECT AREA. THIS ASSESSMENT MUST INCLUDE A THOROUGH VISUAL INSPECTION OF ALL PIPEWORK, FIXTURES, VALVES, AND CONNECTIONS, AS WELL AS AN EVALUATION OF SYSTEM PERFORMANCE AND COMPLIANCE WITH APPLICABLE CODES. ANY DEFICIENCIES, CODE VIOLATIONS, DAMAGED COMPONENTS, INSUFFICIENT CAPACITY, OR UNSAFE CONDITIONS IDENTIFIED DURING THIS EVALUATION MUST BE DOCUMENTED IN WRITING AND REPORTED TO BOTH THE ENGINEER AND THE OWNER BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN.

THE DRAWINGS PROVIDED ARE BASED ON AVAILABLE RECORD INFORMATION AND LIMITED FIELD OBSERVATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING PLUMBING CONDITIONS IN THE FIELD AND TO INFORM THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR COMMENCING INSTALLATION.

CONTRACTOR SHALL FIELD VERIFY ALL PIPING HAS PROPER SLOPES, VENTS, CLEANOUTS, ETC. AND IS NOT SHOWING SIGNS OF DETERIORATION. A SEWER CAMERA SHALL BE USED TO CONFIRM THE SLOPES OF ANY UNDERGROUND PIPING AS WELL AS DETERMINING THE ROUTE AND INTERNAL PIPE CONDITION. DRAWINGS ARE BASED ONLY ON AVAILABLE VISUAL INFORMATION AND MUST BE FIELD VERIFIED. RECORD CAMERA WORK AND NOTIFY ENGINEER OF ANY CONCERNS.

THE BUDGETARY CONSTRAINTS OF THE PROJECT DO NOT ALLOW FOR FUTURE UTILITY REQUIREMENTS OF DENTAL EQUIPMENT (VACUUM, COMPRESSED AIR, ETC.) NO PIPING OR PENETRATIONS FOR FUTURE ARE INCLUDED. THE EXISTING DENTAL CHAIRS ARE EXTREMELY OLD AND HAVE VASTLY DIFFERENT UTILITY REQUIREMENTS. CONTRACTORS MUST INSPECT ALL EXISTING EQUIPMENT IN THEIR CURRENT LOCATION PRIOR TO BIDDING. THE INTENT IS FOR SIMPLE RELOCATION TO THE NEW BUILDING. INCLUDE ALL NECESSARY PROVISIONS.

PLUMBING FIXTURE SCHEDULE	
SK1	- DROP IN TYPE, SINGLE BOWL STAINLESS STEEL SINK WITH ADA BOWL DEPTH OF 5-1/2", BASKET STRAINER AND 8" CENTRESET FAUCET HOLES. GOOSENECKFACUET WITH HOT AND COLD COLOR CODED WRIST BLADE HANDLES AND 1.0 GPM LAMINAR FLOW OUTLET. FIXTURE: ELKAY #LRADQ3122 (31"x22" OVERALL & 28"x16"x5-1/2" BOWL DEPTH) FAUCET: ZURN #Z871C4-XL-21F-HCT
	
SK2	- FIXTURE AND FAUCET TO BE SUPPLIED BY DENTAL EQUIPMENT VENDOR. P.C. SHALL INSTALL AND PLUMB TO UTILITIES.
MXV1	- POINT OF USE MIXING VALVE WITH 110 DEG F OUTLET SETPOINT. ASSE 1070 COMPLIANT. FIXTURE: ZURN-WILKINS #ZW3870XL.T.
	
MS1	- FIAT TSB 100, 24"x24"x12", DELTA 28T2383 FAUCET, 3" PVC TRAP, INTEGRAL SCREWDRIVER STOPS, TERRAZZO MOP BASIN, STAINLESS STEEL CURB CAP, TWO HANDLE WALL MOUNTED FAUCET, TOP WALL BRACE, VACUUM BREAKER, TILING FLANGE FOR TILED WALLS, STAINLESS STEEL WALL GUARD FOR NON TILED GYPSUM BOARD WALLS, COORDINATE WALL FINISH WITH G.C., FIAT 88-CC MOP HANGER, FIAT 832-AA HOSE AND BRACKET, GRID STRAINER
	

FIXTURE RUNOUT SIZES	
CW = COLD WATER HW = HOT WATER (TEMP)	
THE FOLLOWING FIXTURES SHALL BE PROVIDED ANINSTALLED BY THE PLUMBING CONTRACTOR.	
SK1	- 1/2" CW & 1/2" HW (110)
MXV1	- 1/2" CW, 1/2" HW (110) & 1/2" HW (140)
TPV	- 1/2" CW
THE FOLLOWING FIXTURES SHALL BE PROVIDED AND INSTALLED BY THE DENTAL EQUIPMENT VENDOR. PLUMBING CONNECTIONS BY P.C.	
SK2 (TREATMENT ROOM SINK) -	1/2" CW & 1/2" HW (110)

PIPE LEGEND		
	--	DOMESTIC COLD WATER
	--	DOMESTIC HOT WATER
	--	VENT
		EXISTING SANITARY SEWER
		SANITARY SEWER
		COMPRESSED AIR
		DENTAL VACUUM

PIPE LABEL SCHEDULE		
PIPE TYPE	BACKGROUND	LETTERS
DOMESTIC COLD WATER	GREEN	WHITE
DOMESTIC HOT WATER 110°	GREEN	WHITE
DOMESTIC HOT WATER CIRCULATING 110°	GREEN	WHITE
DOMESTIC HOT WATER 140°	GREEN	WHITE
DOMESTIC HOT WATER CIRCULATING 140°	GREEN	WHITE
COMPRESSED AIR	YELLOW	BLACK
VACUUM	GREEN	BLACK
PIPE LABEL SIZE		
PIPE SIZE	LABEL LENGTH	LETTER HEIGHT
3/4" TO 1 1/4"	8"	1/2"
1 1/2" TO 2"	8"	3/4"
2 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"

PLUMBING DRAIN SCHEDULE					
PLAN TAG	MANUF	MODEL	TOP SIZE	CONNECTION SIZE	REMARKS
WCO-1	WADE	8304-COT-VP-83	N/A	REFER TO PLAN	CAST IRON CLEANOUT TEE MATCHING PIPING MATERIAL, RAISED HEAD PLUG DRILLED AND TAPPED FOR FOR COVER SCREW, STAINLESS STEEL COVER, VANDEL PROOF SCREWS, MARK INSIDE OF COVER WITH PERMANENT MARKER, MARKING TO BE (SAN) FOR SANITARY, (RW) FOR RAIN WATER, (AW) FOR ACID WASTE, (GW) FOR GREASE WASTE, (CD) FOR CONDENSATE DRAIN,

- PLUMBING SPECIFICATION NOTES**
- PLUMBING CONTRACT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FEES, AND PERMITS REQUIRED FOR AND REASONABLY INCIDENTAL TO THE EXECUTION OF THE PLUMBING WORK.
 - ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NORTH CAROLINA STATE BUILDING CODE, PLUMBING, ENERGY, AND LOCAL BUILDING CODES.
 - THE PLUMBING CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE PLUMBING PLANS, SCHEDULES AND DETAILS PRIOR TO INSTALLATION OF THE PLUMBING SYSTEM AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE OWNER, ARCHITECT AND/OR ENGINEER FOR RESOLUTION. FIELD VERIFY ALL EXISTING LINE SIZES AND LOCATION PRIOR TO BIDDING.
 - IT WILL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO INSURE THAT ITEMS TO BE FURNISHED UNDER THIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS.
 - THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE OTHER TRADES PRIOR TO THE INSTALLATION OF ANY OF HIS PIPING OR EQUIPMENT.
 - MEASUREMENTS: BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK, THE PLUMBING CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND LINE SIZES AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. HE SHALL ALSO BE RESPONSIBLE FOR VERIFYING THE INVERT ELEVATION OF THE EXISTING SANITARY PIPING PRIOR TO CONSTRUCTION.
 - STANDARDS OF MATERIALS: ALL MATERIALS USED SHALL BE NEW UNLESS OTHERWISE SHOWN OR CALLED FOR, AND SHALL BE FURNISHED IN ACCORDANCE WITH STANDARD SPECIFICATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, THE AMERICAN CONCRETE INSTITUTE, AND OTHER GUIDE SPECIFICATIONS.
 - DIAGRAMS AND COORDINATION: THE DRAWINGS ARE DIAGMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. THE DRAWINGS INDICATE OFFSETS REQUIRED, BUT BY NO MEANS INDICATE ALL SUCH SITUATIONS.
 - INSPECTIONS: THE CONTRACTOR MUST AT ALL TIMES LEND ANY ASSISTANCE NECESSARY FOR ENGINEERS OR THEIR AUTHORIZED REPRESENTATIVE TO MAKE TESTS, INSPECTIONS, ETC.
 - BLOWING OUT, CLEANING AND TESTING SYSTEMS: ALL PIPING AND EQUIPMENT SHALL BE BLOWN OUT UNDER PRESSURE AND CLEANED OF FOREIGN MATTER BEFORE THE SYSTEM IS PUT INTO OPERATION. EQUIPMENT SHALL NOT BE CONNECTED TO PIPING UNTIL IT HAS BEEN BLOWN OUT AND CLEANED. PRESSURE TEST ALL NEW WATER PIPING SYSTEM. ANY DEFECTS MADE EVIDENT BY THE TEST SHALL BE CORRECTED BY THIS CONTRACTOR WITHOUT EXTRA COST TO THE OWNER. DISINFECT WATER PIPING IN ACCORDANCE WITH N.C. PLUMBING CODE, SECTION 610.1.
 - GUARANTEE: CONTRACTOR SHALL GUARANTEE HIS MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS AFTER DATE OF FINAL ACCEPTANCE BY ENGINEERS AND OWNERS (PARTS AND LABOR). ALL GUARANTEE FAILURE SHALL BE CORRECTED OR REPLACED BY CONTRACTOR AS SOON AS POSSIBLE AFTER NOTIFICATION OF SUCH FAILURE.
 - PIPING AND FITTINGS: SANITARY WASTE & VENT PIPING: CAST IRON, NO-HUB PIPE AND FITTINGS. PVC NOT ACCEPTABLE. ABOVE GROUND WATER PIPING: WATER TO BE TYPE-L COPPER PIPE AND FITTINGS. DENTAL VACUUM: SCHEDULE 40 PRESSURE RATED PVC PIPE AND FITTINGS. COMPRESSED AIR: TYPE-L COPPER.
 - INSULATION: INSULATION TO BE 1" THICK FIBERGLASS WITH PAPER JACKET.
 - PROVIDE BALL VALVES TO ISOLATE ALL GROUPS OF FIXTURES AND AS SHOWN ON THE PLANS TO FACILITATE FUTURE SERVICING.
 - PROVIDE DIELECTRIC UNIONS OR FLANGES TO ISOLATE DISSIMILAR METALS.
 - ALL PIPING IN EXPOSED AREAS SHALL BE LABELED WITH PREFAB. LABELS. INCLUDE DIRECTION OF FLOW ARROWS.
 - HORIZONTAL DRAINAGE PIPING 3" AND LARGER SHALL HAVE A MINIMUM FALL OF 1/8" PER FOOT AND PIPING 2" AND SMALLER SHALL HAVE A MINIMUM FALL OF 1/4" PER FOOT. FIELD VERIFY INVERTS PRIOR TO CONSTRUCTION.
 - CLEANOUTS SHALL BE PROVIDED IN ALL SANITARY PIPING AS SHOWN OR INDICATED BY THE AHJ.
 - WCO SHALL HAVE STAINLESS STEEL COVERS.
 - ALL VENT PIPING SHALL SLOPE UP TO THE DISCHARGE POINT.
 - COORDINATE THE STUB UP LOCATIONS OF UNDERGROUND WASTE AND WATER IN EXAM ROOMS WITH G.C. AND OWNER.
 - MAINTAIN ALL WALL RATINGS. SUBMIT UL ASSEMBLY TO LOCAL FIRE MARSHAL FOR APPROVAL IF REQUIRED.
 - G.C. SHALL BE RESPONSIBLE FOR ALL FLOOR SLAB POURING, TRENCHING AND BACKFILL SHALL BE BY P.C.

PLUMBING SHEET INDEX	
P001	PLUMBING COVER SHEET
P100	BASEMENT PLUMBING PLAN
P101	LEVEL 1 PLUMBING WATER, COMPRESSED AIR AND VACUUM PLAN
P102	LEVEL 1 PLUMBING WASTE AND VENT PLAN
P601	DETAILS AND SCHEDULES
PD100	BASEMENT PLUMBING DEMOLITION PLAN

AS-BUILT DRAWING NOTE

P.C. SHALL MAINTAIN A SET OF AS-BUILT DRAWINGS THROUGHOUT THE PROJECT AND LEAVE A PAPER COPY OF THE AS-BUILT PLANS IN A CLEAR PLASTIC ENVELOPE AND LEAVE ON THE WALL IN THE ELECTRICAL ROOM/IT ROOM. P.C. SHALL ALSO PROVIDE A DIGITAL COPY OF THESE AS-BUILTS TO THE OWNER AND THE ENGINEER OF RECORD. THIS IS BEING REQUESTED FOR ANY FUTURE ADDITIONS OR RE-CONFIGURATIONS.

BACKFLOW PREVENTER NOTES

THIS PROJECT IS A TENANT SPACE WITHIN AN EXISTING FUNCTIONING BUILDING. THE WATER LINE BEING UTILIZED IS EXISTING WITHIN THE BUILDING. THERE IS NO BACKFLOW PREVENTER WORK AS PART OF THIS SCOPE.

DEMOLITION NOTES

THESE DEMOLITION DRAWINGS ARE BASED SOLELY ON ENGINEERING SITE VISITS. THEY ARE NOT GUARANTEED TO BE EITHER COMPLETE OR FULLY ACCURATE. THE CONTRACTOR SHOULD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND STARTING ANY DEMOLITION WORK.

DENTAL EQUIPMENT NOTES

ALL DENTAL EQUIPMENT IS EXISTING AND SHALL BE RELOCATED FROM THE OWNER'S CURRENT DENTAL FACILITY. NO NEW DENTAL EQUIPMENT IS INCLUDED AS PART OF THIS PROJECT. RELOCATION SHALL BE BY OWNER/GENERAL CONTRACTOR.

ALL UTILITY CONNECTIONS ASSOCIATED WITH THE DENTAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO DENTAL CHAIRS, VACUUM SYSTEMS, COMPRESSORS, AND RELATED SPECIALTY EQUIPMENT, SHALL BE PROVIDED, INSTALLED, AND COORDINATED BY THE OWNER/GENERAL CONTRACTOR.

WASTE REMOVAL FROM THE DENTAL CHAIRS SHALL BE ACCOMPLISHED THROUGH VACUUM AND WASTE PUMP SYSTEMS. ALL ASSOCIATED EQUIPMENT, PIPING, AND CONNECTIONS REQUIRED FOR THE OPERATION OF THE DENTAL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE OWNER/GENERAL CONTRACTOR.

THE PLUMBING CONTRACTOR SHALL PROVIDE ONLY THE WORK SPECIFICALLY INDICATED ON THE CONTRACT DOCUMENTS. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH THE OWNER/GENERAL CONTRACTOR TO ACCOMMODATE AND ROUTE VENDOR-FURNISHED PIPING, TUBING, AND UTILITIES WITHIN SHARED CEILING AND WALL SPACES WHERE FEASIBLE.

EXTENSIVE FIELD VERIFICATION AND COORDINATION WITH THE OWNER, GENERAL CONTRACTOR, AND ALL TRADES SHALL BE REQUIRED PRIOR TO THE INSTALLATION OF ANY PIPING, UTILITIES, OR EQUIPMENT CONNECTIONS.

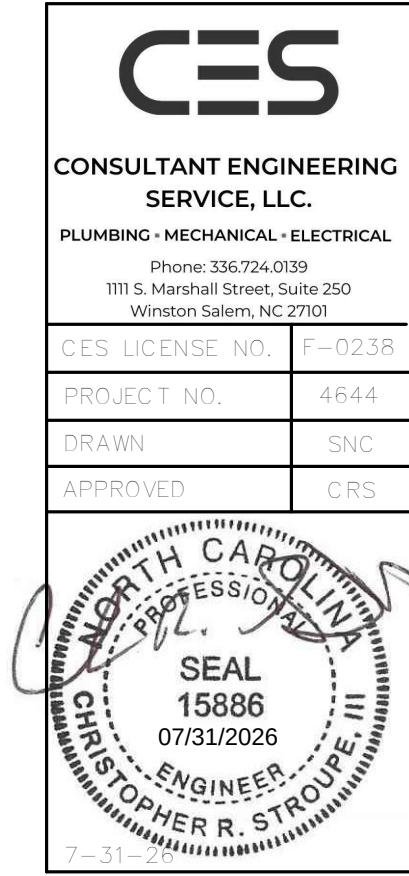
LEGEND	
CW	COLD WATER
HW	HOT WATER (140° F)
SAN	SANITARY SEWER
V	VENT
	PIPE TURNING UP
	PIPE TURNING DOWN
	BALL VALVE
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION
SK	STAINLESS STEEL SINK (OWNER PROVIDED)
MXV	MIXING VALVE (POINT OF USE)
FCO	FLOOR CLEANOUT
GCO	GRADE (EXTERIOR) CLEANOUT
(E)	EXISTING ITEM
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
UC	UNDERGROUND
TPV	TRAP PRIMER VALVE

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P A

3508-A VEST MILL ROAD
WINSTON - SALEM NC
TEL. (336) 760-1411
EMAIL info@petersongordon.com



Forsyth County
Health Department

Dental Suite
Alteration

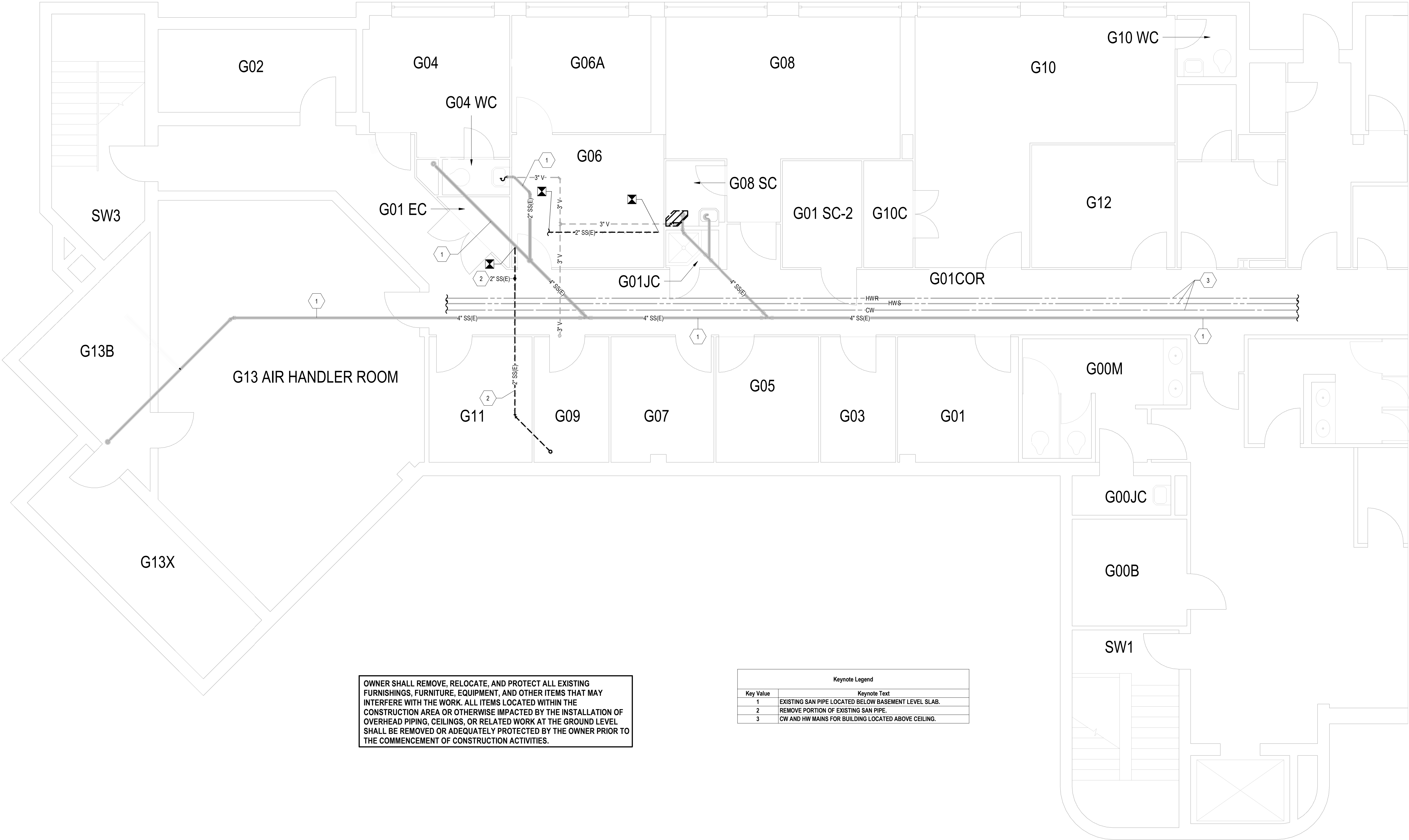
Winston-Salem, NC

Comm. No. 25-380

Date 7-31-26

Drawn By SNC

P001

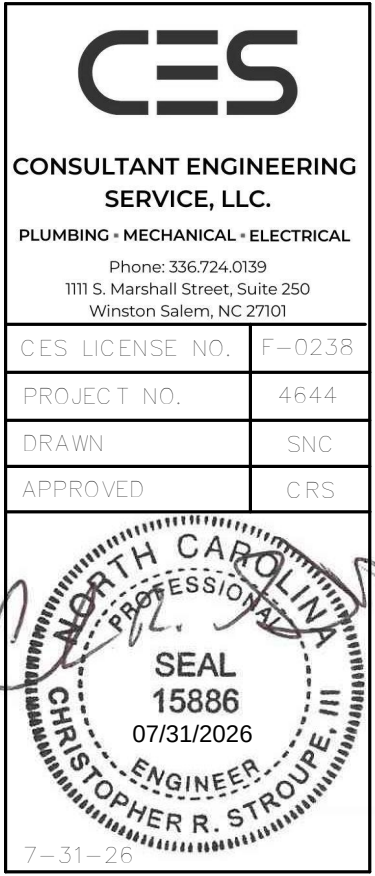


Revision

PETERSON
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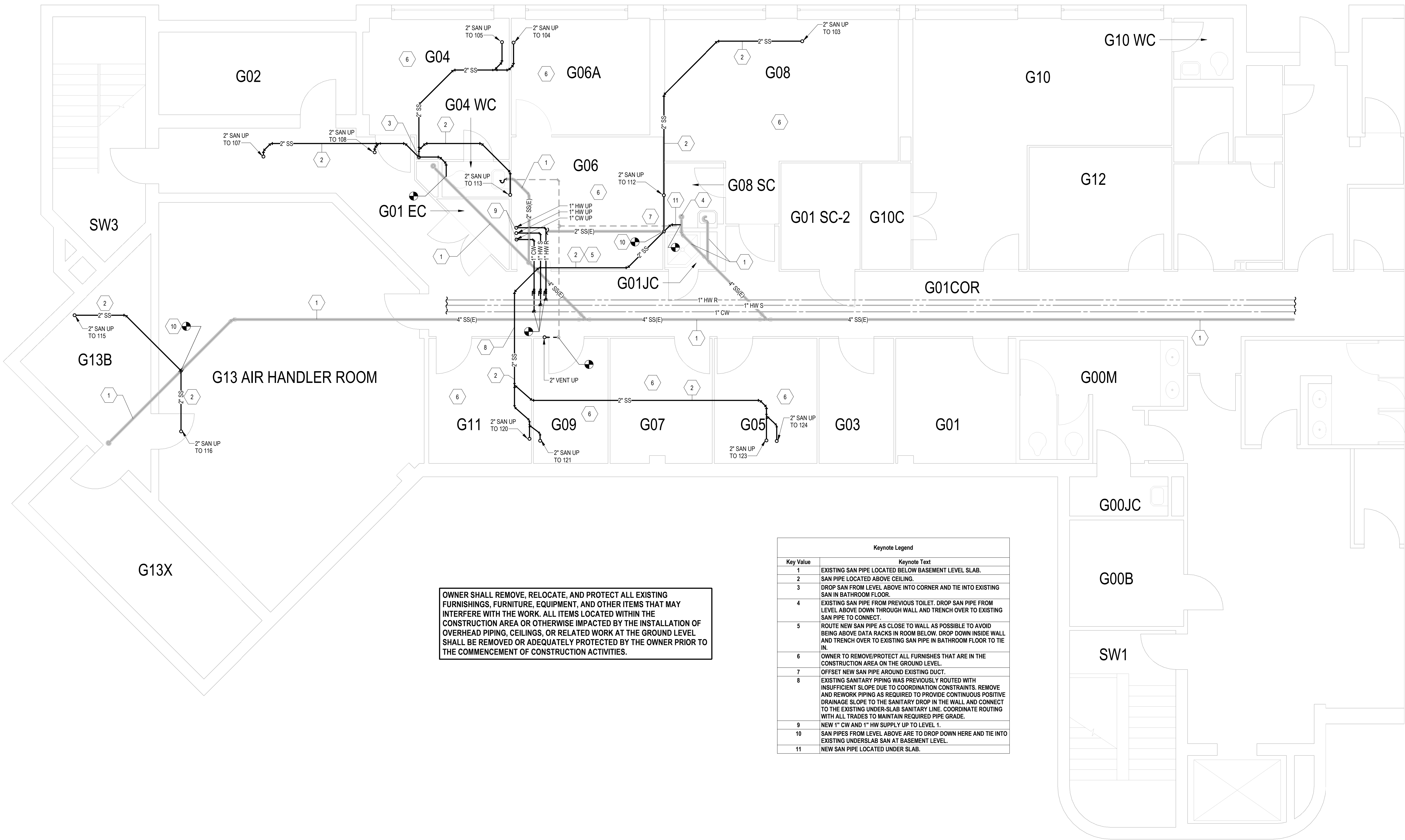
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PD100



OWNER SHALL REMOVE, RELOCATE, AND PROTECT ALL EXISTING FURNISHINGS, FURNITURE, EQUIPMENT, AND OTHER ITEMS THAT MAY INTERFERE WITH THE WORK. ALL ITEMS LOCATED WITHIN THE CONSTRUCTION AREA OR OTHERWISE IMPACTED BY THE INSTALLATION OF OVERHEAD PIPING, CEILINGS, OR RELATED WORK AT THE GROUND LEVEL SHALL BE REMOVED OR ADEQUATELY PROTECTED BY THE OWNER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

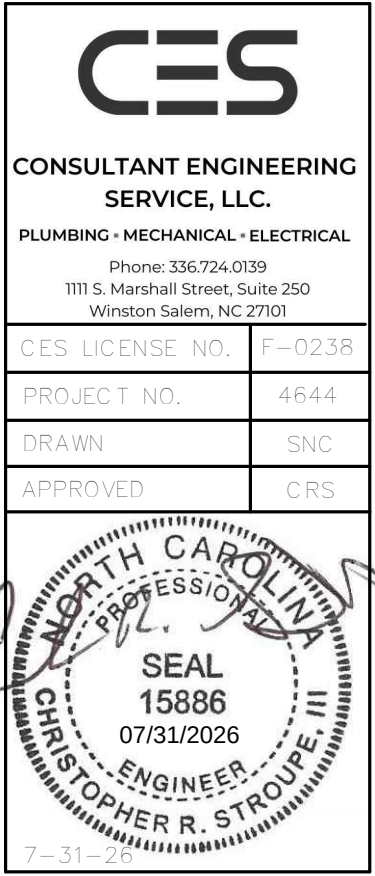
Keynote Legend	
Key Value	Keynote Text
1	EXISTING SAN PIPE LOCATED BELOW BASEMENT LEVEL SLAB.
2	SAN PIPE LOCATED ABOVE CEILING.
3	DROP SAN FROM LEVEL ABOVE INTO CORNER AND TIE INTO EXISTING SAN IN BATHROOM FLOOR.
4	EXISTING SAN PIPE FROM PREVIOUS TOILET. DROP SAN PIPE FROM LEVEL ABOVE DOWN THROUGH WALL AND TRENCH OVER TO EXISTING SAN PIPE TO CONNECT.
5	ROUTE NEW SAN PIPE AS CLOSE TO WALL AS POSSIBLE TO AVOID BEING ABOVE DATA RACKS IN ROOM BELOW. DROP DOWN INSIDE WALL AND TRENCH OVER TO EXISTING SAN PIPE IN BATHROOM FLOOR TO TIE IN.
6	OWNER TO REMOVE/PROTECT ALL FURNISHES THAT ARE IN THE CONSTRUCTION AREA ON THE GROUND LEVEL.
7	OFFSET NEW SAN PIPE AROUND EXISTING DUCT.
8	EXISTING SANITARY PIPING WAS PREVIOUSLY ROUTED WITH INSUFFICIENT SLOPE DUE TO COORDINATION CONSTRAINTS. REMOVE AND REWORK PIPING AS REQUIRED TO PROVIDE CONTINUOUS POSITIVE DRAINAGE SLOPE TO THE SANITARY DROP IN THE WALL AND CONNECT TO THE EXISTING UNDER-SLAB SANITARY LINE. COORDINATE ROUTING WITH ALL TRADES TO MAINTAIN REQUIRED PIPE GRADE.
9	NEW 1" CW AND 1" HW SUPPLY UP TO LEVEL 1.
10	SAN PIPES FROM LEVEL ABOVE ARE TO DROP DOWN HERE AND TIE INTO EXISTING UNDERSLAB SAN AT BASEMENT LEVEL.
11	NEW SAN PIPE LOCATED UNDER SLAB.

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3508-A VEST MILL ROAD
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CES

CONSULTANT ENGINEERING SERVICE, LLC.
PLUMBING - MECHANICAL - ELECTRICAL
Phone: 336.724.0139
111 S. Marshall Street, Suite 250
Winston Salem, NC 27101

CES LICENSE NO. F-0235

PROJECT NO. 4544

DRAWN SNC

APPROVED CRS

SEAL

15886

07/31/2026

CHRISTOPHER R. STROUE

7-31-26

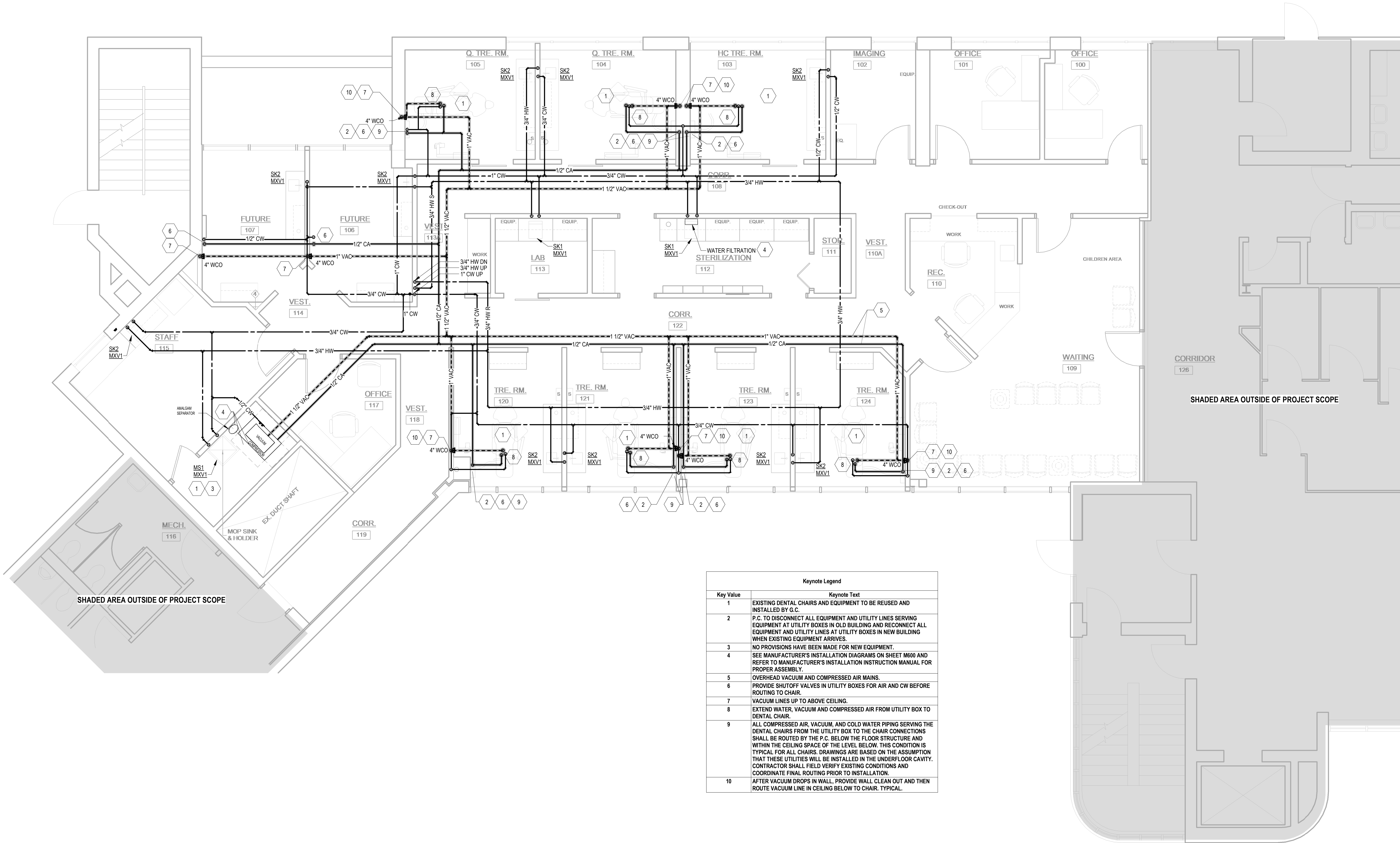
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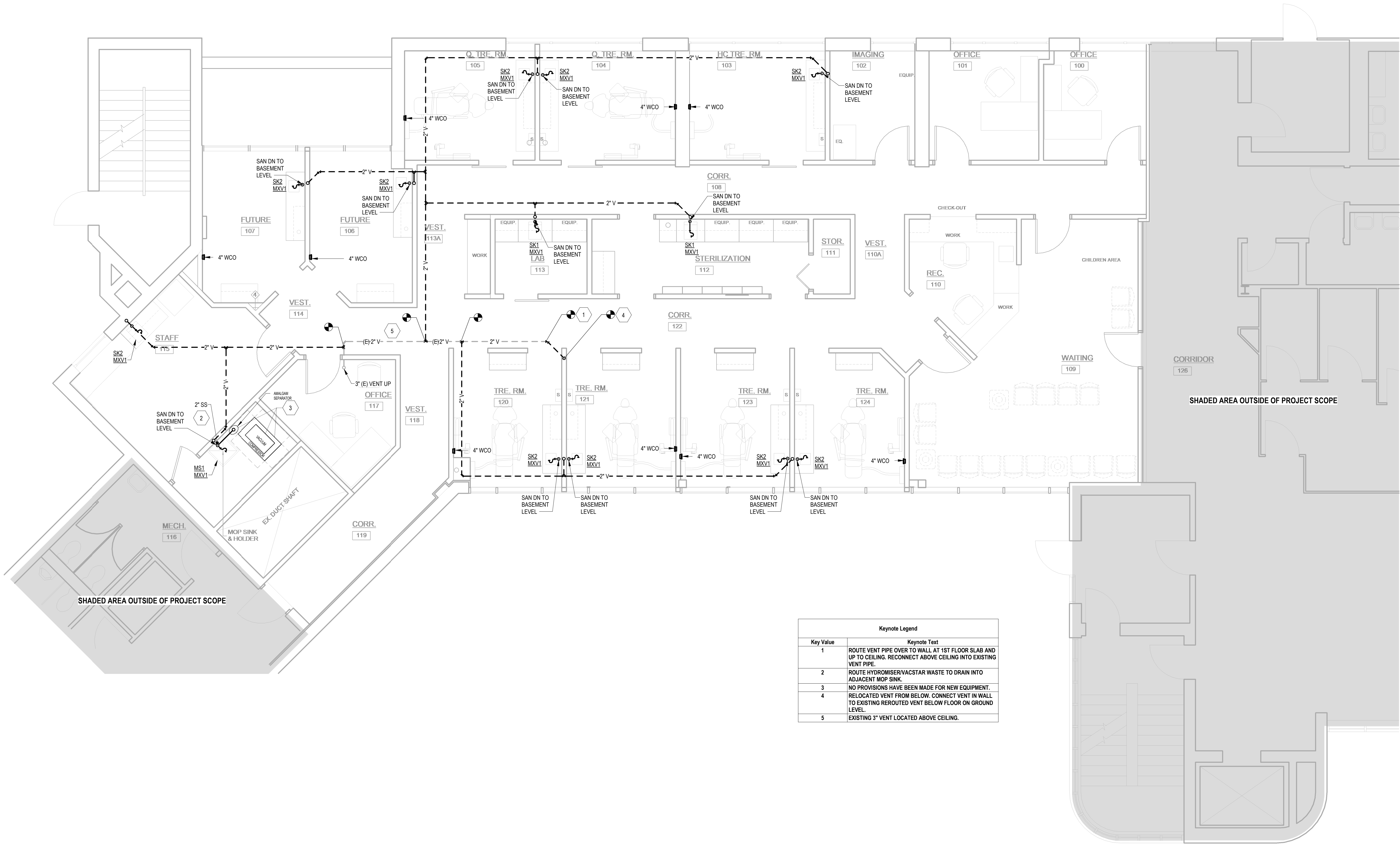
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P101



Keynote Legend	
Key Value	Keynote Text
1	EXISTING DENTAL CHAIRS AND EQUIPMENT TO BE REUSED AND INSTALLED BY G.C.
2	P.C. TO DISCONNECT ALL EQUIPMENT AND UTILITY LINES SERVING EQUIPMENT AT UTILITY BOXES IN OLD BUILDING AND RECONNECT ALL EQUIPMENT AND UTILITY LINES AT UTILITY BOXES IN NEW BUILDING WHEN EXISTING EQUIPMENT ARRIVES.
3	NO PROVISIONS HAVE BEEN MADE FOR NEW EQUIPMENT.
4	SEE MANUFACTURER'S INSTALLATION DIAGRAMS ON SHEET M600 AND REFER TO MANUFACTURER'S INSTALLATION INSTRUCTION MANUAL FOR PROPER ASSEMBLY.
5	OVERHEAD VACUUM AND COMPRESSED AIR MAINS.
6	PROVIDE SHUTOFF VALVES IN UTILITY BOXES FOR AIR AND CW BEFORE ROUTING TO CHAIR.
7	VACUUM LINES UP TO ABOVE CEILING.
8	EXTEND WATER, VACUUM AND COMPRESSED AIR FROM UTILITY BOX TO DENTAL CHAIR.
9	ALL COMPRESSED AIR, VACUUM, AND COLD WATER PIPING SERVING THE DENTAL CHAIRS FROM THE UTILITY BOX TO THE CHAIR CONNECTIONS SHALL BE ROUTED BY THE P.C. BELOW THE FLOOR STRUCTURE AND WITHIN THE CEILING SPACE OF THE LEVEL BELOW. THIS CONDITION IS TYPICAL FOR ALL CHAIRS. DRAWINGS ARE BASED ON THE ASSUMPTION THAT THESE UTILITIES WILL BE INSTALLED IN THE UNDERFLOOR CAVITY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE FINAL ROUTING PRIOR TO INSTALLATION.
10	AFTER VACUUM DROPS IN WALL, PROVIDE WALL CLEAN OUT AND THEN ROUTE VACUUM LINE IN CEILING BELOW TO CHAIR, TYPICAL.



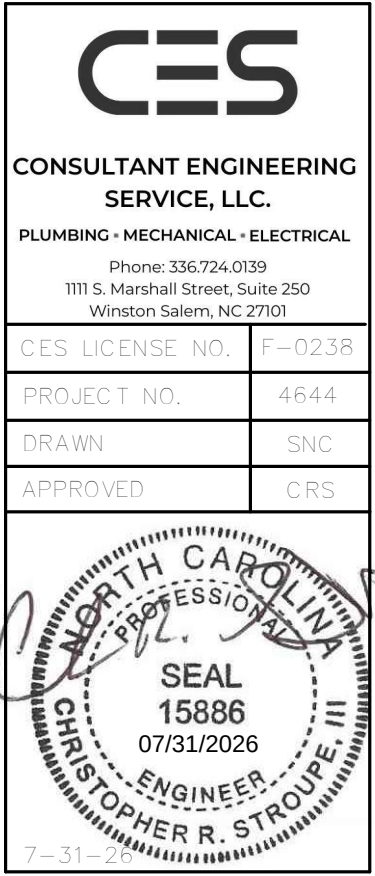
Keynote Legend	
Key Value	Keynote Text
1	ROUTE VENT PIPE OVER TO WALL AT 1ST FLOOR SLAB AND UP TO CEILING. RECONNECT ABOVE CEILING INTO EXISTING VENT PIPE.
2	ROUTE HYDROMISER/VACSTAR WASTE TO DRAIN INTO ADJACENT MOP SINK.
3	NO PROVISIONS HAVE BEEN MADE FOR NEW EQUIPMENT.
4	RELOCATED VENT FROM BELOW. CONNECT VENT IN WALL TO EXISTING REROUTED VENT BELOW FLOOR ON GROUND LEVEL.
5	EXISTING 3" VENT LOCATED ABOVE CEILING.

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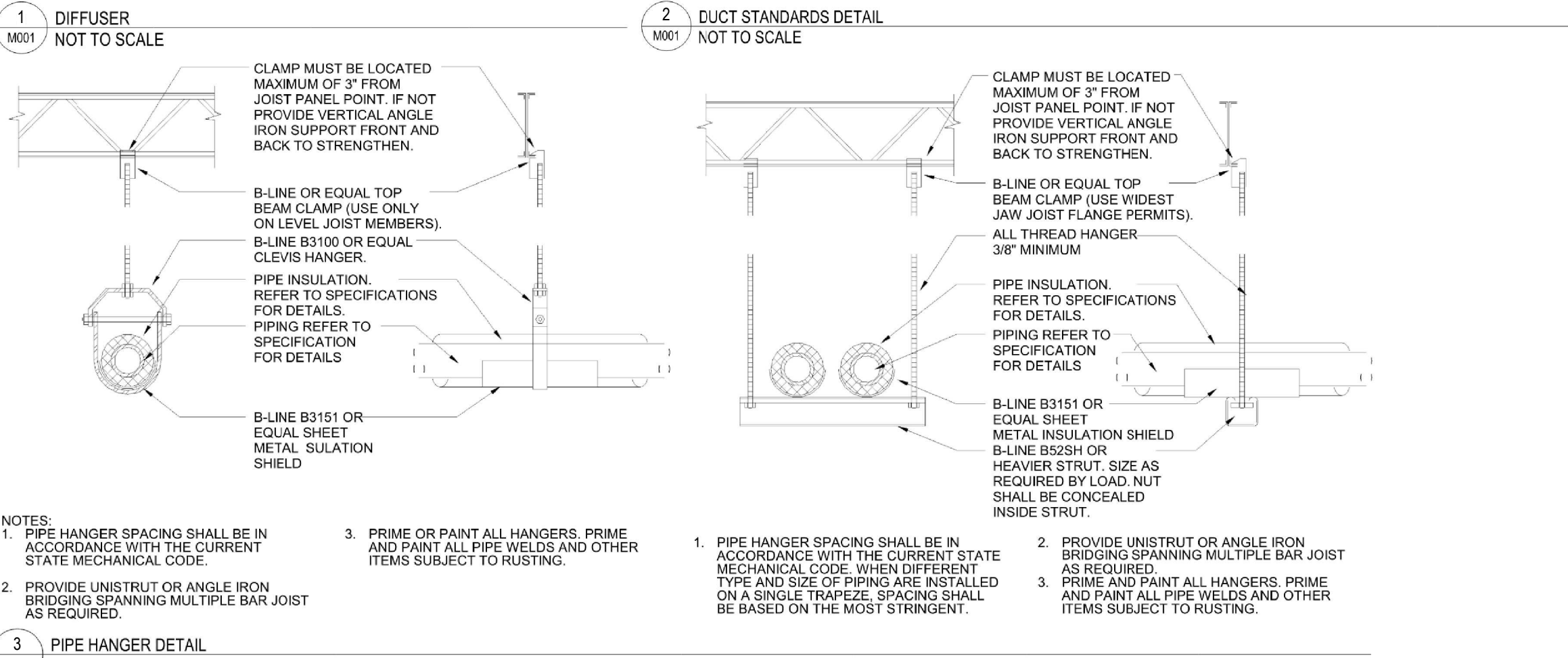
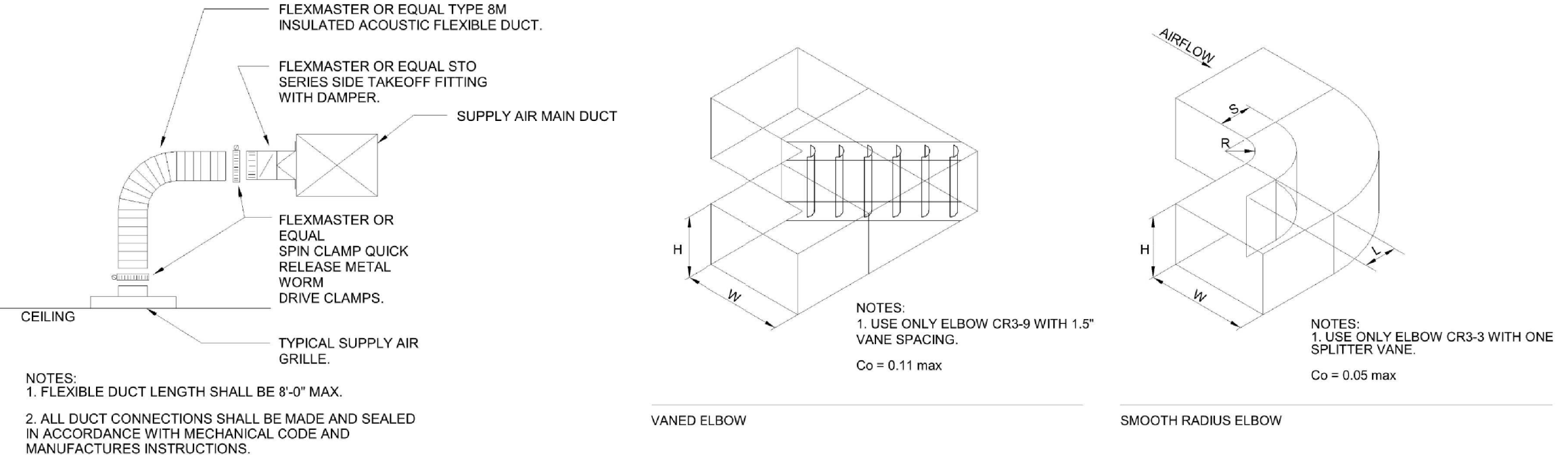


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MECHANICAL SPECIFICATIONS

ENGINEERS: WHENEVER THE TERM ENGINEER IS USED IN THIS SPECIFICATION, IT REFERS TO CONSULTANT ENGINEERING SERVICE, INC., WINSTON-SALEM, NORTH CAROLINA.

MEASUREMENTS: BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK, CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE SITE AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA CHARGE FOR COMPLETION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND THE MEASUREMENTS INDICATED ON THE DRAWINGS. ANY DIFFERENCE WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE ENGINEER, FOR CONSIDERATION BEFORE PROCEEDING WITH THE WORK. MODIFICATIONS WILL NOT RESULT IN ADDITIONAL COSTS TO THE OWNER. STANDARDS OF MATERIALS: ALL MATERIALS USED SHALL BE NEW UNLESS OTHERWISE SHOWN OR CALLED FOR, AND SHALL BE FURNISHED IN ACCORDANCE WITH STANDARD SPECIFICATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, AND OTHER GUIDE SPECIFICATIONS.

CONFORMANCE TO SPECIFICATIONS AND SUBMITTAL OF MATERIALS: DRAWINGS ARE BASED ON THE MANUFACTURER NAMED IN THE SCHEDULE. CONTRACTOR SHALL BEAR ANY COSTS ALTERING ANY OTHER CONTRACT OR SUB-CONTRACT RESULTING FROM A SUBSTITUTION OF EQUIPMENT FOR THAT SPECIFIED OR ON WHICH DRAWINGS AND SPECIFICATIONS ARE BASED.

FEES AND PERMITS: MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES, PERMITS, AND TESTS AS REQUIRED TO COMPLETE THE JOB AND MEET APPROVAL OF THE LOCAL MECHANICAL INSPECTOR.

BLOWING OUT, CLEANING AND ADJUSTING SYSTEMS: ALL PIPING AND EQUIPMENT SHALL BE BLOWN OUT UNDER PRESSURE AND CLEANED OF FOREIGN MATTER BEFORE THE SYSTEM IS PUT INTO OPERATION. MECHANICAL EQUIPMENT SHALL NOT BE CONNECTED TO PIPING UNTIL IT HAS BEEN BLOWN OUT AND CLEANED. TEST, SET AND ADJUST ALL CONTROL EQUIPMENT HEREIN SPECIFIED OR AS DIRECTED AFTER THOROUGHLY CLEANING AND ADJUSTING THE SYSTEM. ALL CONNECTIONS SHALL BE MADE AND ALL PIPING, EQUIPMENT, AND APPARATUS SHALL BE TESTED AND MADE TIGHT UNDER PRESSURE AND WORKING CONDITIONS AS DIRECTED. WHEN THE SYSTEMS ARE COMPLETE, THE CONTRACTOR SHALL PLACE THEM IN OPERATION IN THE PRESENCE OF THE OWNERS OR THEIR REPRESENTATIVES AND SHALL THOROUGHLY ACQUAINT THEM WITH THE PROPER OPERATION OF THE EQUIPMENT.

TESTS: UPON COMPLETION OF THE INSTALLATION OF THE VARIOUS PARTS OR SECTIONS OF THESE IS SPECIFICATIONS, ALL SYSTEMS SHALL BE PROPERLY ADJUSTED AND TESTED BY THE CONTRACTOR AND PLACED IN PERFECT OPERATING CONDITION, SUBJECT TO THE APPROVAL OF THE ENGINEERS. PROVIDE ALL LABOR AND EQUIPMENT TO PERFORM THIS WORK. WHERE PRESSURE TESTING IS APPLICABLE, THE TEST PRESSURE SHALL BE 125 P.S.I.G. OR 50% ABOVE WORKING PRESSURE, WHICHEVER IS THE HIGHER. ANY DEFECTS MADE EVIDENT BY THE TEST SHALL BE CORRECTED AT ONCE BY THIS CONTRACTOR WITHOUT EXTRA COST TO THE OWNER.

EQUIPMENT VARIATIONS: SHOULD CONTRACTOR SUBMIT SUBSTITUTES WHICH VARY IN HORSEPOWER, ELECTRICAL CHARACTERISTICS, PHYSICAL SIZE, NUMBER OF MOTORS, ETC. FROM THOSE SPECIFIED, CONTRACTOR SHALL BEAR ANY AND ALL EXPENSES THAT MAY ARISE IN OTHER CONTRACTOR'S WORK THAT MUST BE ALTERED TO ALLOW USE OF SUCH SUBSTITUTE EQUIPMENT. APPROVAL OF ANY SUCH EQUIPMENT SHALL BE VOIDED SHOULD CONTRACTOR FAIL TO BEAR ANY SUCH EXPENSES.

OPERATING INSTRUCTIONS: AT THE COMPLETION OF THE WORK THE CONTRACTOR SHALL FURNISH THE OWNERS WITH DIGITAL COPIES (PDF FORMAT) OF FILES CONTAINING ENGINEERING DATA AND CUT SHEETS OF ALL EQUIPMENT ALONG WITH TYPED OR PRINTED OPERATING INSTRUCTIONS BOOKLETS SHALL BE SUBJECT TO APPROVAL. THE CONTRACTOR SHALL PROVIDE A COMPETENT INSTRUCTOR TO ADVISE THE OWNER OR THEIR REPRESENTATIVE OF THE PROPER OPERATION AND SERVICING OF EQUIPMENT INSTALLED. INCLUDE ALL WARRANTIES AND A TABLE OF CONTENTS.

ACOUSTICS: A REQUIREMENT OF THIS PROJECT IS TO MEET THE STANDARDS LISTED ON THE DRAWINGS TO SATISFY THE ACOUSTICAL CONSULTANT'S SOUND LEVELS. ANY EQUIPMENT SUBSTITUTIONS SHALL COMPLY WITH THESE CRITERIA. DUCTWORK HAS BEEN SIZED TO COMPLY AND SHOULD NOT BE REDUCED WITHOUT APPROVAL FROM THE ACOUSTICAL CONSULTANTS.

GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS. ALL GUARANTEED FAILURES SHALL BE CORRECTED OR REPLACED BY CONTRACTOR AS SOON AS POSSIBLE AFTER NOTIFICATION OF SUCH FAILURE.

DIAGRAMS AND COORDINATION: THE DRAWINGS ARE DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. HOWEVER, THE CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING THEIR INSTALLATION AND WORK OUT INTERFERENCES THAT MIGHT OCCUR AMONG THEMSELVES. SHOULD INTERFERENCES OCCUR, THE ENGINEERS WILL ASSIST IN WORKING THEM OUT IN THE BEST INTERESTS OF ALL CONTRACTORS CONCERNED AND WITH AS LITTLE CHANGE IN THE SYSTEMS AS ORIGINALLY PLANNED AS POSSIBLE.

THE DRAWINGS INDICATE OFFSETS REQUIRED, BUT BY NO MEANS INDICATE ALL SUCH SITUATIONS. SHOULD CONTRACTOR ELECT TO PREFABRICATE DUCT OR PIPING, HE SHALL DO SO AT THE RISK OF HAVING TO MAKE FIELD CHANGES TO AVOID STRUCTURE, OR OTHER TRADES, AT HIS OWN EXPENSE. OWNERS, AND ENGINEERS SHALL NOT BE LIABLE FOR EXTRA EXPENSES INVOLVED BECAUSE OF THE CONTRACTORS FAILURE TO INCLUDE ADEQUATE ALLOWANCE IN HIS PRICE FOR SUCH FIELD PROBLEMS. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL NECESSARY SERVICE CLEARANCES ARE MAINTAINED. LAYOUT ALL WORK PRIOR TO CONSTRUCTION TO VERIFY. COORDINATION WITH E.C. AND P.C. IS ENCOURAGED.

REGULATIONS AND CODES: ALL WORK SHALL CONFORM TO THE RULES AND REGULATIONS OF THE CURRENT STATE BUILDING CODES, HEATING, AIR CONDITIONING, REFRIGERATION, AND VENTILATION, ENERGY, LATEST EDITION, NFPA CODES, AND U.L. FIRE RESISTIVE INDEX. SHOULD CONTRACT DOCUMENTS AND THESE REGULATIONS CONFLICT IN ANY AREA, THE REGULATIONS AND CODES SHALL BE FOLLOWED.

WORKMANSHIP: ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND COMPLETED IN A FIRST CLASS WORKMANLIKE MANNER. THE ARCHITECTS AND ENGINEERS RESERVE THE RIGHT TO REJECT ANY DAMAGED EQUIPMENT, AND TO DIRECT THE REMOVAL AND REPLACEMENT OF ANY ITEM, WHICH IN THEIR OPINION SHALL NOT REPRESENT ACCEPTABLE WORKMANSHIP. SUCH REMOVAL AND REPLACEMENT SHALL BE DONE WHEN DIRECTED IN WRITING BY THE ARCHITECTS AND ENGINEERS AT THE CONTRACTOR'S EXPENSE AND WITHOUT ADDITIONAL COST TO THE OWNERS.

MECHANICAL LEGEND

VAV	-	VAV BOX W/ELECTRIC RE-HEAT
EF	-	EXHAUST FAN
SA	-	SUPPLY AIR
RA	-	RETURN AIR
EA	-	EXHAUST AIR (GENERAL)
TA	-	TRANSFER AIR
SA-E	-	EXISTING SUPPLY AIR
RA-E	-	EXISTING RETURN AIR
EA-E	-	EXISTING EXHAUST AIR
CFM	-	CUBIC FEET PER MINUTE
BTU	-	BRITISH THERMAL UNIT
12x12	-	RECTANGULAR DUCT NOTATION
12Ø	-	ROUND DUCT NOTATION
(E)	-	EXISTING ITEM
(N)	-	NEW ITEM
(R)	-	RELOCATED ITEM
MC	-	MECHANICAL CONTRACTOR
EC	-	ELECTRICAL CONTRACTOR
PC	-	PLUMBING CONTRACTOR
GC	-	GENERAL CONTRACTOR
UG	-	UNDERGROUND
AG	-	ABOVE GROUND
WCO	-	WALL CLEANOUT
Ⓟ	-	THERMOSTAT
Ⓜ	-	MOTORIZED DAMPER
→	-	DIRECTION OF AIRFLOW
⌂	-	POINT OF DEMOLITION
⌂	-	POINT OF CONNECTION TO EXISTING
⌂	-	ITEM BEING DEMOLISHED/REMOVED

BALANCING: PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION, RENOVATION, OR CONSTRUCTION ACTIVITIES, THE MECHANICAL CONTRACTOR SHALL PERFORM A COMPLETE AIR BALANCE SURVEY OF ALL EXISTING HVAC SYSTEMS SERVING THE PROJECT AREA. AIRFLOWS SHALL BE MEASURED UTILIZING CALIBRATED FLOW HOODS AND OTHER INSTRUMENTS AS REQUIRED TO DOCUMENT EXISTING OPERATING CONDITIONS. RECORD SUPPLY, RETURN, AND EXHAUST AIRFLOWS FOR ALL TERMINALS, GRILLES, REGISTERS, AND DIFFUSERS. SUBMIT A PRE-CONSTRUCTION BASELINE TEST AND BALANCE REPORT TO THE ENGINEER FOR REVIEW PRIOR TO THE START OF DEMOLITION.

UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL ACCEPTANCE, THE MECHANICAL CONTRACTOR SHALL PERFORM A COMPLETE TESTING, ADJUSTING, AND BALANCING (TAB) OF ALL HVAC SYSTEMS AFFECTED BY THE WORK. AIRFLOWS SHALL BE MEASURED USING CALIBRATED FLOW HOODS AND ADJUSTED AS NECESSARY TO ACHIEVE THE DESIGN INTENT AND PROVIDE UNIFORM AIR DISTRIBUTION THROUGHOUT THE SPACE. SYSTEMS SHALL OPERATE QUIETLY AND WITHOUT OBJECTABLE AIR NOISE. ADJUST, REPAIR, OR REPLACE DAMPERS, SHEAVES, BELTS, CONTROL SETTINGS, AND OTHER BALANCING DEVICES AS REQUIRED TO ACHIEVE PROPER SYSTEM PERFORMANCE.

THE POST-CONSTRUCTION AIR BALANCE SHALL DEMONSTRATE THAT FINAL AIRFLOW QUANTITIES ARE EQUAL TO OR GREATER THAN THE DOCUMENTED PRE-CONSTRUCTION BASELINE CONDITIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR APPROVED BY THE ENGINEER. UPON COMPLETION OF BALANCING ACTIVITIES, SUBMIT A FINAL TEST AND BALANCE REPORT TO THE ENGINEER FOR REVIEW. THE REPORT SHALL INCLUDE BOTH PRE-CONSTRUCTION AND POST-CONSTRUCTION AIRFLOW MEASUREMENTS, BALANCING PROCEDURES PERFORMED, DEFICIENCIES ENCOUNTERED, AND CORRECTIVE ACTIONS TAKEN.

A PRE DEMOLITION TEST AND BALANCE IS ENCOURAGED TO ENSURE THE EXISTING BOXES CAN PRODUCE THE REQUIRED AIRFLOW IN THE NEW DESIGN PHASE. IF ANY BOXES ARE DEFICIENT THEN IT SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. FAILURE TO PERFORM AN INITIAL AIRFLOW TEST WILL LAY THE RESPONSIBILITY FOR THE DEFICIENCY ON THE MECHANICAL CONTRACTOR.

A WATER SYSTEM TEST AND BALANCE SHALL ALSO BE PERFORMED TO CALIBRATE THE FLOW CONTROL VALVES TO MATCH THE GPM LISTED AT EACH BOX THROUGH THE COILS.

GRILLES AND REGISTERS: PRICE, KRUEGER, METALAIRE OR TITUS. PROVIDE AS REQUIRED ON DRAWING SCHEDULES.

PAINTING: FACTORY-FINISHED EQUIPMENT OR MATERIAL PROVIDED IN THIS DIVISION THAT HAS BEEN SCRATCHED OR BLEMISHED SHALL BE TOUCHED UP OR REPAINTED AS REQUIRED, BY THIS CONTRACTOR. ALL HANGERS SHALL BE PAINTED.

DUCT INSULATION: ALL CONCEALED DUCTWORK SHALL BE WRAPPED IN 1-1/2" FIBERGLASS INSULATION WITH FOIL JACKET.

FILTERS: CONTRACTOR SHALL PROVIDE TEMPORARY MEDIA OVER RETURN DUCT GRILLES AND OPENINGS DURING CONSTRUCTION AND SHALL REPLACE ALL FILTERS IN THE HVAC EQUIPMENT PRIOR TO TURNING THE TENANT SPACE OVER TO THE OWNER.

LABELING AND IDENTIFYING:

EQUIPMENT: INSTALL ADHESIVE LETTERING ON ALL VAV BOXES TO MATCH THE DESIGNATION ON THESE PLANS. THE LETTERS '(E)' AND '(R)' SHOULD BE OMITTED SUCH THAT THE LABELS READ ONLY 'P3-VAV-4'.

PAINTING: FACTORY-FINISHED EQUIPMENT OR MATERIAL PROVIDED IN THIS DIVISION THAT HAS BEEN SCRATCHED OR BLEMISHED SHALL BE TOUCHED UP OR REPAINTED AS REQUIRED, BY THIS CONTRACTOR. ALL EXPOSED OR EXTERIOR SUPPORTS, UNISTRUT, HANGERS, ETC. SHALL BE PAINTED WITH 2 COATS OF PAINT TO MATCH SURFACE THEY ARE MOUNTED ON.

ACCESS DOORS: WHERE VALVES OR DAMPERS OCCUR IN PLASTER OR SHEET ROCK CEILINGS, OR MASONRY WALLS, MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS DOORS TO SERVICE AND OPERATE. ACCESS DOORS SHALL BE SIZE SUFFICIENT FOR EASY SERVICE AND EQUIPMENT REMOVAL HINGED ON ONE SIDE WITH STYLE 3 CAM-TYPE HEAVY DUTY SCREWDRIVER OPERATED LOCK ON OPPOSITE SIDE. GENERAL CONTRACTOR SHALL MOUNT DOORS. DUCT MOUNTED ACCESS DOORS SHALL BE PROVIDED WITHIN 6" OF ANY FIRE RATED WALL TO ALLOW RESET OF FIRE DAMPERS. THIS SHALL NOT BE REQUIRED WHERE A LAY IN CEILING IS ADJACENT TO THAT WALL.

FIRE RATINGS: COORDINATE ALL FIRE RATINGS WITH EXISTING CONDITIONS AND/OR GENERAL CONTRACTOR. PROVIDE FIRE STOPPING AND/OR FIRE DAMPERS FOR ALL RATED PENETRATIONS. SUBMITT U/L ASSEMBLIES TO INSPECTIONS DEPARTMENT AND FIRE MARSHAL AS REQUIRED.

AUTOMATIC TEMPERATURE CONTROLS: THE BUILDING IS CURRENTLY SERVED BY A FULL BUILDING MANAGEMENT SYSTEM THAT IS MONITORED AND SERVED BY 'ENVIRONMENTAL, LLC' (866)903-8765. THE SERVICES OF THIS CONTRACTOR SHOULD BE USED TO UPDATE ALL THE NEW VAV BOX LOCATIONS AS WELL AS PROVIDING THE NEW THERMOSTATS AND SENSORS AND UPDATING BUILDING GRAPHICS. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO REACH OUT TO THIS VENDOR FOR ALL CONTROLS WORK ON THIS PROJECT.

CONTROL IDENTIFICATION: EACH DISCONNECT, STARTER, CONTROL DEVICE, SWITCH, ETC. IS IDENTIFIED AS TO SERVICE WITH NAME OF EQUIPMENT SERVED AND OPERATING RANGE IF APPLICABLE. IDENTIFICATION IS PROVIDED WITH BLACK PLASTIC NAMEPLATES WITH ETCHED WHITE LETTERING CONFORMING TO CONTROL DIAGRAM AS TO ITEM NAME AND NUMBER. ATTACH DIRECTLY TO DEVICE BY USING SHEET METAL SCREWS OR "POP" RIVETS.

ATRIUM HEALTH ASSET TAGGING: THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE ATRIUM HEALTH ASSET TAGGING REPRESENTATIVES TO INSTALL NEW ASSET BARCODES ON ALL REQUIRED EQUIPMENT. IN THIS PROJECT THAT WOULD BE THE VAV BOXES, EXHAUST FAN AND ANY CONTROL VALVES THAT ARE DEEMED NECESSARY.

DUCT SMOKE DETECTORS: NOT REQUIRED.

CARBON MONOXIDE DETECTOR: NOT REQUIRED.

END OF MECHANICAL SPECIFICATIONS

CONTRACTOR RESPONSIBILITIES

PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL PERFORM A THOROUGH REVIEW OF THE CONTRACT DOCUMENTS AND CONDUCT ALL NECESSARY FIELD INVESTIGATIONS TO BECOME FULLY FAMILIAR WITH EXISTING CONDITIONS, ACCESS REQUIREMENTS, UTILITY SYSTEMS, EQUIPMENT, DIMENSIONS, CLEARANCES, AND OTHER FACTORS THAT MAY AFFECT THE WORK.

THE CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, PERMITS, TESTING, COORDINATION, DEMOLITION, MODIFICATIONS, INCIDENTAL WORK, AND MISCELLANEOUS ITEMS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE CODES, AND INDUSTRY STANDARDS.

SUBMISSION OF A BID SHALL CONSTITUTE ACKNOWLEDGMENT THAT THE CONTRACTOR HAS REVIEWED THE CONTRACT DOCUMENTS, VISITED THE SITE, INVESTIGATED READILY OBSERVABLE CONDITIONS, COORDINATED THE WORK WITH ALL TRADES, AND INCLUDED ALL REASONABLY INFERRABLE WORK NECESSARY FOR A COMPLETE INSTALLATION.

NO ADDITIONAL COMPENSATION SHALL BE REQUESTED FOR CONDITIONS, REQUIREMENTS, OR COORDINATION ISSUES THAT WERE REASONABLY DISCOVERABLE THROUGH REVIEW OF THE CONTRACT DOCUMENTS, PRE-BID MEETINGS, SITE VISITS, FIELD INVESTIGATIONS, OR INDUSTRY-STANDARD CONSTRUCTION PRACTICES.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER, IN WRITING, OF ANY DISCREPANCIES, CONFLICTS, CONCEALED CONDITIONS, CODE CONCERNS, OR CONDITIONS THAT MAY IMPACT THE COST, SCHEDULE, OR CONSTRUCTABILITY OF THE PROJECT UPON DISCOVERY.

THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR MEANS, METHODS, SEQUENCING, SAFETY, TEMPORARY SYSTEMS, CONSTRUCTION PROCEDURES, AND COORDINATION OF ALL SUBCONTRACTORS AND SUPPLIERS NECESSARY TO COMPLETE THE WORK.

EXISTING CONDITIONS AND VERIFICATION

THE CONTRACT DOCUMENTS ARE BASED UPON AVAILABLE RECORD INFORMATION AND LIMITED FIELD OBSERVATIONS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO CONSTRUCTION. FAILURE TO INVESTIGATE AND VERIFY EXISTING CONDITIONS THAT ARE REASONABLY ACCESSIBLE OR DISCOVERABLE PRIOR TO BIDDING SHALL NOT CONSTITUTE GROUNDS FOR A CHANGE ORDER, CONTRACT ADJUSTMENT, OR CLAIM FOR ADDITIONAL COMPENSATION.

MECHANICAL EXISTING CONDITIONS NOTE

THE BUDGETARY LIMITATIONS FOR THIS PROJECT RESTRICT ANY UPGRADES TO THE EXISTING MECHANICAL SYSTEMS, EXCEPT WHERE INDICATED/IMPLIED IN THE DRAWINGS. THE CURRENT MECHANICAL SYSTEMS, INCLUDING HVAC EQUIPMENT, DUCTWORK, PIPING, CONTROLS, AND ASSOCIATED DEVICES THAT SERVE THE WORK AREA, ARE PRESUMED TO BE OPERATIONAL AND WELL-MAINTAINED BY THE OWNER.

BEFORE STARTING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS REQUIRED TO CONDUCT A THOROUGH ASSESSMENT OF THE EXISTING MECHANICAL SYSTEMS THAT SUPPORT THE PROJECT AREA. THIS EVALUATION SHOULD INCLUDE A DETAILED VISUAL INSPECTION OF ALL HVAC UNITS, DUCTWORK INTEGRITY, PIPING SYSTEMS, AND CONTROL COMPONENTS, AS WELL AS CHECKING THE OVERALL OPERATIONAL EFFICIENCY. ANY IDENTIFIED DEFICIENCIES, COMPLIANCE ISSUES, DAMAGED COMPONENTS, INADEQUATE CAPACITY, OR HAZARDOUS CONDITIONS MUST BE DOCUMENTED AND REPORTED IN WRITING TO THE ENGINEER AND THE OWNER BEFORE ANY WORK COMMENCES.

THE PROVIDED DRAWINGS ARE BASED ON THE AVAILABLE RECORDS AND LIMITED VISUAL OBSERVATIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD AND MUST NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR INITIATING INSTALLATION ACTIVITIES.

EXHAUST HOOD SCHEDULE							
PLAN TAG	MANUFACTURER	MODEL	NOMINAL DUCT DIAMETER	TYPE	SERVING	IMAGE	REMARKS
L-1	FAMCO	SDW3	3"	EXHAUST	VACSTAR 80H		1,2,3

NOTES:
1. BACKDRAFT DAMPER
2. SUBMIT COLOR SELECTION TO ARCHITECT FOR APPROVAL.
3. M.C. TO FIELD VERIFY NECK SIZE PRIOR TO PURCHASE.

GRILLE, REGISTER & DIFFUSER SCHEDULE							
PLAN TAG	MANUFACTURE	MODEL	SERVICE	BLOW	DAMPER	FINISH	REMARKS
S1	PRICE	SCD	SUPPLY	4 WAY	YES	WHITE B12	SQUARE CONE DIFFUSER, 24x24 1-BAR LAY-IN PANEL, TOOL-FREE REMOVABLE FACE, INSULATED BACKPAN, 6" NECK
S2	PRICE	SCD	SUPPLY	4 WAY	YES	WHITE B12	SQUARE CONE DIFFUSER, 24x24 1-BAR LAY-IN PANEL, TOOL-FREE REMOVABLE FACE, INSULATED BACKPAN, 8" NECK
R1	PRICE	PDDR	RETURN	N/A	N/A	WHITE B12	PERFORATED RETURN DIFFUSER, 1/2"x12"x1" GRID CORE, 24x24 LAY-IN PANEL, 22x22 RETURN AIR OPENING, WHITE POWDER COAT FINISH

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:
Prescriptive ☒ Energy Cost Budget ☐

Climate Zone 4A "FORSYTH COUNTY, NC"

Exterior design conditions (SMITH REYNOLDS NC, USA)
winter dry bulb 23.3°F
summer dry bulb 92.9°F
summer wet bulb 73.6°F

Interior design conditions
winter dry bulb 72°F
summer dry bulb 75°F
relative humidity 50%

Building heating load N/A INTERIOR DIFFUSER RELOCATION ONLY

Building cooling load N/A INTERIOR DIFFUSER RELOCATION ONLY

Mechanical Spacing Conditioning System
Unitary
description of unit heating efficiency cooling efficiency heat output of unit cooling output of unit
Boiler
total boiler output. If oversized, state reason. N/A
Chiller
total chiller capacity. If oversized, state reason. N/A

List equipment efficiencies Refer to drawings and specifications.

Equipment schedules with motors (mechanical systems)
description of unit motor power number of phases
SEE EQUIPMENT SCHEDULES

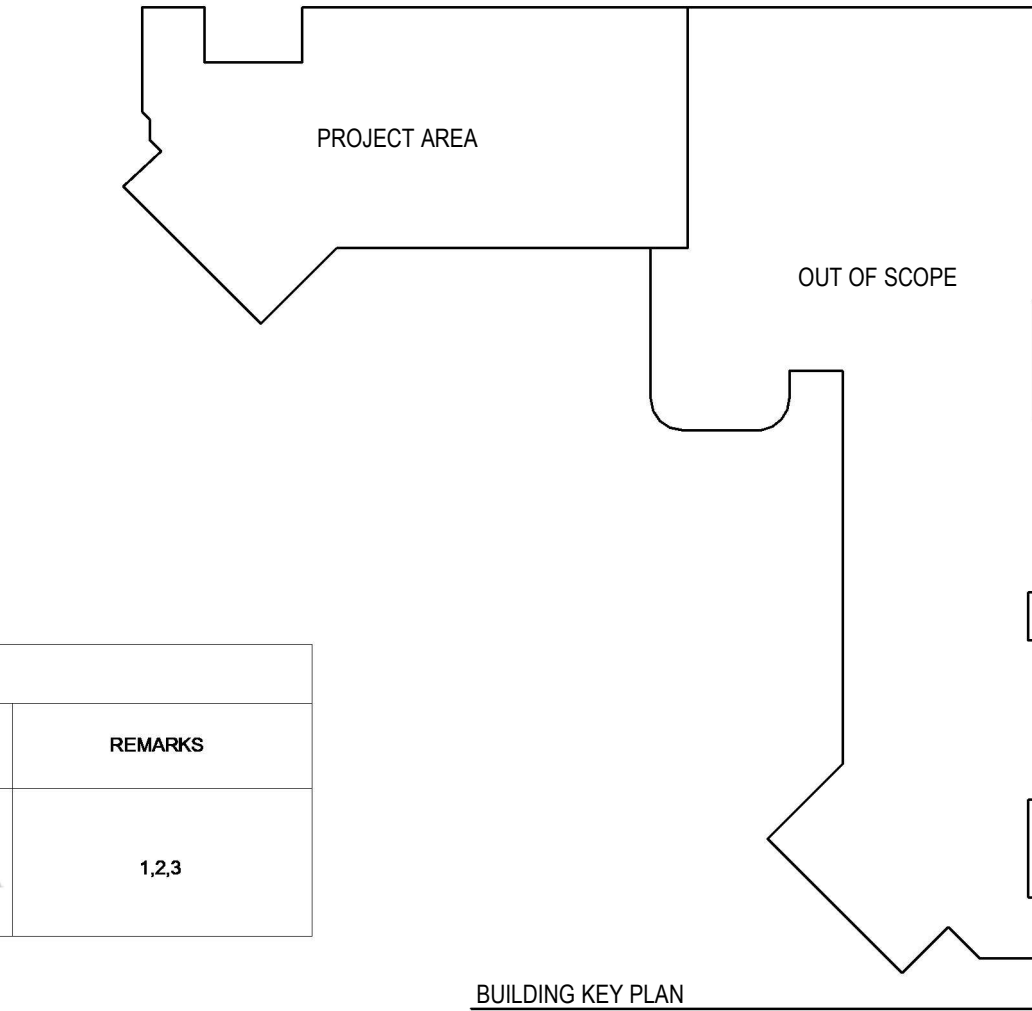
DESIGNER STATEMENT:
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the International Building code, Volume X-Energy.

SIGNED: Christopher R. Stroupe
NAME: Christopher R. Stroupe, PE
TITLE: Engineer

PNEUMATIC MECHANICAL TEMPERATURE CONTROLS
EXISTING TEMPERATURE CONTROLS ARE PNEUMATIC. DUE TO THE RELOCATION OF THERMOSTATS, THE CONTROLS CONTRACTOR SHALL VERIFY THE EXISTING CONTROL SYSTEM AND PROVIDE ALL REQUIRED MODIFICATIONS FOR PROPER OPERATION.

MECHANICAL SHEET INDEX	
M001	MECHANICAL COVER SHEET
MD101	LEVEL 1 MECHANICAL DEMOLITION PLAN
M101	LEVEL 1 MECHANICAL NEW WORK PLAN
M111	LEVEL 1 MECHANICAL CEILING PLAN
M601	DETAILS AND SCHEDULES

AS-BUILT DRAWING NOTE
M.C. SHALL MAINTAIN A SET OF AS-BUILT DRAWINGS THROUGHOUT THE PROJECT AND LEAVE A PAPER COPY OF THE AS-BUILT PLANS IN A CLEAR PLASTIC ENVELOPE AND LEAVE ON THE WALL IN THE ELECTRICAL ROOM. M.C. SHALL ALSO PROVIDE A DIGITAL COPY OF THESE AS-BUILTS TO THE OWNER AND THE ENGINEER OF RECORD. THIS IS BEING REQUESTED FOR ANY FUTURE ADDITIONS OR RE-CONFIGURATIONS.



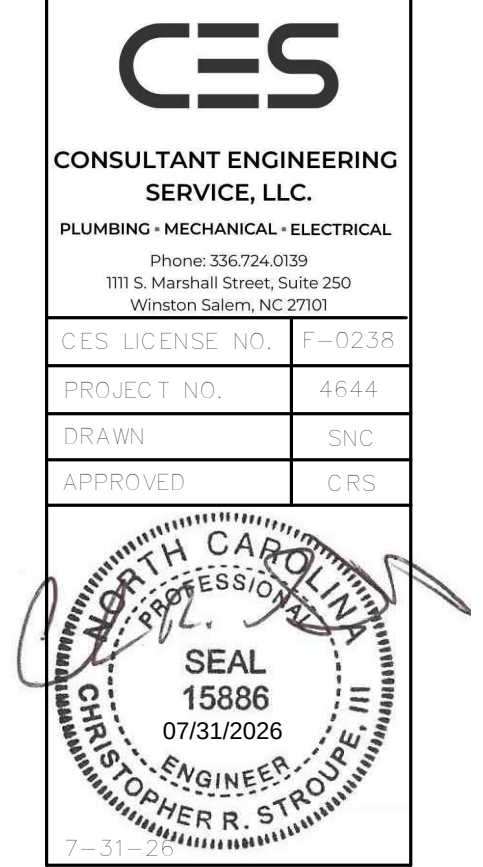
BUILDING KEY PLAN

Revision

PETERSON / GORDON

ARCHITECTS P.A.

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WINSTON-SALEM NC
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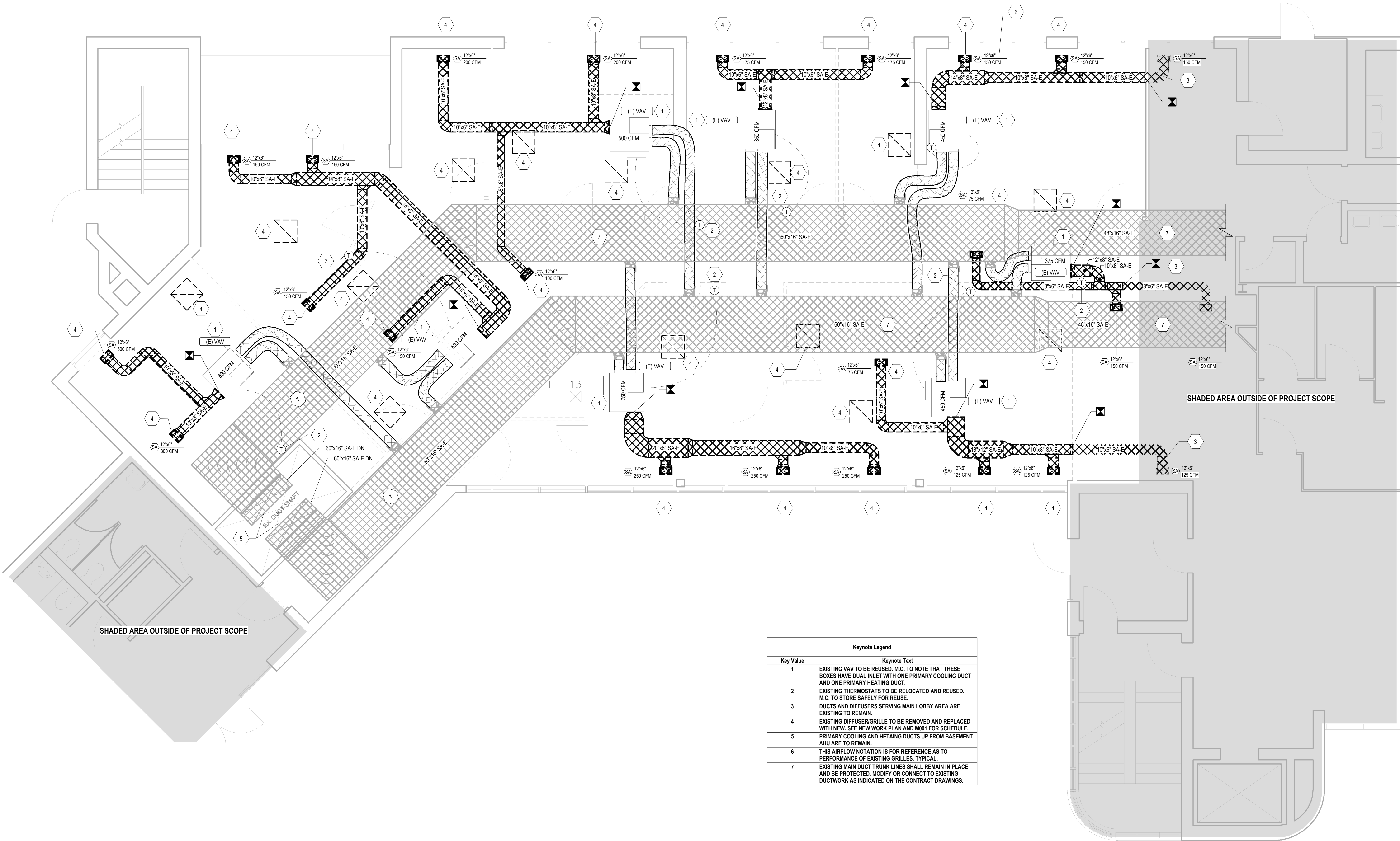
Forsyth County Health Department

Dental Suite Alteration

Winston-Salem, NC

Comm. No. 25-380
Date 7-31-26
Drawn By SNC

M001



Keynote Legend	
Key Value	Keynote Text
1	EXISTING VAV TO BE REUSED. M.C. TO NOTE THAT THESE BOXES HAVE DUAL INLET WITH ONE PRIMARY COOLING DUCT AND ONE PRIMARY HEATING DUCT.
2	EXISTING THERMOSTATS TO BE RELOCATED AND REUSED. M.C. TO STORE SAFELY FOR REUSE.
3	DUCTS AND DIFFUSERS SERVING MAIN LOBBY AREA ARE EXISTING TO REMAIN.
4	EXISTING DIFFUSER/GRILLE TO BE REMOVED AND REPLACED WITH NEW. SEE NEW WORK PLAN AND M001 FOR SCHEDULE.
5	PRIMARY COOLING AND HETAING DUCTS UP FROM BASEMENT AHU ARE TO REMAIN.
6	THIS AIRFLOW NOTATION IS FOR REFERENCE AS TO PERFORMANCE OF EXISTING GRILLES. TYPICAL.
7	EXISTING MAIN DUCT TRUNK LINES SHALL REMAIN IN PLACE AND BE PROTECTED. MODIFY OR CONNECT TO EXISTING DUCTWORK AS INDICATED ON THE CONTRACT DRAWINGS.

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CES
CONSULTANT ENGINEERING
SERVICE, LLC.
PLUMBING - MECHANICAL - ELECTRICAL
Phone: 336.724.0139
111 S. Marshall Street, Suite 250
Winston Salem, NC 27101

CES LICENSE NO.	F-0235
PROJECT NO.	4544
DRAWN	SNC
APPROVED	CRS

SEAL
15886
07/31/2026
BRIAN R. STROUSE
REGISTERED PROFESSIONAL ENGINEER
7-31-26

Forsyth County
Health Department

Dental Suite
Alteration

Winston-Salem, NC

Comm. No.	25-380
Date	7-31-26
Drawn By	SNC

MD101

Revision

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/ GORDON

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APPROVED	CRS

NORTH CAROLINA
PROFESSIONAL
SEAL
15886
07/31/2026
ENGINEER
CHRISTOPHER R. STROUE

7-31

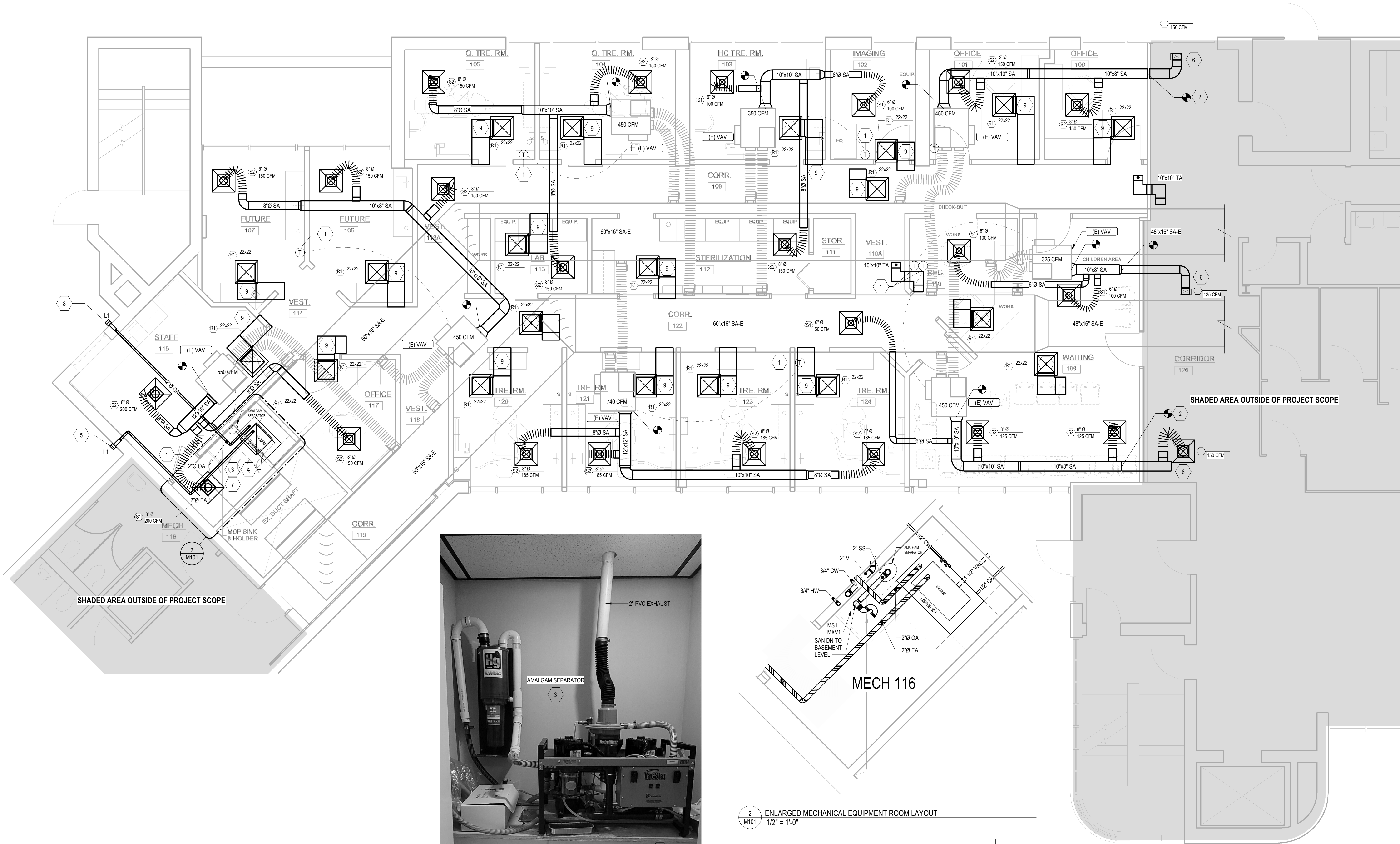
Forsyth County
Health Department

Dental Suite
Alteration

Winston-Salem, NC

Comm. No.	25-380
Date	7-31-26
Drawn By	SNC

M101



Keynote Legend	
Key Value	Keynote Text
1	RELOCATE EXISTING PNEUMATIC THERMOSTAT WITH PNEUMATIC TUBING TO THIS LOCATION. EXTEND AS NECESSARY. M.C. TO COORDINATE WITH THE BUILDING CONTROLS VENDOR AND THE COUNTY REPRESENTATIVE TO UPDATE ANY BMS GRAPHICS.
2	DUCTS AND DIFFUSERS SERVING MAIN LOBBY AREA ARE EXISTING TO REMAIN. RECONNECT EXISTING TO REMAIN DUCT INTO NEW DUCT.
3	DENTAL EQUIPMENT LOCATED IN THE MECHANICAL ROOM IS TO BE MOVED TO NEW DENTAL OFFICE LOCATION AND RE-INSTALLED AS IT CURRENTLY IS IN THE EXISTING DENTAL OFFICE. REFER TO PHOTO CALLOUT ON THIS SHEET.
4	NO PROVISIONS HAVE BEEN MADE FOR NEW EQUIPMENT.
5	PROVIDE A 3" VENT CAP FOR DISCHARGE OF DENTAL VACUUM EXHAUST.
6	THESE DIFFUSERS ARE EXISTING TO REMAIN AND ARE TO BE ADJUSTED TO AIRFLOWS SHOWN.
7	SEE MANUFACTURER'S INSTALLATION DIAGRAMS ON SHEET M600 AND REFER TO MANUFACTURER'S INSTALLATION INSTRUCTION MANUAL FOR PROPER ASSEMBLY.
8	PROVIDE A 3" VENT CAP FOR AIR INTAKE OF DENTAL AIR COMPRESSOR.
9	ALL RETURN AIR BOOTS ARE TO BE 22"x12".

MECHANICAL ROOM - DENTAL EQUIPMENT CONFIGURATION

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P A

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CHRISTOPHER R. STROUE III

7-31-26

Forsyth County
Health Department

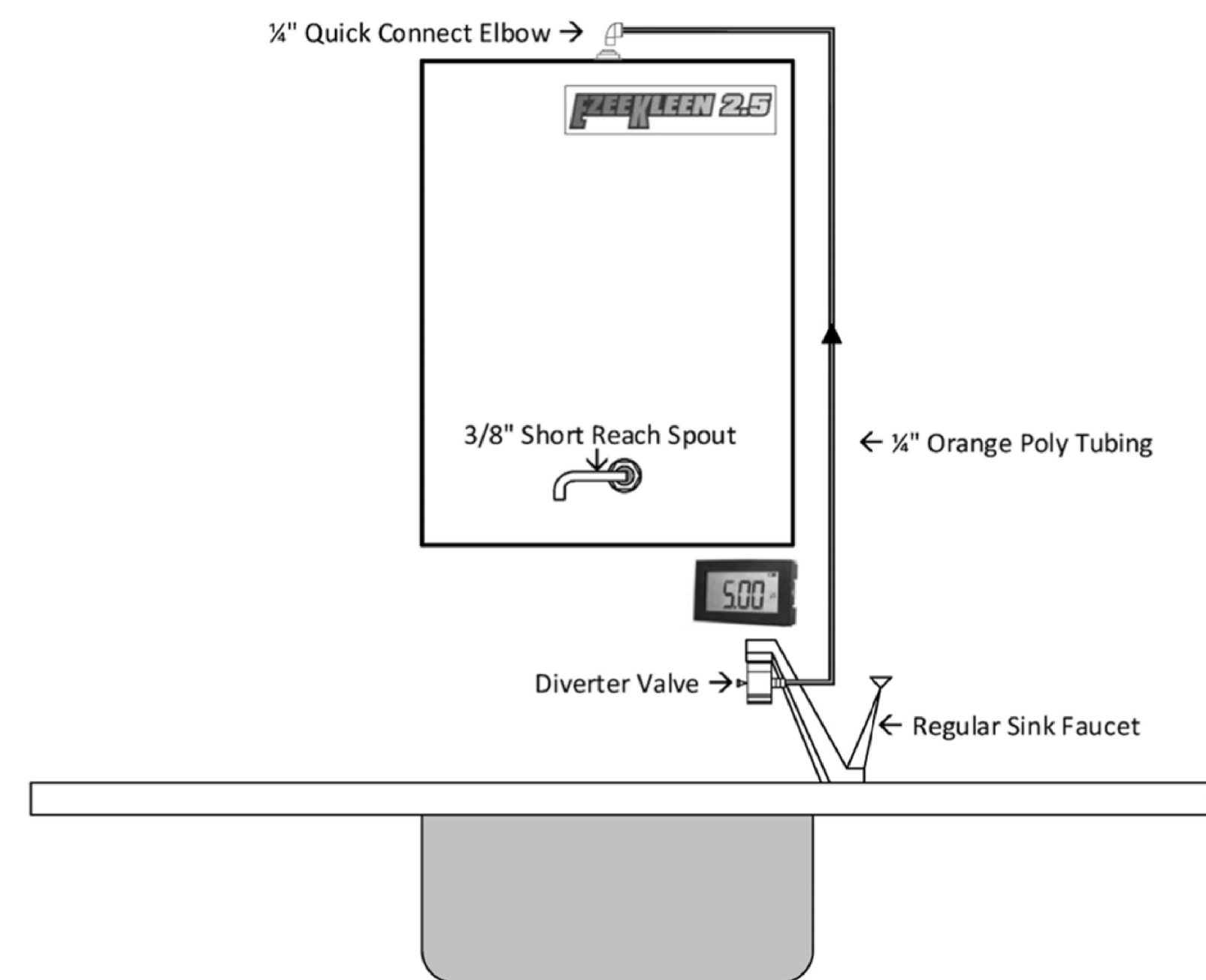
Dental Suite
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M111

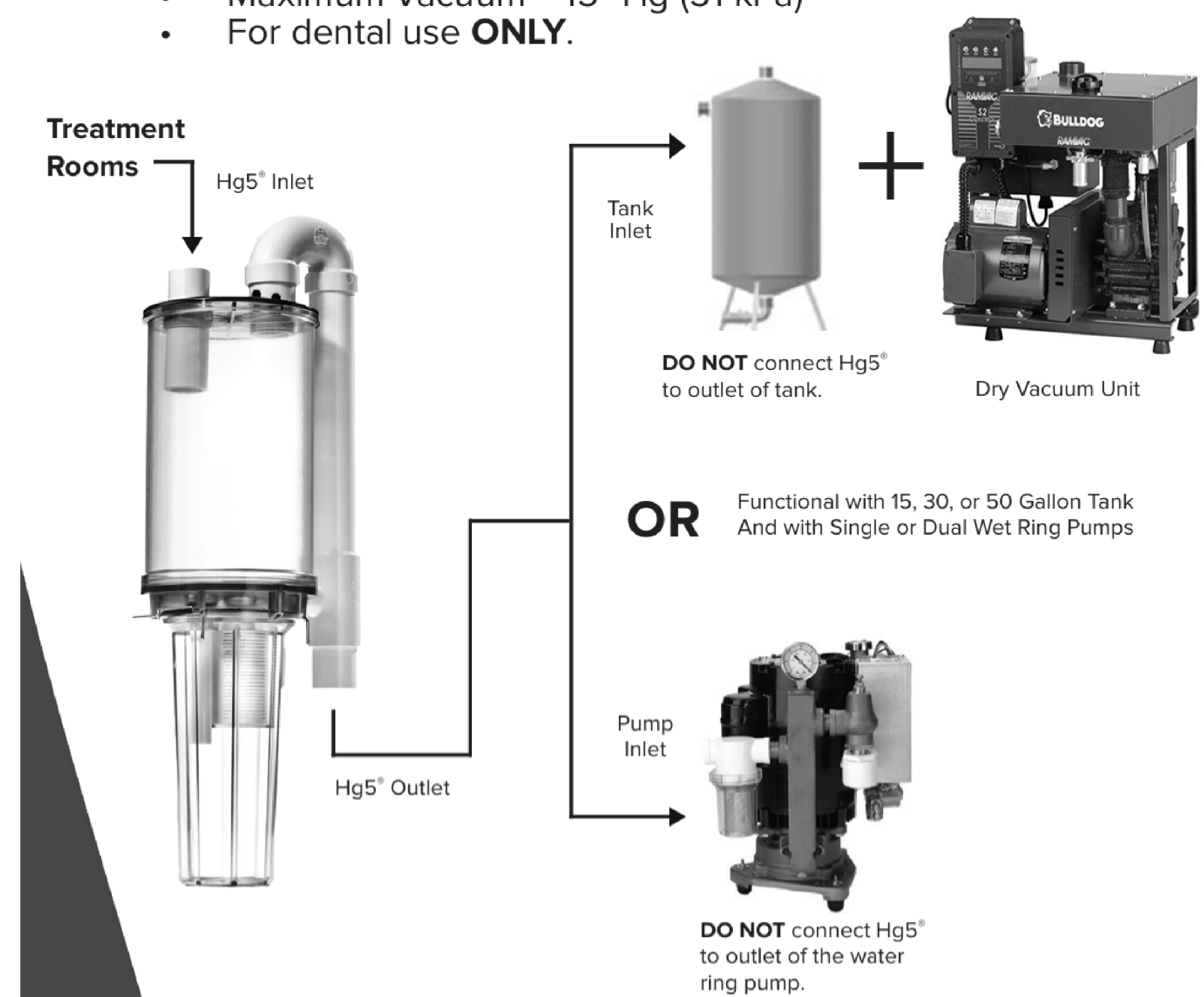




EZEE KLEEN 2.5 WATER FILTRATION SYSTEM ABOVE COUNTER INSTALLATION DIAGRAM

Environmental Specifications:

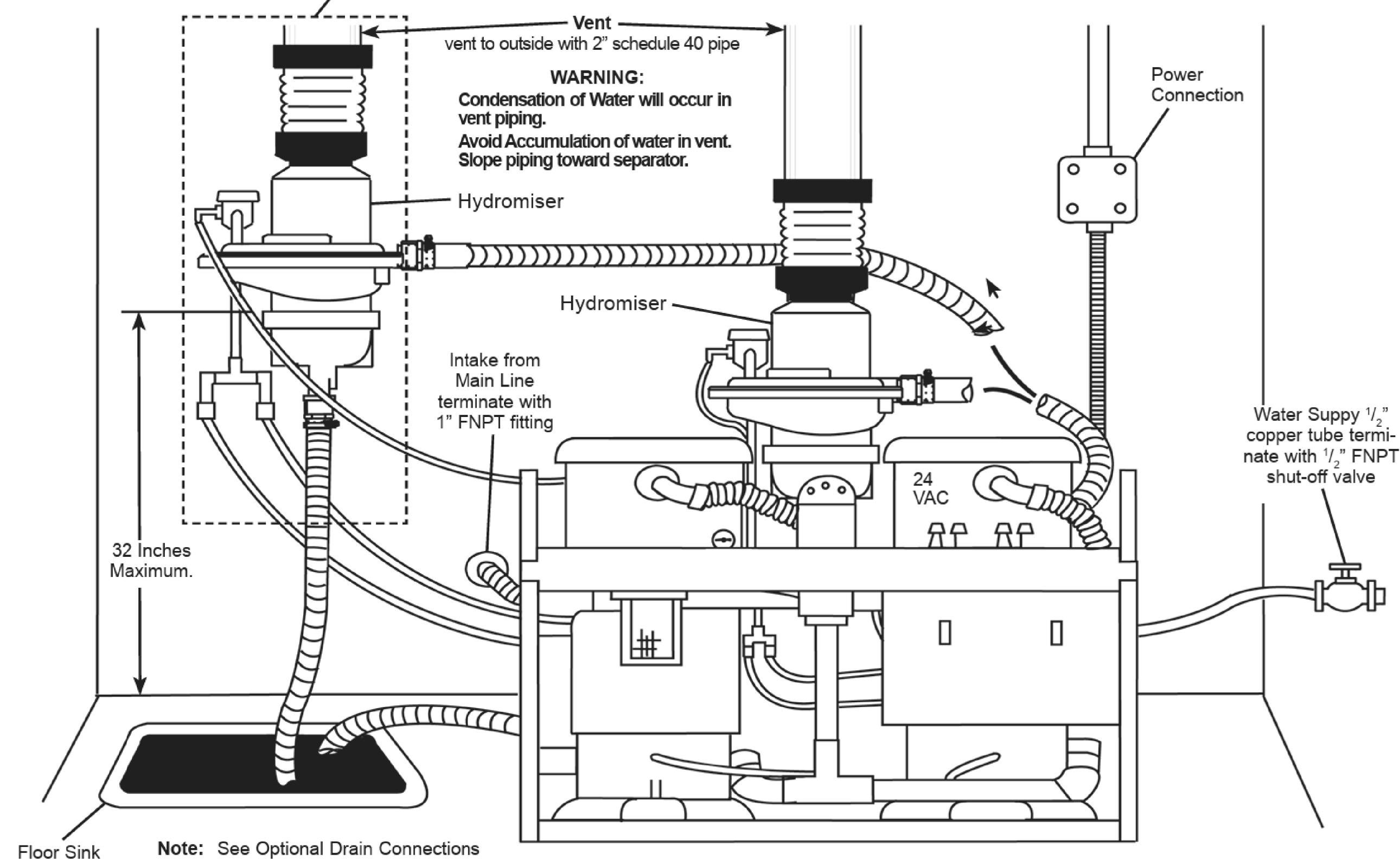
- Overall Dimensions: 11" W x 29" H x 8" D
- One RAMVAC® Hg5® will serve up to 10 chairs.
- Minimize water lift height.
- Maximum Temperature = 120° F (52° C)
- Maximum Vacuum = 15" Hg (51 kPa)
- For dental use **ONLY**.



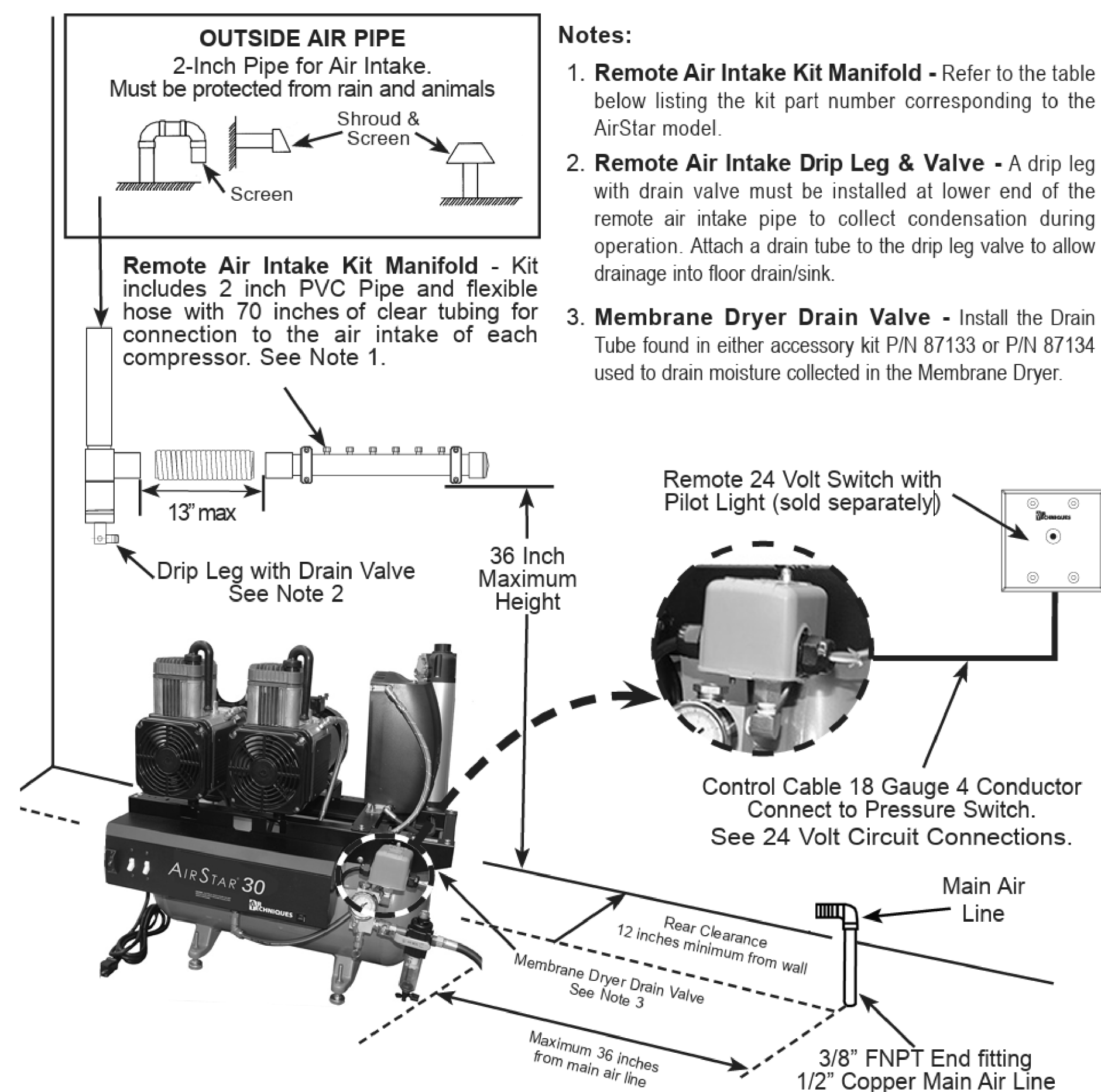
AMALGAM SEPARATOR/COLLECTION RESEVOIR INSTALLATION DIAGRAM

If the existing drain is higher than the HydroMiser outlet, the HydroMiser must be mounted so that its outlet is above the drain. The HydroMiser can be installed up to 32" above the base of the VacStar.

Order Kit PN 55087.



VACSTAR 80H DENTAL VACUUM SYSTEM INSTALLATION DIAGRAM



AIRSTAR 50 COMPRESSOR INSTALLATION DIAGRAM

Notes:

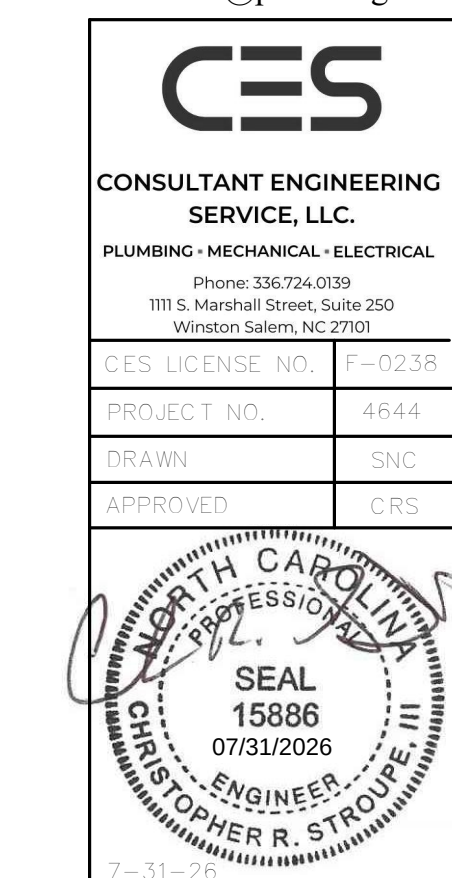
1. **Remote Air Intake Kit Manifold** - Refer to the table below listing the kit part number corresponding to the AirStar model.
2. **Remote Air Intake Drip Leg & Valve** - A drip leg with drain valve must be installed at lower end of the remote air intake pipe to collect condensation during operation. Attach a drain tube to the drip leg valve to allow drainage into floor drain/sink.
3. **Membrane Dryer Drain Valve** - Install the Drain Tube found in either accessory kit P/N 87133 or P/N 87134 used to drain moisture collected in the Membrane Dryer.

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/ GORDON**

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M601

CODES AND STANDARDS
ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL, STATE, AND LOCAL CODES, AS AMENDED BY THE STATE IN WHICH THE WORK ISBEING PERFORMED. THIS INCLUDES, BUT IS NOT LIMITED TO:

ASHRAE/IES	90.1 ENERGY CONSERVATION CODE
NCSCB	NORTH CAROLINA STATE BUILDING CODE
NEC	NATIONAL ELECTRICAL CODE
NESC	NATIONAL ELECTRICAL SAFETY CODE

ALL WORK SHALL BE FIRST CLASS IN NATURE AND SHALL BE IN ACCORDANCE WITH RECOGNIZED STANDARDS, PROCEDURES, AND MATERIALS. RECOGNIZED STANDARDS INCLUDE, BUT ARE NOT LIMITED TO:

AEIC	AMERICAN ASSOCIATION OF EDISON ILLUMINATING COMPANIES
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
EPA	ENVIRONMENTAL PROTECTION AGENCY
ICC	INTERNATIONAL CODE COUNCIL
ICEA	INSULATED CABLE ENGINEERS ASSOCIATION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY
NECA	NATIONAL ELECTRICAL CONTRACTOR ASSOCIATION
NEIS	NATIONAL ELECTRICAL INSTALLATION STANDARDS
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NETA	INTERNATIONAL ELECTRICAL TESTING ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
TOLP	TOXICITY CHARACTERISTIC LEACHING PROCEDURE
UL	UNDERWRITERS LABORATORIES (OR APPROVED 3RD PARTY TESTING AGENCY)

THE INSTALLATION SHALL ALSO COMPLY WITH ALL PERTINENT ORDINANCES, REGULATIONS, AND THE MANUFACTURER'S INSTRUCTIONS.

MATERIAL INSTALLED SHALL BE NEW AND CONFORM TO INDUSTRY STANDARDS.

GENERAL REQUIREMENTS

EQUALS: SPECIAL ATTENTION IS DIRECTED TO N.C. GENERAL STATUE 133-3 ON APPLICABLE PROJECTS. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO ENCOURAGE FREE AND OPEN COMPETITION ON PUBLIC CONTRACTS. REFER TO THE GENERAL CONDITIONS AND SPECIFICATIONS FOR SUBMITTING APPROVED EQUALS PRIOR TO BID.

DOCUMENTS: REFER TO THE GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS, AND INSTRUCTIONS TO BIDDERS FOR ADDITIONAL INFORMATION. THESE DOCUMENTS ARE A PART OF THE CONTRACT DOCUMENTS.

OBTAIN ALL CONTRACT DOCUMENTS THAT PERTAIN TO THIS PROJECT. THIS INCLUDES DRAWINGS, SPECIFICATIONS, AND SUBMITTALS FOR OTHER TRADES. CONNECT AND PROVIDE SERVICES FOR EQUIPMENT AS SHOWN OR INDICATED WHEN APPLICABLE.

ADDENDA: OBTAIN EACH ADDENDA AND INCORPORATE THEM INTO THE BID.

INSURANCE: PROVIDE INSURANCE AS INDICATED IN THE GENERAL CONDITIONS, SPECIFICATIONS, OR AS DIRECTED BY THE OWNER PRIOR TO BID.

FEES: PAY ALL REQUIRED INSPECTION FEES PERTAINING TO THIS CONTRACTOR'S SCOPE OF WORK AND INCLUDE THE COST IN THE BID.

ALTERNATES & UNIT PRICES: EACH BIDDER IS RESPONSIBLE FOR BIDDING ALTERNATES AND UNIT PRICES AS INDICATED.

COMPLETE INSTALLATION: FURNISH ALL MATERIAL, LABOR, AND EQUIPMENT FOR A COMPLETE INSTALLATION FOR EACH ITEM OR SYSTEM.

THE TERM "PROVIDE" MEANS TO FURNISH, INSTALL, AND CONNECT WITH ALL RELATED HARDWARE, SOFTWARE, AND ACCESSORIES FOR A COMPLETE INSTALLATION READY FOR USE.

NOTIFY INSPECTORS: NOTIFY THE APPROPRIATE INSPECTORS TO SCHEDULE REQUIRED INSPECTIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ELECTRICAL INSPECTOR, FIRE MARSHAL, AUTHORITY HAVING JURISDICTION, AND THE ENGINEER OF RECORD.

CONTRACT SUPERVISOR: ASSIGN AND MAINTAIN A SINGLE QUALIFIED PERSON AS THE JOB SUPERINTENDENT THAT IS DEDICATED TO THIS PROJECT.

QUALIFIED PERSONNEL: PROVIDE ADEQUATE MANPOWER TO MEET THE SCHEDULE. THIS INCLUDES QUALIFIED ELECTRICIANS AND MECHANICS THAT ARE PROPERLY LICENSED AND SKILLED IN THE INSTALLATION OF THIS TYPE OF WORK.

MODIFICATIONS: MINOR CHANGES IN LOCATIONS OF EQUIPMENT SUCH AS RECEPTACLES, LIGHT FIXTURES, AND OTHER EQUIPMENT MAY BE MADE AT ANY TIME PRIOR TO ELECTRICAL ROUGH-IN WITHOUT CAUSING ADDITIONAL COST TO THE OWNER.

SITE CONDITIONS: VISIT THE PROJECT SITE PRIOR TO THE BID TO BECOME FAMILIAR WITH THE PROJECT CONDITIONS. DIRECT ANY QUESTIONS TO THE ENGINEER A MINIMUM OF 10 DAYS PRIOR TO BID.

COORDINATION: COORDINATE INSTALLATION WITH THE OWNER'S REPRESENTATIVE, GENERAL CONTRACTOR, AND OTHER TRADES AS APPLICABLE. AVOID CUTTING OR DAMAGING THE WORK OF OTHER TRADES. WHERE CUTTING IS UNAVOIDABLE, COORDINATE WITH OTHER CONTRACTORS FIRST. REPAIR WORK TO MATCH.

STRUCTURE: DO NOT CUT THE STRUCTURE WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

SLEEVES: PROVIDE, PLACE, AND NEATLY GROUT SLEEVES FOR ELECTRICAL WORK IN WALLS AND PARTITIONS.

FIRE CAULK: SEAL AIRTIGHT AROUND ALL CONDUITS, CABLES, BOXES, ETC...THAT ARE RUN THROUGH WALLS, FLOORS, PARTITIONS, AND CEILINGS. USE FIRE BARRIER CAULK AND PUTTY EQUAL TO 3M TYPE 303 PUTTY OR TYPE CP-25 CAULK AS APPLICABLE.

PENETRATIONS: PENETRATIONS THROUGH SMOKE RATED PARTITIONS AND FIRE WALLS SHALL BE PROTECTED PER CODE. APPROVED ASSEMBLIES AND MATERIALS SHALL BE USED AS REQUIRED. COORDINATE WITH THE GENERAL CONTRACTOR AND/OR ENGINEER.

DEFECTIVE EQUIPMENT: REMOVE AND REPLACE EQUIPMENT THAT IS DEFECTIVE OR THAT IS DAMAGED DURING CONSTRUCTION.

CHANGES: DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS SHALL BE REQUESTED IN WRITING PRIOR TO CHANGES BEING MADE. DEVIATIONS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

SUBMITTALS: SUBMIT 6 COPIES OF SUBMITTAL DATA FOR ALL MATERIALS AND EQUIPMENT TO BE INSTALLED ON THIS PROJECT. ELECTRONIC SUBMITTALS ARE ALSO ACCEPTABLE.

SUBMITTALS SHALL COMPLY WITH THE DRAWINGS, SPECIFICATIONS, AND CODE. INCLUDE MANUFACTURER CURRENT SPECIFICATION AND LITERATURE HIGHLIGHTED AND CLEARLY MARKED

INDICATING MATERIALS AND EQUIPMENT TO BE PROVIDED.

SUBMITTAL DATA SHALL INCLUDE EQUIPMENT SIZES, CAPACITIES, VOLTAGE, AMPERAGE, ACCESSORIES, REQUIREMENTS FOR ACCESS AND MAINTENANCE, CLEARANCES, AND OTHER PERTINENT INFORMATION.

ONCE SUBMITTALS COMPLY AND ARE CLEARLY MARKED, STAMP AND SUBMIT TO THE THE ENGINEER FOR APPROVAL. SUBMITTALS WILL NOT BE REVIEWED IF THEY ARE NOT STAMPED OR CLEARLY MARKED.

RECORD DRAWINGS: MAINTAIN A SET OF RECORD DRAWINGS ON SITE THROUGHOUT CONSTRUCTION AND UPDATE DAILY.

MARK RECORD DRAWINGS WITH ALL REVISIONS, CHANGES, AND DEVIATIONS SHOWING ACCURATE AS-BUILT CONDITIONS. INCLUDE REVISIONS TO ALL SCHEDULES AS WELL AS REVISED LOCATIONS FOR DEVICES, CONDUITS, PANELBOARDS, EQUIPMENT, BOXES, WALLS, ETC....

SUBMIT 2 COPIES OF THE MARKED UP RECORD DRAWINGS TO THE ENGINEER AT THE COMPLETION OF THE PROJECT.

UTILITIES: ON APPLICABLE PROJECTS, COORDINATE POWER, TELEPHONE, TELEVISION, AND DATA SERVICE REQUIREMENTS WITH LOCAL UTILITIES PRIOR TO SUBMITTING A BID PROPOSAL.

PROVIDE TEMPORARY UTILITIES AS INDICATED IN THE GENERAL CONDITIONS OR AS DIRECTED BY THE OWNER.

TEMPERATURE RATINGS: ALL ELECTRICAL CONNECTORS, LUGS, BREAKERS, EQUIPMENT, ETC... SHALL BE RATED A MINIMUM OF 75 DEGREES CELSIUS.

BUILDING WIRE AND CABLE

- GENERAL**
 - ALL WIRE AND CABLE SHALL BE LISTED BY AN "APPROVED" THIRD-PARTY AGENCY ACCREDITED BY THE NCBC.
 - PRIOR TO ENERGIZING FEEDERS, SUB-FEEDERS AND SERVICE CONDUCTORS, TEST CONDUCTORS FOR ELECTRICAL CONTINUITY AND SHORT CIRCUITS. A COPY OF THESE TESTS SHALL BE SENT TO THE ENGINEER OF RECORD, THE OWNER, AND MADE AVAILABLE TO THE AUTHORITY HAVING JURISDICTION.
 - ALL WIRE AND CABLE SHALL BE RUN IN RACEWAY.
 - MINIMUM FULL SIZE NEUTRAL WIRE SHALL BE PROVIDED FOR EACH SINGLE PHASE BRANCH CIRCUIT REQUIRING A NEUTRAL. SHARING OF NEUTRALS BETWEEN BRANCH CIRCUITS IS NOT ALLOWED.

CONDUCTORS

- CONDUCTORS AND CABLES SHALL BE 600 VOLTS, THHN/THWN, COPPER. ALUMINUM CONDUCTORS ARE NOT ALLOWED.
- POWER AND LIGHTING CIRCUITS #10AWG AND SMALLER SHALL HAVE SOLID COPPER CONDUCTORS. CONDUCTOR SIZES #8AWG AND LARGER SHALL HAVE CLASS B STRANDED COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT ALLOWED.
- POWER AND LIGHTING CIRCUITS' MINIMUM CONDUCTOR SIZE SHALL BE #12AWG, AND MAXIMUM SIZE ALLOWED SHALL BE 500 KCMIL UON.
- FIRE ALARM AND CONTROL WIRING SHALL HAVE STRANDED COPPER CONDUCTORS. FULL SIZE NEUTRAL CONDUCTOR SHALL BE PROVIDED FOR EACH SERVICE PANEL AND SUB-PANEL.

GENERAL ELECTRICAL NOTES & SPECIFICATIONS

- INSULATION**
 - THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL-RATED THHN/THWN OR XHHW.
- VOLTAGE DROP**
 - WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 120-VOLT CIRCUIT EXCEEDS 50 FEET, THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALLER THAN #10 AWG.
- COLOR CODING**
 - THE SECONDARY SERVICE, FEEDERS, AND BRANCH CIRCUITS SHALL BE COLOR CODED AS FOLLOWS:

PHASE	208/120V	480/277V
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN
- SPlicing**
 - JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS," 3M COMPANY "SCOTCHLOCK" OR T&B CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES.
 - "STA-KON," "PROG," OR OTHER PERMANENT TYPE CRIMP CONNECTORS SHALL NOT BE USED FOR #10 AWG AND SMALLER CONDUCTORS.
 - JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. PERMANENT COMPRESSION CONNECTORS FOR SPLICES AND TAPS, PROVIDED UL-APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE.
 - CONDUCTORS, IN ALL CASES, SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS AND GUTTERS.

GROUNDING AND BONDING

- GROUNDING CONDUCTORS SHALL BE COLORED SOLID GREEN. CONDUCTORS INTENDED AS NEUTRAL SHALL BE COLORED SOLID WHITE ON 120/208 VOLT CIRCUITS AND NATURAL GRAY ON 277/480 VOLT CIRCUITS. THE RACEWAY SYSTEM SHALL NOT BE RELIED ON FOR EQUIPMENT GROUND CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, PROPERLY SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL RACEWAYS EXCEPT FOR TELECOMMUNICATIONS, DATA, AUDIO, AND LOW VOLTAGE RACEWAYS FOR FIRE ALARM SYSTEMS.
- BOND CABLE TRAYS TO MAKE THEM ELECTRICALLY CONTINUOUS. GROUND PER CODE.
- THE ELECTRICAL SERVICE SHALL BE GROUNDIED BY THREE MEANS, WHEN AVAILABLE, PER THE NEC.
- TO THE METALLIC COLD-WATER PIPE, PER NEC 250-52.
- TO THE STEEL FRAME OF THE BUILDING, PROVIDED THE BUILDING FRAME IS EFFECTIVELY GROUNDIED, IN NEW CONSTRUCTION, EFFECTIVELY GROUND AND BOND STEEL BUILDING FRAME.
- TO GROUND ROD(S). GROUND RODS SHALL BE 10 FEET LONG AND 3/4" INCH IN DIAMETER, AND SHALL BE OF COPPER-CLAD STEEL CONSTRUCTION. ALL GROUND CONNECTIONS SHALL BE ACCESSIBLE. PROVIDE A TEST WELL FOR EACH GROUND ROD DRIVEN.
- BOXES WITH CONCENTRIC, ECCENTRIC, OR OVER-SIZED KNOCKOUTS SHALL BE PROVIDED WITH BONDING BUSHINGS AND JUMPERS. THE JUMPER SHALL BE SIZED PER NEC TABLE 250-122 AND LUGGED TO THE BOX.
- WHERE ONE BUILDING IS FEEDING ANOTHER BUILDING, THE INSTALLATION SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF NEC ARTICLES 225 AND 250.
- THE GAS PIPING SYSTEM SHALL BE BONDED TO THE EQUIPMENT GROUND AS REQUIRED PER THE NEC AND NC FUEL GAS CODE.
- IDENTIFY EACH GROUNDING ELECTRODE CONNECTED TO A COMMON GROUND BUS. THE COMMON GROUND BUS SHALL NOT BE LESS THAN 4" HIGH BY 1/4" THICK, WITH LENGTH AS REQUIRED. LENGTH SHALL BE PROVIDED WITH 25% CAPACITY.

SUPPORTING DEVICES

- RACEWAY AND BOXES SHALL BE SUPPORTED IN A METHOD AND AT A SPACING AS APPROVED BY THE NEC, EXCEPT AS NOTED HEREIN.
- CONDUIT SHALL BE SUPPORTED BY APPROVED PIPE STRAPS OR CLAMPS.
- CONDUITS SHALL BE INSTALLED ON THE INTERIOR OR EXTERIOR BUILDING WALLS SHALL BE SPACED OFF THE WALL SURFACE A MINIMUM OF 1/4" INCH USING CLAMP-BACK OR STRUT.
- PIPE STRAPS OR CLAMPS SHALL BE SECURED BY MEANS OF:
 - TOGGLE BOLTS ON HOLLOW MASONRY
 - METAL EXPANSION SHIELDS AND MACHINE SCREWS, OR STANDARD PRE-SET INSERTS, ON CONCRETE OR SOLID MASONRY.
 - MACHINE SCREWS OR BOLTS ON METAL SURFACES.
 - WOOD SCREWS ON WOOD CONSTRUCTION.
 - POWER ACTUATED FASTENERS ARE NOT ALLOWED.

CONDUIT SCHEDULE

- BELOW SLAB ON GRADE AND UNDERGROUND: PVC SCHEDULE 40 WITH ASPHALT COATED RIGID ELBOWS AND GROUND WIRE, ALL THREADED AND CONNECTIONS AND JOINTS SHALL BE WATERTIGHT.
- ABOVE SLAB ON GRADE AND OVERHEAD: EMT CONDUIT WITH STEEL, COMPRESSION TYPE FITTINGS UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
- HAZARDOUS AREAS, SPECIAL OCCUPANCIES, OR CONDUITS SUBJECT TO DAMAGE: INSTALL CONDUIT PER THE NEC. THIS INCLUDES, BUT IS NOT LIMITED TO: GALVANIZED RIGID STEEL CONDUIT, EXPLOSION PROOF AND SEAL OFF TYPES WHERE REQUIRED PER THE NEC FOR ADDITIONAL REQUIREMENTS.
- WHIPS (6 FEET OR LESS TO LIGHTING FIXTURES): MC CABLE WHERE ALLOWED PER THE NEC.
- DEVIATIONS: ANY DEVIATION SHALL BE APPROVED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO BID AND THE A/E PRIOR TO ROUGH-IN.
- MINIMUM CONDUIT SIZES: 3/4" ABOVE GROUND AND 1" UNDERGROUND.

UNDERGROUND RACEWAYS

- RACEWAYS RUN EXTERNAL TO BUILDING FOUNDATION, EXCEPT BRANCH CIRCUIT RACEWAYS, SHALL BE ENCASED WITH A MINIMUM OF THREE INCHES OF CONCRETE ON ALL SIDES.
- ENCASED RACEWAYS MUST HAVE A MINIMUM COVER OF EIGHTEEN INCHES, EXCEPT RACEWAYS CONTAINING CIRCUITS WITH VOLTAGES ABOVE 1000 VOLTS, WHICH MUST HAVE A MINIMUM COVER OF THIRTY INCHES.
- ENCASED RACEWAYS SHALL BE OF A TYPE APPROVED BY THE NEC AND SUITABLE FOR CONCRETE ENCASEMENT.
- STEEL REINFORCING SHALL BE REQUIRED UNDER ROADWAYS AND WITHIN 10 FEET OF ALL MANHOLES AND BUILDING ENTRANCES. THE STEEL REINFORCING SHALL BE TIED TO THE WALL REINFORCING AT MANHOLES AND BUILDING ENTRANCES.
- BRANCH CIRCUITS RUN UNDERGROUND EXTERNAL TO BUILDING FOUNDATION WALLS SHALL BE RUN IN ACCORDANCE WITH THE NEC, AND SHALL BE APPROVED AS SUITABLE FOR DIRECT MINIMUM SIZE SHALL BE 1 INCH.
- ALL UNDERGROUND RACEWAYS, EXCEPT BRANCH CIRCUITS, SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE RACEWAY 6 TO 8 INCHES BELOW FINISHED GRADE. TAPE SHALL BE PERMANENT, BRIGHT COLORED, CONTINUOUS PRINTED, PLASTIC TAPE COMPOUNDED FOR DIRECT BURIAL NOT LESS THAN 6 INCHES WIDE AND 4 MILS THICK.
- WHERE UNDERGROUND RACEWAYS ARE REQUIRED TO TURN UP TO CABINETS, EQUIPMENT, ETC., AND ON TO POLES, THE ELBOW REQUIRED AND THE STUB-UP OUT OF THE SLAB OR EARTH SHALL BE OF GALVANIZED RIGID STEEL FOR THE LAST TWO FEET MINIMUM.
- WHERE PASSING THROUGH A BELOW GRADE WALL FROM A CONDITIONED INTERIOR BUILDING SPACE, RACEWAYS SHALL BE SEALED UTILIZING FITTINGS SIMILAR AND EQUAL TO OZ/GEDNEY TYPE PSK THRU-WALL FITTING WITH FSKA MEMBRANE CLAMP ADAPTER IF REQUIRED.

ABOVE GROUND RACEWAYS

- SUPPORT AND ATTACH ALL CONDUITS AND RACEWAYS PER THE NEC WITH APPROVED HANGERS AND CLAMPS. DO NOT SUPPORT CONDUITS, RACEWAYS, OR CABLES, FROM DUCTWORK, PIPING, CEILING GRID SUPPORT WIRES, OR CEILING SUPPORT SYSTEM. PROVIDE SUPPLEMENTAL STEEL SUPPORTS BETWEEN JOISTS, BEAMS, PURLINS, TRUSSES, ETC., AS REQUIRED.
 - CONDUITS AND RACEWAYS SHALL BE SEISMICALLY SUPPORTED WHERE REQUIRED BY THE BUILDING CODE.
- TERMINATIONS**
- IMC AND GRC SHALL TERMINATE WITH EITHER A DOUBLE LOCKNUT/BUSHING SET, OR IN A THREADED HUB.
 - WHERE CONCENTRIC, ECCENTRIC, OR OVER-SIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING-TYPE INSULATED BUSHING SHALL BE PROVIDED.
 - ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH INSULATED THROAT.
 - EMT TERMINATIONS SHALL BE MADE UTILIZING PLATED STEEL HEXAGONAL COMPRESSION CONNECTORS. NO POT METAL, SET SCREW, OR INDENTED TYPE FITTINGS SHALL BE UTILIZED.

CONDUIT FITTINGS

- WHERE CONDUITS OF ANY TYPE PASS OVER A BUILDING EXPANSION JOINT, A STANDARD EXPANSION JOINT FITTING, COMPATIBLE WITH THE TYPE RACEWAY BEING USED, SHALL BE PROVIDED.
- CONDUIT COUPLINGS FOR IMC, GRC, AND PVC SHALL BE IN ACCORDANCE WITH THE NEC.
- EMT COUPLINGS SHALL BE OF THE PLATED STEEL HEXAGONAL COMPRESSION TYPE. NO POT METAL, SET SCREW, OR INDENTED TYPE COUPLINGS SHALL BE UTILIZED.
- IN OUTDOOR LOCATIONS OR INTERIOR DAMP LOCATIONS, GASKETED FITTINGS INCLUSIVE OF COUPLINGS SHALL BE USED IN ALL METALLIC RACEWAYS.

ELECTRICAL IDENTIFICATION

REFER TO DETAIL ON THE DRAWINGS.

INTERIOR LUMINAIRES

REFER TO THE LIGHTING FIXTURE SCHEDULE AND THE LIGHTING FIXTURE SUPPORT DETAIL ON THE DRAWINGS.

CLEANING AND PAINTING

- VACUUM AND CLEAN ALL BOXES AFTER ROUGH-IN AND PROTECT FROM CONSTRUCTION DEBRIS/PAINTING.
- CLEAN ALL CONDUITS, HANGERS, SUPPORTS, PANELS, LIGHTS, DEVICES, ETC... AND LEAVE READY FOR USE OR PAINTING.
- COORDINATE ALL PAINTING REQUIREMENTS WITH THE ARCHITECT, GENERAL CONTRACTOR, AND/OR OWNER PRIOR TO BID.
- TOUCH UP ALL SCRATCHED SURFACES ON FACTORY FINISHED EQUIPMENT AND MATERIALS WITH PAINT OF SAME TYPE AND COLOR.

TESTING

- PERFORM ALL TESTS REQUIRED BY CODE. MEG-TEST ALL PANELS TO ELIMINATE GROUNDS AND SHORT CIRCUITS. TEST ALL LIGHTS, RECEPTACLES, EQUIPMENT, ETC... FOR PROPER CONNECTION AND GROUNDING.
- TEST THE GROUND SYSTEM WITH "EARTH MEGGER," FURNISH TEST RESULTS TO THE OWNER AND ENGINEER. ADD ADDITIONAL GROUND RODS UNTIL TEST RESULTS ARE BELOW 25 OHMS.
- ENSURE THAT ALL LUGS ON ALL FEEDERS ARE TIGHT THROUGHOUT CONSTRUCTION. TORQUE AS REQUIRED.

TRAINING

- INSTRUCT OWNER'S REPRESENTATIVES IN PROPER OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT.
- FURNISH TO OWNER COPIES OF OPERATING AND MAINTENANCE MANUALS, INCLUDING GUARANTEES AND SPARE PARTS LIST.

GUARANTEE:

- GUARANTEE ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE TIME OF FINAL ACCEPTANCE BY THE OWNER UNLESS OTHERWISE INDICATED. REPAIR AND/OR REPLACE, WITHOUT ANY COST TO THE OWNER, ANY DEFECTIVE PART OR WORKMANSHIP WITHIN THE GUARANTEE PERIOD.

FIRE ALARM SYSTEM:

- THE ENTIRE SYSTEM SHALL BE INSTALLED IN A WORKMANLIKE MANNER, IN ACCORDANCE WITH APPROVED MANUFACTURER'S WRING DIAGRAM. THE CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIRING, OUTLET BOXES, JUNCTION BOXES, CABINETS OR SIMILAR DEVICES NECESSARY FOR THE COMPLETE INSTALLATION.
- PROVIDE A COMPLETE AND OPERATIONAL FIRE ALARM AUDIO/VISUAL NOTIFICATION SYSTEM AS REQUIRED BY ALL APPLICABLE CODES. ALL DEVICES SHALL BE IDENTIFIED WITH ID TAGS.
- ALL CIRCUITS SHALL BE RATED POWER LIMITED IN ACCORDANCE WITH NEC ARTICLE 760.
- CABLE SHALL BE INSTALLED IN UL LISTED METAL CONDUIT OR RACEWAY.
- ALL NOTIFICATION DEVICES CIRCUITS SHALL BE 14 AWG MINIMUM JACKED TWISTED PAIRS OR PER MANUFACTURER'S REQUIREMENTS.
- ALL STROBE FLASH RATE SHALL BE SYNCHRONIZED AS PER NFPA 72.
- ALL FIRE ALARM EQUIPMENT 120VAC CIRCUITS SHALL BE PROVIDE WITH SURGE PROTECTION AND BREAKERS LOCKOUT.
- SECONDARY POWER SUPPLY CAPACITY SHALL BE 24 HOURS, STAND-BY WITH 15 MINUTES OF ALARM. BATTERY BACKUP SHALL NOT BE LOADED MORE THAN 75%.
- NOTIFICATION APPLIANCES CIRCUITS SHALL NOT BE LOADED MORE THAN THE 80% OF ITS LISTED OUTPUTS.
- VOLTAGES DROPS ON ALL CIRCUITS SHALL NOT BE GREATER THAN 15%.
- PROVIDE #6 GROUND CONDUCTOR FROM SYSTEM GROUND BUS BAR TO EACH EQUIPMENT PANEL AND TERMINAL CABINET.
- VERIFY LOCATION AND QUANTITY OF DUCT SMOKE DETECTORS AND ACCESS DOORS PRIOR TO ROUGH IN. COORDINATE WITH MECHANICAL AND FIRE CONTRACTORS.
- COORDINATE DUCT DETECTOR SMOKE MOUNTING WITH M.C. DUCT SMOKE DETECTOR SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR MOUNTED BY MECHANICAL CONTRACTOR AND WIRE BY ELECTRICAL CONTRACTOR.
- COORDINATE WITH M.C. LOCATION FOR ALL DUCTS REMOTE ALARM INDICATING TESTING SWITCHES.
- ALL DETECTORS SHALL HAVE A LIGHT INDICATOR REMOTELY INSTALLED ON THE CEILING AND LABELED ACCORDING TO NFPA 72 SEC 5.14.5.8 CODE.
- ALL INITIATING DEVICES SHALL BE ADDRESSABLE POINT IDENTIFIED.
- REFER TO FLOOR PLANS FOR FIRE ALARM EQUIPMENT COUNTS. NOT ALL FIRE ALARM EQUIPMENT IS SHOWN ON FIRE ALARM RISER.
- PROVIDE SURGE PROTECTION FOR CIRCUITS ENTERING AND/OR LEAVING THE BUILDING.
- ALL UNDER GROUND CABLES SHALL BE LISTED FOR WET LOCATION USE.
- ALL FACP'S SHALL BE NETWORKED PEER TO PEER (IF NEW).
- PROVIDE (2) SOLENOID VALVE FOR EACH EMERGENCY PUSH BUTTON, FIRE ALARM INPUT RELAY FOR ALL STROBE ROOMS (TYPICAL OF ALL).
- ALL HVLS FANS SHALL BE INTERLOCKED TO SHUNT DOWN IMMEDIATELY UPON RECEIVING A WATERFLOW SIGNAL FROM THE ALARM SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72.
- ALL CONDUIT AND/OR CABLE SHALL NOT BE INSTALLED NEAR FANS TO AVOID ANY OBSTRUCTIONS.
- PROVIDE 3/4" CONDUIT AND INTERCONNECTION WIRING FOR MONITORING PRE-ACTION SYSTEM CONTROL. E.C. SHALL TERMINATE IN THE BUILDING FACP AND PROVIDE 5 FEET OF SLACK WIRE IN A BOX ADJACENT TO THE PRE-ACTION PANEL. SPRINKLER SYSTEM CONTRACTOR SHALL MAKE ALL THE TERMINATIONS IN THE PRE-ACTION PANEL. COORDINATE WITH SPRINKLER SYSTEM CONTRACTOR.
- MOUNT SMOKE DETECTORS 3 FEET MINIMUM FROM ANY HVAC SYSTEM SUPPLY/RETURN DIFFUSER.
- STROBES AND HORNS SHALL BE MOUNTED 96" MINIMUM ABOVE FINISH FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER.
- MANUAL PULL STATIONS SHALL BE INSTALLED WITH THE HANDLE 4'-0" ABOVE FINISHED FLOOR.
- ALL AUDIO/VISUAL DEVICES ARE TO BE CEILING MOUNTED AT THE CENTER OF ROOM IF POSSIBLE. COORDINATE WITH OWNER AND G.C. FOR ANY TRADES CONFLICTS PRIOR TO ROUGH-IN.
- END OF LINE DEVICE (RESISTOR, DIODES, CAPACITORS, SHALL BE PROVIDED AS REQUIRED FOR MOUNTING AS DIRECTED BY THE MANUFACTURERS.

ELECTRICAL SUMMARY ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

ENERGY CODE: ☒ PRESCRIPTIVE ☐ PERFORMANCE

ENERGY CODE: ☐ PRESCRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE (EACH FIXTURE TYPE)

LAMP TYPE REQUIRED IN FIXTURE	REFER TO FIXTURE SCHEDULE
NUMBER OF LAMPS IN EACH FIXTURE	REFER TO FIXTURE SCHEDULE
BALLAST TYPE IN FIXTURE	REFER TO FIXTURE SCHEDULE
NUMBER OF BALLAST IN FIXTURE	REFER TO FIXTURE SCHEDULE
TOTAL WATTAGE PER FIXTURE	REFER TO FIXTURE SCHEDULE
TOTAL INTERIOR WATTAGE SPECIFIED VERSUS ALLOWED:	2,520W SPECIFIED VS 2,853W ALLOWED
TOTAL EXTERIOR WATTAGE SPECIFIED VERSUS ALLOWED:	N/A

ADDITIONAL PRESCRIPTIVE COMPLIANCE

- ☐ C406.2 MORE EFFICIENT HVAC PERFORMANCE
- ☒ C406.3 REDUCED LIGHTING POWER DENSITY SYSTEM
- ☐ C406.4 ENHANCED LIGHTING CONTROLS
- ☐ C406.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
- ☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM FOR CERTAIN HVAC EQUIPMENT
- ☐ C406.7 HIGH-EFFICIENCY SERVICE WATER HEATING

DESIGNER STATEMENT

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE THERMAL ENVELOPE REQUIREMENTS OF THE STATE OF NORTH CAROLINA 2018 ENERGY CODE

SIGNED: *Christopher R. Stoupe, III*

NAME: CHRIS STROUPE, P.E.

TITLE: ENGINEER

- LINK TRADE PERMITS WITH THE BUILDING PERMIT.
- ALL PRE-WIRED EQUIPMENT SHALL BE LISTED BY STATE OF NC APPROVED 3RD PARTY AGENCY. (NEC 90.7.110.3(B))
- CLEARANCE REQUIRED AT ELECTRICAL EQUIPMENT, (NEC 110.2.6)
- ALL GROUNDING AND BONDING REQUIRED TO COMPLY WITH NEC ARTICLE 250, (NEC 250.1)
- FLEXIBLE CORDS SHALL NOT PASS THROUGH CEILINGS, WALLS OR FLOORS, (NEC 400.8)
- ALL WIRING, INCLUDING LOW VOLTAGE, DATA, PHONE, FIRE ALARM, SECURITY, HVAC CONTROLS, AND POWER SHALL BE PERMITTED AND INSPECTED PER NC GENERAL STATUTES PER COUNTY, AND CITY ORDINANCE.
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE LABEL LISTED BY A NORTH CAROLINA APPROVED THIRD PARTY TESTING AGENCY.

CONTRACTOR RESPONSIBILITIES:

PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL PERFORM A THOROUGH REVIEW OF THE CONTRACT DOCUMENTS AND CONDUCT ALL NECESSARY FIELD INVESTIGATIONS TO BECOME FULLY FAMILIAR WITH EXISTING CONDITIONS, ACCESS REQUIREMENTS, UTILITY SYSTEMS, EQUIPMENT, DIMENSIONS, CLEARANCES, AND OTHER FACTORS THAT MAY AFFECT THE WORK.

THE CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, PERMITS, TESTING, COORDINATION, DEMOLITION, MODIFICATIONS, INCIDENTAL WORK, AND MISCELLANEOUS ITEMS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE CODES, AND INDUSTRY STANDARDS.

SUBMISSION OF A BID SHALL CONSTITUTE ACKNOWLEDGMENT THAT THE CONTRACTOR HAS REVIEWED THE CONTRACT DOCUMENTS, VISITED THE SITE, INVESTIGATED READILY OBSERVABLE CONDITIONS, COORDINATED THE WORK WITH ALL TRADES, AND INCLUDED ALL REASONABLY INFERRABLE WORK NECESSARY FOR A COMPLETE INSTALLATION.

NO ADDITIONAL COMPENSATION SHALL BE REQUESTED FOR CONDITIONS, REQUIREMENTS, OR COORDINATION ISSUES THAT WERE REASONABLY DISCOVERABLE THROUGH REVIEW OF THE CONTRACT DOCUMENTS, PRE-BID MEETINGS, SITE VISITS, FIELD INVESTIGATIONS, OR INDUSTRY-STANDARD CONSTRUCTION PRACTICES.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER, IN WRITING, OF ANY DISCREPANCIES, CONFLICTS, CONCEALED CONDITIONS, CODE CONCERNS, OR CONDITIONS THAT MAY IMPACT THE COST, SCHEDULE, OR CONSTRUCTABILITY OF THE PROJECT UPON DISCOVERY.

THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR MEANS, METHODS, SEQUENCING, SAFETY, TEMPORARY SYSTEMS, CONSTRUCTION PROCEDURES, AND COORDINATION OF ALL SUBCONTRACTORS AND SUPPLIERS NECESSARY TO COMPLETE THE WORK.

EXISTING CONDITIONS AND VERIFICATION

THE CONTRACT DOCUMENTS ARE BASED UPON AVAILABLE RECORD INFORMATION AND LIMITED FIELD OBSERVATIONS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO CONSTRUCTION. FAILURE TO INVESTIGATE AND VERIFY EXISTING CONDITIONS THAT ARE REASONABLY ACCESSIBLE OR DISCOVERABLE PRIOR TO BIDDING SHALL NOT CONSTITUTE GROUNDS FOR A CHANGE ORDER, CONTRACT ADJUSTMENT, OR CLAIM FOR ADDITIONAL COMPENSATION.

ELECTRICAL EXISTING CONDITIONS NOTE

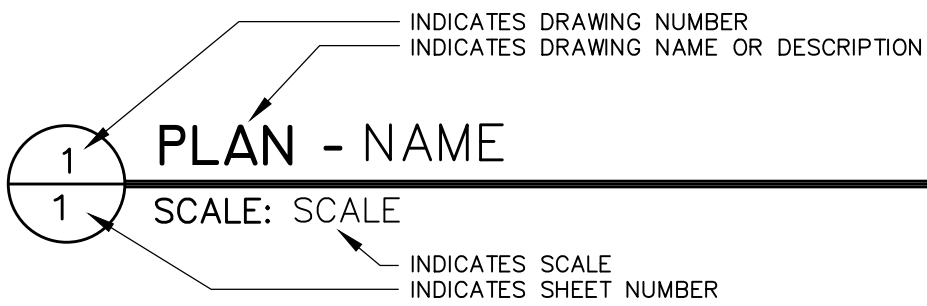
THE BUDGETARY CONSTRAINTS OF THIS PROJECT DO NOT ALLOW FOR UPDATES TO EXISTING ELECTRICAL DISTRIBUTION EQUIPMENT EXCEPT AS INDICATED/IMPLIED ON THE DRAWINGS. EXISTING ELECTRICAL EQUIPMENT, FEEDERS, BRANCH CIRCUITS, GROUNDING SYSTEMS, AND DEVICES SERVING THE AREA OF WORK ARE ASSUMED TO BE OPERATIONAL AND PROPERLY MAINTAINED BY THE OWNER.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL PERFORM A COMPREHENSIVE EVALUATION OF THE EXISTING ELECTRICAL SYSTEMS SERVING THE PROJECT AREA, INCLUDING VISUAL INSPECTION OF PANELS, FEEDERS, GROUNDING AND BONDING, CIRCUIT LOADING, AND EQUIPMENT CONDITION. ANY DEFICIENCIES, CODE VIOLATIONS, DAMAGED EQUIPMENT, INSUFFICIENT CAPACITY, OR UNSAFE CONDITIONS IDENTIFIED SHALL BE DOCUMENTED AND REPORTED IN WRITING TO THE ENGINEER AND OWNER PRIOR TO BEGINNING WORK.

DRAWINGS ARE BASED ON AVAILABLE RECORD INFORMATION AND LIMITED FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ENGINEER OF DISCREPANCIES PRIOR TO ORDERING MATERIALS OR COMMENCING INSTALLATION.

UNIT PRICING:

- ADD (1) 20 AMP DUPLEX RECEPTACLE AND FACEPLATE ON A DEDICATED CIRCUIT, INCLUDE (1) 20AMP SINGLE POLE BREAKER, BOX, PLATE, 3/4" CONDUIT AND (3) #12 WIRE APPROXIMATELY 100' IN LENGTH, INCLUDE ALL LABOR AND MATERIAL. \$_____
- ADD (1) EXIT LIGHT FIXTURE IN CEILING, CONNECT TO CIRCUIT, INCLUDE BOX, MOUNTING DEVICE, 3/4" CONDUIT AND (3) #12 WIRE APPROXIMATELY 50' IN LENGTH, INCLUDE ALL LABOR AND MATERIAL. \$_____
- ADD (1) EMERGENCY BATTERY LIGHT FIXTURE IN CEILING, CONNECT TO EXISTING CIRCUIT, INCLUDE BOX, MOUNTING DEVICE, 3/4" CONDUIT AND (3) #12 WIRE APPROXIMATELY 50' IN LENGTH, INCLUDE ALL LABOR AND MATERIAL. \$_____
- ADD (1) FIRE ALARM HORN/STROBE MOUNTED ON WALL, CONNECT TO EXISTING LOOP, INCLUDE HORN/STROBE, BOX, J-HOOKS, 15FT OF 3/4" CONDUIT (FOR STUB-UP) AND 100FT OF FIRE ALARM WIRE/CABLE, INCLUDE PROGRAMMING, TESTING, ALL LABOR AND MATERIAL. \$_____
- ADD (1) FIRE ALARM PULL STATION MOUNTED ON WALL, CONNECT TO EXISTING LOOP, INCLUDE PULL STATION, BOX, J-HOOKS, 15FT OF 3/4" CONDUIT (FOR STUB-UP) AND 100FT OF FIRE ALARM WIRE/CABLE, INCLUDE PROGRAMMING, TESTING, ALL LABOR AND MATERIAL. \$_____



ELECTRICAL DRAWING INDEX

SHEET #	DESCRIPTION
E0.0	COVER SHEET
E0.1	LOW VOLTAGE SPECIFICATIONS
E0.2	SYMBOL LEGENDS & ABBREVIATIONS
E1.0	ELECTRICAL DEMOLITION PLAN
E2.0	ELECTRICAL LIGHTING PLAN
E2.1	ELECTRICAL POWER PLAN
E2.2	ELECTRICAL FIRE ALARM PLAN
E3.0	ELECTRICAL RISER DIAGRAM
E3.1	ELECTRICAL SCHEDULES
E4.0	ELECTRICAL DETAILS
E4.1	ELECTRICAL DETAILS
E4.2	ELECTRICAL DETAILS

GENERAL ELECTRICAL LOW VOLTAGE NOTES & SPECIFICATIONS

Telecommunications Specifications and Requirements
Prepared by
Forsyth County Management Information Services
MAY 1, 2018 (And edited by CES with permission from Forsyth County on 06/01/2022)

1. Telecommunications Equipment Rooms and Closets
1.1. General
1.1.1. There shall be no other building services located in any of the Telecommunication Rooms (TR's) or Main Distribution Area (MDA), due to network security. Locate other services such as fire alarm control panels, security panels, Control Board panels, paging systems, etc., elsewhere in the building.
1.1.2. There shall be no transformers, water piping, VAV boxes, refrigerant piping, etc., located in the TR's, nor pass through TR's. If a wet sprinkler system is used in the facility, piping should not pass over racks, equipment; and mains should not pass through this room. Coordinate with G.C..
1.1.3. Expansion joints shall not run through the floor area of the TR rooms.
1.2. Main Distribution Area (MDA)
1.2.1. Provide one Main Distribution Area room to meet the requirements as detailed in this document. This room should be designed to support both voice and data communications.
1.2.2. Minimum MDA dimensions are 12' x 12'. A large building may require a larger MDA. Entrance conduits shall stub up in the MDA as close to a corner as possible.
1.3. Telecommunications Rooms (TR)
1.3.1. There should be a minimum of one Telecommunication Room (TR) per floor or the assurance that cabling to a communications outlet/workstation will not exceed 90 meters (295 feet). Multiple wiring closets may be required on each floor to meet this distance limitation. Each Telecommunication Room (TR) should have approximately 100 usable square feet.
1.3.1.1. A TR serving 50 work areas or 5000 sq. ft. must be at least 10'x 8' in size. (A typical work area is 10' x 10' or 100 sq. ft.)
1.3.1.2. A TR serving an area larger than 5000 sq. ft. and less than or equal to 8000 sq. ft. must be at least 10' x 9'.
1.3.1.3. A TR serving an area larger than 8000 sq. ft. and less than or equal to 10,000 sq. ft. must be at least 10' x 11'.
1.3.1.4. For a building where usable floor area served is much less than 5000 sq. ft., a small 8'x 6' TR is adequate.
1.3.2. Telecommunication Rooms (TR) shall be located in center of building and shall be stacked directly above and below each other floor to floor. TR's shall be located so that access is made directly from a public or common hallway. Access shall not interrupt normal business, workflow of occupants.
1.3.3. No other building services shall be located in the TR's, due to network security. Locate other services such as Fire Alarm panels, Security panels, CBord panels, paging systems, etc., elsewhere in the building.
1.3.4. The Telecommunication Rooms (TR) should be located away from any source of water damage. No water piping, refrigerant piping, VAV boxes, etc., should pass through or within the ceiling or floor of these rooms, including condensate pipes. No showers, toilets, or similar wet room areas shall be adjacent to or above this room except the required fire protection system. In addition the rooms shall be located away from electrical transformers, generators, air conditioning units (condensation) and radio transmission equipment. The TR's must be free from dust and any other airborne matter.
1.4. Room Access
1.4.1. The doors to the telecommunication rooms must open 180 degrees outward unless restricted by building code. They must be a minimum of 36" wide and 80" high with no door sill. For security reasons, doors shall be equipped with locks and/or controlled by access card key. Locks must be keyed to Forsyth County standard.
1.5. Room Lighting
1.5.1. Lighting must have a uniform intensity of 30 foot candles minimum when measured 3 feet from the finished floor. Indirect lighting is not permitted. Lighting fixtures must be on electrical circuits separate from the circuit that feeds the electrical outlets in the room. Do not place light fixture above equipment racks, cabinets, frames or other freestanding equipment to avoid flicking of light.
1.6. Floor, Wall, and Ceiling Covering
1.6.1. All walls must be lined with ¾" void free A-C grade (or better) plywood. The plywood must be fire retardant or treated with at least two coats of fire retardant paint on all sides. The plywood must be installed with the smooth (finished) side to the interior of the room. Use flush mounted fasteners. Use light colored paint to aid with lighting in the rooms.
1.6.2. Plywood shall be above electrical outlets and extend to above cable tray. No electrical conduits, junction boxes or any other equipment may be surface mounted on or across any backboard. Install plywood vertically at 24" AFF.
1.6.3. Drop ceiling or suspended ceiling is not permitted in any TR. The minimum acceptable ceiling height is 8.5'. It should be unobstructed to provide space over the equipment racks for suspended cable trays or horizontal ladder racks. Sprinkler heads must be provided with cages to prevent accidental operations. Drainage troughs must be provided under the sprinkler pipes to prevent leakage onto the equipment. Sprinkler heads must be as high as possible to avoid accidental operation from cable pulling activities. Forsyth County prefers no water suppression system in TR's.
1.7. Temperature, Humidity, and BTU
1.7.1. The telecommunications rooms (TR) will typically require continuous air conditioning to maintain room environmental conditions. The TR's require an independent temperature control unit or thermostat and dedicated cooling supply with condensate discharge outside of the TR's. The following room conditions must be maintained 24 hours a day, 7 days a week:
1.7.1.1. • Temperature: 66 °F to 78 °F
1.7.1.2. • Relative Humidity: 34% to 45% (non-condensing)
1.8. Electrical Requirements – Main Distribution Areas (MDA) & Telecommunications Rooms (TR)
1.8.1. In the Main Distribution Areas (MDA) & Telecommunications Rooms (TR) all electrical service should be delivered from the emergency power system if available. A minimum of two dedicated (separate circuits) unswitched 120V/20A quad outlets with dedicated neutrals are required for equipment power at the rack lineup, (two per rack).
1.8.2. They shall be installed on the overhead ladder racks or cable tray. The electrical panel will provide multiple 15 and or 20-amp circuit breakers as required by code and or defined equipment requirements. Each required electrical circuit will terminate near each data rack and or on every wall near each rack.
1.8.3. Depending on the room dimensions, the larger, most used wall will require additional convenience electrical circuits. All receptacles shall be quad (double duplex) and should be labeled with the electrical box and circuit ID locations. Additional convenience receptacles should be flush-mounted 12-inches above the finished floor. These duplex outlets shall be installed at 6-foot intervals around the room.
Emergency power should be utilized whenever possible. If there is a UPS and/or a generator in the building then every other convenience outlet in the TR's should be connected. All electrical outlets hooked to the generator must be red in color with red faceplates. Circuit ID to be labeled on faceplate.
1.8.4. Communications equipment such as a uninterruptible power source (UPS) may require specific branch breaker specifications as well as the terminating receptacle (typically NEMA 5–20R). These specific requirements will be provided during the construction stage.
1.9. Grounding/Bonding
1.9.1. Per ANSI/NECA/BICSI 607 and ANSI/EIA/TIA–607 requirements, the telecommunications grounding and bonding infrastructure shall be routed through each telecommunications space. Each telecommunications room shall be equipped with a Telecommunications Grounding Busbar (TGB) bonded directly to the Telecommunications Bonding Backbone (TBB). The busbars shall be a maximum of 12" and minimum of 6" in length, 2" in width and 1/4 thick. They shall be drilled and tapped to accommodate standard NEMA compliant grounding hardware. The TBB shall be a minimum of #6 AWG stranded copper grounding conductor and should be in conduits. All TBBs shall be tied to the telecommunications main grounding busbar (TMGB) located in the Main Distribution Area. The TMGB shall be bonded to the building system ground with a minimum of 3/0 AWG stranded copper bonding conductor (BC). The ohmic resistance to ground from any point in the telecommunications grounding system must not be more than 3 ohms. The bonding busbar shall have standoff insulators and wall mounting brackets.

1.9.2. Emergency power should be utilized whenever possible.
1.9.3. Power requirements shall be verified with the county before installation.

2. Telecommunications and Conduit and Raceway Specifications
2.1. Conduit System
2.1.1. Provide building entrance conduit systems per the serving Local Exchange Company (LEC) specifications based on the number of required cable pairs terminating at the Subscriber Loop Connection (SLC) and or the Minimum Point of Entry (MPOE) as dictated by the serving LEC. Provide two(2) 4-inch conduits and one(1) 2-inch conduit from the MPOE to the main communications room.
2.1.1.1. At least one of the 4"-conduits shall have have two 3X3 MaxCell MXD detectable installed. Each MaxCell is to have different color ID markings. MaxCell must be installed to manufacturer's instruction including the use of ball bearing swivels and the MaxWell's pull tapes must remain free floating throughout installation. (Plastic flexible inner duct not allowed). Number and sizing of conduits shall be determined on a per project basis.
2.1.2. All utility conduits (including when filled with MaxCell) are to have a pull rope (no strings) installed.
2.1.3. Hand holes are to be open bottom (on top of 4"of rock), with a minimum size of 30"X 48", cover labeled "Communications". Cover to have pull slot with center pin.
2.1.4. If the project consists of more than one building, a conduit system must be provided from the Main Distribution Area to the serving Main Distribution Area of that building. The conduit to each building must be sized according to the number of communications outlets in the building and to support a 50% growth factor.
2.1.5. The conduit systems must adhere to the standards as described by the National Electrical Code (NEC) and all local building codes and ordinances.
2.2. Structured Network Cabling Conduit
2.2.1. Conduit used for network cabling shall not be longer than 100 feet between pull points or contain more than (2) 90-degree bends between pull points. Bends beyond 100-degrees shall be replaced with a pull box. Flexible metal conduit shall not be used for network cabling.
2.2.2. Conduits shall be clean, free of debris and water, unobstructed. Reamed and fitted with bushings, bonded to ground as required by code, capped for protection and equipped with a plastic or nylon pull line rated at 200lb. Seal conduits with pliable / non-hardening duct seal to keep out rodents and moisture.
2.2.3. Firestopping around the outside of the conduits shall be elastomeric (permanent). Firestopping inside the conduit shall be pliable putty (removable). Conduits must be available for re-entry for future cabling without "digging out"hardened fire stop.
2.2.4. Before any terminations and installation of equipment, the TR must be in its finished stage. Free of dust and debris with all walls and ceiling painted to finish coat and floors installed or treated. This shall include lighting and functioning HVAC system to maintain environmental conditions. Temporary units must be approved by Forsyth County MIS prior to installation and must maintain the same environmental standards. This will need to be coordinated with the building / project schedule for Fire Alarm, Elevator, Building Automation Systems and Access Controls testing, inspections and certifications.
Contractor is responsible for dust, debris and moisture. After terminations and equipment are installed, the TR's door must be kept closed and locked at all times.
2.3. Riser Conduits
2.3.1. Provide a conduit system for the delivery of all cable from the main distribution area to each telecommunications room. The conduit system must be sized to meet a 50% growth factor and accommodate the usable square footage in support of workstation growth. A minimum of (4) 4-inch vertical riser conduits or sleeves are required between TR's. They must be installed as close to a corner in the TR as possible. Label conduits at both ends.
2.4. Cable Tray
2.4.1. It is important that the path for the cable tray and/or J-hooks is clear of obstructions, such as HVAC ducts, large pipes and structural beams within the building. Where fire or smoke barriers are penetrated by the cable tray, they shall be fire stopped to maintain the rating of the barrier. Alternatively, conduit sleeves may be used through the penetrations which must be fire stopped as well. The number of sleeves required depends on the number of cables and size of the tray. Use 50% fill ratio to determine the number of sleeves. Two additional spare sleeves should be installed to accommodate future cable placement. Forsyth County prefers B-Line cable baskets and EZpath sleeves.
2.4.2. Place cable trays and/or above drop ceilings in corridors. Do not place them above offices or inaccessible spaces. Cable trays shall run flat and level with minimal rise and fall in elevation along the entire run. There must be at least 4 inches of vertical space between the suspended ceiling tile and the bottom of the cable tray; 12 inches of vertical clearance from the top of the cable tray is required; and 2' total side clearance (meaning, if the cable tray is wall mounted and there is no clearance on one side, then minimum clearance on the other side should be 2').
2.4.3. Access ceiling panels must be installed at 10-foot intervals and at every junction and turn if cable tray is passing through a hard-lid ceiling. The panels should be within 2 feet from the cable tray. They shall not be mounted directly underneath the cable tray.
2.4.4. No other building services cabling shall be located in the cable tray. Locate all other services cabling such as Fire Alarm cabling, Security cabling, audio/visual cabling, etc., in separate cable pathways.
2.4.5. Provide conduits back to TC room where cable tray and J-hooks are not provided.
2.5. Telecommunication Outlets (TO)
2.5.1. A standard telecommunications outlet (TO) requires a double gang box, 4 11/16" x 4 11/16" x 3 1/2" deep. It shall be mounted flush in the wall at the same height as the convenience electrical outlet: 18" AFF. Conduit shall be stubbed 6"above ceiling with pull string. Install single gang mud ring and double gang box. Conduit size shall be minimum of 1", or greater based on 40% fill ratio for Berk-Tek LANmark–XTP Category 6A CMP (plenum) rated cable. (Locations requiring multiple devices may require a 2-inch conduit or greater.)
2.0.1. Placement of TO's for wireless access points must be closely coordinated with Forsyth County IT.
2.0.2. Conduits or J-hooks to floor-mounted TO's shall be run to the nearest cable tray or TC room preferably in the ceiling below the outlets or run to the TR on the same floor as the outlet. Cables must be home run to the nearest TR on the same floor as the TOs.

3. Telecommunications Wiring and Termination
3.1. Horizontal Telecommunications Wiring
3.1.1. Provide all cabling and cable termination equipment to support the voice and data communications within the facility. Cable requirements consist of two data cables per Work Area (WA). Each cable must have the following characteristics: Non-stranded, 4-pair, unshielded twisted pair (UTP), plenum Category 6A. The data cable will conform to most recent EIA/TIA 568B standards and specifications and T568B jack/pin wire assignments.
3.2. Placement of Work Area (WA) Outlet
3.2.1. Provide one Work Area (WA) outlet to the specified workspace. If this workspace has usable square footage to accommodate an additional workspace then two Work Area (WA) outlets shall be installed.
3.3. Horizontal Cable Routing
3.3.1. All data cable installed at the Work Area (WA) must run within one inch conduit (stub up) inside the wall, originating from the double duplex box to the overhead plenum. The data cables shall run together using a common raceway within the plenum ceiling between the Work Area (WA) and the serving Telecommunications room (TR). All cabling, including floor box outlets, must run to TR serving the floor associated with the outlet, unless otherwise indicated.
3.4. Horizontal Cable Length
3.5. Horizontal cable shall not exceed 90 meters (295 feet) between the outlet location and the telecommunications wiring closet. Each cable shall be long enough to accommodate 3m (10ft) of cable slack at the outlet location and 3m (10ft) of slack in the wiring closets all within 90 meters.
3.6. Data Cable Specifications
3.6.1. Provide two, 4–pair, UTP, non–stranded, Category 6A cables adhering to the EIA/TIA 568B standard from the main distribution area (MDA) or the telecommunication rooms (TR) to each Work Station (WS)
outlet. Additional wiring requirements will be needed for conference, reception, secretarial, and community work areas in support of peripheral devices, such as printers, facsimiles or modems, fire alarm control panels, security systems, HVAC controls, elevator controls,etc..

3.1. Fire Safety

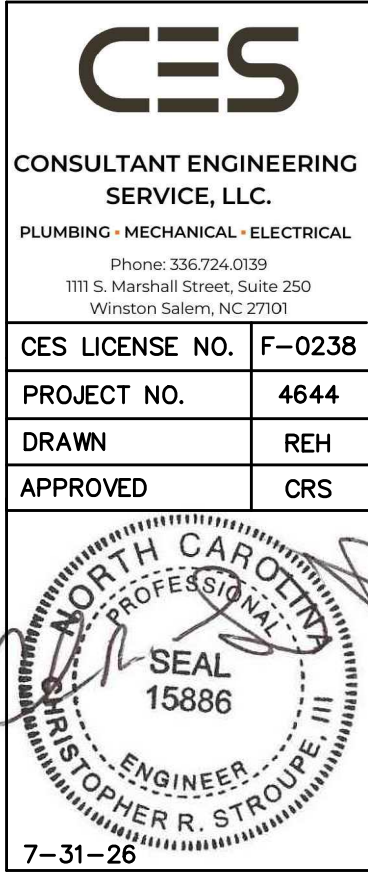
3.1.1. All cable must meet or exceed local and national fire and building code requirements
3.2. Horizontal Cable Termination
3.2.1. Data Termination Device at Receptacle
3.2.2. Provide one communications faceplate to be installed onto the single gang mud plate on the double duplex box. The proposed modular faceplates will be field upgradeable in support of other horizontal cable requirements, such as fiber optic and coaxial cable. Manufacture and model of all proposed faceplates and jacks must be approved by Forsyth County.
3.3. Data Terminating Device at Telecommunications Rooms (TR)
3.3.1. Manufacture and model of all proposed termination equipment must be approved by Forsyth County. The data cables will be punched down to 110 style connectors on the back of, Cat 6A, RJ45 patch panels.
The capacity of the patch panels (48 port) will be sized during the construction stage. The patch panel must conform to EIA/TIA 568B wiring standards. The layout of patch panels and data devices will be defined during the construction stage.
3.4. Data Termination Specifications at Telecommunication Rooms (TR)
3.4.1. The wiring to the patch panel must comply with EIA/TIA568B wiring standards. Patch cords connecting the patch panel to the data Layer 2 switch must also be EIA/TIA 568B compliant. Horizontal and vertical cable managers must also be provided for a neat and functional rack system.
3.5. Data Rack system
3.5.1. Data communications cabinets shall be sized to accommodate immediate cable requirement plus 25% growth. Fiber terminations will be installed at the top of both racks in an appropriate size rack-mounted fiber patch panel using an LC termination/interface.
3.5.2. Two-post relay racks shall be 45 U in height, three (3) inches deep and include 19"EIA Universal Rail Spacing, 1–3/4"height U spaces, #12–24 threaded mounting holes, Marked and numbered U spaces black in color. Each rack shall include:
3.6. Horizontal Cable Managers
3.6.1. 2RU Horizontal cable managers with extended fingers shall be placed above and below each patch panel.
3.7. Vertical Cable Managers
3.7.1. 10"Front and rear vertical cable managers shall be placed between each equipment rack and 6"front and rear vertical cable managers on each end of the equipment rack set. Install dividers in each vertical cable manager.
3.7.2. 12"ladder rack shall be installed in Telecommunication Rooms as specified and approved by the owner and installed by the cabling contractor including all miscellaneous parts required for a complete ladder rack system surrounding the room for a complete ladder rack system. Tie in the ladder tray to the cable basket tray system. Install ladder tray 12 inches above equipment racks utilizing threaded rod to provide a waterfall for the cabling.
3.8. Vertical Telecommunications Wiring
3.8.1. Provide all cabling and cable termination equipment to support the voice and data communications requirements from the local exchange company LEC MPOE to the main distribution area. Provide vertical cable and termination equipment from the main distribution area to all telecommunications rooms on each floor.
3.9. Placement of MDA and TR's
3.9.1. All cable for voice/data circuits from the LEC MPOE leading to the main main distribution area (MDA) shall terminate as required.
3.10. Optic Fiber Riser Cables – Armored Plenum Cable
3.10.1. The backbone fiber cable shall be Multimode type (50/125um OM4) and Single mode Type (9/125um OM4) based on requirements. Multimode optical fiber cables shall meet all of the requirements delineated within specifications of ANSI/TIA/EAI 568B and ISO/IEC 11801. Fiber cables shall be 100% for attenuation and length. Length shall be tested using and OTDR optical length test measurement device. The maximum cable length for Multimode fiber is 550 meters. Attenuation shall be tested at 850nm and 1300 nm for 62.5/125um Multimode inat least one direction using the 2 jumper method.
3.10.2. The contractor will provide documentation including test results on each fiber and the test equipment utilized.
3.10.3. Separate Single Mode (SM) and Multimode (MM) fiber optic cables shall be used for the vertical backbone. All fiber optic cables shall be enclosed in inner duct from relay rack to relay rack.
3.10.3.1. MM –There shall be one (1) 24-strand OM4 MM riser cable pulled from the MDA to each TR. In the MDA and TR's terminate the MM fiber optic cable riser cables on a rack mounted LIU with LC fiber connectors, adaptor plates and blanks.
3.10.3.2. SM –There shall be one (1) 12-strand SM riser cable pulled from the MDA to each TR. In the MDA and TR's terminate the SM fiber optic cable riser cables on a rack mounted LIU with LC fiber connectors, adaptor plates and blanks.
3.10.4. There shall be two (2) 25–pair Category 5e copper riser cables pulled from the MDA to each TR.
3.10.5. In the MDA terminate the copper riser cables from each TR on a wall mounted Category 5e 25–pair 110 split blocks with legs. Mount these 110 blocks beside the LEC's MOPE termination point.
3.10.6. In each TR terminate the copper riser cables from the MDA to a rack mounted Category 5e 48–port patch panel. The pinout for the 8P8C modular jack will be Tip1/pin5 and Ring1/pin4. Each port of the 48 ports on the patch panel will use this configuration.
3.11. Fire Safety
3.11.1. All cable must meet or exceed local and national fire and building code requirements.
3.12. Labeling Specifications (Overview)
3.12.1. All cables will be identified using a machine generated adhesive label at the workstation terminations, at the TR terminations, at the MDA terminations and all cross-connect cable terminations. All labels will be clearly marked and securely adhered to the cover. An example of a cable/location number shall contain the following elements:Room Number, Patch Panel Letter, and Port Number on the Patch Panel. An example of a cable originating from Room 3122, Patch Panel D, and Port Number 14 shall be labeled as follows: 3122–D–14.
3.13. Cable Test and Verification
3.13.1. Category 6A UTP Testing
3.13.1.1. At the completion of the installation and termination of all voice and data wiring in each building, all cable must be tested(Permanent Link). Testing will verify for proper operation per specifications listed below, and documented.
3.13.1.2. A twisted pair transmission analyzer will be used for all data cable to confirm bi-directional compliance with EIA/TIA 568B standards and 10G Base–T Ethernet, recording the test results per cable pair.
3.13.2. Verification
3.13.2.1. Provide Forsyth County staff an electronic copy of the results of all cable testing. The installer will be responsible for the repair and/or replacement of any cable that does not meet specifications.
The contractor will provide documentation including test results on each fiber and the test equipment utilized. Contractual obligations will not be complete until all cables/fiber etc., achieve manufacturer's specifications or higher. Network services or network components will not be installed until all cable test results are complete.

DEFINITIONS:
ER: Entrance Room (Carrier equipment & demarcation) (may be in MDA)
MDA: Main Distribution Area (Main computer room/cross connect for entire building)
TR: Telecommunications Room (Horizontal cross-connect room for individual floors)
WA: Work Area (Minimum one per room)
TO: Telecommunications Outlets/Connectors (Minimum two connectors per WA)
LEC: Local Exchange Company
MPOE: Minimum Point of Entry
SLC: Subscriber Loop Connection
EIA: Electronic Industries Alliance.
TIA: Telecommunications Industry Association
TMGB: Telecommunications Main Grounding Busbar
TBB: Telecommunications Bonding Backbone
MM: Multi Mode Fiber
SM: Single Mode Fiber

PETERSON / GORDON

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Forsyth County Health Department

Dental Suite Alteration

Winston-Salem, NC

Comm. No. 25–380

Date 7–31–26

Drawn By

E0.1

ELECTRICAL ABBREVIATIONS			
ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
1P	ONE POLE	LTG	LIGHTING
2P	TWO POLE	LV	LOW VOLTAGE
3P	THREE POLE		
4P	FOUR POLE	MAU	MAKE-UP AIR UNIT
A	AMPERE	MAX	MAXIMUM
AC	ALTERNATING CURRENT	MCB	MAIN CIRCUIT BREAKER
AF	AMP FRAME	MCC	MOTOR CONTROL CENTER
AFCI	ARC-FAULT CIRCUIT INTERRUPTER	MDR	MAIN DISTRIBUTION PANEL
AFF	ABOVE FINISHED FLOOR	MISC	MISCELLANEOUS
AFG	ABOVE FINISHED GRADE	MFR	MANUFACTURER
AHU	AIR HANDLING UNIT	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED
AL	ALUMINUM	N/A	NOT APPLICABLE
AMP	AMP TRIP	NC	NORMALLY CLOSED
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRICAL CODE
AWG	AMERICAN WIRE GAUGE	NF	NON-FUSED
		NIC	NOT IN CONTRACT
C	CONDUIT	NO	NORMALLY OPEN
CATV	CABLE TELEVISION	P	NUMBER
CB	CIRCUIT BREAKER	NTS	NOT TO SCALE
CKT	CIRCUIT		
CU	COPPER	PB	POLE
		PC	PULL BOX
DC	DIRECT CURRENT	PH	PLUMBING CONTRACTOR
DISC	DISCONNECT	PNL	PHASE
DWG	DRAWING	PNL	PANEL(BOARD)
		PIV	POST INDICATING VALVE
EC	ELECTRICAL CONTRACTOR	PP	POWER PANEL
EF	EXHAUST FAN	PRI	PRIMARY
EMER	EMERGENCY	PVC	PRIMARY
EOL	END OF LINE	PWR	POLYVINYL CHLORIDE CONDUIT
ETR	EXISTING TO REMAIN		
EWG	ELECTRIC WATER COOLER	RE	REMOVE EXISTING
EWH	ELECTRIC WATER HEATER	REC	RECESSED
EXIST	EXISTING	RECP	RECEPTACLE
		REF	REFRIGERATOR
F	FLUSH	RL	RELOCATE EXISTING
FA	FIRE ALARM	RM	ROOM
FBO	FURNISHED BY OTHERS	RMC	RIGID METAL CONDUIT
FC	FIRE PROTECTION CONTRACTOR	RTU	ROOFTOP UNIT
FCU	FAN COIL UNIT		
FIXT	FIXTURE	S	SURFACE MOUNTED
FLA	FULL LOAD AMPS	SCH	SCHEDULE
FLEX	FLEXIBLE	SEC	SECONDARY
FLR	FLOOR	SP	SPARE
FMC	FLEXIBLE METALLIC CONDUIT	SPKR	SPEAKER
FURN	FURNITURE	SS	STAINLESS STEEL
FWE	FURNISHED WITH EQUIPMENT	SUSP	SUSPENDED
		SW	SWITCH
GC	GENERAL CONTRACTOR	SWBD	SWITCHBOARD
GEN	GENERATOR	SWGR	SWITCHGEAR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER		
GFFE	GROUND FAULT PROTECTION EQUIP.	TC	TELECOM CABINET
GND	GROUNDING	TEL	TELEPHONE
GRC	GALVANIZED RIGID CONDUIT	TV	TELEVISION
HP	HORSEPOWER	TYP	TYPICAL
HV	HIGH VOLTAGE		
HVAC	HEATING, VENTILATING, AIR CONDIT.	UC	UNDER COUNTER
HW	HOT WATER	UH	UNIT HEATER
HZ	HERTZ (CYCLE) PER SECOND	UON	UNLESS OTHERWISE NOTED
		UPS	UNINTERRUPTIBLE POWER SOURCE
IAM	INDIVIDUAL ADDRESSABLE MODULE	UTP	UNSHIELDED TWISTED PAIR
IG	ISOLATED GROUND	V	VOLT
IMC	INTERMEDIATE METAL CONDUIT	Y	WYE
IPS	INTERRUPTIBLE POWER SUPPLY	W	WAITT
IR	PASSIVE INFRARED	W	WITH
		WP	WEATHERPROOF
JB	JUNCTION BOX		
KCMIL	THOUSAND CIRCULAR MILS	XFMR	TRANSFORMER
KVA	KILOVOLT AMPERE	XP	EXPLOSION PROOF
KVAR	KILOVOLT AMPERE REACTIVE		
KW	KILOWATT	+80	MOUNTING UNITS TO BOTTOM ABOVE FINISHED FLOOR OR GRADE
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT		
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT		

COMMUNICATIONS	
SYMBOL	DESCRIPTION
	TELEPHONE OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING.
	TELEPHONE OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 46" ABOVE FINISHED FLOOR, OR 6" ABOVE DESK, COUNTERTOP, OR BACKSPLASH UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING.
	DATA OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING. #: INDICATES NUMBER OF DROPS.
	DATA OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 46" ABOVE FINISHED FLOOR, OR 6" ABOVE DESK, COUNTERTOP, OR BACKSPLASH UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING.
	COMBINATION TELEPHONE/DATA OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING.
	COMBINATION TELEPHONE/DATA OUTLET. MOUNT IN 4"x4"x2-1/8" GALVANIZED BOX FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES, CENTER VERTICALLY 46" ABOVE FINISHED FLOOR, OR 6" ABOVE DESK, COUNTERTOP, OR BACKSPLASH UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS. PROVIDE WITH 3/4"C TO ABOVE ACCESSIBLE CEILING.

WIRING & RACEWAY	
SYMBOL	DESCRIPTION
	CONDUIT SLEEVE
	BASKET TYPE CABLE TRAY
	HOMERUN, 120/1? DR 277V/1?. VERIFY PRIOR TO ROUGH-IN
	HOMERUN, 208V/2? WITH NEUTRAL. VERIFY PRIOR TO ROUGH-IN
	HOMERUN, 208/2? DR 480V/2?. VERIFY PRIOR TO ROUGH-IN
	HOMERUN 208/3? DR 480V/3?. VERIFY PRIOR TO ROUGH-IN
	MULTIPLE ARROWS INDICATES MULTIPLE BRANCH CIRCUITS
	20A, 277/1? HOT WIRE.
	20A, 277/1? SWITCH LEG WIRE.
	UNDERGROUND/UNDER CONCRETE SLAB BRANCH CIRCUIT
	LDW VOLTAGE WIRE <12V>
	LIFE SAFETY CIRCUIT

LIGHTING	
SYMBOL	DESCRIPTION
	RECESSED, SURFACE, OR WALL MOUNTED LIGHT FIXTURE CONNECTED TO NORMAL POWER BRANCH CIRCUIT. SEE THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	RECESSED, SURFACE, OR WALL MOUNTED LIGHT FIXTURE CONNECTED TO LIFE SAFETY BRANCH CIRCUIT. SEE THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	SUSPENDED, SURFACE OR WALL MOUNTED LIGHT FIXTURE CONNECTED TO BOTH NORMAL AND EMERGENCY POWER BRANCH CIRCUITS. SEE THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	CEILING MOUNTED EXIT SIGN CONNECTED UNSWITCHED TO INDICATED BRANCH CIRCUIT. SHADED AREA INDICATES FACE WITH DIRECTION ARROWS AS SHOWN. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	WALL MOUNTED EXIT SIGN CONNECTED UNSWITCHED TO INDICATED BRANCH CIRCUIT. SHADED AREA INDICATES FACE WITH DIRECTION ARROWS AS SHOWN. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	EMERGENCY BATTERY UNIT WITH LUMINARIES HEADS. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	SINGLE, DOUBLE, AND QUAD POLE MOUNTED SITE LUMINAIRE. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	BOLLARD TYPE SITE LUMINARIES. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
	POWER PACK
	OCCUPANCY SENSOR

SECURITY	
SYMBOL	DESCRIPTION
	SECURITY CAMERA. "WP" - WEATHER-PROOF EXTERIOR CAMERA.
	DOORBELL.
	ELECTRIC DOOR STRIKE.
	INTERCOM UNIT.
	SECURITY MOTION DETECTOR.
	SECURITY DOOR ALARM MAGNETIC LOCK.
	SECURITY CARD READER. "WP" INDICATES WEATHER PROOF.
	SECURITY CONTROL PANEL.
	SECURITY DOOR CONTACTS.
	SECURITY PUSH BUTTON.
	SECURITY KEYPAD.
	SECURITY INFRA-RED DETECTOR.
	SECURITY ULTRASONIC DETECTOR.
	SECURITY DOOR ALARM.
	SECURITY PANIC BAR.

ELECTRICAL EQUIPMENT	
SYMBOL	DESCRIPTION
	DISCONNECT SWITCH, UNFUSED TYPE, SIZE AS INDICATED ON DRAWINGS. "xxA" INDICATES AMPERAGE.
	DISCONNECT SWITCH, FUSED TYPE, SIZE AS INDICATED ON DRAWINGS. "xxAF" INDICATES FRAME SIZE. "xxAT" INDICATES TRIP SIZE.
	ENCLOSED CIRCUIT BREAKER, SIZE AS INDICATED ON DRAWINGS. "xxAF" INDICATES FRAME SIZE. "xxAT" INDICATES TRIP SIZE.
	MAGNETIC MOTOR STARTER. "RV" INDICATES REDUCED VOLTAGE. STARTER SIZE AS INDICATED.
	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH. STARTER SIZE AND FUSE RATING AS INDICATED.
	EQUIPMENT CONTROL PANEL
	EMERGENCY POWER SHUNT TRIP
	PUSHBUTTON
	ON/OFF PUSHBUTTON
	THREE FUNCTION PUSHBUTTON SWITCH (UP/DOWN/STOP)
	HAND/OFF/AUTOMATIC SELECTOR SWITCH

ELECTRICAL SITE UTILITIES	
SYMBOL	DESCRIPTION
	UNDERGROUND FEEDER.
	UNDERGROUND TELEPHONE.
	UNDERGROUND FIRE ALARM.
	UNDERGROUND TELEVISION (CATV).
	ABOVE GROUND POLE MOUNTED ELECTRICAL.
	ABOVE GROUND POLE MOUNTED TELEPHONE.
	ABOVE GROUND POLE MOUNTED FIRE ALARM.
	ABOVE GROUND POLE MOUNTED TELEVISION (CATV).
	MANHOLE.
	HANDHOLE.
	UTILITY POLE. "Pxxxx" INDICATES POLE NUMBER.

IT SYMBOLS	
SYMBOL	DESCRIPTION
	I.T. RACK
	SOUND SYSTEM AMPLIFIER
	SOUND SYSTEM MIXER
	ASSISTED LISTENING SYSTEM
	RESCUE SYSTEM
	FIRE SERVICE OR EMERGENCY TELEPHONE ACCESSIBLE
	INTERCOM SUBSTATION
	DOOR BUZZER AND DOOR BELL
	SPEAKER FOR INTERCOM SYSTEM(CEILING/WALL MOUNT)
	RECESSED FLOOR BOX WITH MICROPHONE CONNECTION
	DESKTOP MICROPHONE
	WIRELESS ACCESS POINT
	LIGHTWEIGHT LOUDSPEAKER
	OMNIDIRECTIONAL 2'x2' CEILING SPEAKER ARRAY

SWITCHES	
SYMBOL	DESCRIPTION
	120/277 VOLT, 20 AMP, SINGLE-POLE, FEDERAL SPECIFICATION GRADE SWITCH. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS. SUBSCRIPTS INDICATION: <D> DIMMER, <P> PILOT LIGHT, <DS> DUAL TECHNOLOGY OCCUPANCY SENSOR.
	TWO 120/277 VOLT, 20 AMP, SINGLE-POLE, FEDERAL SPECIFICATION GRADE SWITCHES. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS. ONE SWITCH SHALL CONTROL INSIDE LAMPS IN EACH FIXTURE. THE OTHER SWITCH SHALL CONTROL OUTSIDE LAMPS IN EACH FIXTURE.
	2-POLE, SINGLE THROW SWITCH. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS.
	120/277 VOLT, 20 AMP, THREE WAY, FEDERAL SPECIFICATION GRADE SWITCH. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS.
	120/277 VOLT, 20 AMP, FOUR WAY, FEDERAL SPECIFICATION GRADE SWITCH. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED OR REQUIRED BY SITE CONDITIONS.
	120/277 VOLT, 20 AMP, KEY OPERATED, FEDERAL SPECIFICATION GRADE SWITCH. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR TO CENTER UNLESS OTHER NOTED OR REQUIRED BY SITE CONDITIONS.
	MOTOR RATED CONTACT SWITCH WITH POLES AS REQUIRED. MOUNT FLUSH VERTICALLY 46" ABOVE FINISHED FLOOR OR WITHIN SITE OF MOTOR U.O.N. OR REQUIRED BY SITE CONDITIONS.

RECEPTACLES	
SYMBOL	DESCRIPTION
	125 VOLT, 20 AMP, 3 WIRE, GROUNDING TYPE, FEDERAL SPECIFICATION GRADE, DUPLEX RECEPTACLE. TAMPER RESISTANT. MOUNT FLUSH IN 4"x4"x2-1/8" GALVANIZED BOX. MOUNT VERTICALLY 16" ABOVE FINISHED FLOOR TO THE BOTTOM UNLESS OTHERWISE NOTED. GROUND SLOT TO FACE UP.
	125 VOLT, 20 AMP, 3 WIRE, GROUNDING TYPE, FEDERAL SPECIFICATION GRADE, DOUBLE DUPLEX RECEPTACLE. TAMPER RESISTANT. MOUNT FLUSH IN 4"x4"x2-1/8" GALVANIZED BOX. MOUNT VERTICALLY 16" ABOVE FINISHED FLOOR TO THE BOTTOM UNLESS OTHERWISE NOTED. GROUND SLOT TO FACE UP.
	125 VOLT, 20 AMP, 3 WIRE, GROUNDING TYPE, FEDERAL SPECIFICATION GRADE, DOUBLE DUPLEX RECEPTACLE. TAMPER RESISTANT. MOUNT FLUSH IN 4"x4"x2-1/8" GALVANIZED BOX. FLOOR MOUNT RECESSED WITH FLOOR BOX COVER UNLESS OTHERWISE NOTED. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
	125V, 250V, 277V, 480V OR 600, 2 3 OR 4 WIRES, GROUNDING TYPE, FEDERAL SPECIFICATION GRADE, SPECIAL NEMA RECEPTACLE. MOUNT FLUSH IN 4"x4"x2-1/8" GALVANIZED BOX. WALL MOUNT RECESSED. REFER TO FLOOR PLANS FOR SPECIFIC NEMA PLUG TYPE.
	100V TO 250V, 4 WIRES CORD AND PLAY, GROUNDING TYPE, FEDERAL SPECIFICATION GRADE, SPECIAL NEMA RECEPTACLE. MOUNT FLUSH IN 4"x4"x2-1/8" GALVANIZED BOX. WALL MOUNT RECESSED. REFER TO FLOOR PLANS FOR SPECIFIC NEMA PLUG TYPE. GROUND SLOT TO FACE UP.
	STUB UP CONDUIT <SIZE AS SCHEDULED> FOR DIRECT CONNECTIONS. REFER TO PANEL SCHEDULES FOR CONDUIT SIZES.

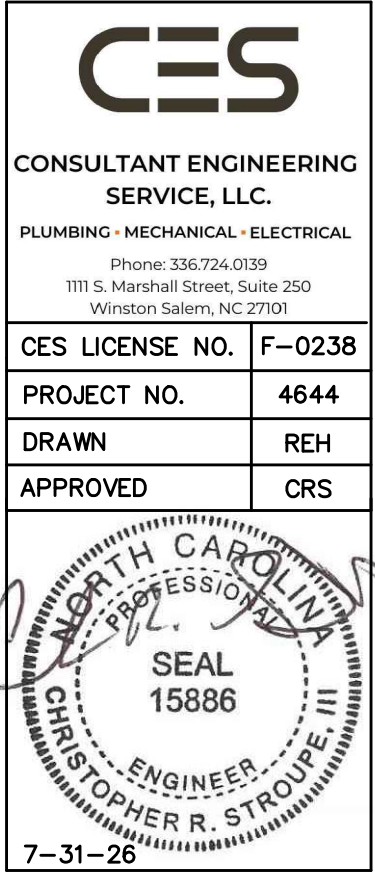
FIRE ALARM	
SYMBOL	DESCRIPTION
	KEY REPOSITORY (KNOX BOX).
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL.
	FIRE ALARM TERMINAL CABINET
	INDIVIDUAL ADDRESSABLE MODULE
	FIRE ALARM DOOR HOLDER AND OUTLET BOX.
	FIRE ALARM STROBE IN OUTLET BOX. MOUNT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER. C=CEILING MOUNTED, CD=CANDELA RATING/SETTING.
	FIRE ALARM SPEAKER IN OUTLET BOX. MOUNT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER. C=CEILING MOUNTED, W=WATTAGE.
	FIRE ALARM STROBE IN OUTLET BOX. MOUNT FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES. MOUNT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER. *CD INDICATES CANDELA RATING.
	FIRE ALARM COMBINATION HORN/STROBE IN OUTLET BOX. MOUNT FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES. MOUNT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER. *CD INDICATES CANDELA RATING.
	FIRE ALARM SPEAKER IN OUTLET BOX. MOUNT FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES. MOUNT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER.
	MANUAL FIRE ALARM PULL STATION IN OUTLET BOX. MOUNT FLUSH IN FINISHED SPACES OR SURFACE IN UNFINISHED SPACES. CENTER 46" ABOVE FINISHED FLOOR, AND WITHIN 5 FEET OF DOOR, UNLESS OTHERWISE NOTED.
	CEILING MOUNTED SMOKE DETECTOR IN OUTLET BOX. SUBSCRIPT "ER" INDICATES FOR ELEVATOR RECALL. MOUNT SMOKE DETECTORS 3 FEET MINIMUM FROM HVAC SYSTEM SUPPLY/RETURN DIFFUSERS.
	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR.
	CEILING MOUNTED CARBON MONOXIDE DETECTOR CONNECTED TO THE FIRE ALARM SYSTEM.
	FIRE ALARM CEILING MOUNTED HEAT DETECTOR AND OUTLET BOX.
	SPRINKLER SYSTEM WATER FLOW SWITCH PROVIDED AND INSTALLED BY THE SPRINKLER CONTRACTOR. FIRE ALARM CONTRACTOR SHALL CONNECT TO THE FIRE ALARM SYSTEM.
	SPRINKLER SYSTEM TAMPER SWITCH PROVIDED AND INSTALLED BY THE SPRINKLER CONTRACTOR. FIRE ALARM CONTRACTOR SHALL CONNECT TO THE FIRE ALARM SYSTEM.
	FIREMAN'S PHONE.
	FIRE ALARM BELL.

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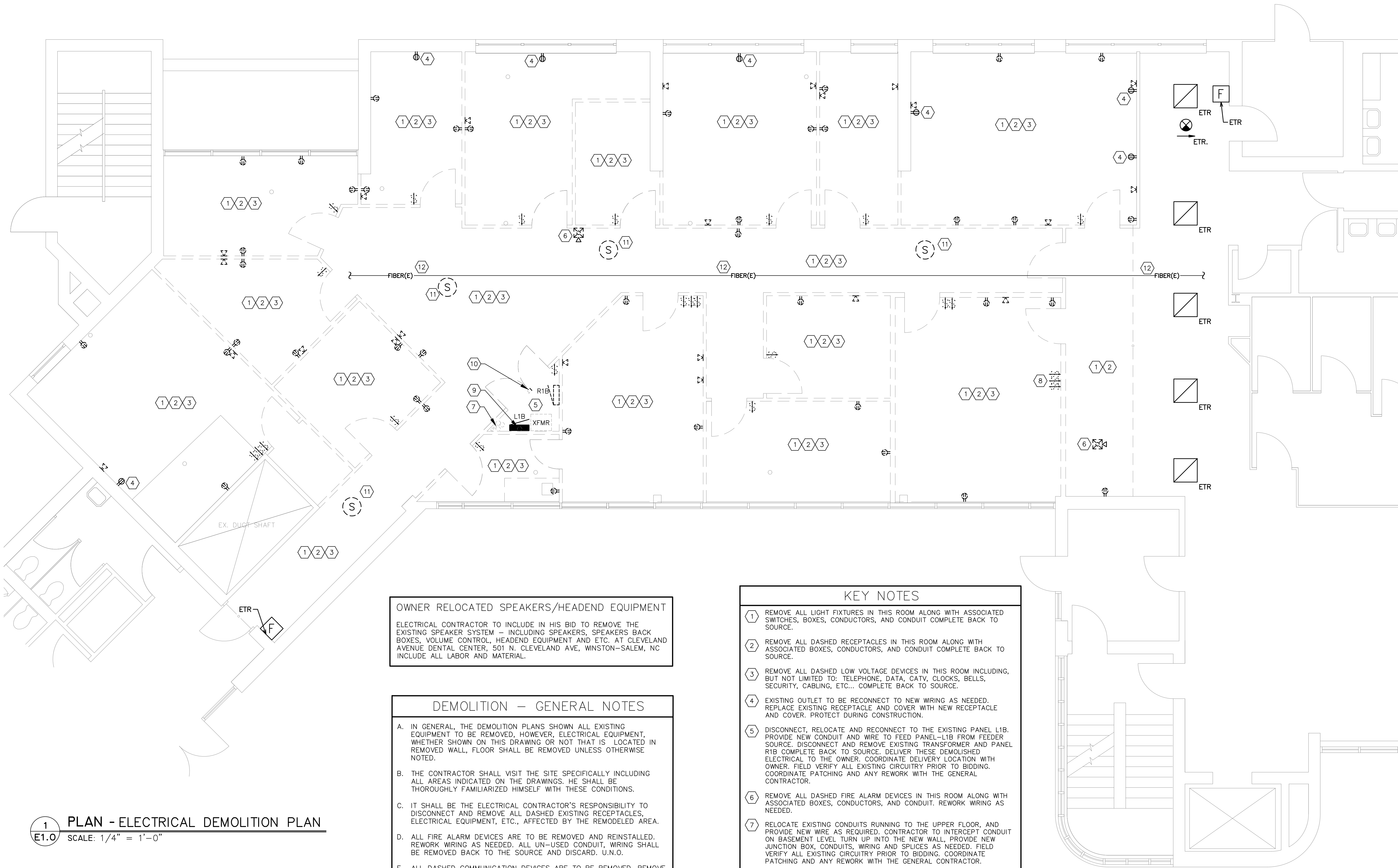
Comm. No. 25-380

Date 7-31-26

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E0.2

ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE USED ON THIS PROJECT



1
E1.0 **PLAN - ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"

OWNER RELOCATED SPEAKERS/HEADEND EQUIPMENT

ELECTRICAL CONTRACTOR TO INCLUDE IN HIS BID TO REMOVE THE EXISTING SPEAKER SYSTEM – INCLUDING SPEAKERS, SPEAKERS BACK BOXES, VOLUME CONTROL, HEADEND EQUIPMENT AND ETC. AT CLEVELAND AVENUE DENTAL CENTER, 501 N. CLEVELAND AVE, WINSTON-SALEM, NC INCLUDE ALL LABOR AND MATERIAL.

- DEMOLITION – GENERAL NOTES**
- IN GENERAL, THE DEMOLITION PLANS SHOWN ALL EXISTING EQUIPMENT TO BE REMOVED, HOWEVER, ELECTRICAL EQUIPMENT, WHETHER SHOWN ON THIS DRAWING OR NOT THAT IS LOCATED IN REMOVED WALL, FLOOR SHALL BE REMOVED UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR SHALL VISIT THE SITE SPECIFICALLY INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL BE THOROUGHLY FAMILIARIZED HIMSELF WITH THESE CONDITIONS.
 - IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO DISCONNECT AND REMOVE ALL DASHED EXISTING RECEPTACLES, ELECTRICAL EQUIPMENT, ETC., AFFECTED BY THE REMODELED AREA.
 - ALL FIRE ALARM DEVICES ARE TO BE REMOVED AND REINSTALLED. REWORK WIRING AS NEEDED. ALL UN-USED CONDUIT, WIRING SHALL BE REMOVED BACK TO THE SOURCE AND DISCARD. U.N.O.
 - ALL DASHED COMMUNICATION DEVICES ARE TO BE REMOVED. REMOVE CONDUIT AND WIRING BACK TO THE SOURCE AND DISCARD. U.N.O.
 - ALL ABANDONED OUTLETS INCLUDING RECEPTACLES, TELEPHONE, DATA, ETC., SHALL BE COVERED AND PATCHED TO MATCH THE FINISH OF SURROUNDING WALL OR CEILING TO THE SATISFACTION OF THE OWNER. COORDINATE WITH ARCHITECT AND G.C.
 - ELECTRICAL CONTRACTOR TO DISCONNECT ANY EXISTING ELECTRICAL DEVICES IN NEW CONSTRUCTION AREA NOT TO REMAIN AND REMOVE EXISTING WIRING BACK TO PANEL. RECONNECT CONDUIT AND WIRING TO RECEPTACLE THAT ARE TO REMAIN, BUT WAS REMOVED DUE TO NEW CONSTRUCTION.

- KEY NOTES**
- REMOVE ALL LIGHT FIXTURES IN THIS ROOM ALONG WITH ASSOCIATED SWITCHES, BOXES, CONDUCTORS, AND CONDUIT COMPLETE BACK TO SOURCE.
 - REMOVE ALL DASHED RECEPTACLES IN THIS ROOM ALONG WITH ASSOCIATED BOXES, CONDUCTORS, AND CONDUIT COMPLETE BACK TO SOURCE.
 - REMOVE ALL DASHED LOW VOLTAGE DEVICES IN THIS ROOM INCLUDING, BUT NOT LIMITED TO: TELEPHONE, DATA, CATV, CLOCKS, BELLS, SECURITY, CABLING, ETC... COMPLETE BACK TO SOURCE.
 - EXISTING OUTLET TO BE RECONNECT TO NEW WIRING AS NEEDED. REPLACE EXISTING RECEPTACLE AND COVER WITH NEW RECEPTACLE AND COVER. PROTECT DURING CONSTRUCTION.
 - DISCONNECT, RELOCATE AND RECONNECT TO THE EXISTING PANEL L1B. PROVIDE NEW CONDUIT AND WIRE TO FEED PANEL-L1B FROM FEEDER SOURCE. DISCONNECT AND REMOVE EXISTING TRANSFORMER AND PANEL R1B COMPLETE BACK TO SOURCE. DELIVER THESE DEMOLISHED ELECTRICAL TO THE OWNER. COORDINATE DELIVERY LOCATION WITH OWNER. FIELD VERIFY ALL EXISTING CIRCUITRY PRIOR TO BIDDING. COORDINATE PATCHING AND ANY REWORK WITH THE GENERAL CONTRACTOR.
 - REMOVE ALL DASHED FIRE ALARM DEVICES IN THIS ROOM ALONG WITH ASSOCIATED BOXES, CONDUCTORS, AND CONDUIT. REWORK WIRING AS NEEDED.
 - RELOCATE EXISTING CONDUITS RUNNING TO THE UPPER FLOOR, AND PROVIDE NEW WIRE AS REQUIRED. CONTRACTOR TO INTERCEPT CONDUIT ON BASEMENT LEVEL. TURN UP INTO THE NEW WALL. PROVIDE NEW JUNCTION BOX, CONDUITS, WIRING AND SPLICES AS NEEDED. FIELD VERIFY ALL EXISTING CIRCUITRY PRIOR TO BIDDING. COORDINATE PATCHING AND ANY REWORK WITH THE GENERAL CONTRACTOR.
 - RELOCATE SWITCHES, BOXES, CONDUCTORS, AND CONDUIT. VERIFY LOCATION WITH OWNER.
 - RELOCATE EXISTING PANEL L1B FEEDER CONDUIT RUNNING TO THE THIS PANEL, AND PROVIDE NEW WIRING AND CONDUIT AS REQUIRED. CONTRACTOR TO INTERCEPT CONDUIT ON BASEMENT LEVEL TURN UP INTO THE NEW LOCATION OF PANEL. PROVIDE NEW JUNCTION BOX, CONDUITS, WIRING AND SPLICES AS NEEDED. FIELD VERIFY ALL EXISTING CIRCUITRY PRIOR TO BIDDING. COORDINATE PATCHING AND ANY REWORK WITH THE GENERAL CONTRACTOR. SEE NEW WORK PLAN.
 - EXISTING DATA RACK OVER DOOR TO BE REMOVED AND AS NEEDED. VERIFY WITH OWNER FOR NEW LOCATION.
 - REMOVE AND REINSTALL EXISTING BUILDING SPEAKERS, SEE NEW WORK FOR ADDITIONAL INFORMATION. VERIFY WITH OWNER.
 - EXISTING FIBER CABLE TO REMAIN. DO NOT REMOVE. CONTRACTOR TO PROTECT DURING CONSTRUCTION. VERIFY EXACT LOCATION BEFORE ANY DEMOLITION STARTS.

ETR – EXISTING TO REMAIN

THESE DEMOLITION DRAWINGS ARE BASED ON ENGINEERING SITE VISITS, NO FACILITY AS-BUILT PLANS WERE AVAILABLE DURING DESIGN. THEY ARE NOT GUARANTEED TO BE EITHER COMPLETE OR FULLY ACCURATE. THE CONTRACTOR SHOULD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND STARTING ANY DEMOLITION WORK.

Revision

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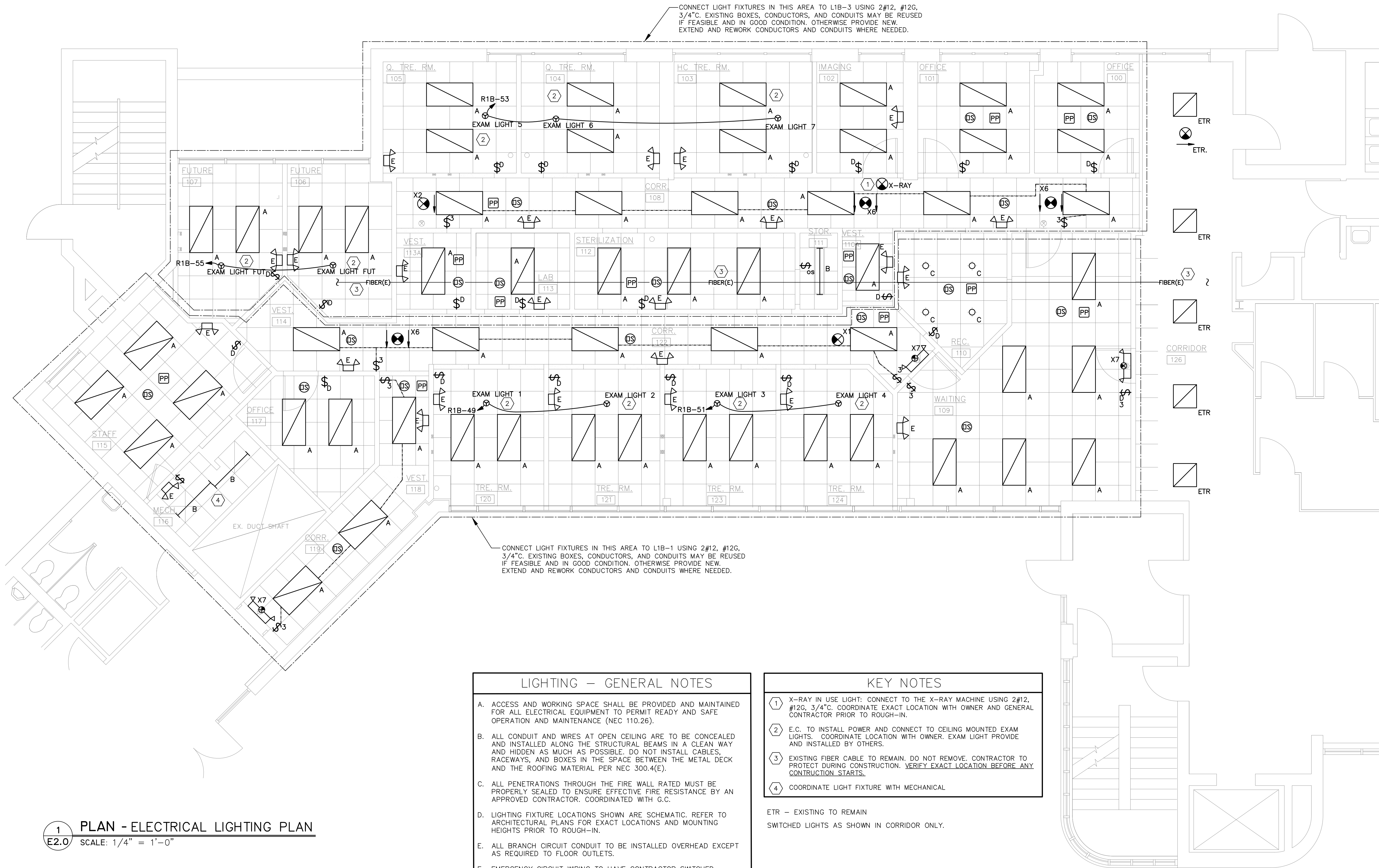
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E1.0



1 PLAN - ELECTRICAL LIGHTING PLAN
E2.0 SCALE: 1/4" = 1'-0"

LIGHTING – GENERAL NOTES	
A.	ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED FOR ALL ELECTRICAL EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE (NEC 110.26).
B.	ALL CONDUIT AND WIRES AT OPEN CEILING ARE TO BE CONCEALED AND INSTALLED ALONG THE STRUCTURAL BEAMS IN A CLEAN WAY AND HIDDEN AS MUCH AS POSSIBLE. DO NOT INSTALL CABLES, RACEWAYS, AND BOXES IN THE SPACE BETWEEN THE METAL DECK AND THE ROOFING MATERIAL PER NEC 300.4(E).
C.	ALL PENETRATIONS THROUGH THE FIRE WALL RATED MUST BE PROPERLY SEALED TO ENSURE EFFECTIVE FIRE RESISTANCE BY AN APPROVED CONTRACTOR. COORDINATED WITH G.C.
D.	LIGHTING FIXTURE LOCATIONS SHOWN ARE SCHEMATIC. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN.
E.	ALL BRANCH CIRCUIT CONDUIT TO BE INSTALLED OVERHEAD EXCEPT AS REQUIRED TO FLOOR OUTLETS.
F.	EMERGENCY CIRCUIT WIRING TO HAVE CONTRACTOR SWITCHED CONDUCTOR AND ALSO UNSWITCHED CONDUCTOR TO ALL EXIT AND EXTERIOR LIGHTS WHERE SHOWN.
G.	CONFIRM LOCATION OF ALL DOOR SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN SWITCHES.
H.	REFER TO ARCHITECT'S REFLECTED CEILING PLANS FOR CEILING HEIGHTS, TYPES, FINISHES, ETC. IN EACH AREA. VERIFY FLANGE TYPES, TRIM KITS, STEM LENGTH, ETC. FOR ALL LIGHT FIXTURES PRIOR TO SUBMITTALS.
I.	COORDINATE WITH LIGHTING VENDORS FOR ANY NECESSARY MOUNTING HARDWARE AND ACCESSORIES PRIOR TO ROUGH-IN.
J.	NOTIFY ENGINEER OF ANY DISCREPANCY PRIOR TO ROUGH-IN.
K.	ALL CONDUIT IN EXPOSED CEILING AREAS SHALL BE RUN PARALLEL OR PERPENDICULAR WITH STRUCTURAL STEEL, TIGHT TO THE ROOF DECK OR TOP OF STEEL MEMBERS HIDDEN FROM VIEW (TYP.)

KEY NOTES	
1	X-RAY IN USE LIGHT: CONNECT TO THE X-RAY MACHINE USING 2#12, #12G, 3/4"C. COORDINATE EXACT LOCATION WITH OWNER AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2	E.C. TO INSTALL POWER AND CONNECT TO CEILING MOUNTED EXAM LIGHTS. COORDINATE LOCATION WITH OWNER. EXAM LIGHT PROVIDE AND INSTALLED BY OTHERS.
3	EXISTING FIBER CABLE TO REMAIN. DO NOT REMOVE. CONTRACTOR TO PROTECT DURING CONSTRUCTION. <u>VERIFY EXACT LOCATION BEFORE ANY CONSTRUCTION STARTS.</u>
4	COORDINATE LIGHT FIXTURE WITH MECHANICAL

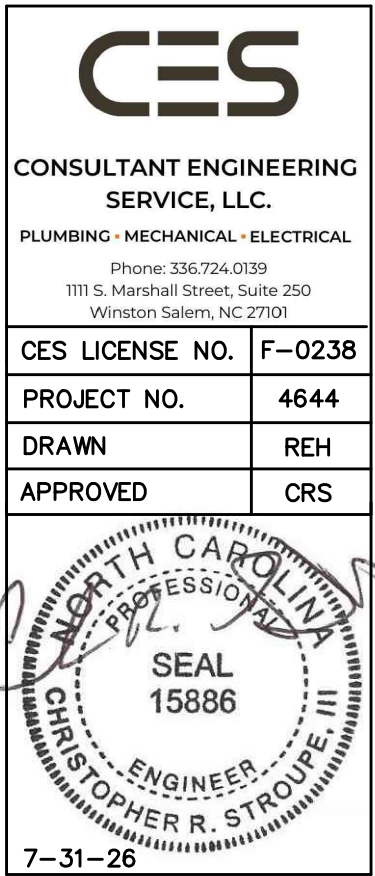
ETR – EXISTING TO REMAIN
SWITCHED LIGHTS AS SHOWN IN CORRIDOR ONLY.

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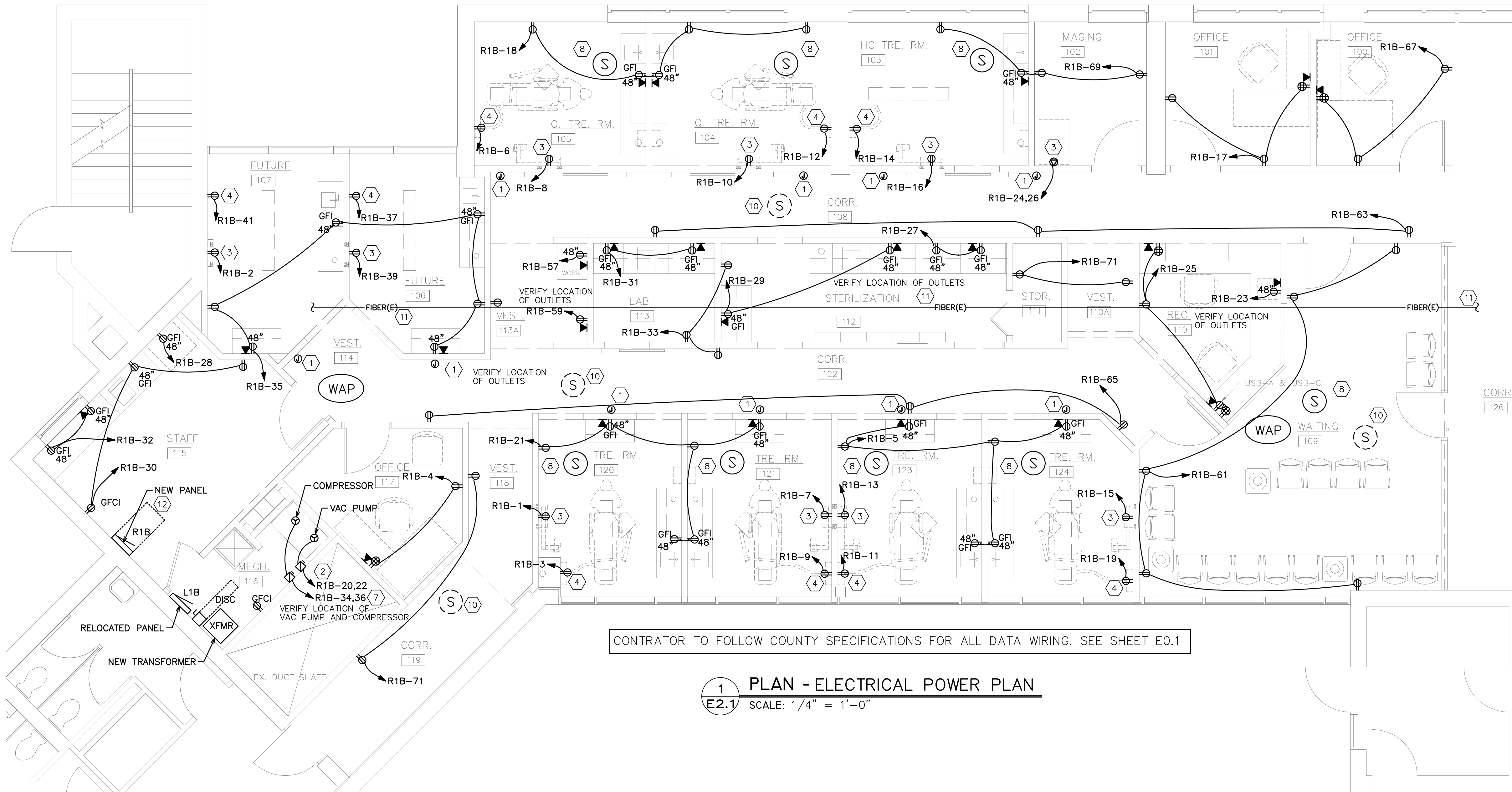
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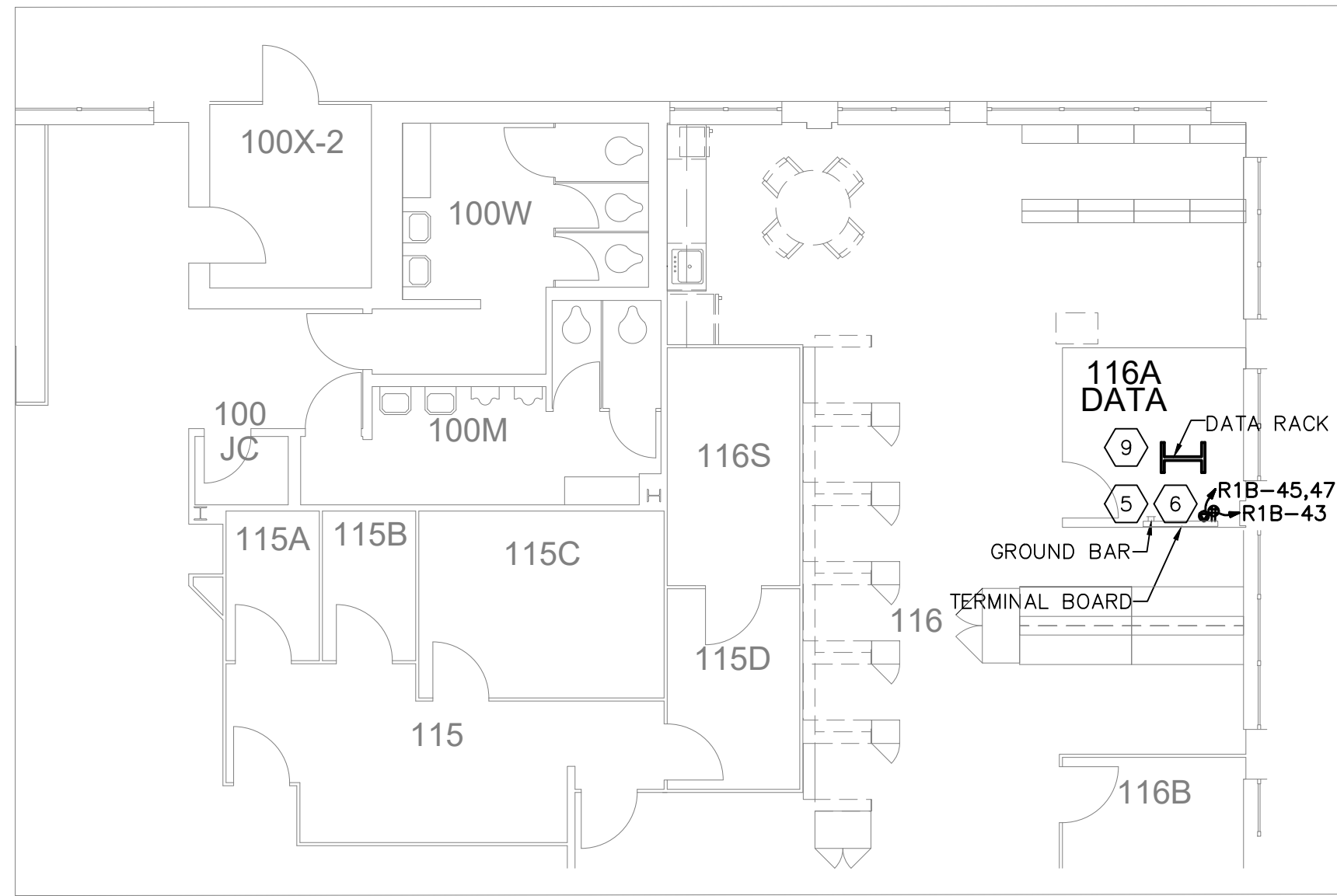
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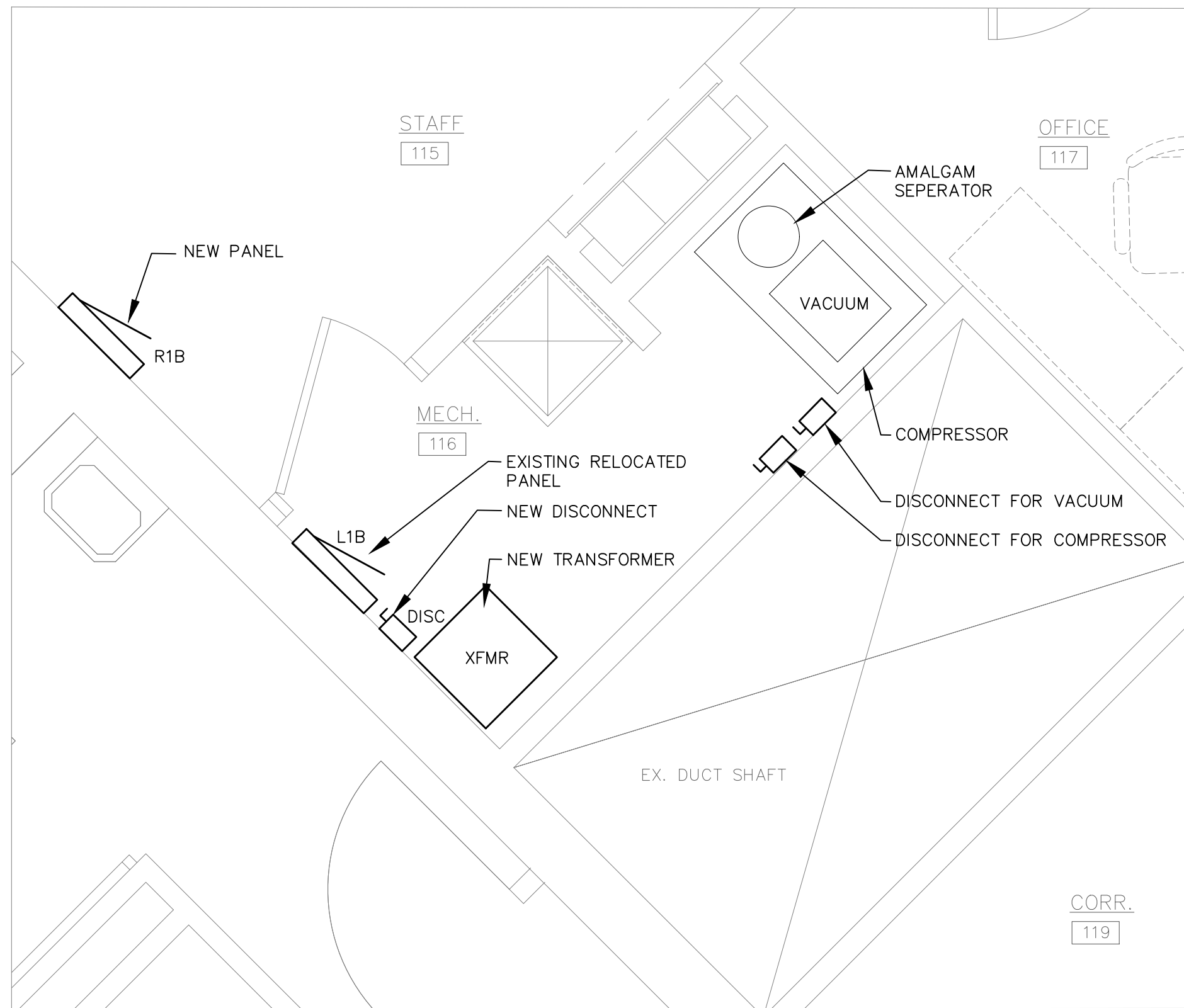
E2.0



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



2 PLAN - ELECTRICAL POWER PLAN/DATA RM 116A
SCALE: 1/8" = 1'-0"



3 PLAN - ELECTRICAL POWER - MECH RM 116
SCALE: 1/2" = 1'-0"

- COUNTY - DATA REQUIREMENTS**
- NEW CABLES NEED TO MATCH THE EXISTING SYSTEM PULLED INTO THE RACK. UON
 - CABLES TO BE CAT 6 PLENUM RATED, COMMSCOPE.
 - CABLE INSTALLER MUST BE CERTIFIED BY THE MANUFACTURER TO INSTALL THE CABLE.
 - PROVIDE 2 DATA CABLES AT EACH OUTLET.
 - PROVIDE 2 CABLES WITH BISCUIT JACKS ABOVE CEILING FOR WIRELESS ACCESS POINTS.
 - PROVIDE A SERVICE LOOP ON ALL DROPS.
 - PROVIDE VELCRO TIE WRAPS ARE TO BE USED (NO ZIP TIES).
 - ALL CABLING MUST BE SUPPORTED BY J-HOOKS OR CABLE TRAY, CABLES ARE NOT TO BE WRAPPED LOOSE TO CEILING OR OTHER SUPPORTS.
 - PROVIDE BLUE CABLE FOR WALL OUTLETS, WHITE CABLE FOR WIRELESS ACCESS POINTS, AND GREEN CABLE FOR SECURITY CAMERAS.
 - PROVIDE AND INSTALL CAT 6 PATCH PANEL IN EXISTING RACK TO ACCOMMODATE NEW WIRING. TERMINATE WIRING AS REQUIRED.
 - PROVIDE MINIMUM 1" CONDUIT TO WALL OUTLETS, 2-1" OR 1-1.5" ARE PREFERRED. CONDUIT SHOULD STUB ABOVE ACCESSIBLE CEILING AND HAVE A BUSHING ON THE END.
 - CONTACTOR TO COORDINATE OUTLET HEIGHTS WITH MILLWORK, FURNITURE, AND EQUIPMENT.
 - SEE SHEET E0.1 AND DETAIL 1/E4.1 FOR ADDITIONAL INFORMATION.
 - EXISTING FIBER CABLE TO REMAIN. DO NOT REMOVE. CONTRACTOR TO PROTECT DURING CONSTRUCTION. VERIFY EXACT LOCATION BEFORE ANY DEMOLITION STARTS.
 - INSTALLER IS TO SUBMIT A TEST REPORT PRIOR TO THE SPACE BEING ACCEPTED AS SUBSTANTIALLY COMPLETE.

NEC 517 - HEALTH CARE FACILITIES

FOR PATIENT CARE SPACES (EXAM ROOMS, TREATMENT ROOMS, OPERATORIES WHERE PATIENTS ARE EXAMINED OR TREATED), THE 2020 NEC REQUIRES:

BRANCH CIRCUITS TO BE INSTALLED IN A METAL RACEWAY (EMT, RIGID, ETC.) OR A CABLE WITH A METALLIC ARMOR/SHEATH THAT QUALIFIES AS AN EQUIPMENT GROUNDING CONDUCTOR.

AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR MUST ALSO BE RUN WITH THE CIRCUIT CONDUCTORS, CREATING THE REDUNDANT GROUNDING PATH REQUIRED BY NEC 517.13. HOSPITAL-GRADE RECEPTACLES ARE REQUIRED IN PATIENT CARE AREAS.

EMT CONDUIT WITH THHN/THWN CONDUCTORS AND AN INSULATED GREEN GROUND. HEALTH-CARE-GRADE MC CABLE (CALLED HCF MC OR MC-AP-HCF) WHERE PERMITTED BY THE AHJ AND PROJECT SPECIFICATIONS.

POWER - GENERAL NOTES

- ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED FOR ALL ELECTRICAL EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE (NEC 110.26).
- ELECTRICAL WORK HAS BEEN SHOWN BASED ON EXISTING FIELD OBSERVATIONS.
- COORDINATE LOCATION OF RECEPTACLES WITH OWNER.
- ALL WIRES AT OPEN CEILING ARE TO BE CONCEALED AND INSTALLED ALONG THE STRUCTURAL BEAMS IN A NEAT WAY AND HIDDEN AS MUCH AS POSSIBLE.
- RECEPTACLES AT COUNTERS TO BE 6" ABOVE COUNTERTOP UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
- ALL EXTERIOR RECEPTACLES SHALL HAVE INUSE HEAVY DUTY METAL COVER WITH LOCK.
- ALL RECEPTACLE PLATES TO HAVE LABELS INDICATING PANELS AND CIRCUIT NUMBER. PROVIDE LAMINATED TAG FOR EACH PLATE. VERIFY WITH OWNER DOR APPROVAL.
- ALL RECEPTACLES IN THE KITCHEN SHOULD BE GROUND FAULT INTERRUPTER CURRENT UNLESS OTHERWISE NOTED.

KEY NOTES

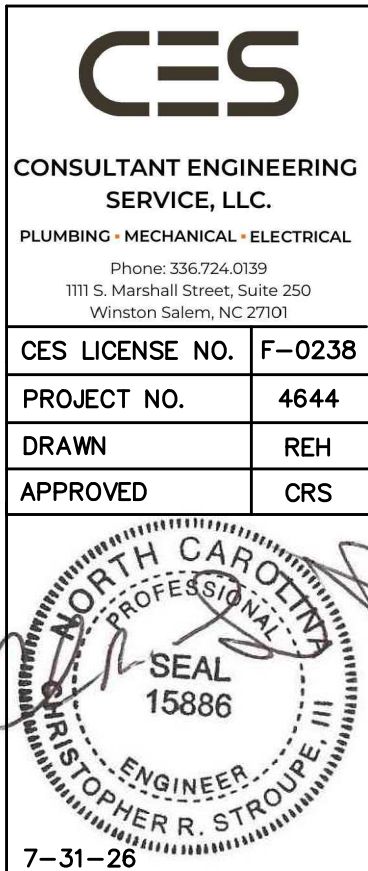
- X-RAY: PROVIDE JUNCTION BOX AND 1" CONDUIT FROM WALL MOUNTED X-RAY MACHINE TO CONTROLLER. PROVIDE WIRING AS NEEDED. COORDINATE EXACT LOCATION WITH OWNER AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
- VACUUM: PROVIDE AND INSTALL 60 AMP, 2P, 3W, 250VOLT, N1, HEAVY DUTY, FUSED DISCONNECT. FUSE PER EQUIPMENT NAMEPLATE. E.C. TO CONNECT VACUUM PUMP WITH 1/2" FLEX. MAKE ALL FINAL CONNECTION AT PUMP AND DISCONNECT. CONNECT AMALGAM SEPARATOR TO VACUUM PUMP, PER MANUFACTURER'S RECOMMENDATION.
- X-RAY: COORDINATE EXACT LOCATION AND HEIGHT WITH OWNER AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE CONNECTIONS PER MANUFACTURER RECOMMENDATION.
- CHAIR: X-RAY: COORDINATE EXACT LOCATION AND HEIGHT WITH OWNER AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE GFCI BREAKER IN PANEL. PROVIDE CONNECTIONS PER MANUFACTURER RECOMMENDATION.
- EXISTING COPPER GROUND BAR WITH 6 POSITIONS. INSTALL #6 BARE CU TO BUILDING STEEL. VERIFY LOCATION WITH OWNER.
- EXISTING 3/4"x4"x4" FIRE RATED PLYWOOD FOR TEL/DATA EQUIPMENT ALONG THE ROOM. VERIFY LOCATION WITH OWNER.
- COMPRESSOR: PROVIDE AND INSTALL 30 AMP, 2P, 3W, 250VOLT, N1, HEAVY DUTY, FUSED DISCONNECT. FUSE PER EQUIPMENT NAMEPLATE. E.C. TO CONNECT WITH 1/2" FLEX. MAKE ALL FINAL CONNECTION AT PUMP AND DISCONNECT. CONNECT SOUND COVER TO COMPRESSOR, PER MANUFACTURER'S RECOMMENDATION.
- E.C. TO INSTALL SPEAKERS AND VOLUME CONTROLS FROM EXISTING LOCATION AT 501 N. CLEVELAND AVE. PROVIDE WIRING FROM SPEAKERS AND VOLUME CONTROLS TO HEADEND EQUIPMENT TO SPEAKER. VERIFY LOCATION. SEE DETAIL 2/E4.1 FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR TO INCLUDE IN HIS BID TO REMOVE THE EXISTING SPEAKER SYSTEM - INCLUDING SPEAKERS, SPEAKERS BACK BOXES, VOLUME CONTROL, HEADEND EQUIPMENT AND ETC. AT CLEVELAND AVENUE DENTAL CENTER, 501 N. CLEVELAND AVE, WINSTON-SALEM, NC INCLUDE ALL LABOR AND MATERIAL. AND RELOCATED TO THE NEW LOCATION AT 725 HIGHLAND AVE., WS, NC.
- REINSTALL EXISTING BUILDING SPEAKER AT ITS NEW LOCATION, EXTEND WIRING AS NEEDED. VERIFY LOCATION WITH OWNER.
- EXISTING FIBER CABLE TO REMAIN. DO NOT REMOVE. CONTRACTOR TO PROTECT DURING CONSTRUCTION. VERIFY EXACT LOCATION BEFORE ANY CONSTRUCTION STARTS.
- E.C. TO PROVIDE AND INSTALL A REMOVABLE SHEET METAL (14GA) CONDUIT ENCLOSURE AT THE TOP OF ELECTRICAL PANEL TO CONCEAL CONDUITS. ENCLOSURE TO RUN FROM THE TOP OF THE PANEL TO CEILING. FIELD VERIFY SIZE WITH SITE CONDITION. (APPROXIMATE 20" X 48" X 6") PAINT ENCLOSURE TO MATCH WALL. PROVIDE SUBMITTAL TO ARCHITECT FOR APPROVAL.

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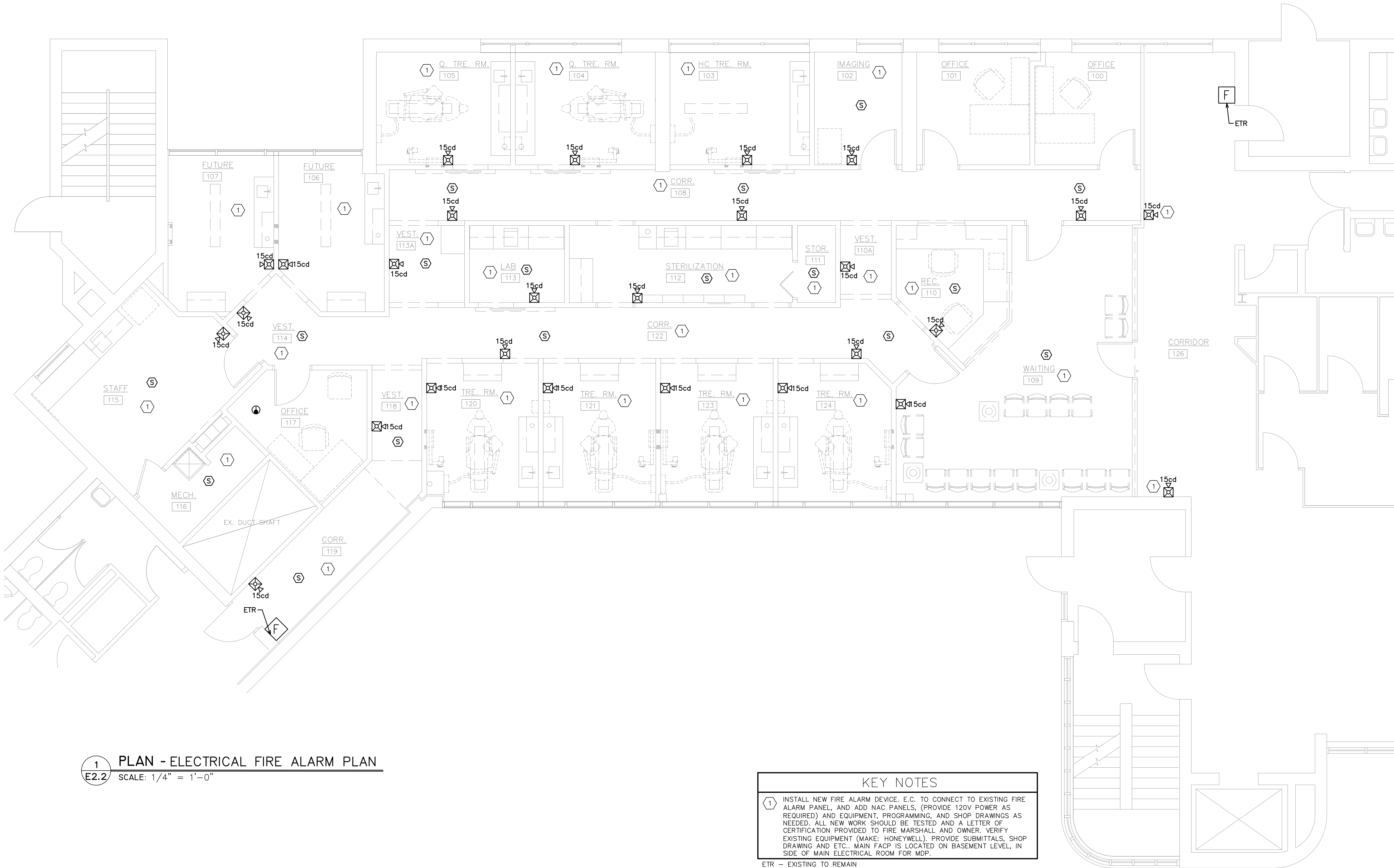
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E2.1



1
E2.2 **PLAN - ELECTRICAL FIRE ALARM PLAN**
SCALE: 1/4" = 1'-0"

KEY NOTES

1. INSTALL NEW FIRE ALARM DEVICE, E.C. TO CONNECT TO EXISTING FIRE ALARM PANEL, AND ADD NAC PANELS, (PROVIDE 120V POWER AS REQUIRED) AND EQUIPMENT, PROGRAMMING, AND SHOP DRAWINGS AS NEEDED. ALL NEW WORK SHOULD BE TESTED AND A LETTER OF CERTIFICATION PROVIDED TO FIRE MARSHALL AND OWNER. VERIFY EXISTING EQUIPMENT (MAKE: HONEYWELL). PROVIDE SUBMITTALS, SHOP DRAWING AND ETC. MAIN FACP IS LOCATED ON BASEMENT LEVEL, IN SIDE OF MAIN ELECTRICAL ROOM FOR MDP.

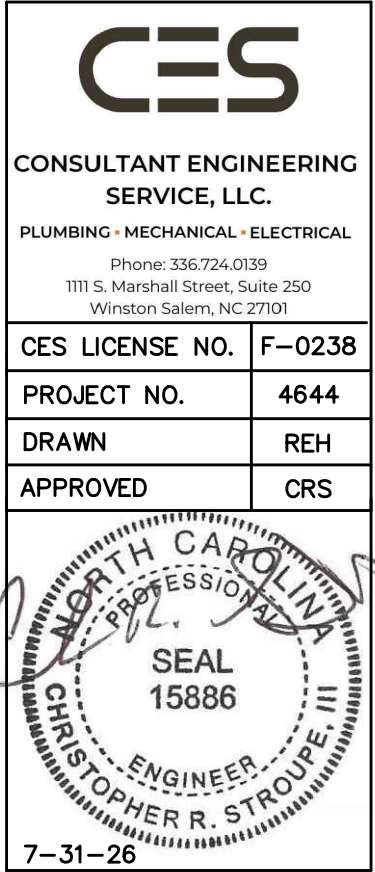
ETR - EXISTING TO REMAIN

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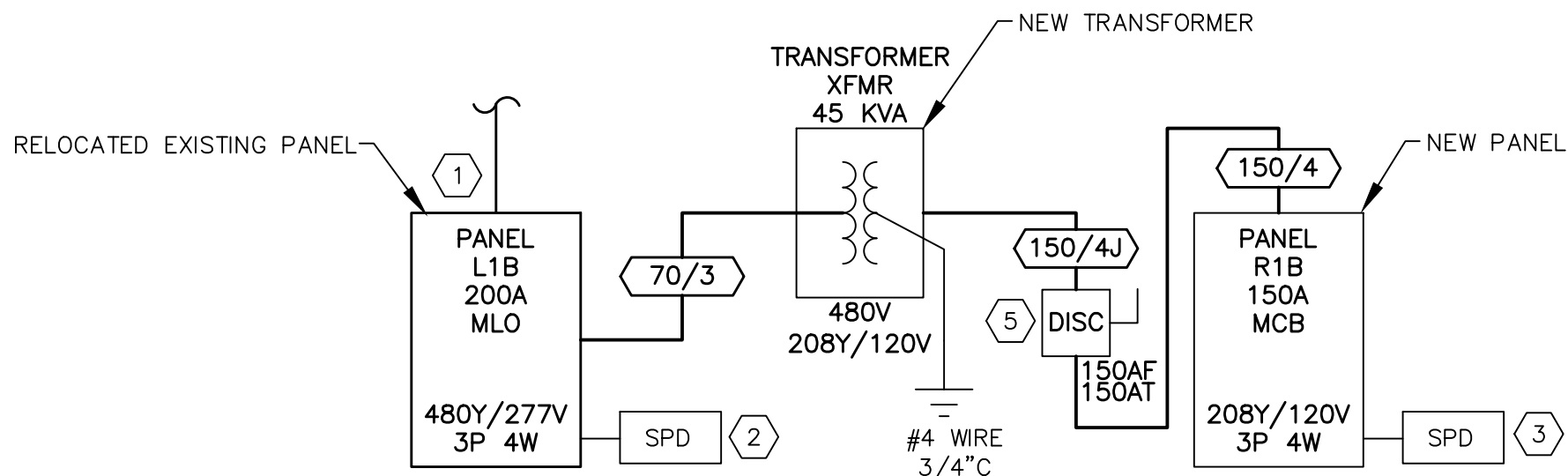
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ELECTRICAL NOTES	
A.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE AN ARC FLASH ANALYSIS AND SELECTIVE COORDINATION STUDY AND SHALL LABEL ALL APPLICABLE ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NFPA 70E. STUDIES SHALL BE INCLUDED IN SUBMITTALS.
B.	SERIES RATING IS NOT ALLOWED. SHARED NEUTRALS ARE NOT ALLOWED FOR NEW WORK. PROVIDE SEPARATE NEUTRALS. PROVIDE TIE BREAKERS AS NEEDED ON EXISTING CIRCUITS.
C.	PROVIDE AND INSTALL PHENOLIC NAMEPLATES WITH STAINLESS STEEL SCREWS.
D.	ALL CONDUCTORS SHALL BE COPPER. UNLESS NOTED OTHERWISE.
E.	ALL SPLICES 1/0 AND LARGER SHALL BE HYPRESS CRIMP.
F.	LABEL ALL RECEPTACLES AND DISCONNECTS.
G.	ALL PANELBOARDS SHALL BE PROVIDED WITH: - HINGED COVERS. - PANEL DIRECTORIES - DOOR LOCK - COPPER BUS - COPPER GROUND BUS - BOLT-ON BREAKERS - FULL SIZE COPPER NEUTRAL BAR(S) - ENGRAVED NAMEPLATE(S) - ARC FLASH LABEL FOR PANELS
H.	ALL TRANSFORMERS SHALL BE PROVIDED WITH: - COMPLY WITH NEMA ST 20 AND LIST AND LABEL AS COMPLYING WITH UL 1561. - COIL MATERIAL: COPPER - CORES: ONE LEG PER PHASE. - ENCLOSURE: VENTILATED, NEMA 250, TYPE 2, CORE AND COIL SHALL BE ENCAPSULATED WITHIN RESIN COMPOUND, SEALING OUT MOISTURE AND AIR. ENCLOSURE FINISH: COMPLY WITH NEMA 250 - FINISH COLOR: GRAY. - TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5% TAPS ABOVE AND FOUR 2.5% TAPS BELOW NORMAL FULL CAPACITY. - INSULATION CLASS: 115 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM. - WALL BRACKETS: MANUFACTURER'S STANDARD BRACKETS. - FUNGUS PROOFING: PERMANENT FUNGICIDAL TREATMENT FOR COIL AND CORE. - FACTORY-ASSEMBLED AND -TESTED, AIR-COOLED UNITS FOR 60-HZ SERVICE. - CORES: GRAIN-ORIENTED, NON-AGING SILICON STEEL. - COILS: CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS: INTERNAL COIL CONNECTIONS: BRAZED OR PRESSURE TYPE. 4" CONCRETE HOUSEKEEPING PAD AS REQUIRED. - WEATHER PROOF VENT AS REQUIRED. - PROVIDE UNISTRUT AND TRAPEZE MOUNT BRACKET KIT COMPATIBLE TO SPECIFIED DRY TRANSFORMER FOR CEILING MOUNT INSTALLATION. PROVIDE SOUND/VIBRATION CONTROL ISOLATION PADS, MAXIMUM WEIGHT 1200LB. COORDINATE LOCATION PRIOR TO ROUGH-IN.

KEY NOTES	
1	RELOCATE EXISTING PANEL L1B TO THE NEW LOCATION. PROVIDE NEW CONDUIT AND WIRE TO FEED PANEL-L1B FROM SOURCE. FIELD VERIFY ALL EXISTING CIRCUITRY PRIOR TO BIDDING. COORDINATE PATCHING AND ANY REWORK WITH THE GENERAL CONTRACTOR.
2	SURGE PROTECTIVE DEVICE WITH INTEGRAL CIRCUIT BREAKER: PROVIDE INNOVATIVE TECHNOLOGY PTE1603Y101.(VERIFY VOLTAGE WITH CAT #) EQUALS BY CURRENT TECHNOLOGY OR LIEBERT. DEVICE SHALL BE 160KA PER PHASE WITH 10 MODE PROTECTION. SINE WAVE TRACKING IS NOT REQUIRED FOR THIS UNIT. PROVIDE #10 CONDUCTORS AND CONNECT TO A 30A/3P CIRCUIT BREAKER. CONDUCTOR LENGTHS SHALL BE AS SHORT AS POSSIBLE AND PER THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE A WARRANTY WITH A MINIMUM OF 20 YEARS THAT INCLUDES LIGHTNING STRIKES.
3	SURGE PROTECTIVE DEVICE WITH INTEGRAL CIRCUIT BREAKER: PROVIDE INNOVATIVE TECHNOLOGY PTE0803Y101. (VERIFY VOLTAGE WITH CAT #) EQUALS BY CURRENT TECHNOLOGY OR LIEBERT. DEVICE SHALL BE 80KA PER PHASE WITH 10 MODE PROTECTION. SINE WAVE TRACKING IS NOT REQUIRED FOR THIS UNIT. PROVIDE #10 CONDUCTORS AND CONNECT TO A 30A/3P CIRCUIT BREAKER. CONDUCTOR LENGTHS SHALL BE AS SHORT AS POSSIBLE AND PER THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE A WARRANTY WITH A MINIMUM OF 20 YEARS THAT INCLUDES LIGHTNING STRIKES.
4	PROVIDE ARC FLASH LABEL ON NEW AND EXISTING PANELS.
5	PROVIDE AND INSTALL 150AF/150AT, 3P, 4W, 250V, N1, HEAVY DUTY, FUSED DISCONNECT.

FEEDER SCHEDULE		
ID	FEEDER AMPS	CONDUIT AND FEEDER
70/3	70	3#4,#8G,1" C
150/4	150	4#1/0,#6G,1-1/2" C
150/4J	150	4#1/0,#6G,1-1/2" C

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE



1 PLAN - ELECTRICAL PARTIAL RISER DIAGRAM
E3.0 SCALE: N.T.S.

R1B-NEW																
ROOM MECH 116 MOUNTING SURFACE FED FROM DISC NOTE NEW PANEL.				VOLTS 208Y/120V 3P 4W BUS AMPS 150 NEUTRAL 100%				AIC 22,000 MAIN BKR 150 LUGS STANDARD		ENCLOSURE TYPE NEMA 1 PANEL TYPE BREAKER						
CKT #	CKT BKR	CIRCUIT DESCRIPTION	CONDUCTORS/CONDUIT	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	CONDUCTORS/CONDUIT	LOAD KVA					
				A	B	C					A	B	C			
1	20/1	RCPT - RM 120	2#12,#12G,3/4"C	0.75			2	20/1	RCPT - RM 107	2#12,#12G,3/4"C	1					
3	20/1	RCPT - RM 120 - GFCI BREAKER	2#12,#12G,3/4"C		1		4	20/1	RCPT - RM 116,117,118	2#12,#12G,3/4"C		0.54				
5	20/1	RCPT - RM 123,124	2#12,#12G,3/4"C			0.9	6	20/1	RCPT - RM 105 - GFCI BREAKER	2#12,#12G,3/4"C			0.75			
7	20/1	RCPT - RM 121	2#12,#12G,3/4"C	0.75			8	20/1	RCPT - RM 105	2#12,#12G,3/4"C	1					
9	20/1	RCPT - RM 121 - GFCI BREAKER	2#12,#12G,3/4"C		1		10	20/1	RCPT - RM 104	2#12,#12G,3/4"C		1				
11	20/1	RCPT - RM 123 - GFCI BREAKER	2#12,#12G,3/4"C			1	12	20/1	RCPT - RM 104 - GFCI BREAKER	2#12,#12G,3/4"C			0.75			
13	20/1	RCPT - RM 123 - GFCI BREAKER	2#12,#12G,3/4"C	0.75			14	20/1	RCPT - RM 103 - GFCI BREAKER	2#12,#12G,3/4"C	0.75					
15	20/1	RCPT - RM 124	2#12,#12G,3/4"C		0.75		16	20/1	RCPT - RM 103	2#12,#12G,3/4"C		1				
17	20/1	RCPT - RM 101	2#10,#10G,3/4"C			0.72	18	20/1	RCPT - RM 102-105	2#10,#10G,3/4"C			0.72			
19	20/1	RCPT - RM 124 - GFCI BREAKER	2#12,#12G,3/4"C	1			20	40/2	VAC PUMP	3#8,#10G,3/4"C	2.8					
21	20/1	RCPT - RM 120,121,123	2#12,#12G,3/4"C		1.1		22					2.8				
23	20/1	RCPT - RM 110	2#12,#12G,3/4"C			1.2	24	20/2	IMAGING	3#12,#12G,3/4"C			1			
25	20/1	RCPT - RM 110,111,110A	2#12,#12G,3/4"C	1.1			26				1					
27	20/1	RCPT - RM 112	2#12,#12G,3/4"C		0.36		28	20/1	RCPT - RM 115	2#12,#12G,3/4"C		1				
29	20/1	RCPT - RM 112	2#12,#12G,3/4"C			0.36	30	20/1	RCPT - RM 115	2#12,#12G,3/4"C	0.36		0.54			
31	20/1	RCPT - RM 113	2#12,#12G,3/4"C		0.36		32	20/1	RCPT - RM 115	2#12,#12G,3/4"C		1.7				
33	20/1	RCPT - RM 112,113	2#12,#12G,3/4"C		0.54		34	20/2	COMPRESSOR	3#12,#12G,3/4"C			1.7			
35	20/1	RCPT - RM 106,107	2#12,#12G,3/4"C			1.1	36									
37	20/1	RCPT - RM 106 - GFCI BREAKER	2#12,#12G,3/4"C	0.75			38	30/3	SPD	4#10,#10G,3/4"C	0.1					
39	20/1	RCPT - RM 106	2#12,#12G,3/4"C		1		40					0.1				
41	20/1	RCPT - RM 107 - GFCI BREAKER	2#12,#12G,3/4"C		0.75		42						0.1			
43	20/1	RCPT - RM 117	2#10,#10G,3/4"C	1.2			44	30/2	SPARE		0					
45	20/2	RCPT - RM 117	3#10,#10G,3/4"C		1		46				0					
47						1	48	30/2	SPARE			0				
49	20/1	EXAM LIGHT 1, EXAM LIGHT 2	2#12,#12G,3/4"C	1.2			50				0					
51	20/1	EXAM LIGHT 3, EXAM LIGHT 4	2#12,#12G,3/4"C		1.2		52	30/1	SPARE			0				
53	20/1	EXAM LIGHT 5, EXAM LIGHT 6, EXAM LIGHT 7	2#12,#12G,3/4"C			1.8	54	20/1	SPARE				0			
55	20/1	EXAM LIGHT FUT	2#12,#12G,3/4"C	1.2			56	20/1	SPARE		0					
57	20/1	RECEPTACLE VEST 113A	2#12,#12G,3/4"C		0.75		58	20/1	SPARE			0				
59	20/1	RECEPTACLE VEST 113A	2#12,#12G,3/4"C			0.75	60	20/1	SPARE				0			
61	20/1	RECEPTACLE - WAITING 109	2#12,#12G,3/4"C		0.9		62	20/1	SPACE		0					
63	20/1	RECEPTACLE - COR 108	2#10,#10G,3/4"C			0.54	64	20/1	SPACE			0				
65	20/1	RECEPTACLE - COR 122	2#10,#10G,3/4"C				66	20/1	SPACE				0			
67	20/1	RECEPTACLE - RM 100	2#10,#10G,3/4"C			0.54	68	20/1	SPACE		0					
69	20/1	RECEPTACLE - RM 102, 103	2#10,#10G,3/4"C		0.72		70	20/1	SPACE			0				
71	20/1	RECEPTACLE - COR 119, VEST 110A, STOR 111	2#10,#10G,3/4"C			0.72	72	20/1	SPACE				0			
							TOTAL CONNECTED KVA BY PHASE				18	18	16			
							TOTAL CONNECTED AMPS BY PHASE				150	150	140			
				CONN KVA			CALC KVA			CONN KVA			CALC KVA			
LIGHTING				5.4	6.8	(125%)	MOTORS				8.9	8.9	(100%)			
LARGEST MOTOR				5.6	1.4	(25%)	RECEPTACLES CONTINUOUS				37	24	(50%>10)			
												0.3	0.38	(125%)		
								TOTAL LOAD				41	41			
								BALANCED 3-PHASE LOAD				110 A	110 A			

L1B-RELOCATED															
ROOM MECH 116 MOUNTING SURFACE FED FROM UTILITY NOTE EXISTING PANEL.				VOLTS 480Y/277V 3P 4W BUS AMPS 200 NEUTRAL 100%				AIC 42,000 MAIN BKR MLO LUGS STANDARD		ENCLOSURE TYPE NEMA 1 PANEL TYPE MLO					
CKT #	CKT BKR	CIRCUIT DESCRIPTION	CONDUCTORS/CONDUIT	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	CONDUCTORS/CONDUIT	LOAD KVA				
				A	B	C					A	B	C		
1	20/1	LIGHTING	2#12,#12G,3/4"C 2#12,#12G,3/4"C	1.4	1.3		2	20/1	SPACE	3#4,#8G,1"C	0				
3	20/1	LIGHTING					4	20/1	SPACE						
5	20/1	SPACE				0	6	20/1	SPACE			0			
7	20/1	SPACE		0			8	20/1	SPACE		0				
9	20/1	SPACE			0		10	20/1	SPACE			0			
11	20/1	SPACE	4#10,#10G,3/4"C	0.1		0	12	20/1	SPACE		17		0		
13	30/3	SPD					14	70/3	XFMR XFMR						
15						0.1		16						18	
17							0.1	18							17
								TOTAL CONNECTED KVA BY PHASE				19	19	17	
							TOTAL CONNECTED AMPS BY PHASE				67	70	62		
		CONN KVA	CALC KVA					CONN KVA	CALC KVA						
LIGHTING		8.2	10	(125%)	MOTORS		8.9	8.9	(100%)						
LARGEST MOTOR		5.6	1.4	(25%)	RECEPTACLES		37	24	(50%>10)						
					CONTINUOUS		0.6	0.75	(125%)						
					TOTAL LOAD			45							
					BALANCED 3-PHASE LOAD			54 A							

PROVIDE NEW BRANCH BREAKERS AS NEEDED, MATCHING AIC RATING.

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/ GORDON

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Forsyth County
Health Department

Dental Suite
Alteration

Winston-Salem, NC

Comm. No. 25-380
Date 7-31-26
Drawn By

E3.0

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CHRISTOPHER R. STROUE

7-31-26

LUMINAIRE SCHEDULE											
CALLOUT	SYMBOL	DESCRIPTION	MODEL	EQUIV. MANUFACTURER	LAMP	DRIVER	MOUNTING	INPUT WATTS	VOLTS	TOTAL LUMENS	NOTES
A		CPANL Switchable Lumen LED Flat Panel, 2x4, 40/50/60LM, 3500 K CCT, - 50LM	Lithonia Lighting, CPANL 2x4 40/50/60LM 35K - 50LM	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	ELECTRONIC	CEILING	43.32	277V 1P 2W	4800	
B		FMLWL 4ft, 3500K CCT, 0-10V Dimming, Multi Volt	Lithonia Lighting, FMLWL 48 835 ZT MVOLT	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	ELECTRONIC	CEILING	41.48	277V 1P 2W	3000	CHAIN HUNG, COORDINATE WITH MECH.
C		6IN LDN, 3500K, 1500LM, WHITE, CRI80	Lithonia Lighting, LDN6 35/15 L06WR	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	ELECTRONIC	CEILING	17.52	277V 1P 2W	1500	
E		LED TWIN-HEAD UNIT, TITLE 20 COMPLIANT	LITHONIA, ELM6L	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	BATTERY	WALL/CEILING	6	277V 1P 2W	90	EMERGENCY BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY.
X1		QUANTUM LED EMERGENCY COMBO, 1045LM, 4600K, NFPA 101, NFPA 70, UL	LHQM LED	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	BATTERY	WALL/CEILING	3	277V 1P 2W	1045	EMERGENCY BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY.
X2		QUANTUM LED EMERGENCY COMBO (ONE HEAD ONLY), 1045LM, 4600K, NFPA 101, NFPA 70, UL	LITHONIA, LHQM LED	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	ELECTRONIC	WALL/CEILING	3	277V 1P 2W	1045	EMERGENCY BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY.
X6		QUANTUM LED EMERGENCY COMBO (ONE HEAD ONLY), 1045LM, 4600K, NFPA 101, NFPA 70, UL	LITHONIA, LHQM LED	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	BATTERY	WALL/CEILING	3	277V 1P 2W	1045	EMERGENCY BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY.
X7		QUANTUM THERMOPLASTIC EXIT/UNIT COMBO, STENCIL FACE, WHITE, RED, HIGH OUTPUT BATTERY	LITHONIA, LHQM LED S W R HO + ELA T SD Q L0309	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	ELECTRONIC	CEILING	3	277V 1P 2W	1024	EMERGENCY BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY.
X-RAY		X-RAY IN USE, LED, THERMOPLASTIC HOUSING, SINGLE SIDED	THE EXIT LIGHT CO., LEDCU-X-RAY-IN-USE	LITHONIA H.E. WILLIAMS HUBBELL	(1) LED	BATTERY	WALL/CEILING	3	277V 1P 2W	1045	BATTERY UNIT WITH LUMINAIRE HEADS. WITH 90MIN BATTERY. CONNECT TO X-RAY EQUIPMENT.

- REMARKS:
- ALL LIGHT FIXTURES SHALL BE ENERGY EFFICIENCY DLC (DESIGN LIGHTS CONSORTIUM) CERTIFIED.
 - LIGHT FIXTURES SHALL BE EQUIPPED WITH UL LISTED AND APPROVED INTEGRALLY MOUNTED DISCONNECTS FOR DRIVER IN ACCORDANCE WITH ARTICLE 410.30 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CONTRACTOR SHALL COORDINATE WITH THE DISTRIBUTOR AND MANUFACTURER TO VERIFY THAT NEW LIGHTS MEET ALL REQUIREMENTS OF THE LATEST EDITION OF THE NEC.
 - ALL LAY-IN TYPE LED LIGHT FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE WITH TWO CEILING SYSTEM SUPPORT WIRES. WIRES SHALL BE ATTACHED AT DIAGONALLY OPPOSITE CORNERS OF THE LIGHT. IN ADDITION, EACH LIGHT SHALL BE ATTACHED TO THE CEILING GRID SYSTEM USING FOUR SCREWS (TWO AT EACH END). SCREWS SHALL NOT INTERFERE WITH THE DOOR OPERATION.
 - PROVIDE THREADED ROD OR WIRE SUPPORT FROM THE STRUCTURE TO ALL CEILING MOUNTED RECESS CAN LIGHTS SO THAT TRIM WILL FIT FLUSH AGAINST THE CEILING AND THE CEILING TILES WILL NOT SAG.
 - ALL LAMPS OF EACH CATEGORY SHALL BE OF THE SAME MANUFACTURER.
 - EXIT LIGHTS SHALL HAVE EVEN GRAPHICS ILLUMINATION (INDIVIDUAL LED SHALL NOT BE VISIBLE), UNIVERSAL MOUNTING, FACES, ARROWS, AND ETC.
 - CONNECT ALL FIXTURES WITH THE "EMERGENCY (HATCHED) AND EXTERIOR EMERGENCY EGRESS LIGHTS TO THE NEAREST EXISTING LIFE SAFETY PANEL. SEE PANEL SCHEDULES AND SITE WORK PLAN NEW WORK.
 - PROVIDE ALL FIXTURE MOUNTING HARDWARE WHERE REQUIRED.
 - VERIFY LIGHT FIXTURE FINISH PRIOR TO ORDERING.

1
E3.1

PLAN - ELECTRICAL FIXTURE SCHEDULE

SCALE: N.T.S.

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PROJECT NO. 4644

DRAWN REH

APPROVED CRS

NORTH CAROLINA

REGISTERED PROFESSIONAL

SEAL

15886

ELECTRICAL ENGINEER

DAVID R. STROUB

7-31-26

KEYNOTES

1. LAY-IN LIGHT FIXTURE.

2. CEILING GRID.

3. SUPPORT WIRE. USE CEILING TYPE SUPPORT WIRE. ONE AT EACH OF TWO DIAGONALLY OPPOSITE CORNERS (EITHER "A" & "C" OR "B" & "D" - TWO REQUIRED PER LIGHT). WIRES SHALL BE SINGLE LENGTH (DO NOT SPLICE), INSTALLED AT NO MORE THAN 45 DEGREES FROM VERTICAL IN ANY DIRECTION, TAUT (NO SLACK), PAINTED A DIFFERENT COLOR (RED) THAN THE OTHER CEILING SUPPORT WIRES.

4. SHEET METAL SCREW (FOUR REQUIRED PER LIGHT). THE SCREWS SHALL BE INSTALLED CONCEALED FROM SIGHT IN SUCH A MANNER THAT THE LIGHT IS ADEQUATELY SECURED TO THE GRID AND THE SCREWS DO NOT INTERFERE WITH ANY DOOR TRIMS, FLANGES, LOUVERS, ETC. INSTALL SCREWS TIGHTLY SO NO GAPS APPEAR IN THE LIGHT FIXTURE FRAMING OR TRIM.

5. STRUCTURE (METAL OR WOOD TRUSS, METAL OR WOOD BAR JOIST, CONCRETE, ETC.).

6. BRIDGING BETWEEN STRUCTURAL MEMBERS (WHERE APPLICABLE). NOTE: SUPPORT WIRES ARE NOT PERMITTED TO ATTACH TO THE BRIDGING AT ANY LOCATION.

7. PIPING, HVAC DUCT, ETC. WITH OR WITHOUT INSULATION. NOTE: SUPPORT WIRES ARE NOT PERMITTED TO CONTACT ANY PIPING, HVAC DUCTS, INCLUDING INSULATION AT ANY POINT.

NOTE: ADDITIONAL SUPPORT MATERIALS MAY BE REQUIRED IN ORDER TO ACHIEVE AN ANGLE OF 45 DEGREES OR LESS, TO AVOID CONTACTING PIPING OR DUCTS, TO PREVENT FROM ATTACHING TO BRIDGING, ETC. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ADDITIONAL SUPPORT MATERIALS APPROVED FOR THE PURPOSE (UNISTRUT, ANGLE IRON, ETC.) AS REQUIRED TO INSTALL THE SUPPORT WIRES PER THIS DETAIL.

1

E4.0

DETAIL - LAY-IN LIGHT FIXTURE SUPPORT

SCALE: N.T.S.

2

E4.0

DETAIL - SERVICE EQUIPMENT GROUND BAR

SCALE: N.T.S.

3

E4.0

DETAIL - RECEPTACLE CONNECTION

SCALE: N.T.S.

4

E4.0

DETAIL - WATER COOLER

SCALE: N.T.S.

5

E4.0

DETAIL - ELECTRICAL EQUIPMENT MINIMUM WORKING

SCALE: N.T.S.

6

E4.0

DETAIL -ELECTRICAL RACEWAY MINIMUM WORKING SPACE

SCALE: N.T.S.

7

E4.0

DETAIL - TYPICAL ELECTRICAL EQUIPMENT LABELS

SCALE: N.T.S.

8

E4.0

DETAIL - MOUNTING HEIGHT, LAYOUT AND CLEARANCE

SCALE: N.T.S.

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E4.0

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CHRISTOPHER R. STROUPE, III

7-31-26



-

- 1) PROVIDE EIGHT (8) CEILING SPEAKERS CONNECTED TO A 70V DISTRIBUTED AUDIO SYSTEM.
- 2) PROVIDE ONE (1) WALL-MOUNTED 70V IMPEDANCE-MATCHING VOLUME CONTROL FOR EACH SPEAKER LOCATION. VERIFY LOCATION.
- 3) SPEAKER WIRING SHALL BE WEST PENN 25291B, 18 AWG, 2-CONDUCTOR, PLENUM-RATED, OR APPROVED EQUAL.
- 4) WIRING FROM AMPLIFIER TO VOLUME CONTROLS AND FROM VOLUME CONTROLS TO SPEAKERS SHALL BE INSTALLED IN A HOMERUN/DAISY-CHAIN CONFIGURATION AS RECOMMENDED BY THE MANUFACTURER.
- 5) VOLUME CONTROLS SHALL BE LOCATED ADJACENT TO THE ROOM ENTRANCE UNLESS OTHERWISE DIRECTED BY THE OWNER.
- 6) EACH VOLUME CONTROL SHALL PROVIDE ON/OFF CAPACITY AND INDEPENDENT ADJUSTMENT OF THE ASSOCIATED SPEAKER.
- 7) AMPLIFIER SHALL BE SIZED FOR THE CONNECTED LOAD PLUS A MINIMUM 20% SPARE CAPACITY.
- 8) ALL WIRING SHALL COMPLY WITH NEC 640 AND MANUFACTURER INSTALLATION REQUIREMENTS.
- 9) LOCATE HEADEND EQUIPMENT IN THE IT/COMMUNICATIONS ROOM UNLESS NOTED OTHERWISE.



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E4.1

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E4.2



- NOTE:**
FIRE ALARM CONTRACTOR TO PROVIDE VOLTAGE DROP
CALCULATION FOR NAC PANEL.
FA CONTRACTOR TO ADD ADDITIONAL NAC PANEL AS
REQUIRED.



3
E4.2

DETAIL - FIRE ALARM SYSTEM I/O MATRIX

SCALE: N.T.S.