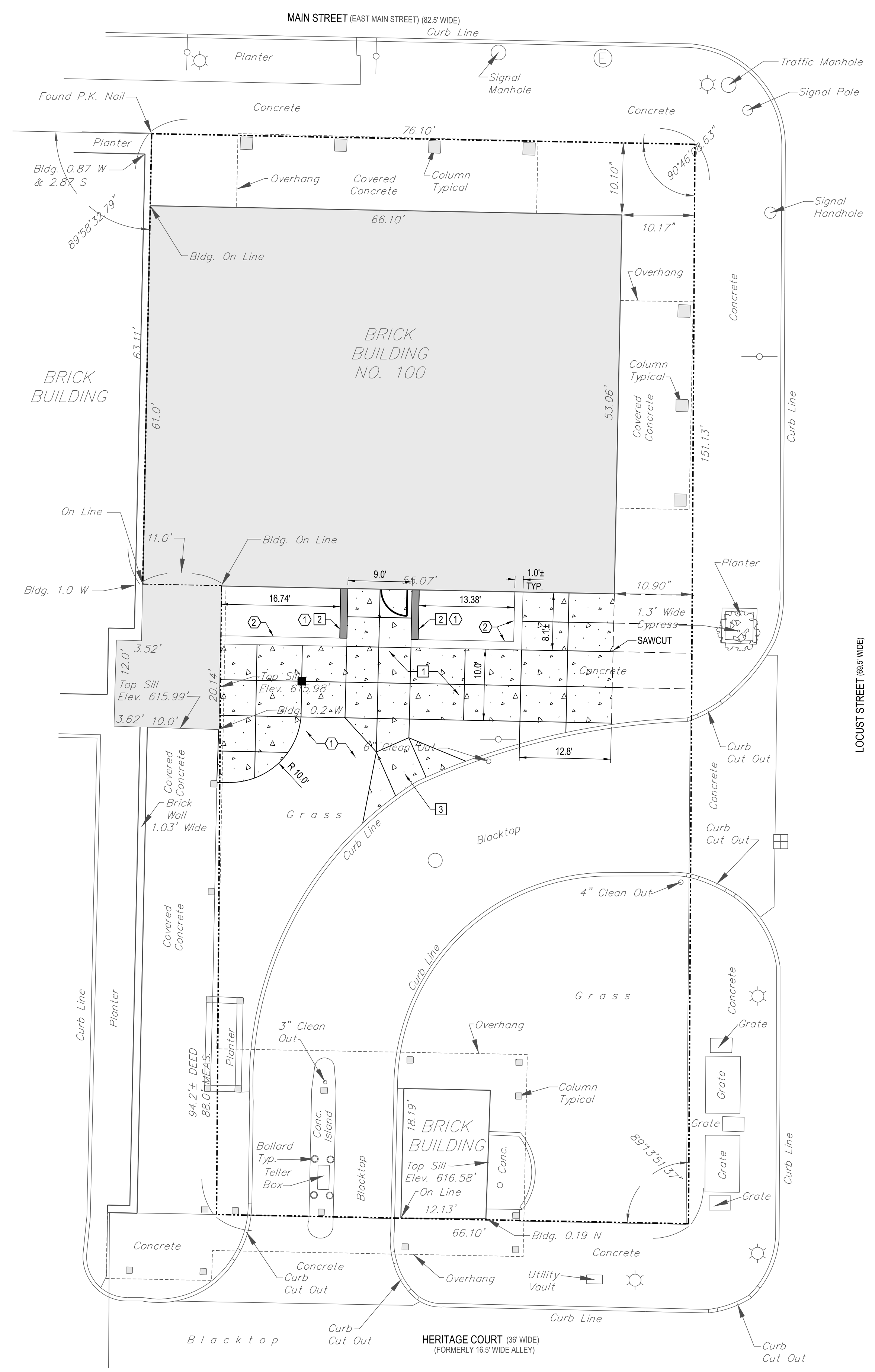


**DEMOLITION PLAN**  
SCALE: 1"=10'



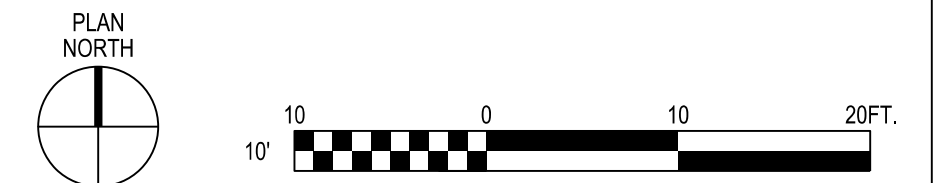
**SITE PLAN**  
SCALE: 1"=10'

**SITE PLAN DETAIL LEGEND**

- ① CONCRETE SIDEWALK
- ② PLANTER/RETAINING WALL
- ③ ACCESSIBLE CURB RAMP 'A'

**SITE PLAN SHEET KEYNOTES**

- ① BACKFILL AND RESTORE LANDSCAPING TO EXISTING CONDITION AND/OR TOPSOIL & SEED
- ② EXISTING RETAINING WALL TO REMAIN



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ISSUE: \_\_\_\_\_

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

SEAL: \_\_\_\_\_

**TITLE:**  
**DEMOLITION**  
**PLAN & SITE**  
**PLAN**



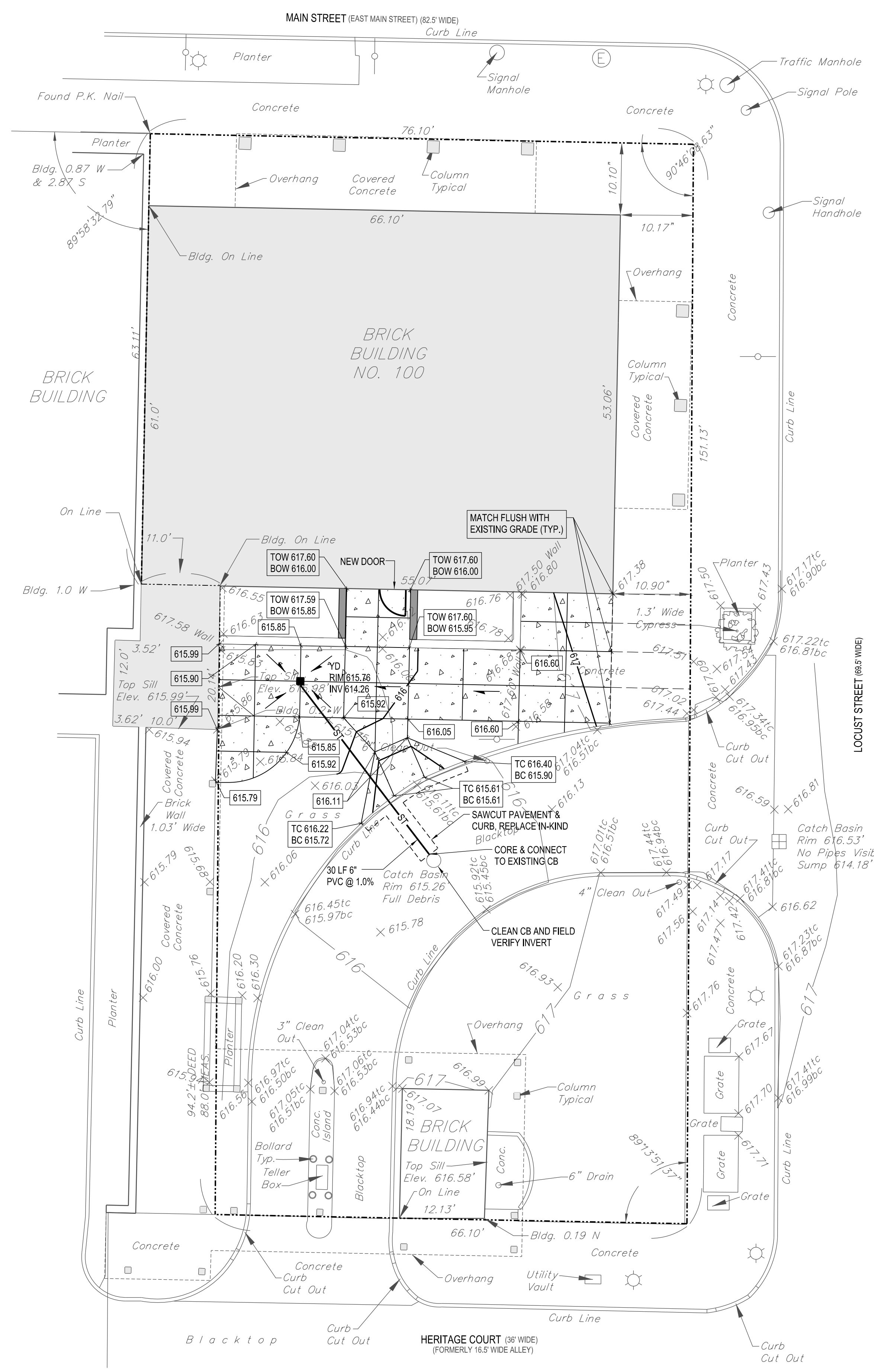
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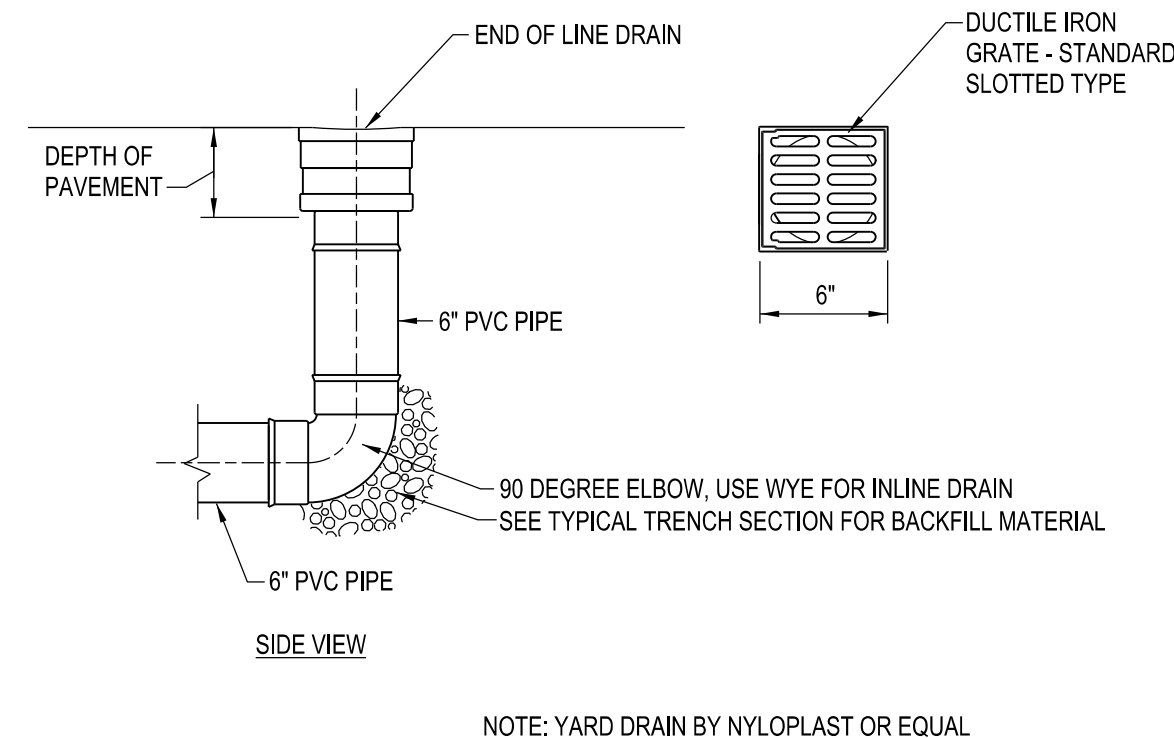
SA JOB #: 21055.01 DATE: 6-27-22

DRAWING #: **C-101**

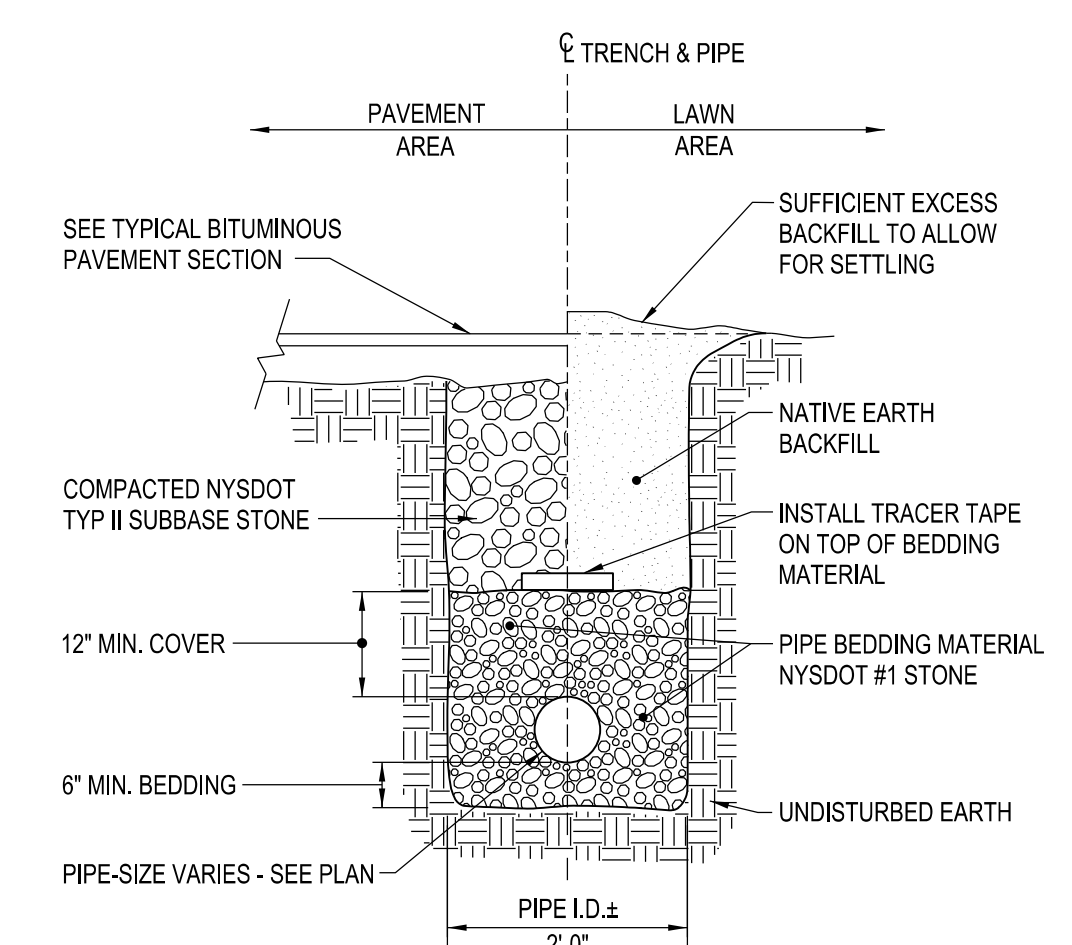




**GRADING PLAN**  
SCALE: 1"=10'



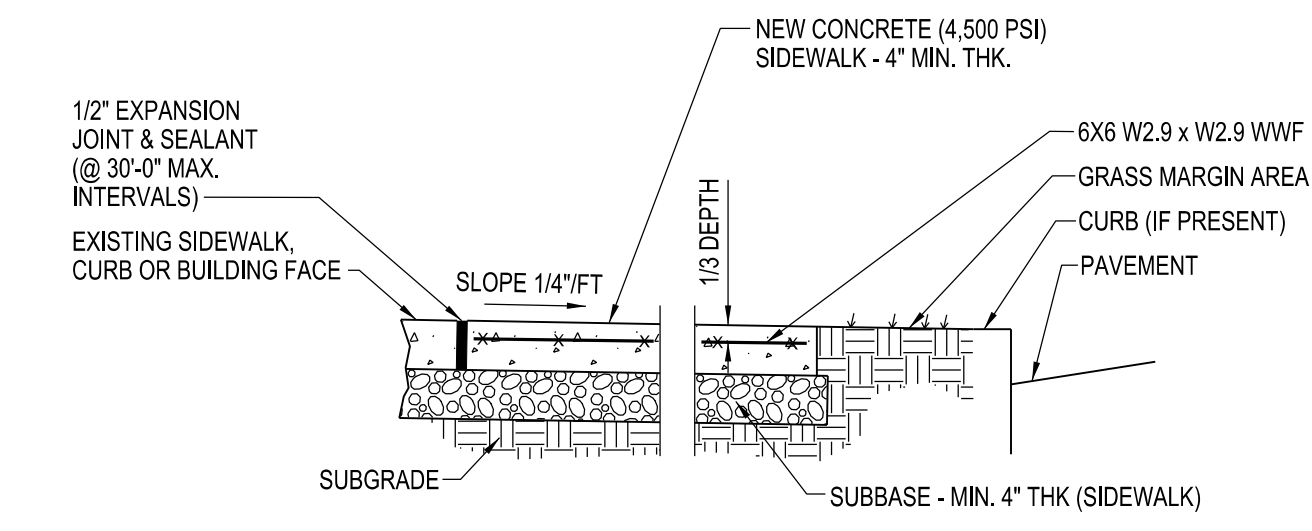
**6" YARD DRAIN**  
SCALE: NTS



**STORM PIPE TRENCH SECTION**  
SCALE: NTS

**GRADING LEGEND**

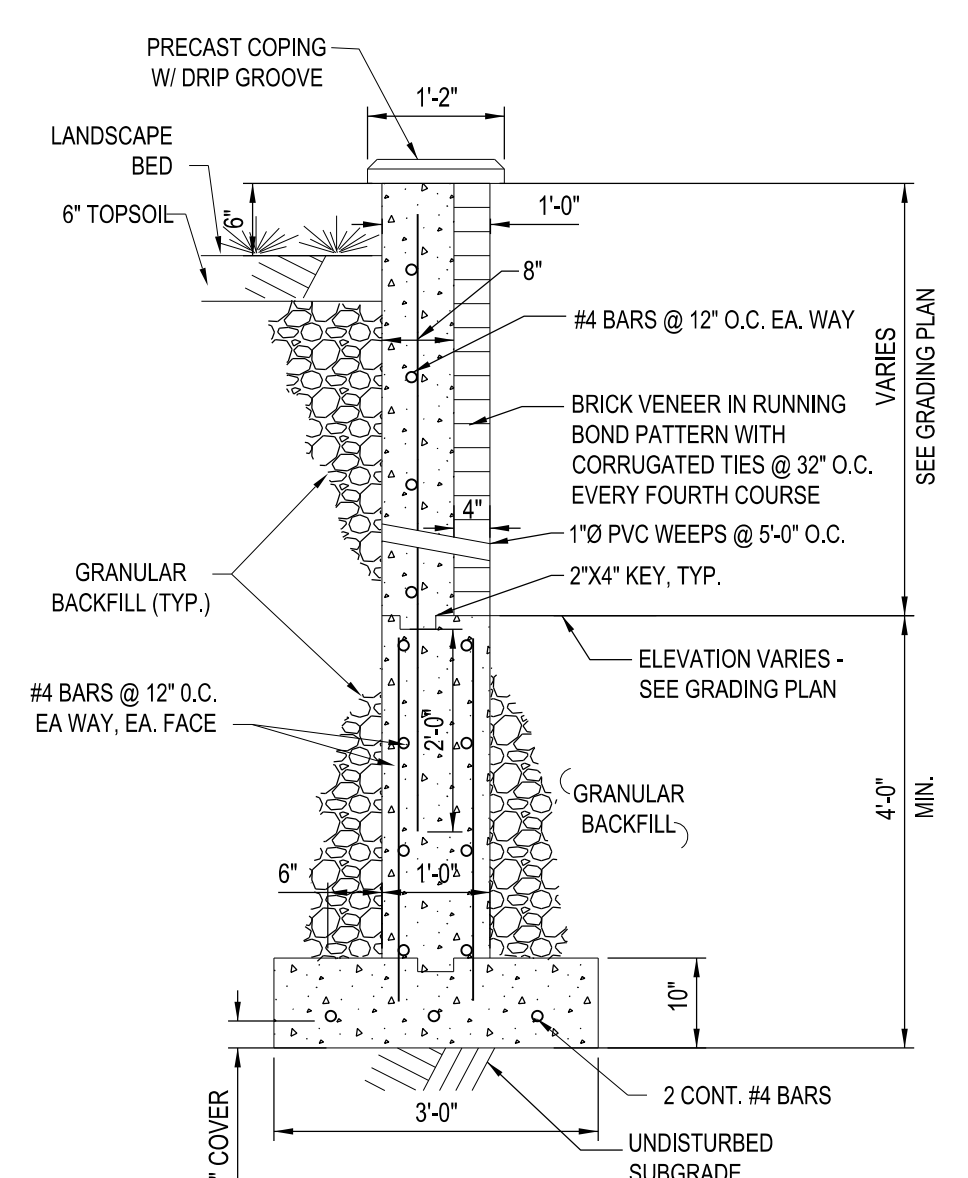
	PROPOSED POINT ELEVATION
	PROPOSED CONTOUR
	TOP OF WALL
	BOTTOM OF WALL
	FLOW DIRECTION
	STORM SEWER
	YARD DRAIN



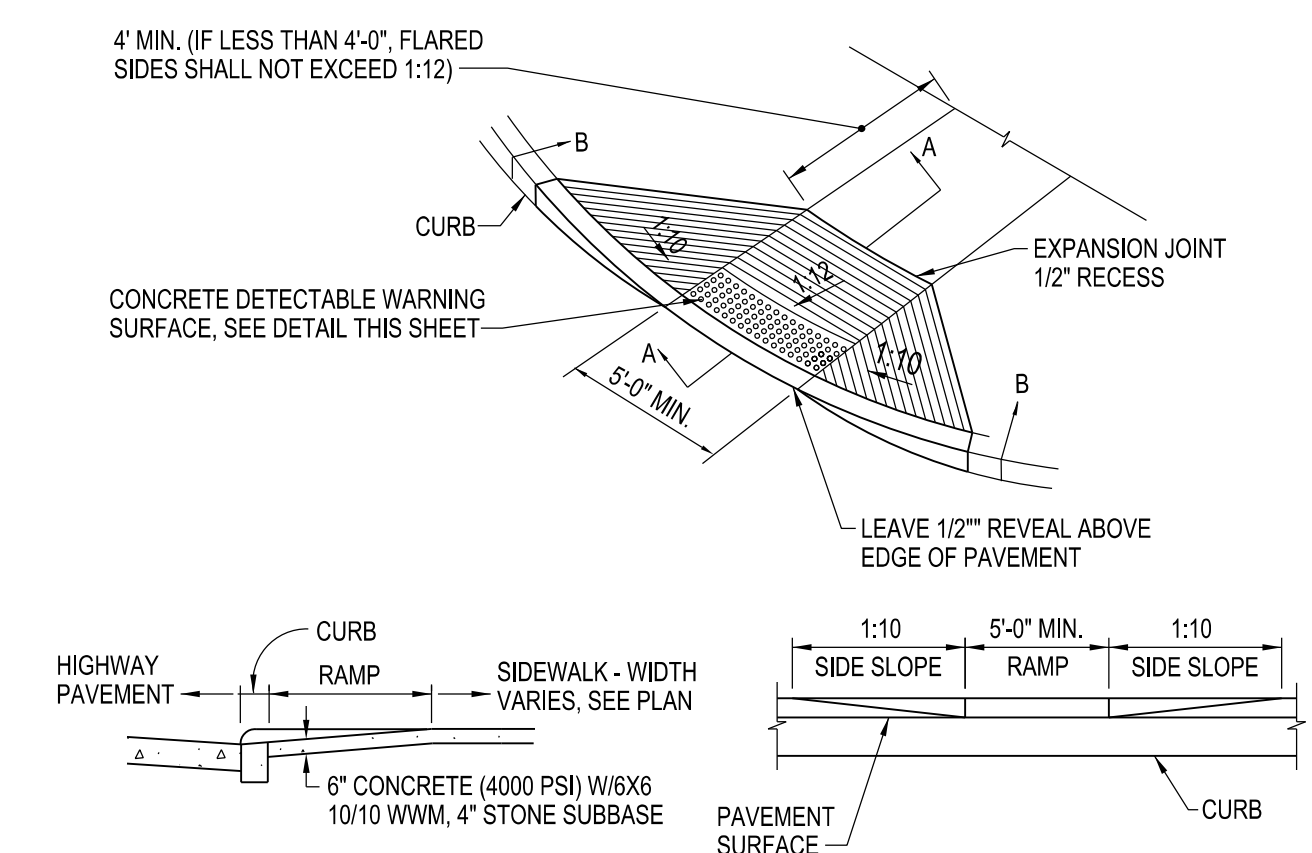
**CROSS SECTION**

- NOTES:
- CONTROL JOINTS TO BE AT 5'-0" O.C. BOTH WAYS OR AS SHOWN ON DRAWINGS. SEAL JOINTS PER SPECIFICATIONS.
  - CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3

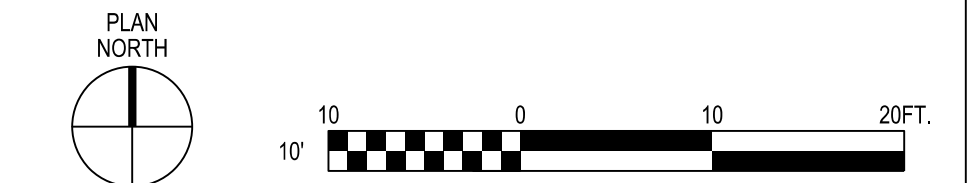
**CONCRETE SIDEWALK**  
SCALE: NTS



**PLANTER RETAINING WALL**  
SCALE: NTS



**ACCESSIBLE CURB RAMP 'A'**  
SCALE: NTS



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JOB CAPT. \_\_\_\_\_ INTERIORS \_\_\_\_\_

SEAL:

TITLE:  
**GRADING PLAN & DETAILS**

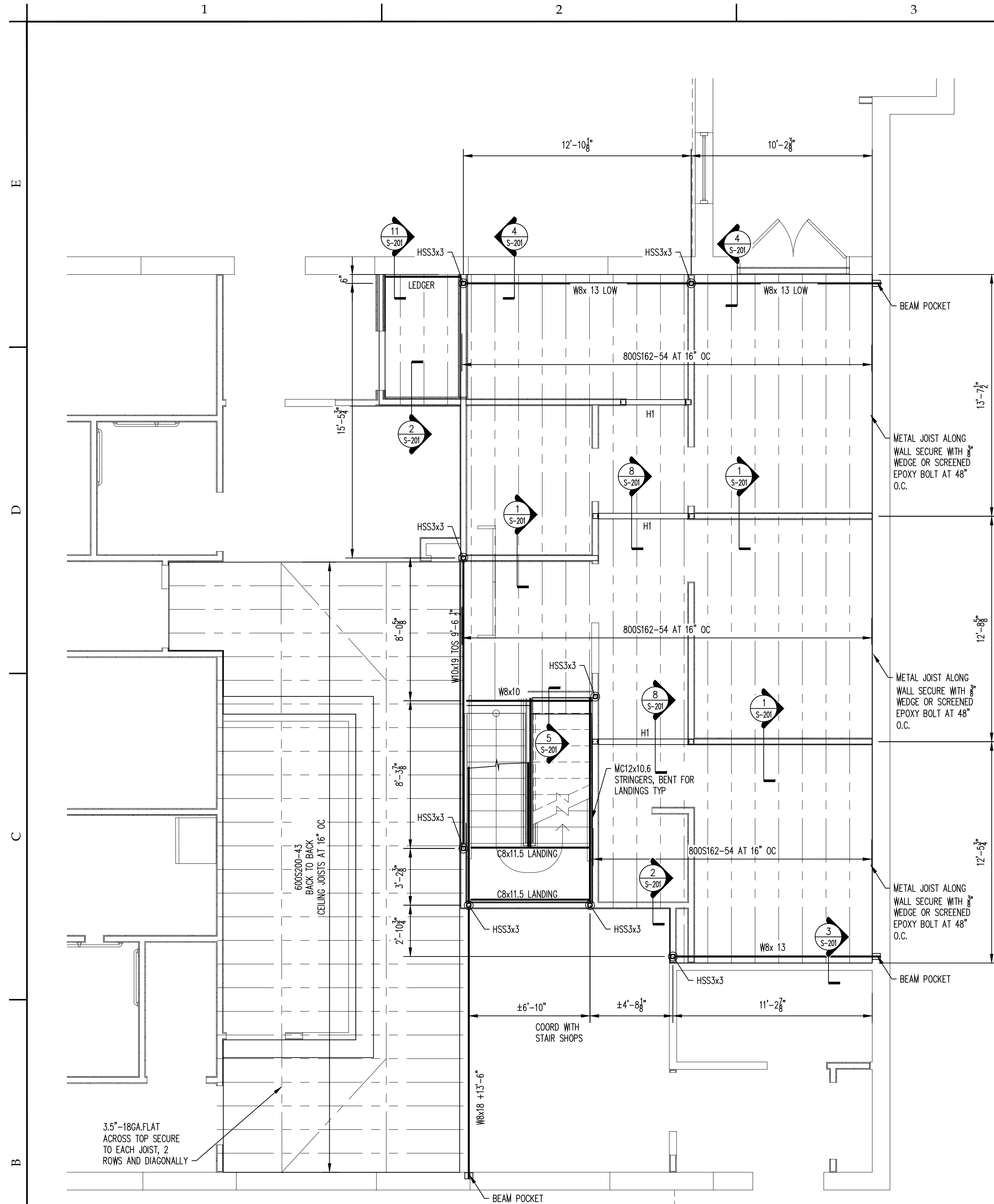


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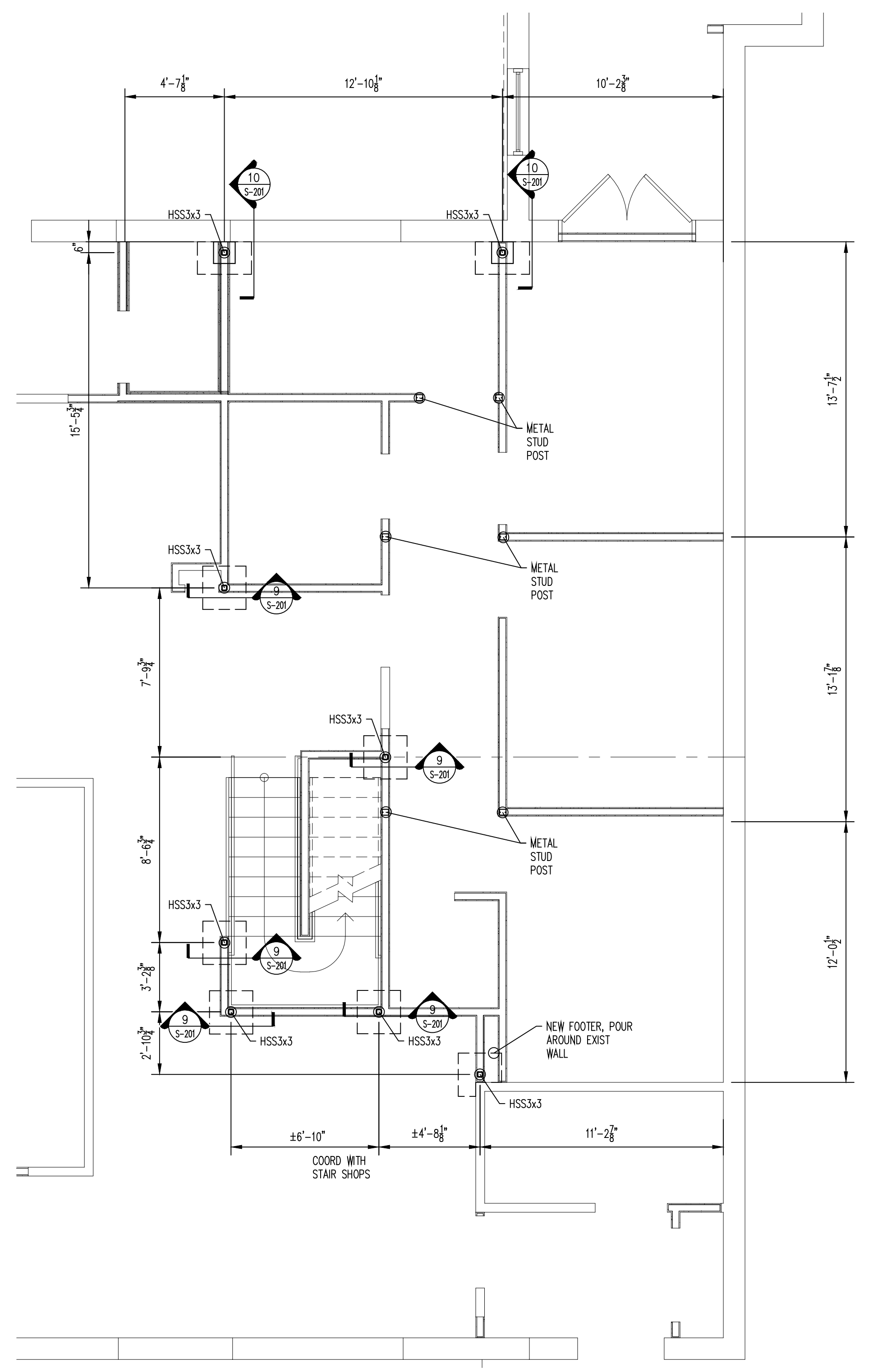
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SA JOB #: 21055.01 DATE: 6-27-22

DRAWING #: **C-102**



**1** MEZZANINE FRAMING PLAN  
SCALE: 1/4"=1'-0"



**2** MEZZANINE FOUNDATION PLAN  
SCALE: 1/4"=1'-0"

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PROJ. ARCH. \_\_\_\_\_ DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS \_\_\_\_\_

SEAL:

TITLE:  
**MEZZANINE FRAMING / FOUNDATION PLAN**



**SILVESTRI ARCHITECTS PC**

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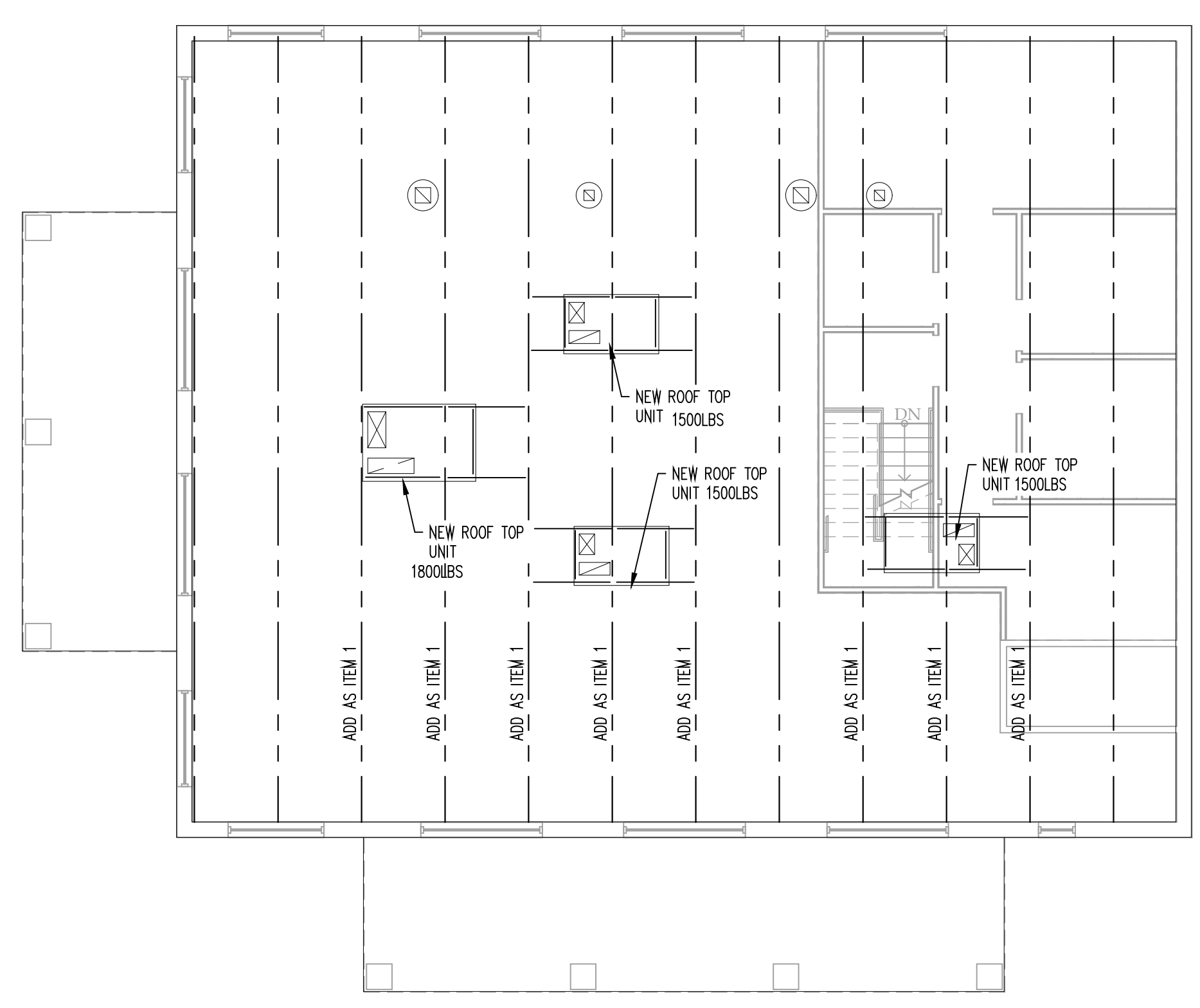
SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **S-101**

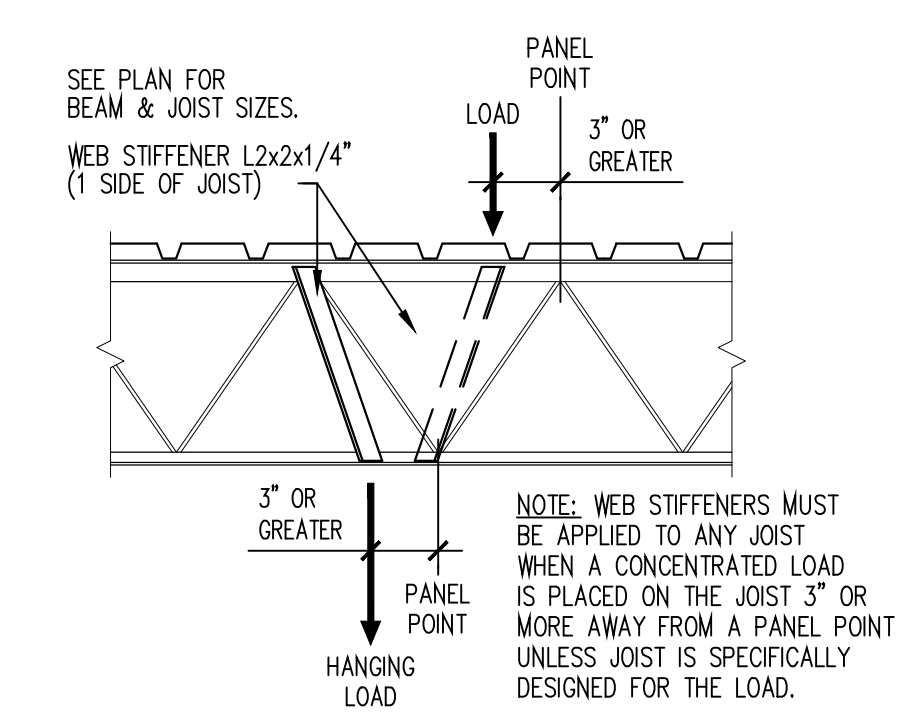


1 2 3 4 5 6

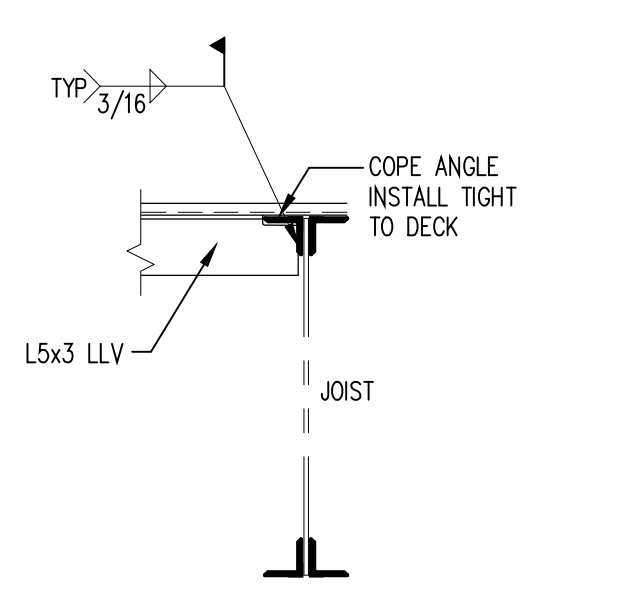
E  
D  
C  
B  
A



**5** ROOF PLAN  
SCALE: 1/8"=1'-0"

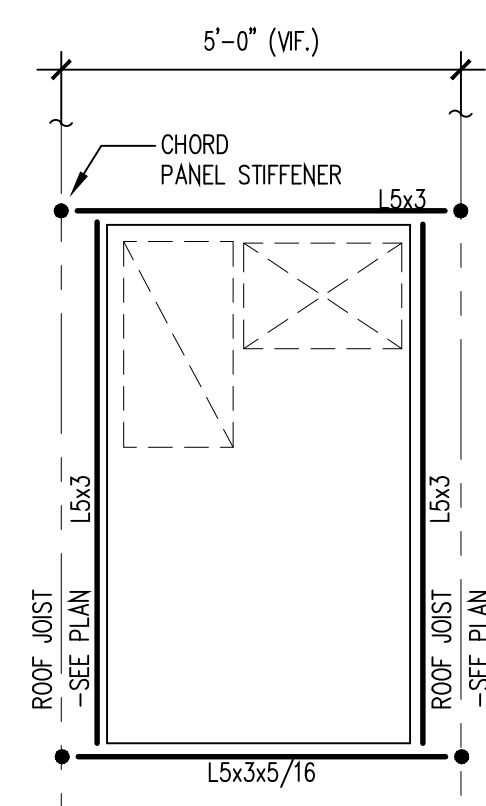


**1** WEB STIFFENER FOR "K" AND "LH" JOISTS  
SCALE: NONE



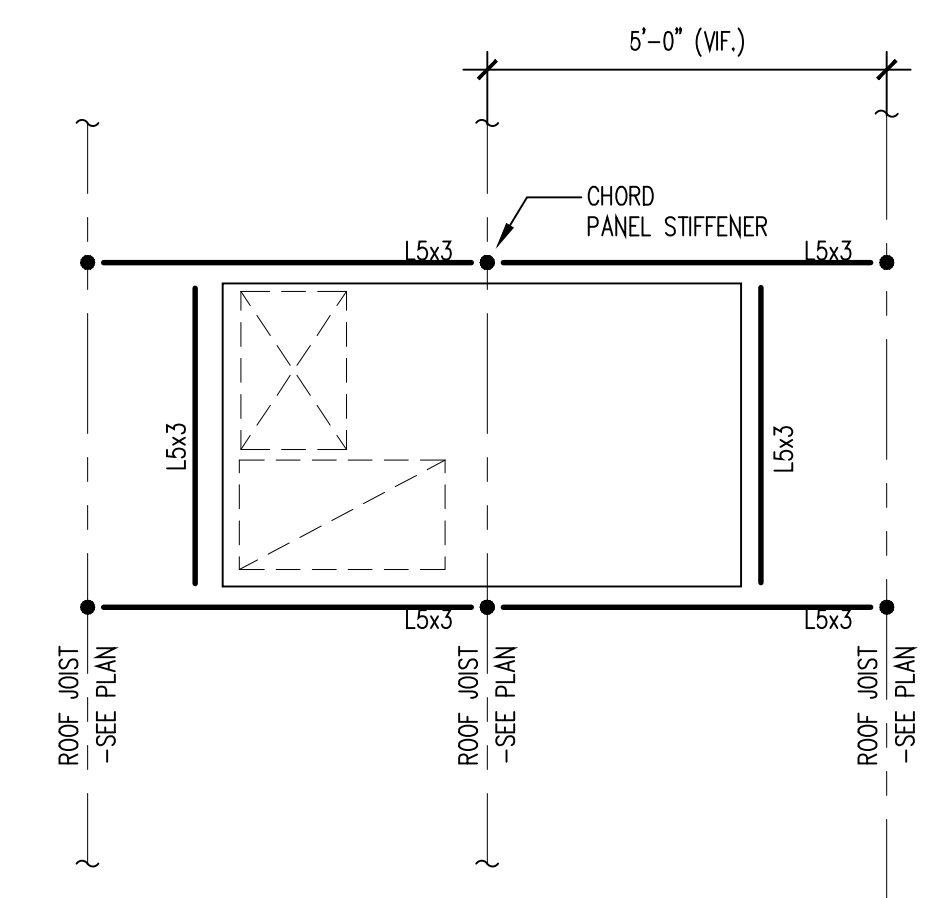
**4** SECTION  
SCALE: NONE

SIMILAR CONNECTION AT ANGLE TO ANGLE



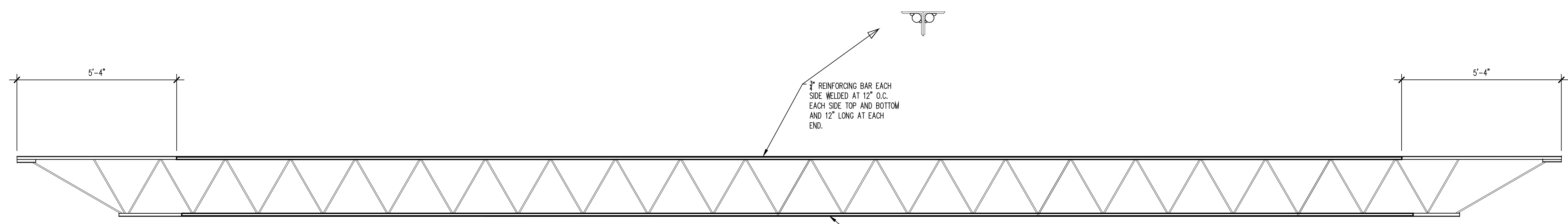
**2** TYPICAL ROOF UNIT SUPPORT  
SCALE: NONE

NOTE: ALL UNEQUAL LEG ANGLES ARE TO BE LONG LEG VERTICAL (LLV).



**3** TYPICAL ROOF UNIT SUPPORT  
SCALE: NONE

NOTE: ALL UNEQUAL LEG ANGLES ARE TO BE LONG LEG VERTICAL (LLV).



**5** BAR JOIST REINFORCING, ADD ITEM 1  
SCALE: NONE

8 BAR JOISTS TO RECEIVE REINFORCING THIS DETAIL, PROVIDE A LINE ITEM COST

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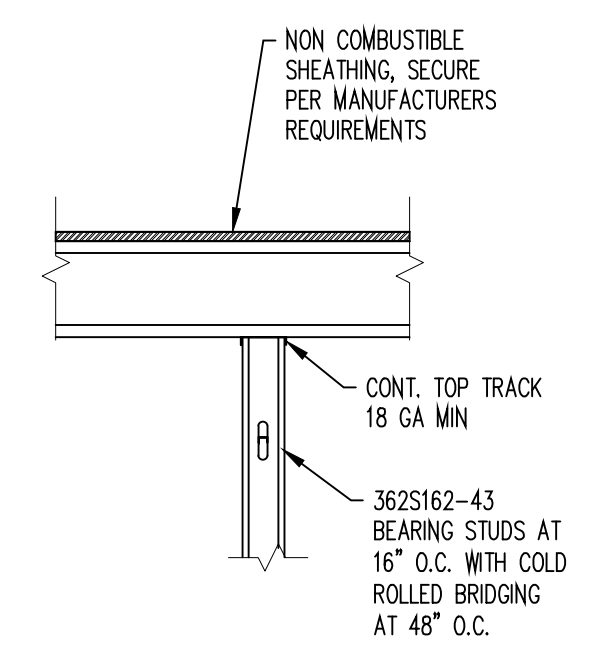
TITLE:  
**ROOF TOP MECHANICAL PLAN**

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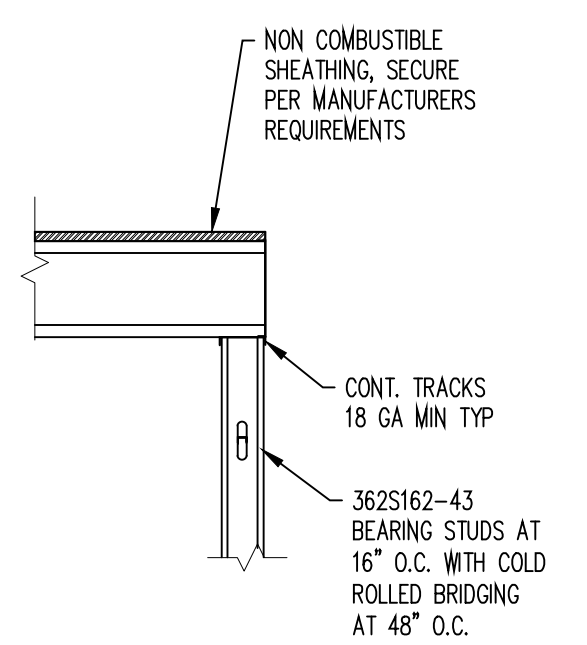
SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **S-102**

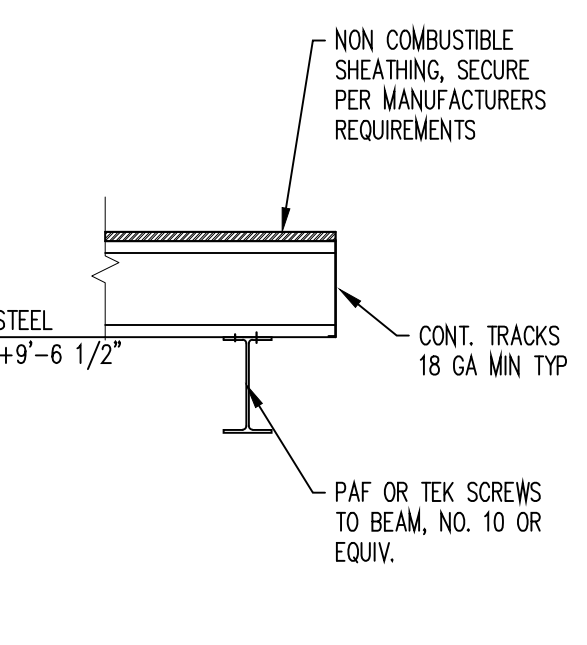
1 2 3 4 5 6



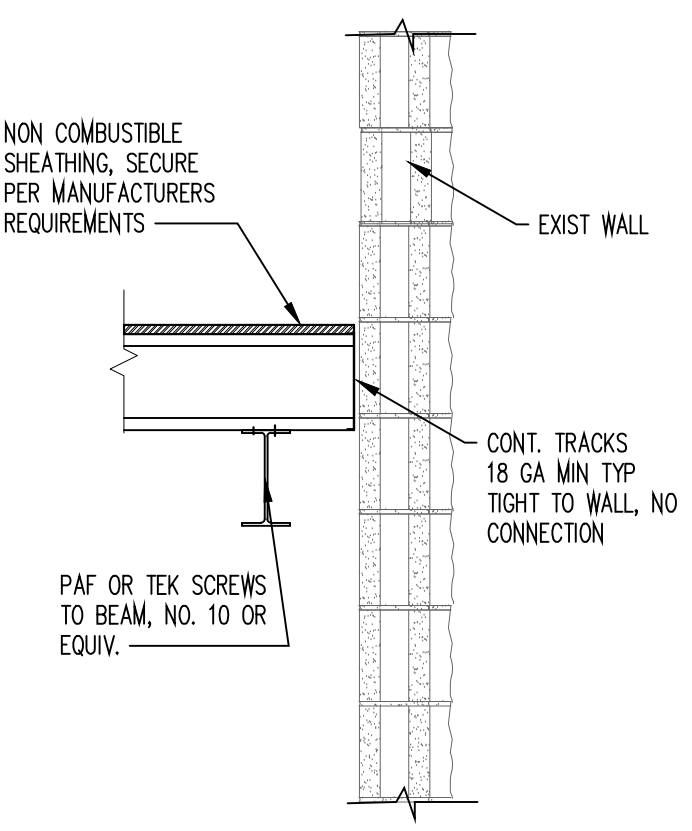
**1 SECTION**  
SCALE: 3/4"=1'-0"



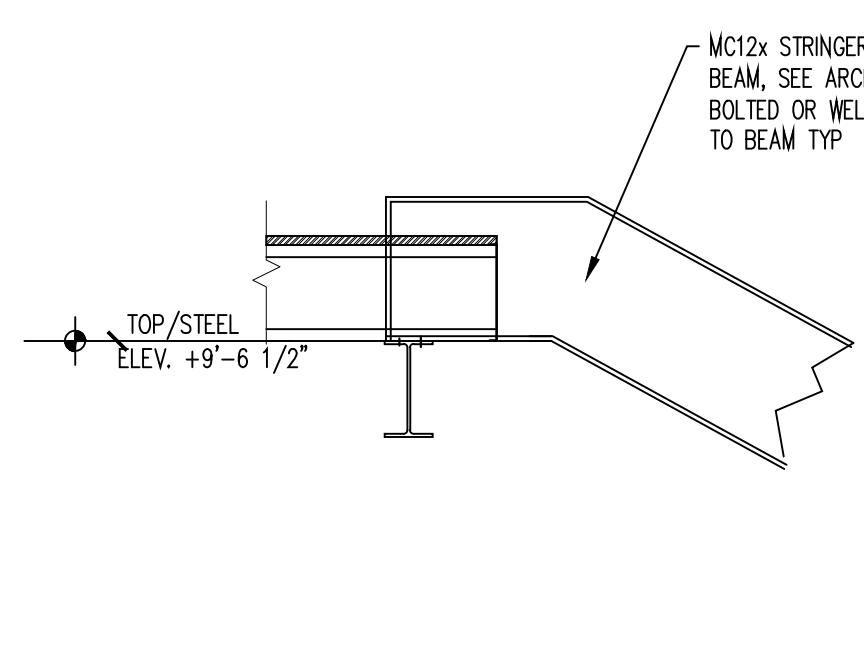
**2 SECTION**  
SCALE: 3/4"=1'-0"



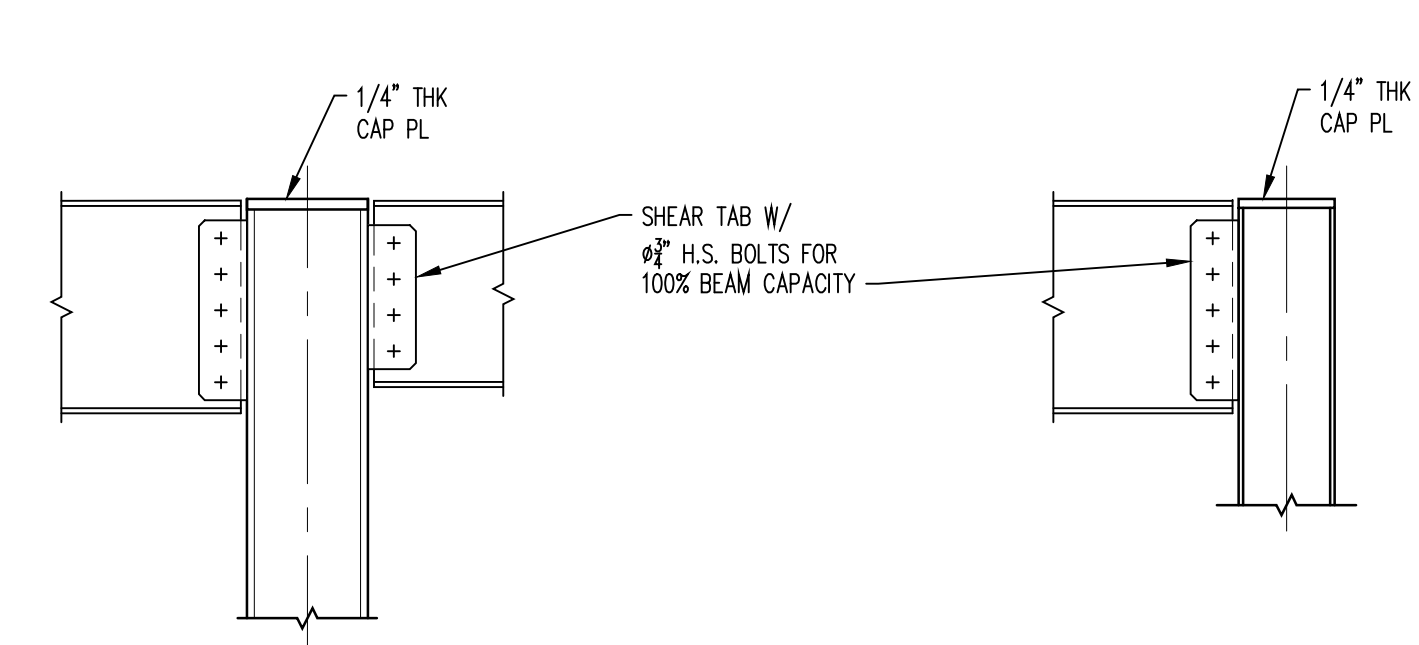
**3 SECTION**  
SCALE: 3/4"=1'-0"



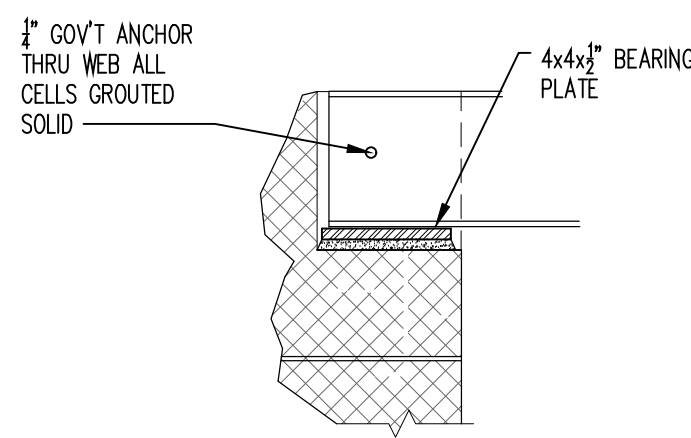
**4 SECTION**  
SCALE: 3/4"=1'-0"



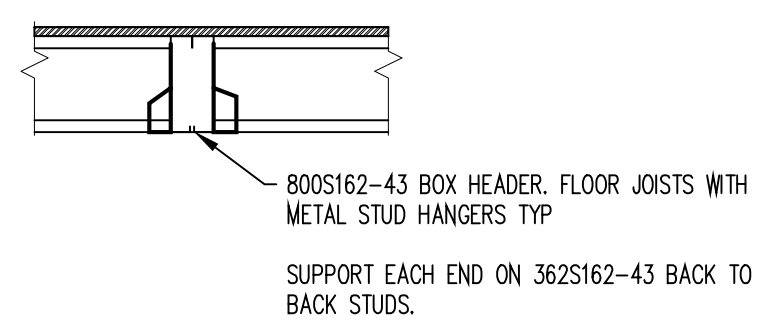
**5 SECTION**  
SCALE: 3/4"=1'-0"



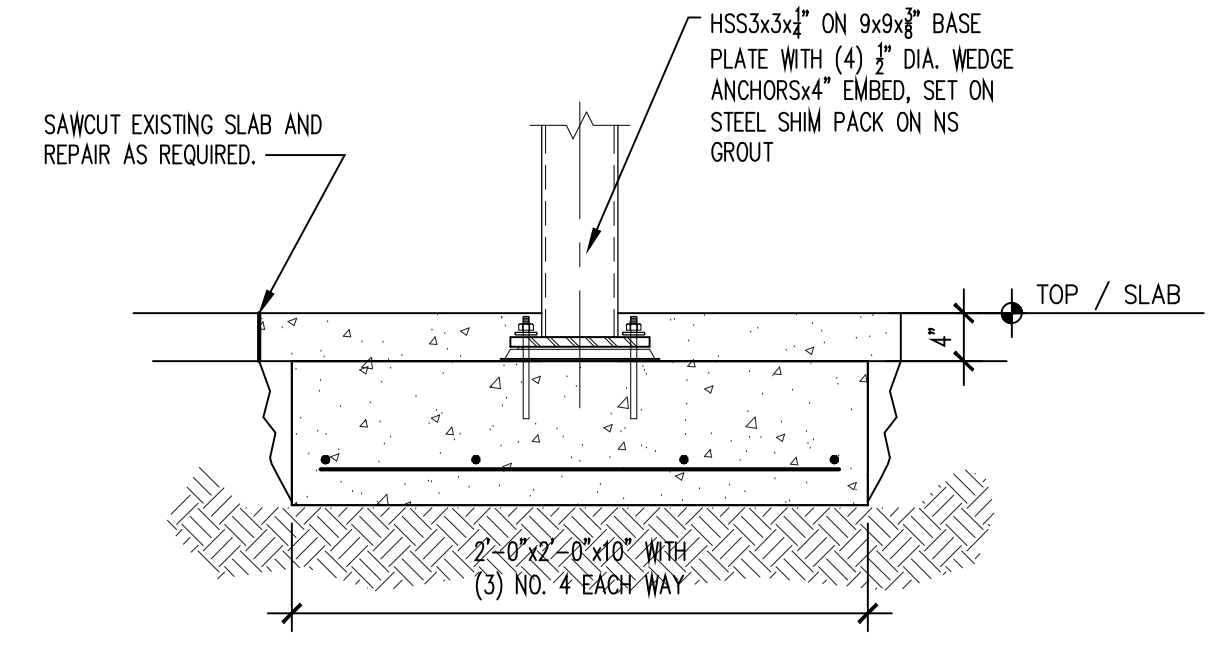
**6 STEEL BEAM TO COLUMN CONNECTION**  
SCALE: N.T.S. TYPICAL



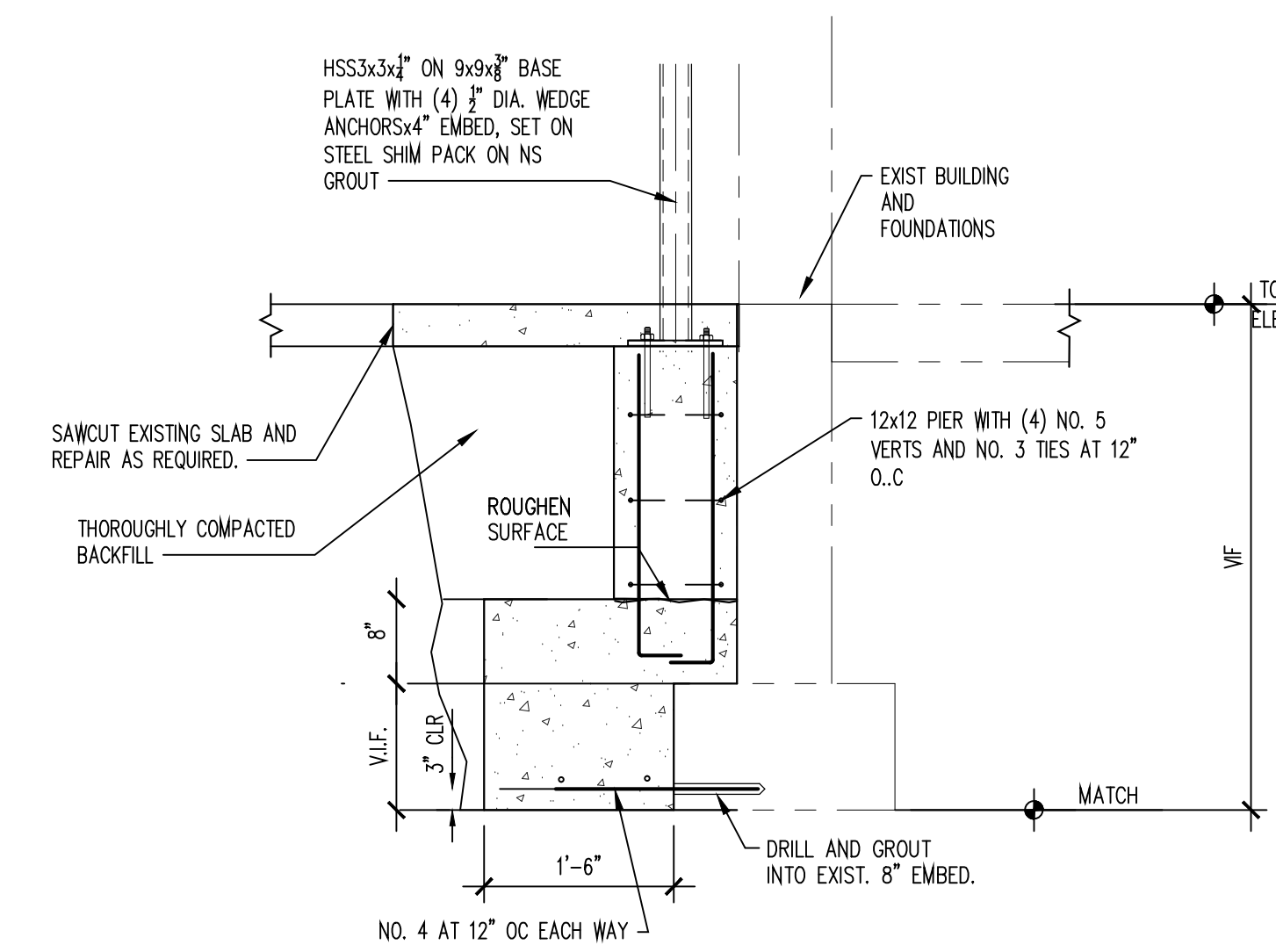
**7 BEAM BEARING SECTION**  
SCALE: 3/4"=1'-0"



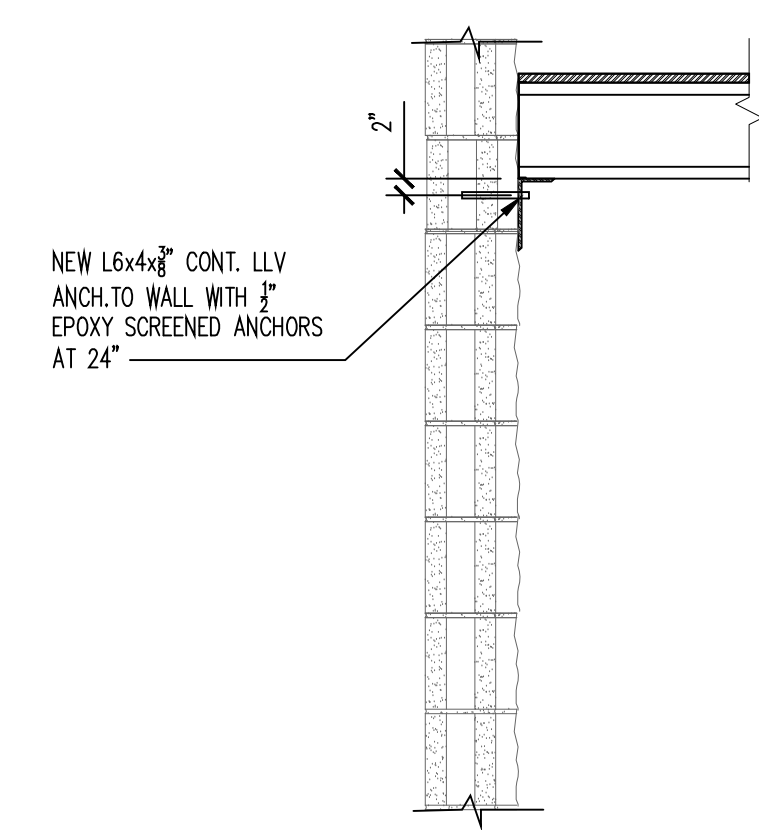
**8 SECTION**  
SCALE: 3/4"=1'-0"



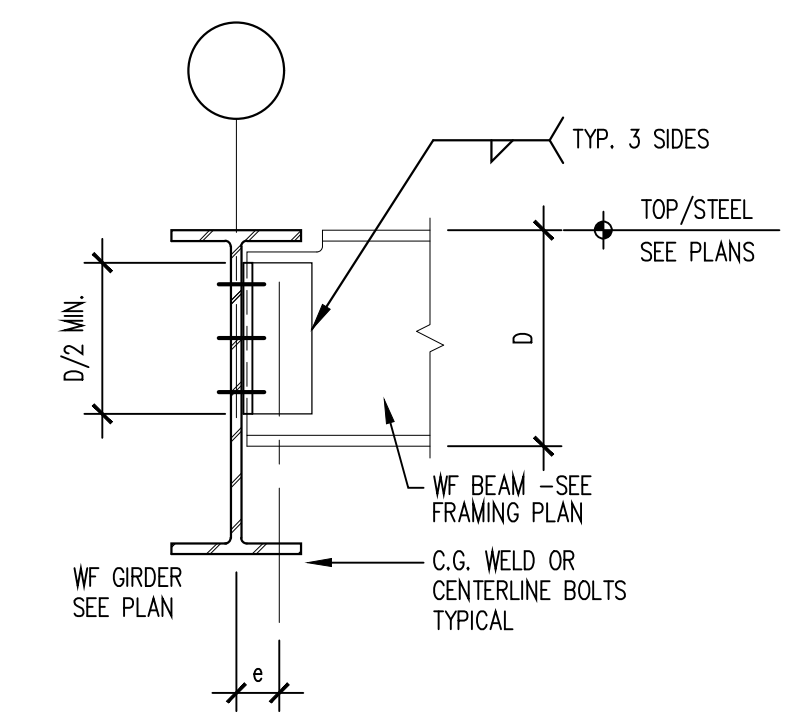
**9 FOUNDATION SECTION**  
SCALE: 3/4"=1'-0"



**10 FOUNDATION SECTION**  
SCALE: 3/4"=1'-0"



**11 FOUNDATION SECTION**  
SCALE: 3/4"=1'-0"



**12 TYPICAL FRAMED BEAM CONNECTION DETAIL**  
SCALE: NONE

**GENERAL STRUCTURAL NOTES:**

- DESIGN AND CONSTRUCTION SHALL CONFORM TO THE NYS BUILDING CODE 2020.
- THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION AND COORDINATED WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE SUCH REQUIREMENTS INTO THEIR WORK.
- DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT OR ENGINEER.
- CONTRACTOR TO COORDINATE ALL OPENINGS, EQUIPMENT LOCATIONS, AND INSERTS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE TRADES THAT REQUIRE THEM. PENETRATIONS THROUGH STRUCTURAL MEMBERS ARE NOT PERMITTED EXCEPT AS DETAILED.
- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, ALL DIMENSIONS TO THE EXISTING STRUCTURE AND ALL STRUCTURAL SIZES AND DEPICTIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- WHERE DEMOLITION OR OTHER MODIFICATIONS TO THE EXISTING STRUCTURE ARE REQUIRED, THE CUTTING, DRILLING, AND REMOVALS SHALL OCCUR IN A MANNER WHICH WILL PREVENT DAMAGE TO ADJOINING CONSTRUCTION WHICH IS TO REMAIN. UNLESS OTHERWISE INDICATED, PROVIDE NEW MATERIALS TO MATCH THE APPEARANCE AND PERFORMANCE OF EXISTING CORRESPONDING MATERIALS WHERE DEMOLITION OCCURS.
- STRUCTURAL MEMBERS MARKED (EX) ARE EXISTING AND ARE TO BE VERIFIED IN THE FIELD.
- SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND SIGNED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ARCHITECT AND ENGINEER. REPRODUCTIONS OF THE STRUCTURAL DRAWINGS SHALL NOT BE USED FOR THE PREPARATION OF SHOP DRAWINGS. MANUFACTURED COMPONENTS SHALL BE SIGNED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO SUBMISSION.

**DESIGN LOADS:**

- LIVE LOAD:**  
GROUND FLOOR = 100 PSF  
OFFICES = 50 PSF  
EGRESS = 100 PSF
- SNOW LOADS:**  
Pg = 50psf  
Pf = 35psf  
I = 1.0
- WIND LOADS:**  
NA

**SEISMIC**  
SEISMIC USE GROUP "II" - SEISMIC DESIGN CATEGORY "B"  
SDS = 0.222g  
SD1 = 0.096g  
SITE CLASS "D"  
BASIC SEISMIC FORCE RESISTING SYSTEM = NA

- UNLESS SHOWN OTHERWISE, STAIRS, STAIR COMPONENTS AND CONNECTIONS, AND RAILINGS SHALL BE DESIGNED AND INCORPORATED INTO THE STEEL SHOP DRAWINGS AS FOLLOWS. LOADS SHOWN ARE IN ADDITION TO THE DEAD LOAD:  
A) MAIN STRINGERS AND LANDINGS: LIVE LOAD = 100psf  
B) TREADS: LIVE LOAD IS THE LARGEST OF: 100psf OR 300lbs ON 4in<sup>2</sup>  
C) HANDRAIL ASSEMBLIES: LARGEST OF: 200LBS OR 50plf. APPLIED IN ANY DIRECTION AT ANY POINT ON THE ASSEMBLY  
D) COORDINATE FINAL DESIGN WITH THE ARCHITECTURAL DRAWINGS AND PROJECT SPECIFICATIONS

**CONCRETE:**

- CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO ACI 318 AND ACI 301.
- MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE:  
2.1. FOOTINGS, PIERS 3,500psi, MAX. W/C RATIO = 0.49
- LEVELING GROUT SHALL BE NON-SHRINK CONFORMING TO ASTM C1107 WITH A MINIMUM 2-DAY STRENGTH OF 5,000psi.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
- CLEAR COVER TO REINFORCING SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:  
5.1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH - 3"  
5.2. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER - 2"  
#5 AND SMALLER - 1 1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER;  
SLABS, WALLS - 3/4"  
ALL OTHER 1 - 1/2"

**COLD-FORMED STEEL:**

- ALL LIGHT GAGE FRAMING SHALL CONFORM TO THE LATEST NORTH AMERICAN SPECIFICATION (NAS) FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.
- MEMBERS TO HAVE MINIMUM YIELD STRESS OF 50ksi AND SHALL HAVE A MINIMUM FLANGE WIDTH OF 1 5/8" AND A RETURN LIP LENGTH OF 1/2". WHERE FLANGE WIDTHS OF 2" ARE SPECIFIED, THE RETURN LIP LENGTH SHALL BE 5/8".
- SIZES AND GAGE SHOWN ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS ARE MINIMUM.
- PROVIDE ALL ACCESSORIES, SUCH AS TRACKS, CLIPS, WEB STIFFENERS, AND CONNECTORS REQUIRED FOR A COMPLETE INSTALLATION AND AS RECOMMENDED BY THE MANUFACTURER.

**STRUCTURAL STEEL:**

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC CODE OF STANDARD PRACTICE.
- STRUCTURAL STEEL GRADES (UNLESS NOTED OTHERWISE):  
A) STRUCTURAL STEEL (W-): ASTM A992, Fy=50ksi  
B) STRUCTURAL STEEL (L-, C- PLATES): ASTM A36, fy = 36ksi  
C) STRUCTURAL TUBING: ASTM A500, fy=46ksi  
D) BOLTS: ASTM A325  
E) ANCHOR RODS: A307  
F) WELDS: E70xx  
G) ADHESIVE ANCHORS (BASIS OF DESIGN):  
j) HILTI HY150  
i) POWERS AC100 PLUS
- WELDS NOT INDICATED FOR STEEL-TO-STEEL CONNECTIONS SHALL BE AN ALL AROUND FILLET WELD WITH A MINIMUM THROAT THICKNESS PER AISC AND AWS STANDARDS.
- ALL STRUCTURAL STEEL SHALL BE COATED AS INDICATED BELOW. APPLY COATINGS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, INCLUDING SURFACE PREPARATIONS AND COMPATIBILITY REQUIREMENTS BETWEEN ALL COATINGS. AFTER ERECTION TOUCH UP ALL AREAS WHERE PAINT OR GALVANIZING IS MISSING OR DAMAGED INCLUDING FIELD WELDS. COLOR SHALL BE AS DETERMINED BY THE OWNER OR ARCHITECT.  
(A) STEEL SHALL BE SHOP PAINTED WITH A RUST INHIBITIVE PRIMER.
- SUBMIT SHOP DRAWINGS FOR STRUCTURAL STEEL FOR REVIEW PRIOR TO CONSTRUCTION.

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ISSUE: BID/PERMIT SET 2022-07-15

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

SEAL:

TITLE:  
**STRUCTURAL DETAILS**



**SILVESTRI ARCHITECTS PC**

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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: S-201

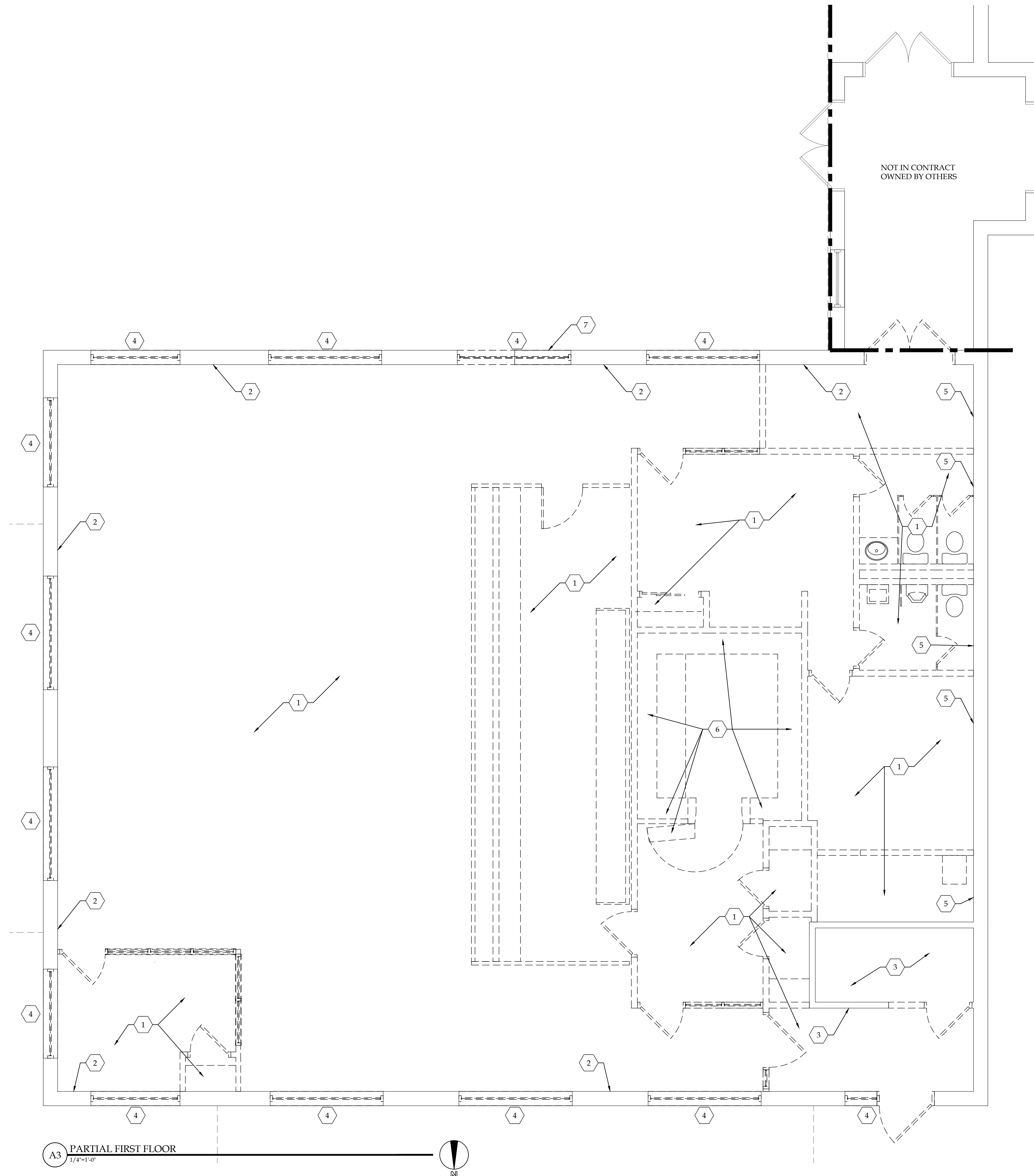


**GENERAL DEMOLITION NOTES:**

- 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
- HAZARDOUS MATERIAL HAVE BEEN FOUND ONSITE. REFER TO ASBESTOS SURVEY LOCATED IN PROJECT MANUAL FOR SURVEYED AREAS.

**DEMOLITION PLAN KEY NOTES: (#)**

1. REMOVE ALL EXISTING CONSTRUCTION, INTERIOR PARTITIONS AND ASSOCIATED DOORS, WALL, FLOOR, AND CEILING FINISHES, AND ALL LIGHTING, PLUMBING, ELECTRICAL 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.
2. ALL EXISTING WALL COVERING, WALL BASE, @ BASEBOARD HEATERS TO BE REMOVED @ EXTERIOR WALLS. EXISTING DRYWALL TO REMAIN. PREPARE EXISTING WALLS TO REMAIN TO RECEIVE NEW FINISH.
3. REMOVE EXISTING DRYWALL OUTSIDE OF MECHANICAL ROOM. EXISTING FRAMING AND DRYWALL INSIDE OF MECHANICAL ROOM TO REMAIN. EXISTING FLOOR FINISH AND CEILING TO BE REMOVED. EXISTING DOOR TO BE REMOVED AND DISPOSED. OPENING INTO SPACE TO BE MOVED PER NEW PLAN.
4. REMOVE EXIST. EXTERIOR DOOR OR WINDOW, FRAME, COVERING & ASSOCIATED HARDWARE IN IT'S ENTIRETY. EXISTING BRICK SILL TO REMAIN.
5. EXISTING DRYWALL AT EXTERIOR WALL TO BE REMOVED. EXISTING FURRING AND INSULATION TO REMAIN.
6. EXISTING CONCRETE VAULT TO BE REMOVED IN ITS ENTIRETY. REMOVE WALLS TO 4" BELOW FINISHED FLOOR. FLOOR TO BE FILLED WITH CONCRETE TO MATCH EXISTING FLOOR ELEVATION.
7. SAWCUT EXISTING WINDOW SILL TO ACCOMMODATE NEW ENTRY DOOR.



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ISSUE:  
 BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**DEMOLITION PLAN**



SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **AD-101**

**GENERAL NOTES**

- 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.
- 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.
- 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.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL INFORMATION ON THE DRAWINGS.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF THE RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF THE WORK. THESE DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATION TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL BID & PERFORM THE WORK IN ACCORDANCE WITH THE FIELD CONDITIONS.
- ALL DIMENSIONS SHOWN FOR EXISTING STRUCTURES ARE BASED ON RECORD DRAWINGS AND FIELD MEASUREMENTS. 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 CONTRACTOR'S SHOP DRAWINGS.
- 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.
- 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.
- ALL OWNER SUPPLIED ITEMS WILL BE COORDINATED WITHIN THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULES PRIOR TO COMMENCEMENT OF ANY WORK.
- THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE WITH THE OWNER FOR ALL BUILDING AND CONSTRUCTION SIGNAGE.
- 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.
- ALL DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALE. DO NOT SCALE DRAWINGS. ALL DIMENSIONS ARE TO FACE OF CONCRETE OR MASONRY, CENTERLINE OF COLUMNS AND BEAMS, AND FINISH TO FINISH, UNLESS OTHERWISE NOTED.
- 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.
- DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY INDICATED OTHERWISE.
- 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.
- 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.
- 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.
- 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.

- PROVIDE INDEPENDENT SUSPENSION FOR ALL LIGHT FIXTURES. SUSPENSION FOR CEILING AND LIGHT FIXTURES SHALL BE INDEPENDENT OF SUSPENSION FOR DUCT WORK.
- ALL EQUIPMENT AND MATERIALS INSTALLED IN THIS JOB SHALL BE NEW AND FREE OF ANY DEFECTS UNLESS OTHERWISE NOTED.
- CONTRACTORS SHALL RECORD ALL DEVIATIONS FROM THE DESIGN DOCUMENTS IN THE DRAWINGS, AND PROVIDE A COPY TO THE ARCHITECT UPON THE COMPLETION OF WORK.
- PROVIDE APPROVED SEPARATION BY MEANS OF COATINGS, GASKETS, OR OTHER EFFECTIVE MEANS TO PREVENT GALVANIC KORROSION BETWEEN ALL DISSIMILAR METALS.
- 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 D ITEMS TO THE CONDITION THEY WERE IN PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES OR BETTER.
- WHERE IT IS NECESSARY TO INSURE STABILITY, CONTRACTOR IS TO PROVIDE ADDITIONAL ANCHORING AND/OR BLOCKING IN STUD PARTITIONS OR BRACE PARTITIONS ABOVE CEILINGS.
- THE NAME OF THE SPECIAL INSPECTION FIRM SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PRIOR TO THE START OF WORK.
- CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS AND CONDITIONS BEFORE SUBMITTING SHOP DRAWINGS AND BEFORE COMMENCING WORK.
- UNLESS OTHERWISE NOTED, EXTEND ALL NEW INSULATION TO THE FACE OF THE EXTERIOR WALL/ROOF; EXTEND ALL FINISHES IN INSULATED AREAS TIGHT TO DECK/SURFACE, TO HOLD INSULATION IN PLACE.
- REPAIR ALL AREAS DISTURBED BY THE WORK OF THIS PROJECT; INCLUDING SUBSTRATES OR STRUCTURAL REPAIRS; AND REPAIRS TO FINISHES TO MATCH AND ALIGN WITH EXISTING FINISHES TO REMAIN.
- UNLESS OTHERWISE INDICATED; EXTEND ALL NEW INTERIOR FIRE RATED WALLS; AND ALL NEW FRAMING TO DECK ABOVE.
- FIRESTOP ALL FRAMED PARTITIONS AS REQUIRED BY CODE.
- MAINTAIN THE INTEGRITY OF THE BUILDINGS STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SAFETY CONDITIONS UNCOVERED DURING DEMOLITION AND DURING NEW CONSTRUCTION WHICH WERE NOT ADDRESSED IN THE

- CONSTRUCTION DOCUMENTS.
- FIELD VERIFY DIMENSIONS BEFORE BEGINNING WITH CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES. DO NOT SCALE DRAWINGS.
- DIMENSION NOTES, FINISHES AND FIXTURES SHOWN ON TYPICAL PLANS, SECTIONS OR DETAILS SHALL APPLY TO SIMILAR, SYMMETRICAL, OR OPPOSITE PLANS, SECTIONS OR DETAILS.
- PROVIDE SEALANT AROUND WINDOWS, DOOR JAMBS AND HEADS, AND ADJACENT CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, CONCEALED WITHIN THE WALLS, FOR ATTACHMENT OF SURFACE AND/OR RECESSED MOUNTED EQUIPMENT OR ACCESSORIES, WHETHER SHOWN IN THE DRAWINGS OR NOT. BLOCKING TO BE FIRE RETARDANT.
- NEW CONSTRUCTION THAT MEETS OR CONNECTS WITH EXISTING CONSTRUCTION SHALL ALIGN EXACTLY.
- ALL DIMENSIONS SHOWN ON THE PLAN ARE FROM FINISH TO FINISH, UNLESS NOTED OTHERWISE.
- GC TO TAKE PROPER PRECAUTIONS AS TO PROTECT EXISTING CEILING TILE GRID IN ADJACENT SPACES FROM DAMAGE DURING CONSTRUCTION. ALL NEW SUSPENDED CEILING TILE GRID, BULKHEADS, ETC. SHALL BE SUSPENDED FROM THE STRUCTURAL DECK ABOVE.
- REMOVE ALL EXISTING ELECTRICAL WIRING, ELECTRICAL OUTLETS, FLOOR MOUNTED OUTLET DEVICES, SPECIAL EQUIPMENT OUTLET DEVICES CONNECTIONS, AND SWITCHES IN DEMOLISHED AND FURRED-OUT WALLS INCLUDED UNDER DEMOLITION WORK AND AS NECESSARY TO ACCOMPLISH THE TOTAL SCOPE OF WORK. COORDINATE WITH THE ELECTRICAL DRAWINGS.
- ALL DOOR SWINGS TO BE VERIFIED PRIOR TO INSTALLING LIGHT SWITCHES. SWITCHES SHALL BE ON LEVER SIDE OF DOOR AND SHALL BE 42" A.F.F. IN CASE OF CONFLICT NOTIFY ARCHITECT PRIOR TO INSTALLATION. EACH ENCLOSED AREA TO HAVE SEPARATE LIGHT SWITCH.
- COORDINATE WITH PARTITION, FURNITURE AND MILLWORK FOR ANY CONFLICT IN LOCATION AND DIMENSION OF POWER OUTLETS.
- COORDINATE ELECTRICAL DEVICE INSTALLATION WITH ALL TRADES. COORDINATION OF MILLWORK, ELECTRICAL PLANS, FURNITURE PLANS AND UNFORSEEN EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. ANY CONFLICTS WITH THE DRAWINGS AND/OR EXISTING CONDITIONS SHALL BE BROUGHT TO THE ARCHITECTS/HS REPRESENTATIVES ATTENTION.

**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 WALL SCHEDULE.
- 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.
- FIRE CAULK ALL PENETRATIONS IN RATED WALL ASSEMBLIES.

**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.

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INTERIORS L.Lidzur INTERIORS A.Nagle

**SEAL:**

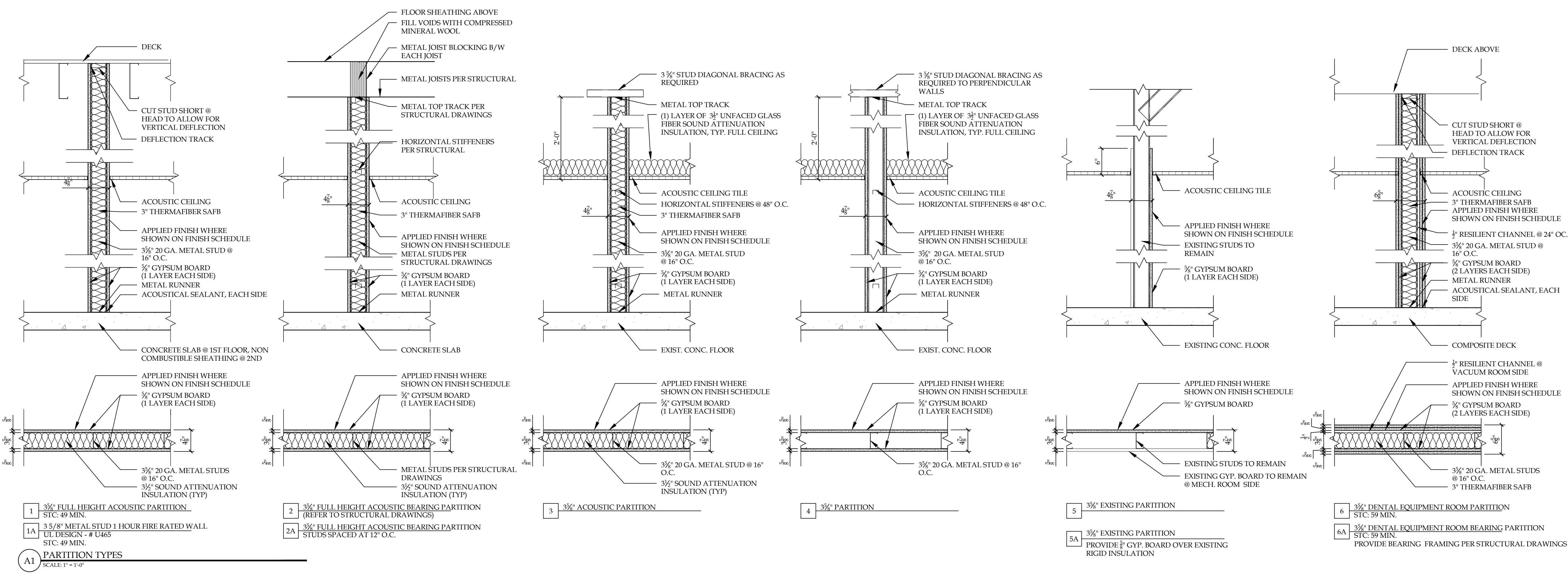
**TITLE:**  
GENERAL NOTES & PARTITION TYPES



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**SA JOB #:** 21055.01 **DATE:** 07-15-22

**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 405, 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 shall comply 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.

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 around the water closet primarily for children's use complying with Section 604.11 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.

EXCEPTION: In ambulatory accessible compartments complying with Section 604.10, flush controls shall be permitted to be located on either 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 hung type with the rim at 17 inches maximum above the floor. Wall hung 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.

EXCEPTIONS: 1. A 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.

2. The requirement for knee and toe clearance shall not apply 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.

3. A 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.

4. A 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.

5. The requirement for knee and toe clearance shall not apply to more than one bowl of a multibowl sink.

6. A parallel approach complying with Section 305 and centered on the sink, shall be permitted at wet bars.

606.3 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. 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 606.3.



FIG. 606.3 HEIGHT OF LAVATORIES AND SINKS

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

606.5 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 activated within a reach depth of 11 inches maximum. Water and soap flow shall be provided with a reach depth of 11 inches maximum.

606.6 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 bathubs shall comply with Section 607.

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

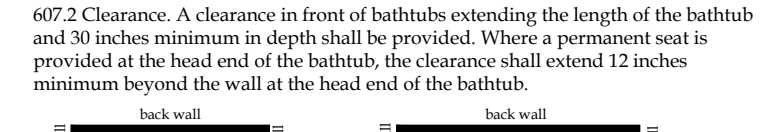


FIG. 607.2 CLEARANCE FOR BATHUBS

607.3 Seat. A permanent seat at the head end of the bathub or a removable in-tub seat shall be provided. Seats shall comply with Section 610.

607.4 Grab Bars. Grab bars shall comply with Section 609 and shall be provided in accordance with Section 607.4.1 or 607.4.2.

EXCEPTION: Grab bars shall not be required to 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.

607.4.1 Bathubs with Permanent Seats. For bathubs with permanent seats, grab bars complying with Section 607.4.1 shall be provided.

607.4.1.1 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 bathub. Each grab bar shall be located 15 inches maximum from the head end wall and extend 12 inches maximum from the control end wall.

607.4.1.2 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.

607.4.1.2.1 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 bathub and extending toward the inside corner of the bathub.

607.4.1.2.2 Vertical Grab Bar. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 1 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the bathub.

607.4.2 Bathubs without Permanent Seats. For bathubs without permanent seats, grab bars complying with Section 607.4.2 shall be provided.

607.4.2.1 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 bathub. Each grab bar shall be located 15 inches maximum from the head end wall and extend 12 inches maximum from the control end wall.

607.4.2.2 Control End Wall. Control end wall grab bars shall comply with Section 607.4.1.2.

607.4.2.3 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 bathub.

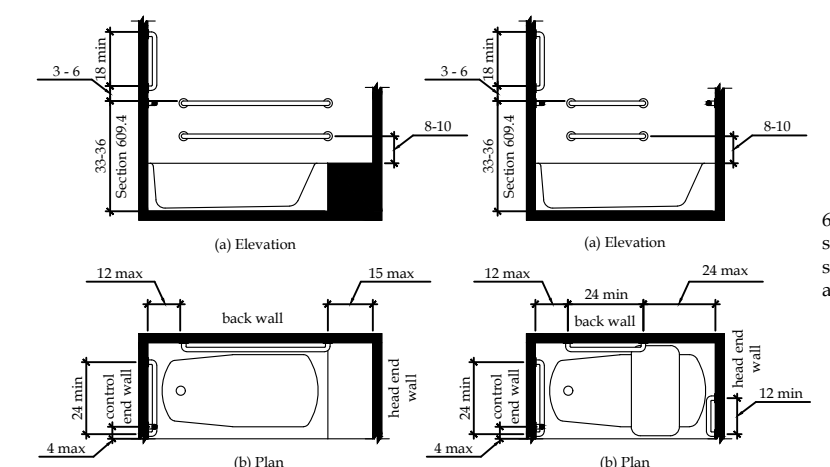


FIG. 608.2 ALTERNATE ROLL-IN TYPE SHOWERS. FIG. 608.3 ALTERNATE ROLL-IN TYPE SHOWERS WITH SEAT

608.3 Alternate Roll-In Type Showers. In alternate roll-in type showers, grab bars shall not be provided above the seat. Grab bars shall be 6 inches maximum from the adjacent wall.

608.4 Controls and Hand Showers. Controls and hand showers shall comply with Sections 608.4 and 309.4.

608.4.1 Transfer-Type Showers. In transfer-type showers, the controls and hand shower shall be located:

- 1. On the control wall opposite the seat.
- 2. At a height of 36 inches minimum and 48 inches maximum above the shower floor, and
- 3. 15 inches maximum, from the centerline of the control wall toward the shower opening.

608.4.2 Standard Roll-In Showers. In standard roll-in showers, the controls and hand shower shall be located on the back wall opposite the seat, the controls and hand shower shall be located within 15 inches, left or right, of the centerline of the seat.

608.4.3 Alternate Roll-In Showers. In alternate roll-in showers, the controls and hand shower shall be located 38 inches minimum and 48 inches maximum above the shower floor. In alternate roll-in showers with controls and hand shower located on the end wall adjacent to the seat, the controls and hand shower shall be 27 inches maximum from the seat wall, in alternate roll-in showers with the controls and hand shower located on the back wall opposite the seat, the controls and hand shower shall be located within 15 inches, left or right, of the centerline of the seat.

608.5 Hand Showers. 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 to not obstruct the use of grab bars.

608.6 Bathub Enclosures. Enclosures for bathubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathubs seats or into bathubs. Enclosures on bathubs shall not have tracks installed on the rim of the bathub.

608.7 Water Temperature. Bathubs 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.

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

608.2.1.1 Size. Transfer-type shower compartments shall have a clear inside dimension of 36 inches in width and 36 inches in depth, measured at the center point of opposing sides. An entry 36 inches minimum in width shall be provided.

608.2.1.2 Clearance. A clearance of 48 inches minimum in length measured perpendicular from the control wall, and 36 inches minimum in depth shall be provided adjacent to the open face of the compartment.

608.2.1.3 Seat. A folding or non-folding seat complying with Section 610 shall be provided on the wall opposite the control wall.

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.

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

608.2.2.1 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.

608.2.2.2 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.

EXCEPTION: A lavatory complying with Section 606 shall be permitted at the end of the clearance opposite the seat.

608.2.2.3 Seat. A folding seat complying with Section 610 shall be provided on an end wall.

EXCEPTIONS: 1. 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.

2. A fixed seat shall be permitted where the seat does not overlap the minimum clear inside dimension required by Section 608.2.2.1.

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

608.2.3.1 Size. Alternate roll-in shower compartments shall have a clear inside dimension of 60 inches minimum in width, and 36 inches in depth, measured at the center point of opposing sides. An entry 36 inches minimum in width shall be provided at one end of the 60-inch width of the compartment. A seat shall be provided on the end side of the compartment.

608.2.3.2 Seat. A folding seat complying with Section 610 shall be provided on the seat wall opposite the back wall.

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.

608.3 Grab Bars. Grab bars shall comply with Section 609 and shall be provided in accordance with Section 608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the floor.

EXCEPTION: Grab bars are 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 grab bars complying with Section 608.3.

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

608.3.1.1 Horizontal Grab Bars. Horizontal grab bars shall be provided across the control wall and on the back wall to a point 18 inches from the control wall.

608.3.1.2 Vertical Grab Bar. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 1 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the shower.

608.3.2 Standard Roll-In-Type Showers. In standard roll-in type showers, a grab bar shall be provided on the control wall beginning at the edge of the seat. The grab bars shall not be provided above the seat. The grab bar wall shall extend the length of the wall but shall not be required to exceed 48 inches in length. Where a side wall is provided opposite the seat within 72 inches of the seat wall, a grab bar shall be provided on the side wall but shall not be required to exceed 30 inches in length. Grab bars shall be 6 inches maximum from the adjacent wall.

608.3.3 Alternate Roll-In Showers. In alternate roll-in showers, the controls and hand shower shall be located 38 inches minimum and 48 inches maximum above the shower floor. In alternate roll-in showers with controls and hand shower located on the end wall adjacent to the seat, the controls and hand shower shall be 27 inches maximum from the seat wall, in alternate roll-in showers with the controls and hand shower located on the back wall opposite the seat, the controls and hand shower shall be located within 15 inches, left or right, of the centerline of the seat.

608.5 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 to not obstruct the use of grab bars.

EXCEPTION: Other than Accessible units and Type A units, a fixed shower head located 48 inches maximum above the shower floor shall be permitted in lieu of a hand shower.

608.6 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.

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 provided.

608.7 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 or 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.

EXCEPTIONS: 1. The space between the grab bars and shower controls, shower fittings, and other grab bars above the grab bar shall be permitted to be 1 1/2 inches minimum and 2 inches maximum.

2. Recessed dispensers projecting from the wall 1/4 inch maximum measured from the face of the dispenser and complying with Section 604.7 shall be permitted within the 12-inch space above and the 1 1/2 inch spaces below and at the ends of the grab bar.

3. Grab bars at water closets primarily for children's use shall comply with Section 609.4.2.

609.4 Position of Children's Grab Bars. At water closets primarily for children's use complying with Section 604.11, 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.

609.4.1 or 607.4.2.1. The lower grab bar on the back wall of a bathub shall comply with Section 607.4.1 or 607.4.2.1.

2. Vertical grab bars shall comply with Sections 604.5.1, 607.4.1.2, 607.4.2.2, and 608.3.1.2.

3. Grab bars at water closets primarily for children's use shall comply with Section 609.4.2.

609.5 Surface Handrails. Grab bars, and any wall or other surfaces adjacent to grab bars, shall be free of sharp or abrasive elements. Edges shall be rounded.

609.6 Fittings. Grab bars shall not rotate within their fittings.

609.7 Installation and Configuration. Grab bars shall be installed in any manner that provides a gripping surface that is standard in this standard and does not obstruct the clear floor space. Horizontal and vertical grab bars shall be permitted to be separate bars, a single piece bar, or combination thereof.

609.8 Structural Strength. Grab bars shall not be required to exceed for materials used where a vertical or horizontal force of 250 pounds is applied at any point on the grab bar, fastener mounting device, or supporting structure.

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

610.2 Bathub Seats. The height of bathub 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 17 inches minimum and 19 inches maximum in depth. Removable in-tub seats shall be capable of secure placement. Permanent seats shall be 15 inches minimum in depth and shall extend from the back wall to or beyond the outer edge of the bathub. Permanent seats shall be positioned at the head end of the bathub.

610.3 Shower Compartment Seats. The height of shower compartment seats shall be 17 inches minimum and 19 inches maximum above the bathroom floor, measured to the top of the seat. In transfer-type and alternate roll-in-type showers, the seat shall extend along the seat wall to a point within 5 inches of the compartment entry. In standard roll-in-type showers, the seat shall extend from the control wall to a point within 3 inches of the compartment entry. Seats shall comply with Section 610.3.1 or 610.3.2.

610.3.1 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.

610.3.2 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.

610.4 Structural Strength. Allowable stresses shall not exceed for materials used where a vertical or horizontal force of 250 pounds is applied at any point on the seat, fastener mounting device, or supporting structure.

701 General. 701.1 Scope. Communications elements and features required to be accessible by the hearing impaired shall comply with the provisions adopted by the administrative authority shall comply with the applicable provisions of Chapter 7.

702 Alarms. 702.1 General. Accessible audible and visible alarms and notification appliances shall be installed in accordance with NFPA 72 listed in Section 103.2.2, be powered by a commercial light and power source, be permanently connected to the wiring of the premises electric system, and be permanently installed.

703 Signs. 703.1 General. Accessible signs shall comply with Section 703. Tactile signs shall contain both raised characters and braille. Where signs with both visual and raised characters are required, either one sign with both visual and raised characters, or two separate signs, one with visual, and one with raised characters, shall be provided.

703.1.1 Designation. Interior and exterior signs identifying permanent rooms and spaces shall comply with Sections 703.1, 703.2, and 703.3.

EXCEPTION: Exterior signs that are not located at the door to the space they serve shall not be required to comply with Section 703.3.

703.1.2 Directional and Informational Signs. Signs that provide directional or information about interior spaces and facilities of the site shall comply with Section 703.3.

703.1.3 Pictograms. Where pictograms are provided as designations of permanent interior rooms and spaces, the pictograms shall comply with Section 703.3 and shall have text descriptors located directly below the pictogram field and complying with Sections 703.2 and 703.3.

EXCEPTION: Pictograms that provide information about a room or space, such as "No Smoking," occupancy signs, and the International Symbol of Accessibility, are not required to have text descriptors.

703.2 Visual Characters. 703.2.1 General. Visual characters shall comply with the following:

- 1. Visual characters that also serve as raised characters shall comply with Section 703.3, or
- 2. Visual characters on SMS signage shall comply with Section 703.7, or
- 3. Visual characters not covered in items 1 and 2 shall comply with Section 703.2.

EXCEPTION: The visual and raised requirements of item 1 shall be permitted to be provided by two separate signs that provide corresponding information provided one sign complies with Section 703.2 and the second sign complies with Section 703.3.

703.2.2 Case. Characters shall be uppercase, lowercase, or a combination of both.

703.2.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Height. The uppercase letter "T" shall be used to determine the allowable height of all characters of a font. The uppercase letter "I" of the font shall have a minimum, complying with Table 703.2.4. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign.

EXCEPTION: In assembly seating where the maximum viewing distance is 100 feet or greater, the height of the uppercase "I" of fonts shall be permitted to be 1 inch for every 30 feet of viewing distance, provided the character height is 8 inches minimum. Viewing distance shall be measured as the horizontal distance between the character and where someone is expected to view the sign.

TABLE 703.2.4 - VISUAL CHARACTER HEIGHT

Height above floor to baseline of character	Horizontal Viewing Distance	Minimum Character Height
40 inches or less than or equal to 70 inches	Less than 6 feet	2 inch
	6 feet and greater	1/4 inch plus 1/8 inch per foot of viewing distance above 6 feet
Greater than 70 inches to less than or equal to 120 inches	Less than 15 feet	2 inches
	15 feet and greater	2 inches, plus 1/8 inch per foot of viewing distance above 15 feet
Greater than 120 inches	Less than 21 feet	3 inches
	12 feet and greater	3 inches, plus 1/8 inch per foot of viewing distance above 21 feet

703.2.5 Character Width. The uppercase letter "W" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "V" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "V" of the font.

703.2.6 Stroke Width. The uppercase letter "T" shall be used to determine the allowable stroke width of all characters of a font. The stroke width shall be 10 percent minimum and 10 percent maximum of the height of the uppercase "T" of the font.

703.2.7 Character Spacing. Spacing shall be measured between the two closest points of adjacent characters within a message, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of the character height.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

EXCEPTION: In assembly seating where the maximum viewing distance is 100 feet or greater, the spacing between the baselines of separate lines of characters within a message shall be permitted to be 120 percent minimum and 170 percent maximum of the character height.

703.2.9 Height Above Floor. Visual characters shall be 40 inches minimum above the floor of the viewing position, measured to the baseline of the character. Heights shall comply with Section 703.2.4, based on the use of the characters on the sign.

EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with Section 703.2.9.

703.2.10 Finish and Contrast. Characters and their background shall have a non-gloss finish. Characters shall contrast with their background, with either light characters on a dark background, or dark characters on a light background.

703.3 Raised Characters. 703.3.1 General. Raised characters shall comply with Section 703.3, and shall be duplicated in braille complying with Section 703.4.

703.3.2 Depth. Raised characters shall be raised 1/32 inch minimum above their background.

703.3.3 Case. Characters shall be uppercase.

703.3.4 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.3.5 Character Height. The uppercase letter "T" shall be used to determine the allowable height of all characters of a font. The height of the uppercase letter "I" of the font, measured vertically from the baseline of the character, shall be 5/8 inch minimum, and 2 inches maximum.

EXCEPTION: Where separate raised and visual characters with the same information are provided, the height of the raised uppercase letter "I" shall be permitted to be 1/2 inch minimum.

703.3.6 Character Width. The uppercase letter "W" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "V" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "V" of the font.

703.3.7 Stroke Width. Raised character stroke width shall comply with Section 703.3.7. The uppercase letter "T" of the font shall be used to determine the allowable stroke width of all characters of a font.



**PROJECT DATA:**  
 SCOPE OF WORK: THIS PROJECT CONSISTS OF THE CONVERSION OF AN EXISTING BANK BUILDING INTO A MEDICAL OFFICE BUILDING  
 CODE EDITION: 2020 Building Code of NYS (IBC 2018 with amendments)  
 2020 Fire Code of NYS (IFC 2018 with amendments)  
 2020 Plumbing Code of NYS (IPC 2018 with amendments)  
 2020 Mechanical Code of NYS (IMC 2018 with amendments)  
 2020 Fuel Gas Code of NYS (IFGC 2018 with amendments)  
 2020 Property Maintenance Code of NYS (PMC 2018 with amendments)  
 2020 Existing Building Code of NYS (EBC 2018 with amendments)  
 2020 Energy Conservation Code of NYS (ECC 2018 with amendments)

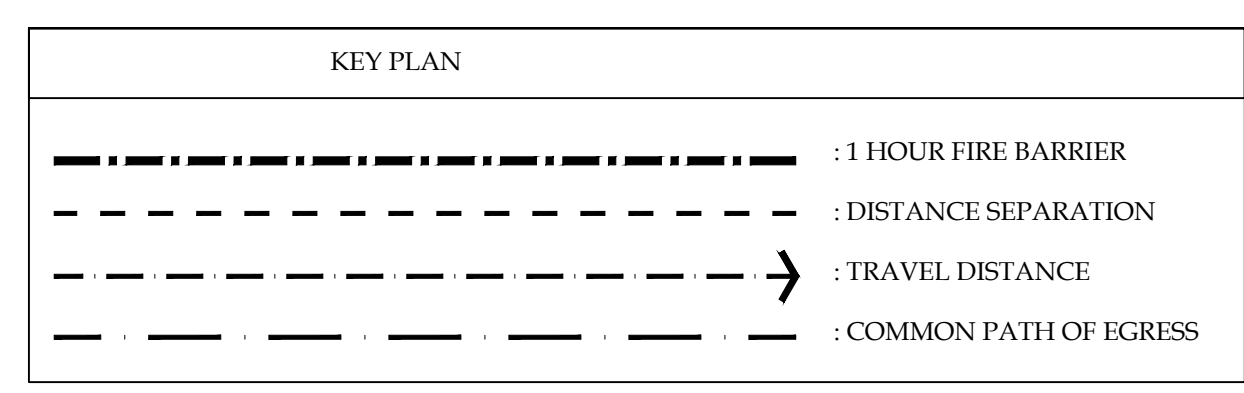
OCCUPANCY TYPE: B  
 CONSTRUCTION TYPE: IIB  
 FULLY SPRINKLERED: NONE  
 NUMBER OF STORIES: 1 WITH MEZZANINE

FLOOR AREA 1st FLOOR: 3,230 SF  
 FLOOR AREA MEZZANINE: 878 SF

OCCUPANCY 1st FLOOR: 3,230 SF / 150 = 22  
 OCCUPANCY MEZZANINE: 878 SF / 150 = 6 (OCCUPANCY LESS THAN 10 THEREFOR PERIMETER WALLS PERMITTED)

TOTAL OCCUPANCY: 28

REQUIRED SANITARY FIXTURES - B OCCUPANCY			
FIXTURE TYPE	CODE REQUIREMENTS	REQUIRED FIXTURES	PROVIDED FIXTURES
WATER CLOSETS/URINALS	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50	1 MEN'S 1 WOMEN'S	3 UNISEX
LAVATORIES	1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80	1 MEN'S 1 WOMEN'S	3 UNISEX
DRINKING FOUNTAINS	1 PER 100	1	1 (WALL MOUNTED WATER COOLER)
SERVICE SINK	1	1	1



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**CHCL**  
 100 MAIN ST.  
 LOCKPORT NY

ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P. Silvestri  
 PROJ. ARCH. S. Hunt DRAFTER  
 INTERIORS L. Litzur INTERIORS A. Nagle

SEAL:

**CODE COMPLIANCE PLAN**

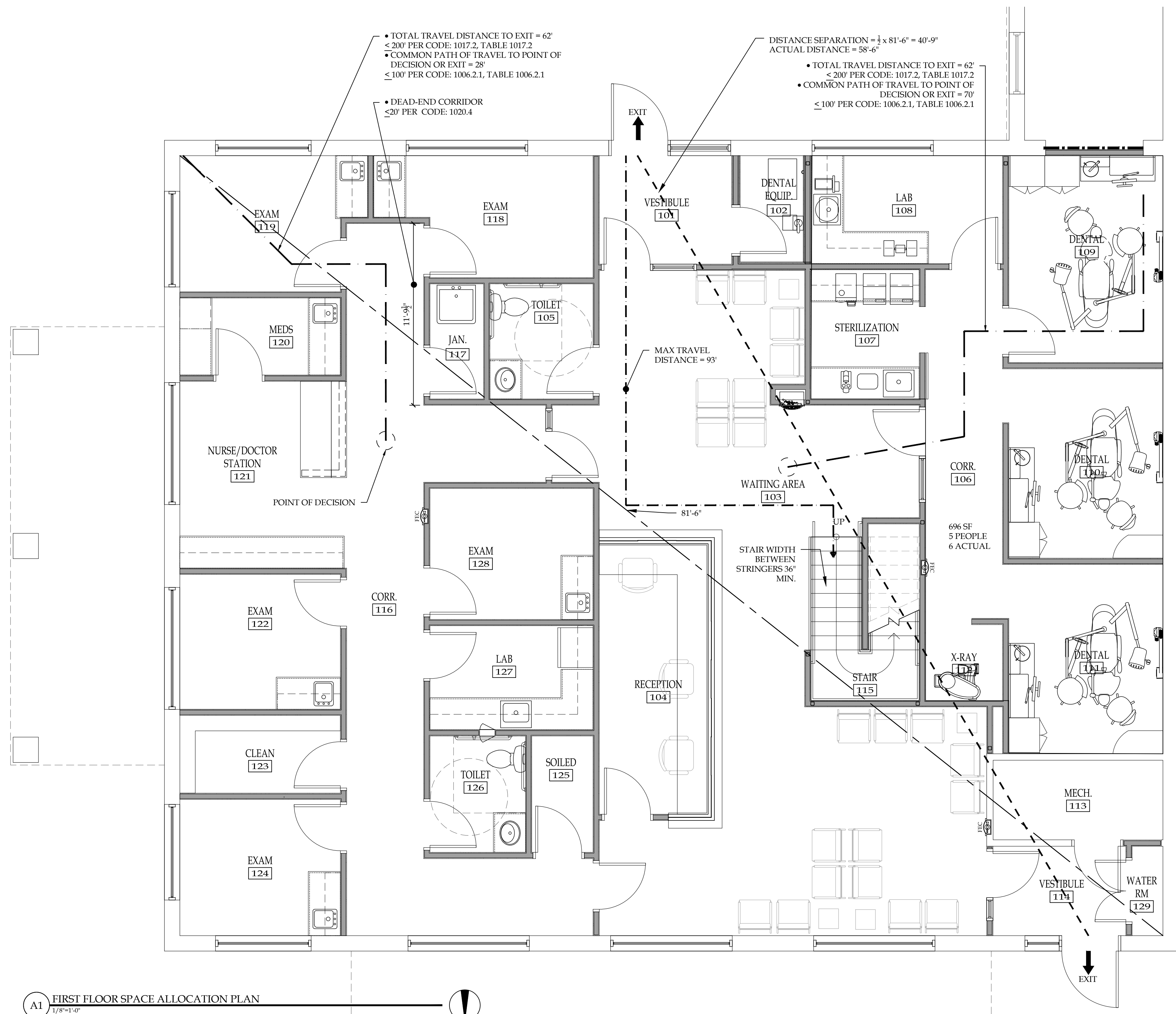


**SILVESTRI ARCHITECTS · PC**

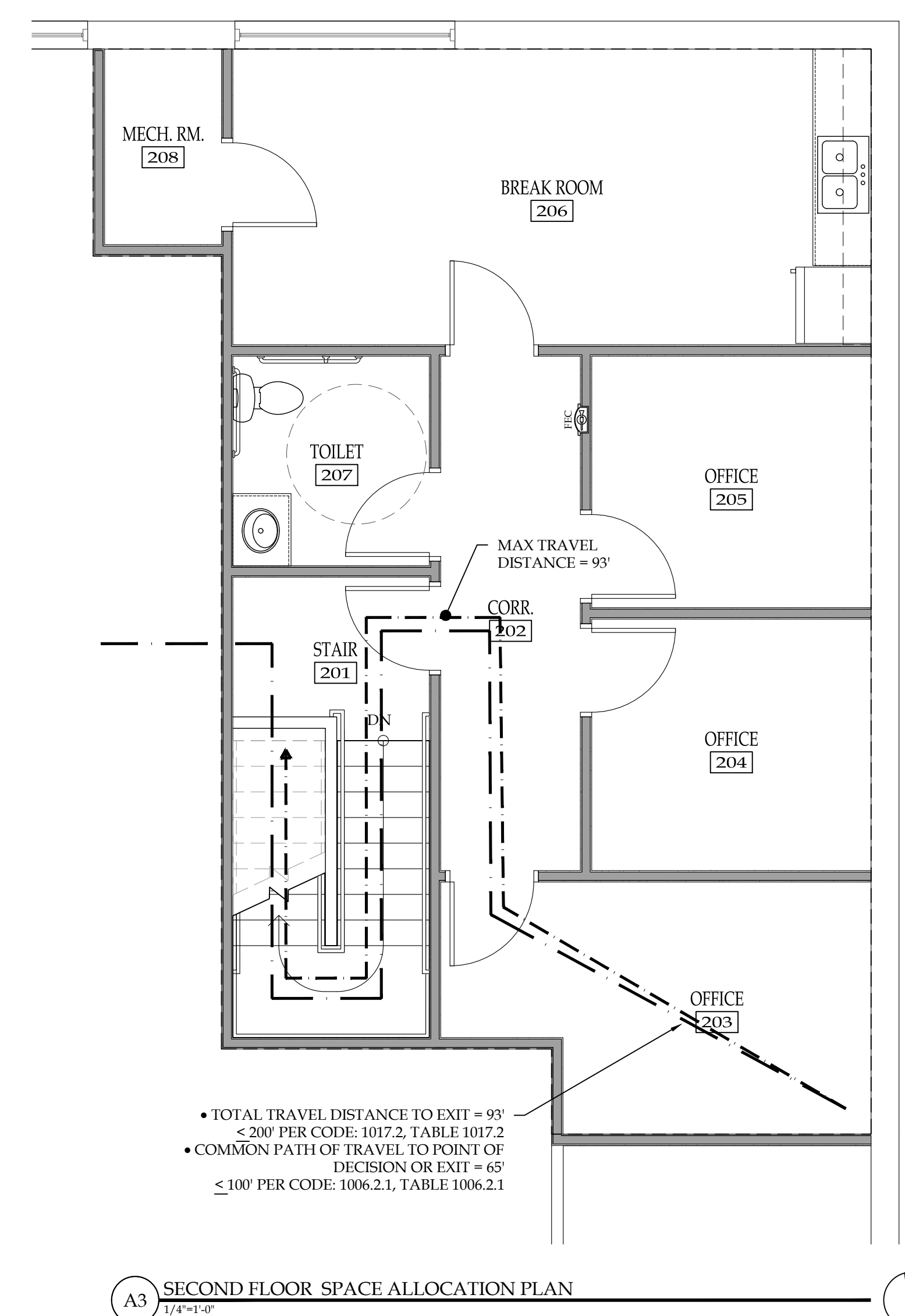
1321 MILLERSPORT HWY PH. 716.691.0900  
 AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: A-004



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



A3 SECOND FLOOR SPACE ALLOCATION PLAN  
 1/4"=1'-0"

1 2 3 4 5 6

E  
D  
C  
B  
A

**FLOOR PLAN NOTES:** #

1. PROVIDE BLOCKING FOR PATTERSON DENTAL EQUIP.  
REFER TO PATTERSON DENTAL DRAWINGS FOR TYPE AND EXACT LOCATION

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ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**FIRST FLOOR PLAN**

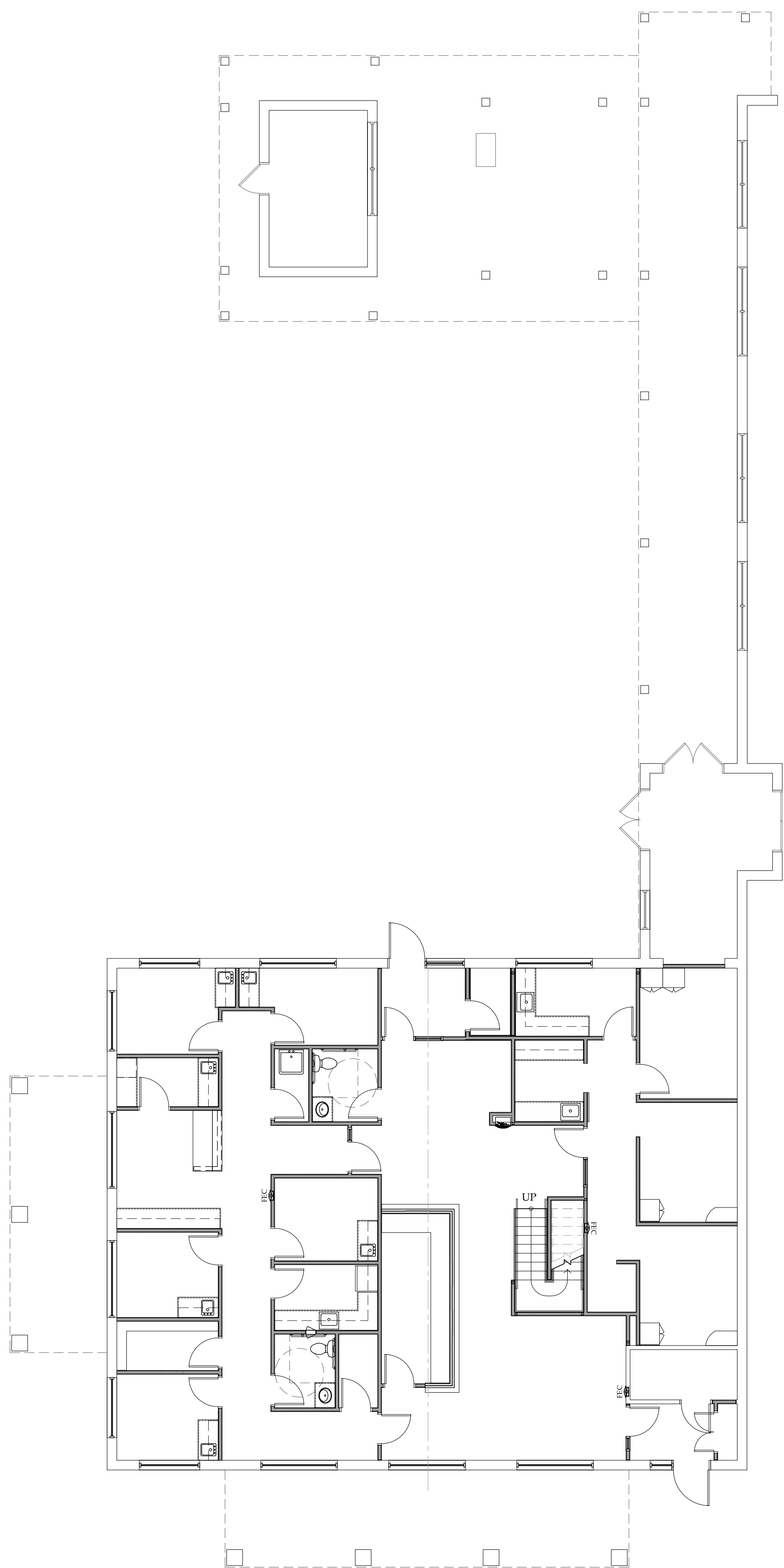


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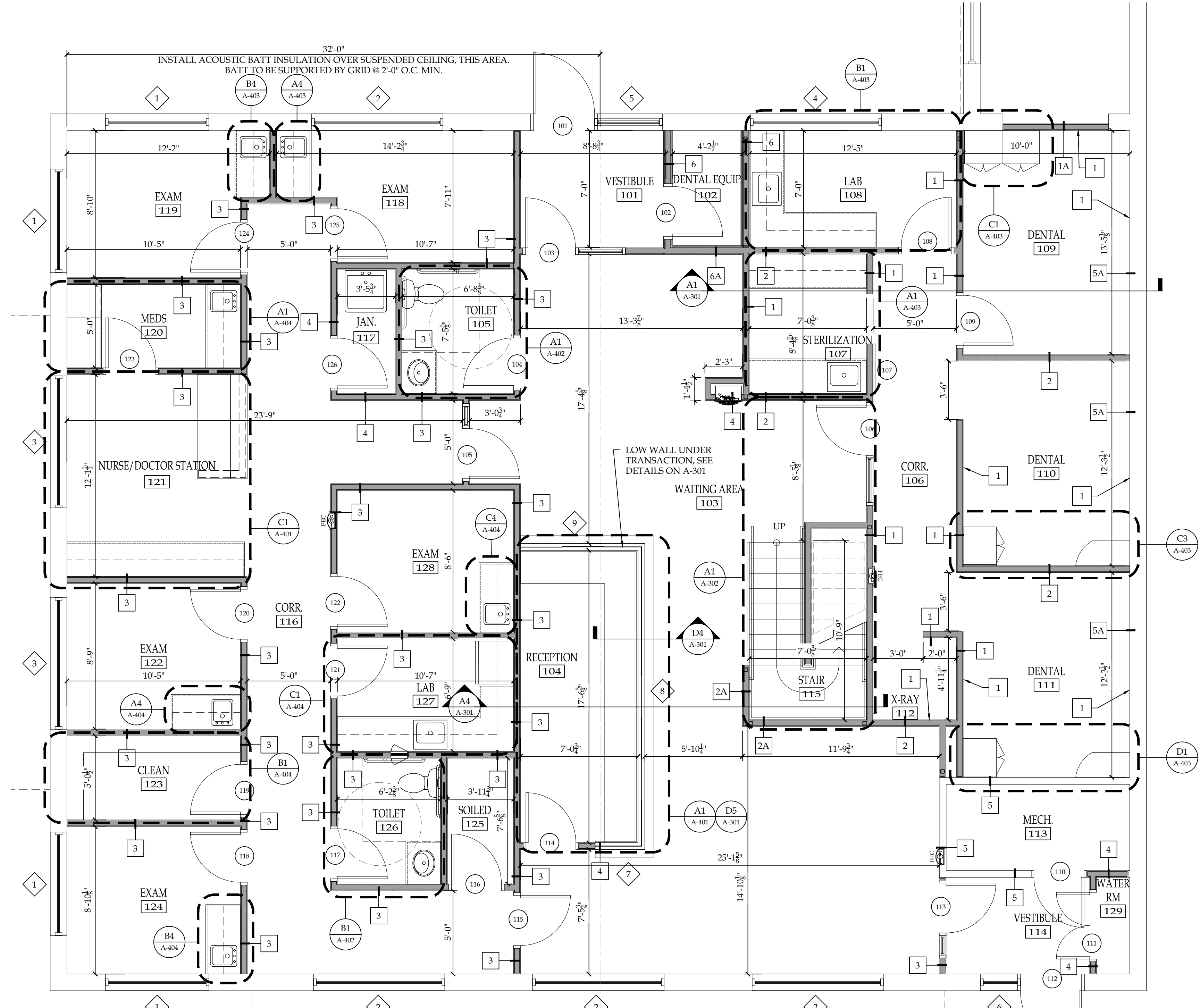
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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-101**



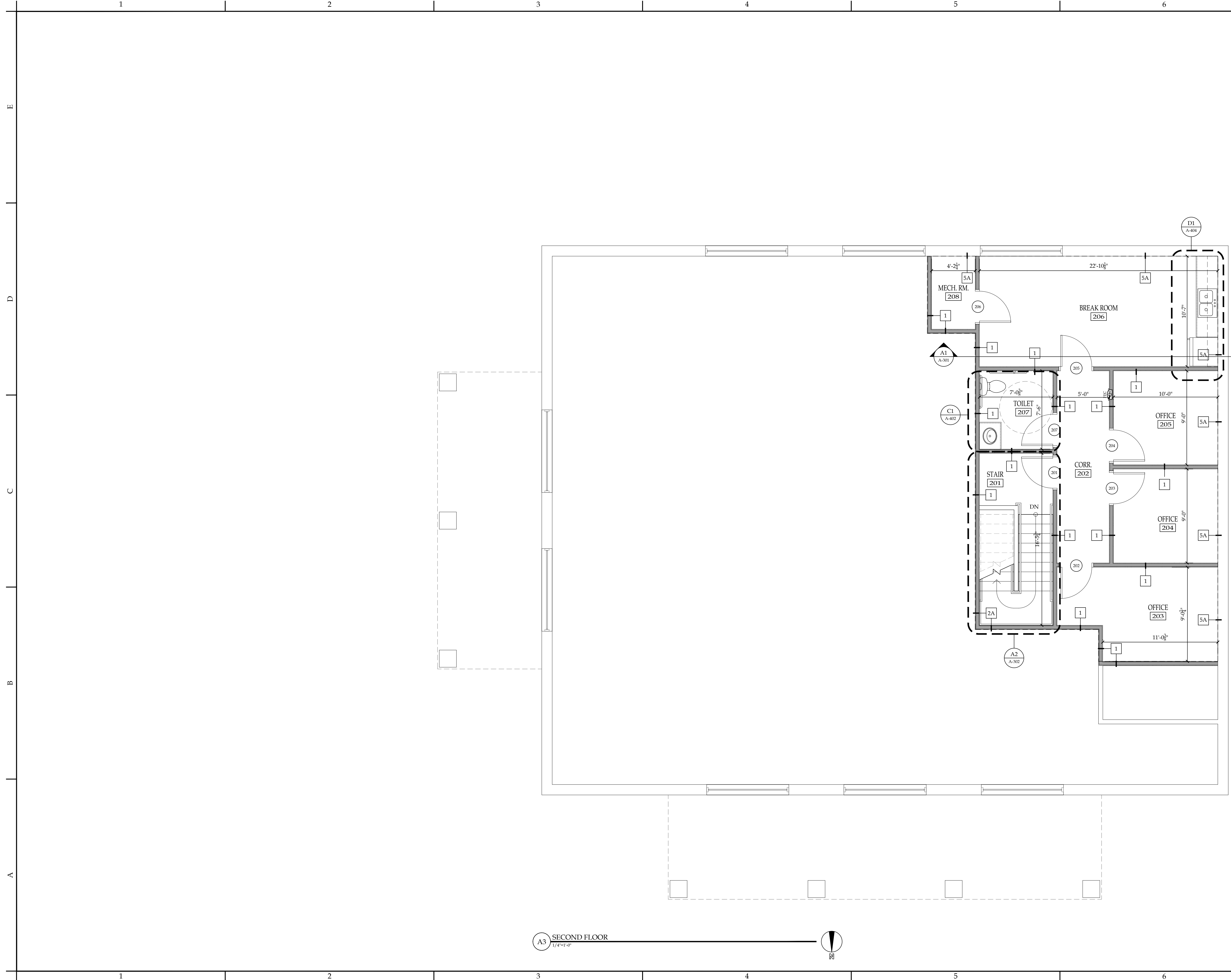
A1 OVERALL FIRST FLOOR  
1/8"=1'-0"



A3 PARTIAL FIRST FLOOR  
1/4"=1'-0"

1 2 3 4 5 6





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ISSUE:  
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SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**SECOND FLOOR PLAN**



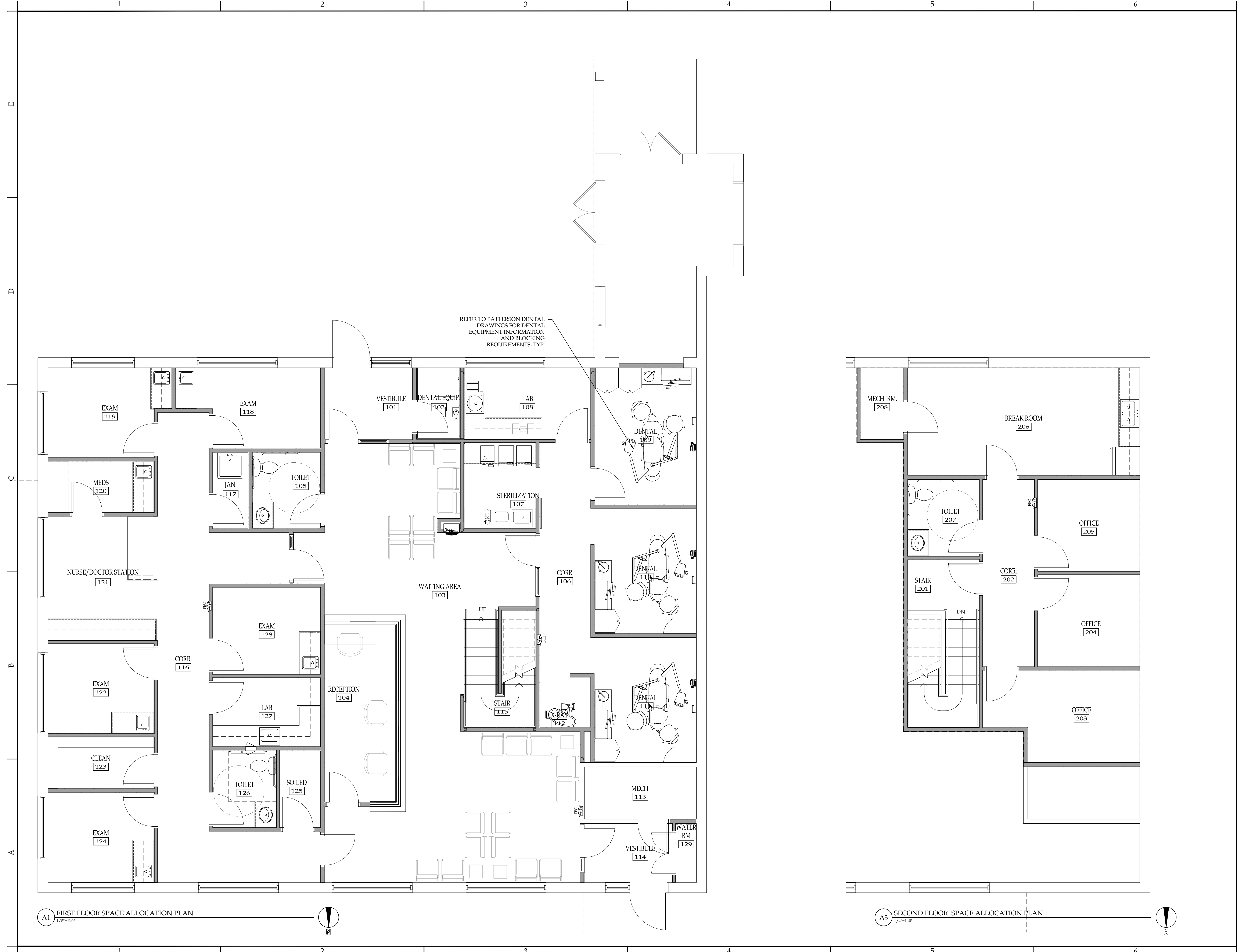
SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-102**

A3 SECOND FLOOR  
 1/4"=1'-0"







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ISSUE:  
 BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**SPACE ALLOCATION PLANS**  
 (FOR REFERENCE ONLY)

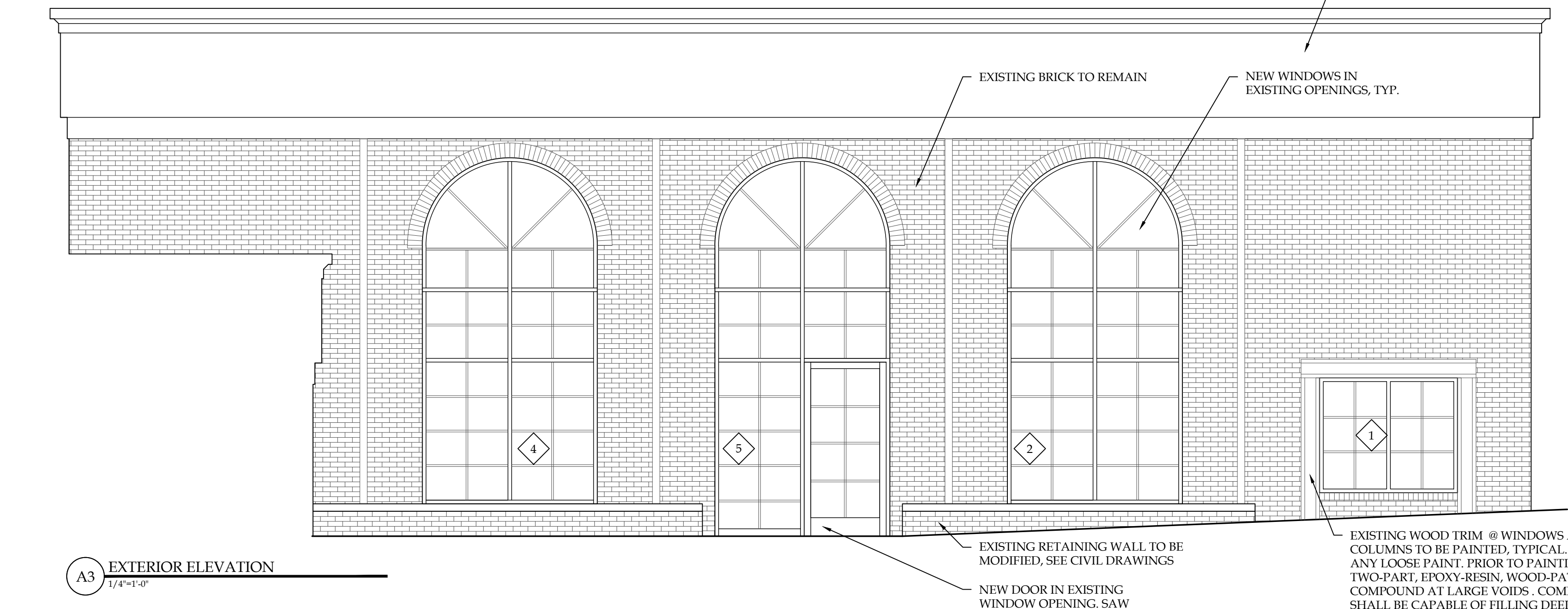
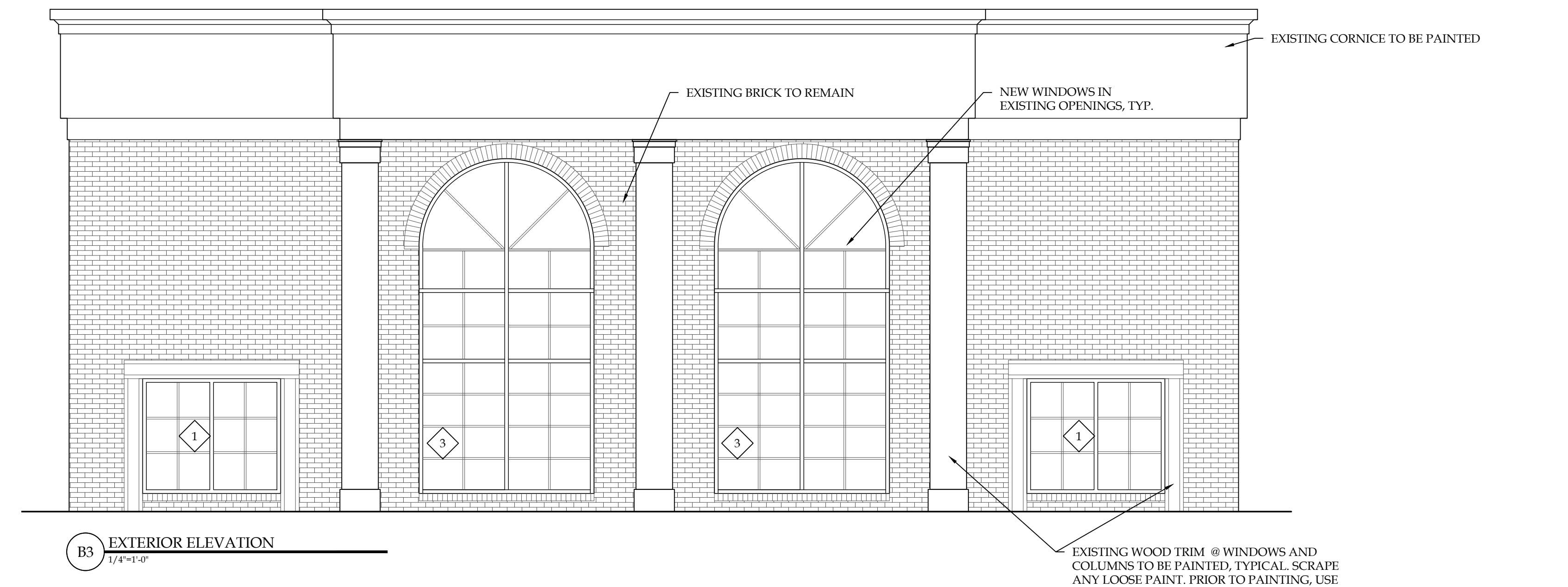
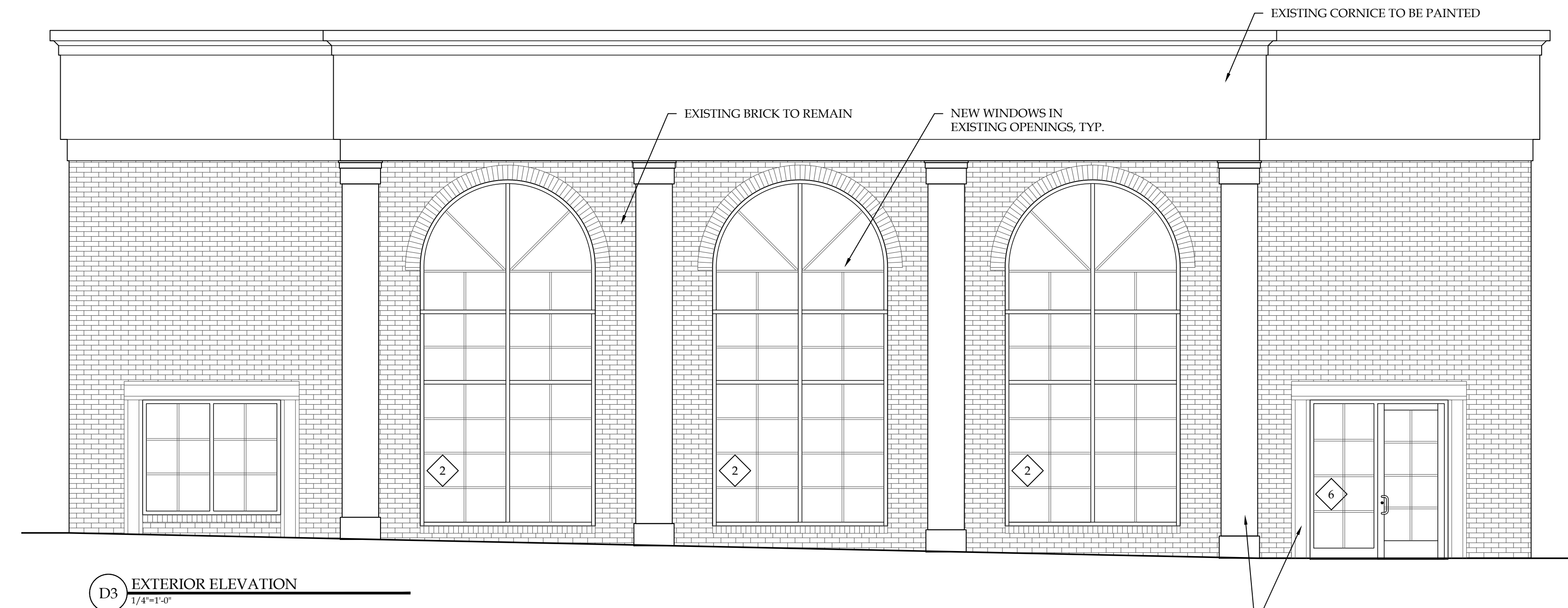
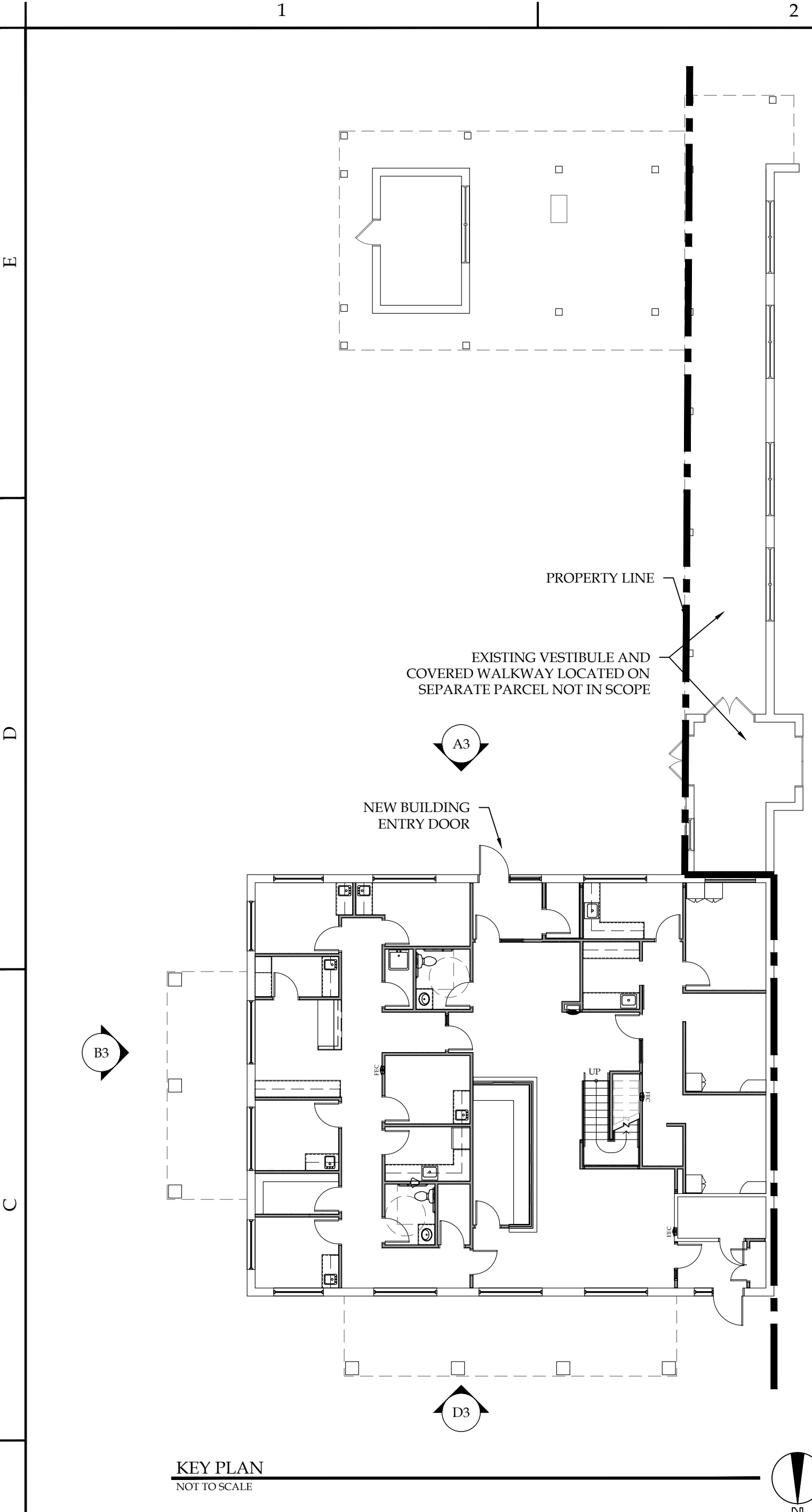


SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-104**

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

A3 SECOND FLOOR SPACE ALLOCATION PLAN  
 1/4"=1'-0"



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ISSUE:  
BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**EXTERIOR ELEVATIONS**



**SILVESTRI**  
ARCHITECTS - PC

1321 MILLERSPORT HWY PH. 716.691.0900  
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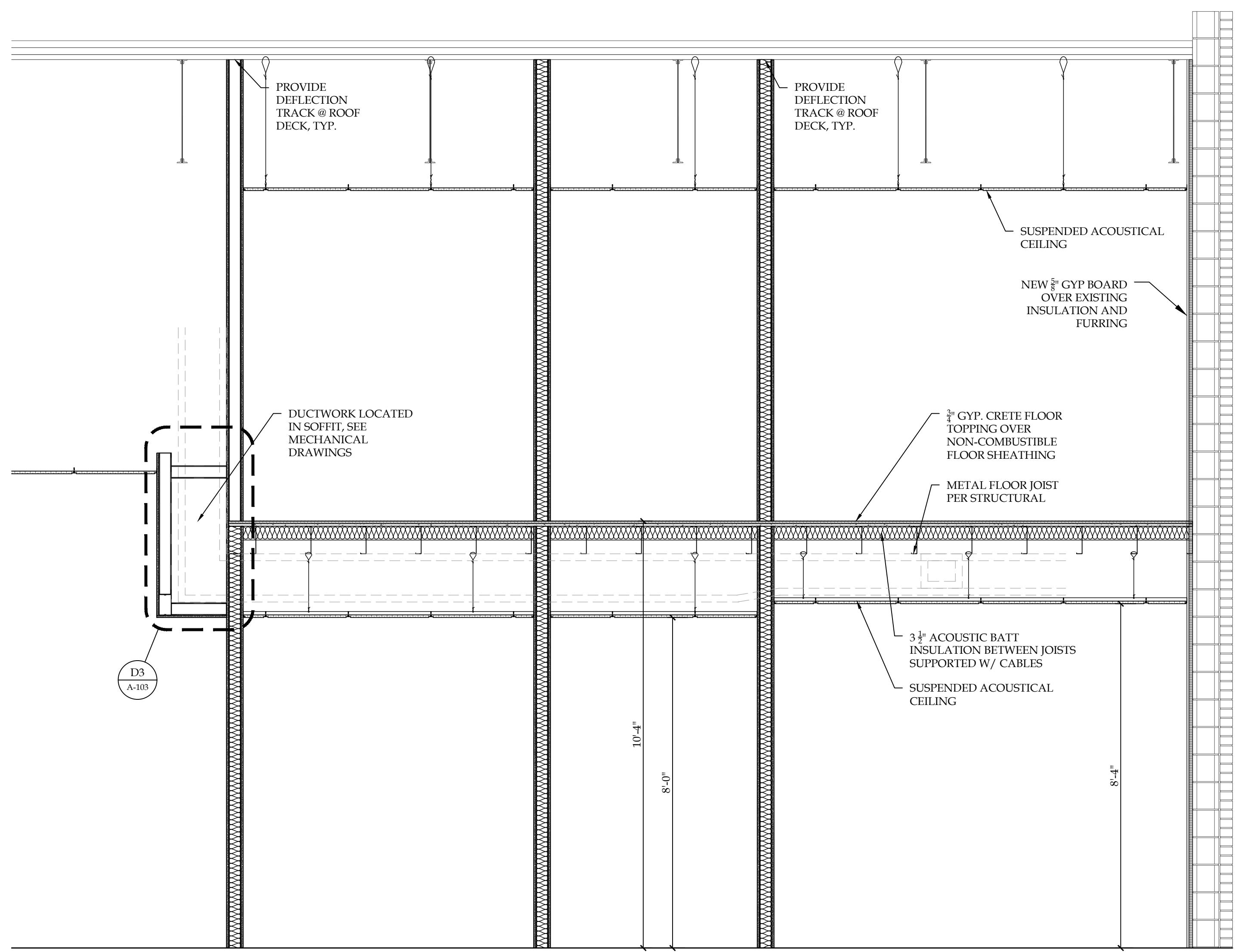
SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-201**

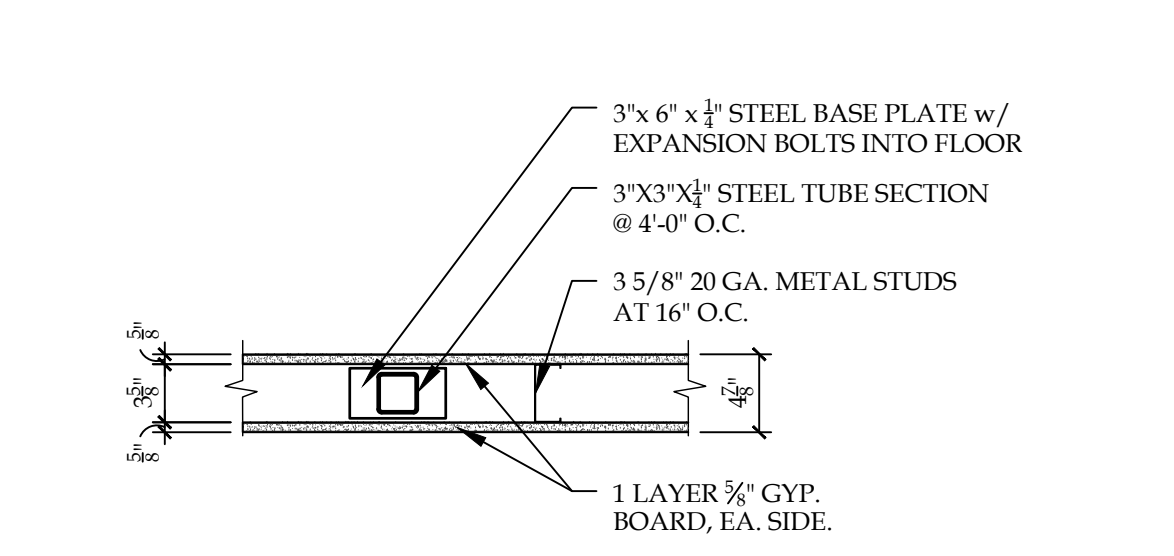


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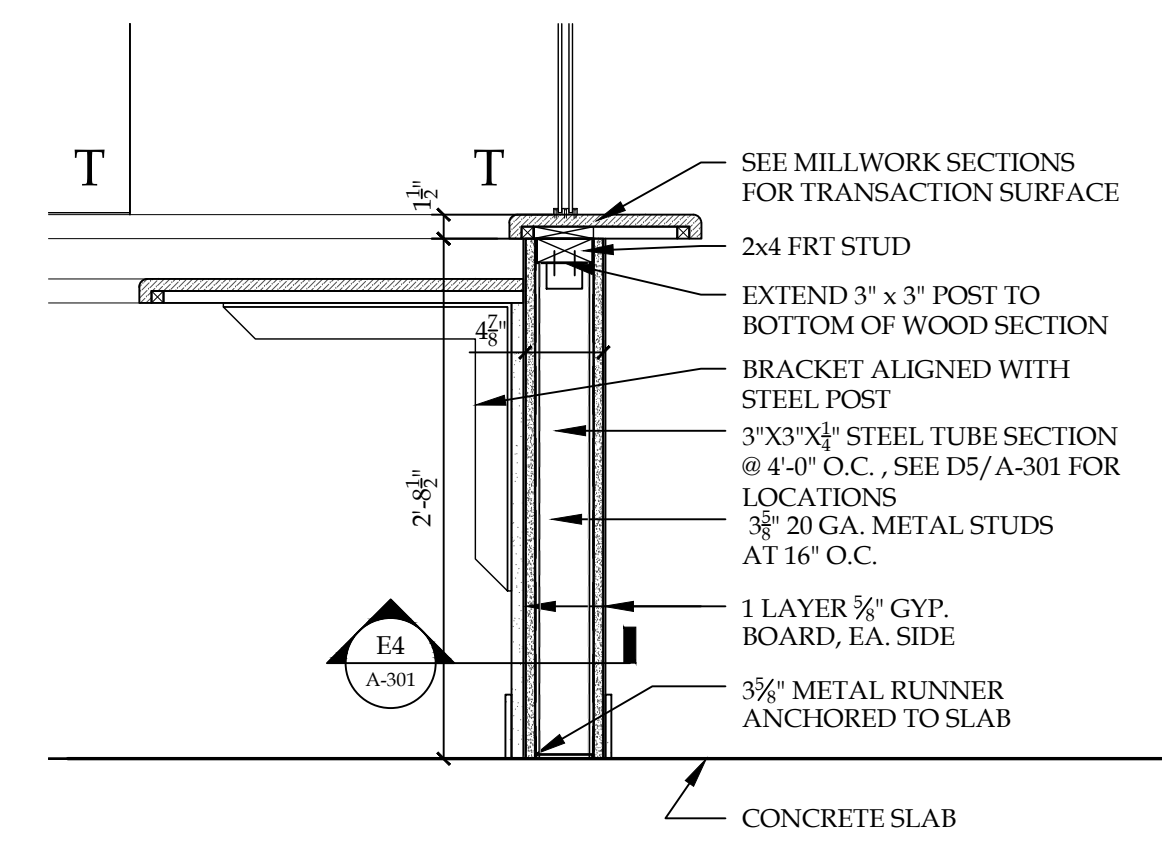
E  
D  
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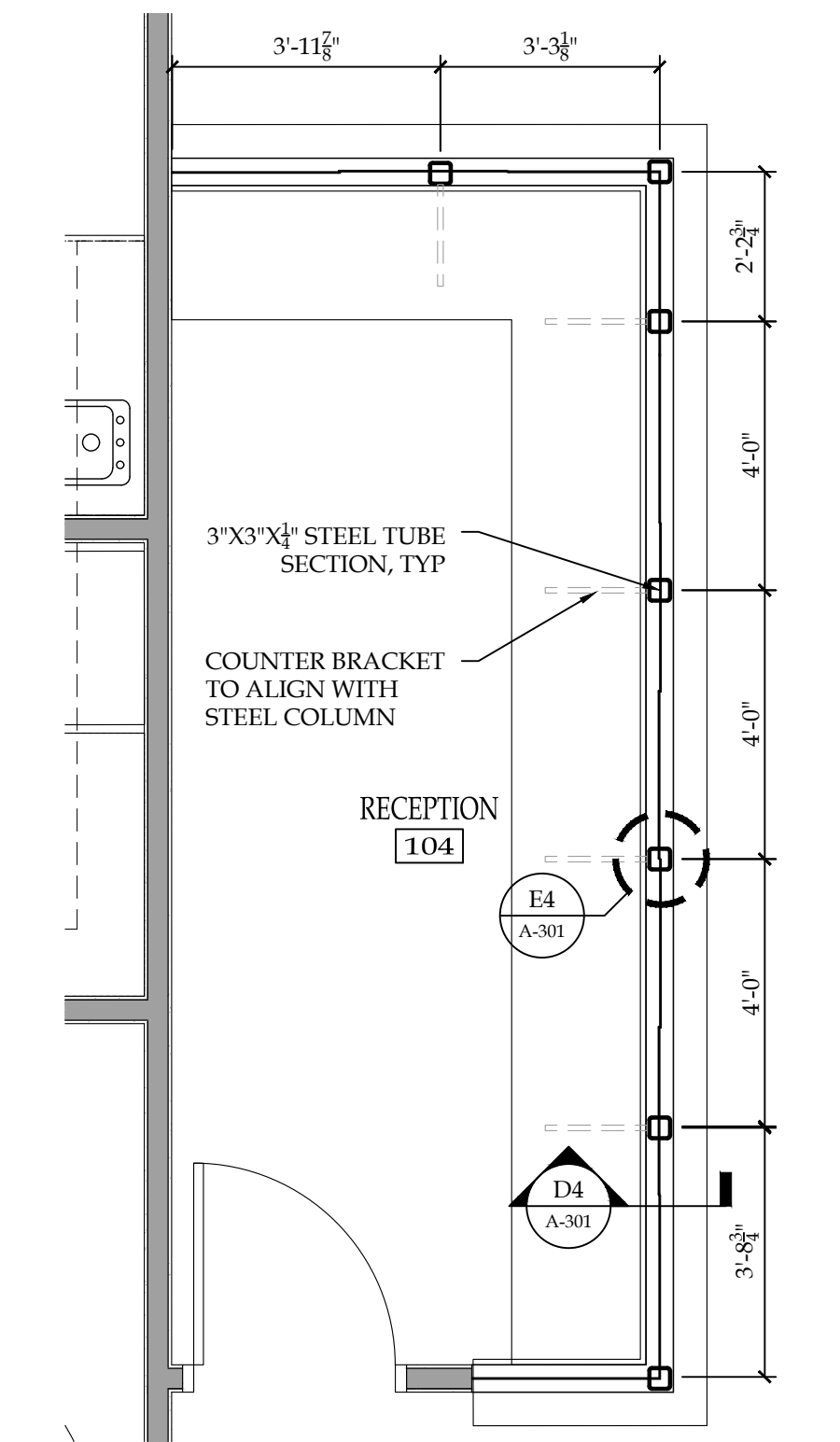
A1 WALL SECTION  
SCALE: 1/2" = 1'-0"



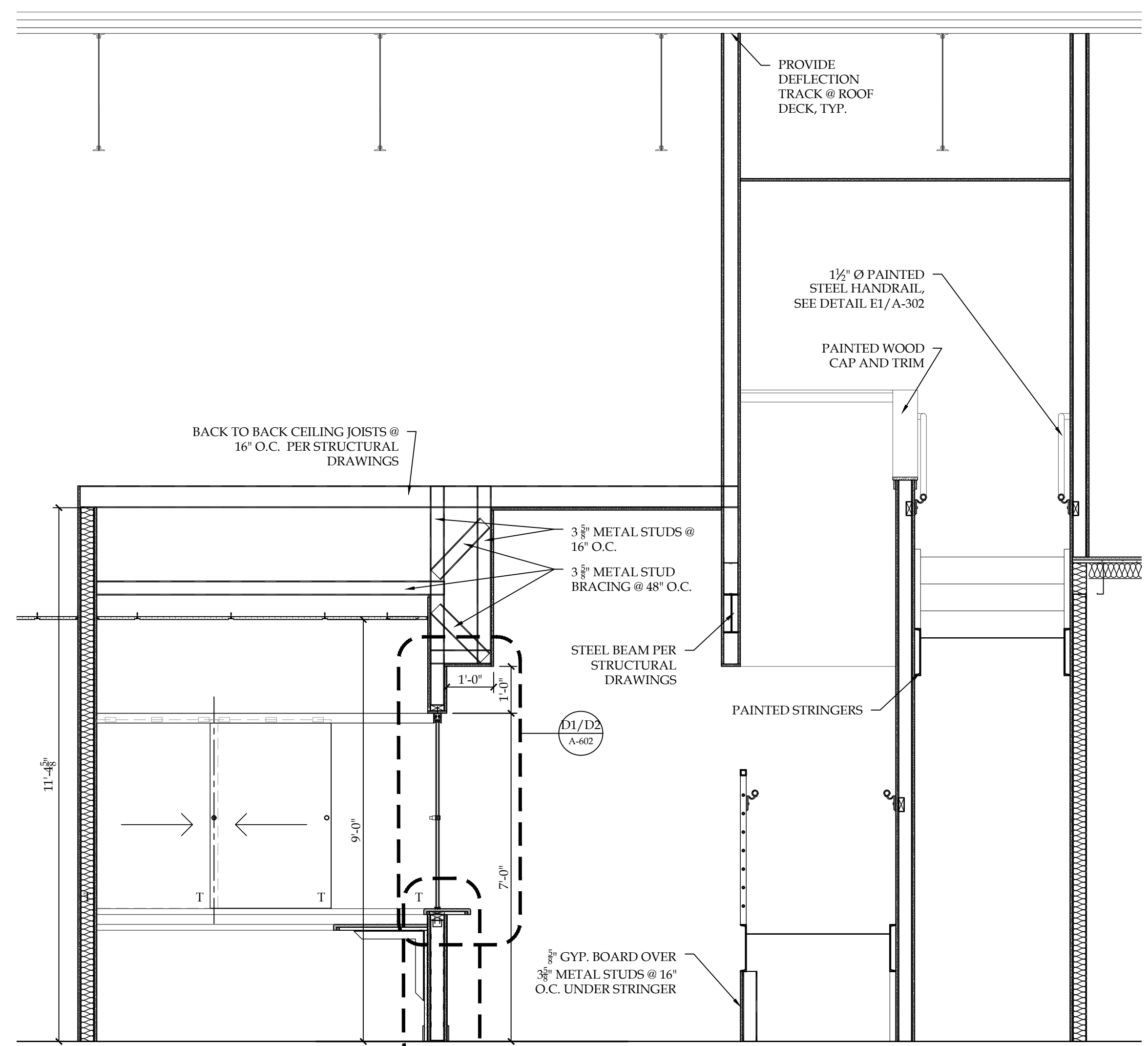
E4 TRANSACTION SUPPORT DETAIL  
SCALE: 1/2" = 1'-0"



D4 TRANSACTION SUPPORT DETAIL  
SCALE: 1/2" = 1'-0"



D5 TRANSACTION SUPPORT STEEL LOCATION PLAN  
SCALE: 1/2" = 1'-0"



A4 WALL SECTION  
SCALE: 1/2" = 1'-0"

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ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

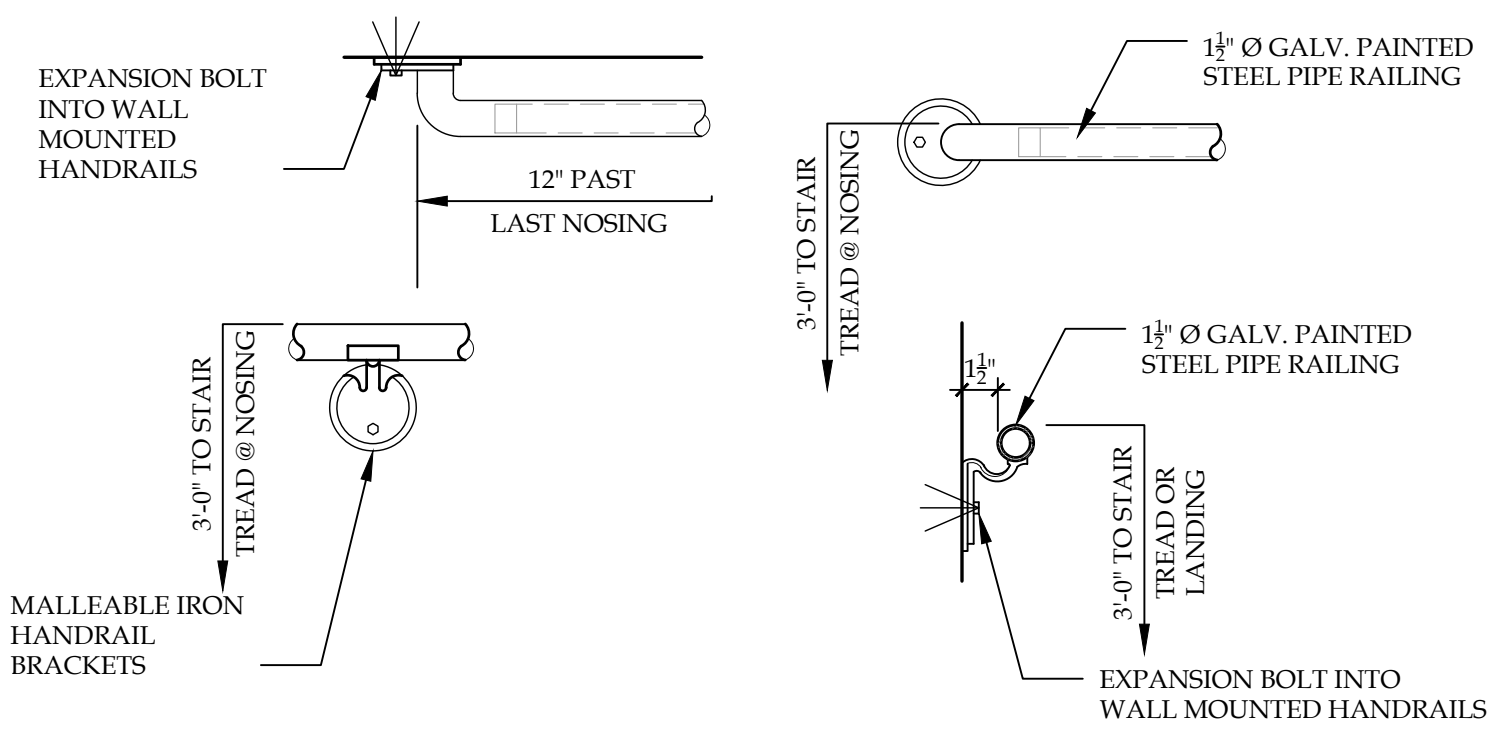
TITLE:  
**BUILDING SECTIONS**

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

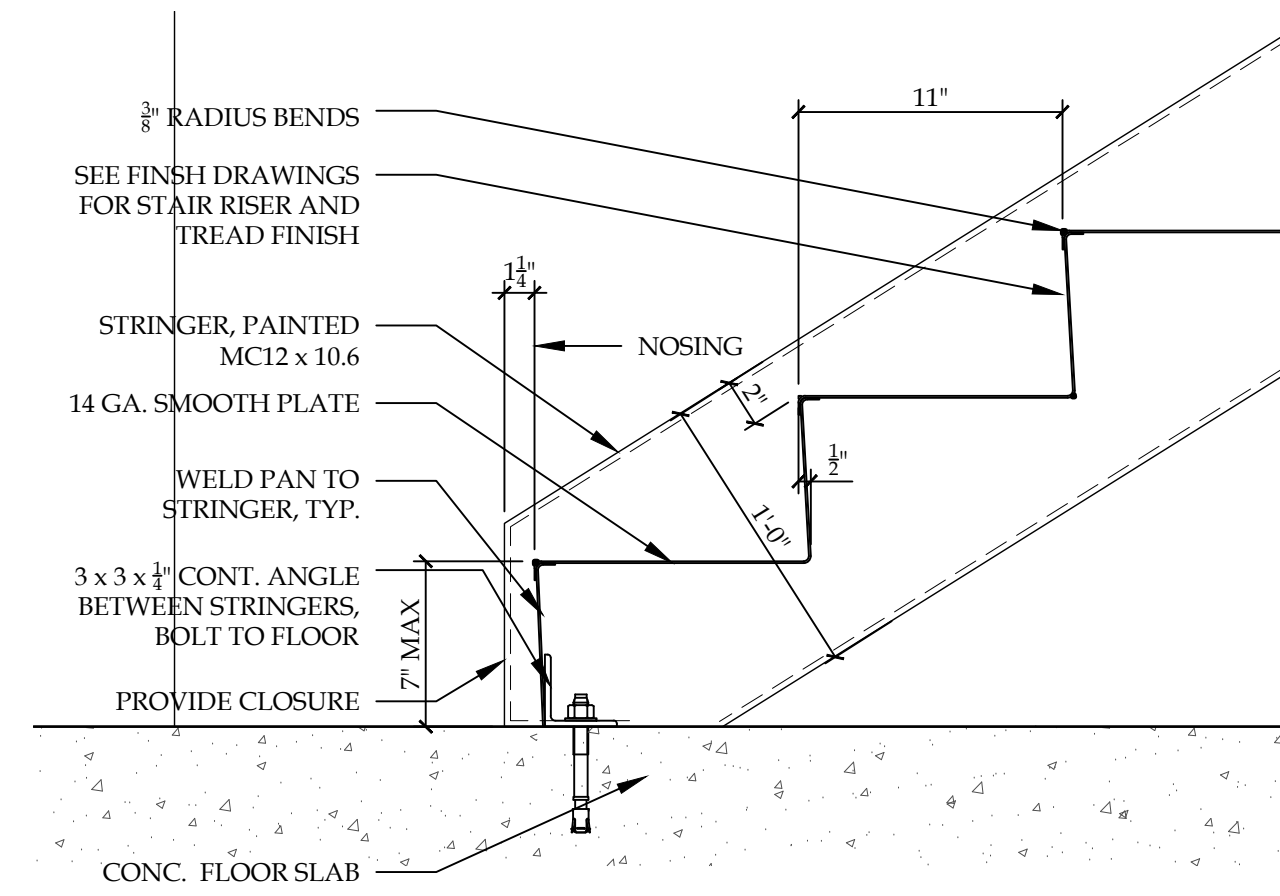
SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: A-301

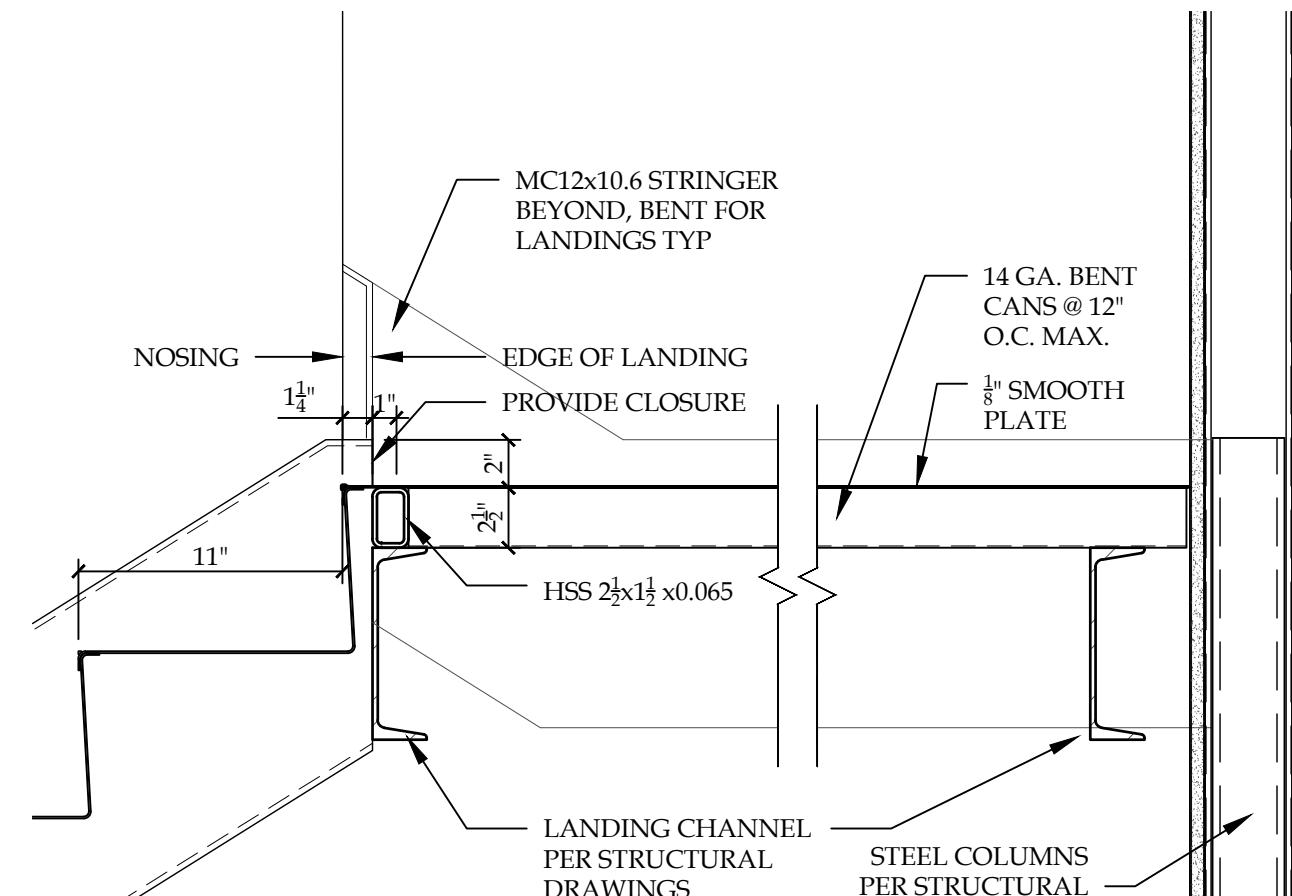
1 2 3 4 5 6



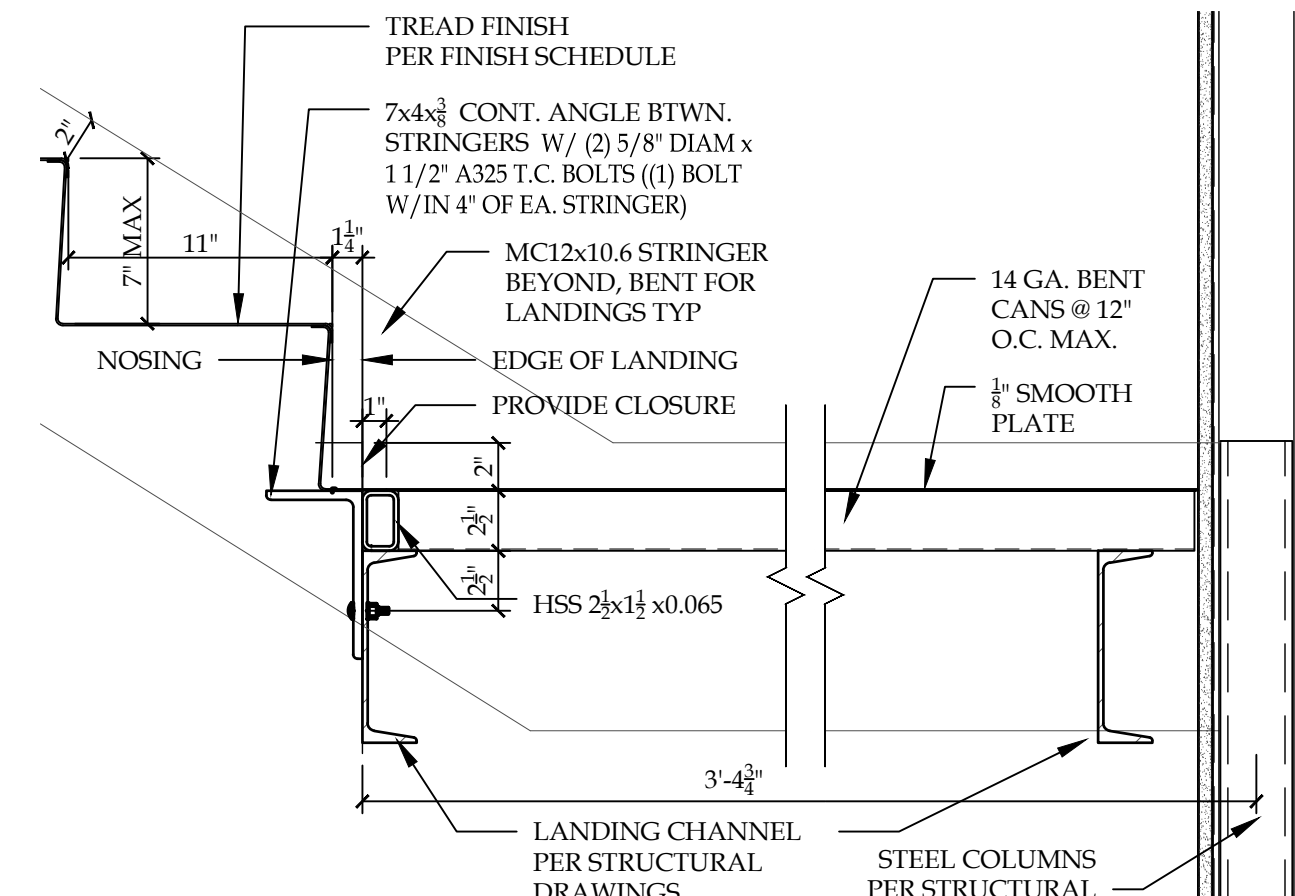
**E1 STAIR DETAIL - RAILING**  
SCALE: 1 1/2" = 1'-0"



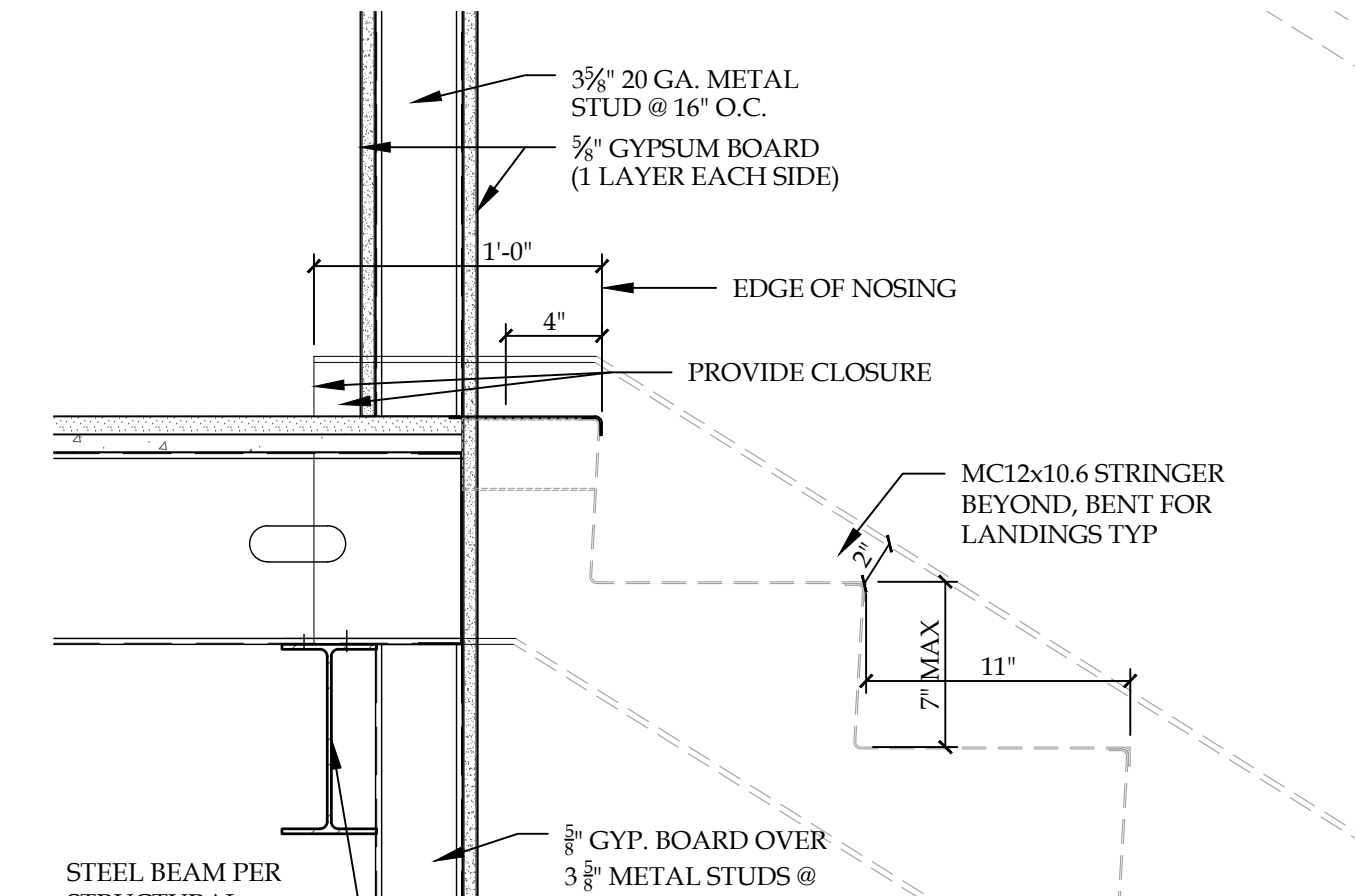
**C1 STAIR DETAIL - 1ST FLOOR**  
SCALE: 1 1/2" = 1'-0"



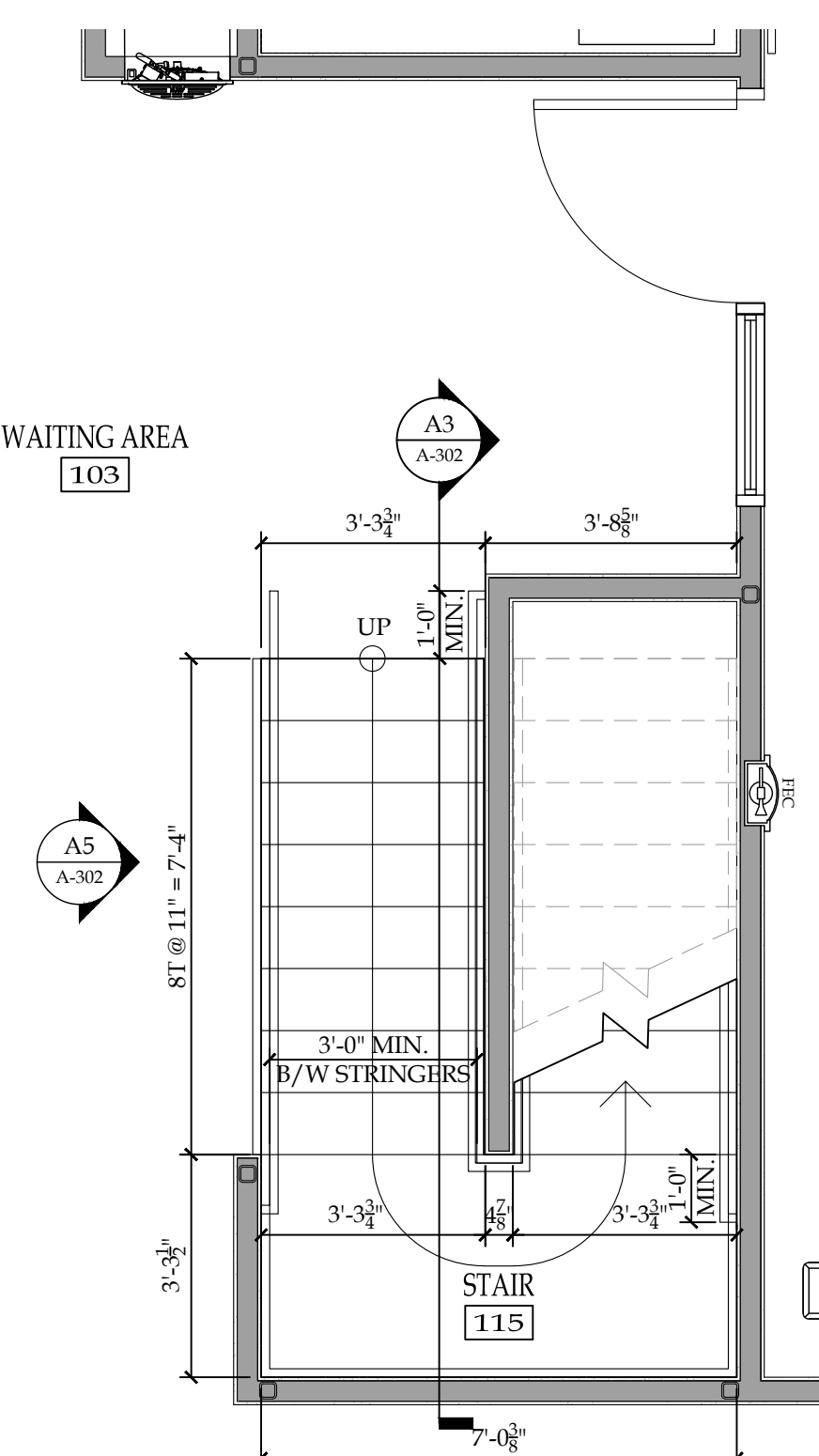
**C2 STAIR DETAIL - LANDING DOWN**  
SCALE: 1 1/2" = 1'-0"



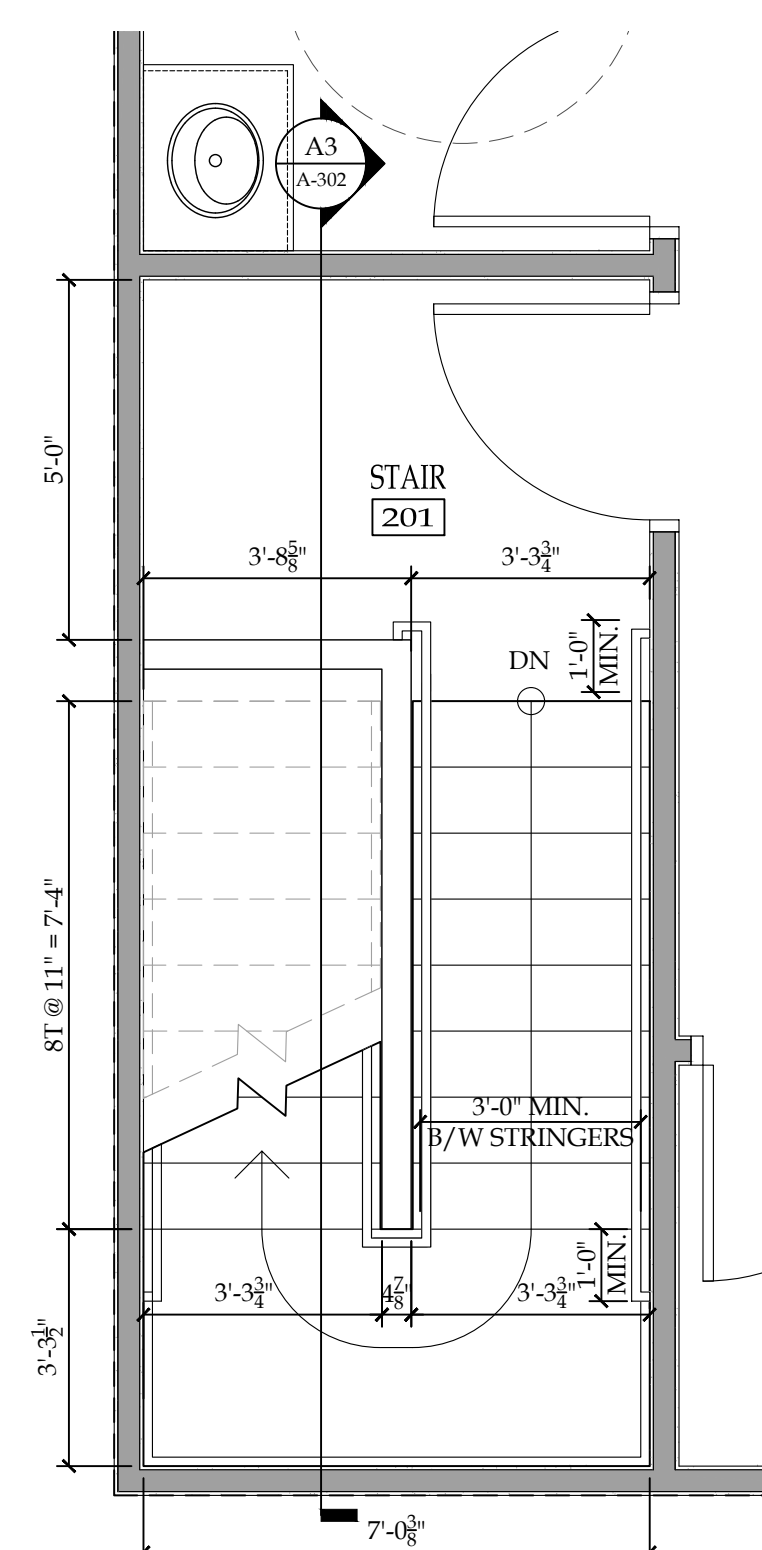
**C4 STAIR DETAIL - LANDING UP**  
SCALE: 1 1/2" = 1'-0"



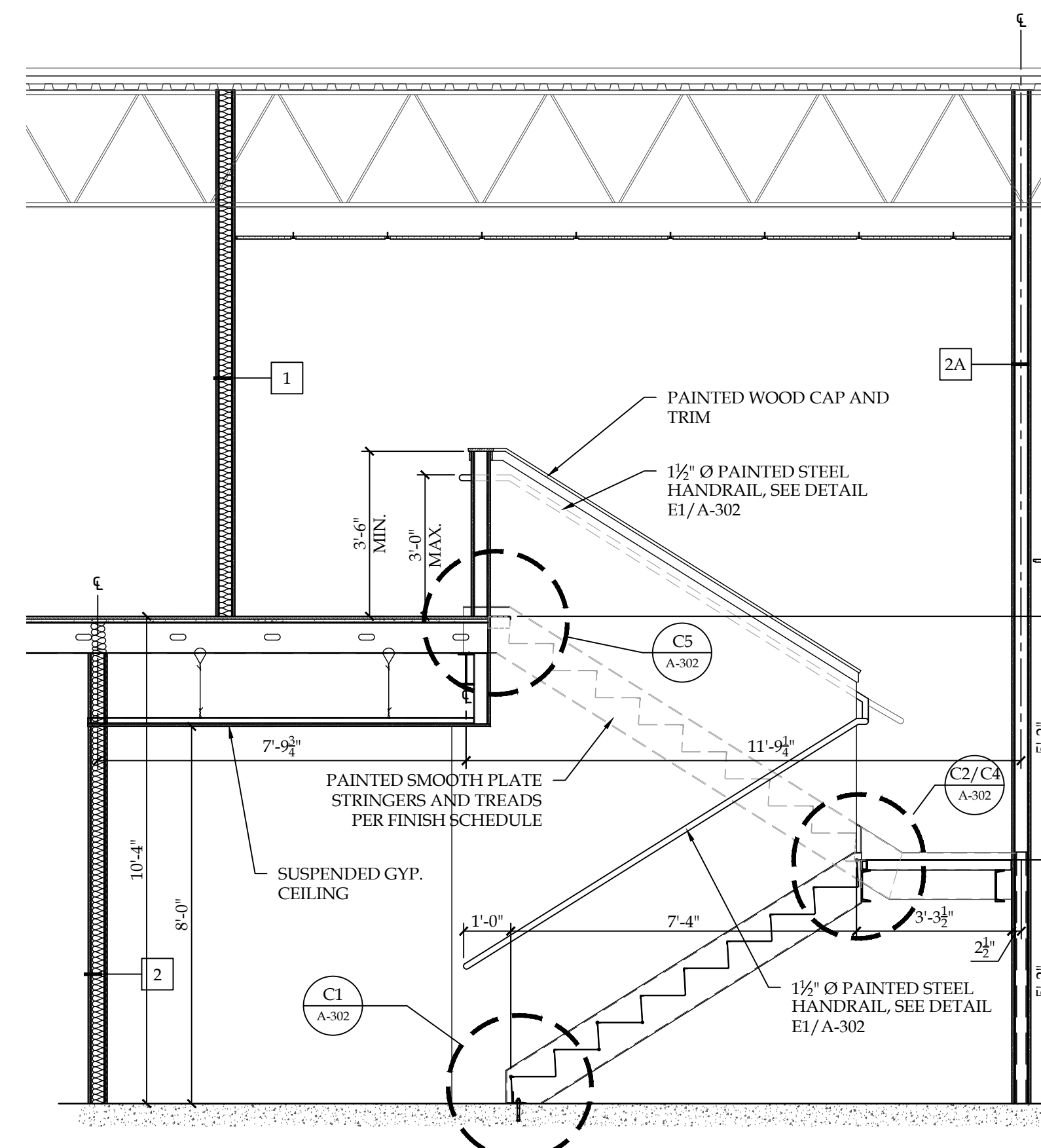
**C5 STAIR DETAIL - LANDING DOWN**  
SCALE: 1 1/2" = 1'-0"



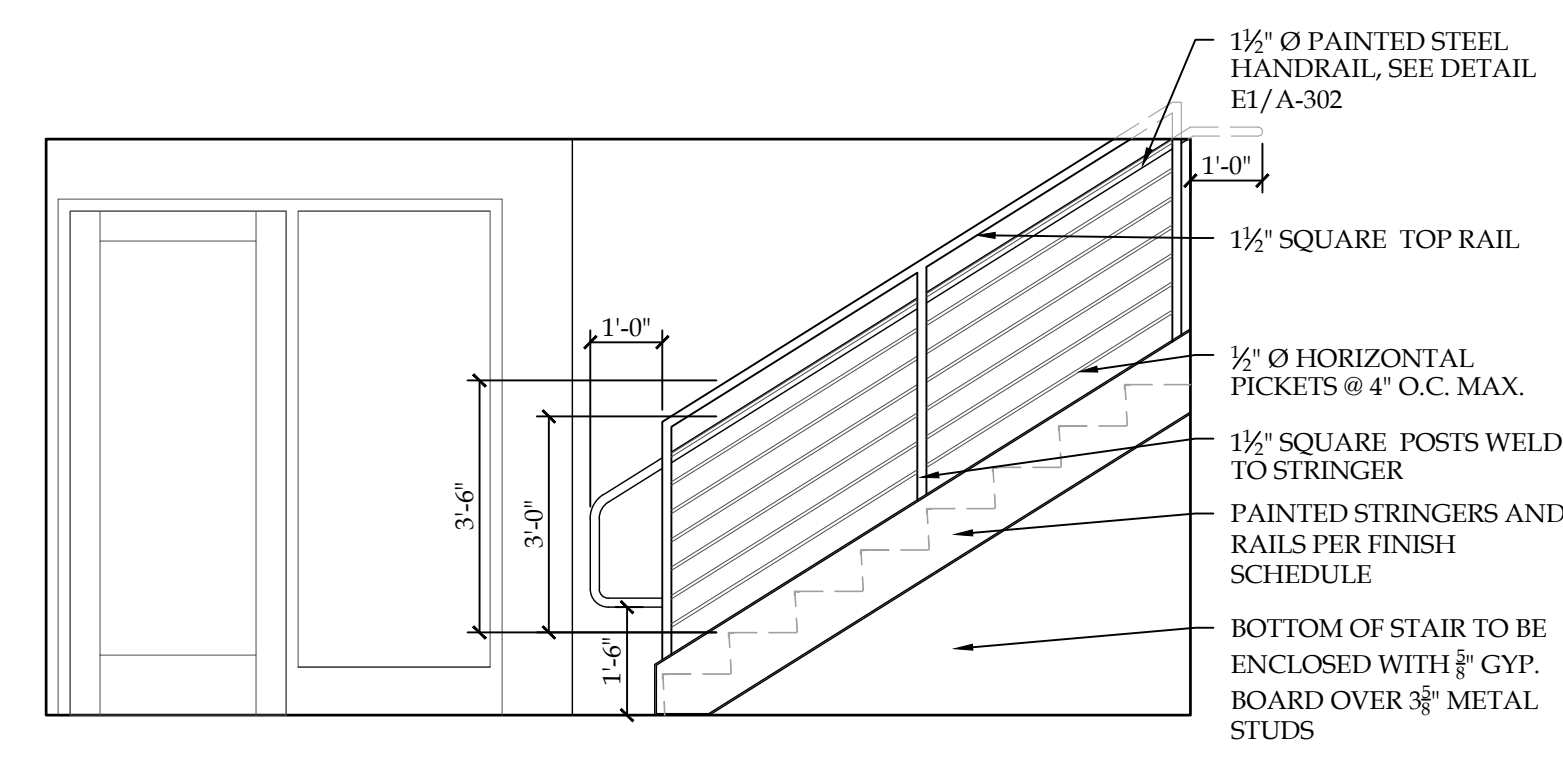
**A1 ENLARGED STAIR PLAN - 1ST FLOOR**  
SCALE: 3/8" = 1'-0"



**A2 ENLARGED STAIR PLAN - 2ND FLOOR**  
SCALE: 3/8" = 1'-0"



**A3 STAIR SECTION**  
SCALE: 3/8" = 1'-0"



**A5 STAIR ELEVATION**  
SCALE: 3/8" = 1'-0"

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ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P. Silvestri  
PROJ. ARCH. S. Hunt DRAFTER  
INTERIORS L. Idziur INTERIORS A. Nagle

TITLE:  
**ENLARGED STAIR PLANS AND SECTIONS**

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

SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-302**



ACCESSORIES SCHEDULE					
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" MIN HORIZONTAL GRAB BAR	3001-42	AMERICAN SPECIALTIES, INC.	PROVIDE BRACKETS FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
B	36" MIN HORIZONTAL GRAB BAR	3001-36	AMERICAN SPECIALTIES, INC.	PROVIDE BRACKETS FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
C	18" MIN VERTICAL GRAB BAR	3001-18	AMERICAN SPECIALTIES, INC.	PROVIDE BRACKETS FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
D	FRAMELESS POLISHED PLATE GLASS MIRROR - 1" THICK	8287	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	DIMENSIONS: 24" WIDE X 36" HIGH SEE DRAWING FOR LOCATIONS
E	TOILET TISSUE DISPENSER	0042	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
F	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	20832	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
G	SURFACE MOUNTED AUTOMATIC HAND SOAP / GEL HAND SANITIZER DISPENSER	0360	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
H	AUTOMATIC HAND DRYER	0199-1-93	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
I	SURFACE MOUNTED PAPER TOWEL DISPENSER	20210	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
J	SURFACE MOUNTED COAT HOOK AND BURETTS	0714	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	BACK OF RESTROOM DOORS
K	HORIZONTAL STAINLESS STEEL WALL MOUNTED BABY CHANGING STATION	KB110-88VM	KOALA KARE	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
L	RECESSED SPECIMEN PASS BOX	8154	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS

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ISSUE:  
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SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
 ENLARGED PLANS  
 & ELEVATIONS

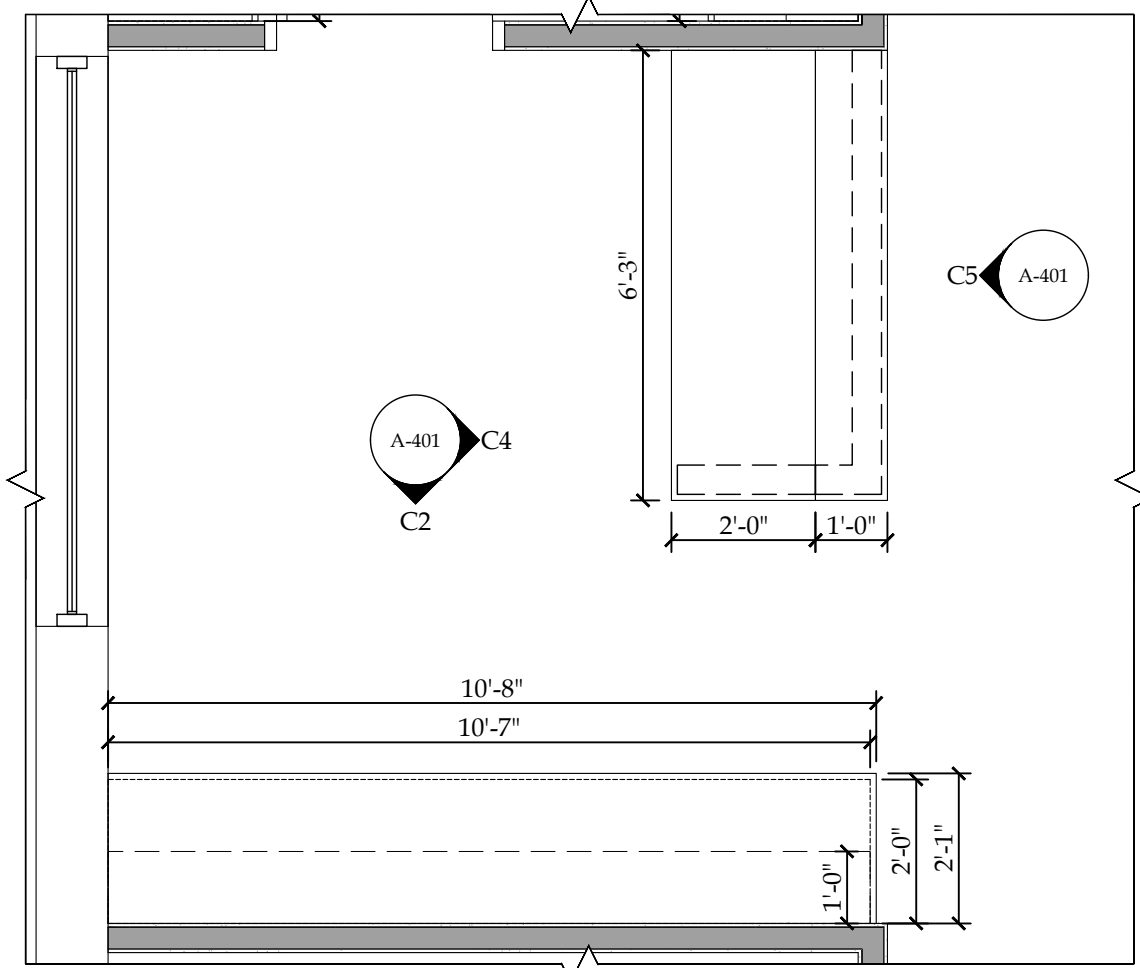


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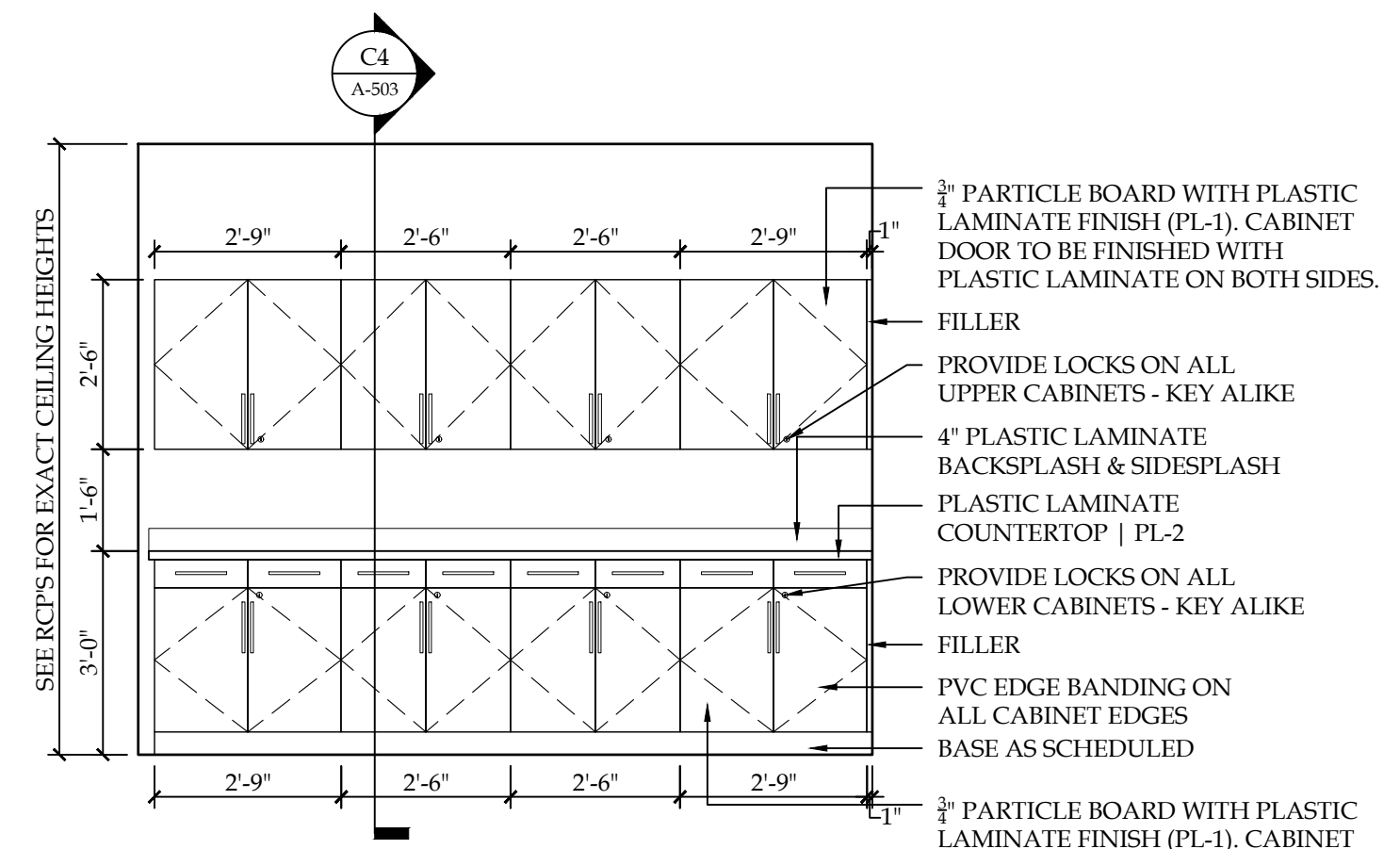
1321 MILLERSPORT HWY PH. 716.691.0900  
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SA JOB #: 21055.01 DATE: 07-15-22

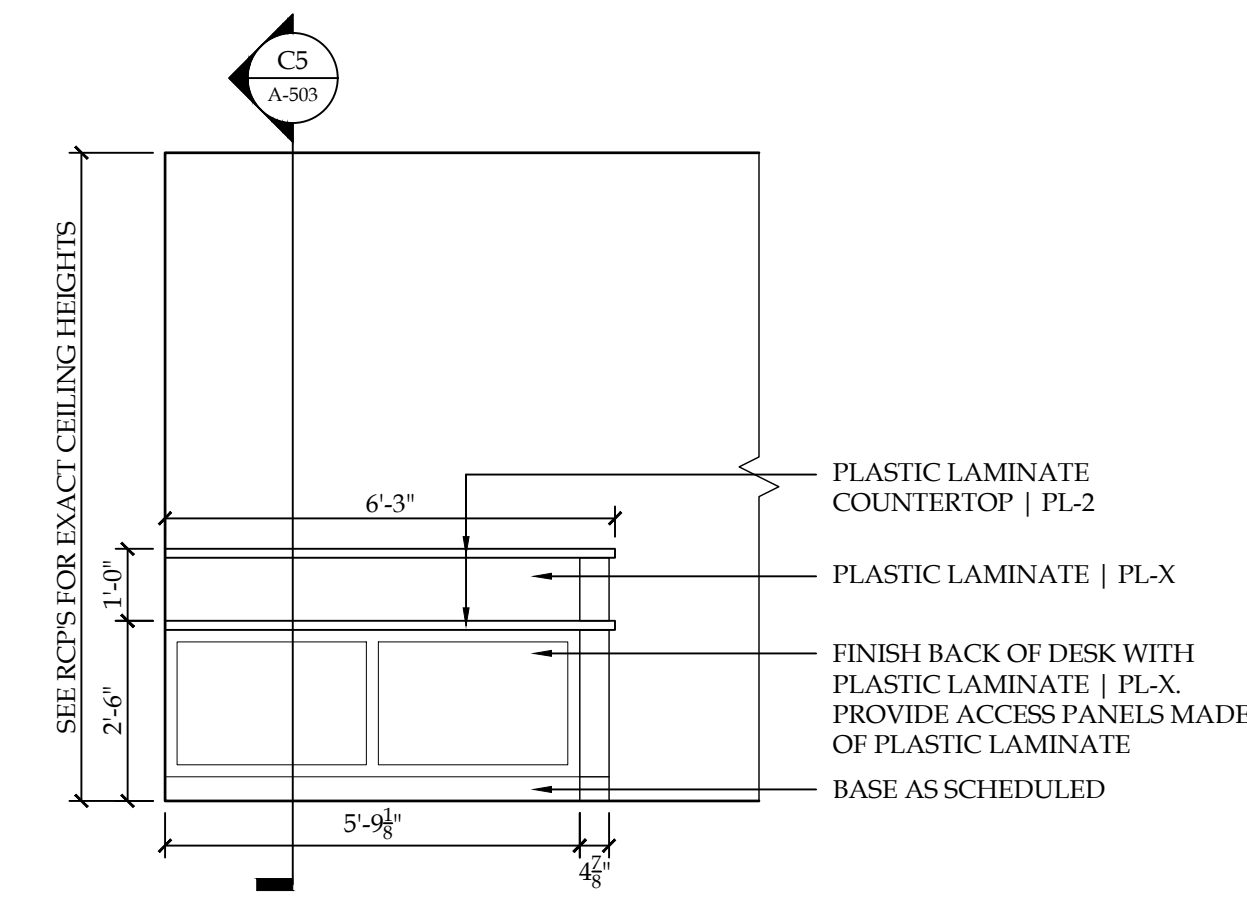
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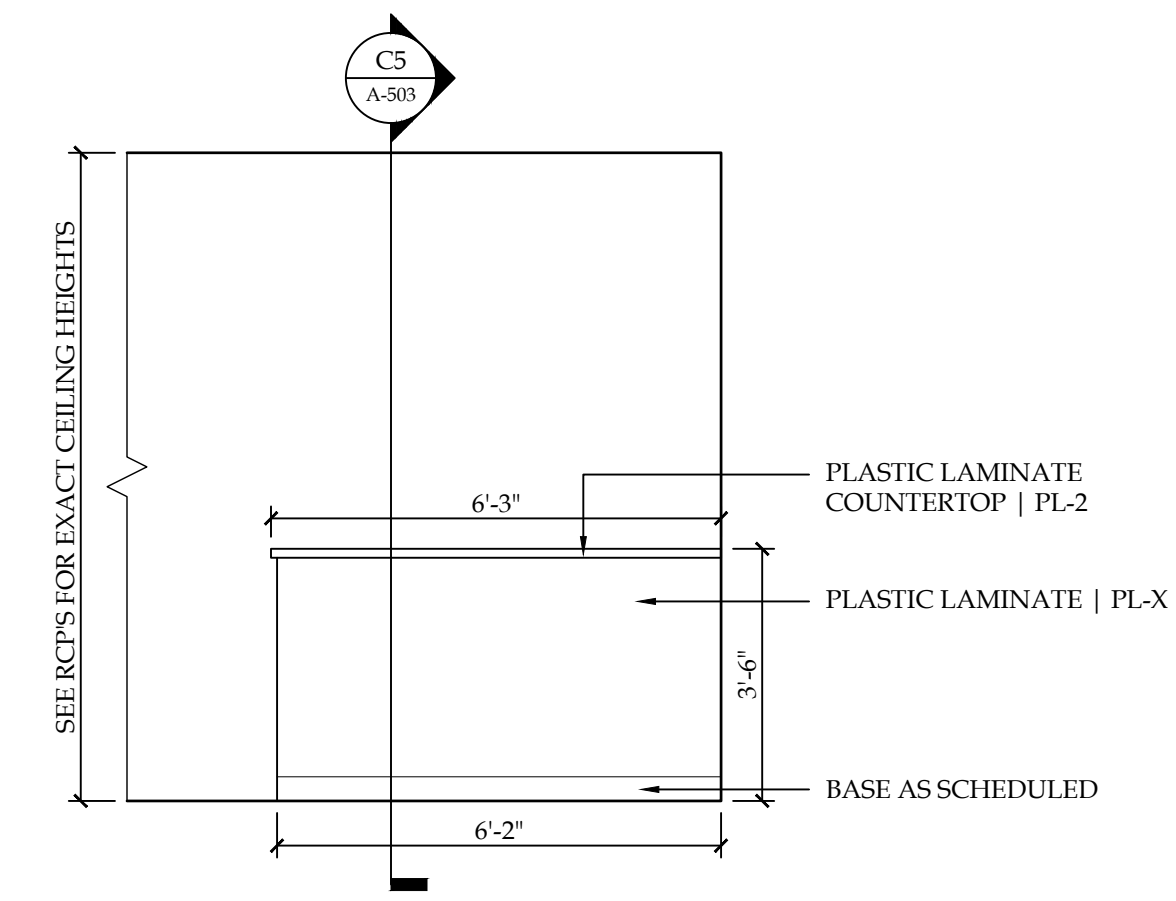
C1 ENLARGED PLAN | NURSE/DOCTORS STATION 121  
 3/8"=1'-0"



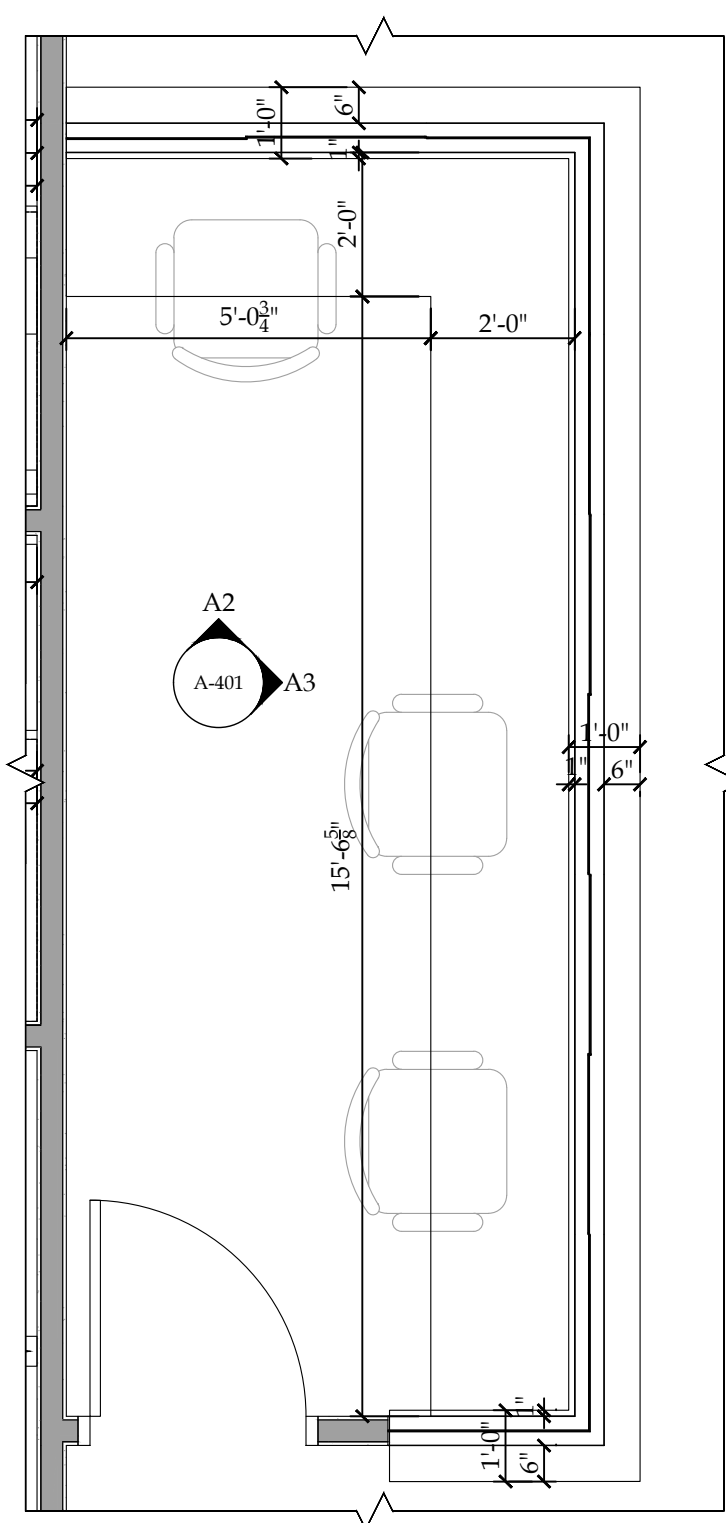
C2 ELEVATION | NURSE/DOCTORS STATION 121  
 3/8"=1'-0"



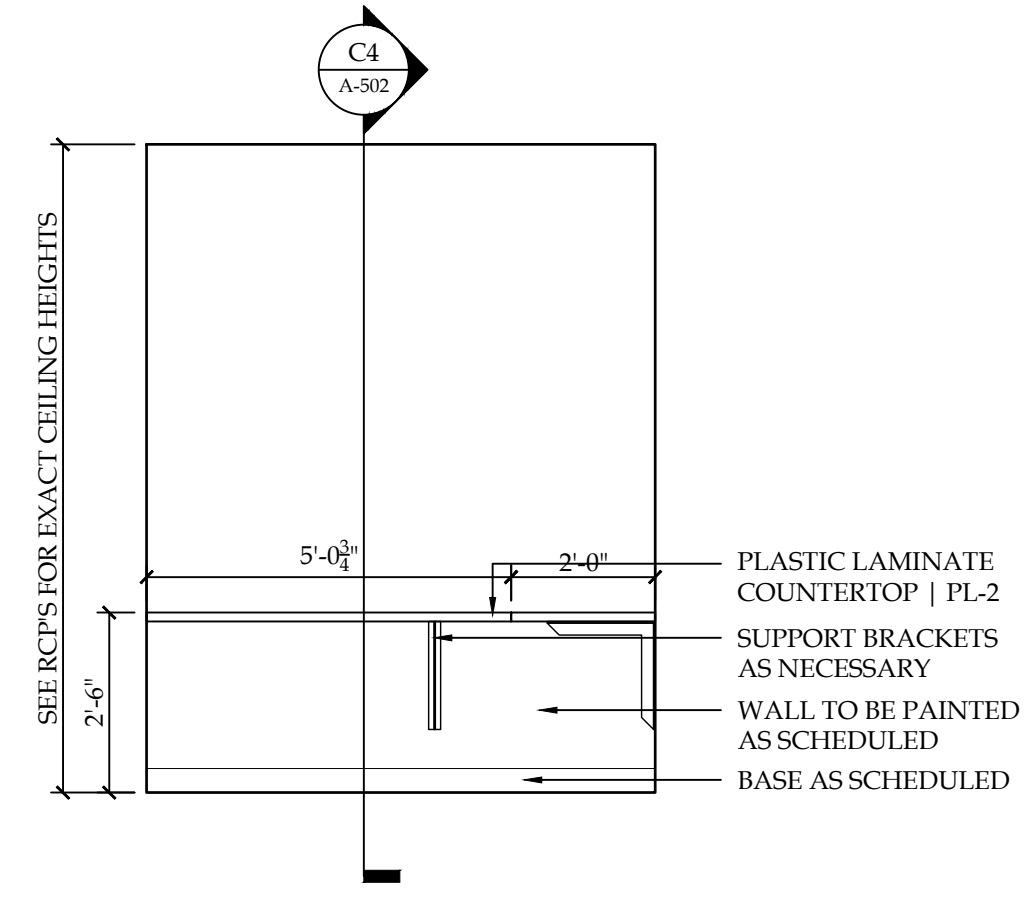
C4 ELEVATION | NURSE/DOCTORS STATION 121  
 3/8"=1'-0"



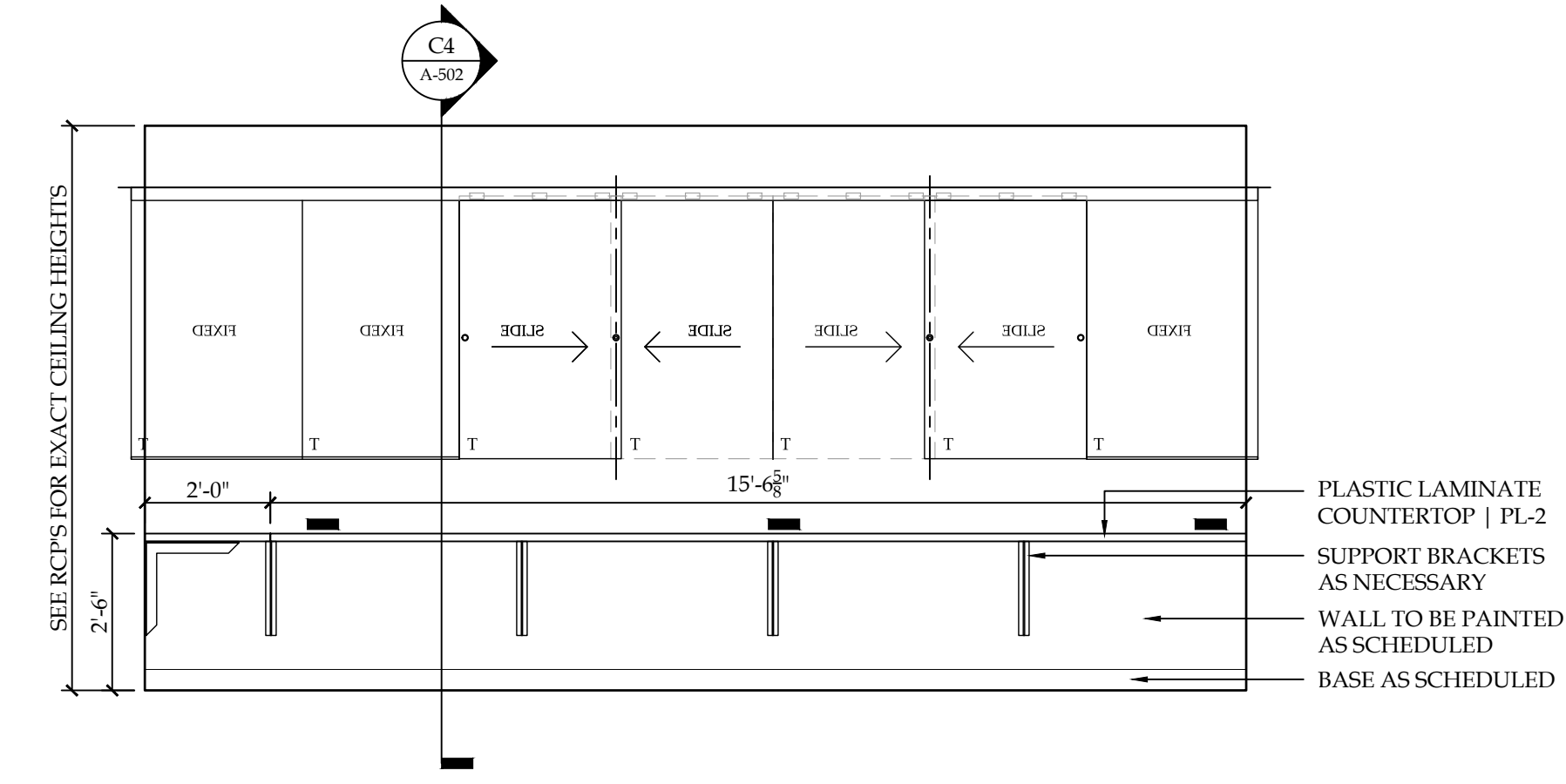
C5 ELEVATION | NURSE/DOCTORS STATION 121  
 3/8"=1'-0"



A1 ENLARGED PLAN | RECEPTION 104  
 3/8"=1'-0"



A2 ELEVATION | RECEPTION 104  
 3/8"=1'-0"



A3 ELEVATION | RECEPTION 104  
 3/8"=1'-0"

### ACCESSORIES SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" MIN HORIZONTAL GRAB BAR	3001-42	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
B	36" MIN HORIZONTAL GRAB BAR	3001-36	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
C	18" MIN VERTICAL GRAB BAR	3001-18	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
D	FRAMELESS POLISHED PLATE GLASS MIRROR - 1" THICK	8287	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	DIMENSIONS: 24" WIDE X 36" HIGH SEE DRAWING FOR LOCATIONS
E	TOILET TISSUE DISPENSER	0042	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
F	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	20832	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
G	SURFACE MOUNTED AUTOMATIC HAND SOAP / GEL HAND SANITIZER DISPENSER	0360	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
H	AUTOMATIC HAND DRYER	0199-1-93	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
I	SURFACE MOUNTED PAPER TOWEL DISPENSER	20210	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
J	SURFACE MOUNTED COAT HOOK AND RUMPER	0714	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	BACK OF RESTROOM DOORS
K	HORIZONTAL STAINLESS STEEL WALL MOUNTED BABY CHANGING STATION	KB110-SBWM	KOALA KARE	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
L	RECESSED SPECIMEN PASS BOX	8154	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS

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ISSUE:  
 BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER \_\_\_\_\_  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**ENLARGED PLANS & ELEVATIONS**

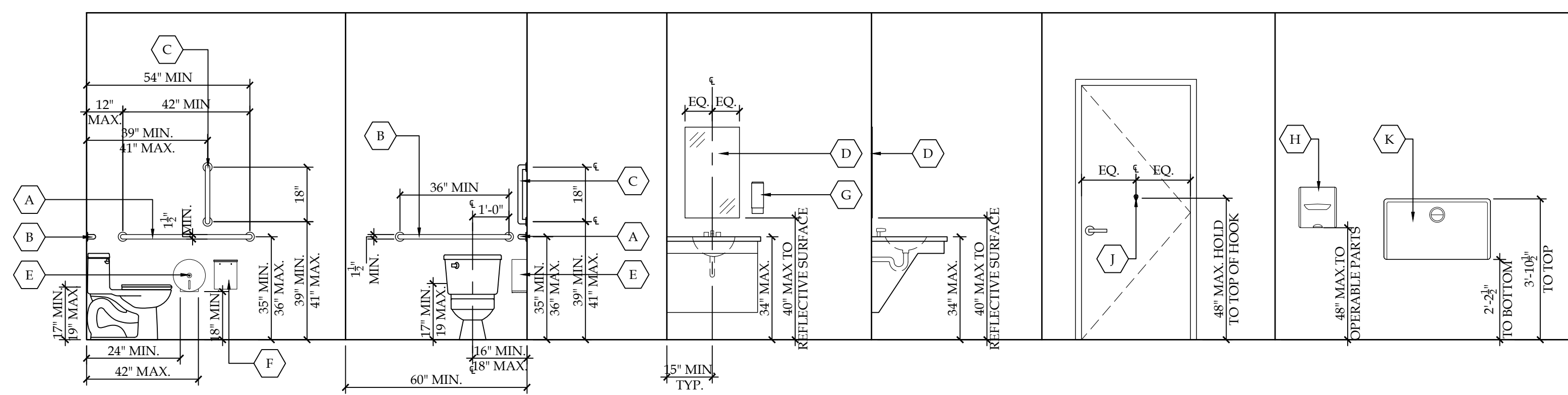


**SILVESTRI**  
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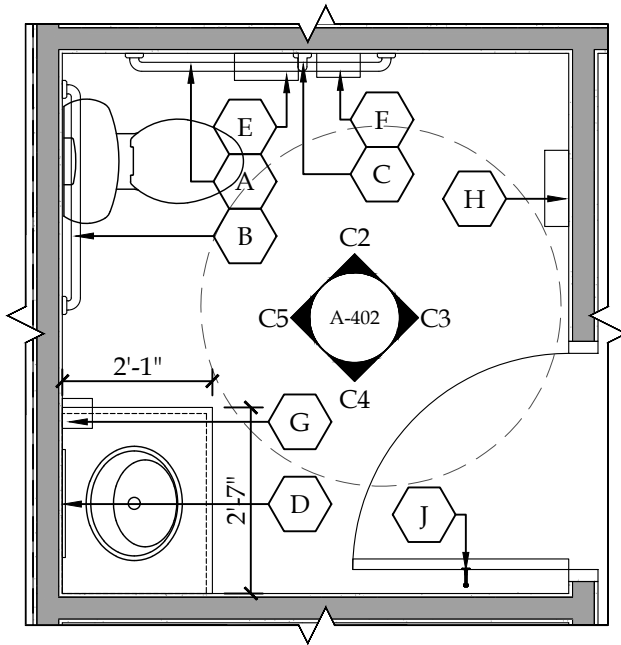
1321 MILLERSPORT HWY PH. 716.691.0900  
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SA JOB #: 21055.01 DATE: 07-15-22

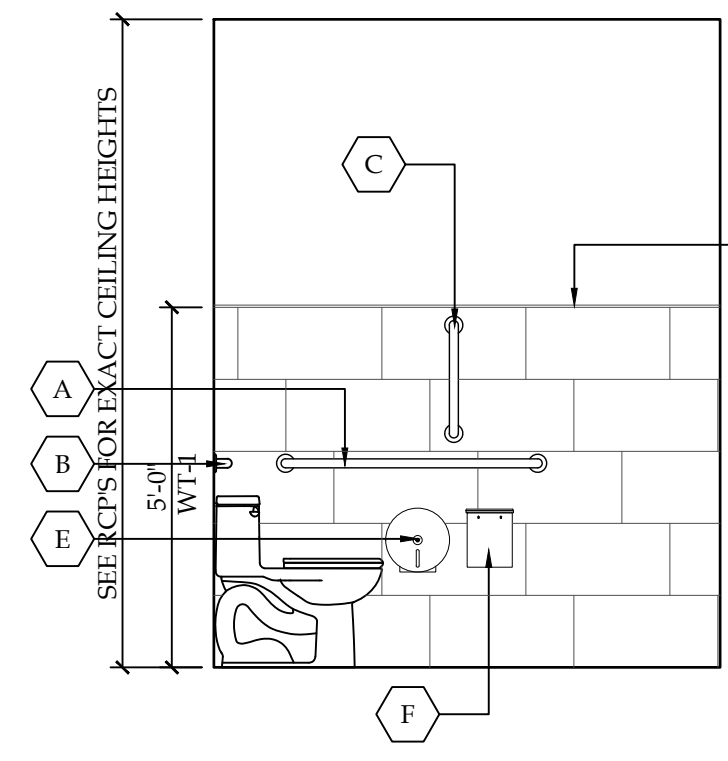
DRAWING #: **A-402**



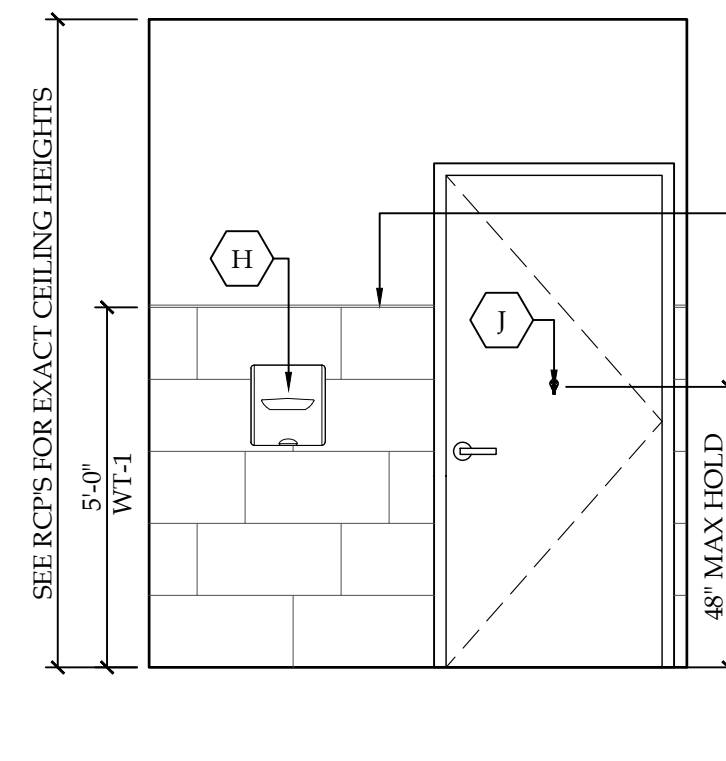
D1 ELEVATION | GENERAL ACCESSIBLE INSTALLATION CRITERIA  
 3/8"=1'-0"



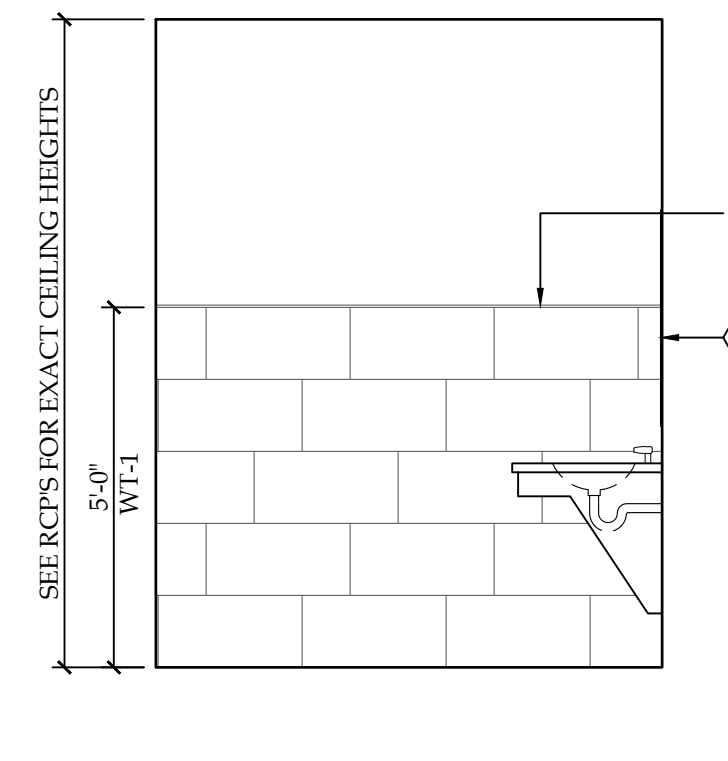
C1 ENLARGED PLAN | TOILET 207  
 3/8"=1'-0"



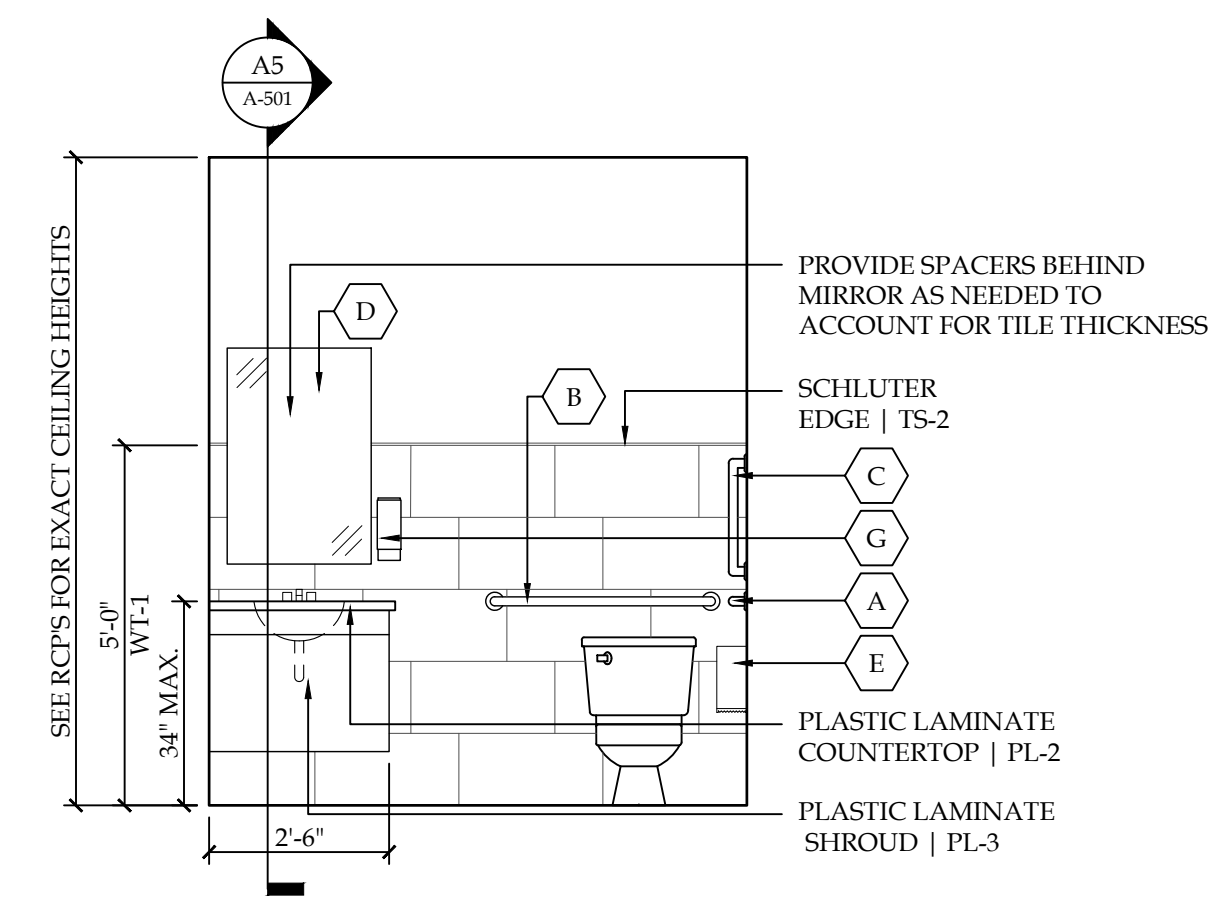
C2 ELEVATION | TOILET 207  
 3/8"=1'-0"



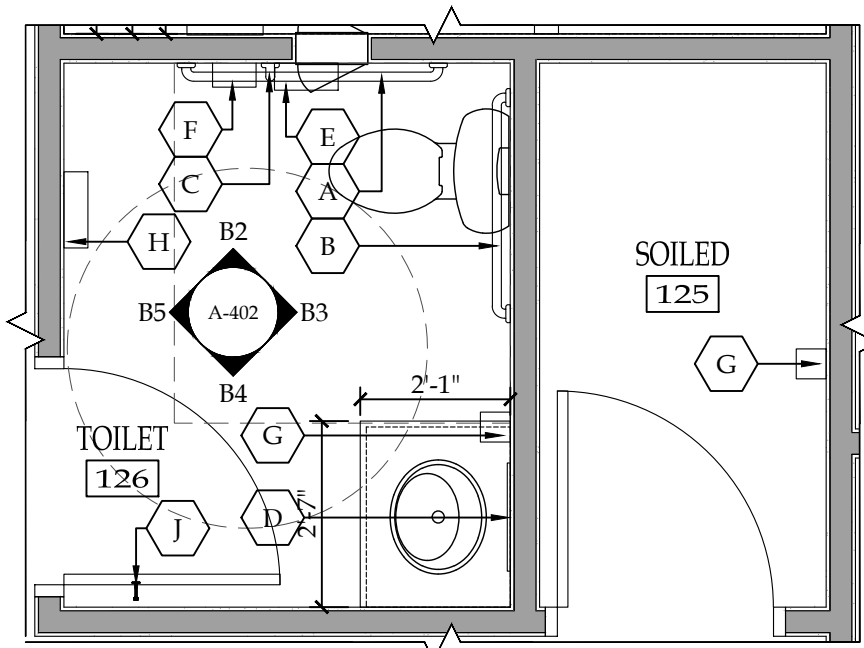
C3 ELEVATION | TOILET 207  
 3/8"=1'-0"



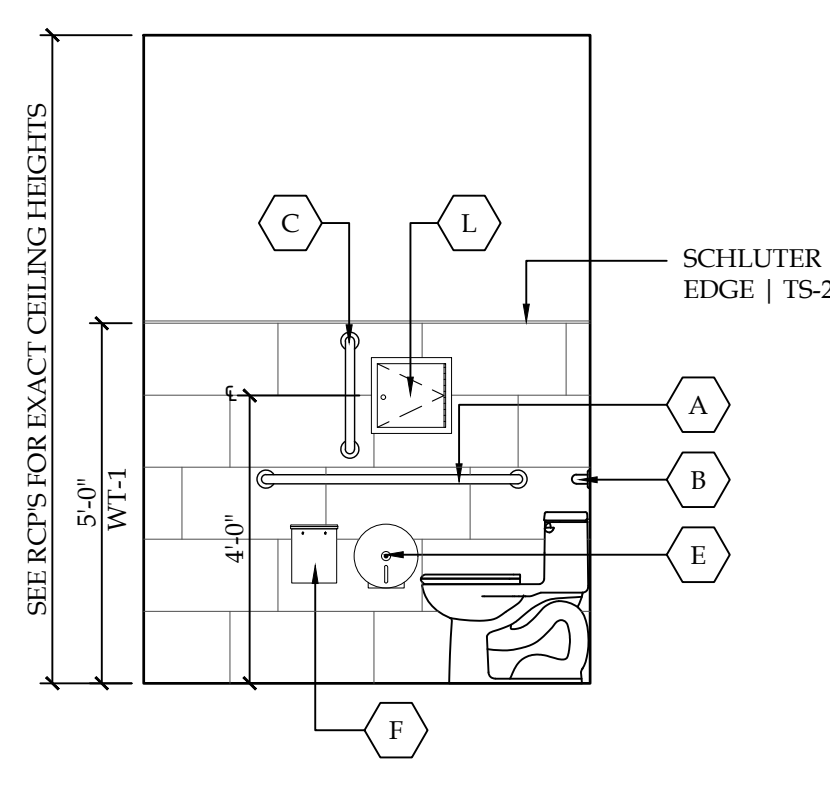
C4 ELEVATION | TOILET 207  
 3/8"=1'-0"



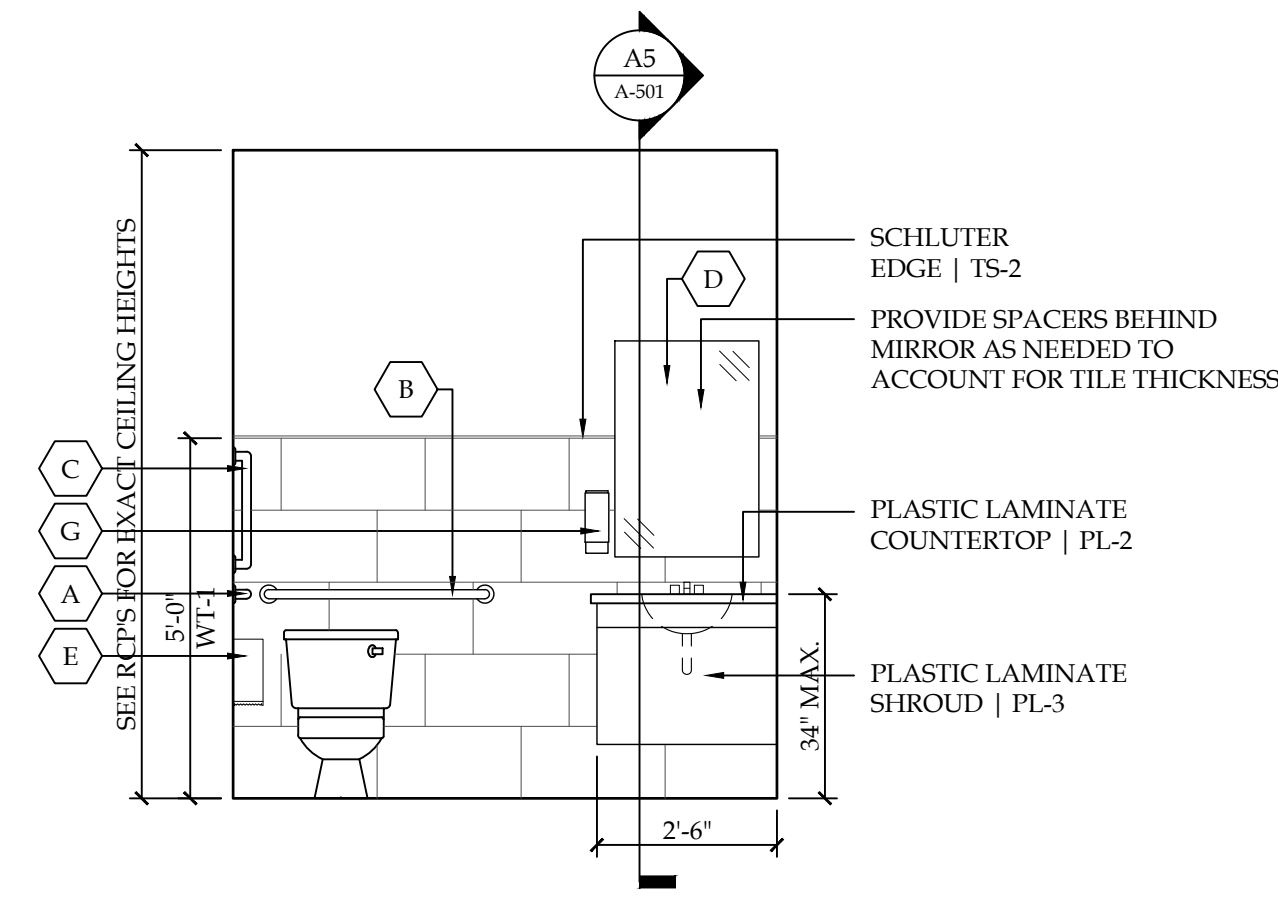
C5 ELEVATION | TOILET 207  
 3/8"=1'-0"



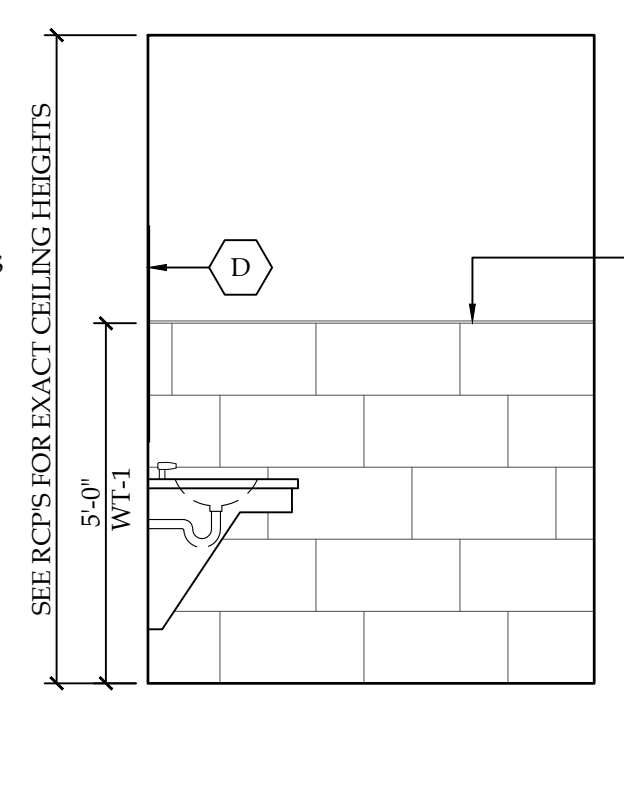
B1 ENLARGED PLAN | SOILED 125 & TOILET 126  
 3/8"=1'-0"



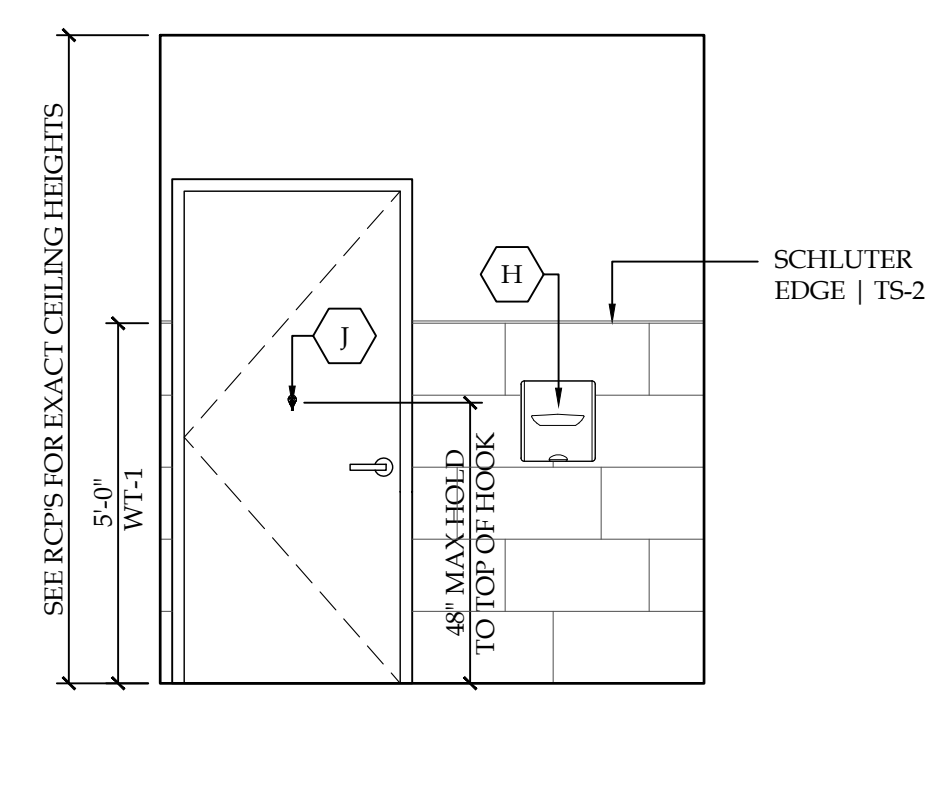
B2 ELEVATION | TOILET 126  
 3/8"=1'-0"



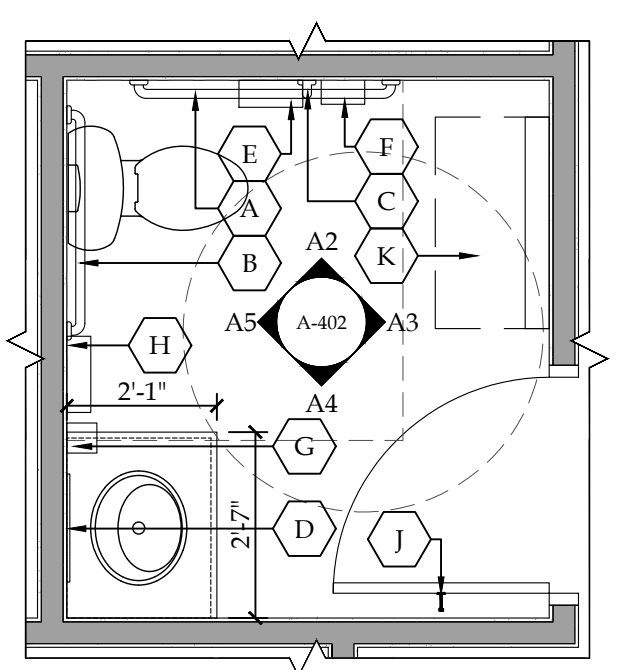
B3 ELEVATION | TOILET 126  
 3/8"=1'-0"



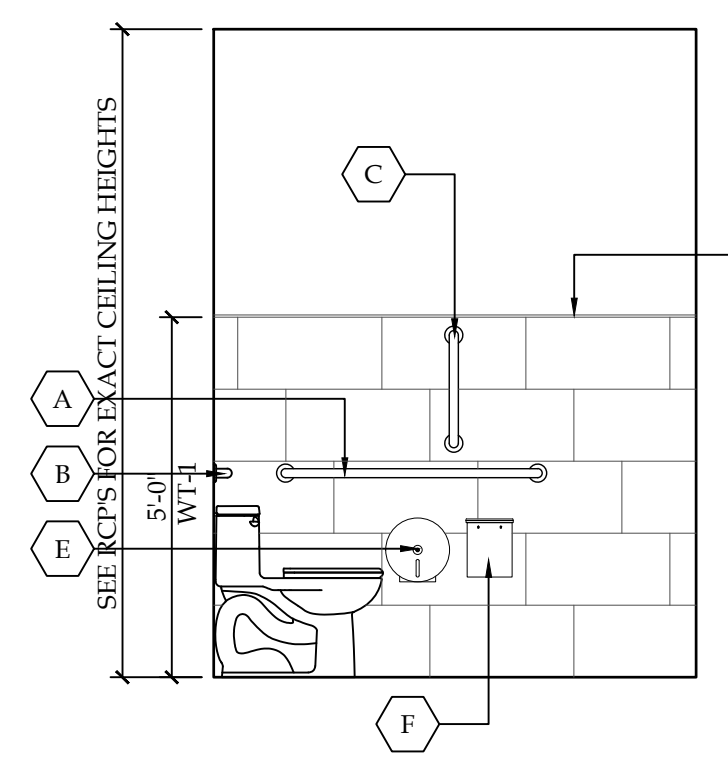
B4 ELEVATION | TOILET 126  
 3/8"=1'-0"



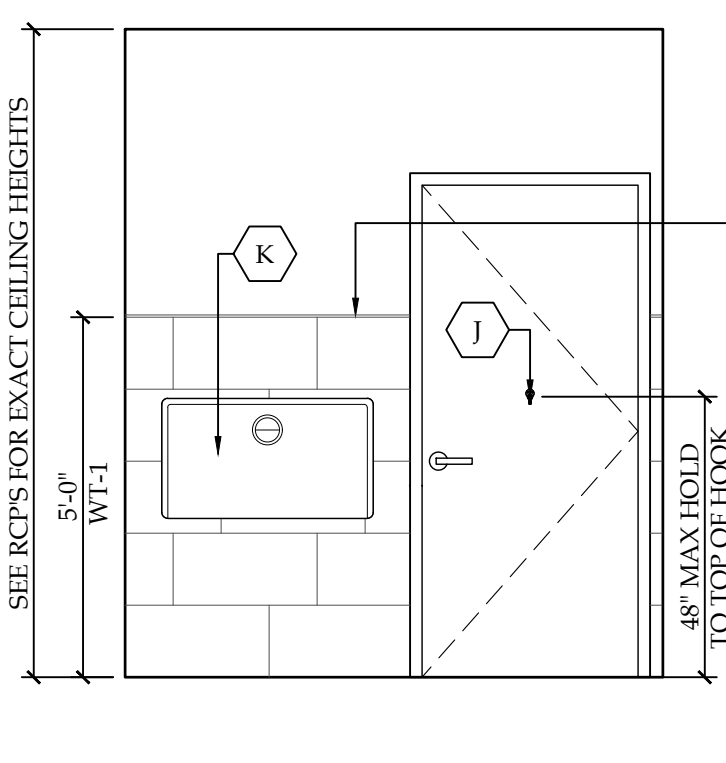
B5 ELEVATION | TOILET 126  
 3/8"=1'-0"



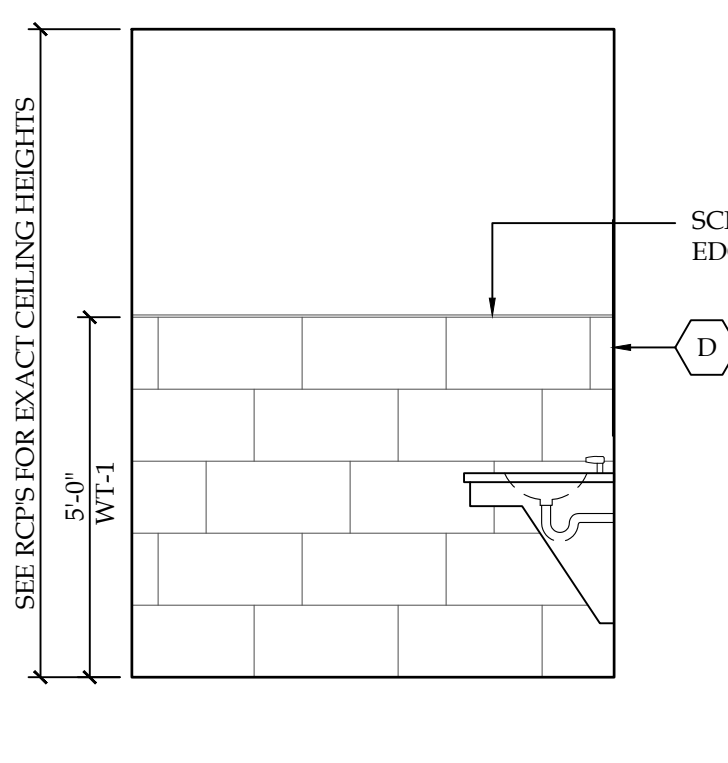
A1 ENLARGED PLAN | TOILET 105  
 3/8"=1'-0"



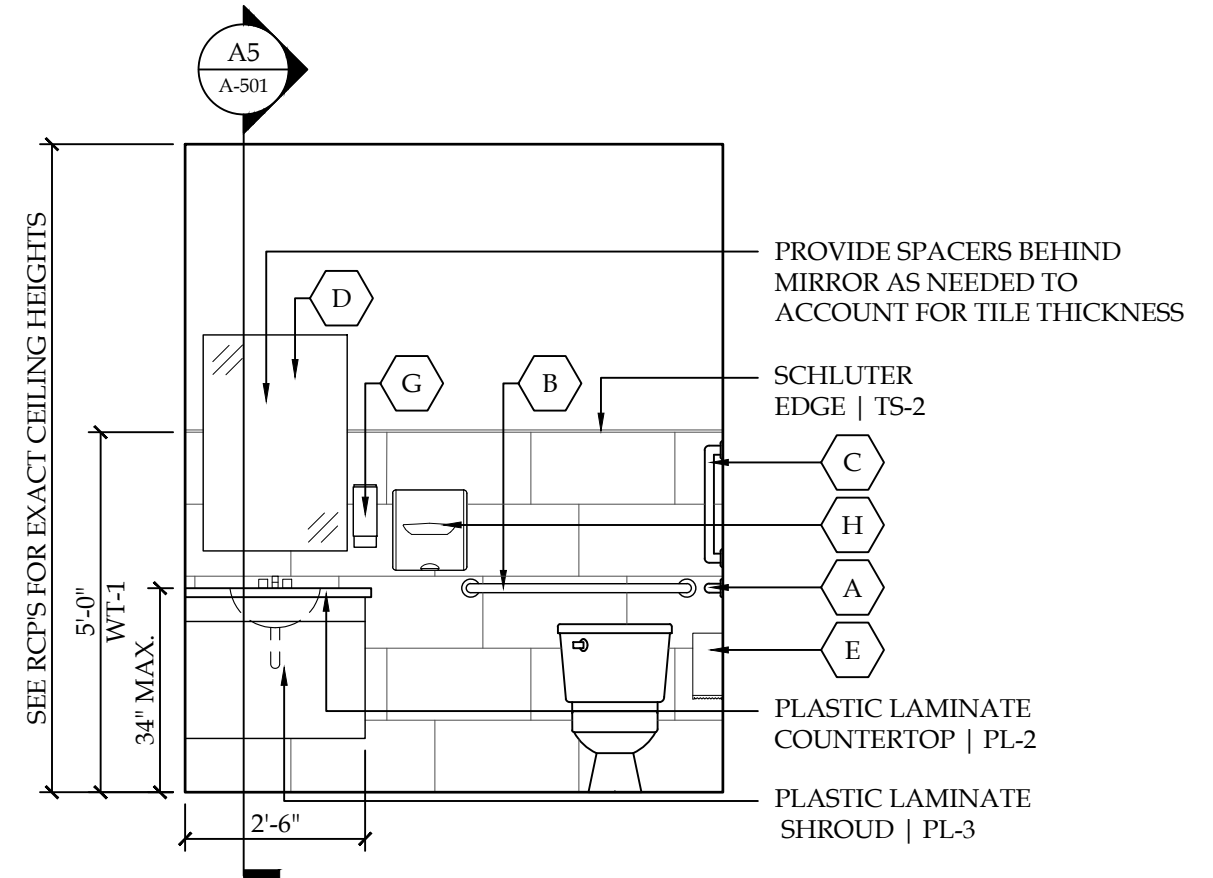
A2 ELEVATION | TOILET 105  
 3/8"=1'-0"



A3 ELEVATION | TOILET 105  
 3/8"=1'-0"



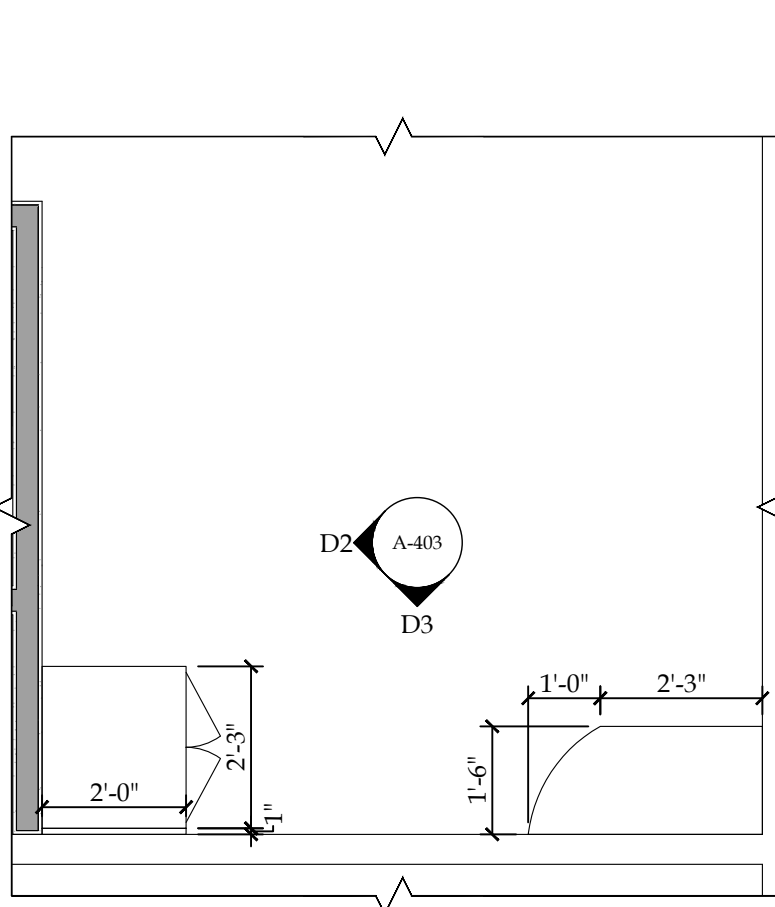
A4 ELEVATION | TOILET 105  
 3/8"=1'-0"



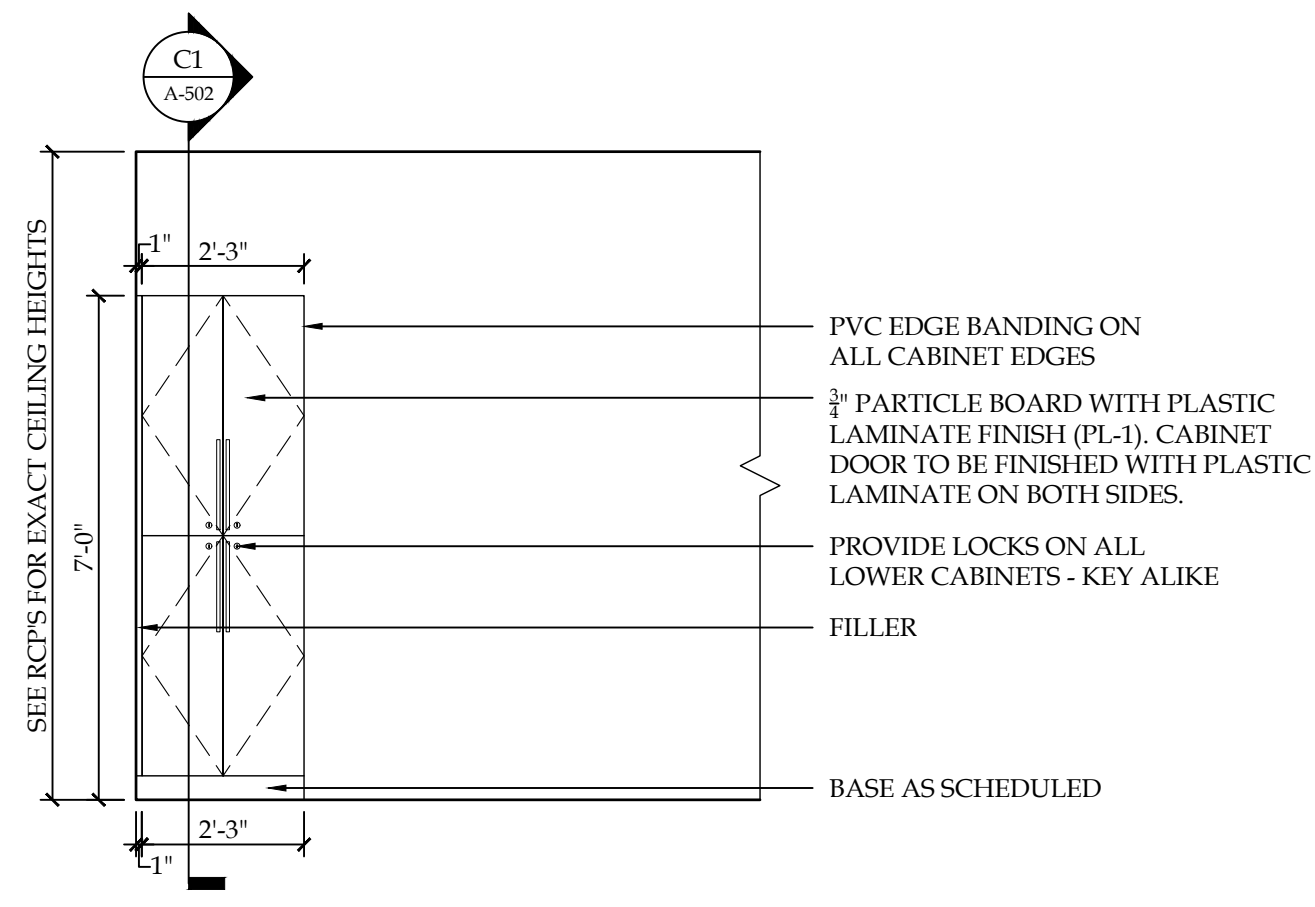
A5 ELEVATION | TOILET 105  
 3/8"=1'-0"

E  
D  
C  
B  
A

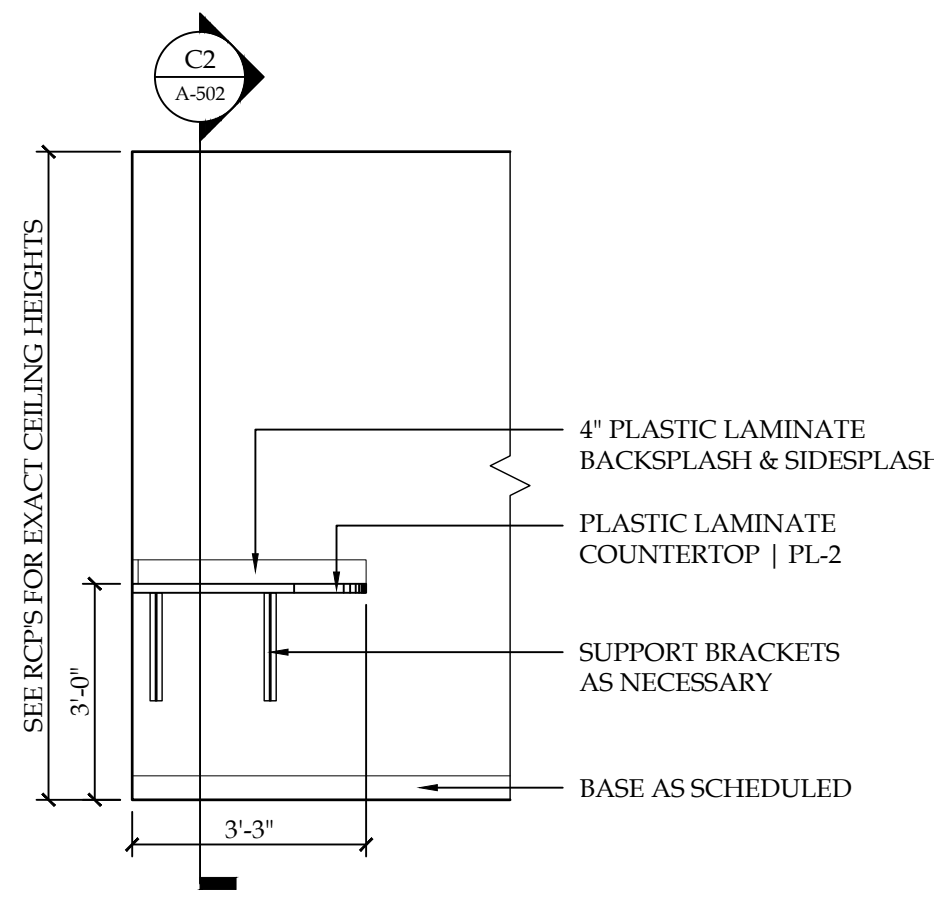




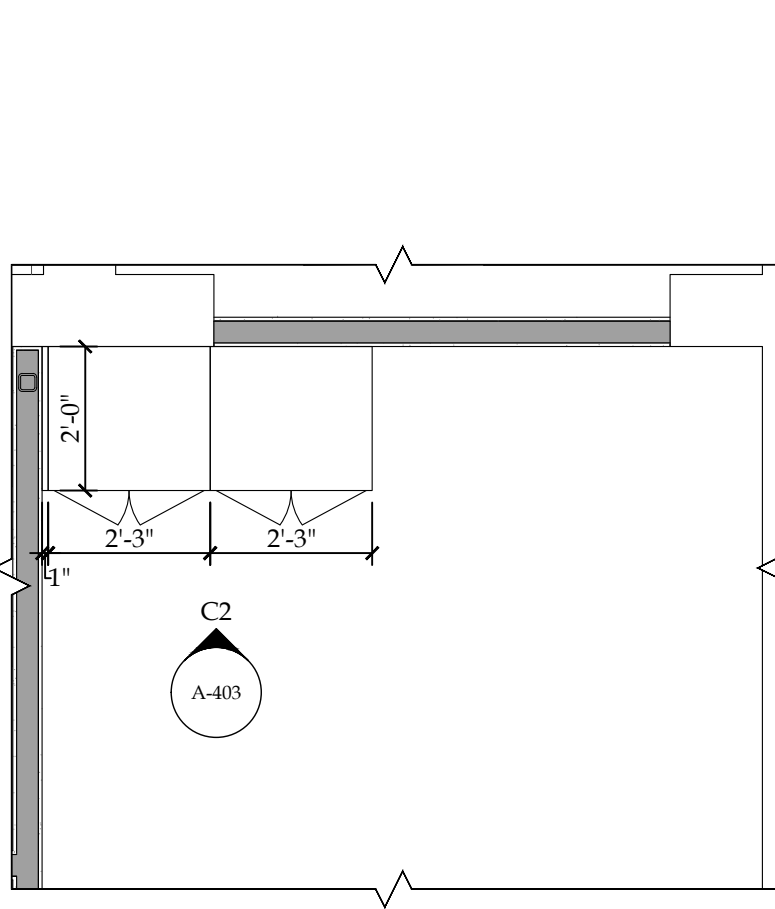
D1 ENLARGED PLAN | DENTAL 111  
3/8"=1'-0"



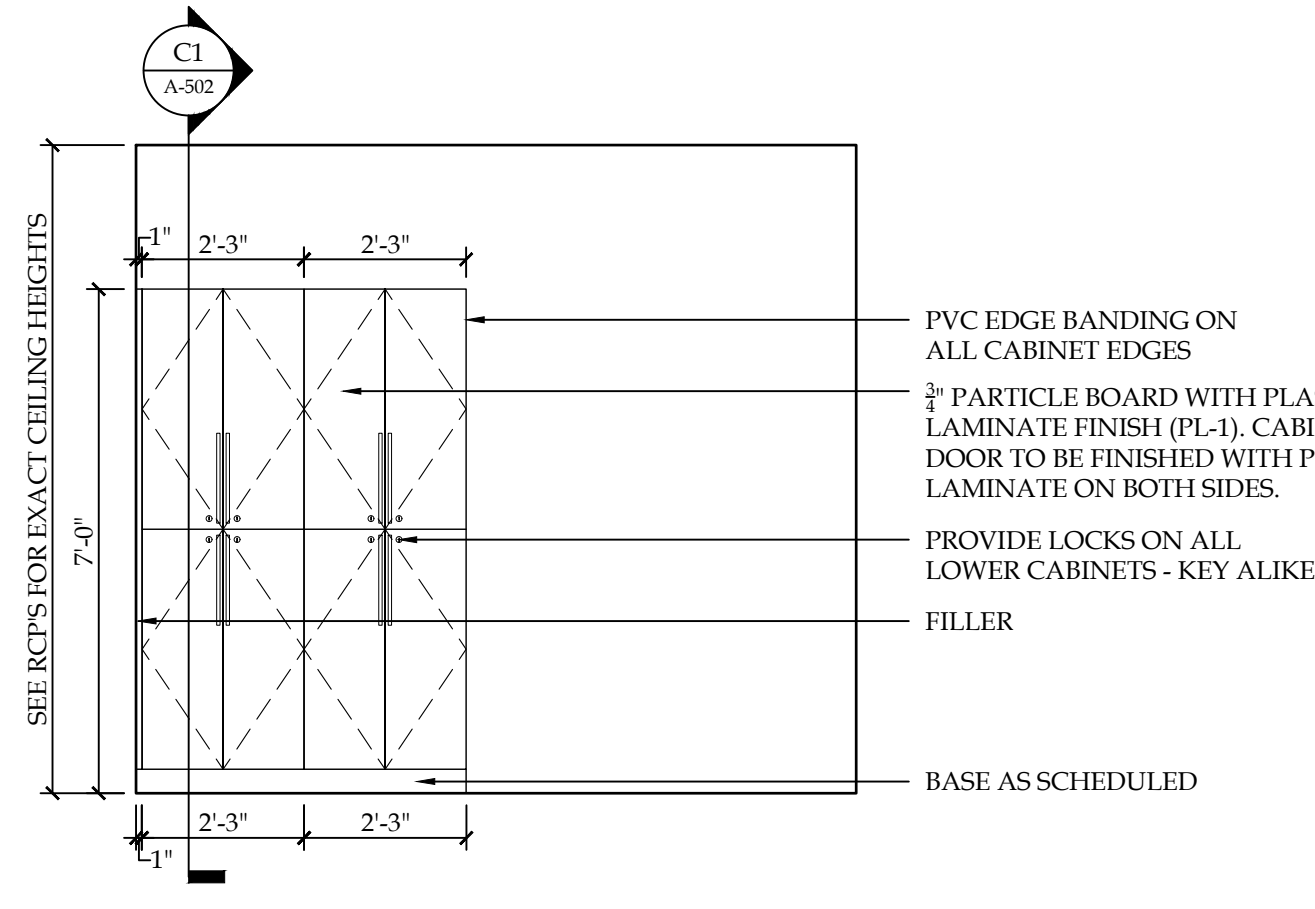
D2 ELEVATION | DENTAL 111  
3/8"=1'-0"



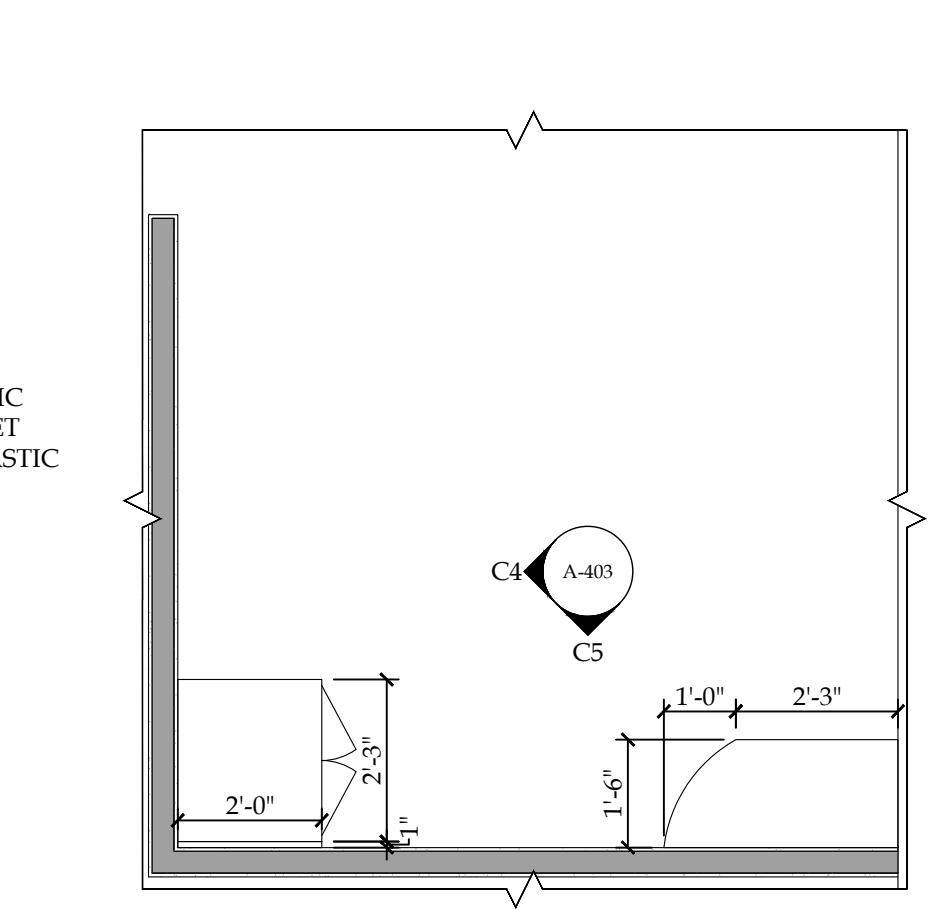
D3 ELEVATION | DENTAL 111  
3/8"=1'-0"



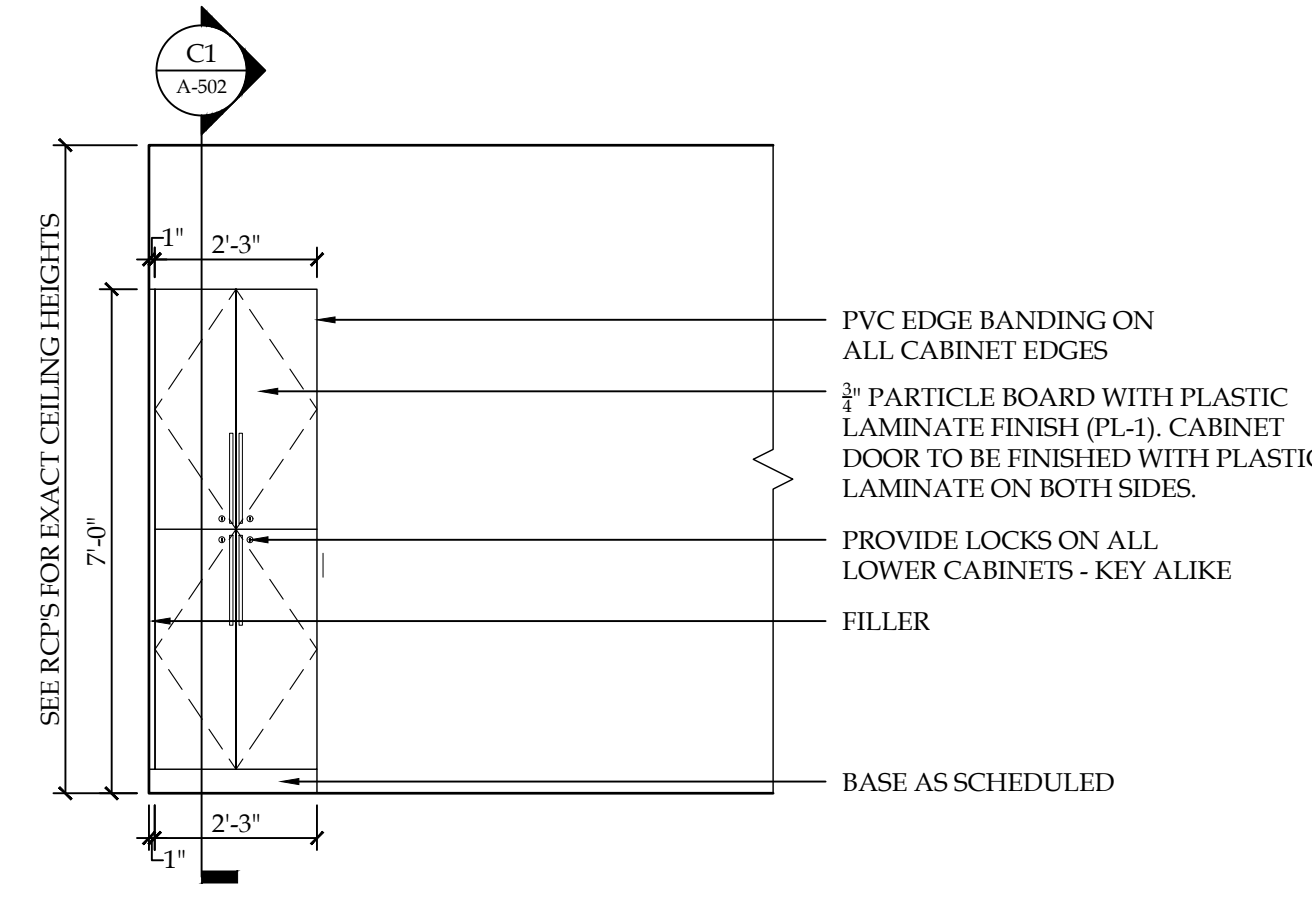
C1 ENLARGED PLAN | DENTAL 109  
3/8"=1'-0"



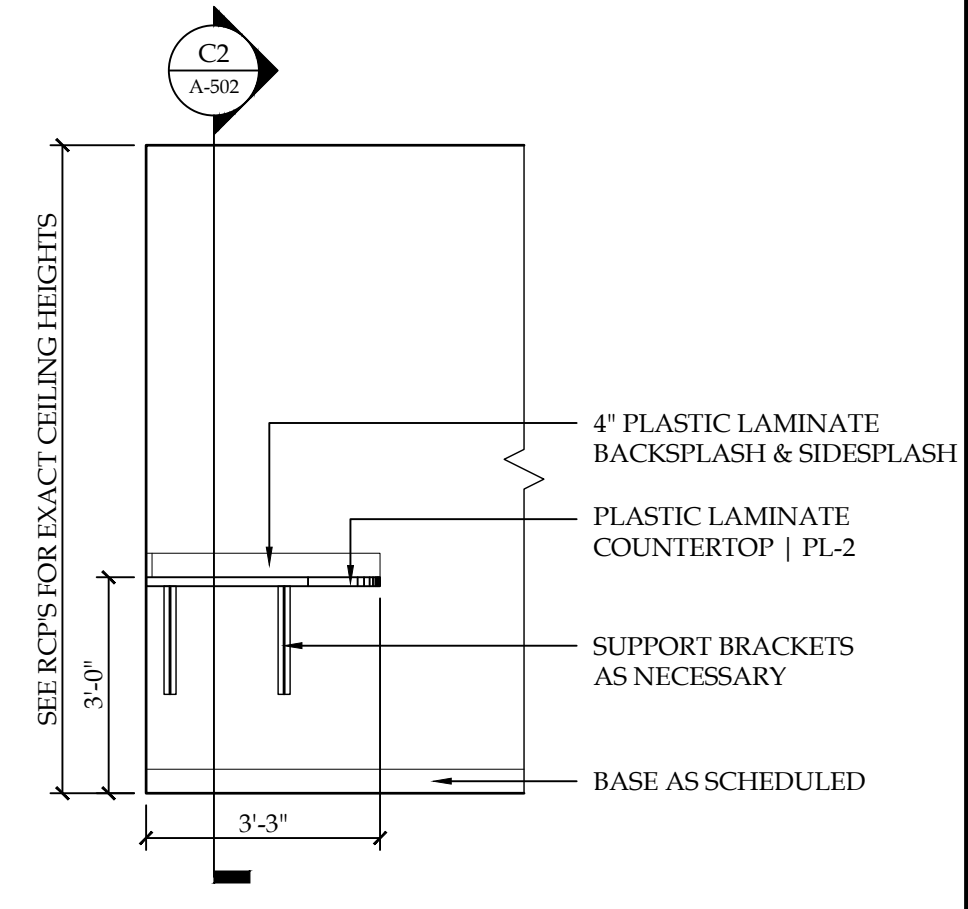
C2 ELEVATION | DENTAL 109  
3/8"=1'-0"



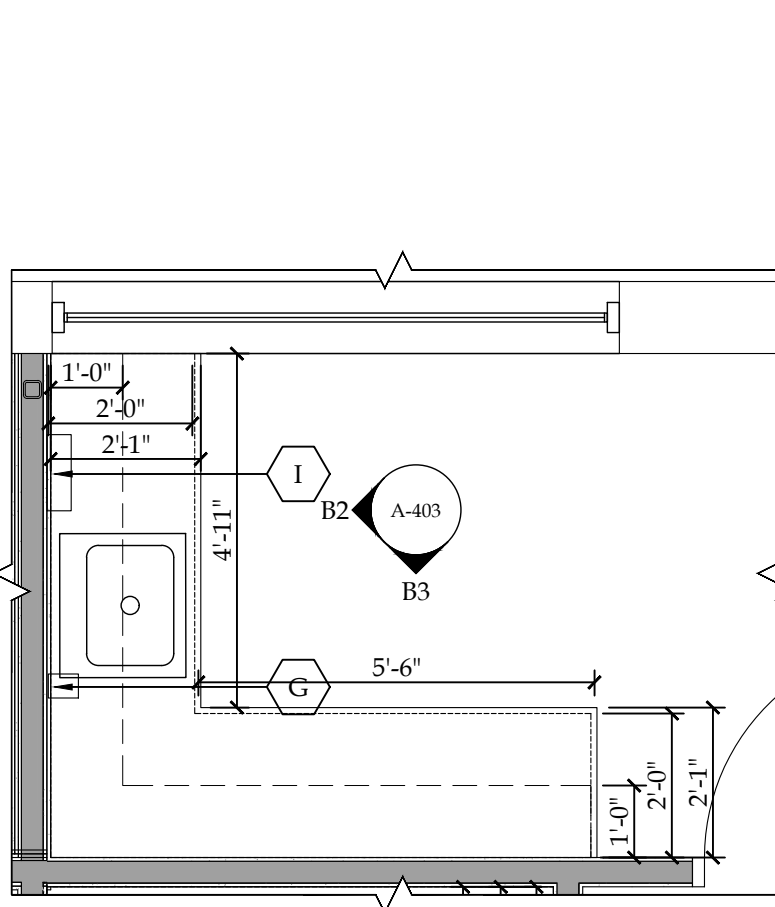
C3 ENLARGED PLAN | DENTAL 110  
3/8"=1'-0"



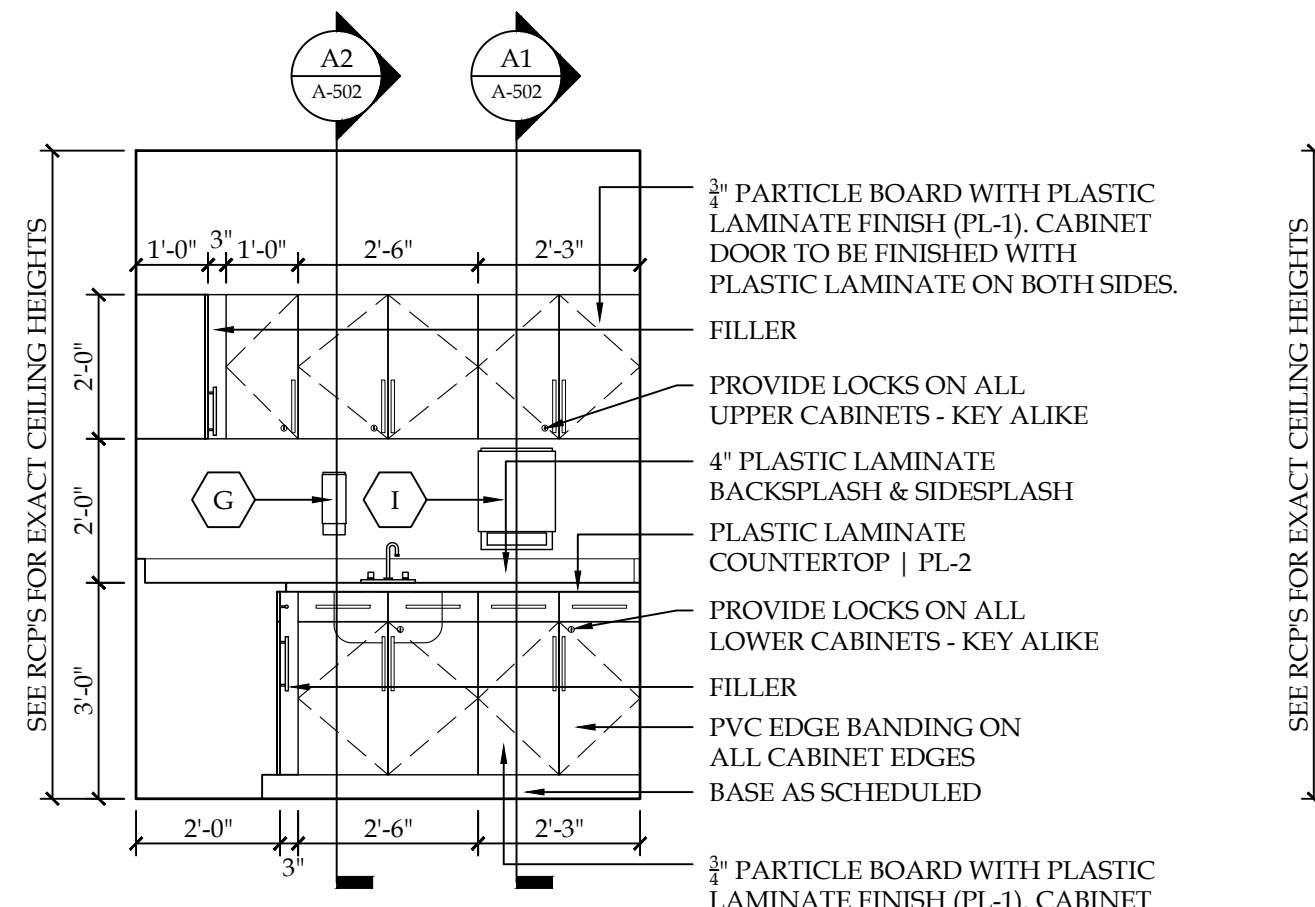
C4 ELEVATION | DENTAL 110  
3/8"=1'-0"



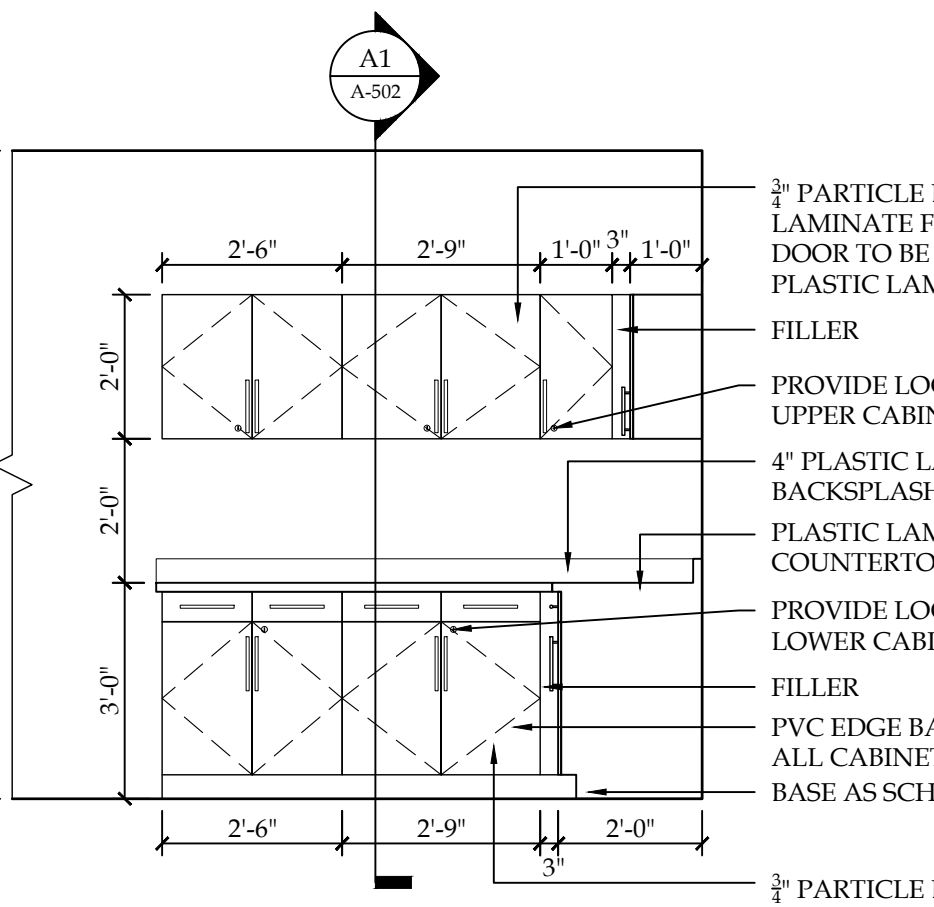
C5 ELEVATION | DENTAL 110  
3/8"=1'-0"



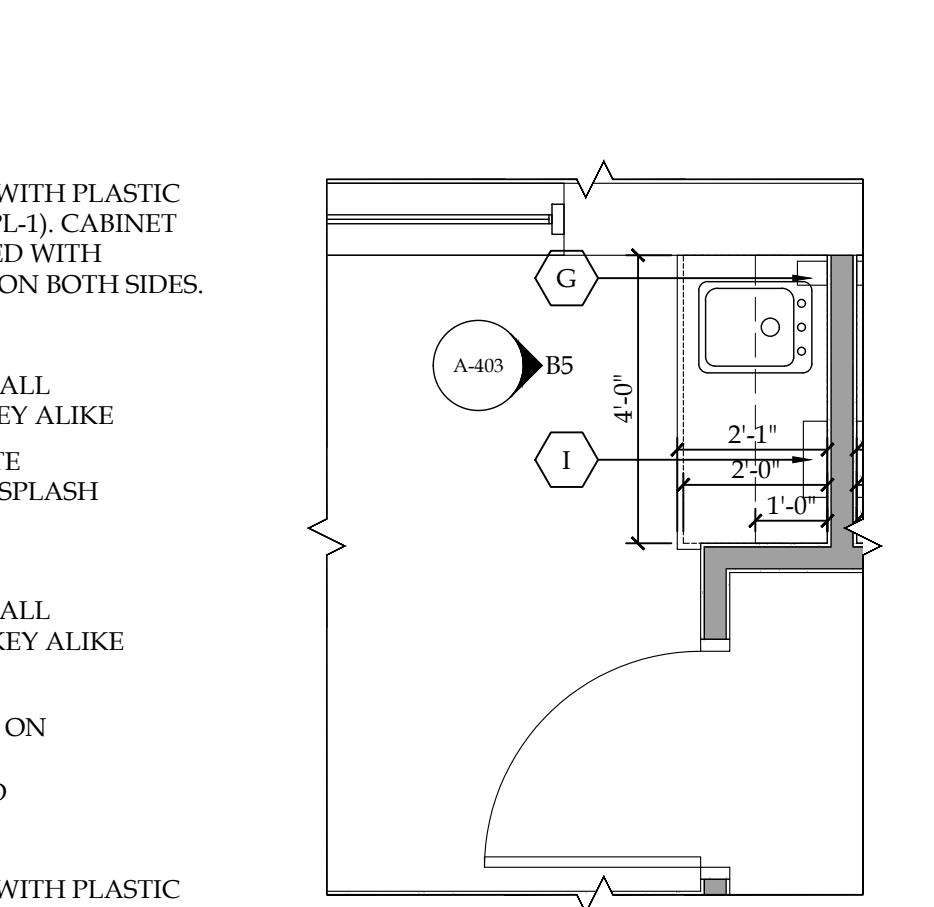
B1 ENLARGED PLAN | LAB 108  
3/8"=1'-0"



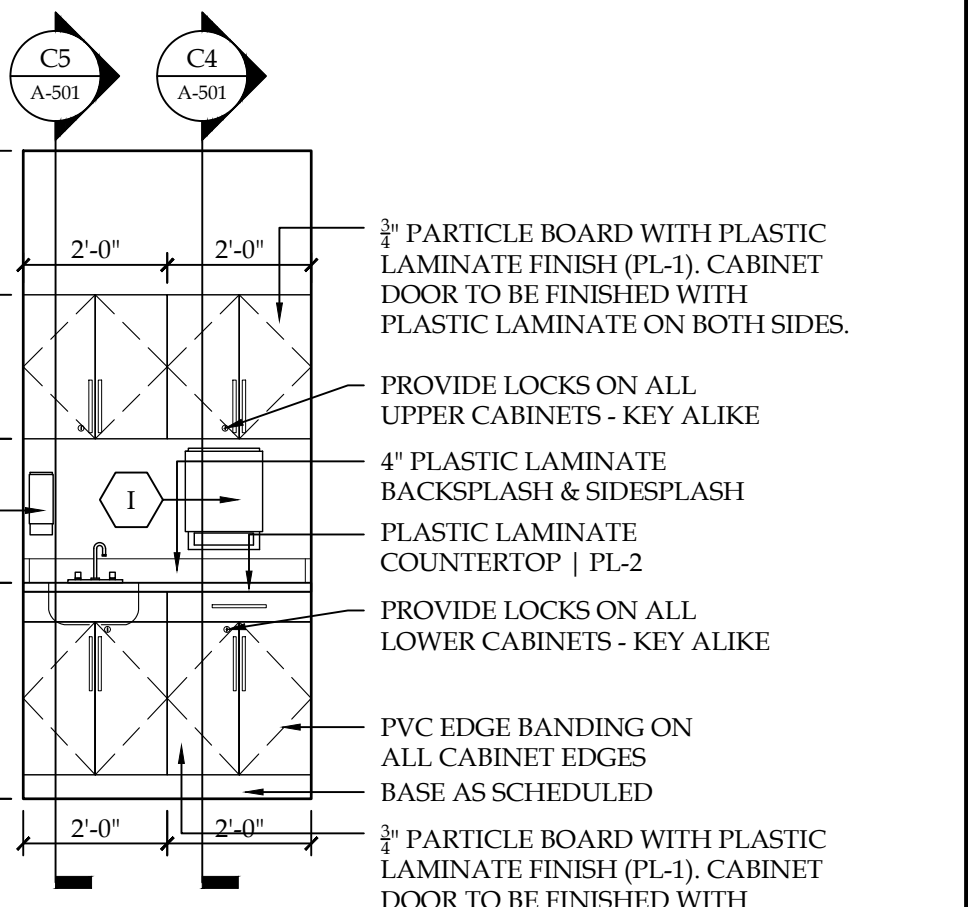
B2 ELEVATION | LAB 108  
3/8"=1'-0"



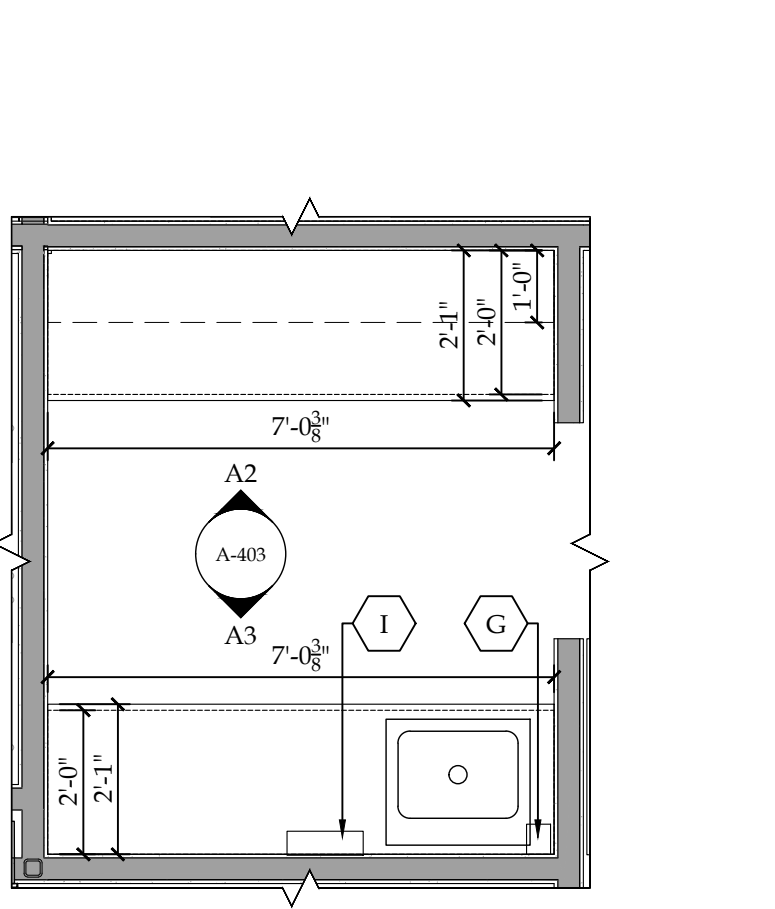
B3 ELEVATION | LAB 108  
3/8"=1'-0"



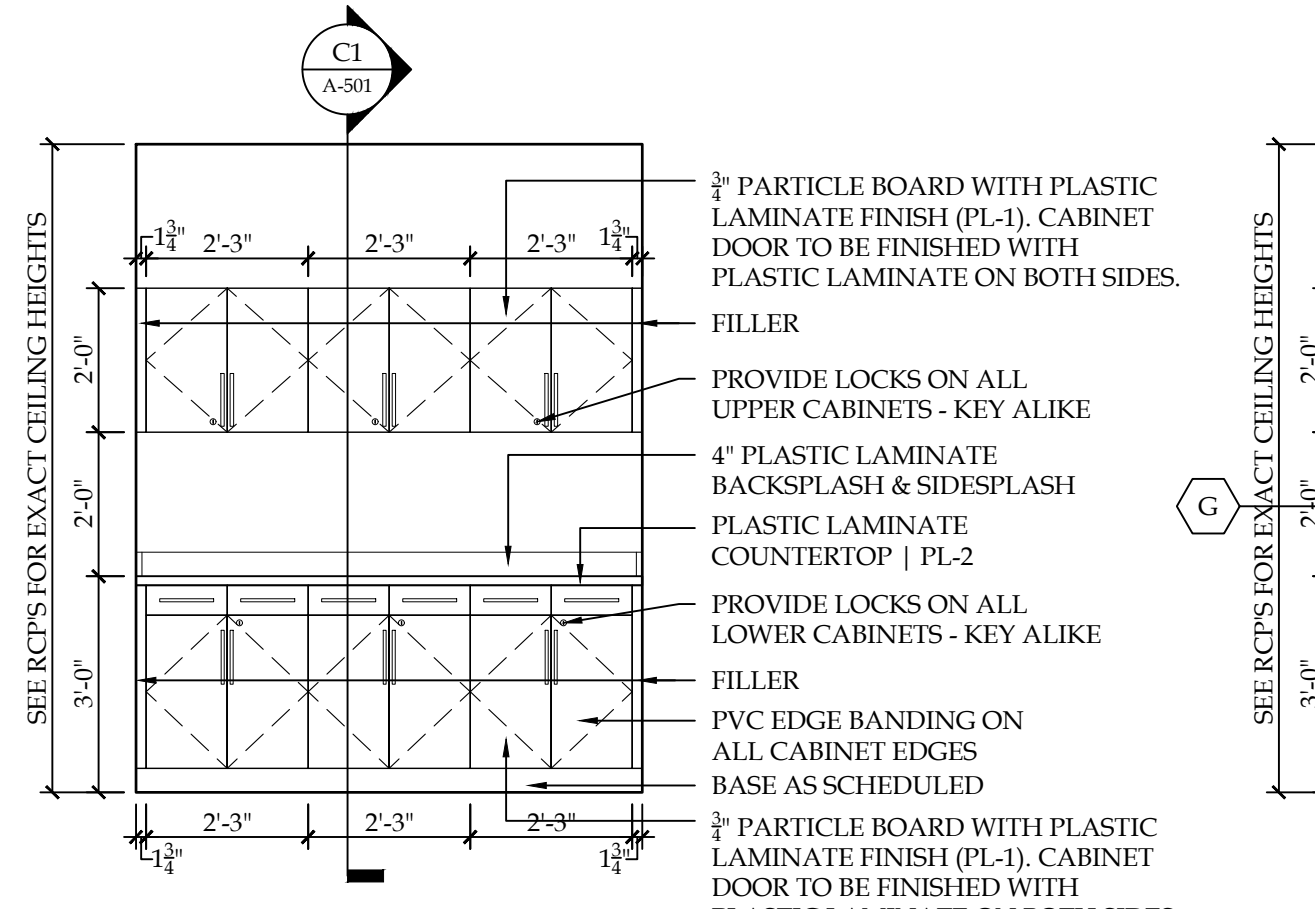
B4 ENLARGED PLAN | EXAM 119  
3/8"=1'-0"



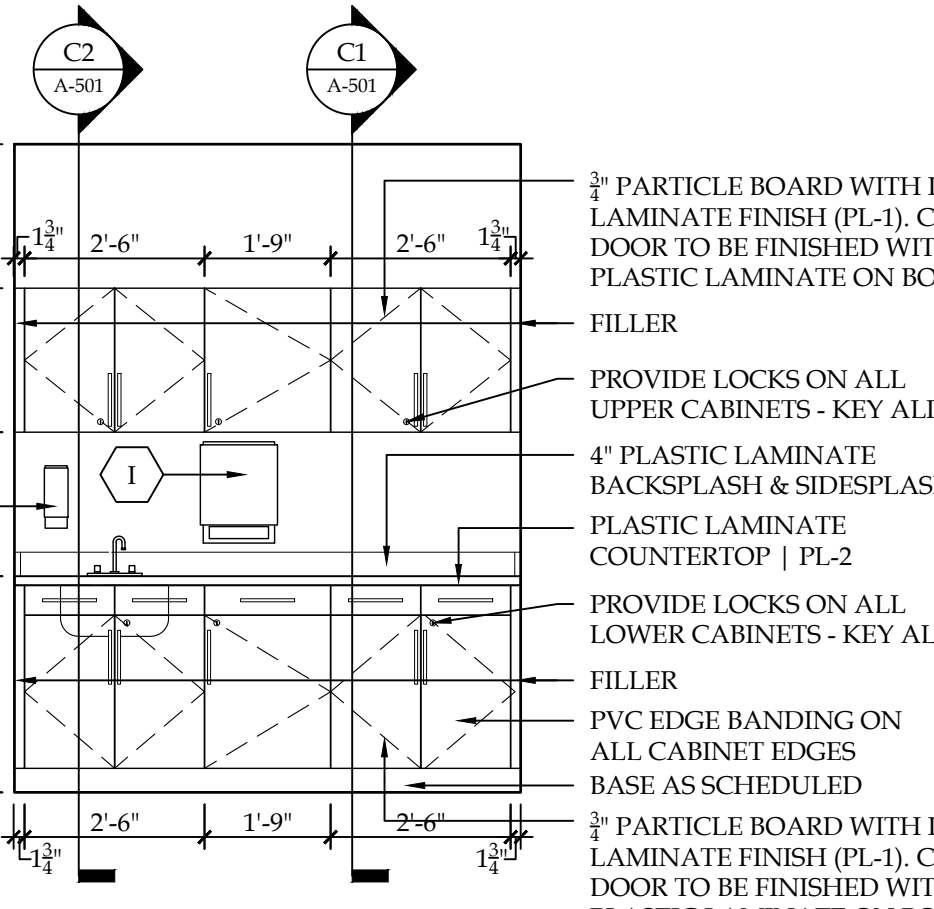
B5 ELEVATION | EXAM 119  
3/8"=1'-0"



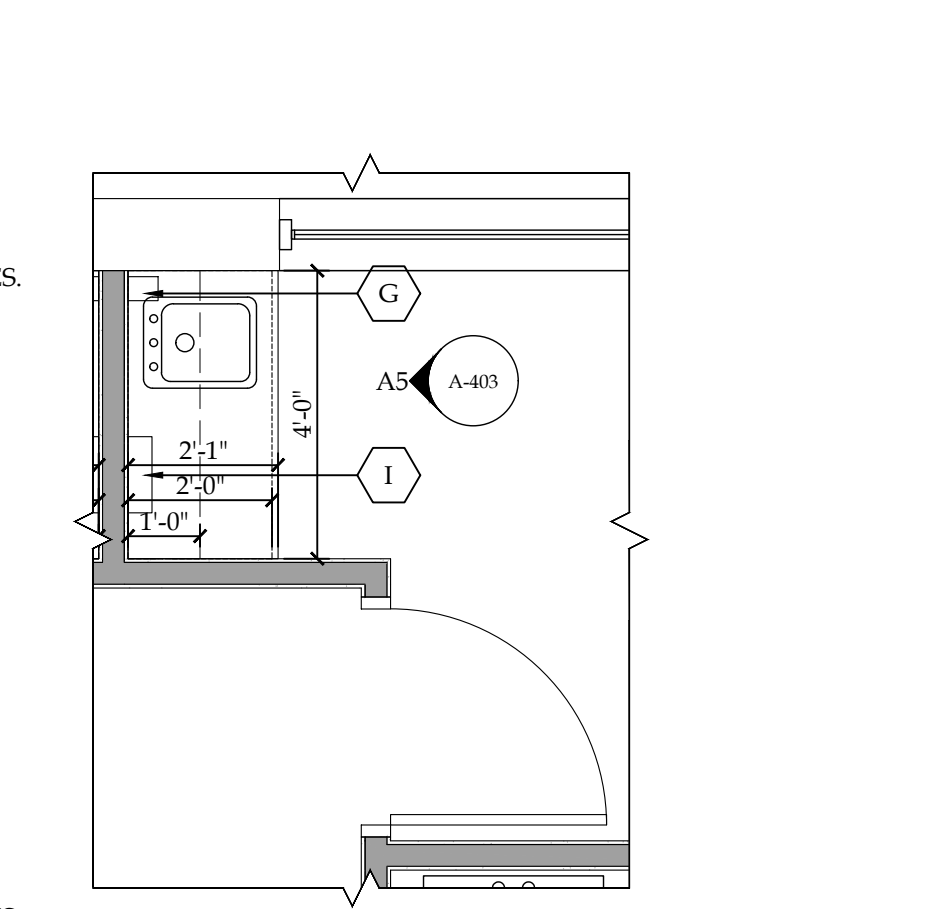
A1 ENLARGED PLAN | STERILIZATION 107  
3/8"=1'-0"



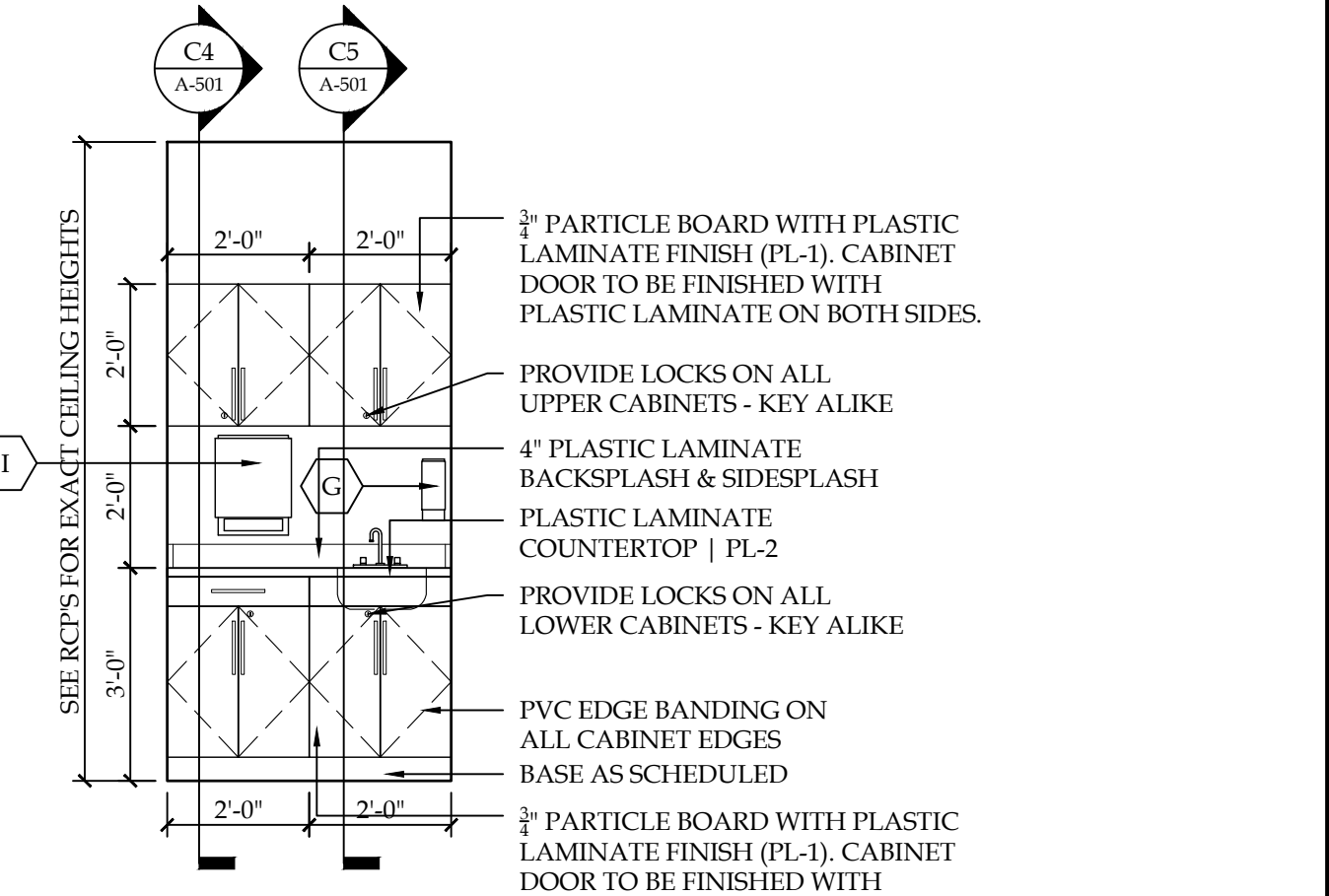
A2 ELEVATION | STERILIZATION 107  
3/8"=1'-0"



A3 ELEVATION | STERILIZATION 107  
3/8"=1'-0"



A4 ENLARGED PLAN | EXAM 118  
3/8"=1'-0"



A5 ELEVATION | EXAM 118  
3/8"=1'-0"

ACCESSORIES SCHEDULE					
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" MIN HORIZONTAL GRAB BAR	3001-42	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
B	36" MIN HORIZONTAL GRAB BAR	3001-36	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
C	18" MIN VERTICAL GRAB BAR	3001-18	AMERICAN SPECIALTIES, INC.	PROVIDE BACKUP FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
D	FRAMELESS POLISHED PLATE GLASS MIRROR - 1" THICK	8287	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	DIMENSIONS: 24" WIDE X 36" HIGH SEE DRAWING FOR LOCATIONS
E	TOILET TISSUE DISPENSER	0042	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
F	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	20832	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
G	SURFACE MOUNTED AUTOMATIC HAND SOAP / GEL HAND SANITIZER DISPENSER	0360	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
H	AUTOMATIC HAND DRYER	0199-1-93	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
I	SURFACE MOUNTED PAPER TOWEL DISPENSER	20210	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
J	SURFACE MOUNTED COAT HOOK AND RUMPER	0714	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	BACK OF RESTROOM DOORS
K	HORIZONTAL STAINLESS STEEL WALL MOUNTED BABY CHANGING STATION	KB110-88W	KOALA KARE	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
L	RECESSED SPECIMEN PASS BOX	8154	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS

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**CHCL**  
100 MAIN ST.  
LOCKPORT NY

ISSUE:  
BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
INTERIORS L.Lidzur INTERIORS A.Nagle

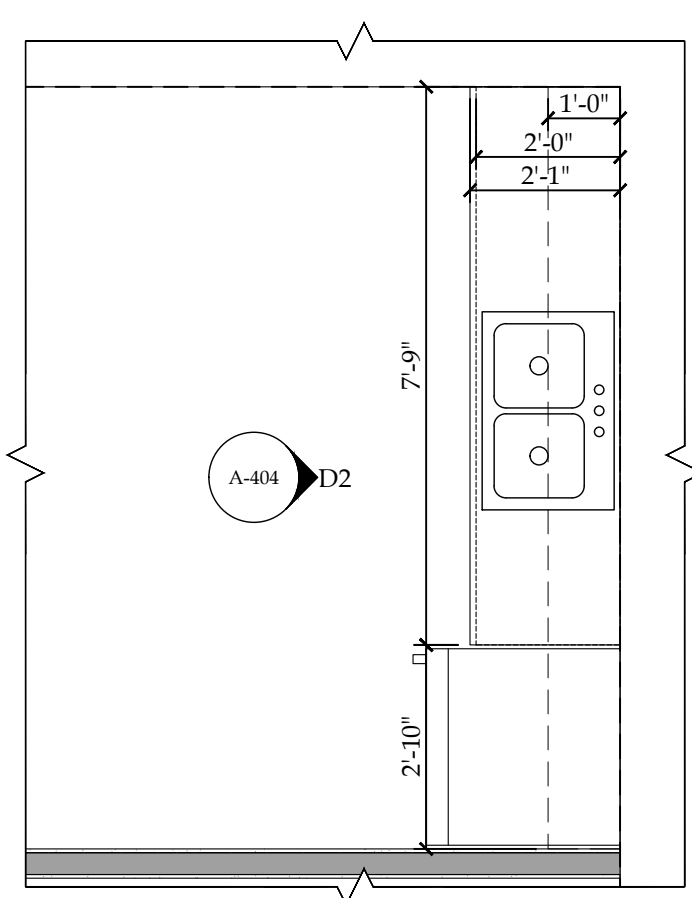
SEAL:  
TITLE:

ENLARGED PLANS  
& ELEVATIONS

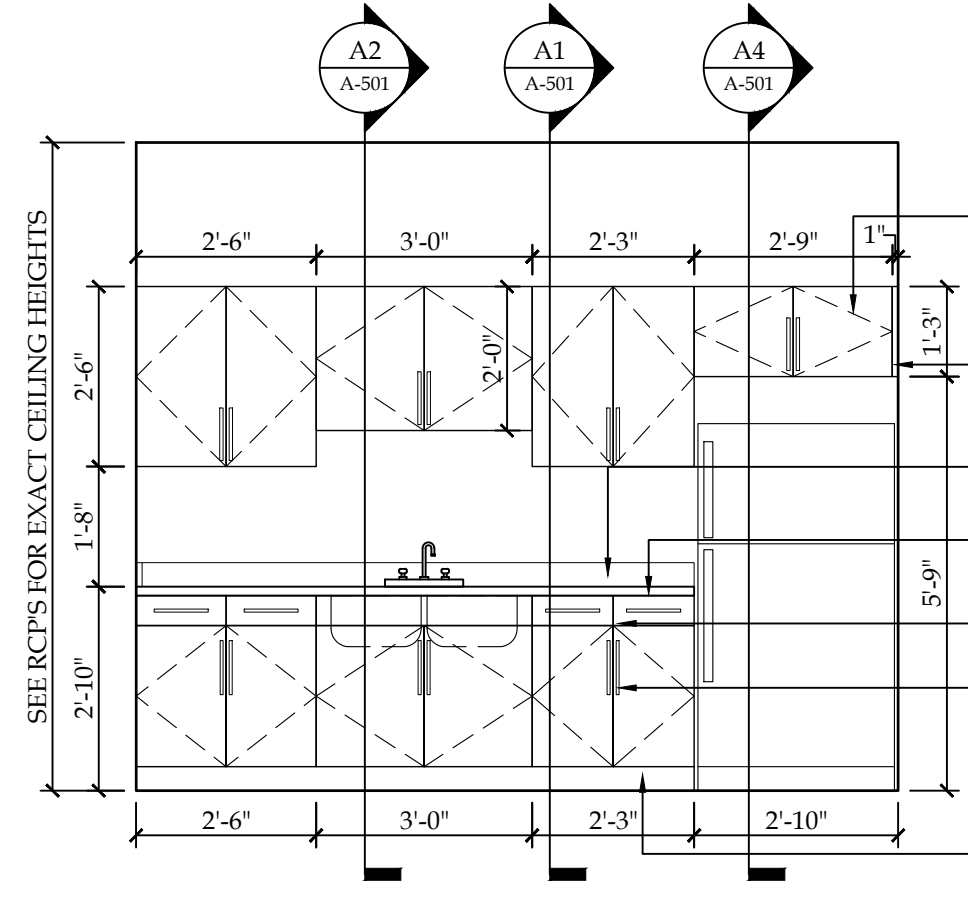
**SILVESTRI**  
ARCHITECTS · PC  
1321 MILLERSPORT HWY PH. 716.691.0900  
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: A-403

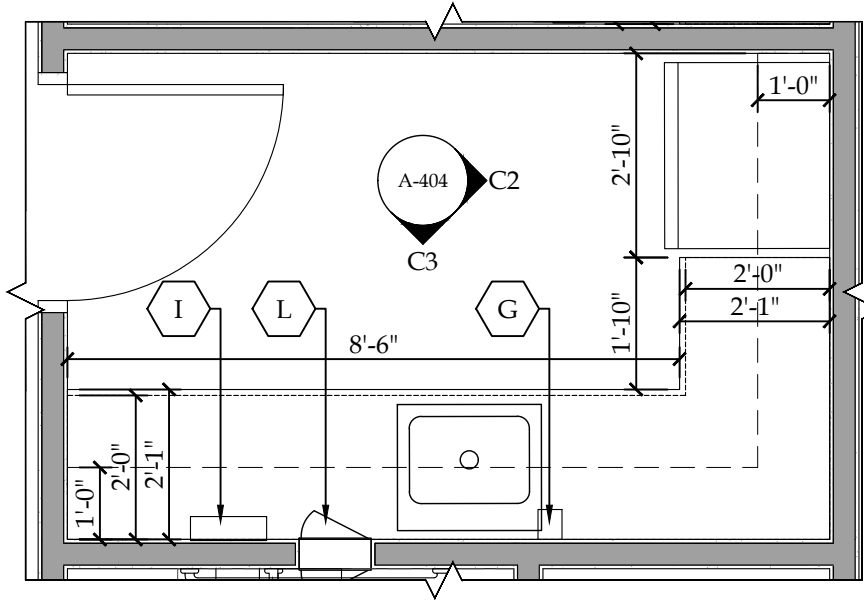


D1 ENLARGED PLAN | BREAK RM. 206  
3/8"=1'-0"

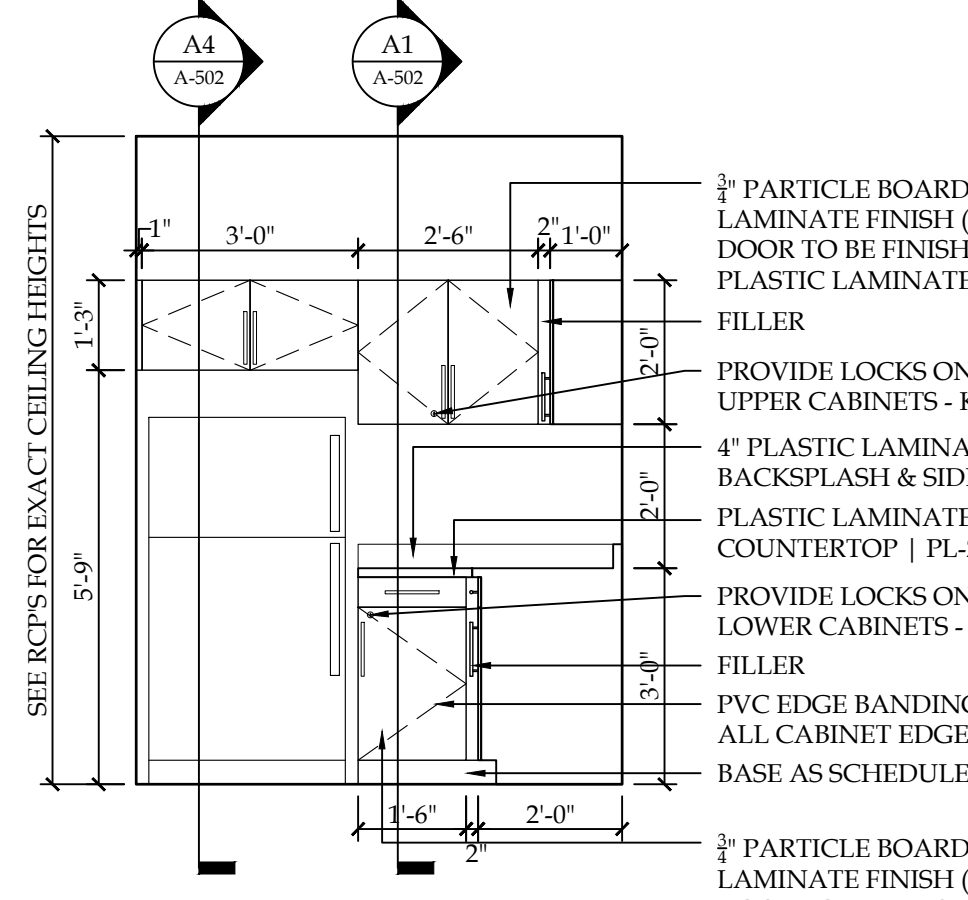


D2 ELEVATION | BREAK RM. 206  
3/8"=1'-0"

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PVC EDGE BANDING ON ALL CABINET EDGES  
3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
BASE AS SCHEDULED



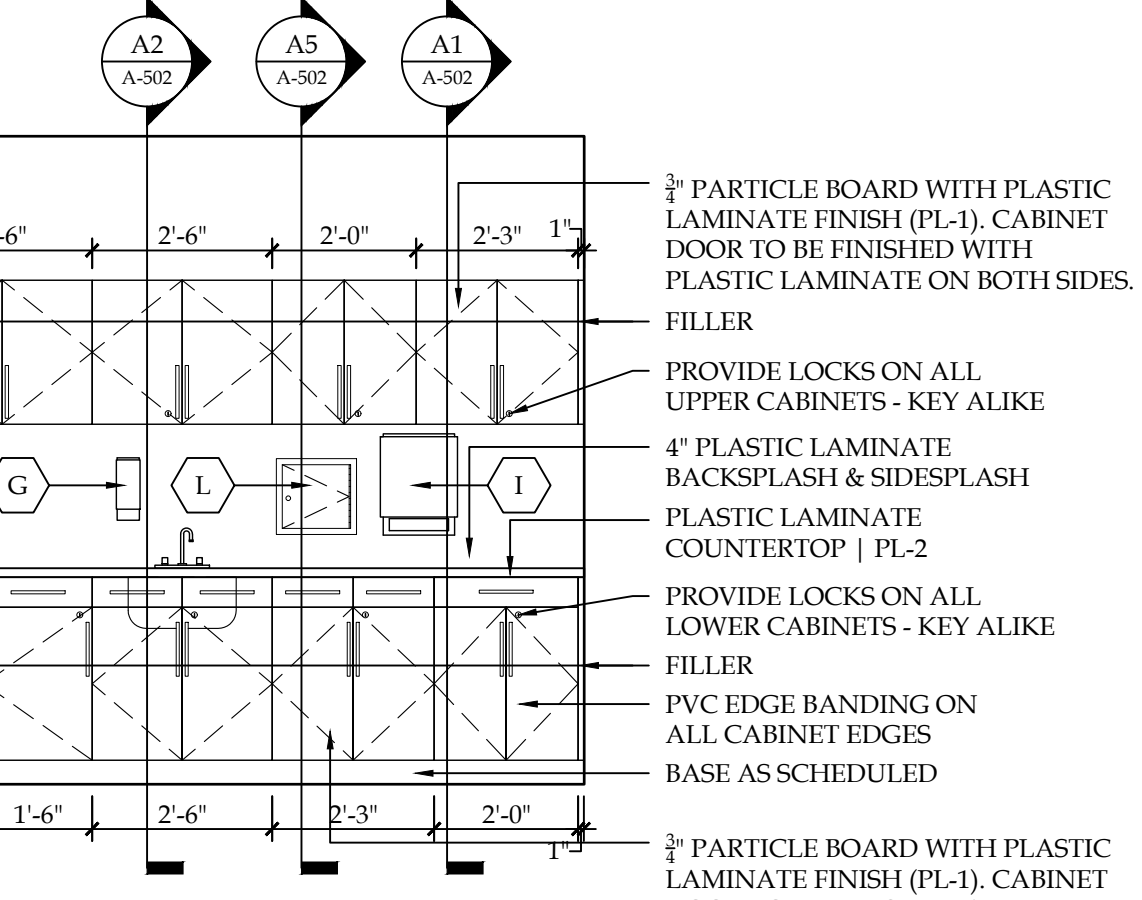
C1 ENLARGED PLAN | LAB 127  
3/8"=1'-0"



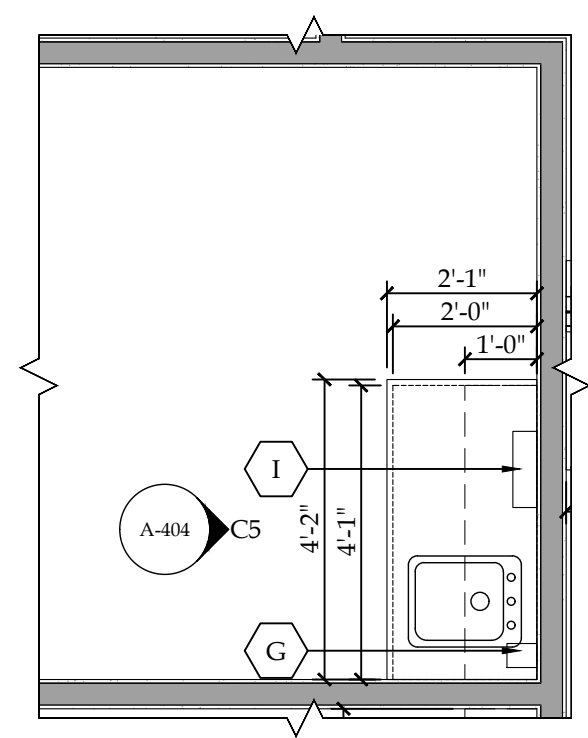
C2 ELEVATION | LAB 127  
3/8"=1'-0"

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

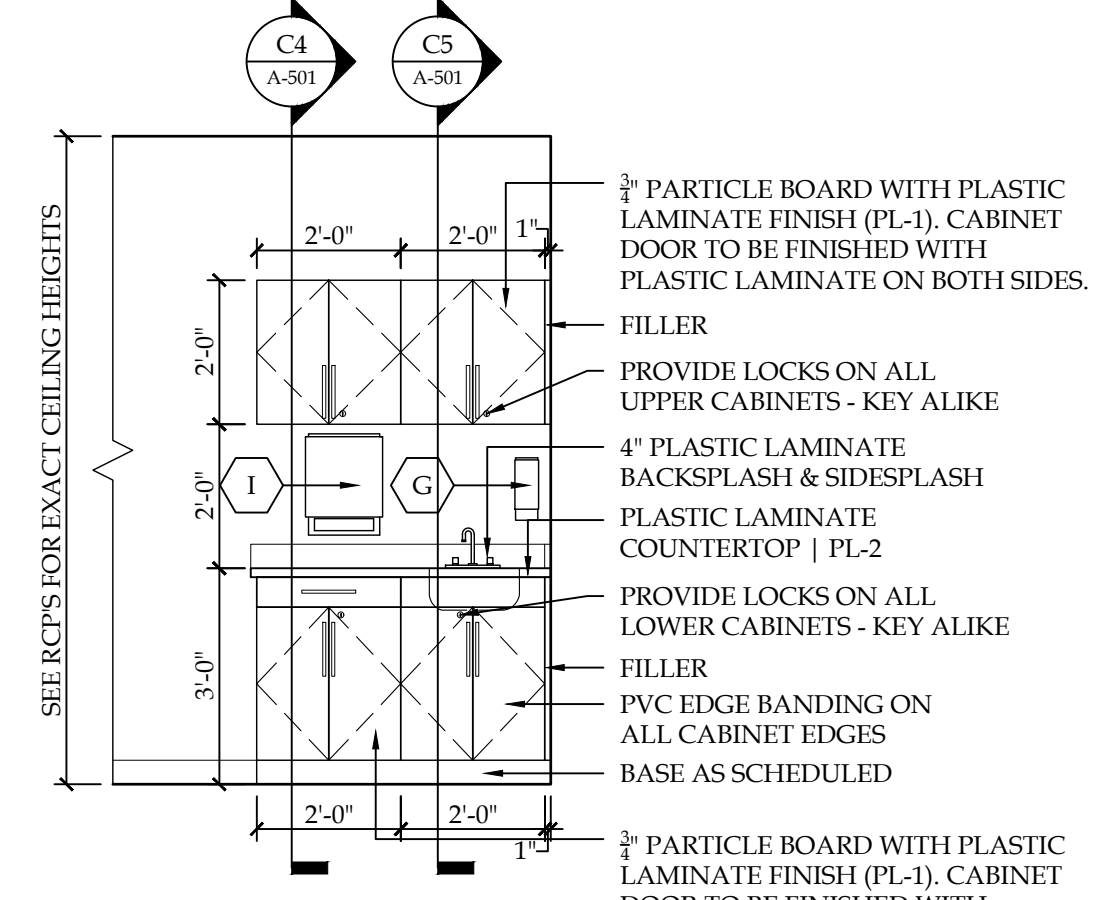
C3 ELEVATION | LAB 127  
3/8"=1'-0"



C3 ELEVATION | LAB 127  
3/8"=1'-0"



C4 ENLARGED PLAN | EXAM 128  
3/8"=1'-0"



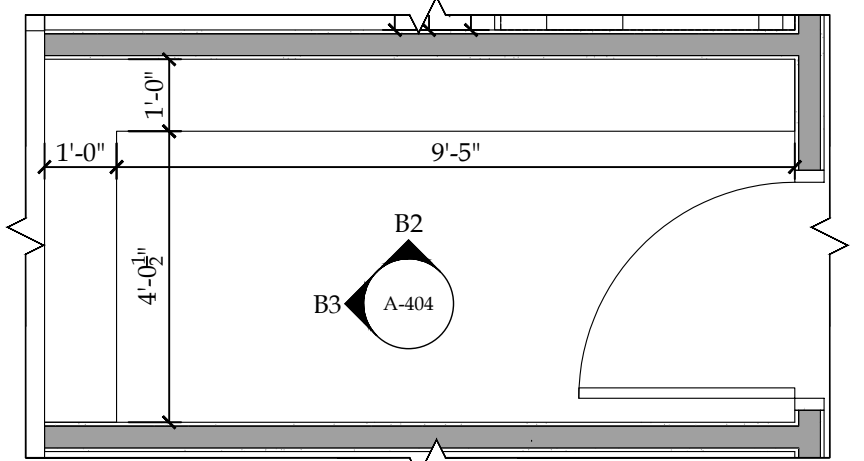
C5 ELEVATION | EXAM 128  
3/8"=1'-0"

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

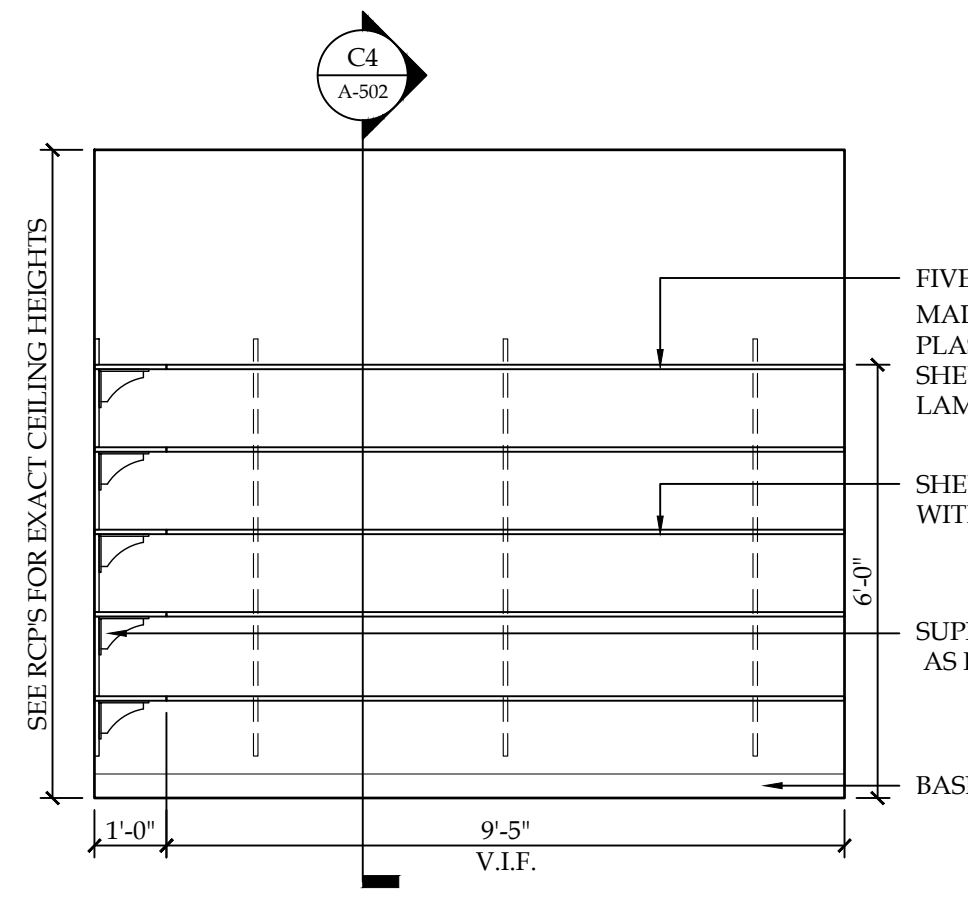
3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

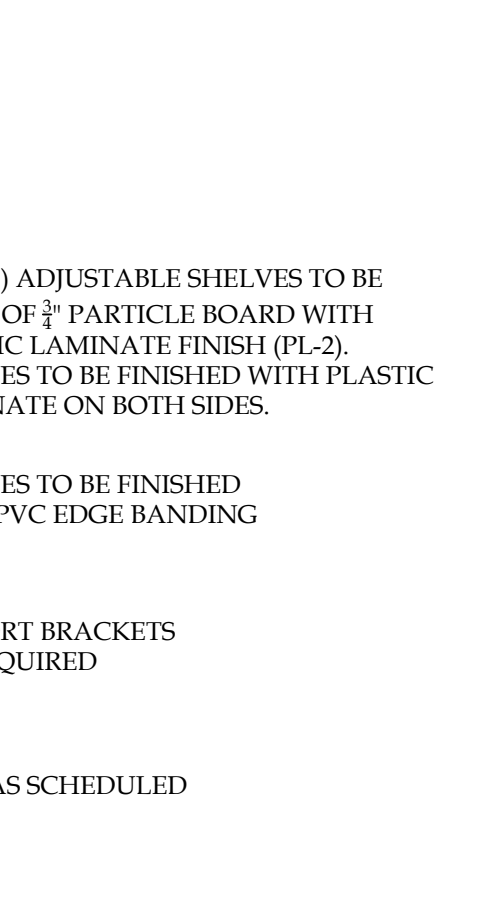
3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED



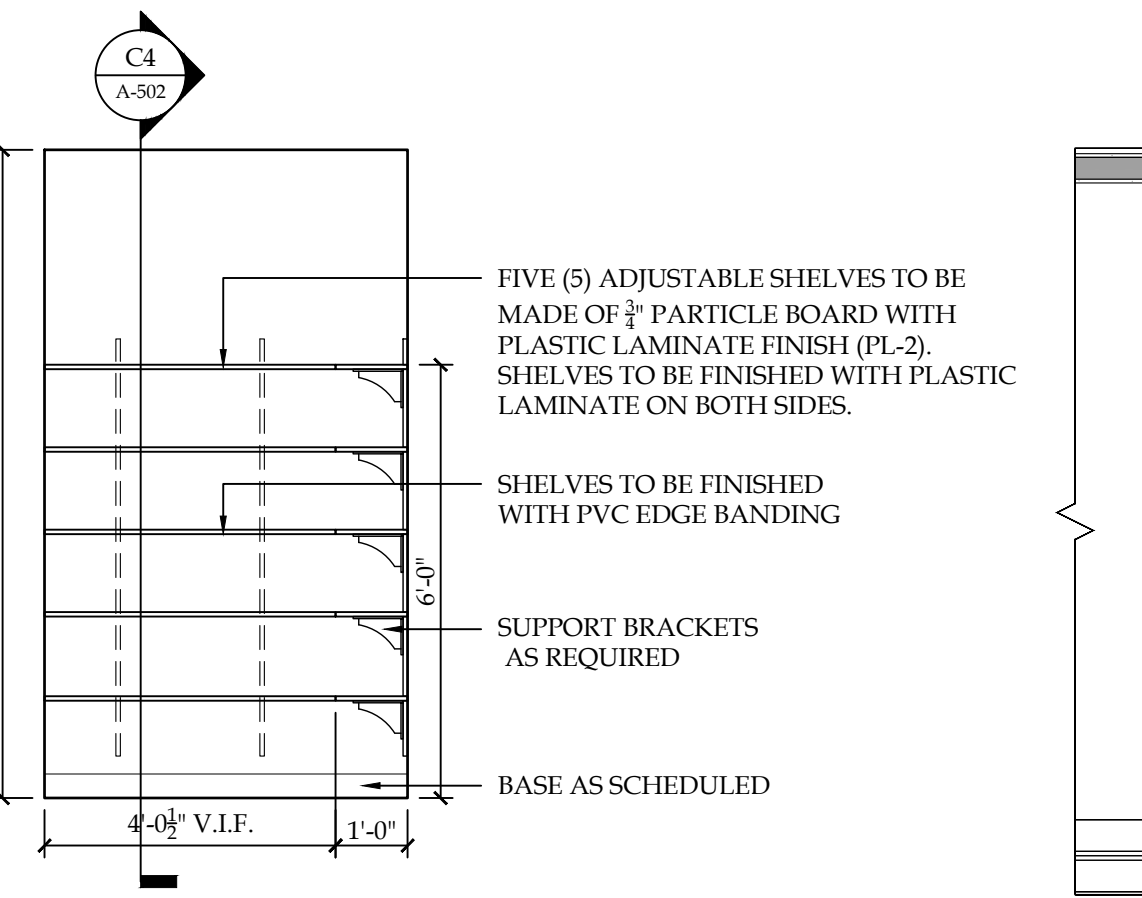
B1 ENLARGED PLAN | CLEAN 123  
3/8"=1'-0"



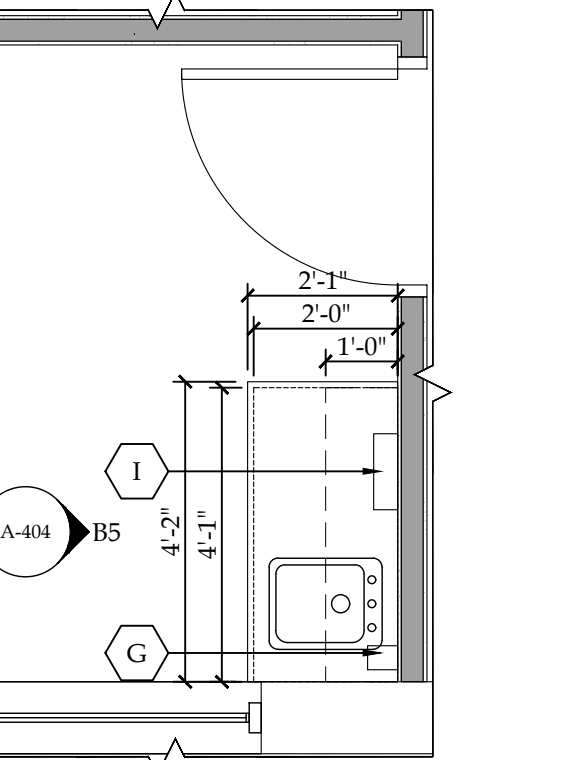
B2 ELEVATION | CLEAN 123  
3/8"=1'-0"



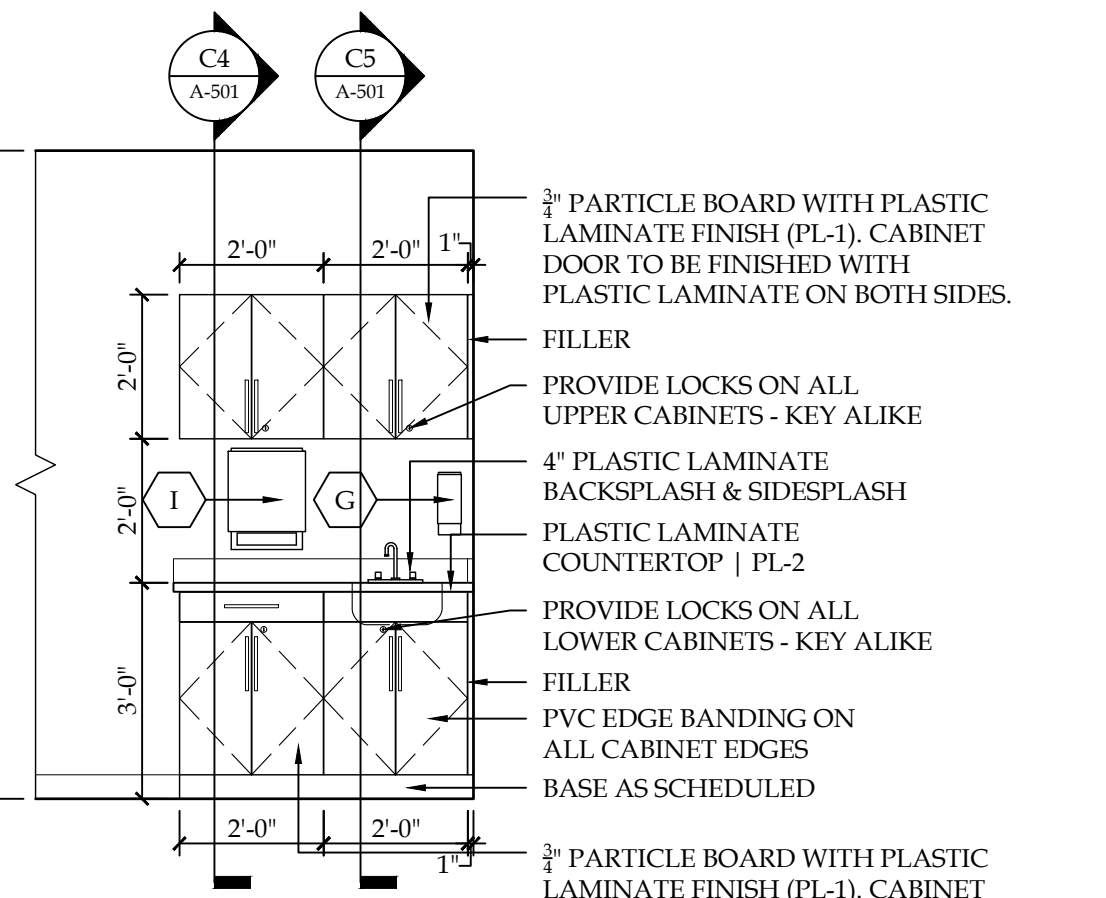
B3 ELEVATION | CLEAN 123  
3/8"=1'-0"



B3 ELEVATION | CLEAN 123  
3/8"=1'-0"



B4 ENLARGED PLAN | EXAM 124  
3/8"=1'-0"



B5 ELEVATION | EXAM 124  
3/8"=1'-0"

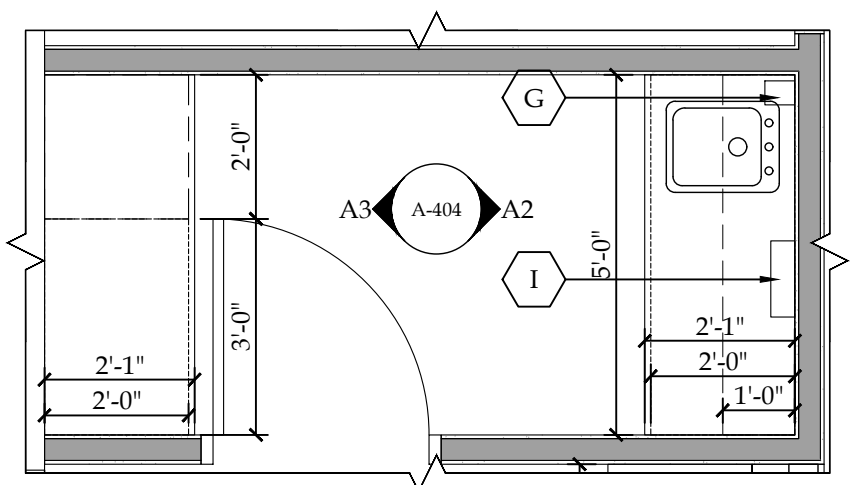
FIVE (5) ADJUSTABLE SHELVES TO BE MADE OF 3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-2), SHELVES TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
SHELVES TO BE FINISHED WITH PVC EDGE BANDING  
SUPPORT BRACKETS AS REQUIRED  
BASE AS SCHEDULED

FIVE (5) ADJUSTABLE SHELVES TO BE MADE OF 3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-2), SHELVES TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
SHELVES TO BE FINISHED WITH PVC EDGE BANDING  
SUPPORT BRACKETS AS REQUIRED  
BASE AS SCHEDULED

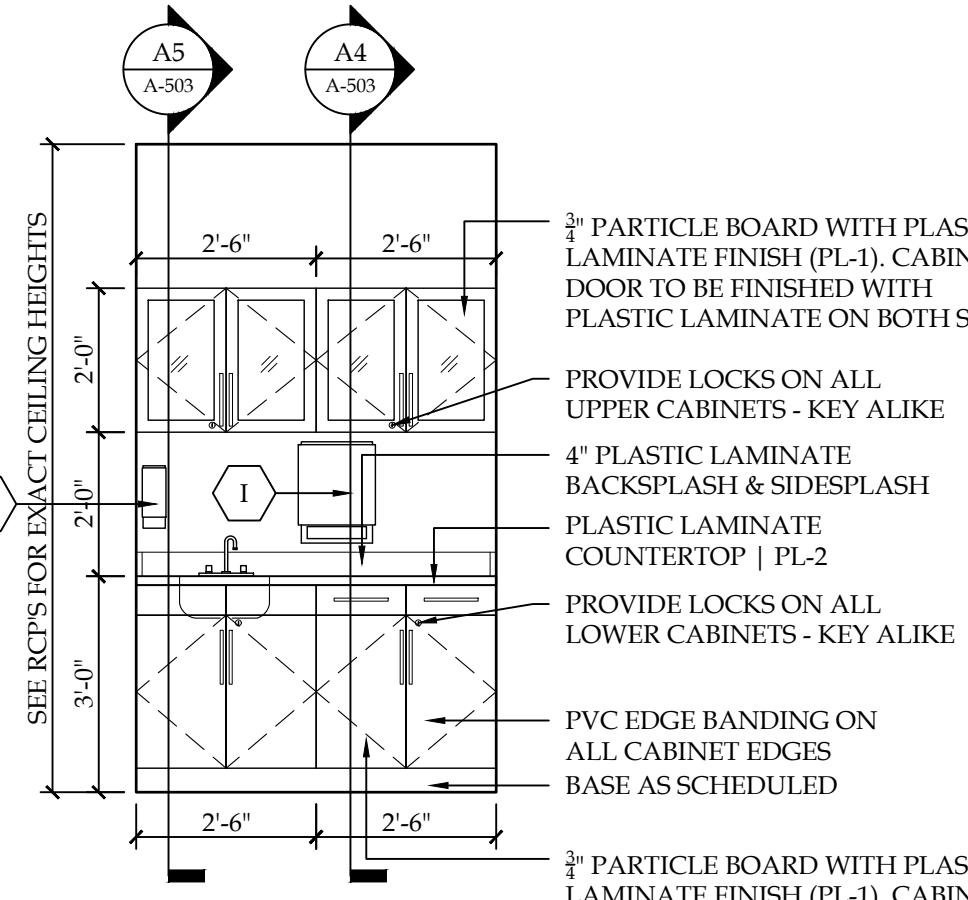
FIVE (5) ADJUSTABLE SHELVES TO BE MADE OF 3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-2), SHELVES TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
SHELVES TO BE FINISHED WITH PVC EDGE BANDING  
SUPPORT BRACKETS AS REQUIRED  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

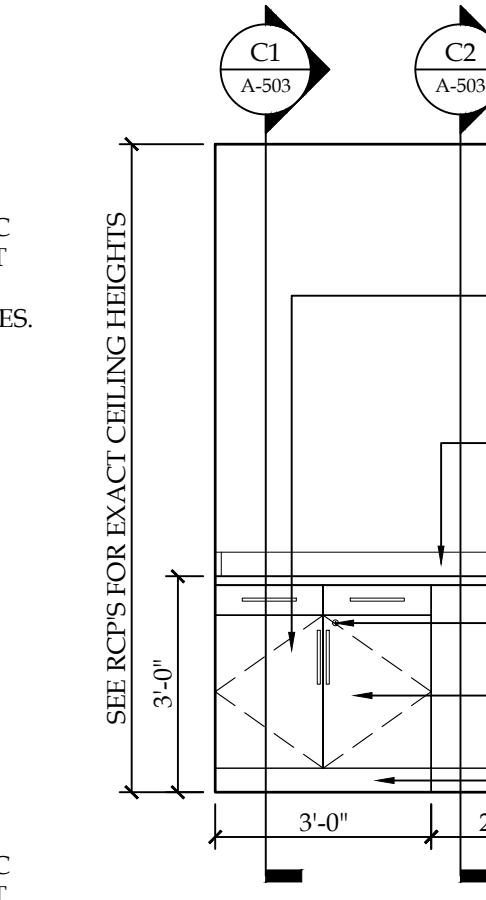
3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED



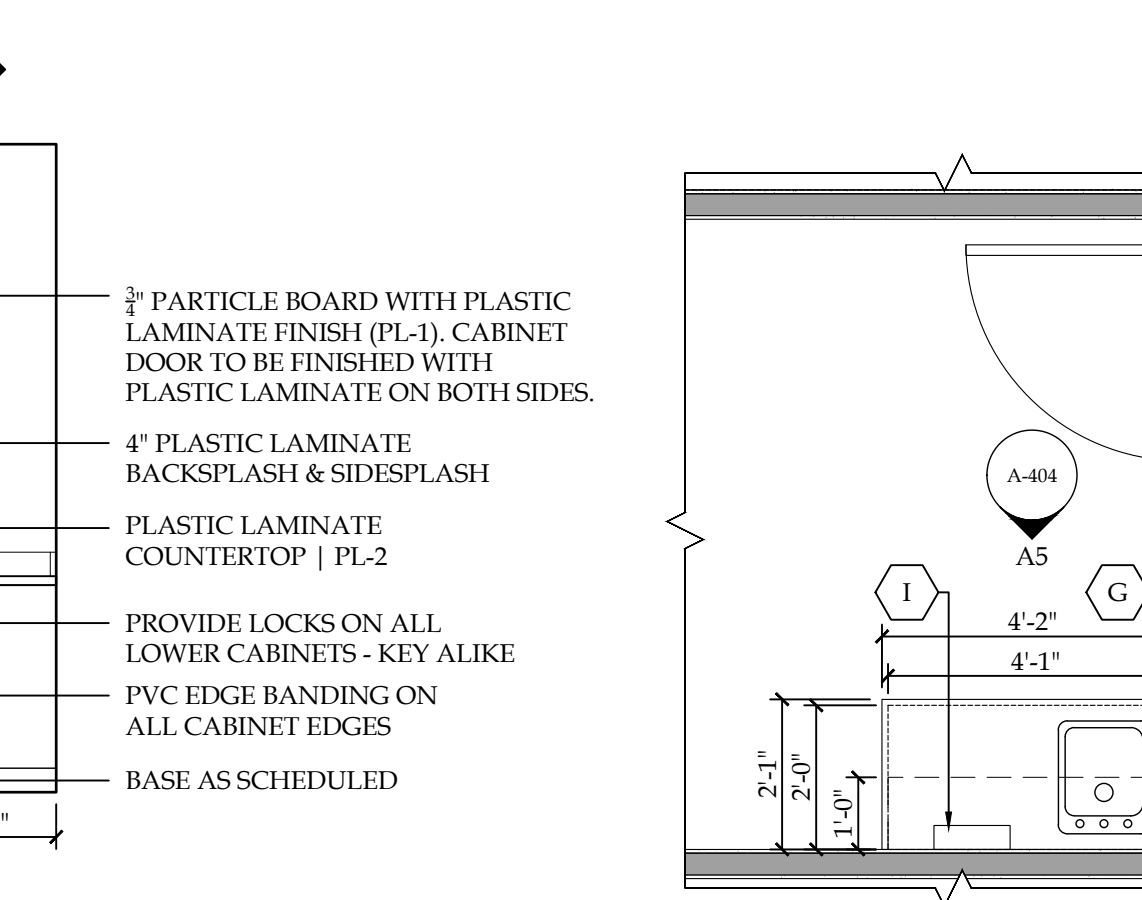
A1 ENLARGED PLAN | MEDS 120  
3/8"=1'-0"



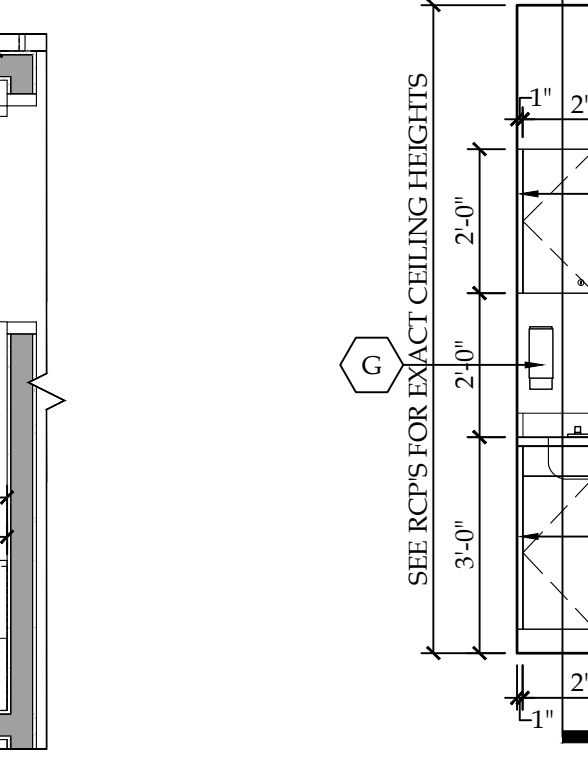
A2 ELEVATION | MEDS 120  
3/8"=1'-0"



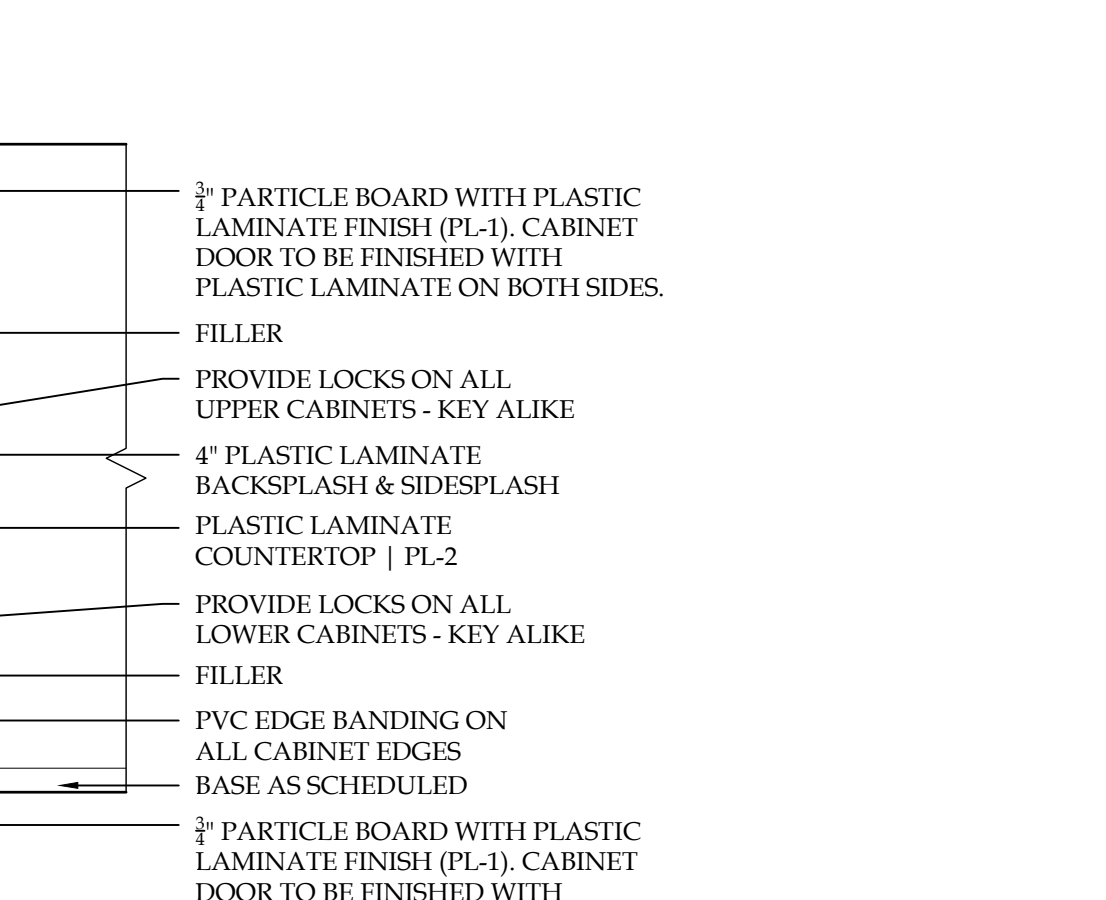
A3 ELEVATION | MEDS 120  
3/8"=1'-0"



A3 ELEVATION | MEDS 120  
3/8"=1'-0"



A4 ENLARGED PLAN | EXAM 122  
3/8"=1'-0"



A5 ELEVATION | EXAM 122  
3/8"=1'-0"

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

3/4" PARTICLE BOARD WITH PLASTIC LAMINATE FINISH (PL-1), CABINET DOOR TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.  
FILLER  
PROVIDE LOCKS ON ALL UPPER CABINETS - KEY ALIKE  
4" PLASTIC LAMINATE BACKSPLASH & SIDESPLASH  
PLASTIC LAMINATE COUNTERTOP | PL-2  
PROVIDE LOCKS ON ALL LOWER CABINETS - KEY ALIKE  
FILLER  
PVC EDGE BANDING ON ALL CABINET EDGES  
BASE AS SCHEDULED

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I	SURFACE MOUNTED PAPER TOWEL DISPENSER	20210	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS, OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF.
J	SURFACE MOUNTED COAT HOOK AND RUMPER	0714	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	BACK OF RESTROOM DOORS
K	HORIZONTAL STAINLESS STEEL WALL MOUNTED BABY CHANGING STATION	KB110-85W	KOALA KARE	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
L	RECESSED SPECIMEN PASS BOX	8154	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS

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100 MAIN ST.  
LOCKPORT NY

ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
PROJ. ARCH. S.Hunt DRAFTER  
INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**ENLARGED PLANS & ELEVATIONS**



**SILVESTRI**  
ARCHITECTS · PC

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-404**



NOTE: ALL WOOD BLOCKING AND FRAMING TO BE FIRE TREATED.

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 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:  
**MILLWORK DETAILS**

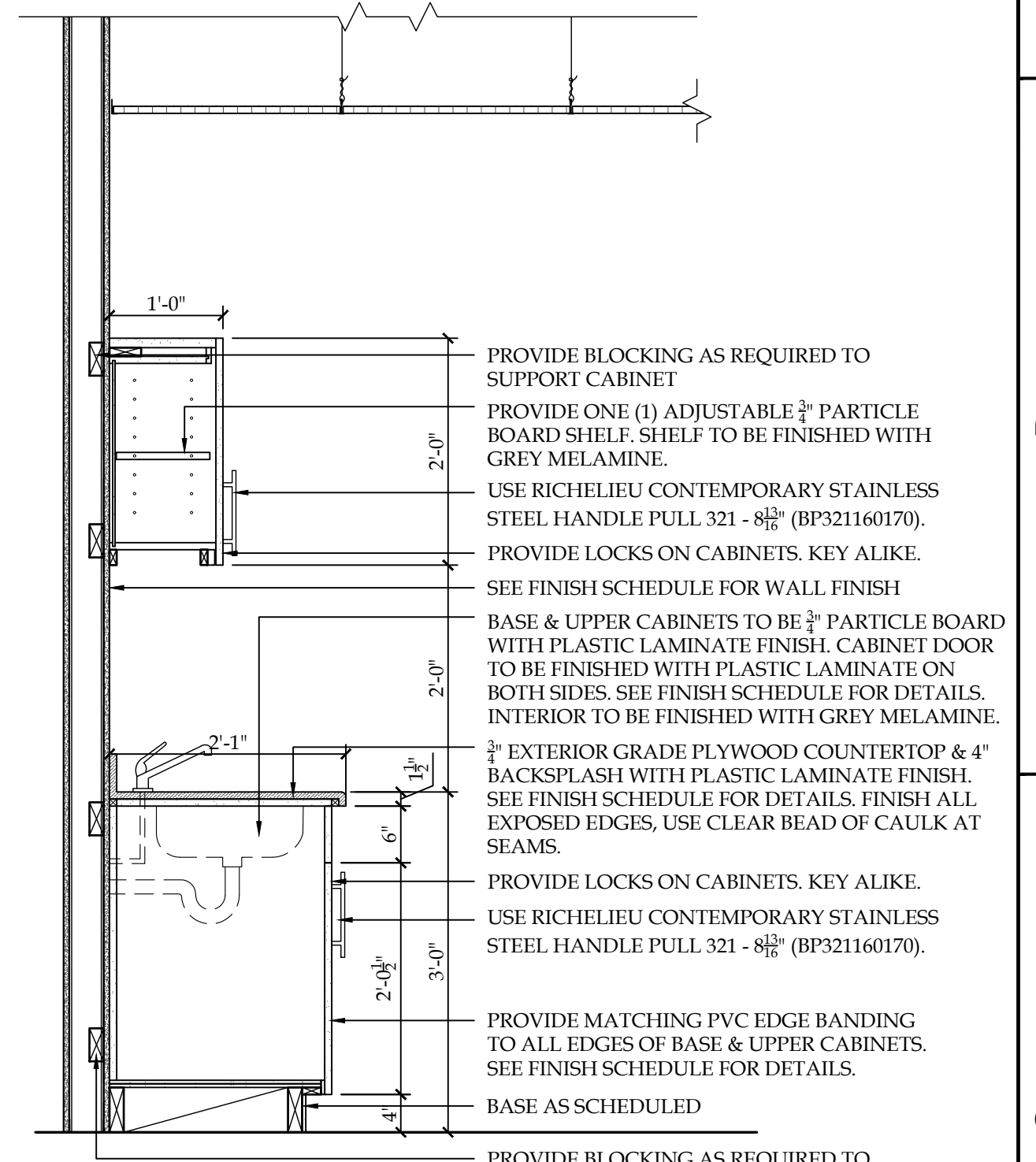


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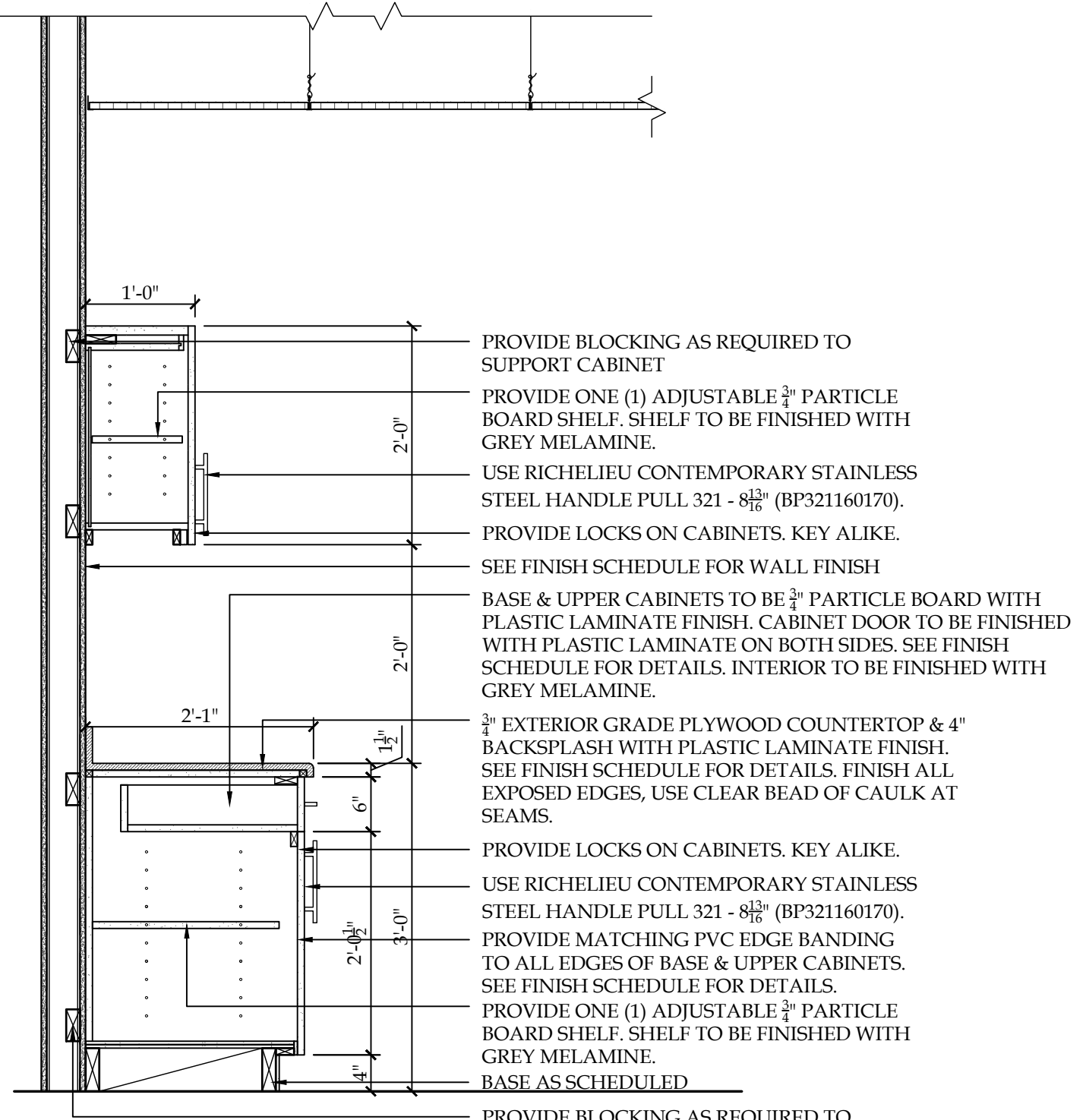
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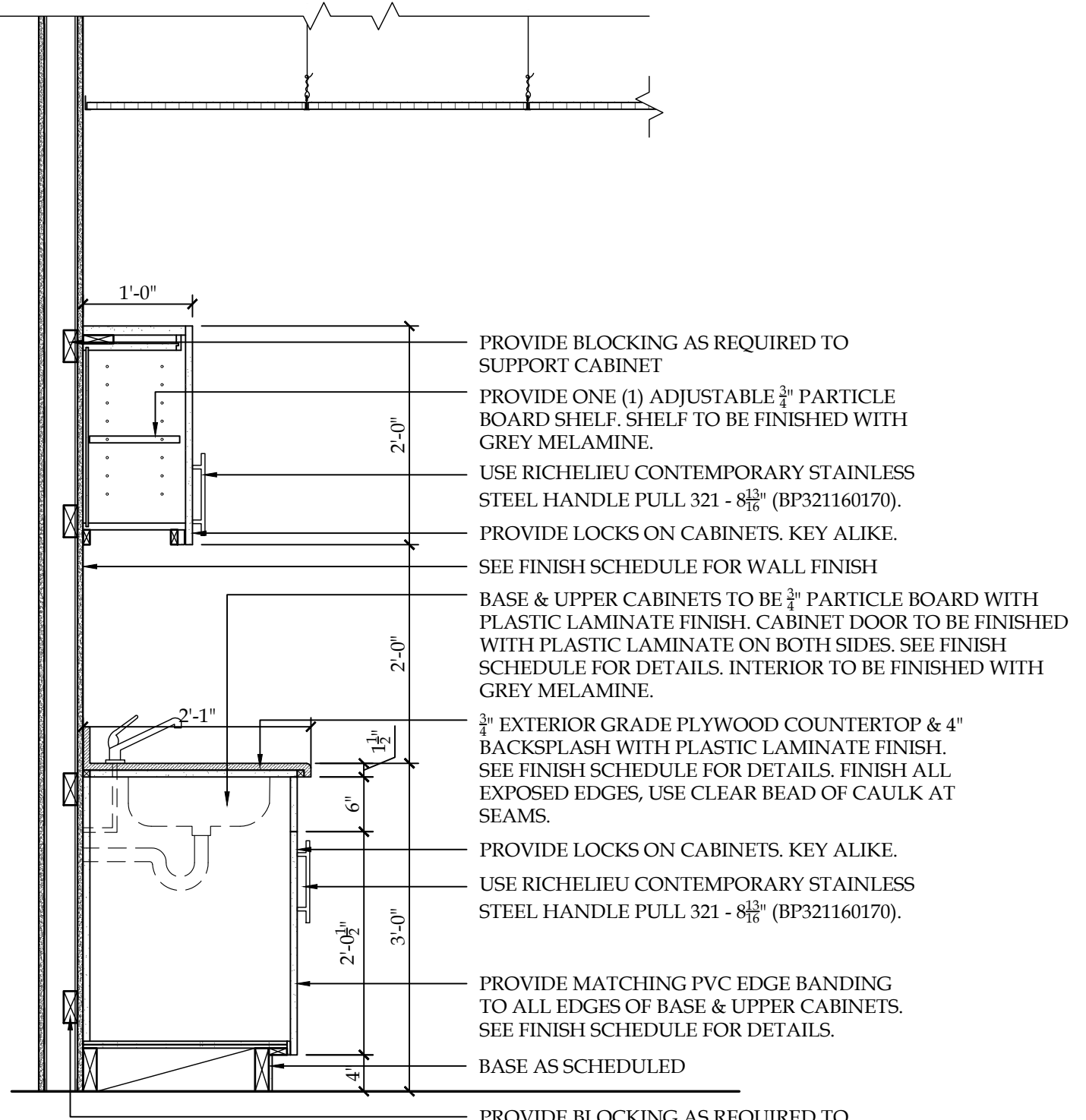
DRAWING #: **A-501**



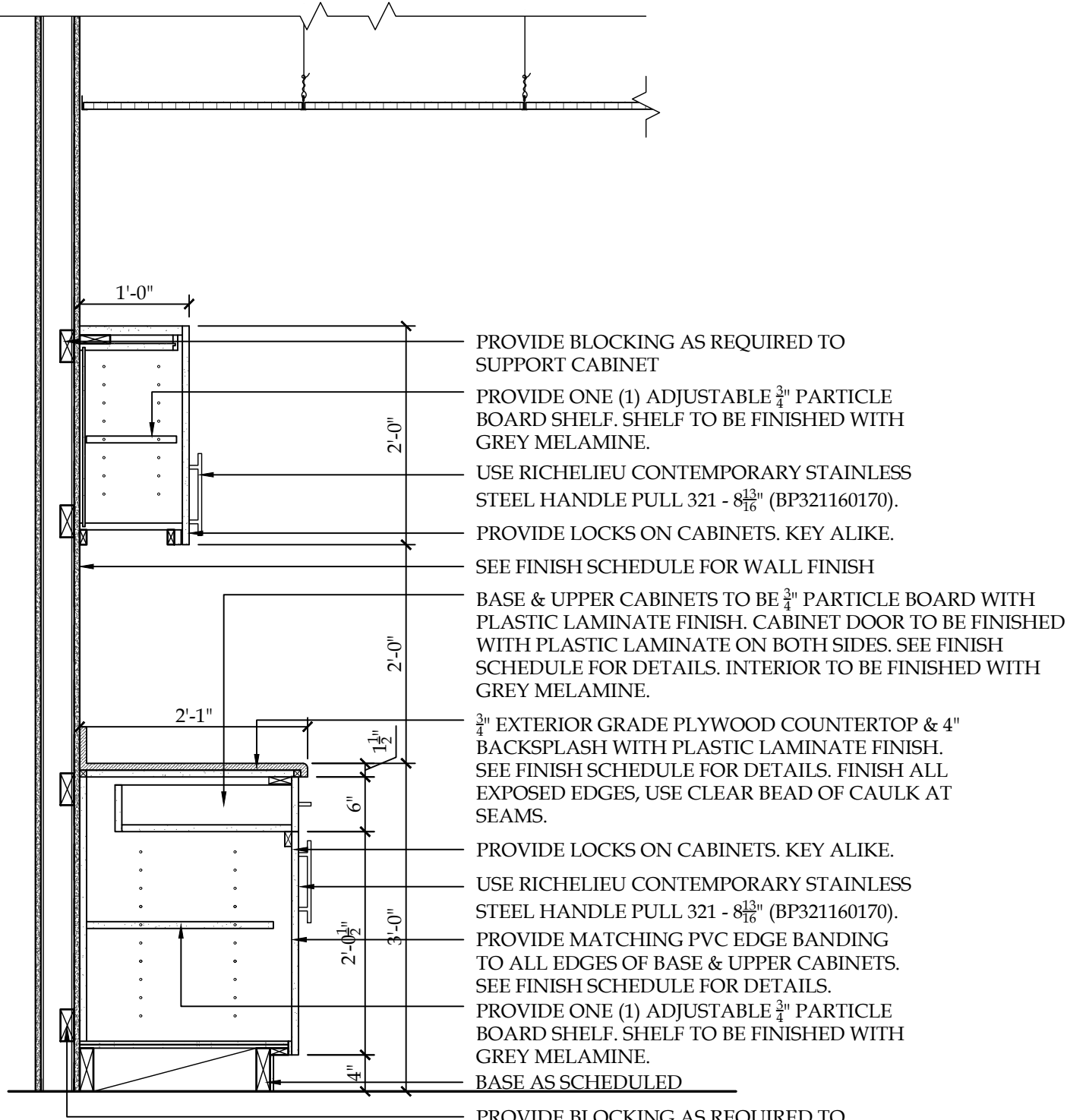
C5 SECTION | SINK & UPPER CABINET @ EXAM ROOMS (TYP.)  
 SCALE: 3/4" = 1'-0"



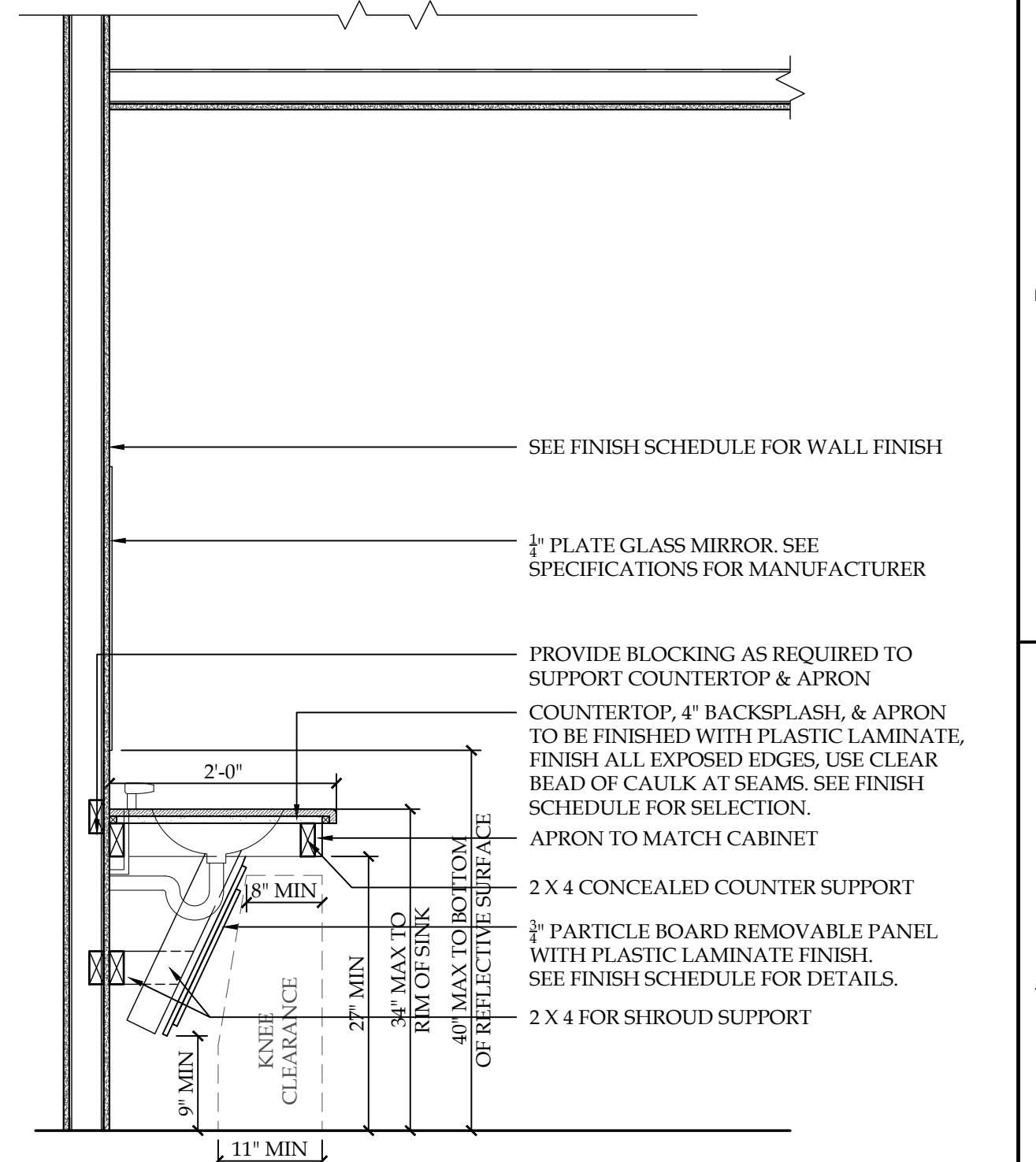
C4 SECTION | LOWER & UPPER CABINETS @ EXAM ROOMS (TYP.)  
 SCALE: 3/4" = 1'-0"



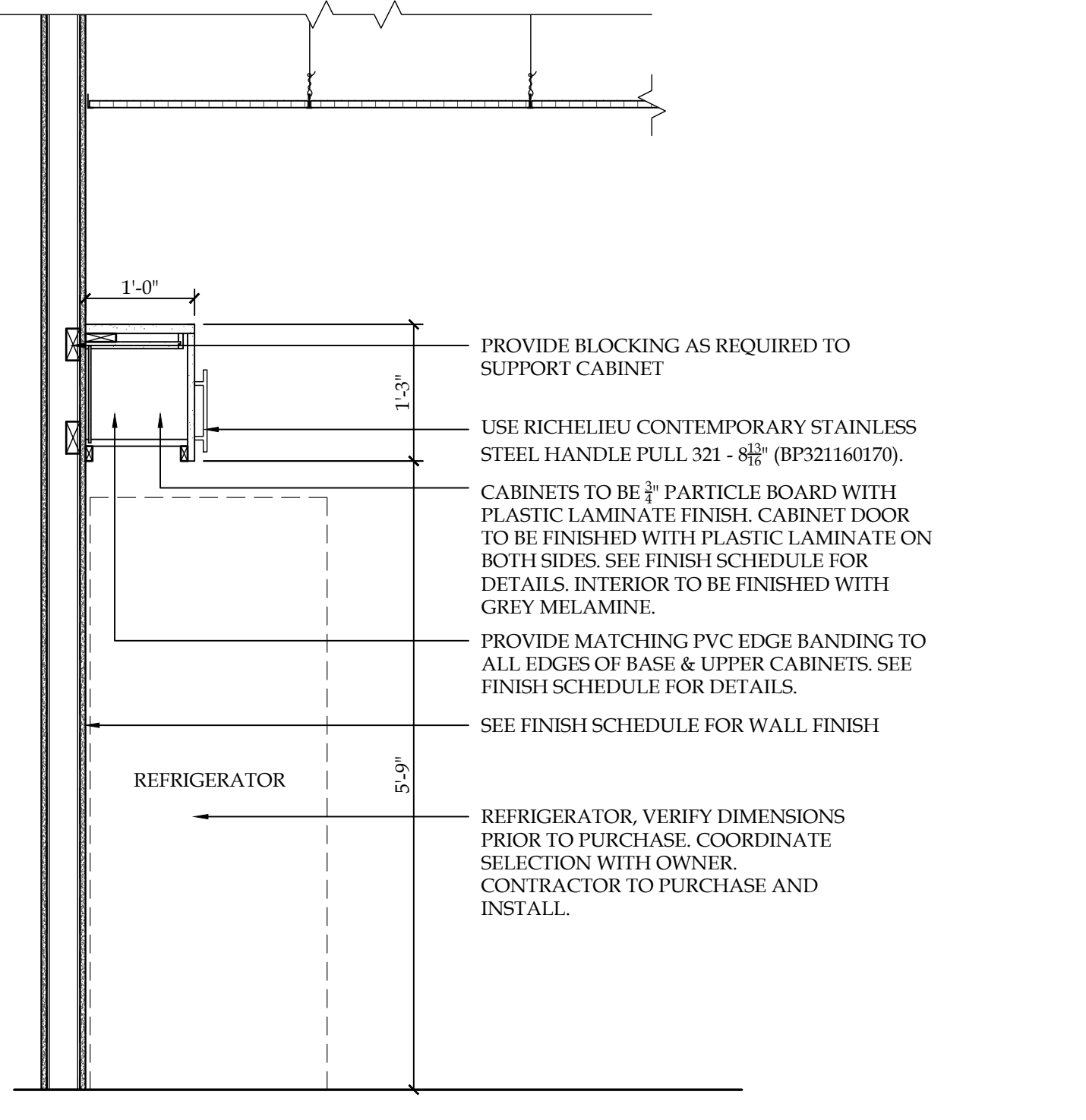
C2 SECTION | SINK & UPPER CABINET @ STERILIZATION 107  
 SCALE: 3/4" = 1'-0"



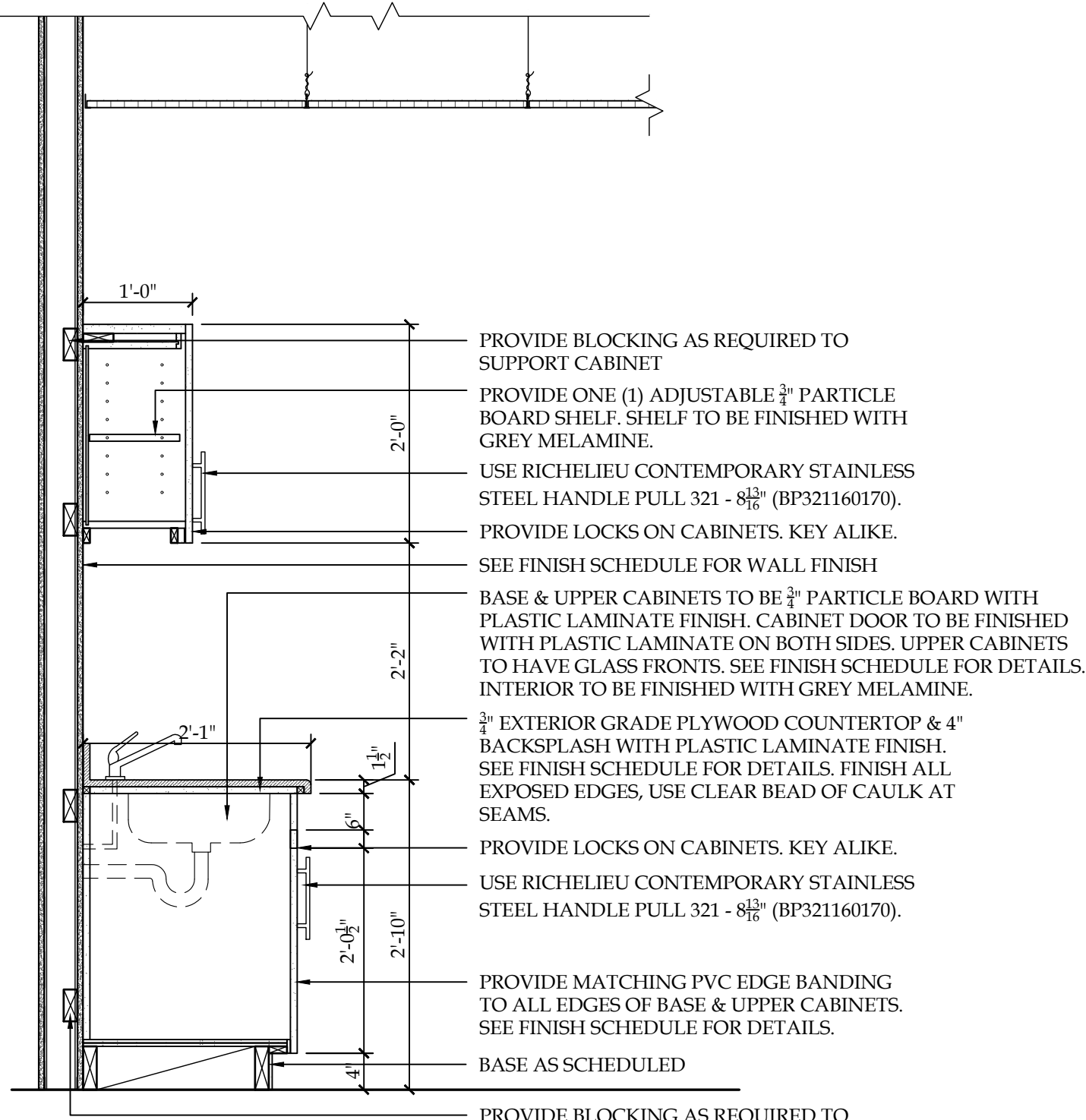
C1 SECTION | LOWER & UPPER CABINETS @ STERILIZATION 107  
 SCALE: 3/4" = 1'-0"



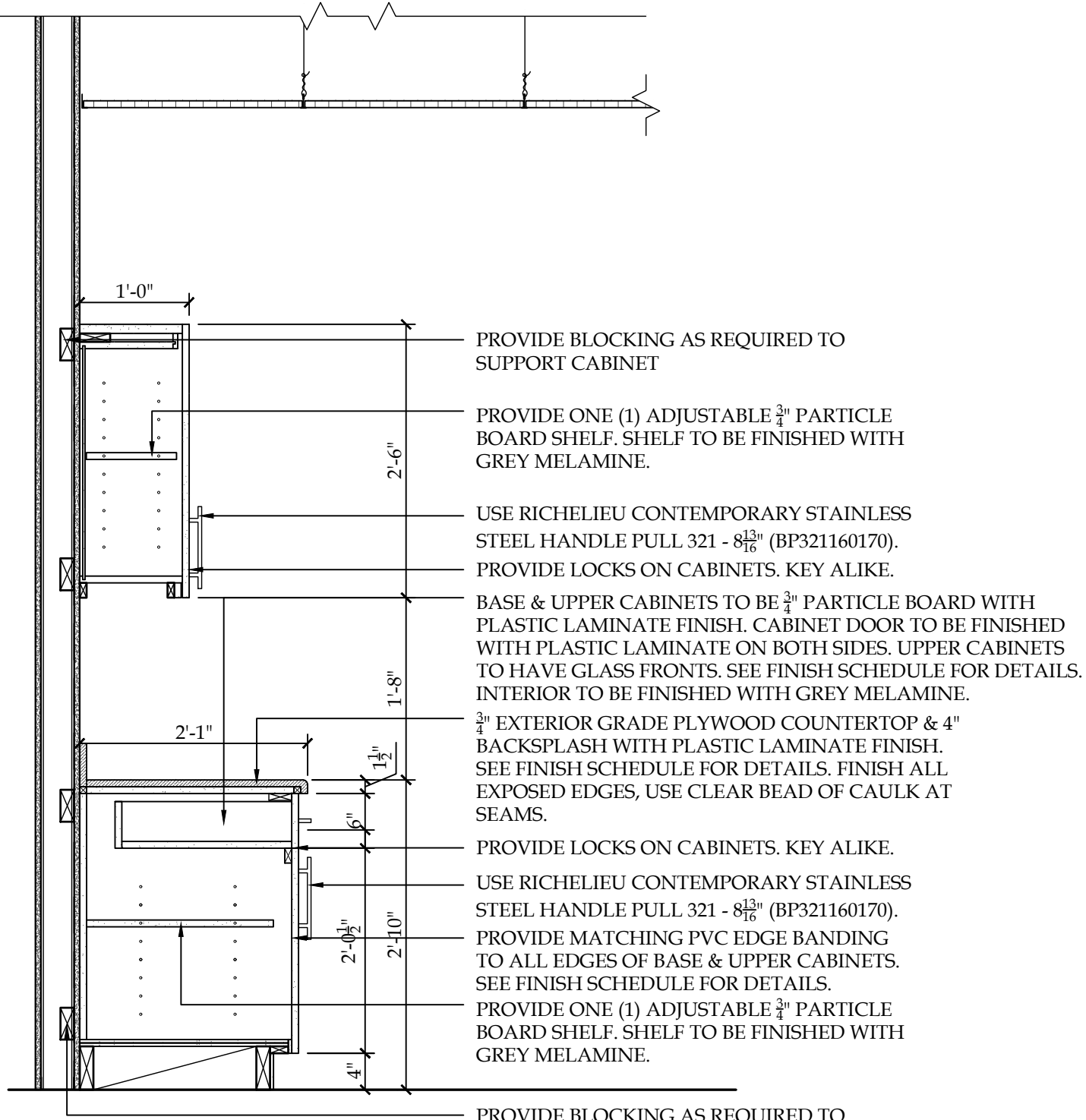
A5 SECTION | BATHROOM SINK @ TOILET ROOMS (TYP.)  
 SCALE: 3/4" = 1'-0"



A4 SECTION | REFRIGERATOR & UPPER CABINET @ BREAK ROOM 206  
 SCALE: 3/4" = 1'-0"



A2 SECTION | SINK & UPPER CABINET @ BREAK ROOM 206  
 SCALE: 3/4" = 1'-0"



A1 SECTION | LOWER & UPPER CABINETS @ BREAK ROOM 206  
 SCALE: 3/4" = 1'-0"

NOTE: ALL WOOD BLOCKING AND FRAMING TO BE FIRE TREATED.

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 LOCKPORT NY

ISSUE: BID/PERMIT SET 2022-07-15

SA PROJECT TEAM: PRINCIPAL P.Silvestri  
 PROJ. ARCH. S.Hunt DRAFTER  
 INTERIORS L.Lidzur INTERIORS A.Nagle

SEAL:

TITLE:

**MILLWORK  
 DETAILS**

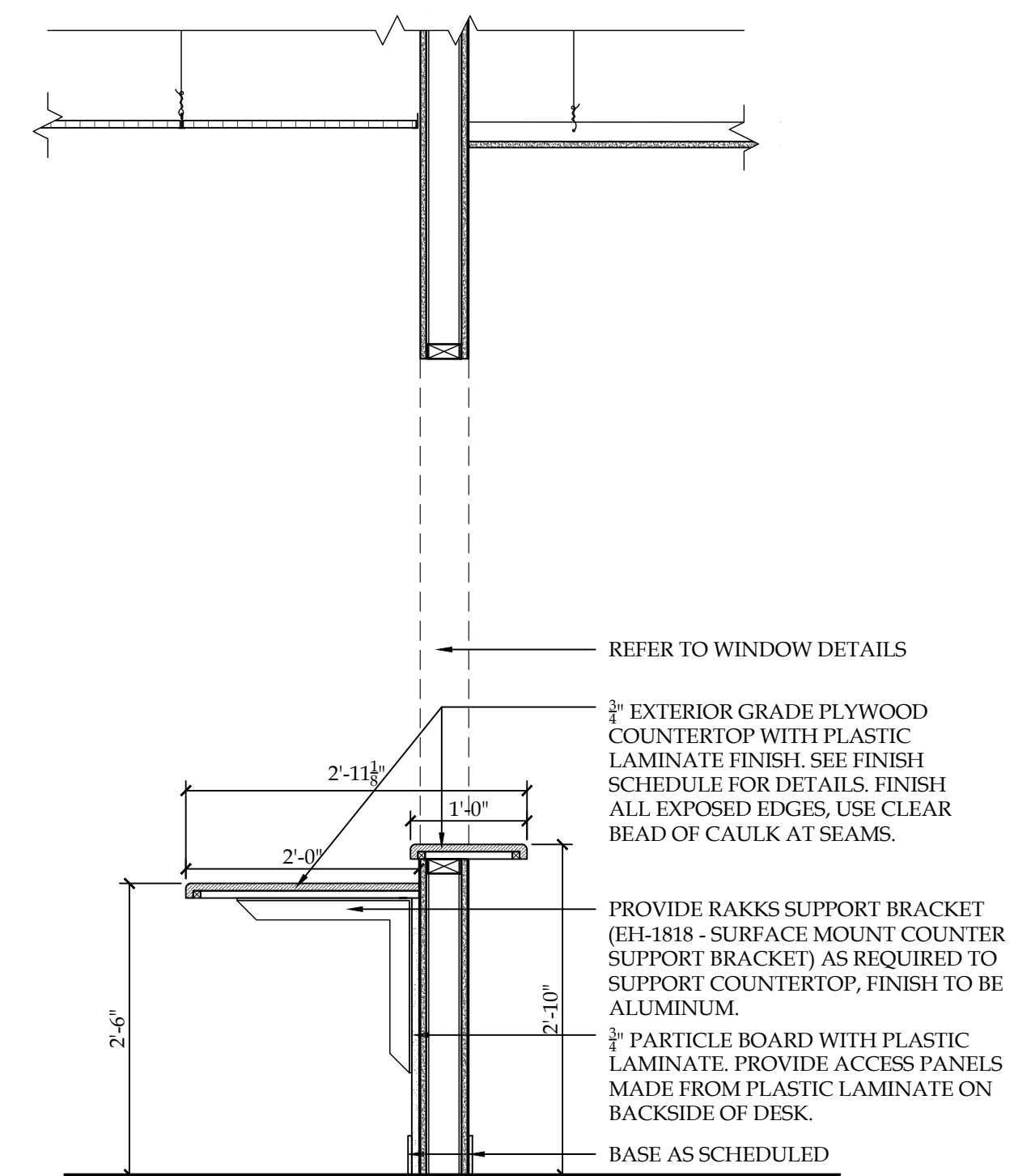


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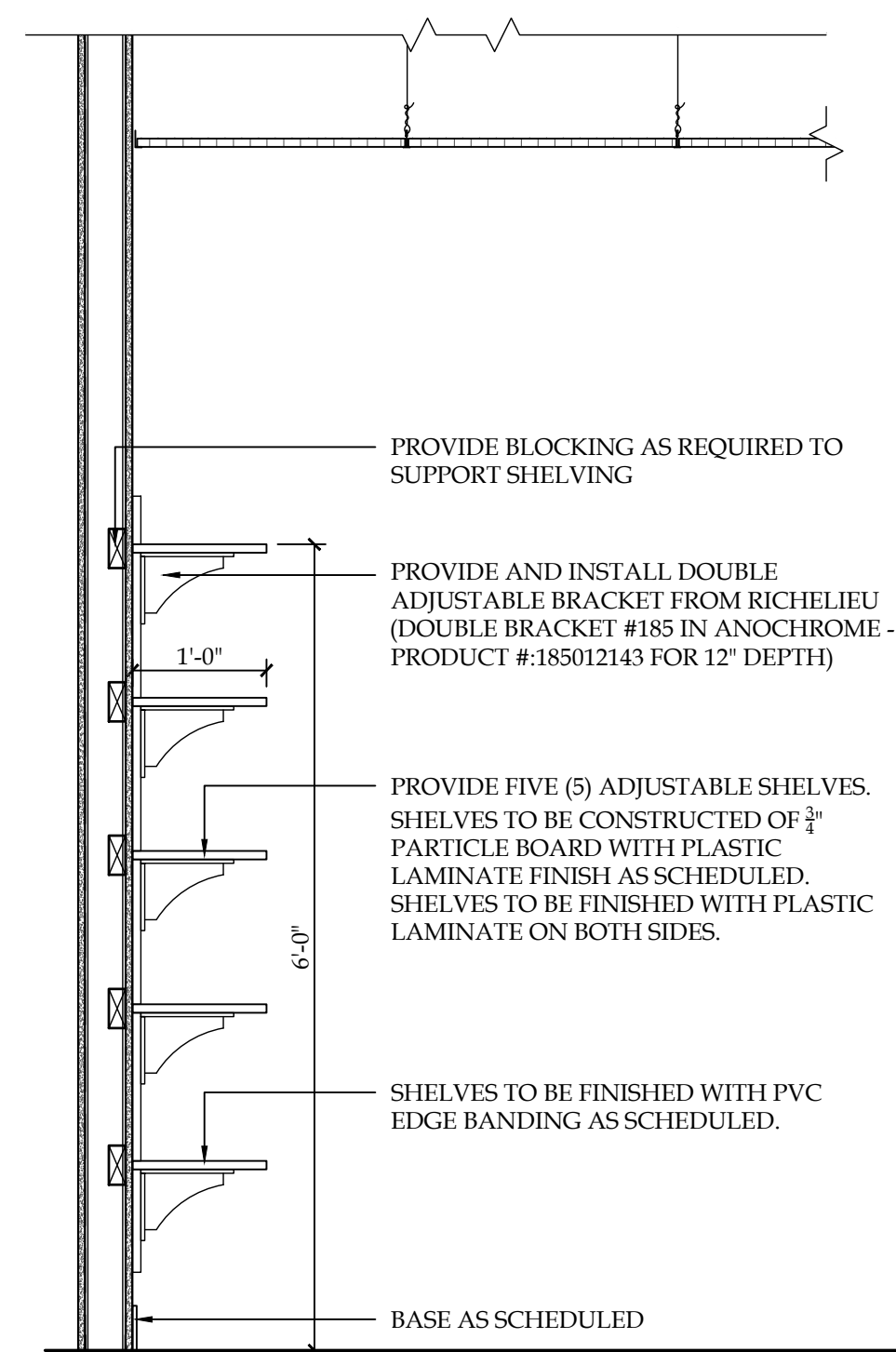
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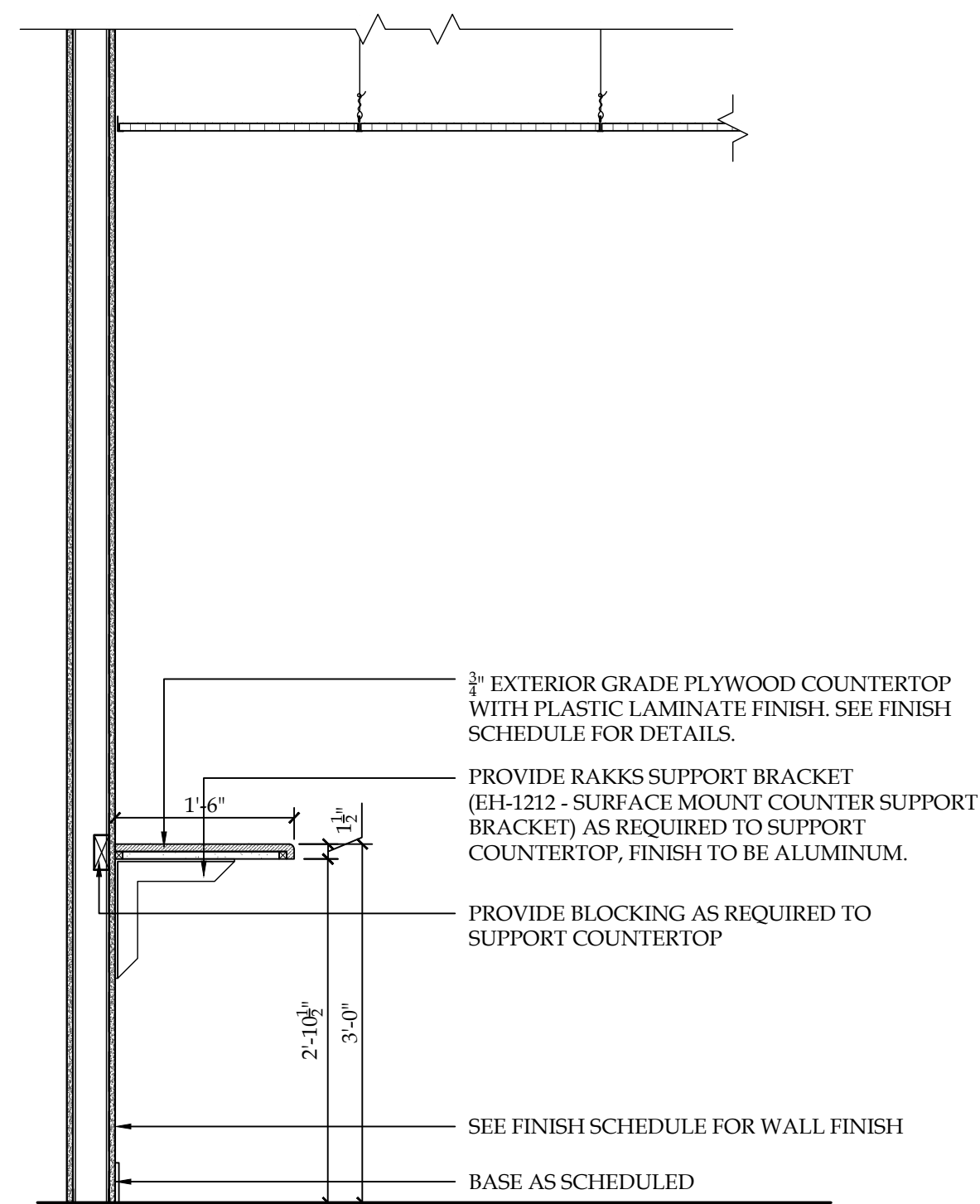
DRAWING #: A-502



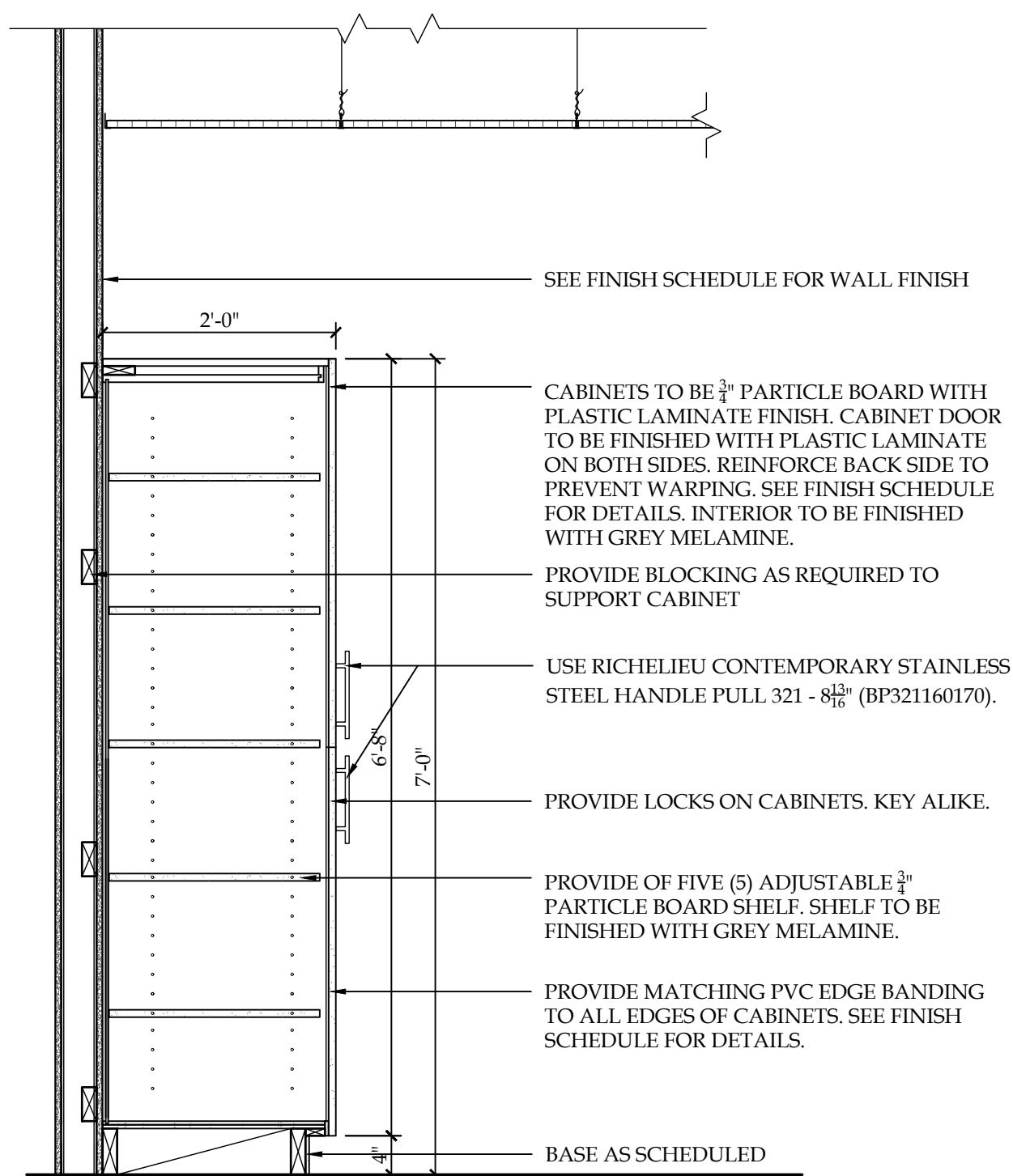
C4 SECTION | COUNTERTOPS @ RECEPTION 104  
 SCALE: 3/4" = 1'-0"



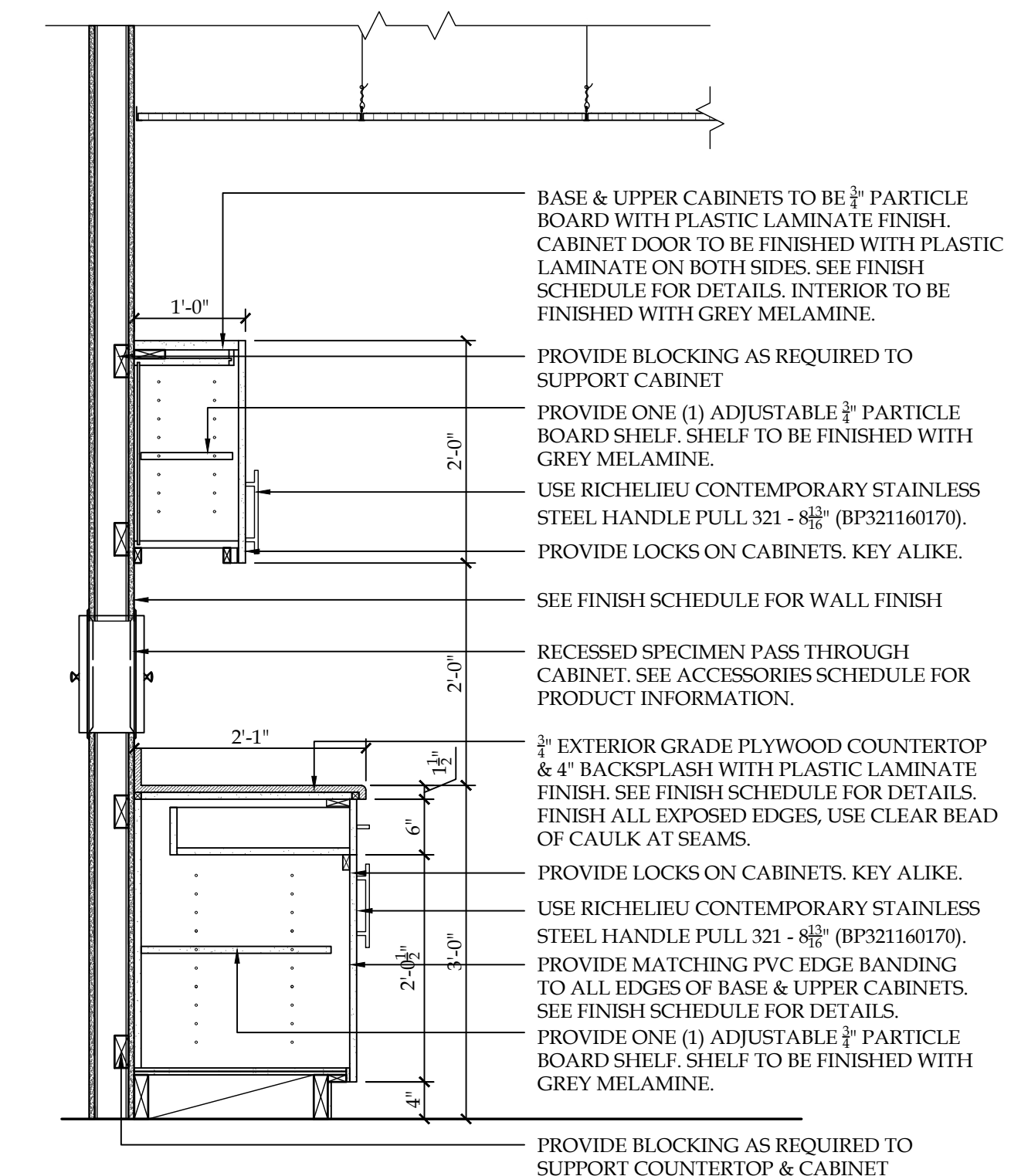
C3 SECTION | SHELVES @ CLEAN ROOM 123  
 SCALE: 3/4" = 1'-0"



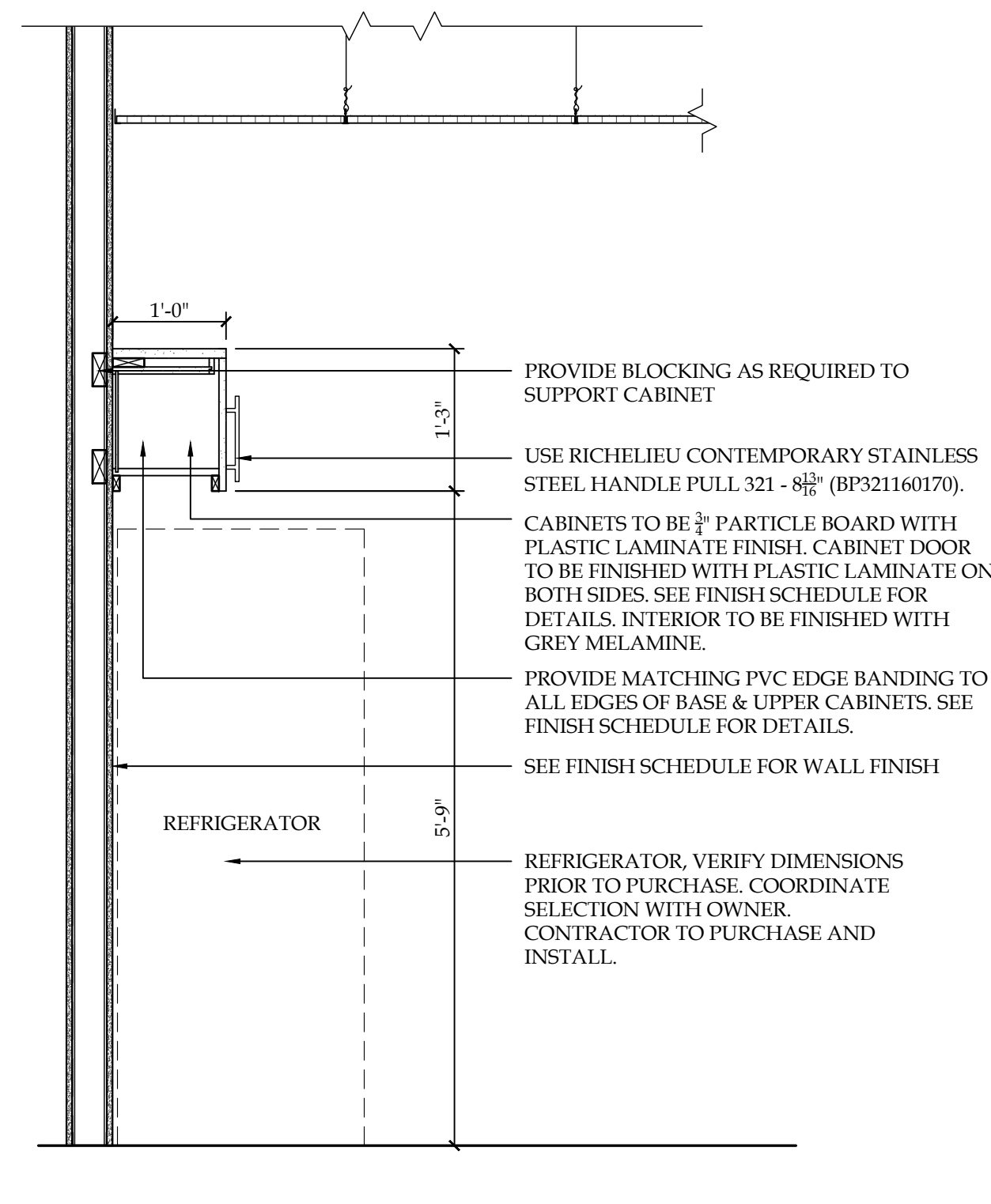
C2 SECTION | COUNTERTOP @ DENTAL ROOMS 110 & 111  
 SCALE: 3/4" = 1'-0"



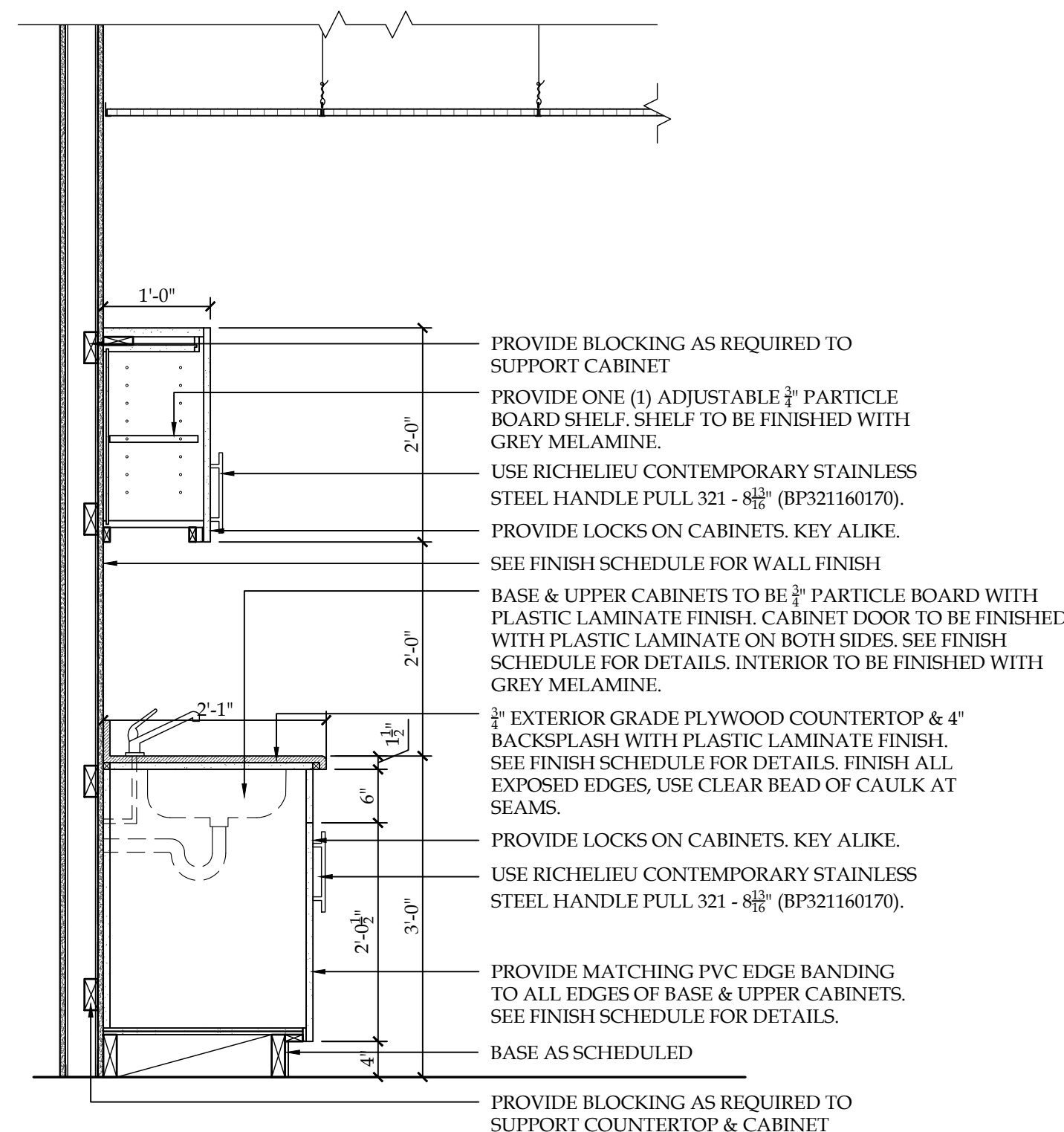
C1 SECTION | STORAGE CABINET @ DENTAL ROOMS (TYP.)  
 SCALE: 3/4" = 1'-0"



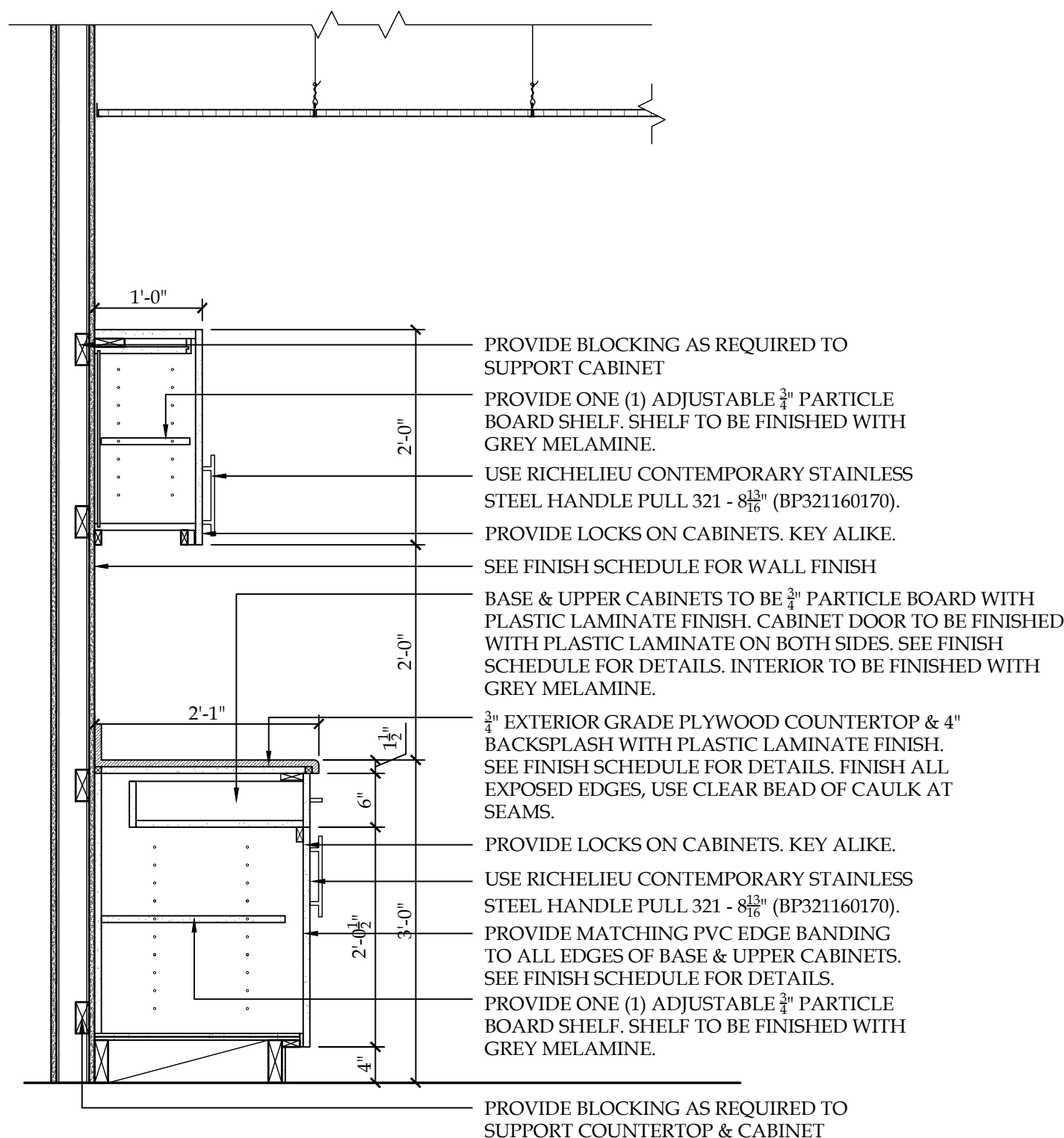
A5 SECTION | LOWER & UPPER CABINETS @ LAB 127  
 SCALE: 3/4" = 1'-0"



A4 SECTION | REFRIGERATOR & UPPER CABINET @ LAB 127  
 SCALE: 3/4" = 1'-0"



A2 SECTION | SINK & UPPER CABINETS @ LAB 108 & 127  
 SCALE: 3/4" = 1'-0"



A1 SECTION | LOWER & UPPER CABINETS @ LAB 108 & 127  
 SCALE: 3/4" = 1'-0"



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 INTERIORS L.Izdziur INTERIORS A.Nagle

SEAL:

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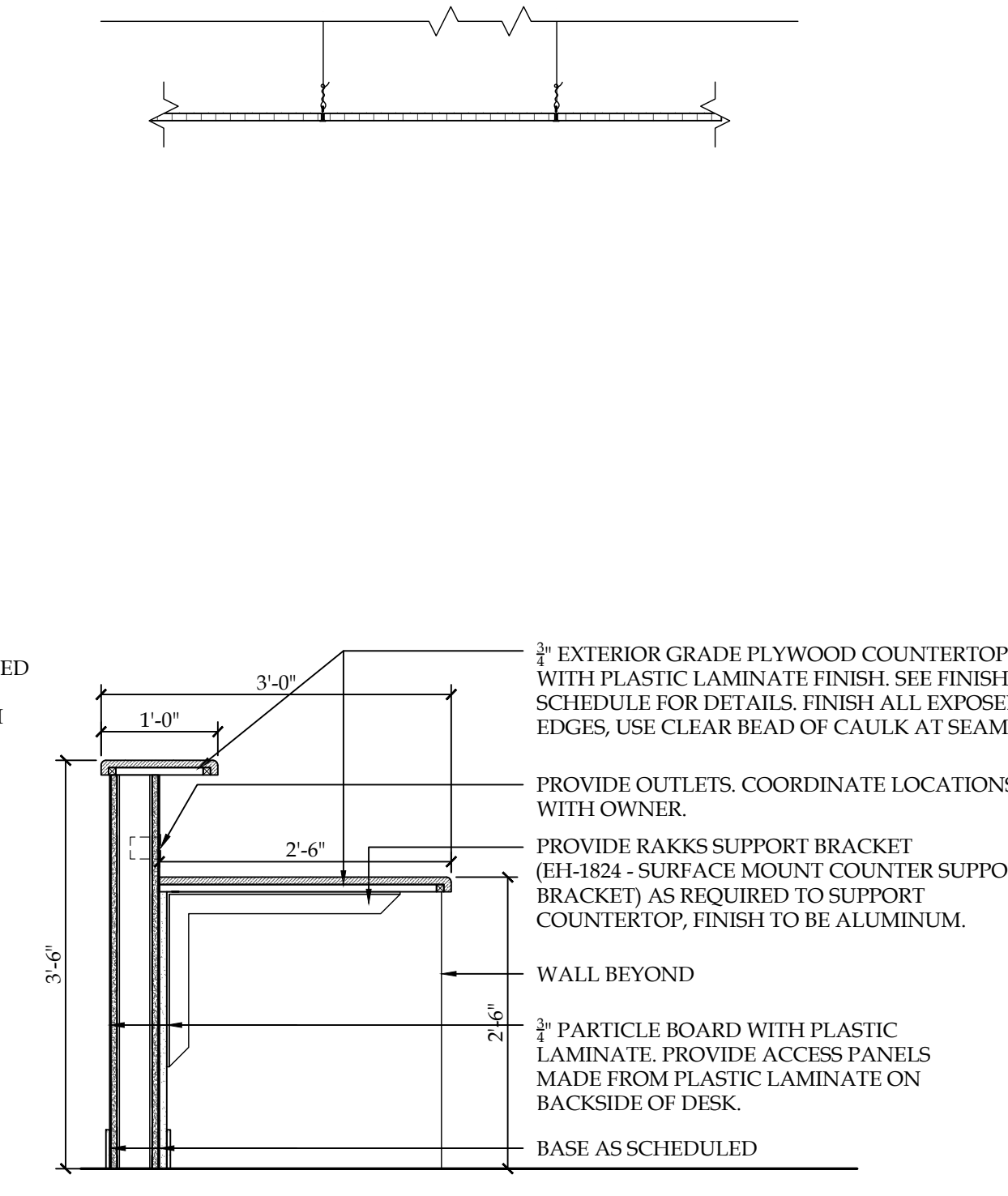


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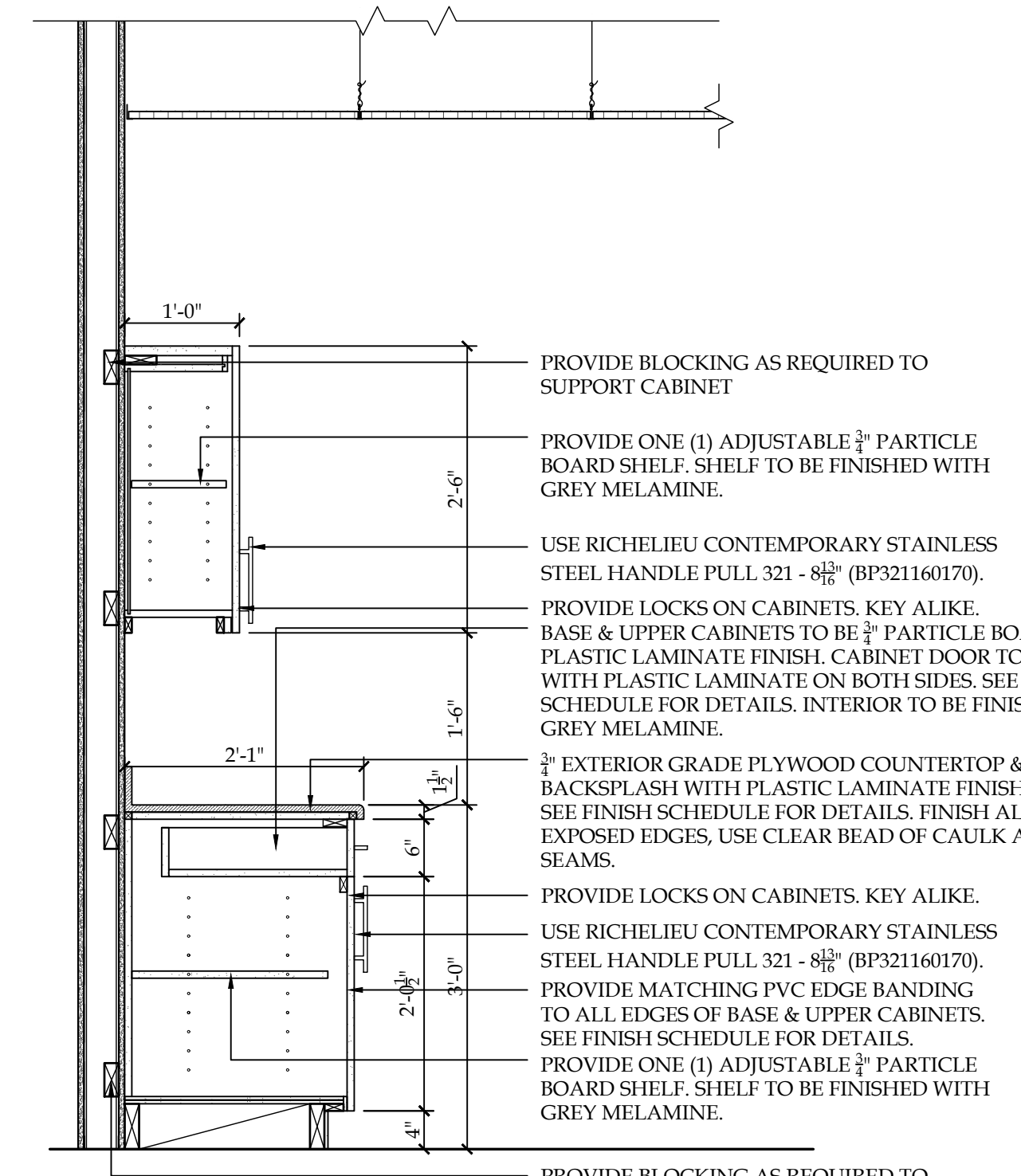
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SA JOB #: 21055.01 DATE: 07-15-22

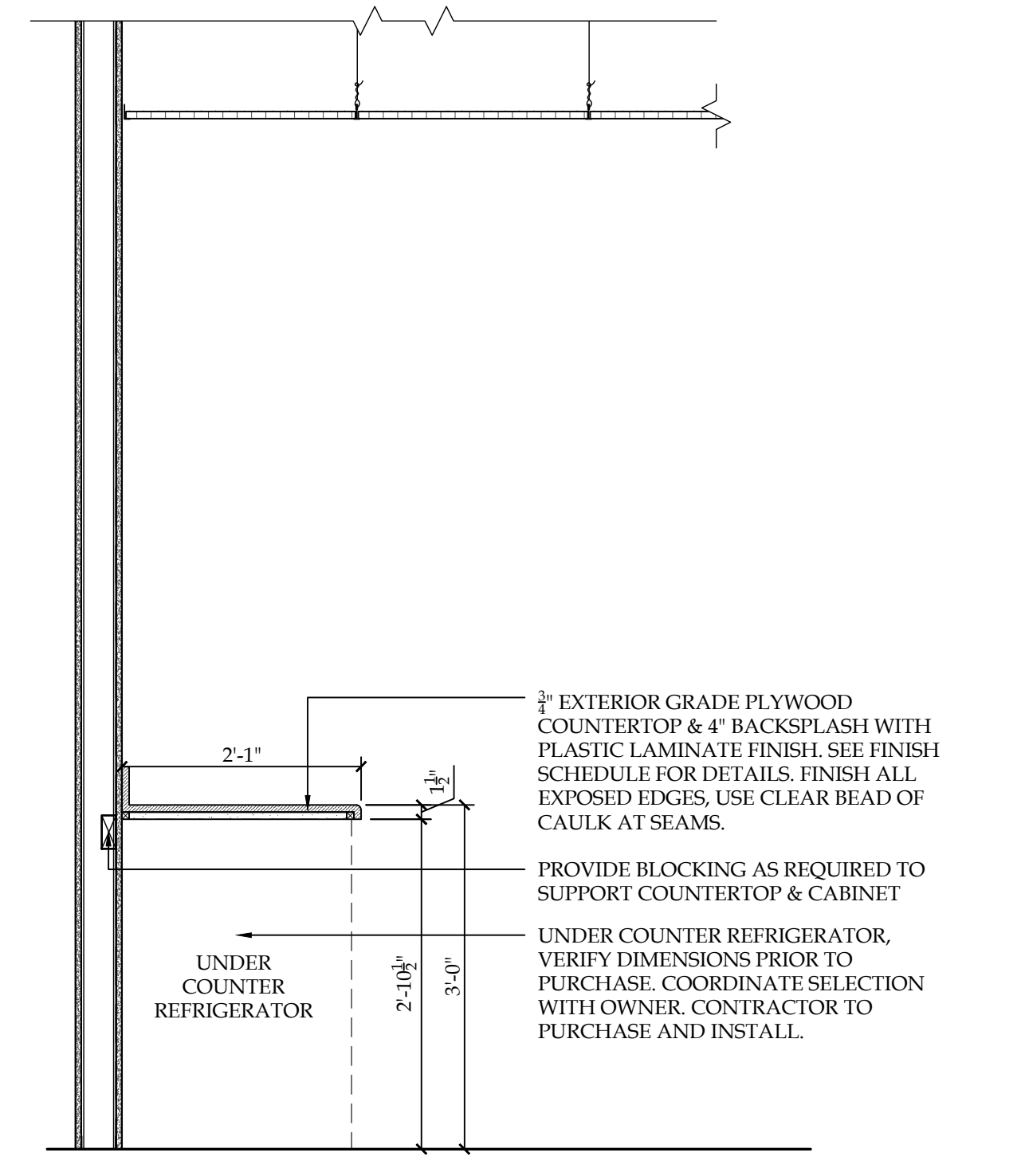
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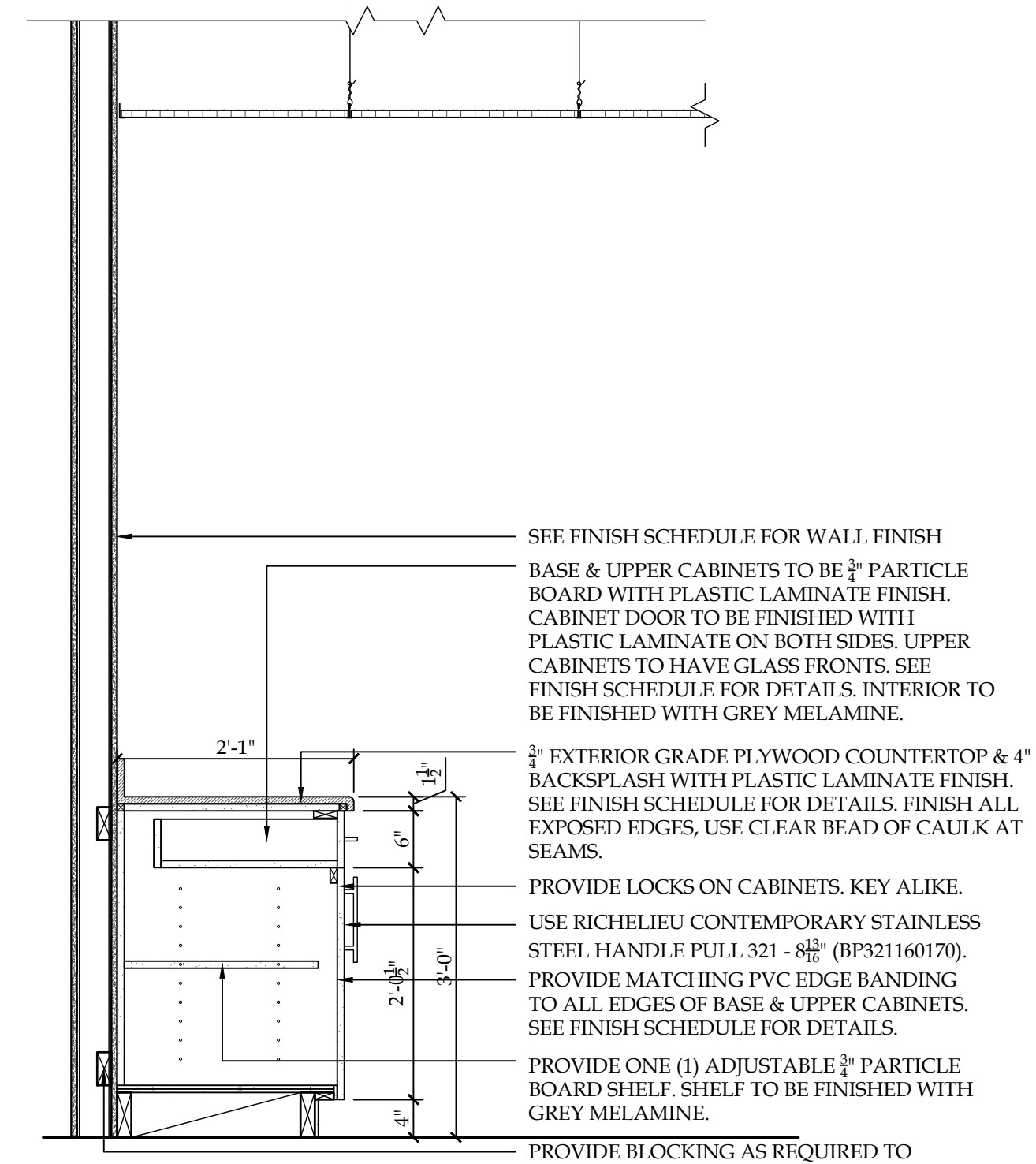
**C5 SECTION | DESK @ NURSES/ DR. ROOM 121**  
 SCALE: 3/4" = 1'-0"



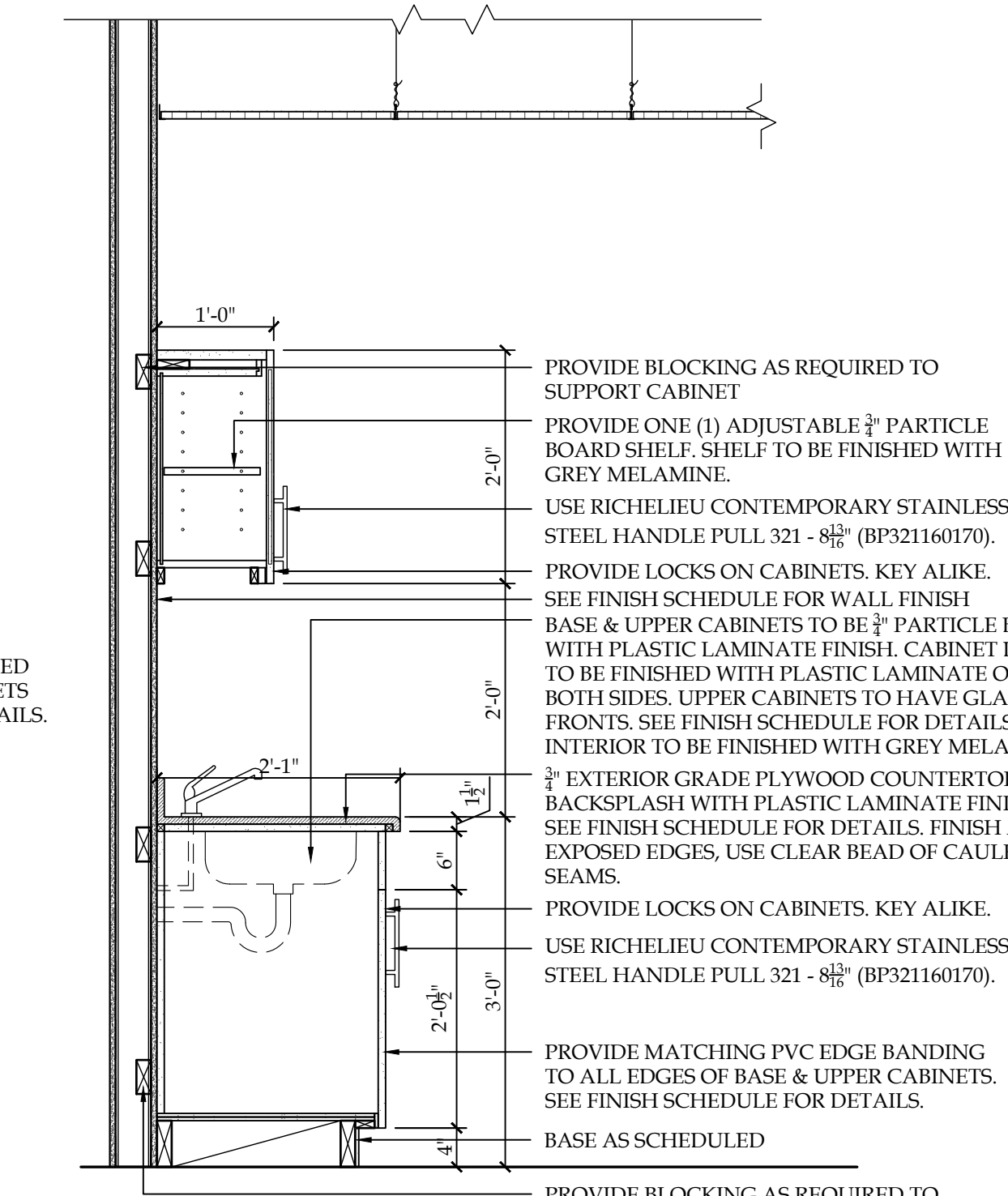
**C4 SECTION | LOWER & UPPER CABINETS @ NURSES/ DR. ROOM 121**  
 SCALE: 3/4" = 1'-0"



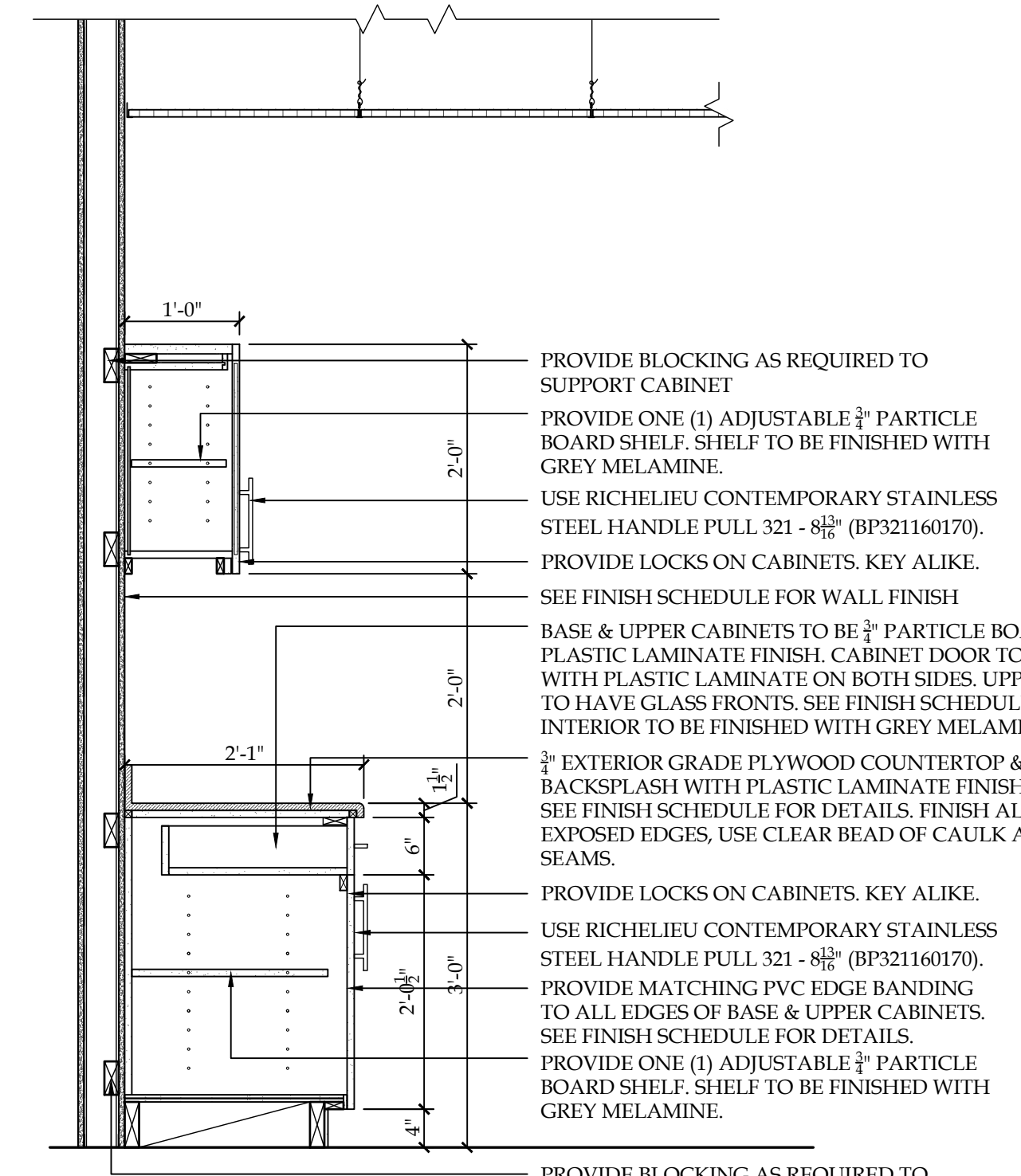
**C2 SECTION | UNDERCOUNTER REFRIGERATOR @ MEDS 120**  
 SCALE: 3/4" = 1'-0"



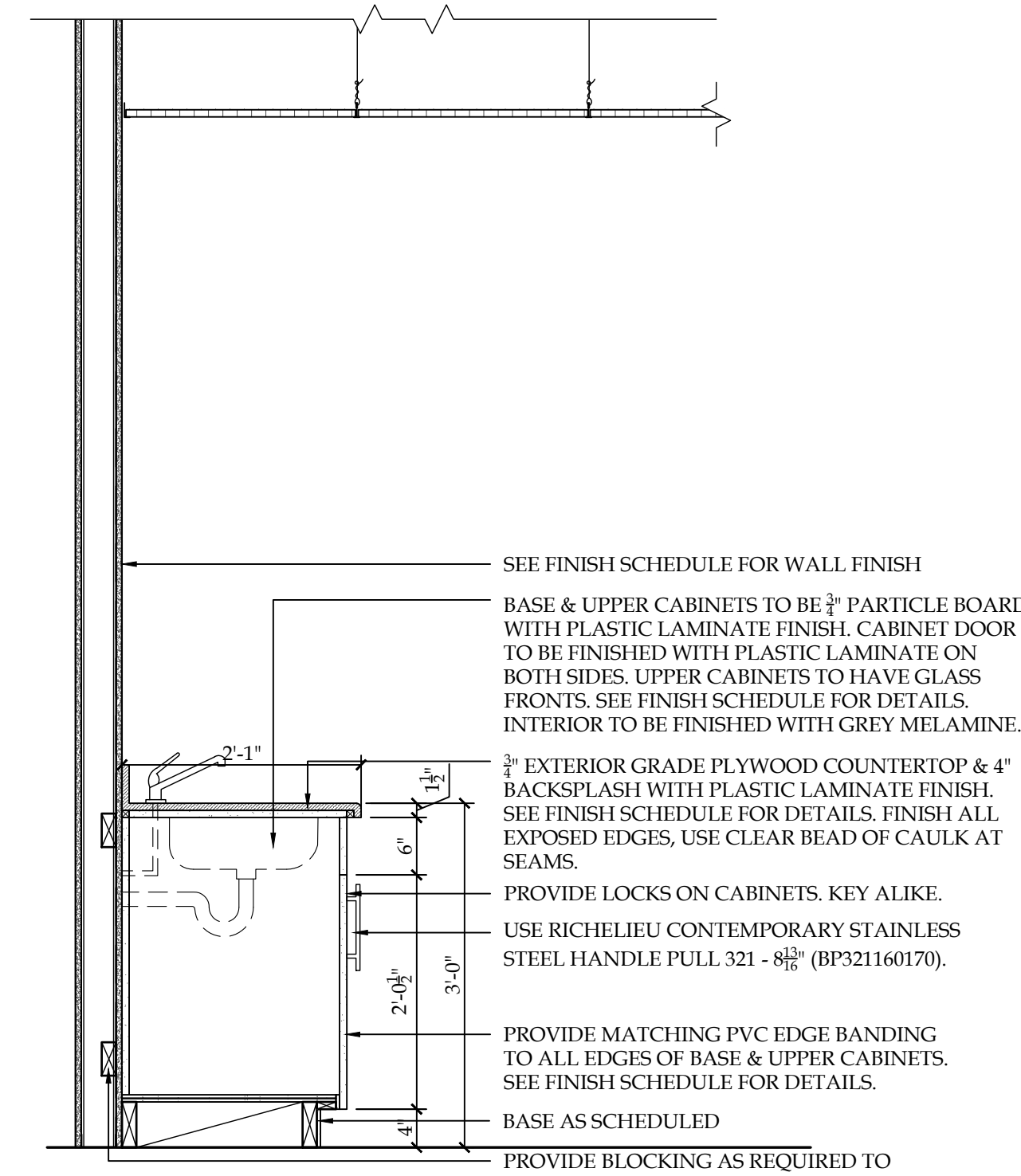
**C1 SECTION | LOWER CABINET @ MEDS 120**  
 SCALE: 3/4" = 1'-0"



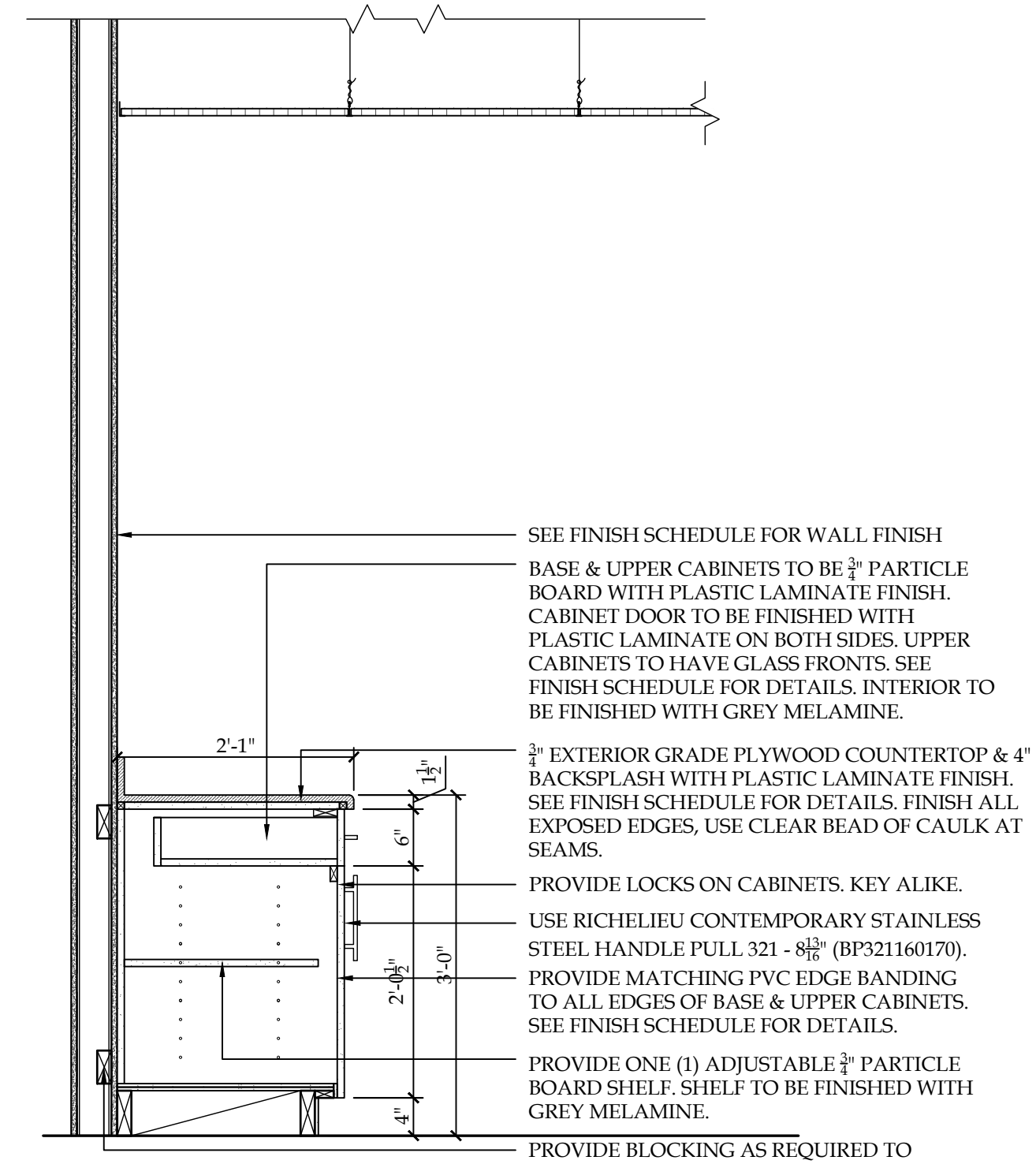
**A5 SECTION | SINK & UPPER CABINET @ MEDS 120**  
 SCALE: 3/4" = 1'-0"



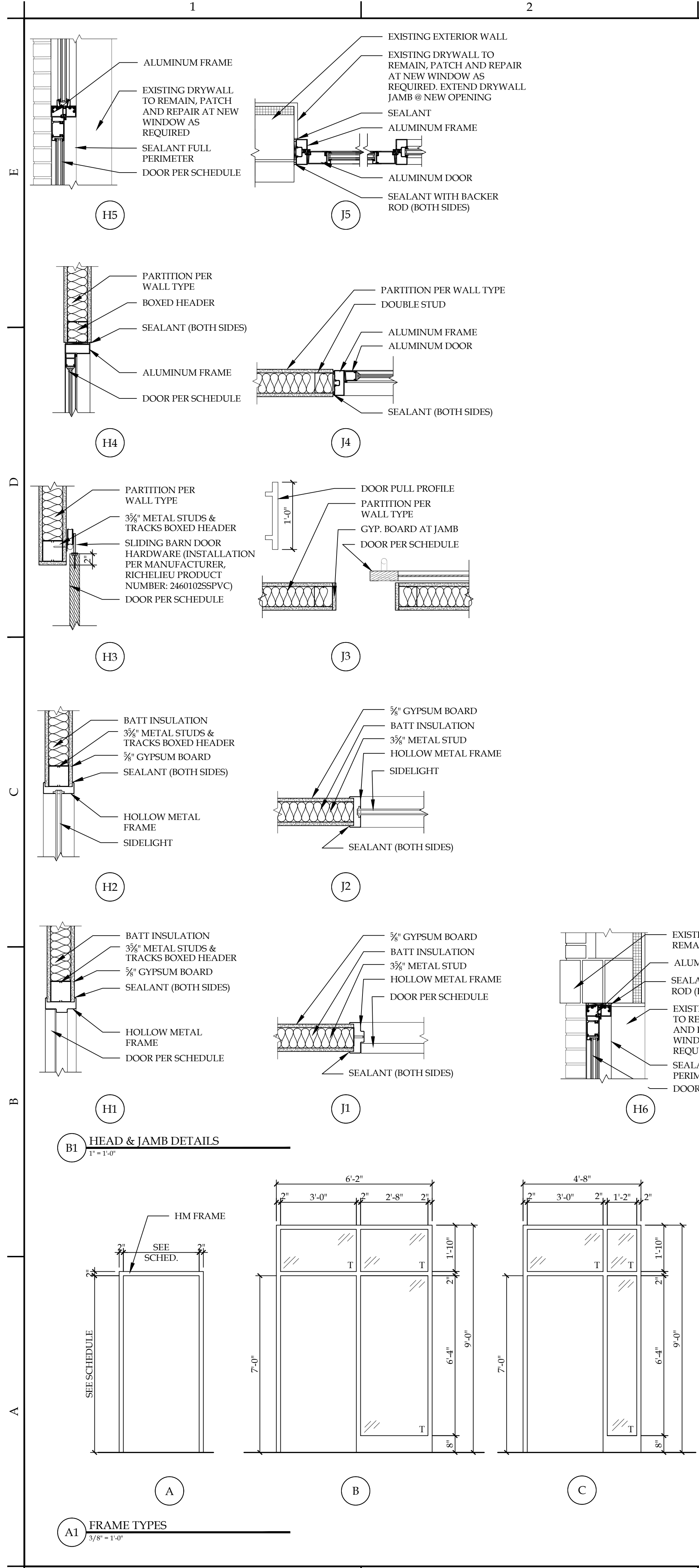
**A4 SECTION | LOWER & UPPER CABINETS @ MEDS 120**  
 SCALE: 3/4" = 1'-0"



**A2 SECTION | SINK @ DENTAL ROOMS 110 & 111**  
 SCALE: 3/4" = 1'-0"



**A1 SECTION | LOWER CABINET @ DENTAL ROOMS 110 & 111**  
 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: EXAM ROOM**
  - 3- HINGES
  - 1- PASSAGE SET
  - 1- WALL STOP
  - 1- KICKPLATE
  - 1- SOUND GASKET
  - 1- AUTOMATIC DOOR BOTTOM
- HARDWARE SET #2: BATHROOM**
  - 3- HINGES
  - 1- PASSAGE SET
  - 1- THUMB TURN DEAD BOLT W/ OCCUPANCY INDICATOR
  - 1- WALL STOP
  - 3- SILENCERS
- HARDWARE SET #3: STORAGE, MECH., JAN.**
  - 3- HINGES
  - 1- OFFICE LOCK SET
  - 1- CLOSER
  - 1- WALL STOP
  - 3- SILENCERS
- HARDWARE SET #4: CONFERENCE ROOM, LAB.**
  - 3- HINGES
  - 1- CLASSROOM LOCK SET
  - 1- WALL STOP
  - 3- SILENCERS
- HARDWARE SET #5: MEDS**
  - 3- HINGES
  - 1- COMBINATION KEYPAD LOCK SET
  - 1- OVERHEAD STOP
  - 3- SILENCERS
- HARDWARE SET #6: OFFICE**
  - 3- HINGES
  - 1- OFFICE/ENTRY LOCKSET
  - 1- WALL STOP
  - 3- SILENCERS
- HARDWARE SET #7: WATER ROOM**
  - 6- HINGES
  - 1- STOREROOM LOCKSET ACTIVE LEAF
  - 1- FLUSH BOLT INACTIVE LEAF
  - 1- DUMMY TRIM
  - 6- SILENCERS
  - 1- WALL STOP
- HARDWARE SET #8: WAITING ROOM**
  - 3- HINGES
  - 1- LEVER PASSAGE
  - 1- CLOSER
  - 1- WALL STOP
  - 3- SILENCERS
- HARDWARE SET #9: EXTERIOR DOOR**
  - EACH DOOR TO HAVE:
  - 1- CONT. HINGE
  - 1- KEY AND THUMB OPERATED DEADLOCK W/ EXIT INDICATOR
  - 1- PUSH/PULL BAR SET
  - 1- CLOSER
  - 1- THRESHOLD (EXTENDED @101)
  - 1- POWER ASSIST OPERATOR
  - 2- ACTIVATOR BUTTONS
  - WEATHERSTRIPPING
  - DOOR SWEEP
- HARDWARE SET #10: INTERIOR DOOR**
  - EACH DOOR TO HAVE:
  - 1- CONT. HINGE
  - 1- PUSH/PULL BAR SET
  - 1- CLOSER
  - 1- WALL STOP
  - 1- POWER ASSIST OPERATOR
  - 2- ACTIVATOR BUTTONS
  - DOOR SWEEP
- HARDWARE SET #11: BARN DOOR**
  - 1- SLIDING BARN DOOR HARDWARE RICHELIEU PRODUCT NUMBER: 2460102SPVC, OR EQUAL
  - 2- PULL HANDLES (SEE JAMB DETAIL FOR PROFILE)

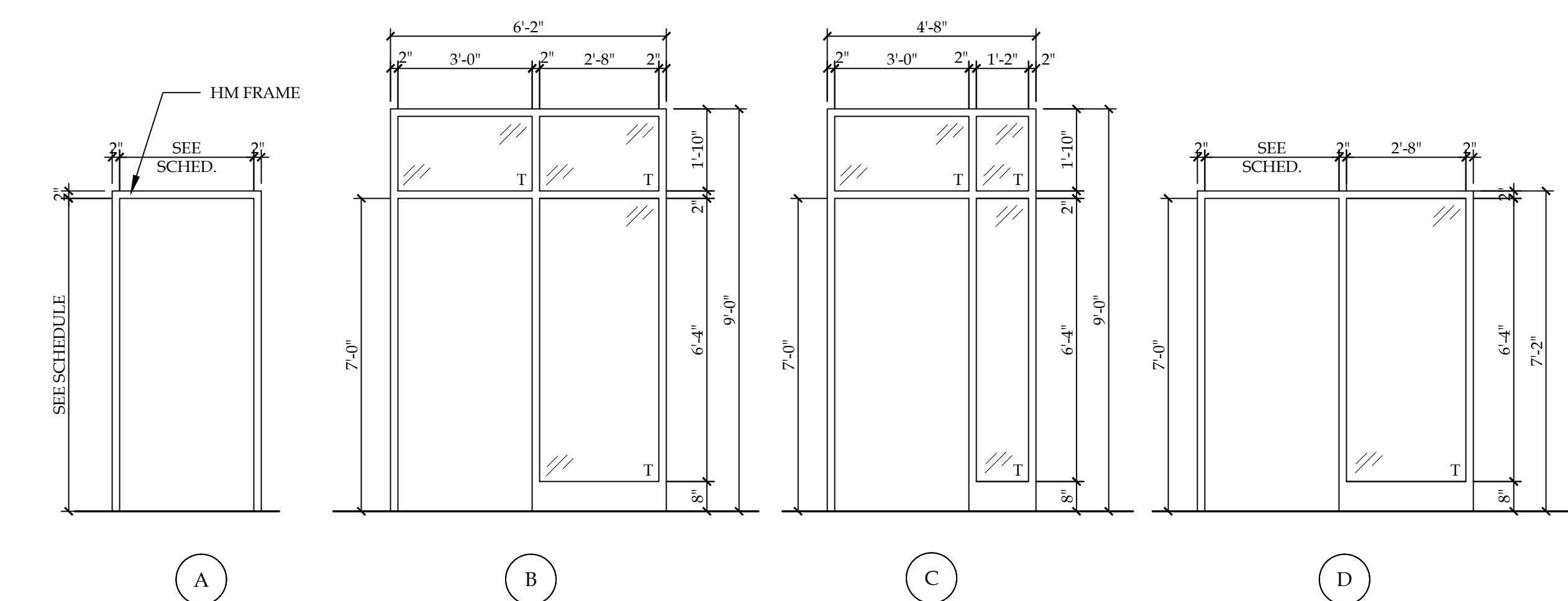
REMARKS	MATERIAL LEGEND
1. FREE EGRESS REQUIRED	ALUM = ALUMINUM
2. INSTALL A READILY VISIBLE DURABLE SIGN IN THE EGRESS SIDE ON OR ADJACENT TO THE DOOR STATING: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. THE SIGN SHALL BE IN LETTERS 1 INCH (25 MM) HIGH ON A CONTRASTING BACKGROUND.	HM = HOLLOW METAL
	GYP.BD. = GYPSUM BOARD
	SCWD = SOLID CORE WOOD
	T = 1/4" TEMPERED GLAZING
	IT = 1" INSULATED TEMPERED GLAZING
	I = 1" INSULATED GLAZING
	SP = SPANDREL GLAZING

### DOOR AND FRAME SCHEDULE

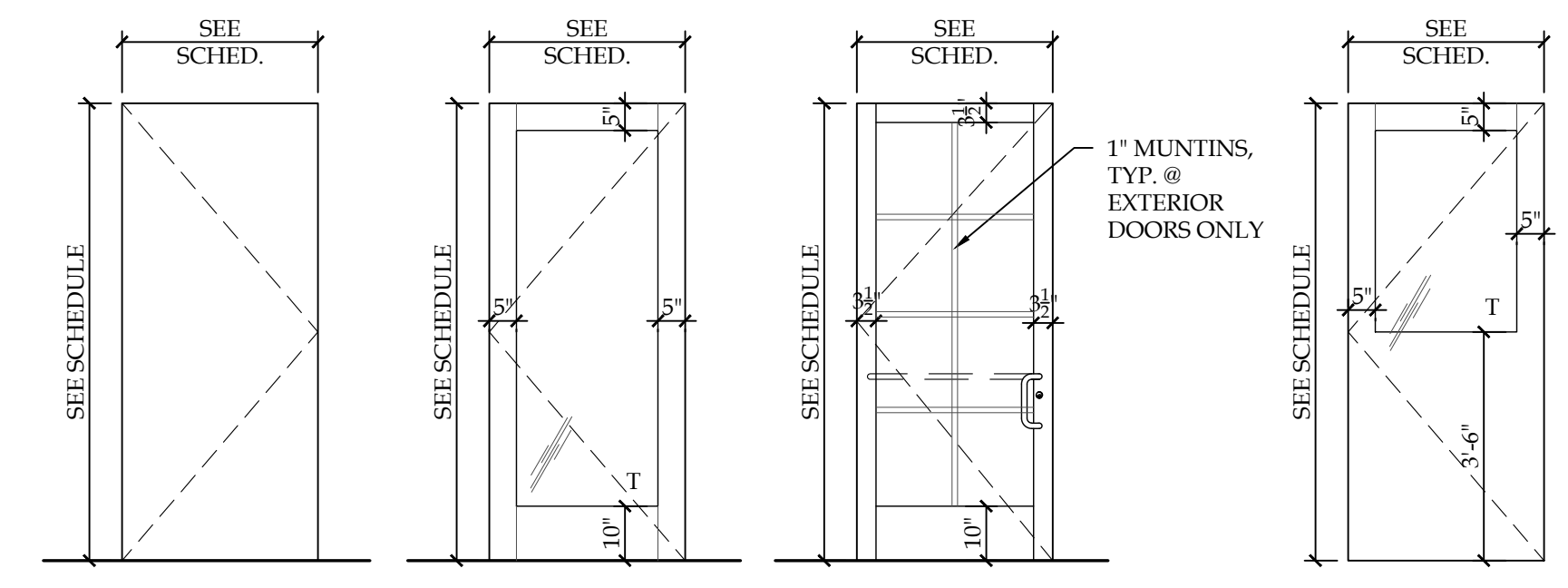
DOOR NO.	LOCATION	DOORS			FRAMES			FIRE RATING	HDW SET #	REMARKS			
		SIZE	DOOR TYPE	MATL	GLAZING	MATL	FRAM E TYPE				DETAILS		
		WIDTH	HEIGHT	THK									
101	VESTIBULE EXT.	3'-8"	7'-10"	1 1/2"	FG2	ALUM	T	ALUM	W5	H5	J5	9	2
102	DENTAL EQUIP.	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
103	VESTIBULE INT.	3'-0"	7'-0"	1 1/2"	FG2	ALUM	T	ALUM	B	H4	J4	10	
104	TOILET	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	2	
105	WAITING AREA	3'-0"	7'-0"	1 1/2"	FG	SCWD	T	HM	C	H1/H2	J1/J2	8	
106	WAITING AREA	3'-0"	7'-0"	1 1/2"	FG	SCWD	T	HM	D	H1/H2	J1/J2	8	
107	STERILIZATION	3'-4" SLAB 3'-0" OPNG	7'-2" SLAB 7'-0" OPNG	1 1/2"	F	SCWD	-	GYP.BD.	--	H3	J3	11	
108	LAB	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	4	
109	DENTAL	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
110	MECH.	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
111	WATER ROOM	(2) 2'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	7	
112	VESTIBULE EXT.	3'-0"	7'-0"	1 1/2"	FG2	ALUM	T	ALUM	W6	H6	J5	9	2
113	VESTIBULE INT.	3'-0"	7'-0"	1 1/2"	FG2	ALUM	T	ALUM	C	H4	J4	10	
114	RECEPTION	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	4	
115	WAITING AREA	3'-0"	7'-0"	1 1/2"	FG	SCWD	T	HM	A	H1	J1	8	
116	SOILED	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
117	TOILET	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	2	
118	EXAM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
119	CLEAN	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
120	EXAM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
121	LAB	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	4	
122	EXAM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
123	MEDS	3'-0"	7'-0"	1 1/2"	HG	SCWD	-	HM	A	H1	J1	5	
124	EXAM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
125	EXAM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	1	
126	JANITOR	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
201	STAIR	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	4	1,
202	OFFICE	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	6	
203	OFFICE	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	6	
204	OFFICE	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	6	
205	BREAK ROOM	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	4	
206	MECH.RM.	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	3	
207	TOILET	3'-0"	7'-0"	1 1/2"	F	SCWD	-	HM	A	H1	J1	2	

- 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.L.F.).
  - ALL FRAMES AT EXTERIOR DOORS TO BE FULLY CAULKED BOTH SIDES AT INTERFACE WITH DISSIMILAR MATERIALS.
  - ALL ALUMINUM STOREFRONT DOORS TO BE INSULATED MEDIUM STYLE. PROVIDE CYLINDERS PER HARDWARE SCHEDULE. ALL GLASS TO BE TEMPERED GLASS.
  - ALL DOORS 1-3/4" THICK UNLESS OTHERWISE NOTED.
  - ALL DOOR FRAME ANCHORS TO BE OF MANUFACTURER'S STANDARD WITH TYPE PER FRAME AND OPENING CONDITIONS UNLESS NOTED OTHERWISE.
  - 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. HARDWARE SUPPLIER TO PROVIDE KEY CABINET WITH CAPACITY TO STORE ONE SPARE KEY FOR EACH LOCKING DEVICE AND MASTER KEYS.
  - 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 FRT 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 BUMPERS ON ALL OPENINGS.
  - CONTRACTOR SHALL COORDINATE ANY SPECIALTY DOORS, FRAMES AND/OR HARDWARE REQUIREMENTS WITH OWNER IN FIELD PRIOR TO CONSTRUCTION.

B1 HEAD & JAMB DETAILS  
1" = 1'-0"



A1 FRAME TYPES  
3/8" = 1'-0"



F FLUSH DOOR  
FG FULL GLASS SCWD  
FG2 FULL GLASS MED. STYLE ALUM. DOOR  
HG HALF GLASS SCWD

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

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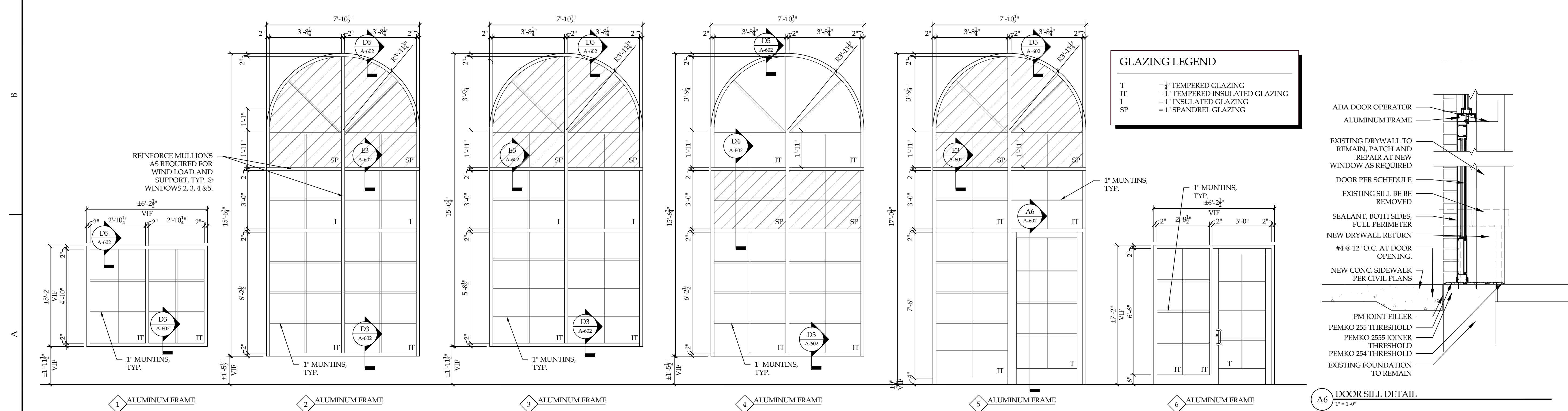
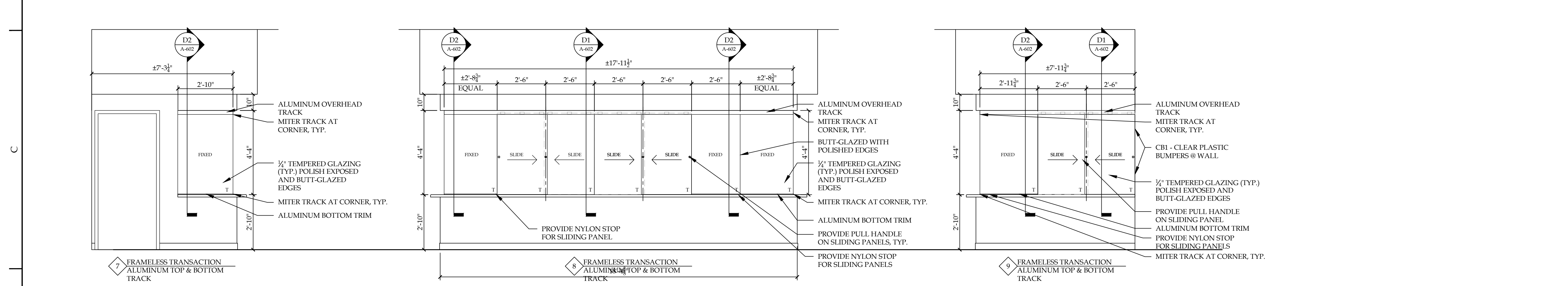
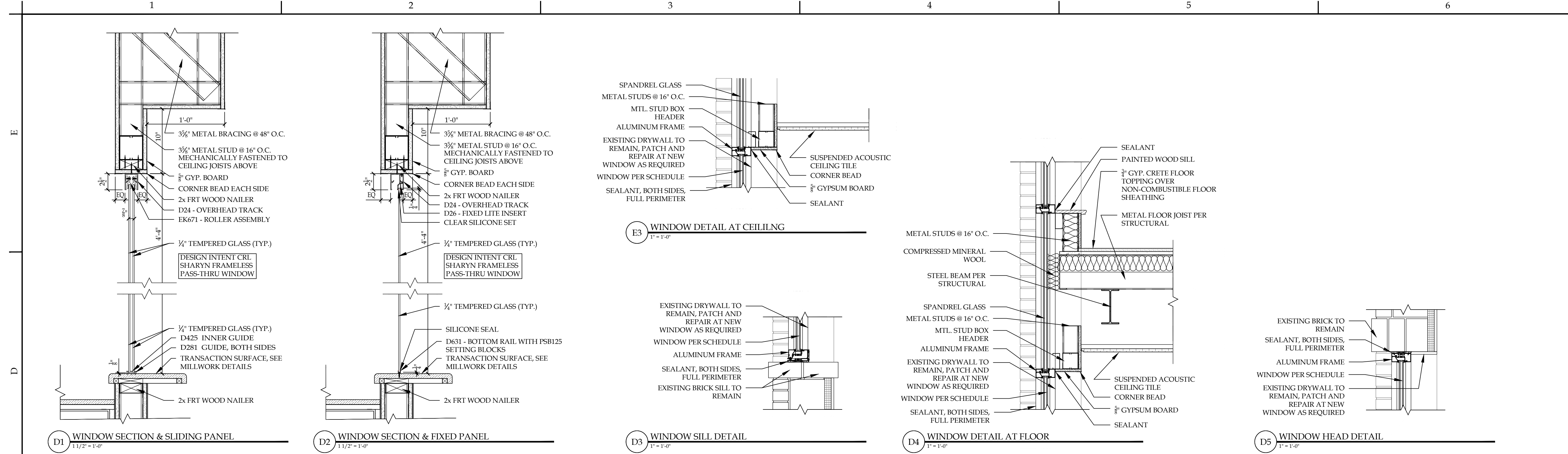
TITLE:  
**DOOR SCHEDULE AND DETAILS**

**SILVESTRI ARCHITECTS · PC**  
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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-601**





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LOCKPORT NY

ISSUE:  
BID/PERMIT SET 2022-07-15

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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: A-602



### ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS	CEILING		MILLWORK/SHROUD	COUNTER TOP/SHELVES	REMARKS
					MATERIAL	HEIGHTS			
<b>FIRST FLOOR</b>									
101	VESTIBULE	CPT-1	RB-1	GYP-P-1	GYP	11'-6"			
102	DENTAL EQUIPMENT	VCT-1	RB-1	GYP-P-1	ACT-1	9'-0"			
103	WAITING AREA	LVT-1	RB-1	GYP-P-1	GYP/ACT-1	VARIES			1
104	RECEPTION	CPT-2	RB-1	GYP-P-1	ACT-1	11'-6"		PL-2	
105	TOILET	T-1	--	WT-1/GYP-P-2	GYP	9'-0"	PL-3	PL-2	2
106	CORRIDOR	LVT-1	RB-1	GYP-P-1	ACT-1	8'-0"			
107	STERILIZATION	LVT-1	RB-1	GYP-P-1	ACT-1	8'-0"	PL-1	PL-2	
108	LAB	LVT-1	RB-1	GYP-P-1	ACT-1	8'-4"	PL-1	PL-2	
109	DENTAL	LVT-1	RB-1	GYP-P-1	ACT-1	8'-4"	PL-1	PL-2	
110	DENTAL	LVT-1	RB-1	GYP-P-1	ACT-1	8'-4"	PL-1	PL-2	
111	DENTAL	LVT-1	RB-1	GYP-P-1	ACT-1	8'-4"	PL-1	PL-2	
112	XRAY	LVT-1	RB-1	GYP-P-1	ACT-1	8'-4"			
113	MECHANICAL	VCT-1	RB-1	GYP-P-1	ACT-1	9'-0"			
114	VESTIBULE	CPT-1	RB-1	GYP-P-1	GYP	9'-0"			
115	STAIR	MISC-2/MISC-3	RB-1	GYP-P-1	GYP	--			
116	CORRIDOR	LVT-1	RB-1	GYP-P-1	ACT-1	11'-6"			
117	JANITOR	VCT-1	RB-1	FRP-1/GYP-P-1	ACT-1	9'-0"			3
118	EXAM	LVT-1	RB-1	GYP-P-1	ACT-1	11'-6"	PL-1	PL-2	
119	EXAM	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"	PL-1	PL-2	
120	MEDS	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"	PL-1	PL-2	
121	NURSE/DOCTORS STATION	LVT-1	RB-1	GYP-P-1	GYP/ACT-1	11'-4"/11'-6"	PL-1	PL-2	
122	EXAM	LVT-1	RB-1	GYP-P-1	ACT-1	11'-6"	PL-2	PL-2	
123	CLEAN ROOM	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"		PL-2	
124	EXAM	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"	PL-2	PL-2	
125	SOILED HOLD	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"			
126	TOILET	T-1	--	WT-1/GYP-P-2	GYP	9'-0"	PL-3	PL-2	2
127	LAB	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"	PL-1	PL-2	
128	EXAM	LVT-1	RB-1	GYP-P-1	ACT-1	9'-0"	PL-1	PL-2	
129	WATER ROOM	VCT-1	RB-1	GYP-P-1	ACT-1	9'-0"			
<b>SECOND FLOOR</b>									
201	STAIR	MISC-2/MISC-3	RB-1	GYP-P-1	GYP	8'-0"			
202	CORRIDOR	LVT-1	RB-1	GYP-P-1	ACT-1	8'-0"			
203	OFFICE	CPT-1	RB-1	GYP-P-1	ACT-1	8'-0"			
204	OFFICE	CPT-1	RB-1	GYP-P-1	ACT-1	8'-0"			
205	OFFICE	CPT-1	RB-1	GYP-P-1	ACT-1	8'-0"			
206	BREAK ROOM	LVT-1	RB-1	GYP-P-1	ACT-1	8'-0"	PL-1	PL-2	
207	TOILET	T-1	--	WT-1/GYP-P-2	GYP	8'-0"	PL-3	PL-2	2
208	MECHANICAL ROOM	VCT-1	RB-1	GYP-P-1	GYP	--			

### REMARKS

- REFER TO REFLECTED CEILING PLAN FOR EXACT DETAILS (MATERIALS, HEIGHTS, SIZES, ETC.) AND CEILING LAYOUT.
- WALL TILE IN RESTROOMS WILL ACT AS WALL BASE. REFER TO DETAIL A5/A-603 FOR EXACT HEIGHTS.
- FRP-1 TO BE INSTALLED UP TO 48" A.F.F. WITH P-1 ABOVE TO CEILING.

### DRYWALL FINISH LEVELS

- LEVEL 0:** NO TAPING, FINISHING, OR ACCESSORIES REQUIRED
- LEVEL 1:** ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE SET IN JOINT COMPOUND. SURFACE SHALL BE FREE OF EXCESS JOINT COMPOUND. TOOL MARKS AND RIDGES ARE ACCEPTABLE.
- LEVEL 2:** ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH A COAT OF JOINT COMPOUND. SURFACE SHALL BE FREE OF EXCESS JOINT COMPOUND. TOOL MARKS AND RIDGES ARE ACCEPTABLE. JOINT COMPOUND APPLIED OVER THE BODY OF THE TAPE AT THE TIME OF TAPE EMBEDMENT SHALL BE CONSIDERED A SEPARATE COAT OF JOINT COMPOUND AND SHALL SATISFY THE CONDITION OF THIS LEVEL.
- LEVEL 3:** ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. ONE ADDITIONAL COAT OF JOINT COMPOUND SHALL BE APPLIED OVER ALL JOINTS AND INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH TWO SEPARATE COATS OF JOINT COMPOUND. ALL JOINT COMPOUND SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINAL FINISHES. SEE PAINTING/WALLCOVERING SPECIFICATION IN THIS REGARD.
- LEVEL 4:** ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. TWO SEPARATE COATS OF JOINT COMPOUND SHALL BE APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT OF JOINT COMPOUND SHALL BE APPLIED OVER INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH THREE SEPARATE COATS OF JOINT COMPOUND. ALL JOINT COMPOUND SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINAL FINISHES. SEE PAINTING/WALLCOVERING SPECIFICATION IN THIS REGARD.
- LEVEL 5:** ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. TWO SEPARATE COATS OF JOINT COMPOUND SHALL BE APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT OF JOINT COMPOUND SHALL BE APPLIED OVER INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH THREE SEPARATE COATS OF JOINT COMPOUND. A THIN SKIM COAT OF JOINT COMPOUND TROWEL APPLIED, OR A MATERIAL MANUFACTURED ESPECIALLY FOR THIS PURPOSE AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, APPLIED TO THE ENTIRE SURFACE. THE SURFACE SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINISH PAINT. SEE PAINTING SPECIFICATION IN THIS REGARD.

### FINISH SELECTIONS

- CARPET (CPT-X):**  
**CPT-1** MANUFACTURER: INTERFACE  
 COLLECTION: STEP REPEAT  
 STYLE: TO BE DETERMINED  
 COLOR: TO BE DETERMINED  
 LOCATION: WALK OFF CARPET
- CPT-2** MANUFACTURER: INTERFACE  
 COLLECTION: NIGHT LIGHTS  
 STYLE: TO BE DETERMINED  
 COLOR: TO BE DETERMINED  
 INSTALLATION: ASHLAR
- LUXURY VINYL TILE (LVT-X):**  
**(LVT-1)** MANUFACTURER: INTERFACE  
 COLLECTION: STUDIO SET  
 COLOR: TO BE DETERMINED  
 INSTALLATION: ASHLAR
- TILE (T-X):**  
**(T-1)** MANUFACTURER: AMERICAN OLEAN  
 DISTRIBUTOR: BEST TILE  
 COLLECTION: NEOCONCRETE  
 COLOR: TO BE DETERMINED  
 FINISH: MATTE  
 SIZE: 12" X 24"  
 INSTALLATION: BRICK LAY 1/2 OFFSET  
 GROUT: TO BE DETERMINED  
 GROUT COLOR: TO BE DETERMINED  
 JOINT THICKNESS: 1/8"
- VINYL COMPOSITE TILE (VCT-X):**  
**(VCT-1)** MANUFACTURER: ARMSTRONG COMMERCIAL FLOORING  
 STYLE: PREMIUM EXCELON CROWN TEXTURE  
 COLOR: TO BE DETERMINED  
 SIZE: 12" X 12"
- RUBBER BASE (RB-X):**  
**(RB-1)** MANUFACTURER: ROPPE  
 STYLE: STANDARD COVE  
 COLOR: TO BE DETERMINED  
 HEIGHT: 4"
- FIBER REINFORCED PLASTIC (FRP-X):**  
**(FRP-1)** MANUFACTURER: CRANE COMPOSITES  
 STYLE: GLASBORD WITH SURFASAL FINISH  
 TEXTURE: PEBBLED EMBOSSED  
 COLOR: TO BE DETERMINED  
 RATING: CLASS A FIRE RATED
- PAINT (P-X):**  
**(P-1) TYPICAL** MANUFACTURER: SHERWIN WILLIAMS  
 TYPE: PROMAR 200  
 COLOR: TO BE DETERMINED  
 FINISH: EGG SHELL
- (P-2) BATHROOM** MANUFACTURER: SHERWIN WILLIAMS  
 TYPE: PROMAR 200  
 COLOR: TO BE DETERMINED  
 FINISH: EGG SHELL
- (P-3) DOOR FRAMES** MANUFACTURER: SHERWIN WILLIAMS  
 TYPE: PROMAR 200  
 COLOR: TO BE DETERMINED  
 FINISH: SEMI-GLOSS
- WALL TILE (WT-X):**  
**(WT-1)** MANUFACTURER: BEST TILE  
 DISTRIBUTOR: BEST TILE  
 COLLECTION: STAX  
 COLOR: TO BE DETERMINED  
 SIZE: 12" X 24"  
 INSTALLATION: BRICK LAY 1/2 OFFSET  
 GROUT: TO BE DETERMINED  
 GROUT COLOR: TO BE DETERMINED  
 JOINT THICKNESS: 1/8"
- PLASTIC LAMINATE (PL-X):**  
**(PL-1) CABINETS** MANUFACTURER: WILSONART  
 COLOR: TO BE DETERMINED  
 FINISH: SEE M-1 FOR COORDINATING MELAMINE COLOR. CABINET DOORS TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.
- (PL-2) COUNTERTOPS** MANUFACTURER: NEVAMAR  
 COLOR: TO BE DETERMINED
- (PL-3) BATHROOM SHROUD** MANUFACTURER: WILSONART  
 COLOR: TO BE DETERMINED
- MELAMINE (M-X):**  
**(M-1)** MANUFACTURER: UNIBOARD  
 COLOR: TO BE DETERMINED  
 LOCATION: TO BE USED WITH PL-1
- TRANSITION STRIP (TS-X):**  
**(TS-1) GENERAL FLOORING FOR SLOPED TRANSITIONS** MANUFACTURER: SCHLUTER SYSTEMS  
 STYLE & SIZE: RENO-TK SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS  
 FINISH: CLEAR SATIN ANODIZED ALUMINUM  
 LOCATION(S): ALL FLOORING MATERIAL CHANGES AS NECESSARY  
 NOTE(S): SEE GENERAL NOTES
- (TS-2) GENERAL BATHROOM WALLS & TILE BASE** MANUFACTURER: SCHLUTER SYSTEMS  
 STYLE & SIZE: JOLLY SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS  
 FINISH: CLEAR SATIN ANODIZED ALUMINUM  
 LOCATION(S): ALL WALL MATERIAL CHANGES AS NECESSARY  
 NOTE(S): SEE GENERAL NOTES

### FINISH SELECTIONS, CONT.

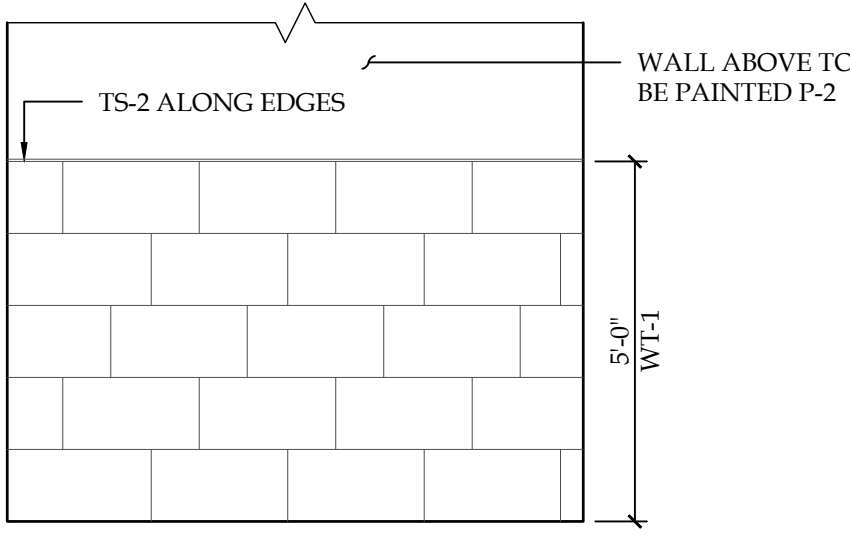
- ACOUSTICAL CEILING TILE (ACT-X):**  
**(ACT-1)** MANUFACTURER: ARMSTRONG CEILINGS  
 STYLE: DUNE SECOND LOOK  
 EDGE PROFILE: ANGLED REGULAR 1/2"  
 SIZE: 2' X 4'  
 THICKNESS: 1/2"  
 COLOR: WHITE  
 SUSPENSION SYS.: PRELUDE 1/2"
- WINDOW TREATMENTS (RS-X):**  
**(RS-1)** MANUFACTURER: HUNTER DOUGLAS  
 TYPE: ROLLER SHADE  
 STYLE: TO BE DETERMINED  
 COLOR: TO BE DETERMINED  
 OPENNESS: 10%  
 LOCATION: SEE FINISH FLOOR PLAN  
 NOTE: SHADES TO BE DIVIDED AT EACH MULLION.
- (RS-2)** MANUFACTURER: HUNTER DOUGLAS  
 TYPE: ROLLER SHADE  
 STYLE: TO BE DETERMINED  
 COLOR: TO BE DETERMINED  
 OPENNESS: 0%  
 LOCATION: SEE FINISH FLOOR PLAN  
 NOTE: SHADES TO BE DIVIDED AT EACH MULLION.
- WOOD DOOR (WD-X):**  
**(WD-1)** MANUFACTURER: MASONITE ARCHITECTURAL  
 SERIES: CEDURA  
 SPECIES: WHITE MAPLE (PLAIN SLICED)  
 STAIN: CLEAR
- MISCELLANEOUS (MISC-X):**  
**(MISC-1) PVC EDGE BANDING** MANUFACTURER: DOLLKEN  
 COLOR: TO BE DETERMINED  
 THICKNESS: 3 MM  
 LOCATION: EVERYWHERE PL-1 IS LOCATED
- (MISC-2) RUBBER STAIR TREAD/RISER** MANUFACTURER: ROPPE  
 STYLE: #95 HAMMERED DESIGN WITH RISER & ABRASIVE STRIP  
 ABRASIVE STRIP COLOR: BLACK  
 TREAD/RISER COLOR: TO BE DETERMINED  
 SIZE: LENGTH AND WIDTH OF TREAD RIDER TO BE V.I.F.  
 NOTE: CONTRACTOR TO USE MATCHING BASE WHERE (MISC-3) IS LOCATED
- (MISC-3) RUBBER TILE AT STAIR LANDINGS** MANUFACTURER: ROPPE  
 STYLE: TO MATCH TREAD/ RISER  
 SIZE: 24" X 24"  
 COLOR: TO BE DETERMINED

### ROOM FINISH LEGEND

- FLOORS**
- CPT = CARPET
  - LVT = LUXURY VINYL TILE
  - T = TILE
  - VCT = VINYL COMPOSITE TILE
- BASE**
- RB = RUBBER BASE
- WALLS**
- FRP = FIBERGLASS REINFORCED PLASTIC
  - GWB = GYPSUM WALL BOARD
  - P = PAINT
  - WT = WALL TILE
- CEILING**
- ACT = ACOUSTIC CEILING TILE
  - GYP = GYPSUM BOARD
- MATERIALS**
- P.B. = PARTICLE BOARD
  - GYP = GYPSUM BOARD
- DOORS**
- WD = WOOD DOOR
- MISCELLANEOUS**
- CAB = CABINET
  - EGG = EGGSHELL
  - EXP = EXPOSED
  - MEP = MECHANICAL, ELECTRICAL, PLUMBING
  - MISC = MISCELLANEOUS
  - PL = PLASTIC LAMINATE
  - RS = ROLLER SHADE
  - SG = SEMI GLOSS
  - TS = TRANSITION STRIP

### GENERAL NOTES

- NO CHANGES OR SUBSTITUTIONS SHALL BE MADE TO THE FOLLOWING FINISHES UNLESS DIRECTED BY THE OWNER OR THE ARCHITECT.
  - MANY FINISH MATERIALS REQUIRE A SUBSTANTIAL LEAD TIME. 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 AND ALL FINISH SELECTIONS/COLORS MUST BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. ACCOUNTING FOR PROPER LEAD TIME. ANY FINISH THAT IS INSTALLED WITHOUT ARCHITECT'S APPROVAL MAY BE REQUIRED TO BE REMOVED AND REPLACED BY THE GENERAL CONTRACTOR.
  - ANY DISCREPANCIES BETWEEN ARCHITECTURAL ELEVATION(S), PLAN(S), SCHEDULE(S) AND NOTES MUST BE BROUGHT TO ARCHITECT'S ATTENTION. ARCHITECTS MUST BE CONTACTED AND GIVE APPROVAL TO MOVE FORWARD WITH SPECIFIC DIRECTION PRIOR TO ANTICIPATED ACTION.
  - IF COLOR OR FINISH IS NOT SPECIFIED CONTACT THE ARCHITECT FOR CLARIFICATION.
  - ALL PAINTING, INCLUDING MEP ITEMS THAT REQUIRE PAINTING, IS UNDER THE PAINTER'S SCOPE OF WORK.
  - ALL INTERIOR PRODUCTS TO MEET/EXCEED FLAME SPREAD RATING PER CODE.
  - ALL BRACKETS SUPPORTING SHELVING/ ADJUSTABLE SHELVING & COUNTERTOPS TO BE EXTRA HEAVY DUTY. SEE DRAWINGS FOR DETAILS.
- WINDOWS:**
- WINDOW SILLS SHALL RECEIVE DRYWALL RETURNS - REFER TO WINDOW DETAILS.
  - ALL GLAZING FACING EXTERIOR TO RECEIVE ROLLER SHADES. COLOR TO BE SELECTED BY ARCHITECT UNLESS OTHERWISE SPECIFIED.
- CEILINGS:**
- ALL GYPSUM BOARD CEILINGS AND GYPSUM BOARD SOFFITS SHALL BE FINISHED TO LEVEL 4 DRYWALL FINISH AND ARE TO BE PAINTED IN A FLAT FINISH. COLOR TO BE SHERWIN WILLIAMS - CEILING WHITE, UNLESS OTHERWISE NOTED.
  - ALL EXPOSED MECHANICAL DUCT COVERS SHALL BE PAINTED TO MATCH THE SURROUNDING WALL/CEILING COLOR. PRIME AS NECESSARY.
  - ALL EXPOSED PLUMBING FIXTURES/ MECHANICAL DUCT/SUPPLY/RETURN SYSTEMS TO BE PAINTED AND/OR PURCHASED IN A COLOR TO MATCH THE SURROUNDING WALL/CEILING COLOR.
  - ANY CEILING HVAC SUPPLY/DIFFUSERS TO BE PAINTED TO MATCH SURROUNDING CEILING FINISH. ANY QUESTION OR CONCERN TO BE BROUGHT TO ARCHITECTS ATTENTION FOR FINAL DECISION PRIOR TO ORDER/INSTALL BY CONTRACTOR OR OTHER.
- WALLS:**
- ALL GWB WALLS SHALL BE FINISHED TO LEVEL 4 DRYWALL FINISH AND INCLUDE (1) COAT WALL PRIMER FOLLOWED BY (2) COATS WALL PAINT ON ALL INTERIOR WALL SURFACE UNLESS OTHERWISE NOTED IN SPECIFICATIONS. ALL GWB ABOVE CEILING TO BE FINISHED TO LEVEL 0. SEE SPEC FOR DETAILS.
  - ALL SURFACE MOUNTED CONDUITS SHALL BE PAINTED TO MATCH WALL PAINT.
  - PROVIDE SCHLUTER STRIP AS SCHEDULED AT EXPOSED UNFINISHED TILE EDGES. NECESSARY SIZES TO BE DETERMINED BY CONTRACTOR AND V.I.F. BASED ON MATERIAL THICKNESS.
  - 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.
  - ALL ELECTRICAL PANEL COVERS AND/OR MECHANICAL EQUIPMENT AND/OR DUCTING TO BE PAINTED TO MATCH ADJOINING WALL.
  - FRP-1 TO BE INSTALLED UP TO 48" A.F.F. IN JANITORS CLOSET(S) WITH SPECIFIED PAINT ABOVE.
- FLOORS:**
- CONDUCT MOISTURE TESTS ON ALL CONCRETE SLABS WHERE FINISH MATERIALS ARE SCHEDULED. RECORD PASSING MOISTURE LEVELS PRIOR TO START OF INSTALLATION. REFERENCE MANUFACTURER'S INSTALLATION SPECIFICATIONS FOR EACH FLOOR FINISH TYPE TO VERIFY REQUIREMENTS.
  - PROVIDE CORIAN OR EQUAL SOLID SURFACE THRESHOLD AT ALL TOILET ROOM TRANSITIONS UNLESS OTHERWISE SPECIFIED. ARCHITECT TO CHOOSE FROM MANUFACTURER FULL RANGE OF COLORS.
  - INSTALL DIRECTIONAL FLOORING ORIENTED AS SPECIFIED ON THE FINISH PLAN.
  - ALL FLOOR FINISHES TO EXTEND BELOW ALL MILLWORK.
  - CONTRACTOR TO PROVIDE TRANSITION STRIP AS SCHEDULED AT ALL FLOORING MATERIAL CHANGES NEEDING THRESHOLDS. NECESSARY SIZES TO BE DETERMINED BY CONTRACTOR AND V.I.F. BASED ON MATERIAL THICKNESS.
- MILLWORK:**
- PROVIDE CLEAR BEAD OF SILICONE OR CLEAR CAULK TO SEAL BETWEEN MILLWORK PIECES (IE-COUNTERTOP AND BACKSPLASH) AND MILLWORK AND WALL (TYPICAL).
  - MILLWORK FINISHES ON SHOP DRAWINGS MUST BE APPROVED BY ARCHITECT PRIOR TO PRODUCTION.
  - USE RICHELIEU CONTEMPORARY METAL PULL-321 IN STAINLESS STEEL FINISH FOR ALL MILLWORK. REFER TO A-500'S FOR EXACT SIZES.
  - CABINET DOORS ARE TO BE FINISHED WITH PLASTIC LAMINATE ON BOTH SIDES.
  - ALL BUILT CABINETS TO RECEIVE PVC EDGE BANDING. SEE FINISH SCHEDULE FOR EXACT DETAILS.
- BASE:**
- PROVIDE A COVED STYLE RUBBER BASE WHERE RESILIENT FLOORING AND CARPET IS SPECIFIED UNLESS OTHERWISE NOTED IN THE WRITTEN FINISH SCHEDULE.
- OUTLETS:**
- ALL PLATE COLORS AND RECEPTACLES TO BE WHITE.
- SIGNAGE**
- SIGNAGE LOCATIONS WILL NEED TO BE PROVIDED AND INSTALLED BY CONTRACTOR. TO BE SELECTED AND APPROVED BY THE ARCHITECT AND CLIENT PRIOR TO PURCHASE.



A5 WALL TILE PATTERN @ BATHROOMS TYPICAL

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### FINISH SCHEDULE



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**FIRST FLOOR  
 FINISH PLAN**



SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-604**



A2 FIRST FLOOR FINISH PLAN  
 1/4"=1'-0"

1

2

3

4

5

6

E

D

C

B

A



A2 SECOND FLOOR FINISH PLAN  
1/4"=1'-0"

**NOTICE**

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ISSUE: BID/PERMIT SET 2022-07-15

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SEAL:

TITLE:  
**SECOND FLOOR  
FINISH PLAN**



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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **A-605**



## 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.
- COORDINATE INSTALLATION AND LOCATIONS OF DUCTWORK WITH BUILDING STRUCTURE, PLUMBING PIPING, ELECTRICAL CONDUIT, LIGHTING, ETC. PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND MATERIALS.
- 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.
- 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.
  - ROOFTOP UNITS: PROVIDE 2" THICK, MERV-13 (MINIMUM) FILTERS.
- ALL EQUIPMENT SHALL HAVE A ONE (1) YEAR WARRANTY; COMPRESSORS SHALL HAVE AN ADDITIONAL FIVE (5) YEAR EXTENDED WARRANTY; PROVIDE WRITTEN GUARANTEE.
- 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.
  - REQUESTS FOR SUBSTITUTION SHALL BE MADE ONLY BY THE BIDDER; REQUESTS FOR SUBSTITUTION FROM SALES REPRESENTATIVES, VENDORS, OR SUPPLIERS ARE NOT ACCEPTABLE.

### PIPING

- CONDENSATE DRAIN 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.

### DUCTWORK

- RUN ALL DUCTWORK AND PIPING AS TIGHT TO BOTTOM OF JOISTS / BEAMS AS POSSIBLE, WITHIN JOIST / BEAM SPACE, AND THRU OPEN JOIST WEBBING.
- 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 AND INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS AND PARTITIONS.
- LOCATE ALL DUCT BALANCING DAMPERS AND CONTROL 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 CONCEALED 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).
- PROVIDE INTERNALLY LINED SUPPLY AIR DUCTWORK FROM ROOFTOP UNITS TO A MINIMUM OF 20- FEET AWAY FROM THE UNIT. REMAINING SUPPLY AIR DUCTWORK AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND ALL-SERVICE JACKET, MINIMUM R-VALUE OF R-6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS.
  - IF APPROVED BY THE OWNER, INSULATION CAN BE REMOVED FROM THE DUCTWORK IF LOCATED WITHIN THE BUILDING THERMAL ENVELOPE (I.E. ENCLOSED CEILINGS) AND NOT WITHIN A PLENUM CEILING SPACE, TO ALLOW FOR MAXIMUM CEILING HEIGHT AND TO FIT WITHIN THE CEILING / JOIST / TRUSS SPACE PROVIDED THAT ALL JOINTS AND SEAMS ARE SEALED AIRTIGHT BY MEANS OF TAPES, MASTICS, AND / OR GASKETING.
- ALL RETURN AIR DUCTWORK SHALL BE INTERNALLY LINED.
  - IF APPROVED BY THE OWNER, INSULATION CAN BE REMOVED FROM THE DUCTWORK IF LOCATED WITHIN THE BUILDING THERMAL ENVELOPE (I.E. ENCLOSED CEILINGS) AND NOT WITHIN A PLENUM CEILING SPACE, TO ALLOW FOR MAXIMUM CEILING HEIGHT AND TO FIT WITHIN THE CEILING / JOIST / TRUSS SPACE PROVIDED THAT ALL JOINTS AND SEAMS ARE SEALED AIRTIGHT BY MEANS OF TAPES, MASTICS, AND / OR GASKETING.
- ALL CONCEALED EXHAUST AIR DUCTWORK LOCATED WITHIN A CEILING PLENUM SPACE SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND ALL-SERVICE JACKET, MINIMUM R-VALUE OF R-6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS.
- ALL DUCT LINERS SHALL BE MINIMUM 2" THICK, 1.00 LB DENSITY, CLOSED-CELL ELASTOMERIC, 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.
  - PAINT INTERIORS OF METAL DUCTS THAT DO NOT HAVE DUCT LINER, FOR 24-INCHES UPSTREAM OF REGISTERS AND GRILLES SO INSIDE OF DUCTWORK IS NOT NOTICEABLE FROM THE INSIDE OF REGISTERS AND GRILLES.
    - APPLY ONE COAT OF FLAT BLACK, LATEX FINISH COAT OVER A COMPATIBLE GALVANIZED-STEEL PRIMER.
- 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 IN EXPOSED AREAS, RETURN / EXHAUST AIR DUCTWORK, AND RETURN / EXHAUST AIR GRILLE CONNECTIONS).

### 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.

### 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 E1554 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

BHP BTU	BRAKE HORSEPOWER BRITISH THERMAL UNITS
CFM CO <sub>2</sub> COP	CUBIC FEET PER MINUTE CARBON DIOXIDE COEFFICIENT OF PERFORMANCE
DB	DRY BULB
EAT ECM EER E/F EWH	ENTERING AIR TEMPERATURE ELECTRONICALLY COMMUTATED MOTOR ENERGY EFFICIENCY RATIO EXHAUST FAN ELECTRIC WALL HEATER
F	FAHRENHEIT
HP HSPF HVAC	HORSEPOWER HEATING SEASONAL PERFORMANCE FACTOR HEATING, VENTILATING, AIR CONDITIONING
IH IN INT	INTAKE HOOD INCHES INTERNAL
KW	KILOWATT
LAT LBS LDB	LEAVING AIR TEMPERATURE POUNDS LEAVING DRY BULB
MBH MCA WOCF	1,000 BRITISH THERMAL UNITS MINIMUM CIRCUIT AMPACITY MAXIMUM OVERCURRENT PROTECTION
OED	OPEN END DUCT
RL RPM RS RTU	REFRIGERANT LIQUID REVOLUTIONS PER MINUTE REFRIGERANT SUCTION ROOFTOP UNIT
SEER SP	SEASONAL ENERGY EFFICIENCY RATIO STATIC PRESSURE
W/ WB	WITH WET BULB

## HVAC DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	SUPPLY DUCT RISER
	RETURN DUCT RISER
	EXHAUST DUCT RISER
	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
	COMBINATION SPACE TEMPERATURE SENSOR AND HUMIDISTAT WITH OVERRIDE
	CONTROL WIRING (PLENUM RATED)

## HVAC DRAWING LIST

M-1	HVAC SCHEDULES, LEGENDS AND ABBREVIATIONS
M-2	HVAC SCHEDULES
M-3	HVAC OUTSIDE AIR CALCULATIONS
M-4	HVAC SPECIFICATIONS
M-5	HVAC SPECIFICATIONS
M-6	HVAC SEQUENCE OF OPERATIONS
M-7	FIRST FLOOR PLAN - HVAC DUCTWORK
M-8	SECOND FLOOR PLAN - HVAC DUCTWORK
M-9	ROOF PLAN - HVAC DUCTWORK
M-10	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	LOUVERED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 18"x18" BACKPAN (NECK SIZE AS SHOWN FOR FULL PANEL LAY-IN APPLICATION) WITH FULL FACE DIFFUSER, 4-WAY ADJUSTABLE THROW, WHITE FINISH	TITUS	TDCA	14	4'-0"
	SUPPLY 24x24	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 18"x18" BACKPAN (NECK SIZE AS SHOWN FOR FULL PANEL APPLICATION) WITH FULL FACE DIFFUSER, 4-WAY ADJUSTABLE THROW, WHITE FINISH	TITUS	TDCA	---	5'-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	17	---
	RETURN 24x24	SURFACE	PERFORATED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 22"x22" BACKPAN FOR FULL PANEL APPLICATION, WHITE FINISH	TITUS	PAR	18	---
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	11	---
	EXHAUST 24x24	SURFACE	PERFORATED FACE, STEEL CONSTRUCTION, OPPOSED BLADE VOLUME DAMPERS, PROVIDE 22"x22" BACKPAN FOR FULL PANEL APPLICATION, WHITE FINISH	TITUS	PAR	---	---

### 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
- 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.

## ELECTRIC WALL HEATER SCHEDULE

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	SERIES	TYPE	MBH	WATTS	AMPS	VOLTS / PH
EW-1	VESTIBULE 101	MARKEL	HF3323TD-RP	3320 SERIES (COMMERCIAL FAN FORCED)	SEMI-RECESSED MOUNTING	3.8	1,125	5.4	208/1/60
EW-2	VESTIBULE 114	MARKEL	HF3323TD-RP	3320 SERIES (COMMERCIAL FAN FORCED)	SEMI-RECESSED MOUNTING	3.8	1,125	5.4	208/1/60

### ELECTRIC WALL HEATER NOTES:

- ELECTRIC WALL HEATERS SHALL BE EQUIPPED WITH BUILT-IN THERMAL OVERLOAD PROTECTION.
- ELECTRIC WALL HEATERS SHALL CONTAIN AN INTEGRAL, TAMPERPROOF THERMOSTAT.
- FURNISHED AND INSTALLED BY DIVISION 23.
  - WIRING BY DIVISION 26.
- FURNISH 2" SEMI-RECESSED MOUNTING FRAME #3320EX16 FOR EACH SEMI-RECESSED MOUNTED ELECTRIC WALL HEATER.
- COLOR, INCLUDING CUSTOM COLOR, AS SELECTED BY ARCHITECT.
- COORDINATE EXACT UNIT LOCATIONS WITH THE ARCHITECT AND OWNER IN THE FIELD PRIOR TO FRAMING THE WALLS AND INSTALLING THE UNITS.
- ACCEPTABLE MANUFACTURERS - MARKEL, Q'MARK, INDEECO.

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SA JOB #: 21055.01  
DATE: 07-15-22

DRAWING #: M-1

**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	JANITOR 117, MEDS 120, SOILED 125, TOILET 126, LAB 127	575	0.375	GREENHECK	G-100-VG	CENTRIFUGAL	DIRECT	1060	4.3	1/4	120/1/60	GPI-19/12-A12	100
E/F-2	DENTAL EQUIPMENT 102, TOILET 105, MECHANICAL 113	225	0.25	GREENHECK	G-070-VG	CENTRIFUGAL	DIRECT	1432	3.6	1/15	120/1/60	GPI-17/8-A12	100
E/F-3	STERILIZATION 107, LAB 108	525	0.25	GREENHECK	G-100-VG	CENTRIFUGAL	DIRECT	901	3.5	1/4	120/1/60	GPI-19/12-A12	100
E/F-4	TOILET 207	100	0.25	GREENHECK	G-060-VG	CENTRIFUGAL	DIRECT	1487	3.3	1/15	120/1/60	GPI-17/8-A12	100

**ROOF EXHAUST FAN NOTES:**

1. HOUSING - DOWNBLAST, ANODIZED ALUMINUM HOOD WITH ALUMINUM BIRDSCREEN.
  2. FAN - BACKWARD INCLINED ANODIZED ALUMINUM.
  3. BUILT-IN POWER DISCONNECT.
  4. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
  5. UNITS SHALL HAVE ADJUSTABLE MOTOR PULLEYS (BELT DRIVE UNITS ONLY).
  6. ROOF CURBS:
    - A. EACH EXHAUST FAN SHALL BE EQUIPPED WITH AN INSULATED, ANODIZED ALUMINUM ROOF CURB (0.080" MINIMUM THICKNESS), ALL WELDED JOINT CONSTRUCTION.
      - 1). ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED.
      - 2). TOP OF ROOF CURB SHALL BE LEVEL.
    - B. ALL CURBS SHALL BE MINIMUM 1'-0" HIGH.
  7. ACCESSORIES:
    - A. MOTORIZED, OPPOSED BLADE, LOW LEAKAGE ALUMINUM CONTROL DAMPERS (120V ACTUATOR).
    - B. VARI-GREEN EC MOTOR WITH UNIT MOUNTED POTENTIOMETER DIAL.
  8. INTERLOCK EXHAUST FAN'S WITH ASSOCIATED ROOFTOP UNIT OPERATION.
  9. MAXIMUM SONES TO BE 4.3 OR LESS, UNLESS OTHERWISE INDICATED.
  10. ACCEPTABLE MANUFACTURER'S - GREENHECK, COOK, TWIN CITY FAN.
- NOTES:**
1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.

**ROOFTOP UNIT SCHEDULE**

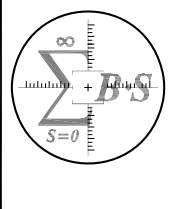
MARK	AREA SERVED	TONS	SUPPLY AIR CFM	RETURN AIR CFM	OUTSIDE AIR CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING COIL				ELECTRIC HEATING SECTION								SUPPLY AIR FAN			SEER / EER	MCA	MOCP (HACR BREAKER)	OPERATING WEIGHT (LBS.)		
									MBH	EAT °F (OUTSIDE DB)	EAT °F (OUTSIDE WB)	MINIMUM ROWS	NOMINAL		APPLICATION		HEAT SIZE	STAGES	EAT °F	LAT °F	VOLTS / PH	RPM	MOTOR						
													KW	MBH	KW	MBH							BHP					HP	VOLTS / PH
RTU-1	CORRIDOR 116, JANITOR 117, EXAM 118, EXAM 119, MEDS 230, NURSE / DOCTOR STATION 121, EXAM 122, CLEAN 123, EXAM 124, SOILED 125, TOILET 126, LAB 127, EXAM 128	6.0	2,500	2,400	100	0.80	CARRIER	50HCB-07	72.0	95	70	3	26.5	90.4	19.9	67.9	MEDIUM	---	69	95	208/3/60	708	1.19	2	208/3/60	--- / 12.2	91.0	100	1,550
RTU-2	CORRIDOR 106, STERILIZATION 107, LAB 108, DENTAL 109, DENTAL 110, DENTAL 111, XRAY 112	3.0	1,250	1,125	125	0.60	CARRIER	50GCB-04	35.2	95	70	2	15.5	52.9	12.0	40.9	HIGH	1	65	95	208/3/60	1694	0.34	1	208/3/60	16.1 / 12.5	63.0	70	1,200
RTU-3	VESTIBULE 101, DENTAL EQUIPMENT 102, WAITING AREA 103, RECEPTION 104, TOILET 105, MECHANICAL 113, VESTIBULE 114	5.0	1,900	1,675	225	0.80	CARRIER	50GCB-06	60.0	95	70	4	17.4	59.4	18.4	62.8	MEDIUM	2	63	95	208/3/60	1870	0.66	1	208/3/60	16.1 / 12.5	93.0	100.0	1,200
RTU-4	CORRIDOR 202, OFFICE 203, OFFICE 204, OFFICE 205, BREAK ROOM 206, TOILET 207	3.0	1,000	875	125	0.60	CARRIER	50GCB-04	35.2	95	70	2	15.5	52.9	12.0	40.9	HIGH	1	63	95	208/3/60	1602	0.29	1	208/3/60	16.1 / 12.5	63.0	70.0	1,200

**ROOFTOP UNIT NOTES:**

1. UNITS SHALL BE LISTED AND LABELED WITH THE ENERGY STAR LOGO (RTU-1).
  2. FACTORY ASSEMBLED, PACKAGED UNIT WITH ROOF CURB AND ALL STANDARD ACCESSORIES.
  3. UNIT SHALL BE SINGLE-WALL CONSTRUCTION AND MINIMUM 1/2" THICK (1-1/2 LB.) DENSITY INSULATION.
  4. UNIT SHALL BE U.L. OR AGA APPROVED.
  5. UNIT SHALL BE OF DOWNFLOW DESIGN AND SHALL HAVE 100% ECONOMIZER FUNCTION.
    - A. UNIT SHALL HAVE 100% ECONOMIZER FUNCTION WITH DIFFERENTIAL ENTHALPY CONTROL AND MINIMUM OUTSIDE AIR SETTING, AND BAROMETRIC RELIEF.
  6. COMPRESSORS SHALL BE HIGH EFFICIENCY DESIGN.
  7. UNIT SHALL HAVE:
    - A. R410A REFRIGERANT.
    - B. ALL SECTIONS SHALL HAVE HINGED ACCESS DOORS.
    - C. MOTORS SHALL HAVE BUILT-IN OVERLOAD PROTECTION.
    - D. DIRECT DRIVE, VANE AXIAL ECM SUPPLY FAN (FIELD ADJUSTABLE FAN SPEED CONTROL, RTU-2 THRU RTU-4).
    - E. UNITS SHALL HAVE ADJUSTABLE PITCH MOTOR SHEAVES AND MOTOR PULLEYS (RTU-1).
    - F. 2-STAGE COOLING.
    - G. FACTORY INSTALLED ELECTRIC HEATER WITH SINGLE-POINT ELECTRICAL CONNECTION.
    - H. FACTORY INSTALLED TRANSFORMER AND FAN CONTACTOR FOR 24-VOLT CONTROLS.
    - I. 30% PLEATED FILTERS (MERV-8, MINIMUM).
    - J. FACTORY INSTALLED REMOTE SHUTDOWN TERMINALS.
    - K. DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
  8. ACCESSORIES:
    - A. 2'-0" HIGH, SOLID BOTTOM THERMAL / ACOUSTICAL ROOF CURB.
    - B. OUTSIDE AIR INTAKE HOOD AND RELIEF / EXHAUST HOOD.
    - C. MOTORIZED, LOW-LEAKAGE, OPPOSED BLADE OUTSIDE AIR DAMPERS.
    - D. POWER EXHAUST.
    - G. CARBON DIOXIDE (CO<sub>2</sub>) SENSOR FOR OUTSIDE AIR CONTROL OVERRIDE (MOUNT IN RETURN AIR DUCTWORK).
    - H. DISCHARGE AIR SENSOR MOUNTED IN SUPPLY AIR DUCTWORK.
    - I. HUMIDI-MIZER DEHUMIDIFICATION CONTROL.
    - J. 2", 30% PLEATED MERV-8 FILTERS AND 4" PLEATED MERV 13 FILTERS.
    - K. FACTORY INSTALLED FILTER MAINTENANCE SENSOR / INDICATOR.
    - L. STAINLESS STEEL, DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
    - M. FACTORY INSTALLED AND WIRED NON-FUSED DISCONNECT SWITCH.
    - N. FACTORY INSTALLED AND WIRED 120 VOLT GFI DUPLEX RECEPTACLE.
    - O. CONTROLS: SYSTEM CONTROLLER WITH VISUAL SCROLLING MARQUEE DISPLAY (COLOR DISPLAY CONTROLLER).
      - 1). I-VU SYSTEM TOUCH (COLOR DISPLAY CONTROLLER WITH TOUCH SCREEN), MULTIPLE UNIT CONTROLLER (LOCATE IN MECHANICAL 113, COORDINATE EXACT LOCATION IN THE FIELD WITH THE OWNER PRIOR TO INSTALLATION).
      - 2). COMBINATION SPACE TEMPERATURE SENSORS WITH OVERRIDE AND HUMIDITY SENSOR.
      - 3). PRIMARY AIR SENSORS.
      - 4). ACTUATOR WITH 4-20mA OUTPUT.
      - 5). INTERLOCKS FOR OTHER EQUIPMENT.
    - P. FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE.
  9. INSTALLATION:
    - A. 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).
      - 1). ROOF CURBS SHALL BE CONSTRUCTED OF 0.080-INCH ALUMINUM OR 16-GAUGE (MINIMUM) HOT DIPPED GALVANIZED STEEL.
      - 2). ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.
    - B. ALL SERVICES TO THE UNIT SHALL ENTER WITHIN THE ROOF CURB. NO SEPARATE ROOF PENETRATIONS ARE ALLOWED.
  10. ACCEPTABLE MANUFACTURER'S - CARRIER, AAO, VALENT.
- NOTES:**
1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
  2. CARRIER'S FAN MOTOR BRAKE HORSEPOWER (BHP) LISTED IS THE "MAXIMUM CONTINUOUS BHP RATING" (FAN POWER). MINIMUM ALLOWABLE FAN MOTOR HORSEPOWER IS 1 HP.
    - A. FAN HORSEPOWER'S (HP) INDICATED ARE FOR LISTED MANUFACTURER'S COMPARISON MOTOR HORSEPOWER RATING.

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ISSUE: 2022-07-15  
 BID/PERMIT SET

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SEAL:

TITLE:  
**HVAC SCHEDULES**



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SA JOB #: 21055.01  
 DATE: 07-15-22

DRAWING #: **M-2**



### HVAC OUTSIDE AIR CALCULATIONS

RTU-1					
OCCUPANCY OR USE	ROOM NAME	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	MINIMUM OUTSIDE AIR REQUIRED
PATIENT ROOMS	EXAM 118	90	5 / 1000 5 x (90 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 90) 10 CFM
PATIENT ROOMS	EXAM 119	90	5 / 1000 5 x (90 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 90) 10 CFM
UTILITIES	MEDS 120	52	---	0.12 CFM / SQFT	0.15 x 52 6 CFM
OFFICE SPACES	NURSE / DOCTOR STATION 121	101	5 / 1000 5 x (101 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 101) 11 CFM
PATIENT ROOMS	EXAM 122	90	5 / 1000 5 x (90 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 90) 10 CFM
PATIENT ROOMS	EXAM 124	90	5 / 1000 5 x (90 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 90) 10 CFM
LABORATORIES	LAB 127	71	7 / 1000 7 x (71 / 1000) 1 PEOPLE	---	20 CFM / PERSON (1 x 20) 20 CFM
PATIENT ROOMS	EXAM 128	90	5 / 1000 5 x (90 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 90) 10 CFM
CORRIDORS	CORRIDORS	246	---	0.06 CFM / SQFT	0.06 x 246 15 CFM

TOTAL MINIMUM OUTSIDE AIR REQUIRED 102 CFM

RTU-1  
2500 SUPPLY CFM x 4% OUTSIDE AIR  
100 CFM  
RTU-1 TOTAL OUTSIDE AIR PROVIDED = 100 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

### HVAC OUTSIDE AIR CALCULATIONS

RTU-2					
OCCUPANCY OR USE	ROOM NAME	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	MINIMUM OUTSIDE AIR REQUIRED
CORRIDORS	CORRIDOR 106	115	---	0.06 CFM / SQFT	0.06 x 115 7 CFM
LABORATORIES	STERILIZATION 107	57	7 / 1000 7 x (57 / 1000) 1 PEOPLE	---	20 CFM / PERSON (1 x 20) 20 CFM
LABORATORIES	LAB 108	87	7 / 1000 7 x (87 / 1000) 1 PEOPLE	---	20 CFM / PERSON (1 x 20) 20 CFM
PATIENT ROOMS	DENTAL 109	134	5 / 1000 5 x (134 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 134) 13 CFM
PATIENT ROOMS	DENTAL 110	120	5 / 1000 5 x (120 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 120) 12 CFM
PATIENT ROOMS	DENTAL 111	118	5 / 1000 5 x (118 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 118) 12 CFM
MEDICAL PROCEDURE ROOMS	X-RAY 112	38	20 / 1000 20 x (38 / 1000) 1 PEOPLE	---	15 CFM / PERSON (1 x 15) 20 CFM

TOTAL MINIMUM OUTSIDE AIR REQUIRED 104 CFM

RTU-2  
1250 SUPPLY CFM x 10% OUTSIDE AIR  
125 CFM  
RTU-2 TOTAL OUTSIDE AIR PROVIDED = 125 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

### HVAC OUTSIDE AIR CALCULATIONS

RTU-3					
OCCUPANCY OR USE	ROOM NAME	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	MINIMUM OUTSIDE AIR REQUIRED
LOBBIES	VESTIBULE 101	61	10 / 1000 10 x (61 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 61) 9 CFM
LOBBIES	WAITING 102	378	20 / 1000 20 x (378 / 1000) 8 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (8 x 5) + (0.06 x 378) 63 CFM
LOBBIES	WAITING 103	323	20 / 1000 20 x (323 / 1000) 6 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (6 x 5) + (0.06 x 323) 49 CFM
RECEPTION AREAS	RECEPTION 104	145	20 / 1000 20 x (145 / 1000) 3 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (3 x 5) + (0.06 x 145) 24 CFM
UTILITIES	MECH 113	57	---	0.06 CFM / SQFT	0.06 x 57 3 CFM
LOBBIES	VESTIBULE 114	52	10 / 1000 10 x (52 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 52) 8 CFM

TOTAL MINIMUM OUTSIDE AIR REQUIRED 156 CFM

RTU-3  
1900 SUPPLY CFM x 11% OUTSIDE AIR  
209 CFM  
RTU-3 TOTAL OUTSIDE AIR PROVIDED = 225 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

### HVAC OUTSIDE AIR CALCULATIONS

RTU-4					
OCCUPANCY OR USE	ROOM NAME	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	MINIMUM OUTSIDE AIR REQUIRED
CORRIDORS	CORRIDOR 202	92	---	0.06 CFM / SQFT	0.06 x 92 6 CFM
OFFICE SPACES	OFFICE 203	120	5 / 1000 5 x (120 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 120) 12 CFM
OFFICE SPACES	OFFICE 204	101	5 / 1000 5 x (101 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 101) 11 CFM
OFFICE SPACES	OFFICE 205	101	5 / 1000 5 x (101 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 101) 11 CFM
OFFICE SPACES	BREAK ROOM 206	247	5 / 1000 5 x (247 / 1000) 1 PEOPLE	0.06 CFM / SQFT	5 CFM / PERSON (1 x 5) + (0.06 x 247) 20 CFM

TOTAL MINIMUM OUTSIDE AIR REQUIRED 60 CFM

RTU-4  
1000 SUPPLY CFM x 12% OUTSIDE AIR  
120 CFM  
RTU-4 TOTAL OUTSIDE AIR PROVIDED = 125 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

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**CALCULATIONS**



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SA JOB #: 21055.01  
DATE: 07-15-22

DRAWING #: M-3

## HVAC SPECIFICATIONS

### 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.
    - REFER TO DIVISION 1 REQUIREMENTS FOR SUBSTITUTION PROCEDURES.
  - MATERIALS AND EQUIPMENT FROM OTHER MANUFACTURERS MAY BE ACCEPTED IF PROVEN EQUAL TO THOSE SPECIFIED.
    - 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 SUBSTITUTION EQUIPMENT.
    - 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.
- B. DIVISION 23 IS LIABLE FOR AND SHALL PAY FOR, ALL ARCHITECTURAL AND ENGINEERING REVIEWS AND REDESIGN COSTS FOR SUBSTITUTE MATERIALS AND EQUIPMENT.
- C. 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.
- 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.
- B. 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**
- A. WORK SHALL COMPLY WITH THE LATEST REVISIONS OF NEW YORK STATE BUILDING CODE, NEW YORK STATE MECHANICAL CODE, NEW YORK STATE FIRE CODE, NEW YORK STATE ENERGY CONSERVATION CODE, AND ANY STATE AND LOCAL CODES OR REGULATIONS THAT APPLY.
- B. COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES AS APPLICABLE.
- C. COMPLY TO REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS THAT ARE IN EXCESS OF GOVERNING CODES.
- D. DO NOT INSTALL WORK AS SPECIFIED OR SHOWN IF IN CONFLICT WITH GOVERNING CODES.
  - NOTIFY ENGINEER IN WRITING AND REQUEST DIRECTION.
- E. PAY ALL INSPECTION AND PERMIT FEES.
- F. PROVIDE CERTIFICATE OF INSPECTION FROM ALL GOVERNING AUTHORITIES.
- 1.3 INSTALLERS QUALIFICATIONS**
- A. 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.
- B. THE MECHANICAL CONTRACTOR SHALL BE LICENSED TO PERFORM MECHANICAL WORK IN THE MUNICIPALITY IN WHICH THE PROJECT IS LOCATED.
- 1.4 OMISSIONS.**
- A. 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).**
- A. 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.
- B. 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**
- A. 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.
  - EACH PIECE OF EQUIPMENT SHALL BE SUBMITTED IN A SEPARATE PDF FILE, COMBINING THE EQUIPMENT INTO ONE (1) PDF FILE WILL NOT BE ACCEPTED.
  - 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.
- B. PREPARE COORDINATION DRAWINGS ACCORDING TO 1/4"=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 PIPING, DUCTWORK, EQUIPMENT, PIPING SPECIALTIES, 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 AND CEILING 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.

- 1.7 RECORD (AS-BUILT) DRAWINGS**
- A. DURING THE PROGRESS OF CONSTRUCTION, THE RECORD DRAWINGS SHALL BE CORRECTED BY DIVISION 23 TO INDICATE ACTUAL INSTALLATIONS.
- B. UPON COMPLETION OF THE PROJECT, 3-SETS OF FINAL RECORD DRAWINGS SHALL PRODUCED, WITH 1-SET EACH BEING DELIVERED TO THE OWNER, ARCHITECT AND ENGINEER.
- 1.8 PROTECTION**
- A. DELIVER PIPES AND TUBES WITH FACTORY APPLIED END-CAPS.
  - MAINTAIN END-CAPS THROUGH SHIPPING, STORAGE AND HANDLING TO PREVENT PIPE-END DAMAGE AND PREVENT ENTRANCE OF DIRT, DEBRIS AND MOISTURE.
- B. CLOSE AND WATERPROOF BETWEEN OPENINGS AND VOIDS IN WALLS AND FLOORS TO PREVENT ENTRANCE OF WATER OR MOISTURE.
- C. PROTECT STORED PIPES AND TUBES FROM MOISTURE AND DIRT.
  - ELEVATE ABOVE GRADE.
- D. SEAL ALL DUCTWORK AND PIPING, 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**
- A. 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.**
- A. 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 GUARANTIES OR WARRANTIES.
- 1.11 HVAC SCOPE OF WORK.**
- A. 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 OWNERS 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 FANS, DUCTS, ETC.
  - PIPING SYSTEMS INCLUDING VALVES AND PIPING SPECIALTIES,
  - INSULATION FOR PIPING, DUCTS, ETC.
  - MISCELLANEOUS EQUIPMENT REQUIRED FOR SYSTEMS.
  - TEMPERATURE CONTROLS.
- 1.12 GUARANTEES.**
- A. 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.**
- A. 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 15'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**
- A. 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.
- B. UNUSED SLOTS AND OTHER PENETRATIONS IN WALLS OR OTHER GENERAL CONSTRUCTION SHALL BE CLOSED AND SEALED WITH AN APPROVED FIRESTOPPING MATERIAL.
- C. PIPES AND DUCTS: THE ANNULUS BETWEEN PIPING AND 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 (M5) 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.
    - LOCATE DRYER EXHAUST AIR LABEL WITHIN 6'-0" OF THE EXHAUST DUCT CONNECTION.
- B. PIPING IDENTIFICATION DEVICES.
- MANUFACTURED PIPE MARKERS: PRE-PRINTED, COLOR CODED WITH LETTERING INDICATING SERVICE, AND SHOWING DIRECTION OF FLOW.
    - COLORS: COMPLY WITH ASME A-13.1 UNLESS OTHERWISE INDICATED.
    - PIPES WITH OD, INCLUDING INSULATION, LESS THAN 6": FULL-BAND PIPE MARKERS EXTENDING 360-DEGREES AROUND PIPE AT EACH LOCATION.
    - ARROWS: INTEGRAL WITH PIPING SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS, OR AS SEPARATE UNIT ON EACH PIPE MARKER TO INDICATE DIRECTION OF FLOW.
  - LOCATE PIPE MARKERS AS FOLLOWS:
    - NEAR PENETRATIONS THROUGH WALLS; ONE PER SIDE OF PENETRATION.
    - SPACED AT MAXIMUM INTERVALS OF 25'-0" ALONG EACH RUN.
- C. 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.

SYSTEM TYPE	MINIMUM PIPE INSULATION		
	TEMPERATURE RANGE (° F)	PIPE DIAMETER	INSULATION THICKNESS
REFRIGERANT SUCTION, REFRIGERANT LIQUID	105-140	≤ 1-1/2"	1"
CONDENSATE	ALL	≤ 1" to ≤ 8"	1/2"

- 2.5 PIPING ROOF SUPPORT SPACING.**
- A. HORIZONTAL PIPING.
- DRAWN-TEMPER COPPER PIPE SIZE AND SPACING (REFRIGERANT PIPING)**
- | PIPE SIZE   | MAXIMUM SPACING |
|-------------|-----------------|
| 1/2" – 5/8" | 5'-0"           |
- B. SUPPORT HORIZONTAL PIPING WITHIN 2'-0" (MAXIMUM) OF EACH ELBOW.
- 2.6 SHEET METAL MATERIALS**
- A. COMPLY WITH SMACNA'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.
  - DESIGNATION; DUCTS SHALL HAVE MILL-PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.

- 2.7 SHEET METAL SEALANT MATERIALS**
- A. MASTIC: NON-HARDENING, NON-MIGRATING MASTIC ELASTIC SEALANT SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK COMPLYING WITH UL 181 REQUIREMENTS FOR CLASS 1 DUCTS.
- B. 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.
- C. SOLVENT-BASED JOINT AND SEAM SEALANT: ONE-PART, NONSAG, SOLVENT-RELEASE-CURING, POLYMERIZED BUTYL SEALANT FORMULATED WITH A MINIMUM OF 75 PERCENT SOLIDS.
- 2.8 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 SCRM, ALUMINUM FOIL, AND VINYL FILM.
- 2.9 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: 1/2", 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.
  - 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.
  - ACCESS DOORS IN DUCTS – PROVIDE AND SIZE DOOR AS FOLLOWS:
    - INSTALL THE FOLLOWING MINIMUM SIZES FOR DUCT-MOUNTING, RECTANGULAR ACCESS DOORS:
      - HEAD AND HAND ACCESS: 18 BY 12 INCHES.
    - INSTALL THE FOLLOWING MINIMUM SIZES FOR DUCT-MOUNTING, ROUND 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:
      - DUCTMAE 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:
      - DUCTMAE 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.

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**CHCL**  
100 MAIN ST.  
LOCKPORT NY

ISSUE: \_\_\_\_\_  
BID/PERMIT SET \_\_\_\_\_ 2022-07-15

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

SEAL: \_\_\_\_\_

TITLE:  
**HVAC**  
SPECIFICATIONS



**SILVESTRI**  
ARCHITECTS • PC

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SA JOB #: \_\_\_\_\_ DATE: \_\_\_\_\_  
21055.01 \_\_\_\_\_ 07-15-22

DRAWING #: \_\_\_\_\_  
M-4



## HVAC SPECIFICATIONS (cont'd)

### 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: EXCEPT AS OTHERWISE INDICATED, FABRICATE CEILING AND WALL DOOR UNITS OF WELDED STEEL CONSTRUCTION WITH WELDS GROUND SMOOTH, 16-GAUGE FRAMES AND 14-GAUGE FLUSH PANEL DOORS, 175 DEGREE SWING WITH CONCEALED SPRING HINGES, FLUSH SCREWDRIVER OPERATED CAM LOCKS, FACTORY APPLIED RUST-INHIBITIVE PRIME COAT PAINT FINISH (FINISH COLOR AS SELECTED BY ARCHITECT).
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE CEILING AND WALL ACCESS DOORS OF ONE OF THE FOLLOWING:
  - MILCOR DIV., INRYCO INC.
  - SMITH (JAY R.) MFG. CO.
  - ZURN INDUSTRIES, INC.

### D. FLEXIBLE CONNECTORS.

- DESCRIPTION: FLAME RETARDANT OR NON-COMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1.
  - FABRIC: GLASS FABRIC DOUBLE COATED WITH NEOPRENE.
  - 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.
    - SELECT METAL COMPATIBLE WITH DUCTS.
- ATTACHMENTS: ATTACH TO EQUIPMENT CONNECTIONS AS SPECIFIED BY MANUFACTURER AND AS SHOWN ON THE DRAWINGS.
  - LENGTH: LIMIT FLEXIBLE CONNECTIONS TO 4" ACTIVE LENGTH IN DIRECTION OF AIRFLOW.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FLEXIBLE CONNECTORS OF ONE OF THE FOLLOWING:
  - DUCTMATE INDUSTRIES, INC.
  - DURO DYNE CORPORATION.
  - VENTFABRICS, INC.

### E. FLEXIBLE DUCTS.

- 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.
- 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.
- FLEXIBLE DUCT FITTINGS: FACTORY FABRICATED GALVANIZED STEEL FITTINGS.
  - USE 45-DEGREE LATERALS, BALL MOUTH TEES, SPIN COLLARS, OR CONICAL TEES FOR DUCT TAPS.
  - 90-DEGREE TEES ARE NOT ALLOWED.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FLEXIBLE DUCTS OF ONE OF THE FOLLOWING:
  - FLEXMASTER U.S.A., INC.
  - MCGILL AIRFLOW CORPORATION.

### F. MOTORIZED CONTROL DAMPERS.

- DESCRIPTION: OPPOSED-BLADE DESIGN WITH INFLATABLE SEAL BLADE EDGING, OR REPLACEABLE RUBBER SEALS, AMCA RATED AND TESTED TO AMCA 500D.
  - 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.
  - BLADES: 6" WIDE, 14-GAUGE GALVANIZED STEEL AIRFOIL SHAPE, DOUBLE-SKIN CONSTRUCTION.
    - 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.
  - LEAKAGE RATE: NOT GREATER THAN 4 CFM / FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE.
- MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MOTORIZED CONTROL DAMPERS OF ONE OF THE FOLLOWING:
  - AIR BALANCE, INC.
  - GREENHECK.
  - RUSKIN COMPANY.

### 2.10 DIFFUSERS, REGISTERS AND GRILLES

- 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.
- PERFORMANCE: PROVIDE CEILING DIFFUSERS / 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.
  - MAXIMUM NC OF 20.
- SQUARE CEILING SUPPLY DIFFUSERS.
  - ARCHITECTURAL SQUARE CEILING DIFFUSERS.
    - MATERIAL: STEEL, ALUMINUM
    - FINISH: BAKED ENAMEL, WHITE.
    - FACE SIZE: 24"x24".
    - FACE STYLE.
      - 24"x24" SQUARE: PROVIDE 18"x18" BACKPAN (NECK SIZE AS SHOWN ON DRAWINGS FOR FULL PANEL APPLICATION) WITH FULL FACE DIFFUSER, EASILY REMOVABLE CORE OF CONCENTRIC LOUVERS (FLUSH WITH FACE), SQUARE OR ROUND DUCT CONNECTION.
        - MINIMUM 22-GAUGE STEEL BACKPAN (WELDED-IN INLETS AND CORNER JOINTS ARE NOT ACCEPTABLE).
      - MOUNTING: LAY-IN (T-BAR), SURFACE.
      - PATTERN (THROW): 4-WAY, FIXED, HORIZONTAL DISCHARGE.
      - DAMPERS: ADJUSTABLE, OPPOSED-BLADE, KEY OPERATED FROM FACE OF DIFFUSER.
      - ACCESSORIES.
        - SQUARE TO ROUND NECK ADAPTOR.
        - PLASTER RING.

### D. CEILING RETURN AND EXHAUST GRILLES.

- MATERIAL: STEEL, ALUMINUM.
- FINISH: BAKED ENAMEL, WHITE.
- 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.
- FACE SIZE.
  - 24"x24" SQUARE: MINIMUM 22-GAUGE STEEL, PROVIDE 22"x22" BACKPAN (NECK SIZE AS SHOWN ON DRAWINGS, STANDARD NECK SIZE WHERE NOT INDICATED).
  - MINIMUM 22-GAUGE STEEL BACKPAN (WELDED-IN INLETS AND CORNER JOINTS ARE NOT ACCEPTABLE).
- MOUNTING: LAY-IN (T-BAR), SURFACE.
- DAMPERS: ADJUSTABLE, OPPOSED-BLADE, KEY OPERATED FROM FACE OF DIFFUSER.
- ACCESSORIES.
  - SQUARE TO ROUND NECK ADAPTOR.
  - PLASTER RING.

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

- PRICE INDUSTRIES.
- TITUS.

### 2.11 AIR DUCTWORK AND COIL CLEANING

#### A. SCOPE OF WORK.

- EXTENT OF WORK INCLUDES THE FOLLOWING.
  - SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTWORK SYSTEMS.
  - 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.
  - THE HVAC SYSTEM INCLUDES ANY INTERIOR SURFACE OF THE FACILITY'S AIR DISTRIBUTION SYSTEM FOR CONDITIONED SPACES AND / OR OCCUPIED ZONES.
    - 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.
- CLEANING REQUIREMENTS.
  - ENGAGE A QUALIFIED AIR SYSTEM CLEANING SPECIALIST (ASCS) TO CLEAN THE SYSTEMS.
  - 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.
  - 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.
  - 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.
    - OTHER OPENINGS SHALL BE CREATED WHERE NEEDED AND THEY MUST BE CREATED SO THEY CAN BE SEALED IN ACCORDANCE WITH INDUSTRY CODES AND STANDARDS.
    - 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.
  - CUTTING SERVICE OPENINGS INTO FLEXIBLE DUCTS AND FLEXIBLE CONNECTORS IS NOT PERMITTED.
  - 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.
  - CLEAN THE FOLLOWING METAL DUCT SYSTEM COMPONENTS BY REMOVING VISIBLE SURFACE CONTAMINANTS AND DEPOSITS.
    - AIR DISTRIBUTION DEVICES (REGISTERS, GRILLES AND DIFFUSERS).
    - SUPPLY, RETURN AND EXHAUST AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.

#### B. MECHANICAL CLEANING METHODOLOGY.

- 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.
  - 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).
    - 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.
  - ALL METHODS USED SHALL INCORPORATE THE USE OF VACUUM COLLECTION DEVICES THAT ARE OPERATED CONTINUOUSLY DURING CLEANING.
  - 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.
  - 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.
    - RELEASE OF DEBRIS OUTDOORS MUST NOT VIOLATE ANY OUTDOOR ENVIRONMENTAL STANDARDS, CODES OR REGULATIONS.
  - 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.
    - 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.

#### C. METHODS OF CLEANING FIBROUS GLASS INSULATED COMPONENTS.

- 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.
  - 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).
    - 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.
- CLEANING OF COILS.
    - ANY CLEANING METHOD MAY BE USED WHICH WILL RENDER THE COIL VISIBLY CLEAN AND CAPABLE OF PASSING COIL CLEANING VERIFICATION (SEE APPLICABLE NADCA STANDARDS).
    - COIL DRAIN PANS SHALL BE SUBJECT TO NON-POROUS SURFACES CLEANING VERIFICATION (THE DRAIN FOR THE CONDENSATE DRAIN PAN SHALL BE OPERATIONAL).
    - 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.
    - COILS SHALL BE THOROUGHLY RINSED WITH CLEAN WATER TO REMOVE ANY LATENT RESIDUES AND CLEANING MATERIALS; COMB AND STRAIGHTEN FINS.
    - PROVIDE OPERATIVE DRAINAGE SYSTEM FOR WASHDOWN PROCEDURES.

### D. CLEANLINESS VERIFICATION.

- 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.
- VISUAL INSPECTION: THE HVAC SYSTEM SHALL BE INSPECTED VISUALLY TO ENSURE THAT NO VISIBLE CONTAMINANTS ARE PRESENT.
  - 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.
  - 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.
- 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).
  - GRAVIMETRIC ANALYSIS SHALL BE PERFORMED BY A QUALIFIED THIRD-PARTY EXPERIENCED IN TESTING OF THIS NATURE.
    - 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

- GENERAL: MULTIPLE MOBILIZATIONS ARE REQUIRED PER EACH COMPLETED WORK AREA / PHASE (I.E. PRIOR TO OWNER'S OCCUPANCY SPACE).
  - HVAC PRIME CONTRACTOR SHALL REVIEW THE PHASING PLANS AND INCLUDE IN BASE BID, SEPARATE BALANCE REPORTS FOR EACH COMPLETED AREA OF WORK.
  - AIR BALANCING CONTRACTOR SHALL INCLUDE, IN THEIR PRICING, ONE SHEAVE CHANGE FOR EACH ROOFTOP UNIT TO BE INSTALLED AT COMPLETION OF PROJECT, IF NECESSARY.
  - 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.
  - TAB FIRM QUALIFICATIONS: ENGAGE A TAB FIRM CERTIFIED BY EITHER ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
    - A SPECIALIST WITH AT LEAST 5-YEARS OF EXPERIENCE IN THOSE TESTING, ADJUSTING AND BALANCING REQUIREMENTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT.
      - SUBMIT BIOGRAPHICAL DATA ON TAB SUPERVISOR WHO IS DIRECTLY SUPERVISING TESTING, ADJUSTING AND BALANCING WORK.
      - SUBMIT THE INDIVIDUAL QUALIFICATIONS OF ALL PERSONS RESPONSIBLE FOR SUPERVISING AND PERFORMING THE ACTUAL WORK.
  - 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".
    - A SPECIALIST WITH AT LEAST 5-YEARS OF EXPERIENCE IN THOSE TESTING, ADJUSTING AND BALANCING REQUIREMENTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT.
      - SUBMIT BIOGRAPHICAL DATA ON TAB SUPERVISOR WHO IS DIRECTLY SUPERVISING TESTING, ADJUSTING AND BALANCING WORK.
      - SUBMIT THE INDIVIDUAL QUALIFICATIONS OF ALL PERSONS RESPONSIBLE FOR SUPERVISING AND PERFORMING THE ACTUAL WORK.
- 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".
  - CALIBRATE INSTRUMENTS AT LEAST EVERY 6-MONTHS OR MORE FREQUENTLY IF REQUIRED BY INSTRUMENT MANUFACTURER.
    - PROVIDE UPDATED RECORD OF INSTRUMENT CALIBRATION THAT INDICATES DATE OF CALIBRATION AND THE NAME OF THE PARTY PERFORMING INSTRUMENT CALIBRATION.

#### F. PROJECT CONDITIONS.

- GENERAL: DO NOT PROCEED WITH TESTING, ADJUSTING AND BALANCING WORK UNTIL THE FOLLOWING CONDITIONS HAVE BEEN MET.
  - WORK HAS BEEN COMPLETED AND IS OPERABLE.
  - WORK SCHEDULED FOR TESTING, ADJUSTING AND BALANCING IS CLEAN AND FREE FROM DEBRIS, DIRT AND DISCARDED BUILDING MATERIALS.
  - 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.
  - 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.
  - UNIT FILTERS ARE NOT "LOADED"; MECHANICAL CONTRACTOR SHALL REPLACE, IF REQUIRED, PRIOR TO BALANCING.
- GENERAL PROCEDURES FOR TESTING AND BALANCING.
  - 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".
  - 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.
    - TEST DURATION: OPERATING TESTS OF EQUIPMENT SHALL BE OF NOT LESS THAN FOUR (4) HOURS DURATION AFTER STABILIZED OPERATING CONDITIONS HAVE BEEN ESTABLISHED.
  - 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.

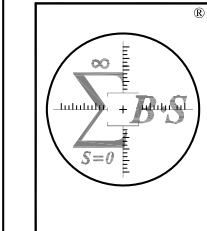
#### H. PROCEDURES FOR SOUND-LEVEL MEASUREMENTS.

- PERFORM SOUND-PRESSURE-LEVEL MEASUREMENTS WITH AN OCTAVE-BAND ANALYZER COMPLYING WITH ANSI S-1.4 FOR TYPE 1 SOUND-LEVEL METERS AND ANSI S-1.11 FOR OCTAVE-BAND FILTERS.
- PERFORM SOUND-LEVEL TESTING AFTER AIR AND WATER BALANCING AND EQUIPMENT TESTING ARE COMPLETE.
  - PERFORM THE MEASUREMENTS WHEN THE SPACE IS NOT OCCUPIED AND WHEN THE OCCUPANT NOISE LEVEL FROM OTHER SPACES IN THE BUILDING AND OUTSIDE ARE AT A MINIMUM.
- TAKE SOUND MEASUREMENTS AT A HEIGHT APPROXIMATELY 4'-0" ABOVE THE FLOOR AND AT LEAST 3'-0" FROM WALL, COLUMN, AND OTHER LARGE SURFACES CAPABLE OF ALTERING THE MEASUREMENTS.
  - MAXIMUM NOISE CRITERIA FOR ALL SPACES SHALL NOT EXCEED NC 25.
- PERFORM SOUND TESTINGS AT LOCATIONS ON PROJECT FOR EACH OF THE FOLLOWING SPACE TYPES:
  - OFFICES.
  - LOBBY.
- TOLERANCES.
  - SUPPLY AND EXHAUST FANS: 0% TO PLUS 5%.
  - AIR OUTLETS AND INLETS: 0% TO PLUS 5%.

### J. FINAL REPORT.

- GENERAL: PROVIDE TYPEWRITTEN 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.
  - INCLUDE A CERTIFICATION SHEET IN FRONT OF BINDER, SEALED AND SIGNED BY THE TESTING AND BALANCING ENGINEER.
  - INCLUDE A LIST OF INSTRUMENTS USED FOR PROCEDURES, ALONG WITH PROOF OF CALIBRATION.
- GENERAL REPORT DATA: IN ADDITION TO FORM TITLES AND ENTRIES, INCLUDE THE FOLLOWING DATA IN THE FINAL REPORT, AS APPLICABLE.
  - TITLE PAGE.
  - NAME AND ADDRESS OF TAB FIRM.
  - PROJECT NAME AND LOCATION.
  - ARCHITECTS NAME AND ADDRESS.
  - ENGINEERS NAME AND ADDRESS.
  - MECHANICAL CONTRACTORS NAME AND ADDRESS.
  - REPORT DATE.
  - TABLE OF CONTENTS WITH THE TOTAL NUMBER OF PAGES (NUMBER EACH PAGE IN REPORT) DEFINED FOR EACH SECTION OF THE REPORT.
  - SUMMARY OF CONTENTS INCLUDING THE FOLLOWING:
    - INDICATED VERSUS FINAL PERFORMANCE.
    - NOTABLE CHARACTERISTICS OF SYSTEMS.
    - DESCRIPTION OF SYSTEM OPERATION SEQUENCE IF IT VARIES FROM THE CONTRACT DOCUMENTS.
- INSPECTIONS.
  - INITIAL INSPECTION.
    - 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.
      - RANDOMLY CHECK THE FOLLOWING FOR EACH SYSTEM:
        - MEASURE AIRFLOW OF AT LEAST 10% OF AIR OUTLETS.
        - MEASURE ROOM TEMPERATURE AT EACH THERMOSTAT.
        - MEASURE SPACE PRESSURE OF AT LEAST 10% OF LOCATIONS.
        - BALANCING DEVICES ARE MARKED WITH FINAL BALANCE POSITION.
  - FINAL INSPECTION.
    - 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.
      - TAB FIRM TEST AND BALANCE ENGINEER SHALL CONDUCT THE INSPECTION IN THE PRESENCE OF THE ARCHITECT AND OWNER.
      - ARCHITECT AND OWNER SHALL RANDOMLY SELECT MEASUREMENTS DOCUMENTED IN THE FINAL REPORT TO BE RECHECKED.
        - 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.
      - 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".
        - 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.
          - IN THE EVENT THE REPORT IS REJECTED, ALL SYSTEMS SHALL BE READJUSTED AND RE-TESTED, NEW DATA RECORDED, NEW CERTIFIED REPORTS SUBMITTED, AND NEW INSPECTIONS TEST MADE, ALL AT NO ADDITIONAL COST TO THE OWNER.
    - TAB FIRM SHALL RECHECK ALL MEASUREMENTS AND MAKE READJUSTMENTS.
      - REVISE THE FINAL REPORT AND BALANCE DEVICE SETTINGS TO INCLUDE ALL CHANGES AND RESUBMIT THE FINAL REPORT.
      - REQUEST A SECOND FINAL INSPECTION.
        - 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 DEDUCT THE COST OF THE SERVICES FROM THE FINAL PAYMENT OF THE ORIGINAL TAB FIRM.

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ISSUE: **BID/PERMIT SET** 2022-07-15

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PROJ. ARCH. \_\_\_\_\_ DRAFTER \_\_\_\_\_  
JOB CAPT. \_\_\_\_\_ INTERIORS \_\_\_\_\_

SEAL:

TITLE: **HVAC SPECIFICATIONS**

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SA JOB #: **21055.01** DATE: **07-15-22**

DRAWING #: **M-5**

## HVAC SEQUENCE OF OPERATIONS

### PART 1 – GENERAL

#### 1.1 SEQUENCE OF OPERATION – HVAC DUCTWORK.

##### A. EXHAUST FANS (E/F-1 THRU E/F-4)

###### 1. GENERAL.

- a. CONFIGURATION: CONSTANT-VOLUME MIXED-AIR SINGLE PATH.
- b. ASSOCIATED ROOFTOP UNIT: RTU-1 (E/F-1), RTU-2 (E/F-3), RTU-3 (E/F-2), RTU-4 (E/F-4).

###### 2. SYSTEM RUN.

###### a. OCCUPIED MODE.

- 1). EXHAUST FAN SHALL BE INTERLOCKED TO RUN DURING THE OCCUPIED MODE OF ITS ASSOCIATED ROOFTOP UNIT.

###### b. UNOCCUPIED MODE.

- 1). EXHAUST FAN SHALL BE OFF DURING THE UNOCCUPIED MODE OF ITS ASSOCIATED ROOFTOP UNIT.

###### 3. SYSTEM OFF.

- a. THE EXHAUST FAN SHALL BE OFF.
- b. THE EXHAUST DAMPERS SHALL BE CLOSED.

###### 4. FAILURE MODES.

- a. FAN FAILURE: IF THE EXHAUST FAN FAILS TO OPERATE, THE EXHAUST FAN SHALL SHUT DOWN AND ALARM SHALL BE ANNUNCIATED.

- 1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

###### b. POWER FAILURE.

- 1). FANS: UPON RESTORATION OF POWER, THE EXHAUST FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
- 2). DAMPERS: DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.

##### B. ROOFTOP UNITS (RTU-1 THRU RTU-4).

###### 1. GENERAL.

- a. CONFIGURATION: CONSTANT-VOLUME MIXED-AIR SINGLE PATH.
- b. ASSOCIATED EXHAUST FANS: E/F-1 (RTU-1), E/F-2 (RTU-3), E/F-3 (RTU-2), E/F-4 (RTU-4).

###### 2. SYSTEM RUN.

###### a. OCCUPIED MODE.

- 1). SUPPLY FAN: SUPPLY FAN SHALL RUN CONTINUOUSLY.
- 2). ECONOMIZER (WITH CO2 SENSOR).

- a). 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.
- b). MINIMUM OUTSIDE AIR IS SUPPLIED TO ALL AREAS AT ALL TIMES DURING OCCUPIED MODE.
- c). CARBON DIOXIDE SENSOR OVERRIDES MINIMUM OUTSIDE AIR SETPOINT TO INCREASE OUTSIDE AIR SHOULD THE CONDITIONS IN THE SPACE DEVIATE FROM DESIGN CONDITIONS.

- 3). ELECTRIC HEAT: CYCLE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE (72° F, ADJUSTABLE)

- a). 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.

- 1)). THE OUTSIDE AIR DAMPER SHALL CLOSE, THE SUPPLY FAN SHALL STOP.

- b). ABOVE 115° F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5-MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

- 1)). IF THE DISCHARGE AIR TEMPERATURE DOES NOT DROP BELOW 115° F, THE UNIT SHALL SHUT DOWN.

- 4). 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 SPACE TEMPERATURE.

###### b. UNOCCUPIED HEATING MODE.

- 1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED HEATING SETPOINT (55° F, ADJUSTABLE).
- 2). ECONOMIZER DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED AND RETURN AIR DAMPER IS FULLY OPEN.
- 3). ELECTRIC HEAT: CYCLE AS FOLLOWS WHEN THE SUPPLY FAN IS ON:

- a). BELOW 55° F (ADJUSTABLE) SPACE TEMPERATURE, FULLY OPEN GAS VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95° F (ADJUSTABLE).
- b). ABOVE 55° F (ADJUSTABLE) SPACE TEMPERATURE, CYCLE THE GAS VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95° F (ADJUSTABLE).

- 4). DX COOLING: OFF.

###### c. UNOCCUPIED COOLING MODE.

- 1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT (85° F, ADJUSTABLE).
- 2). ECONOMIZER DAMPERS: ECONOMIZER DAMPERS SHALL BE ENABLED TO PROVIDE FREE COOLING WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE DRY BULB ECONOMIZER SETPOINT.

- a). ECONOMIZER AVAILABLE: OUTSIDE AIR AND EXHAUST AIR DAMPERS ARE FULLY OPEN AND RETURN AIR DAMPER IS FULLY CLOSED WHEN THE SUPPLY FAN IS ON.
- b). ECONOMIZER NOT AVAILABLE: OUTSIDE AIR AND EXHAUST DAMPERS ARE FULLY CLOSED AND RETURN AIR DAMPER IS FULLY OPEN.

- 3). ELECTRIC HEAT: OFF.
- 4). DX COOLING: CYCLE WHEN OUTSIDE AIR TEMPERATURE IS ABOVE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN SUPPLY AIR TEMPERATURE AT 55° F (ADJUSTABLE).

###### 3. SYSTEM OFF.

- a. THE SUPPLY FAN SHALL BE OFF.
- b. THE OUTSIDE AIR DAMPERS SHALL BE CLOSED.
- c. THE RETURN AIR DAMPER SHALL BE OPEN.
- d. THE ELECTRIC HEAT SHALL CYCLE TO MAINTAIN THE MIXED AIR PLENUM TEMPERATURE AT 50° F (ADJUSTABLE).
- e. THE DX COOLING SHALL BE OFF.

###### 4. SAFETIES AND ALARMS.

- a. DISPLAY OFF-NORMAL ALARM WHENEVER SUPPLY FAN STATUS DOES NOT EQUAL COMMAND.
- b. 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).

- 1). HEATING COIL SHALL OPEN FULLY, AND DAMPERS AND DX COOLING BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

- c. 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).

- 1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

###### d. SMOKE CONTROL.

- 1). DUCT SMOKE DETECTOR(S) SHALL STOP THE SUPPLY FAN AND DISPLAY ALARM WHEN PRODUCTS OF COMBUSTION ARE DETECTED IN THE AIR STREAM.

- a). DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

- 2). THE SUPPLY FAN SHALL BE INTERLOCKED TO SHUT DOWN UPON A COMMAND FROM THE BUILDING FIRE ALARM SYSTEM.
- 3). UPON A RETURN TO NORMAL, THE SUPPLY FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.

- e. FILTER CONDITION: MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER AND DISPLAY AN ALARM WHEN DIFFERENTIAL PRESSURE SETPOINT IS EXCEEDED.

###### 5. FAILURE MODES.

- a. FAN FAILURE: IF THE SUPPLY FAN FAILS TO OPERATE, THE SUPPLY FAN SHALL SHUT DOWN AND ALARM SHALL BE DISPLAYED.

- 1). DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

- b. SENSOR FAILURE: UPON THE FAILURE OF AN ANALOG SENSOR, ASSOCIATED DAMPERS SHALL REMAIN AT THEIR LAST POSITION AND ALARM SHALL BE DISPLAYED.

- c. POWER FAILURE.
- 1). FANS: UPON RESTORATION OF POWER, THE SUPPLY FANS SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
- 2). DAMPERS: ECONOMIZER DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.

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SEAL:

TITLE:  
**HVAC  
SEQUENCE OF  
OPERATIONS**



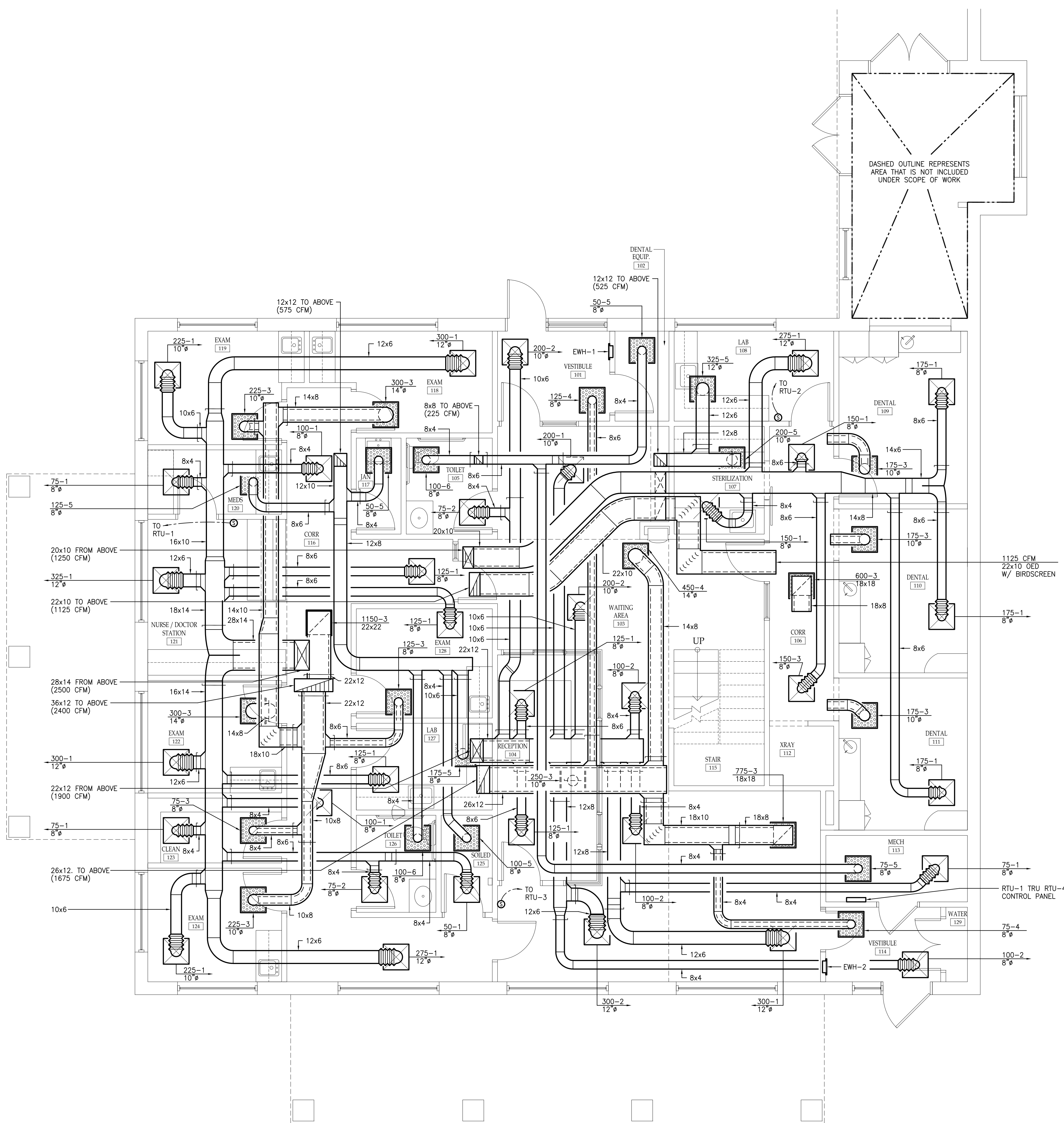
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21055.01 07-15-22

DRAWING #: \_\_\_\_\_  
M-6





**2 HVAC GENERAL NOTES:**

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTWORK TAPS.
2. COORDINATE LOCATION AND SPACING OF INTERIOR WALL FRAMING WITH THE ARCHITECT FOR SUPPLY AIR, RETURN AIR AND EXHAUST AIR DUCTWORK PENETRATIONS PRIOR TO FRAMING THE WALLS, ADJUSTING THE SPACING TO ALLOW FOR A MINIMUM OF 1" CLEAR (ALL SIDES) AROUND DUCTWORK PENETRATION.
3. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF TEMPERATURE SENSORS IN THE FIELD WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

DASHED OUTLINE REPRESENTS AREA THAT IS NOT INCLUDED UNDER SCOPE OF WORK

**1 FIRST FLOOR PLAN - HVAC DUCTWORK**  
SCALE: 1/4" = 1'-0"

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

SEAL:

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

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DRAWING #: M-7

**2**  
**M-8** HVAC GENERAL NOTES:

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTWORK TAPS.
2. COORDINATE LOCATION AND SPACING OF INTERIOR WALL FRAMING WITH THE ARCHITECT FOR SUPPLY AIR AND RETURN AIR DUCTWORK PENETRATIONS PRIOR TO FRAMING THE WALLS, ADJUSTING THE SPACING TO ALLOW FOR A MINIMUM OF 1" CLEAR (ALL SIDES) AROUND DUCTWORK PENETRATION.
3. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF TEMPERATURE SENSORS IN THE FIELD WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

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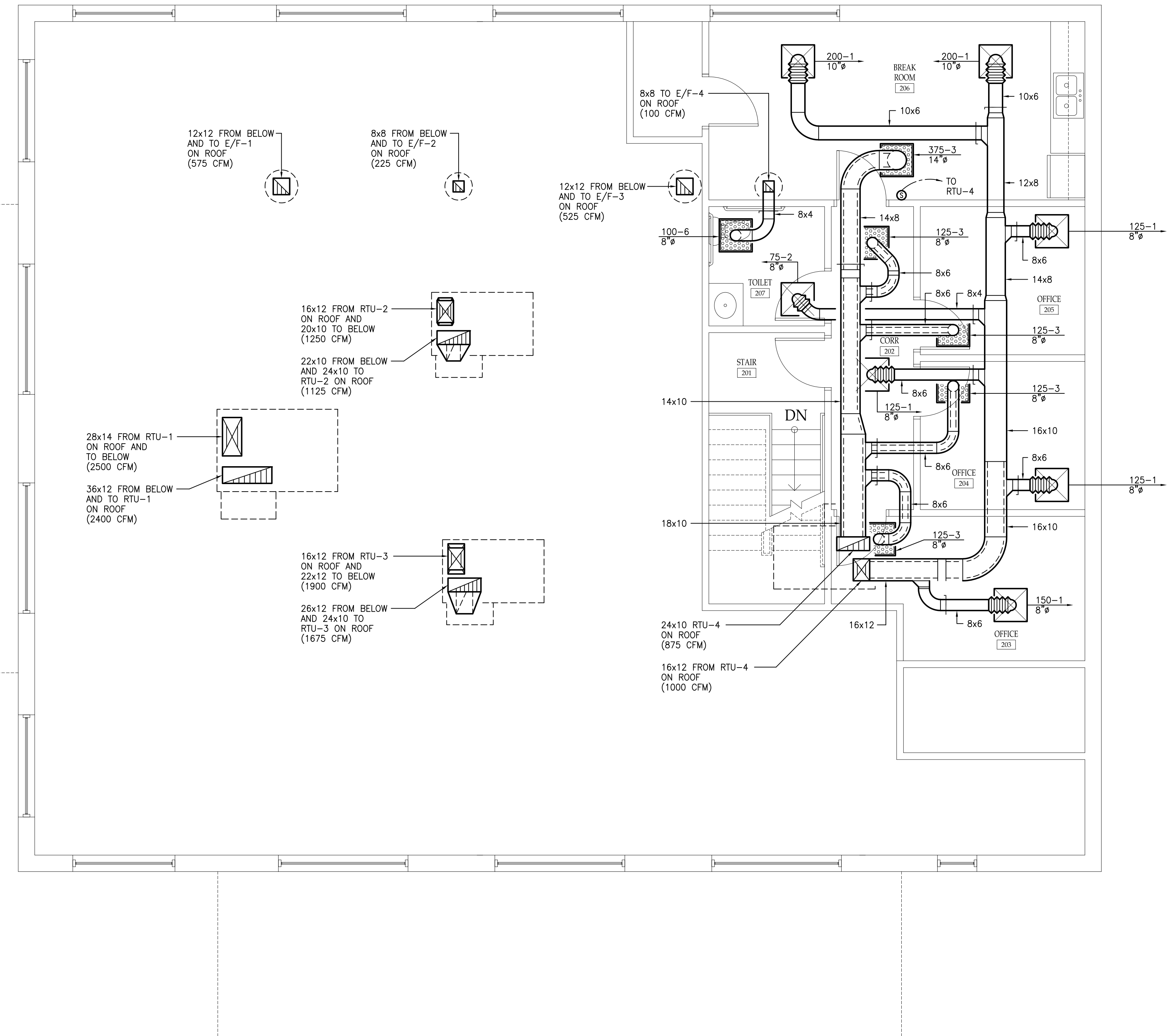
TITLE:  
**SECOND FLOOR  
PLAN -  
HVAC  
DUCTWORK**



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DRAWING #: M-8



**1**  
**M-8** SECOND FLOOR PLAN - HVAC DUCTWORK  
SCALE: 1/4" = 1'-0"



**3**  
**M-9** 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 EQUIPMENT PADS AND CURBS.
4. DIVISION 7 TO PROVIDE ROOF FLASHING AND SEALING OF ALL ROOF OPENINGS.
5. COORDINATE LOCATION AND SPACING OF ROOF JOISTS WITH DIVISION 6 FOR DUCTWORK PENETRATIONS PRIOR TO INSTALLING DUCTWORK. DIVISION 6 SHALL ADJUST TRUSS SPACING TO ALLOW FOR A MINIMUM OF 2" CLEAR (ALL SIDES) AROUND OPENING AND PROVIDE ANY ADDITIONAL SUPPORTS REQUIRED TO SUPPORT DIVISION 23 EQUIPMENT.
6. HVAC EQUIPMENT LOCATIONS SHOWN FOR PROPOSED LOCATIONS ONLY. ALL HVAC EQUIPMENT SHALL BE INSTALLED TO AVOID ALL ROOF CRICKET SLOPES AND PITCHES.

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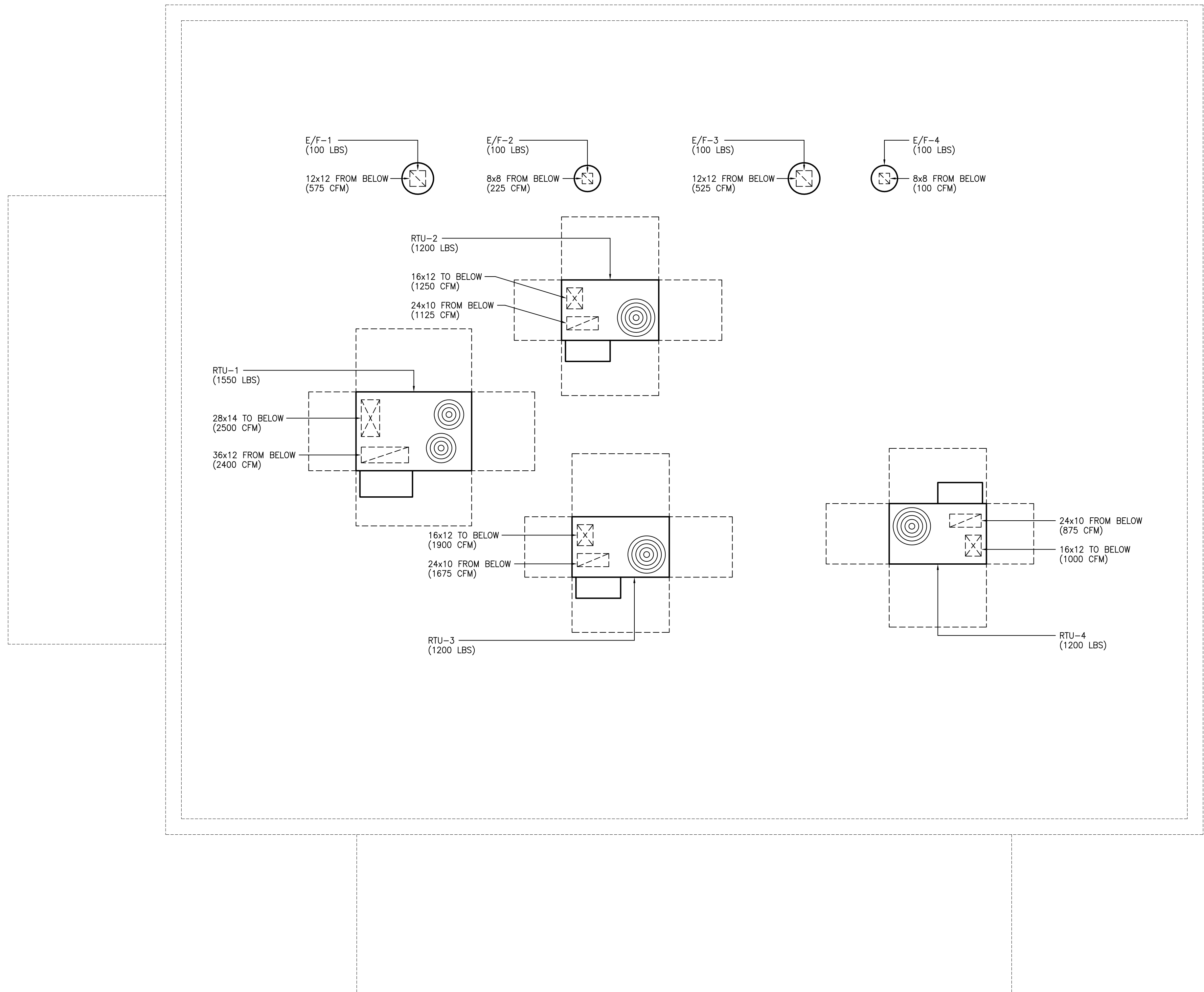
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**ROOF PLAN - HVAC DUCTWORK**



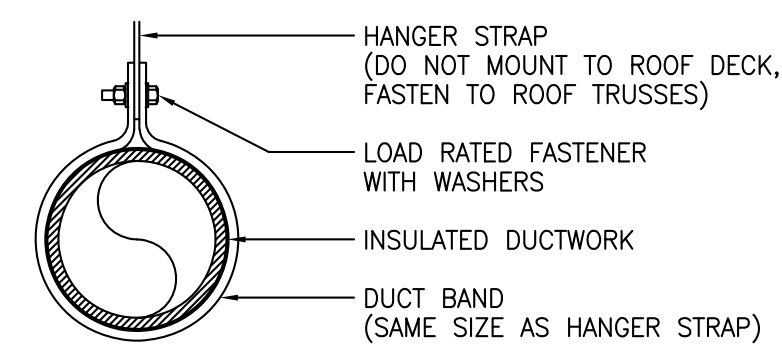
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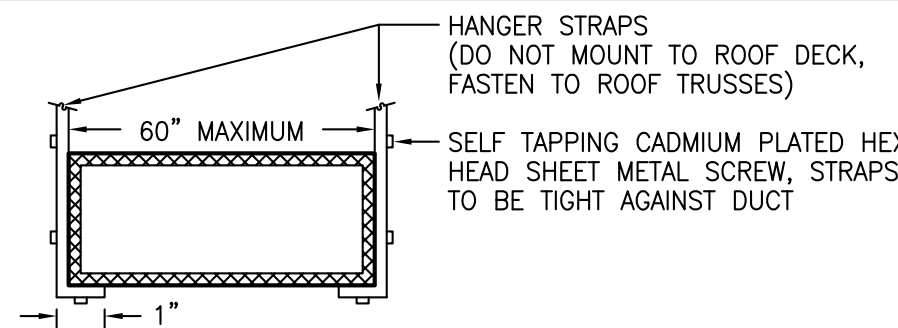
DRAWING #: M-9



**1**  
**M-9** ROOF PLAN - HVAC DUCTWORK  
SCALE: 1/4" = 1'-0"

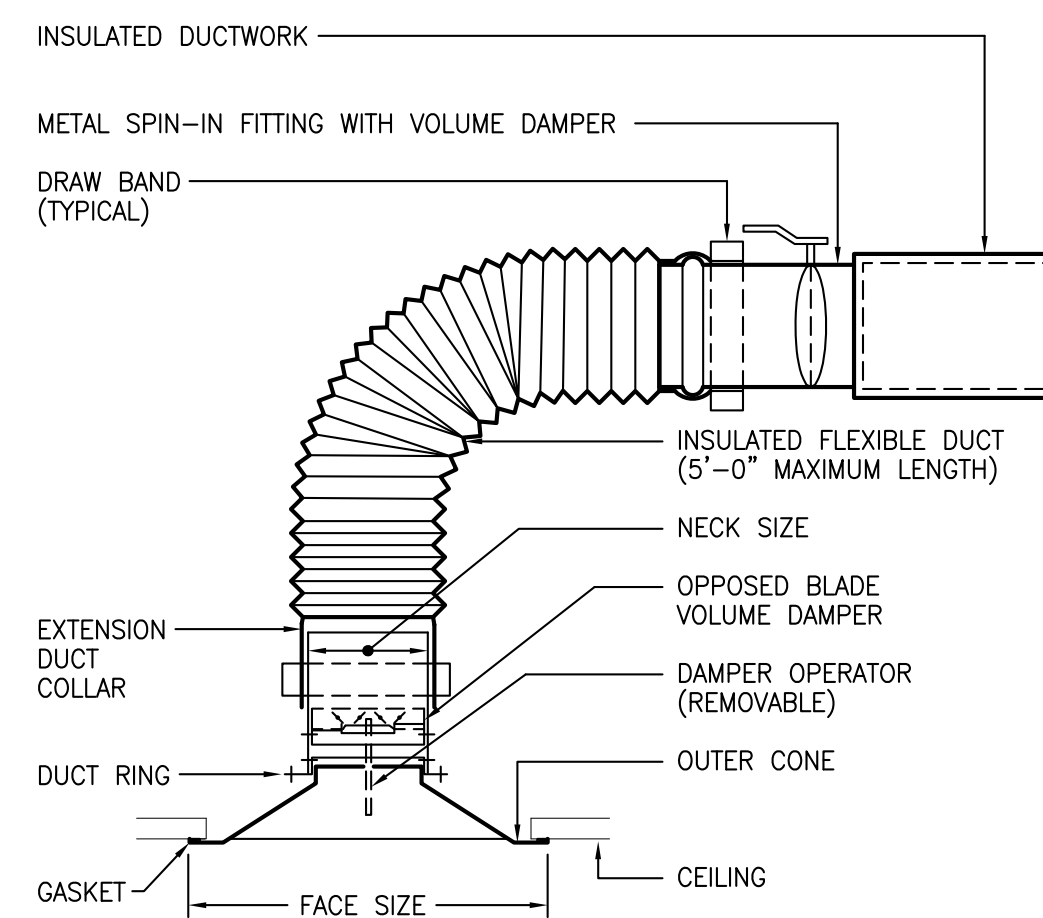


HANGER SIZES FOR ROUND DUCT				
DUCT DIAMETER	ROUND HANGERS	STRAP HANGERS	MAXIMUM SPACING	NUMBER OF HANGERS
UP THRU 18"	1/4" ROD	1" x 16 GAUGE	10'-0"	1
19" THRU 36"	3/8" ROD	1" x 12 GAUGE	10'-0"	1



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 30"	1/4" ROD	1" x 16 GAUGE	10'-0"

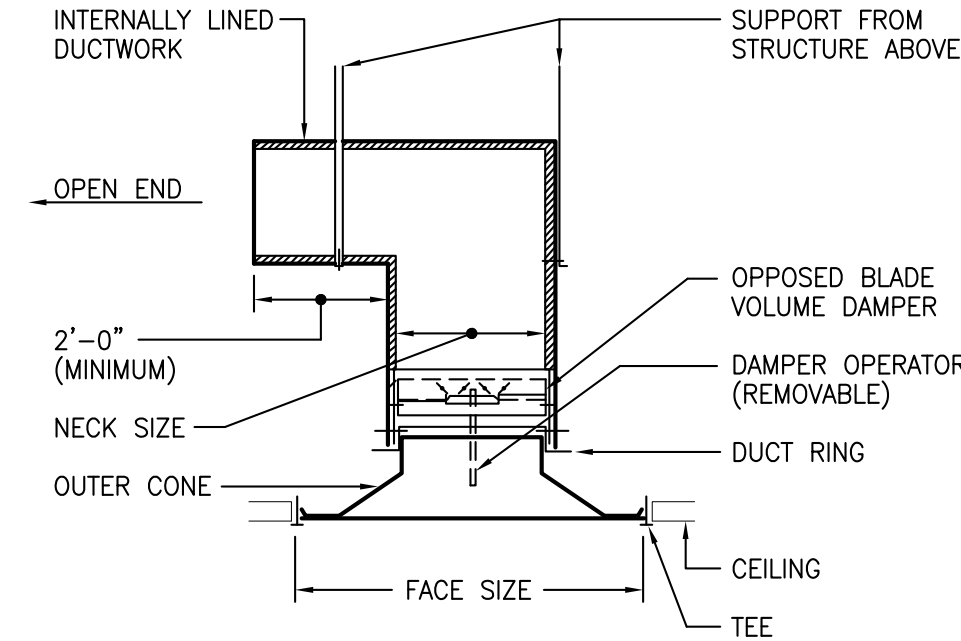
**DUCT HANGER DETAIL**



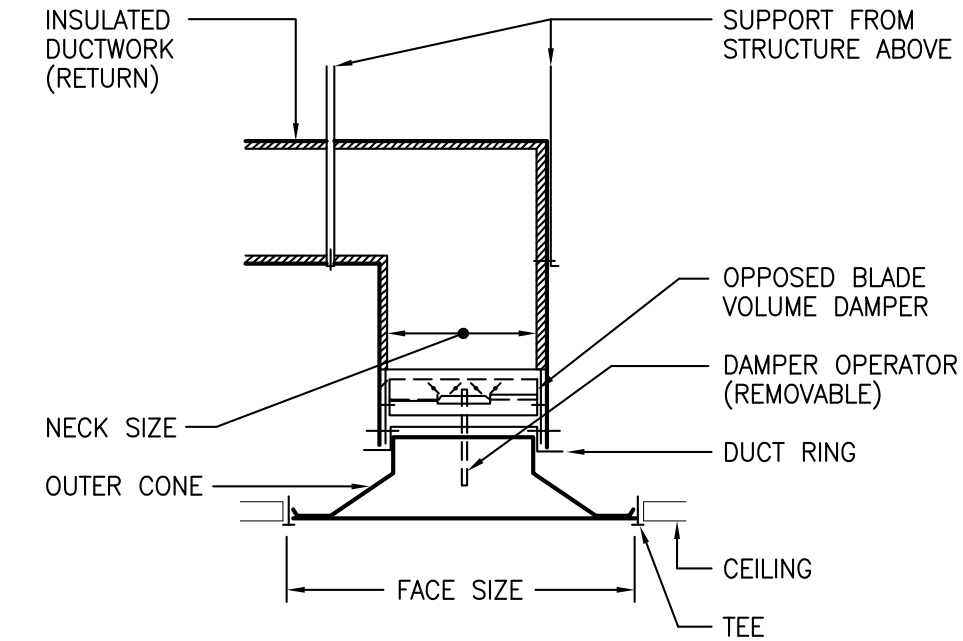
**INSTALLATION NOTES:**

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.

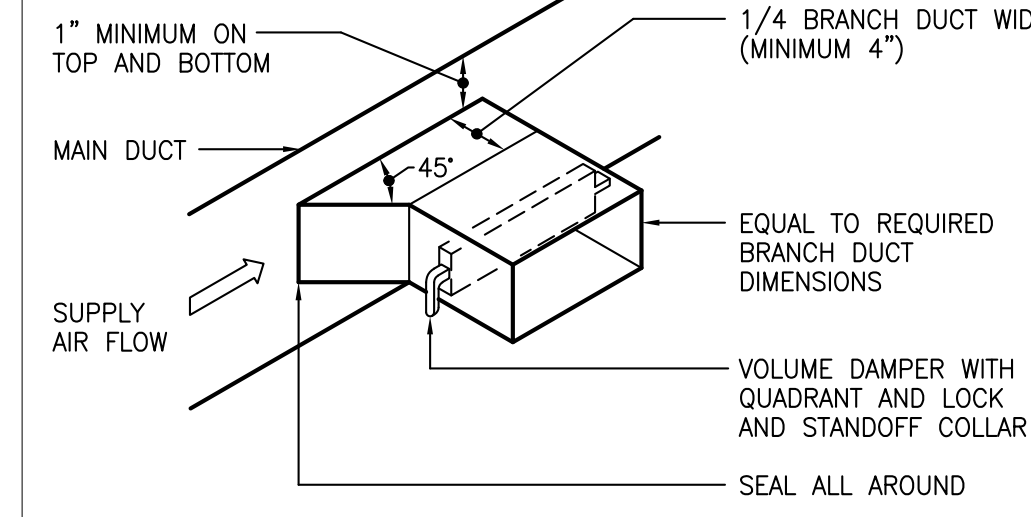
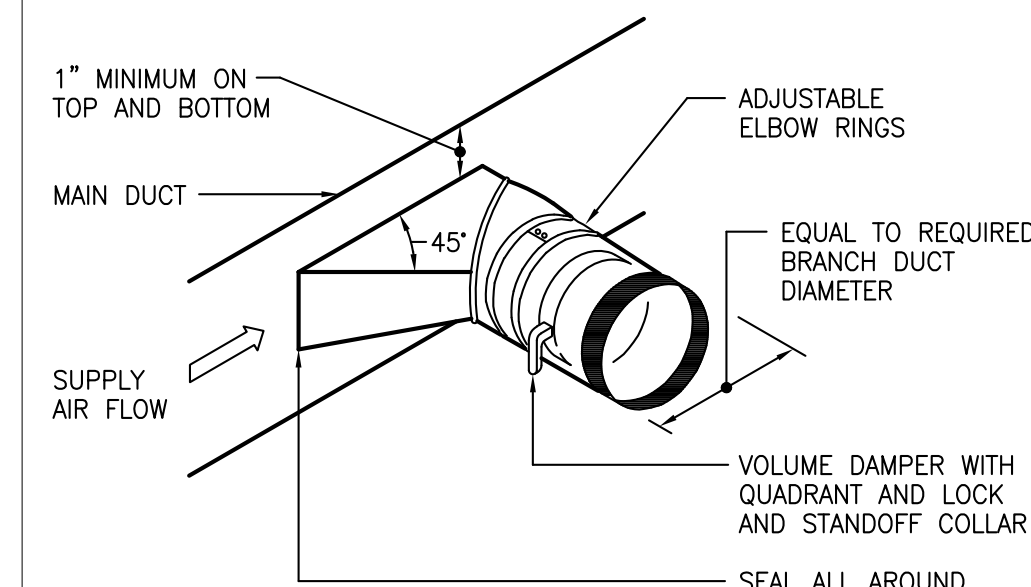
**CEILING DIFFUSER CONNECTION DETAIL**



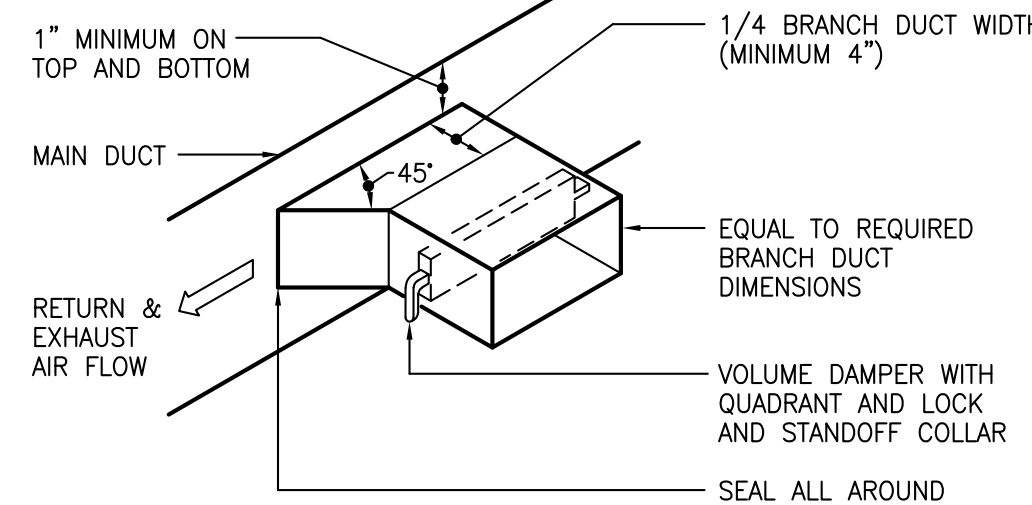
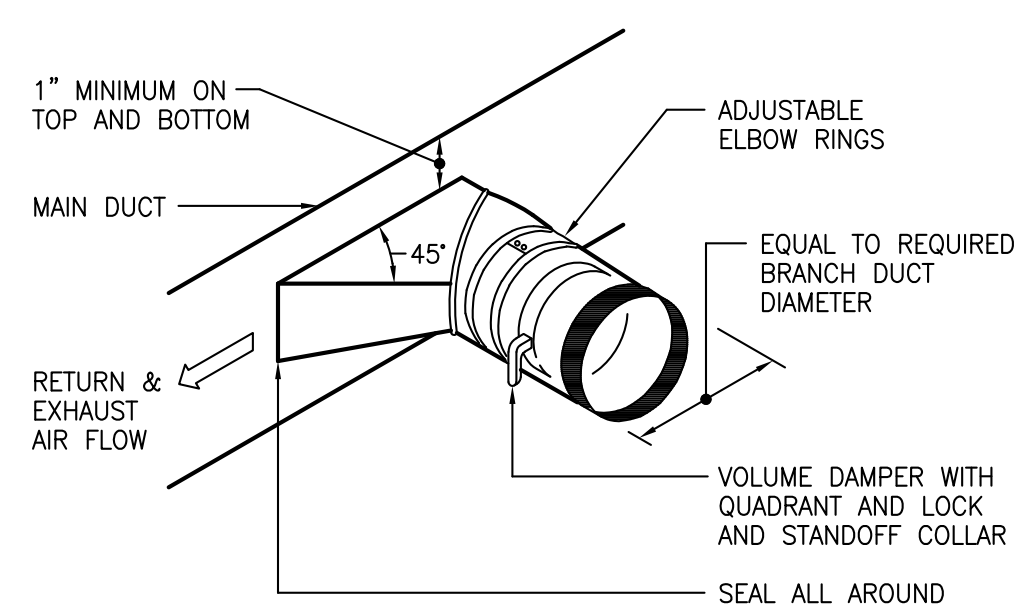
**RETURN GRILLE (PLENUM) CONNECTION DETAIL**



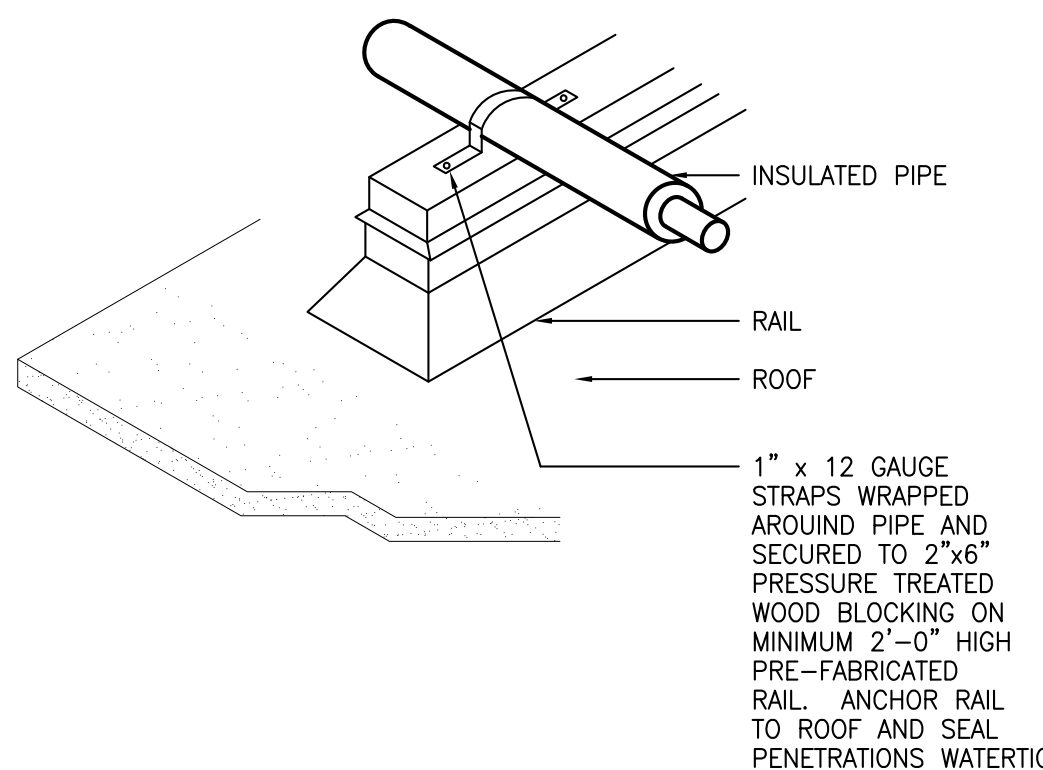
**RETURN / EXHAUST GRILLE CONNECTION DETAIL**



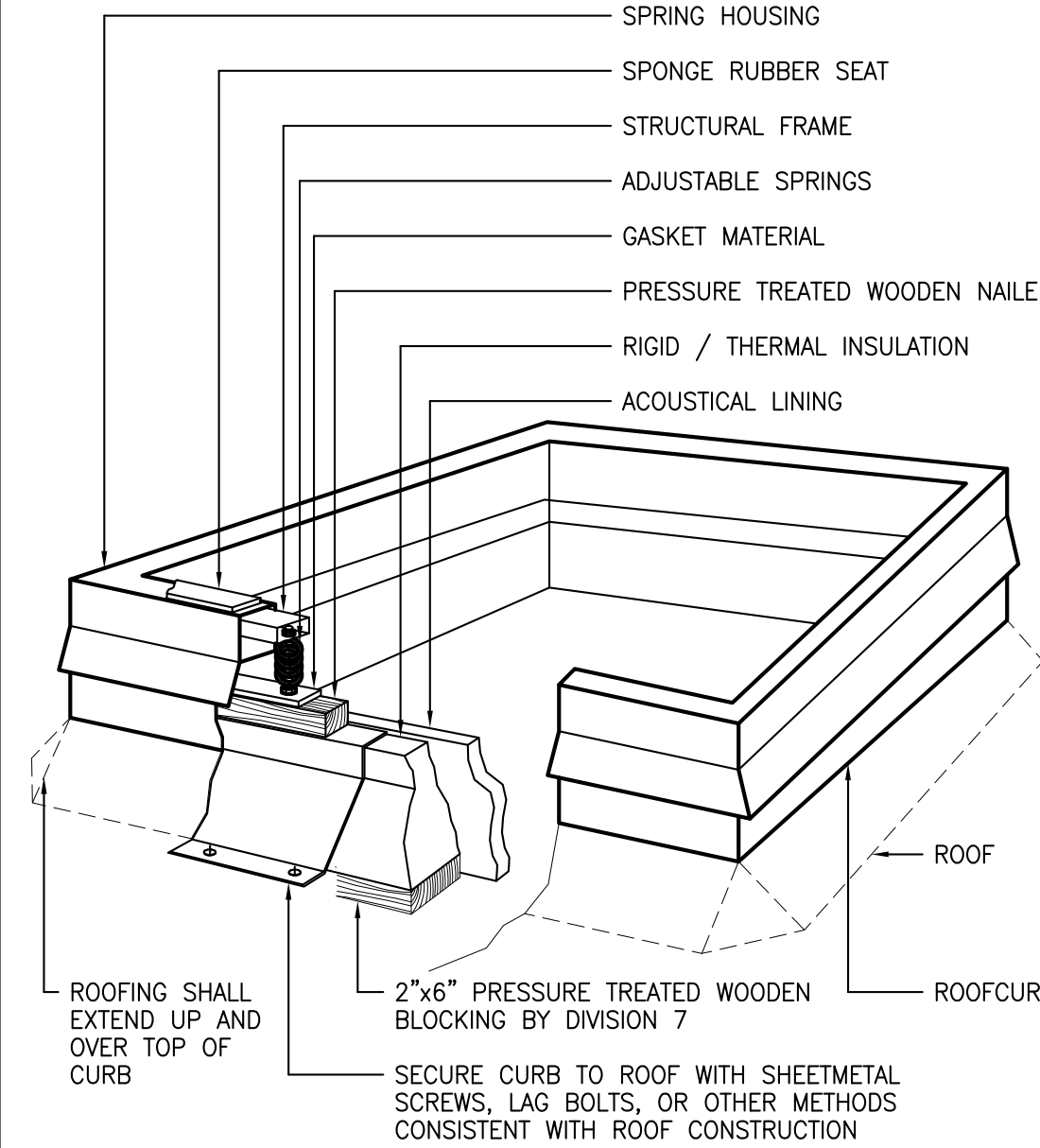
**SUPPLY BRANCH TAKE-OFF FITTING DETAIL**



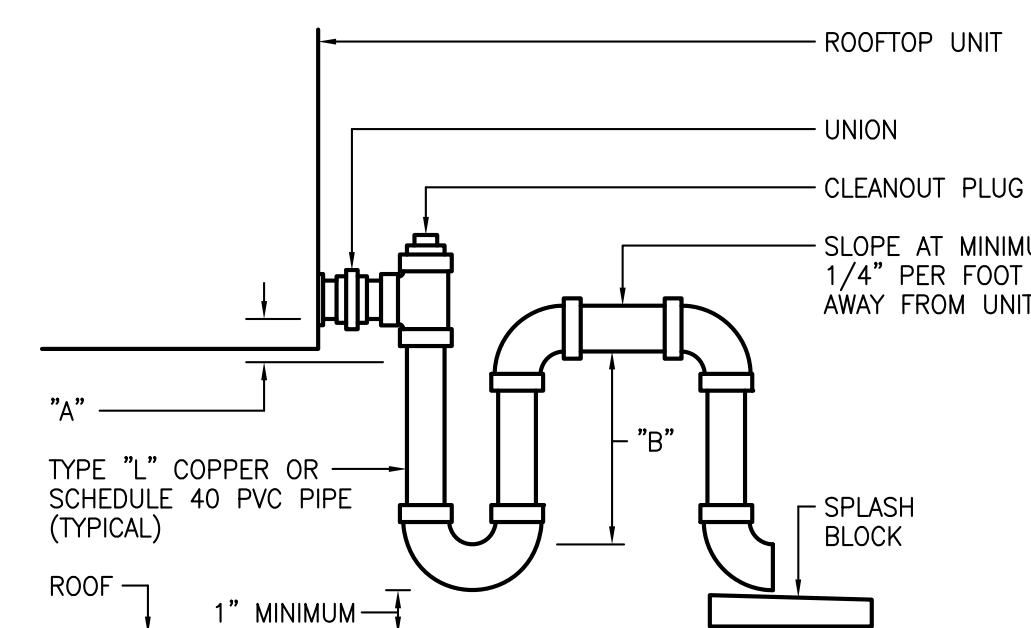
**RETURN / EXHAUST BRANCH TAKE-OFF FITTING DETAIL**



**ROOF MOUNTED PIPE SUPPORT DETAIL**



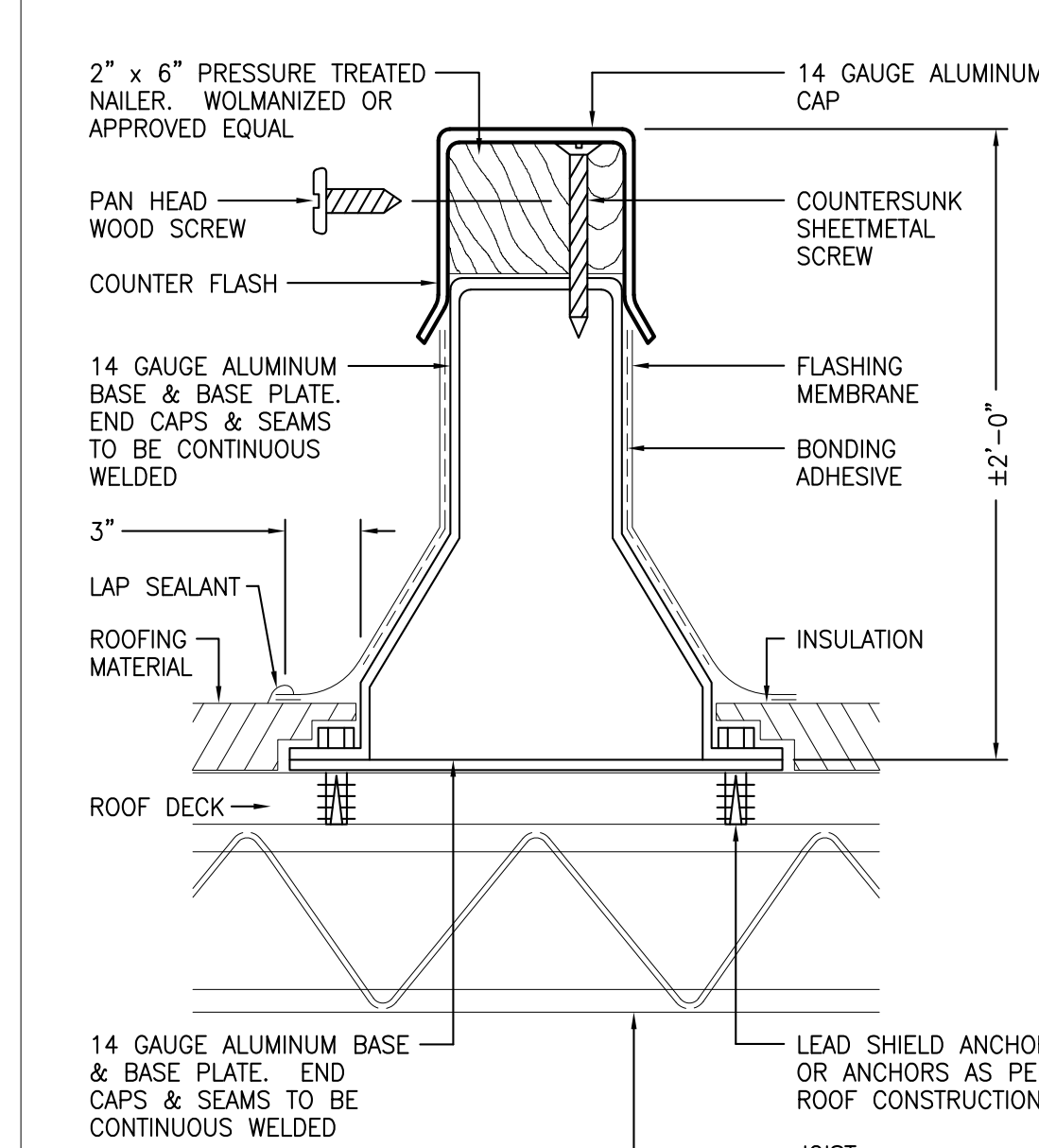
**THERMAL ACOUSTICAL AND VIBRATION ISOLATION ROOF CURB DETAIL**



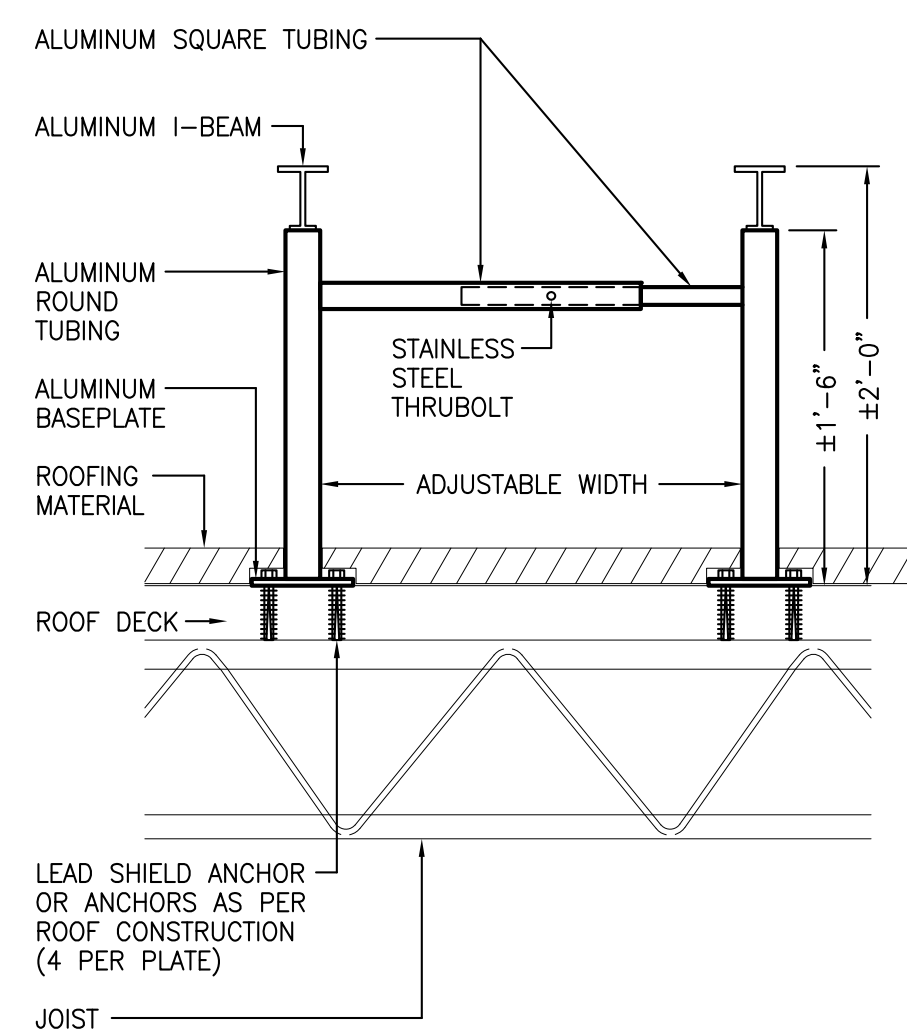
COIL CONFIGURATION	DIMENSION "A"	DIMENSION "B"
BLOW-THRU	1"	FAN DISCHARGE STATIC PRESSURE PLUS 1"
DRAW-THRU	FAN SUCTION STATIC PRESSURE PLUS 1"	2-1/2"

- 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).

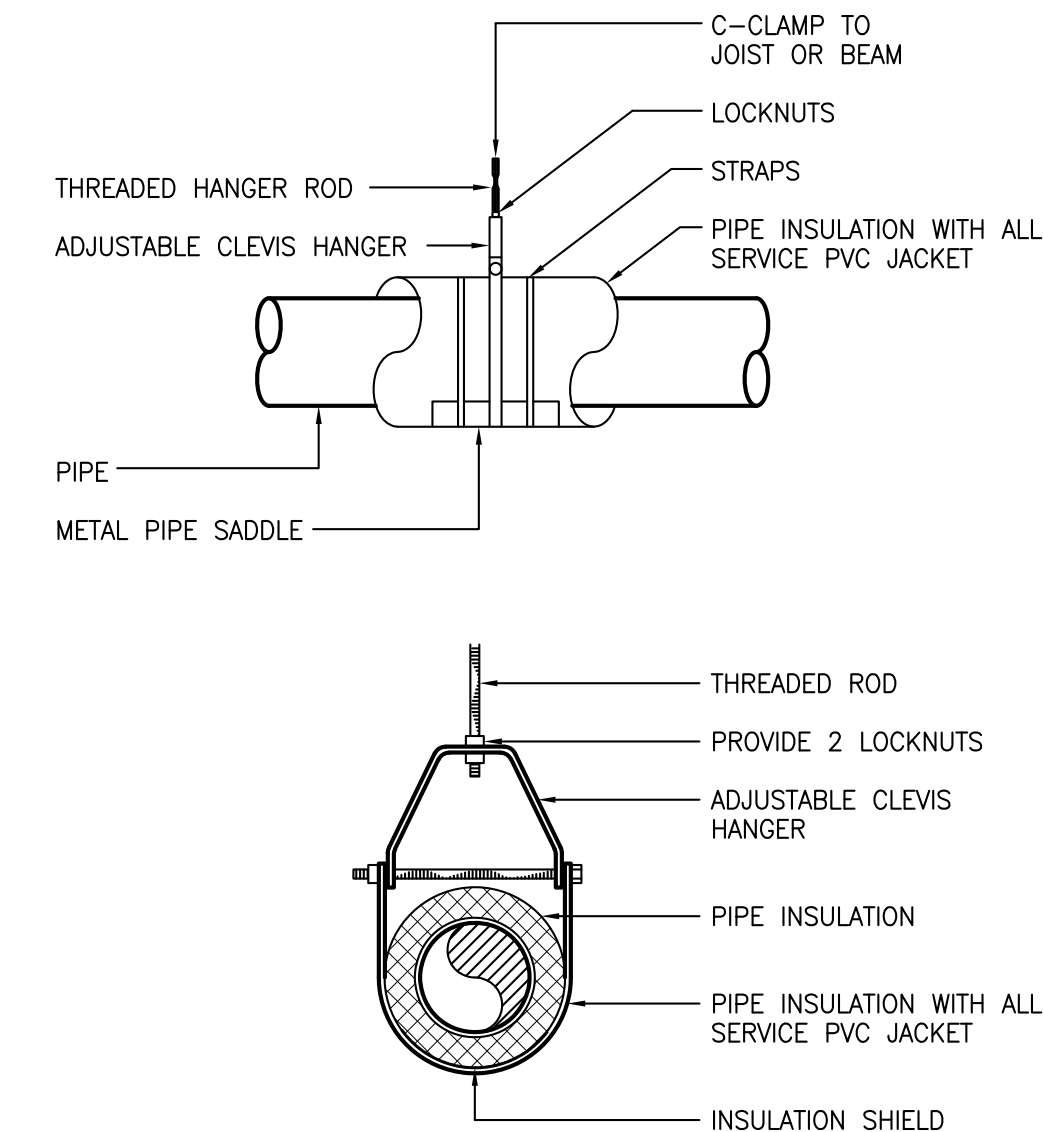
**ROOFTOP UNIT CONDENSATE TRAP DETAIL**



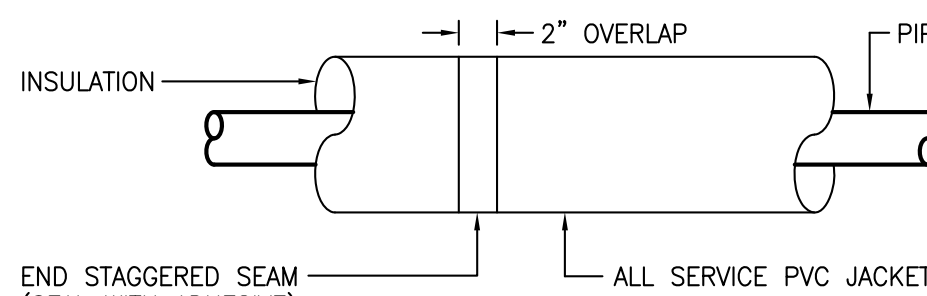
**ROOF MOUNTED EQUIPMENT RAIL DETAIL**



**ROOF MOUNTED CONDENSING UNIT STAND DETAIL**

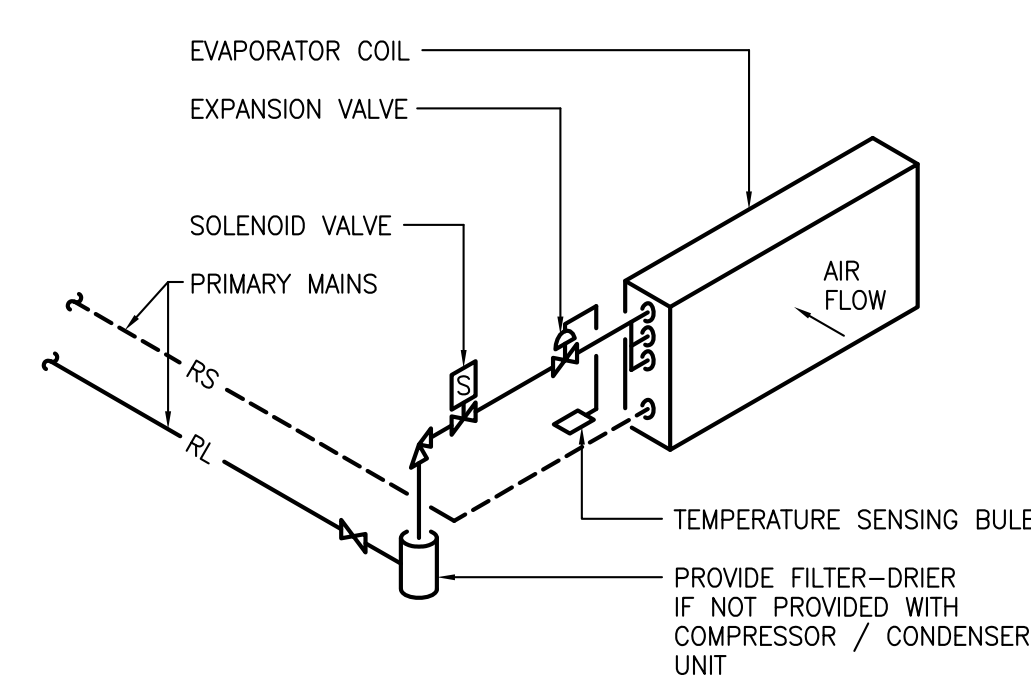


**SINGLE PIPE HANGER DETAIL**



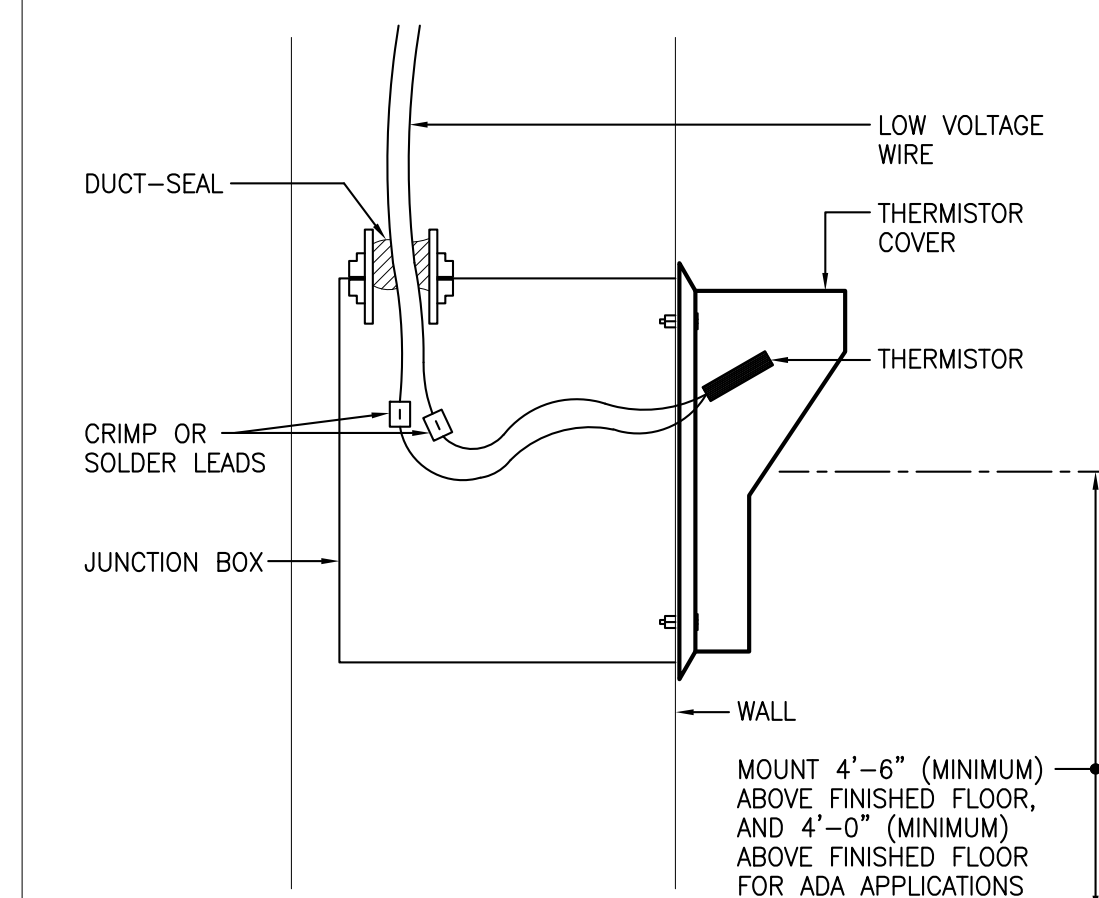
- NOTE:**
1. ALL PIPING EXPOSED IN OCCUPIED AREAS SHALL BE JACKETED WITH MATERIALS SUITABLE FOR PAINTING.

**PIPING INSULATION JACKET DETAIL**



- NOTES:**
1. PITCH ALL GAS LINES IN DIRECTION OF FLOW, 1/16 INCH/FOOT (MINIMUM).
  2. PROVIDE DOUBLE RISER WHERE NECESSARY TO MAINTAIN REQUIRED VELOCITIES FOR OIL FLOW.
  3. PROVIDE A TRAP FOR EVERY 25 FEET OF VERTICAL RISE IN GAS LINES.
  4. HVAC EQUIPMENT SUPPLIER SHALL SIZE REFRIGERANT LINES TO MEET SYSTEM REQUIREMENTS.

**DX COOLING COIL PIPING DETAIL**



**TEMPERATURE SENSOR AND THERMOSTAT MOUNTING DETAIL**

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SEAL:

TITLE: **HVAC DETAILS**



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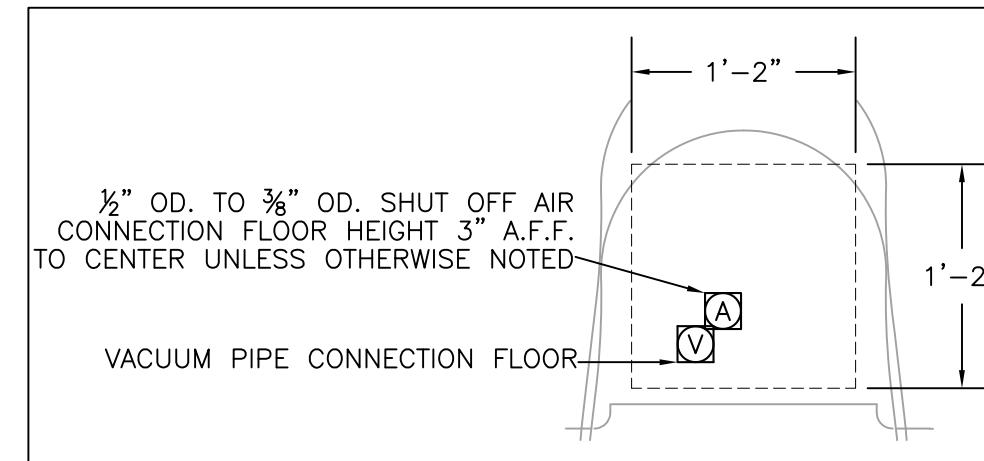




**PLUMBING DENTAL EQUIPMENT SCHEDULE**

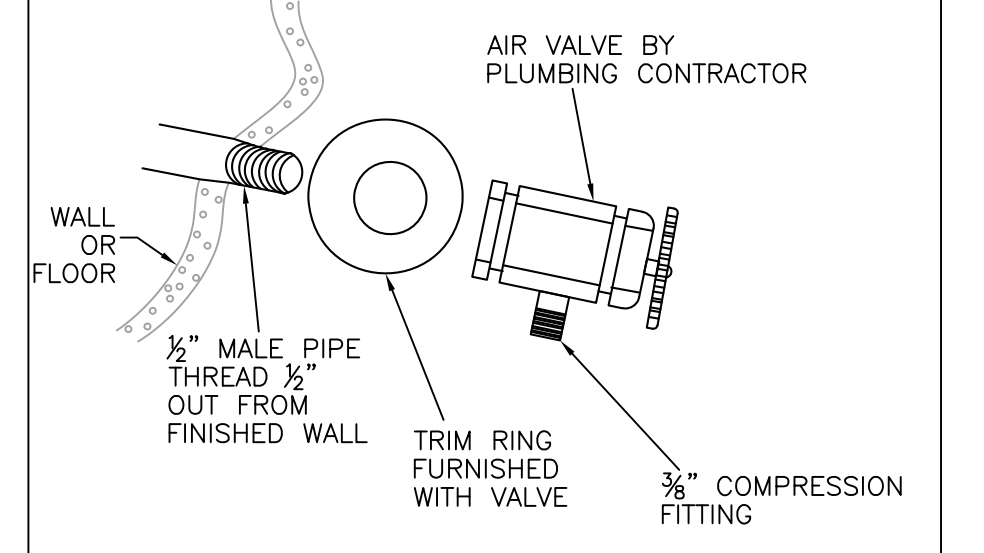
**ALL EQUIPMENT LISTED BELOW IS TO BE PROVIDED BY PATTERSON DENTAL. PLUMBING CONTRACTOR TO MAKE CONNECTIONS LISTED BELOW. ALL ITEMS TO BE INSTALLED PER STATE AND LOCAL CODES.**

QTY	ITEM #	DESCRIPTION	PLUMBING				PLUMBING INFO		RISERS & BRANCHES	VAC INFO	DENTAL COMPRESSED AIR
			SUPPLY	SANITARY	PLUMBING REMARKS	VAC REMARKS	COMPRESSED AIR REMARKS				
			1/2" COLD WATER COPPER	1/2" HOT WATER COPPER	1 1/2" PVC WASTE SCHEDULE 40	DRAIN DIRECT	DRAIN INDIRECT	DRAIN STAND PIPE	5/8" PVC SCHEDULE 40	2" PVC SCHEDULE 40	1/2" COPPER TYPE L OR K
3	1	DENTAL CHAIR							COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #1 ON DRAWING P-2.		COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #1 ON DRAWING P-2.
3	20	SIDE CABINET							SEE DETAIL #2 ON DRAWING P-2.		COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #1 ON DRAWING P-2.
1	22	STERILIZATION CABINET							COORDINATE PIPING LOCATIONS WITH MILLWORK & SK-3		COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #2 ON DRAWING P-2.
1	31	LAB CABINETS							COORDINATE PIPING LOCATIONS WITH MILLWORK & SK-2		COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #3 ON DRAWING P-2.
1	40	PLASTER TRAP							INSTALL FOR LAB SINK AND MODEL TRIMMER. BRACE TRAP TO SUPPORT WEIGHT OF FULL TRAP AND TO SIMPLIFY THE REMOVAL OF CANISTER FOR CLEANING.		COORDINATE U/F CONNECTION IN FIELD WITH NEARBY EQUIPMENT. SK-2 DOESN'T REQUIRE CONNECTION.
1	41	MODEL TRIMMER							CONNECT WATER LINE TO SINK COLD WATER SUPPLY, SEE DETAIL #4 ON DRAWING P-2 FOR DRAIN.		
1	50	ASSISTINA									COORDINATE U/F CONNECTION IN FIELD. SEE DETAIL #3 ON DRAWING P-2.
2	51	STERILIZER							PROVIDE DRAIN LINE. COORDINATE SIZE & LOCATION WITH PATTERSON DENTAL.		
1	60	COMPRESSOR							REQUIRES AIR INTAKE, 2" PVC PIPE AND FLEXIBLE HOSE WITH 70" OF CLEAR TUBING FOR CONNECTION TO THE AIR INTAKE OF EACH COMPRESSOR. COORDINATE WITH PATTERSON DENTAL.		IF PIPE VOLUME IS TOO GREAT (MORE THAN 235 IN <sup>3</sup> OR MORE THAN 100 FT. OF 1/2" DIAMETER PIPE), A PRESSURE REGULATOR SHOULD BE INSTALLED BETWEEN MAIN TANK AND THE DISTRIBUTION PIPING AND SET TO 80 PSI.
1	61	WET VACUUM SYSTEM							REQUIRES FLOOR SINK PER LOCAL CODES. SEE PLUMBING FIXTURE SCHEDULE AND PLANS		SUCTION LINE MUST SLOPE A MIN 1/4" PER 10' TOWARDS PUMP. DO NOT USE 90° TEES. USE 45° Y'S AND ELBOWS. SEE PLANS & PATTERSON DENTAL DRAWINGS.
1	63	AMALGAM SEPARATOR									

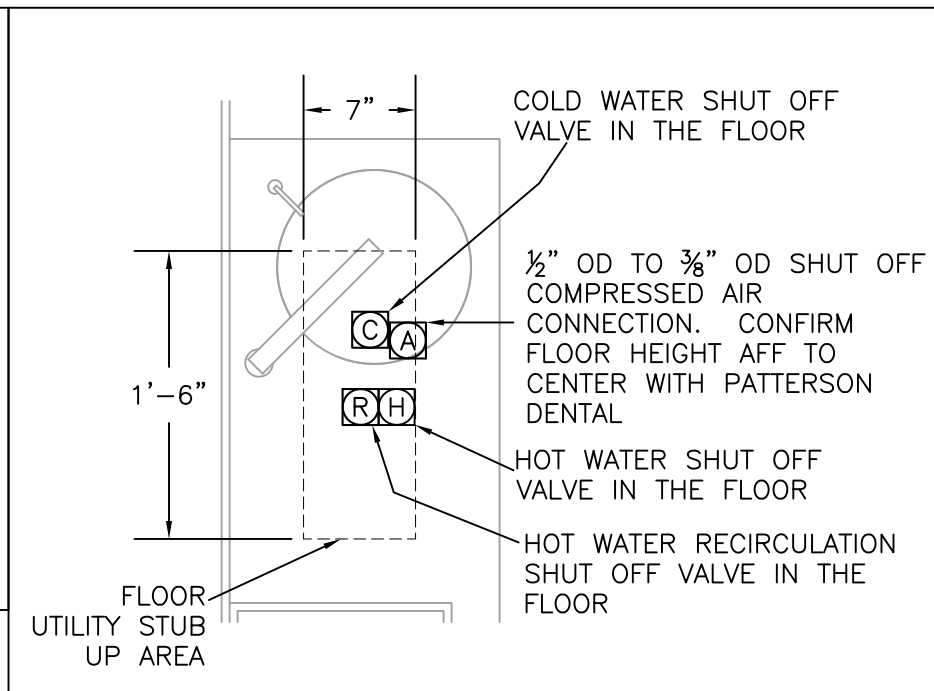


**1 ENLARGED CHAIR UTILITY ITEM #1**  
SCALE: NONE

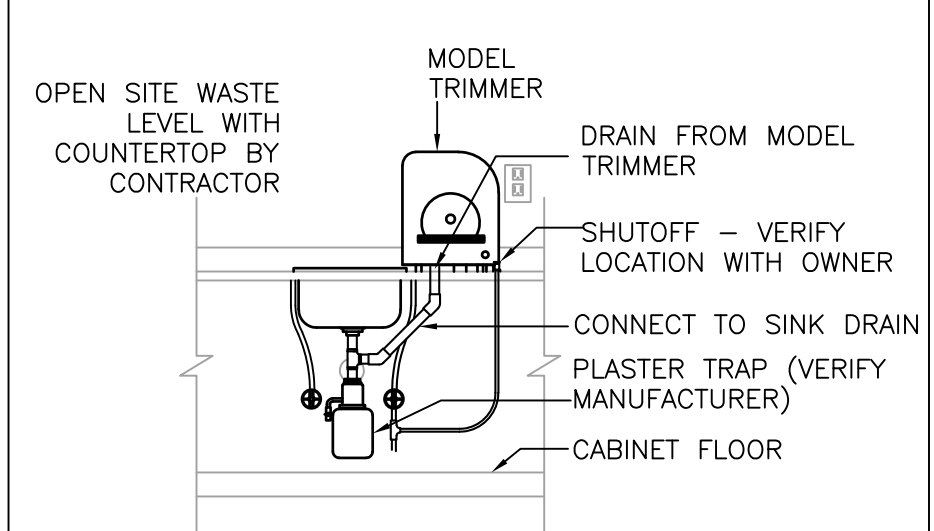
AIR OUTLET PLUMBING: PROVIDE SHORT STUBBED OUT LINE FROM WALL - TERMINATE WITH RIGHT ANGLE STOP VALVE THAT AS A 3/8" O.D. COMPRESSION OUTLET FITTING. SEE ELEVATIONS ON PATTERSON DENTAL DRAWINGS.



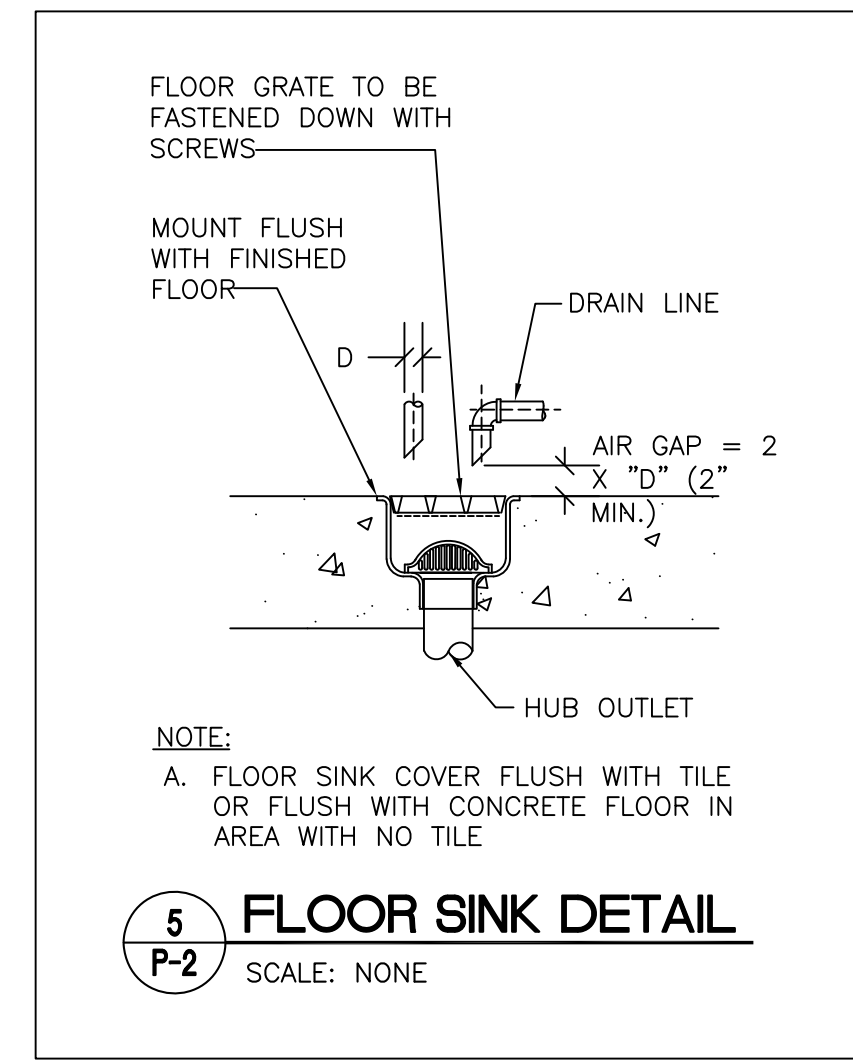
**3 AIR OUTLET**  
SCALE: NONE



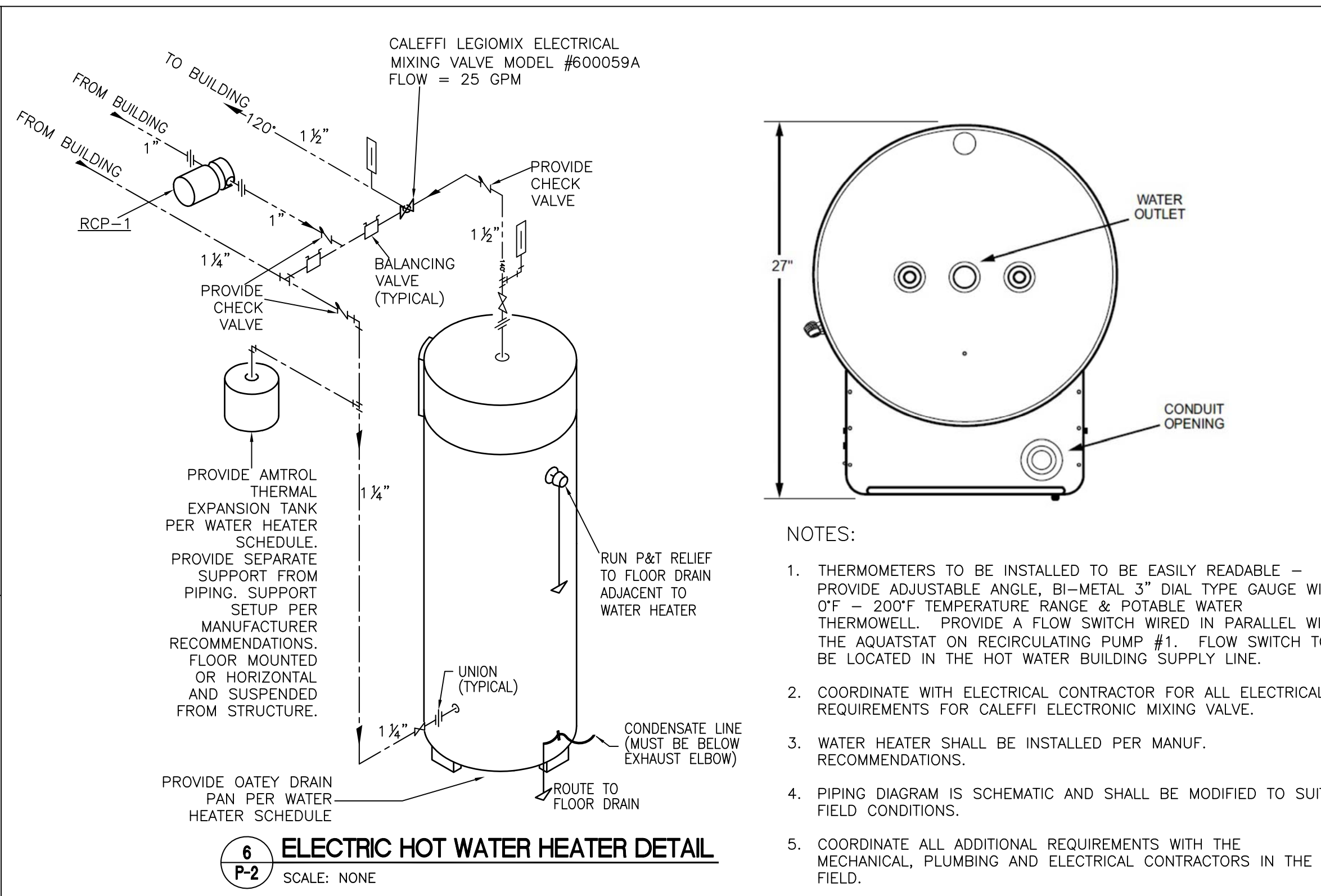
**2 ENLARGED DOCTOR CABINET UTILITY ITEM #20**  
SCALE: NONE



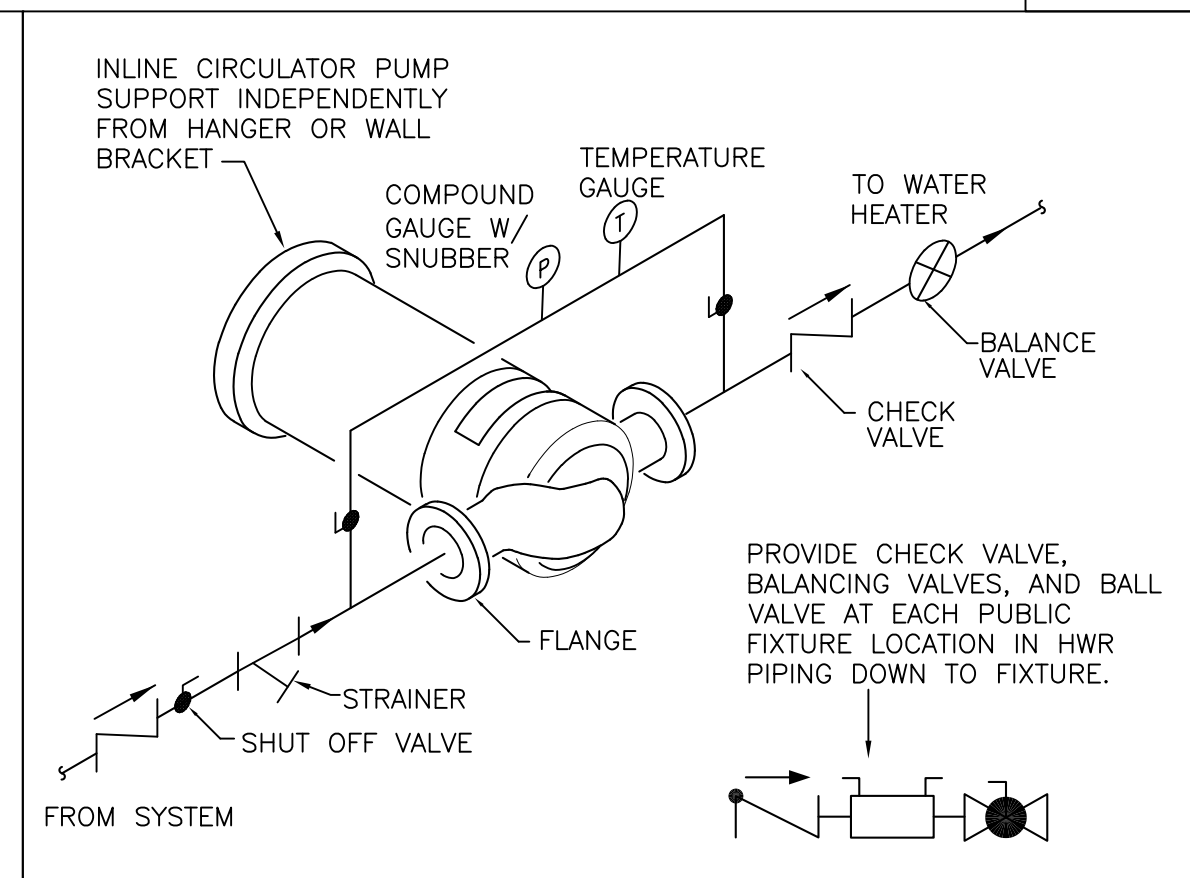
**4 MODEL TRIMMER WITH PLASTER TRAP**  
SCALE: NONE



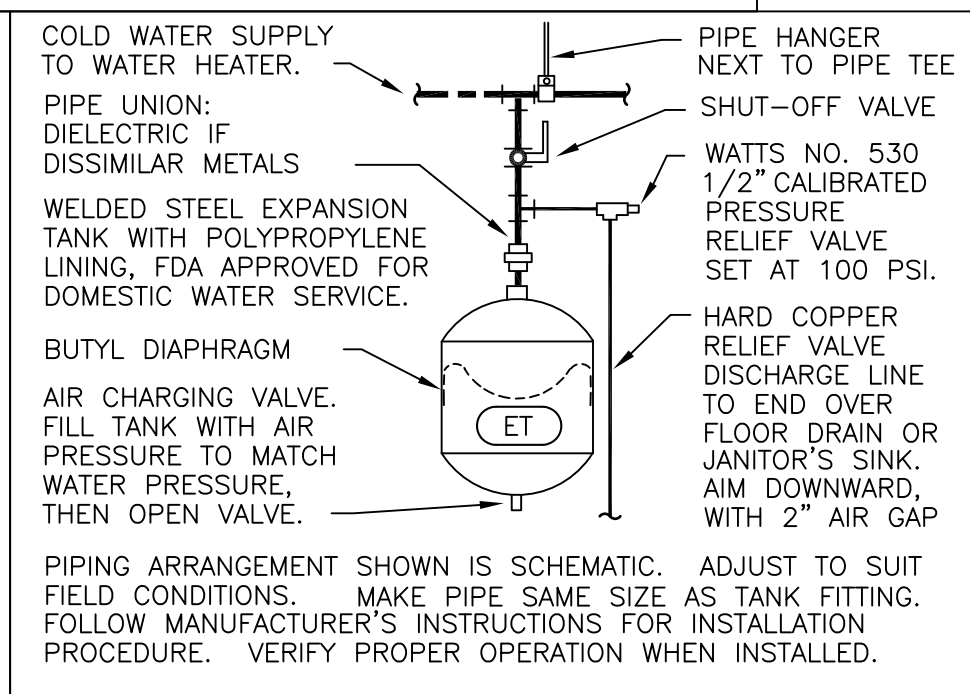
**5 FLOOR SINK DETAIL**  
SCALE: NONE



**6 ELECTRIC HOT WATER HEATER DETAIL**  
SCALE: NONE



**7 DOMESTIC HOT WATER CIRCULATION INLINE PUMP PIPING DETAIL**  
SCALE: NONE



**8 EXPANSION TANK DETAIL**  
SCALE: NONE

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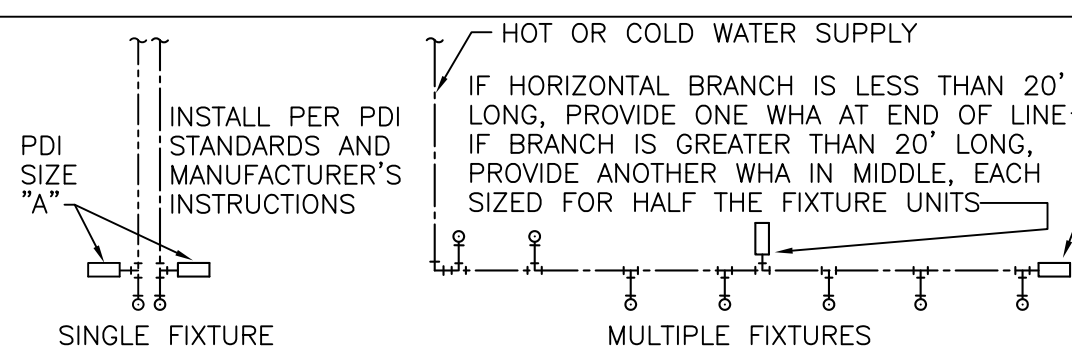
SEAL:  
  
TITLE:  
**PLUMBING SCHEDULES & DETAILS CONTINUED**

**SILVESTRI ARCHITECTS · PC**  
1321 MILLERSPORT HWY PH. 716.691.0900  
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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **P-2**





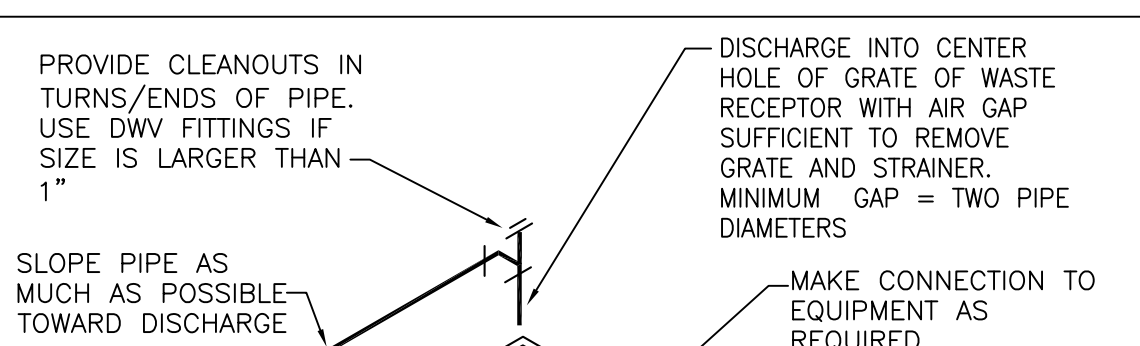
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1 1/4"	61-113
E	1 1/2"	114-154
F	2"	154-330

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
MOP RECEPTOR	3	3
SHOWER/BATHTUB	2	2

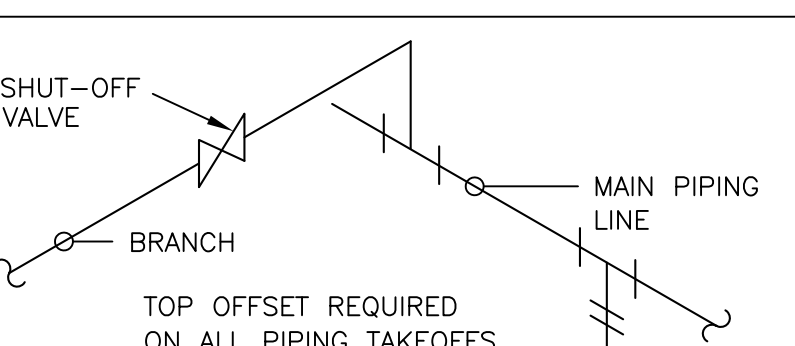
PC TO PROVIDE WATER HAMMER ARRESTERS BY MIFAB, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

**1 WATER HAMMER REQUIREMENTS**  
SCALE: NONE

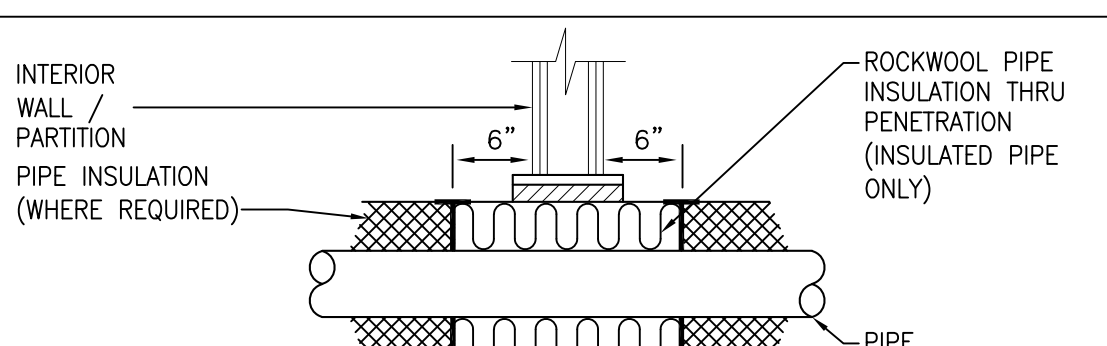


NOTE: ROUTE PIPE INCONSPICUOUSLY AND UNOBTUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR ADDITIONAL INFORMATION.

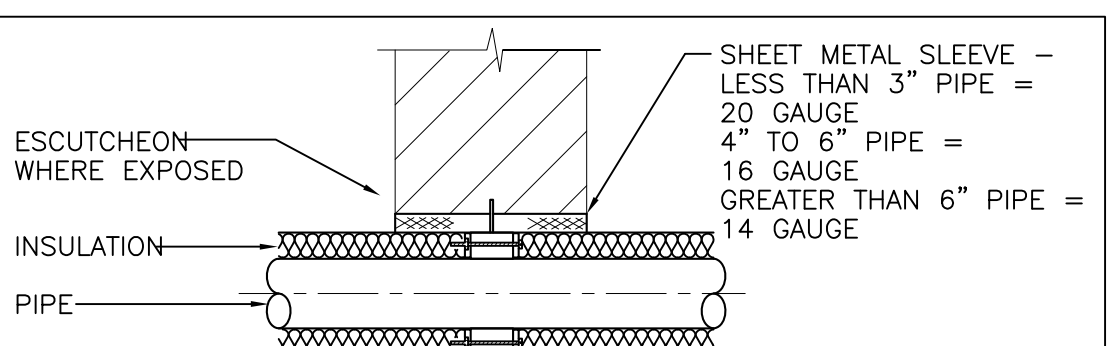
**2 INDIRECT WASTE PIPE AT DRAIN RECEPTOR DETAIL**  
SCALE: NONE



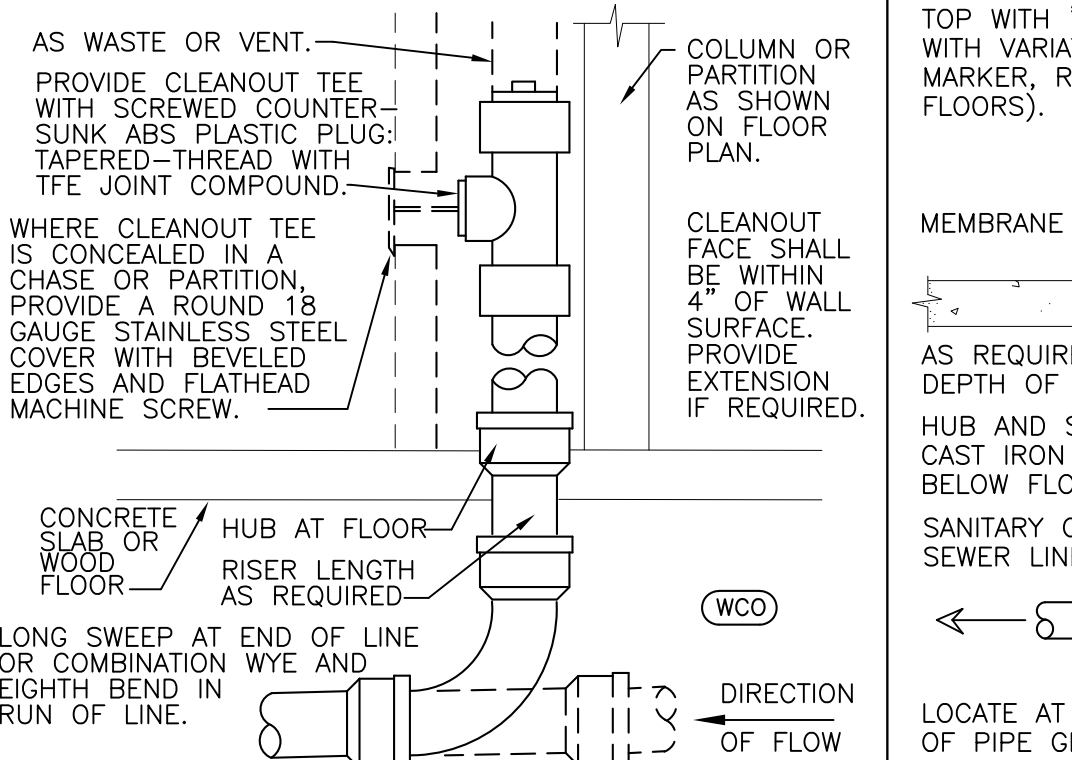
**3 TYP. BRANCH PIPING TAKEOFF DETAIL**  
SCALE: NONE



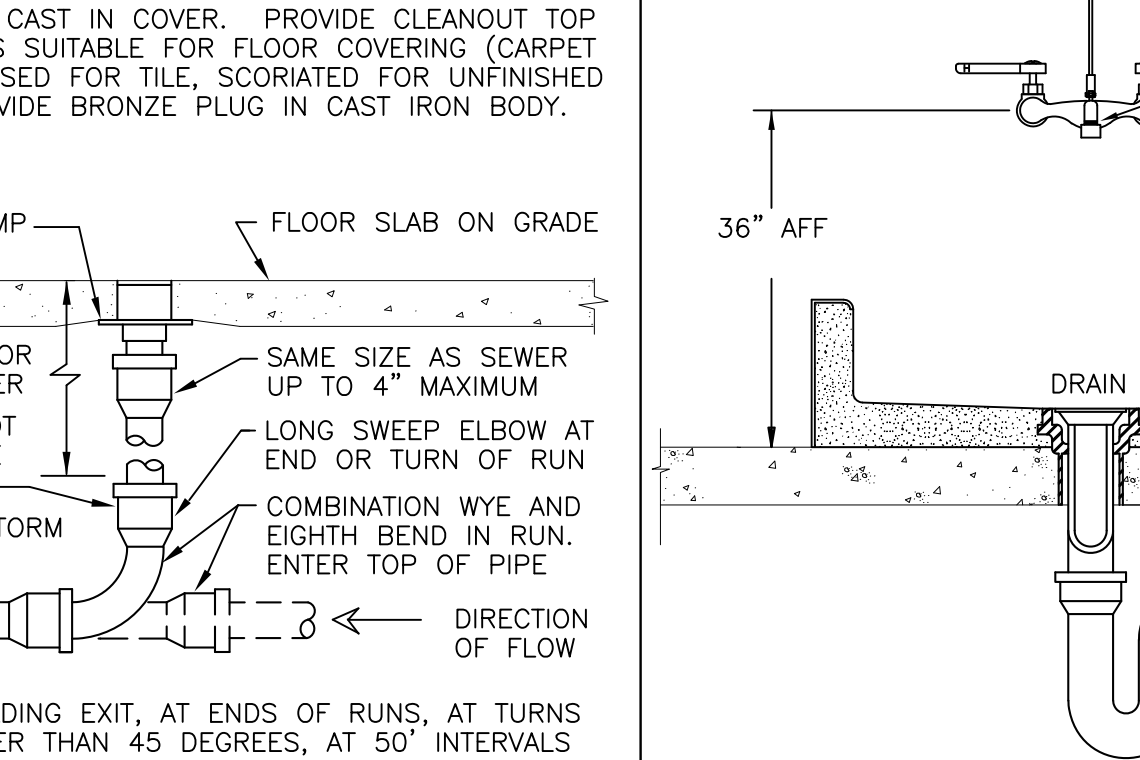
**4 TYP. FIRESTOPPING AT PENETRATIONS (PIPE THRU WALL/FLOOR) DETAIL**  
SCALE: NONE



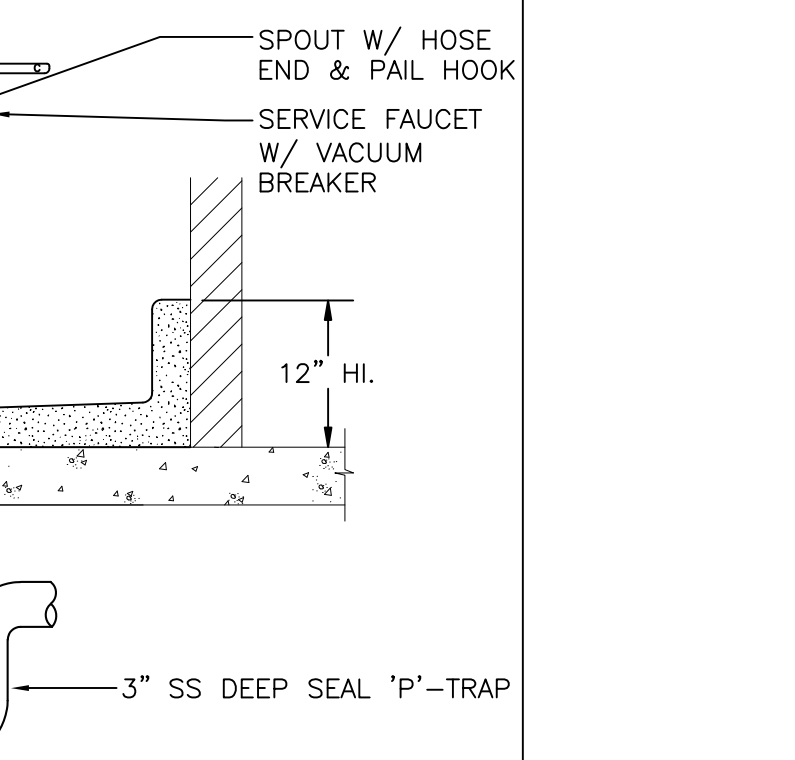
**5 PIPE THRU EXTERIOR WALL PENETRATION DETAIL**  
SCALE: NONE



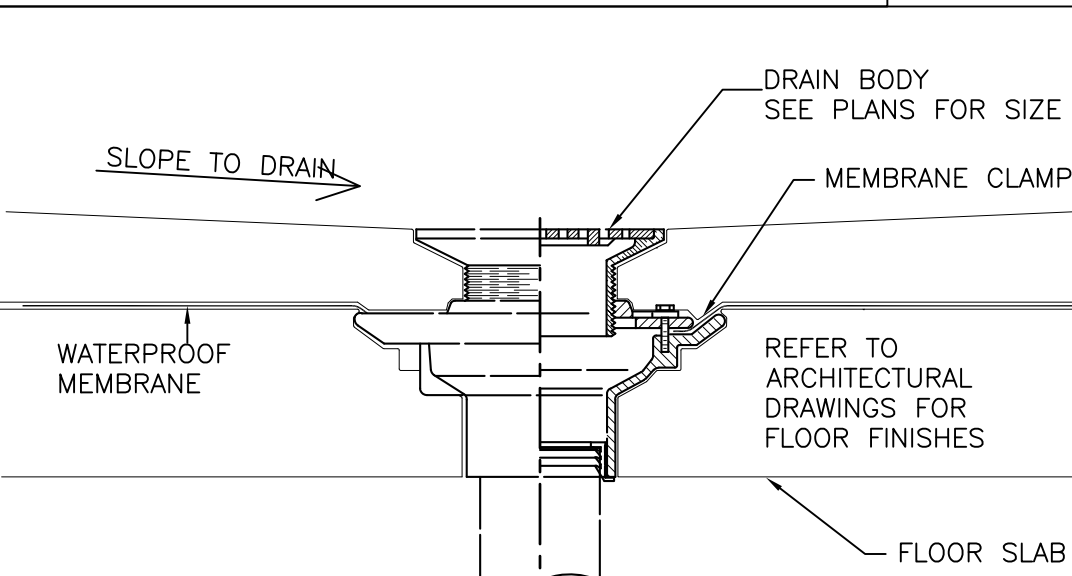
**6 WALL CLEANOUT DETAIL**  
SCALE: NONE



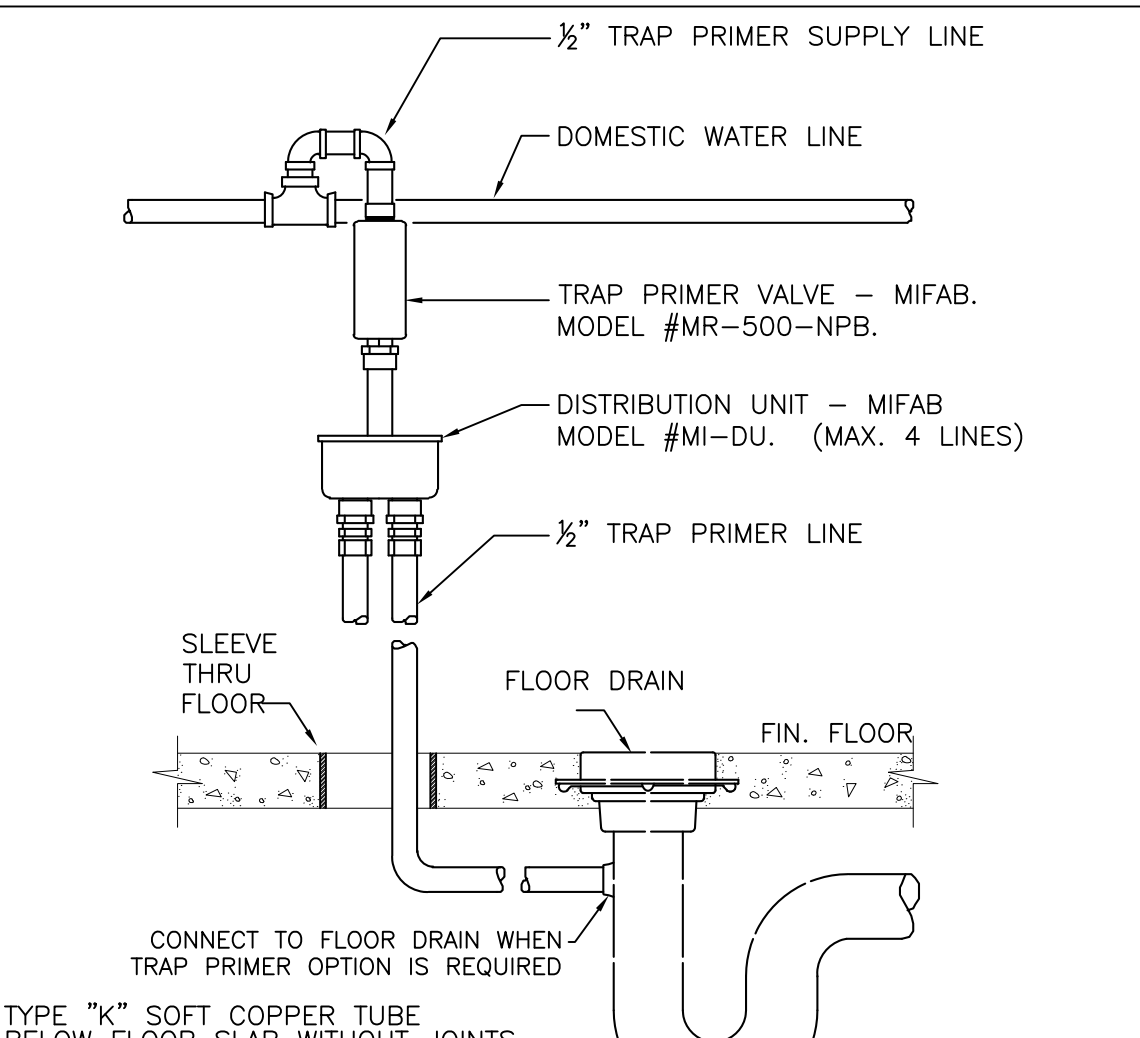
**7 FLOOR CLEANOUT DETAIL**  
SCALE: NONE



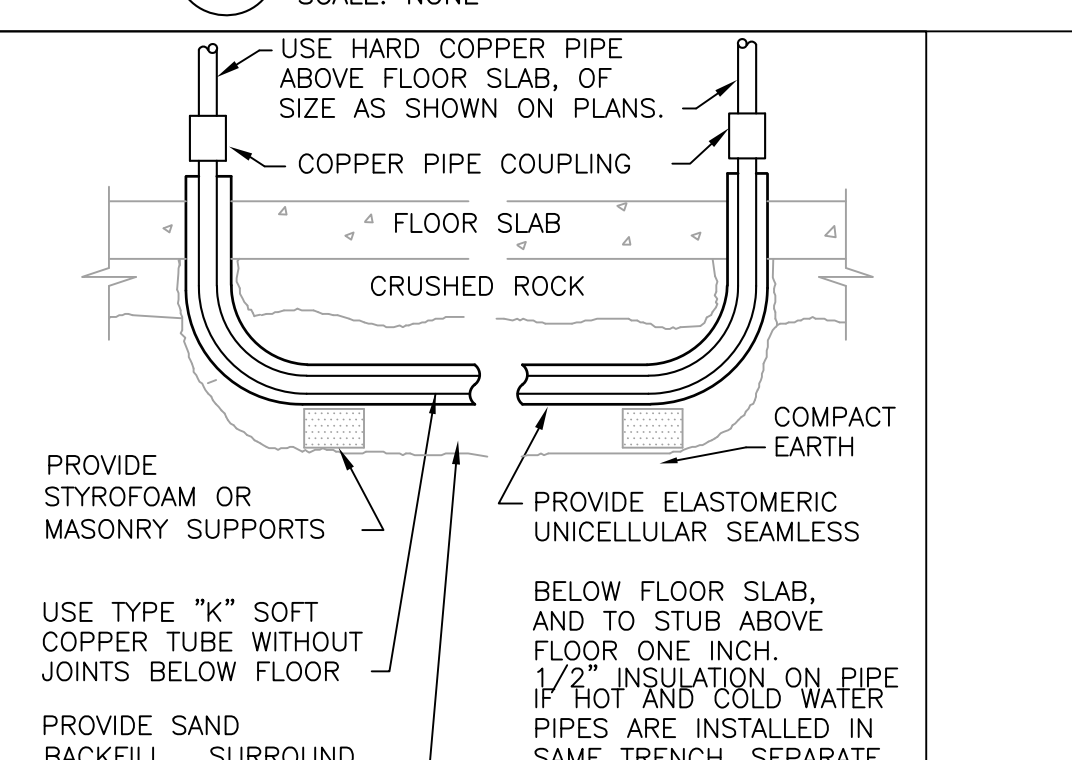
**8 MOP RECEPTOR DETAIL**  
SCALE: NONE



**10 FLOOR DRAIN DETAIL**  
SCALE: NONE



**11 TRAP PRIMER PIPING DETAIL**  
SCALE: NONE



**12 WATER PIPING UNDER THE SLAB**  
SCALE: NONE

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ISSUE: BID/PERMIT SET 2022-07-15

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

SEAL:

TITLE: **PLUMBING DETAILS CONTINUED**

**SILVESTRI ARCHITECTS · PC**

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **P-3**

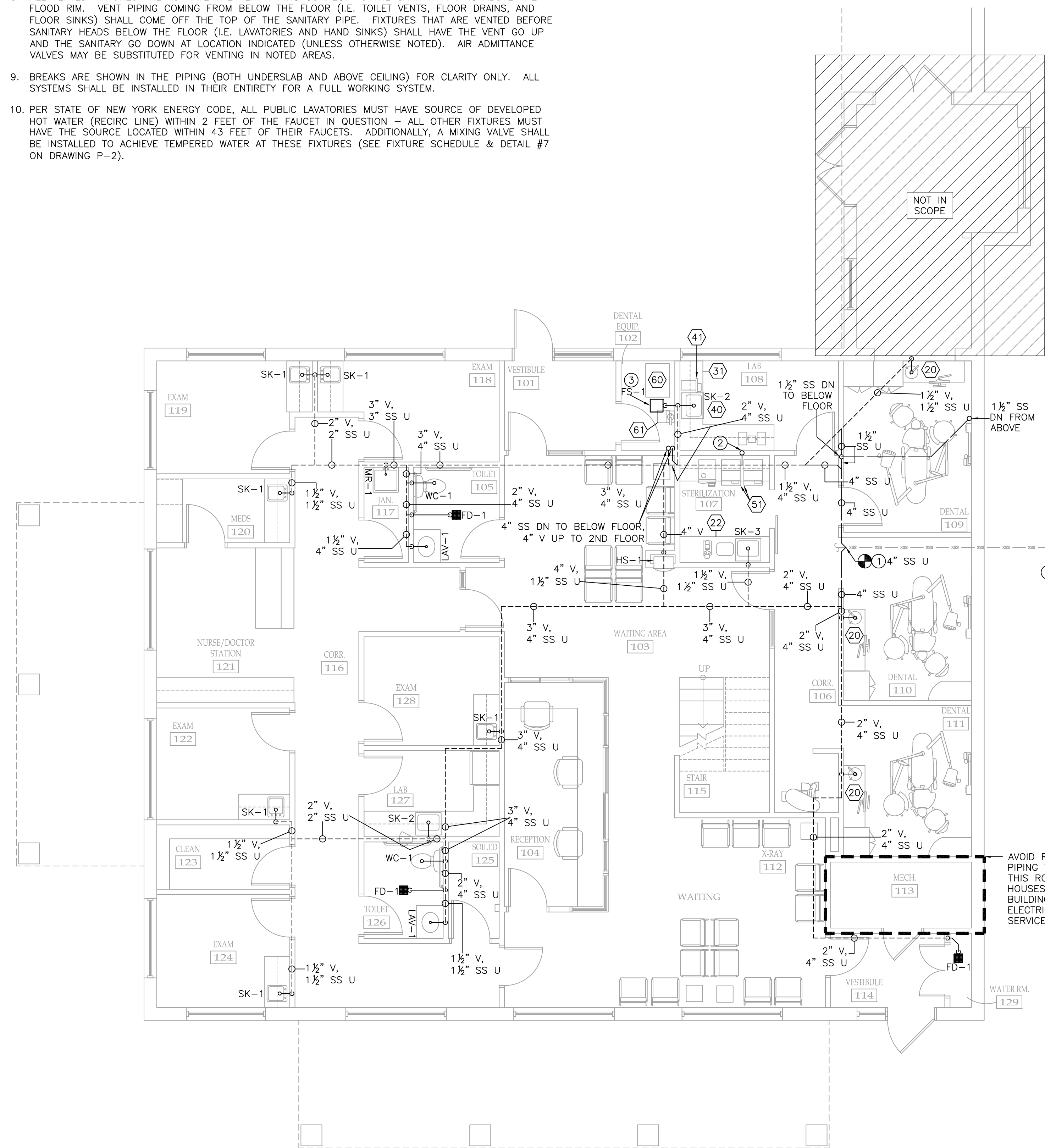
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3. PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH EXISTING ARCHITECTURAL FINISHES.
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8. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOR RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED (UNLESS OTHERWISE NOTED). AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
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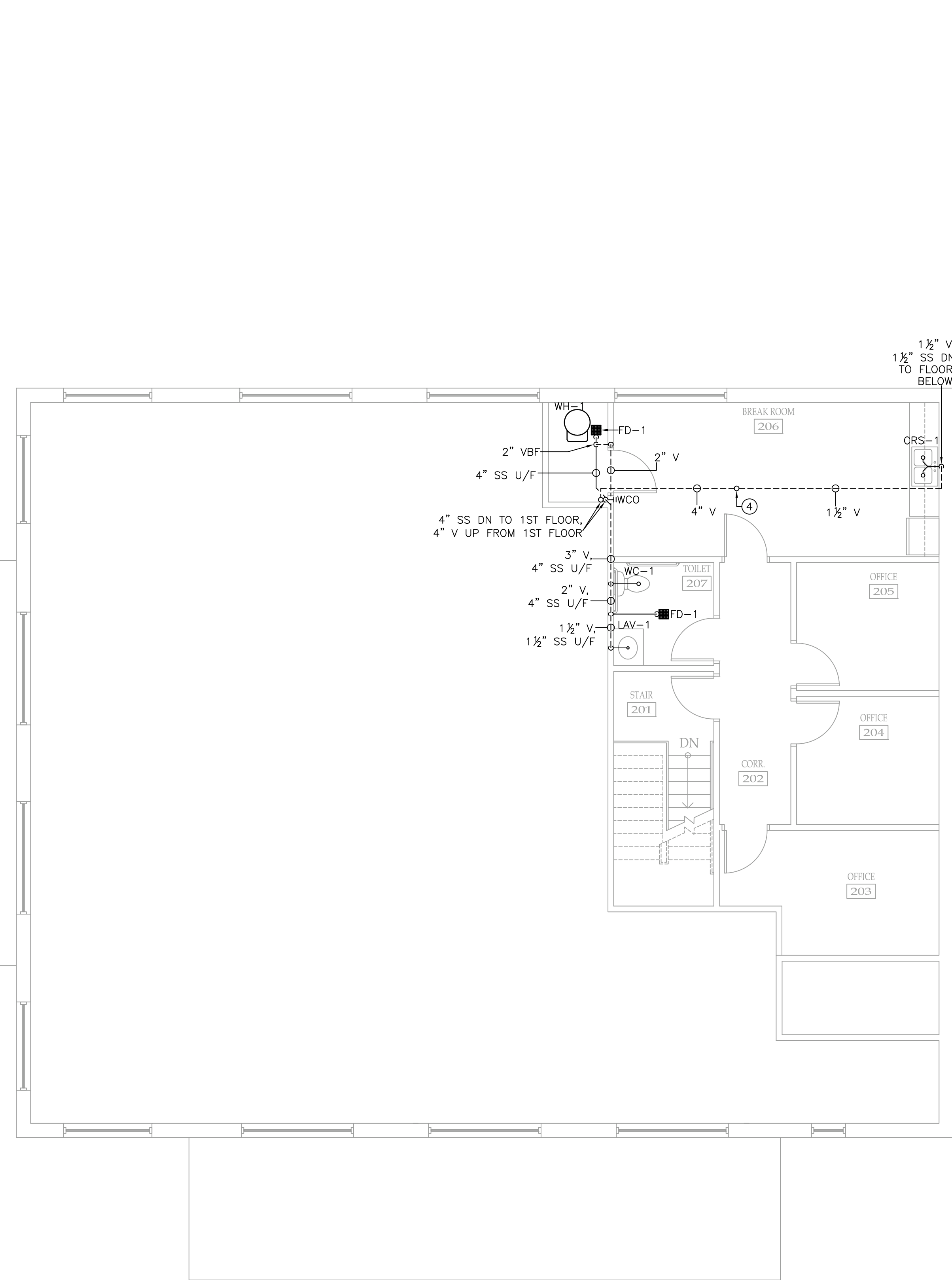
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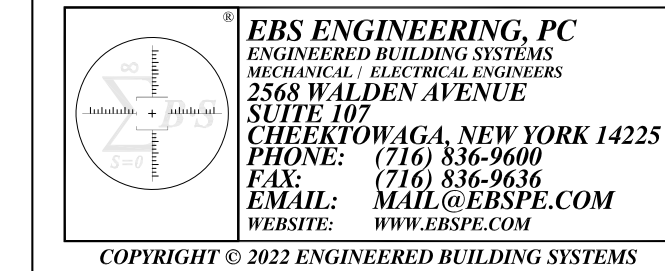
**1 SANITARY SEWER - 1ST FLOOR PLAN**  
P-4 SCALE: 3/16" = 1'-0"



**2 SANITARY SEWER - 2ND FLOOR PLAN**  
P-4 SCALE: 3/16" = 1'-0"

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

SEAL:

TITLE:  
**PLUMBING  
SANITARY  
SEWER FLOOR  
PLANS**



**SILVESTRI**  
ARCHITECTS · PC

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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: P-4



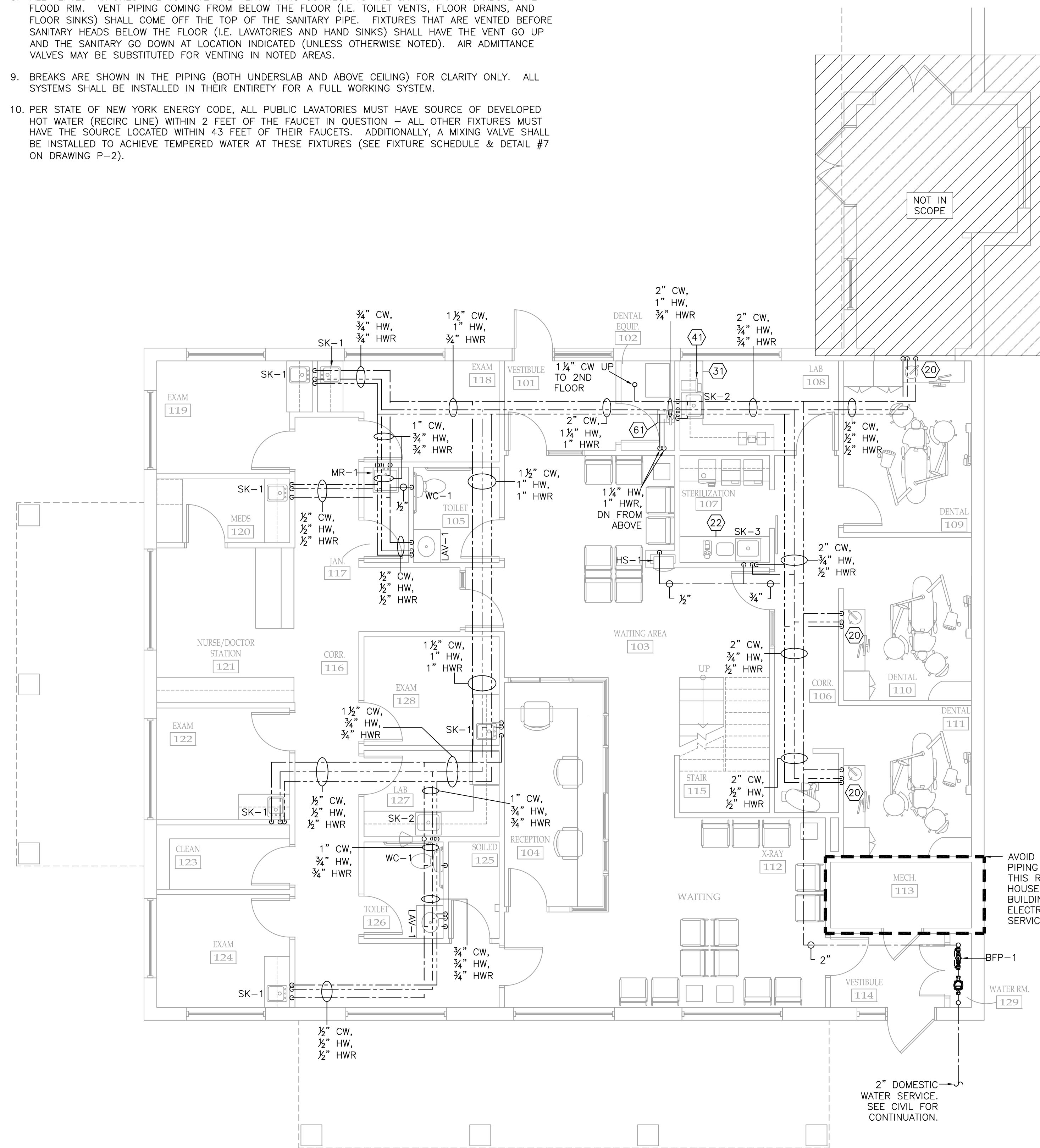
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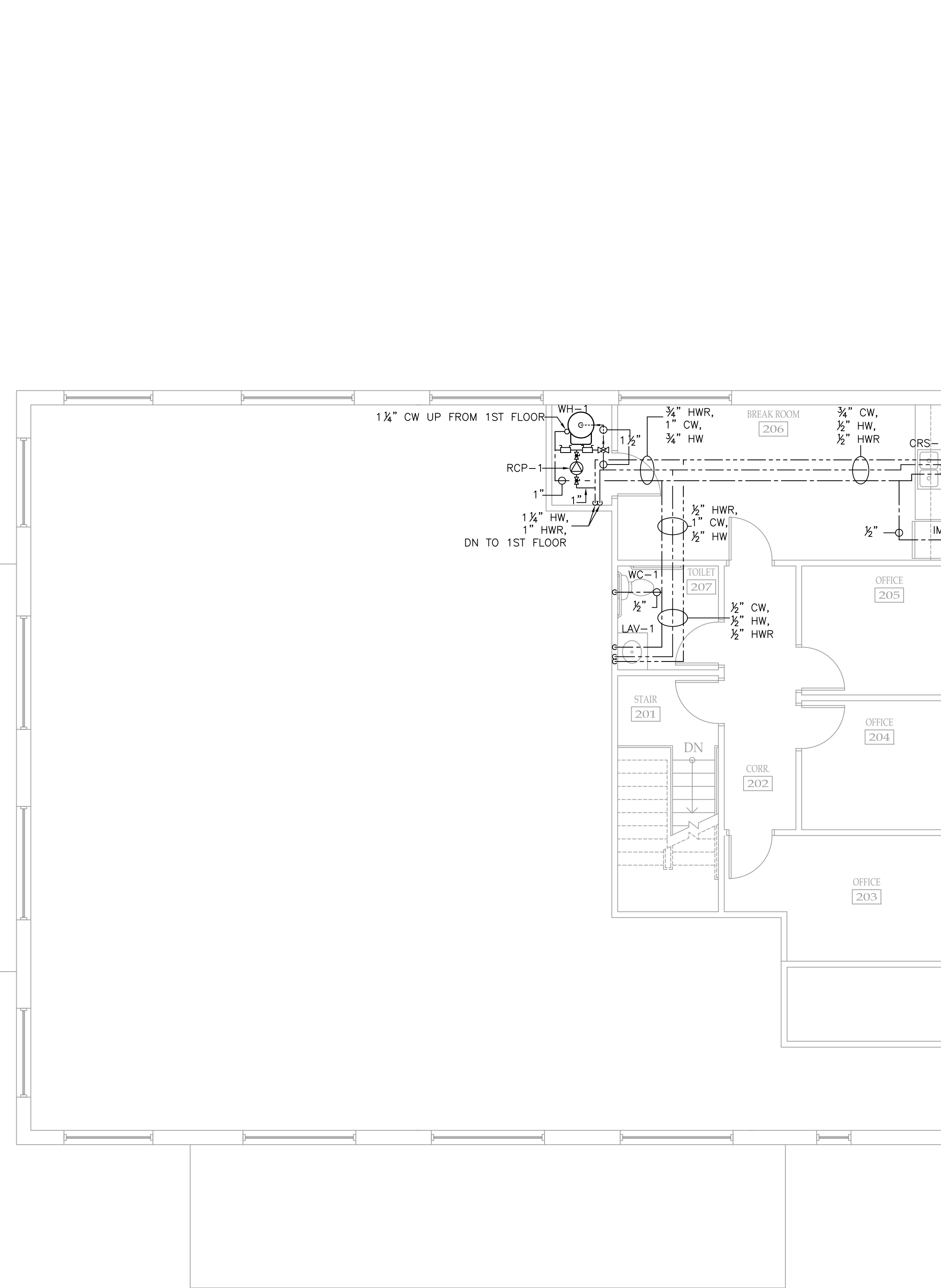
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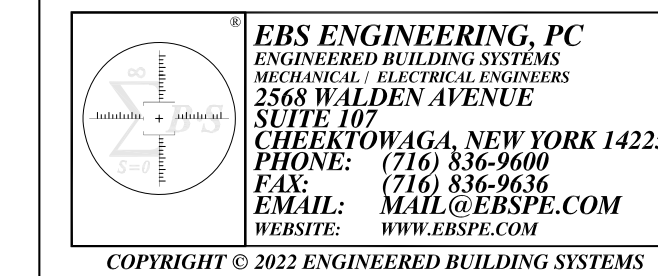
**1 DOMESTIC WATER - 1ST FLOOR PLAN**  
P-5 SCALE: 3/16" = 1'-0"



**2 DOMESTIC WATER - 2ND FLOOR PLAN**  
P-5 SCALE: 3/16" = 1'-0"

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

SEAL:

TITLE:  
**PLUMBING DOMESTIC WATER FLOOR PLANS**



**SILVESTRI ARCHITECTS PC**

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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: P-5





**GENERAL NOTES:**

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**1 VACUUM + COMPRESSED AIR - 1ST FLOOR PLAN**  
 P-6 SCALE: 3/16" = 1'-0"

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ISSUE: \_\_\_\_\_  
 BID/PERMIT SET 2022-07-15

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

SEAL: \_\_\_\_\_

TITLE:  
**PLUMBING  
 VACUUM &  
 COMPRESSED  
 AIR 1ST FLOOR  
 PLAN**



**SILVESTRI**  
 ARCHITECTS · PC

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SA JOB #: \_\_\_\_\_ DATE: \_\_\_\_\_  
 21055.01 07-15-22

DRAWING #: \_\_\_\_\_  
**P-6**



PLUMBING SYSTEMS SPECIFICATIONS

PART 1 GENERAL

1.01 SUMMARY:

- A. The Contractor shall provide the building plumbing systems as shown on the drawings, as specified in this Section, and as needed for a complete installation including, but not necessarily limited to:
1. Applications and fees for all plumbing permits, services, and interim and final inspections.
2. Temporary water provisions as required for construction purposes.
3. Excavation and backfill for plumbing systems work.
4. Concrete pads and pits as may be required for plumbing systems work.
5. Domestic hot and cold water piping systems, including backflow preventer.
6. Drain, waste, and vent systems.
7. Gas piping system.
8. Storm piping system.
9. Plumbing fixtures and trim.
10. Cathodic and dielectric protection.
11. Accessory plumbing devices including but not necessarily limited to hangers, supports, inserts, valves, and Pipe Labeling.
12. Access panels and boxes for Contractor-provided valves.
13. Piping insulation.
14. Cutting and patching.
15. Final gas connections to HVAC equipment.
16. Painting of exposed piping.
17. Sterilization of the potable water system.
18. Seismic Restraints (as may be required by the local jurisdiction).
19. Testing, adjusting and balancing.

- B. The Contractor shall include the cost of applications and fees for all plumbing permits, services, and interim and final inspections in the Base Bid.

1.02 SUBMITTALS:

The Contractor shall submit Product Data of the following: Domestic Water Piping, Sanitary/Storm Piping, Gas Piping, Valves, Pipe Hangers/Supports, Piping Insulation, and Plumbing Fixtures for review by the Architect/Engineer. Any Request for Product Substitution must be submitted one week prior to bid submission.

1.03 QUALITY ASSURANCE:

Codes and Regulations:

All materials, apparatus, and equipment and the installation thereof shall comply with all state and county ordinances and all other governmental and/or private authorities having jurisdiction, and shall comply with all county and state laws, rules, and regulations, as well as rules and regulations of the National Board of Fire Underwriters, and the Plumbing Code having jurisdiction. In the event of conflict between or among specified requirements and pertinent regulations, the more stringent requirement will govern and shall be provided at no additional cost to the owner.

Drawings and Coordination:

Construction drawings shall be considered as a part of the work, insofar as the drawings furnish the Contractor with information relating to design and construction of the building. Because of the scale of the mechanical drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required to meet such conditions. The plumbing drawings show the general arrangements of all piping, ductwork, equipment, etc., and shall NOT BE SCALED. This work shall be coordinated with ALL trades. Critical locations are dimensioned on the drawings; if a conflict arises, the Contractor shall notify the owner and the Architect/ Engineer immediately for clarification.

The Contractor shall verify the dimensions governing the plumbing systems work in the building. No extra compensation shall be claimed or allowed on account of differences between actual dimensions and those indicated on the drawings. The Contractor shall examine adjoining work, on which mechanical work is dependent for proper operation, and shall report any work which must be corrected. No waiver of responsibility for defective work shall be claimed or allowed due to any failure to report unfavorable conditions affecting the plumbing systems work.

1.04 WARRANTY/ CLOSEOUT DOCUMENTS:

Manufacturer's Warranty: The Contractor shall provide the manufacturer's standard product warranty.

Installer's Warranty: The Contractor shall include a copy of the Subcontractor's Warranty for all work provided under the contract for construction for a term of 1 year after the Date of Substantial Completion.

Warranties shall be included in the Building Maintenance Manuals submitted to the owner after the Date of Final Completion.

Sterilization Certificate of Performance: Upon completion of the water line sterilization, the Contractor shall deliver a copy of an acceptable sterilization "Certificate of Performance" to the owner. This Sterilization Certificate of Performance shall additionally be included in the Building Maintenance Manuals submitted to the Construction Project Manager after the Date of Final Completion, as further described in this section.

Project Record Drawings: The Contractor shall record all changes as the work progresses on a set of project record drawings kept at the job site, and shall provide record drawings to the Construction Project Manager after the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL:

The word piping shall mean pipe, fittings, nipples, valves, etc. completely assembled.

2.02 DOMESTIC WATER SYSTEM:

Water Lines:

Copper: Type "L" hard drawn, per ASTM B88-7, for all water pipe above concrete or ground.
Copper: Type "K" hard drawn, per ASTM B88-7, for water pipe set in or under concrete or in the ground. Wrap lines below concrete floors with 5 mils polyethylene tape with joints overlapped 25% minimum, and insulate with Armaflex insulation. No fittings shall be under the slab.

Fittings: Wrought copper, per ANSI B16.18 and B16.22.

Identification: Color identify pipe with size of pipe manufacturer's trademark, and conform to the following schedule:

- Type "K" Copper - Green
Type "L" Copper - Blue

PEX Water Lines:

Uponor PEX-a Tubing: Tubing to be per ASTM F876 and ASTM F877, Uponor AQUAPEX, for all water pipe above or below concrete or ground, all sizes up to and including 3". Fittings: Fitting assembly is manufactured from material listed in paragraph 5.1 of ASTM F1960. All fitting material is to comply with ASTM F1960. Type: PEX-a cold expansion fitting. Assembly consists of the appropriate ProPEX insert with a corresponding ProPEX Ring. PEX Manifold: Material: Type L copper body with UNS 3600 series brass ProPEX outlet connections or Engineered Plastic (EP) body with ProPEX outlet connections. Manifold Type: Uponor ProPEX 1" Copper Manifold or Uponor engineer plastic (EP) Manifold. All manifolds manufactured with the appropriate-sized ProPEX fittings on the manifold supply inlets.

Specification for CPVC Hot and Cold Water Commercial Systems (with piping components 1/2" - 6"):

All pipe and fittings to be manufactured from CPVC compound with a cell class of 24448 for pipe and 23447 for fittings as per ASTM D-1784 and conform with National Sanitation Foundation (NSF) standards 14 and 61.

1/2" through 2" sizes: FlowGuard Gold® CPVC Copper Tube Size mfg. to standard dimension ratio (SDR) 11 and shall conform to ASTM D-2846. Transition fittings to have brass male or female connections with integral CPVC socket connections as mfg. by Charlotte Pipe and Foundry Co.

3" through 6" sizes: Corzan® CPVC Schedule 80 iron pipe size (IPS). Pipe shall conform to ASTM F-441. Socket type fittings shall conform to ASTM F-439. Transition to metal piping to be made using 150# flanged connections.

All pipe and fittings to be produced by a single manufacturer and to be installed in accordance with manufacturer's recommendations and local code requirements. FlowGuard Gold to be joined using approved one-step solvent cement conforming to ASTM F-493. Corzan to be installed using approved solvent cement conforming to ASTM F-493 and primer conforming to ASTM F-656. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co. and are intended for hot and cold domestic water distribution systems.

2.03 SANITARY/STORM DRAINAGE SYSTEM:

Waste, Vent, & Storm Lines: Sanitary & Storm piping to be either cast iron or copper. Where allowable by local and national codes, plastic DWV piping may be used under slab and where concealed by walls. Copper or cast piping shall be utilized for sanitary, vent, & gravity storm piping above ceiling spaces and where otherwise exposed and within plenum areas. No condensate or storm water filled piping shall run in unheated spaces such as attics or porte cocheres without heat trace protection - coordinate with electrical contractor.

Cast Iron - Aboveground: Provide cast iron no-hub soil and vent pipe, coated inside and out, conforming to CISPI 301-69T Specifications, for all soil and waste lines above ground and for all vent lines with inside diameter 2 inches and larger. Standard weight soil and waste fittings will be accepted throughout. Pipe shall conform to CISPI Standard 301. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

Cast Iron - Under Building: Service weight cast iron pipe with bell and spigot joints and fittings. Underground pipe may be installed with "Tyseal" gaskets as specified hereinafter. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

2.04 GAS PIPING SYSTEM:

Provide Schedule 40 black steel pipe conforming to ASTM A120 and A53 with extra-heavy malleable iron banded thread fittings. Unions shall be ground iron to bronze seat. Plug valves shall be Rockwell-Nordstrom No. 142. Factory spiral wrapped in two directions, using Scotch wrap 10 mil tape with 1" overlap for all underground piping.

Provide drip legs on all mains and risers and at equipment connections. Provide gas cocks at all equipment connections.

Fittings: Provide extra-heavy black malleable iron banded screwed or weld pattern as applicable per ASA B16.3.

Rooftop horizontal gas piping support pedestals shall be pre-manufactured roof piping supports. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof.

2.05 ROOF PENETRATIONS:

Each trade shall provide their own roof penetrations and the Contractor shall coordinate the installation of same with other related trades, such that in no way shall the roof warranty be altered, modified, or voided. The roof flashing system shall be as specified in Section 07510- Single-Ply Membrane Roofing System and Section 07720- Roof Accessories.

2.06 ACCESS DOORS:

The Plumbing Subcontractor shall furnish access doors for the Contractor's installation in finished work for concealed valves, cleanouts, and to concealed parts of the plumbing system that require accessibility for proper operation, maintenance, and repair. Doors are not required for suspended acoustical ceilings with lift-out panels.

Access doors shall be of the proper size for respective concealed items, with minimum size exclusive of other requirements, 18" x 18". Access door shall be flush type, with No. 13 U.S. Standard Gauge Steel door and trim, concealed hinges and screwdriver operated, stainless steel cam lock. Access door shall be shop painted with one coat of zinc chromate primer.

2.07 VALVES:

Valves for water piping shall be 125 lb. SWP, all bronze gate valves. Drips shall be all bronze 1/2" globe SWP hose end. Check valves shall be horizontal swing check 125 lb. SWP type. Where used in connection with chrome plated pipe, valves shall be the same finish as the pipe. Install valves on all hot and cold water branch lines to each group of fixtures or individual fixtures. All products listed meet the low-lead requirements of NSF-372 and meet the requirements of ANSI/NSF61.

Gate Valves: Red White #206AB, 125# brass body, non-rising stem, for all lines up to 4".

Check Valves: Red White #236AB 125# brass body, Y-pattern, PTFE seat for all sizes up to 2" in diameter. Nibco #F-910-LF, 125# iron body, bronze trimmed, flanged horizontal check valve for all valves larger than 2 inches in diameter.

Balancing Valve: Caleffi ThermoSetter 116 Series - Recirculation thermal balancing valve made from dezincification resistant low-lead brass. Stainless steel & copper adjustable cartridge, peroxide-cured EPDM seals, ABS adjustment knob. Each valve has 230 psi maximum working pressure and 95-140°F adjustable temperature range (see Mixing Valves below for final set temperature). Provide with outlet temperature gauge with 30-180°F temperature scale and pre-formed insulation shell.

Mixing Valves - Temperature at faucets to be 110°F, unless otherwise noted. Ends of valves to be sweat or F1960 PEX connection: Caleffi 5213 series (showers & mop receptors) - Three-way thermostatic mixing valve designed with a low-lead brass body and regulating spindle, PPO shutter, seats and slide guides with integral inlet port check valves, stainless steel springs and seals in peroxide-cured EPDM.

Caleffi SinkMixer model #521201A (lavatories & sinks) - Four port thermostatic mixing valve designed with a forged low-lead brass body, AISI 302 stainless steel spring, AISI 304 stainless steel hot inlet strainers, seals in peroxide-cured EPDM, and polysulphone shutter. Provided with inlet port check valves and strainers.

Plug Valves: Rockwell-Nordstrom #142 for lines two inches and smaller and #143 for 2-1/2 inches and larger, lubricated plug valve with #555 lubricant for natural gas service.

Globe Valves: Red White #211AB, brass body, 200# WOG, swivel style disc.

Ball Valves: Red White #5049AB Brass Body, 600# WOG, 150# WSP, PTFE seat, blow-out proof stem.

Gas Valves: 1 1/2" and smaller: Provide Rockwell-Nordstrom #143 with #555 lubricant for natural gas service. 2 1/2" and larger: Provide Rockwell-Nordstrom #143 with #555 lubricant for natural gas service.

Valve Manufacturers: Provide as manufactured by Crane, Jenkins, Walworth, Kennedy, Stockham, Red-White, Caleffi, or Nibco-Scott. No other product/manufacturers are permitted.

Provide valve boxes for all valves. Boxes shall be Mueller #H-10360, Size 564 S, screw type, and shall have 5 1/4" shaft with "WATER" cast in lid.

Trap Primers: Where shown on the drawings or required by plumbing code (see Drawings for product specifications). Automatic trap primer on cold water supply at nearest fixture and run drain to trap seal being protected. Provide access panel when primers are installed in walls.

Air Cushions and Shock Absorbers: Each hot and cold water connection to a fixture or faucet shall be equipped with full size vertical air cushion not less than 12" long. In addition to air cushions, provide 1 inch pipe size, shock absorber at each hot and cold connection and battery of fixtures. Shock absorbers shall be MIFAB #CL-A-NPB.

Hose Bibs: Provide as scheduled and detailed on the Drawings.

Vacuum Breakers: Furnish and install on all faucets, hydrants and all other water discharge points with threaded hose connector, where shown on drawings and where required by Code. Hose thread vacuum breaker shall be Watts Model #B-A or approved equal.

Vacuum breakers for general piping application shall be Watts Regulator Company, No. 288A or approved equal, with bronze body and internal trim and brass external trim. Vacuum breakers shall have angle type bodies with female inlet connection at bottom and female outlet connections at side. Furnish and install where contamination of potable water is possible and where required by local authorities.

2.08 PIPE HANGERS AND SUPPORTS:

Rooftop Piping Support Pedestals: Horizontal piping mounted on roof shall be supported with pre-manufactured pedestals and Accessory Pipe Straps as specified in Section 07720- Roof Accessories. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof, and the installation of same will be rejected by the Architect/ Engineer.

Adequately support piping against sagging, pocketing, swaying, and displacement. Properly space and apply hangers to achieve the result, and not farther apart than the following:

Steel Pipe: 1 1/4" and smaller, 8 foot on center; 1 1/2" and larger, 10 foot on center; Copper Tubing: 1 1/4" and smaller, 6 foot on center; 1 1/2" and larger, 10 foot on center; Plastic Pipe (Where Allowed): 1 1/2" and smaller, 3 foot on center; 2" and larger, 4 foot on center

Install Trisolator #500 isolators around all uninsulated copper lines where hanger occurs. Install dielectric fitting between all ferrous and non-ferrous piping with a 12" section of red brass pipe in between.

Size all hangers on insulated lines to fit around outside diameter of insulation specified with allowance for sheet metal shield. Pipe shield shall be 169A, 1/3 circumference of insulation of a length of not less than 3 x diameter of the insulation (maximum 24").

Manufacturer: Grinnell Company catalog numbers are indicated to simplify the description, however, hangers and supports shall be Grinnell, Grabler, Fee & Mason, Eicen or approved equal.

Overhead Supported: Each horizontal pipe shall be supported on adjustable wrought iron clevis hangers equal to Grinnell, Figure 260, except that groups of pipes shall be supported on trapeze hangers made up of steel rods and steel channels or angles. Pipe shall be "U" bolted to trapeze and trapeze spaced for the smallest pipe in the group.

2.09 PLUMBING SYSTEM INSULATION:

All insulation shall be applied in a neat and workmanlike manner. Remove and replace all insulation not applied in strict accordance with manufacturer's specifications or not presenting a neat appearance. Insulation shall be continuous through wall and ceiling openings and sleeves.

Work Included: Pipe covering for domestic hot water (including recirculation), cold water, and roof drain piping.

Materials and Installation: No pipe insulation shall be applied until piping has been pressure tested and approved. All insulation shall be applied strictly in accordance with the manufacturer's recommendations. Materials as manufactured by Johns Manville, Fiberglass, Phillip Corey, or Armstrong will be acceptable if equal to those specified. All insulation on indoor work shall have composite fire and smoke hazard ratings as tested by procedure NFPA 255 not exceeding: Flame Spread 25, Fuel Contributed 50, Smoke Developed 50. Accessories, such as adhesives, mastics, cements, tapes, and cloth for fitting, shall have the same component ratings as listed above. Insulation shall have an average thermal conductivity not to exceed 0.25 BTU/inch of thickness per square foot per 1°F. at a mean temperature of 75°F.

Domestic Hot Water, Tempered Water, Cold Water, and Roof Drain Piping Piping: All piping shall be insulated with fiberglass pipe insulated with foil-kraft laminate vapor barrier fastened with pressure sensitive tape and stapled 12" on center - see schedule below for thicknesses. All piping, fittings, valves, flanges, etc. shall be covered with PVC jackets/fitting covers (20 mils thick minimum), taped and tacked fastened.

PIPING INSULATION SCHEDULE - Follow New York State Energy Code Table C403.11.3 for insulation thickness (ceiling space is at a premium and insulation must be minimum values):

Domestic Cold Water: 1 1/4" and Smaller: 1/2" thick; 1 1/2" and Larger: 1" thick.
Domestic Hot, Recirculated, and Tempered Hot Water: 1 1/4" and Smaller: 1" thick; 1 1/2" and Larger: 1 1/2" thick.
Stormwater and Overflow: All Pipe Sizes: 1" thick - unless otherwise noted.

No insulation shall be installed on any piping before the building is adequately closed in. Where necessary to install any insulation before it is protected by building enclosures, and if acceptable by the local jurisdiction, the covering must be effectively protected with roofing felt, wired on the covering to make an absolute waterproof protection for the pipe covering.

Pipe Insulation at Handicap Accessible Lavatories: Provide Dearborn #ADA100 or #ADA101 insulating kits on traps and hot and cold water supplies at each handicap accessible toilet room lavatory.

2.10 PAINTING & PIPE LABELS:

Comply with Architectural requirements for painting interior piping. Paint exposed, interior metal piping, valves, service regulators, service meters and meter bars, and piping specialties, except components, with factory-applied paint or protective coating.

W.B. Light Industrial Coating: MPI INT 5.1B - GS. 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: Selected by Architect.

All piping and valves shall be labeled in accordance with New York State Code and ANSI/ASME A13.1.

Damage and Touchup: Repair marred and damaged factory-applied finishes with materials and by procedures to match original factory finish.

2.11 TRAPS:

All fixtures and floor drains are to be separately trapped as near to the fixture or floor drain as possible. Traps shall be self-cleaning, water-sealed, and shall have a scouring action. Traps shall be set true with respect to water seal and shall be protected from freezing. All underground traps, except "P" traps into which floor drains with removable strainers discharge, shall be provided with accessible cleanouts. Traps which are not part of plumbing fixtures shall be of the same material and size as pipes or branches into which they discharge.

2.12 VENTS:

Collect vents together as shown on the drawings to minimize number of vents terminating through roof. Verify location of roof equipment indicated. Offset vents through roof to maintain a minimum distance of 10 feet away from outside air intakes.

2.13 CLEANOUTS:

Where indicated on the drawings and as required by local plumbing code. Make all cleanouts accessible by one of the following means:

- Within 6 inches from ceiling access panel; Extending to floor or grade above; Locate in wall with removable plate.

Size: Same as pipe on which installed.

Installation: Covers set flush with finished wall, floor or grade, to be securely anchored by means of integral lugs or bolts. Where surfacing materials such as resilient floor covering is used, install the clean out with top so that finished surface is smooth and flush.

Manufacturers: Cleanout products shall be as manufactured by MIFAB or as detailed in the fixture schedule.

Floor Cleanouts and Access Covers: Duco coated cast iron body and frame with "Leckeromated" plug and heavy duty adjustable scoriated secured polished bronze top.

Cleanout to Grade with Countersunk Plug: Duco-coated cast iron body with bronze taper thread countersunk plug. Installed in 24" x 24" concrete pad, tapered for drainage.

Wall Cleanouts: Stainless steel chrome plated bronze deep cover with center screw.

2.14 FLOOR DRAINS:

Floor drains shall be properly anchored to building construction with clamping device or with lugs embedded in concrete slabs. Floor drains shall be as scheduled and detailed on the drawings. All floor drains shall have automatic trap primers installed as required. Acceptable Manufacturers include: Jay R Smith, MIFAB, Watts, and Zurn.

2.15 FIXTURE SUPPORTS:

Steel plated supports for all wall hung fixture shall be supported with 3/8" x 6" steel plates recessed and lag screwed to wood studs or welded to steel studs and tapped for fixture bolts. Install the length and number of plates as required to satisfactorily support the fixtures.

2.16 PLUMBING FIXTURES:

General: Furnish and install plumbing fixtures complete with trim and caulk. See drawings for Plumbing Fixture Schedule. All fixtures shall be Class "A". Vitreous fixtures shall be best quality. Warped, imperfect fixtures are NOT acceptable. Brass products shall contain at least 75% copper. All exposed metal below and above each fixture throughout shall be chrome plated on brass, with cast brass escutcheons. Where fixtures are noted on drawings as furnished by others, they shall be set by this contractor and this contractor shall furnish, install and connect service to such fixtures. All fixtures supported from walls shall be provided with carriers by MIFAB. Furnish, set and connect all plumbing fixtures including all necessary supports, and chrome plated exposed work and fittings. Provide loose-key type fixtures stops for all fixtures unless noted otherwise. The plumbing subcontractor shall purchase plumbing fixtures, flush valves, toilet seats and carriers as specified on the drawings.

The plumbing subcontractor shall purchase faucets, tailpiece, P-trap, lavatory insulation supply kit, valves, sink accessories, trap primer, water hammer arrester, floor drains and wall clean out as specified on the drawings.

Traps exposed above the floor shall be chrome plated adjustable brass, with chrome plated approved cleanout plugs, cast set screw wall escutcheon and casing. All trim shall be of polished chrome-plated brass and of one acceptable manufacturer unless specifically noted otherwise. Provide fixture stops or valve ahead of all equipment or fixtures. Refer to Plumbing Fixture Schedule on Drawings.

Domestic Water Heaters: Provide water heater of size, capacity and make as scheduled on the drawings. Heaters shall be fully warranted for minimum of 5 full years after final acceptance of the building. Furnish heaters with the following accessories:
1. ASME combination temperature and pressure relief valve rated in excess of heater input. Run full size drain to location shown on plans.
2. Automatic thermostat actuated controls with 100 percent shutoff.
3. Dual high-limit controls.
4. Tank drain.

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ISSUE: 2022-07-15
BID/PERMIT SET

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TITLE:
PLUMBING
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SA JOB #: 21055.01
DATE: 07-15-22

DRAWING #: P-7



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

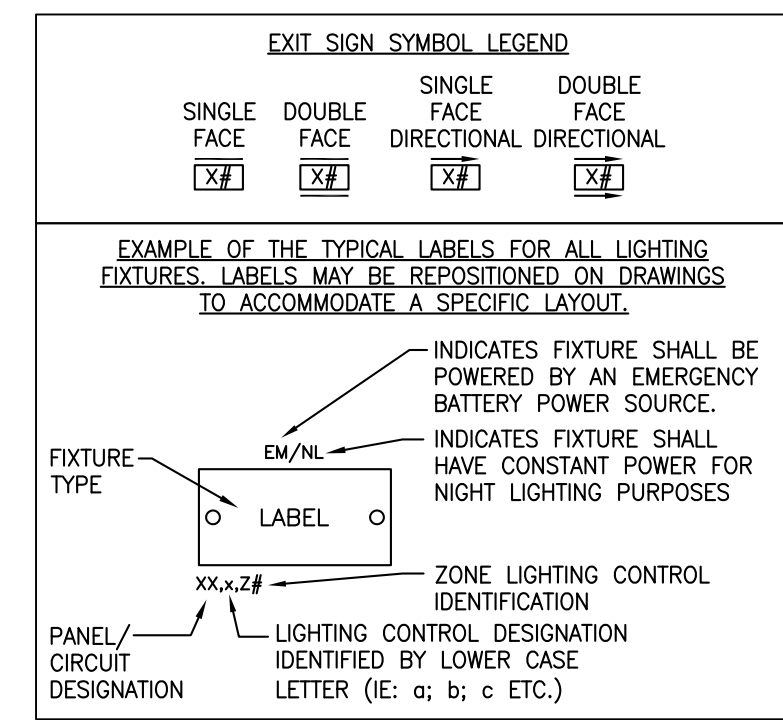
POWER SYMBOLS	LIGHTING CONTROL SYMBOLS	FIRE ALARM SYMBOLS
—  — SIGNIFIES TWO(2) CONDUCTORS 2#12 + 1#12 GRND. IN 1/2" CONDUIT.	§ TOGGLE SWITCH (SINGLE-POLE)	■ FACP FIRE ALARM CONTROL PANEL
—   — SIGNIFIES THREE(3) CONDUCTORS 3#12 + 1#12 GRND. IN 3/4" CONDUIT.	§1,111,11V TOGGLE SWITCHES (SINGLE-POLE, GANGED)	■ 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.	§3,111,11V 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#10 + 1#10 GRND. IN 3/4" CONDUIT.	§K KEYSWITCH (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#8 GRND. IN 3/4" CONDUIT.	§T DIGITAL PROGRAMMABLE TIMER (SINGLE-POLE, 3-WAY)	■ 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#8 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#6 GRND. IN 1" CONDUIT.	§D DIMMER (SINGLE-POLE), PHASE DIMMING OR LOW VOLTAGE 0-10V AS REQUIRED FOR THE APPLICATION.	■ DS DUCT SMOKE DETECTOR - WIRED INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL WITHIN HMC DUCTWORK.
—   #6 SIGNIFIES THREE(3) CONDUCTORS 3#6 + 1#6 GRND. IN 1" CONDUIT.	§LVD LOW VOLTAGE 0-10V CONTROLLER	■ A AUDIO DEVICE (WALL) - WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX.
— HOMERUN TO PANELBOARD	§M MOMENTARY CONTACT 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	§OS DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR ACUITY CONTROLS - SENSOR SWITCH #WSX-PDT-SA-WH (OR EQUAL)	■ X COMBINATION AUDIO/VISUAL DEVICE (WALL) - WIRE INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX.
— SIGNIFIES INTENDED SWITCHING SCHEME	§OSD DUAL TECHNOLOGY DIMMING OCCUPANCY WALL SWITCH. INCLUDE LOW VOLTAGE WIRING TO ASSOCIATED LIGHT FIXTURE FOR DIMMING OPERATION.	■ HD MAGNETIC DOOR HOLDER - TO BE INSTALLED WITHIN WALL & WIRED INTO BUILDING FIRE ALARM SYSTEM AS REQUIRED.
⊙ JUNCTION BOX (SIZE AS REQUIRED)	⊙ MAGNETIC DOOR HOLDER - TO BE INSTALLED WITHIN WALL & WIRED INTO BUILDING FIRE ALARM SYSTEM AS REQUIRED.	■ FL FLOW SWITCH - PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
~ CONDUIT/WIRE BREAK	⊙ LOW-VOLTAGE, DUAL TECHNOLOGY, SMALL MOTION CEILING OCCUPANCY SENSOR, ACUITY CONTROLS - SENSOR SWITCH #CM-PDT-9 (OR EQUAL)	■ TA TAMPER SWITCH - PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
⊔ CONDUIT STUB OUT	⊙ ACUITY CONTROLS - SENSOR SWITCH #WSX-PDT-EZ-D-SA-WH (OR EQUAL)	■ MM MONITORING MODULE
• CONDUIT STUB-DOWN	⊙ EXTERIOR REMOTE PHOTOCELL TORK MODEL #2101 OR EQUAL.	■ CM CONTROL MODULE
○ CONDUIT STUB-UP	⊙ DIGITAL TIME CLOCK	■ RTI REMOTE TEST STATION
208Y/120V RECESSED OR SURFACE MOUNTED PANELBOARD	■ ER UL924 EMERGENCY BYPASS / SHUNT-TRIP RELAY AS MANUFACTURED BY HUBBELL, WATT-STOPPER, FUNCTIONAL DEVICES, PHILIPS BODINE OR EQUAL.	
480Y/277V RECESSED OR SURFACE MOUNTED PANELBOARD		
⊕ 16 POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.		
⊕ 36 POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.		
⊕ ELECTRIC MOTOR - PROVIDED & INSTALLED BY OTHERS, WIRE BY E.C. XX = HORSE POWER RATING		
⊕ RECEPTACLE (SIMPLEX)		
⊕ RECEPTACLE (DUPLX)		
⊕ RECEPTACLE (QUAD)		
⊕ USB RECEPTACLE (DUPLX WITH 2 USB CHARGING PORTS) DECORATOR STYLE		
⊕ RECEPTACLE (DUPLX) W/ GROUND FAULT PROTECTION		
⊕ RECEPTACLE (QUAD) W/ GROUND FAULT PROTECTION		
⊕ WP RECEPTACLE (DUPLX) W/ GROUND FAULT PROTECTION & A WEATHERPROOF COVER		
ES 120V ELECTRONIC DOOR STRIKE. SUPPLIED & INSTALLED BY OTHERS, WIRED BY E.C.		
⊕ "SPECIAL" RECEPTACLE - VERIFY NEMA TYPE AND INSTALLATION LOCATION IN FIELD.		
FB# RECESSED FLOOR BOX - TO BE INSTALLED FLUSH WITHIN FINISHED FLOOR		
PT# POKE-THRU - TO BE INSTALLED FLUSH TO FINISHED FLOOR		
HC HANDICAP DOOR PUSH-BUTTON		
§MS 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./TYPE/COLOR)	VOLT	VA	MOUNTING	MANUFACTURER/ MODEL #
⊙1	6" ROUND LED DOWNLIGHT WITH A SEMI-SPECULAR REFLECTOR, CLEAR TRIM AND 0-10V DIMMING DRIVER	LED/3500K/1000 LUMENS	120V	11W	RECESSED	LITHONIA LIGHTING: LDN6-35/10-L06/AR -LSS-MVOLT-GZ10
⊙2	6" ROUND LED DOWNLIGHT WITH A SEMI-SPECULAR REFLECTOR, CLEAR TRIM AND 0-10V DIMMING DRIVER	LED/3500K/1500 LUMENS	120V	18W	RECESSED	LITHONIA LIGHTING: LDN6-35/15-L06/AR -LSS-MVOLT-GZ10
⊙3	4" ROUND LED DOWNLIGHT WITH A SEMI-SPECULAR REFLECTOR, CLEAR TRIM AND 0-10V DIMMING DRIVER	LED/3500K/500 LUMENS	120V	6W	RECESSED	LITHONIA LIGHTING: LDN4-35/05-L04/AR -LSS-MVOLT-GZ10
⊕L1	2'X2' LED SWITCHABLE LUMEN AND COLOR TEMPERATURE FLAT PANEL WITH A STEEL FRAME, FLAT WHITE LENS AND 0-10V DIMMING DRIVER	LED/3500K/4400 LUMENS	120-277V	39W	RECESSED	LITHONIA LIGHTING: CPANL-2X2-ALO6-SW7
⊕L2	2'X4' LED SWITCHABLE LUMEN AND COLOR TEMPERATURE FLAT PANEL WITH A STEEL FRAME, FLAT WHITE LENS AND 0-10V DIMMING DRIVER	LED/3500K/4000 LUMENS	120-277V	36W	LAY-IN	LITHONIA LIGHTING: CPANL-2X4-ALO6-SW7
⊕L3	2'X4' LED SWITCHABLE LUMEN AND COLOR TEMPERATURE FLAT PANEL WITH A STEEL FRAME, FLAT WHITE LENS AND 0-10V DIMMING DRIVER	LED/3500K/5000 LUMENS	120-277V	45W	LAY-IN	LITHONIA LIGHTING: CPANL-2X4-ALO6-SW7
⊕L4	2'X4' LED SWITCHABLE LUMEN AND COLOR TEMPERATURE FLAT PANEL WITH A STEEL FRAME, FLAT WHITE LENS AND 0-10V DIMMING DRIVER	LED/3500K/6000 LUMENS	120-277V	56W	LAY-IN	LITHONIA LIGHTING: CPANL-2X4-ALO6-SW7
⊕L5	4" LINEAR LED STRIP LIGHT WITH A WHITE HOUSING, FROSTED DROP LENS DIFFUSER AND 0-10V DIMMING DRIVER	LED/3500K/5000 LUMENS	120-277V	41W	SURFACE - CEILING	LITHONIA LIGHTING: ZLTD-148-5000LM-FST-MVOLT-3SK-BCRC1
⊕L6	4" LINEAR DIRECT/INDIRECT PENDANT WITH A FLUSH WHITE LENS, WIDE SPREAD INDIRECT OPTIC & 0-10V DIMMING DRIVER	LED/3500K/750LM (DOWN) 350LM (UP)	120V	36W	SUSPEND 9'-0"A.F.F.	WAMEXERX LIGHTING: W44P-DI-HLO-FH-WO2-SW-80-750-350-35-4-120-01-1C-NA-ACS-(TBD)
⊕X1	EXIT SIGN, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENCILED 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" LQM-S-W-3-R-120/277-ELN
⊕X2	COMBINATION LED EXIT SIGN / EMERGENCY LIGHTING UNIT, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENCILED 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" LHQM-LED-R
⊕X3	COMBINATION LED EXIT SIGN / EMERGENCY LIGHTING UNIT, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENCILED RED LETTERS WITH TWIN ADJUSTABLE HEADS FOR EMERGENCY LIGHTING & AN INTEGRAL HIGH OUTPUT 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" LHQM-LED-R-HO
⊕E1	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
E2	REMOTE EMERGENCY LED FIXTURE WITH TWIN ADJUSTABLE LAMP HEADS AND A WEATHER-PROOF ALUMINUM HOUSING, COLOR BY ARCHITECT. LAMP TO BE POWER BY A AN LED REMOTE BATTERY PACK.	TWO 1.2W/9.6V LEDs	9.6V	N/A	WALL +7'-6" A.F.F. OR AS NOTED	LITHONIA LIGHTING: ELMRW-LP220L-(TBD)-1
HWA	DECORATIVE ADA EXTERIOR LED WALL SCONCE WITH A WHITE ACRYLIC LENS AND INTEGRAL PHOTOCELL FOR DUSK/DAWN CONTROL.	LED/3000K/1,400 LUMENS	MVOLT	9W	WALL ±6'-0" A.F.F.	LIGHTWAY LIGHTING: MERW-612-LED-FTH-2-D-(TBD)-WSA-DIM-Z1
⊕EX1	RECESSED DOWNLIGHT.	N/A	120V	N/A	RECESSED	EXISTING
⊕EX2	DECORATIVE WALL SCONCE.	N/A	120V	N/A	WALL	EXISTING
⊕EX3	WALL PACK / FLOOD LIGHT.	N/A	120V	N/A	WALL	EXISTING

**GENERAL NOTES TO LIGHTING FIXTURE SCHEDULE**

- ALTERNATE FIXTURE SELECTIONS MUST PROVIDE EQUAL PERFORMANCE WITH A MAXIMUM WATTAGE THAT DOES NOT EXCEED THE SPECIFIED WATTAGE, NO EXCEPTIONS.
- FIXTURES WITH SWITCHABLE LUMEN AND COLOR TEMPERATURES ARE TO BE SET PER INFORMATION PROVIDED IN "LAMP" COLUMN.



**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.

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

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

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ISSUE: BID/PERMIT SET 2022-07-15

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SEAL:

TITLE:

**ELECTRICAL SCHEDULES**



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DRAWING #: E-1



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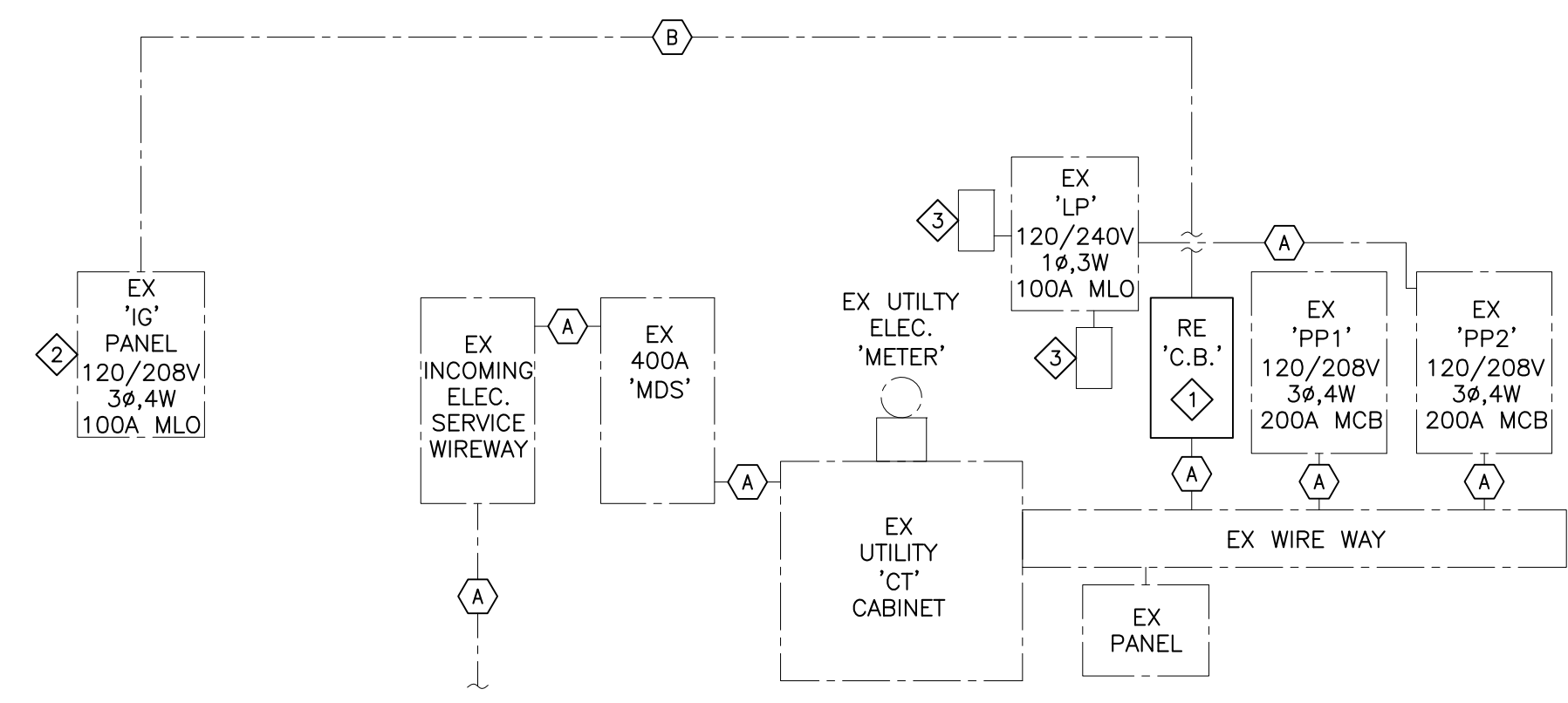
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**ELECTRICAL RISER DIAGRAM & PANEL SCHEDULES**

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**RISER DIAGRAM FEEDER SCHEDULE**

SYMBOL	DESCRIPTION
(A)	EXISTING FEEDER SCHEDULED TO REMAIN
(B)	EXISTING FEEDER SCHEDULED TO BE RETAINED AND REUSED TO RE-FEED 'IG' PANEL.

**RISER DIAGRAM GENERAL NOTES:**

- FIELD VERIFY AND CONFIRM THAT THE EXISTING ELECTRIC SERVICE IS SIZED FOR A FULL 400 AMPERES. ANY FIELD FINDINGS INDICATING THAT THE SERVICE IS SIZED FOR LESS THAN 400 AMPERES MUST BE REPORTED TO THE PROJECT ELECTRICAL ENGINEER FOR FURTHER EVALUATION.
- EXISTING ELECTRIC SERVICE METERING IS SCHEDULED TO REMAIN AS-IS.
- PROVIDE NEW EQUIPMENT LABELS FOR EXISTING / NEW EQUIPMENT AS REQUIRED. HAND WRITTEN LABELS ARE NOT PERMITTED.
- PROVIDE ARC FLASH ANALYSIS WITH WARNING LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70E.
- PROVIDE NEW GROUNDING ELECTRODE AT NEW WATER SERVICE PER ALL NEC ARTICLE 250 REQUIREMENTS.

**RISER DIAGRAM KEYNOTES:**

- EXISTING 150A CIRCUIT BREAKER SERVING ELECTRIC FURNACE UNIT, SCHEDULED TO BE REMOVED, SHALL BE DISCONNECTED AND REMOVED. ASSOCIATED BRANCH CIRCUIT WIRING SHALL BE COMPLETELY REMOVED FROM C.B. TO ELECTRIC FURNACE UNIT. PROVIDE NEW 3-POLE, 100A C.B. WITH A NEAM 1 ENCLOSURE AND INSTALL IN PLACE OF DISCONNECT SWITCH BEING REMOVED. RETAIN EXISTING WIRING, EMANATING FROM WIRING WAY, TO FEED NEW C.B. BEAKER. NEW C.B. SHALL BE USED TO RE-FEED EXISTING 'IG' PANEL.
- EXISTING FEEDER SERVING 'IG' PANEL SHALL BE DISCONNECTED FROM 3-POLE 100A C.B., LOCATED IN PANEL 'PP1', EXTENDED AND TERMINATED TO NEW 3-POLE, 100A C.B. IDENTIFIED IN KEYNOTE #1. FIELD VERIFY ALL NECESSARY WORK REQUIRED TO OBTAIN A 100% COMPLETE INSTALLATION.
- EXISTING MECHANICAL TIMERS ARE SCHEDULED TO REMAIN IN PLACE, E.C. TO ENSURE THESE TIMERS ARE FULLY OPERATIONAL AND CAN BE SET TO MEET OWNER REQUIREMENTS FOR EXISTING EXTERIOR LIGHTING CONTROL. SUPPLY AND INSTALL NEW DIGITAL TIMERS TO REPLACE EXISTING IF EXISTING TIMERS ARE NO LONGER OPERATIONAL OR ARE INCAPABLE OF MEETING OWNER LIGHTING CONTROL DEMANDS.

**ELECTRICAL LOAD ANALYSIS**

LOAD DESCRIPTION	CONNECTED LOAD	DIVERSITY %	DESIGN LOAD
LIGHTING	2,670	100	2,670
RECEPTACLES	27,210	NEC 220.44	18,605
HVAC (COOLING)	N/A	-	N/A
ELECTRIC HEATING	90,820	80	70,656
DENTAL EQUIP.	9,600	80	7,680
X-RAY EQUIP.	9,360	65	6,084
WATER HEATER	12,240	65	7,956
EXHAUST FANS	1,392	100	1,392
MISC.	9,000	80	7,200
<b>LOAD (kVA)</b>	<b>153,292</b>		<b>115,043</b>
<b>LOAD (AMPS)</b>	<b>450</b>		<b>339</b>

**1 RISER DIAGRAM**  
 E-2 SCALE: N.T.S.

**PP1 (EXISTING)** 208Y/120V 225 Amp Mains Three Phase Four Wire 42ckl. MAIL LUGS ONLY MAIN BREAKER ← 200A MCB

ckt#	DESCRIPTION	BREAKER	LOCATION: MECHANICAL RM.			DESCRIPTION	ckt#	
			L1	L2	L3			
1	Roof Top Unit (RTU-1)	100A-3P	72.00	0.00		-	2	
3				72.00	0.00	-	4	
5					72.00	0.00	6	
7	NEW - Roof Top Unit (RTU-2)	**70A-3P	50.00	5.80		20A-1P Exhaust Fan (EF-1 & EF-2)	8	
9				50.00	5.80	20A-1P Exhaust Fan (EF-3 & EF-4)	10	
11					50.00	6.50	20A-1P Powered Door Motors	12
13	Roof Top Unit (RTU-3)	100A-3P	74.00	4.70		15A-2P Electrical Wall Heater (EWH-1)	14	
15				74.00	4.70	20A-1P Powered Door Motors	16	
17					74.00	6.50	20A-1P Powered Door Motors	18
19	SPACE	-	0.00	4.70		**15A-2P Electrical Wall Heater (EWH-2)	20	
21	SPACE	-		0.00	4.70		22	
23	SPACE	-			0.00	0.00	24	
25	SPACE	-	0.00	0.00			26	
27	SPACE	-		0.00	0.00		28	
29	SPACE	**20A-1P			0.00	0.00	30	
31	SPACE	30A-2P	0.00	0.00			32	
33	SPACE	30A-2P	0.00	0.00			34	
35	SPACE	30A-2P	0.00	0.00			36	
37	SPACE	30A-2P	0.00	0.00			38	
39	SPACE	30A-2P	0.00	0.00			40	
41	SPACE	30A-2P	0.00	0.00			42	
<b>TOTAL CONNECTED AMPS/LEG</b>			<b>211.20</b>	<b>211.20</b>	<b>209.00</b>		<b>TOTAL CONNECTED KVA</b>	<b>75.77</b>
* DENOTES GFCCI C.B. ** DENOTES NEW C.B.							<b>TOTAL CONNECTED AMPERES</b>	<b>210.47</b>

**PP2 (EXISTING)** 208Y/120V 225 Amp Mains Three Phase Four Wire 42ckl. MAIL LUGS ONLY MAIN BREAKER ← 200A MCB

ckt#	DESCRIPTION	BREAKER	LOCATION: MECHANICAL RM.			DESCRIPTION	ckt#		
			L1	L2	L3				
1	Exam 128, Chair 133, Chair 134, Jan 117 Recept.	15A-1P	7.50	5.25		20A-1P Exam & Dental Rm. Lights	2		
3	Exam 122/124 HG Recepts.	20A-1P			9.00	8.00	20A-1P Vest., Waiting, Corr. Star Lights	4	
5	Nurse/Doctor Station 121 Recepts.	20A-1P			4.50	9.00	20A-1P Recept., Lab. Ytl. Stor., Office Lights	6	
7	Nurse/Doctor Station 121 Recepts.	20A-1P	3.00	10.50			20A-1P Toilet 207 Hand Dryer	8	
9	Meets 120 Recepts.	20A-1P		3.00	7.50		15A-1P Office 203/204 Recepts.	10	
11	Exam 118/119 HG Recepts.	20A-1P				12.00	7.50	20A-1P Office 204/205 Recepts.	12
13	Exam 128 & Ytl. 105/126 HG Recepts.	20A-1P	9.00	6.50			20A-1P Toilet 207 Recept.	14	
15	Lab 127 Recepts.	20A-1P		6.00	0.75		15A-1P Recirculating Pump	16	
17	Lab 127 Recepts.	20A-1P			6.00	3.00	20A-1P Corridor 202, Breakrm 206 Recepts.	18	
19	Reception 104 Recept.	20A-1P	9.00	6.00			15A-1P Breakrm 206 Recepts.	20	
21	Reception 104 Recept.	20A-1P			10.50	6.00	20A-1P Breakrm 206 Recepts.	22	
23	Waiting 103 Recepts.	20A-1P			9.00	20.00	**40A-2P Dental Compressor	24	
25	Waiting 103 Recepts.	20A-1P	6.00	20.00				26	
27	Waiting 103 Water Cooler Recept.	15A-1P		8.00	20.00		**40A-2P Dental Vacuum Pump	28	
29	SPACE	20A-1P			0.00	20.00		30	
31	Water Heater (WH-1)	**50A-3P	34.00	10.50			20A-1P Toilet 105 Hand Dryer	32	
33			34.00	10.50			20A-1P Toilet 126 Hand Dryer	34	
35					34.00	16.00	50A-2P EX Panel 1P	36	
37	Roof Top Unit (RTU-4)	**70A-3P	50.00	16.00				38	
39				50.00	0.00			40	
41				50.00	0.00			42	
<b>TOTAL CONNECTED AMPS/LEG</b>			<b>193.25</b>	<b>173.25</b>	<b>191.00</b>		<b>TOTAL CONNECTED KVA</b>	<b>66.90</b>	
* DENOTES GFCCI C.B. ** DENOTES NEW C.B.							<b>TOTAL CONNECTED AMPERES</b>	<b>185.83</b>	

**IG (EXISTING)** 208Y/120V 100 Amp Mains Three Phase Four Wire 24ckl. MAIL LUGS ONLY MAIN BREAKER ← 200A MCB

ckt#	DESCRIPTION	BREAKER	LOCATION: MECHANICAL RM.			DESCRIPTION	ckt#	
			L1	L2	L3			
1	Fire Alarm Control Panel (FACP)	20A-1P	3.50	0.00		20A-1P Dental 109 HG Recepts.	2	
3	Lab 109 Recepts.	20A-1P			4.50	0.00	20A-1P Dental 110 HG Recepts.	4
5	Sterilization 107 Recepts.	20A-1P			12.00	0.00	20A-1P Dental 111 HG Recepts.	6
7	Sterilization 107 Recepts.	20A-1P	12.00	12.00			20A-1P Dental 109 X-Ray Arm	8
9	Sterilization 107 Recepts.	20A-1P		12.00	12.00		20A-1P Dental 110 X-Ray Arm	10
11	Sterilization 107 Recepts.	20A-1P			12.00	12.00	20A-1P Dental 111 X-Ray Arm	12
13	Sterilization 107 Recepts.	20A-1P	12.00	10.00			20A-1P Panoramic X-Ray Recept.	14
15	SPACE	20A-1P		0.00	0.00		20A-1P SPARE	16
17	SPACE	20A-1P			0.00	0.00	20A-1P SPARE	18
19	SPACE	20A-1P	0.00	0.00			20A-1P SPARE	20
21	SPACE	-		0.00	16.00			22
23	SPACE	-			0.00	16.00	**20A-2P Panoramic X-Ray Recept.	24
<b>TOTAL CONNECTED AMPS/LEG</b>			<b>49.50</b>	<b>44.50</b>	<b>52.00</b>		<b>TOTAL CONNECTED KVA</b>	<b>17.52</b>
* DENOTES GFCCI C.B. ** DENOTES NEW C.B.							<b>TOTAL CONNECTED AMPERES</b>	<b>48.67</b>

**PANEL SCHEDULES GENERAL NOTES:**

- CIRCUIT BREAKERS IDENTIFIED IN PANEL SCHEDULE ARE EXISTING UNLESS OTHERWISE NOTED.
- SUPPLY AND INSTALL "NEW" CIRCUIT BREAKERS AS SCHEDULED. THESE CIRCUIT BREAKERS WILL REPLACE EXISTING UNUSED CIRCUIT BREAKERS WHICH SHALL BE RETAINED AND TURNED OVER TO OWNER TO SERVE AS SPARES.

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SEAL:

TITLE:

**ELECTRICAL  
 DETAILS**

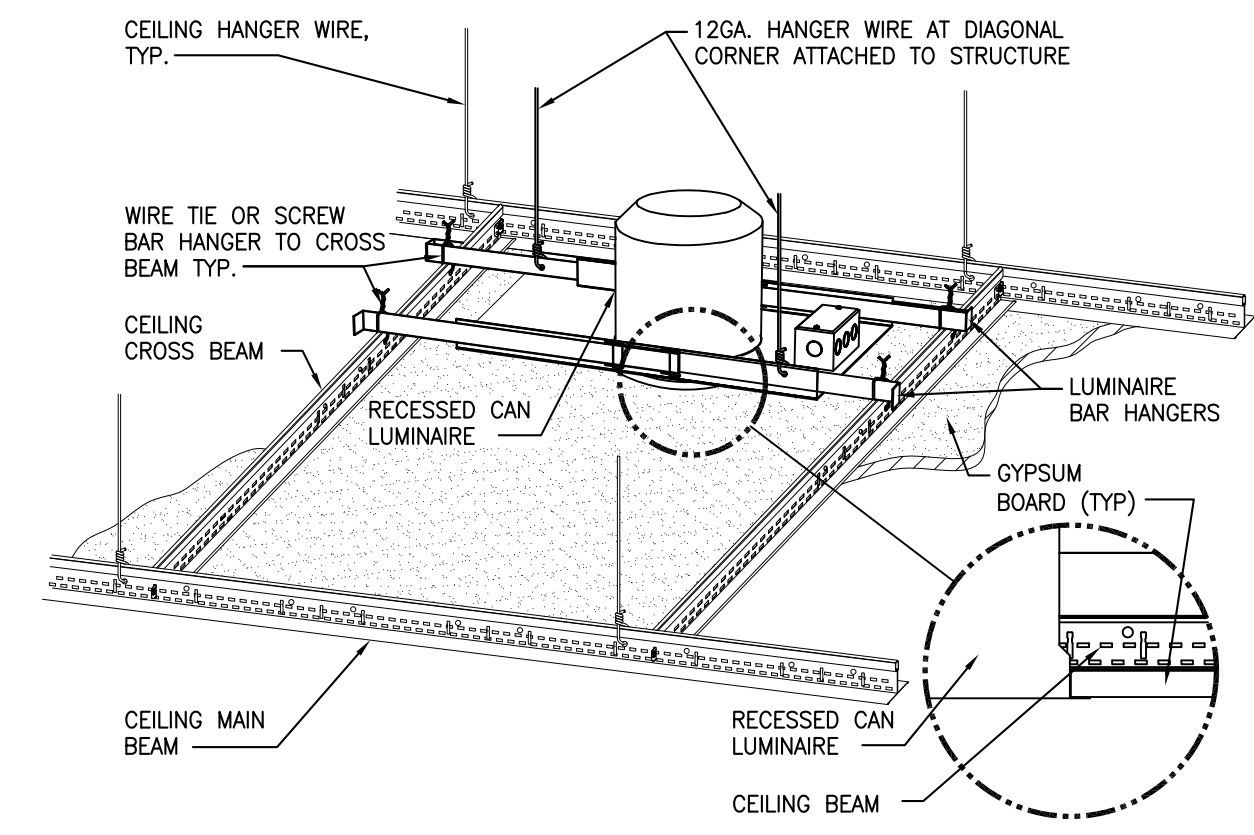


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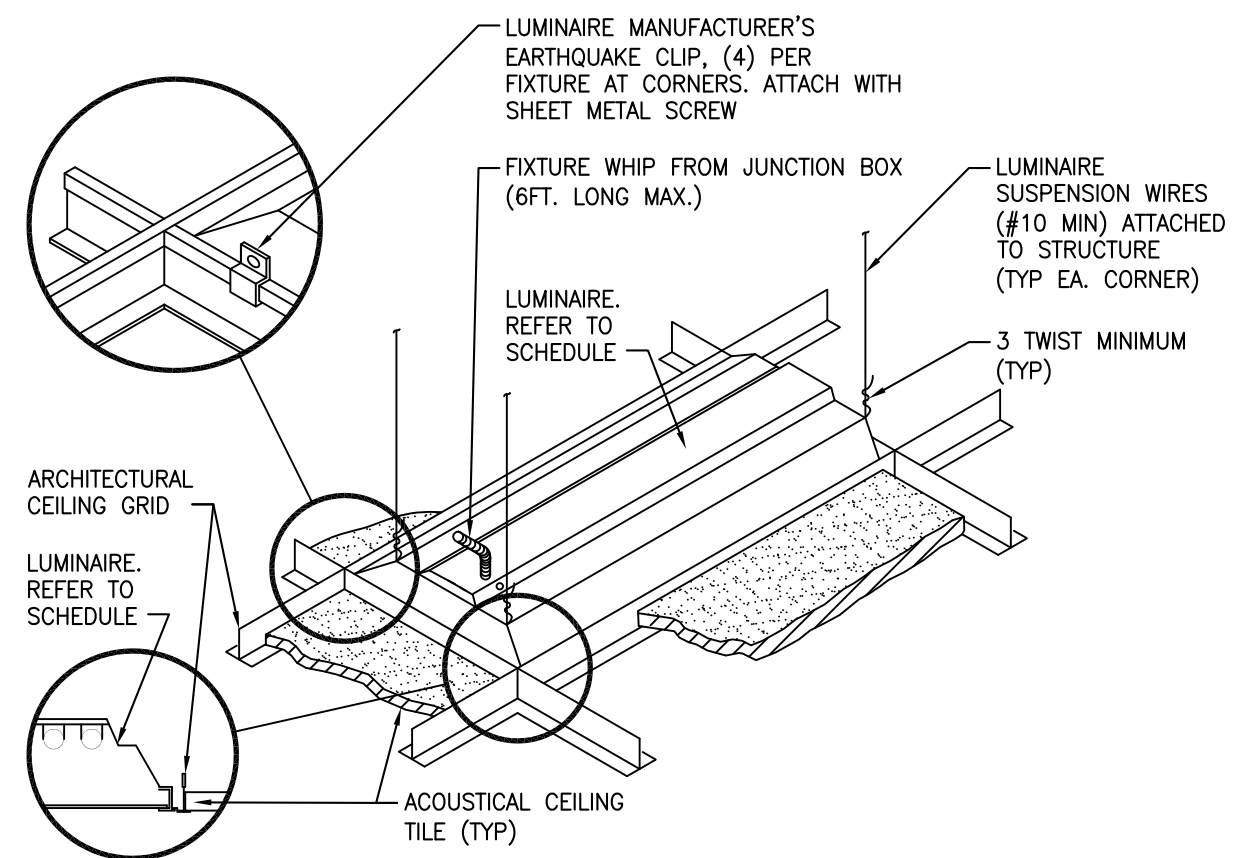
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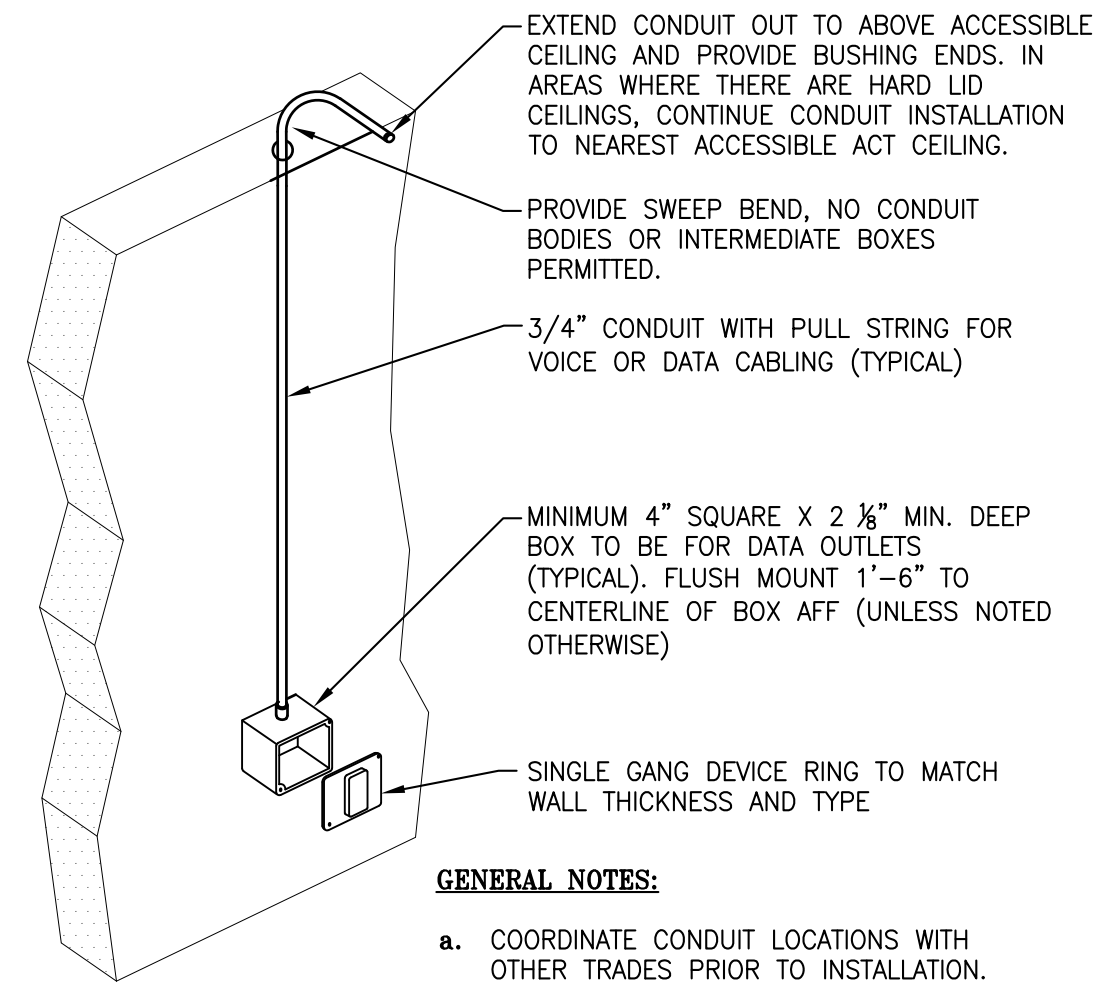
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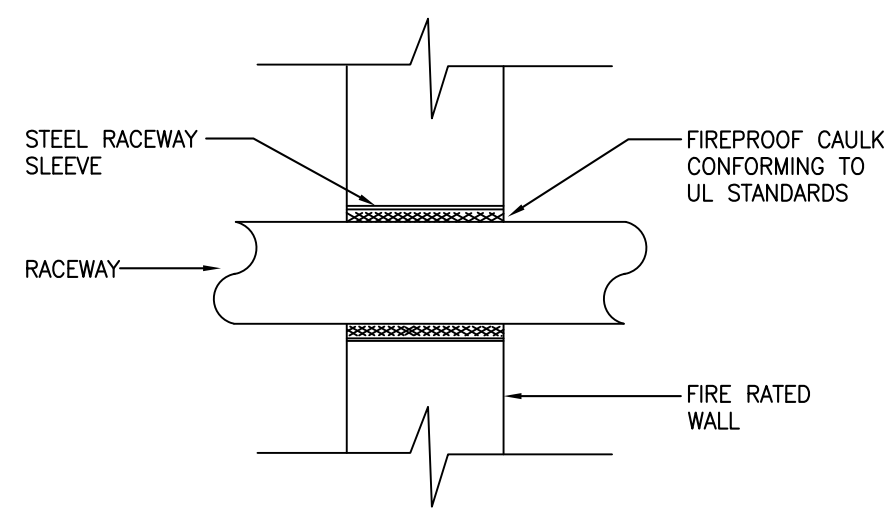
**4 DOWNLIGHT MOUNTING -GYP. CEILING**  
 SCALE: N.T.S. Electrical Detail



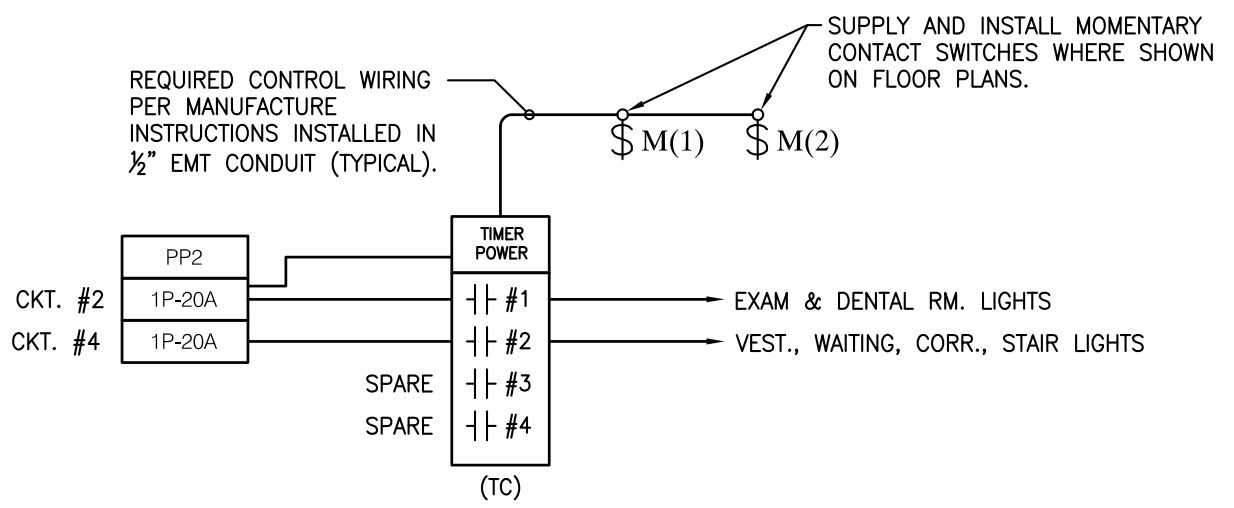
**3 LUMINAIRE MOUNTING - LAY-IN CEILING**  
 SCALE: N.T.S. Electrical Detail



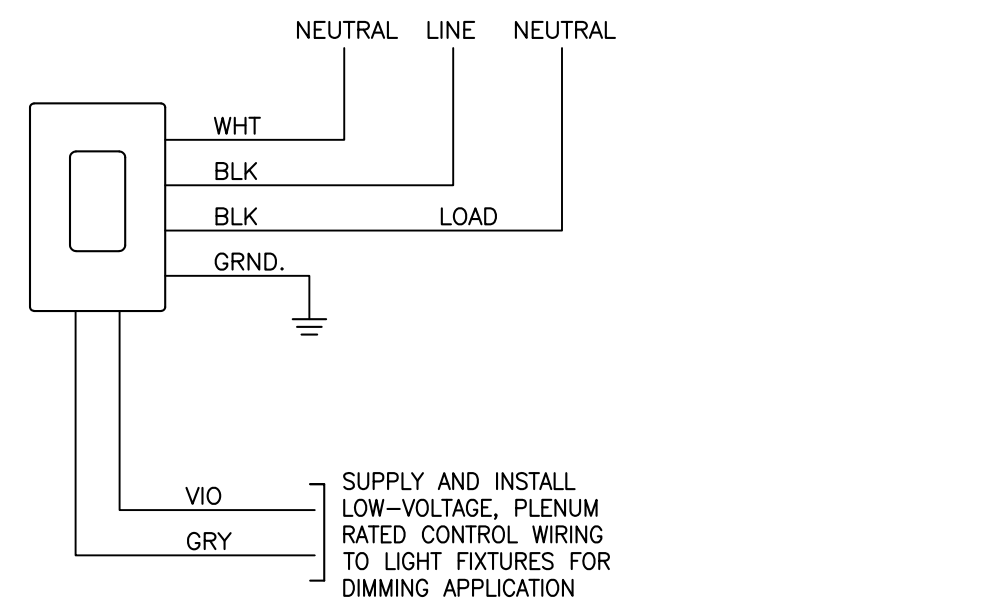
**2 COMMUNICATIONS (DATA/TELEPHONE) BOX AND CONDUIT INSTALLATION DETAIL**  
 SCALE: N.T.S. Electrical Detail



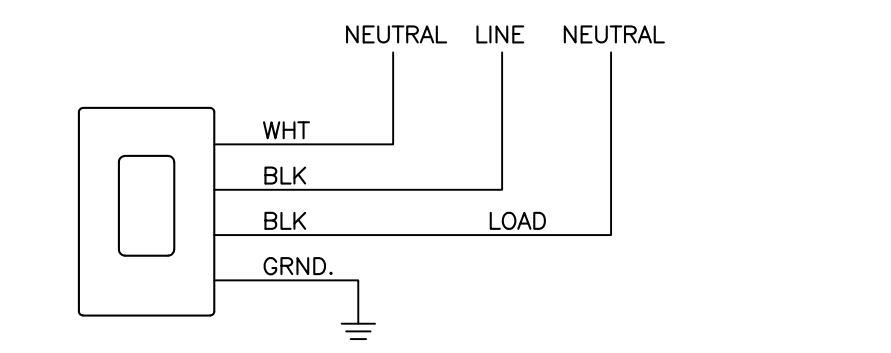
**1 RACEWAY PENETRATION THRU FIRE RATED WALL/CEILING**  
 SCALE: N.T.S. Electrical Detail



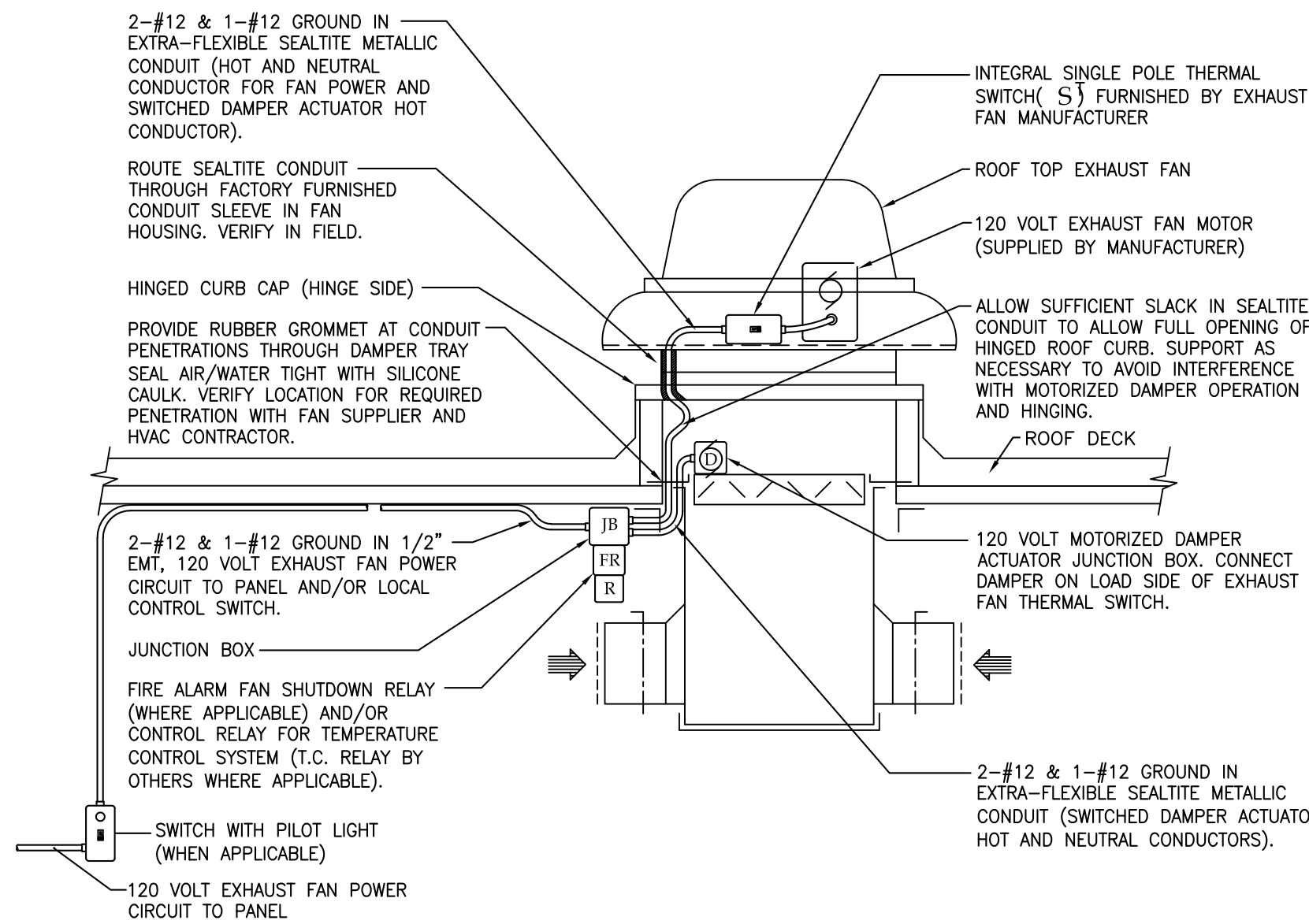
**7 DIGITAL TIME CLOCK WIRING DIAGRAM (TC)**  
 SCALE: N.T.S. Electrical Detail



**6 TYPICAL 0-10V DIMMING SWITCH**  
 SCALE: N.T.S. Electrical Detail

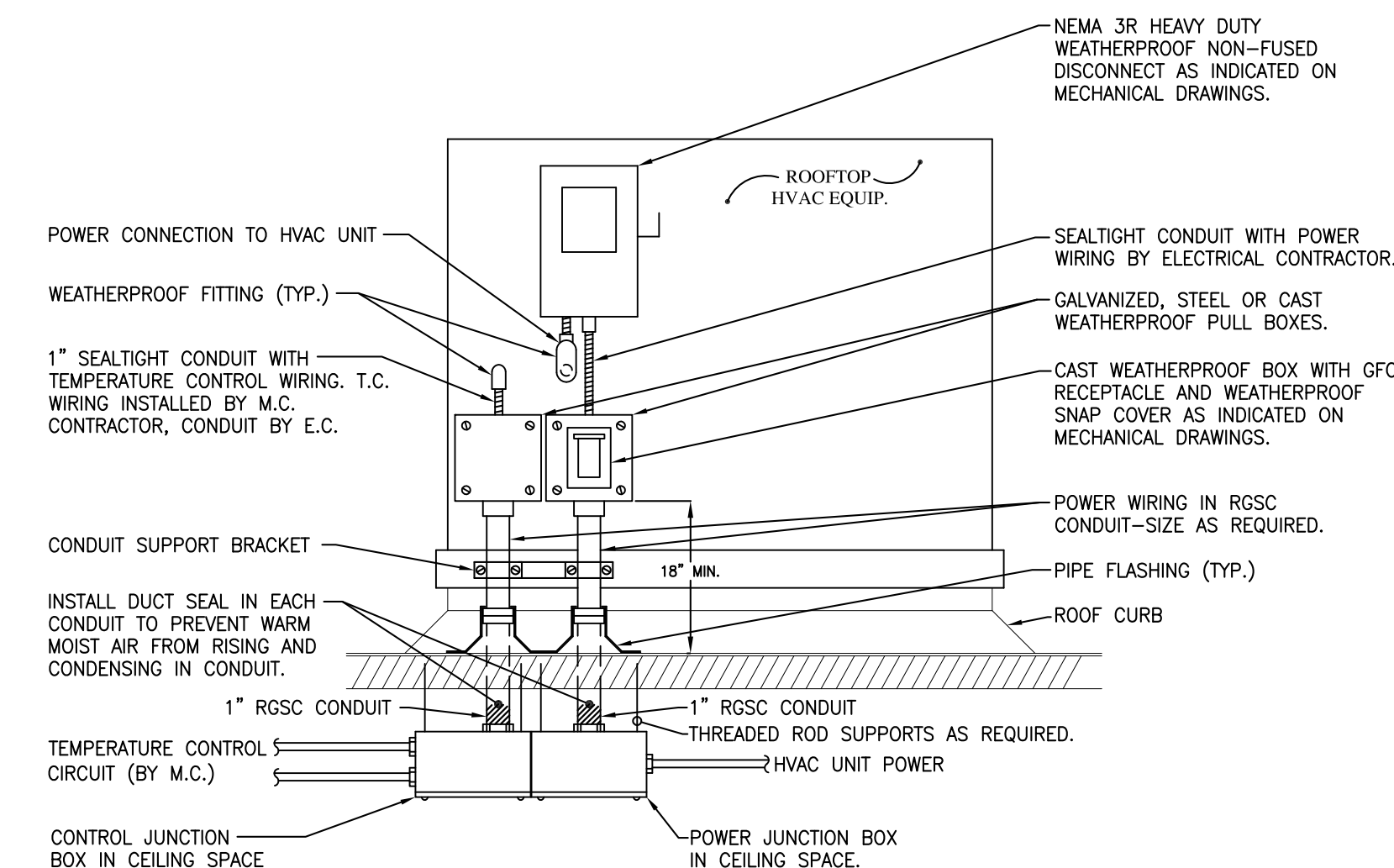


**5 TYPICAL 1-POLE WALL SWITCH / OCCUPANY SENSOR**  
 SCALE: N.T.S. Electrical Detail



**9 TYPICAL 120V ROOFTOP EXHAUST FAN**  
 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 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.  
 d. REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT SUPPLIED (IE. DISCONNECT SWITCHES, STARTERS ETC.) UNDER THE MECHANICAL CONTRACT AND INSTALLED BY THE ELECTRICAL CONTRACTOR.



**8 TYPICAL ROOFTOP HVAC UNIT**  
 SCALE: N.T.S. Electrical Detail





1  
E-4  
1ST FLOOR PLAN -  
DENTAL CONDUIT AND X-RAY CONTROL WIRING  
SCALE: 3/16" = 1'-0"

**GENERAL NOTES:**

- a. COORDINATE ALL BELOW GRADE CONDUITS INSTALLATIONS WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ANY WORK. CONFIRM WITH PATTERSON DENTAL DRAWINGS AND REPRESENTATIVE THAT ALL NECESSARY BELOW GRADE CONDUITS HAVE BEEN SUPPLIED AND INSTALLED AS REQUIRED TO FACILITATE ALL POWER AND CONTROL WIRING REQUIREMENTS FOR DENTAL EQUIPMENT.

**DRAWING KEYNOTES:** ⬠

1. ROUTE TWO(2) 3/4" EMT CONDUITS OVERHEAD FROM MASTER CONTROL SWITCH J-BOX TO EACH J-BOX FOR COMPRESSOR AND WET VACUUM SYSTEM LOCATED IN DENTAL EQUIPMENT RM. CONCEAL CONDUIT WITHIN WALLS AND ABOVE FINISHED CEILING. INSTALL #18/4 LOW-VOLTAGE WIRING WITHIN EACH CONDUIT LEAVING 12" OF COILED CABLE AT MASTER SWITCH AND 36" OF COILED CABLE AT EACH J-BOX FOR TERMINATION TO RESPECTIVE EQUIPMENT ITEMS. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.
2. ROUTE 3/4" EMT CONDUIT OVERHEAD FROM X-RAY SWITCH BACKBOX TO J-BOX FOR PANORAMIC / WALL MOUNTED X-RAY ARM. CONCEAL CONDUIT WITHIN WALLS AND ABOVE FINISHED CEILING. INSTALL #18/3 LOW-VOLTAGE WIRING WITHIN CONDUIT LEAVING 12" OF COILED CABLE AT SWITCH AND 36" OF COILED CABLE AT J-BOX FOR TERMINATION TO X-RAY EQUIPMENT. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.
3. ROUTE 2" PVC SCH.40 CONDUIT WITHIN CONCRETE FLOOR FROM FROM SIDE CABINET TO DENTAL CHAIR UTILITY FLOOR BOX. SUPPLY CONDUIT WITH PLASTIC END BUSHINGS AND A PULLSTRING. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION, INCLUDING STUB-UP LOCATION AT SIDE CABINET, WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.

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SEAL:

TITLE:  
1ST FLOOR PLAN  
DENTAL  
CONDUIT &  
X-RAY CONTROL  
WIRING

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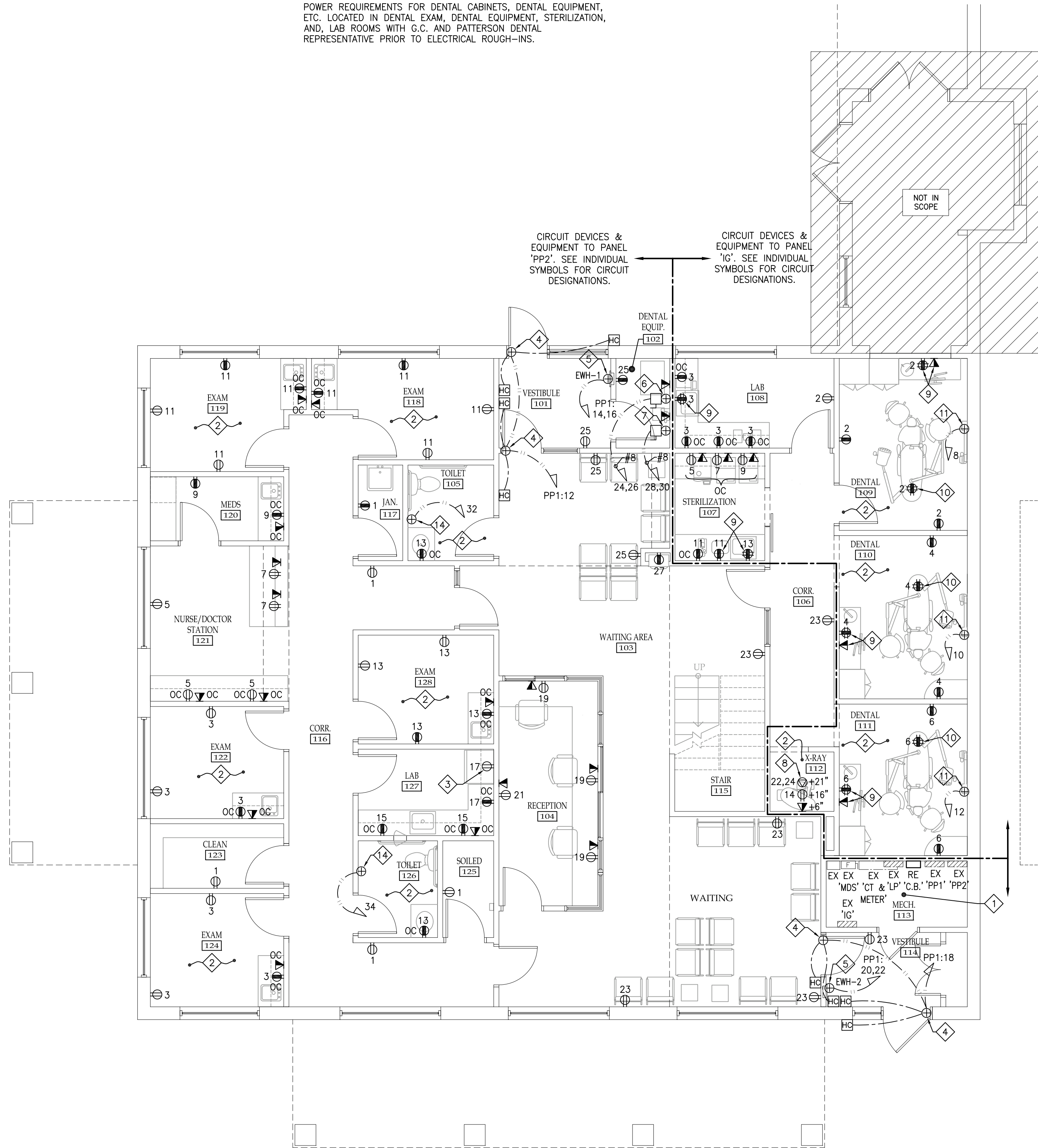


**GENERAL NOTES:**

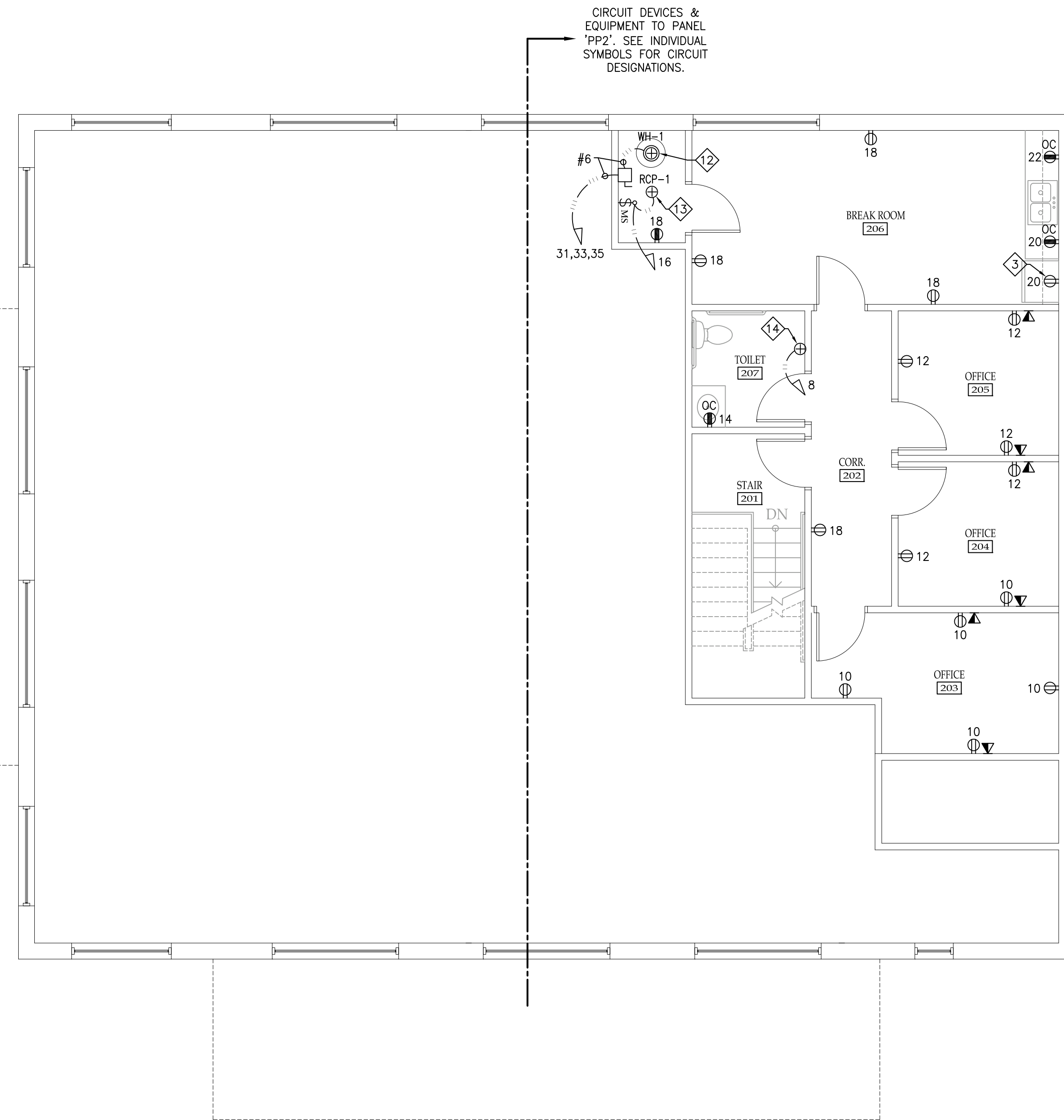
- POWER CIRCUIT WIRING SHALL BE PROVIDED TO DEVICES SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.
- CIRCUIT DEVICES & EQUIPMENT TO PANEL AS DESIGNATED ON DRAWING. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.
- ALL STANDARD, GFI & HOSPITAL GRADE RECEPTACLES TO BE TAMPER-PROOF.
- 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.
- CONFIRM ALL ELECTRICAL DEVICE LOCATIONS AND EQUIPMENT POWER REQUIREMENTS FOR DENTAL CABINETS, DENTAL EQUIPMENT, ETC. LOCATED IN DENTAL EXAM, DENTAL EQUIPMENT, STERILIZATION, AND, LAB ROOMS WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ELECTRICAL ROUGH-IN.

**DRAWING KEYNOTES:**

- EXISTING EQUIPMENT AND DEVICES FOUND WITHIN MECH. 113, DISCOVERED TO NO LONGER BE IN USE, ARE TO BE DISCONNECTED AND COMPLETELY REMOVED INCLUSIVE OF ALL ASSOCIATED WIRING. EXISTING EQUIPMENT THAT IS SCHEDULED TO REMAIN MUST BE RELABELED AS DESIGNATED IN DESIGN DOCUMENTS. HANDWRITTEN LABELS ARE NOT PERMITTED. EXISTING HANDWRITTEN LABELING ARE TO BE COMPLETELY REMOVED.
- INSTALL HOSPITAL GRADE RECEPTACLES IN ROOM/AREA WHERE THIS KEYNOTE IS SHOWN. UTILIZE HEALTH CARE RATED (HCF) CABLE TO WIRE NEW DEVICES FOLLOWING ALL INSTALLATION REQUIREMENTS UNDER NEC ARTICLE 517.
- WIRE FROM GFCI PROTECTED SIDE OF COUNTER RECEPTACLE WITH SAME CIRCUIT DESIGNATION
- FEED AUTOMATIC DOOR MOTOR WITH A 1Ø, 120V POWER CONNECTION. DOOR CONTROLS SHALL BE SUPPLIED BY OTHERS, INSTALLED AND WIRED BY E.C. FIELD VERIFY ALL NECESSARY WORK AND COORDINATE ENTIRE INSTALLATION WITH G.C.
- FEED ELECTRIC WALL HEATER WITH A 1Ø, 208V POWER CONNECTION. HEATER SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.
- FEED AIR COMPRESSOR WITH A 1Ø, 220V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED, NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL IN AN ACCESSIBLE LOCATION. VERIFY POWER TERMINATION REQUIREMENTS TO COMPRESSOR WITH PATTERSON DENTAL. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE.
- FEED VACUUM PUMP WITH A 1Ø, 220V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED, NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL IN AN ACCESSIBLE LOCATION. VERIFY POWER TERMINATION REQUIREMENTS TO VACUUM PUMP WITH PATTERSON DENTAL. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE.
- NEMA 6-20R FOR PANORAMIC X-RAY MACHINE. CONFIRM RECEPTACLE CONFIGURATION WITH PATTERSON DENTAL REPRESENTATIVE PRIOR TO INSTALLATION.
- INSTALL RECEPTACLE / DATA OUTLET WITHIN BASE CABINET OF MILLWORK. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.
- INSTALL RECEPTACLE WITHIN "DENTAL UTILITY FLOOR BOX". PROVIDE A 4" SQ. ELECTRICAL BOX WITH AN INDUSTRIAL RAISED COVER FOR RECEPTACLE INSTALLATION WITHIN UTILITY FLOOR BOX. UTILITY FLOOR BOX SHALL BE SUPPLIED AND INSTALLED BY OTHERS AND WILL BE UTILIZED FOR POWER, DATA, DRAIN, WATER AND VACUUM CONNECTIONS TO DENTAL CHAIR. REFERENCE PATTERSON DENTAL DRAWING FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.
- FEED X-RAY ARM WITH A 120V POWER CONNECTION VIA A JUNCTION BOX INSTALLED +46"A.F.F. FIELD VERIFY POWER TERMINATION REQUIREMENTS. REFERENCE PATTERSON DENTAL DRAWINGS FOR FURTHER INFORMATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND PATTERSON DENTAL REPRESENTATIVE PRIOR TO ROUGH-IN.
- FEED ELECTRICAL WATER HEATER WITH A 3Ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED, NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION. FIELD VERIFY DISCONNECT SWITCH LOCATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND P.C.
- FEED RECIRCULATING PUMP WITH A 1Ø, 120V POWER CONNECTION. SUPPLY A NEMA-1, 3ØA RATED MANUAL MOTOR CONTROLLER FOR DISCONNECTING MEANS. MOUNT ON WALL NEAR RECIRCULATING PUMP IN AN ACCESSIBLE LOCATION AND LABEL ACCORDINGLY. COORDINATE INSTALLATION WITH P.C.
- FEED HAND DRYER WITH A 1Ø, 120V POWER CONNECTION. COORDINATE INSTALLATION WITH G.C.



**1**  
**E-5** 1ST FLOOR PLAN - ELECTRICAL POWER  
SCALE: 3/16" = 1'-0"



**2**  
**E-5** 2ND FLOOR PLAN - ELECTRICAL POWER  
SCALE: 3/16" = 1'-0"

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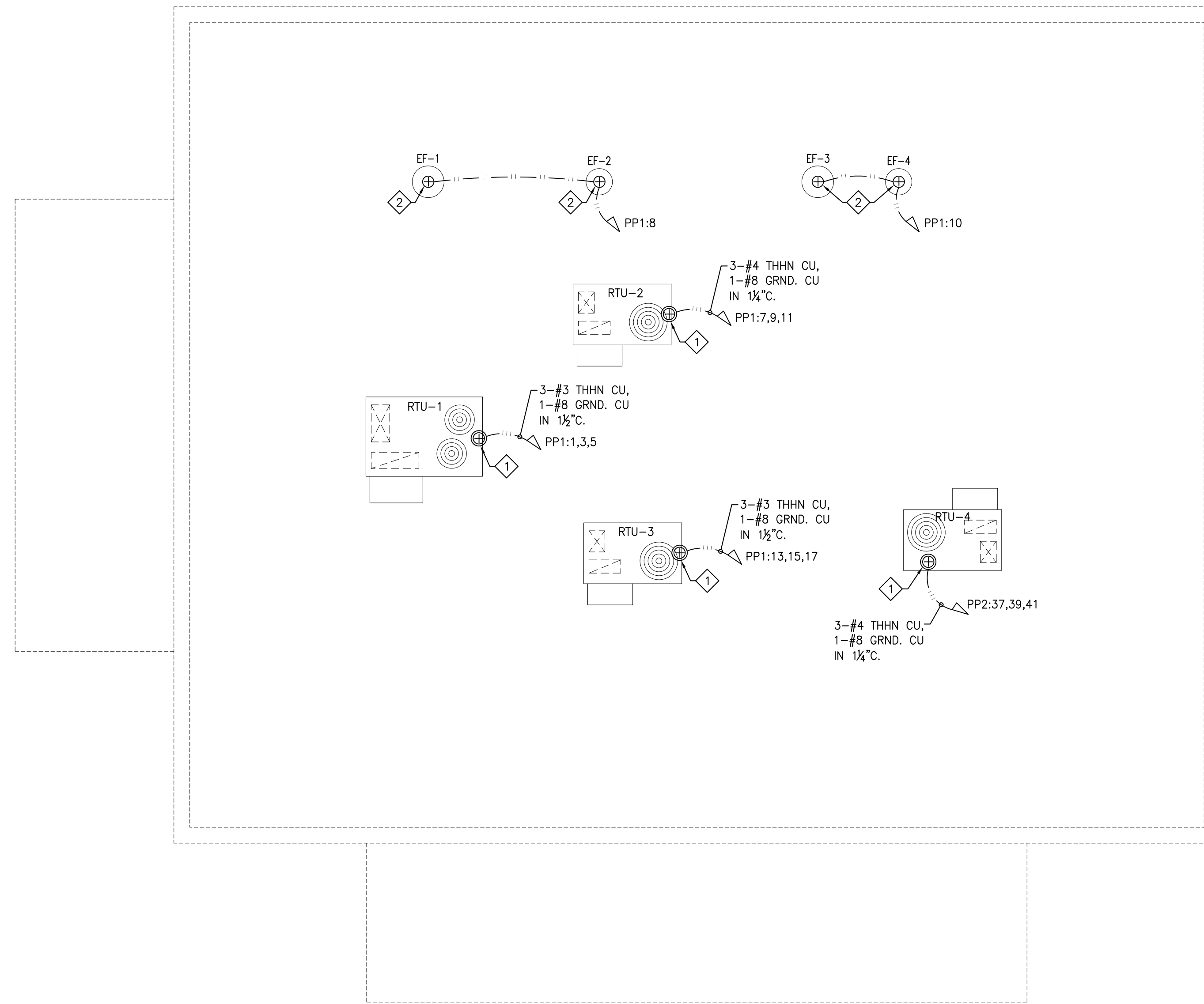
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**1ST & 2ND FLOOR PLANS ELECTRICAL POWER**

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DRAWING #: **E-5**





**1**  
**E-6** ROOF PLAN -  
ELECTRICAL POWER  
SCALE: 3/16" = 1'-0"

**GENERAL NOTES:**

- a. POWER CIRCUIT WIRING SHALL BE PROVIDED TO DEVICES SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING 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.
- b. CIRCUIT DEVICES & EQUIPMENT TO DESIGNATED PANEL: CIRCUIT IDENTIFIED ON DRAWING.

**DRAWING KEYNOTES:**

- 1. FEED ROOF TOP UNIT WITH A 3Ø, 208V POWER CONNECTION. UNIT SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH AND PRE-WIRED GFCI RECEPTACLE. COORDINATE INSTALLATION WITH M.C.
- 2. FEED ROOF EXHAUST FAN WITH A 1Ø, 120V POWER CONNECTION. EXHAUST FAN SHALL BE EQUIPPED WITH AN INTEGRAL PLUG TYPE DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

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JOB CAPT. \_\_\_\_\_ INTERIORS \_\_\_\_\_

SEAL:

TITLE:  
**ROOF PLAN  
ELECTRICAL  
POWER**

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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **E-6**

**GENERAL NOTES:**

- POWER CIRCUIT WIRING SHALL BE PROVIDED TO LIGHTING SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING 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.
- CIRCUIT LIGHTING TO PANEL 'PP2'. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.
- TOGGLE SWITCH, WALL SWITCH OCCUPANCY SENSOR AND CEILING OCCUPANCY SENSORS SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN AREAS WHERE SWITCHING SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (IE: "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY SWITCHING SCHEME.
- WIRE EMERGENCY LIGHTING PACKS AND EXIT SIGNS FROM LOCAL AREA LIGHTING CIRCUIT AHEAD OF ALL SWITCHES AND OCCUPANCY SENSOR CONTROL.

**DRAWING KEYNOTES:**

- UTILIZE HEALTH CARE RATED (HCF) CABLE FOR SWITCH AND LIGHT CIRCUITS IN PATIENT CARE SPACES WHERE THIS KEYNOTE IS SHOWN FOLLOWING ALL INSTALLATION REQUIREMENTS FOUND UNDER NEC ARTICLE 517.
- DIGITAL TIME CLOCK (TC1) SHALL BE SUPPLIED AND INSTALLED TO PROVIDE AUTOMATIC CONTROL FOR LIGHTING THAT DOES NOT HAVE LOCAL AREA OCCUPANCY/VACANCY CONTROL. SEE WIRING DIAGRAM 7/E-3 FOR FURTHER INFORMATION.
- RETAIN EXISTING BRANCH CIRCUIT CONTINUITY, WITH TIMER CONTROL, TO THIS FIXTURE. REPLACE INOPERABLE LAMPS AS NEEDED AND ENSURE LIGHTING IS FULLY OPERATIONAL BY COMPLETION OF CONSTRUCTION.
- DISCONNECT AND REMOVE EXISTING WALL PACK / FLOOD LIGHT. ASSOCIATED BRANCH CIRCUIT WIRING SHALL BE REMOVED BACK TO SOURCE. PATCH AND REPAIR EXISTING FACADE AS REQUIRED, COORDINATE THIS WORK WITH G.C.

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**1ST & 2ND FLOOR PLANS  
 ELECTRICAL LIGHTING**

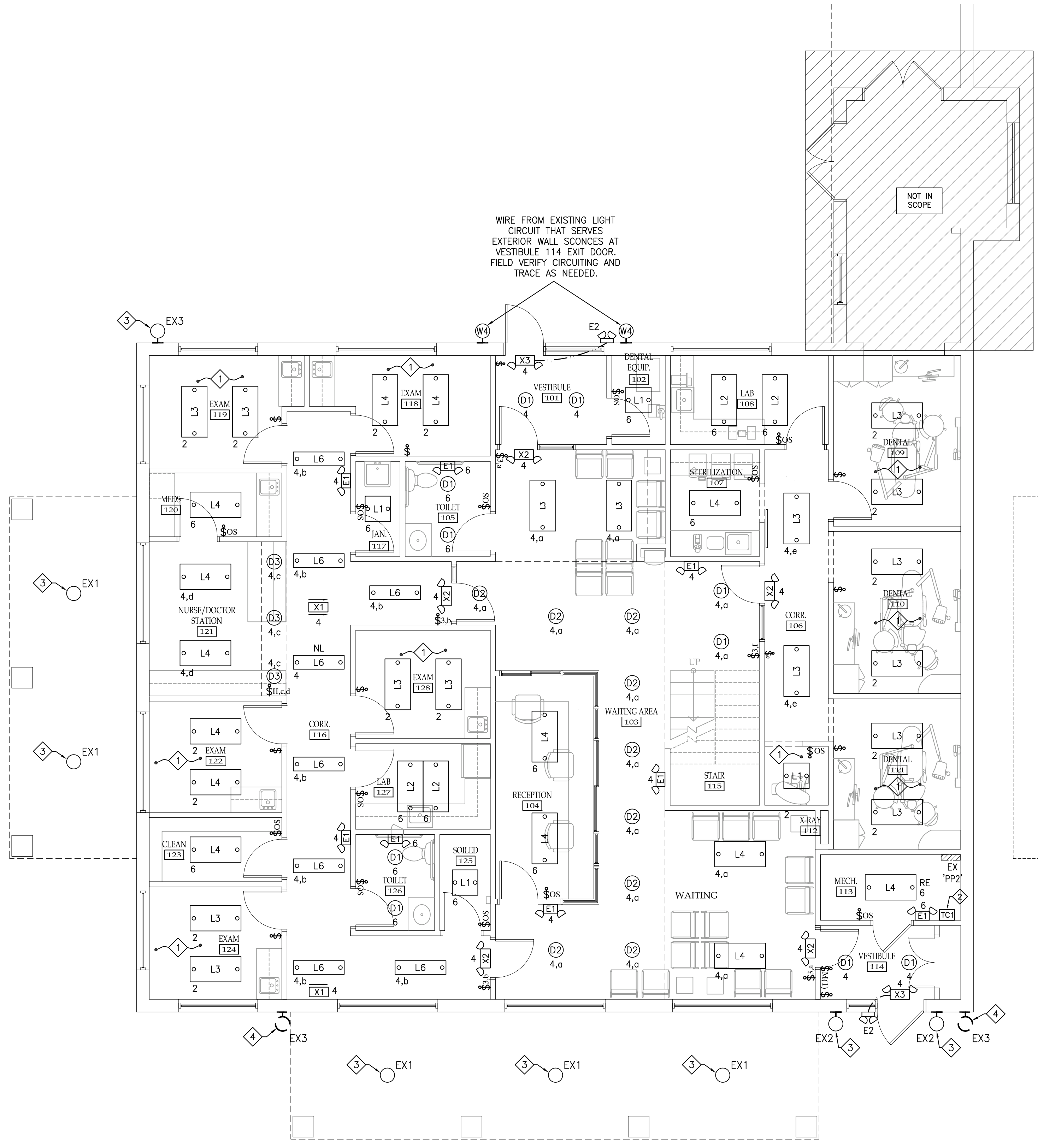


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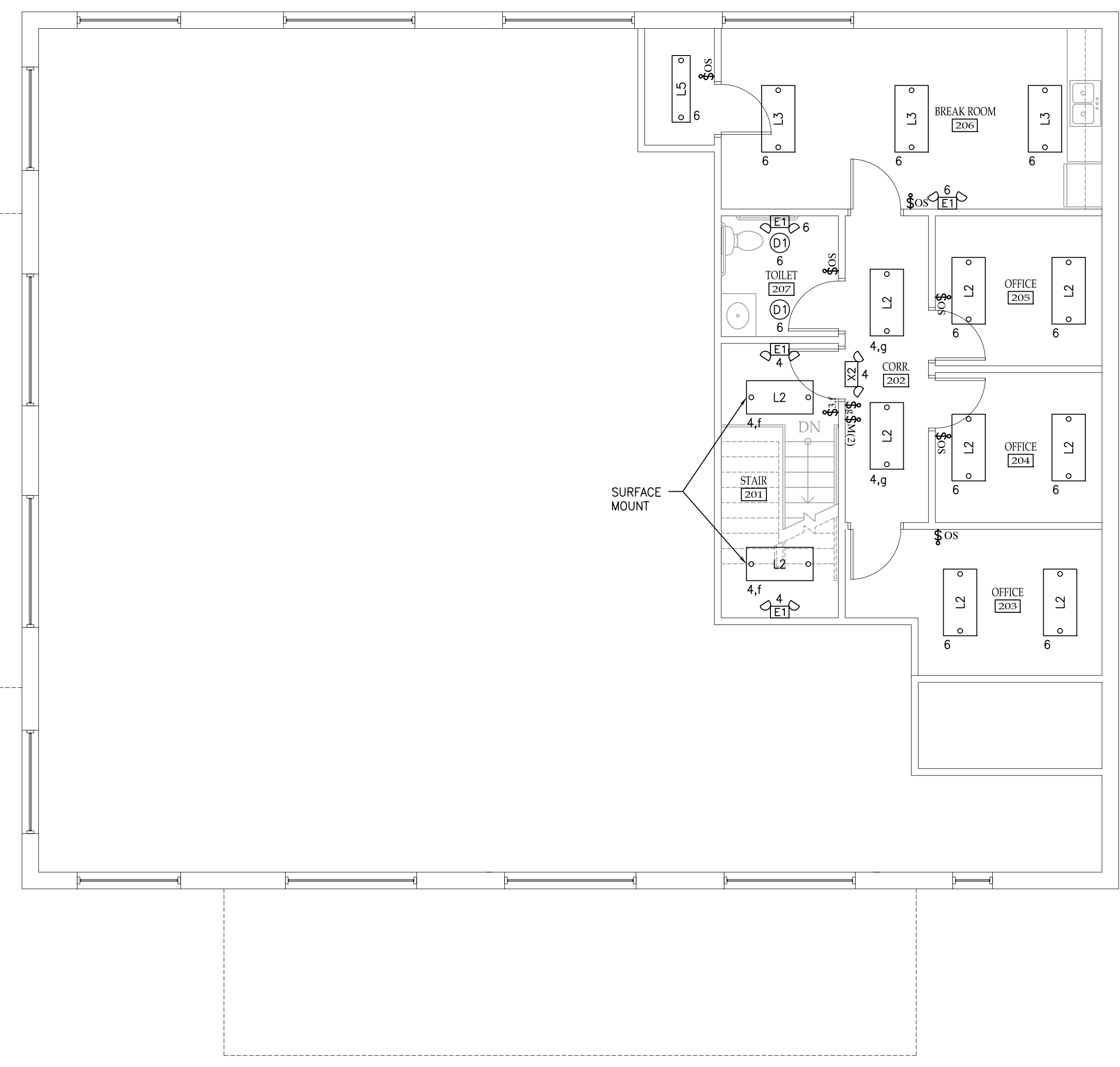
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DRAWING #: E-7



**1 1ST FLOOR PLAN - ELECTRICAL LIGHTING**  
 E-7 SCALE: 3/16" = 1'-0"



**2 2ND FLOOR PLAN - ELECTRICAL LIGHTING**  
 E-7 SCALE: 3/16" = 1'-0"



**GENERAL NOTES:**

- a. SMOKE DETECTORS TO BE LOCATED A MINIMUM OF 3'-0" FROM AN HVAC SUPPLY / RETURN AIR GRILL.
- b. FIRE ALARM VISUAL (STROBE) DEVICES SHALL BE SET AT 15cd UNLESS OTHERWISE DESIGNATED.

**DRAWING KEYNOTES:**

1. FEED FIRE ALARM PANEL WITH A 1Ø, 120V POWER CONNECTION WIRED FROM A DEDICATED CIRCUIT IN THE DESIGNATED PANEL WITH SURGE PROTECTION. SUPPLY FACP WITH TWO(2) DEDICATED "OUTSIDE" TELEPHONE LINES FOR SYSTEM MONITORING. COORDINATE TELEPHONE REQUIREMENTS WITH BUILDING OWNER AND LOCAL FIRE MARSHAL.
2. INSTALL DUCT SMOKE DETECTOR, WITH SAMPLING TUBE, IN RETURN AIR DUCT OF ROOF TOP UNIT. FIELD VERIFY EXACT LOCATION WITH M.C. SUPPLY A REMOTE TEST STATION AND INSTALL WATER HEATER ROOM, LABEL ACCORDINGLY. WIRE DUCT SMOKE DETECTOR INTO HVAC UNIT CONTROLLER FOR AUTOMATIC UNIT SHUT-DOWN UPON DEVICE OR FIRE ALARM SYSTEM ACTIVATION. SUPPLY REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

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SEAL:

TITLE:  
**1ST & 2ND FLOOR PLANS  
 FIRE ALARM**



**SILVESTRI**  
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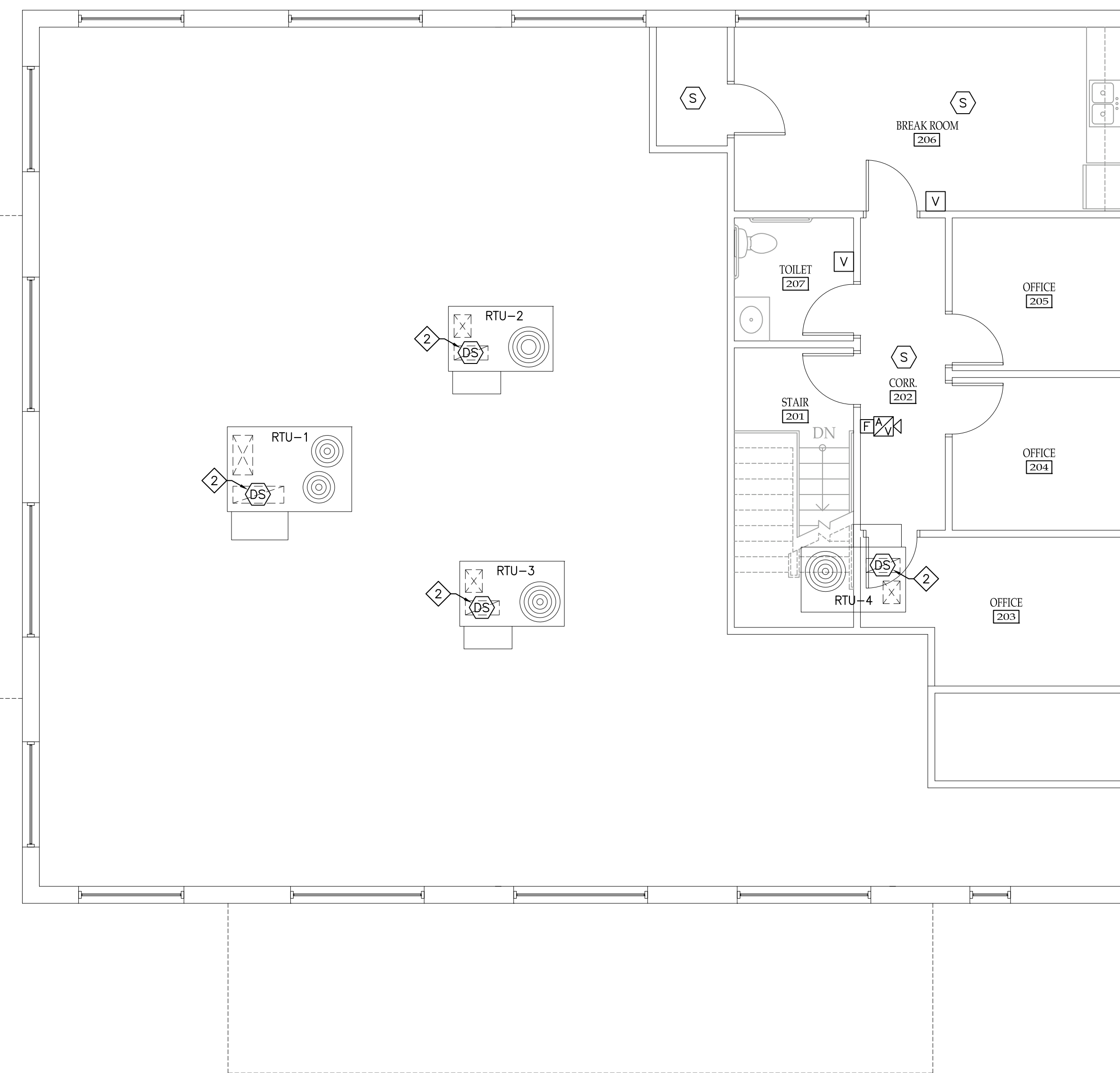
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SA JOB #: 21055.01 DATE: 07-15-22

DRAWING #: **E-8**



**1**  
**E-8**  
**1ST FLOOR PLAN -  
 FIRE ALARM**  
 SCALE: 3/16" = 1'-0"



**2**  
**E-8**  
**2ND FLOOR PLAN -  
 FIRE ALARM**  
 SCALE: 3/16" = 1'-0"



**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 INTERPRETTED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR 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 BE RESPONSIBLE TO MAKE SURE THE EQUIPMENT IS 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 CONTRACTOR. 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 TO THE ARCHITECT.
  - 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 REQUIRING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF 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 BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE THE RESPONSIBILITY 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. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO 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 ANY OTHER 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 MATERIAL 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 A 3RD PARTY AGENCY APPROVED 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 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 BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT IDENTIFIED AND 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 ALLIED 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 PHASE OF 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 OF 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, ONE (1) PDF SET 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 TYPED/WRITTEN 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 GALVANIZED, 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.
- ALL 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 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 WATERTIGHT 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 DEBRIS AND 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-STOPS" DESIGNATED ASTM E814.
- ACCEPTABLE MANUFACTURERS:
  - DOW CORNING FIRE-STOP SYSTEM FOAMS AND SEALANTS
  - NELSON ELECTRIC FIRE-STOP SYSTEM PUTTY, CLK AND WRP
  - THOMAS & BETTS - 5-100 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 WATERTIGHT 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 POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING NEW PANELS AND FEEDERS.
  - 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.
  - OUTDOOR LIGHTING AND CONTROLS (WHEN APPLICABLE).
  - FIRE ALARM 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) FOOTCANDLES 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:**

- EXISTING ELECTRIC SERVICE AND UTILITY METERING IS SCHEDULED TO REMAIN AS-IS.

**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 90% 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. AMACONDA, 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
- #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 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.
- PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
- CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.
- FORM AND TIE ALL WIRING IN PANELBOARDS.
- THERE SHALL BE NO WIRENUT 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:**

- 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 WATERTIGHT 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 TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
  - IF CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
  - PROVIDE MULTIPLE 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 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 FRAMES 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, BRADS, 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.

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BID/PERMIT SET \_\_\_\_\_ 2022-07-15

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

SEAL: \_\_\_\_\_

TITLE: \_\_\_\_\_

**ELECTRICAL SPECIFICATIONS**



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21055.01 07-15-22

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 "WLRO" 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.
    - HOSPITAL GRADE SHALL MEET CURRENT NEC REQUIREMENTS.
    - RECEPTACLES WITH INTEGRAL USB CARING PORTS SHALL BE LISTED AND CONSTRUCTED SUCH THAT CLASS CIRCUITRY IS INTEGRAL WITH RECEPTACLE.
  - PROVIDE TAMPER-RESISTANT RECEPTACLE IN THE FOLLOWING AREAS:
    - WHERE DESIGNATED ON DRAWINGS
    - 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.
  - 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. 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 ENGINEER'S 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 MANUFACTURES 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

- F. 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.
  - LOCATE 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-SHAUMUITT, 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**

- A. MANUFACTURER:**
- ALL EQUIPMENT IDENTIFIED IN THIS SECTION, AND THROUGHOUT DESIGN DOCUMENTS, IS BASED ON THE MANUFACTURER OF SQUARE-D. ACCEPTABLE ALTERNATE MANUFACTURES INCLUDE CUTLER-HAMMER, SIEMENS OR EQUAL PROVIDED EQUIPMENT MEETS ALL DESIGN CRITERIA AND PHYSICAL CHARACTERISTICS OF THE PROJECT.
- B. SUBMITTALS:**
- SUBMIT EQUIPMENT DATA SHEETS INCLUDING CIRCUIT BREAKERS AND ALL ASSOCIATED ACCESSORIES. INFORMATION SHALL INCLUDE EQUIPMENT MANUFACTURE, MODEL NUMBERS AND APPLICABLE SHOP DRAWINGS.

- C. GENERAL:**
- PANELBOARD SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT AT THE TERMINALS.
  - PANELBOARDS SHALL BE LABELED WITH PHENOLIC NAMEPLATES INSCRIBED AS INDICATED ON THE DRAWINGS. PROVIDE ARC FLASH ANALYSIS WITH WARNING LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70 AND 70E.
  - PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON THE DRAWINGS.
  - PANELBOARDS SHALL HAVE COPPER OR ALUMINUM (SEE #5 BELOW) BUS WITH BOLTED BREAKERS, FULLY RATED NEUTRAL BUS AND FULLY RATED INTERRUPTING CAPACITY; NO SERIES RATED SYSTEM PERMITTED. PROVIDE WITH BLANK END WALLS (NO PRE-PUNCHED BOXES), DOOR-IN-DOOR OR HINGED TRIM, INTERRUPTING RATING AS CALLED FOR, 24 CIRCUIT MINIMUM PANEL SIZE, FLUSH OR SURFACE MOUNTED AS INDICATED.
  - ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. ALUMINUM BUS BARS ARE ACCEPTABLE WHEN ALUMINUM FEEDERS ARE SPECIFIED.
  - PANELS KNOWN AS "LOAD CENTERS" ARE UNACCEPTABLE.
  - SPACES, AS IDENTIFIED IN PANEL SCHEDULES, FOR FUTURE PROTECTIVE DEVICES SHALL INCLUDE BUS AND SUPPORT.
  - INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR. APARTMENT UNIT LOAD CENTERS SHALL BE INSTALLED AT HEIGHTS TO MEET ADA REQUIREMENTS.
  - MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION.
  - ALL BREAKERS SHALL BE BOLT-ON TYPE. PUSH-ON TYPE ARE ONLY ACCEPTABLE FOR USE IN "LOAD CENTERS".
  - ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
  - ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL.
  - GFCI CIRCUIT BREAKERS: SINGLE-POLE AND TWO-POLE CONFIGURATIONS WITH CLASS A GROUND-FAULT PROTECTION (6-MA TRIP).
  - GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKERS: CLASS B GROUND-FAULT PROTECTION (30-MA TRIP).
  - ARC-FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKERS: COMPLY WITH UL 1699; 120/240-V, SINGLE-POLE CONFIGURATION.
  - PROVIDE (3) SPARE 1" CONDUITS INTO ACCESSIBLE CEILING SPACE WHERE PANELS ARE FLUSH-MOUNTED. PROVIDE REMOVABLE CAP OR PLUG AT CONDUIT AND ABOVE CEILING.
  - ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE.
  - FOR EXISTING PANELBOARDS, RELABEL EXISTING PANELBOARD DIRECTORIES TO REFLECT ALL BRANCH CIRCUIT REVISIONS; PROVIDE TYPEWRITTEN WITH ROOM NUMBERS, FUNCTION, ETC. TO POSITIVELY IDENTIFY EACH BRANCH CIRCUIT.
  - FOR EXISTING PANELBOARDS, 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.

**FIRE ALARM SYSTEM SPECIFICATION**

**PART 1 – GENERAL**

- A. GENERAL:**
- THE FIRE ALARM SYSTEM SHALL BE A COMPLETE SYSTEM OF ONE OF THE FOLLOWING MANUFACTURERS:
    - FIRE-LITE
    - MIRCOM
    - SILENT KNIGHT
    - NOTIFIER
    - EDWARDS
    - SIMPLEX
    - OR APPROVED EQUAL.
- B. SUBMITTALS:**
- INCLUDE THE FOLLOWING ITEMS FOR REVIEW BY THE ENGINEER OF RECORD AND LOCAL BUILDING DEPARTMENT:
    - SYSTEM DEVICE DATA SHEETS INCLUDING CONTROL PANEL AND ALL ASSOCIATED ACCESSORIES. 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
    - NFPA 72 – COMPLETE
    - NFPA 101
    - APPLICABLE REQUIREMENTS OF THE TOWN.
  - ALL EQUIPMENT SHALL BE "UL" LISTED UNDER THE FIRE PROTECTION DIRECTORY AND SUPPLEMENTS.
- D. PROJECT DESCRIPTION**
- PROVIDE ANALOG MANUAL FIRE ALARM AND SMOKE DETECTION SYSTEM FOR A 2-STORY MEDICAL OFFICE.
  - PROVIDE INITIATING DEVICES, NOTIFICATION APPLIANCES AND OTHER EQUIPMENT REQUIRED FOR A COMPLETE, OPERATIONAL AND CODE-COMPLIANT SYSTEM.
  - PROVIDE AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES IN AREAS INDICATED ON DRAWINGS
  - PROVIDE NAC POWER SUPPLIES AS NEEDED TO ACCOMMODATE NOTIFICATION APPLIANCES
  - PERFORM TESTING OF COMPLETED INSTALLATION IN ACCORDANCE WITH NFPA 72 CHAPTER 10
  - SURGE SURGE PROTECTION DEVICE WITH VISIBLE, AUDIBLE, SMART NOTIFICATION AND REPLACEABLE SURGE PROTECTION MODULE. PROVIDE DITEK SURGE PROTECTION DTK-120X12 (OR EQUAL).

**PART 2 – DESIGN PARAMETERS**

- A. INFORMATION AND PARAMETERS**
- SYSTEM DESIGN BASIS IS NFPA 72 "PARTIAL" DETECTION. SMOKE DETECTION IS BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE FOR APPLICABLE USE GROUPS.
  - THE BUILDING SHALL BE UNDER ONE NOTIFICATION ZONE.
  - NOTIFICATION APPLIANCES SHALL CONSIST OF AUDIO (HORNS) AND FIRE ALARM VISUAL (STROBES).
  - STANDBY POWER BATTERIES IN FACP AND NAC POWER SUPPLIES SHALL BE SIZED TO PROVIDE 24 HOURS OF STANDBY POWER IN ADDITION TO 15 MINUTES IN FULL LOAD ALARM IN ACCORDANCE WITH NFPA 72.
  - ALL WIRING FOR THIS SYSTEM SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE AND FINISHES.
  - "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.
  - PATHWAY SURVIVABILITY MEANS THE ABILITY OF ANY CONDUCTOR, OPTIC FIBER, RADIO CARRIER, OR OTHER MEANS FOR TRANSMITTING SYSTEM INFORMATION TO REMAIN OPERATIONAL DURING FIRE CONDITIONS.
  - PATHWAY SURVIVABILITY WILL BE ACCOMPLISHED BY USING A COMBINATION OF LISTED CIRCUIT INTEGRITY (C) CABLE, CLASS "B" CIRCUITS AND ROUTING OF VERTICAL AUDIO, NETWORK AND COMMUNICATION RISERS IN STAIRWELLS WHICH HAVE A TWO HOUR FIRE RESISTANCE RATING.

**PART 3 – PRODUCT AND EQUIPMENT**

- A. FIRE ALARM CONTROL UNIT**
- ANALOG ZONE TYPE UNIT WITH MANUAL AND AUTOMATIC ALARM CAPABILITIES, LCD DISPLAY CAPABLE OF SUPPORTING SYSTEM NEEDS AS SHOWN AND IDENTIFIED IN CONTRACTOR DOCUMENTS AND ALSO THE ABILITY TO SUPPORT FUTURE COMMERCIAL TENANTS. INCLUDE REMOTE POWER SUPPLIES SIZED FOR THE SIMULTANEOUS OPERATION OF ALL AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES.
  - CONTROL PANEL SHALL CONTAIN FIVE(5) (MIN.) PROGRAMMABLE "INITIATING" CIRCUITS (ZONES).
  - CONTROL PANEL SHALL CONTAIN TWO (2) "INDICATING" ALARM CIRCUITS FOR AUDIBLE AND VISUAL DEVICES.
  - MAIN CABINET SHALL BE FOR FLUSH INSTALLATION WITH APPROPRIATE COVERPLATE RED IN COLOR.
  - SYSTEM SHALL BE FULLY SUPERVISED, SHALL BE FOR 120 VOLT SUPPLY, FOR 24 VOLT DC OPERATION AND SHALL HAVE BATTERY "BACKUP" FOR 24 HOUR OPERATION AFTER 120 VOLT POWER FAILURE.
  - CONTROL PANEL SHALL CONTAIN DIGITAL COMMUNICATOR FOR TOUCH-TONE AND/OR DIAL INTERFACE (PER OWNER).
- B. 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".
  - AUDIO (HORN) DEVICES WITH 520HZ LOW FREQUENCY SOUNDER SHALL BE SUPPLIED FOR NON-ADA GUESTROOMS.
  - 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.
- C. ZONE SCHEDULE:**
- ZONE 1 = PULL STATIONS.
  - ZONE 2 = SMOKE DETECTORS
  - ZONE 3 = DUCT SMOKE DETECTOR
  - ZONE 4 = SPARE
  - ZONE 4 = SPARE

**PART 4 – EXECUTION**

**A. INSTALLATION**

- THE CONTRACTOR SHALL FURNISH ALL CONDUIT, WIRING, OUTLET BOXES, JUNCTION BOXES, CABINETS, AND SIMILAR DEVICES NECESSARY FOR THE COMPLETE INSTALLATION. ALL WIRING SHALL BE OF THE TYPE RECOMMENDED BY THE MANUFACTURER.
- FIRE PROTECTION AND DETECTION SYSTEMS ARE SUBJECT TO PERIOD INSPECTION BY LOCAL MUNICIPALITY. WORK SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL INSPECTED AND ACCEPTED BY THE CODE ENFORCEMENT OFFICER. FIRE ALARM SYSTEMS, FIRE DETECTION DEVICES OR SYSTEMS, FIRE PROTECTION SYSTEMS, FIRE SUPPRESSION SYSTEMS, INCLUDING ROUGH-IN AND FINAL OPERATIONAL TESTING SHALL BE INSPECTED BY THE CITY OF BUFFALO.
- ALL CONDUCTORS SHALL BE INSTALLED IN EMT WHERE CONDUCTORS ARE NOT CONCEALED ABOVE CEILINGS OR IN WALLS OR AS OTHERWISE PRESCRIBED BY NEC ARTICLE 760, SUCH AS WHEN PASSING THROUGH A FLOOR. CONDUCTORS LOCATED AT THE ROOF DECK ARE NOT REQUIRED TO BE IN EMT, AND SHALL BE ATTACHED TO THE BUILDING STRUCTURE WITH APPROVED SUPPORTS.
- ALL LOW VOLTAGE OPERATIONS FOR ALL FIRE ALARM SYSTEM DEVICES SHALL BE PROVIDED FROM THE CONTROL UNIT.
- FIRE ALARM CABLE SHALL COMPLY WITH NEC ARTICLE 760 FOR NPLFA OR PLFA AS APPLICABLE OR SHALL BE LISTED FIRE ALARM CABLE; SOLID OR STRANDED COPPER IS PERMITTED; AND SHALL COMPLY WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INITIATING DEVICE CIRCUITS, SIGNALING LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS.
- ALL SYSTEM WIRING SIZE SHALL BE AS DETERMINED SUITABLE BY THE MANUFACTURER AND IN COMPLIANCE WITH THE CURRENT CARRYING CAPACITIES AS SET FORTH BY THE NATIONAL ELECTRICAL CODE.
- EACH CIRCUIT SHALL UTILIZE WIRE OF A COLOR DIFFERENT AND DISTINGUISHABLE FROM OTHER CIRCUITS. COLOR CODING SHALL BE APPROVED BY THE OWNER'S DESIGNATED REPRESENTATIVE. COLORS SHALL BE CONTINUOUS THROUGHOUT EACH ENTIRE CIRCUIT. MATCH EXISTING.
- RACEWAYS SHALL NOT CONTAIN BOTH POWER LIMITED AND NON-POWER LIMITED CONDUCTORS UNLESS SPECIFICALLY PERMITTED BY NEC AND THE MANUFACTURER'S EQUIPMENT LISTINGS.
- RACEWAY SHALL ENTER PANELS FROM THE SIDES OR BOTTOM; NO RACEWAY SHALL ENTER THE TOP OF A PANEL.
- EXPOSED RACEWAYS SHALL BE RUN PARALLEL AND PERPENDICULAR TO THE WALLS AND CEILINGS. WHEREVER PRACTICAL, EXPOSED RACEWAYS SHALL BE RUN ON THE CEILING AS CLOSE AS POSSIBLE TO A WALL OR AS HIGH AS POSSIBLE ON A WALL. WHERE EXPOSED RACEWAYS MUST CROSS UNDER A STRUCTURAL BEAM OR RIB, THEY SHALL BE RUN DOWN ON ONE SIDE OF THE BEAM OR RIB, ACROSS ITS BOTTOM, AND UP TO THE CEILING ON THE OTHER SIDE OF THE BEAM OR RIB. NO SPANNING FROM BEAM TO BEAM OR RIB TO RIB WILL BE PERMITTED. THE USE OF A CONDUIT BODY ON ONE SIDE OF A BEAM OR RIB WILL BE PERMITTED PROVIDED IT WILL BE READILY ACCESSIBLE.
- ALL RACEWAYS, FLEXIBLE RACEWAYS, MOUNTING BOXES, JUNCTION BOXES, AND PANELS SHALL BE SECURELY FASTENED TO ENSURE POSITIVE GROUNDING THROUGHOUT THE ENTIRE SYSTEM.
- WHERE NEW PENETRATIONS OF FLOOR SLABS OR FIRE WALLS ARE MADE, THEY SHALL BE FIRE-STOPPED IN ACCORDANCE WITH THE BUILDING CODE.
- END-OF-LINE RESISTORS SHALL BE FURNISHED AS REQUIRED AND SHALL BE MOUNTED AS DIRECTED BY THE MANUFACTURER.
- END-OF-LINE RESISTORS SHALL COMPLY WITH THE SYSTEM MANUFACTURER'S RECOMMENDATIONS.
- THE FIELD LOCATION OF THE END-OF-LINE RESISTORS SHALL BE LABELED SO THAT THE DEVICES MAY BE EASILY LOCATED, AND THAT LOCATION SHALL BE NOTED ON THE POINT-TO-POINT DRAWINGS.
- ALL WIRING WITHIN THE CONTROL PANEL SHALL BE NEATLY SERVED IN THE PANEL GUTTERS, WHERE APPLICABLE, AND SHALL BE SECURED BY MEANS OF THOMAS & BETTS "TY-RAPS" OR BY OTHER APPROVED MEANS.
- ALL WIRING SHALL BE TESTED FOR STURV VOLTAGE, SHORT CIRCUITS, AND GROUND FAULTS PRIOR TO CONNECTION TO THE CONTROL PANEL AND ANY DEVICES.
- SPLICING OF WIRING CONNECTIONS, USE OF COMMON WIRE NUTS, OR MORE THAN TWO WIRES ON ONE TERMINAL SCREW IS PROHIBITED.
- SURGE PROTECTION DEVICES SHALL BE INSTALLED AND WIRED PER MANUFACTURE INSTRUCTIONS MEETING ALL NEC REQUIREMENTS.

**B. COMMISSIONING**

- THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE, CITY REPRESENTATIVE, 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.

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

SEAL: \_\_\_\_\_

TITLE: \_\_\_\_\_

**ELECTRICAL SPECIFICATIONS**



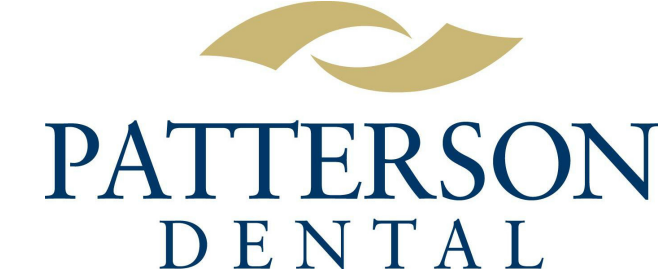
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**E-10**





1031 MENDOTA HEIGHTS ROAD  
MENDOTA HEIGHTS, MN

NOT FOR CONSTRUCTION

Sheet List	
Sheet Number	Sheet Name
DA001	GENERAL NOTES
DA111	LVL 1 FLOOR PLAN
DA113	LVL 1 BACKING PLAN
DA310	LVL 1 DENTAL ELEVATIONS
DB110	LVL 1 DENTAL UTILITIES IN FLOOR
DE110	LVL 1 ELECTRICAL & LOW VOLTAGE
DP110	LVL 1 PLUMBING
DX110	DETAILS

**ABBREVIATION LEGEND**

AFF	ABOVE FINISHED FLOOR
DR	SUPPLIED BY DOCTOR
EC	ELECTRICAL CONTRACTOR
ER	EXISTING RELOCATED
EX	EXISTING
FT	FUTURE
GC	GENERAL CONTRACTOR
MTD	MOUNTED
NC	NO CHANGE
NIC	NOT INCLUDED
NIS	NOT IN SCOPE
NW	NEW
PC	PLUMBING CONTRACTOR
PD	PATTERSON DENTAL
TYP	TYPICAL
VFY	VERIFY
VIF	VERIFY IN FIELD

**PATTERSON DENTAL:**

**PATTERSON DENTAL'S RESPONSIBILITIES WILL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:**

- PATTERSON DENTAL WILL PROVIDE A SET OF DENTAL SPECIFIC SHOP DRAWINGS TO AID THE CONTRACTOR AND/OR ARCHITECT OF THE OWNER'S CHOOSING IN THE CONSTRUCTION OF THE OWNER'S DENTAL OFFICE. THESE DRAWINGS WILL PROVIDE CRITICAL DENTAL LOCATIONS OF ALL DENTAL EQUIPMENT. WRITTEN DIMENSIONS WILL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- PATTERSON DENTAL WILL ASSUME NO RESPONSIBILITY FOR DEVIATIONS FROM THE DENTAL DRAWINGS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN ENDORSEMENT.
- PATTERSON DENTAL'S REPRESENTATIVES WILL PROVIDE ASSISTANCE AS NEEDED TO THE CONTRACTOR AND/OR ARCHITECT WITH PROPER ADVANCE NOTICE.
- A PRE-CONSTRUCTION MEETING BETWEEN PATTERSON DENTAL'S REPRESENTATIVES AND THE CONTRACTOR, ARCHITECT, AND SUB-CONTRACTORS TO INCLUDE MECHANICAL, PLUMBING, AND ELECTRICAL IS REQUIRED. DENTAL SPECIFIC TEMPLATES AND SPECIFIC CONSTRUCTION REQUIREMENTS WILL BE PROVIDED DURING THIS MEETING.
- PATTERSON DENTAL'S REPRESENTATIVES WILL MAKE PERIODIC VISITS TO THE JOB SITE AT CRITICAL POINTS IN THE CONSTRUCTION PROCESS. **THE CONTRACTOR IS REQUIRED TO INFORM PATTERSON WHEN INSPECTIONS OF PLUMBING, WIRING, AND BACKING IN THE WALLS CAN BE PERFORMED PRIOR TO BACKFILLING TRENCHES, POURING OF THE SLAB, SEALING PARTITIONS AND INSTALLING CEILINGS.**
- PATTERSON DENTAL'S REPRESENTATIVES WILL COORDINATE WITH THE CONTRACTOR TO INSTALL THE DENTAL EQUIPMENT AS LAID OUT IN THE INSTALLATION GUIDELINES AT A DATE AGREED UPON BY THE CONTRACTOR AND PATTERSON. A FINAL INSPECTION PRIOR TO THE INSTALLATION OF THE DENTAL EQUIPMENT WILL BE PERFORMED TO ENSURE THAT ALL PLUMBING, ELECTRICAL AND MECHANICAL CONSTRUCTION IS COMPLETE. ALL FLOORING, PAINTING AND CEILING WORK MUST BE COMPLETED PRIOR TO EQUIPMENT INSTALLATION.
- THE CONTRACTOR AND SUB-CONTRACTORS ARE TO PROVIDE FINAL HOOK UP TO ALL DENTAL EQUIPMENT AS SET FORTH THE INSTALLATION GUIDELINES.

**BUILDING CONTRACTOR:**

- THE BUILDING CONTRACTOR WHO HAS ENTERED INTO A CONSTRUCTION CONTRACT WITH THE OWNER IS RESPONSIBLE FOR ALL WORK DEFINED BY THAT CONTRACT. IF THE PROJECT IS LET UNDER SEPARATE CONTRACTS TO MORE THAN ONE CONTRACTOR, THE RESPONSIBILITIES LISTED BELOW APPLY TO EACH CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETION OF THE PROJECT IN THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR IS TO FURNISH ALL MATERIALS AND LABOR REQUIRED TO COMPLETE THE PROJECT, THAT IS NOT SPECIFICALLY PROVIDED BY PATTERSON DENTAL, WHETHER OR NOT EACH AND EVERY ITEM IS SPECIFICALLY MENTIONED.
- THE CONTRACTOR SHALL ADVISE THE OWNER OF ANY CONFLICT BETWEEN THESE DRAWINGS AND THE FIELD CONDITIONS BEFORE PROCEEDING WITH THE JOB. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR THE ACCURACY OF FIELD MEASUREMENTS AND CONDITIONS AND SHALL BE RESPONSIBLE FOR THE PROPER MODIFICATIONS TO ANY EXISTING WORK, PREVIOUSLY INSTALLED WORK, AND/OR OTHER TRADES. WRITTEN APPROVAL MUST BE OBTAINED FROM THE PATTERSON EQUIPMENT SPECIALIST ASSIGNED TO THE PROJECT BEFORE ANY CHANGES AND/OR DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS ARE MADE. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE EXECUTION OF HIS/HER WORK AND FOR ANY CHANGES AND/OR DEVIATIONS FROM THE DRAWINGS OR SPECIFICATIONS MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER AND/OR THE PATTERSON EQUIPMENT SPECIALIST. ANY COSTS RESULTING FROM CHANGES AND/OR DEVIATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- A COMPLETE SET OF DRAWINGS MUST BE KEPT AT THE JOB SITE AT ALL TIMES AND ANY CHANGES MUST BE NOTED THEREON AND INITIALED AT THE TIME THE CHANGE OR DEVIATION IS PERFORMED.
- THE GENERAL CONTRACTOR SHALL DO ALL PATCHING TO CONFORM TO MATERIAL, TEXTURE AND SURFACE ALIGNMENT WITH THE ADJOINING SURFACE AND FINAL TOUCH UP/APPEARANCE OF ALL FINISHED SURFACES. THE CONTRACTOR SHALL ENSURE THE PROTECTION OF ALL EQUIPMENT FURNISHED UNDER HIS/HER CONTRACT AND BY OTHERS PRESENT AT THE JOB SITE.
- THE CONTRACTOR SHALL REMOVE DEBRIS AND MAINTAIN THE PREMISES BROOM CLEAN AT ALL TIMES. DEBRIS IS TO INCLUDE, BUT NOT LIMITED TO SHIPPING CARTONS, BOXES, ETC., RESULTING FROM THE INSTALLATION OF DENTAL AND OTHER EQUIPMENT BY CONTRACTORS CONCURRENTLY ENGAGED.
- THE CONTRACTOR SHALL PARTICIPATE AT ALL JOB COORDINATION MEETINGS WITH PATTERSON DENTAL AND ENSURE THE ATTENDANCE OF APPLICABLE TRADES.
- THE CONTRACTOR IS REQUIRED TO INFORM PATTERSON DENTAL REPRESENTATIVES OF KEY EVENTS IN THE CONSTRUCTION PROCESS WITH REASONABLE ADVANCE NOTICE, TO FACILITATE THE INSPECTION OF SAID EVENTS, I.E. BACKFILLING TRENCHES, CLOSING WALLS, POURING CONCRETE TO BURY PLUMBING AND ELECTRICAL WORK IN FLOORS AND INSTALLING CEILING TILES.
- THE CONTRACTOR SHALL AFFORD THE OWNER AND SEPARATE CONTRACTORS REASONABLE OPPORTUNITY FOR THE INTRODUCTION AND/OR STORAGE OF THEIR MATERIALS AND EQUIPMENT AND EXECUTION OF THEIR WORK.

**GENERAL NOTES:**

- THE ITEMS LISTED HERE IN THE GENERAL NOTES ARE INTENDED TO CLARIFY OVERALL GENERAL CONDITIONS FOR A SMOOTH TRANSITION BETWEEN ALL SUB-CONTRACTORS, THE GENERAL CONTRACTOR, EQUIPMENT INSTALLERS, PATTERSON DENTAL AND THE OWNER FOR FINAL APPROVAL OF ALL WORK PERFORMED BY THE RESPECTIVE TRADES. THROUGHOUT THESE PLANS ARE VARIOUS DETAILS, REQUIREMENTS AND SPECIFICATIONS TO AID IN THIS PROCESS. IT IS THE RESPONSIBILITY OF EACH TRADE, CONTRACTOR AND THE OWNER TO READ ALL NOTES AND ILLUSTRATIONS THAT PERTAIN TO THEIR SPECIFIC TASK IN THE PROCESS.
- MOST OF THE DENTAL UTILITY AND SPECIFICATION REQUIREMENTS ARE OUTLINED IN THE TEMPLATES AND DOCUMENTATION THAT PATTERSON WILL PROVIDE TO THE CONTRACTOR. QUESTIONS WILL ARISE ON THE JOB SITE AND MOST CAN BE ANSWERED BY TELEPHONE. THE CONTRACTOR WILL BE PROVIDED CONTACT NUMBERS FOR PATTERSON DENTAL REPRESENTATIVES TO FACILITATE TIMELY ANSWERS TO THOSE QUESTIONS. IN SOME CASES IT WILL BE NECESSARY FOR THE PATTERSON REPRESENTATIVE TO BE PRESENT AT THE JOB SITE TO ANSWER QUESTIONS OR SPOT LOCATIONS FOR DENTAL SPECIFIC ITEMS. IN THESE CASES AN APPOINTMENT WILL BE REQUIRED WITH REASONABLE ADEQUATE NOTIFICATION.
- IF A JOB SITE APPOINTMENT IS REQUIRED, ALL TRADES SHOULD BE NOTIFIED OF THE APPOINTMENT SO THE OPTION OF BEING PRESENT WITH ANY QUESTIONS CONCERNING THEIR PORTION OF THE JOB CAN BE ADMINISTERED AT THAT APPOINTMENT. THE PATTERSON DENTAL REPRESENTATIVE SHOULD BE INFORMED AS TO THE MAGNITUDE OF THE APPOINTMENT PRIOR TO ARRIVAL ON THE JOB SITE IN ORDER TO ALLOW ENOUGH TIME IN THE APPOINTMENT.
- THE GENERAL CONTRACTOR MUST SIGN THIS SHEET STIPULATING THAT THEY UNDERSTAND AND WILL COMPLY WITH ALL SPECIFICATIONS BEFORE ANY WORK WILL COMMENCE. A SIGNED COPY OF THE PLANS ARE TO BE RETURNED TO PATTERSON DENTAL AND A SECOND SIGNED COPY KEPT ON THE JOB SITE AT ALL TIMES.
- THE PATTERSON DENTAL REPRESENTATIVE SHALL GIVE INSTRUCTIONS TO THE GENERAL CONTRACTOR ONLY. ALL COMMUNICATIONS AND COORDINATION WITH TRADESMEN SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR UNLESS PREDETERMINED TO BE OTHERWISE.
- ALL ELECTRICAL, MECHANICAL AND PLUMBING CONNECTIONS TO DENTAL EQUIPMENT WILL BE PERFORMED BY THE APPLICABLE TRADE RESPONSIBLE. INSTALLATION PERMITS, IF REQUIRED, WILL BE OBTAINED BY THE TRADES THAT PROVIDE THAT SERVICE.
- IF NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROCURING A MED GAS CERTIFIED PLUMBING SUB-CONTRACTOR FOR ANY LEVEL 3 NITROUS-OXYGEN CONSCIOUS SEDATION SYSTEM DETAILED IN THESE PLANS. ANY NITROUS OXIDE SYSTEM DESIGN SHOWN ON THESE PLANS IS TO BE USED AS AN ILLUSTRATION ONLY FOR THE PURPOSE OF LOCATING END USER OUTLET STATIONS, CYLINDER ROOM MANIFOLD AND ALARM PANEL. THE FINAL TRUNK SYSTEM INSTALLATION SHALL STRICTLY ADHERE TO ONLY MECHANICALLY ENGINEERED DRAWINGS, IF SUPPLIED.
- THE PLUMBING SUB-CONTRACTOR SHALL PROVIDE MED GAS CERTIFICATION IN ACCORDANCE WITH ANY REQUESTS BY THE OWNER, CONTRACTOR, BUILDING DEPARTMENT OR PATTERSON DENTAL PRIOR TO COMMENCING WORK ON ANY TYPE OF CUSTOMER INSTALLED NITROUS OXIDE SYSTEM BEING USED IN THE CONSTRUCTION PROJECT.
- ALL PLUMBING AND ELECTRICAL LINES TO BE CONCEALED UNLESS OTHERWISE SPECIFIED.
- ALL LABOR AND MATERIALS NECESSARY FOR CHANGES IN EXISTING PLUMBING, CARPENTRY, AND ELECTRICAL WORK MUST BE DONE AND SUPPLIED BY THE CONTRACTOR AND IS NOT INCLUDED IN THE COST OF THE DENTAL EQUIPMENT.
- THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND DO ALL PATCHING AFTER ROUGHING IN IS COMPLETED.
- ALL ROUGH IN AND FINISH WORK FOR DENTAL EQUIPMENT IS TO BE ACCORDING TO TEMPLATES FURNISHED BY THE MANUFACTURERS OF THE EQUIPMENT BEING INSTALLED. A REPRESENTATIVE OF PATTERSON DENTAL WILL POSITION THE TEMPLATES IN THEIR PROPER LOCATIONS, AT WHICH TIME ALL SPECIFICATIONS ON THE PLANS WILL BE EXPLAINED TO THE CONTRACTOR OR SUB-CONTRACTOR(S). ALL SPECIFIED SIZES OF PIPES, TUBING, AND/OR FITTINGS, ETC., MUST BE RIGIDLY FOLLOWED AS WELL AS PROPER HEIGHTS MARKED. ANY INFRACTIONS ON SIZES OR HEIGHTS OF PIPES, TUBING AND/OR FITTINGS WILL HAVE TO BE CORRECTED BEFORE THE EQUIPMENT CAN BE INSTALLED AND SUCH EXTRA EXPENSE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/OR SUB-CONTRACTOR.
- THE DOCTOR/OWNER SHALL DESIGNATE RESPONSIBILITY FOR PROVIDING AND INSTALLING CABINETS AND COUNTERTOPS (OTHER THAN THOSE SPECIFIED AND/OR CONTRACTED BY PATTERSON DENTAL).
- THE DOCTOR SHALL MAKE ARRANGEMENTS FOR INSTALLATION OF NON-DENTAL SYSTEMS BEFORE WALLS ARE CLOSED.
- PATTERSON DENTAL SHALL NOT BE HELD RESPONSIBLE FOR MULTIMEDIA SYSTEMS SUCH AS ENTERTAINMENT TVS, MONITORS, NETWORK COMPUTER SYSTEMS OR ANY ITEMS NOT SHOWN ON THESE PLANS.
- GC MUST CONFIRM ALL MEASUREMENTS OF SPACE CONDITIONS PRIOR TO STARTING DEMOLITION
- GC SHOULD NOTIFY PATTERSON EQUIPMENT SPECIALIST 1(ONE GC MUST CONFIRM ALL MEASUREMENTS OF SPACE CONDITIONS PRIOR TO STARTING DEMOLITION) WEEK PRIOR TO CLOSING OF ALL WALLS, CEILINGS, FLOORS TO ALLOW FINAL INSPECTION OF INSTALLATION.
- GC IS RESPONSIBLE FOR CONFIRMING ALL UTILITIES FOR EXISTING EQ BEING MOVED FROM EXISTING LOCATION OR EQUIPMENT NOT SUPPLIED BY PATTERSON
- GC IS RESPONSIBLE FOR CONFIRMING ALL UTILITIES FOR EXISTING EQ BEING MOVED FROM EXISTING LOCATION OR EQUIPMENT NOT SUPPLIED BY PATTERSON
- RADIATION PROTECTION: THE DOCTOR'S ARCHITECT/GC ARE REQUIRED TO REVIEW ALL LOCAL AND NATIONAL RADIATION AND XRAY SHIELDING REQUIREMENTS AND SUBMIT AN APPLICATION FOR REGISTRATION OF IONIZING RADIATION SOURCES. PLANS MUST BE SUBMITTED TO RADIATION CONTROL PROGRAM, IF APPLICABLE, ALONG WITH OTHER INFORMATION THEY WILL PROVIDE A LETTER OF ACCEPTABLE X-RAY PROTECTION OR ADVISE OTHERWISE. THIS APPLICATION AND PLAN SHOULD BE SUBMITTED PRIOR TO WALLS GOING UP. COPY OF APPROVAL LETTER FROM LOCAL GOVERNING BODY MUST BE PROVIDED TO PATTERSON EQUIPMENT SPECIALIST AND SERVICE TECHNICIAN. NOTE: IF EXISTING X-RAYS TO BE REPLACED WITH NEW AND EXISTING SHIELDING IS TO BE REUSED ARCHITECT/GC MUST VERIFY NEEDS WITH LOCAL CODE OFFICER.**

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**OWNER:**  
**Community Health Lockport**

**LOCATION:**  
34 Benwood Avenue Suite 1  
Buffalo, NY. 14214

DRAWN BY	EQUIPMENT REP:	EQUIPMENT REP #:
EEH	Rob Langer	716-316-9687
PROJECT #:	ISSUE DATE:	
766-422961	01/06/2022	

REVISIONS			
REV #	SCOPE	DRAWN BY	DATE

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REFERENCE  
ONLY

SHEET NO.  
**DA001**

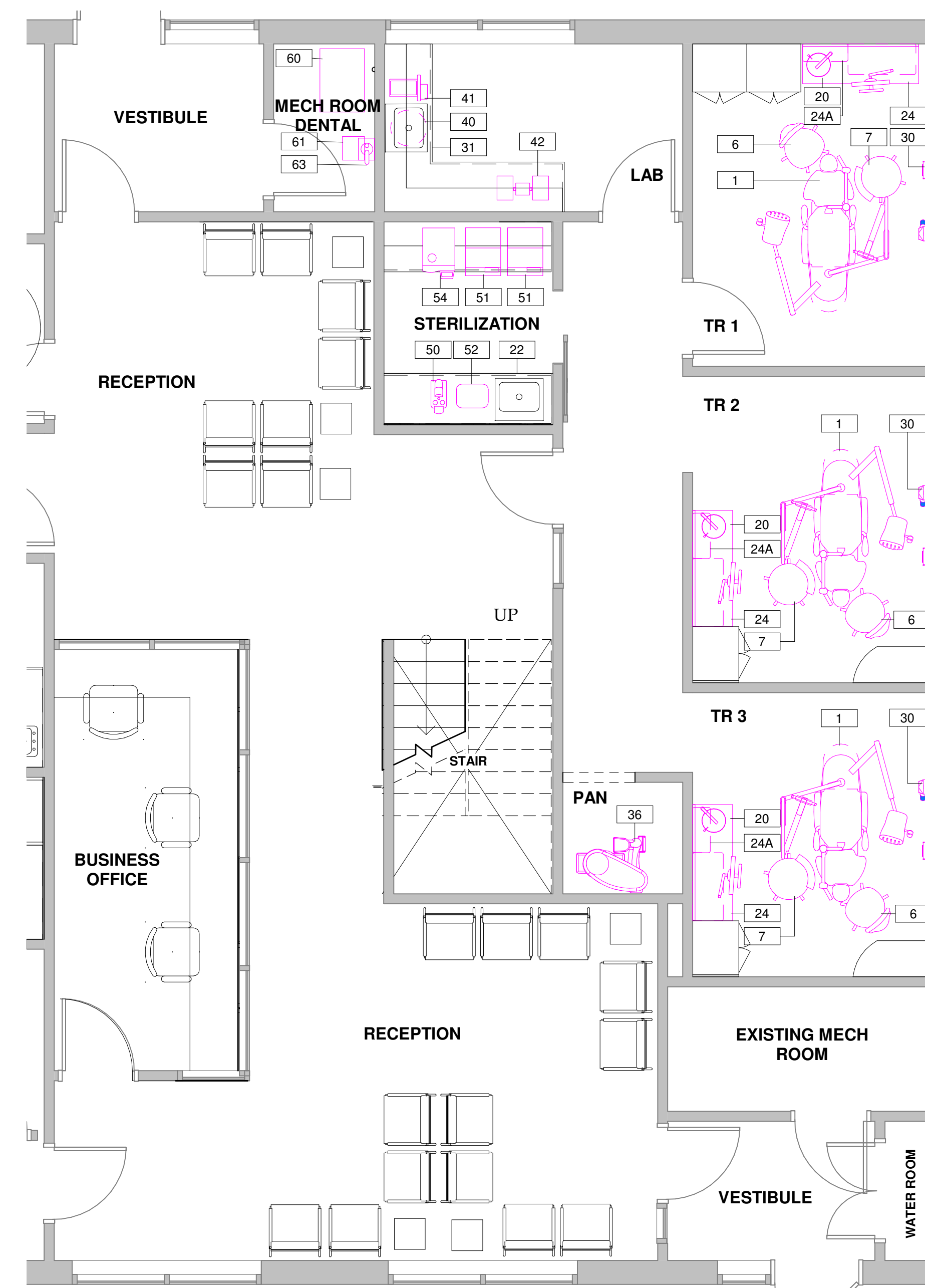
NOT FOR CONSTRUCTION



EQUIPMENT SCHEDULE								
EQUIPMENT INFO								
QTY	ITEM #	DESCRIPTION	STATUS	MANUFACTURER	MODEL	SUPPLIED BY	INSTALLED BY	EQUIPMENT REMARKS
<b>LAB</b>								
1	31	LAB CABINETS	NW	BY OTHERS	VFY	GC	GC	
1	40	PLASTER TRAP	NW	VFY	VFY	PD	PD	
1	41	MODEL TRIMMER	NW	HANDLER MFG CO	31-SV	PD	PD	
1	42	LATHE	NW	VFY	VFY	PD	PD	
<b>MECH</b>								
1	60	COMPRESSOR	NW	AIR TECHNIQUES	AS30	PD	PD	
1	61	WET VACUUM SYSTEM	NW	AIR TECHNIQUES	VS40	PD	PD	
1	63	AMALGAM SEPARATOR	NW	SOLMETEX	HG5	PD	PC	
<b>PAN</b>								
1	36	PANORAMIC X-RAY	NW	PLANMEGA	PROMAX	PD	PD	
<b>STERILIZATION</b>								
1	22	STERILIZATION CABINET	NW	BY OTHERS	VFY	GC	GC	
1	50	ASSISTINA	NW	A-DEC	A-DEC 301 PLUS ASSISTINA	PD	PD	
2	51	STERILIZER	NW	MIDMARK	M11-020	PD	PD	PROVIDE DRAIN LINE
1	52	ULTRASONIC CLEANER	NW	MIDMARK	M150-001	PD	PD	
1	54	STATIM	NW	SCICAN	STATIM G4	PD	PD	
<b>TREATMENT</b>								
3	1	DENTAL CHAIR	NW	A-DEC	A-DEC 411	PD	PD	
3	20	SIDE CABINET	NW	A-DEC	5531.58	PD	PD	
3	24	UPPER STORAGE CABINET	NW	A-DEC	5731.34	PD	PD	
3	24A	UPPER DISPENSING CABINET	NW	A-DEC	5730.22	PD	PD	
3	30	INTRAORAL X-RAY	NW	SIRONA	HELIODENT PLUS	PD	PD	

PLAN LEGEND	
	DENTAL FURNITURE & EQUIPMENT
	DENTAL FURNITURE & EQUIPMENT EXISTING RELOCATED
	DENTAL FURNITURE & EQUIPMENT FUTURE
	EQUIPMENT NUMBER TAG (NUMBERS ARE RANDOM)

WALL LEGEND	
	EXISTING WALL
	DEMO WALL
	NEW WALL
	SOUND PROOFING IN WALL
	LEAD LINED WALL



1 LVL 1 FLOOR PLAN  
1/4" = 1'-0"

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OWNER:

**Community Health Lockport**

LOCATION:

34 Benwood Avenue Suite 1  
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DRAWN BY	EQUIPMENT REP:	EQUIPMENT REP #:
EEH	Rob Langer	716-316-9687
PROJECT #:	ISSUE DATE:	
766-422961	01/06/2022	

REVISIONS			
REV #	SCOPE	DRAWN BY	DATE

**FOR REFERENCE ONLY**

SHEET NO.  
**DA111**

NOT FOR CONSTRUCTION

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<b>PROJECT #:</b> 766-422961	<b>ISSUE DATE:</b> 01/06/2022	

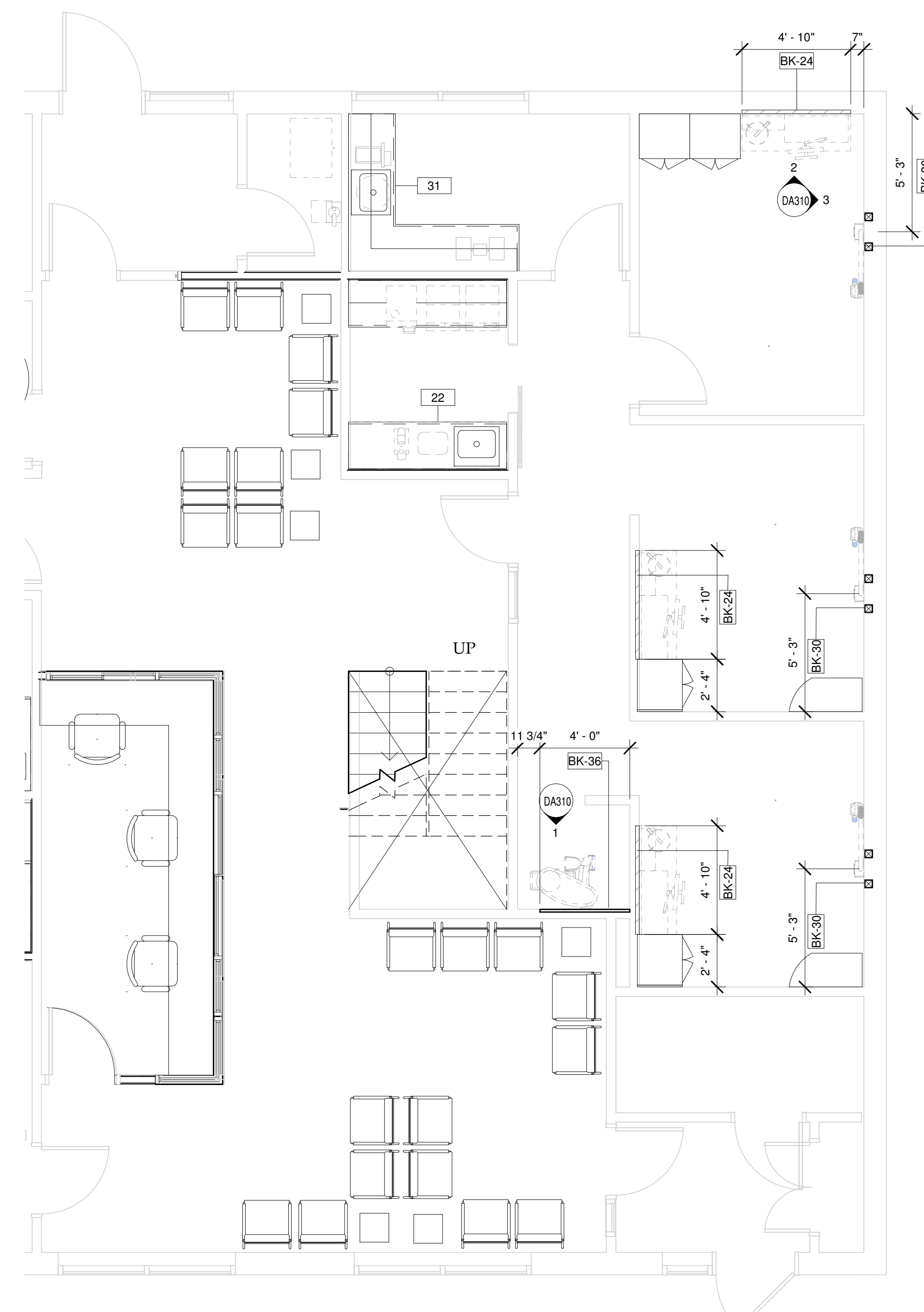
REVISIONS			
REV #	SCOPE	DRAWN BY	DATE

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ONLY

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SHEET NO.  
**DA113**

EQUIPMENT BACKING SCHEDULE												
NOTE: ALL DBL PLYWOOD BACKING IS TO BE GLUED AND SCREWED												
QTY	BACKING NUMBER	EQUIPMENT DESCRIPTION	WALL			CEILING						
			SGL 4" X 4" FLOOR TO STRUCTURE ABOVE	DBL 4" X 4" FLOOR TO STRUCTURE ABOVE	DBL 2" X 12" FLOOR TO STRUCTURE ABOVE	DBL 3/4" PLYWOOD (GLUED & SCREWED)	SGL 3/4" PLYWOOD	SGL 2" X 8" TOP OF BASE CABINET	DBL 3/4" PLYWOOD PARALLEL TO CEILING	DBL 3/4" PLYWOOD FLUSH WITH CEILING	OTHER	
1	BK-22	STERILIZATION CABINET										ALL BACKING REQUIRED FOR CABINET IS TO BE SUPPLIED AND INSTALLED BY CABINET SUPPLIER
3	BK-24	UPPER DISPENSING CABINET										
3	BK-24	UPPER STORAGE CABINET										
3	BK-30	INTRAORAL X-RAY										
1	BK-31	LAB CABINETS										ALL BACKING REQUIRED FOR CABINET IS TO BE SUPPLIED AND INSTALLED BY CABINET SUPPLIER
1	BK-36	PANORAMIC X-RAY										



① LVL 1 BACKING PLAN  
1/4" = 1'-0"

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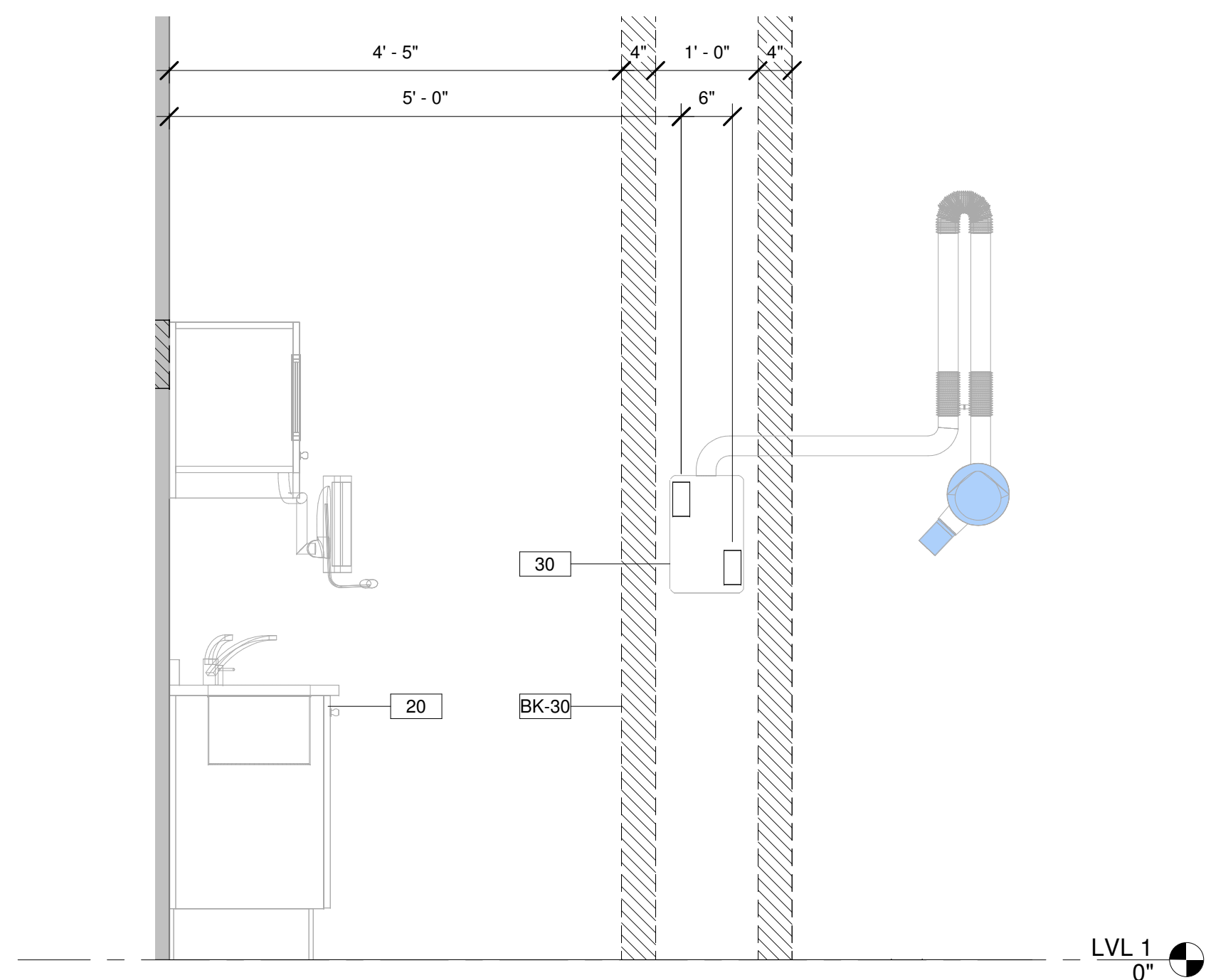
LOCATION:

34 Benwood Avenue Suite 1  
Buffalo, NY. 14214

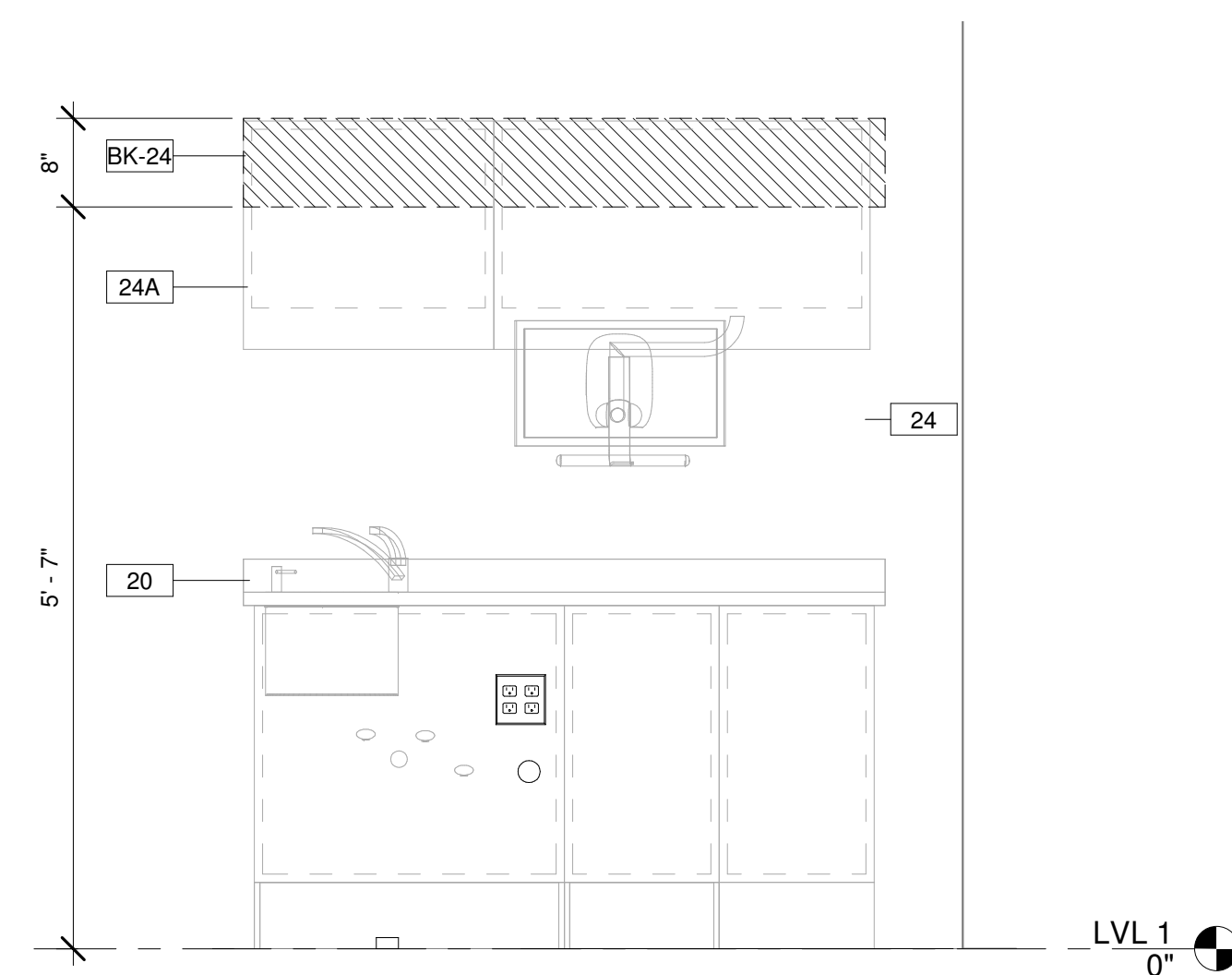
<b>DRAWN BY</b> EEH	<b>EQUIPMENT REP:</b> Rob Langer	<b>EQUIPMENT REP #:</b> 716-316-9687
<b>PROJECT #:</b> 766-422961	<b>ISSUE DATE:</b> 01/06/2022	

REVISIONS			
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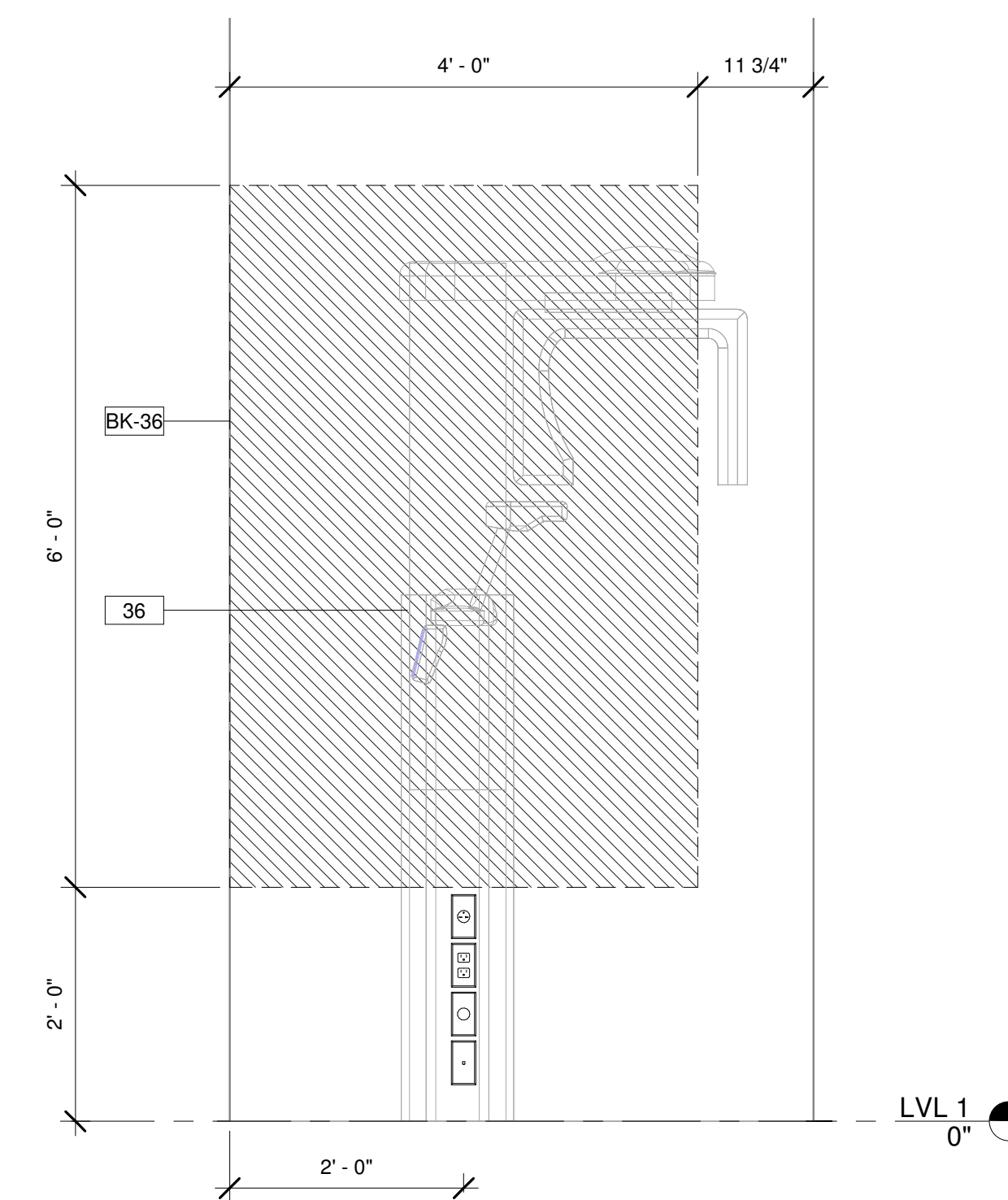
**FOR REFERENCE ONLY**



③ ELEVATION INTRA ORAL X-RAY WALL (TYP.)  
3/4" = 1'-0"



② ELEVATION TREATMENT WALL (TYP.)  
3/4" = 1'-0"



① ELEVATION PANORAMIC WALL  
3/4" = 1'-0"

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<b>DRAWN BY</b> EEH	<b>EQUIPMENT REP:</b> Rob Langer	<b>EQUIPMENT REP #:</b> 716-316-9687
<b>PROJECT #:</b> 766-422961	<b>ISSUE DATE:</b> 01/06/2022	

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DB110

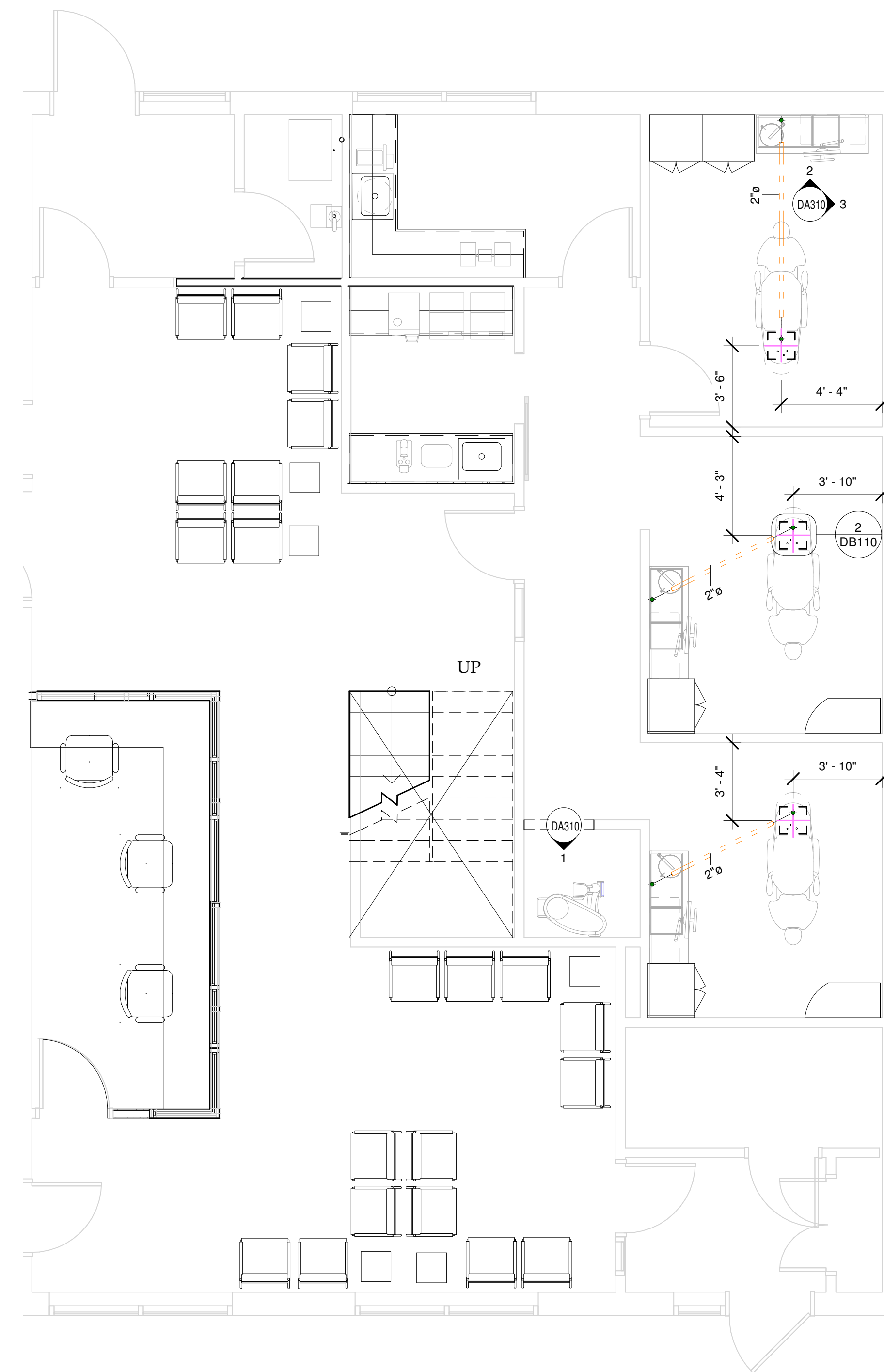
SHEET NO.  
**DB110**

ELECTRICAL SYMBOLS IN FLOOR		
ALL DEVICES SHALL BE INSTALLED PER STATE AND LOCAL CODE. ALL LOCATIONS SHOULD BE VERIFIED WITH PATTERSON REP OR OWNER PRIOR TO PLACEMENT.		
+XX" - INDICATES HEIGHT FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED BELOW, IF ITEM NOT TAGGED HEIGHT IS 18" A.F.F.		
QTY.	SYM.	DESCRIPTION
3		120v QUAD OUTLET FLOOR, MOUNTED ON FLOOR

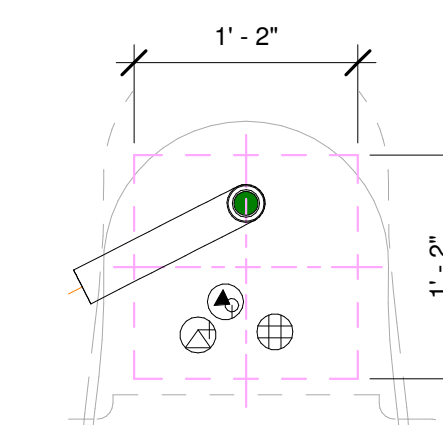
LOW VOLTAGE SYMBOLS		
ALL DEVICES SHALL BE INSTALLED PER STATE AND LOCAL CODE. ALL LOCATIONS SHOULD BE VERIFIED WITH PATTERSON REP OR OWNER PRIOR TO PLACEMENT.		
-XX" - INDICATES HEIGHT FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED BELOW, IF ITEM NOT TAGGED HEIGHT IS 18" A.F.F.		
QTY.	SYM.	DESCRIPTION
6		CONDUIT FLOOR STUB OUT, IF TAG NOT PRESENT HEIGHT IS 1" A.F.F.

PLUMBING SYMBOLS IN FLOOR		
ALL DEVICES SHALL BE INSTALLED PER STATE AND LOCAL CODES. ALL LOCATIONS SHOULD BE VERIFIED WITH PATTERSON REP OR OWNER PRIOR TO PLACEMENT.		
+XX" - INDICATES HEIGHT FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED BELOW, IF ITEM NOT TAGGED HEIGHT IS 18" A.F.F.		
QTY.	SYM.	DESCRIPTION
4		1/2" OD, TO 3/8" OD SHUT OFF AIR CONNECTION FLOOR HEIGHT 3" A.F.F. TO CENTER UNLESS OTHERWISE NOTED
3		VACUUM PIPE CONNECTION FLOOR
1		VACUUM RISER FLOOR

ELECTRICAL LEGEND	
	18/3 WIRE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	18/4 WIRE, WIRES RUN IN WALLS OR ABOVE FINISHED CEILING
	CAT5e OR BETTER CABLE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	MANUFACTURER CABLE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	ELECTRICAL CONDUIT UNDER FLOOR, SIZE AS INDICATED ON PLAN
	ELECTRICAL CONDUIT ABOVE CEILING, SIZE AS INDICATED ON PLAN



① LVL 1 UNDER FLOOR UTILITY PLAN  
1/4" = 1'-0"



② ENLARGED CHAIR UTILITY ITEM #1  
1" = 1'-0"

NOT FOR CONSTRUCTION

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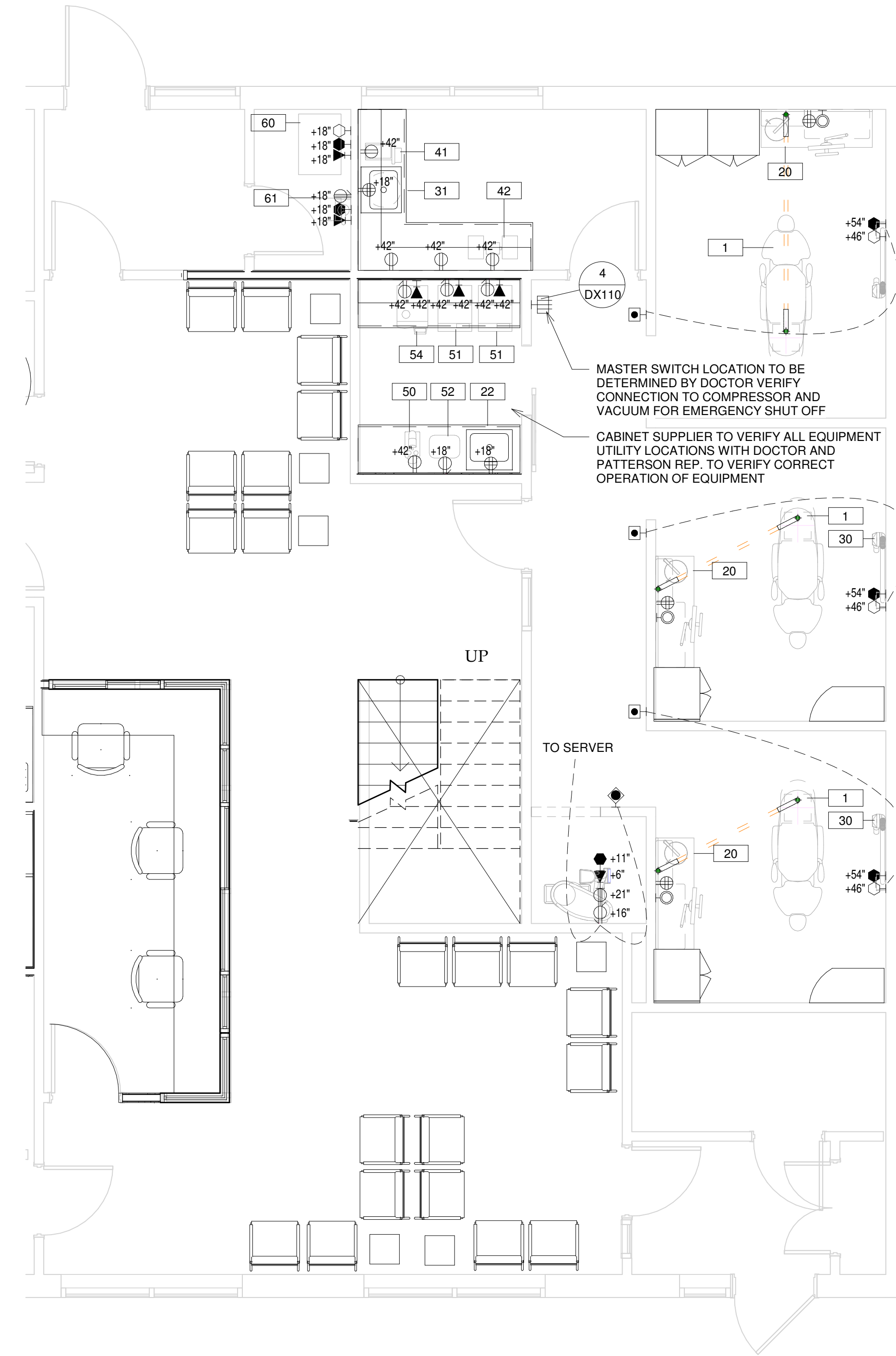


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QTY.	SYM.	DESCRIPTION
5		120v DUPLEX DEDICATED OUTLET WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F. TO CENTER OF DEVICE
5		120v FLUSH DUPLEX OUTLET WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F. TO CENTER OF DEVICE
5		120v QUAD OUTLET WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F. TO CENTER OF DEVICE
2		220v SINGLE OUTLET WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F. TO CENTER OF DEVICE
4		J-BOX WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F.

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QTY.	SYM.	DESCRIPTION
3		CONDUIT WALL STUB OUT, IF TAG NOT PRESENT HEIGHT IS 3" A.F.F.
6		DATA DEVICE WALL, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F.
6		J-BOX WALL LOW VOLTAGE, IF TAG NOT PRESENT HEIGHT IS 18" A.F.F.
1		MASTER SWITCH WALL, IF TAG NOT PRESENT HEIGHT IS 60" A.F.F. TO CENTER
1		REMOTE PAN SWITCH IN WALL, IF TAG NOT PRESENT HEIGHT IS 60" A.F.F.
3		REMOTE X-RAY SWITCH WALL, IF TAG NOT PRESENT HEIGHT IS 60" A.F.F.

ELECTRICAL LEGEND	
	18/3 WIRE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	18/4 WIRE, WIRES RUN IN WALLS OR ABOVE FINISHED CEILING
	CAT5e OR BETTER CABLE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	MANUFACTURER CABLE, CABLE RUN IN WALLS OR ABOVE FINISHED CEILING
	ELECTRICAL CONDUIT UNDER FLOOR, SIZE AS INDICATED ON PLAN
	ELECTRICAL CONDUIT ABOVE CEILING, SIZE AS INDICATED ON PLAN

EQUIPMENT POWER & LOW VOLTAGE SCHEDULE																										
GENERAL NOTES																										
ALL DEVICES ARE TO BE INSTALLED PER STATE AND LOCAL CODES.																										
EQUIPMENT INFO				ELECTRICAL INFO				LOW VOLTAGE INFO																		
QTY	ITEM #	DESCRIPTION	STATUS	EC CONNECTION BY	VOLTS	AMPS	SINGLE OUTLET	DUPLEX OUTLET	QUAD OUTLET	DIRECT WIRE	DEDICATED POWER	J-BOX	ELECTRICAL REMARKS	EC CONNECTION BY	LV CONNECTION BY	3" EMPTY CONDUIT	3/4" EMPTY CONDUIT	1" EMPTY CONDUIT	18/3 WIRE	18/4 WIRE	J-BOX LV	CAT5e OR BETTER MFG CABLE	MONITOR CABLE	LV REMARKS		
3	1	DENTAL CHAIR	NW	EC	120v	7.0								EC											RUN LOW VOLTAGE WIRES AND OR CABLES TO LOCATIONS INDICATED ON PLANS	
3	20	SIDE CABINET	NW	EC	120v	20.0							EC TO LEAVE MIN 3" FLEXIBLE CONDUIT	EC											RUN LOW VOLTAGE WIRES AND OR CABLES TO LOCATIONS INDICATED ON PLANS	
1	22	STERILIZATION CABINET	NW	EC	120v	20.0							GC PROVIDED CABINET, ALL UTILITY LOCATIONS FOR DENTAL EQUIPMENT TO BE COORDINATED BY GC. VERIFY LOCATIONS WITH CABINET MFG, OWNER, AND PATTERSON EQUIPMENT SPECIALIST.	EC											GC PROVIDED CABINET, ALL UTILITY LOCATIONS FOR DENTAL EQUIPMENT TO BE COORDINATED BY GC. VERIFY LOCATIONS WITH CABINET MFG, OWNER, AND PATTERSON EQUIPMENT SPECIALIST.	
3	24	UPPER STORAGE CABINET	NW	EC	120v	3.0								EC											RUN LOW VOLTAGE WIRES AND OR CABLES TO LOCATIONS INDICATED ON PLANS	
3	30	INTRAORAL X-RAY	NW	EC	120v	20.0								EC											RUN WIRES TO REMOTE SWITCH AS INDICATED ON PLAN	
1	31	LAB CABINETS	NW	EC	120v	20.0							GC PROVIDED CABINET, ALL UTILITY LOCATIONS FOR DENTAL EQUIPMENT TO BE COORDINATED BY GC. VERIFY LOCATIONS WITH CABINET MFG, OWNER, AND PATTERSON EQUIPMENT SPECIALIST.	EC											GC PROVIDED CABINET, ALL UTILITY LOCATIONS FOR DENTAL EQUIPMENT TO BE COORDINATED BY GC. VERIFY LOCATIONS WITH CABINET MFG, OWNER, AND PATTERSON EQUIPMENT SPECIALIST.	
1	36	PANORAMIC X-RAY	NW	EC	120	20.0								EC												
1	41	MODEL TRIMMER	NW	EC	120	10.0								EC												
1	42	LATHE	NW	EC	120	5.0								EC												
2	51	STERILIZER	NW	EC	120v	12.0							DEDICATED POWER	EC												
1	52	ULTRASONIC CLEANER	NW	EC	120v	2.0								EC												
1	54	STATIM	NW	EC	120v	11.0								EC												
1	60	COMPRESSOR	NW	EC	220V	20.0							BREAKER RATING 40.0 AMPS / IF SERVICE IS ABOVE OR BELOW VOLTAGE INDICATED, INSTALL A BUCK/BOOST TRANSFORMER AS REQUIRED.	EC												
1	61	WET VACUUM SYSTEM	NW	EC	220v	20.0							DEDICATED POWER, DISCONNECT REQUIRED IF UNIT IS NOT LOCATED IN SAME ROOM AS ELECTRICAL PANEL / IF VOLTAGE FALLS ABOVE OR BELOW THE MINIMUM OR MAXIMUM A BUCK/BOOST TRANSFORMER MUST BE INSTALLED.	EC												



① LVL 1 POWER & LOW VOLTAGE PLAN  
1/4" = 1'-0"

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**OWNER:**  
**Community Health Lockport**  
**LOCATION:**  
34 Benwood Avenue Suite 1  
Buffalo, NY. 14214

DRAWN BY	EQUIPMENT REP:	EQUIPMENT REP #:
EEH	Rob Langer	716-316-9687
PROJECT #:	ISSUE DATE:	
766-422961	01/06/2022	

REVISIONS			
REV #	SCOPE	DRAWN BY	DATE

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SHEET NO.  
**DE110**

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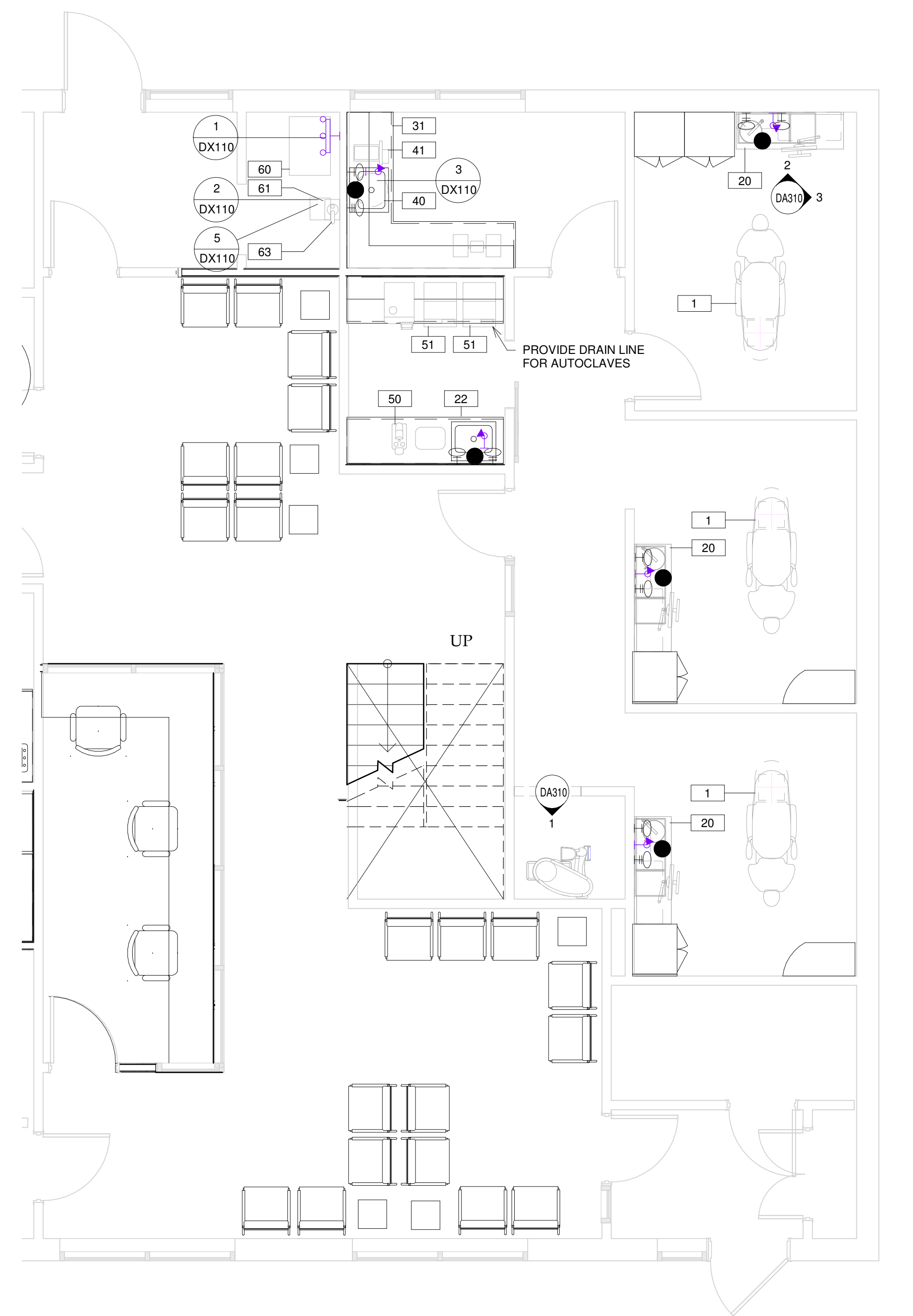
<b>DRAWN BY:</b> EEH	<b>EQUIPMENT REP.:</b> Rob Langer	<b>EQUIPMENT REP #:</b> 716-316-9687
<b>PROJECT #:</b> 766-422961	<b>ISSUE DATE:</b> 01/06/2022	

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① LVL 1 PLUMBING PLAN  
1/4" = 1'-0"

**PLUMBING SYMBOLS**

ALL DEVICES SHALL BE INSTALLED PER STATE AND LOCAL CODES. ALL LOCATIONS SHOULD BE VERIFIED WITH PATTERSON REP OR OWNER PRIOR TO PLACEMENT.

+XX" - INDICATES HEIGHT FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED BELOW, IF ITEM NOT TAGGED HEIGHT IS 18" A.F.F.

QTY.	SYM.	DESCRIPTION
5	▼	1/2" OD. TO 3/8" OD. SHUT OFF AIR CONNECTION WALL, HEIGHT 3" A.F.F. TO CENTER IF TAG NOT PRESENT
5	●	DIRECT DRAIN WALL
1	↕	FRESH AIR IN MANIFOLD WALL
5	⊕	SHUT OFF VALVE COLD WATER WALL
5	⊕	SHUT OFF VALVE HOT WATER WALL

**EQUIPMENT EXHAUST SCHEDULE**

**GENERAL NOTES:**  
ALL ITEMS IDENTIFIED AS "FT" WILL BE INSTALLED AT A FUTURE DATE. ALL UTILITIES NEED TO BE CAP AND CONCEALED FOR FUTURE USE.  
ALL ITEMS WILL BE INSTALLED PER STATE AND LOCAL CODES.

QTY	ITEM #	DESCRIPTION	STATUS	VENT EXHAUST REMARKS
1	60	COMPRESSOR	NW	
1	61	WET VACUUM SYSTEM	NW	2" PVC SCHEDULE 40 FRESH AIR VENT REQUIRED TO OUTSIDE. / ROOM TEMP MUST NOT BE BELOW 40° OR ABOVE 104° / SEE DETAIL AN INDICATED ON PLAN

**EQUIPMENT PLUMBING-DENTAL COMPRESSED AIR-VAC SCHEDULE**

**GENERAL NOTES:**  
ALL ITEMS TO BE INSTALLED PER STATE AND LOCAL CODES.

QTY	ITEM #	DESCRIPTION	STATUS	PLUMBING INFO								VAC INFO				DENTAL COMPRESSED AIR			
				PLUMBING				PLUMBING INFO				VAC INFO				DENTAL COMPRESSED AIR			
				PLUMBING CONNECTION BY	SUPPLY	SANITARY	PLUMBING REMARKS	RISERS	MAIN & BRANCHES	VAC REMARKS	1/2" COPPER TYPE L OR K	5/8" COPPER TYPE M	COMPRESSED AIR REMARKS						
3	1	DENTAL CHAIR	NW	PC	1/4" COLD WATER FLEX TUBING	1/2" COLD WATER COPPER	3/4" COLD WATER COPPER	3/4" HOT WATER COPPER	1" COLD WATER COPPER	3/4" COPPER TYPE M	1-1/2" PVC WASTE SCHEDULE 40	DRAIN DIRECT	DRAIN INDIRECT	DRAIN STAND PIPE					
1	20	SIDE CABINET	NW	PC															
1	22	STERILIZATION CABINET	NW	PC															
1	31	LAB CABINETS	NW	PC															
1	40	PLASTER TRAP	NW	PC															
1	41	MODEL TRIMMER	NW																
1	50	ASSISTINA	NW	PC															
2	51	STERILIZER	NW																
1	60	COMPRESSOR	NW	PC															
1	61	WET VACUUM SYSTEM	NW	PC															
1	63	AMALGAM SEPARATOR	NW	PC															

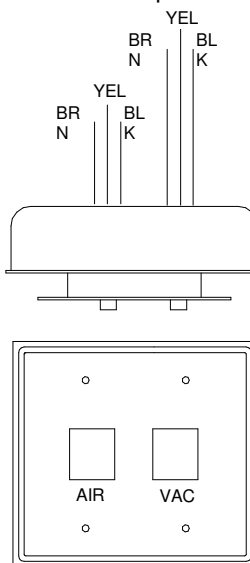


**NOTE:**

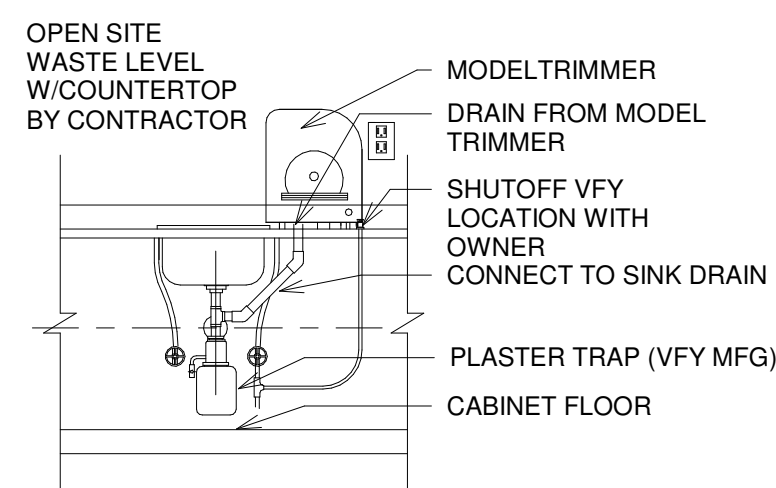
All wires to be class B low voltage. For "runs" under 150', wire to be 18 gage. For "runs" over 150', wires should be 16 gage.

**Caution!** Local codes may dictate changes to the above specifications.

Contractor to provide wire from mechanical room to remote control panel.

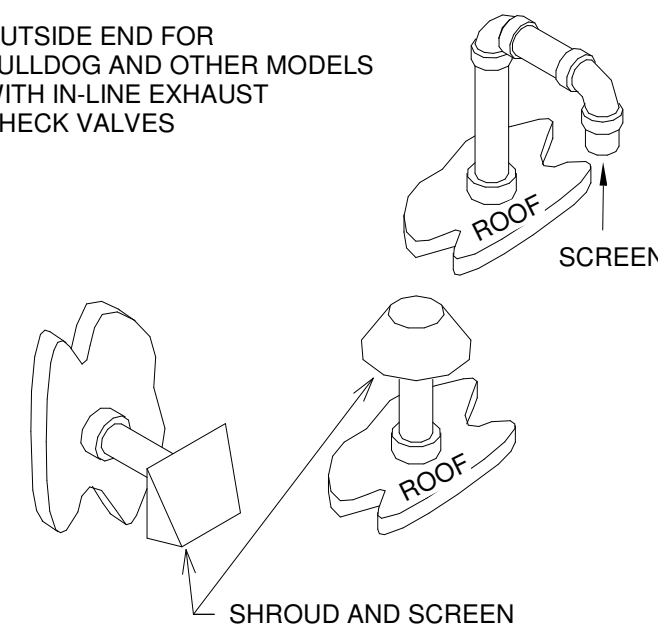


④ REMOTE CONTROL PANEL  
3" = 1'-0"



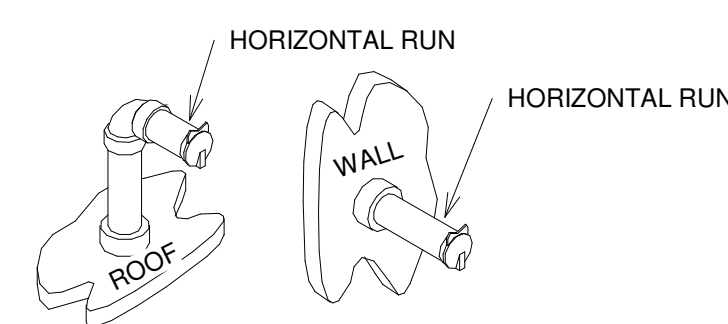
③ MODEL TRIMMER W/ PLASTER TRAP  
1" = 1'-0"

OUTSIDE END FOR BULLDOG AND OTHER MODELS WITH IN-LINE EXHAUST CHECK VALVES



② EXHAUST PIPING - OUTSIDE END  
1 1/2" = 1'-0"

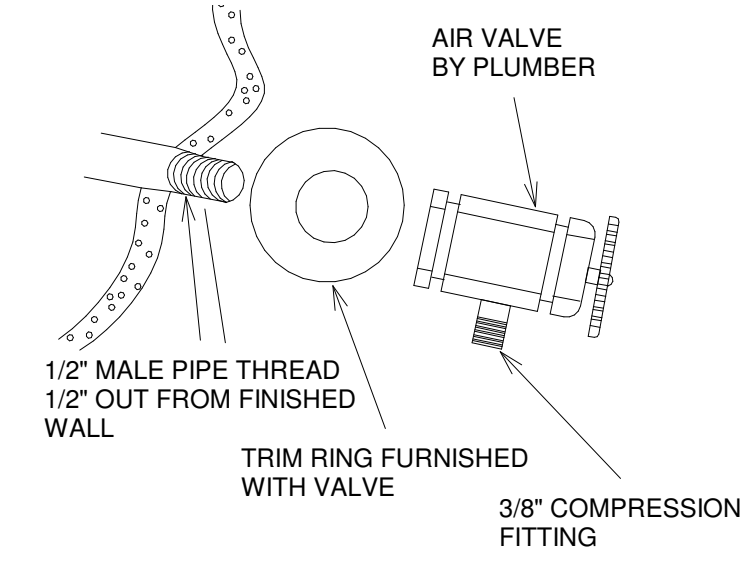
OUTSIDE END FOR MODELS WITH RAMVAC SUPPLIED FLAPPER VALVE



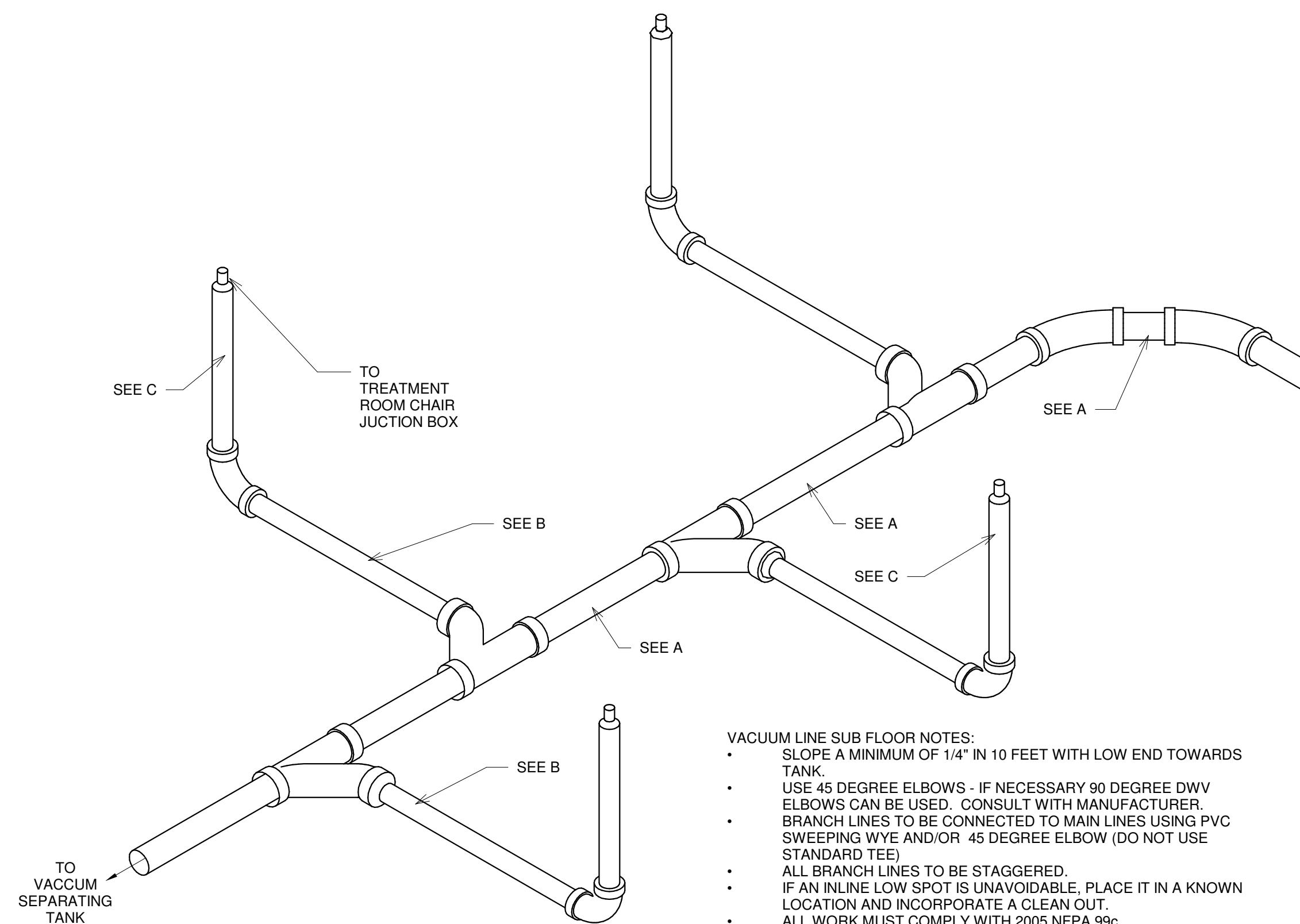
- PROTECT OUTSIDE END OF EXHAUST FROM ENTRY OF WATER, DEBRIS, AND CREATURES.
- POINT AWAY FROM PREVAILING WINDS, CLEAR OF SNOW OR OTHER OBSTRUCTIONS.
- CLEAR ROOF TOPS OR OUTSIDE WALLS BY A MINIMUM OF 6 INCHES.
- LOCATE IN AN INCONSPICUOUS SITE AWAY FROM DOORS, WINDOWS OR VENTILATION INTAKES.
- ALL WORK MUST COMPLY WITH 1996 NFPA 99C.

AIR OUTLET PLUMBING:

A. PROVIDE SHORT STUBBED OUT LINE FROM WALL - TERMINATE WITH RIGHT ANGLE STOP VALVE THAT AS A 3/8" O.D. COMPRESSION OUTLET FITTING. ELEVATION ON PRINT.



① AIR OUTLET  
3" = 1'-0"



- VACUUM LINE SUB FLOOR NOTES:
- SLOPE A MINIMUM OF 1/4" IN 10 FEET WITH LOW END TOWARDS TANK.
  - USE 45 DEGREE ELBOWS - IF NECESSARY 90 DEGREE DWV ELBOWS CAN BE USED. CONSULT WITH MANUFACTURER.
  - BRANCH LINES TO BE CONNECTED TO MAIN LINES USING PVC SWEEPING WYE AND/OR 45 DEGREE ELBOW (DO NOT USE STANDARD TEE)
  - ALL BRANCH LINES TO BE STAGGERED.
  - IF AN INLINE LOW SPOT IS UNAVOIDABLE, PLACE IT IN A KNOWN LOCATION AND INCORPORATE A CLEAN OUT.
  - ALL WORK MUST COMPLY WITH 2005 NFPA 99C.

AIR TECHNIQUES VAC STAR					
IF A PIPING DIAGRAM IS PROVIDED BY THE MANUFACTURER, IT SUPERCEDES THIS CHART. IF NOT, USE THIS CHART IN CONFERENCE WITH PATTERSON DENTAL REP.					
		VS20	VS40	VSS0 OR VS50H	VS80 OR VS80H
A	MAIN LINE DIAMETER MINIMUM-MAXIMUM	1" - 1-1/2" PVC SCH. 40	1-1/4" - 2" PVC SCH. 40	1-1/4" - 1-1/2" PVC SCH. 40	1-1/4" - 2" PVC SCH. 40
B	BRANCH LINE DIAMETER MINIMUM-MAXIMUM	3/4" - 1-1/2" PVC SCH. 40	1" - 1-1/2" PVC SCH. 40	1" - 1-1/2" PVC SCH. 40	1" - 1-1/2" PVC SCH. 40
C	RISER LINE DIAMETER	3/4" PVC SCH. 40	3/4" PVC SCH. 40	1" PVC SCH. 40	1" PVC SCH. 40

⑤ VACUUM LINE - SUB FLOOR (AIR TECHNIQUES VAC STAR)  
1 1/2" = 1'-0"

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