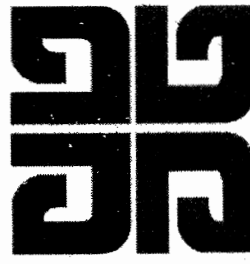


ABI COMMERCIAL INNOVATION CENTER

ARKANSAS STATE UNIVERSITY

JONESBORO, ARKANSAS

Project Architect

BRACKETT
KRENNERICH
architects 

Mechanical/Electrical Engineers

Pettit & Pettit
Consulting Engineers, Inc. 

Lab Consultant



Funding Provided by

U.S. Department of Commerce

Economic Development Administration

EDA Award Number: 08-79-04345



Honorable Mike Beebe
Arkansas Governor



ARKANSAS STATE UNIVERSITY
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SYMBOLS

SECTION		SECTION NUMBER
DETAIL		DETAIL NUMBER
DOOR		SHEET NUMBER
WINDOW		
ALUMINUM FRAME		
HOLLOW METAL FRAME		
EXISTING CONTOUR LINE		
NEW CONTOUR LINE		
NEW SPOT ELEVATION		
FINISH ELEVATION		

MATERIALS

CONCRETE	
STEEL	
METAL STUDS	
CONCRETE BLOCK	
PLYWOOD	
FINISH WOOD	
WOOD FRAMING/BLOCKING	
GYPSUM BOARD	
RIGID INSULATION	
BATT INSULATION	
COMPACT FILL	
GRAVEL FILL	
ASPHALT PAVING	

ABBREVIATIONS

ABOVE FINISH FLOOR	A.F.F.	MANUFACTURER	MFR.
ACOUSTICAL	ACOUST.	MECHANICAL	MECH.
ALUMINUM	ALUM.	METAL THRESHOLD	M.T.
APPROXIMATE	APPROX.	NOMINAL	NOM.
CEILING	CLG.	NOT IN CONTRACT	N.I.C.
CENTER LINE	CL	ON CENTER	O.C.
CORNER GUARD	CG	PLATE	PL
EACH	EA.	REQUIRED	REQ.
EMERGENCY SHOWER PULL STATION	ESPS	SIMILAR	SIM.
ELECTRIC WATER COOLER	E.W.C.	SQUARE	SQ.
FINISH	FIN.	SUSPENDED	SUSP.
FIRE EXTINGUISHER	F.E.	TOP OF CURB	T.O.C.
FIRE EXTINGUISHER CABINET	F.E.C.	TOP OF FOOTING	T.O.F.
FLOOR	FLR.	TOP OF WALL / WALK	T.O.W.
INSULATION	INSUL.	TYPICAL	TYP.
JOINT	JNT.	WITH	W/

INDEX TO DRAWINGS

COVER SHEET	TITLE SHEET
ARCHITECTURAL	
A001	DOOR SCHEDULE, HOLLOW METAL FRAME SCHEDULE, VISUAL DOOR TYPES, DETAILS
A002	FIRST FLOOR LIFESAFETY PLAN
A003	PARTIAL FIRST FLOOR FINISH FLOOR PLAN, FINISH SCHEDULE, DETAILS
A100	DEMOLITION FLOOR PLAN AND REFLECTED CEILING DEMOLITION PLAN
A101	PARTIAL FIRST FLOOR PLAN, PARTIAL SECOND AND THIRD FLOOR PLAN, VISUAL WALL TYPES
A400	PARTIAL FIRST FLOOR REFLECTED CEILING PLAN, CEILING DETAILS
LABORATORY CASEWORK	
QL001	SYMBOLS AND ABBREVIATIONS
QL002	SYMBOLS, ABBREVIATIONS, EXHAUST SCHEDULE, FIXTURES AND ACCESSORIES
QL003	CASEWORK ELEVATIONS AND ABBREVIATIONS
QL101A	FIRST FLOOR LAB PLAN, SECTION A
QL101B	FIRST FLOOR LAB PLAN, SECTION B
QL201	LABORATORY ELEVATIONS
QL202	LABORATORY ELEVATIONS
QL203	LABORATORY ELEVATIONS
QL204	LABORATORY ELEVATIONS
QL500	LABORATORY DETAILS
MECHANICAL	
M100	PARTIAL FIRST FLOOR PLAN - HVAC DEMOLITION
M101	PARTIAL FIRST FLOOR PLAN - HVAC
M102	PARTIAL FIRST FLOOR PLAN - HVAC PIPING
M201	DETAILS - HVAC
M301	EQUIPMENT SCHEDULES - HVAC
M302	EQUIPMENT SCHEDULES - HVAC
M401	CONTROL SCHEMATICS - HVAC
PLUMBING	
P100	PLUMBING GENERAL NOTES AND LEGENDS
P101	PLUMBING PLAN - EXISTING DEMO UNDERGROUND
P102	PLUMBING PLAN - WASTE, VENT AND STORM DRAIN PIPING
P103	PLUMBING PLAN - WATER AND GAS PIPING
P104	PLUMBING RISERS
P105	PLUMBING DETAILS
FIRE PROTECTION	
FP01	FIRE PROTECTION PLAN
ELECTRICAL	
E001	ELECTRICAL DEMOLITION PLAN
E101	ELECTRICAL LIGHTING PLAN
E201	ELECTRICAL POWER PLAN
E202	ELECTRICAL HVAC POWER PLAN
E301	ELECTRICAL SCHEDULES AND DETAILS
E302	ELECTRICAL PANEL SCHEDULES
PRE-HEAT SYSTEM	
M1.01	FOURTH FLOOR MECHANICAL ROOM - HVAC
M2.01	FIRST FLOOR MECHANICAL PIPING PLAN
M3.01	PIPING DIAGRAM AND DETAILS - HVAC
M4.01	CONTROLS - HVAC
M4.02	CONTROLS - HVAC
M5.01	SCHEDULES AND LEGEND - HVAC
E1.01	FOURTH FLOOR MECHANICAL ROOM - ELECTRICAL

VICINITY MAP



ARKANSAS FIRE PREVENTION CODE 2007

OCCUPANCY CLASSIFICATION Group B, Business	OCCUPANCY LOAD (Table 1004.1.1) Finish out space 63
BUILDING AREA	
Existing First Floor (current area) 22,016 sq.ft.	
Existing First Floor (finish out) 6,245 sq.ft.	
Total First Floor 28,261 sq.ft.	
BUILDING HEIGHT (existing) 60'-0"	
NUMBER OF STORIES (existing) Four (4)	
TYPE OF CONSTRUCTION (existing) Type II-B, fully sprinklered	
ALLOWABLE HEIGHT (Table 503) 75'-0" (with height increase per section 504)	
ALLOWABLE AREA (Table 503) 69,000 sq. ft. (with area increase)	
MAXIMUM NO. OF STORIES Five (5) (with story increase per section 504)	
EXIT ACCESS STRATEGY 2 exits are directly to exterior Fully Sprinklered	
EXIT REQUIREMENTS	
Min. No. of Exits (finish out space) 2 (4 Provided)	
Min. Door Size 36"(ADA)	
Max Distance To Exit 250'-0"	
Egress Level .15" Per Person	
SEISMIC ZONE 3, Category D	

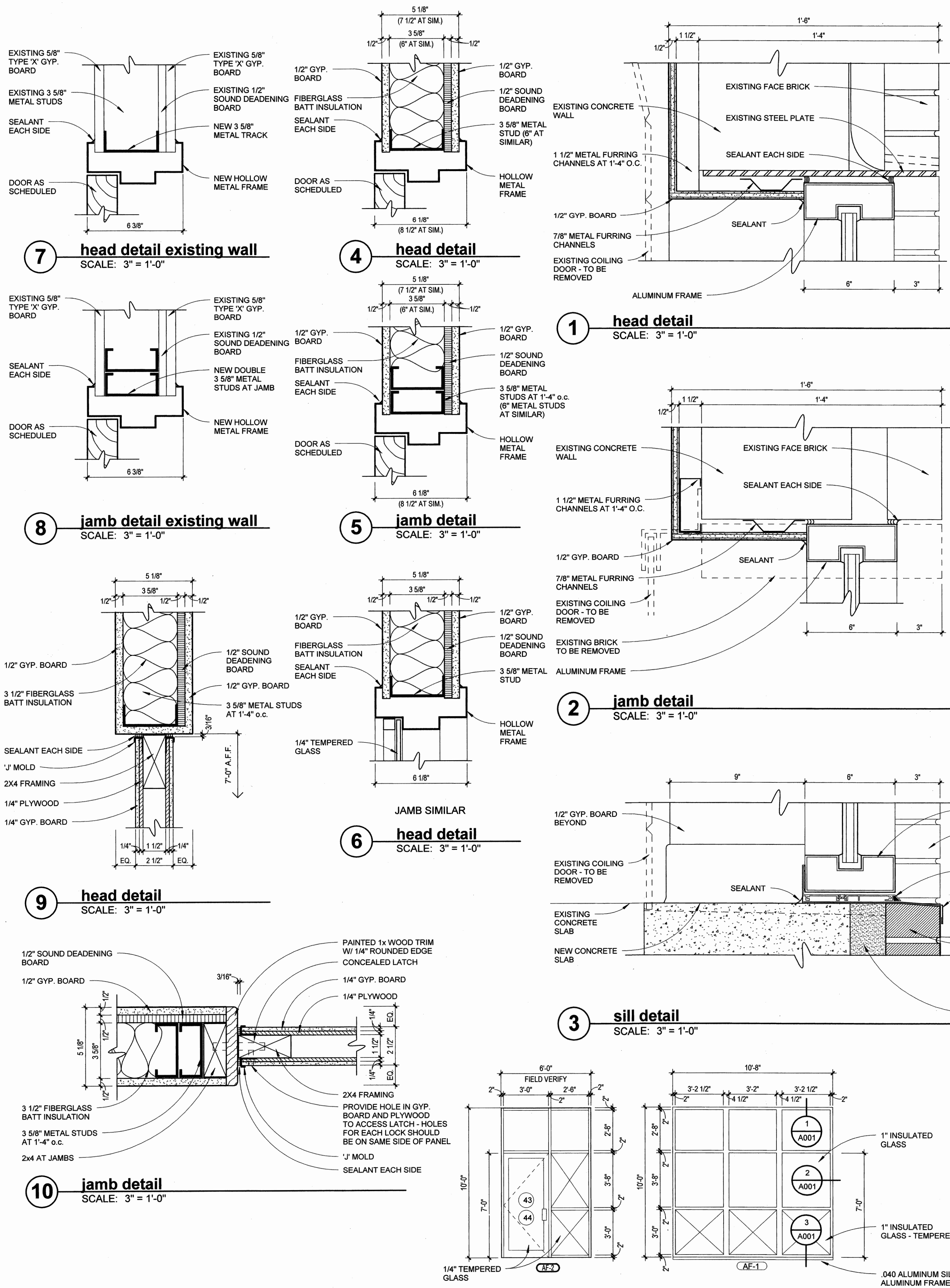
I hereby certify that these plans and specifications have been prepared by me, or under my supervision. I further certify that to the best of my knowledge these plans and specifications are as required by law and in compliance with the Arkansas Fire Prevention Code for the State of Arkansas.

Jerry W. Brackett



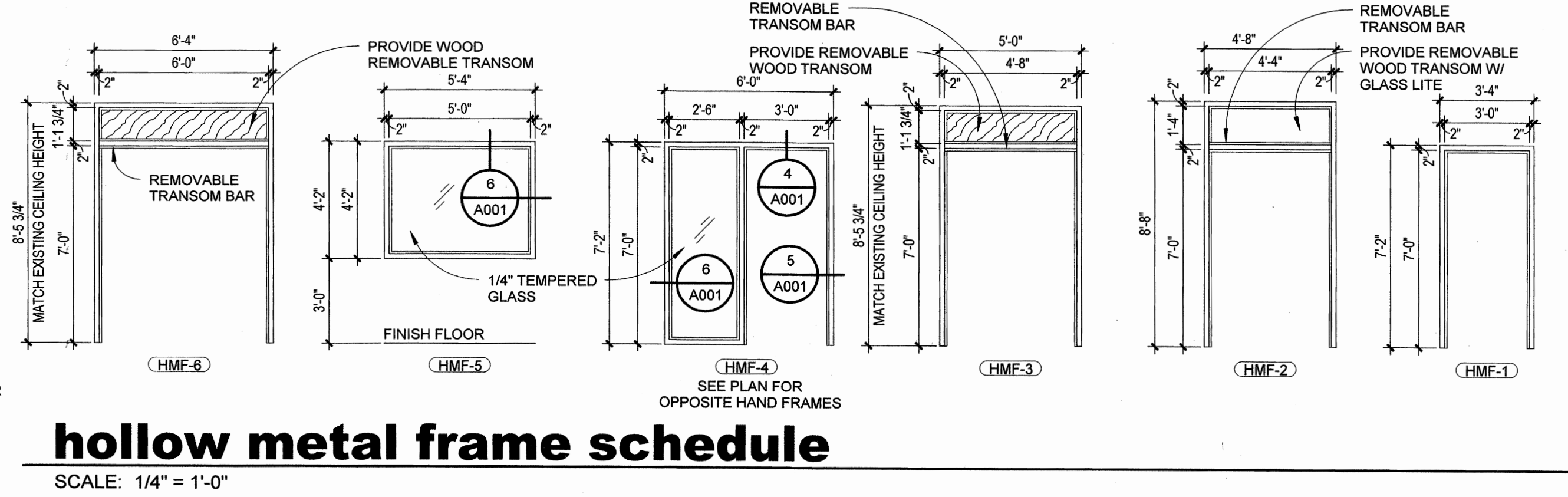
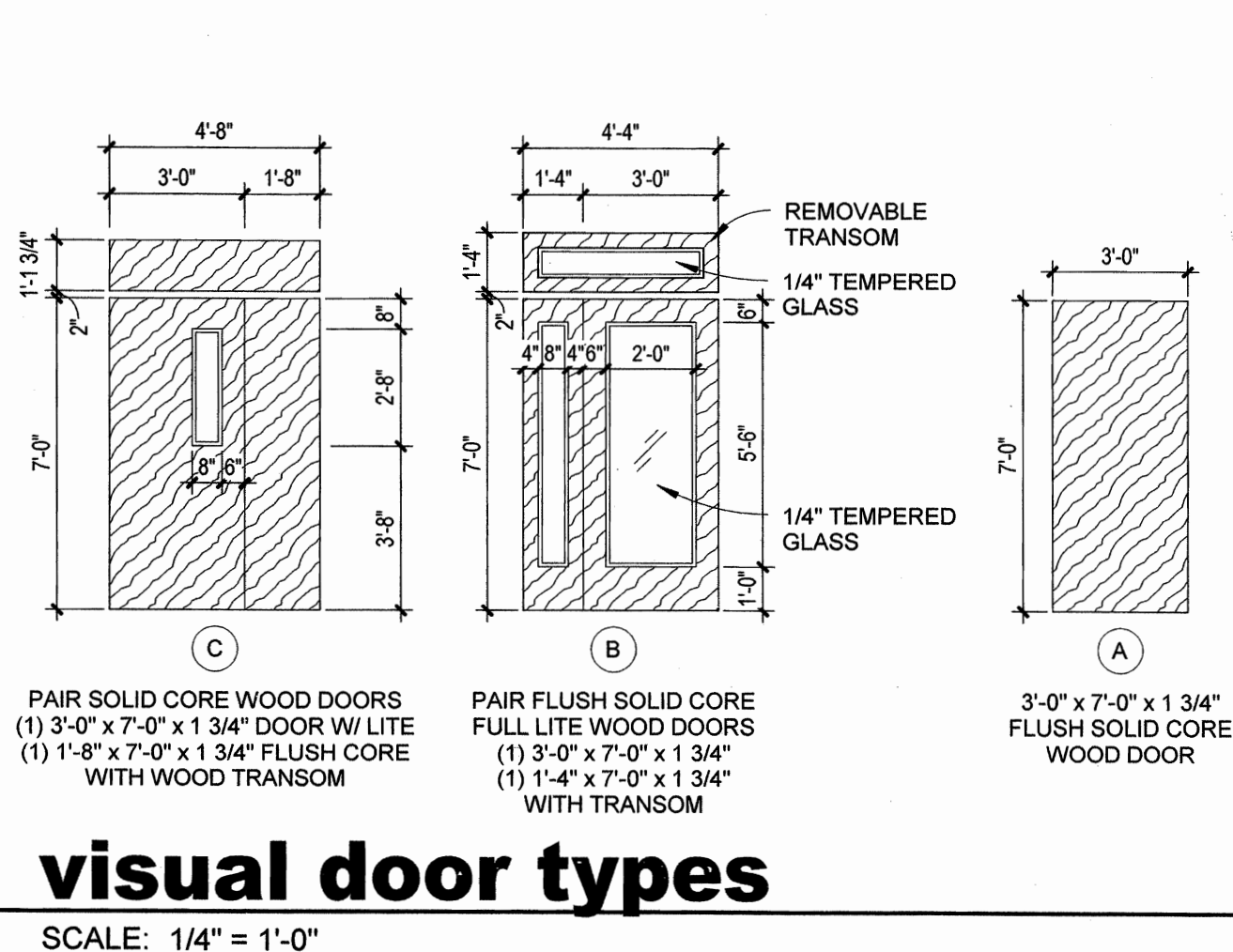
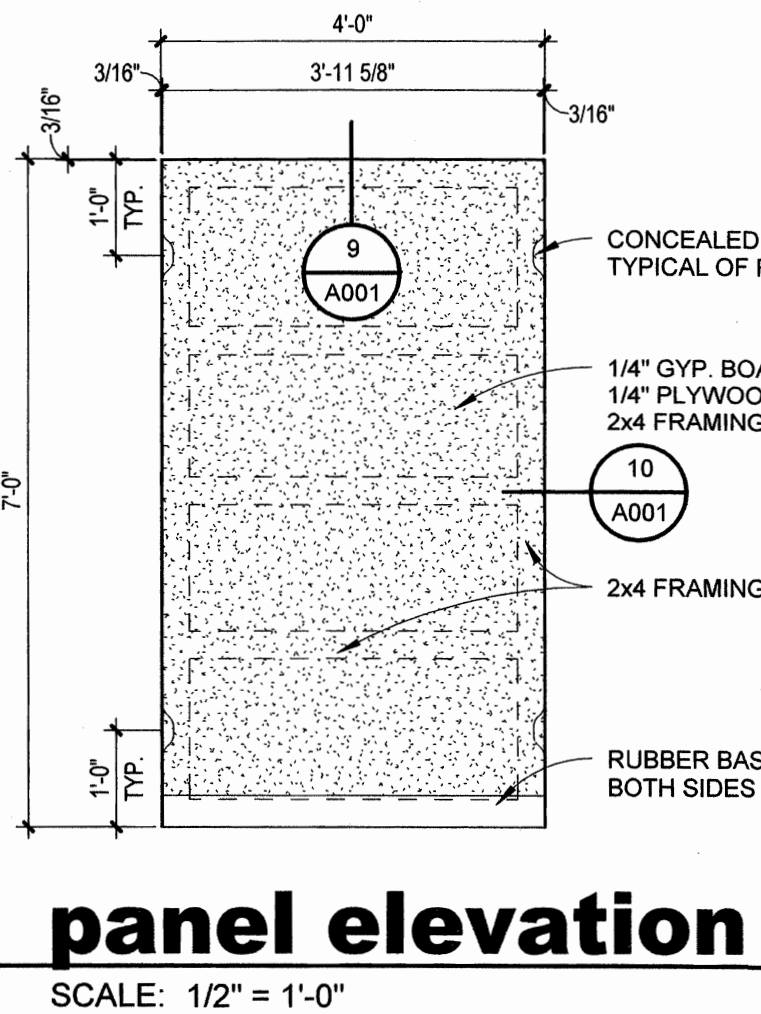
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KRENNERICH
architects

SET NUMBER



aluminum frame schedule
SCALE: 1/4" = 1'-0"

DOOR SCHEDULE											
Door Number	Type	Style	Threshold	Frame	Frame Depth	DETAILS				HDWE	Remarks
						Head	Jamb	Sill	Label		
1	EXISTING	SINGLE	-----	EXISTING	-----	4/A001	5/A001	-----	-----	6	RELOCATED EXISTING FRAME AND DOOR
2	OMITTED										DOOR OMITTED FROM PROJECT
3	OMITTED										DOOR OMITTED FROM PROJECT
4	OMITTED										DOOR OMITTED FROM PROJECT
5	OMITTED										DOOR OMITTED FROM PROJECT
6	OMITTED										DOOR OMITTED FROM PROJECT
7	OMITTED										DOOR OMITTED FROM PROJECT
8	OMITTED										DOOR OMITTED FROM PROJECT
9	OMITTED										DOOR OMITTED FROM PROJECT
10	OMITTED										DOOR OMITTED FROM PROJECT
11	OMITTED										DOOR OMITTED FROM PROJECT
12	A	SINGLE	-----	HMF-1	6 1/8"	4/A001	5/A001	-----	-----	5	
13	A	SINGLE	-----	HMF-1	6 1/8"	4/A001	5/A001	-----	-----	6	
14	A	SINGLE	-----	HMF-1	6 1/8"	4/A001	5/A001	-----	-----	5	
15	A	SINGLE	-----	HMF-1	6 1/8"	4/A001	5/A001	-----	-----	7	
16	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
17	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
18	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
19	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
20	B	PAIR	-----	HMF-2	8 1/2"	4/A001(SIM)	5/A001(SIM)	-----	-----	8	
21	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
22	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
23	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
24	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
25	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
26	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
27	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
28	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
29	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
30	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
31	B	PAIR	-----	HMF-2	8 1/2"	4/A001(SIM)	5/A001(SIM)	-----	-----	8	
32	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
33	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
34	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
35	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
36	C	PAIR	-----	HMF-3	6 1/8"	4/A001	5/A001	-----	-----	2	GENERAL CONTRACTOR TO PROVIDE PALM READER
37	B	PAIR	-----	HMF-2	6 1/8"	4/A001	5/A001	-----	-----	8	
38	C	PAIR	-----	HMF-3	6 3/8"	7/A001	8/A001	-----	-----	8	
39	A	PAIR	-----	HMF-6	VERIFY	-----	-----	-----	-----	1	GENERAL CONTRACTOR TO PROVIDE PALM READER
40	OMITTED										DOOR OMITTED FROM PROJECT
41	OMITTED										DOOR OMITTED FROM PROJECT
42	OMITTED										DOOR OMITTED FROM PROJECT
43	STILE	SINGLE	-----	AF-2	4 1/2"	-----	-----	-----	-----	3	GENERAL CONTRACTOR TO PROVIDE PALM READER
44	STILE	SINGLE	-----	AF-2	4 1/2"	-----	-----	-----	-----	3	GENERAL CONTRACTOR TO PROVIDE PALM READER
45	A	SINGLE	-----	EXISTING	EXISTING	-----	-----	-----	90 MIN.	4	
46	A	SINGLE	-----	EXISTING	EXISTING	-----	-----	-----	90 MIN.	9	
47	A	SINGL E	-----	HM-4	-----	4/A001	5/A001	-----	-----	5	GENERAL CONTRACTOR TO PROVIDE PALM READER



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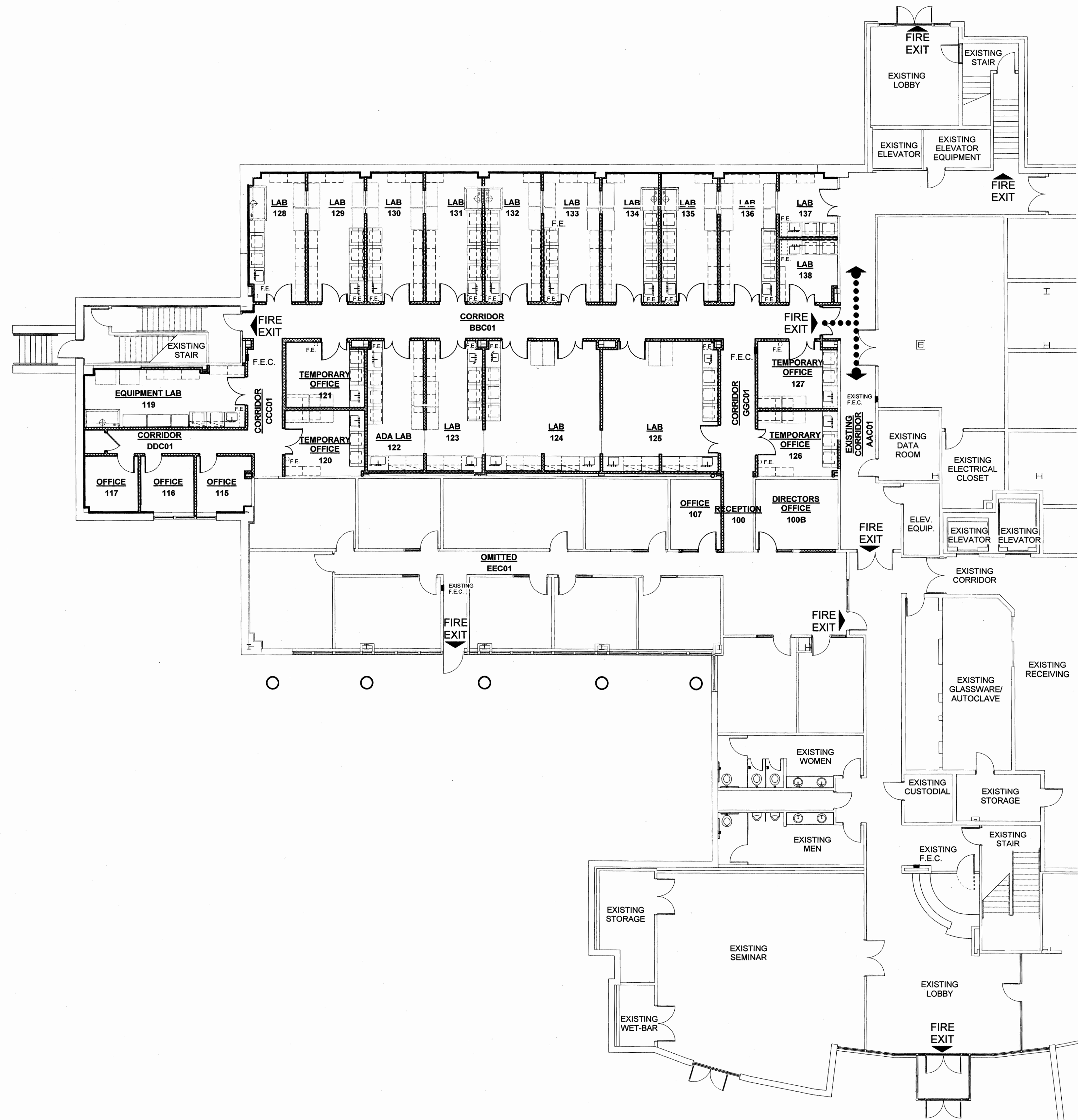
Commission Number
12709-R

A001

Rev. Date: August 6, 2010
Date: April 8, 2010

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100 East Huntington Ave. Suite D P.O. Box 1655
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lifesafety plan

SCALE: 3/32" = 1'-0"

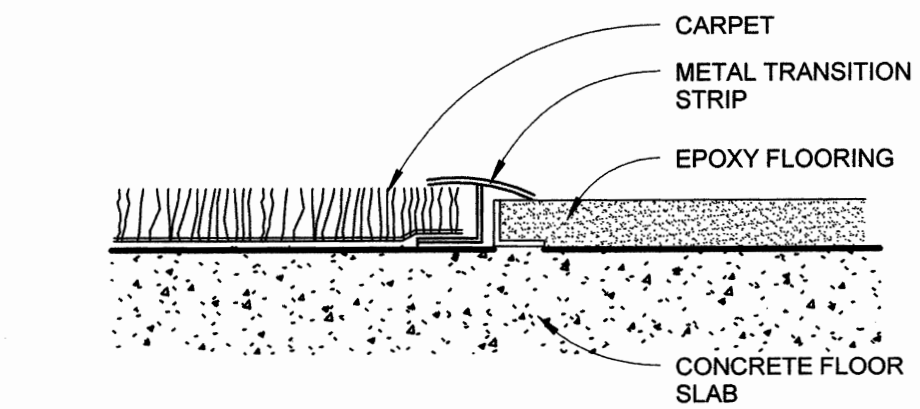
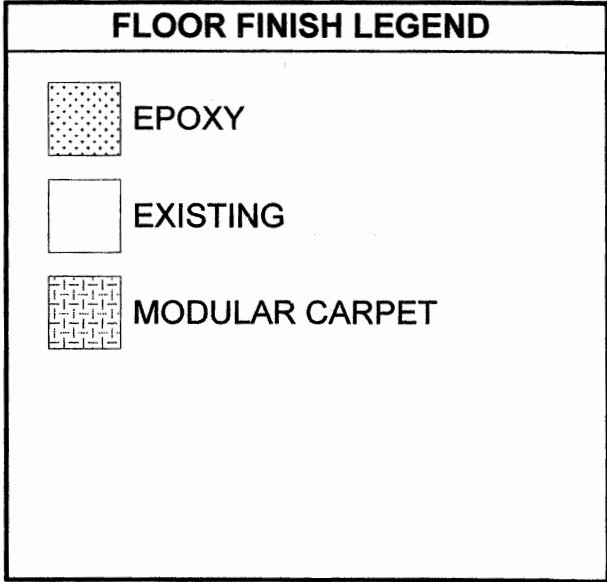
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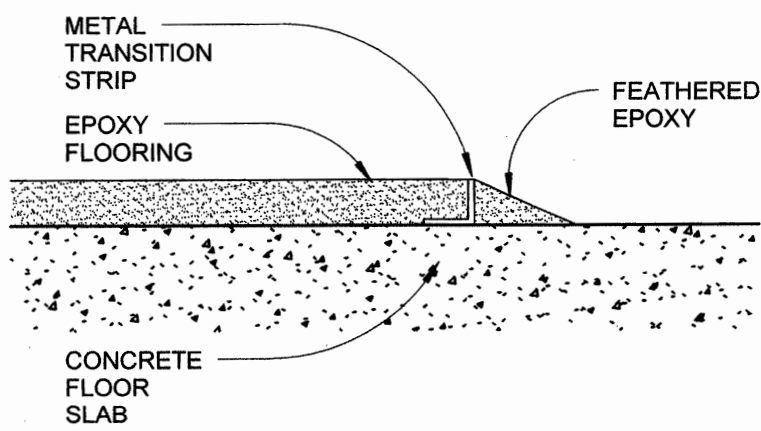


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A002
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Date: April 8, 2010

FINISH SCHEDULE							
Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Height	Ceiling Finish	Comments
100	RECEPTION	EXISTING	EXISTING RUBBER	PAINTED GYPSUM BOARD AT NORTH WALL	EXISTING	EXISTING	
100A	OMITTED						
100B	DIRECTORS OFFICE	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	EXISTING	EXISTING	
101	OMITTED						
102	OMITTED						
103	OMITTED						
104	OMITTED	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	9'-6"	2x2 SUSP. ACOUSTICAL TILE	
105	OMITTED						
106	OMITTED						
107	OFFICE	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	EXISTING	
108	OMITTED						
109	OMITTED						
110	OMITTED						
111	OMITTED						
112	OMITTED						
113	OMITTED						
114	OMITTED						
115	OFFICE	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	10'-4"	2x2 SUSP. ACOUSTICAL TILE	
116	OFFICE	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	10'-4"	2x2 SUSP. ACOUSTICAL TILE	
117	OFFICE	MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
118	STORAGE	EPOXY	①	EXISTING	9'-0"	2x2 SUSP. ACOUSTICAL TILE	① EPOXY FLOORING TO BE INSTALLED PRIOR TO WALL PARTITIONS - EPOXY FLOORING TO BE CONTINUOUS UNDER ALL PARTITIONS
119	EQUIPMENT LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
120	TEMPORARY OFFICE	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
121	TEMPORARY OFFICE	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
122	ADA LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
123	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
124	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
125	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
126	TEMPORARY OFFICE	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
127	TEMPORARY OFFICE	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
128	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
129	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
130	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
131	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
132	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
133	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
134	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
135	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
136	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
137	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
138	LAB	EPOXY	①	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE	
139	OMITTED						
140	OMITTED						
141	OMITTED						
142	OMITTED						
AAC01	EXISTING CORRIDOR	EXISTING EPOXY	EXISTING EPOXY	PAINTED GYPSUM BOARD	EXISTING	EXISTING	PAINT EXISTING WALLS TO RECEIVE WORK - MATCH EXISTING EPOXY FLOORING
AAC01A	ANTE	EPOXY	4" EPOXY	PAINTED GYPSUM BOARD	8'-5 3/4"	2x2 SUSP. ACOUSTICAL TILE	
BBC01	CORRIDOR	EPOXY	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. METAL PANEL, PAINTED GYPSUM BOARD FURR DOWN	PAINT FURR DOWNS AN ACCENT COLOR. CEILING TO HAVE PATTERN. SEE SHEET A400.
CCC01	CORRIDOR	EPOXY	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE, PAINTED GYPSUM BOARD FURR DOWN	PAINT FURR DOWNS AN ACCENT COLOR
DDC01	CORRIDOR	EPOXY	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE, PAINTED GYPSUM BOARD FURR DOWN	
EEC01	OMITTED						
FFC01	OMITTED						
GGC01	CORRIDOR	EPOXY, MODULAR CARPET	4" RUBBER	PAINTED GYPSUM BOARD	9'-0"	2x2 SUSP. ACOUSTICAL TILE, PAINTED GYPSUM BOARD FURR DOWN	PAINT FURR DOWNS AN ACCENT COLOR



1 carpet to concrete
SCALE: 1 : 1



2 epoxy flooring / concrete
SCALE: 1 : 1



finish floor plan

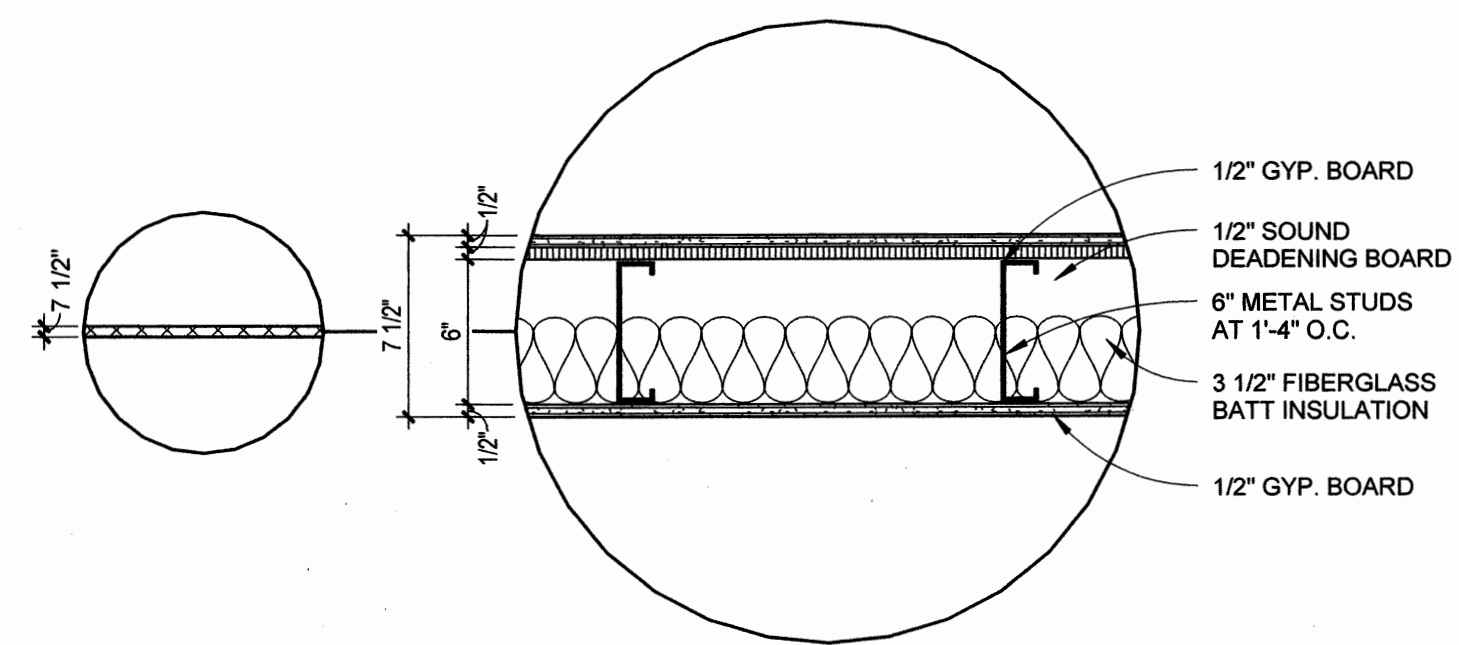
SCALE: 1/8" = 1'-0"

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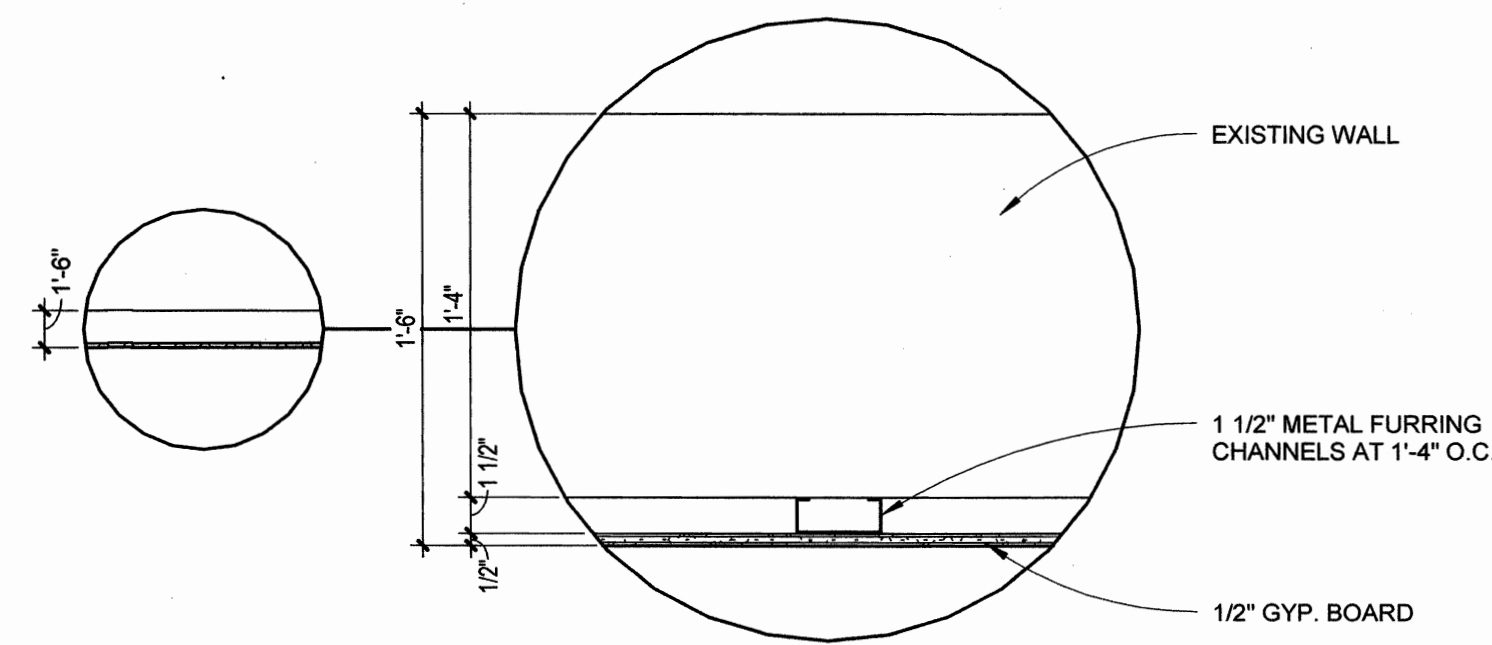
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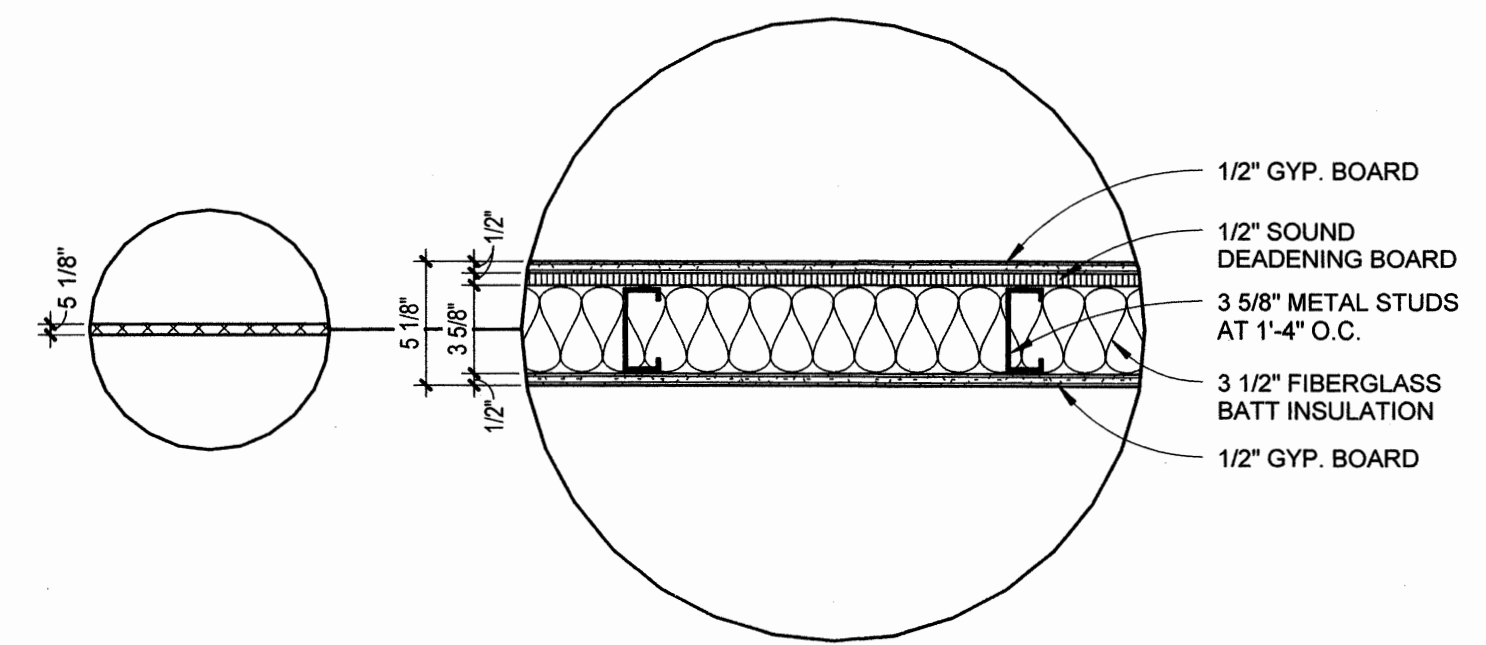
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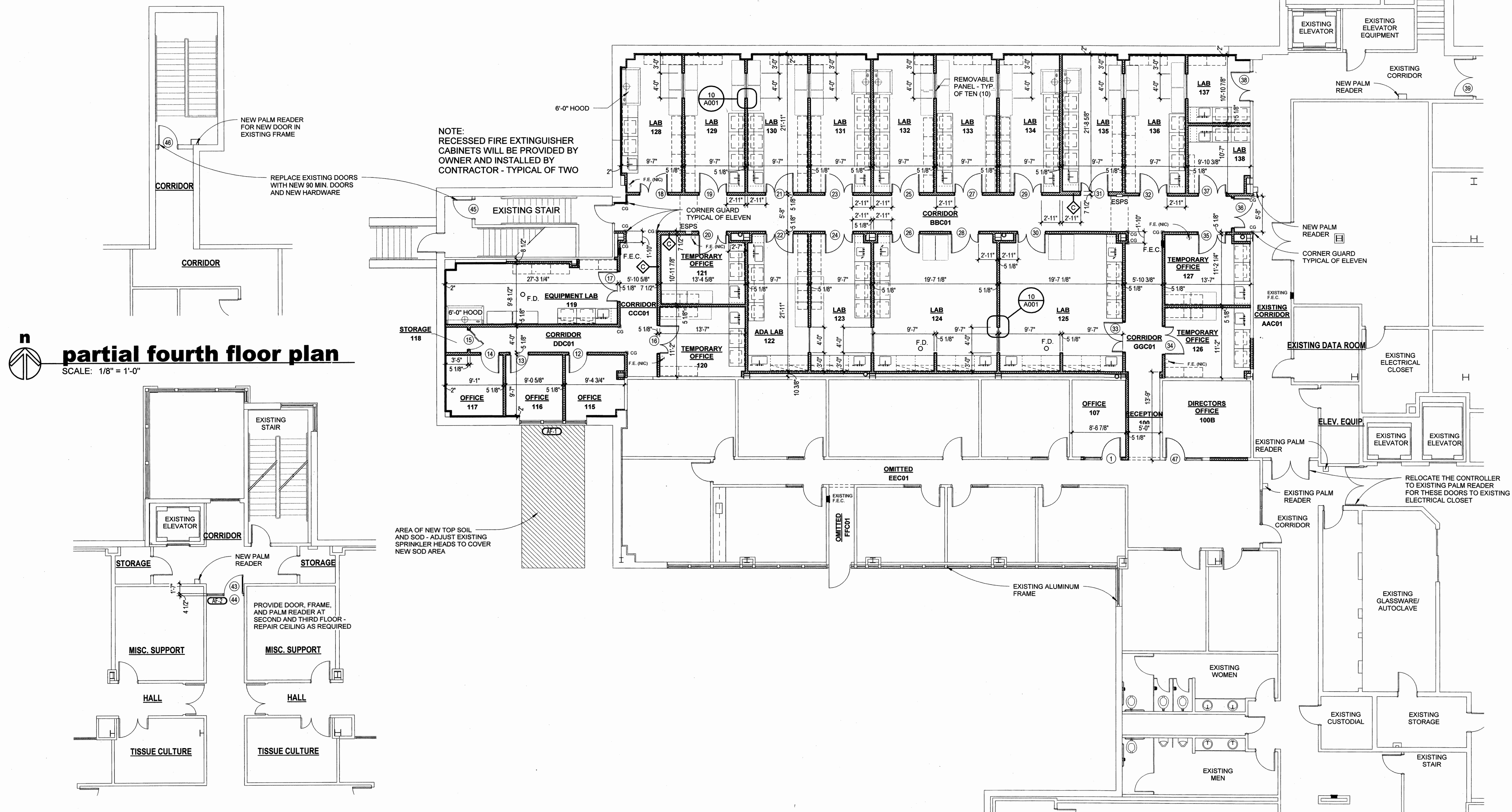
C interior wall
SCALE: 1 1/2" = 1'-0"
WALL TO EXTEND TO FLOOR DECK
13'-6" FINISH FLOOR TO BOTTOM OF
FLOOR DECK ABOVE



B interior wall - furr out
SCALE: 1 1/2" = 1'-0"
EXISTING WALL
1 1/2" METAL FURRING
CHANNELS AT 1'-4" O.C.
1/2" GYP. BOARD



A interior wall - typical
SCALE: 1 1/2" = 1'-0"
WALL TO EXTEND TO FLOOR DECK
13'-6" FINISH FLOOR TO BOTTOM OF
FLOOR DECK ABOVE



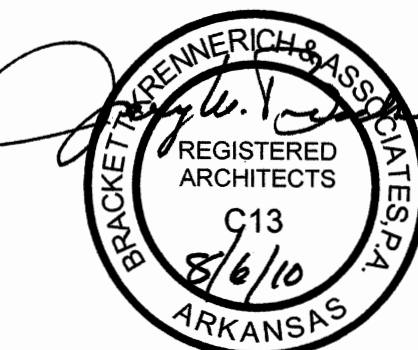
partial fourth floor plan
SCALE: 1/8" = 1'-0"

partial second and third floor plan
SCALE: 1/8" = 1'-0"

partial first floor plan
SCALE: 1/8" = 1'-0"

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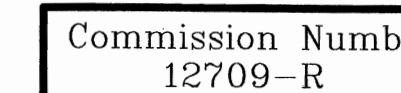


Commission Number
12709-R

A101

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Date: April 8, 2010

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partial first floor reflected ceiling plan

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

GENERAL NOTES

- 1.CAREFULLY EXAMINE THE LABORATORY FURNISHINGS DRAWINGS AND SPECIFICATIONS AND ALL OTHER DRAWINGS AND SPECIFICATIONS TO PROPERLY DETERMINE CONTRACTUAL RESPONSIBILITIES.
- 2.FOR ACTUAL ROOM DIMENSIONS REFER TO ARCHITECTURAL PLANS.
- 3.ALL DIMENSIONS SHALL BE FIELD CHECKED PRIOR TO FABRICATION.
- 4.LOCATION OF EQUIPMENT, SUCH AS OVERHEAD SERVICE CARRIERS, UMBILICAL ENCLOSURES, FUME HOODS, BRACES OR ANY OTHER ITEMS THAT MAY INTERFERE WITH LIGHTING, STRUCTURAL OR MECHANICAL SYSTEMS, SHALL BE CAREFULLY COORDINATED AND DISCREPANCIES BROUGHT TO A/E'S ATTENTION IMMEDIATELY.
- 5.ALL LABORATORY WORK SURFACES SHALL BE EPOXY RESIN, UNLESS OTHERWISE NOTED. WORK SURFACES SHALL BE 34" A.F.F, UON. WALL SHELVING TO BE 3/4" THICK TRESPA.
- 6.OVERALL LENGTH OF TOPS SHALL BE DETERMINED BY CASEWORK AND DIMENSIONS AS INDICATED ON PLANS. SUCH LENGTHS SHALL REMAIN CONSTANT REGARDLESS OF SUCCESSFUL BIDDER'S STANDARDS. ALL LABORATORY WORK SURFACES SHALL OVERHANG FRONT OF CASEWORK BELOW BY 1" AND OVERHAND EXPOSED SIDES OF CASEWORK BY 1/2". PROVIDE DRIP EDGE AT ALL OVERHANGS AND 1/16" BEVEL AT FINISHED EDGES.
- 7.LABORATORY COUNTERTOPS SHALL BE 2'-6" DEEP AT CASEWORK ALONG WALLS, UNLESS OTHERWISE NOTED.
- 8.ALL WALL SHELVING AND OPEN LABORATORY SHELVING ARE TO BE ADJUSTABLE, UNLESS OTHERWISE NOTED.
- 9.MAXIMUM HEIGHT FOR ADJUSTABLE SHELVING IS 7'-0" ABOVE FINISHED FLOOR. SHELVING STANDARDS ARE TO BE INSTALLED TO PREVENT SHELVING FROM BEING INSTALLED TOO HIGH.
- 10.PROVIDE 3/4" THICK AND 4" HIGH BACKSPLASH TO MATCH COUNTERTOP MATERIAL AT ALL LOCATIONS WHERE COUNTERTOPS MEET ADJACENT WALLS, METAL UPRIGHTS, FUME HOODS, AND METAL CABINETS THAT EXTEND ABOVE COUNTERTOPS, UNLESS NOTED OTHERWISE.
- 11.COUNTERTOPS AND SPLASHES SHALL BE SCRIBED TO MATCH IRREGULARITIES AND CONTOURS OF WALLS.
- 12.INSTALLATION OF CASEWORK SHALL BEGIN AT THE HIGH POINT OF THE FLOOR UNDER EACH BENCH.
- 13.ALL EXPOSED-TO-VIEW COUNTERTOP EDGES, BACKS OF SPLASHES, AND ALL EDGES OF TABLES, BACKS OF COUNTERTOPS AND SPLASHED HELD AWAY FROM WALL SHALL BE FILLED, SEALED AND FINISHED
- 14.CASEWORK SHALL BE PAINTED METAL, UNLESS OTHERWISE NOTED.
- 15.ALL PLUMBING SYSTEM HANGARDS AND FASTENERS SHALL BE PROVIDED UNDER DIVISION 15.
- 16.ALL LABORATORY SINKS SHALL BE PROVIDED UNDER DIVISION 12. FOR FINAL CONNECTIONS TO LABORATORY WASTE SYSTEM BY DIVISION 15.
- 17.ALL PENETRATIONS THROUGH COUNTERTOP SHALL BE CAULKED UNDER DIVISION 12 WITH ACID-RESISTANT SEALANT.
- 18.HIGH CASEWORK AND FREE-STANDING METAL, WOOD AND TRESPA SHELVING UNITS SHALL BE SECURED TO PREVENT TIPPING.
- 19.THE GENERAL CONTRACTOR SHALL COORDINATE THE LOCATIONS OF AND INSTALL ALL WALL STRAPPING AND BLOCKING WITHIN FINISHED WALLS AND FURRED COLUMNS TO SUPPORT SHELVING, SHELVING STANDARDS, CABINETS, AND COUNTERTOPS.
- 20.PROVIDE STEEL ANGLE REINFORCING AT WORK SURFACES WITH APRON SPANNING 4'-0" OR GRATER. EDGE OF WORK SURFACE SHOULD BE CAPABLE OF SUPPLYING A 200LB POINT LOAD.
- 21.MOUNT SERVICE FIXTURES 4" OFF CABINET SIDE AND 4" OFF BACK OF COUNTERTOP U.N.O., WHERE MULTIPLE SERVICE FIXTURES OCCUR. SPACE FIXTURES AS INDICATED ON SHEET QL002.

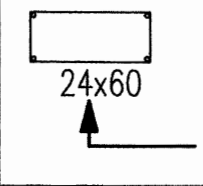
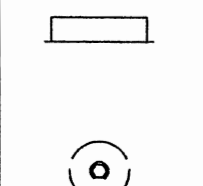
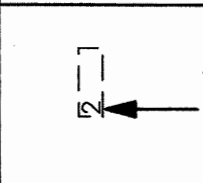
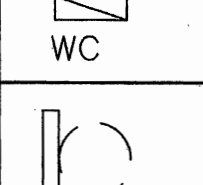
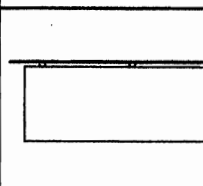
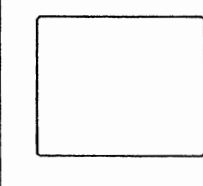
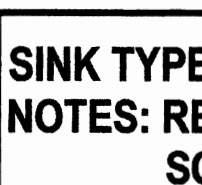
ABBREVIATIONS

⊙ AT	INC INCUBATOR
A COMPRESSED AIR	INC SK INCUBATOR SHAKER
A/E ARCHITECTURE/ENGINEERING	LCO2 LIQUIFIED CARBON DIOXIDE
ADA ACCESSIBLE TO THE DISABLED	LHE LIQUID HELIUM
ADJ ADJUSTABLE	LN LIQUID NITROGEN
AFF ABOVE FINISHED FLOOR	MAX MAXIMUM
ANES ANESTHESIA MACHINE	MB MARKER BOARD
AR ARGON	MH MOP HOLDER
AWS ANIMAL WATERING SYSTEM	MIN MINIMUM
BSC BIOLOGICAL SAFETY CABINET	MTD MOUNTED
CB CHALK BOARD	N NITROGEN
CCS CAGE CHANGING STATION	NO NUMBER
CD CONDENSATE	NIC NOT IN CONTRACT
CFCI CONTRACTOR FURNISHED, INSTALLED	NOM NOMINAL
CENT CENTRIFUGE	O OXYGEN
CHWS/R CHILLED WATER SUPPLY/RETURN	OC ON CENTER
CO2 CARBON DIOXIDE	OFI OWNER FURNISHED AND INSTALLED
CRYO CRYOSTAT	OFOI OWNER FURNISHED, OWNER INSTALLED
CW COLD WATER	OFCI OWNER FURNISHED, CONTRACTOR INSTALLED
D DRAIN	OHSC OVERHEAD SERVICE CARRIER
DH DRENCH HOSE	PTD PAPER TOWEL DISPENSER (NIC)
DI DEIONIZED WATER	REF REFRIGERATOR
DIA DIAMETER	R/F REFRIGERATOR/FREEZER
DWG DRAWING	RO REVERSE OSMOSIS
ECWS/R EQUIPMENT COOLING WATER SUPPLY/RETURN	SF SNORKEL FUME EXTRACTOR
ES EMERGENCY SHOWER	SG SPECIAL GAS
EQ EQUAL	SIM SIMILAR
EW EYEWASH	SMS SHEET METAL SCREW
EXH EXHAUST	SS SAFETY STATION
FB FIRE BLANKET	ST STEAM
FE FIRE EXTINGUISHER CABINET	ST STL STAINLESS STEEL
FEC	TIS PROC TISSUE PROCESSOR
FD FLOOR DRAIN	TYP TYPICAL
FP FILLER PANEL	UC UNDER COUNTER, UNDER CABINET
FRZR FREEZER	UHP ULTRA HIGH PURITY
FS FLOOR SINK	UNO UNLESS NOTED OTHERWISE
G NATURAL GAS	UON UNLESS OTHERWISE NOTED
GA GAUGE	V VACUUM
H HYDROGEN	WAGD WASTE ANESTHESIA GAS DISPOSAL
HCW HOT AND COLD WATER	W/ WITH
HE HELIUM	WD WOOD
HW HOT WATER	XP EXPLOSION PROOF
ICE ICEMAKER	

LABORATORY SERVICE FITTINGS AND FIXTURES

BENCH TOP MOUNTED		
SYMBOL	DESCRIPTION	SPECIFICATION SECTION DIV. 11 ITEM NO.
HCW	HOT AND COLD WATER MIXING FAUCET	HCW19; HCW20 ⊙ ADA LOCATIONS
HCW-PR	HOT AND COLD WATER PRE-RINSE FIXTURE	PR6
DH	DRENCH HOSE/EYEWASH	DH2
SPRAY	DRENCH HOSE	DH1
PW	PURIFIED WATER	PW5
⊙ G	NATURAL GAS, SINGLE OUTLET, BALL VALVE	B6
⧿ G2	NATURAL GAS, 70° TWO-WAY	B8
⧿ G2	NATURAL GAS, 180° TWO-WAY	B7
⧿ G4	NATURAL GAS, FOUR-WAY	B9
⊙ V	VACUUM, SINGLE OUTLET, BALL VALVE	B6
WALL MOUNTED / PANEL MOUNTED		
SYMBOL	DESCRIPTION	
⊢ V	VACUUM	B10
⊙ G	NATURAL GAS	B10
⧿ G2	NATURAL GAS, TWO-WAY WYE	B11
⊢ A120	COMPRESSED AIR, 120PSI W/REGULATOR	HPG9
FUME HOOD & BIOLOGICAL SAFETY CABINET		
SYMBOL	DESCRIPTION	
≡ ICW	COLD WATER	FHW5; FHW7 ⊙ ADA LOCATIONS
⊢ A	COMPRESSED AIR, 15PSI	FHG2; FHB2 ⊙ ADA LOCATIONS
⊢ V	VACUUM	FHG2; FHB2 ⊙ ADA LOCATIONS
⊙ G	NATURAL GAS	FHG2; FHB2 ⊙ ADA LOCATIONS
⊙ N	NITROGEN	FHG2; FHB2 ⊙ ADA LOCATIONS

MISC. PLAN SYMBOLS

	DETAIL
—	DRYING RACK
	FREESTANDING SHELVING UNIT, PAINTED METAL (INCHES) WIDTHxLENGTH
	BARRIER-FREE SAFETY STATION EMERGENCY SHOWER WITH CONCEALED STAY-OPEN BALL VALVE, "PANIC BAR" ACTIVATION AND CEILING MOUNTED EXPOSED SHOWER HEAD
	ADJUSTABLE SHELVING NO. OF SHELVES (2-HIGH, UNO)
	WALL CABINET (W = CABINET TYPE)
	CYLINDER RESTRAINT
	HEAVY DUTY WALL SHELVING
	LABORATORY SINK

SINK TYPE SCHEDULE

NOTES: REFER TO PLANS FOR SINKS TO BE PROVIDED.
SOME SIGNS MAY NOT BE USED IN THIS PROJECT.

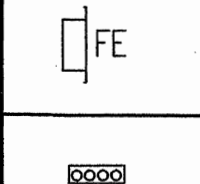
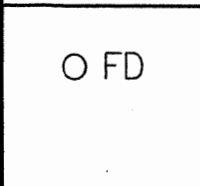
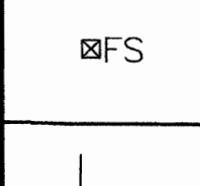
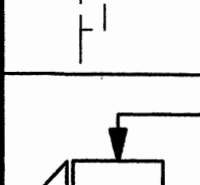
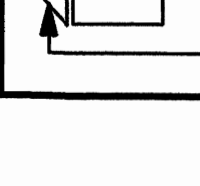
TYPE	INSIDE SINK DIMENSIONS (L X W X D)	MOUNTING	REMARKS
S1	21.5" x 15.5" x 11"	UNDER MOUNT	EPOXY RESIN LABORATORY SINK
S2	28" x 15" x 12"	UNDER MOUNT	EPOXY RESIN LABORATORY SINK
S3	29.5" x 14.75" x 6"	UNDER MOUNT	EPOXY RESIN LABORATORY SINK, ADA LOCATIONS
S4	42.25" x 18.25" x 12.625"	UNDER MOUNT	EPOXY RESIN LABORATORY SINK
S5	16" x 12" x 8"	DROP IN	EPOXY RESIN LABORATORY SINK
CS1	5.7" x 2.7" x 3.7"	DROP IN	OVAL EPOXY RESIN
CS2	6" x 3"	TOP	OVAL EPOXY RESIN; FOR FUME HOODS
CS3	11" x 3" x 4"	WALL	EPOXY RESIN
CS4	13.6" x 4.4" x 5.4"	DROP IN	EPOXY RESIN WITH SCREEN

DRYING RACKS (P SERIES)

NOTES: REFER TO PLANS FOR DRYING RACKS TO BE PROVIDED.
SOME SIGNS MAY NOT BE USED IN THIS PROJECT.

TYPE	SIZE (W x H)	PEG SIZE	MATERIAL	DRIP TROUGH	REMARKS
P1	18" x 24"	6-1/2"	ST. STL	Y	
P2	24" x 30"	6-1/2"	ST. STL	Y	
P3	30" x 30"	6-1/2"	ST. STL	Y	

MISC. PLAN SYMBOLS

	DETAIL
OFE	FIRE EXTINGUISHER AND WALL BRACKET (SHOWN FOR COORDINATION PURPOSES; REFER TO ARCHITECTURAL DWGS.)
	FIRE EXTINGUISHER AND WALL CABINET (SHOWN FOR COORDINATION PURPOSES; REFER TO ARCHITECTURAL DWGS.)
	OFOI WATER POLISHER UNIT
○ FD	FLOOR DRAIN (SHOWN FOR COORDINATION PURPOSES; REFER TO PLUMBING DRAWINGS)
	FLOOR SINK (SHOWN FOR COORDINATION PURPOSES; REFER TO PLUMBING DRAWINGS)
	PAPER TOWEL DISPENSER, NIC (SHOWN FOR COORDINATION PURPOSES)
	SHEET NUMBER ELEVATION

SYMBOLS AND ABBREVIATIONS

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JONESBORO, ARKANSAS

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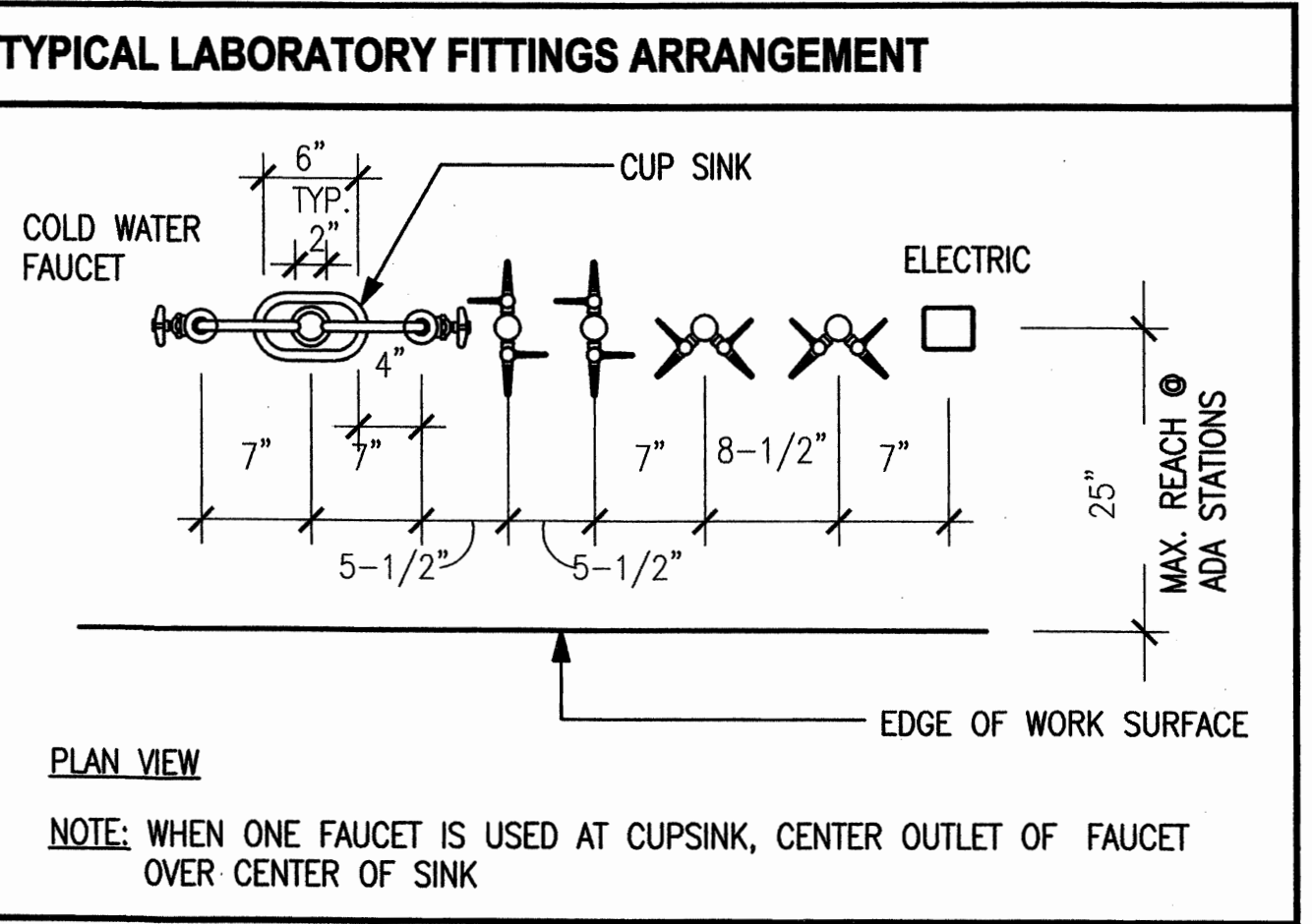
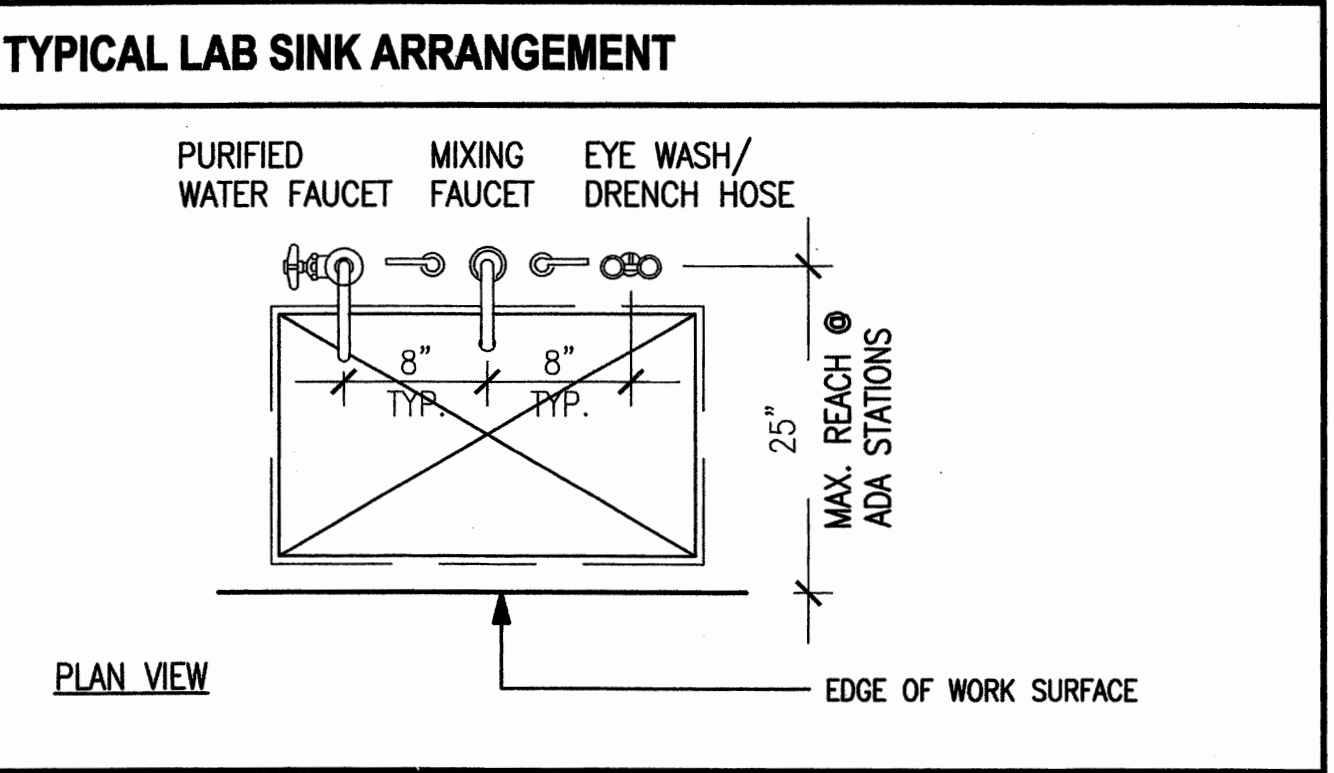
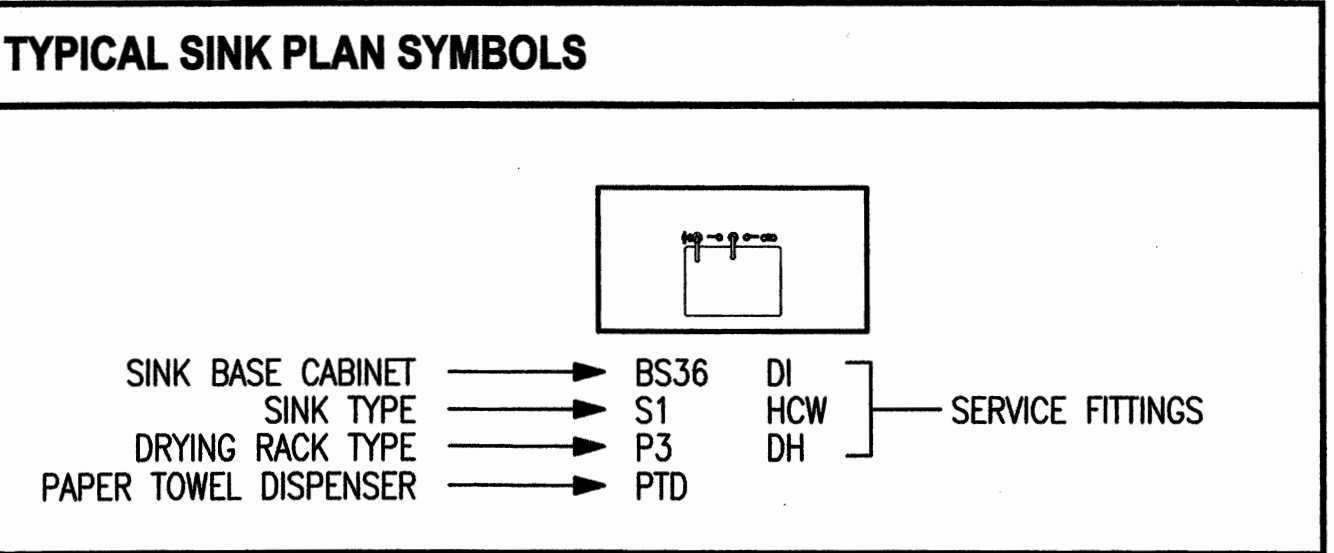
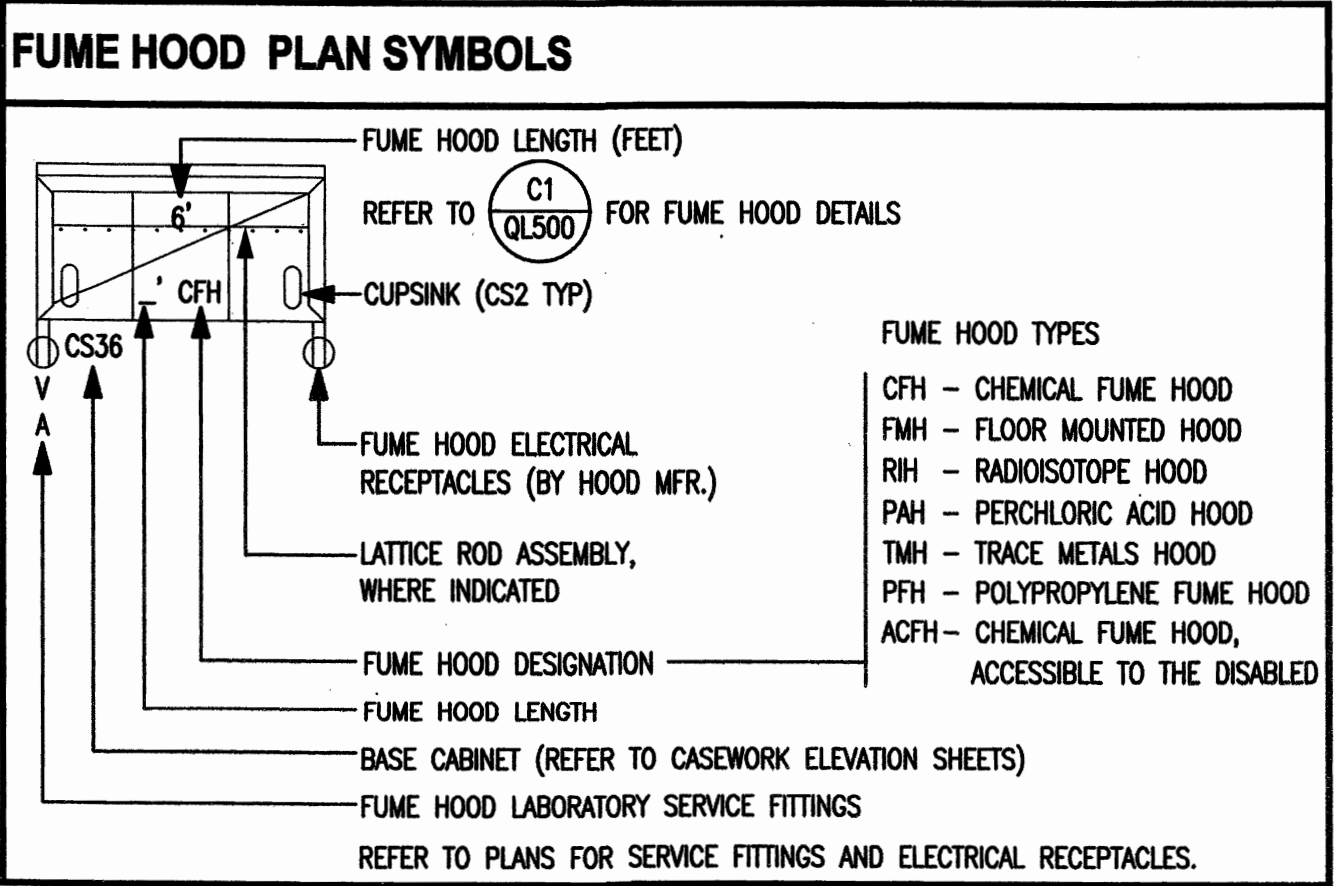
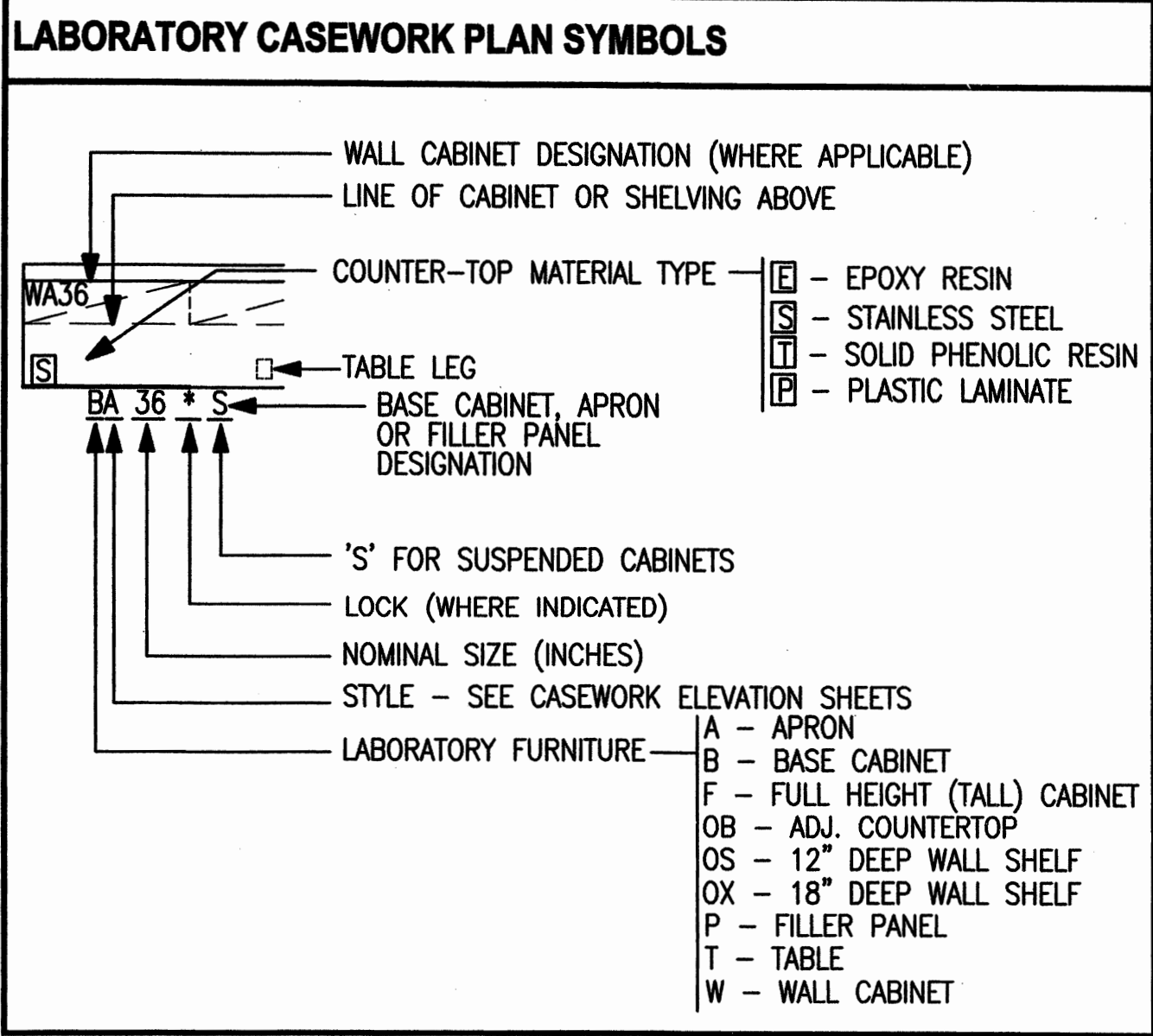
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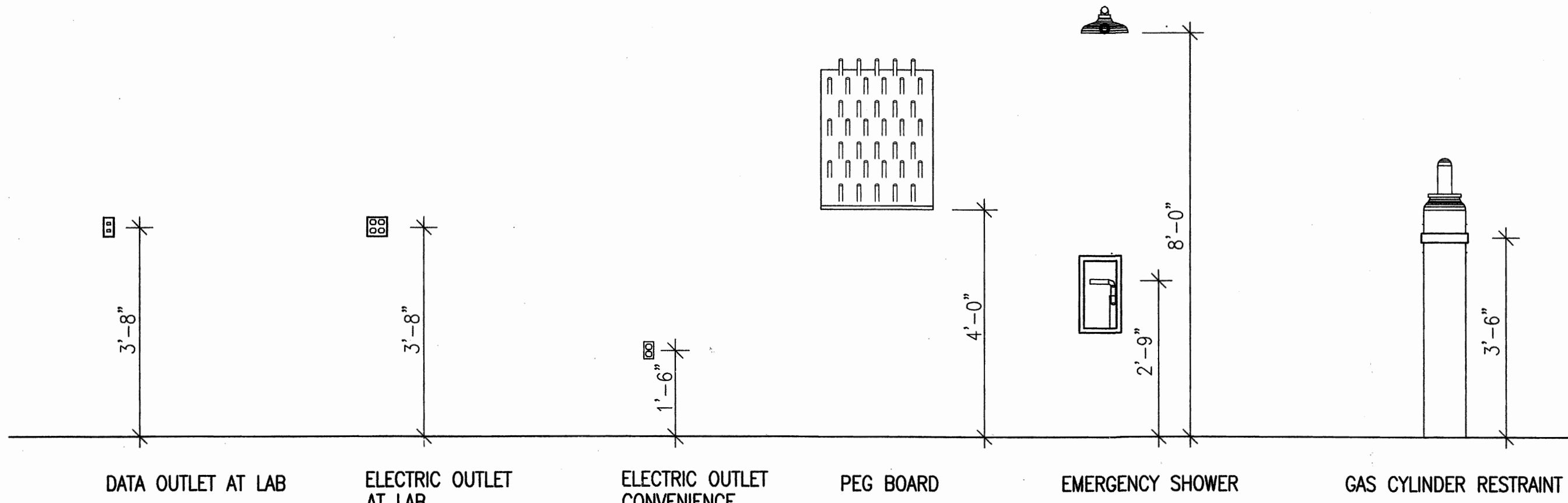
QL001

Date: April 8, 2010



EXHAUST DEVICE SCHEDULE

CHEMICAL FUME HOOD												
DRAWING ID	EQUIPMENT NAME	TYPE OF HOOD	TYPE OF SASH	QTY. OF VERTICAL SASHES	NOMINAL SASH WIDTH (in.)	DESIGN SASH HEIGHT (in.)	FACE VELOCITY (fpm.)	DESIGN AIR FLOW (cfm.)	MIN. VAV AIRFLOW (cfm.)	MIN. STATIC PRESSURE AT HOOD OUTLET (in WG)	EXHAUST CONNECTION (in. diameter)	REMARKS
BENCH-MOUNTED FUME HOODS: STANDARD HEIGHT												
4' CFH	4' CHEMICAL FUME HOOD	HIGH PERFORMANCE / LOW VELOCITY	VERTICAL	1	38.375	18	100	568	309	0.20	12	
6' CFH, 6' ACFH	6' CHEMICAL FUME HOOD	HIGH PERFORMANCE / LOW VELOCITY	VERTICAL	1	62.375	18	100	922	499	0.25	12	
MISCELLANEOUS EQUIPMENT												
DRAWING ID	EQUIPMENT	WIDTH (in.)	DEPTH (in.)	DESIGN AIR FLOW (cfm)	EXHAUST STATIC PRESSURE (in. WG)	EXHAUST CONNECTION (in.)	REMARKS					
CS__	CORROSIVES STORAGE CABINET			75	-	2 DIA.	LOCATED BELOW BENCH; REFER TO PLANS FOR CABINET WIDTH.					



FIXTURES & ACCESSORIES

SYMBOLS, ABBREVIATIONS, EXHAUST SCHEDULE, FIXTURES AND ACCESSORIES

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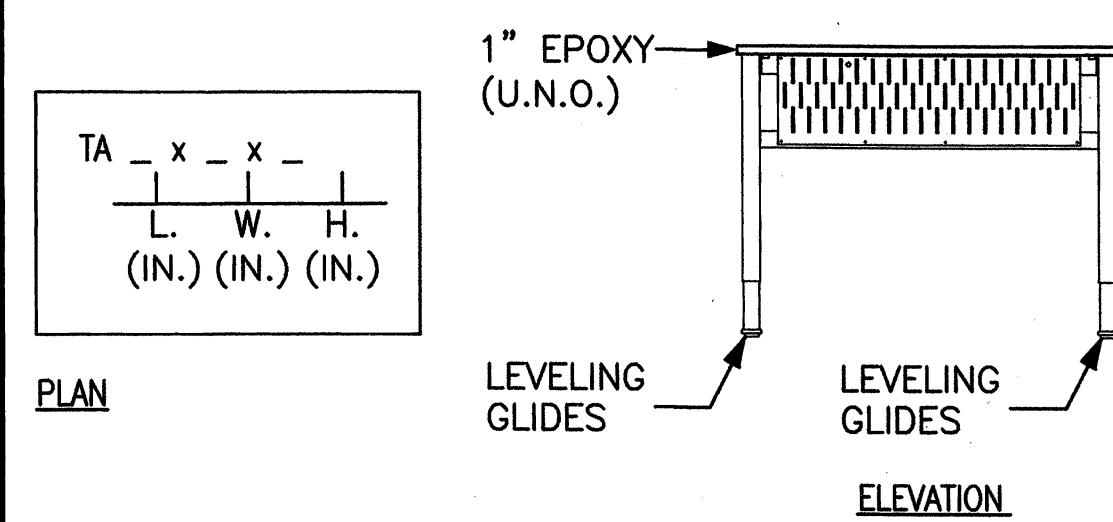
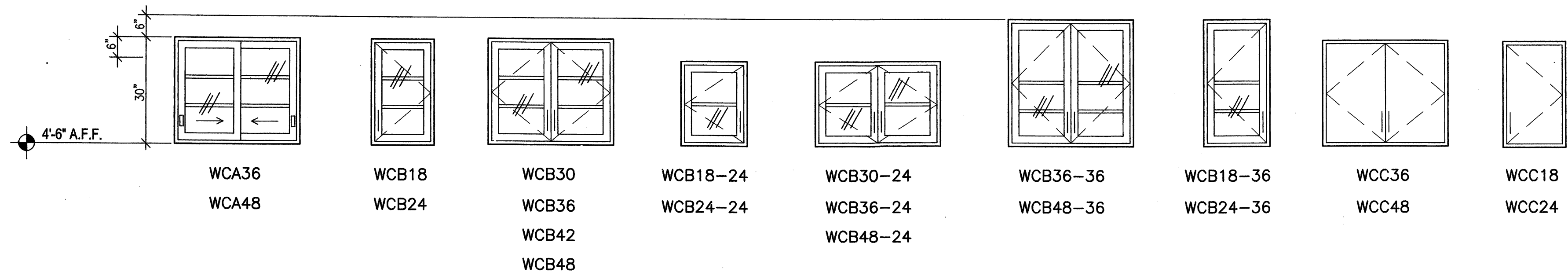
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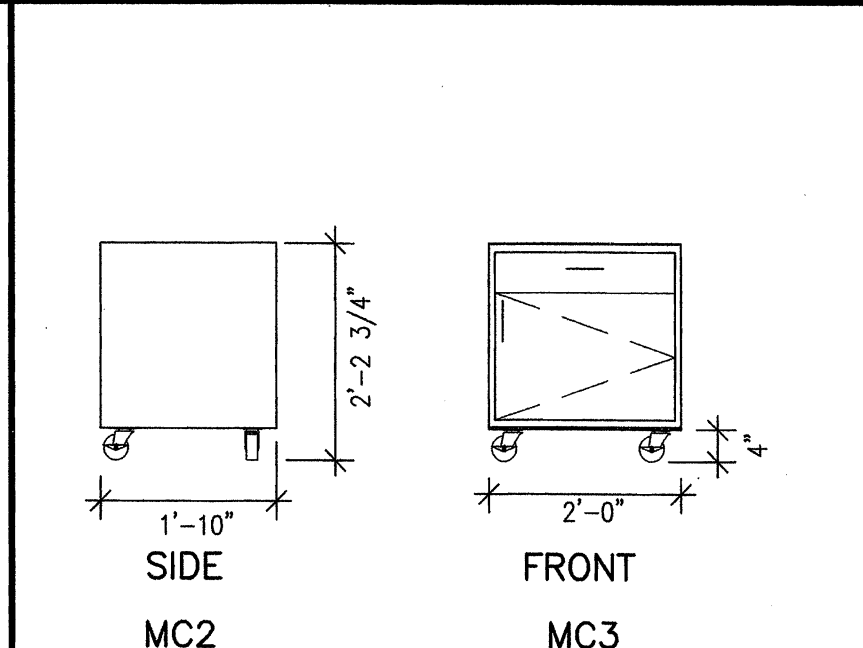
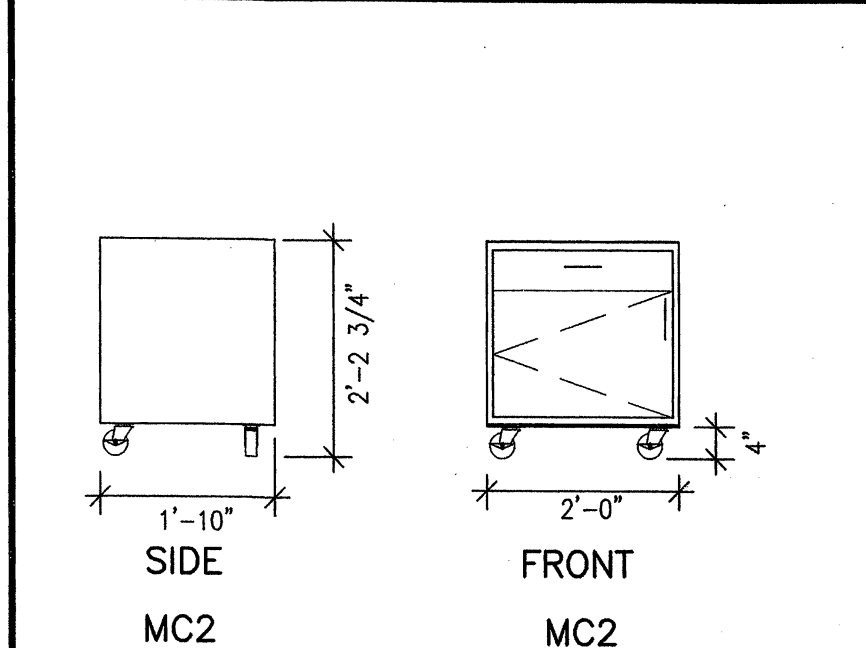
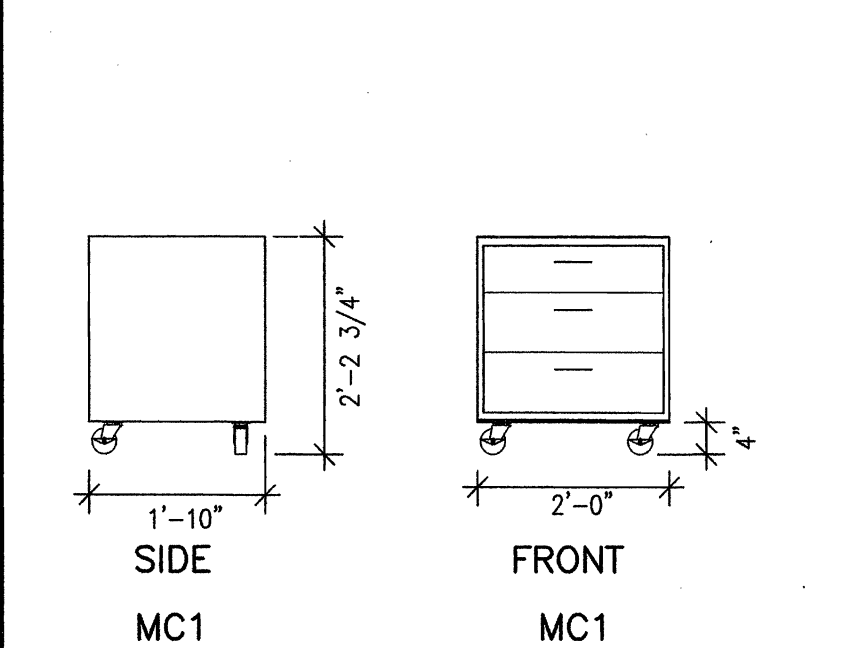
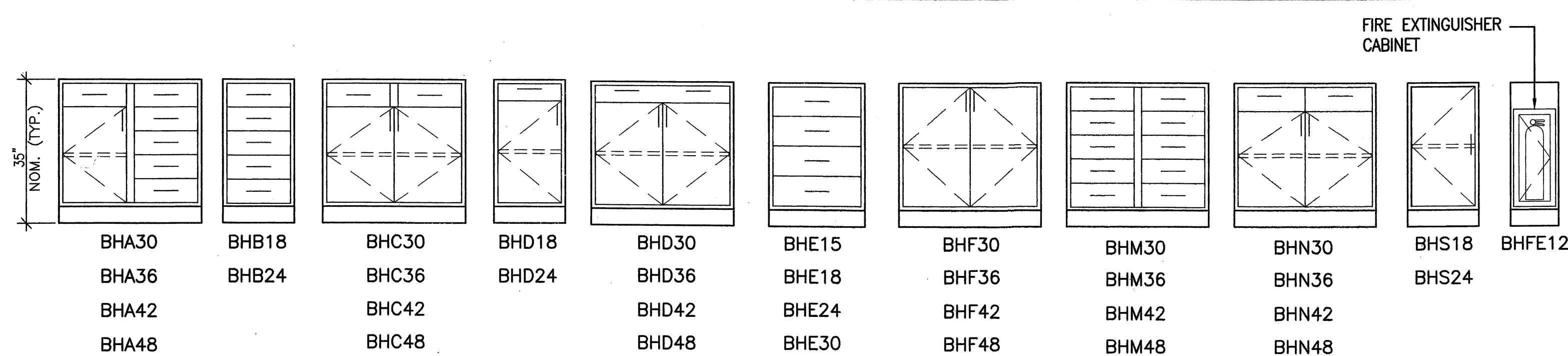
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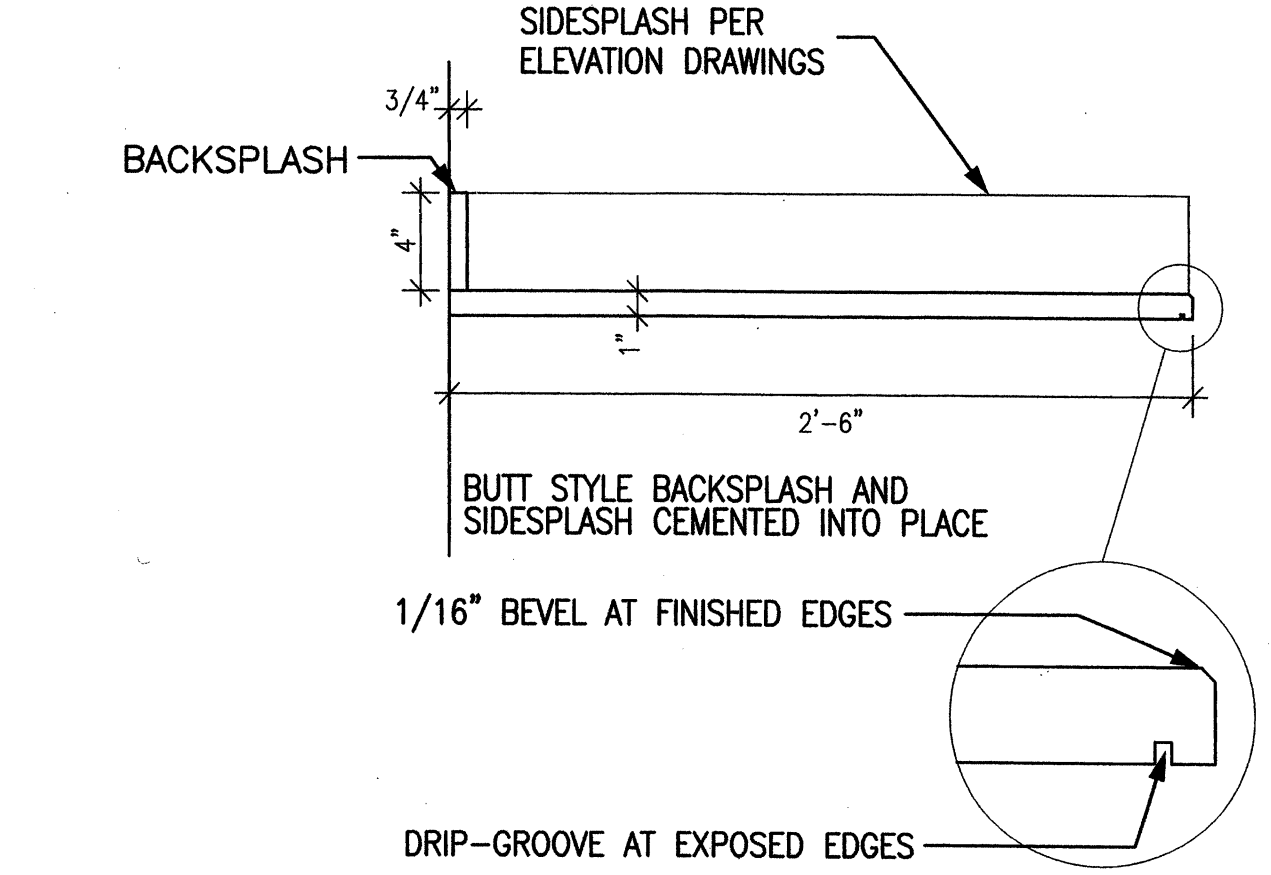
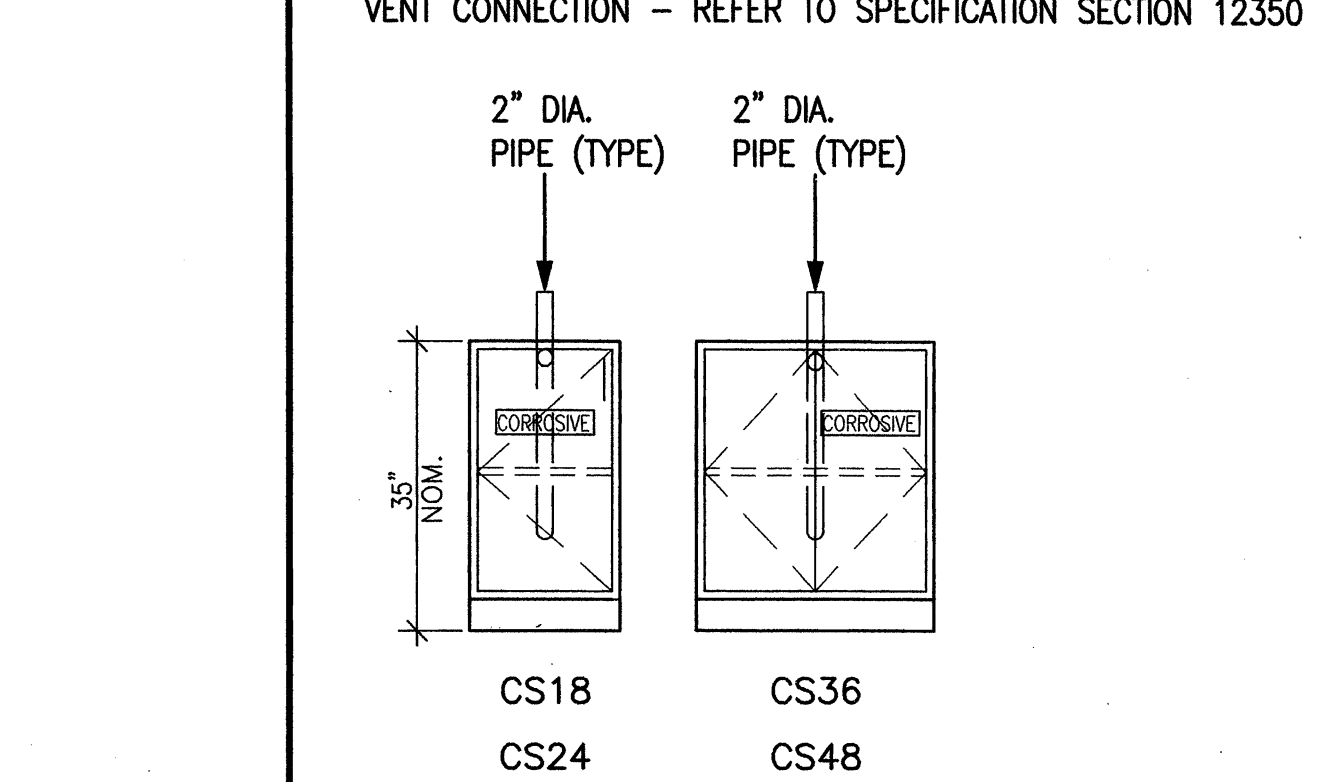
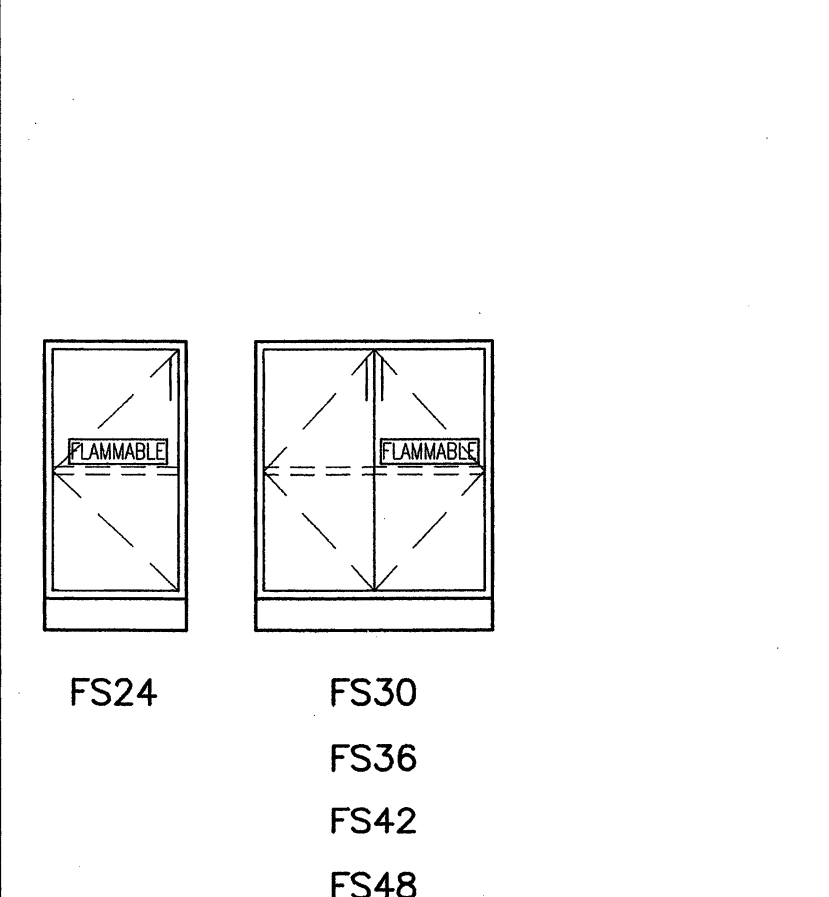
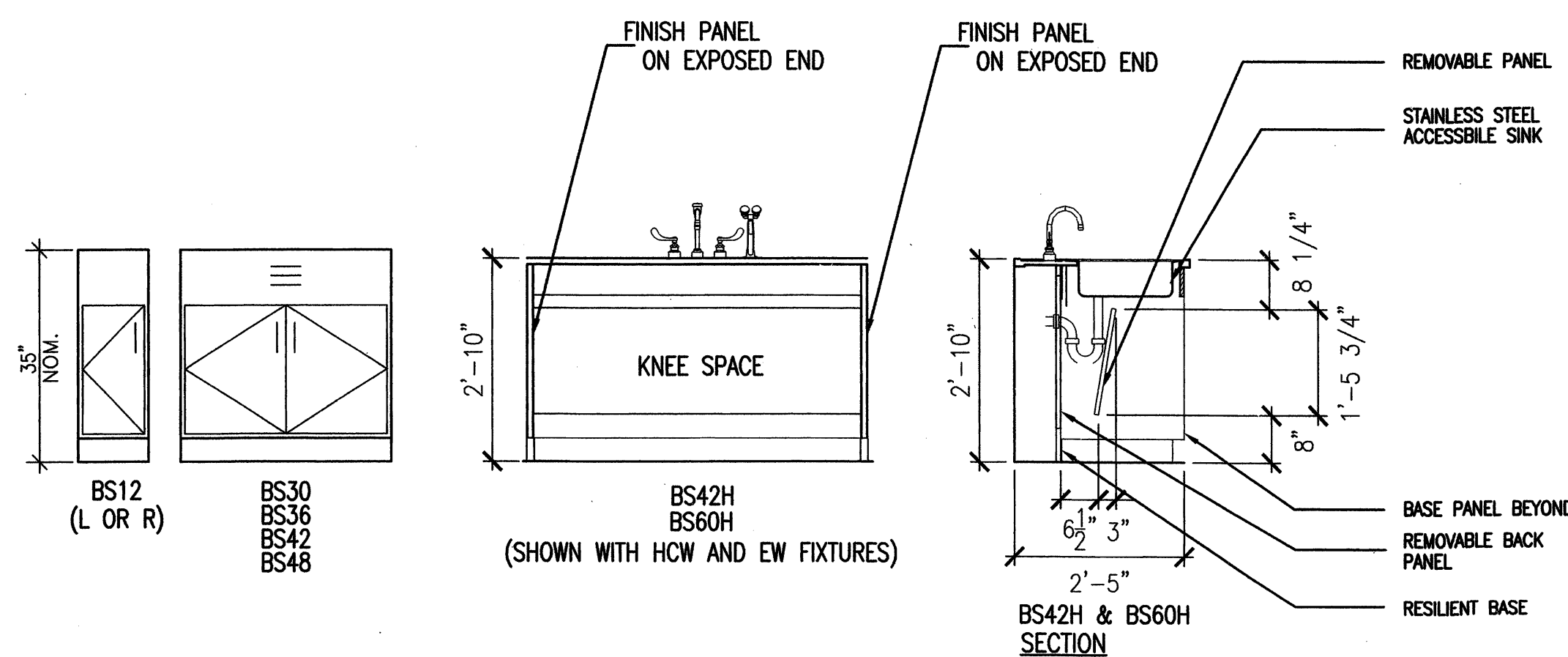


WALL CABINETS (WC SERIES) - NOTE: SOME TYPES MAY NOT BE USED

LABORATORY TABLES



FLOOR MOUNTED - STANDING HEIGHT BASE CABINETS (BH SERIES) - NOTE: SOME TYPES MAY NOT BE USED
NOTE: ADJUST HEIGHT AS REQUIRED FOR ADA HEIGHT CASEWORK WITH WORK SURFACE AT 34" A.F.F.

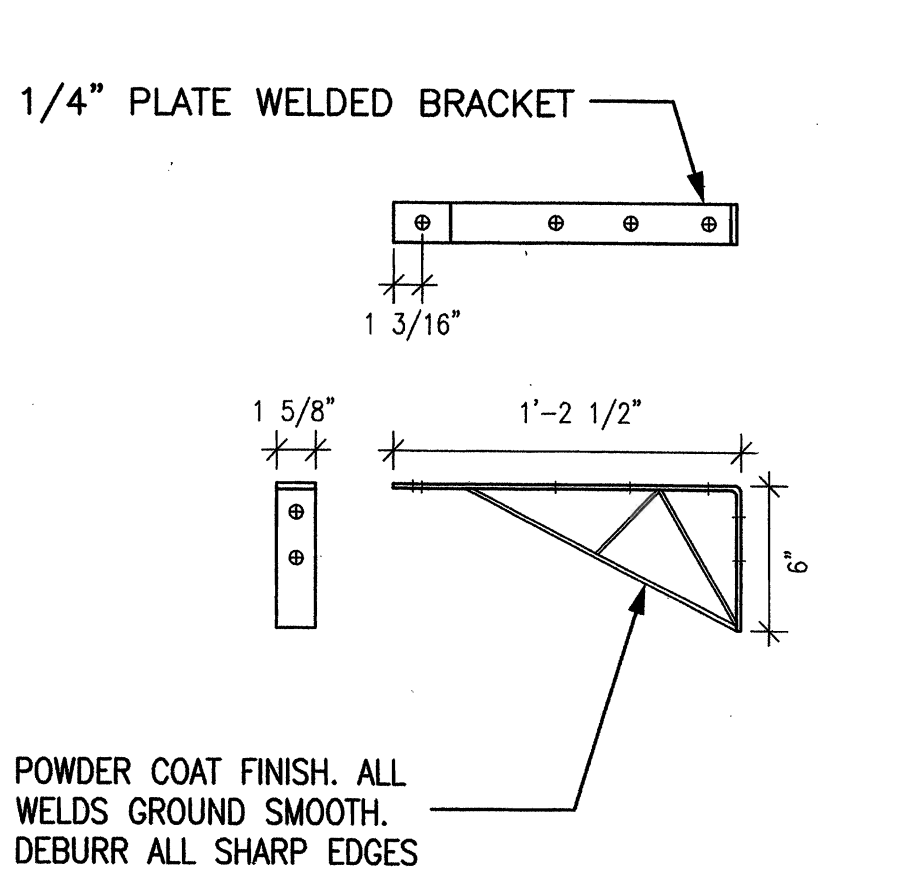
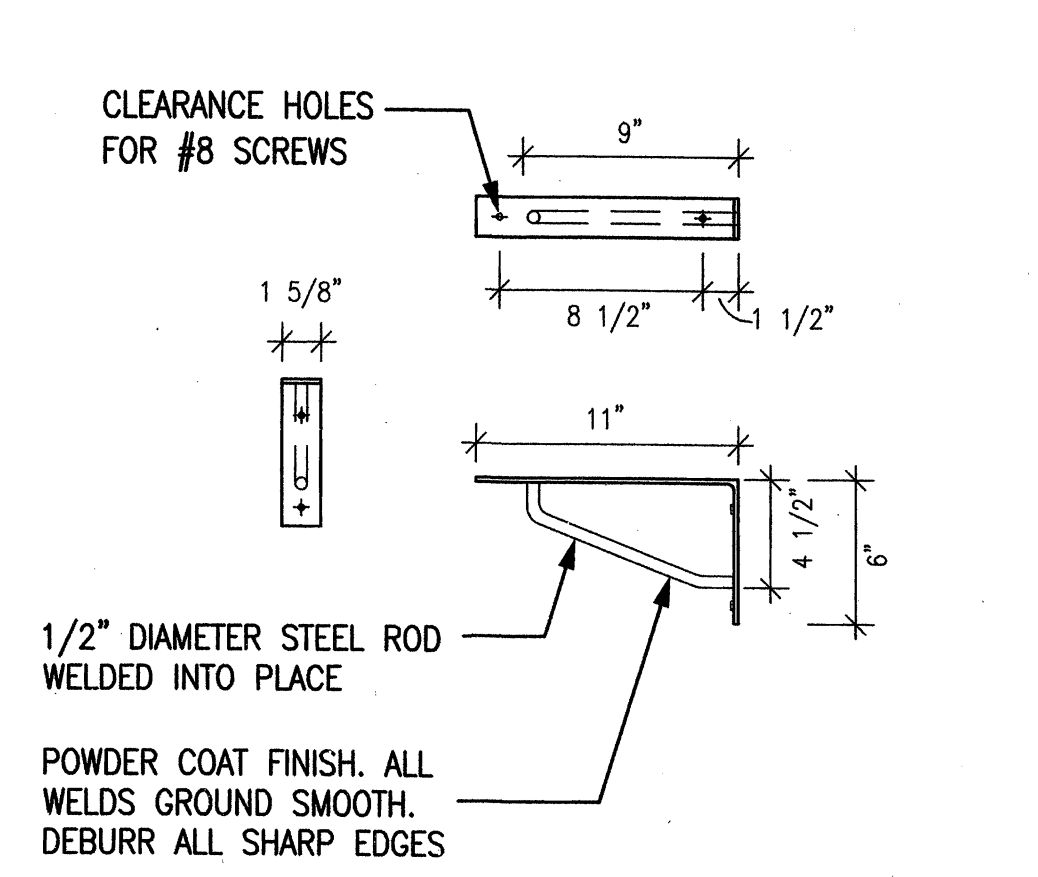
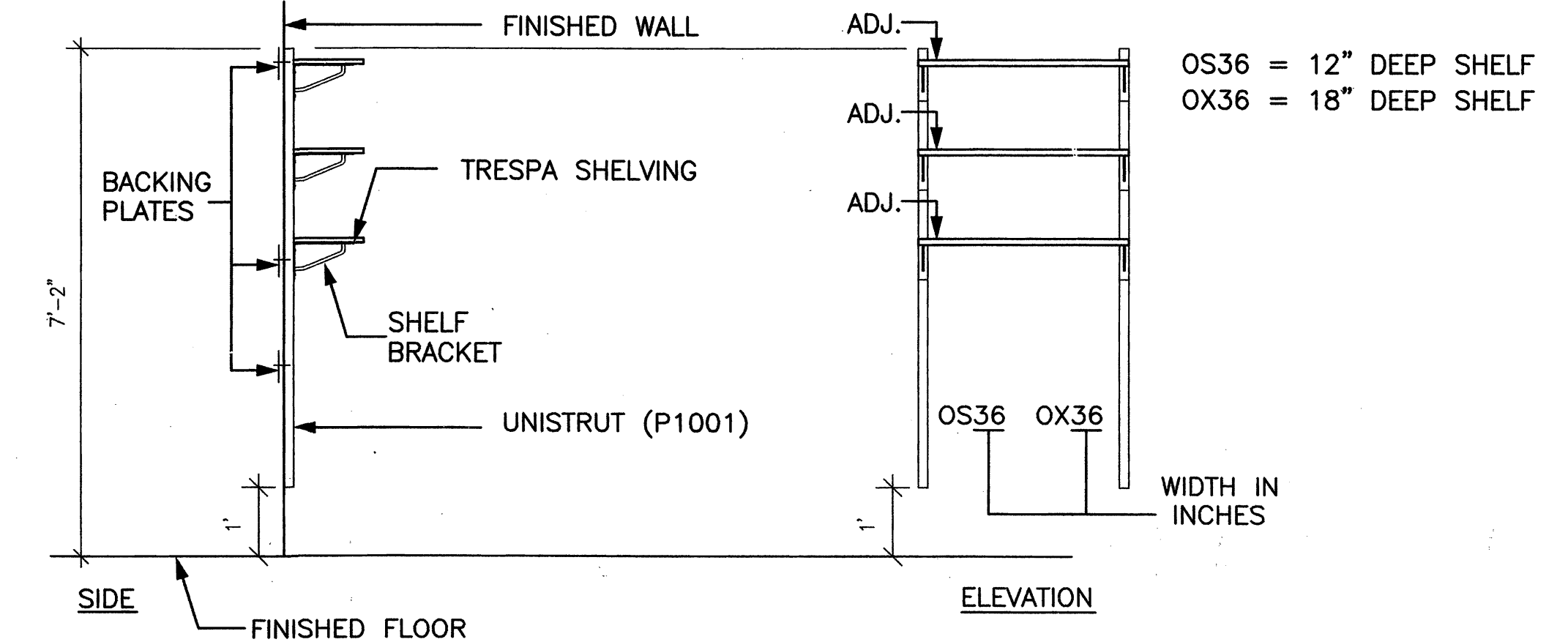
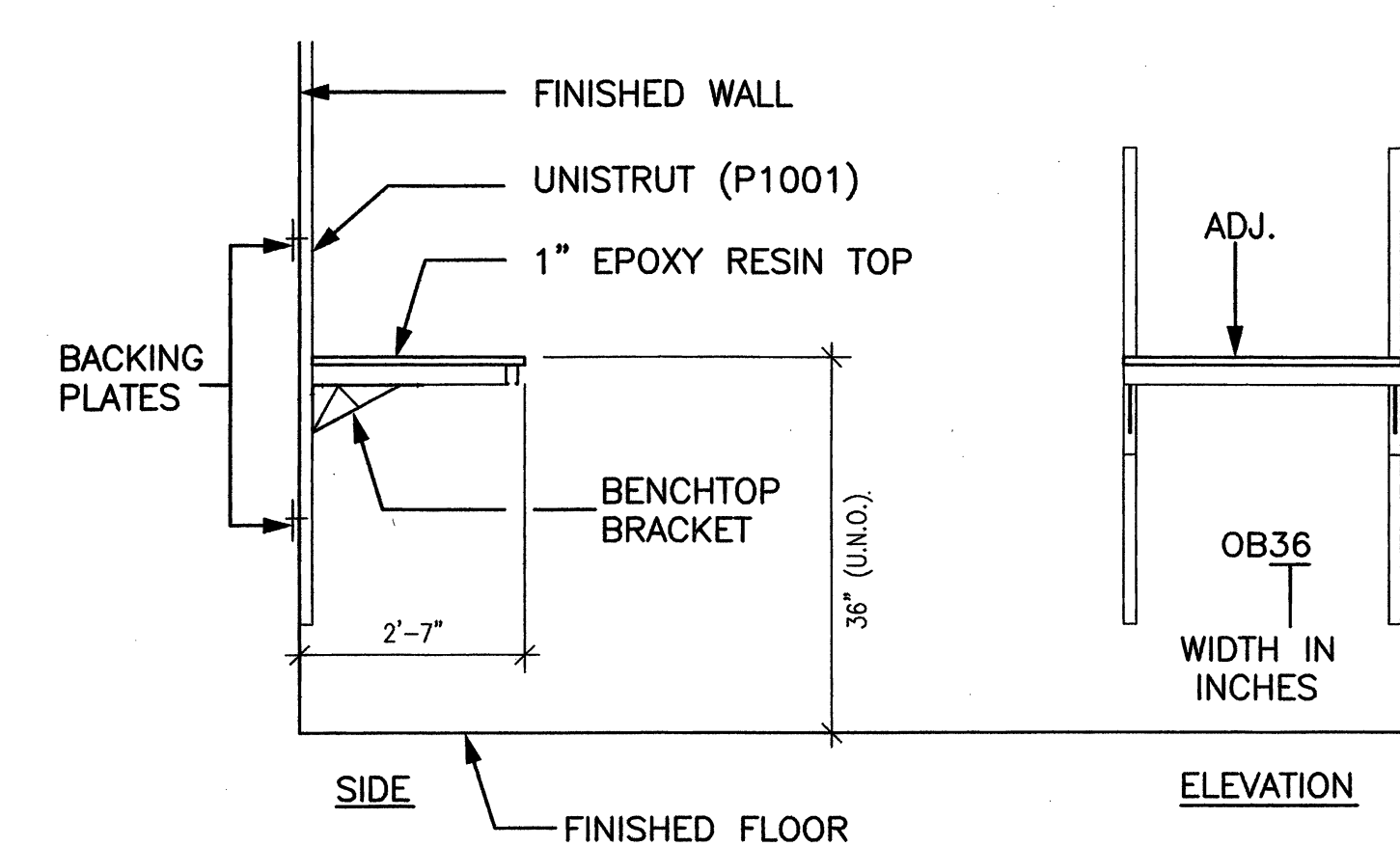


FLOOR MOUNTED - SINK BASE CABINETS (BS SERIES)

FLAMMABLE LIQUID STORAGE CABINET (FS SERIES)
NOTE: SOME TYPES MAY NOT BE USED

CORROSIVES STORAGE CABINETS (CS SERIES)
NOTE: SOME TYPES MAY NOT BE USED

EPOXY RESIN COUNTERTOP



ADJUSTABLE EPOXY RESIN COUNTERTOP WITH BENCHTOP BRACKET MOUNTED ON UNISTRUT

ADJUSTABLE TRESPA SHELVE WITH SHELF BRACKET MOUNTED ON UNISTRUT

SHELF BRACKET

BENCHTOP BRACKET

CASEWORK ELEVATIONS AND ABBREVIATIONS

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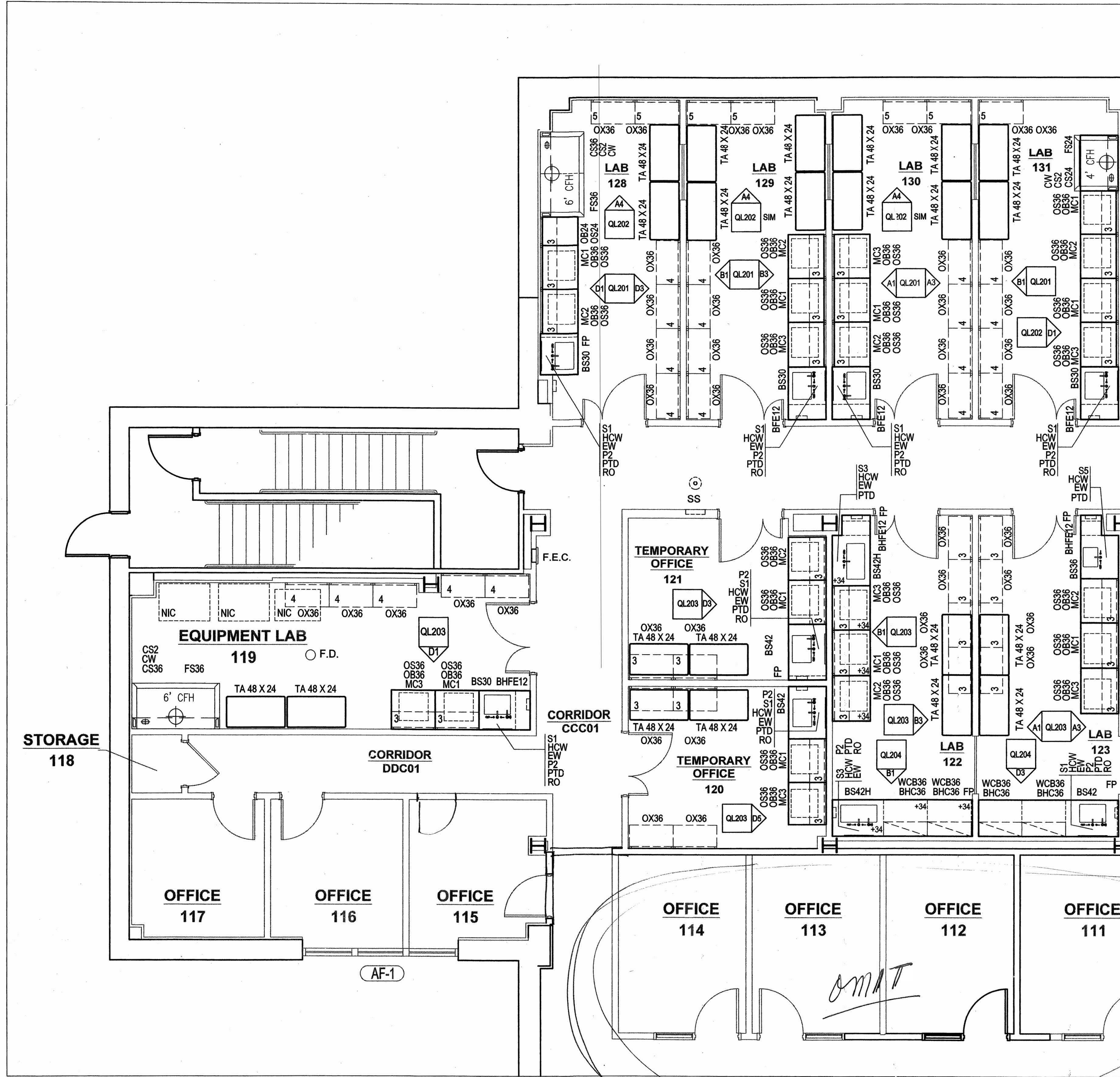
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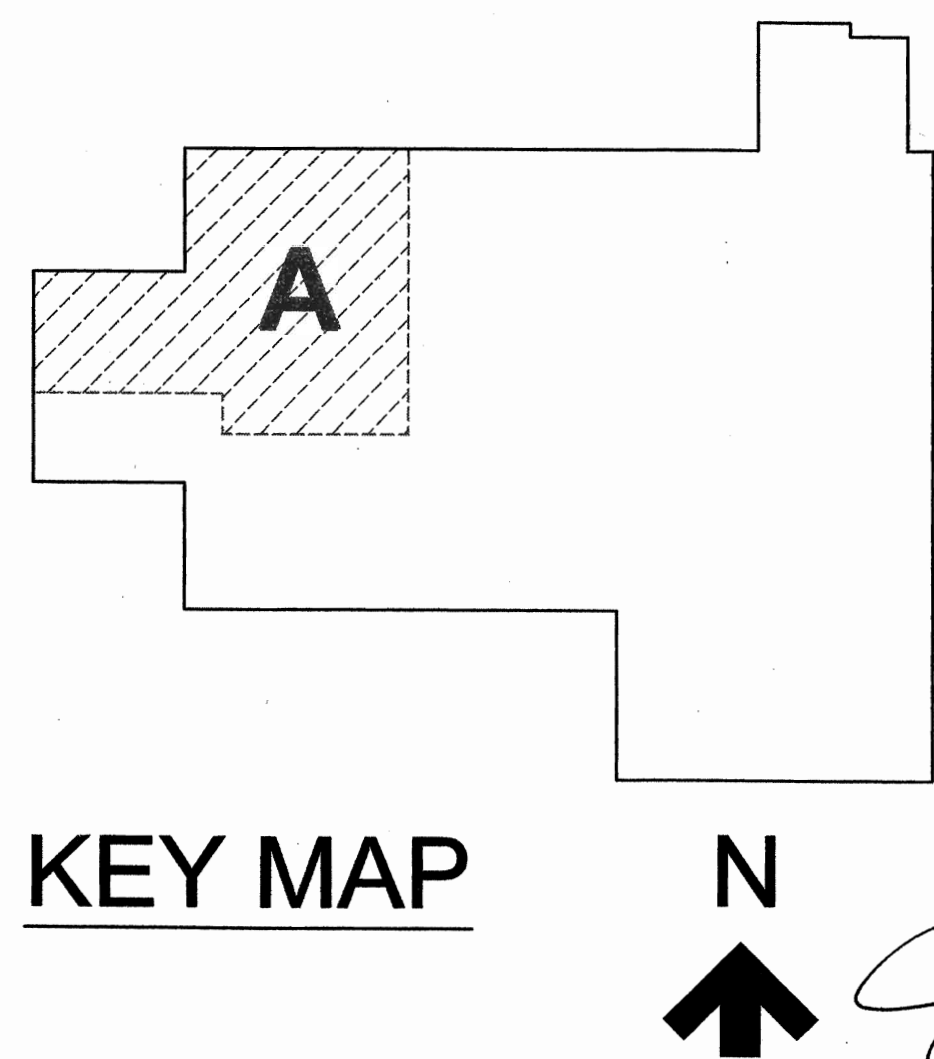
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FIRST FLOOR LABORATORY PLAN - SECTION A
SCALE 1/4" = 1'-0"



KEY MAP

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architects

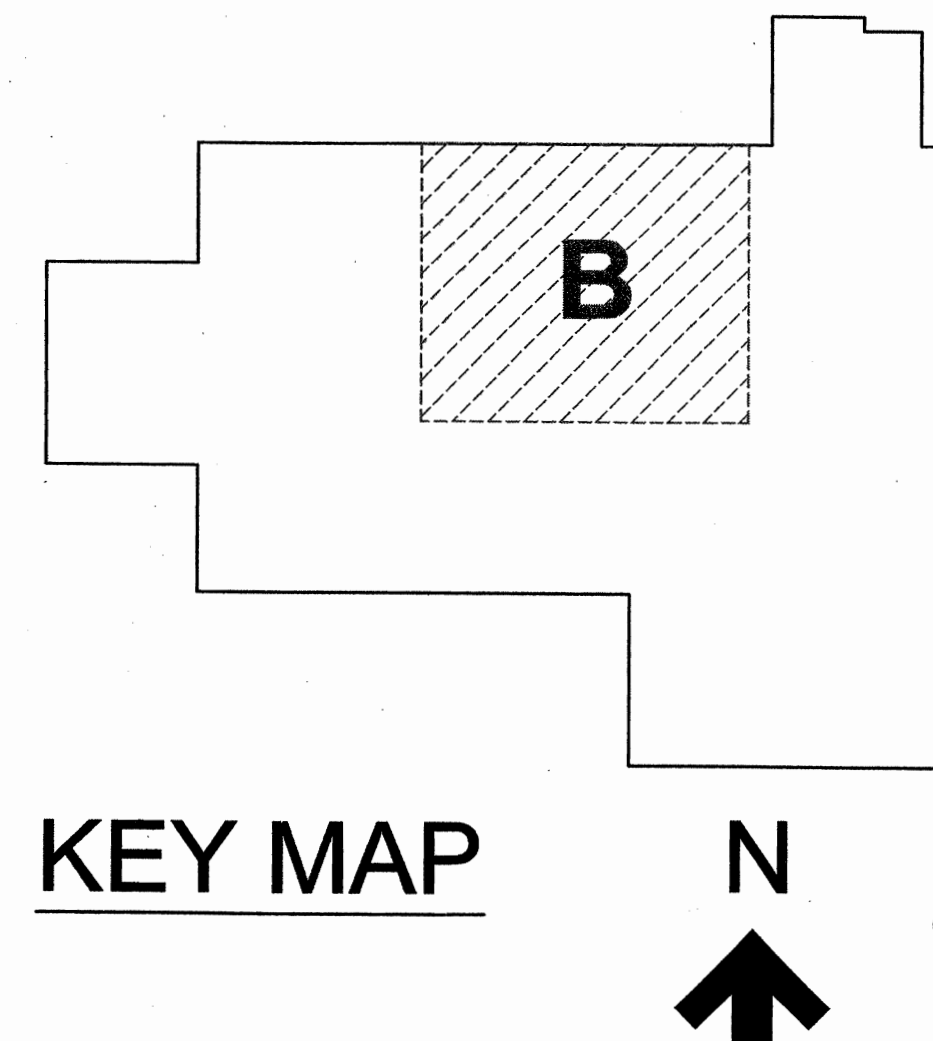


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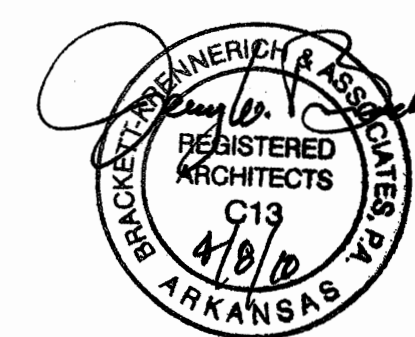
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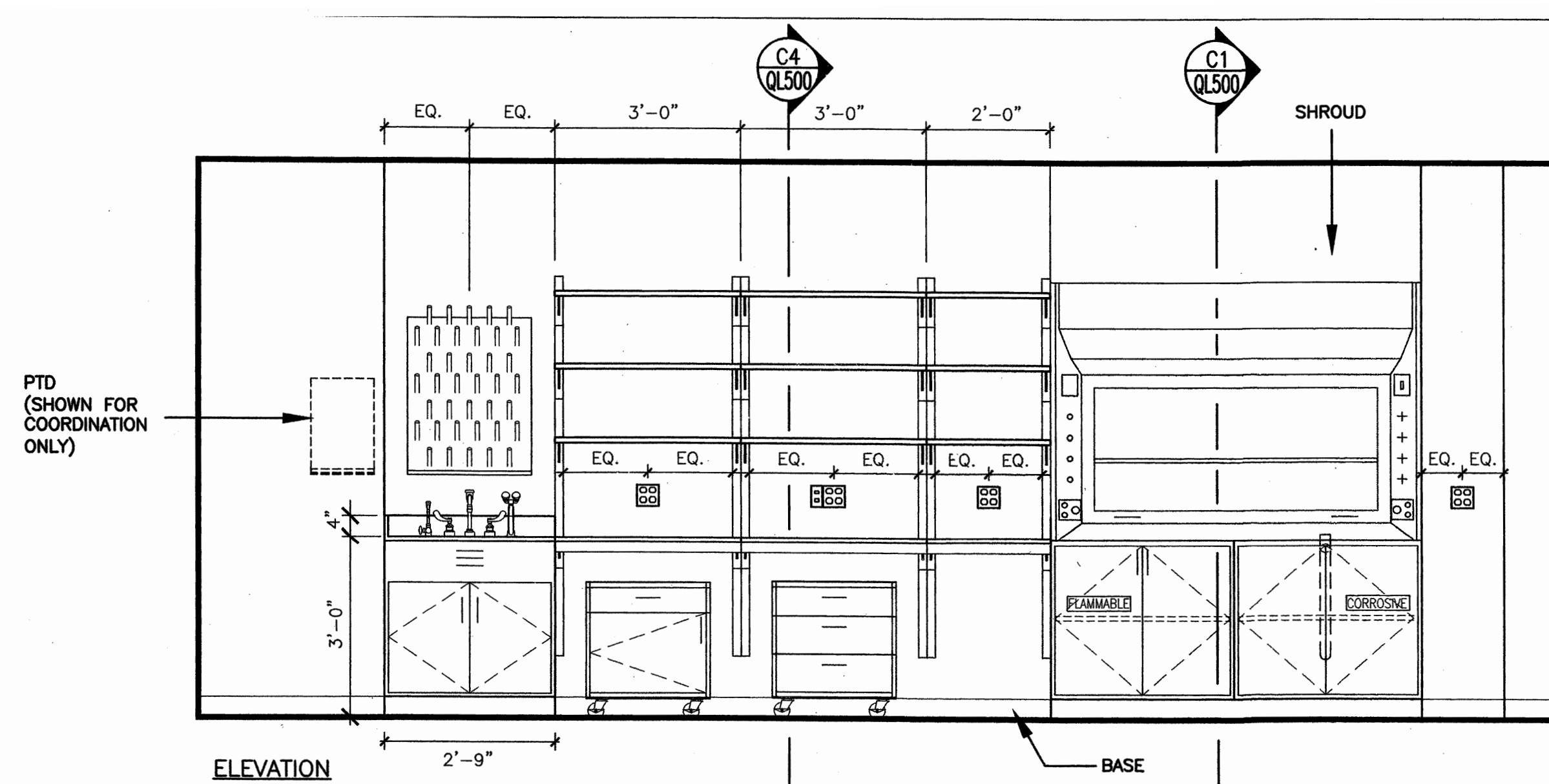


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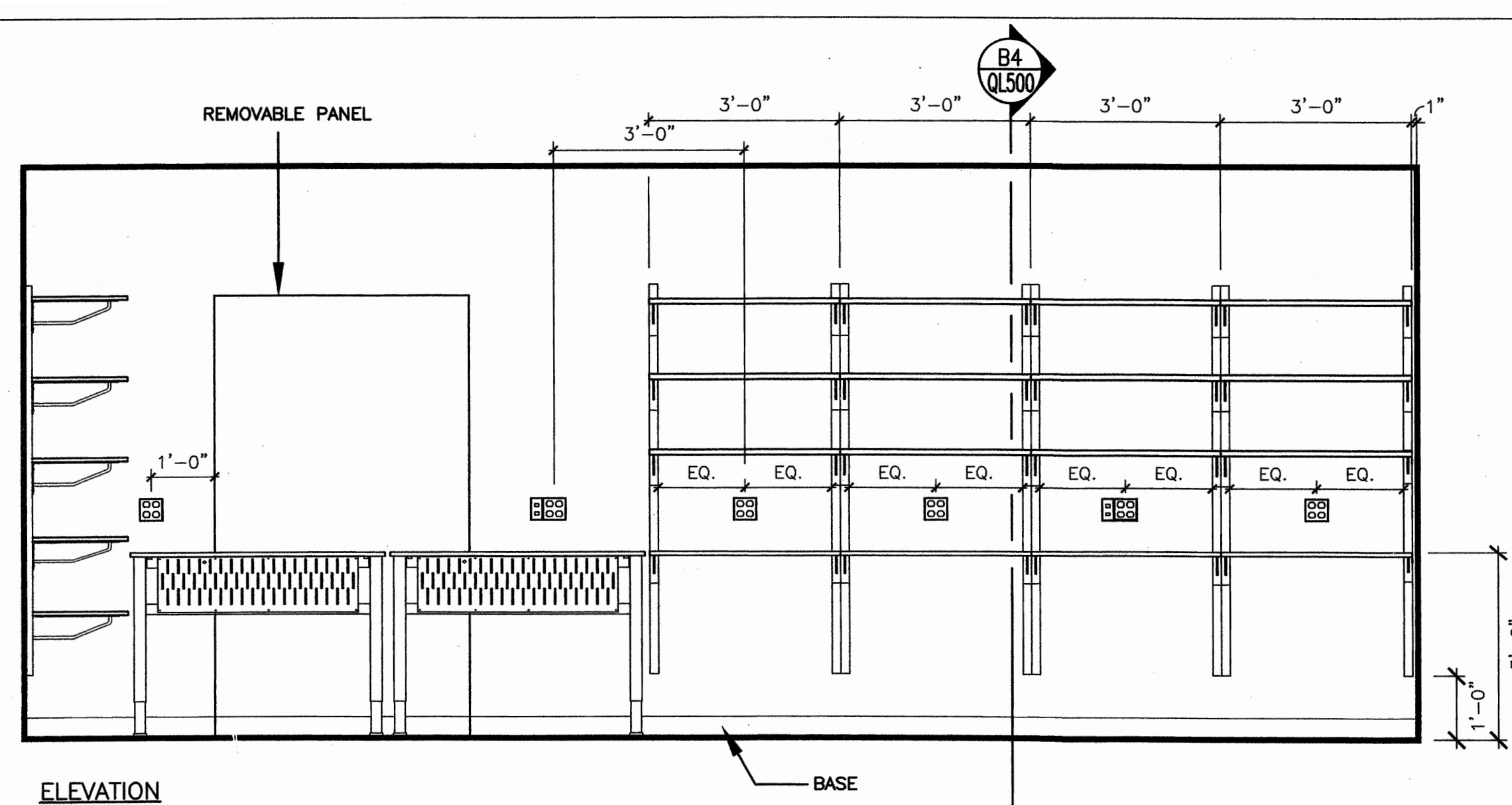


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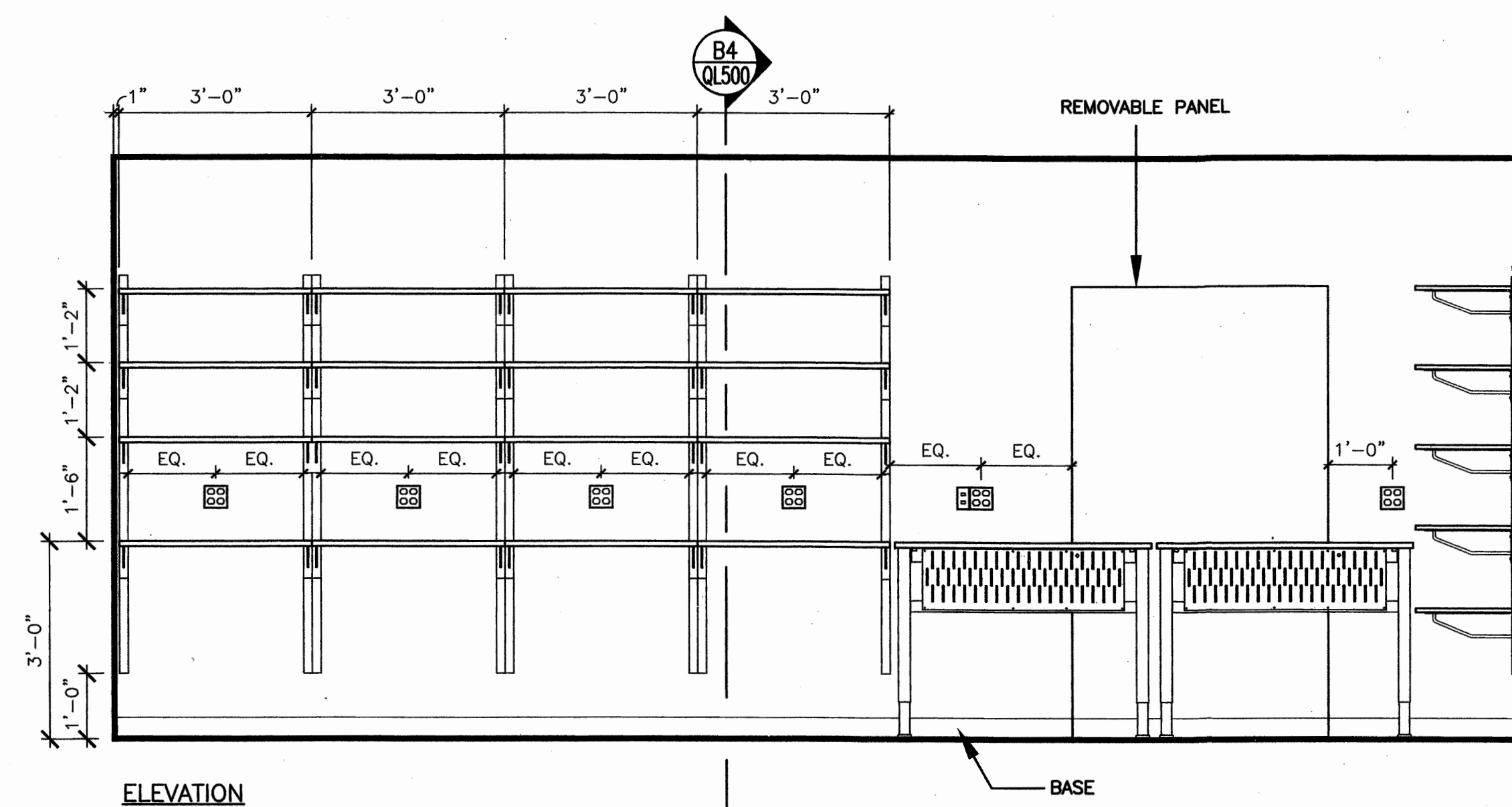
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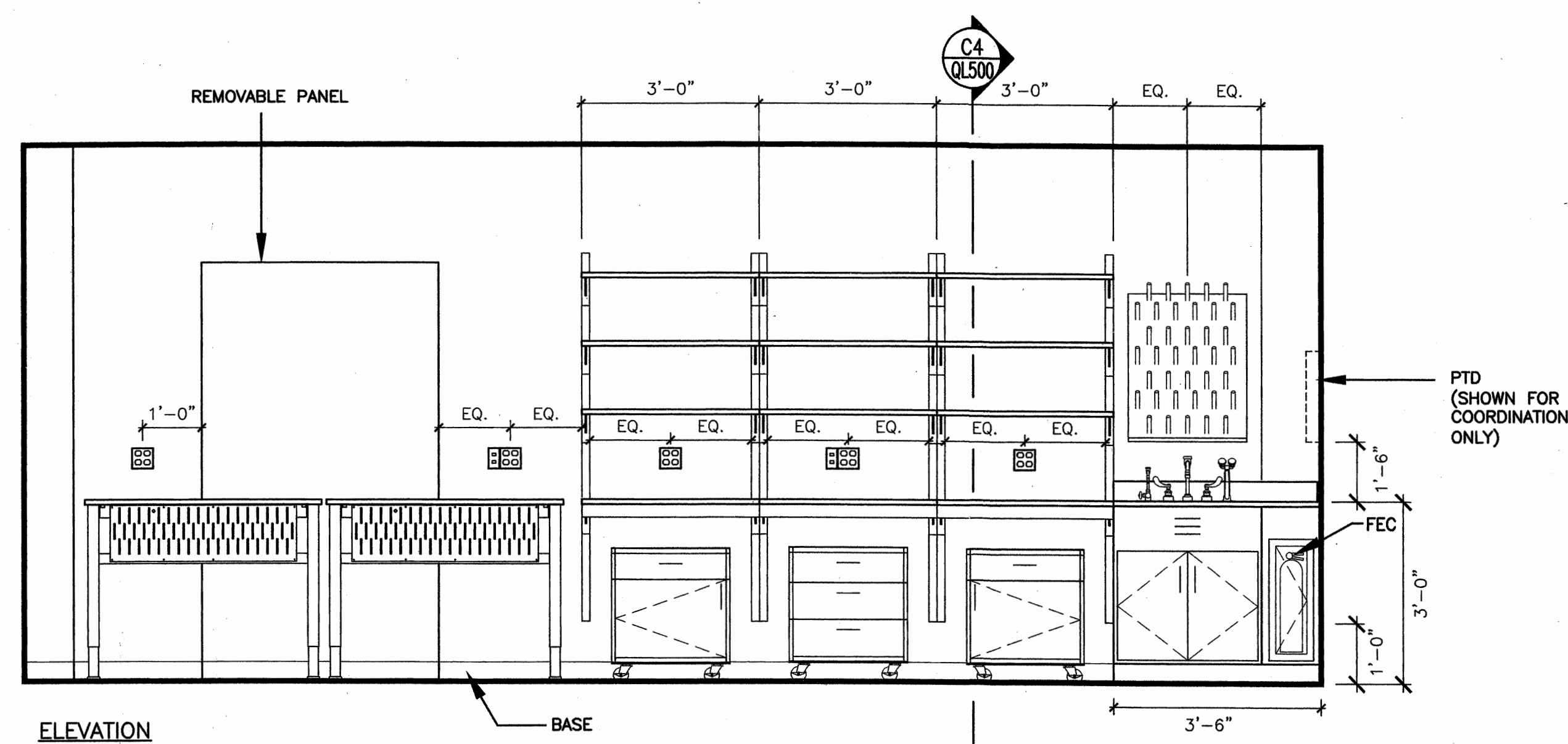
D1 LAB 128
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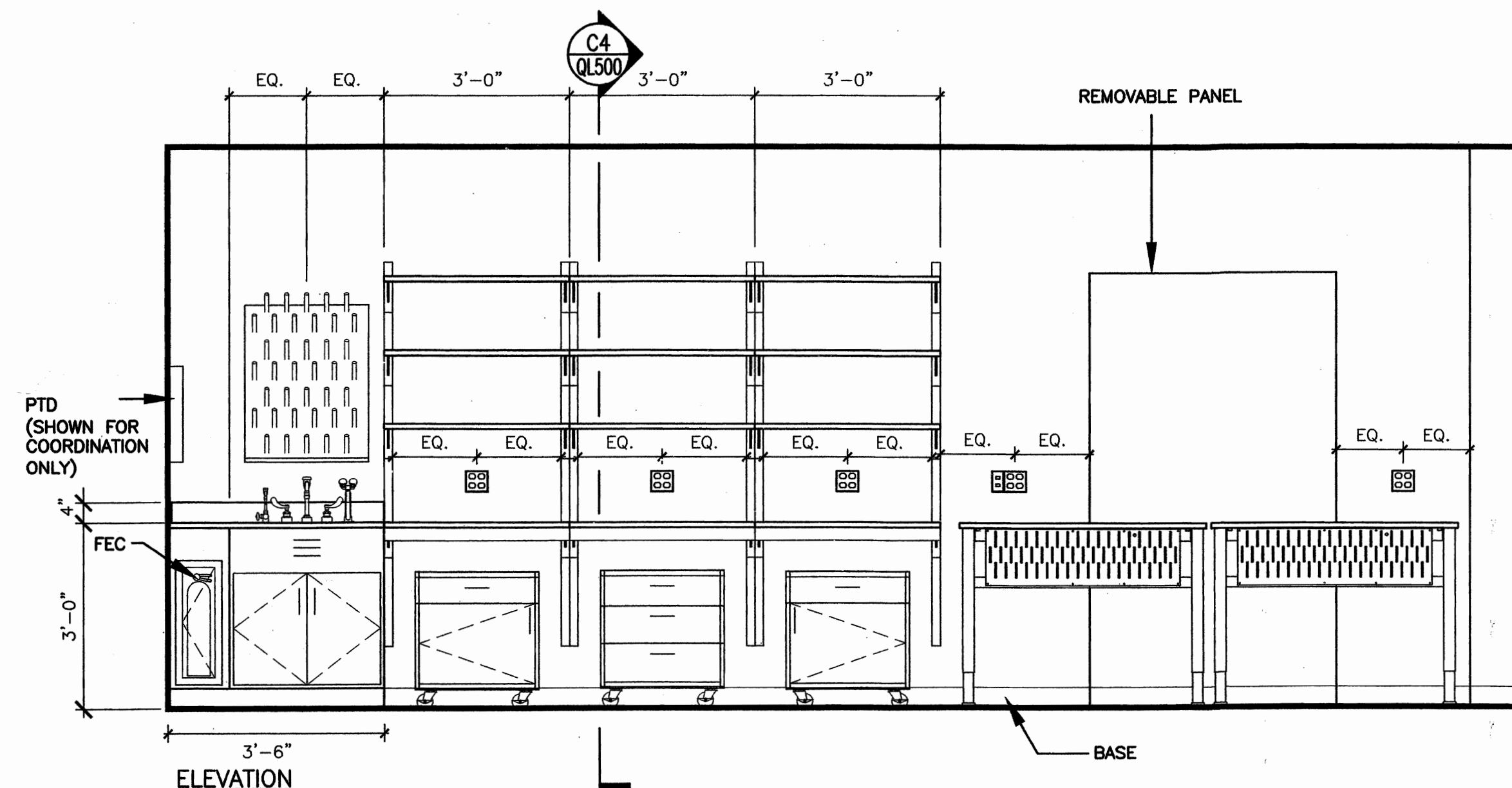
D3 LABS 128 & 132
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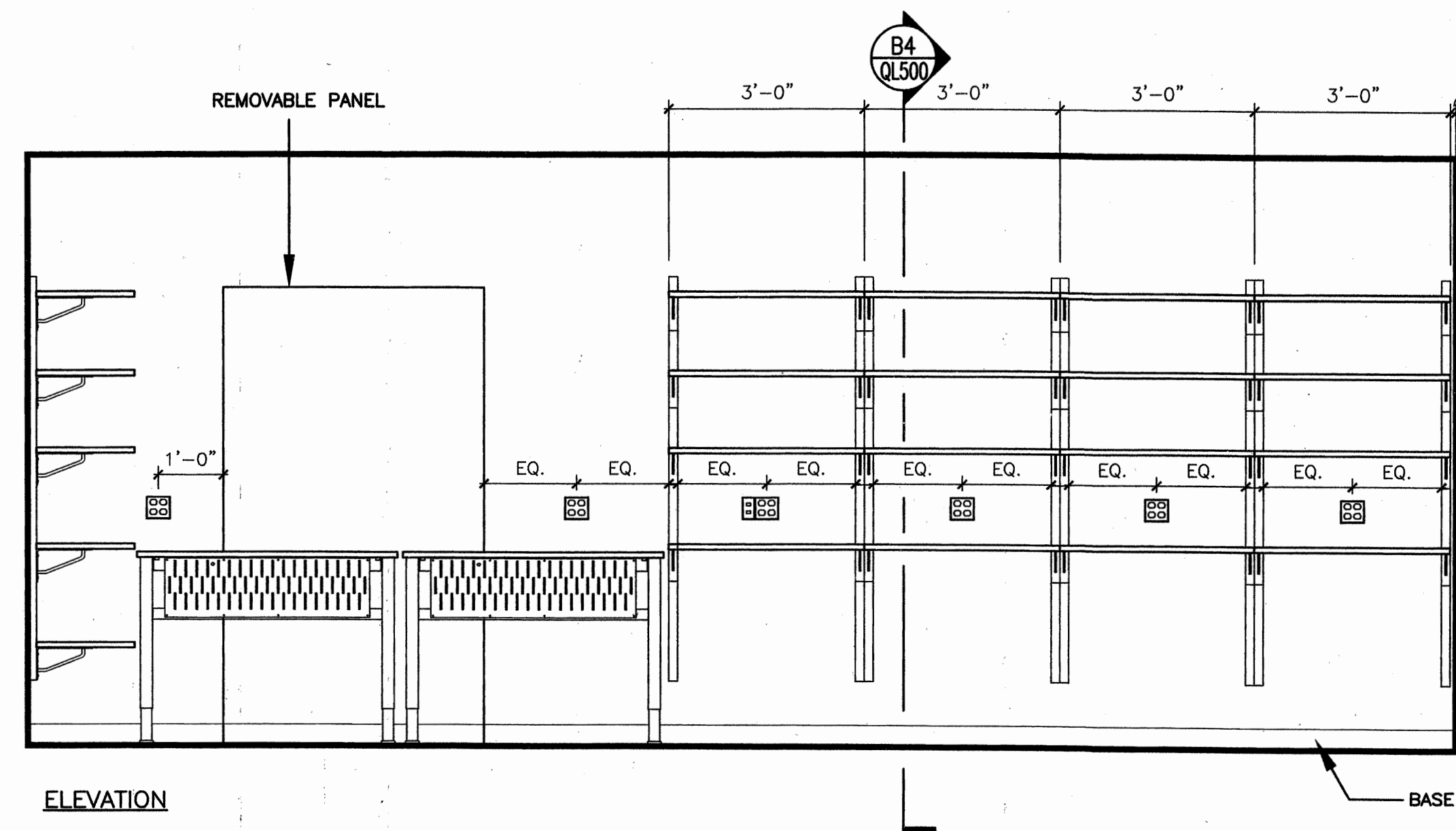
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B3 LAB 129 & 136
SCALE: 1/2"=1'-0"




A1 LABS 130 & 133
SCALE: 1/2"=1'-0"



A3 LAB 130
SCALE: 1/2" = 1'-0"

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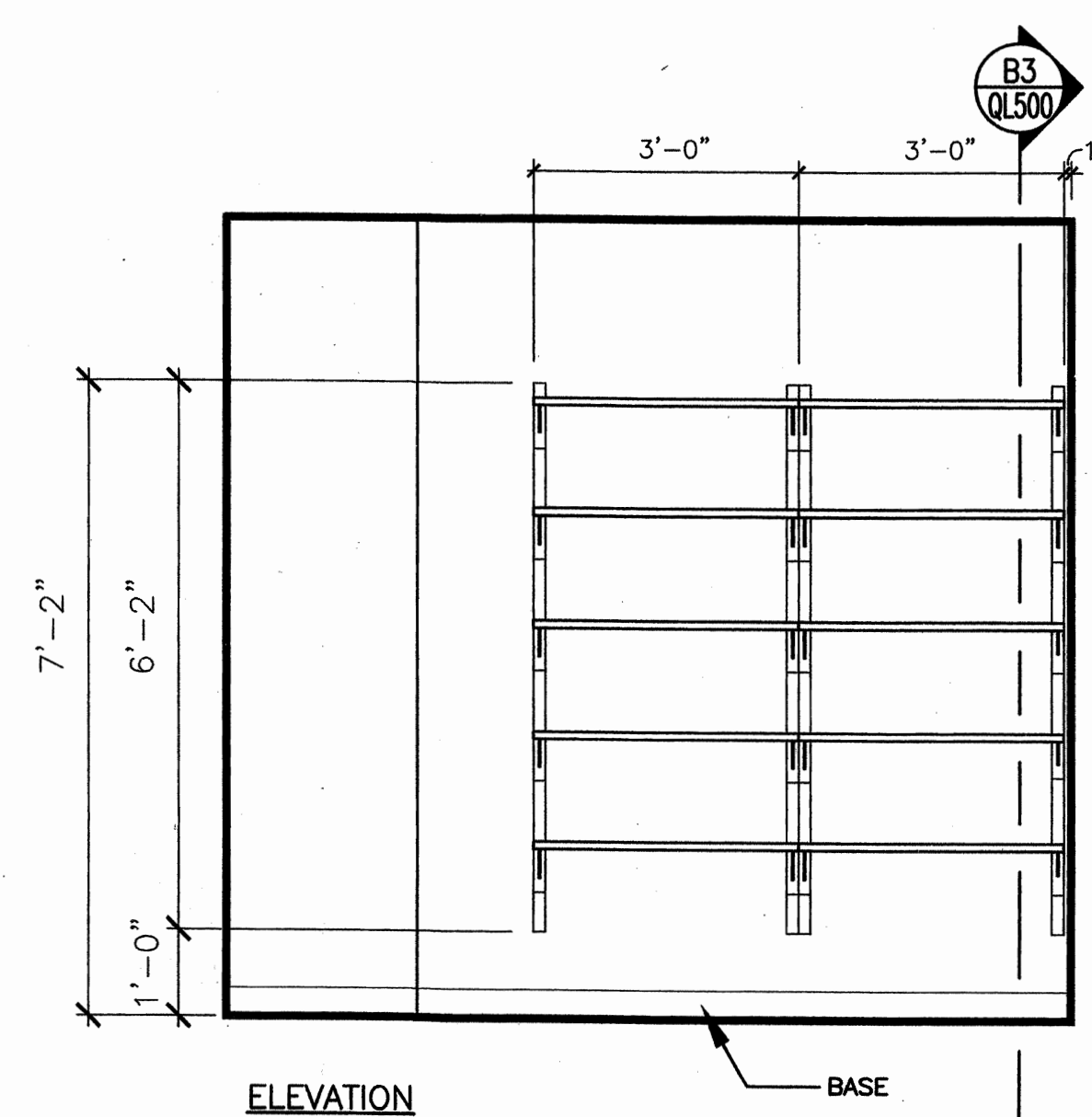
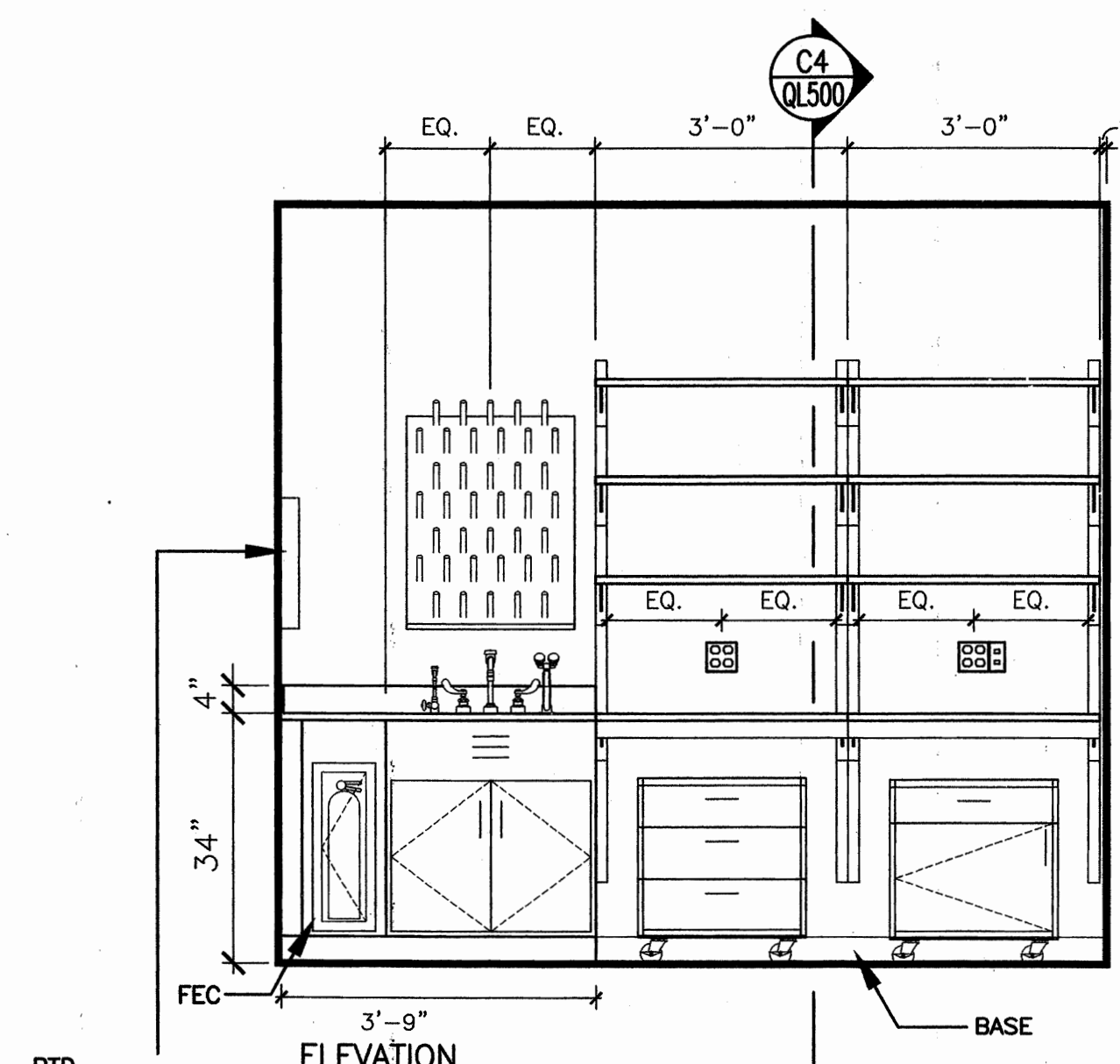
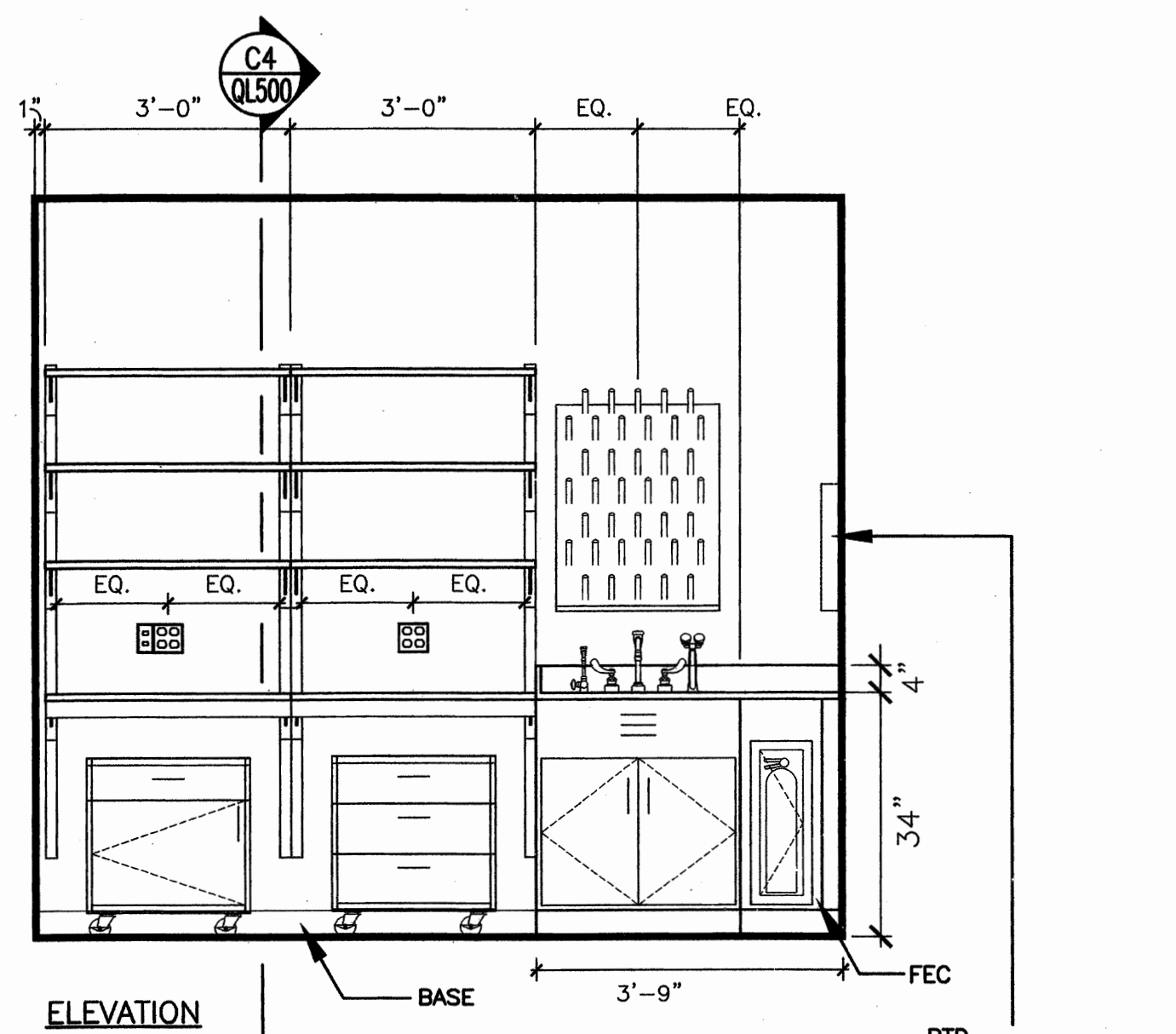
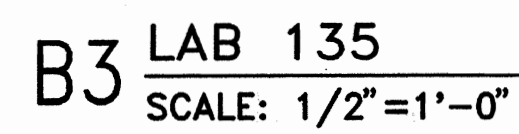
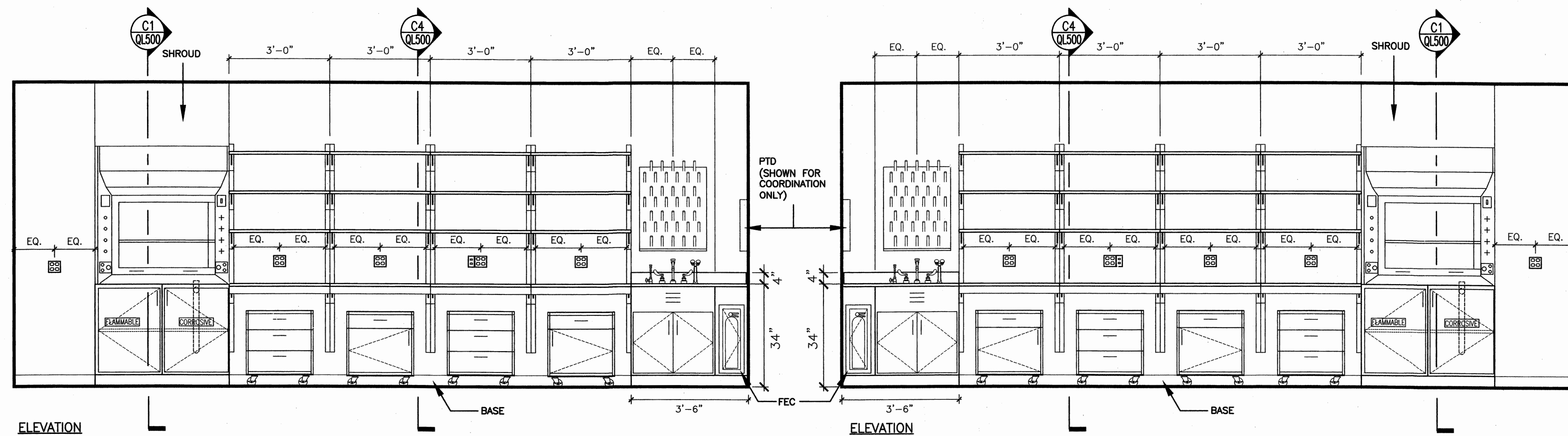
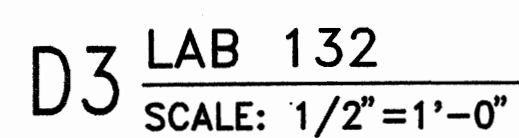
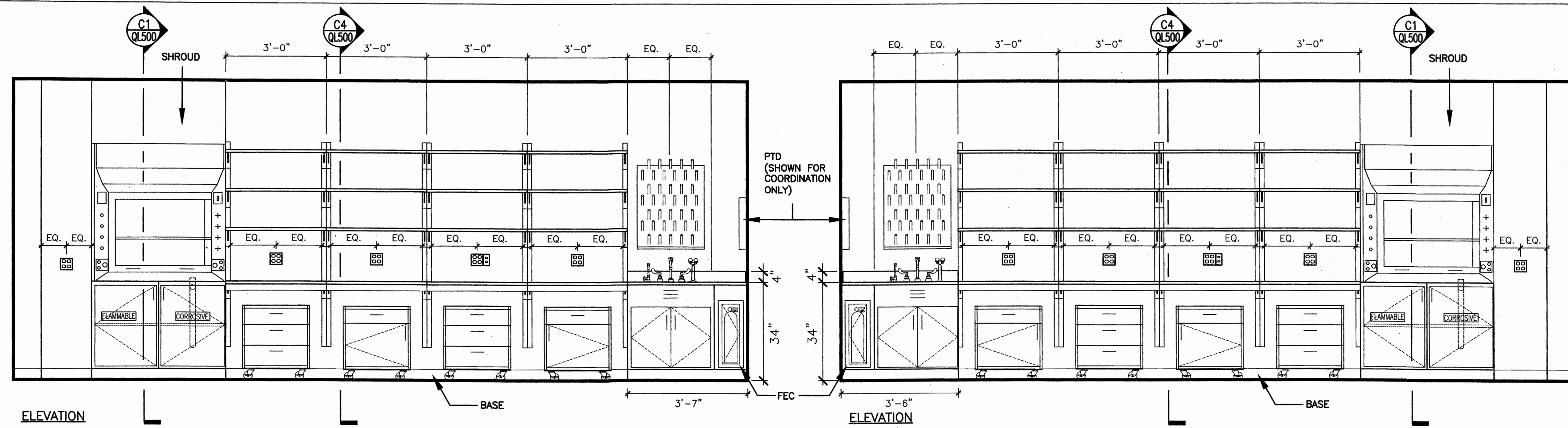
QL20:

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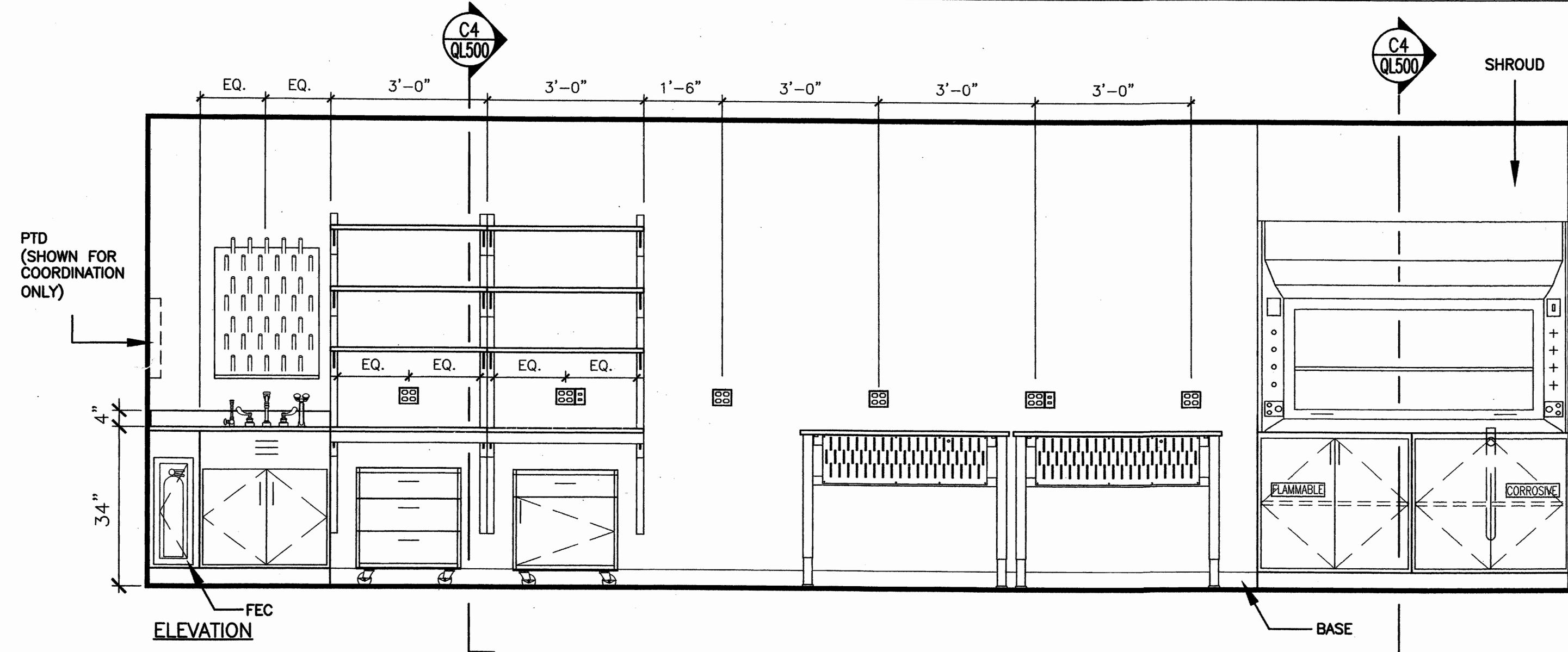
Date: April 8, 20

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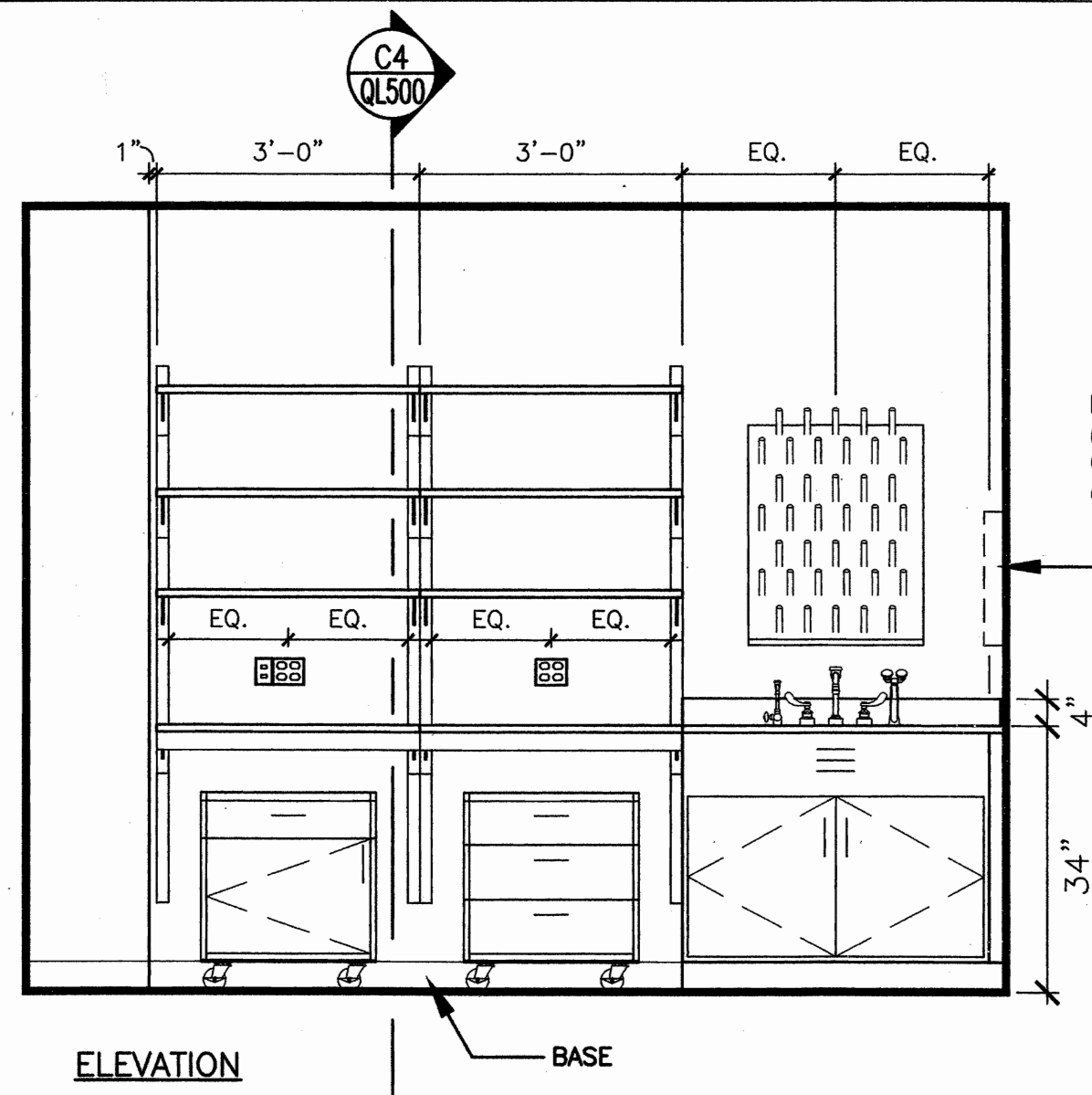
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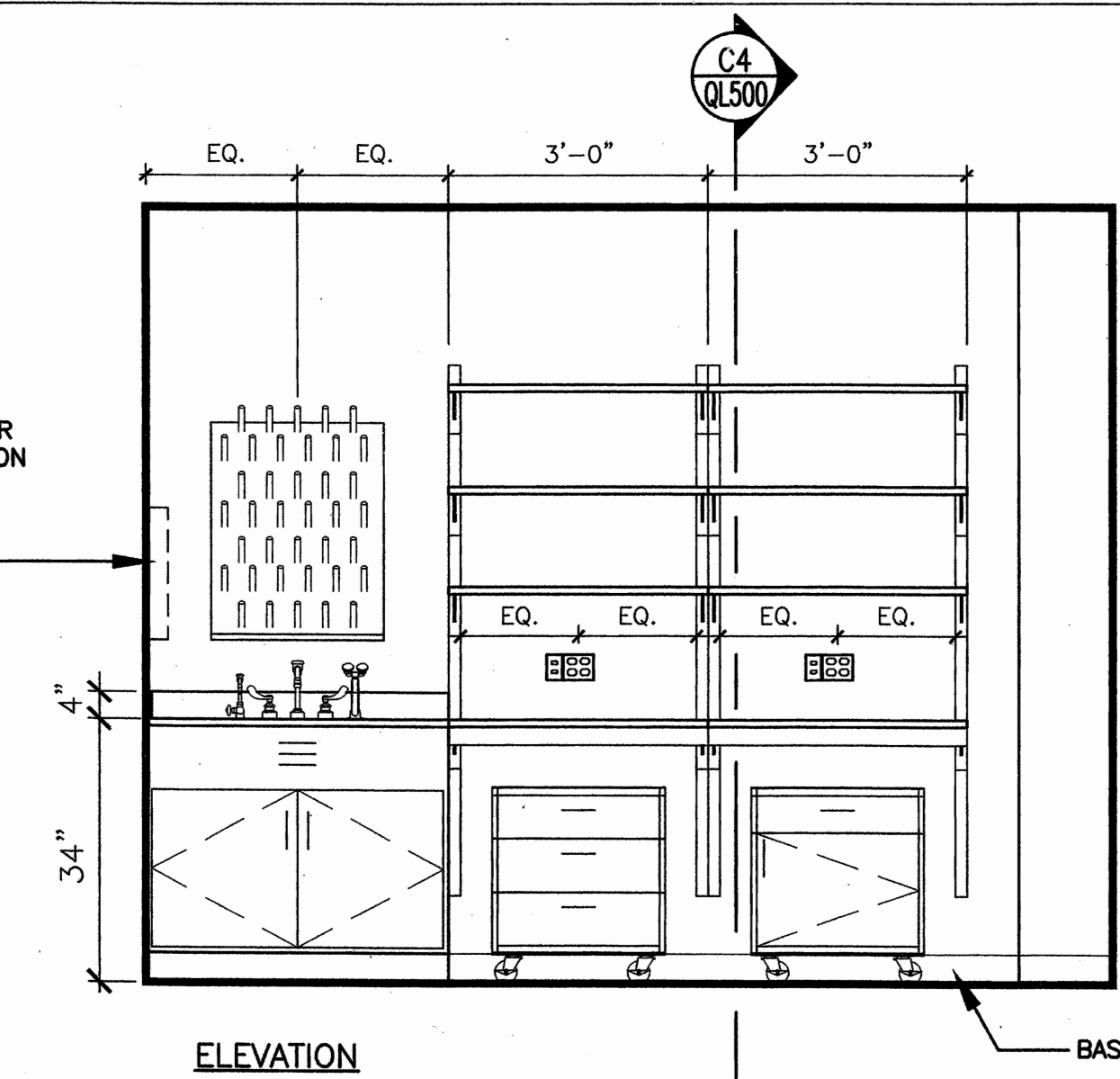
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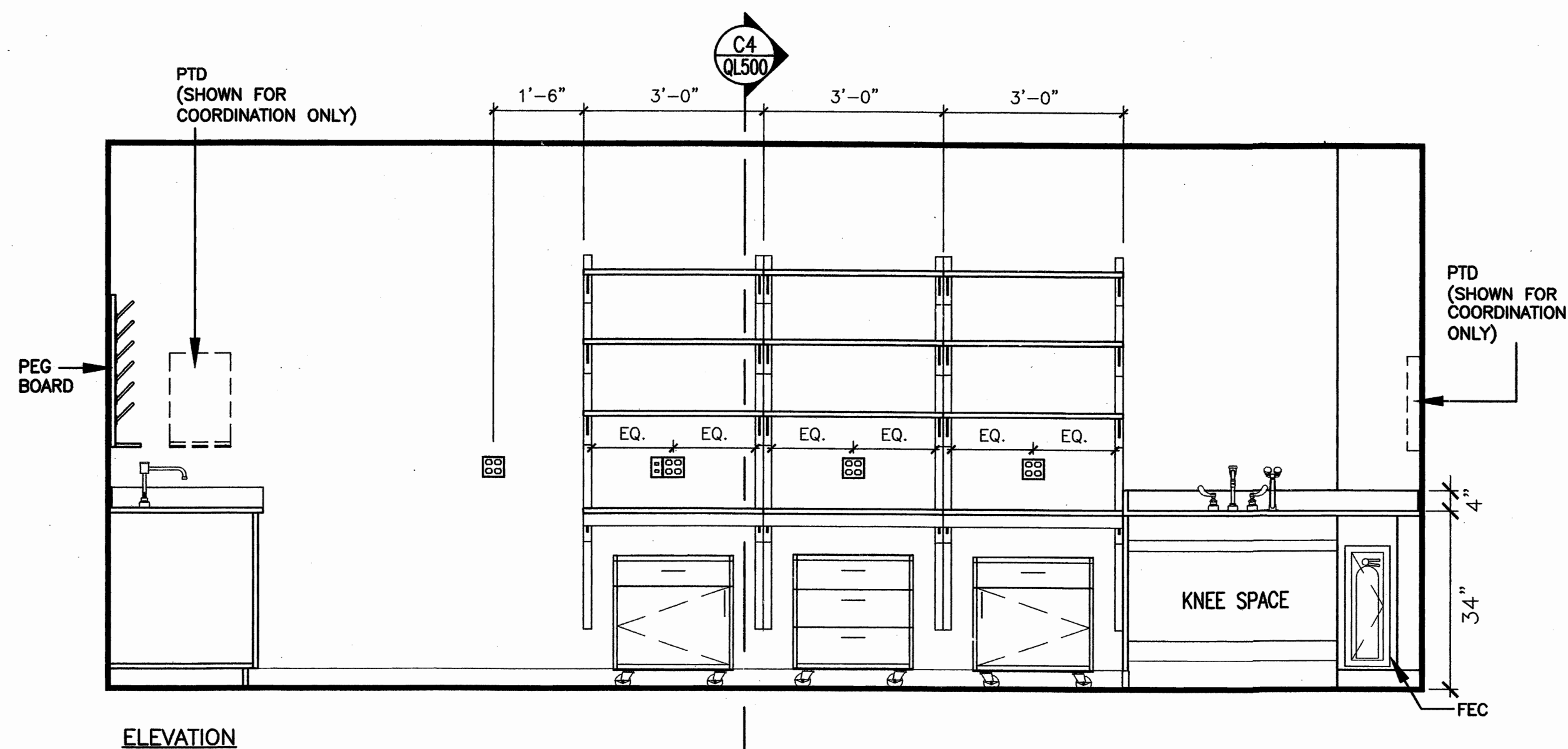
D1 LAB 119
SCALE: 1/2"=1'-0"



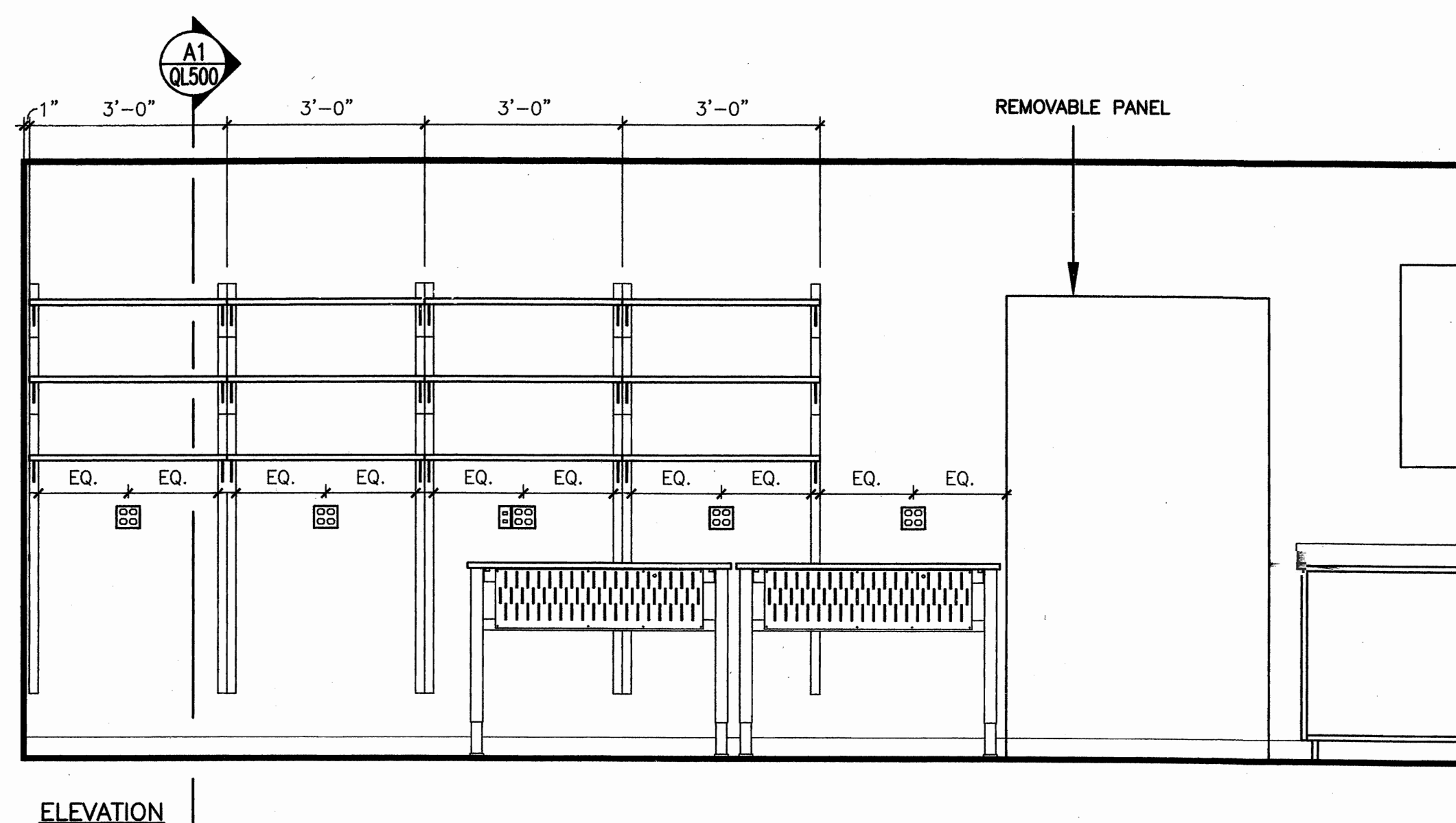
D3 LAB 121 & 127
SCALE: 1/2"=1'-0"



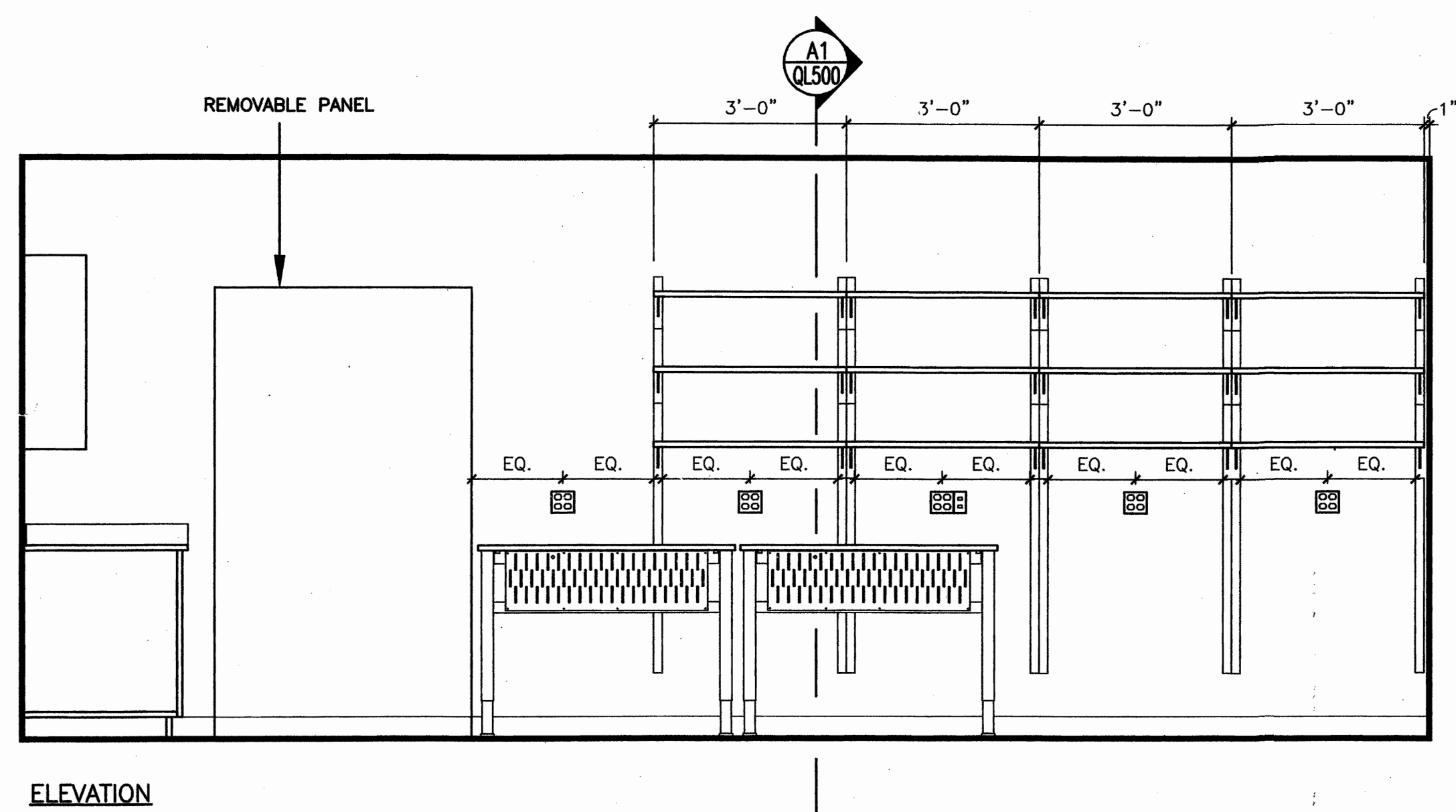
D5 LAB 120 & 126
SCALE: 1/2"=1'-0"



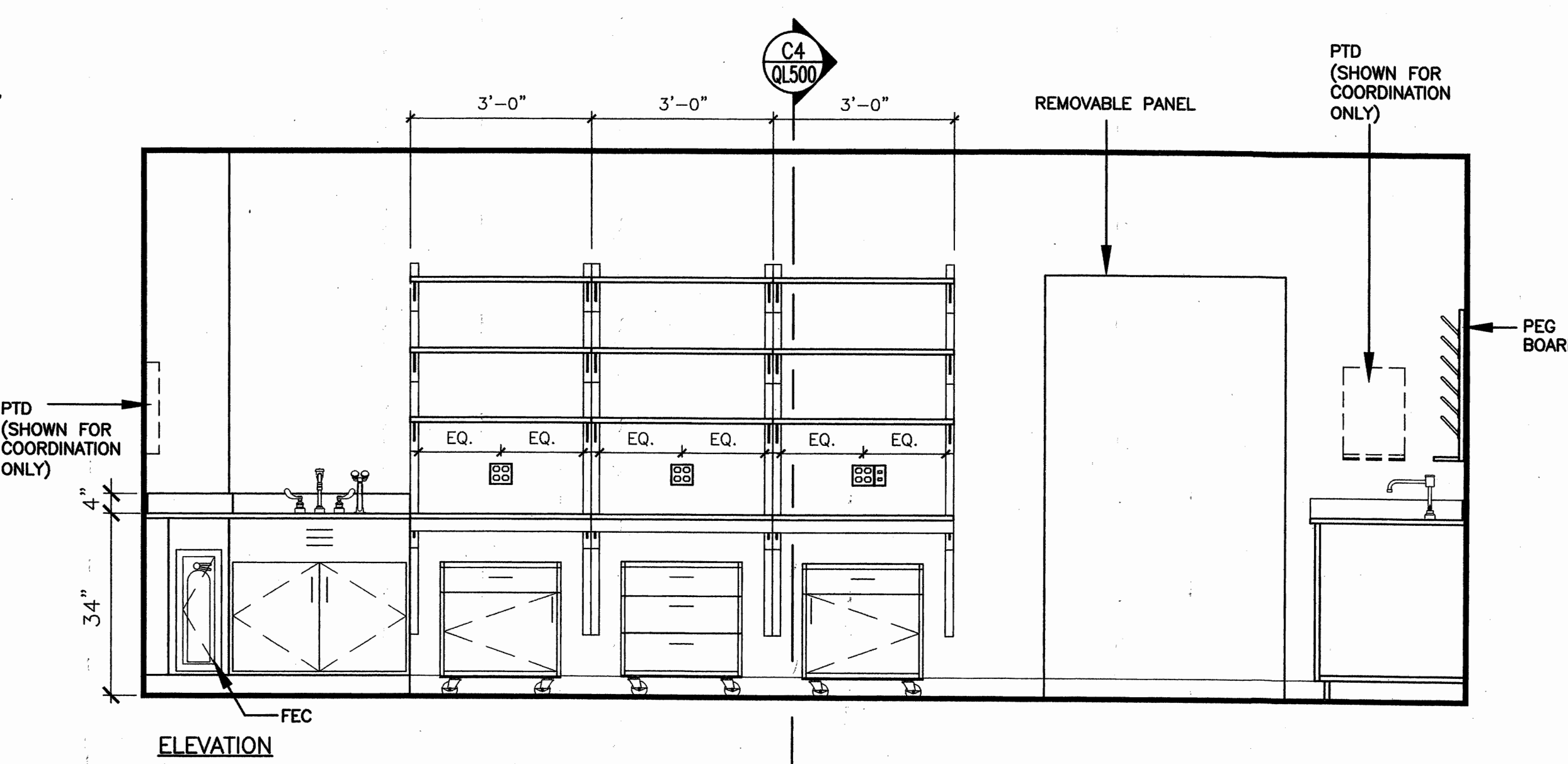
B1 LABS 122
SCALE: 1/2"=1'-0"



B3 LAB 122
SCALE: 1/2"=1'-0"



A1 LAB 123
SCALE: 1/2"=1'-0"



A3 LABS 123 & 125
SCALE: 1/2"=1'-0"

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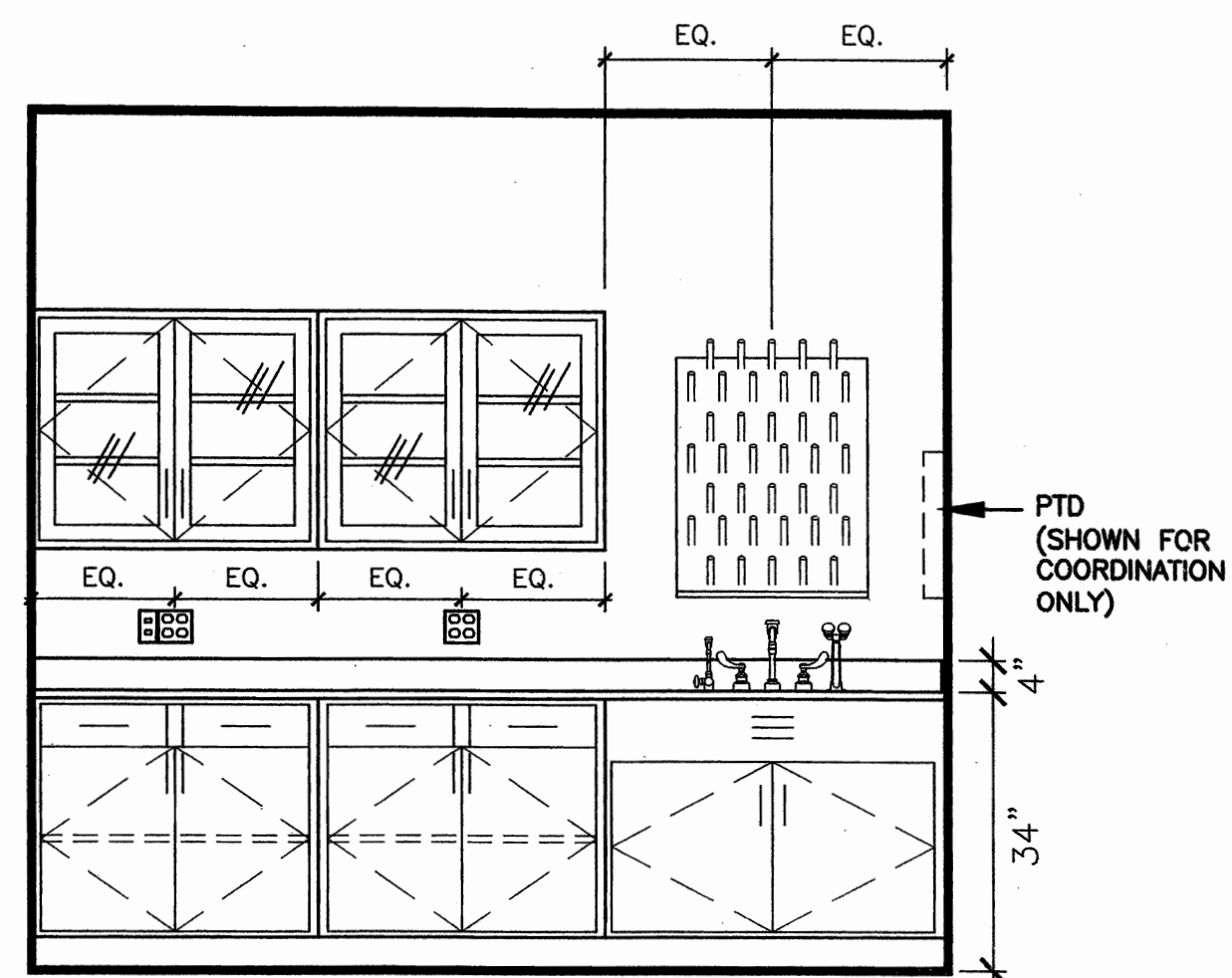
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Date: April 8, 2010

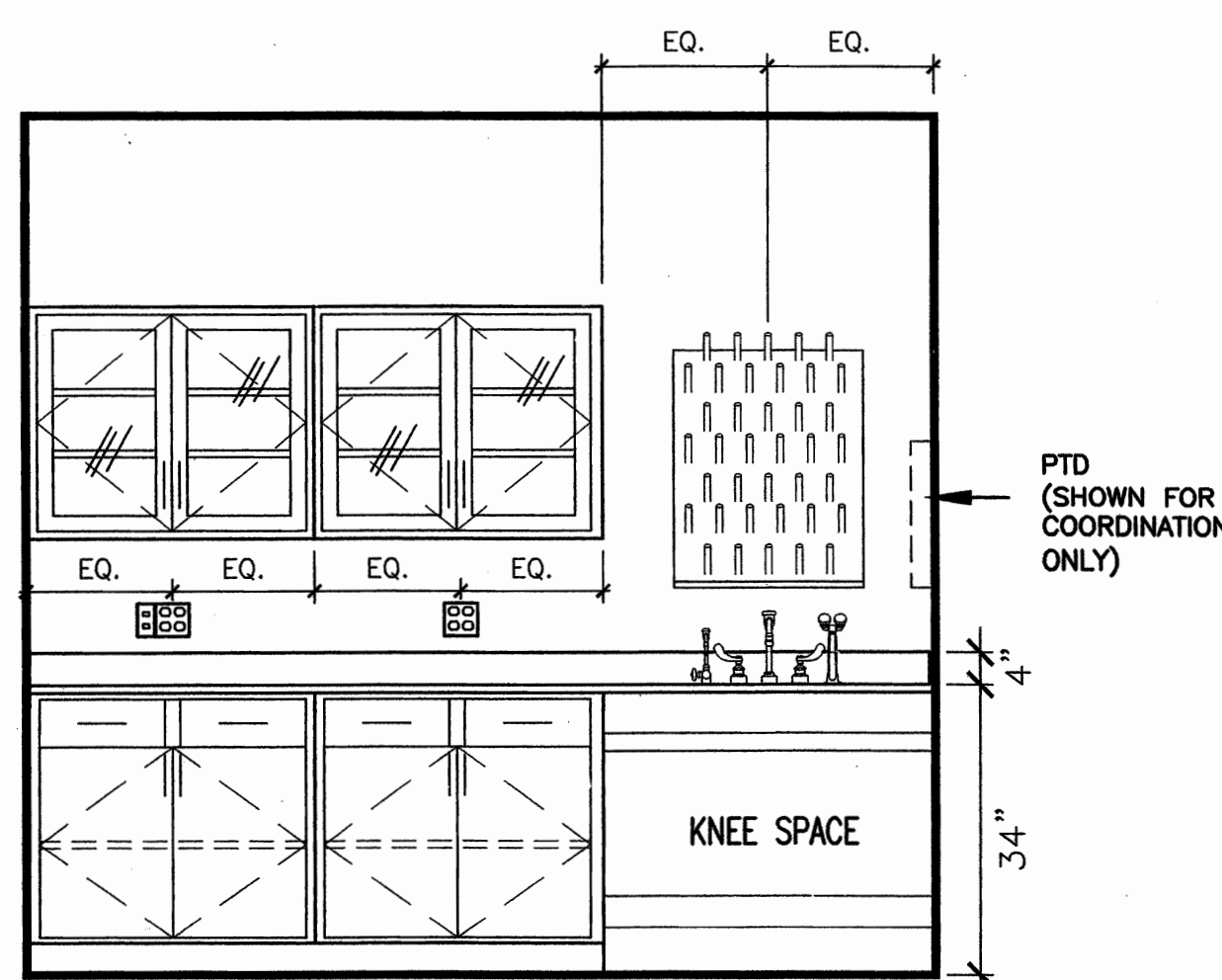


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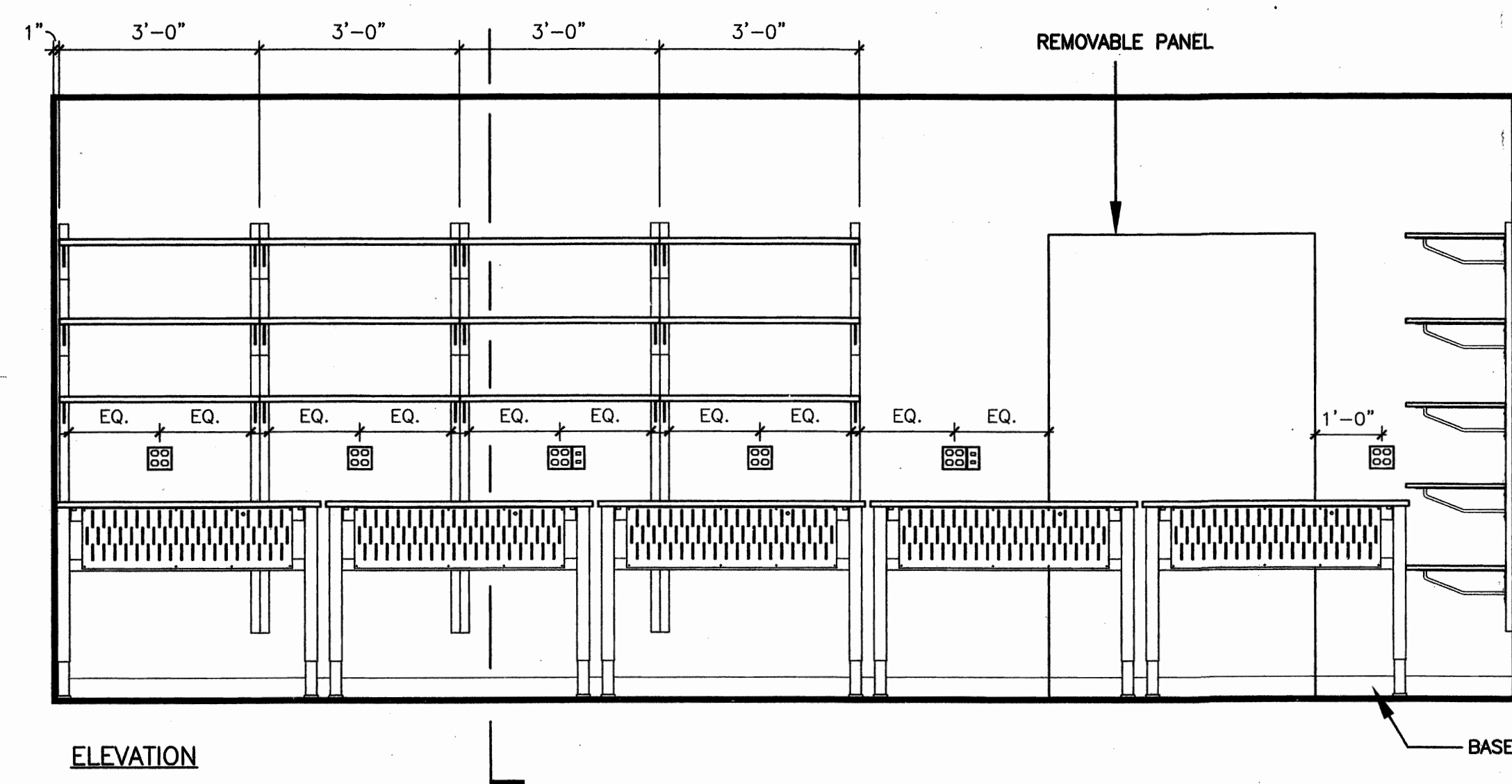
ELEVATION

D1 LAB 123, 124, & 125
SCALE: 1/2"=1'-0"



ELEVATION

B1 LABS 122
SCALE: 1/2"=1'-0"

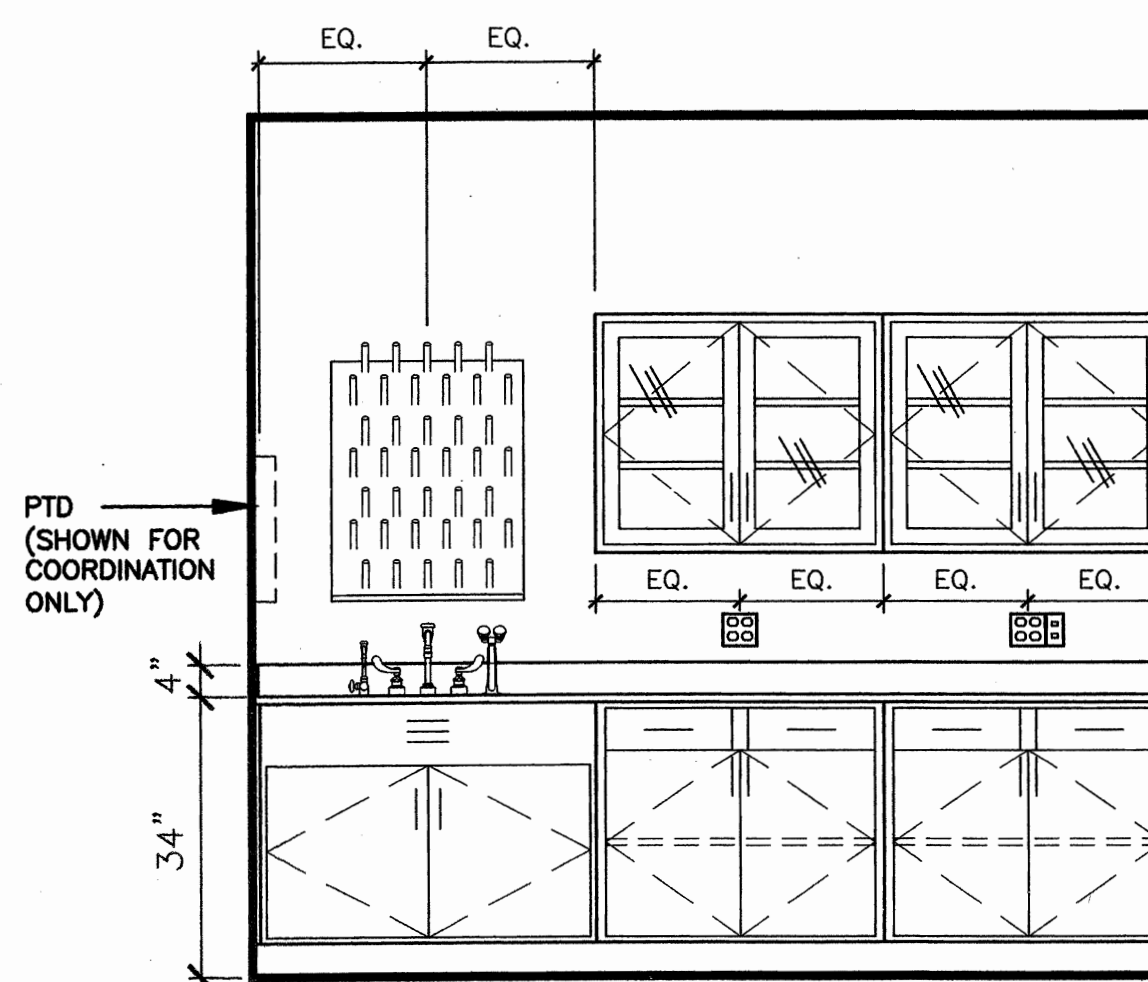


ELEVATION

A1 LAB 134
SCALE: 1/2"=1'-0"

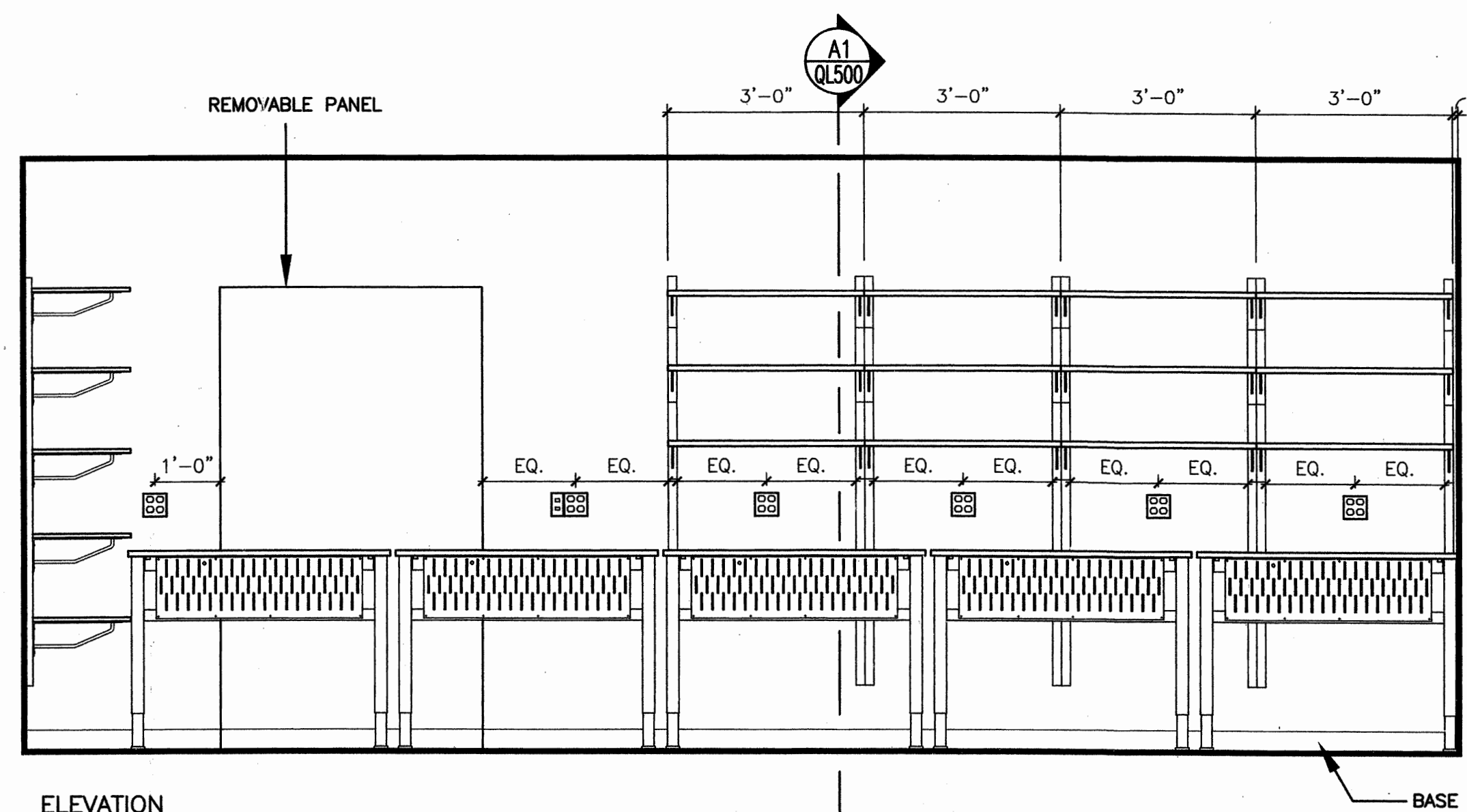
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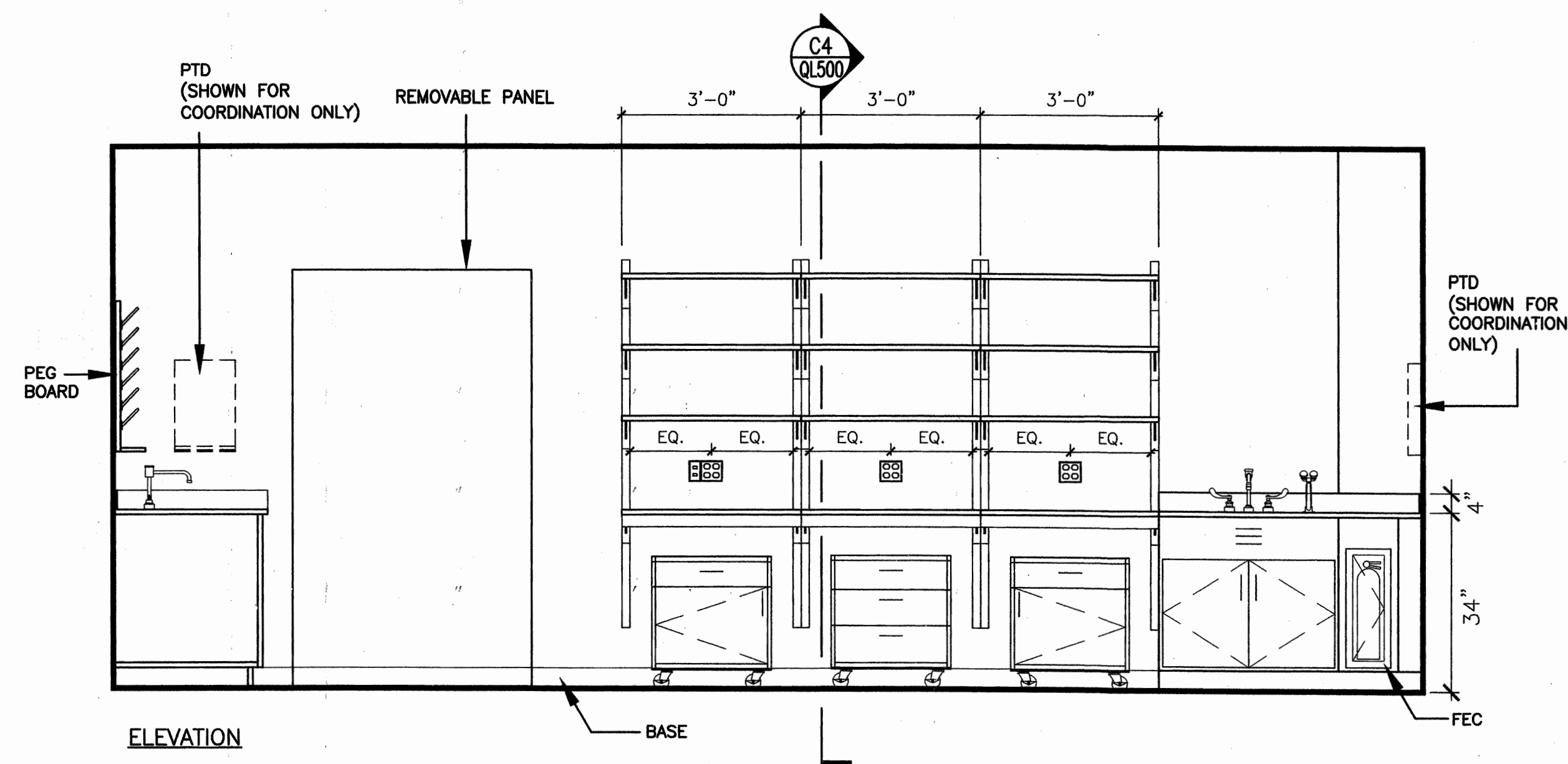
ELEVATION

D3 LAB 123, 124, & 125
SCALE: 1/2"=1'-0"



ELEVATION

B3 LAB 133
SCALE: 1/2"=1'-0"



ELEVATION

A3 LABS 124
SCALE: 1/2"=1'-0"

3

4

5

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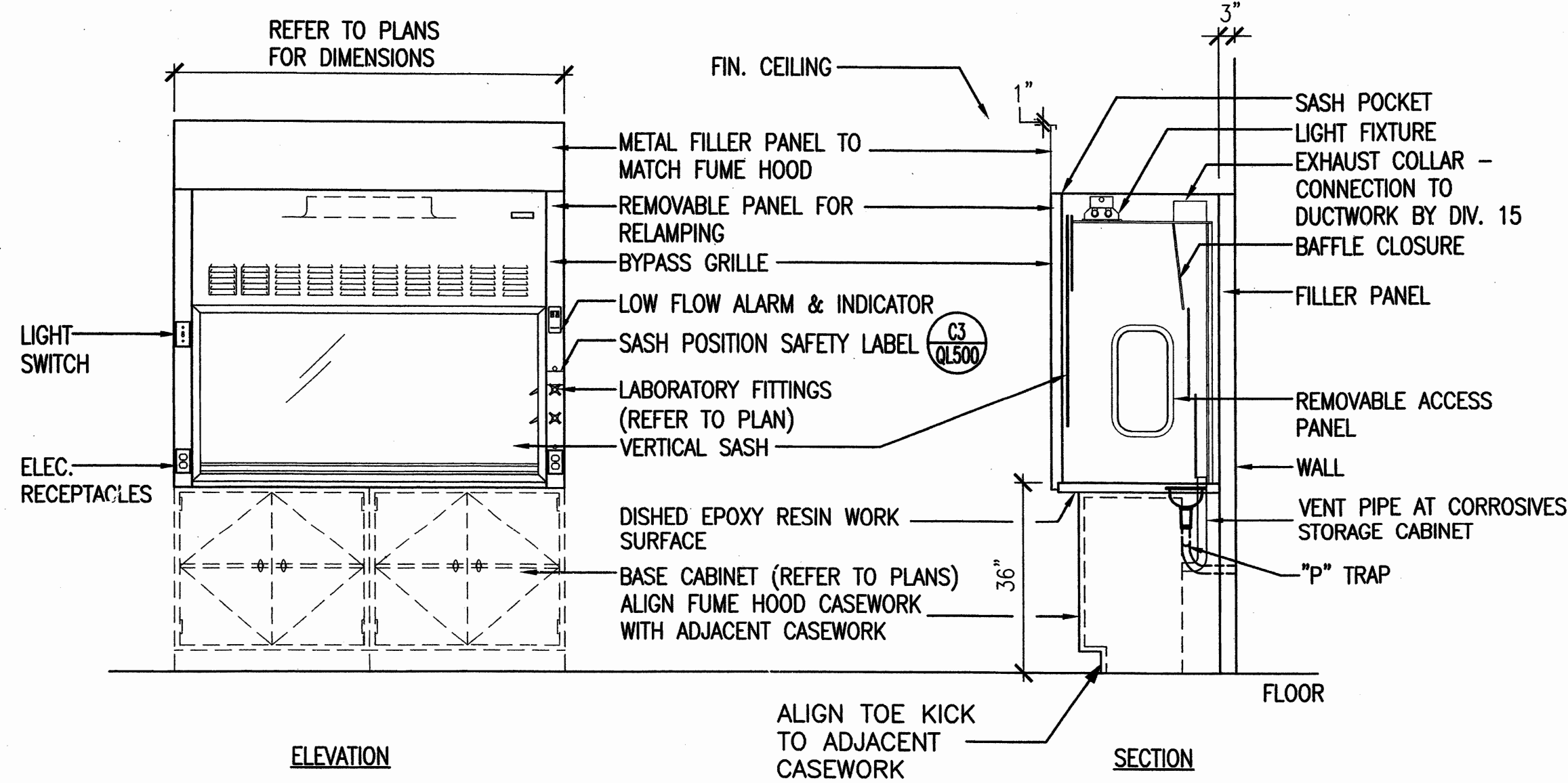
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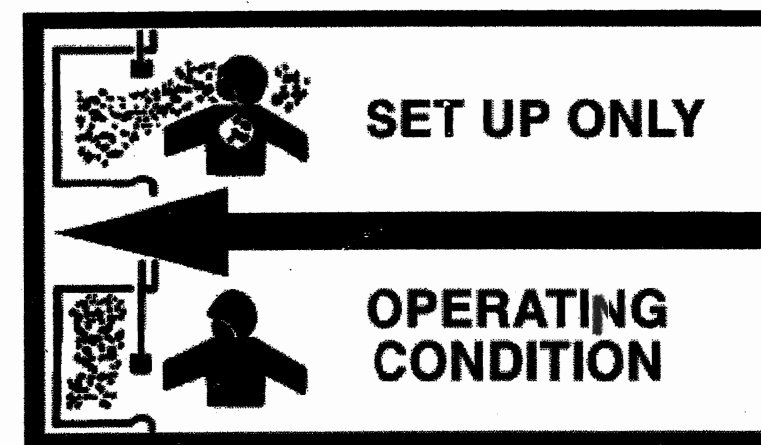
Commission Number
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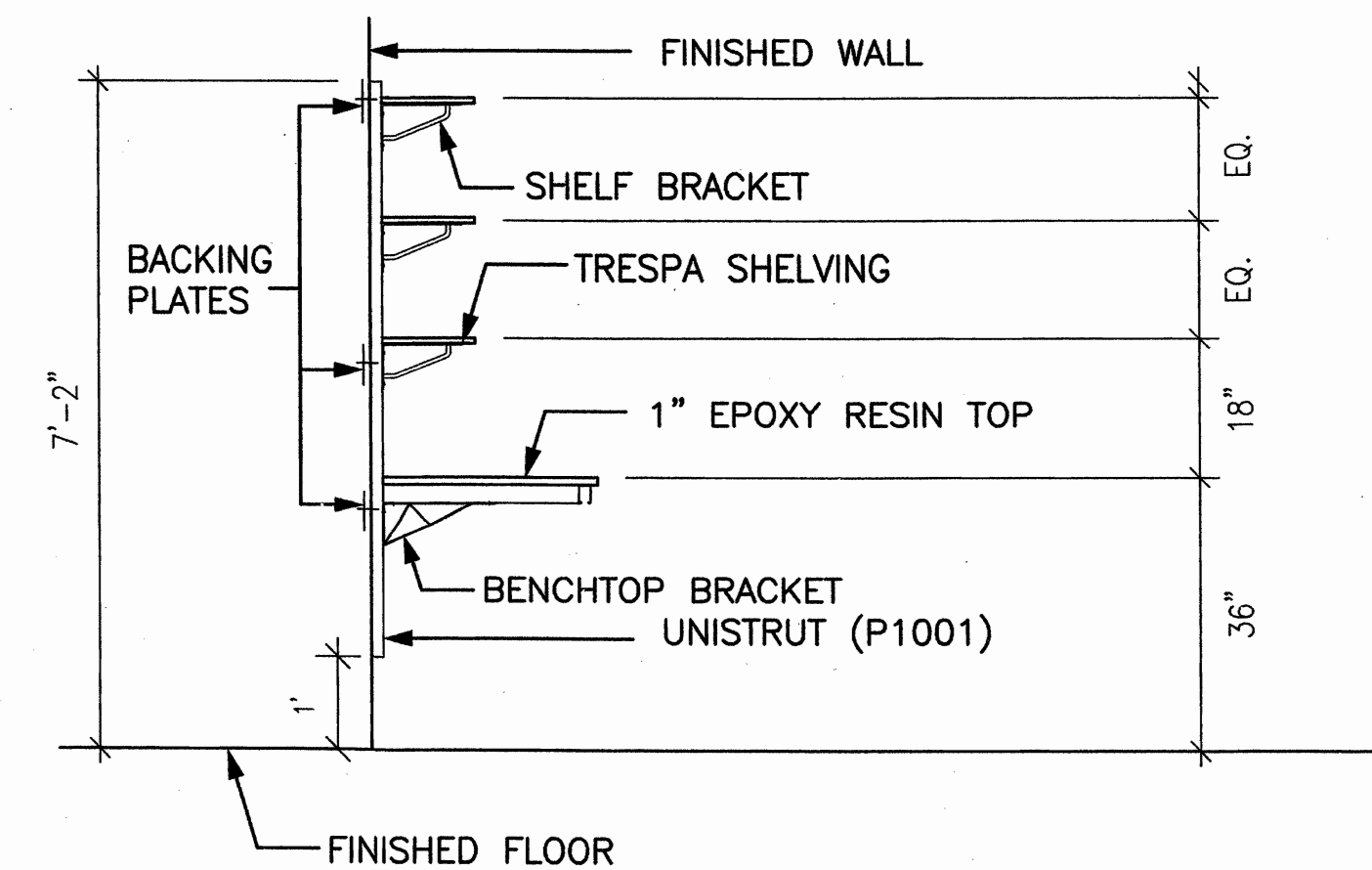
Date: April 8, 2010



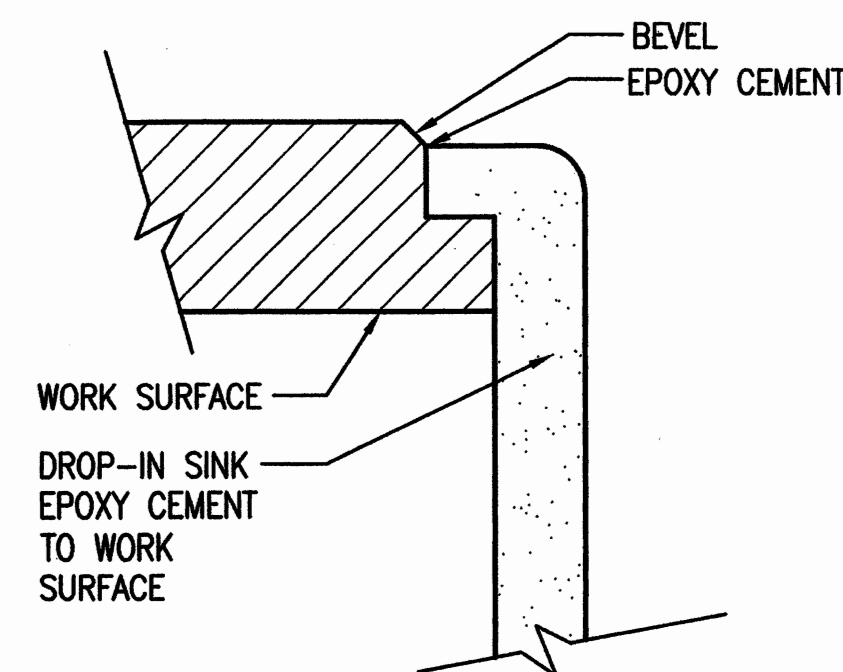
C1 BENCH MOUNTED FUME HOOD SECTION & ELEVATION
SCALE: 1/2"=1'-0"



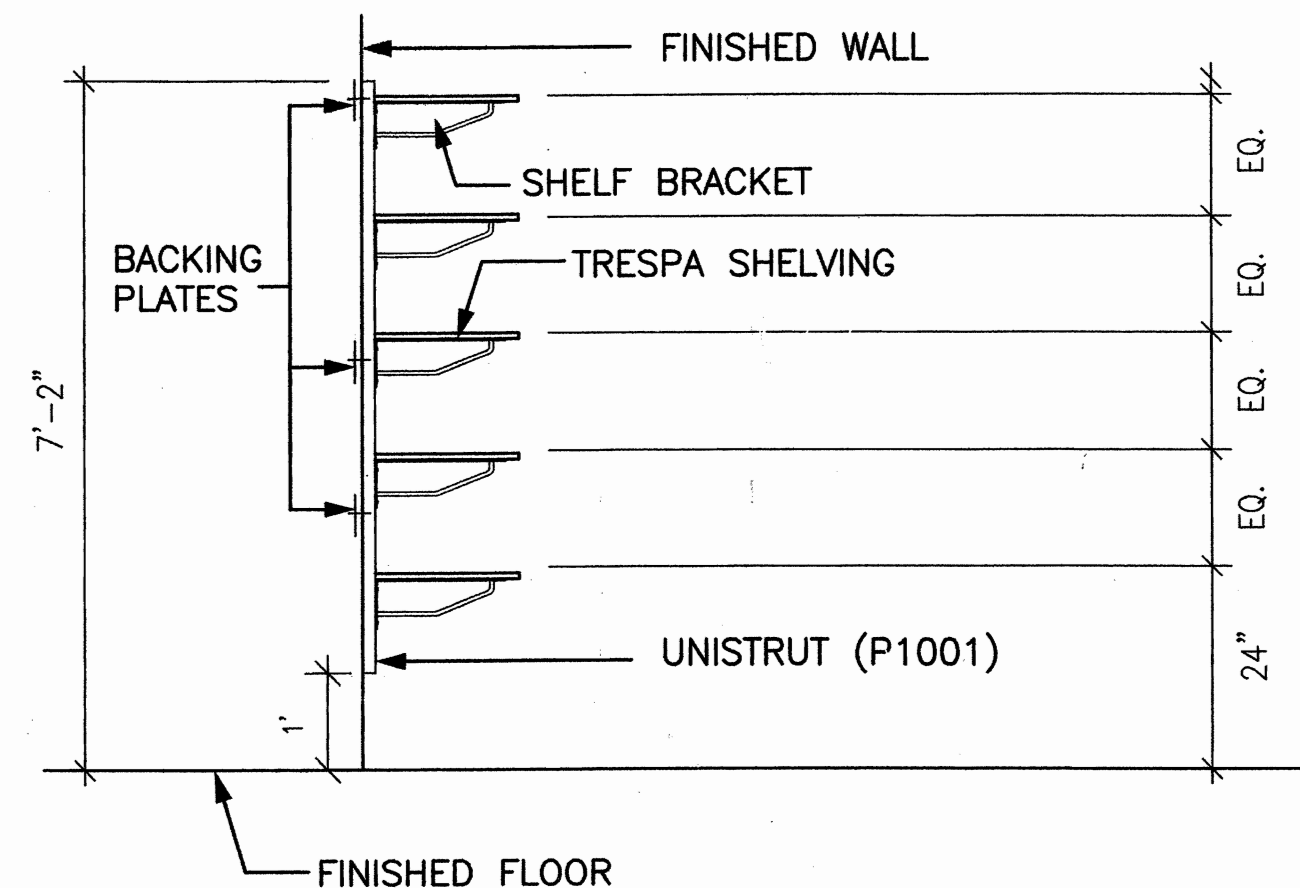
C3 SASH POSITION SAFETY LABEL
SCALE: 1/2"=1'-0"



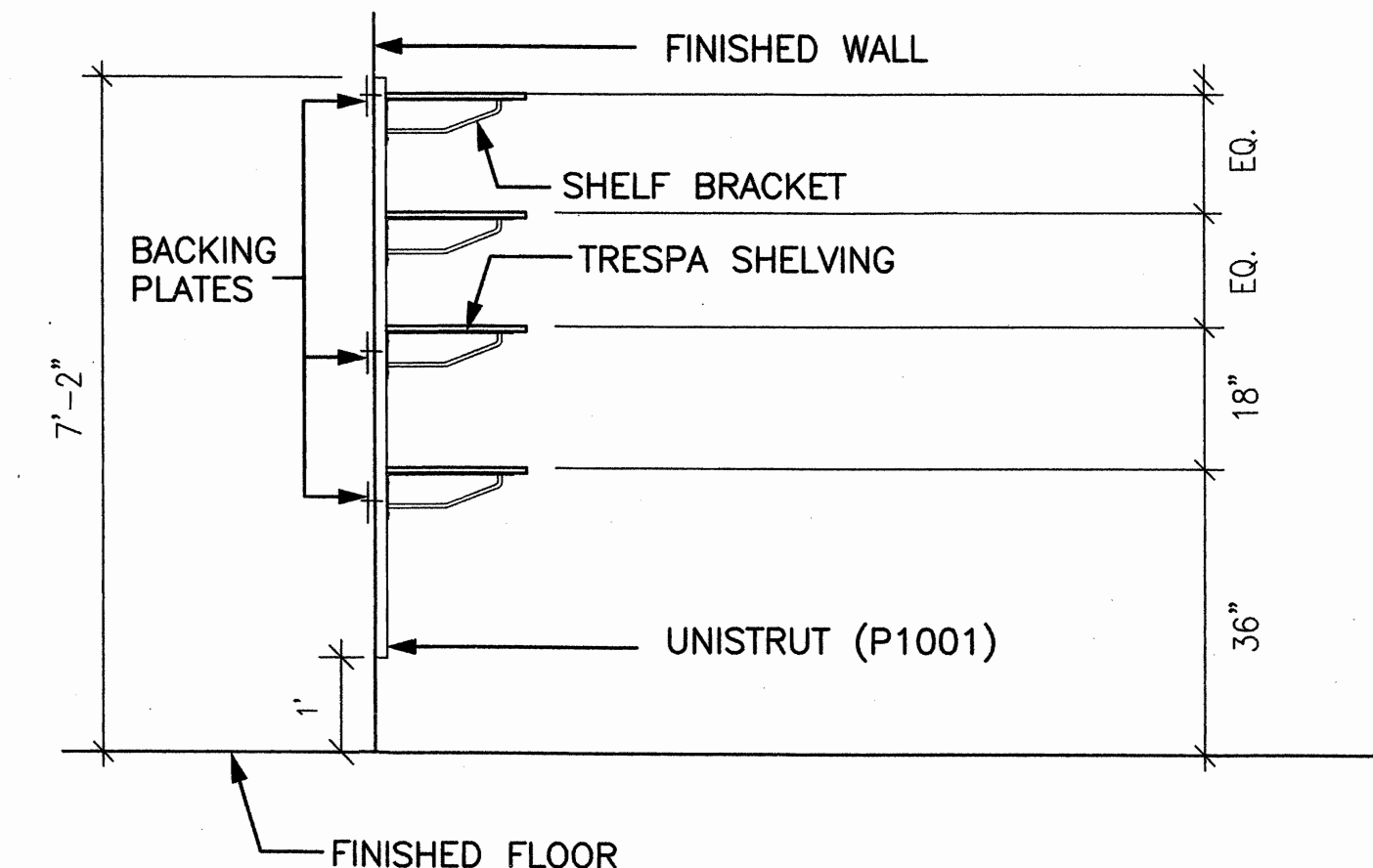
C4 SECTION
SCALE: 1/2"=1'-0"



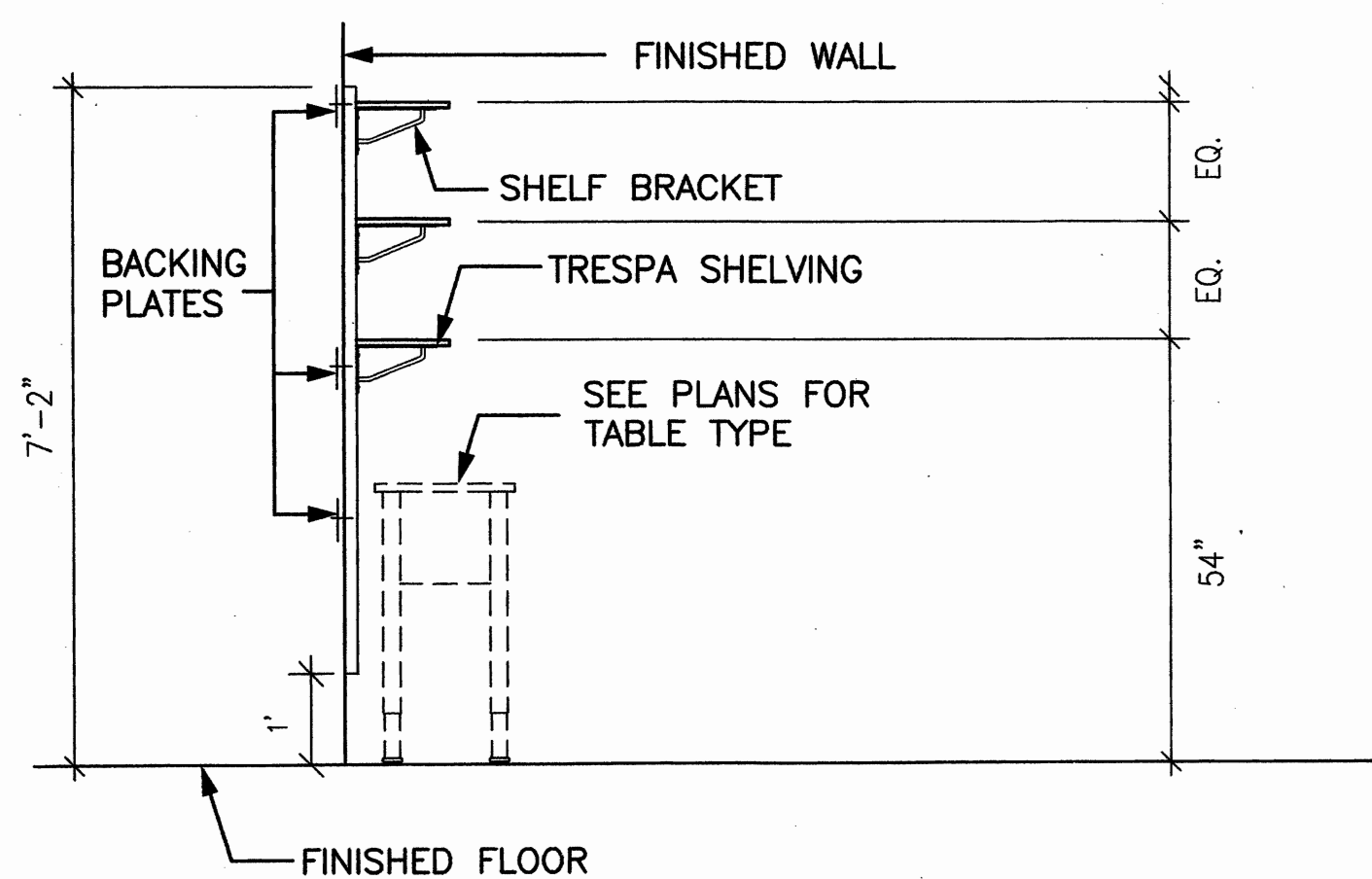
B1 DROP IN SINK
SCALE: FULL SIZE



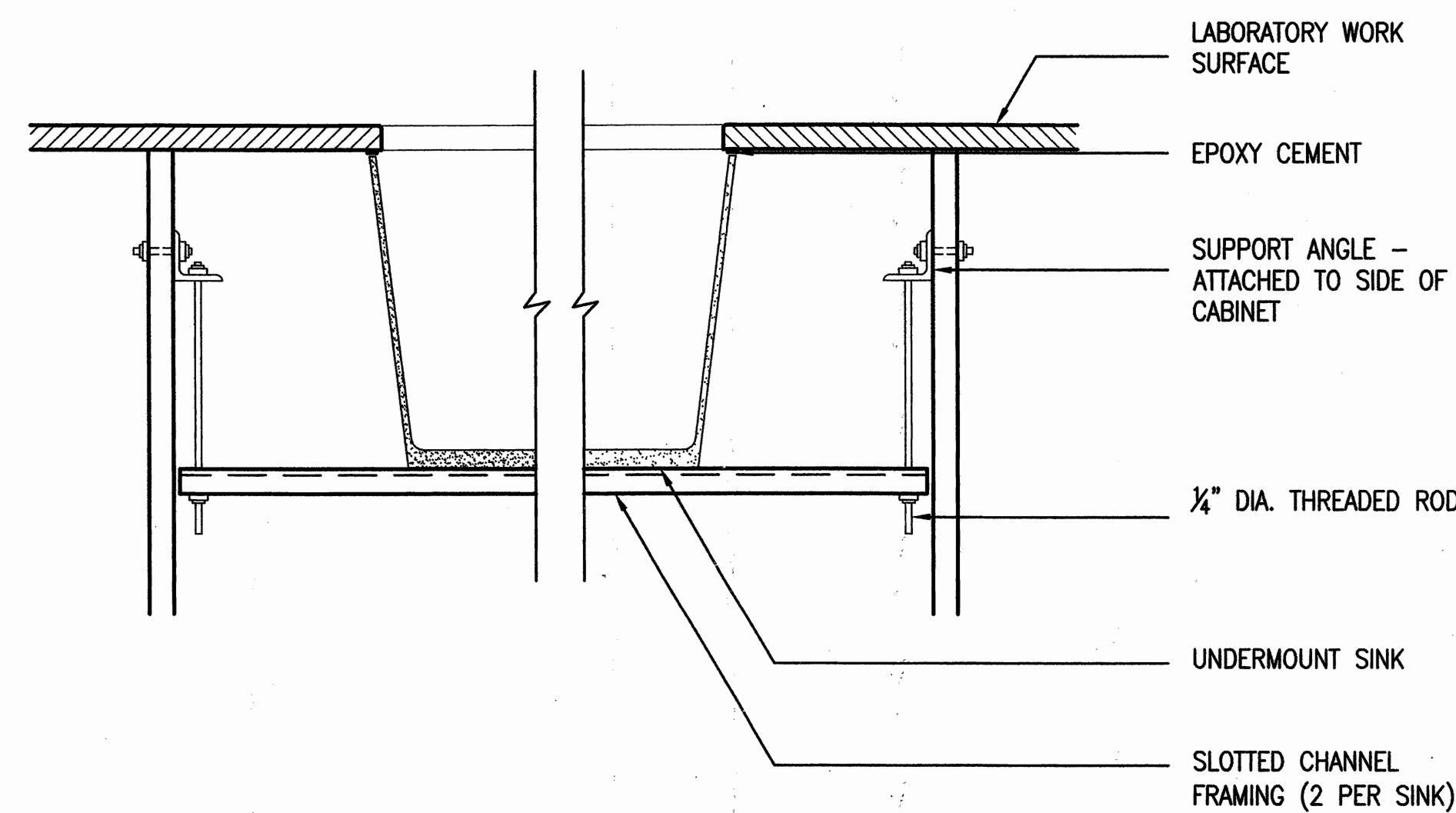
B3 SECTION
SCALE: 1/2"=1'-0"



B4 SECTION
SCALE: 1/2"=1'-0"



A1 SECTION
SCALE: 1/2"=1'-0"



A3 UNDERMOUNT SINK DETAIL
SCALE: NOT TO SCALE

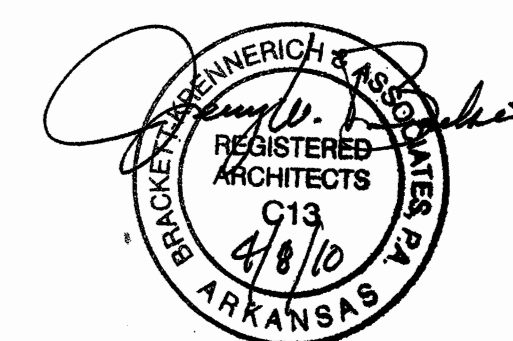
LABORATORY DETAILS

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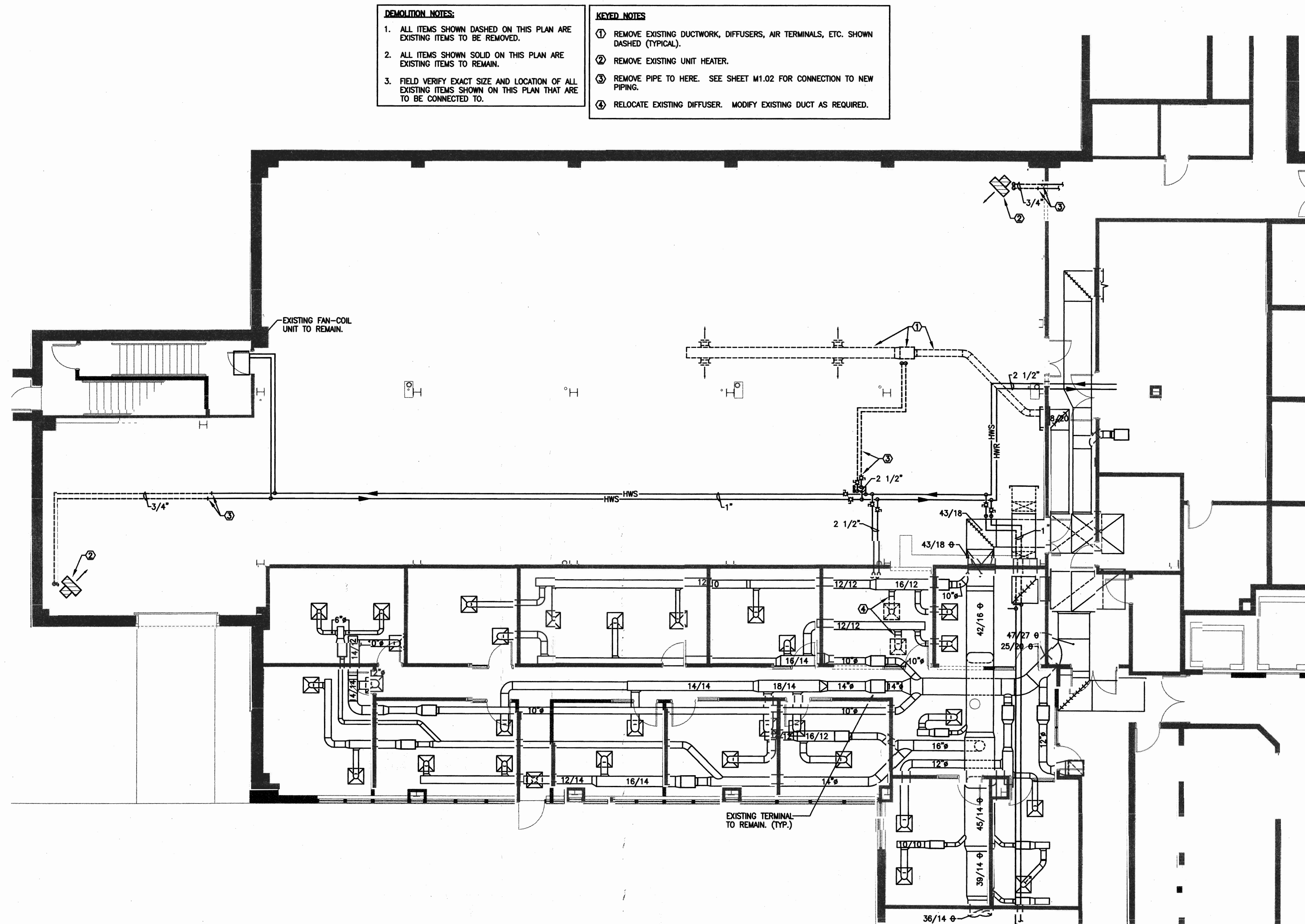
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QL500

Date: April 8, 2010



- DEMOLITION NOTES:**

 1. ALL ITEMS SHOWN DASHED ON THIS PLAN ARE EXISTING ITEMS TO BE REMOVED.
 2. ALL ITEMS SHOWN SOLID ON THIS PLAN ARE EXISTING ITEMS TO REMAIN.
 3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

KEYED NOTES:

 - ① REMOVE EXISTING DUCTWORK, DIFFUSERS, AIR TERMINALS, ETC. SHOWN DASHED (TYPICAL).
 - ② REMOVE EXISTING UNIT HEATER.
 - ③ REMOVE PIPE TO HERE. SEE SHEET M1.02 FOR CONNECTION TO NEW PIPING.
 - ④ RELOCATE EXISTING DIFFUSER. MODIFY EXISTING DUCT AS REQUIRED.

partial first floor plan - hvac demolition
 SCALE: 1/8" = 1'-0"

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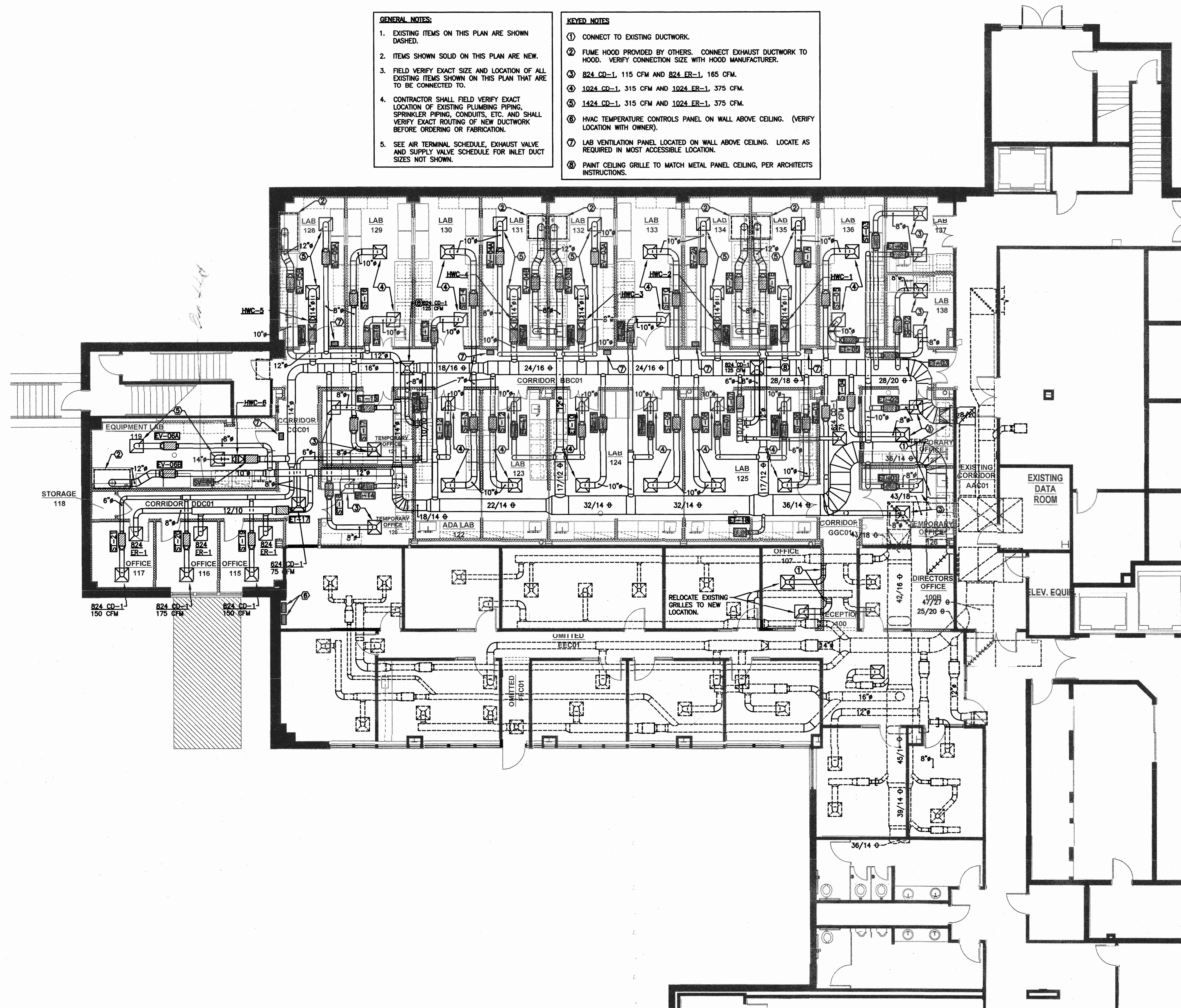
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12709-R

M100

Rev. Date: August 6, 2010
Date: April 8, 2010

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- GENERAL NOTES:**
- EXISTING ITEMS ON THIS PLAN ARE SHOWN DASHED.
 - ITEMS SHOWN SOLID ON THIS PLAN ARE NEW.
 - FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING PLUMBING PIPING, SPRINKLER PIPING, CONDUITS, ETC. AND SHALL VERIFY EXACT ROUTING OF NEW DUCTWORK BEFORE ORDERING OR FABRICATION.
 - SEE AIR TERMINAL SCHEDULE, EXHAUST VALVE AND SUPPLY VALVE SCHEDULE FOR INLET DUCT SIZES NOT SHOWN.

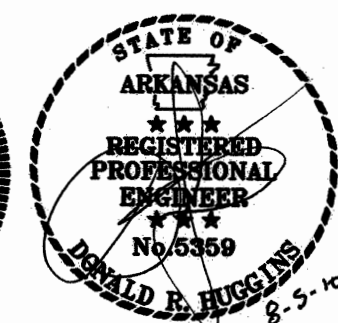
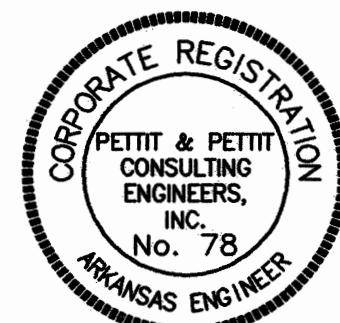
- KEYED NOTES:**
- CONNECT TO EXISTING DUCTWORK.
 - FUME HOOD PROVIDED BY OTHERS. CONNECT EXHAUST DUCTWORK TO HOOD. VERIFY CONNECTION SIZE WITH HOOD MANUFACTURER.
 - 824 CD-1, 115 CFM AND 824 ER-1, 165 CFM.
 - 1024 CD-1, 315 CFM AND 1024 ER-1, 375 CFM.
 - 1424 CD-1, 315 CFM AND 1024 ER-1, 375 CFM.
 - HVAC TEMPERATURE CONTROLS PANEL ON WALL ABOVE CEILING. (VERIFY LOCATION WITH OWNER).
 - LAB VENTILATION PANEL LOCATED ON WALL ABOVE CEILING. LOCATE AS REQUIRED IN MOST ACCESSIBLE LOCATION.
 - PAINT CEILING GRILLE TO MATCH METAL PANEL CEILING, PER ARCHITECTS INSTRUCTIONS.

SV 5
ST 13
EV 13
ET 16



partial first floor plan - hvac

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



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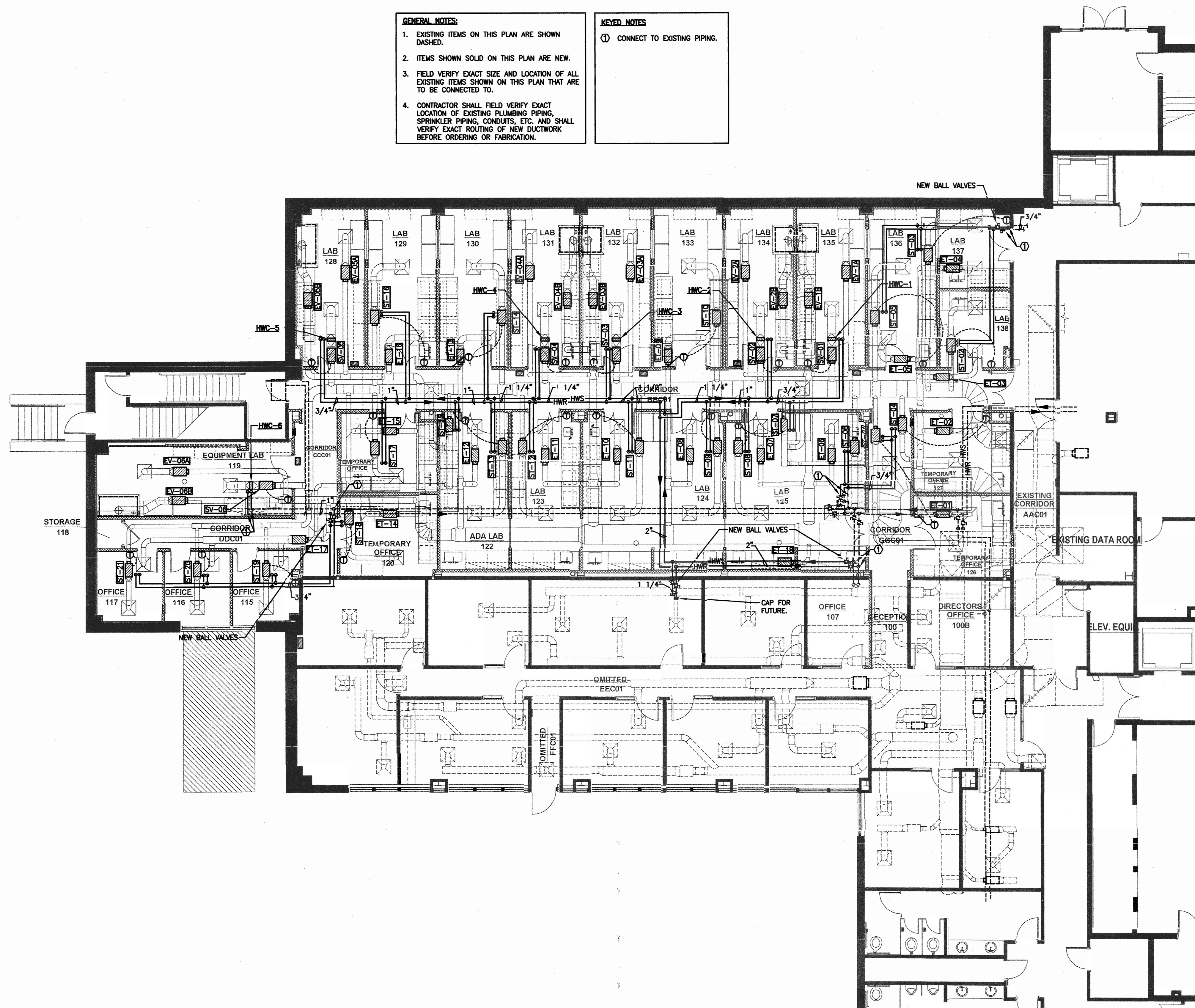
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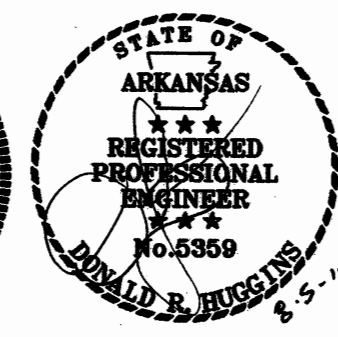
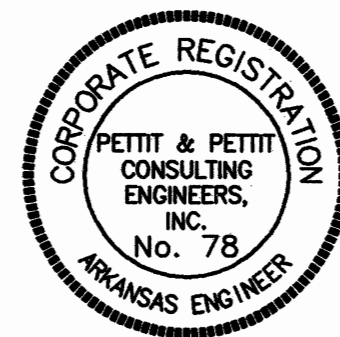
- GENERAL NOTES:**
1. EXISTING ITEMS ON THIS PLAN ARE SHOWN DASHED.
 2. ITEMS SHOWN SOLID ON THIS PLAN ARE NEW.
 3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
 4. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING PLUMBING PIPING, SPRINKLER PIPING, CONDUITS, ETC. AND SHALL VERIFY EXACT ROUTING OF NEW DUCTWORK BEFORE ORDERING OR FABRICATION.

- KEYED NOTES**
- ① CONNECT TO EXISTING PIPING.



partial first floor plan - hvac piping

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



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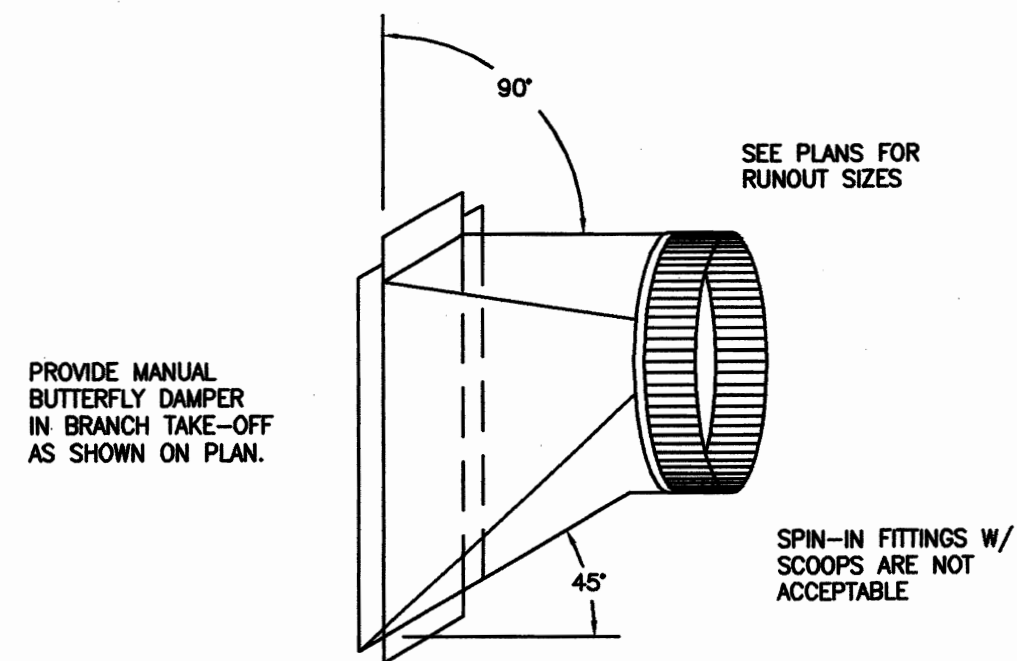
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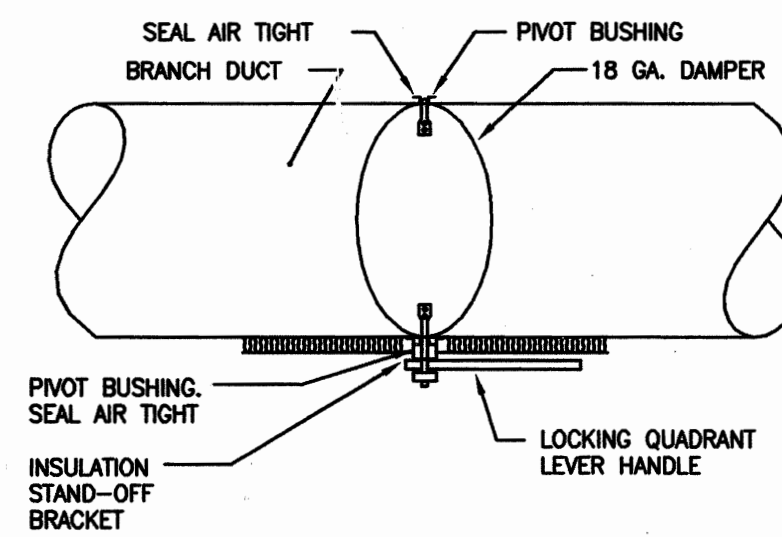
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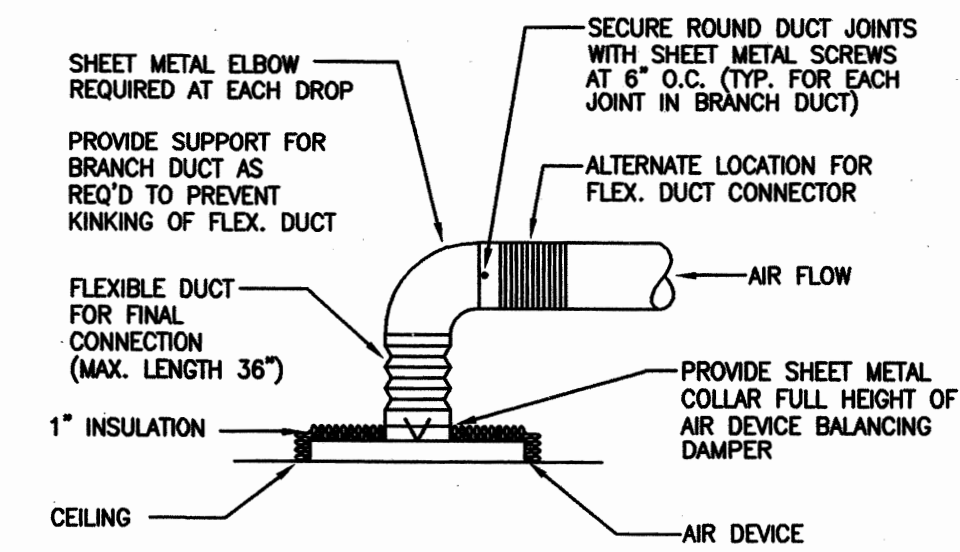


1 BRANCH DUCT TAP FITTING
N.T.S.

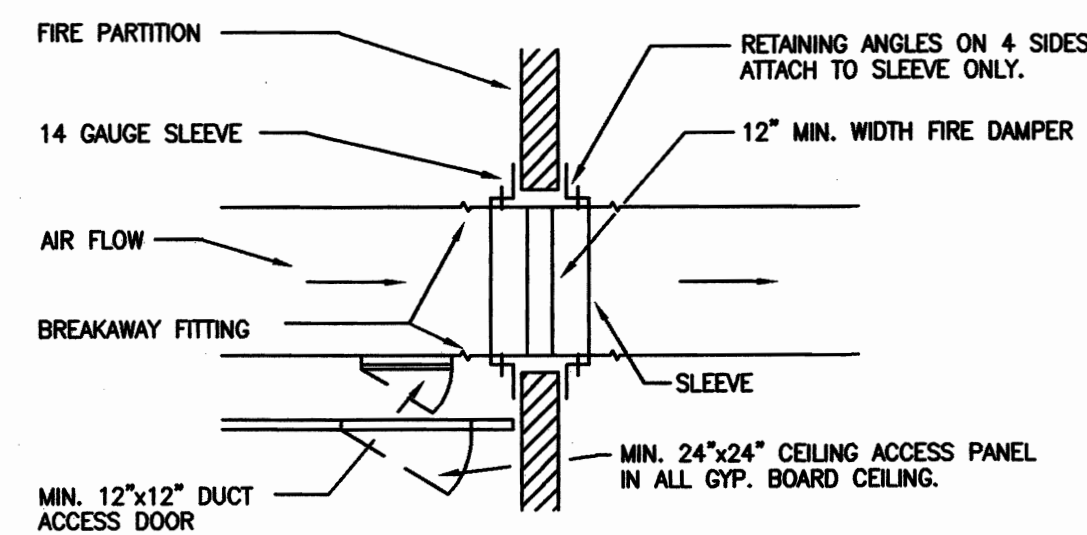


ABOVE ACCESSIBLE CEILINGS

2 MANUAL DAMPER OPERATOR DETAIL
N.T.S.

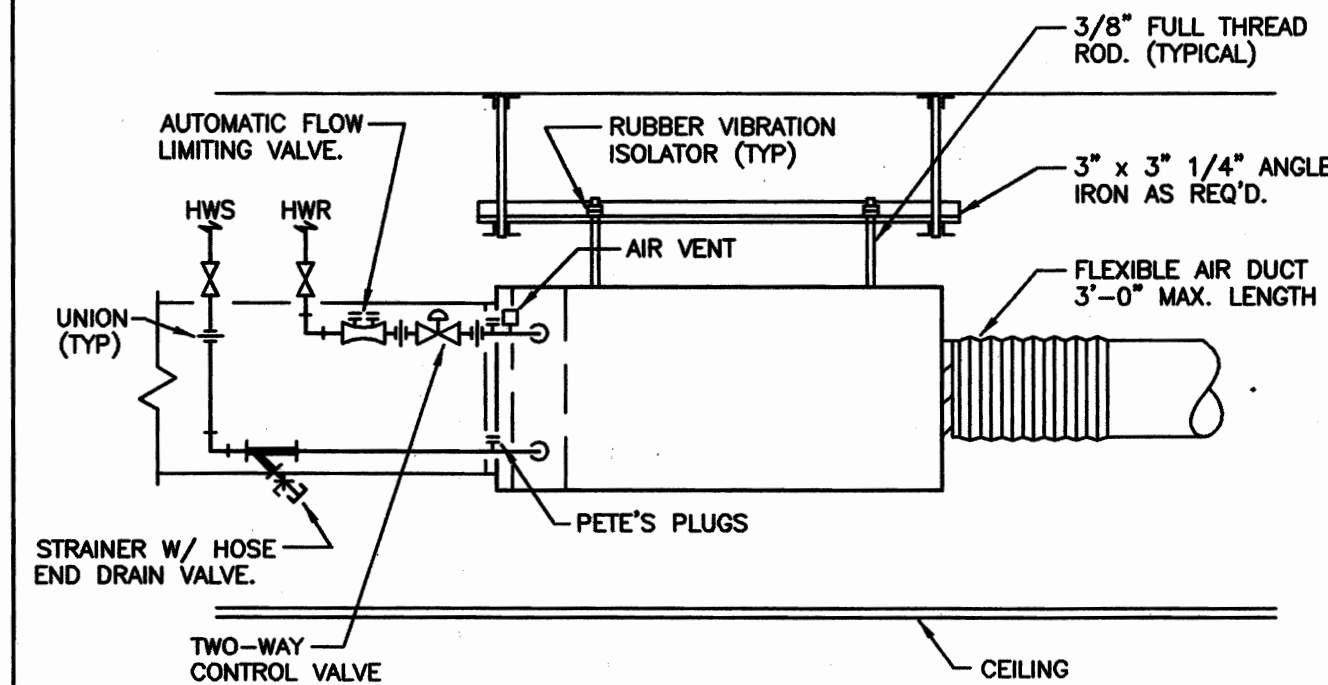


3 DIFFUSER CONNECTION DETAIL
N.T.S.



NOTE: SEE FIRE DAMPER MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

4 FIRE DAMPER DETAIL
N.T.S.



5 VAV TERMINAL DETAIL
N.T.S.
(TYPICAL FOR DUCT MOUNTED HOT WATER COIL PIPING)

GENERAL NOTES

1. DUE TO THE SMALL SCALE OF THIS DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL COORDINATE AND ARRANGE HIS WORK ACCORDINGLY.
2. ROUND BRANCH DUCT RUNOUTS SHALL BE SAME SIZE AS DIFFUSER THROAT UNLESS OTHERWISE NOTED.
3. FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTIONS TO DIFFUSERS. A MAXIMUM LENGTH OF THREE FEET (3') SHALL BE USED.
4. ALL CEILING-MOUNTED SUPPLY DIFFUSERS SHALL HAVE FOUR-WAY (4-WAY) PATTERN UNLESS OTHERWISE INDICATED.
5. WHERE MANUAL DAMPERS ARE INSTALLED IN EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF BRACKET TO PREVENT COMPRESSION OF INSULATION BY DAMPER OPERATOR HANDLE.
6. PROVIDE TURNING VANES IN ALL 90-DEGREE ELBOWS.
7. PROVIDE SLEEVES THROUGH WALLS AND FLOORS. SEAL EXCESS OPENING WITH WATER-PROOF SEALANT. COORDINATE LOCATIONS AND SIZES OF SLEEVES WITH GENERAL CONTRACTOR. SLEEVES SHALL PROVIDE A MAXIMUM OF 1" CLEARANCE BETWEEN DUCT OR PIPE AND SLEEVE. SEAL PENETRATION IN FIRE/SMOKE RATED WALLS AND FLOOR WITH AN APPROVED FIRE/SMOKE BLOCK SEALANT.
8. EXTERNALLY INSULATE SUPPLY, RETURN, RELIEF, AND OUTSIDE AIR DUCTWORK WITH 2" 1LB/CU FT. GLASS FIBER INSULATION.
9. EXTERNALLY INSULATE LOW-VELOCITY ROUND RUNOUT DUCTWORK.
10. INSULATE THE TOP OF ALL SUPPLY AIR DIFFUSERS WITH A MINIMUM OF 1/2" THICK FIBERGLASS DUCT WRAP.
11. COORDINATE LOCATION OF DUCTS AND DIFFUSERS WITH STRUCTURAL FRAMING MEMBERS. OFFSET DUCTS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS.

DUCTWORK LEGEND

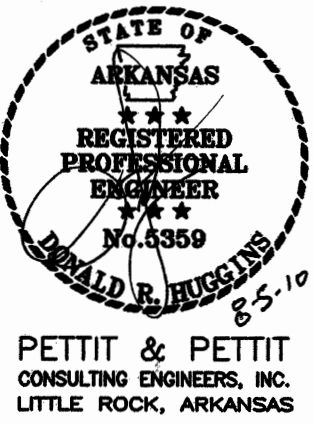
	CEILING DIFFUSER		EXTRACTOR
	RETURN AIR GRILLE (RA)		MANUAL DAMPER
	EXHAUST REGISTER (ER)		FIRE DAMPER AND ACCESS DOOR (SMOKE DAMPER S.D. SIMILAR)
	FLEXIBLE DUCT CONNECTOR		DIAMETER
	TURNING VANES		OVAL DUCT
	SPLITTER DAMPER (TEE)		THERMOSTAT
			TOP NUMBER REFERS TO THE DETAIL NUMBER. BOTTOM NUMBER REFERS TO THE SHEET WHERE DETAIL IS SHOWN

SUPPLY AIR TERMINAL SCHEDULE																
DESIG.	MFR/MDL	TYPE	PRIMARY CFM		INLET SIZE	OUTLET W x H	HEATING WATER COIL DATA									REMARKS
			MIN.	MAX.			CFM	APD	MBH	EWLT/LWT	EAT/LAT(COIL)	GPM	PIPE SIZE	WPD	ROW/FIN	
ST-01	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-02	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-03	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-04	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-05	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-06	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-07	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	80	200	6"ø	12"x8"	100	0.03"	4.4	160'/142.3'	55'/96'	0.50	1/2"	.20'	1/10 FPI	
ST-08	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-09	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-10	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-11	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-12	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-13	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-14	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-15	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	80	200	6"ø	12"x8"	100	0.03"	4.4	160'/142.3'	55'/96'	0.50	1/2"	.20'	1/10 FPI	
ST-16	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	375	0.06"	9.5	160'/147.2'	55'/83'	1.50	3/4"	1.6'	1/10 FPI	
ST-17	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-18	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	165	0.02"	5.3	160'/139.0'	55'/85'	0.50	1/2"	.20'	1/10 FPI	
ST-19	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	60	150	6"ø	12"x8"	100	0.02"	4.4	160'/142.3'	55'/96'	0.50	1/2"	.20'	1/10 FPI	
ST-20	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	70	175	6"ø	12"x8"	100	0.02"	4.4	160'/142.3'	55'/96'	0.50	1/2"	.20'	1/10 FPI	
ST-21	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	60	150	6"ø	12"x8"	100	0.02"	4.4	160'/142.3'	55'/96'	0.50	1/2"	.20'	1/10 FPI	

AIR DEVICE SCHEDULE							
NOTE: SEE PLANS FOR AIR DEVICES WITH FIRE DAMPERS							
DESIG.	MFR/MDL	TYPE	FACE SIZE	FINISH	FREE AREA	ACCESS.	REMARKS
CD-1	TUTTLE & BAILEY / 1300	LOUVER FACE CEILING SUPPLY	AS NOTED	WHITE	----	VOLUME CONTROL	2'x2' GRILLE WITH ROUND NECK FIXED HORIZONTAL AIR DEFLECTION
ER-1	TUTTLE & BAILEY / PR	PERF. FACE CEILING EXHAUST	AS NOTED	WHITE	51%	VOLUME CONTROL	ALL ALUMINUM CONSTRUCTION.

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EXHAUST AIR TERMINAL SCHEDULE																	
DESIG.	MFR/MDL	TYPE	PRIMARY CFM		INLET SIZE	OUTLET W x H	HEATING WATER COIL DATA										REMARKS
			MIN.	MAX.			CFM	APD	MBH	EWL/LWT	EAT/LAT(COIL)	GPM	PIPE SIZE	WPD	ROW/FIN		
ET-01	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-02	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-03	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-04	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-05	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-06	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-07	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-08	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-09	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-10	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-11	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-12	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-13	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-14	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-15	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	115	165	6"ø	12"x8"	--	--	--	--	--	--	--	--	--		
ET-16	TITUS/ DESV 07	SINGLE DUCT VARIABLE VOLUME	315	375	7"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-17	TITUS/ DESV 08	SINGLE DUCT VARIABLE VOLUME	190	475	8"ø	12"x10"	--	--	--	--	--	--	--	--	--		
ET-18	TITUS/ DESV 06	SINGLE DUCT VARIABLE VOLUME	0	375	6"ø	12"x8"	--	--	--	--	--	--	--	--	--	THIS TERMINAL WILL NOT BE USED AT THIS TIME AND IS PROVIDED FOR FUTURE SNORKEL EXHAUST SYSTEM.	

SUPPLY AIR VALVE SCHEDULE							
DESIG.	MFR/MDL	TYPE	PRIMARY CFM		INLET SIZE	OUTLET SIZE	REMARKS
			MIN.	MAX.			
SV-01	PHOENIX / MAV 08	ELECTRONIC SUPPLY AIR VALVE	315	700	8"ø	8"ø	
SV-02	PHOENIX / MAV 08	SINGLE DUCT VARIABLE VOLUME	315	700	8"ø	8"ø	
SV-03	PHOENIX / MAV 08	SINGLE DUCT VARIABLE VOLUME	315	700	8"ø	8"ø	
SV-04	PHOENIX / MAV 08	SINGLE DUCT VARIABLE VOLUME	315	700	8"ø	8"ø	
SV-05	PHOENIX / MAV 12	SINGLE DUCT VARIABLE VOLUME	315	1,100	12"ø	12"ø	
SV-06	PHOENIX / MAV 12	SINGLE DUCT VARIABLE VOLUME	400	1,100	12"ø	12"ø	

EXHAUST AIR VALVE SCHEDULE							
DESIG.	MFR/MDL	TYPE	PRIMARY CFM		INLET SIZE	OUTLET W x H	REMARKS
			MIN.	MAX.			
EV-1A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	315	375	8"ø	8"ø	
EV-1B	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	0	570	8"ø	8"ø	
EV-2A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	315	375	8"ø	8"ø	
EV-2B	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	0	570	8"ø	8"ø	
EV-3A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	315	375	8"ø	8"ø	
EV-3B	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	0	570	8"ø	8"ø	
EV-4A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	315	375	8"ø	8"ø	
EV-4B	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	0	570	8"ø	8"ø	
EV-5A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	315	375	8"ø	8"ø	
EV-5B	PHOENIX EXV 10 /	SINGLE DUCT VARIABLE VOLUME	0	922	10"ø	10"ø	
EV-6A	PHOENIX EXV 08 /	SINGLE DUCT VARIABLE VOLUME	400	475	8"ø	8"ø	
EV-6B	PHOENIX EXV 10 /	SINGLE DUCT VARIABLE VOLUME	0	922	10"ø	10"ø	

DUCT MOUNTED HOT WATER COIL SCHEDULE														
DESIG.	MFR/MDL	SERVES	SIZE	CFM	EAT	LAT	EWL	LWT	GPM	PD	ROW/FIN	FACE VEL	AIR PD	REMARKS
HWC-1	MCQUAY / SBS1001C	SV-01	16"x12"	700	55'	86.3'	160'	139.1'	2.3	1.1'	1 ROW	525	.08"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.
HWC-2	MCQUAY / SBS1001C	SV-02	16"x12"	700	55'	86.3'	160'	139.1'	2.3	1.1'	1 ROW	525	.08"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.
HWC-3	MCQUAY / SBS1001C	SV-03	16"x12"	700	55'	86.3'	160'	139.1'	2.3	1.1'	1 ROW	525	.08"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.
HWC-4	MCQUAY / SBS1001C	SV-04	16"x12"	700	55'	86.3'	160'	139.1'	2.3	1.1'	1 ROW	525	.08"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.
HWC-5	MCQUAY / SBS0901C	SV-05	18"x16"	1,100	55'	85.2'	160'	139.9'	3.6	3.7'	1 ROW	550	.018"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.
HWC-6	MCQUAY / SBS0901C	SV-05	18"x16"	1,100	55'	85.2'	160'	139.9'	3.6	3.7'	1 ROW	550	.018"	PROVIDE CASING WITH CONNECTIONS FOR DUCTWORK.



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CONTROL SCHEDULE				
ROOM TEMPERATURE	(°F)	HEATING SET POINT	COOLING SET POINT	(°C)
VALVE OPEN	_____	_____	_____	_____
MAXIMUM AIR	_____	_____	_____	_____
SUPPLY AIR	_____	_____	_____	_____
REHEAT COIL VALVE	_____	_____	_____	_____
MINIMUM AIR	_____	_____	_____	_____
VALVE CLOSED	_____	_____	_____	_____

SEQUENCE: ST-19, ST-20, ST-21 (OFFICES)

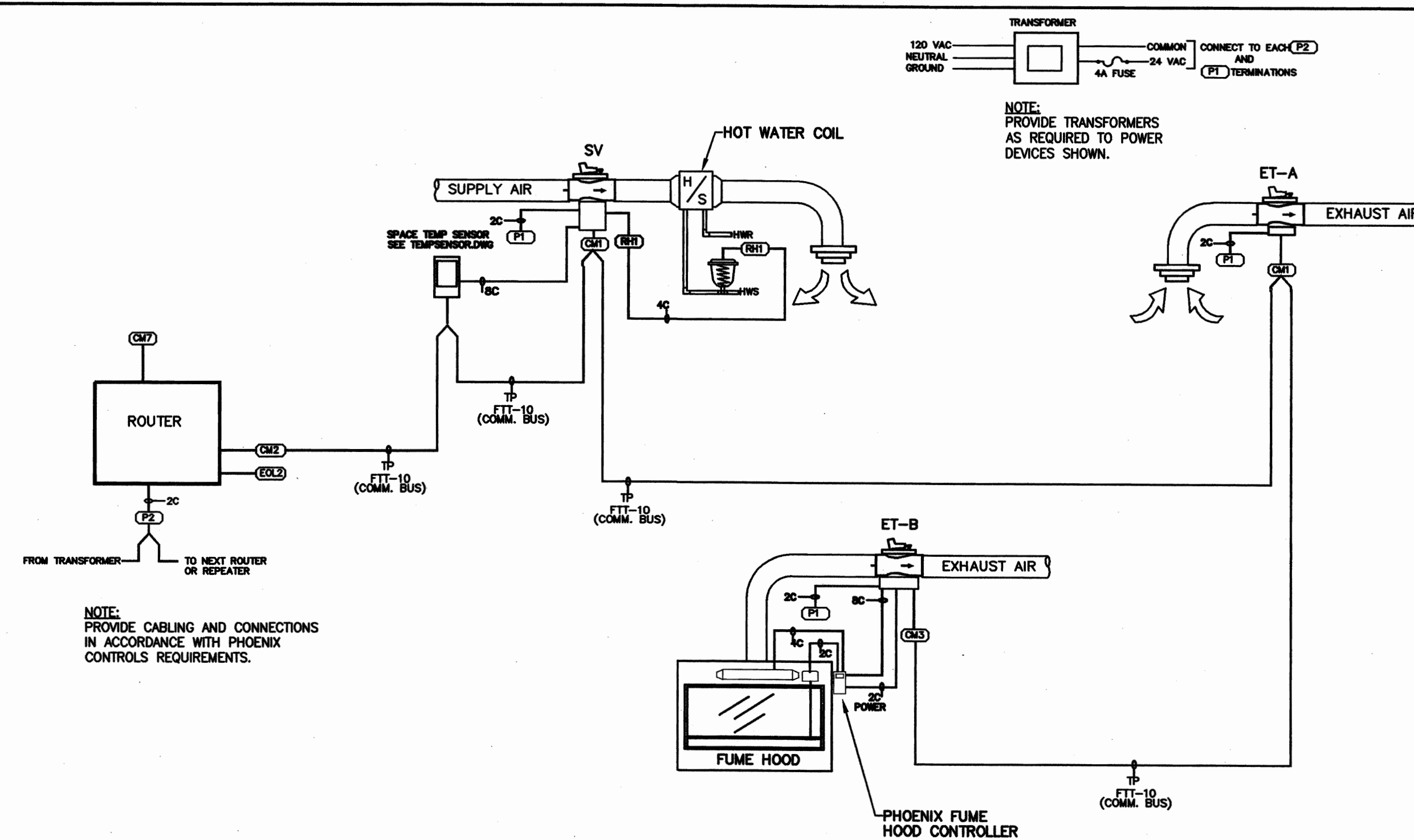
SECONDARY VALVE SHALL BE CONTROLLED BY AN APPLICATION SPECIFIC CONTROLLER. THE VALVE BOX SHALL BE CONTROLLED BY THE CONTROLLER. THE CONTROLLER SHALL BE ON A CALL FOR COOLING THE CONTROLLER SHALL MODULATE THE DAMPER FROM 0% TO 100% OPEN TO MAINTAIN SPACE TEMPERATURE AT ITS SETPOINT. (OCCUPIED & UNOCCUPIED) ON A CALL FOR HEAT THE CONTROLLER SHALL MODULATE THE DAMPER TO ITS MINIMUM AIR FLOW SETPOINT. ON A FURTHER CALL FOR HEAT THE CONTROLLER SHALL MODULATE THE HOT WATER VALVE OPEN TO MAINTAIN THE SPACE TEMPERATURE AT ITS SETPOINT SPACE TEMPERATURE SHALL BE ADJUSTABLE AT THE WALL THERMOSTAT OR AT THE OPERATOR WORKSTATION. ASSOCIATED EXHAUST TERMINAL SHALL SUM AIRFLOWS THRU SUPPLY TERMINALS AND SHALL MODULATE ACCORDINGLY. LIGHTING OCCUPANCY SENSOR SHALL DETERMINE OCCUPIED OR UNOCCUPIED STATUS.

SEQUENCE: ST-1 THRU 18 (LABS WITHOUT HOODS)

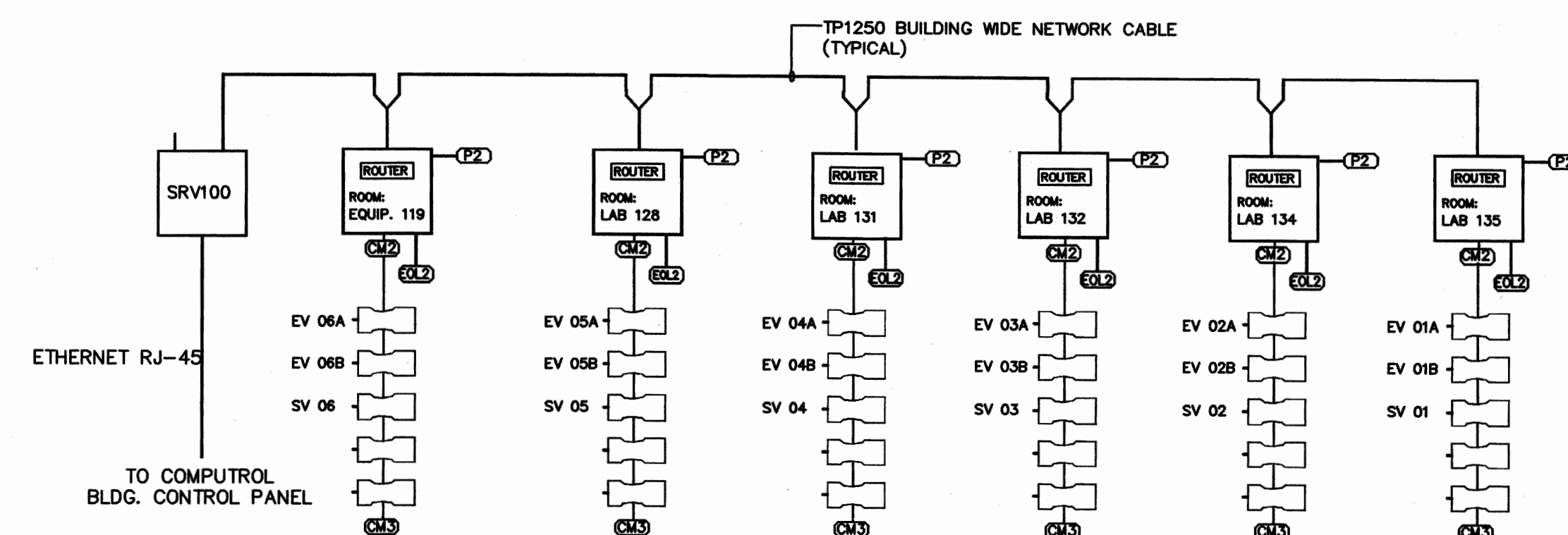
SEQUENCE: ST1 THRU 16 (LABS WITHOUT HOODS)
THE VAV BOX SHALL BE CONTROLLED BY AN APPLICATION SPECIFIC
CONTROLLER.

THE VAV TERMINALS FOR EACH SPACE (SUPPLY (ST) AND EXHAUST (ET) SHALL BE SET AT MINIMUM OR MAXIMUM AIRFLOW BASED ON ROOM PRESSURE REQUIREMENT SET FROM OPERATOR WORKSTATION. INITIAL SETUP WILL BE FOR NEGATIVE ROOM PRESSURE (SUPPLY (ST) AT MINIMUM AIRFLOW, AND EXHAUST (ET) AT MAXIMUM AIRFLOW).

THE HOT WATER VALVE WILL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT.
LIGHTING OCCUPANCY SENSOR SHALL DETERMINE OCCUPIED AND UNOCCUPIED STATUS.



TYPICAL LAB CONTROLS



NOTE:
SUPPLY VALVES ALSO HAVE HOT
WATER REHEAT COILS.

LAB SYSTEM NETWORK

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PLUMBING GENERAL NOTES																											
<p>1. THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, JOB SITE VERIFY SIZE, LOCATION, ETC. OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.</p> <p>2. HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS FOLLOWS, UNLESS SHOWN OR NOTED OTHERWISE.</p> <table><tr><td>WATER CLOSET</td><td>1"</td></tr><tr><td>URINAL</td><td>1 1/2"</td></tr><tr><td>LAVATORY</td><td>3/4"</td></tr><tr><td>SERVICE SINK</td><td>1/2"</td></tr><tr><td>ELECTRIC WATER COOLER</td><td>1/2"</td></tr><tr><td>SINK</td><td>1/2"</td></tr><tr><td>SHOWER</td><td>3/4"</td></tr><tr><td>FREEZE-PROOF WALL HYDRANT</td><td>1-1/4" & 1/2"</td></tr><tr><td>CLINICAL SINK</td><td>1/2"</td></tr><tr><td>ICE MACHINE</td><td>1/2"</td></tr><tr><td>SUPPLY AND DRAIN UNIT (WASHER BOX)</td><td>3/4"</td></tr><tr><td>HOSE BIBB</td><td>1-1/4"</td></tr><tr><td>EMERGENCY SHOWER EYEWASH</td><td>1-1/4"</td></tr></table> <p>3. INSTALL WATER HAMMER ARRESTORS EQUAL TO ZURN "SHOCKTROL" AT EACH QUICK CLOSING VALVE, AND AT EACH GROUP OF PLUMBING FIXTURES, AND AS NOTED ON DRAWINGS SIZED AS PER MANUFACTURERS RECOMMENDATIONS. (MUST BE ACCESSIBLE WHERE POSSIBLE, ABOVE CEILING IF NECESSARY)</p> <p>4. ALL SUPPLIES TO FIXTURE SHALL BE PROVIDED WITH HIGH EAR COUPLING EQUAL TO MUELLER CO. No. C-100HE (1/2", 3/4" OR 1" SIZE) AT THE WALL (ANCHOR TO CROSS MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.</p> <p>5. ALL FLOOR DRAINS SHALL BE PROVIDED WITH DEEP SEAL TYPE TRAP WITH NOT LESS THAN FOUR INCH (4") WATER SEAL AND BE PROVIDED WITH TRAP PRIMER.</p> <p>6. ALL VENTS THROUGH ROOF (V.T.R.) SHALL BE PROVIDED WITH 6" (24" X 24" SIZE) FLASHING. WHERE STANDING SEAM TYPE IS USED THE FLASHING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATION AND AS DETAILED ON THE ARCHITECTURAL DRAWINGS. CLOSE COORDINATION WITH THE ROOFING CONTRACTOR SHALL BE MAINTAINED TO ASSURE THE VENT PENETRATION IS CENTERED WITHIN THE METAL ROOF PANELS. TYPICALLY FOR METAL OR OTHER SPECIAL MATERIAL ROOFS - USE MANUFACTURED RUBBER BOOT WITH STAINLESS STEEL HARDWARE TYPE THAT IS ARCHITECT APPROVED AND MUST BE COMPATIBLE WITH ROOFING SYSTEM AND ROOF WARRANTY.</p> <p>7. FLUSH VALVES SHALL BE MOUNTED SUCH THAT THE DIMENSION FROM FLUSH VALVE CENTERLINE TO FINISHED FLOOR SHALL BE 39". (DOES NOT APPLY TO ELECTRONIC FLUSH VALVES) WHERE HANDICAPPED GRAB BARS ARE INSTALLED ON BACK WALL AT CLOSET, FLUSH VALVE SHALL BE MOUNTED AT STANDARD HEIGHT. SEE SPECIFICATIONS AND WATER CLOSET DETAIL.</p> <p>8. WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF THAT NOTE.</p> <p>9. WHERE PLUMBING FIXTURES ARE LOCATED ON EXTERIOR WALL, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE WALL INSULATION.</p> <p>10. CLOSE COORDINATION AND COOPERATION SHALL BE MAINTAINED BETWEEN TRADES WITH REGARD TO PLUMBING, HVAC, FIRE PROTECTION AND ELECTRICAL PLANS.</p> <p>11. PROVIDE CLEANOUT CLEARANCE IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE, BUT DO NOT LOCATE IN FOOT TRAFFIC PATHWAYS. DO NOT LOCATE CLEANOUTS IN FLOORS WITH CARPET. (FIELD COORDINATE) LOCATE FLOOR CLEANOUT NEAR WALLS, IN JANITORS ROOM, STORAGE ROOM, ETC., DO NOT LOCATE NEAR DOORWAYS.</p> <p>12. ALL EXPOSED GAS PIPING (INCLUDING ALL ROOF PIPING) SHALL BE SCHEDULE 40 STEEL AND BE CLEANED, PRIMED, AND PAINTED WITH (2) COATS OF EPOXY PAINT. COLOR AS SELECTED BY THE ARCHITECT.</p> <p>13. PROVIDE FIRE STOPPING OR FIRE STOP SLEEVE DEVICES AT ALL RATED ASSEMBLIES - SEE ARCHITECTURAL SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR DETAILS.</p> <p>14. TRAP PRIMERS- LOCATE TRAP PRIMERS REASONABLY CLOSE TO PLUMBING FIXTURE (10' TO 20')- DO NOT CONNECT TRAP PRIMER TO WATER LINE LARGER THAN 1 1/2" SIZE- TRY TO LOCATE TRAP PRIMER LOWER THAN PLUMBING FIXTURES. FIELD VERIFY EXACT TRAP PRIMER LOCATIONS AND WATER PIPE ROUTING. TRAP PRIMER SHALL TYPICALLY BE PRECISION PLUMBING PRODUCTS MODEL # P2-500. WHERE FLOOR DRAINS OCCUR NEAR WATER CLOSETS - USE VACUUM BREAKER TRAP PRIMER - SLOAN "TP" - MODEL VBF-72A - EXPOSED 3/4" TUBING SHALL BE VERY MINIMAL AND CHROME PLATED WITH CAST CHROME FLANGE TO WALL.</p> <p>15. COORDINATE EXACT LOCATIONS OF ALL PLUMBING PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.</p> <p>16. VERIFY WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL "ADM" PLUMBING FIXTURES</p> <p>17. ALL JANITORS ROOMS SHALL HAVE FLOOR DRAINS.</p> <p>18. ALL SANITARY SEWER RISERS SHALL HAVE CLEANOUT AT THE BASE (WALL CLEANOUT OR FLOOR CLEANOUT)</p> <p>19. ALL STORM DRAIN PIPING SHALL HAVE CLEANOUT PLUGS AT EACH 90° TURN AND CEILINGS AND HAVE A FLOOR OR WALL CLEANOUT AT THE BASE.</p>		WATER CLOSET	1"	URINAL	1 1/2"	LAVATORY	3/4"	SERVICE SINK	1/2"	ELECTRIC WATER COOLER	1/2"	SINK	1/2"	SHOWER	3/4"	FREEZE-PROOF WALL HYDRANT	1-1/4" & 1/2"	CLINICAL SINK	1/2"	ICE MACHINE	1/2"	SUPPLY AND DRAIN UNIT (WASHER BOX)	3/4"	HOSE BIBB	1-1/4"	EMERGENCY SHOWER EYEWASH	1-1/4"
WATER CLOSET	1"																										
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EMERGENCY SHOWER EYEWASH	1-1/4"																										

FIXTURE LEGEND	
SYMBOL	DESCRIPTION
	NEW FIXTURE
	ROUGH IN AND FINAL CONNECT ONLY

PLUMBING LEGEND			
SYMBOL	DESCRIPTION		
	SOIL, WASTE, OR SANITARY SEWER		BALL VALVE
	SANITARY SEWER (ON SITE)		PLUG COCK - GAS COCK
	SANITARY VENT		PRESSURE REDUCING VALVE
	GREASE WASTE		STRAINER
	COMBINATION WASTE AND VENT		UNION
	ACID WASTE		FLOOR DRAIN
	ACID VENT		ROOF DRAIN
	WATER (ON SITE)		ACCESS DOOR
	COLD WATER		VENT THRU ROOF
	HOT WATER		HOSE BIBB
	HOT WATER RETURN		FREEZE PROOF WALL HYDRANT
	NON-POTABLE WATER		CLEANOUT PLUG
	STORM DRAIN		FLOOR CLEANOUT
	INDIRECT DRAIN		FLOOR CLEANOUT WITH ACID RESISTANT PIPING AND FITTINGS
	OVERFLOW STORM DRAIN		WALL CLEANOUT
	SUMP PUMP DISCHARGE		EXTERIOR CLEANOUT
	NATURAL GAS (LOW PRESSURE GAS)		DENOTES - SANITARY VENT STACK THRU ROOF
	LAB AIR		RISER DESIGNATION
	LAB VACUUM		
	FLOW DIRECTION		NEW CONNECTION TO EXISTING
	GATE VALVE		EXISTING PIPING TO BE REMOVED OR ABANDONED
	GLOBE VALVE		EXISTING PIPING TO REMAIN
	CHECK VALVE		CAP AND SEAL AIR OR WATER TIGHT
			TERMINATION POINT OF DEMOLITION

DRAIN SCHEDULE		
SYMBOL	MANUFACTURER	REMARKS
FD-10	ACID RESISTANT FLOOR DRAIN - ORION MODEL AWFSTD FOR SOCKET FUSION - MUST HAVE TRAP PRIMER	LAB AREAS

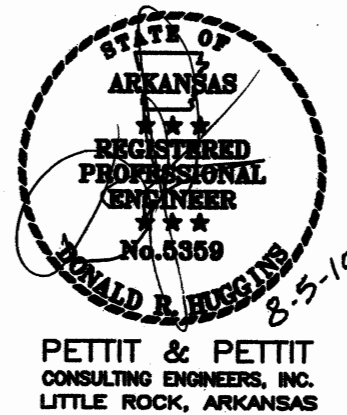
NOTE: ALL FLOOR DRAINS SHALL BE ACCESSORIZE FOR VANDAL PROOF INSTALLATION
ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS

LABORATORY PLUMBING GENERAL NOTES	
<p>1. ALL LABORATORY EQUIPMENT IS SPECIFIED BY ARCHITECT IN EQUIPMENT SECTIONS OF SPECS- THE MECHANICAL CONTRACTOR SHALL ROUGH-IN AND FINAL CONNECT ALL LABORATORY EQUIPMENT</p> <p>2. SEE LABORATORY EQUIP LAY-OUT AND ELEVATION SHEETS IN THIS SET OF DRAWINGS FOR SPECIFIC INFORMATION ON LABORATORY EQUIPMENT</p> <p>3. NOTE THAT THE FOLLOWING WORK AND MATERIALS ARE NOT SUPPLIED BY THE LABORATORY EQUIP SUPPLIER AND MUST BE SUPPLIED BY THE CONTRACTOR</p> <p>(A) ROUGH IN AND FINAL CONNECTS FOR ALL ACID WASTE, HOT AND COLD WATER, GAS, AIR, TO LABORATORY EQUIP (SEE DRAWING FOR EXACT SERVICES)</p> <p>(B) ALL FLOOR DRAINS AND FLOOR SINKS</p> <p>(C) STOPS AND SUPPLIES ON WATER LINES</p> <p>(D) P-TRAPS</p> <p>(E) FLUSHING OUT OF ALL PIPING AND DRAINAGE SYSTEMS PRIOR TO CONNECTING LAB EQUIP</p> <p>(F) PIPING AND INSTALLATION OF ALL ACCESSORIES FURNISHED LOOSE WITH LAB EQUIP</p> <p>4. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY TRAPS, SUPPLIES, VALVES, FITTINGS ETC THAT ARE NOT NOTED TO BE FURNISHED BY LAB EQUIP DRAWINGS AND SPECIFICATIONS FOR A COMPLETE WORKING SYSTEM.</p> <p>5. THE CONTRACTOR MUST REVIEW AND COORDINATE PLUMBING DRAWINGS WITH ARCHITECTURAL AND LABORATORY EQUIP DRAWINGS. HE WILL BE RESPONSIBLE FOR ROUGHING IN AND/OR INSTALLING PLUMBING RELATED LAB EQUIP IF IT IS SHOWN ON THE ARCHITECTURAL OR LAB EQUIP DRAWINGS, EVEN IF NOT SHOWN ON THE PLUMBING DRAWINGS.</p> <p>6. COORDINATE ALL PLUMBING PIPING LOCATIONS WITH HVAC AND ELECTRICAL DRAWINGS. ADJUST WATER, GAS, AIR, PIPING AROUND LARGE DUCTWORK AS REQUIRED.</p> <p>7. VERIFY THE EXACT PLUMBING ROUGH IN REQUIREMENTS OF ALL LAB EQUIP WITH EQUIP SUPPLIERS AND LAB EQUIP DRAWINGS AND SPECIFICATIONS.</p> <p>8. NOTE THAT FUME HOODS ARE NOT PRE-PIPED AND MUST BE PIPED IN THE FIELD- BY THE CONTRACTOR, (COORDINATE THIS REQUIREMENT WITH LAB EQUIP DRAWINGS AND SPECIFICATIONS.)</p>	

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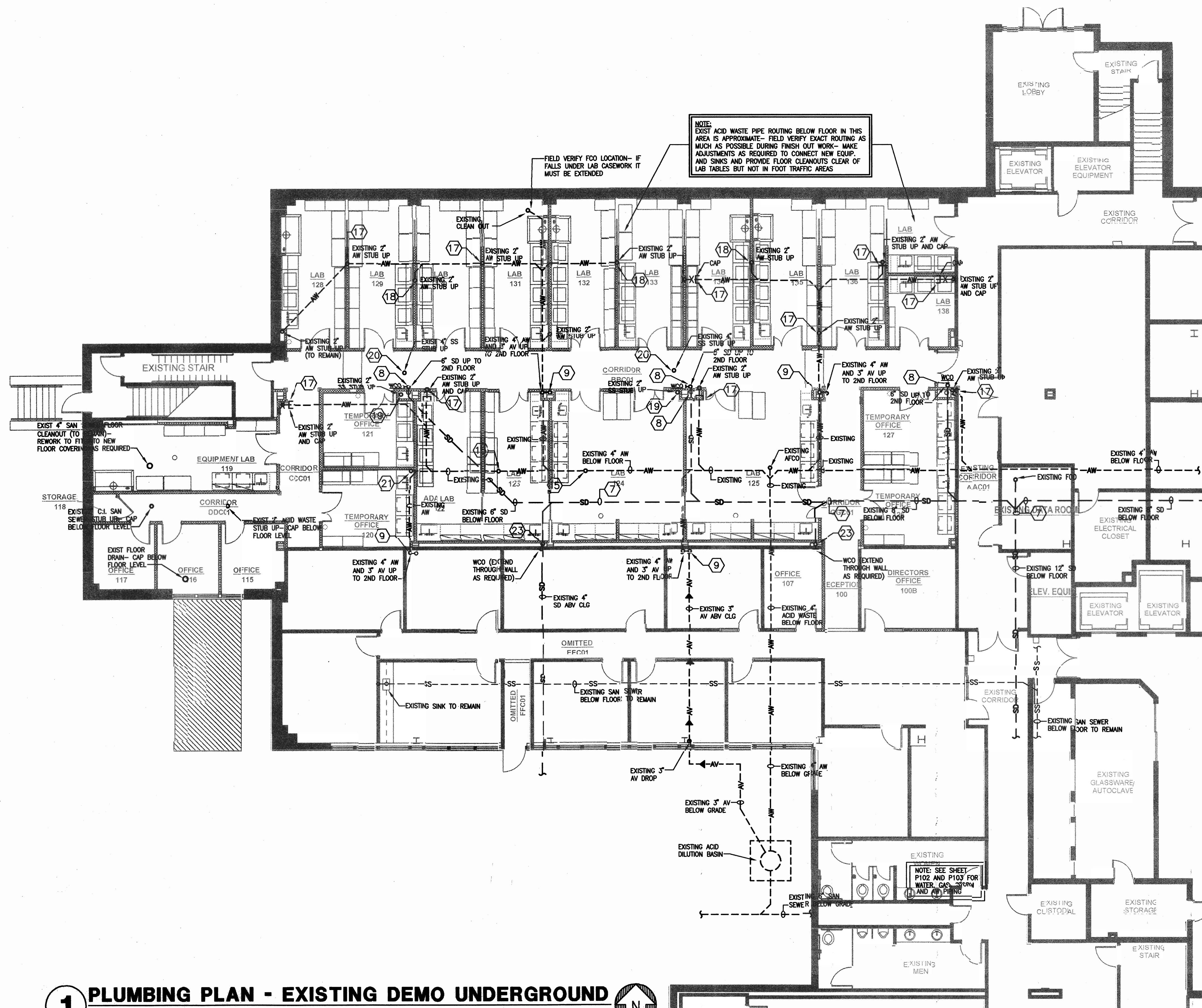
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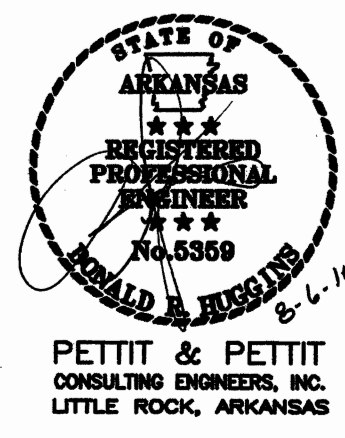
PLUMBING KEYED NOTES

- ROUGH IN AND FINAL CONNECT LAB SINK (S-1, S-5, AND S-3) - SEE LAB EQUIP. DRAWINGS FOR DETAILS AND SPECIFICATIONS - REQUIRES 2" ACID WASTE, 2" ACID VENT, 1/2" HOT AND COLD WATER TO FAUCET, AND 1/2" COLD WATER WITH FULL PORT BALL VALVE UNDER COUNTER TO SUPPLY EYEWASH (SEE LAB EQUIP. DWGS FOR SPECIFICATION) - REQUIRES 1/2" PVC R.O. WATER DROP IN WALL AND CONNECT TO R.O. FAUCET (SEE LAB EQUIP. DRAWINGS FOR SPECIFICATION) - NOTE - S-5 SINK DOES NOT RECEIVE R.O. WATER
- ROUGH IN AND FINAL CONNECT LAB FUME HOOD. REQUIRES 2" ACID WASTE, 2" ACID VENT, AND 1/2" COLD WATER (SEE LAB EQUIP. DWGS FOR SPECIFICATIONS).
- ROUGH IN AND FINAL CONNECT EMERGENCY SHOWER AND EYE WASH - REQUIRES 1/2" COLD WATER (SEE LAB EQUIP. DWGS FOR SPECIFICATIONS).
- CONNECT INTO EXISTING ACID WASTE BELOW FLOOR AND EXTEND AS SHOWN - NOTE CONCRETE FLOOR MUST BE SAW CUT, PIPE INSTALLED AND FLOOR REPAIRED TO ORIGINAL CONDITION. FIELD VERIFY EXISTING INVERT ELEVATIONS AT THESE END POINTS TO ENSURE THE ACID WASTE CAN BE EXTENDED.
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- EXISTING STORM DRAIN PIPING BELOW FLOOR - TO REMAIN AS IS - FIELD COORDINATE EXACT LOCATION WHEN INSTALLING NEW PIPING NEARBY.
- EXIST 6" STORM DRAIN RISER UP TO 2ND FLOOR IS LOCATED APPROX. 12" NORTH OF COLUMN FACE - THE RISER MUST BE RELOCATED 12" SOUTH TO ALIGN WITH COLUMN AND CLEAR NEW CORRIDOR. SAW CUT FLOOR, EXCAVATE, MOVE RISER BACK SOUTH, RISE UP ON SIDE OF COLUMN, THEN OFFSET AROUND BEAM ABOVE, THEN RECONNECT TO EXIST PIPE UP THRU 2ND FLOOR SLAB - INSTALL NEW FID IN NEW FURRING AROUND COLUMN - INSULATE PIPE RISER, PATCH FLOOR BACK TO ORIGINAL CONDITION.
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- EXISTING CW, HW, AND GAS ABOVE CEILING. (FIELD VERIFY EXACT SIZES)
- 1/2" CW DROP TO FUME HOOD.
- 1 1/2" R.O. WATER LOOP ABOVE CLG - PIPING SHALL BE SCHEDULE 80 PVC, KEEP LOOP CLOSE TO SINK DROPS AS POSSIBLE, KEEP ALL DEAD END RUN OUTS SHORT AS POSSIBLE
- 1 1/2" COLD WATER DROP TO EMERGENCY SHOWER.
- MOUNT BARNSTEAD NANOPURE WATER POLISHER UNIT ON WALL ABOVE SINK - CONNECT 1/2" R.O. WATER TO INLET (SEE SPECIFICATIONS)
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- EXISTING 4" ACID WASTE AND 3" ACID VENT UP
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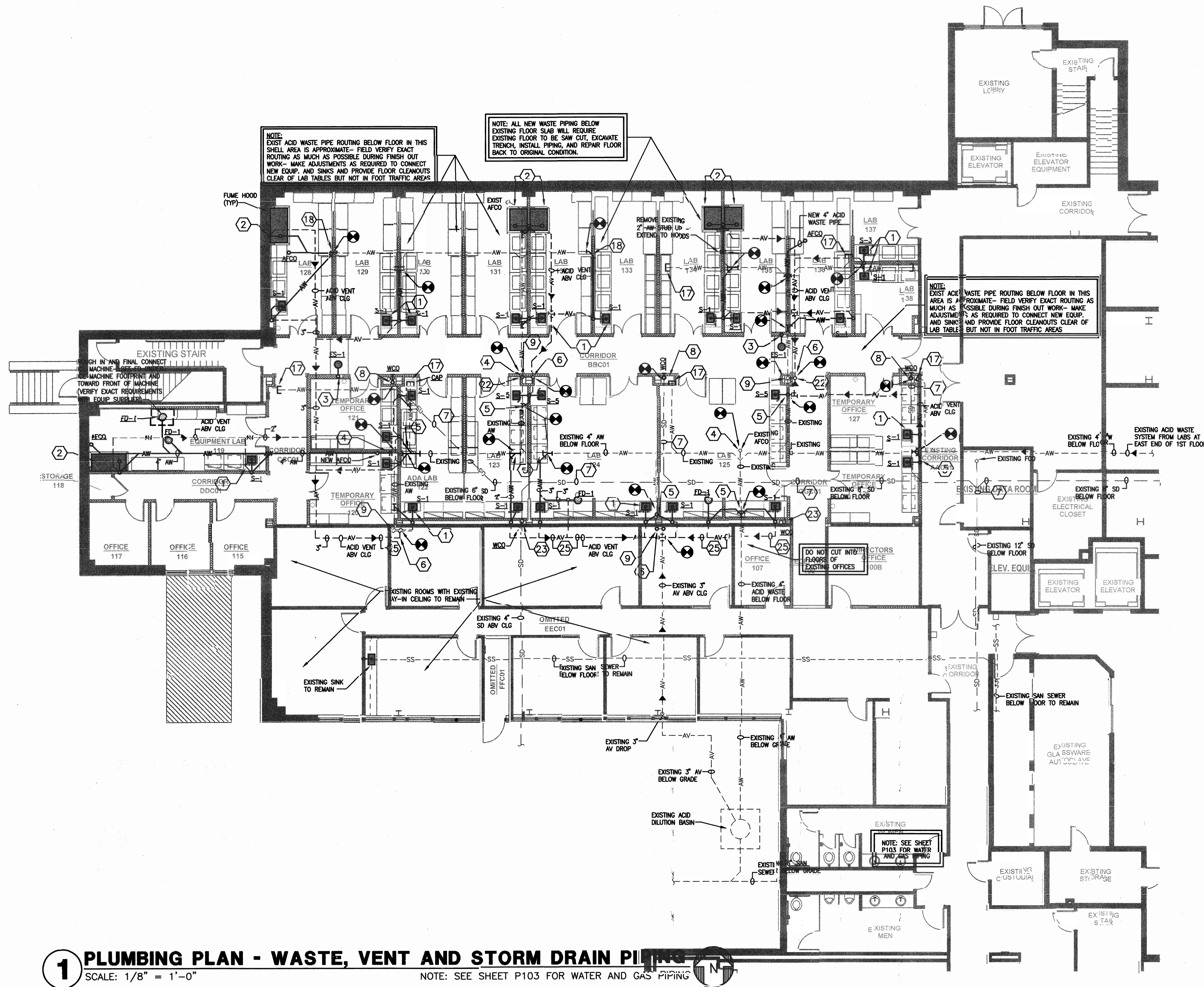
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1 PLUMBING PLAN - EXISTING DEMO UNDERGROUND
SCALE: 1/8" = 1'-0"



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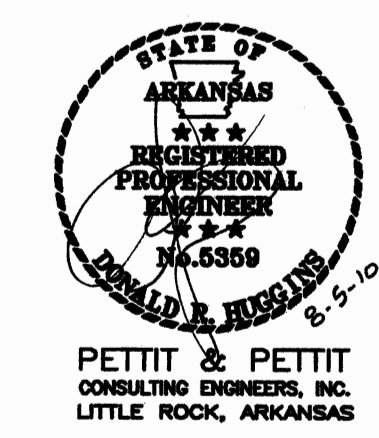
1 PLUMBING PLAN - WASTE, VENT AND STORM DRAIN PIPING
 SCALE: 1/8" = 1'-0"
 NOTE: SEE SHEET P103 FOR WATER AND GAS PIPING

PLUMBING KEYED NOTES

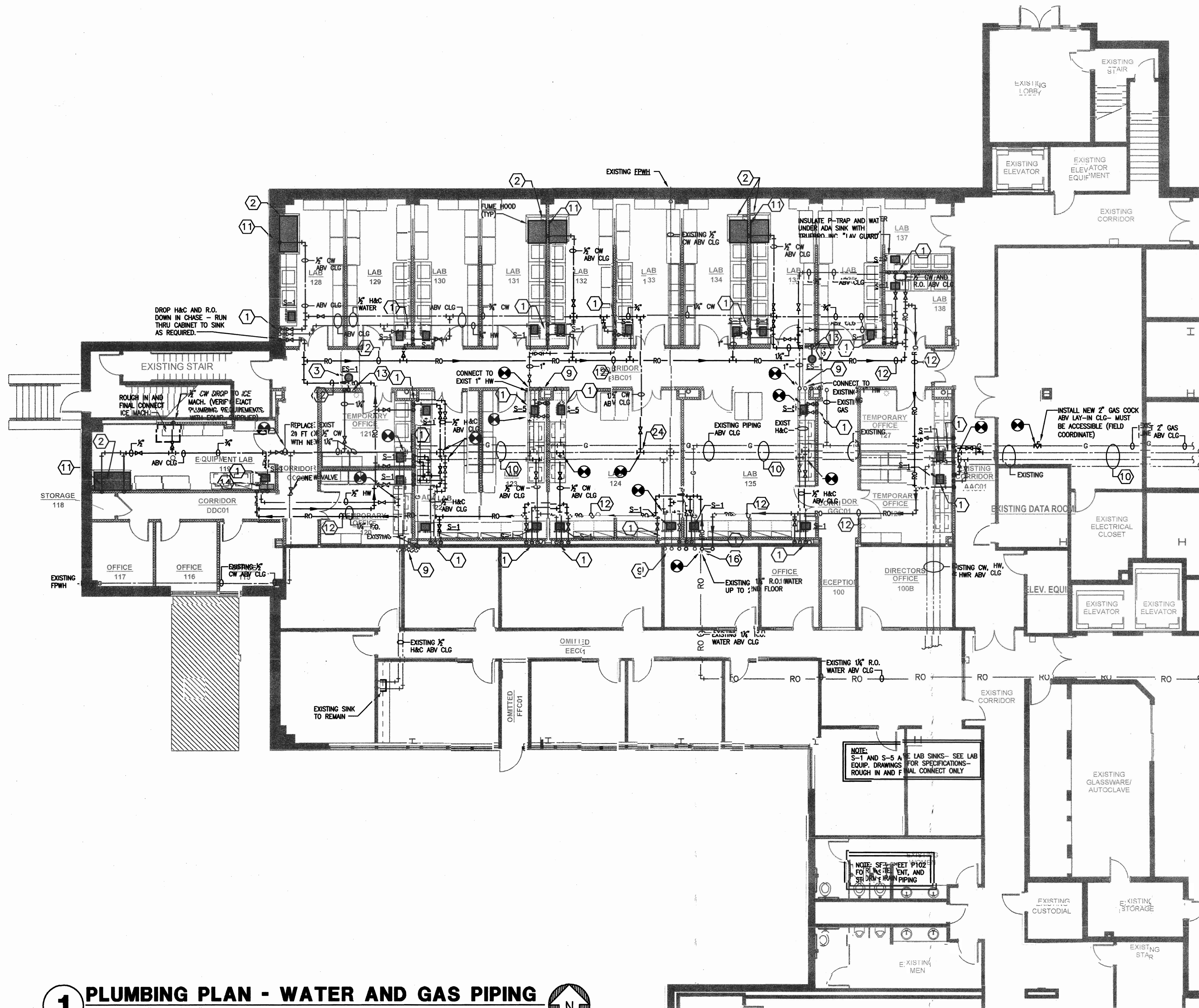
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1 PLUMBING PLAN - WATER AND GAS PIPING
 SCALE: 1/8" = 1'-0"

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NOTE: S-1 AND S-5 ARE LAB SINKS - SEE LAB EQUIP. DRAWINGS FOR SPECIFICATIONS - ROUGH IN AND FINAL CONNECT ONLY

NOTE: SEE SHEET P102 FOR ACID WASTE, AND STORM DRAIN PIPING

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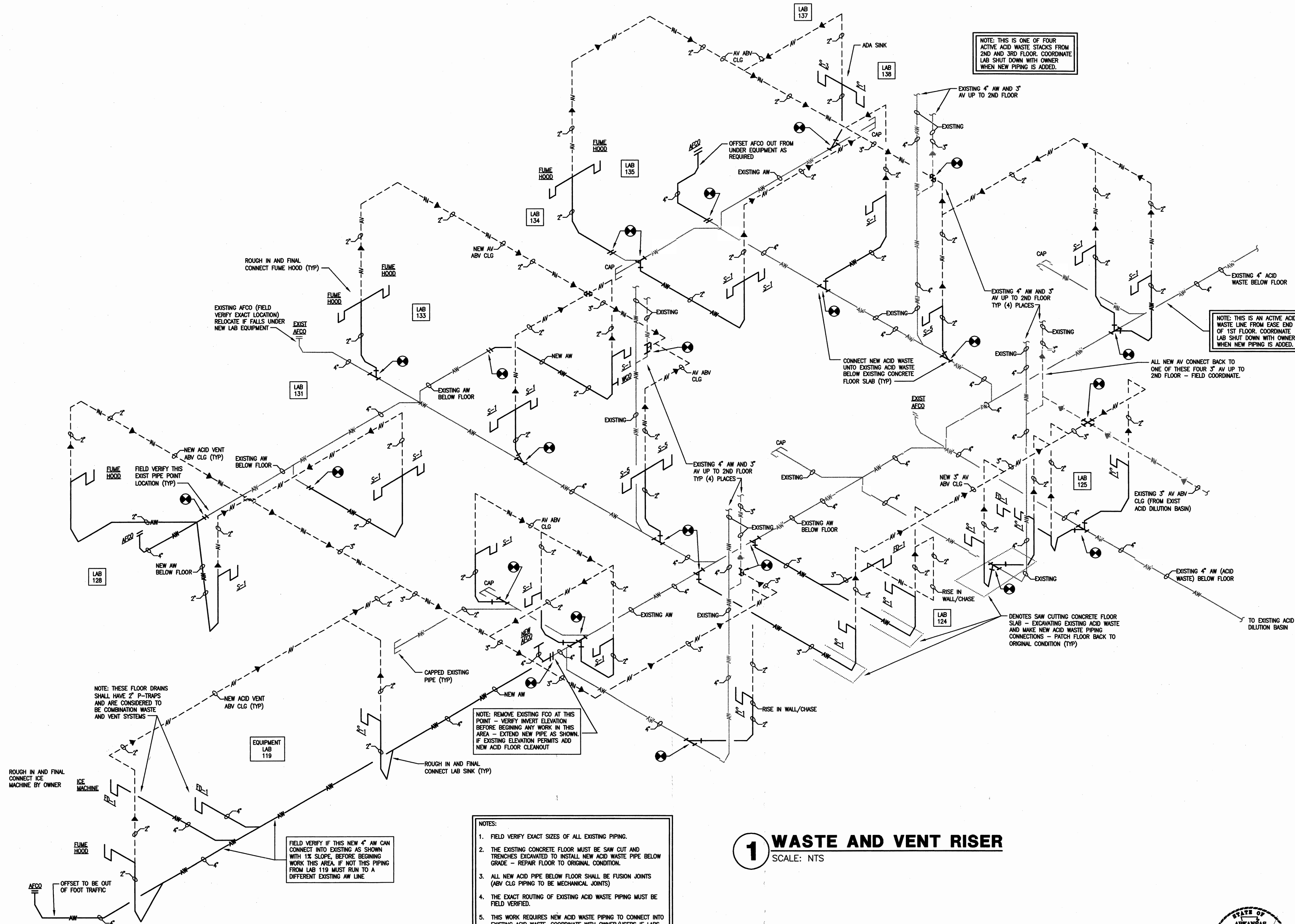
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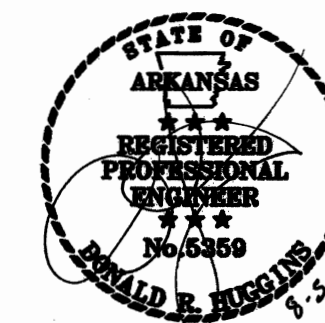
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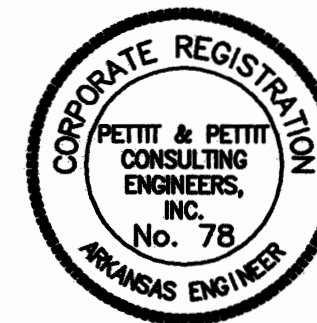


1 WASTE AND VENT RISER

SCALE: NTS



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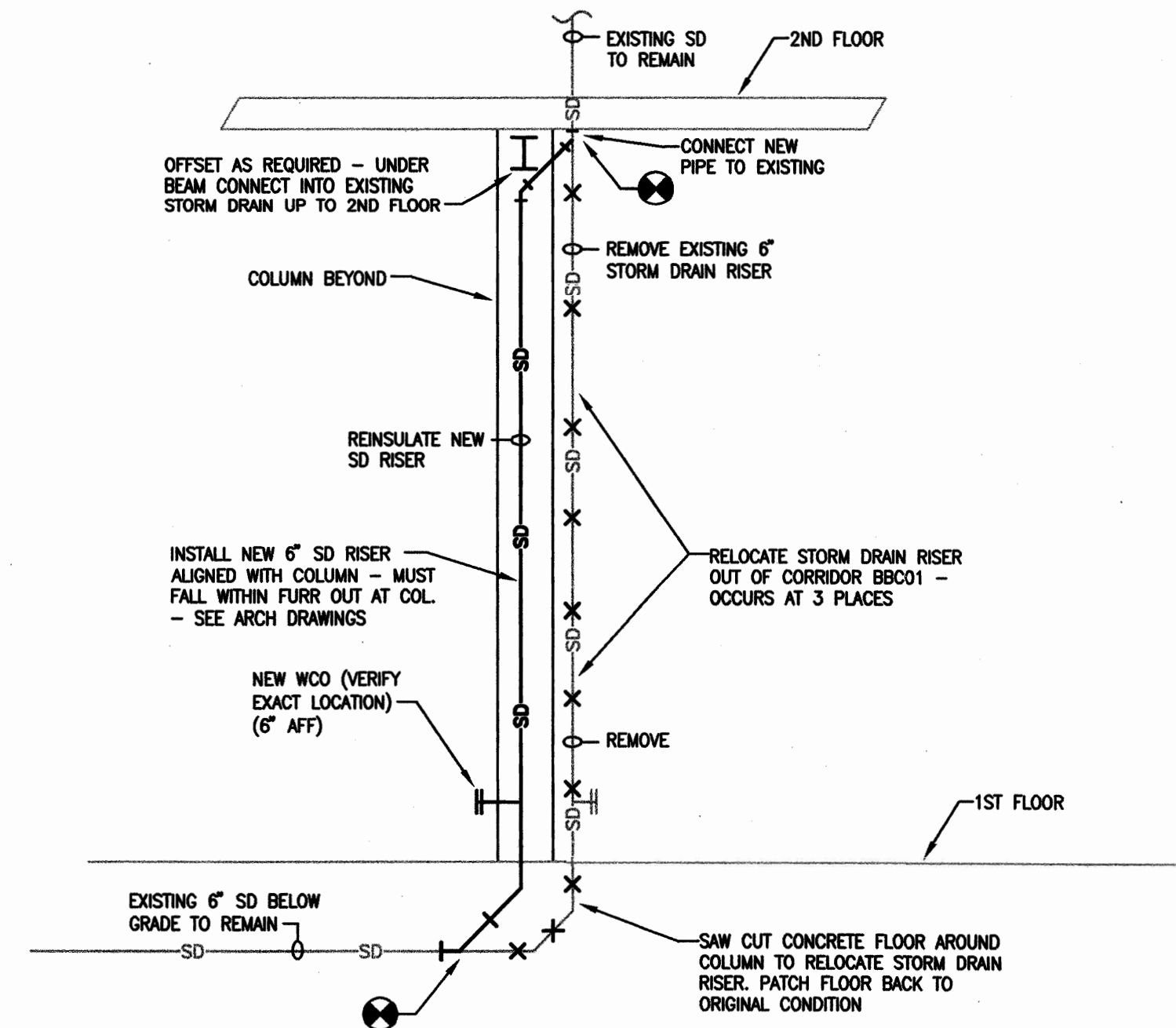
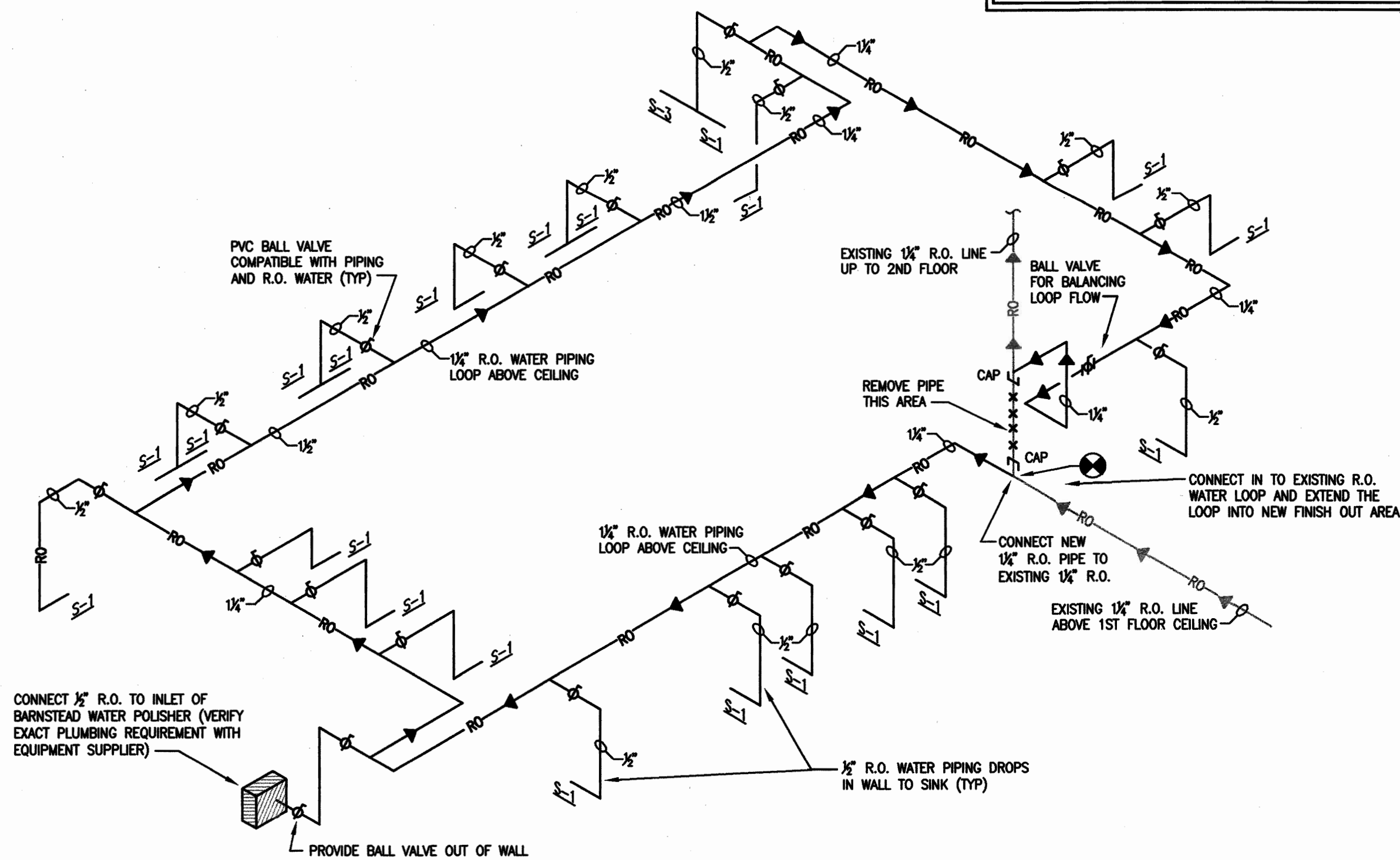


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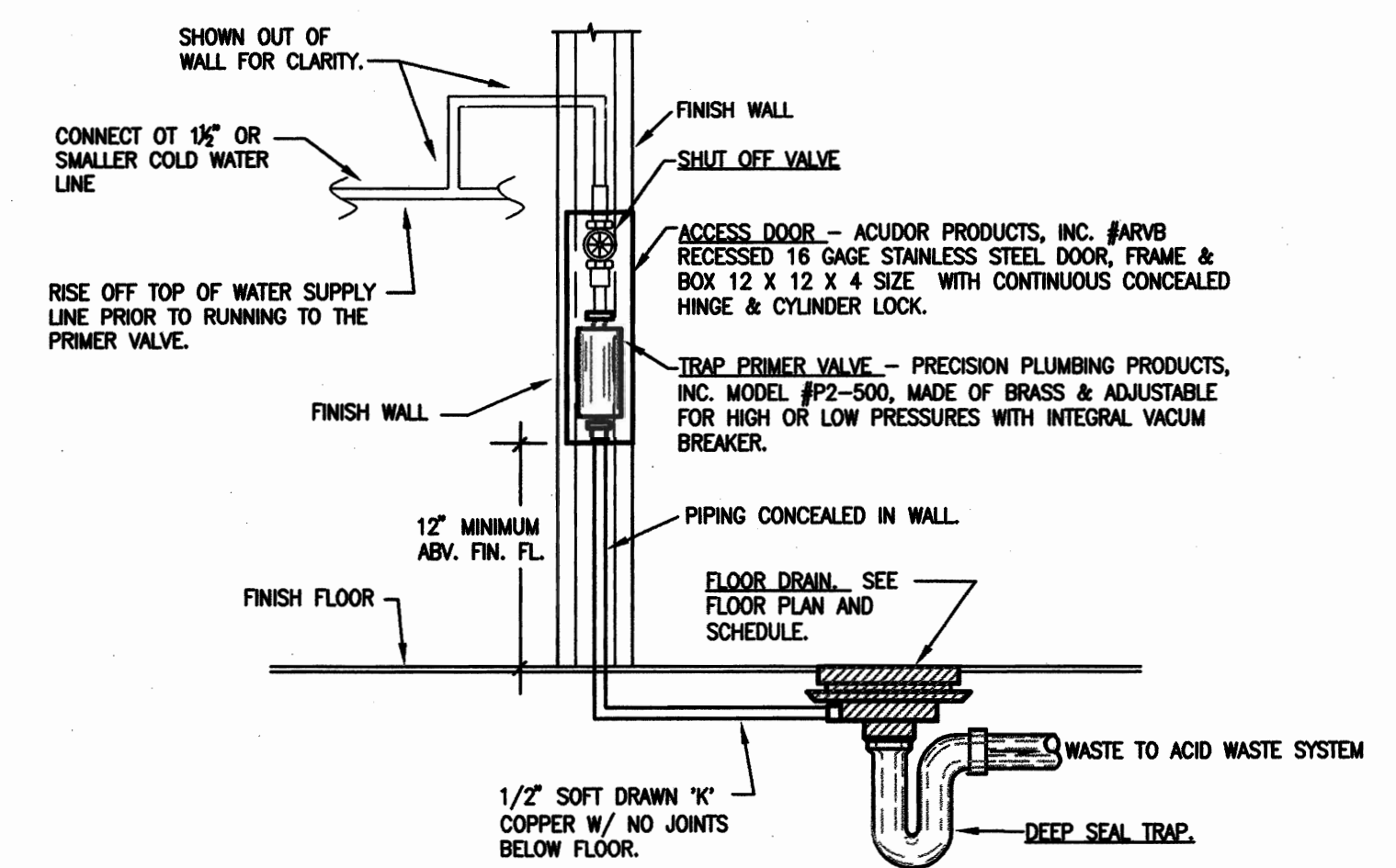


2 RELOCATE STORM DRAIN RISER AT COLUMN
SCALE: NTS

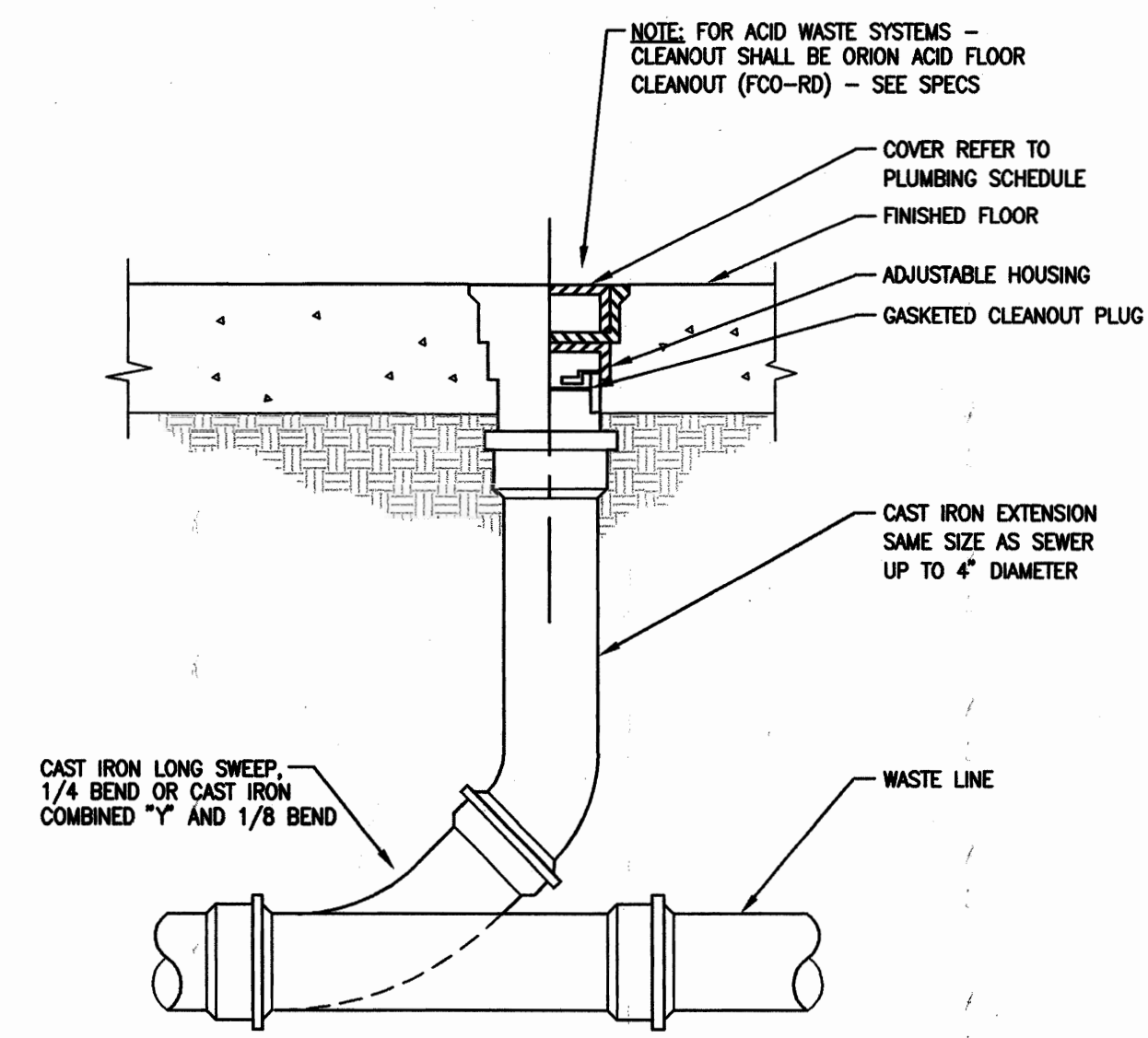
1 R.O. (REVERSE OSMOSIS) WATER PIPING DIAGRAM
SCALE: NTS

R.O. PIPE MATERIALS

"R.O." (REVERSE OSMOSIS) WATER PIPING SHALL BE SCHEDULE 80 PVC (POLYVINYL CHLORIDE, TYPE I (NON-PLASTICIZED) AND MUST MEET REQUIREMENTS OF NSF FOR CONVEYING POTABLE WATER. PIPING MAY BE JOINED BY SOLVENT WELDING. JOINTS MUST BE SMOOTH. WELDED JOINTS MUST CURE COMPLETELY AND PIPING VIGOROUSLY FLUSHED TO REMOVE TRACES OF CHEMICAL SOLVENT. PIPE MUST BE SUPPORTED AS RECOMMENDED BY MANUFACTURER (APPROX. 6 FT). PIPE ENDS MUST BE CUT (NOT SAWED) BEVELED AND POLISHED BY MAKING GLUED SOLVENT WELDED JOINTS. USE 45° ELBOWS OR SWEEP FITTINGS. VALVES SHALL BE BALL VALVES MADE OF PVC AND HAVE TRUE UNION ENDS, UNRESTRICTED BORE FOR MAX FLOW, AND BE COMPATIBLE WITH PIPING NOTED ABOVE. ALL FITTINGS, CONNECTIONS, ETC FOR ENTIRE R.O. WATER SYSTEM MUST BE PVC MATERIAL THAT MEETS REQUIREMENTS NOTED ABOVE.

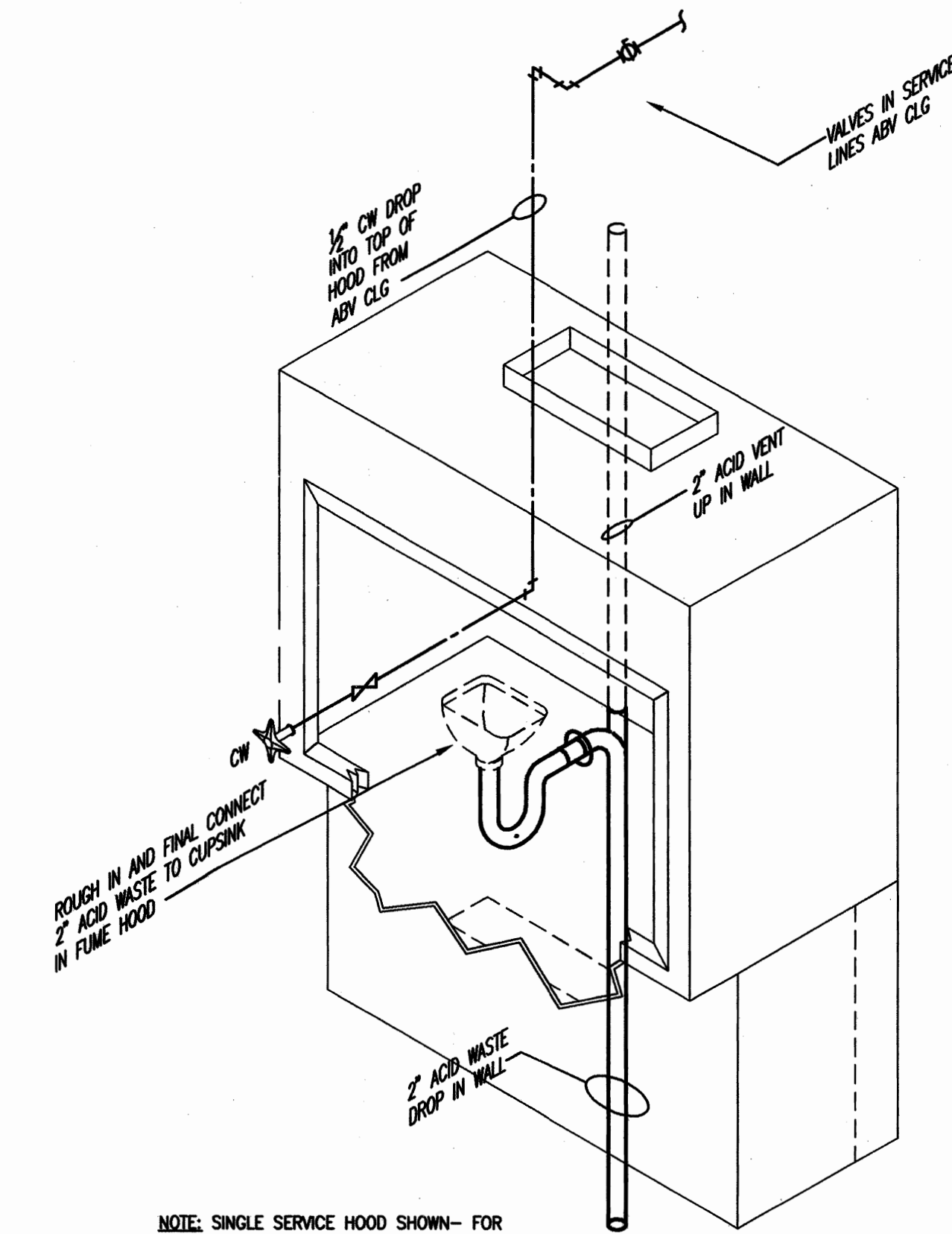


3 TRAP PRIMER DETAIL
SCALE: NONE (FOR CONCEALED LOCATIONS)



4 FLOOR CLEAN-OUT (FCO)
SCALE: NONE

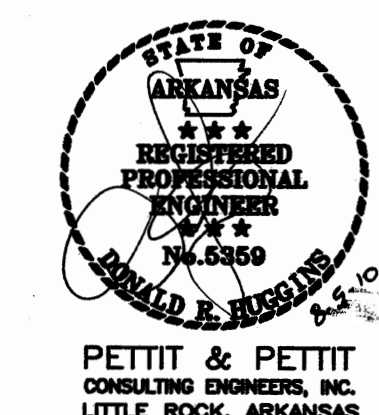
NOTE: FOR ACID WASTE SYSTEMS - PIPING SHALL BE ORION POLYPROPYLENE WITH SOCKET FUSION JOINTS (SEE SPECS)



NOTE: SINGLE SERVICE HOOD SHOWN - FOR DUAL SERVICE HOODS DUAL SET OF LAB GAS DROPS REQUIRED AND/OR 2 CUP SINKS REQUIRED. SEE LAB EQUIPMENT DRAWINGS FOR DETAILS.

5 FUME HOOD PIPING DIAGRAM
SCALE: NONE

ROUGH IN AND FINAL CONNECT FUME HOODS - SEE ARCHITECTURAL SPECIFICATIONS FOR EXACT ROUGH-IN REQUIREMENTS.



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FIRE PROTECTION LEGEND	
SYMBOL	DESCRIPTION
—SP—	FIRE SPRINKLER PIPING
—DSP—	DRY PIPE FIRE SPRINKLER PIPING
—F—	FIRE PROTECTION WATER SUPPLY
●	BRASS SPRINKLER HEAD (UPRIGHT OR PENDANT AS REQ'D)
○	RECESSED PENDANT SPRINKLER HEAD IN CEILING
⊙	EXTRA LARGE ORIFICE TYPE SPRINKLER HEAD
⊙	DRY PENDENT ON DROP SPRINKLER HEAD
⊙	CONCEALED TYPE SPRINKLER HEAD
▶	HORIZONTAL SIDEWALL SPRINKLER HEAD
×	EXISTING SPRINKLER HEAD
⊞	SUPERVISED INDICATING TYPE VALVE (O.S.&Y)

FIRE PROTECTION LEGEND	
SYMBOL	DESCRIPTION
⏏	FLOW SWITCH
▨	RECESSED FIRE HOSE CABINET
▨	RECESSED FIRE EXTINGUISHER CABINET
F.E.	FIRE EXTINGUISHER
F.H.C.	FIRE HOSE CABINET
O.S.&Y.	OUTSIDE SCREW & YOKE
F.E.C.	FIRE EXTINGUISHER CABINET
⚓	FIRE HYDRANT
⚓	FIRE DEPARTMENT CONNECTION

FIRE PROTECTION GENERAL NOTES	
1.	THE RENOVATED AREA SHALL BE COMPLETELY SPRINKLED. SEE HVAC AND ELECTRICAL DRAWINGS FOR GRILLES, LIGHTS, ETC. AND COORDINATE SPRINKLER HEAD LOCATION AS REQUIRED. THESE SYSTEMS SHALL BE HYDRAULICALLY DESIGNED TO MEET NFPA 13, STATE AND LOCAL CODES. IN FINISHED AREAS LOCATE SPRINKLER HEADS SYMMETRICALLY IN ROOMS AND CENTER HEADS IN CEILING TILE.
2.	PROVIDE SPRINKLER HEADS AT TOP AND BOTTOM FLOORS OF ALL LARGE MECHANICAL CHASES (AS REQUIRED BY CODE).
3.	SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FIRE EXTINGUISHER CABINETS, ETC.
4.	COORDINATE FIRE SPRINKLER ZONING WITH ELECTRICAL DRAWINGS AND FIRE ALARM SYSTEM.
5.	ALL VALVES MUST BE ACCESSIBLE, IF INSTALLED ABOVE A FIXED CEILING, ACCESS DOORS SHALL BE INSTALLED.
6.	ALL SPRINKLER BRANCHES DOWNSTREAM OF AN ALARM SHALL HAVE A 1" MINIMUM TEST DRAIN LINE WITH EASILY ACCESSIBLE VALVE. DISCHARGE DRAIN TO AN APPROPRIATE LOCATION, THRU OUTSIDE WALL IF POSSIBLE, OR TO A LARGE FLOOR DRAIN IN A MECHANICAL ROOM, ETC.
7.	ALL SPRINKLER PIPING SHALL SLOPE TO LOW POINTS WITH VALVES FOR DRAINING.
8.	ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE, EXCEPT IN SPECIAL AREAS.
9.	SPRINKLER HEADS SHALL BE LOCATED 15' (OR LESS) ON CENTER - EXTENDED COVERAGE HEADS NOT ACCEPTABLE.
10.	PIPE ROUTING IS GENERAL AND IS SHOWN FOR COORDINATION WITH OTHER TRADES. SPRINKLER HEAD LAYOUT IS TO SHOW GENERAL HEAD LAYOUT AND SHALL NOT BE USED TO DETERMINE THE QUANTITY OF HEADS REQUIRED. THE QUANTITY OF HEADS REQUIRED SHALL BE BASED ON THE REQUIREMENTS OF NFPA 13.
11.	PROVIDE SYSTEM TO NFPA 13 COVERAGE AND OCCUPANCY REQUIREMENTS
12.	WATER SUPPLY - FIELD VERIFY EXISTING CONDITIONS
13.	INTERFACE SYSTEM WITH BUILDING FIRE AND SMOKE ALARM SYSTEM.
14.	ALL PIPING TO BE SCHEDULE 40 STEEL (WITH FLEXIBLE CONNECTORS TO ALL HEADS).
15.	ALL EXPOSED SPRINKLER PIPING SHALL BE PAINTED - CLEAN, PRIME, AND PAINT WITH (2) COATS EPOXY PAINT (COLOR AS SELECTED BY ARCHITECT) FIRE CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR



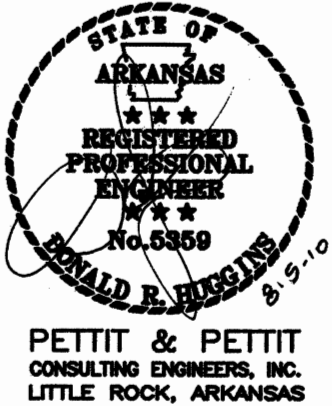
FIRE PROTECTION KEYED NOTES	
①	THIS SHELL SPACE HAS AN EXISTING "GRID" TYPE FIRE SPRINKLER SYSTEM INSTALLED WITH UPRIGHT SPRINKLER HEADS - WITH THIS NEW FINISH OUT PROJECT, MODIFY THE EXISTING SPRINKLER SYSTEM INTO A FINISHED SPRINKLER SYSTEM (TO MATCH EXISTING SURROUNDING AREAS) REMOVE EXISTING UPRIGHT HEADS AND INSTALL NEW RECESSED CHROME HEADS AND ESCUTCHEONS IN NEW LAY-IN AND GYP. BOARD CEILINGS. ALL HEADS SHALL BE CONNECTED WITH FLEXIBLE SPRINKLER CONNECTIONS (FLEXHEAD INDUSTRIES) AND HEADS CENTERED IN TILE. CONNECT INTO EXISTING MAIN BRANCHES ABOVE CEILING TYPICAL RUNNING EAST AND WEST. FIELD VERIFY EXACT SIZES AND LOCATIONS. ADD OR MOVE PIPING ABOVE CEILING AS REQUIRED. COVERAGE SHALL BE HYDRAULICALLY DESIGNED AS PER NFPA13.
②	THESE AREAS HAVE AN EXISTING FIRE SPRINKLER SYSTEM WITH RECESSED HEADS IN LAY-IN CEILING AND SHALL REMAIN.

NOTE: COORDINATE EXACT LOCATION OF LIGHT FIXTURES WITH ARCHITECTURAL CEILING PLAN AND ELECTRICAL LIGHTING PLAN

NOTE: COORDINATE EXACT LOCATION OF CEILING DIFFUSERS, RETURN AIR GRILLES AND EXHAUST REGISTERS WITH HVAC DRAWINGS

NOTE: SEE THIS SHEET FOR FIRE PROTECTION GENERAL NOTES AND LEGENDS

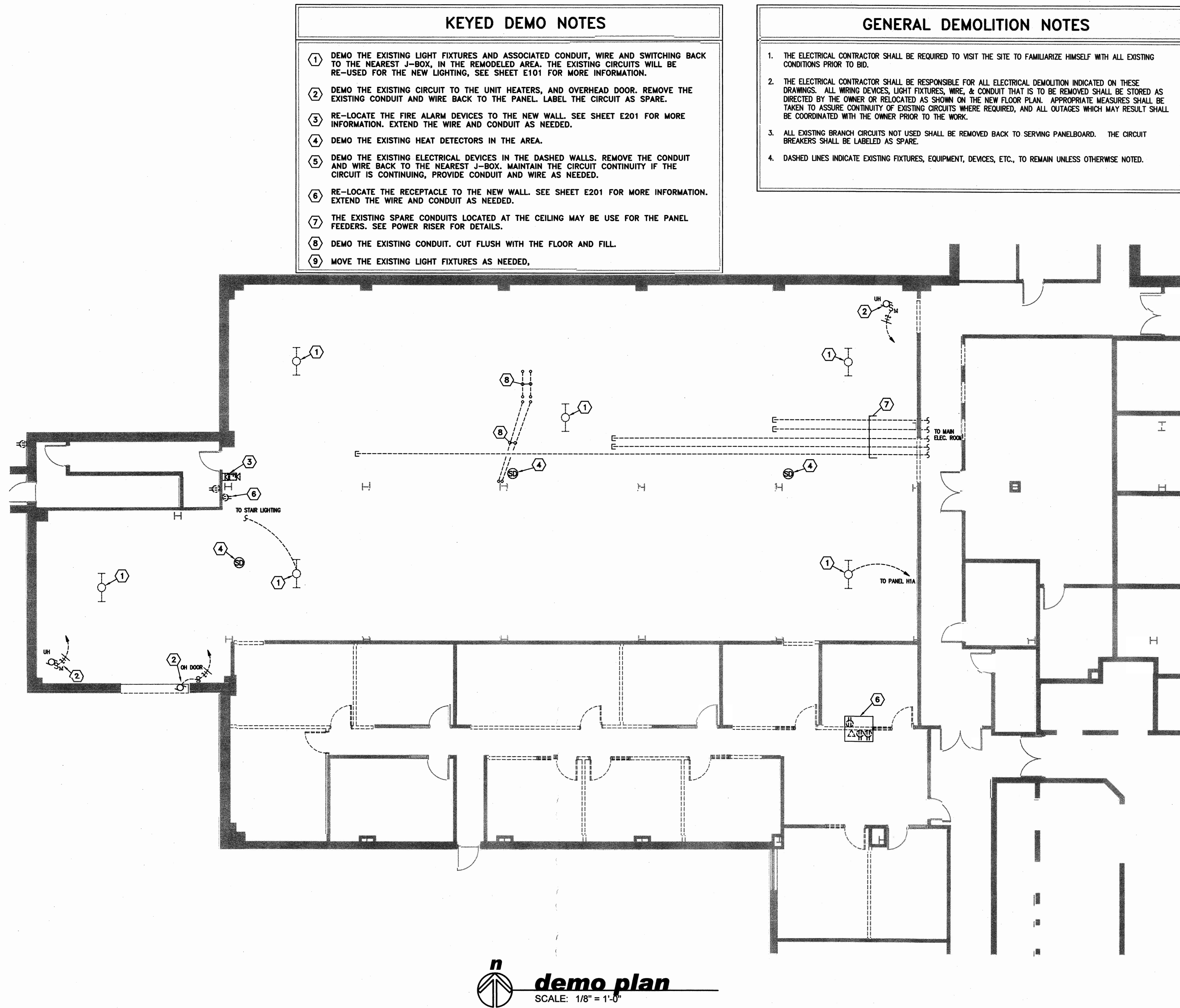
1 FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"



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Date: April 8, 2010

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KEYED DEMO NOTES

- 1 DEMO THE EXISTING LIGHT FIXTURES AND ASSOCIATED CONDUIT, WIRE AND SWITCHING BACK TO THE NEAREST J-BOX, IN THE REMODELED AREA. THE EXISTING CIRCUITS WILL BE RE-USED FOR THE NEW LIGHTING, SEE SHEET E101 FOR MORE INFORMATION.
- 2 DEMO THE EXISTING CIRCUIT TO THE UNIT HEATERS, AND OVERHEAD DOOR. REMOVE THE EXISTING CONDUIT AND WIRE BACK TO THE PANEL. LABEL THE CIRCUIT AS SPARE.
- 3 RE-LOCATE THE FIRE ALARM DEVICES TO THE NEW WALL. SEE SHEET E201 FOR MORE INFORMATION. EXTEND THE WIRE AND CONDUIT AS NEEDED.
- 4 DEMO THE EXISTING HEAT DETECTORS IN THE AREA.
- 5 DEMO THE EXISTING ELECTRICAL DEVICES IN THE DASHED WALLS. REMOVE THE CONDUIT AND WIRE BACK TO THE NEAREST J-BOX. MAINTAIN THE CIRCUIT CONTINUITY IF THE CIRCUIT IS CONTINUING, PROVIDE CONDUIT AND WIRE AS NEEDED.
- 6 RE-LOCATE THE RECEPTACLE TO THE NEW WALL. SEE SHEET E201 FOR MORE INFORMATION. EXTEND THE WIRE AND CONDUIT AS NEEDED.
- 7 THE EXISTING SPARE CONDUITS LOCATED AT THE CEILING MAY BE USE FOR THE PANEL FEEDERS. SEE POWER RISER FOR DETAILS.
- 8 DEMO THE EXISTING CONDUIT. CUT FLUSH WITH THE FLOOR AND FILL.
- 9 MOVE THE EXISTING LIGHT FIXTURES AS NEEDED.

GENERAL DEMOLITION NOTES

1. THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO VISIT THE SITE TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BID.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL DEMOLITION INDICATED ON THESE DRAWINGS. ALL WIRING DEVICES, LIGHT FIXTURES, WIRE, & CONDUIT THAT IS TO BE REMOVED SHALL BE STORED AS DIRECTED BY THE OWNER OR RELOCATED AS SHOWN ON THE NEW FLOOR PLAN. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED, AND ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.
3. ALL EXISTING BRANCH CIRCUITS NOT USED SHALL BE REMOVED BACK TO SERVING PANELBOARD. THE CIRCUIT BREAKERS SHALL BE LABELED AS SPARE.
4. DASHED LINES INDICATE EXISTING FIXTURES, EQUIPMENT, DEVICES, ETC., TO REMAIN UNLESS OTHERWISE NOTED.

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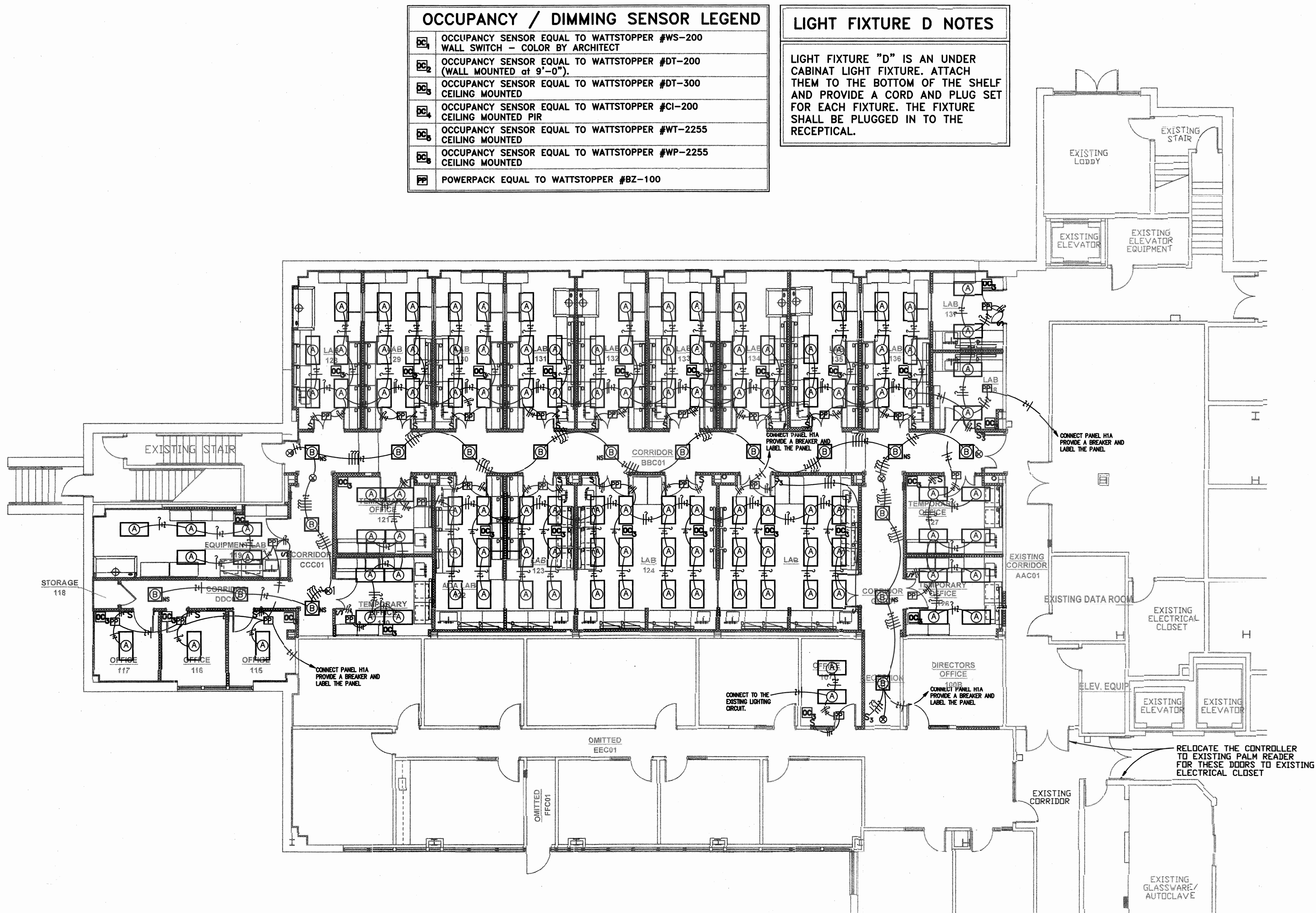


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OCCUPANCY / DIMMING SENSOR LEGEND	
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #WS-200 WALL SWITCH - COLOR BY ARCHITECT
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #DT-200 (WALL MOUNTED at 9'-0")
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #DT-300 CEILING MOUNTED
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #CI-200 CEILING MOUNTED PIR
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #WT-2255 CEILING MOUNTED
	OCCUPANCY SENSOR EQUAL TO WATTSTOPPER #WP-2255 CEILING MOUNTED
	POWERPACK EQUAL TO WATTSTOPPER #BZ-100

LIGHT FIXTURE D NOTES

LIGHT FIXTURE "D" IS AN UNDER CABINET LIGHT FIXTURE. ATTACH THEM TO THE BOTTOM OF THE SHELF AND PROVIDE A CORD AND PLUG SET FOR EACH FIXTURE. THE FIXTURE SHALL BE PLUGGED IN TO THE RECEPTICAL.

lighting plan
SCALE: 1/8" = 1'-0"

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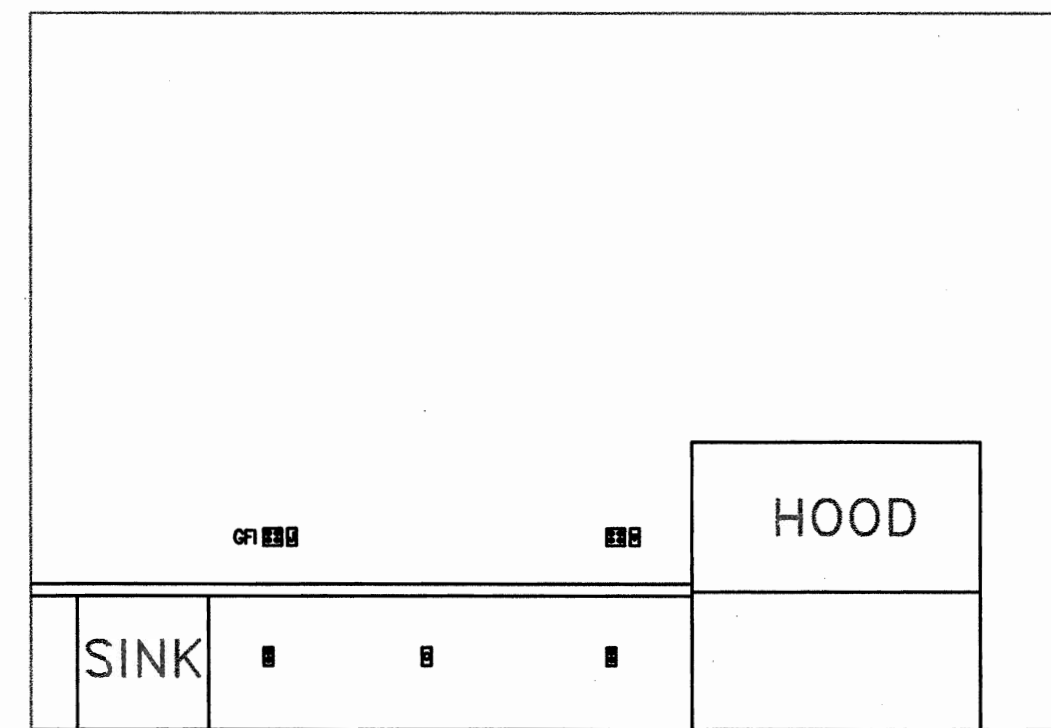
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E101

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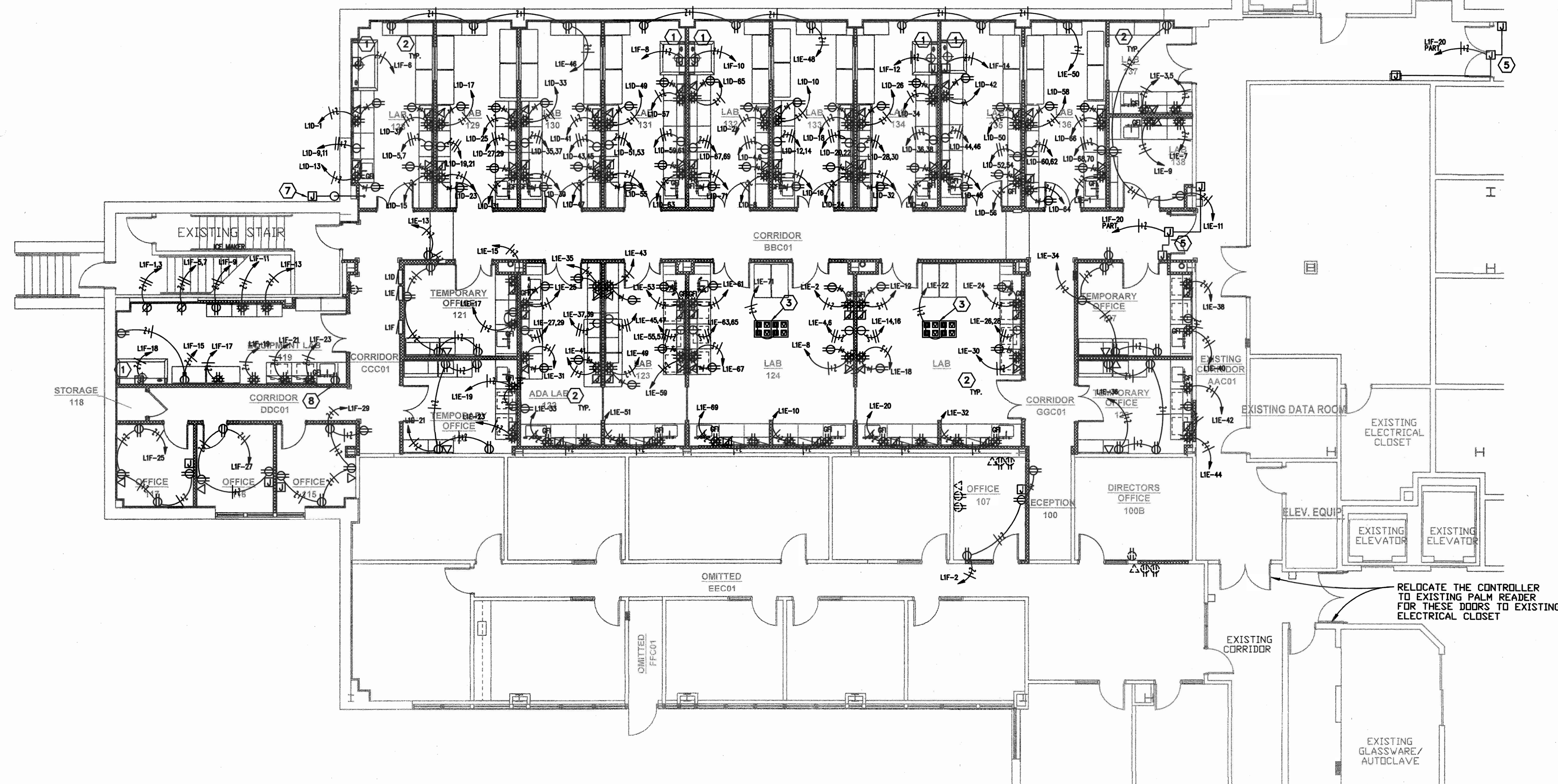
KEYED NOTES

- ① COORDINATE THE INSTALLATION OF THE HOODS WITH THE LAB EQUIPMENT INSTALLER. PROVIDE AND INSTALL ALL WIRE AND CONDUIT FROM THE J-BOX TO THE HOOD.
- ② SEE THE ELEVATION ON THIS SHEET FOR THE FOR INSTALLATION LOCATIONS.
- ③ THE CEILING MOUNTED RECEPTACLES SHALL BE INSTALLED IN A KEWAUNEE ALPHA 2 STATION 2X2 CEILING PANEL. COLOR BY ARCH. THIS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. INSTALL THERE ARE A TOTAL OF 4 PANELS. THE RECEPTACLES AND DATA OUTLETS IN THE PANEL.
- ④ THE CONTRACTOR SHALL SEE THE DETAIL ON SHEET E301 FOR MORE INFORMATION. FOR THE SECURITY READER AND DOOR OPERATOR.
- ⑤ SEE THE DOOR ACCESS RISER, SEE SHEET E301.
- ⑥ FOR TV LOCATION, VERIFY THE EXACT LOCATION WITH THE OWNER. PRIOR TO INSTALLATION.
- ⑦ PROVIDE AND INSTALL A 4" CONDUIT FOR FUTURE DATA CONNECT INTO THE BUILDING. INSTALL A IN-GRADE J-BOX. THE CONDUIT SHALL EXTEND UP THE WALL AND ENTER THE BUILDING ABOVE THE CEILING. WATER PROOF ALL PENETRATIONS IN TO THE BUILDING.
- ⑧ RECEPTICAL FOR THE WATER PURIFICATION SYSTEM. RECEPTICAL SHALL BE MOUNTED ABOVE THE SINK. VERIFY THE EXACT LOCATION WITH THE PLUMBING CONTRACTOR PRIOR TO INSTALLATION.

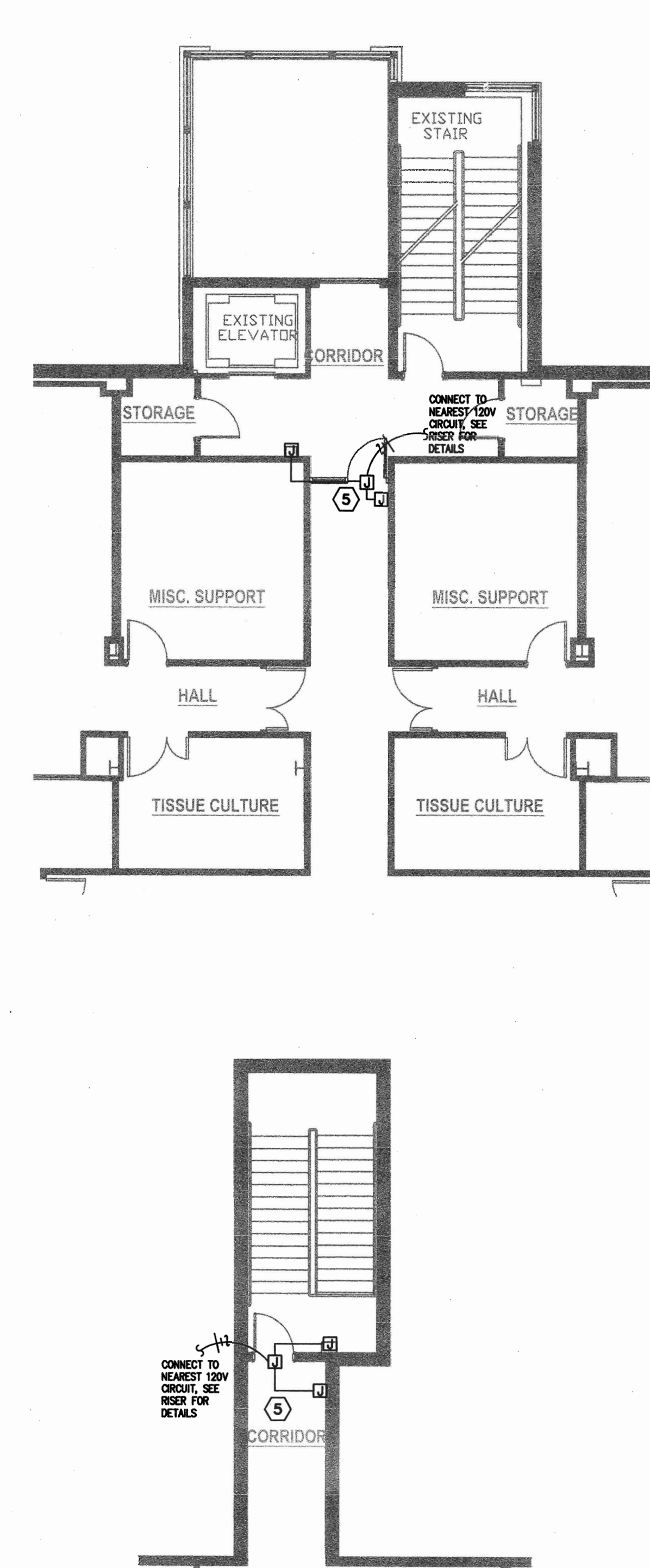


HERE IS A TYPICAL ELEVATION OF A LAB WALL. SOME ROOMS MAY DIFFER. THE QUAD RECEPTACLES AND DATA OUTLETS SHALL BE INSTALLED ABOVE THE COUNTER. THE DUPLEX RECEPTACLES AND 220V OUTLET SHALL BE INSTALLED BELOW THE COUNTER. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS OF ALL OUTLETS SHALL BE COORDINATED WITH THE LAB WORK ELEVATIONS SO THEY ARE NOT LOCATED BEHIND ANY MIL.WORK.

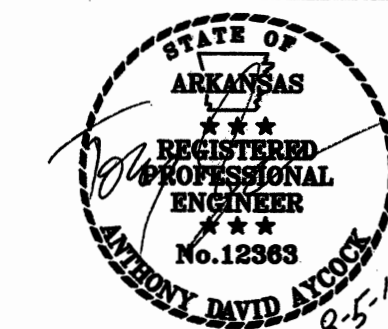
typ. lab power & data plan



power plan
SCALE: 1/8" = 1'-0"



partial second and third floor plan
SCALE: 1/8" = 1'-0"



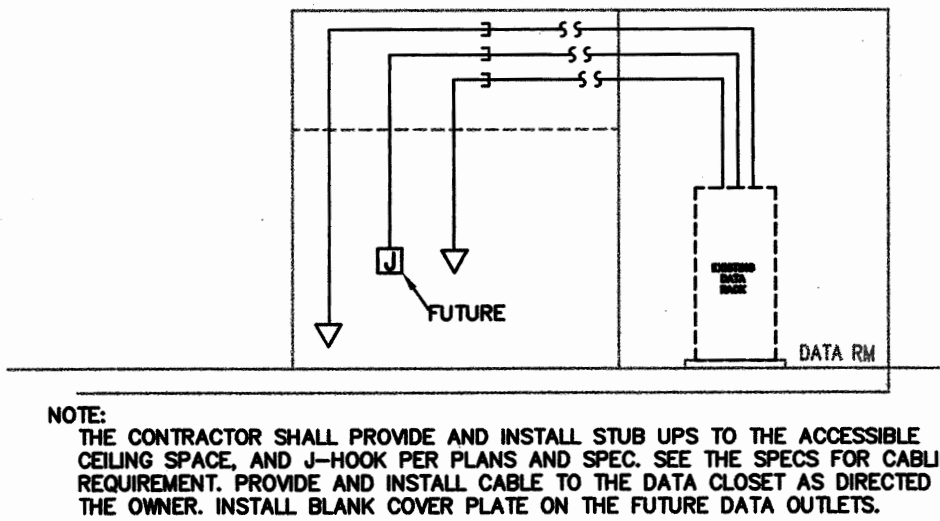
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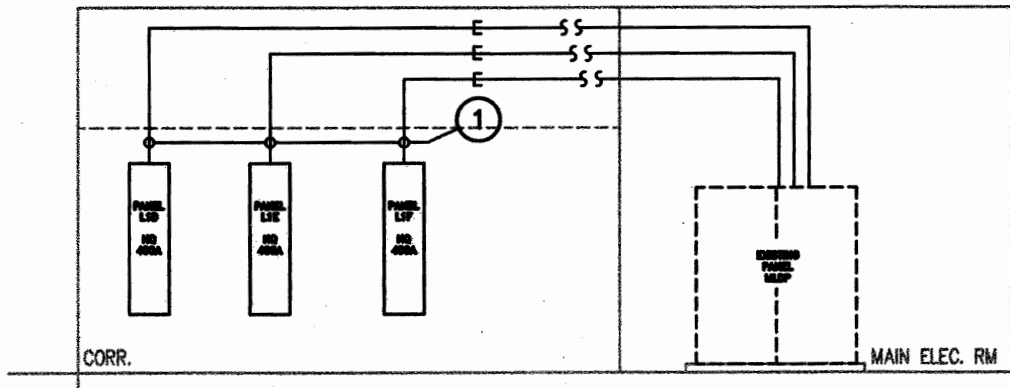
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GENERAL NOTES	
1.	CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND. EQUIPMENT GROUND CONDUCTOR SIZE SHALL NOT BE LESS THAN #12 AWG OR AS INDICATED ON THE DRAWINGS.
2.	ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER THW, THHN, THWN, AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
3.	MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED. SEE SPECS FOR CONDUIT REQUIREMENTS. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
4.	MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED.
5.	ALL WORK SHALL COMPLY WITH THE 2008 EDITION OF THE NATIONAL ELECTRICAL CODE.
6.	ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTORS FOR EXACT LOCATION OF HVAC AND PLUMBING EQUIPMENT.
7.	ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTOR BEING INSTALLED.
8.	USE COMPRESSION FITTINGS ON CONDUIT, SET SCREW FITTINGS ARE NOT ALLOWED.
9.	LABEL ALL NEW CIRCUITS ON PANEL SCHEDULES.
10.	6'-0" MAXIMUM LENGTH ON FLEXIBLE CONDUIT.
11.	FIRE PROOF ALL PENETRATIONS MADE THROUGH FIRE RATED WALLS.
12.	ALL DEVICES SHALL BE RATED 20 AMP MINIMUM, VERIFY COLOR WITH ARCHITECT.
13.	CONNECT DEVICES BY WRAPPING WIRE AROUND SCREW TERMINAL IN A CLOCKWISE DIRECTION AND TIGHTEN SCREW, BACK-CONNECTED SPRING DEVICES ARE NOT ALLOWED.
14.	PULL ALL THE CONDUCTORS THROUGH RACEWAY AT THE SAME TIME.
15.	ALL BOXES SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDINGS STRUCTURE.
16.	CONTRACTOR SHALL REFER TO THE ARCHITECTURAL ELEVATIONS AND MILLWORK DETAILS FOR EXACT LOCATIONS OF ALL WIRING DEVICES.
17.	CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LAY-IN LIGHT FIXTURES.
18.	THE SPECIFICATIONS ARE AS BINDING ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.



DATA RISER DIAGRAM
N.T.S.

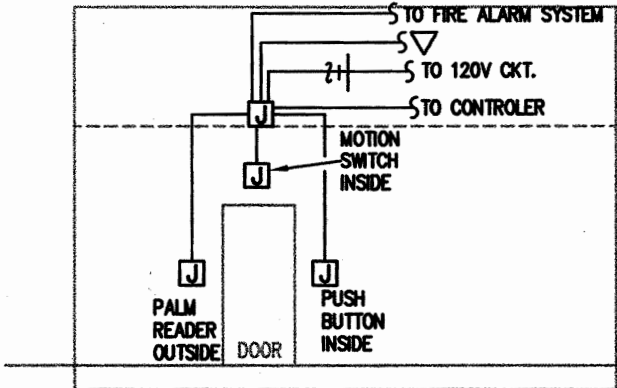


POWER SYSTEMS RISER DIAGRAM
N.T.S.

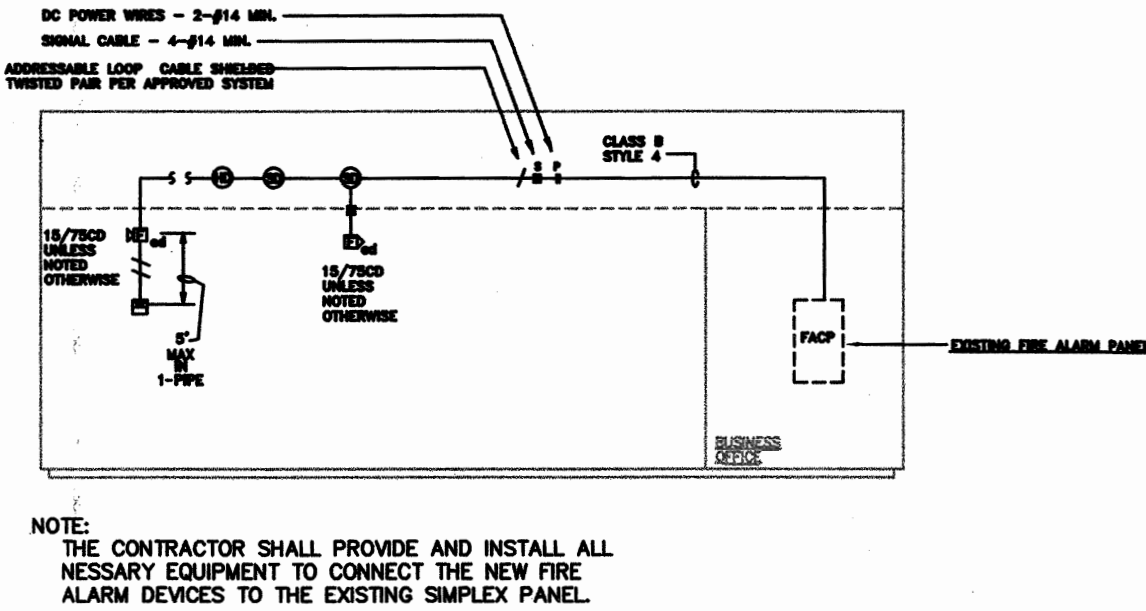
- KEYED NOTES:
- ① THE ELECTRICAL CONTRACTOR SHALL INSTALL NEW CONDUIT AND WIRE TO THE EXISTING PANEL "MLDP" IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR. PROVIDE AND INSTALL 3 200A 3P BREAKERS IN THE PANEL. VERIFY THE CONDUIT ROUTING AND BREAKER REQUIREMENTS PRIOR TO BID. LABEL PANEL "MLDP". THE CONTRACTOR MAY USE THE EXISTING CONDUITS IF THEY EXTEND TO THE MAIN ELECTRICAL ROOM.
- WIRE 4 3/0'S & #6EG IN 2" C FOR EACH PANEL.

FIXTURE SCHEDULE			
TYPE	MANUFACTURER OR EQUAL	LAMPS	REMARKS
A	LIGHTOLIER SPS2GFSVA332-UNV-HI WITH PROGRAM START BAL.	32W T-8	2X4 TROFFER
B	LIGHTOLIER QVS2GPF1FT UNV-HI WITH PROGRAM START BAL.	50W BIAx	2X2 TROFFER
D	PHILIPS 6W PROFILE POWER CORE 21" UNDER CABINET LIGHT ATTACH TO THE BOTTOM OF THE SHELF AND PROVIDE A CORD AND PLUG SET FOR EACH FIXTURE.	LED 2700K	LED UNDERCABINET LIGHT
⊗	MATCH EXISTING EXIT SIGNS	LED	EXIT LIGHT

- NOTES:
- ALL FIXTURES SHALL BE PAINTED AFTER FABRICATION.
 - VERIFY ALL FIXTURE COLORS - THE COLOR AND FINISHES ARE TO BE SELECTED BY THE ARCHITECT AT NO ADDITIONAL COSTS. THE CONTRACTOR SHALL INCLUDE COST OF ARCHITECT COLOR SELECTION OF LIGHT FIXTURE IN BID.
 - COORDINATE ALL FIXTURES MOUNTING TYPE AND HEIGHT WITH ARCHITECTURAL REFLECTED CEILING PLAN.
 - BALLASTS MUST BE 10XTHD AND PROGRAM START.



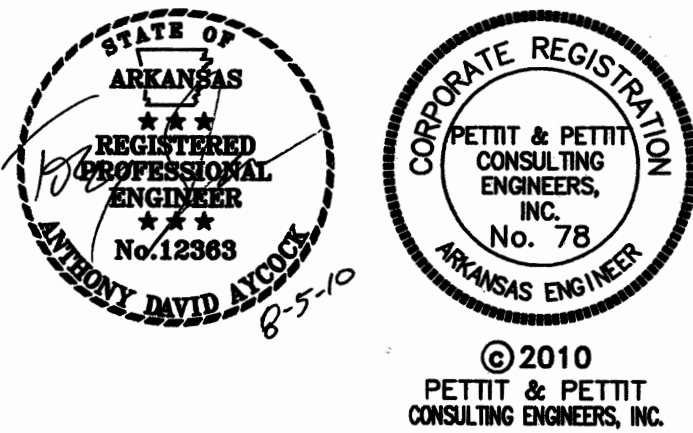
DOOR ACCESS RISER
N.T.S.



FIRE ALARM SYSTEM RISER DIAGRAM
N.T.S.

SYMBOLS SCHEDULE	
SYMBOL	DESCRIPTION
	FLUORESCENT LIGHT FIXTURE - CEILING MOUNTED
	LIGHT FIXTURE - WALL MOUNTED
	EXIT LIGHTS - WALL MT. & CEILING MT. SHOWN - SHADING INDICATES FACE(S), DIRECTIONAL ARROWS SHALL BE AS SHOWN ON PLANS
	SINGLE-POLE SWITCH
	MANUAL MOTOR STARTER WITH OVERLOADS
	DIGITAL TIMER SWITCH (EQUAL TO WATTSTOPPER TS-400)
	LOCAL SINGLE OVERRIDE LOW VOLTAGE SWITCH * EQUALS NUMBER OF BUTTONS
	DUPLEX RECEPTACLE
	QUADRUPLX RECEPTACLE
	COMPUTER RECEPTACLE
	COMPUTER QUADRUPLX RECEPTACLE
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS
	DATA OUTLET MOUNTED ABOVE COUNTER TOP - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS
	JUNCTION BOX MOUNTED ABOVE COUNTER TOP, FOR FUTURE DATA OUTLET - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS. PROVIDE A BLANK COVERPLATE
	DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTING
	DUPLEX RECEPTACLE IN FLUSH WTD CAST FLOOR OR CEILING BOX
	SPECIAL PURPOSE OUTLET - NEMA CONFIGURATION (VOLTAGE, AMPACITY) AS NOTED ON DRAWINGS
	MUSHROOM HEAD PUSHBUTTON
	JUNCTION BOX
	SURFACE MOUNTED PANELBOARD
	FIRE ALARM AUDIO/VISUAL DEVICE - NUMBER INDICATES INDICATES MINIMUM CANDELA RATING OF STROBE
	FIRE ALARM STROBE ONLY - NUMBER INDICATES MINIMUM CANDELA RATING OF STROBE
	FIRE ALARM PULL STATION
	HEAT DETECTOR
	SMOKE DETECTOR
	DUCT MOUNTED SMOKE DETECTOR
	DATA OUTLET
	DATA OUTLET - FLUSH MOUNTED IN FLOOR SLAB OR CEILING
	BRANCH CIRCUIT IN CONDUIT - SWITCHED HOT THRU LIGHTING CONTROL SYSTEM, SWITCH LEG, PHASE LEG, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED GROUND
	BRANCH CIRCUIT HOMERUN - PANEL AND CIRCUIT NUMBER INDICATED
	CONDUIT CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE
	DISCONNECT SWITCH
NS	NON-SWITCHED
CKT or CR	CIRCUIT
UC	DENOTES UNDER COUNTER - VERIFY LOCATION
AC	ABOVE COUNTER

- NOTE:
- NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT.
 - SYMBOLS SHOWN DASHED ON PLANS INDICATES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC.



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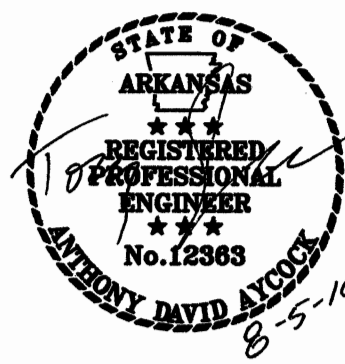
PANELBOARD: L1D	VOLTAGE: 208Y120V, 3#, 4W	COPPER BUS RATING: 225A	MAIN: 225A MLO	TOTAL CONNECTED VA: 29000
LOCATION: HALL CCC01	MFG. AND TYPE: SQUARE-D "NQ"	EQUIP. GRD. BUS: YES	ISOL. GRD. BUS: -	TOTAL A Ø : 9800
MOUNTING: FLUSH	ENCLOSURE: NEMA 1	MINIMUM A.I.C. RATING: -K	FED FROM: -	TOTAL B Ø : 10000
LOAD (VA)	SERVES			TOTAL C Ø : 9400
AØ BØ CØ		P/T NO. ABC ØØØ	CIR. P/T NO. T	
600	LAB 128 RECEPTACLES	1/20 1	2 1/20	LAB 132 RECEPTACLES
600	LAB 128 RECEPTACLES	2/20 3	4 2/20	LAB 132 220V RECEPTACLE
200	LAB 128 220V RECEPTACLE	2/20 5	6 2/20	INSALL 4 #10'S WIRING
200	INSALL 4 #10'S WIRING	2/20 7	8 1/20	LAB 132 RECEPTACLES
200	LAB 128 220V RECEPTACLE	2/20 9	10 1/20	LAB 133 RECEPTACLES
200	INSALL 4 #10'S WIRING	2/20 11	12 2/20	LAB 133 220V RECEPTACLE
600	LAB 128 RECEPTACLES	2/20 13	14 2/20	INSALL 4 #10'S WIRING
600	LAB 128 RECEPTACLES	2/20 15	16 1/20	LAB 133 RECEPTACLES
600	LAB 129 RECEPTACLES	2/20 17	18 1/20	LAB 133 RECEPTACLES
200	LAB 129 220V RECEPTACLE	2/20 19	20 2/20	LAB 133 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 21	22 2/20	INSALL 4 #10'S WIRING
600	LAB 129 RECEPTACLES	2/20 23	24 1/20	LAB 133 RECEPTACLES
600	LAB 129 RECEPTACLES	2/20 25	26 1/20	LAB 134 RECEPTACLES
200	LAB 129 220V RECEPTACLE	2/20 27	28 2/20	LAB 134 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 29	30 2/20	INSALL 4 #10'S WIRING
600	LAB 129 RECEPTACLES	2/20 31	32 1/20	LAB 134 RECEPTACLES
600	LAB 130 RECEPTACLES	1/20 33	34 1/20	LAB 134 RECEPTACLES
200	LAB 130 220V RECEPTACLE	2/20 35	36 2/20	LAB 134 220V RECEPTACLE
600	INSALL 4 #10'S WIRING	2/20 37	38 1/20	INSALL 4 #10'S WIRING
600	LAB 130 RECEPTACLES	1/20 39	40 1/20	LAB 134 RECEPTACLES
200	LAB 130 RECEPTACLES	2/20 41	42 1/20	LAB 135 RECEPTACLES
200	LAB 130 220V RECEPTACLE	2/20 43	44 2/20	LAB 135 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 45	46 2/20	INSALL 4 #10'S WIRING
600	LAB 130 RECEPTACLES	1/20 47	48 1/20	LAB 135 RECEPTACLES
200	LAB 131 RECEPTACLES	2/20 49	50 1/20	LAB 135 RECEPTACLES
200	LAB 131 220V RECEPTACLE	2/20 51	52 2/20	LAB 135 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 53	54 1/20	INSALL 4 #10'S WIRING
600	LAB 131 RECEPTACLES	1/20 55	56 1/20	LAB 135 RECEPTACLES
600	LAB 131 RECEPTACLES	2/20 57	58 1/20	LAB 136 RECEPTACLES
200	LAB 131 220V RECEPTACLE	2/20 59	60 2/20	LAB 136 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 61	62 2/20	INSALL 4 #10'S WIRING
600	LAB 131 RECEPTACLES	1/20 63	64 1/20	LAB 136 RECEPTACLES
600	LAB 132 RECEPTACLES	1/20 65	66 1/20	LAB 136 RECEPTACLES
200	LAB 132 220V RECEPTACLE	2/20 67	68 2/20	LAB 136 220V RECEPTACLE
200	INSALL 4 #10'S WIRING	2/20 69	70 2/20	INSALL 4 #10'S WIRING
600	LAB 132 RECEPTACLES	1/20 71	72 1/20	SPARE

PANELBOARD: L1E	VOLTAGE: 208Y120V, 3#, 4W	COPPER BUS RATING: 225A	MAIN: 225A MLO	TOTAL CONNECTED VA: 31400
LOCATION: HALL CCC01	MFG. AND TYPE: SQUARE-D "NQ"	EQUIP. GRD. BUS: YES	ISOL. GRD. BUS: -	TOTAL A Ø : 11600
MOUNTING: FLUSH	ENCLOSURE: NEMA 1	MINIMUM A.I.C. RATING: -K	FED FROM: -	TOTAL B Ø : 10000
LOAD (VA)	SERVES			TOTAL C Ø : 9800
AØ BØ CØ		P/T NO. ABC ØØØ	CIR. P/T NO. T	
600	LAB 136 RECEPTACLES	1/20 1	2 1/20	LAB 124 RECEPTACLES
400	LAB 137 RECEPTACLES	1/20 3	4 2/20	LAB 124 220V RECEPTACLE
400	LAB 137 RECEPTACLES	1/20 5	6 2/20	INSALL 4 #10'S WIRING
400	LAB 138 RECEPTACLES	1/20 7	8 1/20	LAB 124 RECEPTACLES
400	LAB 138 RECEPTACLES	1/20 9	10 1/20	LAB 124 RECEPTACLES
400	LAB 137 & 138 RECEPTACLES	1/20 11	12 2/20	LAB 125 RECEPTACLES
1000	OFFICE 121 RECEPTACLES	1/20 13	14 2/20	LAB 125 220V RECEPTACLE
600	OFFICE 121 RECEPTACLES	1/20 15	16 2/20	INSALL 4 #10'S WIRING
400	OFFICE 121 RECEPTACLES	1/20 17	18 1/20	LAB 125 RECEPTACLES
600	OFFICE 120 RECEPTACLES	1/20 19	20 2/20	LAB 125 RECEPTACLES
800	OFFICE 120 RECEPTACLES	1/20 21	22 2/20	LAB 125 RECEPTACLES, CEILING MOUNT
400	OFFICE 120 RECEPTACLES	1/20 23	24 1/20	LAB 125 RECEPTACLES
600	LAB 122 RECEPTACLES	1/20 25	26 2/20	LAB 125 220V RECEPTACLE
200	LAB 122 220V RECEPTACLE	2/20 27	28 2/20	INSALL 4 #10'S WIRING
200	INSALL 4 #10'S WIRING	2/20 29	30 1/20	LAB 125 RECEPTACLES
800	LAB 122 RECEPTACLES	1/20 31	32 1/20	LAB 125 RECEPTACLES
800	LAB 122 RECEPTACLES	1/20 33	34 1/20	OFFICE 127 RECEPTACLES
600	LAB 122 RECEPTACLES	2/20 35	36 1/20	OFFICE 126 RECEPTACLES
200	LAB 122 220V RECEPTACLE	2/20 37	38 1/20	OFFICE 127 RECEPTACLES
200	INSALL 4 #10'S WIRING	2/20 39	40 1/20	OFFICE 127 RECEPTACLES
600	LAB 122 RECEPTACLES	1/20 41	42 2/20	OFFICE 126 RECEPTACLES
600	LAB 123 RECEPTACLES	1/20 43	44 1/20	OFFICE 126 RECEPTACLES
200	LAB 123 220V RECEPTACLE	2/20 45	46 1/20	LAB 126, 129 & 130 RECEPTACLES
200	INSALL 4 #10'S WIRING	2/20 47	48 1/20	LAB 131, 132 & 133 RECEPTACLES
600	LAB 123 RECEPTACLES	1/20 49	50 2/20	LAB 134, 135 & 136 RECEPTACLES
800	LAB 123 RECEPTACLES	1/20 51	52 1/20	SPARE
600	LAB 123 RECEPTACLES	1/20 53	54 1/20	SPARE
200	LAB 123 220V RECEPTACLE	2/20 55	56 1/20	SPARE
200	INSALL 4 #10'S WIRING	2/20 57	58 1/20	SPARE
600	LAB 123 RECEPTACLES	1/20 59	60 1/20	SPARE
600	LAB 124 RECEPTACLES	1/20 61	62 1/20	SPARE
200	LAB 124 220V RECEPTACLE	2/20 63	64 1/20	SPARE
200	INSALL 4 #10'S WIRING	2/20 65	66 -	-
600	LAB 124 RECEPTACLES	1/20 67	68 -	-
800	LAB 124 RECEPTACLES	1/20 69	70 -	-
800	LAB 124 RECEPTACLES, CEILING MOUNT	1/20 71	72 -	-

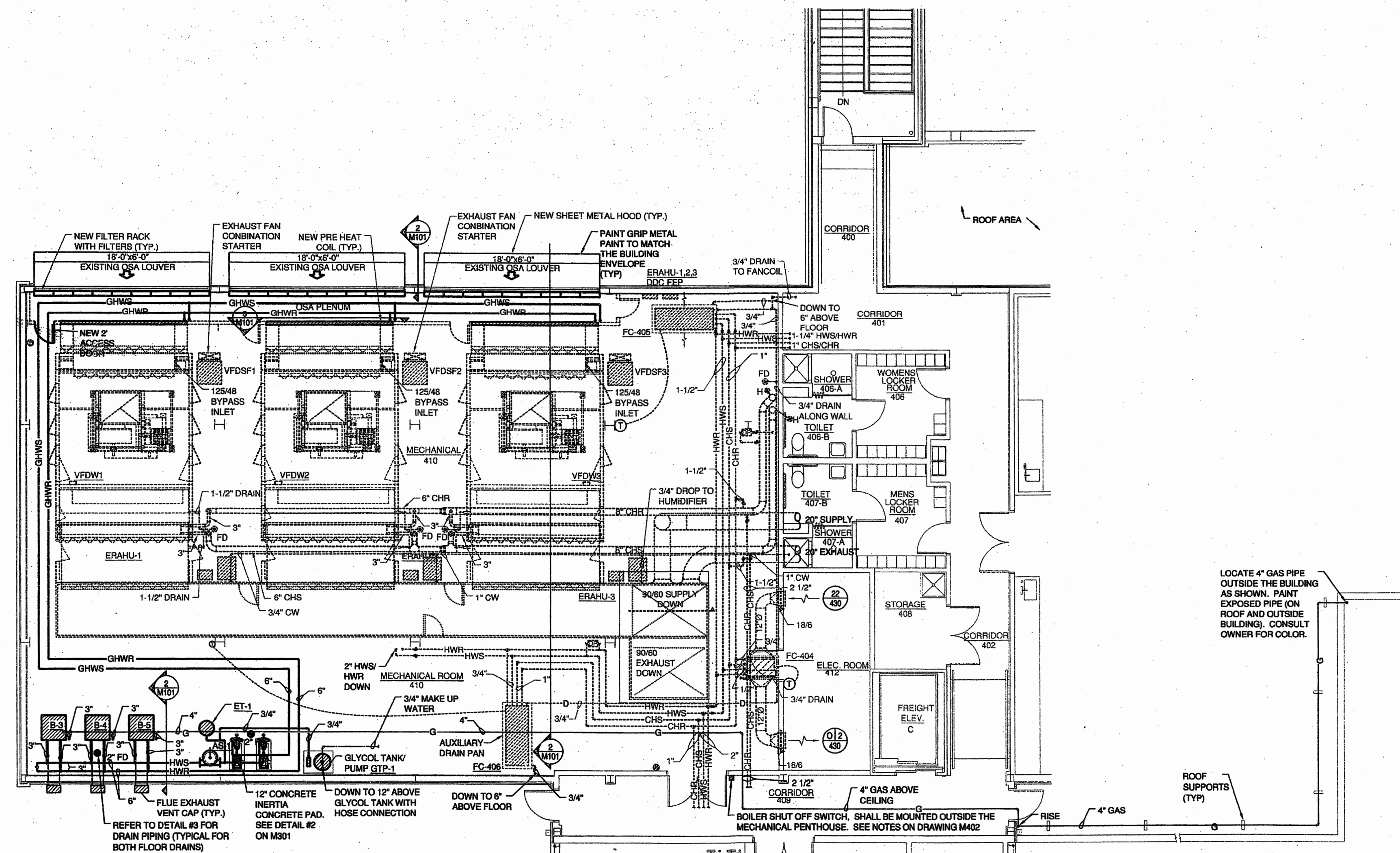
PANELBOARD: L1F	VOLTAGE: 208Y120V, 3#, 4W	COPPER BUS RATING: 225A	MAIN: 225A MLO	TOTAL CONNECTED VA: 20000
LOCATION: HALL CCC01	MFG. AND TYPE: SQUARE-D "NQ"	EQUIP. GRD. BUS: YES	ISOL. GRD. BUS: -	TOTAL A Ø : 7200
MOUNTING: FLUSH	ENCLOSURE: NEMA 1	MINIMUM A.I.C. RATING: -K	FED FROM: -	TOTAL B Ø : 6800
LOAD (VA)	SERVES			TOTAL C Ø : 6000
AØ BØ CØ		P/T NO. ABC ØØØ	CIR. P/T NO. T	
600	LAB 119 FREEZER 220 RECEPT.	1/20 1	2 1/20	OFFICE 107 & 108
600	INSALL 4 #10'S WIRING	1/20 3	4 1/20	SPARE
600	LAB 119 FREEZER 220 RECEPT.	1/20 5	6 1/20	LAB 128 HOOD
600	INSALL 4 #10'S WIRING	1/20 7	8 1/20	LAB 130 HOOD
800	LAB 119 ICE MAKER RECEPT.	1/20 9	10 1/20	LAB 131 HOOD
400	LAB 119 RECEPTACLES	1/20 11	12 1/20	LAB 134 HOOD
400	LAB 119 RECEPTACLES	1/20 13	14 1/20	LAB 135 HOOD
400	LAB 119 RECEPTACLES	1/20 15	16 1/20	SPARE
400	LAB 119 RECEPTACLES	1/20 17	18 1/20	LAB 119 HOOD
400	LAB 119 RECEPTACLES	1/20 19	20 1/20	HVAC CONTROLS ABOVE CEILING
400	LAB 119 RECEPTACLES	1/20 21	22 1/20	HVAC CONTROLS ABOVE CEILING
400	LAB 119 RECEPTACLES	1/20 23	24 1/20	HVAC CONTROLS ABOVE CEILING
800	OFFICE 117 RECEPTACLES	1/20 25	26 1/20	HVAC CONTROLS ABOVE CEILING
600	OFFICE 116 RECEPTACLES	1/20 27	28 1/20	HVAC CONTROLS ABOVE CEILING
1000	OFFICE 115 RECEPTACLES	1/20 29	30 1/20	SPARE
-	SPARE	1/20 31	32 1/20	SPARE
800	OFFICE 112 & 113 RECEPTACLES	1/20 33	34 1/20	SPARE
-	SPARE	1/20 35	36 1/20	SPARE
-	SPARE	1/20 37	38 1/20	SPARE
-	SPARE	1/20 39	40 1/20	SPARE
-	SPARE	1/20 41	42 1/20	SPARE
-	SPARE	1/20 43	44 1/20	SPARE
-	SPARE	1/20 45	46 1/20	SPARE
-	SPARE	1/20 47	48 1/20	SPARE
-	SPARE	1/20 49	50 1/20	SPARE
-	SPARE	1/20 51	52 1/20	SPARE
-	SPARE	1/20 53	54 1/20	SPARE
-	SPARE	1/20 55	56 1/20	SPARE
-	SPARE	1/20 57	58 1/20	SPARE
-	-	1/20 59	60 -	-
-	-	1/20 61	62 -	-
-	-	1/20 63	64 -	-
-	-	1/20 65	66 -	-
-	-	1/20 67	68 -	-
-	-	1/20 69	70 -	-
-	-	1/20 71	72 -	-

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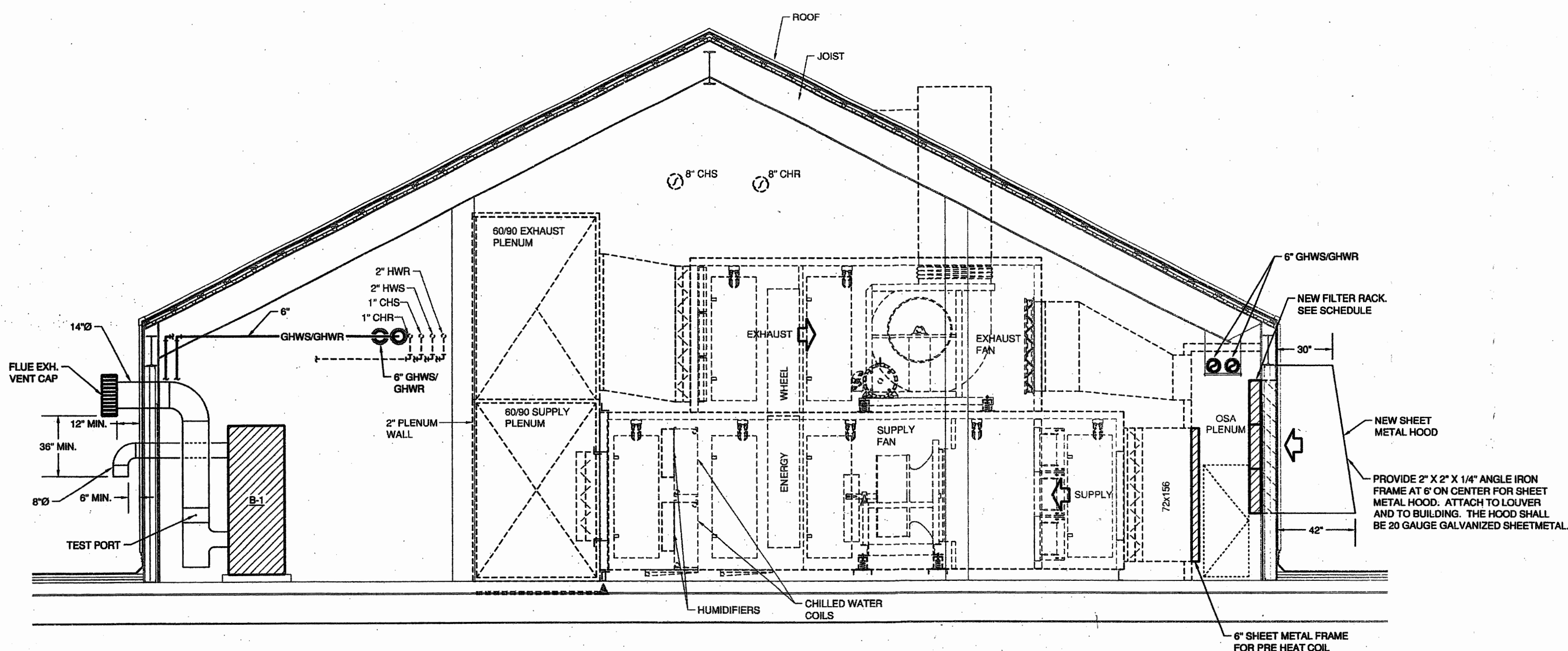
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Commission Number
12709-R
E302
Rev. Date: August 6, 2010
Date: April 8, 2010

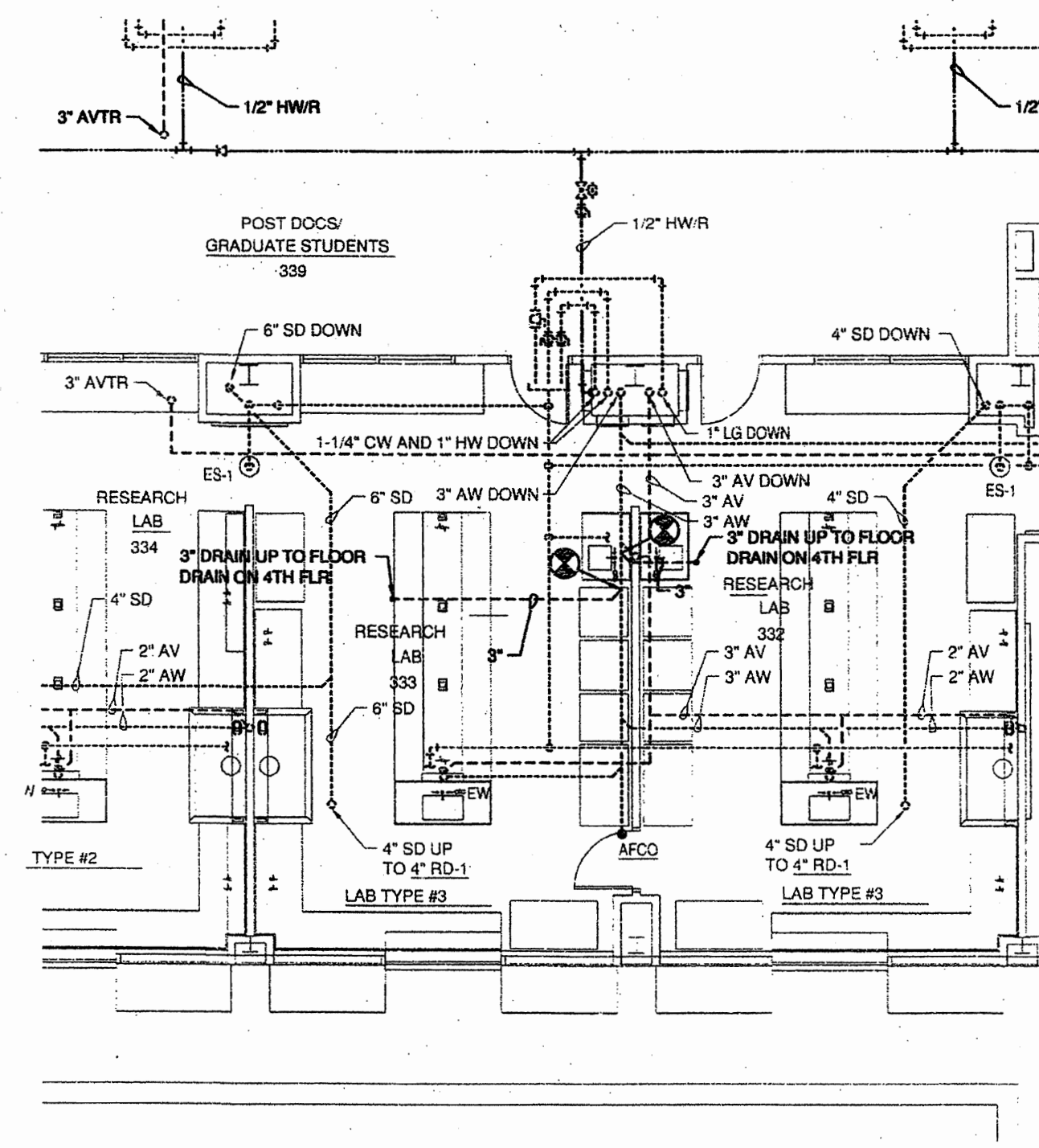


fourth floor mechanical room - hvac plan
SCALE: 1/8" = 1'-0"

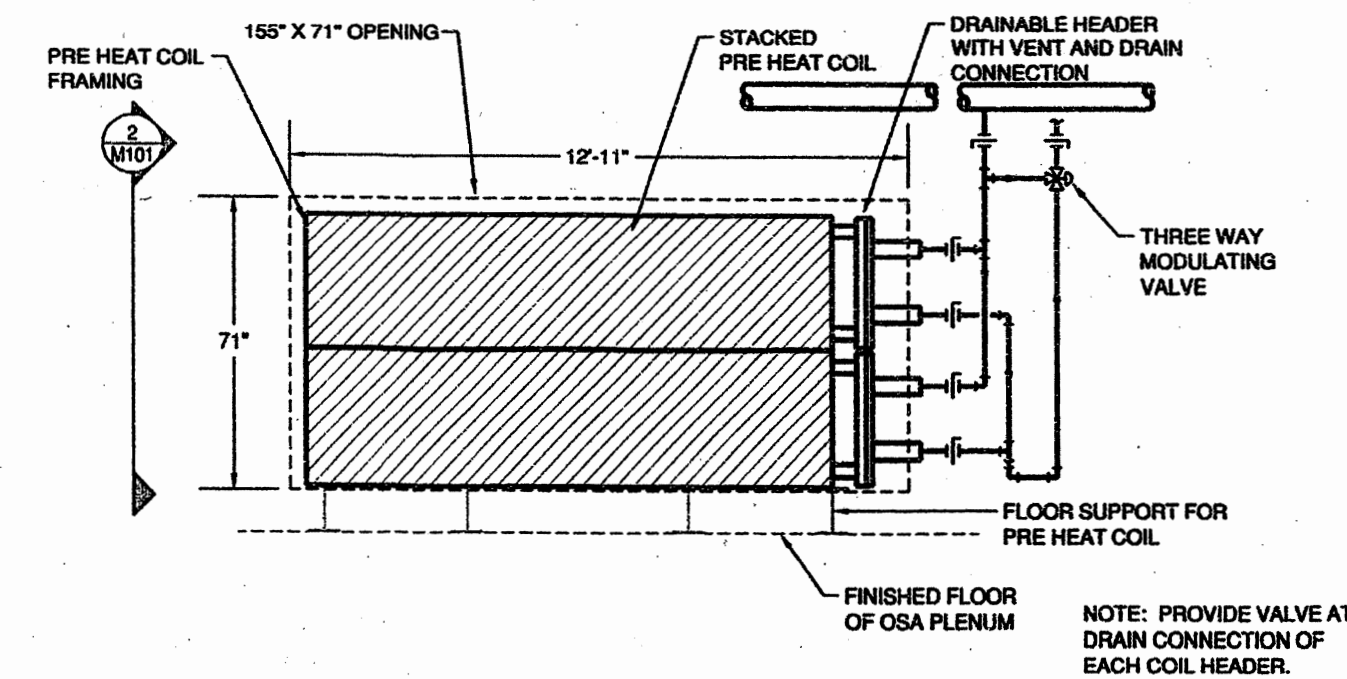


FOURTH FLOOR MECHANICAL ROOM SECTION - HVAC PLAN
SCALE: 1/4" = 1'-0"

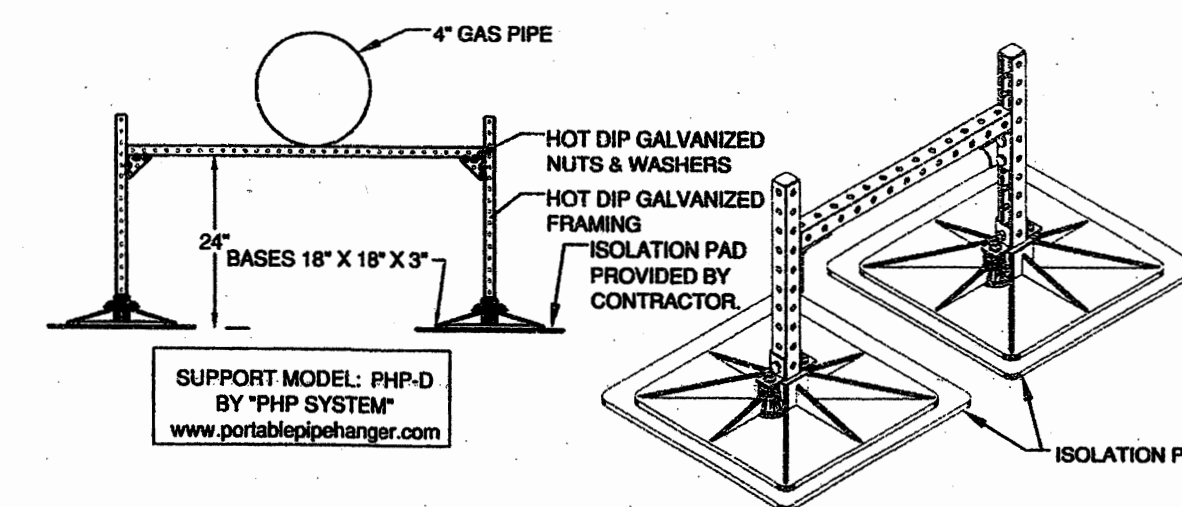
GENERAL NOTE:
1. PROVIDE EPOXY COATING FOR THE ENTIRE SURFACE AREA OF THE MECHANICAL ROOM PENTHOUSE FLOOR. EPOXY COATING SHALL BE EQUAL TO "DURAL CONCRETE FLOOR COATING", "DURA POXY". CONSULT OWNER FOR COLOR SELECTION.



partial third floor - plumbing plan
SCALE: 1/8" = 1'-0"



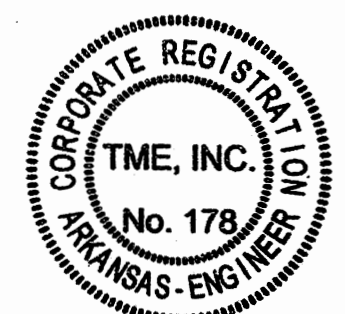
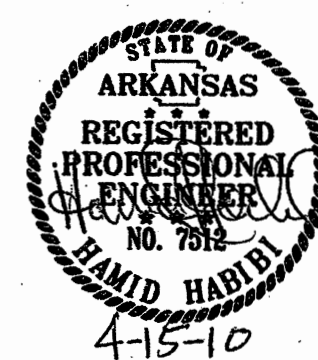
FRONT VIEW OF PRE HEAT COIL
SCALE: 1/4" = 1'-0"



TYPICAL ROOF TOP PIPE SUPPORT DETAIL
SCALE: NONE

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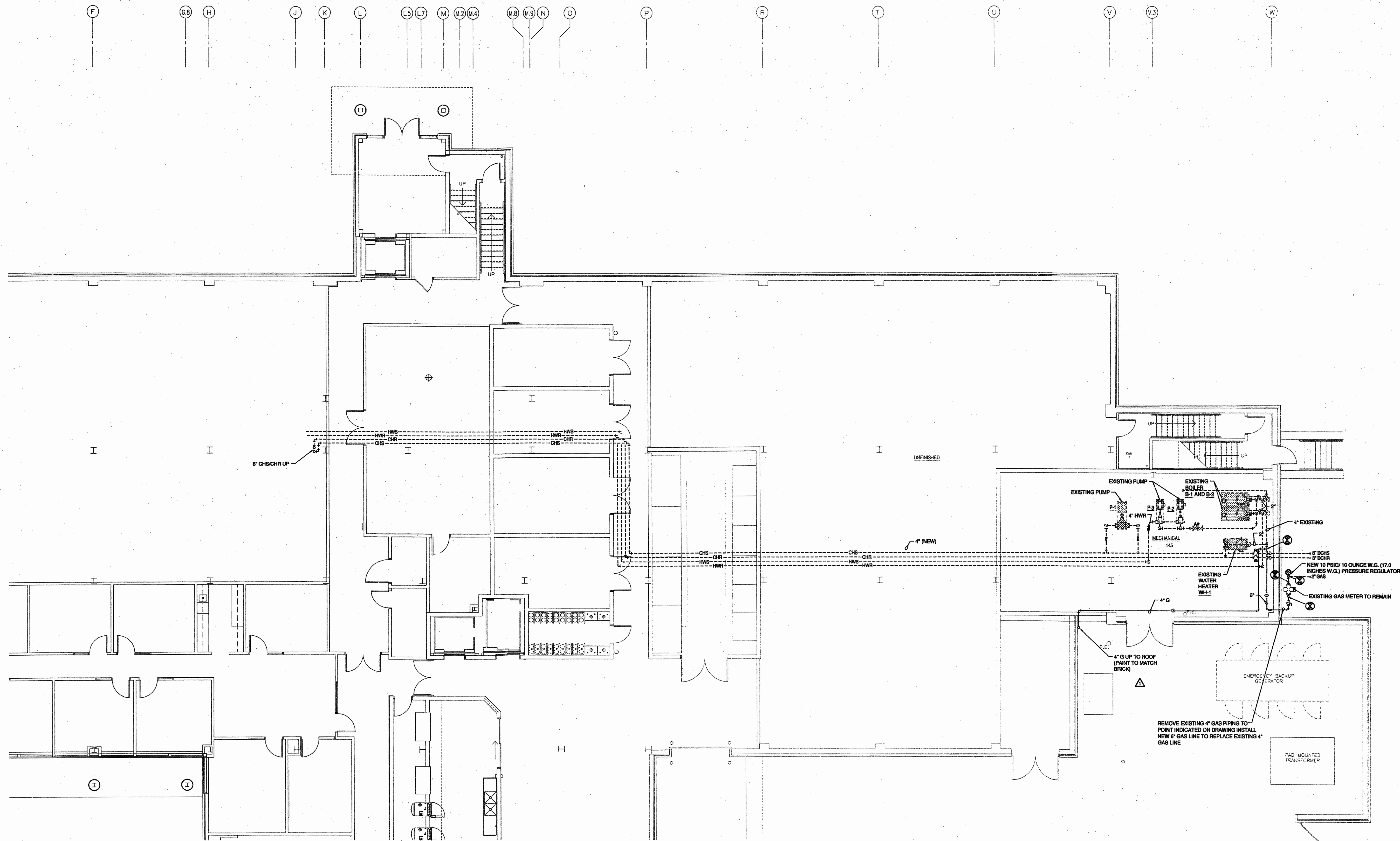
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M1.01

Date: April 8, 2010

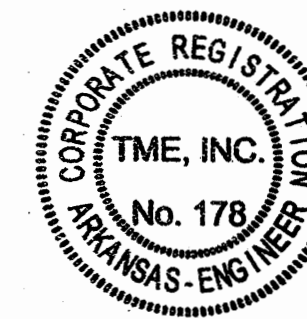
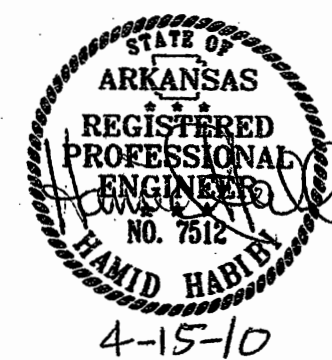


first floor - mechanical piping plan

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

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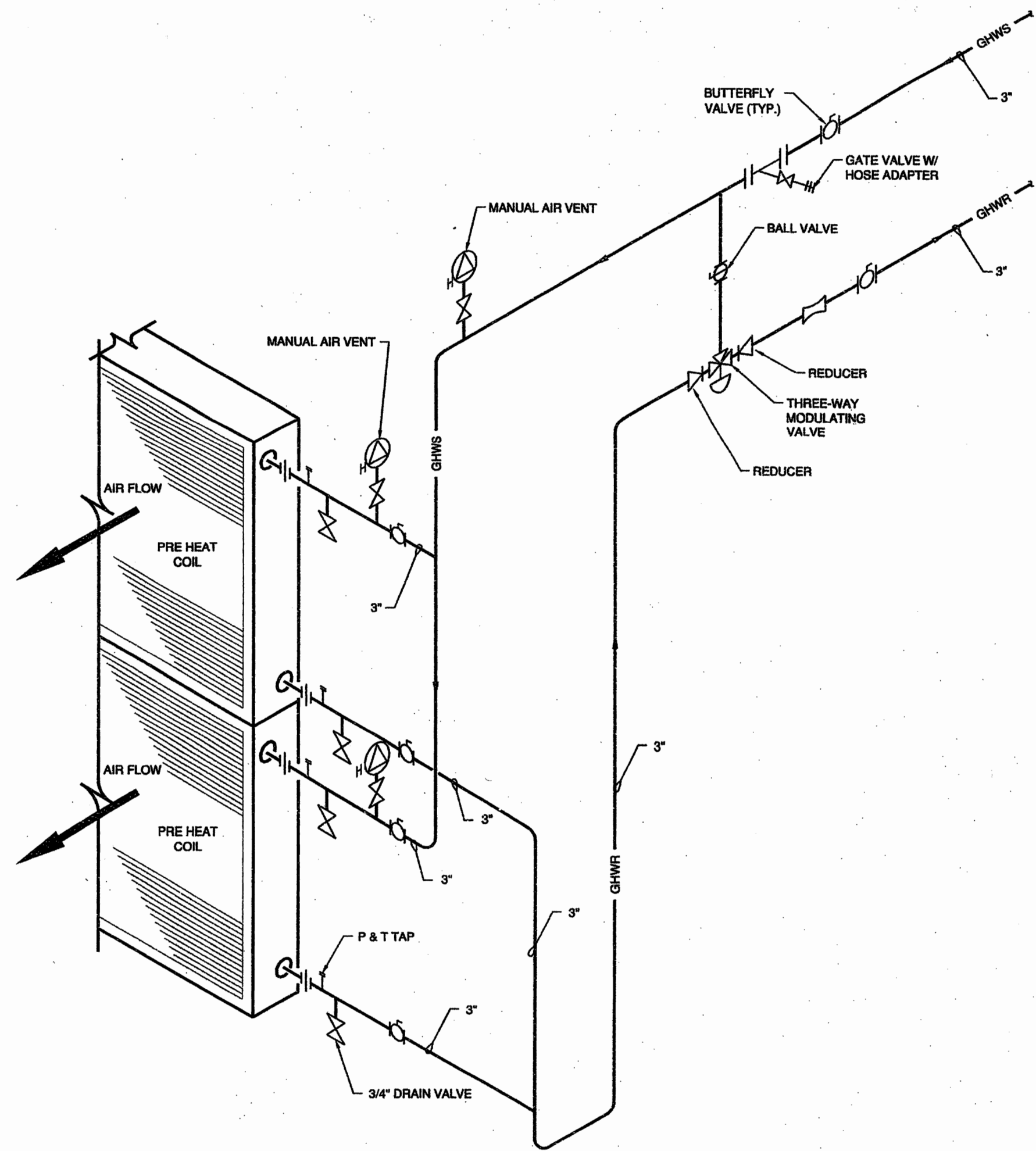
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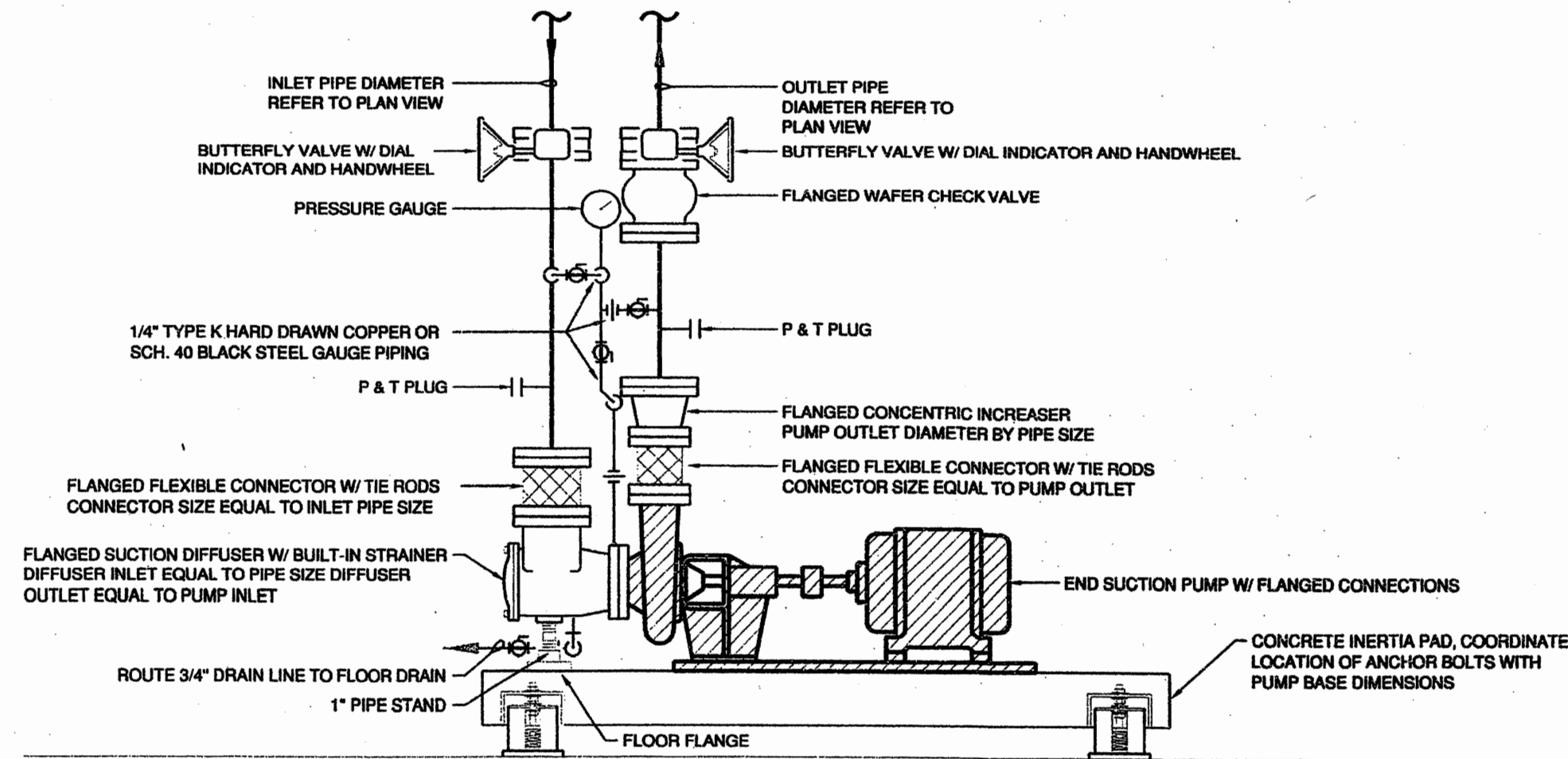
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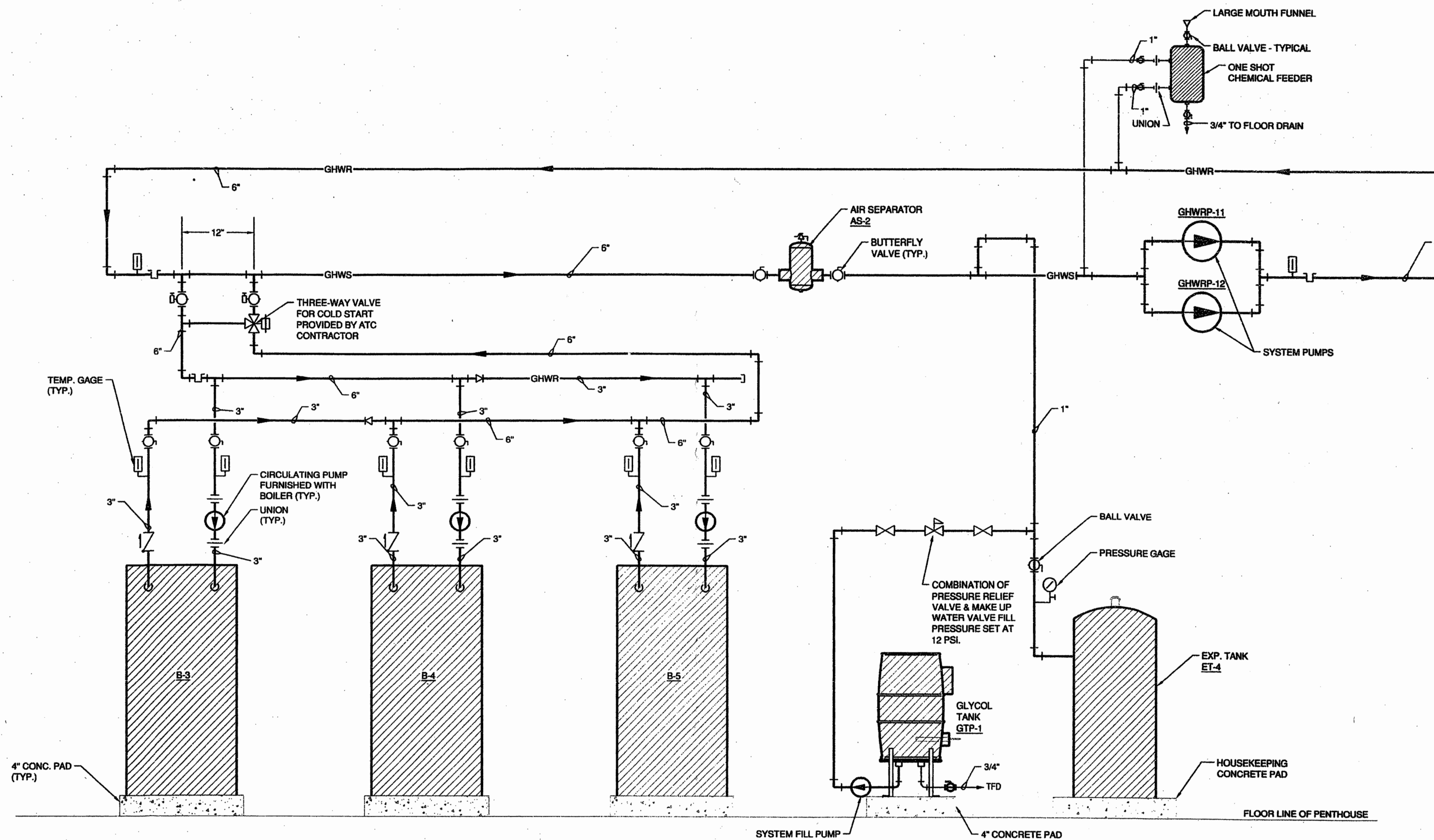
Date: April 8, 2010



5 PRE HEAT COIL PIPING DETAIL
NOT TO SCALE



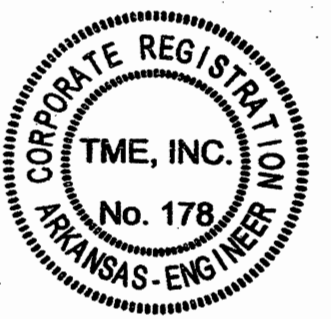
2 PUMP PIPING DETAIL
NOT TO SCALE



4 HOT WATER FLOW DIAGRAM
NOT TO SCALE

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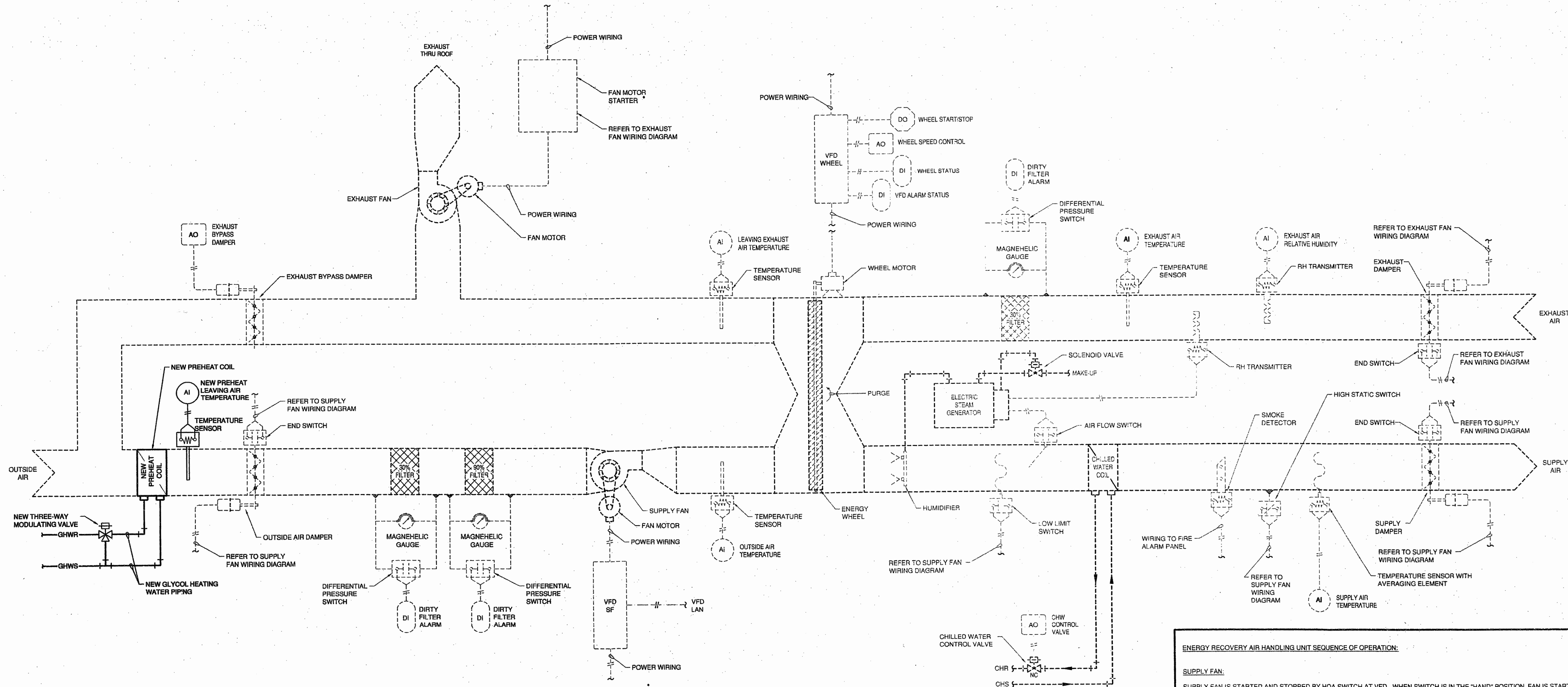
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M301

Date: April 8, 2010



1 EXISTING ENERGY RECOVERY AIR HANDLING UNIT CONTROL DIAGRAM (TYPICAL 3 TIMES)
NOT TO SCALE

ENERGY RECOVERY AIR HANDLING UNIT SEQUENCE OF OPERATION:

SUPPLY FAN:
SUPPLY FAN IS STARTED AND STOPPED BY HOA SWITCH AT VFD. WHEN SWITCH IS IN THE "HAND" POSITION, FAN IS STARTED AND STOPPED AND FAN SPEED IS CONTROLLED BY VFD KEYPAD. WHEN SWITCH IS IN THE "AUTO" POSITION, FAN IS STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT AND FAN SPEED IS CONTROLLED BY DDC PANEL THROUGH EMS INTERFACE. FAN SHALL TYPICALLY BE OPERATED CONTINUOUSLY. FAN SHALL BE AUTOMATICALLY STOPPED BY FIRE ALARM PANEL, LOW LIMIT SWITCH, AND HIGH STATIC SWITCH IN THE EVENT OF AN ALARM CONDITION. OUTSIDE AIR DAMPER AND SUPPLY AIR DAMPER SHALL BE AUTOMATICALLY OPENED WHENEVER THE SUPPLY FAN IS IN OPERATION. DAMPER OPENING SHALL BE DELAYED ON START-UP BY A TIME DELAY RELAY UNTIL THE FAN SPEED IS AT 10% TO PREVENT REVERSE ROTATION OF THE FAN. DAMPERS SHALL BE AUTOMATICALLY CLOSED WHEN THE FAN IS NOT IN OPERATION. FAN SPEED SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE SUPPLY AIR DUCT STATIC PRESSURE AT SETPOINT OF 1.5 INCHES W.G. (ADJUSTABLE). ALL SUPPLY FANS SHALL BE OPERATED AT THE SAME SPEED. IF THE OUTSIDE AIR DAMPER AND THE SUPPLY AIR DAMPER ARE NOT FULLY OPEN (AS INDICATED BY DAMPER END SWITCHES), THE FAN SPEED SHALL BE LIMITED TO A MAXIMUM OF 10% (ADJUSTABLE).

EXHAUST FAN:
EXHAUST FAN IS STARTED AND STOPPED BY HOA SWITCH AT MOTOR STARTER. WHEN SWITCH IS IN THE AUTO POSITION, FAN IS STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT. FAN SHALL TYPICALLY BE OPERATED CONTINUOUSLY. FAN SHALL BE AUTOMATICALLY STOPPED BY FIRE ALARM PANEL IN THE EVENT OF AN ALARM CONDITION. EXHAUST DAMPER SHALL BE AUTOMATICALLY OPENED WHENEVER THE EXHAUST FAN IS IN OPERATION. DAMPER SHALL BE AUTOMATICALLY CLOSED WHEN THE FAN IS NOT IN OPERATION. FAN SHALL BE OPERATED AT CONSTANT SPEED.

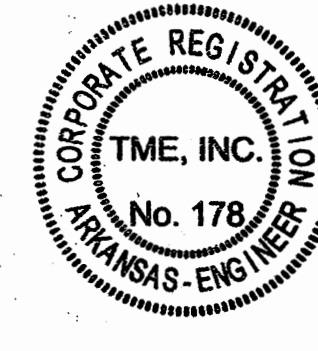
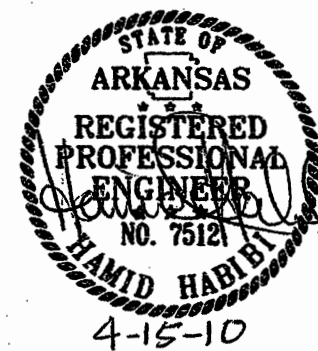
EXHAUST BYPASS DAMPER:
WHEN EXHAUST FAN IS IN OPERATION, BYPASS DAMPER SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE EXHAUST DUCT STATIC PRESSURE AT SETPOINT OF NEGATIVE 1.5 INCHES W.G. (ADJUSTABLE). WHEN EXHAUST FAN IS NOT IN OPERATION, BYPASS DAMPER SHALL BE CLOSED.

ENERGY WHEEL:
THE SPEED OF THE ENERGY WHEEL SHALL BE MODULATED BY DDC PANEL ANALOG OUTPUT. WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 80 DEG. F, THE WHEEL SHALL BE OPERATED AT FULL SPEED. WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 50 DEG. F AND BELOW 80 DEG. F, THE WHEEL SHALL BE OPERATED AT MINIMUM SPEED (AS REQUIRED FOR CLEANINGS). WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 50 DEG. F AND ABOVE 30 DEG. F, THE WHEEL SPEED SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SETPOINT OF 55 DEG. F. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 30 DEG. F, THE WHEEL SPEED SHALL BE OPERATED AT FULL SPEED. WHEEL SPEED CONTROL, HOWEVER, SHALL BE OVERRIDDEN AS REQUIRED TO PREVENT THE LEAVING EXHAUST AIR TEMPERATURE FROM DECREASING BELOW 35 DEG. F (FROST CONTROL).

HUMIDIFIER:
HUMIDIFIER CAPACITY SHALL BE MODULATED BY CONTROL PANEL FURNISHED WITH HUMIDIFIER. HUMIDIFIER CAPACITY SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE EXHAUST AIR RELATIVE HUMIDITY AT SETPOINT OF 35% RH (ADJUSTABLE AT HUMIDIFIER CONTROL PANEL).

CHILLED WATER CONTROL VALVE:
CHILLED WATER CONTROL VALVE SHALL BE MODULATED BY DDC PANEL ANALOG OUTPUT AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SETPOINT OF 55 DEG. F (ADJUSTABLE).

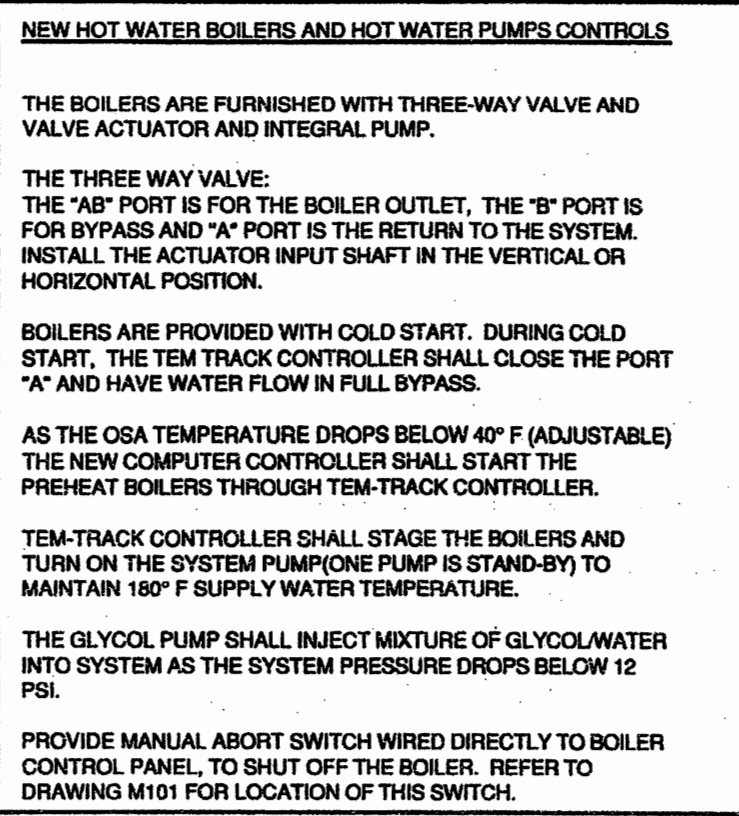
NEW PREHEAT COIL CONTROL VALVE:
AS THE OUTSIDE AIR TEMPERATURE DROPS BELOW 41° F, THE THREE-WAY MODULATING VALVE SHALL MODULATE FLOW THROUGH PREHEAT COIL TO MAINTAIN THE LEAVING AIR TEMPERATURE OF 46° F












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


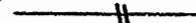






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WIRING DIAGRAM LEGEND

	EXTERNAL WIRING
	INTERNAL WIRING
	NUMBERED TERMINAL BLOCK
	NO CONTACTS
	NC CONTACTS
	PILOT LIGHT (AMBER LENS)
	PILOT LIGHT (RED LENS)
	FUSE
	CONTROL RELAY
DS	DRIVE STATUS RELAY
FAR	FIRE ALARM RELAY
LL	LOW LIMIT SWITCH (MANUAL RESET)
HS	HIGH STATIC SWITCH (MANUAL RESET)
VFD	VARIABLE FREQUENCY DRIVE
ODC SS	START/STOP DIGITAL OUTPUT FROM ODC PANEL
TDR	TIME DELAY RELAY

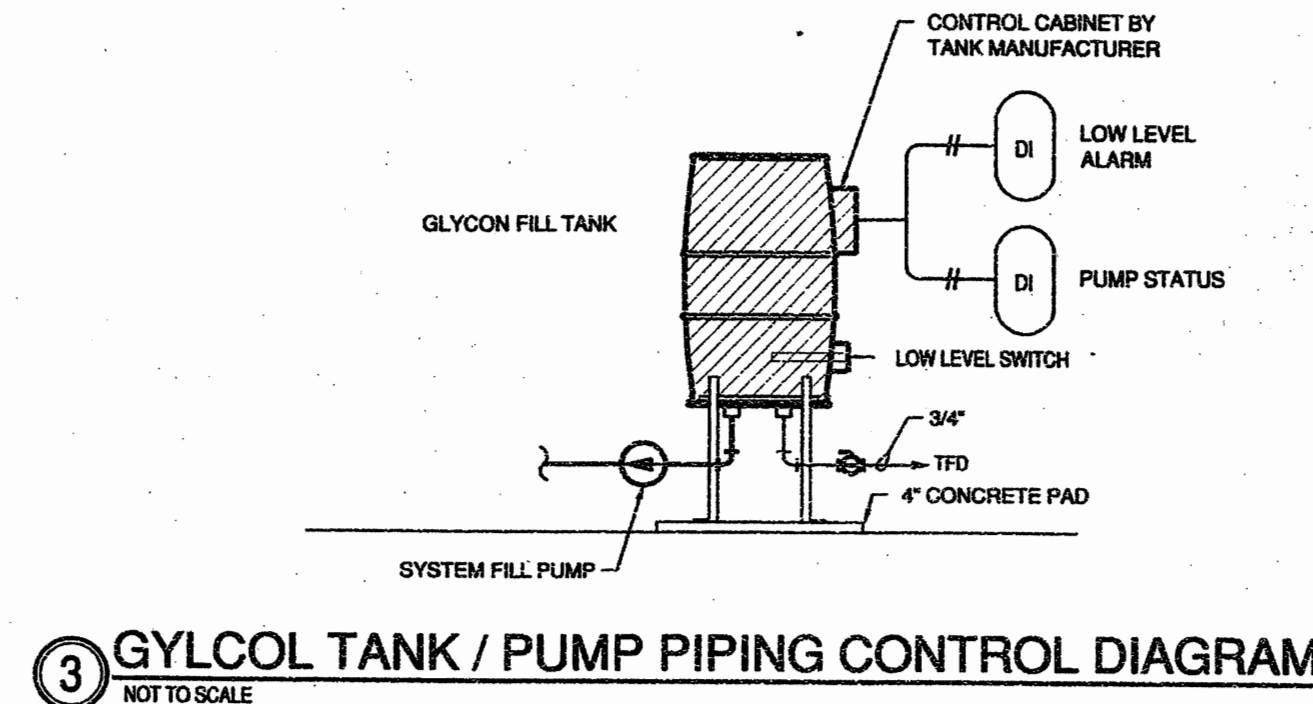
CONTROLS LEGEND

	DOD PANEL ANALOG INPUT
	DOD PANEL ANALOG OUTPUT
	DOD PANEL DIGITAL INPUT
	DOD PANEL DIGITAL OUTPUT
	CONTROL WIRING
	EMS TRUNK CABLEING
	EMS LAN CABLEING
	FUME HOOD LAN CABLEING
	VFD LAN CABLEING
	THERMOSTAT CABLEING
	PNEUMATIC AIR LINE
LC	LABORATORY CONTROLLER
DOD PANEL	DIRECT DIGITAL CONTROL PANEL
TEC	TERMINAL EQUIPMENT CONTROLLER
FT	FUME HOOD CONTROLLER
TH	"INTELLIGENT" THERMOSTAT
ES	END SWITCH

GLYCOL FILL TANK - SYSTEM SEQUENCE OF OPERATION:

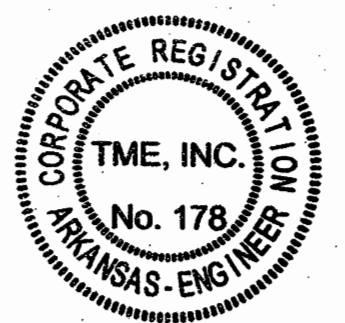
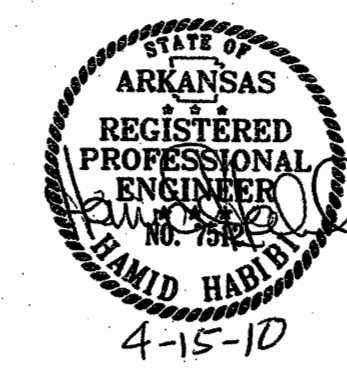
GLYCOL FILL TANK:

DDC PANEL MONITORS AND ALARMS LOW LEVEL AND PUMP OPERATION.



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BOILERS (OWNER FURNISHED, CONTRACTOR INSTALLED)										ELECTRICAL (OWNER FURNISHED CONTRACTOR INSTALLED)									
DESIGNATION	REFERENCE PRODUCT	LOCATION	TYPE	FUEL	NAT GAS INPUT (MBH)	HEATING OUTPUT (MBH)	GPM	EWI / LWT (°F)	OPERATING WEIGHT (LBS)	PUMP MOTOR (HP)	VOLTS/PHASE	CONTROLS (AMPS/VOLTS)	REMARKS						
B-3	RAYPACK MODE MVB-TYPE H-2004	PENTHOUSE	ATMOSPHERIC COPPER TUBE	NAT. GAS	2004	1679	112	150 / 180	1200	1/2	460/3	5 / 120	FURNISHED WITH INTEGRAL PUMP & TEMP-TRACK CONTROLLER FOR BOILER SEQUENCING.						
B-4	RAYPACK MODE MVB-TYPE H-2004	PENTHOUSE	ATMOSPHERIC COPPER TUBE	NAT. GAS	2004	1679	112	150 / 180	1200	1/2	460/3	5 / 120	FURNISHED WITH INTEGRAL PUMP & TEMP-TRACK CONTROLLER FOR BOILER SEQUENCING.						
B-5	RAYPACK MODE MVB-TYPE H-2004	PENTHOUSE	ATMOSPHERIC COPPER TUBE	NAT. GAS	2004	1679	112	150 / 180	1200	1/2	460/3	5 / 120	FURNISHED WITH INTEGRAL PUMP & TEMP-TRACK CONTROLLER FOR BOILER SEQUENCING.						

PUMPS (OWNER FURNISHED, CONTRACTOR INSTALLED)										(OWNER FURNISHED CONTRACTOR INSTALLED)									
DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	WATER FLOW RATE (GPM)	TOTAL HEAD (FT. WATER)	ROTATION (RPM)	EFFICIENCY (%)	MOTOR SIZE BHP	MHP	VOLTS	PHASE	REMARKS						
GHWP-11	PACO 3085	PENTHOUSE	PRE HEAT COIL	END SUCTION FRAME MTD.	330	80	1750	74.5	-	15	460	3	FURNISH WITH OSHA GUARD, SPARE SEAL, ONE PUMP IS STAND-BY						
GHWP-12	PACO 3085	PENTHOUSE	PRE HEAT COIL	END SUCTION FRAME MTD.	330	80	1750	74.5	-	15	460	3	FURNISH WITH OSHA GUARD, SPARE SEAL, ONE PUMP IS STAND-BY						

AIR & DIRT SEPARATOR						
DESIGNATION	REFERENCE PRODUCT	SERVES	TYPE	SYSTEM (GPM)	MAX. WATER PRESSURE DROP (FT. WATER)	REMARKS
AS-1	SPIROTHERM	GLYCOL PRE HEATING LOOP	DIRT & AIR	330	10.0	-

EXPANSION TANKS														
DESIGNATION	REFERENCE PRODUCT	SERVES	TYPE	MAX. SYSTEM VOLUME (GAL.)	MINIMUM TEMPERATURE (°F)	MAXIMUM TEMPERATURE (°F)	INITIAL TANK AIR PRESSURE (PSIG)	MAXIMUM PRESSURE (PSIG)	MINIMUM TANK SIZE (GAL.)	MINIMUM ACCEPTANCE (GAL.)	TANK DIAMETER (IN.)	TANK LENGTH (IN.)	REMARKS	
ET-1	WHEATLEY WFA-140	HTG WATER LOOP	BLADDER TYPE	700	50	180	12	65	36	36	20	40	FULL ACCEPTANCE	

PRE HEAT COIL - HOT WATER (OWNEER FURNISHED, CONTRACTOR INSTALLED)										(OWNEER FURNISHED CONTRACTOR INSTALLED)									
DESIGNATION	REFERENCE PRODUCT	SERVES	HEATING CAPACITY (MBH) / COIL	AIR FLOW RATE (CFM) / COIL	FACE VELOCITY (FPM)	AIR PRESSURE DROP (IN. WATER)	AIR EAT / LAT (°F)	WATER FLOW RATE (GPM) / COIL	WATER PRESSURE DROP (FT. WATER)	EWI / LWT (°F)	MINIMUM ROWS	DIMENSION H X L (INCHES)	NO. OF COILS	FLUID	REMARKS				
PHC-1	HEATCRAFT SMH0801C	ERU-1	759.0	17,500	588	0.10	0 / 40	55	11.0	180 / 150	2	33 X 130	2	30% PROPYLENE GLYCOL					
PHC-2	HEATCRAFT SMH0801C	ERU-2	759.0	17,500	588	0.10	0 / 40	55	11.0	180 / 150	2	33 X 130	2	30% PROPYLENE GLYCOL					
PHC-3	HEATCRAFT SMH0801C	ERU-3	759.0	17,500	588	0.10	0 / 40	55	11.0	180 / 150	2	33 X 130	2	30% PROPYLENE GLYCOL					

OSA FILTER RACK / FILTERS											
DESIGNATION	REFERENCE PRODUCT	FILTER FRAME	SERVES	MAXIMUM AIRFLOW (CFM)	MAXIMUM VELOCITY (FPM)	PRESSURE DROP INITIAL / FINAL (IN. WATER)	RATED EFFICIENCY (%)	SIZE (IN X IN X IN)	HOUSING (HIGH X WIDE)	REMARKS	
PRE FILTER RACK/FILTERS	SMITH MIST-ELIMINATOR	PREHEAT COIL	PREHEAT COILS	35,000	450	0.10 / 0.35	20 - 25	24 x 24 & 12 x 24	15 FT. x 6 FT.	VERIFY THE EXACT DIMENSION OF FILTER RACK. GALVANIZED STEEL, MIST ELIMINATOR, 24 GAUGE FRAME	

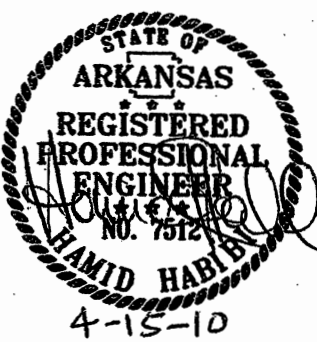
FURNISH EACH FILTER BANK WITH DWYER #2001, 0-1" OR 0-3" DIFFERENTIAL PRESSURE GAGE

VARIABLE FREQUENCY DRIVES											
DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	APPLICATION	RATED HORSEPOWER	EFFICIENCY (%)	VOLTS	PHASE	MAX. OUTPUT CURRENT (AMPS)	REMARKS
GHWP-11-VFD	ABB	PENTHOUSE	GHWP-11	PWM	VARIABLE TORQUE	15	96	460	3		FURNISH W/ DISCONNECT SWITCH.
GHWP-12-VFD	ABB	PENTHOUSE	GHWP-12	PWM	VARIABLE TORQUE	15	96	460	3		

glycol tank and pump											
DESIGNATION	REFERENCE PRODUCT	SERVES	TANK VOLUME (GAL.)	TANK MATERIAL	PERCENT OF SOLUTION (%)	GLYCOL TYPE	VOLTS	PHASE	WATER FLOW RATE (GPM)	PUMP PRESSURE (PSI)	REMARKS
GTP-1	ADVANTAGE CONTROL MODEL AGF-1C	BOILERS B-3, B-4, AND B-5	30	POLYETHYLENE	30%	PROPYLENE GLYCOL	120	1	6.1	60	PROVIDE WITH DRY CONTACT FOR FIRE ALARM

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—HWS—	HEATING WATER SUPPLY	ⓘ	THERMOSTAT
—HWR—	HEATING WATER RETURN	—H—	THERMOSTAT WIRING
—GHWS—	GLYCOL HEATING WATER SUPPLY	Ⓜ	HUMIDISTAT
—GHR—	GLYCOL HEATING WATER RETURN	ⓉS	TEMPERATURE SENSOR
—CHS—	CHILLED WATER SUPPLY	Ⓛ	GPM FLUID FLOW METER
—CHR—	CHILLED WATER RETURN	SA	SUPPLY AIR DUCT
—D—	CONDENSATE DRAIN	RA	RETURN AIR DUCT
—	BALL VALVE	EH	EXHAUST AIR DUCT
—	BUTTERFLY VALVE (LEVER HANDLE)	CFM	CUBIC FEET PER MINUTE
—	BUTTERFLY VALVE (GEAR OPERATOR)	EMS	ENERGY MANAGEMENT SYSTEM
—	GATE VALVE	ATC	AUTOMATIC TEMP CONTROLS
—	OS & Y GATE VALVE	CO2	CARBON DIOXIDE
—	GLOBE VALVE	PPM	PARTS PER MILLION
—	CHECK VALVE (SWING CHECK)	⌀	ROUND DIAMETER
—	CHECK VALVE (BUTTERFLY CHECK)	⬡	FLAT OVAL (MAJOR MINOR)
—	PRESSURE REDUCING VALVE	⌢	SHORT (1/4) RADIUS ELL (RECTANGULAR OR ROUND) CENTERLINE RADIUS = 1d
—	FLOW LIMITING VALVE	⌢	LONG (1.5d) RADIUS ELL (ROUND OR OVAL) CENTERLINE RADIUS = 1.5d
—	CALIBRATED BALANCING VALVE	⌢	ELL WITH TURNING VANES
—	VALVE AT RISER	—	STREAMLINE TAP (RECTANGULAR)
—	STRAINER W/ DRAIN VALVE	—	STREAMLINE TAP (ROUND)
—	UNION	—	CONICAL TAP
—	AIR TERMINAL / FAN COIL UNIT/HOT WATER RETURN/ CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC	—	MANUAL VOLUME DAMPER
—	CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC	—	MOTORIZED VOLUME DAMPER
—	CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC	—	FIRE DAMPER (FD)
—	CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC	—	SMOKE DAMPER
—	FLEXIBLE PIPE CONNECTOR	—	RECTANGULAR DUCT (WIDTH/DEPTH)
—	METAL BELLGOWN PUMP CONNECTOR	—	ROUND DUCT OFFSET
—	AIR VENT (A - AUTO, H - HAND)	—	CHANGE IN ELEVATION (R - RISE, F - FALL)
—	PRESSURE AND TEMPERATURE TAP	—	FLEXIBLE DUCT
—	PRESSURE GAUGE	—	SUPPLY DUCT UP
—	PRESSURE GAUGE W/ SIPHON	—	RETURN DUCT UP
—	THERMOMETER W/ INSERTION WELL	—	EXHAUST DUCT UP
—	ANCHOR	—	SUPPLY DUCT DOWN
—	PIPE GUIDE	—	RETURN DUCT DOWN
—	FLANGE	—	EXHAUST DUCT DOWN
—	ELBOW, TURNED UP	—	CEILING DIFFUSER
—	ELBOW, TURNED DOWN	—	RETURN AIR GRILLE
—	RISE OR DROP IN PIPE	—	EXHAUST AIR GRILLE
—	TEE, SIDE CONNECTION	—	CAPPED OUTLET
—	TEE, OUTLET UP	—	CAPPED PIPE
—	TEE, OUTLET DOWN	—	CONCENTRIC REDUCER
—	CONCENTRIC REDUCER	—	ECCENTRIC REDUCER
—	STEAM TRAP (DRIP LEG)	—	STEAM TRAP
—	STEAM TRAP	—	DIRECTION OF PITCH
—	DIRECTION OF PITCH	—	PIPE TO FLOOR DRAIN
—	PIPE TO FLOOR DRAIN		



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M5.01

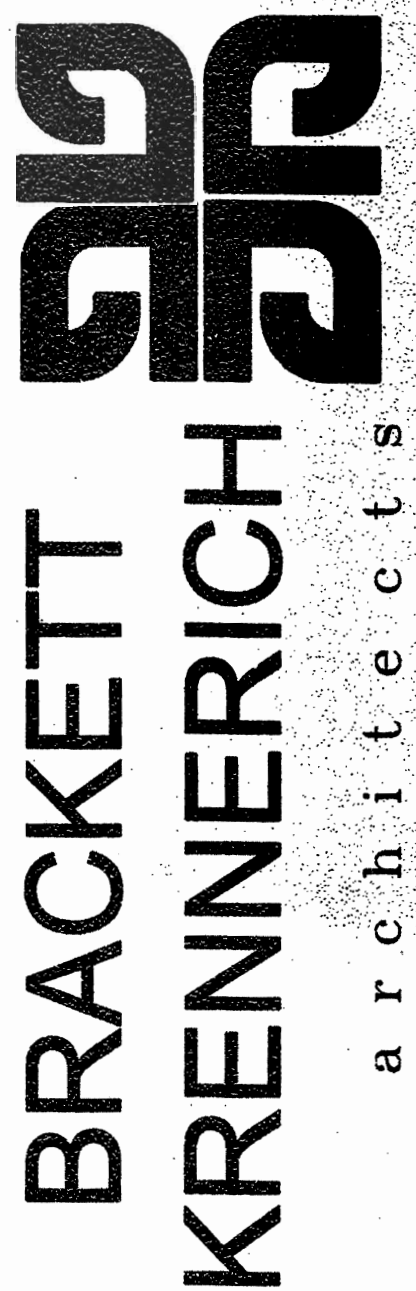
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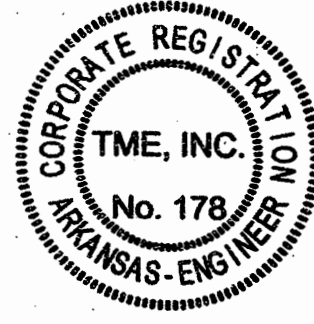
BRACKETT
KRENNERICH
architects

KEYED NOTES:

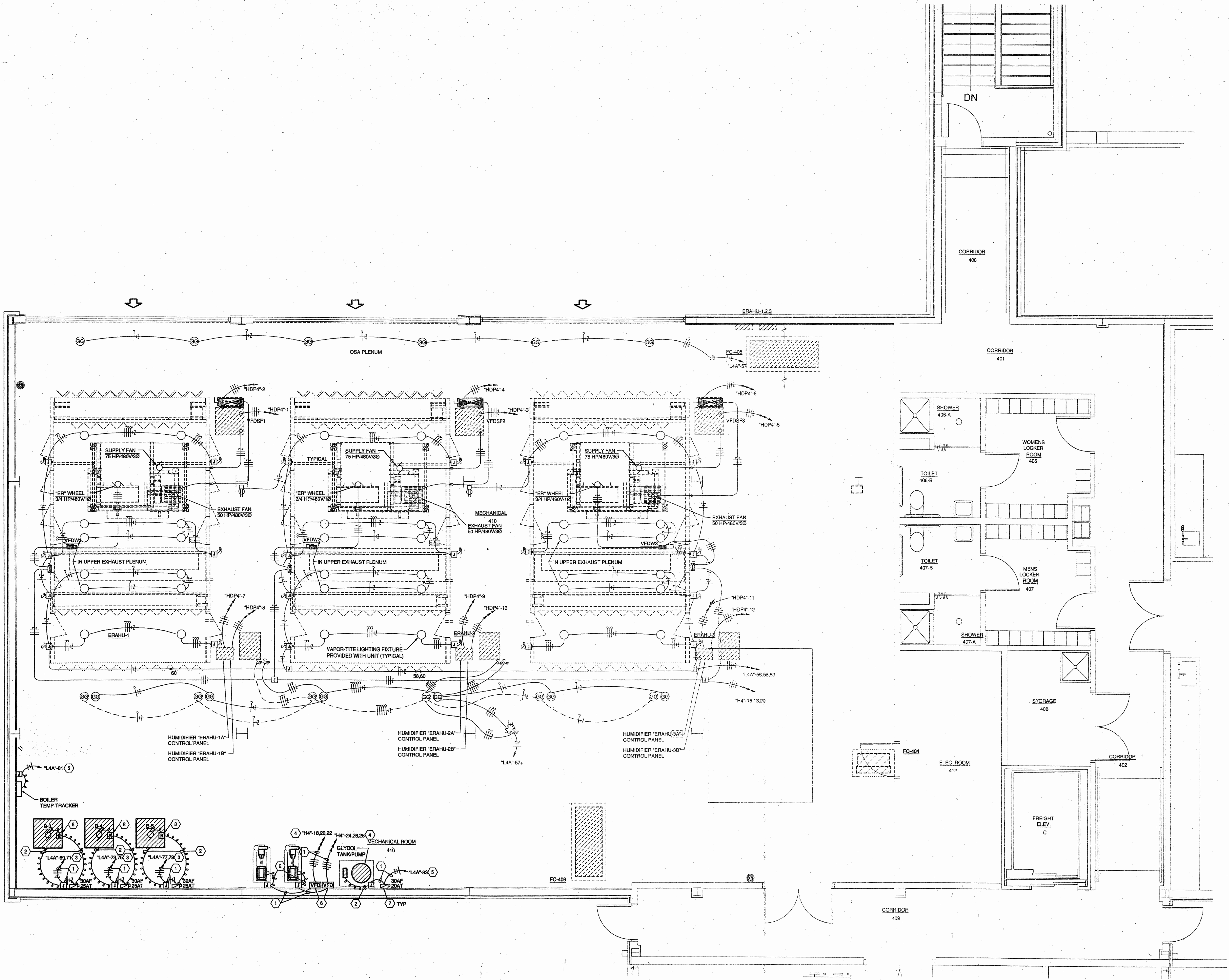
- 1 #10 CONDUCTORS, 3/4" GRS.
- 2 #10 CONDUCTORS, 3/4" SEALTITE.
- 3 INSTALL (2) 120V 30A 1P BREAKERS, ONE EACH FOR (2) CIRCUITS IN DESIGNATED EXISTING PANEL.
- 4 INSTALL (1) 480V 30A 3P BREAKER IN DESIGNATED PANEL.
- 5 INSTALL (1) 120V 30A 1P BREAKER IN DESIGNATED PANEL.
- 6 VFD WITH DISCONNECT BY DIV 15.
- 7 FUSED DISCONNECT 30A FRAME, FUSED (T) AS NOTED.
- 8 [R] IS RELAY FOR MOTOR CONTROL FURNISHED WITH BOILER BY DIV 15.
- 9 INSTALL (1) 120V 20A 1P SHUNT TRIP BREAKER.



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fourth floor mechanical room - electrical plan
SCALE: 1/4" = 1'-0"