



# BRYANT & STRATTON

S.A. PROJECT # 14082.07  
DATE: 06-29-2021

1259 CENTRAL AVE. ALBANY, NY 12205

## ARCHITECT:

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(716) 691-0900

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### EBS ENGINEERING, PC

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## CONSTRUCTION MANAGER:

### P.A.T. CONSTRUCTION MANAGEMENT CORP.

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WILLIAMSVILLE, NY 14221

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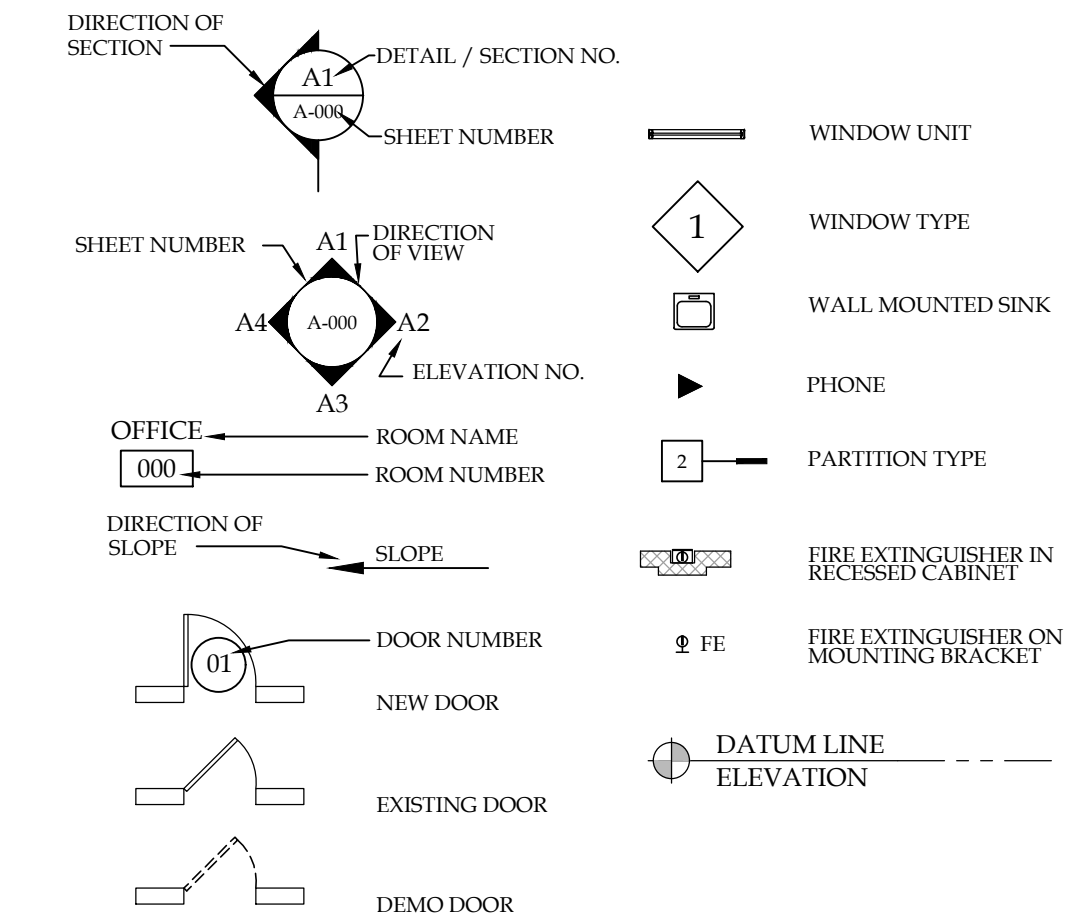
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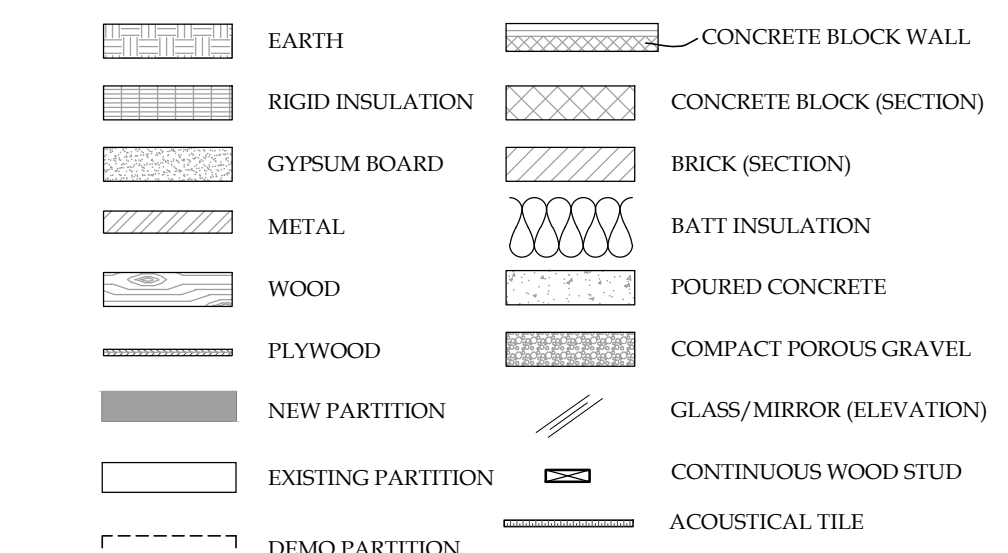
## ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR	N.I.C.	NOT IN CONTRACT
ACT.	ACCOMPLISH	N.T.S.	NOT TO SCALE
A.C.	AIR CONDITION	NOM.	NOMINAL
ALL.	ALLIANCE	NO.	NUMBER
ALUM.	ALUMINUM		
APPROX.	APPROXIMATE		
ARCH.	ARCHITECTURAL		
AUTO.	AUTOMATIC		
BM.	BEAM	O.C.	ON CENTER
BRG.	BEARING	OPNG.	OPENING
B.M.	BENCH MARK	OPPH.	OPPOSITE HAND
BLK.	BLOCK	OH.	OVERHEAD
BLKG.	BLOCKING		
BD.	BOARD	PMBC.	PREENGINEERED METAL BUILDING CONTRACTOR
BDT.	BOITTIME	PNT.	PAINT (TD)
BRK.	BRICK	PNL.	PANEL
BRCK.	BRICK EXPANSION JOINT	P.D.	PAPER TOWEL DISPENSER
B.E.J.	BRICK COURSE	P.F.R.	PAPER TOWEL RECEPTER
BLDG.	BUILDING	PVMT.	PAVEMENT
BRK.	BUILT-UP ROOFING	PRG.	PRG BOARD
		PLAS.	PLASTER
CLG.	CEILING	P.LAM.	PLASTIC LAMINATE
CAB.	CABINET	PL.	PLATE
CPT.	CARPET	POL.	POLISHED
C.S.W.R.	CASEWORK	PWD.	PLYWOOD
C.B.	CATCH BASIN	PT.	POINT
CEM.	CEMENT	PT.	POUNDS PER SQ. INCH
CT.	CERAMIC TILE	PSF.	POUNDS PER SQ. FOOT
CHBD.	CHALK BOARD	P.F.	POWER PANEL
CLF.	CLIP	PRE. FAB.	PREFABRICATED
COL.	COLUMN	PREF.	PREFINISHED
CONC.	CONCRETE	PROF.	PROTECTION
CMU.	CONCRETE MASONRY UNIT	PROP.	PROPERTY LINE
CONT.	CONTINUOUS		
CONTR.	CONTRACTOR	QT.	QUARRY TILE
CT.	CONTROL JOINT		
C.C.	CORNER GUARD		
CRS.	COURSE		
		RAD.	RADIUS
DET.	DETAIL	R.W.L.	RAIN WATER LEADER
DIA.	DIAMETER	RECPT.	RECEPTACLE, ELECTRIC
DIM.	DIMENSION	RECS.	RECESS
DISP.	DISPENSER	REFR.	REFRIGERATOR
DN.	DOWN	REIN.	REINFORCE (D) (ING)
DS.	DOWNSCOUT	REQD.	REQUIRED
DWG.	DRAWING	RES.	RECESS (ED)
D.F.	DRINKING FOUNTAIN	R.C.P.	REFLECTED CEILING PLAN
DIFF.	DIFFUSER	RET.	RETURN
		RA.	RETURN AIR
EA.	EACH	REV.	REVISION
EIPS.	EXTERIOR INSULATION & FINISH SYSTEM	R.H.	RIGHT HAND
ELC.	ELECTRICAL	ROW.	RIGHT OF WAY
EPNL.	ELECTRIC PANEL	R.	RISER
EL.	ELEVATOR	R.D.	ROOF DRAIN
EL.EV.	ELEVATION	REG.	ROOFING
EQ.	EQUAL	RM.	ROOM
EX.	EXISTING	RND.	ROUND
EXIST.	EXISTING		
EXP. JT.	EXPANSION JOINT		
		SOL.	SADDLE
FB.	FACE BRICK	STG.	SEATING
FIN.	FINISH (ED)	SHHH.	SHEATHING
F.A.	FIRE ARM	SHIT.	SHIRT
FHC.	FIRE EXTINGUISHER CABINET	SHR.	SIMILAR
FHC.	FIRE HOSE CABINET	SIM.	SIMILAR
F.P.	FIRE PROOFING	SPKR.	SPEAKER
FL.	FLOOR	SPEC.	SPECIFICATIONS
F.D.	FLOOR DRAIN	SQ.	SQUARE
FOOT.	FOOT	SST.	STAINLESS STEEL
F.W.C.	FACE WALL COVERING	SP.	STAND PIPE
FTC.	FOOTING	STD.	STANDARD
FDN.	FOUNDATION	SD.	STORM DRAIN
FUR.	FURRING	S.C.T.	STRUCTURAL GLAZED TILE
		STRUCT.	STRUCTURAL
GAL.	GALLON	SUSP.	SUSPENDED
G.C.	GENERAL CONTRACTOR	SW.	SWITCH
GL.	GLASS	SWBD.	SWITCH BOARD
G.B.	GRAB BAR	SV.	SHEET VINYL
G.W.B.	GYP. GYPSUM WALL BOARD		
GYP.	GYP.		
HDW.	HARDWARE	T.B.	TACKBOARD
HD. WD.	HARDWOOD	TEL.	TELEPHONE
HVAC.	HEATING, VENTILATING, & AIR CONDITIONING	TEMP.	TEMPERATURE
		TEX.	TEXTURE
HT.	HEIGHT	THR.	THICK (NESS)
H.C.	HOLLOW CORE	THR.	THRESHOLD
HM.	HOLLOW METAL	TP.	TOILET PAPER HOLDER
HORIZ.	HORIZONTAL	T/O.	TOP OF
HB.	HOSE BIB	TB.	TOWEL BAR
H.W.	HOT WATER	TYP.	TYPICAL
INSUL.	INSULATE (D) (ION)	U.C.L.	UNDER CABINET LIGHT
INS. GL.	INSULATED GLASS	UR.	UNDERCUT
INV.	INVERT		
JAN.	JANITOR		
JT.	JOINT		
KIT.	KITCHEN	V.T.R.	VENT THRU ROOF
KN.	KNOCK OUT	VENT.	VENTILATOR
RO.	ROOF	VERT.	VERTICAL
		VEST.	VESTIBULE
LAM.	LAMINATED	V.C.T.	VINYL COMPOSITE TILE
LAV.	LAVATORY	V.F.	VERIFY IN FIELD
LH.	LEFT HAND	V.W.C.	VINYL WALL COVERING
LGT.	LENGTH		
LGT.	LIGHT		
L.F.	LINEAR FEET	WSCT.	WAINSCOT
LTL.	LINE TIE	WS.	WEATHER STRIP
LD.	LINE LOAD	WT.	WEIGHT
LLH.	LONG LEG HORIZONTAL	WWF.	WELDED WIRE FABRIC
LLV.	LONG LEG VERTICAL	W.C.D.F.	WHEELCHAIR DRINKING FOUNTAIN
L.M.F.	LIGHT GAUGE METAL FRAMING	W.	WITH
L.V.R.	LOUVER	W/O.	WITHOUT
L.F.	LOW POINT	WD.	WOOD
MACH.	MACHINE		
M.H.	MACHINE		
MFR.	MANUFACTURE		
MAS.	MASONRY		
M.O.	MASONRY OPENING		
MATL.	MATERIAL		
MAX.	MAXIMUM		
MECH.	MECHANICAL		
MEMB.	MEMBRANE		
MET.	METAL		
M.T.P.	METAL TOILET PARTITION		
MIN.	MINIMUM		
MISC.	MISCELLANEOUS		
MULL.	MULLION		

## DRAFTING SYMBOLS



## MATERIAL SYMBOLS



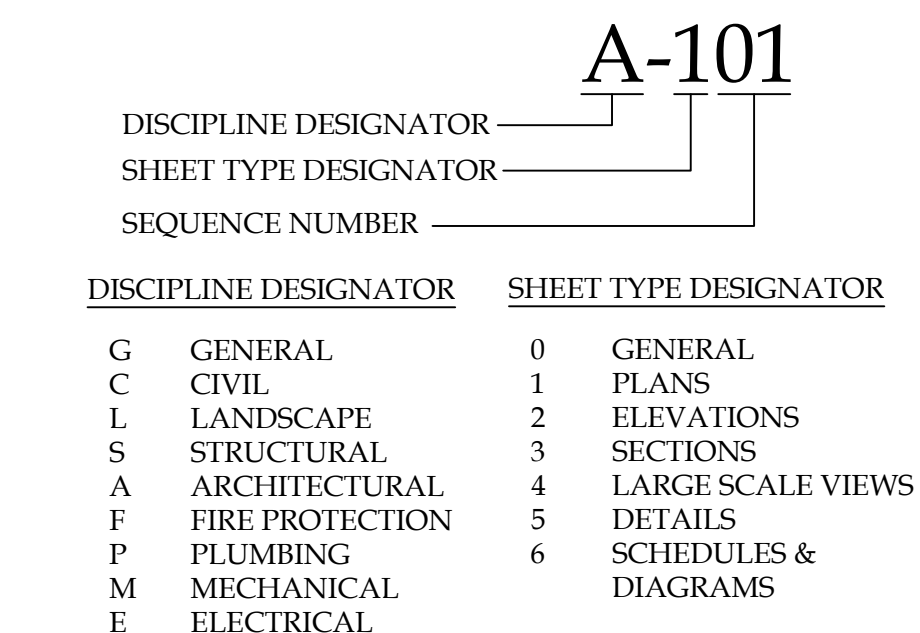
## BUILDING DATA

OCCUPANCY CLASSIFICATION: B  
CONSTRUCTION TYPE: IIB

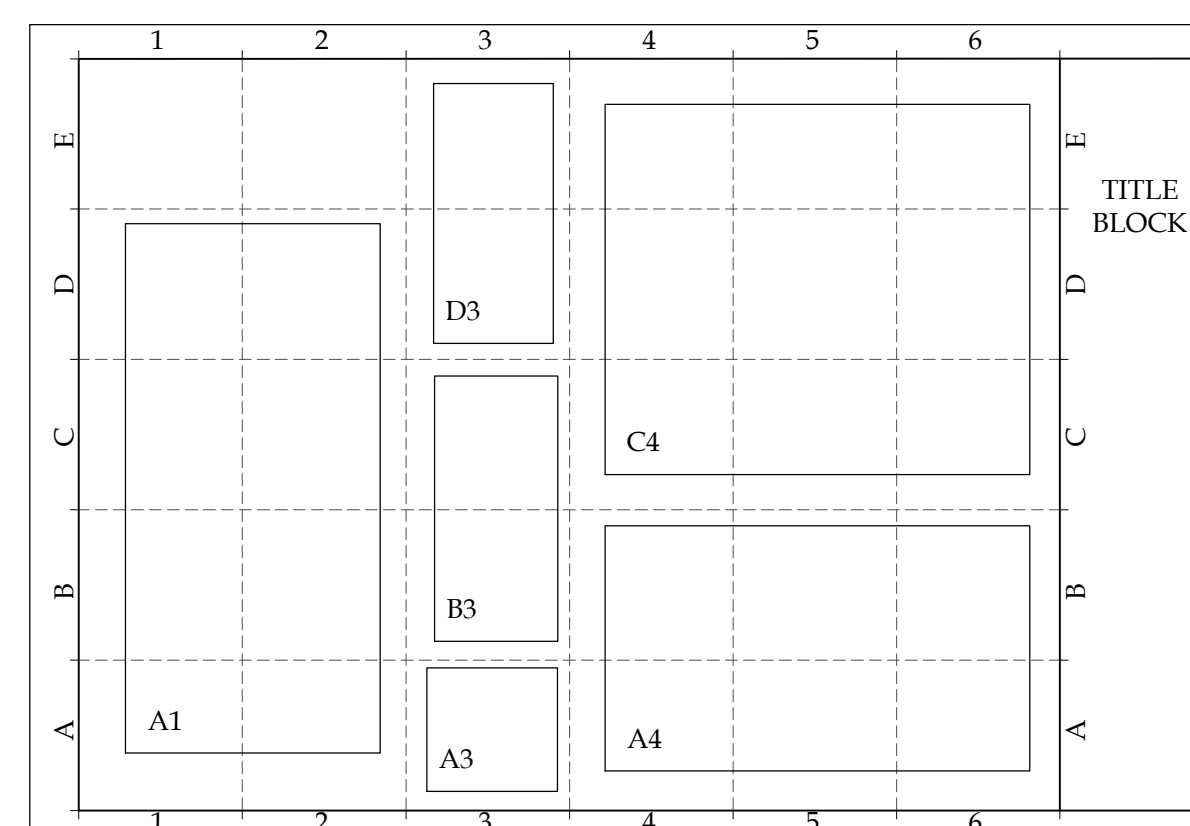
## ISSUE

2021-06-29: ISSUED FOR BID

## SHEET IDENTIFICATION LOGIC



## DRAWING AREA LOGIC

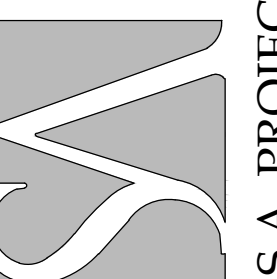


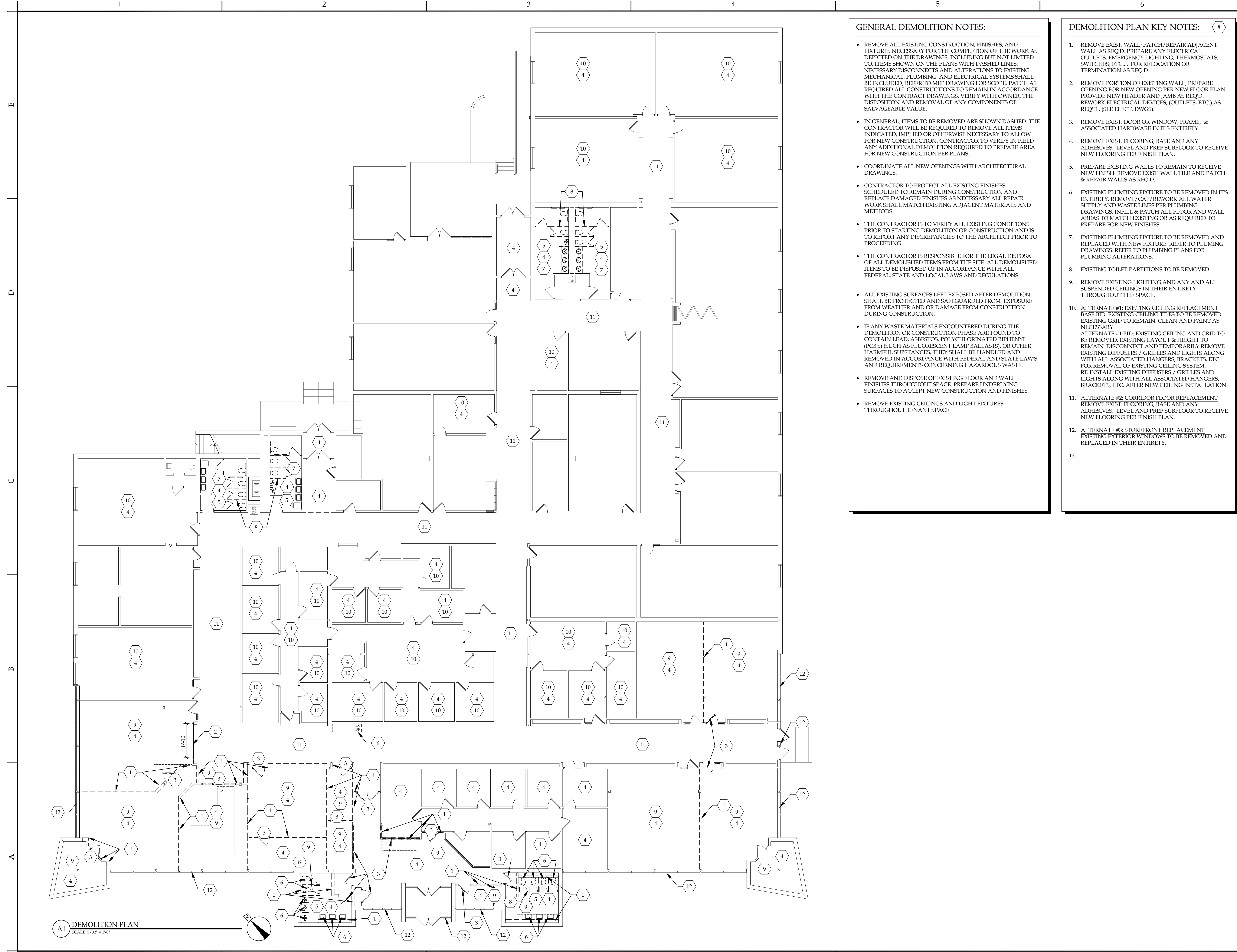
BRYANT & STRATTON

1259 CENTRAL AVE. ALBANY, NY 12205

SA PROJECT TEAM: PRINCIPAL: P.Silvestri PROJ. ARCHITECT: S.Hunt JOB CAPTAIN: INTERIORS: N.Catuzza

S.A. PROJECT # 14082.07  
DATE: 05-13-2021





A1 DEMOLITION PLAN  
SCALE: 3/32" = 1'-0"

**GENERAL DEMOLITION NOTES:**

- REMOVE ALL EXISTING CONSTRUCTION, FINISHES, AND FIXTURES NECESSARY FOR THE COMPLETION OF THE WORK AS DEPICTED ON THE DRAWINGS, INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS SHALL BE INCLUDED. REFER TO MEP DRAWING FOR SCOPE. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. VERIFY WITH OWNER, THE DISPOSITION AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- IN GENERAL, ITEMS TO BE REMOVED ARE SHOWN DASHED. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL ITEMS INDICATED, IMPLIED OR OTHERWISE NECESSARY TO ALLOW FOR NEW CONSTRUCTION. CONTRACTOR TO VERIFY IN FIELD ANY ADDITIONAL DEMOLITION REQUIRED TO PREPARE AREA FOR NEW CONSTRUCTION PER PLANS.
- COORDINATE ALL NEW OPENINGS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROTECT ALL EXISTING FINISHES SCHEDULED TO REMAIN DURING CONSTRUCTION AND REPLACE DAMAGED FINISHES AS NECESSARY. ALL REPAIR WORK SHALL MATCH EXISTING ADJACENT MATERIALS AND METHODS.
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION OR CONSTRUCTION AND IS TO REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL DEMOLISHED ITEMS FROM THE SITE. ALL DEMOLISHED ITEMS TO BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.
- ALL EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION SHALL BE PROTECTED AND SAFEGUARDED FROM EXPOSURE FROM WEATHER AND OR DAMAGE FROM CONSTRUCTION DURING CONSTRUCTION.
- IF ANY WASTE MATERIALS ENCOUNTERED DURING THE DEMOLITION OR CONSTRUCTION PHASE ARE FOUND TO CONTAIN LEAD, ASBESTOS, POLYCHLORINATED BIPHENYL (PCBS) (SUCH AS FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES, THEY SHALL BE HANDLED AND REMOVED IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- REMOVE AND DISPOSE OF EXISTING FLOOR AND WALL FINISHES THROUGHOUT SPACE. PREPARE UNDERLYING SURFACES TO ACCEPT NEW CONSTRUCTION AND FINISHES.
- REMOVE EXISTING CEILINGS AND LIGHT FIXTURES THROUGHOUT TENANT SPACE

**DEMOLITION PLAN KEY NOTES:**

- REMOVE EXIST. WALL, PATCH/REPAIR ADJACENT WALL AS REQ'D. PREPARE ANY ELECTRICAL OUTLETS, EMERGENCY LIGHTING, THERMOSTATS, SWITCHES, ETC... FOR RELOCATION OR TERMINATION AS REQ'D
- REMOVE PORTION OF EXISTING WALL, PREPARE OPENING FOR NEW OPENING PER NEW FLOOR PLAN. PROVIDE NEW HEADER AND JAMB AS REQ'D. REWORK ELECTRICAL DEVICES, (OUTLETS, ETC.) AS REQ'D., (SEE ELEC. DWGS).
- REMOVE EXIST. DOOR OR WINDOW, FRAME, & ASSOCIATED HARDWARE IN ITS ENTIRETY.
- REMOVE EXIST. FLOORING, BASE AND ANY ADHESIVES. LEVEL AND PREP SUBFLOOR TO RECEIVE NEW FLOORING PER FINISH PLAN.
- PREPARE EXISTING WALLS TO REMAIN TO RECEIVE NEW FINISH. REMOVE EXIST. WALL TILE AND PATCH & REPAIR WALLS AS REQ'D.
- EXISTING PLUMBING FIXTURE TO BE REMOVED IN ITS ENTIRETY. REMOVE/CAP/REWORK ALL WATER SUPPLY AND WASTE LINES PER PLUMBING DRAWINGS. INELL & PATCH ALL FLOOR AND WALL AREAS TO MATCH EXISTING OR AS REQUIRED TO PREPARE FOR NEW FINISHES.
- EXISTING PLUMBING FIXTURE TO BE REMOVED AND REPLACED WITH NEW FIXTURE. REFER TO PLUMBING DRAWINGS. REFER TO PLUMBING PLANS FOR PLUMBING ALTERATIONS.
- EXISTING TOILET PARTITIONS TO BE REMOVED.
- REMOVE EXISTING LIGHTING AND ANY AND ALL SUSPENDED CEILINGS IN THEIR ENTIRETY THROUGHOUT THE SPACE.
- ALTERNATE #1: EXISTING CEILING REPLACEMENT**  
BASE BID: EXISTING CEILING TILES TO BE REMOVED. EXISTING GRID TO REMAIN, CLEAN AND PAINT AS NECESSARY.  
ALTERNATE #1 BID: EXISTING CEILING AND GRID TO BE REMOVED. EXISTING LAYOUT & HEIGHT TO REMAIN. DISCONNECT AND TEMPORARILY REMOVE EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. FOR REMOVAL OF EXISTING CEILING SYSTEM. RE-INST ALL EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. AFTER NEW CEILING INSTALLATION
- ALTERNATE #2: CORRIDOR FLOOR REPLACEMENT**  
REMOVE EXIST. FLOORING, BASE AND ANY ADHESIVES. LEVEL AND PREP SUBFLOOR TO RECEIVE NEW FLOORING PER FINISH PLAN.
- ALTERNATE #3: STOREFRONT REPLACEMENT**  
EXISTING EXTERIOR WINDOWS TO BE REMOVED AND REPLACED IN THEIR ENTIRETY.
- 

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**Bryant & Stratton**  
1259 Central Ave.  
Albany, NY 12205

ISSUE:  
2021-06-29: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**DEMOLITION PLAN**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: AD-101

## GENERAL NOTES

1. DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALE.
2. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE NEW YORK STATE BUILDING CODES, OSHA STANDARDS AND FIRE SAFETY CODE / RELEVANT SECTIONS OF THE N.F.P.A. & ANY LOCAL CODES BEING MORE RESTRICTIVE THAN THE MINIMUMS LISTED.
3. CONSTRUCTION MEANS, METHODS, TECHNIQUES AND CRAFTSMANSHIP ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. G.C. SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD. CONTACT ARCHITECT IF MAJOR DISCREPANCIES OCCUR BETWEEN DRAWINGS AND EXISTING CONDITIONS.
4. THE CONTRACTOR IS REQUIRED TO INSPECT THE PROJECT SITE IN ORDER TO DETERMINE THE EXTENT OF THE REQUIRED WORK. THIS INSPECTION SHALL BE COMPLETED PRIOR TO THE SUBMISSION OF ANY PROPOSAL TO COMPLETE THIS PROJECT. INSPECTION TIMES SHALL BE COORDINATED WITH THE OWNER.
5. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL INFORMATION ON THE DRAWINGS.
6. ALL DIMENSIONS SHOWN FOR EXISTING STRUCTURES ARE BASED ON RECORD DRAWINGS. THE CONTRACTOR IS ADVISED THAT SAID DRAWINGS MAY NOT ACCURATELY REFLECT AS BUILT CONDITIONS. ACCURATE FIELD MEASUREMENTS SHOULD BE MADE PRIOR TO ORDERING ANY PREFABRICATED MATERIALS. DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND SHALL BE REFLECTED ON THE CONTRACTORS SHOP DRAWINGS.
7. THE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS FOR THIS PROJECT WILL BE COMPLETED TO THE SCOPE OF THE PROJECT IN COMPLIANCE WITH THE OWNER AND DESIGN TEAM. ANY CHANGES TO THESE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS WILL ONLY BE DONE BY A CHANGE ORDER THAT IS APPROVED BY THE OWNER'S REPRESENTATIVE.
8. CONSIDERATION WILL NOT BE GRANTED FOR ANY ALLEGED MISUNDERSTANDINGS AS TO THE AMOUNT AND / OR SCOPE OF WORK TO BE PERFORMED. TENDER OF PROPOSAL SHALL CONVEY FULL AGREEMENT TO THE ITEMS, AND CONDITIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SHOULD THE CONTRACTOR FIND DISCREPANCIES OR OMISSIONS IN THE CONSTRUCTION DOCUMENTS OR BE IN DOUBT AS TO THE INTENT THEREOF, THE CONTRACTOR SHALL IMMEDIATELY OBTAIN CLARIFICATION FROM THE ARCHITECT PRIOR TO SUBMITTING A PROPOSAL FOR THE WORK.
9. ALL OWNER SUPPLIED ITEMS WILL BE COORDINATED WITHIN THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULES PRIOR TO COMMENCEMENT OF ANY WORK.
10. THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE WITH THE OWNER FOR ALL BUILDING AND CONSTRUCTION SIGNAGE.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF HIS WORK AND SCHEDULE WITH WORK BEING PERFORMED BY OTHERS AND THE USER/OWNER OF THE BUILDING.
12. THE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK. ANY DISCREPANCIES BETWEEN THE ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR CLARIFICATION PRIOR TO PROCEEDING WITH SAID WORK.
13. DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY INDICATED OTHERWISE.
14. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING SOME, OR THEIR EXACT MEANING, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
15. CONTRACTOR SHALL VERIFY AND ESTABLISH THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES WITHIN THE WORK AREA, AND SHALL COORDINATE WITH THE OWNER AND THE UTILITY COMPANIES PRIOR TO THE START OF THE PROJECT.
16. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO ADEQUATELY PROTECT PERSONAL AND ADJACENT PROPERTY AND TO INSURE SAFETY OF THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.
17. ALL CEILING HEIGHTS AS SHOWN ON DETAILS OR PLANS OR NOTES ARE FROM TOP OF CONCRETE DECK TO FINISH CEILING. USE OF THE TERM ABOVE FINISH FLOOR (A.F.F.) MEANS MEASURED FROM THE TOP OF CONCRETE DECK. CONTRACTOR SHALL ALLOW FOR AND COORDINATE WORK WITH FLOOR FINISH MATERIAL AND INSTALLATION METHOD.
18. PROVIDE INDEPENDENT SUSPENSION FOR ALL LIGHT FIXTURES. SUSPENSION FOR CEILING AND LIGHT FIXTURES SHALL BE INDEPENDENT OF SUSPENSION FOR DUCT WORK.
19. ALL EQUIPMENT AND MATERIALS INSTALLED IN THIS JOB SHALL BE NEW AND FREE OF ANY DEFECTS UNLESS OTHERWISE NOTED.
20. CONTRACTORS SHALL RECORD ALL DEVIATIONS FROM THE DESIGN DOCUMENTS IN THE DRAWINGS, AND PROVIDE A COPY TO THE ARCHITECT UPON THE COMPLETION OF WORK.
21. PROVIDE APPROVED SEPARATION BY MEANS OF COATINGS, GASKETS, OR OTHER EFFECTIVE MEANS TO PREVENT GALVANIC CORROSION BETWEEN ALL DISSIMILAR METALS.
22. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATIONS OF THIS PROJECT TO ADJACENT PROPERTY, UTILITIES, PAVEMENT, LANDSCAPING, STRUCTURES OR IMPROVEMENTS OF ANY KIND. THE GENERAL CONTRACTOR SHALL REPAIR ALL SUCH DAMAGE DUE TO THE CONDITION THEY WERE IN PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES OR BETTER.
23. WHERE IT IS NECESSARY TO INSURE STABILITY, CONTRACTOR IS TO PROVIDE ADDITIONAL ANCHORING AND/OR BLOCKING IN STUD PARTITIONS OR BRACE PARTITIONS ABOVE CEILINGS.
24. CONTRACTOR TO COORDINATE LOCATIONS OF FLOOR DRAINS WITH PLUMBING CONTRACTOR.
25. AUTOMATIC SPRINKLER PROTECTION IS REQUIRED. AUTOMATIC SPRINKLER TO BE CONFIGURED AS REQUIRED FOR NEW CONSTRUCTION. CONTRACTOR TO PROVIDE LAYOUT AND THE MINIMUM REQUIREMENTS FOR THE DESIGN AND INSTALLATION OF AUTOMATIC FIRE SPRINKLER SYSTEM AND EXPOSURE PROTECTION SPRINKLER SYSTEMS, INCLUDING THE CHARACTER AND ADEQUACY OF WATER SUPPLIES AND THE SELECTION OF SPRINKLERS, PIPING, VALVES AND ALL OTHER MATERIALS AND ACCESSORIES IN ACCORDANCE WITH NFPA 13 AND LOCAL BUILDING CODES.
26. ROOM IDENTIFICATION LABELING AND INTERIOR SIGNAGE TO BE COORDINATED WITH TENANT. SIGNAGE SHALL COMPLY WITH ADA REQUIREMENTS.
27. CONTRACTOR SHALL PROVIDE AND INSTALL FIRE EXTINGUISHERS PER CODE, INCLUDING NFPA 10, AND AS DIRECTED BY THE LOCAL FIRE DEPARTMENT THROUGHOUT BUILDING. FIRE EXTINGUISHER CABINETS SHALL NOT PROJECT MORE THAN 4" BEYOND THE FACE OF THE WALL. RECESSED FIRE EXTINGUISHER CABINETS IN FIRE RATED WALLS SHALL HAVE THE SAME FIRE RATING AS THE WALL.
28. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF FINISHED WALL.
29. BEFORE SUBMITTING BID, EXAMINE ALL DRAWINGS RELATED TO THE WORK, BECOME FULLY INFORMED AS TO THE EXTENT AND CHARACTER OF THE WORK OF ALL TRADES AND ITS RELATION TO THE WORK UNDER THE CONTRACT. NO CONSIDERATIONS WILL BE GIVEN FOR ALLEGED MISUNDERSTANDING OF THE MATERIALS TO BE FURNISHED OR THE WORK TO BE DONE.
30. CONTRACTOR SHALL REVIEW AND SUBMIT SHOP DRAWINGS SUFFICIENTLY IN ADVANCE OF THE WORK TO ALLOW PROPER TIME FOR REVIEW. MATERIALS SHALL NOT BE FABRICATED OR DELIVERED TO THE SITE BEFORE THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE.
31. ALL SUBSTITUTE MANUFACTURERS, EQUIPMENT, MATERIALS AND PRODUCTS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COSTS TO ANY AND ALL BUILDING COMPONENTS THAT ARE AFFECTED BY THE SUBSTITUTIONS. ADDITIONAL COSTS INCLUDE ANY REDESIGN THAT IS REQUIRED DUE TO THE SUBSTITUTION.
32. DO NOT SCALE DRAWINGS, THE DIMENSIONS SHOWN ON THE PLANS MAY VARY FROM THE ACTUAL DIMENSIONS IN THE FIELD. IT IS, THEREFORE, IMPERATIVE THAT THE CONTRACTOR, PRIOR TO COMMENCEMENT OF WORK, TAKE EXACT MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE PLANS AND SHOP DRAWINGS. ALL WORKING DRAWINGS PREPARED BY THE CONTRACTOR SHALL INCLUDE A STATEMENT CERTIFYING THAT THOSE DRAWINGS HAVE BEEN PREPARED IN ACCORDANCE WITH THE FIELD MEASURED DIMENSIONS.
33. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE TO NOTIFY THE ARCHITECT WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO COMPLY WITH THE DOCUMENTS. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE AND COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER. RECOMMENDED BY MANUFACTURER.
34. THE LOCATION FOR ALL ITEMS WHEN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE DIAGRAMMATIC. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED AT THE PROJECT AND SHALL HAVE THE APPROVAL OF THE OWNER'S REPRESENTATIVE BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS, THE CONTRACTOR SHALL FURNISH AND INSTALL, WITHOUT ADDITIONAL REMUNERATION, ANY COMPONENT NECESSARY TO COMPLETE THE SYSTEMS IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE.
35. DATA, COMMUNICATION, AND SECURITY SYSTEMS ARE PROVIDED BY THE OWNER'S VENDORS. HOWEVER, THE ELECTRICAL CONTRACTOR SHALL PROVIDE APPROPRIATE WALL BOXES AND CABLE AS REQUIRED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE FINAL LOCATION OF THESE ITEMS WITH THE OWNER'S VENDORS. ADAAG COMPLIANCE SHALL APPLY.
36. MECHANICAL, ELECTRICAL, AND PLUMBING, ARE SCHEMATIC IN NATURE. THEREFORE, IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE ROUTING OF THESE TRADES, AS WELL AS, THE OWNER'S WORK TO ASSURE THAT THESE SYSTEMS DO NOT CONFLICT WITH THE ARCHITECTURAL AND STRUCTURAL ELEMENTS OF THE BUILDING. IF THE GENERAL CONTRACTOR ROUTE THESE ITEMS TO AVOID A CONFLICT, THEN THEY SHALL NOTIFY THE ARCHITECT PRIOR TO STARTING ANY RELATED WORK.
37. CONTRACTOR TO PROTECT ALL NEW WORK DURING CONSTRUCTION AND REPLACE DAMAGED MATERIAL IN KIND.
38. ALL GYPSUM WALL BOARD TO BE TAPED AND SANDED AT INTERSECTION OF CONSTRUCTION (NO. 3" MOLD)
39. PROVIDE CORNER BEAD AT ALL EXPOSED GYPSUM WALL BOARD CORNERS.
40. CONTRACTOR SHALL PROVIDE ALL MATERIALS, FABRICATION, LABOR AND SUPERVISION, ERECTION EQUIPMENT AND APPLIANCES REQUIRED TO INSTALL ALL EQUIPMENT SHOWN ON DRAWINGS AS INDICATED IN THE SPECIFICATIONS.
41. THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND PRODUCTS," UNLESS OTHERWISE NOTED.
42. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PERFORMANCE OF THE CONTRACT.
43. SAVE WORKING CONDITIONS ARE ALL SAFETY REQUIREMENTS ESTABLISHED BY JURISDICTIONAL AGENCIES AND/OR THE OWNER SHALL BE OBSERVED. WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENTS SHALL APPLY. CARE MUST BE EXERCISED TO AVOID ENDANGERING PERSONNEL OR THE STRUCTURE.
44. CONTRACTOR SHALL REMOVE ALL PROPERLY DISPOSE OF ALL DEBRIS FROM SITE AND LEAVE THE WORK AREA BROOM CLEAN ON A DAILY BASIS AND PROVIDE DUMPSTER SERVICE. PLACE DUMPSTERS AS DIRECTED BY THE "OWNER'S REPRESENTATIVE"
45. CONTRACTOR SHALL FURNISH ALL SCAFFOLDING, HOISTING EQUIPMENT AND ANY OTHER EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER.
46. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO INSURE AGAINST DAMAGE TO EXISTING WORK TO REMAIN IN PLACE. ANY DAMAGE TO SUCH WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
47. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND PAYING FOR ALL PERMITS AND APPROVALS NECESSARY FOR THE COMPLETION OF THE PROJECT.
48. ALL NEW MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS LATEST WRITTEN INSTRUCTIONS AND SPECIFICATIONS.
49. ALL FASTENERS INTO PRESSURE TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED OR STAINLESS STEEL AS RECOMMENDED BY MANUFACTURER.

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DRAWING #: **A-001**



604.9.6 Grab Bars. Grab bars shall comply with Section 609. Side wall grab bars complying with Section 604.5.1 located on the wall closest to the water closet, and a rear wall grab bar complying with Section 604.5.2, shall be provided.

604.10 Ambulatory Accessible Compartments. 604.10.1 General. Ambulatory accessible compartments shall comply with Section 604.10.

604.10.2 Size. The minimum area of an ambulatory accessible compartment shall be 60 inches minimum in depth and 36 inches in width.

604.10.3 Doors. Toilet compartment doors, including door hardware, shall comply with Section 406, except if the approach is to the latch side of the compartment door the clearance between the door side of the compartment and any obstruction shall be 42 inches minimum. The door shall be self-closing. A door pull complying with Section 402.2.6 shall be placed near the latch. Compartment doors shall not swing into the required minimum area of the compartment.

604.10.4 Grab Bars. Grab bars with Section 609. Side wall grab bars complying with Section 604.5.1 shall be provided on both sides of the compartment. 604.11 Water Closets and Toilet Compartments for Children's Use.

604.11.1 General. Accessible water closets and toilet compartments primarily for children's use shall comply with Section 604.11.1.

604.11.2 Location. The water closet primarily for children's use shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition. Water closets located in ambulatory accessible toilet compartments specified in Section 604.10 shall be located as specified in Section 604.2.

604.11.3 Clearance. A clearance above the water closet primarily for children's use complying with Section 604.3 shall be provided. 604.11.4 Height. The height of water closet seats primarily for children's use shall be 11 inches minimum and 17 inches maximum above the floor, measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.11.5 Grab Bars. Grab bars for water closets primarily for children's use shall comply with Section 604.5.

604.11.6 Flush Controls. Flush controls primarily for children's use shall be hand operated or automatic. Hand operated flush controls shall comply with Sections 309.2 and 309.4 and shall be installed 36 inches maximum above the floor. Flush controls shall be located on the open side of the water closet.

604.11.7 Dispensers. Toilet paper dispensers primarily for children's use shall comply with Section 609. The outlet of dispensers shall be located within an area 24 inches minimum and 42 inches maximum from the rear wall. The outlet of the dispenser shall be 14 inches minimum and 19 inches maximum above the floor. There shall be a clearance of 1 1/2 inches minimum below the grab bar. Dispensers shall not be of a type that control delivery or do not allow continuous paper flow.

604.11.8 Toilet Compartments. Toilet compartments primarily for children's use shall comply with Sections 604.9 and 604.10, as applicable.

605 Urinals. 605.1 General. Accessible urinals shall comply with Section 605.

605.2 Height and Depth. Urinals shall be of the stall type or of the wall hanging type with the rim at 17 inches maximum above the floor. Wall hanging urinals shall be 13 1/2 inches minimum in depth measured from the outer face of the urinal rim to the wall.

605.3 Clear Floor Space. A clear floor space complying with Section 305, positioned for forward approach, shall be provided. 605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 309.

606 Lavatories and Sinks. 606.1 General. Accessible lavatories and sinks shall comply with Section 606.

606.2 Clear Floor Space. A clear floor space complying with Section 305.3, positioned for forward approach, shall be provided. Knee and toe clearance complying with Section 306 shall be provided. The dip of the overflow shall not be considered in determining knee and toe clearances.

606.3 Parallel approach complying with Section 305 and centered on the sink, shall be permitted to a kitchen sink in a space where a cook top or conventional range is not provided.

606.4 Knee and toe clearance shall be provided to a lavatory in a toilet or bathing facility for a single occupant, accessed only through a private office and not for common use or public use.

606.5 Knee clearance of 24 inches minimum above the floor shall be permitted at lavatories and sinks used primarily by children ages 6 through 12 where the rim or counter surface is 31 inches maximum above the floor.

606.6 Parallel approach complying with Section 305 and centered on the sink, shall be permitted at lavatories and sinks used primarily by children ages 5 and younger.

606.7 The requirement for knee and toe clearance shall not apply to more than one bowl of a multi-bowl sink. 606.8 A parallel approach complying with Section 305 and centered on the sink, shall be permitted at wet bars.

606.9 Height. The front of lavatories and sinks shall be 34 inches maximum above the floor, measured to the highest of the rim or counter surface.

606.10 Exception. A lavatory in a toilet or bathing facility for a single occupant, accessed only through a private office and not for common use or public use, shall not be required to comply with Section 606.9.

606.11 Faucets. Faucets shall comply with Section 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

606.12 Lavatories with Enhanced Reach Range. Where enhanced reach range is required at lavatories, faucets and soap dispenser controls shall have a reach depth of 11 inches maximum or, if automatic, shall be actuated within a reach depth of 11 inches maximum. Water and soap flow shall be provided with a reach depth of 11 inches maximum.

606.13 Exposed Pipes and Scares. Water supply and drainpipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

607 Bathubs. 607.1 General. Accessible bathtubs shall comply with Section 607.

607.2 Clearance. A clearance in front of bathtubs measuring the length of the bathtub and 30 inches minimum in depth shall be provided. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches minimum beyond the wall at the head end of the bathtub.

607.3 Size. Standard roll-in-type shower compartments shall have a clear inside dimension of 60 inches minimum in width and 30 inches minimum in depth measured at the center point of opposing sides. An entry 60 inches minimum in width shall be provided.

607.4 Clearance. A clearance of 60 inches minimum in length adjacent to the 60-inch width of the open face of the shower compartment, and 30 inches minimum in depth, shall be provided.

607.5 Seat. A folding seat complying with Section 610 shall be provided on an end wall of the compartment.

607.6 Exception. A seat is not required to be installed in a shower for a single occupant accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of a shower seat.

607.7 Grab Bars. Grab bars shall be installed in a bathing facility for a single occupant accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with Section 607.4.

607.8 Bathtubs with Permanent Seats. For bathtubs with permanent seats, grab bars complying with Section 607.4.1 shall be provided.

607.9 Back Wall. Two horizontal grab bars shall be provided on the back wall, one complying with Section 609.4 and the other located 8 inches minimum and 10 inches maximum above the rim of the bathtub. Each grab bar shall be located 12 inches maximum from the head end wall and extend 12 inches maximum from the control end wall.

607.10 Control End Wall. Control end wall grab bars shall comply with Section 607.4.1.2. EXCEPTION: An L-shaped continuous grab bar of equivalent dimensions and positioning shall be permitted to serve the function of separate vertical and horizontal grab bars.

607.11 Horizontal Grab Bar. A horizontal grab bar 24 inches minimum in length shall be provided on the control end wall beginning near the front edge of the bathtub and extending toward the inside corner of the bathtub.

607.12 Vertical Grab Bar. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 3 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the bathtub.

607.13 Bathtubs without Permanent Seats. For bathtubs without permanent seats, grab bars complying with Section 607.4.2 shall be provided.

607.14 Back Wall. Two horizontal grab bars shall be provided on the back wall, one complying with Section 609.4 and the other located 8 inches minimum and 10 inches maximum above the rim of the bathtub. Each grab bar shall be located 12 inches maximum from the head end wall and extend 12 inches maximum from the control end wall.

607.15 Control End Wall. Control end wall grab bars shall comply with Section 607.4.1.2. 607.16 Head End Wall. A horizontal grab bar 12 inches minimum in length shall be provided on the head end wall at the front edge of the bathtub.

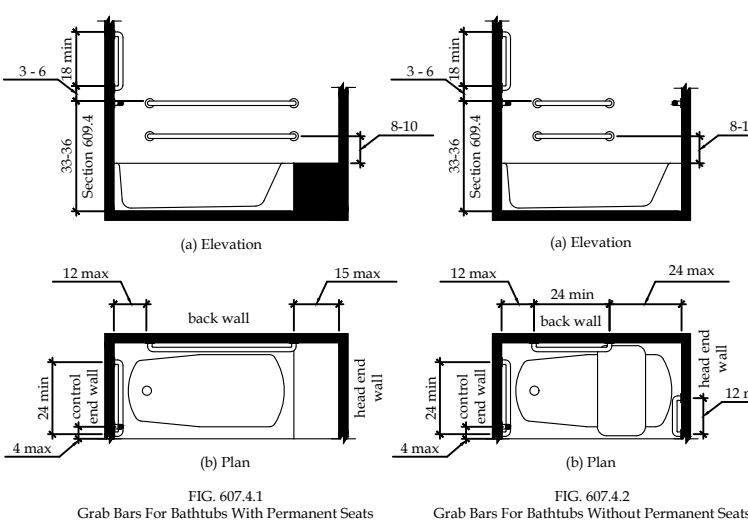


FIG. 607.2.1 Alternate Roll-in-Type Shower Compartments. FIG. 607.2.2 Standard Roll-in-Type Shower Compartments. FIG. 607.2.3 Alternate Roll-in-Type Shower Compartments with a Seat.

607.5 Controls. Controls, other than drain stoppers, shall be provided on an end wall, located between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with Section 309.4.

607.6 Hand Shower. A hand shower with a hose 59 inches minimum in length, that can be used as both a fixed shower head and as a hand shower, shall be provided. The hand shower shall have a control with a nonpositive shut-off feature. Where provided, an adjustable-height hand shower mounted on a vertical bar shall be installed so as not to obstruct the use of grab bars.

607.7 Bathtubs Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the bathtub.

607.8 Water Temperature. Bathtubs shall deliver water that is 120°F maximum.

608 Shower Compartments. 608.1 General. Accessible shower compartments shall comply with Section 608.1.

608.2 Size, clearance and seat. Shower compartments shall have sizes, clearances and seats complying with Section 608.2.1.

608.2.1 Transfer-Type Shower Compartments. Transfer-type shower compartments shall comply with Section 608.2.1.

608.2.2 Standard Roll-in-Type Shower Compartments. Standard roll-in-type shower compartments shall comply with Section 608.2.2.

608.2.3 Alternate Roll-in-Type Shower Compartments. Alternate roll-in-type shower compartments shall comply with Section 608.2.3.

608.2.4 Hand Showers. A hand shower with a hose 59 inches minimum in length, that can be used both as a fixed shower head and as a hand shower, shall be provided. The hand shower shall have a control with a nonpositive shut-off feature. Where provided, an adjustable-height hand shower mounted on a vertical bar shall be installed so as not to obstruct the use of grab bars.

608.2.5 Thresholds. Thresholds in roll-in-type shower compartments shall be 1/2 inch maximum in height in accordance with Section 303. In transfer-type shower compartments, thresholds 1/2 inch maximum in height shall be beveled, rounded, or vertical.

608.2.6 Exception. In existing facilities, in transfer-type shower compartments where provision of a threshold 1/2 inch in height would disturb the structure, reinforcement of the floor slab, at a threshold 2 inches maximum in height shall be permitted.

608.2.7 Water Temperature. Shower compartment enclosures for shower compartments shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats. 608.8 Water Temperature. Showers shall deliver water that is 120°F (49°C) maximum.

609 Grab Bars. 609.1 General. Grab bars in accessible toilet or bathing facilities shall comply with Section 609.

609.2 Cross Section. Grab bars shall have a cross section complying with Section 609.2.1 and 609.2.2.

609.2.1 Circular Cross Section. Grab bars with a circular cross section shall have an outside diameter of 1 1/2 inches minimum and 2 inches maximum.

609.2.2 Noncircular Cross Section. Grab bars with a noncircular cross section shall have a cross section dimension of 1 1/2 inches maximum and a perimeter dimension of 4 inches minimum and 4.8 inches maximum.

609.3 Spacing. The space between the wall and the grab bar shall be 1 1/2 inches. The space between the grab bar and projecting objects below and at the ends of the grab bar shall be 1 1/2 inches minimum. The space between the grab bar and projecting objects above the grab bar shall be 12 inches minimum.

609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches minimum and 36 inches maximum above the floor measured to the top of the gripping surface or shall be installed as required by Items 1 through 3.

609.5 General. Grab bars shall be installed in a horizontal position, 33 inches minimum and 36 inches maximum above the floor measured to the top of the gripping surface or shall be installed as required by Items 1 through 3.

609.6 Vertical Grab Bars. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 3 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the bathtub.

609.7 Horizontal Grab Bars. A horizontal grab bar 24 inches minimum in length shall be provided on the control end wall beginning near the front edge of the bathtub and extending toward the inside corner of the bathtub.

609.8 Transfer-Type Showers. Grab bars for transfer type showers shall comply with Section 608.3.1.

609.9 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.10 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.11 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.12 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

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609.43 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.44 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

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609.46 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.47 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

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609.60 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.61 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

609.62 Child's Grab Bars. Grab bars for children's use shall comply with Section 604.11.5.

610 Seats. 610.1 General. Seats in accessible bathtubs and shower compartments shall comply with Section 610.

610.2 Bathtub Seats. The height of bathtub seats shall be 17 inches minimum and 19 inches maximum above the bathroom floor, measured to the top of the seat. Removable-in-tub seats shall be 15 inches minimum above the floor, measured to the baseline of the lowest raised character and 40 inches maximum above the floor, measured to the baseline of the highest raised character.

610.3 Rectangular Seats. The rear edge of a rectangular seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The side edge of the seat shall be 1 1/2 inches maximum from the back wall of a transfer-type shower and 1 1/4 inches maximum from the control wall of a roll-in-type shower.

610.3.1 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.2 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.3 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.4 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.5 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.6 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.7 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.8 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.9 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.10 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.11 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.12 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.13 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

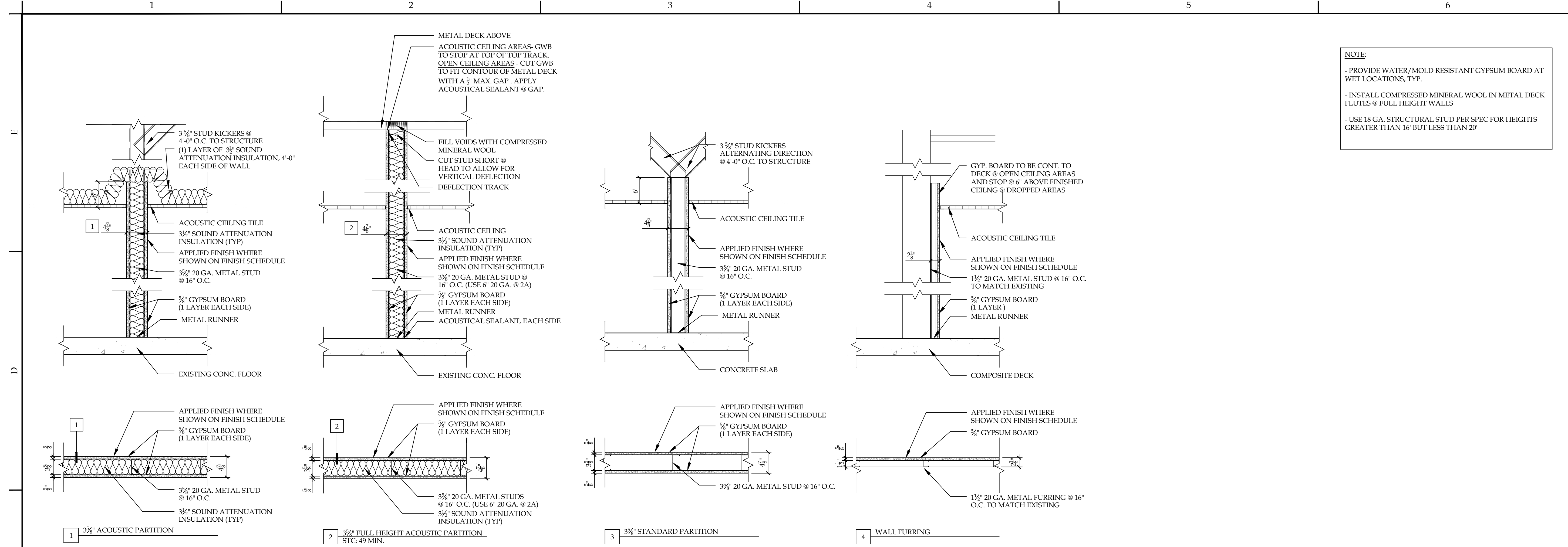
610.3.14 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.15 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.16 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.17 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.

610.3.18 Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.



**NOTE:**

- PROVIDE WATER/MOLD RESISTANT GYPSUM BOARD AT WET LOCATIONS, TYP.
- INSTALL COMPRESSED MINERAL WOOL IN METAL DECK FLUTES @ FULL HEIGHT WALLS
- USE 18 GA. STRUCTURAL STUD PER SPEC FOR HEIGHTS GREATER THAN 16' BUT LESS THAN 20'

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**ISSUE:**  
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**SA PROJECT TEAM:** PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

**SEAL:**

**TITLE:**  
 PARTITION TYPES



**SA JOB #:** 14082.07 **DATE:** 6-29-2021

**DRAWING #:** A-004

**GENERAL WALL NOTES**

- SEE SPECIFICATIONS FOR APPLICATIONS OF GYPSUM PRODUCTS, UNLESS NOTED ON DRAWINGS. REFER TO SPECIFICATIONS FOR SPECIAL APPLICATIONS, THICKNESS, AND TYPES. (I.E. MOLD & MOISTURE RESISTANCE, TILE BACKER BOARDS, ETC.)
- REFER TO THE LATEST EDITION OF UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE DIRECTORY FOR ADDITIONAL REQUIREMENTS ON UL RATED ASSEMBLIES AS NOTED IN THE PARTITION DETAILS
- USE ONLY PARTITIONS IDENTIFIED ON THE PLANS.
- STC = SOUND TRANSMISSION CLASS - REFER TO THE WALL SCHEDULE IN PLAN FOR WALLS THAT ARE SOUND RATED.
- ALL SEALANTS IN RATED WALL LOCATIONS REFERENCED IN THE WALL TYPE DETAILS SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE UNDERWRITERS LABORATORIES, INC FIRE RESISTANCE DIRECTORY. IN ADDITION TO FIRE RESISTANCE, WALL LOCATIONS CALLED OUT WITH REQUIRED ACOUSTICAL VALUE, AS NOTED IN WALL SCHEDULE, SHALL HAVE SEALANTS THAT MAINTAIN THE MINIMUM SOUNDS VALUE OF THE WALL PARTITION.

**SOUND INSULATION NOTES**

- ASSEMBLIES SHOULD BE AIRTIGHT. HAIRLINE CRACKS AND HOLES ARE NOT ALLOWED.
- RECESSED WALL FIXTURES SUCH AS CABINETS, OUTLETS, AND OTHER ITEMS WHICH PENETRATE THE GYPSUM BOARD SURFACE SHOULD NOT BE LOCATED BACK TO BACK IN THE SAME STUD CAVITY.
- ANY OPENINGS CUT FOR ANY FIXTURES SHALL BE CAREFULLY CUT TO SIZE, PROPERLY FASTENED, INSULATED PER WALL ASSEMBLY AND PROPERLY CAULKED.
- THE ENTIRE PERIMETER OF A SOUND INSULATING ASSEMBLY MUST BE MADE AIRTIGHT TO PREVENT SOUND FROM "FLANKING".
- AN ACOUSTICAL SEALANT SHOULD BE USED TO SEAL BETWEEN THE SOUND INSULATING ASSEMBLY AND ALL DISSIMILAR ASSEMBLIES AND BETWEEN THE ASSEMBLY AND SIMILAR SURFACES WHERE PERIMETER RELIEF IS REQUIRED. TAPING AND CAULKING OF GYPSUM BOARD WALL AND WALL-CEILING INTERSECTIONS PROVIDES AN ADEQUATE AIR SEAL AT THESE LOCATIONS.
- ALL SEALANTS IN RATED WALL LOCATIONS REFERENCED IN THE WALL TYPE DETAILS SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE UNDERWRITERS LABORATORIES, INC FIRE RESISTANCE DIRECTORY. IN ADDITION TO FIRE RESISTANCE, WALL LOCATIONS CALLED OUT WITH REQUIRED ACOUSTICAL VALUE, AS NOTED IN WALL SCHEDULE, SHALL HAVE SEALANTS THAT MAINTAIN THE MINIMUM SOUNDS VALUE OF THE WALL PARTITION.
- ASTM RECOMMENDED PRACTICES E-497 SHOULD BE FOLLOWED FOR GOOD SOUND CONTROL. ALSO CONSULT THE MANUFACTURER OF THE GYPSUM BOARD FOR ANY SPECIAL RECOMMENDATIONS RELATING TO THEIR SYSTEM.

**C1 PARTITION TYPES**  
 SCALE: 1" = 1'-0"

**A1 WALL TO WINDOW TERMINATION DETAILS**  
 SCALE: 1 1/2" = 1'-0"

**A2 WALL TO WINDOW TERMINATION DETAILS**  
 SCALE: 1 1/2" = 1'-0"



OCCUPANCY TYPE: B  
 CONSTRUCTION TYPE: IIB  
 FULLY SPRINKLERED: NFPA 13  
 TABULAR FIRE AREA: 32,750 SF  
 EXISTING EXITING AND CORRIDOR PATHWAYS TO REMAIN

OCCUPANCY LOAD:

CLASSROOMS (20 NET)	9300/20	= 465 PEOPLE
LABS (50 NET)	2895/50	= 58 PEOPLE
LIBRARY (50 NET)	1090/50	= 22 PEOPLE
ASSEMBLY (15 NET)	765/15	= 51 PEOPLE
STORAGE (300 GROSS)	949/300	= 4 PEOPLE
BUSINESS (150 GROSS)	6735/150	= 45 PEOPLE

TOTAL OCCUPANCY = 645 PEOPLE

REQUIRED SANITARY FIXTURES							
OCCUPANCY TYPE	#	WATER CLOSETS		LAVATORIES		DRINKING FOUNTAIN	SERVICE SINK
		MALE-323	FEMALE-323	MALE	FEMALE		
B	568	6.68	6.68	4.55	4.55		
A (WC 1:25) (L 1:200)	51	.34	.34	.128	.128		
S (WC&L 1:100)	4	.02	.02	.02	.02		
LIBRARY (0.125 M (1.45 F) (L 1:200)	22	.088	.169	.055	.055		
	645.00	7.13	7.21	4.75	4.75		
PROVIDED SANITARY FIXTURES							
		8	8	5	7		EXISTING TO REMAIN

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 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

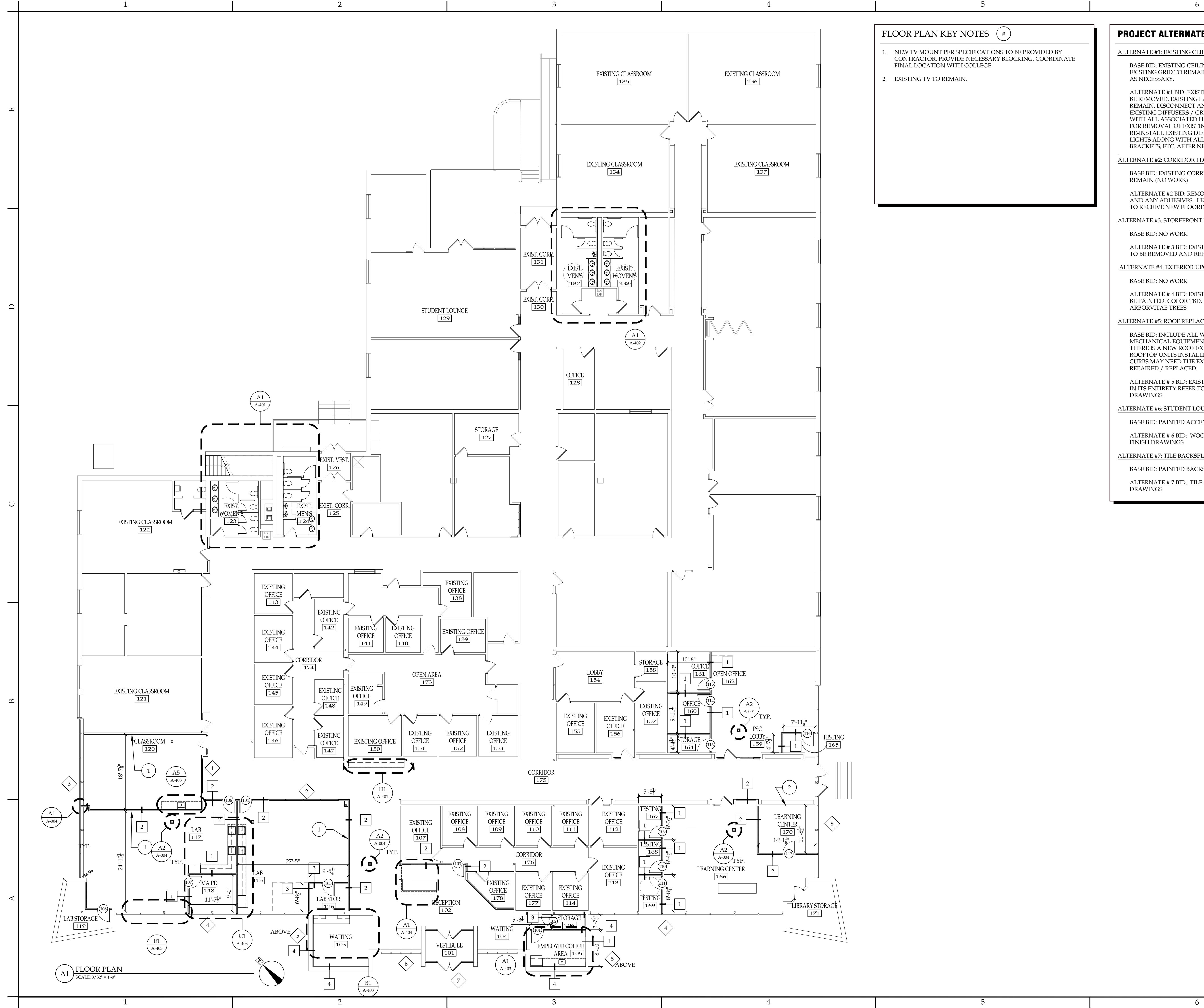
TITLE:  
**CODE COMPLIANCE PLAN**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-005**

A1 CODE COMPLIANCE PLAN  
 SCALE: 3/32" = 1'-0"



- FLOOR PLAN KEY NOTES** #
- NEW TV MOUNT PER SPECIFICATIONS TO BE PROVIDED BY CONTRACTOR. PROVIDE NECESSARY BLOCKING. COORDINATE FINAL LOCATION WITH COLLEGE.
  - EXISTING TV TO REMAIN.

- PROJECT ALTERNATES:**
- ALTERNATE #1: EXISTING CEILING REPLACEMENT**  
 BASE BID: EXISTING CEILING TILES TO BE REMOVED. EXISTING GRID TO REMAIN, CLEAN AND PAINT GRID AS NECESSARY.  
 ALTERNATE #1 BID: EXISTING CEILING AND GRID TO BE REMOVED. EXISTING LAYOUT & HEIGHT TO REMAIN. DISCONNECT AND TEMPORARILY REMOVE EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. FOR REMOVAL OF EXISTING CEILING SYSTEM. RE-INSTALL EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. AFTER NEW CEILING INSTALLATION
- ALTERNATE #2: CORRIDOR FLOOR REPLACEMENT**  
 BASE BID: EXISTING CORRIDOR FLOORING TO REMAIN (NO WORK)  
 ALTERNATE #2 BID: REMOVE EXIST. FLOORING, BASE AND ANY ADHESIVES, LEVEL AND PREP SUBFLOOR TO RECEIVE NEW FLOORING PER FINISH PLAN.
- ALTERNATE #3: STOREFRONT REPLACEMENT**  
 BASE BID: NO WORK  
 ALTERNATE #3 BID: EXISTING EXTERIOR WINDOWS TO BE REMOVED AND REPLACED IN THEIR ENTIRETY.
- ALTERNATE #4: EXTERIOR UPGRADES**  
 BASE BID: NO WORK  
 ALTERNATE #4 BID: EXISTING EXTERIOR STONE TO BE PAINTED. COLOR TBD. INSTALL (6) NEW ARBORVITAE TREES
- ALTERNATE #5: ROOF REPLACEMENT**  
 BASE BID: INCLUDE ALL WORK RELATING TO NEW MECHANICAL EQUIPMENT AND PENETRATIONS. THERE IS A NEW ROOF EXHAUST FAN AND THE NEW ROOFTOP UNITS INSTALLED ON THE EXISTING ROOF CURBS MAY NEED THE EXISTING FLASHING REPAIRED / REPLACED.  
 ALTERNATE #5 BID: EXISTING ROOF TO BE REPLACED IN ITS ENTIRETY REFER TO ROOF REPLACEMENT DRAWINGS.
- ALTERNATE #6: STUDENT LOUNGE ACCENT WALL**  
 BASE BID: PAINTED ACCENT WALL  
 ALTERNATE #6 BID: WOOD ACCENT WALL, SEE FINISH DRAWINGS
- ALTERNATE #7: TILE BACKSPLASH**  
 BASE BID: PAINTED BACKSPLASH  
 ALTERNATE #7 BID: TILE BACKSPLASH, SEE FINISH DRAWINGS

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SEAL:

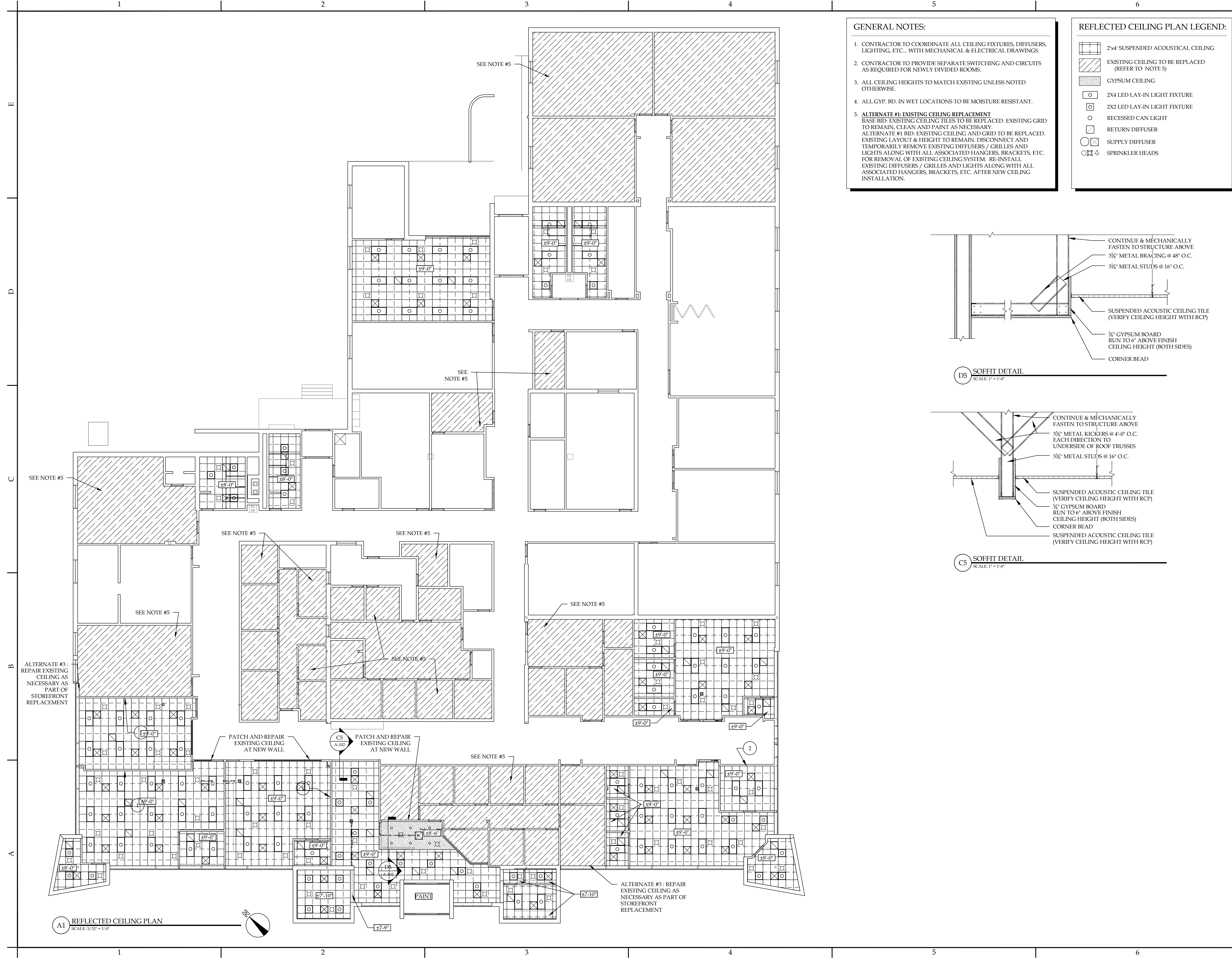
TITLE:  
 FLOOR PLAN



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: A-101

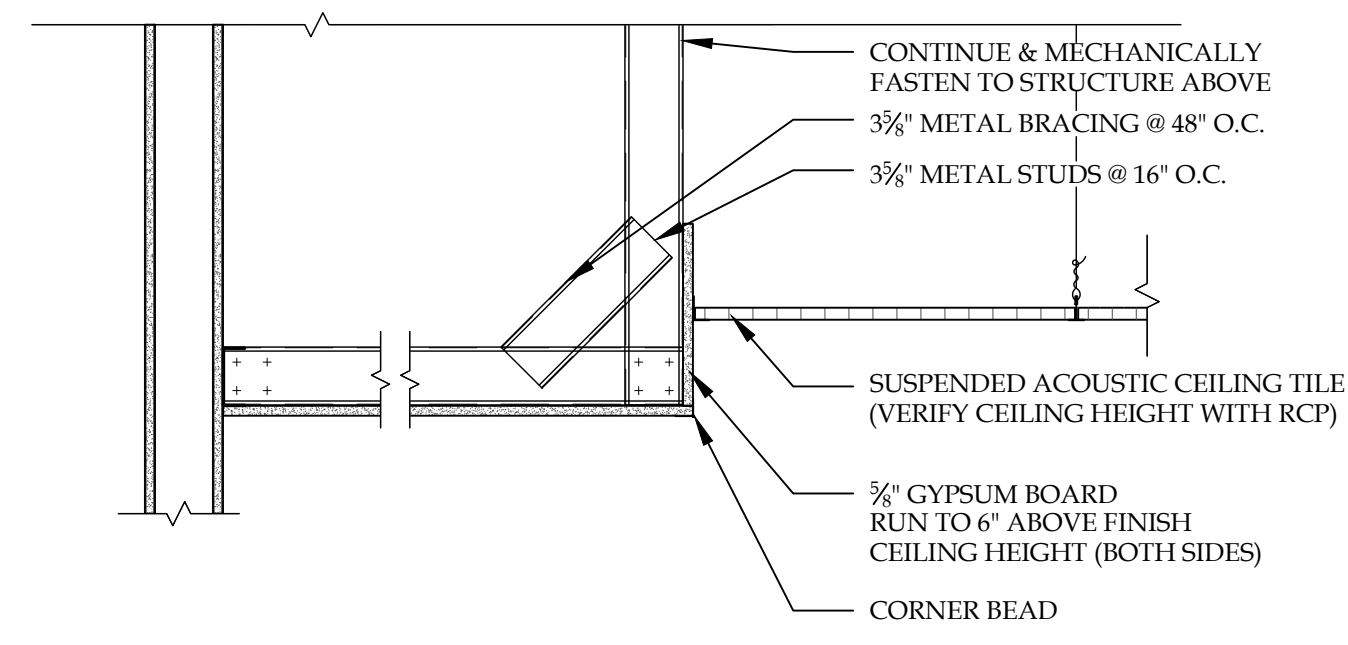




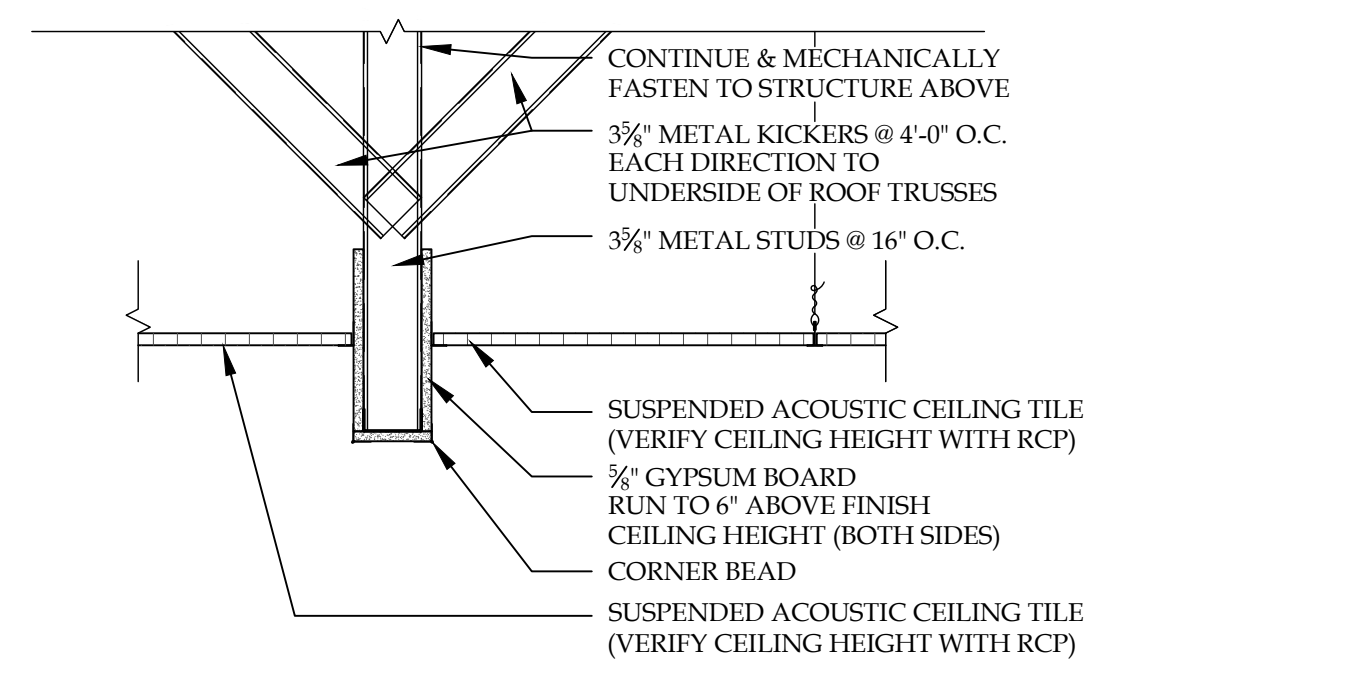
**GENERAL NOTES:**

- CONTRACTOR TO COORDINATE ALL CEILING FIXTURES, DIFFUSERS, LIGHTING, ETC... WITH MECHANICAL & ELECTRICAL DRAWINGS.
- CONTRACTOR TO PROVIDE SEPARATE SWITCHING AND CIRCUITS AS REQUIRED FOR NEWLY DIVIDED ROOMS.
- ALL CEILING HEIGHTS TO MATCH EXISTING UNLESS NOTED OTHERWISE.
- ALL GYP. BD. IN WET LOCATIONS TO BE MOISTURE RESISTANT.
- ALTERNATE #1: EXISTING CEILING REPLACEMENT**  
 BASE BID: EXISTING CEILING TILES TO BE REPLACED. EXISTING GRID TO REMAIN, CLEAN AND PAINT AS NECESSARY.  
 ALTERNATE #1 BID: EXISTING CEILING AND GRID TO BE REPLACED. EXISTING LAYOUT & HEIGHT TO REMAIN. DISCONNECT AND TEMPORARILY REMOVE EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. FOR REMOVAL OF EXISTING CEILING SYSTEM. RE-INSTALL EXISTING DIFFUSERS / GRILLES AND LIGHTS ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. AFTER NEW CEILING INSTALLATION.

- REFLECTED CEILING PLAN LEGEND:**
- 2x4' SUSPENDED ACOUSTICAL CEILING
  - EXISTING CEILING TO BE REPLACED (REFER TO NOTE 5)
  - GYPSUM CEILING
  - 2x4 LED LAY-IN LIGHT FIXTURE
  - 2x2 LED LAY-IN LIGHT FIXTURE
  - RECESSED CAN LIGHT
  - RETURN DIFFUSER
  - SUPPLY DIFFUSER
  - SPRINKLER HEADS



D5 SOFFIT DETAIL  
SCALE: 1" = 1'-0"



C5 SOFFIT DETAIL  
SCALE: 1" = 1'-0"

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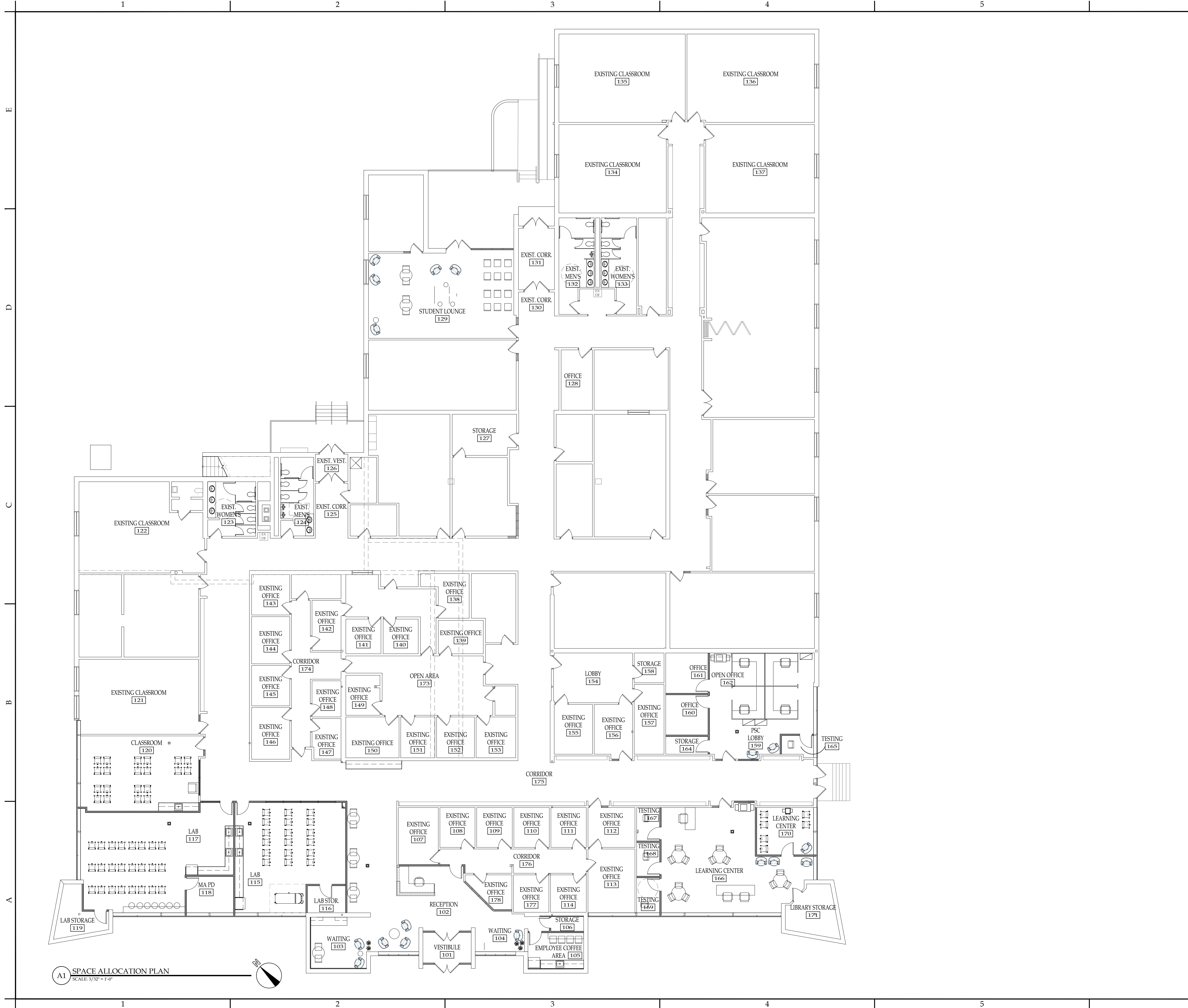
SEAL:

TITLE:  
**REFLECTED CEILING PLAN**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-102**



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SEAL:

TITLE:  
**SPACE ALLOCATION PLAN**

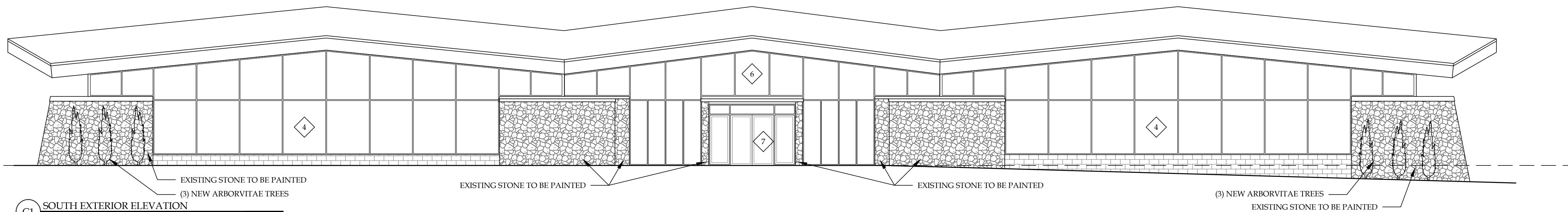


SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-101**

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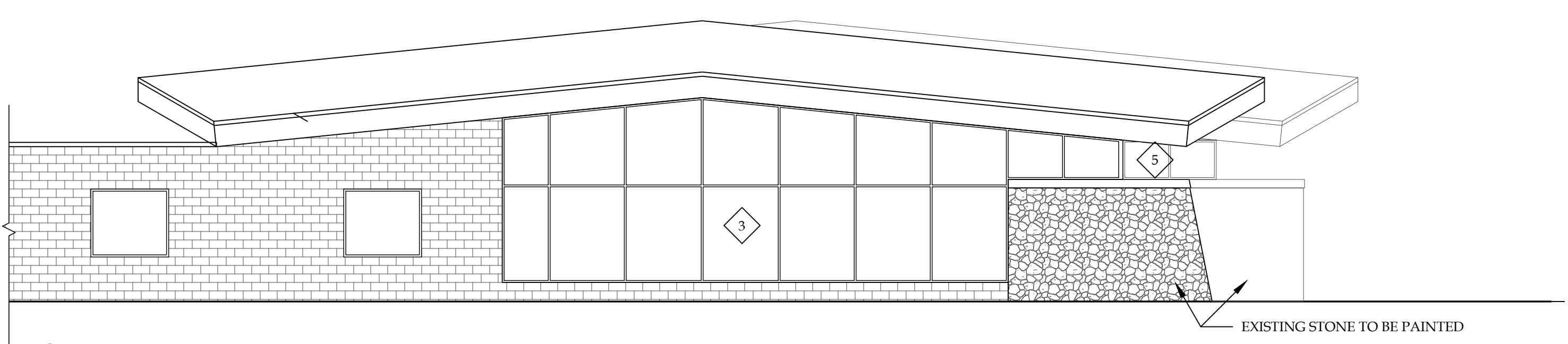
E  
D  
C  
B  
A



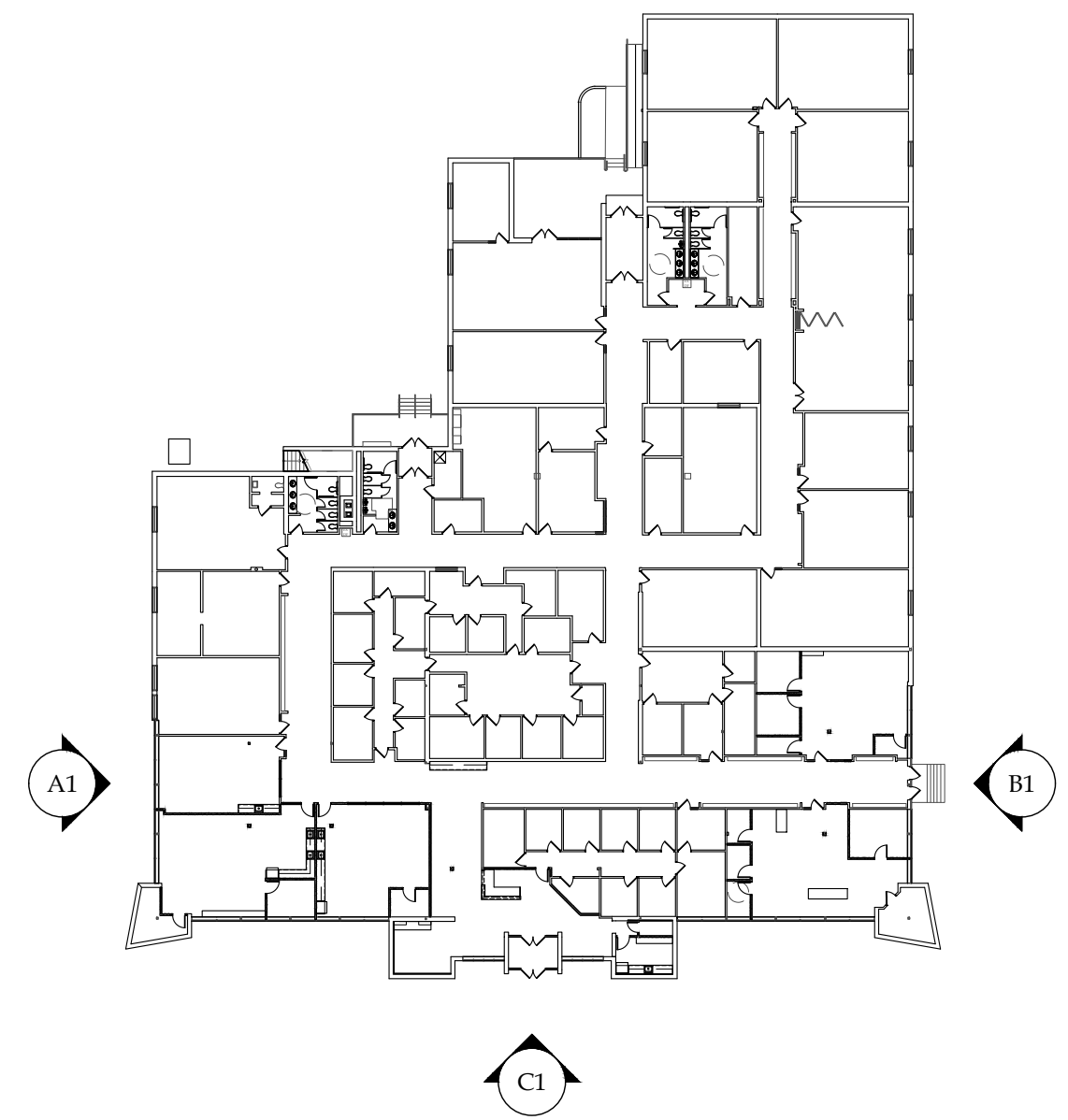
**C1** SOUTH EXTERIOR ELEVATION  
SCALE: 1/8" = 1'-0"



**B1** EAST EXTERIOR ELEVATION  
SCALE: 1/8" = 1'-0"



**A1** WEST EXTERIOR ELEVATION  
SCALE: 1/8" = 1'-0"



KEY PLAN  
SCALE: NOT TO SCALE

1 2 3 4 5 6

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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**EXTERIOR ELEVATIONS**



**SILVESTRI ARCHITECTS - PC**  
1321 MILLERSPORT HWY PH. 716.691.0900  
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #: **A-201**

ACCESSORIES SCHEDULE					
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" HORIZONTAL GRAB BAR	B-680642	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
B	36" HORIZONTAL GRAB BAR	B-680636	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
C	18" VERTICAL GRAB BAR	B-680618	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
D	1/4" 24"X36" FRAMELESS PLATE GLASS MIRROR	B-1556	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SPACERS TO BE USED BEHIND MIRROR FOR LEVEL APPLICATION. MIRRORS TO BE MOUNTED ON STAND-FAST STAINLESS STEEL STAND OFFS.
E	SURFACE MOUNTED AUTOMATIC HAND SOAP DISPENSER	B-2013	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING. OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF. COLOR: TRD
F	SURFACE MOUNTED TOILET TISSUE DISPENSER	B-2888	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING.
G	SURFACE MOUNTED AUTOMATIC PAPER TOWEL DISPENSER	29660A	ENMOTION	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING. COLOR: WHITE
H	STAINLESS STEEL SURFACE MOUNTED COAT HOOK/DOOR STOP	B-212	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	BACK OF RESTROOM TOILET ROOM DOORS
I	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	B-270	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
J	SEMI RECESSED WASTE RECEPTACLE	B-4344	BOHRICK WASHROOM EQUIPMENT, INC.	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
K	TOILET PARTITIONS	OVERHEAD BRACED & FLOOR MOUNTED	GLOBAL PARTITIONS	PER MANUFACTURER'S REQUIREMENTS	FLOOR ANCHORED/OVERHEAD BRACED. REFER TO DRAWINGS. POWDER COATED STEEL FINISH. COLOR: TRD

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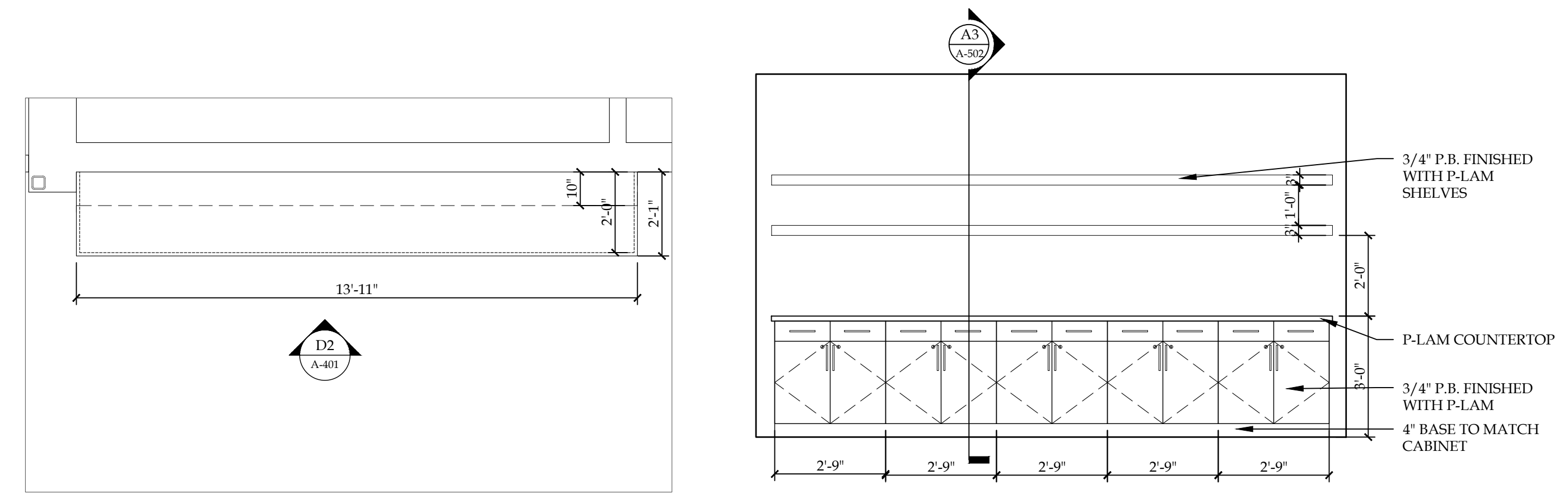
SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

TITLE:  
**ENLARGED FLOOR PLANS & ELEVATIONS**



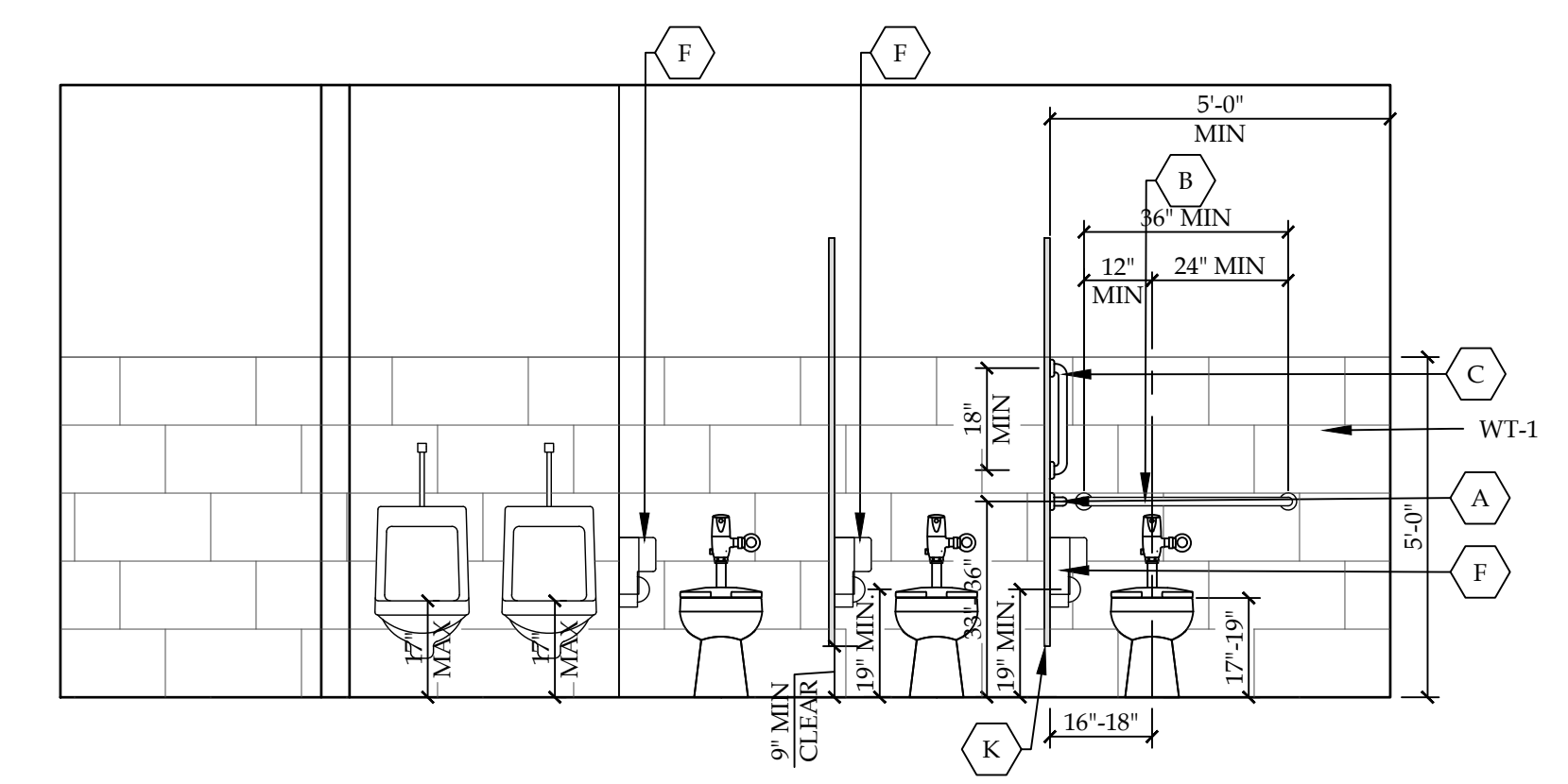
SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-401**

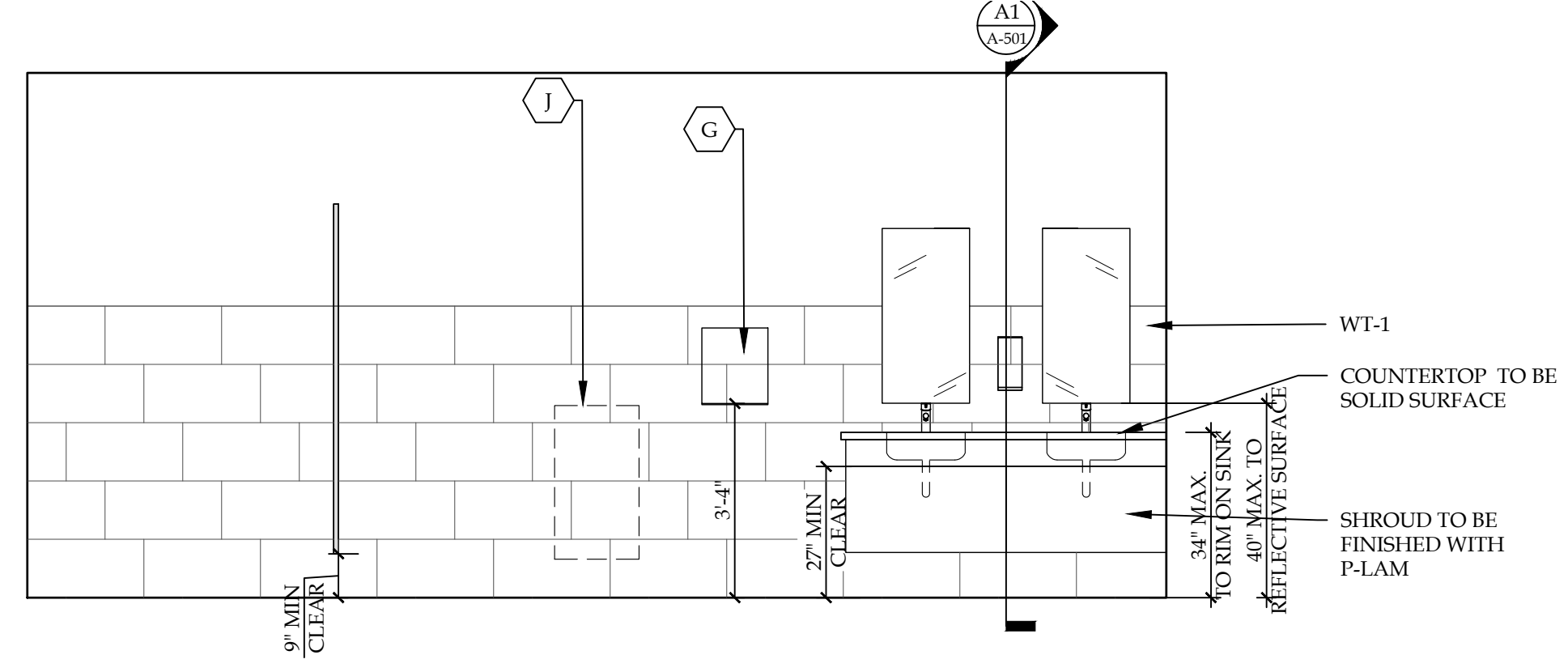


D1 ENLARGED PLAN - MODEL SHELVES  
 SCALE: 3/8"=1'-0"

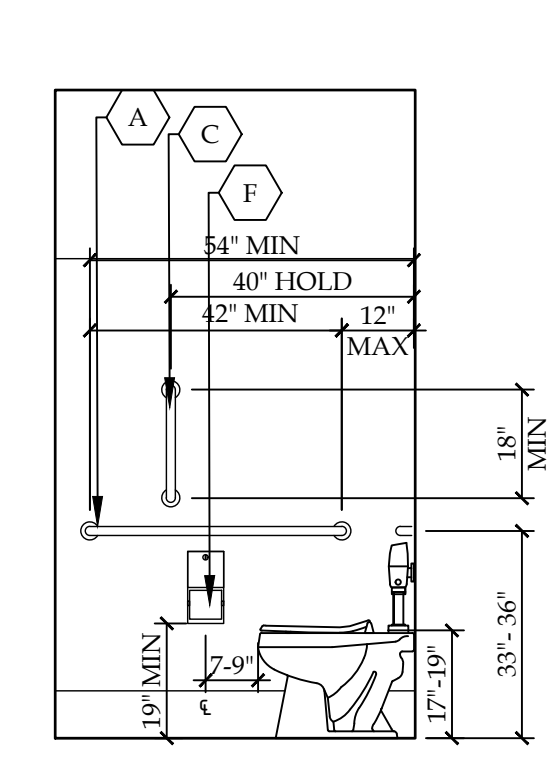
D2 ELEVATION - MODEL SHELVES  
 SCALE: 3/8"=1'-0"



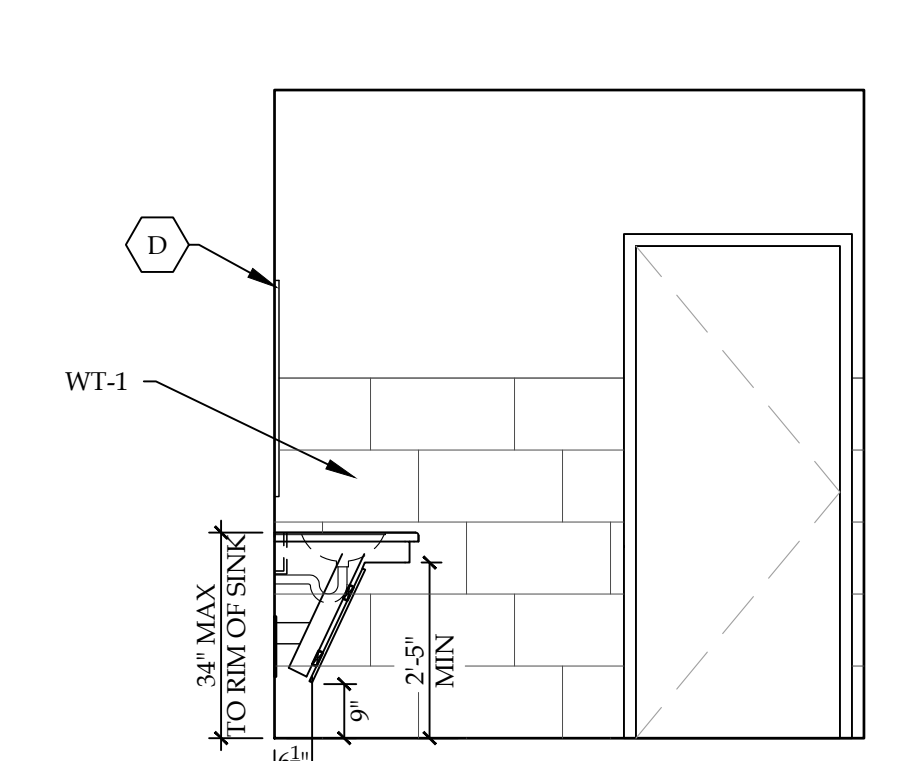
C1 ELEVATION - MEN'S #124  
 SCALE: 3/8"=1'-0"



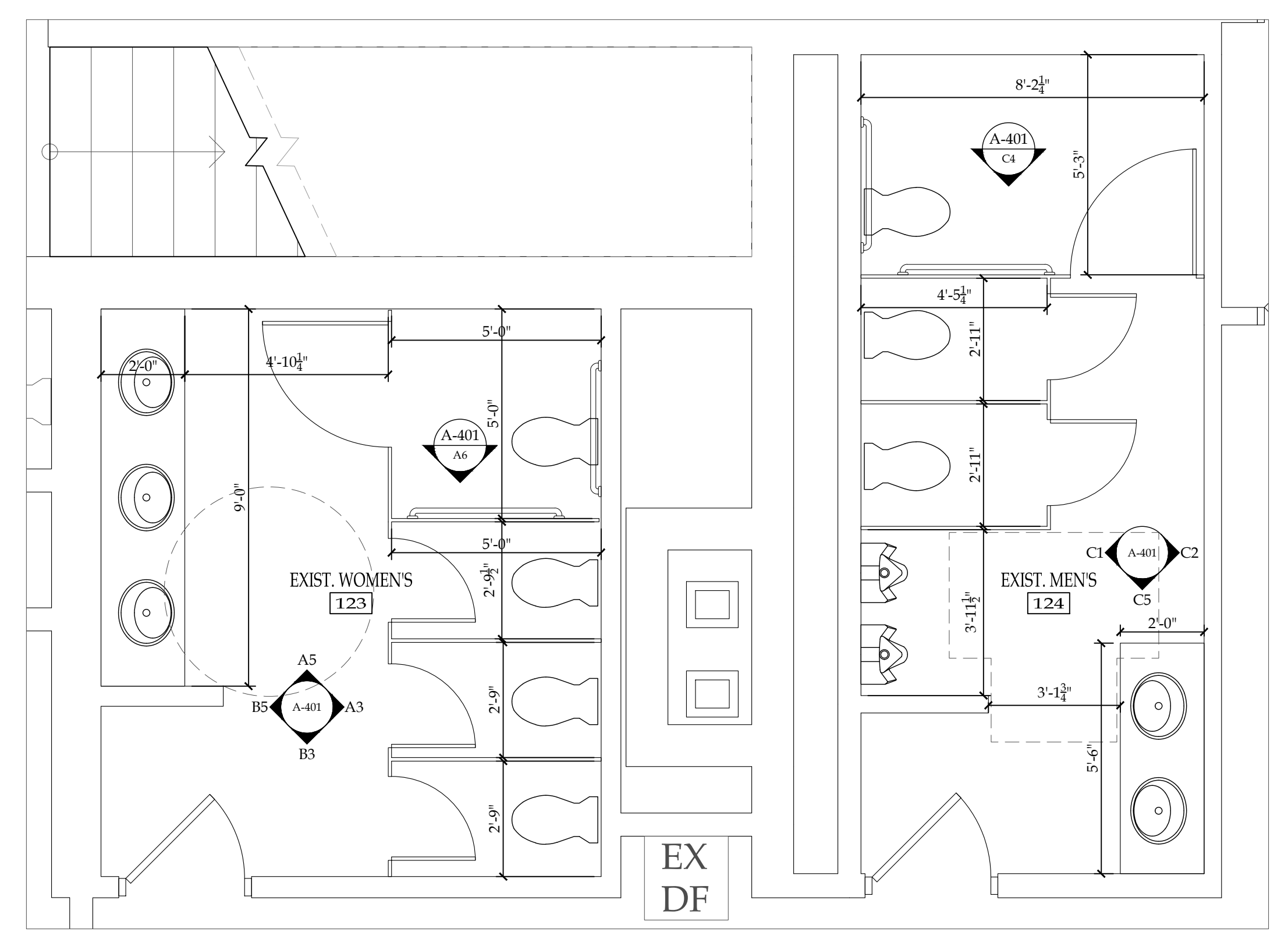
C2 ELEVATION - MEN'S #124  
 SCALE: 3/8"=1'-0"



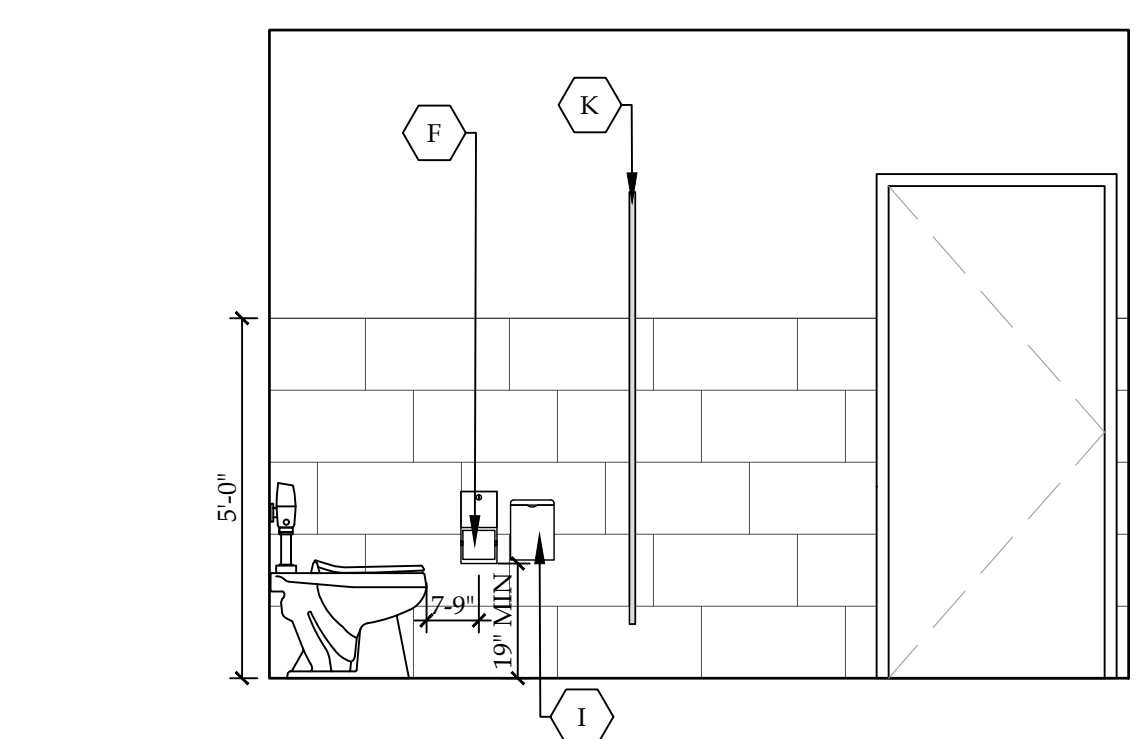
C4 ELEVATION - MEN'S #124  
 SCALE: 3/8"=1'-0"



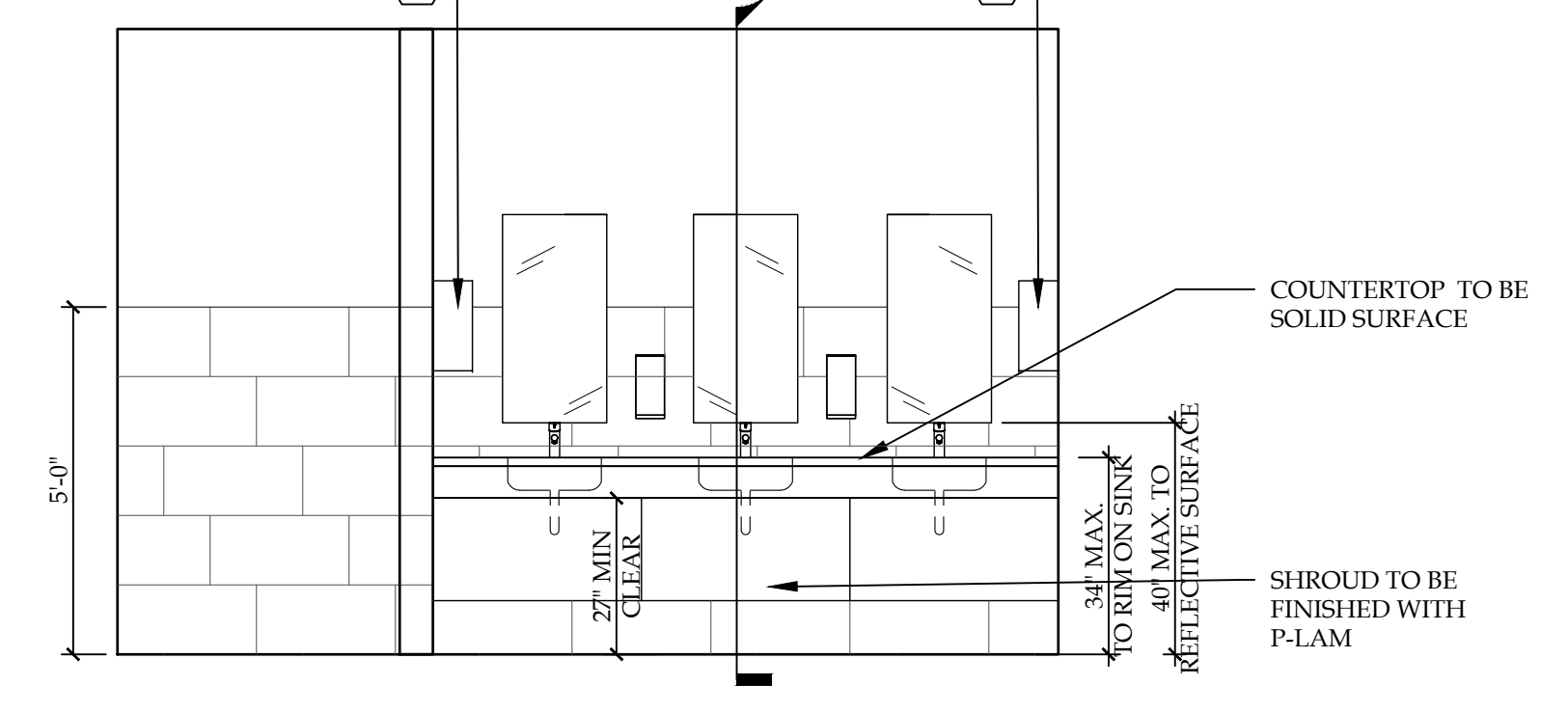
C5 ELEVATION - MEN'S #124  
 SCALE: 3/8"=1'-0"



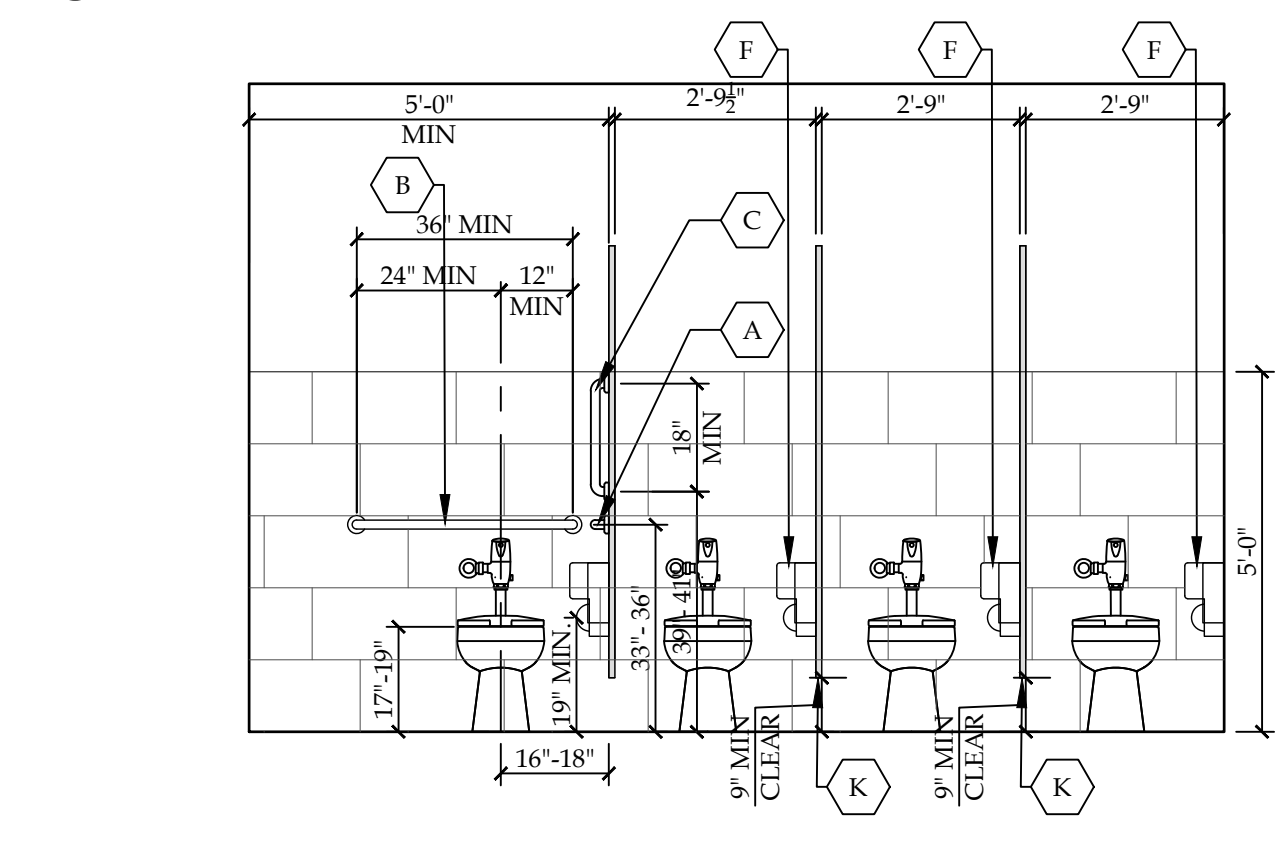
A1 ENLARGED PLAN - WOMEN'S #123 & MEN'S #124  
 SCALE: 3/8"=1'-0"



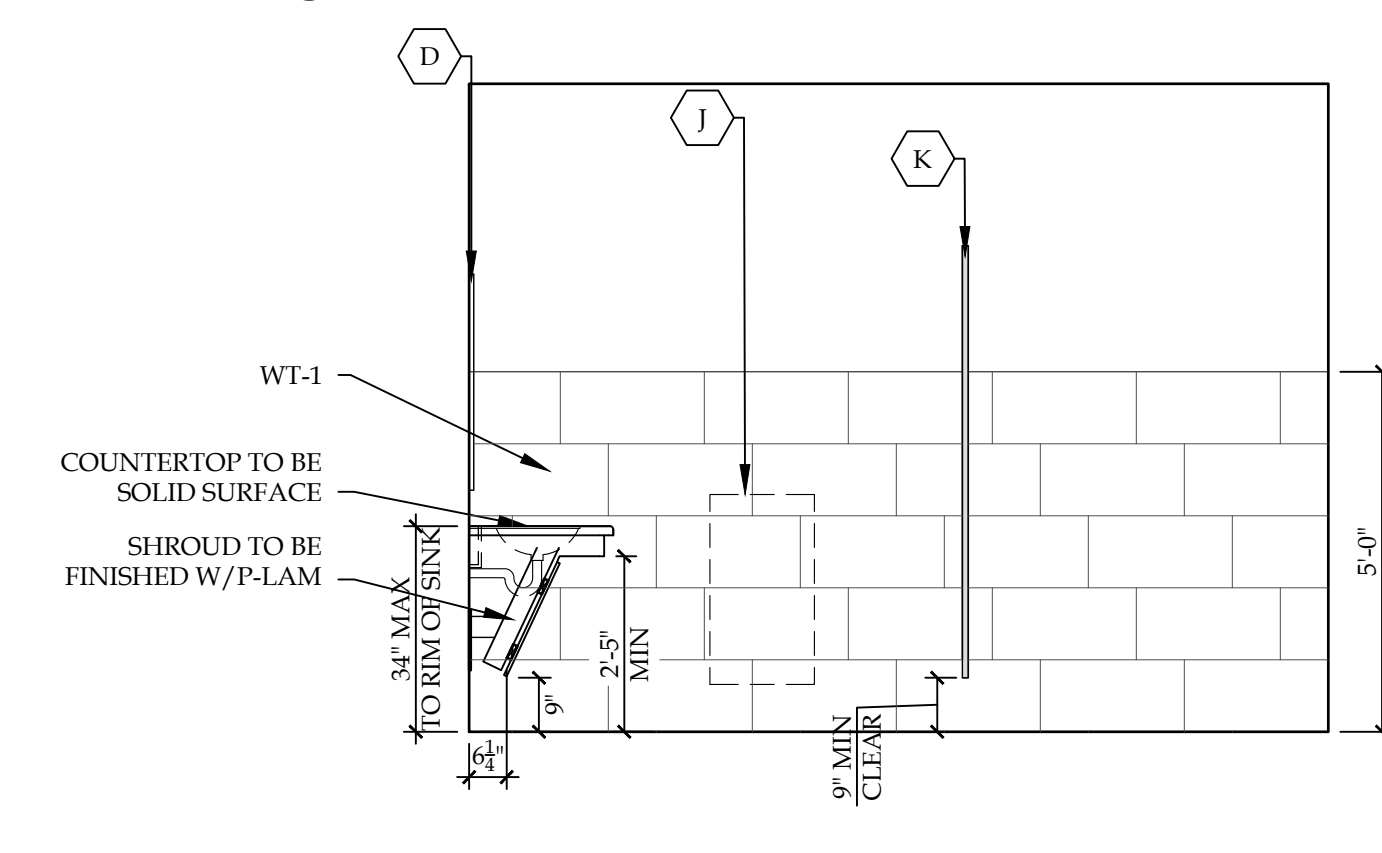
B3 ELEVATION - WOMEN'S #123  
 SCALE: 3/8"=1'-0"



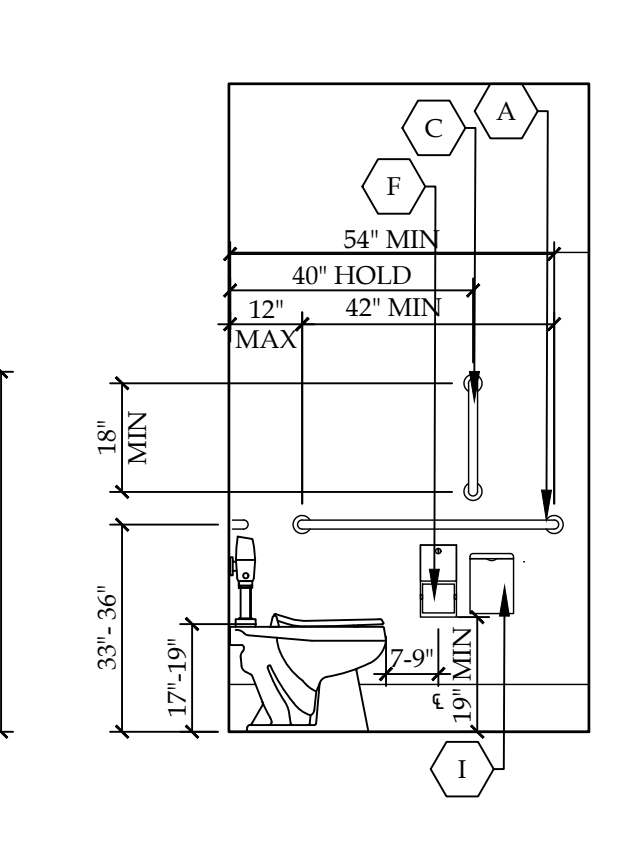
B5 ELEVATION - WOMEN'S #123  
 SCALE: 3/8"=1'-0"



A3 ELEVATION - WOMEN'S #123  
 SCALE: 3/8"=1'-0"

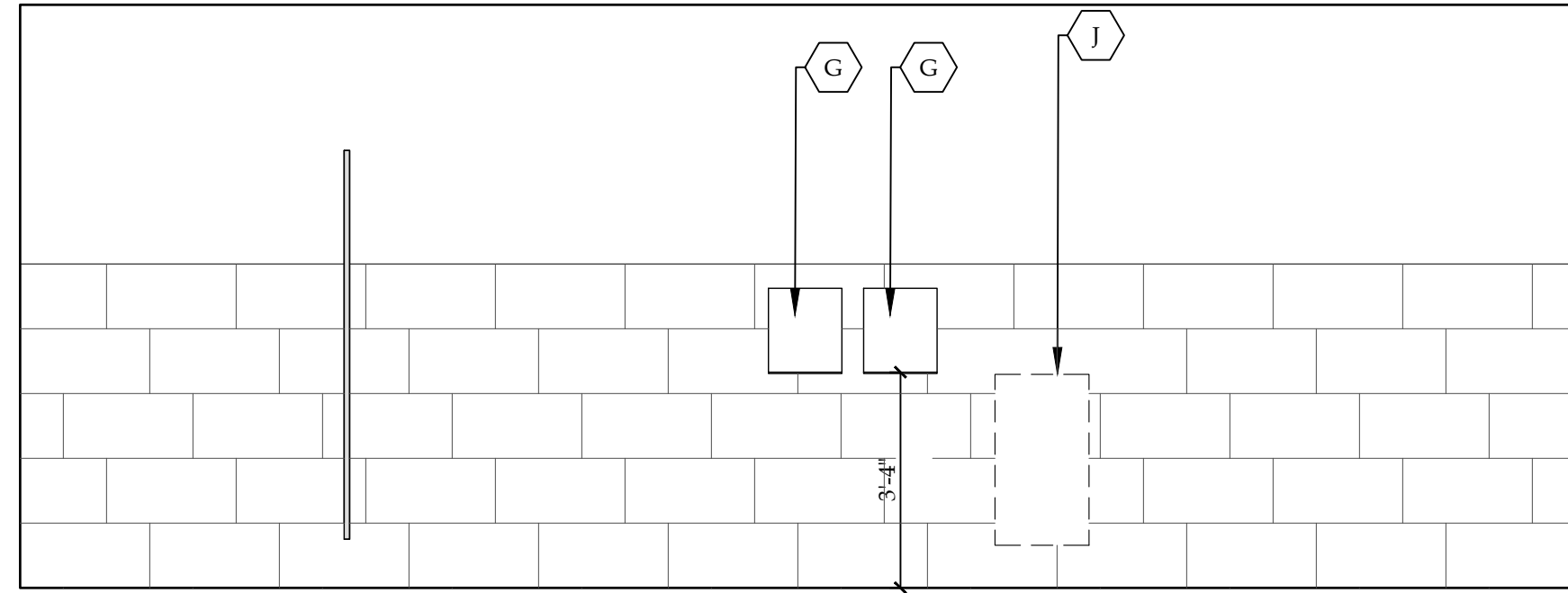


A5 ELEVATION - WOMEN'S #123  
 SCALE: 3/8"=1'-0"

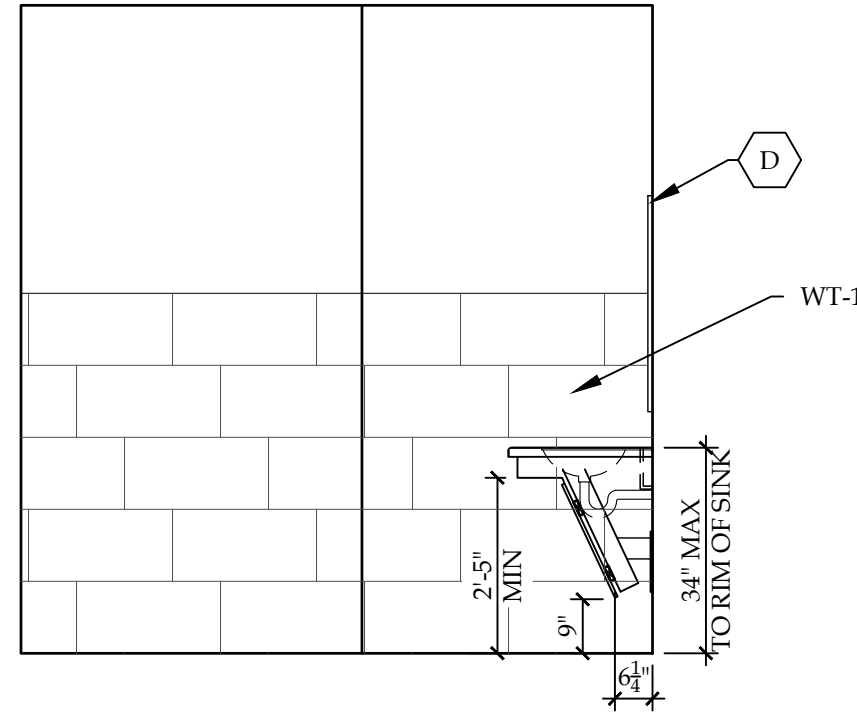


A6 ELEVATION - WOMEN'S #123  
 SCALE: 3/8"=1'-0"

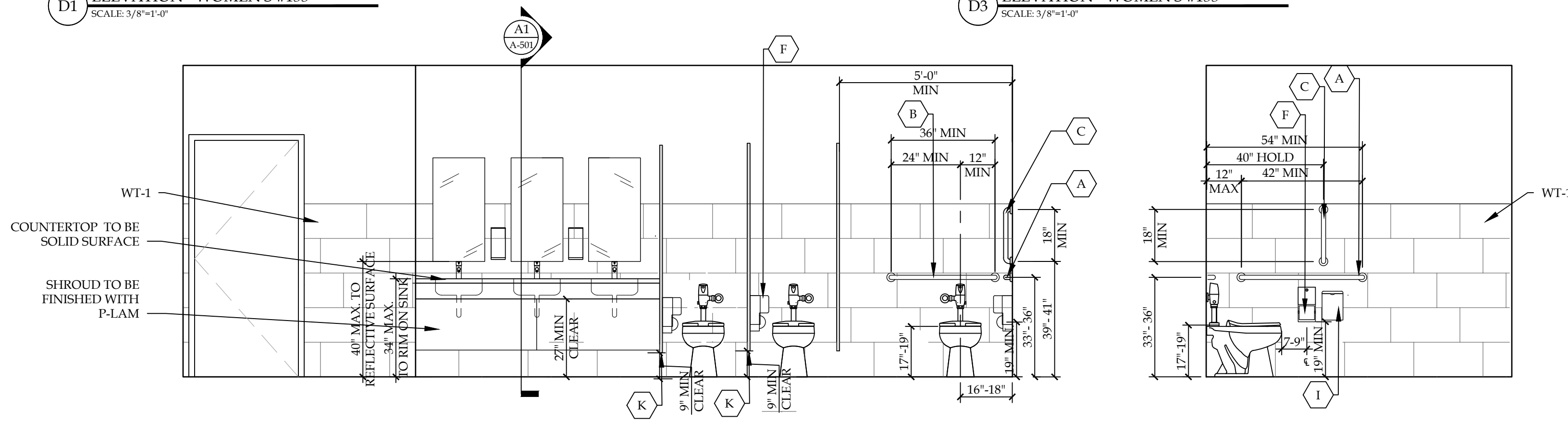
E  
D  
C  
B  
A



D1 ELEVATION - WOMEN'S #133  
SCALE: 3/8"=1'-0"

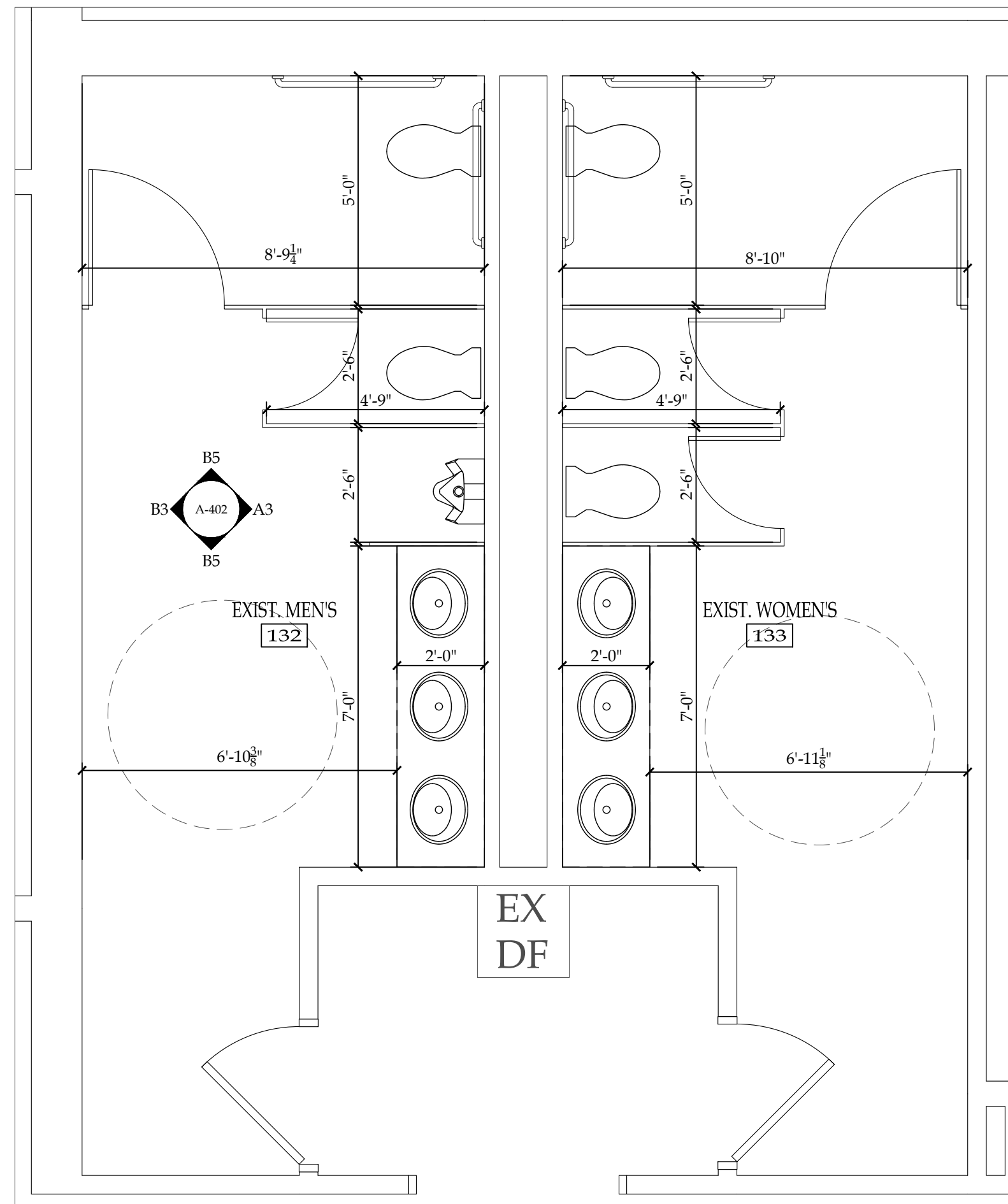


D3 ELEVATION - WOMEN'S #133  
SCALE: 3/8"=1'-0"

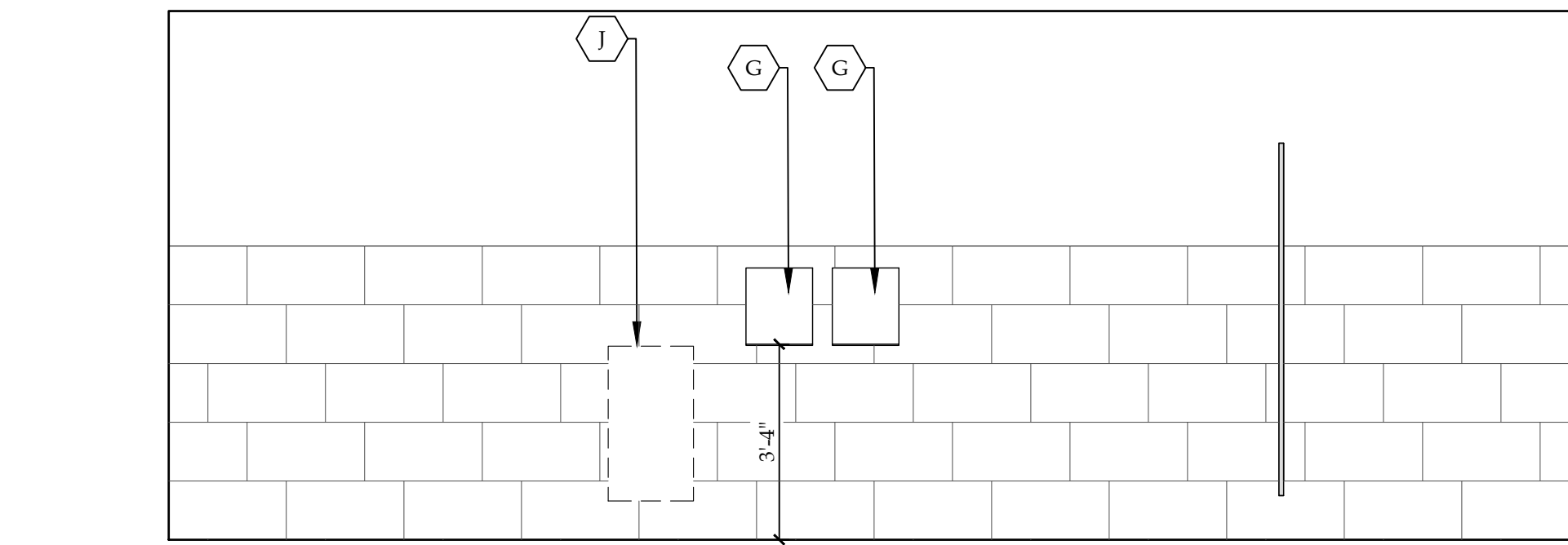


C1 ELEVATION - WOMEN'S #133  
SCALE: 3/8"=1'-0"

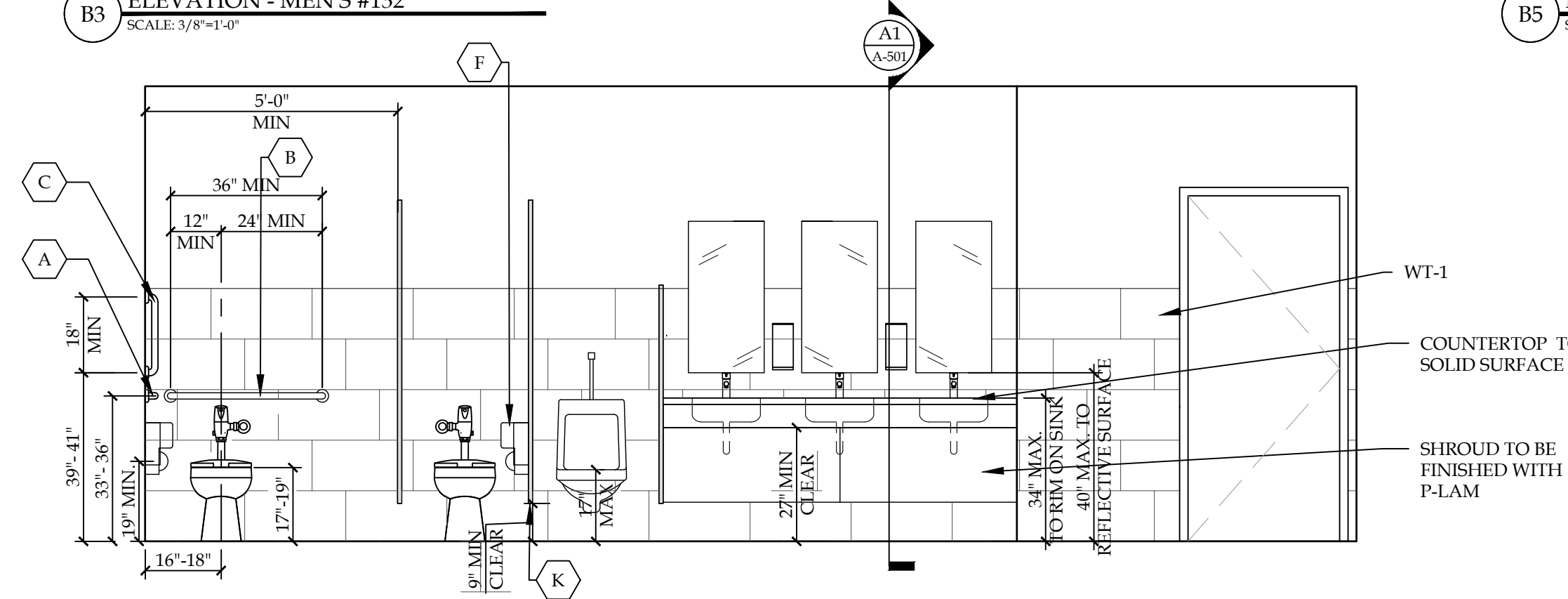
C3 ELEVATION - WOMEN'S #133  
SCALE: 3/8"=1'-0"



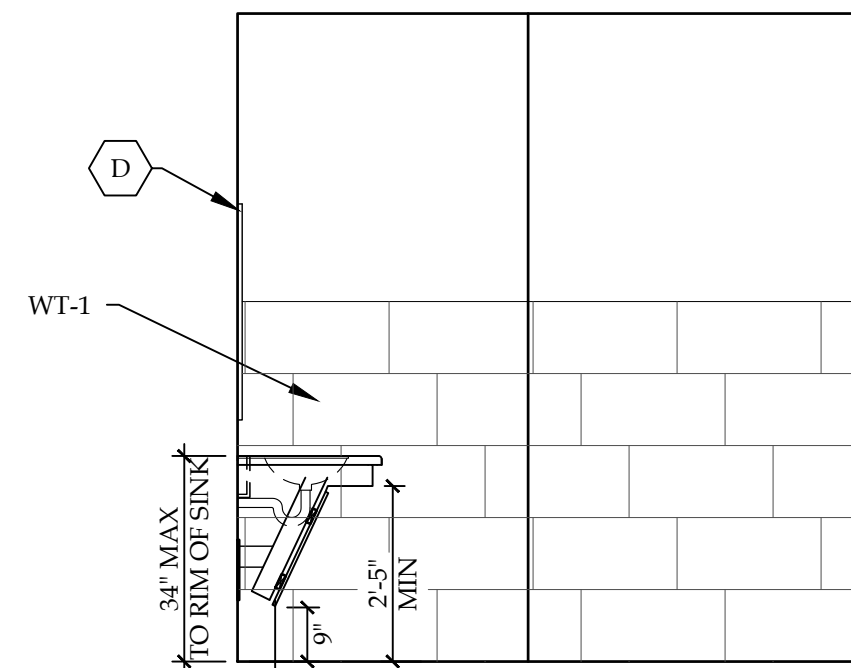
A1 ENLARGED PLAN - EXISTING MEN'S #132 & EXISTING WOMEN'S #133  
SCALE: 3/8"=1'-0"



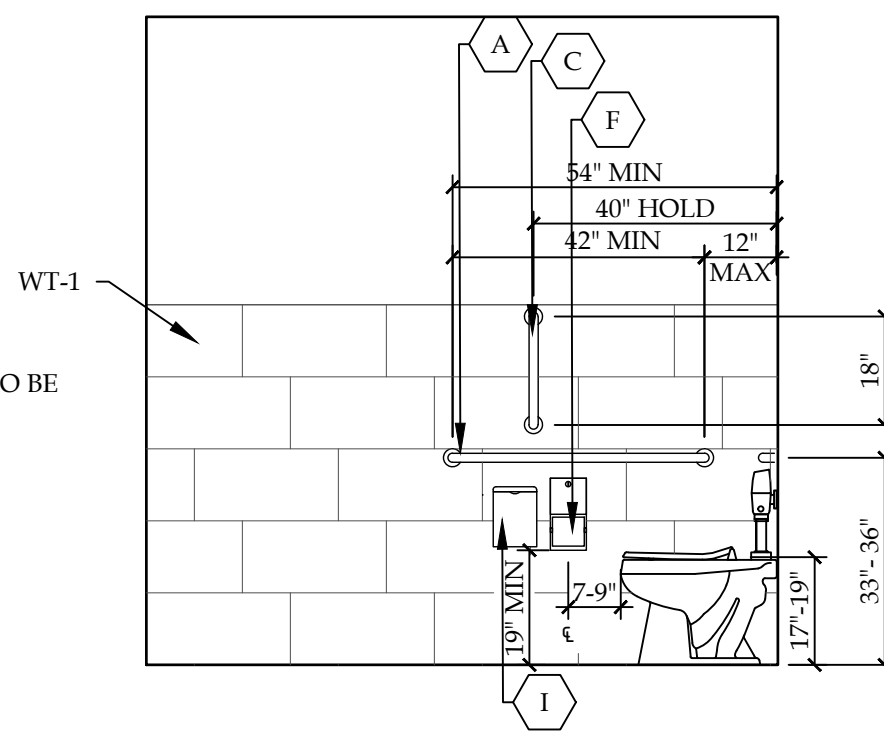
B3 ELEVATION - MEN'S #132  
SCALE: 3/8"=1'-0"



A3 ELEVATION - MEN'S #132  
SCALE: 3/8"=1'-0"



B5 ELEVATION - MEN'S #132  
SCALE: 3/8"=1'-0"



B5 ELEVATION - MEN'S #132  
SCALE: 3/8"=1'-0"

ACCESSORIES SCHEDULE					
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" HORIZONTAL GRAB BAR	B-680642	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
B	36" HORIZONTAL GRAB BAR	B-680636	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
C	18" VERTICAL GRAB BAR	B-680648	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
D	1/4" 24"x36" FRAMELESS PLATE GLASS MIRROR	B-1556	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SPACERS TO BE USED BEHIND MIRROR FOR LEVEL APPLICATION. MIRRORS TO BE MOUNTED ON STAND STAINLESS STEEL STAND OFFS.
E	SURFACE MOUNTED AUTOMATIC HAND SOAP DISPENSER	B-2013	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING. OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF. COLOR: TRD
F	SURFACE MOUNTED TOILET TISSUE DISPENSER	B-2888	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
G	SURFACE MOUNTED AUTOMATIC PAPER TOWEL DISPENSER	29460A	ENMOTION	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING. COLOR WHITE
H	STAINLESS STEEL SURFACE MOUNTED COAT HOOK/DOOR STOP	B-212	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	BACK OF RESTROOM TOILET ROOM DOORS
I	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	B-270	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
J	SEMI RECESSED WASTE RECEPTACLE	B-4344	BOBRICK WASHROOM EQUIPMENT, INC	PER MANUFACTURER'S REQUIREMENTS	SEE DRAWING
K	TOILET PARTITIONS	OVERHEAD BRACED & FLOOR MOUNTED	GLOBAL PARTITIONS	PER MANUFACTURER'S REQUIREMENTS	FLOOR ANCHORED/OVERHEAD BRACED. REFER TO DRAWINGS, POWDER COATED STEEL FINISH COLOR TRD

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SA PROJECT TEAM: PRINCIPAL P. Silvestri  
PROJ. ARCH. S. Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N. Catuzza

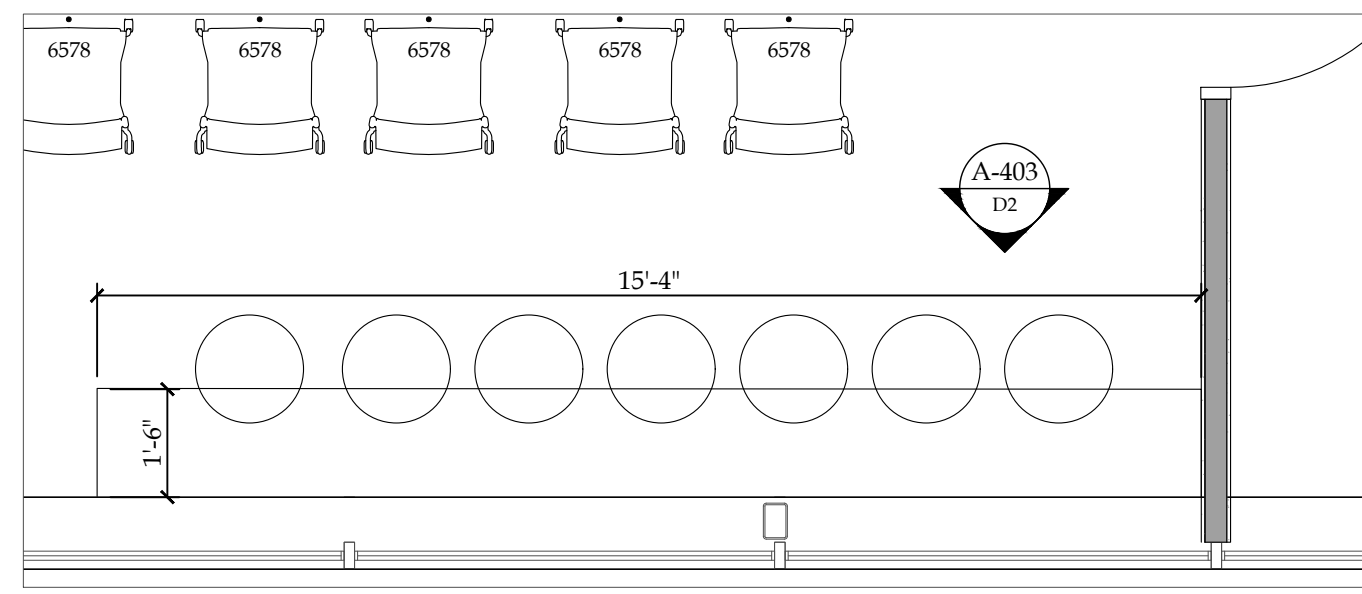
SEAL:

TITLE:  
**ENLARGED FLOOR PLANS & ELEVATIONS**

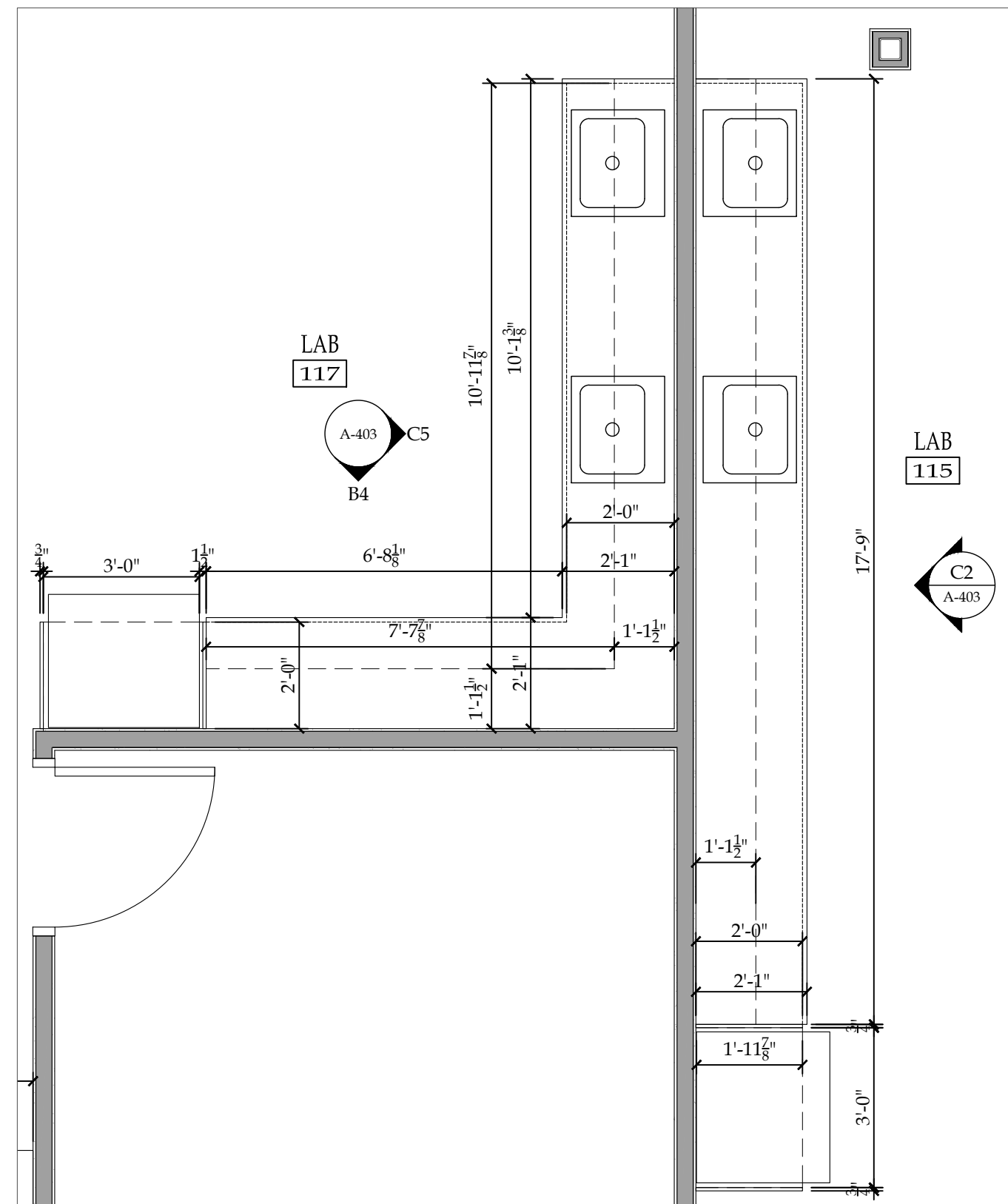


SA JOB #: 14082.07 DATE: 6-29-2021

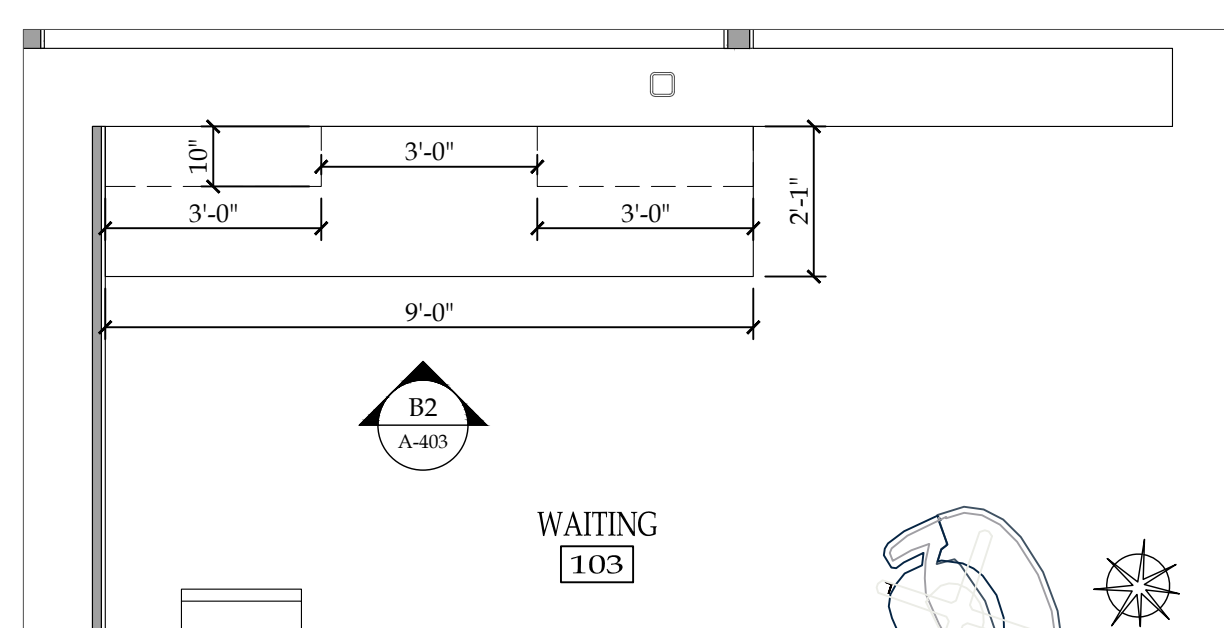
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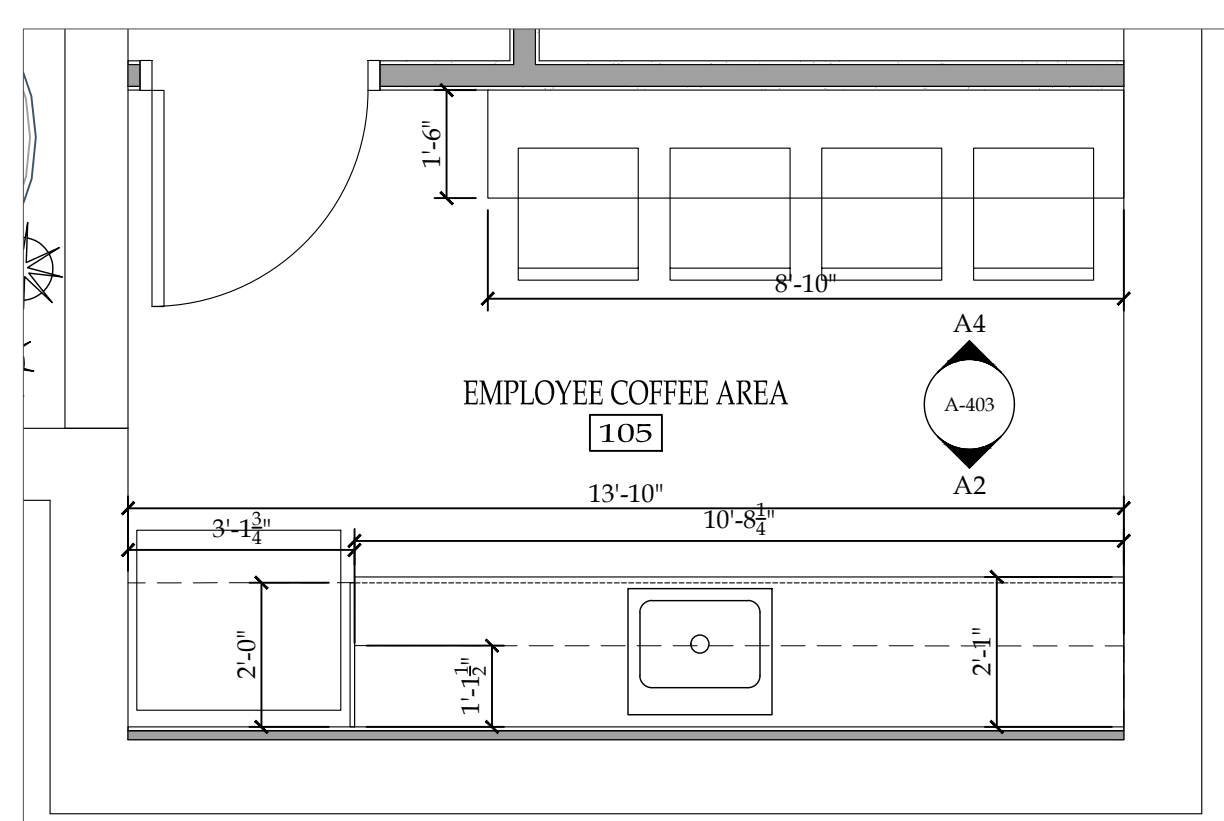
E1 ENLARGED PLAN - LAB #117  
SCALE: 3/8"=1'-0"



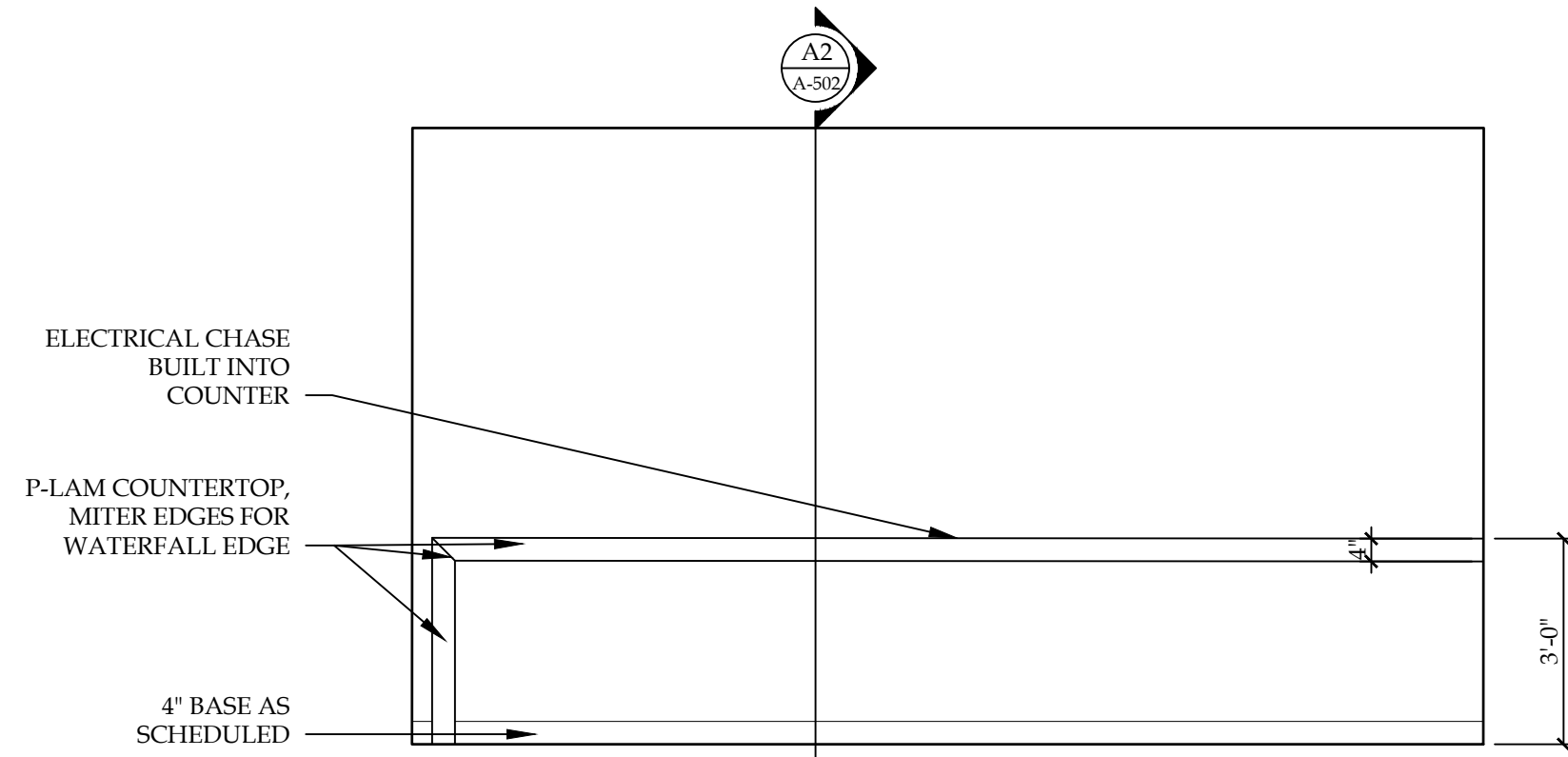
C1 ENLARGED PLAN - LAB #115 & LAB #117  
SCALE: 3/8"=1'-0"



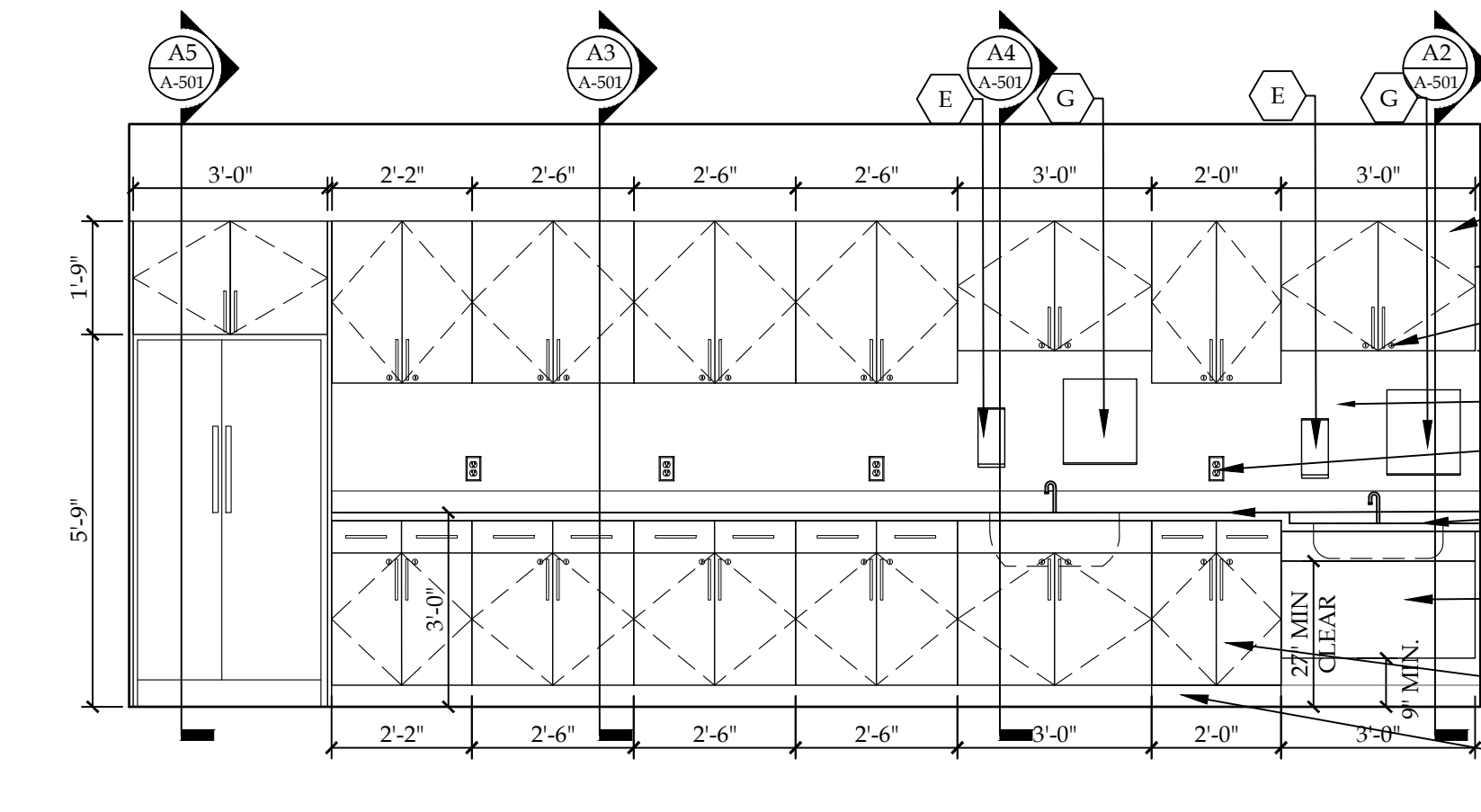
B1 ENLARGED PLAN - WAITING #103  
SCALE: 3/8"=1'-0"



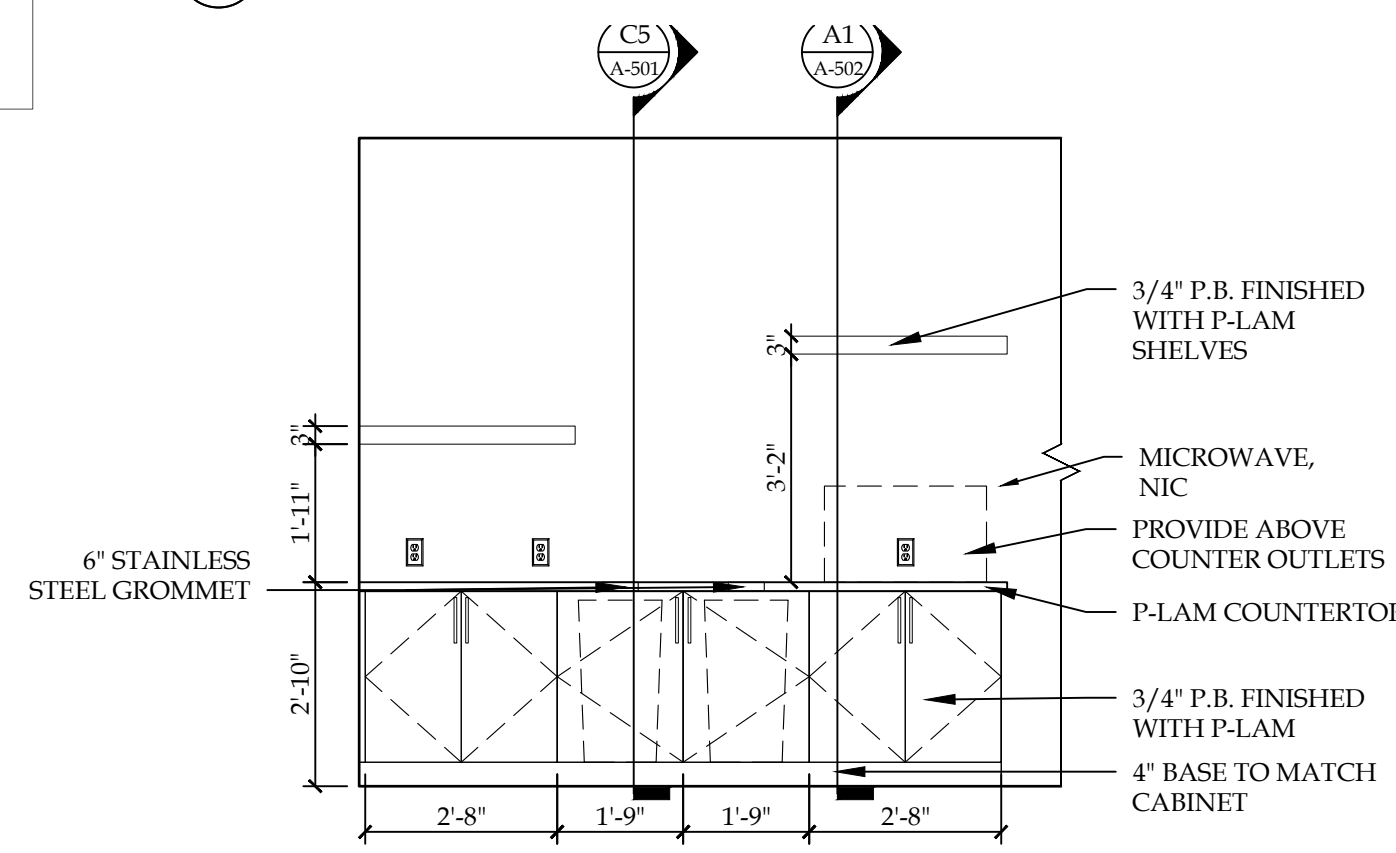
A1 ENLARGED PLAN - EMPLOYEE COFFEE AREA #105  
SCALE: 3/8"=1'-0"



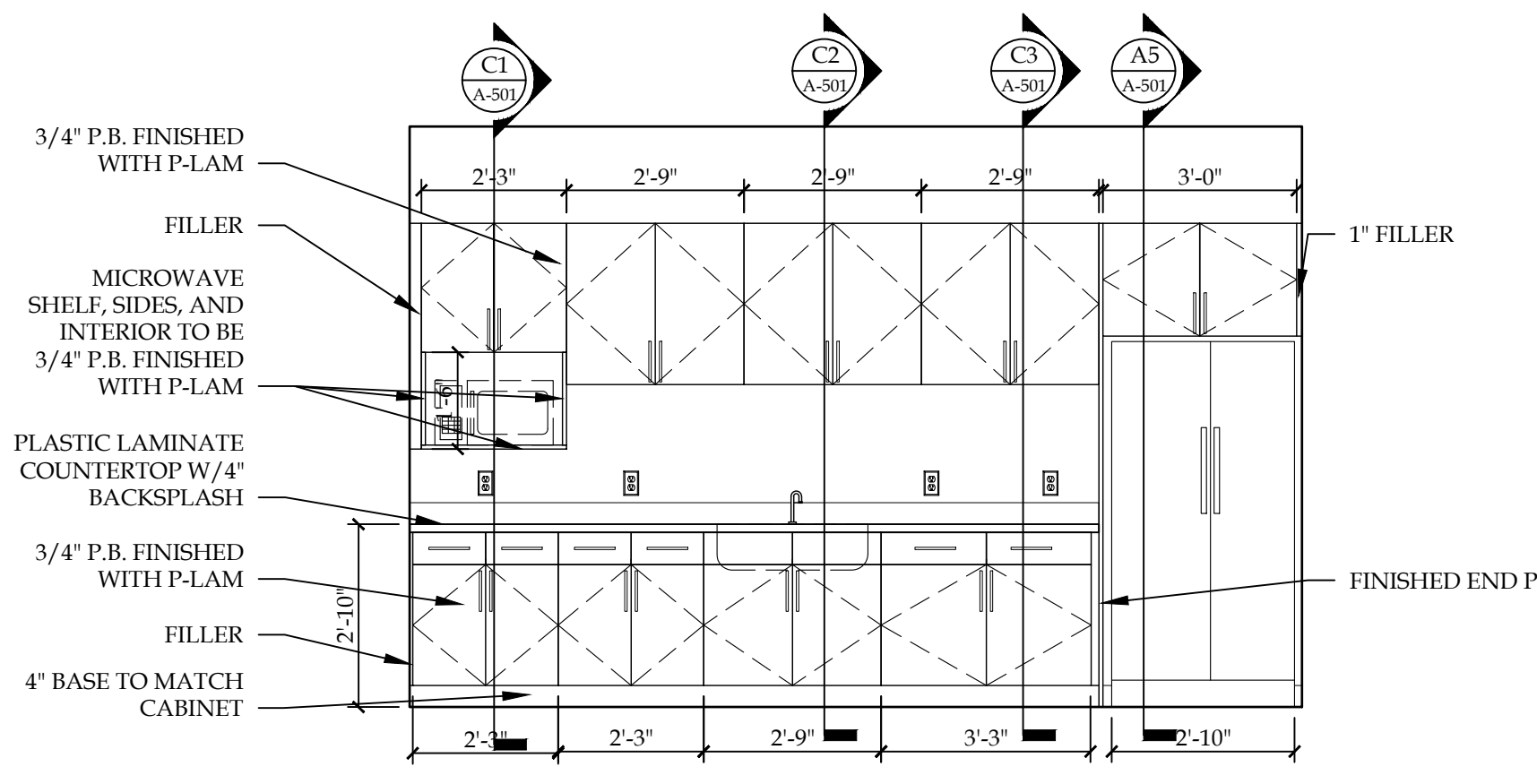
D2 ELEVATION - LAB #117  
SCALE: 3/8"=1'-0"



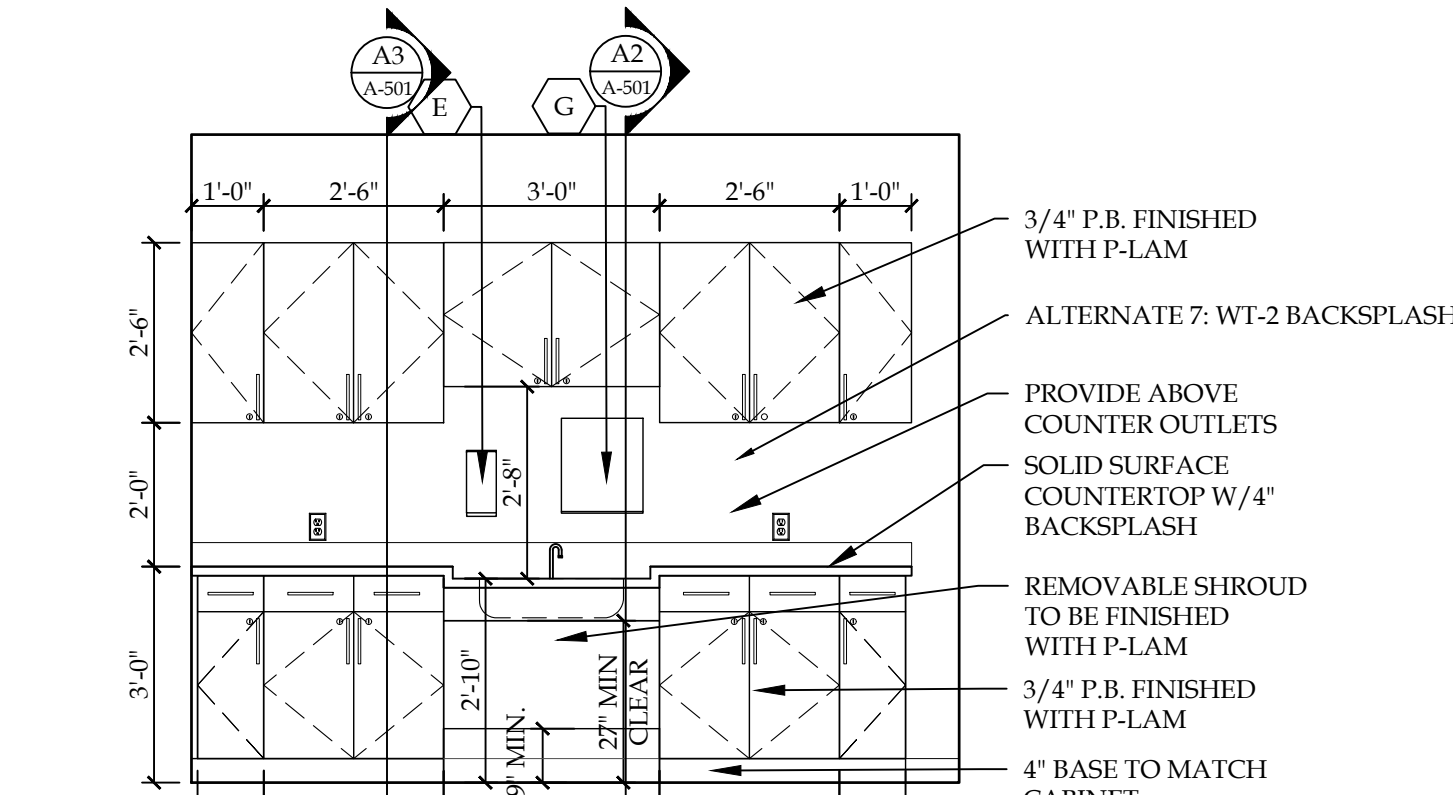
C2 ELEVATION - LAB #115  
SCALE: 3/8"=1'-0"



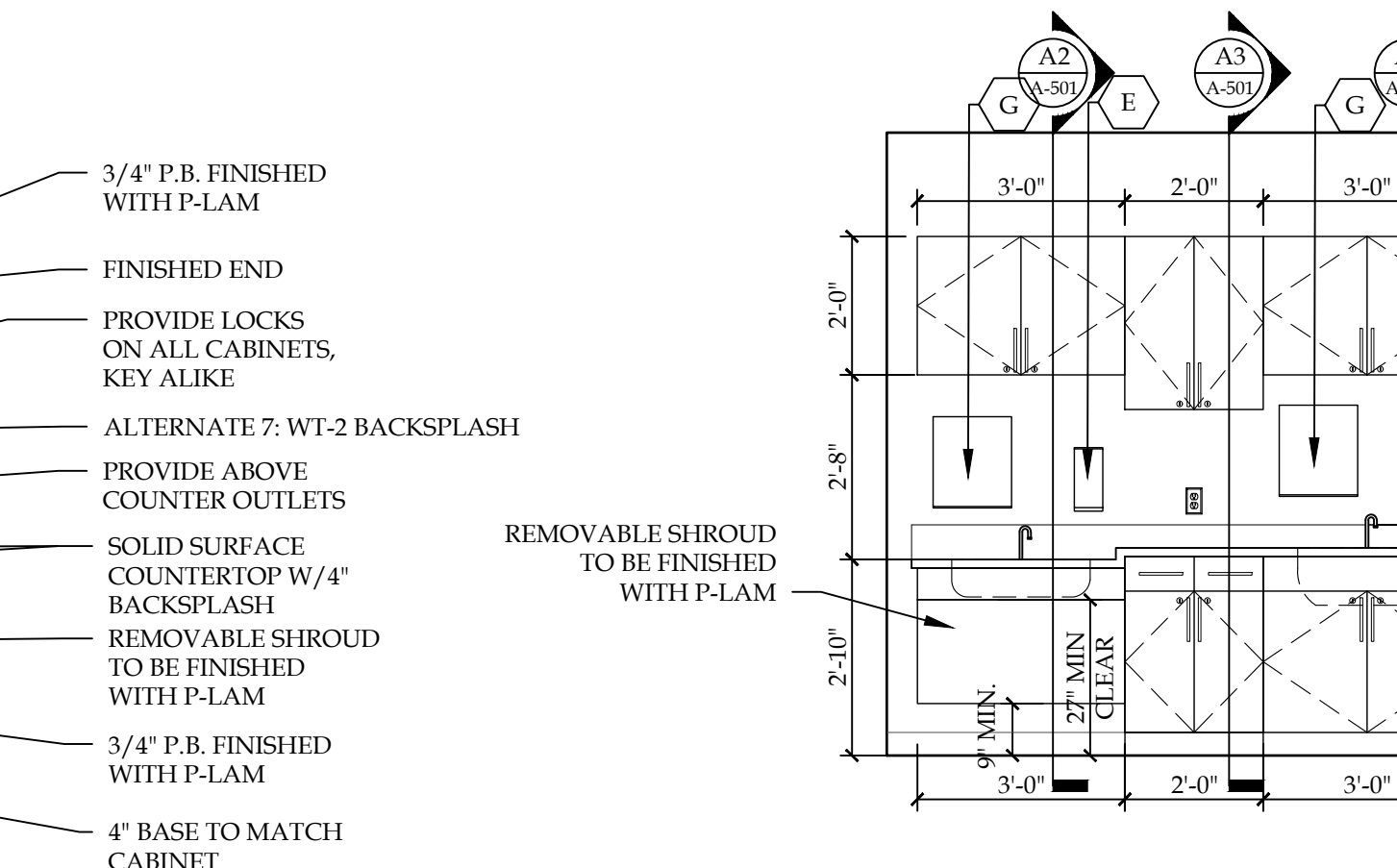
B2 ELEVATION - EMPLOYEE COFFEE AREA #105  
SCALE: 3/8"=1'-0"



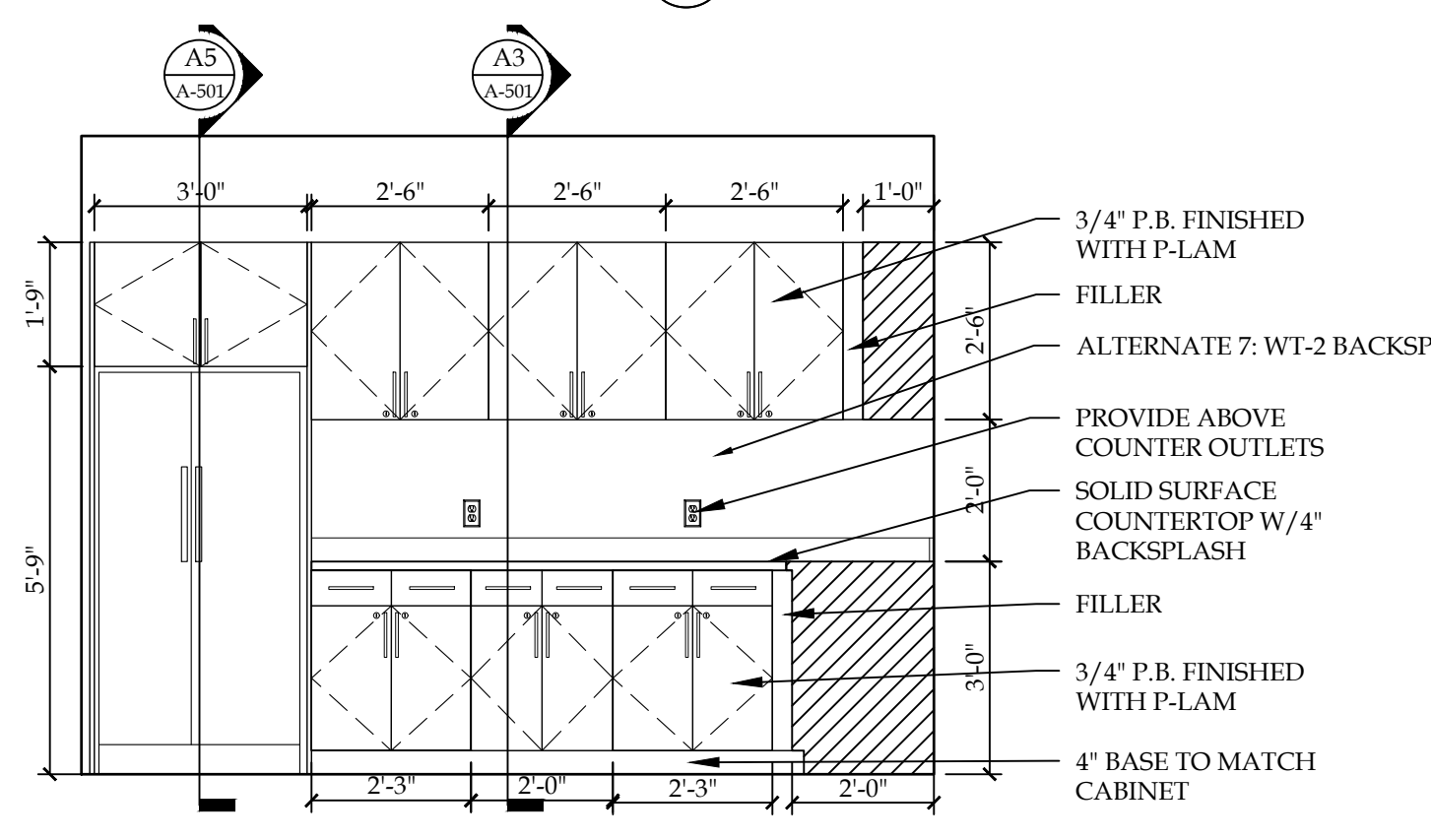
A2 ELEVATION - EMPLOYEE COFFEE AREA #105  
SCALE: 3/8"=1'-0"



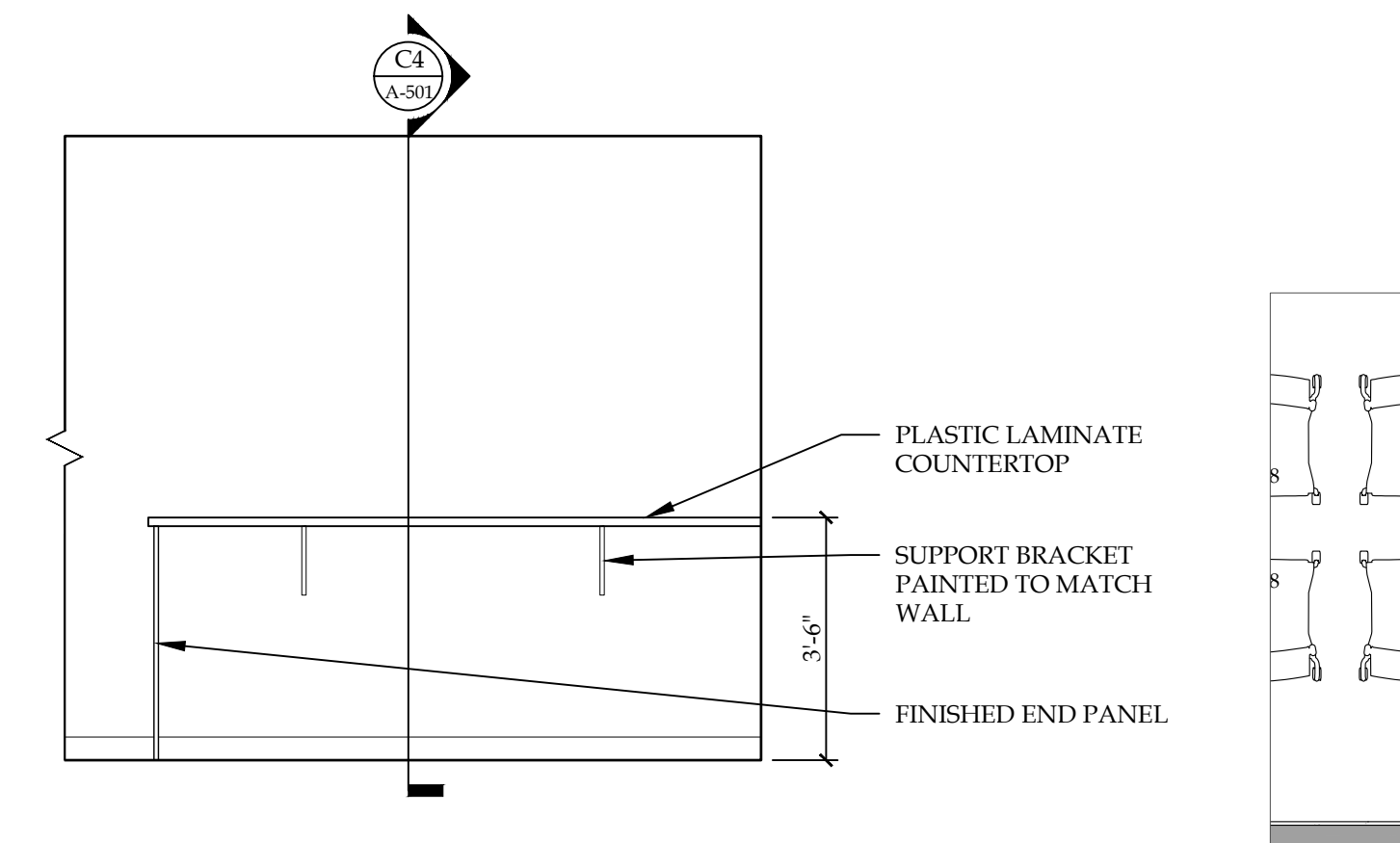
D4 ELEVATION - CLASSROOM #120  
SCALE: 3/8"=1'-0"



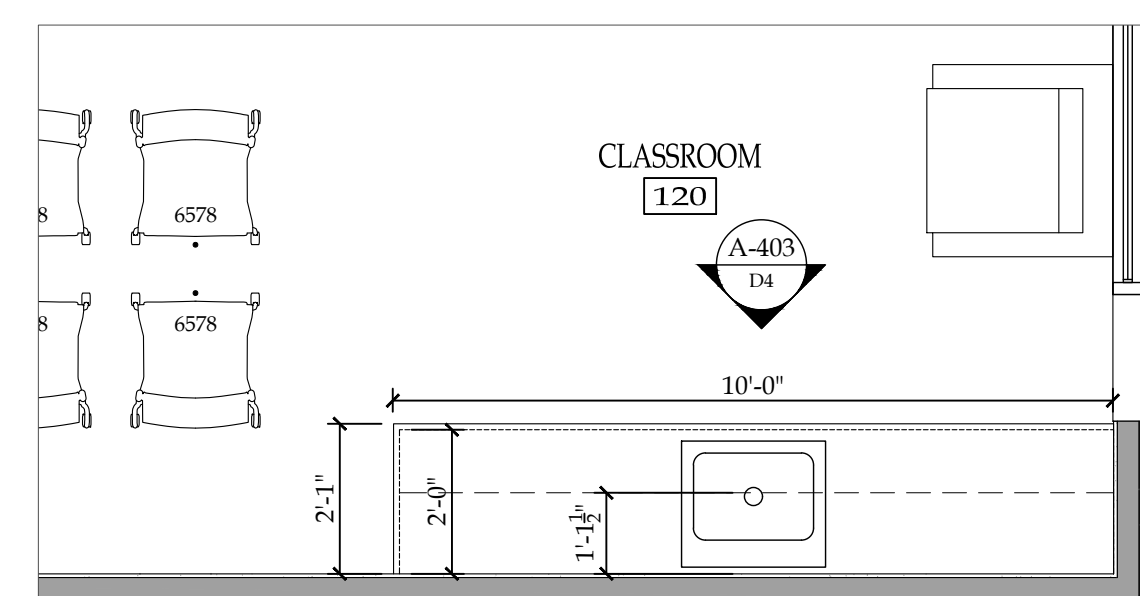
C5 ELEVATION - LAB #117  
SCALE: 3/8"=1'-0"



B4 ELEVATION - EMPLOYEE COFFEE AREA #105  
SCALE: 3/8"=1'-0"



A4 ELEVATION - EMPLOYEE COFFEE AREA #105  
SCALE: 3/8"=1'-0"



A5 ENLARGED PLAN - CLASSROOM #120  
SCALE: 3/8"=1'-0"

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PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**ENLARGED FLOOR PLANS & ELEVATIONS**



**SILVESTRI ARCHITECTS · PC**

1321 MILLERSPORT HWY PH. 716.691.0900  
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-403**

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 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

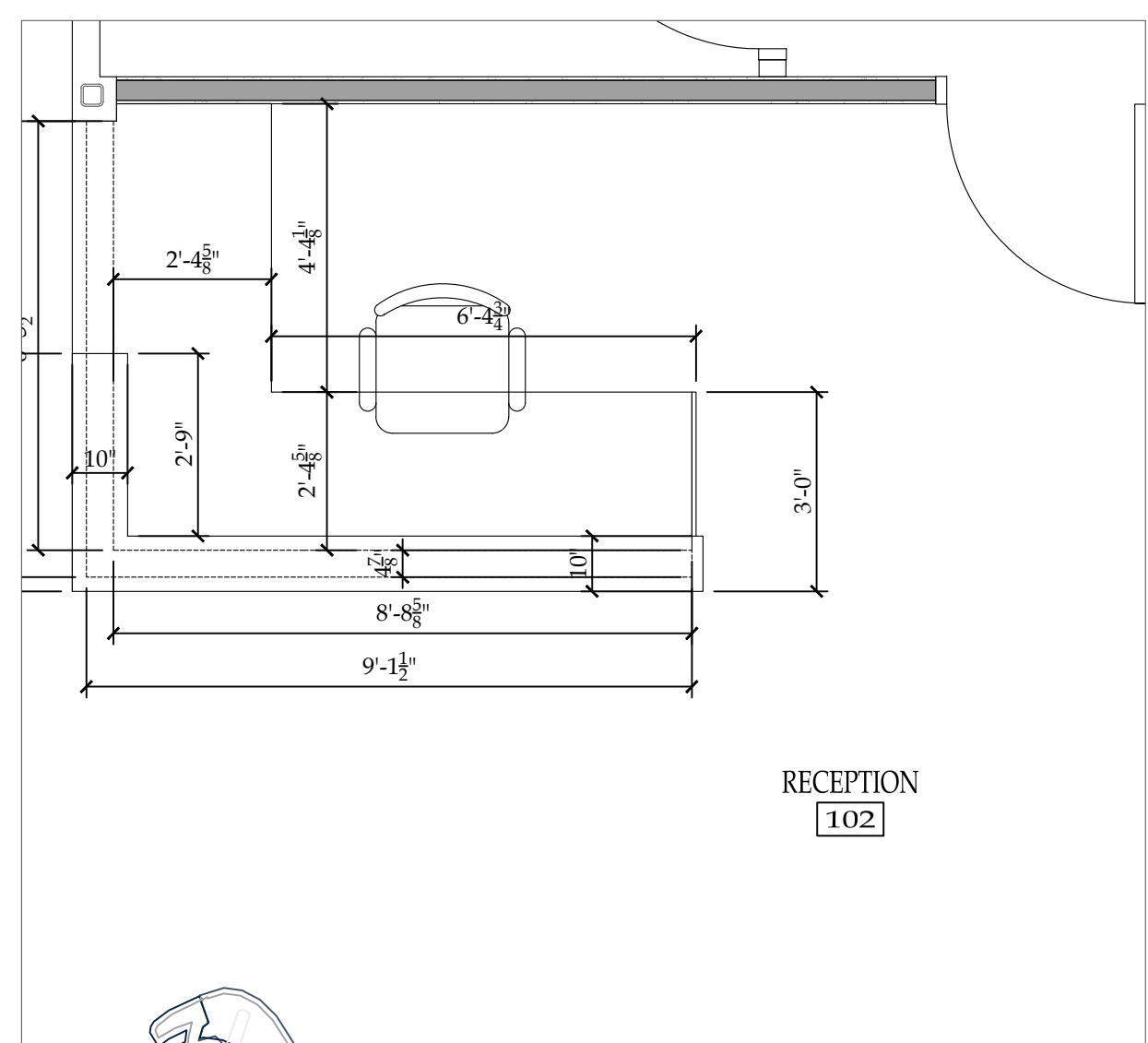
TITLE:  
**ENLARGED FLOOR PLANS & ELEVATIONS**



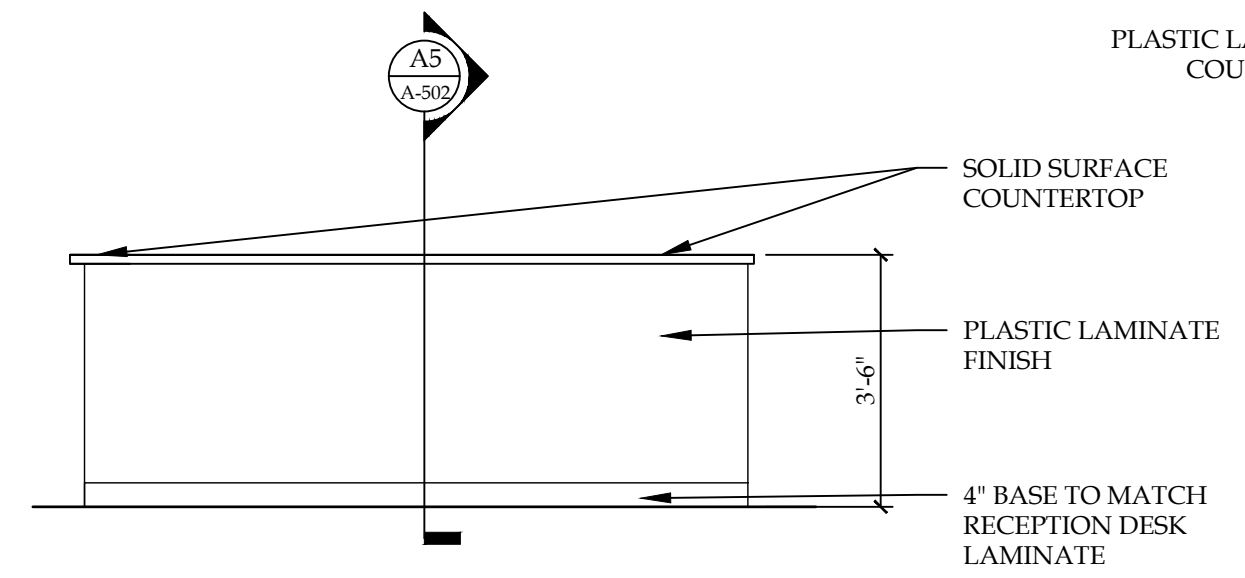
**SILVESTRI ARCHITECTS - PC**  
 1321 MILLERSPORT HWY PH. 716.691.0900  
 AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: **14082.07** DATE: **6-29-2021**

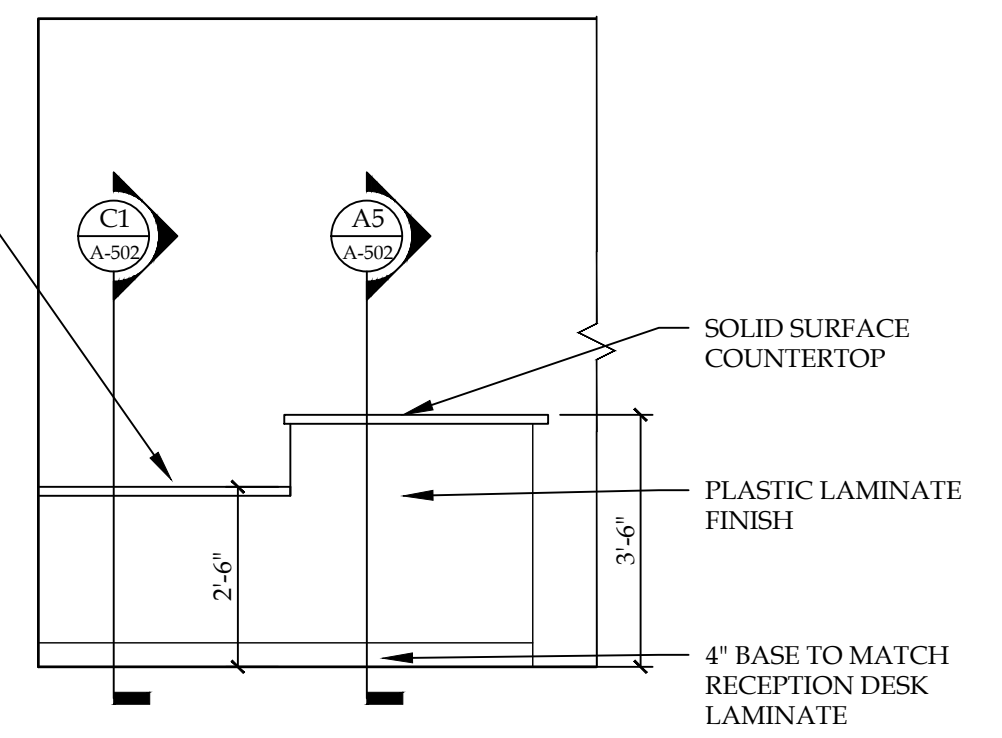
DRAWING #: **A-404**



A1 ENLARGED PLAN - RECEPTION #102  
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A2 ELEVATION - EMPLOYEE COFFEE AREA #105  
 SCALE: 3/8"=1'-0"

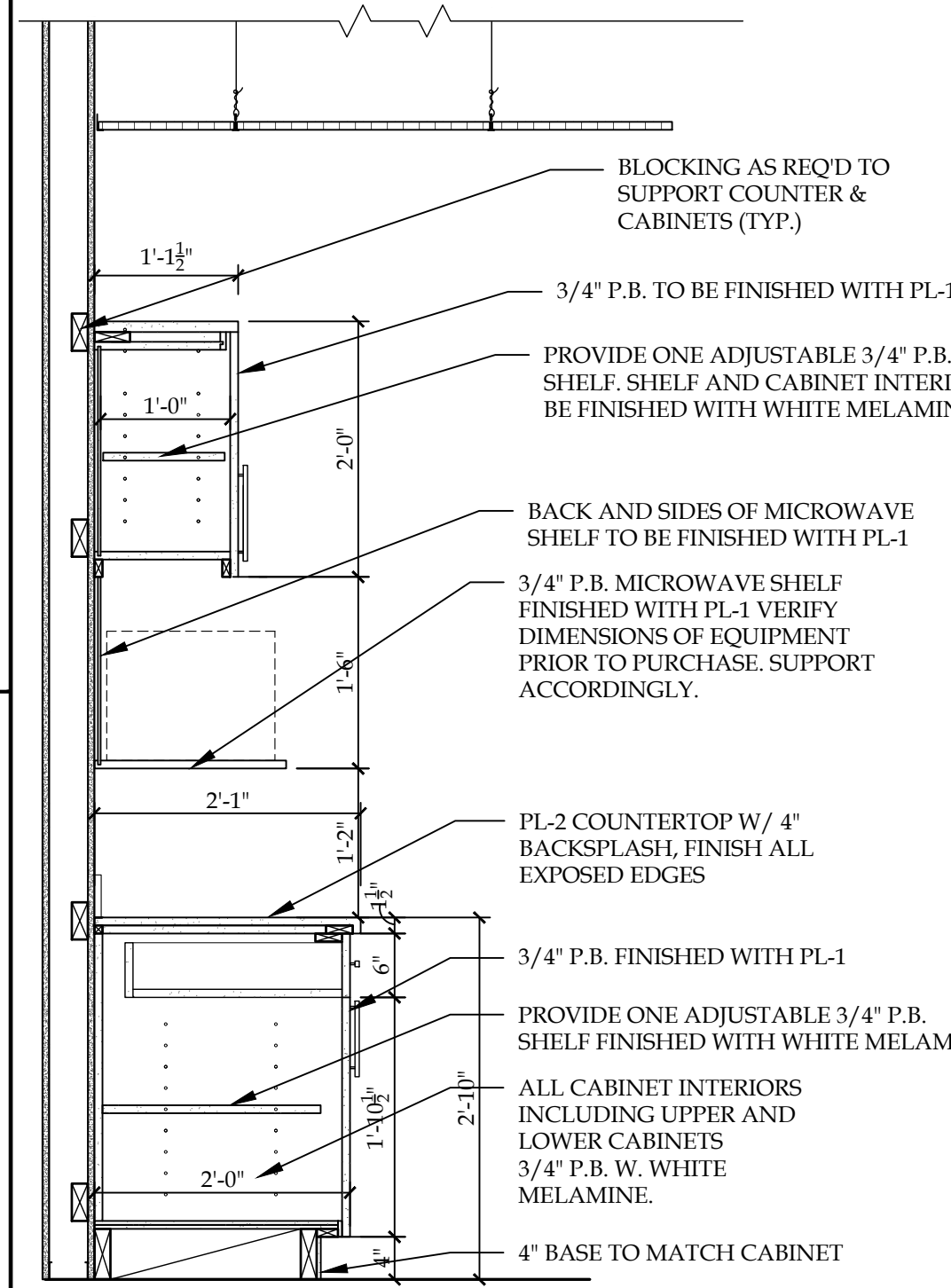


A4 ELEVATION - EMPLOYEE COFFEE AREA #105  
 SCALE: 3/8"=1'-0"

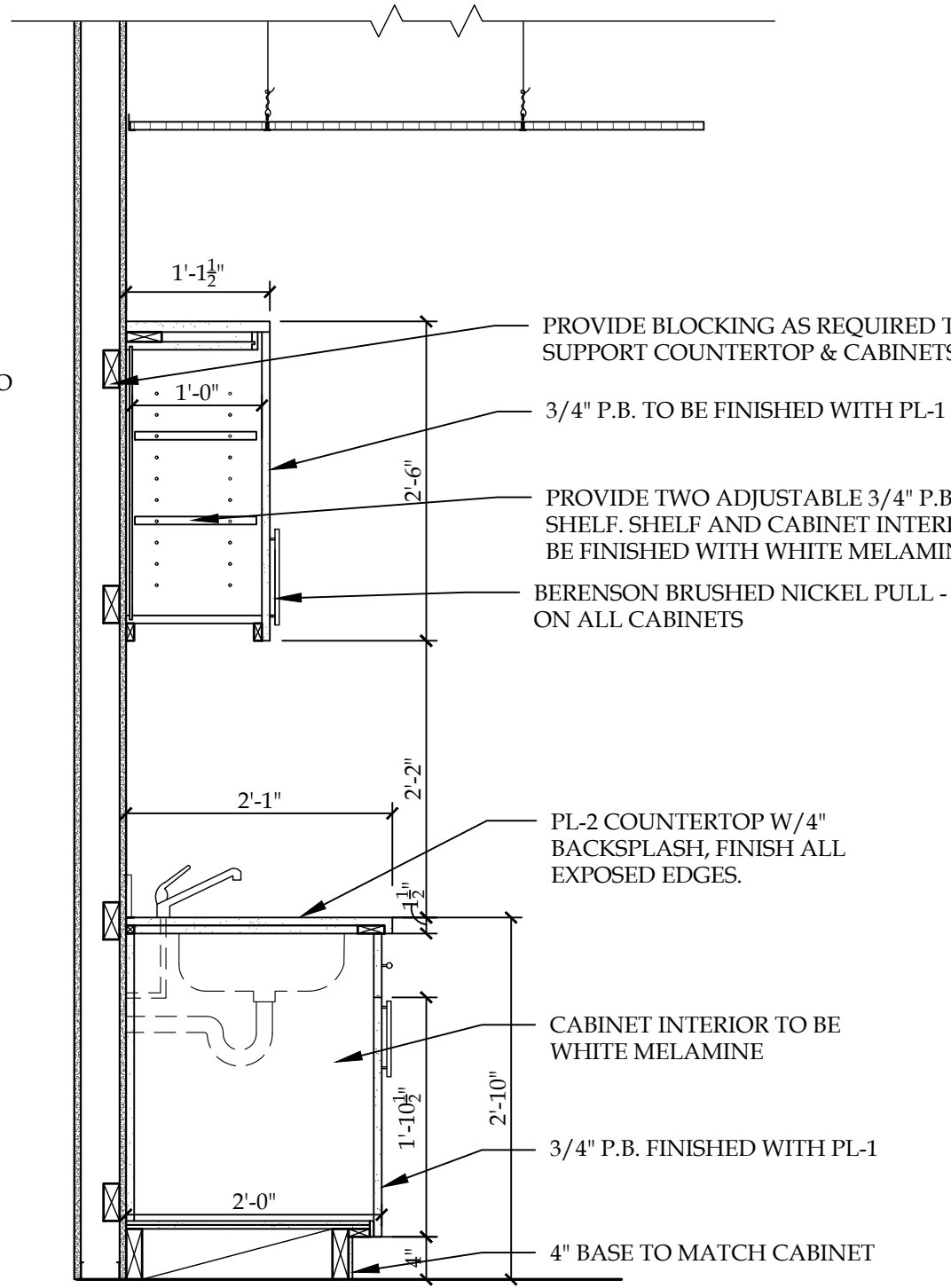
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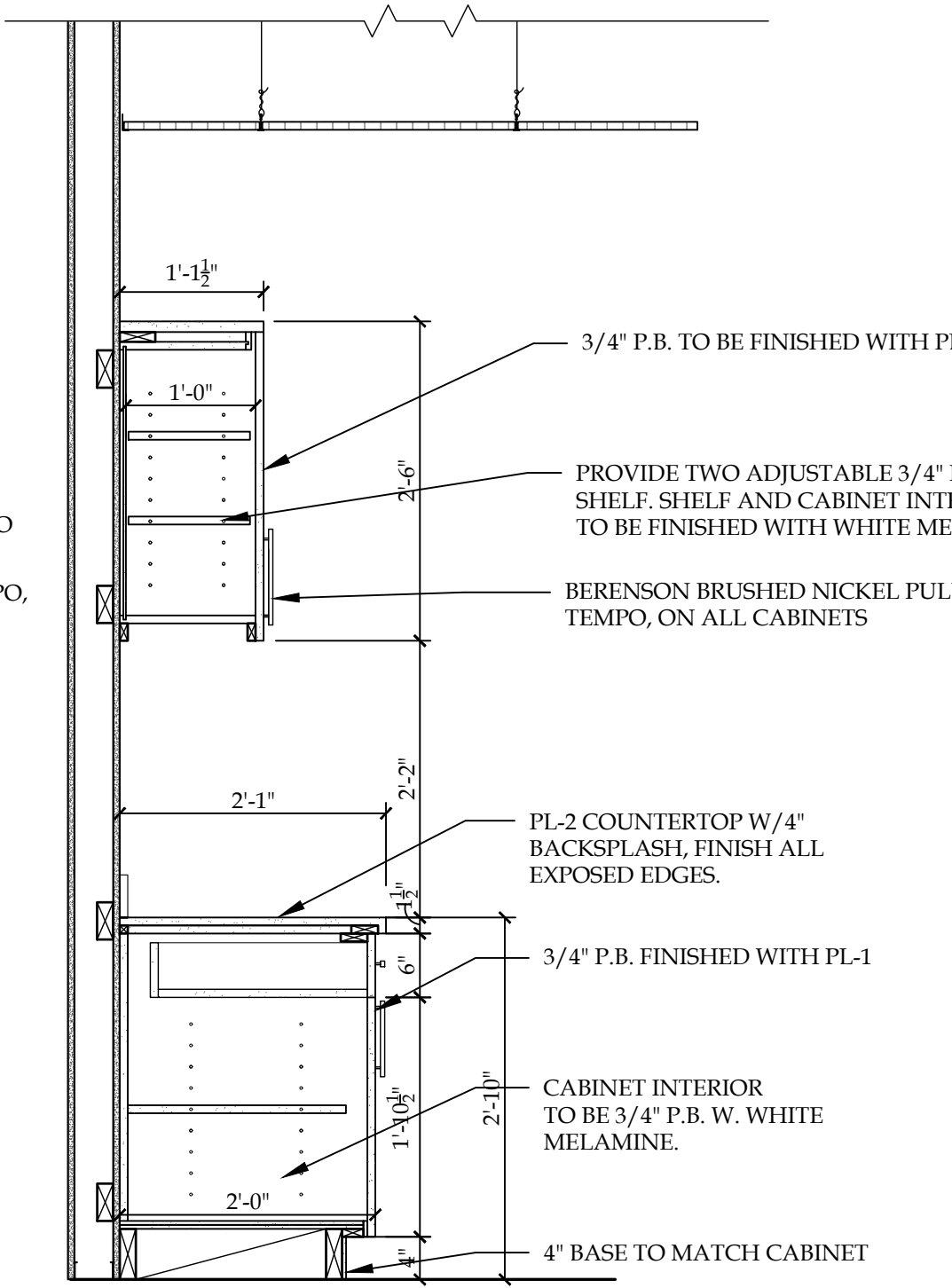
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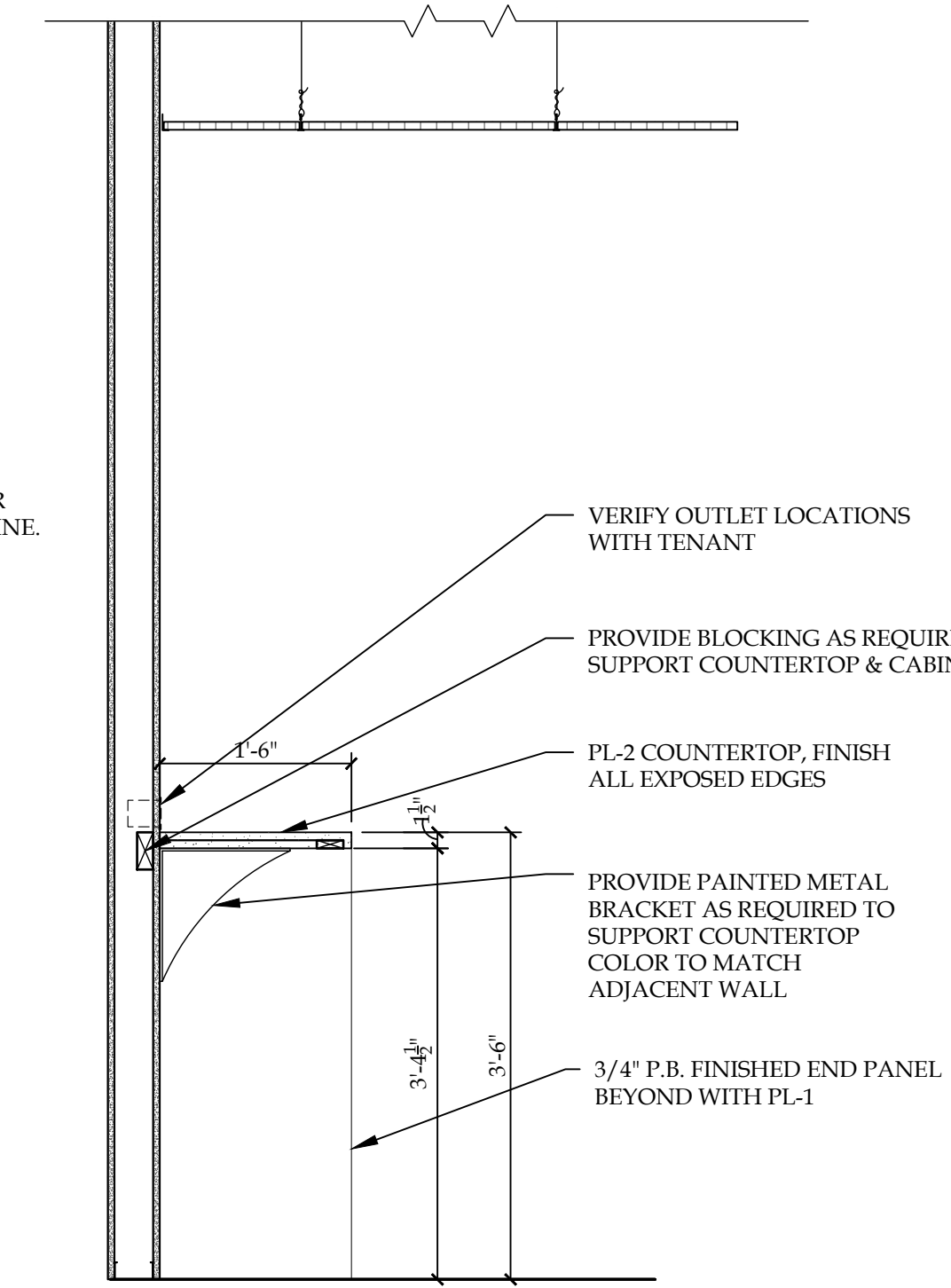
C1 SECTION - BREAK ROOM  
SCALE: 3/4"=1'-0"



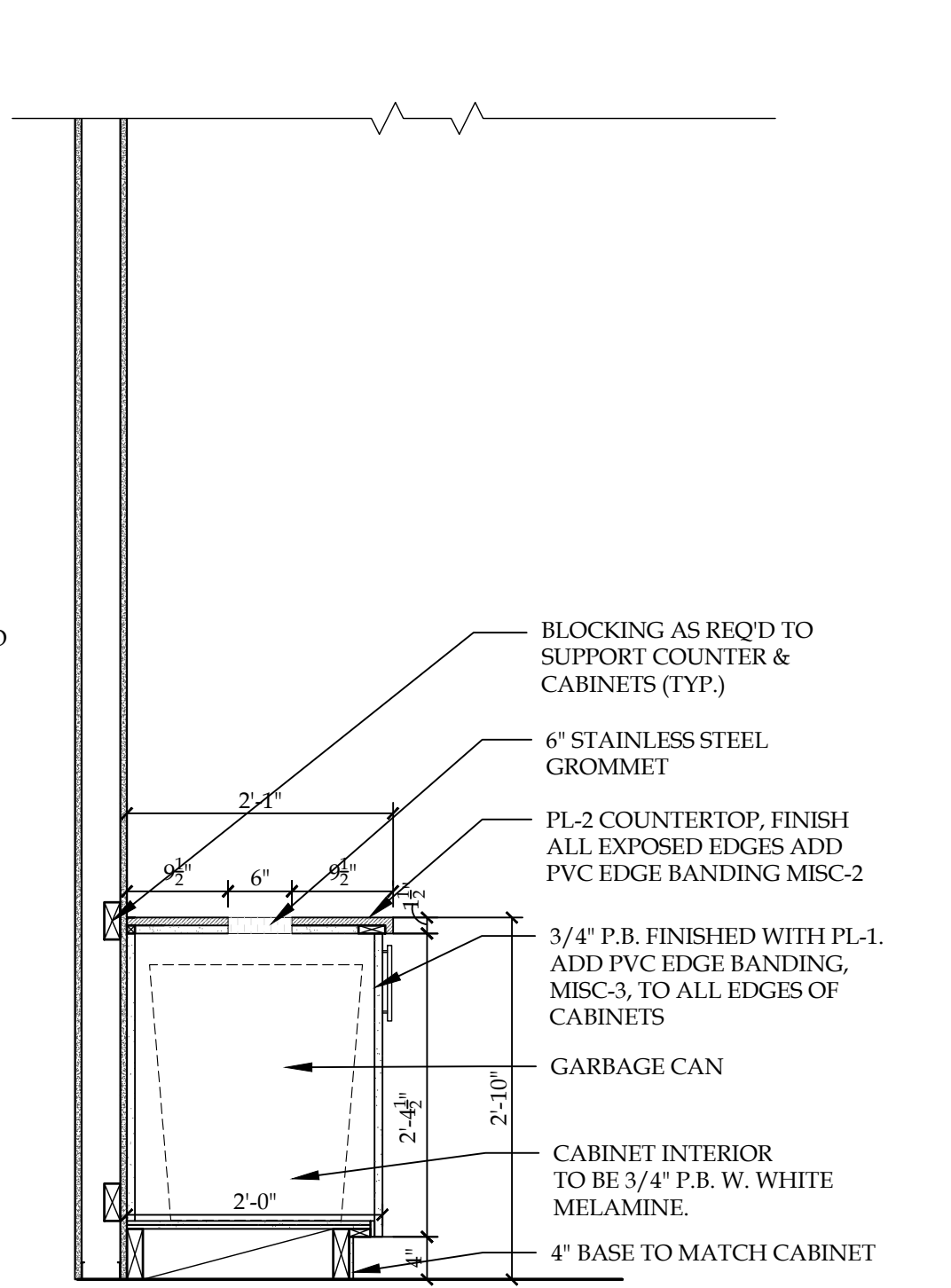
C2 SECTION - BREAK ROOM  
SCALE: 3/4"=1'-0"



C3 SECTION - BREAK ROOM  
SCALE: 3/4"=1'-0"



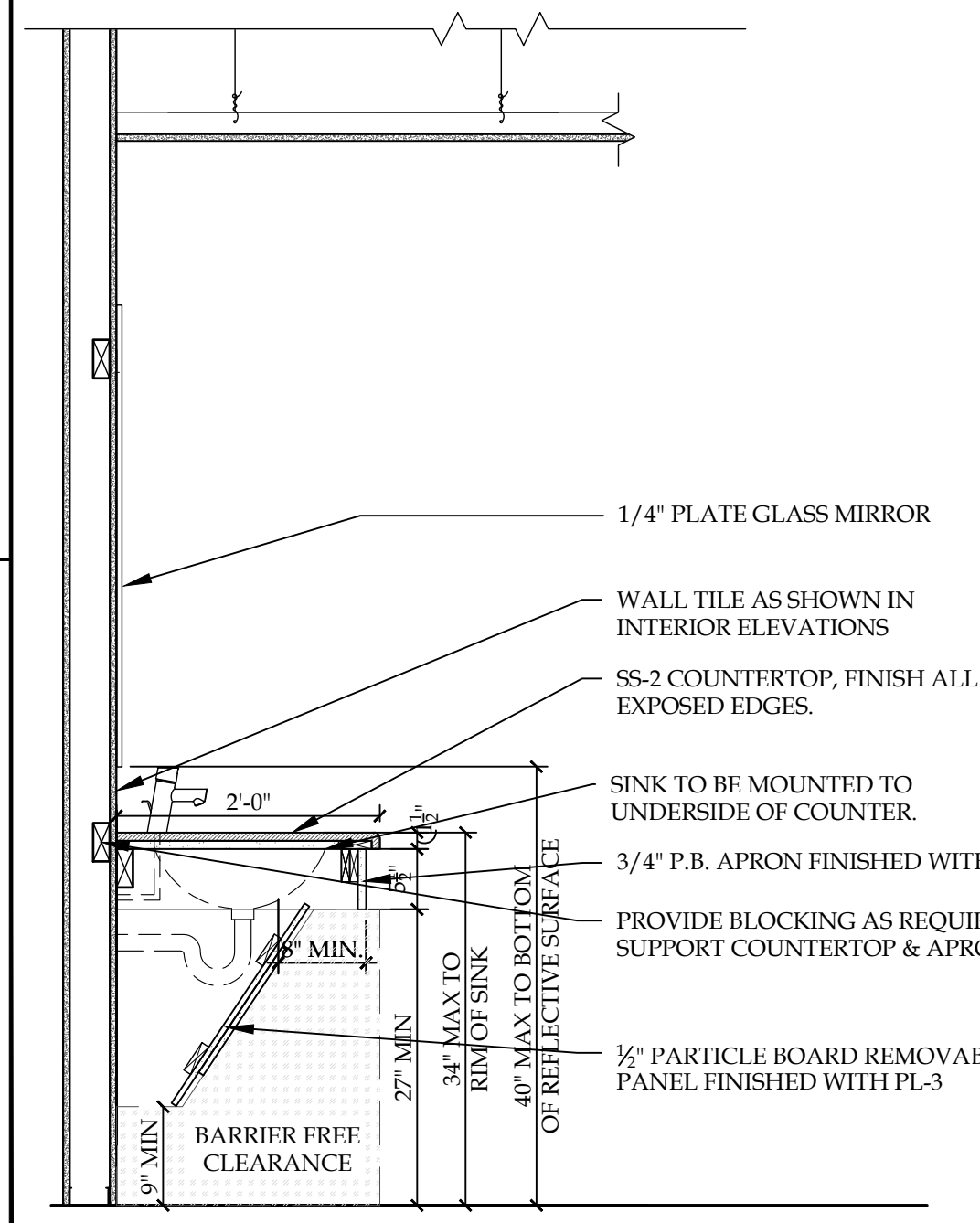
C4 SECTION - BREAK ROOM  
SCALE: 3/4"=1'-0"



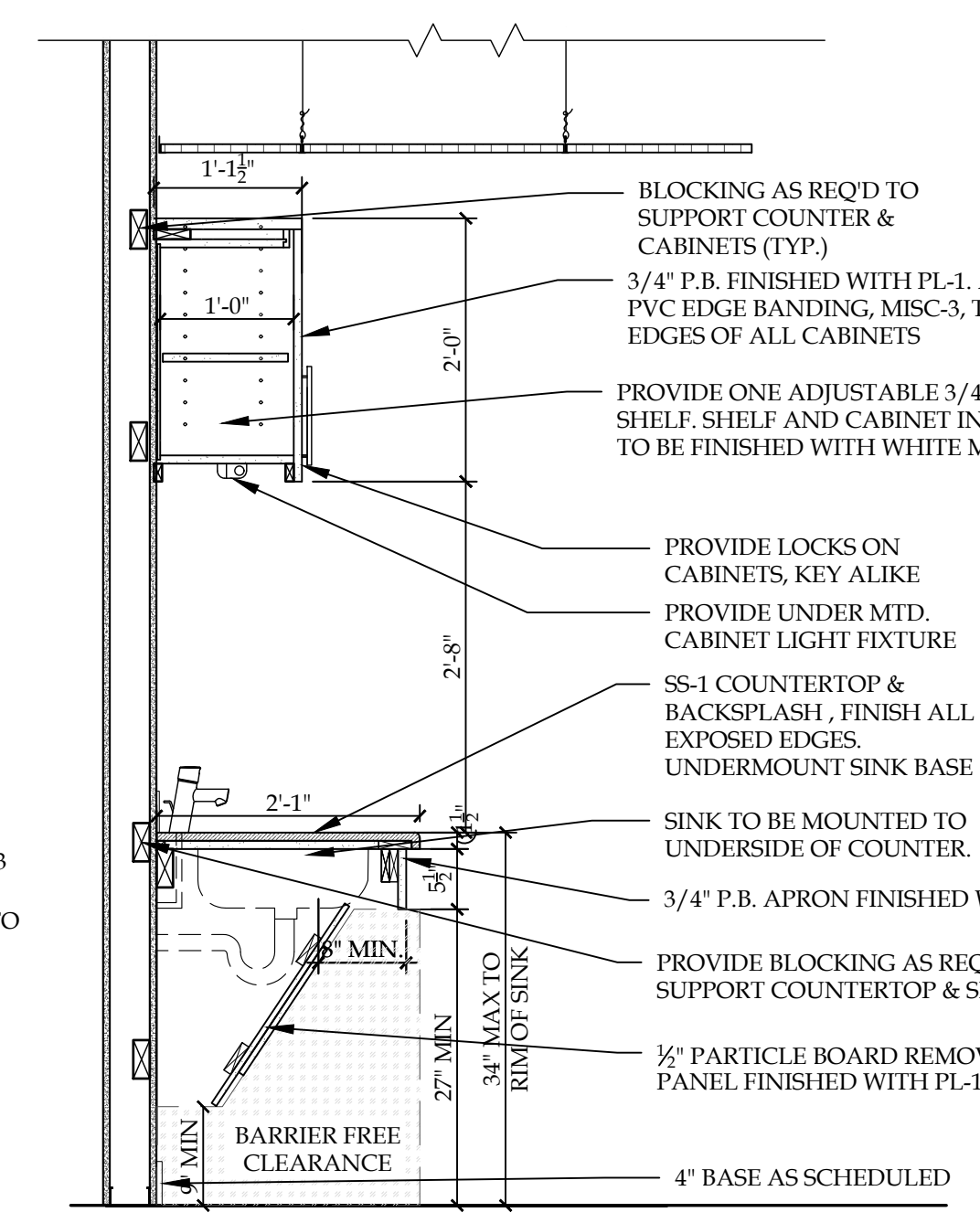
C5 SECTION - WAITING  
SCALE: 3/4"=1'-0"

B

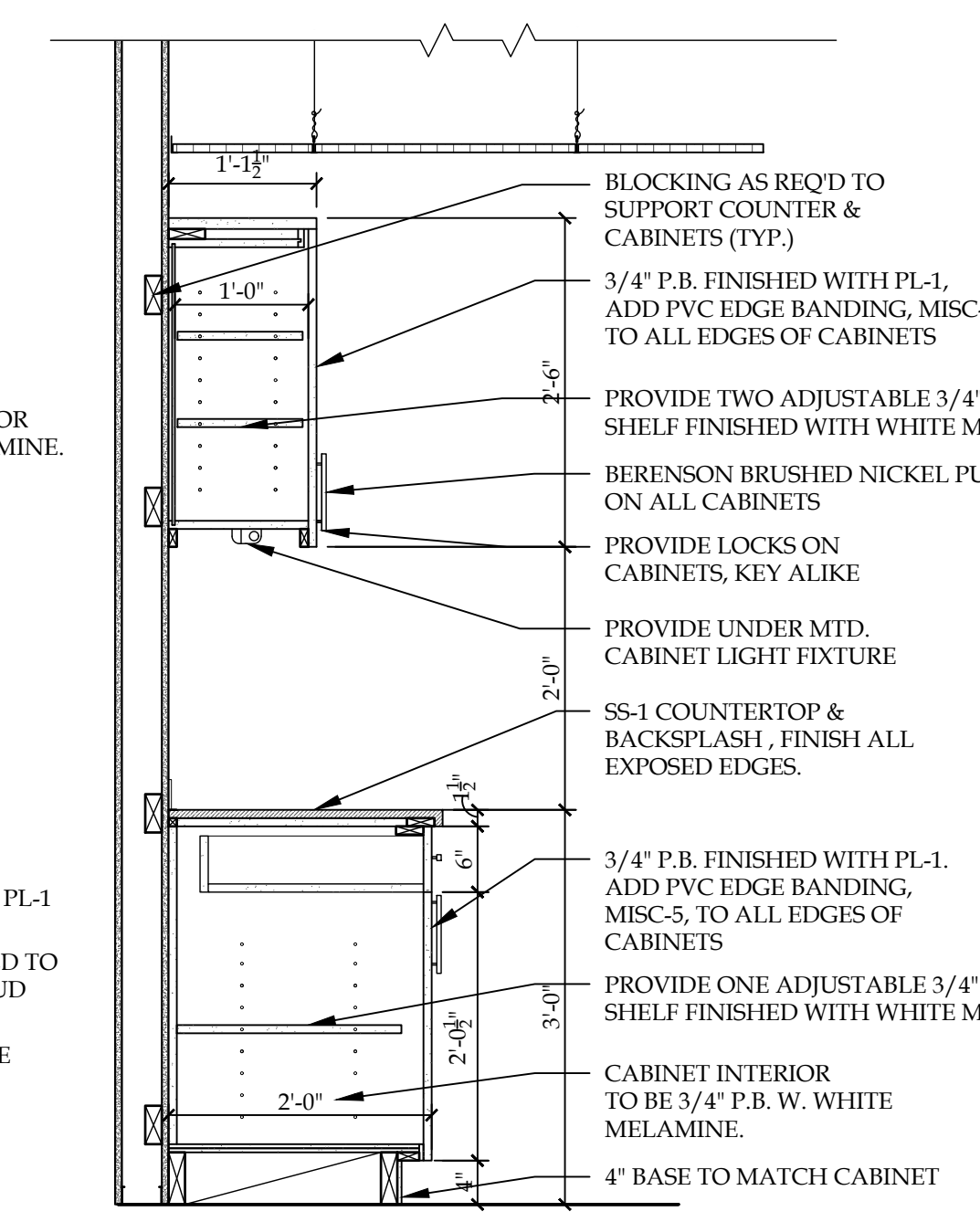
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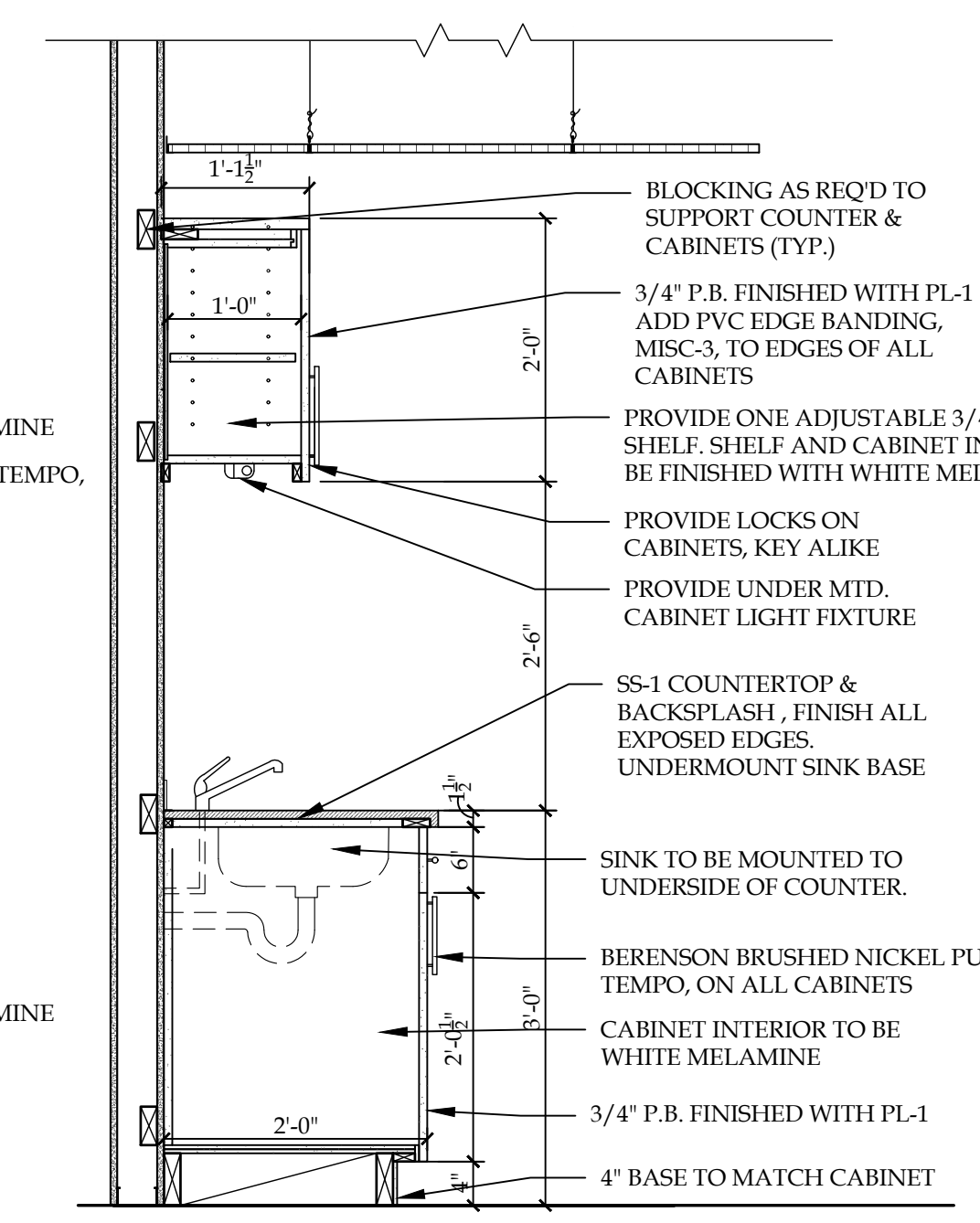
A1 SECTION - RESTROOM SHROUD  
SCALE: 3/4"=1'-0"



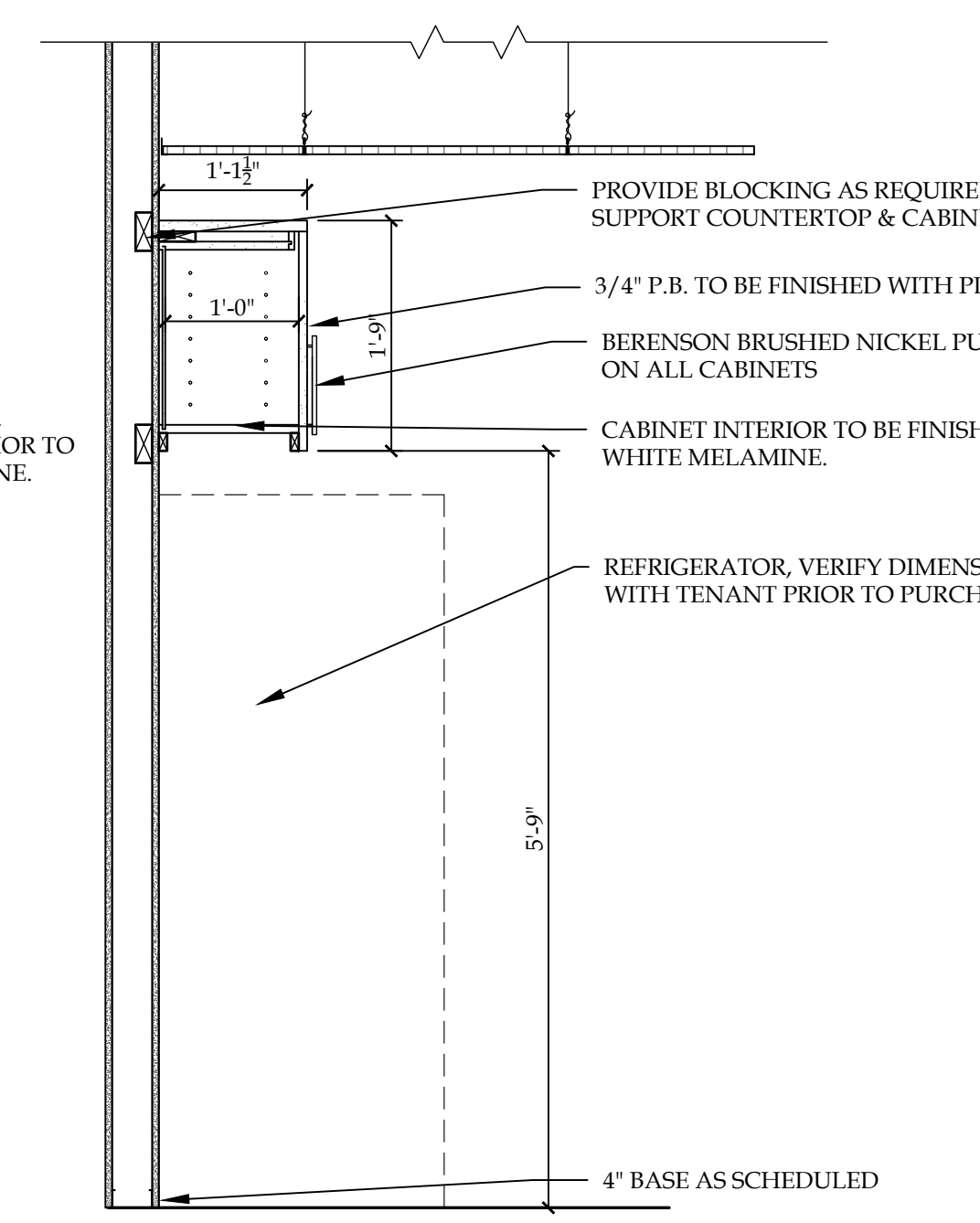
A2 SECTION - LAB  
SCALE: 3/4"=1'-0"



A3 SECTION - LAB  
SCALE: 3/4"=1'-0"



A4 SECTION - LAB  
SCALE: 3/4"=1'-0"



A5 SECTION - BREAK ROOM/LAB  
SCALE: 3/4"=1'-0"

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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:

**MILLWORK  
DETAILS**



**SILVESTRI  
ARCHITECTS · PC**

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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-501**



E

D

C

B

A

E

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A

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TITLE:

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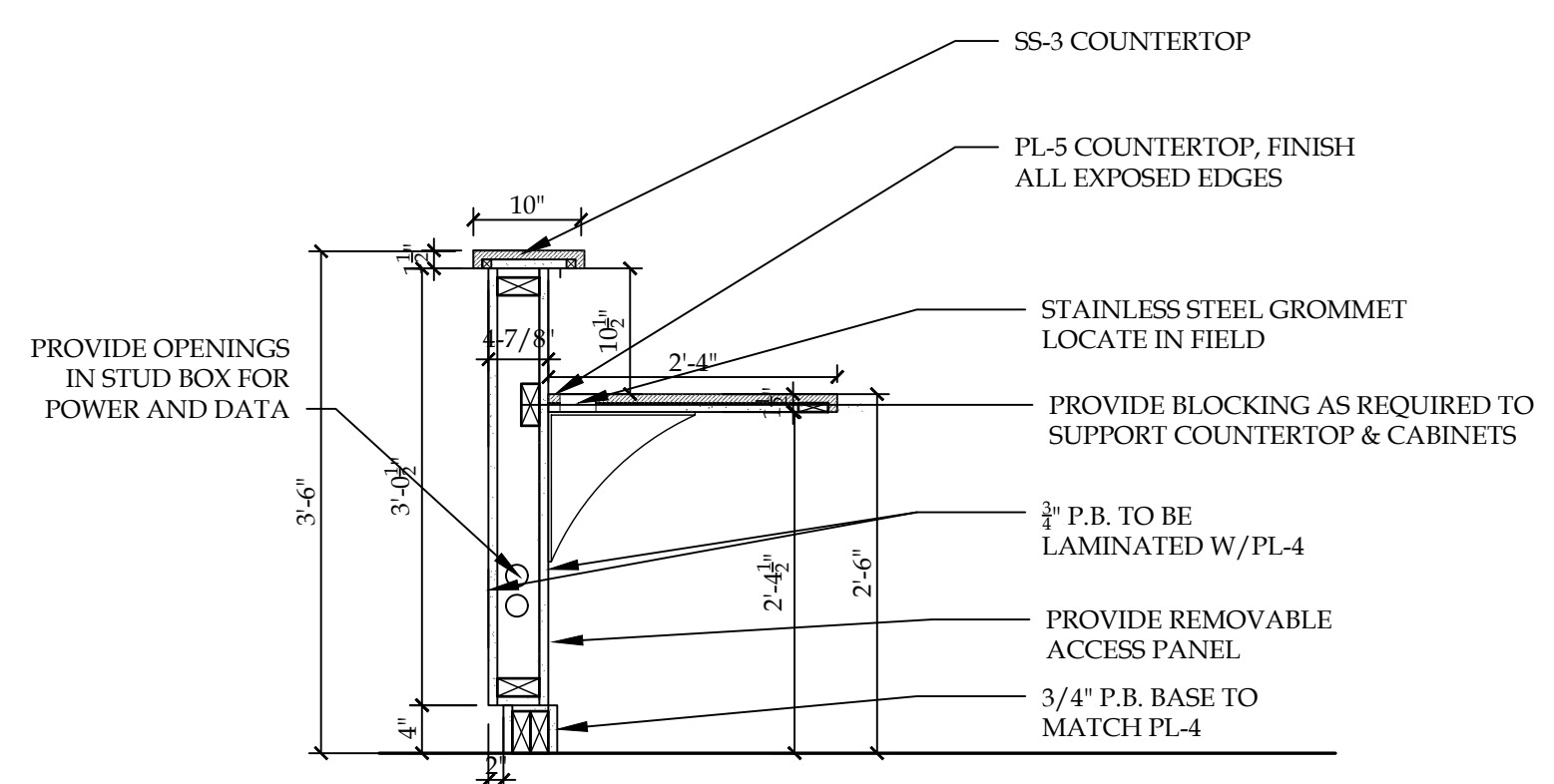


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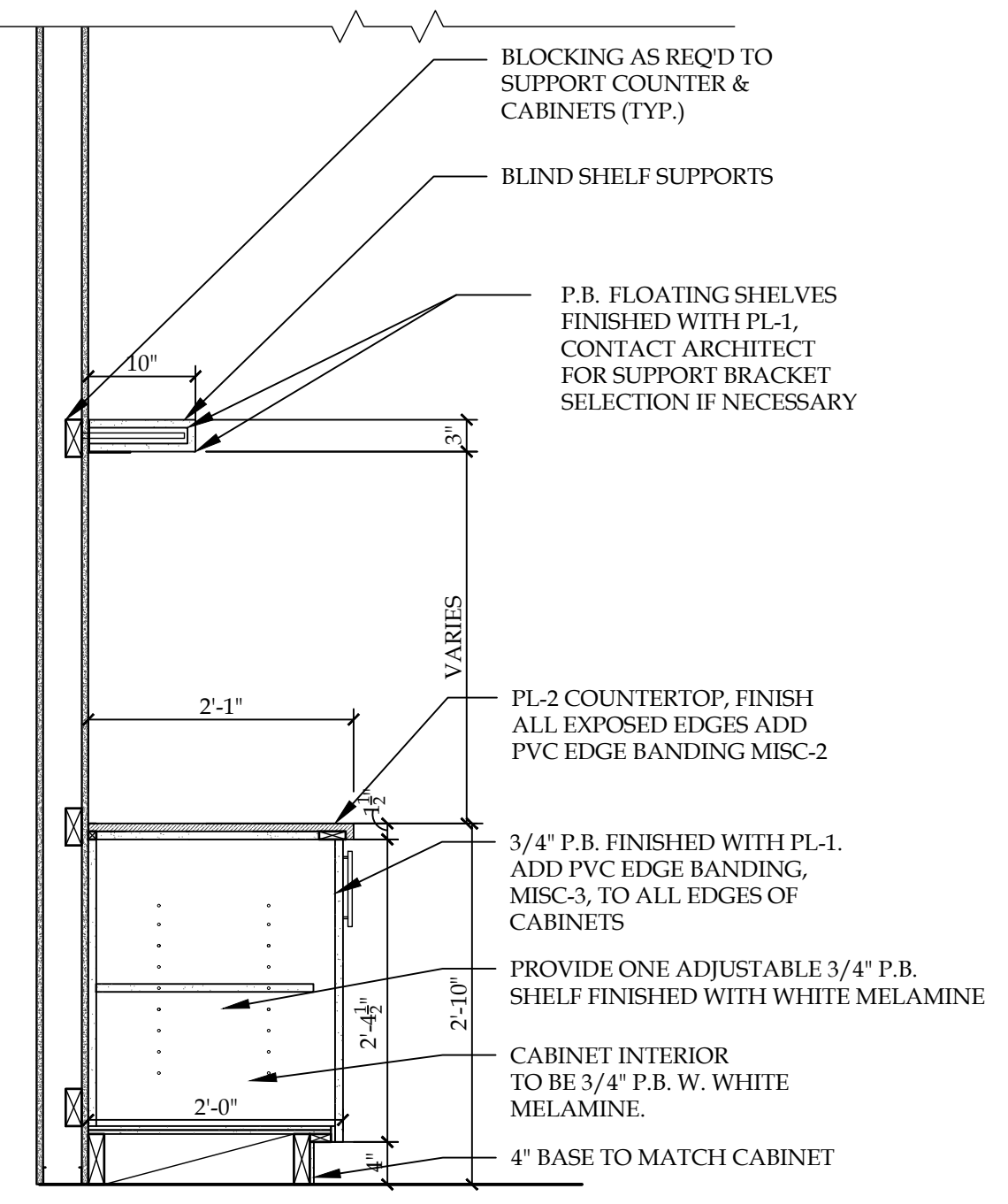
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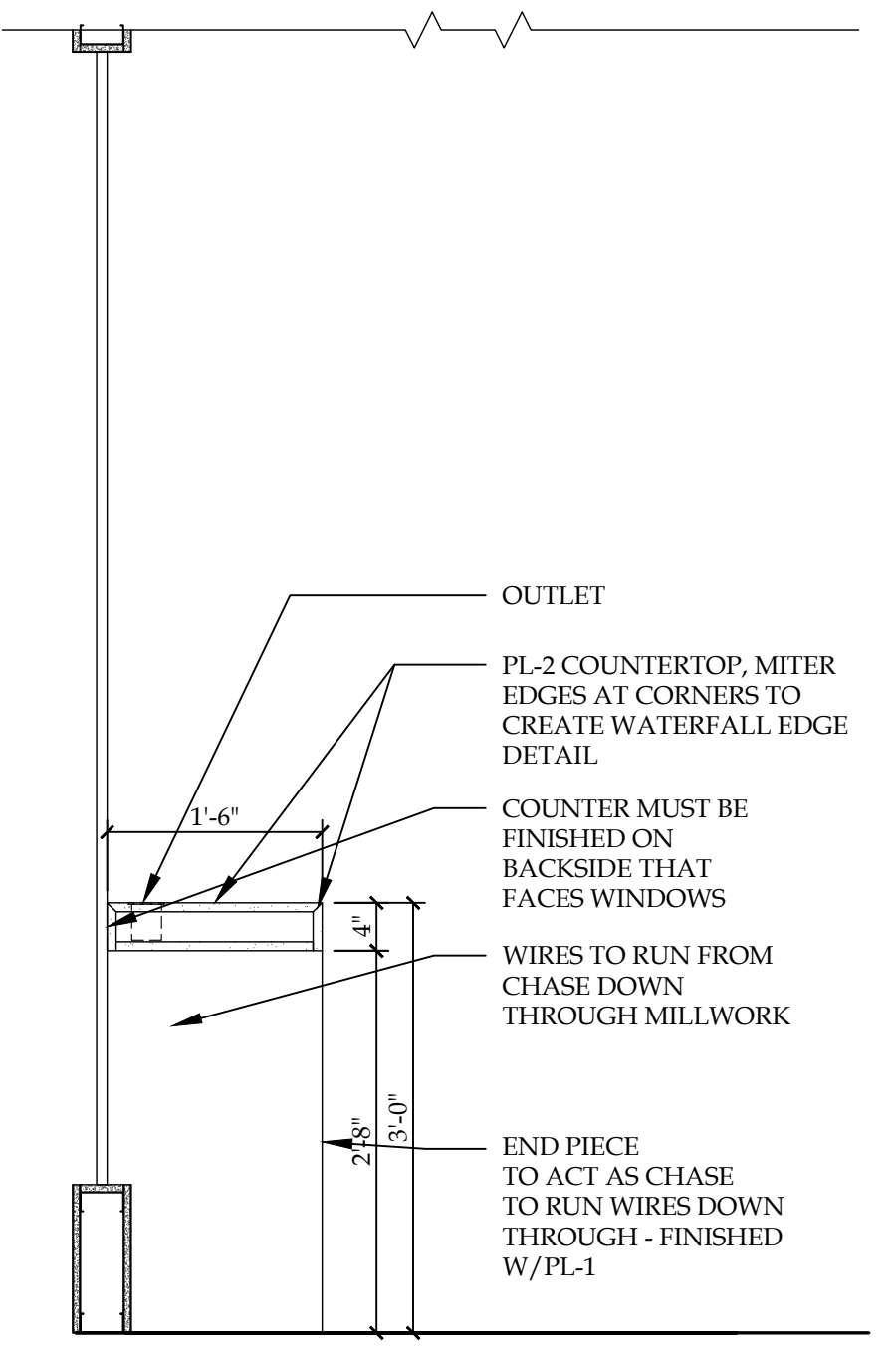
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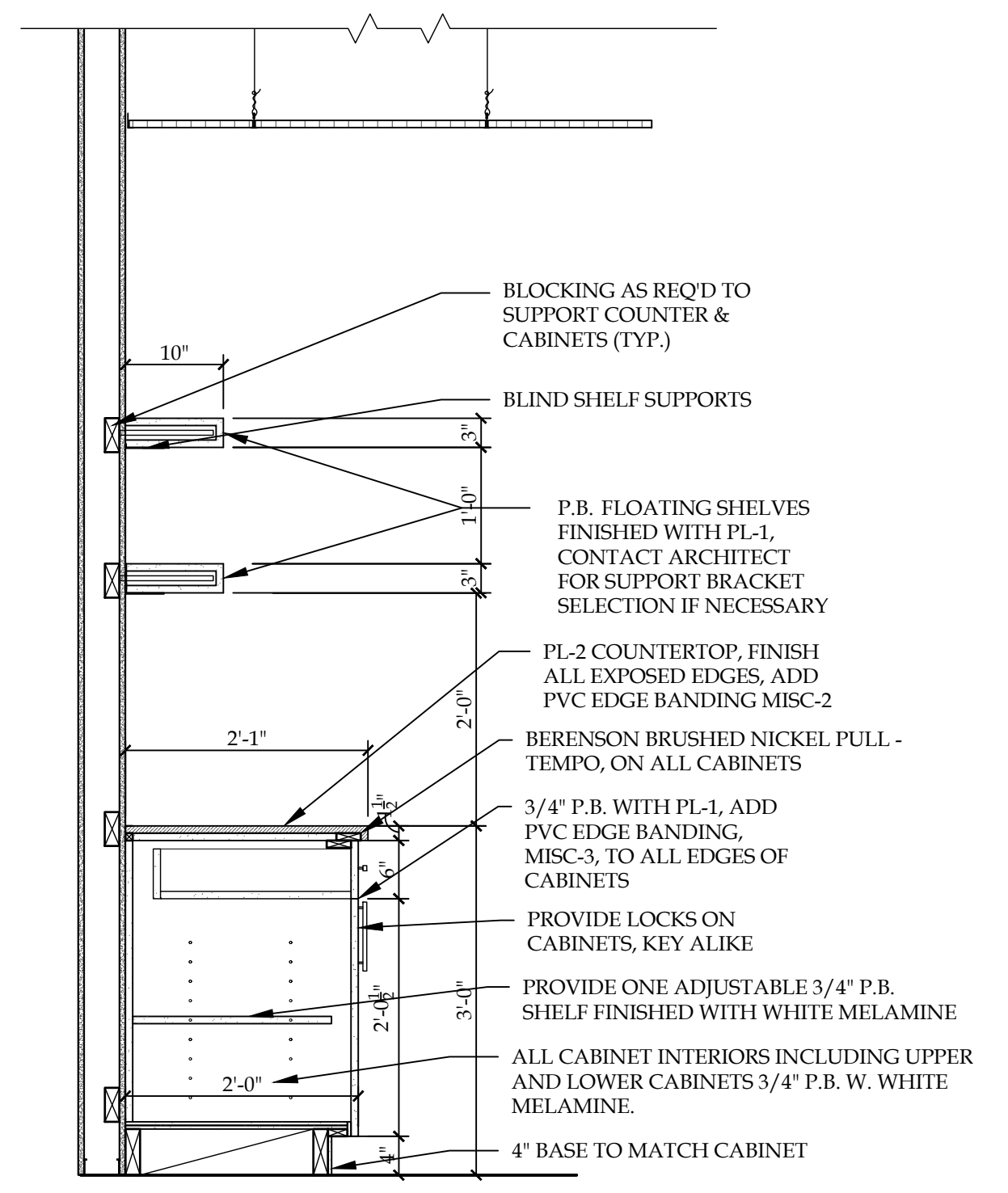
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 SCALE: 3/4"=1'-0"



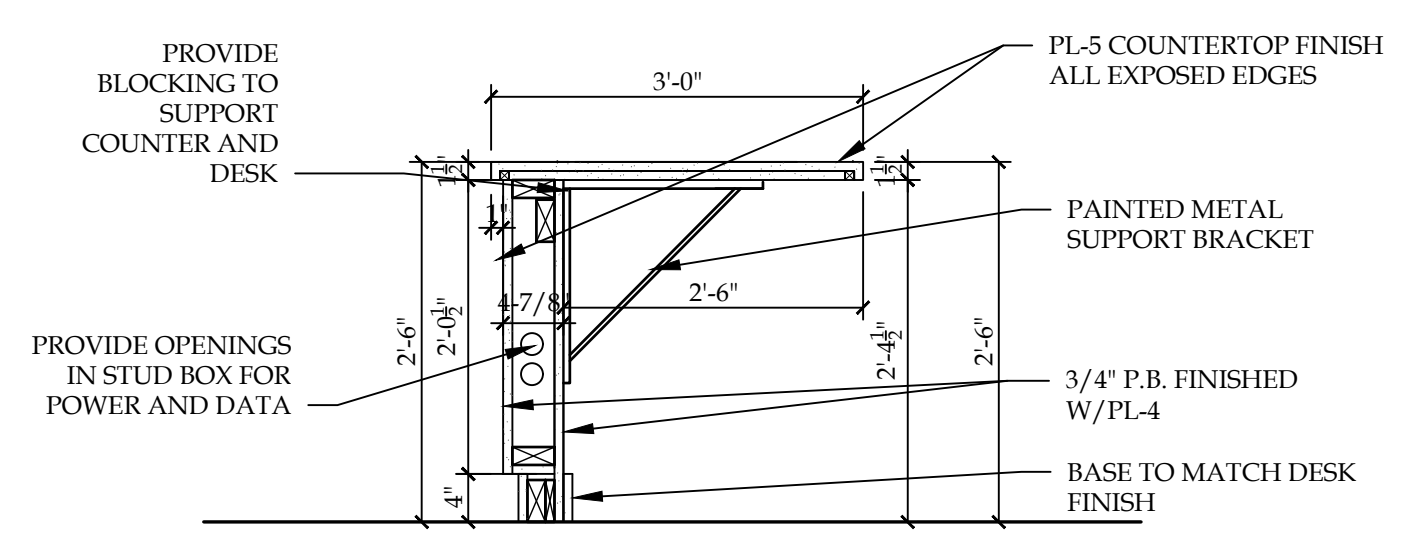
**A1 SECTION - WAITING**  
 SCALE: 3/4"=1'-0"



**A2 SECTION - LAB**  
 SCALE: 3/4"=1'-0"



**A3 SECTION - MODEL SHELVES**  
 SCALE: 3/4"=1'-0"



**A5 SECTION - RECEPTION**  
 SCALE: 3/4"=1'-0"

### HARDWARE SCHEDULE

- \* PROVIDE SOLID WOOD BLOCKING AT ALL WALL STOPS
- \* ALL HARDWARE TO BE ADA COMPLIANT MORTISE LOCKSETS W/ ARCHITECTURAL LEVERS

#### HARDWARE SET #1: OFFICE

- 3 - HINGES
- 1 - OFFICE/ENTRY LOCKSET
- 1 - WALL STOP
- 3 - SILENCERS
- 1 - PROVIDE CLOSER @ RATED DOORS

#### HARDWARE SET #2: STORAGE

- 3 - HINGES
- 1 - STOREROOM LOCKSET
- 1 - WALL STOP
- 3 - SILENCERS

#### HARDWARE SET #3: CLASSROOM

- 3 - HINGES
- 1 - KEYED LOCK OUTSIDE. THUMB TURN WITH FREE EGRESS INSIDE
- 1 - WALL STOP
- 3 - SILENCERS

#### HARDWARE SET #4 GENERAL PASSAGE

- 3 - HINGES
- 1 - PASSAGE SET
- 1 - WALL STOP
- 3 - SILENCERS

### GENERAL NOTES

- ALL DOORS & FRAMES TO INCLUDE ALL NECESSARY HARDWARE & ACCESSORIES FOR INSTALLATION & OPERATION. ANY HARDWARE ITEM NOT SPECIFICALLY CALLED OUT, BUT REQUIRED TO MAKE ANY ASSEMBLY OPERATIONAL, SHALL BE INCLUDED BY THE HARDWARE SUPPLIER AND CONSTRUCTION MANAGER. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- HOLLOW METAL DOOR FRAMES TO MATCH DEPTH OF EXISTING WALL, (V.I.F.).
- ALL DOOR FRAME ANCHORS TO BE OF MANUFACTURE'S STANDARD WITH TYPE PER FRAME AND OPENING CONDITIONS UNLESS NOTED OTHERWISE.
- ALL EXIT DOORS SHALL BE EQUIPPED WITH PANIC HARDWARE
- HEIGHT OF DOOR THRESHOLDS SHALL NOT EXCEED 1/2" ABOVE FINISHED FLOOR.
- ALL DOOR HARDWARE MATERIAL & FUNCTION TO BE COORDINATED WITH ARCHITECT.
- KEYING SCHEDULE TO BE DIRECTLY COORDINATED WITH OWNER.
- COORDINATE AND FIELD VERIFY ALL ROUGH OPENINGS & FRAMING PRIOR TO UNIT FABRICATION OR INSTALLATION.
- MANUFACTURER SHALL ENGINEER ALL FRAME AND GLAZING ASSEMBLIES FOR ALL LOADS ACCORDING TO REQUIREMENTS OF ALL BUILDING CODES.
- PROVIDE SOLID BLOCKING AT ALL DOORS FOR WALL BUMPERS.
- ALL HOLLOW METAL DOORS AND FRAMES SHALL BE SUPPLIED SHOP PRIMED AND FIELD PAINTED PER FINISH SCHEDULE.
- PROVIDE SILENCERS AND WALL BUMPERS ON ALL OPENINGS.
- CONTRACTOR SHALL COORDINATE ANY SPECIALTY DOORS, FRAMES AND/OR HARDWARE REQUIREMENTS WITH OWNER IN FIELD PRIOR TO CONSTRUCTION.
- REUSE SALVAGED DOORS AND HARDWARE, WHERE POSSIBLE. VERIFY ALL EXISTING DOOR SWINGS AND HARDWARE, PROVIDE NEW AS REQUIRED. NEW DOORS TO BE FINISHED TO MATCH EXISTING. CONTRACTOR TO WALK SITE WITH OWNER TO COORDINATE DOOR REUSE.

### DOOR AND FRAME SCHEDULE

DOOR NO.	LOCATION	DOORS						FRAMES				FIRE RATING	HDW SET #	REMARKS
		SIZE			DOOR TYPE	MATL.	GLAZING	MATL.	FRAME TYPE	DETAILS				
		WIDTH	HEIGHT	THK						HEAD	JAMB			
101	EMPLOYEE COFFEE AREA	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		4	
102	STORAGE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		2	
103	RECEPTION	3'-0"	7'-0"	1 3/4"	FG	SCWD	-	HM	A	H1	J1		3	
104	LAB	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		3	
105	LAB STORAGE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		2	
106	LAB	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	B	H1/H2	J1/J2		3	
107	MA PD OFFICE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		1	
108	LAB STORAGE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		2	
109	TESTING	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		4	
110	TESTING	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		4	
111	TESTING	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		4	
112	LEARNING CENTER	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		3	
113	STORAGE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		2	
114	OFFICE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		1	
115	OFFICE	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		1	
116	TESTING	3'-0"	7'-0"	1 3/4"	F	SCWD	-	HM	A	H1	J1		4	
117	STUDENT LOUNGE	EX	EX	EX	EX	ALUM		ALUM	EX					1

### REMARKS

- EXISTING DOOR TO BE REFURBISHED FOR SMOOTH OPERATION. DOOR DOES NOT OPEN PROPERLY.

### MATERIAL LEGEND

- ALUM = ALUMINUM
- HM = HOLLOW METAL
- MTL = METAL
- SCWD = SOLID CORE WOOD
- T = 1/4" TEMPERED GLAZING
- IT = 1" TEMPERED INSULATED GLAZING
- I = 1" INSULATED GLAZING
- SP = 1" SPANDREL GLAZING
- SPT = 1" TEMPERED SPANDREL GLAZING

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1259 Central Ave.  
Albany, NY 12205

ISSUE:  
2021-06-29: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
JOB CAPT. INTERIORS N.Catazza

SEAL:

TITLE:

**DOOR SCHEDULE, TYPES AND DETAILS**

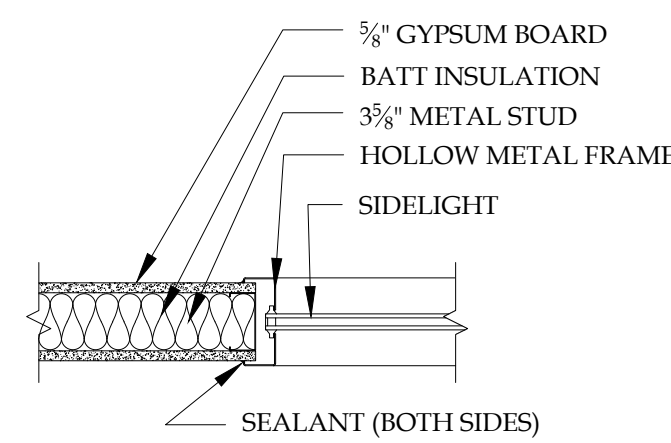


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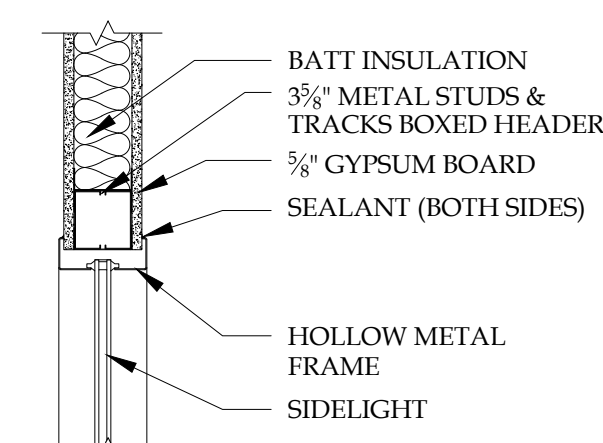
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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 14082.07 DATE: 6-29-2021

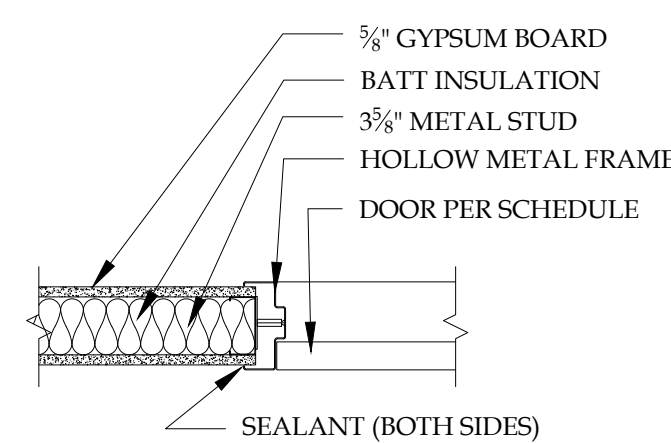
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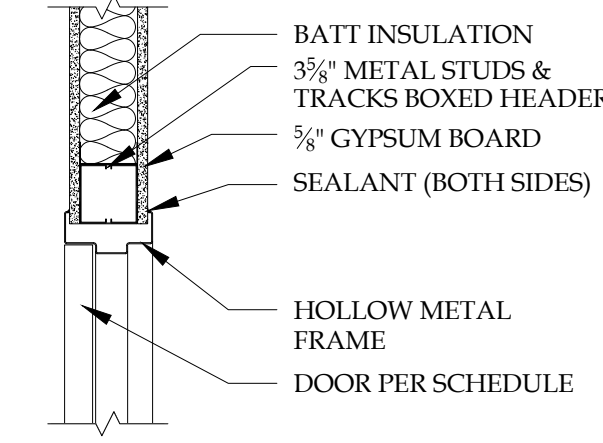
J2



H2

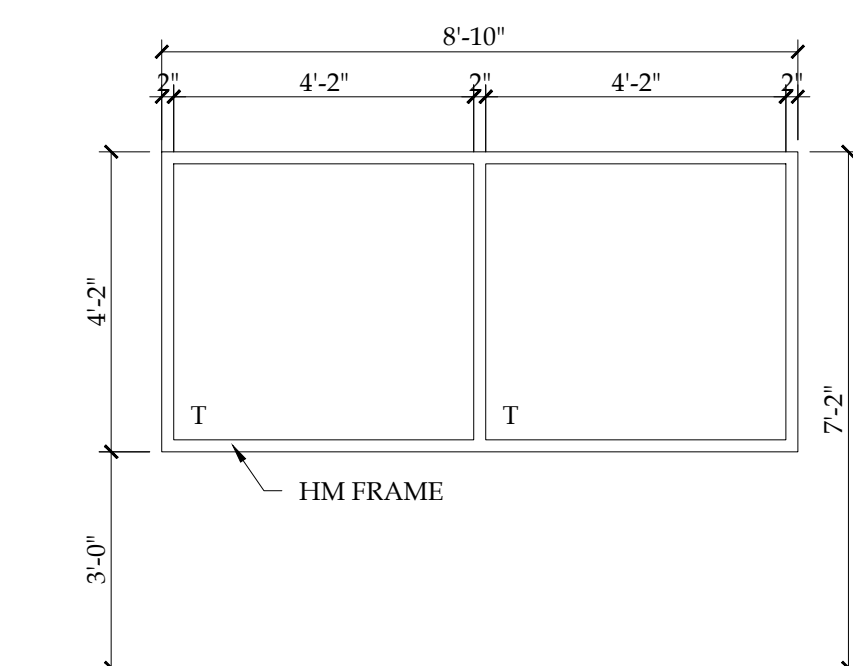


J1



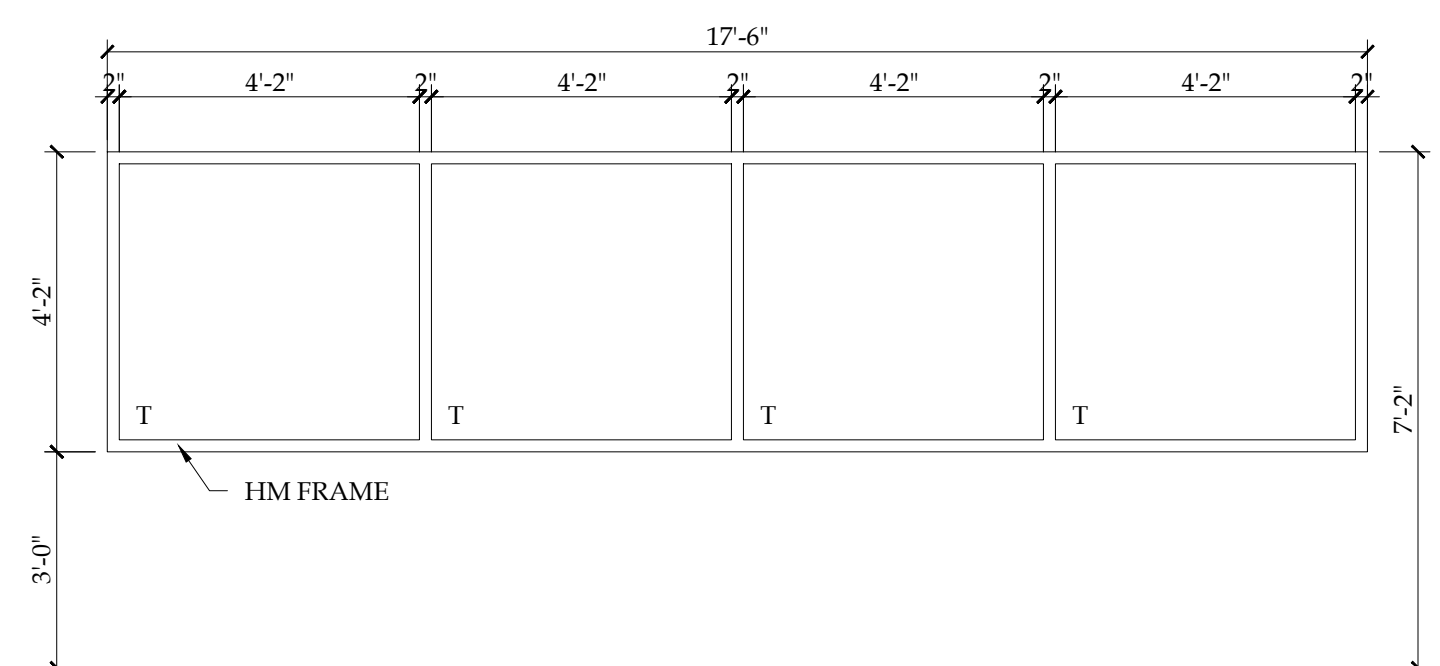
H1

B4 HEAD & JAMB DETAILS  
1/8" = 1'-0"

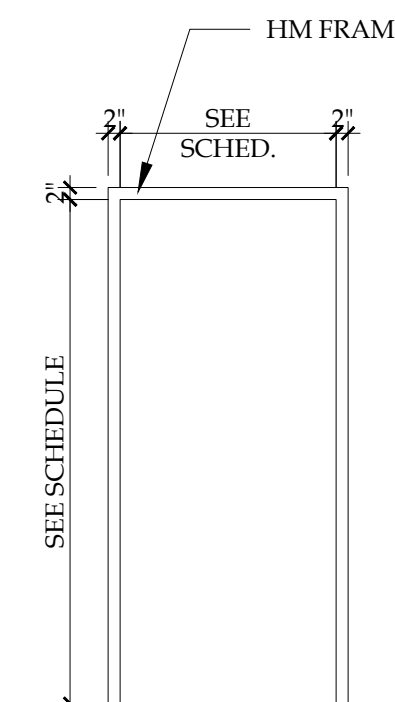


1 HM FRAME

A1 INTERIOR WINDOW TYPES  
3/8" = 1'-0"

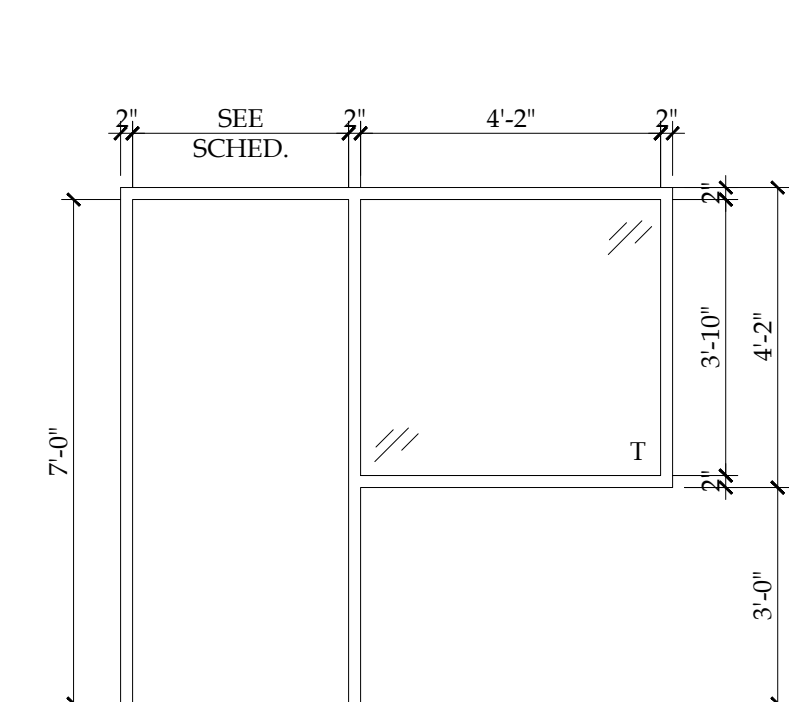


2 HM FRAME

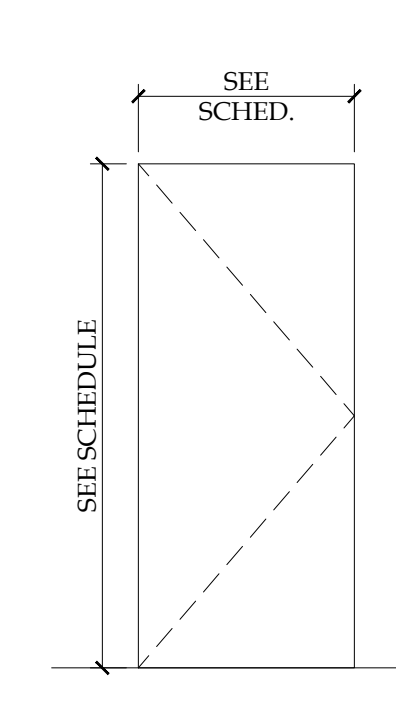


A

A4 FRAME TYPES  
3/8" = 1'-0"

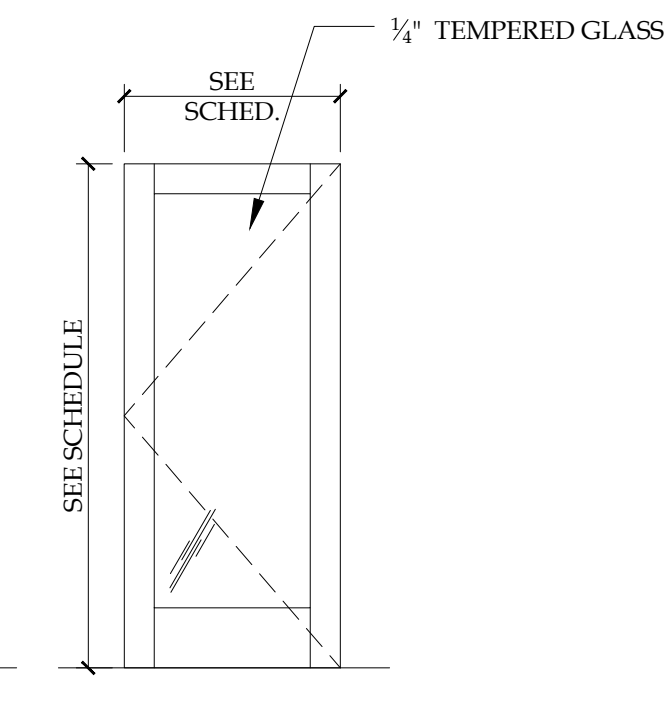


C



F FLUSH DOOR

A5 DOOR TYPES  
3/8" = 1'-0"



FG FULL GLASS

**ALTERNATE #3**

**STOREFRONT REPLACEMENT**

EXISTING CURTAIN WALL WINDOWS TO BE REMOVED AND REPLACED IN THEIR ENTIRETY.

ALL DIMENSIONS SHOWN FOR EXISTING EXTERIOR WINDOWS ARE BASED ON RECORD DRAWINGS. THE CONTRACTOR IS ADVISED THAT SAID DRAWINGS MAY NOT ACCURATELY REFLECT AS BUILT CONDITIONS. ACCURATE FIELD MEASUREMENTS SHOULD BE MADE PRIOR TO ORDERING ANY PREFABRICATED MATERIALS. DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND SHALL BE REFLECTED ON THE CONTRACTORS SHOP DRAWINGS.

HORIZONTAL AND VERTICAL MULLIONS ARE TO MATCH EXISTING LOCATIONS.

EXTERIOR DOORS AND HARDWARE TO BE REPLACED IN KIND.

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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catizza \_\_\_\_\_

SEAL:

TITLE:  
**EXTERIOR WINDOW TYPES**

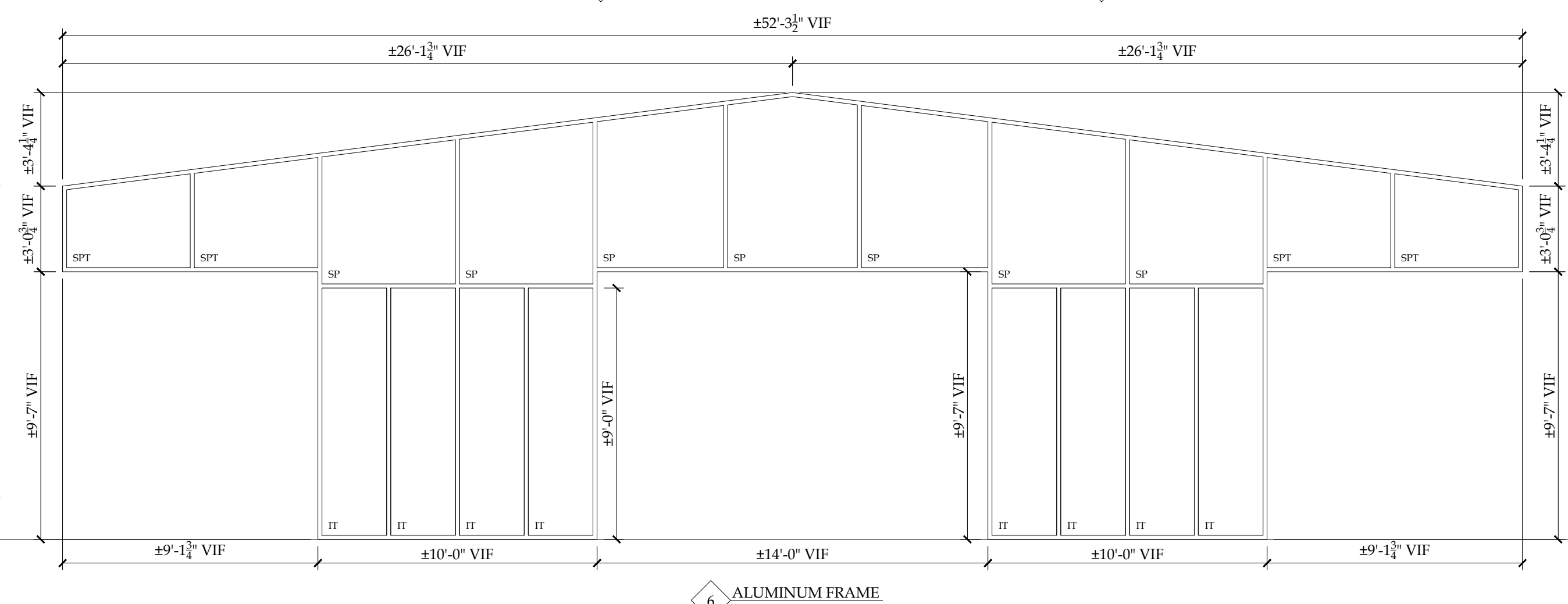
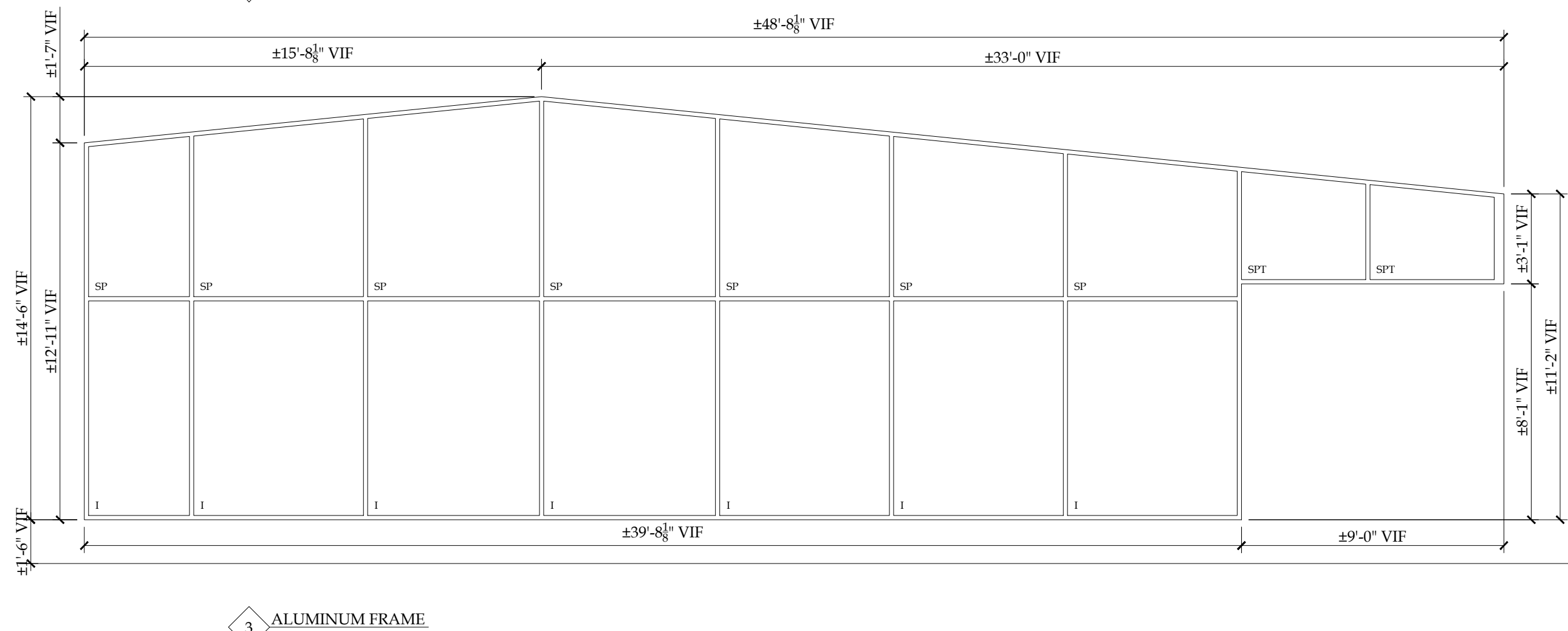
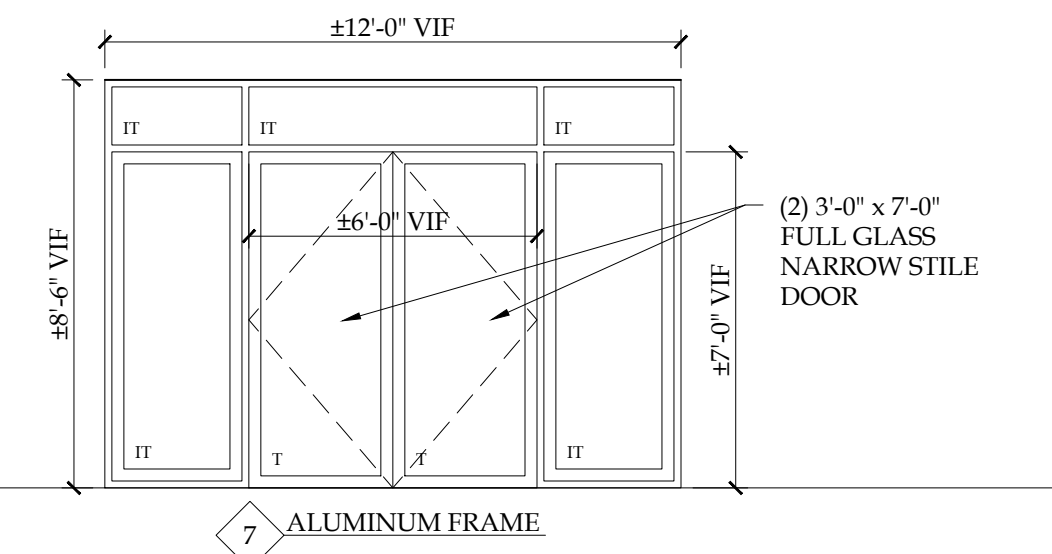
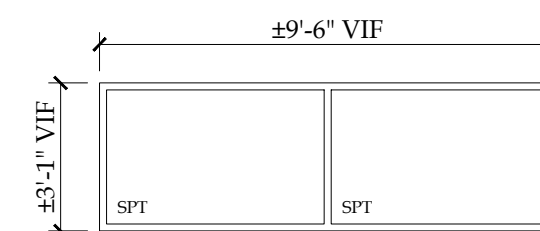
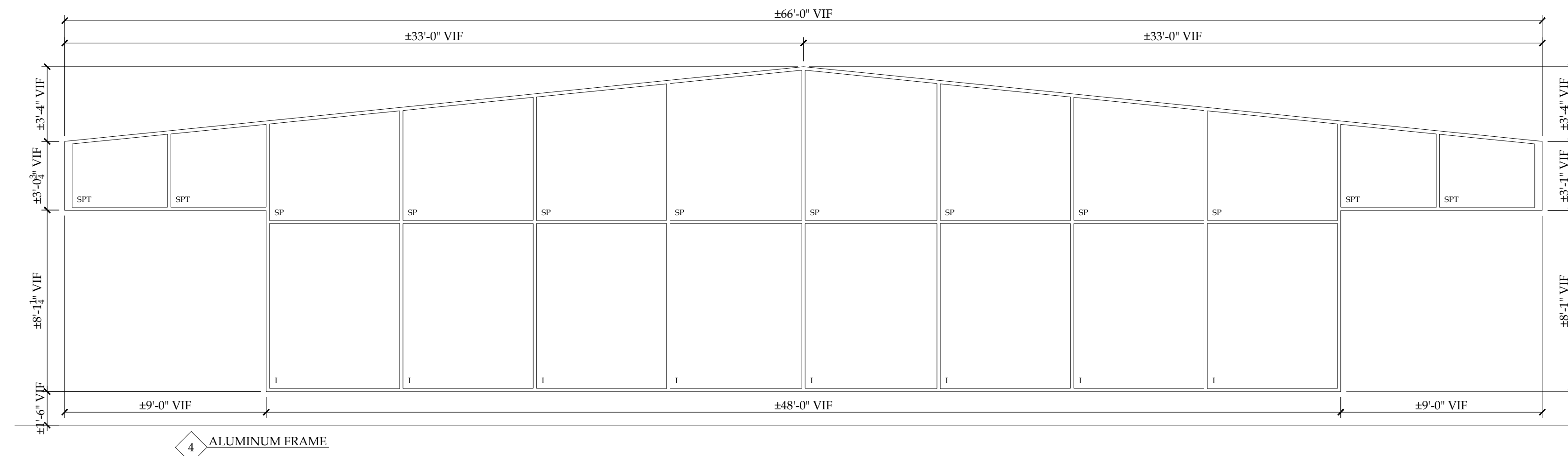
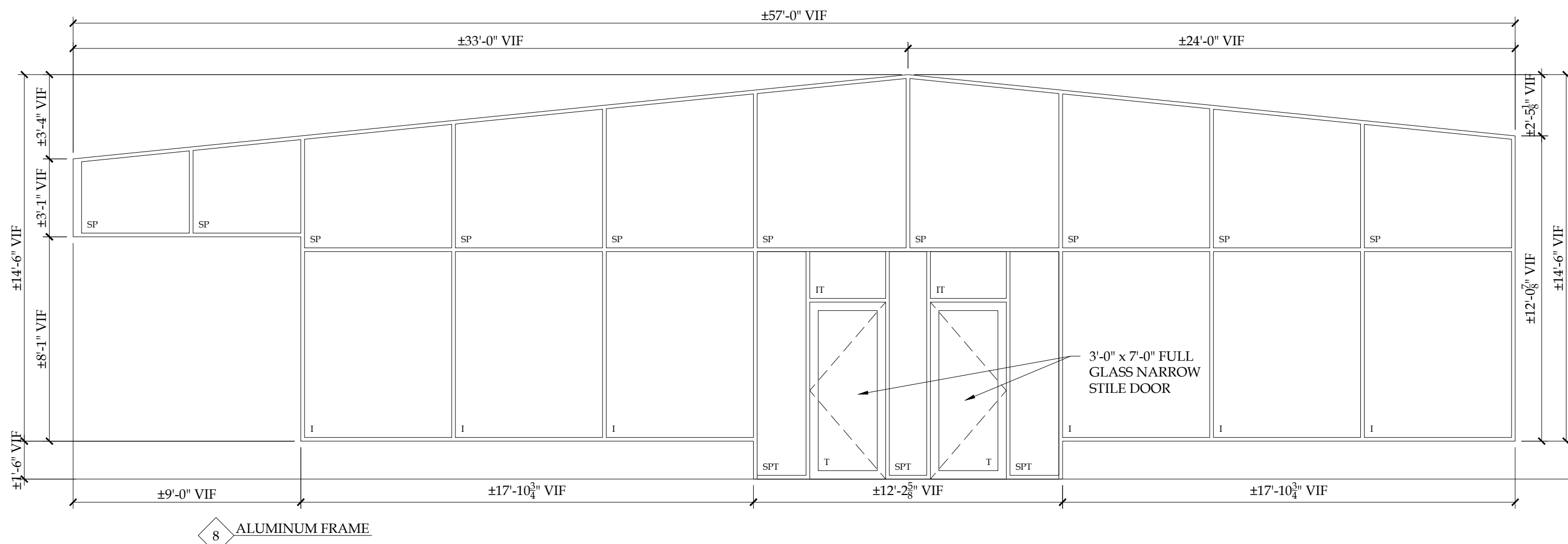


**SILVESTRI ARCHITECTS · PC**

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-602**



A1 EXTERIOR WINDOW TYPES  
1/4" = 1'-0"

1  
FINISH SELECTIONS

**PAINT (P-X):**  
(P-1) (TYPICAL)  
MANUFACTURER: SHERWIN WILLIAMS  
COLOR: CRUSHED ICE SW7647  
FINISH: EGGHELL

(P-2) (ACCENT)  
MANUFACTURER: SHERWIN WILLIAMS  
COLOR: SMOKY BLUE SW7604  
FINISH: EGGHELL

(P-3) (ACCENT)  
MANUFACTURER: SHERWIN WILLIAMS  
COLOR: ENDLESS SEA SW9150  
FINISH: EGGHELL

(P-4) (ACCENT)  
MANUFACTURER: SHERWIN WILLIAMS  
COLOR: WEB GRAY SW7075  
FINISH: SEMI-GLOSS

**WALL TILE (WT-X):**  
(WT-1)  
MANUFACTURER: DAL TILE  
STYLE: VERTUO  
COLOR: VR13  
SIZE: 12"X24"  
INSTALLATION: SEE A-400S FOR DETAILS  
GROUT: MAPEI -

(WT-2) (LAB BACKSPLASH)  
MANUFACTURER: BEST TILE  
STYLE: BRINTON  
COLOR: WHITE  
FINISH: GLOSSY  
SIZE: 3"X6"  
GROUT: MAPEI -  
NOTE: INCLUDED IN ALTERNATE 7

**CARPET (CPT-X):**  
(CPT-1)  
MANUFACTURER: TARKETT  
STYLE: SUBSTANCE  
COLOR: SOVEREIGN 11449  
SIZE: 18"X36"

(CPT-2)  
MANUFACTURER: TARKETT  
STYLE: SUBSTANCE  
COLOR: SOVEREIGN 11449  
SIZE: 9"X36"

(CPT-3)  
MANUFACTURER: TARKETT  
STYLE: SUBSTANCE  
COLOR: SOVEREIGN 11449  
SIZE: 24"X24"

(CPT-4)  
MANUFACTURER: TARKETT  
STYLE: ABRASIVE ACTION II  
COLOR: CHARCOAL 19100  
SIZE: 24"X24"

**LUXURY VINYL TILE (LVT-X):**  
(LVT-1)  
MANUFACTURER: TARKETT  
STYLE: 1D LATITUDE  
COLOR: SUNTONE TEAK 7532

**TILE (T-X):**  
(T-1) (RESTROOMS)  
MANUFACTURER: DAL TILE  
STYLE: VERTUO  
COLOR: COMPOSER VR11  
FINISH: 12"X24"  
INSTALLATION: 1/3 BRICK LAY  
GROUT: MAPEI - TBD

**RUBBER BASE (RB-X):**  
(RB-1)  
MANUFACTURER: JOHNSONITE  
SIZE: 4" COVE BASE  
COLOR: CHARCOAL

**SOLID SURFACE (SS-X):**  
(SS-1) (LAB COUNTER)  
MANUFACTURER: CORIAN  
COLOR: SILVER BIRCH

(SS-2) (RESTROOM COUNTER)  
MANUFACTURER: CORIAN  
COLOR: TBD - LOWEST COST GRADE

(SS-3) (RECEPTION COUNTER)  
MANUFACTURER: MSI QUARTZ  
COLOR: TBD

**PLASTIC LAMINATE (PL-X):**  
(PL-1) (CABINETS)  
MANUFACTURER: WILSONART  
COLOR: TBD

(PL-2) (COUNTER)  
MANUFACTURER: NEVAMAR  
COLOR: ESKAFFE

(PL-3) (RESTROOM SHROUD)  
MANUFACTURER: WILSONART  
COLOR: TBD

(PL-4) (RECEPTION DESK)  
MANUFACTURER: WILSONART  
COLOR: TBD - PRICE PREMIUM LAMINATE

(PL-5) (RECEPTION WORK SURFACE)  
MANUFACTURER: NEVAMAR  
COLOR: TBD

2  
FINISH SELECTIONS

**ACOUSTICAL CEILING TILE (ACT-X):**  
(ACT-1)  
MANUFACTURER: ARMSTRONG  
STYLE: CORTEGA 2765  
SIZE: 2 X 4'  
EDGE: SQUARE  
COLOR: WHITE  
SUSPENSION SYS.: TEGULAR

**WOOD DOOR (WD-X):**  
(WD-1)  
MANUFACTURER: MASONITE  
STYLE: ASPIRO  
SPECIES: PLAIN SLICED BIRCH  
STAIN: TO MATCH EXISTING DOORS

**TRANSITION (TS-X):**  
(TS-1) (GENERAL)  
MANUFACTURER: SCHLUTER SYSTEMS  
STYLE & SIZE: RENO-TK SIZE TO BE V.L.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS  
CLEAR SATIN ANODIZED ALUMINUM FLOORING MATERIAL CHANGES AS NECESSARY.  
PLEASE SEE GENERAL NOTES RE: TRANSITIONS. LVT TO CPT DOES NOT NEED TRANSITIONS

**ROLLERSHADES (RS-X):**  
(RS-1)  
MANUFACTURER: HUNTER DOUGLAS  
STYLE: E SCREEN 7510  
COLOR: CHARCOAL  
OPENNESS: 5%  
LOCATION: EXTERIOR WINDOWS

**WOOD WALL (WDW-X):**  
(WDW-1)  
SPECIES: RECLAIMED MAPLE WOOD  
SIZE: 4"X6"  
STAIN: TO BE PROV. BY ARCHITECT

**MISCELLANEOUS (MISC-X):**  
(MISC-1) (TOILET PARTITIONS)  
MANUFACTURER: GENERAL PARTITIONS  
FINISH: POWDERCOATED STEEL COLOR TBD  
FLOOR ANCHORED/OVERHEAD BRACED

(MISC-2)  
(PVC EDGE BANDING)  
MANUFACTURER: DOELLKEN  
STYLE: TBD  
LOCATION: COUNTERTOPS WHERE SPECIFIED

(MISC-3)  
(PVC EDGE BANDING)  
MANUFACTURER: DOELLKEN  
COLOR: TBD  
LOCATION: CABINETS WHERE SPECIFIED

3  
GENERAL NOTES

- ANY AND ALL FINISH SELECTIONS/ COLORS MUST BE SUBMITTED TO ARCHITECT FOR APPROVAL ACCOUNTING FOR PROPER LEAD TIME. ANY FINISH THAT IS INSTALLED WITHOUT ARCHITECTS APPROVAL MAY BE REQUIRED TO BE REMOVED AND REPLACED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ORDER ALL MATERIALS AT THE APPROPRIATE TIME. ANY FEES INCURRED AS A RESULT OF FINISHES NOT BEING ORDERED ON TIME WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY DISCREPANCIES BETWEEN ARCHITECTURAL ELEVATION(S), PLAN(S), SCHEDULE(S) AND NOTES MUST BE BROUGHT TO ARCHITECTS ATTENTION. ARCHITECT MUST BE CONTACTED AND GIVE APPROVAL TO MOVE FORWARD WITH SPECIFIC DIRECTION PRIOR TO ANTICIPATED ACTION.
- SEE A-500S DRAWINGS FOR ALL CABINET HARDWARE. TYPICAL HARDWARE TO BE BERENSON BRUSHED NICKEL TEMPO PULL
- ALL INTERIOR PRODUCTS TO MEET/EXCEED FLAME SPREAD RATING PER CODE
- ALL FLOOR FINISHES TO EXTEND BENEATH ALL MILLWORK.
- ALL ELECTRICAL PANEL COVERS AND/OR MECHANICAL EQUIPMENT AND/OR DUCTING TO BE PAINTED TO MATCH ADJOINING WALL.
- ANY CEILING HVAC SUPPLY/DIFFUSERS ETC. TO BE PAINTED TO MATCH SURROUNDING CEILING FINISH. ANY QUESTIONS OR CONCERN TO BE BROUGHT TO ARCHITECT'S ATTENTION FOR FINAL DECISION PRIOR TO ORDER/INSTALL BY CONTRACTOR OR OTHER.
- GYPSON SOFFIT TO BE EXTEND TO CEILING. HORIZONTAL SURFACE OF ALL SOFFITS TO BE PAINTED TO MATCH ADJOINING WALLS UNLESS OTHERWISE SPECIFIED.

**CEILINGS:**

- ALL GYPSUM BOARD CEILINGS TO BE PAINTED IN A FLAT WHITE FINISH UNLESS SPECIFIED.
- ALL EXPOSED MECHANICAL DUCT COVERS SHALL BE PAINTED TO MATCH THE SURROUNDING WALL/ CEILING COLOR. PRIME AS NECESSARY.
- EXPOSED CEILING, JOISTS, DUCTS, DIFFUSERS, AND ALL OTHER CEILING ELEMENTS TO PAINTED P-6 IN FRONT AREA, ADVISOR AREA, AND LEARNING COMMONS.

**WALLS:**

- PROVIDE (1) COAT WALL PRIMER FOLLOWED BY (2) COATS WALL PAINT ON ALL INTERIOR WALL SURFACE UNLESS OTHERWISE NOTED IN SPECIFICATIONS. SEE SPEC FOR DETAILS.
- WHERE DARK PAINT COLORS ARE APPLIED, USE DEEP GRAY BASE PRIMER TO PREVENT BURNISHING.
- PROVIDE SPACERS AS NEEDED BEHIND MIRRORING IN RESTROOM TO ACCOUNT FOR TILE THICKNESS.

**FLOORS:**

- PROVIDE CORIAN OR EQUAL THRESHOLD AT ALL TOILET ROOM TRANSITIONS UNLESS OTHERWISE SPECIFIED. ARCHITECT TO CHOOSE FROM MANUFACTURER FULL RANGE OF COLORS.
- NO CHANGES OR SUBSTITUTIONS WILL BE MADE TO THE FOLLOWING FINISHES UNLESS DIRECTED BY THE OWNER OR ARCHITECT.
- CONTRACTOR TO PROVIDE (TS-1) AT ALL FLOORING MATERIAL CHANGES NEEDING THRESHOLDS. NECESSARY SIZES TO BE DETERMINED BY CONTRACTOR AND V.L.F. BASED ON MATERIAL THICKNESS.

**MILLWORK:**

- PROVIDE CLEAR BEAD OF SILICONE OR CLEAR CALK TO SEAL BETWEEN MILLWORK PIECES (IE: COUNTER TOP AND BACKSPLASH) AND MILLWORK AND WALL. (TYPICAL).

**WINDOWS:**

- ALL GLAZING FACING EXTERIOR TO RECEIVE RS-1.

**DOORS:**

- ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED WITH P-4.

**OUTLETS:**

- ALL OUTLET SWITCHES AND COVERS TO BE WHITE.

**SIGNAGE:**


- SIGNAGE LOCATIONS WILL NEED TO BE PROVIDED AND INSTALLED BY CONTRACTOR. TO BE SELECTED AND APPROVED BY ARCHITECT AND CLIENT PRIOR TO MANUFACTURER/PURCHASE TO BE PROVIDED BY COLLEGE'S CURRENT SIGNAGE VENDOR.

4  
ROOM FINISH LEGEND

<b>FLOORS</b>	<b>MISCELLANEOUS</b>
CPT = CARPET	PL = PLASTIC LAMINATE
T = TILE	SS = SOLID SURFACE
LVT = LUXURY VINYL TILE	TS = TRANSITION STRIP
<b>BASE</b>	MISC = MISCELLANEOUS
RB = RUBBER BASE	RS = ROLLER SHADES
<b>WALLS</b>	<b>MATERIALS</b>
P = PAINT	P.B. = PARTICLE BOARD
WT = WALL TILE	GYP. = GYPSUM BOARD
WDW = WOOD WALL	
<b>CEILING</b>	
ACT = ACOUSTIC CEILING TILE	
GYP = GYPSUM BOARD	
<b>DOORS</b>	
WD = WOOD DOOR	

5  
6

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SEAL:

TITLE:  
**FINISH LEGEND & GENERAL NOTES**



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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-603**

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	BASE	FLOOR	WALLS	CEILING	MILLWORK		REMARKS
						CABINET/SHROUD	COUNTERTOP/BACKSPLASH	
101	VESTIBULE	TB-1	CPT-4/T-1	P-1	PT EXIST			
102	RECEPTION	RB-1	LVT-1	P-1/P-3	GYP	PL-4	PL-5/SS-3	
103	WAITING	RB-1	LVT-1	P-1	ACT-1	PL-1	PL-2	1
104	WAITING	RB-1	LVT-1	P-1	ACT-1			1
105	EMPLOYEE COFFEE AREA	RB-1	LVT-1	P-1	ACT-1	PL-1	PL-2	
106	STORAGE	RB-1	LVT-1	P-1	ACT-1			
107	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
108	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
109	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
110	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
111	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
112	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
113	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
114	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
115	LAB	RB-1	LVT-1	P-1/P-3/ALT-7	ACT-1	PL-1	SS-1	5
116	LAB STORAGE	RB-1	LVT-1	P-1	ACT-1			
117	LAB	RB-1	LVT-1	P-1/P-3/ALT-7	ACT-1	PL-1	SS-1	5
118	MA PD	RB-1	LVT-1	P-1	ACT-1			
119	LAB STORAGE	RB-1	LVT-1	P-1	ACT-1			
120	CLASSROOM	RB-1	LVT-1	P-1/P-3/ALT-7	ACT-1	PL-1	SS-1	5
121	EXISTING CLASSROOM	RB-1	CPT-1	P-1	ALT-1			2
122	EXISTING CLASSROOM	RB-1	CPT-1	P-1	ALT-1			2
123	EXISTING WOMEN'S		T-1	P-1/WT-1	ACT-1	PL-3	SS-1	1
124	EXISTING MEN'S		T-1	P-1/WT-1	ACT-1	PL-3	SS-1	1
125	EXISTING CORRIDOR	RB-1	LVT-1	P-1	EXIST			
126	EXISTING VESTIBULE	RB-1	CPT-4	P-1	EXIST			
127	STORAGE	RB-1	LVT-1	P-1	ALT-1			2
128	OFFICE	RB-1	CPT-2	P-1	ALT-1			2
129	STUDENT LOUNGE	RB-1	LVT-1	P-1/P-2	ACT-1			4
130	EXISTING CORRIDOR	RB-1	LVT-1	P-1	EXIST			
131	EXISTING CORRIDOR	RB-1	CPT-4	P-1	EXIST			
132	EXISTING MEN'S		T-1	P-1	ACT-1	PL-3	SS-1	1
133	EXISTING WOMEN'S		T-1	P-1	ACT-1	PL-3	SS-1	1
134	EXISTING CLASSROOM	RB-1	CPT-1/CPT-2	P-1	ALT-1			2
135	EXISTING CLASSROOM	RB-1	CPT-1/CPT-2	P-1	ALT-1			2
136	EXISTING CLASSROOM	RB-1	CPT-1/CPT-2	P-1	ALT-1			2
137	EXISTING CLASSROOM	RB-1	CPT-1/CPT-2	P-1	ALT-1			2
138	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
139	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
140	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
141	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
142	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
143	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
144	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
145	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
146	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
147	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
148	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
149	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
150	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
151	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
152	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
153	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2

154	LOBBY	RB-1	CPT-2	P-1	ALT-1			2
155	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
156	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
157	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
158	STORAGE	RB-1	CPT-2	P-1	ALT-1			2
159	PSC LOBBY	RB-1	CPT-1	P-1/P-2	ACT-1			
160	OFFICE	RB-1	CPT-2	P-1	ACT-1			
161	OFFICE	RB-1	CPT-2	P-1	ACT-1			
162	OPEN OFFICE	RB-1	CPT-1	P-1/P-2	ACT-1			
163	NOT USED							
164	STORAGE	RB-1	CPT-3	P-1	ACT-1			
165	TESTING	RB-1	CPT-3	P-1	ACT-1			
166	LEARNING CENTER	RB-1	CPT-1	P-1/P-2	ACT-1			
167	TESTING	RB-1	CPT-3	P-1	ACT-1			
168	TESTING	RB-1	CPT-3	P-1	ACT-1			
169	TESTING	RB-1	CPT-3	P-1	ACT-1			
170	LEARNING CENTER	RB-1	CPT-3	P-1	ACT-1			
171	LIBRARY STORAGE	RB-1	CPT-3	P-1	ACT-1			
172	EXISTING CONCRETE DECK							
173	OPEN AREA	RB-1	LVT-1	P-1	-			
174	CORRIDOR	RB-1	LVT-1	P-1	ALT-1			2
175	CORRIDOR	RB-1	ALT-2		EXIST			3
176	CORRIDOR	RB-1	CPT-2	P-1	ALT-1			2
177	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2
178	EXISTING OFFICE	RB-1	CPT-2	P-1	ALT-1			2

**ROOM FINISH LEGEND**

<b>FLOORS</b>	<b>MISCELLANEOUS</b>
CPT = CARPET	PL = PLASTIC LAMINATE
T = TILE	SS = SOLID SURFACE
LVT = LUXURY VINYL TILE	TS = TRANSITION STRIP
<b>BASE</b>	MISC = MISCELLANEOUS
RB = RUBBER BASE	RS = ROLLER SHADES
<b>WALLS</b>	<b>MATERIALS</b>
P = PAINT	P.B. = PARTICLE BOARD
WT = WALL TILE	GYP. = GYPSUM BOARD
FRP = FIBER REINFORCED PANEL	
<b>CEILING</b>	
ACT = ACOUSTIC CEILING TILE	
GYP = GYPSUM BOARD	
<b>DOORS</b>	
WD = WOOD DOOR	

**REMARKS**

1. WALL TILE IN RESTROOMS WILL ACT AS WALL BASE. REFER TO A-400S FOR EXACT TILE LAYOUT AND HEIGHTS.
2. ALTERNATE 1 IS SPECIFIED FOR THIS SPACE, SEE REFLECTED CEILING PLAN FOR EXTENT OF WORK.
3. ALTERNATE 2 IS SPECIFIED FOR THIS SPACE, SEE FINISH PLAN FOR EXTENT OF WORK.
4. ALTERNATE 6 IS SPECIFIED FOR THIS SPACE, SEE FINISH PLAN FOR EXTENT OF WORK.
5. ALTERNATE 7 IS SPECIFIED FOR THIS SPACE, SEE FINISH PLAN FOR EXTENT OF WORK.

**FINISH ALTERNATES**

ALTERNATE 2: ALL CORRIDOR FLOORING TO BE REPLACED W/LVT-1. REFER TO A-100S FOR EXACT ALTERNATE WORK

ALTERNATE 6: WOOD ACCENT WALL IN STUDENT UNION. REFER TO A-100S FOR EXACT ALTERNATE WORK

ALTERNATE 7: WT-2 BACKSPLASH IN LABS. REFER TO A-100S FOR EXACT ALTERNATE WORK

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1259 Central Ave.  
Albany, NY 12205

ISSUE:  
2021-06-29: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

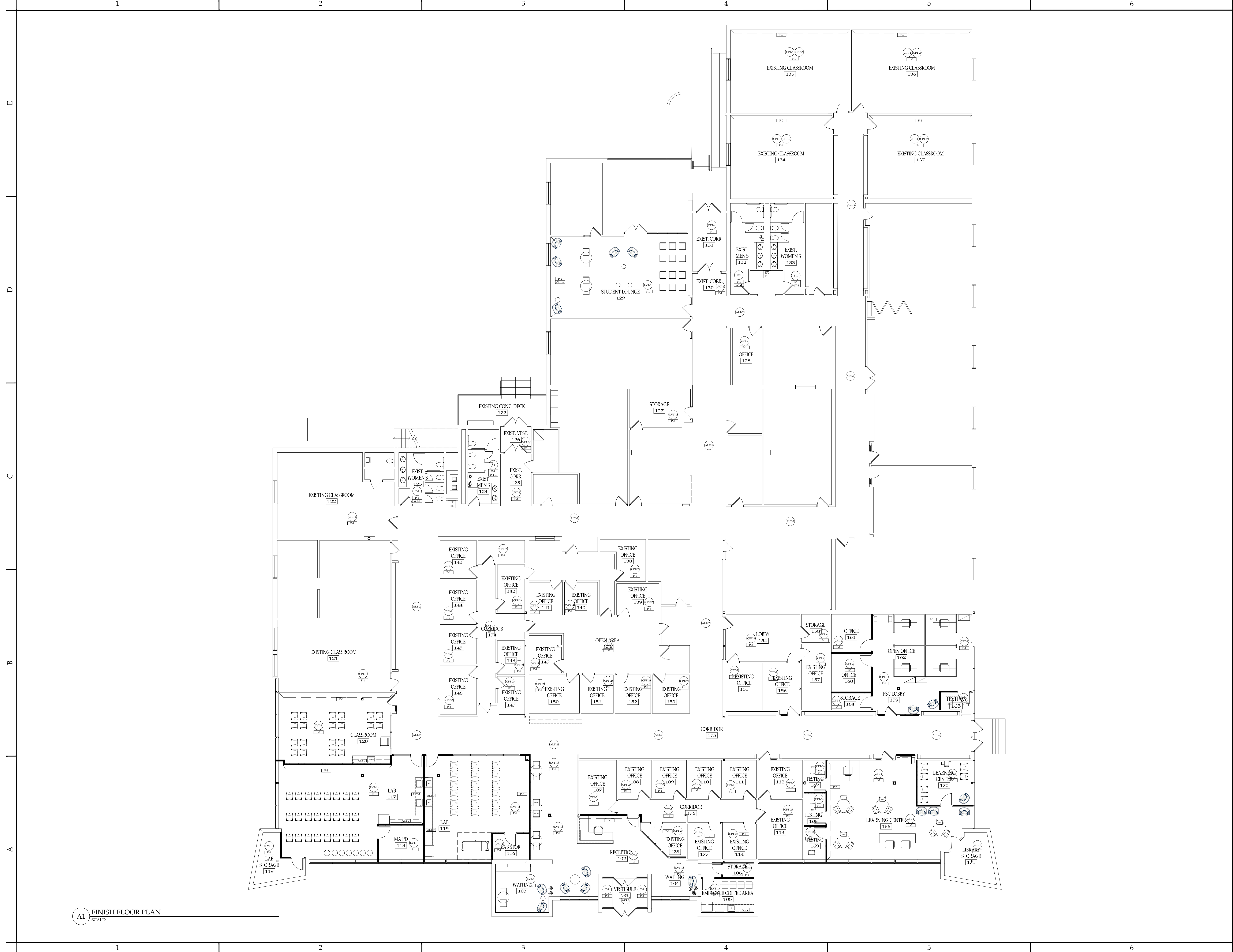
SEAL:

TITLE:  
**ROOM FINISH SCHEDULE**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-604**



A1 FINISH FLOOR PLAN  
SCALE:

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PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**FINISH FLOOR PLAN**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **A-605**

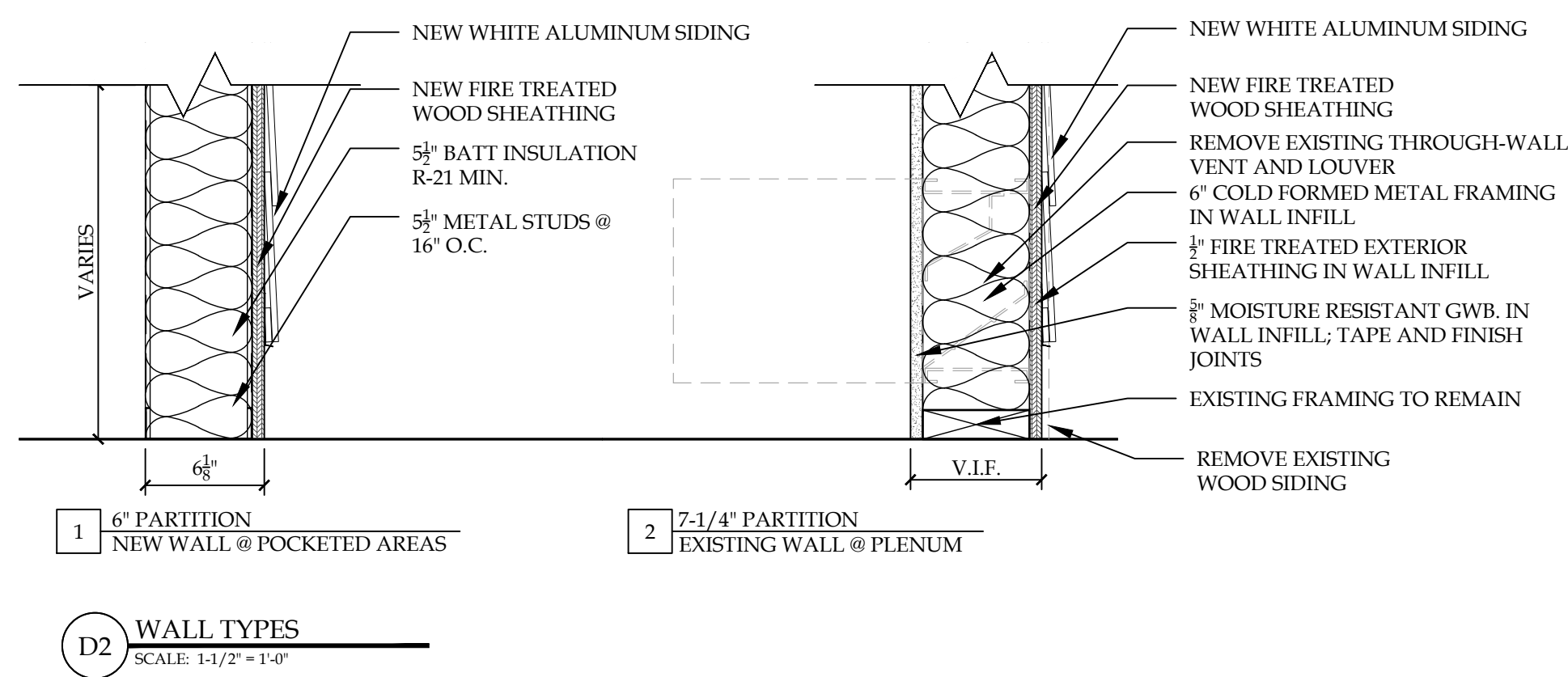


**NOTE:**

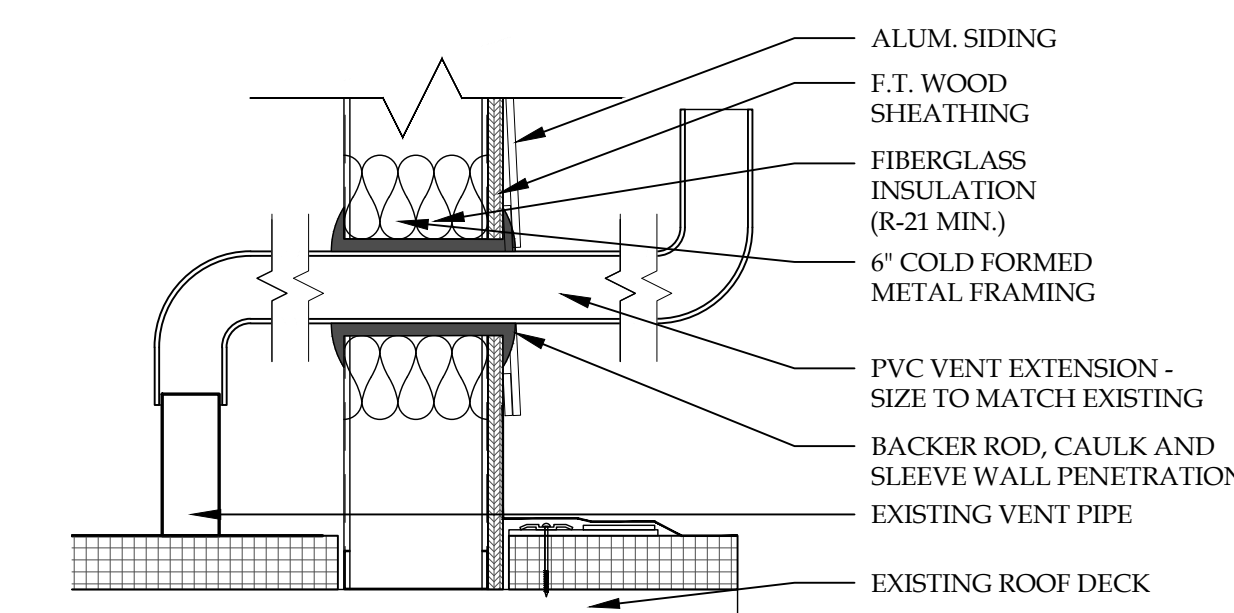
INDICATED ROOF INSULATION THICKNESSES ARE BASED ON AN AVERAGE R-30. ALTERNATIVE THICKNESSES WILL BE CONSIDERED PROVIDED THE AVERAGE R VALUE IS AT LEAST 30. REMOVE ALL ROOFING INSULATION AND METAL EDGES. INSPECT EXISTING DECK FOR DETERIORATION.

**NOTE:**

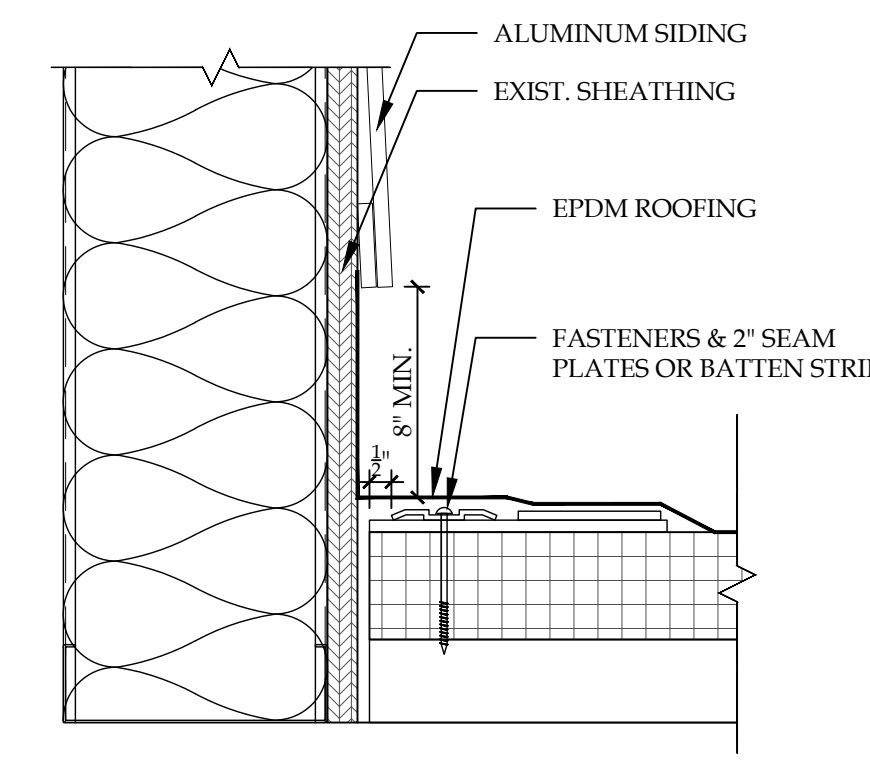
- AT CURB REMOVALS:**
- REMOVE EXISTING CURB
  - CLOSE OPENING WITH 1 1/2" 20GA. METAL DECK
  - PROVIDE 3/4"x3/4" ANGLES AS REQUIRED TO SUPPORT DECK. SECURE ANGLES TO ADJACENT ROOF JOISTS/BEAMS.
- NEW ROOF DRAINS:**
- ALL NEW DRAINS TO BE 4"
  - CONNECT TO EXISTING ROOF DRAINAGE PIPING
  - RAISE EXISTING ROOF DRAIN AS REQUIRED FOR INSULATION THICKNESS INDICATED.
- ROOF CURBS:**
- RAISE ALL ROOF CURBS AS REQUIRED TO PROVIDE A MINIMUM OF 8" FROM BOTTOM OF RTU TO ROOF SURFACE. USE 2x WOOD BLOCKING AS REQUIRED. RESET, RECONNECT, AND VERIFY OPERATION OF MECHANICAL UNIT.
  - SET CURBS LEVEL.
  - EXTEND DUCTWORK AS REQUIRED.



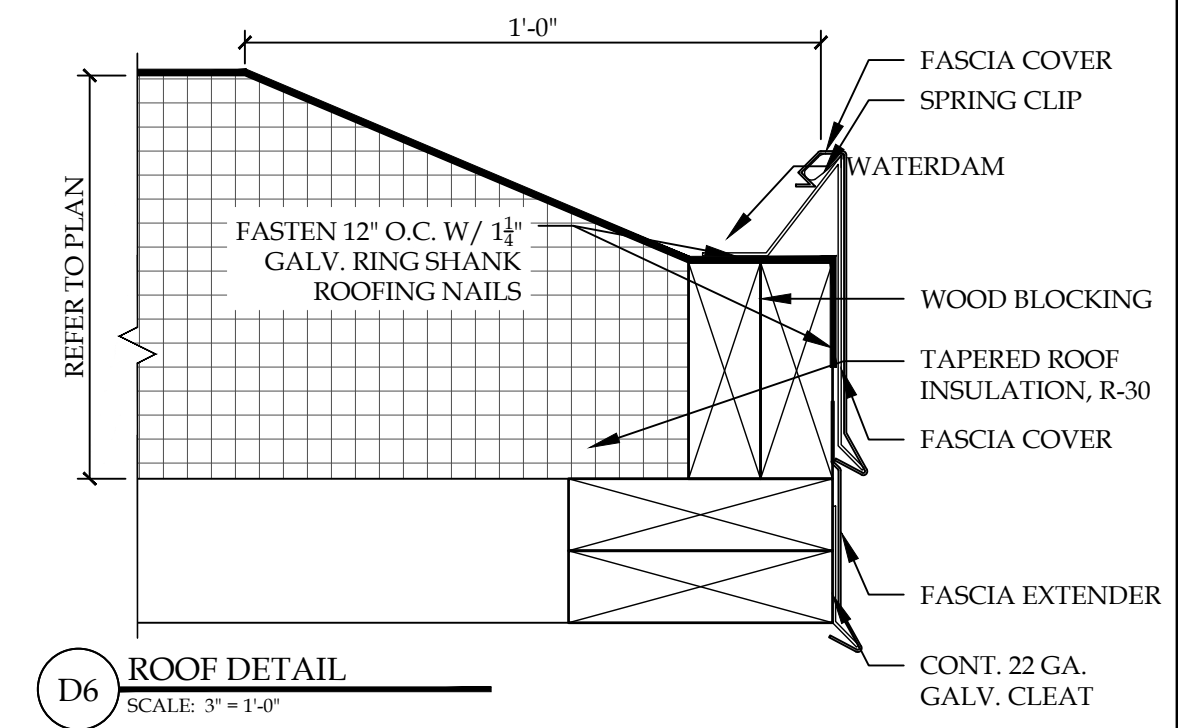
D2 WALL TYPES  
SCALE: 1/12" = 1'-0"



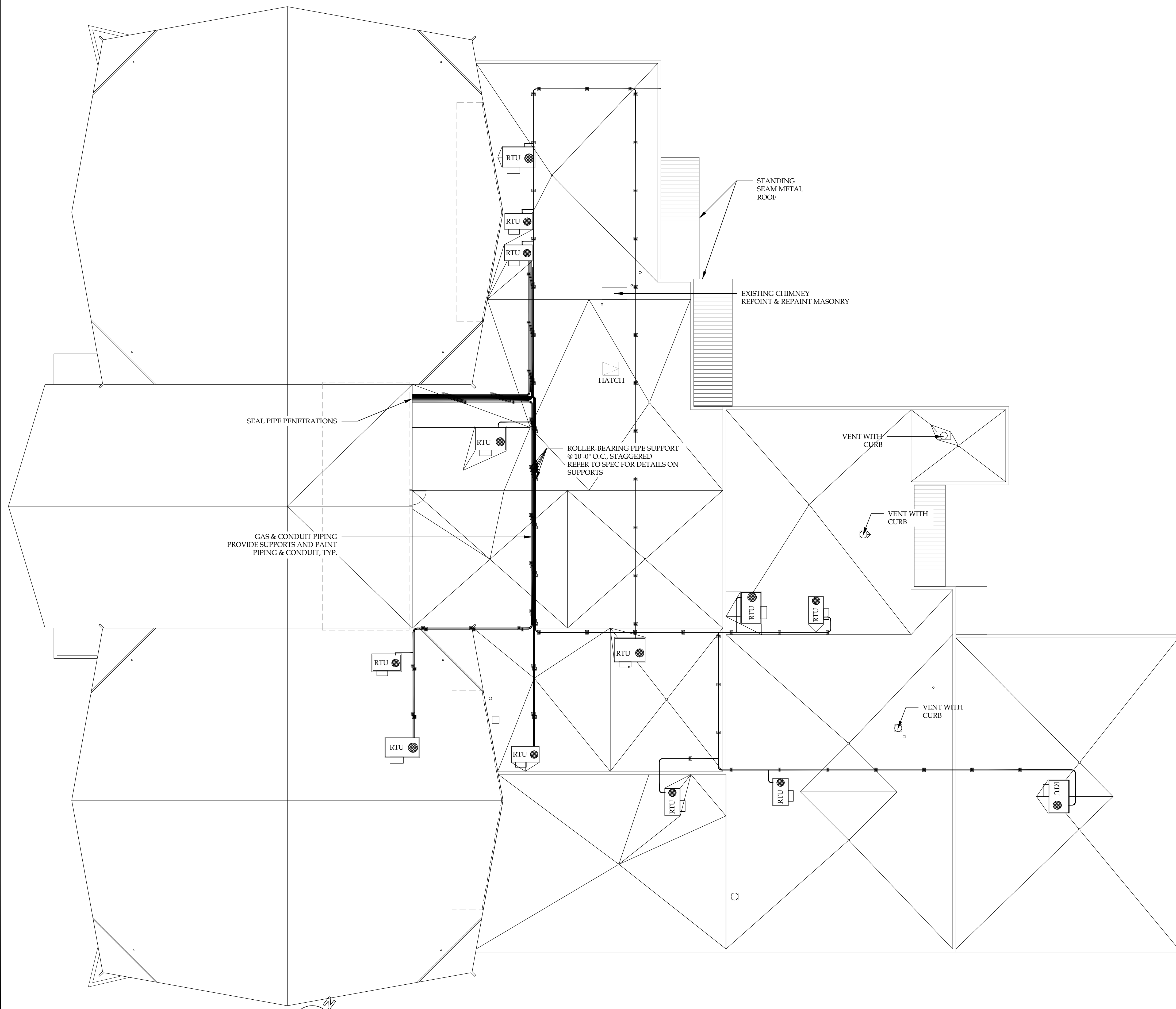
D4 DETAIL @ VENT PIPE EXTENSION  
SCALE: 1/12" = 1'-0"



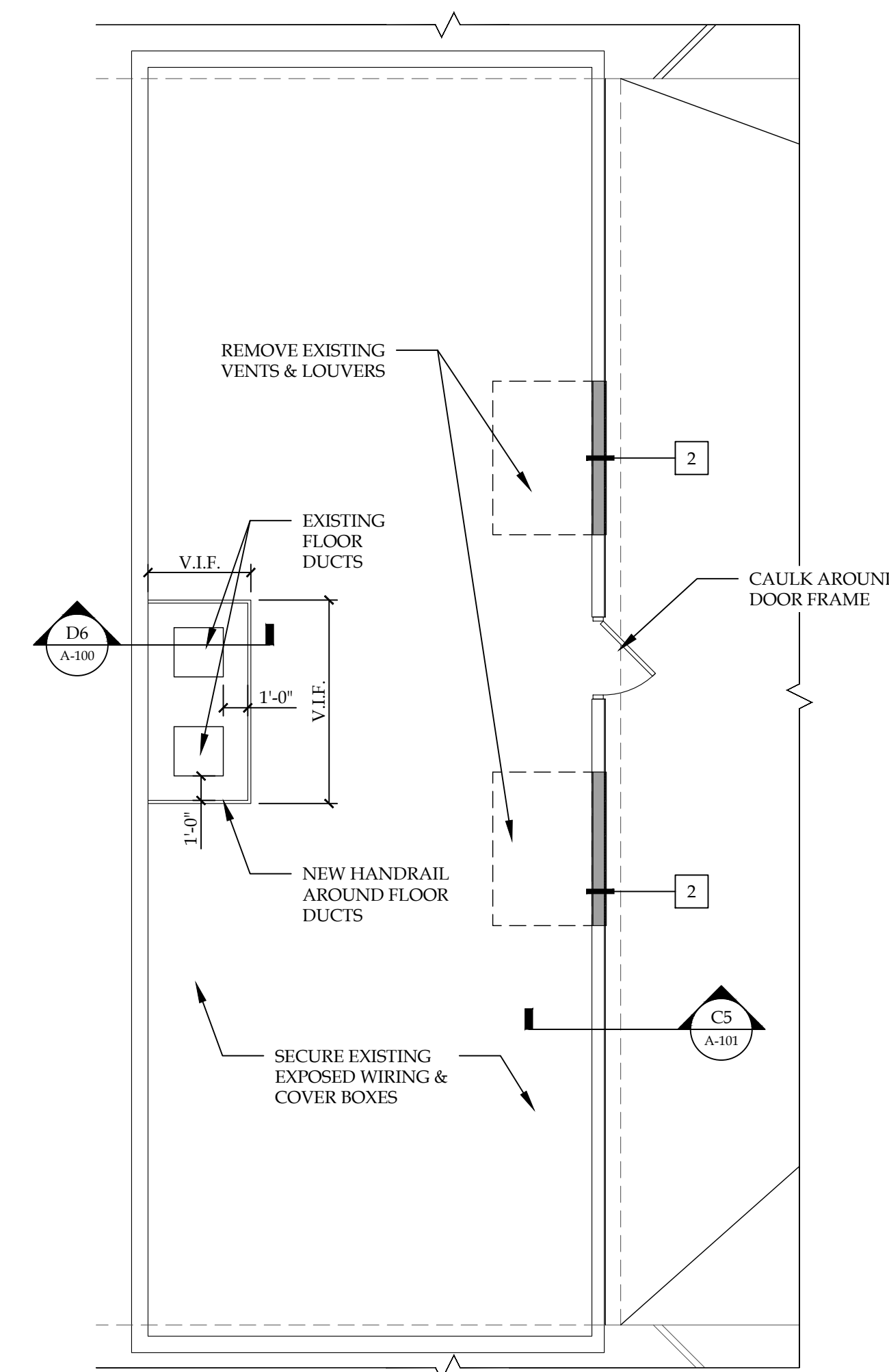
D5 DETAIL @ NEW WALL BASE  
SCALE: 1/12" = 1'-0"



D6 ROOF DETAIL  
SCALE: 3/8" = 1'-0"



A1 ROOF PLAN - UPPER ROOF GAS PIPING  
SCALE: 3/32" = 1'-0"



A5 ENLARGED PLAN - PLENUM SPACE  
SCALE: 3/16" = 1'-0"

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**Bryant & Stratton  
College  
Roof  
Reconstruction**

1259 CENTRAL AVE.  
ALBANY, NY

ISSUE:

SA PROJECT TEAM: PRINCIPAL P. Silvestri  
JOB CAPT.'s \_\_\_\_\_ DRAFTER \_\_\_\_\_  
INTERIORS \_\_\_\_\_

SEAL:

TITLE:

**ROOF PLAN AND  
DETAILS**



**SILVESTRI  
ARCHITECTS + PC**

1321 MILLERSPORT HWY PH. 716.691.0900  
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SA JOB #: 14082 DATE: 08-18-20

DRAWING #: A-101



## HVAC GENERAL NOTES

### ARCHITECTURAL

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
- LIGHT FIXTURE LOCATIONS TAKE PRECEDENCE OVER DIFFUSER AND GRILLE LOCATIONS. LOCATE DIFFUSERS AND GRILLES TO ACCOMMODATE LIGHTING LAYOUT.
- REFER TO ARCHITECTURAL FLOOR PLANS FOR LOCATION AND RATING OF ALL FIRE RATED WALLS AND CEILINGS.

### GENERAL

- THE HVAC CONTRACTOR SHALL VISIT THE JOB SITE AND BE FAMILIAR WITH ALL PROJECT CONDITIONS PRIOR TO FABRICATING DUCTWORK, EQUIPMENT, ETC. NO ALLOWANCES WILL BE MADE FOR CONTRACTOR'S UNFAMILIARITY WITH PROJECT CONDITIONS.
- DUCTWORK ROUTING SHOWN IS SCHEMATIC. HVAC CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSETS AND FITTINGS, INCLUDING DIVIDED DUCTS, REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES AS ENCOUNTERED IN THE FIELD.
- FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, ASHRAE, SMACNA, NFPA, EPA, ETC.
- PRIOR TO INSTALLATION OF ASSOCIATED WORK, INSTALLER SHALL MEET AT PROJECT SITE WITH GENERAL CONTRACTOR, INSTALLER OF EACH COMPONENT OF ASSOCIATED WORK, INSPECTION AND TESTING AGENCY REPRESENTATIVES (IF ANY), INSTALLERS OF OTHER WORK REQUIRING COORDINATION WITH WORK OF THIS SECTION AND ARCHITECT / OWNER FOR PURPOSE OF COORDINATING LOCATIONS OF PROPOSED SYSTEMS, REVIEWING MATERIAL SELECTIONS, AND PROCEDURES TO BE FOLLOWED IN PERFORMING THE WORK IN COMPLIANCE WITH REQUIREMENTS SPECIFIED.
  - THE HVAC CONTRACTOR SHALL VERIFY THE ENTIRE SCOPE OF THE DEMOLITION AND NEW WORK PRIOR TO BID. ADDITIONAL DEMOLITION AND / OR RELOCATION OF EXISTING SYSTEMS THAT MAY NOT BE REPRESENTED ON THESE DRAWINGS SHALL HAVE ADDITIONAL FUNDS ALLOCATED FOR A 100% COMPLETE AND OPERATIONAL SYSTEM AND WILL REPRESENT THE CONTRACTOR'S KNOWLEDGE OF THE PROJECT / SITE AND ON-SITE INSPECTION PRIOR TO BID.
    - COORDINATE THE DEMOLITION AND / OR RELOCATION OF EXISTING SYSTEMS WITH THE OWNER AND / OR OWNERS REPRESENTATIVE PRIOR TO PROCEEDING WITH ANY WORK.

- COORDINATE SCHEDULE FOR HOOK-UPS TO EXISTING SYSTEMS AND EQUIPMENT REMOVAL OR RELOCATION WITH THE OWNER AND PERFORM THIS WORK AT SUCH TIMES TO ENSURE THAT PERIODS OF SHUTDOWN WILL BE ACCEPTABLE TO THE OWNER.

- COORDINATE INSTALLATION AND LOCATIONS OF NEW DUCTWORK WITH BUILDING STRUCTURE, PLUMBING PIPING, ELECTRICAL CONDUIT, LIGHTING, ETC. PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND MATERIALS.

- VERIFY EXACT SIZES OF EXISTING DUCTWORK IN FIELD PRIOR TO MAKING NEW CONNECTION.

- VERIFY EXACT LOCATION OF CONNECTION POINTS (NEW TO EXISTING) IN FIELD PRIOR TO CONSTRUCTION.

- RELOCATE EXISTING DUCTWORK, PIPING AND / OR EQUIPMENT IN EXISTING CEILING SPACES TO ACCOMMODATE ALL RENOVATIONS AND ADDITIONS.

- ALL PIPING, DUCTS, VENTS, ETC. EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER.

- MAINTAIN MINIMUM OF TEN (10) FEET BETWEEN OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGE, PLUMBING VENTS, ETC.

- MAINTAIN A MINIMUM OF TEN (10) FEET BETWEEN EDGE OF HVAC EQUIPMENT / ROOF CURBS AND EDGE OF ROOF / PARAPET.

- REFER TO PLUMBING DRAWINGS FOR LOCATION AND ROUTING OF ALL GAS PIPING.

- DIVISION 23 SHALL BE LICENSED TO PERFORM MECHANICAL WORK IN THE MUNICIPALITY IN WHICH THE PROJECT IS LOCATED.

- DIVISION 23 SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS FURNISHED UNDER THIS CONTRACT AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS SHALL BE RECTIFIED BY DIVISION 23 WITHOUT ANY ADDITIONAL COST TO THE OWNER.

- WORK SHALL COMPLY WITH THE LATEST REVISIONS OF NEW YORK STATE BUILDING CODE, NEW YORK STATE MECHANICAL CODE, NEW YORK STATE UNIFORM FIRE PROTECTION AND CONSTRUCTION CODE, NEW YORK STATE ENERGY CONSERVATION CODE, AND ANY STATE AND LOCAL CODES OR REGULATIONS THAT APPLY.

- IN CASE OF CONFLICTS BETWEEN DRAWINGS, SPECIFICATIONS, AND INTERPRETATION OF CODES BY LOCAL AUTHORITY, LATER SHALL GOVERN.

### EQUIPMENT

- ALL HVAC EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS AS SHOWN. UTILIZE FACTORY FILTERS DURING CONSTRUCTION AND REPLACE WITH NEW FILTERS JUST PRIOR TO TESTING AND BALANCING. PROVIDE ONE (1) SET OF EXTRA FILTERS FOR EACH UNIT INSTALLED.

- EXISTING AND NEW ROOFTOP UNIT FILTERS SHALL BE REPLACED WITH MINIMUM MERV-11 FILTERS PRIOR TO TESTING AND BALANCING.

- ALL EQUIPMENT SHALL HAVE A ONE (1) YEAR WARRANTY; COMPRESSORS SHALL HAVE AN ADDITIONAL FIVE (5) YEAR EXTENDED WARRANTY. ROOFTOP UNIT HEAT EXCHANGERS SHALL HAVE AN ADDITIONAL TEN (10) YEAR EXTENDED WARRANTY; PROVIDE WRITTEN GUARANTEE.

- GENERAL CONTRACTOR SHALL STORE ALL HVAC EQUIPMENT (ROOFTOP UNITS, DUCTWORK, ETC.) THAT ARRIVES AT THE PROJECT SITE. STORE ALL EQUIPMENT IN A DRY PLACE, PROTECTING ALL EQUIPMENT FROM THE WEATHER, CONSTRUCTION TRAFFIC AND THEFT.

- ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.

- FLEXIBLE CONNECTORS SHALL BE INSTALLED ON SUPPLY, RETURN, AND EXHAUST AIR DUCTS AT ALL EQUIPMENT CONNECTIONS.

- THE BIDDER MUST SUBMIT IN WRITING TO THE ARCHITECT / OWNER, WHO WILL FORWARD TO THE ENGINEER, ANY REQUEST FOR A PROPOSED DEVIATION, MODIFICATION, OR SUBSTITUTION TO THESE DRAWINGS AND SPECIFICATIONS FOR EVALUATION NO LATER THAN TEN (10) DAYS PRIOR TO THE BID DATE, AND SHALL BE ACCOMPANIED BY TECHNICAL DATA, DRAWINGS, AND COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH THESE DRAWINGS AND SPECIFICATIONS.

### DUCTWORK

- RUN ALL DUCTWORK AS TIGHT TO BOTTOM OF STEEL AS POSSIBLE OR RUN THRU OPEN JOIST WEBBING (IF APPLICABLE).
- DUCTWORK SHALL NOT BE SUPPORTED FROM BRIDGING, CONDUIT, PIPING, ETC. OF ANY KIND. DO NOT USE FASTENERS THAT PENETRATE ROOF DECKS.
- ASPECT RATIO SHALL NOT EXCEED 3:1.
- ALL DUCTWORK INSTALLATIONS SHALL RUN CONTINUOUSLY THROUGH PARTITIONS.
- LOCATE ALL DUCT BALANCING DAMPERS AND FIRE DAMPERS ABOVE ACCESSIBLE CEILINGS OR PROVIDE CEILING AND / OR WALL ACCESS DOORS.
- PROVIDE VOLUME CONTROL DAMPERS WITH QUADRANT AND LOCK AND STANDOFF COLLAR AT ALL BRANCH DUCTS TO DIFFUSERS. INSTALL AT A MINIMUM OF TWO DUCT WIDTHS FROM BRANCH TAKEOFF.
- DUCTWORK SIZES INDICATED ON DRAWINGS ARE INSIDE, FREE AND CLEAR DIMENSIONS. INCREASE DUCT OUTSIDE DIMENSION SIZE BY TWO (2) TIMES THE THICKNESS OF THE INSULATION.
- ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
- ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL IN AREAS WITH FINISHED CEILINGS.
- ALL NEW DUCTWORK AND FITTINGS SHALL BE CONSTRUCTED OF MINIMUM 26-GAUGE STEEL (GALVANIZED).
- WHERE RECTANGULAR DUCTWORK IS INDICATED, AND AT INSTALLERS OPTION, SPIRAL AND ROUND DUCTWORK MAY BE SUBSTITUTED FOR RECTANGULAR DUCTWORK PROVIDED THEY ARE EQUIVALENT TO THE RECTANGULAR DIMENSIONS INDICATED ON THE DRAWINGS (i.e.: 8x4 = 8"φ, 10x6 = 10"φ).
- ALL NEW SUPPLY AIR DUCTWORK AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM R-VALUE OF R-6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS.

- ALL EXISTING DUCTWORK AND FITTINGS FROM NEW DUCTWORK CONNECTION TO EXISTING MAIN DUCTWORK SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM R-VALUE OF R-6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS.

- ALL RETURN AIR AND TRANSFER AIR DUCTWORK AND FITTINGS SHALL BE INTERNALLY LINED.
- ALL DUCT LINERS SHALL BE MINIMUM 1-1/2" THICK, COATED TO PREVENT ELEMENTS FROM ENTERING THE AIRSTREAM (COATING SHALL MEET ASHRAE 62 - LATEST EDITION), AND ENVIRONMENTALLY FRIENDLY WITH A MINIMUM R-VALUE OF R-6. LINER SHALL BE BLACK IN COLOR SO IT IS NOT NOTICEABLE FROM THE INSIDE OF REGISTERS AND GRILLES.
- ALL SQUARE ELBOWS SHALL HAVE AIRFOIL TYPE TURNING VANES.
- MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0". ALL FLEXIBLE DUCT SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS, WITH A MINIMUM R-VALUE OF R-6. SUPPORT FLEXIBLE DUCT TO ELIMINATE KINKING AND SAGGING. (FLEXIBLE DUCT IS NOT PERMITTED ON RETURN / EXHAUST AIR DUCTWORK, AND RETURN / EXHAUST AIR GRILLE CONNECTIONS).

### PIPING

- ALL CONDENSATE DRAIN PIPING SHALL BE FULLY INSULATED WITH MINIMUM 1-1/2" THICK, 0.75 LB DENSITY, INSULATION WITH VAPOR BARRIER, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS.
- CONDENSATE PIPING FROM AIR CONDITIONING EQUIPMENT SHALL BE PITCHED A MINIMUM OF 1/4" PER FOOT, IN THE DIRECTION OF FLOW.
- CONDENSATE DRAIN PIPES SHALL HAVE CLEANOUTS AT EVERY CHANGE IN DIRECTION, DISTANCES GREATER THAN 3 FEET, AND AT THE BEGINNING OF LONG STRAIGHT RUNS.

### CONTROLS

- ALL CONTROL WIRING AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) AND NFPA 70.
- ALL CONTROL WIRING AND POWER CONDUCTOR INSULATION SHALL BE PLENUM RATED.
- ALL EXPOSED CONTROL WIRING SHALL BE INSTALLED IN 3/4" EMT CONDUIT.
- PROVIDE ALL RELAYS, CONTACTORS, ETC. REQUIRED TO ACHIEVE INTERLOCK OPERATION OF EQUIPMENT.
- CONTROLS SHALL BE COMPATIBLE TO AND INTERFACE WITH EXISTING ENERGY MANAGEMENT SYSTEM (IF APPLICABLE).

### BALANCING

- MECHANICAL CONTRACTOR, WHO IS CERTIFIED BY EITHER THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB); UPON COMPLETION OF THE PROJECT, SHALL PERFORM A COMPLETE TESTING AND BALANCING OF ALL EQUIPMENT. BALANCE SYSTEM TO WITHIN ±5% OF AIR QUANTITIES INDICATED ON PLANS AND SCHEDULES AND PROVIDE THE OWNER WITH A COMPLETE, SIGNED AND SEALED BALANCE REPORT.
  - WHERE CFM'S ARE NOT INDICATED, PRIOR TO REMOVING EXISTING DIFFUSERS / GRILLES, MEASURE AND RECORD EXISTING AIR DEVICES CFM'S.

### DUCTWORK PRESSURE (TIGHTNESS) TESTING

- ALL DUCTWORK AND PLENUM SYSTEMS SHALL BE SEALED AND PRESSURE TESTED USING INSTRUMENTS AND PROCEDURES SPECIFIED IN ANSI / ASHRAE 152 AND ASTM E1354 TEST METHOD "A", AND NEW YORK STATE ENERGY CONSERVATION CODE SECTION 403.
  - EXCEPTION: DUCT TIGHTNESS TEST IS NOT REQUIRED IF THE AIR HANDLER AND ALL DUCTS ARE LOCATED WITHIN THE CONDITIONED SPACE.

## HVAC ABBREVIATIONS

AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
BHP	BRAKE HORSEPOWER
CFM	CUBIC FEET PER MINUTE
CO <sub>2</sub>	CARBON DIOXIDE
DB	DRY BULB
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
E/F	EXHAUST FAN
F	FAHRENHEIT
FD	FIRE DAMPER
HP	HORSEPOWER
HVAC	HEATING, VENTILATING, AIR CONDITIONING
IN	INCHES
INT	INTERNAL
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
MBH	1,000 BRITISH THERMAL UNITS
MCA	MINIMUM CIRCUIT AMPACITY
MCCP	MAXIMUM OVERCURRENT PROTECTION
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
WB	WET BULB

## HVAC DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	SUPPLY DUCT RISER
	RETURN DUCT RISER
	EXHAUST DUCT RISER
	EXISTING DUCTWORK TO REMAIN
	EXISTING DUCTWORK TO BE REMOVED
	DUCT RISE OR DROP
	AIRFOIL TURNING VANES
	FLEXIBLE DUCT
	INTERNALLY LINED DUCTWORK
	MANUAL VOLUME DAMPERS
	ROUND
	SUPPLY AIR DEVICE - FIRST NO. CFM, SECOND NO. TYPE THIRD NO. NECK SIZE (REFER TO SCHEDULE FOR DEVICE SIZE)
	RETURN / EXHAUST AIR DEVICE - FIRST NO. CFM, SECOND NO. TYPE THIRD NO. NECK SIZE (IF REQUIRED) (REFER TO SCHEDULE FOR DEVICE SIZE)

## HVAC CONTROL SYMBOLS

SYMBOL	DESCRIPTION
	MANUAL, PROGRAMMABLE, 7-DAY, 24-HOUR DIGITAL THERMOSTAT WITH BACKLIT DISPLAY AND BATTERY BACKUP
	CONTROL WIRING (PLENUM RATED)

## HVAC DRAWING LIST

M-1	HVAC SCHEDULES, LEGENDS AND DETAILS
M-2	HVAC SCHEDULES AND SEQUENCE OF OPERATIONS
M-3	HVAC SPECIFICATIONS
M-4	HVAC SPECIFICATIONS
M-5	PARTIAL FLOOR PLAN - HVAC DUCTWORK DEMOLITION
M-6	PARTIAL FLOOR PLAN - HVAC DUCTWORK DEMOLITION
M-7	PARTIAL FLOOR PLAN - HVAC DUCTWORK
M-8	PARTIAL FLOOR PLAN - HVAC DUCTWORK
M-9	PARTIAL ROOF PLAN - HVAC DUCTWORK
M-10	PARTIAL ROOF PLAN - HVAC DUCTWORK
M-11	HVAC DETAILS

## AIR DISTRIBUTION DEVICE SCHEDULE

SYMBOL	STYLE & DEVICE SIZE	MOUNTING	DESCRIPTION	MANUFACTURER	MODEL NO.	MAXIMUM NC	THROW (MINIMUM FEET)
SUPPLY							
	SUPPLY 24x24	LAY-IN	3-CONE FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, 360° ADJUSTABLE PATTERN THROW, WHITE FINISH	TITUS	TMSA	16	4'-0"
	SUPPLY 24x24	SURFACE	3-CONE FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, 360° ADJUSTABLE PATTERN THROW, WHITE FINISH	TITUS	TMSA	---	6'-0"
RETURN							
	RETURN 24x24	LAY-IN	PERFORATED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 22"x22" BACKPAN FOR FULL PANEL LAY-IN APPLICATION, WHITE FINISH	TITUS	PAR	14	---
EXHAUST							
	EXHAUST 24x24	LAY-IN	PERFORATED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 22"x22" BACKPAN FOR FULL PANEL LAY-IN APPLICATION, WHITE FINISH	TITUS	PAR	16	---

### AIR DISTRIBUTION DEVICE NOTES:

- ALL DEVICES SHALL BE FROM A SINGLE MANUFACTURER.
- ALL DEVICES SHALL HAVE MATCHING MATTE, WHITE FINISH (UNLESS OTHERWISE NOTED IN DESCRIPTION ABOVE).
- MAXIMUM NC OF 20.
- ACCESSORIES:
  - PLASTER FRAME: FOR INSTALLATION IN GYPBOARD CEILING.
  - OPERATING KEYS: TOOLS DESIGNED TO FIT THROUGH DIFFUSER FACE AND OPERATE VOLUME CONTROL DEVICE AND / OR PATTERN ADJUSTMENT
- ALL NEW DIFFUSERS / GRILLES SHALL MATCH EXISTING BUILDING STANDARD (VERIFY EXISTING DIFFUSER / GRILLE MANUFACTURER AND MODEL NUMBER PRIOR TO PURCHASING AND INSTALLING DIFFUSERS / GRILLES).
- ACCEPTABLE MANUFACTURER'S - TITUS, PRICE.

### NOTES:

- SUBMITTALS SHALL INCLUDE DIFFUSER AND GRILLE SCHEDULE INDICATING ROOM LOCATION, NOISE CRITERIA (NC), THROW AND PERFORMANCE DATA FOR EACH TYPE OF DIFFUSER AND GRILLES INDICATED.

## ROOF EXHAUST FAN SCHEDULE

MARK	AREA SERVED	CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	FAN				MOTOR		ROOF CURB SIZE	OPERATING WEIGHT (LBS.)
						FAN TYPE	DRIVE TYPE	RPM	SONES	HP	VOLTS / PH		
E/F-1	EXISTING WOMENS 123, EXISTING MENS 124	775	0.25	GREENHECK	LB-14-4	CENTRIFUGAL	BELT	661	4.2	1/4	120/1/60	GPI=26/16-A12	150

### ROOF EXHAUST FAN NOTES:

- HOUSING - "LOW PROFILE" ANODIZED ALUMINUM WITH HINGED HOOD AND ALUMINUM BIRDSCREEN.
- FAN - BACKWARD INCLINED ANODIZED ALUMINUM.
- BUILT-IN POWER DISCONNECT.
- MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
- UNITS SHALL HAVE ADJUSTABLE MOTOR PULLEYS.
- ROOF CURBS:
  - EACH EXHAUST FAN SHALL BE EQUIPPED WITH AN INSULATED, ANODIZED ALUMINUM ROOF CURB (0.080" MINIMUM THICKNESS), ALL WELDED JOINT CONSTRUCTION.
    - ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.
  - ALL CURBS SHALL BE MINIMUM 1'-0" HIGH.
- ACCESSORIES:
  - MOTORIZED, OPPOSED BLADE, LOW LEAKAGE ALUMINUM CONTROL DAMPERS (120V ACTUATOR).
  - 1" THICK FAN HOUSING INSULATION.
  - INTERLOCK EXHAUST FAN'S WITH ASSOCIATED EXISTING ROOFTOP UNIT OPERATION.
  - MAXIMUM SONES TO BE 4.2 OR LESS, UNLESS OTHERWISE INDICATED.
  - ACCEPTABLE MANUFACTURER'S - GREENHECK, COOK, TWIN CITY FAN.
- NOTES:
  - UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.

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SEAL:

TITLE:  
**HVAC SCHEDULES, LEGENDS AND ABBREVIATIONS**



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DRAWING #: **M-1**

**ROOFTOP UNIT SCHEDULE**

MARK	AREA SERVED	TONS	SUPPLY AIR CFM	RETURN AIR CFM	OUTSIDE AIR CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING COIL			GAS HEATING SECTION					SUPPLY AIR FAN			SEER / EER	MCA	MOCB (HACR BREAKER)	OPERATING WEIGHT (LBS.)			
									MBH	EAT °F (OUTSIDE DB)	EAT °F (OUTSIDE WB)	MIN. ROWS	MBH INPUT	MBH OUTPUT	AFUE %	EAT °F	LAT °F	RPM	MOTOR							
																			BHP					HP	VOLTS / PH	
RTU-1	EXISTING SPACES	8.5	3,400	3,050	350	----	CARRIER	48HCE-09	97.0	95	70	4	120.0 (1ST STAGE) 180.0 (2ND STAGE)	98.0 (1ST STAGE) 148.0 (2ND STAGE)	82%	65	95	867	1.72	2	208/3/60	----	12.0	41.0	50	1,650
RTU-2	EXISTING SPACES	8.5	3,400	3,050	350	----	CARRIER	48HCE-09	97.0	95	70	4	120.0 (1ST STAGE) 180.0 (2ND STAGE)	98.0 (1ST STAGE) 148.0 (2ND STAGE)	82%	65	95	867	1.72	2	208/3/60	----	12.0	41.0	50	1,650
RTU-3	EXISTING SPACES	10.0	4,000	3,600	400	----	CARRIER	48HCE-12	115.0	95	70	4	180.0 (1ST STAGE) 224.0 (2ND STAGE)	147.0 (1ST STAGE) 184.0 (2ND STAGE)	82%	65	95	942	2.41	3	208/3/60	----	11.5	53.0	60	1,800
RTU-4	EXISTING SPACES	5.0	2,000	1,800	200	----	CARRIER	48GCE-06	60.0	95	70	4	82.0 (1ST STAGE) 110.0 (2ND STAGE)	65.0 (1ST STAGE) 88.0 (2ND STAGE)	80%	65	95	2133	1.02	2	208/3/60	16.0 / 12.0		31.0	45	1,150
RTU-5	EXISTING SPACES	8.5	3,400	3,050	350	----	CARRIER	48HCE-09	97.0	95	70	4	120.0 (1ST STAGE) 180.0 (2ND STAGE)	98.0 (1ST STAGE) 148.0 (2ND STAGE)	82%	65	95	867	1.72	2	208/3/60	----	12.0	41.0	50	1,650
RTU-6	EXISTING SPACES	3.0	1,200	1,075	125	----	CARRIER	48GCD-04	35.2	95	70	2	50.0 (1ST STAGE) 67.0 (2ND STAGE)	40.0 (1ST STAGE) 54.0 (2ND STAGE)	81%	65	95	1874	0.46	1	208/3/60	16.0 / 12.0		21.0	30	950
RTU-7	EXISTING SPACES	4.0	1,600	1,450	150	----	CARRIER	48HCE-05	47.0	95	70	4	82.0 (1ST STAGE) 110.0 (2ND STAGE)	65.0 (1ST STAGE) 88.0 (2ND STAGE)	80%	65	95	1993	0.84	1	208/3/60	16.0 / 12.0		26.0	30	1,050
RTU-8	EXISTING SPACES	12.5	5,000	4,500	500	----	CARRIER	48HCF-14	146.0	95	70	4	192.0 (1ST STAGE) 240.0 (2ND STAGE)	156.0 (1ST STAGE) 195.0 (2ND STAGE)	81%	65	95	718	2.39	3	208/3/60	----	12.2	60.0	70	2,200
RTU-9	EXISTING SPACES	5.0	2,000	1,800	200	----	CARRIER	48GCE-06	60.0	95	70	4	82.0 (1ST STAGE) 110.0 (2ND STAGE)	65.0 (1ST STAGE) 88.0 (2ND STAGE)	80%	65	95	2133	1.02	2	208/3/60	16.0 / 12.0		31.0	45	1,150
RTU-10	EXISTING SPACES	5.0	2,000	1,800	200	----	CARRIER	48GCE-06	60.0	95	70	4	82.0 (1ST STAGE) 110.0 (2ND STAGE)	65.0 (1ST STAGE) 88.0 (2ND STAGE)	80%	65	95	2133	1.02	2	208/3/60	16.0 / 12.0		31.0	45	1,150

**ROOFTOP UNIT NOTES:**

- FACTORY ASSEMBLED, PACKAGED UNIT WITH ROOF CURB AND ALL STANDARD ACCESSORIES.
- UNIT SHALL BE SINGLE-WALL CONSTRUCTION.
- UNIT SHALL BE U.L. OR AGA APPROVED.
- UNIT SHALL BE OF DOWNFLOW DESIGN AND SHALL HAVE 100% ECONOMIZER FUNCTION.
  - UNIT SHALL HAVE 100% ECONOMIZER FUNCTION WITH DIFFERENTIAL ENTHALPY CONTROL AND MINIMUM OUTSIDE AIR SETTING, AND BAROMETRIC RELIEF.
- COMPRESSORS SHALL BE HIGH EFFICIENCY DESIGN.
- UNIT SHALL HAVE:
  - R410A REFRIGERANT.
  - ALL SECTIONS SHALL HAVE HINGED ACCESS DOORS.
  - MOTORS SHALL HAVE BUILT-IN OVERLOAD PROTECTION.
  - RTU-1, 2, 3, 5, 8: UNIT SHALL HAVE ADJUSTABLE PITCH MOTOR SHEAVES AND MOTOR PULLEYS.
  - RTU-4, 6, 7, 9, 10: UNIT SHALL HAVE DIRECT DRIVE, VANE AXIAL ECM SUPPLY FAN (FIELD ADJUSTABLE FAN SPEED CONTROL).
  - 2-STAGE GAS HEATING AND 2-STAGE COOLING.
  - 30% PLEATED FILTERS.
  - ALUMINIZED STEEL HEAT EXCHANGER.
  - FACTORY INSTALLED REMOTE SHUTDOWN TERMINALS.
  - DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
  - UNIT MOUNTED CONTROLS WITH FACTORY MOUNTED CONTROL BOARD.
- ACCESSORIES:
  - OUTSIDE AIR INTAKE HOOD AND RELIEF / EXHAUST HOOD.
  - MOTORIZED, LOW-LEAKAGE, OPPOSED BLADE OUTSIDE AIR DAMPERS.
  - CARBON DIOXIDE (CO<sub>2</sub>) SENSOR FOR OUTSIDE AIR CONTROL OVERRIDE (MOUNT IN RETURN AIR DUCTWORK).
  - DISCHARGE AIR SENSOR MOUNTED IN SUPPLY AIR DUCTWORK.
  - HUMIDI-MIZER DEHUMIDIFICATION CONTROL.
  - MERV-11 FILTERS.
  - STAINLESS STEEL, DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
  - FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE.

- INSTALLATION:
  - UNITS SHALL BE ON MANUFACTURER PROVIDED, FULL PERIMETER, INSULATED ROOF CURB SUITABLE FOR THE ROOF DECK, INSULATION AND MEMBRANE (REFER TO ARCHITECTURAL DRAWINGS FOR ROOF CONSTRUCTION).
    - ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.
  - ALL SERVICES TO THE UNIT SHALL ENTER WITHIN THE ROOF CURB. NO SEPARATE ROOF PENETRATIONS ARE ALLOWED.
- ACCEPTABLE MANUFACTURER'S - CARRIER, AON, MCQUAY.

**NOTES:**

- UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
- CARRIER'S FAN MOTOR BRAKE HORSEPOWER (BHP) LISTED IS THE "MAXIMUM CONTINUOUS BHP RATING" (FAN POWER). MINIMUM ALLOWABLE FAN MOTOR HORSEPOWER IS 1 HP.
  - FAN HORSEPOWER'S (HP) INDICATED ARE FOR LISTED MANUFACTURER'S COMPARISON MOTOR HORSEPOWER RATING.
- UNITS SUPPLY FAN RPM'S AND BHP'S ARE BASED ON 0.80" EXTERNAL STATIC PRESSURE (DUCTWORK ONLY). DIVISION 23 SHALL VERIFY UNITS ACTUAL STATIC PRESSURE (VIA AIRFLOW MEASUREMENTS OR EXISTING BALANCE REPORTS) AND COORDINATE WITH UNIT MANUFACTURER THE SUPPLY FANS EXACT RPM AND BHP PRIOR TO PURCHASING AND INSTALLING UNITS.

**HVAC SEQUENCE OF OPERATIONS**

1.1 SEQUENCE OF OPERATIONS - HVAC DUCTWORK

- ROOFTOP UNITS (RTU-1 THRU RTU-10).
  - GENERAL.
    - CONFIGURATION: CONSTANT-VOLUME MIXED-AIR SINGLE PATH.
  - SYSTEM RUN.
    - OCCUPIED MODE.
      - SUPPLY FAN: SUPPLY FAN SHALL RUN CONTINUOUSLY.
      - ECONOMIZER (WITH CO<sub>2</sub> SENSOR).
        - THE CONTROL SYSTEM SHALL SENSE THE INCREASED OCCUPANTS / CARBON DIOXIDE AND INCREASE THE OUTSIDE AIR QUANTITY ON THE EQUIPMENT SERVING THAT AREA SUCH THAT THE CARBON DIOXIDE SHALL BE CONTROLLED SO AS NOT TO EXCEED 500 PPM (ADJUSTABLE) ABOVE THE OUTSIDE AIR CARBON DIOXIDE CONCENTRATION.
        - MINIMUM OUTSIDE AIR IS SUPPLIED TO ALL AREAS AT ALL TIMES DURING OCCUPIED MODE.
        - CARBON DIOXIDE SENSOR OVERRIDES MINIMUM OUTSIDE AIR SETPOINT TO INCREASE OUTSIDE AIR SHOULD THE CONDITIONS IN THE SPACE DEVIATE FROM DESIGN CONDITIONS.
    - GAS VALVE: CYCLE IN SEQUENCE WITH THE ECONOMIZER DAMPERS TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE.
      - BELOW 50° F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5-MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.
        - THE OUTSIDE AIR DAMPER SHALL CLOSE, THE SUPPLY FAN SHALL STOP AND THE GAS VALVE SHALL BE DISABLED.
      - ABOVE 115° F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5-MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE GAS VALVE SHALL CLOSE.
        - IF THE DISCHARGE AIR TEMPERATURE DOES NOT DROP BELOW 115° F, THE UNIT SHALL SHUT DOWN.
        - THE OUTSIDE AIR DAMPER SHALL CLOSE AND THE SUPPLY FAN SHALL STOP.
    - DX COOLING: CYCLE WHEN OUTSIDE AIR TEMPERATURE IS ABOVE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN SUPPLY AIR TEMPERATURE AT SETPOINT AS RESET FROM DISCHARGE AIR TEMPERATURE.
  - UNOCCUPIED HEATING MODE.
    - SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN DISCHARGE AIR TEMPERAURE AT THE UNOCCUPIED HEATING SETPOINT (55° F, ADJUSTABLE).
    - ECONOMIZER DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED AND RETURN AIR DAMPER IS FULLY OPEN.
    - GAS VALVE: CYCLE AS FOLLOWS WHEN THE SUPPLY FAN IS ON:
      - BELOW 55° F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE, FULLY OPEN GAS VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE AT 90° F (ADJUSTABLE).
      - ABOVE 55° F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE, CYCLE THE GAS VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE AT 90° F (ADJUSTABLE).
    - DX COOLING: OFF.
  - UNOCCUPIED COOLING MODE.
    - SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN DISCHARGE AIR TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT (85° F, ADJUSTABLE).
    - ECONOMIZER DAMPERS: ECONOMIZER DAMPERS SHALL BE ENABLED TO PROVIDE FREE COOLING WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE DRY BULB ECONOMIZER SETPOINT.
      - ECONOMIZER AVAILABLE: OUTSIDE AIR AND EXHAUST AIR DAMPERS ARE FULLY OPEN AND RETURN AIR DAMPER IS FULLY CLOSED WHEN THE SUPPLY FAN IS ON.
      - ECONOMIZER NOT AVAILABLE: OUTSIDE AIR AND EXHAUST DAMPERS ARE FULLY CLOSED AND RETURN AIR DAMPER IS FULLY OPEN.
    - GAS VALVE: CLOSED.
    - DX COOLING: CYCLE WHEN OUTSIDE AIR TEMPERATURE IS ABOVE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN SUPPLY AIR TEMPERATURE AT 55° F (ADJUSTABLE).
  - SYSTEM OFF.
    - THE SUPPLY FAN SHALL BE OFF.
    - THE OUTSIDE AIR DAMPERS SHALL BE CLOSED.
    - THE RETURN AIR DAMPER SHALL BE OPEN.
    - THE GAS VALVE SHALL CYCLE TO MAINTAIN THE MIXED AIR PLENUM TEMPERATURE AT 50° F (ADJUSTABLE).
    - THE DX COOLING SHALL BE OFF.
  - SAFETIES AND ALARMS.
    - DISPLAY OFF-NORMAL ALARM WHENEVER SUPPLY FAN STATUS DOES NOT EQUAL COMMAND.
    - LOW LIMIT: MANUAL RESET LOW LIMIT THERMOSTAT SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE COIL DISCHARGE AIR TEMPERATURE FALL BELOW 38° F (ADJUSTABLE).
      - HEATING COIL VALVE SHALL OPEN FULLY, AND DAMPERS AND DX COOLING CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.
    - HIGH LIMIT: MANUAL RESET HIGH LIMIT THERMOSTAT LOCATED IN THE RETURN AIR SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE RETURN AIR TEMPERATURE RISE ABOVE 125° F (ADJUSTABLE).
      - DAMPERS AND CONTROL VALVES SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.
    - SMOKE CONTROL.
      - DUCT SMOKE DETECTOR(S) SHALL STOP THE SUPPLY FAN AND DISPLAY ALARM WHEN PRODUCTS OF COMBUSTION ARE DETECTED IN THE AIR STREAM.
        - DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.
      - THE SUPPLY FAN SHALL BE INTERLOCKED TO SHUT DOWN UPON A COMMAND FROM THE BUILDING FIRE ALARM SYSTEM.
      - UPON A RETURN TO NORMAL, THE SUPPLY FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
    - FILTER CONDITION: MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER AND DISPLAY AN ALARM WHEN DIFFERENTIAL PRESSURE SETPOINT IS EXCEEDED.
  - FAILURE MODES.
    - FAN FAILURE: IF THE SUPPLY FAN FAILS TO OPERATE, THE SUPPLY FAN SHALL SHUT DOWN AND ALARM SHALL BE DISPLAYED.
      - DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.
    - SENSOR FAILURE: UPON THE FAILURE OF AN ANALOG SENSOR, ASSOCIATED DAMPERS AND CONTROL VALVES SHALL REMAIN AT THEIR LAST POSITION AND ALARM SHALL BE DISPLAYED.
    - POWER FAILURE.
      - FANS: UPON RESTORATION OF POWER, THE SUPPLY FANS SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
      - DAMPERS: ECONOMIZER DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.
      - VALVES: GAS VALVE SHALL BE PROVIDED WITH SPRING RETURN ACTUATOR TO FAIL OPEN TO THE COIL.

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SEAL:

TITLE:  
**HVAC SCHEDULES AND SEQUENCE OF OPERATIONS**



SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #: **M-2**

## PART 1 – GENERAL

## 1.1 QUALITY ASSURANCE

## A. MATERIALS AND EQUIPMENT SHALL BE PROVIDED BY ONE OF THE MANUFACTURERS LISTED IN PART 2 – PRODUCTS.

- DIVISION 23 BIDS SHALL BE BASED ON THE MATERIAL MENTIONED OR SPECIFIED, AND ANY PROPOSALS FOR A SUBSTITUTION SHALL BE MADE IN WRITING TO THE ARCHITECT / ENGINEER ALLOWING ADEQUATE TIME FOR APPROPRIATE ACTION.

## a. REFER TO DIVISION 1 REQUIREMENTS FOR SUBSTITUTION PROCEDURES.

- MATERIALS AND EQUIPMENT FROM OTHER MANUFACTURERS MAY BE ACCEPTED IF PROVEN EQUAL TO THOSE SPECIFIED.

## a. EQUIPMENT SELECTION OF HIGHER ELECTRICAL CHARACTERISTICS, PHYSICAL DIMENSIONS, CAPACITIES, AND RATINGS MAY BE FURNISHED PROVIDED SUCH PROPOSED EQUIPMENT IS APPROVED IN WRITING AND CONNECTING MECHANICAL AND ELECTRICAL SERVICES, CIRCUIT BREAKERS, CONDUIT, MOTOR, BASES, AND EQUIPMENT SPACES ARE INCREASED.

- DIVISION 23 ALSO IS LIABLE FOR ALL COSTS AND CHANGES IN THE WORK REQUIRED BY SUBSTITUTE EQUIPMENT.

## a). NO ADDITIONAL COSTS WILL BE APPROVED FOR THESE INCREASES, IF LARGER EQUIPMENT IS APPROVED.

- IF MINIMUM ENERGY RATINGS OR EFFICIENCIES OF EQUIPMENT ARE SPECIFIED, EQUIPMENT MUST MEET DESIGN AND COMMISSIONING REQUIREMENTS.

- DIVISION 23 IS LIABLE FOR AND SHALL PAY FOR, ALL ARCHITECTURAL AND ENGINEERING REVIEWS AND REDESIGN COSTS FOR SUBSTITUTE MATERIALS AND EQUIPMENT.
- THE BIDDER MUST SUBMIT IN WRITING TO THE ARCHITECT / OWNER, WHO WILL FORWARD TO THE ENGINEER, ANY REQUEST FOR A PROPOSED DEVIATION, MODIFICATION, OR SUBSTITUTION TO THESE DRAWINGS AND SPECIFICATIONS FOR EVALUATION NO LATER THAN TEN (10) DAYS PRIOR TO THE BID DATE. PHONE CALLS, EMAILS, ETC. MADE THE DAY BEFORE AND / OR THE DAY THE BIDS ARE DUE ARE NOT ACCEPTABLE.

## a. A REQUEST FOR ANY SUBSTITUTION SHALL BE ACCOMPANIED BY TECHNICAL DATA, DRAWINGS, PRODUCT SAMPLES, AND COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH THESE SPECIFICATIONS AND DRAWINGS.

- REQUESTS FOR SUBSTITUTION SHALL BE MADE ONLY BY THE BIDDER; REQUESTS FOR SUBSTITUTION FROM SALES REPRESENTATIVES, VENDORS, OR SUPPLIERS ARE NOT ACCEPTABLE.

- NO MATERIALS SHALL BE DEEMED ACCEPTABLE IF NOT IN STRICT AND FULL COMPLIANCE WITH THESE DRAWINGS AND SPECIFICATIONS.

- ALL BIDDERS MUST BID SOLELY ON THE SPECIFIED MATERIALS UNLESS ACCEPTANCE BY THE ENGINEER OF A DEVIATION, OMISSION, MODIFICATION, OR SUBSTITUTION IS GRANTED IN WRITING THROUGH THE ARCHITECT / OWNER TO ALL BIDDERS PRIOR TO THE BID DATE.

- FAILURE TO SUBMIT PROPOSED SUBSTITUTED EQUIPMENT / MATERIALS PRIOR TO THE BID EVALUATION DATE, AND IS INCLUDED IN THE BIDDERS PRICE / SUBMITTAL REVIEW DRAWINGS (AFTER THE PROJECT IS AWARDED); WILL RESULT IN A "REJECTED" SUBMITTAL PACKAGE.

- THE LENGTH OF TIME THE MANUFACTURER HAS BEEN IN BUSINESS, THE LOCATION AND CAPABILITY OF COMPLETE REPAIR FACILITIES, AVAILABILITY OF REPAIR PARTS AND ANNUAL MAINTENANCE CONTRACTS ALL WILL BE CONSIDERED IN DETERMINING EQUALITY.

## 1.2 LAWS, PERMITS, INSPECTIONS

- WORK SHALL COMPLY WITH THE LATEST REVISIONS OF NEW YORK STATE BUILDING CODE, NEW YORK STATE MECHANICAL CODE, NEW YORK STATE UNIFORM FIRE PROTECTION AND CONSTRUCTION CODE, NEW YORK STATE ENERGY CONSERVATION CODE, AND ANY STATE AND LOCAL CODES OR REGULATIONS THAT APPLY.

- COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES AS APPLICABLE.

- COMPLY TO REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS THAT ARE IN EXCESS OF GOVERNING CODES.

- DO NOT INSTALL WORK AS SPECIFIED OR SHOWN IF IN CONFLICT WITH GOVERNING CODES.

- NOTIFY ENGINEER IN WRITING AND REQUEST DIRECTION.

- PAY ALL INSPECTION AND PERMIT FEES.

- PROVIDE CERTIFICATE OF INSPECTION FROM ALL GOVERNING AUTHORITIES.

## 1.3 INSTALLERS QUALIFICATIONS

- SKILLED MECHANICS WHO HAVE SUCCESSFULLY COMPLETED AN APPRENTICESHIP PROGRAM OR ANOTHER CRAFT TRAINING PROGRAM CERTIFIED BY THE U.S. DEPARTMENT OF LABOR, BUREAU OF APPRENTICESHIP AND TRAINING.

- THE MECHANICAL CONTRACTOR SHALL BE LICENSED TO PERFORM MECHANICAL WORK IN THE MUNICIPALITY IN WHICH THE PROJECT IS LOCATED.

## 1.4 OMISSIONS.

- OMISSIONS, DISCREPANCIES OR POINTS OF QUESTION FOUND BY A BIDDER IN THE PLANS OR SPECIFICATIONS SHALL BE REFERRED TO THE ARCHITECT, WHO WILL FORWARD TO THE ENGINEER TO MAKE ANY CLARIFICATIONS IN WRITING.

## 1.5 REQUEST FOR INFORMATION (RFI).

- PRIOR TO, AND DURING THE CONSTRUCTION OF THE PROJECT, QUESTIONS FROM THE HVAC CONTRACTOR REGARDING OMISSIONS, DISCREPANCIES, COORDINATION ITEMS, AND ANY OTHER CONDITIONS THAT RESULT IN CHANGES TO THE HVAC LAYOUT SHALL BE REFERRED TO THE ARCHITECT, WHO WILL MAKE ANY CLARIFICATIONS IN WRITING.

- THE HVAC CONTRACTOR SHALL PROVIDE A DETAILED DESCRIPTION OF THE INFORMATION BEING REQUESTED ALONG WITH A DRAWING SHOWING THE AREA AND ITEMS WHERE THE CONFLICTS OCCUR AS WELL AS A PROPOSED SOLUTION TO RESOLVE THE CONFLICTS.
- FAILURE TO PROVIDE A DETAILED DESCRIPTION AND PROPOSED SOLUTION TO THE INFORMATION BEING REQUESTED WILL RESULT IN THE ARCHITECT / ENGINEER RETURNING THE REQUEST AND REQUIRING THAT THIS BE PROVIDED BEFORE REVIEWING, ACCEPTING OR MODIFYING THE PROPOSED REQUEST.

- THE ENGINEER SHALL HAVE 5 (FIVE) WORKING BUSINESS DAYS (NOT INCLUDING HOLIDAYS AND VACATIONS) FROM THE DATE THAT THE ENGINEER HAS RECEIVED THEM TO REVIEW AND ISSUE A RESPONSE TO THE CONTRACTOR.

## 1.6 SHOP DRAWINGS

- DIVISION 23 SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY VIA EMAIL IN PDF FORMAT TO THE ARCHITECT WHO WILL THEN FORWARD THEM TO THE ENGINEER.

- DIVISION 23 SHALL CHECK, SIGN, STAMP AND DATE ALL SUBMITTALS BEFORE SENDING THEM TO THE ENGINEER FOR REVIEW.
- THE ENGINEER SHALL HAVE 10-WORKING BUSINESS DAYS (NOT INCLUDING HOLIDAYS AND VACATIONS) AFTER THE DATE THAT THE ENGINEER HAS RECEIVED THEM TO REVIEW, SIGN AND STAMP THE SUBMITTALS BEFORE RETURNING THEM TO THE ARCHITECT.
- EACH PIECE OF EQUIPMENT SHALL BE SUBMITTED IN A SEPARATE PDF FILE, COMBINING THE EQUIPMENT INTO ONE (1) PDF FILE WILL NOT BE ACCEPTED.

- PREPARE COORDINATION DRAWINGS ACCORDING TO 1/4"-INCH EQUALS 1'-0" SCALE OR LARGER.

- DETAIL MAJOR ELEMENTS, COMPONENTS AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS. INCLUDE THE FOLLOWING:

- PROPOSED LOCATIONS AND SIZES OF DUCTWORK, EQUIPMENT, DUCTWORK ACCESSORIES AND MATERIALS.
- CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, INCLUDING SPACE FOR EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
- EQUIPMENT SERVICE CONNECTIONS AND SUPPORT DETAILS.
- FIRE-RATED WALL PENETRATIONS.
- FLOOR PLANS, ELEVATIONS AND DETAILS TO INDICATE PENETRATIONS IN FLOORS, WALLS AND CEILINGS AND THEIR RELATIONSHIP TO OTHER PENETRATIONS AND INSTALLATIONS.
- REFLECTED CEILING PLANS TO COORDINATE AND INTEGRATE INSTALLATIONS, AIR OUTLETS AND INLETS, LIGHT FIXTURES, AND OTHER CEILING MOUNTED ITEMS.

## HVAC SPECIFICATIONS

## 1.7 RECORD (AS-BUILT) DRAWINGS

- DURING THE PROGRESS OF CONSTRUCTION, THE RECORD DRAWINGS SHALL BE CORRECTED BY DIVISION 23 TO INDICATE ACTUAL INSTALLATIONS.
- UPON COMPLETION OF THE PROJECT, 3-SETS OF FINAL RECORD DRAWINGS SHALL BE PRODUCED, WITH 1-SET EACH BEING DELIVERED TO THE OWNER, ARCHITECT AND ENGINEER.

## 1.8 PROTECTION

- CLOSE AND WATERPROOF BETWEEN OPENINGS, PIPES AND VOIDS IN WALLS TO PREVENT ENTRANCE OF WATER OR MOISTURE.
- SEAL ALL DUCTWORK, INCLUDING OPEN-ENDED DUCTWORK, AT THE END OF EACH DAY TO PREVENT DUST, DEBRIS, ETC. FROM ENTERING THE DUCTWORK AND PIPING.

## 1.9 OPERATION DURING CONSTRUCTION

- DIVISION 23 IS RESPONSIBLE FOR THE INSTALLATION AND OPERATION, SERVICE AND MAINTENANCE OF ALL NEW EQUIPMENT DURING CONSTRUCTION AND PRIOR TO ACCEPTANCE BY THE OWNER OF THE COMPLETED PROJECT. WARRANTY PERIODS SHALL NOT COMMENCE UNTIL FINAL ACCEPTANCE BY THE OWNER.

## 1.10 PROJECT COMPLETION.

- AT THE COMPLETION OF THE PROJECT, DIVISION 23 SHALL PROVIDE TO THE OWNER, THREE (3) HARD BOUND VOLUMES OF MANUALS CONTAINING OPERATING SERVICE AND LUBRICATION INSTRUCTIONS, AND PARTS LISTS FOR ALL MAJOR EQUIPMENT AND MANUFACTURERS GUARANTEES OR WARRANTIES.

## 1.11 HVAC SCOPE OF WORK.

- THE WORK INCLUDED UNDER THIS CONTRACT CONSISTS OF THE PROVIDING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, ETC., NECESSARY TO COMPLETE THE INSTALLATION THE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS, AND OTHER ITEMS HEREIN LISTED, AND AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED IN THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. HVAC WORK IS COMPRISED OF, BUT NOT LIMITED TO THE FOLLOWING PRINCIPAL ITEMS:

- SUPPLY AND RETURN SYSTEMS INCLUDING DUCTS, GRILLES AND OUTLETS.
- EXHAUST SYSTEMS INCLUDING DUCTS, ETC.
- INSULATION FOR DUCTS, ETC.
- MISCELLANEOUS EQUIPMENT REQUIRED FOR SYSTEMS.
- TEMPERATURE CONTROLS.

## 1.12 GUARANTEES.

- DIVISION 23 SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS FURNISHED UNDER THIS CONTRACT AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS SHALL BE RECTIFIED BY DIVISION 23 WITHOUT ANY ADDITIONAL COST TO THE OWNER.

## 1.13 PUNCH LIST.

- DIVISION 23 SHALL SCHEDULE, THROUGH THE ARCHITECT WITH A MINIMUM OF 7-DAYS NOTICE, THE ENGINEER TO PERFORM THE FOLLOWING:

- PRE-PUNCH LIST: VERIFICATION OF MECHANICAL ITEMS SUCH AS, BUT NOT LIMITED TO, DUCTWORK SIZES, LOCATIONS, METHODS OF ASSEMBLY / INSTALLATION, BEFORE ITEMS ARE ENCLOSED BY CEILINGS, WALLS, ETC.

- DIVISION 23 SHALL DELIVER TO BOTH THE ARCHITECT AND ENGINEER, A LETTER STATING THAT ALL ITEMS IN THE PRE-PUNCH LIST HAVE BEEN CORRECTED OR ADJUSTED ACCORDING TO THE GENERAL CONDITIONS OF THE CONTRACT BEFORE ANY CEILINGS, WALLS, ETC. CAN BE INSTALLED TO ENCLOSE MECHANICAL ITEMS.

- FINAL PUNCH LIST: VERIFICATION OF MECHANICAL ITEMS SUCH AS, BUT NOT LIMITED TO, UNIT OPERATION, SENSOR LOCATIONS, COLORS SELECTED BY ARCHITECT.

- BEFORE PROCEEDING WITH THE FINAL PUNCH LIST, DIVISION 23 SHALL PROVIDE THE ENGINEER WITH A COMPLETE SIGNED AND SEALED BALANCE REPORT.

- THE ENGINEER SHALL NOT PERFORM A FINAL PUNCH LIST UNTIL A COMPLETED BALANCE REPORT IS RECEIVED.

- DIVISION 23 SHALL, AT THE REQUEST OF THE ENGINEER, PROVIDE A LADDER AND ONE EMPLOYEE TO REMOVE AND REPLACE CEILING TILES, OPEN ACCESS DOORS, ETC. FOR INSPECTION OF MECHANICAL ITEMS.

- THE EMPLOYEE SHALL BE MADE IMMEDIATELY AVAILABLE TO REMOVE ITEMS THAT ARE REQUESTED BY THE ENGINEER.
- ANY CEILING TILE THAT IS DAMAGED SHALL BE REPLACED WITH NEW (TO MATCH EXISTING) AT DIVISION 23'S EXPENSE.

- DIVISION 23 SHALL DELIVER TO BOTH THE ARCHITECT AND ENGINEER, A LETTER STATING THAT ALL ITEMS IN THE FINAL PUNCH LIST HAVE BEEN CORRECTED OR ADJUSTED ACCORDING TO THE GENERAL CONDITIONS OF THE CONTRACT.

## PART 2 – PRODUCTS

## 2.1 FIRESTOPPING

- PROVIDE UL LISTED AND TESTED FIRESTOPPING MATERIAL, SILICONE ELASTOMER SPECIFICALLY FORMULATED FOR USE IN HORIZONTAL AND VERTICAL APPLICATIONS.

- THE MATERIAL SHALL POSSESS INTUMESCENT CHARACTERISTICS, AND UPON EXPOSURE TO HEAT ABOVE 250° F, SHALL EXPAND TO NOT LESS THAN FIVE TIMES ITS ORIGINAL VOLUME TO FORM A FIREPROOF ENVELOPE UL RATED FOR 2 AND 3-HOURS PROTECTION, WHEN APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

- UNUSED SLOTS AND OTHER PENETRATIONS IN WALLS OR OTHER GENERAL CONSTRUCTION SHALL BE CLOSED AND SEALED WITH AN APPROVED FIRESTOPPING MATERIAL.

- DUCT OPENINGS IN WALLS SHALL BE CLOSED WITH 16-GAUGE GALVANIZED STEEL SHEET SECURELY ATTACHED AT THE MIDPOINT OF THE WALL THICKNESS AND FIRESTOPPED ON BOTH SIDES OF THE STEEL SHEET WITH NOT LESS THAN 1/8-INCH THICK LAYER OF NON-SAGGING SILICONE ELASTOMER TO FULLY COVER THE OPENING.

- DUCTS: THE ANNULUS BETWEEN DUCTWORK AND WALLS IN FINISHED SPACES SHALL BE FILLED, SEALED, AND PAINTED TO MATCH ADJACENT SURFACES.

- WHERE DUCTWORK PASSES THROUGH A FIRE-RATED WALL ASSEMBLY, AND THERE ARE NO FIRE DAMPERS SHOWN ON THE PLANS (DUCTWORK SIZE IS LESS THAN 100 SQUARE INCHES), PROVIDE THE FOLLOWING, MINIMUM:
  - A MINIMUM OF 12-INCH LONG BY 0.060-INCH THICK STEEL SLEEVE SHALL BE CENTERED IN EACH DUCT OPENING.
  - THE SLEEVE SHALL BE SECURED TO BOTH SIDES OF THE WALL / CEILING AND ALL FOUR SIDES OF THE SLEEVE WITH A MINIMUM OF 1-1/2" x 1-1/2" x 0.060" STEEL RETAINING ANGLES.
  - THE RETAINING ANGLES SHALL BE SECURED TO THE SLEEVES AND THE WALL / CEILING WITH NO. 10 (4#) SCREWS.
  - THE ANNULAR SPACE BETWEEN THE STEEL SLEEVE AND WALL / CEILING SHALL BE FILLED WITH SILICONE ELASTOMER TO PROVIDE A MINIMUM 2-HOUR RATED FIRESTOP.

## 2.2 MECHANICAL IDENTIFICATION

## A. DUCT IDENTIFICATION DEVICES.

- PLASTIC DUCT MARKERS: MANUFACTURERS STANDARD LAMINATED PLASTIC, COLOR CODED, CONTACT-TYPE, PERMANENT ADHESIVE.

- LETTER SIZE: MINIMUM 1/4" FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 2'-0", 1/2" FOR VIEWING DISTANCES UP TO 6'-0", AND PROPORTIONALLY LARGER LETTERING FOR GREATER VIEWING DISTANCES.
- CONFORM TO THE FOLLOWING COLOR CODE:
  - GREEN: RETURN AIR.
  - YELLOW: SUPPLY AIR.
  - BLUE: EXHAUST AIR.
  - NOMENCLATURE: INCLUDE THE FOLLOWING, AS A MINIMUM:
    - DIRECTION OF AIRFLOW.
    - DUCT SERVICE (SUPPLY, RETURN, EXHAUST, ETC.).

- LOCATE DUCT MARKERS NEAT POINTS WHERE DUCTS ENTER INTO CONCEALED SPACES AND AT MAXIMUM INTERVALS OF 25'-0" IN EACH SPACE WHERE DUCTS ARE EXPOSED OR CONCEALED BY REMOVABLE CEILING SYSTEMS.

## B. EQUIPMENT IDENTIFICATION DEVICES.

- EQUIPMENT NAMEPLATES: METAL NAMEPLATE WITH OPERATIONAL DATA ENGRAVED OR STAMPED, PERMANENTLY ATTACHED TO EQUIPMENT.

- DATA: MANUFACTURER, PRODUCT NAME, MODEL NUMBER, SERIAL NUMBER, CAPACITY, OPERATING AND POWER CHARACTERISTICS, LABELS OF TESTED COMPLIANCES, AND SIMILAR ESSENTIAL DATA.

- ENGRAVING: MANUFACTURER'S STANDARD LETTER STYLE, OF SIZES AND WITH TERMS TO MATCH EQUIPMENT IDENTIFICATION.
- THICKNESS: 1/16 INCH FOR UNITS UP TO 20 SQUARE INCHES OR 8-INCHES IN LENGTH, AND 1/8 INCH FOR LARGER UNITS.

- LOCATION: AN ACCESSIBLE AND VISIBLE LOCATION.
- FASTENERS: AS REQUIRED TO MOUNT ON EQUIPMENT.

- DUCT ACCESS DOOR MARKERS: 1/16-INCH THICK, ENGRAVED LAMINATED PLASTIC, WITH ABBREVIATED TERMS AND NUMBERS CORRESPONDING TO IDENTIFICATION.

- PROVIDE 1/8-INCH CENTER HOLE FOR ATTACHMENT.
- FASTENERS: SELF-TAPPING, STAINLESS-STEEL SCREWS OR CONTACT-TYPE, PERMANENT ADHESIVE.

## 2.3 PIPING MATERIALS

- CONDENSATE PIPING: TYPE L DRAWN-TEMPER COPPER, ASTM B-88. WITH CRIMPED SOLDERED JOINTS.

- FITTINGS: WROUGHT COPPER COMPLYING WITH ASME B16.22.

## 2.4 PIPING INSULATION

- FIRE-TEST RESPONSE CHARACTERISTICS: FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS; COMPLYING WITH ASTM E-84.

## B. INSULATION MATERIALS.

- MINERAL-FIBER INSULATION: PREFORMED PIPE INSULATION WITH GLASS FIBERS BONDED WITH A THERMOSETTING RESIN; WITH FACTORY-APPLIED, ALL PURPOSE, VAPOR-RETARDER PVC JACKET.
- CLOSE-CELL PHENOLIC FOAM INSULATION: PREFORMED PIPE INSULATION OF RIGID, EXPANDED, CLOSED CELL STRUCTURE, WITH VAPOR BARRIER AND ALL SERVICE JACKET; COMPLYING WITH ASTM C-1126, TYPE III, GRADE 1.

- ALL PIPING EXPOSED ON THE ROOF SHALL BE PROVIDED WITH A HIGH IMPACT, UV-RESISTANT PVC JACKET, MINIMUM 30 MIL (AS MANUFACTURED BY JOHNS MANVILLE).

- SCHEDULE OF PIPING INSULATION THICKNESSES.

## MINIMUM PIPE INSULATION

SYSTEM TYPE	TEMPERATURE RANGE (° F)	PIPE DIAMETER	INSULATION THICKNESS
CONDENSATE	ALL	≤1" to 8"	1-1/2"

## 2.5 SHEET METAL MATERIALS

- COMPLY WITH SMACTA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESSES, AND DUCT CONSTRUCTION METHODS, UNLESS OTHERWISE INDICATED.

- SHEET METAL MATERIALS SHALL BE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, OIL CANNING, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.

## B. GALVANIZED SHEET STEEL.

- LOCK-FORMING QUALITY; COMPLYING WITH ASTM A653/A653M AND HAVING G90 ZINC COATING DESIGNATION; DUCTS SHALL HAVE MILL-PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.

## 2.6 SHEET METAL SEALANT MATERIALS

- MASTIC: NON-HARDENING, NON-MIGRATING MASTIC ELASTIC SEALANT SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK.

- WATER-BASED JOINT AND SEAM SEALANT: FLEXIBLE, ADHESIVE SEALANT, RESISTANT TO UV LIGHT WHEN CURED, UL 723 LISTED, AND COMPLYING WITH NFPA REQUIREMENTS FOR CLASS 1 DUCTS.

- SOLVENT-BASED JOINT AND SEAM SEALANT: ONE-PART, NONSAG, SOLVENT-RELEASE-CURING, POLYMERIZED BUTYL SEALANT FORMULATED WITH A MINIMUM OF 75 PERCENT SOLIDS.

## 2.7 DUCTWORK INSULATION

## A. FIRE-TEST RESPONSE CHARACTERISTICS.

- INDOOR APPLICATIONS: FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS; COMPLYING WITH ASTM E-84.

## B. INSULATION MATERIALS.

- MINERAL-FIBER BLANKET THERMAL INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN, WITHOUT FACING AND WITH ALL SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM.

## 2.8 DUCTWORK ACCESSORIES

## A. VOLUME DAMPERS.

- LOW LEAKAGE VOLUME DAMPERS: MULTIPLE OR SINGLE-BLADE, OPPOSED BLADE DESIGN, LOW LEAKAGE RATING, LINKAGE OUTSIDE OF AIRSTREAM, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.

- STEEL FRAMES: HAT-SHAPED, GALVANIZED SHEET STEEL CHANNELS, MINIMUM OF 0.064" THICK, WITH MITERED AND WELDED CORNERS; FRAMES WITH FLANGES FOR ATTACHING TO WALLS, FLANGELESS FRAMES FOR INSTALLATION IN DUCTS.
- ROLL-FORMED STEEL BLADES: 0.064" THICK, GALVANIZED SHEET STEEL.
- BLADE AXLES: 1/22" GALVANIZED STEEL.
- BEARINGS: TWO-PIECE MOLDED SYNTHETIC THRUST OR BALL.
- BLADE SEALS: FELT OR NEOPRENE.
- JAMB SEALS: CAMBERED STAINLESS STEEL.
- TIE BARS AND BRACKETS: GALVANIZED STEEL.
- FINISH: MILL.

- JACKSHAFT: 1" DIAMETER, GALVANIZED STEEL PIPE ROTATING WITHIN PIPE-BEARING ASSEMBLY MOUNTED ON SUPPORTS AT EACH MULLION AND AT EACH END OF MULTIPLE DAMPER ASSEMBLIES.

- DAMPER HARDWARE: ZINC-PLATED, DIE-CAST CORE WITH DIAL AND HANDLE MADE OF 3/32" THICK ZINC-PLATED STEEL, AND A 3/4" HEXAGON LOCKING NUT.

- INCLUDE CENTER HOLE TO SUIT DAMPER OPERATING-ROD SIZE.
- INCLUDE ELEVATED PLATFORM FOR INSULATED DUCT MOUNTING.

## 4. DUCT ACCESSORY HARDWARE.

- QUADRANT LOCKS: PROVIDE FOR EACH VOLUME DAMPER, QUADRANT LOCK DEVICE ON ONE END OF SHAFT; AND END BEARING PLATE ON OTHER END FOR DAMPER LENGTHS OVER 12".

- PROVIDE EXTENDED QUADRANT LOCKS FOR EXTERNALLY INSULATED DUCTWORK.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE QUADRANT LOCKS OF ONE OF THE FOLLOWING:

- VENT FABRICS, INC.
- YOUNG REGULATOR COMPANY.

- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE VOLUME DAMPERS OF ONE OF THE FOLLOWING:

- AIR BALANCE, INC.
- GREENHECK.
- McGILL AIRFLOW CORPORATION.
- RUSKIN COMPANY.

## B. DUCT-MOUNTING ACCESS DOORS.

- DESCRIPTION: FABRICATE DOORS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.

- PROVIDE ACCESS DOORS IN DUCTS FOR READY ACCESS TO OPERATING PARTS INCLUDING FIRE DAMPERS, ETC.

- HEAD AND HAND ACCESS: 18 BY 10 INCHES.

- INSTALL THE FOLLOWING MINIMUM SIZES FOR DUCT-MOUNTING, RECTANGULAR ACCESS DOORS:

- HEAD AND HAND ACCESS: 12 INCHES IN DIAMETER.

- WHEN FIELD CONDITIONS REQUIRE AN ACCESS OPENING SMALLER THAN 18-INCH BY 10-INCH OR 12-INCHES IN DIAMETER, PROVIDE A 24-INCH LONG REMOVABLE SECTION OF CASING OR DUCT, SECURED WITH QUICK-ACTING LOCKING DEVICES, 6 INCHES ON CENTERS, TO PERMIT READY ACCESS WITHOUT DISMANTLING OTHER EQUIPMENT.

- LABEL FIRE DAMPERS ACCESS DOORS IN ACCORDANCE WITH NFPA AND DRAWINGS.

- RECTANGULAR DOORS: MINIMUM 22-GAUGE, DOUBLE-WALL, DUCT MOUNTING, FABRICATED OF GALVANIZED SHEET METAL (OR MATERIAL MATCHING ADJOINING DUCTWORK).

- INCLUDE CONTINUOUS PIANO HINGE AND CAM LATCHES.
- FRAME: MINIMUM 22-GAUGE GALVANIZED SHEET STEEL, WITH BEND-OVER TABS AND FOAM GASKETS.
- LOCKS: MINIMUM 16-GAUGE GALVANIZED STEEL CAM AND 20-GAUGE GALVANIZED STEEL LATCH.
- ARRANGE DOORS SO THAT SYSTEM AIR PRESSURE WILL ASSIST CLOSURE AND PREVENT OPENING WHEN THE SYSTEM IS IN OPERATION.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE RECTANGULAR ACCESS DOORS OF ONE OF THE FOLLOWING:

- DUCTMATE INDUSTRIES, INC.
- McGILL AIRFLOW CORPORATION.
- RUSKIN COMPANY.

- ROUND DOORS: MINIMUM 22-GAUGE, DOUBLE WALL, DUCT MOUNTING; FABRICATED OF GALVANIZED SHEET METAL (OR MATERIAL MATCHING ADJOINING DUCTWORK).

- INCLUDE CAM LATCHES.
- FRAME: MINIMUM 22-GAUGE GALVANIZED SHEET STEEL, WITH SPIN-IN NOTCHED FRAME.
- ARRANGE DOORS SO THAT SYSTEM AIR PRESSURE WILL ASSIST CLOSURE AND PREVENT OPENING WHEN THE SYSTEM IS IN OPERATION.
- MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ROUND ACCESS DOORS BY ONE OF THE FOLLOWING:

- DUCTMATE INDUSTRIES, INC.
- FLEXMASTER U.S.A., INC.

- SEAL AROUND FRAME ATTACHMENT TO DUCT AND DOOR TO FRAME WITH NEOPRENE OR FOAM RUBBER GASKET.
- INSULATION: 1-INCH THICK, FIBROUS-GLASS OR POLYSTYRENE-FOAM BOARD.

## C. CEILING AND WALL ACCESS DOORS.

- WHERE CEILINGS AND WALLS MUST BE PENETRATED FOR ACCESS TO MECHANICAL WORK, PROVIDE TYPES OF ACCESS DOORS INDICATED.

- FURNISH SIZES INDICATED OR, WHERE NOT OTHERWISE INDICATED, FURNISH ADEQUATE SIZE FOR INTENDED AND NECESSARY ACCESS.

- HEAD AND HAND ACCESS MINIMUM SIZES FOR RECTANGULAR ACCESS DOORS: 20 INCHES BY 12 INCHES.

- FURNISH MANUFACTURER'S COMPLETE UNITS, OF TYPE RECOMMENDED FOR APPLICATION IN INDICATED SUBSTRATE CONSTRUCTION, IN EACH CASE, COMPLETE WITH ANCHORAGES AND HARDWARE.

- CONSTRUCTION:

HVAC SPECIFICATIONS (cont'd)

D. FIRE DAMPERS.

- 1. DESCRIPTION: LABELED ACCORDING TO UL 555, AND UL 555C (FIRE RATED CEILINGS WITH WOOD JOIST / TRUSS CONSTRUCTION), HORIZONTAL OR VERTICAL MOUNTING, MILL FINISH.
a. FIRE RATING: 1-1/2 HOURS AND 2 HOURS.
b. FRAME: CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM; FABRICATED WITH ROLL-FORMED, MINIMUM 20-GAUGE GALVANIZED STEEL; WITH MITERED AND INTERLOCKING CORNERS.
c. MOUNTING SLEEVE: FACTORY FURNISHED, FIELD INSTALLED, MINIMUM 20-GAUGE GALVANIZED SHEET STEEL AND RETAINING ANGLES.
1). MINIMUM THICKNESS: 0.138" THICK AND OF LENGTH TO SUIT APPLICATION.
2). EXCEPTIONS: OMIT SLEEVE WHERE DAMPER FRAME WIDTH PERMITS DIRECT ATTACHMENT OF PERIMETER MOUNTING ANGLES ON EACH SIDE OF WALL OR FLOOR, AND THICKNESS OF DAMPER FRAME COMPLIES WITH SLEEVE REQUIREMENTS.
d. BLADES: ROLL-FORMED, INTERLOCKING, MINIMUM 24-GAUGE GALVANIZED SHEET STEEL.
1). IN PLACE OF INTERLOCKING BLADES, USE FULL LENGTH, 0.034" THICK, GALVANIZED STEEL BLADE CONNECTORS.
e. HORIZONTAL MOUNTING: INCLUDE BLADE LOCK AND 301 STAINLESS STEEL CONSTANT FORCE TYPE CLOSURE SPRING.
f. FUSIBLE LINK: REPLACEABLE, 165° F, VIBRATION PROOF AND SECURED WITH CLINCHED "S" HOOKS OR STAINLESS STEEL BOLTS AND LOCK NUTS.

- 2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FIRE DAMPERS OF ONE OF THE FOLLOWING:
a. AIR BALANCE, INC.
b. GREENHECK.
c. RUSKIN COMPANY.

E. FLEXIBLE CONNECTORS.

- 1. DESCRIPTION: FLAME RETARDANT OR NON-COMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1.
a. FABRIC: GLASS FABRIC DOUBLE COATED WITH NEOPRENE.
b. METAL EDGE CONNECTORS: FACTORY FABRICATED WITH A FABRIC STRIP 3-1/2" WIDE ATTACHED TO TWO STRIPS OF 2-3/4" WIDE, 0.028" THICK GALVANIZED SHEET STEEL OR 0.032" THICK ALUMINUM SHEETS.
1). SELECT METAL COMPATIBLE WITH DUCTS.
2. ATTACHMENTS: ATTACH TO EQUIPMENT CONNECTIONS AS SPECIFIED BY MANUFACTURER AND AS SHOWN ON THE DRAWINGS.
a. LENGTH: LIMIT FLEXIBLE CONNECTIONS TO 4" ACTIVE LENGTH IN DIRECTION OF AIRFLOW.
3. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FLEXIBLE CONNECTORS OF ONE OF THE FOLLOWING:
a. DUCTMATE INDUSTRIES, INC.
b. DURO DYNE CORPORATION.
c. VENTFABRICS, INC.

F. FLEXIBLE DUCTS.

- 1. INSULATED FLEXIBLE DUCTS: UL 181, CLASS 1; BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; 1" THICK FIBROUS-GLASS INSULATION; ALUMINUM VAPOR BARRIER FILM; MAXIMUM 5'-0" IN LENGTH.
2. FLEXIBLE DUCT CLAMPS: STAINLESS STEEL BAND WITH CADMIUM-PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM-GEAR ACTION, IN SIZES TO SUIT DUCT SIZE.
3. FLEXIBLE DUCT FITTINGS: FACTORY FABRICATED GALVANIZED STEEL FITTINGS.
a. USE 45-DEGREE LATERALS, BALL MOUTH TEES, SPIN COLLARS, OR CONICAL TEES FOR DUCT TAPS.
b. 90-DEGREE TEES ARE NOT ALLOWED.
4. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FLEXIBLE DUCTS OF ONE OF THE FOLLOWING:
a. FLEXMASTER U.S.A., INC.
b. MCGILL AIRFLOW CORPORATION.

G. MOTORIZED CONTROL DAMPERS.

- 1. DESCRIPTION: OPPOSED-BLADE DESIGN WITH INFLATABLE SEAL BLADE EDGING, OR REPLACEABLE RUBBER SEALS, AMCA RATED AND TESTED TO AMCA 5000.
a. FRAME: 5"x1"x16-GAUGE GALVANIZED STEEL HAT CHANNEL REINFORCED WITH CORNER BRACES EQUAL TO 13-GAUGE CHANNEL FRAMES (3-1/2"x3/8"x16-GAUGE TOP AND BOTTOM ON 12" HIGH OR LESS) AND HOLES FOR DUCT MOUNTING.
b. BLADES: 6" WIDE, 14-GAUGE GALVANIZED STEEL AIRFOIL SHAPE, DOUBLE-SKIN CONSTRUCTION.
1). SECURE BLADES TO 1/2" REMOVABLE DIAMETER, ZINC-PLATED AXLES USING ZINC-PLATED HARDWARE, WITH NYLON BLADE BEARINGS, BLADE-LINKAGE HARDWARE OF ZINC-PLATED STEEL AND BRASS (CONCEALED IN FRAME), ENDS SEALED AGAINST SPRING-STAINLESS STEEL BLADE BEARINGS, AND THRUST BEARINGS AT EACH END OF EVERY BLADE.
c. LEAKAGE RATE: NOT GREATER THAN 4 CFM / FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE.
2. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MOTORIZED CONTROL DAMPERS OF ONE OF THE FOLLOWING:
a. AIR BALANCE, INC.
b. GREENHECK.
c. RUSKIN COMPANY.

2.9 DIFFUSERS, REGISTERS AND GRILLES

- A. CEILING COMPATIBILITY: PROVIDE DIFFUSERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO CEILING MODULE AND WITH ACCURATE FIT AND ADEQUATE SUPPORT.
B. PERFORMANCE: PROVIDE CEILING DIFFUSERS AND GRILLES THAT HAVE, AS MINIMUM, TEMPERATURE AND VELOCITY TRAVERSES, THROW AND DROP, AND NOISE CRITERIA RATINGS FOR EACH SIZE DEVICE AS LISTED IN MANUFACTURERS CURRENT DATA.
1. NOISE LEVELS OF NC 20 OR LESS.
C. SQUARE CEILING SUPPLY DIFFUSERS.
1. LOUVERED FACE DIFFUSER.
a. MATERIAL: MINIMUM 18-GAUGE STEEL, CORE OF CONCENTRIC RINGS.
b. FINISH: BAKED ENAMEL, COLOR SELECTED BY ARCHITECT.
c. FACE STYLE: THREE CONE.
d. PATTERN: FULLY ADJUSTABLE.
1). MANUAL ADJUSTABLE CORES FROM HORIZONTAL TO VERTICAL BY EXTENDING OR RETRACTING THE INNER THREE CONES.
a). THESE THREE CONES SHALL BE CONSTRUCTED AS A SINGLE INNER ASSEMBLY AND MUST BE EASILY REMOVABLE USING A SPRING LOCK MECHANISM.
b). A RETAINER CABLE SHALL BE PROVIDED TO ALLOW THE INNER CORE ASSEMBLY TO HANG DURING MAINTENANCE OF DIFFUSERS.
e. MOUNTING: T-BAR (LAY-IN), SURFACE
f. DAMPERS: ADJUSTABLE OPPOSED BLADE, KEY OPERATED FROM FACE OF DIFFUSER.
g. ACCESS: PROVIDE REMOVABLE INTERNAL PARTS OF ROUND DIFFUSERS, INCLUDING VOLUME REGULATORS, DIFFUSER FACE, DAMPERS AND EQUALIZING DEVICES.
h. ACCESSORIES:
1). OPERATING KEYS: TOOLS DESIGNED TO FIT THROUGH DIFFUSER FACE AND OPERATE VOLUME CONTROL DEVICE AND / OR PATTERN ADJUSTMENT.
2). PLASTER RING.

D. CEILING RETURN / EXHAUST GRILLES.

- 1. MATERIAL: STEEL.
2. FINISH: BAKED ENAMEL, WHITE.
3. FACE STYLE: FLUSH, HOUSING COVERED WITH REMOVABLE PERFORATED PANEL (PERFORATED SCREEN WITH 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS) IN FRAME, MINIMUM 51% FREE AREA.
4. FACE SIZE.
a. 24"x24" SQUARE: MINIMUM 22-GAUGE STEEL, PROVIDE 22"x22" BACKPAN (NECK SIZE AS SHOWN ON DRAWINGS, STANDARD NECK SIZE WHERE NOT INDICATED).
1). MINIMUM 22-GAUGE STEEL BACKPAN (WELDED-IN INLETS AND CORNER JOINTS ARE NOT ACCEPTABLE).
5. MOUNTING: LAY-IN (T-BAR).
6. DAMPERS: ADJUSTABLE, OPPOSED-BLADE, KEY OPERATED FROM FACE OF DIFFUSER.
7. ACCESSORIES:
a. SQUARE TO ROUND NECK ADAPTOR.

E. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DIFFUSERS, REGISTERS AND GRILLES OF ONE OF THE FOLLOWING:

- 1. PRICE INDUSTRIES.
2. TITUS.

2.10 AIR DUCTWORK CLEANING

- A. SCOPE OF WORK.
1. EXTENT OF WORK INCLUDES THE FOLLOWING.
a. EXISTING AND NEW SUPPLY, RETURN AND EXHAUST AIR DUCTWORK SYSTEMS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF VISIBLE SURFACE CONTAMINANTS AND DEPOSITS FROM WITHIN THE HVAC SYSTEM IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS.
3. THE HVAC SYSTEM INCLUDES ANY INTERIOR SURFACE OF THE FACILITY'S AIR DISTRIBUTION SYSTEM FOR CONDITIONED SPACES AND / OR OCCUPIED ZONES.
a. THIS INCLUDES THE ENTIRE HEATING, AIR CONDITIONING AND VENTILATION SYSTEMS FROM THE POINTS WHERE THE AIR ENTERS THE SYSTEM TO THE POINTS WHERE THE AIR IS DISCHARGED FROM THE SYSTEM.
B. CLEANING REQUIREMENTS.
1. ENGAGE A QUALIFIED AIR SYSTEM CLEANING SPECIALIST (ASCS) TO CLEAN THE SYSTEMS.
2. COMPONENT CLEANING: CLEANING METHODS SHALL BE EMPLOYED SUCH THAT ALL HVAC SYSTEM COMPONENTS MUST BE VISIBLY CLEAN AS DEFINED IN APPLICABLE STANDARDS; SEE NATIONAL AIR DUCT CLEANERS ASSOCIATION (NADCA) STANDARDS.
3. AIR VOLUME CONTROL DEVICES: DAMPERS AND ANY AIR DIRECTIONAL MECHANICAL DEVICES INSIDE THE HVAC SYSTEM MUST HAVE THEIR POSITION MARKED PRIOR TO CLEANING AND, UPON COMPLETION, MUST BE RESTORED TO THEIR MARKED POSITION.
4. SERVICE OPENINGS: THE CONTRACTOR SHALL UTILIZE SERVICE OPENINGS, AS REQUIRED FOR PROPER CLEANING, AT VARIOUS POINTS OF THE HVAC SYSTEM FOR PHYSICAL AND MECHANICAL ENTRY AND INSPECTION.
a. OTHER OPENINGS SHALL BE CREATED WHERE NEEDED AND THEY MUST BE CREATED SO THEY CAN BE SEALED IN ACCORDANCE WITH INDUSTRY CODES AND STANDARDS.
b. CLOSURES MUST NOT SIGNIFICANTLY HINDER, RESTRICT, OR ALTER THE AIRFLOW WITHIN THE SYSTEM AND MUST BE PROPERLY INSULATED TO PREVENT HEAT LOSS / GAIN OR CONDENSATION ON SURFACES WITHIN THE SYSTEM.
5. CUTTING SERVICE OPENINGS INTO FLEXIBLE DUCTS AND FLEXIBLE CONNECTORS IS NOT PERMITTED.
6. CEILING SECTIONS (TILE): THE CONTRACTOR MAY REMOVE AND REINSTALL CEILING SECTIONS TO GAIN ACCESS TO HVAC SYSTEMS DURING THE CLEANING PROCESS; ANY CEILING TILE THAT IS DAMAGED SHALL BE REPLACED WITH NEW (TO MATCH EXISTING) AT THE CONTRACTOR'S EXPENSE.
7. CLEAN THE FOLLOWING METAL DUCT SYSTEM COMPONENTS BY REMOVING VISIBLE SURFACE CONTAMINANTS AND DEPOSITS.
a. AIR DISTRIBUTION DEVICES (REGISTERS, GRILLES AND DIFFUSERS.
b. SUPPLY, RETURN AND EXHAUST AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
C. MECHANICAL CLEANING METHODOLOGY.
1. THE HVAC SYSTEM SHALL BE CLEANED USING SOURCE REMOVAL MECHANICAL CLEANING METHODS DESIGNED TO EXTRACT CONTAMINANTS FROM WITHIN THE HVAC SYSTEM AND SAFELY REMOVE CONTAMINANTS FROM THE FACILITY.
a. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SELECT SOURCE REMOVAL METHODS WHICH WILL RENDER THE HVAC SYSTEM VISIBLY CLEAN AND CAPABLE OF PASSING CLEANING VERIFICATION METHODS (SEE APPLICABLE NADCA STANDARDS).
1). NO CLEANING METHOD, OR COMBINATION OF METHODS, SHALL BE USED WHICH COULD POTENTIALLY DAMAGE COMPONENTS OF THE HVAC SYSTEM OR NEGATIVELY ALTER THE INTEGRITY OF THE SYSTEM.
b. ALL METHODS USED SHALL INCORPORATE THE USE OF VACUUM COLLECTION DEVICES THAT ARE OPERATED CONTINUOUSLY DURING CLEANING.
c. ALL VACUUM DEVICES EXHAUSTING AIR INSIDE THE BUILDING SHALL BE EQUIPPED WITH HEPA FILTERS (MINIMUM 99.97 PERCENT COLLECTION EFFICIENCY FOR 0.3-MICRON SIZE OR GREATER PARTICLES), INCLUDING HAND-HELD VACUUMS AND WET VACUUMS.
d. ALL VACUUM DEVICES EXHAUSTING AIR OUTSIDE THE FACILITY SHALL BE EQUIPPED WITH PARTICULATE COLLECTION INCLUDING ADEQUATE FILTRATION TO CONTAIN DEBRIS REMOVED FROM THE HVAC SYSTEM AND SHALL BE LOCATED DOWN WIND AND AWAY FROM AIR INTAKES AND OTHER POINTS OF ENTRY INTO BUILDING.
1). RELEASE OF DEBRIS OUTDOORS MUST NOT VIOLATE ANY OUTDOOR ENVIRONMENTAL STANDARDS, CODES OR REGULATIONS.
e. ALL METHODS REQUIRE MECHANICAL AGITATION DEVICES TO DISLODGE DEBRIS ADHERED TO INTERIOR HVAC SYSTEM SURFACES, SUCH THAT DEBRIS MAY BE SAFELY CONVEYED TO VACUUM COLLECTION DEVICES.
1). ACCEPTABLE METHODS WILL INCLUDE THOSE WHICH WILL NOT POTENTIALLY DAMAGE THE INTEGRITY OF THE DUCTWORK, NOR DAMAGE POROUS SURFACE MATERIALS SUCH AS LINERS INSIDE THE DUCTWORK OR SYSTEM COMPONENTS.
2. METHODS OF CLEANING FIBROUS GLASS INSULATED COMPONENTS.
a. FIBROUS GLASS THERMAL OR ACOUSTICAL INSULATION ELEMENTS PRESENT IN ANY EQUIPMENT OR DUCTWORK SHALL BE THOROUGHLY CLEANED WITH HEPA VACUUMING EQUIPMENT, WHILE THE HVAC SYSTEM IS UNDER CONSTANT NEGATIVE PRESSURE, AND NOT PERMITTED TO GET WET IN ACCORDANCE WITH APPLICABLE NADCA AND NAIMA STANDARDS AND RECOMMENDATIONS.
b. CLEANING METHODS USED SHALL NOT CAUSE DAMAGE TO FIBROUS GLASS COMPONENTS AND WILL RENDER THE SYSTEM CAPABLE OF PASSING CLEANING VERIFICATION TESTS (SEE NADCA STANDARDS).
1). IN THE EVENT FIBER GLASS MATERIALS MUST BE REPLACED, ALL MATERIALS SHALL CONFORM TO APPLICABLE INDUSTRY CODES AND STANDARDS, INCLUDING THOSE OF UL AND SMACNA.
3. CLEANING OF COILS.
a. ANY CLEANING METHOD MAY BE USED WHICH WILL RENDER THE COIL VISIBLY CLEAN AND CAPABLE OF PASSING COIL CLEANING VERIFICATION (SEE APPLICABLE NADCA STANDARDS).
b. COIL DRAIN PANS SHALL BE SUBJECT TO NON-POROUS SURFACES CLEANING VERIFICATION (THE DRAIN FOR THE CONDENSATE DRAIN PAN SHALL BE OPERATIONAL).
c. CLEANING METHODS SHALL NOT CAUSE ANY APPRECIABLE DAMAGE TO, DISPLACEMENT OF, INHIBIT HEAT TRANSFER, OR EROSION OF THE COIL SURFACE OR FINS, AND SHALL CONFORM TO COIL MANUFACTURER RECOMMENDATIONS.
d. COILS SHALL BE THOROUGHLY RINSED WITH CLEAN WATER TO REMOVE ANY LATENT RESIDUES AND CLEANING MATERIALS; COMB AND STRAIGHTEN FINS.
e. PROVIDE OPERATIVE DRAINAGE SYSTEM FOR WASHDOWN PROCEDURES.

D. CLEANLINESS VERIFICATION.

- 1. VERIFICATION OF HVAC SYSTEM CLEANLINESS WILL BE DETERMINED AFTER MECHANICAL CLEANING AND BEFORE THE APPLICATION OF ANY TREATMENT OR INTRODUCTION OF ANY TREATMENT-RELATED SUBSTANCE TO THE HVAC SYSTEM, INCLUDING BIOCIDAL AGENTS AND COATINGS.
2. VISUAL INSPECTION: THE HVAC SYSTEM SHALL BE INSPECTED VISUALLY TO ENSURE THAT NO VISIBLE CONTAMINANTS ARE PRESENT.
a. IF NO CONTAMINANTS ARE EVIDENT THROUGH VISUAL INSPECTION, THE HVAC SYSTEM SHALL BE CONSIDERED CLEAN; HOWEVER, THE OWNER RESERVES THE RIGHT TO FURTHER VERIFY SYSTEM CLEANLINESS THROUGH GRAVIMETRIC OR WIPE TESTING ANALYSIS TESTING AS SPECIFIED HEREIN.
b. IF VISIBLE CONTAMINANTS ARE EVIDENT THROUGH VISUAL INSPECTION, THOSE PORTIONS OF THE SYSTEM WHERE CONTAMINANTS ARE VISIBLE SHALL BE RE-CLEANED AND SUBJECT TO RE-INSPECTION FOR CLEANLINESS.
3. GRAVIMETRIC ANALYSIS: AT THE DISCRETION AND EXPENSE OF THE OWNER, SECTIONS OF THE HVAC SYSTEM MAY BE TESTED FOR CLEANLINESS USING THE NADCA VACUUM TEST (GRAVIMETRIC ANALYSIS) AS SPECIFIED IN APPLICABLE NADCA STANDARDS (LEVELS OF DEBRIS COLLECTED SHALL BE EQUAL TO OR LESS THAN ACCEPTABLE LEVELS DEFINED IN APPLICABLE NADCA STANDARDS).
a. GRAVIMETRIC ANALYSIS SHALL BE PERFORMED BY A QUALIFIED THIRD-PARTY EXPERIENCED IN TESTING OF THIS NATURE.
1). IF GRAVIMETRIC ANALYSIS DETERMINES THAT LEVELS OF DEBRIS EXCEED THOSE SPECIFIED IN APPLICABLE NADCA STANDARDS, THE SYSTEM SHALL NOT BE CONSIDERED CLEAN AND THOSE SECTIONS OF THE SYSTEM WHICH FAILED CLEANLINESS VERIFICATION SHALL BE RE-CLEANED AT THE EXPENSE OF THE ORIGINAL HVAC SYSTEM CLEANING CONTRACTOR.

PART 3 - TESTING, ADJUSTING AND BALANCING

- 3.1 TESTING, ADJUSTING AND BALANCING
A. GENERAL: MULTIPLE MOBILIZATIONS ARE REQUIRED PER EACH COMPLETED WORK AREA / PHASE (I.E. PRIOR TO OWNER'S OCCUPANCY SPACE).
1. HVAC PRIME CONTRACTOR SHALL REVIEW THE PHASING PLANS AND INCLUDE IN BASE BID, SEPARATE BALANCE REPORTS FOR EACH COMPLETED AREA OF WORK.
B. AIR BALANCING CONTRACTOR SHALL INCLUDE, IN THEIR PRICING, ONE SHEAVE CHANGE FOR RROFTOP UNIT TO BE INSTALLED AT COMPLETION OF PROJECT, IF NECESSARY.
1. SHEAVES AND BELT ADJUSTMENTS SHALL BE SET IN ACCORDANCE WITH THE UNIT MANUFACTURER RECOMMENDATIONS AND WITH FACTORY-AUTHORIZED SERVICE REPRESENTATIVE PRESENT, IN ORDER TO MAINTAIN MAXIMUM BELT LIFE.
C. TAB FIRM QUALIFICATIONS: ENGAGE A TAB FIRM CERTIFIED BY EITHER ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
1. A SPECIALIST WITH AT LEAST 5-YEARS OF EXPERIENCE IN THOSE TESTING, ADJUSTING AND BALANCING REQUIREMENTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT.
a. SUBMIT BIOGRAPHICAL DATA ON TAB SUPERVISOR WHO IS DIRECTLY SUPERVISING TESTING, ADJUSTING AND BALANCING WORK.
b. SUBMIT THE INDIVIDUAL QUALIFICATIONS OF ALL PERSONS RESPONSIBLE FOR SUPERVISING AND PERFORMING THE ACTUAL WORK.

- D. TAB FORM REPORTS: USE STANDARD FORMS FROM AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS".
E. INSTRUMENTATION TYPE, QUANTITY AND ACCURACY: AS DESCRIBED IN AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS", SECTION II, "REQUIRED INSTRUMENTATION FOR NEBB CERTIFICATION".
1. CALIBRATE INSTRUMENTS AT LEAST EVERY 6-MONTHS OR MORE FREQUENTLY IF REQUIRED BY INSTRUMENT MANUFACTURER.
a. PROVIDE UPDATED RECORD OF INSTRUMENT CALIBRATION THAT INDICATES DATE OF CALIBRATION AND THE NAME OF THE PARTY PERFORMING INSTRUMENT CALIBRATION.

- F. PROJECT CONDITIONS.
1. GENERAL: DO NOT PROCEED WITH TESTING, ADJUSTING AND BALANCING WORK UNTIL THE FOLLOWING CONDITIONS HAVE BEEN MET.
a. WORK HAS BEEN COMPLETED AND IS OPERABLE.
b. WORK SCHEDULED FOR TESTING, ADJUSTING AND BALANCING IS CLEAN AND FREE FROM DEBRIS, DIRT AND DISCARDED BUILDING MATERIALS.
c. ALL ARCHITECTURAL OPENINGS (DOORS, WINDOWS, AND OTHER OPENINGS) WHICH MAY AFFECT THE OPERATION OF THE SYSTEM TO BE TESTED, ADJUSTED AND BALANCED SHALL BE AT THEIR NORMAL STATES.
d. ALL RELATED MECHANICAL SYSTEMS, WHICH MAY AFFECT THE OPERATION OF THE SYSTEM TO BE TESTED, ADJUSTED AND BALANCED SHALL BE AT THEIR NORMAL OPERATING CONDITIONS; COORDINATE WITH CONTROLS CONTRACTOR.
e. UNIT FILTERS ARE NOT "LOADED"; MECHANICAL CONTRACTOR SHALL REPLACE, IF REQUIRED, PRIOR TO BALANCING.
G. GENERAL PROCEDURES FOR TESTING AND BALANCING.

- 1. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS".
2. TEST, ADJUST AND BALANCE SYSTEMS DURING NEAR-PEAK SUMMER SEASON FOR AIR CONDITIONING SYSTEMS AND DURING NEAR-PEAK WINTER SEASON FOR HEATING SYSTEMS, INCLUDING AT LEAST A PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 5 DEGREE F (3 DEGREE C) WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 10 DEGREE F (6 DEGREE C) DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION. WHEN SEASONAL OPERATION DOES NOT PERMIT MEASURING FINAL TEMPERATURES, THEN TAKE FINAL TEMPERATURE READINGS WHEN SEASONAL OPERATION DOES PERMIT.
a. TEST DURATION: OPERATING TESTS OF EQUIPMENT SHALL BE OF NOT LESS THAN FOUR (4) HOURS DURATION AFTER STABILIZED OPERATING CONDITIONS HAVE BEEN ESTABLISHED.
3. MARK EQUIPMENT AND BALANCING DEVICE SETTINGS WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL, INCLUDING DAMPER-CONTROL POSITIONS, FAN-SPEED CONTROL LEVERS, AND SIMILAR CONTROL DEVICES, TO SHOW FINAL SETTINGS.

- H. TOLERANCES.
1. SUPPLY AND EXHAUST FANS: 0% TO PLUS 5%.
2. AIR OUTLETS AND INLETS: 0% TO PLUS 5%.

- 3.2 EQUIPMENT REPORT TEST DATA.
A. TEST DATA REQUIREMENTS: PROVIDE THE FOLLOWING, AS A MINIMUM, INDICATED AND ACTUAL VALUES PER EACH PIECE OF SYSTEM TESTED.
1. EXHAUST FANS.
a. TOTAL AIRFLOW RATE IN CFM.
b. TOTAL SYSTEM STATIC PRESSURE IN INCHES WG.
c. FAN RPM.
d. DISCHARGE AND SUCTION STATIC PRESSURE IN INCHES WG.
2. ROOFTOP UNITS.
a. TOTAL AIRFLOW RATE IN CFM.
b. TOTAL SUPPLY AND RETURN AIRFLOW RATE IN CFM.
c. TOTAL SUPPLY FAN STATIC PRESSURE IN INCHES WG.
d. SUPPLY FAN RPM.
e. DISCHARGE STATIC PRESSURE IN INCHES WG.
f. FILTER STATIC PRESSURE DIFFERENTIAL IN INCHES WG.
g. OUTSIDE AIRFLOW RATE IN CFM.
h. OUTSIDE AIR DAMPER POSITION.
i. OUTSIDE AIR ENTERING AND LEAVING AIR TEMPERATURE IN DEGREES F.
j. MOTOR VOLTAGE AT EACH CONNECTION.
k. MOTOR AMPERAGE FOR EACH PHASE.
3. AIR TERMINAL DEVICES.
a. AIRFLOW RATE IN CFM.
b. AIR VELOCITY IN FPM.
c. PRELIMINARY AIRFLOW RATE AS NEEDED IN CFM.
d. PRELIMINARY VELOCITY AS NEEDED IN FPM.
e. FINAL AIRFLOW RATE IN CFM.
f. FINAL VELOCITY IN FPM.
g. NOISE CRITERIA (NC).
h. SPACE TEMPERATURE IN DEGREES F.

- 4. RECTANGULAR AND ROUND DUCTWORK.
a. SYSTEM AND FURNACE UNIT NUMBER.
b. DUCT STATIC PRESSURE IN INCHES WG.
c. DUCT SIZE IN INCHES.
d. ACTUAL AIRFLOW RATE IN CFM.
e. ACTUAL VELOCITY IN FPM.

- 3.3 DUCTWORK PRESSURE (TIGHTNESS) TESTING
1. ALL DUCTWORK AND PLENUM SYSTEMS SHALL BE SEALED AND PRESSURE TESTED USING INSTRUMENTS AND PROCEDURES SPECIFIED IN ANSI / ASHRAE 152 AND ASTM E1554 TEST METHOD "A", AND NEW YORK STATE ENERGY CONSERVATION CODE SECTION 403.
A. EXCEPTION: DUCT TIGHTNESS TEST IS NOT REQUIRED IF THE AIR HANDLER AND ALL DUCTS ARE LOCATED WITHIN THE CONDITIONED SPACE.

I. FINAL REPORT.

- 1. GENERAL: PROVIDE TYPED WRITTEN OR COMPUTER PRINTOUT IN LETTER-QUALITY FONT, ON STANDARD BOND PAPER, IN THREE-RING BINDER, TABULATED AND DIVIDED INTO SECTIONS BY TESTED AND BALANCED SYSTEM.
a. INCLUDE A CERTIFICATION SHEET IN FRONT OF BINDER, SEALED AND SIGNED BY THE TESTING AND BALANCING ENGINEER.
b. INCLUDE A LIST OF INSTRUMENTS USED FOR PROCEDURES, ALONG WITH PROOF OF CALIBRATION.
2. GENERAL REPORT DATA: IN ADDITION TO FORM TITLES AND ENTRIES, INCLUDE THE FOLLOWING DATA IN THE FINAL REPORT, AS APPLICABLE.
a. TITLE PAGE.
b. NAME AND ADDRESS OF TAB FIRM.
c. PROJECT NAME AND LOCATION.
d. ARCHITECTS NAME AND ADDRESS.
e. ENGINEERS NAME AND ADDRESS.
f. MECHANICAL CONTRACTORS NAME AND ADDRESS.
g. REPORT DATE.
h. TABLE OF CONTENTS WITH THE TOTAL NUMBER OF PAGES (NUMBER EACH PAGE IN REPORT) DEFINED FOR EACH SECTION OF THE REPORT.
i. SUMMARY OF CONTENTS INCLUDING THE FOLLOWING:
1). INDICATED VERSUS FINAL PERFORMANCE.
2). NOTABLE CHARACTERISTICS OF SYSTEMS.
3). DESCRIPTION OF SYSTEM OPERATION SEQUENCE IF IT VARIES FROM THE CONTRACT DOCUMENTS.

J. INSPECTIONS.

- 1. INITIAL INSPECTION.
a. AFTER TESTING AND BALANCING ARE COMPLETE, OPERATE EACH SYSTEM AND RANDOMLY CHECK MEASUREMENTS TO VERIFY THAT THE SYSTEM IS OPERATING ACCORDING TO THE FINAL TEST AND BALANCE READINGS DOCUMENTED IN THE FINAL REPORT.
1). RANDOMLY CHECK THE FOLLOWING FOR EACH SYSTEM:
a). MEASURE AIRFLOW AT AT LEAST 10% OF AIR OUTLETS.
b). MEASURE ROOM TEMPERATURE AT EACH THERMOSTAT.
c). MEASURE SPACE PRESSURE OF AT LEAST 10% OF LOCATIONS.
d). BALANCING DEVICES ARE MARKED WITH FINAL BALANCE POSITION.
2. FINAL INSPECTION.
a. AFTER INITIAL INSPECTION IS COMPLETE AND EVIDENCE BY RANDOM CHECKS VERIFIES THAT TESTING AND BALANCING ARE COMPLETE AND ACCURATELY DOCUMENTED IN THE FINAL REPORT, REQUEST THAT A FINAL INSPECTION BE MADE BY THE ARCHITECT AND OWNER.
1). TAB FIRM TEST AND BALANCE ENGINEER SHALL CONDUCT THE INSPECTION IN THE PRESENCE OF THE ARCHITECT AND OWNER.
b. ARCHITECT AND OWNER SHALL RANDOMLY SELECT MEASUREMENTS DOCUMENTED IN THE FINAL REPORT TO BE RECHECKED.
1). THE RECHECKING SHALL BE LIMITED TO EITHER 10% OF THE TOTAL MEASUREMENTS RECORDED, OR THE EXTENT OF THE MEASUREMENTS THAT CAN BE ACCOMPLISHED IN A NORMAL 8-HOUR BUSINESS DAY.
c. IF THE RECHECKS YIELD MEASUREMENTS THAT DIFFER FROM THE MEASUREMENTS DOCUMENTED IN THE FINAL REPORT BY MORE THAN THE TOLERANCES ALLOWED, THE MEASUREMENTS SHALL BE NOTED AS "FAILED".
1). IF THE NUMBER OF "FAILED" MEASUREMENTS IS GREATER THAN 10% OF THE TOTAL MEASUREMENTS CHECKED DURING THE FINAL INSPECTION, OR A SOUND LEVEL OF 2 db OR MORE GREATER THAN THAT RECORDED IN THE REPORT LISTINGS, THE TESTING AND BALANCING SHALL BE CONSIDERED INCOMPLETE AND SHALL BE REJECTED.
a). IN THE EVENT THE REPORT IS REJECTED, ALL SYSTEMS SHALL BE READJUSTED AND TESTED, NEW DATA RECORDED, NEW CERTIFIED REPORTS SUBMITTED, AND NEW INSPECTIONS TEST MADE, ALL AT NO ADDITIONAL COST.
d. TAB FIRM SHALL RECHECK ALL MEASUREMENTS AND MAKE READJUSTMENTS.
1). REVISE THE FINAL REPORT AND BALANCE DEVICE SETTINGS TO INCLUDE ALL CHANGES AND RESUBMIT THE FINAL REPORT.
e. REQUEST A SECOND FINAL INSPECTION.
1). IF THE SECOND FINAL INSPECTION ALSO FAILS, THE OWNER SHALL CONTRACT THE SERVICES OF ANOTHER QUALIFIED TAB FIRM TO COMPLETE THE TESTING AND BALANCING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND REDUCT THE COST OF THE SERVICES FROM THE FINAL PAYMENT OF THE ORIGINAL TAB FIRM.

NOTICE

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PROJ. ARCH. S.Hunt
DRAFTER
JOB CAPT. INTERIORS N.Catuzza

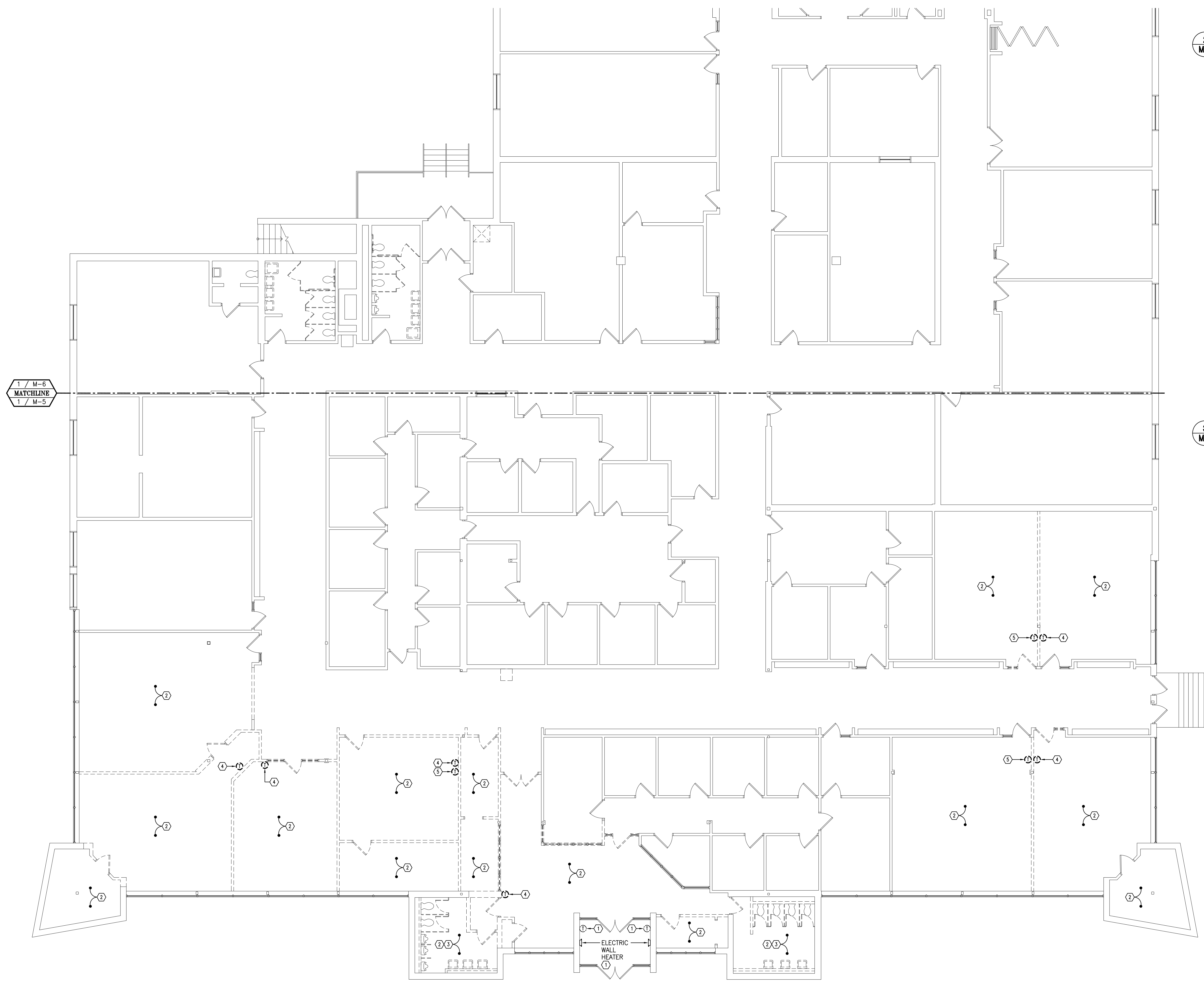
SEAL:

TITLE: HVAC SPECIFICATIONS

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SA JOB #: 14082.07
DATE: 6-29-2021

DRAWING #: M-4



**2 HVAC NOTES:**

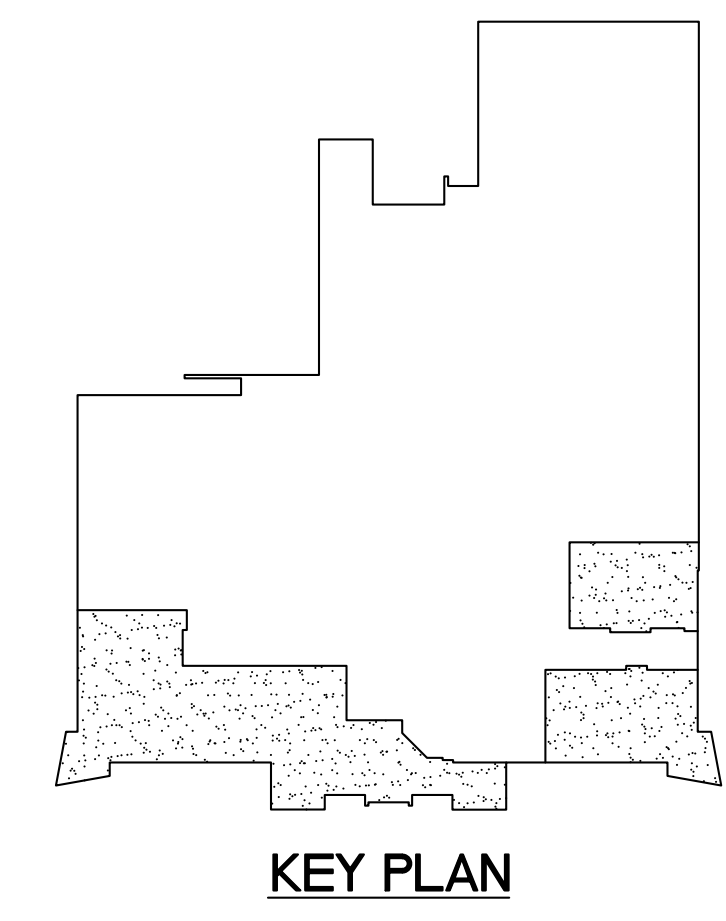
1. EXISTING TO REMAIN.
  2. DISCONNECT AND REMOVE EXISTING DIFFUSER / GRILLE ALONG WITH ALL ASSOCIATED DUCTWORK CONNECTIONS, HANGERS, ETC. PREPARE EXISTING SUPPLY AIR DUCTWORK FOR NEW CONNECTION.
  3. CAP EXISTING EXHAUST AIR DUCTWORK AIR AND WATERTIGHT AT JOIST LEVEL ABOVE CEILING.
  4. DISCONNECT AND RELOCATE EXISTING THERMOSTAT ALONG WITH ASSOCIATED BRACKETS, ETC. TO LOCATION INDICATED ON DRAWING 1/M-7
  5. DISCONNECT AND REMOVE EXISTING THERMOSTAT ALONG WITH ALL ASSOCIATED BRACKETS, ETC.
1. MODIFY / EXTEND EXISTING CONTROL WIRING TO CONNECT TO RELOCATED THERMOSTAT SHOWN ON DRAWING 1/M-7 AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.

**3 HVAC GENERAL NOTES:**

1. WHERE CFM'S ARE NOT INDICATED, PRIOR TO REMOVING EXISTING DIFFUSERS / GRILLES, MEASURE AND RECORD EXISTING AIR DEVICES CFM'S.

1 / M-6  
MATCHLINE  
1 / M-5

**1 PARTIAL FLOOR PLAN - HVAC DEMOLITION**  
SCALE: 1/8" = 1'-0"



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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

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TITLE:  
**PARTIAL FLOOR PLAN - HVAC DEMOLITION**

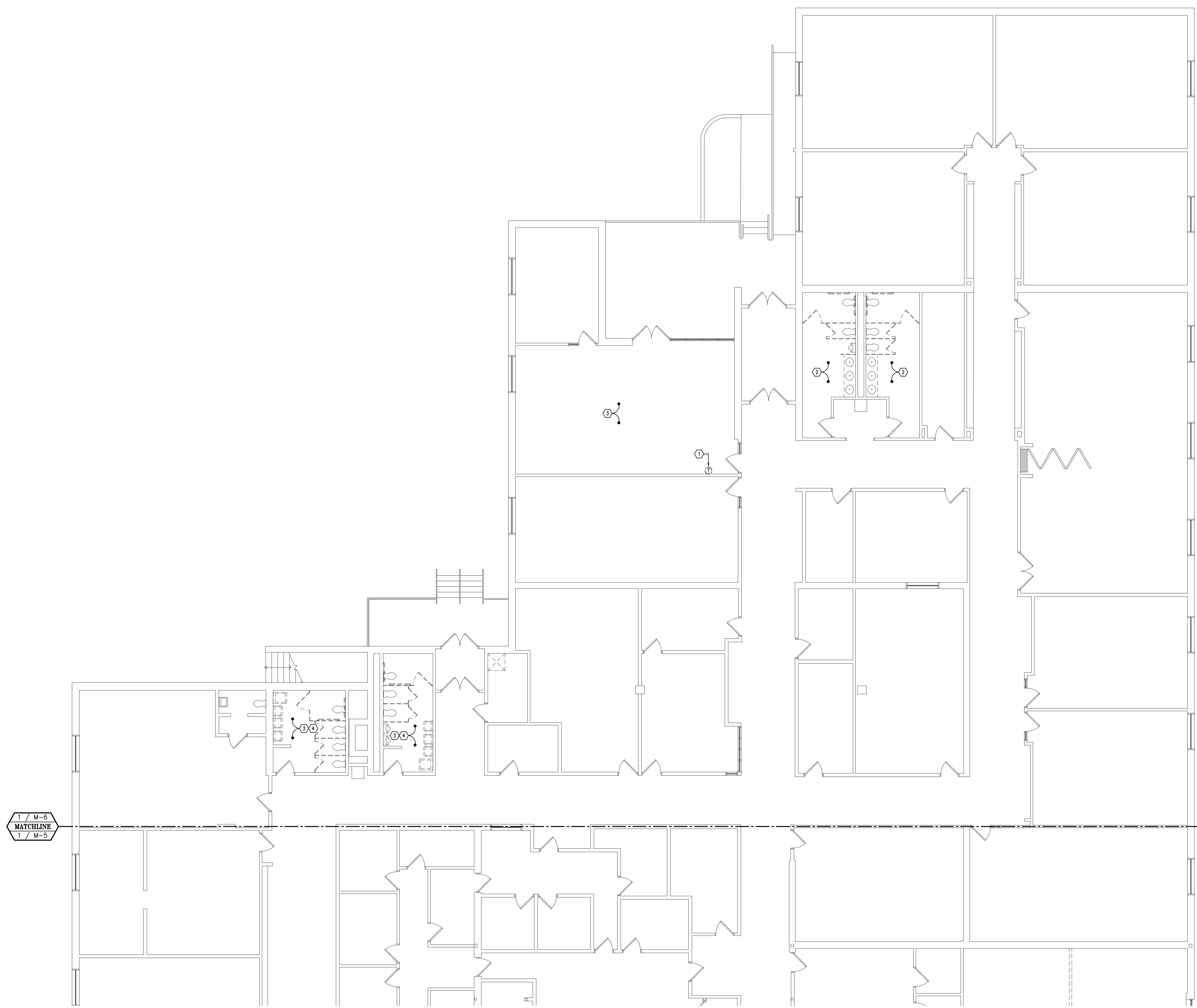


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DRAWING #: M-5

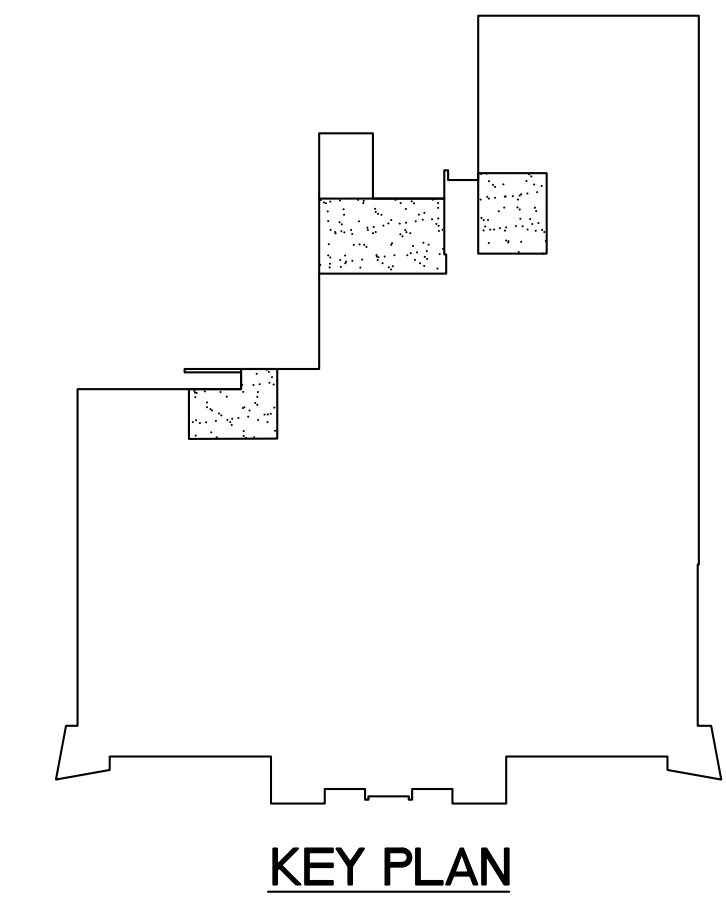


**2 HVAC NOTES:**

1. EXISTING TO REMAIN.
2. DISCONNECT AND REMOVE EXISTING DIFFUSER / GRILLE ALONG WITH ALL ASSOCIATED DUCTWORK CONNECTIONS, HANGERS, ETC. PREPARE EXISTING SUPPLY AIR AND EXHAUST AIR DUCTWORK FOR NEW CONNECTION.
3. DISCONNECT AND REMOVE EXISTING DIFFUSER / GRILLE ALONG WITH ALL ASSOCIATED DUCTWORK CONNECTIONS, HANGERS, ETC. PREPARE EXISTING SUPPLY AIR DUCTWORK FOR NEW CONNECTION.
4. DISCONNECT AND REMOVE EXISTING CEILING EXHAUST FAN ALONG WITH ALL ASSOCIATED HANGERS, BRACKETS, ETC. CAP DUCTWORK AT EXISTING WALL PENETRATION AIR AND WATERTIGHT.

**3 HVAC GENERAL NOTES:**

1. WHERE CFM'S ARE NOT INDICATED, PRIOR TO REMOVING EXISTING DIFFUSERS / GRILLES, MEASURE AND RECORD EXISTING AIR DEVICES CFM'S.



**KEY PLAN**

1 / M-6  
MATCHLINE  
1 / M-5

**1 PARTIAL FLOOR PLAN - HVAC DEMOLITION**  
SCALE: 1/8" = 1'-0"

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SEAL:

TITLE:  
**PARTIAL FLOOR PLAN - HVAC DEMOLITION**

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DRAWING #: **M-6**



1 / M-8  
MATCHLINE  
1 / M-7

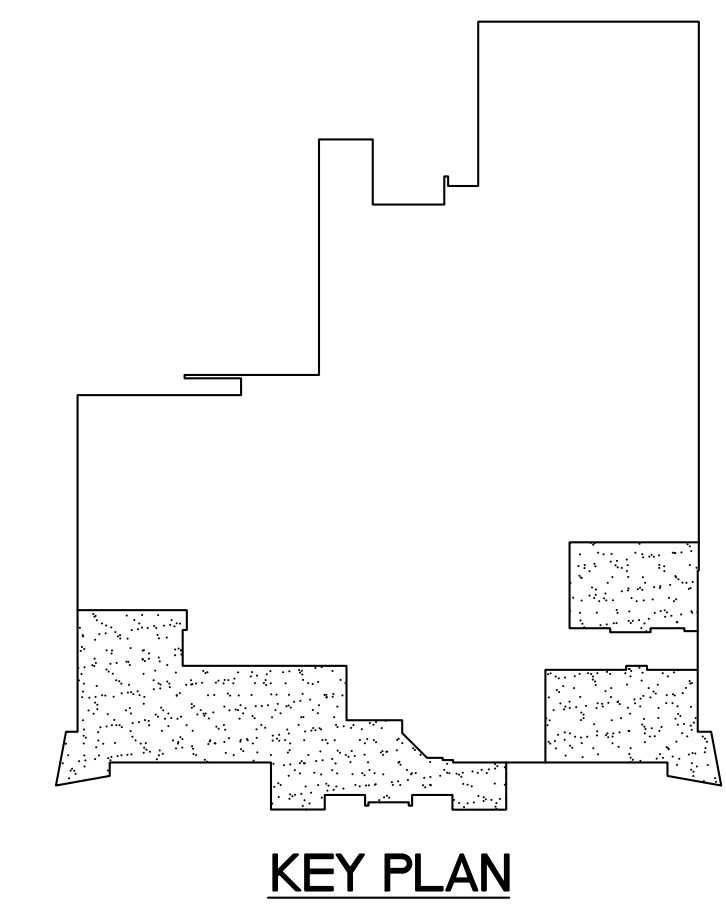
**2 HVAC NOTES:**

1. EXISTING TO REMAIN.
2. CONNECT NEW DUCTWORK TO EXISTING DUCTWORK. MODIFY / EXTEND EXISTING DUCTWORK AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.
3. EXISTING, RELOCATED THERMOSTAT.
  - A. MODIFY / EXTEND EXISTING CONTROL WIRING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

**3 HVAC GENERAL NOTES:**

1. PROVIDE VOLUME DAMPERS AT ALL NEW TO EXISTING BRANCH DUCTWORK TAPS.
2. RETURN AIR SYSTEM AS SHOWN ON THESE DRAWINGS IS A PLENUM RETURN AIR SYSTEM.
  - A. VERIFY EXACT LOCATION OF EXISTING RETURN AIR DUCTWORK TO ENSURE NEW RETURN AIR DUCTWORK AS SHOWN WILL GET BACK TO ASSOCIATED EXISTING ROOFTOP UNIT.
  - B. IF THE EXISTING RETURN AIR SYSTEM IS A DUCTED SYSTEM, CONNECT NEW RETURN AIR DUCTWORK TO EXISTING RETURN AIR MAIN BRANCH DUCTWORK.
    - 1). MODIFY / EXTEND EXISTING DUCTWORK AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.
3. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF EXISTING, RELOCATED THERMOSTATS IN THE FIELD WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

**1 PARTIAL FLOOR PLAN - HVAC DUCTWORK**  
SCALE: 1/8" = 1'-0"



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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**PARTIAL FLOOR PLAN - HVAC DUCTWORK**

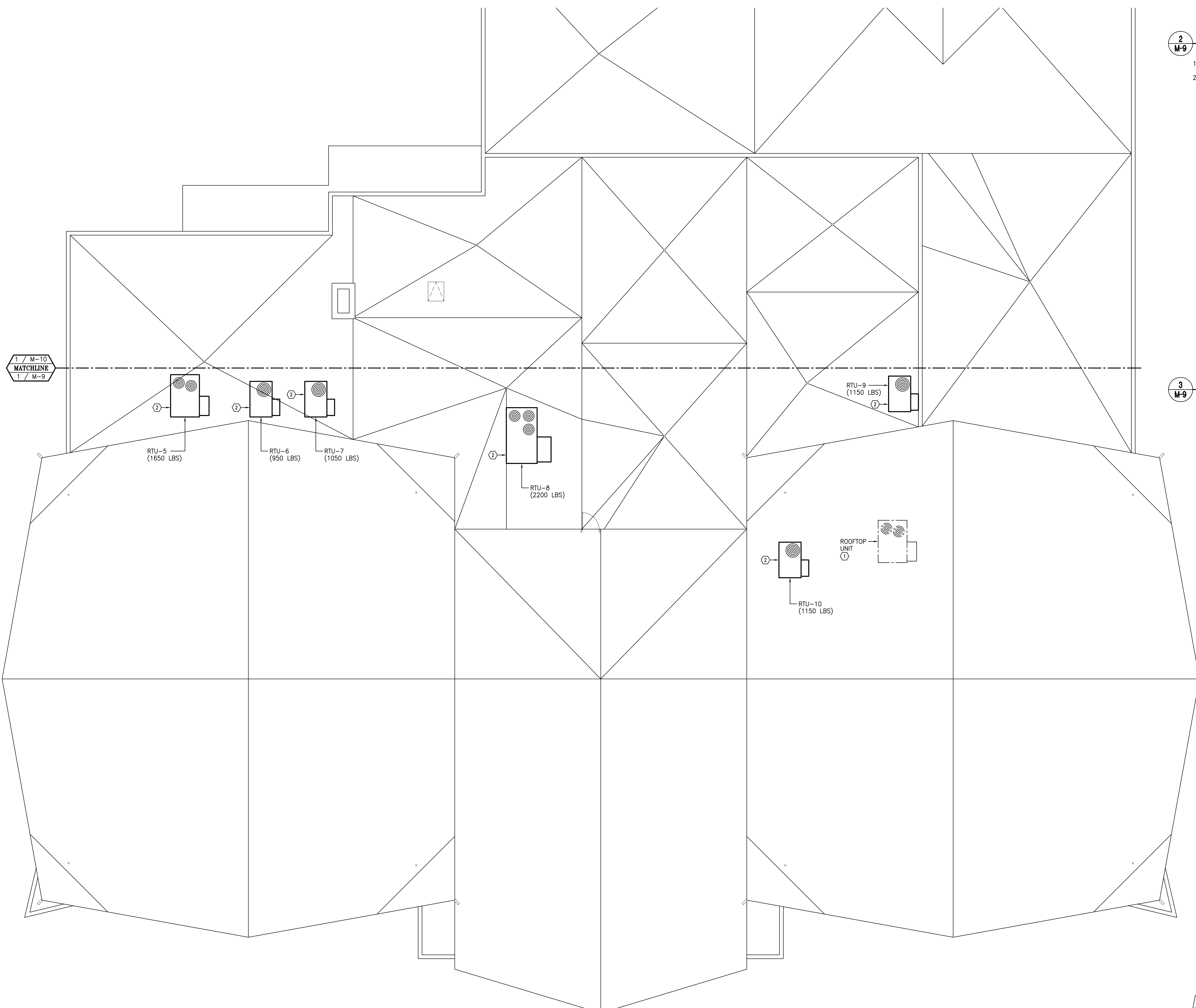
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DRAWING #: M-7





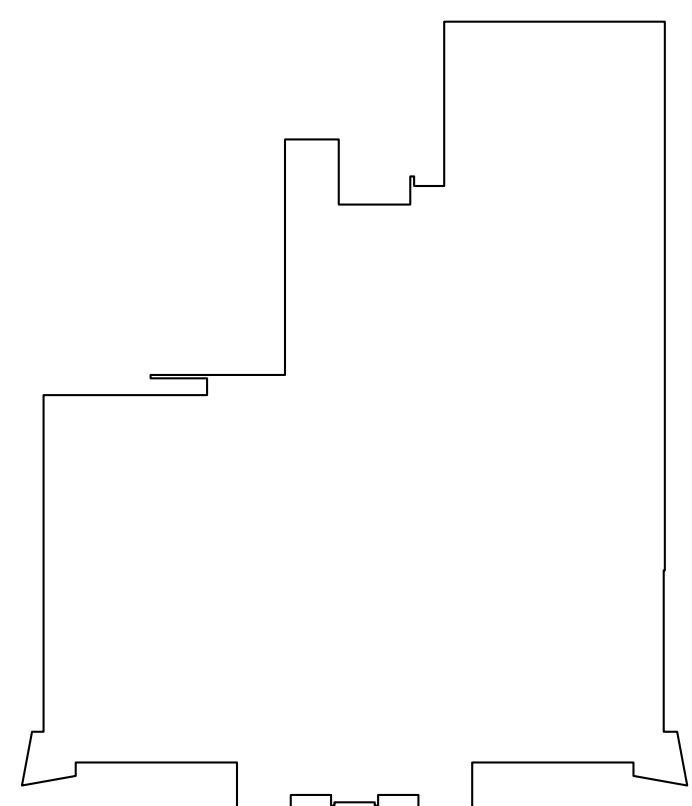


**2 HVAC NOTES:**

1. EXISTING TO REMAIN.
2. DISCONNECT AND REMOVE EXISTING ROOFTOP UNIT AND PREPARE EXISTING ROOF CURB FOR NEW CONNECTION. REFER TO SCHEDULES FOR NEW ROOFTOP UNIT REQUIREMENTS.
- A. CONNECT EXISTING DUCTWORK TO ROOFTOP UNIT, MODIFY / EXTEND EXISTING DUCTWORK AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.

**3 HVAC GENERAL NOTES:**

1. DIVISION 23 TO PROVIDE AND INSTALL ALL EQUIPMENT.
2. DIVISION 7 SHALL REPAIR / REPLACE EXISTING ROOF FLASHING AND SEALING OF ALL ROOF OPENINGS PRIOR TO NEW EQUIPMENT INSTALLATION.
3. DIVISION 23 SHALL VERIFY EXISTING ROOFTOP UNIT SIZES (TONNAGE) AND EXISTING ROOF CURB SIZE WITH NEW ROOFTOP UNIT SIZES PRIOR TO REMOVING EXISTING ROOFTOP UNITS AND INSTALLING NEW ROOFTOP UNITS.
  - A. PROVIDE ROOF CURB ADAPTER AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.
4. REPLACE ALL EXISTING TO REMAIN ROOFTOP UNITS FILTERS WITH NEW MERV-11 FILTERS AT THE END OF COMPLETION OF INSTALLATION AND JUST PRIOR TO TESTING AND BALANCING.
  - A. ADJUST EXISTING UNITS FAN SPEEDS AND / OR REPLACE EXISTING UNITS MOTOR AND SHEAVES AS REQUIRED TO ACHIEVE REBALANCED MINIMUM CFM'S AS INDICATED ON THE DRAWINGS. CONSULT UNIT MANUFACTURERS PRIOR TO MAKING ANY ADJUSTMENTS FOR APPROVAL (APPROVAL MUST BE SUBMITTED IN WRITING).



**1 PARTIAL ROOF PLAN - HVAC DUCTWORK**  
SCALE: 1/8" = 1'-0"

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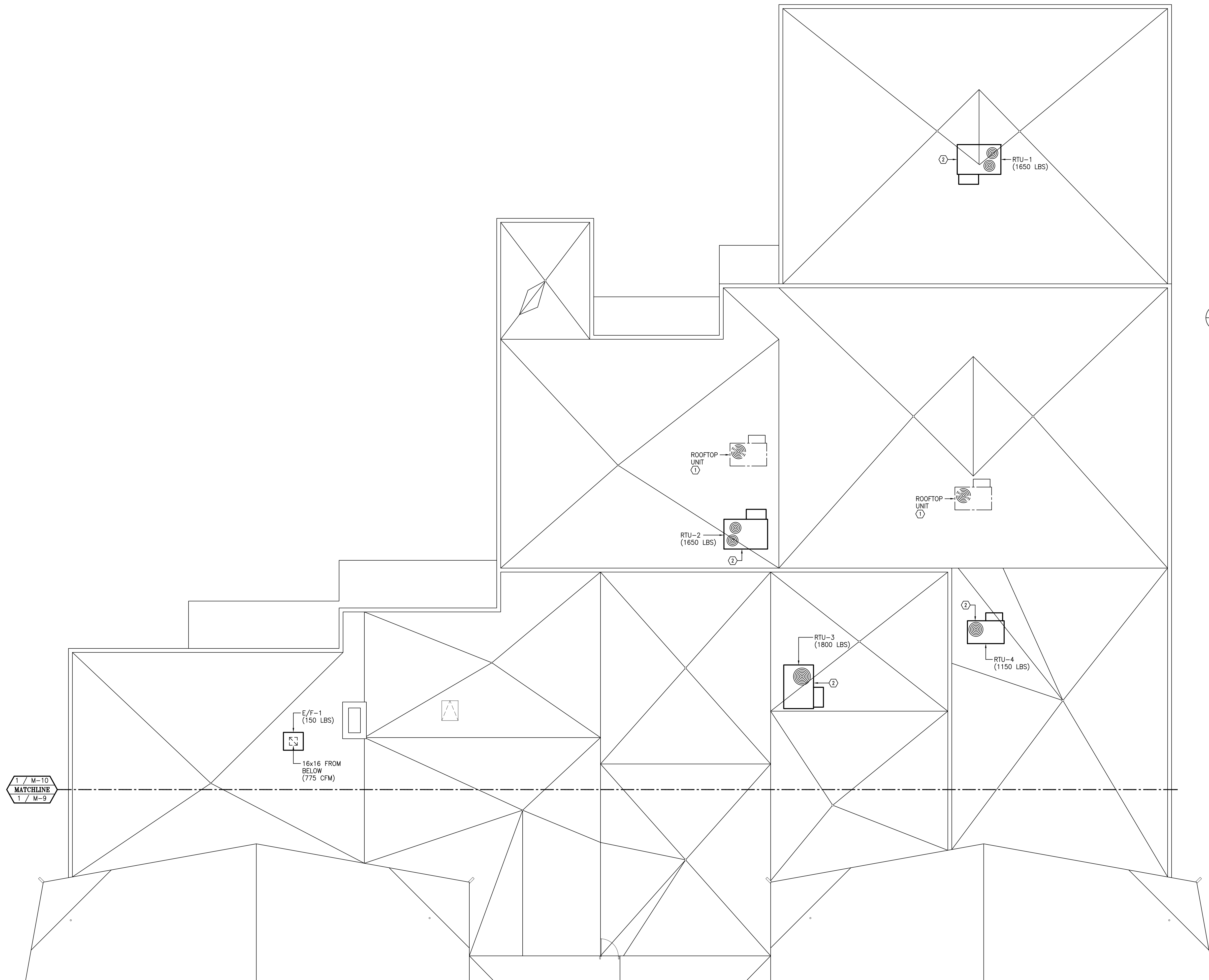
SEAL:

TITLE:  
**PARTIAL  
ROOF PLAN -  
HVAC  
DUCTWORK**

**SILVESTRI**  
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SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #: **M-9**



**2 HVAC NOTES:**

- 1. EXISTING TO REMAIN.
- 2. DISCONNECT AND REMOVE EXISTING ROOFTOP UNIT AND PREPARE EXISTING ROOF CURB FOR NEW CONNECTION. REFER TO SCHEDULES FOR NEW ROOFTOP UNIT REQUIREMENTS.
- A. CONNECT EXISTING DUCTWORK TO ROOFTOP UNIT, MODIFY / EXTEND EXISTING DUCTWORK AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.

**3 HVAC GENERAL NOTES:**

- 1. DIVISION 7 AND DIVISION 23 TO COORDINATE ALL ROOF OPENINGS, ROOF PENETRATIONS, AND EQUIPMENT PAD INSTALLATIONS.
- 2. DIVISION 7 TO CUT ALL ROOF OPENINGS.
- 3. DIVISION 23 TO PROVIDE AND INSTALL ALL NEW EQUIPMENT AND NEW EQUIPMENT CURBS.
- 4. DIVISION 7 TO PROVIDE ROOF FLASHING AND SEALING OF ALL ROOF OPENINGS.
  - A. DIVISION 7 SHALL REPAIR / REPLACE EXISTING ROOF FLASHING AND SEALING OF ALL EXISTING ROOF OPENINGS PRIOR TO NEW EQUIPMENT INSTALLATION.
- 5. DIVISION 23 SHALL VERIFY EXISTING ROOFTOP UNIT SIZES (TONNAGE) AND EXISTING ROOF CURB SIZE WITH NEW ROOFTOP UNIT SIZES PRIOR TO REMOVING EXISTING ROOFTOP UNITS AND INSTALLING NEW ROOFTOP UNITS.
  - A. PROVIDE ROOF CURB ADAPTER AS REQUIRED. FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.
- 6. REPLACE ALL EXISTING TO REMAIN ROOFTOP UNITS FILTERS WITH NEW MERV-11 FILTERS AT THE END OF COMPLETION OF INSTALLATION AND JUST PRIOR TO TESTING AND BALANCING.
  - A. ADJUST EXISTING UNITS FAN SPEEDS AND / OR REPLACE EXISTING UNITS MOTOR AND SHEAVES AS REQUIRED TO ACHIEVE REBALANCED MINIMUM CFM'S AS INDICATED ON THE DRAWINGS. CONSULT UNIT MANUFACTURERS PRIOR TO MAKING ANY ADJUSTMENTS FOR APPROVAL (APPROVAL MUST BE SUBMITTED IN WRITING).

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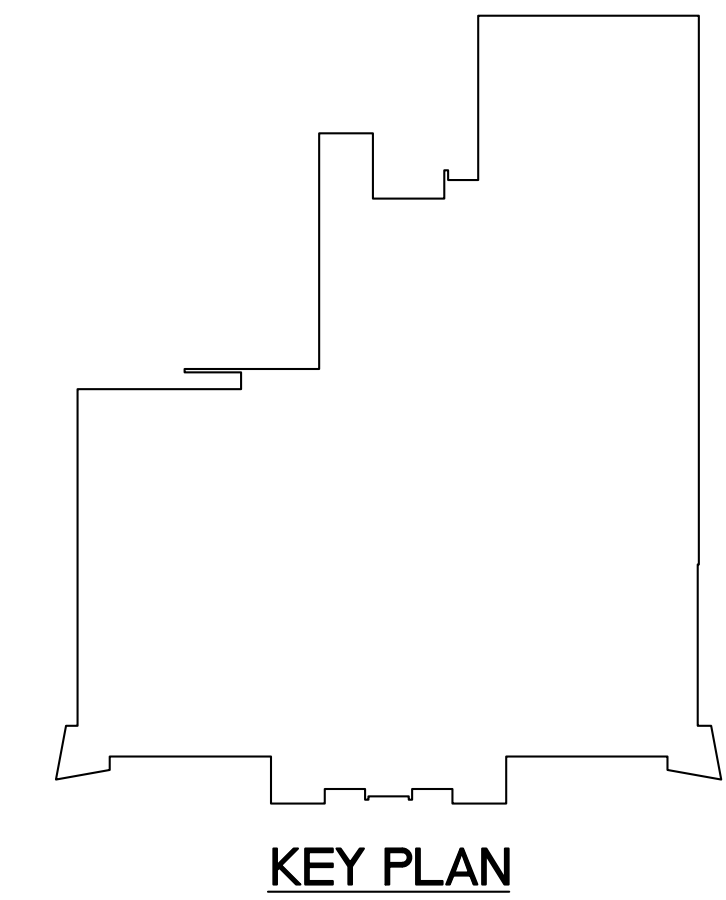
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**PARTIAL ROOF PLAN - HVAC DUCTWORK**

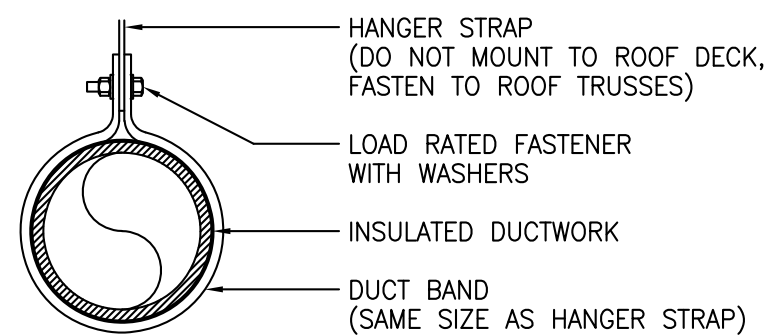
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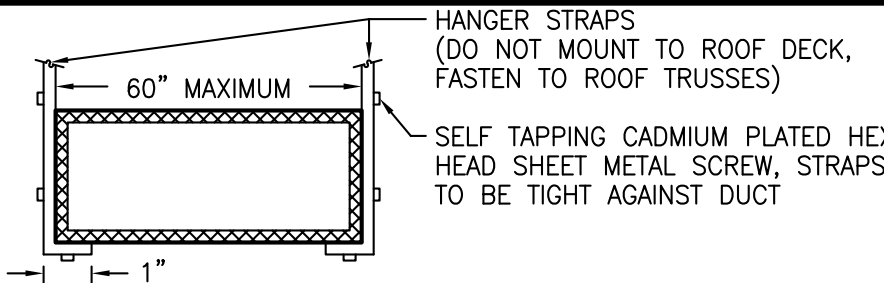
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**1 PARTIAL ROOF PLAN - HVAC DUCTWORK**  
 SCALE: 1/8" = 1'-0"



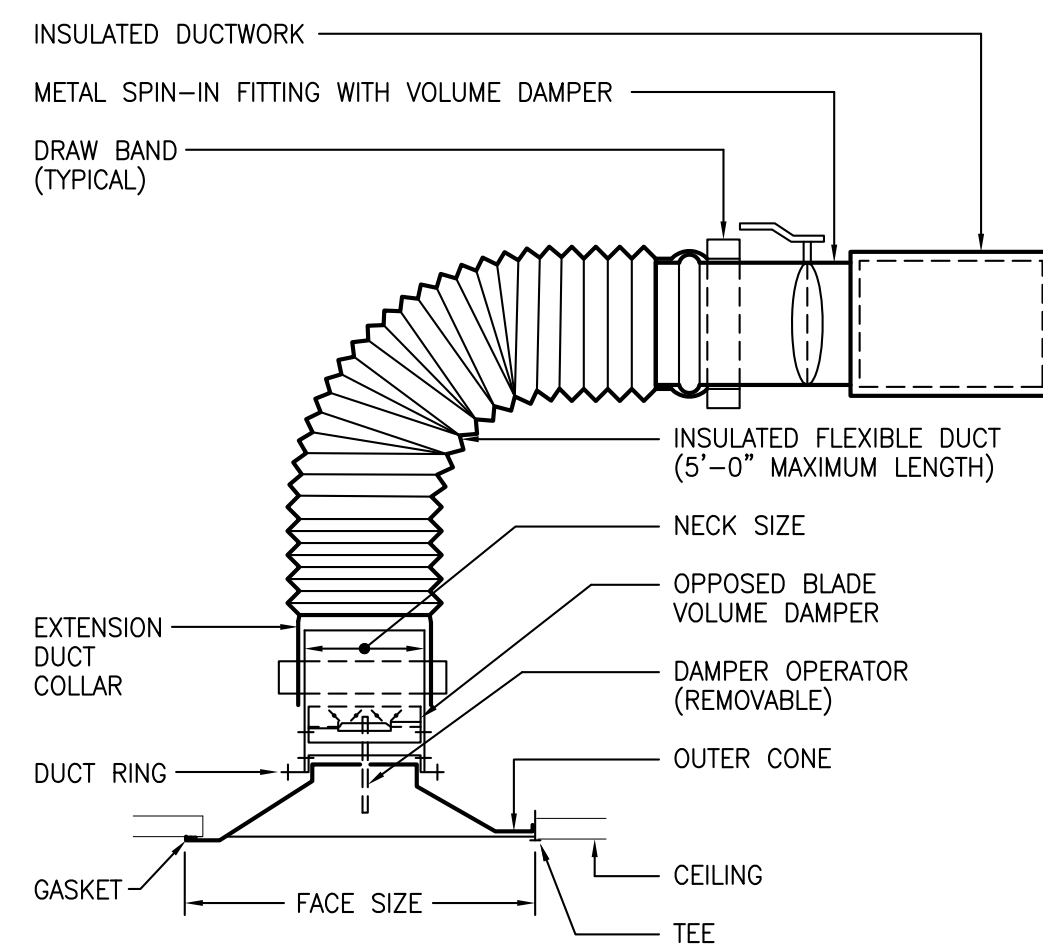


HANGER SIZES FOR ROUND DUCT				
DUCT DIAMETER	ROUND HANGERS	STRAP HANGERS	MAXIMUM SPACING	NUMBER OF HANGERS
UP THRU 18"	1/4" ROD	1" x 16 GAUGE	10'-0"	1
19" THRU 36"	3/8" ROD	1" x 12 GAUGE	10'-0"	1



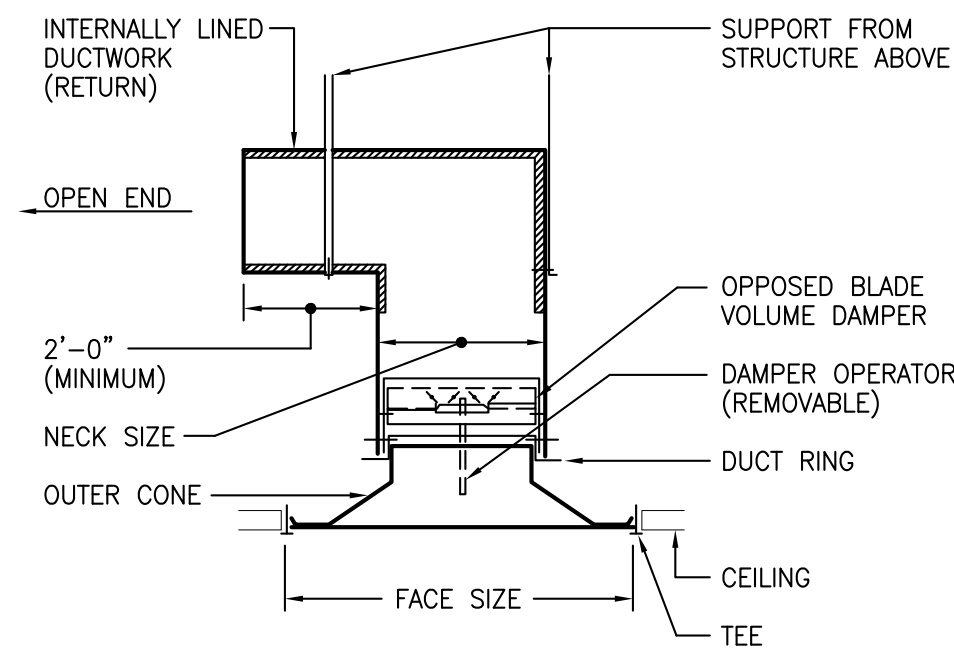
HANGER SIZES FOR RECTANGULAR DUCT				
LONGEST DIMENSION OF DUCT	ROUND HANGERS	STRAP HANGERS	MAXIMUM SPACING	
UP THRU 18"	1/4" ROD	1" x 16 GAUGE	10'-0"	
19" THRU 42"	1/4" ROD	1" x 16 GAUGE	10'-0"	
43" THRU 60"	3/8" ROD	1" x 16 GAUGE	10'-0"	

**DUCT HANGER DETAIL**

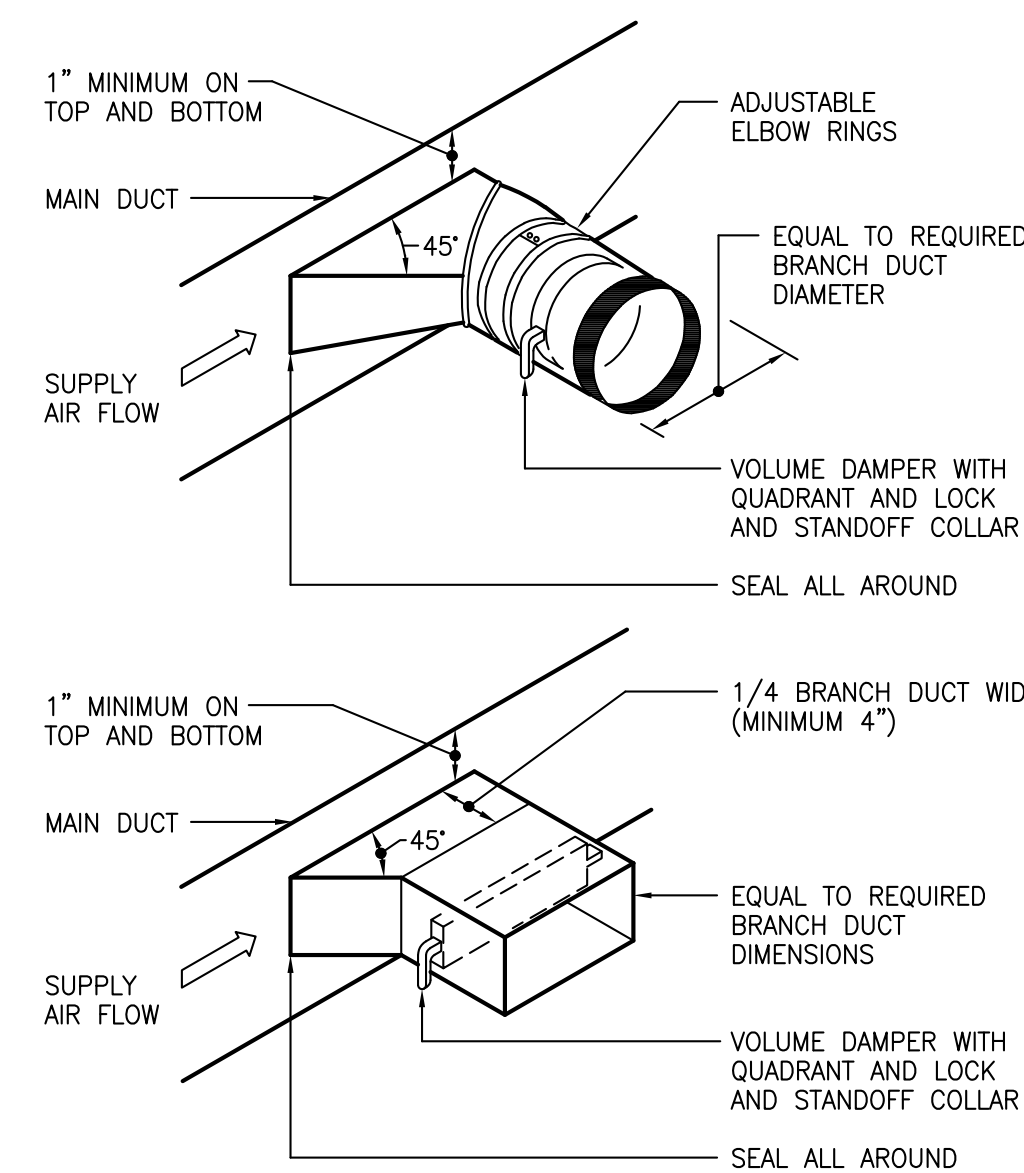


- INSTALLATION NOTES:**
1. FASTEN DUCT RING TO EXTENSION DUCT COLLAR WITH SHEET METAL SCREWS.
  2. "TAP-OUT" EITHER SIDE OR BOTTOM OF DUCT; TOP "TAP-OUT" IS NOT ACCEPTABLE.

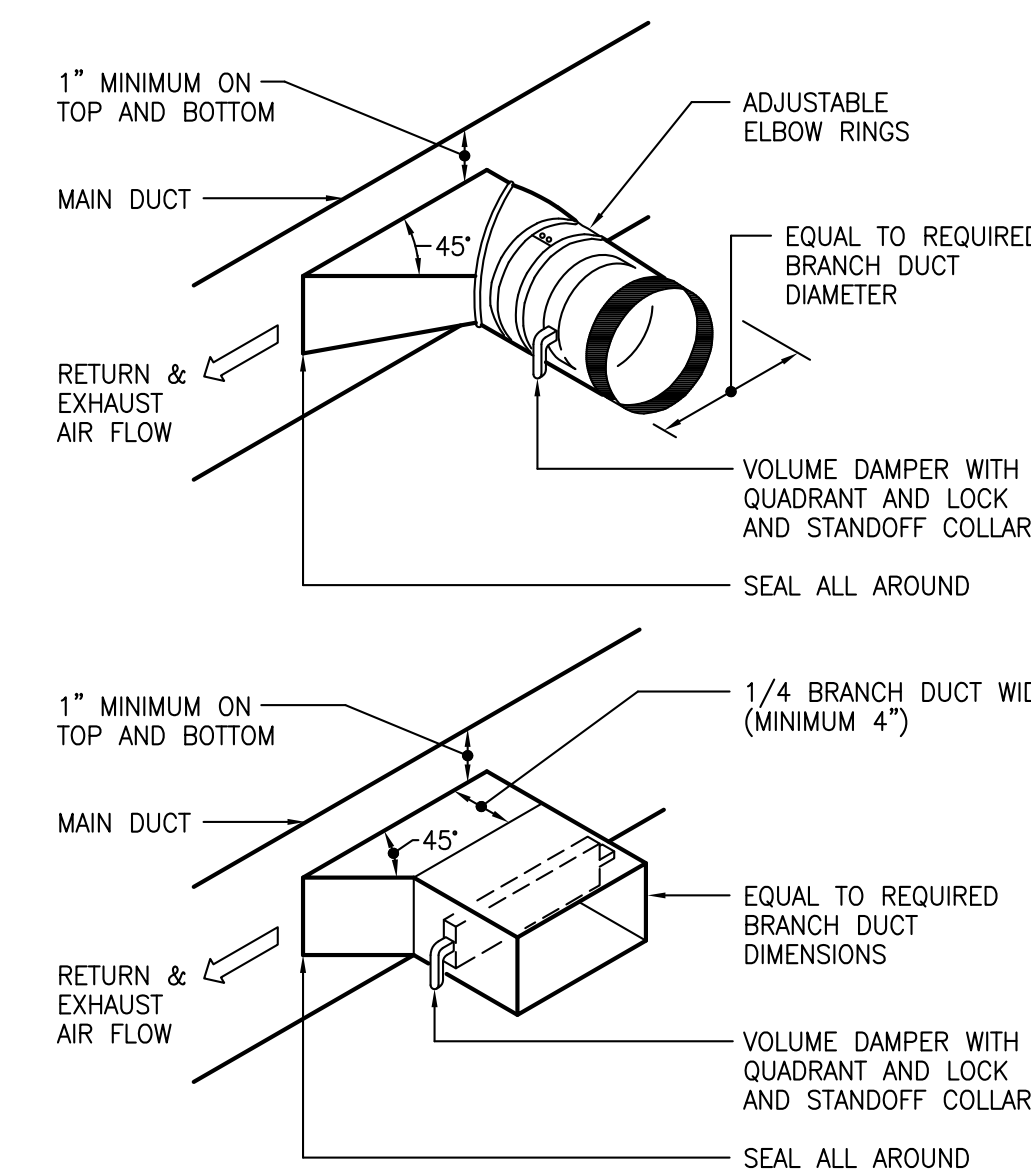
**CEILING DIFFUSER CONNECTION DETAIL**



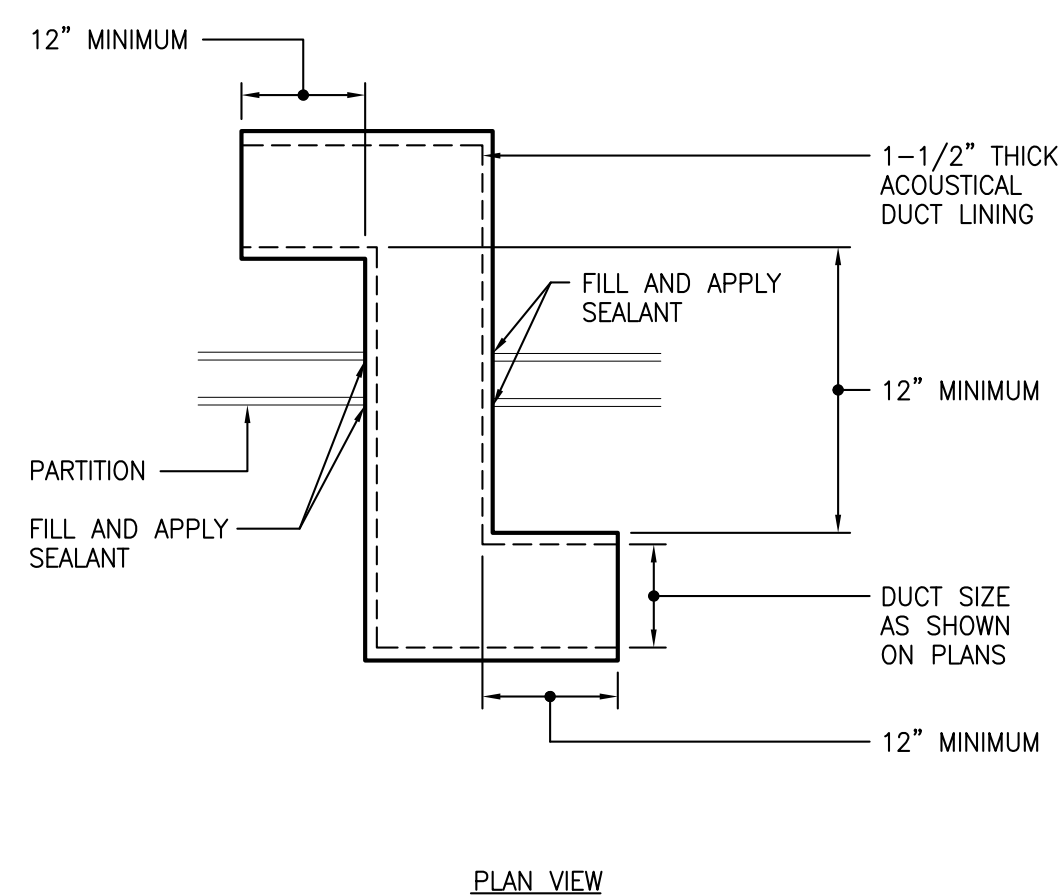
**RETURN GRILLE CONNECTION DETAIL**



**SUPPLY BRANCH TAKE-OFF FITTING DETAIL**

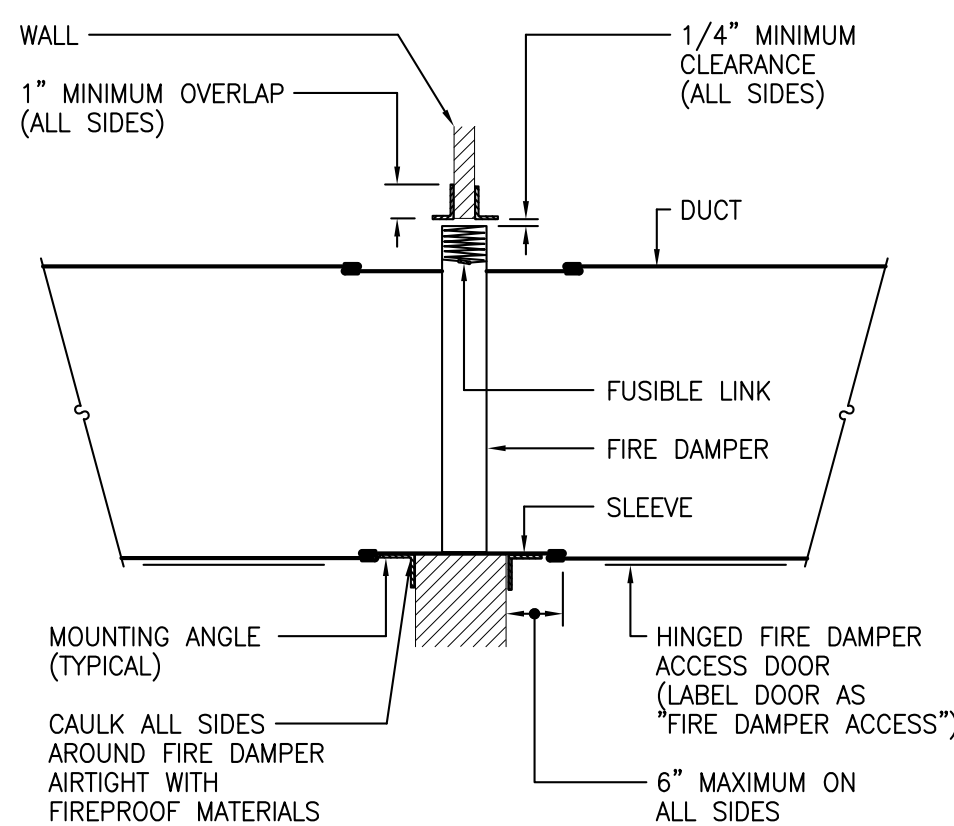


**RETURN / EXHAUST BRANCH TAKE-OFF FITTING DETAIL**



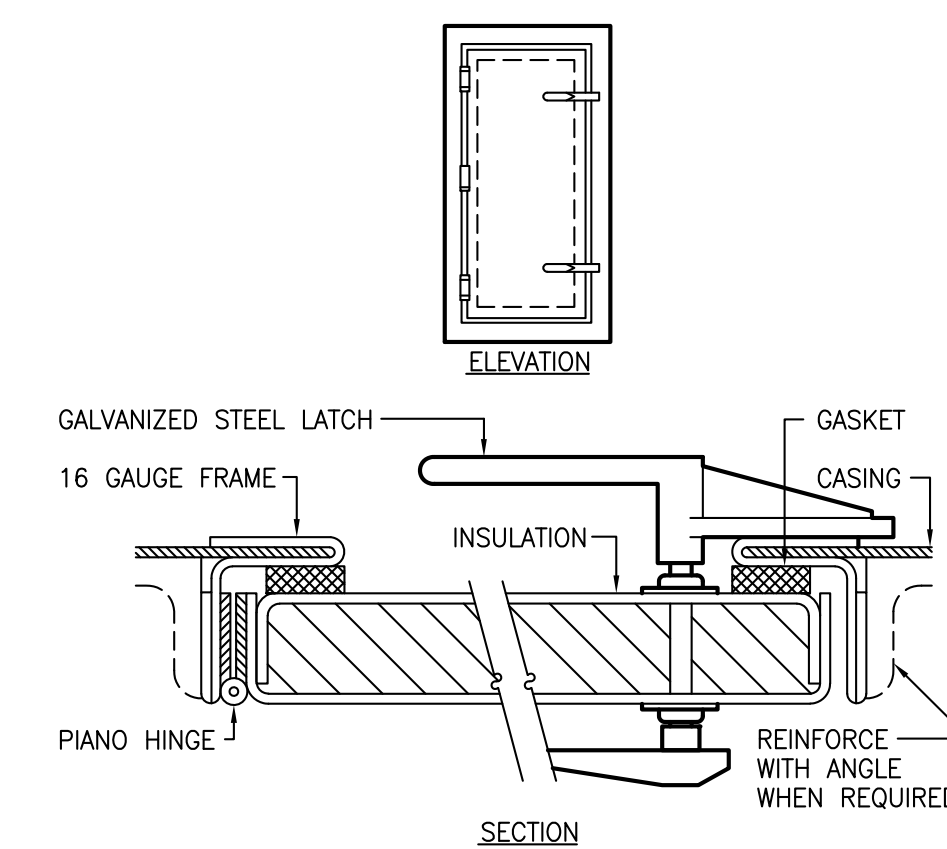
- NOTES:**
1. SUPPORT SILENCER FROM STRUCTURE ABOVE.

**TRANSFER DUCT DETAIL**



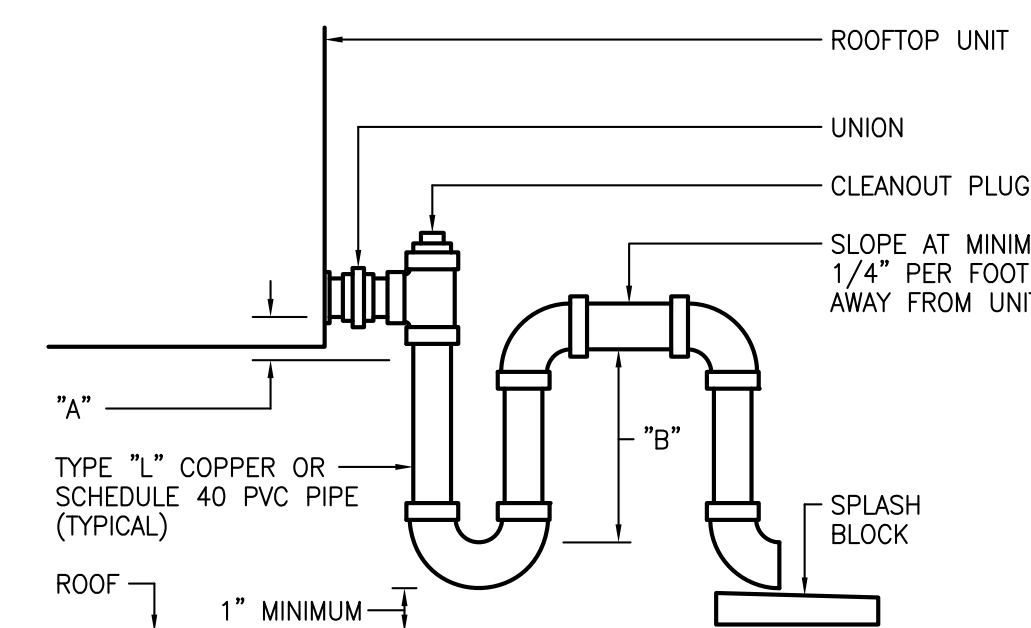
**FIRE DAMPER (OUTSIDE DUCT) DETAIL**

- NOTES:**
1. OPENINGS IN WALL SHALL BE 1/8" PER FOOT LARGER THAN DAMPER DIMENSIONS (3/16" LARGER PER FOOT FOR STAINLESS STEEL). MINIMUM CLEARANCE OF 1/4" REQUIRED FOR ALL INSTALLATIONS.
  2. SLEEVE GAUGE SHALL BE AT LEAST EQUAL TO THE GAUGE OF THE DUCT AS DEFINED BY THE APPROPRIATE SMACNA DUCT CONSTRUCTION STANDARDS AND NFPA 90A, WHEN ONE OR MORE OF THE FOLLOWING DUCT SLEEVE CONNECTIONS ARE USED:
    - A. PLAIN "S" SLIP.
    - B. HEMMED "S" SLIP.
    - C. STANDING "S" SLIP.
    - D. REINFORCED STANDING "S" SLIP.
    - E. INSIDE SLIP JOINT.
    - F. DOUBLE "S" SLIP.
  3. IF ANY OTHER DUCT SLEEVE CONNECTIONS ARE USED, THE SLEEVE SHALL BE MINIMUM 16-GAUGE FOR DAMPERS UP TO 36"W x 24"H AND 14-GAUGE IF WIDTH EXCEEDS 36" OR HEIGHT EXCEEDS 24".
  4. MOUNTING ANGLE SHALL BE MINIMUM OF 2"x1"x14-GAUGE AND BOLTED, TACK WELDED OR SCREWED TO SLEEVE AT MAXIMUM SPACING OF 12" AND WITH MINIMUM OF TWO CONNECTIONS IN EACH SIDE, TOP AND BOTTOM. MOUNTING ANGLES SHALL OVERLAP WALL A MINIMUM OF 1" ON ALL FOUR SIDES.
  5. DAMPER SHALL BE BOLTED, TACK WELDED OR SCREWED TO SLEEVE ON SAME SPACING AS ANGLES. SLEEVES SHALL NOT EXTEND MORE THAN 6" OUTSIDE OF WALL.



- NOTE:**
1. ALL DOORS TO OPEN AGAINST PRESSURE.
  2. LABEL DOOR "FIRE DAMPER ACCESS".

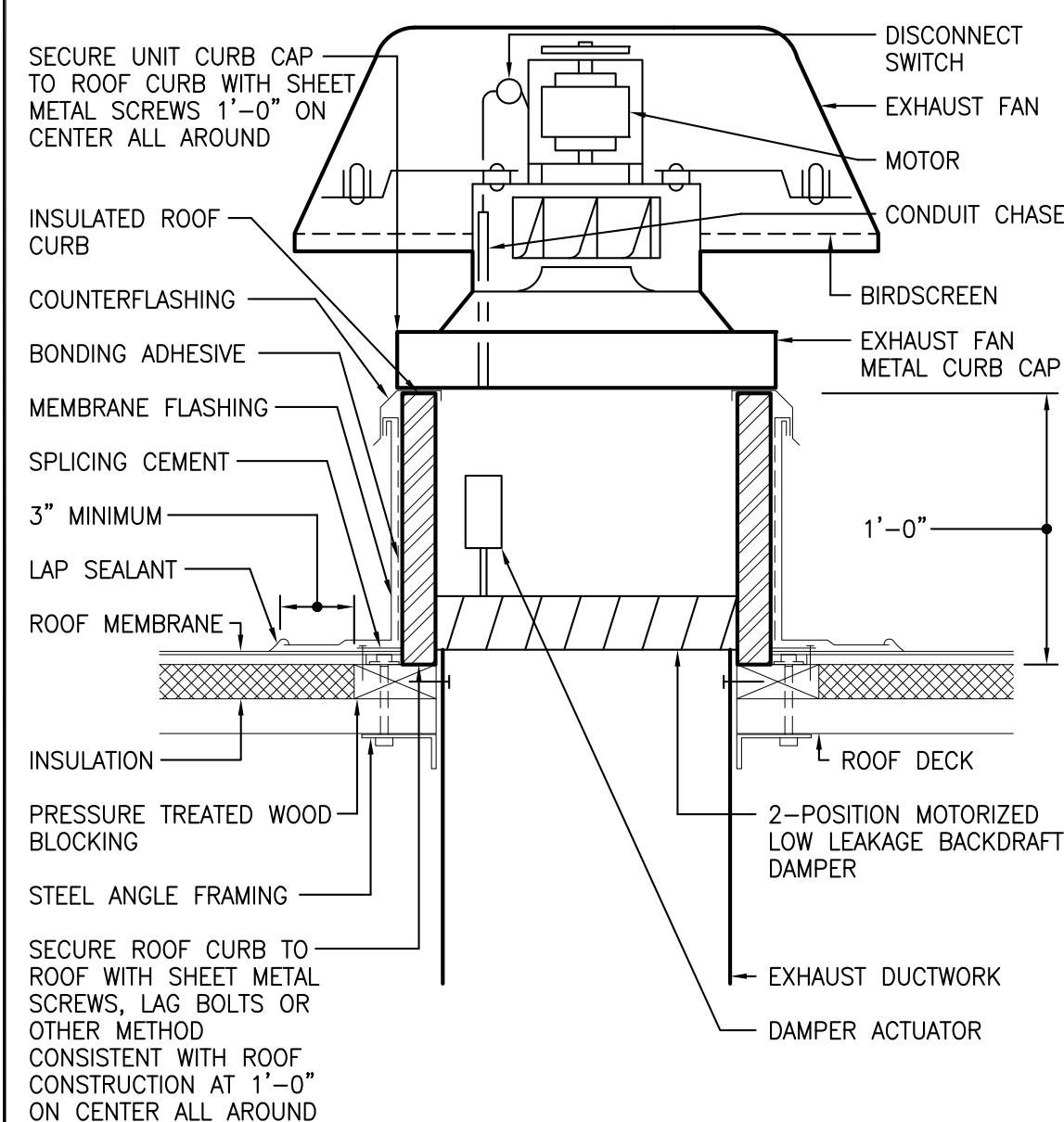
**DUCT ACCESS DOOR DETAIL**



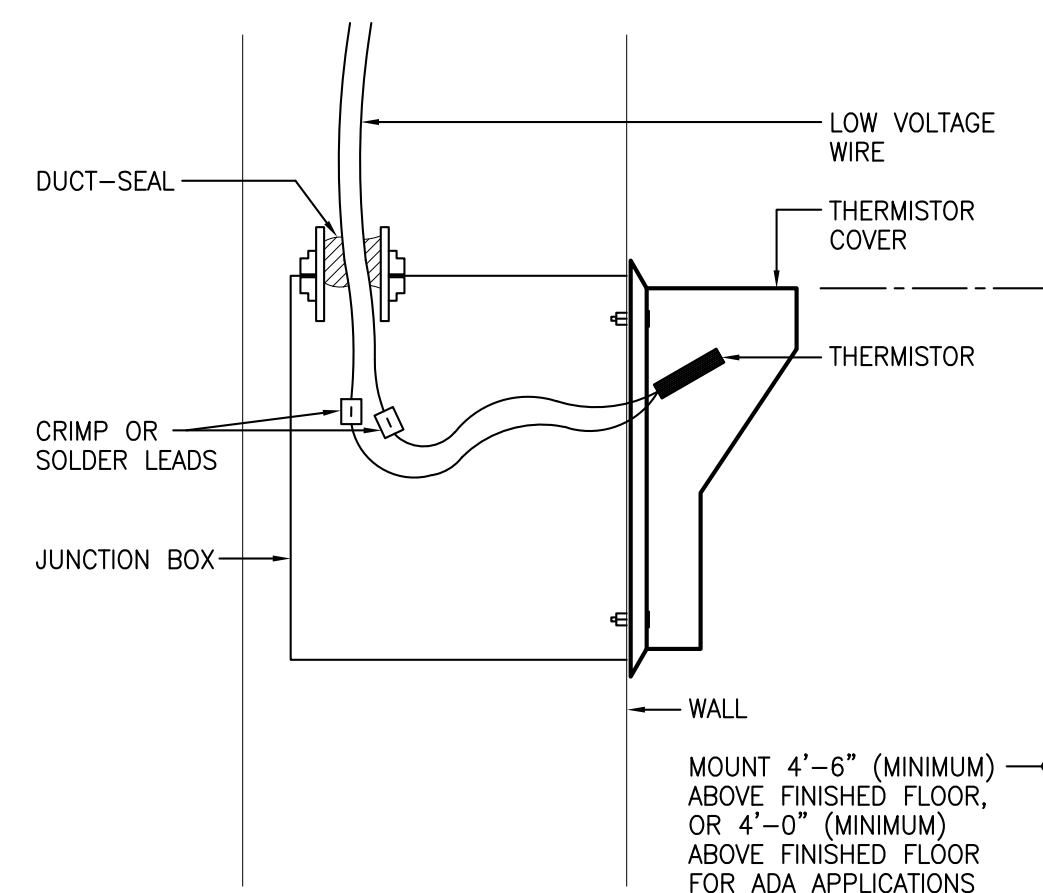
COIL CONFIGURATION	DIMENSION "A"	DIMENSION "B"
BLOW-THRU	1"	FAN DISCHARGE STATIC PRESSURE PLUS 1"
DRAW-THRU	FAN SUCTION STATIC PRESSURE PLUS 1"	2-1/2"

- NOTES:**
1. MINIMUM "A" OR "B" DIMENSION SHALL NOT BE LESS THAN 1".
  2. COPPER CONDENSATE DRAIN LINES SHALL BE INSULATED WITH MINIMUM 1-1/2" THICK ARMAFLEX II SLIP-ON TYPE INSULATION.
  3. DISCHARGE CONDENSATE PIPING A MINIMUM OF 3'-0" AWAY FROM UNIT TO SPLASH BLOCK ON ROOF (UNLESS PROHIBITED BY LOCAL CODE).

**ROOFTOP UNIT CONDENSATE TRAP DETAIL**



**ROOF MOUNTED EXHAUST FAN DETAIL**



**THERMOSTAT MOUNTING DETAIL**

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ISSUE:  
2021-06-29: BID/PERMIT SET

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TITLE:  
**HVAC DETAILS**

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SA JOB #: 14082.07 DATE: 6-29-2021

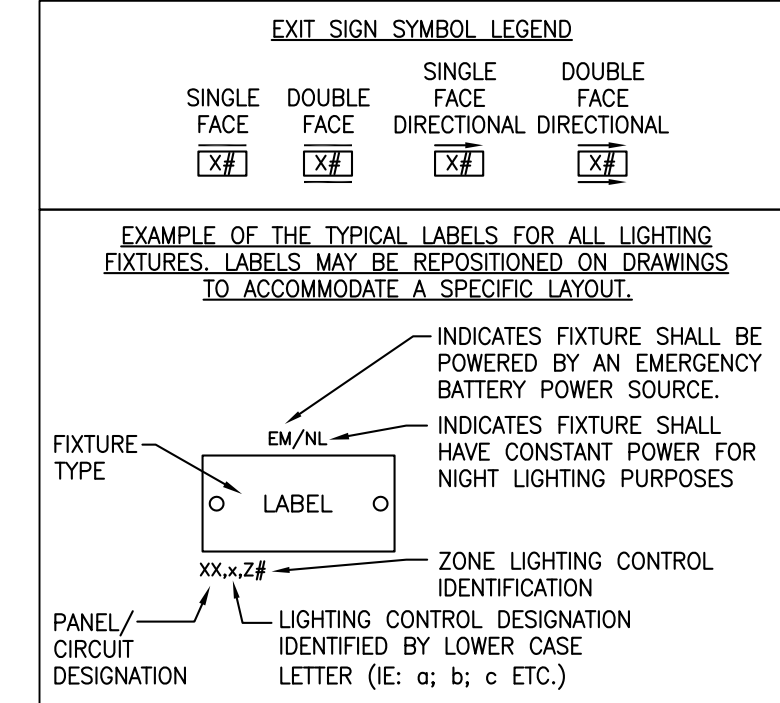
DRAWING #: M-11

**ELECTRICAL SYMBOLS LEGEND**  
NOT ALL SYMBOLS MAY BE REPRESENTED ON DRAWINGS

POWER SYMBOLS	LIGHTING CONTROL SYMBOLS	FIRE ALARM SYMBOLS
—  — SIGNIFIES TWO(2) CONDUCTORS 2#12 + 1#12 GRND. IN 3/4" CONDUIT.	§ TOGGLE SWITCH (SINGLE-POLE)	FACP FIRE ALARM CONTROL PANEL
—   — SIGNIFIES THREE(3) CONDUCTORS 3#12 + 1#12 GRND. IN 3/4" CONDUIT.	§   LIV TOGGLE SWITCHES (SINGLE-POLE, GANGED)	AP FIRE ALARM REMOTE ANNUNCIATOR PANEL
—    — SIGNIFIES FOUR(4) CONDUCTORS 4#12 + 1#12 GRND. IN 3/4" CONDUIT.	§3 TOGGLE SWITCH (SINGLE-POLE, 3-WAY)	F FIRE ALARM PULLSTATION - INSTALL 48" A.F.F. TO CENTER OF BOX
—     — SIGNIFIES FIVE(5) CONDUCTORS 5#12 + 1#12 GRND. IN 3/4" CONDUIT.	§3,   LIV TOGGLE SWITCH (SINGLE-POLE, 3-WAY, GANGED)	CM CARBON MONOXIDE DETECTOR WITH AUDIBLE BASE. WIRE INTO SUPERVISORY CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
—   #10 SIGNIFIES TWO(2) CONDUCTORS 2#10 + 1#10 GRND. IN 3/4" CONDUIT.	§4 TOGGLE SWITCH (SINGLE-POLE, 4-WAY)	S PHOTOELECTRIC SMOKE DETECTOR WITH STANDARD BASE. WIRE INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
—   #10 SIGNIFIES THREE(3) CONDUCTORS 3#12 + 1#10 GRND. IN 3/4" CONDUIT.	§K KEYED SWITCH (SINGLE-POLE)	CS COMBINATION CARBON MONOXIDE / PHOTOELECTRIC SMOKE DETECTOR WITH AN AUDIBLE BASE. WIRE INTO INITIATING / SUPERVISORY / SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
—   #8 SIGNIFIES TWO(2) CONDUCTORS 2#8 + 1#10 GRND. IN 3/4" CONDUIT.	§T TIME DELAY SWITCH (SINGLE-POLE)	H HEAT DETECTOR - FIXED TEMPERATURE OF 135°. WIRED INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
—   #8 SIGNIFIES THREE(3) CONDUCTORS 3#8 + 1#10 GRND. IN 3/4" CONDUIT.	§PL PILOT LIGHT SWITCH (SINGLE-POLE)	CH COMBINATION CARBON MONOXIDE / HEAT DETECTOR, FIXED TEMPERATURE OF 135° WITH AN AUDIBLE BASE. WIRE INTO INITIATING / SUPERVISORY / SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
—   #6 SIGNIFIES TWO(2) CONDUCTORS 2#6 + 1#8 GRND. IN 1" CONDUIT.	§D DIMMER (SINGLE-POLE)	DS DUCT SMOKE DETECTOR - WIRED INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL WITHIN HVAC DUCTWORK.
—   #6 SIGNIFIES THREE(3) CONDUCTORS 3#6 + 1#8 GRND. IN 1" CONDUIT.	§D,   LIV DIMMER (SINGLE-POLE, GANGED - 2, 3, 4 ETC.)	AK AUDIO DEVICE (WALL) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
— — HOMERUN TO PANELBOARD	§K KEYED SWITCH (SINGLE-POLE)	V VISUAL DEVICE (WALL) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
— — LOW VOLTAGE CONTROL WIRING	§M MOMENTARY CONTACT SWITCH (SINGLE-POLE)	AVX COMBINATION AUDIO/VISUAL DEVICE (WALL) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
Ⓟ JUNCTION BOX (SIZE AS REQUIRED)	§DI LINE-VOLTAGE WIRELESS WALL SWITCH CONTROLLER PROVIDING ON/OFF DIMMING CONTROL WITH JOT ENABLED WIRELESS COMMUNICATION.	AVX AUDIO DEVICE (CEILING) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
~ CONDUIT/WIRE BREAK	§OS DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR ACUITY CONTROLS - #SPDOMRA-JOT-DX-(TBD)	V STROBE DEVICE (CEILING) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
⌈ CONDUIT STUB OUT	§OS LOW-VOLTAGE, DUAL TECHNOLOGY, SMALL MOTION CEILING OCCUPANCY SENSOR.	AVX COMBINATION AUDIO/VISUAL DEVICE (CEILING) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL @ FINISHED CEILING.
• CONDUIT STUB-DOWN	§OS ACUITY CONTROLS - SENSOR SWITCH #WXSX-PDT-SA-WH (OR EQUAL)	HDH MAGNETIC DOOR HOLDER - TO BE INSTALLED WITHIN WALL & WIRED INTO BUILDING FIRE ALARM SYSTEM AS REQUIRED.
○ CONDUIT STUB-UP	§PC EXTERIOR REMOTE PHOTOCELL TORK MODEL #2101 OR EQUAL.	FL FLOW SWITCH - PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
208Y/120V RECESSED OR SURFACE MOUNTED PANELBOARD	TC# DIGITAL TIME CLOCK	TA TAMPER SWITCH - PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
480Y/277V RECESSED OR SURFACE MOUNTED PANELBOARD		MM MONITORING MODULE
1# POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.	TELEPHONE / NETWORK DATA JACK - SEE "COMMUNICATION DEVICE SCHEDULE" FOR FURTHER INFORMATION	CM CONTROL MODULE
3# POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.	MB# MEDIA BOX - SEE "COMMUNICATION DEVICE SCHEDULE" FOR FURTHER INFORMATION	RT REMOTE TEST STATION
ELECTRIC MOTOR - PROVIDED & INSTALLED BY OTHERS, WIRE BY E.C. XX = HORSE POWER RATING		
RECEPTACLE (SIMPLEX)		
RECEPTACLE (DUPLEX)		
RECEPTACLE (QUAD)		
RECEPTACLE (DUPLEX WITH 2 USB CHARGING PORTS) DECORATOR STYLE		
RECEPTACLE (DUPLEX) W/ GROUND FAULT PROTECTION		
RECEPTACLE (QUAD) W/ GROUND FAULT PROTECTION		
RECEPTACLE (DUPLEX) W/ GROUND FAULT PROTECTION & A WEATHERPROOF COVER		
PLUGMOLD		
120V ELECTRONIC DOOR STRIKE, SUPPLIED & INSTALLED BY OTHERS, WIRED BY E.C.		
"SPECIAL" RECEPTACLE - VERIFY NEMA TYPE AND INSTALLATION LOCATION IN FIELD.		
RECESSED FLOOR BOX - TO BE INSTALLED FLUSH WITHIN FINISHED FLOOR		
POWER POLE WITH DIVIDER FOR POWER AND COMMUNICATIONS WIRING.		
MANUAL MOTOR STARTER		
MAGNETIC MOTOR STARTER		
COMBINATION MOTOR STARTER/FUSED DISCONNECT SWITCH		
NON-FUSED DISCONNECT SWITCH		
FUSED DISCONNECT SWITCH		

**LIGHTING FIXTURE SCHEDULE**

SYMBOL	DESCRIPTION	LAMP (QTY/TYPER/COLOR)	VOLT	VA	MOUNTING	MANUFACTURER/ MODEL #
(A)	4" APERTURE LED DOWNLIGHT WITH CLEAR TRIM, SEMI-SPECULAR REFLECTOR AND 0-10V DIMMING *ENERGY STAR LISTED*	LED/3500K/750 LUMENS	120/277V	10W	RECESSED	LITHONIA LIGHTING: LDN4-35/07-L04-AR-LS-MVOLT-D10
⊙ B ⊙	2'X4' LED FLAT PANEL WITH A WHITE PRISMATIC LENS AND 0-10V DIMMING DRIVER. *DLC LISTED*	LED/3500K/4800 LUMENS	120/277V	39W	LAY-IN	LITHONIA LIGHTING: CPX-2X4-4000LM-80CRI-35K-A12-MIN10-ZT-MVOLT-
⊙ B1 ⊙	2'X4' LED FLAT PANEL WITH A WHITE PRISMATIC LENS AND 0-10V DIMMING DRIVER. *DLC LISTED*	LED/3500K/4800 LUMENS	120/277V	39W	LAY-IN	LITHONIA LIGHTING: CPX-2X4-4000LM-80CRI-35K-A12-MIN10-ZT-JOTVX15-MVOLT-
⊕ C4	2'X2' LED FLAT PANEL WITH A WHITE PRISMATIC LENS AND 0-10V DIMMING DRIVER. *DLC LISTED*	LED/3500K/3200 LUMENS	120/277V	31W	LAY-IN	LITHONIA LIGHTING: CPX-2X2-3200LM-80CRI-35K-A12-MIN10-ZT-MVOLT-
(X1)	EXIT SIGN, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENOILED RED LETTERS WITH LED LAMPS & AN INTEGRAL BATTERY PACK.	LED - FURNISHED WITH FIXTURE	120/277V	N/A	CEILING/WALL (+7"-6"A.F.F.) TBD BY E.C.	LITHONIA LIGHTING: "QUANTUM" LHM-S-W-3-R-120/277-ELN
(XZ)	COMBINATION LED EXIT SIGN / EMERGENCY LIGHTING UNIT, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENOILED RED LETTERS WITH, TWIN ADJUSTABLE HEADS FOR EMERGENCY LIGHTING & AN INTEGRAL BATTERY PACK.	LED (EXIT), TWO 1.5W/LEDs FURNISHED WITH FIXTURE	120/277V	N/A	CEILING/WALL (+7"-6"A.F.F.) TBD BY E.C.	LITHONIA LIGHTING: "QUANTUM" LHM-S-W-3-R-120/277-ELN
(EIT)	EMERGENCY LED LIGHTING UNIT WITH A WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, TWIN ADJUSTABLE HEADS & AN INTEGRAL BATTERY PACK.	TWO 2.4W/220 LUMEN LEDs FURNISHED WITH FIXTURES	120/277V	N/A	WALL +7"-6" A.F.F.	LITHONIA LIGHTING: "QUANTUM" ELM2L



**AS A REQUIREMENT FOR ALL PROSPECTIVE BIDDERS SHALL:**

- VISIT THE SITE PRIOR TO BID SUBMISSION
- FIELD VERIFY ALL MEASUREMENTS
- GENERATE A COMPREHENSIVE LIST DETAILING SITE CONDITIONS FOR FIELD PERSONNEL.

**THE SUCCESSFUL BIDDING CONTRACTOR SHALL:**

- REVIEW ENTIRE DRAWING PACKAGE AND EFFECTIVELY COORDINATE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
- COORDINATE ALL BUILDING INTERCONNECTIONS AND POWER SYSTEMS SHUTDOWN WITH OWNER.
- PROVIDE ONE COMPLETE SET OF AS-BUILD DRAWINGS TO THE ENGINEER OF RECORD AND ONE TO THE OWNER.

**COMMUNICATION DEVICE SCHEDULE**

SYMBOL	DESCRIPTION	WALLPLATE/MEDIA BOX MODEL #S
⊙ 4	6-PORT, QUICKPORT WALLPLATE INSTALLED 18"A.F.F., UNLESS OTHERWISE NOTED. WALLPLATE SHALL RECEIVE THE FOLLOWING RJ-45 CONNECTOR: *ONE(1) IVORY CATEGORY 6 FOR VOIP NETWORK CABLE (LEVITON #61110-R16). *FIVE(5) BLANK IVORY INSERTS	LEVITON: #41080-6IP
(M1)	2-GANG RECESSED STEEL MEDIA BOX FOR INSTALLATION OF ONE(1) DUPLEX RECEPTACLE AND UP TO SIX(6) COMMUNICATION CONNECTORS. INSTALL 65"A.F.F., UNLESS OTHERWISE NOTED. SUPPLY AND INSTALL THE FOLLOWING FOR INSTALLATION IN MEDIA BOX: *ONE(1) DUPLEX RECEPTACLE WITH COVERPLATE (WHITE). *ONE(1) 6-PORT WALLPLATE (LEVITON #41080-BWP) WITH THE FOLLOWING: -ONE(1) F-CONNECTOR FEED THROUGH (LEVITON #40831-WH). -ONE(1) HDMI FEED THROUGH CONNECTOR (40834-00W). PROVIDED FOR OWNER USE AS NEEDED. -ONE(1) WHITE CATEGORY 6 FOR VOIP NETWORK CABLE (LEVITON #61110-RW6). -THREE(3) BLANK WHITE INSERTS INSTALL 1 1/2" EMT CONDUIT FROM LOW-VOLTAGE SIDE OF MEDIA J-BOX TO ACCESSIBLE CEILING SPACE FOR INSTALLATION OF CURRENT AND FUTURE CABLING.	LEGRAND-PASS & SEYMOUR: TV2MW

**GENERAL NOTES TO COMMUNICATION DEVICE SCHEDULE:**

- CATEGORY 6 PLENUM RATED CABLE CONTAINS FOUR TWISTED PAIRS. A 4 PRECEDING THE SYMBOL INDICATES ONE CABLE, AN 8 INDICATES TWO CABLES, ETC.
- CONTRACTOR SHALL PROVIDE COMMUNICATIONS INSTALLATION INCLUSIVE OF ALL REQUIRED ELECTRICAL BOXES, CABLE, CONDUIT, WALL PLATES, CONNECTORS, TERMINATIONS, TESTING, LABELING ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
- IVORY WALL PLATES AND ASSOCIATED CONNECTOR COLORS SHALL BE CONFIRMED WITH ARCHITECT / INTERIOR DESIGNER PRIOR TO ORDERING. FINAL COLOR SELECTION SHALL MATCH ALL ELECTRICAL DEVICES COLORS UTILIZED THROUGHOUT SPACE.

**GENERAL SYMBOLS & ABBREVIATION**  
NOT ALL ABBREVIATIONS MAY BE REPRESENTED ON DRAWINGS

--- SIGNIFIES EXISTING ELECTRICAL EQUIPMENT/ DEVICES TO REMAIN	GRC GALVANIZED RIGID STEEL CONDUIT
--- SIGNIFIES EXISTING ELECTRICAL EQUIPMENT/ DEVICES TO BE REMOVED	HOA HAND-OFF-AUTOMATIC SWITCH
◇ KEYNOTE	HACR HEATING AIR CONDITION, REFRIGERATION C.B.
★ REVISION TAG	HVAC HEATING, VENTILATION, AIR CONDITIONING
⊙ PHASE	HZ HERTZ
A AMPERES	IG ISOLATED GROUND
AC ALTERNATING CURRENT	IMC INTERMEDIATE METAL CONDUIT
A/C AIR CONDITIONING	INT INTERLOCK
AF AMPERE FRAME	KCMIL THOUSAND CIRCULAR MILS
AFF ABOVE FINISHED FLOOR	KVA KILOVOLT-AMPERES
AHU AIR HANDLING UNIT	KVAR KILOVOLT-AMPERES REACTIVE
AIC AMPERE INTERRUPTING CAPACITY	LC LIGHTING CONTACTOR
AL ALUMINUM	LFMC LIQUID TIGHT FLEXIBLE METAL CONDUIT
AT AMPERE TRIP	MAU MAKE-UP AIR UNIT
ATS AUTOMATIC TRANSFER SWITCH	MCA MECHANICAL CONTRACTOR
AWG AMERICAN WIRE GAUGE	MCA MINIMUM CIRCUIT AMPS
C CONDUIT	MCB MAIN CIRCUIT BREAKER
CATV CABLE TELEVISION	MCC MOTOR CONTROL CENTER
CB CIRCUIT BREAKER	MCP MOTOR CIRCUIT PROTECTION
C.C. CIVIL CONTRACTOR	MIN MINIMUM
CCV CLOSED CIRCUIT TELEVISION	MLO MAIN LUGS ONLY
CD CANDELA	NA NOT APPLICABLE
CKT CIRCUIT	NAC NOTIFICATION APPLIANCE CIRCUIT
CLF CURRENT LIMITING FUSE	NC NORMALLY CLOSED
CM CEILING MOUNT	NEC NATIONAL ELECTRICAL CODE
CPT CONTROL POWER TRANSFORMER	NFPA NATIONAL FIRE PROTECTION ASSOCIATION
CT CURRENT TRANSFORMER	NL NIGHT LIGHT
CU COPPER	NO NORMALLY OPEN
DC DIRECT CURRENT	NTS NOT TO SCALE
DIA DIAMETER	OC OVER COUNTER
E.C. ELECTRICAL CONTRACTOR	OHE OVER HEAD ELECTRIC
EF EXHAUST FAN	PB PULL BOX
ELEV ELEVATOR	P.C. PLUMBING CONTRACTOR
EM EMERGENCY	PNL PANEL
EMT ELECTRICAL METALLIC TUBING	PWR POWER
EPO EMERGENCY POWER OFF	PT POTENTIAL TRANSFORMER
EX EXISTING	PVC RIGID NON-METALLIC CONDUIT
EXR EXISTING TO BE RELOCATED	QTY QUANTITY
EWK ELECTRIC WATER COOLER	RE REPLACE EXISTING
F FUSE	RMC RIGID METAL CONDUIT
FAA FIRE ALARM ANNUNCIATOR	RTS REMOTE TEST STATION
FCU FAN COIL UNIT	RTU ROOF TOP UNIT
FLA FULL LOAD AMPERES	S.C. STRUCTURAL CONTRACTOR
FMC FLEXIBLE METAL CONDUIT	ST SHUNT TRIP
G GROUND	TBD TO BE DETERMINED BY EC
G.C. GENERAL CONTRACTOR	UC UNDER GROUND COMMUNICATIONS
GFI GROUND FAULT CIRCUIT INTERRUPTER	UGE UNDER GROUND ELECTRIC
GND GROUND	UL UNDERWRITERS LABORATORY
	V VOLT
	VA VOLT-AMPERE
	W WATT
	WG WIRE GUARD
	WP WEATHER PROOF
	XFMR TRANSFORMER

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SEAL:

TITLE:

**ELECTRICAL SCHEDULES & NOTES**

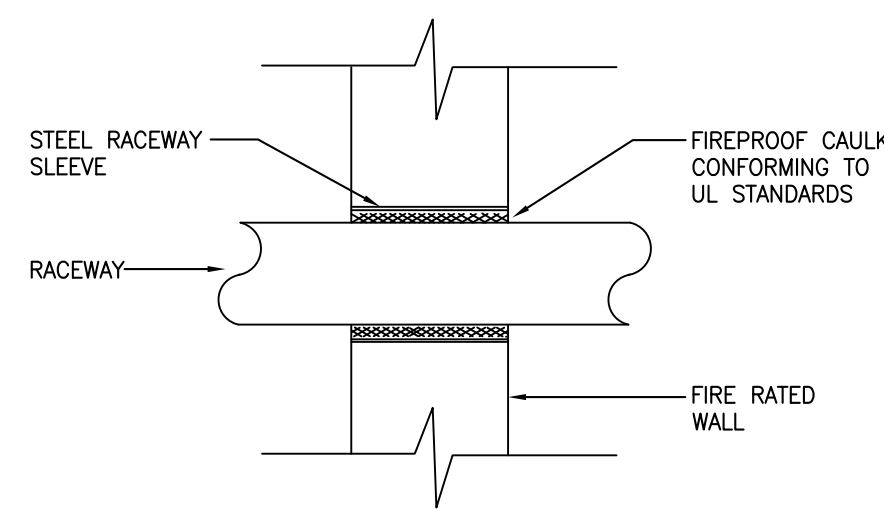


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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: E-1

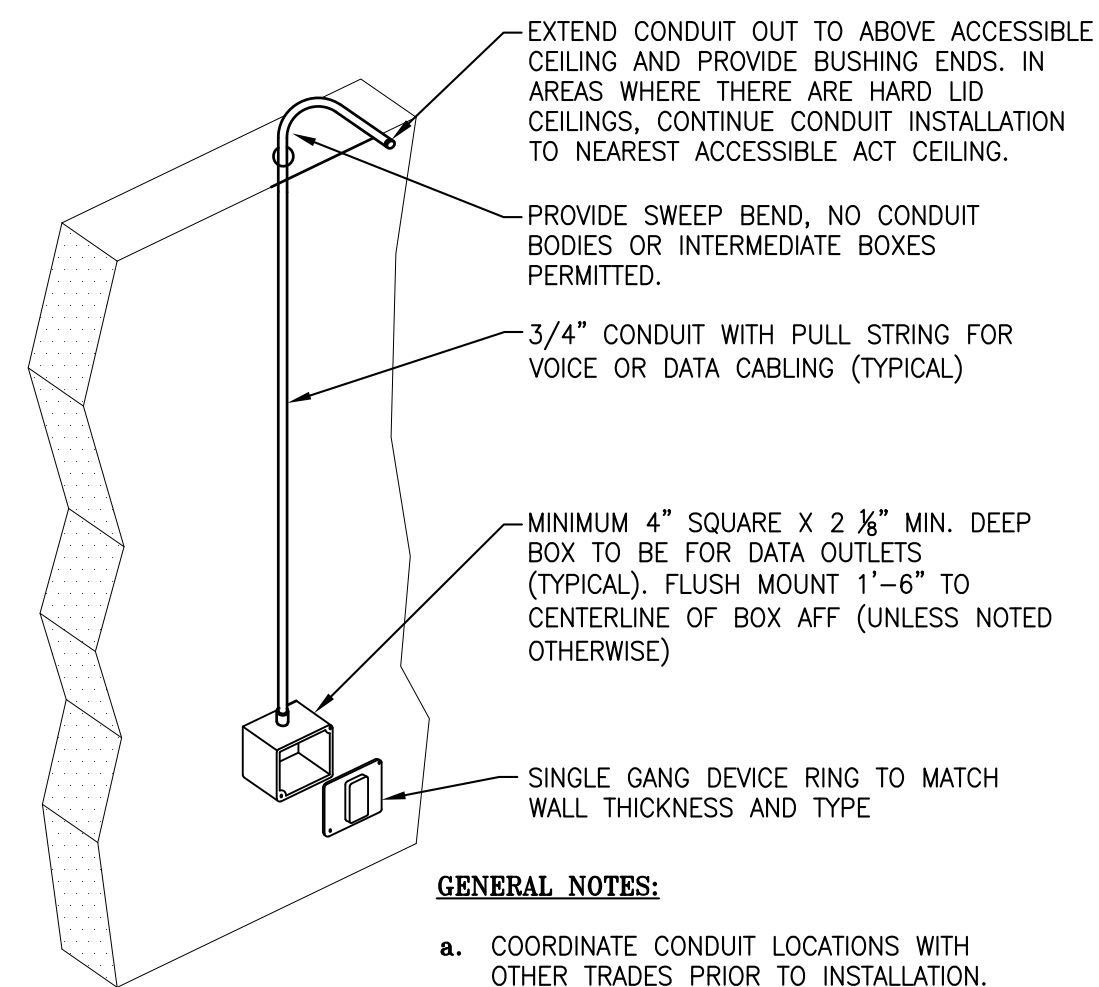


**GENERAL NOTES:**

- a. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY PENETRATIONS FOR CONDUIT SLEEVES AND FIRESTOP AS INDICATED ABOVE. THIS DETAIL IS TYPICAL TO ALL FLOOR TO FLOOR AND FIREWALL PENETRATIONS.

**1 RACEWAY PENETRATION THRU FIRE RATED WALL/CEILING**

**E-2** SCALE: N.T.S. Electrical Detail

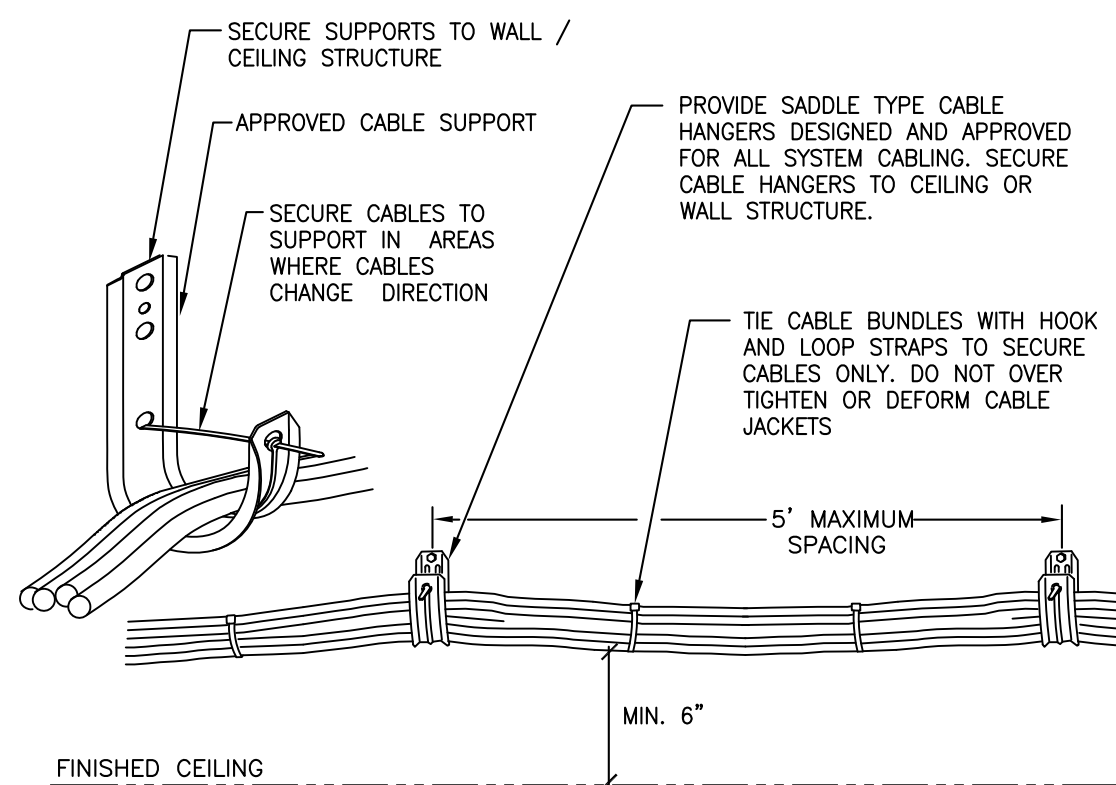


**GENERAL NOTES:**

- a. COORDINATE CONDUIT LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION.

**2 COMMUNICATIONS (DATA/TELEPHONE) BOX AND CONDUIT INSTALLATION DETAIL**

**E-2** SCALE: N.T.S. Electrical Detail

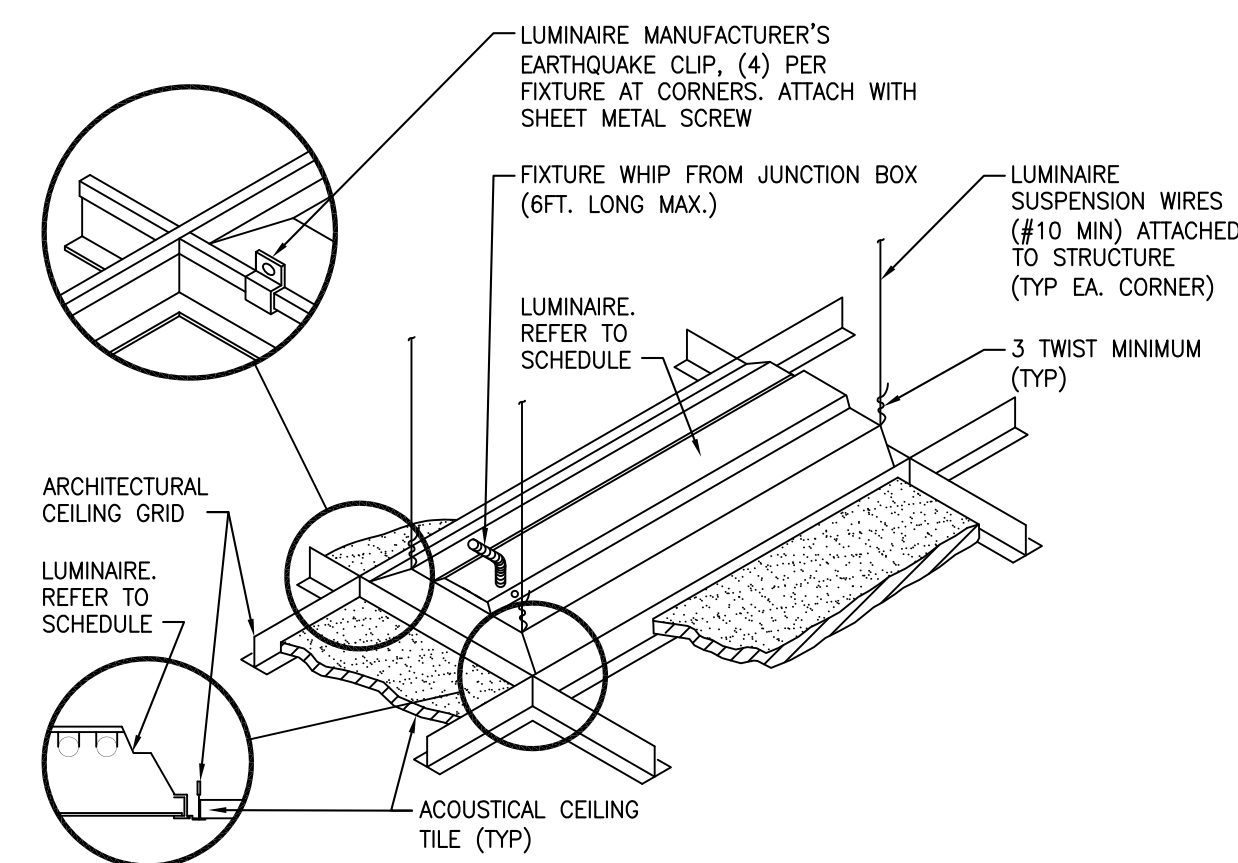


**GENERAL NOTES:**

- a. LOCATE CABLE BUNDLES A MINIMUM OF 6" ABOVE REMOVABLE CEILINGS TO MAINTAIN CLEARANCE ALONG WALLS WHERE POSSIBLE. LOCATE IN AREAS THAT ARE ACCESSIBLE.
- b. USE 2 OR MORE CABLE HANGERS AT ALL TURNS TO MAINTAIN MANUFACTURER'S BEND RADIUS REQUIREMENTS.

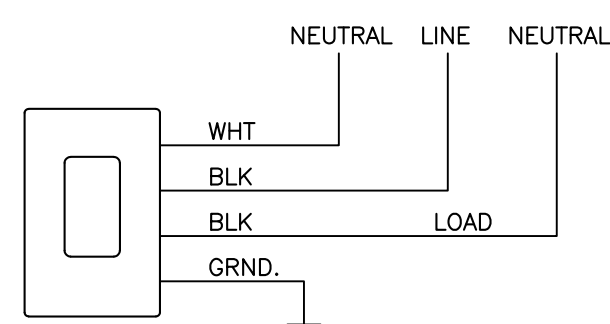
**3 TYPICAL J-HOOK INSTALLATION**

**E-2** SCALE: N.T.S. Electrical Detail



**4 LUMINAIRE MOUNTING - LAY-IN CEILING**

**E-2** SCALE: N.T.S. Electrical Detail

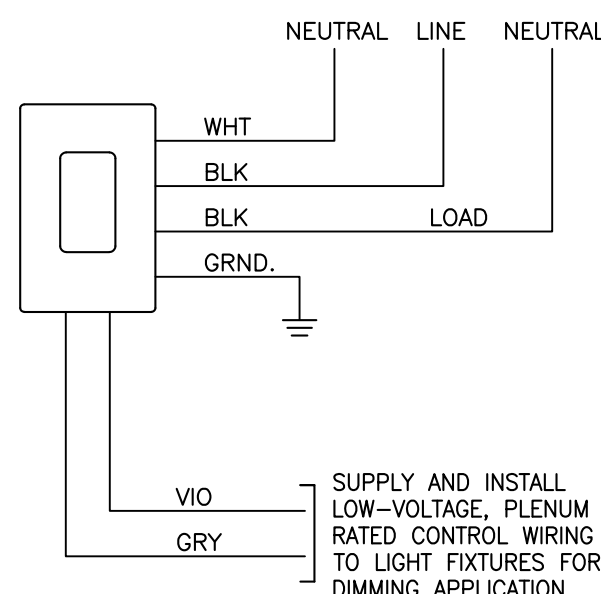


**GENERAL NOTES:**

- a. DETAIL SHOWN FOR REFERENCE ONLY. INSTALL AND WIRE PER MANUFACTURE INSTRUCTIONS.
- b. PROGRAMMING FUNCTIONS SHALL REMAIN AT DEFAULT SETTING EXCEPT FOR AS FOLLOWS:
  - OCCUPANCY TIME DELAY = 15 MINUTES
  - ON MODE = SET FOR MANUAL ON CONTROL (OFFICES, CONFERENCE RMS., JANITOR CLOSETS, STORAGE RMS, ETC. PER IECC)
  - ON MODE = SET FOR AUTO ON CONTROL (PUBLIC SPACES, I.E. RESTROOMS, PRIMARY ENTRANCE, LOBBY, CORRIDORS, STAIR CASES, ETC. PER IECC)

**5 TYPICAL 1-POLE WALL SWITCH / OCCUPANY SENSOR**

**E-2** SCALE: N.T.S. Electrical Detail

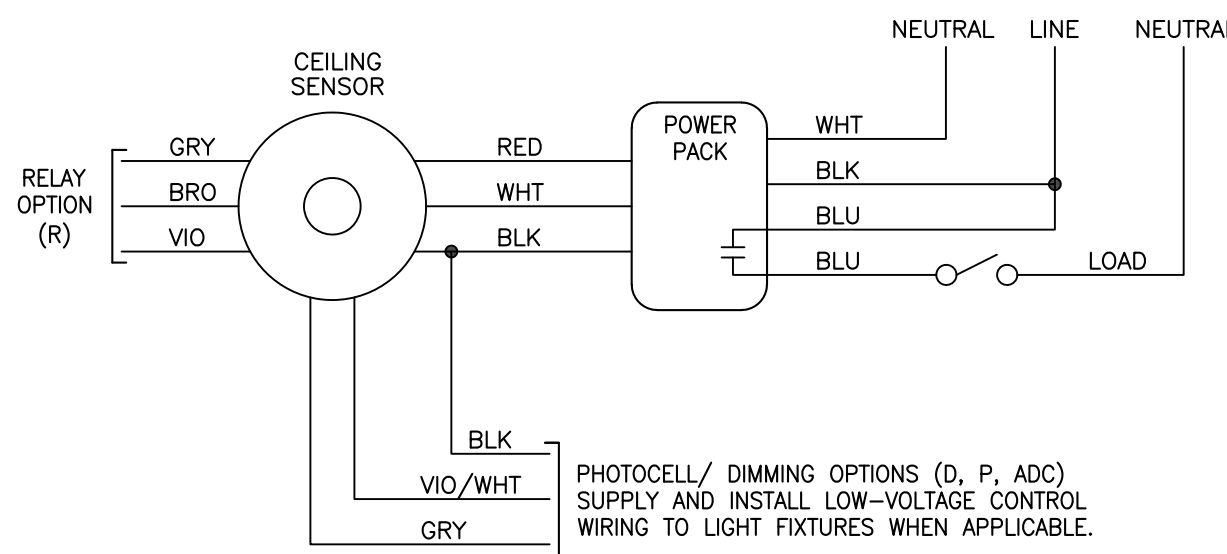


**GENERAL NOTES:**

- a. DETAIL SHOWN FOR REFERENCE ONLY. INSTALL AND WIRE PER MANUFACTURE INSTRUCTIONS.
- b. PROGRAMMING FUNCTIONS SHALL REMAIN AT DEFAULT SETTING EXCEPT FOR AS FOLLOWS:
  - OCCUPANCY TIME DELAY = 15 MINUTES
  - ON MODE = SET FOR MANUAL ON CONTROL
  - ACTIVATE DAYLIGHT HARVESTING CONTROLS FOR ROOMS / AREAS WITH EXTERIOR WINDOWS.

**6 TYPICAL 0-10V DIMMING SWITCH**

**E-2** SCALE: N.T.S. Electrical Detail

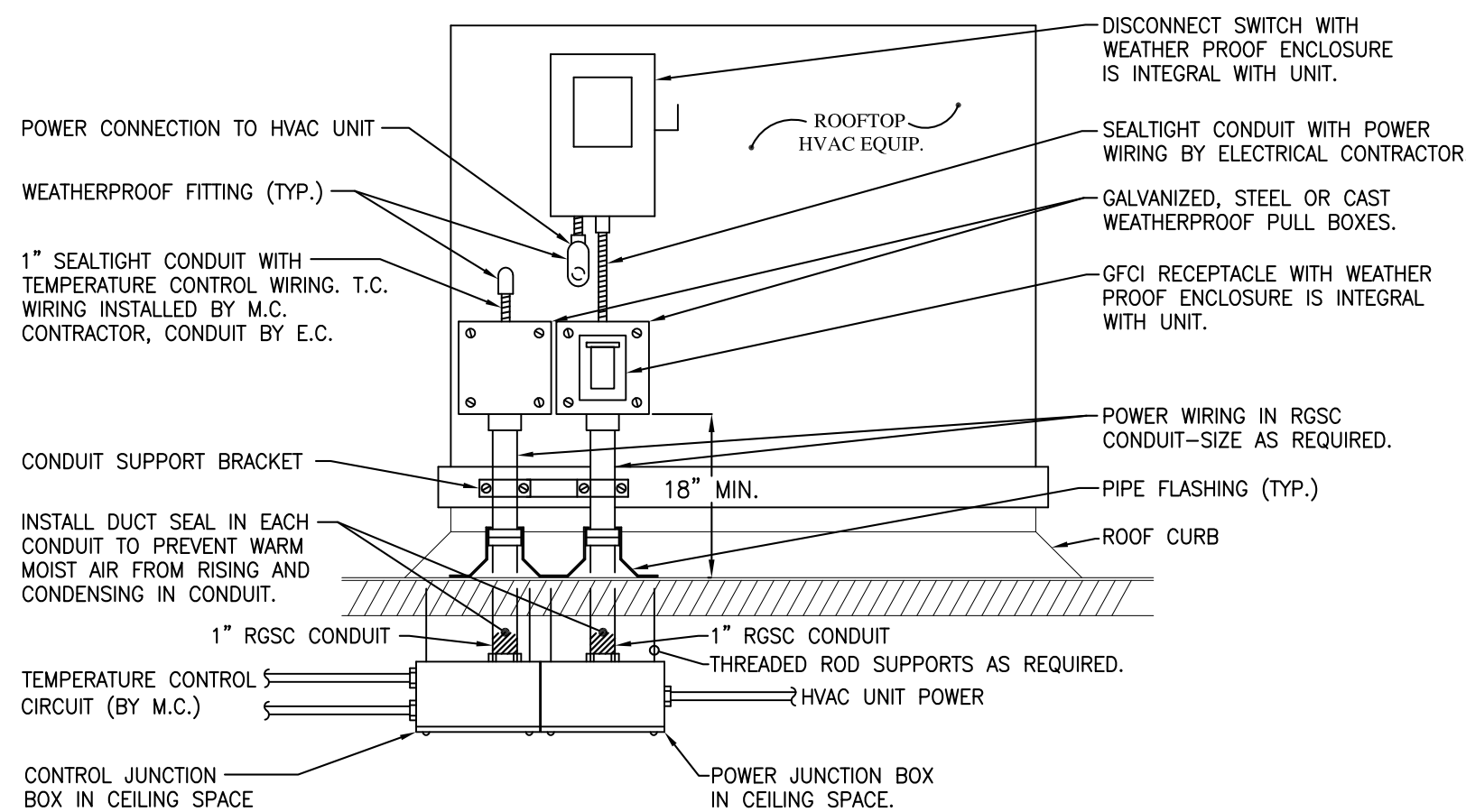


**GENERAL NOTES:**

- a. DETAIL SHOWN FOR REFERENCE ONLY. INSTALL AND WIRE PER MANUFACTURE INSTRUCTIONS.
- b. PROGRAMMING FUNCTIONS SHALL REMAIN AT DEFAULT SETTING EXCEPT FOR AS FOLLOWS:
  - OCCUPANCY TIME DELAY = 20 MINUTES
  - PHOTOCELL MODE = DIM ONLY, NO OFF
  - DIMMING RANGE = 10V HIGH, 3V LOW

**7 TYPICAL LOW-VOLTAGE CEILING MOUNT OCCUPANY SENSOR**

**E-2** SCALE: N.T.S. Electrical Detail

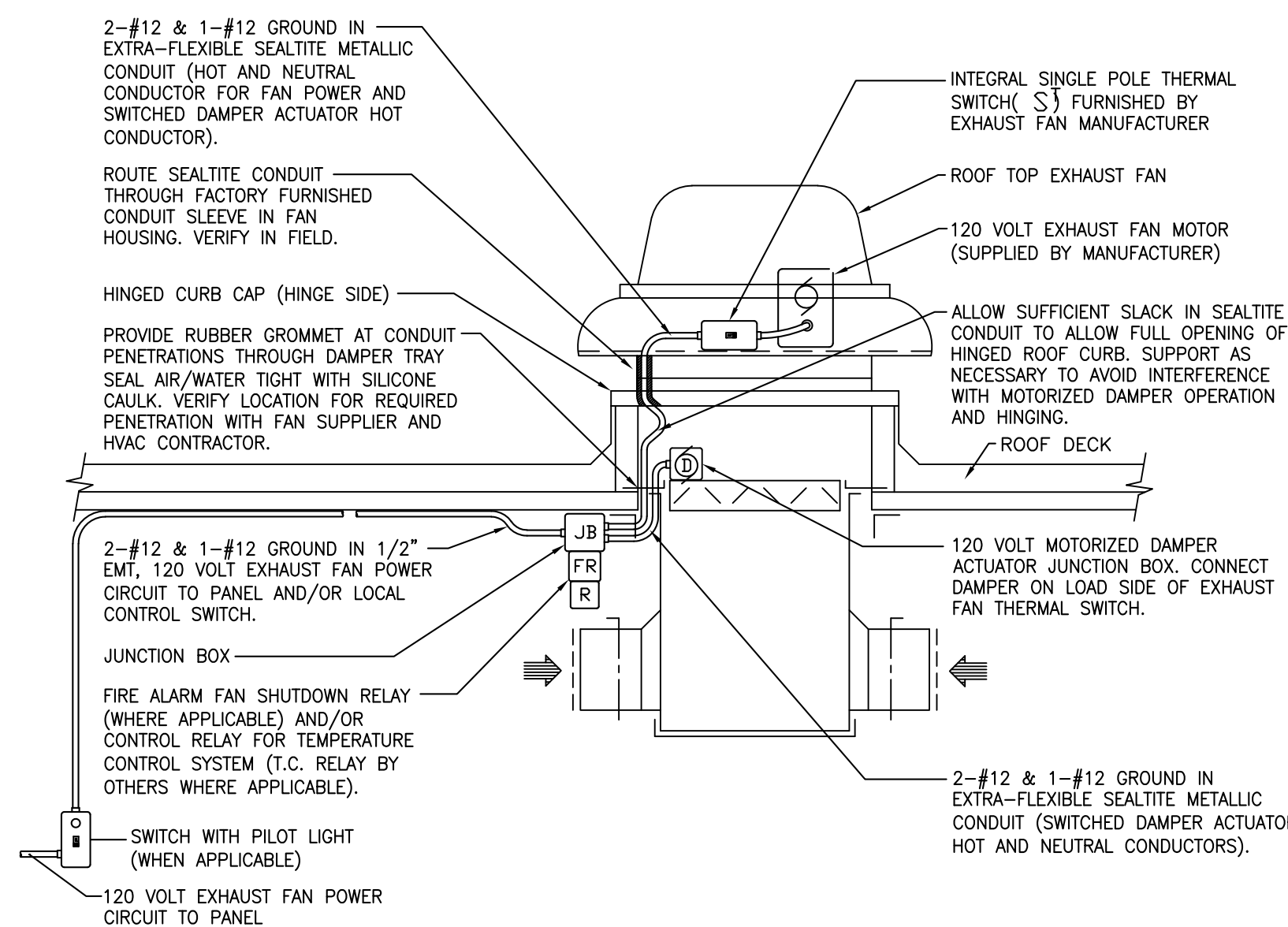


**GENERAL NOTES:**

- a. WIRING TO THE ROOFTOP HVAC EQUIPMENT SHALL EXTEND THROUGH THE ROOF IN CONDUITS LOCATED OUTSIDE OF THE EQUIPMENT ROOF CURB AS SHOWN, UNLESS OTHERWISE SPECIFICALLY ALLOWED BY THE UNIT MANUFACTURER.
- b. WIRE RUN INSIDE HVAC EQUIPMENT SHALL BE ACCOMPLISHED IN A MANNER ACCEPTABLE WITH THE UNIT MANUFACTURER AND SHALL MEET ALL REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.
- c. COORDINATE CONTROL WIRING RACEWAY INSTALLATION WITH THE MECHANICAL CONTRACTOR. TEMPERATURE CONTROL WIRING BY MECHANICAL CONTRACTOR.

**8 TYPICAL ROOFTOP HVAC UNIT**

**E-2** SCALE: N.T.S. Electrical Detail



**9 TYPICAL 120V ROOFTOP EXHAUST FAN**

**E-2** SCALE: N.T.S. Electrical Detail

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 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**ELECTRICAL  
 DETAILS**

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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **E-2**

**GENERAL DRAWING NOTES:**

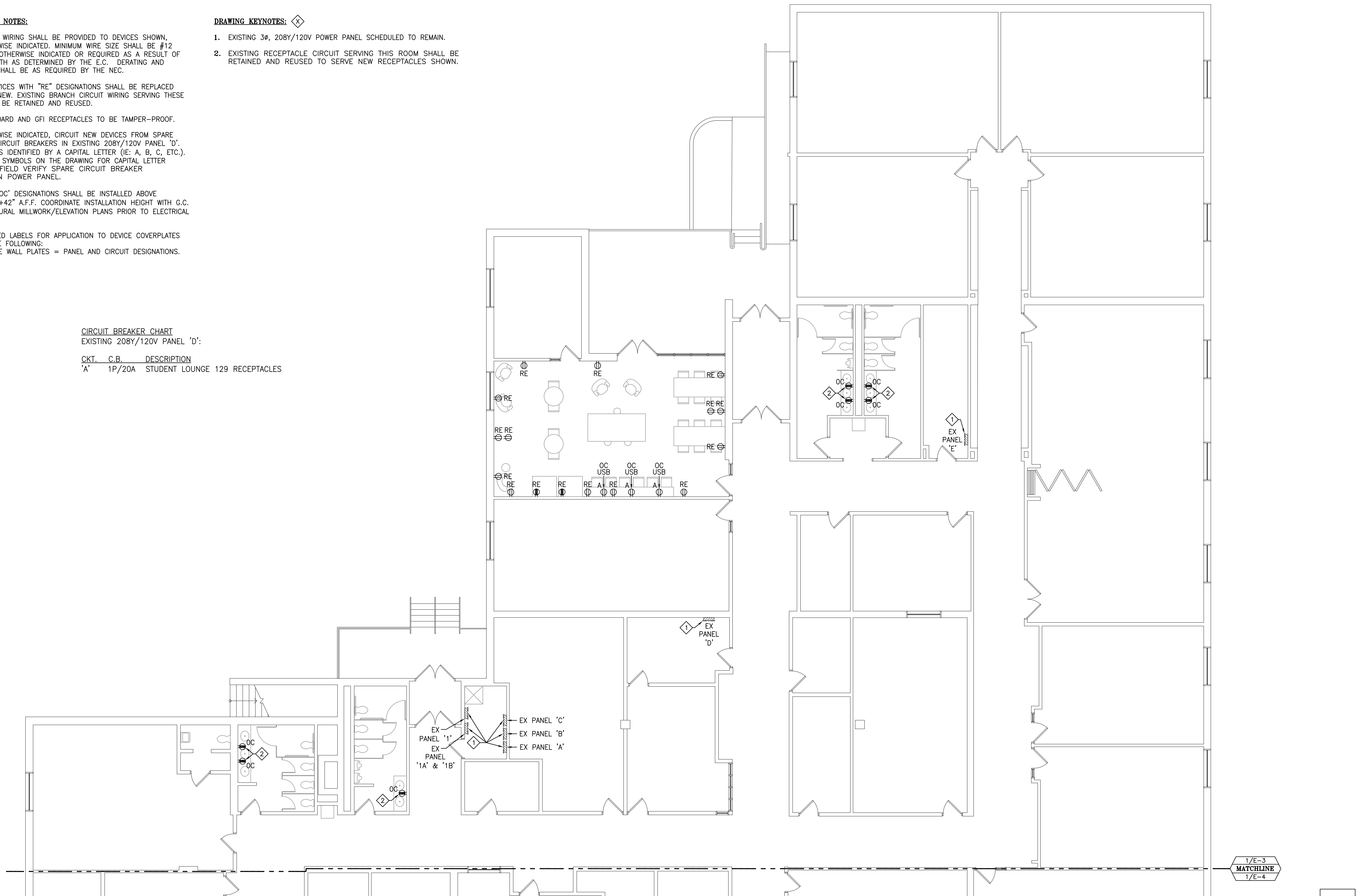
- POWER CIRCUIT WIRING SHALL BE PROVIDED TO DEVICES SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.
- ELECTRICAL DEVICES WITH "RE" DESIGNATIONS SHALL BE REPLACED IN-KIND WITH NEW. EXISTING BRANCH CIRCUIT WIRING SERVING THESE DEVICES SHALL BE RETAINED AND REUSED.
- ALL NEW STANDARD AND GFI RECEPTACLES TO BE TAMPER-PROOF.
- UNLESS OTHERWISE INDICATED, CIRCUIT NEW DEVICES FROM SPARE 1-POLE, 20A CIRCUIT BREAKERS IN EXISTING 208Y/120V PANEL 'D'. EACH CIRCUIT IS IDENTIFIED BY A CAPITAL LETTER (I.E: A, B, C, ETC.). SEE INDIVIDUAL SYMBOLS ON THE DRAWING FOR CAPITAL LETTER DESIGNATIONS. FIELD VERIFY SPARE CIRCUIT BREAKER AVAILABILITY IN POWER PANEL.
- DEVICES WITH 'OC' DESIGNATIONS SHALL BE INSTALLED ABOVE COUNTER TOP +42" A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL MILLWORK/ELEVATION PLANS PRIOR TO ELECTRICAL ROUGH-IN.
- PROVIDE PRINTED LABELS FOR APPLICATION TO DEVICE COVERPLATES IDENTIFYING THE FOLLOWING:
  - RECEPTACLE WALL PLATES = PANEL AND CIRCUIT DESIGNATIONS.

**DRAWING KEYNOTES:**

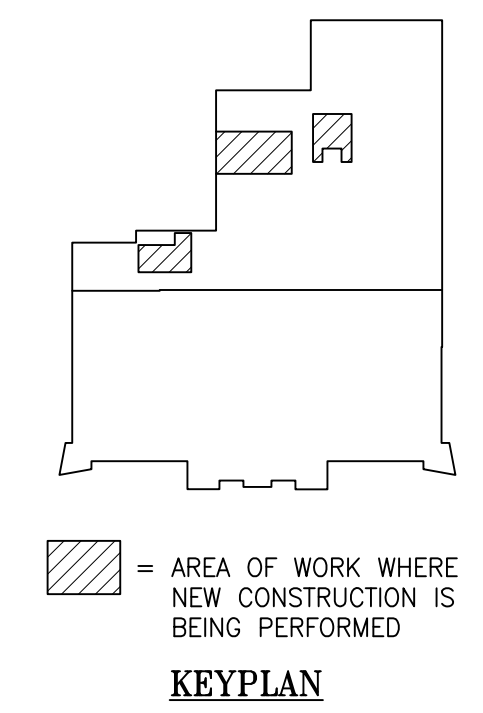
- EXISTING 3Ø, 208Y/120V POWER PANEL SCHEDULED TO REMAIN.
- EXISTING RECEPTACLE CIRCUIT SERVING THIS ROOM SHALL BE RETAINED AND REUSED TO SERVE NEW RECEPTACLES SHOWN.

**CIRCUIT BREAKER CHART**  
EXISTING 208Y/120V PANEL 'D':

CKT.	C.B.	DESCRIPTION
'A'	1P/20A	STUDENT LOUNGE 129 RECEPTACLES



**1 E-3** ELECTRICAL POWER - PARTIAL FLOOR PLAN  
SCALE: 1/8" = 1'-0"



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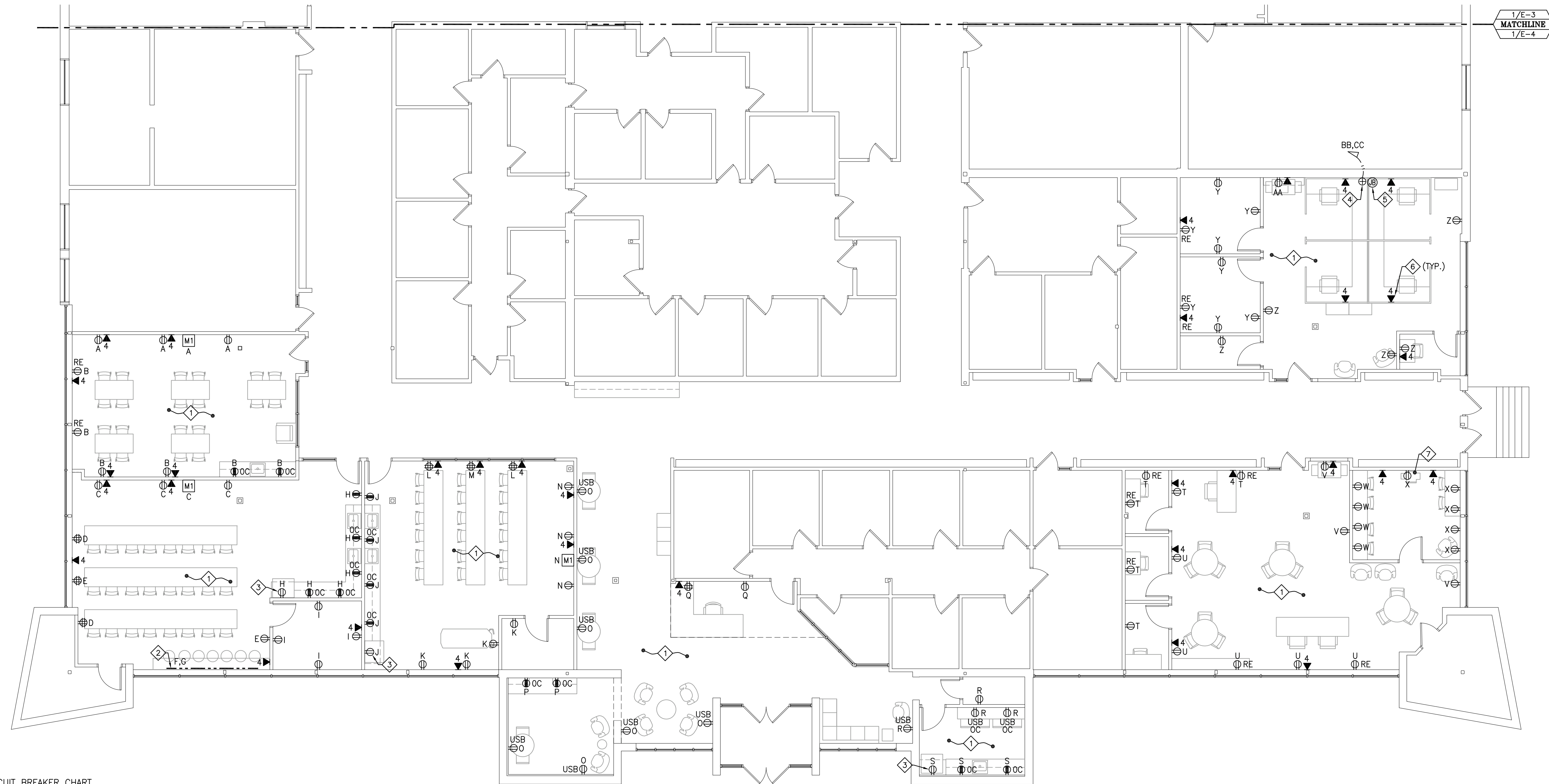
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TITLE:  
**ELECTRICAL  
POWER  
PARTIAL  
FLOOR PLAN**

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DRAWING #: **E-3**



CIRCUIT BREAKER CHART  
EXISTING 208Y/120V PANEL 'A', 'B' OR 'C':

CKT.	C.B.	DESCRIPTION
'A'	1P/20A	CLASSROOM 130 RECEPTACLES
'B'	1P/20A	CLASSROOM 130 RECEPTACLES
'C'	1P/20A	LAB 117 RECEPTACLES
'D'	1P/20A	LAB 117 RECEPTACLES
'E'	1P/20A	LAB 117 RECEPTACLES
'F'	1P/20A	LAB 117 PLUGMOLD RECEPTACLES
'G'	1P/20A	LAB 117 PLUGMOLD RECEPTACLES
'H'	1P/20A	LAB 117 COUNTER RECEPTACLES
'I'	1P/20A	MA PD 118 RECEPTACLES
'J'	1P/20A	LAB 115 COUNTER RECEPTACLES
'K'	1P/20A	LAB 115, STOR. 116 RECEPTACLES
'L'	1P/20A	LAB 115 RECEPTACLES
'M'	1P/20A	LAB 115 RECEPTACLES
'N'	1P/20A	LAB 115 RECEPTACLES
'O'	1P/20A	RECEPTION 102, WAITING 103 RECEPTACLES
'P'	1P/20A	WAITING 103 COUNTER RECEPTACLES
'Q'	1P/20A	RECEPTION 102 RECEPTACLES
'Q'	1P/20A	WAITING 104, STOR. 106, EMPLOYEE COFFEE AREA 105 RECEPTACLES
'S'	1P/20A	EMPLOYEE COFFEE AREA 105 RECEPTACLES
'T'	1P/20A	LEARNING CENTER 166, TESTING 167, 168, 169 RECEPTACLES
'U'	1P/20A	LEARNING CENTER 166 RECEPTACLES
'V'	1P/20A	LEARNING CENTER 166 RECEPTACLES
'W'	1P/20A	LEARNING CENTER 170 RECEPTACLES
'X'	1P/20A	LEARNING CENTER 170 RECEPTACLES
'Y'	1P/20A	OFFICE 160, 161 RECEPTACLES
'Z'	1P/20A	PFC LOBBY 156, STOR. 164, TESTING 165 RECEPTACLES
'AA'	1P/20A	PFC LOBBY 156 RECEPTACLE
'BB'	1P/20A	PFC LOBBY 156 CUBICLE RECEPTACLES
'CC'	1P/20A	PFC LOBBY 156 CUBICLE RECEPTACLES

**1 E-4 ELECTRICAL POWER - PARTIAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

**GENERAL DRAWING NOTES:**

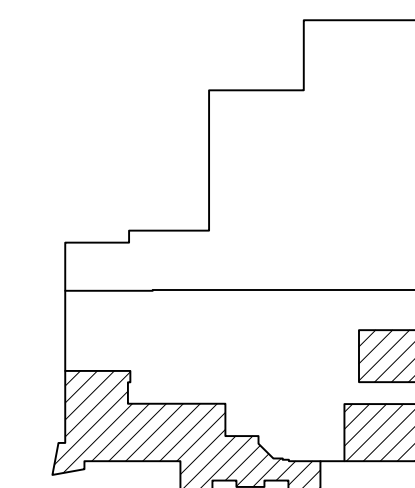
- POWER CIRCUIT WIRING SHALL BE PROVIDED TO DEVICES SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.
- EXISTING RECEPTACLES & PLUG MOLD STRIPS NOT REPRESENTED ON DRAWINGS THAT ARE FOUND IN AREAS OF WORK SHALL BE DISCONNECTED AND REMOVED UNLESS OTHERWISE DIRECTED BY G.C. ASSOCIATED WIRING SHALL BE RETAINED FOR REUSE TO SERVE NEW DEVICES SHOWN AS DETERMINED BY E.C.
- ELECTRICAL DEVICES WITH "RE" DESIGNATIONS SHALL BE REPLACED IN-KIND WITH NEW. EXISTING BRANCH CIRCUIT WIRING SERVING THESE DEVICES SHALL BE RETAINED AND REUSED UNLESS OTHERWISE INDICATED.
- ALL NEW STANDARD AND GFI RECEPTACLES TO BE TAMPER-PROOF. UNLESS OTHERWISE INDICATED, CIRCUIT NEW DEVICES FROM SPARE 1-POLE, 20A CIRCUIT BREAKERS IN EXISTING 208Y/120V PANEL 'A', 'B' OR 'C'. EACH CIRCUIT IS IDENTIFIED BY A CAPITAL LETTER (IE: A, B, C, ETC.). SEE INDIVIDUAL SYMBOLS ON THE DRAWING FOR CAPITAL LETTER DESIGNATIONS. FIELD VERIFY SPARE CIRCUIT BREAKER AVAILABILITY IN POWER PANELS.

- DEVICES WITH "OC" DESIGNATIONS SHALL BE INSTALLED ABOVE COUNTER TOP +42" A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL MILLWORK/ELEVATION PLANS PRIOR TO ELECTRICAL ROUGH-IN.
- NETWORK CABLING SERVING NEW COMMUNICATION WALLPLATES SHALL EMANATE FROM EXISTING PATCH PANEL(S) LOCATED IN EXISTING I.T. CLOSET (IDF). E.C. MUST FIELD VERIFY EXISTING EQUIPMENT IN I.T. CLOSET (IDF) WITH OWNER I.T. PERSONAL, PRIOR TO ANY WORK, TO GAIN A FULL UNDERSTANDING OF EXISTING SYSTEMS AND OVERALL INSTALLATION REQUIREMENTS NECESSARY TO COMPLETE NEW WORK.
- PROVIDE PRINTED LABELS FOR APPLICATION TO DEVICE COVERPLATES IDENTIFYING THE FOLLOWING:
  - RECEPTACLE WALL PLATES = PANEL AND CIRCUIT DESIGNATIONS.
  - COMMUNICATIONS WALL PLATES = CORRESPONDING PATCH PANEL PORT FOR EACH CAT. 6 CABLE DROP.

**DRAWING KEYNOTES:**

- EXISTING 120V RECEPTACLE CIRCUITS EMANATING FROM PANEL 'A', 'B', OR 'C' SERVING AREAS WHERE THIS KEYNOTE IS SHOWN MAY BE REUSED TO FEED NEW DEVICES SHOWN AS DETERMINED BY E.C. IN THE FIELD.
- PROVIDE 12" LENGTH OF PLUGMOLD FOR INSTALLATION TO UNDERSIDE OF COUNTERTOP. REFERENCE ARCHITECTURAL DETAILS FOR FURTHER INFORMATION. PLUGMOLD SHALL HAVE SINGLE TAMPER-RESISTANT RECEPTACLES INSTALLED ON 12" CENTERS CAPABLE OF BEING WIRED WITH TWO(2) 120V CIRCUITS. UTILIZE WIREMOLD; PLUGMOLD 2000 SERIES OR EQUAL.
- WIRE FROM GFCI PROTECTED SIDE OF COUNTER RECEPTACLE FED BY SAME CIRCUIT DESIGNATION.
- FEED PRE-WIRED CUBICLE GROUP WITH DESIGNATED 120V POWER CIRCUITS. UP TO EIGHT(8) RECEPTACLES MAY BE FED BY A SINGLE 20A C.B. INSTALL 2-GANG ELECTRICAL BOX FLUSH TO FINISHED WALL 12" A.F.F. WITH NECESSARY FURNITURE FEED COVERPLATE TO ALLOW FOR POWER TERMINATIONS TO PRE-WIRED CUBICLE GROUP POWER WHIP. CONFIRM POWER TERMINATION REQUIREMENTS WITH G.C. AND FURNITURE SYSTEM PROVIDER PRIOR TO ANY WORK.

- INSTALL 2-GANG ELECTRICAL BOX, WITH PASS-THRU COVERPLATE, FLUSH TO FINISHED WALL 12" A.F.F. SUPPLY 1/2" EMT CONDUIT AND INSTALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE WITH PLASTIC END-BUSHING AND A PULLSTRING. ELECTRIC BOX AND CONDUIT SHALL BE UTILIZED TO SERVE CUBICLE GROUP WITH NECESSARY TELEPHONE/DATA CABLES.
- INSTALL NETWORK DATA JACK IN BASE OF FURNITURE PARTITION WITH APPROPRIATE COVERPLATE.
- EXISTING TELEVISION OUTLET AND ASSOCIATED RECEPTACLE ARE SCHEDULED TO REMAIN.



KEYPLAN  
= AREA OF WORK WHERE NEW CONSTRUCTION IS BEING PERFORMED

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TITLE:  
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POWER  
PARTIAL  
FLOOR PLAN**



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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **E-4**

HVAC EQUIPMENT SCHEDULE									
UNIT #	DESCRIPTION	PHASE	VOLTAGE	MCA	EXISTING PANEL/CKT	CIRCUIT BREAKER	POWER WIRING & CONDUIT	DISCONNECT SWITCH	NOTES
RTU-1	HVAC ROOF TOP UNIT	3	208	41	FIELD VERIFY	50A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2
RTU-2	HVAC ROOF TOP UNIT	3	208	41	FIELD VERIFY	50A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2
RTU-3	HVAC ROOF TOP UNIT	3	208	53	FIELD VERIFY	60A-3P	3#6, 1#8G IN 1" C	IDS	1,2
RTU-4	HVAC ROOF TOP UNIT	3	208	31	FIELD VERIFY	45A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2
RTU-5	HVAC ROOF TOP UNIT	3	208	41	FIELD VERIFY	50A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2
RTU-6	HVAC ROOF TOP UNIT	3	208	21	FIELD VERIFY	30A-3P	3#10, 1#10G IN 3/4" C	IDS	1,2
RTU-7	HVAC ROOF TOP UNIT	3	208	26	FIELD VERIFY	30A-3P	3#10, 1#10G IN 3/4" C	IDS	1,2
RTU-8	HVAC ROOF TOP UNIT	3	208	60	FIELD VERIFY	70A-3P	3#4, 1#8G IN 1 1/4" C	IDS	1,2
RTU-9	HVAC ROOF TOP UNIT	3	208	31	FIELD VERIFY	45A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2
RTU-10	HVAC ROOF TOP UNIT	3	208	31	FIELD VERIFY	45A-3P	3#8, 1#10G IN 3/4" C	IDS	1,2

**EQUIPMENT SCHEDULE LEGEND**

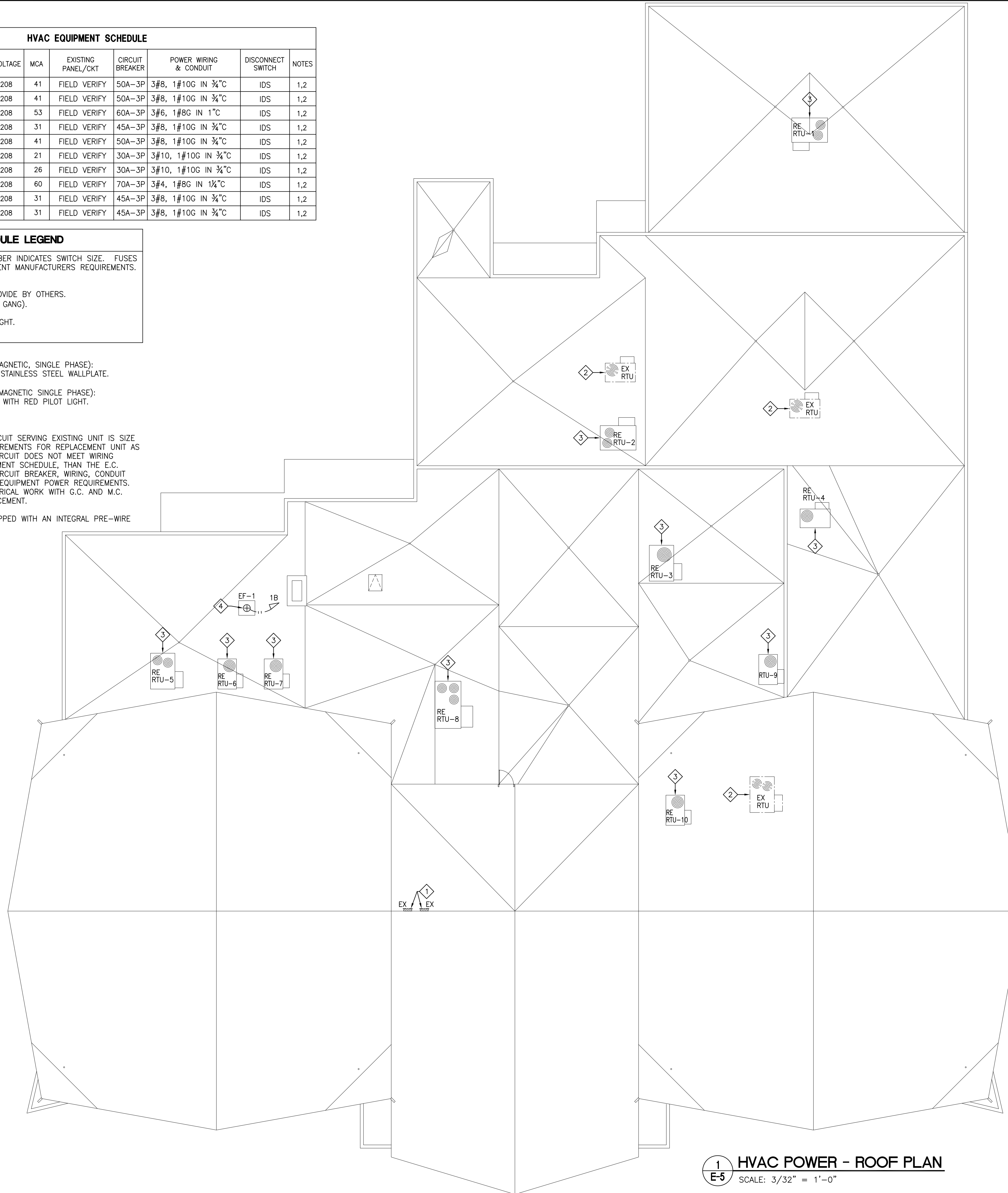
FSS = FUSIBLE SAFETY SWITCH, NUMBER INDICATES SWITCH SIZE. FUSES SHALL BE SIZED FOR EQUIPMENT MANUFACTURERS REQUIREMENTS, LOCATED AT UNIT.  
 SS = SAFETY SWITCH, NON-FUSED.  
 PCU = PACKAGED CONTROL UNIT, PROVIDE BY OTHERS.  
 TS = TOGGLE TYPE SWITCH (SINGLE GANG).  
 IDS = INTEGRAL DISCONNECT SWITCH.  
 TSP = TOGGLE SWITCH WITH PILOT LIGHT.  
 ST = TIMER SWITCH.

**MOTOR CONTROLLER TYPES:**

- TYPE A - (FULL VOLTAGE, NON-MAGNETIC, SINGLE PHASE): SURFACE MOUNT, TOGGLE SWITCH, STAINLESS STEEL WALLPLATE.
- TYPE A1 - (FULL VOLTAGE, NON-MAGNETIC SINGLE PHASE): SIMILAR TO TYPE A ABOVE EXCEPT WITH RED PILOT LIGHT.

**EQUIPMENT SCHEDULED NOTES:**

- FIELD VERIFY EXISTING BRANCH CIRCUIT SERVING EXISTING UNIT IS SIZE ADEQUATELY TO MEET POWER REQUIREMENTS FOR REPLACEMENT UNIT AS SCHEDULED. IF EXISTING BRANCH CIRCUIT DOES NOT MEET WIRING REQUIREMENTS IDENTIFIED IN EQUIPMENT SCHEDULE, THAN THE E.C. SHALL SUPPLY AND INSTALL NEW CIRCUIT BREAKER, WIRING, CONDUIT ETC. AS SCHEDULED TO MEET NEW EQUIPMENT POWER REQUIREMENTS. FIELD VERIFY ALL NECESSARY ELECTRICAL WORK WITH G.C. AND M.C. REQUIRED TO SUPPORT UNIT REPLACEMENT.
- NEW ROOF TOP UNIT WILL BE EQUIPPED WITH AN INTEGRAL PRE-WIRE GFCI RECEPTACLE.



**GENERAL NOTES:**

- POWER CIRCUIT WIRING SHALL BE PROVIDED TO DEVICES SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

**DRAWING KEYNOTES:**

- EXISTING 3Ø, 208Y/120V POWER PANEL LOCATED IN ROOF MECHANICAL ROOM SCHEDULED TO REMAIN.
- EXISTING ROOF TOP UNIT SCHEDULED TO REMAIN.
- EXISTING ROOF TOP UNIT SCHEDULED TO BE REPLACED WITH NEW. SEE 'HVAC EQUIPMENT SCHEDULE' FOR FURTHER INFORMATION.
- FEED ROOF EXHAUST FAN WITH A 1Ø, 120V POWER CONNECTION EMANATING FROM A SPARE 1-POLE, 20A C.B. IN EXISTING PANEL '1B'. EXHAUST FAN SHALL BE EQUIPPED WITH AN INTEGRAL PLUG TYPE DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

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SEAL:

TITLE:  
**HVAC  
 POWER  
 ROOF PLAN**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: E-5

1 HVAC POWER - ROOF PLAN  
 E-5 SCALE: 3/32" = 1'-0"

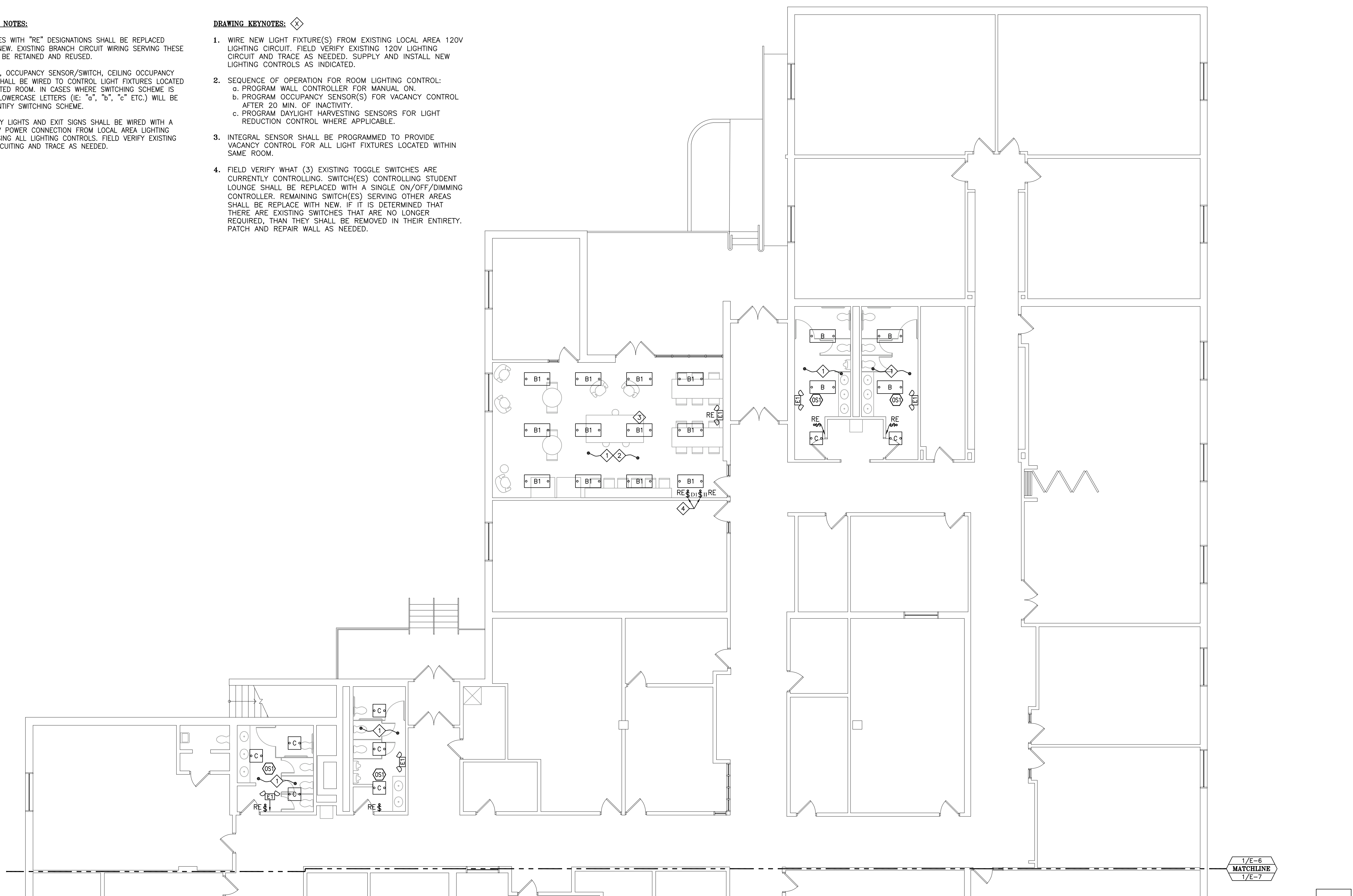


**GENERAL DRAWING NOTES:**

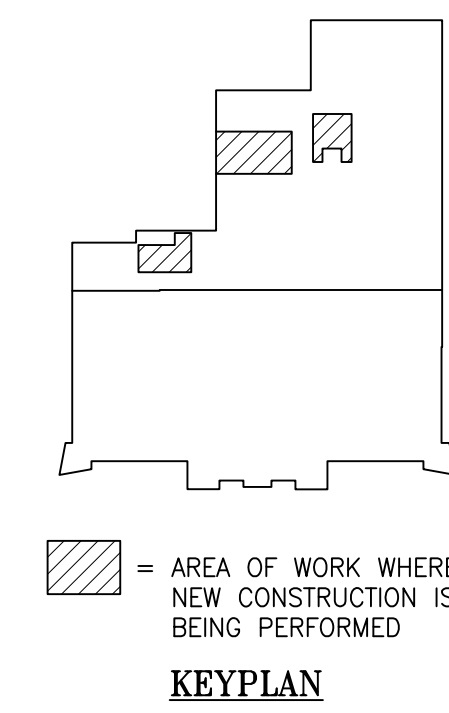
- a. LIGHTING DEVICES WITH "RE" DESIGNATIONS SHALL BE REPLACED IN-KIND WITH NEW. EXISTING BRANCH CIRCUIT WIRING SERVING THESE DEVICES SHALL BE RETAINED AND REUSED.
- b. TOGGLE SWITCH, OCCUPANCY SENSOR/SWITCH, CEILING OCCUPANCY SENSOR ETC. SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN CASES WHERE SWITCHING SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (E. "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY SWITCHING SCHEME.
- c. NEW EMERGENCY LIGHTS AND EXIT SIGNS SHALL BE WIRED WITH A CONSTANT 120V POWER CONNECTION FROM LOCAL AREA LIGHTING CIRCUIT BYPASSING ALL LIGHTING CONTROLS. FIELD VERIFY EXISTING 120V LIGHT CIRCUITING AND TRACE AS NEEDED.

**DRAWING KEYNOTES:**

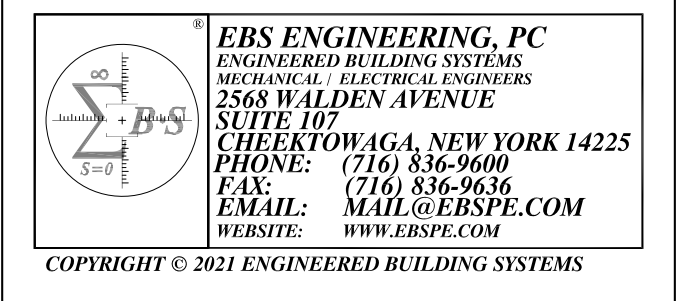
- 1. WIRE NEW LIGHT FIXTURE(S) FROM EXISTING LOCAL AREA 120V LIGHTING CIRCUIT. FIELD VERIFY EXISTING 120V LIGHTING CIRCUIT AND TRACE AS NEEDED. SUPPLY AND INSTALL NEW LIGHTING CONTROLS AS INDICATED.
- 2. SEQUENCE OF OPERATION FOR ROOM LIGHTING CONTROL:
  - a. PROGRAM WALL CONTROLLER FOR MANUAL ON.
  - b. PROGRAM OCCUPANCY SENSOR(S) FOR VACANCY CONTROL AFTER 20 MIN. OF INACTIVITY.
  - c. PROGRAM DAYLIGHT HARVESTING SENSORS FOR LIGHT REDUCTION CONTROL WHERE APPLICABLE.
- 3. INTEGRAL SENSOR SHALL BE PROGRAMMED TO PROVIDE VACANCY CONTROL FOR ALL LIGHT FIXTURES LOCATED WITHIN SAME ROOM.
- 4. FIELD VERIFY WHAT (3) EXISTING TOGGLE SWITCHES ARE CURRENTLY CONTROLLING. SWITCH(ES) CONTROLLING STUDENT LOUNGE SHALL BE REPLACED WITH A SINGLE ON/OFF/DIMMING CONTROLLER. REMAINING SWITCH(ES) SERVING OTHER AREAS SHALL BE REPLACE WITH NEW. IF IT IS DETERMINED THAT THERE ARE EXISTING SWITCHES THAT ARE NO LONGER REQUIRED, THAN THEY SHALL BE REMOVED IN THEIR ENTIRETY. PATCH AND REPAIR WALL AS NEEDED.



**1**  
**E-6** **ELECTRICAL LIGHTING - PARTIAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**ELECTRICAL  
LIGHTING  
PARTIAL  
FLOOR PLAN**

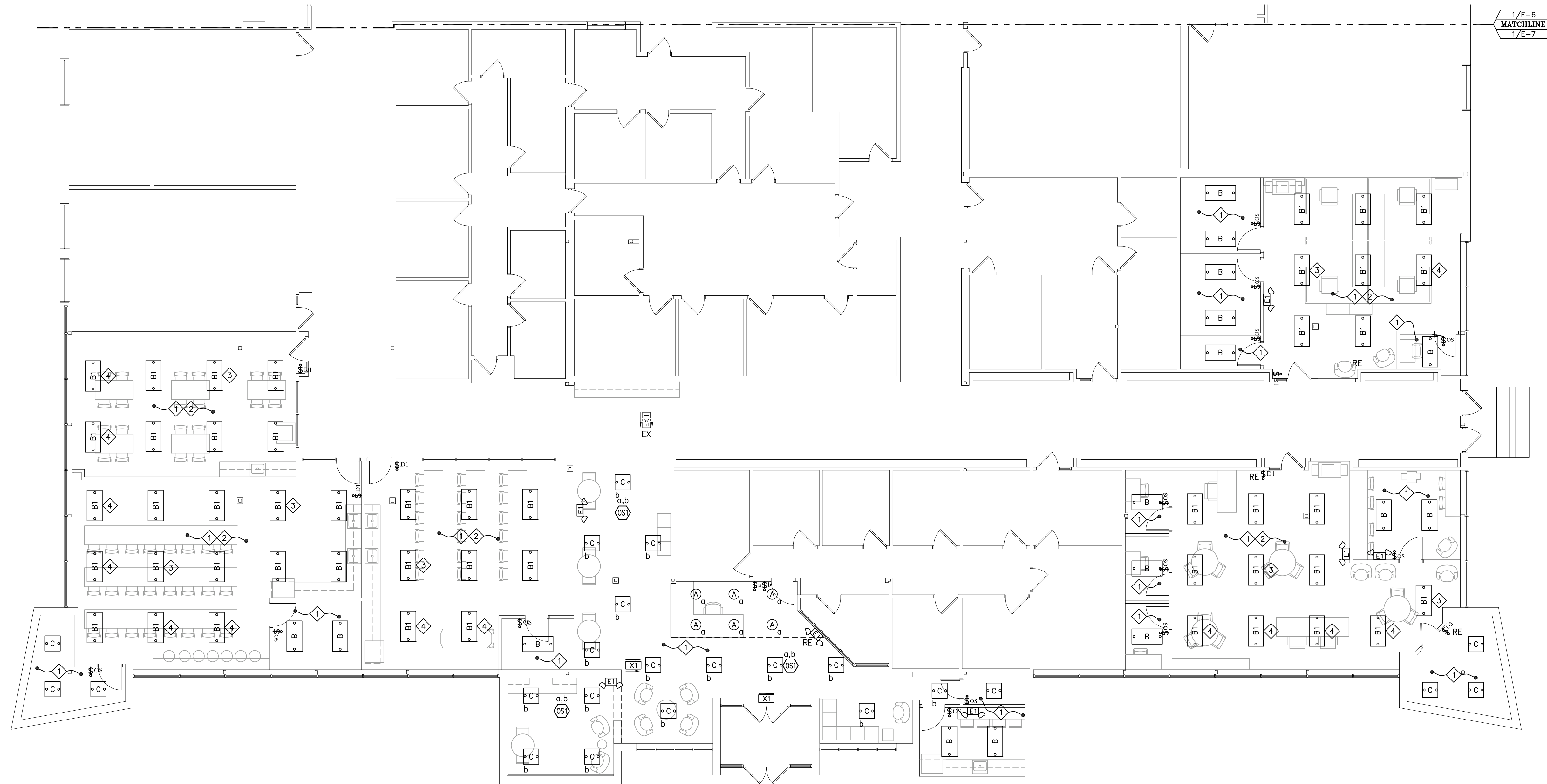


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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **E-6**



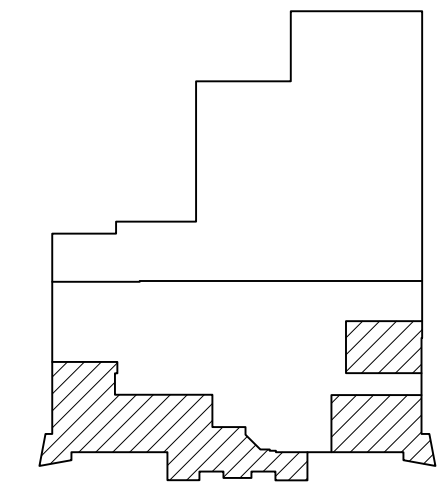
**1**  
**E-7** **ELECTRICAL LIGHTING - PARTIAL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

**GENERAL DRAWING NOTES:**

- a. LIGHTING DEVICES WITH "RE" DESIGNATIONS SHALL BE REPLACED IN-KIND WITH NEW. EXISTING BRANCH CIRCUIT WIRING SERVING THESE DEVICES SHALL BE RETAINED AND REUSED.
- b. TOGGLE SWITCH, OCCUPANCY SENSOR/SWITCH, CEILING OCCUPANCY SENSOR ETC. SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN CASES WHERE SWITCHING SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (I.E. "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY SWITCHING SCHEME.
- c. NEW EMERGENCY LIGHTS AND EXIT SIGNS SHALL BE WIRED WITH A CONSTANT 120V POWER CONNECTION FROM LOCAL AREA LIGHTING CIRCUIT BYPASSING ALL LIGHTING CONTROLS. FIELD VERIFY EXISTING 120V LIGHT CIRCUITING AND TRACE AS NEEDED.

**DRAWING KEYNOTES:**

1. WIRE NEW LIGHT FIXTURE(S) FROM EXISTING LOCAL AREA 120V LIGHTING CIRCUIT. FIELD VERIFY EXISTING 120V LIGHTING CIRCUIT AND TRACE AS NEEDED. SUPPLY AND INSTALL NEW LIGHTING CONTROLS AS INDICATED.
2. SEQUENCE OF OPERATION FOR ROOM LIGHTING CONTROL:
  - a. PROGRAM WALL CONTROLLER FOR MANUAL ON.
  - b. PROGRAM OCCUPANCY SENSOR(S) FOR VACANCY CONTROL AFTER 20 MIN. OF INACTIVITY.
  - c. PROGRAM DAYLIGHT HARVESTING SENSORS FOR LIGHT REDUCTION CONTROL WHERE APPLICABLE.
3. INTEGRAL SENSOR SHALL BE PROGRAMMED TO PROVIDE VACANCY CONTROL FOR ALL LIGHT FIXTURES LOCATED WITHIN SAME ROOM.
4. INTEGRAL SENSOR SHALL BE PROGRAMMED TO PROVIDE DAYLIGHT HARVESTING CONTROL FOR DESIGNATED FIXTURE IDENTIFIED BY THIS KEYNOTE.



**KEYPLAN**

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2021-06-29: BID/PERMIT SET

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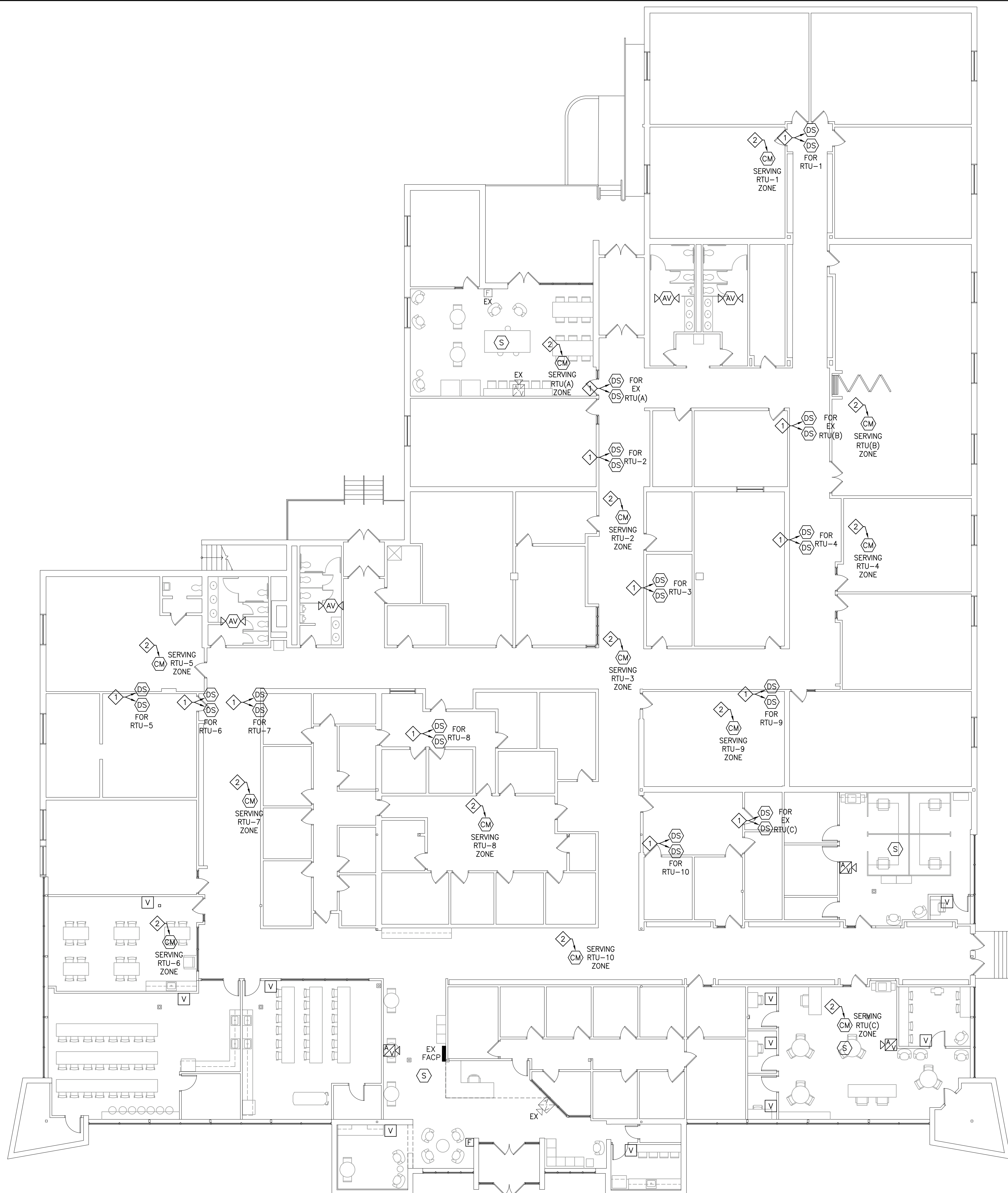
SEAL:

TITLE:  
**ELECTRICAL  
LIGHTING  
PARTIAL  
FLOOR PLAN**

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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **E-7**



**1**  
**E-8** FIRE ALARM - FLOOR PLAN  
SCALE: 3/32" = 1'-0"

**GENERAL NOTES:**

- a. ENSURE ALL SMOKE DETECTORS ARE PLACED A MINIMAL DISTANCE OF 3'-0" FROM HVAC SUPPLY / RETURN AIR GRILLS. LOCATIONS SHOWN ON PLANS ARE SUGGESTED.
- b. ENSURE CARBON MONOXIDE DETECTORS ARE INSTALLED AT LOCATIONS MEETING CURRENT NYS AND LOCAL CODES.
- c. FIRE ALARM VISUAL (STROBE) DEVICE CANDELA RATINGS SHALL BE SET AT 15cd UNLESS OTHERWISE NOTED.

**LIGHTING KEYNOTES:**

- 1. SUPPLY DUCT SMOKE DETECTOR, WITH SAMPLING TUBE, AND INSTALL IN SUPPLY AND RETURN AIR DUCT OF ROOF TOP UNIT (RTU). FIELD VERIFY EXACT LOCATION WITH M.C. SUPPLY EACH WITH A REMOTE TEST STATION AND INSTALL IN NEAREST STORAGE OR MECHANICAL RM., TO BE FIELD VERIFIED BY E.C., AND LABEL ACCORDINGLY. ROOF TOP UNIT SHALL BE PROGRAMMED TO SHUTDOWN UPON ACTIVATION OF FIRE ALARM SYSTEM. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.
- 2. LOCATE CARBON MONOXIDE DETECTOR IN HVAC ZONE AS CLOSE TO FIRST SUPPLY AIR DIFFUSER AS POSSIBLE. LOCATION SHOWN IS FOR REFERENCE ONLY. FIELD VERIFY EACH HVAC ZONE IN COORDINATION WITH G.C. AND M.C. IN ORDER TO DETERMINE FINAL DEVICE PLACEMENT THAT BEST SERVES THAT ZONE.

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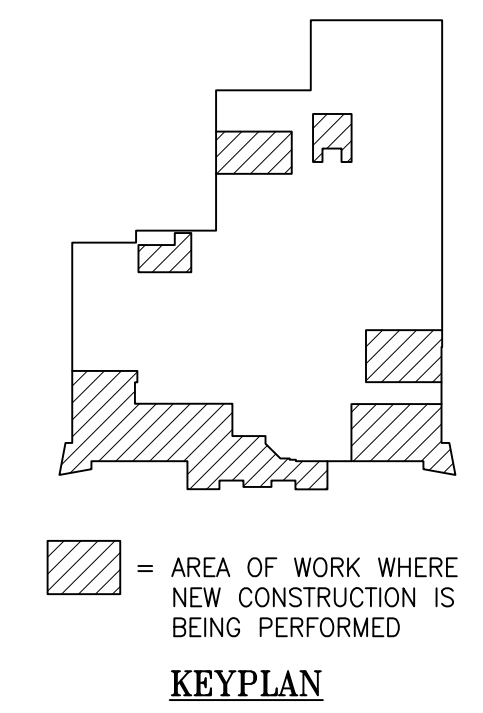
SEAL:

TITLE:  
**FIRE ALARM FLOOR PLAN**

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SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: **E-8**



GENERAL PROVISIONS

- A. GENERAL:**
- REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
  - THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
  - ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
  - UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
  - THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.
  - ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
  - EXAMINE THE WORK OF OTHER TRADES INsofar AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
  - ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT INCLUDING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
  - IT IS THE INTENT OF THESE DRAWINGS THAT THIS IS A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, PRIOR TO BIDDING THE JOB, WHO WILL MAKE CLARIFICATIONS IN WRITING.
- B. VISIT TO THE SITE:**
- THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.
- C. CODE AND PERMITS:**
- INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
  - COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
  - THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE.
  - ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED TO A NATIONALLY RECOGNIZED TESTING LABORATORY, SUCH AS UL, CSA, ETL OR APPROVED EQUIVALENT.
- D. ELECTRICAL INSPECTION:**
- ALL ELECTRICAL INSPECTIONS SHALL BE BY THE LOCAL TOWN.
- E. RECORD DRAWINGS:**
- IMMEDIATELY AFTER THE CONTRACT IS SIGNED, THE CONTRACTOR SHALL OBTAIN A COMPLETE SET OF REPRODUCTIONS OF THE CONTRACT DRAWINGS. THESE WILL BE THE BASIC RECORD DRAWINGS, TO BE DELIVERED TO THE ARCHITECT WITH TWO SETS OF PRINTS. UPON COMPLETION OF THE PROJECT, PRIOR TO REQUEST FOR FINAL PAYMENT. DURING THE PROGRESS OF THE JOB, THE RECORD DRAWINGS SHALL BE CORRECTED FROM MONTH-TO-MONTH TO SHOW THE WORK AS ACTUALLY INSTALLED.
- F. STANDARDS AND SUBSTITUTIONS:**
- WHEREVER THE WORDS "APPROVED BY," "APPROVED EQUAL," "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD."
  - THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY. THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
  - SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.
  - WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL RELATED TRADES INVOLVED.
  - ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
  - IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE.
- G. TESTING AND PLACING IN SERVICE:**
- ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
  - TESTS SHALL INCLUDE THE FOLLOWING:
    - MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY FEEDER UNDER FULL LOAD CONDITIONS.
    - MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).
    - MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING ELECTRODE.
    - MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.
- H. INTERFERENCES:**
- BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
  - IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT AND / OR ENGINEER SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. THEIR DECISION WILL BE FINAL.
- I. QUALITY ASSURANCE:**
- ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OR CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

**J. LABOR:**

- THE ELECTRICAL CONTRACTOR SHALL HAVE COMPETENT SUPERVISION IN RESPONSIBLE CHARGE OF THE WORK, WHO SHALL BE ON THE SITE DURING THE ERECTION OF THE MATERIAL FURNISHED UNDER THESE SPECIFICATIONS AND WHEN THE SYSTEM IS PUT INTO OPERATION. USE ONLY COMPETENT LABOR AND PERFORM IN A FIRST-CLASS MANNER.

**K. STORAGE AND PROTECTION:**

- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOSS OR DAMAGE TO THE BUILDING AND ITS CONTENTS CAUSED BY HIS EMPLOYEES OR EQUIPMENT. ALL SUCH DAMAGE SHALL BE REPAIRED OR THE ITEMS REPLACED, TO THE SATISFACTION OF THE ARCHITECT.

**L. VERIFICATION OF MEASUREMENTS:**

- BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK, THIS CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED ON ACCOUNT OF THE DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND THE MEASUREMENTS INDICATED ON THE DRAWINGS. ANY DIFFERENCE WHICH MAY BE FOUND, SHALL BE SUBMITTED TO THE ARCHITECT FOR CONSIDERATION, BEFORE PROCEEDING WITH THE WORK.

**M. MAINTENANCE AND OPERATION MANUALS:**

- UPON COMPLETION OF THE WORK AND BEFORE REQUEST FOR FINAL PAYMENT, THE CONTRACTOR SHALL DELIVER TO THE ARCHITECT'S ENGINEER, FOUR (4) SETS OF FULL AND COMPLETE DIRECTIONS PERTAINING TO THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED UNDER THIS CONTRACT. THESE DIRECTIONS SHALL BE NEATLY TYPENRITTEN ON 8 1/2" X 11" SHEETS WITH INDEX TABS, AND SHALL BE ACCOMPANIED BY PRINTS OF THE WORK AS INSTALLED, PARTS LIST DIAGRAMS, ETC., NECESSARY FOR THE GUIDANCE OF THE OWNER.

BASIC ELECTRICAL MATERIALS AND METHODS

**A. NAMEPLATES:**

- GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
- PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.

**B. MOUNTING ACCESSORIES:**

- THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.
- SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANNEZED PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.
- ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PAINTED PLYWOOD BACKBOARD. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.

**C. EXECUTION:**

- THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
- CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
- EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
- CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS. PROVIDE WATER TIGHT SEALS FOR ALL OPENINGS CREATED THROUGH FOUNDATION WALLS OR EXTERIOR WALLS.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.

**D. OPENINGS AND CHASES:**

- DETERMINE AND BE RESPONSIBLE FOR PROPER SIZE AND LOCATION OF OPENINGS AND CHASES REQUIRED. INSTALL ALL SLEEVES NECESSARY FOR THE WORK. WHEREVER ANY PIPING PASSES THROUGH ANY WALL, THE OPENING SHALL BE SEALED TIGHT AGAINST THE PIPING BY THIS CONTRACTOR. PIPING THROUGH FOUNDATION WALLS AND ROOFS SHALL BE SEALED WATER TIGHT BY THIS CONTRACTOR.

**E. MATERIALS AND WORKMANSHIP:**

- ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.
- ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY.
- DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
- ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.
- THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.

**F. FIRE STOPPING:**

- FIRE-STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALLS AND ALL FLOOR ASSEMBLIES SHALL BE LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRE-STOP SYSTEMS." THE SYSTEM SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATION FIRE-STOPPS" DESIGNATED ASTM E814.
- ACCEPTABLE MANUFACTURERS:
  - DOW CORNING FIRE-STOP SYSTEM FOAMS AND SEALANTS
  - NELSON ELECTRIC FIRE-STOP SYSTEM PUTTY, CLK AND WRP
  - THOMAS & BETTS - S-100 FS500/600
  - CARBORUNDUM Fyre PUTTY
  - HILTI FIRESTOP SYSTEMS
- INSTALLATION OF FIRE-STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALLS AND FLOOR ASSEMBLIES SHALL BE AS FOLLOWS:
  - PROVIDE FIRE-STOP SYSTEM SEALS AT ALL LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL BUSWAYS/CABLES/WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. PROVIDE FIRESTOP SEAL BETWEEN SLEEVE AND WALL FOR DRY WALL CONSTRUCTION.
  - PROVIDE INTUMESCENT INSERT (SPECIFIED TECHNOLOGIES, INC. SERIES EP POWERSHIELD FIRESTOP INSERT, OR APPROVED EQUIVALENT) IN ALL ELECTRICAL SWITCH, OUTLET AND JUNCTION BOXES INSTALLED IN A FIRE RATED WALL ASSEMBLY.
  - THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRE-STOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATER TIGHT SEAL.
  - THE METHODS USED SHALL INCORPORATE QUALITIES THAT PERMIT THE EASY REMOVAL OR ADDITION OF ELECTRICAL CONDUITS OR CABLES WITHOUT DRILLING OR USE OF SPECIAL TOOLS. THE PRODUCT SHALL ADHERE TO ITSELF TO ALLOW REPAIRS TO BE MADE WITH THE SAME MATERIAL AND PERMIT THE VIBRATION, EXPANSION AND/OR CONTRACTION OF ANY ITEMS PASSING THROUGH THE PENETRATION WITHOUT CRACKING, CRUMBLING AND RESULTING REDUCTION IN FIRE RATING.
  - PROVIDE RIGID STEEL SLEEVES WHERE NON-ARMORED CABLES PASS THROUGH FIRE RATED WALLS AND BARRIERS.

SCOPE OF WORK:

- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
  - COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
  - COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
  - WIRING DEVICES.
  - COMPLETE LIGHTING FIXTURE INSTALLATION INCLUDING ALL REQUIRED LAMPS.
  - ILLUMINATED EXIT LIGHT SYSTEM.
  - LIGHTING CONTROLS.
  - FIRE ALARM SYSTEM.
  - GROUNDING OF THE ELECTRICAL SYSTEM.
  - TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
  - TELEPHONE AND COMMUNICATION CONDUIT SYSTEM INCLUDING BOXES SHOWN ON THE DRAWINGS AND REQUIRED BY THE LOCAL TELEPHONE COMPANY AND/OR OWNER.
  - IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS:
    - FIRE ALARM SYSTEM: RED
    - TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.

TEMPORARY SERVICE:

- THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND REMOVE AS REQUIRED ALL TEMPORARY POWER AND TEMPORARY LIGHTING IN ALL AREAS AND INDIVIDUAL ROOMS WHEN NEEDED BY THE INDIVIDUAL TRADES IN THE PERFORMANCE OF THEIR WORK. THIS CONTRACTOR SHALL PROVIDE A MINIMUM OF TWENTY (20) FOOT CANDLE OF ILLUMINATION FOR TEMPORARY LIGHTING. ANY ADDITIONAL LIGHTING REQUIRED BY INDIVIDUAL TRADES SHALL BE PROVIDED BY THE INDIVIDUAL TRADES INCLUDING POWER FOR THE LIGHTING. THE ELECTRICAL WORK FOR CONSTRUCTION PURPOSES SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, SPECIFIC SAFETY REQUIREMENTS, AS WELL AS THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND NATIONAL ELECTRICAL SAFETY CODE. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED APPLICATIONS, PERMITS AND INSPECTIONS PERTAINING TO THIS WORK. THIS COST SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.
- NEW LIGHT FIXTURES SHALL NOT BE USED FOR TEMPORARY LIGHTING.

ELECTRIC SERVICE:

- ELECTRIC SERVICE IS EXISTING SCHEDULED TO REMAIN.

WIRE AND CABLE:

- UNLESS OTHERWISE SPECIFIED, MC CABLE MAY BE UTILIZED FOR BRANCH WIRING WHEN CONCEALED WITHIN WALLS OR ABOVE FINISHED CEILINGS. EXPOSED INSTALLATIONS ARE NOT PERMITTED.
- CONDUCTORS SHALL BE ANNEALED COPPER, STRANDED 98% CONDUCTIVITY, 600 V RATED FOR FEEDERS AND BRANCH CIRCUITS, TYPE THHN/THWN INSULATION, MINIMUM #12 AWG SIZE FOR BRANCH CIRCUITS. PROVIDE #10 AWG MINIMUM SIZE FOR BRANCH CIRCUIT RUNS EXCEEDING 100 FEET. ALUMINUM CONDUCTORS SHALL NOT BE USED FOR BRANCH CIRCUITS. ANACONDA, GENERAL CABLE, ROME CABLE OR ACCEPTED EQUAL.
- COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:
  - 240/120V 1Ø SYSTEM PHASE A-BLACK; PHASE B-RED; NEUTRAL-WHITE; GROUND-GREEN
  - 208/120V 3Ø SYSTEM PHASE A-BLACK; PHASE B-RED; PHASE C-BLUE; NEUTRAL-WHITE; GROUND-GREEN
  - 480/277V 3Ø SYSTEM PHASE A-BROWN; PHASE B-ORANGE; PHASE C-YELLOW; NEUTRAL-GREY; GROUND-GREEN
- #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
- COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
- FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.
- CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.
- CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
- CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.
- INSTALL SEPARATE NEUTRALS FOR EACH SINGLE PHASE BRANCH CIRCUIT.
- CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.
- CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.
- INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.
- PULL CONDUCTORS USING RECOMMENDED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
- CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.
- PULL CONDUCTORS USING RECOMMENDED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
- FORM AND TIE ALL WIRING IN PANELBOARDS.
- THERE SHALL BE NO WIRE NUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.
- MAKE ALL CONNECTIONS TO DISCONNECT SWITCHES, MOTOR CONTROLLERS, MOTORS AND OTHER EQUIPMENT SHOWN ON THE PLANS. EXIT LIGHTS, FIRE ALARM AND EMERGENCY CIRCUITS SHALL BE INSTALLED IN SEPARATE CONDUIT SYSTEMS. INSTALL A MAXIMUM OF 3 SINGLE PHASE CIRCUITS IN A SINGLE RACEWAY, UNLESS OTHERWISE SPECIFICALLY CALLED FOR (SIX (6) CURRENT CARRYING CONDUCTORS MAXIMUM PLUS GROUND).
- INSTALL MULTIWIRE BRANCH CIRCUITS PER ALL REQUIREMENTS OF N.E.C. ARTICLE 210.4. HANDLE TIES MUST BE INSTALLED TO IDENTIFY SINGLE-POLE, MULTIWIRE BRANCH CIRCUITS PER ALL REQUIREMENTS OF N.E.C. ARTICLE 240.15(B).
- BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.

RACEWAYS AND BOXES

**A. RACEWAYS (AS APPLICABLE):**

- ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.
  - CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.
  - CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC SCHEDULE 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.
  - CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY WALL, METAL THREADED TYPE.
  - CONDUIT SIZE SHALL BE 1/2" MINIMUM.
  - CONDUIT SHALL BE SECURELY FASTENED IN PLACE.
  - ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.
  - USE FLEXIBLE CONDUIT FOR THE CONNECTION TO RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6" LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.
  - USE WATER TIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER UNLESS SHOWN OTHERWISE. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED (TWO COATS) WITH HEAVY ASPHALTUM PAINT.
  - SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE (NEC).
  - INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY-IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS. STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNING USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
  - IF CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZOIDAL HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
  - INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.
  - PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF.
  - THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED METAL JOINTS.
  - INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOOR SLABS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.
  - HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.

**B. PULL & JUNCTION BOXES:**

- INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES, IN DIRECTION, AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED.
- PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE.
- PROVIDE CAST IRON BOXES, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE WHERE SHOWN ON THE DRAWINGS. FURNISH REMOVABLE COVERS WITH GASKETS AND STAINLESS STEEL, BRASS OR BRONZE SCREWS.
- PROVIDE CONCRETE BOXES FOR UNDERGROUND WORK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. FURNISH STEEL FRAME AND COVERS WITH THE COVER ATTACHED TO THE FRAME WITH HEXAGON HEAD, BRASS OR BRONZE CAP SCREWS, 3/8" DIAMETER. PROVIDE A RUBBER GASKET FOR SEALING BETWEEN THE COVER AND THE FRAME. PAINT THE COVER WITH TWO COATS OF HEAVY ASPHALTUM.
- PROVIDE SIZE AS REQUIRED FOR NUMBER AND SIZE OF CONDUIT AND CONDUCTORS. COORDINATE DEPTH TO SUIT WALL, DEPTH AND CONSTRUCTION. MAXIMUM NUMBER OF CONDUCTORS PERMITTED IN STANDARD BOXES SHALL BE AS LISTED IN N.E.C. INSTALL FLUSH RECESSED WHEREVER POSSIBLE AND SECURELY SUPPORTED FROM BUILDING CONSTRUCTION. O.Z./GEDNEY, CROUSE HINDS, T&B, STEEL CITY, RACO OR ACCEPTED EQUAL.

GROUNDING AND BONDING

**A. GENERAL:**

- ALL GROUNDING AND GROUNDING CIRCUITRY SHALL MEET OR EXCEED THE REQUIREMENTS OF NEC 2017, ARTICLE 250. RACEWAY SYSTEMS WHICH INCLUDES ALL METAL CONDUIT, PULLBOXES, JUNCTION BOXES, ENCLOSURES, MOTOR FRAMES, ETC. SHALL BE MADE TO FORM A CONTINUOUS CONDUCTING, PERMANENT GROUND CIRCUIT OF THE LOWEST PRACTICAL IMPEDANCE TO ENHANCE THE SAFE CONDUCTION OF GROUND FAULT CURRENTS AND TO PREVENT OBJECTIONABLE DIFFERENCES IN VOLTAGE BETWEEN METAL CURRENT CARRYING PARTS OF THE ELECTRICAL SYSTEM. PROVIDE A GREEN GROUNDING CONDUCTOR IN ALL CIRCUITS. CONDUIT SYSTEM SHALL NOT BE USED AS THE EQUIPMENT GROUNDING CONDUCTOR. CONDUCTOR SIZE SHALL BE AS REQUIRED BY NEC, ARTICLE 250. ALL EQUIPMENT GROUND BUS, GROUND PADS, FRAMES, ENCLOSURES, ETC SHALL HAVE SURFACES AT THE POINT OF CONNECTION THOROUGHLY CLEANED AND BRIGHTENED JUST PRIOR TO ACTUALLY MAKING THE CONNECTION. TOUCH-UP DAMAGED PAINTED SURFACES. SPLICES IN WIRE OR CABLE GROUNDING CONDUCTORS ARE PROHIBITED. SOLDER PROHIBITED FOR CONNECTIONS.
- ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZE PER N.E.C. IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY.
- ALL GROUNDING SYSTEMS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL METHODS OF CONSTRUCTION THAT ARE NOT SPECIFICALLY DESCRIBED OR INDICATED IN THE CONTRACT DOCUMENTS SHALL BE SUBJECT TO THE CONTROL AND APPROVAL OF THE OWNER'S REPRESENTATIVE.
- GROUND EACH OUTSIDE LIGHTING POLE SEPARATELY.
- SEE CONTRACT DOCUMENTS FOR ADDITIONAL GROUNDING INFORMATION SPECIFIC TO THIS PROJECT.

**B. CONDUCTORS:**

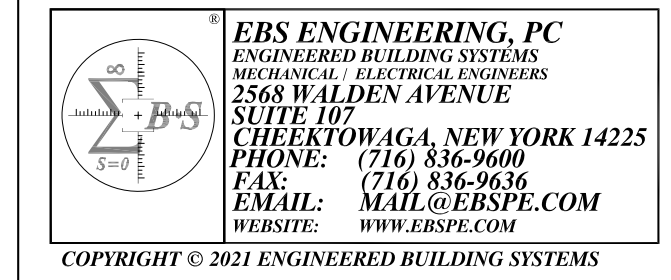
- EXPOSED GROUNDING CONDUCTORS SUCH AS BARS, STRAPS, CABLES, FLEXIBLE JUMPERS, BRAIDS, SHUNTS, ETC. SHALL BE BARE COPPER UNLESS OTHERWISE CALLED FOR.
- CONDUCTORS SHALL BE COPPER.
- PROVIDE CONDUCTORS WITH THHN/THWN INSULATION. SIZES #10 AWG AND SMALLER SHALL BE GREEN IN COLOR. CONDUCTOR SIZES #8 AWG AND LARGER MAY HAVE GREEN TAPED BANDS AT EACH END AND IN ALL PULLBOXES.

**C. TESTS:**

- GROUPS AND GROUNDING SYSTEM SHALL HAVE A RESISTANCE TO SOLID EARTH GROUND NOT TO EXCEED THE FOLLOWING VALUES:
  - FOR GROUNDING SECONDARY SERVICE NEUTRAL; 25 OHMS
  - FOR GROUNDING NON-CURRENT CARRYING METAL PARTS ASSOCIATED WITH SECONDARY DISTRIBUTION SYSTEM; 25 OHMS
- PROVIDING GROUNDING TESTS TO VERIFY THE ABOVE VALUES. WHERE THESE VALUES ARE NOT MET, ADD ADDITIONAL GROUND RODS OR CONNECTIONS IN ORDER TO MEET THESE VALUES.

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ISSUE:  
2021-06-29: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**ELECTRICAL SPECIFICATIONS**



SA JOB #: 14082.07 DATE: 6-29-2021

DRAWING #: E-9

## WIRING DEVICES

### A. GENERAL:

- PROVIDE WIRING DEVICES, IN TYPES, CHARACTERISTICS, GRADES AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED WHICH ARE UL LISTED AND WHICH COMPLY WITH NEMA WD 1 AND OTHER APPLICABLE UL AND NEMA STANDARDS.
- WIRING DEVICE COLOR SHALL BE SELECTED BY ARCHITECT, UNLESS OTHERWISE INDICATED.
- PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
  - FINISHED AREAS: THERMOPLASTIC – COLOR TO MATCH DEVICE.
  - UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL, AS APPROPRIATE FOR THE TYPE OF BOX.
  - EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKET, WEATHERPROOF, CROUSE-HINDS "WLRD" FOR DUPLEX RECEPTACLES AND "WLRs" FOR SINGLE RECEPTACLES OR EQUAL.
  - TELEPHONE, COMMUNICATION, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND SWITCHES. ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE BY THIS CONTRACTOR.
  - WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVERPLATE.
- LOCATE SWITCHES AND WALL SWITCH SENSORS AT A MAXIMUM HEIGHT OF 4'-0" A.F.F., MEASURED TO CENTER OF BOX, OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS) UNLESS OTHERWISE INDICATED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL. INSTALL ALL SWITCHES ON STRIKE SIDE OF DOOR.
- LOCATE RECEPTACLES AT A MINIMUM HEIGHT OF 1'-6" A.F.F., MEASURED TO CENTER OF BOX, OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE. THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL.
- ALL WIRING DEVICES SHALL BE INSTALLED NEATLY AND PARALLEL WITH BUILDING LINES.

### B. SUBMITTALS:

- SUBMIT DEVICE PRODUCT DATA SHEETS IDENTIFYING MANUFACTURE AND MODEL NUMBERS.

### C. RECEPTACLES:

- PROVIDE NEMA CONFIGURATION 5-20R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED FOR 20 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
  - STANDARD RECEPTACLES SHALL BE SPECIFICATION GRADE.
  - GFCI RECEPTACLES SHALL BE SPECIFICATION GRADE.
  - RECEPTACLES WITH INTEGRAL USB CHARGING PORTS SHALL BE LISTED AND CONSTRUCTED SUCH THAT CLASS CIRCUITRY IS INTEGRAL WITH RECEPTACLE.
- PROVIDE TAMPER-RESISTANT RECEPTACLE IN THE FOLLOWING AREAS:
  - DWELLING UNITS.
  - QUESTROOM AND GUEST SUITES.
  - CHILD CARE FACILITIES.
  - PRESCHOOLS AND ELEMENTARY EDUCATION FACILITIES.
  - BUSINESS OFFICES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL AND DENTAL OFFICES AND OUTPATIENT FACILITIES.
  - SUBSET OF ASSEMBLY OCCUPANCIES DESCRIBED IN 518.2 TO INCLUDE PLACES OF WAITING TRANSPORTATION, GYMNASIUMS, SKATING RINKS, AND AUDITORIUMS.
  - DORMITORIES.
- RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS OR AS REQUIRED FOR EQUIPMENT SUPPLIED BY OTHERS.
- CONNECT WIRING DEVICE GROUNDING TERMINAL TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.
- PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND WORKMANSHIP EQUAL TO THAT OF ABOVE DESCRIPTIONS.
- ACCEPTABLE MANUFACTURES INCLUDED EATON/ARROW HART, LEGRAND (P&S), LUTRON, LEVITON OR APPROVED EQUAL. ALL DEVICES SELECTED FOR PROJECT SHALL BE SUPPLIED BY THE SAME MANUFACTURE.

### D. WALL SWITCHES:

- PROVIDE SINGLE-POLE, THREE\_WAY, AND FOUR\_WAY 20A, 120/277 VOLT HEAVY-DUTY SPECIFICATION GRADE DEVICES WITH COPPER ALLOY CONTACT ARM, HEAVY DUTY BUMPER PADS FOR QUIET, SMOOTH OPERATION, HIGH STRENGTH THERMOPLASTIC POLYCARBONATE TOGGLE, AND SILVER ALLOY CONTACTS.
- ACCEPTABLE MANUFACTURES INCLUDE EATON/ARROW HART, LUTRON, LEVITON, LEGRAND OR APPROVED EQUAL. ALL DEVICES SELECTED FOR PROJECT SHALL BE SUPPLIED BY THE SAME MANUFACTURE.

### E. WALL DIMMER / SWITCHES:

- PROVIDE SINGLE-POLE, THREE\_WAY 120/277 VOLT SPECIFICATION GRADE 0-10V LED DIMMER DEVICES WITH THERMOPLASTIC POLYCARBONATE CONSTRUCTION, SEPERATE ON/OFF CONTROL AND SLIDE ADJUSTER FOR DIMMING. FOR USE WHEN SERVING LED FIXTURES WITH 0-10V DIMMING DRIVERS. INCLUDE LOW-VOLTAGE CONTROL WIRING INSTALLED FROM SENSOR TO DESIGNATED LIGHT FIXTURES FOR DIMMING OPERATION.
- PROVIDE SINGLE-POLE, THREE\_WAY 120/277 VOLT SPECIFICATION GRADE ELECTRONIC LOW-VOLTAGE (ELV) AND/OR CFL-LED COMPATIBLE DIMMER DEVICES WITH THERMOPLASTIC POLYCARBONATE CONSTRUCTION, TOGGLE/ROCKER ON/OFF CONTROL AND SLIDE ADJUSTER FOR DIMMING. FOR USE WHEN SERVING LINE-VOLTAGE LED FIXTURES.
- ACCEPTABLE MANUFACTURERS INCLUDE EATON/ARROW HART, LUTRON, LEVITON, LEGRAND OR APPROVED EQUAL. ALL DEVICES SELECTED FOR PROJECT SHALL BE SUPPLIED BY THE SAME MANUFACTURE.

### G. AUTOMATIC LIGHTING CONTROL DEVICES:

- ALL LIGHTING CONTROLS MUST BE SELECTED, INSTALLED AND WIRED TO MEET CURRENT LOCAL AND STATE ENERGY CODE REQUIREMENTS (2020 ENERGY CONSERVATION CODE OF NEW YORK). ANY DISCREPANCIES BETWEEN THESE DESIGN DOCUMENTS AND CURRENT ENERGY CODES MUST BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BID SUBMISSION.
- PROVIDE SINGLE RELAY, DUAL TECHNOLOGY, 120/277 VOLT, OCCUPANCY SENSOR WALL SWITCH, UNLESS OTHERWISE INDICATED IN DESIGN DOCUMENTS. BASIC PROGRAMMING SHALL INCLUDE MANUAL ON, AUTOMATIC OFF WITH THE OCCUPANCY SENSOR TIME DELAY SET FOR 15 MINUTES IN OFFICES, JANITOR CLOSETS, STORAGE RMS ETC. PER IECC. ALTERNATE PROGRAMMING SHALL INCLUDE AUTOMATIC ON, AUTOMATIC OFF WITH THE OCCUPANCY SENSOR TIME DELAY SET FOR 15 MINUTES IN RESTROOMS, CONFERENCE ROOMS, ETC. PER IECC. REMAINING PROGRAMMING OPTIONS SHALL BE FACTORY DEFAULT UNLESS OTHERWISE INDICATED OR REQUIRED.
- PROVIDE SINGLE RELAY, DUAL TECHNOLOGY, 120/277 VOLT, OCCUPANCY SENSOR DIMMING WALL SWITCH WITH OPTION FOR DAYLIGHT HARVESTING. INCLUDE LOW-VOLTAGE CONTROL WIRING INSTALLED FROM SENSOR TO DESIGNATED LIGHT FIXTURES FOR DIMMING OPERATION. BASIC PROGRAMMING SHALL INCLUDE MANUAL ON, AUTOMATIC OFF WITH THE OCCUPANCY SENSOR TIME DELAY SET FOR 15 MINUTES. DAYLIGHT HARVESTING SHALL BE ACTIVATED IN ROOMS WITH EXTERIOR WINDOWS WHERE COMBINED LIGHTING LOAD IS IN EXCESS OF 150 WATTS FOR THAT ROOM. REMAINING PROGRAMMING OPTIONS SHALL BE FACTORY DEFAULT UNLESS OTHERWISE INDICATED OR REQUIRED.
- PROVIDE SINGLE ZONE, DUAL TECHNOLOGY 120/277V CEILING MOUNT DIMMING AND PHOTOCONTROL OCCUPANCY SENSOR WITH 360 DEGREE VIEWING ANGLE, UNLESS OTHERWISE INDICATED IN DESIGN DOCUMENTS. PROVIDE ALL REQUIRED POWER PACKS, SLAVE POWER PACKS, CONTROL UNITS, RELAYS, BACKBOXES, MOUNTING PLATES AND OTHER EQUIPMENT NECESSARY FOR PROPER SYSTEM OPERATION. BASIC PROGRAMMING SHALL INCLUDE OCCUPANCY SENSOR TIME DELAY SET FOR 15 MINUTES AND DIMMING SET TO 3V. REMAINING PROGRAMMING OPTIONS SHALL BE FACTORY DEFAULT UNLESS OTHERWISE INDICATED.
- ACCEPTABLE MANUFACTURERS INCLUDE SENSOR SWITCH, WATTSTOPPER, EATON/ARROW HART, LUTRON, LEVITON, LEGRAND OR APPROVED EQUAL. ALL DEVICES SELECTED FOR PROJECT SHALL BE SUPPLIED BY THE SAME MANUFACTURE.

## LIGHTING

### A. GENERAL:

- SEE SHEET E-1 FOR PROJECT LIGHT FIXTURE SPECIFICATIONS.
- ALL LIGHTING FIXTURES SHALL BE UL LISTED AND BARE THE UL LABEL OF APPROVAL
- LIGHT FIXTURE HOUSINGS RECESSED WITHIN FIRE RATED CEILINGS MUST BE SUPPLIED WITH FIRE RATED COVERS, UTILIZE TENMAT PRODUCTS OR EQUAL. CONFIRM FIRE RATED CEILING LOCATIONS AND TYPES WITH ARCHITECTURAL DRAWINGS.
- SET LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS UNLESS OTHERWISE INDICATED.
- INSTALL LAMPS IN EACH LUMINAIRE AS NEEDED.
- FIXTURES SHALL BE SUPPORTED FROM BUILDING STRUCTURE.
- WHERE FIXTURES ARE INSTALLED ON DRYWALL CEILINGS, THEY SHALL BE SUPPORTED FROM THE CEILING FRAMING SYSTEM OR THE BUILDING STRUCTURE. SUPPORT FROM DRYWALL IS NOT ACCEPTABLE.
- NFPA 70 REQUIRES MINIMUM SUPPORT FOR FIXTURES. REFER TO "LAY-IN CEILING LIGHTING FIXTURES SUPPORTS" PARAGRAPH BELOW FOR MORE SPECIFIC SUPPORT REQUIREMENTS AND FOR REQUIREMENTS EXCEEDING CODE MINIMUMS. FOR PROJECTS REQUIRING SEISMIC DESIGN, ADDITIONAL SUPPORTS, AND RESTRAINING DEVICES BEYOND THOSE SPECIFIED HERE MAY BE REQUIRED.

### B. SUBMITTALS:

- SUBMIT LIGHT FIXTURE DATA SHEETS IDENTIFYING MANUFACTURE AND MODEL NUMBERS.

### C. LAY-IN CEILING LIGHTING FIXTURES SUPPORTS:

- USE GRID AS A SUPPORT ELEMENT.
- INSTALL CEILING SUPPORT SYSTEM RODS OR WIRES FOR EACH FIXTURE. LOCATE NOT MORE THAN 6 INCHES FROM LIGHTING FIXTURE CORNERS.
- SUPPORT CLIPS: FASTEN TO LIGHTING FIXTURES AND TO CEILING GRID MEMBERS AT OR NEAR EACH FIXTURE CORNER WITH CLIPS THAT ARE UL LISTED FOR THE APPLICATION.
- FIXTURES OF SIZES LESS THAN CEILING GRID: INSTALL AS INDICATED ON REFLECTED CEILING PLANS OR CENTER IN ACOUSTICAL PANEL, AND SUPPORT FIXTURES INDEPENDENTLY WITH AT LEAST TWO 3/4-INCH METAL CHANNELS SPANNING AND SECURED TO CEILING TEES.

### D. SUSPENDED LIGHTING FIXTURE SUPPORT:

- PENDANTS AND RODS: WHERE LONGER THAN 48 INCHES (1200 MM), BRACE TO LIMIT SWINGING.
- STEM-MOUNTED, SINGLE-UNIT FIXTURES: SUSPEND WITH TWIN-STEM HANGERS.
- CONTINUOUS ROWS: USE TUBING OR STEM FOR WIRING AT ONE POINT AND TUBING OR ROD FOR SUSPENSION FOR EACH UNIT LENGTH OF FIXTURE CHASSIS, INCLUDING ONE AT EACH END.
- DO NOT USE GRID AS SUPPORT FOR PENDANT LUMINAIRES. CONNECT SUPPORT WIRES OR RODS TO BUILDING STRUCTURE.

### E. GYPSUM CEILING LIGHTING FIXTURE SUPPORT

- USE CEILING BEAMS AS SUPPORT ELEMENT.
- INSTALL CEILING SUPPORT SYSTEM WIRES FOR EACH FIXTURE. LOCATE NOT MORE THAN 6 INCHES FROM LIGHTING FIXTURE CORN
- SUPPORT SCREWS / WIRE TIES: FASTEN TO LIGHTING FIXTURES AND TO CEILING BEAMS AT OR NEAR FIXTURE CORNER

- IMMEDIATELY PRIOR TO OCCUPANCY, DAMP CLEAN ALL DIFFUSERS, GLASSWARE, FIXTURE TRIMS, REFLECTORS, LAMPS AND REPLACE BURNED OUT LAMPS.

## SAFETY SWITCHES & FUSES

### A. SWITCHES:

- SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE.
- SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS.
- SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS.
- SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R OUTDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS.
- MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE MANUFACTURER.
- Mount the SAFETY SWITCHES SECURELY BETWEEN 3' x 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

### B. FUSES:

- THE CONTRACTOR SHALL FURNISH A COMPLETE SET OF FUSES FOR ALL SWITCHES, PLUS FUSIBLE EQUIPMENT FURNISHED BY OTHER TRADES. UNLESS INDICATED OTHERWISE ON PLANS, THE FUSES SHALL BE OF THE FOLLOWING TYPES:
  - FUSES 601 TO 6000 AMPS SHALL BE UL CLASS. TRADE TYPE SHALL BE KRP-C AS MANUFACTURED BY THE BUSSMANN COMPANY.
  - FUSES 1/10 TO 600 AMPS SHALL BE UL CLASS RK1. TRADE TYPE SHALL BE LOW PEAK LPS-RK (600V) AND LPN-RK (250V) AS MANUFACTURED BY BUSSMANN COMPANY.
  - ALL OTHER FUSES SHALL BE DUAL-ELEMENT CURRENT-LIMITING TYPE WITH 200,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY.
  - FUSES SHALL BE MANUFACTURED BY BUSSMANN, GOULD-SHAUMUTT, OR RELIANCE.
  - SPARE FUSES AMOUNTING TO A DUPLICATE SET OF EACH SIZE INSTALLED SHALL BE TURNED OVER TO THE OWNER UPON COMPLETION OF THE PROJECT. PROVIDE AND PLACE IN A SPARE FUSE CABINET SIMILAR TO BUSSMANN # SFC.
  - THIS CONTRACTOR SHALL REPLACE ALL FUSES BLOWN DURING CONSTRUCTION.

### C. MOTOR CONTROLLERS:

- TYPE A (FULL VOLTAGE, NON-MAGNETIC, SINGLE PHASE): TOGGLE SWITCH, STAINLESS STEEL ENCLOSURE, THERMOPLASTIC COVERPLATE; SIEMENS CLASS SMF SERIES, OR ACCEPTED EQUAL.
- TYPE A1 (FULL VOLTAGE, NON-MAGNETIC SINGLE PHASE): SIMILAR TO TYPE A ABOVE, EXCEPT WITH RED PILOT LIGHT; SIEMENS CLASS SMF SERIES, OR ACCEPTED EQUAL.
- TYPE B (FULL VOLTAGE MAGNETIC): NEMA 1 ENCLOSURE WITH PILOT LIGHT; SIEMENS CLASS 14 SERIES WITH AUXILIARY CONTACTS, OR ACCEPTED EQUAL.
- TYPE B1 (FULL VOLTAGE, COMBINATION MAGNETIC): FUSIBLE DISCONNECT SWITCH TYPE, NEMA 1 ENCLOSURE, PILOT LIGHT AND HOA IN COVER; SIEMENS CLASS 17 SERIES WITH AUXILIARY CONTACTS, OR ACCEPTED EQUAL.

### PANELBOARDS

- EXISTING PANELBOARDS ARE SCHEDULED TO REMAIN. FIELD VERIFY EXISTING EQUIPMENT MANUFACTURE AS NEEDED.
- WHEN REQUIRED, PROVIDE NEW QUICK MAKE, QUICK BREAK, THERMAL MAGNETIC, TOGGLE MECHANISM, MOLDED CASE CIRCUIT BREAKERS AS RECOMMENDED BY EQUIPMENT MANUFACTURER. PROVIDE AMPACITY AND POLES AS INDICATED ON PLANS WITH APPROPRIATE AMPERE INTERRUPTING RATING TO MATCH EXISTING EQUIPMENT. MULTIPOLE BREAKERS SHALL HAVE COMMON TRIP. MAKE TO MATCH EXISTING PANELBOARDS.
- FOR EXISTING PANELBOARDS WHERE CIRCUITS HAVE BEEN UPDATED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT, PROVIDE NEW UPDATED PANELBOARD DIRECTORIES TO REFLECT ALL BRANCH CIRCUIT REVISIONS; PROVIDE TYPEWRITTEN WITH ROOM NUMBERS, FUNCTION, ETC. TO POSITIVELY IDENTIFY EACH BRANCH CIRCUIT.

## FIRE ALARM SYSTEM SPECIFICATION

### A. GENERAL:

- THE FIRE ALARM SYSTEM IS EXISTING ZONE TYPE. NEW DEVICES MUST BE COMPATIBLE WITH EXISTING SYSTEM.

### B. SUBMITTALS:

- INCLUDE THE FOLLOWING ITEMS FOR REVIEW BY THE ENGINEER OF RECORD AND LOCAL BUILDING DEPARTMENT.
  - DEVICE DATA SHEETS. INFORMATION SHALL INCLUDE EQUIPMENT MANUFACTURE AND MODEL NUMBERS.
  - BATTERY CALCULATIONS.
  - RISER DIAGRAM IDENTIFYING DEVICES, CONDUCTOR TYPES / SIZES, CANDELA RATINGS AND REQUIRED POWER SUPPLIES TO FACILITATE ENTIRE SYSTEM INSTALLATION.
  - SHOP DRAWINGS INDICATING THE USE OF ALL ROOMS WITH LOCATIONS OF ALARM AND INITIATING DEVICES IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.

NOTE: CAD FILES OF THE FIRE ALARM DESIGN DOCUMENTS WILL BE PROVIDED UPON REQUEST.

### C. COMPLIANCE:

- SYSTEM AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE STANDARDS AND REQUIREMENTS OF THE NFPA INCLUDING:
  - NFPA 70 – INCLUDING ARTICLE 760 (NEC)
  - NFPA 72 – COMPLETE
  - NFPA 101
  - APPLICABLE REQUIREMENTS OF THE LOCAL TOWN
- ALL EQUIPMENT SHALL BE "UL" LISTED UNDER THE FIRE PROTECTION DIRECTORY AND SUPPLEMENTS.

### D. INSTALLATION:

- STEEL OUTLET OR METAL BACK BOXES SHALL BE PROVIDED FOR ALL COMPONENTS OF THE SYSTEM.
- ALL WIRING FOR THIS SYSTEM SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE AND FINISHED.
- "UL" LISTED AND APPROVED FIRE ALARM CABLE MAY BE EMPLOYED FOR THE COMPLETE SYSTEM AND SHALL BE FULLY CONCEALED. FIRE ALARM CABLE SHALL BE "PLENUM" RATED CONSISTING OF #14 (MINIMUM SIZE) COPPER CONDUCTORS WITH HYPALON OR TEFLON INSULATION AND JACKET. THE OUTER JACKET SHALL BE RED IN COLOR. WHERE EXPOSED, FIRE ALARM CABLE SHALL BE INSTALLED IN EMT CONDUIT, SIZE AS REQUIRED.
- FIRE ALARM WIRING SYSTEM SHALL BE CONFIGURED AS CLASS "B".
- PROVIDE GALVANIZED CHASE NIPPLE (OR SIMILAR PLASTIC FITTING) WHERE CABLES ENTER OUTLET BOXES, BACKBOXES, PANELS ETC.

### E. CONTROL PANEL

- EXISTING ZONE TYPE CONTROL PANEL MANUFACTURED BY FCI (FIRE CONTROL INSTRUMENTS). FIELD VERIFY EXACT MODEL. EXPAND EXISTING ZONE FIRE ALARM CONTROL PANEL AS NEEDED TO INCORPORATE NEW FIRE ALARM DESIGNS.

### F. DEVICES:

- PULLSTATIONS SHALL BE DUAL ACTION, RED IN COLOR LABELED "FIRE".
- AUDIO/VISUAL (HORN/STROBE) SHALL BE RED IN COLOR LABELED "FIRE" WITH FIELD SELECTABLE CANDELA RATINGS (15, 30, 75, 95, 110) AS REQUIRED FOR SPACES COVERED.
- VISUAL (STROBE) DEVICES SHALL BE RED IN COLOR LABELED "FIRE". WITH FIELD SELECTABLE CANDELA RATINGS (15, 30, 75, 95, 110) AS REQUIRED FOR SPACES COVERED.
- SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE WITH STANDARD BASE UNLESS OTHERWISE INDICATED.
- HEAT DETECTORS SHALL BE 190° FIXED TEMPERATURE WITH STANDARD BASE UNLESS OTHERWISE INDICATED.
- CO DETECTORS SHALL HAVE AN AN AUDIBLE BASE PROVIDING A TEMPORAL 4 NOTIFICATION TONE.
- SEE "FIRE ALARM SYSTEM SCHEDULE" ON SHEET E-1 FOR FURTHER INFORMATION ON SYSTEM DEVICES.

### G. COMMISSIONING

- THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN THE PRESENCE OF: THE OWNER'S REPRESENTATIVE, CITY REPRESENTATIVE, THE ARCHITECT/ENGINEER, THE CONTRACTOR AND THE FACTORY AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER. UPON COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO CERTIFY, IN WRITING, TO THE JURISDICTION HAVING AUTHORITY, OWNER, ARCHITECT AND THE ENGINEER.
- THE CONTRACTOR SHALL WARRANTY THE COMPLETED FIRE ALARM SYSTEM EQUIPMENT, WIRING AND INSTALLATION, TO BE FREE FROM INHERENT DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE CERTIFIED TEST.

## COMMUNICATIONS SPECIFICATIONS (TELEPHONE / DATA)

### A. GENERAL

- THIS SPECIFICATION OUTLINES REQUIREMENTS FOR VOIP (DATE / TELEPHONE) SYSTEM.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND SERVICE REQUIRED TO PERFORM THE WORK DESIGNATED IN THIS SPECIFICATION. ALL TOOLS, LADDERS, TEST EQUIPMENT AND OTHER ITEMS USED IN THE PERFORMANCE OF THIS WORK SHALL BE PROVIDED BY THE CONTRACTOR.

### B. SUBMITTALS

- SUBMIT PRODUCT DATA SHEETS IDENTIFYING MANUFACTURE AND MODEL NUMBERS.

### C. SITE PREPARATION – EXISTING I.T. CLOSET

- THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH EXISTING EQUIPMENT LOCATED IN EXISTING I.T. CLOSETS. CONSULT OWNER I.T. PERSONAL REGARDING EXISTING SYSTEMS, EQUIPMENT AND OPERATIONS.

### D. EXISTING I.T. CLOSET EQUIPMENT RACK

- EXISTING EQUIPMENT RACKS SHALL REMAIN AND BE REUSED.
- NEW EQUIPMENT SHALL BE CONFIGURED AS DIRECTED BY OWNER I.T. PERSONAL. IF REQUIRED, THE CONTRACTOR IS TO PROVIDE ALL OF THE FOLLOWING LISTED EQUIPMENT:
  - REQUIRED QUANTITY OF 12 OR 24 PORT CAT.6 PATCH PANELS WITH 110 REAR WIRED TO 568B WIRING STANDARD; PREFERABLY WITH CANTERED OR SLANTED FACE FOR EASE OF DISTRIBUTION OF PATCH CORDS. PATCH PANEL QUANTITIES FOR EACH I.T. CLOSET MUST BE FIELD VERIFIED BY E.C. BASE ON EXISTING ON EXISTING EQUIPMENT AND SPARE PORTS.
- HORIZONTAL CABLING FOR RACK WILL BE RUN INTO THE REAR OF THE PATCH PANELS AND EQUIPMENT RACKS SO THAT THE CABLE IS SPLIT, ENTERING AND BEING DISTRIBUTED FROM BOTH SIDES OF THE REAR OF THE RACK. THIS ALLOWS FOR BOTH SIDES OF THE REAR DUCTWORK TO BE UTILIZED FOR CABLE PATHWAY.
- THE CABLEING IS TO EGRESS FROM THE CEILING AND ENTER THE REAR DUCT CAVITIES IN THE MOST DIRECT MANNER.
- A MINIMUM OF 3' AND NOT MORE THAN 6' OF CABLE SLACK IS TO BE LEFT WITHIN THE DUCTWORK OF EACH RACK AND AN ADDITIONAL 15' SHOULD BE LEFT NEATLY COILED ABOVE THE CEILING TO PROVIDE FOR LIMITED MOVES, ADDS AND CHANGES.
- ALL CABLE IS TO BE DRESSED AS NEATLY AS POSSIBLE.

### E. CABLING:

- THE CONTRACTOR SHALL PROVIDE CATEGORY 6 PLENUM RATED CABLING WITH BLUE OUTER JACKET.

### F. GENERAL HORIZONTAL CABLING:

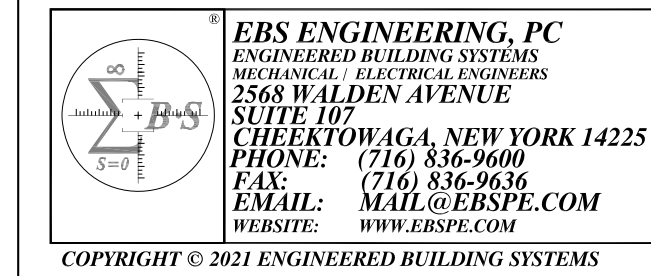
- THE CONTRACTOR SHALL NUMBER AND LABEL ALL DATA PLOTS TO MEET OWNER REQUIREMENTS. VERIFY WITH OWNER I.T. REPRESENTATIVE IF A SPECIFIC NUMBERING SYSTEM IS TO BE APPLIED.
- ALL CONNECTORS ARE TO BE PLACED IN FLUSH MOUNTED WALL PLATES. SEE SHEET E-1 FOR FURTHER WALL PLATE SPECIFICATIONS
- TEN(10) FEET OF SLACK IS TO BE LEFT NEATLY COILED IN THE CEILING DIRECTLY ABOVE THE WALL OUTLETS. THIS IS TO PROVIDE SUFFICIENT SLACK ON CABLING FOR LIMITED FUTURE MOVES, ADDS AND CHANGES
- ALL CABLE IS TO BE RUN THROUGH THE BUILDING IN A SYSTEMATIC MANNER IN WHICH THE CABLE PATH FOLLOWS THAT OF THE INTERIOR CORRIDORS UNTIL THE CABLE IS TO BREAK OUT FROM THE GROUP HEADING TOWARDS THE INDIVIDUAL OUTLETS.
- ALL CABLES SHALL EMANATE FROM PATCH PANELS IN EXISTING I.T. ROOM.
- CABLING IS TO BE SUPPORTED BY DEDICATED CABLE HANGERS OR LADDERS INSTALLED THROUGHOUT THE BUILDING.
- ALL CABLES IN GROUPS OF MORE THAN 6 CABLES MUST BE SUPPORTED BY THIS DEDICATED NETWORK OF HANGERS OR LADDERS.
- IF HANGERS ARE TO BE USED, ALL HANGERS ARE TO BE PLACED AT INTERVALS OF BETWEEN 3 TO 6 FEET APART.
- ANY CABLE GROUP LESS THAN 6 CABLES CAN BE SUPPORTED BY THE EXISTING STRUCTURES SUCH AS CEILING GRID HANGERS.
- AVOID LAYING CABLING DIRECTLY ON CEILING GRID / TILE SYSTEM.

### G. MANUFACTURE

- UTILIZE LEVITON PRODUCTS. ALTERNATE MANUFACTURE MUST BE APPROVED BY BOTH THE OWNER AND ENGINEER PRIOR TO SUBMITTAL PHASE.

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2021-06-29: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**ELECTRICAL  
SPECIFICATIONS**



SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #: **E-10**

## LEGEND

TYP.	TYPICAL
U/F	UNDER FLOOR
RPZ	REDUCED PRESSURE ZONE ASSEMBLIES
MC	MECHANICAL CONTRACTOR
GC	GENERAL CONTRACTOR
CONT.	CONTINUATION
N/A	NOT APPLICABLE
PC	PLUMBING CONTRACTOR
RM.	ROOM
BLDG.	BUILDING
KEC	KITCHEN EQUIPMENT CONTRACTOR
HVAC	HEATING, VENTILATING, AIR CONDITIONING
F/#	FOR/NUMBER OF HEADS

SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE AS REQUIRED BY CODE. CONTRACTOR TO CONSULT WITH SPECIFICATIONS REGARDING EXPOSED SPRINKLER HEAD FINISH BEFORE ORDERING.

### SCHEDULE OF SPRINKLER HEADS

SYMBOL	DESCRIPTION
☉	Pendant Semi-recessed head with white finish and upright sprinkler head, 1/2" orifice, 155°F. <i>UL Listed</i> and FM approved. "Rooster Style" – Reliable Sprinkler or equal.
☉	Pendant fully-recessed anti-corrosion head with finish cover plate, 1/2" orifice, 155°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler F1FR-56 series or Viking VK302 with ENT Coating.
☉	Dry Pendant Semi-recessed head with white finish and upright sprinkler head, 1/2" orifice, 155°F. <i>UL Listed</i> and FM approved. "Rooster Style" – Reliable Sprinkler or equal.
☉	Full-(concealed) head with white finish, 1/2" orifice, 165°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler G5-56 series or equal.
○	Upright brass head, 1/2" orifice, 210°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler or equal.
☉	Anti-corrosion Upright head with corrosion resistant polyester coating, 1/2" orifice, 210°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler F1FR-56 series or equal.
⬆	Fully-recessed Sidewall type head with white finish, 1/2" orifice, 165°F. <i>UL Listed</i> and FM approved. Quick Response, Extended Coverage. Reliable Sprinkler G6-80 series or equal.
△	Sidewall type head with white finish, 1/2" orifice, 155°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler or equal.
▲	Dry Sidewall type head with white finish and white escutcheon, 1/2" orifice, 155°F. <i>UL Listed</i> and FM approved. Reliable Sprinkler or equal.

### FIRE PROTECTION SYSTEMS SPECIFICATIONS

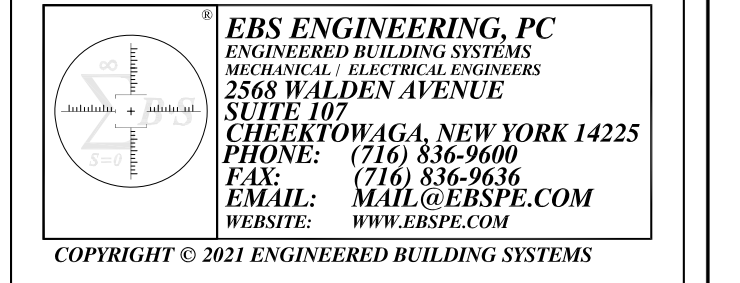
- The contractor shall be responsible for a complete turn key installation using Underwriter Laboratories UL listed products including design, obtaining approvals and coordination with other trades. Install to meet NFPA 13, NFPA 72, NFPA 101, and the local Authority Having Jurisdiction requirements.
- Sprinkler heads, mains, runouts, tailbacks, sprigs etc. shall be provided as follows:
  - The fire protection contractor shall provide services for this project on a design build basis. Provide all required materials and designs for a 100% complete, functional and code compliant installation. Provide piping drawings, schematics, material specifications etc. with flow calculations to the local jurisdiction having authority for review and approval prior to installation. All prospective bidders shall visit the site prior to bid submission to verify field conditions and scope of work. Coordinate main fire protection service size requirements and all locations of fire protection mains serving the building with the Civil Engineer and Architect prior to bid submission. Provide flow and tamper switches as required and coordinate terminations with the electrical contractor. Main fire protection service is existing, provide new drops to new sprinkler heads.
- Sprinkler head locations shall be used as a guide for bid. Sprinkler locations show approximate locations with full rcp and field coordination to be provided by the successful contractor. Provide all heads as required per NFPA 13. Existing fire protection service is in place. Verify all piping and head requirements with hydraulic calculations.
- The suggested sprinkler locations are not intended to limit the contractor from providing another design that may be more economical and still meet the requirements of the local Authority Having Jurisdiction and NFPA.
- Comply with Architectural requirements for painting interior piping. Paint exposed, interior metal piping, valves, and piping specialties, except components, with factory-applied paint or protective coating. Exposed sprinkler heads shall be piped according to color requirements below.
 

W.B. Light Industrial Coating: MPI INT 5.1B – G5. Prime Coat: Rust Inhibitive Primer. (MPI #107). Intermediate Coat: W.B. Light Industrial Coating (MPI #153). Topcoat: W.B. Light Industrial Coating (MPI #153). Color: Black.

Damage and Touchup: Repair marred and damaged factory-applied finishes with materials and by procedures to match original factory finish.
- Working plans and computerized hydraulic calculations shall be prepared by a minimum Level 3 N.I.C.E.T. Certified Sprinkler Layout Designer. Submit working plans and hydraulic calculations signed and sealed by a Professional Fire Protection Engineer registered in the state in which the project is located, to Authorities that Have Jurisdiction. Design documents are for permit purposes. The design is not intended to limit the contractor from providing another design that may be more economical and still meet the requirements of the Local Authority Having Jurisdiction. All drawings, including As-Builts, shall be submitted on disc using AUTO CAD.
- The hydraulic calculations shall include the pressure drop through all pipe, fittings and devices, including the pressure drop through the reduced pressure principle backflow preventer, from the most hydraulic remote point of the sprinkler system to the location of the test hydrant.
- Submit drawings to local fire dept. and obtain necessary approvals, permits and certificates prior to submission to the engineer for final review.
- Where required by code or directed by local authorities, contractor shall provide seismic hanging & constraints on all piping in complete accordance with the latest issue of the State Plumbing Building Code, local codes and NFPA.
- The fire protection contractor shall provide a guarantee covering all design, installation, material and workmanship for five years following date of acceptance by Owner.
- The hydraulic calculations shall be based on the flow test data listed below (this information shall be provided by the fire protection contractor at submittal of shop drawings and calculations):
  - Static pressure psi.
  - Residual pressure psi.
  - Flow gpm.
  - Flow/test hydrant locations.
  - Date of test.
  - Time of test.
  - Responsible party conducting test.
  - Hydrant outlet discharge coefficient.
- Piping shall be sloped to drain back to sprinkler riser. Auxiliary drainage in accordance with NFPA 13 shall be provided for all trapped sections of pipe.
- Pipe all drains and inspector's test to outside, or discharge to a drain approved by the owner for sprinkler discharge.
- Provide automatic sprinkler below obstructions 48 inches and wider. (platforms, ductwork, stairways, unit heater, etc).
- Refer to the architectural drawings for reflected ceiling plans and coordinate all work with all other contractors prior to installation of the sprinkler system. Up front field coordination between all contractors is required due to limited space constraints.

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JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**FIRE PROTECTION  
LEGENDS,  
SCHEDULES, &  
SPECIFICATIONS**



**SILVESTRI  
ARCHITECTS + PC**

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #:  
**FP-1**

GENERAL FIRE PROTECTION DRAWING NOTES:

1. FIELD VERIFY ALL EXISTING HEADS AND PIPING LOCATIONS, SIZES, ETC. IN WORK AREA. ALL HEADS ARE TO BE RELOCATED/REMOVED AND PIPING SHALL BE REMOVED AS REQUIRED FOR NEW LAYOUT - SEE DRAWING NOTES. ALL REMOVED HEADS AND PIPING ARE TO BE DISPOSED OF PROPERLY PER NEW YORK STATE CODES. EXISTING PIPING AND ZONING CONTROLS ARE TO REMAIN AND SHALL BE REUSED AS MUCH AS POSSIBLE. SHOULD ANY EXISTING PIPING, VALVES, OR CONTROLS, NOT PASS THE REQUIRED TESTS, THEY ARE TO BE REPLACED IN KIND. COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED SHOULD ANY CONTROLS NEED TO BE REPLACED. CONTRACTOR TO PERFORM NEW HYDRAULIC CALCULATIONS PER SPECIFICATIONS BEFORE INSTALLING ANY NEW ELEMENTS OF THE SYSTEM.
2. COORDINATE ALL NEW PIPING AND FINAL HEAD LOCATIONS WITH EXISTING STRUCTURE AND ALL OTHER WORK - EXISTING AND NEW MECHANICAL, PLUMBING, ELECTRICAL, ETC.

FIRE PROTECTION DRAWING NOTES  $\diamond$ :

1. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR CORRIDORS, CLASSROOMS, OFFICES, AND RESTROOMS. THE SPACES ARE LIGHT HAZARD. SEE GENERAL NOTES.

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ISSUE:  
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 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**FIRE PROTECTION  
 PARTIAL FIRST  
 FLOOR PLAN**



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SA JOB #: **14082.07** DATE: **6-29-2021**

DRAWING #: **FP-2**



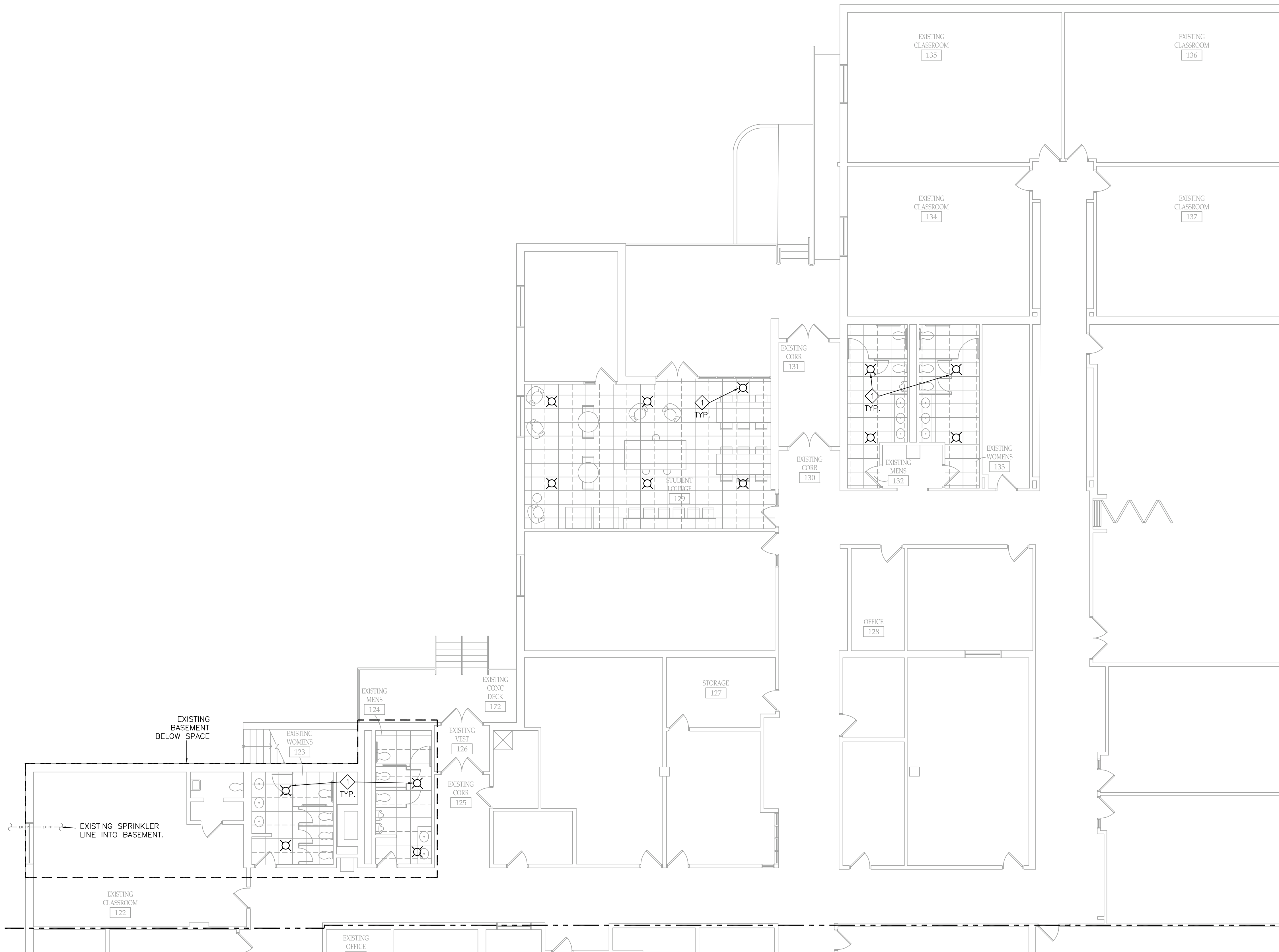
**1 FIRE PROTECTION - PARTIAL 1ST FL. PLAN**  
 FP-2 SCALE: 1/8" = 1'-0"

**FIRE PROTECTION DRAWING NOTES**

1. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR CORRIDORS, CLASSROOMS, OFFICES, AND RESTROOMS. THE SPACES ARE LIGHT HAZARD. SEE GENERAL NOTES.

**GENERAL FIRE PROTECTION DRAWING NOTES:**

1. FIELD VERIFY ALL EXISTING HEADS AND PIPING LOCATIONS, SIZES, ETC. IN WORK AREA. ALL HEADS ARE TO BE RELOCATED/REMOVED AND PIPING SHALL BE REMOVED AS REQUIRED FOR NEW LAYOUT - SEE DRAWING NOTES. ALL REMOVED HEADS AND PIPING ARE TO BE DISPOSED OF PROPERLY PER NEW YORK STATE CODES. EXISTING PIPING AND ZONING CONTROLS ARE TO REMAIN AND SHALL BE REUSED AS MUCH AS POSSIBLE. SHOULD ANY EXISTING PIPING, VALVES, OR CONTROLS, NOT PASS THE REQUIRED TESTS, THEY ARE TO BE REPLACED IN KIND. COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED SHOULD ANY CONTROLS NEED TO BE REPLACED. CONTRACTOR TO PERFORM NEW HYDRAULIC CALCULATIONS PER SPECIFICATIONS BEFORE INSTALLING ANY NEW ELEMENTS OF THE SYSTEM.
2. COORDINATE ALL NEW PIPING AND FINAL HEAD LOCATIONS WITH EXISTING STRUCTURE AND ALL OTHER WORK - EXISTING AND NEW MECHANICAL, PLUMBING, ELECTRICAL, ETC.



**1 FIRE PROTECTION - PARTIAL 1ST FL. PLAN**  
 SCALE: 1/8" = 1'-0"

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 JOB CAPT. \_\_\_\_\_ INTERIORS N.Catuzza

SEAL:

TITLE:  
**FIRE PROTECTION  
 PARTIAL FIRST  
 FLOOR PLAN**

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