

**MECHANICAL PLAN**

**ENVIRONMENTAL REQUIREMENTS**

- AIR CONDITIONING IS TO PROVIDE A TEMPERATURE OF 70°F ±5°F IN THE EXAM ROOM, 70°F±10°F IN THE EQUIPMENT & CONTROL AREAS, RELATIVE HUMIDITY OF 40-60% (NON-CONDENSING) IS REQUIRED. EXAMINATION ROOM AND 40-80% (NON-CONDENSING) IN ALL OTHER AREAS WHERE SIEMENS EQUIPMENT IS INSTALLED. THESE CONDITIONS ARE TO BE MET AT ALL TIMES; 24 HOURS A DAY, 7 DAYS A WEEK.
- A DEDICATED AIR CONDITIONING AND HUMIDIFICATION SYSTEM IS RECOMMENDED FOR THE EXAM ROOM. A MINIMUM AIR EXCHANGE RATE OF 6 TIMES PER HOUR FOR THE EXAM ROOM IS REQUIRED. IT IS RECOMMENDED TO INSTALL A FRESH AIR SYSTEM WITH 50%-50% FRESH AIR INTAKE.
- AIR SUPPLY AND RETURN ABOVE THE FINISHED CEILING IN THE EXAM ROOM IS RECOMMENDED. EACH ROOM SHOULD HAVE A DEDICATED CONTROL AND SENSOR TO MONITOR AND ADJUST THE AIR.
- THE HEAT INTO THE EXAM ROOM IS LESS THAN 10,236 BTU/HR. THE HEAT INTO THE EQUIPMENT ROOM IS LESS THAN 3,412 BTU/HR. THIS HEAT DISSIPATION IS FROM THE SIEMENS EQUIPMENT ONLY. AUXILIARY SUPPORT EQUIPMENT (ie UPS) AND LIGHTING MUST BE CONSIDERED FOR TOTAL HEAT LOADS.
- IT IS IMPORTANT FOR FRESH AIR INTAKE SYSTEMS TO EXHAUST AIR DIRECTLY OUT OF THE BUILDING. THE EXHAUST AIR MUST NOT BE DEFLECTED INTO ANOTHER ROOM. THE MAGNET ROOM EXHAUST AIR SHOULD BE INSTALLED AT LEAST 6'-6" ABOVE FINISHED FLOOR.
- IF THE INPUT DRAWS UPON AIR FROM OUTSIDE THE BUILDING, IT IS RECOMMENDED TO INSTALL AN ON-SITE FILTER TO REMOVE DUST PARTICLES GREATER THAN 10 MICRONS.
- DO NOT LOCATE ANY HVAC DIFFUSERS ABOVE THE MAGNET. THERE SHALL NOT BE AIR BLOWING DIRECTLY ON THE MAGNET.

**CHILLED WATER SUPPLY**

A CHILLED WATER SUPPLY IS REQUIRED TO THE MRI SYSTEM 24 HOURS A DAY, YEAR ROUND FOR THE COLD HEAD AND GRADIENT SYSTEMS. THIS CAN BE PROVIDED BY A CENTRAL CHILLED WATER SUPPLY OR A SEPARATE STAND ALONE CHILLER THAT MEETS THE STATED REQUIREMENTS. THE CHILLED WATER CAN ALSO BE SUPPLIED BY A DEDICATED KRAUS ECO CHILLER AND INTERFACE PANEL WITHOUT THE USE OF A DEDICATED KRAUS CHILLER, A SEP (SYSTEM SEPARATOR CABINET), MUST BE INCLUDED WITH THE SIEMENS ORDER. THE PIPE SIZE BETWEEN THE KRAUS CHILLER AND INTERFACE PANEL, OR BETWEEN THE WATER SUPPLY AND SEP MUST BE 2 INCH UP TO 82 FEET, 2-1/2 INCH UP TO 148 FEET, CONSULT FOR LONGER PIPE. PERMISSIBLE MATERIALS THAT CAN BE USED FOR THE PIPING ARE: STAINLESS STEEL (V2A, V4A), NON-FERROUS METAL (COPPER, BRASS), SYNTHETIC MATERIAL, PLASTICS, BRAZING SOLDER, HARD SOLDER, OR FITTING SOLDER TYPE 3 AND 4. THERE ARE MATERIALS THAT MAY CAUSE DAMAGE TO THE COOLING SYSTEM AND CANNOT BE USED, THESE MATERIALS ARE ALUMINUM, IRON, CARBON STEEL, ZINC, ZINC PLATED STEEL, OR STANDARD STEEL PIPES. THESE REQUIREMENTS ARE REQUIRED FOR NEW INSTALLATIONS, IF EXISTING WATER PIPES COMPLY WITH SIEMENS WATER SPECIFICATIONS, THEY DO NOT NEED TO BE REPLACED.

NORMAL TAP WATER MUST BE AVAILABLE FOR FILLING THE SECONDARY WATER CIRCUIT. THERE SHALL BE A HOSE BID LOCATED WITHIN 65' OF THE SEP, IFP, ACC OR THE KRAUS CHILLER.

THE SUPPLY AND RETURN CHILLED WATER PIPES MUST BE LABELED. THE LOCATION OF THE LABELS MUST BE AT ALL CONNECTION AND REFILLING POINTS AND MUST CONTAIN FLOW DIRECTION AND CONTENTS.

**CHILLED WATER REQUIREMENTS**

WATER REQUIREMENTS TO BE MEASURED AT THE SEP CABINET.

FLOW RATE:	23.78-29.05 GPM
WATER TEMPERATURE:	42.8°F - 53.6°F
BTU DISCHARGE TO THE WATER	204,729 BTU/HR
WATER PRESSURE	MAXIMUM 87 PSI
LOSS OF PRESSURE FOR SEP CABINET	<14.5 PSI 11.6 TYPICAL
CHILLED WATER ACIDITY RANGE	6 pH TO 8 pH
CHILLED WATER HARDNESS	<250 ppm
CHLORINE GAS CONCENTRATION	<200 ppm
FILTRATION	500 µm

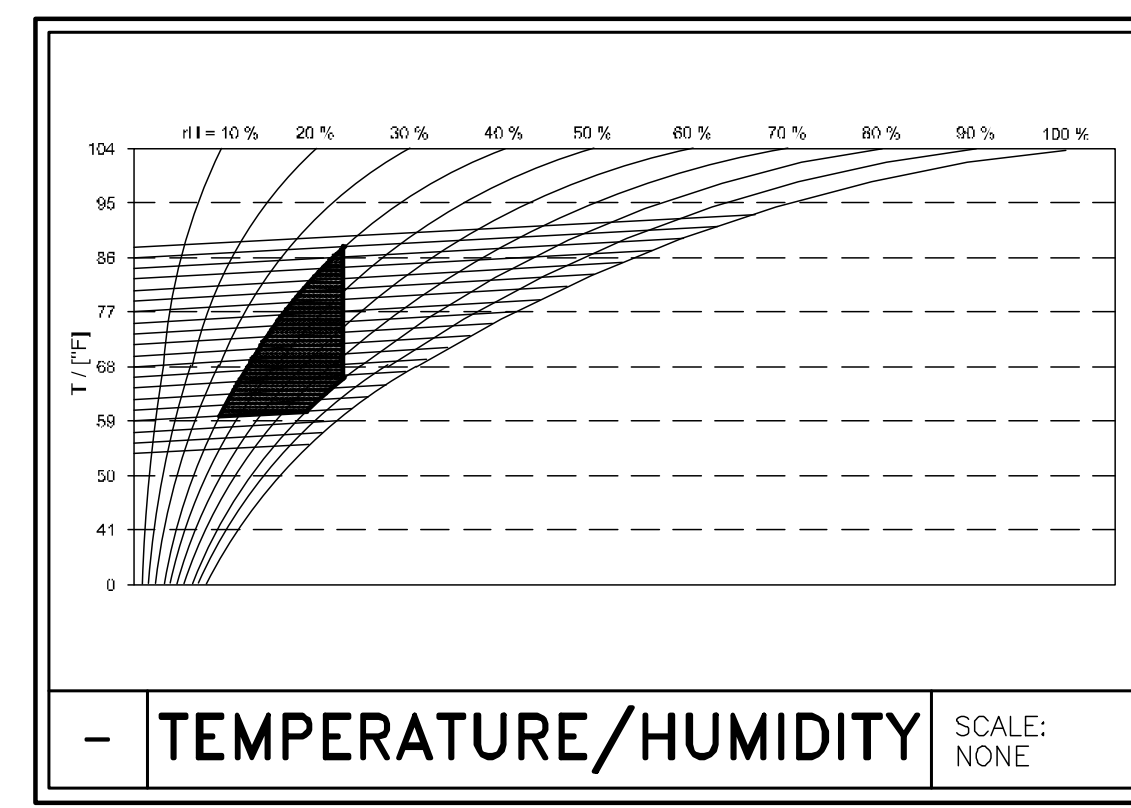
FOR INSTALLATION OF A KRAUS ECO CHILLER, IT IS THE RESPONSIBILITY OF THE CUSTOMER/MECHANICAL CONTRACTOR TO PROVIDE A MIXTURE OF WATER WITH 35%-38% ETHYLENE GLYCOL PRIOR TO CHILLER START UP. DO NOT USE PROPYLENE GLYCOL OR AUTOMOTIVE ANTI-FREEZE.

THE AMOUNT OF THE MIXTURE MUST FILL THE CHILLER, MR SYSTEM AND PIPING (SUPPLY AND RETURN), SEE EXAMPLES BELOW.

(1) GALLON OF UNDILUTED GLYCOL, OR (2) GALLONS OF WATER/GLYCOL MIXTURE MUST REMAIN ON SITE FOR USE AFTER START UP.

MIXTURE VOLUME INCLUDING SUPPLY & RETURN+15 GAL. CHILLER & MR	PIPE DIAMETER	TOTAL LENGTH	MIXTURE VOLUME	GLYCOL NEEDED
	2"	100'	31.3 GALLONS	11.9 GALLONS
	2"	200'	47.6 GALLONS	18.1 GALLONS
	2.5"	100'	40.5 GALLONS	15.4 GALLONS
	2.5"	200'	66.0 GALLONS	25.1 GALLONS

MIXTURE VOLUME = 3.14 x (PIPE RADIUS)<sup>2</sup> x PIPE LENGTH + 15 GALLONS. GLYCOL AMOUNT = 35-38% OF MIXTURE VOLUME.

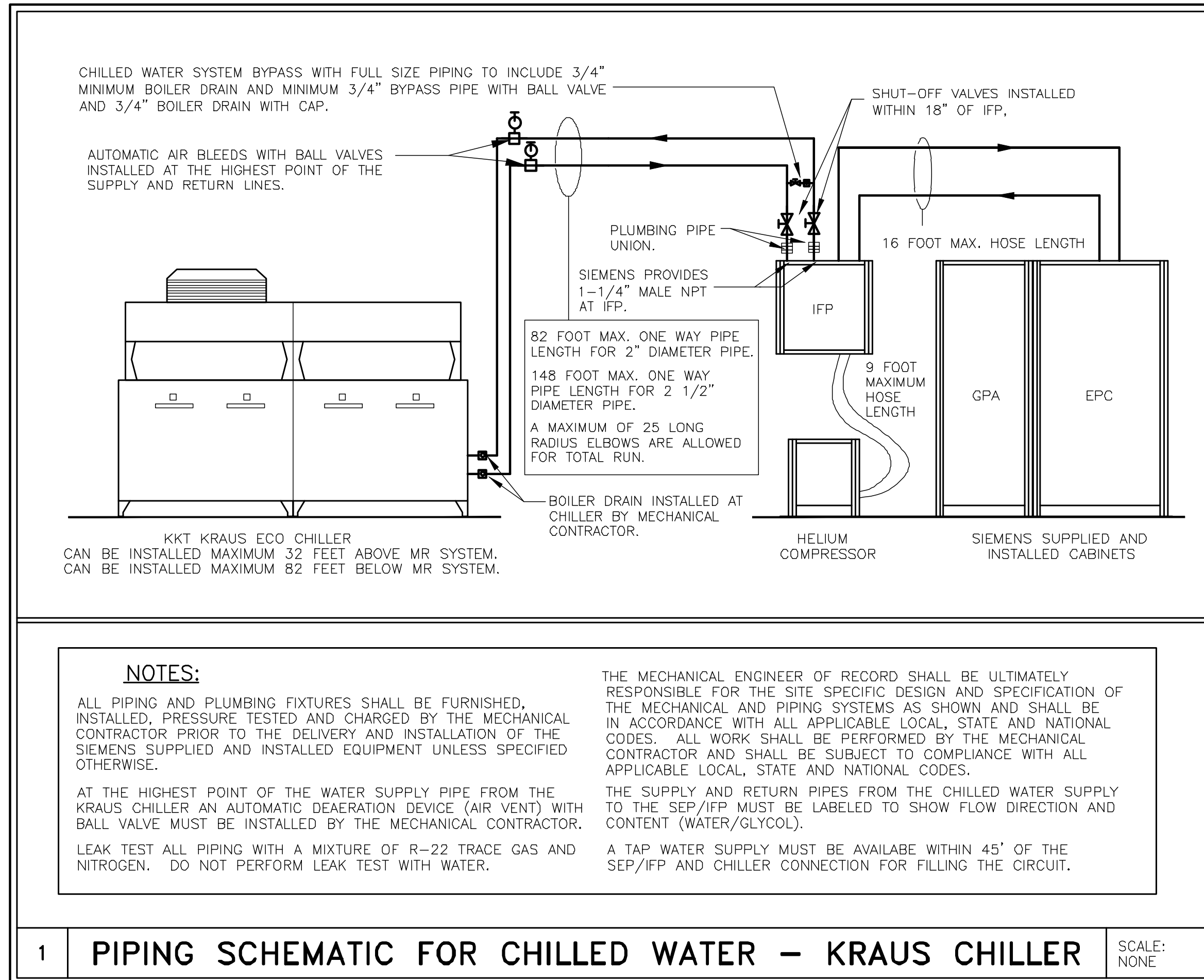
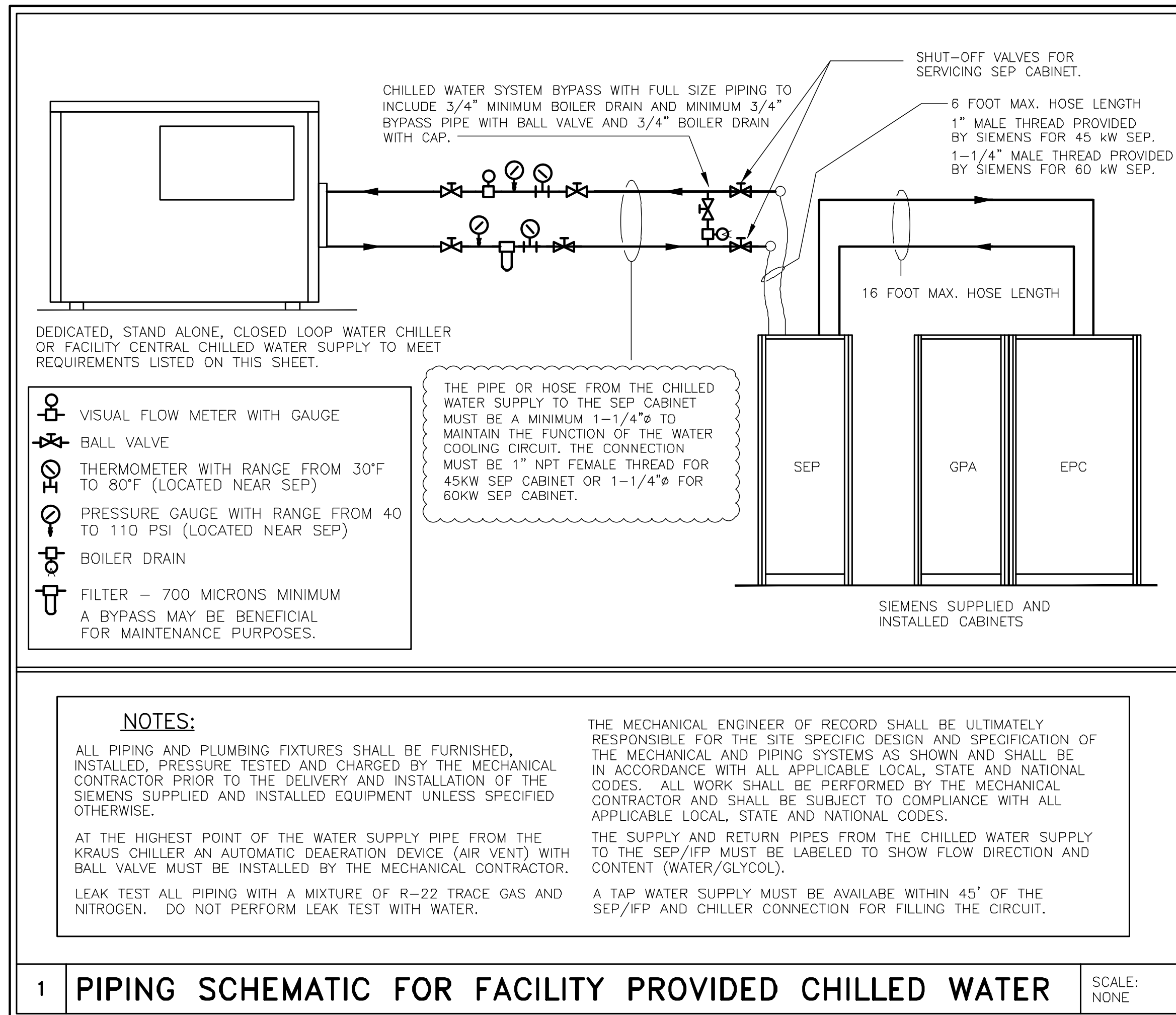


**ATTENTION:**

- THIS DRAWING IS DESIGNED TO CONFORM TO FEATURES AND EQUIPMENT REQUIREMENTS PRESENTED AT THE TIME OF THEIR PREPARATION. SINCE BOTH THESE FACTORS ARE SUBJECT TO DESIGN MODIFICATION, THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES.

- THIS SET OF PLANS REPRESENTS A COMPLETE SET OF DETAILS AND SHOULD NOT BE SEPARATED.

- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.



**CEILING HEIGHTS**

EXAM ROOM	7'-11" MINIMUM
CONTROL ROOM	6'-11" MINIMUM
EQUIPMENT ROOM	7'-3" MINIMUM

**SIEMENS**  
MAGNETOM AERA 1.5T  
TYPICAL FINAL DRAWING SET

PROJECT #: 10023  
SHEET 9 OF 10  
DATE: 05/16/13

SHEET: M-101  
DRAWN BY: B. HERRMANN  
CHECKED:

ALL RIGHTS ARE RESERVED.

SCALE: AS NOTED REF. #: ---

**MECHANICAL NOTES**

- THE AIR H.V.A.C. SYSTEM MUST OPERATE FOR A MINIMUM OF 48 CONSECUTIVE HOURS PRIOR TO THE DELIVERY OF THE EQUIPMENT.
- THE FILTERS MUST BE CHANGED IMMEDIATELY PRIOR TO THE DELIVERY OF THE EQUIPMENT.
- SMS REQUIRES THE USE OF A DEDICATED H.V.A.C. SYSTEM FOR THE EQUIPMENT ROOM TO BE LOCATED, SIZED AND SPECIFIED BY THE MECHANICAL ENGINEER OF RECORD AND TO BE SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- SMS RECOMMENDS THAT THE CUSTOMER PROVIDE AND INSTALL AN OXYGEN MONITORING SYSTEM WITH VISUAL AND AUDIBLE ALARMS TO INDICATE WHEN THE OXYGEN CONTAINED IN AMBIENT AIR FALLS BELOW PRE-PROGRAMMED SAFETY LEVELS WITH THE SENSOR TO BE LOCATED IN THE SCAN ROOM IN THE AREA DESIGNATED FOR CRYOGEN FILLING.
- THE SIEMENS ACTIVE SHIELDED MAGNET RECIRCULATES LIQUID HELIUM, ELIMINATING THE NEED FOR A DEDICATED CRYOGEN STORAGE AREA. THE RECIRCULATING SYSTEM SIGNIFICANTLY REDUCES THE HELIUM "BOIL OFF". THE MAGNET WILL REQUIRE OCCASIONAL FILLING. A DELIVERY ROUTE TO CRYOGEN SUPPLIERS MUST BE ESTABLISHED. A MINIMUM 36" CLEARANCE IS REQUIRED.

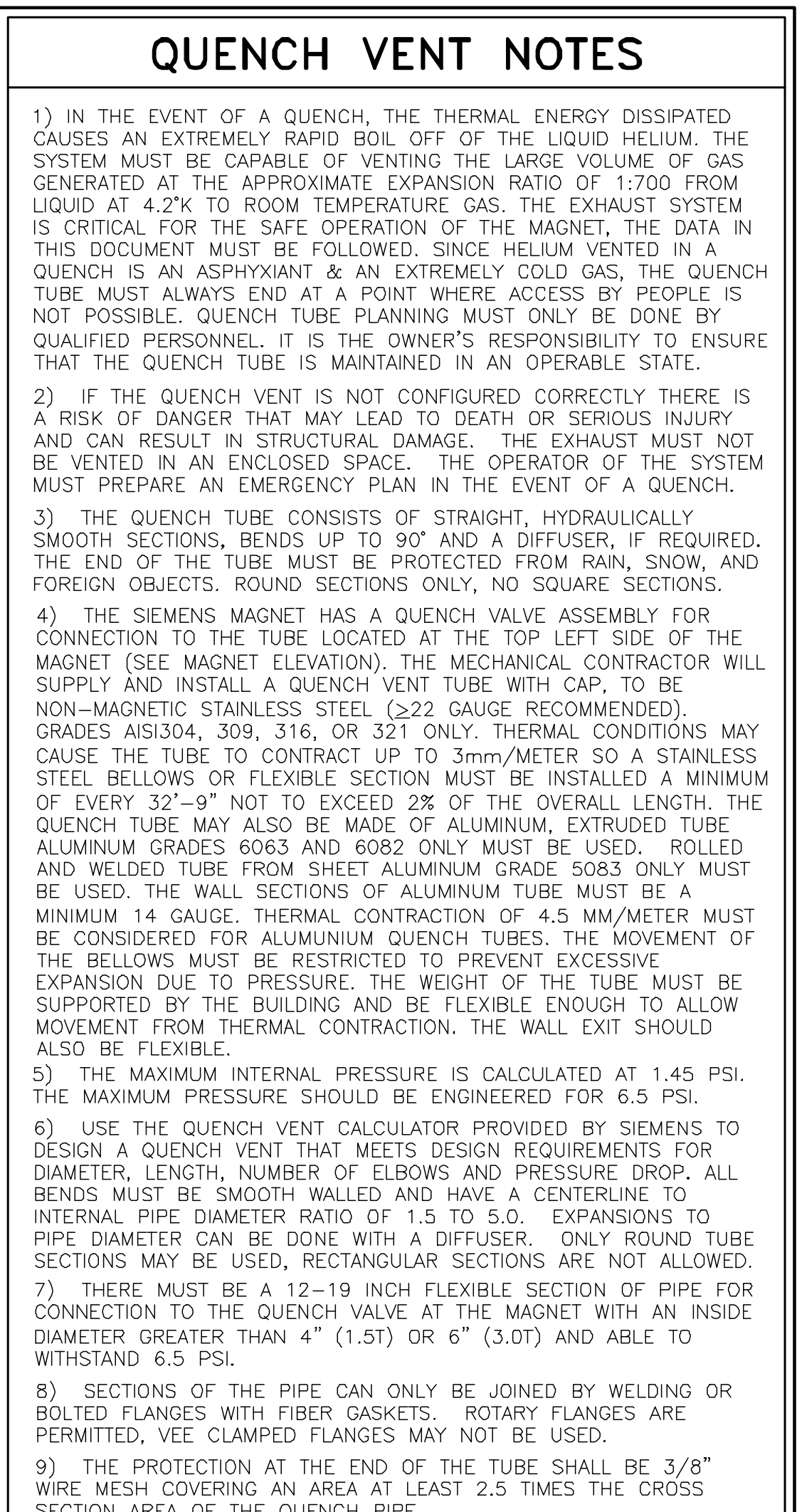
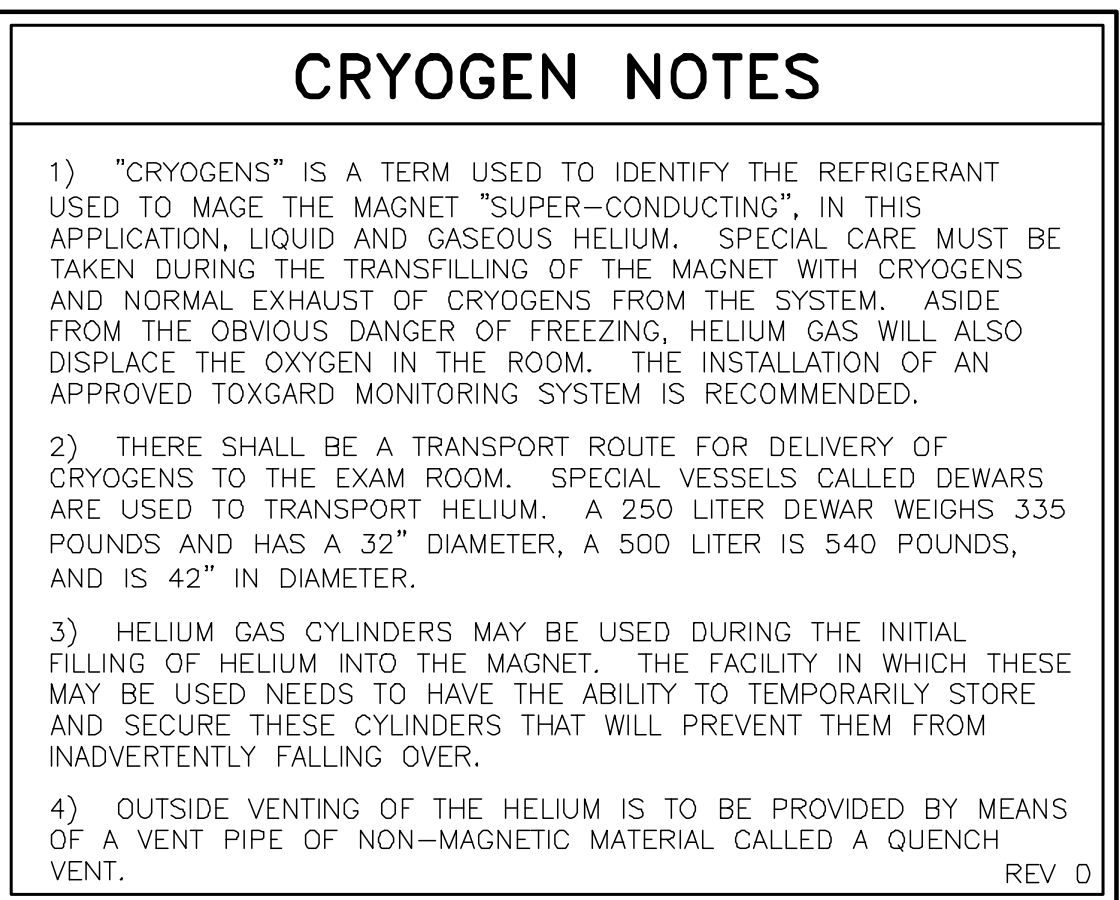
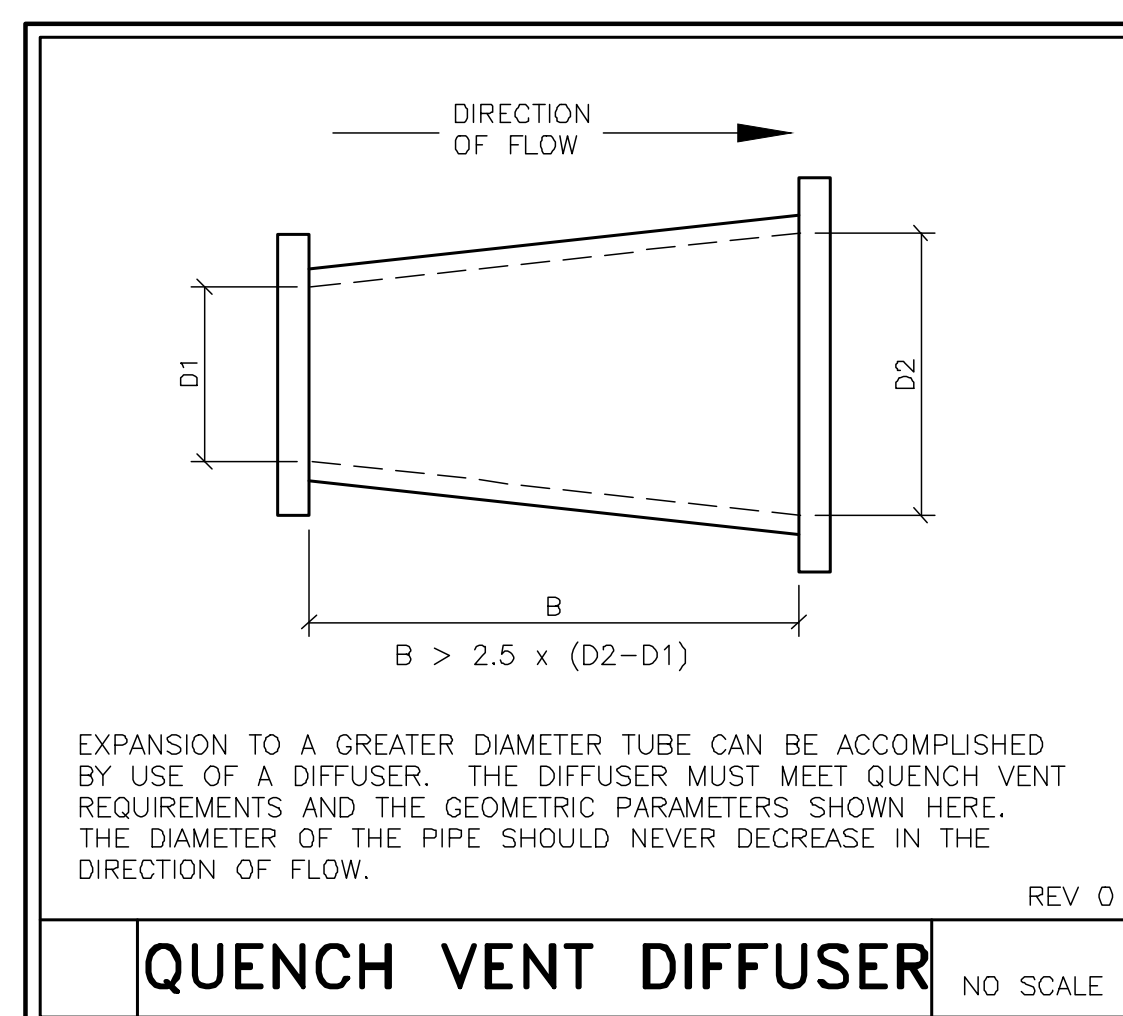
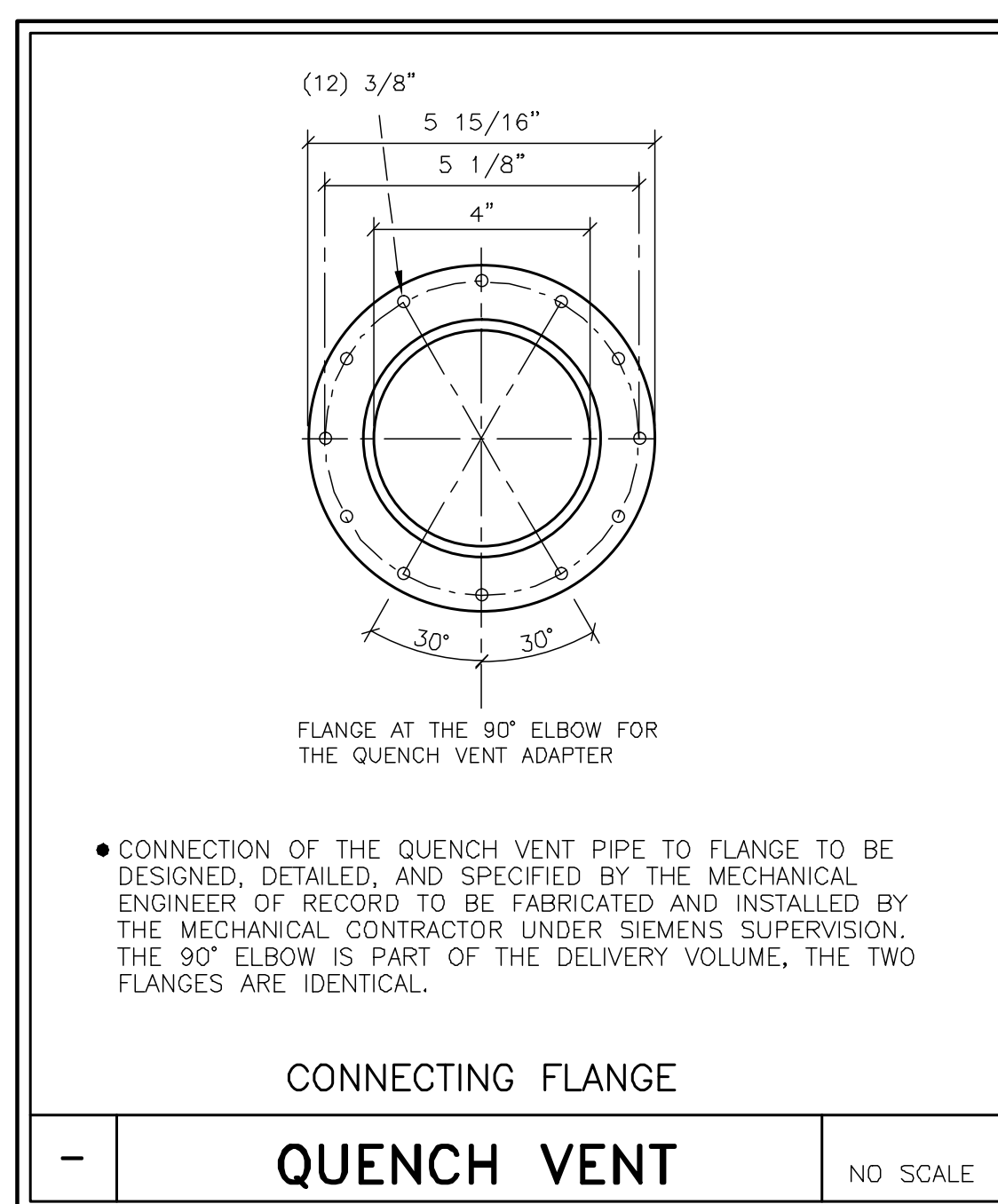
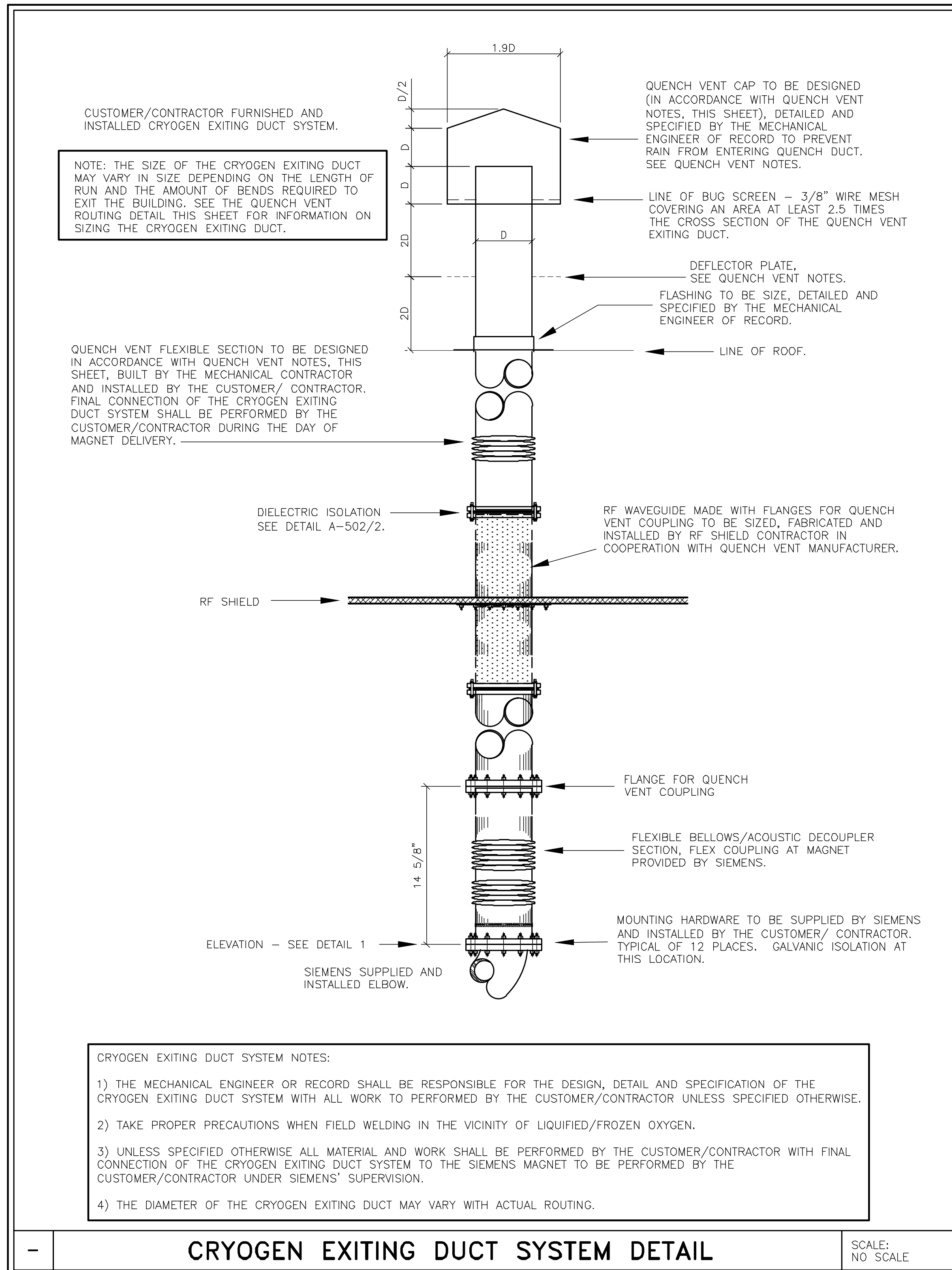
**FIRE CONTROL NOTES**

- SIEMENS HAS NO SPECIFIC REQUIREMENT FOR FIRE PROTECTION. FIRE PROTECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH LOCAL CODES AND CUSTOMER'S INSURANCE REQUIREMENTS. ALL FIRE PROTECTION SYSTEMS SHALL BE DEFINED BY THE ARCHITECT OF RECORD WITH DESIGN, SPECIFICATION AND DETAILING OF THE FIRE PROTECTION SYSTEM BY THE MECHANICAL ENGINEER OF RECORD IN ACCORDANCE WITH SIEMENS GUIDELINES AS STATED HEREIN.  
THE ELECTRONIC EQUIPMENT OF THE MR SYSTEMS WILL BE DAMAGED BY WATER, REDUCTION OR ELIMINATION OF WATER USED FOR FIRE SUPPRESSION WILL REDUCE POTENTIAL WATER DAMAGE. PRE-ACTION INERT GAS, OR HALOCARBONS OR OTHER METHODS CAN REDUCE OR ELIMINATE WATER. REFER TO YOUR FIRE PROTECTION PROFESSIONAL.
- THE USE OF SMOKE DETECTORS INSIDE OF THE MR EXAMINATION ROOM IS NOT RECOMMENDED. SMOKE DETECTORS, BY DESIGN, CAN GENERATE NOISE THAT MAY INTERFERE WITH THE MRI EXAMINATION AND CAUSE IMAGE ARTIFACTS. IF THE USE OF A SMOKE DETECTOR IN THE EXAMINATION ROOM IS MANDATED BY LOCAL REQUIREMENTS, SPECIAL NOISE TESTS MUST BE PERFORMED BY SIEMENS SERVICE AFTER THE MRI IS OPERATIONAL. MRI EQUIPMENT PERFORMANCE PROBLEMS DUE TO SMOKE DETECTORS ARE THE RESPONSIBILITY OF THE CUSTOMER AND ARE NOT COVERED UNDER WARRANTY OR SERVICE AGREEMENT.
- ALL MATERIAL USED INSIDE THE MAGNET ROOM SHALL BE NON-MAGNETIC.
- ALL PENETRATIONS IN THE RF CABIN/SHIELD SHALL BE THROUGH A WAVEGUIDE TO BE EQUIPPED WITH A SIEMENS APPROVED DIELECTRIC COUPLER ON BOTH ENDS OF THE WAVEGUIDE. ALL WAVEGUIDES SHALL BE DESIGNED, DETAILED AND SPECIFIED BY THE RF CABIN/SHIELD CONTRACTOR WITH ALL LOCATIONS TO BE DETERMINED BY THE ARCHITECT AND MECHANICAL ENGINEER OF RECORD TO BE ESTABLISHED IN A PRE-PLANNING MEETING PRIOR TO THE DESIGN, SPECIFICATION, AND FABRICATION OF THE RF CABIN/SHIELD.
- EACH ELECTRICAL PENETRATION OF THE RF CABIN/SHIELD FOR ELECTRICAL SERVICING OF THE FIRE PROTECTION SYSTEM SHALL BE THROUGH AN RFI FILTER TO BE SUPPLIED BY THE RF SHIELD CONTRACTOR WITH FILTER LOCATIONS TO BE DETERMINED BY THE ARCHITECT AND THE ELECTRICAL ENGINEER OF RECORD TO BE ESTABLISHED IN A PRE-PLANNING MEETING PRIOR TO THE DESIGN, SPECIFICATION AND FABRICATION OF THE RF CABIN/SHIELD.
- IT IS PERMISSIBLE TO RUN "BLACK PIPE" UP TO THE DIELECTRIC COUPLER ON THE OUTSIDE OF THE RF SHIELD.
- THERE MUST BE NO GROUND CONNECTIONS MADE DURING THE INSTALLATION OF EITHER THE PIPING OR ELECTRICAL FOR THE FIRE PROTECTION SYSTEM.
- THE USE OF HALON IS NOT ACCEPTABLE.
- THE LOCATION OF FIRE CONTROL SYSTEM COMPONENTS SHALL BE COORDINATED THROUGH THE ARCHITECT OF RECORD WITH ALL LOCATIONS TO BE COORDINATED WITH SIEMENS EQUIPMENT LOCATIONS AS SHOWN ON THE 1/4" SCALE EQUIPMENT LOCATION PLAN.
- THE FIRE CONTROL CONTRACTOR SHALL VERIFY EQUIPMENT MOUNTING PROCEDURES AND LOCATIONS ON ANY WALLS CONTAINING RF SHIELDING WITH THE SIEMENS PROJECT MANAGER PRIOR TO THE COMMENCEMENT OF WORK.

**COMPRESSOR LINE INSULATION**

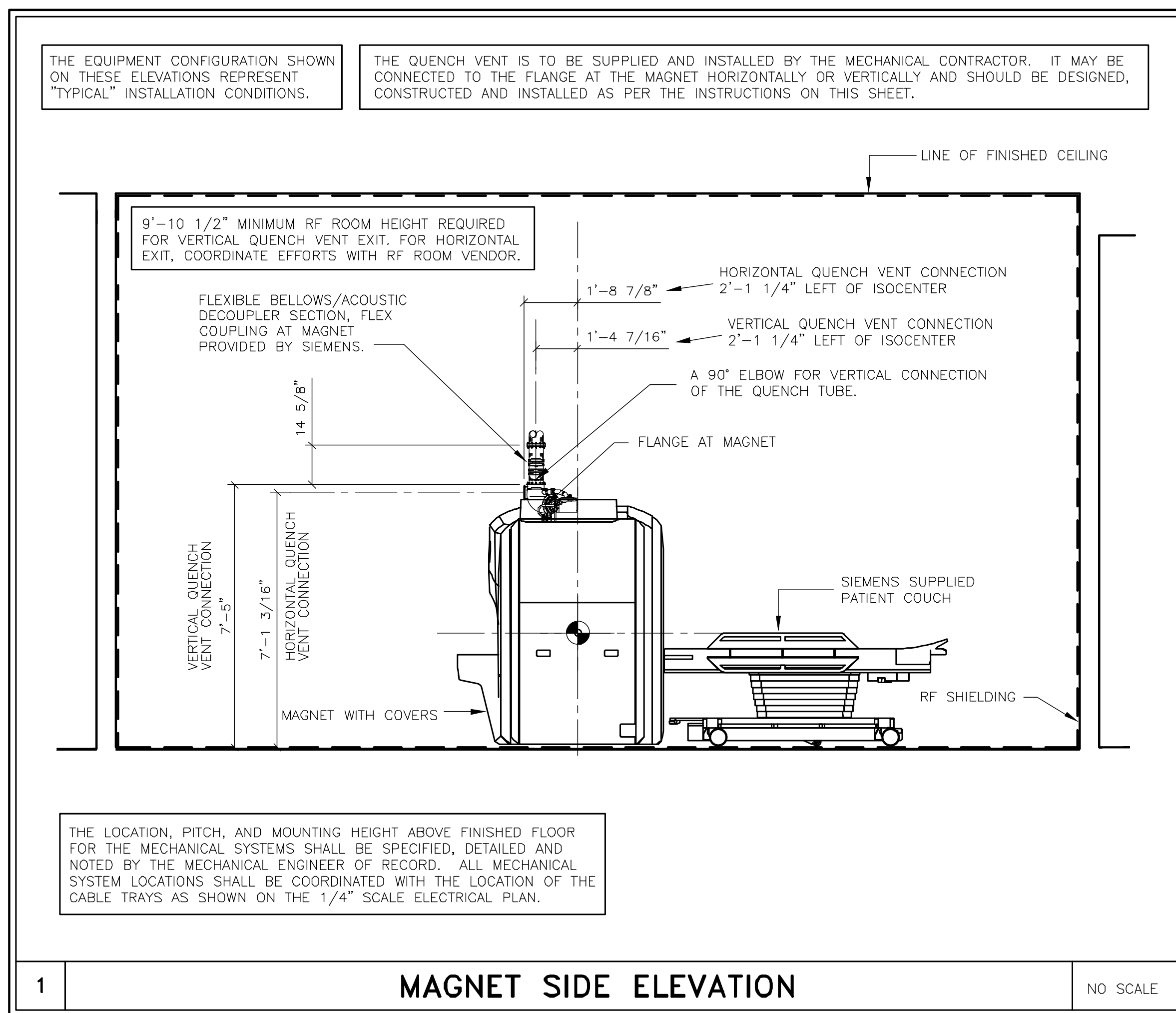
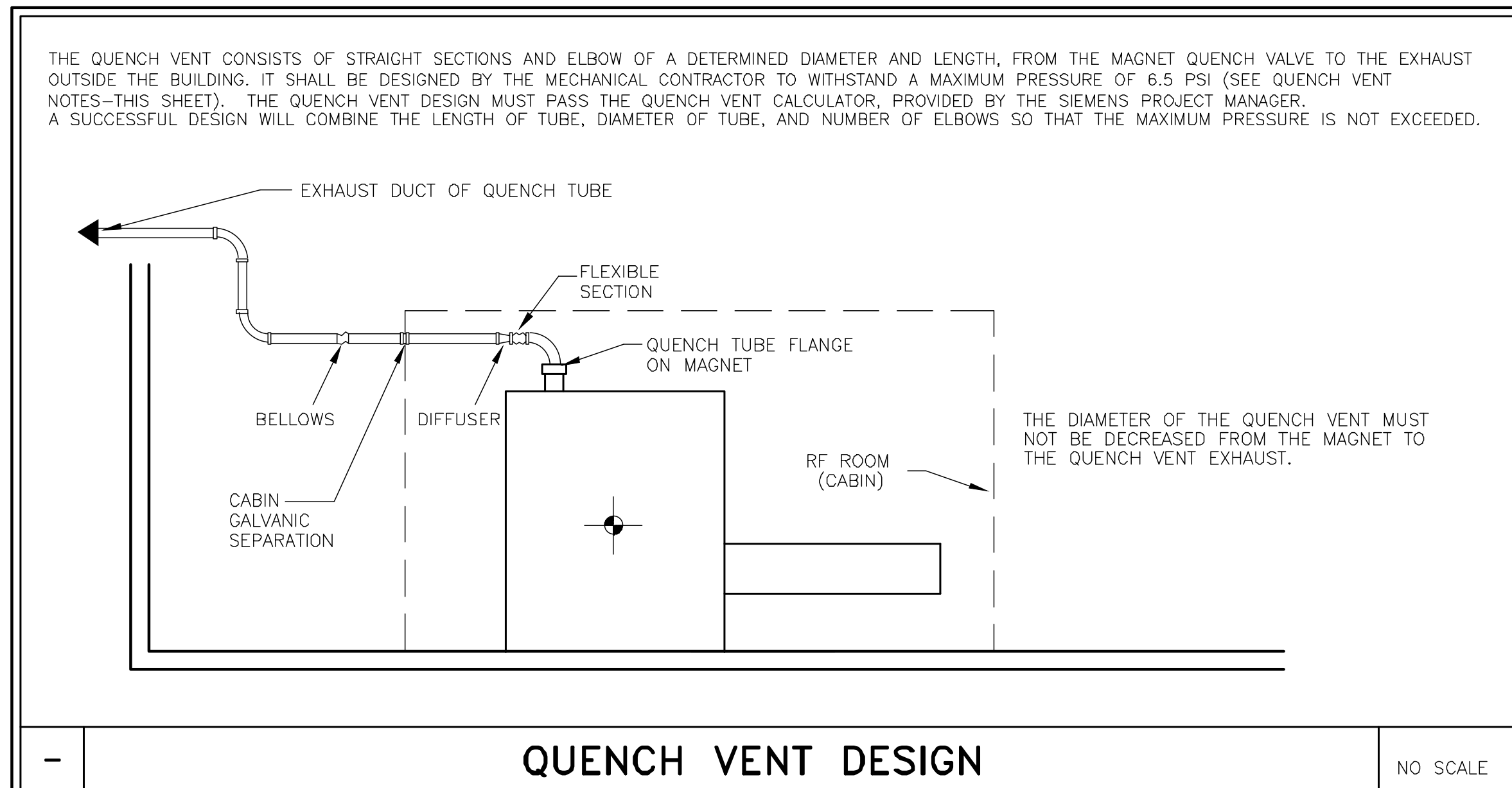
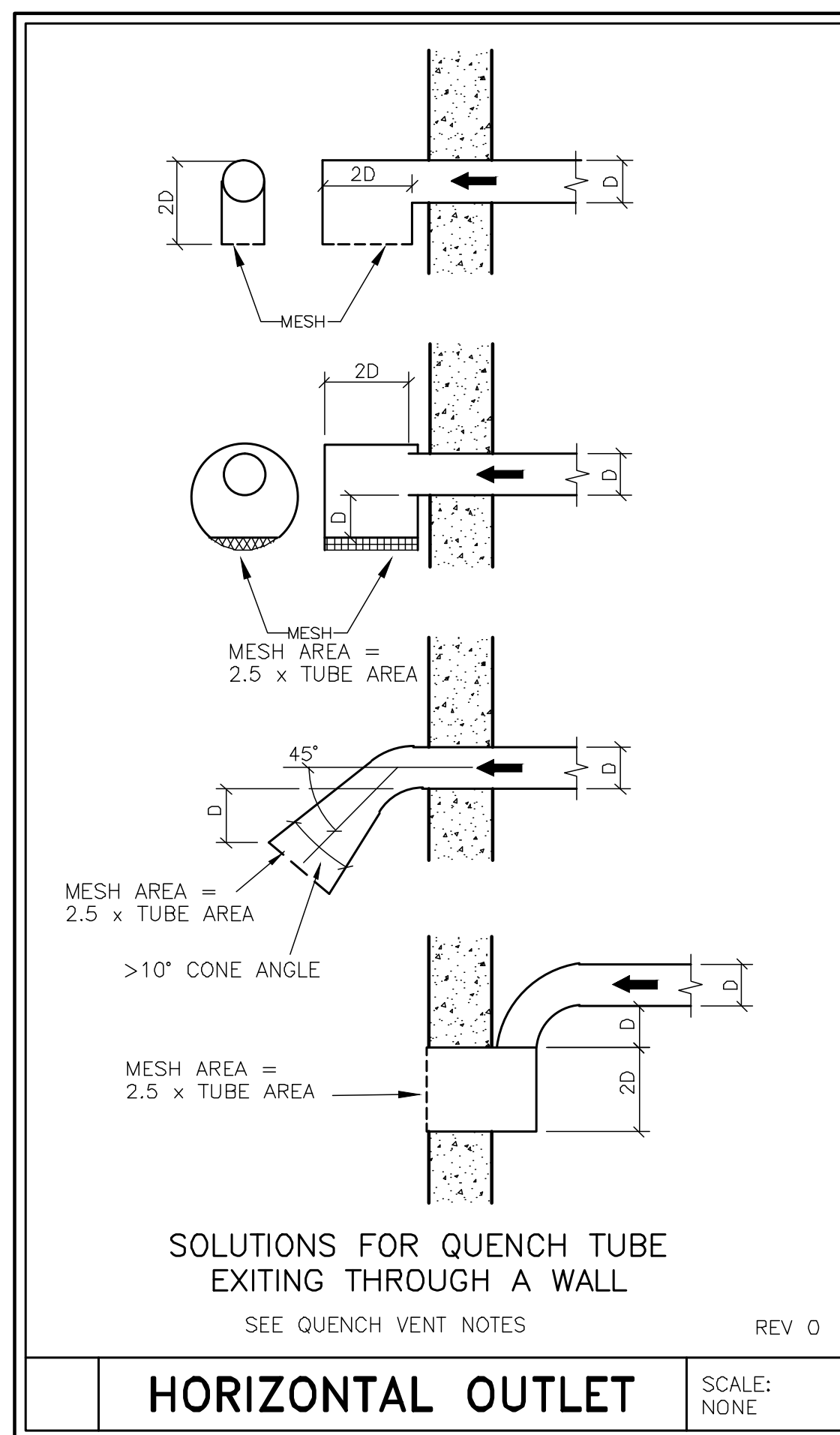
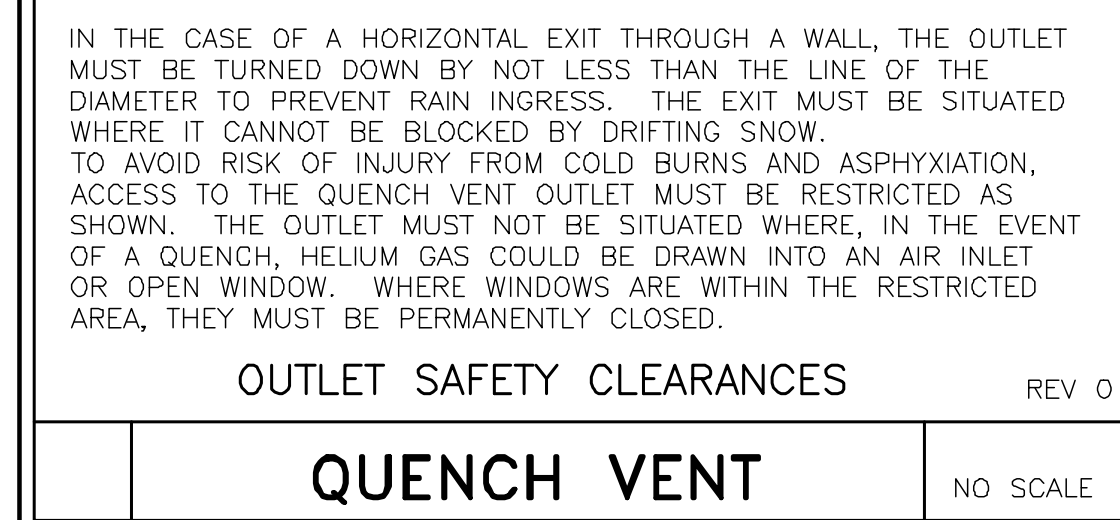
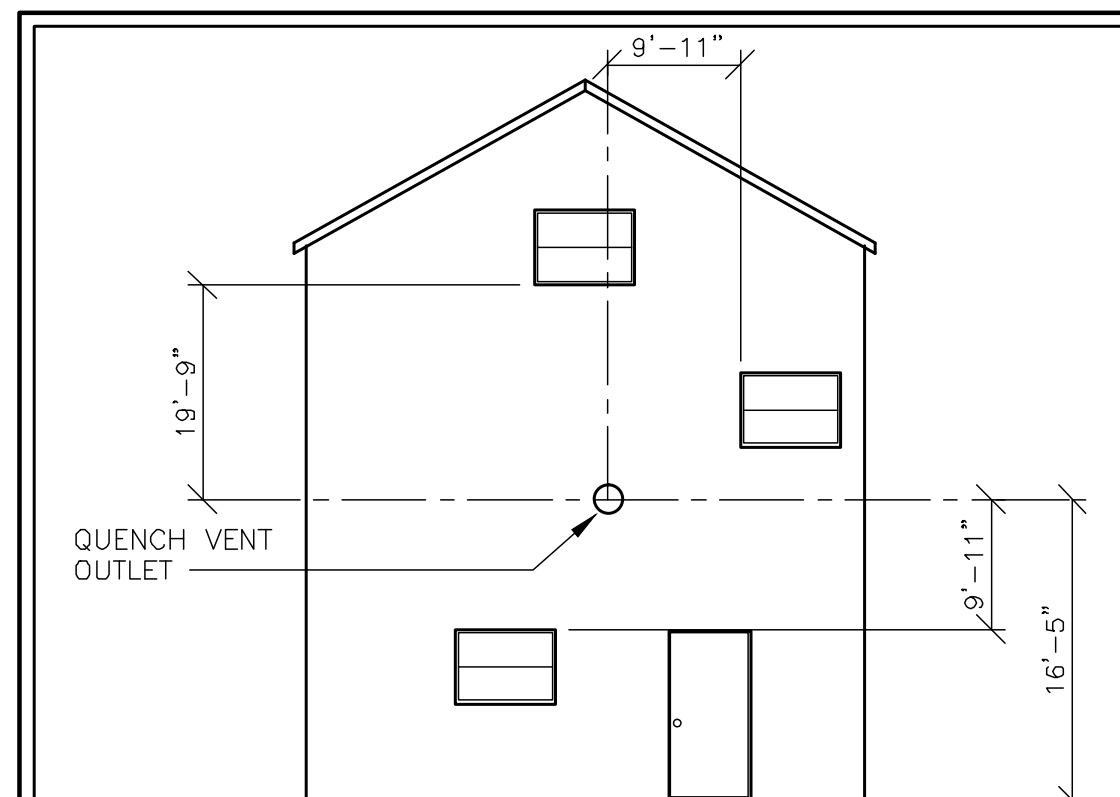
COMPRESSOR LINES RUNNING FROM THE COMPRESSOR (OR SEP CABINET) TO THE MAGNET ARE INSULATED BY SIEMENS. ADDITIONAL INSULATION (ARMAFLEX OR EQUIVALENT) FOR NOISE REDUCTION (CHIRPING) MAY BE REQUIRED. ADDITIONAL INSULATION NOT PROVIDED BY SIEMENS.

AERA 03/13/13



HELIUM CONTENT		
LITERS AT 100%	1,280	
TYPICAL BOIL OFF RATE	0.0 L/HR	FOR TYPICAL CLINICAL USE, DEPENDING ON SEQUENCES AND OPERATING TIME.
TYPICAL REFILL INTERVAL	10 YEARS	

WITHOUT THE COLDHEAD RUNNING THE LIQUID HELIUM WILL BOIL OFF FROM 97% TO 0% IN APPROX 30 DAYS. THE LOSS DURING SHIPPING IS APPROX. 3.3% PER DAY.



AERA 03/13/13

**SIEMENS**

**MAGNETOM AERA 1.5T**

TYPICAL FINAL DRAWING SET

THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.	PROJECT #:	SHEET:
	<b>10023</b>	<b>M-501</b>
ALL RIGHTS ARE RESERVED.	DRAWN BY:	CHECKED:
	B. HERRMANN	
DATE: 05/16/13	DATE:	

SYMBOLS: **AS NOTED**

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- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.

- ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.

- THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

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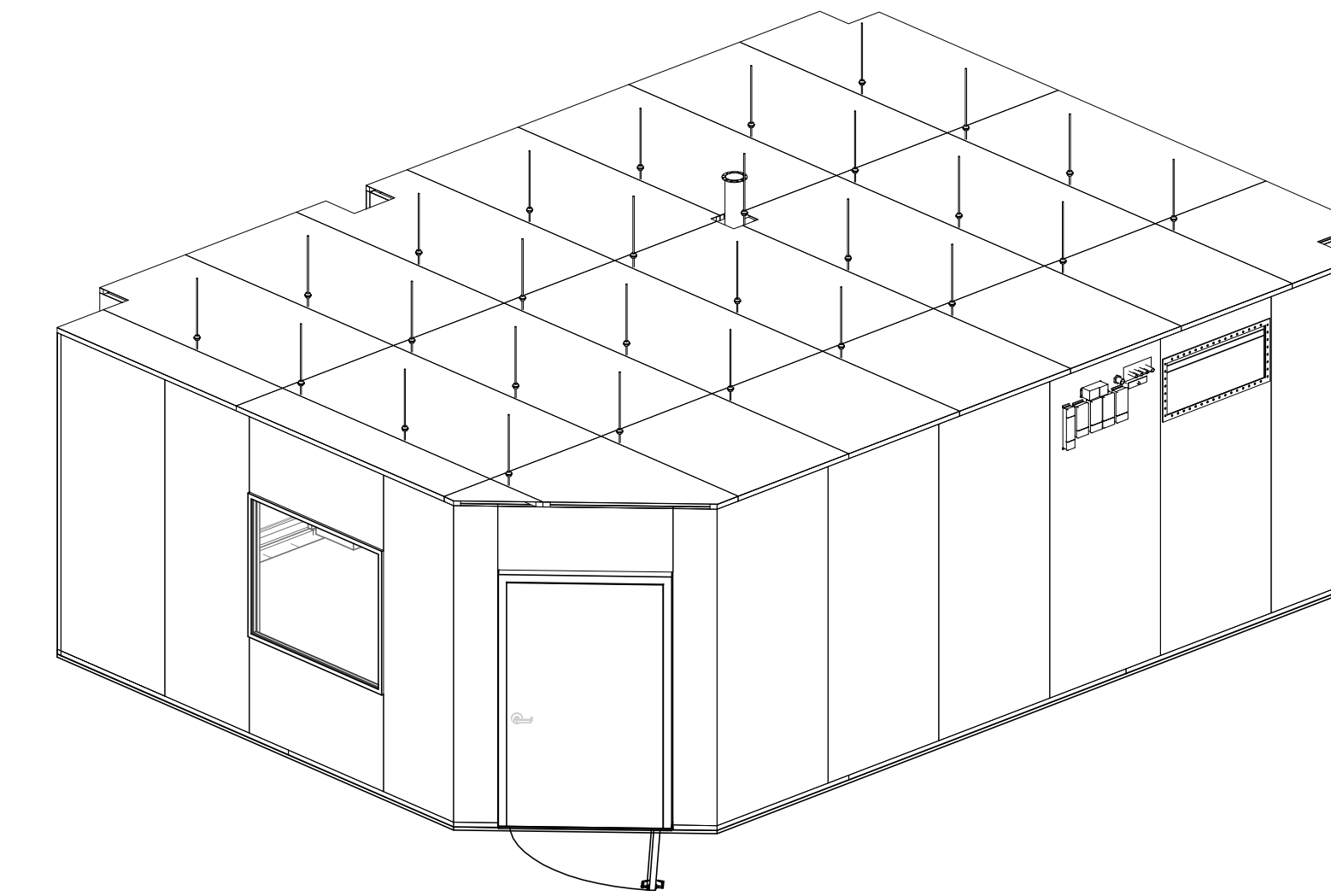
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Vendor: SIEMENS  
Magnet: AERA 1.5T  
PIM: N/A  
Project #: N/A  
Revision: N/A  
PM: N/A  
Phone: N/A

## RADIO FREQUENCY SHIELD FOR: BROCKTON VA HOSPITAL

BROCKTON, MA



1 RF Shield Cover  
RF0.0

### SITE PREPARATION CHECKLIST PRIOR TO RF SHIELD INSTALLATION

**MODULAR RF WOOD FLOOR**  
THE FOLLOWING ITEMS ARE REQUIRED / TO BE VERIFIED BY THE GENERAL CONTRACTOR (GC)  
PRIOR TO THE RF SHIELDING INSTALLATION.  
CONTACT YOUR SHIELDING VENDOR PROJECT MANAGER TO ADVISE OF ANY DISCREPANCIES.

- |  |  |
|--|--|
| <p><input type="checkbox"/> 1. THE FLOOR TRENCH, IF REQUIRED, SHALL COMPLY WITH THE ABOVE CONCRETE SLAB SPECIFICATIONS. THE TRENCH WALLS SHALL BE PLUMB, STRAIGHT, AND TRUE. THE TOP AND BOTTOM WALL CORNERS/EDGES SHALL BE CLEAN, SMOOTH, AND SQUARE.</p> <p><input type="checkbox"/> 2. THE PARENT ROOM STRUCTURE SHALL BE SQUARE, PLUMB, AND TRUE TO THE DIMENSIONS DETAILED ON THIS DRAWING, AS NOTED.</p> <p><input type="checkbox"/> 3. THE LOCATION OF THE MAGNET ISOCENTER AND RELATED MAGNET INTERFACE CONNECTIONS SHALL BE FURNISHED BY THE IMAGING SYSTEM SUPPLIER WITH THE APPROVAL OF THESE DRAWINGS. THESE LOCATIONS SHALL ALSO BE FIELD IDENTIFIED DURING THE RF ENCLOSURE INSTALLATION BY THE IMAGING SYSTEM SUPPLIER.</p> <p><input type="checkbox"/> 4. BEFORE THE RF COMPONENTS MAY BE INSTALLED, THE SHIELDED AREA SHALL BE <b>WEATHERPROOFED</b>. THIS SHALL INCLUDE, BUT NOT LIMITED TO, THE MAGNET ACCESS OPENING AREA, CRYOGEN EXHAUST VENTING, AND ALL OTHER ENCLOSURE PENETRATIONS.</p> <p><input type="checkbox"/> 5. THE MRI ROOM MUST BE HEATED TO A MINIMUM OF 68°F AT FLOOR LEVEL DURING THE RF SHIELD INSTALLATION AND 48 HOURS AFTER APPLICATION OF THE RF FLOORING FILLER TILES. THE TEMPERATURE REQUIREMENT IS TO ALLOW FOR PROPER CURE FOR THE TILE ADHESIVE THAT THE SHIELD VENDOR INSTALLS. NOTE: TEMPORARY HEAT IS ALLOWED, BUT CANNOT CAUSE EXCESSIVE HEAT &amp; HUMIDITY. HUMIDITY EFFECTS CURING/CURE TIMES AND INCREASES CORROSION. HUMIDITY IN THE MRI ROOM IS NOT ACCEPTABLE.</p> <p><input type="checkbox"/> 6. INTERIOR DRY STORAGE AREA SHALL BE PROVIDED FOR THE RF COMPONENTS, MATERIALS, AND RELATED EQUIPMENT DURING INSTALLATION. THE APPROXIMATE STORAGE AREA REQUIRED IS 20ft. x 20ft. AND SHOULD BE REASONABLY CLOSE TO THE MRI ROOM AREA. THE CONTROL ROOM AND/OR EQUIPMENT ROOM AREAS WORK FOR STORAGE. THE GC IS RESPONSIBLE TO PROVIDE "OTHER" STORAGE IF NEARBY/INTERIOR STORAGE IS NOT AVAILABLE. CONTACT THE SHIELDING VENDOR PROJECT MANAGER TO DISCUSS.</p> <p><input type="checkbox"/> 7. THE ROOM MUST BE DRY, EMPTY, AND BROOM SWEEP. TRASH CONTAINER, SHALL BE PROVIDED BY THE G.C., FOR THE REMOVAL OF WASTE AND CRATING MATERIALS.</p> <p><input type="checkbox"/> 8. TEMPORARY ELECTRIC POWER; 115V, SINGLE PHASE FOR HAND TOOLS IS REQUIRED FOR INSTALLATION OF THE RF ENCLOSURE.</p> <p><input type="checkbox"/> 9. TEMPORARY ELECTRIC POWER; 115v SINGLE PHASE NON-GFI FOR RF TESTING. CAUTION: DO NOT CONNECT UNTIL RF SHIELD HAS BEEN GROUNDED.</p> <p><input type="checkbox"/> 10. TEMPORARY LIGHTING; 4 LIGHTS 100 WATT MINIMUM.</p> <p><input type="checkbox"/> 11. ANY OVERHEAD MEP'S MUST CLEAR THE HEIGHT OF THE RF SHIELD. ANY OBSTRUCTIONS MUST BE RELOCATED OR ACCOUNTED FOR IN THE SHIELDING HEIGHT. PIPING THAT MAY SWEAT OR LEAK MUST HAVE DRIP PANS INSTALLED.</p> | <p><input type="checkbox"/> 12. THE RF SHIELDED CEILING FRAMES SHALL BE SUPPORTED FROM THE PARENT ROOM STRUCTURE IMMEDIATELY ABOVE THE SCAN ROOM. REFER TO THE CEILING SUPPORT ANCHOR DETAIL ON THIS DRAWING SET FOR PARTICULAR APPLICATION.</p> <ul style="list-style-type: none"> <li>• A STANDARD, ONE POUND PER SQUARE FOOT, INTERIOR SUSPENDED CEILING MAY BE SUPPORTED FROM THE RF CEILING PANEL SYSTEM. REFER TO THE CEILING DETAIL ON THIS DRAWING SET.</li> <li>• AN INTERIOR FINISHED CEILING EXCEEDING ONE POUND PER SQUARE FOOT SHALL REQUIRE ADDITIONAL RF CEILING SYSTEM SUPPORT, REFER TO DETAILS ON THIS DRAWING SET OR CONTACT THE SHIELD VENDOR / APPLICATIONS ENGINEERING.</li> </ul> <p>CAUTION: THE RF CEILING SYSTEM IS NOT A LOAD BEARING SURFACE.</p> <p><input type="checkbox"/> 13. IF THERE IS/ARE EXTERIOR WINDOW(S) TO BE MATCHED BY AN RF WINDOW(S) THE GC WILL NEED TO MAKE PREPARATIONS TO FRAME OUT THE AREA BETWEEN THE RF SHIELD AND THE PARENT WALL AROUND THE WINDOW PERIMETER(S). TYPICALLY THIS IS DONE WITH BLACK PAINTED DRYWALL OR PLYWOOD, OR SOME TYPE OF CUSTOM WINDOW FRAME. THIS WILL NEED TO BE READY TO BE INSTALLED DURING THE RF SHIELD INSTALLATION.</p> |
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**NOTE: ALL DIMENSIONS ARE FINAL ON THIS LAYOUT, UNLESS NOTED OTHERWISE ON THE RETURNED SET OF APPROVED RF DRAWINGS.**

### GENERAL MRI ROOM CONSTRUCTION NOTES

1. PLUMBING, SPRINKLER, MEDGAS AND ELECTRICAL ENTRIES INTO THE RF SHIELD SHOULD BE MADE AT THE PENETRATION PANEL LOCATION, THROUGH THE SHIELD VENDOR INSTALLED WAVEGUIDES/RF FILTERS, THEN ROUTED THROUGH THE ROOM AS REQUIRED. ALL PIPE PENETRATIONS SHALL BE INSTALLED AS DETAILED ON THESE DRAWINGS. ACCESS TO THESE PIPE CONNECTIONS SHALL COMPLY WITH LOCAL CODES.
2. FINAL BUILDING GROUND CONNECTION TO THE RF ENCLOSURE GROUND STUD (BY THE G.C.) SHALL COMPLY WITH LOCAL CODES.
3. IF ANY RF COMPONENTS ARE DAMAGED AFTER THE INSTALLATION CREW HAS COMPLETED THE RF VERIFICATION TEST, CONTACT SHIELDING VENDOR FOR INSTRUCTIONS AND/OR REPAIR SCHEDULE.
4. NO PENETRATIONS THROUGH THE RF SHIELD ARE ALLOWED WITHOUT A RF WAVEGUIDE OR RF FILTER.
5. FINAL ELECTRICAL CONNECTIONS AND ACCESS REQUIREMENTS TO THE RF POWER FILTERS SHALL COMPLY WITH LOCAL CODES AND DETAILS ON THESE DRAWINGS.
6. THE INTERIOR SCAN ROOM WALL FINISH MAY BE APPLIED TO THE VERTICAL 16" O.C. FURRING STRIPS, FURNISHED & INSTALLED PER CONTRACT.

### NEW CONCRETE SLAB SPECIFICATIONS

REFER TO RF1.0 "FOUNDATION" PAGE.

### EXISTING CONCRETE SLAB SPECIFICATIONS

REFER TO RF1.0 "FOUNDATION" PAGE

### RF SHIELD FLOOR PANELS

1. THE MODULAR FLOOR SYSTEM MUST NOT BE EXPOSED TO LIQUIDS OF ANY SORT, ie:(WATER, COFFEE, LIQUID CLEANER, ETC.) LIQUID WILL DEGRADE THE SHIELDING PROPERTIES IF EXPOSED TO THE MODULAR PANELS.
2. THERE MAY BE ADDITIONAL FLOOR PREP REQUIRED BY THE G.C. ON THE MODULAR TYPE RF FLOOR SYSTEMS BEFORE FINISH FLOORING IS APPLIED.
- THIS FLOOR SYSTEM CONSISTS OF METAL LAMINATED WOOD PANELS WHICH ARE CLAMPED TOGETHER. FILLER TILE IS PLACED BETWEEN THE CLAMPS TO LEVEL OUT THE FLOOR SURFACE.
- TYPICAL INSTALLATIONS REQUIRE THE GC/FLOORING CONTRACTOR TO PUT A "FLASH-PATCH" MATERIAL ON TOP OF THE RF FLOOR TO PROVIDE A BETTER SURFACE TO INSTALL THE FINISH FLOORING PRODUCT.
- THE FLASH-PATCH MATERIAL MUST NOT CAUSE MOISTURE PROBLEMS WITH THE RF FLOOR. USE A PRODUCT SIMILAR TO ARDEX SD-F FEATHER FINISH.

### RF SHIELD FRAME CONSTRUCTION

- THE RF SHIELD IS CONSTRUCTED WITH: DIM. LVL LUMBER WITH 3oz. PAPER-BACKED COPPER WRAPPED TO THE OUTSIDE OF THE FRAME.
- THE LUMBER IS FIRE RETARDANT TREATED WOOD LVL LUMBER, FLAMESPREAD 10, SMOKE DEVELOPED 50, AWPAC C20-99, INTERIOR TYPE A

Drawing Table of Contents	
Sheet Number	Sheet Name
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RF1.1	CEILING SUPPORT LAYOUT
RF1.2	FLOOR PLAN
RF2.0	ELEVATIONS
RF2.1	ELEVATIONS
RF3.0	DETAILS
RF3.1	DETAILS
RF4.0	AUTOSEAL 2 DOOR

## SPECIFICATIONS

### TESTING PROCEDURE

RF TESTING PERFORMED IN GENERAL ACCORDANCE WITH MIL-STD 285. SHOULD A VERIFICATION TEST BE REQUIRED, IT IS THE RESPONSIBILITY OF THE MAGNET MANUFACTURER TO CORRECT ANY DEFICIENCIES IN RF ATTENUATION OF THE MRI SUPPLIED PENETRATION PANEL.

THE SHIELDING VENDOR SHALL HAVE AN ONGOING PRODUCT IMPROVEMENT PROGRAM.

### GROUND ISOLATION GUIDELINES

- UNDER NO CIRCUMSTANCE CAN ANY CONDUCTIVE MATERIAL COME IN CONTACT WITH THE EXTERIOR OF THE ENCLOSURE OR THE STRUCTURAL SYSTEM OF THE SHIELDED ROOM.
- ANY DUCT OR PIPE WORK (INCLUDING ELECTRICAL CONDUIT) MUST BE BROKEN WITH A DIELECTRIC OUTSIDE THE SHIELD, AND PASS THROUGH A WAVEGUIDE OR FILTER AT THE PENETRATION POINT.
- THE CONCRETE SLAB SHALL BE FREE OF STANDING WATER AND/OR MOISTURE PRIOR TO INSTALLATION OF R.F. SHIELDING TO INSURE GROUND ISOLATION. FAILURE TO CONTROL THE MOISTURE MAY ADVERSELY AFFECT ADHESION AND DETERIORATE THE GROUND ISOLATION CHARACTERISTICS. UPON ESTABLISHING SPECIFIED GROUND ISOLATION, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSURE GROUND ISOLATION IS MAINTAINED.
- PRIOR TO INSTALLATION OF THE COPPER RF FLOOR, THE UNDERLYING CONCRETE SLAB SHALL HAVE HAD A MINIMUM OF SEVEN DAYS CURE TIME WITH ABSOLUTELY NO CONCRETE SEALANT OR CURING COMPOUND APPLIED TO IT. THE SLAB MUST BE KEPT DRY AND CLEAN AT ALL TIMES.
- UPON COMPLETION OF THE RF SHIELDING INSTALLATION A GROUND ISOLATION TEST WILL BE PERFORMED BY LINDGREN AND SHALL BE WITNESSED AND SIGNED OFF BY A REPRESENTATIVE OF OUR CUSTOMER. ESTABLISHING THE ACHIEVEMENT OF AT LEAST 1000 OHMS GROUND ISOLATION.

### SEISMIC

- THE SHIELDS ARE NOT ENGINEERED FOR SEISMIC PERFORMANCE UNLESS SPECIFIED ON THESE DRAWINGS. THE G.C. IS RESPONSIBLE FOR ANY SEISMIC ENGINEERING REQUIREMENTS PER APPLICABLE SITE BUILDING CODES.

### INSTALLATION SCHEDULE

SHIELD INSTALLATION IS 4-6 WEEKS AFTER DRAWING APPROVAL.

### RF ENCLOSURE PERFORMANCE

THE RF ENCLOSURE PERFORMANCE SHALL BE VERIFIED AFTER THE SHIELD INSTALLATION IS COMPLETE, AND SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

### RF ATTENUATION:

- PLANE WAVE: 90 dB at 128 Mhz (+/- .5Mhz)  
100 dB for co-siting
- ISOLATION RESISTANCE: >100 ohms MINIMUM

THE RF PERFORMANCE SHALL BE WITNESSED BY THE G.C. OR THE G.C.'S REPRESENTATIVE

### RF DOOR

THE DOOR FINISH MUST BE DETERMINED BY OUR CUSTOMER AT LEAST FOUR WEEKS PRIOR TO THE INSTALLATION DATE.

THE RF DOOR PROVIDED IS NOT FIRE RATED

THE FINISH FOR THE RF DOOR(S) MAY BE:

### PLASTIC LAMINATES:

FORMICA #7152 NORTHERN OAK  
WILSONART #1573-60 FROSTY WHITE.

CUSTOM PLASTIC LAMINATES CAN BE SELECTED FOR AN ADDITIONAL CHARGE.

### VENEERS:

BIRCH, RED OAK, CHERRY, OR MAPLE

NOTE: ETS-LINDGREN MANUFACTURING DOES NOT PROVIDE FINISHES FOR VENEERS.  
VENEERS FINISHED ON SITE BY G.C.

DOOR HARDWARE SPECIFICATIONS / SEE DOOR DETAIL THIS DRAWING SET.

THE RF DOOR CONTACTS ARE NOT A WARRANTED ITEM. PRECAUTION SHOULD BE TAKEN TO PREVENT DAMAGE TO THE CONTACTS DURING THE CONSTRUCTION PHASE AND END USER USE.

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COVER

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REVISIONS:  
Rev Date By Description

PROJECT TITLE:  
BROCKTON VA HOSPITAL  
ADDRESS:  
BROCKTON, MA

DRAWN BY: CJW

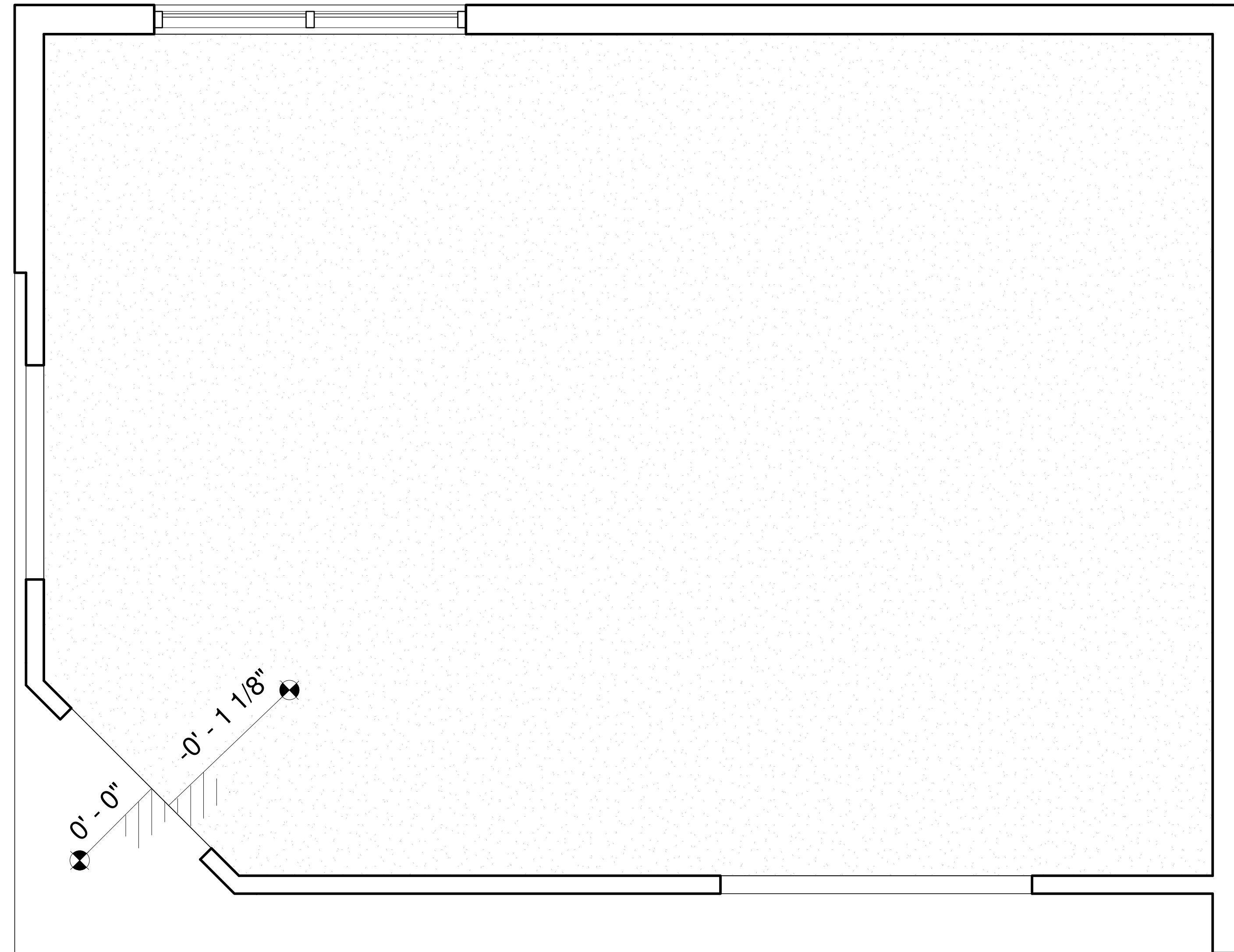
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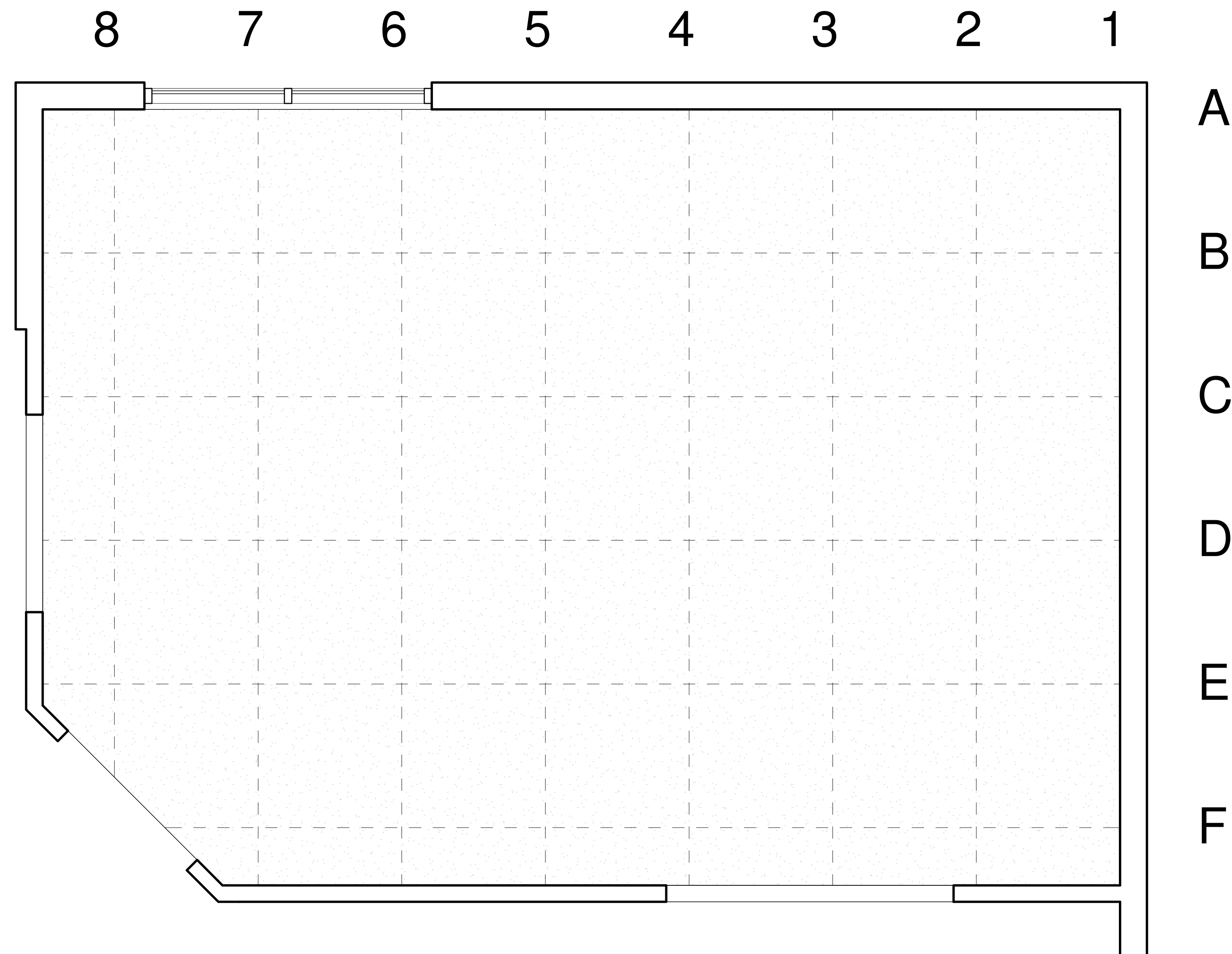
JOB NO: MD61434 REV:

DRAWING NO:

RF0.0



1 FOUNDATION PLAN  
NOT TO SCALE



2 FLOOR LEVELNESS CHART  
NOT TO SCALE

THE BELOW SPECIFICATIONS AND/OR PARENT FLOOR CONDITIONS MUST BE MET PRIOR TO THE RF SHIELD INSTALLATION.  
IT IS THE GC/CUSTOMER/OWNERS RESPONSIBILITY FOR GETTING THE SITE TO MEET SPECIFICATION.  
ETS-LINDGREN INSTALLERS WILL INSPECT THAT THE SPECIFICATIONS HAVE BEEN MET AND WILL ACCEPT OR REJECT THE CONDITIONS TO BEGIN THE JOB BASED ON THOSE FINDINGS.

**SITE REQUIREMENTS**

**CONCRETE SLAB SPECIFICATIONS**

- CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF:
  - A. SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING ACI301
  - B. GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION ACI 302.1
  - C. SURFACE SHALL BE SOUND CONCRETE WHICH EXHIBITS A MINIMUM 100PSI PULLOUT STRENGTH.
- 1. ACI 302 CLASS 4 CONCRETE FLOOR.
- 2. TYPE PORTLAND CEMENT PER C150.
- 3. PARENT CONCRETE FLOOR MUST BE LEVEL WITHIN +/- 1/8". NOT TO EXCEED 1/4" ACROSS ENTIRE SCAN ROOM AREA AND/OR BE IN COMPLIANCE WITH MORE STRINGENT MAGNET VENDOR SPECIFICATIONS FOR SPECIALIZED ZONES UNDER MAGNET AND PATIENT TABLE (SEE MAGNET VENDOR SPECIFIC NOTES, SHEET RF3.1, IF APPLICABLE)
- 4. CONCRETE JOINTS/SEAMS MAY NEED SPECIAL TREATMENT AND NEED TO BE IDENTIFIED IN LOCATION AND PURPOSE. (IE: EXPANSION, CONTROL VIBRATION)
- 5. THE CONCRETE SLAB MUST BE FREE OF STANDING WATER AND/OR MOISTURE PRIOR TO INSTALLATION OF R.F. SHIELDING TO INSURE GROUND ISOLATION. FAILURE TO CONTROL THE MOISTURE MAY DETERIORATE THE GROUND ISOLATION CHARACTERISTICS. UPON ESTABLISHING SPECIFIED GROUND ISOLATION, IT IS THE RESPONSIBILITY OF THE OWNER OR OWNER'S REPRESENTATIVE TO INSURE GROUND ISOLATION IS MAINTAINED.
- 6. TEMPERATURE: MAINTAIN ROOM TEMPERATURE AT 68 DEGREES F FOR 48 HOURS BEFORE, DURING AND 48 HOURS AFTER INSTALLATION.

THE ABOVE CONCRETE SLAB SPECIFICATIONS IS THE MINIMUM REQUIREMENT FOR INSTALLATION OF A PANELIZED R.F. FLOOR SHIELD AND IS IN ADDITION TO ARCHITECTURAL CONCRETE SPECIFICATIONS.

**SURFACE PREPARATION**

SURFACE SHALL BE FREE OF ANY DELETERIOUS MATERIALS SUCH AS LAITANCE, DUST, DIRT, OIL AND MATERIALS RESULTING FROM SURFACE PREPARATION.  
THE CONCRETE SLAB SHALL BE FREE OF STANDING WATER AND/OR MOISTURE PRIOR TO INSTALLATION OF R.F. SHIELDING TO INSURE GROUND ISOLATION. FAILURE TO CONTROL THE MOISTURE MAY ADVERSELY AFFECT AND/OR DETERIORATE THE GROUND ISOLATION CHARACTERISTICS. UPON ESTABLISHING SPECIFIED GROUND ISOLATION, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSURE GROUND ISOLATION IS MAINTAINED.  
REMOVE ALL PROJECTIONS AND OTHER CONDITIONS, WHICH AFFECT THE INSTALLATION OF THE FLOORING.

**RF SHIELD FLOOR PANELS**

1. THE MODULAR FLOOR SYSTEM MUST NOT BE EXPOSED TO LIQUIDS OF ANY SORT, ie:(WATER, COFFEE, LIQUID CLEANER, ETC.) LIQUID WILL DEGRADE THE SHIELDING PROPERTIES IF EXPOSED TO THE MODULAR PANELS.
  2. THERE MAY BE ADDITIONAL FLOOR PREP REQUIRED BY THE CUSTOMER ON THE MODULAR TYPE RF FLOOR SYSTEMS BEFORE FINISH FLOORING IS APPLIED.
- THIS FLOOR SYSTEM CONSISTS OF METAL LAMINATED WOOD PANELS WHICH ARE CLAMPED TOGETHER. FILLER TILE IS PLACED BETWEEN THE CLAMPS TO LEVEL OUT THE FLOOR SURFACE.  
TYPICAL INSTALLATIONS REQUIRE THE GC/FLOORING CONTRACTOR TO PUT A "FLASH-PATCH" MATERIAL TO FILL S MALL CRACKS OR VOIDS TO PROVIDE A BETTER SURFACE TO INSTALL THE FINISH FLOORING PRODUCT.  
THE FLASH-PATCH MATERIAL MUST NOT CAUSE MOISTURE PROBLEMS WITH THE RF FLOOR. USE A PRODUCT SIMILAR TO **ARDEX SD-F FEATHER FINISH**.  
NO POURING OF ANY SUBSTRATE FOR LEVELING PURPOSES, CRACK TROWEL FILL ONLY.

**FLOOR LEVELNESS CHART: (48"x48" GRID)**

GC TO VERIFY FLOOR LEVELNESS. READING SHOULD BE RECORDED USING LASER LEVEL AND RESULTS TO BE RECORDED ON THIS SHEET AND RETURNED TO ETS-LINDGREN.



USE ELECTRONIC VERSION TO ASSURE LATEST REVISION

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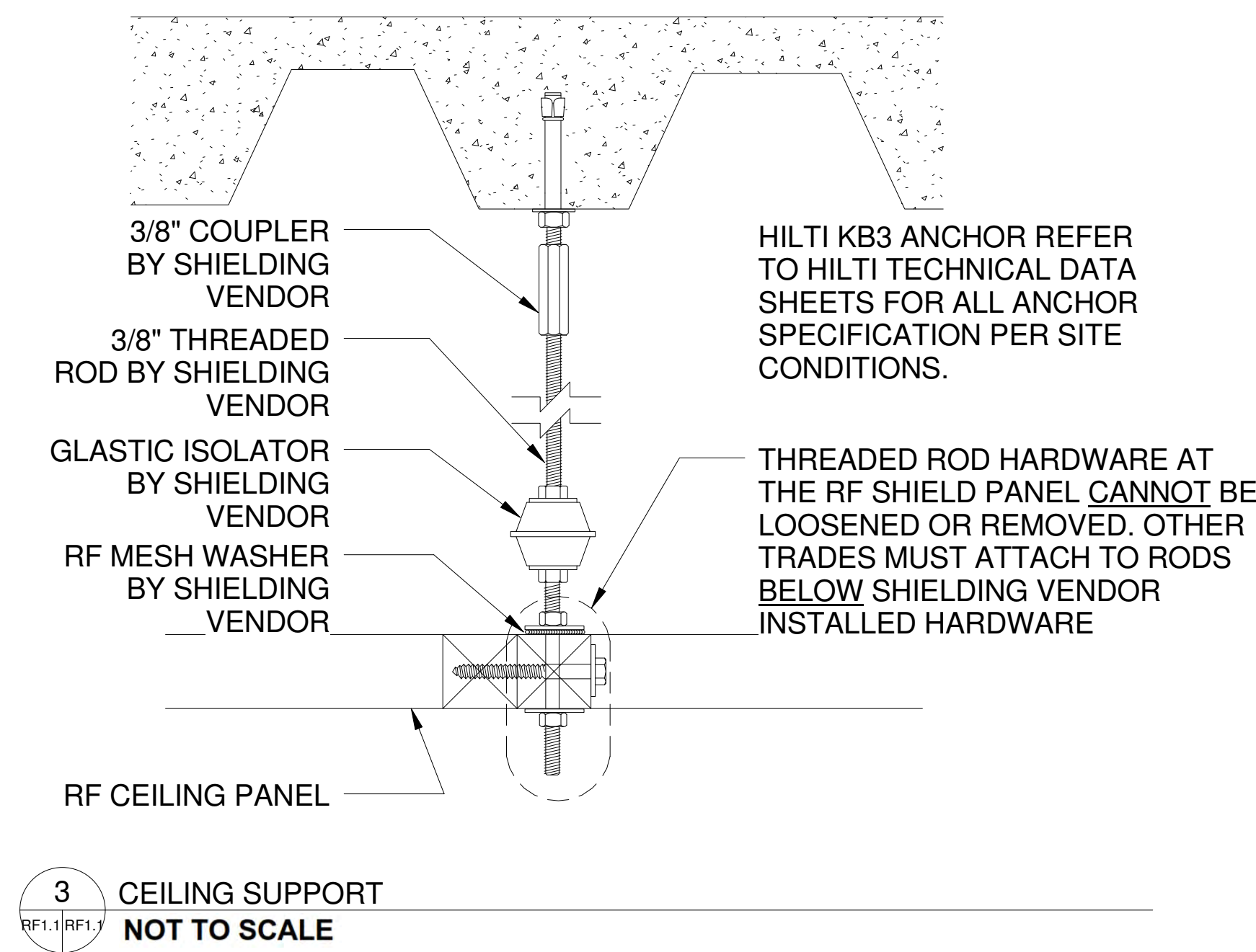
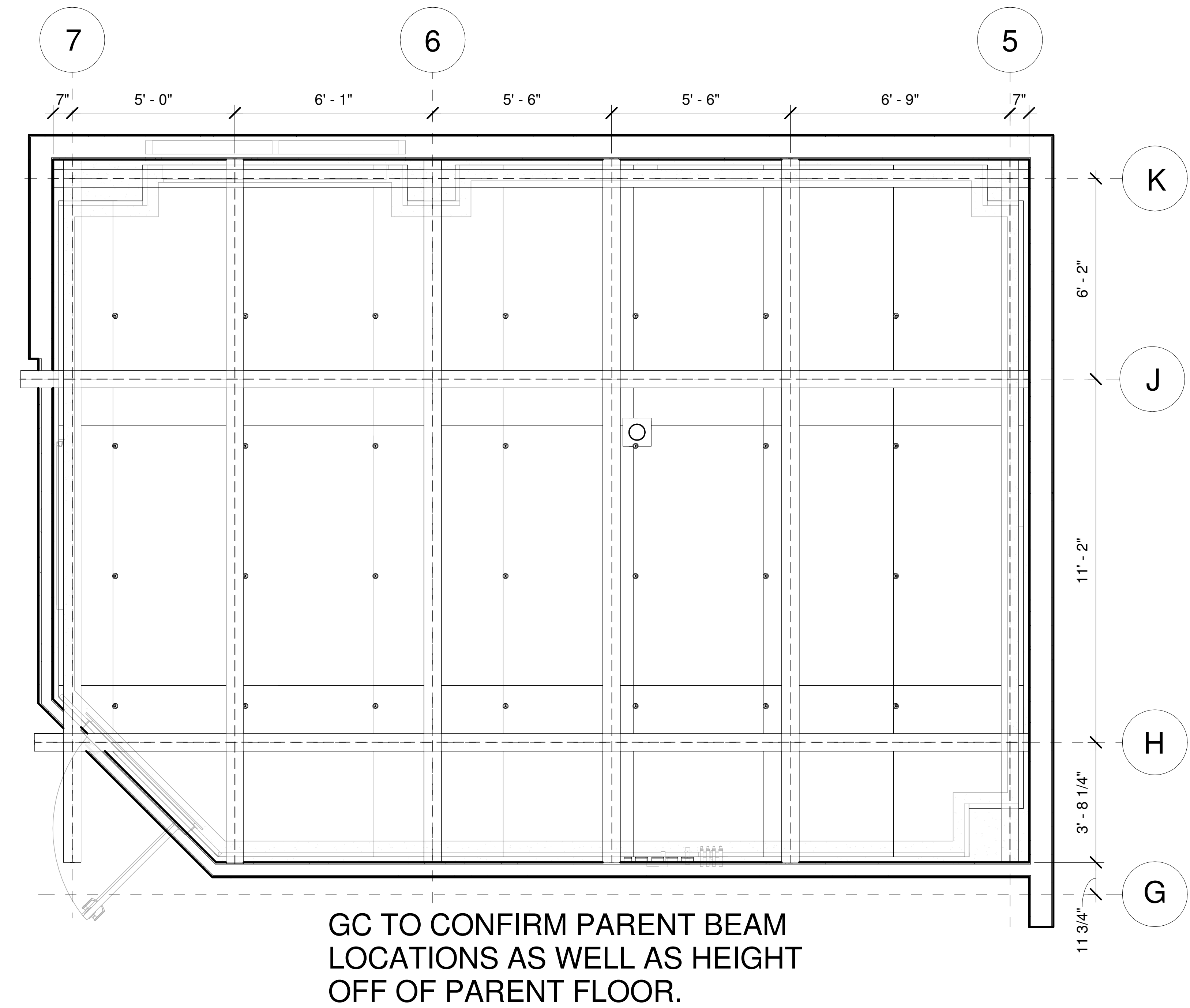
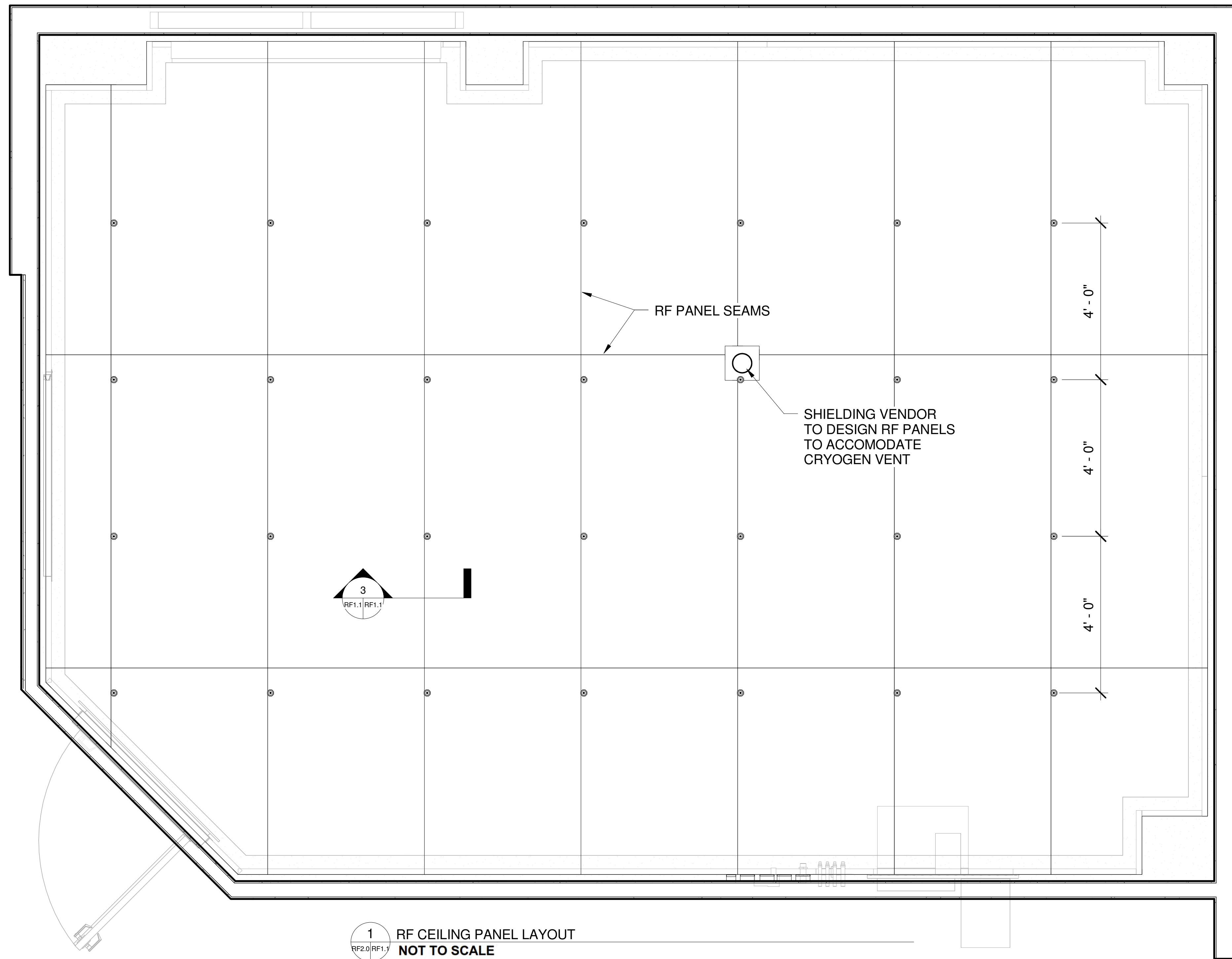
PROJECT TITLE: **BROCKTON VA HOSPITAL**  
ADDRESS: **BROCKTON, MA**

DRAWN BY: **Author**  
DATE: **2/9/16**  
SCALE: **NOT TO SCALE**

JOB NO: **MD61434** REV:

DRAWING NO: **RF1.0**

TYPICAL RF CEILING PANEL AND THREADED ROD LAYOUT



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**ADDRESS:** BROCKTON, MA

**DRAWN BY:** Author  
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**SCALE:** As indicated

**JOB NO:** MD61434  
**REV:**

**DRAWING NO:** RF1.1



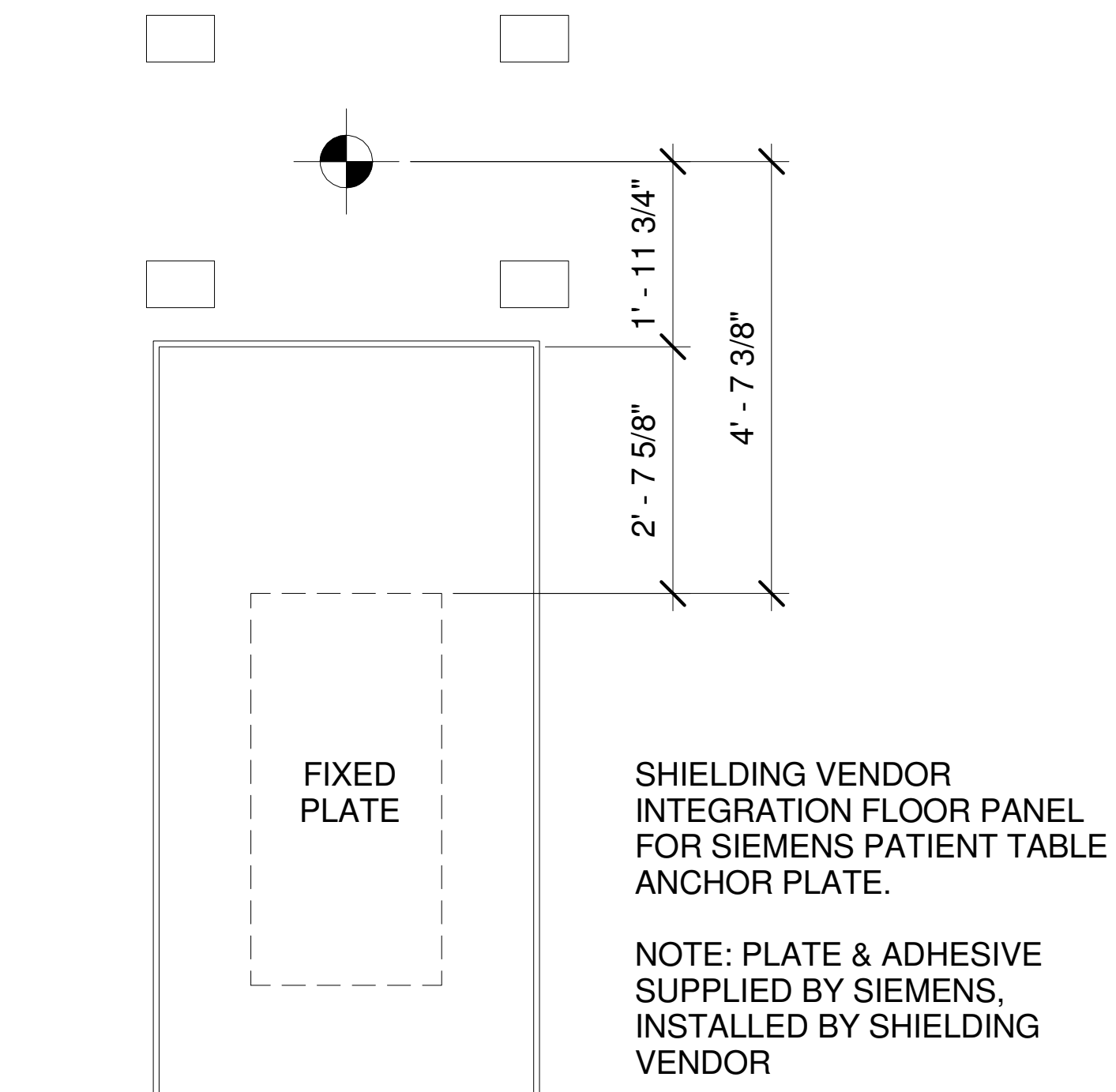
NOTES:  
1. GC TO FIELD VERIFY ALL PARENT ROOM DIMENSIONS.

2. FINAL R.O. FOR PENETRATION PANEL TO BE COORDINATED WITH MAGNET VENDOR DRAWINGS.

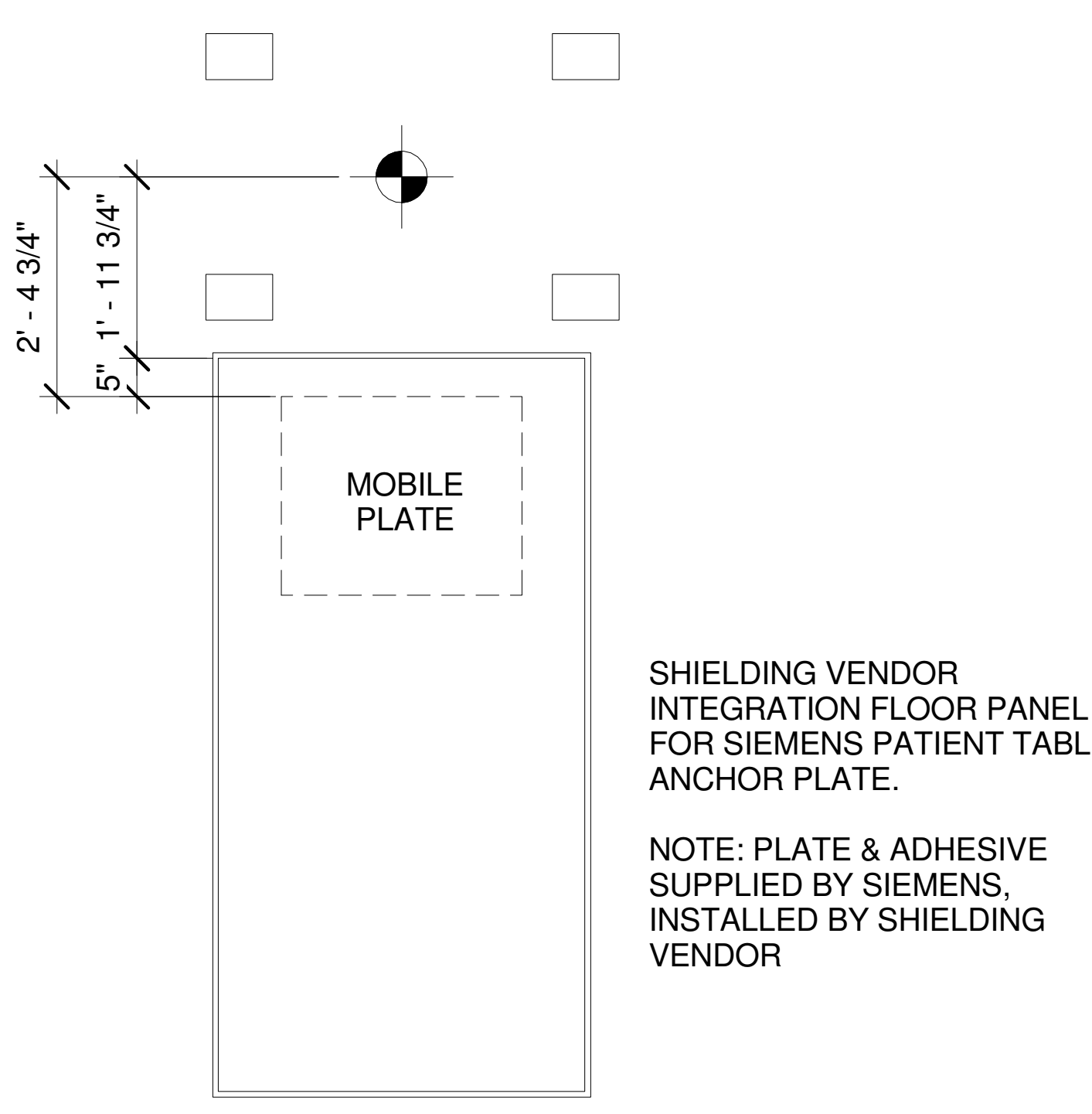
3. 20" x 29" CEILING HATCH IS FOR PRESSURE RELIEF AND ACCESS ABOVE SHIELD. NO DUCTWORK IS ATTACHED TO THIS ITEM.

4. INSTALLERS NOTE: MAGNET ANCHORS, PADS, BRACKETS, CRYOGEN VENT LOCATIONS TO BE LOCATED ON SITE WITH VENDOR DRAWINGS BY THE G.C.

5. SEE MAGNET VENDOR SPECIFIC NOTES, SHEET RF3.1, (IF APPLICABLE).



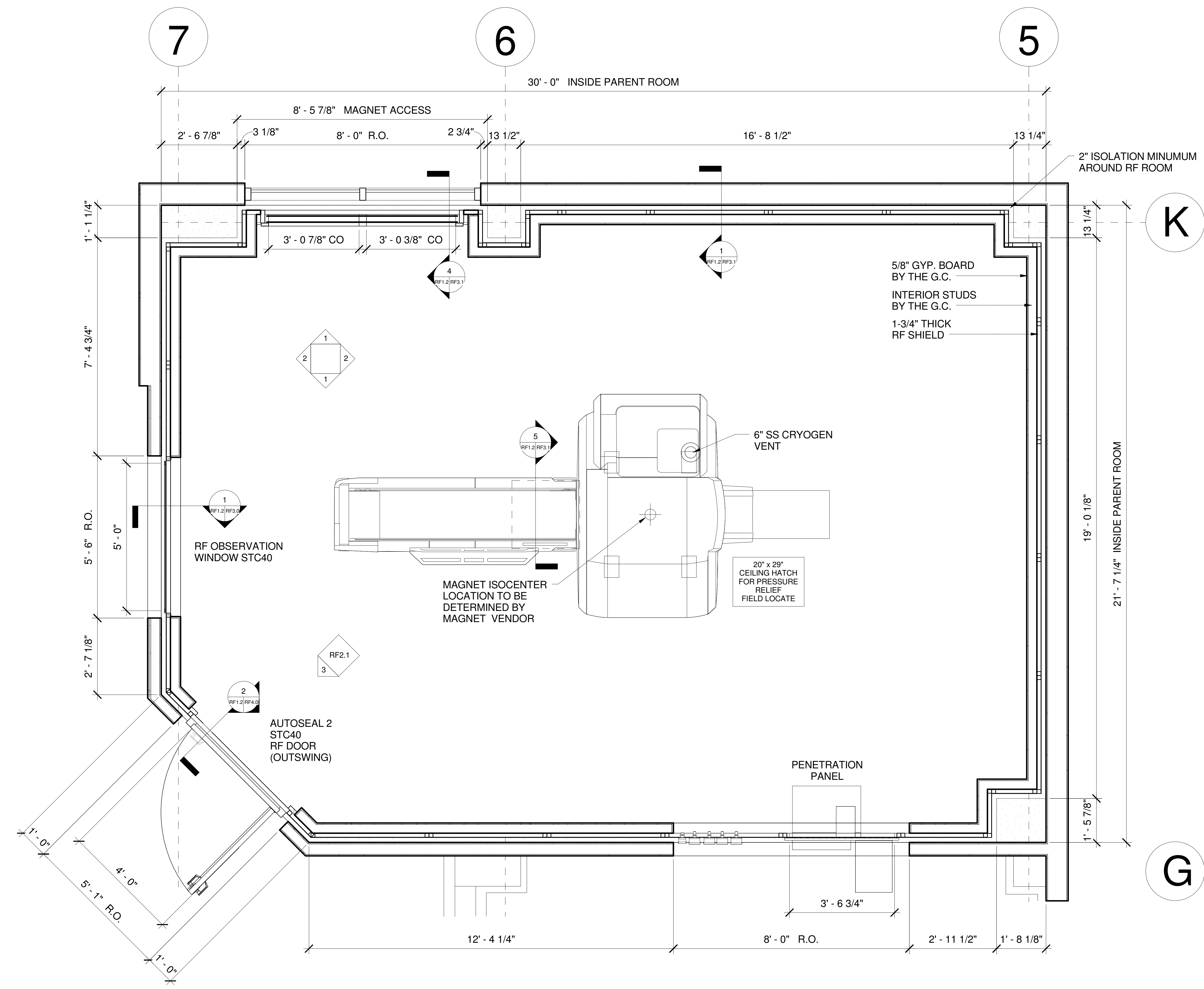
2 SIEMENS 1.5T AERA FIXED PATIENT TABLE PAD LOCATION  
NOT TO SCALE



3 SIEMENS 1.5T AERA MOBILE PATIENT TABLE PAD LOCATION  
NOT TO SCALE

SHIELDING VENDOR RF SHIELD ACOUSTIC RATING	
	STC RATING
COPPER WALL (ONLY)	14
COPPER WALL + MINERAL WOOL	19
COPPER WALL + INTERIOR STUD WALL & GYP BOARD FINISH	40
COPPER WALL + MINERAL WOOL + INTERIOR STUD WALL & GYP BOARD FINISH	46

CONTACT YOUR SHIELDING VENDOR SALES OR PROJECT MANAGER FOR THE MINERAL WOOL ACOUSTIC DAMPENING OPTION.



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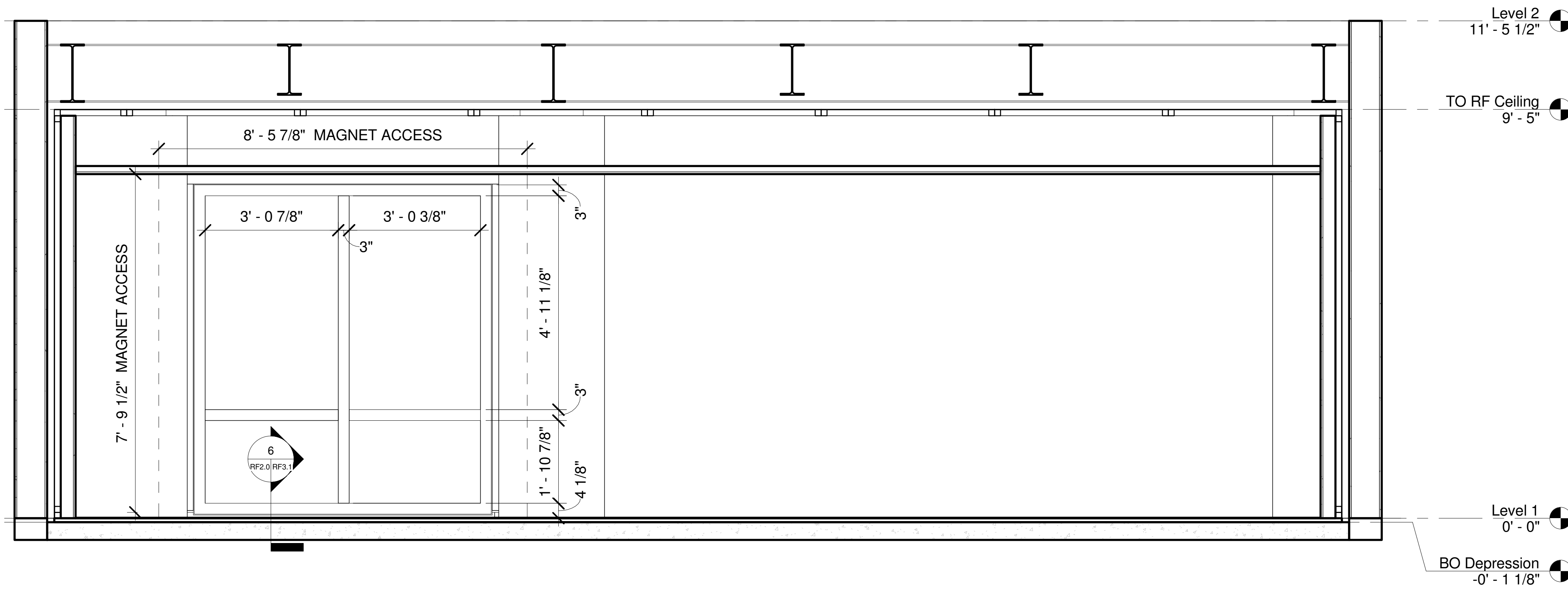
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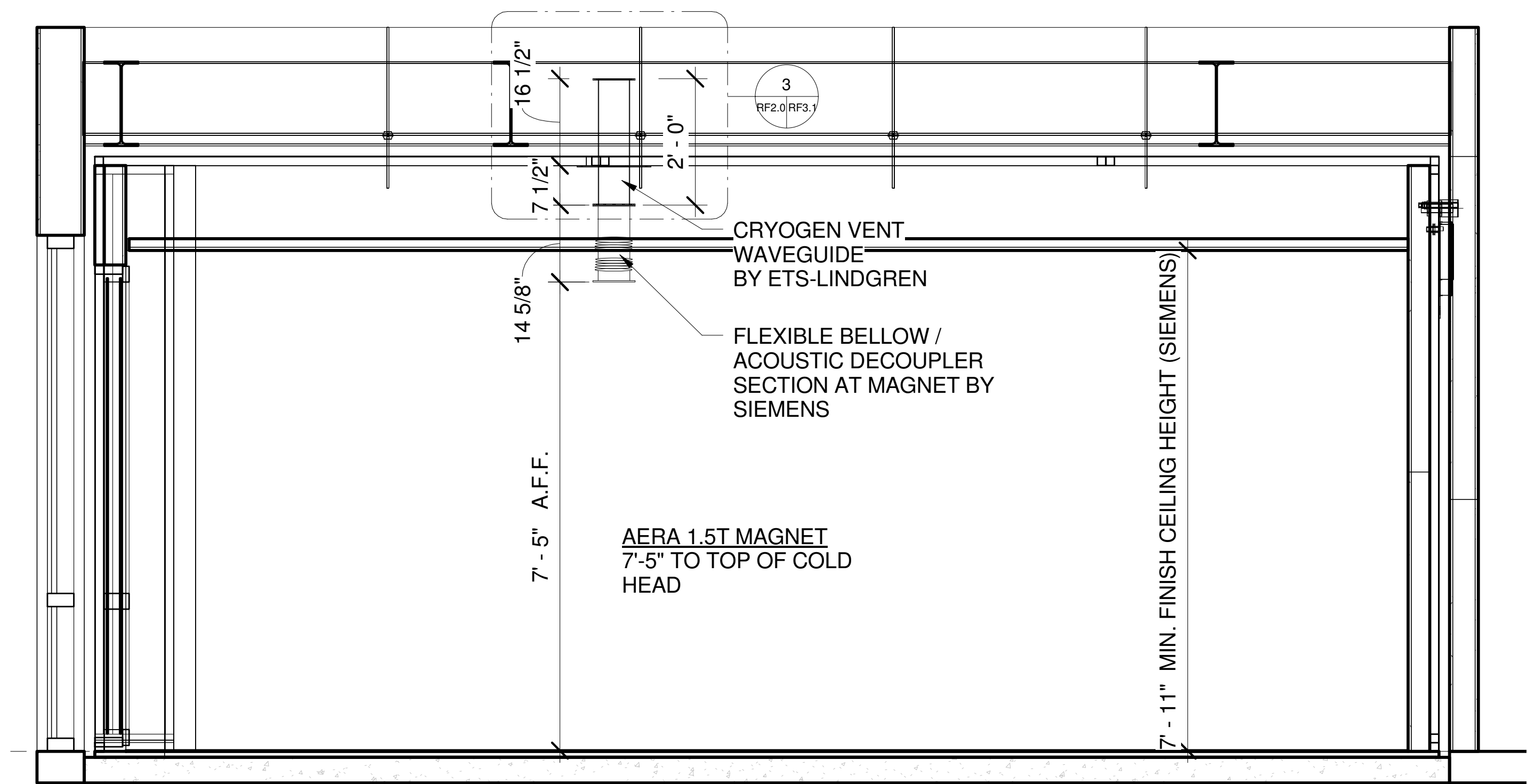
**REV:**

**DRAWING NO:** RF1.2





1 Inside Elevation NORTH  
RF1.2/RF2.0  
NOT TO SCALE



2 Inside Elevation EAST  
RF1.2/RF2.0  
NOT TO SCALE

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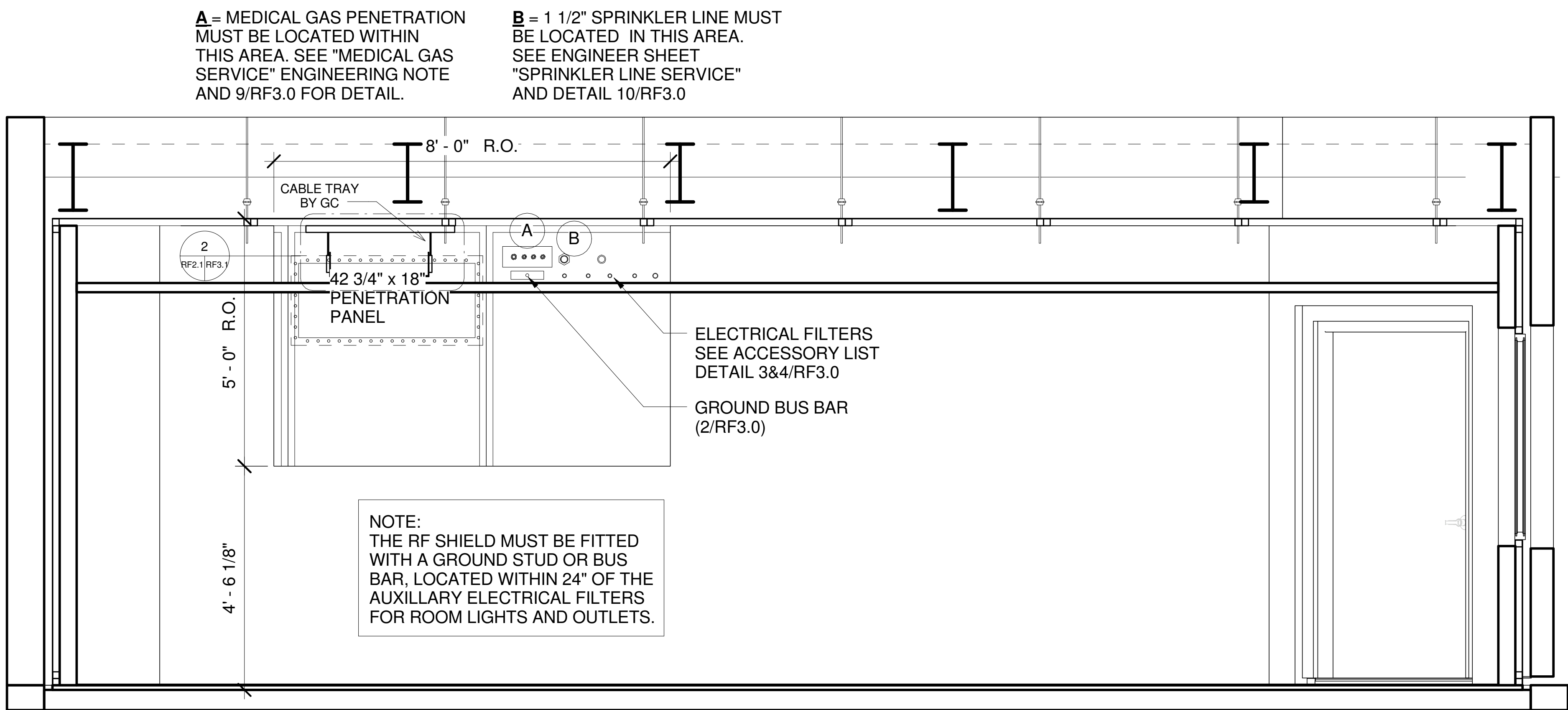
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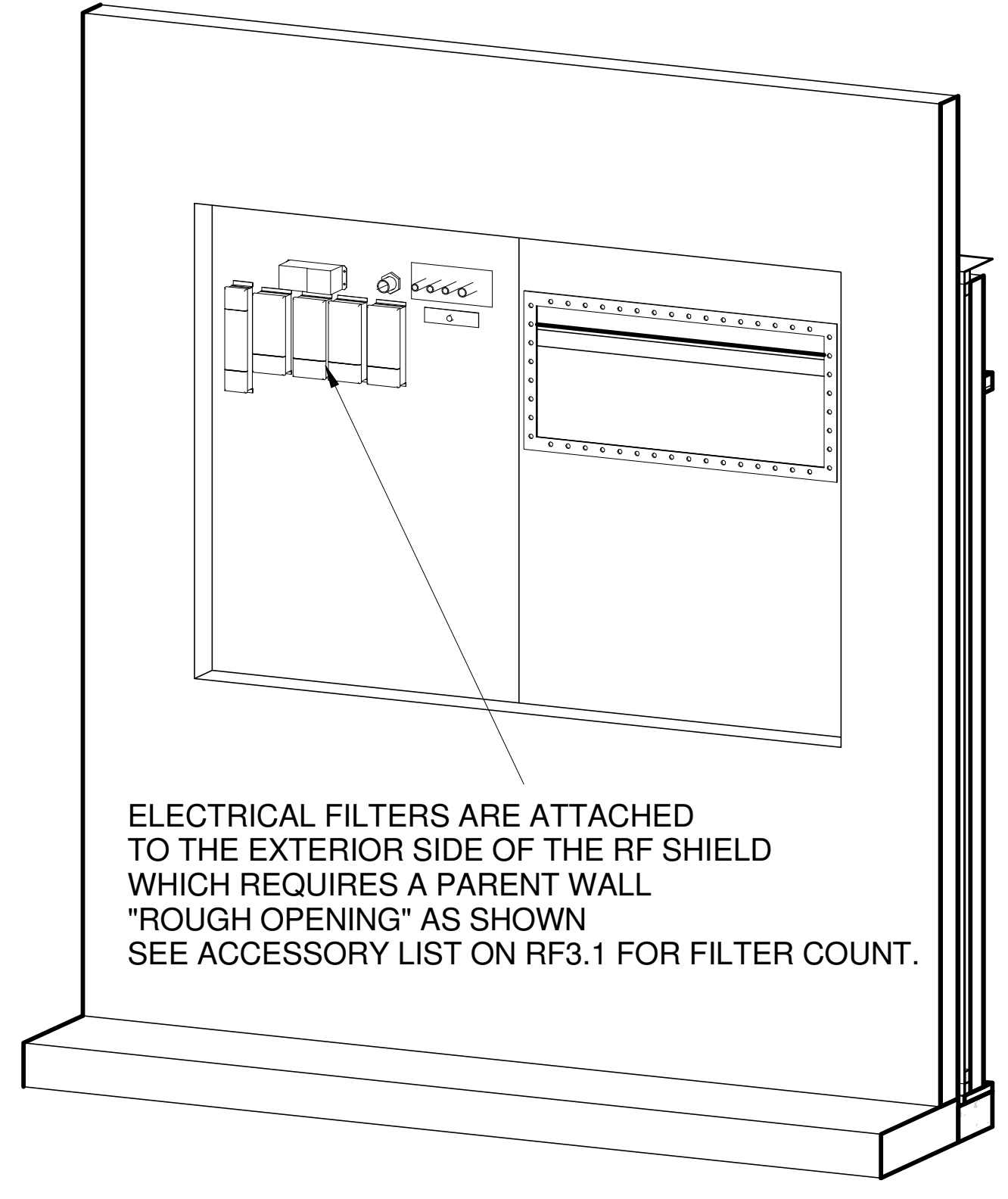
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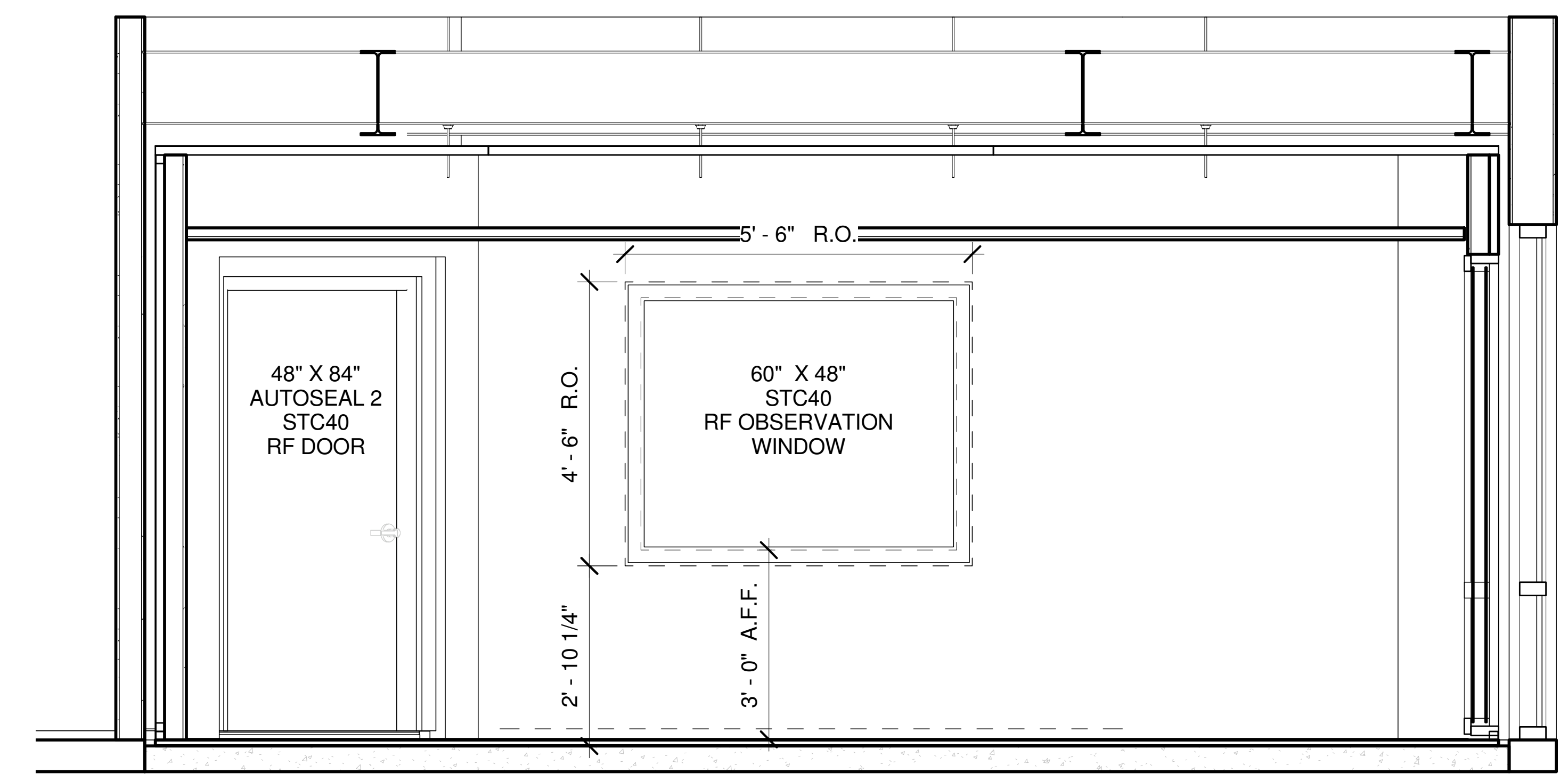
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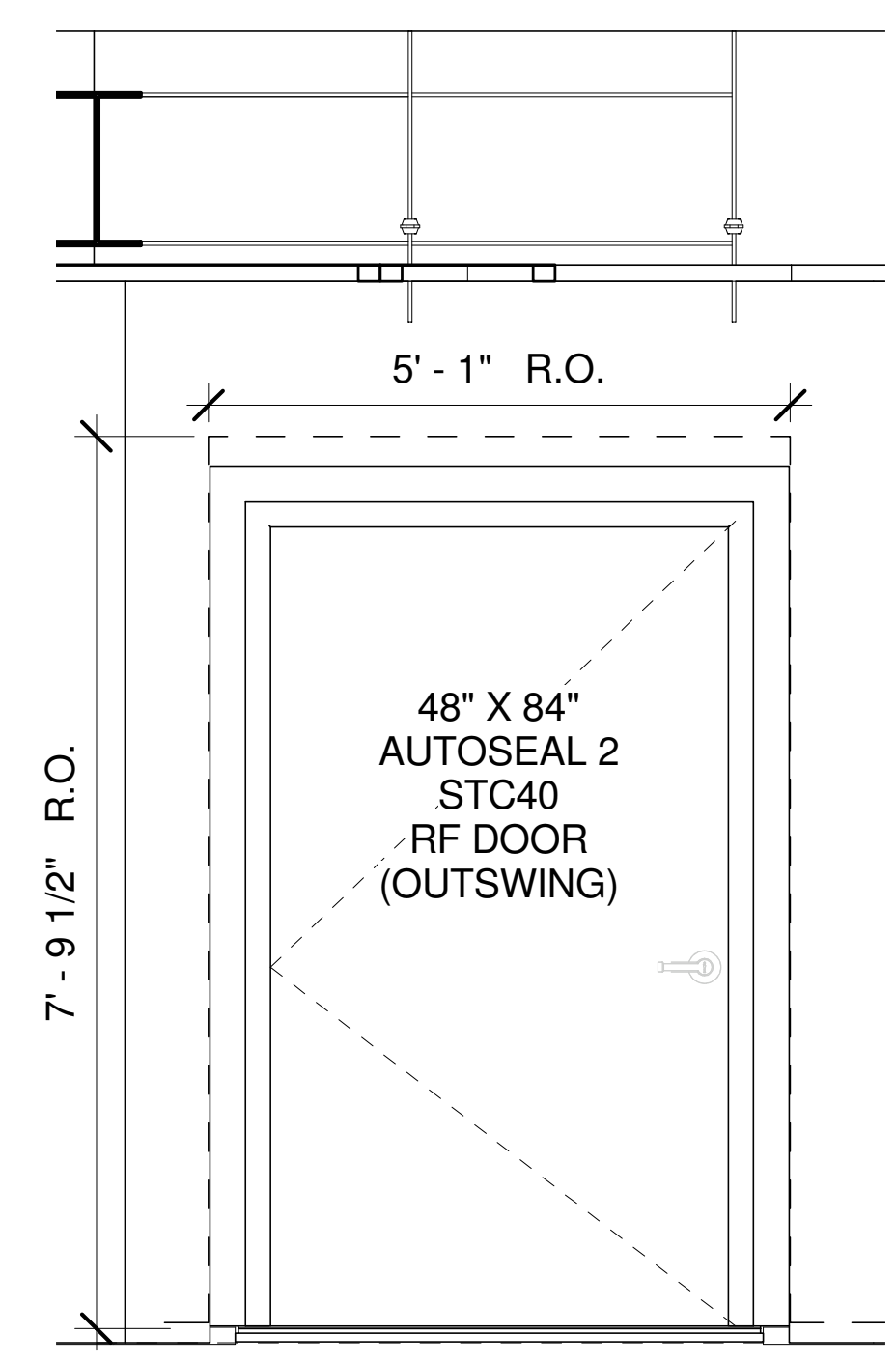
1 Inside Elevation SOUTH  
NOT TO SCALE



4 3D EXTERIOR PEN PANEL



2 Inside Elevation WEST  
NOT TO SCALE



3 Inside Elevation DOOR  
NOT TO SCALE

ELEVATIONS

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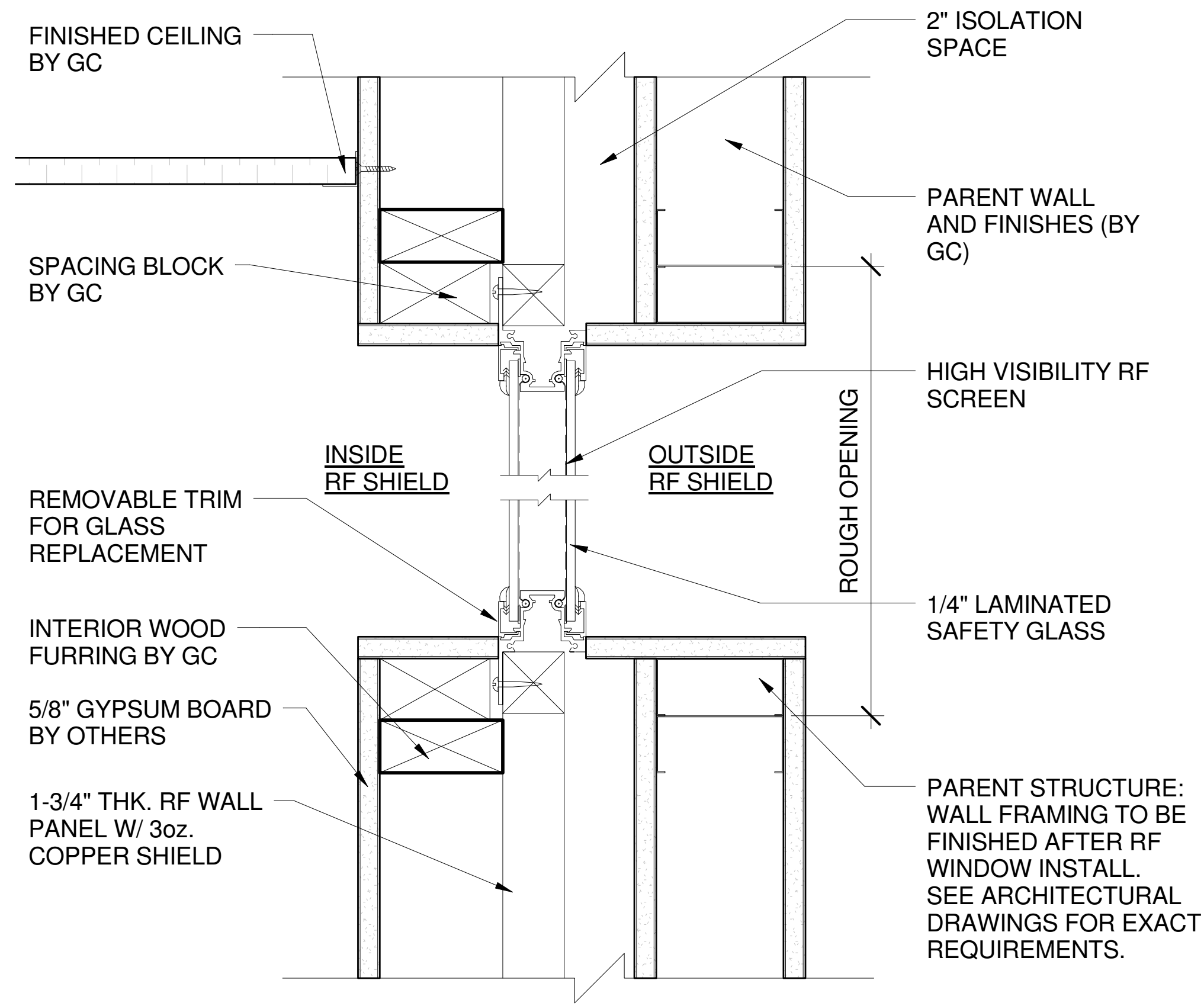
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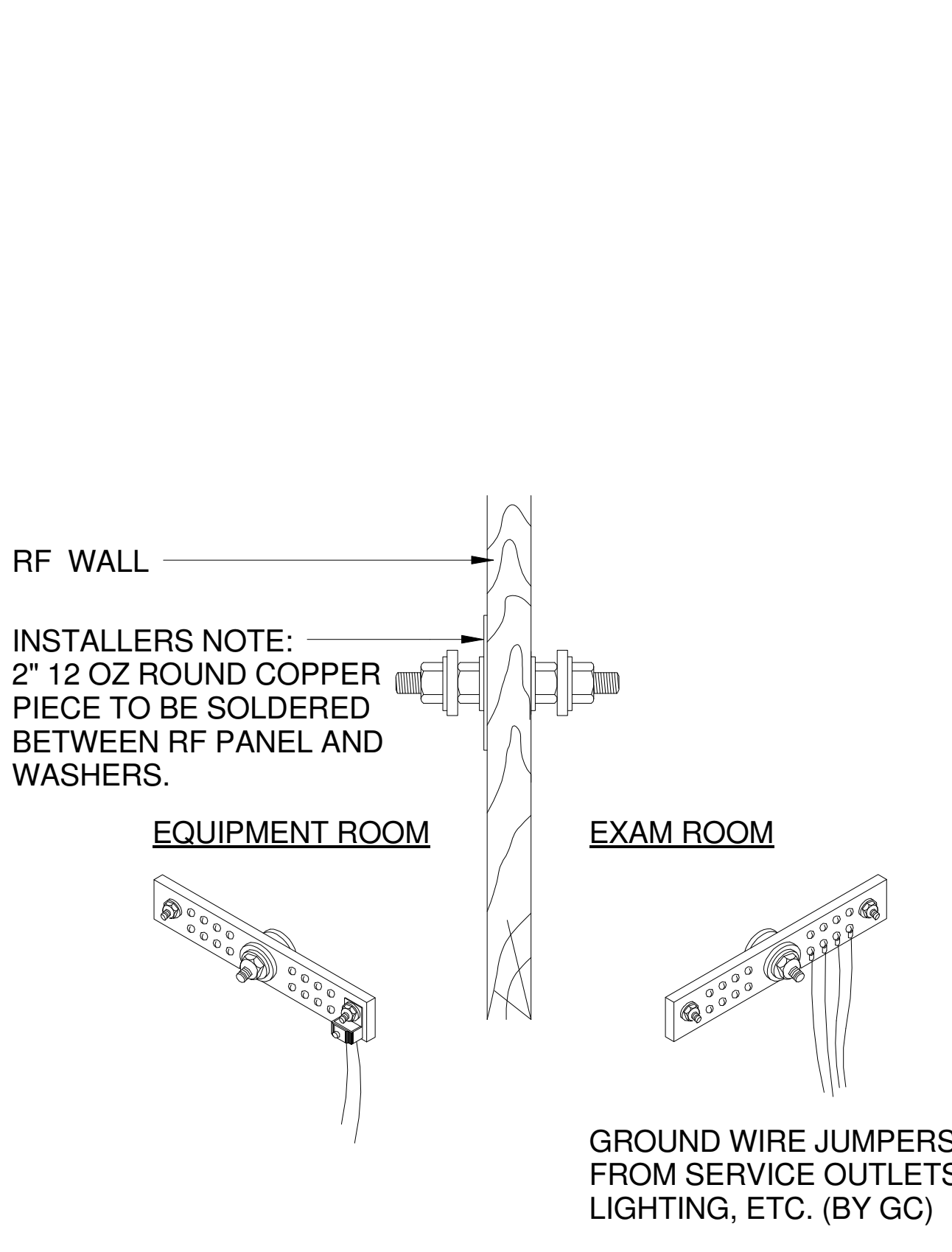
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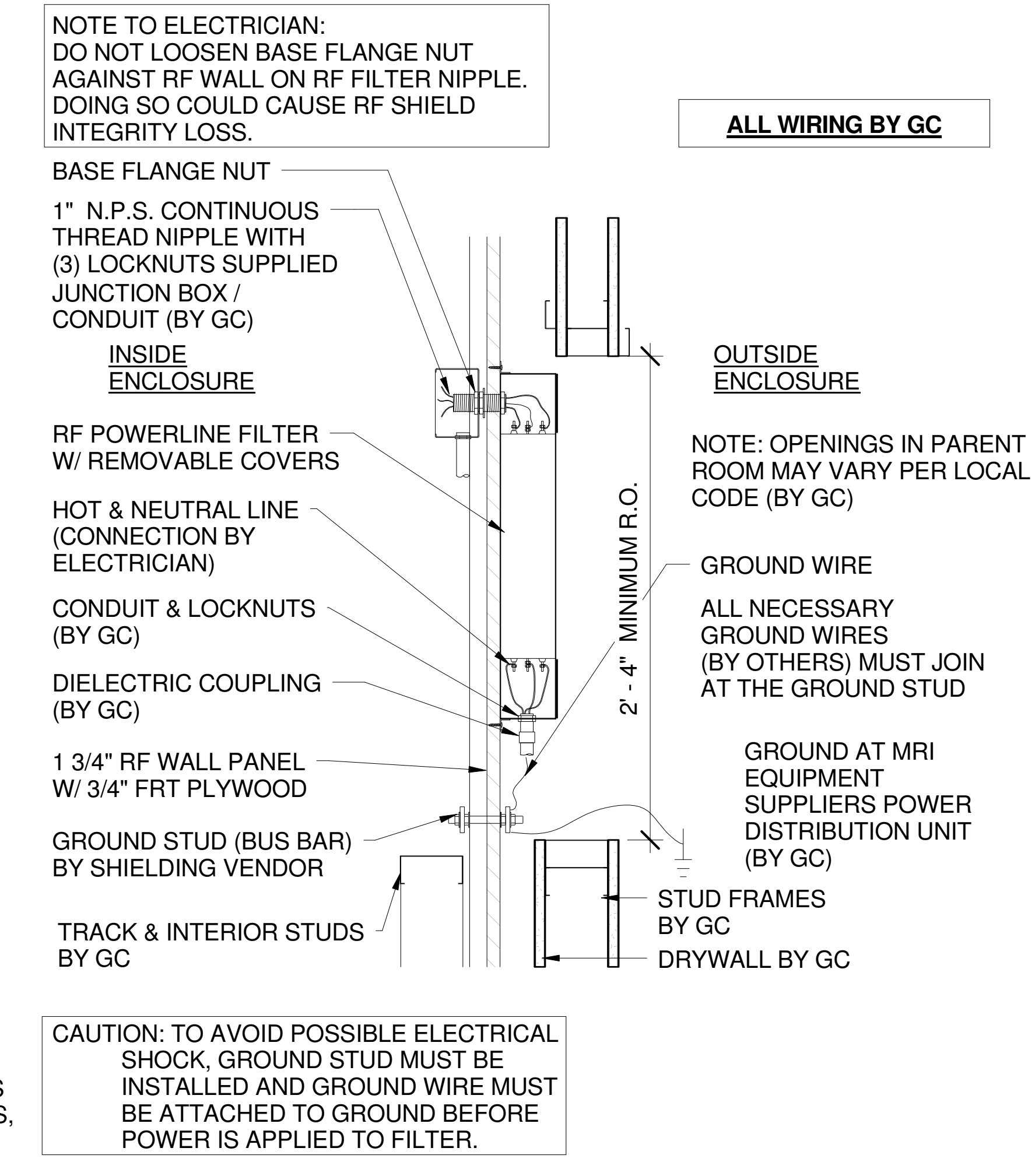




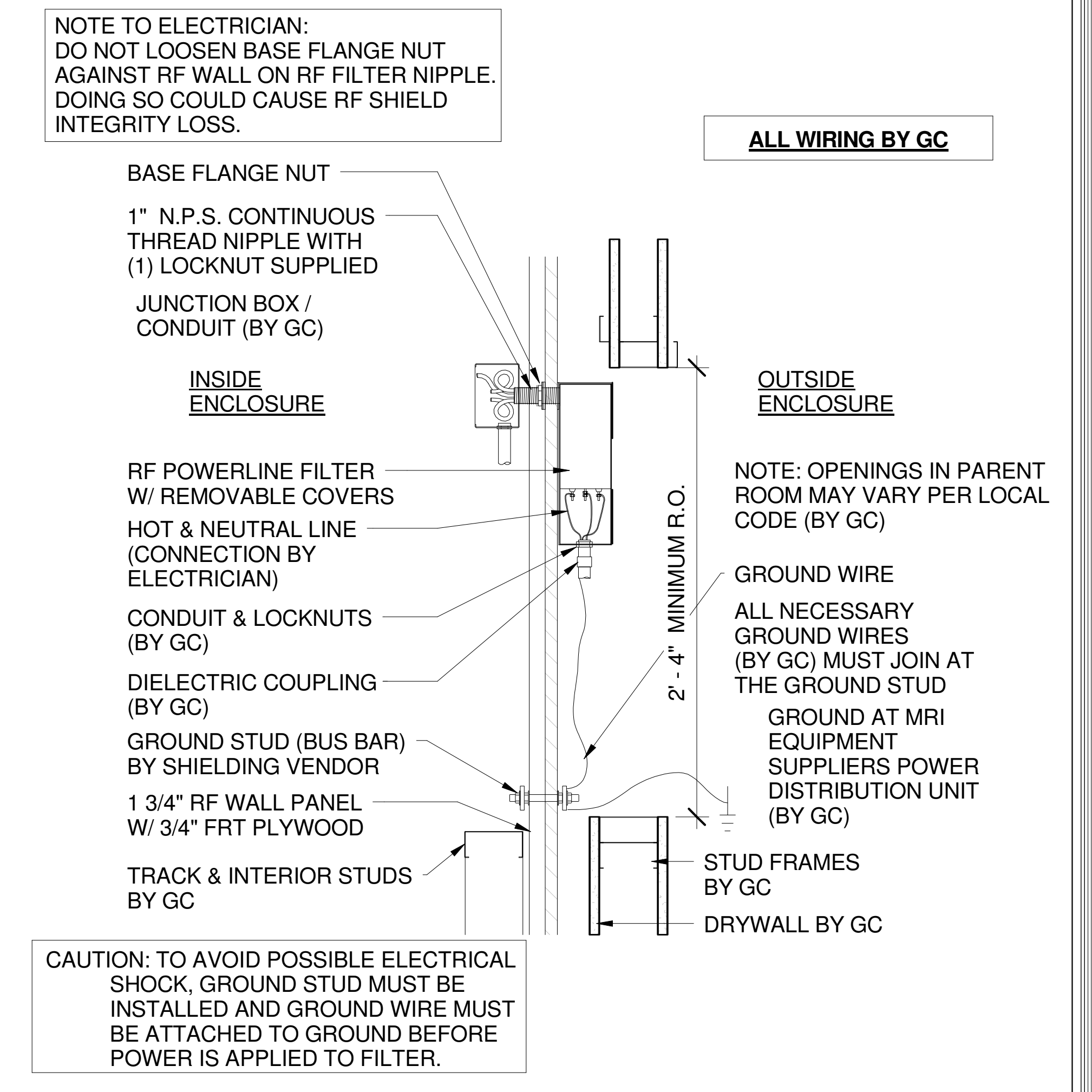
1 RF OBSERVATION WINDOW (copper wall)  
NOT TO SCALE



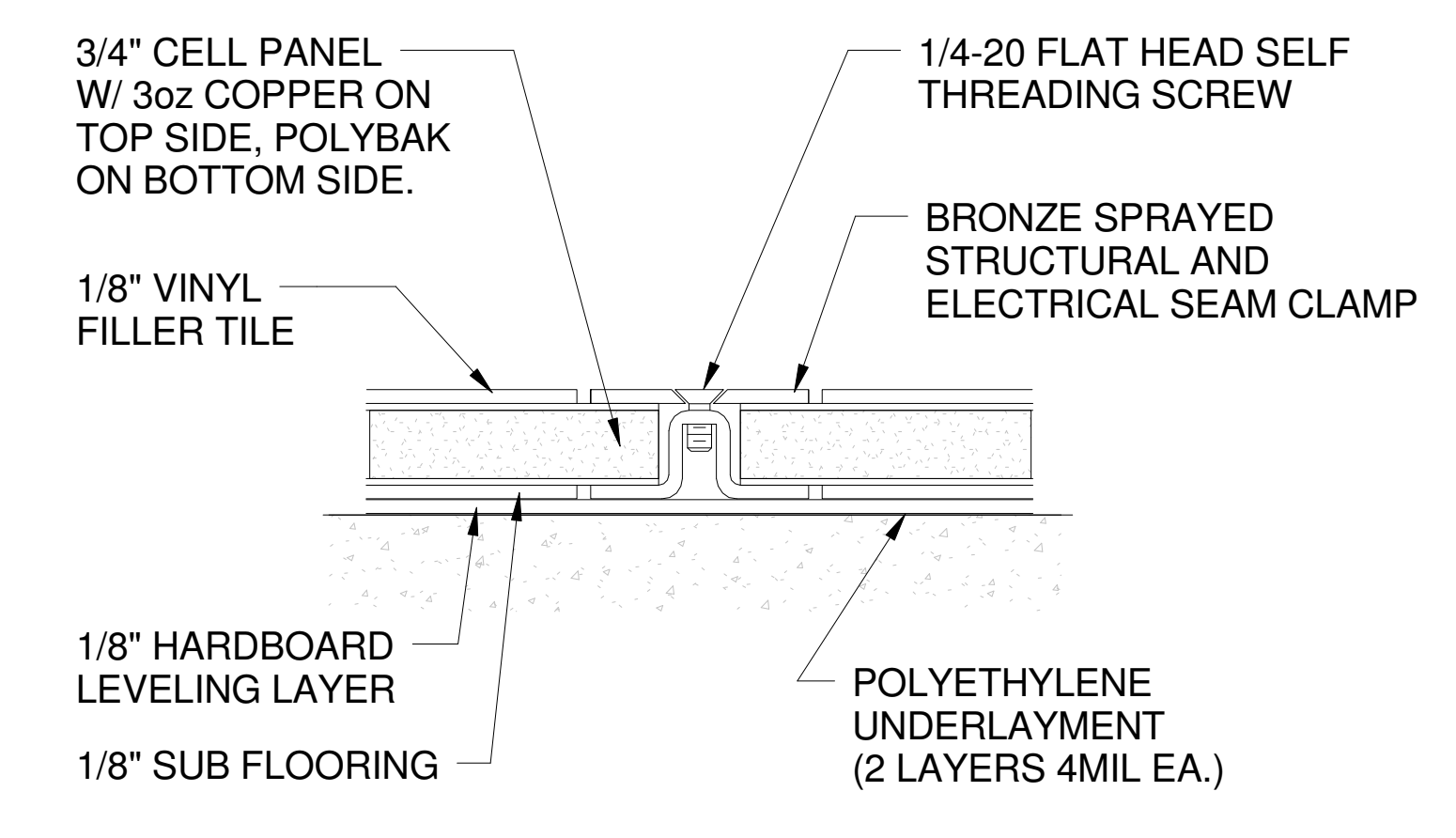
2 GROUND BUSBAR DETAIL  
NOT TO SCALE



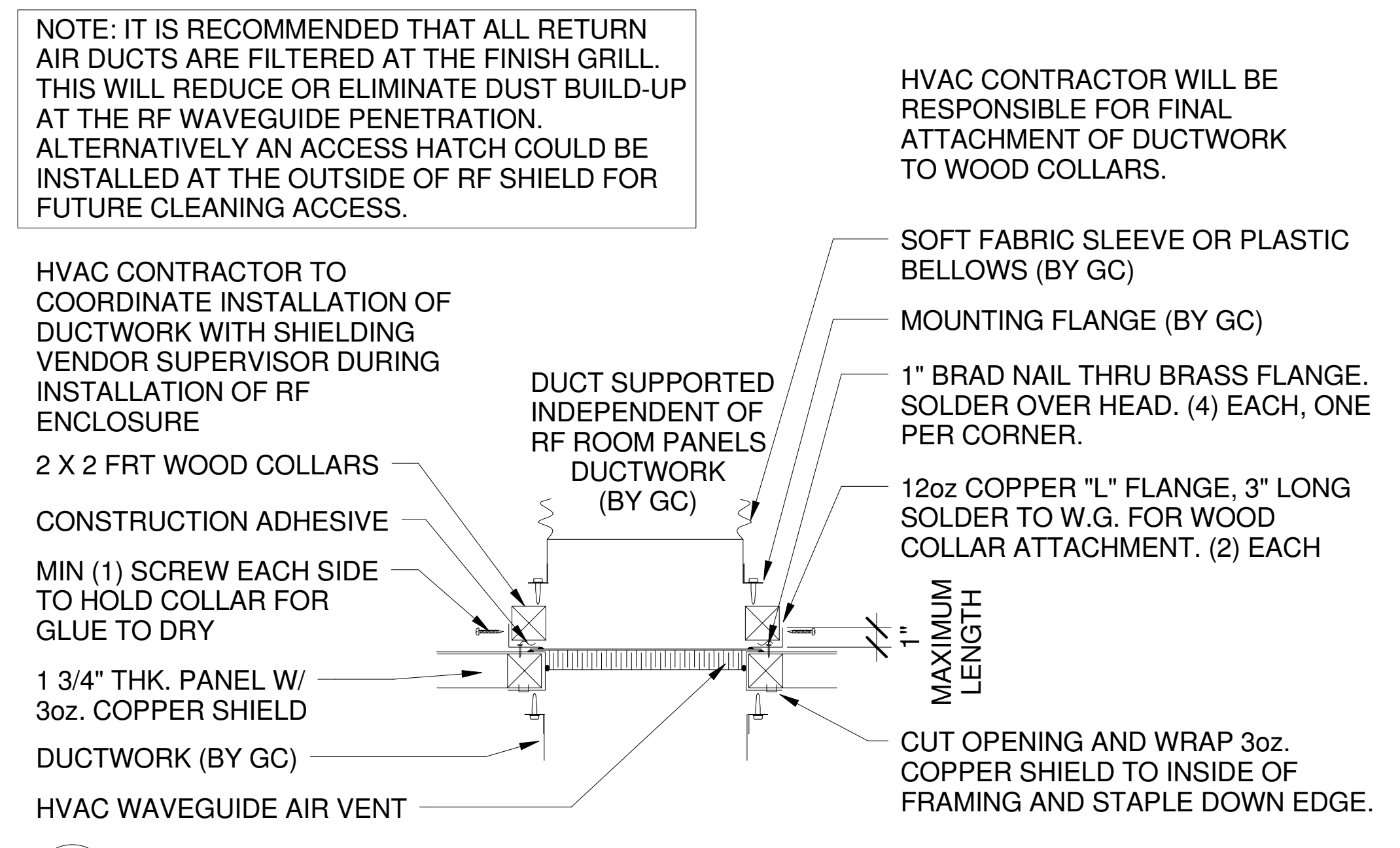
3 RF ELECTRICAL POWER FILTER "ELUL / EQ" DETAIL  
NOT TO SCALE



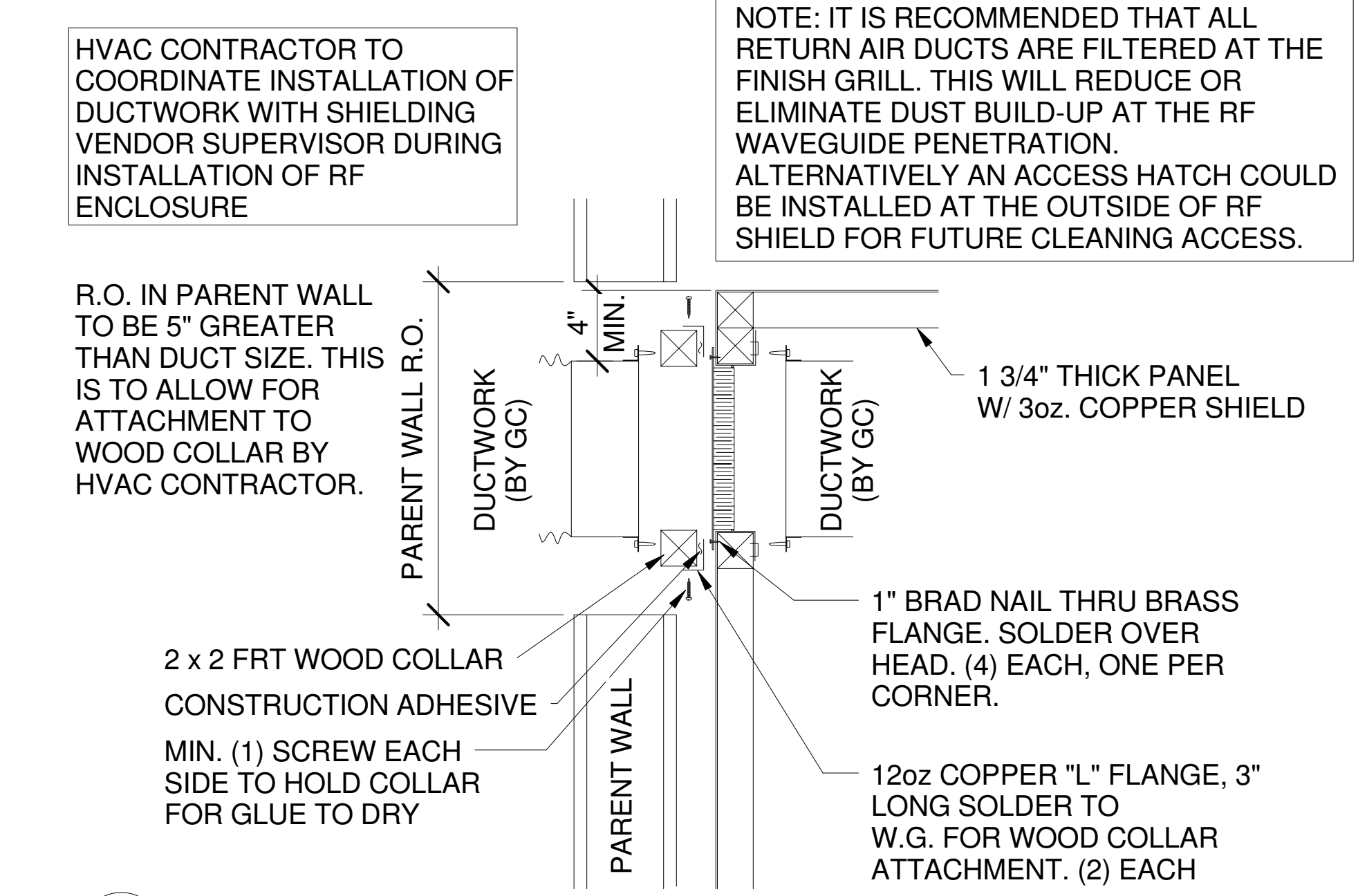
4 RF ELECTRICAL POWER FILTER "LMF" DETAIL  
NOT TO SCALE



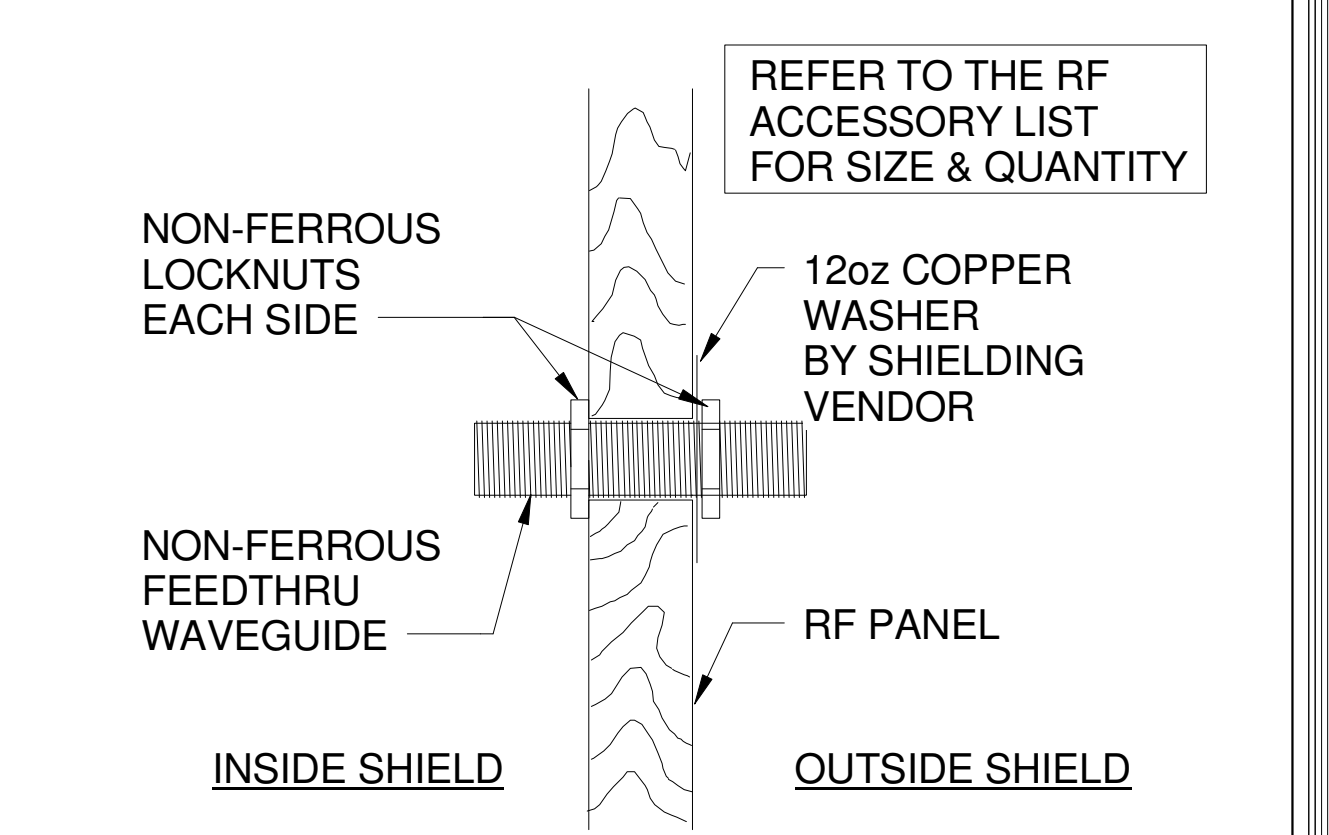
5 FLOOR SYSTEM MODULAR CELL  
NOT TO SCALE



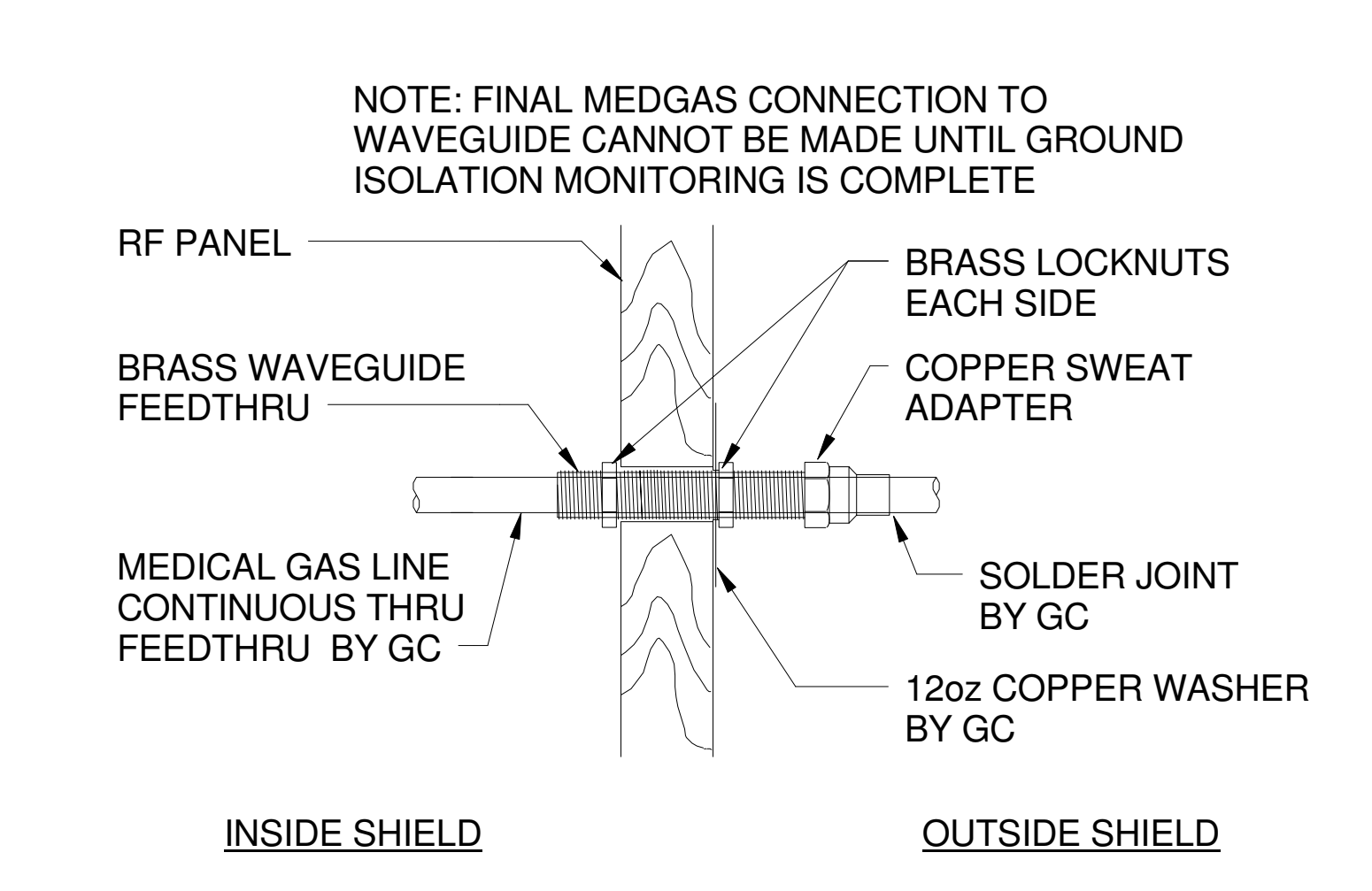
6 WAVEGUIDE AIRVENT CEILING PENETRATIONS (copper)  
NOT TO SCALE



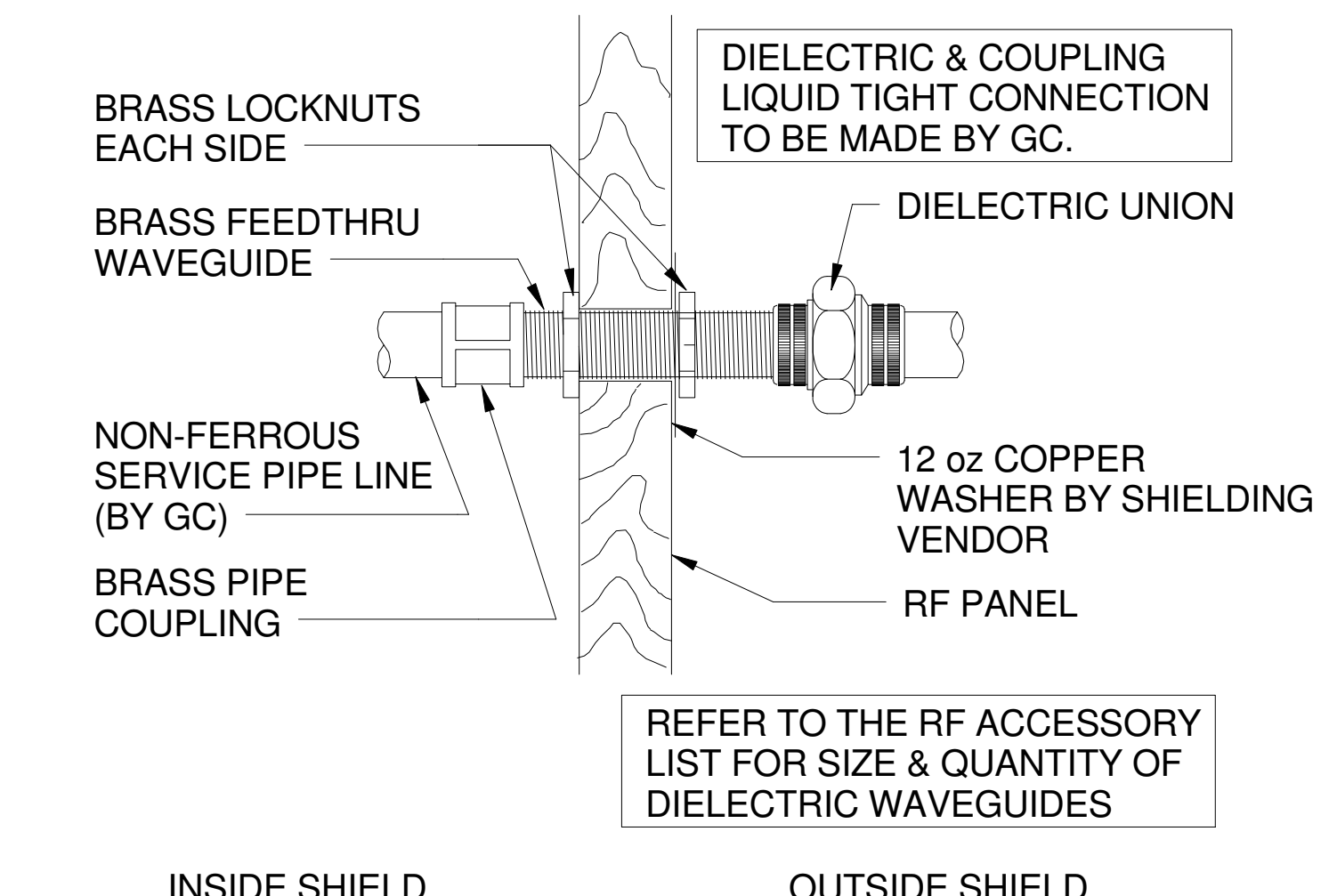
7 WAVEGUIDE AIRVENT WALL PENETRATIONS (copper)  
NOT TO SCALE



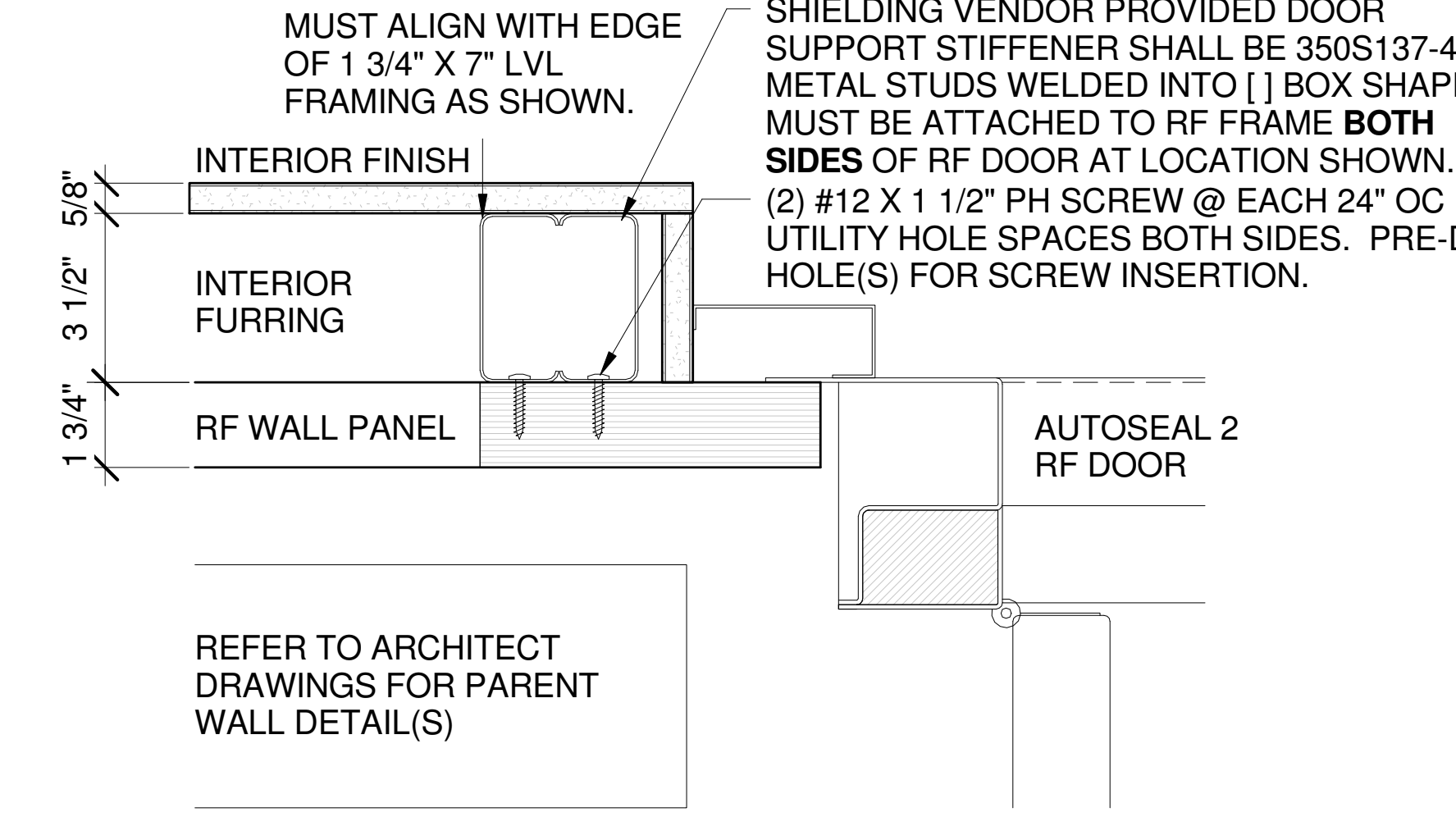
8 WAVEGUIDE FEEDTHRU  
NOT TO SCALE



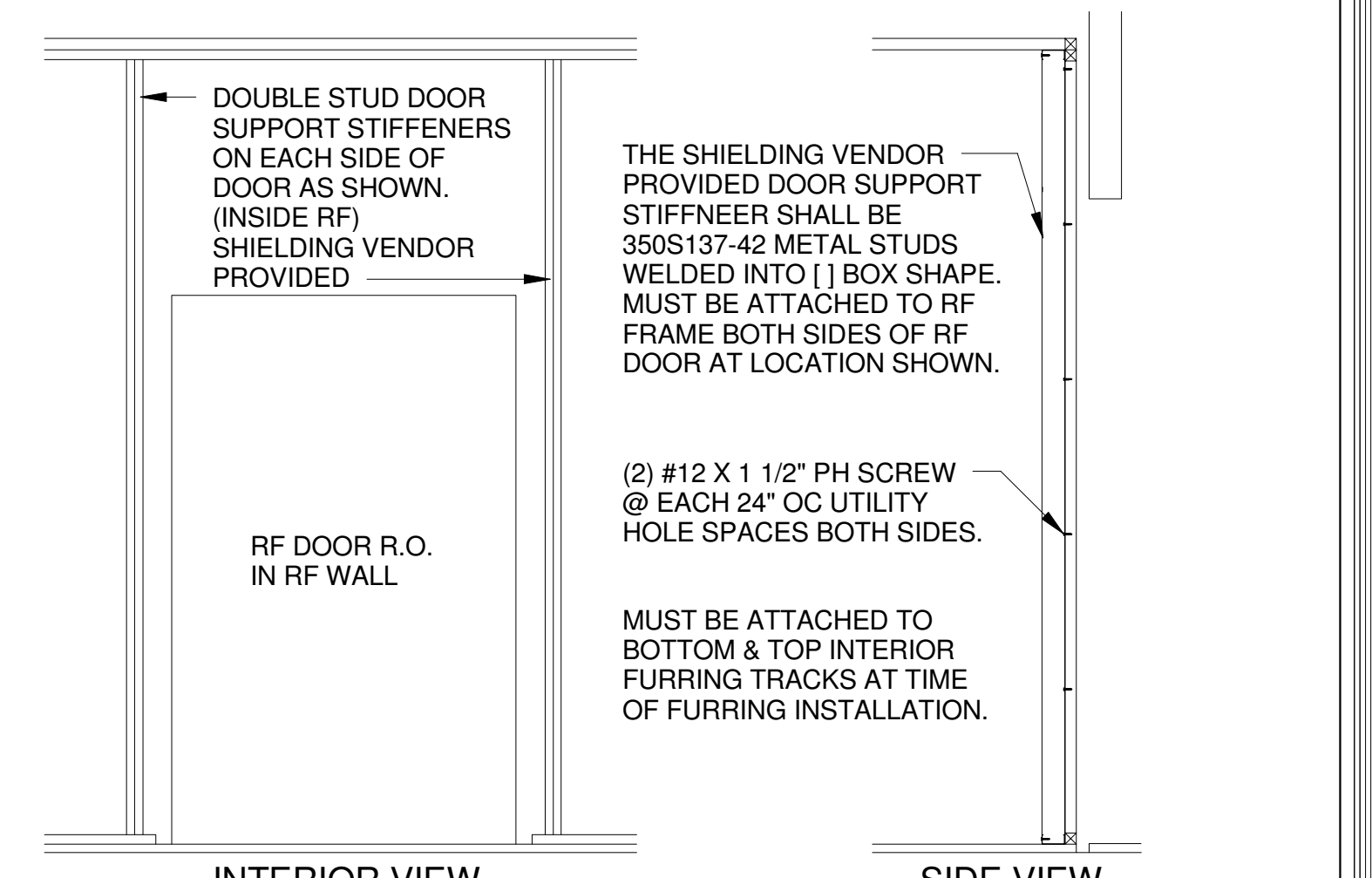
9 WAVEGUIDE MEDGAS PENETRATION (no dielectric)  
NOT TO SCALE



10 WAVEGUIDE DIELECTRIC  
NOT TO SCALE



11 DOOR STIFFENER OUTSWING AS2 RF DOOR (copper wall)  
NOT TO SCALE



12 DOOR STIFFENER (copper wall)  
NOT TO SCALE

USE ELECTRONIC VERSION TO ASSURE LATEST REVISION

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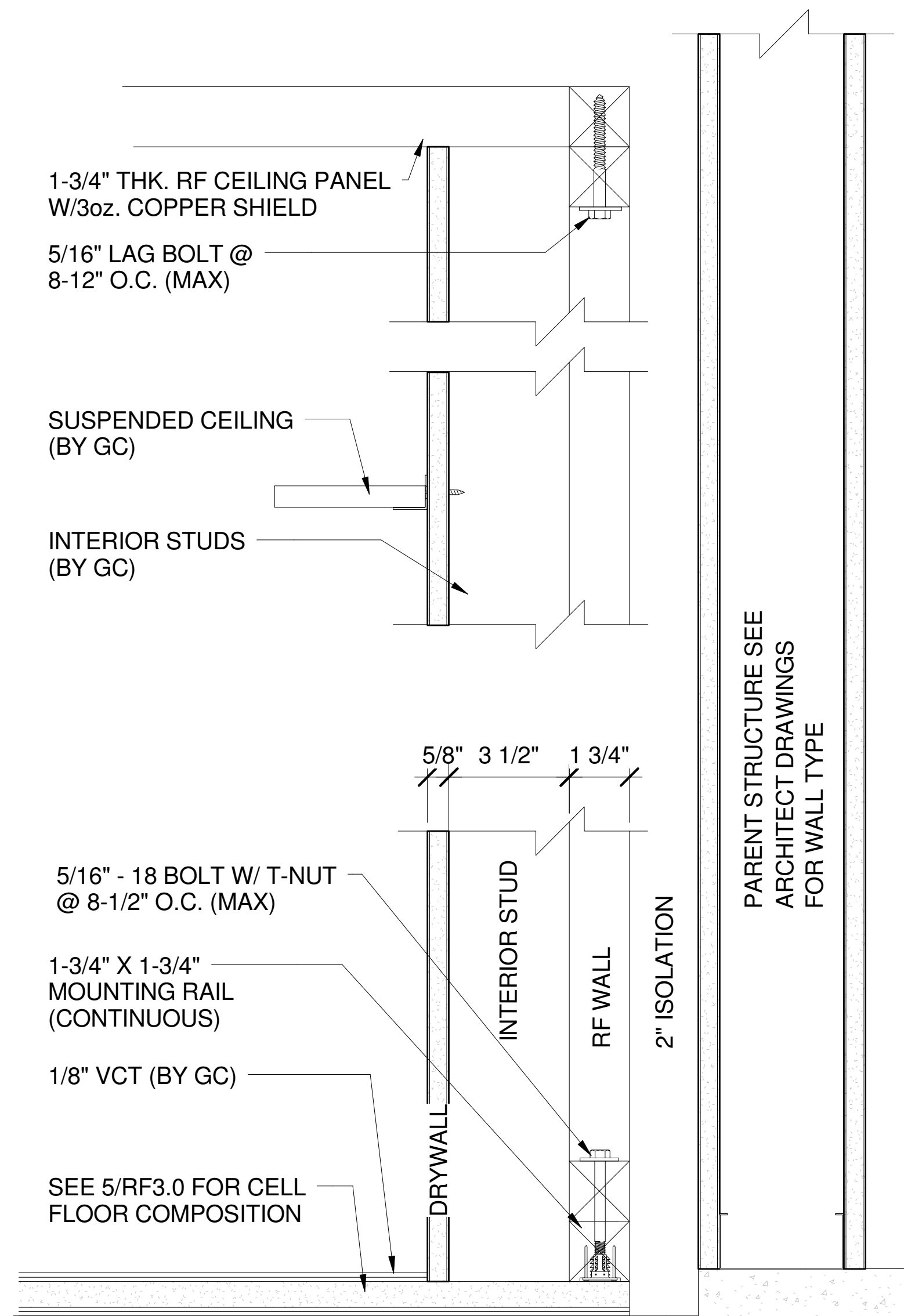
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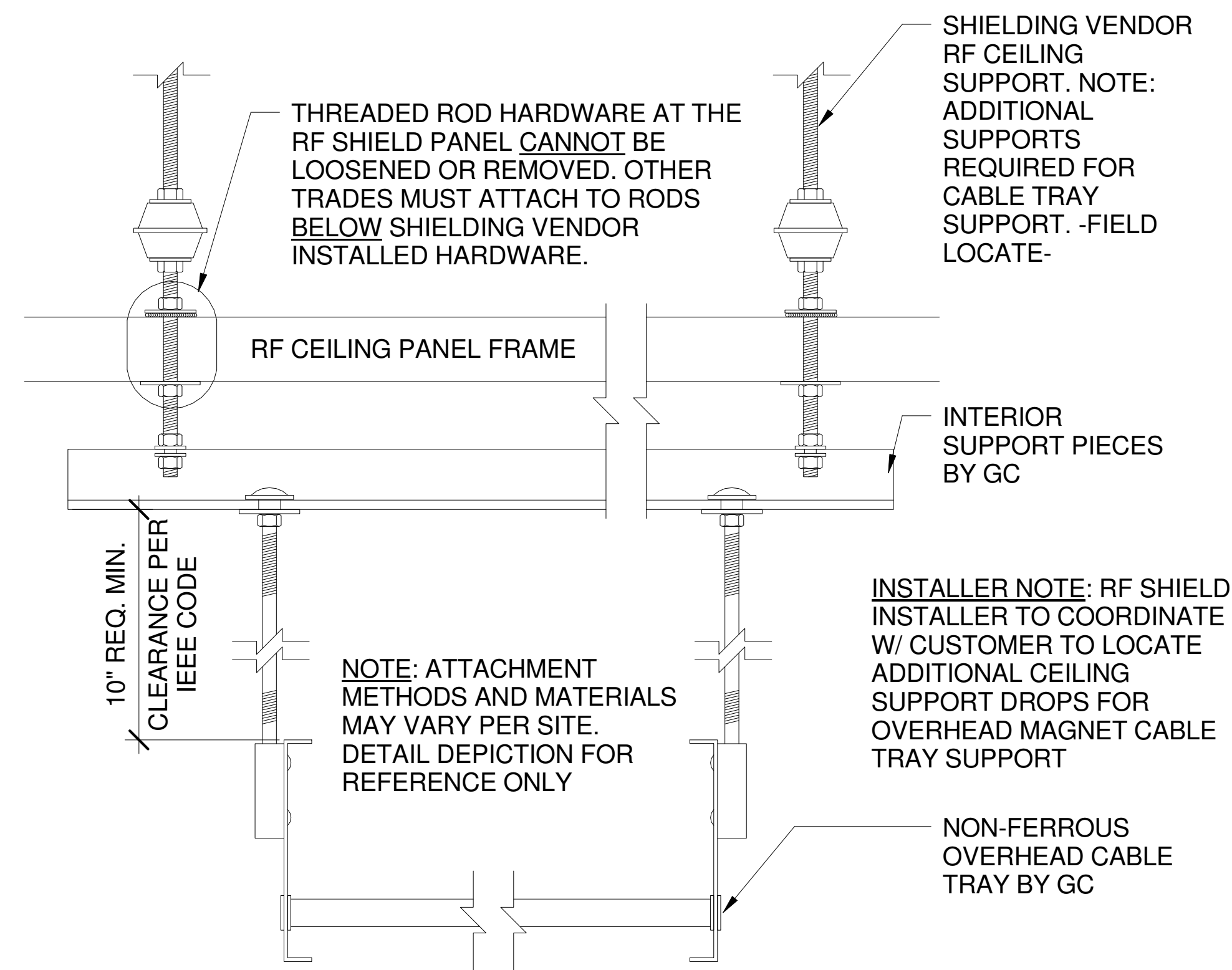
JOB NO: **MD61434**

REV:

DRAWING NO: **RF3.0**

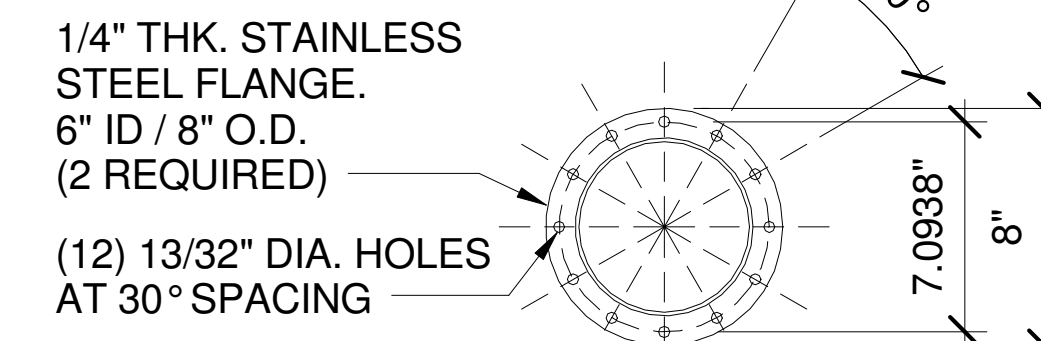


1 WALL SECTION (copper wall - cell floor, 3 1/2" stud)  
RF1.2/RF3.1  
**NOT TO SCALE**

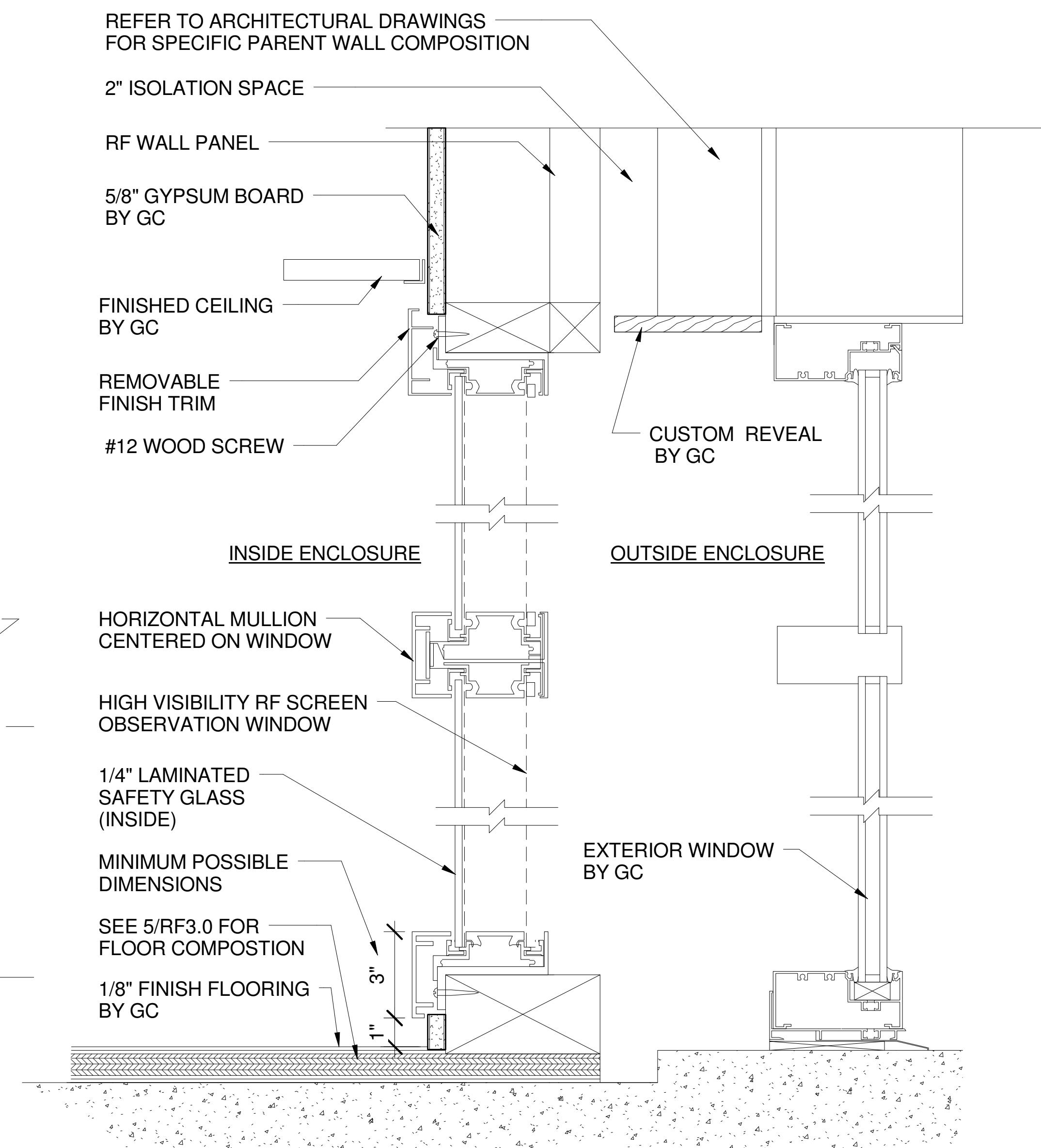


2 CABLE TRAY SUPPORT DETAIL (copper ceiling)  
RF2.1/RF3.1  
**NOT TO SCALE**

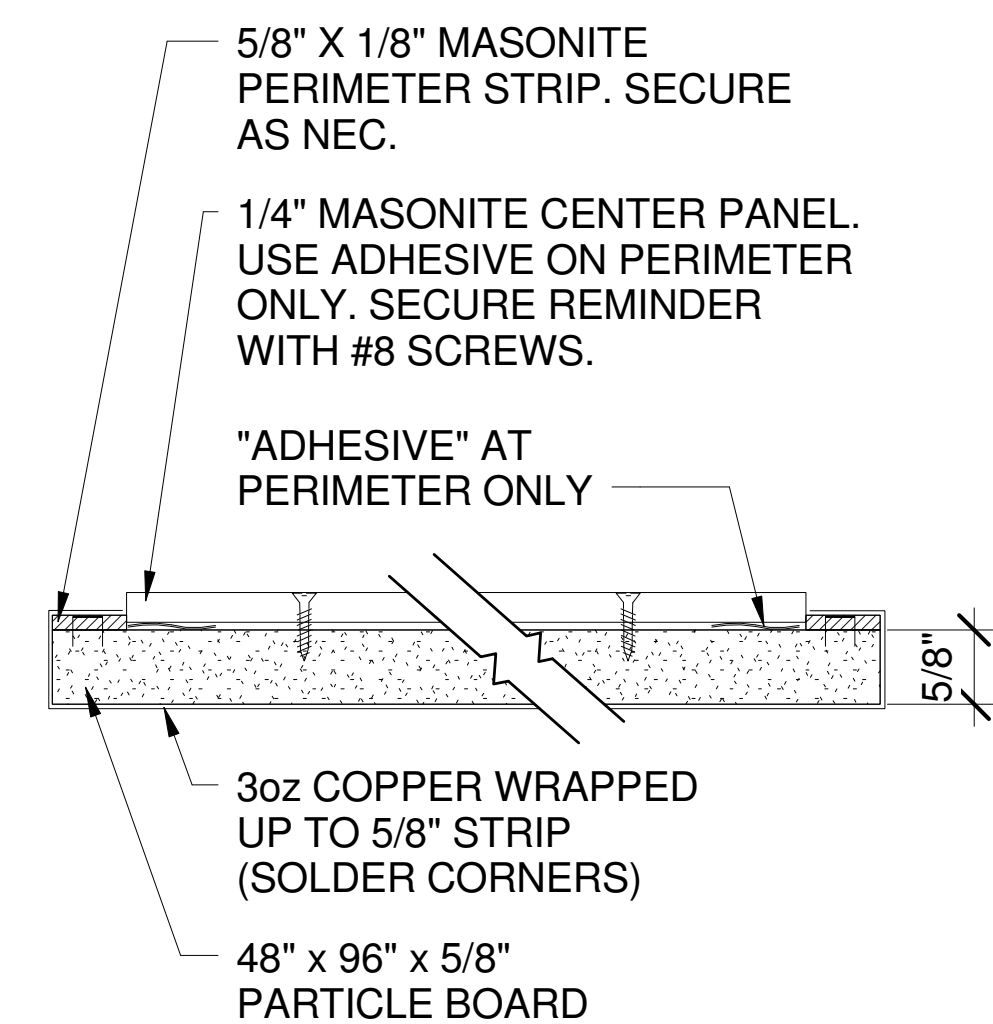
NOTE: SHIELDING VENDOR PROVIDES RF WAVEGUIDE ONLY. DIELECTRIC MATERIAL AND CONNECTION BY MAGNET VENDOR (INSIDE RF) AND MECHANICAL CONTRACTOR (OUTSIDE RF), PER SIEMENS M-501.



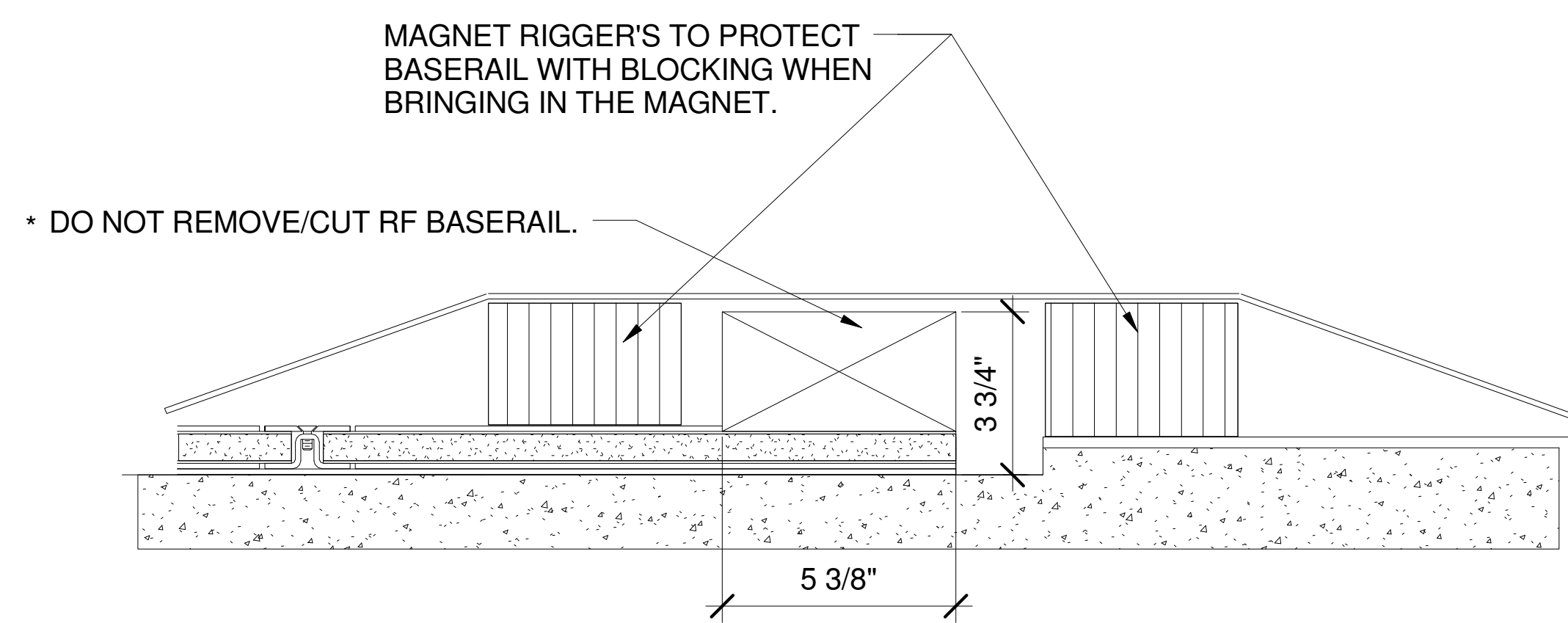
3 SIEMENS CRYOGEN VENT DETAIL (6")  
RF2.0/RF3.1  
**NOT TO SCALE**



4 WINDOW WALL  
RF1.2/RF3.1  
**NOT TO SCALE**



5 SIEMENS PATIENT TABLE FLOOR PANEL (cell floor)  
RF1.2/RF3.1  
**NOT TO SCALE**

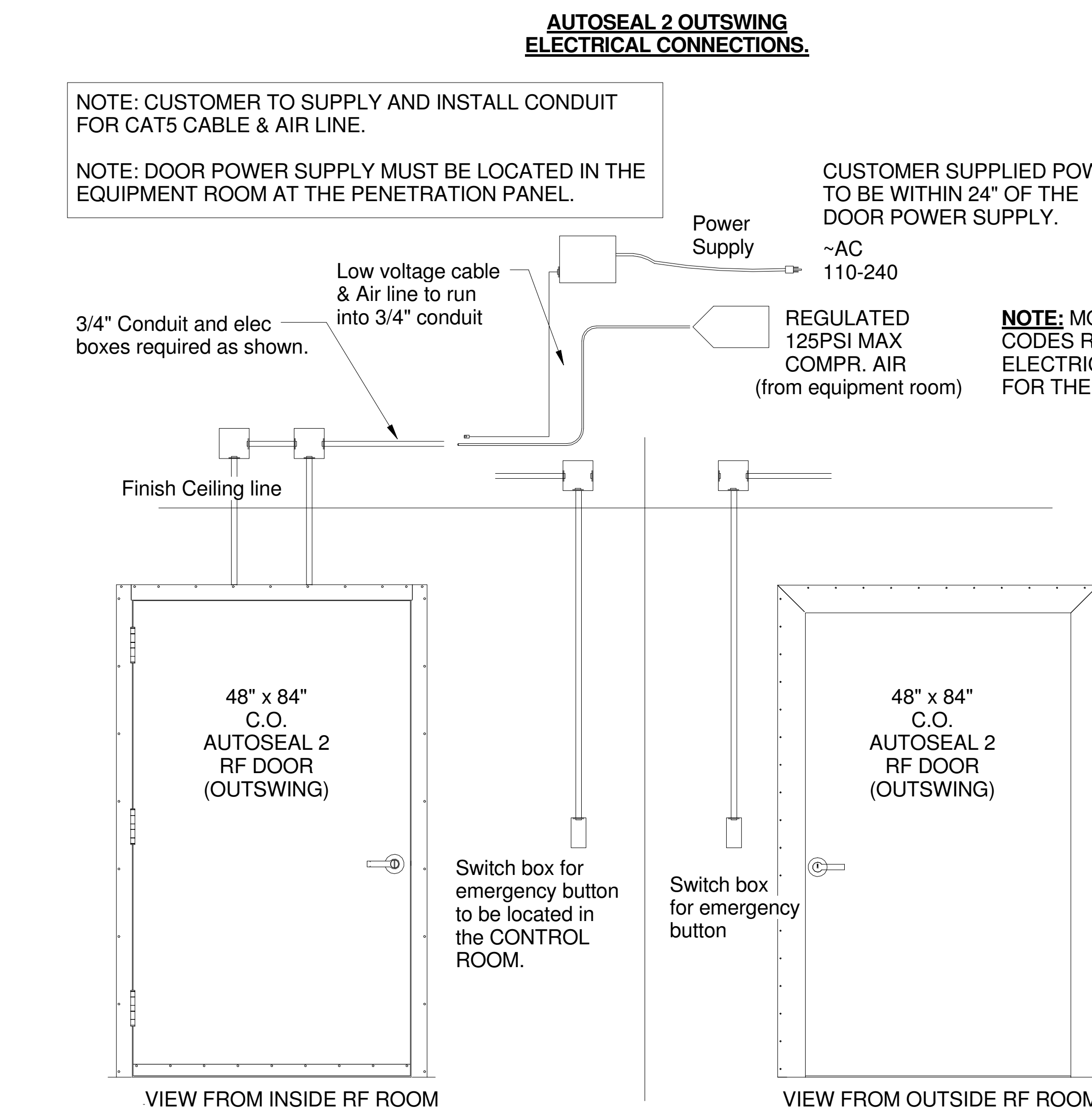
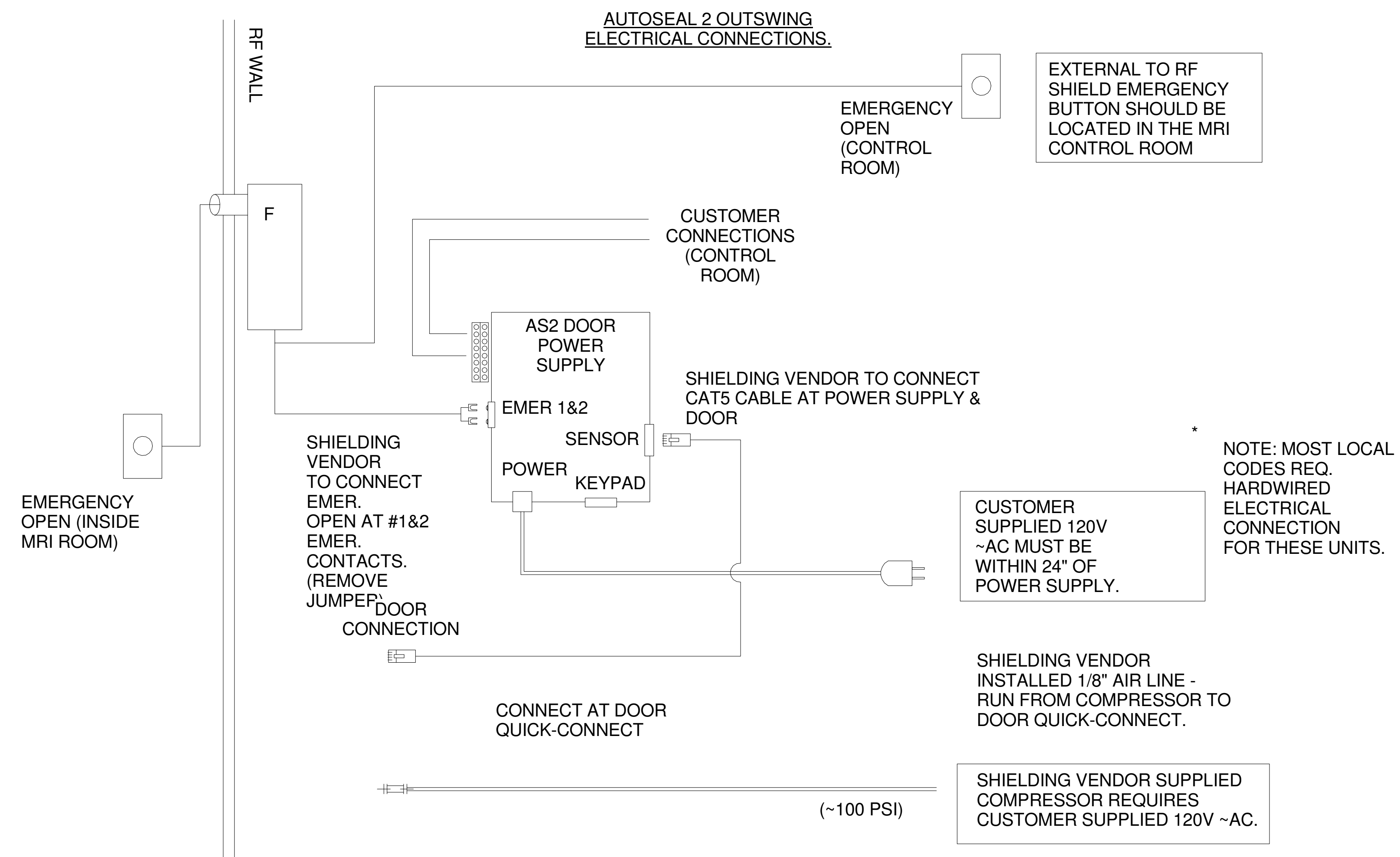


6 MAGNET ACCESS @ WINDOW WALL  
RF2.0/RF3.1  
**NOT TO SCALE**

ACCESSORIES LIST			
QTY	DESCRIPTION	REMARKS	REF.
1	42 3/4" X 18" R.O.	SIEMENS SET UP PANEL	
1	KIT, GROUND STUD		2/RF3.0
1	6" DIA. W.G. STAINLESS STEEL	CRYOGEN VENT	3/RF3.1
TBD	0-30AMP 2LINE POWER FILTERS	LIGHTING / OUTLETS	4/RF3.0
TBD	0-30AMP 2LINE POWER FILTERS	EPO SHUNT (UPS - L1)	4/RF3.0
TBD	10AMP PWR FILTER (EQ2010)	EPO - (SYSTEM)	3/RF3.0
TBD	1 AMP 2LINE POWER FILTER	SMOKE DETECTION	3/RF3.0
TBD	1/2" DIA. WAVEGUIDE FEEDTHRUS	MEDGAS	9/RF3.0
TBD	3/4" DIA. MEDGAS FEEDTHRUS	VACUUM	9/RF3.0
TBD	2"DIA DIELECTRIC FEEDTHRUS	FIRE PROTECTION	10/RF3.0
	"x" WAVEGUIDE AIRVENTS	FOR HVAC	7/RF3.0
	"x" WAVEGUIDE AIRVENTS	FOR HVAC	7/RF3.0
	"x" WAVEGUIDE AIRVENTS	FOR HVAC	7/RF3.0
	"x" WAVEGUIDE AIRVENTS	FOR HVAC	7/RF3.0

7 SIEMENS ACCESSORIES LIST  
RF3.1  
**NOT TO SCALE**

DRAWINGS SUPPLIED BY ETS-LINDGREN ARE RF SHIELD SHOP DRAWINGS. THEY ARE NOT CONSTRUCTION DRAWINGS AND SHALL BE USED FOR REFERENCE ONLY.



**OUTSWING DOOR INSTALLION GUIDE**  
(Reverse for left hand swing)

**CUSTOMER SUPPLIED UTILITY ITEMS**

Power:	Supply to:	Location:	Method:
120v - 15A	Compressor	Equipment Rm	Outlet or per code
120/240v - 15A	Door pwr supply	Equipment Rm	Outlet or per code

**ETS-LINDGREN SUPPLIED AIR COMPRESSOR**

PUMA LA-5706 (Size: 24\"/>

NOTE 1: Compressor needs to be located in the Equipment room, in an area that is easily accessible for servicing. Please refer to Users Guide for further information.

NOTE 2: Customer is responsible for locating and mounting compressor at time of RF installation.

NOTE 3: Customer is responsible for 110 volt outlet at compressor location.

**DOOR SYSTEM**

KEEP STAINLESS STEEL JAMB AND THRESHOLD CLEAN AND FREE OF WAX OR FLOOR POLISH.

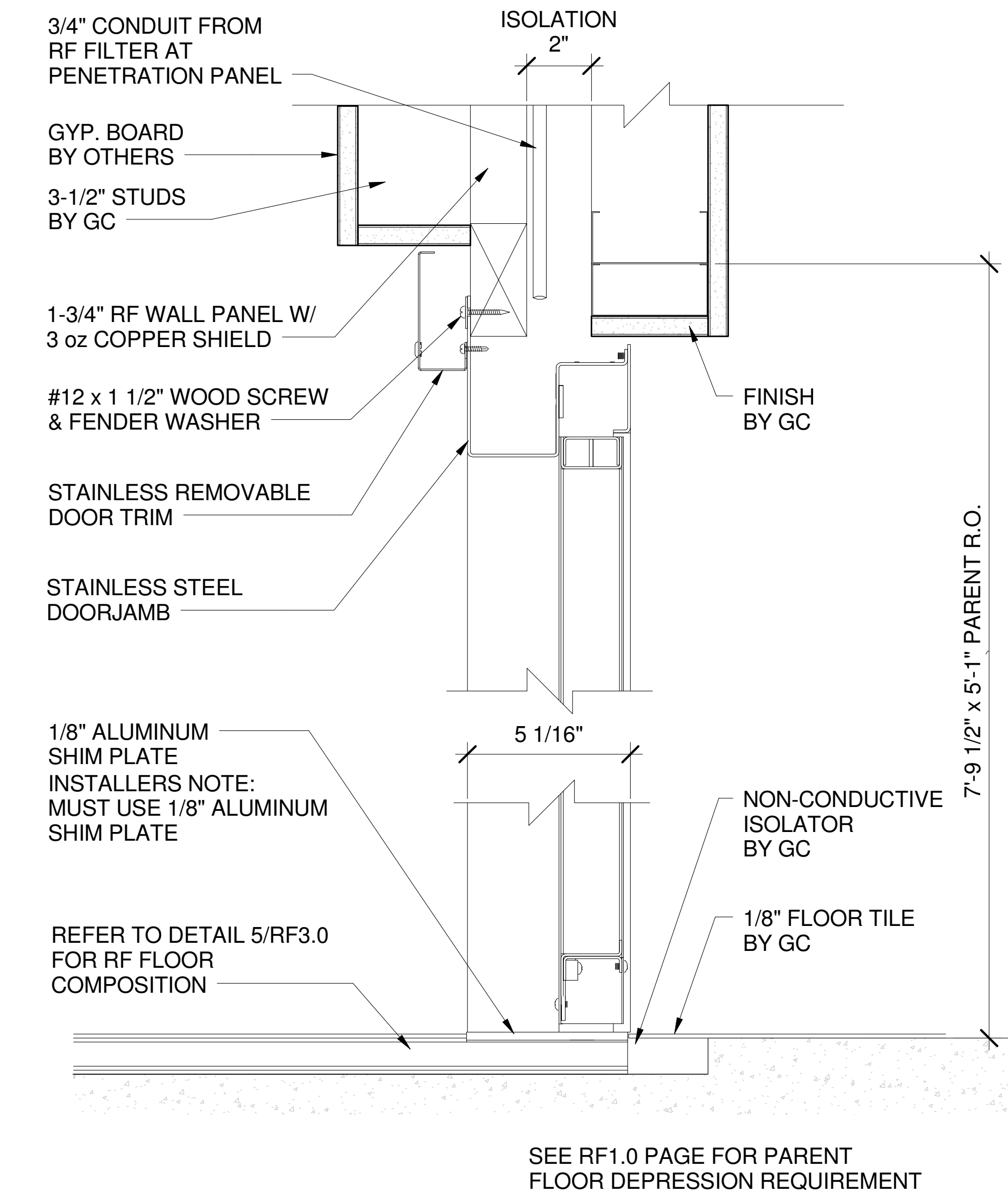
USE THE FINE SIDE OF AN ALUMINUM OXIDE ABRASIVE SPONGE TO CLEAN THE JAMB AND THRESHOLD IN THE AREAS WHERE THE DOOR SEAL MAKES CONTACT.  
**DO NOT SAND THE DOOR SEALS!**

IT IS ONLY NECESSARY TO CLEAN AND BRIGHTEN THE SURFACE. GENERALLY SAND IN THE LENGTH DIRECTION.

USE A CLEAN CLOTH TO WIPE OFF THE PARTICLES AND DIRT FROM THE JAMB AND THRESHOLD.

FOR OPTIMUM PERFORMANCE, REPEAT THIS PROCEDURE MONTHLY.

THE DOOR MECHANISM AND PERIMETER SEALS ARE MAINTENANCE FREE. CAUTION SHOULD BE TAKEN TO NOT CLOSE THE DOOR WITH OBSTRUCTIONS ACROSS THE THRESHOLD OR IN THE DOOR OPENING. (POWER CORDS, ETC...)



**2** DOOR AUTOSEAL 2 OUTSWING (copper wall - cell floor, depress)  
**NOT TO SCALE**

**AIR COMPRESSOR**

CUSTOMER SHOULD COMPLETE WARRANTY REGISTRATION AND SEND TO MANUFACTURER. NOTE: NUMBER ON WARRANTY REGISTRATION MUST MATCH NUMBER ON COMPRESSOR.

DRAIN MOISTURE FROM DISPENSER REGULARLY. RECOMMEND TO LOCATE COMPRESSOR NEAR A DRAIN AND RUN A HOSE FROM THE DISPENSER TO THE DRAIN TO AVOID WEEKLY DRAIN MAINTENANCE OF DISPENSER.

BLOW DOWN RECEIVER (AIR TANK) AT LEAST ONCE A WEEK. CLOSE DRAIN COCK TIGHTLY AFTERWARDS.

**EMERGENCY AIR SUPPLY**

A COMPRESSOR FAILURE CAN BE TEMPORARILY REPLACED BY A PORTABLE AIR TANK UNTIL A WARRANTED REPLACEMENT CAN BE SENT. CONTACT LINDGREN FOR THIS PROCEDURE.

**ALTERNATE COMPRESSOR**

IF YOU HAVE SUPPLIED YOUR OWN COMPRESSOR, FOLLOW THE MANUFACTURERS RECOMMENDED MAINTENANCE PROCEDURES.

**HANDLE HARDWARE**

SCHLAGE LEVER HANDLE WITH US-26D FINISH.

**1** DOOR AUTOSEAL 2 OUTSWING ELECTRICAL CONNECTIONS  
**NOT TO SCALE**

Rev.	Date	By	Description

