

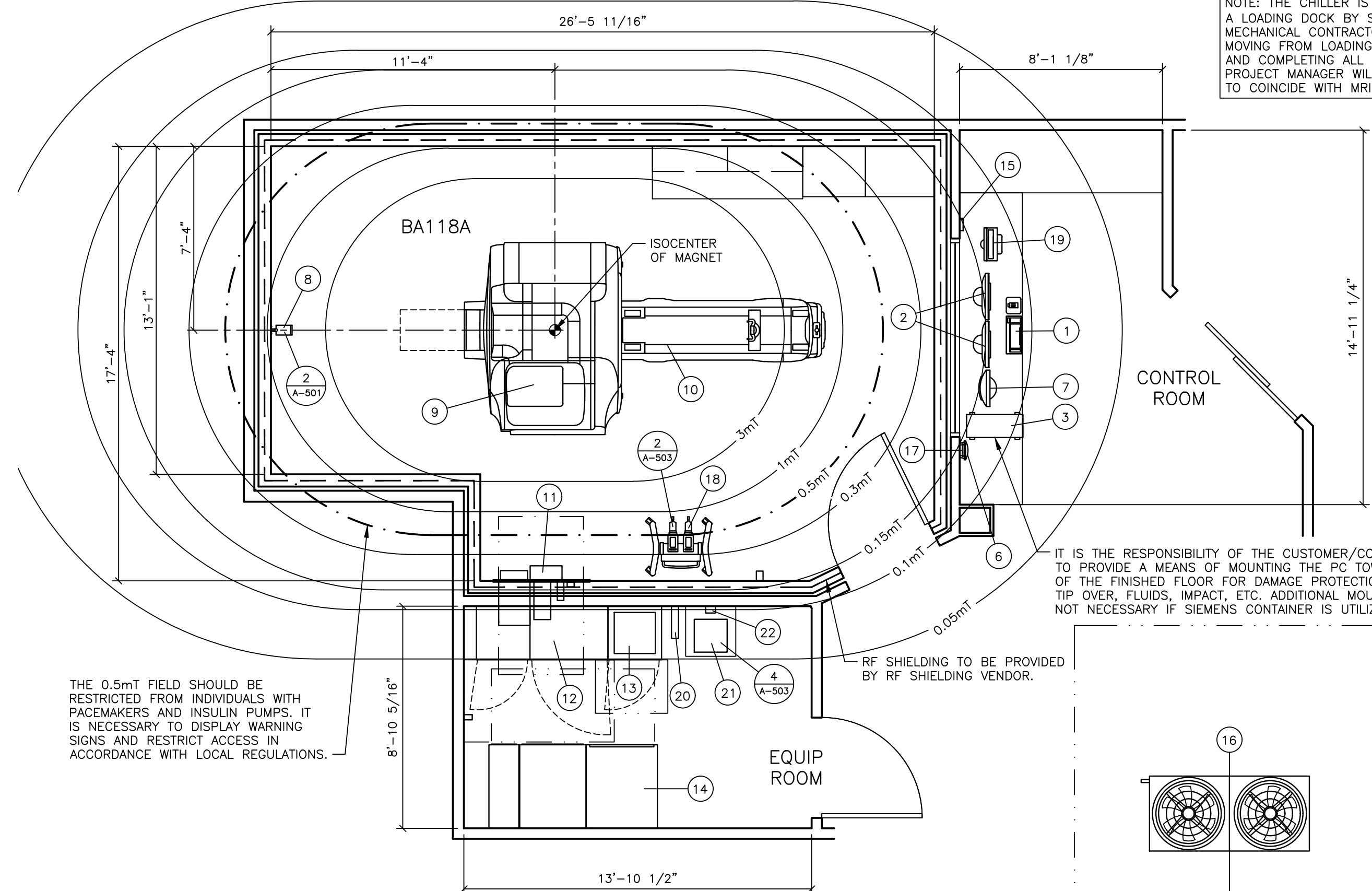
THIS SET OF FINAL DRAWINGS IS REFLECTIVE OF THE LATEST SALES CONFIGURATION. ANY CHANGES TO THIS SALES CONFIGURATION MAY REQUIRE A REVISION TO THIS PROJECT PLAN. IF REQUESTED, SIEMENS WILL PRODUCE A REVISED SET OF FINAL DRAWINGS TO REFLECT THE CHANGES, HOWEVER SIEMENS IS NOT RESPONSIBLE FOR ANY CONSTRUCTION COSTS ASSOCIATED WITH THE CHANGES THAT OCCUR FROM THIS PLAN MODIFICATION.

SINKS, COUNTERTOPS AND ALL CASEWORK SHOWN IS SUGGESTED AND MUST BE DESIGNED SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

NOTE: THE UPS IS SUPPLIED AND DELIVERED TO CUSTOMER'S LOADING DOCK BY SIEMENS. CUSTOMER'S ELECTRICIAN IS RESPONSIBLE FOR MOVING FROM LOADING DOCK TO FINAL LOCATION AND COMPLETING ALL CONNECTIONS. SIEMENS PROJECT MANAGER WILL SCHEDULE UPS STARTUP PRIOR TO DELIVERY OF SIEMENS IMAGING EQUIPMENT.

IF A CLOSET IS DESIRED TO CONCEAL THE FILTER PLATE AND CABLE CONNECTIONS, IT IS TO BE DESIGNED AND SPECIFIED AND PROVIDED BY THE CUSTOMER OR THEIR REPRESENTATIVE. A 30 1/4" CLEARANCE IS REQUIRED FOR SERVICE AND CABLING. DOORS THAT OPEN TO PROVIDE THIS ACCESS ARE ACCEPTABLE.

NOTE: THE CHILLER IS SUPPLIED AND DELIVERED TO A LOADING DOCK BY SIEMENS. CUSTOMER'S MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MOVING FROM LOADING DOCK TO FINAL LOCATION AND COMPLETING ALL CONNECTIONS. SIEMENS PROJECT MANAGER WILL SCHEDULE CHILLER STARTUP TO COINCIDE WITH MRI STARTUP.



THE 0.5mT FIELD SHOULD BE RESTRICTED FROM INDIVIDUALS WITH PACEMAKERS AND INSULIN PUMPS. IT IS NECESSARY TO DISPLAY WARNING SIGNS AND RESTRICT ACCESS IN ACCORDANCE WITH LOCAL REGULATIONS.

IT IS THE RESPONSIBILITY OF THE CUSTOMER/CONTRACTOR TO PROVIDE A MEANS OF MOUNTING THE PC TOWER OFF OF THE FINISHED FLOOR FOR DAMAGE PROTECTION AGAINST TIP OVER, FLUIDS, IMPACT, ETC. ADDITIONAL MOUNTING IS NOT NECESSARY IF SIEMENS CONTAINER IS UTILIZED.

RF SHIELDING TO BE PROVIDED BY RF SHIELDING VENDOR.

ARCHITECTURAL EQUIPMENT PLAN

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

STATE AGENCY REVIEW

PRIOR TO SIEMENS EQUIPMENT INSTALLATION, APPROVAL OF CONSTRUCTION OR STRUCTURAL MODIFICATIONS FOR DIAGNOSTIC OR THERAPEUTIC PURPOSES, MUST BE OBTAINED BY THE CUSTOMER FROM THE APPROPRIATE STATE AGENCY, IF APPLICABLE.

MAGNETIC FIELD WARNING

PLEASE BE AWARE THAT DURING THE CALIBRATION PHASE OF THE MRI INSTALLATION, THE MAGNET WILL BE AT FULL FIELD STRENGTH AND ALL NECESSARY PRECAUTIONS WHEN WORKING IN THE VICINITY OF STRONG MAGNETIC FIELDS MUST BE TAKEN. WHEN THE CALIBRATION OF THE MAGNET OVERLAPS WITH FINAL CONSTRUCTION ACTIVITIES, THERE IS THE POSSIBILITY OF THE INTRODUCTION OF FERROUS MAGNETIC OBJECTS BY WORKERS INTO THE MR ROOM. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT ALL PRECAUTIONS ARE TAKEN TO ENSURE THAT THIS DOES NOT HAPPEN, AS EQUIPMENT DAMAGE AND SERIOUS BODILY INJURY COULD OCCUR.

REV 0

EXAM ROOM LIGHTING

THE MAGNETIC FIELD ADVERSELY AFFECTS THE OPERATING LIFE OF LIGHT BULBS LOCATED IN THE IMMEDIATE VICINITY OF THE MAGNET. THE FILAMENT IN THE BULBS OSCILLATES WITH THE FREQUENCY OF THE POWER SUPPLY. LIGHTS IN THE VICINITY OF THE MAGNET CONNECTED TO A DC POWER SUPPLY CAN REDUCE THIS EFFECT. RESIDUAL DC RIPPLE SHOULD BE LESS THAN 5%.

REV 2

MAGNET CO-SITING

MINIMUM MAGNET TO MAGNET DISTANCE (SIEMENS)

| DISTANCE | 7.0T | 3.0T | 1.5T | 1.0T | 0.35T | 0.2T |
|----------|--------|--------|--------|--------|--------|--------|
| | 32'-9" | 19'-9" | 19'-9" | 19'-9" | 32'-9" | 32'-9" |

TWO MAGNETS WITH THE SAME FREQUENCY ALIGNED IN THE Z AXIS WILL REQUIRE MORE SEPARATION DUE TO INCREASED RF COUPLING BETWEEN THE TWO SYSTEMS. THIS IS EVALUATED INDIVIDUALLY.

DO NOT RAMP ONE MAGNET WHILE THE OTHER IS RUNNING APPLICATIONS. SHIM IS ONLY OPTIMIZED WHEN BOTH MAGNETS ARE RAMPED UP DURING THE SHIMMING PROCEDURE.

WHEN CO-SITING AN MR SYSTEM WITH A MAGNETIC NAVIGATION SYSTEM THE MINIMUM DISTANCE FOR CLINICAL IMAGING IS 98'-6", FOR SPECTROSCOPY THE MINIMUM SEPARATION IS 121'-5".

REV 0

OEM ACCESSORY ITEMS

FOR OEM (OUTSIDE EQUIPMENT MANUFACTURER) ITEMS THAT ARE SOLD AS ACCESSORIES TO THE SIEMENS MR SYSTEM (INJECTORS, LASER LIGHTS, ELASTOGRAPHY, CHILLERS, UPS, ETC.), PLEASE REFER TO THE SIEMENS PROJECT MANAGER AND THE ACTUAL EQUIPMENT VENDOR FOR TECHNICAL INFORMATION AND INSTALLATION REQUIREMENTS.

REV 1

EQUIPMENT LEGEND

| NO | DESCRIPTION | SMS SYM | WEIGHT (LBS) | BTU/HR TO AIR | DIMENSIONS (INCHES) | | | REMARKS |
|----|---|---------|--------------|---------------|---------------------|--------|----------|------------------------------|
| | | | | | W | D | H | |
| 1 | MRC KEYBOARD | ⊖ | 5 | --- | 27 1/4 | 10 1/8 | 1 3/4 | ON CONSOLE/COUNTER |
| 2 | DUAL COLOR MONITORS FOR MRC | ⊖ | 22 | 239 | 18 5/16 | 4 3/4 | 16 15/16 | ON CONSOLE/COUNTER |
| 3 | HOST PC MRC | ⊖ | 49 | 2,389 | 11 | 27 | 18 1/8 | |
| 4 | MRC OPERATING CONSOLE TABLE | ⊖ | 132 | --- | 54 3/8 | 31 1/2 | 27-46 | ADJUSTABLE HEIGHT |
| 5 | CONTAINER FOR HOST PC 500 | ⊖ | 238 | --- | 19 5/8 | 31 1/2 | 28 3/8 | |
| 6 | ALARM BOX | ⊖ | 2 | --- | 9 | 4 | 9 | |
| 7 | PATIENT MONITOR | ⊖ | 9 | --- | 13 | 8 | 12 1/2 | |
| 8 | PATIENT SUPERVISION CAMERA | ⊖ | 3 | --- | 3 1/8 | 6 3/4 | 6 3/4 | WALL MOUNTED |
| 9 | SOLA MAGNET IN OPERATION | ⊖ | 8,779 | 7,506 | 91 | 170 | 86 | |
| 10 | PATIENT TABLE (MOBILE) | ⊖ | 529 | --- | 29 1/2 | 97 1/4 | 21-41 | |
| 11 | RF-FILTER PLATE | ⊖ | 287 | 853 | 46 1/2 | 35 1/8 | 21 5/8 | |
| 12 | ELECTRONICS CABINET (GPA/EPC CABINET) | ⊖ | 3,307 | <3,412 | 61 1/2 | 26 | 77 1/2 | |
| 13 | SEP CABINET | ⊖ | 750 | <3,412 | 25 5/8 | 25 5/8 | 73 5/8 | |
| 14 | EATON 93PM 180 KW UPS WITH BATTERY & MAINTENANCE BYPASS | ⊖ | 6,664 | 20,523 | 81 | 42 | 74 | |
| 15 | EATON 93PM REMOTE MONITORING DEVICE | ⊖ | 0.5 | --- | 6 | 1 | 3 | SEE MFG REQUIREMENTS |
| 16 | HASKRIS OPC 24 CHILLER | ⊖ | 1,860 | --- | 76 1/2 | 41 7/8 | 74 | CUST. TO LOCATE/INSTALL |
| 17 | HASKRIS REMOTE CONTROL PANEL | ⊖ | 2 | --- | 6 1/8 | 1 1/2 | 3 1/4 | WALL MOUNTED IN CONTROL ROOM |
| 18 | MRXPERION INJECTOR STAND AND HEAD | ⊖ | 94 | --- | 23 3/8 | 28 3/8 | 71 7/8 | INJECTOR ON STAND |
| 19 | MRXPERION ICBC INJECTOR CRU | ⊖ | 17.6 | --- | 15 3/4 | 10 1/4 | 13 1/2 | ON CUSTOMERS COUNTER |
| 20 | MRXPERION ICBC INJECTOR POWER SUPPLY | ⊖ | 6 | --- | 15 3/8 | 3 3/8 | 15 1/2 | LOCATED IN EQUIP ROOM |
| 21 | ELASTOGRAPHY ACTIVE DRIVER | ⊖ | 53.5 | --- | 15 3/4 | 15 3/4 | 6 | PROVIDE SHELF |
| 22 | ELASTOGRAPHY TRIGGER BOX | ⊖ | --- | --- | 3 1/4 | 4 3/4 | 4 3/4 | IN EQUIPMENT ROOM |

PROTECTING THE MAGNETIC FIELD

THE SIEMENS MR SYSTEM UTILIZES A SUPERCONDUCTIVE MAGNET WITH AN EXTREMELY HOMOGENEOUS FIELD WITHIN THE MAGNET TO PROVIDE DISTORTION FREE IMAGING. THE PRESENCE OF FERROMAGNETIC MATERIAL WITHIN THE VICINITY OF THE MAGNET CAN ADVERSELY AFFECT THE UNIFORMITY OF THE USEFUL MAGNETIC FIELD. THIS APPLIES TO STATIONARY FERROUS MATERIAL (STRUCTURAL STEEL) WHICH IS TO BE MINIMIZED. STATIONARY STEEL COMPENSATION MAY BE ACHIEVED BY MAGNET POSITIONING AND SELECTIVE USE OF SHIMS. DISTORTION CAUSED BY MOVING FERROMAGNETIC OBJECTS (MOTOR VEHICLES, ELEVATORS) IS MORE DIFFICULT TO COMPENSATE AND MAY REQUIRE THE USE OF MAGNETIC SHIELDING.

REV 0

PROTECTING THE ENVIRONMENT

PROTECTING THE IMMEDIATE ENVIRONMENT FROM THE EFFECT OF THE MAGNETIC FIELD REQUIRES CONSIDERATION. INFORMATION STORED ON MAGNETIC DATA CARRIERS SUCH AS DISCS, TAPES AND CARDS MAY BE ERASED IF NEAR THE MAGNET. CAUTION WITH REGARD TO HEART PACEMAKERS MUST BE EXERCISED. MOST PACEMAKER UNITS EMPLOY A REED RELAY WHICH MAY CHANGE OPERATING MODE WHEN EXPOSED TO AN EXTERNAL MAGNETIC FIELD. PACEMAKER USERS MUST BE KEPT AT A SPECIFIED DISTANCE FROM THE MAGNET WHICH IS DETERMINED BY THE MAGNET FIELD STRENGTH.

REV 0

MAGNETIC FRINGE FIELDS

MAGNETIC FIELDS MAY AFFECT THE FUNCTION OF DEVICES IN THE VICINITY OF THE MAGNET. THESE DEVICES MUST BE OUTSIDE CERTAIN MAGNETIC FIELDS. THE DISTANCES LISTED ARE FROM THE MAGNET ISOCENTER AND DO NOT CONSIDER ANY MAGNETIC ROOM SHIELDING.

| FIELD | X & Y AXIS | Z AXIS | DEVICES |
|--------|------------|--------|--|
| 3.0mT | 6'-1" | 9'-2" | SMALL MOTORS, WATCHES, CAMERAS, CREDIT CARDS, MAGNETIC DATA CARRIERS. |
| 1.0mT | 7'-3" | 11'-7" | COMPUTERS, MAGNETIC DISK DRIVES, OSCILLOSCOPES, PROCESSORS |
| 0.5mT | 8'-3" | 13'-2" | CARDIAC PACEMAKERS, X-RAY TUBES, INSULIN PUMPS, B/W MONITORS, MAGNETIC DATA CARRIERS (LONG-TERM STORAGE) |
| 0.15mT | 10'-4" | 17'-4" | SIEMENS CT SCANNERS |
| 0.1mT | 11'-2" | 19'-1" | CRT MONITORS, SIEMENS LINEAR ACCELERATORS |
| 0.05mT | 13'-6" | 22'-8" | X-RAY IMAGE INTENSIFIERS, GAMMA CAMERAS, PET/CYCLOTRON, ELECTRON MICROSCOPES, LINEAR ACCELERATORS |

THE OWNER/USER IS TO VERIFY THE LOCATION OF THE 0.5mT FIELD AND ENSURE THAT IT IS MAINTAINED AS A RESTRICTED AREA.

MAGNET SITING REQUIREMENTS

IT MUST BE ENSURED THAT THE MAGNET IS LOCATED SO THAT THE STABILITY AND HOMOGENEITY OF THE MAGNETIC FIELD ARE NOT ADVERSELY AFFECTED BY EXTRANEOUS FIELDS AND STATIC OR DYNAMIC FERROMAGNETIC OBJECTS.

| X & Y AXIS | Z AXIS | SOURCE OF INTERFERENCE |
|------------|--------|--|
| 4'-2" | | FLOOR STEEL REINFORCEMENT <20 LBS./ FT ² IRON BEAMS < 66 LBS./FT. |
| 16'-1" | 19'-1" | MOVING METAL UP TO 110 LBS. |
| 13'-1" | | WATER COOLING UNIT (CHILLER) |
| 17'-5" | 21'-4" | MOVING METAL UP TO 440 LBS. |
| 18'-1" | 24'-8" | MOVING METAL UP TO 2,000 LBS. |
| 20'-5" | 29'-7" | ELEVATORS, TRUCKS UP TO 10,000 LBS. |
| 13'-1" | 13'-1" | AC TRANSFORMERS LESS THAN 650 KVA |
| 16'-5" | 16'-5" | AC TRANSFORMERS LESS THAN 1600 KVA |
| 5'-0" | 5'-0" | AC CABLES, MOTORS LESS THAN 250 AMPS |
| 8'-3" | 8'-3" | AC CABLES, MOTORS LESS THAN 1000 AMPS |

FOR IRON OBJECTS LOCATED UP TO 45' FROM THE Z AXIS, THE DISTANCES FOR THE Z AXIS MUST BE USED. REDUCTION IS POSSIBLE WITH STEEL SHIELDING.

PROJECT MILESTONES

| PROJECT MILESTONES TO BE COMPLETED BEFORE EQUIPMENT DELIVERY | REFERENCE SHEET |
|--|-----------------|
| <input type="checkbox"/> DELIVERY PATH VERIFIED | A-102 |
| <input type="checkbox"/> FLOOR LEVEL MEETS SIEMENS SPECIFICATIONS AND ALL BASEPLATES INSTALLED | S-101 |
| <input type="checkbox"/> RF ROOM TEST COMPLETED AND MEETS SIEMENS SPECIFICATIONS | A-502 |
| <input type="checkbox"/> ALL RACEWAY, CONDUITS AND JUNCTION BOXES INSTALLED | E-101 |
| <input type="checkbox"/> ALL PLUMBING INSTALLED AND TESTED | M-101 |
| <input type="checkbox"/> POWER SCHEDULE COMPLETED | E-102 |
| <input type="checkbox"/> ALL EPO BUTTONS INSTALLED AND TESTED | E-101 |
| <input type="checkbox"/> MR COMPATIBLE LIGHTING AND CEILING GRIDS INSTALLED IN MAGNET ROOM | A-101 |
| <input type="checkbox"/> CONTROL ROOM COMPLETED ENOUGH TO FACILITATE THE INSTALLATION | A-101 |
| <input type="checkbox"/> CHILLED WATER SUPPLY AVAILABLE AND MEETS SIEMENS SPECIFICATIONS | M-101 |
| <input type="checkbox"/> MR COMPATIBLE LIGHTING AND CEILING GRIDS INSTALLED IN MAGNET ROOM | A-101 |
| <input type="checkbox"/> HVAC SYSTEM COMPLETE, TESTED AND WORKING PER SIEMENS SPECIFICATIONS | M-101 |
| <input type="checkbox"/> QUENCH PIPE CONSTRUCTED AND INSTALLED PER SIEMENS SPECIFICATIONS | M-501 |
| <input type="checkbox"/> ETHERNET CONNECTION INSTALLED AND IN OPERATION AT THE SHOWN LOCATIONS | E-101 |

CEILING HEIGHTS

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

| | | |
|---|------------------------------|--------------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | PROJECT #: 2414586 | SHEET: A-101 |
| 1901 SOUTH 1ST STREET, TEMPLE, TX 76504 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS | DATE: 12/10/24 | DRAWN BY: P. WOTORTSI |

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.

- 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.

| | | |
|---------------|----------|--|
| SYM | DATE | DESCRIPTION |
| | 12/10/24 | 2414586 DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |
| -ISSUE BLOCK- | | |
| SCALE: | AS NOTED | REF. #: 30295989 |

ARCHITECTURAL NOTES

- ALL PRELIMINARY EQUIPMENT LAYOUTS SUBMITTED BY SIEMENS HEALTHCARE ARE BASED ON THE RECOMMENDED SPACE NECESSARY FOR THE OPERATION AND SERVICEABILITY OF THE EQUIPMENT BEING PROPOSED. SIEMENS WILL NOT SUBMIT AN EQUIPMENT LAYOUT THAT IS NOT IN THE BEST INTEREST OF BOTH THE CUSTOMER AND SIEMENS. ALL EQUIPMENT LAYOUTS ARE BASED EITHER ON AN ACTUAL SITE SURVEY OR ARCHITECTURAL DRAWINGS SUPPLIED TO SIEMENS. SIEMENS WILL NOT BE RESPONSIBLE FOR ANY ALTERATIONS THAT ENCROUGH WITHIN DESIGNATED SAFETY AND SERVICE CLEARANCE ZONES AS INDICATED ON DRAWINGS (I.E., PIPE CHASES, VENTILATION DUCTS, CASEWORK, AND SOFFITS, ETC.) MADE BY THE CUSTOMER OR REQUIRED BY A CUSTOMER'S ARCHITECTURAL FIRM ONCE PRELIMINARY DRAWINGS HAVE BEEN SUBMITTED AND APPROVED. DO NOT ALTER ANY SPECIFICATIONS AND/OR DIMENSIONS WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SIEMENS PROJECT MANAGER.
- SIEMENS HEALTHCARE IS NOT AN ARCHITECTURAL OR ENGINEERING FIRM. DRAWINGS SUPPLIED BY SIEMENS ARE NOT CONSTRUCTION DRAWINGS. THEREFORE, THESE DRAWINGS ARE TO BE USED ONLY FOR INFORMATION TO COMPLEMENT ACTUAL CONSTRUCTION DRAWINGS AVAILABLE FROM A CUSTOMER APPOINTED ARCHITECTURAL REPRESENTATIVE OR A CUSTOMER'S ENGINEERING DESIGN GROUP. THE CUSTOMER'S ARCHITECT AND GENERAL CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CODES AND PROFESSIONAL DESIGN REQUIREMENTS INCLUDING OSHA/NEC SAFETY CLEARANCE REQUIREMENTS IN ADDITION TO SIEMENS-REQUIRED SAFETY/SERVICE CLEARANCES SHOWN.
- THE CUSTOMER IS RESPONSIBLE FOR ALL ROOM AND AREA PREPARATION COSTS, PROFESSIONAL FEES, PERMITS, REPORTS, AND INSPECTION FEES.
- EQUIPMENT WARRANTIES, EXPRESSED OR IMPLIED ON THE PART OF SIEMENS SHALL BE CONTINGENT UPON STRICT COMPLIANCE WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND RECOMMENDATIONS AND REQUIREMENTS CONTAINED IN THESE DRAWINGS, UNLESS SPECIFIED OTHERWISE.
- ALL DIMENSIONS SHOWN ARE FROM FINISHED SURFACES UNLESS SPECIFIED OTHERWISE.
- SIEMENS HEALTHCARE SHALL BE RESPONSIBLE FOR SIEMENS EQUIPMENT INSTALLATION, CALIBRATION, CONNECTION AND INSTALLATION OF SIEMENS PROVIDED CABLES. THE CUSTOMER/ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR TERMINATIONS OF CUSTOMER/ELECTRICAL CONTRACTOR-SUPPLIED CABLES TO SIEMENS EQUIPMENT. IN THE EVENT THAT SPECIFIC TRADE RULES OR LICENSE REQUIREMENTS PROHIBIT THIS, THE CUSTOMER SHALL INITIATE THE SERVICES OF APPROVED OTHER CONTRACTORS AND PAY FOR SELECTED, APPROVED PARTIES TO PERFORM THIS WORK WITH SUPERVISION PROVIDED BY SIEMENS. CALIBRATION WHEN ACCOMPLISHED OUTSIDE OF NORMAL INSTALLATION SEQUENCES DUE TO CONTRACTOR OR TRADE RULE ACTIONS OR REQUIREMENTS SHALL BE SUPPORTED BY, CHARGED TO, AND ACCEPTED BY THE CUSTOMER AS AN ADDITIONAL INSTALLATION EXPENSE.
- THE CUSTOMER SHALL COORDINATE WITH SIEMENS PROJECT MANAGER THE LOCATIONS AND TRAVEL OF ALL ANCILLARY EQUIPMENT TO BE CEILING OR WALL MOUNTED (I.E., O.R. LIGHTS, MEDICAL GAS COLUMNS, PHYSIOLOGICAL MONITORING INJECTORS, CRT PLATFORMS, SPRINKLER HEADS, SMOKE DETECTORS, ELECTRICAL OUTLETS, HVAC GRILLES, SPEAKERS, AND GENERAL ROOM LIGHTING, ETC.).
- THE GENERAL CONTRACTOR/CUSTOMER SHALL BE RESPONSIBLE FOR ALL FINAL PAINT, TOUCH-UP AND ANY COSMETIC OR TRIM WORK WHICH NEEDS TO BE OR IS REQUIRED TO BE COMPLETED AFTER THE INSTALLATION OF THE SIEMENS EQUIPMENT AND ANY ASSOCIATED SUPPORT APPARATUS.
- CUSTOMER/CONTRACTOR MUST ASSIST SIEMENS INSTALLERS WITH INSTALLATION OF EQUIPMENT ABOVE 14'-0". REFER TO THE ELECTRICAL NOTES ON SIEMENS SHEET E-101 FOR MORE DETAILS.

REV 0

CONSTRUCTION REQUIREMENTS

THE CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL CONSTRUCTION MATERIALS INCLUDING ELECTRICAL AND MECHANICAL DEVICES REQUIRED BY SIEMENS SPECIFICATIONS AND TO ENSURE THAT THE MATERIAL USED INSIDE THE RF-SHIELDING IS AS FREE OF FERROMAGNETIC PROPERTIES AS POSSIBLE. STEEL WALL STUDS ARE PERMITTED BUT MUST BE SECURED PROPERLY. ANY FERROUS MATERIAL INSIDE THE EXAM ROOM MAY BECOME A PROJECTILE AND CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPMENT. FERROUS ITEMS INSIDE THE EXAM ROOM ARE THE LIABILITY OF THE CONTRACTOR AND/OR INSTALLER.

REV 3

CASEWORK & ACCESSORY NOTES

- ALL CASEWORK IS EITHER EXISTING OR IS TO BE DESIGNED, DETAILED, FURNISHED AND INSTALLED BY THE CUSTOMER AND/OR CONTRACTOR. FOLLOW DESIGN RECOMMENDATIONS INCLUDED HERewith, AS THEY ARE ESSENTIAL FOR THE SUCCESSFUL INSTALLATION & OPERATION OF THE SIEMENS EQUIPMENT.
- ALL FURNITURE (CHAIRS, ETC.) FOR THE CONTROL ROOM ARE TO BE PROVIDED BY THE CUSTOMER.

REV 0

RESOURCE LIST (SMS SHEET ONLY)

| DESIGNATION | PG NUMBER | DATE |
|----------------|----------------------|-------|
| PLANNING GUIDE | M11-010.891.01.07.02 | 03.23 |

SOLA
REV 22

SIEMENS

VA TEMPLE 674

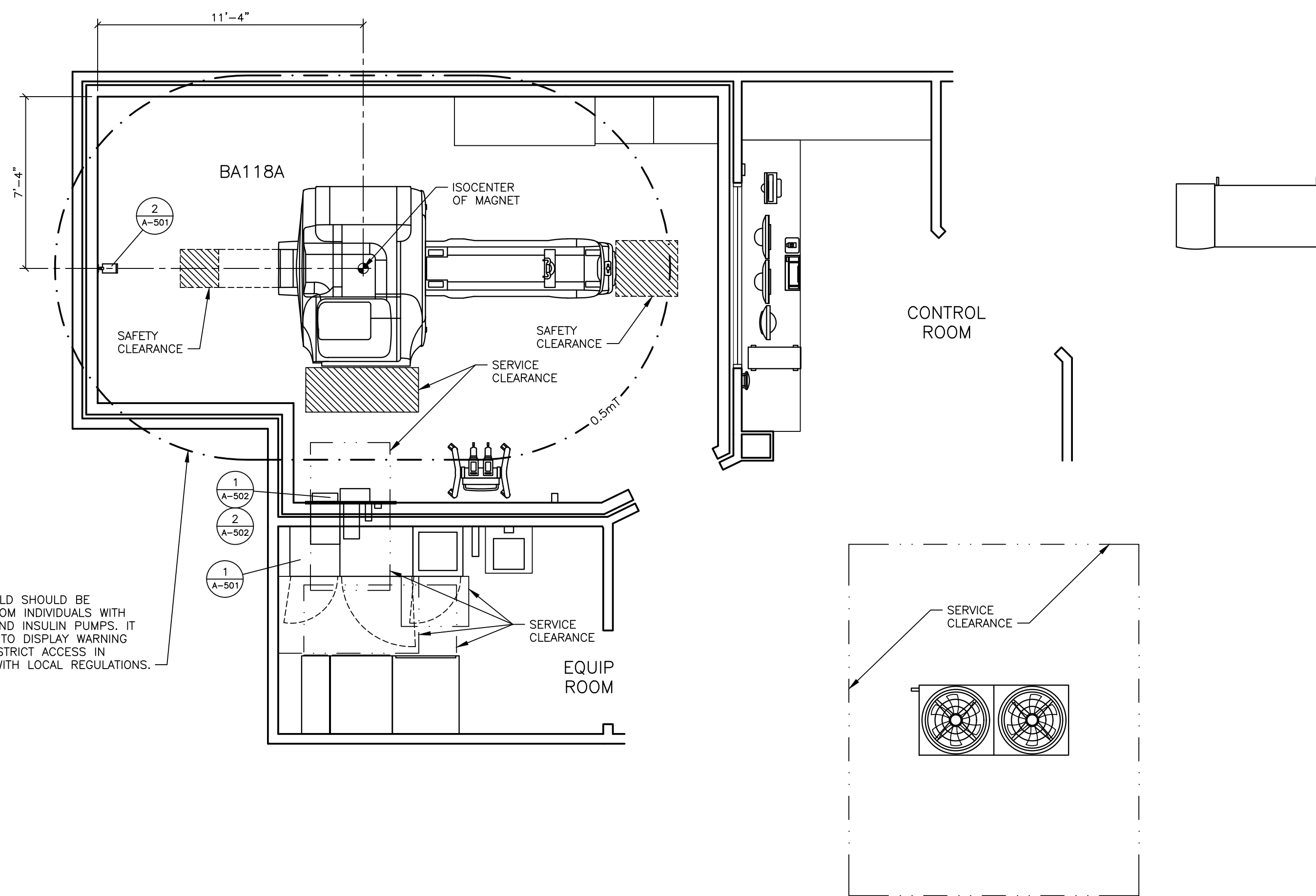
1901 SOUTH 1ST STREET, TEMPLE, TX 76504
MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS

| | |
|------------------------------|--------------------------|
| PROJECT #: 2414586 | SHEET: A-101 |
| DATE: 12/10/24 | DRAWN BY: P. WOTORTSI |

THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.

SCALE: AS NOTED REF. #:
30295989

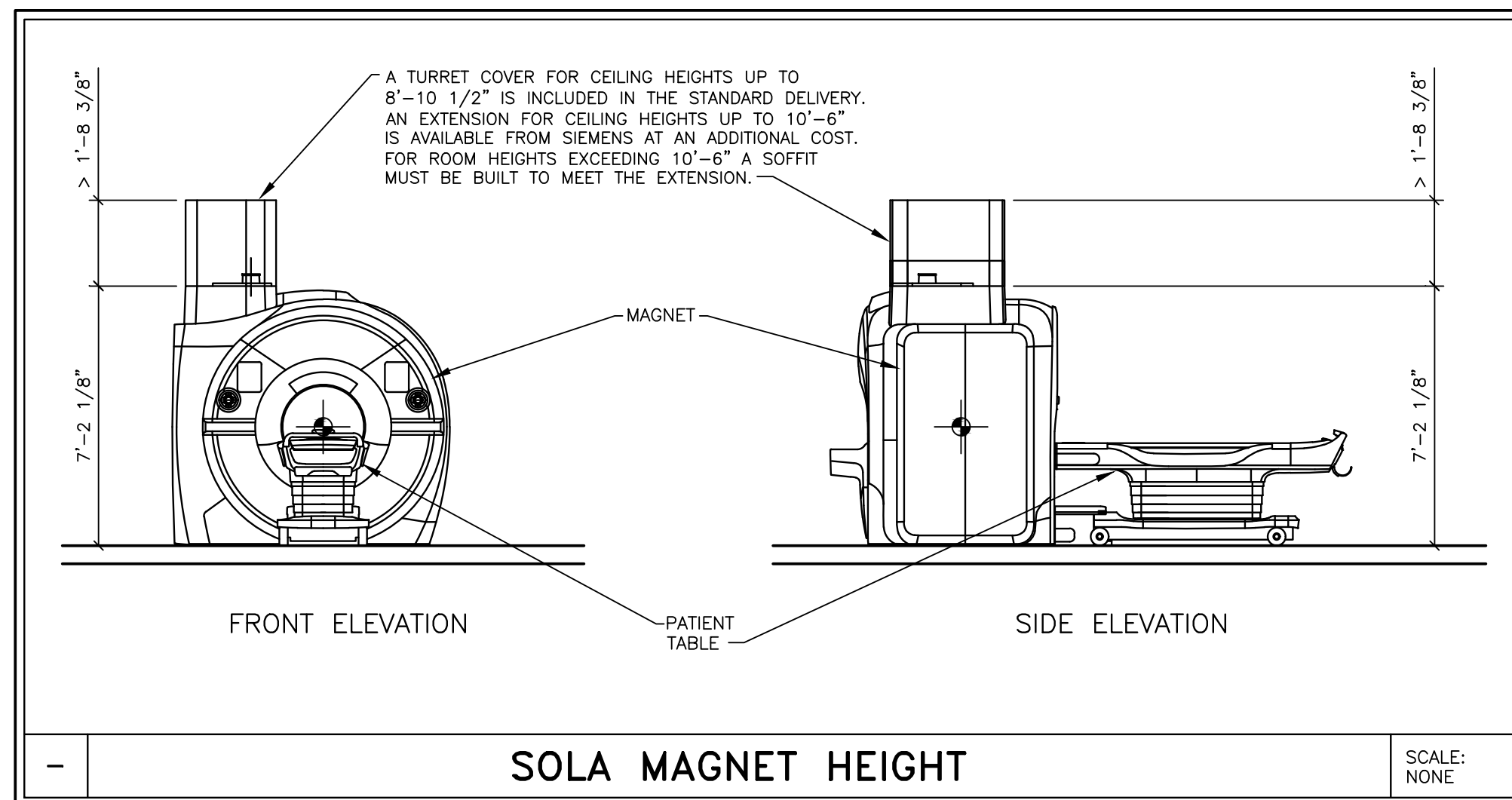
REFERENCE DOCUMENT - NOT FOR CONSTRUCTION



THE 0.5mT FIELD SHOULD BE RESTRICTED FROM INDIVIDUALS WITH PACEMAKERS AND INSULIN PUMPS. IT IS NECESSARY TO DISPLAY WARNING SIGNS AND RESTRICT ACCESS IN ACCORDANCE WITH LOCAL REGULATIONS.

SAFETY/SERVICE CLEARANCE PLAN

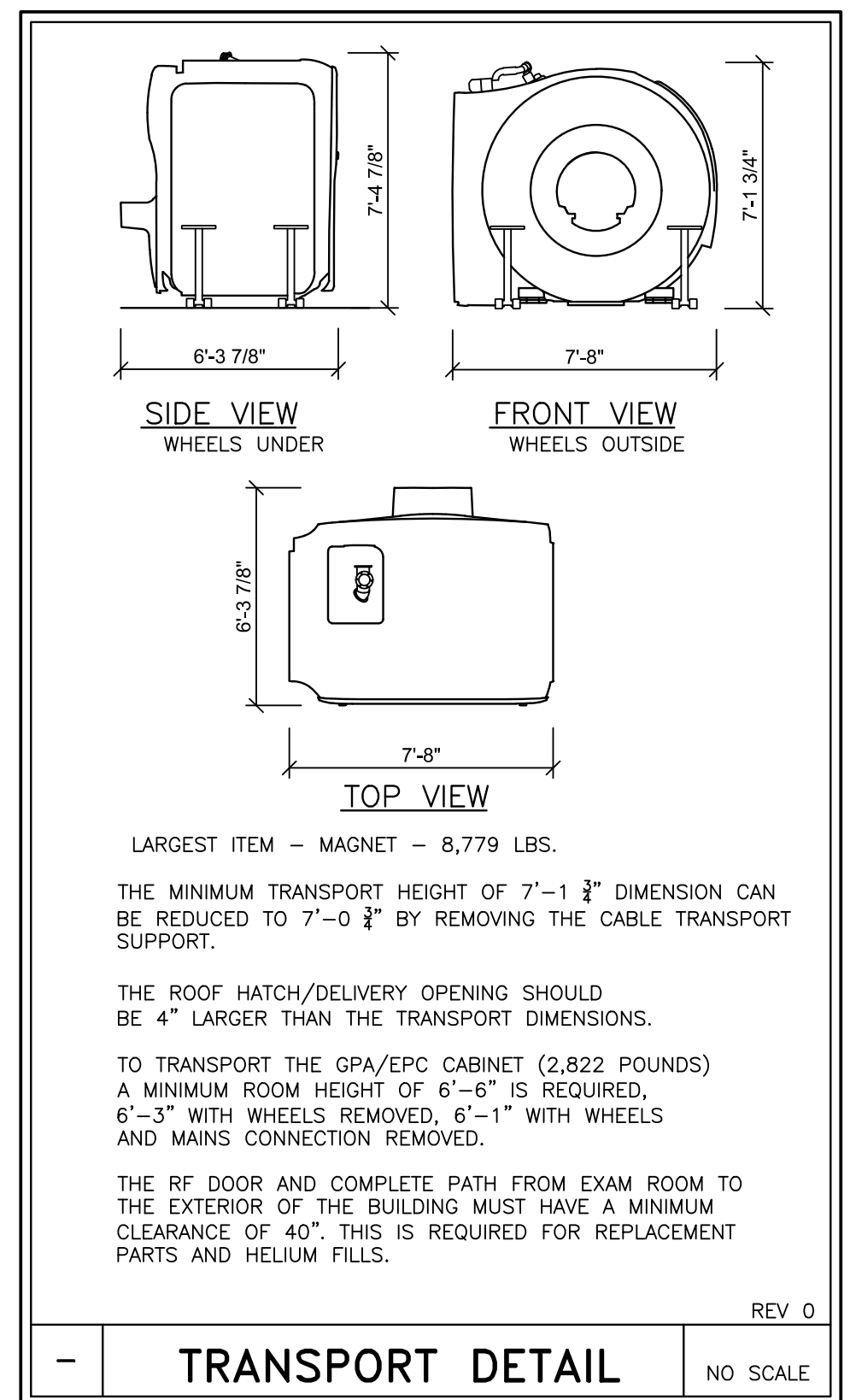
SCALE: 1/4" = 1'-0"



| NOISE LEVELS ^{XQ GRADIENTS} | |
|--------------------------------------|--|
| SYSTEM ROOM | NOISE LEVEL / dB(A) |
| CONTROL ROOM | <55 |
| EXAMINATION ROOM | 80.6 dB(A) - 8 HOUR AVERAGE 101.8 dB(A) MAXIMUM, MEASURED INSIDE THE EXAM ROOM. |
| EQUIPMENT ROOM | <65 |

NOISE LEVELS ARE BASED ON AN AVERAGE MEASUREMENT OVER 8 HOURS OF CLINICAL SCANNING. PEAK LEVELS MAY BE HIGHER FOR CERTAIN SEQUENCES.

IT IS THE CUSTOMER'S RESPONSIBILITY TO ENSURE THAT ALL LOCAL/STATE/OSHA NOISE REGULATIONS ARE ADHERED TO. ADDITIONAL NOISE DATA MAY BE PROVIDED BY SIEMENS PROJECT MANAGER UPON REQUEST. 03/19/18



| SURFACE COIL STORAGE | | | | |
|------------------------|--------------|--------|--------|--------|
| COIL NAME | POUND WEIGHT | INCHES | | |
| | | LENGTH | WIDTH | HEIGHT |
| BIOMATRIX HEAD/NECK 20 | 13 | 16 3/4 | 14 5/8 | 15 1/8 |
| BIOMATRIX SPINE 32 | 23 | 47 1/4 | 19 1/4 | 3 |
| BODY 18 | 4 | 15 1/8 | 23 1/4 | 3 |
| FLEX LARGE 4 | 1.2 | 20 3/8 | 8 7/8 | - |
| FLEX SMALL 4 | 1 | 14 3/8 | 8 7/8 | - |

SURFACE COILS ARE COMPONENTS OF THE MRI SYSTEM THAT ARE ATTACHED TO THE PATIENT TABLE DURING EXAMS. WHEN NOT IN USE COILS SHOULD BE STORED SO THAT THEY ARE FREE FROM DAMAGE. THE DESIGN OF THE MR EXAM ROOM MUST HAVE AMPLE STORAGE SPACE TO ACCOMMODATE ANY COILS THAT THE OWNER WILL HAVE. COILS MAY BE SELECTED FROM THE LIST BELOW. STORAGE PROVIDED BY CUSTOMER/CONTRACTOR.

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

| | | | |
|--|--|--|--------------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | | SIEMENS | |
| | | VA TEMPLE 674 | |
| | | 1901 SOUTH 1ST STREET, TEMPLE, TX 76504 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS | |
| THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. | | PROJECT #: 2414586 | SHEET: A-102 |
| ALL RIGHTS ARE RESERVED. | | SHEET 2 OF 11 | DRAWN BY: P. WOTORTSI |
| SCALE: AS NOTED | | REF. #: 30295989 | DATE: 12/10/24 |

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

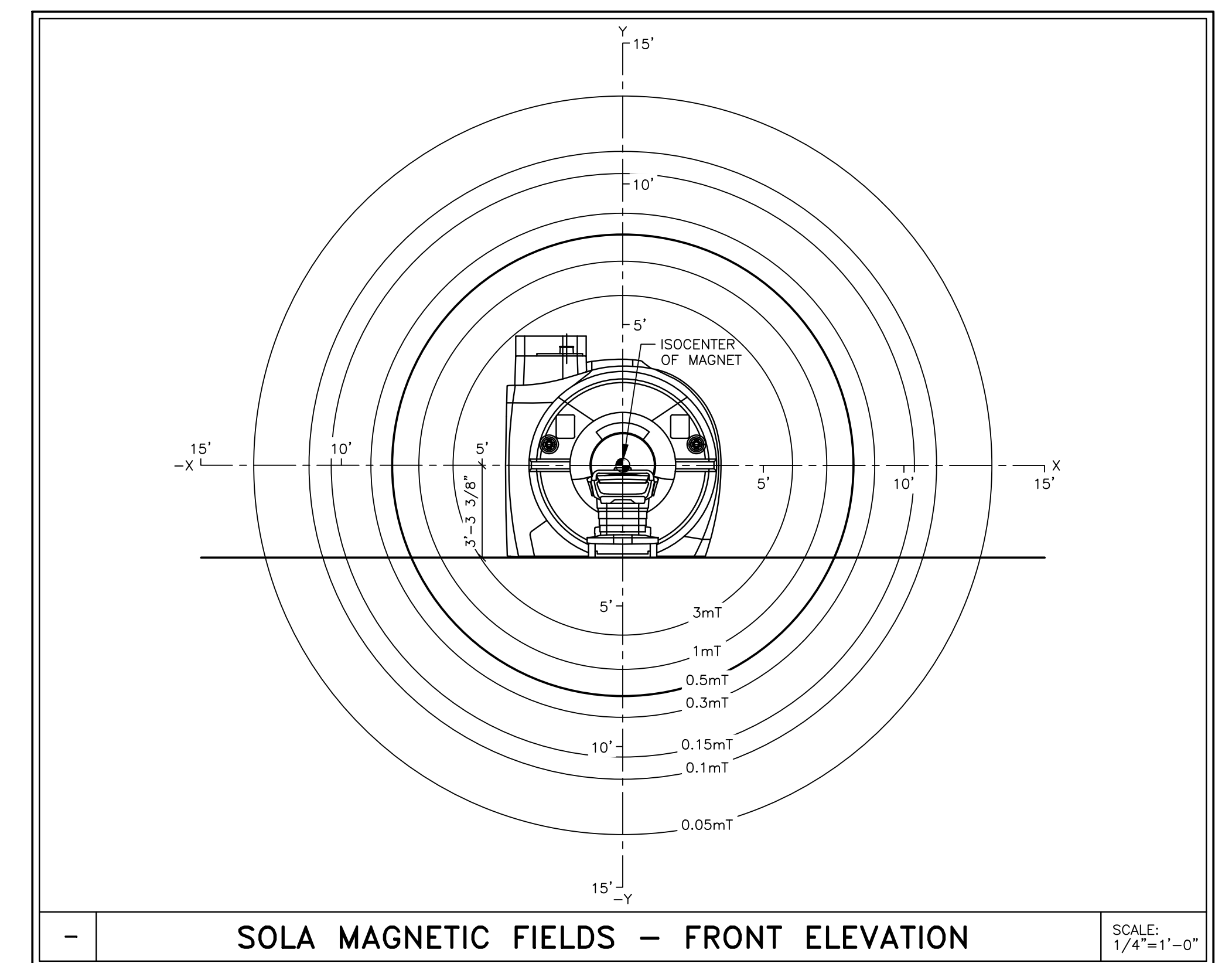
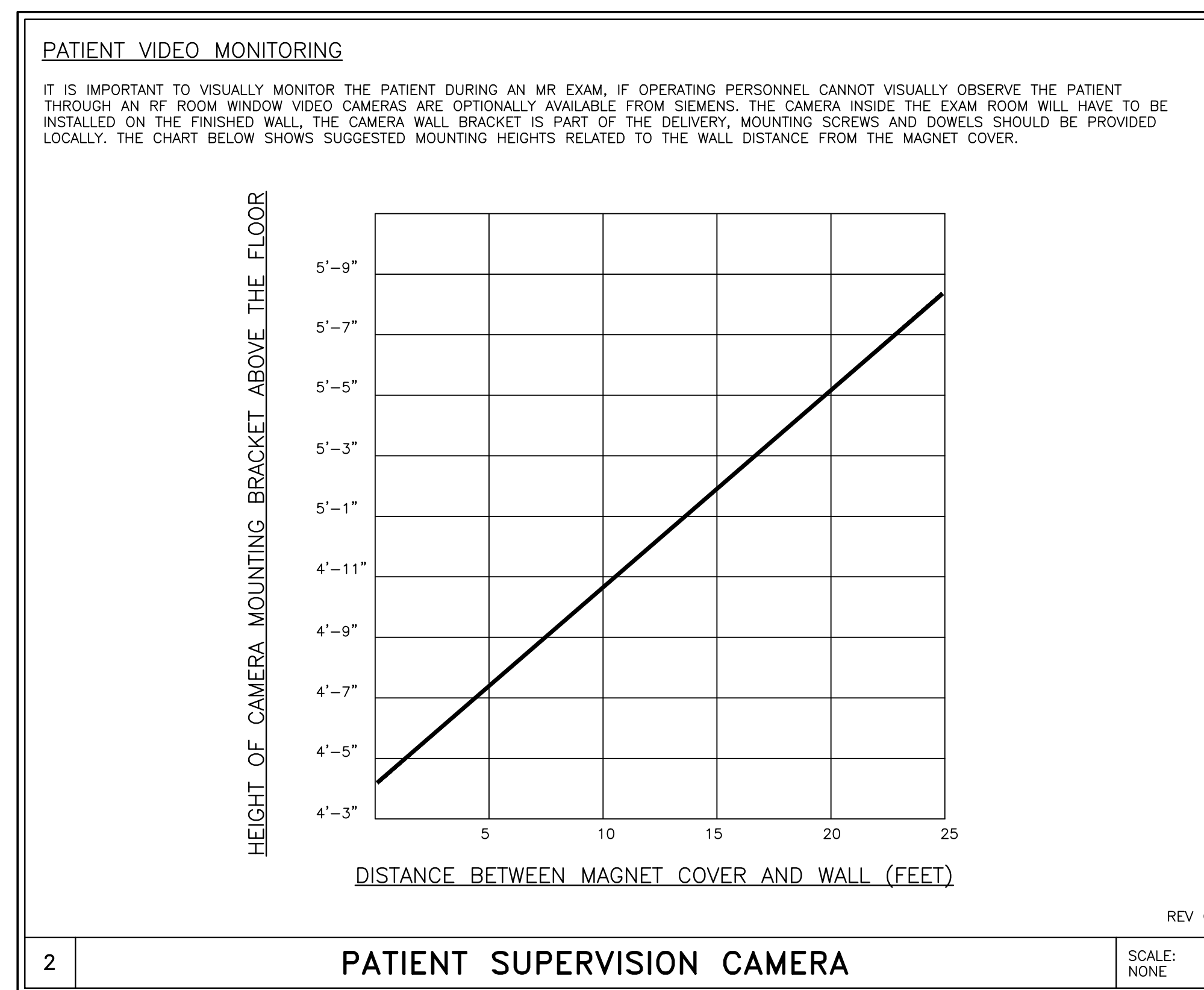
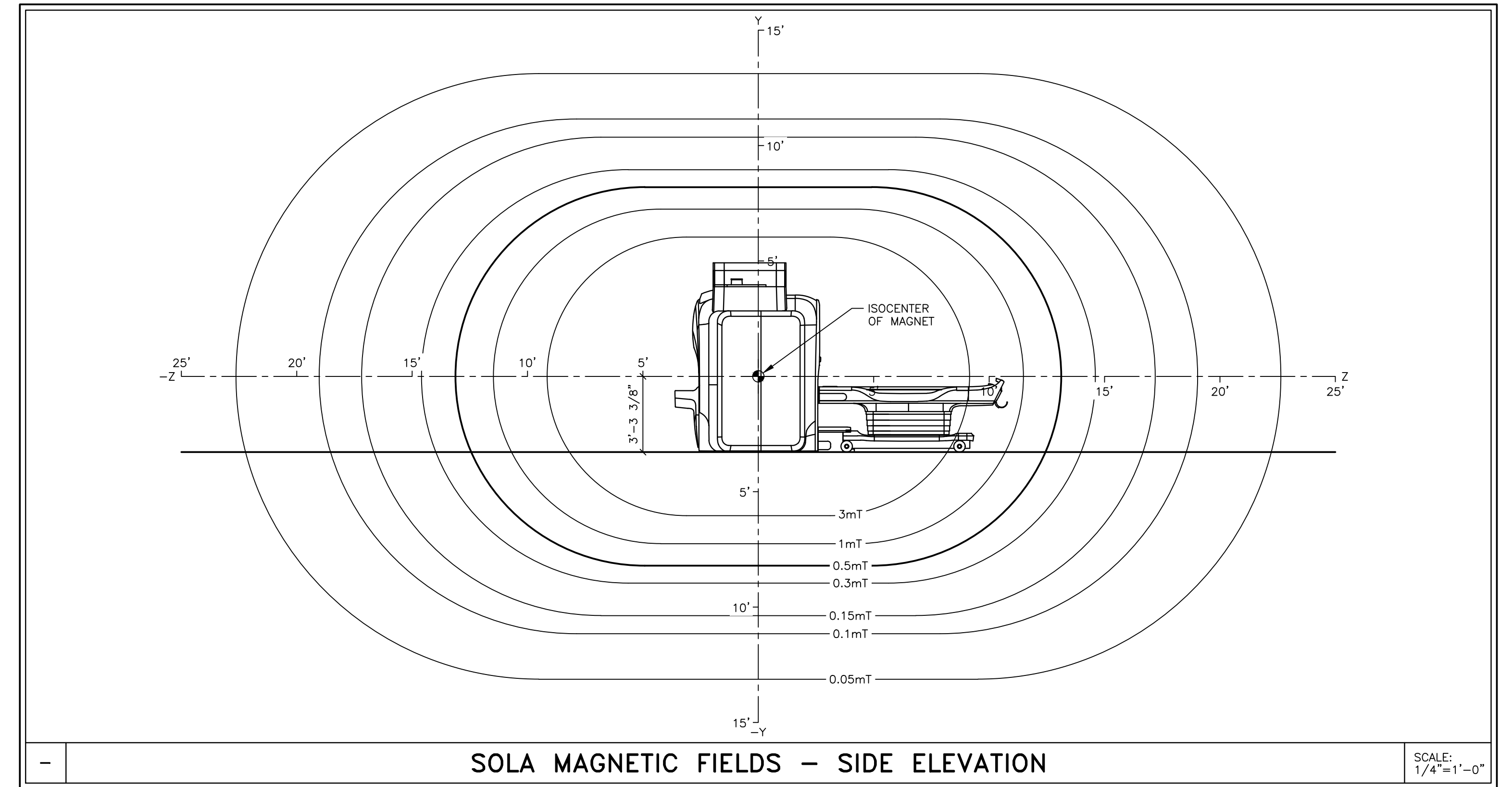
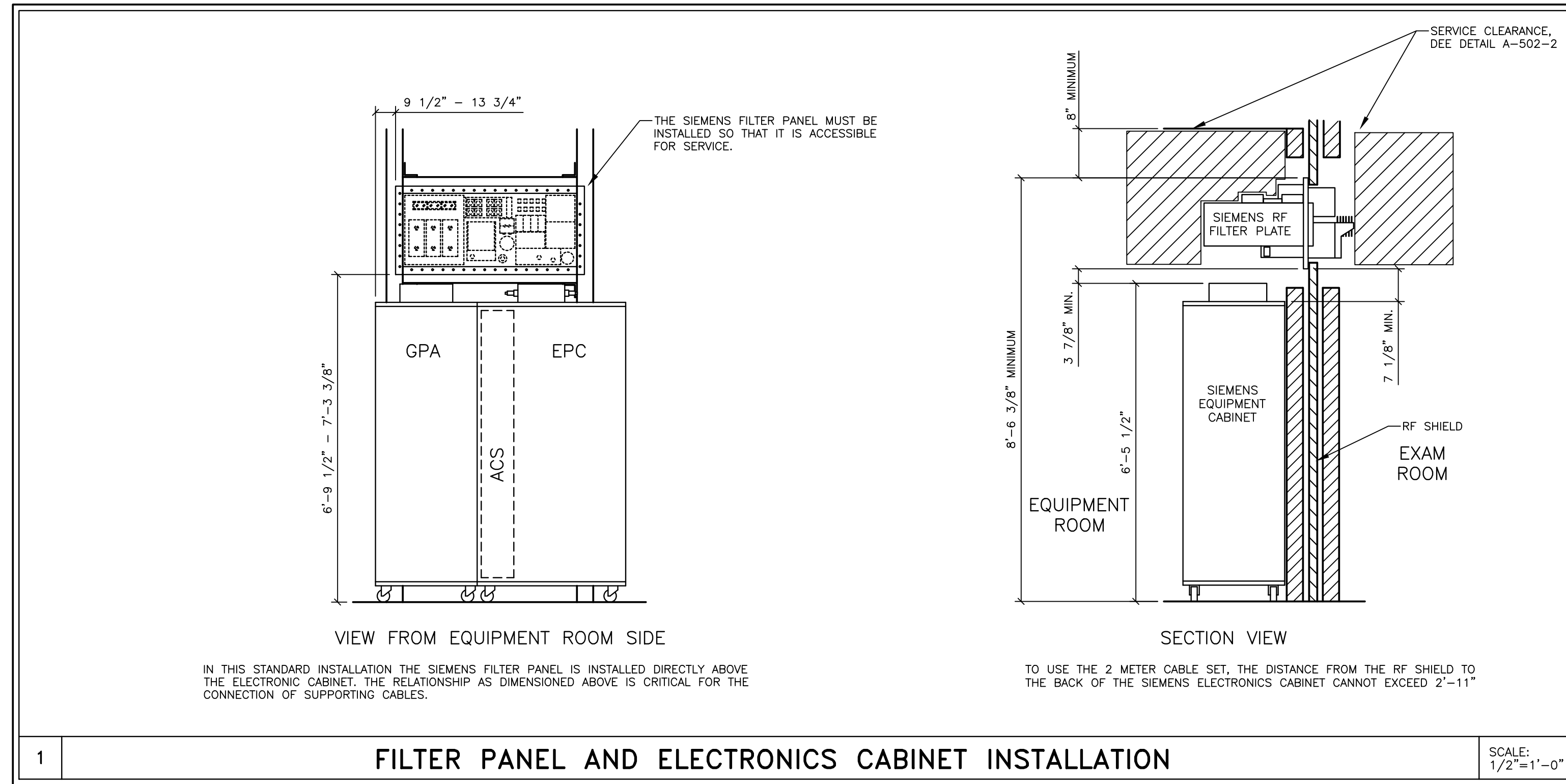
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| SYM | DATE | DESCRIPTION |
|-----|----------|--|
| △ | 12/10/24 | 2414586RA DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |

-ISSUE BLOCK-



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| | | | |
|--|--|--|--------------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | | SIEMENS | |
| | | VA TEMPLE 674 | |
| | | 1901 SOUTH 1ST STREET, TEMPLE, TX 76504 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS | |
| THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. | | PROJECT #: 2414586 | SHEET: A-501 |
| ALL RIGHTS ARE RESERVED. | | SHEET 3 OF 11 | DRAWN BY: P. WOTORTSI |
| SCALE: AS NOTED | | REF. #: 30295989 | DATE: 12/10/24 |

-ISSUE BLOCK-

SOLA
REV 22

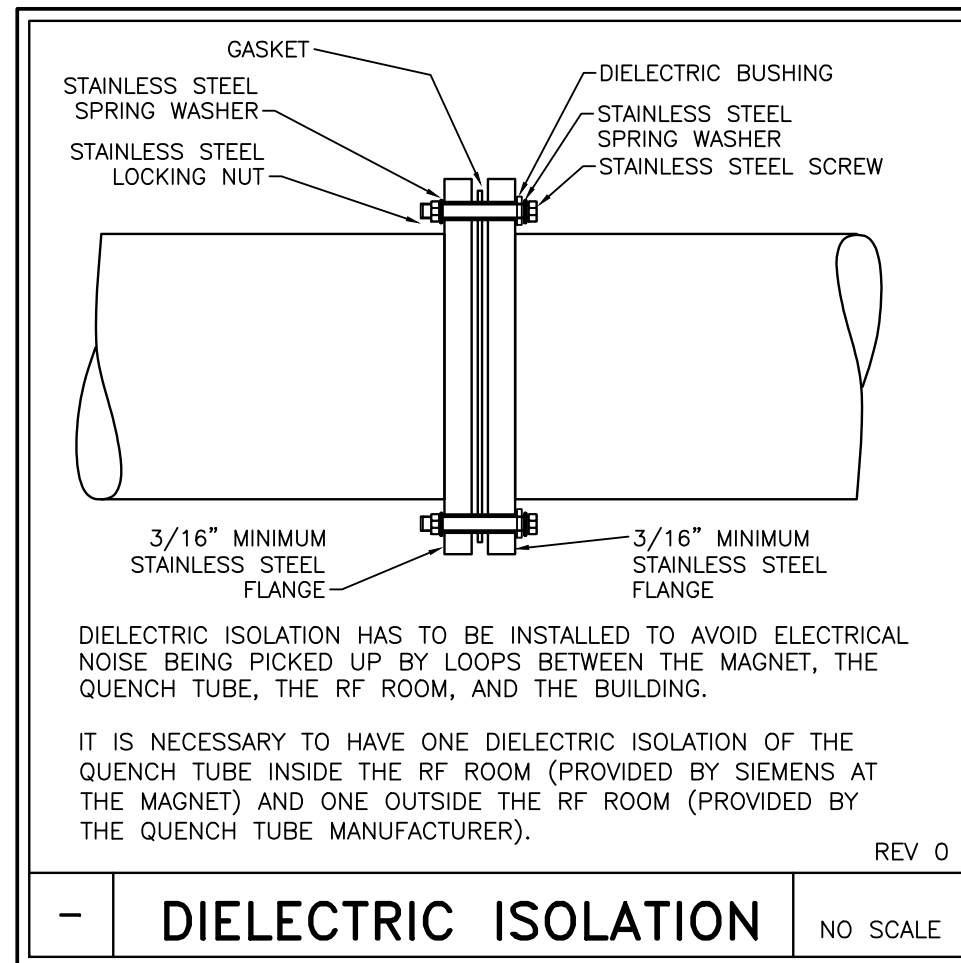
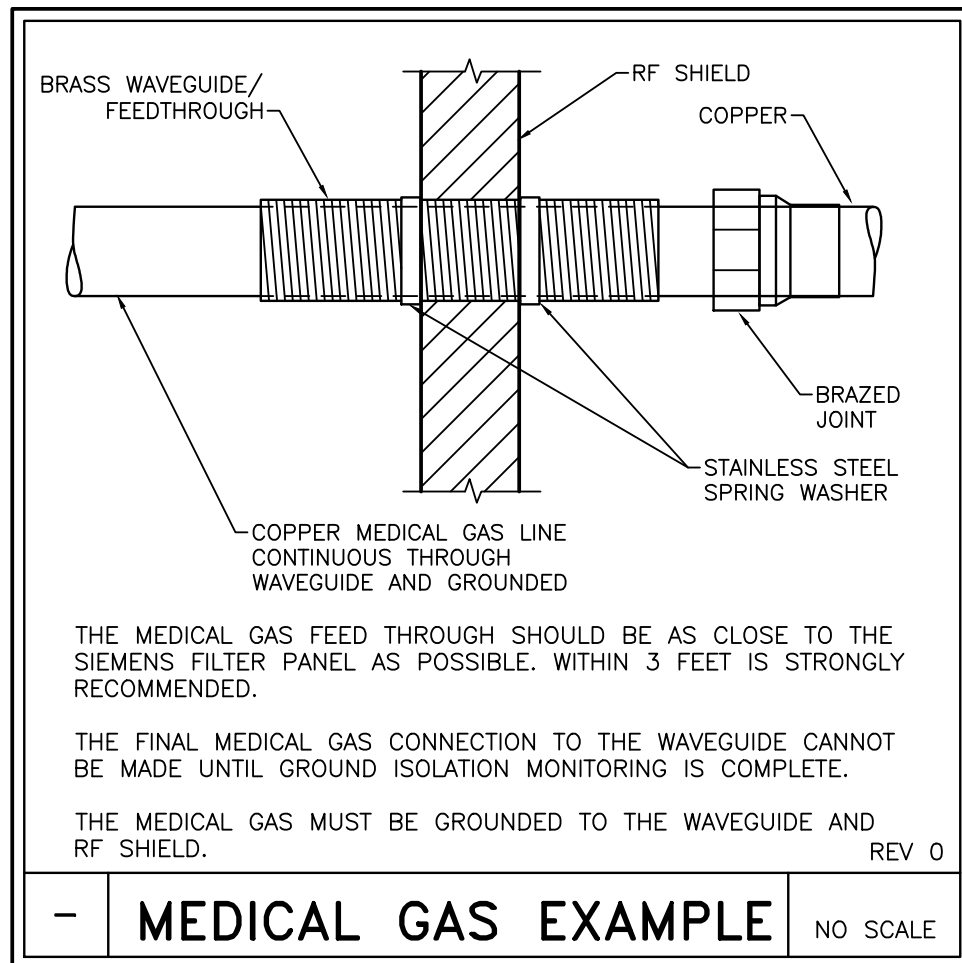
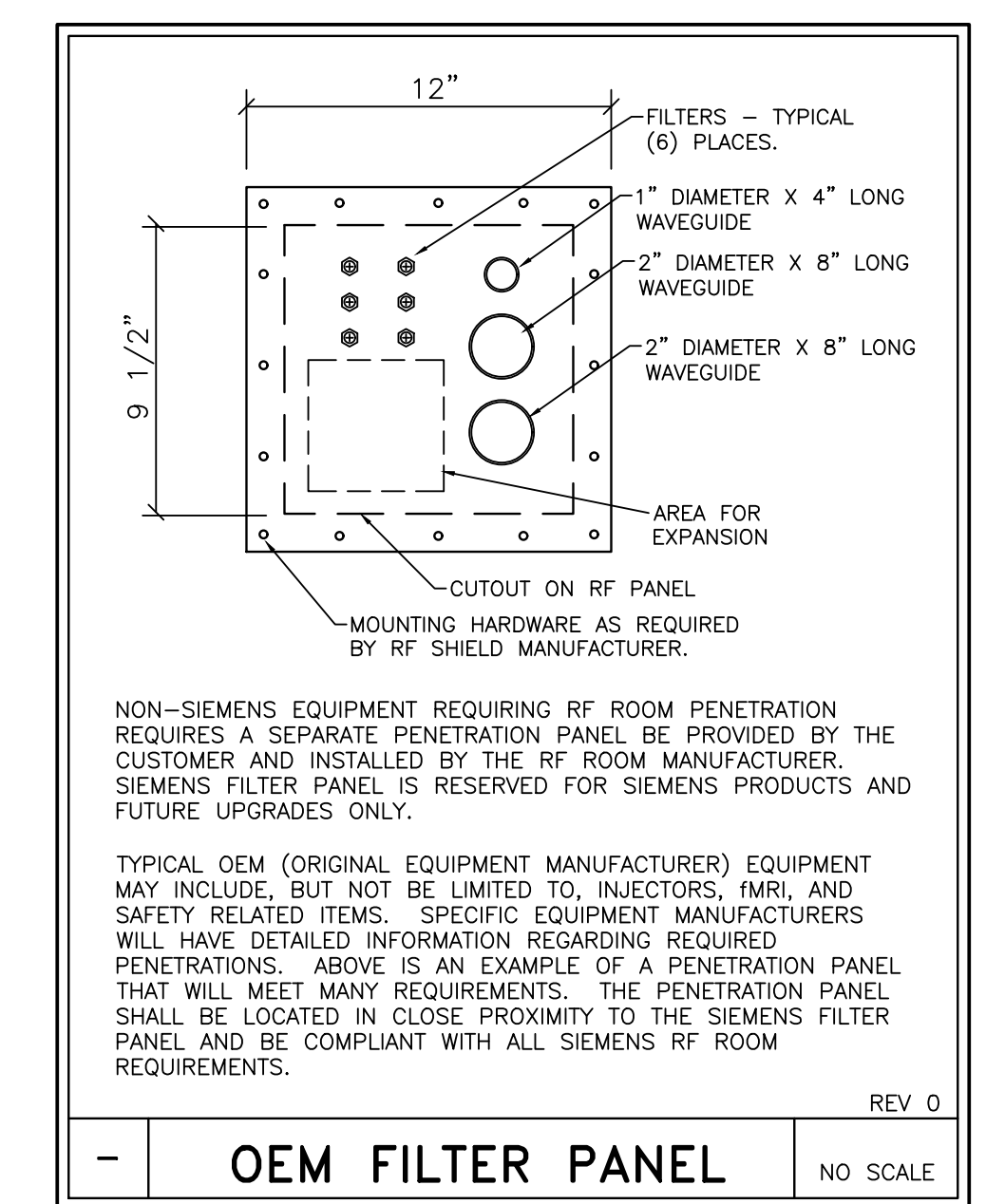
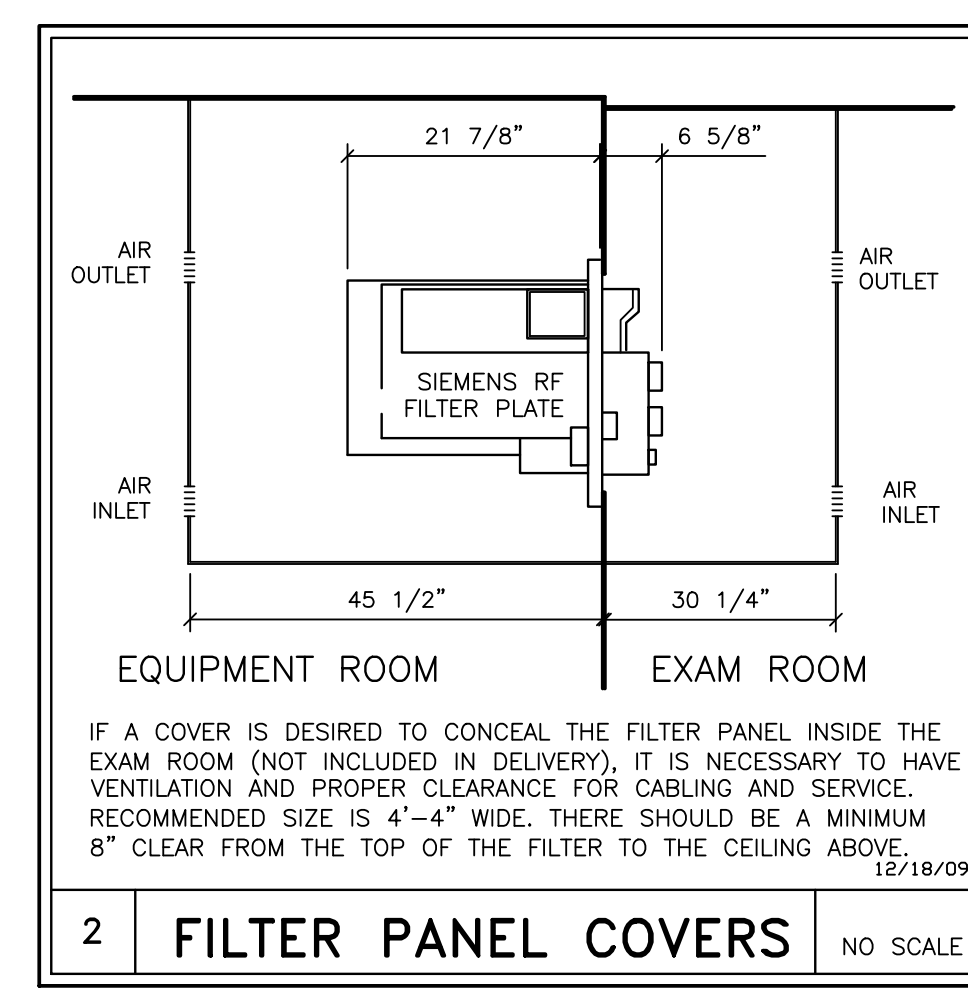
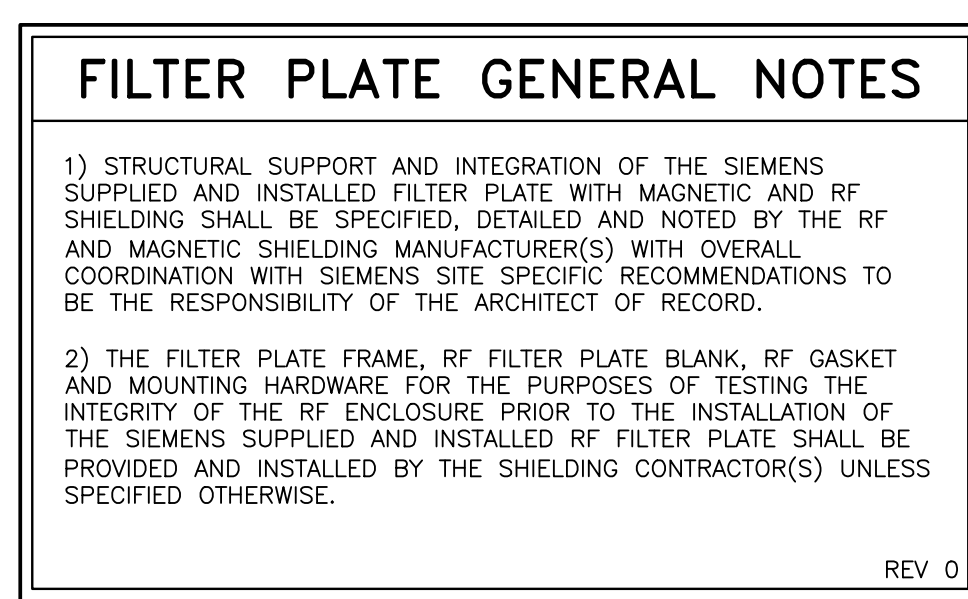
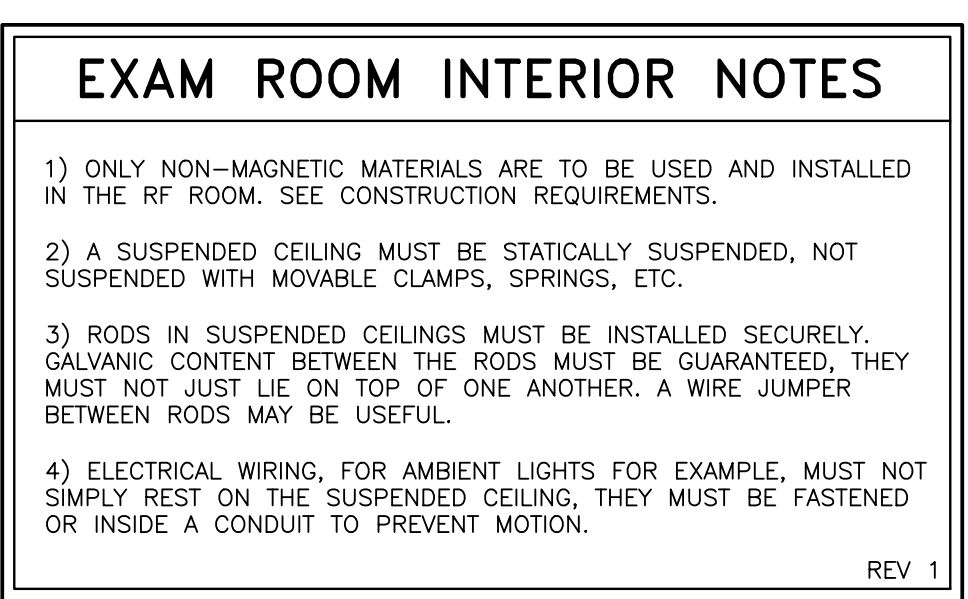
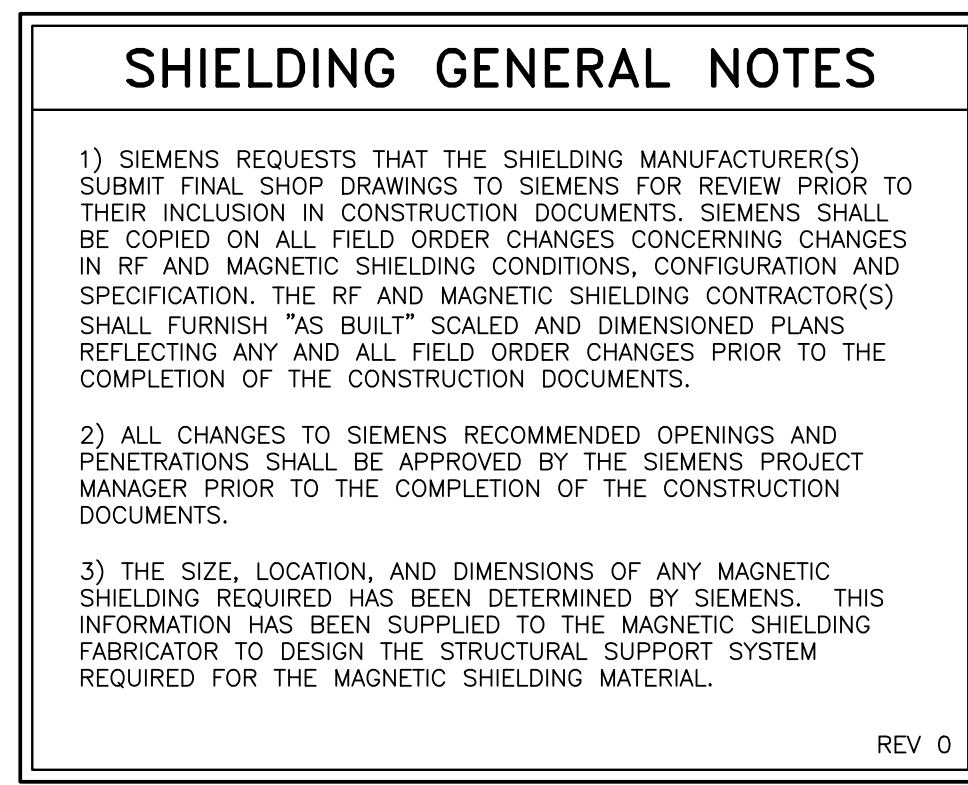
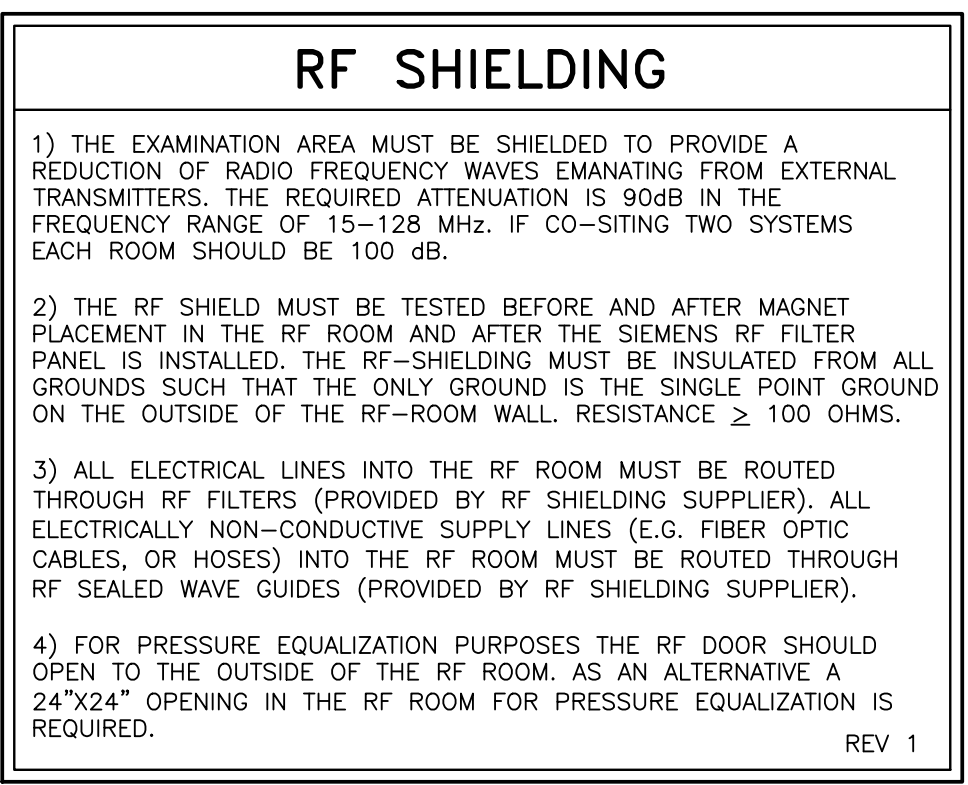
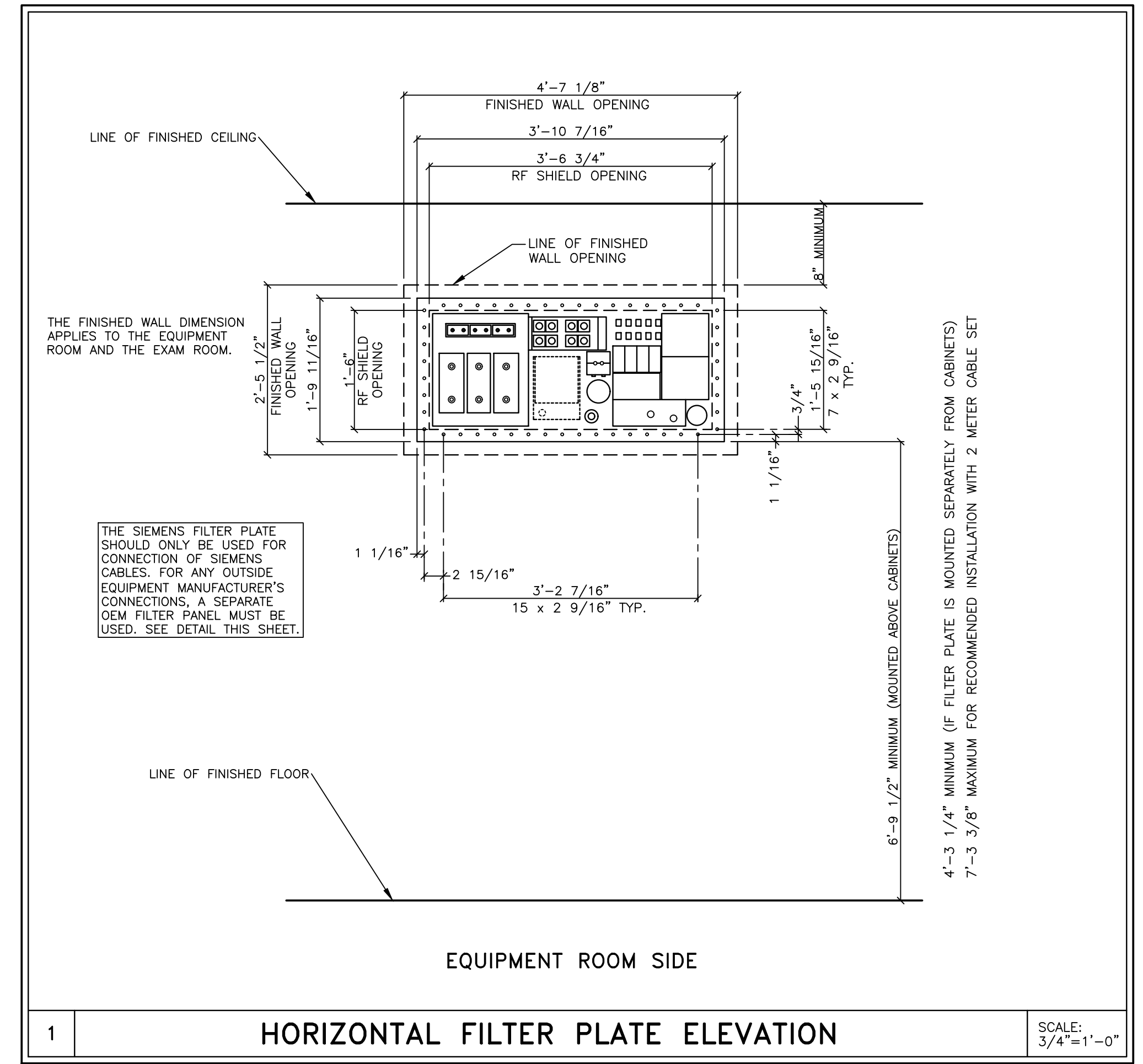
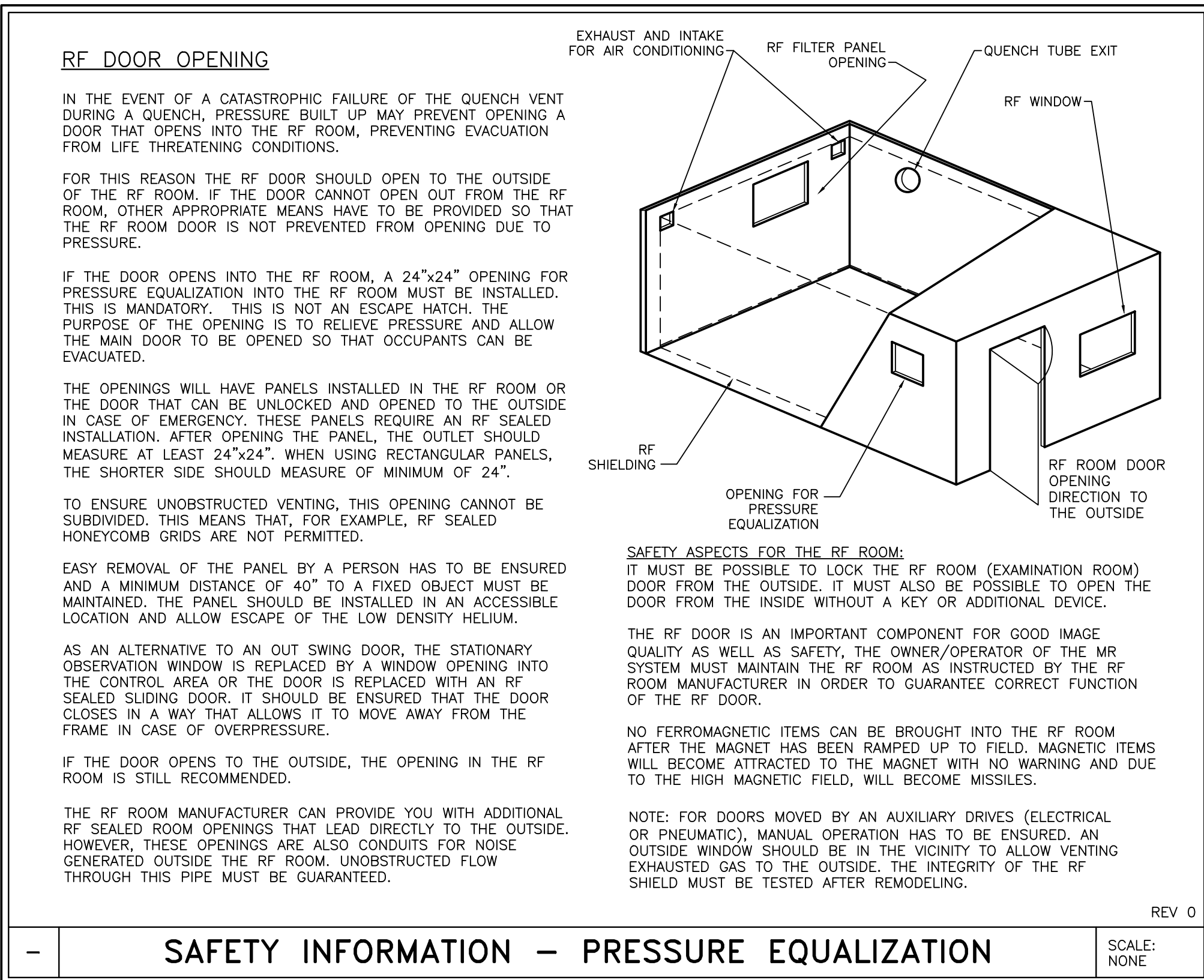
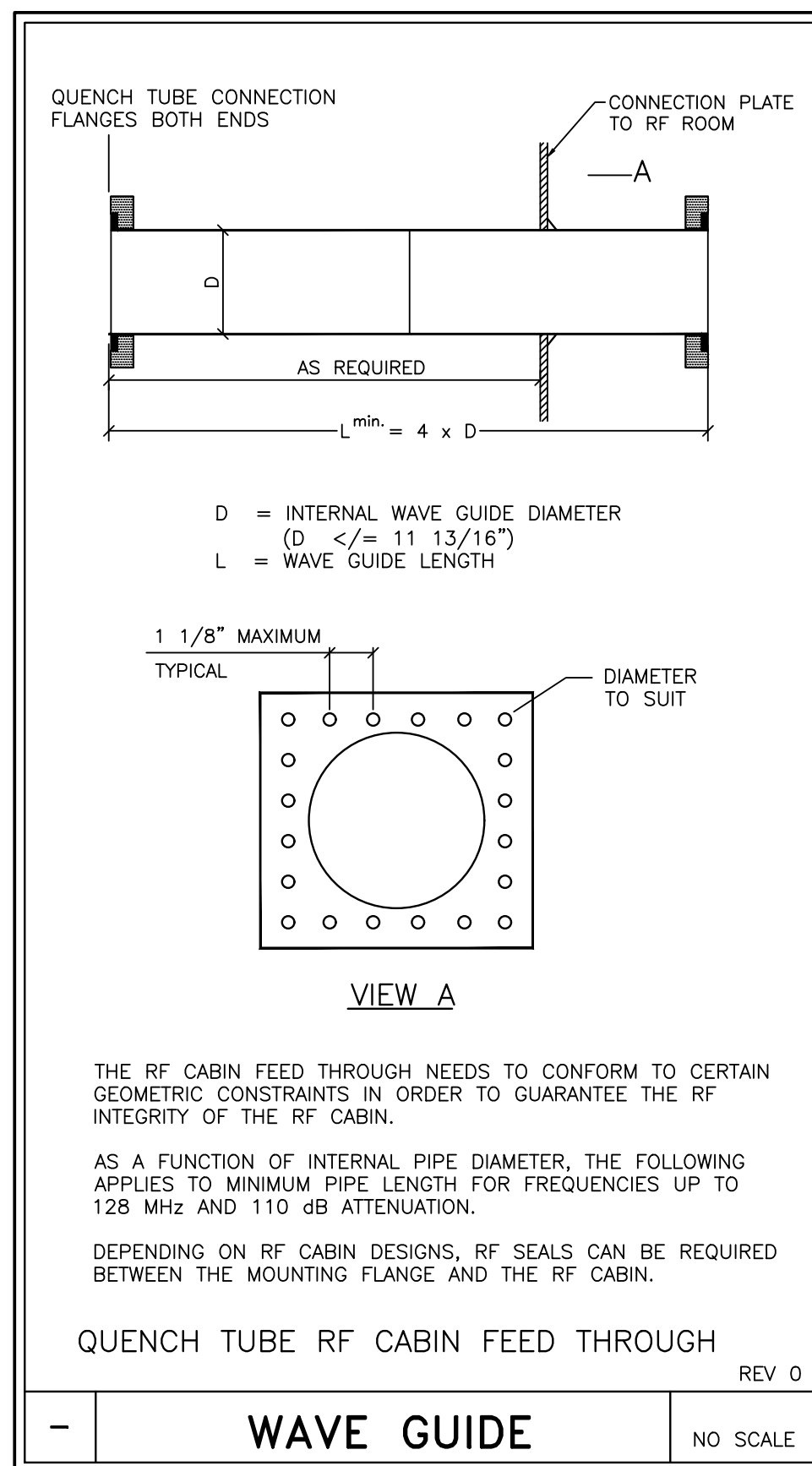


IMAGE QUALITY CONCERNS

BROADBAND RF NOISE IS A SINGLE TRANSIENT OR CONTINUOUS SERIES OF TRANSIENT DISTURBANCES CAUSED BY AN ELECTRICAL DISCHARGE. LOW HUMIDITY ENVIRONMENTAL CONDITIONS WILL HAVE HIGHER PROBABILITY OF ELECTRICAL DISCHARGE. THE ELECTRICAL DISCHARGE CAN OCCUR DUE TO ELECTRICAL ARCING OR MERELY STATIC DISCHARGE. SOME POTENTIAL SOURCES CAPABLE OF PRODUCING ELECTRICAL DISCHARGE INCLUDE:

- LOOSE HARDWARE/FASTENERS-VIBRATION OR MOVEMENT (ELECTRICAL CONTINUITY MUST ALWAYS BE MAINTAINED).
- FLOORING MATERIAL INCLUDING RAISED ACCESS FLOORING (PANELS AND SUPPORT HARDWARE) AND CARPETING.
- ELECTRICAL FIXTURES (LIGHTING FIXTURES, TRACK LIGHTING, EMERGENCY LIGHTING, BATTERY CHARGERS, OUTLETS).
- DUCTING FOR HVAC AND CABLE ROUTING.
- RF SHIELD SEALS (WALLS, DOORS, WINDOWS, ETC.).

REV 0



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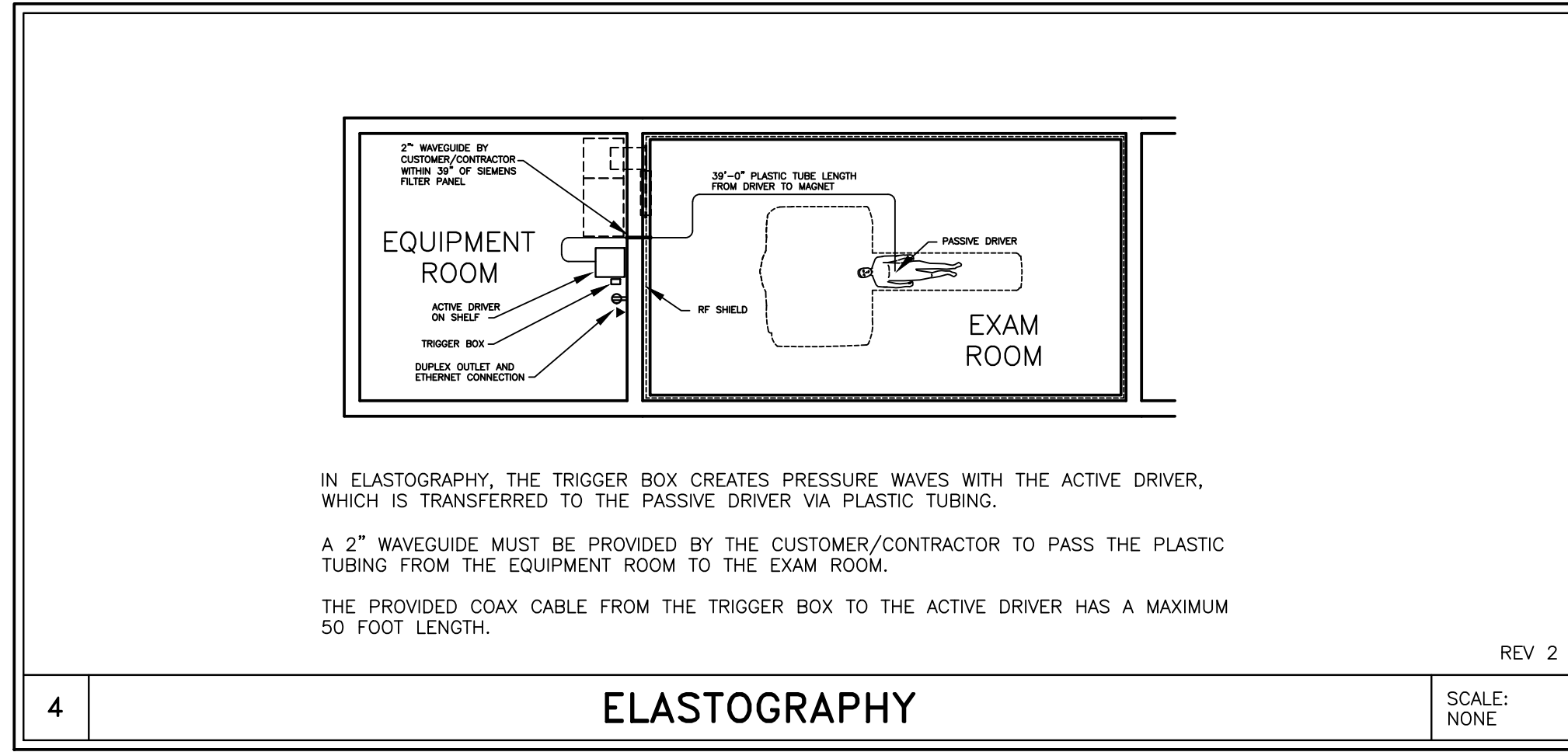
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| ALL RIGHTS ARE RESERVED. | | SHEET 4 OF 11 DRAWN BY: P. WOTORTSI | |
| SCALE: AS NOTED REF. #: 30295989 | | DATE: 12/10/24 | |

SOLA
REV 22

| SYM | DATE | DESCRIPTION |
|-----------------|----------|--|
| △ | 12/10/24 | 2414586RA DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |
| - ISSUE BLOCK - | | |



IN ELASTOGRAPHY, THE TRIGGER BOX CREATES PRESSURE WAVES WITH THE ACTIVE DRIVER, WHICH IS TRANSFERRED TO THE PASSIVE DRIVER VIA PLASTIC TUBING.

A 2" WAVEGUIDE MUST BE PROVIDED BY THE CUSTOMER/CONTRACTOR TO PASS THE PLASTIC TUBING FROM THE EQUIPMENT ROOM TO THE EXAM ROOM.

THE PROVIDED COAX CABLE FROM THE TRIGGER BOX TO THE ACTIVE DRIVER HAS A MAXIMUM 50 FOOT LENGTH.

REV 2

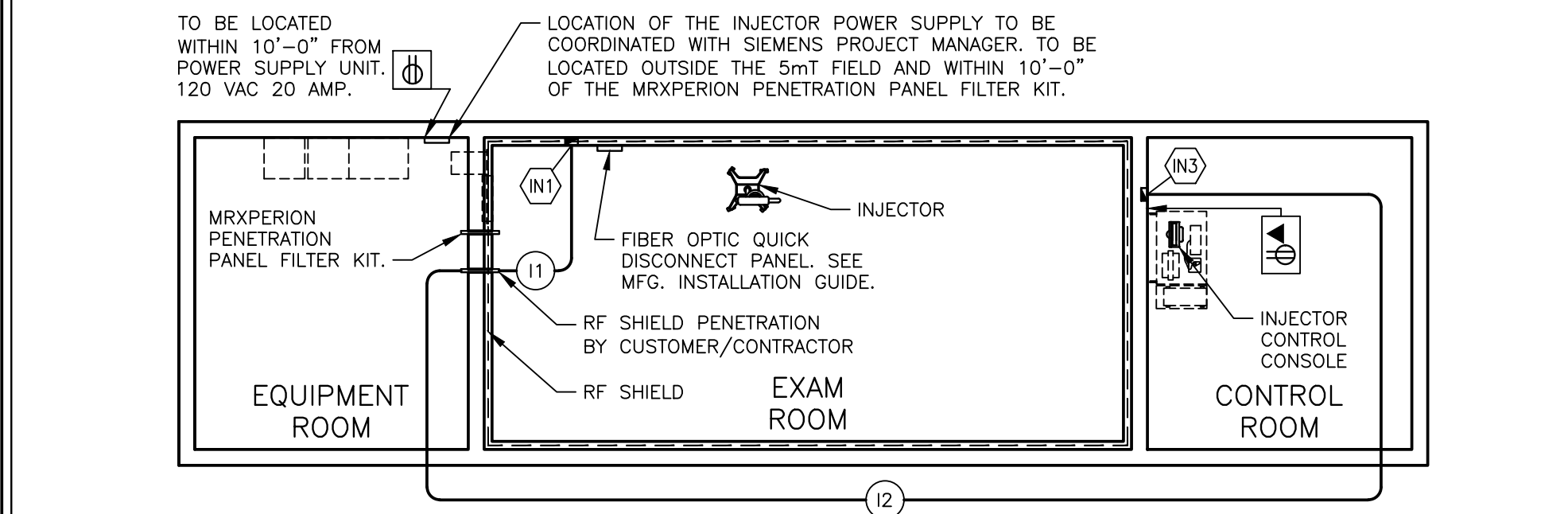
SCALE: NONE

ELASTOGRAPHY

4

NOTES:
 INJECTOR POWER SUPPLY IN THE EQUIPMENT ROOM. ELECTRICAL SUPPLY IN EQUIPMENT ROOM.
 MRXPERION PENETRATION PANEL FILTER KIT MUST BE ORDERED TO ACCOMMODATE THIS INSTALLATION.
 INJECTORS THAT ARE USED IN MRI APPLICATIONS WILL HAVE THREE COMPONENTS: THE INJECTOR, THE POWER SUPPLY AND THE CONTROL UNIT. THE INJECTOR WILL BE LOCATED IN THE EXAM ROOM AND THE CONTROL UNIT WILL BE LOCATED IN THE CONTROL ROOM. THE POWER SUPPLY MAY BE LOCATED IN THE EQUIPMENT ROOM OR IN THE EXAM ROOM. IN EITHER SITUATION A PENETRATION OR PENETRATIONS OF THE RF SHIELD, SEPARATE FROM THE SIEMENS FILTER PANEL, IS REQUIRED.
 IT IS CRITICAL THAT THE SINGLE POINT GROUND IS MAINTAINED AND THAT NO ELECTRICAL NOISE IS INTRODUCED TO THE MR SYSTEM DUE TO THE INJECTOR INSTALLATION. ALWAYS REFER TO THE MANUFACTURER'S INSTRUCTIONS.
 CUSTOMER SUPPLIED AND INSTALLED PENETRATION TO INCLUDE FILTER AND WAVEGUIDE TO ACCOMMODATE THE FIBER OPTIC CABLE FROM THE EXAM ROOM TO THE CONTROL ROOM.

CABLE LENGTHS:
 THERE IS A 40 FOOT FIBER OPTIC CABLE FROM THE INJECTOR TO THE FIBER OPTICS QUICK DISCONNECT PANEL LOCATED NEAR "IN1".
 THERE IS A 150 FOOT FIBER OPTIC CABLE FROM THE FIBER OPTICS QUICK DISCONNECT PANEL LOCATED NEAR "IN1" TO THE CONTROL CONSOLE LOCATED NEAR "IN3".
 THERE IS A 40 FOOT DC POWER CABLE FROM THE INJECTOR TO THE MRXPERION PENETRATION PANEL FILTER KIT.
 THERE IS A 10 FOOT DC POWER CABLE FROM THE INJECTOR POWER SUPPLY.



TO BE LOCATED WITHIN 10'-0" FROM POWER SUPPLY UNIT. 120 VAC 20 AMP.

LOCATION OF THE INJECTOR POWER SUPPLY TO BE COORDINATED WITH SIEMENS PROJECT MANAGER. TO BE LOCATED OUTSIDE THE 5MT FIELD AND WITHIN 10'-0" OF THE MRXPERION PENETRATION PANEL FILTER KIT.

ELECTRICAL LEGEND

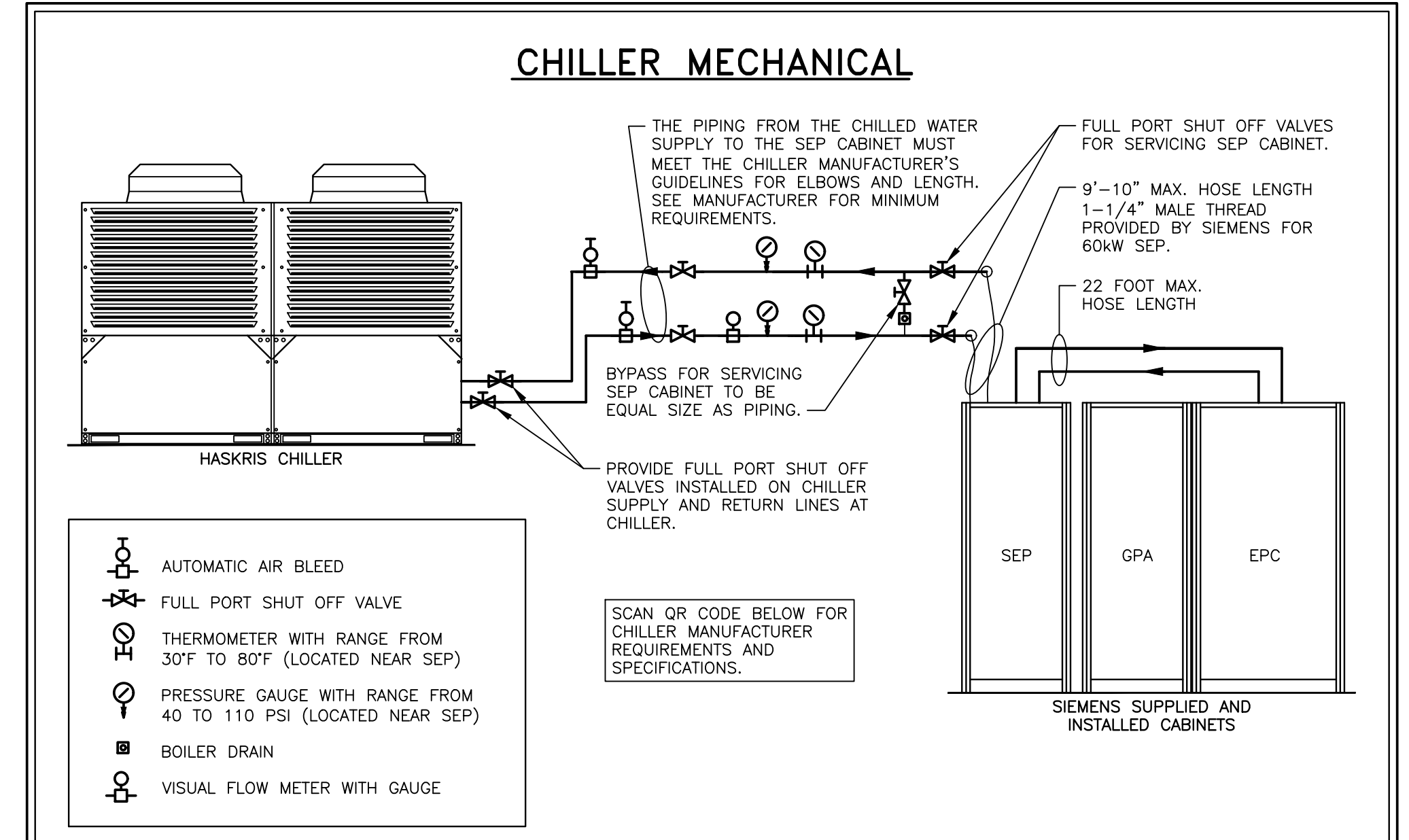
| SYM | SIZE | DESCRIPTION | REMARKS |
|------|-------------|--|--|
| (N1) | AS REQUIRED | NON-FERROUS PULL BOX MOUNTED FLUSH WITH FINISHED WALL MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT. | INJECTOR FIBER OPTICS QUICK DISCONNECT PANEL IN EXAM ROOM. |
| (N2) | AS REQUIRED | PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN CONTROL AREA. MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT. | INJECTOR CONTROL CONSOLE IN CONTROL ROOM. |
| (1) | (1) 2" | NON-FERROUS CONDUIT FROM 2" PENETRATION PANEL NEAR "F1" TO "IN1" FOR INJECTOR FIBER OPTICS CABLES. | MAX CABLE LENGTH IS 150 FEET FROM FIBER OPTICS QUICK DISCONNECT PANEL IN EXAM ROOM TO CONTROL CONSOLE IN CONTROL ROOM. |
| (2) | (1) 2" | CONDUITS FROM 2" PENETRATION PANEL NEAR "F1" LOCATION TO CONTROL ROOM "IN3" FOR INJECTOR FIBER OPTICS CABLES. | |

FOR ADDITIONAL INFORMATION FROM BAYER MANUFACTURING, SCAN THE QR CODE OR VISIT THE FOLLOWING WEB SITE.
WWW.BAYERRADIOLOGY-US.MYASORB.COM

MRXPERION MRI CONTRAST INJECTOR

2

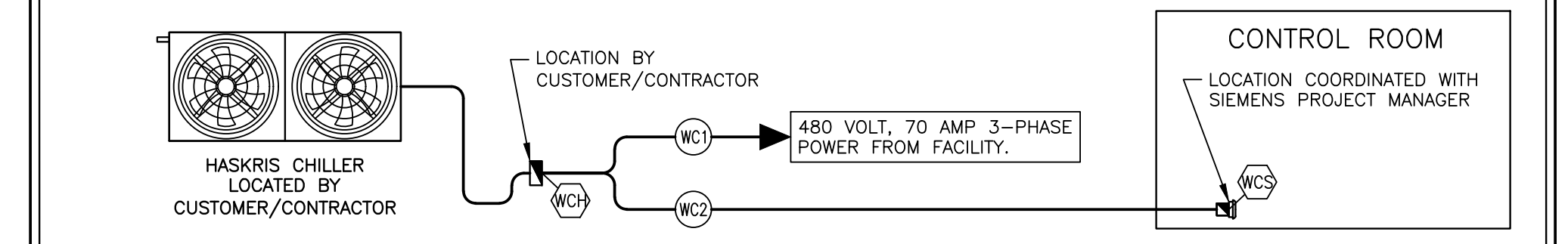
SCALE: NONE



- AUTOMATIC AIR BLEED
- ✂ FULL PORT SHUT OFF VALVE
- ⊖ THERMOMETER WITH RANGE FROM 30°F TO 80°F (LOCATED NEAR SEP)
- ⊖ PRESSURE GAUGE WITH RANGE FROM 40 TO 110 PSI (LOCATED NEAR SEP)
- ⊖ BOILER DRAIN
- ⊖ VISUAL FLOW METER WITH GAUGE

- CHILLED WATER PIPING NOTES:**
- ALL PIPING AND PLUMBING FIXTURES SHALL BE FURNISHED, INSTALLED, CLEANED, PRESSURE TESTED AND CHARGED BY THE MECHANICAL CONTRACTOR PRIOR TO THE DELIVERY AND INSTALLATION OF THE SIEMENS SUPPLIED AND INSTALLED EQUIPMENT UNLESS SPECIFIED OTHERWISE.
 - THE MECHANICAL CONTRACTOR MUST INSTALL AUTOMATIC DE-AERATION DEVICE (AIR VENT) AT THE HIGHEST POINT OF THE WATER SUPPLY PIPE FROM THE CHILLER TO SEP.
 - SYSTEM MUST BE PROVEN TO BE LEAK FREE.
 - THE SUPPLY AND RETURN PIPES FROM THE CHILLED WATER SUPPLY TO THE SEP MUST BE LABELED TO SHOW FLOW DIRECTION AND CONTENT (WATER/GLYCOL).
 - THE MECHANICAL ENGINEER OF RECORD SHALL BE ULTIMATELY RESPONSIBLE FOR THE SITE SPECIFIC DESIGN AND SPECIFICATION OF THE MECHANICAL AND PIPING SYSTEMS AS SHOWN AND SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES. ALL WORK SHALL MEET CHILLER MANUFACTURERS REQUIREMENTS AND SPECIFICATIONS.
 - MANUFACTURER APPROVED GLYCOL AND MIXTURE TO BE SUPPLIED AND FILLED BY MECHANICAL CONTRACTOR FOR COMPLETE CHILLER LOOP. 25 GALLONS ARE NEEDED IN ADDITION TO THE SUPPLY AND RETURN LINES. AN ADDITIONAL 5 GALLONS OF THE MIXED GLYCOL TO REMAIN ON SITE FOR START UP.

CHILLER ELECTRICAL



ELECTRICAL LEGEND

| SYM | SIZE | DESCRIPTION | REMARKS |
|------|-------------|--|-------------------------------------|
| (WC) | AS REQUIRED | PULL BOX MOUNTED ADJACENT TO WATER CHILLER PROVIDED WITH FLEX-TITE CONDUIT FROM PULL BOX TO KNOCK OUT PANEL ON CHILLER. COORDINATE WITH SIEMENS PROJECT MANAGER. | WATER CHILLER |
| (WC) | AS REQUIRED | PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN CONTROL ROOM IN LOCATION COORDINATED WITH SIEMENS PROJECT MANAGER, WIRES ENTER CONTROL PANEL FROM THE BOTTOM. | CHILLER REMOTE CONTROL/STATUS PANEL |
| (WC) | (1) 2" | CONDUIT FROM FACILITY POWER TO "WCH". | |
| (WC) | (1) 1" | CONDUIT FROM "WCH" TO "WCS". | NOT TO EXCEED 150 FEET |

CONTRACTOR SUPPLIED CABLES

| FROM | VIA | TO | DESCRIPTION | REMARKS |
|--------|-----|-----|--|---------|
| SOURCE | WC1 | WCH | (3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER. | |
| WCH | WC2 | WCS | CABLE PROVIDED BY CHILLER MANUFACTURER, PULLED BY ELECTRICIAN | |

FOR ADDITIONAL INFORMATION FROM HASKRIS MANUFACTURER, SCAN THE QR CODE OR VISIT THE FOLLOWING WEB SITE.
WWW.HASKRIS.COM/SIEMENS
 PASSWORD: 1944

HASKRIS CHILLER

1

SOLA REV 22

PROJECT MANAGER: MICHAEL DAVIS
 TEL: (979) 286-4470 EXT:
 FAX:
 EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM

SIEMENS
VA TEMPLE 674
 1901 SOUTH 1ST STREET, TEMPLE, TX 76504
 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS

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PROJECT #: **2414586**
 SHEET: **A-503**

DATE: 12/10/24
 DRAWN BY: P. WOTORTSI

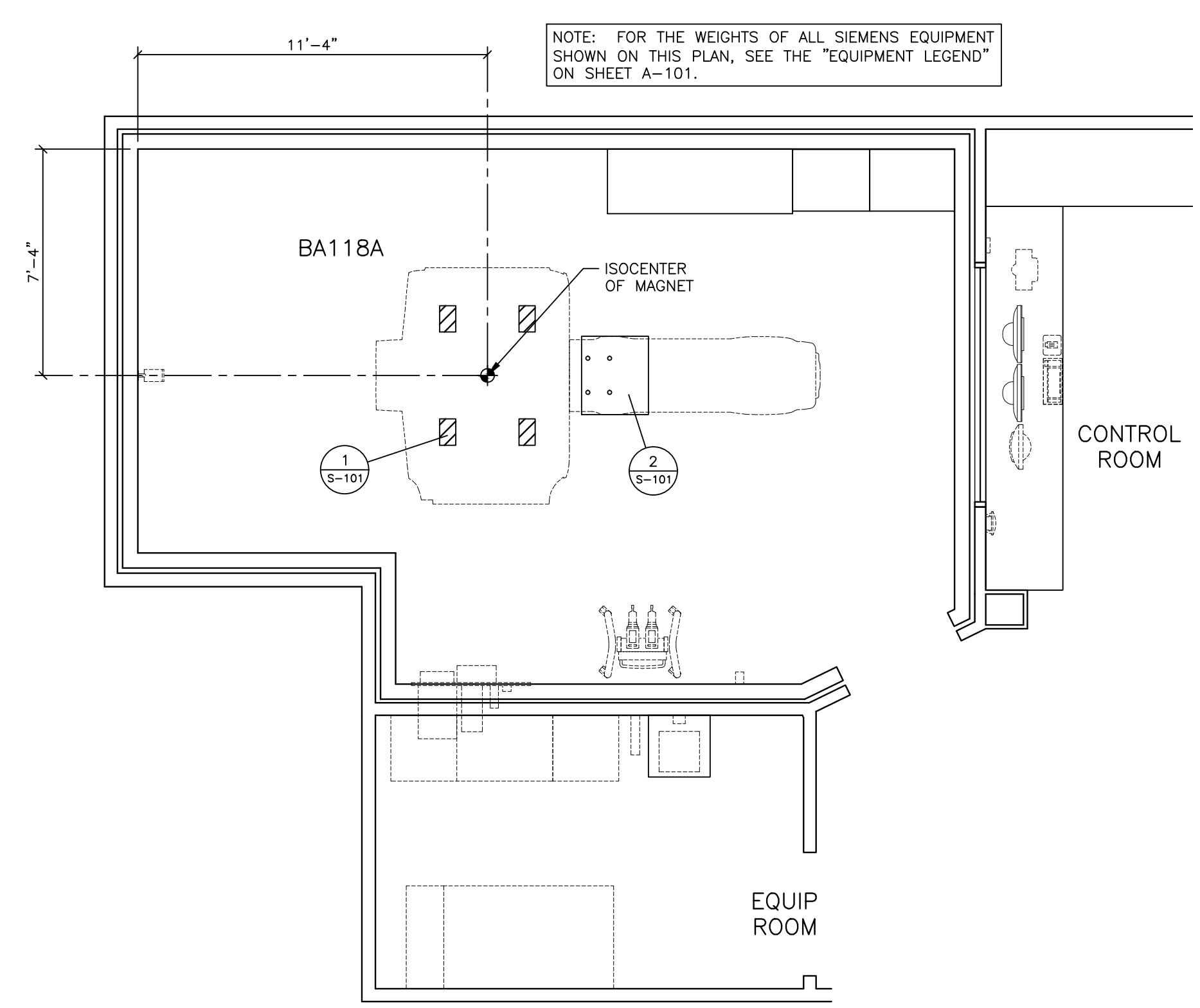
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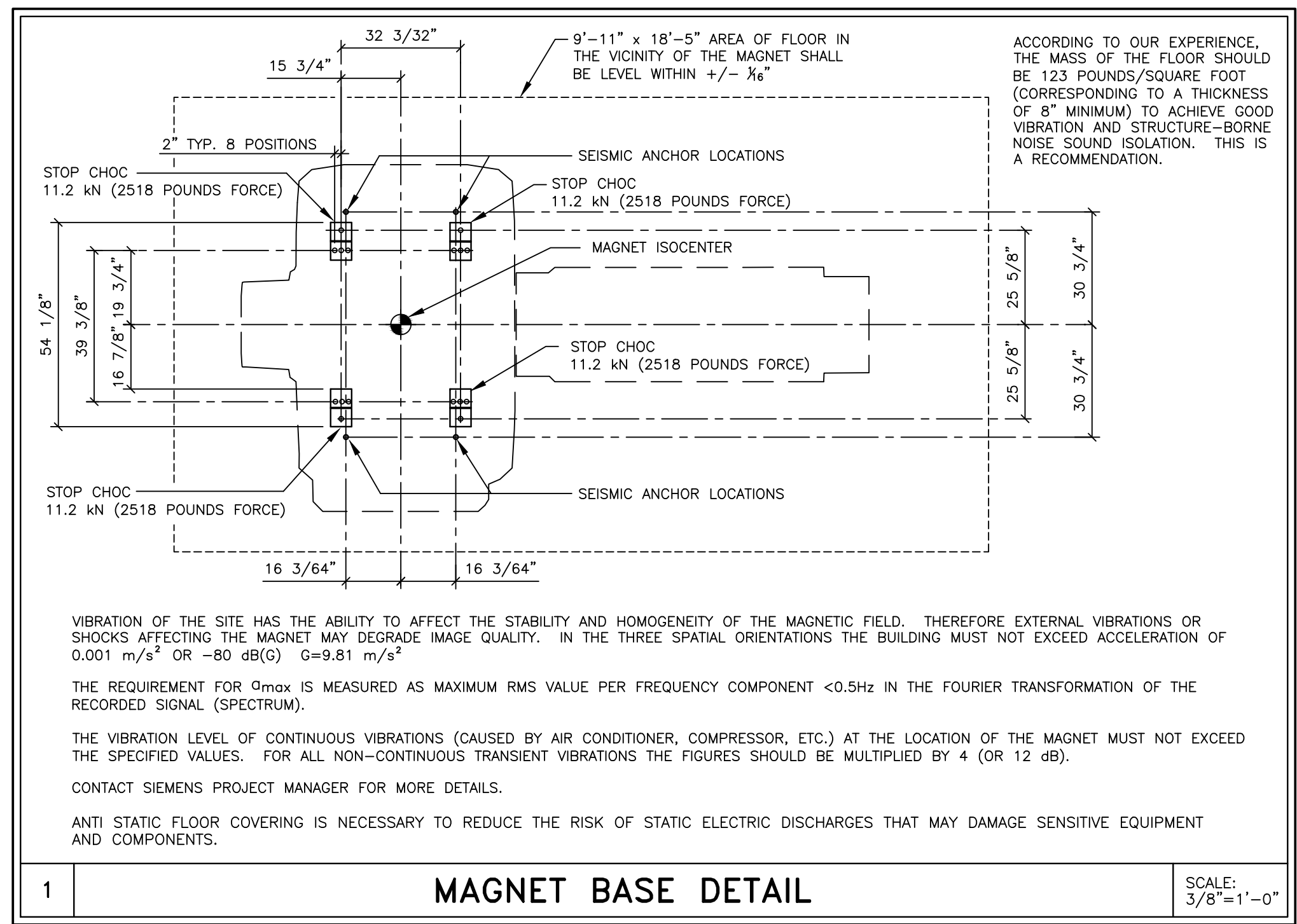
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-ISSUE BLOCK-



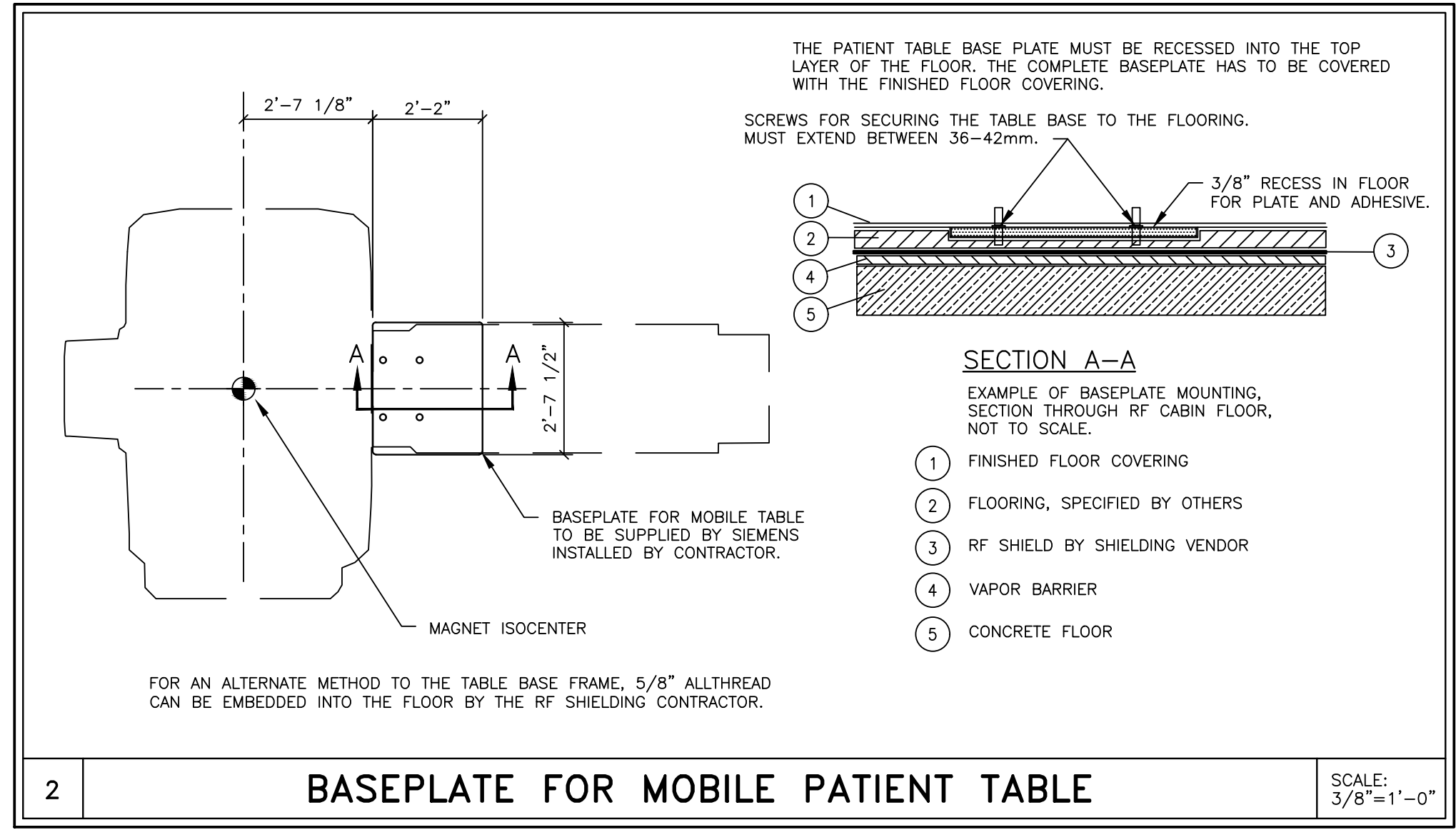
STRUCTURAL FLOOR PLAN

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



MAGNET BASE DETAIL

SCALE: 3/8"=1'-0"



BASEPLATE FOR MOBILE PATIENT TABLE

SCALE: 3/8"=1'-0"

- STRUCTURAL NOTES**
- 1) THE CUSTOMER/CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL SUPPORT MEMBERS AND NEEDED HARDWARE FOR THE INSTALLATION OF THE SIEMENS EQUIPMENT.
 - 2) THE OVERHEAD STRUCTURAL SUPPORT SYSTEM SHALL BE FIXED, RIGID AND BRACED FOR SWAY.
 - 3) ALL STRUCTURAL SUPPORT MEMBERS SHALL BE TRUE, SQUARE, LEVEL, PARALLEL AND COPLANAR WITH RESPECT TO EACH OTHER, WITH A HORIZONTAL STRUCTURAL SUPPORT MEMBER TO BE LOCATED AND SET WITH A TRANSIT.
 - 4) ALL STRUCTURAL SUPPORT DETAILS SHOWN ARE SAMPLE DETAILS BASED UPON TYPICAL AND STANDARD BUILDING PRACTICES AND ARE NOT INTENDED AS ACTUAL CONSTRUCTION DETAILS. ALL CONSTRUCTION DETAILS AND SUPPORT CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER AT THE CUSTOMER'S EXPENSE. IN THE EVENT AN EXISTING SUPPORT SYSTEM IS TO BE USED, IT WILL BE THE CUSTOMER'S RESPONSIBILITY TO VERIFY THE INTEGRITY OF THAT SYSTEM.
 - 5) MOUNTING PLATES, FRAMES, AND HARDWARE SUPPLIED BY SIEMENS AS DETAILED IN THIS DRAWING SET ARE INSTALLED BY SIEMENS UNLESS OTHERWISE REQUIRED. ANY DEVIATION FROM THE PROVIDED MATERIALS OR MOUNTING METHODS MUST BE DESIGNED AND DOCUMENTED BY THE STRUCTURAL ENGINEER OF RECORD. ALTERNATE MOUNTING MATERIALS (I.E. ANCHORS, THREADED ROD, BACKING PLATES, ETC.) MUST BE SUPPLIED BY THE CUSTOMER/CONTRACTOR. SIEMENS MAY REQUIRE ASSISTANCE FROM THE CUSTOMER/CONTRACTOR WITH INSTALLATION WHEN UTILIZING ALTERNATE MOUNTING MATERIALS.
 - 6) ALL CEILING FIXTURES (I.E. AIR SUPPLY GRILLES, AIR RETURN GRILLES, EXHAUST GRILLES, SPRINKLER HEADS, INCANDESCENT AND FLUORESCENT LIGHT FIXTURES, INTERCOM SPEAKERS, MEDICAL GAS COLUMNS, ETC.) SHALL BE INSTALLED FLOOR MOUNTED WITH THE FINISHED CEILING TO PROVIDE FREE AND UNRESTRICTED TRAVEL OF THE SMS CEILING MOUNTED EQUIPMENT.
 - 7) THE STRUCTURAL PLANNING AS SHOWN ON THE 1/4" STRUCTURAL PLAN HAS BEEN COORDINATED WITH THE EQUIPMENT LOCATION AS SHOWN ON THE 1/4" EQUIPMENT LAYOUT PLAN. FOR THIS REASON, ANY DEVIATIONS FROM THE STRUCTURAL PLANNING AS SHOWN MUST BE APPROVED BY SMS PLANNING DEPARTMENT.
 - 8) THE STRUCTURAL ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAIL OF FLOOR, WALL AND CEILING STRUCTURES IN ACCORDANCE WITH THE WEIGHTS, MOMENTS AND FORCES AS SHOWN ON OUR STRUCTURAL CALCULATIONS, OR INFORMATION, IN CONSIDERATION OF FORCES AS DETERMINED PER LOCAL GOVERNING BUILDING CODES.

CEILING HEIGHTS

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

| | | | |
|--|--|--|--------------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | | SIEMENS | |
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| SCALE: AS NOTED | | REF. #: 30295989 | DATE: 12/10/24 |

ATTENTION:

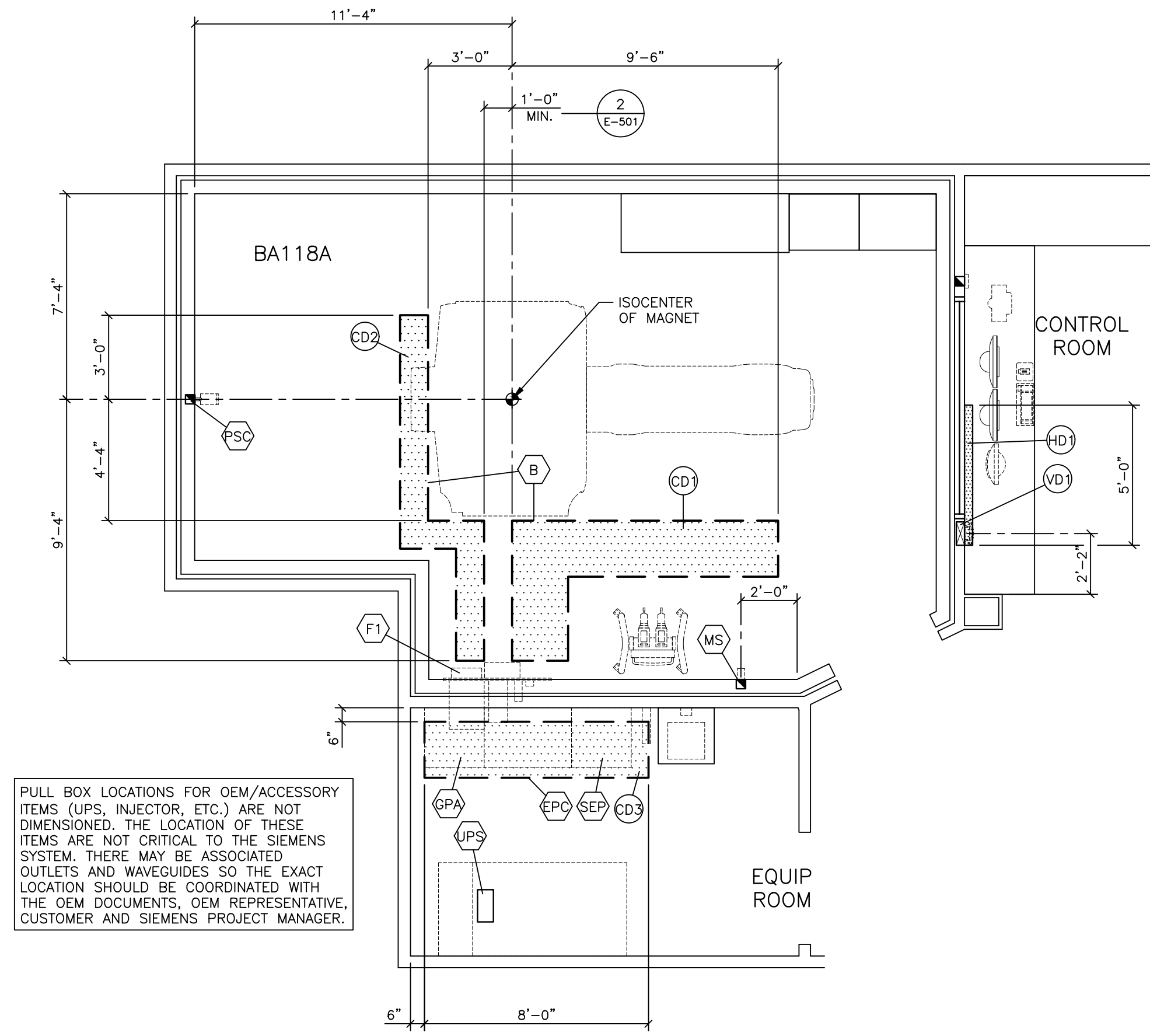
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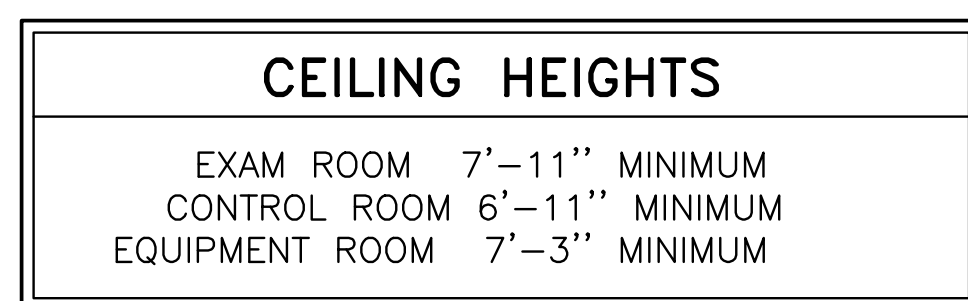
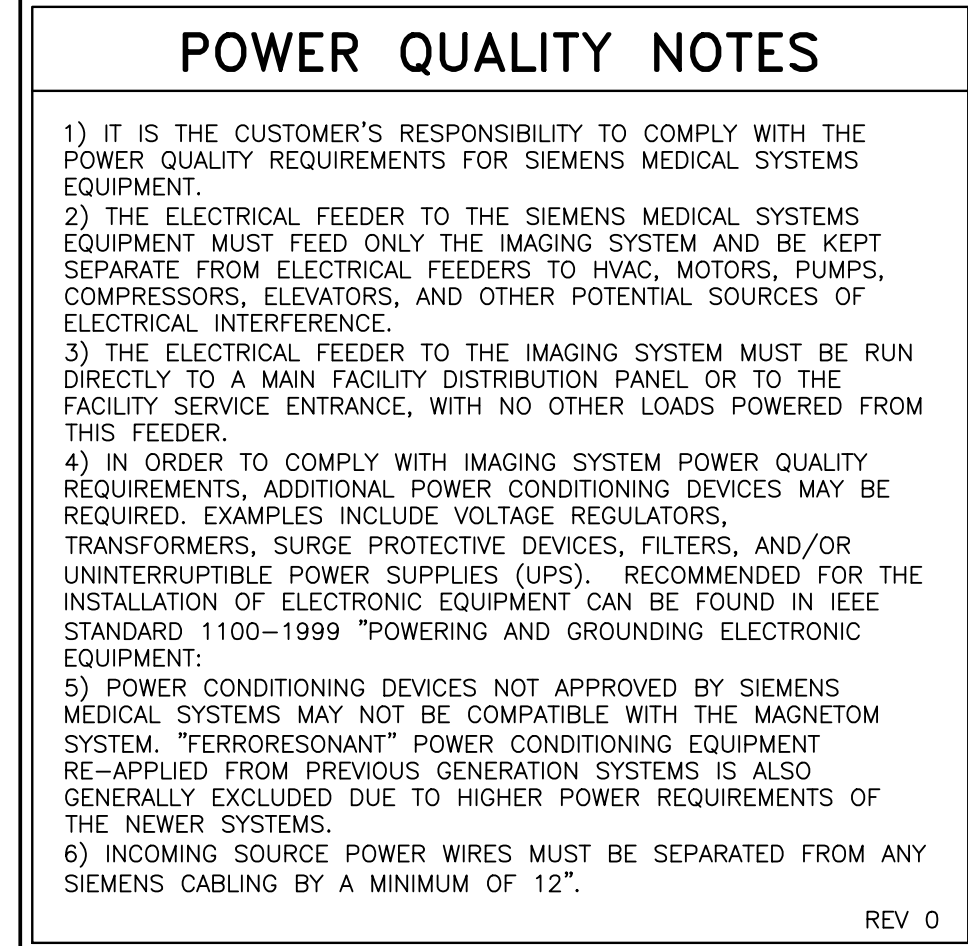
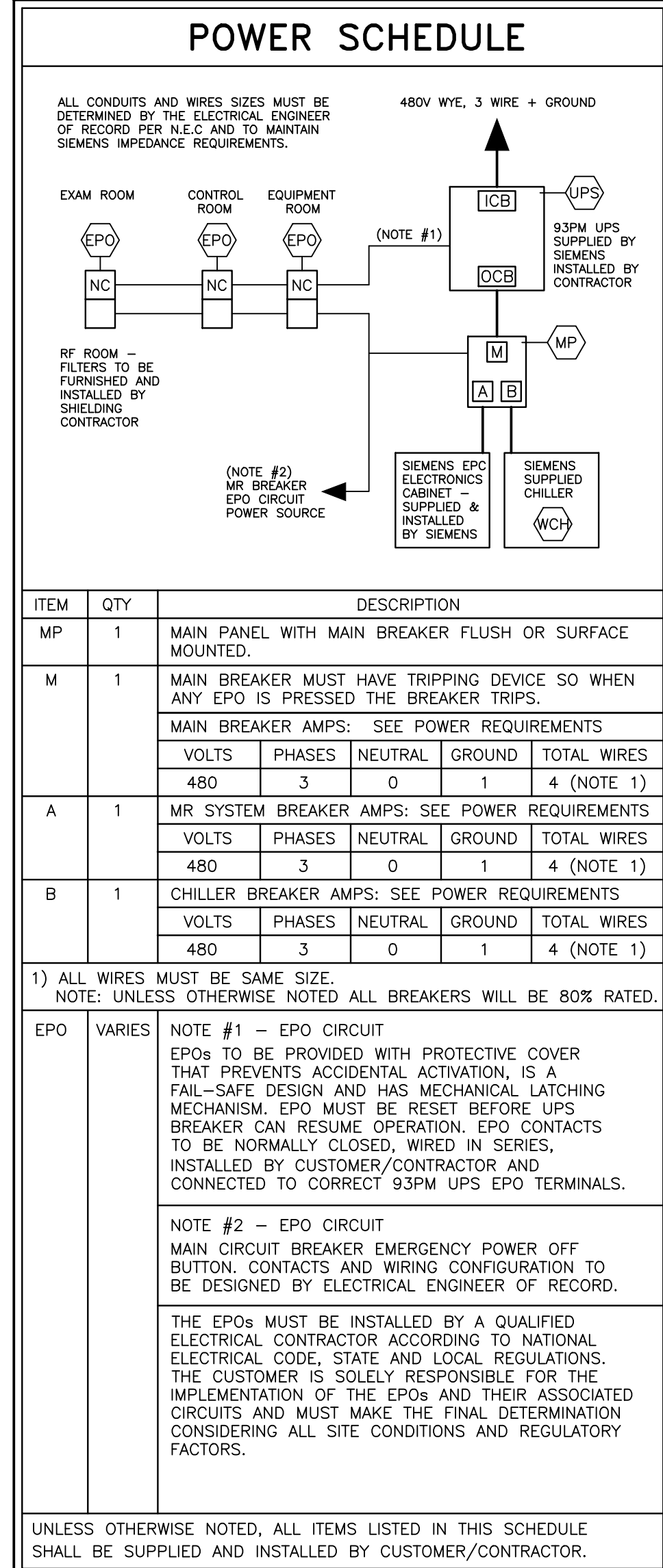
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| | 12/10/24 | 2414586RA DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |
| -ISSUE BLOCK- | | |

SOLA REV 22



ELECTRICAL DIMENSION PLAN

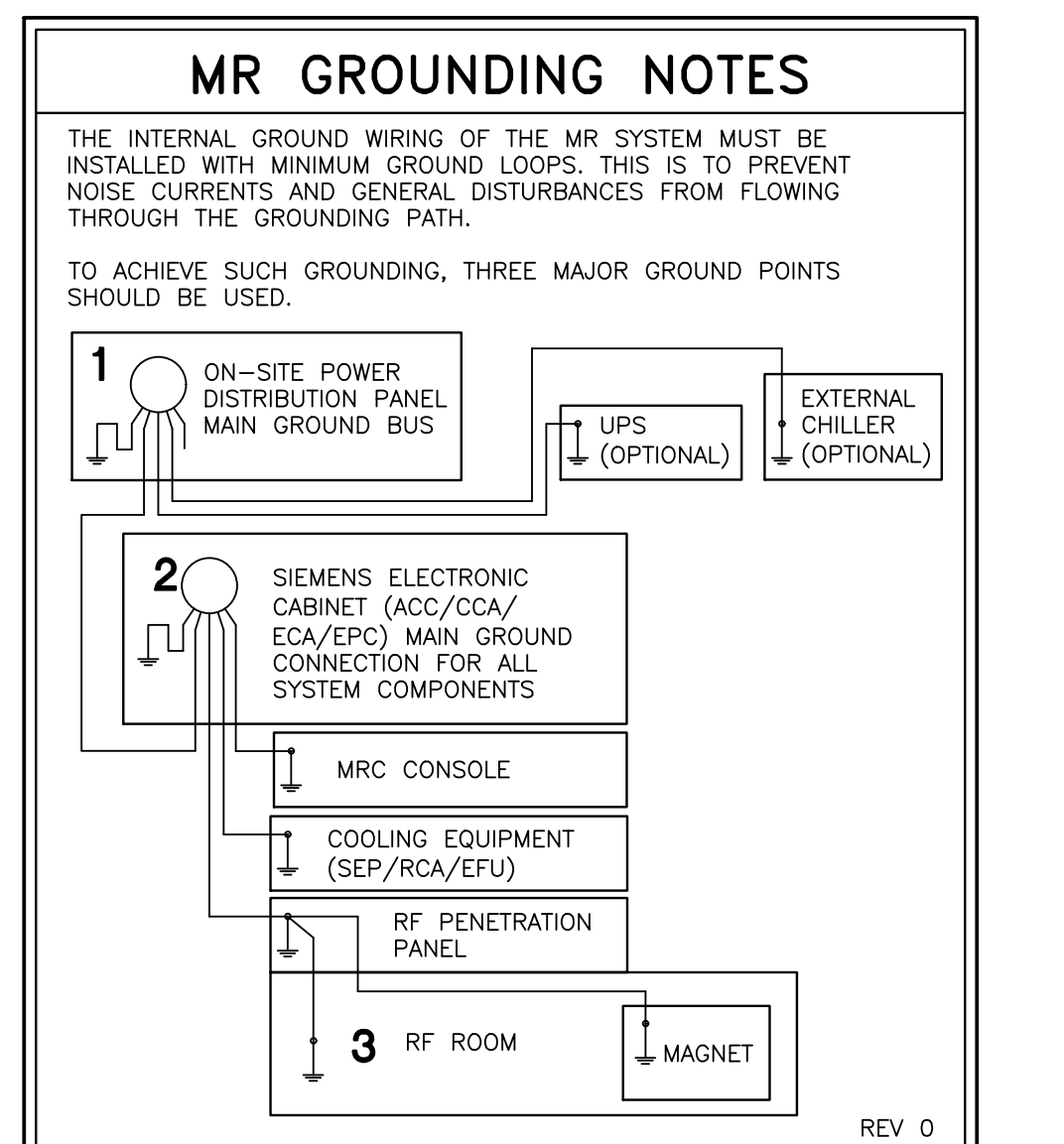
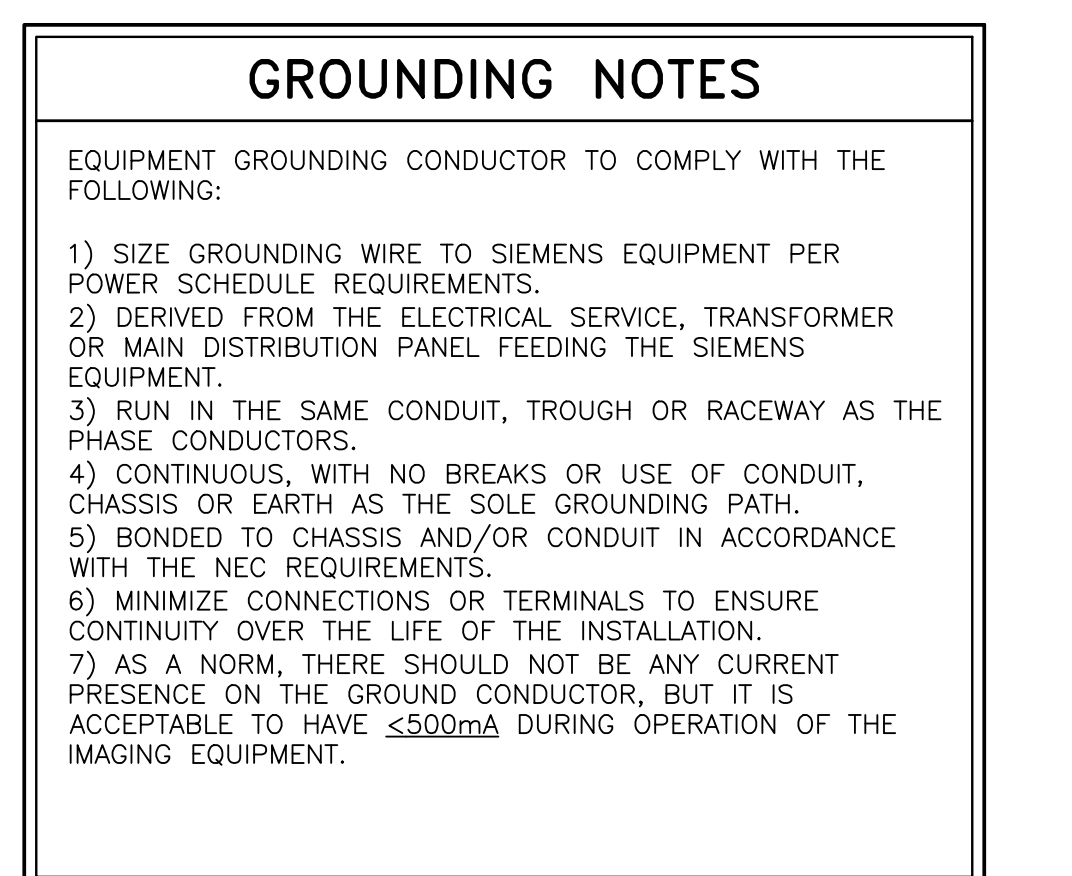
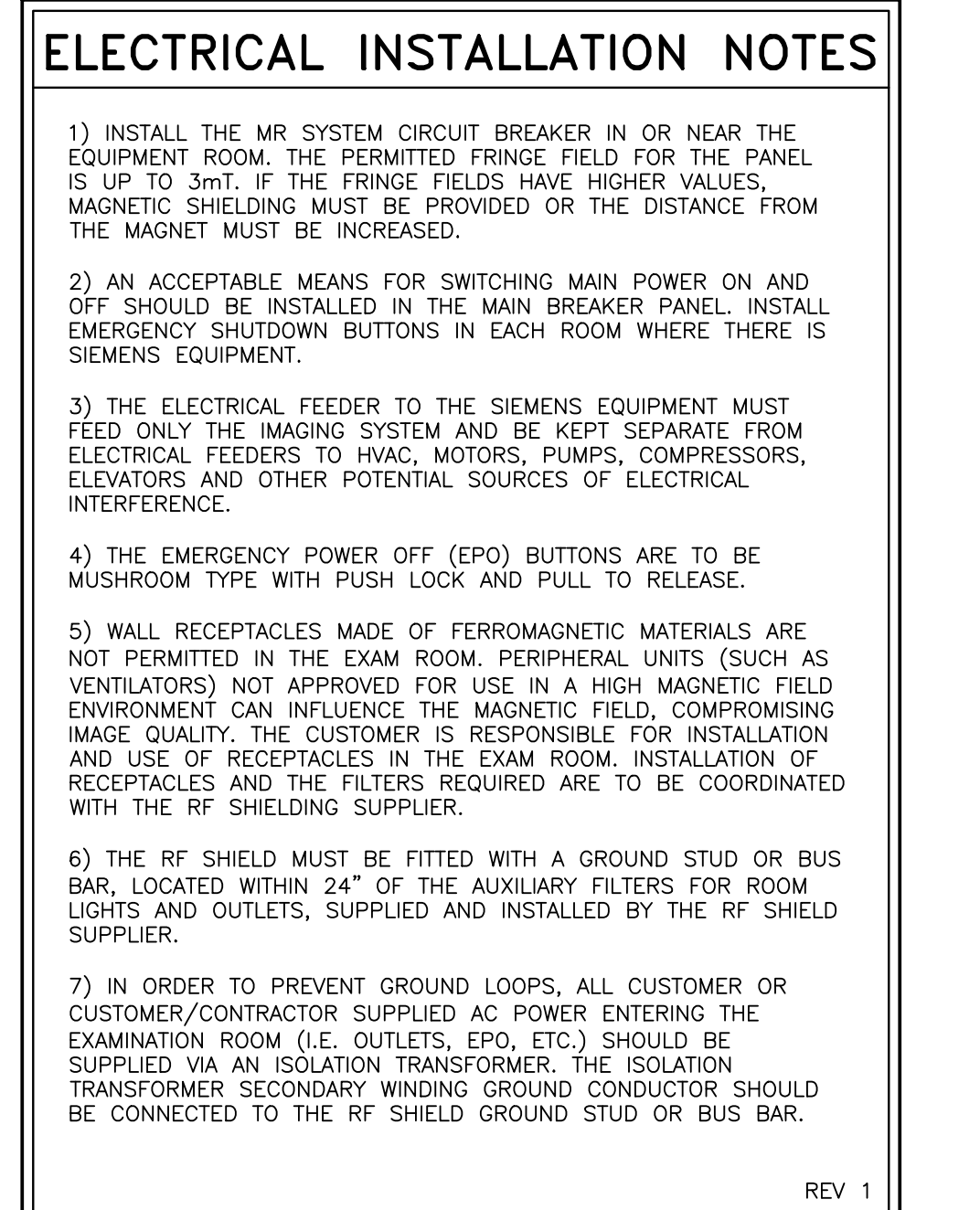
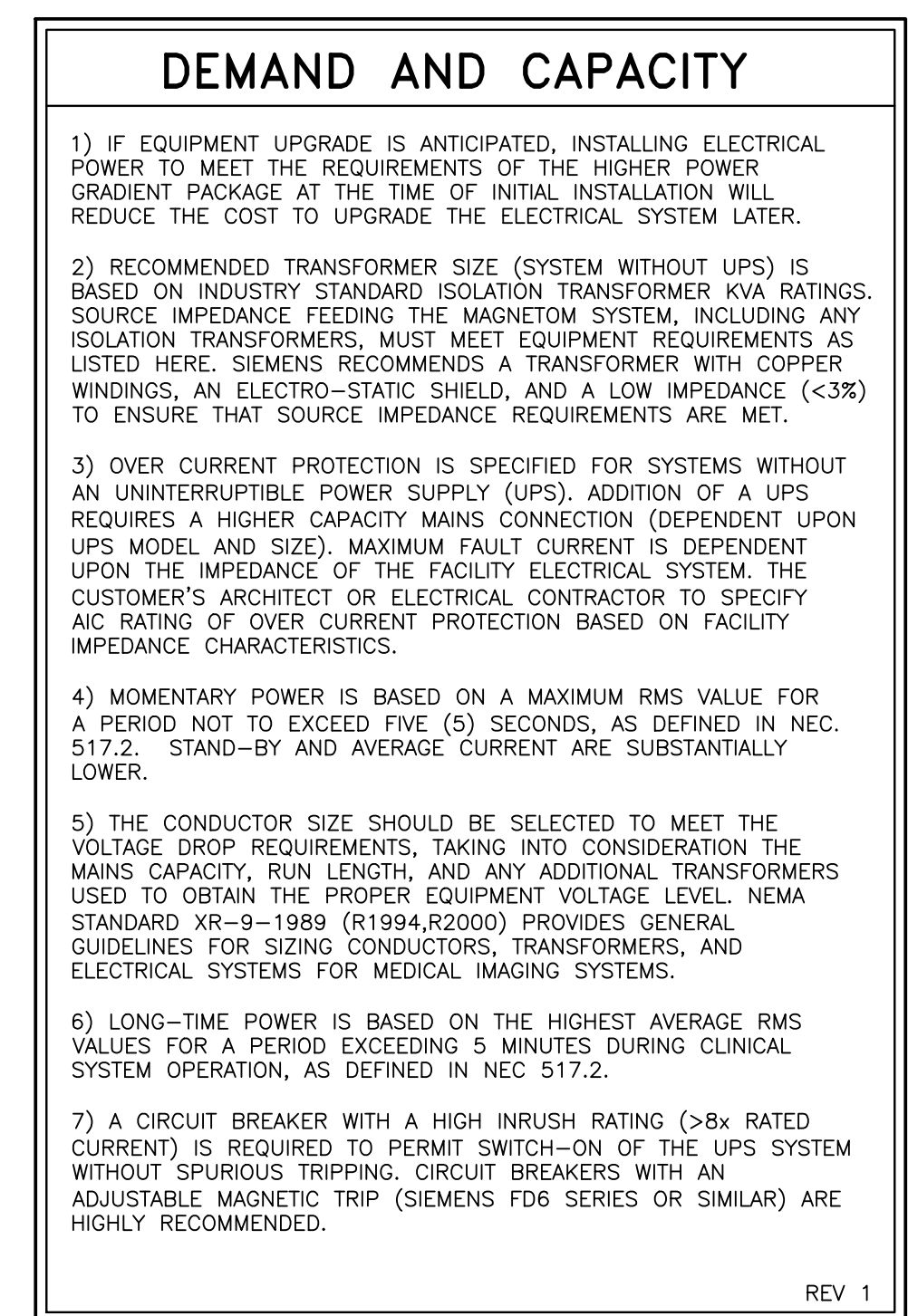
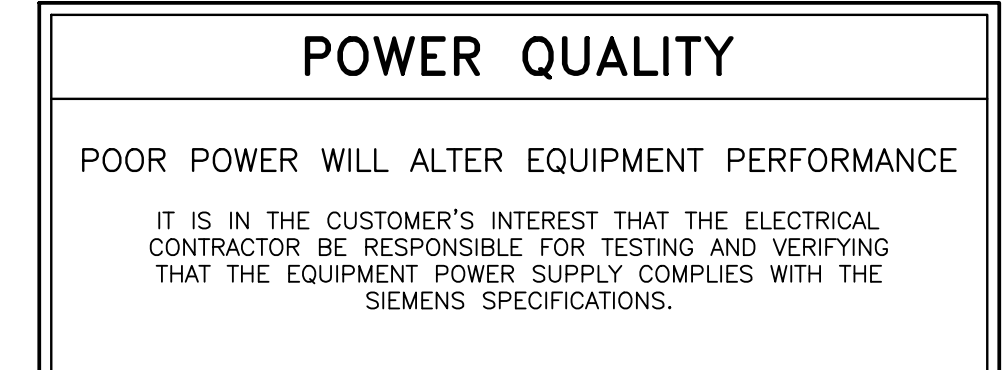
SCALE: 1/4" = 1'-0"



SOLA XQ POWER REQUIREMENTS

VOLTAGE VARIATION: 480 VAC ±10% FOR ALL LINE & LOAD CONDITIONS
VOLTAGE UNBALANCE: 2% MAXIMUM DIFFERENCE BETWEEN PHASES

| | |
|-------------------------------------|----------------|
| VOLTAGE 480V 3-PHASE: | ± 10% |
| FREQUENCY: | 60 Hz ± 1.0 Hz |
| LINE IMPEDANCE: | <100 mOHMS |
| CONNECTED VALUE: | 88 kVA |
| SHORT TIME POWER (LESS THAN 3sec.): | 104 kVA |
| MOMENTARY POWER (LESS THAN 5sec.): | 145 kVA |
| EATON 93PM - 180kW UPS | |
| EATON UPS INPUT BREAKER (ICB) | 350 Amp |
| EATON UPS OUTPUT BREAKER (OCB) | 300 Amp |
| MAIN BREAKER (M): | 250 Amp |
| MR SOLA XQ SYSTEM BREAKER SIZE (A): | 150 Amp |
| CHILLER BREAKER SIZE (B): | 70 Amp |
| ALL BREAKERS ARE RATED AT 80% | |



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| | | | |
|--|---------------------------------|--|-----------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | | | |
| PROJECT #: 2414586 | | | |
| THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. | | 1901 SOUTH 1ST STREET, TEMPLE, TX 76504 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS | |
| DATE: 12/10/24 | APPROVED BY CUSTOMER FOR FINALS | DATE: 12/10/24 | DRAWN BY: P. WOTORTSI |
| -ISSUE BLOCK- | | SCALE: AS NOTED | REF. #: 30295989 |

REFERENCE DOCUMENT - NOT FOR CONSTRUCTION

THE PROPER ROUTING OF CABLES IS ESSENTIAL TO ACHIEVE GOOD IMAGE QUALITY. RF CABLES MUST BE SEPARATED FROM FIBER OPTIC BY AT LEAST 12" AND FROM THE GRADIENT CABLES BY AT LEAST 12". FIBER OPTIC CABLES MUST ALSO BE SEPARATED FROM THE GRADIENT CABLES BY AT LEAST 12". THIS SHOWS RACEWAY/CABLE ROUTING.

THIS CABLE TRAY MAY BE 6" OR 12" WIDE, SEE ELECTRICAL LEGEND.

CABLE DESIGNATIONS ARE SHOWN AS AN EXAMPLE, ANY CATEGORY CABLE CAN BE LOCATED IN ANY OF THE COMPARTMENTS OF THE RACEWAY AS LONG AS CORRECT SEPARATIONS ARE MAINTAINED.

WHEN ROUTING RACEWAYS, DO NOT EXCEED THE MAXIMUM LENGTHS LISTED IN DETAIL E-501/2. EXCESS CABLE SHOULD BE ROUTED IN THE RACEWAY IN A MEANDERING METHOD, NEVER ROLLED IN LOOPS.

THE BENDING RADIUS FOR THE CABLES MUST BE MAINTAINED.
 TRANSMITTER CABLE - 5" WHEN BENT ONCE.
 TRANSMITTER CABLE - 14.25 WHEN BENT SEVERAL TIMES.
 FIBER OPTIC CABLE - 6"
 GRADIENT CABLE - 5.5" (ONLY WITH EXTENDED CABLE SET)
 FIBER OPTIC CABLE FOR PATIENT OBSERVATION - 2"

2 **CABLE SEPARATION** SCALE: NONE REV 0

CABLE PROTECTION

CABLES ARE NOT PLENUM RATED. ALL CABLES MUST BE ROUTED IN CABLE DUCTS OR CABLE CONDUITS.

SIEMENS SMART REMOTE SERVICE

TO ENSURE THE UPTIME OF YOUR SYSTEM DURING THE WARRANTY PERIOD (AND BEYOND WITH A SERVICE AGREEMENT), SIEMENS REMOTE SERVICES (SRS) REQUIRES REMOTE LOCAL AREA NETWORK ACCESS TO SIEMENS SYSTEMS.

THE PREFERRED CONNECTION METHOD IS (VPN) VIRTUAL PRIVATE NETWORK (WHERE THE CUSTOMER HAS AVAILABLE A VPN CAPABLE FIREWALL OR OTHER VPN APPLIANCE). THIS METHOD PROVIDES THE POSSIBILITY FOR REMOTE SYSTEM DIAGNOSTICS WITHOUT ADDITIONAL HARDWARE. PLEASE CONTACT SIEMENS SMART REMOTE SERVICES TO DETERMINE BEST IMPLEMENTATION FOR YOUR SITE. CONTACT: IMCPTSCSRS.DL@SIEMENS-HEALTHINEERS.COM.

CONDUITS AND RACEWAYS

- 1) ALL POWER CONDUCTORS SUPPLIED BY THE CUSTOMER/ CONTRACTOR SHALL BE INSTALLED IN METAL RACEWAY, 600 VOLT CLASS, STRANDED TYPE THHN-THWN, RATED FOR 75°C (165°F) OPERATION. RECOMMEND MINIMUM 5 FEET WIRE TAILS AT ALL OUTLET POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY SIEMENS MEDICAL SYSTEMS.
- 2) THE CABLE GROUPS INCLUDED WITH THE MAGNETOM SYSTEM MAY BE ROUTED IN THE SAME CABLE TRAY IF PROVIDED WITH AN 8" SEPARATION BETWEEN SMALL SIGNAL LINES, GRADIENT CABLES, AND THE RF TRANSMIT CABLE. A 24" WIDE LADDER TYPE CABLE TRAY IS RECOMMENDED. CABLES SHOULD NOT BE BUNDLED TOGETHER.
- 3) NOTE THE CABLE CONNECTOR SIZES (LARGEST CONNECTOR SIZE IS 2 1/2" x 2 1/2") FOR CABLE FEED-THROUGHS AND CABLE DUCTS.
- 4) THE CABLE LENGTHS SPECIFIED ARE THE STANDARD LENGTHS.
- 5) THE SIEMENS SYSTEM CABLES ARE NOT PLENUM RATED AND SHOULD NOT BE RUN UNPROTECTED IN AN AIR PLENUM UNLESS ENCLOSED IN A SEALED CABLE TRAY OR CONDUIT.

REV 0

CABLE LENGTH RESTRICTIONS

- 1) THE CABLE SET LENGTH IDENTIFIES THE "FREE CABLE LENGTH". THIS IS THE LENGTH FROM CONNECTION POINT TO CONNECTION POINT. THE CABLE LENGTH IS NOT THE DISTANCE BETWEEN COMPONENTS.
- 2) THE GRADIENT CABLES INSIDE THE RF SHIELDED ROOM ARE 6'-0" SHORTER THAN THE OTHER SYSTEM CABLES. THIS MEANS THAT IF THE 22' CABLE SET IS SELECTED, THE GRADIENT CABLES WILL BE 16' IN LENGTH. THE GRADIENT CABLES NEED TO GO UP INTO THE CABLE TRAY IN THE CEILING AT THE FILTER PLATE AND DOWN AT THE MAGNET. THESE VERTICAL RUNS MUST BE DEDUCTED FROM THE TOTAL CABLE LENGTH OF 16'.

REV 0

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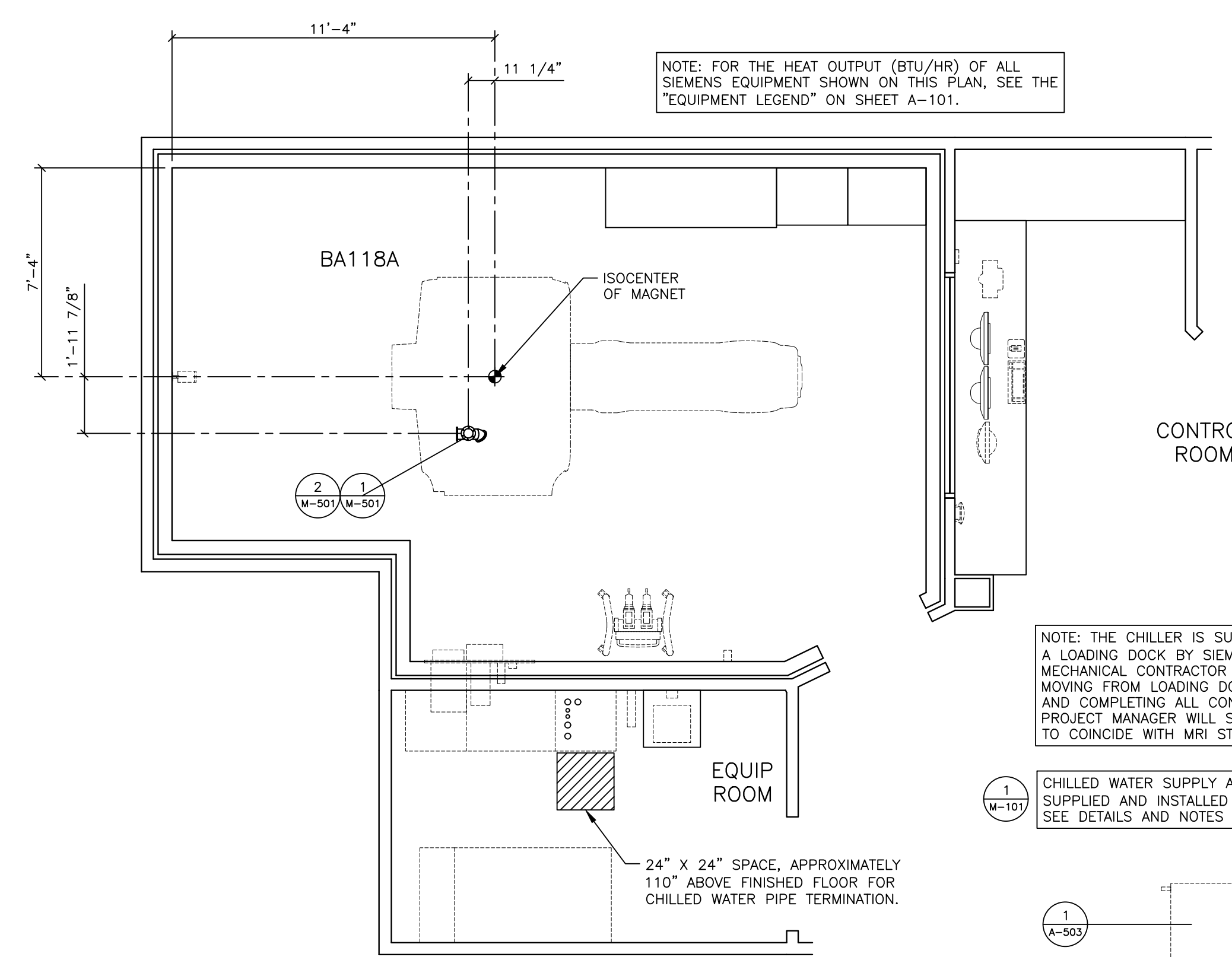
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| | | | |
|--|--|--|--------------------------|
| PROJECT MANAGER: MICHAEL DAVIS TEL: (979) 286-4470 EXT: FAX: EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM | | SIEMENS | |
| | | VA TEMPLE 674 | |
| | | 1901 SOUTH 1ST STREET, TEMPLE, TX 76504 MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS | |
| THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. | | PROJECT #: 2414586 | SHEET: E-501 |
| ALL RIGHTS ARE RESERVED. | | SHEET 9 OF 11 | DRAWN BY: P. WOTORTSI |
| SCALE: AS NOTED REF. #: 30295989 | | DATE: 12/10/24 | |

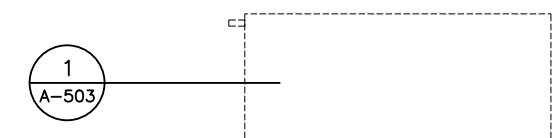
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| SYM | DATE | DESCRIPTION |
| △ | 12/10/24 | 2414586RA DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |
| - ISSUE BLOCK - | | |

SOLA
REV 22



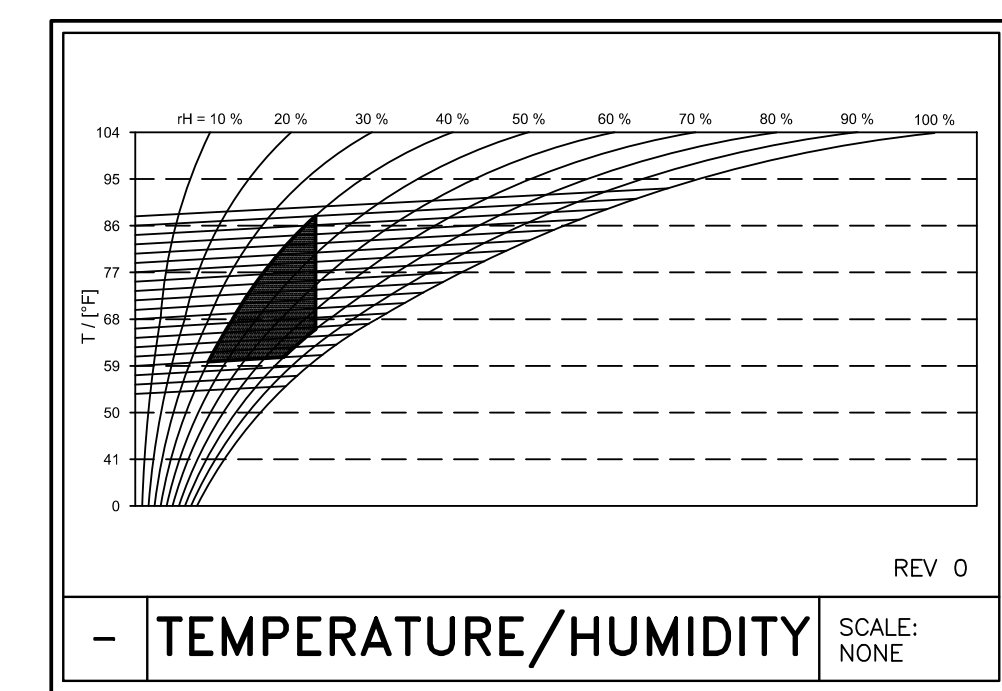
NOTE: THE CHILLER IS SUPPLIED AND DELIVERED TO A LOADING DOCK BY SIEMENS. CUSTOMER'S MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MOVING FROM LOADING DOCK TO FINAL LOCATION AND COMPLETING ALL CONNECTIONS. SIEMENS PROJECT MANAGER WILL SCHEDULE CHILLER STARTUP TO COINCIDE WITH MRI STARTUP.

1 CHILLED WATER SUPPLY AND RETURN LINES TO BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR. SEE DETAILS AND NOTES ON THIS SHEET.



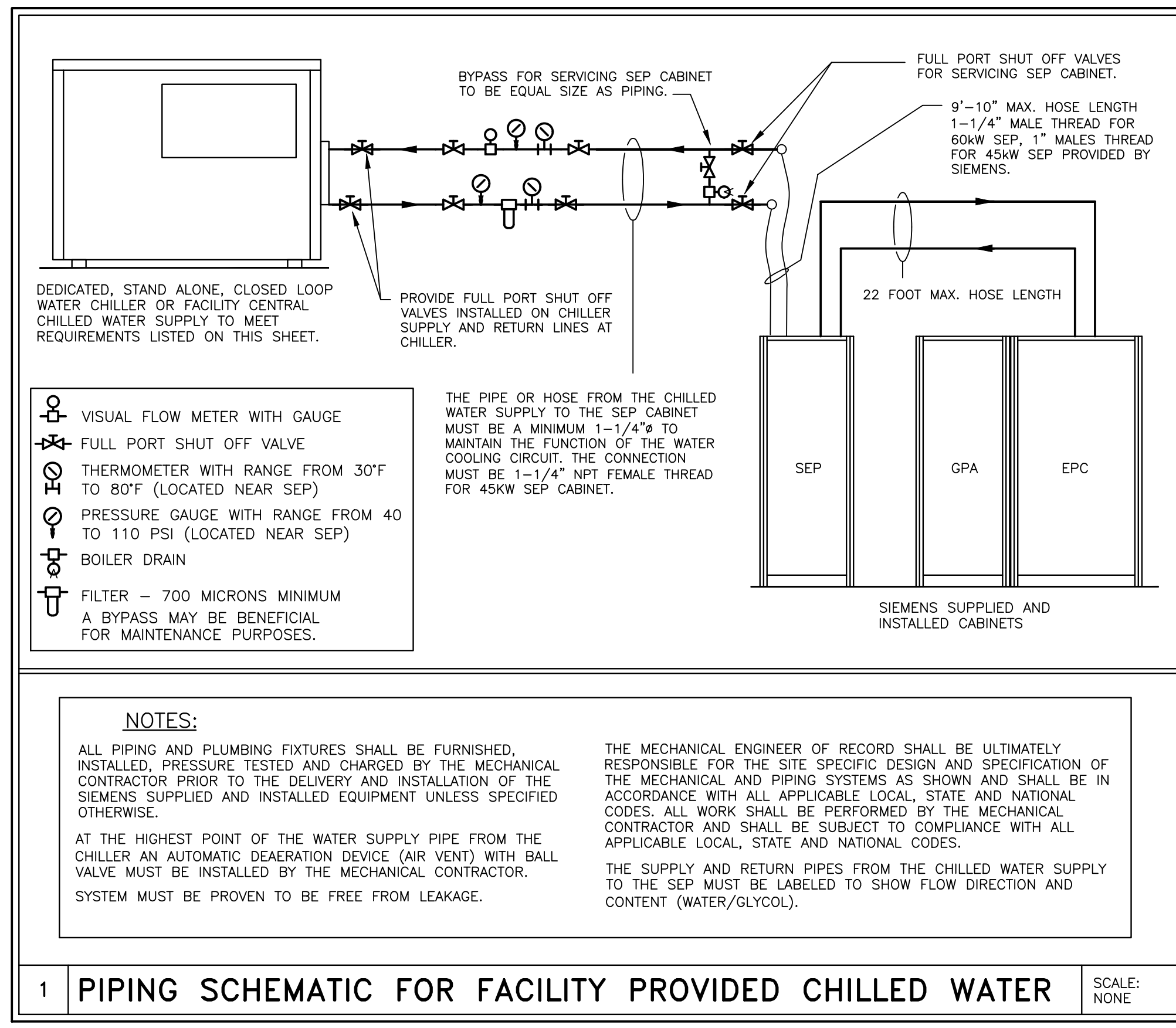
MECHANICAL PLAN

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



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 30%-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 (i.e. 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.
- THE AIR INTAKE OF THE AIR CONDITIONING SYSTEM MUST NOT BE LOCATED IN THE VICINITY OF THE QUENCH VENT EXHAUST.
- 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. 12/11/12



1 PIPING SCHEMATIC FOR FACILITY PROVIDED CHILLED WATER SCALE: NONE

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. CHILLED WATER CAN ALSO BE SUPPLIED BY A CHILLER PROVIDED BY SIEMENS.

A SEPARATOR CABINET (SEP) OR INTERFACE PANEL (IFP) MUST BE INCLUDED WITH THE SIEMENS ORDER. THE PIPE SIZE BETWEEN THE WATER SUPPLY AND SEP MUST MEET MANUFACTURER AND SIEMENS REQUIREMENTS. LARGER DIAMETER PIPE MAY BE REQUIRED DUE TO LENGTH OF RUN. FLOW AND PRESSURE REQUIREMENTS MUST BE MET.

PERMISSIBLE MATERIALS THAT CAN BE USED FOR THE PIPING ARE: STAINLESS STEEL (V2A, V3A), 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.

27 GALLONS OF DISTILLED/DE-IONIZED WATER MUST BE PROVIDED AND INSTALLED BY CUSTOMER/CONTRACTOR FOR FILLING THE SECONDARY CHILLED WATER CIRCUIT.

SEE MANUFACTURER'S REQUIREMENTS FOR GLYCOL AND WATER QUALITY TO BE PROVIDED AND FILLED BY CUSTOMER/CONTRACTOR.

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

| XQ GRADIENTS | |
|---|----------------------------|
| 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 | 204,911 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 CALCIUM CARBONATE |
| CHLORINE GAS CONCENTRATION | <200 ppm |
| FILTRATION | 700 μm |

CEILING HEIGHTS

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

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.
- SIEMENS 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.
- SIEMENS 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 FOR CRYOGEN DEWARS 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. SEE CONSTRUCTION REQUIREMENTS.
- ALL PENETRATIONS IN THE RF CABIN/SHIELD SHALL BE THROUGH A WAVE GUIDE TO BE EQUIPPED WITH A DIELECTRIC COUPLER ON BOTH ENDS OF THE WAVE GUIDE. ALL WAVE GUIDES 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 RF 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.

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| SYM | DATE | DESCRIPTION |
|---------------|----------|---|
| △ | 12/10/24 | 2414586A DATED 11/12/24 APPROVED BY CUSTOMER FOR FINALS |
| -ISSUE BLOCK- | | |

PROJECT MANAGER: MICHAEL DAVIS
TEL: (979) 286-4470 EXT:
FAX:
EMAIL: DAVIS.MICHAEL@SIEMENS-HEALTHINEERS.COM

SIEMENS
VA TEMPLE 674
1901 SOUTH 1ST STREET, TEMPLE, TX 76504
MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS

PROJECT #:
2414586

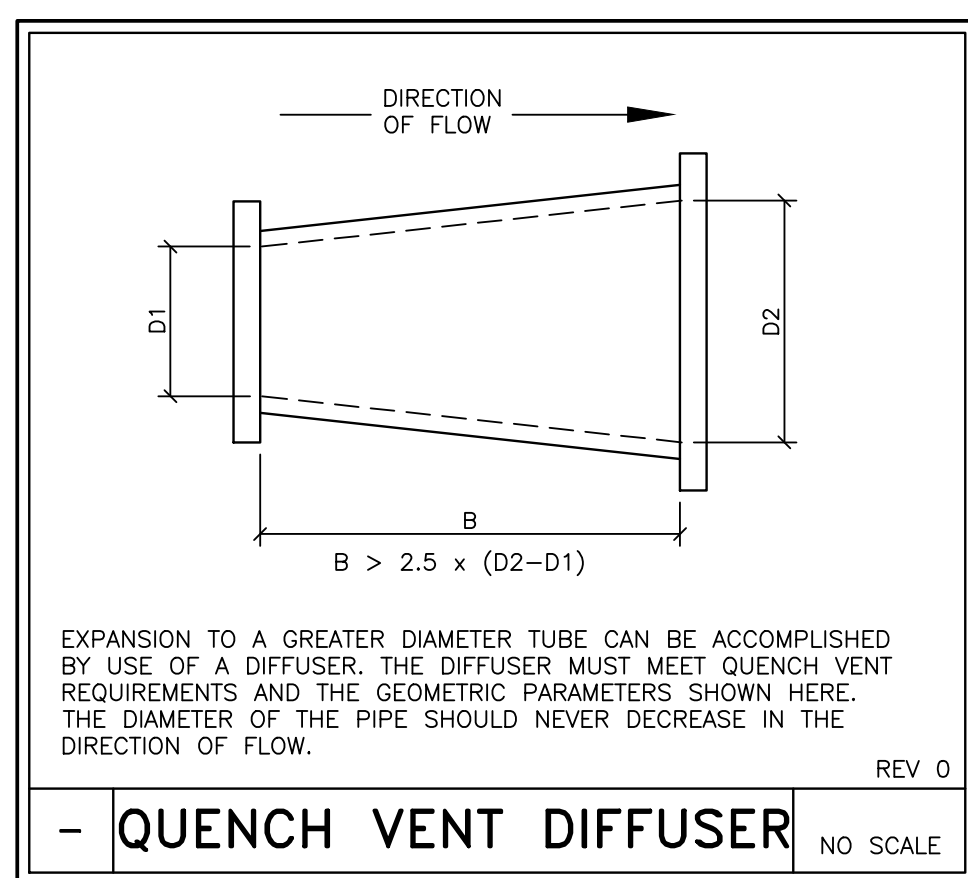
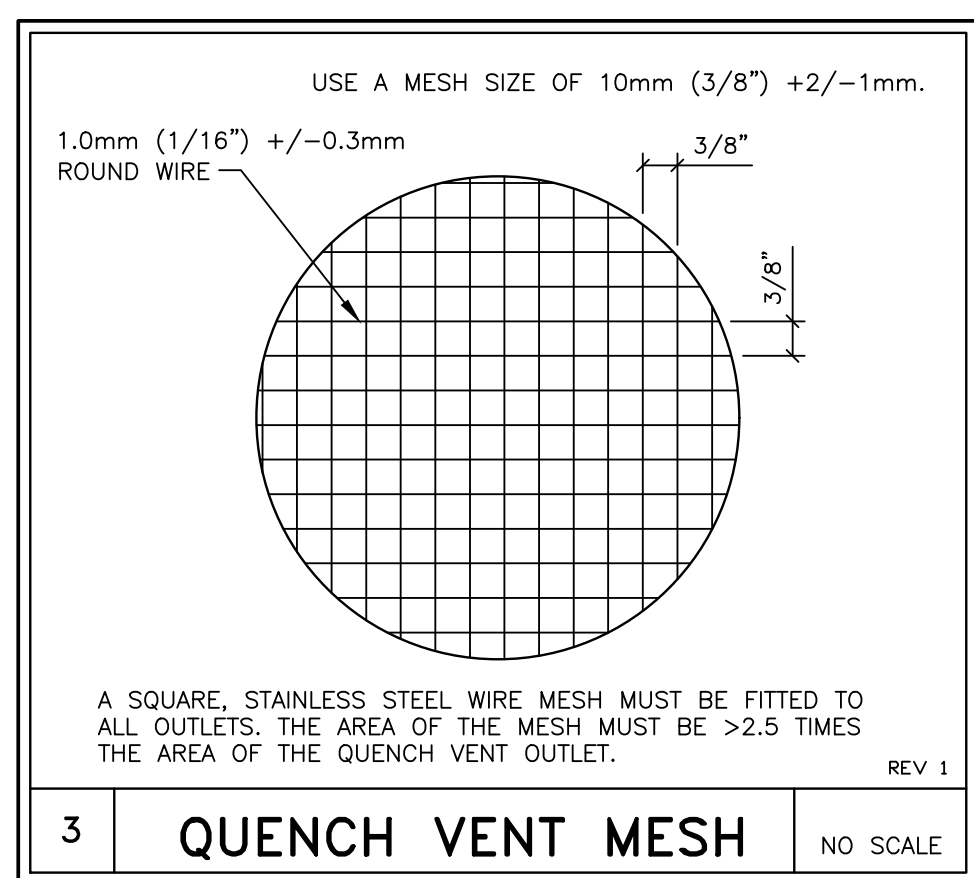
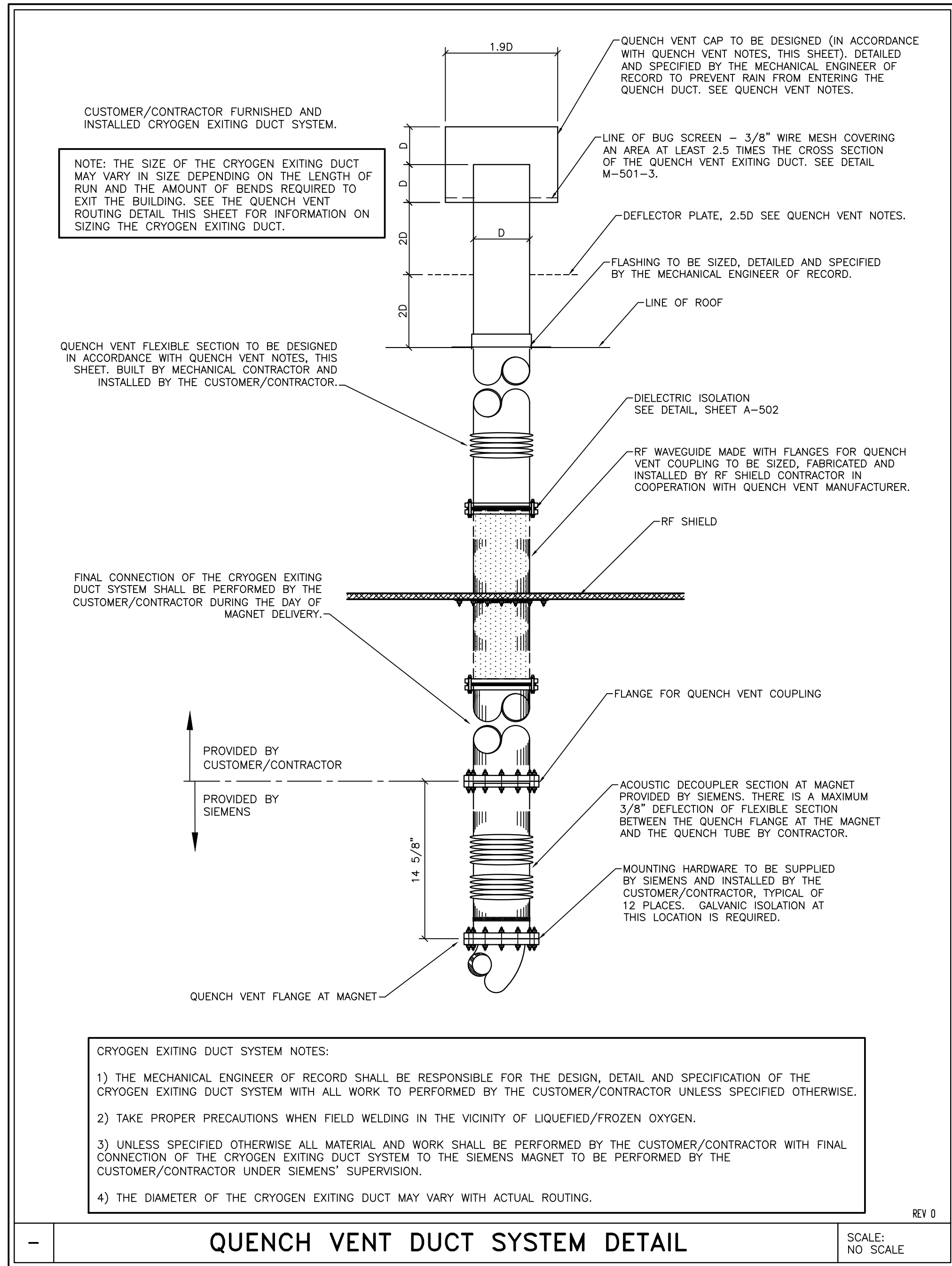
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SHEET 10 OF 11 DRAWN BY: P. WOTORTSI

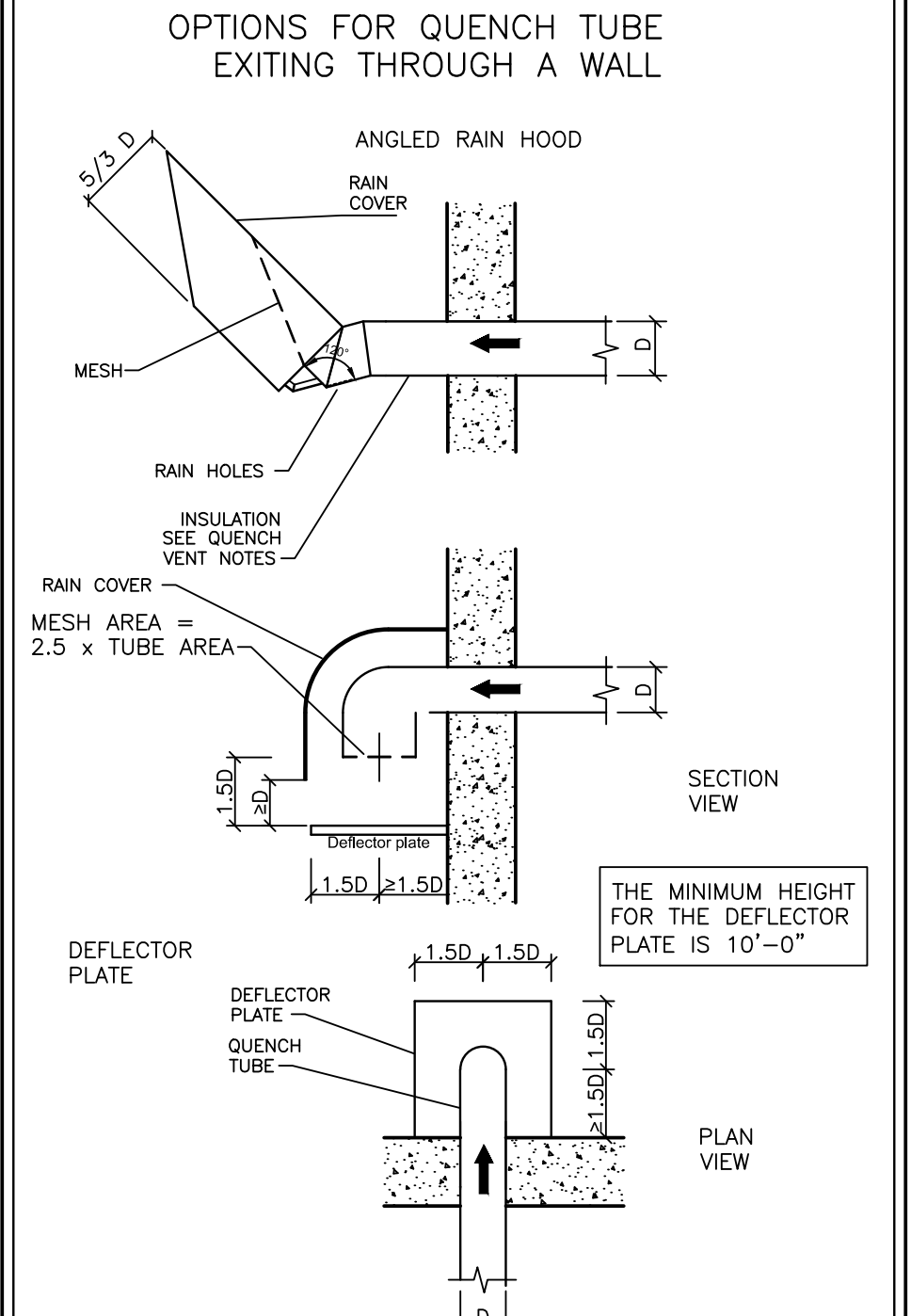
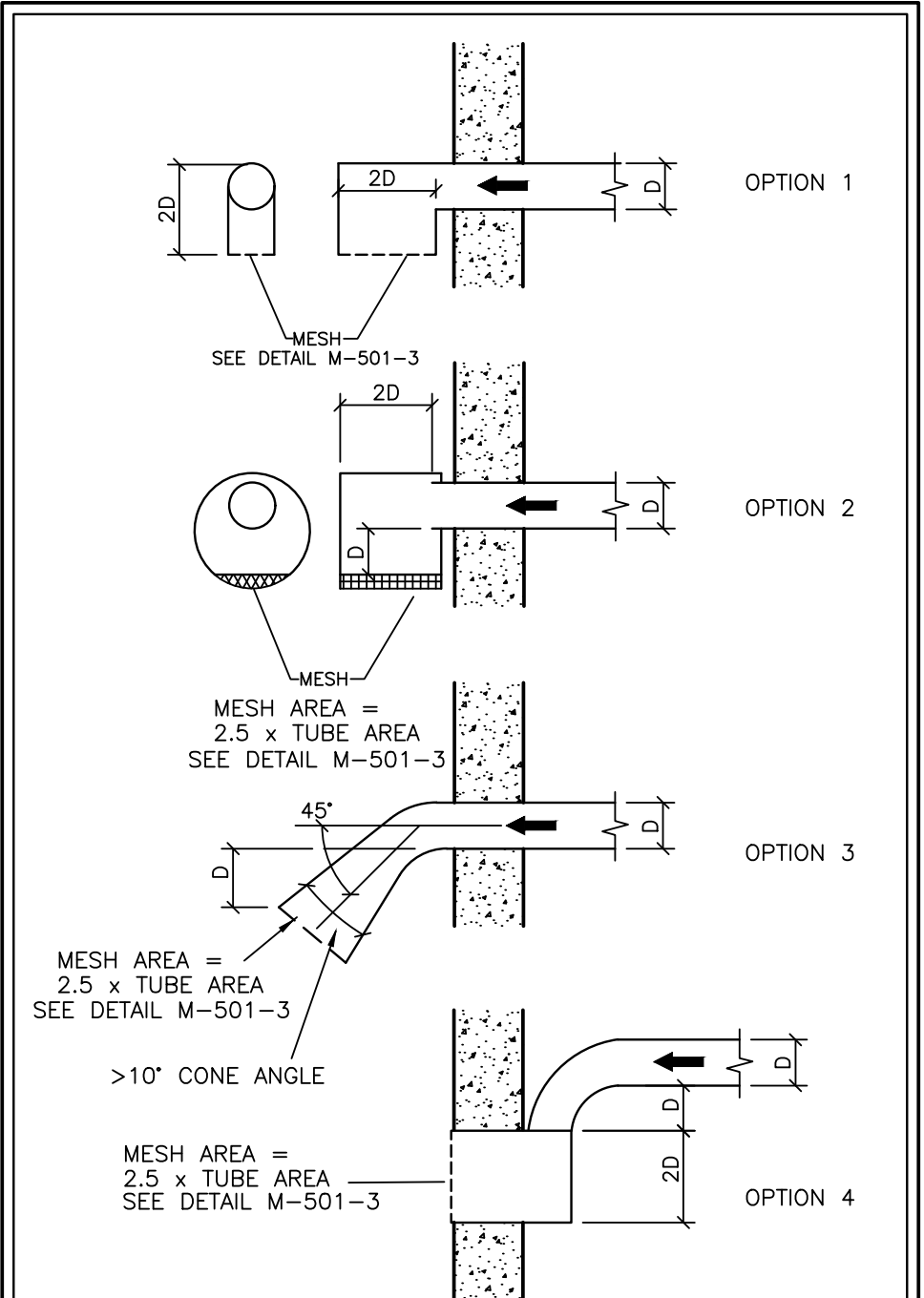
DATE: 12/10/24

M-101



CRYOGEN NOTES

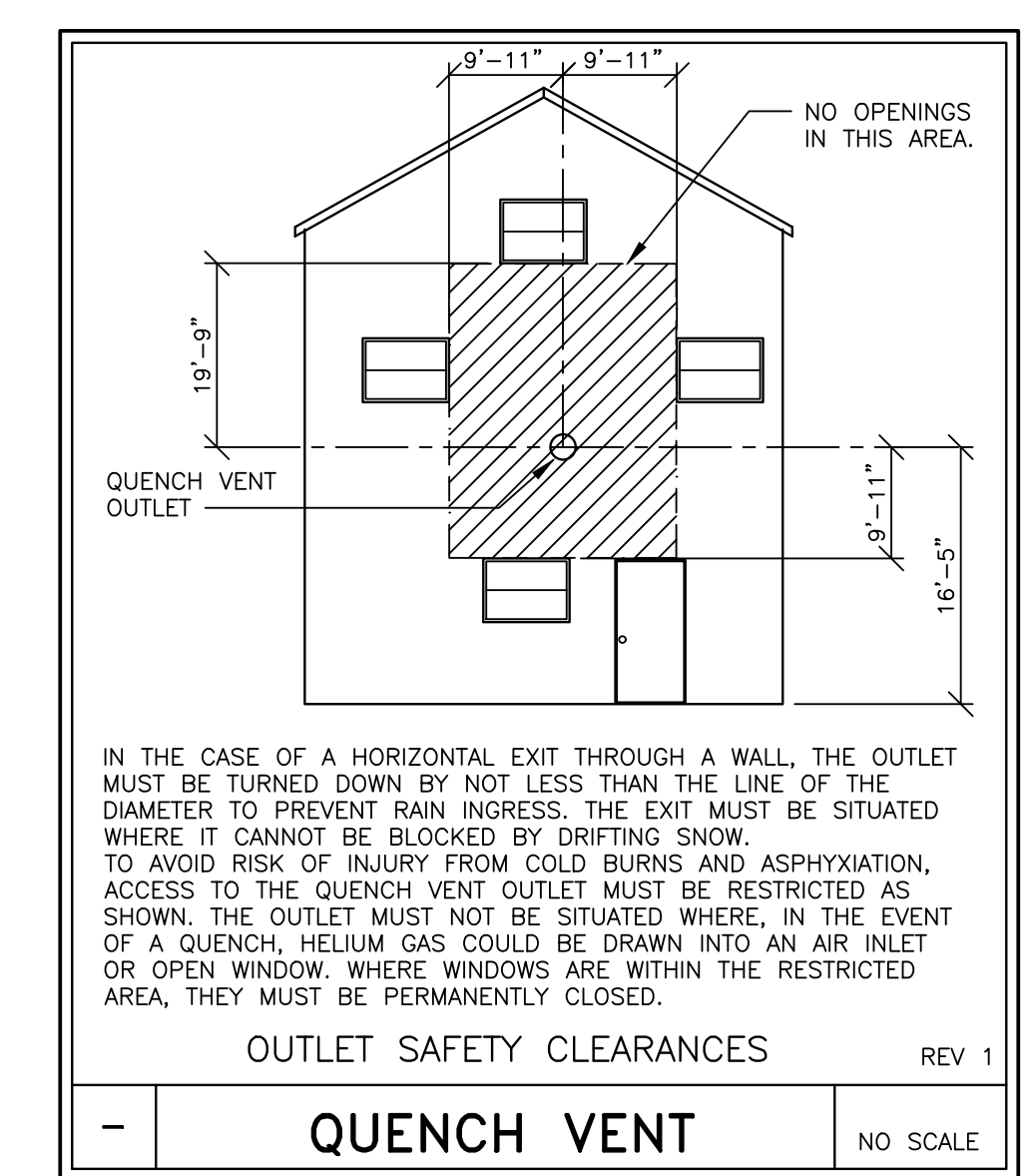
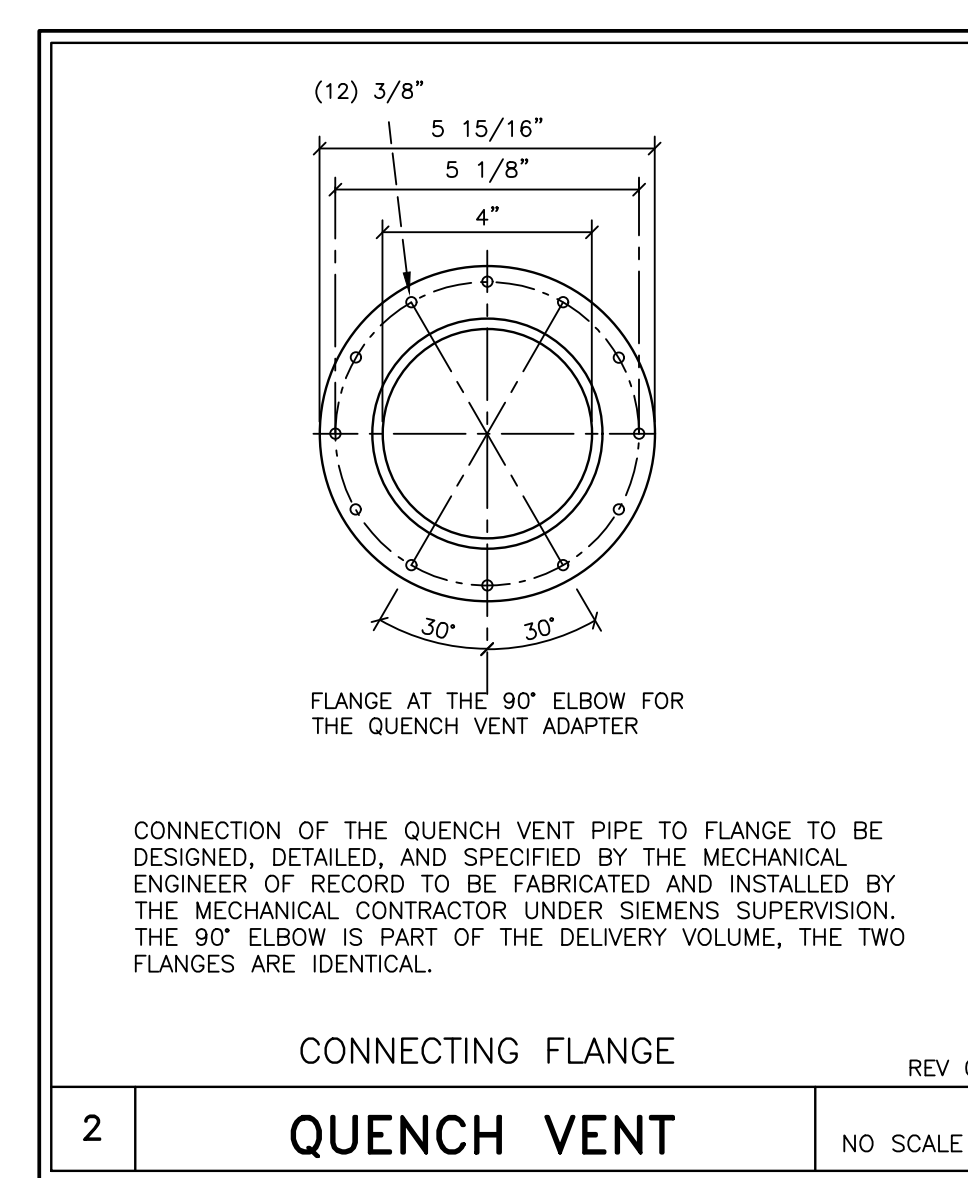
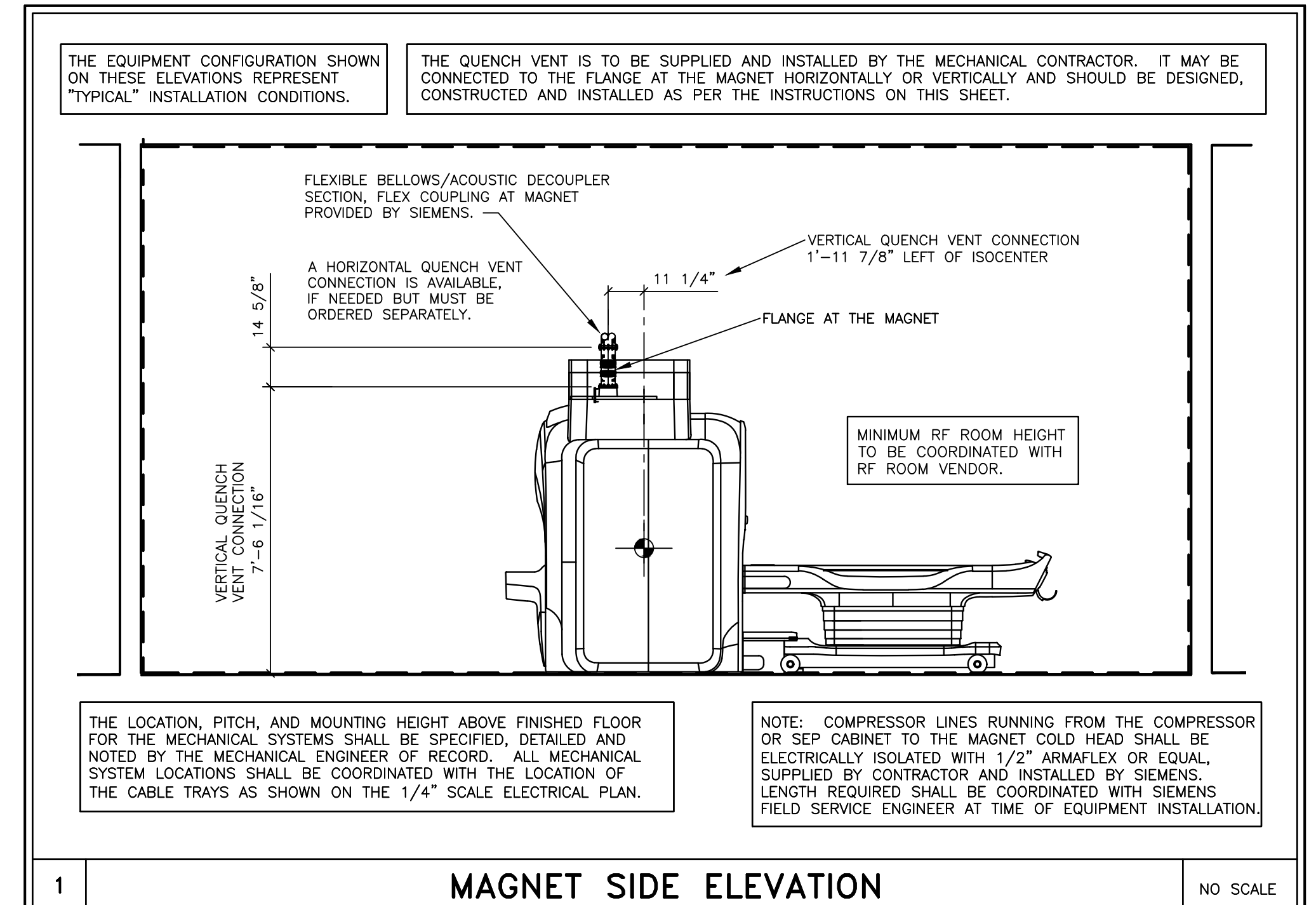
- "CRYOGENS" IS A TERM USED TO IDENTIFY THE REFRIGERANT USED TO MAKE THE MAGNET "SUPER-CONDUCTING". IN THIS APPLICATION, LIQUID AND GASEOUS HELIUM. SPECIAL CARE MUST BE TAKEN DURING THE TRANSFILLING OF THE MAGNET WITH CRYOGENS AND NORMAL EXHAUST OF CRYOGENS FROM THE SYSTEM, ASIDE FROM THE OBVIOUS DANGER OF FREEZING, HELIUM GAS WILL ALSO DISPLACE THE OXYGEN IN THE ROOM. THE INSTALLATION OF AN APPROVED TOXGARD MONITORING SYSTEM IS RECOMMENDED.
- THERE SHALL BE A TRANSPORT ROUTE FOR DELIVERY OF CRYOGENS TO THE EXAM ROOM. SPECIAL VESSELS CALLED DEWARs ARE USED TO TRANSPORT HELIUM. A 250 LITER DEWAR WEIGHS 335 POUNDS AND HAS A 32" DIAMETER, A 500 LITER IS 540 POUNDS, AND IS 42" IN DIAMETER.
- HELIUM GAS CYLINDERS MAY BE USED DURING THE INITIAL FILLING OF HELIUM INTO THE MAGNET. THE FACILITY IN WHICH THESE MAY BE USED NEEDS TO HAVE THE ABILITY TO TEMPORARILY STORE AND SECURE THESE CYLINDERS THAT WILL PREVENT THEM FROM INADVERTENTLY FALLING OVER.
- OUTSIDE VENTING OF THE HELIUM IS TO BE PROVIDED BY MEANS OF A VENT PIPE OF NON-MAGNETIC MATERIAL CALLED A QUENCH VENT. REV 0



QUENCH VENT NOTES

QUENCH VENT DESIGN INSTRUCTIONS

- IN THE EVENT OF A QUENCH, THE THERMAL ENERGY DISSIPATED CAUSES AN EXTREMELY RAPID BOIL OFF OF THE LIQUID HELIUM. THE SYSTEM MUST BE CAPABLE OF VENTING THE LARGE VOLUME OF GAS GENERATED AT THE APPROXIMATE EXPANSION RATIO OF 1:700 FROM LIQUID AT 4.2K TO ROOM TEMPERATURE GAS. THE EXHAUST SYSTEM IS CRITICAL FOR THE SAFE OPERATION OF THE MAGNET. THE DATA IN THIS DOCUMENT MUST BE FOLLOWED, SINCE HELIUM VENTED IN A QUENCH IS AN ASPHYXIANT AN EXTREMELY TOXIC. THE QUENCH TUBE MUST ALWAYS END AT A POINT WHERE ACCESS BY PEOPLE IS NOT POSSIBLE. QUENCH TUBE PLANNING MUST ONLY BE DONE BY QUALIFIED PERSONNEL. IT IS THE OWNER'S RESPONSIBILITY TO ENSURE THAT THE QUENCH TUBE IS MAINTAINED IN AN OPERABLE STATE.
- IF THE QUENCH VENT IS NOT CONFIGURED CORRECTLY THERE IS A RISK OF DANGER THAT MAY LEAD TO DEATH OR SERIOUS INJURY AND CAN RESULT IN STRUCTURAL DAMAGE. THE EXHAUST MUST NOT BE VENTED IN AN ENCLOSED SPACE. THE OPERATOR OF THE SYSTEM MUST PREPARE AN EMERGENCY PLAN IN THE EVENT OF A QUENCH.
- THE QUENCH TUBE CONSISTS OF STRAIGHT, HYDRAULICALLY SMOOTH SECTIONS, BENDS UP TO 90° AND A DIFFUSER, IF REQUIRED. THE END OF THE TUBE MUST BE PROTECTED FROM RAIN, SNOW, AND FOREIGN OBJECTS. ROUND SECTIONS ONLY, NO SQUARE SECTIONS.
- THE SIEMENS MAGNET HAS A QUENCH VALVE ASSEMBLY FOR CONNECTION TO THE TUBE LOCATED AT THE TOP LEFT SIDE OF THE MAGNET (SEE MAGNET ELEVATION). THE MECHANICAL CONTRACTOR WILL SUPPLY AND INSTALL A QUENCH VENT TUBE WITH CAP, TO BE NON-MAGNETIC STAINLESS STEEL (≥22 GAUGE RECOMMENDED). GRADES AISI304, 309, 316, OR 321 ONLY. THERMAL CONDITIONS MAY CAUSE THE TUBE TO CONTRACT UP TO 3mm/METER SO A STAINLESS STEEL BELLOWS OR FLEXIBLE SECTION MUST BE INSTALLED A MINIMUM OF EVERY 32'-9" OF STRAIGHT PIPE NOT TO EXCEED 2% OF THE OVERALL LENGTH. THE QUENCH TUBE MAY ALSO BE MADE OF ALUMINUM, EXTRUDED TUBE ALUMINUM GRADES 6063 AND 6082 ONLY MUST BE USED. ROLLED AND WELDED TUBE FROM SHEET ALUMINUM GRADE 5083 ONLY MUST BE USED. THE WALL SECTIONS OF ALUMINUM TUBE MUST BE A MINIMUM 14 GAUGE. THERMAL CONTRACTION OF 4.5 MM/METER MUST BE CONSIDERED FOR ALUMINUM QUENCH TUBES. THE MOVEMENT OF THE BELLOWS MUST BE RESTRICTED TO PREVENT EXCESSIVE EXPANSION DUE TO PRESSURE. THE WEIGHT OF THE TUBE MUST BE SUPPORTED BY A DIFFUSER. ONLY ROUND TUBE SECTIONS MAY BE USED, RECTANGULAR SECTIONS ARE NOT ALLOWED.
- USE THE QUENCH VENT CALCULATOR PROVIDED BY SIEMENS TO DESIGN A QUENCH VENT THAT MEETS DESIGN REQUIREMENTS FOR DIAMETER, LENGTH, NUMBER OF ELBOWS AND PRESSURE DROP. ALL BENDS MUST BE SMOOTH WALLED AND HAVE A CENTERLINE TO INTERNAL PIPE DIAMETER RATIO OF 1.5 TO 5.0. EXPANSIONS TO PIPE DIAMETER CAN BE DONE WITH A DIFFUSER. ONLY ROUND TUBE SECTIONS MAY BE USED, RECTANGULAR SECTIONS ARE NOT ALLOWED.
- THERE MUST BE A 12-19 INCH FLEXIBLE SECTION OF PIPE FOR CONNECTION TO THE QUENCH VALVE AT THE MAGNET WITH AN INSIDE DIAMETER GREATER THAN 4" (1.5T) OR 6" (3.0T) AND ABLE TO WITHSTAND 6.5 PSI.
- SECTIONS OF THE PIPE CAN ONLY BE JOINED BY WELDING OR BOLTED FLANGES WITH FIBER GASKETS. ROTARY FLANGES ARE PERMITTED. VEE CLAMPED FLANGES MAY NOT BE USED.
- THE PROTECTION AT THE END OF THE TUBE SHALL BE 3/8" WIRE MESH WITH 1/16 INCH WIRES, COVERING AN AREA AT LEAST 2.5 TIMES THE CROSS SECTION AREA OF THE QUENCH PIPE.
- WHERE THE QUENCH TUBE EXITS THROUGH A FLAT ROOF, THE THE OUTLET MUST BE ABOVE A LEVEL WHERE WATER COULD ENTER IN THE EVENT THAT THE ROOF DRAINS BECOME BLOCKED. IN THE CASE OF A HORIZONTAL EXIT THROUGH A WALL, THE OUTLET SHALL BE ANGLED DOWNWARD NOT LESS THAN 1° PIPE DIAMETER TO PREVENT RAIN INGRESS. THE EXIT SHALL BE LOCATED ABOVE THE LEVEL OF DRIFTING SNOW.
- WHERE THE QUENCH TUBE EXITS VERTICALLY, A RAIN COVER MUST ALSO BE FITTED WITH THE DIAMETER TO BE TWO TIMES THE DIAMETER OF THE QUENCH TUBE. THE CLEARANCE BETWEEN THE RAIN GUARD AND THE MESH SHALL BE 2 TIMES THE DIAMETER OF THE TUBE. A DEFLECTOR PLATE SHALL BE WELDED TO THE TUBE WHERE IT EXITS THE ROOF TO PREVENT HELIUM FROM RE-ENTERING THE BUILDING. THE DEFLECTOR SHALL BE AT LEAST 3 TIMES THE DIAMETER OF THE QUENCH TUBE AND LOCATED TWO PIPE DIAMETERS ABOVE THE ROOF AND TWO PIPE DIAMETERS BELOW THE RAIN GUARD.
- DURING A QUENCH THE HELIUM GAS EXITING THE QUENCH PIPE MAY BE AT TEMPERATURES OF LESS THAN -400°F. DUE TO THIS TEMPERATURE ROOFING MATERIALS OR ITEMS AROUND THE VENT EXIT MAY BE ADVERSELY AFFECTED. CONSIDERATION OF MATERIALS AND ITEMS PLACED NEAR THE VENT EXIT SHOULD BE TAKEN INTO ACCOUNT SO DAMAGE DOES NOT OCCUR.
- WHERE THE QUENCH TUBE EXITS HORIZONTALLY, THE OUTLET MUST CONFORM TO OPTIONS 1-4 OR THE ANGLED RAIN HOOD. THE OUTLET SHOULD NOT BE LOCATED WHERE HELIUM GAS CAN BE DRAWN INTO AN AIR INLET, ENTER AN OPEN WINDOW, OR BLOW DIRECTLY ONTO STRUCTURE OR EQUIPMENT. RESTRICT ACCESS TO WINDOWS AND DOORS TO AVOID INJURY FROM COLD BURNS AND ASPHYXIATION BY 9'-11" ON EACH SIDE, BELOW AND 19'-9" ABOVE, IF THE OUTLET IS POSITIONED TOO LOW A DEFLECTOR PLATE CAN BE USED WITH OPTION 1 AND 3.
- WARNING SIGNS AND OUTLET RESTRICTIONS
A WARNING SIGN MUST BE FIXED AND VISIBLE NEAR THE QUENCH VENT OUTLET. THE TUBE MUST HAVE A WARNING POSTED ALONG ITS ENTIRE LENGTH FOR EXTREMELY COLD HELIUM GAS - AUTHORIZED PERSONNEL ONLY.
- AREAS WITH ACCESS IN THE AREA OF THE OUTLET MUST BE CLEARLY IDENTIFIED AND FENCED, FOR EXAMPLE, A ROOF OUTLET WITH MAINTENANCE ACCESS.
- INSULATION AND GALVANIC SEPARATION
THE QUENCH TUBE MUST HAVE MINIMUM 1" INSULATION FOR THE FULL LENGTH. WITHIN THE RF ROOM THERE SHOULD BE A 1" LAYER OF MINERAL FIBER INSULATION WITH A VAPOR BARRIER AND 1" CLASS 0 OR CLASS AP ARMAFLEX. OUTDOOR PIPES MUST BE WEATHERPROOF. THE INSULATION MUST NOT TOUCH THE MAGNET COVERS. TO AVOID RF DISTURBANCES THE INSULATION MUST NOT MAKE ELECTRICAL CONTACT WITH THE WAVEGUIDE.
- GALVANIC SEPARATION MUST BE PROVIDED BETWEEN THE MAGNET, THE QUENCH VENT, THE RAIN GUARD, AND THE BUILDING. TWO SEPARATIONS ARE REQUIRED USING STAINLESS STEEL BOLTS, INSULATING BUSHES AND LOCKING NUTS. NO OTHER DESIGNS ARE PERMITTED FOR SAFETY.
- THE DESIGN AND CONSTRUCTION OF THE QUENCH PIPE MUST BE DOCUMENTED WITH DRAWINGS AND CALCULATIONS THAT ARE KEPT WITH INSTALLATION DOCUMENTS. IT MUST COMPLY WITH THE REQUIREMENTS IN THIS DOCUMENT BEFORE BEING CONNECTED TO THE MAGNET. REV 7



HELIUM CONTENT

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| MAXIMUM LIQUID FILL | 1,356 LITERS | |
| TYPICAL BOIL OFF RATE | 0.0 L/HR | FOR TYPICAL CLINICAL USE, DEPENDING ON SEQUENCES AND OPERATING TIME. |
| TYPICAL REFILL INTERVAL | NA | |

WITHOUT THE COLD HEAD RUNNING THE LIQUID HELIUM WILL BOIL OFF FROM 97% TO 0% IN APPROXIMATELY 30 DAYS. THE LOSS DURING SHIPPING IS APPROXIMATELY 65 LITERS PER DAY.

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.

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.

SIEMENS
VA TEMPLE 674

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MRI SUITE - BA118A - MAGNETOM SOLA XQ GRADIENTS

PROJECT #: **2414586** SHEET: **M-501**

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