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## INVITATION FOR BIDS

### ALL PROSPECTIVE MECHANICAL CONTRACTORS

#### INVITATION FOR BIDS

##### *Grady MRI Chiller*

Grady Health System Department of Facilities Management is soliciting proposals for mechanical services for the ***Marcus Trauma Tower 4<sup>th</sup> Floor Penthouse.***

The project will be located at the main campus at 80 Jesse hill Dr., Atlanta, GA. 30303 in the Marcus Trauma Tower 4<sup>th</sup> Floor Penthouse.

The IFB (dated Monday, August 19, 2024) will be posted on the Grady website prior to the **mandatory pre-proposal** meeting Monday, September 16, 2024, at 3:00pm EST, in the offices of the Health System's Department of Facilities Management, Basement Floor, Grady Hospital. The driving address is 80 Jesse hill Dr., Atlanta, GA. 30303

Proposals will be due on **Tuesday, October 1, 2024, at 4:00 PM EST.** Additional RFP documents will be presented at the **mandatory pre-proposal** meeting.

Additionally, registration with VendorMate (through the following website: <https://registersupplier.ghx.com>) must be completed prior to proposal submission.

Please notify **Ron Henry** by email at [rehenry@gmh.edu](mailto:rehenry@gmh.edu) of your intention to attend the pre-proposal meeting by email no later than **Friday, September 13, 2024, at 4:00 PM EST.**

**Please see the attached documents below for Project Background and New Scope Narrative.**

Sincerely,

Grady Health System



TLC Engineering Solutions  
4360 Chamblee Dunwoody Rd., Ste 210  
Atlanta, Georgia 30341



## GRADY HEALTH SYSTEMS

ATLANTA, GEORGIA

### MRI CHILLER CONCEPT DESIGN

JULY 12, 2024



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### APPENDICES:

- Appendix A: Mechanical Schematic Drawings
- Appendix B: Electrical Schematic Drawings
- Appendix C: Siemens Site Specific Drawings

## **1.0 Project Background and Existing Conditions**

### **Background:**

Grady operates three MRIs on the 3<sup>rd</sup> floor of the Marcus Trauma Building. The MRIs' cooling is supplied by the chiller plant located in the 4<sup>th</sup> floor Mechanical penthouse. Grady engaged TLC to produce a concept design to add dedicated chillers, one for each MRI. TLC brought on PES Structural Engineers to determine if additional roof supports would be required.

### **Mechanical:**

The MRIs system is isolated from the main chilled water system with a heat exchanger, and there are three dedicated circulation pumps for the system. When the third MRI was installed in 2022, the heat exchanger was replaced with a larger capacity model and the third pump was added to maintain redundancy. The pump system operates at constant volume of approximately 90 GPM.

### **Electrical:**

The existing chillers pumps will remain as they are. No changes to electrical installation is anticipated.

### **Structural:**

The existing roof construction based on original design documents dated 11-6-2014 consists of a concrete beam and slab construction. The existing 5" thick reinforced slab spans to 21" deep cast in place beams at various spacings which are supported by concrete girders. The concrete strength is 5000 psi.



## 2.0 New Scope Narrative

### **Mechanical:**

Three air-cooled chillers will be installed on the 4<sup>th</sup> floor roof, one chiller dedicated to each MRI. Piping shall be routed through the 4<sup>th</sup> floor mechanical room to each MRI equipment room. All piping shall be insulated, and exterior piping will also be heat traced for freeze protection. The piping shall connect to the existing systems upstream of the components required by Siemens (Appendix C). The existing MRI chilled water loop shall remain in service to function as a backup system. Control valves and a bypass will be installed to ensure that cold water is available without interruption.

The new chillers shall have manufacturer provided, onboard controls. Integrate each chiller with the BMS for monitoring and alarms as indicated in Appendix A. Provide an add/alternate price to use a Filtrine Quick Connect Panel (or similar). Integrate the existing MRI loop pumps into the BMS and provide new controls as required per the sequence on the drawings.

At each location where piping penetrates the roof, provide a piping doghouse or box. Coordinate with Grady's preferred roofing vendor and provide proper installation.

One of the chiller locations is less than 10' from a roof edge and may require fall protection during maintenance activities. The connection work inside of the MRI rooms shall be coordinated with the Owner to minimize downtime.

### **Electrical:**

The three air-cooled chillers will derive their power from existing distribution panel "4CED2". Panel 4CED2 will need to be metered for 30 days to confirm the electrical capacity of the panel. Each chiller will require a NEMA 3R disconnect rated at 200A and non-fused. 150A breaker will be provided at distribution panel "4CED2" for each chiller. Refer to Appendix B for wiring and conduit information. For the new chiller piping mounted on the exterior of the building, a new 277V, 30A breaker shall be utilized to power the heat traced that will be used on the exterior piping. This should be obtained from the existing 277/480V equipment distribution panel.

### **Structural:**

PES has analyzed the existing structure for the weight of the 6,400# chillers. The existing roof slab, girders and columns are all capable of supporting the new units. However, not all the roof beams have the capacity to support the units. PES has worked with TLC to locate the units in the locations on their plan so that they are either on a girder line or supported directly over a beam that can support their weight.

# APPENDIX A

C:\Users\mat.mason\Documents\824101\_Grady MRI Chiller\_MIE\_E24\_matt.mason\ENM1.rvt

7/12/2024 5:26:28 PM

Consultants:

Revisions:

No.	Date	Description
A	10 JULY 24	DRAFT FOR REVIEW

Seal:

Project No.: 824101

Issue Date: 10 JULY 2024

Drawn By: Christian D.  
Approved By: MDM  
Scale: NTS

Drawing Title:  
**MECHANICAL  
LEGENDS SHEET**

Drawing No.:

M001

MECHANICAL SYMBOL LEGEND				MECHANICAL ABBREVIATIONS		MECHANICAL GENERAL NOTES	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	-CEILING DIFFUSER, ROUND NECK (CEILING DIFFUSERS ARE 4-WAY THROW UNO)		-FIRE DAMPER (WITH ACCESS PANEL)		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT	AFD	-ADJUSTABLE FREQUENCY DRIVE
	-ROUND DIFFUSER		-FIRE & SMOKE DAMPER (WITH ACCESS PANEL)		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT	AFR	-ABOVE FINISHED FLOOR
	-CEILING RETURN		-SMOKE DAMPER (WITH ACCESS PANEL)		-AIR HANDLING UNIT	AFR	-ABOVE FINISHED ROOF
	-CEILING EXHAUST		-SOUND ATTENUATOR	AP	-ACCESS PANEL	AHU	-AIR HANDLING UNIT
	-CEILING DIFFUSER, RECTANGULAR OR SQUARE NECK (CEILING DIFFUSERS ARE 4-WAY THROW UNO)		-MOTOR OPERATED CONTROL DAMPER (MOD)	BOP	-BOTTOM OF PIPE	MOD	-MODIFIED CONTROL DAMPER (MOD)
	-SUPPLY REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)		-AIR FLOW MEASURING STATION	BHP	-BRAKE HORSEPOWER	NAM	-NEGATIVE AIR MACHINE
	-RETURN/EXHAUST REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)		-MANUAL BALANCING DAMPER	NC	-NORMALLY CLOSED	NO	-NORMALLY OPEN
	-REVISION REFERENCE		-DOOR GRILLE	NTS	-NOT TO SCALE	OAL	-OUTSIDE AIR
	-DETAIL REFERENCE, TOP-DETAIL, BOTTOM-DRAWING SHOWN ON		-UNDERCUT DOOR	CD	-CEILING DIFFUSER	OAL	-OUTSIDE AIR LOUVER
	-THERMOSTAT/TEMPERATURE SENSOR		-ACCESS DOORS, VERTICAL OR HORIZONTAL	CV	-COOLING TOWER	PRV	-PRESSURE REDUCING VALVE
	-HUMIDISTAT/HUMIDITY SENSOR		-STAINLESS STEEL DUCTWORK	CV	-CONSTANT AIR VOLUME	PRS	-PRESSURE REDUCING STATION
	-DUCT SMOKE DETECTOR		-FLEXIBLE CONNECTION	AP	-CHANGE IN PRESSURE	PSI	-POUNDS PER SQUARE INCH
	-CONNECT TO EXISTING		-FLAT OVAL DUCT	AT	-CHANGE IN TEMPERATURE	PSIG	-PSI GAUGE
	-DEMOLISH TO POINT INDICATED		-NEW DUCTWORK, FIRST DIMENSION IS SIDE SHOWN	CFM	-CUBIC FEET PER MINUTE	PTAC	-PACKAGED TERMINAL AIR CONDITIONER
	-MOTORIZED CONTROL DAMPER		-EXISTING DUCTWORK TO REMAIN	CU	-CONDENSING UNIT	PVC	-POLYVINYL CHLORIDE PIPE
	-TEMPERATURE SENSOR		-EXISTING DUCTWORK TO BE REMOVED	DDC	-DIRECT DIGITAL CONTROLS	RA	-RETURN AIR
	-DIGITAL ROOM PRESSURE MONITOR		-DUCT ELBOW, POSITIVE PRESSURE (SUPPLY), FIRST DIMENSION INDICATES SIDE TO WHICH ARROW IS POINTING	DN	-DOWN	RVC	-REHEAT COIL
	-ANALOG ROOM PRESSURE MONITOR		-DUCT ELBOW, EXHAUST	EA	-EXHAUST AIR	RHP	-ROOFTOP HEAT PUMP
	-BACKDRAFT DAMPER		-DUCT ELBOW, NEGATIVE PRESSURE, RETURN	EAT	-ENTERING AIR TEMPERATURE	RFM	-REVOLUTIONS PER MINUTE
	-NEUTRAL RELATIVE PRESSURE		-DUCT ELBOW UP THROUGH ROOF OR SLAB ABOVE	ESP	-EXTERNAL STATIC PRESSURE	RS/L	-REFRIGERANT SUCTION & LIQUID LINES
	-POSITIVE RELATIVE PRESSURE		-RECTANGULAR DUCT SECTION UP, POSITIVE PRESSURE, SUPPLY OR OUTSIDE AIR	EWT	-ENTERING WATER TEMPERATURE	RTU	-ROOFTOP AIR HANDLING UNIT
	-NEGATIVE RELATIVE PRESSURE		-RECTANGULAR DUCT SECTION UP, NEGATIVE PRESSURE, RETURN	FCU	-FAN COIL UNIT	SA	-SUPPLY AIR
	-SHEET NOTE CALLOUT		-RECTANGULAR DUCT SECTION UP, EXHAUST	FD	-FIRE DAMPER	SP	-STATIC PRESSURE
	-SHEET NOTE CALLOUT		-ROUND DUCT SECTION UP	FF	-FINAL FILTERS	TSP	-TOTAL STATIC PRESSURE
	-SHEET NOTE CALLOUT		-FLAT OVAL DUCT SECTION UP	FLA	-FULL LOAD AMPS	UNO	-UNLESS NOTED OTHERWISE
	-CEILING MOUNTED ACCESS DOOR		-FLAT OVAL DUCT SECTION UP	FFM	-FEET PER MINUTE	VIPH	-VOLTS/PHASE
				CFM	-GALLONS PER MINUTE	VAV	-VARIABLE AIR VOLUME
				ISO	-ISOLATION EXHAUST	VFD	-VARIABLE FREQUENCY DRIVE
				KW	-KILOWATT		
				LAT	-LEAVING AIR TEMPERATURE		
				LWT	-LEAVING WATER TEMPERATURE		

MECHANICAL PIPING SYMBOL LEGEND				APPLICABLE CODES		MECHANICAL SHEET INDEX	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SHEET	DESCRIPTION
	-CONDENSER WATER SUPPLY		-FLOW DIRECTION		-P-TRAP	M001	MECHANICAL LEGENDS SHEET
	-CONDENSER WATER RETURN		-ISOLATION VALVE		-TWO-WAY CHECK VALVE	M002	MECHANICAL SPECIFICATIONS
	-CHILLED WATER SUPPLY		-BALL VALVE		-MANUAL VENT	M001	LEVEL 3 - NEW WORK MECHANICAL PLAN
	-CHILLED WATER RETURN		-CALIBRATING BALANCING VALVE		-PRESSURE GAUGE	M002	LEVEL 4 - NEW WORK MECHANICAL PLAN
	-CONDENSATE		-BUTTERFLY VALVE		-RELIEF VALVE	M003	ROOF LEVEL - NEW WORK MECHANICAL PLAN
	-CONDENSATE RETURN		-GAS COCK		-FLOW METER	M001	MECHANICAL DETAILS
	-PUMPED CONDENSATE		-UNION		-WATER METER	M001	MECHANICAL SCHEDULES
	-HEATING HOT WATER RETURN		-STRAINER		-INLINE PUMP		
	-HEATING HOT WATER SUPPLY		-CONTROL VALVE		-INLINE PUMP		
	-HIGH PRESSURE STEAM SUPPLY		-SOLENOID VALVE		-VALVE ON RISER		
	-MEDIUM PRESSURE STEAM SUPPLY		-CHECK VALVE		-CAP		
	-LOW PRESSURE STEAM SUPPLY		-FLOW SWITCH		-CONNECTION, BOTTOM		
	-HIGH PRESSURE STEAM RETURN		-SLOPE DIRECTION (DOWN)		-CONNECTION, TOP		
	-MEDIUM PRESSURE STEAM RETURN		-FLEX CONNECTION		-COUPLING		
	-LOW PRESSURE STEAM RETURN		-O.S.&Y. GATE VALVE		-ELBOW, 90°		
	-REFRIGERANT LIQUID		-STEAM TRAP		-ELBOW, 45°		
	-REFRIGERANT SUCTION		-THREE-WAY CONTROL VALVE		-ELBOW, TURNED DOWN		
	-TEE, OUTLET DOWN		-THERMOMETER		-ELBOW, TURNED UP		
	-TEE, OUTLET UP						
	-45° PIPE RISE (R) / DROP (D)						
	-PIPE ANCHORS						
	-CONCENTRIC REDUCER						
	-ECCENTRIC REDUCER						

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT

MECHANICAL EQUIPMENT TAGS	
	-AIR DISTRIBUTION DEVICE TAG
	-EQUIPMENT TAG
	-RECTANGULAR DUCT TAG
	-OVAL DUCT TAG
	-ROUND DUCT TAG
	-PIPE TAG

NOT FOR  
CONSTRUCTION



30 Jesse Hill Jr Dr SE  
Atlanta, GA 30303

Drawing No.:  
M002



Consultants:

Revisions:

No.	Date	Description
A	10 JUL 24	DRAFT FOR REVIEW

Seal:

NOT FOR  
CONSTRUCTION

Project No.: 824101

Issue Date: 10 JULY 2024

Drawn By: Christian D.

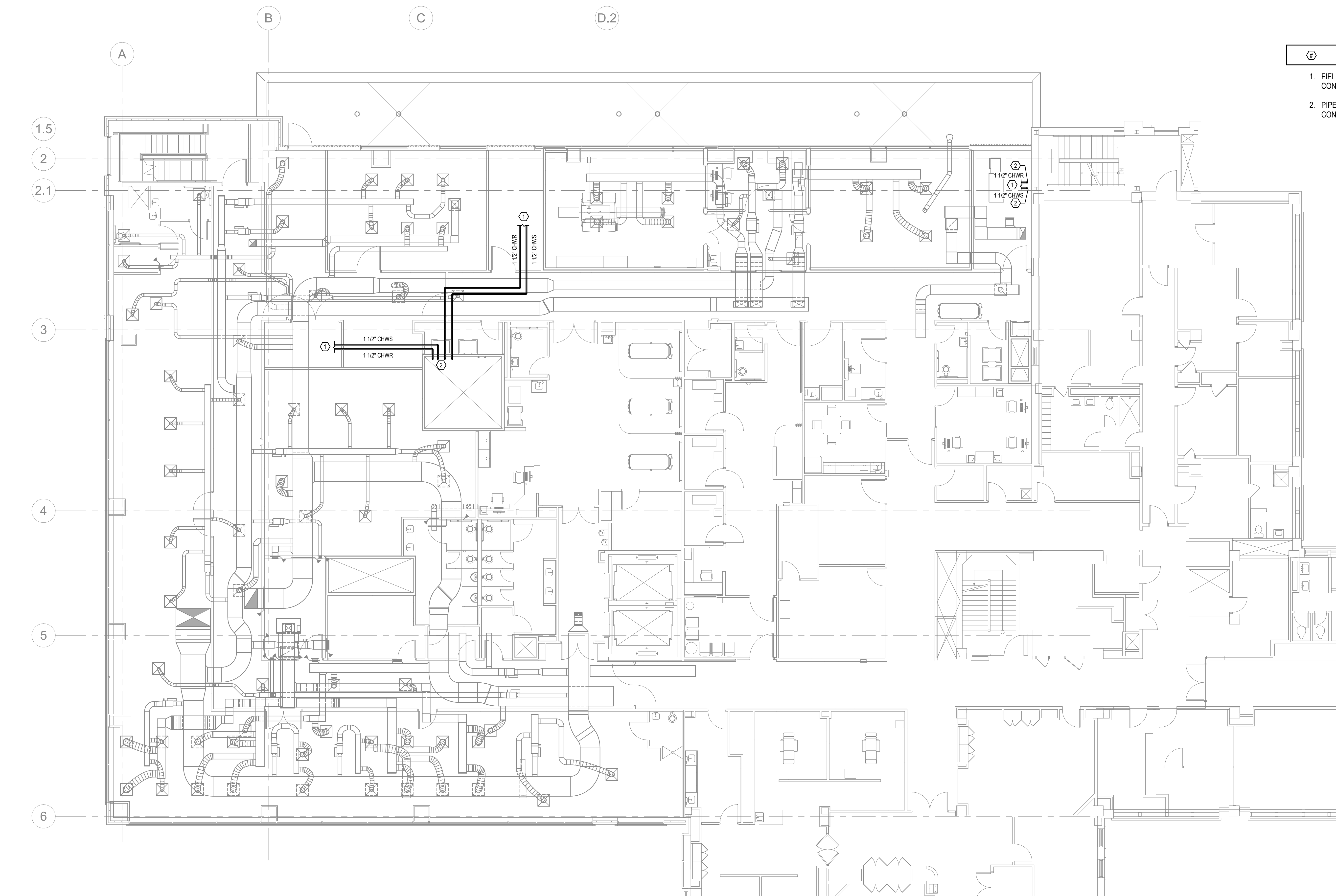
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**LEVEL 3 - NEW  
WORK MECHANICAL  
PLAN**

Drawing No.:

M201



1 PARTIAL NEW WORK MECHANICAL PLAN - LEVEL 3  
1/8" = 1'-0"

80 Jesse Hill Jr Dr SE  
Atlanta GA 30303

Consultant

Revisions

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Seal

NOT FOR  
CONSTRUCTION

Project No.: 82410

Issue Date: 10 JULY 202

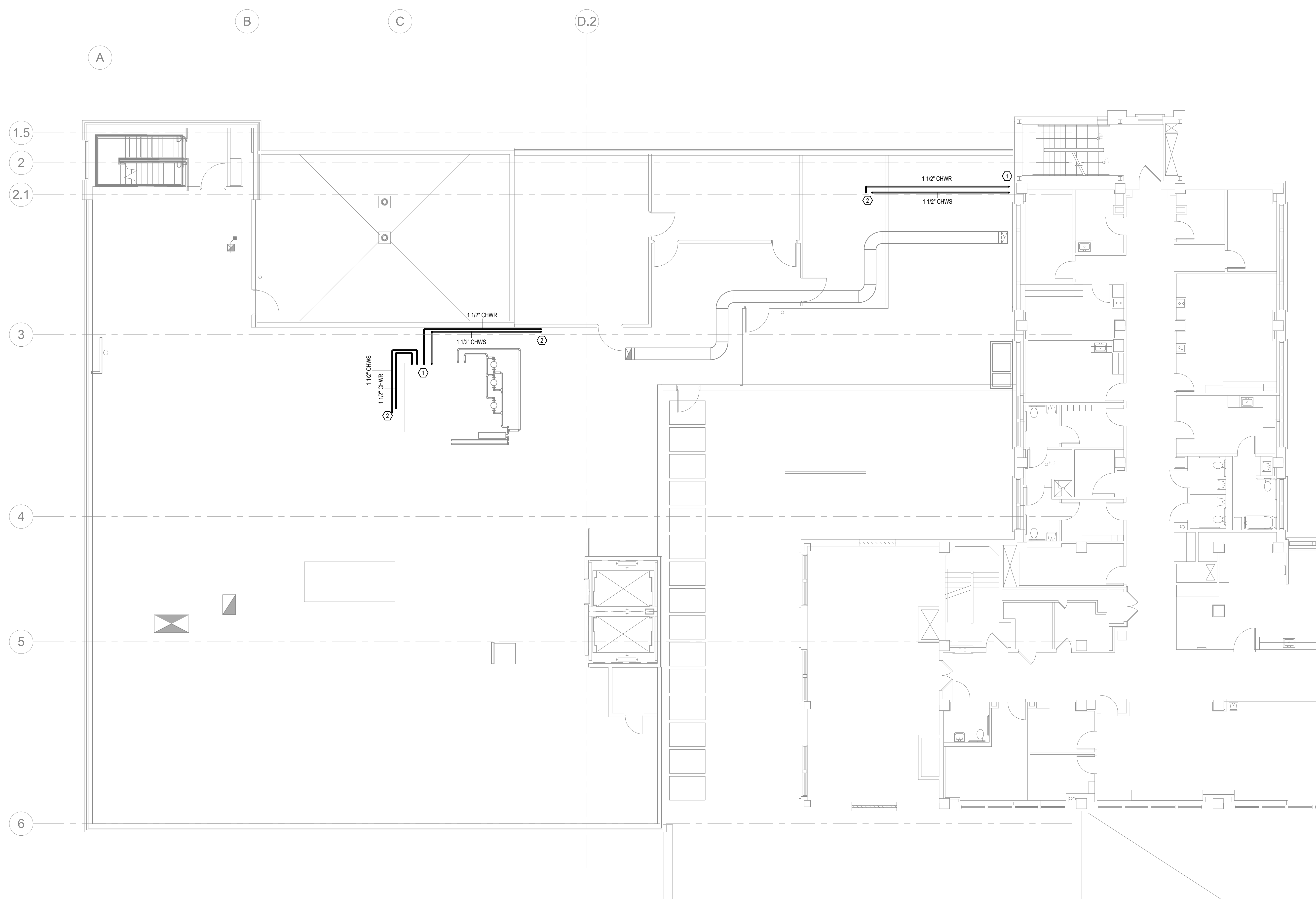
Drawn By: Christian D

Approved By: \_\_\_\_\_ MDM  
Scale:  $1/8" = 1'-0"$

Drawing Title:  
**LEVEL 4 - NEW  
WORK MECHANICAL  
PLAN**

Drawing No. : \_\_\_\_\_

M202



1 PARTIAL NEW WORK MECHANICAL PLAN - LEVEL 4  
1/8" = 1'-0"

## Grady MRI Chiller Concept Design

80 Jesse Hill Jr Dr SE  
Atlanta GA 30303

Consultants

## Revisions:

No.	Date	Description
A	10.JUL.24	DRAFT FOR REVIEW

Seal

NOT FOR  
CONSTRUCTION

Project No.: 82410

Issue Date: 10 JULY 202

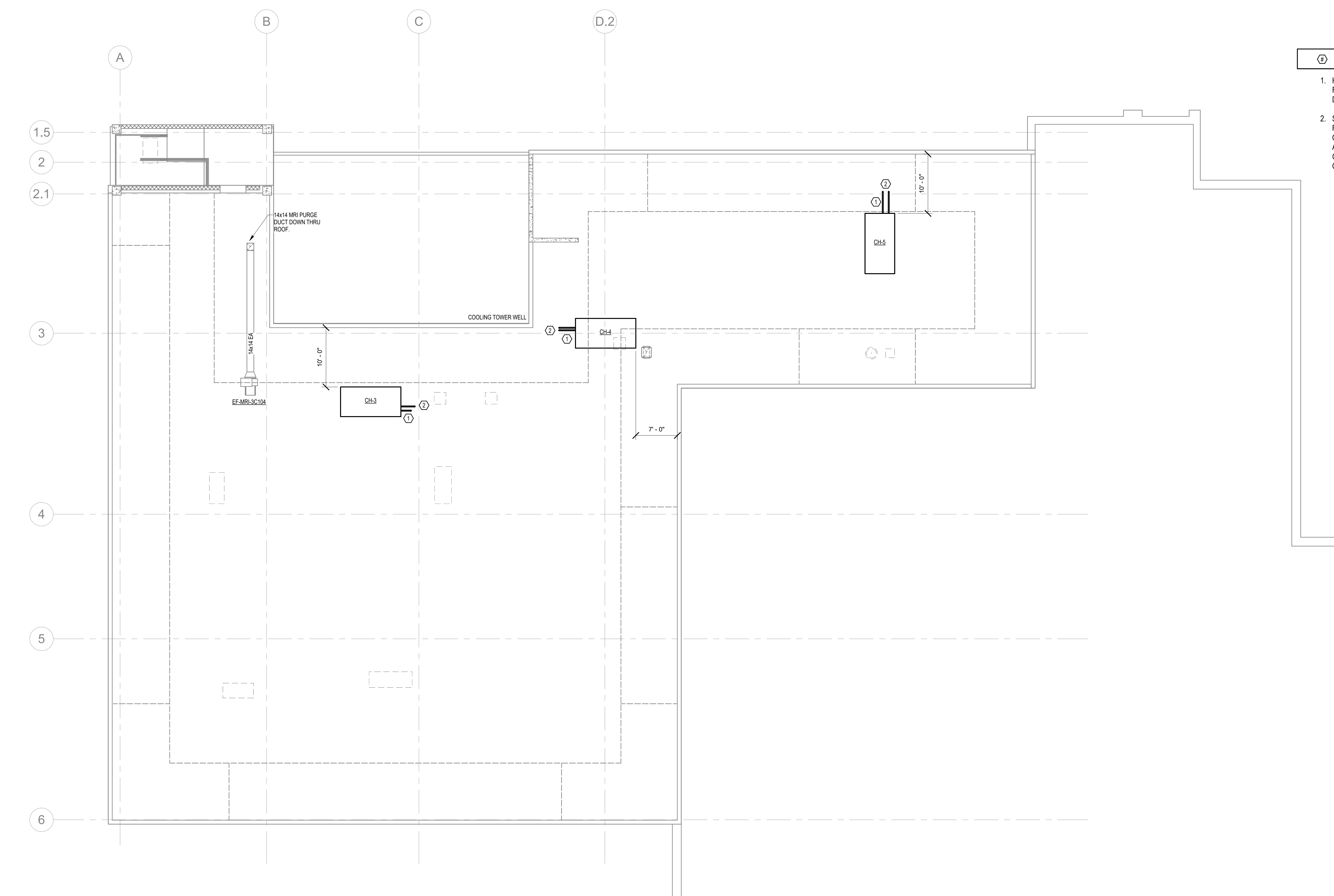
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Approved By: \_\_\_\_\_ MDM  
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ROOF LEVEL - NEW  
WORK MECHANICAL  
PLAN

Drawing No. : \_\_\_\_\_

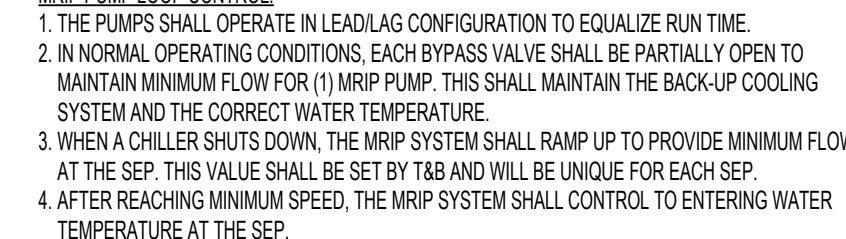
M203



## KEYNOTES

1. HEAT TRACE ALL EXTERIOR PIPING FOR FREEZE PROTECTION AT 40F. SEE ELECTRICAL DRAWINGS.
2. SUPPLY AND RETURN PIPING DOWN THRU ROOF TO 4TH FLOOR. SEE M202 FOR CONTINUATION. PROVIDE PIPE DOGHOUSE AND ALL ROOF WORK. COORDINATE WITH GRADY'S PREFERRED ROOFING CONTRACTOR.

1 PARTIAL NEW WORK MECHANICAL PLAN - ROOF  
1/8" = 1'-0"



1 12" = 1'-0"

Seal

M301



NOTES:  
1. STAINLESS STEEL PLATES  
2. FOULING FACTOR: 0.000005  
3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

**NOTES:**

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS AND ADDITIONAL REQUIREMENTS.
2. MOTORS SHALL BE HIGH EFFICIENCY AND TEC TYPE.
3. PROVIDE PROPER PIPE TRANSITION TO PUMP INLET/OUTLET AS REQUIRED.
4. PROVIDE SUCTION DIFFUSERS AS REQUIRED.
5. PROVIDE FULL IMPELLER SIZE FOR ALL VFD DRIVEN PUMPS.
6. VFD DRIVEN PUMPS SHALL BE INVERTER DUTY.
7. PROVIDE SPRING VIBRATION ISOLATORS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**NOTES:**

1. PROVIDE RAIL SYSTEM FOR ROOF MOUNTING.
2. PROVIDE WITH SINGLE-POINT POWER CONNECTION. SINGLE-POINT POWER CONNECTION SHALL INCLUDE ALL NECESSARY POWER NEEDS OF THE CHILLER. PROVIDE ANY NECESSARY STEP-DOWN TRANSFORMERS FOR COMPLETE SYSTEM.
3. PROVIDE UPS FOR CHILLER CONTROLS, SUCH THAT UPON POWER LOSS, THE CHILLER WILL RESTART AUTOMATICALLY, RESUMING ITS PREVIOUS STATUS AND SETTINGS.
4. PROVIDE LINE REACTORS FOR THE CONDENSER FAN VFDs FOR HARMONIC ISOLATION.
5. PERFORMANCE VALUES BASED ON AHRI TOLERANCES.
6. PROVIDE VARIABLE SPEED CONDENSER FANS FOR LOW AMBIENT CONTROL.
7. PROVIDE CORROSION-RESISTANT BAKED ENAMEL FINISH ON CASING
8. PROVIDE FLEX CONNECTORS AND ISOLATION VALVES AT PIPE CONNECTIONS TO CHILLER INLET AND OUTLET.
9. PROVIDE FACTORY DISCONNECT AND CONTROL PANEL WITH NEMA 3R ENCLOSURE
10. PROVIDE FACTORY INSULATION.
11. PROVIDE PROTECTIVE CONDENSER GRILLES FOR PROTECTION OF CONDENSER FINS.
12. PROVIDE INTEGRAL 3 HP CENTRIFUGAL PUMP. STAINLESS STEEL CONSTRUCTION. PROVIDE RUBBER PAD ISOLATION.
13. INSULATE ALL INTERNAL PIPING AND FITTINGS WITH CLOSED CELL INSULATION.

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

















NOT FOR  
CONSTRUCTION

Drawing Title:  
**MECHANICAL  
SCHEDULES**

Drawing No.: M401

# APPENDIX B

ELECTRICAL SYMBOL LEGEND					
BASIC MATERIALS			FIRE ALARM / DETECTION SYSTEM		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
DEVICE ABBREVIATION TAGS					
8C	POKE THRU WITH 8" CORE DRILL		MANHOLE	NEPA	
8C	POKE THRU WITH 8" CORE DRILL		PULLBOX		MANUAL PULL STATION
4G	FOUR GANG FLOOR BOX		HANDHOLE		CEILING SMOKE DETECTOR, PHOTOELECTRIC TYPE UNLESS OTHERWISE NOTED
1G	SIX GANG FLOOR BOX		TRANSFORMER		CEILING SMOKE DETECTOR, IONIZATION TYPE UNLESS OTHERWISE NOTED
8G	EIGHT GANG FLOOR BOX				CEILING SMOKE DETECTOR, RETURN TYPE UNLESS OTHERWISE NOTED
AV	DOUBLE DUPLEX RECEPTACLE WITH DEDICATED CIRCUIT FOR AV RACK OR CART		AUTOMATIC TRANSFER SWITCH		BEAM SMOKE DETECTOR
C	RECEPTACLE CONTROLLED PER ASHRAE 90.1 (2010) PROVIDE POWER PACK FOR RECEPTACLE CIRCUIT. TO BE CONTROLLED THROUGH LOCAL ROOM OCCUPANCY SENSOR(S); PROVIDE DEVICE WITH BLUE DOT OR UNIVERSAL POWER SYMBOL EXISTING TO REMAIN		NON-FUSED DISCONNECT SWITCH, RATING AS NOTED		BEAM SMOKE DETECTOR RECEIVER
ETR	HOSPITAL GRADE		FUSED DISCONNECT SWITCH, RATING AS NOTED		HEAT DETECTOR, DIFFERENTIAL TYPE UNLESS OTHERWISE NOTED
H	ISOLATED GROUND (ORANGE DEVICE)		MCP - MINIMUM CIRCUIT PROTECTION		SUPERVISED ADDRESSABLE FIRE ALARM CONTROL RELAY
IG	RELOCATED		MCP - MINIMUM CIRCUIT PROTECTION		SMOKE DETECTOR REMOTE TEST SWITCH WITH INDICATING LAMP, WALL MOUNTED AT 48" AFF. UNLESS OTHERWISE NOTED
RL	TAMPER RESISTANT		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, WALL MOUNTED, 7500 UNLESS OTHERWISE NOTED
TR	DUPLEX RECEPTACLE ADJACENT TO TV OUTLET, COORDINATE HEIGHT W/ ARCHITECT		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
TV	DUPLEX RECEPTACLE WITH (2) USB PORTS		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
U	WEATHERPROOF		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
WP			MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
Sa	SINGLE POLE SWITCH (SUBSCRIPT INDICATES ITEM CONTROLLED)		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S3	THREE-WAY SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S4	FOUR-WAY SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
Sx	SINGLE POLE KEY SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S1	DIGITAL TIMER SWITCH 1/15 MIN. WARNING FLASH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S0a0	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
S0a	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY VACANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		STROBE, CEILING MOUNTED, 10 CD UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		COMBINATION SPEAKER/STROBE, CEILING MOUNTED, 7500 UNLESS OTHERWISE NOTED
S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
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S0a	WALL MOUNTED DUAL TECHNOLOGY DIMMING/OCCUPANCY SENSOR SWITCH		MCP - MINIMUM CIRCUIT PROTECTION		HORN ONLY, WALL MOUNTED
S0a					

NURSE CALL SYSTEMS		ABBREVIATIONS		ABBREVIATIONS (CONT.)	
	SINGLE PATIENT STATION	AC	AIR CONDITIONING	KCMIL	ONE THOUSAND CIRCULAR MILS
	DUAL PATIENT STATION	AC	ALTERNATING CURRENT	KV	KILOVOLT
	DUTY STATION	ABV CLG	ABOVE CEILING	KVA	KILOVOLT AMPERES
	STAFF ASSISTANCE STATION	ADA	AMERICANS WITH DISABILITIES ACT	KW	KILOWATT
	STAFF EMERGENCY STATION	AF	AMPERE FRAME	KWH	KILOWATT HOURS
	STAFF EMERGENCY ANNUNCIATOR	AFB	ABOVE FINISHED FLOOR	LBS	POUNDS
	EMERGENCY STATION	AFG	ABOVE FINISHED GRADE	LED	LIGHT EMITTING DIODE
	TOILET EMERGENCY STATION	AHU	AIR HANDLING UNIT	LP	LIGHTNING PROTECTION
	SHOWER EMERGENCY STATION	AIC	AMPERE INTERRUPTING CAPACITY	LT	LIGHT
	CODE BLUE EMERGENCY STATION	AL	ALUMINUM	LG	LIGHTING
	DUAL STAFF PRESENCE INDICATOR STATION	AMP	AMPERE	LSI	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND
	CORRIDOR DOME LIGHT WALL MOUNTED	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LSL	LONG TIME, SHORT TIME, INSTANTANEOUS, ALARM
	CORRIDOR ZONE LIGHT	ASA	AMERICAN STANDARDS ASSOCIATION	LSL	LONG TIME, SHORT TIME, INSTANTANEOUS
	CODE BLUE ANNUNCIATOR PANEL WALL MOUNTED	AT	AMPERE TRIP	MAX	MAXIMUM
	NURSE CALL EQUIPMENT CABINET	ATS	AUTOMATIC TRANSFER SWITCH	MCA	MINIMUM CIRCUIT AMPERS
	NURSE CALL MASTER STATION	AUX	AUXILIARY	MCB	MAIN CIRCUIT BREAKER
	NURSE CALL MASTER SUB-STATION	AWG	AMERICAN WIRE GAUGE	MCC	MOTOR CONTROL CENTER
	NURSE CALL SYSTEM CONDUIT AND WIRING	BC	BARE COPPER	MDC	MAIN SERVICE DISTRIBUTION PANEL
		BL	BASIC WIRING LEVEL	MC	MICROPHONE
		BAS	BUILDING AUTOMATION SYSTEM	MIL	MINIMUM
		BMS	BUILDING MANAGEMENT SYSTEM	MLO	MAXIMUM LOGS ONLY
		BRKR OR BRO	BREAKER	MOC	MAXIMUM OVERCURRENT PROTECTION
		C	CONDUIT OR RACEWAY	MSB	MAIN SERVICE SWITCHBOARD
		CAB	CABINET	MTD	MOUNTED
		CRT	CIRCUIT	MTO	MOUNTING
		CB	CIRCUIT BREAKER	MTR	MOTOR
		CBM	CERTIFIED BALLAST MANUFACTURERS	MTR	MANUAL TRANSFER SWITCH
		CTV	CABLE TELEVISION	MTRX	MULTIPLE (TRANSFER) PANEL
		CCTV	CLOSED CIRCUIT TELEVISION	MVA	MEGA VOLT AMPS
		CLEC	CLOCK EQUIPMENT CABINET	N	NEUTRAL
		CLG	CEILING	NC	NORMALLY CLOSED
		CO	CONDUIT OR RACEWAY ONLY	NEL	NATIONAL ELECTRICAL CODE
		COAX	COAXIAL CABLE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
		COND	CONDUCTOR	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		CONN	CONNECTION	NOT IN CONTRACT	
		CPU	CENTRAL PROCESSING UNIT	NF	NON-FUSED
		CRT	CATHODE RAY THERMAL VIDEO DISPLAY TERMINAL	NL	NON-LEADER
		CT	CURRENT TRANSFORMER	NO	NORMALLY OPEN OR NUMBER
		CJ	COPPER	OL	OVERLOAD
		CW	COLD WATER	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
		DC	DIRECT CURRENT	P	POLE
		DDC	DIRECT DIGITAL CONTROL	P	PULLBOX
		DEG	DEGREE	PF	POWER FACTOR
		DF	DEMAND FACTOR	PV	POST INDICATOR VALVE
		DISC	DISCONNECT	PAL	PANEL
		DISC SW	DISCONNECT SWITCH	PR	PAIR
		DO	DRAW OUT	PR	PRIMARY
		DN	DOWN	PT	POTENTIAL TRANSFORMER
		DPST	DOUBLE POLE SINGLE THROW	PVC	POLYVINYLCHLORIDE
		EDH	ELECTRIC DUCT HEATER	PWR	POWER
		EMT	ELECTRIC METALLIC TUBING	REC	RECEPTACLE
		EO	ELECTRICALLY OPERATED	REF	REFRIGERATOR
		EOL	END OF LINE	RGS, RGC	RIGID GALVANIZED STEEL CONDUIT
		EOR	ENGINEER OF RECORD	RLA	RUNNING LOAD AMPERES
		ETR	EXISTING TO REMAIN	RMS	ROOT MEAN SQUARE
		EWC	ELECTRIC WATER COOLER	RNG	REVOLUTIONS PER MINUTE
		FA	FIRE ALARM	RTU	ROOF TOP UNIT
		FAP	FIRE ALARM ANNUNCIATOR PANEL	SCA	SHORT CIRCUIT AMPERES
		FATC	FIRE ALARM TERMINAL CABINET	SD	SMOKE DETECTOR
		FCU	FAN COIL UNIT	SEC	SECONDARY
		FUA	FULL LOAD AMPERES	SEN	SOLID NEUTRAL
		FM	FACTORY MUTUAL	SPD	SURGE PROTECTIVE DEVICE
		FPU	FAN POWERED UNIT	SPKR	SPEAKER
		FT	FEET	SPT	SINGLE POLE SINGLE THROW
		GF	GROUND FAULT	SS	STAINLESS STEEL
		GFA	GROUND FAULT ALARM	STD	SOLID STATE TRIP
		GFCI	GROUND-FAULT CIRCUIT INTERRUPTER	STT	SHORT TIME TRIP
		GFR	GROUND FAULT RELAY	SW	SWITCH
		GND, G	GROUND	SWBD	SWITCHBOARD
		HP	HORSEPOWER	SWGR	SWITCHGEAR
		HOA	HAND-OFF-AUTOMATIC	TEL	TELEPHONE
		HORIZ	HORIZONTAL	TIB	TELEPHONE TERMINAL BOARD
		IBC	INTERNATIONAL BUILDING CODE	TIB	TELEPHONE TERMINAL CABINET
		I	INTERCOM	TYSC	TELEVISION EQUIPMENT CABINET
		ICU	INTENSIVE CARE UNIT	TYP	TYPICAL
		IECC	INTERNATIONAL ENERGY CONSERVATION CODE	UG	UNDERGROUND
		IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS	UNLESS OTHERWISE NOTED	
		IES	ILLUMINATING ENGINEERING SOCIETY	UL	UNDERWRITERS LABORATORIES
		IMC	INTERMEDIATE METAL CONDUIT	UL	UTILITY
		IN	INCHES	V	VOLT
		IPCEA	INSULATED POWER CABLE ENGINEERS ASSOCIATION	V	VOLT
		IT	INSTANTANEOUS TRIP	VA	VOLTAAMPERE
		JB OR J-BOX	JUNCTION BOX	VAR	VOLT AMPERE REACTIVE
				VAV	VARIABLE AIR VOLUME
				VFD	VARIABLE-FREQUENCY DRIVE
				W	WIRE
				WP	WEATHER PROOF
				XMR	TRANSFER
				XMR	TRANSFER

ELECTRICAL SHEET INDEX	
E001	ELECTRICAL SYMBOLS, LEGEND, AND INDEX
E002	ELECTRICAL NOTES AND SPECIFICATIONS
E003	PARTIAL ONE-LINE DIAGRAM
E202	PARTIAL LEVEL 4 - NEW WORK POWER PLAN
E203	PARTIAL ROOF LEVEL - NEW WORK POWER PLAN

# Grady MRI Chiller Concept Design

30 Jesse Hill Jr Dr SE  
Atlanta, GA 30303

### Consultants:

[illegible]

Seal

Project No.:	824101
Issue Date:	10 JULY 2024
Drawn By:	RLS
Approved By:	FSS
Scale:	N.T.S.

Drawing Title

# ELECTRICAL SYMBOLS, LEGEND, AND INDEX

Drawing No

E001







## DESCRIPTION



① PROVIDE 30 DAY ELECTRICAL LOAD READING OF  
PANEL AS REQUIRED BY NEG.

1 Existing Partial One-Line Diagram  
N.T.S

## Grady MRI Chiller Concept Design

00 Jesse Hill Jr Dr SE  
Atlanta GA 30303

Consultant

Revisions

[illegible]

Seal

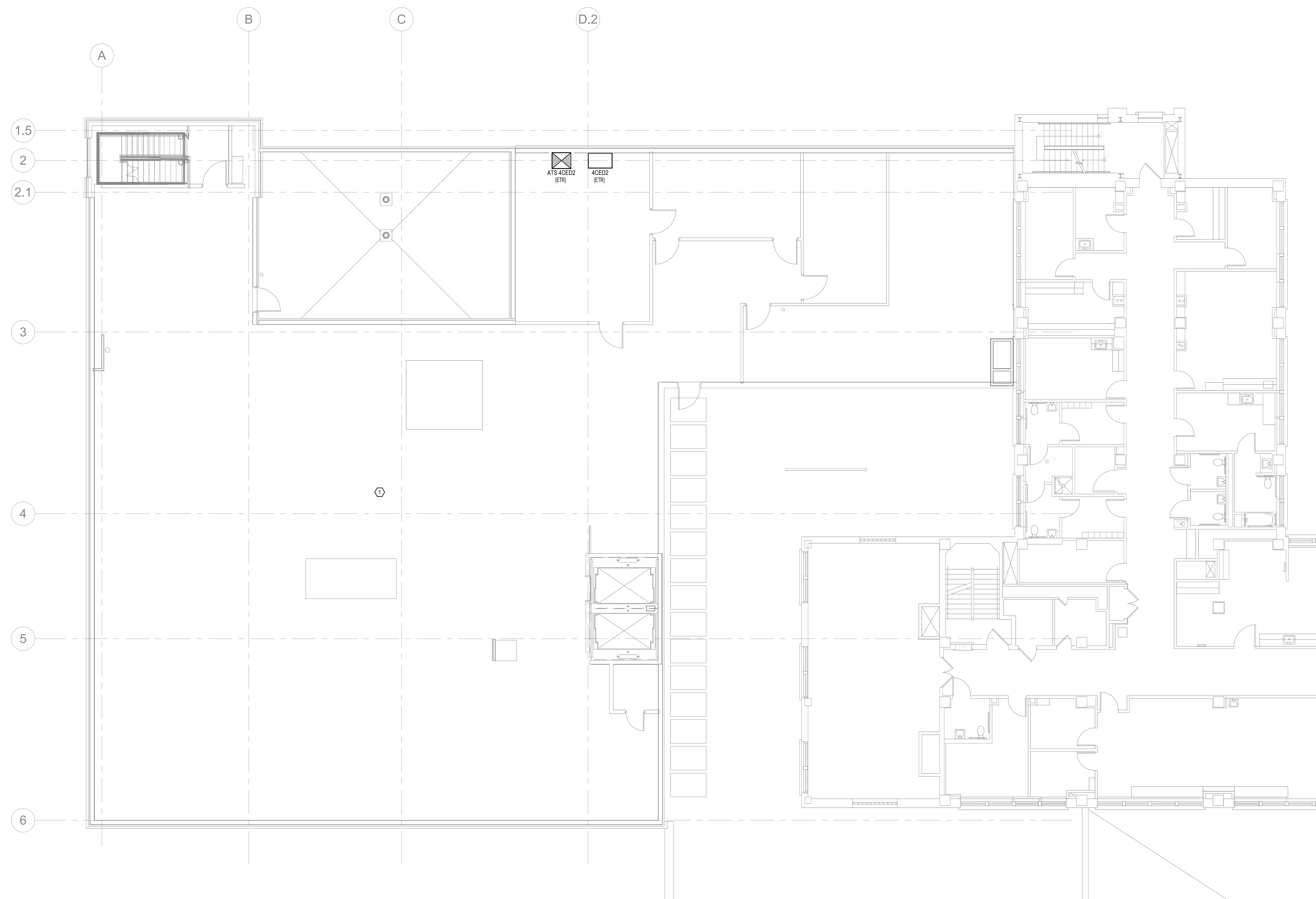
NOT FOR  
CONSTRUCTION

Project No.:	82410
Issue Date:	10 JULY 202

Drawn By:	RLS
Approved By:	FSS
Scale:	1/8" = 1'-0"

Drawing Title:  
PARTIAL LEVEL 4 -  
NEW WORK POWER  
PLAN

Drawing No.: **E202**



## KEYNOTES

① ALTERNATE LOCATION FOR CH-2

1 PARTIAL NEW WORK POWER PLAN - LEVEL 4  
1/8" = 1'-0"

Consultants:

Revisions

[illegible]

Seal

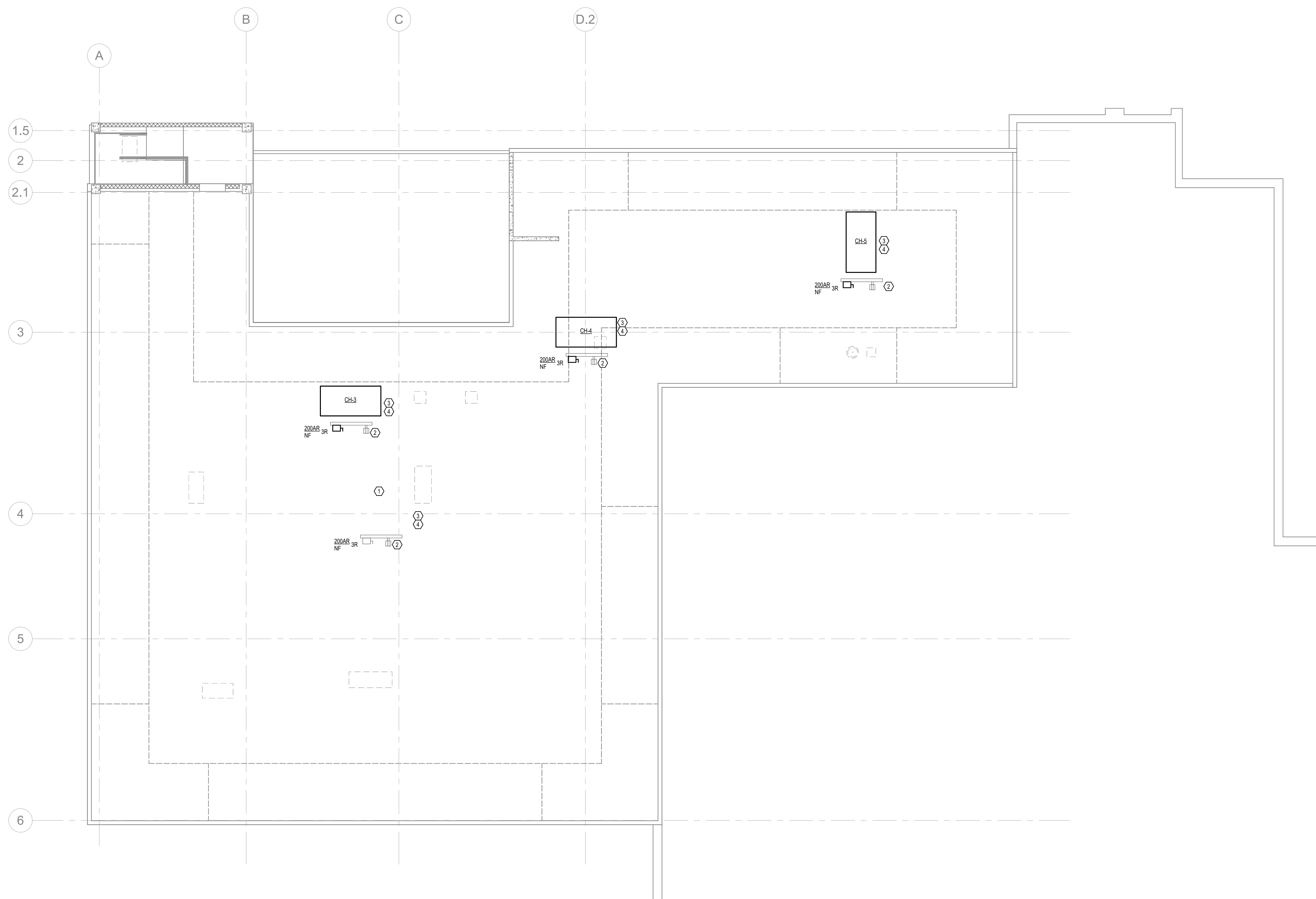
NOT FOR  
CONSTRUCTION

Drawn By:	RLS
Approved By:	FSS
Scale:	1/8" = 1'-0"

Drawing Title:  
PARTIAL ROOF  
LEVEL - NEW WORK  
POWER PLAN

Drawing No.

E203



## KEYNOTES

- ⑦ ALTERNATE LOCATION FOR CH-2 AND DISCONNECT.
- ⑧ PROVIDE WEATHER PROOF WHILE IN USE ALUMINUM COVER. WIRE TO 120V BRANCH CIRCUIT FOR EQUIPMENT BRANCH USING 2#10, 1#10 GROUND IN 3/4" CONDUIT.
- ⑨ CONTRACTOR SHALL CONNECT NEW EQUIPMENT TO EXISTING LIGHTNING PROTECTION. PROVIDE UL CERTIFIED SYSTEM.
- ⑩ PROVIDE 277, 30A GFCI PROTECTED CIRCUIT FOR HEAT TREATING OF MECHANICAL PIPES. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN. INCREASE BREAKER SIZE AS NECESSARY. PROVIDE WIRE SIZE PER NEC.

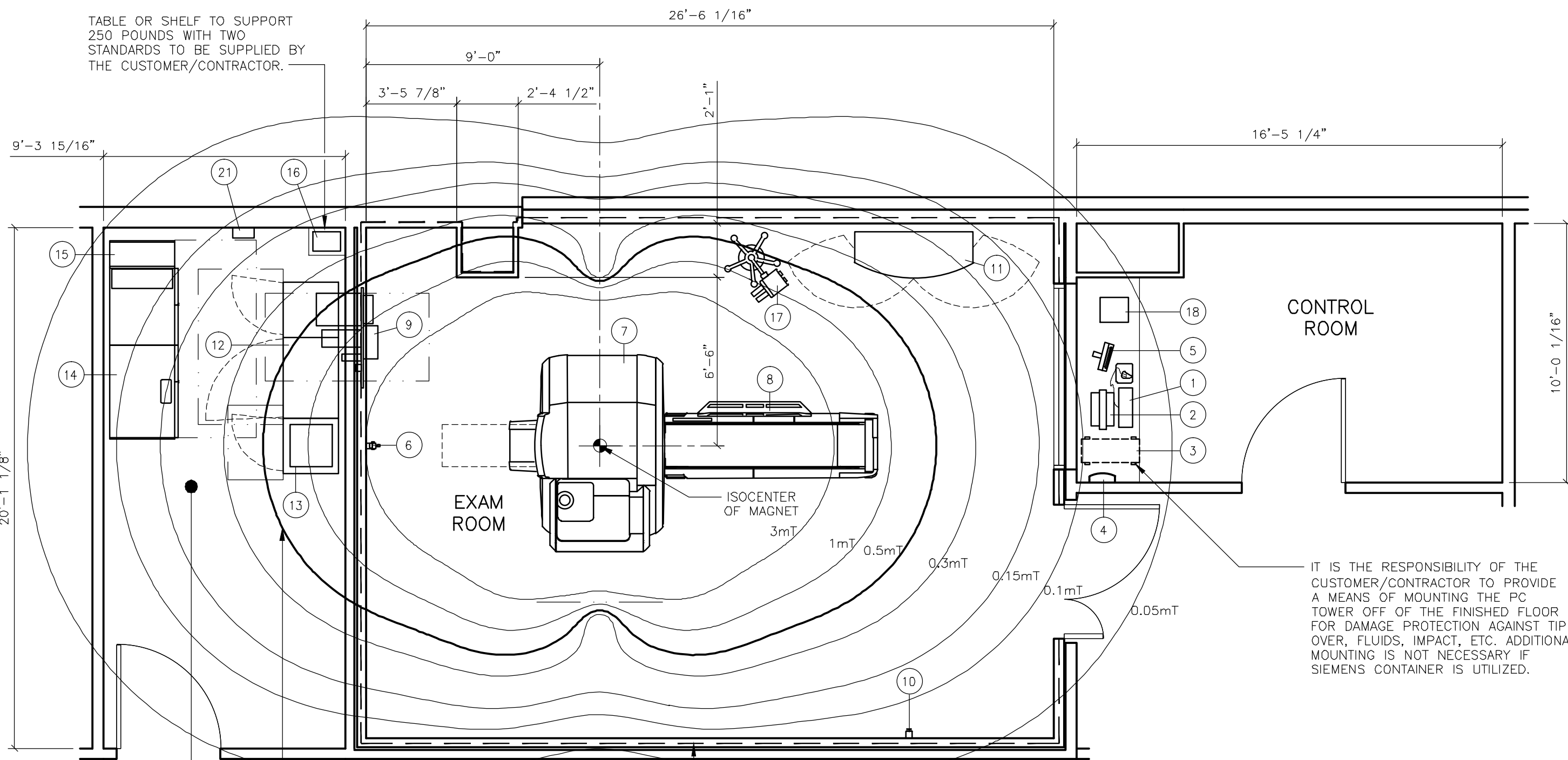
**GENERAL LIGHTNING PROTECTION NOTES:**

1. PROVIDE COMPLETE LISTED, LP1 CERTIFIED LIGHTNING PROTECTION SYSTEM IN FULL COMPLIANCE WITH THE LATEST EDITION OF NFPA 780 FOR PROTECTION OF BUILDINGS AND STRUCTURES. PROVIDE AIR TERMINALS ON ALL ROOF MOUNTED METALLIC EQUIPMENT AS REQUIRED. BOND ALL METALLIC BODIES WITHIN AREAS CALCULATED BY NFPA 780.
2. ALL ROOF MOUNTED EQUIPMENT SHALL BE ALUMINUM, ALL DOWN CONDUCTORS AND GROUND RODS SHALL BE COPPER. ALL DOWN CONDUCTORS SHALL BE CONTAINED IN MINIMUM 1" PVC CONDUIT.
3. SUBMIT COMPLETE SHOP DRAWINGS SHOWING ROOF LAYOUT, DOWN LOCATIONS, GROUND ROD LOCATIONS, ETC. AS WELL AS ALL CONNECTION DETAILS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. CONTRACTOR SHALL PERFORM ALL REQUIRED RESISTANCE AND CONTINUITY TESTING AFTER INSTALLATION IS COMPLETED.
4. COORDINATE EXACT LOCATION OF ALL ROOFTOP METALLIC EQUIPMENT WITHIN 23' PERIOD OF INSTALLATION AND ROUGH-IN FIELD LOCATIONS. SHOOT LOCATIONS.

1 PARTIAL NEW WORK POWER PLAN - ROOF  
1/8" = 1'-0"

# APPENDIX C





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.

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.

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.

RF SHIELDING TO BE PROVIDED BY RF SHIELDING VENDOR.

CHILLER TO BE SUPPLIED, LOCATED AND INSTALLED BY CUSTOMER/CONTRACTOR. REFER TO MANUFACTURER'S INFORMATION.

THERE SHALL BE A SEPARATE RF ROOM PENETRATION PANEL FOR NON-SIEMENS EQUIPMENT. THE OUTSIDE EQUIPMENT MANUFACTURER (OEM) WILL SPECIFY ANY AND ALL FILTER AND PENETRATION REQUIREMENTS.

WARNING NOTES:  
THE 0.5mT FIELD MUST BE RESTRICTED FROM INDIVIDUALS WITH PACEMAKERS OR INSULIN PUMPS IN ACCORDANCE WITH LOCAL CODES. FOR EXAMPLE FENCES WITH WARNING SIGNS, OR MAGNETIC ROOM SHIELDING TO REDUCE THE FIELD.

MAGNETIC FIELD WARNING  
PLEASE BE AWARE THAT DURING THE CALIBRATION PHASE OF YOUR MRI INSTALLATION, YOUR NEW 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.

QUENCH VENT SPECIFICATIONS:  
THE QUENCH VENT REQUIREMENTS AND SPECIFICATION DETAILED ON SHEET M-501 MUST BE MET.

## ARCHITECTURAL EQUIPMENT PLAN

### ROOM MEASUREMENTS

ALL ROOM MEASUREMENTS AND ROOM DETAIL SPECIFICATIONS MUST BE VERIFIED ON SITE PRIOR TO BEGINNING ANY CONSTRUCTION WORK.

### 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. ANY FERROUS MATERIAL INSIDE THE EXAM ROOM MAY BECOME A MISSILE AND CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPMENT. FERROUS ITEMS INSIDE THE EXAM ROOM ARE THE LIABILITY OF THE CONTRACTOR AND/OR INSTALLER.

### 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.

### DC 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%.

### 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.

### STATIC DISSIPATIVE FLOORING

SIEMENS RECOMMENDS "STATIC DISSIPATIVE" FLOOR COVERING WITH AN ELECTRICAL RESISTANCE OF  $\leq 10^9$  OHMS IN ALL AREAS WHERE SIEMENS EQUIPMENT IS INSTALLED. A STATIC DISSIPATIVE FLOOR REDUCES THE RISK OF STATIC ELECTRIC DISCHARGES THAT MAY DAMAGE SENSITIVE EQUIPMENT AND COMPONENTS.

### CASEWORK & ACCESSORY NOTES

1) 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.

2) ALL FURNITURE (CHAIRS, ETC.) FOR THE CONTROL ROOM ARE TO BE PROVIDED BY THE CUSTOMER.

### TRANSPORTING REQUIREMENTS

LARGEST ITEM - MAGNET - 10,361 LBS.

MINIMUM MAGNET DIMENSIONS WITH TRANSPORT WHEELS UNDER MAGNET:

7'-7" HIGH X 7'-3" WIDE X 5'-2" DEEP WITHOUT TABLE SUPPORT, 6'-0" DEEP WITH TABLE SUPPORT.

THE ROOF HATCH/DELIVERY OPENING SHOULD BE 4" LARGER.

TO TRANSPORT THE GPA/EPC CABINET (3,307 POUNDS) A MINIMUM ROOM HEIGHT OF 6'-9" IS REQUIRED, 6'-3" WITH WHEELS REMOVED, 6'-1" WITH WHEELS AND MAINS CONNECTION REMOVED.

### NOISE LEVELS

SYSTEM ROOM	NOISE LEVEL / dB(A)
CONTROL ROOM	<55
EXAMINATION ROOM	XJ GRADIENTS 83.1 OVER 8 HOUR AVERAGE 101.5 MAXIMUM MEASURED IN THE EXAM ROOM
	XQ GRADIENTS 86.1 OVER 8 HOUR AVERAGE 108.2 MAXIMUM MEASURED IN 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.

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	COLOR MONITOR FOR MRC	☐	22	239	18 5/16	16 15/16	4 3/4	ON CONSOLE/COUNTER	
3	HOST PC MRC	☐	49	2,389	11	27	18 1/8		
4	ALARM BOX	☐	2	---	9	4	9		
5	PATIENT MONITOR (OPTION)	☐	30	---	13	8	12 1/2		
6	PATIENT SUPERVISION CAMERA (OPTION)	☐	3	---	3 1/8	6 3/4	6 3/4	WALL MOUNTED	
7	AERA MAGNET WITH COVERS, COILS, ELECTRONICS	☐	10,093	7,506	91	170	86		
8	PATIENT TABLE (MOBILE)	☐	529	---	29 1/2	97 1/4	21-41	MOBILE TABLE	
9	RF-FILTER PLATE	☐	287	853	46 1/2	35 1/8	21 5/8		
10	MAGNET STOP	☐	1	---	3	5	3		
11	SURFACE COIL CART (OPTION)	☐	110	---	55 1/8	21 1/8	47 5/8	WEIGHT WITHOUT COILS	
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	POWERWARE 9390 U.P.S. WITH BATTERY (OPTION)	☐	5,880	43,800	78 3/8	32	74		
15	POWERWARE 9390 ISOLATION TRANSFORMER (OPTION)	☐	1,100		12	32	74		
16	POWERWARE 9130 UPS (OPTION)	☐	76	1,257	8 3/8	12 7/8	16 1/4		
17	MEDRAD ICBC INJECTOR STAND AND HEAD (OPTION)	☐	37.5	---	19 1/4	21 1/2	52 1/4	INJECTOR ON STAND	
18	MEDRAD ICBC INJECTOR CRU (OPTION)	☐	7.9	---	12	10 1/2	10 7/8	ON CUSTOMERS COUNTER	
19	MEDRAD ICBC INJECTOR POWER SUPPLY (OPTION)	☐	3.5	---	10	5	3 1/4	OUTSIDE 5mT FIELD	

### 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.

### 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 AND Z AXIS	SOURCE OF INTERFERENCE
4'-2"	FLOOR STEEL REINFORCEMENT <20 LBS./ FT <sup>2</sup> IRON BEAMS < 88 LBS./FT.
16'-1" / 19'-1"	STRETCHERS UP TO 110 LBS.
13'-1"	WATER COOLING UNIT (CHILLER)
17'-5" / 21'-40"	TRANSPORT DEVICES UP TO 440 LBS.
18'-5" / 24'-8"	VEHICLES UP TO 2,000 LBS.
20'-5" / 29'-7"	ELEVATORS, TRUCKS UP TO 10,000 LBS.
39'-5"/26'-2"	AC TRANSFORMERS LESS THAN 100 KVA
39'-5"/29'-7"	AC TRANSFORMERS LESS THAN 250 KVA
42'-7"/32'-10"	AC TRANSFORMERS LESS THAN 650 KVA
45'-11"/36'-2"	AC TRANSFORMERS LESS THAN 1600 KVA
9'-10"/6'-6"	AC CABLES, MOTORS LESS THAN 100 AMPS
19'-9"/6'-7"	AC CABLES, MOTORS LESS THAN 250 AMPS
29'-7"/36'-2"	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.

### ENVIRONMENTAL/POWER AUDIT

AS AN INDICATION OF OUR COMMITMENT TO QUALITY, SIEMENS MAY, AT NO COST TO YOUR FACILITY, CHECK THE OPERATING ENVIRONMENT AFTER SYSTEM TURNOVER TO DETERMINE IF THE REQUIREMENTS FOR TEMPERATURE, HUMIDITY, POWER, AND GROUNDING ARE MET AS PER SIEMENS' PUBLISHED SPECIFICATIONS. SIEMENS WILL GENERATE A WRITTEN REPORT DETAILING THE ENVIRONMENTAL AND ELECTRICAL CONDITION OF THE SITE AFTER TURNOVER AND WILL SHARE THE REPORT WITH YOU. IN THE EVENT WE IDENTIFY ANY ENVIRONMENTAL/POWER DEFICIENCIES AT THE SITE, YOUR FACILITY WILL BE REQUESTED TO CORRECT DEFICIENCIES WITHIN THIRTY (30) DAYS. SHOULD ANY CORRECTIVE ACTIONS BE NECESSARY, AND UPON REQUEST, SIEMENS WILL PROVIDE GUIDANCE IN AN EFFORT TO FACILITATE RESOLUTION. PLEASE BE ADVISED THAT AFTER 30 DAYS NOTICE ANY REPAIR OR MAINTENANCE SERVICES NECESSITATED BY SEVERE DEFICIENCIES WILL FALL OUTSIDE YOUR WARRANTY COVERAGE.

### CEILING HEIGHTS

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

### 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 LATCH 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.

### 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.

X/Y AND Z AXIS	DEVICES
6'-1" / 9'-2"	SMALL MOTORS, WATCHES, CAMERAS, CREDIT CARDS, MAGNETIC DATA CARRIERS (SHORT-TERM EXPOSURE)
3.0mT	
7'-3" / 11'-6"	COMPUTERS, MAGNETIC DISK DRIVES, OSCILLOSCOPES, PROCESSORS
1.0mT	
8'-3" / 13'-2"	CARDIAC PACEMAKERS, X-RAY TUBES, INSULIN PUMPS, B/W MONITORS, MAGNETIC DATA CARRIERS (LONG-TERM STORAGE)
0.5mT	
9'-9" / 16'-1"	SIEMENS CT SCANNERS
0.2mT	
10'-4" / 17'-1"	COLOR MONITORS, SIEMENS LINEAR ACCELERATORS
0.15mT	
13'-1" / 22'-3"	X-RAY IMAGE INTENSIFIERS, GAMMA CAMERAS, PET/CYCLOTRON, ELECTRON MICROSCOPES, LINEAR ACCELERATORS
0.05mT	

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

### MAGNET CO-SITING

MINIMUM DISTANCE MAGNET-MAGNET (SIEMENS)					
	0.2T	0.35T	1.0T	1.5T	3.0T
0.2T	32'-9"	32'-9"	16'-5"	19'-9"	32'-9"
0.35T	32'-9"	32'-9"	16'-5"	19'-9"	32'-9"
1.0T	16'-5"	16'-5"	14'-10"	16'-5"	19'-9"
1.5T	19'-9"	19'-9"	16'-5"	16'-5"	19'-9"
3.0T	32'-9"	32'-9"	19'-9"	19'-9"	19'-9"

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".

### ARCHITECTURAL NOTES

- 1) ALL PRELIMINARY EQUIPMENT LAYOUTS SUBMITTED BY SIEMENS MEDICAL SOLUTIONS, INC. (SMS HEREAFER) ARE BASED ON THE RECOMMENDED SPACE NECESSARY FOR THE OPERATION AND SERVICEABILITY OF THE EQUIPMENT BEING PROPOSED. SMS WILL NOT SUBMIT AN EQUIPMENT LAYOUT THAT IS NOT IN THE BEST INTEREST OF BOTH THE CUSTOMER AND SMS. ALL EQUIPMENT LAYOUTS ARE BASED EITHER ON AN ACTUAL SITE LOCATION SURVEY OR ARCHITECTURAL DRAWINGS SUPPLIED TO SMS. SMS WILL NOT BE RESPONSIBLE FOR ANY ALTERATIONS THAT ENCRDACH 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 SMS PROJECT MANAGER.
- 2) SMS IS NOT AN ARCHITECTURAL OR ENGINEERING FIRM. DRAWINGS SUPPLIED BY SMS 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.
- 3) THE CUSTOMER IS RESPONSIBLE FOR ALL ROOM AND AREA PREPARATION COSTS, PROFESSIONAL FEES, PERMITS, REPORTS, AND INSPECTION FEES.
- 4) EQUIPMENT WARRANTIES, EXPRESSED OR IMPLIED ON THE PART OF SMS SHALL BE CONTINGENT UPON STRICT COMPLIANCE WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND RECOMMENDATIONS AND REQUIREMENTS CONTAINED IN THESE DRAWINGS, UNLESS SPECIFIED OTHERWISE.
- 5) ALL DIMENSIONS SHOWN ARE TAKEN FROM FINISHED SURFACES UNLESS SPECIFIED OTHERWISE.
- 6) 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. ACTUAL PROTECTION REQUIREMENTS SHALL BE SPECIFIED BY A REGISTERED RADIATION PHYSICIST AT CUSTOMER'S ENGAGEMENT AND EXPENSE. RESPONSIBILITY FOR ALL INFORMATION AS TO THE ROOM LOCATION, USE, AND NUMBER OF ANTICIPATED EXAMINATIONS TO BE PERFORMED PER TIME PERIOD SHALL BE PROVIDED TO THE PHYSICIST BY THE CUSTOMER. THE CUSTOMER SHALL FURTHER TAKE ALL RESPONSIBILITY IN THE COMMUNICATION AND COORDINATION OF ACTIVITIES OF THE RADIATION PHYSICIST AND THE ARCHITECTURAL REPRESENTATIVE.
- 7) SMS SHALL BE RESPONSIBLE FOR SMS EQUIPMENT INSTALLATION AND CALIBRATION, CONNECTION AND INSTALLATION OF SMS PROVIDED CABLES, AND CONNECTION OF CONTRACTOR PROVIDED WIRES TO SMS 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 JOB SUPERVISION TO BE PROVIDED BY SMS. 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.
- 8) THE CUSTOMER SHALL VERIFY WITH SMS PROJECT MANAGER FINAL INSTALLATION DRAWINGS THE LOCATIONS AND TRAVEL OF ALL ANGIOGRAPHY 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.).
- 9) 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 SMS EQUIPMENT AND ANY ASSOCIATED SUPPORT APPARATUS.

### SITE READINESS GUIDELINES

THE FOLLOWING GENERAL CONDITIONS ARE NECESSARY TO HAVE THE STATUS OF "READY SITE".

- 1) PROPER POWER AVAILABLE AT SIEMENS EQUIPMENT POWER CABINET LOCATION AND ALL POWER OUTLETS FUNCTIONING.
- 2) AIR CONDITIONING/HUMIDIFICATION SYSTEMS COMPLETE, TESTED, AND FUNCTIONING PROPERLY ACCORDING TO SIEMENS SPECIFICATIONS.
- 3) PROPER LIGHTING INSTALLED AND FUNCTIONING.
- 4) PLUMBING COMPLETE EXCEPT FOR ANY FINAL CONNECTIONS TO SIEMENS EQUIPMENT.
- 5) ALL CABLE TRAYS/DUCTS/CONDUITS CORRECTLY SIZED, LOCATED, AND INSTALLED ACCORDING TO THE SIEMENS DRAWINGS.
- 6) ALL REINFORCEMENT PLATES/UNISTRUIT INSTALLED AS REQUIRED.
- 7) ROOM FOR EQUIPMENT INSTALLATION AND IMMEDIATE VICINITY IS DUST-FREE AND IS TO REMAIN SO FOR THE DURATION OF THE INSTALLATION.
- 8) A SECURE AREA (APPROXIMATELY 10' x 10') IS AVAILABLE AT EQUIPMENT DELIVERY FOR PARTS AND INSTALLATION TOOLS.
- 9) CUSTOMER SUPPLIED CAMERAS AND PROCESSORS INSTALLED.
- 10) CUSTOMER APPROVAL FOR SIEMENS REMOTE SERVICES (SRS) CONNECTION, AND CUSTOMER'S I.T. CONTACT INFORMATION AND IP ADDRESSES ESTABLISHED.
- 11) WALLS TO BE PRIMED AND PAINTED, FLOORS TO BE TILED EXCEPT IN AREAS OF THE EQUIPMENT BASE PLATES.

IF THESE CONDITIONS ARE NOT MET, THE SIEMENS PROJECT MANAGER AND THE DESIGNATED SIEMENS INSTALLATION SUPERVISOR SHALL RESCHEDULE THE INSTALLATION START DATE. NOTE: ADDITIONAL COST MAY BE INCURRED BY THE CUSTOMER/CONTRACTOR AND DELIVERY DATES MAY NEED TO BE RESCHEDULED, WHEN THE SIEMENS SITE READINESS GUIDELINES ARE NOT MET.

RESOURCE LIST (SMS USE ONLY)		
DESIGNATION	PG NUMBER	DATE
PLANNING GUIDE	M7-010.891.01.08.02	08.14

# ATTENTION:

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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.

PROJECT MANAGER: MICHAEL POWERS  
TEL: (770) 330-1781  
FAX: (770) 369-8232  
EMAIL: michael.powers@siemens.com

EXT:

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ALL RIGHTS ARE RESERVED.

SCALE: AS NOTED  
REF. #1-49M1UW

PROJECT #:  
**1500201**

SHEET:  
**A-101**

191 PEACHTREE ST., ATLANTA, GA 30303  
MRI SUITE -- MAGNETOM AERA W/MOBILE TABLE

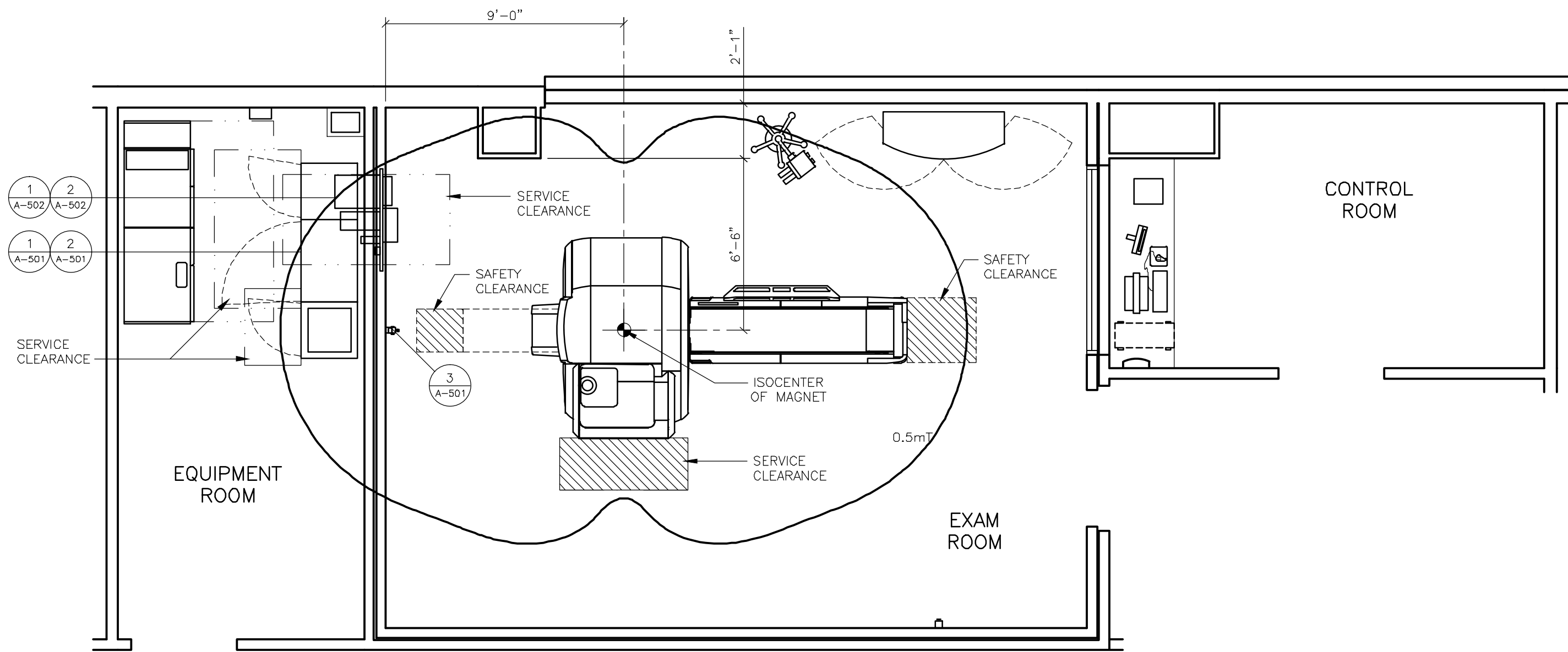
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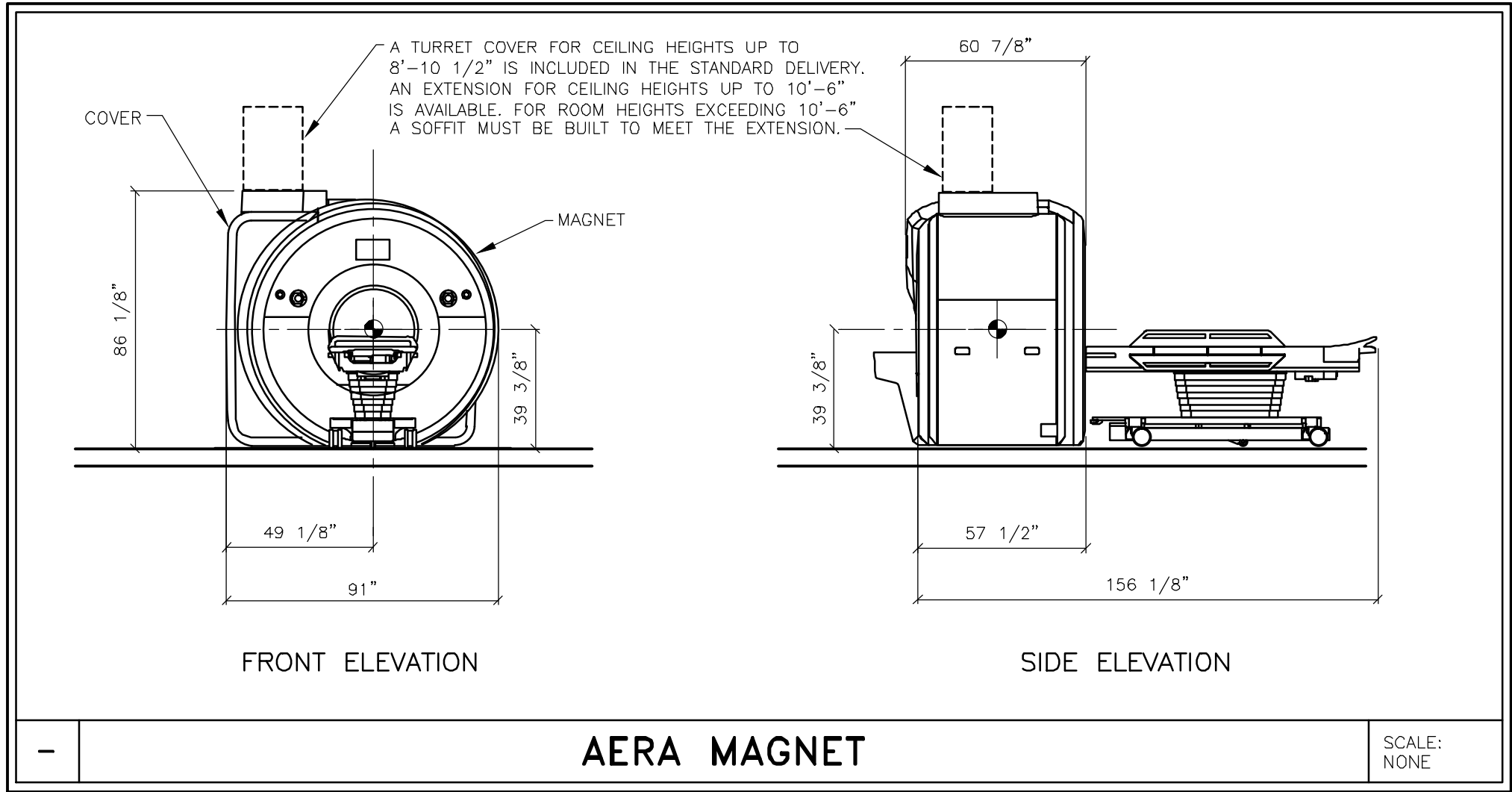
DATE: 03/18/15

DRAWN BY: F. CARUSO



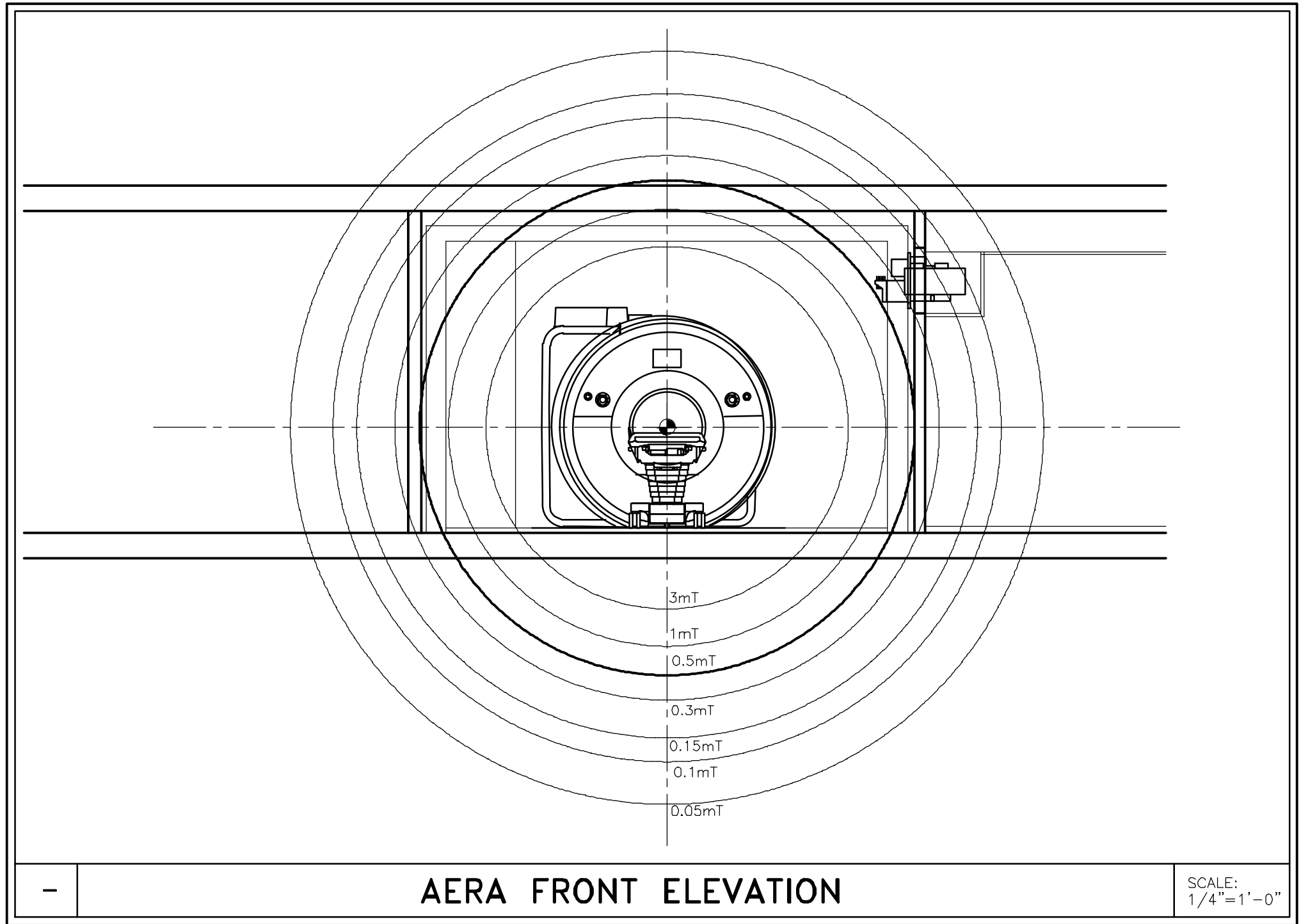
SAFETY/SERVICE CLEARANCE PLAN

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



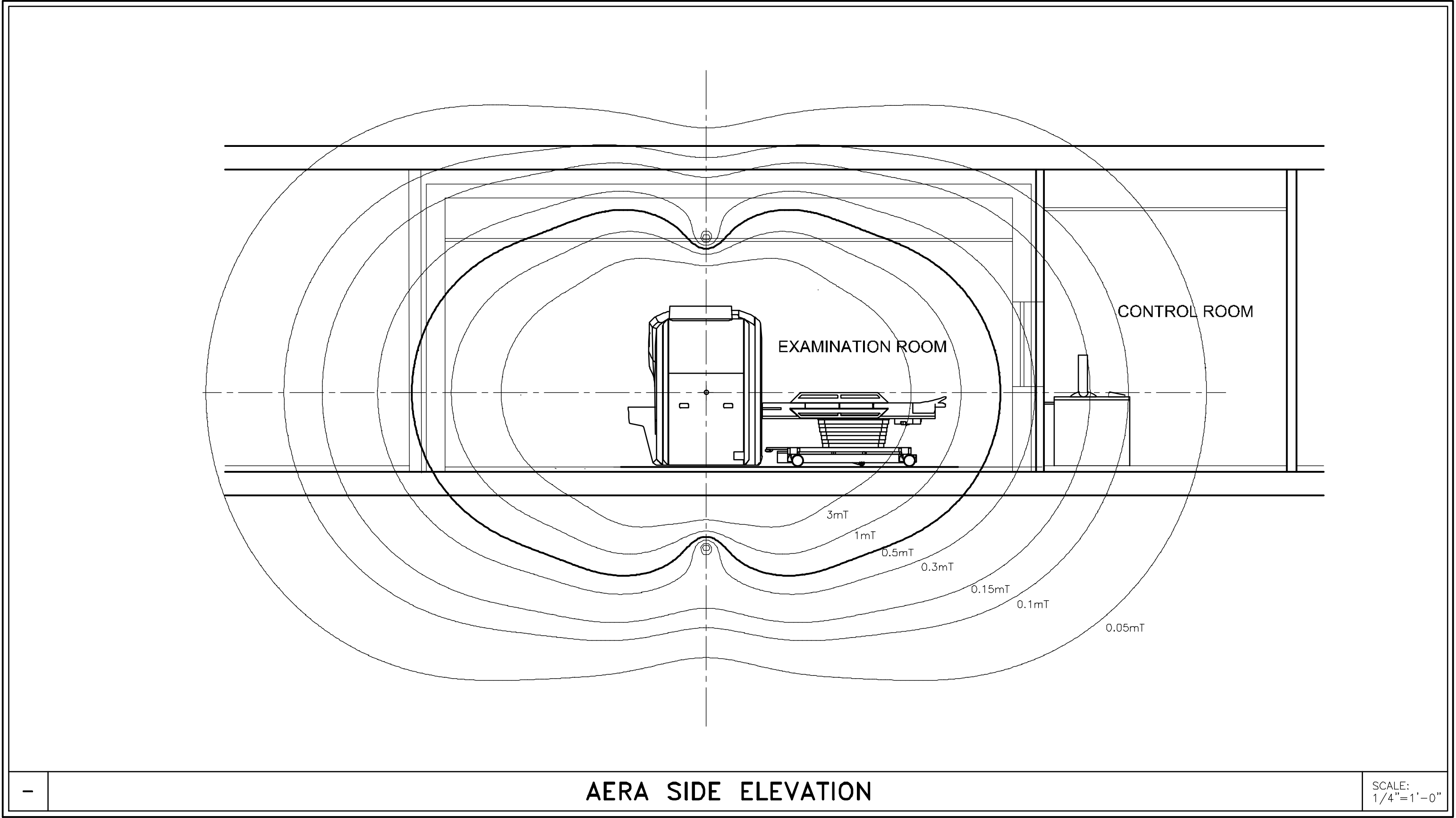
AERA MAGNET

SCALE:  
NONE



AERA FRONT ELEVATION

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



AERA SIDE ELEVATION

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

CEILING HEIGHTS

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

PROJECT MANAGER: MICHAEL POWERS  
TEL: (770) 330-1781 EXT:  
VMAIL:  
FAX: (770) 369-8232  
EMAIL: michael.powers@siemens.com

**SIEMENS**

**GRADY HEALTH SYSTEM**

191 PEACHTREE ST., ATLANTA, GA 30303  
MRI SUITE - MAGNETOM AERA W/MOBILE TABLE

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SCALE:  
AS NOTED

REF. #:  
1-49M1UW

PROJECT #:

**1500201**

SHEET 2 OF 10

DATE: 03/18/15

DRAWN BY:  
F. CARUSO

SHEET:

**A-102**

**ATTENTION:**

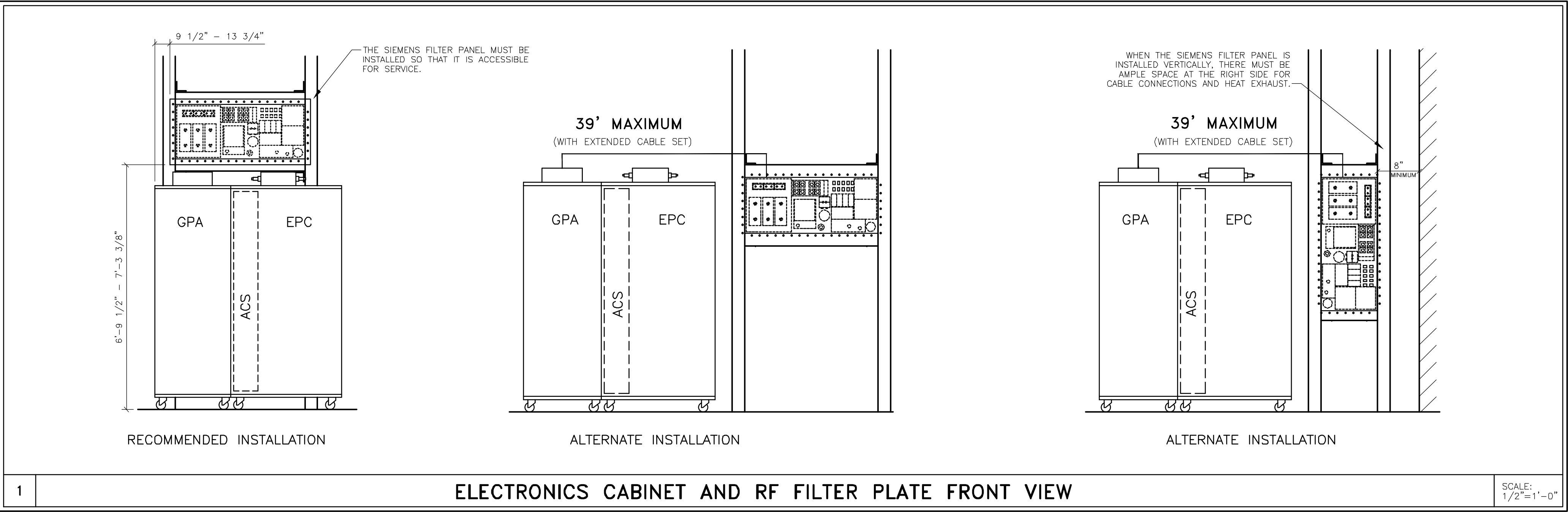
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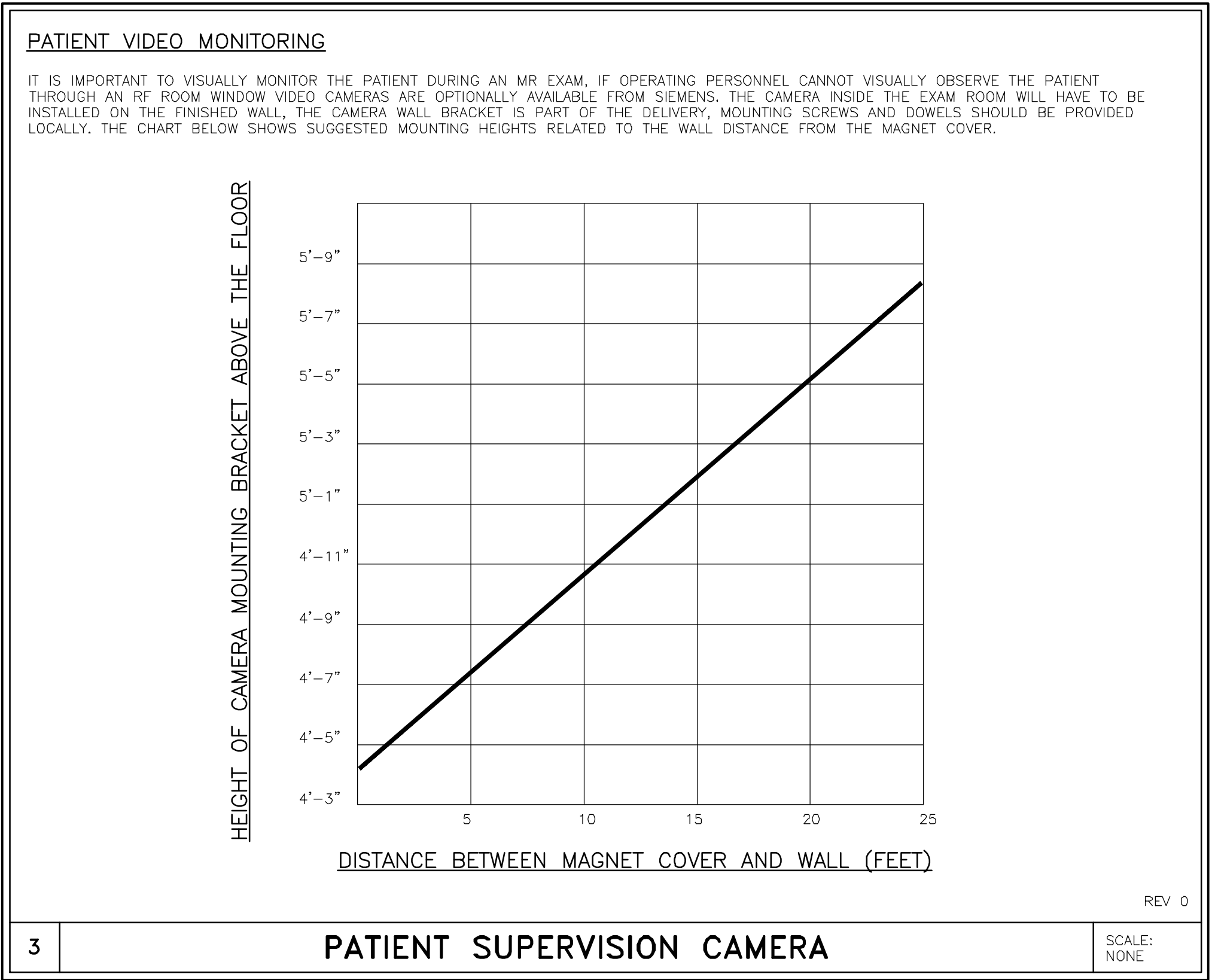
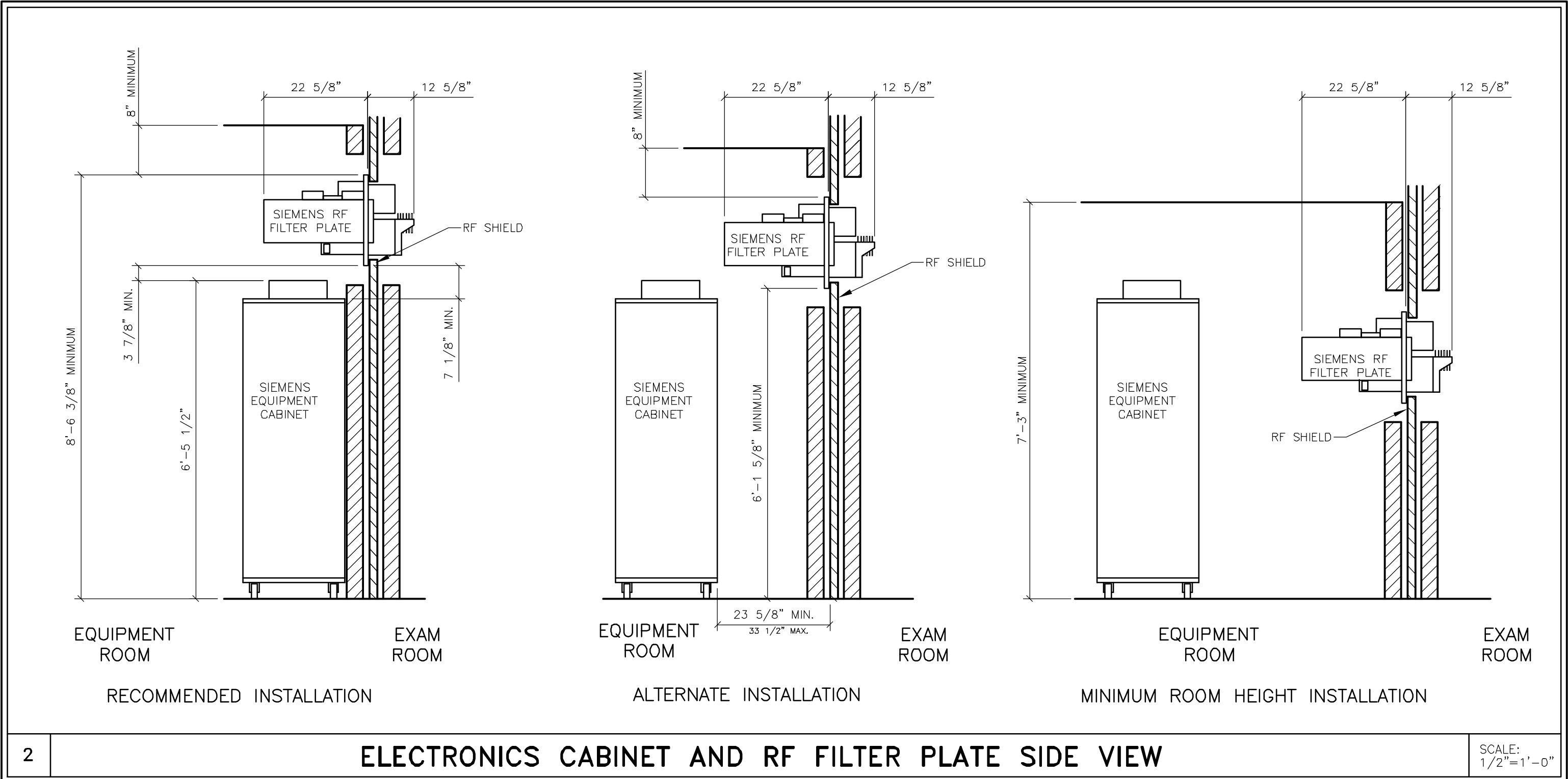
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SYM	DATE	DESCRIPTION
△	03/18/15	R101RA VERSION DATED 01/19/15 APPROVED BY CUSTOMERS FOR FINALS
—ISSUE BLOCK—		

AERA  
REV 8



SURFACE COIL SIZES				
COIL NAME	POUND WEIGHT	INCHES		
		LENGTH	WIDTH	HEIGHT
BODY COIL 18	4	15 1/8	23 1/4	3
HEAD/NECK COIL 20	11	17 3/8	13	14 5/8
SPINE COIL 32	24	47 1/4	19 1/4	3
FLEX COIL LARGE 4	1.2	20 3/8	8 7/8	-
FLEX COIL SMALL 4	1	14 3/8	6 7/8	-
PERIPHERAL ANGIO 36	18	33 7/8	26	11
HAND/WRIST COIL 16	6	13 1/8	8 1/2	4 1/2
HAND/WRIST COIL BASE	4	20 5/8	12 3/8	1 1/4
FOOT/ANKLE COIL 16	7	16 1/8	13	15 3/8
FOOT/ANKLE COIL BASE	15	16 3/4	13 1/8	15 1/8
SHOULDER COIL LARGE 16	15	15	17	19
SHOULDER COIL SMALL 16	15	12	17	19
CP EXTREMITY	15	16	10 5/8	11 3/8
TX/RX 15 CHANNEL KNEE	15	10 1/8	14 1/8	12 1/4
BI BREAST COIL 4 CH.	23	34 5/8	18 1/2	8 1/4
AI BREAST COIL 16 CH.	24	28	18 1/2	7 7/8
SENTINELLE VANGUARD IMMOBILIZER	45	43 1/4	22 7/8	11



ATTENTION:

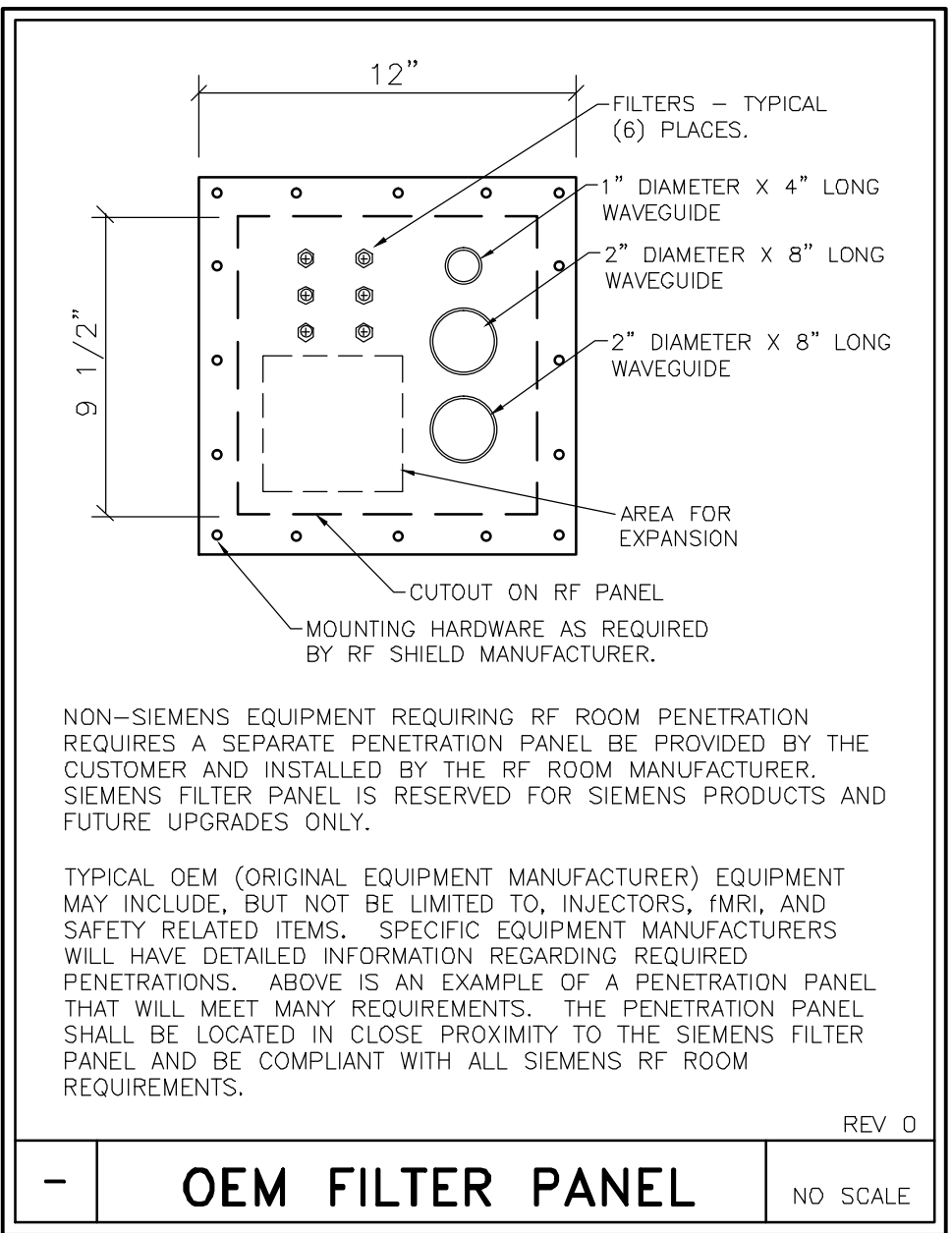
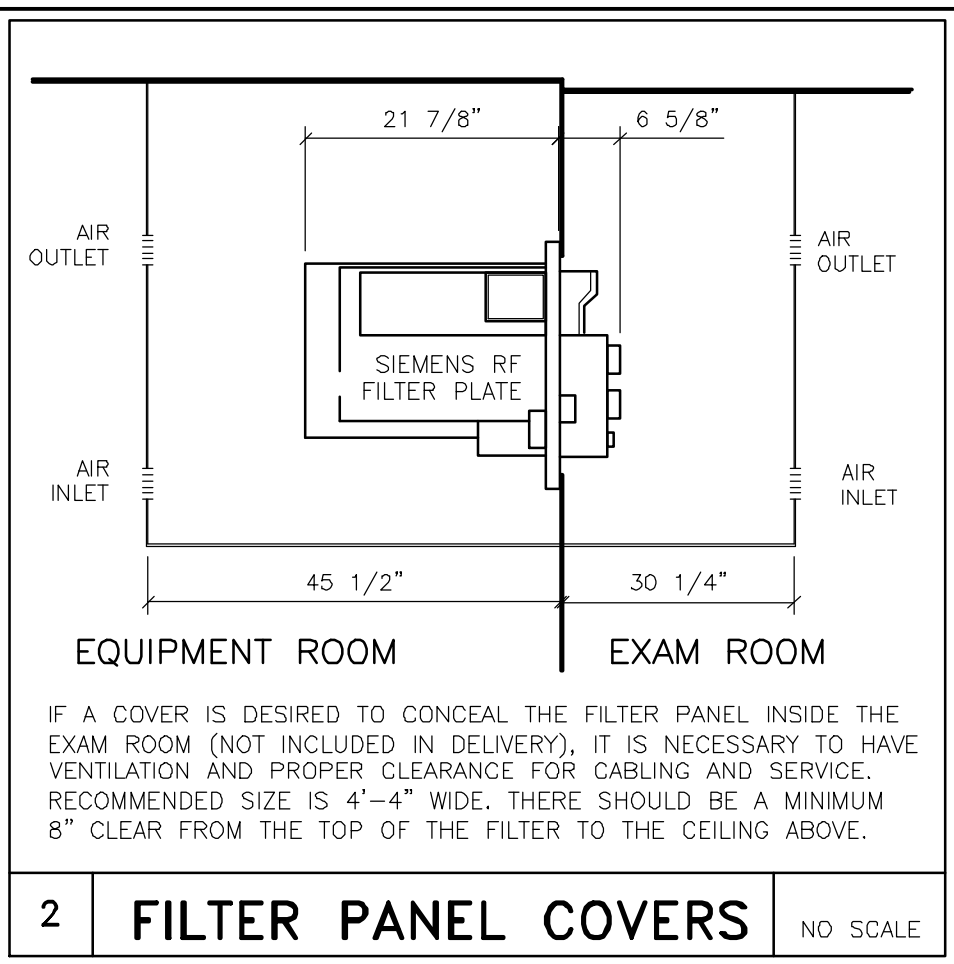
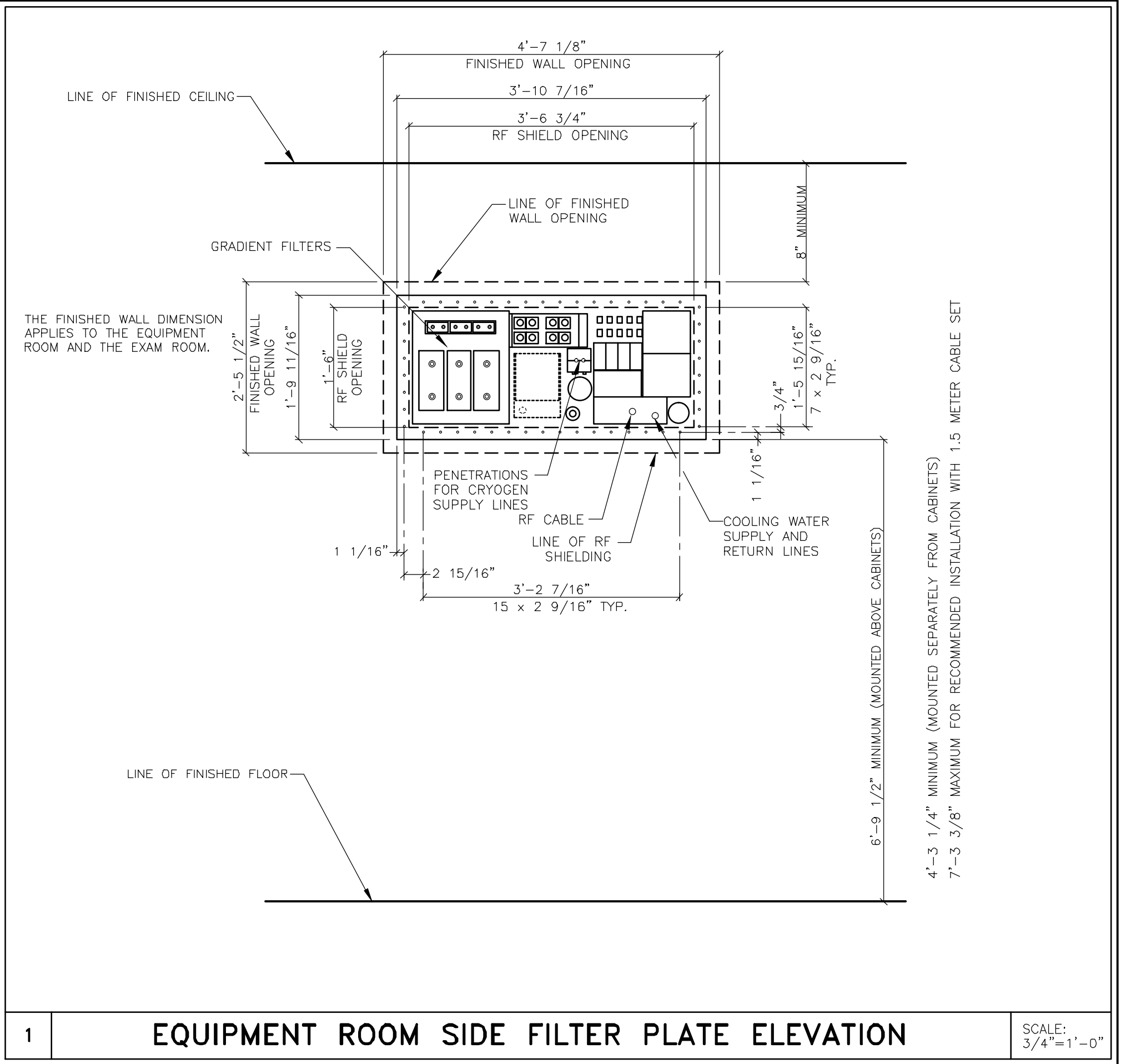
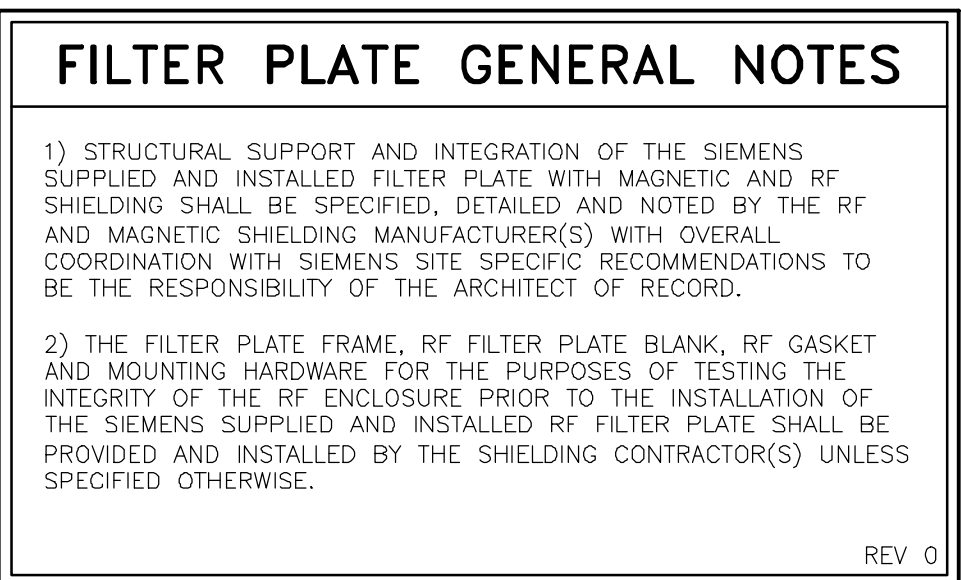
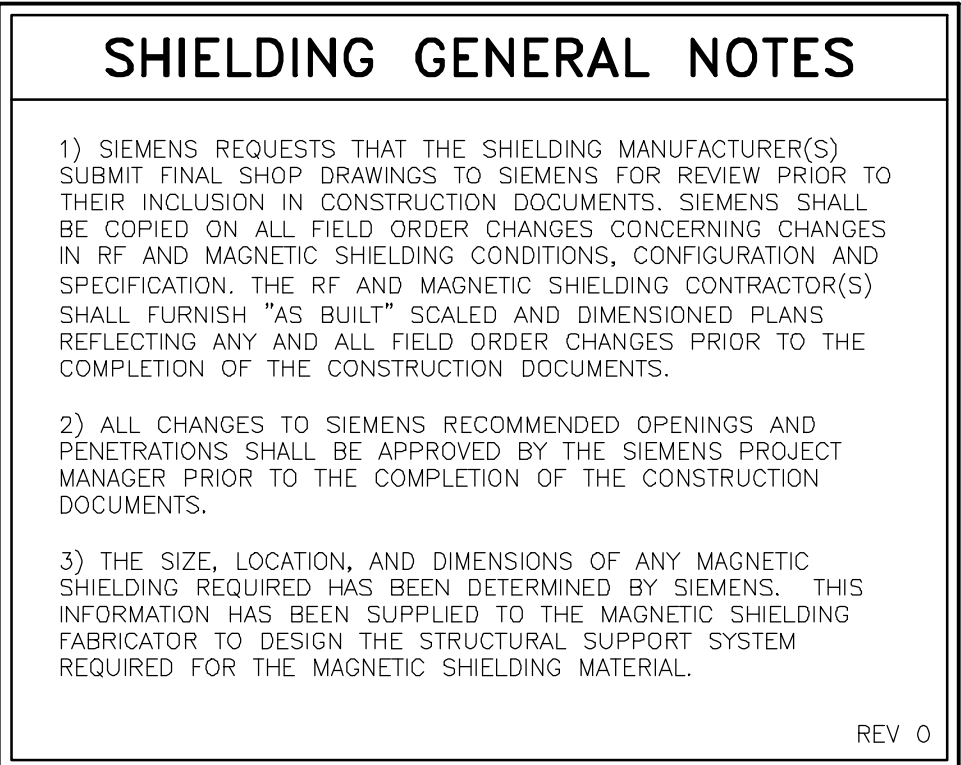
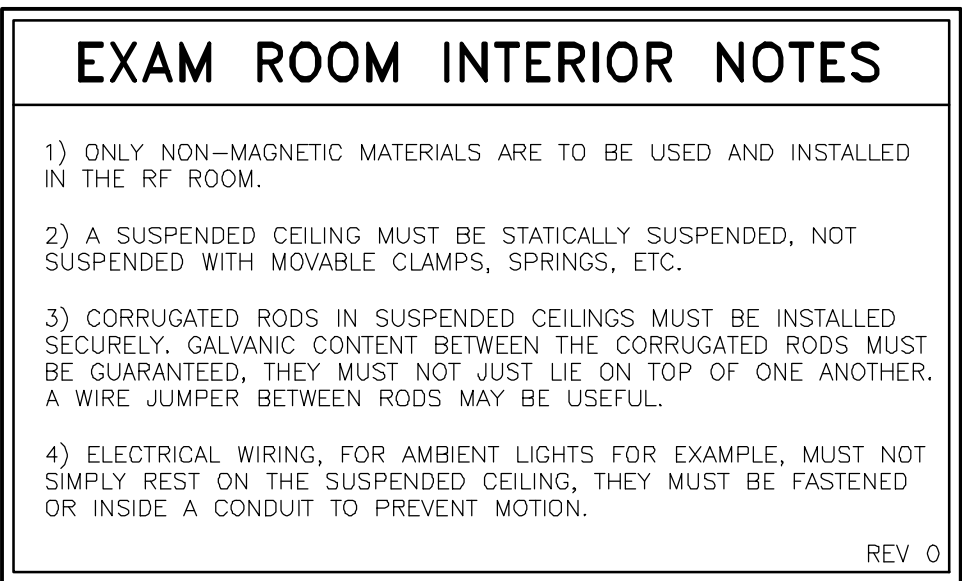
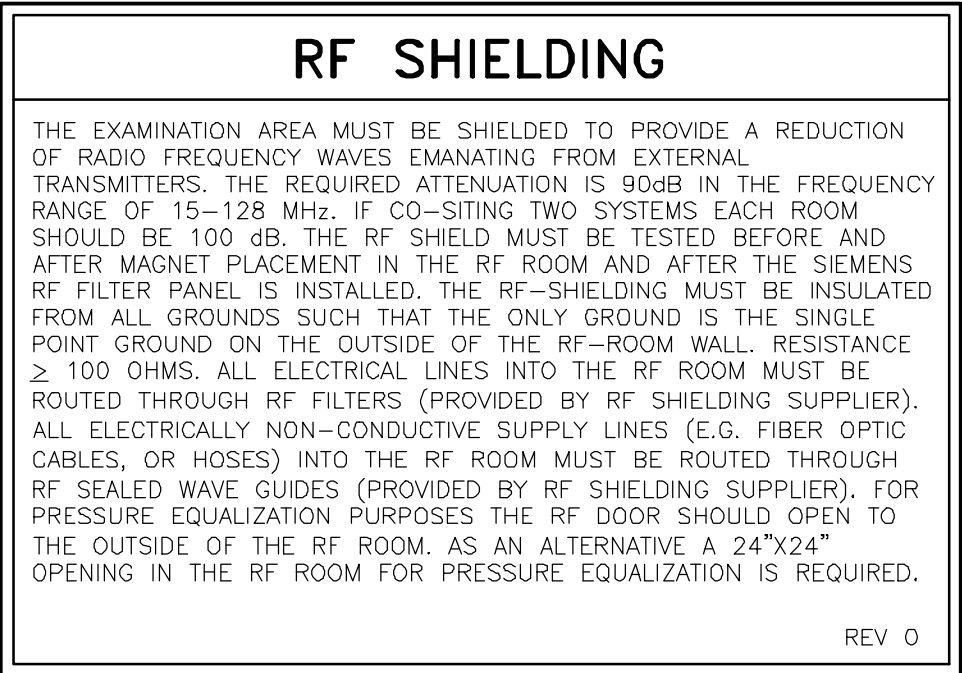
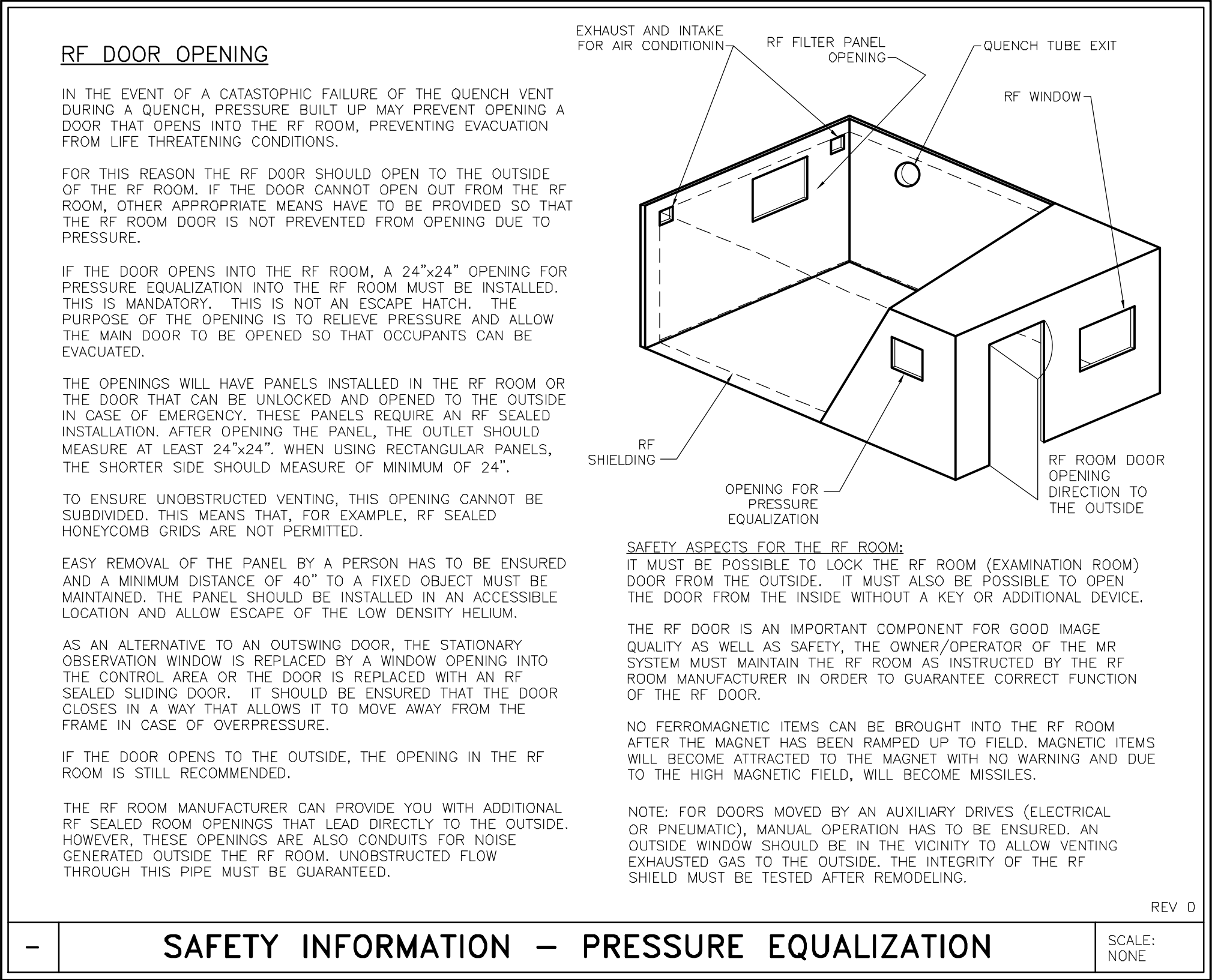
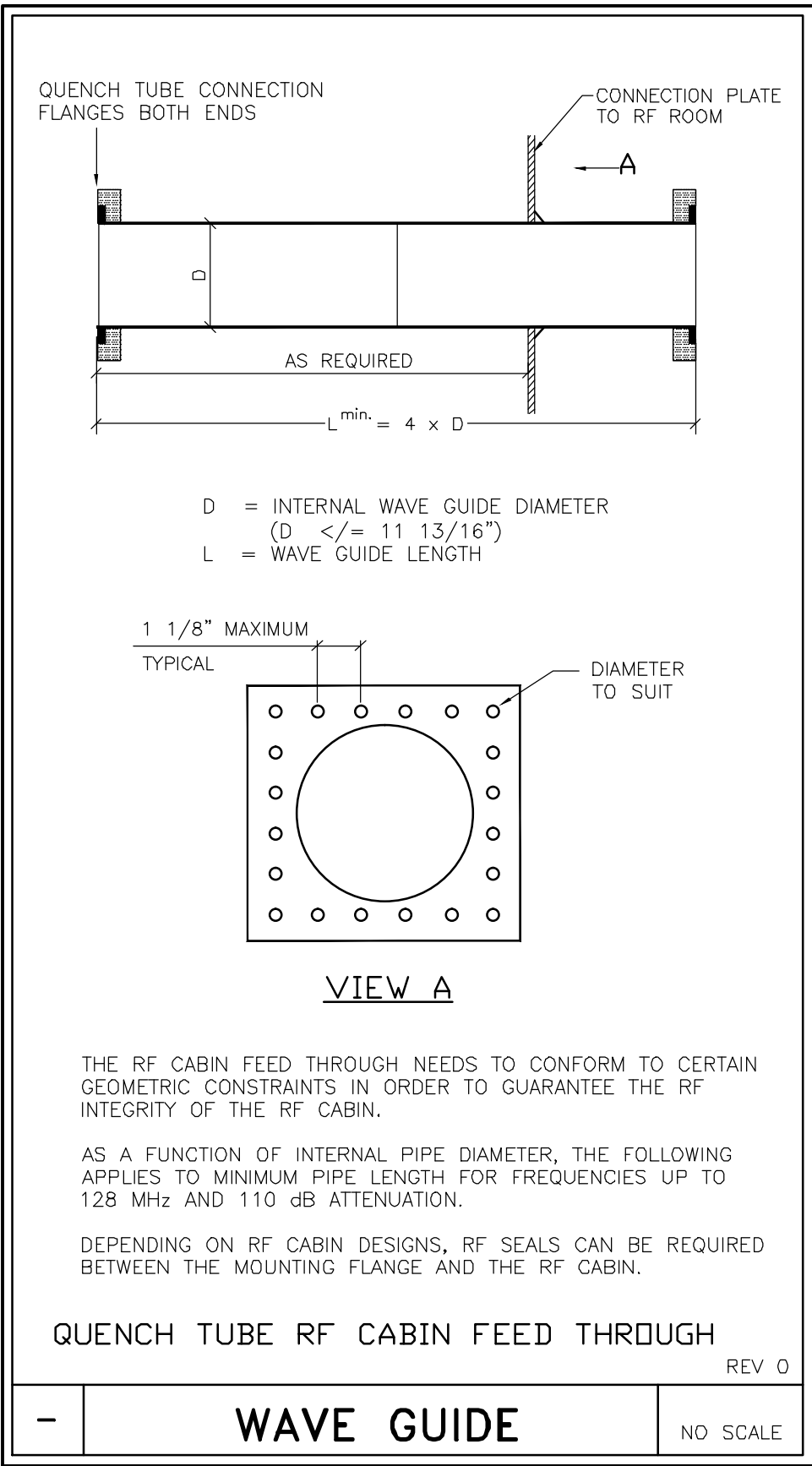
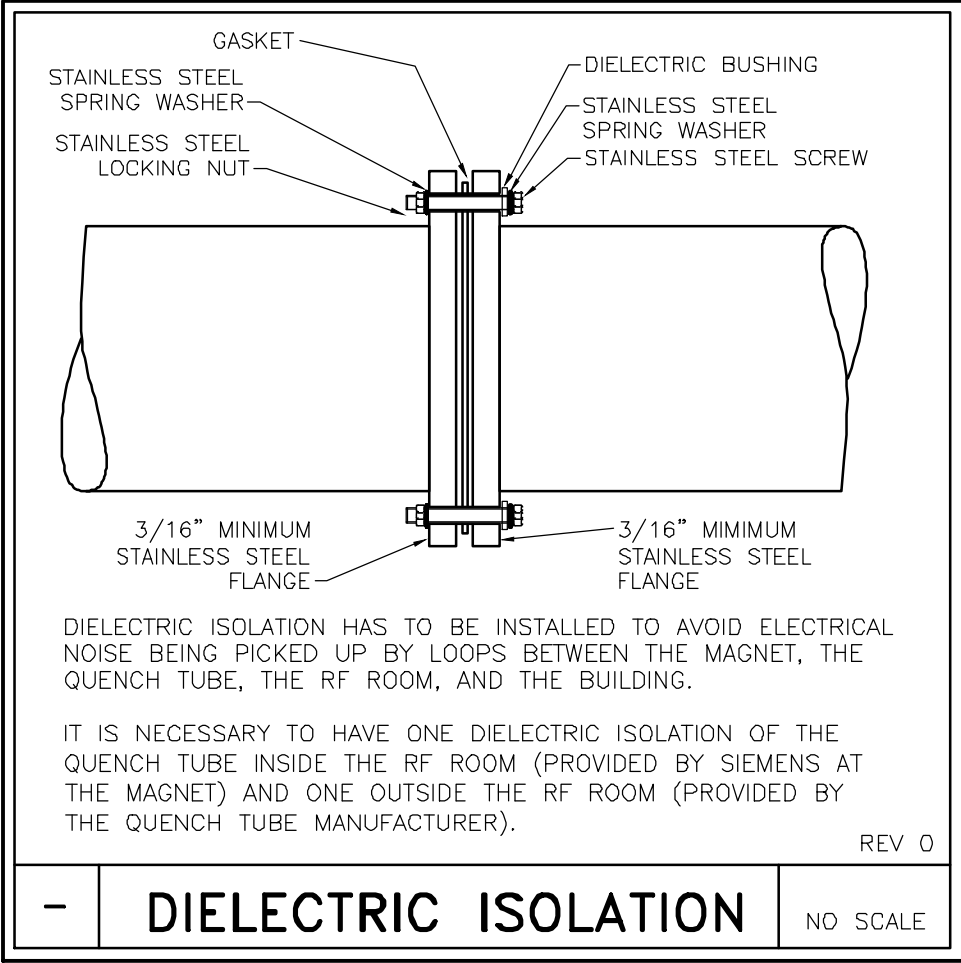
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		PROJECT MANAGER: MICHAEL POWERS TEL: (770) 330-1781 EXT: VMAIL: (770) 369-8232 FAX: (770) 369-8232 EMAIL: michael.powers@siemens.com		<b>SIEMENS</b>	
		<b>GRADY HEALTH SYSTEM</b>		191 PEACHTREE ST., ATLANTA, GA 30303 MRI SUITE - MAGNETOM AERA W/MOBILE TABLE	
		THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.		PROJECT #: <b>1500201</b>	
		ALL RIGHTS ARE RESERVED.		SHEET: <b>A-501</b>	
		SCALE: AS NOTED		REF. #: 1-49M1UW	
		DATE: 03/18/15		DRAWN BY: F. CARUSO	
		—ISSUE BLOCK—			





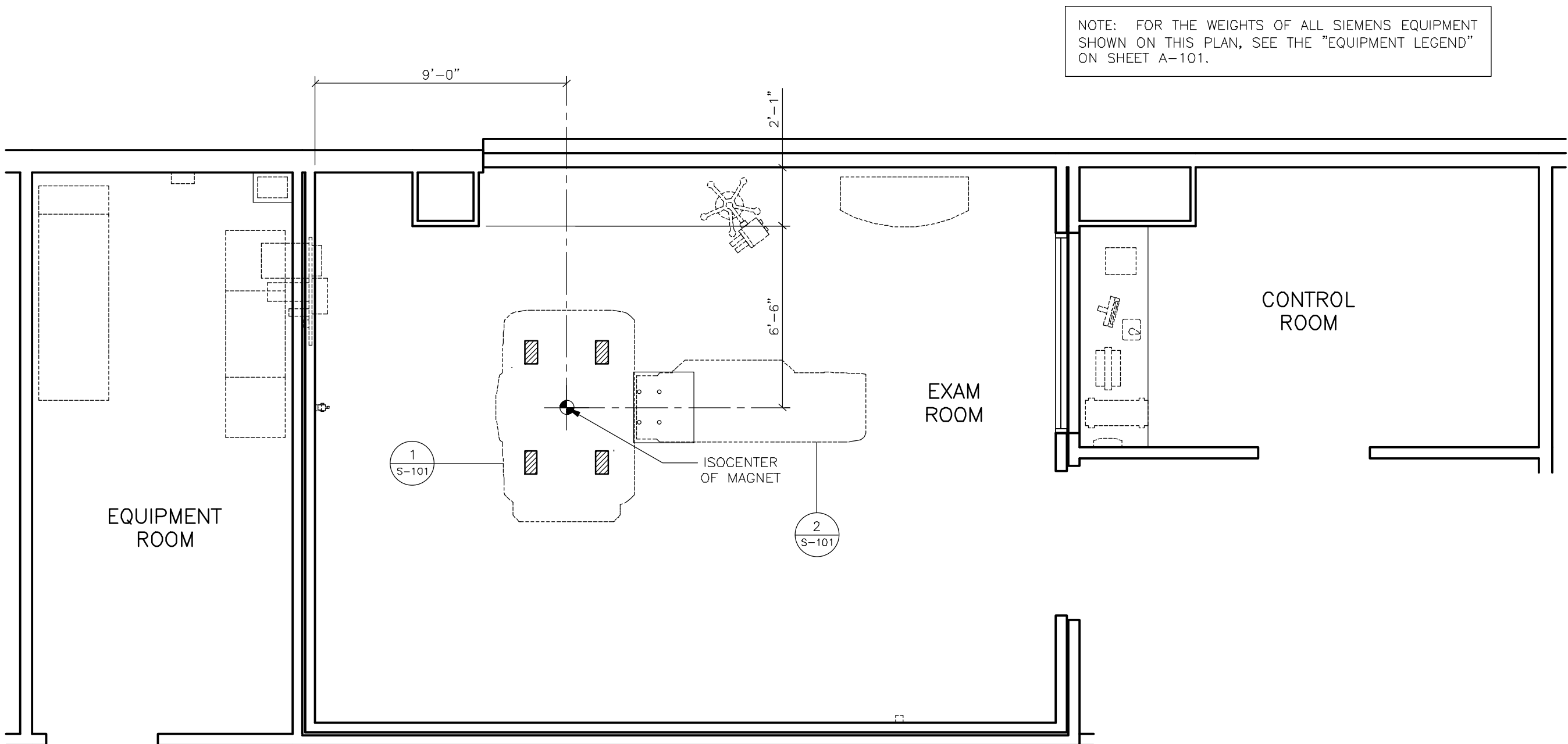
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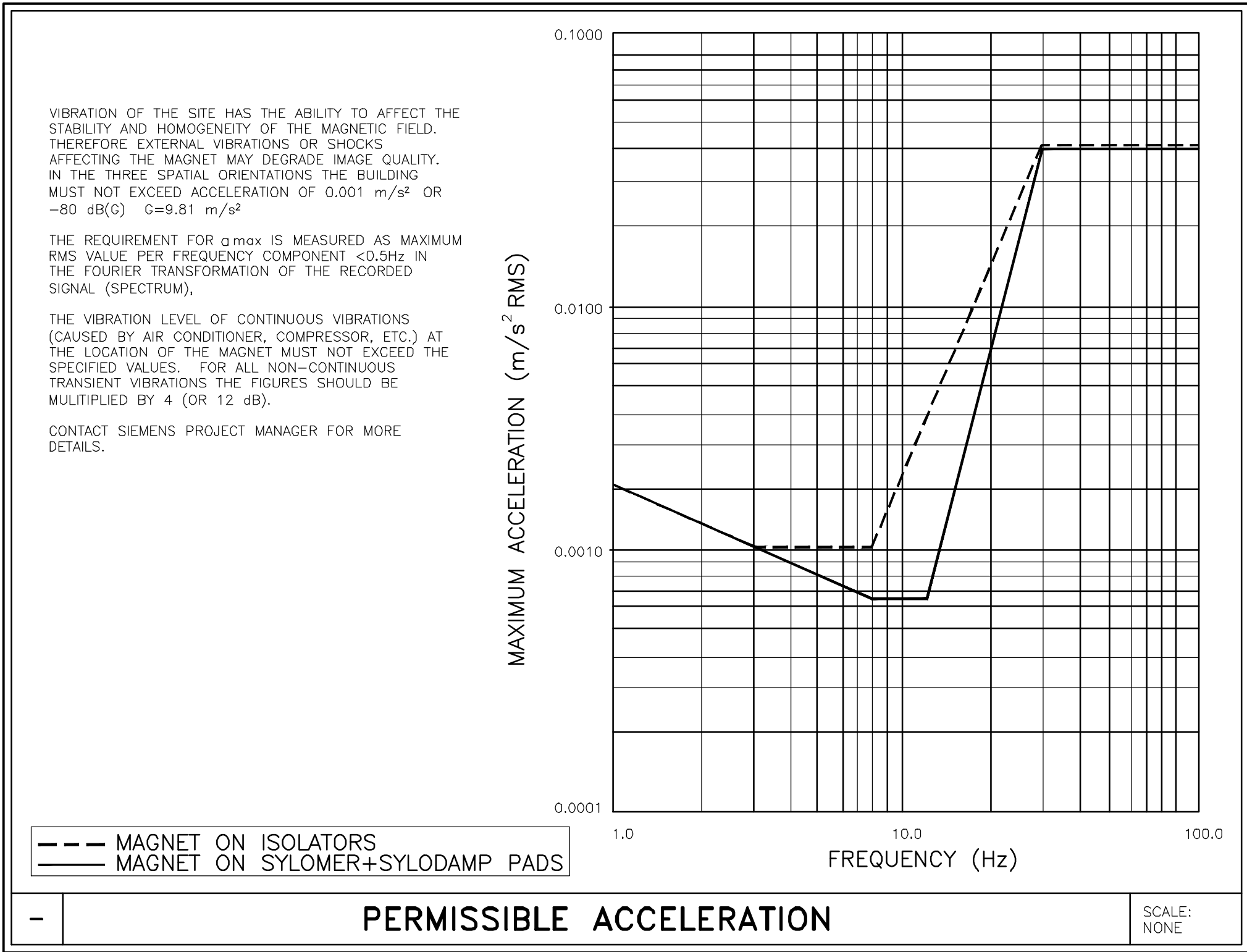
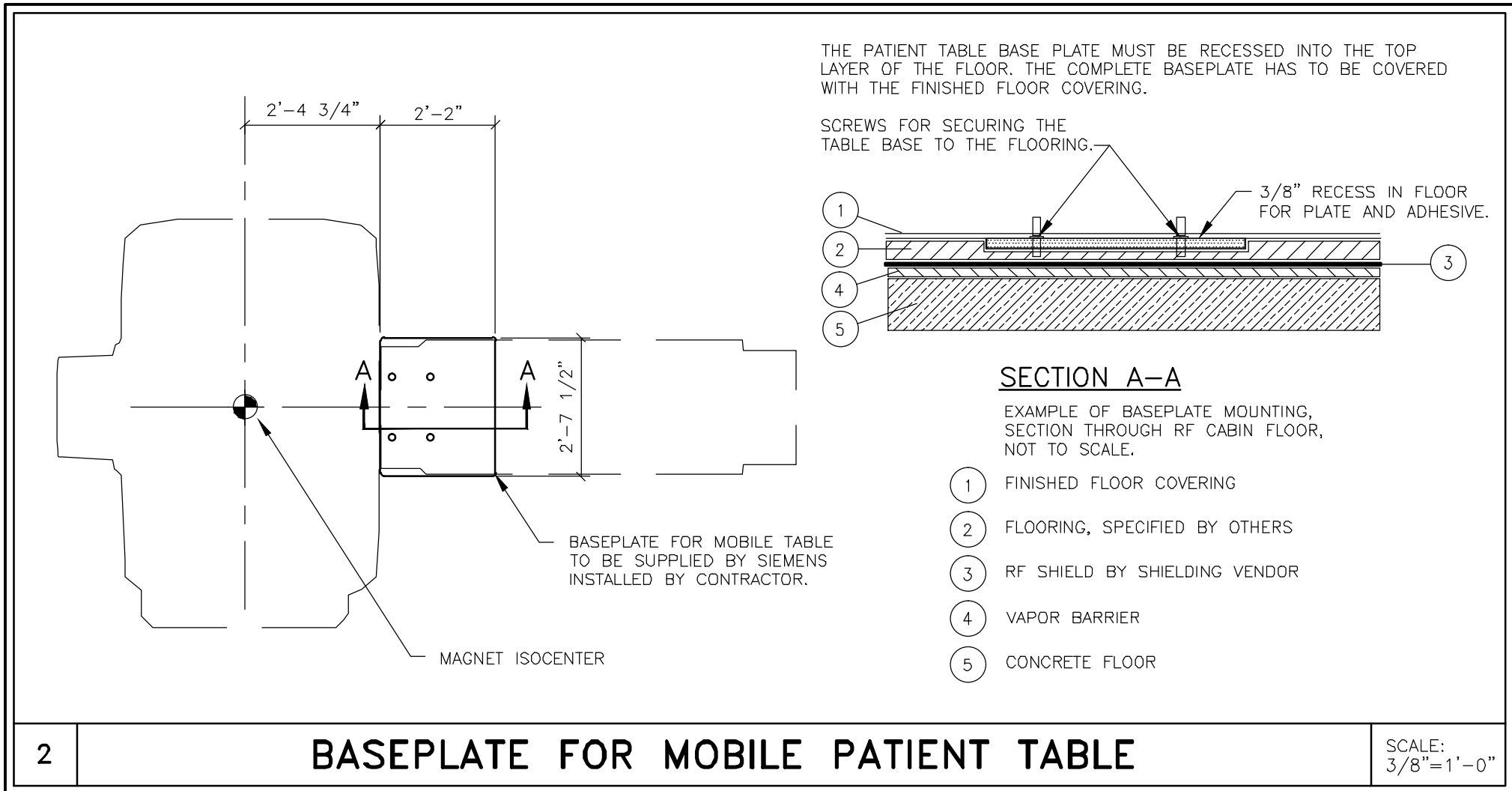
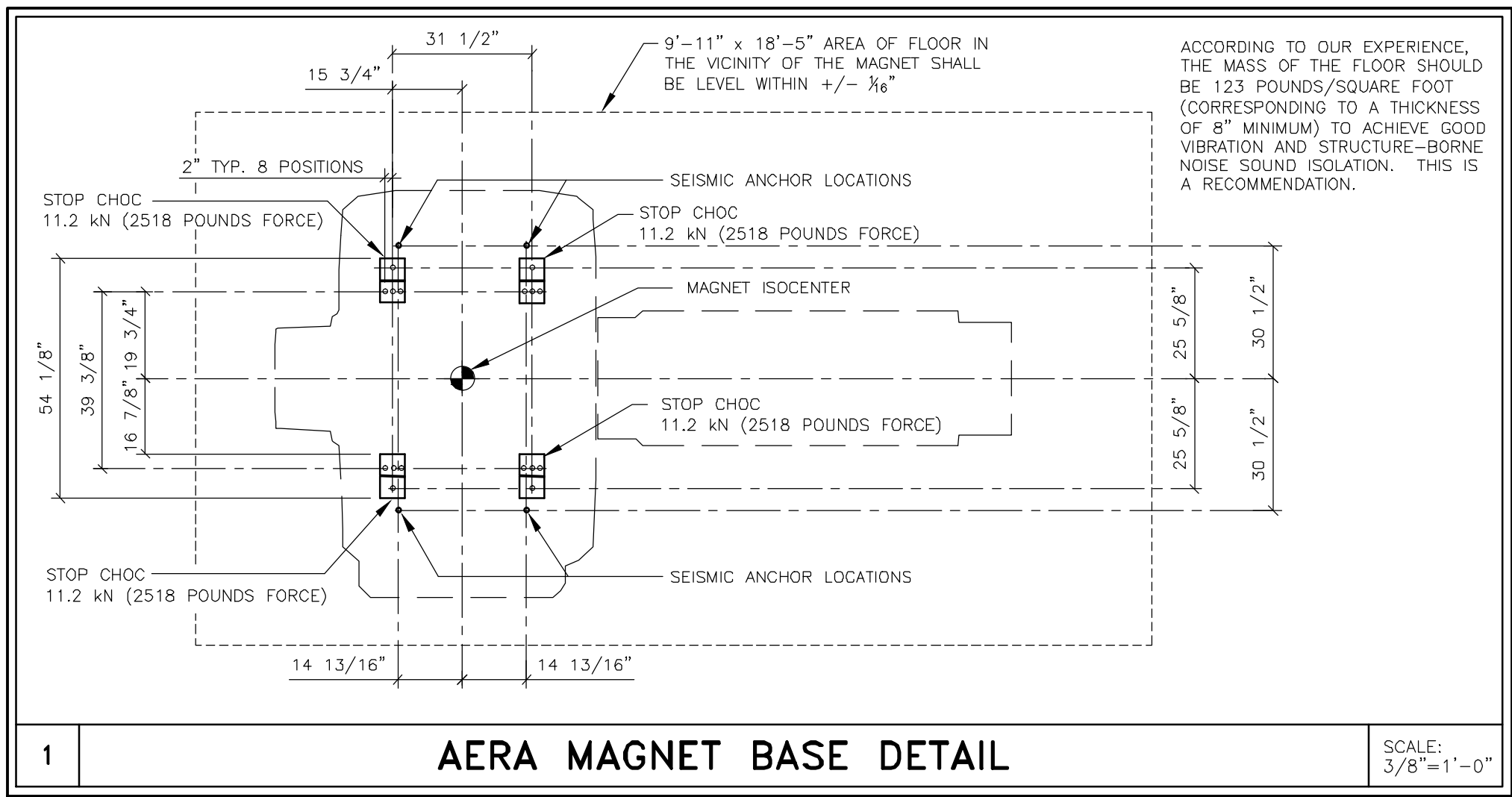
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				<b>GRADY HEALTH SYSTEM</b>	
		191 PEACHTREE ST., ATLANTA, GA 30303 MRI SUITE -- MAGNETOM AERA W/MOBILE TABLE			
		PROJECT #: <b>1500201</b>		SHEET: <b>A-502</b>	
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		SCALE: AS NOTED REF. #1: 49M1UW			
		DATE: 03/18/15			
		SYM DATE DESCRIPTION			
		—ISSUE BLOCK—			



STRUCTURAL FLOOR PLAN

SCALE: 1/4" = 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 FLUSH MOUNTED WITH THE FINISHED CEILING TO PROVIDE FREE AND UNRESTRICTED TRAVEL OF THE SMS CEILING MOUNTED EQUIPMENT.
- 7) THE BOTTOM SIDE OF THE UNISTRUT CEILING GRID AND ANY CEILING MOUNTED SUPPORT PLATES ARE TO BE INSTALLED FLUSH WITH THE FINISHED CEILING. THE CUSTOMER/CONTRACTOR SHALL ALSO PROVIDE COVERSTRIPS FOR THE UNISTRUT.
- 8) 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.
- 9) 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.

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.

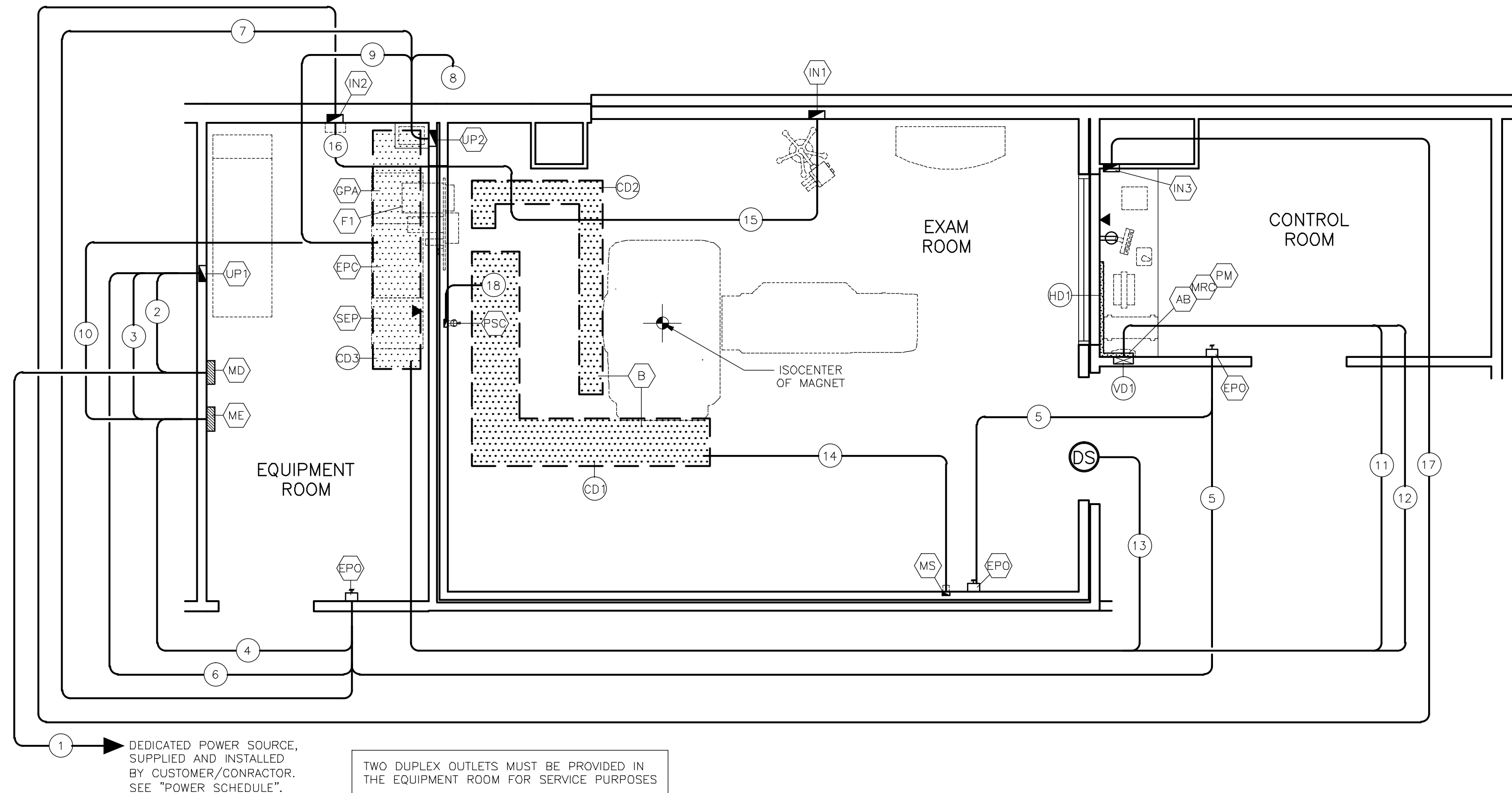
CEILING HEIGHTS

EXAM ROOM 7'-11" MINIMUM

CONTROL ROOM 6'-11" MINIMUM

EQUIPMENT ROOM 7'-3" MINIMUM

		PROJECT MANAGER: MICHAEL POWERS TEL: (770) 330-1781 EXT: FAX: (770) 369-8232 EMAIL: michael.powers@siemens.com		<b>SIEMENS</b>	
		<b>GRADY HEALTH SYSTEM</b>		191 PEACHTREE ST., ATLANTA, GA 30303 MRI SUITE -- MAGNETOM AERA W/MOBILE TABLE	
		THE USE OR REPRODUCTION OF THIS TITLE BLOCK, WITHOUT SIEMENS AUTHORIZATION, WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.		PROJECT #: <b>1500201</b>	
		ALL RIGHTS ARE RESERVED.		SHEET: <b>S-101</b>	
		SCALE: AS NOTED		REF. #: 1-49M1UW	
		DATE: 03/18/15		DRAWN BY: F. CARUSO	
		—ISSUE BLOCK—			



ELECTRICAL RACEWAY PLAN

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

SYMBOLS	
ALL MAY NOT APPLY	
	CAUTION OR WARNING
	CRITICAL NOTE(S)
	PANEL OR ENCLOSURE BY CUSTOMER/CONTRACTOR
	OPENING IN RACEWAY OR TRENCH/DUCT
	PULLBOX IN (FLOOR/WALL/CEILING)
	OPENING IN ACCESS FLOORING
	RF DOOR SWITCH - MCMMASTER-CARR SUPPLY ROLLER LIMIT SWITCH 7076k14 PROVIDED BY CONTRACTOR, AND MOUNTED AT TOP OF DOOR. COORDINATE WITH SIEMENS PROJECT MANAGER.
	(EPO) EMERGENCY POWER OFF BUTTON
	CEILING DUCT
	SURFACE MOUNTED DUCT
	VERTICAL DUCT
	ETHERNET CONNECTION TO CUSTOMER'S INFORMATION SYSTEMS NETWORK (VERIFY WITH SMS PROJECT MANAGER).
	110 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET LOCATED NEAR THE ETHERNET CONNECTION.

CONTRACTOR SUPPLIED CABLES				
FROM	VIA	TO	DESCRIPTION	REMARKS
SOURCE	1	MD	(3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.	
MD	2	UP1	(3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.	
UP1	3	ME	(3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.	
ME	4	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
EPO	5	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
EPO	6	UP1	DETERMINED BY ELECTRICAL CONTRACTOR.	
EPO	7	UP2	DETERMINED BY ELECTRICAL CONTRACTOR.	
ME	10	EPC	(3) 2/0 AND (1) 2/0 EQUIPMENT GROUND. TO REDUCE EMI (INTERFERENCE) THE POWER CABLES MUST BE SHIELDED. THIS CAN BE ACHIEVED BY USING EMT, WHICH IS CONSIDERED A SHIELDING DEVICE. IF CABLES ARE RUN IN FREE AIR SHIELDED CONDUCTORS MUST BE USED.	

ELECTRICAL LEGEND

SYM	SIZE	DESCRIPTION	REMARKS
AS	3"	OPENING IN FACE OF VERTICAL DUCT 5'-0" ABOVE FINISHED FLOOR IN LOCATION TO BE COORDINATED WITH THE ARCHITECT.	ALARM BOX
AS	18" x 18"	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	ELECTRONICS CABINETS
AS	AS REQUIRED	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	MAGNET CABLE ACCESS
AS	----	EMERGENCY POWER OFF BUTTONS, MOUNTED WITH CENTERLINE AT 5'-0" ABOVE FINISHED FLOOR. ALL PARTS ARE TO BE NONFERROUS INSIDE THE RF ROOM. EXACT LOCATIONS ARE TO BE VERIFIED WITH THE ARCHITECT OF RECORD.	SEE POWER SCHEDULE, SHEET E-102
AS	----	SIEMENS RF FILTER PANEL TO BE MOUNTED ON RF SHIELDED WALL.	FILTER PANEL
AS	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 POWER SUPPLY-- MUST BE LOCATED OUTSIDE OF 5m FIELD
AS	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN EQUIPMENT ROOM, MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	INJECTOR POWER SUPPLY
AS	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
AS	----	MAIN FUSIBLE DISCONNECT, EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR	SEE POWER SCHEDULE
AS	----	MAIN ENCLOSURE WITH MAIN BREAKER. EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR.	SEE POWER SCHEDULE
AS	4" x 4"	OPENING IN FACE OF RACEWAY IN SHOWN LOCATION.	HOST COMPUTER/PATINET MONITOR
AS	AS REQUIRED	NON-FERROUS SINGLE GANG BOX MOUNTED FLUSH WITH FINISHED WALL MOUNTED 6'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	MAGNET STOP
AS	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL REFER TO HEIGHT CHART A-501-3. THE PULL BOX CAN BE MOUNTED AT APPROXIMATELY 5'-0" ABOVE THE FINISHED FLOOR IN MOST CASES, DEPENDING ON THE DISTANCE FROM THE MAGNET TO THE WALL.	PATIENT SUPERVISION CAMERA
AS	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL AT FLOOR LINE IN SHOWN LOCATION PROVIDED WITH 2" OPENING IN FINISHED COVER.	POWERWARE 9130
AS	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER AND EATON INSTALLATION MANUAL IN SHOWN LOCATION PROVIDED WITH 2" OPENING IN FINISHED COVER.	POWERWARE 9390
AS	24"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER, IN THE EXAM ROOM, MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE FILTER PANEL AND THE MAGNET. A 15" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE RF FILTER PANEL (F1), WHEN ROUTING ALL RACEWAYS REFER TO DETAIL E-501/2 TAKING CARE SO THAT MAXIMUM CABLE LENGTHS ARE NOT EXCEEDED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/2
AS	12"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EXAM ROOM. A 12" SEPARATION BETWEEN CD1 AND CD2 MUST BE MAINTAINED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/2
AS	24"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EQUIPMENT ROOM MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE EQUIPMENT ROOM AND THE RF FILTER PANEL (F1). AN 18" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE FILTER PANEL.	CABLE TRAY SEE DETAIL E-501/2
AS	4" x 2"	WIREMOLD SURFACE MOUNTED ON WALL IN CONTROL AREA AT FLOOR LINE AS SHOWN, FINISHED TO MATCH WALLS.	
AS	10" x 3-1/2"	VERTICAL DUCT MOUNTED FLUSH WITH FINISHED WALL IN CONTROL AREA FROM ABOVE FINISHED CEILING TO FLOOR LINE PROVIDED WITH REMOVABLE FINISHED COVERS.	
AS	AS PER NEC	CONDUIT FROM FACILITY POWER TO MAIN DISCONNECT (MD)	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "MD" TO "UP1"	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "UP1" TO "ME"	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "ME" TO "EPO".	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "EPO" TO "EPO" TO BE NON-FERROUS WHEN INSIDE THE RF ROOM. CUSTOMER/CONTRACTOR IS TO PROVIDE RF FILTERS FOR ALL NON-SIEMENS WIRING.	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "EPO" TO "UP1".	SEE POWER SCHEDULE, SHEET E-102
AS	AS PER NEC	CONDUIT FROM "EPO" TO "UP2".	SEE POWER SCHEDULE, SHEET E-102
AS	(1) 3/4"	SURFACE MOUNTED FLEX CONDUIT FROM "UP2" TO SIEMENS PROVIDED UPS/EPO CONTROL BOX.	MAXIMUM LENGTH 4 FEET
AS	(1) 1"	CONDUIT FROM "UP2" TO "EPC".	MAXIMUM LENGTH 29 FEET
AS	(1) 2"	CONDUIT FROM "ME" TO END AT "EPC" VIA FLEX CONDUIT. THERE MUST BE A DIELECTRIC SEPARATION BETWEEN THE CONDUIT AND THE CONNECTION AT THE SIEMENS EPC CABINET.	SEE POWER SCHEDULE, SHEET E-102
AS	(2) 2 1/2"	CONDUIT FROM "VD1" (MRC) TO "CD3" (EPC).	60" MAXIMUM CONDUIT LENGTH
AS	(1) 1 1/2"	CONDUIT FROM "VD1" (AB) TO "CD3" (EPC).	60" MAXIMUM CONDUIT LENGTH
AS	(1) 1/2"	CONDUIT FROM "DS" TO "CD3" (EPC).	55" MAXIMUM CONDUIT LENGTH
AS	(1) 3/4"	CONDUIT FROM "MS" TO "CD1" (WIRES TO MAGNET) TO BE NON-FERROUS WHEN INSIDE THE RF ROOM.	20" MAXIMUM CONDUIT LENGTH
AS	(2) 2"	NON-FERROUS CONDUITS FROM NEAR "F1" TO "IN1" FOR INJECTOR CABLES.	NOT TO EXCEED 50 FEET
AS	(2) 2"	CONDUITS FROM NEAR FILTER LOCATION TO "IN2".	
AS	(1) 1"	CONDUIT FROM "IN2" TO "IN3" FOR INJECTOR CABLES.	NOT TO EXCEED 200 FEET
AS	(1) 1"	NON-FERROUS CONDUIT FROM "PSC" TO "CD1".	

ELECTRICAL NOTES

- COMPLIANCE: ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA-70), O.S.H.A. REGULATIONS, AS WELL AS APPLICABLE REGULATIONS OF CITY, COUNTY, STATE AND FEDERAL AGENCIES. PROVIDE MATERIALS AND EQUIPMENT THAT COMPLY TO ANSI, IEEE AND NEMA STANDARDS, WHERE APPLICABLE. PROVIDE ONLY MATERIALS AND PRODUCTS THAT ARE U.L. LISTED AND LABELED. CUSTOMER'S/CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF NECA STANDARD OF INSTALLATION.
- QUALITY ASSURANCE: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT TO THE EXISTING STRUCTURE AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST OR BE DISCOVERED THAT PREVENT THE INSTALLATION OF WORK AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO FABRICATION OF EQUIPMENT, OR THE PERFORMANCE OF ANY WORK THAT MAY BE AFFECTED. DO NOT ALTER DRAWINGS, DIMENSIONS, OR SPECIFICATIONS IN ANY WAY WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SMS PROJECT MANAGER. ALL DIMENSIONS ARE FROM FINISHED SURFACES. CONDUIT AND PULL BOXES TO BE INSTALLED BY THE CUSTOMER/CONTRACTOR WITH LOCATIONS BEING FIELD VERIFIED BY SMS PROJECT MANAGER.
- POWER SUPPLY SOURCE: POWER SUPPLIES FOR SIEMENS MEDICAL SOLUTIONS EQUIPMENT SHALL BE DEDICATED SERVICES KEPT ENTIRELY FREE AND INDEPENDENT OF ALL OTHER BUILDING WIRING AND EQUIPMENT, SUCH AS: ELEVATORS, GENERATORS, PUMPS, HVAC SYSTEMS, ETC. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CUSTOMER/UTILITY COMPANY FIELD REPRESENTATIVE.
- WORK FURNISHED BY CUSTOMER/CONTRACTOR: WORK NOT PROVIDED BY SIEMENS MEDICAL SOLUTIONS BUT SHOWN ON DRAWINGS TO BE FURNISHED AND INSTALLED BY CUSTOMER/CONTRACTOR INCLUDES THE FOLLOWING BUT IS NOT LIMITED TO UNLESS NOTED OTHERWISE: ELECTRICAL RACEWAYS AND DUCTS, WIRING TROUGHS, PULL BOXES, CONDUITS, CIRCUIT BREAKERS, EMERGENCY OFF BUTTONS, DOOR SWITCHES, WARNING LIGHTS, WIRING, WIRING DEVICES, CONNECTORS, LIGHTING EQUIPMENT AND GROUNDING.
- RACEWAY AND CONDUIT NOTES: ALL ITEMS IN THE MAGNET ROOM SHALL BE NON-FERROUS. RACEWAY SHALL BE ELECTRIC METALLIC TUBING (EMT) FOR RIGID CONDUIT WORK, OR WHERE SHORT OFF-SET CONNECTIONS ARE REQUIRED LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED. FIELD BENDS SHALL NOT BE LESS THAN AS SHOWN IN TABLE 346-10 OF THE NATIONAL ELECTRICAL CODE. PROVIDE A JETLINE "SUPER TRUE TAPE", OR EQUIVALENT CONDUIT MEASURING TAPE FISH LINE IN ALL RACEWAYS AND CONDUITS. CONDUIT BODIES SHALL NOT BE USED, WHERE A CONDUIT ENTERS A BOX, FITTING, OR OTHER ENCLOSURE, AN INSULATED THROAT CONNECTOR SHALL BE PROVIDED TO PROTECT THE WIRE FROM ABRASION. CONNECTORS SHALL BE DOUBLE SET SCREW TYPE, STEEL CONCRETE TIGHT. KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES OR STEAM AND HOT WATER PIPES. INSTALL RACEWAY RUNS ABOVE WATER AND STEAM PIPES PROVIDED THAT CABLE RUN DISTANCES ARE MAINTAINED. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY. CONDUIT RUNS ARE SHOWN SCHEMATICALLY. INSTALL CONDUIT WITH A MINIMUM OF BENDS IN THE SHORTEST PRACTICAL DISTANCE CONSIDERING THE BUILDING CONSTRUCTION AND OBSTRUCTIONS, EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL MAKE CERTAIN THAT ANY CONDUIT/RACEWAY RUNS CONTAINING SIEMENS MEDICAL SYSTEMS CABLES DO NOT EXCEED THE SPECIFIED MAXIMUM DISTANCES AS SHOWN ON THE ELECTRICAL DETAILS. PROVIDE ENCLOSED METAL RACEWAY SYSTEM (WIRE DUCT) WHERE SHOWN ON DRAWINGS WITH DIVIDERS TO SEPARATE THE DUCT (FOR POWER AND SIEMENS MEDICAL SOLUTIONS CABLING), DIVIDERS AND CROSSOVER PIECES TO BE PROVIDED AS NECESSARY. FOR UL CERTIFIED SYSTEMS, THE CABLE TO CABLE AS WELL AS THE CIRCUIT TO CIRCUIT SEPARATION REQUIREMENT WAS EVALUATED DURING THE UL SYSTEM INVESTIGATION OF THIS EQUIPMENT. ADDITIONAL SEPARATION OF THE SYSTEM CABLE ASSEMBLIES INTO SEPARATE OR PARTITIONED RACEWAYS, UNLESS OTHERWISE NOTED, IS NOT NECESSARY TO INSURE SEPARATION OF CIRCUITS, AS THEY CAN BE IN THE SAME RACEWAY. PROVIDE WIRE DUCT/RACEWAY WITH ACCESSIBLE REMOVABLE COVERS. LOCATIONS OF OPENINGS (I.E. ACCESS PANELS) TO BE CUT IN FIELD ARE TO BE COORDINATED WITH SIEMENS PROJECT MANAGER. ELECTRICAL PULL BOXES AND RACEWAY COVERS SHALL BE INSTALLED IN A MANNER TO ALLOW ACCESSIBILITY FOR INSTALLATION AND MAINTENANCE. CONTRACTORS MUST PROVIDE PULL STRINGS FOR ALL CONDUIT AND WIRE DUCT/RACEWAY. IN-FLOOR TRENCH DUCT AND FLUSH FLOOR BOXES SHALL BE PROVIDED WITH FULLY GASKETED REMOVABLE COVERS. WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED HIGHER THAN 14 FEET ABOVE FINISHED FLOOR, THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP THE SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE. WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED ABOVE A HARD CEILING (I.E. SHEET ROCK), A 24" x 24" ACCESS PANEL IS REQUIRED AT EACH JUNCTION BOX AND WITHIN 2 FEET OF EACH 90 DEGREE ELBOW OR TEE IN WIRE DUCT/RACEWAY. THERE MUST BE FREE AND CLEAR ACCESS TO JUNCTION BOXES AND WIRE DUCT/RACEWAY. WHEN ACCESS PANELS ARE LOCATED MORE THAN 3 FEET FROM JUNCTION BOXES AND WIRE DUCT/RACEWAY THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE. WIRING: WIRING SHALL BE INSTALLED IN METAL RACEWAY, 800 VOLT CLASS, STRANDED TYPE THHN-THWN, SINGLE CONDUCTOR ANNEALED COPPER FOR A MAXIMUM OPERATING TEMPERATURE OF 75° C (165° F). SIZED AS INDICATED. THE CUSTOMER/CONTRACTOR SHALL LEAVE MINIMUM 10 FT. WIRE TAILS AT ALL OUTLET POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY SIEMENS MEDICAL SOLUTIONS. IN ADDITION TO THE CIRCUIT BREAKER LOAD CURRENT RATING, COORDINATION MUST ALSO BE GIVEN TO SELECTION OF CIRCUIT BREAKERS THAT HAVE A HIGH ENOUGH SHORT CIRCUIT CURRENT WITHSTAND RATING TO SAFELY COORDINATE WITH THE POWER SYSTEM AVAILABLE SHORT CIRCUIT CURRENT. GENERALLY, WHEN THE CIRCUIT VOLT, 3 PHASE, AIR EQUIPMENT IS SERVED FROM A POWER SUPPLY SYSTEM THAT IS PROVIDED WITH A 500 KVA OR SMALLER TRANSFORMER, A STANDARD 14,000 RMS AMPERE WITHSTAND RATED CIRCUIT BREAKER WILL BE ADEQUATE. HOWEVER, IF THE POWER SUPPLY SYSTEM TRANSFORMER IS LARGER THAN 500 KVA, THEN THE CIRCUIT BREAKERS HAVING A SHORT CIRCUIT WITHSTAND RATING GREATER THAN 14,000 RMS AMPERES MAY BE REQUIRED.

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CEILING HEIGHTS

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

PROJECT MANAGER: MICHAEL POWERS  
TEL: (770) 330-1781  
FAX: (770) 369-8232  
EMAIL: michael.powers@siemens.com

**SIEMENS**  
**GRADY HEALTH SYSTEM**  
191 PEACHTREE ST., ATLANTA, GA 30303  
MRI SUITE -- MAGNETOM AERA W/MOBILE TABLE

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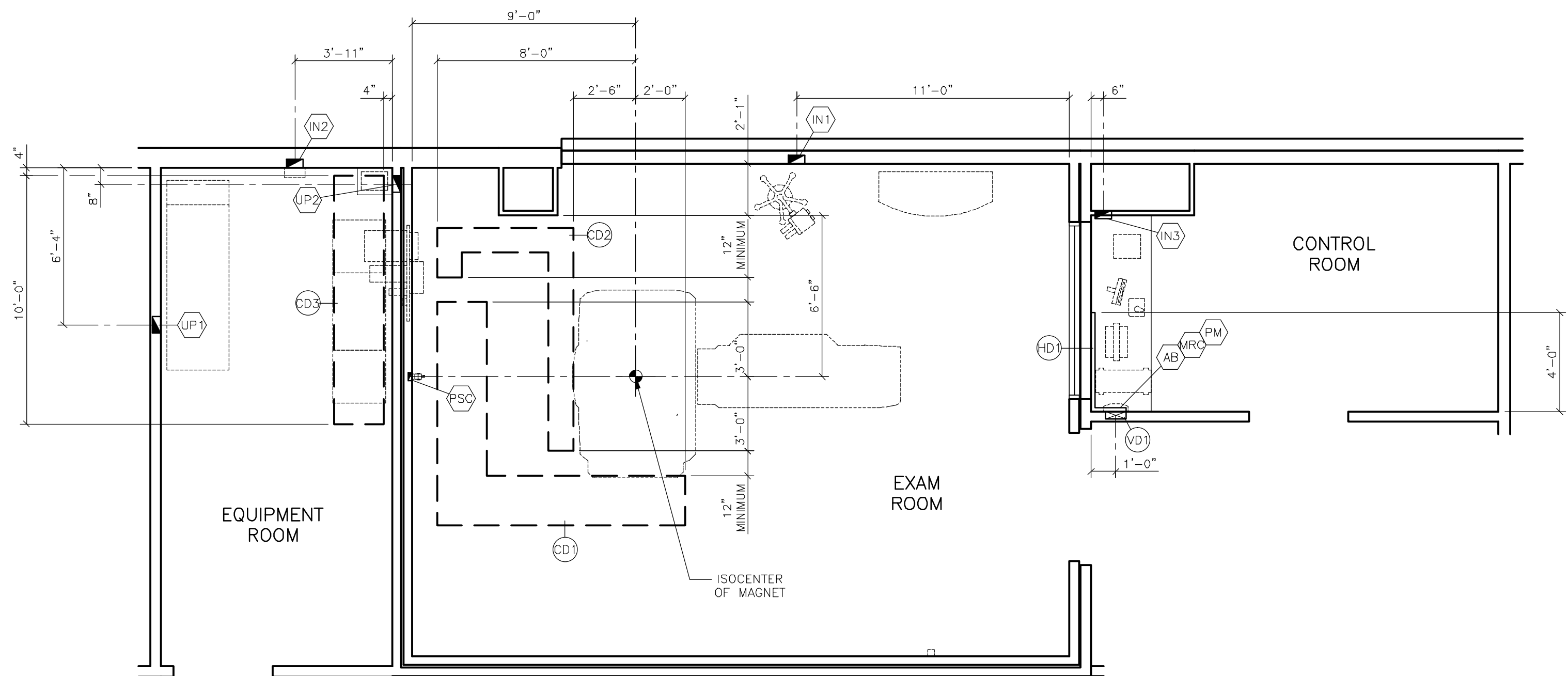
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PROJECT #:  
**1500201**

SHEET:  
**E-101**

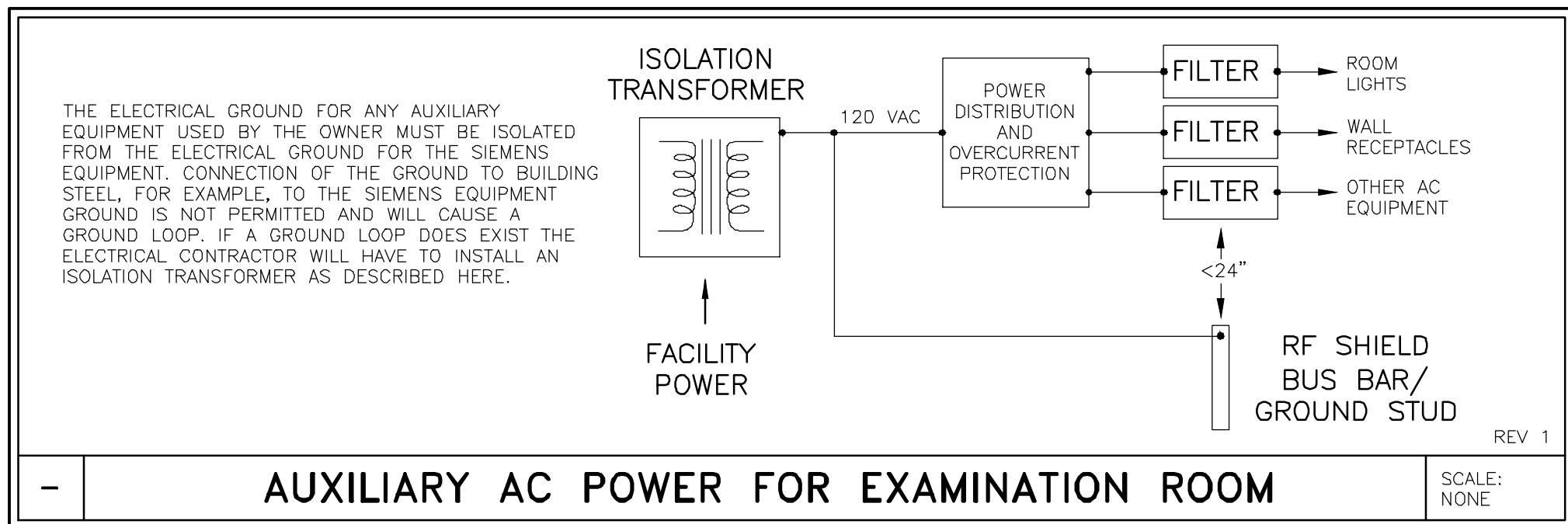
DATE: 03/18/15  
DRAWN BY: F. CARUSO





ELECTRICAL DIMENSION PLAN

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



### POWER QUALITY NOTES

1) IT IS THE CUSTOMER'S RESPONSIBILITY TO COMPLY WITH THE POWER QUALITY REQUIREMENTS FOR SIEMENS MEDICAL SYSTEMS EQUIPMENT.

2) THE ELECTRICAL FEEDER TO THE SIEMENS MEDICAL SYSTEMS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS, AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.

3) THE ELECTRICAL FEEDER TO THE IMAGING SYSTEM MUST BE RUN DIRECTLY TO A MAIN FACILITY DISTRIBUTION PANEL OR TO THE FACILITY SERVICE ENTRANCE, WITH NO OTHER LOADS POWERED FROM THIS FEEDER.

4) IN ORDER TO COMPLY WITH IMAGING SYSTEM POWER QUALITY REQUIREMENTS, ADDITIONAL POWER CONDITIONING DEVICES MAY BE REQUIRED. EXAMPLES INCLUDE VOLTAGE REGULATORS, TRANSFORMERS, SURGE PROTECTIVE DEVICES, FILTERS, AND/OR UNINTERRUPTIBLE POWER SUPPLIES (UPS). RECOMMENDED FOR THE INSTALLATION OF ELECTRONIC EQUIPMENT CAN BE FOUND IN IEEE STANDARD 1100-1999 "POWERING AND GROUNDING ELECTRONIC EQUIPMENT."

5) POWER CONDITIONING DEVICES NOT APPROVED BY SIEMENS MEDICAL SYSTEMS MAY NOT BE COMPATIBLE WITH THE MAGNETOM SYSTEM. "FERRORESONANT" POWER CONDITIONING EQUIPMENT RE-APPLIED FROM PREVIOUS GENERATION SYSTEMS IS ALSO GENERALLY EXCLUDED DUE TO HIGHER POWER REQUIREMENTS OF THE NEWER SYSTEMS.

6) INCOMING SOURCE POWER WIRES MUST BE SEPARATED FROM ANY SIEMENS CABLING BY A MINIMUM OF 12".

REV 0

### POWER SCHEDULE

ALL CONDUITS AND WIRES SIZES MUST BE DETERMINED BY THE ELECTRICAL ENGINEER OF RECORD PER N.E.C. AND TO MAINTAIN SIEMENS IMPEDANCE REQUIREMENTS.

MINIMUM 250 AMP WIRE

MINIMUM 250 AMP WIRE

MINIMUM 250 AMP WIRE

9390 160 KVA UPS PROVIDED BY SIEMENS, INSTALLED BY CONTRACTOR.

9130 3 KVA UPS BY SIEMENS

UPS CABLE BY SIEMENS 29'-0" MAXIMUM LENGTH

UPS/EPO CONTROL BOX SUPPLIED BY SIEMENS, INSTALLED BY CONTRACTOR

ITEM	QTY	DESCRIPTION
MD	1	MAIN FUSIBLE DISCONNECT, 400 AMPS, FLUSH OR SURFACE MOUNTED, FUSED BY ENGINEER OF RECORD PER EATON POWERWARE PLANNING GUIDE. SIEMENS PROJECT MANAGER TO PROVIDE EATON POWERWARE PLANNING GUIDE.
ME	1	MAIN ENCLOSURE WITH MAIN BREAKER FLUSH OR SURFACE MOUNTED, FUSED BY ENGINEER OF RECORD PER EATON POWERWARE PLANNING GUIDE. SIEMENS PROJECT MANAGER TO PROVIDE EATON POWERWARE PLANNING GUIDE.

MAIN BREAKER AMPS: SEE POWER REQUIREMENTS				
VOLTS	PHASES	NEUTRAL	GROUND	TOTAL WIRES
480	3	0	1	4 (NOTE 1)

1) ALL WIRES MUST BE SAME SIZE.

ITEM	QTY	DESCRIPTION
EPO	VARIES	EMERGENCY POWER OFF BUTTON WITH PROTECTIVE COVER THAT PREVENTS ACCIDENTAL ACTIVATION OF THE EPO BUTTON. THE EPO MUST BE OF FAIL-SAFE DESIGN, THE CONTROL CIRCUIT FOR THE EPO'S MUST HAVE AN ENERGY STORAGE SOURCE SO THAT THE CONTROL CIRCUIT NEVER LOSES POWER. ALL EPO'S ARE TO BE LATCHING TYPE AND MUST BE RESET BEFORE MAIN BREAKER CAN BE RESET.

IF ANY OPTIONAL UPS EQUIPMENT IS PROVIDED BY SIEMENS, THE CUSTOMER/CONTRACTOR SHALL PROVIDE AN ADDITIONAL CONTACT IN EACH EPO AND PROVIDE SEPARATE WIRING FOR AN ADDITIONAL EPO CIRCUIT AS REQUIRED. PLEASE COORDINATE THE TYPE OF CONTACT REQUIRED FOR THE UPS CIRCUIT WITH SIEMENS PROJECT MANAGER.

THE EPO'S MUST BE INSTALLED BY A QUALIFIED ELECTRICAL CONTRACTOR ACCORDING TO NATIONAL ELECTRICAL CODE, STATE AND LOCAL REGULATIONS. MEASURES SHOULD BE TAKEN TO DESIGN THE CIRCUIT IN SUCH A WAY THAT IT WILL ALWAYS WORK WHEN THE MEDICAL EQUIPMENT IS POWERED. THE CUSTOMER IS SOLELY RESPONSIBLE FOR THE IMPLEMENTATION OF THE EPO'S AND THEIR ASSOCIATED CIRCUITS AND MUST MAKE THE FINAL DETERMINATION CONSIDERING ALL SITE CONDITIONS AND REGULATORY FACTORS.

EACH EPO MUST HAVE 2 SETS OF CONTACTS.

ALL ITEMS LISTED IN THIS SCHEDULE SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

REV 0

### POWER REQUIREMENTS

VOLTAGE VARIATION: 480 VAC ±10% FOR ALL LINE AND LOAD CONDITIONS, VOLTAGE UNBALANCE: 2% MAXIMUM DIFFERENCE BETWEEN PHASES	
FREQUENCY:	60 Hz ± 1.0 Hz
LINE IMPEDANCE:	< 95 mΩMS
STAND-BY POWER CONSUMPTION	9.0 kW
TYPICAL POWER CONSUMPTION DURING EXAM	20.1 kW
CONNECTION VALUE	110 kVA
MOMENTARY POWER	114 kVA
MR SYSTEM BREAKER SIZE	150 AMPS
RECOMMENDED UPS EATON 9390	160 kVA
UPS SYSTEM BREAKER SIZE	250 AMPS
ALL BREAKERS ARE RATED AT 100%	

### POWER QUALITY

POOR POWER WILL ALTER EQUIPMENT PERFORMANCE

IT IS IN THE CUSTOMER'S INTEREST THAT THE ELECTRICAL CONTRACTOR BE RESPONSIBLE FOR TESTING AND VERIFYING THAT THE EQUIPMENT POWER SUPPLY COMPLIES WITH THE SIEMENS SPECIFICATIONS.

### DEMAND AND CAPACITY

1) IF EQUIPMENT UPGRADE IS ANTICIPATED, INSTALLING ELECTRICAL POWER TO MEET THE REQUIREMENTS OF THE HIGHER POWER GRADIENT PACKAGE AT THE TIME OF INITIAL INSTALLATION WILL REDUCE THE COST TO UPGRADE THE ELECTRICAL SYSTEM LATER.

2) RECOMMENDED TRANSFORMER SIZE (SYSTEM WITHOUT UPS) IS BASED ON INDUSTRY STANDARD ISOLATION TRANSFORMER KVA RATINGS. SOURCE IMPEDANCE FEEDING THE MAGNETOM SYSTEM, INCLUDING ANY ISOLATION TRANSFORMERS, MUST MEET EQUIPMENT REQUIREMENTS AS LISTED HERE. SIEMENS RECOMMENDS A TRANSFORMER WITH COPPER WINDINGS, AN ELECTRO-STATIC SHIELD, AND A LOW IMPEDANCE (<3%) TO ENSURE THAT SOURCE IMPEDANCE REQUIREMENTS ARE MET.

3) OVER CURRENT PROTECTION IS SPECIFIED FOR SYSTEMS WITHOUT AN UNINTERRUPTIBLE POWER SUPPLY (UPS). ADDITION OF A UPS REQUIRES A HIGHER CAPACITY MAINS CONNECTION (DEPENDENT UPON UPS MODEL AND SIZE). MAXIMUM FAULT CURRENT IS DEPENDENT UPON THE IMPEDANCE OF THE FACILITY ELECTRICAL SYSTEM. THE CUSTOMER'S ARCHITECT OR ELECTRICAL CONTRACTOR TO SPECIFY AIC RATING OF OVER CURRENT PROTECTION BASED ON FACILITY IMPEDANCE CHARACTERISTICS.

4) MOMENTARY POWER IS BASED ON A MAXIMUM RMS VALUE FOR A PERIOD NOT TO EXCEED FIVE (5) SECONDS, AS DEFINED IN NEC 517.2. STAND-BY AND AVERAGE CURRENT ARE SUBSTANTIALLY LOWER.

5) THE CONDUCTOR SIZE SHOULD BE SELECTED TO MEET THE VOLTAGE DROP REQUIREMENTS, TAKING INTO CONSIDERATION THE MAINS CAPACITY, RUN LENGTH, AND ANY ADDITIONAL TRANSFORMERS USED TO OBTAIN THE PROPER EQUIPMENT VOLTAGE LEVEL. NEMA STANDARD XR-9-1989 (R1994,R2000) PROVIDES GENERAL GUIDELINES FOR SIZING CONDUCTORS, TRANSFORMERS, AND ELECTRICAL SYSTEMS FOR MEDICAL IMAGING SYSTEMS.

6) LONG-TIME POWER IS BASED ON THE HIGHEST AVERAGE RMS VALUES FOR A PERIOD EXCEEDING 5 MINUTES DURING CLINICAL SYSTEM OPERATION, AS DEFINED IN NEC 517.2.

7) A CIRCUIT BREAKER WITH A HIGH INRUSH RATING (>8x RATED CURRENT) IS REQUIRED TO PERMIT SWITCH-ON OF THE UPS SYSTEM WITHOUT SPURIOUS TRIPPING. CIRCUIT BREAKERS WITH AN ADJUSTABLE MAGNETIC TRIP (SIEMENS FDB SERIES OR SIMILAR) ARE HIGHLY RECOMMENDED.

REV 1

### CHILLER POWER REQUIREMENTS

KKT ECO CHILLER	480 VOLTS, 3-PHASE 60 AMPS
KKT MEDIX X 60 CHILLER	480 VOLTS, 3-PHASE 75 AMPS
DIMPLEX 14 TON CHILLER	480 VOLTS, 3-PHASE 70 AMPS
DIMPLEX 20 TON CHILLER	480 VOLTS, 3-PHASE 95 AMPS

REFER TO CHILLER MANUFACTURER'S INFORMATION

### ELECTRICAL INSTALLATION NOTES

1) INSTALL THE MR SYSTEM CIRCUIT BREAKER IN OR NEAR THE EQUIPMENT ROOM. THE PERMITTED FRINGE FIELD FOR THE PANEL IS UP TO 3mT. IF THE FRINGE FIELDS HAVE HIGHER VALUES, MAGNETIC SHIELDING MUST BE PROVIDED OR THE DISTANCE FROM THE MAGNET MUST BE INCREASED.

2) AN ACCEPTABLE MEANS FOR SWITCHING MAIN POWER ON AND OFF SHOULD BE INSTALLED IN THE MAIN BREAKER PANEL. INSTALL EMERGENCY SHUTDOWN BUTTONS IN EACH ROOM WHERE THERE IS SIEMENS EQUIPMENT.

3) THE ELECTRICAL FEEDER TO THE SIEMENS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.

4) THE EMERGENCY POWER OFF (EPO) BUTTONS ARE TO BE MUSHROOM TYPE WITH PUSH LOCK AND PULL TO RELEASE.

5) WALL RECEPTACLES MADE OF FERROMAGNETIC MATERIALS ARE NOT PERMITTED IN THE EXAM ROOM. PERIPHERAL UNITS (SUCH AS VENTILATORS) NOT APPROVED FOR USE IN A HIGH MAGNETIC FIELD ENVIRONMENT CAN INFLUENCE THE MAGNETIC FIELD, COMPROMISING IMAGE QUALITY. THE CUSTOMER IS RESPONSIBLE FOR INSTALLATION AND USE OF RECEPTACLES IN THE EXAM ROOM. INSTALLATION OF RECEPTACLES AND THE FILTERS REQUIRED ARE TO BE COORDINATED WITH THE RF SHIELDING SUPPLIER.

6) THE RF SHIELD MUST BE FITTED WITH A GROUND STUD OR BUS BAR, LOCATED WITHIN 24" OF THE AUXILIARY FILTERS FOR ROOM LIGHTS AND OUTLETS, SUPPLIED AND INSTALLED BY THE RF SHIELD SUPPLIER.

7) IN ORDER TO PREVENT GROUND LOOPS, ALL CUSTOMER OR CUSTOMER/CONTRACTOR SUPPLIED AC POWER ENTERING THE EXAMINATION ROOM (I.E. OUTLETS, EPO, ETC.) SHOULD BE SUPPLIED VIA AN ISOLATION TRANSFORMER. THE ISOLATION TRANSFORMER SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE RF SHIELD GROUND STUD OR BUS BAR. SEE NOTE 6 ABOVE AND THE AUXILIARY AC POWER FOR EXAMINATION ROOM DETAIL.

REV 0

### GROUNDING NOTES

EQUIPMENT GROUND CONDUCTOR TO COMPLY WITH THE FOLLOWING:

1) SIZED EQUIVALENT TO THE PHASE CONDUCTORS (FULL SIZED GROUND).

2) DERIVED FROM THE ELECTRICAL SERVICE, TRANSFORMER OR MAIN DISTRIBUTION PANEL FEEDING THE SIEMENS EQUIPMENT.

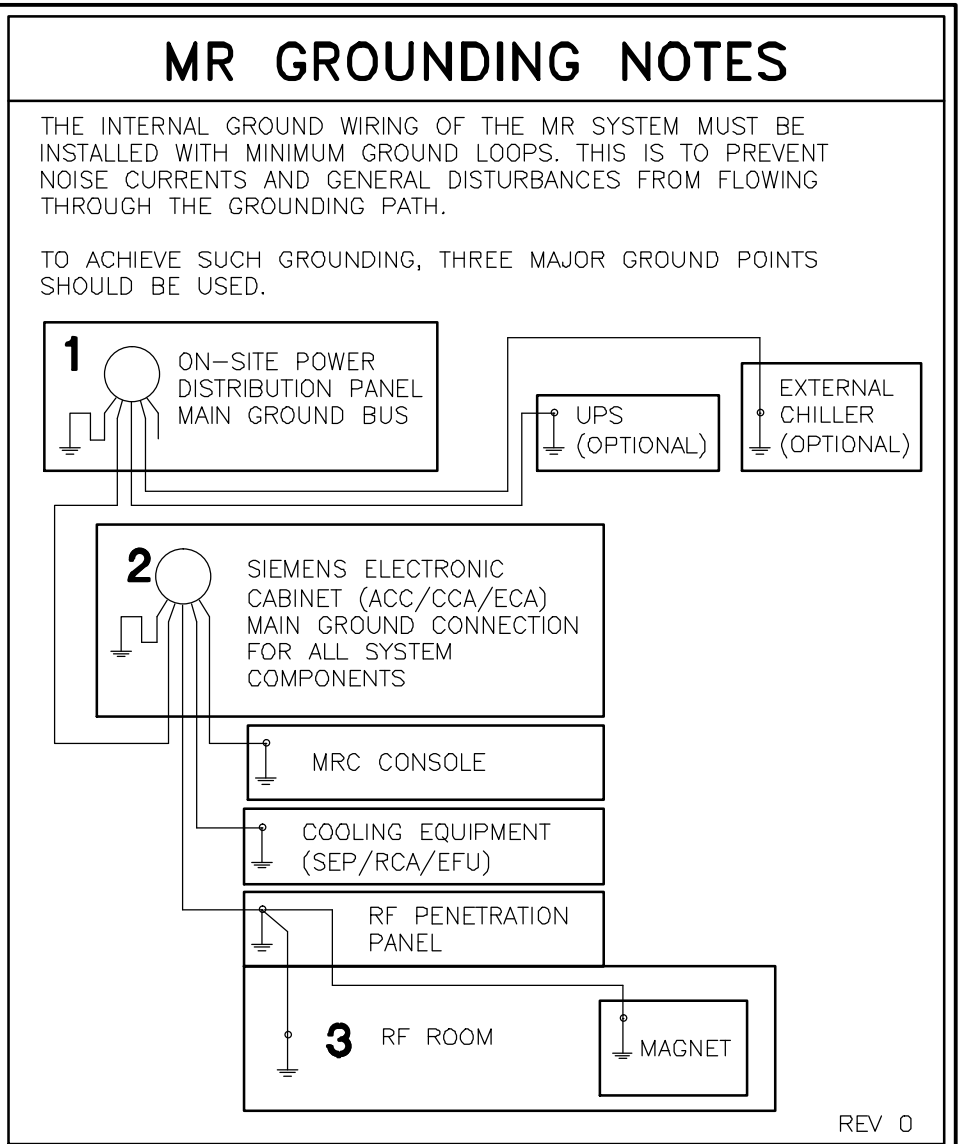
3) RUN IN THE SAME CONDUIT, TROUGH OR RACEWAY AS THE PHASE CONDUCTORS.

4) CONTINUOUS, WITH NO BREAKS OR USE OF CONDUIT, CHASSIS OR EARTH AS THE SOLE GROUNDING PATH.

5) BONDED TO CHASSIS AND/OR CONDUIT IN ACCORDANCE WITH THE NEC REQUIREMENTS.

6) MINIMIZE CONNECTIONS OR TERMINALS TO ENSURE CONTINUITY OVER THE LIFE OF THE INSTALLATION.

7) AS A NORM, THERE SHOULD NOT BE ANY CURRENT PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS ACCEPTABLE TO HAVE <500mA DURING OPERATION OF THE IMAGING EQUIPMENT.



### CEILING HEIGHTS

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

## 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.

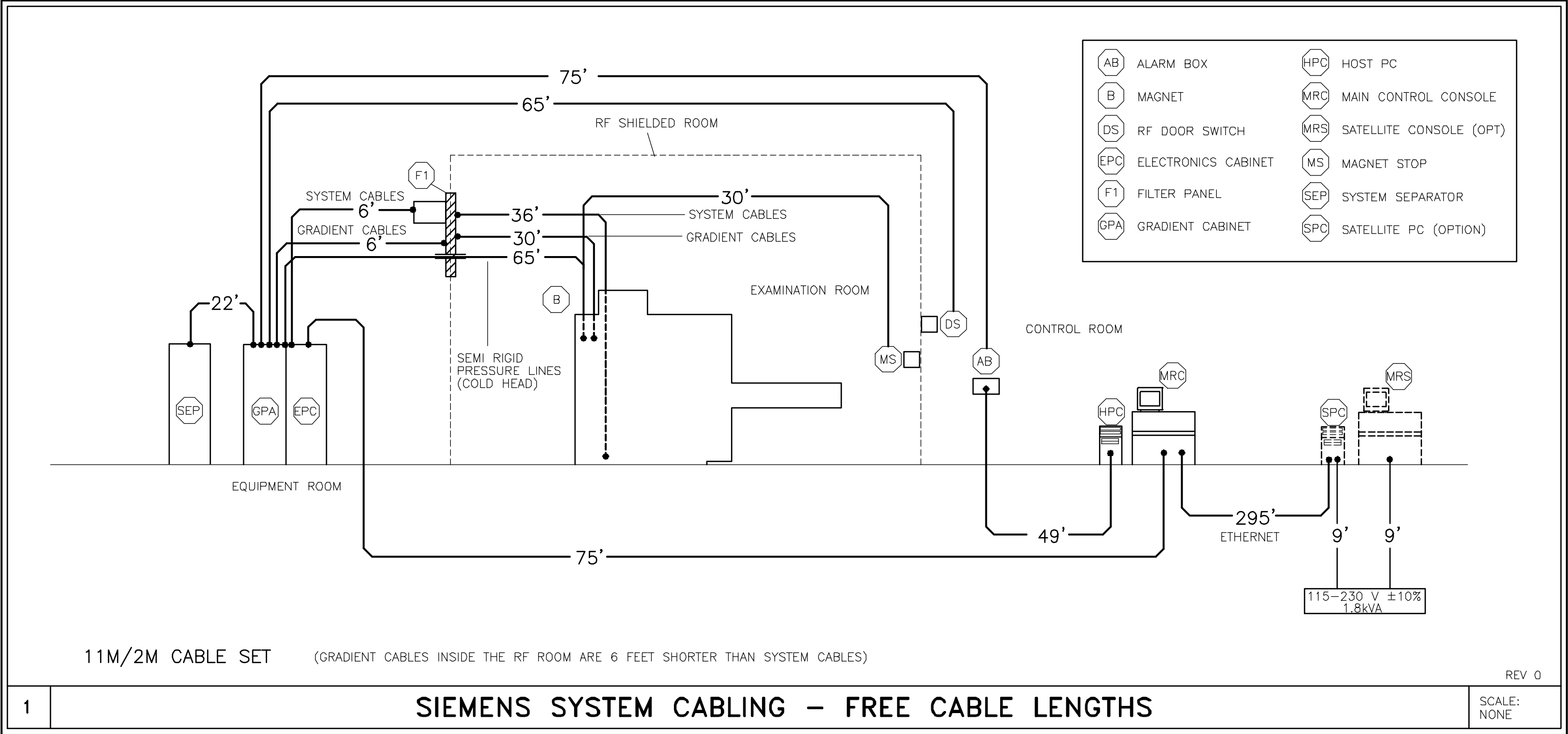
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—ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.

—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.

PROJECT MANAGER: MICHAEL POWERS TEL: (770) 330-1781 FAX: (770) 369-8232 EMAIL: michael.powers@siemens.com	<b>SIEMENS</b> <b>GRADY HEALTH SYSTEM</b> 191 PEACHTREE ST., ATLANTA, GA 30303 MRI SUITE -- MAGNETOM AERA W/MOBILE TABLE
THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.	PROJECT #: <b>1500201</b> SHEET: <b>E-102</b>
ALL RIGHTS ARE RESERVED.	SHEET 7 OF 10 DRAWN BY: F. CARUSO DATE: 03/18/15
SCALE: AS NOTED REF. #1-49M1UW	



**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

**SIEMENS REMOTE SERVICES (SRS)**

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.

**SRS REQUIRES ONE OF THE FOLLOWING CONNECTION METHODS:**

**(PREFERRED) VPN CONNECTION**

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 REMOTE SERVICES (800-888-SIEM) TO DETERMINE IF THIS METHOD IS SUITABLE FOR YOUR SITE.

**(OPTIONAL) SRS ROUTER CONNECTION**

— THE SRS ROUTER IS SUPPLIED BY SIEMENS AND INSTALLED AT THE CUSTOMER'S SITE, WHILE STILL REMAINING THE PROPERTY OF SIEMENS. THE CUSTOMER'S NETWORK ADMINISTRATOR AND SIEMENS REMOTE SERVICES SHALL DETERMINE THE TYPE AND LOCATION OF THE SRS ROUTER REQUIRED.

— THE SRS ROUTER IS CONNECTED TO AN ANALOG MODEM THAT IS SUPPLIED BY SIEMENS, WHICH THEN IN TURN IS CONNECTED TO AN ANALOG PHONE LINE THAT IS SUPPLIED BY THE CUSTOMER. ONE SRS ROUTER ALLOWS REMOTE DIAGNOSTICS TO MULTIPLE MEDICAL SYSTEMS.

— THE SRS ROUTER SHOULD BE INSTALLED IN A SECURE LOCATION (CUSTOMER'S NETWORK COMPUTER ROOM) THAT HAS LIMITED ACCESS. IT CAN BE LOCATED ON A SHELF, TABLE, OR IN A CABINET. THE CONNECTION CABLES (WITH INDICATED LENGTHS BELOW) ARE INCLUDED WITH DELIVERY.

**SRS ROUTER CONNECTION DIAGRAM**

CUSTOMER NETWORK OR SWITCH\* — 3'-3" — SRS ROUTER — 2'-7" — 3'-3" — 110 V

NOTE: ALL POWER OUTLETS ARE SUPPLIED/INSTALLED BY CUSTOMER.

① ETHERNET SWITCH OR HUB, SUPPLIED BY CUSTOMER

② SRS ROUTER, SUPPLIED BY SIEMENS (SIZE: 11.2"W X 8.7"D X 5.5"H, WEIGHT: 2 LBS.)

③ ANALOG MODEM, SUPPLIED BY SIEMENS

④ ANALOG PHONE LINE, SUPPLIED BY CUSTOMER

\* OPTIONAL SWITCH AND CABLES ARE NOT INCLUDED, BUT CAN BE ORDERED FROM SIEMENS.

**SIEMENS REMOTE SERVICE**

SCALE: NONE

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.

**CABLE SEPARATION**

2

SCALE: NONE

REV 0

**Legend:**

- CD1 RF - TRANSMIT/RECEIVE CABLES
- CD2 WATER HOSES, PRESSURIZED HOSES
- CD3 FIBER OPTIC - SIGNAL - /POWER CABLES
- CD4 GRADIENT CABLES

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"

**LIGHTING GUIDELINES**

**EXAM, CONTROL, AND EVALUATION ROOMS:**

1) THE ROOM LIGHTING MUST REMAIN FUNCTIONAL WHEN THE MR SYSTEM IS SWITCHED OFF AND/OR WHEN EMERGENCY SHUTDOWN BUTTONS ARE ACTIVATED.

2) IT MUST BE POSSIBLE TO CONTROL THE INTENSITY OF ILLUMINATION OF APPROXIMATELY 46 FOOT-CANDLES THROUGH GROUP CONNECTION. ALL LIGHTS IN THE EXAMINATION ROOM ARE CONNECTED TO A COMMON SWITCH IN THE CONTROL ROOM. THERE SHOULD BE SEPARATE SWITCHES IN THE EXAMINATION ROOM FOR THE GROUPS OF LIGHTS ABOVE AND NEAR THE PATIENT TABLE. AS WELL AS FOR THE GROUP OF LIGHTS ABOVE THE MAGNET. THE LOCATION OF THESE SWITCHES IS AT THE OWNER'S DISCRETION.

**EXAMINATION ROOM:**

1) THE MAGNETIC FIELD ADVERSELY AFFECTS THE OPERATING LIFE OF LIGHT BULBS LOCATED IN THE IMMEDIATE VICINITY OF THE MAGNET. THE FILAMENT IN THE BULB OSCILLATES WITH THE FREQUENCY OF THE POWER SUPPLY. DURING SCANNING, IT IS RECOMMENDED THAT LIGHT FIXTURES IN THE VICINITY OF THE MAGNET (IN EXAMINATION ROOM) BE CONNECTED TO A DC VOLTAGE SUPPLY. THE RESIDUAL RIPPLE OF THE DIRECT VOLTAGE SHOULD BE ±5%. WHEN INSTALLING THE LIGHT SOCKET, ENSURE THAT THE POLARITY IS CORRECT.

2) FLUORESCENT LIGHTS, ENERGY- SAVING LIGHTS, AND DIMMERS ARE NOT PERMITTED.

**CONTROL AND EVALUATION ROOM:**

FOLLOW THE APPROPRIATE GUIDELINES FOR LIGHTING IN ROOMS WITH MONITOR WORKSTATIONS.

**EQUIPMENT ROOM:**

ILLUMINATION INTENSITY SHOULD BE APPROXIMATELY 46 FOOT-CANDLES.

REV 0

**INJECTOR INSTALLATION OPTIONS**

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 OPTIONALLY WITHIN THE SCAN ROOM. IN EITHER SITUATION A PENETRATION OF THE RF SHIELD, SEPARATE FROM THE SIEMENS FILTER PANEL, IS REQUIRED.

**METHOD 1** INJECTOR POWER SUPPLY IN EQUIPMENT ROOM, PENETRATION TO INCLUDE FILTER AND WAVEGUIDE.

**METHOD 2** INJECTOR POWER SUPPLY IN EXAM ROOM, ELECTRICAL SUPPLY IN EXAM ROOM, PENETRATION TO INCLUDE WAVEGUIDE.

WITH EITHER METHOD 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.

**MRI CONTRAST INJECTOR**

REV 1

SCALE: NONE

**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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**SIEMENS**

**GRADY HEALTH SYSTEM**

191 PEACHTREE ST., ATLANTA, GA 30303

MRI SUITE - MAGNETOM AERA W/MOBILE TABLE

PROJECT #: **1500201**

SHEET: **E-501**

DATE: 03/18/15

SCALE: AS NOTED

REF. #1-49M1UW

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

ALL RIGHTS ARE RESERVED.

PROJECT MANAGER: MICHAEL POWERS

TEL: (770) 330-1781 EXT:

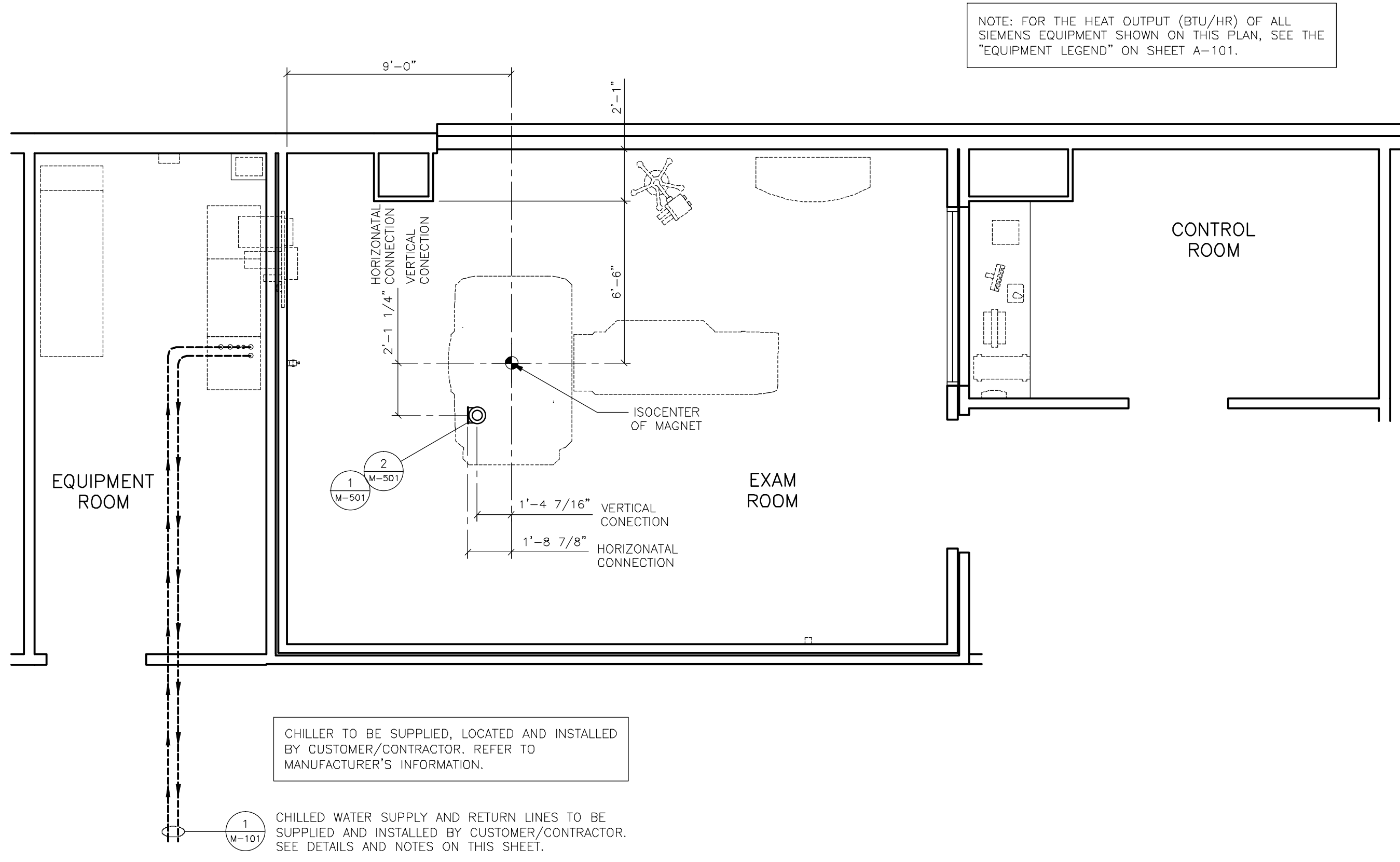
FAX: (770) 369-8232

EMAIL: michael.powers@siemens.com

SYMBOL DATE DESCRIPTION

— ISSUE BLOCK —





MECHANICAL PLAN

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

ENVIRONMENTAL REQUIREMENTS

- 1) 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.
- 2) 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.
- 3) 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.
- 4) 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.
- 5) THE AIR INTAKE OF THE AIR CONDITIONING SYSTEM MUST NOT BE LOCATED IN THE VICINITY OF THE QUENCH VENT EXHAUST.
- 6) 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.
- 7) DO NOT LOCATE ANY HVAC DIFFUSERS ABOVE THE MAGNET. THERE SHALL NOT BE AIR BLOWING DIRECTLY ON THE MAGNET.

CHILLED WATER SUPPLY

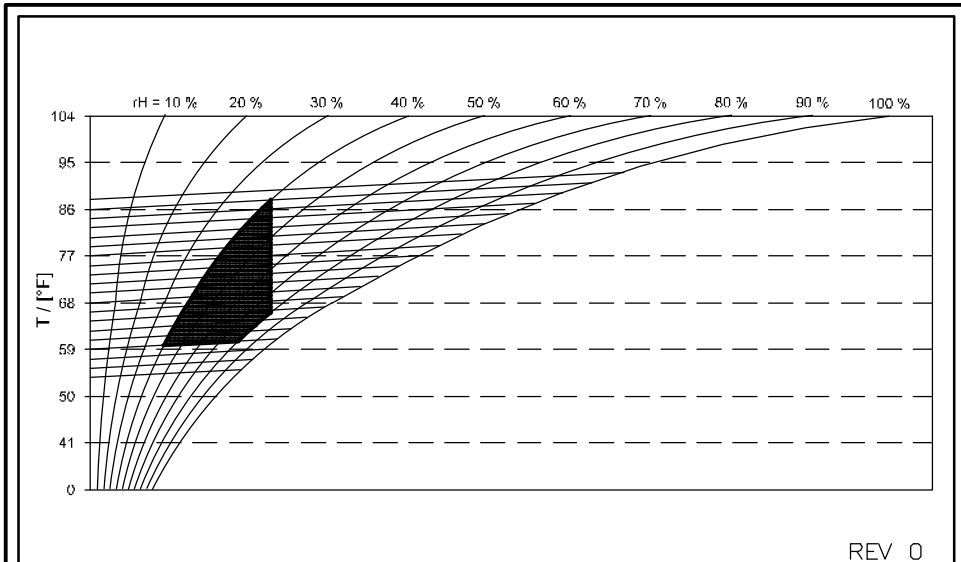
A CHILLED WATER SUPPLY IS REQUIRED TO THE MRI SYSTEM 24 HOURS A DAY, YEAR ROUND FOR THE COLD HEAD AND GRADIENT SYSTEMS. THIS CAN BE PROVIDED BY A CENTRAL CHILLED WATER SUPPLY OR A SEPARATE STAND ALONE CHILLER THAT MEETS THE STATED REQUIREMENTS. THE CHILLED WATER CAN ALSO BE SUPPLIED BY A DEDICATED KRAUS 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 BIB LOCATED WITHIN 65' OF THE SEP, IFP, EPC 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.



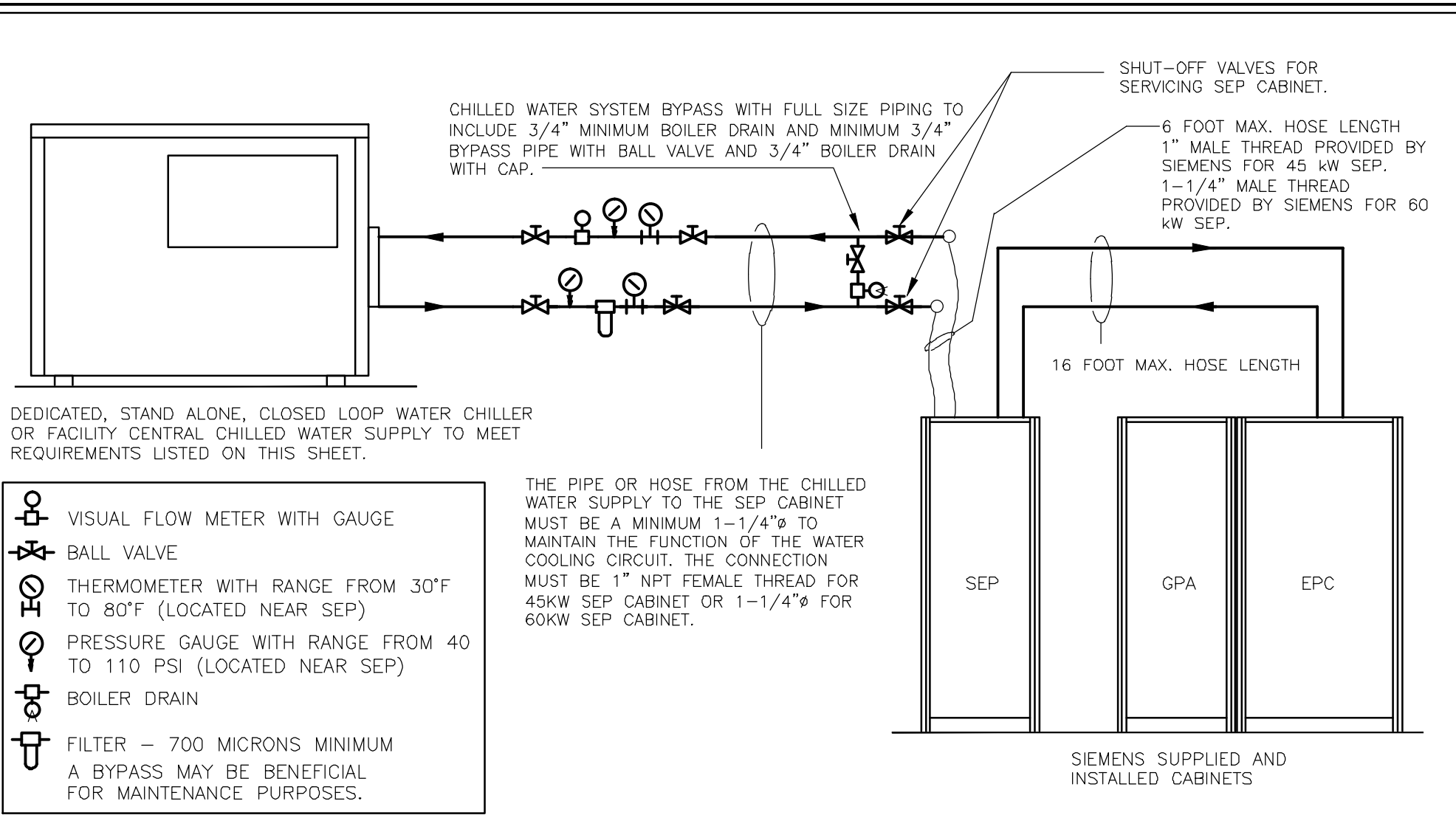
CEILING HEIGHTS

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

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.

1 PIPING SCHEMATIC FOR FACILITY PROVIDED CHILLED WATER

SCALE: NONE



NOTES:

ALL PIPING AND PLUMBING FIXTURES SHALL BE FURNISHED, INSTALLED, PRESSURE TESTED AND CHARGED BY THE MECHANICAL CONTRACTOR PRIOR TO THE DELIVERY AND INSTALLATION OF THE SIEMENS SUPPLIED AND INSTALLED EQUIPMENT UNLESS SPECIFIED OTHERWISE.

AT THE HIGHEST POINT OF THE WATER SUPPLY PIPE FROM THE CHILLER AN AUTOMATIC DEAERATION DEVICE (AIR VENT) WITH BALL VALVE MUST BE INSTALLED BY THE MECHANICAL CONTRACTOR.

LEAK TEST ALL PIPING WITH A MIXTURE OF R-22 TRACE GAS AND NITROGEN. DO NOT PERFORM LEAK TEST WITH WATER.

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 BE PERFORMED BY THE MECHANICAL CONTRACTOR AND SHALL BE SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.

THE SUPPLY AND RETURN PIPES FROM THE CHILLED WATER SUPPLY TO THE SEP/IFP MUST BE LABELED TO SHOW FLOW DIRECTION AND CONTENT (WATER/GLYCOL).

A TAP WATER SUPPLY MUST BE AVAILABLE WITHIN 45' OF THE SEP/IFP AND CHILLER CONNECTION FOR FILLING THE CIRCUIT.

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 CALCIUM CARBONATE
CHLORINE GAS CONCENTRATION	<200 ppm
FILTRATION	500 µm

FOR INSTALLATION OF A DIMPLEX CHILLER, IT IS THE RESPONSIBILITY OF THE CUSTOMER/MECHANICAL CONTRACTOR TO PROVIDE A MIXTURE OF WATER WITH 40% ETHYLENE GLYCOL OR 50% PROPYLENE GLYCOL PRIOR TO CHILLER START UP. DO NOT USE AUTOMOTIVE ANTI-FREEZE.

DIMPLEX CHILLERS USE 70-100 GALLONS PLUS THE PIPE LENGTH.

CONTRACTOR TO PROVIDE 65-95 GALLONS OF DE-MINERALIZED WATER. DO NOT USE TAP WATER.

FOR INSTALLATION OF A KKT 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.

MECHANICAL NOTES

- 1) THE AIR H.V.A.C. SYSTEM MUST OPERATE FOR A MINIMUM OF 48 CONSECUTIVE HOURS PRIOR TO THE DELIVERY OF THE EQUIPMENT.
- 2) THE FILTERS MUST BE CHANGED IMMEDIATELY PRIOR TO THE DELIVERY OF THE EQUIPMENT.
- 3) 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.
- 4) 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.
- 5) 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.

REV 0

FIRE CONTROL NOTES

- 1) 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.
- 2) 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.
- 3) ALL MATERIAL USED INSIDE THE MAGNET ROOM SHALL BE NON-MAGNETIC.
- 4) ALL PENETRATIONS IN THE RF CABIN/SHIELD SHALL BE THROUGH A WAVE GUIDE TO BE EQUIPPED WITH A SIEMENS APPROVED 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.
- 5) 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.
- 6) IT IS PERMISSIBLE TO RUN "BLACK PIPE" UP TO THE DIELECTRIC COUPLER ON THE OUTSIDE OF THE RF SHIELD.
- 7) THERE MUST BE NO GROUND CONNECTIONS MADE DURING THE INSTALLATION OF EITHER THE PIPING OR ELECTRICAL FOR THE FIRE PROTECTION SYSTEM.
- 8) THE USE OF HALON IS NOT ACCEPTABLE.
- 9) THE LOCATION OF FIRE CONTROL SYSTEM COMPONENTS SHALL BE COORDINATED THROUGH THE ARCHITECT WITH ALL LOCATIONS TO BE COORDINATED WITH SIEMENS EQUIPMENT LOCATIONS AS SHOWN ON THE 1/4" SCALE EQUIPMENT LOCATION PLAN.
- 10) 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.

REV 0

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.

REV 0

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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.

PROJECT MANAGER: MICHAEL POWERS  
TEL: (770) 330-1781  
FAX: (770) 369-8232  
EMAIL: michael.powers@siemens.com

SIEMENS

GRADY HEALTH SYSTEM

191 PEACHTREE ST., ATLANTA, GA 30303  
MRI SUITE - MAGNETOM AERA W/MOBILE TABLE

PROJECT #:

1500201

SHEET:

M-101

SHEET 9 OF 10

DRAWN BY: F. CARUSO

DATE: 03/18/15

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

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SCALE: AS NOTED REF. #1-49M1UW

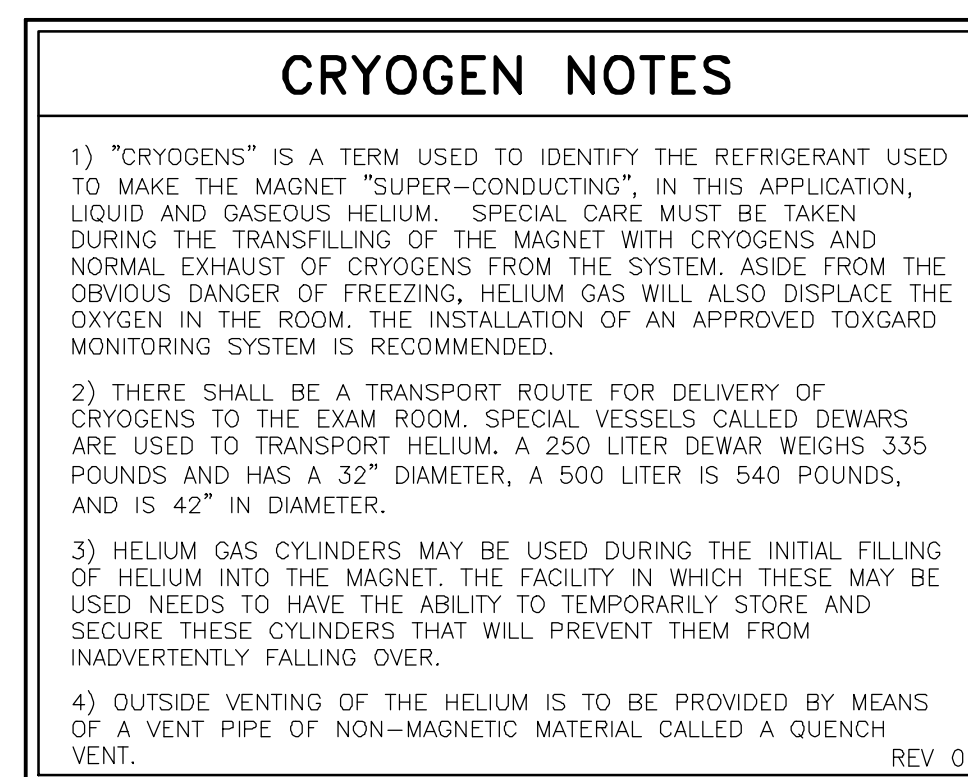
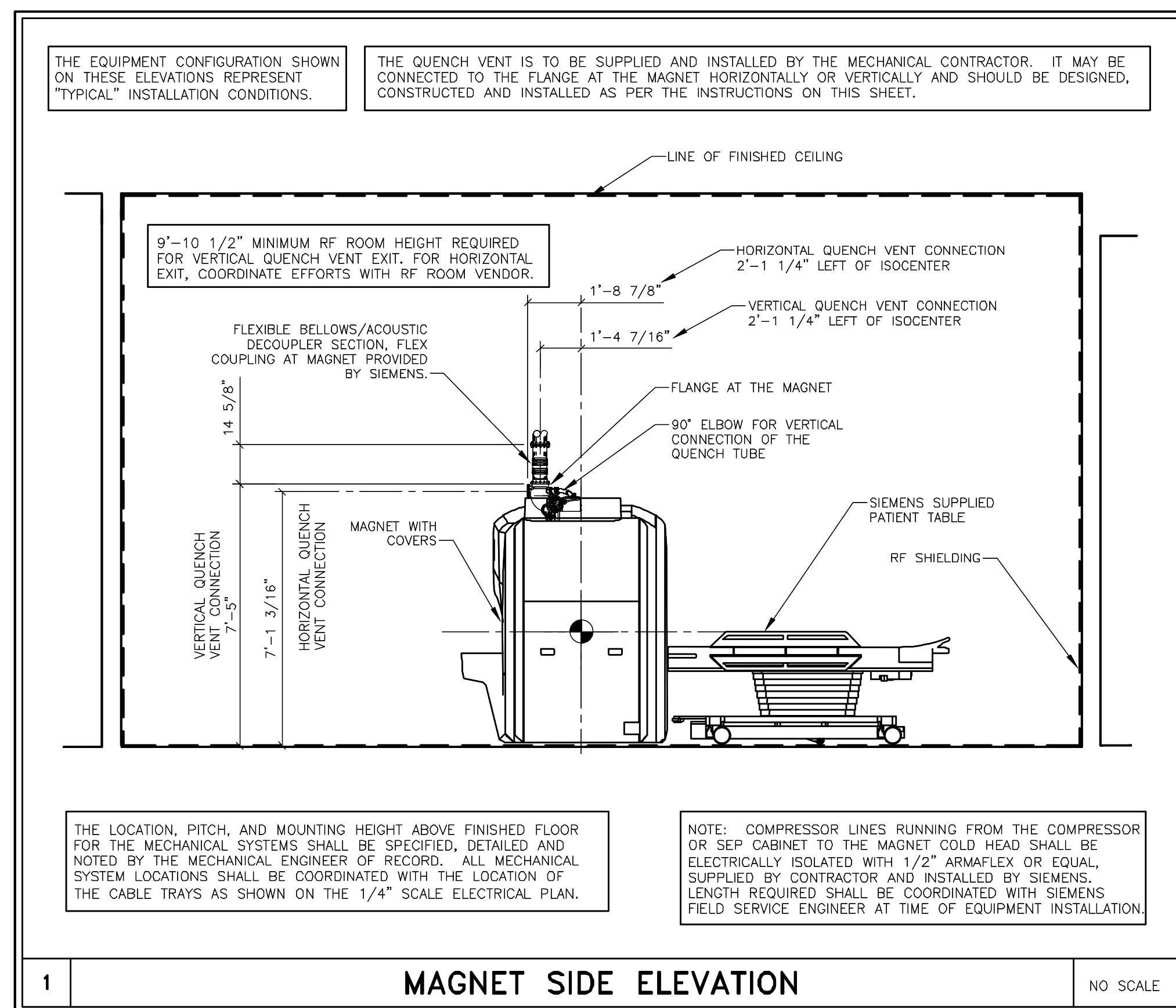
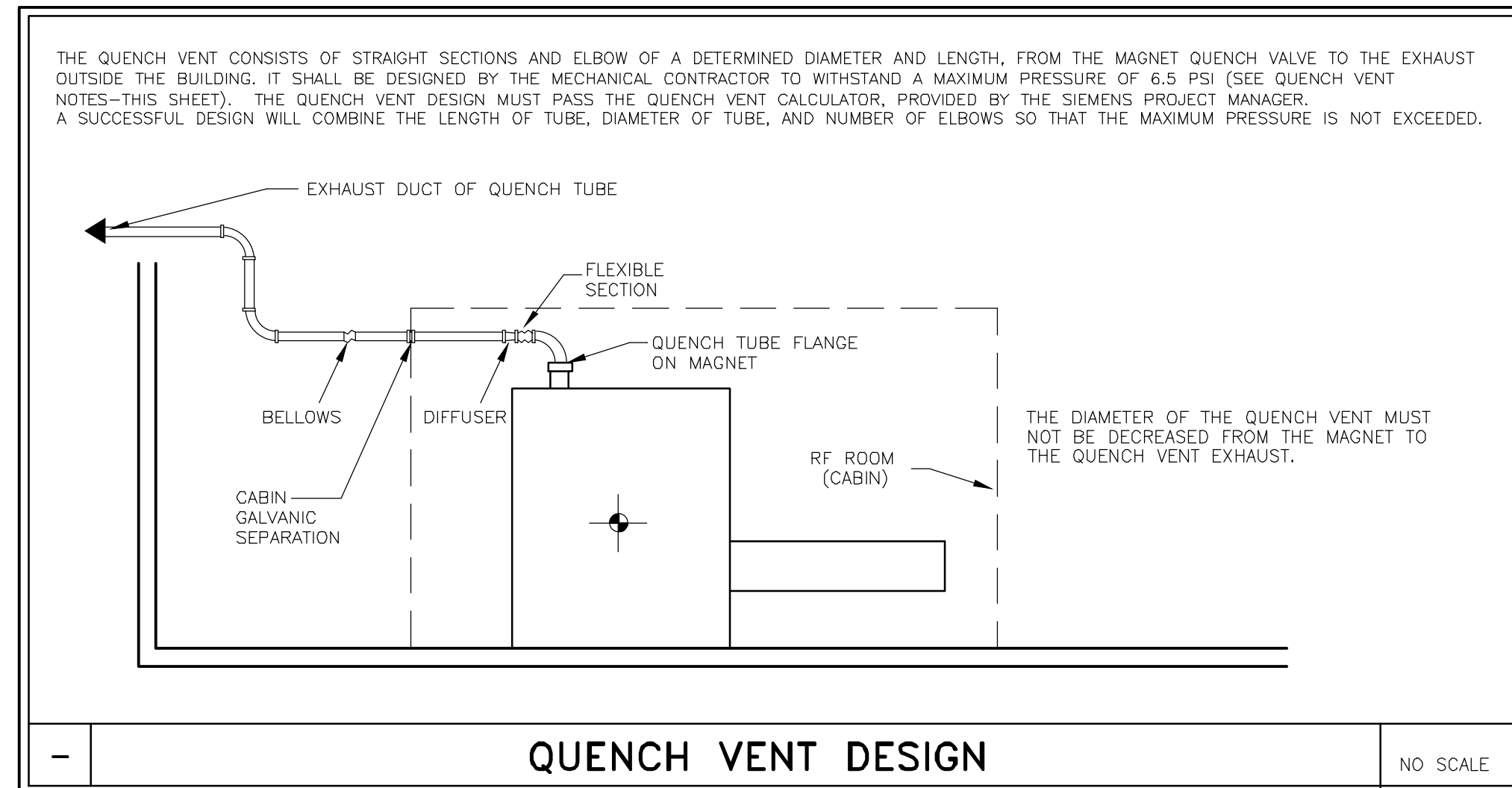
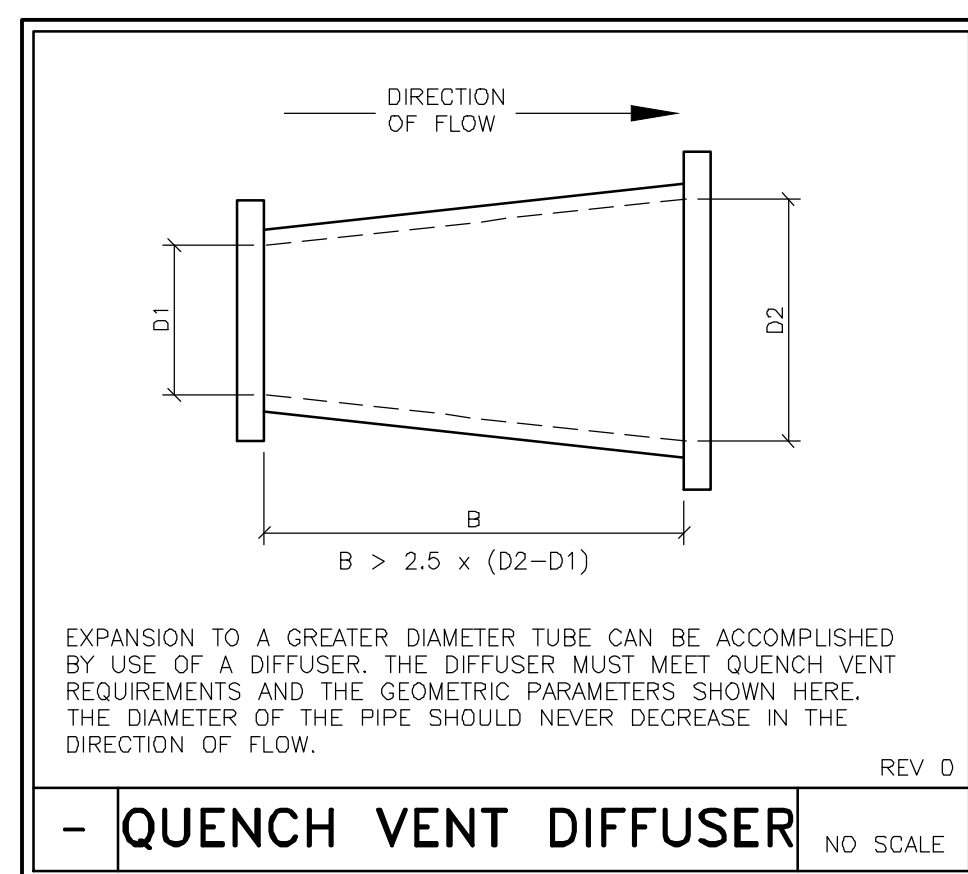
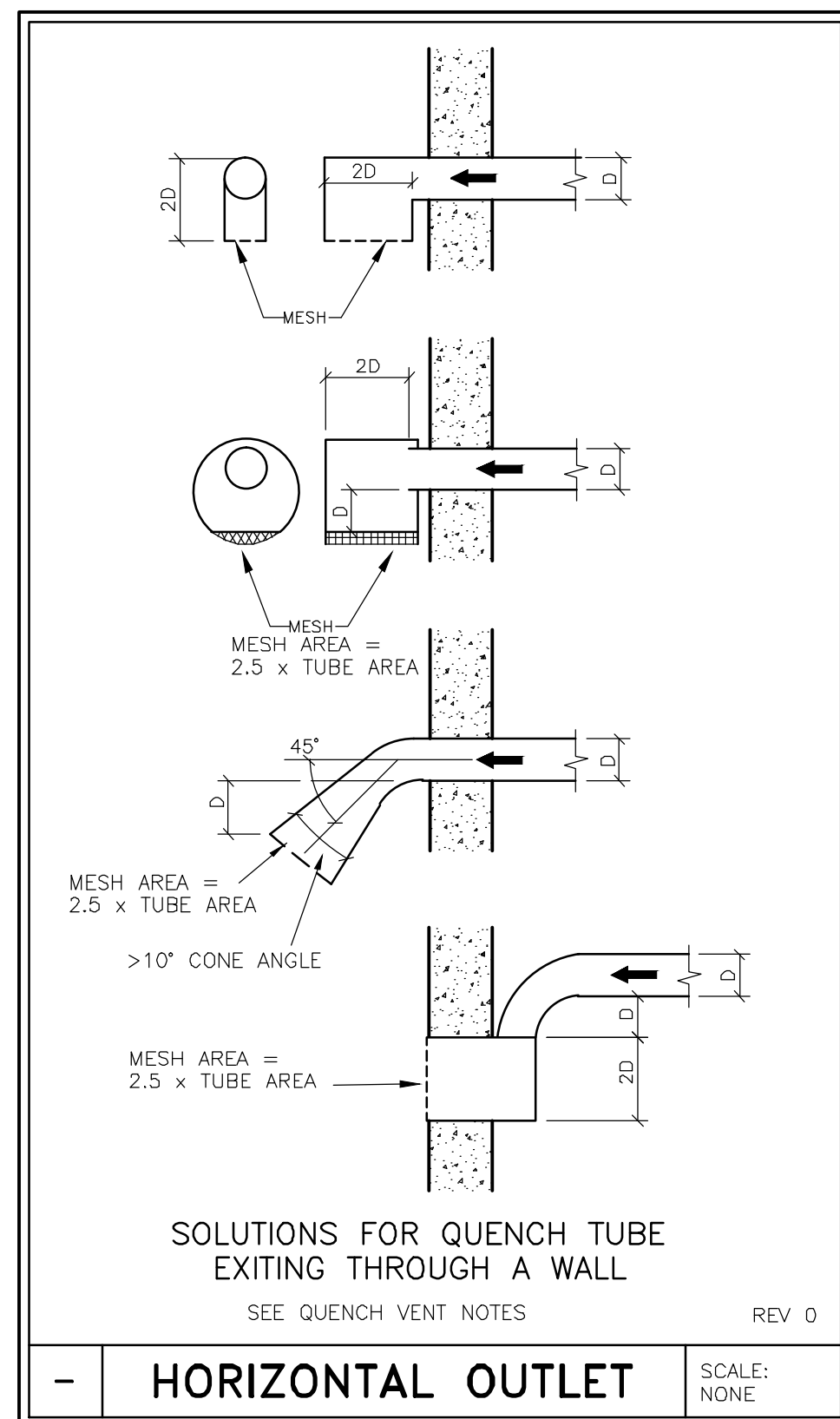
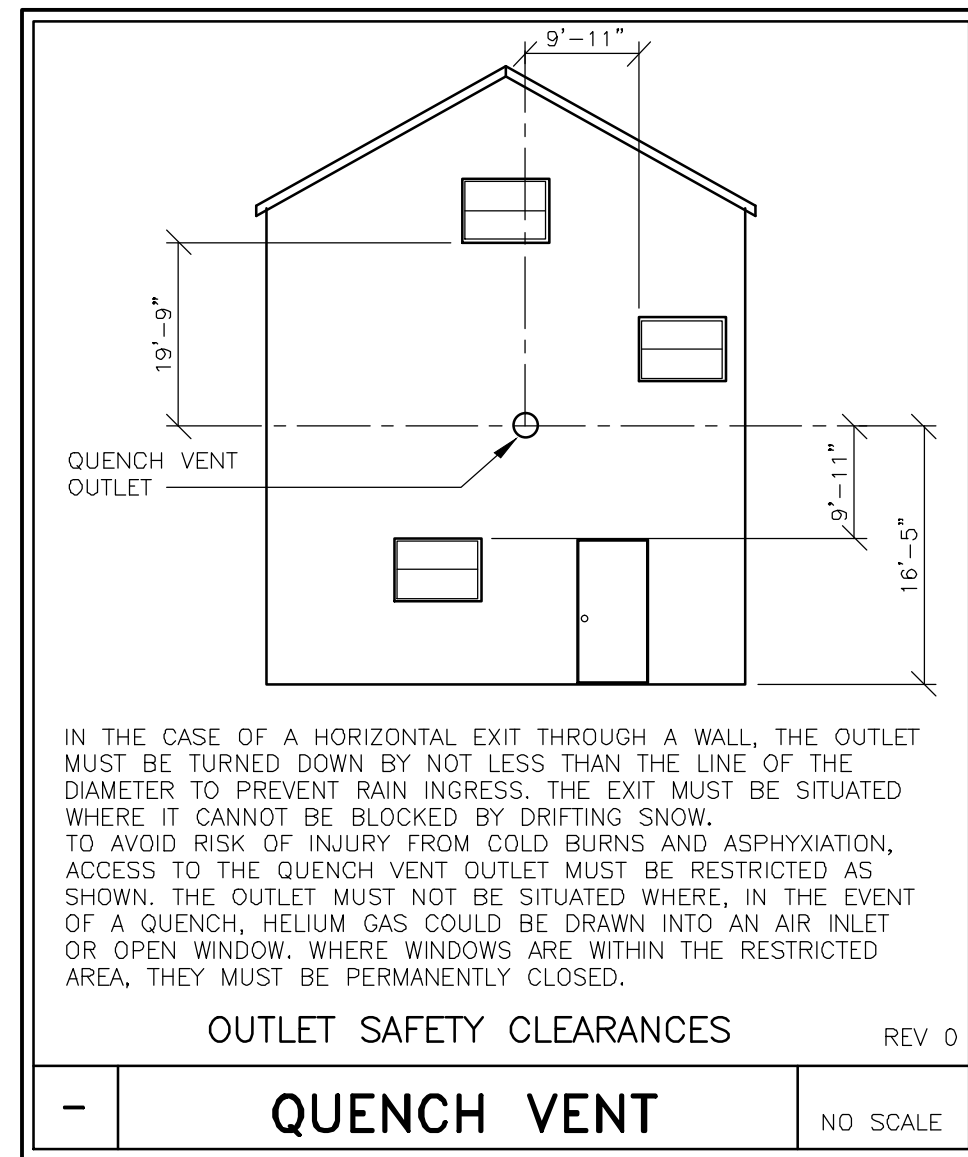
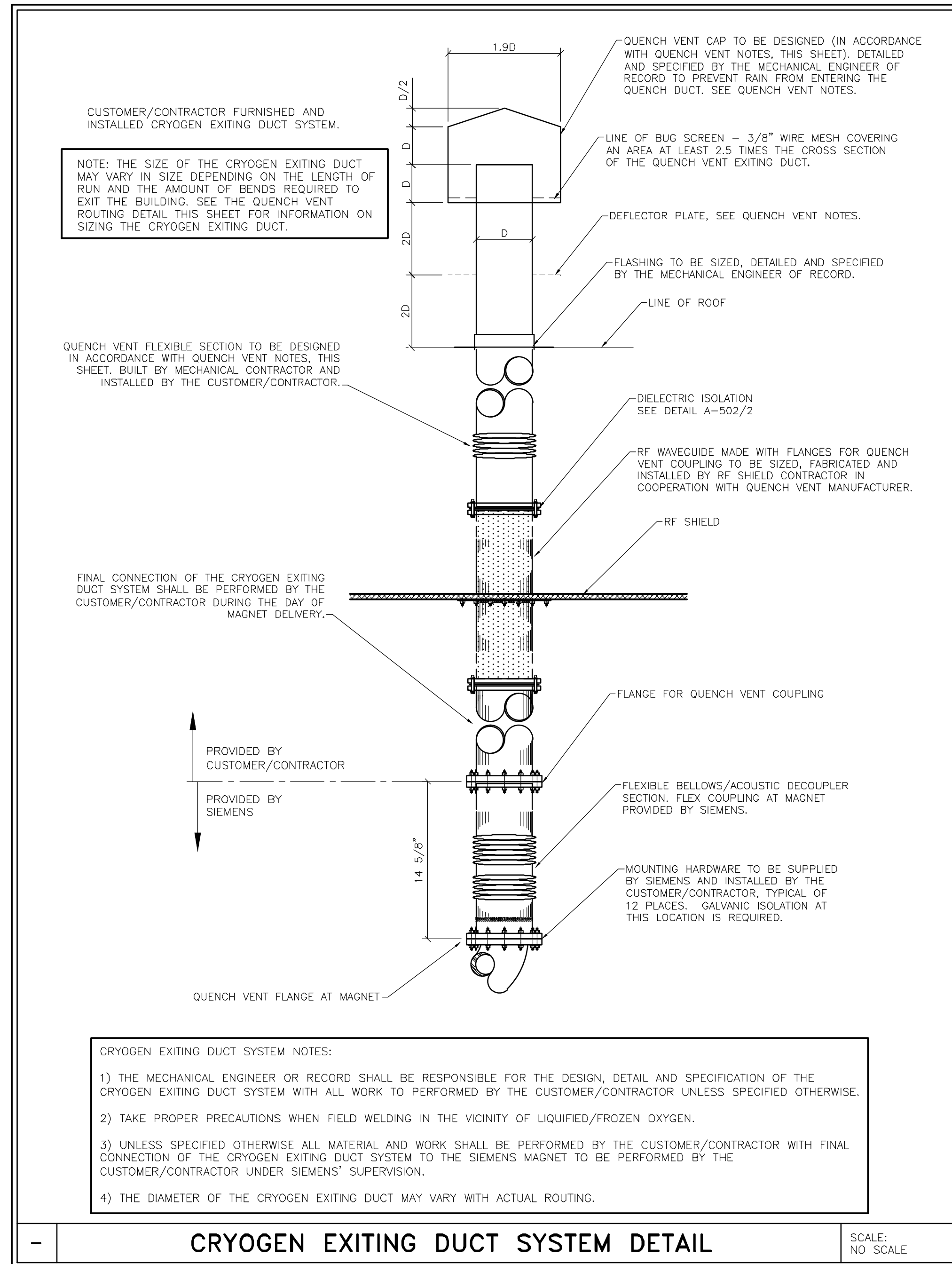
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R101RA VERSION DATED 01/19/15 APPROVED BY CUSTOMERS FOR FINALS

SYM DATE DESCRIPTION

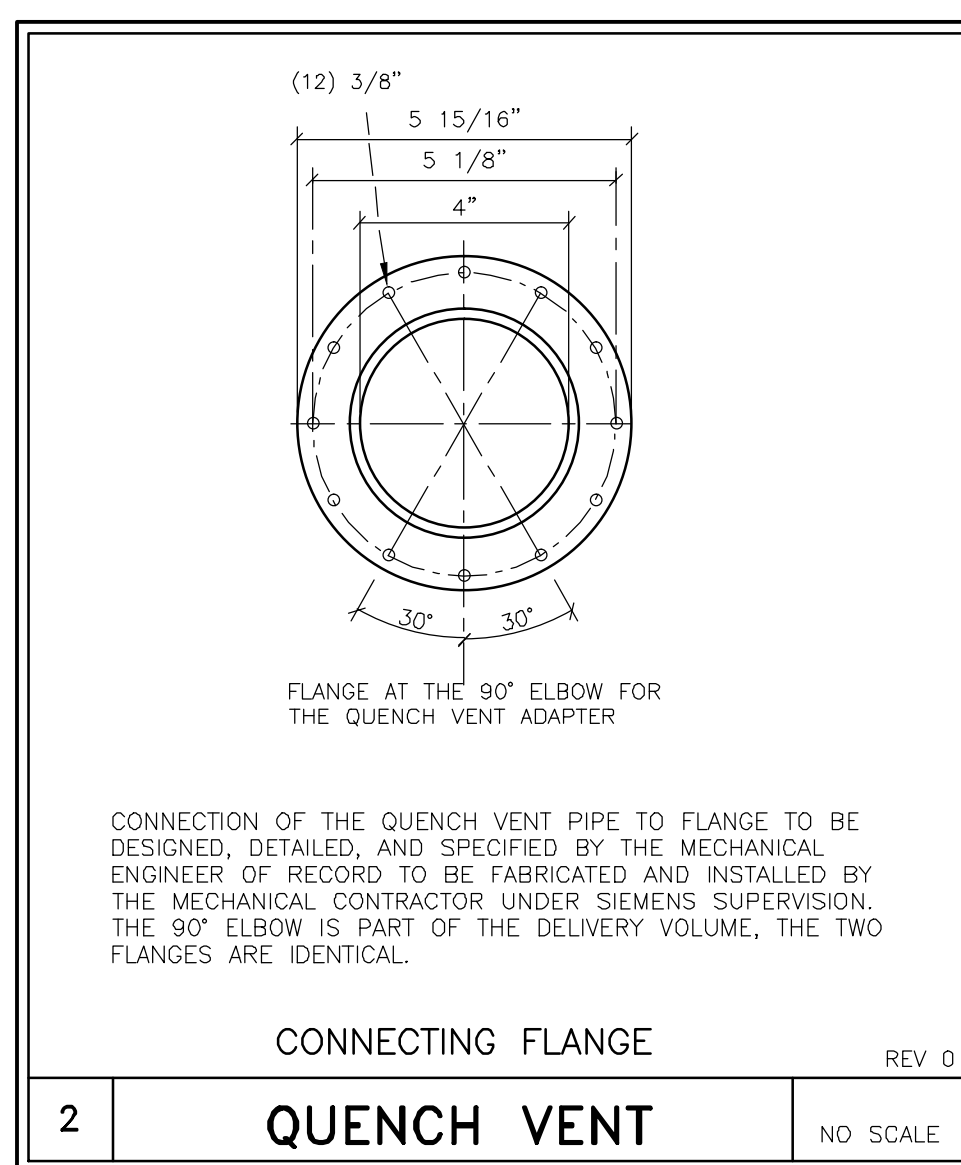
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AERA  
REV 8



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 COLD HEAD RUNNING THE LIQUID FROM 97% TO 0% IN APPROXIMATELY 30 DAYS. THE LOSS DURING SHIPPING IS APPROXIMATELY		HELIUM WILL BOIL OFF 3.3% PER DAY.

- # QUENCH VENT NOTES
- 1) IN THE EVENT OF A QUENCH, THE THERMAL ENERGY DISSIPATED THROUGH THE EXHAUST ASSEMBLY OF A QUENCH VENT BELLOWS, THE SYSTEM MUST BE CAPABLE OF VENTING THE LARGE VOLUME OF GAS GENERATED AT THE APPROXIMATE EXPANSION RATE OF 1:7000 FROM LIQUID AT +27K TO ROOM TEMPERATURE GAS. THE EXHAUST SYSTEM IN THIS DOCUMENT MUST BE ALLOWED, SINCE HELIUM USED IN A QUENCH IS AN ASPHYXANT & AN EXTREMELY COLD GAS, THE QUENCH TUBE MUST ALWAYS END AT A POINT WHERE ACCESS BY PEOPLE IS NOT POSSIBLE. THE QUENCH TUBE MUST BE MAINTAINED BY A QUALIFIED PERSON, IT IS THE OWNER'S RESPONSIBILITY TO ENSURE THAT THE QUENCH TUBE IS PLACED IN AN OPERABLE STATE.
  - 2) 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 BE MAINTAINED IN AN OPERABLE STATE. THE EXHAUST SYSTEM MUST PREPARE AN EMERGENCY PLAN IN THE EVENT OF A QUENCH.
  - 3) 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.
  - 4) THE SIEMENS MAGNET HAS A QUENCH VALVE ASSEMBLY FOR CONNECTION TO THE TUBE LOCATED AT THE TOP LEFT SIDE OF THE BELLOWS (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 A193A4, 309, 316, OR 321 ONLY. THERMAL CONDITIONS MAY CAUSE THE TUBE TO CONTRACT UP TO 3mm/METER SO A STAINLESS STEEL EXPANSION JOINT FLEXIBLE JOINT MUST BE INSTALLED. A MINIMUM OF EVERY 32'-9" 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 NON-ALUMINUM TUBES ARE NOT ALLOWED. THE QUENCH TUBE 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 DEFLECTION. THE QUENCH TUBE MUST BE SUPPORTED BY THE BUILDING AND BE FLEXIBLE ENOUGH TO ALLOW MOVEMENT FROM THERMAL CONTRACTION, THE WALL EXIT SHOULD ALSO BE FLEXIBLE.
  - 5) THE MAXIMUM THERMAL PRESSURE IS CALCULATED AT 1.45 PSI. THE MAXIMUM PRESSURE SHOULD BE ENGINEERED FOR 6.5 PSI.
  - 6) 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 EXPANSION PIPE. THE PRESSURE DROP MUST BE 1.0 PSI PER FOOT. PIPE DIAMETER CAN BE DONE WITH A DIFFUSER, ONLY ROUND TUBE SECTIONS MAY BE USED, RECTANGULAR SECTIONS ARE NOT ALLOWED.
  - 7) THERE MUST BE A 12-19 INCH FLEXIBLE SECTION OF PIPE FOR CONNECTION TO THE QUENCH VALVE AT THE MAGNET WITH AN INSIDE DIAMETER OF 12" OR LARGER (1.51") OR 8" (3.01") AND ABLE TO WITHSTAND 6.5 PSI.
  - 8) SECTIONS OF THE PIPE CAN ONLY BE JOINED BY WELDING OR BOLTED FLANGES WITH FIBER GASKETS. ROTARY FLANGES ARE PERMITTED, WELD CLAMPED FLANGES MAY NOT BE USED.
  - 9) THE PROTECTION AT THE END OF THE TUBE SHALL BE 3/8" WIRE MESH COVERING AN AREA AT LEAST 2.5 TIMES THE CROSS SECTIONAL AREA OF THE QUENCH PIPE.
  - 10) WHERE THE QUENCH TUBE EXISTS THROUGH A FLAT ROOF, THE TUBE 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 45 DEGREE DIAMETER TO OPEN RAIN GUTTERS. THE EXHAUST SHALL LOCATE ABOVE THE LEVEL OF DRIFTING SNOW.
  - 11) WHERE THE QUENCH TUBE EXISTS 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 COVER AND THE QUENCH TUBE SHALL BE 1/2" MIN. THE TOP 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. A DEFLECTOR SHALL BE AT LEAST THE DIAMETER OF THE RAIN GUARD 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 -40°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.
- 12) TO AVOID INJURY FROM COLD BURNS AND ASPHYXATION ACCESS TO THE QUENCH VENT MUST BE RESTRICTED BY 9'-11" ON EACH SIDE AND BELOW, AND 19'-9" ABOVE WITH WARNING SIGNS. THE EXHAUST MUST BE LOCATED AT LEAST 10 FEET FROM ANY COULD BE DRAWN INTO AN AIR INLET OR OPEN WINDOW. A WARNING MUST BE PLACED NEAR THE QUENCH VENT OUTLET.
  - 13) 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 O OR CLASS AP ARMAFLEX. OUTDOOR PIPES MUST BE WEATHERPROOF. THE TUBE MUST HAVE A WARNING POSTED ALONG IT. THE END OF THE TUBE MUST BE PROTECTED FROM RAIN, SNOW, AND FOREIGN OBJECTS. THE INSULATION MUST NOT TOUCH THE MAGNET COILS, TO AVOID RF DISTURBANCES THE INSULATION MUST NOT MAKE ELECTRICAL CONTACT WITH THE WAVEGUIDE.
  - 14) GALVANIC SEPARATION MUST BE PROVIDED BETWEEN THE MAGNET, THE QUENCH VENT, THE RF ROOM, AND THE BUILDING, TWO SEPARATIONS ARE REQUIRED USING STAINLESS STEEL BOLTS, INSULATING BUSHES AND LOCKING NUTS, NO OTHER DESIGNS ARE PERMITTED FOR SAFETY.
  - 15) 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.



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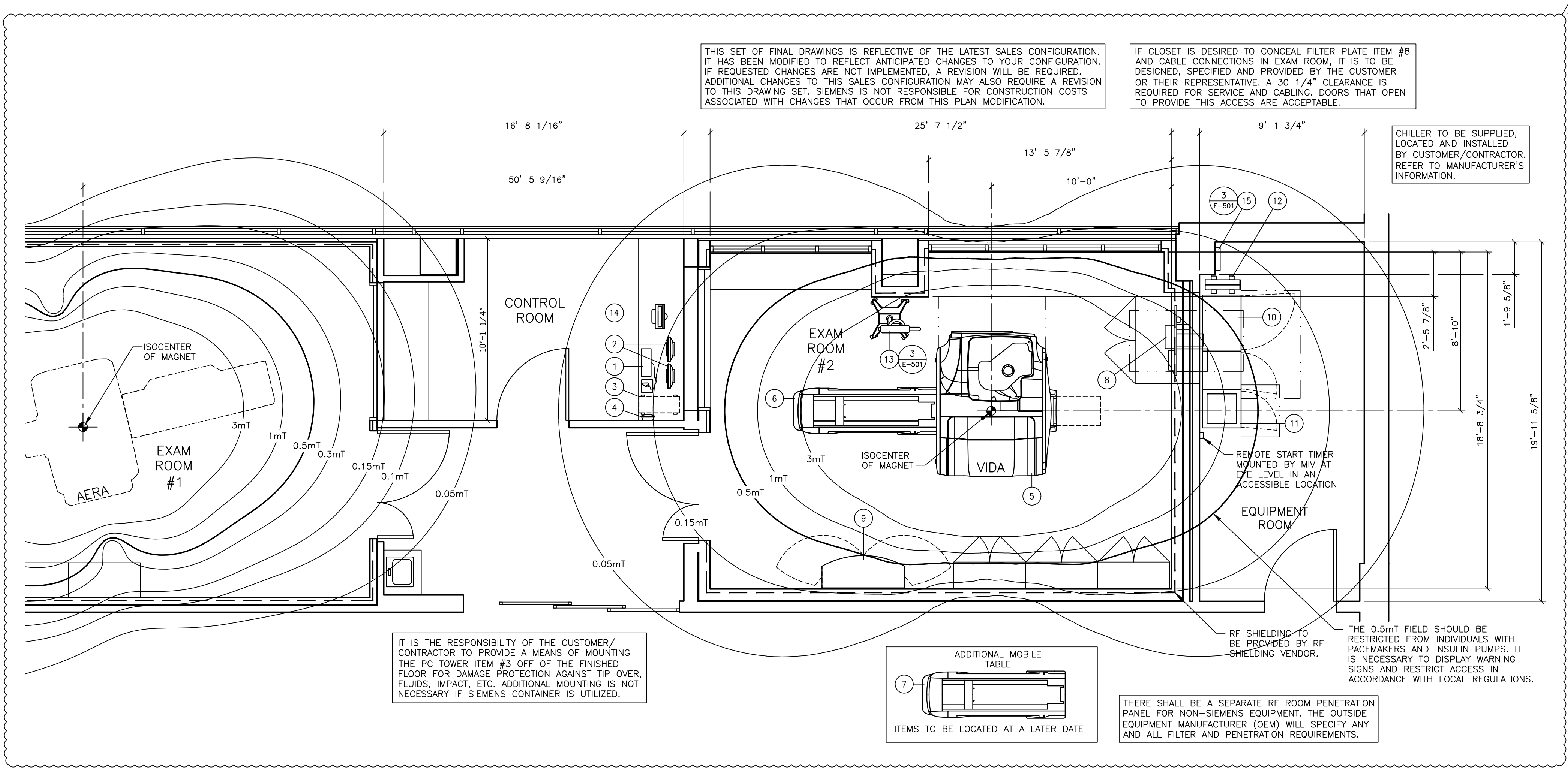
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- ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.  
- THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

		PROJECT MANAGER: MICHAEL POWERS TEL: (770) 330-1781 VMAIL: 330-1781 EXT: 330-1781 FAX: (770) 369-8232 EMAIL: michael.powers@siemens.com		<div>SIEMENS</div>		
		<div>GRADY HEALTH SYSTEM</div> <div>191 PEACHTREE ST., ATLANTA, GA 30303 MRI SUITE - MAGNETOM AERA W/MOBILE TABLE</div>				
<div>△</div>	03/18/15	R101RA VERSION DATED 01/19/15 APPROVED BY CUSTOMERS FOR FINALS		<div>PROJECT #:</div> <div>1500201</div>		<div>SHEET:</div> <div>M-501</div>
SYM	DATE	DESCRIPTION		<div>SHEET</div> <div>10 OF 10</div> <div>DRAWN BY:</div> <div>F. CARUSO</div>		
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ARCHITECTURAL EQUIPMENT PLAN

### 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

### 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

### NOISE LEVELS

SYSTEM ROOM	NOISE LEVEL / dB(A)
CONTROL ROOM	<55
EXAMINATION ROOM	XQ GRADIENTS 87.4 dB(A) - 8 HOUR AVERAGE 102.9 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.

### CASEWORK & ACCESSORY NOTES

1) 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.

2) ALL FURNITURE (CHAIRS, ETC.) FOR THE CONTROL ROOM ARE TO BE PROVIDED BY THE CUSTOMER.

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 MISSILE 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 2

### MAGNET CO-SITING

MINIMUM DISTANCE MAGNET-MAGNET (SIEMENS)					
	0.2T	0.35T	1.0T	1.5T	3.0T
0.2T	32'-9"	32'-9"	16'-5"	19'-9"	32'-9"
0.35T	32'-9"	32'-9"	16'-5"	19'-9"	32'-9"
1.0T	16'-5"	16'-5"	14'-10"	16'-5"	19'-9"
1.5T	19'-9"	19'-9"	16'-5"	16'-5"	19'-9"
3.0T	32'-9"	32'-9"	19'-9"	19'-9"	19'-9"

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

### 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

### CEILING HEIGHTS

MAGNET EXAMINATION ROOM: 7'-11" MINIMUM  
EQUIPMENT ROOM: 7'-3" MINIMUM  
ALL ANCILLARY AREAS: 6'-11" MINIMUM

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.

### 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 CUSTOMER'S COUNTER
2	COLOR MONITOR FOR MRC	⊖	22	239	18 5/16	16 15/16	4 3/4	ON CUSTOMER'S COUNTER
3	HOST PC MRC	⊖	49	2,390	11	27	18 1/8	BELOW COUNTER TOP
4	ALARM BOX	⊖	2	---	9	4	9	WALL MOUNTED
5	VIDA MAGNET IN OPERATION	⊖	16,204	9,383	96 1/2	80 5/8	89	
6	PATIENT TABLE (MOBILE)	⊖	529	---	29 1/2	97 1/4	21-41	
7	ADDITIONAL PATIENT TABLE (MOBILE)	⊖	529	---	29 1/2	97 1/4	21-41	
8	RF-FILTER PLATE (HORIZONTAL)	⊖	287	853	46 1/2	35 1/8	21 5/8	WALL MOUNTED
9	SURFACE COIL CART	⊖	110	---	55 1/8	21 1/8	47 5/8	WEIGHT WITHOUT COILS
10	GPA/EPC ELECTRONICS CABINET (XQ GRADIENTS)	⊖	3,307	<3,412	61 1/2	26	77 1/2	
11	SEP CABINET	⊖	701	<3,412	25 5/8	25 5/8	73 5/8	
12	LIEBERT GXT4 UPS WITH BATTERY	⊖	164	1,121	17	23 5/8	6 3/4	
13	MRXPERION INJECTOR STAND AND HEAD	⊖	94	---	23 3/8	28 3/8	71 7/8	INJECTOR ON STAND
14	MRXPERION iCBC INJECTOR CRU	⊖	17.6	---	15 3/4	10 1/4	13 1/2	ON CUSTOMERS COUNTER
15	MRXPERION iCBC INJECTOR POWER SUPPLY	⊖	6	---	15 3/8	3 3/8	15 1/2	LOCATED IN EXAM ROOM OUTSIDE 5mT FIELD

### 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, TAPE 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

### 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 EXTRANEEOUS FIELDS AND STATIC OR DYNAMIC FERROMAGNETIC OBJECTS.

X & Y AXES	Z AXIS	SOURCE OF INTERFERENCE
4'-4"	4'-4"	FLOOR STEEL REINFORCEMENT<20 LBS./ FT <sup>2</sup>
18'-1"	21'-4"	IRON BEAMS < 67 LBS./FT.
13'-1"	21'-4"	MOVING METAL UP TO 110 LBS.
19'-9"	23'-0"	WATER COOLING UNIT (CHILLER)
21'-4"	26'-3"	MOVING METAL UP TO 440 LBS.
23'-0"	31'-2"	MOVING METAL UP TO 2,000 LBS.
13'-2"	31'-2"	ELEVATORS, TRUCKS UP TO 10,000 LBS.
16'-5"	31'-2"	AC TRANSFORMERS UP TO 650 KVA
5'-0"	5'-0"	AC TRANSFORMERS UP TO 1600 KVA
5'-0"	5'-0"	AC CABLES, MOTORS LESS THAN 100 AMPS
8'-3"	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, COORDINATED DELIVERY PATH CLOSE UP PRIOR TO CALIBRATION	A-102
<input type="checkbox"/> COORDINATE RF ROOM CONSTRUCTION/ROOM FINISH PRIOR TO CALIBRATION	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 DISTRIBUTION COMPLETED PER SYSTEM REQUIREMENTS	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"/> 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

### 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.

### RESOURCE LIST (SMS USE ONLY)

DESIGNATION	PG NUMBER	DATE
PLANNING GUIDE	M11-030.891.01.03.02	11/19
MAGNETIC SHIELDING CALCULATIONS	89727-1357201	05/21
MAGNETIC SHIELDING CALCULATIONS	89727-1357686	05/21

VIDA  
REV 16

ATTENTION:

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SIEMENS

GRADY MEMORIAL HOSPITAL CORPORATION

80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS

PROJECT #:

2003356

SHEET:

A-101

SYM DATE DESCRIPTION

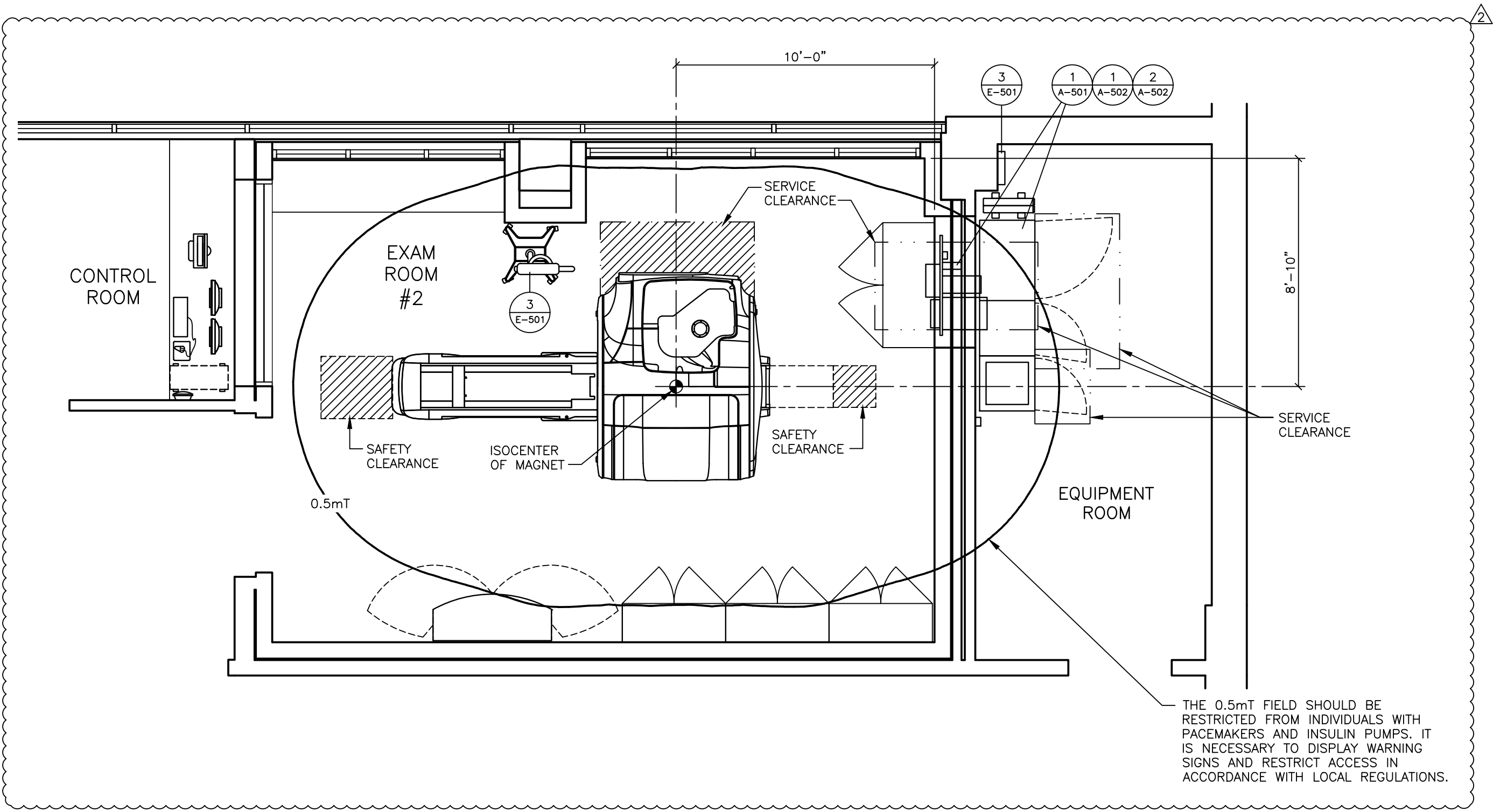
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SCALE: AS NOTED REF. #: 30238438

SHEET 1 OF 10

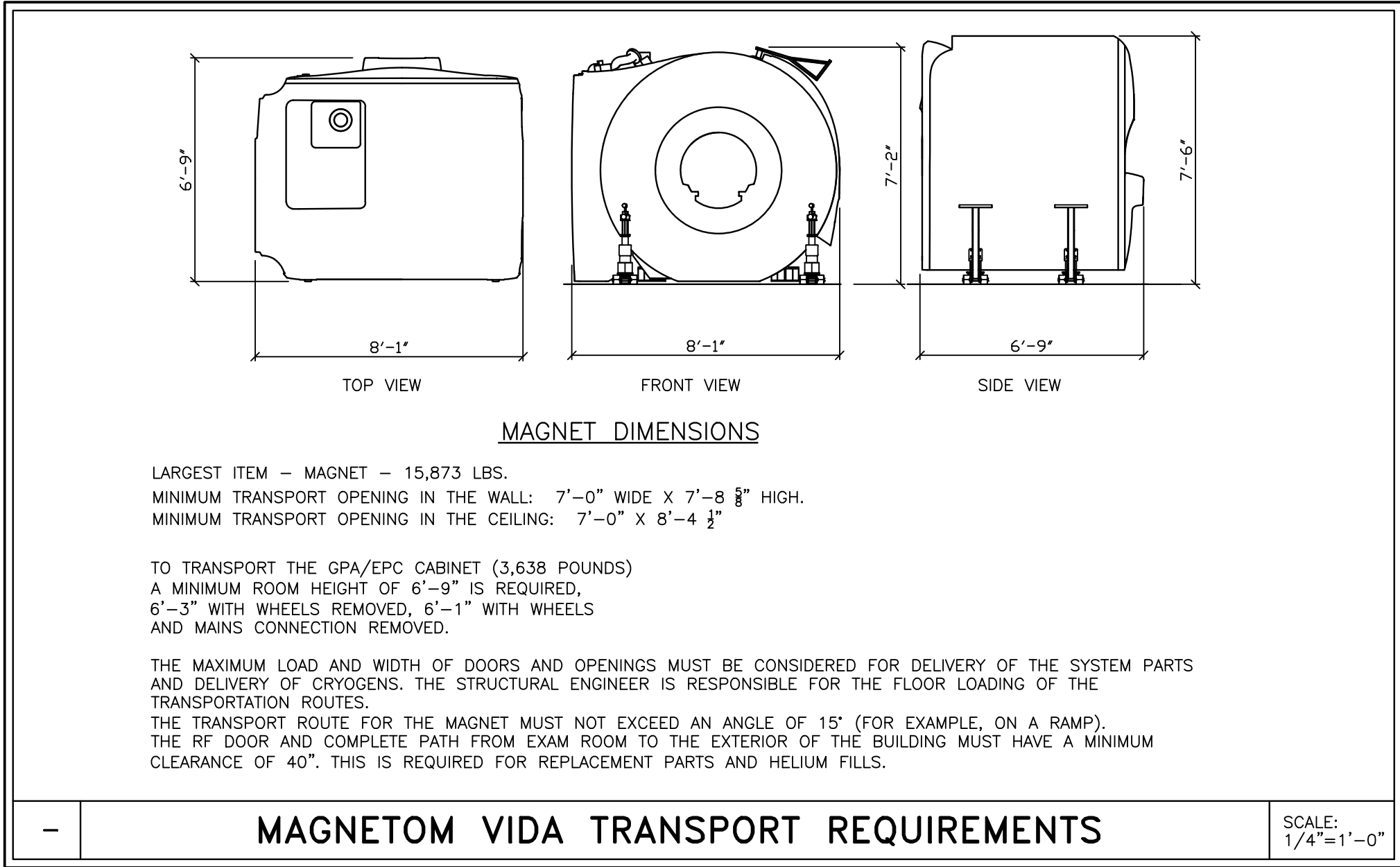
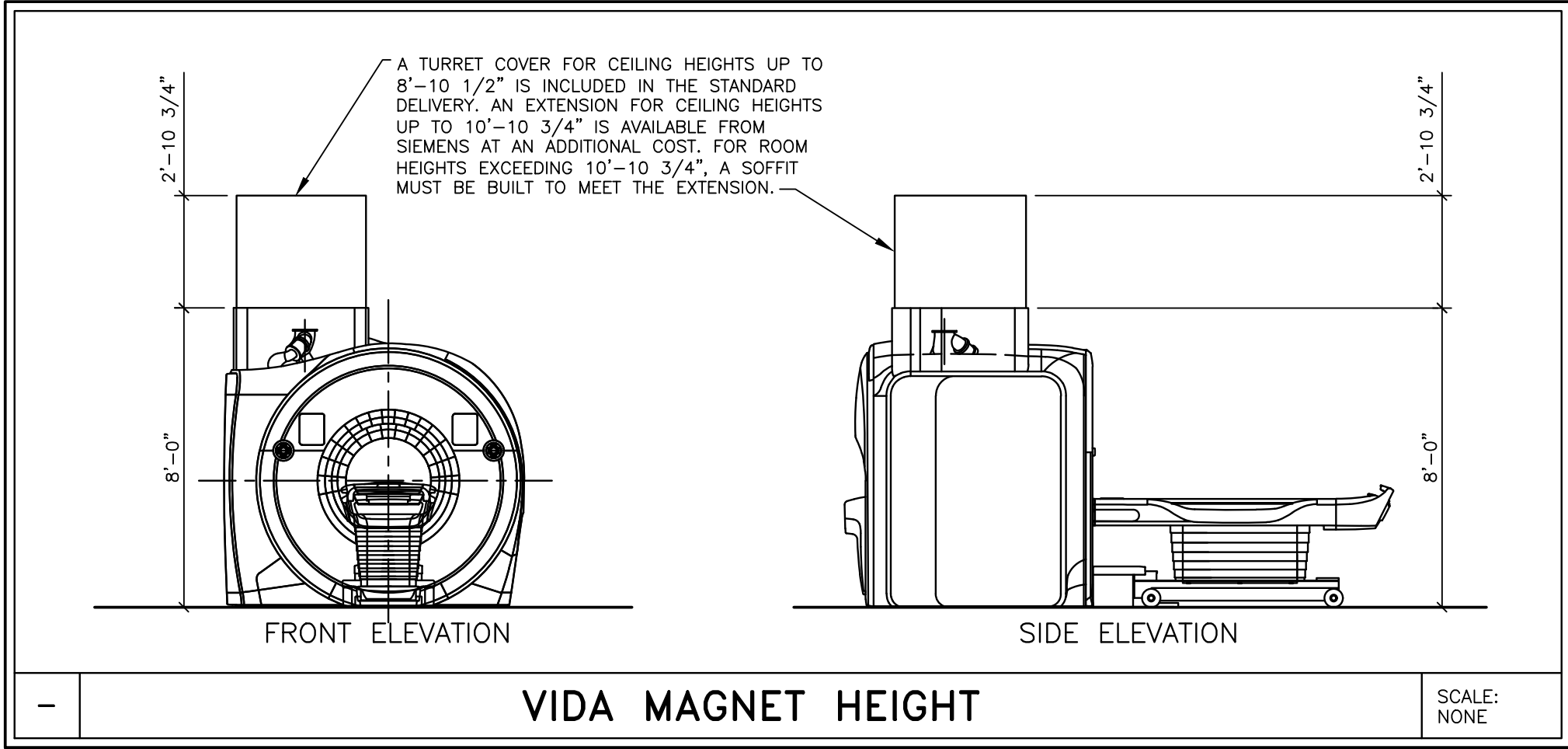
DATE: 06/25/21

DRAWN BY: D. BRISTOE



SAFETY/SERVICE CLEARANCE PLAN

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



ARCHITECTURAL NOTES

- 1) 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 ENCROACH 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.
- 2) 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.
- 3) THE CUSTOMER IS RESPONSIBLE FOR ALL ROOM AND AREA PREPARATION COSTS, PROFESSIONAL FEES, PERMITS, REPORTS, AND INSPECTION FEES.
- 4) 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.
- 5) ALL DIMENSIONS SHOWN ARE FROM FINISHED SURFACES UNLESS SPECIFIED OTHERWISE.
- 6) 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.
- 7) 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 INFUSORS, CRT PLATFORMS, SPRINKLER HEADS, SMOKE DETECTORS, ELECTRICAL OUTLETS, HVAC GRILLES, SPEAKERS, AND GENERAL ROOM LIGHTING, ETC.).
- 8) 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.
- 9) 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

SURFACE COIL STORAGE

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.

COIL NAME	POUND WEIGHT	INCHES			
		LENGTH	WIDTH	HEIGHT	DIAMETER
MATRIX COILS					
BIOMATRIX HEAD/NECK 20	13	16 3/4	14 5/8	15 1/8	—
BIOMATRIX SPINE 32	24	47 1/4	19 1/4	2 1/2	—
BODY 18	26	15 1/4	19 1/8	23 1/4	—
FLEX LARGE 4	2	20 1/4	8 7/8	—	—
FLEX SMALL 4	1	14 1/2	6 7/8	—	—

COMBINATION OF ALL COILS IS POSSIBLE.

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— 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.

△	06/25/21	COMPLETE NEW SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/
△	06/25/21	MODIFIED MAGNET GAUSS FIELDS TO REFLECT LATEST SHLD CALCS./
△	06/25/21	ALL LAYOUTS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY
△	05/11/21	NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET
△	06/25/21	2003356RRA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS
SYM	DATE	DESCRIPTION
—ISSUE BLOCK—		

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365 EXT:  
VMAIL:  
FAX:  
EMAIL: patrick.ruiz@siemens-healthineers.com

GRADY MEMORIAL HOSPITAL CORPORATION

80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 — MAGNETOM VIDA XQ GRADIENTS

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

ALL RIGHTS ARE RESERVED.

SCALE: AS NOTED REF. #: 30238438

PROJECT #:  
**2003356**

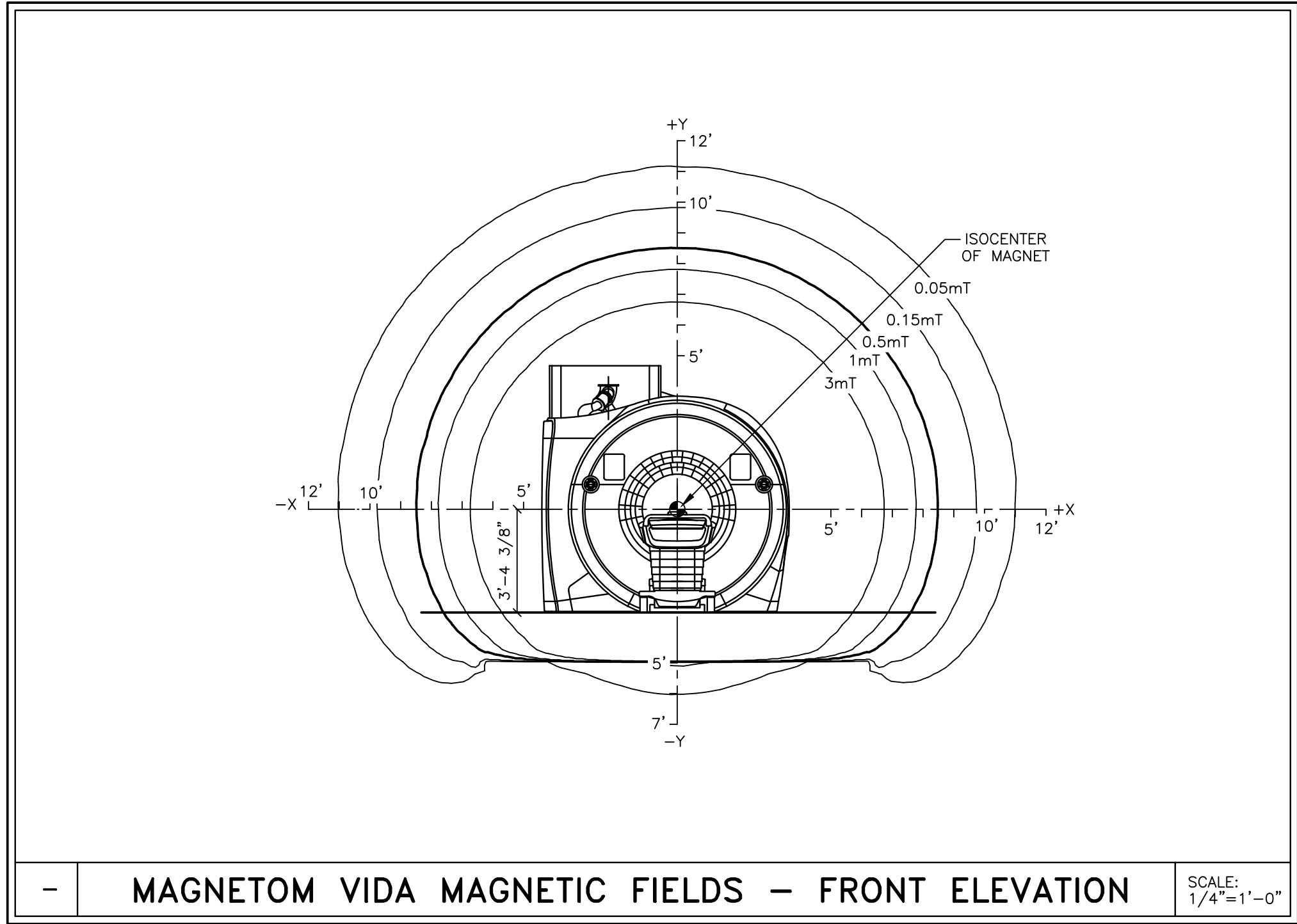
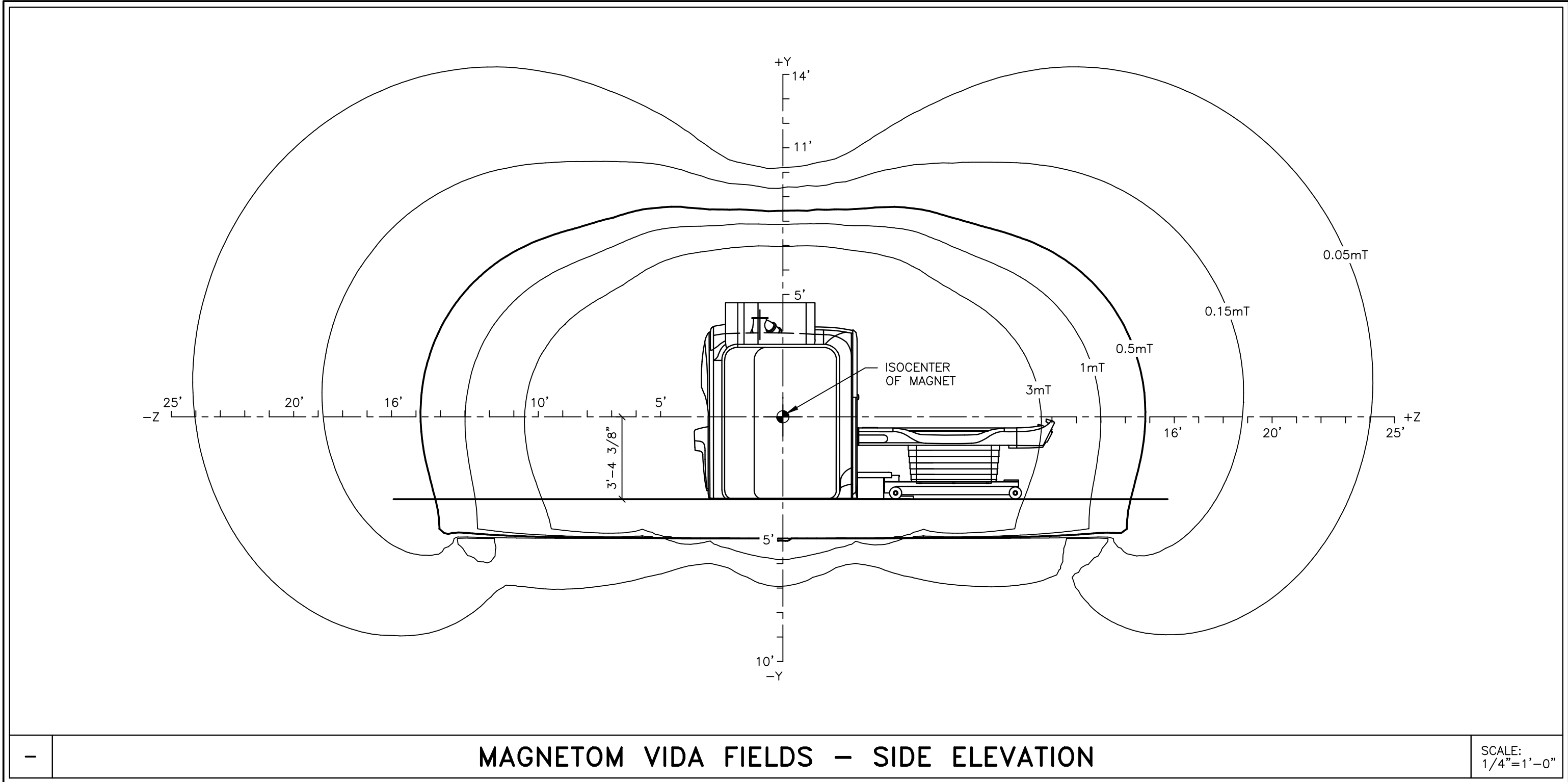
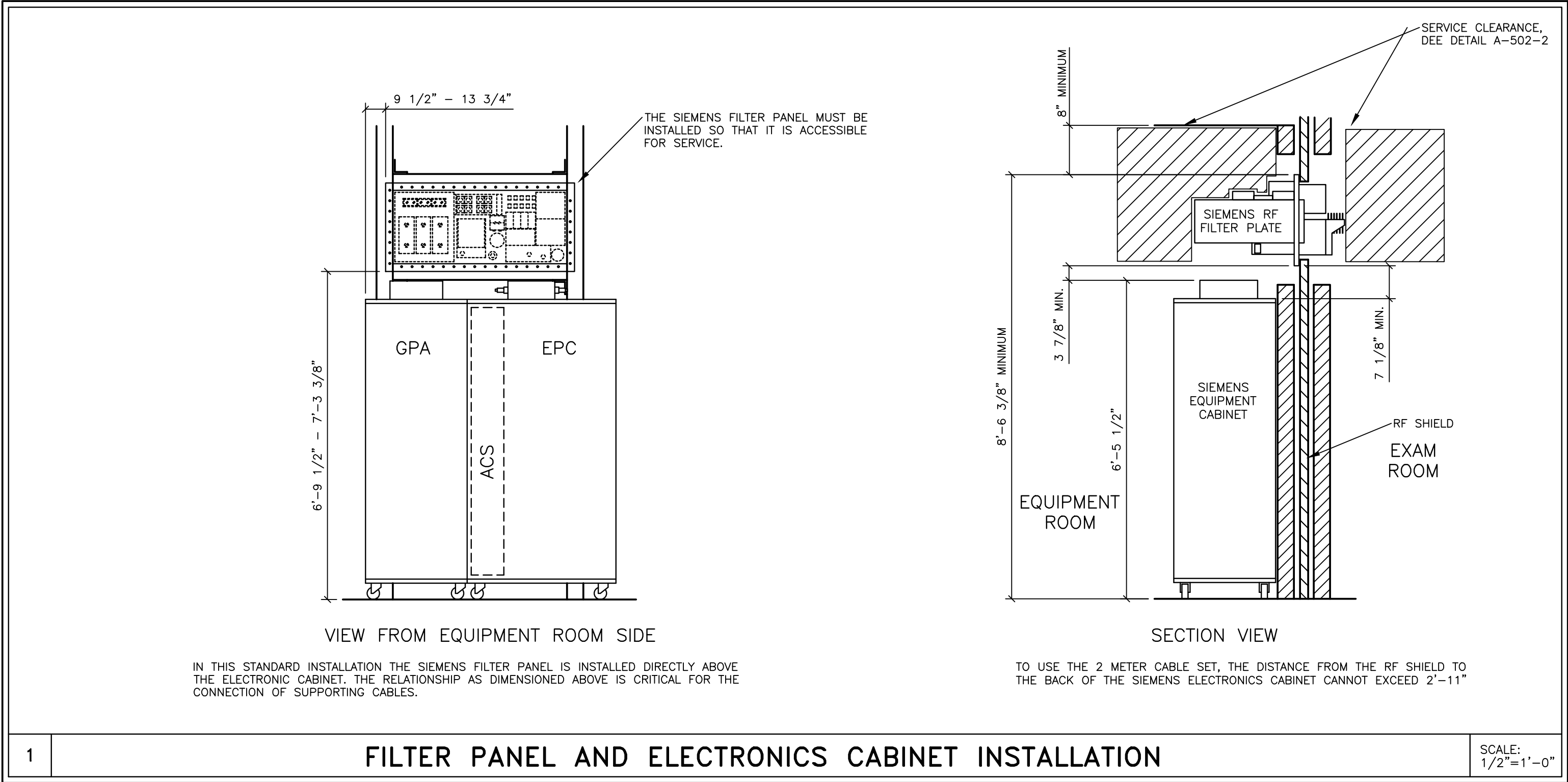
SHEET 2 OF 10 DRAWN BY: D. BRISTOE

DATE: 06/25/21

VIDA  
REV. 16

SIEMENS

A-102



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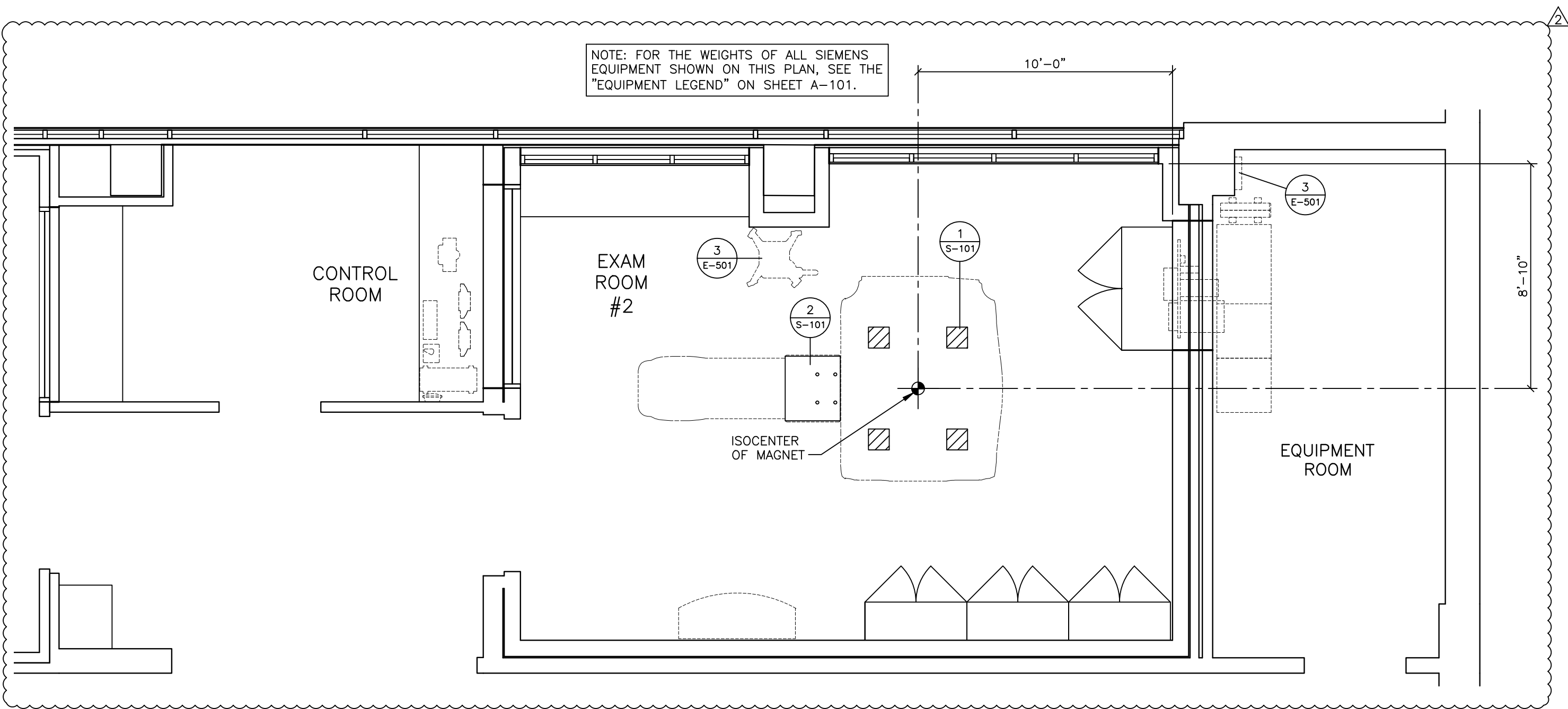
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			PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365 VMAIL: FAX: EMAIL: patrick.ruiz@siemens-healthineers.com		<b>SIEMENS</b>	
△	06/25/21	COMPLETE NEW-SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/				
△	06/25/21	MODIFIED MAGNET GAUSS FIELDS TO REFLECT LATEST SHLD CALCS./	<b>GRADY MEMORIAL HOSPITAL CORPORATION</b>			
△	06/25/21	ALL LAYOUTS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY	80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303 MRI ROOM #2 – MAGNETOM VIDA XQ GRADIENTS			
△	05/11/21	NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIELD MAGNET	THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.		PROJECT #: <b>2003356</b>	
△	06/25/21	2003356RRA DATED 09/10/20 APPROVED BY DESCRIPTION FOR FINALS	ALL RIGHTS ARE RESERVED.		SHEET: <b>A-501</b>	
SYM	DATE	DESCRIPTION	SCALE: AS NOTED		SHEET OF 3 10	
—ISSUE BLOCK—			REF. #: 30238438		DRAWN BY: D. BRISTOE	
			DATE: 06/25/21			

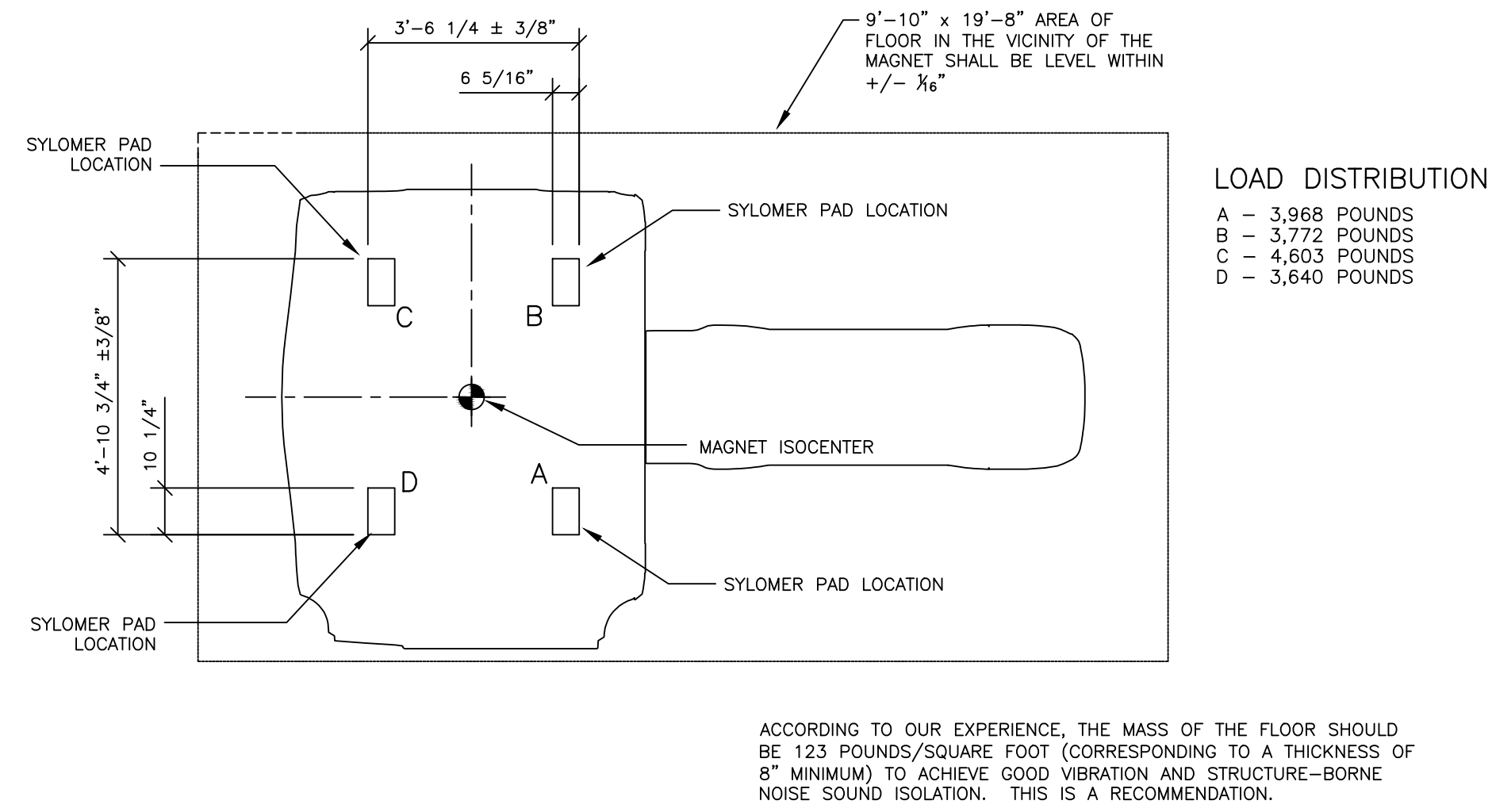






STRUCTURAL FLOOR PLAN

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



VIBRATION OF THE SITE HAS THE ABILITY TO AFFECT THE STABILITY AND HOMOGENEITY OF THE MAGNETIC FIELD. THEREFORE EXTERNAL VIBRATIONS OR SHOCKS AFFECTING THE MAGNET MAY DEGRADE IMAGE QUALITY. IN THE THREE SPATIAL ORIENTATIONS THE BUILDING MUST NOT EXCEED ACCELERATION OF 0.001 m/s<sup>2</sup> OR -80 dB(G) G=9.81 m/s<sup>2</sup>

THE REQUIREMENT FOR  $a_{max}$  IS MEASURED AS MAXIMUM RMS VALUE PER FREQUENCY COMPONENT <0.5Hz IN THE FOURIER TRANSFORMATION OF THE RECORDED SIGNAL (SPECTRUM).

THE VIBRATION LEVEL OF CONTINUOUS VIBRATIONS (CAUSED BY AIR CONDITIONER, COMPRESSOR, ETC.) AT THE LOCATION OF THE MAGNET MUST NOT EXCEED THE SPECIFIED VALUES. FOR ALL NON-CONTINUOUS TRANSIENT VIBRATIONS THE FIGURES SHOULD BE MULTIPLIED BY 4 (OR 12 dB).

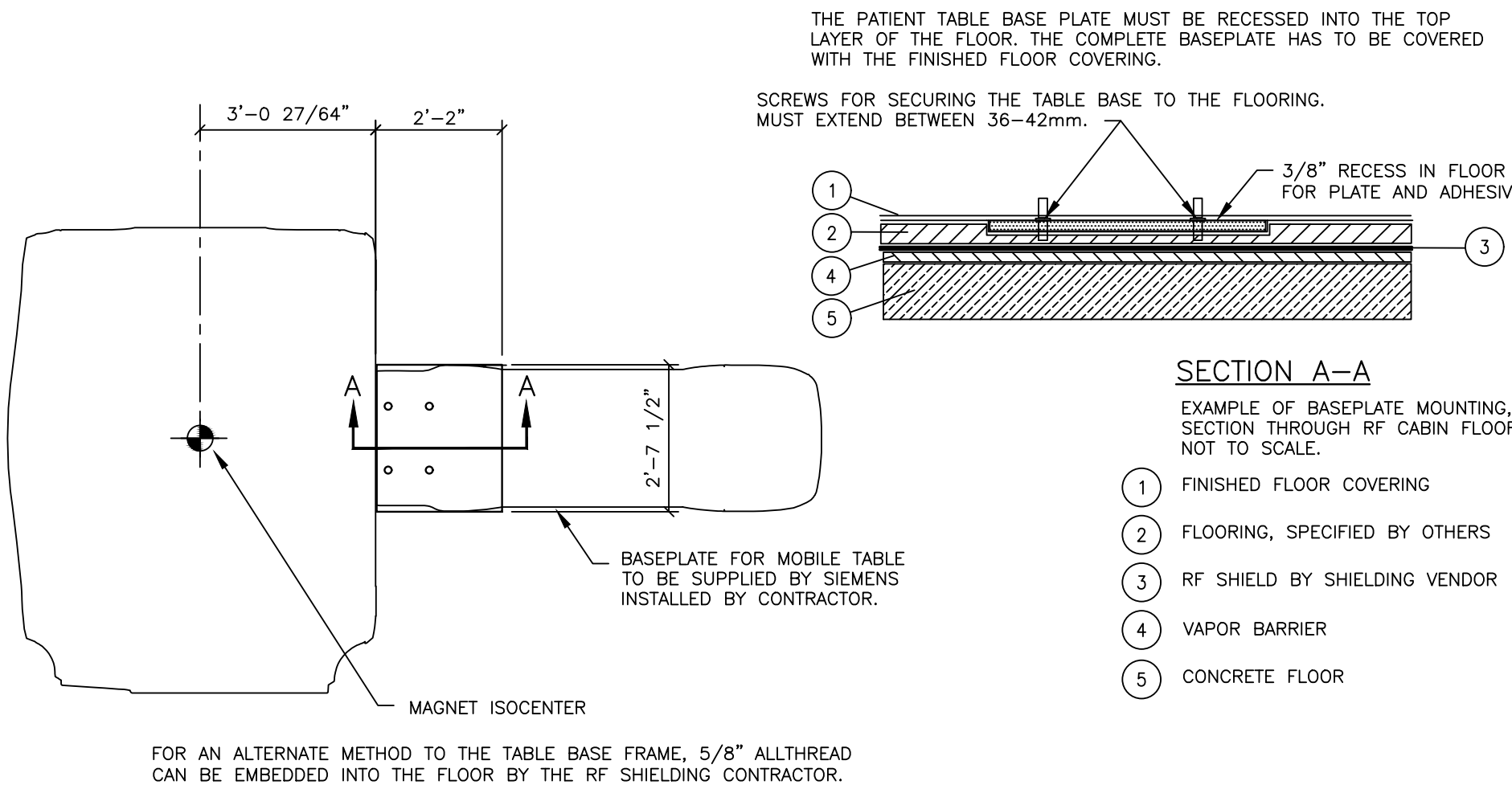
CONTACT SIEMENS PROJECT MANAGER FOR MORE DETAILS.

ANTI STATIC FLOOR COVERING IS NECESSARY TO REDUCE THE RISK OF STATIC ELECTRIC DISCHARGES THAT MAY DAMAGE SENSITIVE EQUIPMENT AND COMPONENTS.

1

MAGNETOM VIDA BASE DETAIL

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



2

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 FLUSH MOUNTED WITH THE FINISHED CEILING TO PROVIDE FREE AND UNRESTRICTED TRAVEL OF THE SMS CEILING MOUNTED EQUIPMENT.
- 7) THE BOTTOM SIDE OF THE UNISTRUT CEILING GRID AND ANY CEILING MOUNTED SUPPORT PLATES ARE TO BE INSTALLED FLUSH WITH THE FINISHED CEILING. THE CUSTOMER/CONTRACTOR SHALL ALSO PROVIDE COVERSTRIPS FOR THE UNISTRUT.
- 8) 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.
- 9) 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.

FLOOR LOADING TABLE

	POUNDS
MAGNET AND PATIENT TABLE	16,513
MAGNET ONLY FLOOR LOADING	16,204
LOAD DISTRIBUTION PER SHIM PLATE	SEE DETAIL 1
PATIENT	550

CEILING HEIGHTS

MAGNET EXAMINATION ROOM: 7'-11" MINIMUM  
EQUIPMENT ROOM: 7'-3" MINIMUM  
ALL ANCILLARY AREAS: 6'-11" MINIMUM

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SYM	DATE	DESCRIPTION
-ISSUE BLOCK-		

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365 EXT:  
VMAIL:  
FAX:  
EMAIL: patrick.ruiz@siemens-healthineers.com

**SIEMENS**  
**GRADY MEMORIAL HOSPITAL CORPORATION**  
80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS

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SCALE: AS NOTED REF. #: 30238438

PROJECT #:  
**2003356**  
SHEET OF 10  
DRAWN BY: D. BRISTOE  
DATE: 06/25/21

SHEET:  
**S-101**

ATTENTION:

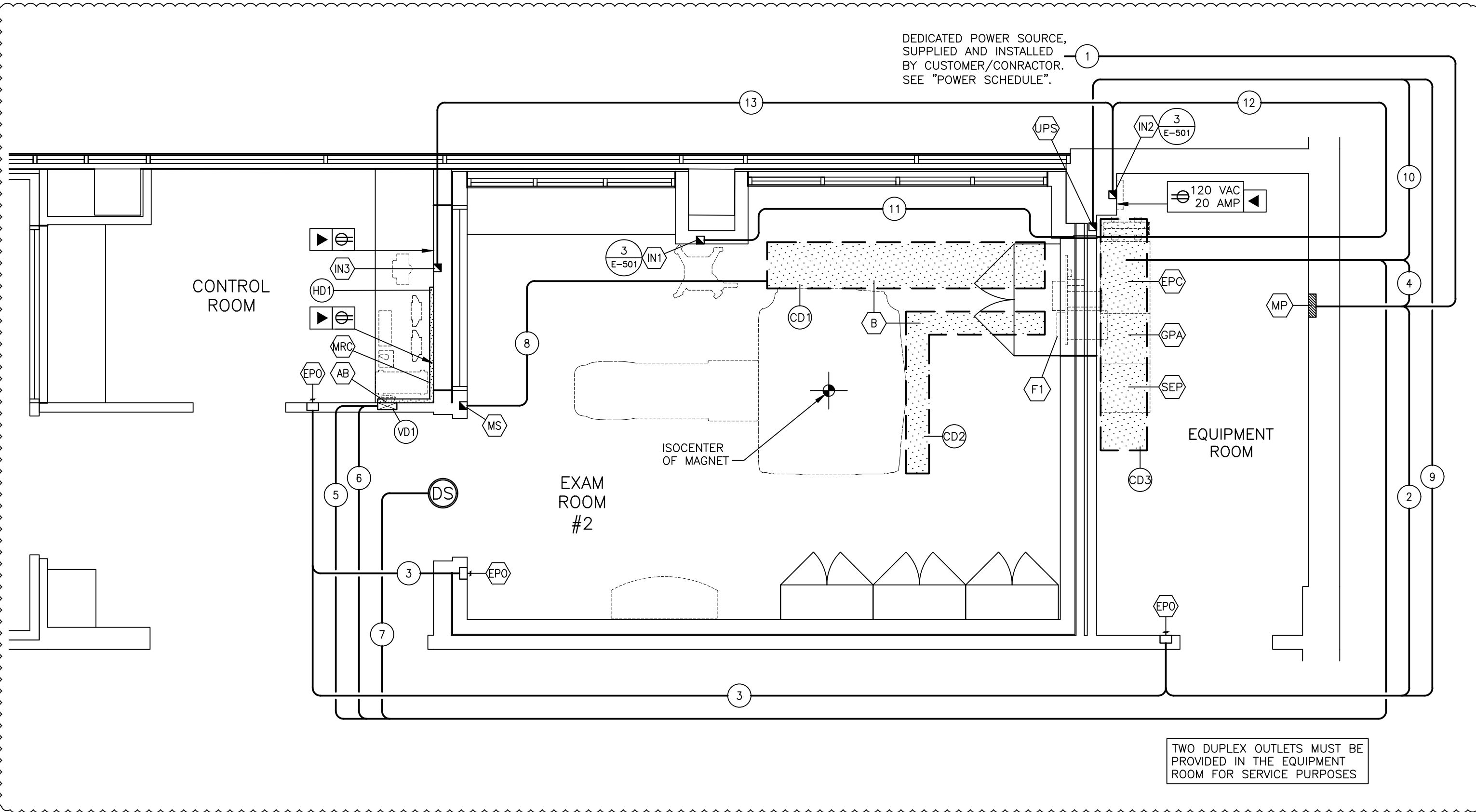
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- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.

- 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.

VIDA  
REV 16





ELECTRICAL RACEWAY PLAN

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

SYMBOLS	
ALL MAY NOT APPLY	
	CAUTION OR WARNING
	CRITICAL NOTE(S)
	PANEL OR ENCLOSURE BY CUSTOMER/CONTRACTOR
	OPENING IN RACEWAY OR TRENCHDUCT
	PULLBOX IN (FLOOR/WALL/CEILING)
	OPENING IN ACCESS FLOORING
	RF DOOR SWITCH - MCMASTER-CARR SUPPLY ROLLER LIMIT SWITCH 7076k14 PROVIDED BY CONTRACTOR, AND MOUNTED AT TOP OF DOOR. COORDINATE WITH SIEMENS PROJECT MANAGER.
	(EPO) EMERGENCY POWER OFF BUTTON
	CEILING DUCT
	SURFACE MOUNTED DUCT
	VERTICAL DUCT
	ETHERNET CONNECTION TO CUSTOMER'S INFORMATION SYSTEMS NETWORK IN AN ACCESSIBLE LOCATION (VERIFY WITH SIEMENS PROJECT MANAGER).
	110 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET LOCATED NEAR THE ETHERNET CONNECTION.

REV 2

ELECTRICAL LEGEND

SYM	SIZE	DESCRIPTION	REMARKS
	3"ø	OPENING IN FACE OF VERTICAL DUCT 5'-0" ABOVE FINISHED FLOOR IN LOCATION TO BE COORDINATED WITH THE ARCHITECT.	ALARM BOX
	AS REQUIRED	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	ELECTRONICS CABINETS
	AS REQUIRED	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	MAGNET CABLE ACCESS
	-----	EMERGENCY POWER OFF BUTTONS, MOUNTED WITH CENTERLINE AT 5'-0" ABOVE FINISHED FLOOR. ALL PARTS ARE TO BE NONFERROUS INSIDE THE RF ROOM. EXACT LOCATIONS ARE TO BE VERIFIED WITH THE ARCHITECT OF RECORD.	SEE POWER SCHEDULE, SHEET E-102
	-----	SIEMENS RF FILTER PANEL TO BE MOUNTED ON RF SHIELDED WALL	FILTER PANEL
	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 POWER SUPPLY-- MUST BE LOCATED OUTSIDE OF 5m FIELD
	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN EQUIPMENT ROOM, MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	INJECTOR POWER SUPPLY
	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
	-----	MAIN PANEL WITH MAIN BREAKER. EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR	SEE POWER SCHEDULE
	4" x 4"	OPENING IN FACE OF RACEWAY IN SHOWN LOCATION.	HOST COMPUTER
	AS REQUIRED	NON-FERROUS SINGLE GANG BOX MOUNTED FLUSH WITH FINISHED WALL MOUNTED 6'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	MAGNET STOP
	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL AT FLOOR LINE IN SHOWN LOCATION PROVIDED WITH 2"ø OPENING IN FINISHED COVER.	LIEBERT GTX4 UPS
	24"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER, IN THE EXAM ROOM, MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE FILTER PANEL AND THE MAGNET. A 15" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE RF FILTER PANEL (F1). WHEN ROUTING ALL RACEWAYS REFER TO DETAIL E-501/2 TAKING CARE SO THAT MAXIMUM CABLE LENGTHS ARE NOT EXCEEDED. A 12" SEPARATION BETWEEN CD1 AND CD2 MUST BE MAINTAINED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/2
	12"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER, IN THE EXAM ROOM, MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE FILTER PANEL AND THE MAGNET. A 15" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE RF FILTER PANEL (F1). WHEN ROUTING ALL RACEWAYS REFER TO DETAIL E-501/2 TAKING CARE SO THAT MAXIMUM CABLE LENGTHS ARE NOT EXCEEDED. A 12" SEPARATION BETWEEN CD2 AND CD1 MUST BE MAINTAINED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/2
	24"x4"	LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EQUIPMENT ROOM MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE EQUIPMENT ROOM AND THE RF FILTER PANEL (F1). AN 18" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE FILTER PANEL.	CABLE TRAY SEE DETAIL E-501/2
	4" x 2"	HORIZONTAL DUCT SURFACE MOUNTED ON WALL IN CONTROL AREA AT FLOOR LINE AS SHOWN, FINISHED TO MATCH WALLS.	
	10" x 3-1/2"	VERTICAL DUCT MOUNTED FLUSH WITH FINISHED WALL IN CONTROL AREA FROM ABOVE FINISHED CEILING TO FLOOR LINE PROVIDED WITH REMOVABLE FINISHED COVERS.	
	AS PER NEC	CONDUIT FROM FACILITY POWER TO MAIN PANEL "MP"	SEE POWER SCHEDULE, SHEET E-102
	AS PER NEC	CONDUIT FROM "MP" TO "EPO"	SEE POWER SCHEDULE, SHEET E-102
	AS PER NEC	CONDUIT FROM "EPO" TO "EPO" TO BE NON-FERROUS WHEN INSIDE THE RF ROOM. CUSTOMER/CONTRACTOR IS TO PROVIDE RF FILTERS FOR ALL NON-SIEMENS WIRING.	SEE POWER SCHEDULE, SHEET E-102
	(1) 2"ø	CONDUIT FROM "MP" TO END AT "CD3" (EPC) VIA FLEX CONDUIT. THERE MUST BE A DIELECTRIC SEPARATION BETWEEN THE CONDUIT AND THE CONNECTION AT THE SIEMENS EPC CABINET.	SEE POWER SCHEDULE, SHEET E-102
	(2) 2 1/2"ø	CONDUIT FROM "VD1" (MRC) TO "CD3" (EPC)	NOT TO EXCEED 60 FT.
	(1) 1 1/2"ø	CONDUIT FROM "VD1" (AB) TO "CD3" (EPC)	NOT TO EXCEED 60 FT.
	(1) 1/2"ø	CONDUIT FROM "DS" TO "CD3" (EPC)	NOT TO EXCEED 60 FT.
	(1) 3/4"ø	CONDUIT FROM "MS" TO "CD1" (WIRES TO MAGNET) TO BE NON-FERROUS WHEN INSIDE THE RF ROOM.	NOT TO EXCEED 20 FT.
	(1) 3/4"ø	CONDUIT FROM "EPO" TO "UPS"	
	(1) 2"ø	CONDUIT FROM "UPS" TO "CD3" (EPC)	MAXIMUM LENGTH 29 FEET
	(1) 2"ø	NON-FERROUS CONDUIT FROM "IN1" TO RF PENETRATION/FILTER PANEL (LOCATED NEAR "F1"). CABLES RUN FROM INJECTOR AT "IN1" THRU RF PENETRATION/FILTER PANEL TO INJECTOR POWER SUPPLY AT "IN2". REFER TO MANUFACTURERS SPECIFICATIONS FOR ACTUAL ELECTRICAL REQUIREMENTS.	NOT TO EXCEED 30 FEET IN EXAM ROOM
	(1) 2"ø	CONDUIT FROM RF PENETRATION/FILTER PANEL (LOCATED NEAR "F1") TO "IN2". CABLES RUN FROM INJECTOR AT "IN1" THRU RF PENETRATION/FILTER PANEL TO INJECTOR POWER SUPPLY AT "IN2". REFER TO MANUFACTURERS SPECIFICATIONS FOR ACTUAL ELECTRICAL REQUIREMENT	NOT TO EXCEED 10 FEET OUTSIDE EXAM ROOM
	(1) 2"ø	CONDUIT FROM "IN2" TO "IN3" FOR INJECTOR CABLES.	NOT TO EXCEED 150 FEET

CONTRACTOR SUPPLIED CABLES

FROM	VIA	TO	DESCRIPTION	REMARKS
SOURCE	1	MP	(3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.	
MP	2	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
EPO	3	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
MP	4	EPC	(3) 2/0 AND (1) 2/0 EQUIPMENT GROUND. TO REDUCE EMI (INTERFERENCE) THE POWER CABLES MUST BE SHIELDED. THIS CAN BE ACHIEVED BY USING EMT, WHICH IS CONSIDERED A SHIELDING DEVICE. IF CABLES ARE RUN IN FREE AIR SHIELDED CONDUCTORS MUST BE USED.	LANDED BY ELECTRICAL CONTRACTOR
EPO	9	UPS	DETERMINED BY ELECTRICAL CONTRACTOR.	6 FOOT TAILS

ELECTRICAL NOTES

- 1) COMPLIANCE: ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA-70), O.S.H.A. REGULATIONS, AS WELL AS APPLICABLE REGULATIONS OF CITY, COUNTY, STATE AND FEDERAL AGENCIES. PROVIDE MATERIALS AND EQUIPMENT THAT COMPLY TO ANSI, IEEE AND NEMA STANDARDS AND ARE U.L. LISTED AND LABELED. THE CUSTOMER'S/CONTRACTOR'S WORK AND ALL EQUIPMENT INSTALLED SHALL COMPLY WITH THE CURRENT EDITION OF NATIONAL ELECTRICAL CODE ADOPTED/ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
- 2) QUALITY ASSURANCE: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT INTO THE EXISTING STRUCTURE AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST OR BE DISCOVERED THAT PREVENT THE INSTALLATION OF WORK AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO FABRICATION OF EQUIPMENT, OR THE PERFORMANCE OF ANY WORK THAT MAY BE AFFECTED. DO NOT ALTER DRAWINGS, DIMENSIONS, OR SPECIFICATIONS IN ANY WAY WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SIEMENS PROJECT MANAGER. ALL DIMENSIONS ARE FROM FINISHED SURFACES. CONDUIT AND PULL BOXES TO BE INSTALLED BY THE CUSTOMER/CONTRACTOR WITH LOCATIONS BEING FIELD VERIFIED BY SIEMENS PROJECT MANAGER.
- 3) POWER SUPPLY SOURCE: POWER SUPPLIES FOR SIEMENS HEALTHCARE EQUIPMENT SHALL BE FROM A MEDICAL IMAGING PANEL OR BUILDING SPECIFIC EQUIPMENT THAT IS A GROUNDED 3 OR 4-WIRE "WYE" SOURCE PER THE SPECIFIC EQUIPMENT OPERATION REQUIREMENTS. A DEDICATED CIRCUIT SHALL BE PROVIDED THAT IS KEPT ENTIRELY FREE AND INDEPENDENT OF ALL OTHER BUILDING WIRING, NO ELEVATORS, GENERATORS, PUMPS, HVAC OR SIMILAR EQUIPMENT SHALL BE CONNECTED TO THE SAME CIRCUIT OR MEDICAL IMAGING PANEL THAT SERVES THE SIEMENS HEALTHCARE EQUIPMENT. IF THE POWER SUPPLY SOURCE DOES NOT MEET THE SPECIFIC SIEMENS EQUIPMENT POWER REQUIREMENTS, THE CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT REQUIRED TO ESTABLISH THE POWER SUPPLY IN ACCORDANCE WITH THE REQUIRED POWER SUPPLY PARAMETERS OF THE SIEMENS EQUIPMENT. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CUSTOMER AND/OR UTILITY COMPANY FIELD REPRESENTATIVE.
- 4) WORK FURNISHED BY CUSTOMER/CONTRACTOR: WORK NOT PROVIDED BY SIEMENS HEALTHCARE BUT SHOWN ON DRAWINGS TO BE FURNISHED AND MAINTAINED BY CUSTOMER/CONTRACTOR INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING, UNLESS NOTED OTHERWISE: ELECTRICAL RACEWAYS AND DUCTS, WIRING TROUGHS, PULL BOXES, CONDUITS, CIRCUIT BREAKERS, ACCESS PANELS, EMERGENCY OFF BUTTONS, DOOR SWITCHES, WARNING LIGHTS, WIRING DEVICES, CONNECTORS, LIGHTING EQUIPMENT AND GROUNDING.
- 5) RACEWAY AND CONDUIT NOTES: ALL ITEMS IN THE MAGNET ROOM SHALL BE NON-FERROUS. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT ENFORCED EDITION OF THE NATIONAL ELECTRICAL CODE. CONDUIT BODIES SHALL NOT BE USED WHERE A CONDUIT ENTERS A BOX, FITTING, OR OTHER ENCLOSURE. AN INSULATED THROAT CONNECTOR SHALL BE PROVIDED TO PROTECT THE WIRE FROM ABRASION. ALL CONNECTORS FOR EMT SHALL BE COMPRESSION OR DOUBLE SET SCREW TYPE.  
KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES OR STEAM AND HOT WATER PIPES. INSTALL RACEWAY RUNS ABOVE WATER AND STEAM PIPES PROVIDED THAT CABLE RUN DISTANCES ARE MAINTAINED. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY.  
CONDUIT RUNS ARE SHOWN SCHEMATICALLY. INSTALL CONDUIT WITH A MINIMUM OF BENDS IN THE SHORTEST PRACTICAL DISTANCE CONSIDERING THE BUILDING CONSTRUCTION AND OBSTRUCTIONS, EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL MAKE CERTAIN THAT ANY CONDUIT/RACEWAY RUNS CONTAINING SIEMENS HEALTHCARE CABLES DO NOT EXCEED THE SPECIFIED MAXIMUM DISTANCES AS SHOWN ON THE ELECTRICAL DETAILS. LISTED CONDUIT SIZES FOR SIEMENS-SUPPLIED CABLES MUST BE MAINTAINED IN ORDER TO ENABLE THE TOTAL CABLE BUNDLE INCLUDING CONNECTORS TO BE PULLED THROUGH WITHOUT DAMAGE.  
PROVIDE ENCLOSED METAL WIRE DUCT RACEWAY SYSTEM WHERE SHOWN ON DRAWINGS WITH DIVIDERS TO SEPARATE THE DUCT INTO TWO OR THREE SEPARATE COMPARTMENTS AS SHOWN ON THE SIEMENS PLANS (FOR POWER AND SIEMENS HEALTHCARE CABLES). DIVIDERS AND CROSSOVER PIECES TO BE PROVIDED AS NECESSARY. THE CABLE TO CABLE AS WELL AS THE CIRCUIT TO CIRCUIT SEPARATION REQUIREMENT WAS EVALUATED DURING THE UL SYSTEM CERTIFICATION OF THE EQUIPMENT. ADDITIONAL SEPARATION OF THE SYSTEM CABLE ASSEMBLIES INTO SEPARATE OR PARTITIONED RACEWAYS, UNLESS OTHERWISE NOTED, IS NOT NECESSARY TO INSURE SEPARATION OF CIRCUITS.  
PROVIDE WIRE DUCT/RACEWAY WITH ACCESSIBLE REMOVABLE COVERS. LOCATIONS OF BUILDING MATERIAL OPENINGS (I.E. ACCESS PANELS) TO BE CUT IN FIELD ARE TO BE COORDINATED WITH THE DRAWING REQUIREMENTS AND BUILDING STRUCTURE. THOSE THAT ARE NOT INDICATED OR INTERFERE WITH BUILDING ELEMENTS SHALL BE COORDINATED WITH SIEMENS PROJECT MANAGER. ELECTRICAL PULL BOXES AND RACEWAY COVERS SHALL BE INSTALLED IN A MANNER TO ALLOW ACCESSIBILITY FOR INSTALLATION AND MAINTENANCE. CONTRACTORS MUST PROVIDE PULL STRINGS FOR ALL CONDUIT AND WIRE DUCT/RACEWAY. IN-FLOOR TRENCH DUCT AND FLUSH FLOOR BOXES SHALL BE PROVIDED WITH FULLY GASKETED REMOVABLE COVERS.  
WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED HIGHER THAN 14 FEET ABOVE FINISHED FLOOR, THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP THE SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE.  
WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED ABOVE A HARD CEILING (I.E. SHEET ROCK), A 24" x 24" ACCESS PANEL IS REQUIRED AT EACH JUNCTION BOX AND WITHIN 2 FEET OF EACH RACEWAY TRANSITION (SUCH AS A 90 DEGREE ELBOW OR TEE) IN DUCT/RACEWAY. THERE MUST BE FREE AND CLEAR ACCESS TO JUNCTION BOXES AND WIRE DUCT/RACEWAY. WHEN ACCESS PANELS ARE LOCATED MORE THAN 3 FEET FROM JUNCTION BOXES AND WIRE DUCT/RACEWAY THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE.
- 6) WIRING: ALL WIRING INSTALLED SHALL BE 600 VOLT CLASS, STRANDED TYPE THHN/THWN-2, SINGLE CONDUCTOR ANNEALED COPPER FOR A MAXIMUM OPERATING TEMPERATURE OF 90° C (194° F), SIZED AS INDICATED INSTALLED IN METAL RACEWAYS. THE CUSTOMER/CONTRACTOR SHALL LEAVE MINIMUM 10 FT. OF WIRE TAILS AT ALL OUTLET POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY THE CUSTOMER/ELECTRICAL CONTRACTOR.
- 7) SHORT CIRCUIT REQUIREMENTS: ALL CIRCUIT BREAKERS SUPPLIED FOR THE SIEMENS EQUIPMENT REQUIREMENTS SHALL BE RATED HIGHER THAN THE SHORT CIRCUIT AVAILABLE AT THE TERMINALS OF THE ELECTRICAL EQUIPMENT AS DETERMINED BY THE ENGINEER OF RECORD, BUT NOT LESS THAN 35,000A RMS SYMMETRICAL AT 480V, 3-PHASE, 60 HERTZ. THE CONTRACTOR SHALL OBTAIN THE CORRECT SHORT CIRCUIT CURRENT RATING OF ALL THE NEW EQUIPMENT FOR INSTALLATION FROM THE ENGINEER OF RECORD.

CEILING HEIGHTS

MAGNET EXAMINATION ROOM: 7'-11" MINIMUM  
EQUIPMENT ROOM: 7'-3" MINIMUM  
ALL ANCILLARY AREAS: 6'-11" MINIMUM

06/25/21

COMPLETE NEW SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/

06/25/21

MODIFIED MAGNET GAUSS FIELDS TO REFLECT LATEST SHLD CALCS./

06/25/21

ALL LAYOUTS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY

05/11/21

NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET

06/25/21

2003356RRA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS

SYM

DATE

DESCRIPTION

—ISSUE BLOCK—

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365  
FAX:  
EMAIL: patrick.rui@siemens-healthineers.com

EXT:

**GRADY MEMORIAL HOSPITAL CORPORATION**  
80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS

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

PROJECT #:

**2003356**

SHEET:

**E-101**

SHEET OF 10  
6 10

DRAWN BY:  
D. BRISTOE

DATE:

06/25/21

ALL RIGHTS ARE RESERVED.

SCALE: AS NOTED

REF. #: 30238438

ATTENTION:

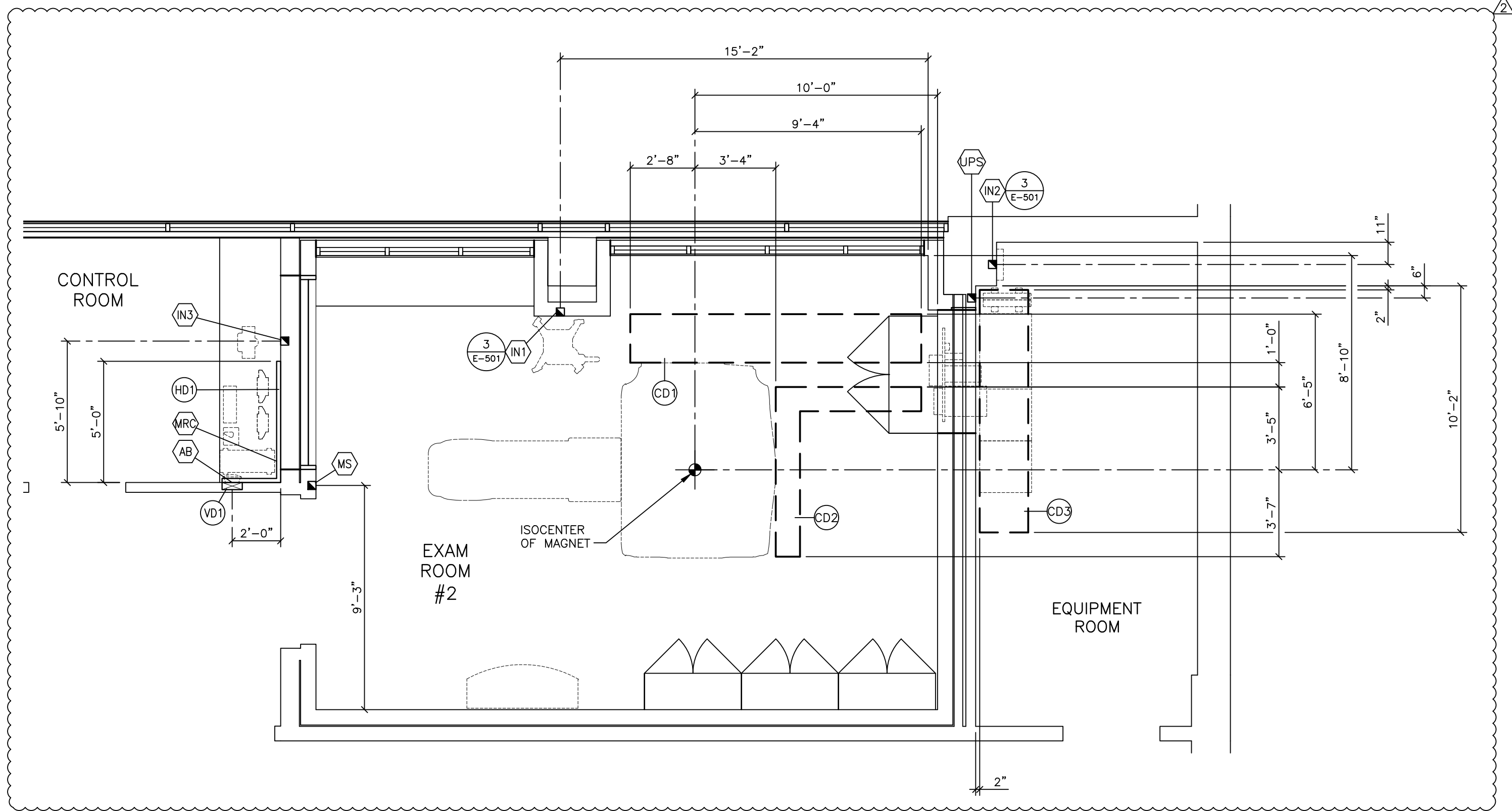
— THIS DRAWING IS DESIGNED TO CONFORM TO FEATURES AND EQUIPMENT REQUIREMENTS PRESENTED AT THE TIME OF THEIR PREPARATION. — SINCE BOTH THESE FACTORS ARE SUBJECT TO DESIGN MODIFICATION, THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES. — THIS SET OF PLANS REPRESENTS A COMPLETE SET OF DETAILS AND SHOULD 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.

VIDA  
REV 16



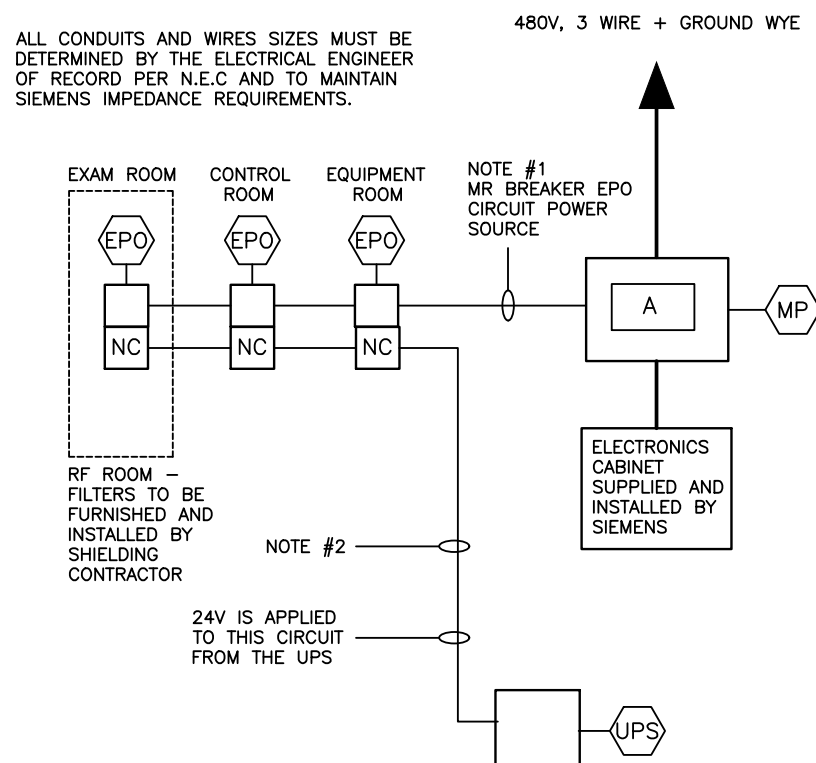


ELECTRICAL DIMENSION PLAN

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

## POWER SCHEDULE

ALL CONDUITS AND WIRES SIZES MUST BE DETERMINED BY THE ELECTRICAL ENGINEER OF RECORD PER N.E.C. AND TO MAINTAIN SIEMENS IMPEDANCE REQUIREMENTS.



ITEM	QTY	DESCRIPTION
MP	1	MAIN PANEL WITH MAIN BREAKER FLUSH OR SURFACE MOUNTED.
A	1	MR SYSTEM BREAKER MUST HAVE TRIPPING DEVICE SO WHEN ANY EPO IS PRESSED THE BREAKER TRIPS.
		MR BREAKER AMPS: SEE POWER REQUIREMENTS
		VOLTS PHASES NEUTRAL GROUND TOTAL WIRES
		480 3 0 1 4 (NOTE 1)

1) ALL WIRES MUST BE SAME SIZE.  
NOTE: UNLESS OTHERWISE NOTED ALL BREAKERS WILL BE 80% RATED.

EPO VARIES NOTE 1 - EPO CIRCUIT #1  
MAIN CIRCUIT BREAKER EMERGENCY POWER OFF BUTTON WITH PROTECTIVE COVER THAT PREVENTS ACCIDENTAL ACTIVATION. THE EPO MUST BE OF FAIL-SAFE DESIGN. ALL EPO'S TO HAVE MECHANICAL LATCHING MECHANISM. EPO MUST BE RESET BEFORE MR BREAKER CAN RESUME OPERATION. CONTACTS AND WIRING CONFIGURATION TO BE DESIGNED BY ELECTRICAL ENGINEER OF RECORD.

NOTE 2 - EPO CIRCUIT #2  
EPO CONTACTS TO BE NORMALLY CLOSED, WIRED IN SERIES, CONNECTED TO GXT4 UPS ONLY.

THE EPO'S MUST BE INSTALLED BY A QUALIFIED ELECTRICAL CONTRACTOR ACCORDING TO NATIONAL ELECTRICAL CODE, STATE AND LOCAL REGULATIONS. THE CUSTOMER IS SOLELY RESPONSIBLE FOR THE IMPLEMENTATION OF THE EPO'S AND THEIR ASSOCIATED CIRCUITS AND MUST MAKE THE FINAL DETERMINATION CONSIDERING ALL SITE CONDITIONS AND REGULATORY FACTORS.

UNLESS OTHERWISE NOTED, ALL ITEMS LISTED IN THIS SCHEDULE SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

REV 1

## POWER QUALITY NOTES

- 1) IT IS THE CUSTOMER'S RESPONSIBILITY TO COMPLY WITH THE POWER QUALITY REQUIREMENTS FOR SIEMENS MEDICAL SYSTEMS EQUIPMENT.
- 2) THE ELECTRICAL FEEDER TO THE SIEMENS MEDICAL SYSTEMS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS, AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.
- 3) THE ELECTRICAL FEEDER TO THE IMAGING SYSTEM MUST BE RUN DIRECTLY TO A MAIN FACILITY DISTRIBUTION PANEL OR TO THE FACILITY SERVICE ENTRANCE, WITH NO OTHER LOADS POWERED FROM THIS FEEDER.
- 4) IN ORDER TO COMPLY WITH IMAGING SYSTEM POWER QUALITY REQUIREMENTS, ADDITIONAL POWER CONDITIONING DEVICES MAY BE REQUIRED. EXAMPLES INCLUDE VOLTAGE REGULATORS, TRANSFORMERS, SURGE PROTECTIVE DEVICES, FILTERS, AND/OR UNINTERRUPTIBLE POWER SUPPLIES (UPS). RECOMMENDED FOR THE INSTALLATION OF ELECTRONIC EQUIPMENT CAN BE FOUND IN IEEE STANDARD 1100-1999 "POWERING AND GROUNDING ELECTRONIC EQUIPMENT".
- 5) POWER CONDITIONING DEVICES NOT APPROVED BY SIEMENS MEDICAL SYSTEMS MAY NOT BE COMPATIBLE WITH THE MAGNETOM SYSTEM. "FERRORESONANT" POWER CONDITIONING EQUIPMENT RE-APPLIED FROM PREVIOUS GENERATION SYSTEMS IS ALSO GENERALLY EXCLUDED DUE TO HIGHER POWER REQUIREMENTS OF THE NEWER SYSTEMS.
- 6) INCOMING SOURCE POWER WIRES MUST BE SEPARATED FROM ANY SIEMENS CABLING BY A MINIMUM OF 12".

REV 0

## CEILING HEIGHTS

MAGNET EXAMINATION ROOM: 7'-11" MINIMUM  
EQUIPMENT ROOM: 7'-3" MINIMUM  
ALL ANCILLARY AREAS: 6'-11" MINIMUM

## POWER REQUIREMENTS

VOLTAGE VARIATION: 480 VAC $\pm 10\%$ FOR ALL LINE AND LOAD CONDITIONS VOLTAGE UNBALANCE: 2% MAXIMUM DIFFERENCE BETWEEN PHASES	
FREQUENCY:	60 Hz $\pm 1.0$ Hz
LINE IMPEDANCE:	<150 mOHMS
POWER CONSUMPTION READY FOR MEASUREMENT CHILLER/SEP	8.35kW/1.8kW
POWER CONSUMPTION TYPICAL EXAM CHILLER/SEP	27.42kW/1.8kW
CONNECTION VALUE	84 kVA
MOMENTARY POWER	135 kVA
MR SYSTEM BREAKER SIZE (A)	150 A
ALL BREAKERS ARE RATED AT 80%	

## POWER QUALITY

POOR POWER WILL ALTER EQUIPMENT PERFORMANCE

IT IS IN THE CUSTOMER'S INTEREST THAT THE ELECTRICAL CONTRACTOR BE RESPONSIBLE FOR TESTING AND VERIFYING THAT THE EQUIPMENT POWER SUPPLY COMPLIES WITH THE SIEMENS SPECIFICATIONS.

## DEMAND AND CAPACITY

- 1) IF EQUIPMENT UPGRADE IS ANTICIPATED, INSTALLING ELECTRICAL POWER TO MEET THE REQUIREMENTS OF THE HIGHER POWER GRADIENT PACKAGE AT THE TIME OF INITIAL INSTALLATION WILL REDUCE THE COST TO UPGRADE THE ELECTRICAL SYSTEM LATER.
- 2) RECOMMENDED TRANSFORMER SIZE (SYSTEM WITHOUT UPS) IS BASED ON INDUSTRY STANDARD ISOLATION TRANSFORMER KVA RATINGS. SOURCE IMPEDANCE FEEDING THE MAGNETOM SYSTEM, INCLUDING ANY ISOLATION TRANSFORMERS, MUST MEET EQUIPMENT REQUIREMENTS AS LISTED HERE. SIEMENS RECOMMENDS A TRANSFORMER WITH COPPER WINDINGS, AN ELECTRO-STATIC SHIELD, AND A LOW IMPEDANCE (<3%) TO ENSURE THAT SOURCE IMPEDANCE REQUIREMENTS ARE MET.
- 3) OVER CURRENT PROTECTION IS SPECIFIED FOR SYSTEMS WITHOUT AN UNINTERRUPTIBLE POWER SUPPLY (UPS). ADDITION OF A UPS REQUIRES A HIGHER CAPACITY MAINS CONNECTION (DEPENDENT UPON UPS MODEL AND SIZE). MAXIMUM FAULT CURRENT IS DEPENDENT UPON THE IMPEDANCE OF THE FACILITY ELECTRICAL SYSTEM. THE CUSTOMER'S ARCHITECT OR ELECTRICAL CONTRACTOR TO SPECIFY AIC RATING OF OVER CURRENT PROTECTION BASED ON FACILITY IMPEDANCE CHARACTERISTICS.
- 4) MOMENTARY POWER IS BASED ON A MAXIMUM RMS VALUE FOR A PERIOD NOT TO EXCEED FIVE (5) SECONDS, AS DEFINED IN NEC 517.2. STAND-BY AND AVERAGE CURRENT ARE SUBSTANTIALLY LOWER.
- 5) THE CONDUCTOR SIZE SHOULD BE SELECTED TO MEET THE VOLTAGE DROP REQUIREMENTS, TAKING INTO CONSIDERATION THE MAINS CAPACITY, RUN LENGTH, AND ANY ADDITIONAL TRANSFORMERS USED TO OBTAIN THE PROPER EQUIPMENT VOLTAGE LEVEL. NEMA STANDARD XR-9-1989 (R1994,R2000) PROVIDES GENERAL GUIDELINES FOR SIZING CONDUCTORS, TRANSFORMERS, AND ELECTRICAL SYSTEMS FOR MEDICAL IMAGING SYSTEMS.
- 6) LONG-TIME POWER IS BASED ON THE HIGHEST AVERAGE RMS VALUES FOR A PERIOD EXCEEDING 5 MINUTES DURING CLINICAL SYSTEM OPERATION, AS DEFINED IN NEC 517.2.
- 7) A CIRCUIT BREAKER WITH A HIGH INRUSH RATING (>8x RATED CURRENT) IS REQUIRED TO PERMIT SWITCH-ON OF THE UPS SYSTEM WITHOUT SPURIOUS TRIPPING. CIRCUIT BREAKERS WITH AN ADJUSTABLE MAGNETIC TRIP (SIEMENS FD6 SERIES OR SIMILAR) ARE HIGHLY RECOMMENDED.

REV 1

## ELECTRICAL INSTALLATION NOTES

- 1) INSTALL THE MR SYSTEM CIRCUIT BREAKER IN OR NEAR THE EQUIPMENT ROOM. THE PERMITTED FRINGE FIELD FOR THE PANEL IS UP TO 3mT. IF THE FRINGE FIELDS HAVE HIGHER VALUES, MAGNETIC SHIELDING MUST BE PROVIDED OR THE DISTANCE FROM THE MAGNET MUST BE INCREASED.
- 2) AN ACCEPTABLE MEANS FOR SWITCHING MAIN POWER ON AND OFF SHOULD BE INSTALLED IN THE MAIN BREAKER PANEL. INSTALL EMERGENCY SHUTDOWN BUTTONS IN EACH ROOM WHERE THERE IS SIEMENS EQUIPMENT.
- 3) THE ELECTRICAL FEEDER TO THE SIEMENS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.
- 4) THE EMERGENCY POWER OFF (EPO) BUTTONS ARE TO BE MUSHROOM TYPE WITH PUSH LOCK AND PULL TO RELEASE.
- 5) WALL RECEPTACLES MADE OF FERROMAGNETIC MATERIALS ARE NOT PERMITTED IN THE EXAM ROOM. PERIPHERAL UNITS (SUCH AS VENTILATORS) NOT APPROVED FOR USE IN A HIGH MAGNETIC FIELD ENVIRONMENT CAN INFLUENCE THE MAGNETIC FIELD, COMPROMISING IMAGE QUALITY. THE CUSTOMER IS RESPONSIBLE FOR INSTALLATION AND USE OF RECEPTACLES IN THE EXAM ROOM. INSTALLATION OF RECEPTACLES AND THE FILTERS REQUIRED ARE TO BE COORDINATED WITH THE RF SHIELDING SUPPLIER.
- 6) THE RF SHIELD MUST BE FITTED WITH A GROUND STUD OR BUS BAR, LOCATED WITHIN 24" OF THE AUXILIARY FILTERS FOR ROOM LIGHTS AND OUTLETS, SUPPLIED AND INSTALLED BY THE RF SHIELD SUPPLIER.
- 7) IN ORDER TO PREVENT GROUND LOOPS, ALL CUSTOMER OR CUSTOMER/CONTRACTOR SUPPLIED AC POWER ENTERING THE EXAMINATION ROOM (I.E. OUTLETS, EPO, ETC.) SHOULD BE SUPPLIED VIA AN ISOLATION TRANSFORMER. THE ISOLATION TRANSFORMER SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE RF SHIELD GROUND STUD OR BUS BAR.

REV 1

## GROUNDING NOTES

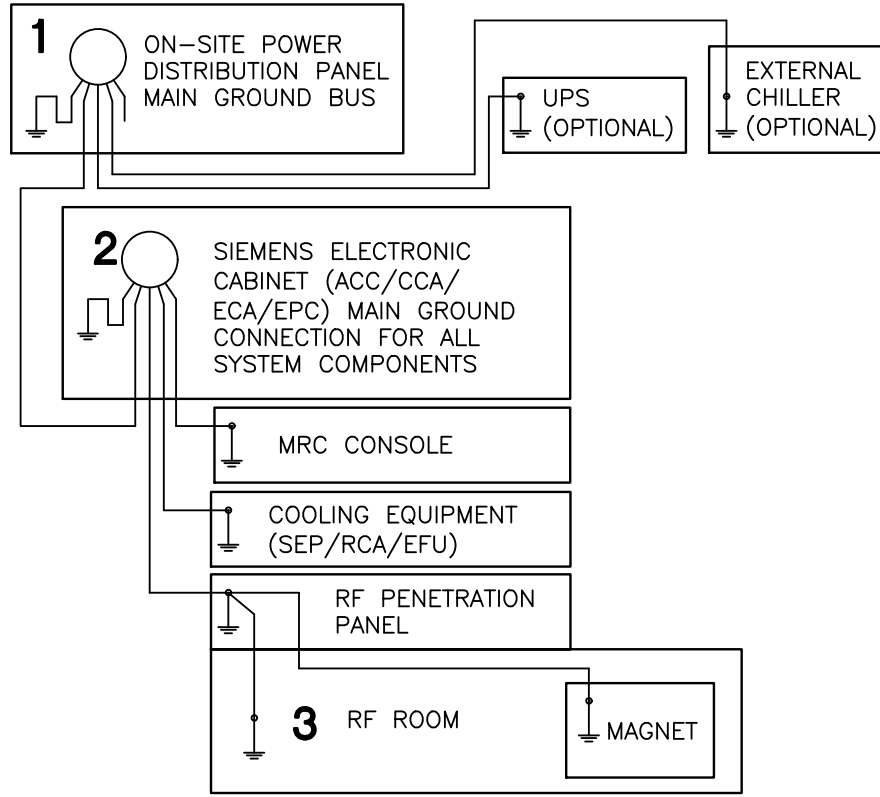
EQUIPMENT GROUNDING CONDUCTOR TO COMPLY WITH THE FOLLOWING:

- 1) SIZE GROUNDING WIRE TO SIEMENS EQUIPMENT PER POWER SCHEDULE REQUIREMENTS.
- 2) DERIVED FROM THE ELECTRICAL SERVICE, TRANSFORMER OR MAIN DISTRIBUTION PANEL FEEDING THE SIEMENS EQUIPMENT.
- 3) RUN IN THE SAME CONDUIT, TROUGH OR RACEWAY AS THE POWER CONDUCTORS.
- 4) CONTINUOUS, WITH NO BREAKS OR USE OF CONDUIT, CHASSIS OR EARTH AS THE SOLE GROUNDING PATH.
- 5) BONDED TO CHASSIS AND/OR CONDUIT IN ACCORDANCE WITH THE NEC REQUIREMENTS.
- 6) MINIMIZE CONNECTIONS OR TERMINALS TO ENSURE CONTINUITY OVER THE LIFE OF THE INSTALLATION.
- 7) AS A NORM, THERE SHOULD NOT BE ANY CURRENT PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS ACCEPTABLE TO HAVE  $\leq 500\text{mA}$  DURING OPERATION OF THE IMAGING EQUIPMENT.

## MR GROUNDING NOTES

THE INTERNAL GROUND WIRING OF THE MR SYSTEM MUST BE INSTALLED WITH MINIMUM GROUND LOOPS. THIS IS TO PREVENT NOISE CURRENTS AND GENERAL DISTURBANCES FROM FLOWING THROUGH THE GROUNDING PATH.

TO ACHIEVE SUCH GROUNDING, THREE MAJOR GROUND POINTS SHOULD BE USED.



REV 0






VIDA  
REV 16

## ATTENTION:

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- 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.

			PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365 EMAIL: <a href="mailto:patrick.ruiiz@siemens-healthineers.com">patrick.ruiiz@siemens-healthineers.com</a> FAX: <a href="mailto:patrick.ruiiz@siemens-healthineers.com">patrick.ruiiz@siemens-healthineers.com</a>	
	06/25/21	COMPLETE NEW SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/	<div>GRADY MEMORIAL</div> <div>80 JESSE HILL JUN MRI ROOM</div> <div>THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW</div> <div>ALL RIGHTS ARE RESERVED.</div>	
	06/25/21	MODIFIED MAGNET GAUSS FIELDS TO REFLECT LATEST SHLD CALCS./		
	06/25/21	ALL LAYOUTS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY		
	05/11/21	NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET		
	06/25/21	2003356RRA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS		
SYM	DATE	DESCRIPTION	SCALE: AS NOTED REF. # 30238438 DATE:	
-ISSUE BLOCK-				

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365 EXT:  
FAX:  
EMAIL: patrick.ruiz@siemens-healthineers.com

## GRADY MEMORIAL HOSPITAL CORPORATION

80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS

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

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PROJECT #:

2003356

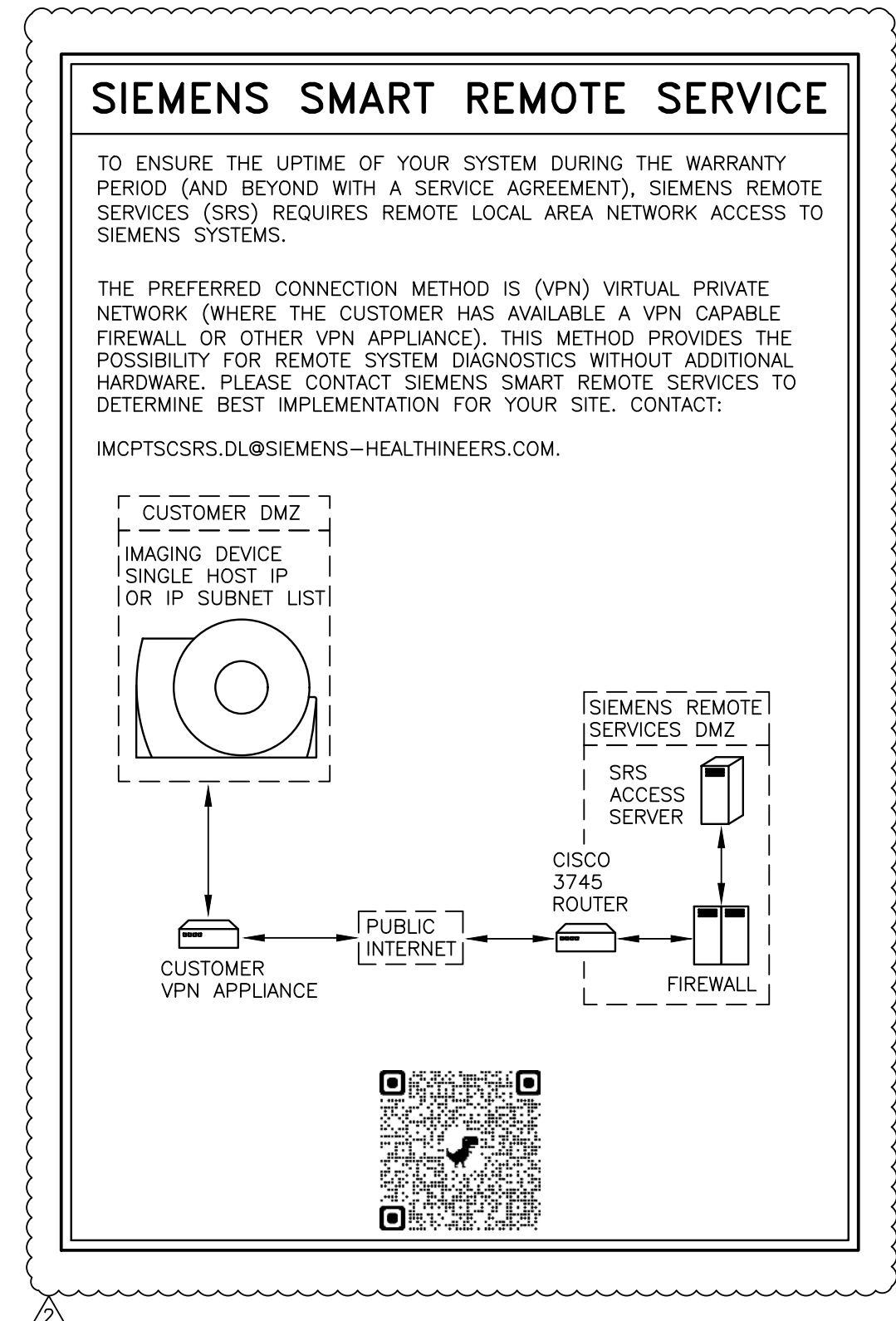
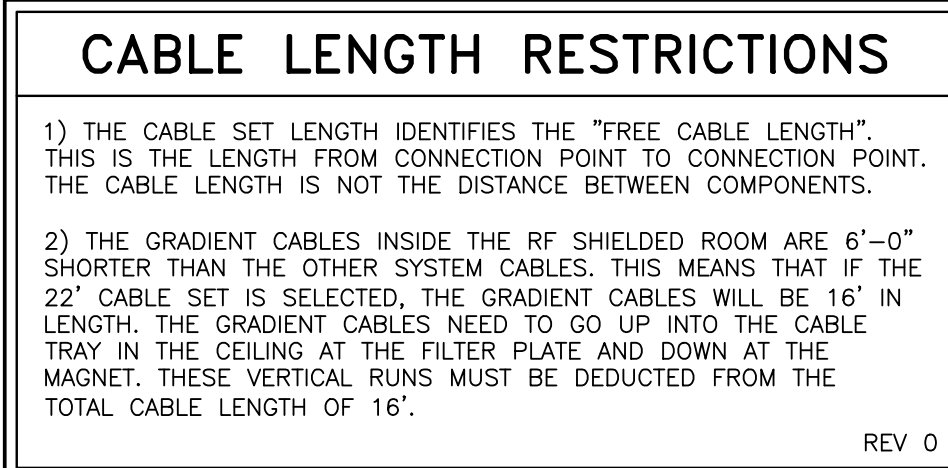
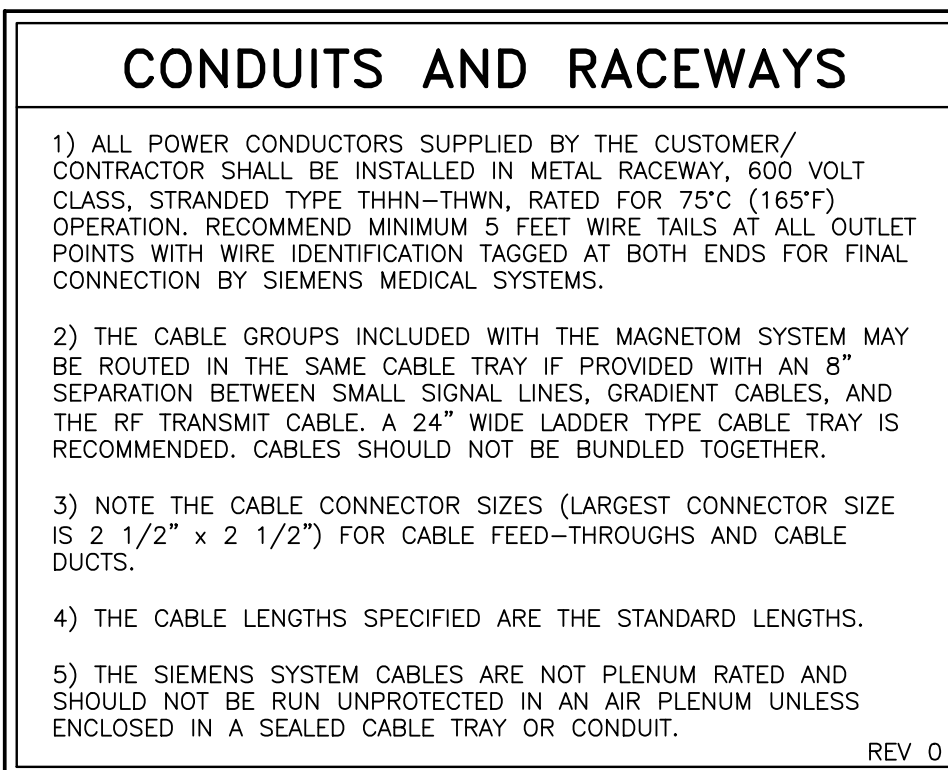
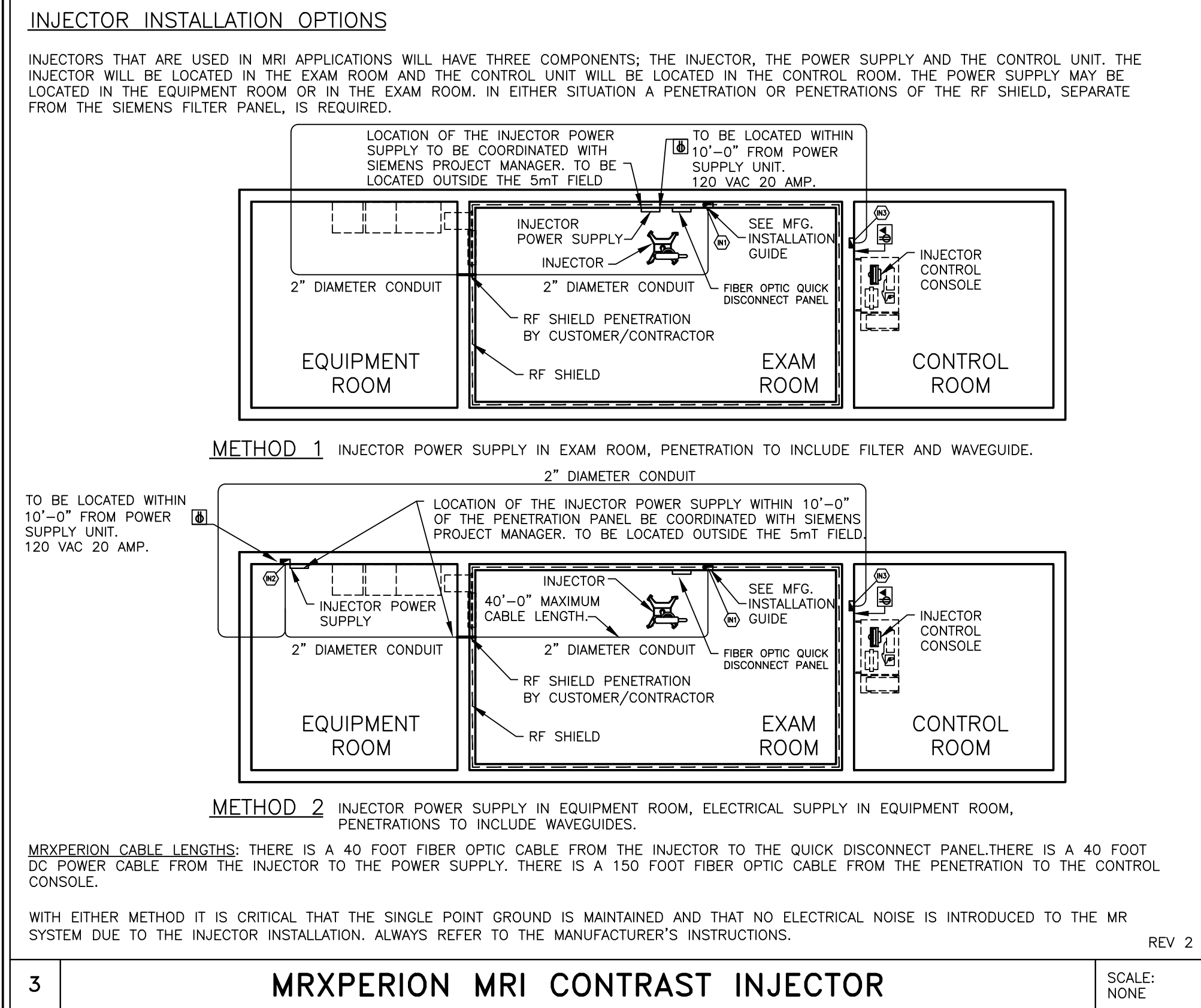
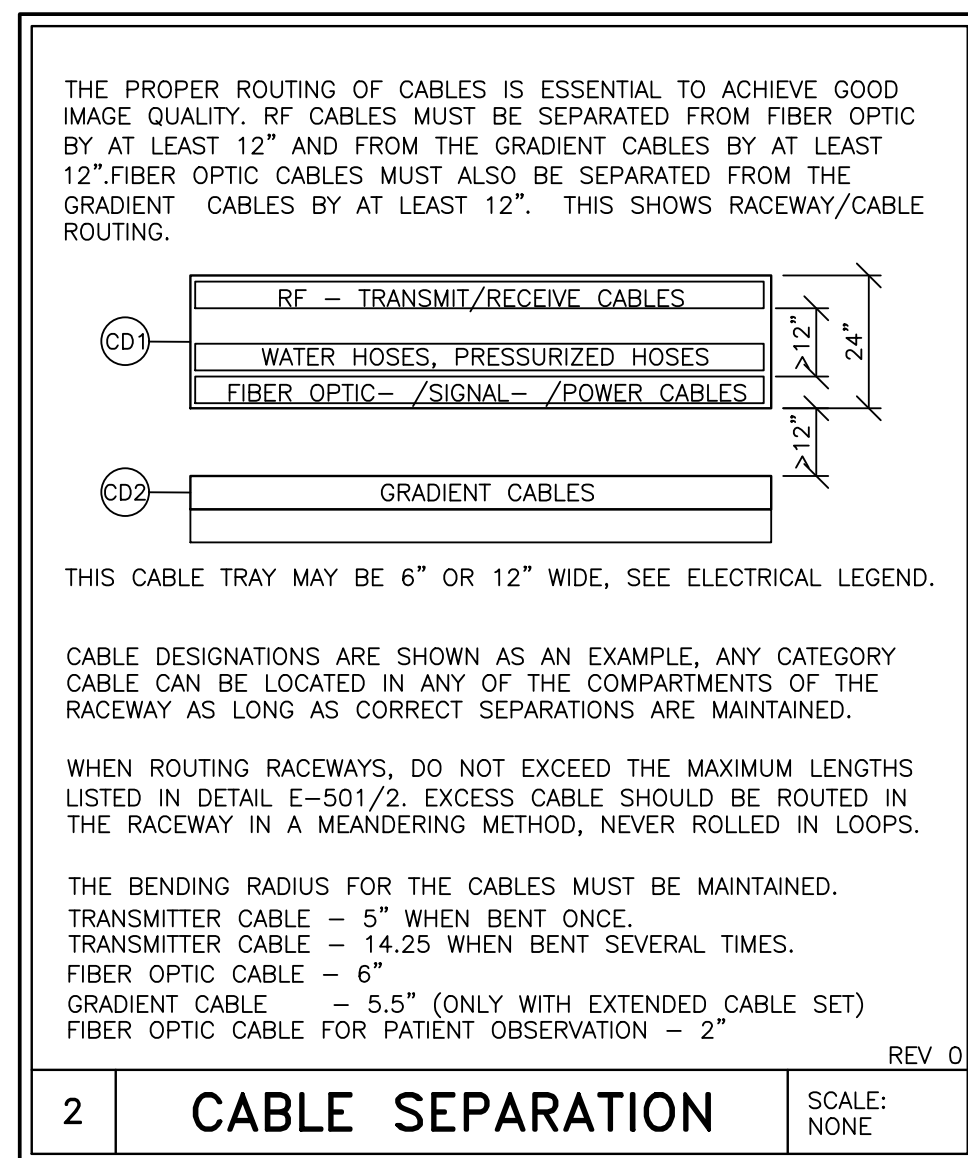
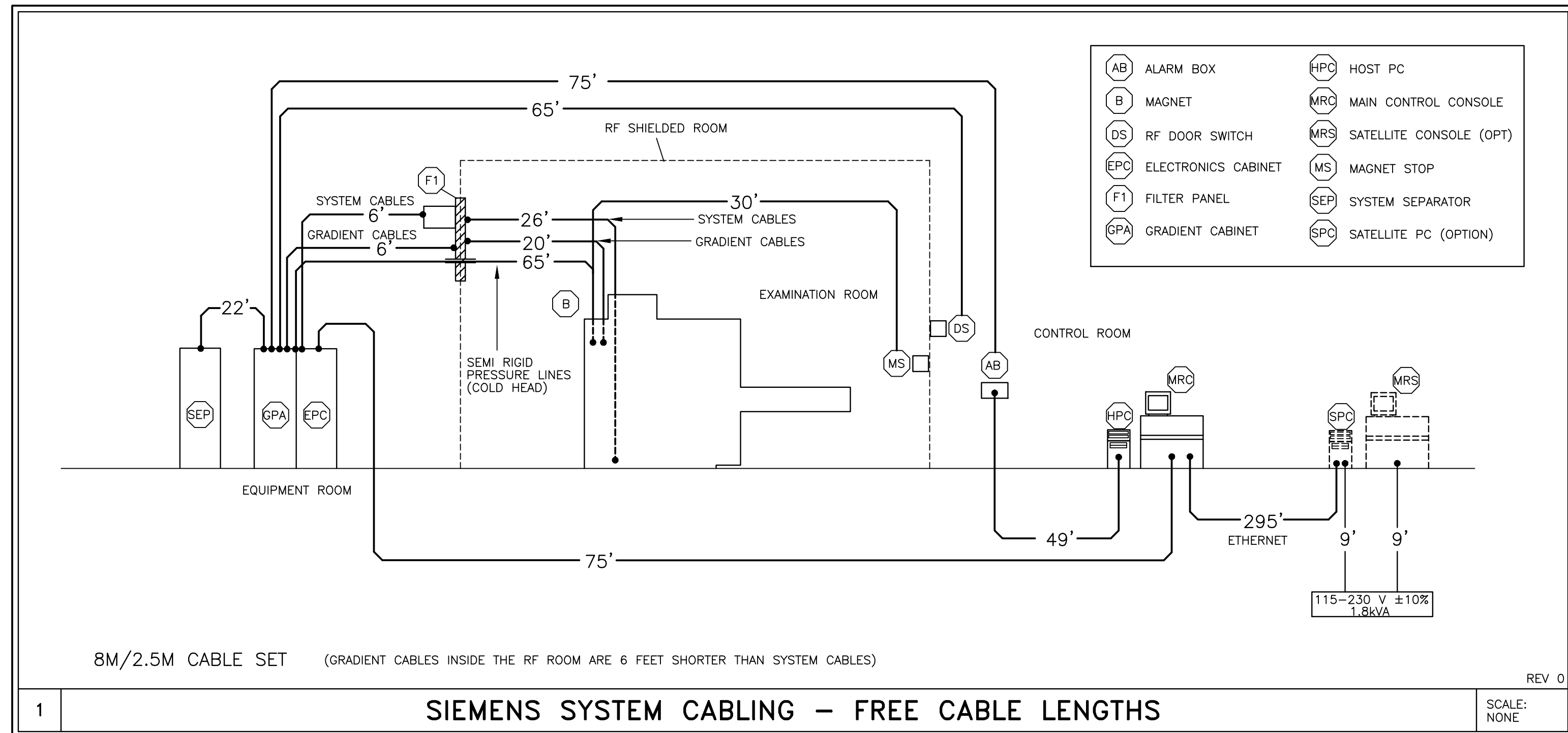
SHEET 7 OF 10

DRAWN BY: D. BRISTOE

DATE: 06/25/21

SHEET:

E-102



			PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365	<b>SIEMENS</b>	
	06/25/21	COMPLETE NEW SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/	VMAIL: FAX: EMAIL: patrick.ruiz@siemens-healthineers.com		
	06/25/21	MODIFIED MAGNET CAUSFS FIELDS TO REFLECT LATEST SHLD CALCS./	<b>GRADY MEMORIAL HOSPITAL CORPORATION</b>		
	06/25/21	ALL LAUTOS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY	80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303 MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS		
	05/11/21	NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET	THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. <b>ALL RIGHTS ARE RESERVED.</b>	PROJECT #:	SHEET:
	06/25/21	2003356RA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS		<b>2003356</b>	<b>E-501</b>
SYM	DATE	DESCRIPTION		SHEET OF 10	DRAWN BY: D. BRISTOE
—ISSUE BLOCK—			SCALE: AS NOTED	REF. #: 30238438	DATE: 06/25/21

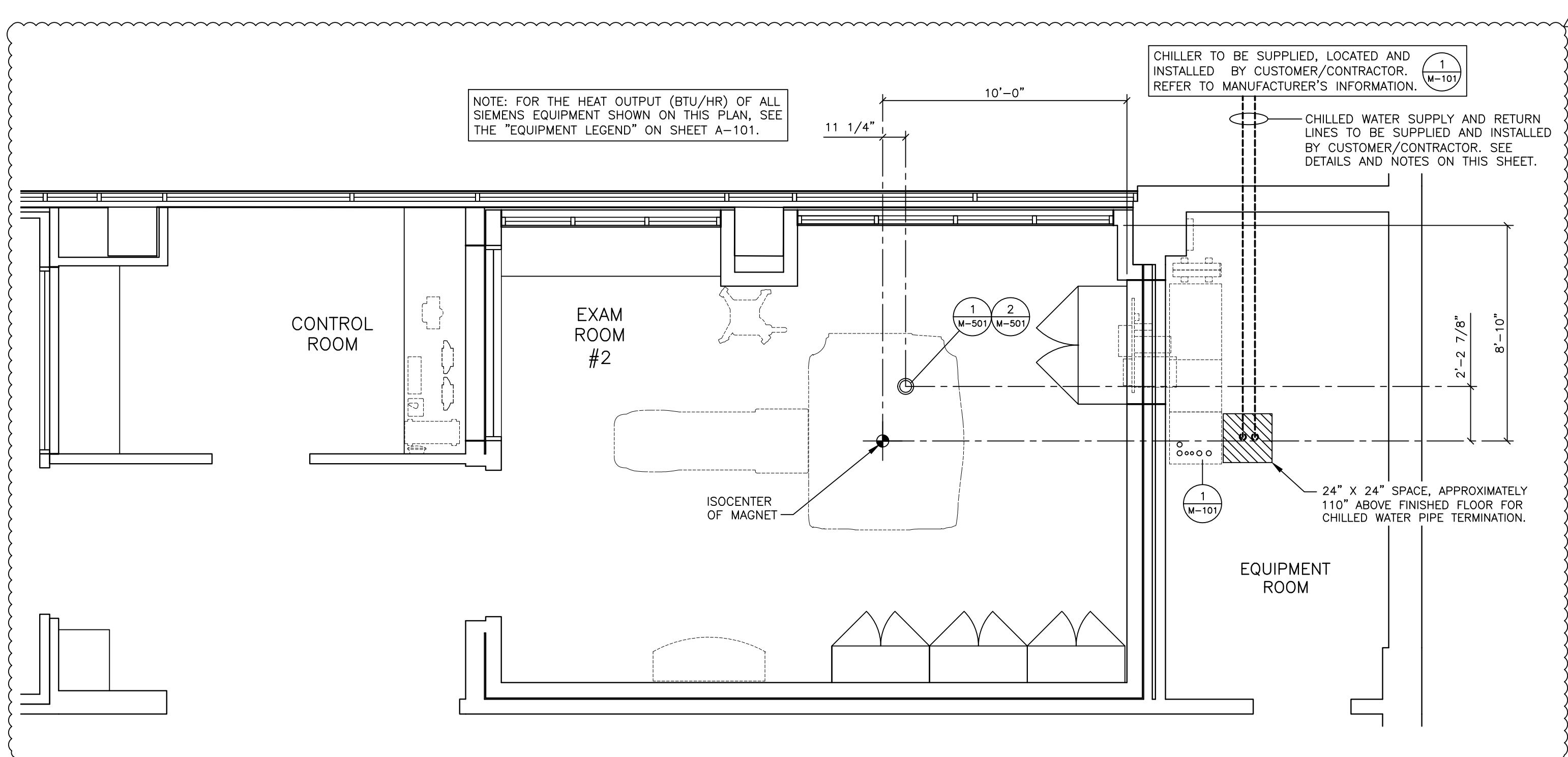
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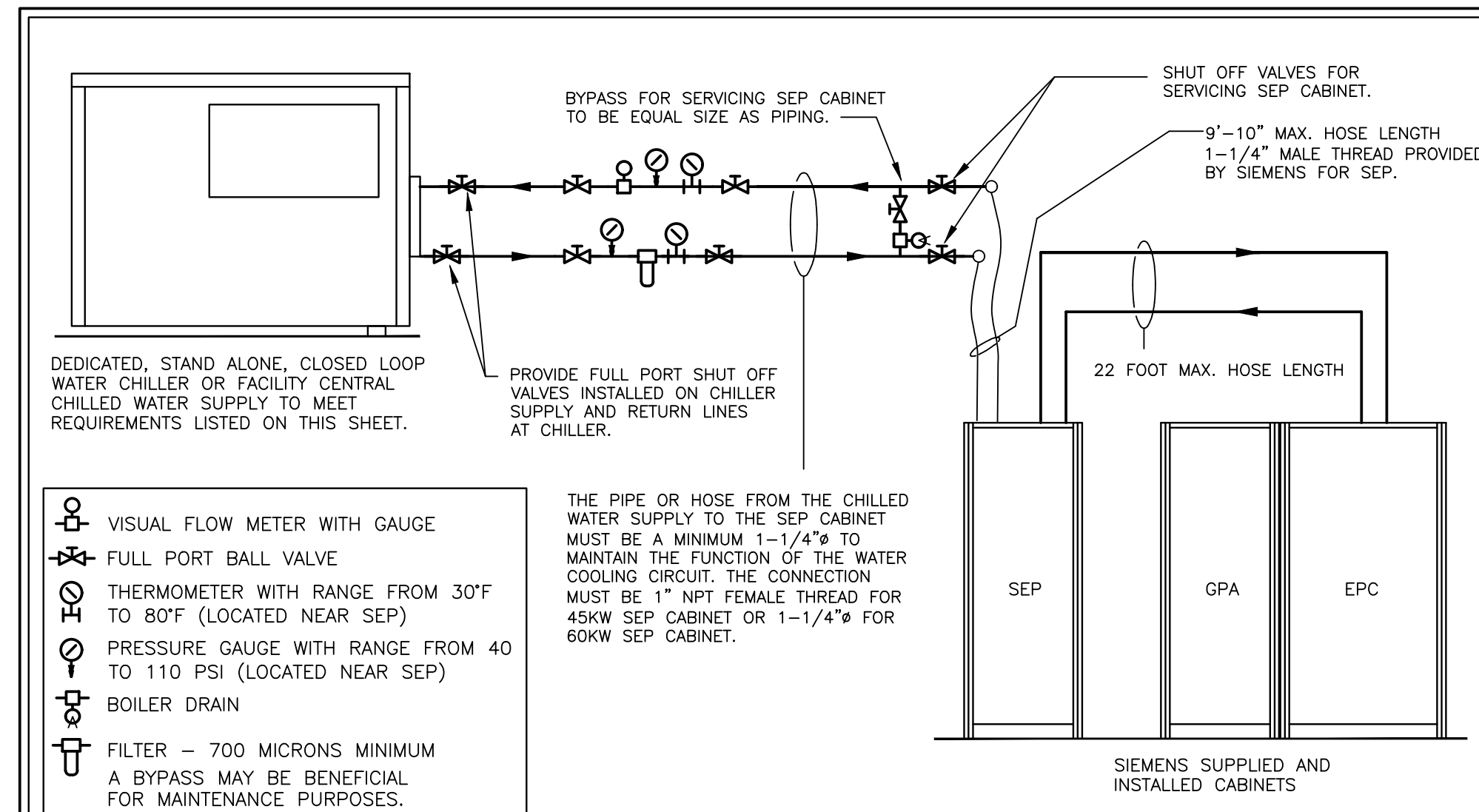
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## MECHANICAL PLAN

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

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, 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.

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

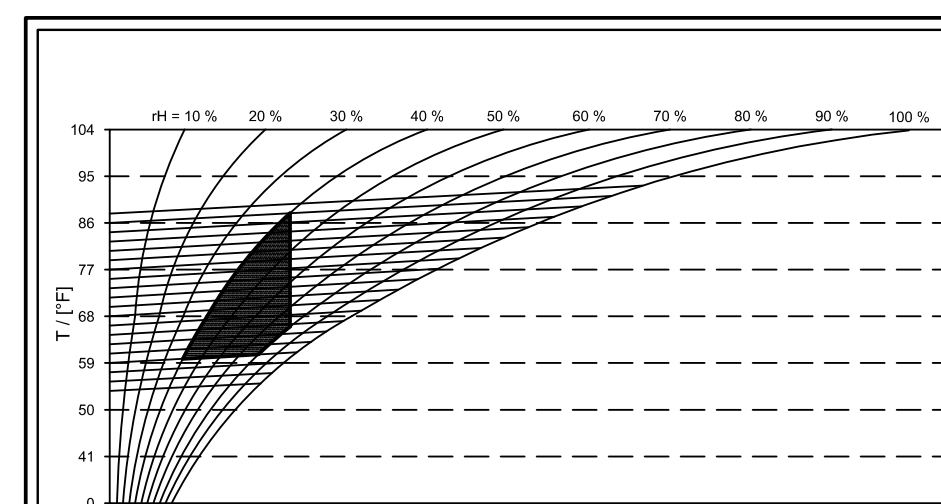
SEE MANUFACTURER'S REQUIREMENTS FOR GLYCOL AND WATER  
QUALITY TO BE PROVIDED AND FILLED BY CUSTOMER/CONTRACTOR

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:	26.42 GPM $\pm$ 2.5GPM
WATER TEMPERATURE:	42.8°F ~ 57.2°F
BTU DISCHARGE TO THE WATER	204,911 BTU/HR
WATER PRESSURE	MAXIMUM 87 PSI
LOSS OF PRESSURE FOR SEP CABINET	<8.7 PSI AT 29 GPM
CHILLED WATER ACIDITY RANGE	6 pH TO 8 pH
CHILLED WATER QUALITY	200 ppm CHLORINE 200 ppm SUPPHATE
FILTRATION	700 $\mu$ m



R

## ENVIRONMENTAL REQUIREMENTS

1) AIR CONDITIONING IS TO PROVIDE A TEMPERATURE OF 70°F ±5°F IN THE CONTROL & EQUIPMENT ROOMS 65°F-71°F IN EXAM ROOM. 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.

2) 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.

3) 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.

- 4) 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.
- 5) THE AIR INTAKE OF THE AIR CONDITIONING SYSTEM MUST NOT BE LOCATED IN THE VICINITY OF THE QUENCH VENT EXHAUST.

6) 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.






7) DO NOT LOCATE ANY HVAC DIFFUSERS ABOVE THE MAGNET.  
THERE SHALL NOT BE AIR BLOWING DIRECTLY ON THE MAGNET.

## CEILING HEIGHTS

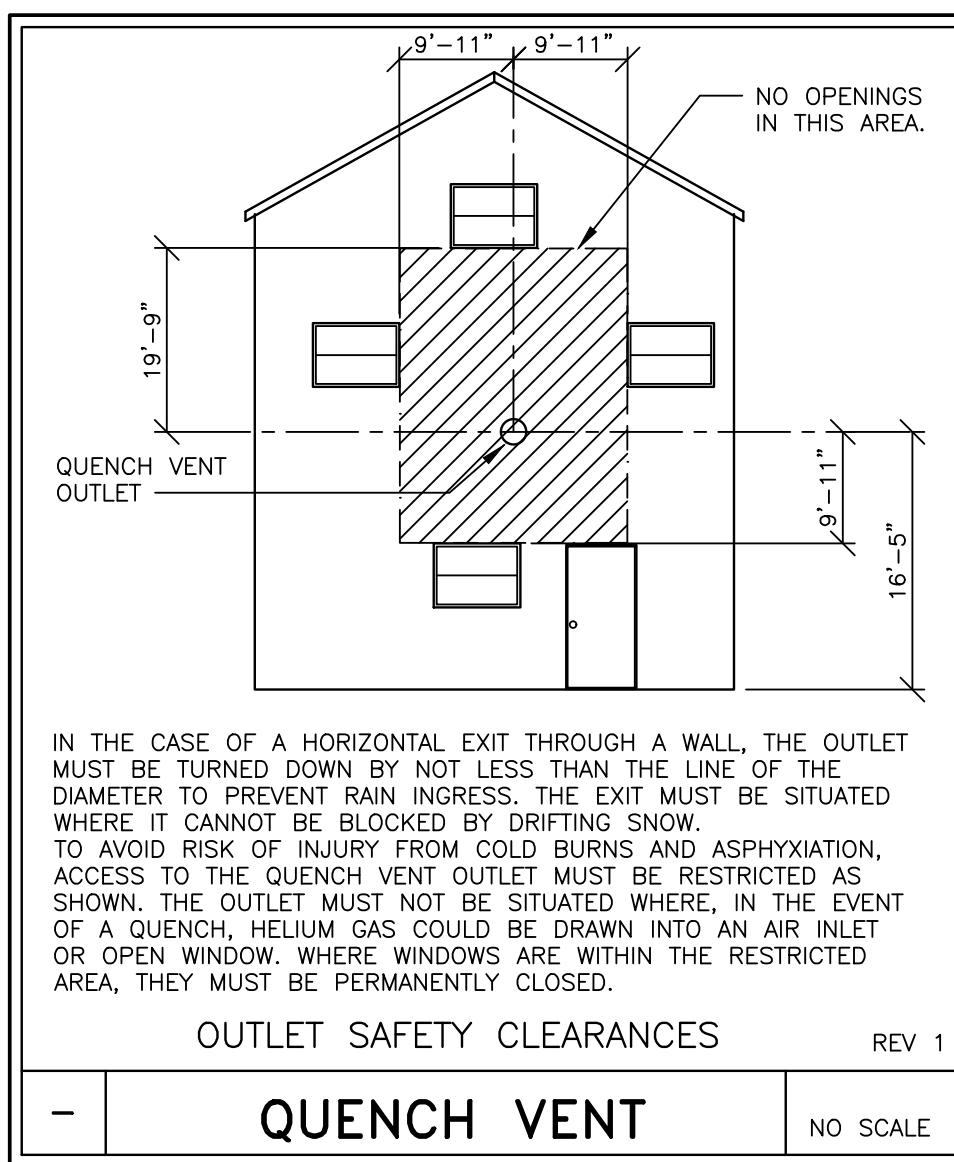
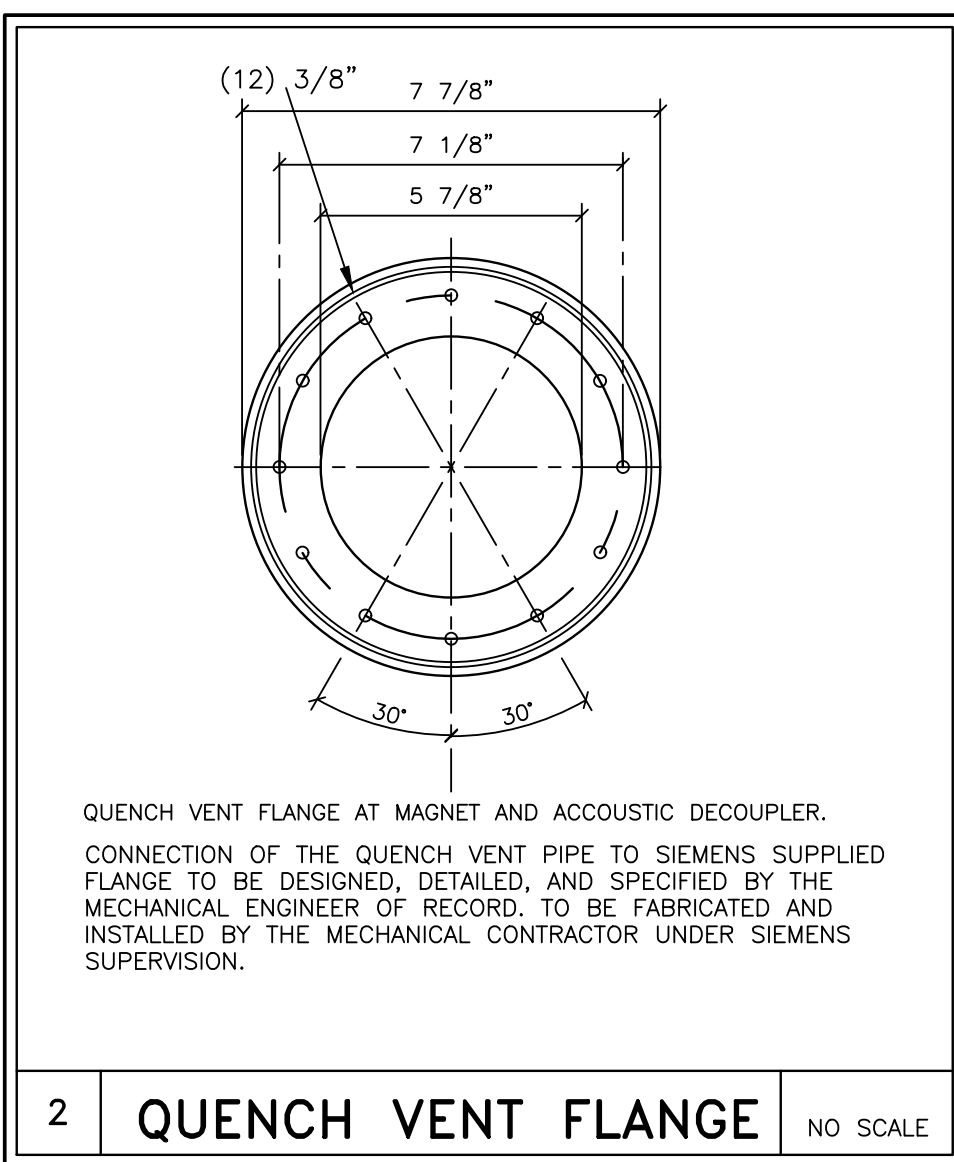
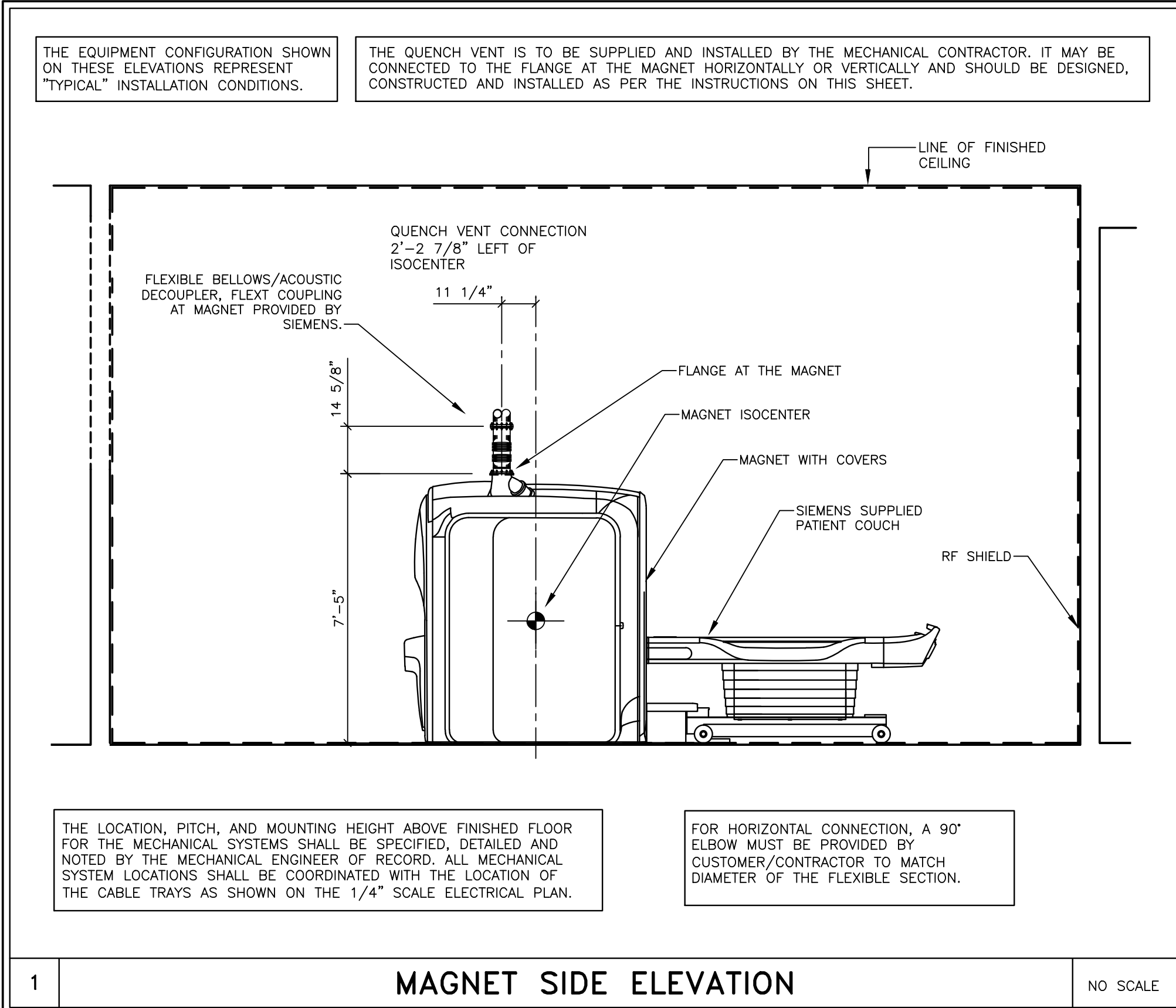
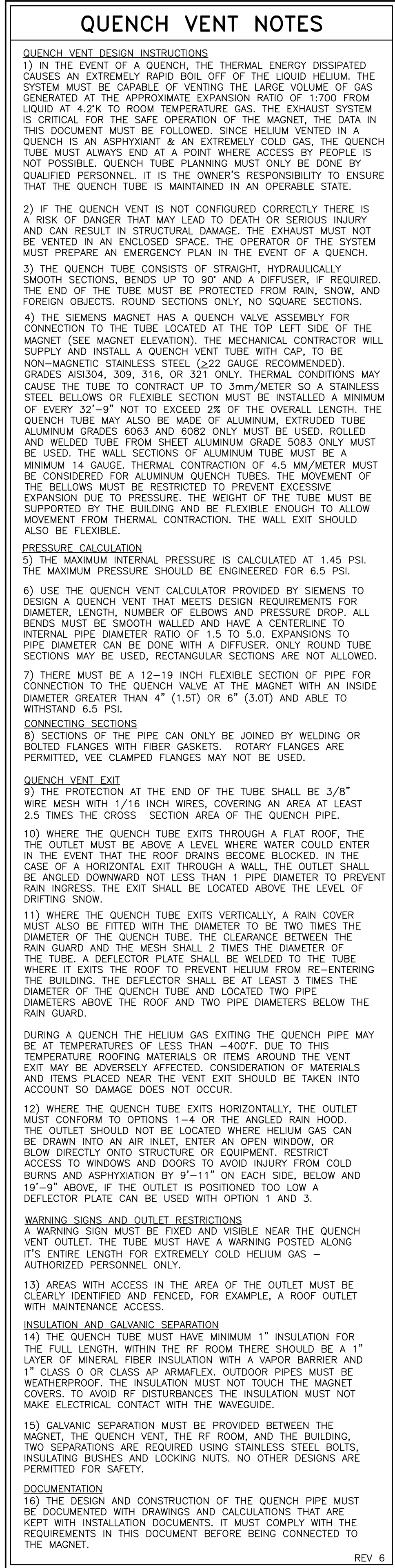
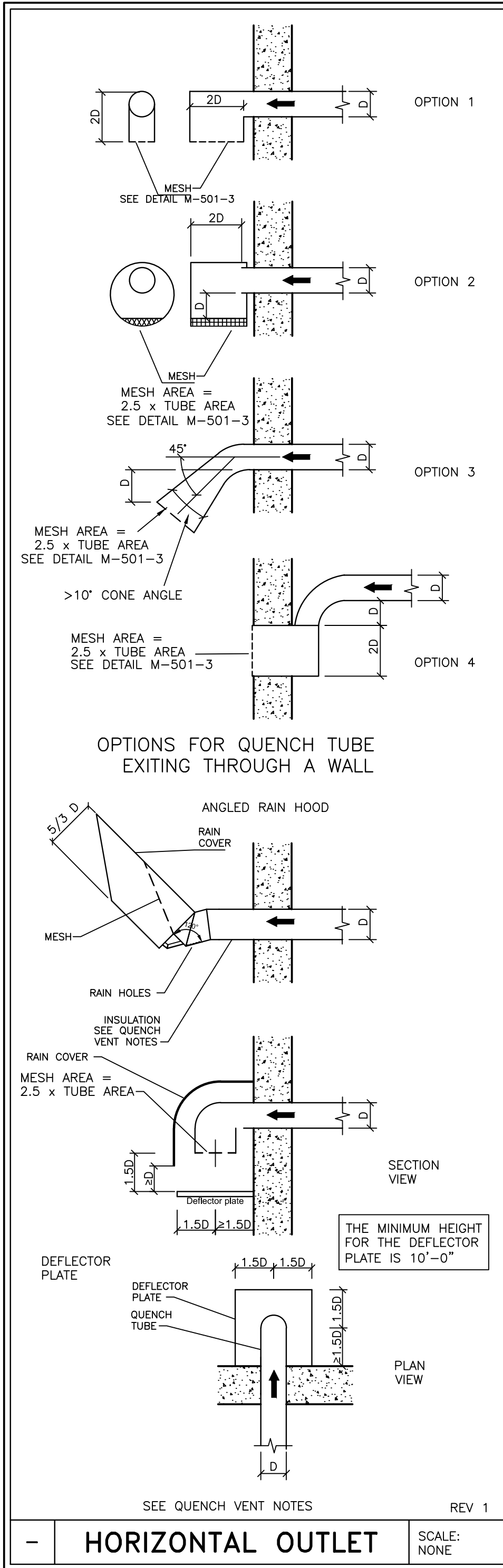
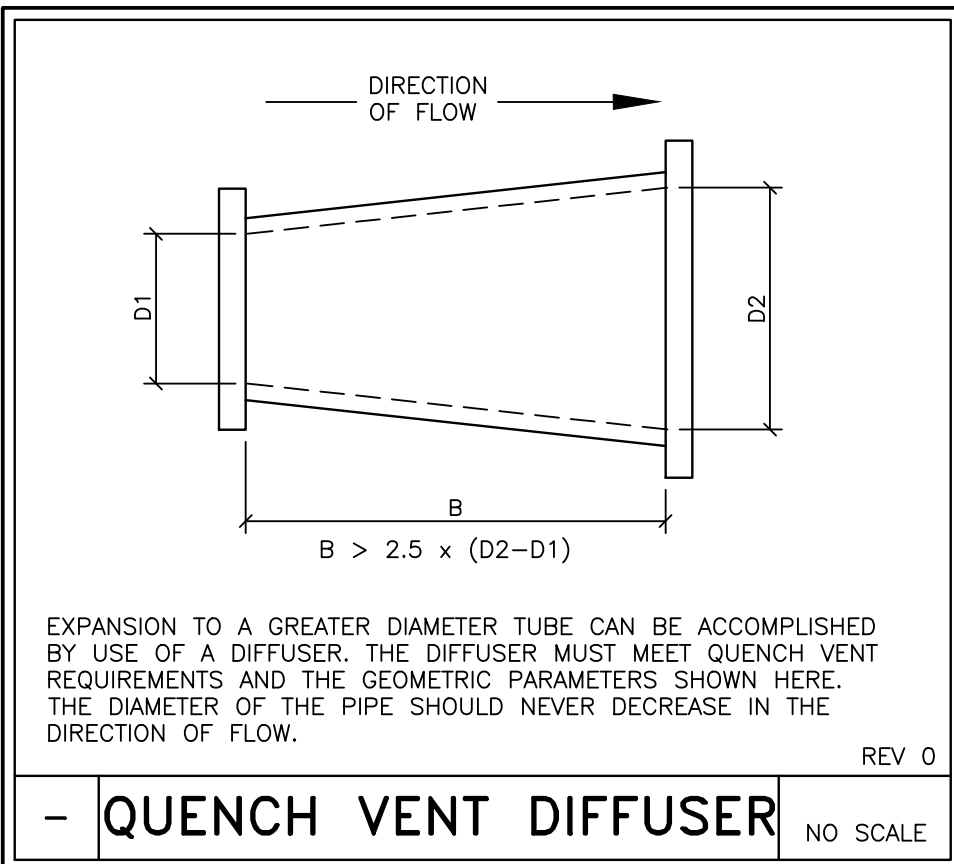
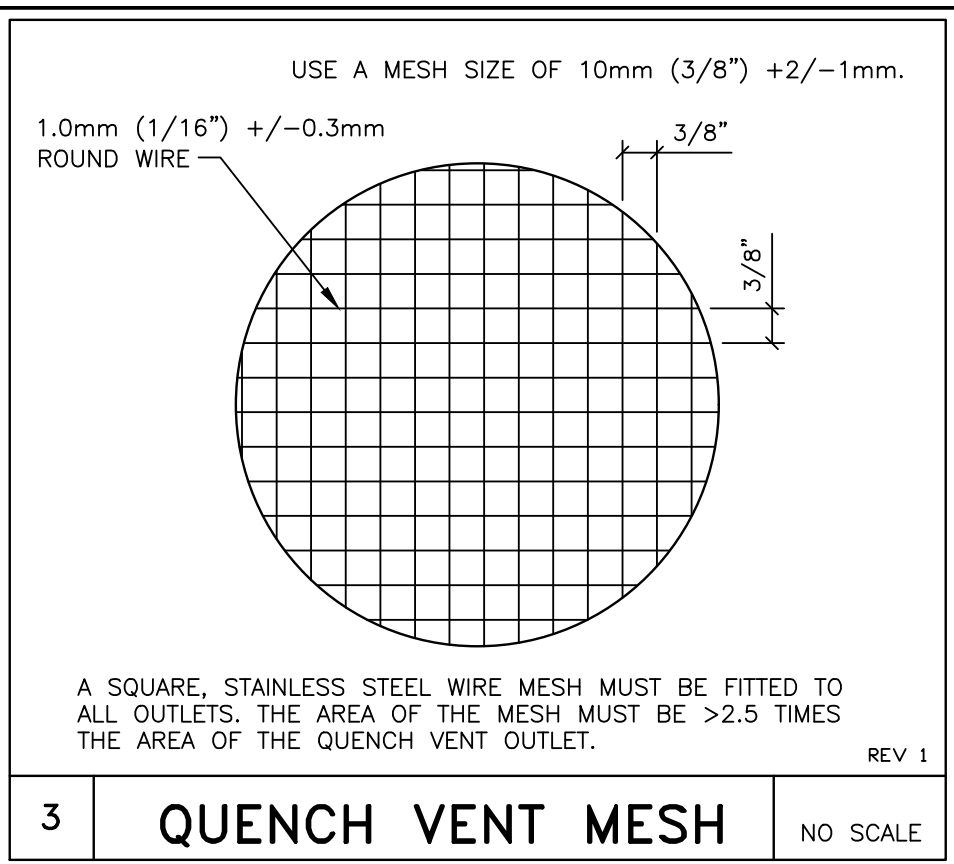
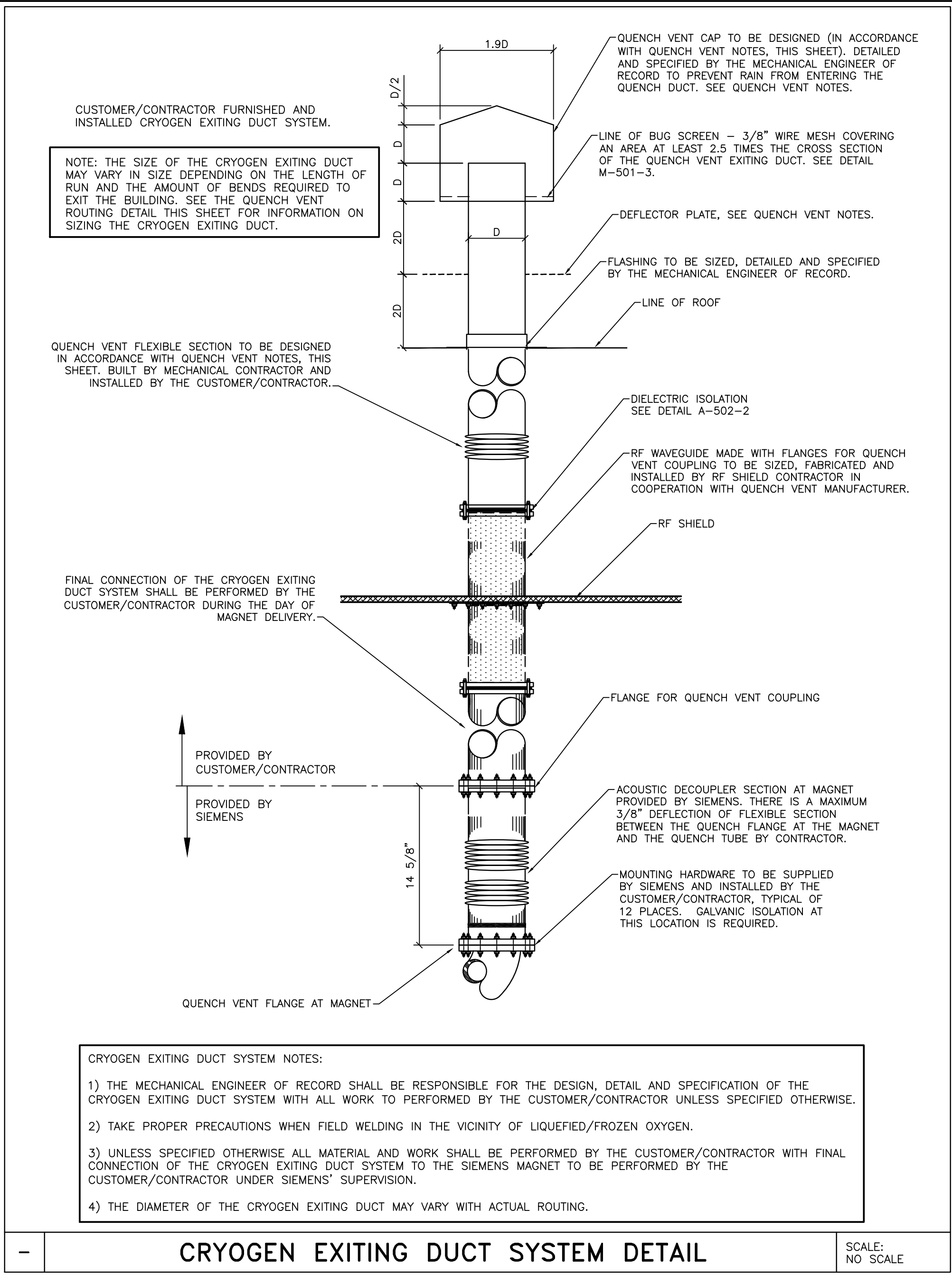
MAGNET EXAMINATION ROOM: 7'-11" MINIMUM

EQUIPMENT ROOM: 7'-3" MINIMUM

ALL ANCILLARY AREAS: 6'-11" MINIMUM

			PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365      EXT: VMAIL: FAX: EMAIL: patrick.ruiz@siemens-healthineers.com	<div>SIEMENS</div>	
	06/25/21	COMPLETE NEW SET OF DWGS BASED ON LATEST MAIL BACKGROUNDS/			
	06/25/21	MODIFIED MAGNET CAUS FIELDS TO REFLECT LATEST SHLD CAUS,7	<div>GRADY MEMORIAL HOSPITAL CORPORATION</div> <div>80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA    30303</div> <div>MRI ROOM #2 – MAGNETOM VIDA XQ GRADIENTS</div>		
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	05/11/21	NEW MAIL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET	<div><div>THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.</div><div>ALL RIGHTS ARE RESERVED.</div></div> <div><div>PROJECT #:</div><div>2003356</div></div> <div><div>SHEET:</div><div>M-101</div></div>		
	06/25/21	2003356RRA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS			
SYM	DATE	DESCRIPTION	<div><div>SHEET 9 OF 10</div><div>DRAWN BY: D. BRISTOE</div></div>		
—ISSUE BLOCK—			<div><div>SCALE: AS NOTED</div><div>REF. #: 30238438</div><div>DATE: 06/25/21</div></div>		





HELIUM CONTENT		
LITERS AT 100%	1,511	LIQUID HELIUM WEIGHT 417 LB.
TYPICAL BOIL OFF RATE	0.0 L/HR	FOR TYPICAL CLINICAL USE, DEPENDING ON SEQUENCES AND OPERATING TIME.
TYPICAL REFILL INTERVAL	N.A.	
WITHOUT THE COLD HEAD RUNNING THE LIQUID HELIUM BOIL OFF IS APPROXIMATELY 3.5% PER 24 HOURS.		

06/25/21

COMPLETE NEW SET OF DWGS BASED ON LATEST WALL BACKGROUNDS/

06/25/21

MODIFIED MAGNET GAUSS FIELDS TO REFLECT LATEST SHD CALCS./

06/25/21

ALL LAYOUTS, LEGENDS NOTES & DETAILS UPDATED ACCORDINGLY

05/11/21

NEW WALL BACKGROUNDS/ ADD CASEWORK & SHIFT MAGNET

06/25/21

2003356RRA DATED 09/10/20 APPROVED BY CUSTOMERS FOR FINALS

SYM

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DESCRIPTION

—ISSUE BLOCK—

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PROJECT MANAGER: PATRICK RUIZ  
TELEPHONE: (770) 402-1365  
FAX: EXT:  
EMAIL: patrick.ruiz@siemens-healthineers.com

**SIEMENS**

**GRADY MEMORIAL HOSPITAL CORPORATION**  
80 JESSE HILL JUNIOR DRIVE, SOUTH EAST, ATLANTA, GA 30303  
MRI ROOM #2 - MAGNETOM VIDA XQ GRADIENTS

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PROJECT #:

**2003356**

SHEET:

**M-501**

SHEET OF 10 10

DRAWN BY: D. BRISTOE

DATE: 06/25/21

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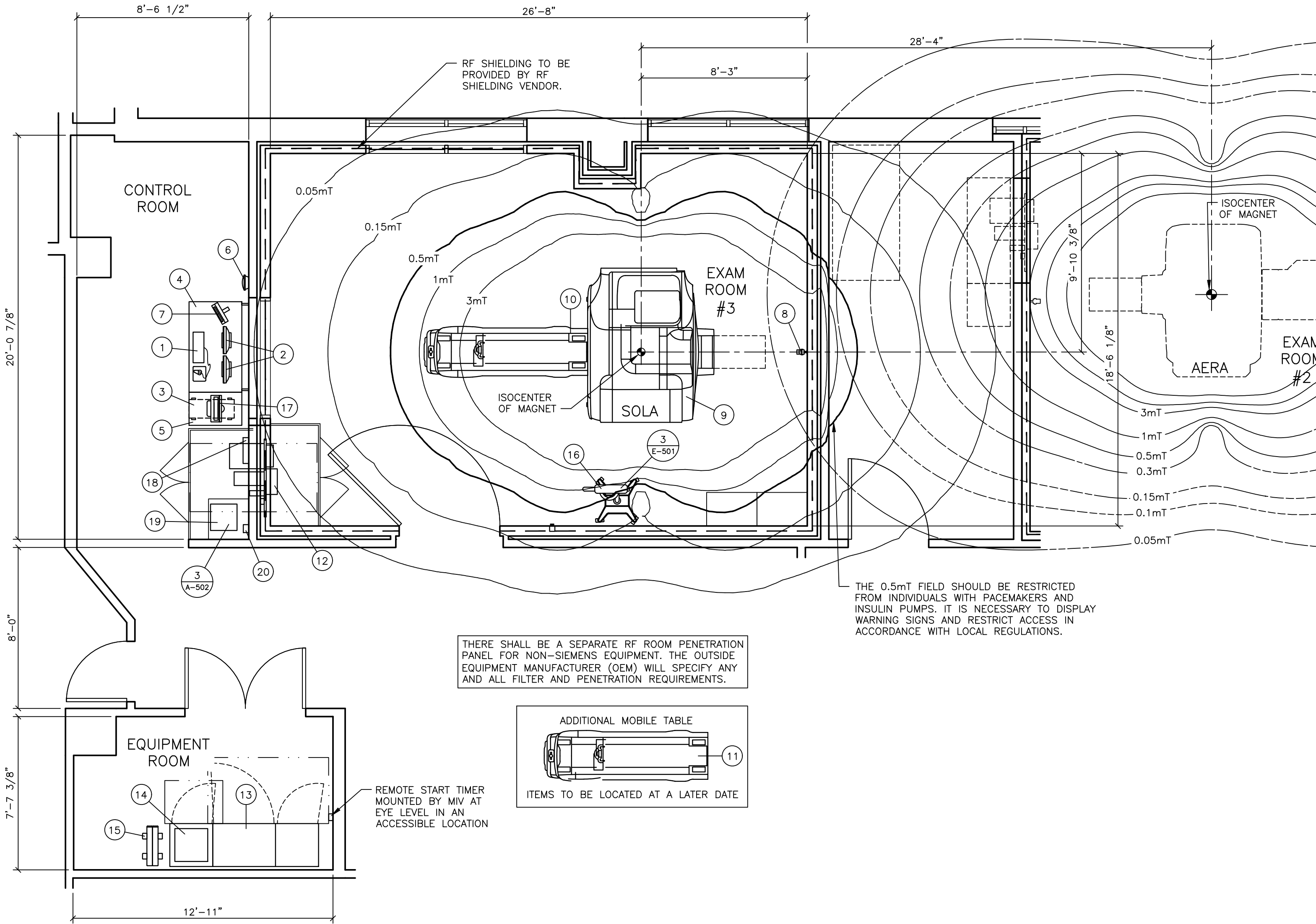
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THIS SET OF FINAL DRAWINGS IS NOT REFLECTIVE OF THE LATEST SALES CONFIGURATION. IT HAS BEEN MODIFIED TO REFLECT ANTICIPATED CHANGES TO YOUR CONFIGURATION. IF REQUESTED CHANGES ARE NOT IMPLEMENTED, A REVISION WILL BE REQUIRED. ADDITIONAL CHANGES TO THIS SALES CONFIGURATION MAY ALSO REQUIRE A REVISION TO THIS DRAWING SET. SIEMENS IS NOT RESPONSIBLE FOR CONSTRUCTION COSTS ASSOCIATED WITH CHANGES THAT OCCUR FROM THIS PLAN MODIFICATION.

CHILLER TO BE SUPPLIED, LOCATED AND INSTALLED BY CUSTOMER/CONTRACTOR. REFER TO MANUFACTURER'S INFORMATION.

IF CLOSET IS DESIRED TO CONCEAL FILTER PLATE ITEM #12 AND CABLE CONNECTIONS IN EXAM ROOM, IT IS TO BE DESIGNED, 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.



## 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)

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

TWO MAGNETS WITH THE SAME FREQUENCY ALIGNED IN THE Z AXES 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

### CEILING HEIGHTS

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

## 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	COLOR MONITOR 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	ADDITIONAL PATIENT TABLE (MOBILE)	⊖	529	---	29 1/2	97 1/4	21-41	
12	RF-FILTER PLATE	⊖	287	853	46 1/2	35 1/8	21 5/8	
13	ELECTRONICS CABINET (GPA/EPC CABINET)	⊖	3,307	<3,412	61 1/2	26	77 1/2	
14	SEP CABINET	⊖	750	<3,412	25 5/8	25 5/8	73 5/8	
15	LIEBERT GXT4 UPS WITH BATTERY	⊖	164	1,121	17	23 5/8	6 3/4	
16	MRXPERION INJECTOR STAND AND HEAD	⊖	94	---	23 3/8	28 3/8	71 7/8	INJECTOR ON STAND
17	MRXPERION ICBC INJECTOR CRU	⊖	17.6	---	15 3/4	10 1/4	13 1/2	ON CUSTOMERS COUNTER
18	MRXPERION ICBC INJECTOR POWER SUPPLY	⊖	6	---	15 3/8	3 3/8	15 1/2	LOCATED IN CONTROL ROOM CLOSET OUTSIDE 5mT FIELD
19	ELASTOGRAPHY ACTIVE DRIVER	⊖	53.5	---	15 3/4	15 3/4	6	PROVIDE SHELF
20	ELASTOGRAPHY TRIGGER BOX	⊖	---	---	3 1/4	4 3/4	4 3/4	IN CONTROL ROOM CLOSET

## 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	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 AXES	Z AXIS	SOURCE OF INTERFERENCE
4'-2"		FLOOR STEEL REINFORCEMENT<20 LBS./ FT. <sup>2</sup>
16'-1"	19'-1"	IRON BEAMS < 66 LBS./FT.
		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.

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

1) 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.

2) ALL FURNITURE (CHAIRS, ETC.) FOR THE CONTROL ROOM ARE TO BE PROVIDED BY THE CUSTOMER.

REV 0

## RESOURCE LIST (SMS USE ONLY)

DESIGNATION	PG NUMBER	DATE
PLANNING GUIDE	M11-010.891.01.03.02	11.19

SOLA  
REV 14

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365  
FAX: EXT:  
EMAIL: PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM

**SIEMENS**

**GRADY HEALTH SYSTEM**

80 JESSE HILL JR DR SE, ATLANTA, GA 30303

MRI SUITE -- MRI 3 -- MAGNETOM SOLA XQ GRADIENTS

PROJECT #:

**2200757**

SHEET:

**A-101**

SHEET 1 OF 10

DRAWN BY: D. BRISTOE

DATE: 06/06/22

SCALE: AS NOTED

REF. # 30261311

**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.  
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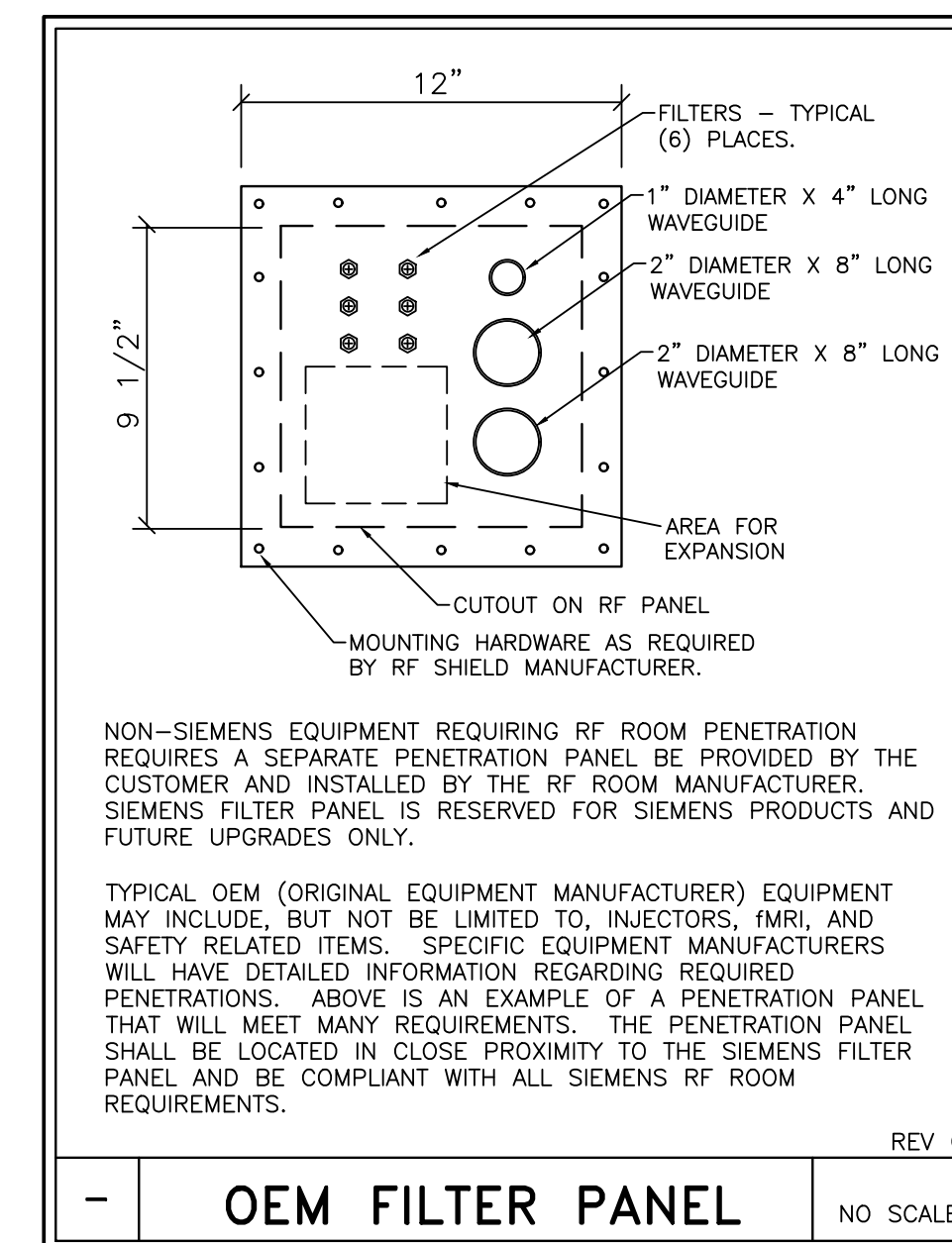
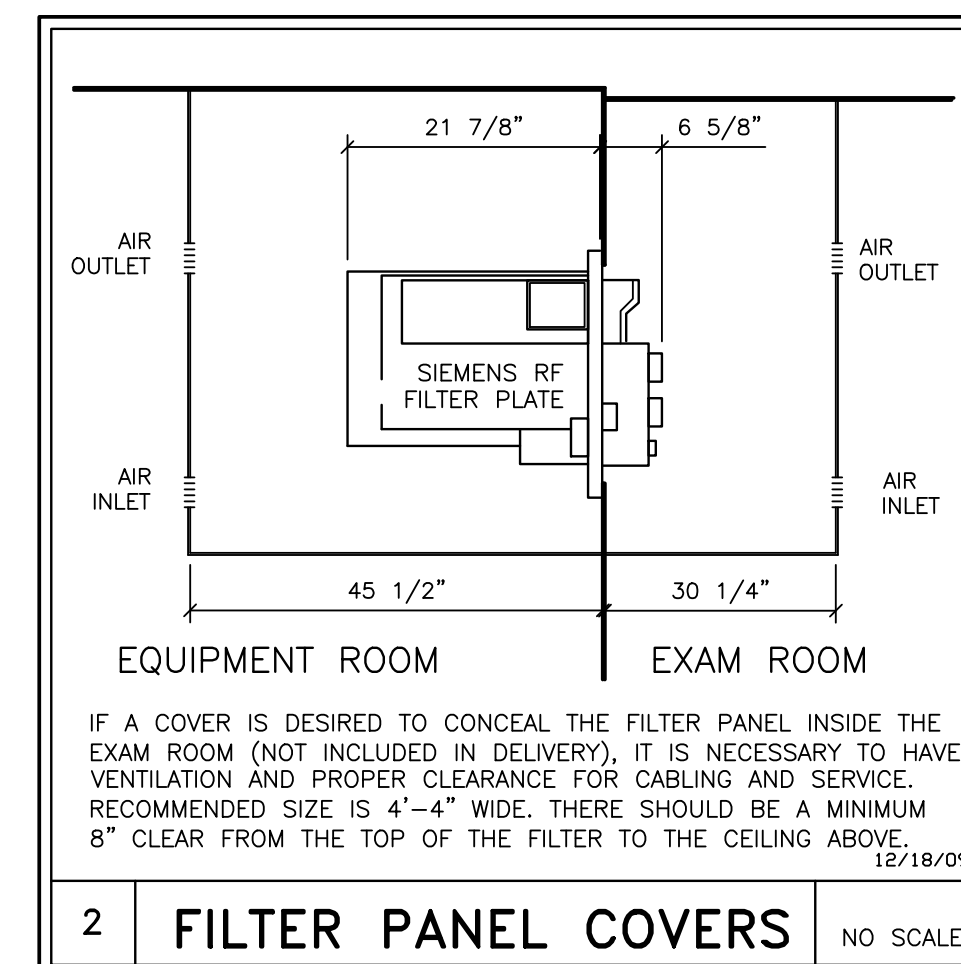
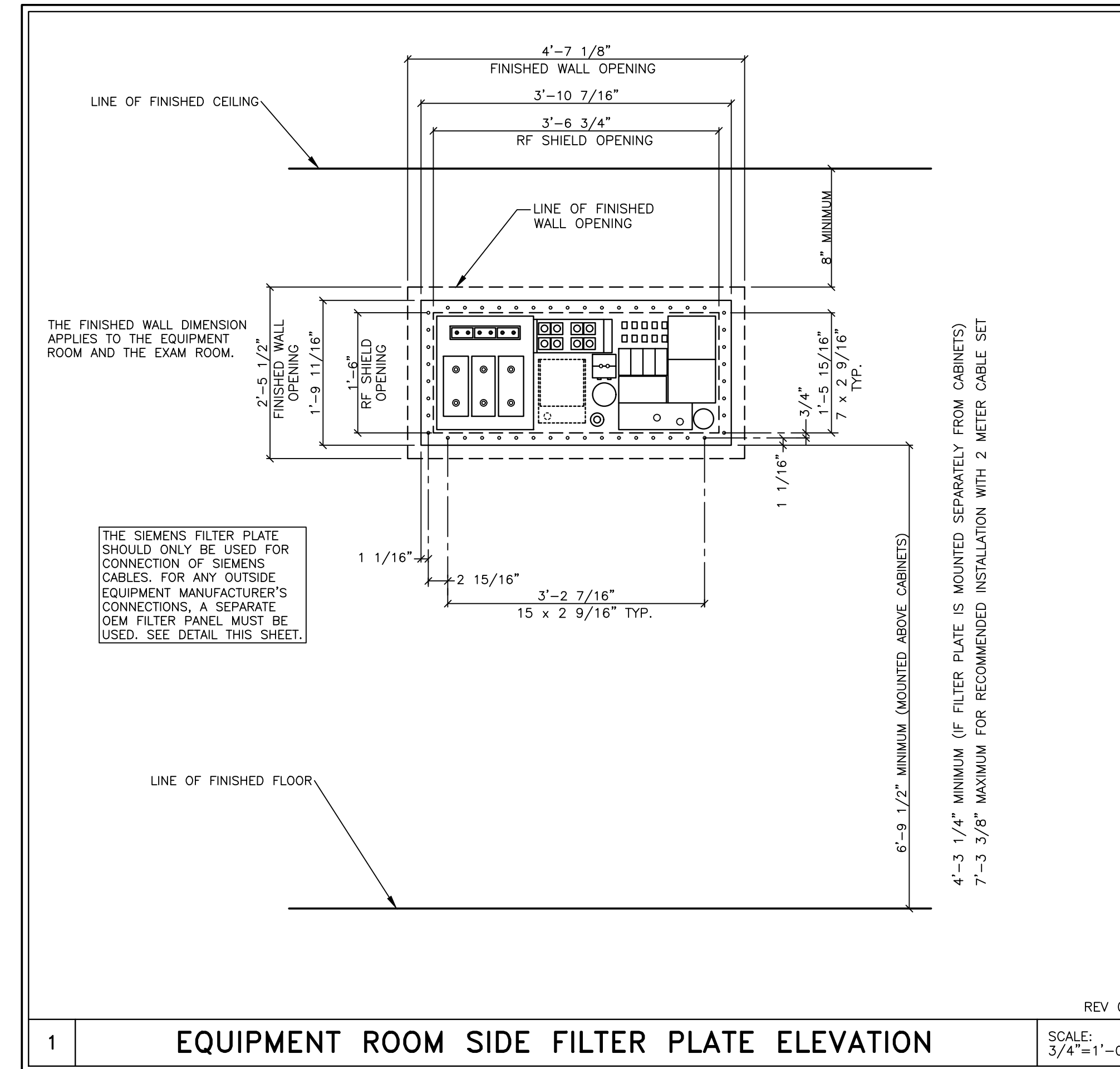
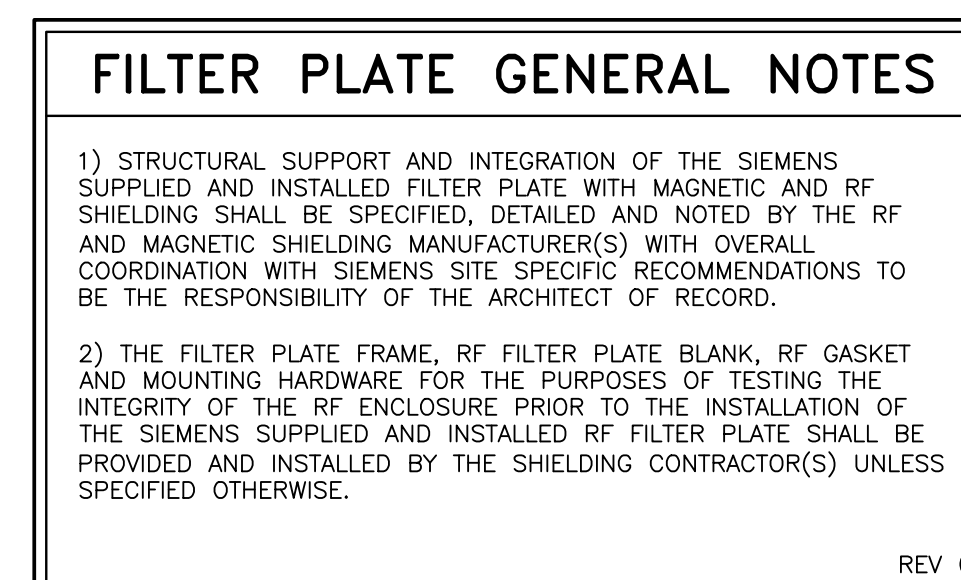
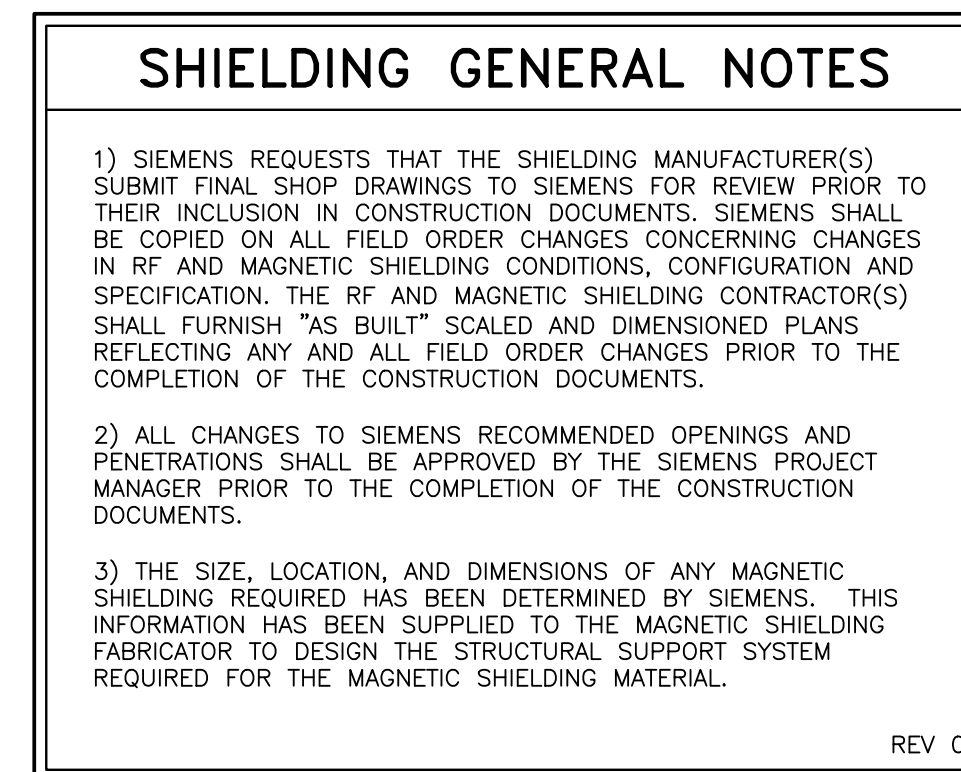
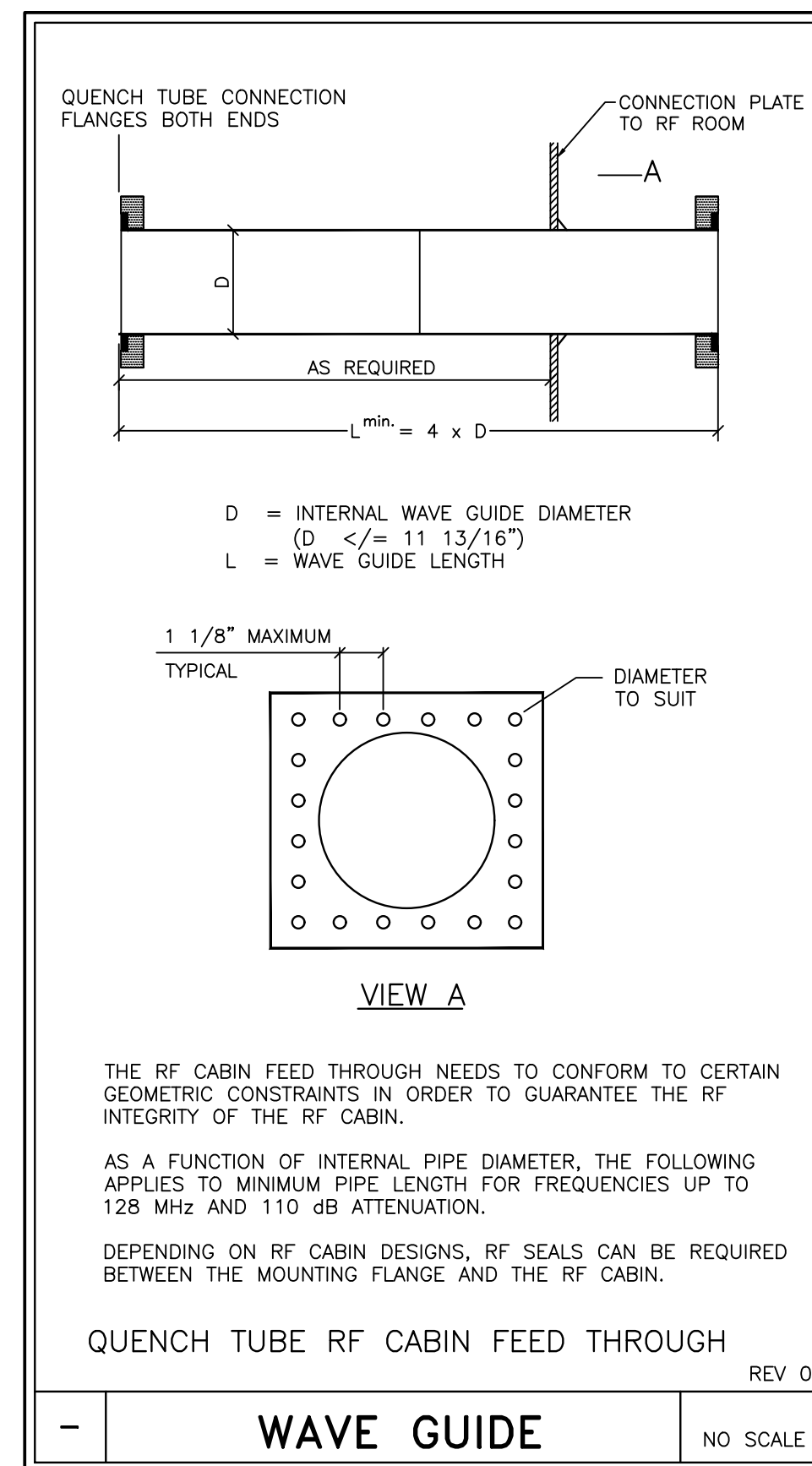
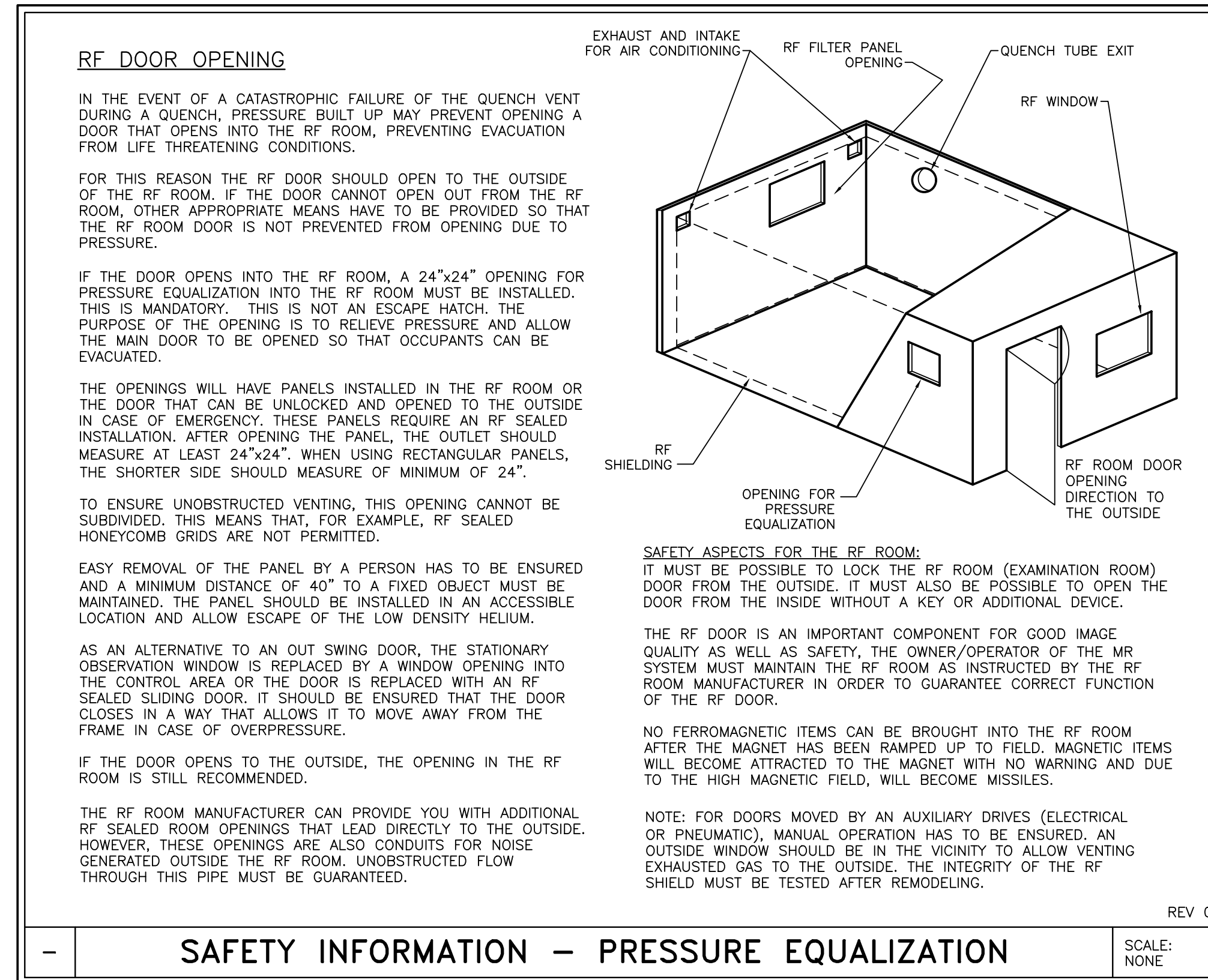
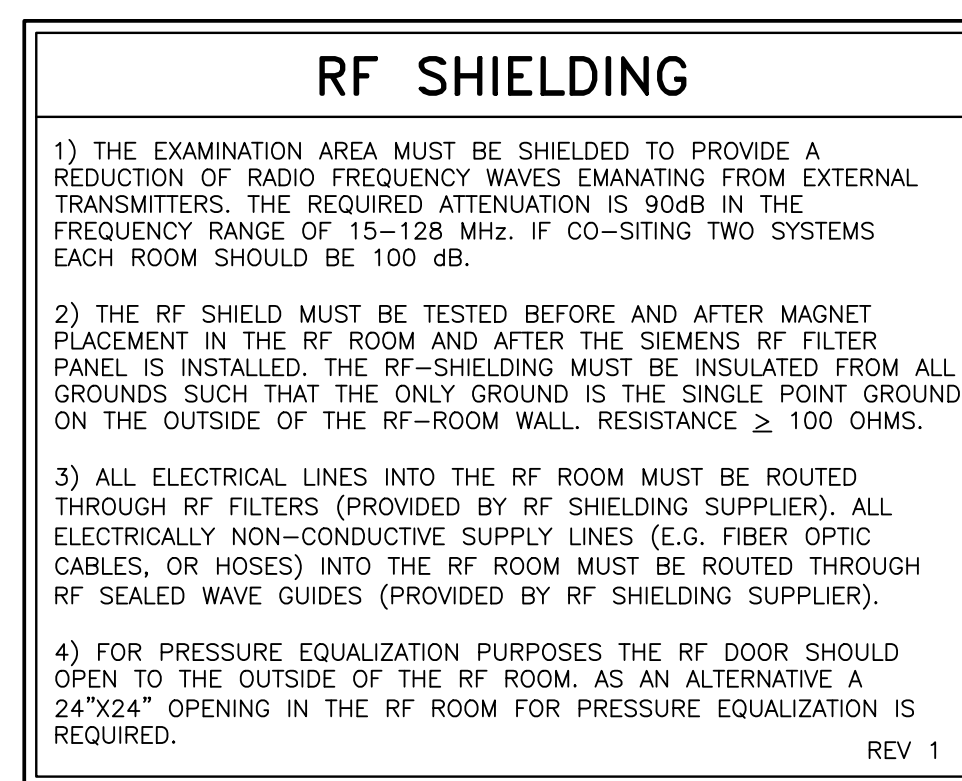
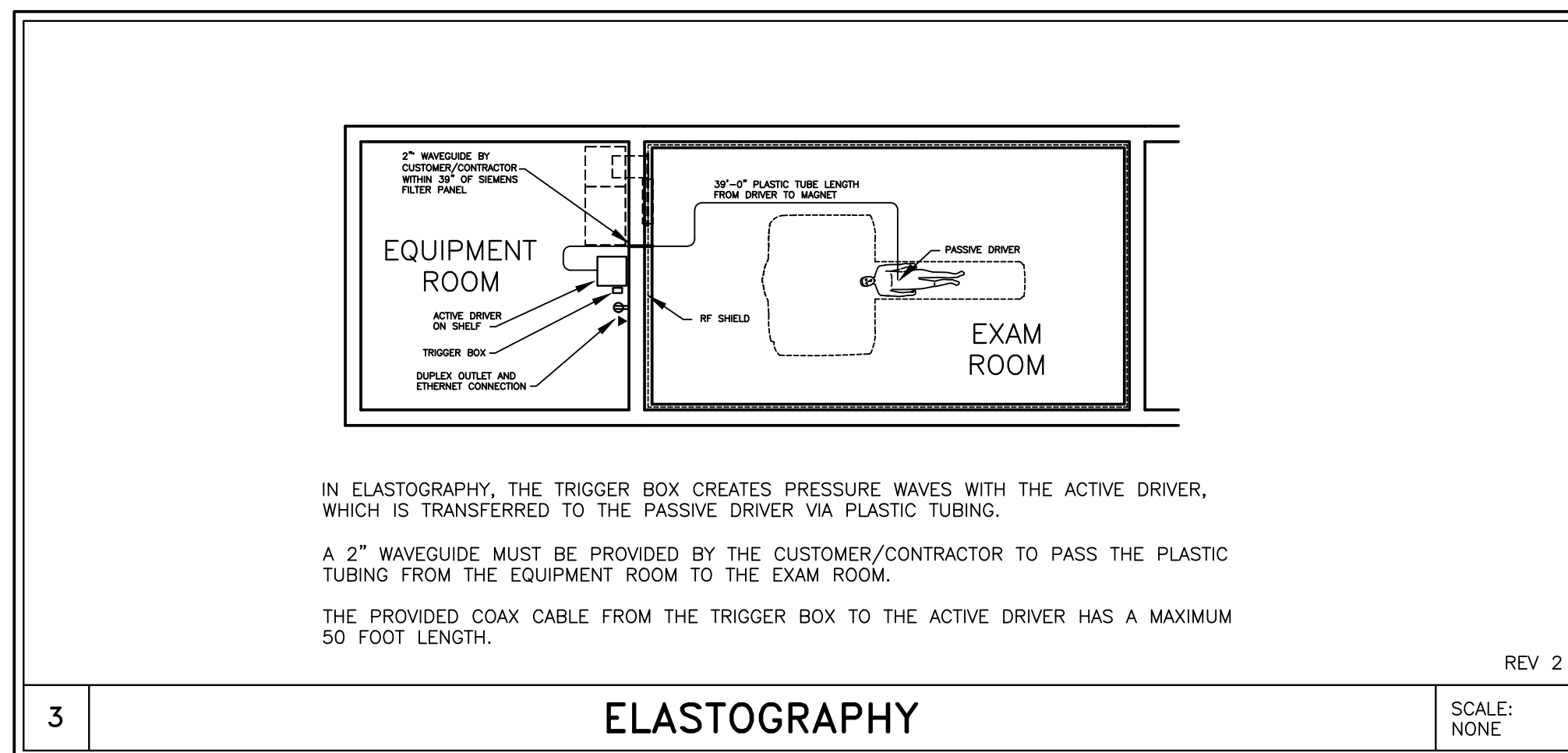
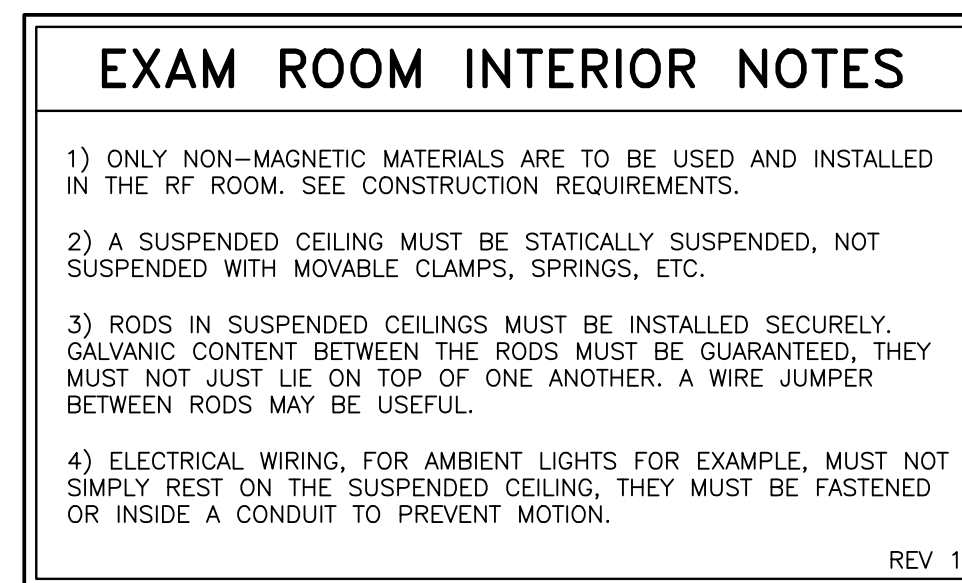
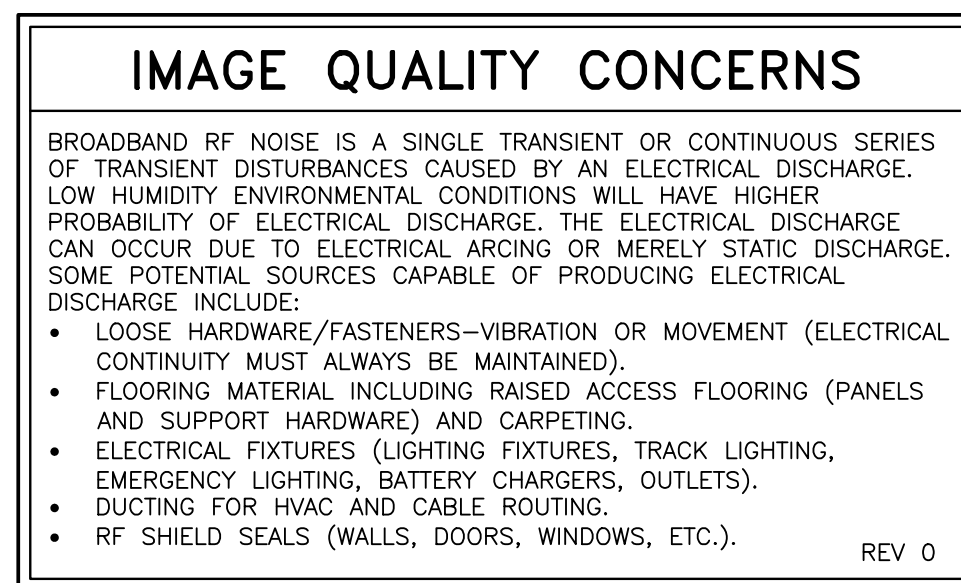
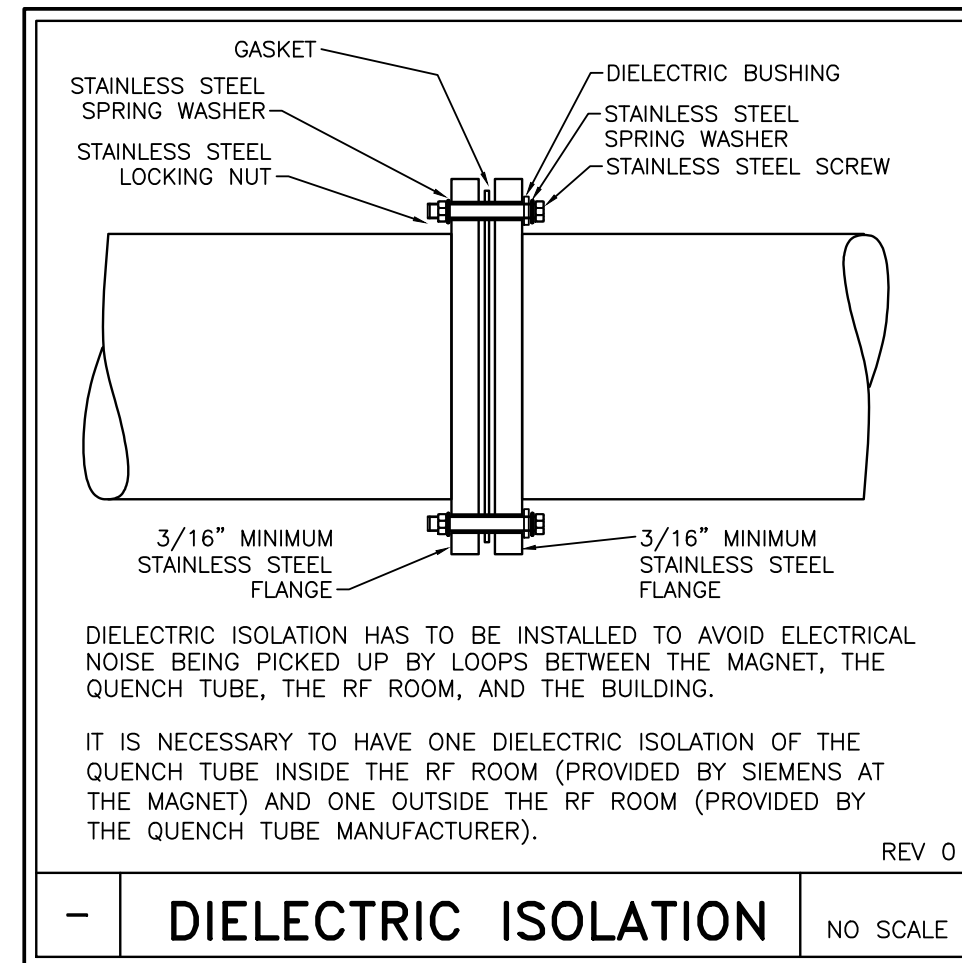
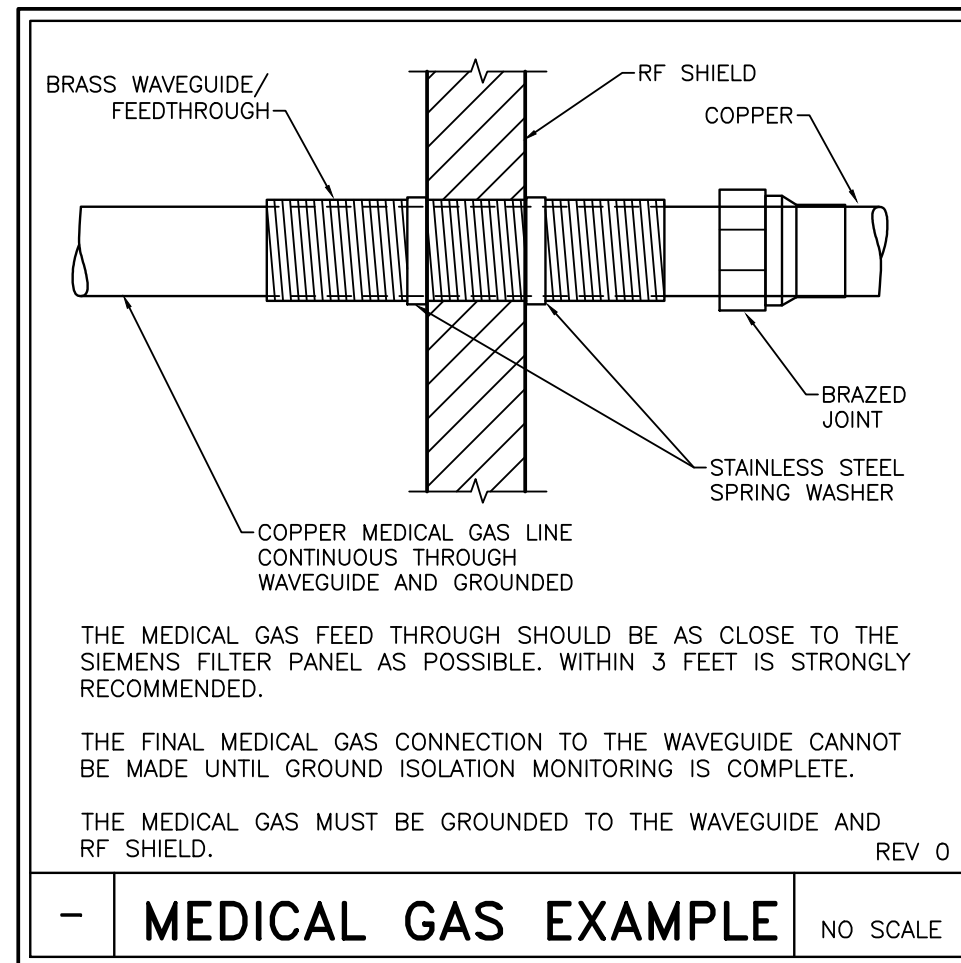
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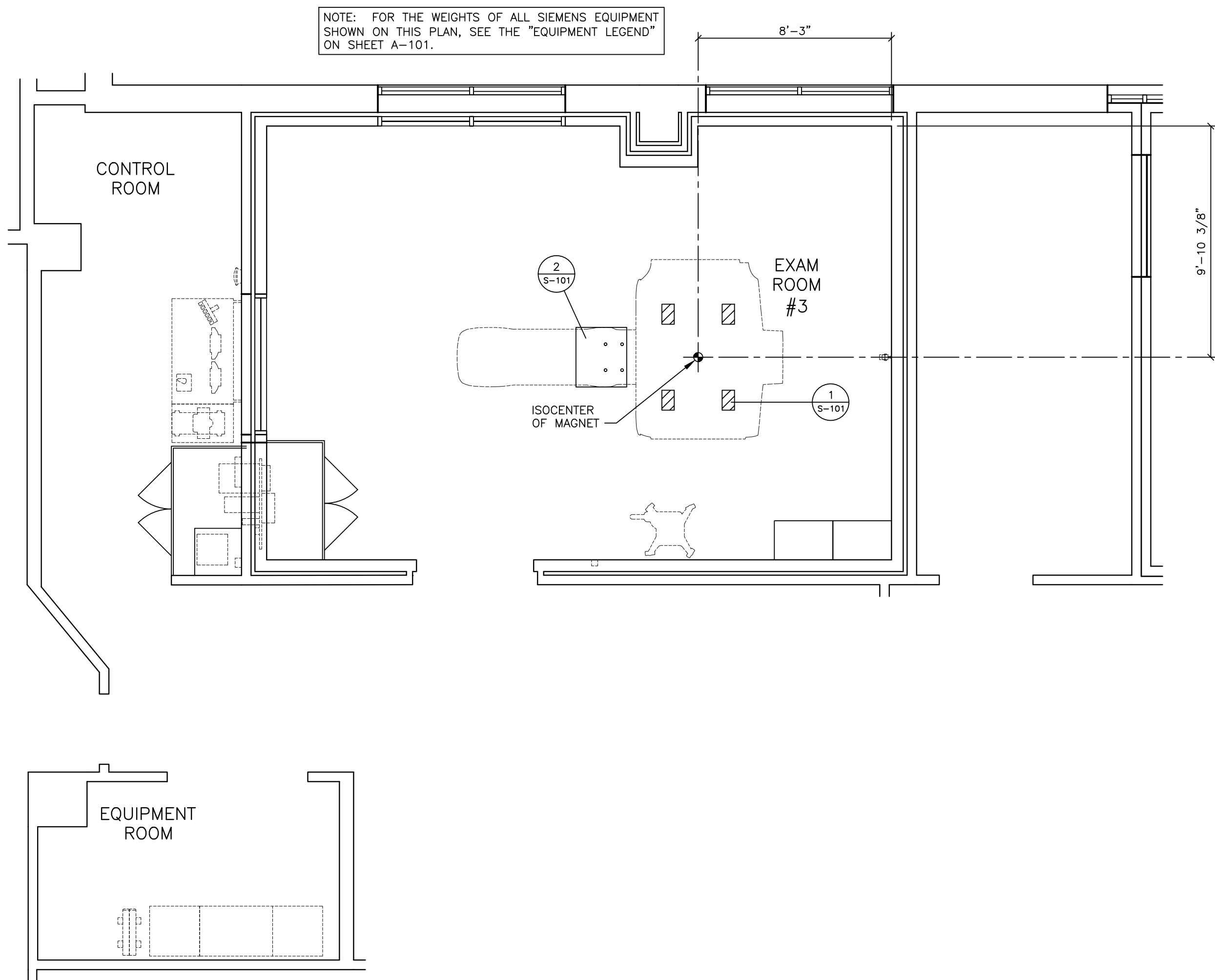






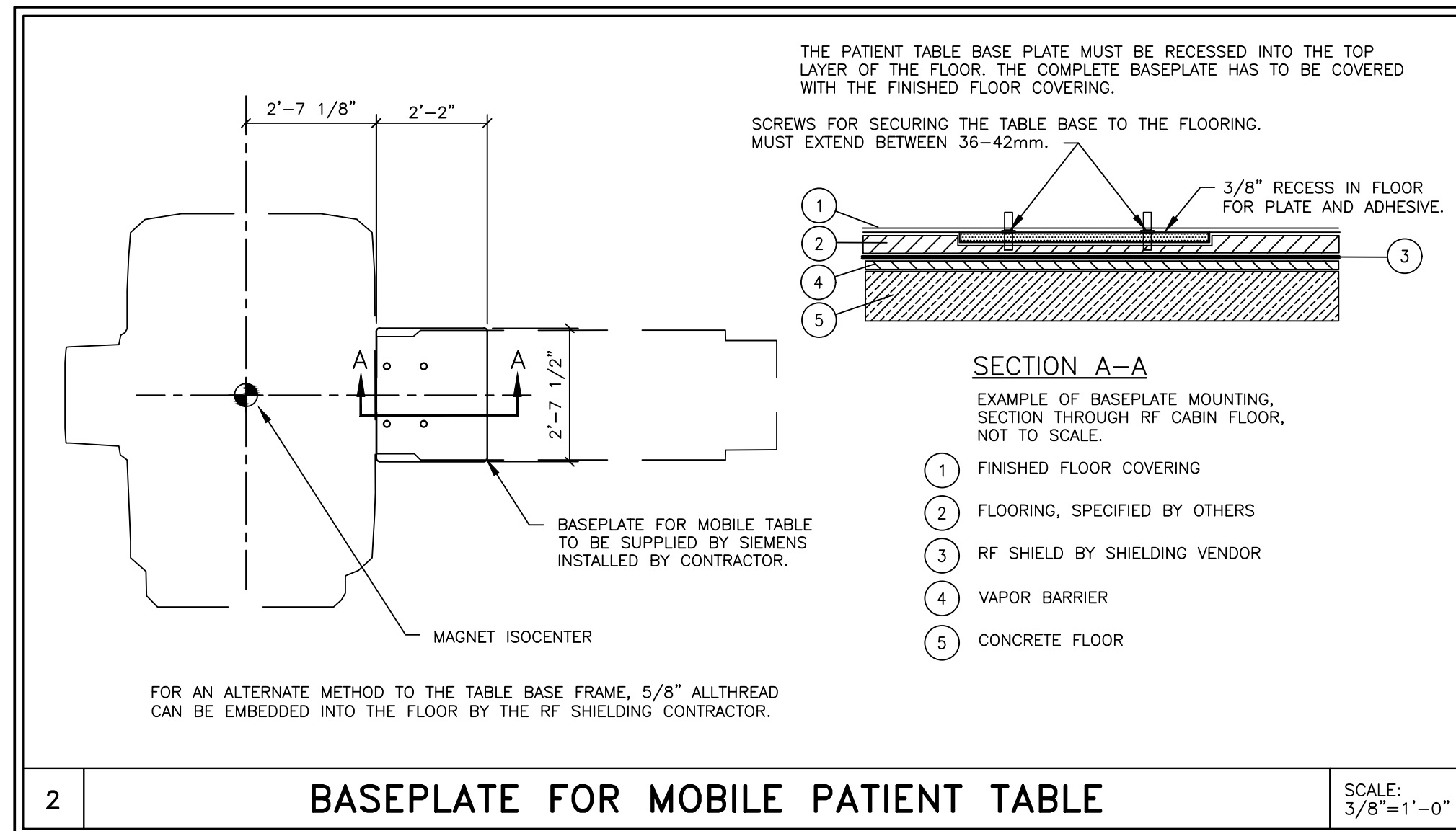
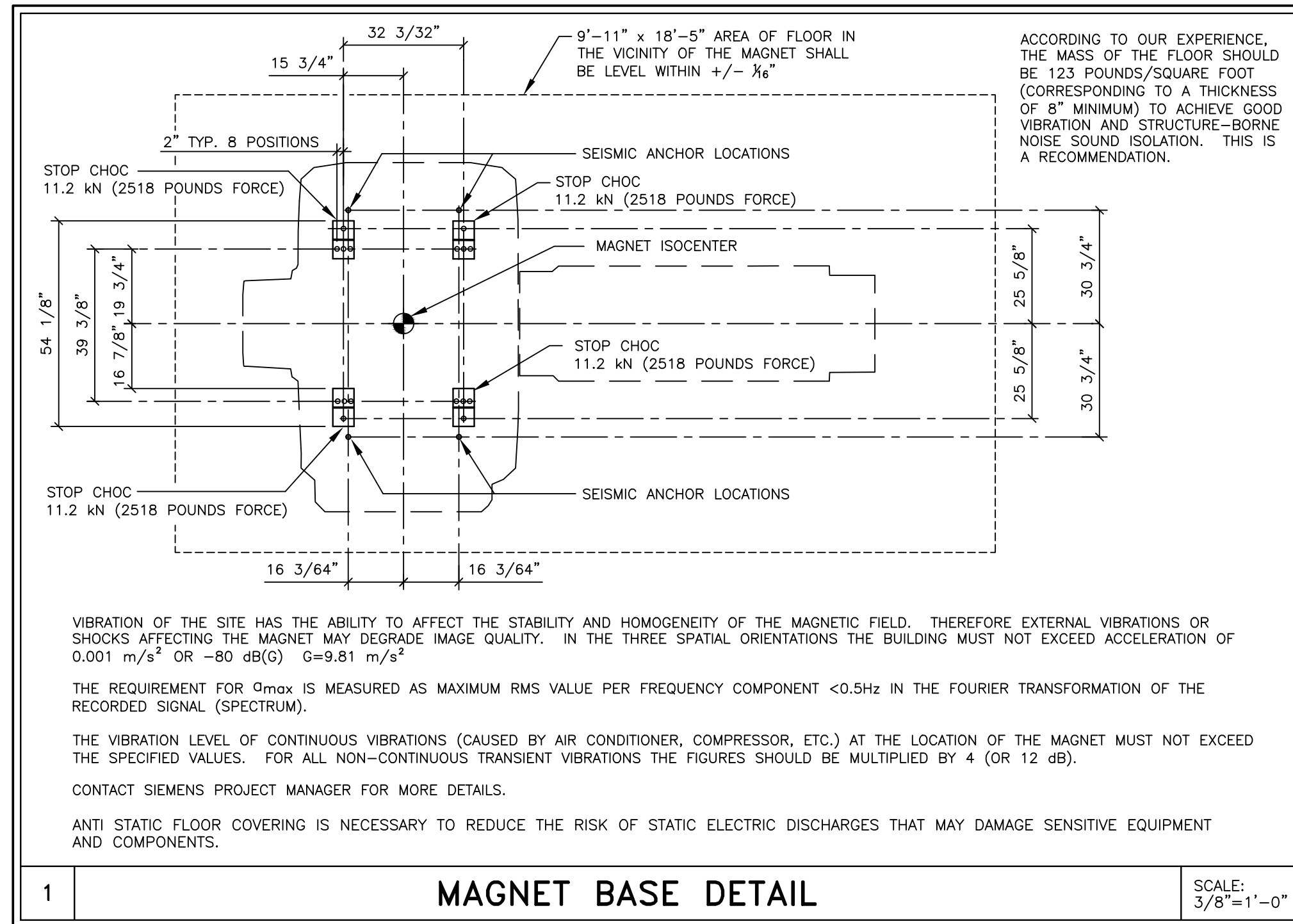






STRUCTURAL FLOOR PLAN

SCALE: 1/4" = 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 FLUSH 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: PATRICK RUIZ  
TEL: (770) 402-1365 EXT:  
FAX:  
EMAIL: PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM

SIEMENS

GRADY HEALTH SYSTEM

80 JESSE HILL JR DR SE, ATLANTA, GA 30303  
MRI SUITE - MRI 3 - MAGNETOM SOLA XQ GRADIENTS

PROJECT #:

2200757

SHEET:

S-101

SHEET 5 OF 10

DRAWN BY:

D. BRISTOE

DATE: 06/06/22

SCALE: AS NOTED

REF. # 30261311

ATTENTION:

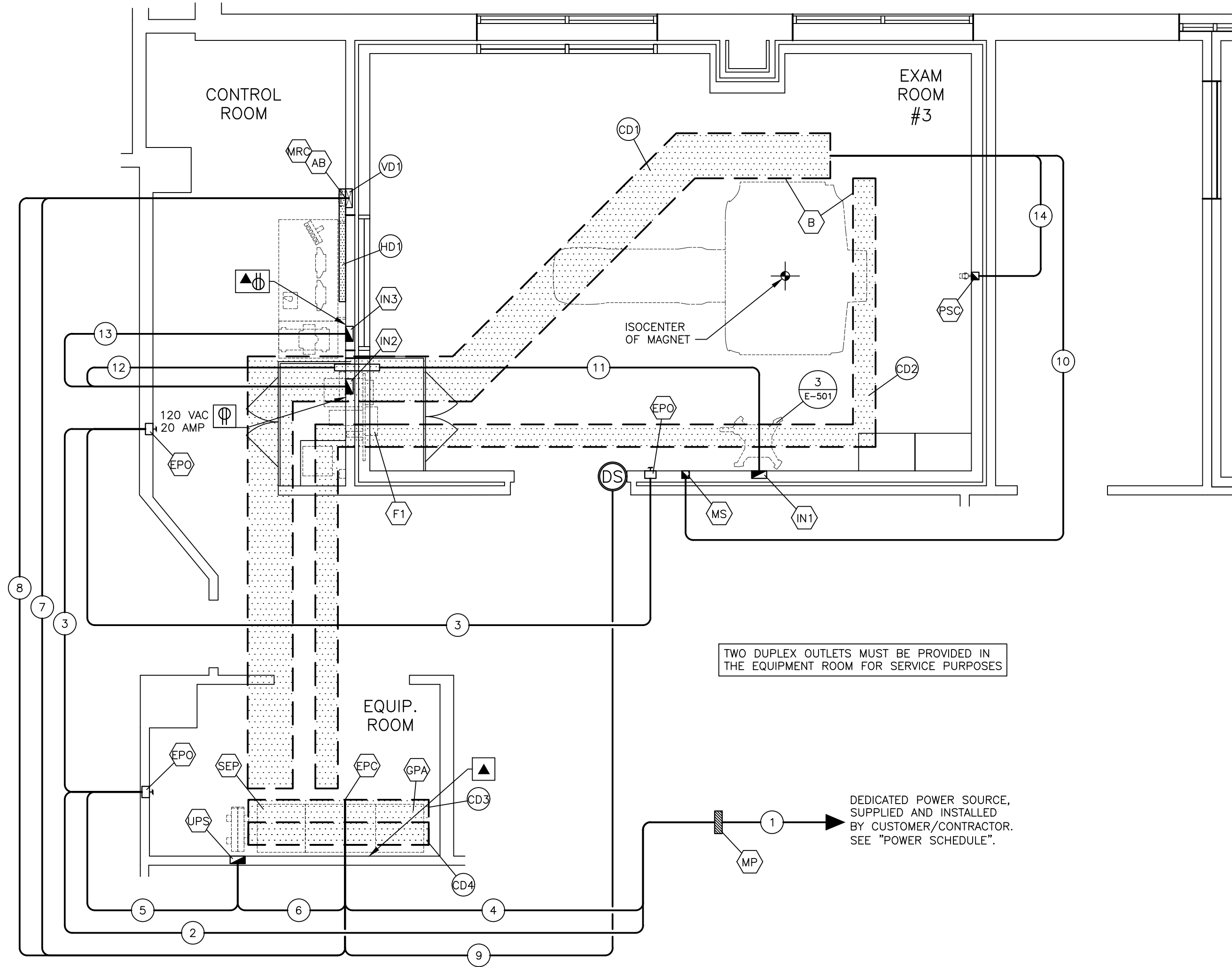
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ELECTRICAL RACEWAY PLAN

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

SYMBOLS

ALL MAY NOT APPLY

	CAUTION OR WARNING
	CRITICAL NOTE(S)
	PANEL OR ENCLOSURE BY CUSTOMER/CONTRACTOR
	OPENING IN RACEWAY OR TRENCH/DUCT
	PULLBOX IN (FLOOR/WALL/CEILING)
	OPENING IN ACCESS FLOORING
	RF DOOR SWITCH - MCMASTER-CARR SUPPLY ROLLER LIMIT SWITCH 7076K14 PROVIDED BY CONTRACTOR, AND MOUNTED AT TOP OF DOOR. COORDINATE WITH SIEMENS PROJECT MANAGER.
	(EPO) EMERGENCY POWER OFF BUTTON
	CEILING DUCT
	SURFACE MOUNTED DUCT
	VERTICAL DUCT
	ETHERNET CONNECTION TO CUSTOMER'S INFORMATION SYSTEMS NETWORK IN AN ACCESSIBLE LOCATION (VERIFY WITH SIEMENS PROJECT MANAGER).
	110 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET LOCATED NEAR THE ETHERNET CONNECTION.

REV 2

ELECTRICAL LEGEND

SYM	SIZE	DESCRIPTION SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR	REMARKS
AB	3"	OPENING IN FACE OF VERTICAL DUCT 5'-0" ABOVE FINISHED FLOOR IN LOCATION TO BE COORDINATED WITH THE ARCHITECT.	ALARM BOX
AB, AB, AB	18" x 18"	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	ELECTRONICS CABINETS
B	AS REQUIRED	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	MAGNET CABLE ACCESS
CD	----	EMERGENCY POWER OFF BUTTONS, MOUNTED WITH CENTERLINE AT 5'-0" ABOVE FINISHED FLOOR. ALL PARTS ARE TO BE NON-FERROUS INSIDE THE RF ROOM. EXACT LOCATIONS ARE TO BE VERIFIED WITH THE ARCHITECT OF RECORD.	SEE POWER SCHEDULE, SHEET E-102
CD	----	SIEMENS RF FILTER PANEL TO BE MOUNTED ON RF SHIELDED WALL.	FILTER PANEL
CD	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 POWER SUPPLY- MUST BE LOCATED OUTSIDE OF 5mT FIELD
CD	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN EQUIPMENT ROOM, MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	INJECTOR POWER SUPPLY
CD	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
CD	----	MAIN PANEL WITH MAIN BREAKER. EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR	SEE POWER SCHEDULE
CD	4" x 4"	OPENING IN FACE OF RACEWAY IN SHOWN LOCATION.	HOST COMPUTER
CD	AS REQUIRED	NON-FERROUS SINGLE GANG BOX MOUNTED FLUSH WITH FINISHED WALL MOUNTED 6'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	MAGNET STOP
CD	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL REFER TO HEIGHT CHART A-501-3. THE PULL BOX CAN BE MOUNTED AT APPROXIMATELY 5'-0" ABOVE THE FINISHED FLOOR IN MOST CASES, DEPENDING ON THE DISTANCE FROM THE MAGNET TO THE WALL.	PATIENT SUPERVISION CAMERA
CD	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL AT FLOOR LINE IN SHOWN LOCATION PROVIDED WITH 2"Ø OPENING IN FINISHED COVER.	LIEBERT GXT4 UPS
CD	24"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER, IN THE EXAM ROOM, MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE FILTER PANEL AND THE MAGNET. A 15" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE RF FILTER PANEL (F1). WHEN ROUTING ALL RACEWAYS REFER TO DETAIL E-501/2 TAKING CARE SO THAT MAXIMUM CABLE LENGTHS ARE NOT EXCEEDED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/1
CD	12"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EXAM ROOM. A 12" SEPARATION BETWEEN CD1 AND CD2 MUST BE MAINTAINED. DO NOT LOCATE THIS CABLE TRAY ABOVE THE MAGNET.	CABLE TRAY SEE DETAIL E-501/1
CD	24"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EQUIPMENT ROOM MAINTAINING 12" CLEARANCE ABOVE THE TRAY FOR ACCESS. CABLE LADDER IS REQUIRED TO SUPPORT INTERCONNECTING CABLES BETWEEN THE EQUIPMENT ROOM AND THE RF FILTER PANEL (F1). AN 18" MINIMUM CLEARANCE IS REQUIRED BETWEEN THE LADDER TRAY AND THE FILTER PANEL.	CABLE TRAY SEE DETAIL E-501/1
CD	12"x4"	ALUMINUM LADDER TRAY, MOUNTED AT HEIGHT COORDINATED WITH SIEMENS PROJECT MANAGER IN EQUIPMENT ROOM. A 12" SEPARATION BETWEEN CD3 AND CD4 MUST BE MAINTAINED.	CABLE TRAY SEE DETAIL E-501/1
CD	4" x 2"	HORIZONTAL DUCT SURFACE MOUNTED ON WALL IN CONTROL AREA AT FLOOR LINE AS SHOWN, FINISHED TO MATCH WALLS.	
CD	10" x 3-1/2"	VERTICAL DUCT MOUNTED FLUSH WITH FINISHED WALL, IN CONTROL AREA FROM ABOVE FINISHED CEILING TO FLOOR LINE PROVIDED WITH REMOVABLE FINISHED COVERS.	
CD	AS PER NEC	CONDUIT FROM FACILITY POWER TO MAIN PANEL "MP".	SEE POWER SCHEDULE, SHEET E-102
CD	AS PER NEC	CONDUIT FROM "MP" TO "EPO".	SEE POWER SCHEDULE, SHEET E-102
CD	AS PER NEC	CONDUIT FROM "EPO" TO "EPO" TO BE NON-FERROUS WHEN INSIDE THE RF ROOM. CUSTOMER/CONTRACTOR IS TO PROVIDE RF FILTERS FOR ALL NON-SIEMENS WIRING.	SEE POWER SCHEDULE, SHEET E-102
CD	(1) 2"	CONDUIT FROM "MP" TO END AT "CD3" (EPC) VIA FLEX CONDUIT. THERE MUST BE A DIELECTRIC SEPARATION BETWEEN THE CONDUIT AND THE CONNECTION AT THE SIEMENS EPC CABINET.	SEE POWER SCHEDULE, SHEET E-102
CD	(1) 3/4"	CONDUIT FROM "EPO" TO "UPS".	
CD	(1) 2"	CONDUIT FROM "UPS" TO "CD3" (EPC)	MAXIMUM LENGTH 29 FEET
CD	(2) 2 1/2"	CONDUIT FROM "VD1" (MRC) TO "CD3" (EPC).	NOT TO EXCEED 54 FT.
CD	(1) 1 1/2"	CONDUIT FROM "VD1" (AB) TO "CD3" (EPC).	NOT TO EXCEED 60 FT.
CD	(1) 1/2"	CONDUIT FROM "DS" TO "CD3" (EPC).	NOT TO EXCEED 60 FT.
CD	(1) 3/4"	CONDUIT FROM "MS" TO "CD1" (WIRES TO MAGNET) TO BE NON-FERROUS WHEN INSIDE THE RF ROOM.	NOT TO EXCEED 25 FT.
CD	(1) 2"	NON-FERROUS CONDUITS FROM NEAR "F1" TO "IN1" FOR INJECTOR CABLES.	NOT TO EXCEED 40 FEET
CD	(1) 2"	CONDUITS FROM NEAR FILTER LOCATION TO "IN2".	
CD	(1) 2"	CONDUIT FROM "IN2" TO "IN3" FOR INJECTOR CABLES.	NOT TO EXCEED 150 FEET
CD	(1) 1"	NON-FERROUS CONDUIT FROM "PSC" TO "CD1".	

CONTRACTOR SUPPLIED CABLES

FROM	VIA	TO	DESCRIPTION	REMARKS
SOURCE	1	MP	(3) PHASE CONDUCTORS; (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.	
MP	2	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
EPO	3	EPO	DETERMINED BY ELECTRICAL CONTRACTOR.	
MP	4, CD3	EPC	(3) 2/0 AND (1) 2/0 EQUIPMENT GROUND, TO REDUCE EMI (INTERFERENCE) THE POWER CABLES MUST BE SHIELDED. THIS CAN BE ACHIEVED BY USING EMT, WHICH IS CONSIDERED A SHIELDING DEVICE. IF CABLES ARE RUN IN FREE AIR SHIELDED CONDUCTORS MUST BE USED.	LANDED BY ELECTRICAL CONTRACTOR
EPO	5	UPS	DETERMINED BY ELECTRICAL CONTRACTOR.	6 FOOT TAILS

ELECTRICAL NOTES

- 1) COMPLIANCE: ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA-70), O.S.H.A. REGULATIONS, AS WELL AS APPLICABLE REGULATIONS OF CITY, COUNTY, STATE AND FEDERAL AGENCIES. PROVIDE MATERIALS AND EQUIPMENT THAT COMPLY TO ANSI, IEEE AND NEMA STANDARDS AND ARE U.L. LISTED AND LABELED. THE CUSTOMER'S/CONTRACTOR'S WORK AND ALL EQUIPMENT INSTALLED SHALL COMPLY WITH THE CURRENT EDITION OF NATIONAL ELECTRICAL CODE ADOPTED/ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
- 2) QUALITY ASSURANCE: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT INTO THE EXISTING STRUCTURE AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST OR BE DISCOVERED THAT PREVENT THE INSTALLATION OF WORK AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO FABRICATION OF EQUIPMENT, OR THE PERFORMANCE OF ANY WORK THAT MAY BE AFFECTED. DO NOT ALTER DRAWINGS, DIMENSIONS, OR SPECIFICATIONS IN ANY WAY WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SIEMENS PROJECT MANAGER. ALL DIMENSIONS ARE FROM FINISHED SURFACES. CONDUIT AND PULL BOXES TO BE INSTALLED BY THE CUSTOMER/CONTRACTOR WITH LOCATIONS BEING FIELD VERIFIED BY SIEMENS PROJECT MANAGER.
- 3) POWER SUPPLY SOURCE: POWER SUPPLIES FOR SIEMENS HEALTHCARE EQUIPMENT SHALL BE FROM A MEDICAL IMAGING PANEL OR BUILDING SERVICE EQUIPMENT THAT IS A GROUNDED 3 OR 4-WIRE "WYE" SOURCE PER THE SPECIFIC EQUIPMENT OPERATION REQUIREMENTS. A DEDICATED CIRCUIT SHALL BE PROVIDED THAT IS KEPT ENTIRELY FREE AND INDEPENDENT OF ALL OTHER BUILDING WIRING. NO ELEVATORS, GENERATORS, PUMPS, HVAC OR SIMILAR EQUIPMENT SHALL BE CONNECTED TO THE SAME CIRCUIT OR MEDICAL IMAGING PANEL THAT SERVES THE SIEMENS HEALTHCARE EQUIPMENT. IF THE POWER SUPPLY SOURCE DOES NOT MEET THE SPECIFIC SIEMENS EQUIPMENT POWER REQUIREMENTS, THE CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT REQUIRED TO ESTABLISH THE POWER SUPPLY IN ACCORDANCE WITH THE REQUIRED POWER SUPPLY PARAMETERS OF THE SIEMENS EQUIPMENT. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CUSTOMER AND/OR UTILITY COMPANY FIELD REPRESENTATIVE.
- 4) WORK FURNISHED BY CUSTOMER/CONTRACTOR: WORK NOT PROVIDED BY SIEMENS HEALTHCARE BUT SHOWN ON DRAWINGS TO BE FURNISHED AND INSTALLED BY CUSTOMER/CONTRACTOR INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING, UNLESS NOTED OTHERWISE: ELECTRICAL RACEWAYS AND DUCTS, WIRING TROUGHS, PULL BOXES, CONDUITS, CIRCUIT BREAKERS, ACCESS PANELS, EMERGENCY OFF BUTTONS, DOOR SWITCHES, WARNING LIGHTS, WIRING DEVICES, CONNECTORS, LIGHTING EQUIPMENT AND GROUNDING.
- 5) RACEWAY AND CONDUIT NOTES: ALL ITEMS IN THE MAGNET ROOM SHALL BE NON-FERROUS. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT ENFORCED EDITION OF THE NATIONAL ELECTRICAL CODE. CONDUIT BODIES SHALL NOT BE USED WHERE A CONDUIT ENTERS A BOX, FITTING, OR OTHER ENCLOSURE, AN INSULATED THROAT CONNECTOR SHALL BE PROVIDED TO PROTECT THE WIRE FROM ABRASION. ALL CONNECTORS FOR EMT SHALL BE COMPRESSION OR DOUBLE SET SCREW TYPE.
- 6) KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES, STEAM OR HOT WATER PIPES. INSTALL RACEWAY RUNS ABOVE WATER AND STEAM PIPES PROVIDED THAT CABLE RUN DISTANCES ARE MAINTAINED. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY.
- 7) CONDUIT RUNS ARE SHOWN SCHEMATICALLY. INSTALL CONDUIT WITH A MINIMUM OF BENDS IN THE SHORTEST PRACTICAL DISTANCE CONSIDERING THE BUILDING CONSTRUCTION AND OBSTRUCTIONS, EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL MAKE CERTAIN THAT ANY CONDUIT/RACEWAY RUNS CONTAINING SIEMENS HEALTHCARE CABLES DO NOT EXCEED THE SPECIFIED MAXIMUM DISTANCES AS SHOWN ON THE ELECTRICAL DETAILS. LISTED CONDUIT SIZES FOR SIEMENS-SUPPLIED CABLES MUST BE MAINTAINED IN ORDER TO ENABLE THE TOTAL CABLE BUNDLE INCLUDING CONNECTORS TO BE PULLED THROUGH WITHOUT DAMAGE.
- 8) PROVIDE ENCLOSED METAL WIRE DUCT RACEWAY SYSTEM WHERE SHOWN ON DRAWINGS WITH DIVIDERS TO SEPARATE THE DUCT INTO TWO OR THREE SEPARATE COMPARTMENTS AS SHOWN ON THE SIEMENS PLANS FOR POWER AND SIEMENS HEALTHCARE CABLES. DIVIDERS AND CROSSOVER PIECES TO BE PROVIDED AS NECESSARY. THE CABLE TO CABLE AS WELL AS THE CIRCUIT TO CIRCUIT SEPARATION REQUIREMENT WAS EVALUATED DURING THE UL SYSTEM CERTIFICATION OF THE EQUIPMENT. ADDITIONAL SEPARATION OF THE SYSTEM CABLE ASSEMBLIES INTO SEPARATE OR PARTITIONED RACEWAYS, UNLESS OTHERWISE NOTED, IS NOT NECESSARY TO INSURE SEPARATION OF CIRCUITS.
- 9) PROVIDE WIRE DUCT/RACEWAY WITH ACCESSIBLE REMOVABLE COVERS. LOCATIONS OF BUILDING MATERIAL OPENINGS (I.E. ACCESS PANELS) TO BE CUT IN FIELD ARE TO BE COORDINATED WITH THE DRAWING REQUIREMENTS AND BUILDING STRUCTURE. THOSE THAT ARE NOT INDICATED OR INTERFERE WITH BUILDING ELEMENTS SHALL BE COORDINATED WITH SIEMENS PROJECT MANAGER. ELECTRICAL PULL BOXES AND RACEWAY COVERS SHALL BE INSTALLED IN A MANNER TO ALLOW ACCESSIBILITY FOR INSTALLATION AND MAINTENANCE. CONTRACTORS MUST PROVIDE PULL STRINGS FOR ALL CONDUIT AND WIRE DUCT/RACEWAY. IN-FLOOR TRENCH DUCT AND FLUSH FLOOR BOXES SHALL BE PROVIDED WITH FULLY GASKETED REMOVABLE COVERS.
- 10) WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED HIGHER THAN 14 FEET ABOVE FINISHED FLOOR, THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP THE SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE.
- 11) WHEN JUNCTION BOXES AND WIRE DUCT/RACEWAY ARE MOUNTED ABOVE A HARD CEILING (I.E. SHEET ROCK), A 24" x 24" ACCESS PANEL IS REQUIRED AT EACH JUNCTION BOX AND WITHIN 2 FEET OF EACH RACEWAY TRANSITION (SUCH AS A 90 DEGREE ELBOW OR TEE) IN DUCT/RACEWAY. THERE MUST BE FREE AND CLEAR ACCESS TO JUNCTION BOXES AND WIRE DUCT/RACEWAY. WHEN ACCESS PANELS ARE LOCATED MORE THAN 3 FEET FROM JUNCTION BOXES AND WIRE DUCT/RACEWAY THE ELECTRICAL CONTRACTOR SHALL PROVIDE TWO ELECTRICIANS TO HELP SIEMENS INSTALL TEAM PULL SIEMENS SUPPLIED CABLES AT CUSTOMER EXPENSE.
- 12) WIRING: ALL WIRING INSTALLED SHALL BE 600 VOLT CLASS, STRANDED TYPE THHN/THWN-2, SINGLE CONDUCTOR ANNEALED COPPER FOR A MAXIMUM OPERATING TEMPERATURE OF 90° C (194° F). SIZED AS INDICATED INSTALLED IN METAL RACEWAYS. THE CUSTOMER/CONTRACTOR SHALL LEAVE MINIMUM 10 FT. OF WIRE TAILS AT ALL OUTLET POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY THE CUSTOMER/ELECTRICAL CONTRACTOR.
- 13) SHORT CIRCUIT REQUIREMENTS: ALL CIRCUIT BREAKERS SUPPLIED FOR THE SIEMENS EQUIPMENT REQUIREMENTS SHALL BE RATED HIGHER THAN THE SHORT CIRCUIT AVAILABLE AT THE TERMINALS OF THE ELECTRICAL EQUIPMENT AS DETERMINED BY THE ENGINEER OF RECORD, BUT NOT LESS THAN 35,000A RMS SYMMETRICAL AT 480V, 3-PHASE, 60 HERTZ. THE CONTRACTOR SHALL OBTAIN THE CORRECT SHORT CIRCUIT CURRENT RATING OF ALL THE NEW EQUIPMENT FOR INSTALLATION FROM THE ENGINEER OF RECORD.

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.

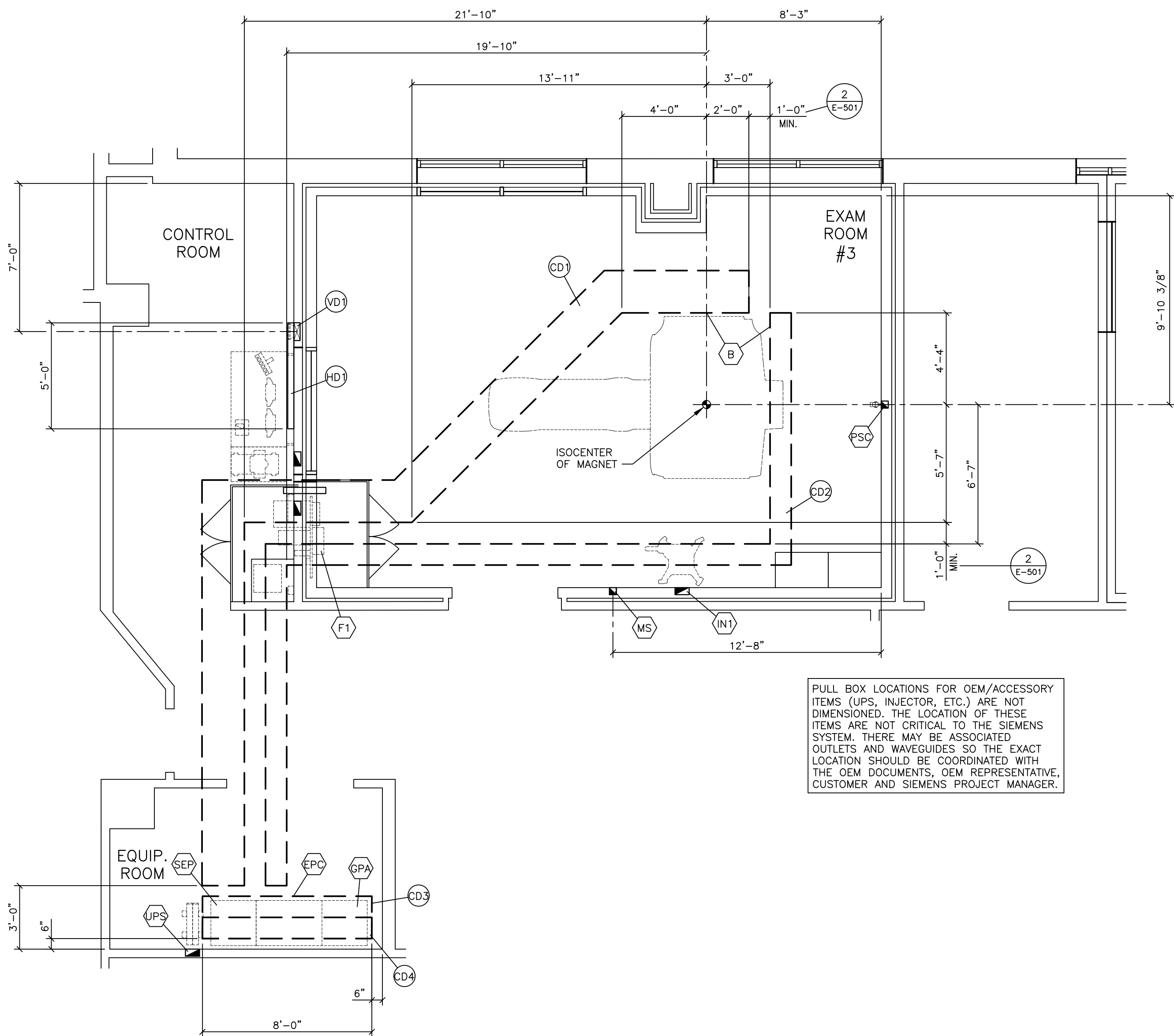
— ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.

— 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.

CEILING HEIGHTS

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

		PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365 EXT: FAX: EMAIL: PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM		<b>SIEMENS</b>	
				<b>GRADY HEALTH SYSTEM</b>	
		80 JESSE HILL JR DR SE, ATLANTA, GA 30303 MRI SUITE - MRI 3 - 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 #: <b>2200757</b>	
		ALL RIGHTS ARE RESERVED.		SHEET: <b>E-101</b>	
		SCALE: AS NOTED REF. # 30261311		SHEET 6 OF 10 DRAWN BY: D. BRISTOE	
		DATE: 06/06/22			

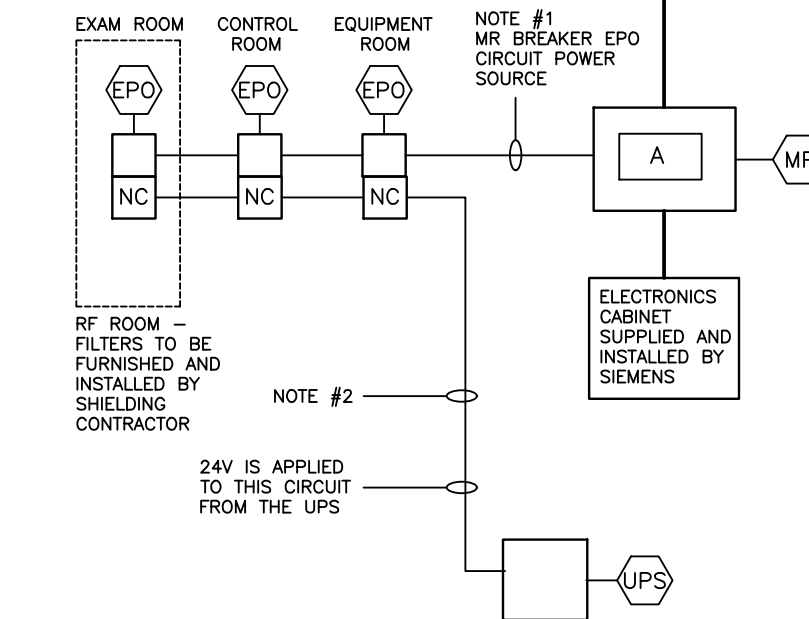


ELECTRICAL DIMENSION PLAN

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

## POWER SCHEDULE

ALL CONDUITS AND WIRES SIZES MUST BE DETERMINED BY THE ELECTRICAL ENGINEER OF RECORD PER N.E.C. AND TO MAINTAIN SIEMENS IMPEDANCE REQUIREMENTS.



ITEM	QTY	DESCRIPTION
MP	1	MAIN PANEL WITH MAIN BREAKER FLUSH OR SURFACE MOUNTED.
A	1	MR SYSTEM BREAKER MUST HAVE TRIPPING DEVICE SO WHEN ANY EPO IS PRESSED THE BREAKER TRIPS.
MR BREAKER AMPS: SEE POWER REQUIREMENTS		
		VOLTS   PHASES   NEUTRAL   GROUND   TOTAL WIRES
		480   3   0   1   4 (NOTE 1)

1) ALL WIRES MUST BE SAME SIZE.  
NOTE: UNLESS OTHERWISE NOTED ALL BREAKERS WILL BE 80% RATED.

EPO VARIES NOTE 1 - EPO CIRCUIT #1  
MAIN CIRCUIT BREAKER EMERGENCY POWER OFF BUTTON WITH PROTECTIVE COVER THAT PREVENTS ACCIDENTAL ACTIVATION. THE EPO MUST BE OF FAIL-SAFE DESIGN. ALL EPO'S TO HAVE MECHANICAL LATCHING MECHANISM. EPO MUST BE RESET BEFORE MR BREAKER CAN RESUME OPERATION. CONTACTS AND WIRING CONFIGURATION TO BE DESIGNED BY ELECTRICAL ENGINEER OF RECORD.

NOTE 2 - EPO CIRCUIT #2  
EPO CONTACTS TO BE NORMALLY CLOSED, WIRED IN SERIES, CONNECTED TO 9130 UPS ONLY.

THE EPO'S MUST BE INSTALLED BY A QUALIFIED ELECTRICAL CONTRACTOR ACCORDING TO NATIONAL ELECTRICAL CODE, STATE AND LOCAL REGULATIONS. THE CUSTOMER IS SOLELY RESPONSIBLE FOR THE IMPLEMENTATION OF THE EPO'S AND THEIR ASSOCIATED CIRCUITS AND MUST MAKE THE FINAL DETERMINATION CONSIDERING ALL SITE CONDITIONS AND REGULATORY FACTORS.

UNLESS OTHERWISE NOTED, ALL ITEMS LISTED IN THIS SCHEDULE SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR.

REV 0

## POWER QUALITY NOTES

- 1) IT IS THE CUSTOMER'S RESPONSIBILITY TO COMPLY WITH THE POWER QUALITY REQUIREMENTS FOR SIEMENS MEDICAL SYSTEMS EQUIPMENT.
- 2) THE ELECTRICAL FEEDER TO THE SIEMENS MEDICAL SYSTEMS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS, AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.
- 3) THE ELECTRICAL FEEDER TO THE IMAGING SYSTEM MUST BE RUN DIRECTLY TO A MAIN FACILITY DISTRIBUTION PANEL OR TO THE FACILITY SERVICE ENTRANCE, WITH NO OTHER LOADS POWERED FROM THIS FEEDER.
- 4) IN ORDER TO COMPLY WITH IMAGING SYSTEM POWER QUALITY REQUIREMENTS, ADDITIONAL POWER CONDITIONING DEVICES MAY BE REQUIRED. EXAMPLES INCLUDE VOLTAGE REGULATORS, TRANSFORMERS, SURGE PROTECTIVE DEVICES, FILTERS, AND/OR UNINTERRUPTIBLE POWER SUPPLIES (UPS). RECOMMENDED FOR THE INSTALLATION OF ELECTRONIC EQUIPMENT CAN BE FOUND IN IEEE STANDARD 1100-1999 "POWERING AND GROUNDING ELECTRONIC EQUIPMENT."
- 5) POWER CONDITIONING DEVICES NOT APPROVED BY SIEMENS MEDICAL SYSTEMS MAY NOT BE COMPATIBLE WITH THE MAGNETOM SYSTEM. "FERRORESONANT" POWER CONDITIONING EQUIPMENT RE-APPLIED FROM PREVIOUS GENERATION SYSTEMS IS ALSO GENERALLY EXCLUDED DUE TO HIGHER POWER REQUIREMENTS OF THE NEWER SYSTEMS.
- 6) INCOMING SOURCE POWER WIRES MUST BE SEPARATED FROM ANY SIEMENS CABLING BY A MINIMUM OF 12".

REV 0

## CEILING HEIGHTS

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

## POWER REQUIREMENTS

VOLTAGE VARIATION: 480 VAC $\pm 10\%$ FOR ALL LINE AND LOAD CONDITIONS VOLTAGE UNBALANCE: 2% MAXIMUM DIFFERENCE BETWEEN PHASES	
VOLTAGE:	480V - 3 PHASE
FREQUENCY:	60 Hz $\pm 1.0$ Hz
LINE IMPEDANCE:	<140 mOHMS
CONNECTION VALUE	88 kVA
SHORT TIME POWER (LESS THAN 3 SECONDS)	104 kVA
MR SYSTEM BREAKER SIZE (A)	125 A
ALL BREAKERS ARE RATED AT 80%	

## POWER QUALITY

## POOR POWER WILL ALTER EQUIPMENT PERFORMANCE

IT IS IN THE CUSTOMER'S INTEREST THAT THE ELECTRICAL CONTRACTOR BE RESPONSIBLE FOR TESTING AND VERIFYING THAT THE EQUIPMENT POWER SUPPLY COMPLIES WITH THE SIEMENS SPECIFICATIONS.

## DEMAND AND CAPACITY

1) IF EQUIPMENT UPGRADE IS ANTICIPATED, INSTALLING ELECTRICAL POWER TO MEET THE REQUIREMENTS OF THE HIGHER POWER GRADIENT PACKAGE AT THE TIME OF INITIAL INSTALLATION WILL REDUCE THE COST TO UPGRADE THE ELECTRICAL SYSTEM LATER.

2) RECOMMENDED TRANSFORMER SIZE (SYSTEM WITHOUT UPS) IS BASED ON INDUSTRY STANDARD ISOLATION TRANSFORMER KVA RATINGS. SOURCE IMPEDANCE FEEDING THE MAGNETOM SYSTEM, INCLUDING ANY ISOLATION TRANSFORMERS, MUST MEET EQUIPMENT REQUIREMENTS AS LISTED HERE. SIEMENS RECOMMENDS A TRANSFORMER WITH COPPER WINDINGS, AN ELECTRO-STATIC SHIELD, AND A LOW IMPEDANCE (<3%) TO ENSURE THAT SOURCE IMPEDANCE REQUIREMENTS ARE MET.

3) OVER CURRENT PROTECTION IS SPECIFIED FOR SYSTEMS WITHOUT AN UNINTERRUPTIBLE POWER SUPPLY (UPS). ADDITION OF A UPS REQUIRES A HIGHER CAPACITY MAINS CONNECTION (DEPENDENT UPON UPS MODEL AND SIZE). MAXIMUM FAULT CURRENT IS DEPENDENT UPON THE IMPEDANCE OF THE FACILITY ELECTRICAL SYSTEM. THE CUSTOMER'S ARCHITECT OR ELECTRICAL CONTRACTOR TO SPECIFY AIC RATING OF OVER CURRENT PROTECTION BASED ON FACILITY IMPEDANCE CHARACTERISTICS.

4) MOMENTARY POWER IS BASED ON A MAXIMUM RMS VALUE FOR A PERIOD NOT TO EXCEED FIVE (5) SECONDS, AS DEFINED IN NEC 517.2. STAND-BY AND AVERAGE CURRENT ARE SUBSTANTIALLY LOWER.

5) THE CONDUCTOR SIZE SHOULD BE SELECTED TO MEET THE VOLTAGE DROP REQUIREMENTS, TAKING INTO CONSIDERATION THE MAINS CAPACITY, RUN LENGTH, AND ANY ADDITIONAL TRANSFORMERS USED TO OBTAIN THE PROPER EQUIPMENT VOLTAGE LEVEL. NEMA STANDARD XR-9-1989 (R1994,R2000) PROVIDES GENERAL GUIDELINES FOR SIZING CONDUCTORS, TRANSFORMERS, AND ELECTRICAL SYSTEMS FOR MEDICAL IMAGING SYSTEMS.

6) LONG-TIME POWER IS BASED ON THE HIGHEST AVERAGE RMS VALUES FOR A PERIOD EXCEEDING 5 MINUTES DURING CLINICAL SYSTEM OPERATION, AS DEFINED IN NEC 517.2.

7) A CIRCUIT BREAKER WITH A HIGH INRUSH RATING (>8x RATED CURRENT) IS REQUIRED TO PERMIT SWITCH-ON OF THE UPS SYSTEM WITHOUT SPURIOUS TRIPPING. CIRCUIT BREAKERS WITH AN ADJUSTABLE MAGNETIC TRIP (SIEMENS FD6 SERIES OR SIMILAR) ARE HIGHLY RECOMMENDED.

REV 1

## ELECTRICAL INSTALLATION NOTES

1) INSTALL THE MR SYSTEM CIRCUIT BREAKER IN OR NEAR THE EQUIPMENT ROOM. THE PERMITTED FRINGE FIELD FOR THE PANEL IS UP TO 3mT. IF THE FRINGE FIELDS HAVE HIGHER VALUES, MAGNETIC SHIELDING MUST BE PROVIDED OR THE DISTANCE FROM THE MAGNET MUST BE INCREASED.

2) AN ACCEPTABLE MEANS FOR SWITCHING MAIN POWER ON AND OFF SHOULD BE INSTALLED IN THE MAIN BREAKER PANEL. INSTALL EMERGENCY SHUTDOWN BUTTONS IN EACH ROOM WHERE THERE IS SIEMENS EQUIPMENT.

3) THE ELECTRICAL FEEDER TO THE SIEMENS EQUIPMENT MUST FEED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS AND OTHER POTENTIAL SOURCES OF ELECTRICAL INTERFERENCE.

4) THE EMERGENCY POWER OFF (EPO) BUTTONS ARE TO BE MUSHROOM TYPE WITH PUSH LOCK AND PULL TO RELEASE.

5) WALL RECEPTACLES MADE OF FERROMAGNETIC MATERIALS ARE NOT PERMITTED IN THE EXAM ROOM. PERIPHERAL UNITS (SUCH AS VENTILATORS) NOT APPROVED FOR USE IN A HIGH MAGNETIC FIELD ENVIRONMENT CAN INFLUENCE THE MAGNETIC FIELD, COMPROMISING IMAGE QUALITY. THE CUSTOMER IS RESPONSIBLE FOR INSTALLATION AND USE OF RECEPTACLES IN THE EXAM ROOM. INSTALLATION OF RECEPTACLES AND THE FILTERS REQUIRED ARE TO BE COORDINATED WITH THE RF SHIELDING SUPPLIER.

6) THE RF SHIELD MUST BE FITTED WITH A GROUND STUD OR BUS BAR, LOCATED WITHIN 24" OF THE AUXILIARY FILTERS FOR ROOM LIGHTS AND OUTLETS, SUPPLIED AND INSTALLED BY THE RF SHIELD SUPPLIER.

7) IN ORDER TO PREVENT GROUND LOOPS, ALL CUSTOMER OR CUSTOMER/CONTRACTOR SUPPLIED AC POWER ENTERING THE EXAMINATION ROOM (I.E. OUTLETS, EPO, ETC.) SHOULD BE SUPPLIED VIA AN ISOLATION TRANSFORMER. THE ISOLATION TRANSFORMER SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE RF SHIELD GROUND STUD OR BUS BAR.

REV 1

## GROUNDING NOTES

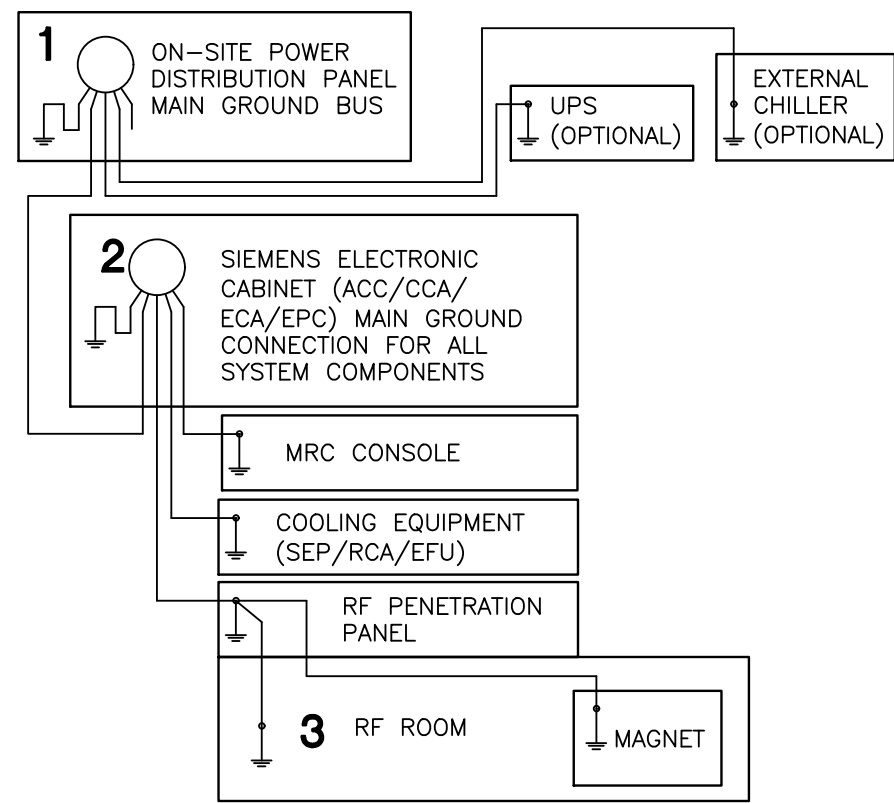
EQUIPMENT GROUNDING CONDUCTOR TO COMPLY WITH THE FOLLOWING:

- 1) SIZE GROUNDING WIRE TO SIEMENS EQUIPMENT PER POWER SCHEDULE REQUIREMENTS.
- 2) DERIVED FROM THE ELECTRICAL SERVICE, TRANSFORMER OR MAIN DISTRIBUTION PANEL FEEDING THE SIEMENS EQUIPMENT.
- 3) RUN IN THE SAME CONDUIT, TROUGH OR RACEWAY AS THE PHASE CONDUCTORS.
- 4) CONTINUOUS, WITH NO BREAKS OR USE OF CONDUIT, CHASSIS OR EARTH AS THE SOLE GROUNDING PATH.
- 5) BONDED TO CHASSIS AND/OR CONDUIT IN ACCORDANCE WITH THE NEC REQUIREMENTS.
- 6) MINIMIZE CONNECTIONS OR TERMINALS TO ENSURE CONTINUITY OVER THE LIFE OF THE INSTALLATION.
- 7) AS A NORM, THERE SHOULD NOT BE ANY CURRENT PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS ACCEPTABLE TO HAVE  $\leq 500\text{mA}$  DURING OPERATION OF THE IMAGING EQUIPMENT.

## MR GROUNDING NOTES

THE INTERNAL GROUND WIRING OF THE MR SYSTEM MUST BE INSTALLED WITH MINIMUM GROUND LOOPS. THIS IS TO PREVENT NOISE CURRENTS AND GENERAL DISTURBANCES FROM FLOWING THROUGH THE GROUNDING PATH.

TO ACHIEVE SUCH GROUNDING, THREE MAJOR GROUND POINTS SHOULD BE USED.



REV 0

SOLA  
REV 14

PROJECT MANAGER: PATRICK RUIZ  
TEL: (770) 402-1365 EXT:  
FAX:  
EMAIL: PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM

SIEMENS

GRADY HEALTH SYSTEM

80 JESSE HILL JR DR SE, ATLANTA, GA 30303  
MRI SUITE - MRI 3 - MAGNETOM SOLA XQ GRADIENTS

PROJECT #:

2200757

SHEET:

E-102

SHEET 7 OF 10

DRAWN BY:

D. BRISTOE

DATE: 06/06/22

SCALE: AS NOTED

REF. # 30261311

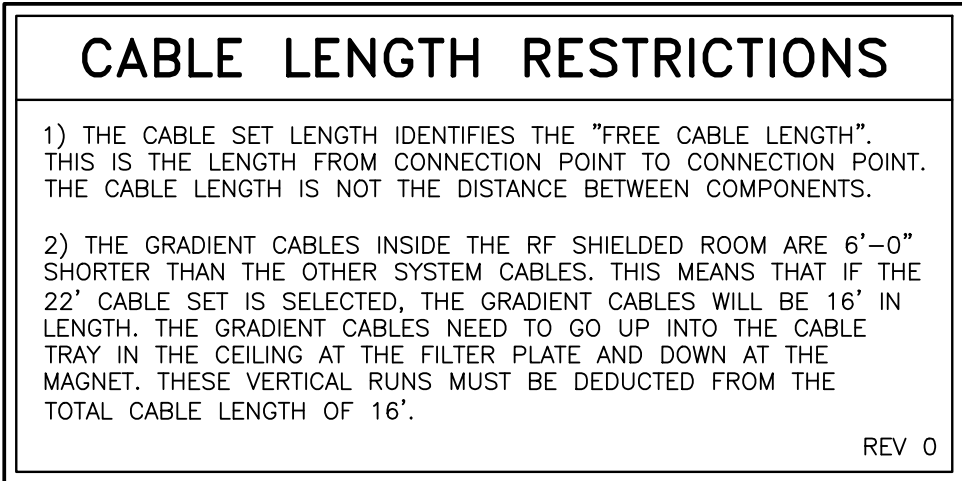
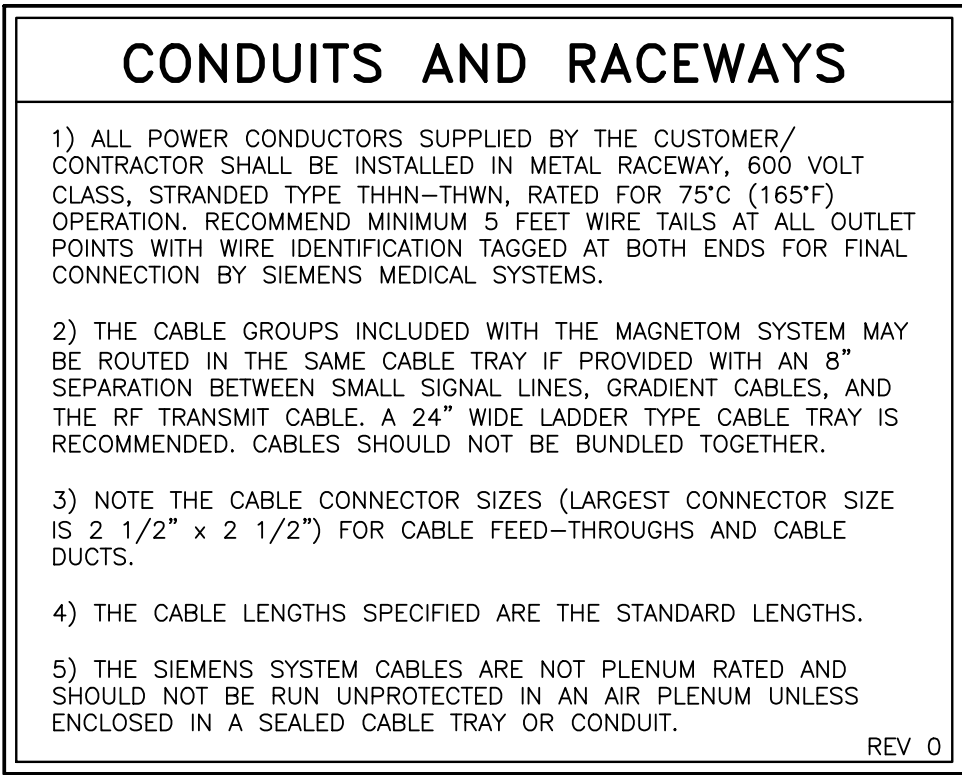
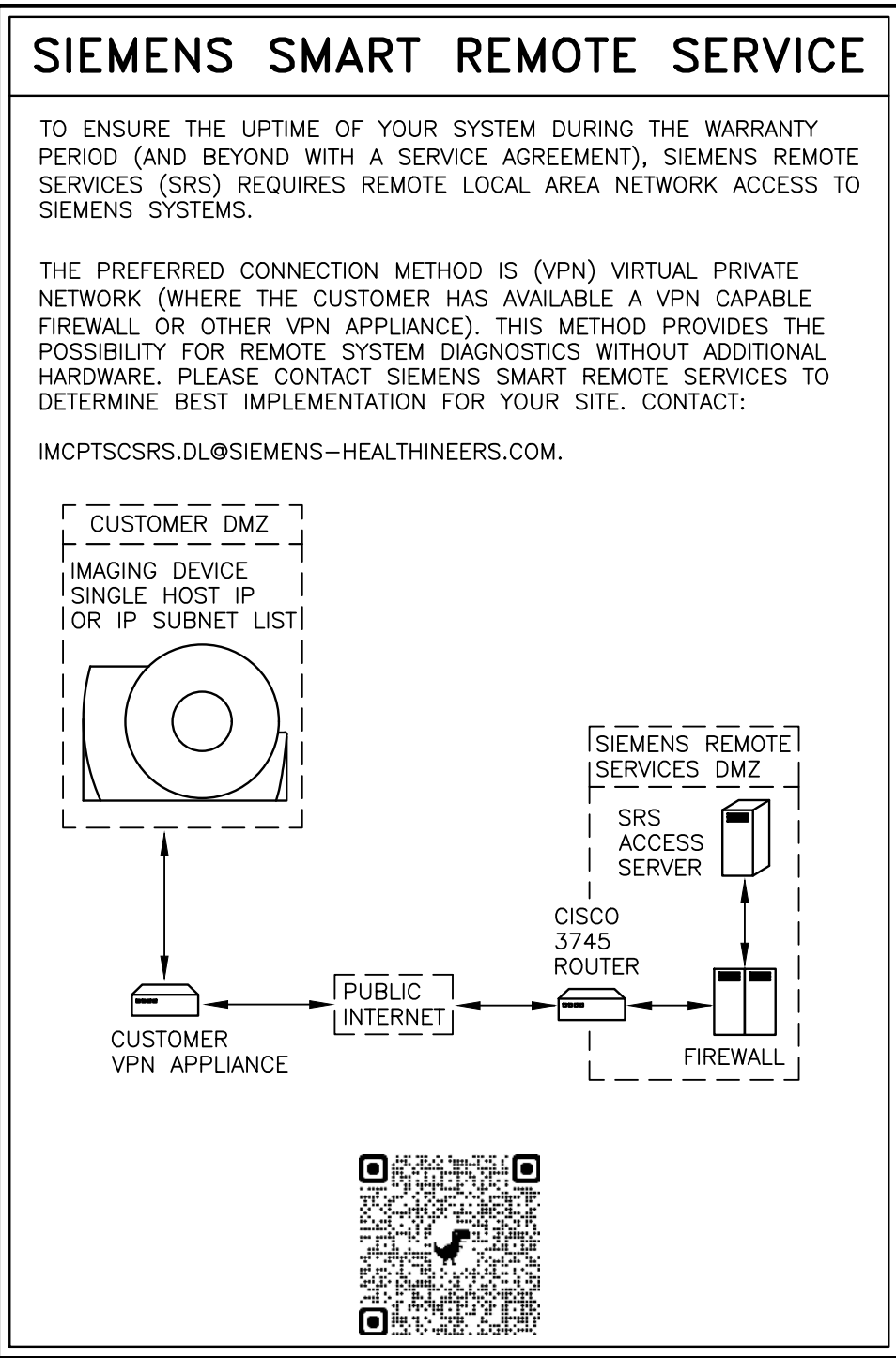
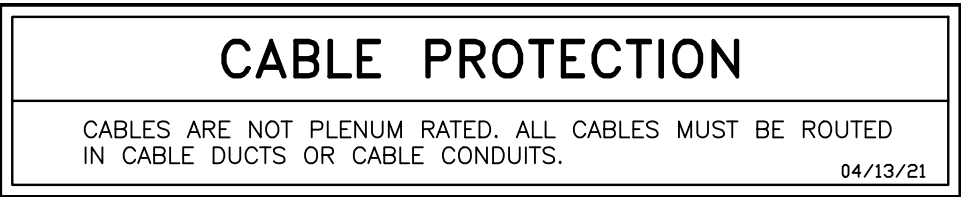
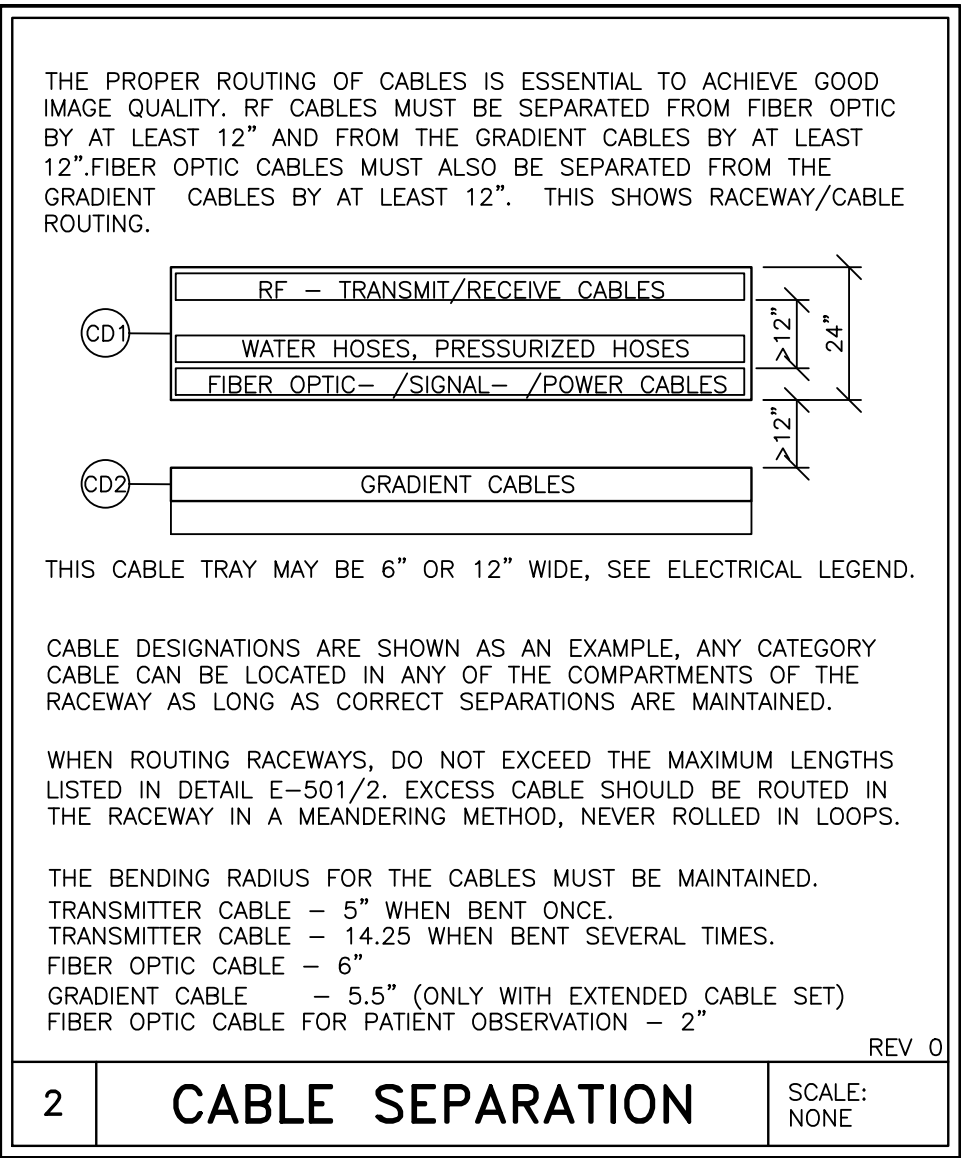
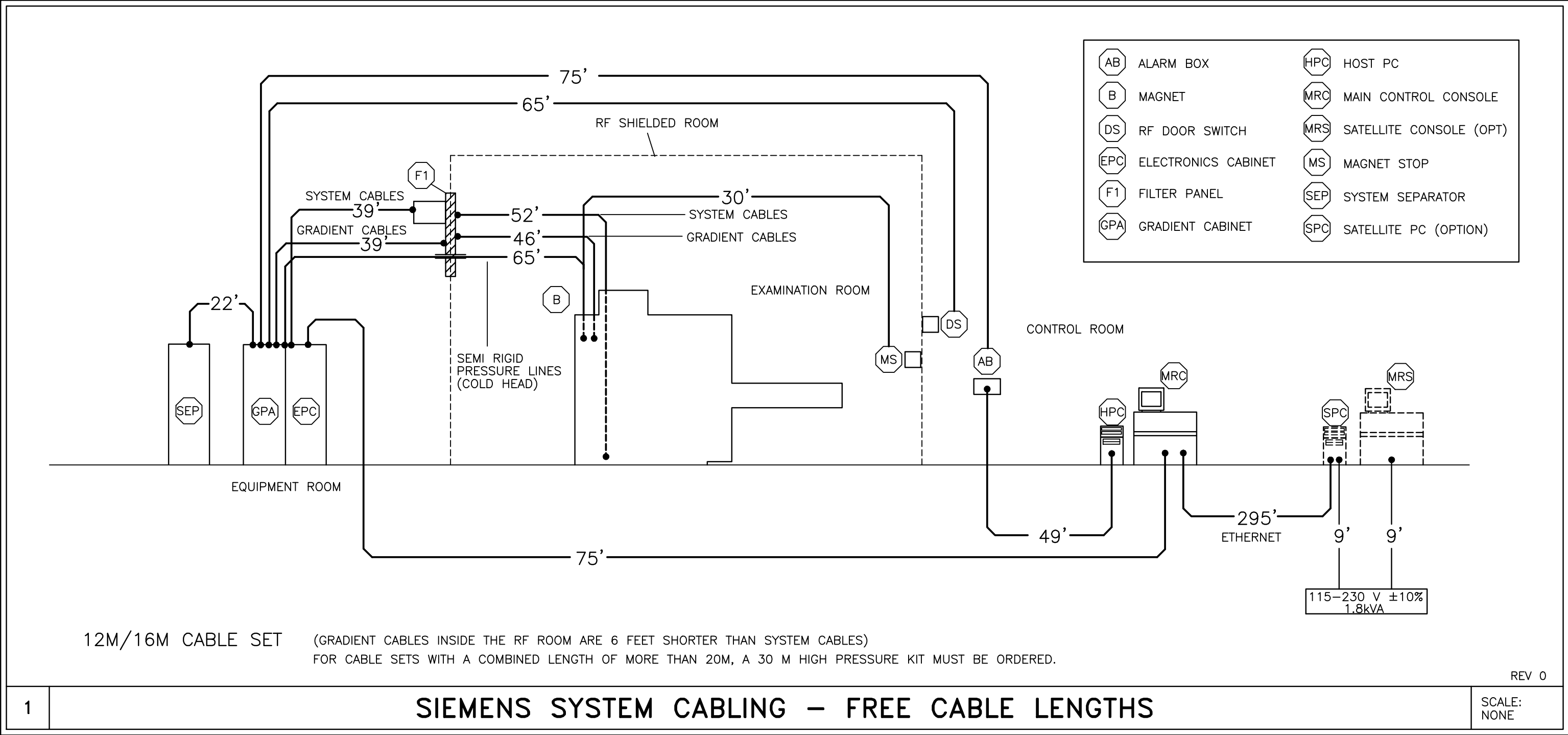
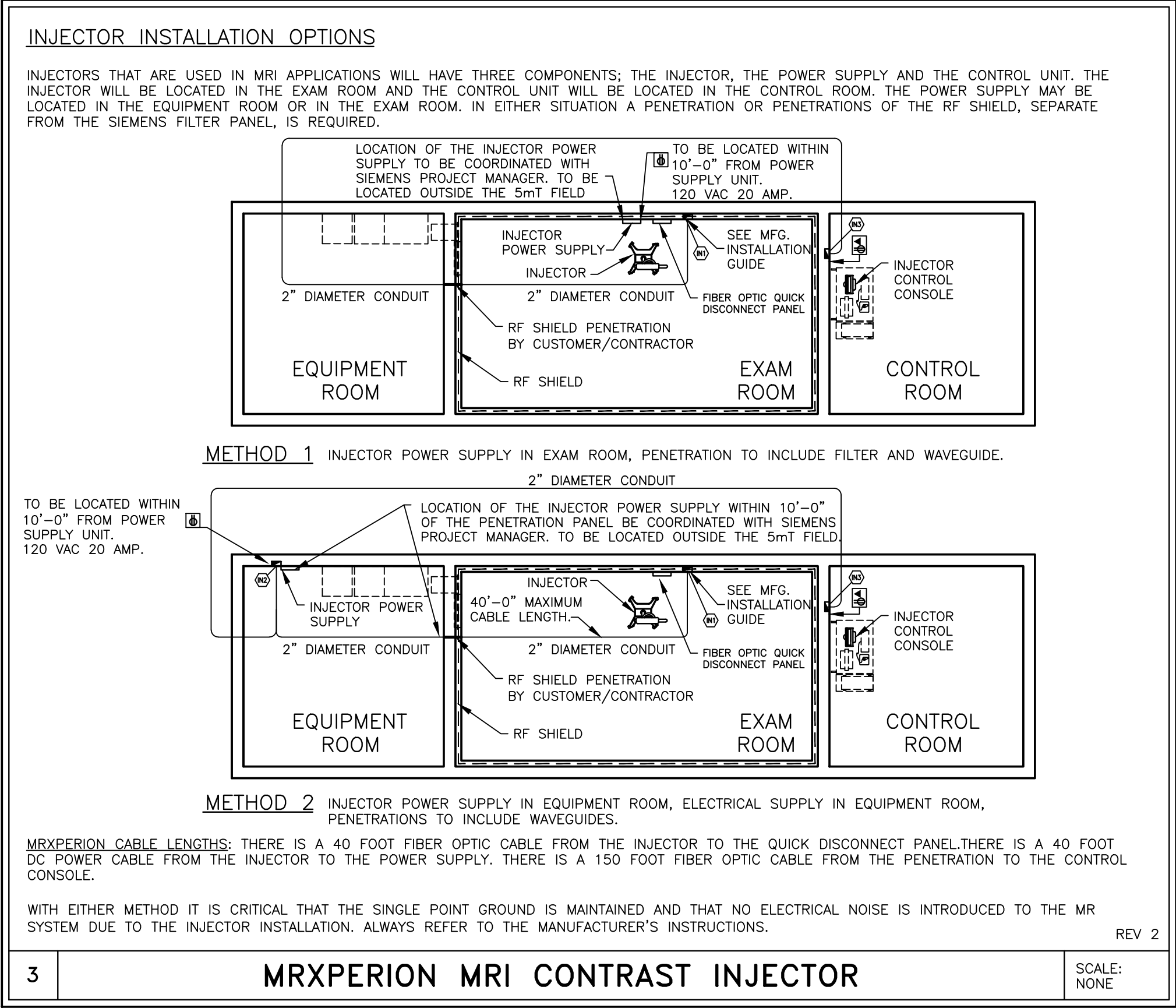
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- THIS SET OF PLANS REPRESENTS A COMPLETE SET OF DETAILS AND SHOULD NOT BE SEPARATED.

- 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.





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			PROJECT MANAGER: PATRICK RUIZ TEL: (770) 402-1365 EXT: FAX: EMAIL: <a href="mailto:PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM">PATRICK.RUIZ@SIEMENS-HEALTHINEERS.COM</a>	
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			SHEET: <b>E-501</b>	
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			REF. # 30261311	





