

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

EQUIPMENT LEGEND DIMENSIONS (INCHES) DESCRIPTION SMS | WEIGHT | BTU/HR | REMARKS (LBS) TO AIR D 1) | MRC KEYBOARD ---27 1/4 | 10 1/8 | 1 3/4 ON CONSOLE/COUNTER) COLOR MONITOR FOR MRC 18 5/16 | 16 15/16 | 4 3/4 | ON CONSOLE/COUNTER 239 3) | HOST PC MRC 2.389 27 18 1/8 49 132 54 3/8 | 31 1/2 | 27-46 ADJUSTABLE HEIGHT 4) MRC OPERATING CONSOLE TABLE (OPTION) ___ \ominus | 5) CONTAINER FOR HOST PC 500 (OPTION) 238 19 5/8 | 31 1/2 | 28 3/8 6) | ALARM BOX ') | PATIENT MONITOR (OPTION) 12 1/2 8) | PATIENT SUPERVISION CAMERA (OPTION) ---3 1/8 | 6 3/4 6 3/4 | WALL MOUNTED (9) SKYRA MAGNET IN OPERATION 15,652 9,383 91 82 3/4 10) PATIENT TABLE (MOBILE) 529 29 1/2 | 97 1/4 | 21-41 1) RF-FILTER PLATE **⟨F1⟩** | 287 853 | 46 1/2 | 35 1/8 | 21 5/8) | ELECTRONICS CABINET (GPA/EPC CABINET) 3,307 <3,412 61 1/2 26 SEP CABINET 750 <3,412 25 5/8 | 25 5/8 | 73 5/8 14) LIEBERT GXT4 UPS WITH BATTERY (OPTION) 164 1,121 17 | 23 5/8 | 6 3/4 (WCH) 4,300 15) DIMPLEX CHILLER (60kW) (OPTION) 138 44 84 1/2 CUST. TO LOCATE/INSTALL 3 1/4 | WALL MOUNTED IN CONTROL (16) DIMPLEX STATUS PANEL (OPTION)) | MRXPERION INJECTOR STAND AND HEAD (OPTION) 23 3/8 | 28 3/8 | 71 7/8 | INJECTOR ON STAND MRXPERION INJECTOR CRU (OPTION) 17.6 15 3/4 10 1/4 13 1/2 ON CUSTOMERS COUNTER MRXPERION INJECTOR POWER SUPPLY (OPTION) LOCATED IN EXAM ROOM 15 3/8 3 3/8 15 1/2 OUTSIDE 5mT FIELD

PROTECTING THE MAGNETIC FIELD

THE SIEMENS MR SYSTEM UTILIZES A SUPERCONDUCTIVE MAGNET WITH AN EXTREMELY HOMOGENOUS FIELD WITHIN THE MAGNET TO PROVIDE DISTORTION REE IMAGING. THE PRESENCE OF FERROMAGNETIC MATERIAL WITHIN THE /ICINITY OF THE MAGNET CAN ADVERSELY AFFECT THE UNIFORMITY OF THE JSEFUL 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 JSE 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 AXES	Z AXIS	SOURCE OF INTERFERENCE		
4'-2	2"	FLOOR STEEL REINFORCEMENT<20 LBS./ FT 2 IRON BEAMS < 66 LBS./FT.		
18'-0"	23'-3"	MOVING METAL UP TO 110 LBS.		
13'-	1 "	WATER COOLING UNIT (CHILLER)		
19'-8"	22'-11"	MOVING METAL UP TO 440 LBS.		
21'-3"	26'-2"	MOVING METAL UP TO 2,000 LBS.		
20'-5"	29'-7"	ELEVATORS, TRUCKS UP TO 10,000 LBS.		
22'-11"	31'-2"	AC TRANSFORMERS LESS THAN 100 KVA		
41'-0"	32'-9"	AC TRANSFORMERS LESS THAN 250 KVA		
42'-7"	39'-4"	AC TRANSFORMERS LESS THAN 650 KVA		
45'-11"	49'-2"	AC TRANSFORMERS LESS THAN 1600 KVA		
9'-10"	6'-6"	AC CABLES, MOTORS LESS THAN 100 AMPS		
22'-11"	9'-10"	AC CABLES, MOTORS LESS THAN 250 AMPS		
39'-5"	16'-5"	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.

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.

MAGNETIC FRINGE FIELDS

MAGNETIC FIELDS MAY AFFECT THE FUNCTION OF DEVICES IN THE

MAGNE	THESE DEVICES MUST BE OUTSIDE CERTAIN STANCES LISTED ARE FROM THE MAGNET CONSIDER ANY MAGNETIC ROOM SHIELDING.		
FIELD	X & Y Z AXIS		DEVICES
3.0mT	6'-11"	10'-6"	SMALL MOTORS, WATCHES, CAMERAS, CRED CARDS, MAGNETIC DATA CARRIERS.
1.0mT	7'-7"	13'-2"	COMPUTERS, MAGNETIC DISK DRIVES, OSCILLOSCOPES, PROCESSORS
0.5mT	8'-7"	15'-2"	CARDIAC PACEMAKERS, X—RAY TUBES, INSULIN PUMPS, B/W MONITORS, MAGNETIC DATA CARRIERS (LONG—TERM STORAGE)
0.15mT	11'-2"	20'-1"	SIEMENS CT SCANNERS
0.1mT	12'-6"	22'-4"	CRT MONITORS, SIEMENS LINEAR ACCELERATORS
0.05mT	16'-1"	26'-11"	X-RAY IMAGE INTENSIFIERS, GAMMA CAMERAS, PET/CYCLOTRON, ELECTRON MICROSCOPES, LINEAR ACCELERATORS
			VERIFY THE LOCATION OF THE 0.5mT FIELD MAINTAINED AS A RESTRICTED AREA.

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 FÍRM. 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

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

AND PROFESSIONAL DESIGN REQUIREMENTS INCLUDING OSHA/NEC

INSPECTION FEES. 4) EQUIPMENT WARRANTIES, EXPRESSED OR IMPLIED ON THE PART OF SÍEMENS SHALL BE CONTINGENT UPON STRICT COMPLIANCE WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND RECOMMENDATIONS AND REQUIREMENTS CONTAINED IN THESE DRAWINGS, UNLESS SPECIFIED OTHERWISE.

EQUIPMENT INSTALLATION, CALIBRATION, CONNECTION AND INSTALLATION

5) ALL DIMENSIONS SHOWN ARE FROM FINISHED SURFACES UNLESS SPECIFIED OTHERWISE. 6) SIEMENS HEALTHCARE SHALL BE RESPONSIBLE FOR SIEMENS

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 INJECTORS, 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.

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.

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

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

HEREWITH, AS THEY ARE ESSENTIAL FOR THE SUCCESSFUL

INSTALLATION & OPERATION OF THE SIEMENS EQUIPMENT.

RESOURCE LIST (SMS USE ONLY) PG NUMBER

PLANNING GUIDE M7-030.891.01.12.02

SKYRA

REV 24

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

ALL PLUMBING INSTALLED AND TESTED

ALL EPO BUTTONS INSTALLED AND TESTED

CEILING HEIGHTS

MAGNETOM SKYRA SIEMENS AUTHORIZATION WILL ALL RIGHTS ARE RESERVED. DATE DESCRIPTION

REFERENCE SHEET

A-102

A-102

S-101

A-502

E-101

M - 101

E-102

E-101

A-101

A-101

M - 101

M - 101

M - 501

E-101

ROJECT MANAGER:

TYPICAL FINAL DRAWING SET THE USE OR REPRODUCTION OF PROJECT #: THIS TITLE BLOCK WITHOUT RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.

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.

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%.

ATTENTION:

NOISE LEVELS SYSTEM ROOM NOISE LEVEL / dB(A) CONTROL ROOM 88.3 dB(A) - 8 HOUR AVERAGE EXAMINATION ROOM 106 dB(A) MAXIMUM, MEASURED INSIDE THE EXAM ROOM.

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

EQUIPMENT ROOM

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.

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.

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.

MAGNET CO-SITING

MINIMUM DISTANCE MAGNET-MAGNET (SIEMENS)

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"

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".

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.

0.2T | 0.35T | 1.0T | 1.5T | 3.0T

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

-ISSUE BLOCK-

PROJECT MILESTONES

PROJECT MILESTONES TO BE COMPLETED BEFORE EQUIPMENT DELIVERY

DELIVERY PATH VERIFIED, COORDINATED DELIVERY PATH CLOSE UP PRIOR TO CALIBRATION

COORDINATE RF ROOM CONSTRUCTION/ROOM FINISH PRIOR TO CALIBRATION

MR COMPATIBLE LIGHTING AND CEILING GRIDS INSTALLED IN MAGNET ROOM

QUENCH PIPE CONSTRUCTED AND INSTALLED PER SIEMENS SPECIFICATIONS

HVAC SYSTEM COMPLETE, TESTED AND WORKING PER SIEMENS SPECIFICATIONS

ETHERNET CONNECTION INSTALLED AND IN OPERATION AT THE SHOWN LOCATIONS

CONTROL ROOM COMPLETED ENOUGH TO FACILITATE THE INSTALLATION

CHILLED WATER SUPPLY AVAILABLE AND MEETS SIEMENS SPECIFICATIONS

RF ROOM TEST COMPLETED AND MEETS SIEMENS SPECIFICATIONS

ALL RACEWAY, CONDUITS AND JUNCTION BOXES INSTALLED

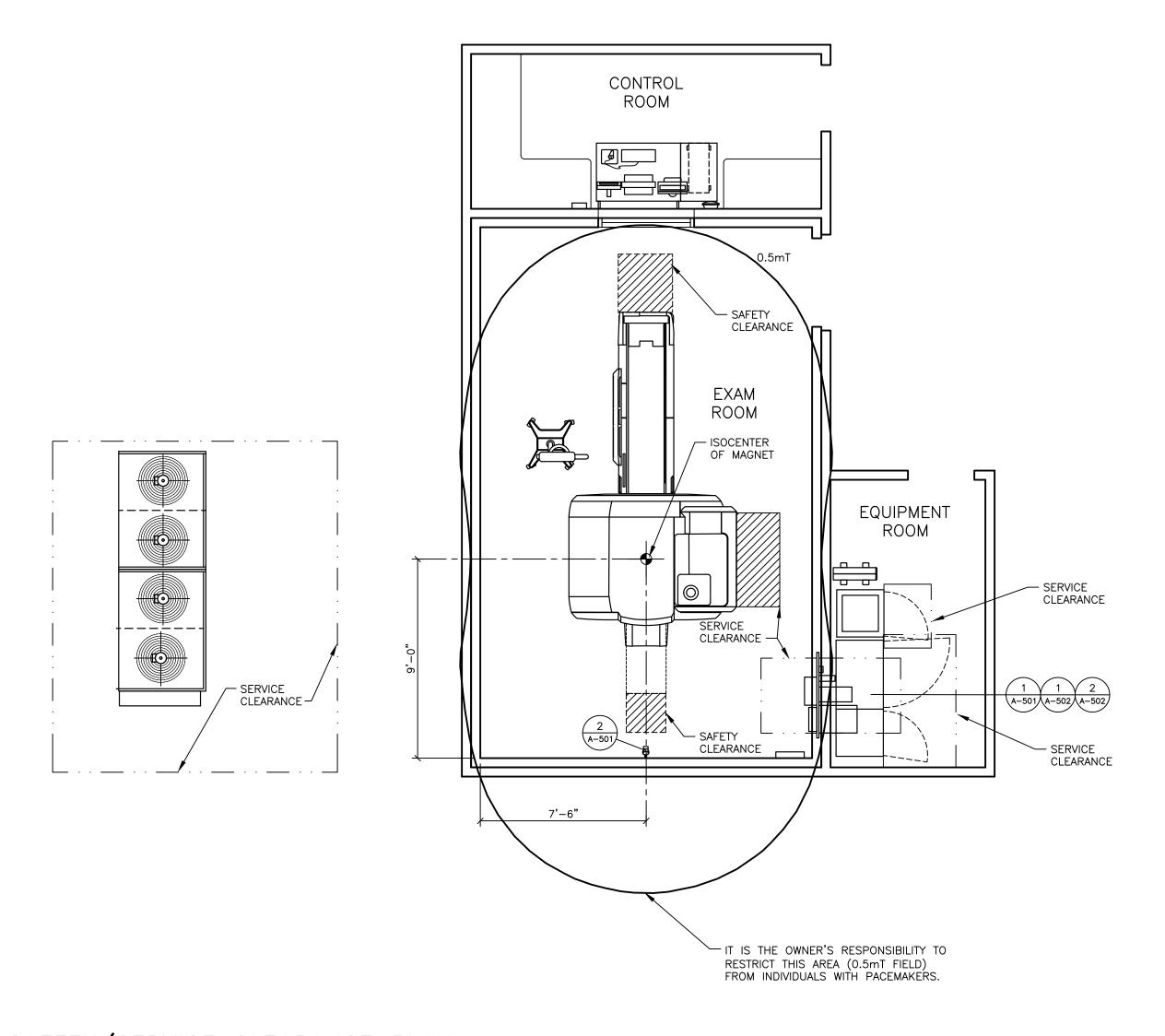
POWER DISTRIBUTION COMPLETED PER SYSTEM REQUIREMENTS

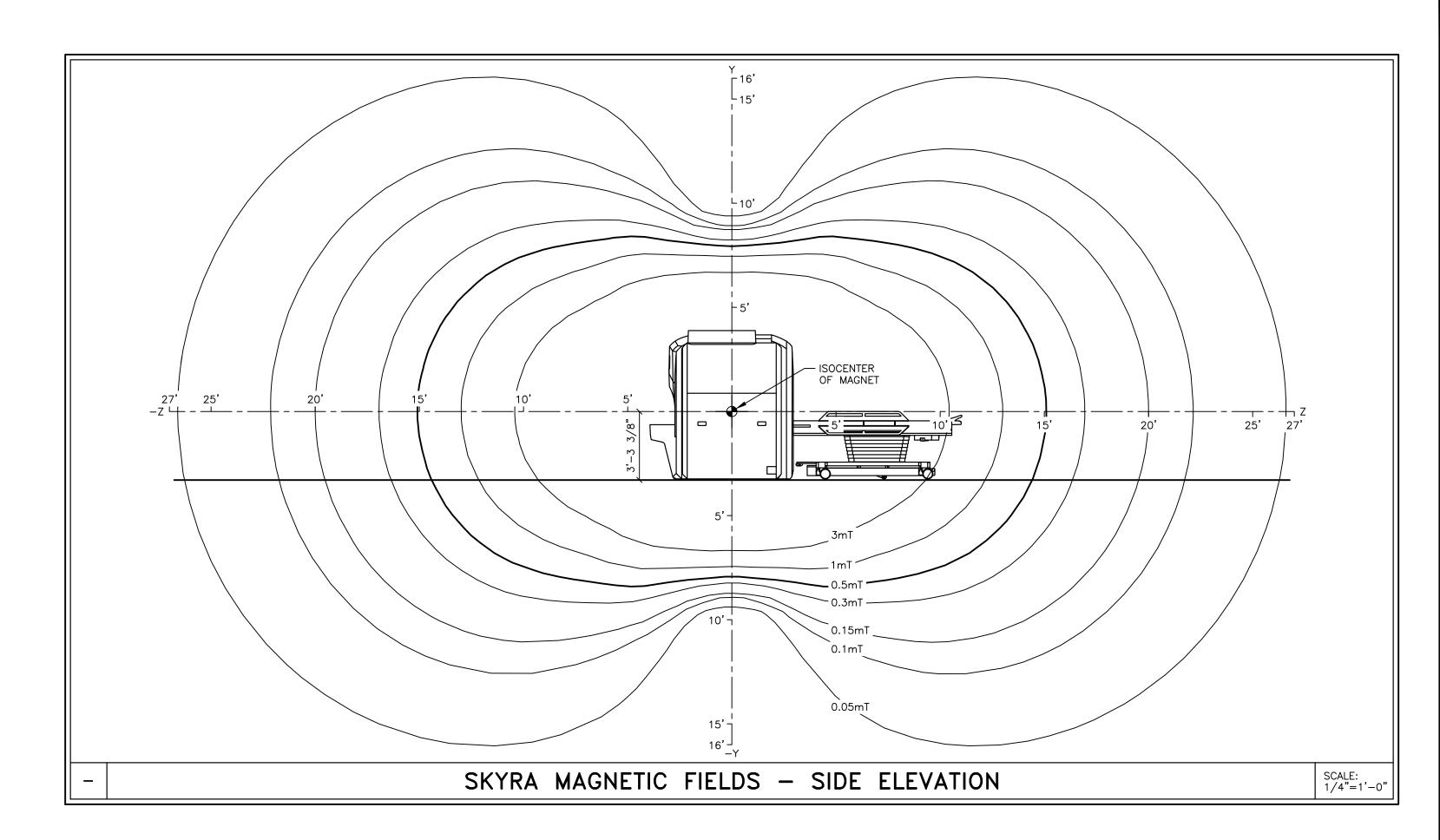
FLOOR LEVEL MEETS SIEMENS SPECIFICATIONS AND ALL BASEPLATES INSTALLED

SCALE: AS NOTED

10024 B. HERRMANN

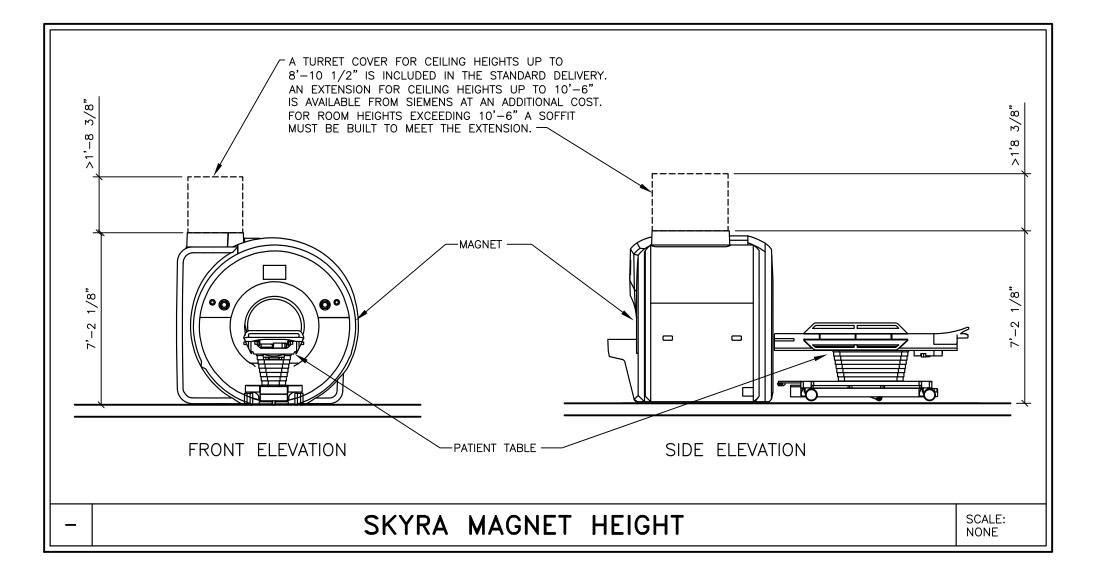
SIEMENS

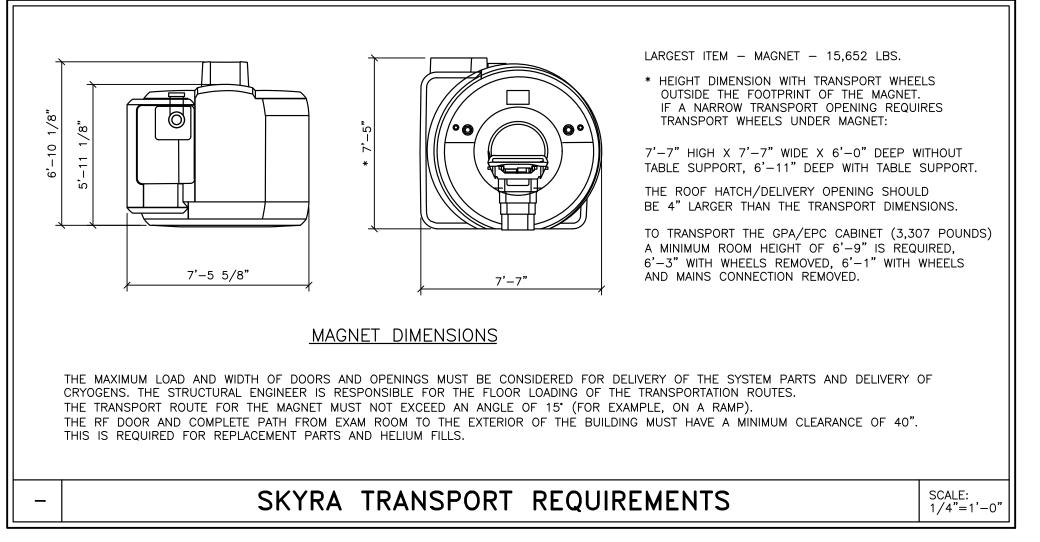


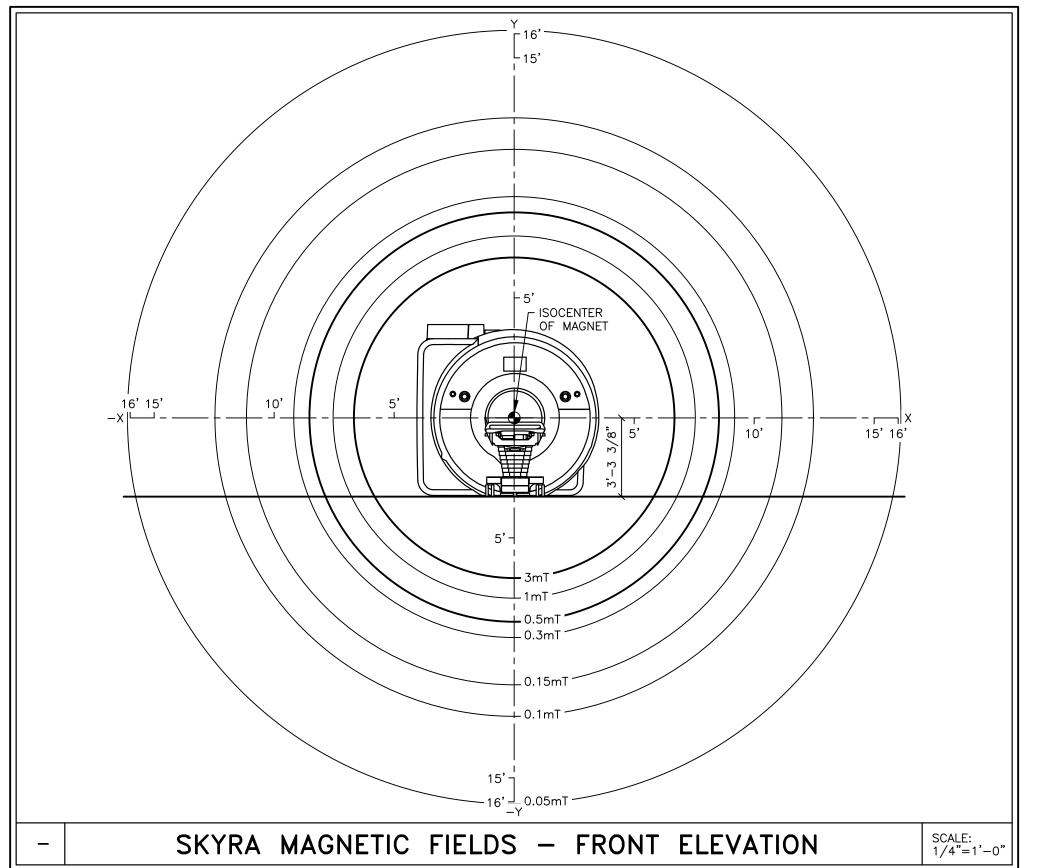


SAFETY/SERVICE CLEARANCE PLAN

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







CEILING HEIGHTS						
NET EXAMINATION ROOM:	7-11" MINIMUM					
EQUIPMENT ROOM:	7'-3" MINIMUM WITH RESTRICTION					
ANCILLARY AREAS:	6'-11" MINIMUM					

SIEMENS MAGNETOM SKYRA TYPICAL FINAL DRAWING SET THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL PROJECT #: 10024 RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. ALL RIGHTS ARE RESERVED. DATE DESCRIPTION B. HERRMANN -ISSUE BLOCK-SCALE: AS NOTED

ROJECT MANAGER:

SKYRA REV 24

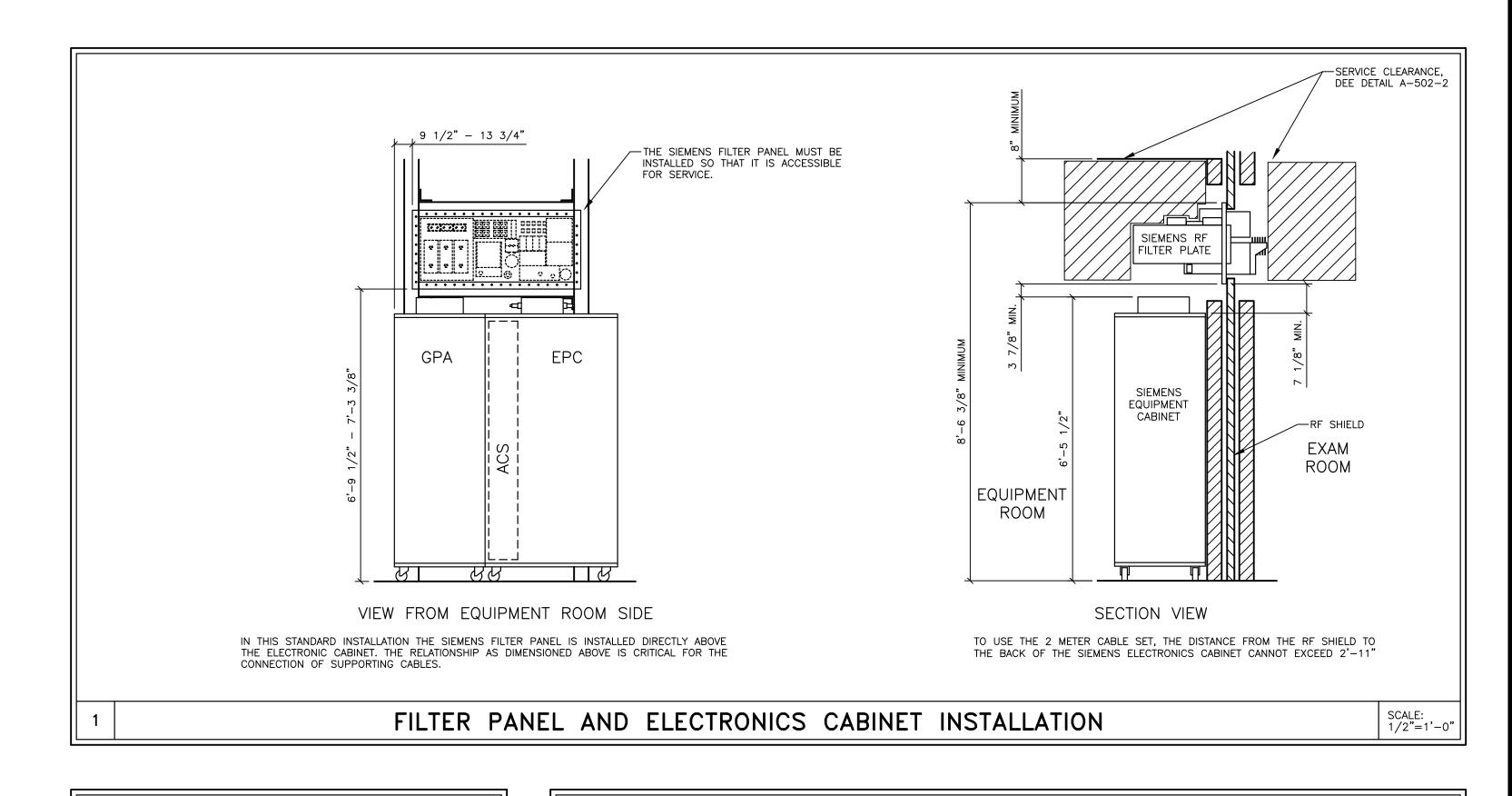
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DOCUMENTS FOR REFERENCE.

- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION

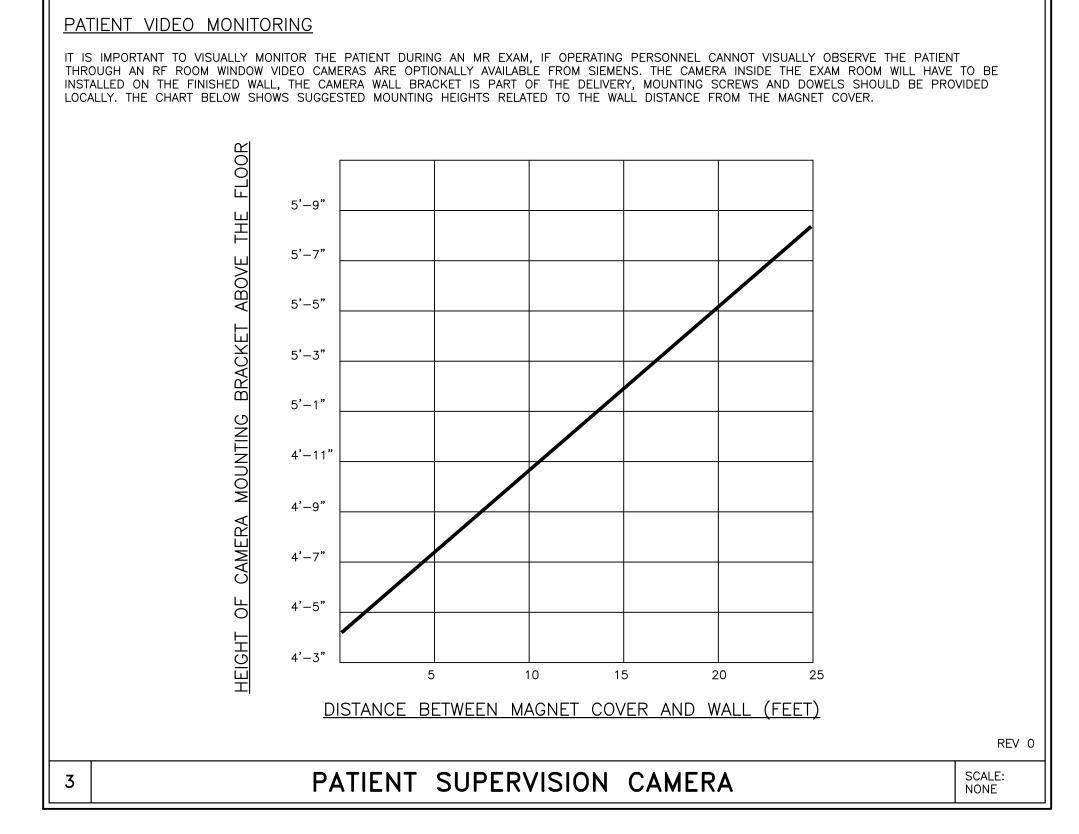
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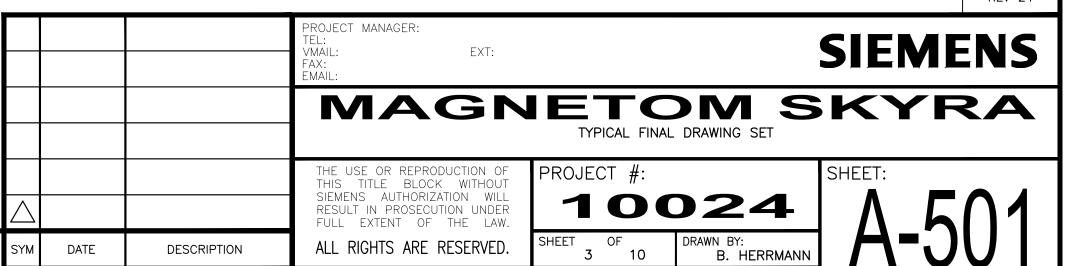
SURFACE COIL STORAGE

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	INCHES				
00.2 1.11.11.2	WEIGHT	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		



SKYRA REV 24



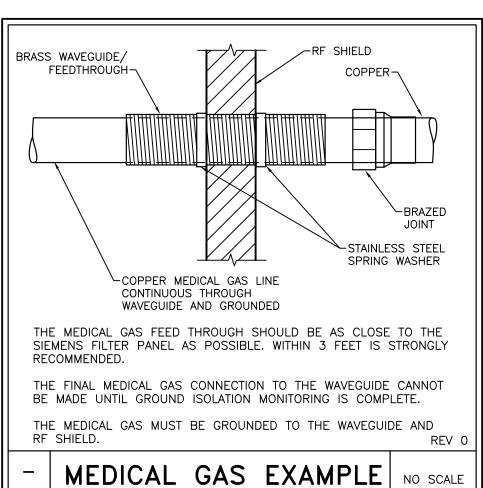
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-ISSUE BLOCK-SCALE: AS NOTED



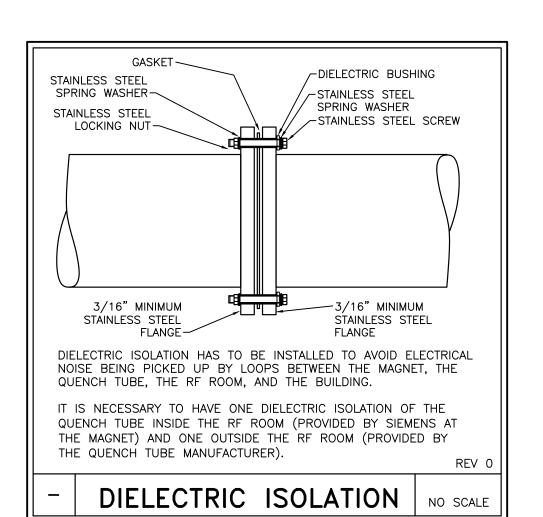
BROADBAND RF NOISE IS A SINGLE TRANSIENT OR CONTINUOUS SERIES OF TRANSIENT DISTURBANCES CAUSED BY AN ELECTRICAL DISCHARGE. LOW HUMIDITY ENVIRONMENTAL CONDITIONS WILL HAVE HIGHER PROBABILITY OF ELECTRICAL DISCHARGE. THE ELECTRICAL DISCHARGE CAN OCCUR DUE TO ELECTRICAL ARCING OR MERELY STATIC DISCHARGE.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

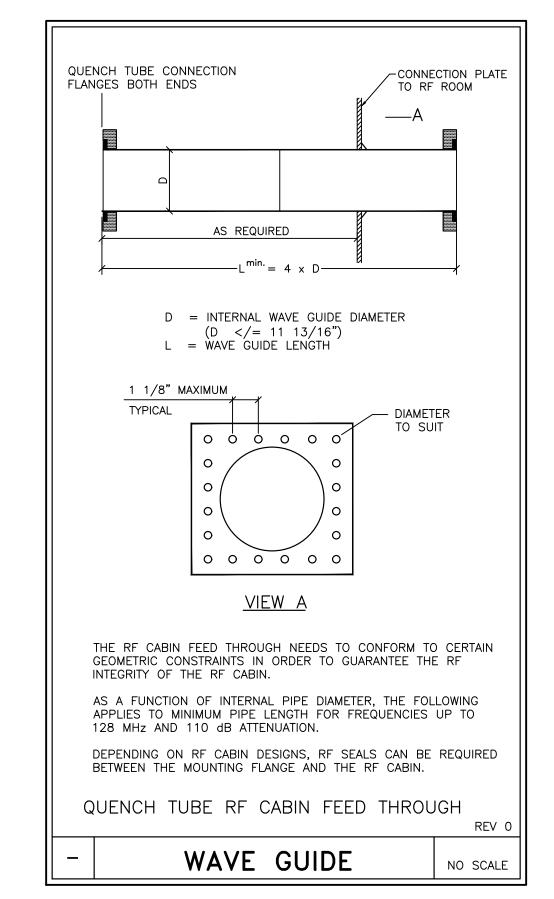
IMAGE QUALITY CONCERNS

- DISCHARGE INCLUDE: LOOSE HARDWARE/FASTENERS-VIBRATION OR MOVEMENT (ELECTRICAL CONTINUITY MUST ALWAYS BE MAINTAINED).
- FLOORING MATERIAL INCLUDING RAISED ACCESS FLOORING (PANELS AND SUPPORT HARDWARE) AND CARPETING.

REV 0

- ELECTRICAL FIXTURES (LIGHTING FIXTURES, TRACK LIGHTING, EMERGENCY LIGHTING, BATTERY CHARGERS, OUTLETS). DUCTING FOR HVAC AND CABLE ROUTING.
- RF SHIELD SEALS (WALLS, DOORS, WINDOWS, ETC.).





EXHAUST AND INTAKE FOR AIR CONDITIONING RF DOOR OPENING IN THE EVENT OF A CATASTROPHIC FAILURE OF THE QUENCH VENT DURING A QUENCH, PRESSURE BUILT UP MAY PREVENT OPENING A DOOR THAT OPENS INTO THE RF ROOM, PREVENTING EVACUATION FROM LIFE THREATENING CONDITIONS. FOR THIS REASON THE RF DOOR SHOULD OPEN TO THE OUTSIDE OF THE RF ROOM. IF THE DOOR CANNOT OPEN OUT FROM THE RF ROOM, OTHER APPROPRIATE MEANS HAVE TO BE PROVIDED SO THAT THE RF ROOM DOOR IS NOT PREVENTED FROM OPENING DUE TO PRFSSURE. IF THE DOOR OPENS INTO THE RF ROOM, A 24"x24" OPENING FOR PRESSURE EQUALIZATION INTO THE RF ROOM MUST BE INSTALLED. THIS IS MANDATORY. THIS IS NOT AN ESCAPE HATCH. THE PURPOSE OF THE OPENING IS TO RELIEVE PRESSURE AND ALLOW THE MAIN DOOR TO BE OPENED SO THAT OCCUPANTS CAN BE THE OPENINGS WILL HAVE PANELS INSTALLED IN THE RF ROOM OR THE DOOR THAT CAN BE UNLOCKED AND OPENED TO THE OUTSIDE

IN CASE OF EMERGENCY. THESE PANELS REQUIRE AN RF SEALED INSTALLATION. AFTER OPENING THE PANEL, THE OUTLET SHOULD MEASURE AT LEAST 24"x24". WHEN USING RECTANGULAR PANELS, THE SHORTER SIDE SHOULD MEASURE OF MINIMUM OF 24".

TO ENSURE UNOBSTRUCTED VENTING, THIS OPENING CANNOT BE SUBDIVIDED. THIS MEANS THAT, FOR EXAMPLE, RF SEALED HONEYCOMB GRIDS ARE NOT PERMITTED.

EASY REMOVAL OF THE PANEL BY A PERSON HAS TO BE ENSURED AND A MINIMUM DISTANCE OF 40" TO A FIXED OBJECT MUST BE MAINTAINED. THE PANEL SHOULD BE INSTALLED IN AN ACCESSIBLE LOCATION AND ALLOW ESCAPE OF THE LOW DENSITY HELIUM.

AS AN ALTERNATIVE TO AN OUT SWING DOOR, THE STATIONARY OBSERVATION WINDOW IS REPLACED BY A WINDOW OPENING INTO THE CONTROL AREA OR THE DOOR IS REPLACED WITH AN RF SEALED SLIDING DOOR. IT SHOULD BE ENSURED THAT THE DOOR CLOSES IN A WAY THAT ALLOWS IT TO MOVE AWAY FROM THE FRAME IN CASE OF OVERPRESSURE.

IF THE DOOR OPENS TO THE OUTSIDE, THE OPENING IN THE RF ROOM IS STILL RECOMMENDED.

THE RF ROOM MANUFACTURER CAN PROVIDE YOU WITH ADDITIONAL RF SEALED ROOM OPENINGS THAT LEAD DIRECTLY TO THE OUTSIDE. HOWEVER, THESE OPENINGS ARE ALSO CONDUITS FOR NOISE GENERATED OUTSIDE THE RF ROOM. UNOBSTRUCTED FLOW THROUGH THIS PIPE MUST BE GUARANTEED.

-QUENCH TUBE EXIT RF WINDOW ¬ RF ROOM DOOR OPENING OPENING FOR -DIRECTION TO PRESSURE EQUALIZATION SAFETY ASPECTS FOR THE RF ROOM: IT MUST BE POSSIBLE TO LOCK THE RF ROOM (EXAMINATION ROOM)

DOOR FROM THE OUTSIDE. IT MUST ALSO BE POSSIBLE TO OPEN THE DOOR FROM THE INSIDE WITHOUT A KEY OR ADDITIONAL DEVICE.

THE RF DOOR IS AN IMPORTANT COMPONENT FOR GOOD IMAGE QUALITY AS WELL AS SAFETY, THE OWNER/OPERATOR OF THE MR SYSTEM MUST MAINTAIN THE RF ROOM AS INSTRUCTED BY THE RF ROOM MANUFACTURER IN ORDER TO GUARANTEE CORRECT FUNCTION

NO FERROMAGNETIC ITEMS CAN BE BROUGHT INTO THE RF ROOM AFTER THE MAGNET HAS BEEN RAMPED UP TO FIELD. MAGNETIC ITEMS WILL BECOME ATTRACTED TO THE MAGNET WITH NO WARNING AND DUE TO THE HIGH MAGNETIC FIELD, WILL BECOME MISSILES.

NOTE: FOR DOORS MOVED BY AN AUXILIARY DRIVES (ELECTRICAL OR PNEUMATIC), MANUAL OPERATION HAS TO BE ENSURED. AN OUTSIDE WINDOW SHOULD BE IN THE VICINITY TO ALLOW VENTING EXHAUSTED GAS TO THE OUTSIDE. THE INTEGRITY OF THE RF SHIELD MUST BE TESTED AFTER REMODELING.

SAFETY INFORMATION - PRESSURE EQUALIZATION

RF SHIELDING

1) THE EXAMINATION AREA MUST BE SHIELDED TO PROVIDE A REDUCTION OF RADIO FREQUENCY WAVES EMANATING FROM EXTERNAL TRANSMITTERS. THE REQUIRED ATTENUATION IS 90dB IN THE FREQUENCY RANGE OF 15-128 MHz. IF CO-SITING TWO SYSTEMS EACH ROOM SHOULD BE 100 dB.

2) THE RF SHIELD MUST BE TESTED BEFORE AND AFTER MAGNET PANEL IS INSTALLED. THE RF-SHIELDING MUST BE INSULATED FROM ALL GROUNDS SUCH THAT THE ONLY GROUND IS THE SINGLE POINT GROUND ON THE OUTSIDE OF THE RF-ROOM WALL. RESISTANCE \geq 100 OHMS.

3) ALL ELECTRICAL LINES INTO THE RF ROOM MUST BE ROUTED THROUGH RF FILTERS (PROVIDED BY RF SHIELDING SUPPLIER). ALL ELECTRICALLY NON-CONDUCTIVE SUPPLY LINES (E.G. FIBER OPTIC CABLES, OR HOSES) INTO THE RF ROOM MUST BE ROUTED THROUGH RF SEALED WAVE GUIDES (PROVIDED BY RF SHIELDING SUPPLIER).

4) FOR PRESSURE EQUALIZATION PURPOSES THE RF DOOR SHOULD OPEN TO THE OUTSIDE OF THE RF ROOM. AS AN ALTERNATIVE A 24"X24" OPENING IN THE RF ROOM FOR PRESSURE EQUALIZATION IS REQUIRED. REV 1

SHIELDING GENERAL NOTES

1) SIEMENS REQUESTS THAT THE SHIELDING MANUFACTURER(S) SUBMIT FINAL SHOP DRAWINGS TO SIEMENS FOR REVIEW PRIOR TO THEIR INCLUSION IN CONSTRUCTION DOCUMENTS. SIEMENS SHALL BE COPIED ON ALL FIELD ORDER CHANGES CONCERNING CHANGES IN RF AND MAGNETIC SHIELDING CONDITIONS, CONFIGURATION AND SPECIFICATION. THE RF AND MAGNETIC SHIELDING CONTRACTOR(S) SHALL FURNISH "AS BUILT" SCALED AND DIMENSIONED PLANS REFLECTING ANY AND ALL FIELD ORDER CHANGES PRIOR TO THE COMPLETION OF THE CONSTRUCTION DOCUMENTS.

2) ALL CHANGES TO SIEMENS RECOMMENDED OPENINGS AND PÉNETRATIONS SHALL BE APPROVED BY THE SIEMENS PROJECT MANAGER PRIOR TO THE COMPLETION OF THE CONSTRUCTION DOCUMENTS.

3) THE SIZE, LOCATION, AND DIMENSIONS OF ANY MAGNETIC SHIELDING REQUIRED HAS BEEN DETERMINED BY SIEMENS. THIS INFORMATION HAS BEEN SUPPLIED TO THE MAGNETIC SHIELDING FABRICATOR TO DESIGN THE STRUCTURAL SUPPORT SYSTEM REQUIRED FOR THE MAGNETIC SHIELDING MATERIAL.

FILTER PLATE GENERAL NOTES

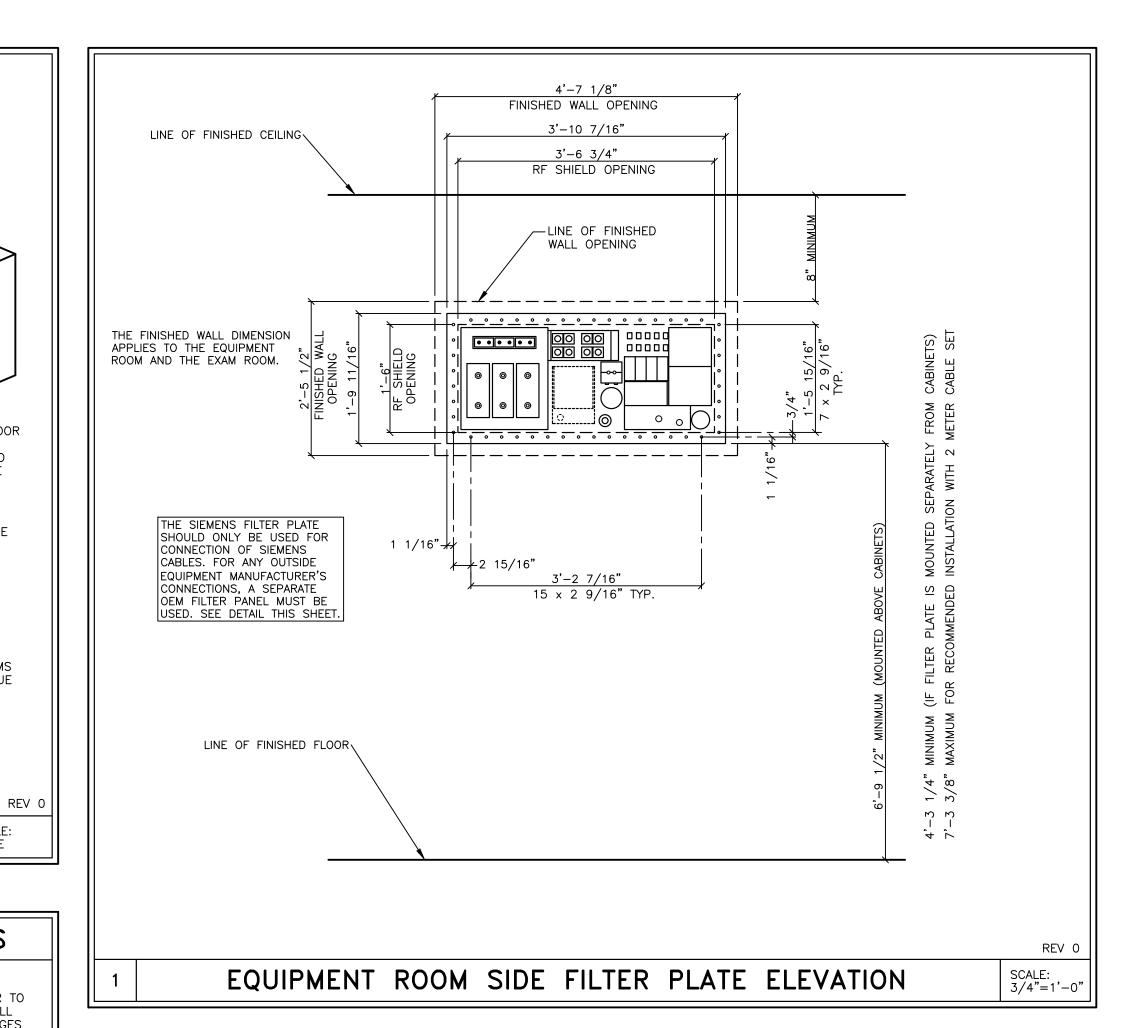
1) STRUCTURAL SUPPORT AND INTEGRATION OF THE SIEMENS SUPPLIED AND INSTALLED FILTER PLATE WITH MAGNETIC AND RF SHIELDING SHALL BE SPECIFIED, DETAILED AND NOTED BY THE RF AND MAGNETIC SHIELDING MANUFACTURER(S) WITH OVERALL COORDINATION WITH SIEMENS SITE SPECIFIC RECOMMENDATIONS TO BE THE RESPONSIBILITY OF THE ARCHITECT OF RECORD.

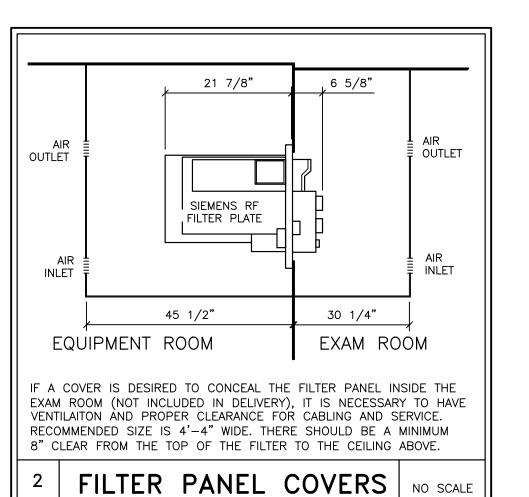
2) THE FILTER PLATE FRAME, RF FILTER PLATE BLANK, RF GASKET AND MOUNTING HARDWARE FOR THE PURPOSES OF TESTING THE INTEGRITY OF THE RF ENCLOSURE PRIOR TO THE INSTALLATION OF THE SIEMENS SUPPLIED AND INSTALLED RF FILTER PLATE SHALL BE PROVIDED AND INSTALLED BY THE SHIELDING CONTRACTOR(S) UNLESS SPECIFIED OTHERWISE.

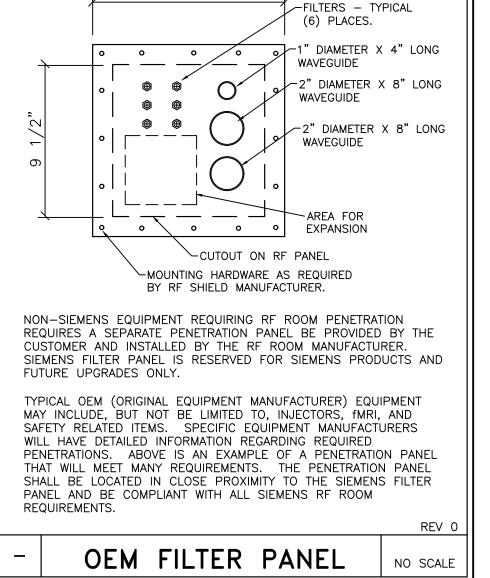
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SCALE:

NONE

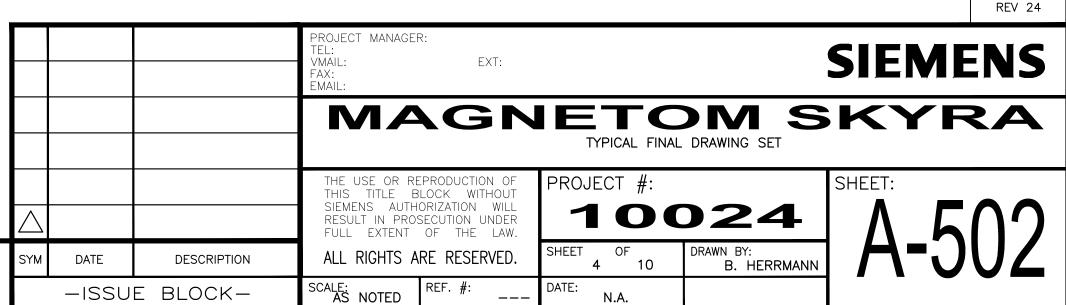






12"

SKYRA



EXAM ROOM INTERIOR NOTES

1) ONLY NON-MAGNETIC MATERIALS ARE TO BE USED AND INSTALLED N THE RF ROOM. SEE CONSTRUCTION REQUIREMENTS.

2) A SUSPENDED CEILING MUST BE STATICALLY SUSPENDED, NOT SUSPENDED WITH MOVABLE CLAMPS, SPRINGS, ETC.

3) RODS IN SUSPENDED CEILINGS MUST BE INSTALLED SECURELY. GALVANIC CONTENT BETWEEN THE RODS MUST BE GUARANTEED, THEY MUST NOT JUST LIE ON TOP OF ONE ANOTHER. A WIRE JUMPER BETWEEN RODS MAY BE USEFUL.

4) ELECTRICAL WIRING, FOR AMBIENT LIGHTS FOR EXAMPLE, MUST NOT SÍMPLY REST ON THE SUSPENDED CEILING, THEY MUST BE FASTENED OR INSIDE A CONDUIT TO PREVENT MOTION.

REV 1

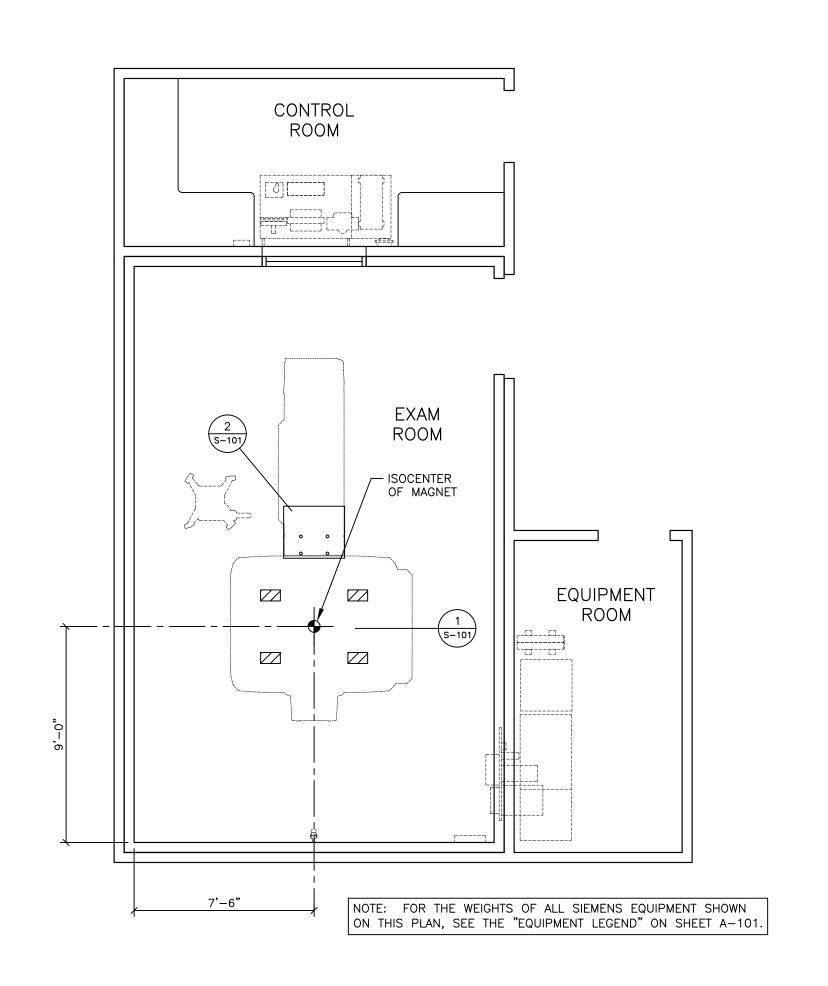
- THIS DRAWING IS DESIGNED TO CONFORM TO FEATURES AND EQUIPMENT REQUIREMENTS PRESENTED AT THE TIME OF THEIR PREPARATION. SINCE BOTH THESE FACTORS ARE SUBJECT TO DESIGN MODIFICATION, THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES. - THIS SET OF PLANS REPRESENTS A COMPLETE SET OF DETAILS AND SHOULD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

- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION

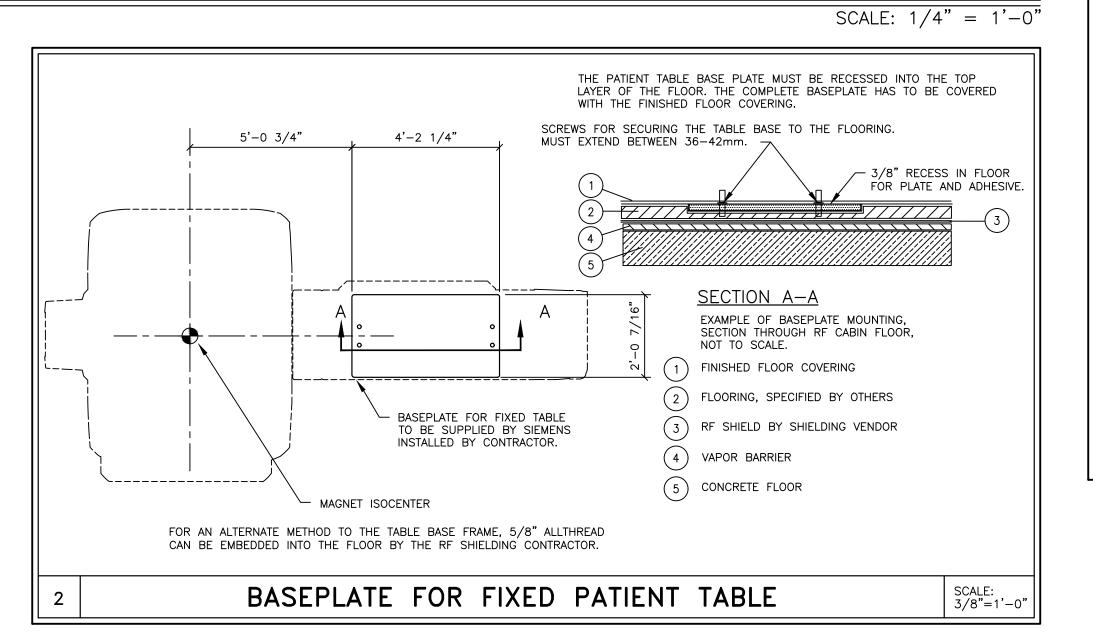
-ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES. THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

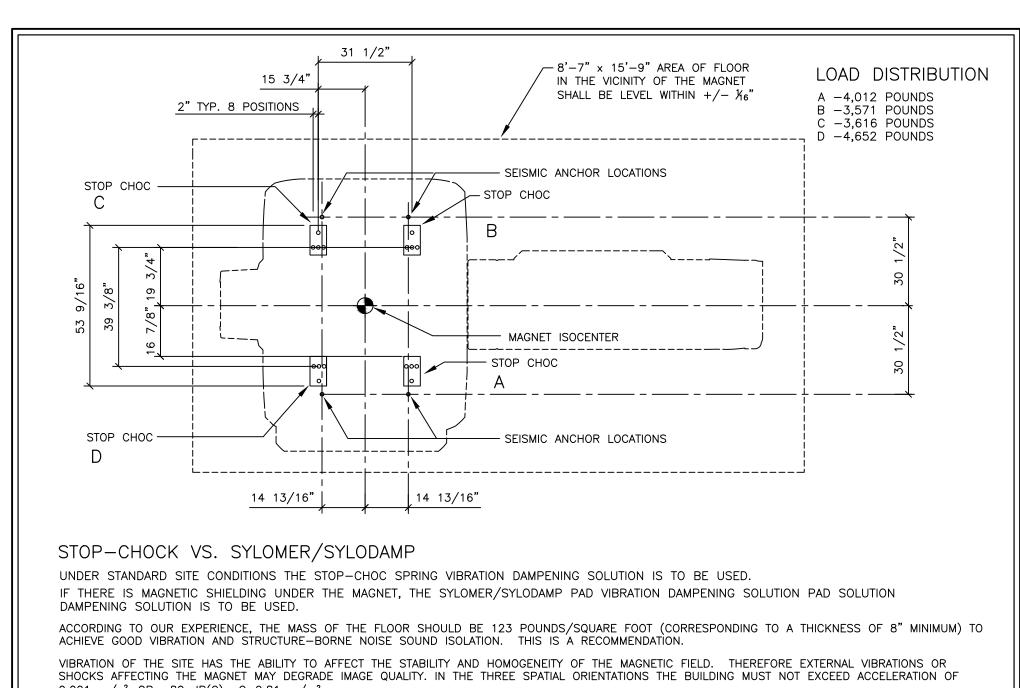
ATTENTION:

DOCUMENTS FOR REFERENCE.



STRUCTURAL FLOOR PLAN



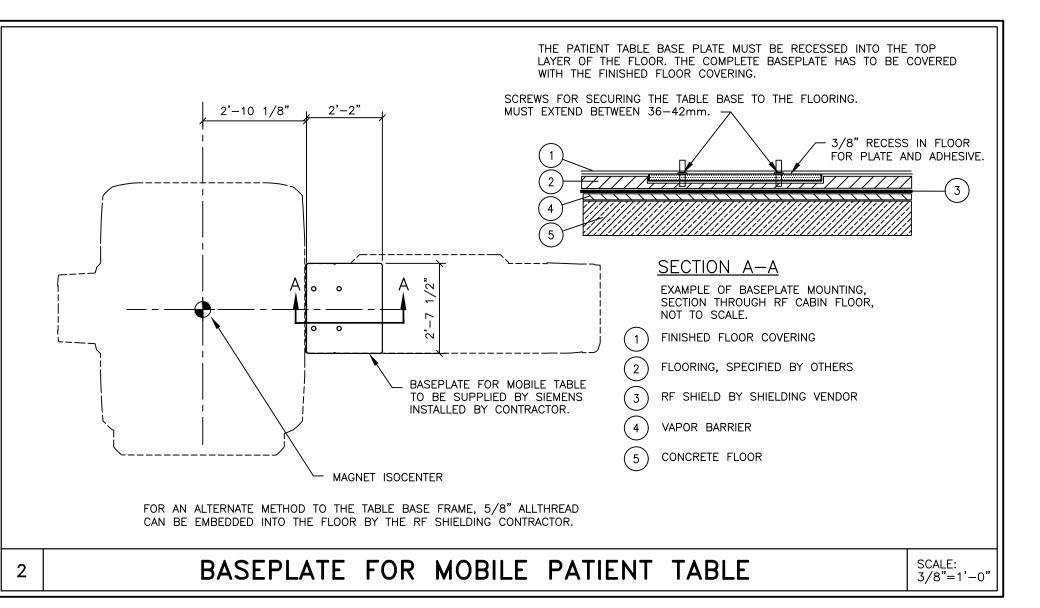


 $0.001 \text{ m/s}^2 \text{ OR } -80 \text{ dB(G)} \text{ G=} 9.81 \text{ m/s}^2$ THE REQUIREMENT FOR a max IS MEASURED AS MAXIMUM RMS VALUE PER FREQUENCY COMPONENT <0.5Hz IN THE FOURIER TRANSFORMATION OF THE RECORDED SIGNAL (SPECTRUM),

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 MULITIPLIED 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.

SKYRA BASE DETAIL 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.

WITH A TRANSIT.

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

4) ALL STRUCTURAL SUPPORT DETAILS SHOWN ARE SAMPLE DETAILS BÁSED 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

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

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.

UTILIZING ALTERNATE MOUNTING MATERIALS.

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 TAB	LE
	POUNDS
MAGNET AND PATIENT TABLE	16,381
MAGNET ONLY FLOOR LOADING	15,851
LOAD DISTRIBUTION PER SHIM PLATE	SEE DETAIL 1
PATIENT	550

SKYRA REV 24

CEILING HEIGHTS			PROJECT MANAGER: TEL: VMAIL: EXT:		SIEMENS	
GNET EXAMINATION ROOM: 7-11" MINIMUM			FAX: EMAIL:		OILIVILIYO	
EQUIPMENT ROOM: 7'-3" MINIMUM WITH RESTRICTION			MAGNETOM SKYRA			
LL ANCILLARY AREAS: 6'-11" MINIMUM				TYPICAL FINAL DRAWING SET		
.			THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT	PROJECT #:	SHEET:	
			SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER	10024		

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.

MAGNET EXAMINATION ROOM: 7-11" MIN

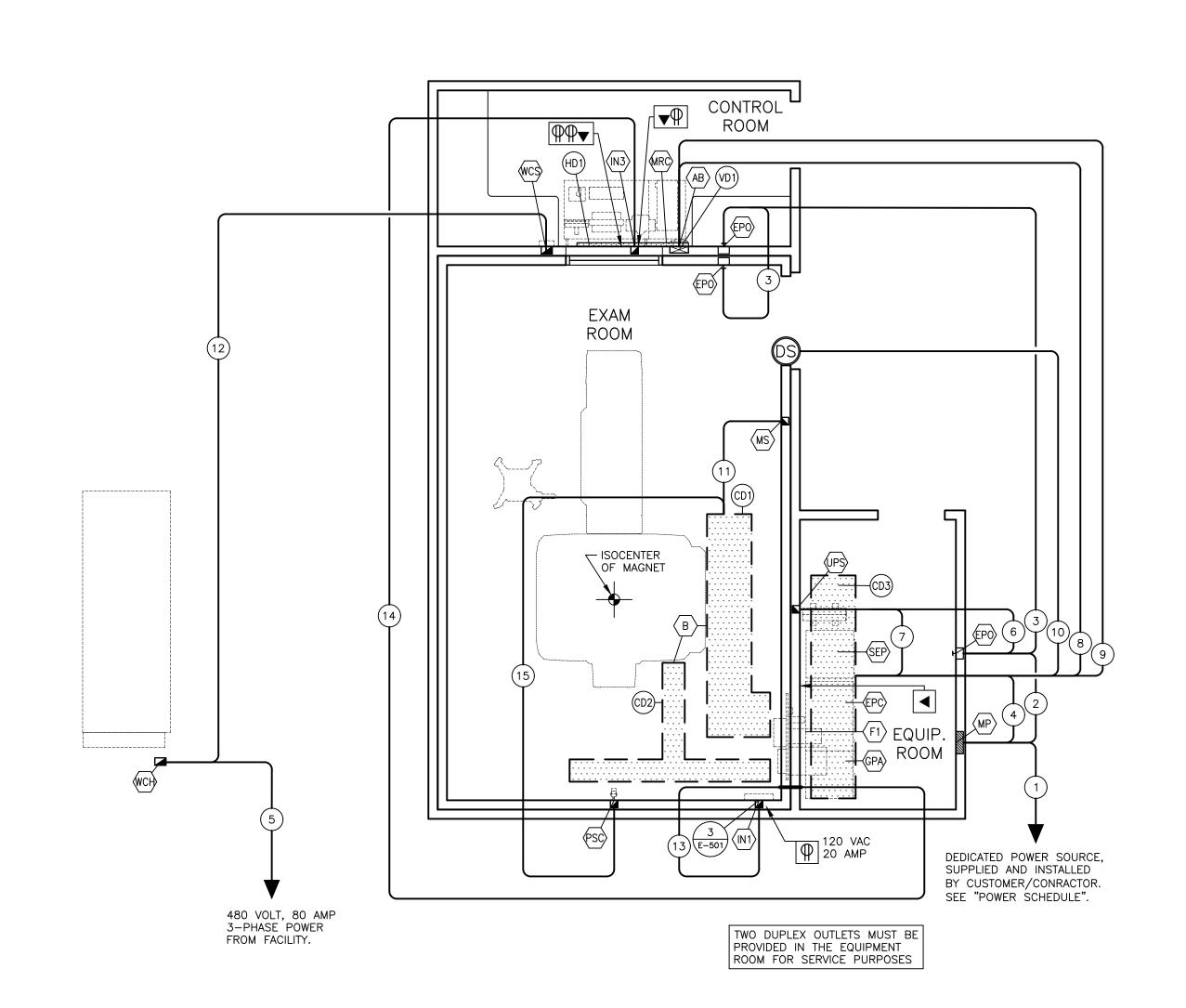
DATE

DESCRIPTION

-ISSUE BLOCK-

FULL EXTENT OF THE LAW. ALL RIGHTS ARE RESERVED. SCALE: AS NOTED REF. #:

B. HERRMANN



ELECTRICAL RACEWAY PLAN

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

SYMBOLS					
	ALL MAY NOT APPLY				
	CAUTION OR WARNING				
İ	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 ROLLE 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).					
\Leftrightarrow	110 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET LOCATED NEAR THE ETHERNET CONNECTION. REV 2				

		ELECTRICAL LEGEND	
SYM	SIZE	DESCRIPTION	REMARKS
		SUPPLIED AND INSTALLED BY CUSTOMER/CONTRACTOR	
(AB)	3"ø	OPENING IN FACE OF VERTICAL DUCT 5'-0" ABOVE FINISHED FLOOR IN LOCATION TO BE COORDINATED WITH THE ARCHITECT.	ALARM BOX
	18" x 18"	LOCATION FOR CABLES TO DROP OUT OF BOTTOM OF RACEWAY.	ELECTRONICS CABINETS
<u>B</u>	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
(FI)		SIEMENS RF FILTER PANEL TO BE MOUNTED ON RF SHIELDED WALL	FILTER PANEL
(N1)	AS REQUIRED	NON-FERROUS PULL BOX MOUNTED FLUSH WITH FINISHED WALL MOUNTED 2'-0" ABOVE FINISHED FLOOR. PROVIDE NEATLY FINISHED AND REMOVABLE COVER WITH CABLE EXIT. EXACT LOCATION TO BE COORDINATED WITH THE ARCHITECT.	INJECTOR POWER SUPPLY- MUST BE LOCATED OUTSID OF 5mT FIELD
(N3)	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 CONSO
₩P		MAIN PANEL WITH MAIN BREAKER. EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR	SEE POWER SCHEDULE
€ RC>	4" × 4"	OPENING IN FACE OF RACEWAY IN SHOWN LOCATION.	HOST COMPUTER
(MS)	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
(53)	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 CAME
(P)	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
(WCI)→	AS REQUIRED	PULL BOX MOUNTED ADJACENT TO WATER CHILLER PROVIDED WITH FLEX-TITE CONDUIT FROM PULL BOX TO KNOCK OUT PANEL ON CHILLER. COORDINATE WITH SIEMENS PROJECT MANAGER.	WATER CHILLER
(NC)>	AS REQUIRED	PULL BOX MOUNTED FLUSH WITH FINISHED WALL IN LOCATION COORDINATED WITH SIEMENS PROJECT MANAGER, WIRES ENTER CONTROL PANEL FROM THE BOTTOM.	CHILLER REMOTE CONTROL STATUS PANEL
(1)	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
(02)	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
(33)	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
(HD1)	4" × 2"	HORIZONTAL DUCT SURFACE MOUNTED ON WALL IN CONTROL AREA AT FLOOR LINE AS SHOWN, FINISHED TO MATCH WALLS.	
(N)	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.	
1	AS PER NEC	CONDUIT FROM FACILITY POWER TO MAIN PANEL "MP".	SEE POWER SCHEDULE, SHEET E-102
2	AS PER NEC	CONDUIT FROM "MP" TO "EPO".	SEE POWER SCHEDULE, SHEET E-102
3	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
4	(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
5	(1) 2 " ø	CONDUIT FROM FACILITY POWER TO "WCH".	
6	(1) 3/4"ø	CONDUIT FROM "EPO" TO "UPS".	
7	(1) 2"ø	CONDUIT FROM "UPS" TO "CD3" (EPC)	MAXIMUM LENGTH 29 FEET
8	(2) 2 1/2"ø	CONDUIT FROM "VD1" (MRC) TO "CD3" (EPC).	NOT TO EXCEED 54 FT.
9	(1) 1 1/2"ø	CONDUIT FROM "VD1" (AB) TO "CD3" (EPC).	NOT TO EXCEED 60 FT.
10	(1) 1/2"ø	CONDUIT FROM "DS" TO "CD3" (EPC).	NOT TO EXCEED 60 FT.
11)	(1) 3/4"ø	CONDUIT FROM "MS" TO "CD1" (WIRES TO MAGNET) TO BE NON-FERROUS WHEN INSIDE THE RF ROOM.	
	(1) 1"ø	CONDUIT FROM "WCH" TO "WCS".	NOT TO EXCEED 150 FEET
(12)	\'\\ ' ~	1	<u> </u>
(12) (13)	(1) 2"ø	NON-FERROUS CONDUITS FROM NEAR "F1" TO "IN1" FOR INJECTOR CARLES	NOT TO EXCFFD 40 FFFT
(12) (13) (14)	(1) 2"ø (1) 2"ø	NON-FERROUS CONDUITS FROM NEAR "F1" TO "IN1" FOR INJECTOR CABLES. CONDUIT FROM NEAR "F1" TO "IN3" FOR INJECTOR CABLES.	NOT TO EXCEED 40 FEET NOT TO EXCEED 150 FEET

CONTRACTOR SUPPLIED CABLES					
FROM	VIA	то	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.		
EP0	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	
SOURCE	5	WCH	(3) PHASE CONDUCTORS, (1) FULL SIZE EQUIPMENT GROUND WIRE TO BE SIZED BY ELECTRICAL CONTRACTOR/ENGINEER.		
EPO	6	UPS	DETERMINED BY ELECTRICAL CONTRACTOR.	6 FOOT TAILS	
WCH	12	WCS	THERMOSTAT WIRE SUPPLIED AND INSTALLED BY CONTRACTOR.		

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 APPLICATBLE, PROVIDE ONLY MATERIALS AND PRODUCTS THAT ARE UL LISTED AND LABELED. THE CUSTOMER'S/CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE. 2) QUALITY ASSURANCE: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT 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

HÉALTHCARE EQUIPMENT SHALL BE DEDICATED CIRCUIT. 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 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

5) RACEWAY AND CONDUIT NOTES: ALL ITEMS IN THE MAGNET ROOM SHALL BE NON-FERROUS. ALL CONDUITS SHALL BE INSTALLED PER LATEST 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. 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 EXCÉED THE SPECIFIED MAXIMUM DISTANCES AS SHOWN ON THE ELECTRICAL DETAILS. PROVIDE ENCLOSED METAL SYSTEM (WIRE DUCT) WIRE DUCT

RACEWAY SYSTEM WHERE SHOWN ON DRAWINGS WITH DIVIDERS TO SEPARATE THE DUCT (FOR POWER AND SIEMENS HEALTHCARE CABLING). DIVIDERS AND CROSSOVER PIECES TO BE PROVIDED AS NECESSARY. FOR UL 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. 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 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.

6) WIRING: WIRING SHALL BE 600 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 OUTLÉT POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY THE CUSTOMER/ELECTRICAL CONTRACTOR. 7) ALL CIRCUIT BREAKERS SHALL BE RATÉD FOR 25 KV RMS SHORT CIRCUIT RATING.

SKYRA REV 24

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

			PROJECT MANAGER: TEL: VMAIL: EXT: FAX: EMAIL:		SIEMENS
			MAGN	TYPICAL FINAL DRAWING SET	SKYRA
\triangle			THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.	PROJECT #: 10024	SHEET:
SYM	DATE	DESCRIPTION	ALL RIGHTS ARE RESERVED.	SHEET OF DRAWN BY: 6 10 B. HERRMAI	

PROJECT MANAGER:

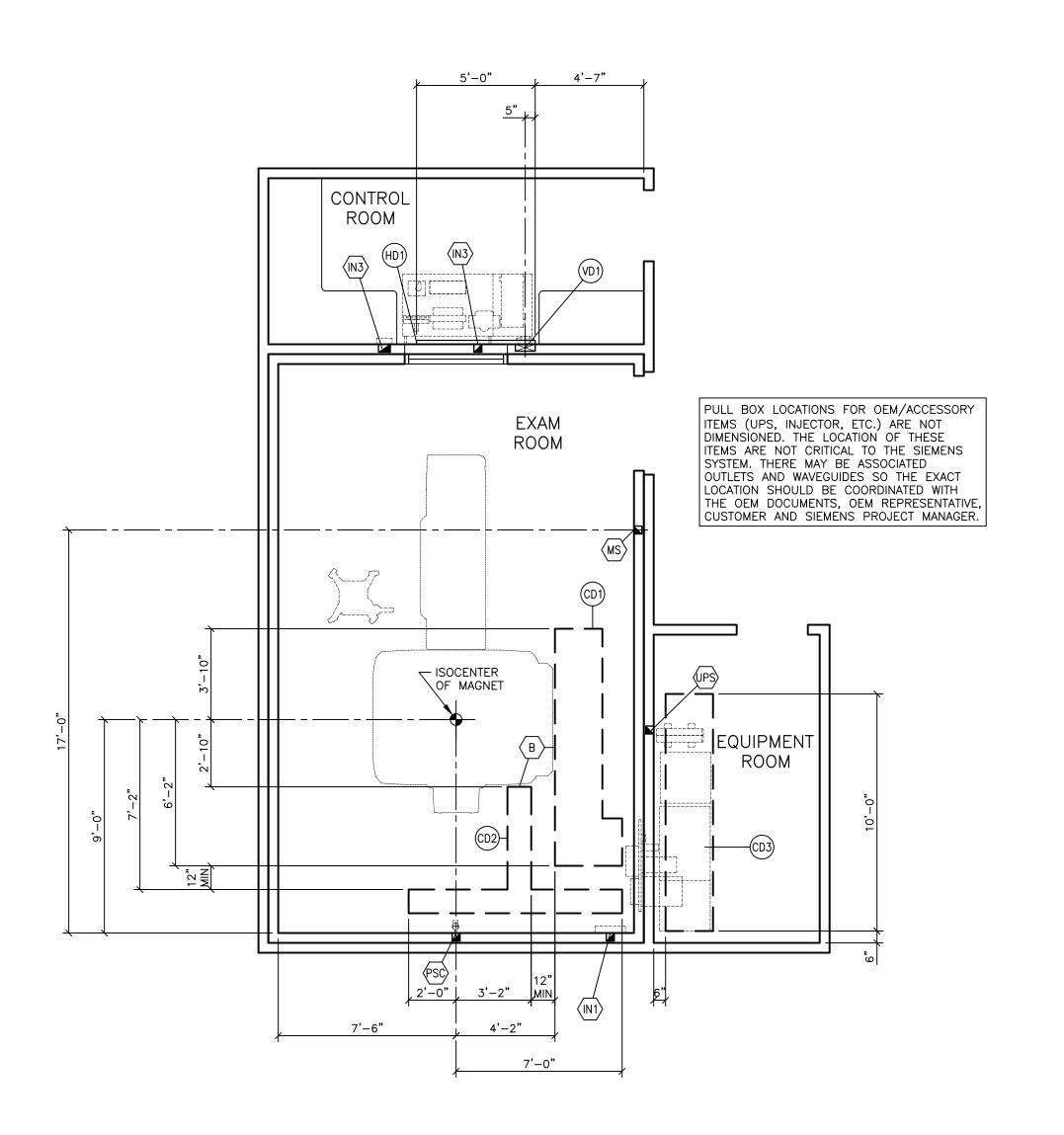
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- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.

- 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.

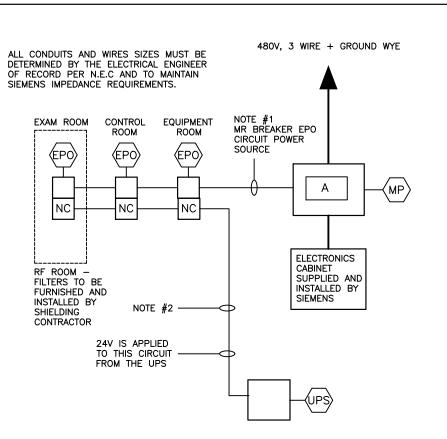
SCALE: AS NOTED -ISSUE BLOCK-



ELECTRICAL DIMENSION PLAN

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

POWER SCHEDULE



ITEM	QTY		DESCRIPTION				
MP	1	MAIN PANEL WITH MAIN BREAKER FLUSH OR SURFACE MOUNTED.					
Α	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 FLECTRICAL 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

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

POWER QUALITY NOTES

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

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 DÍRECTLY TO A MAIN FACILITY DISTRIBUTION PANEL OR TO THE FACILITY SERVICE ENTRANCE, WITH NO OTHER LOADS POWERED FROM 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 MÉDICAL 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".

DATE

DESCRIPTION

-ISSUE BLOCK-

POWER REQUIREMENTS

VOLTAGE VARIATION:480 VAC ±10% FOR ALL LINE AND LOAD CONDITIONS VOLTAGE UNBALANCE: 2% MAXIMUM DIFFERENCE BETWEEN PHASES 60 Hz ± 1.0 Hz LINE IMPEDANCE: <150 mOHMS READY FOR MEASUREMENT 16.2 kW 84 kVA CONNECTION VALUE MOMENTARY POWER 128 kVA 150 A MR SYSTEM BREAKER SIZE (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

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 FÉED ONLY THE IMAGING SYSTEM AND BE KEPT SEPARATE FROM ELECTRICAL FEEDERS TO HVAC, MOTORS, PUMPS, COMPRESSORS, ELEVATORS AND OTHER POTENTIAL SOURCES OF ELECTRICAL

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

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.

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.

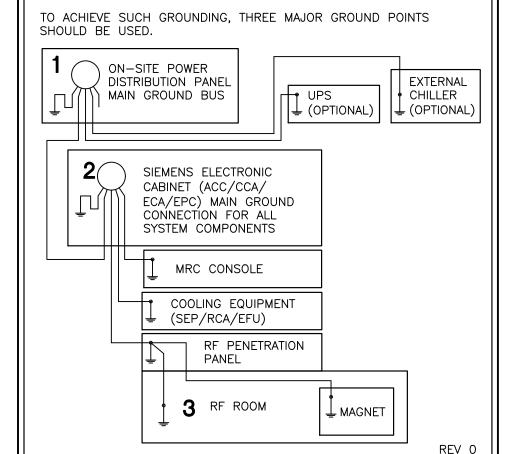
5) BONDED TO CHASSIS AND/OR CONDUIT IN ACCORDANCE

WITH THE NEC REQUIREMENTS. 6) MINIMIZE CONNECTIONS OR TERMINALS TO ENSURE CONTINUITY OVER THE LIFE OF THE INSTALLATION. PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS

7) AS A NORM, THERE SHOULD NOT BE ANY CURRENT ACCEPTABLE TO HAVE <500mA 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.



SKYRA REV 24

SIEMENS

CEILING HEIGHTS

MAGNET EXAMINATION ROOM: 7-11" MINIMUM EQUIPMENT ROOM: 7'-3" MINIMUM WITH RESTRICTION

ALL ANCILLARY AREAS: 6'-11" MINIMUM

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

MAGNETOM SKYRA TYPICAL FINAL DRAWING SET THE USE OR REPRODUCTION OF PROJECT #: THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW. ALL RIGHTS ARE RESERVED.

SCALE: AS NOTED

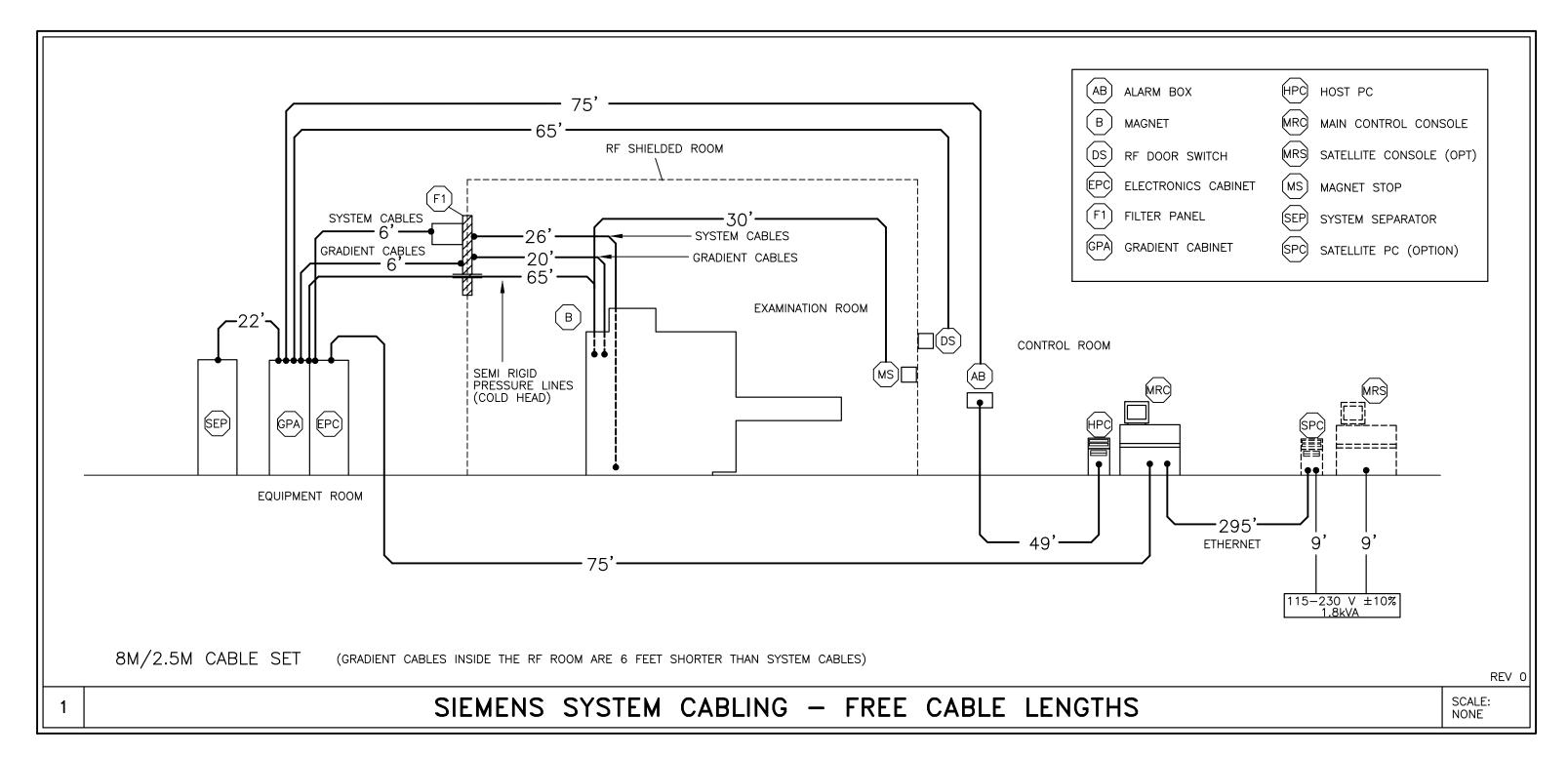
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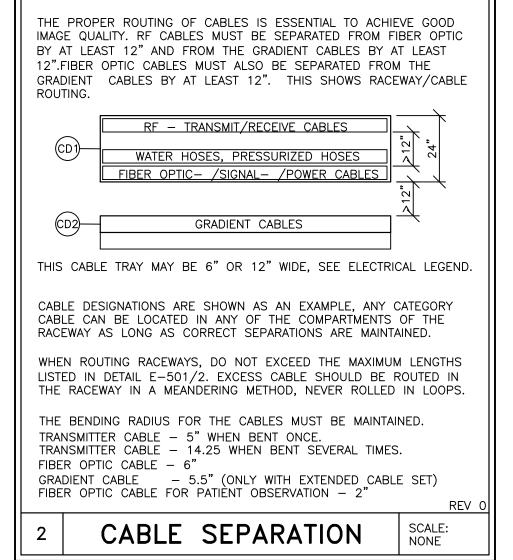
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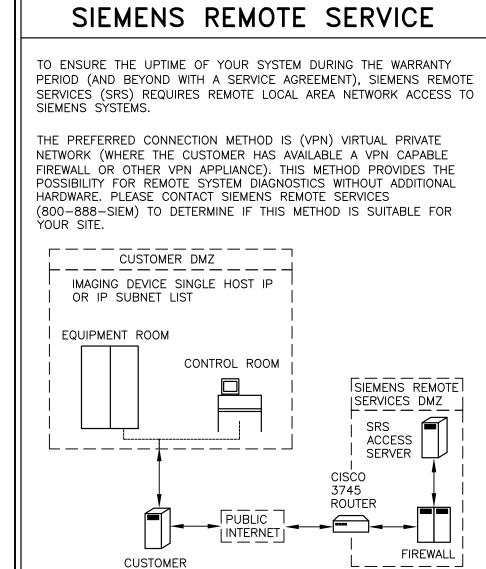
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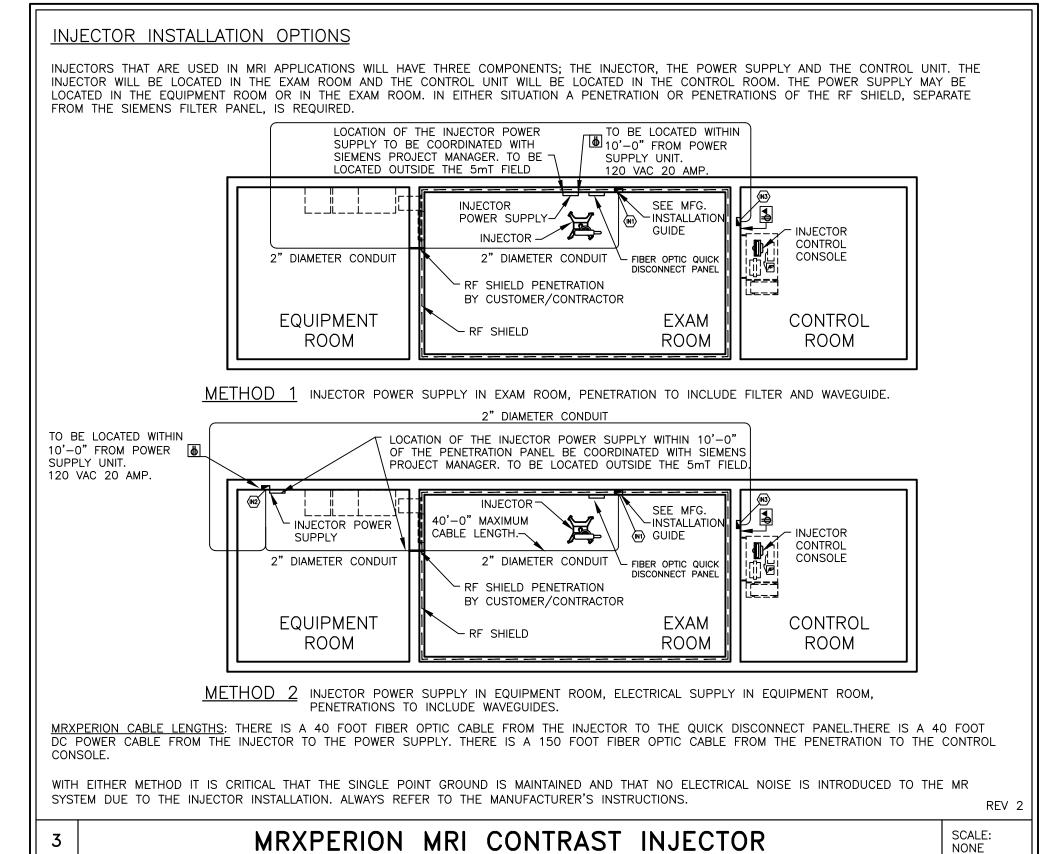
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VPN SERVER



REV 0

CABLE LENGTH RESTRICTIONS

1) THE CABLE SET LENGTH IDENTIFIES THE "FREE CABLE LENGTH". THIS IS THE LENGTH FROM CONNECTION POINT TO CONNECTION POINT. THE CABLE LENGTH IS NOT THE DISTANCE BETWEEN COMPONENTS.

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'.

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

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.

SKYRA REV 24

ROJECT MANAGER: SIEMENS **MAGNETOM SKYRA** TYPICAL FINAL DRAWING SET THE USE OR REPRODUCTION OF PROJECT #: THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL 10024 RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.

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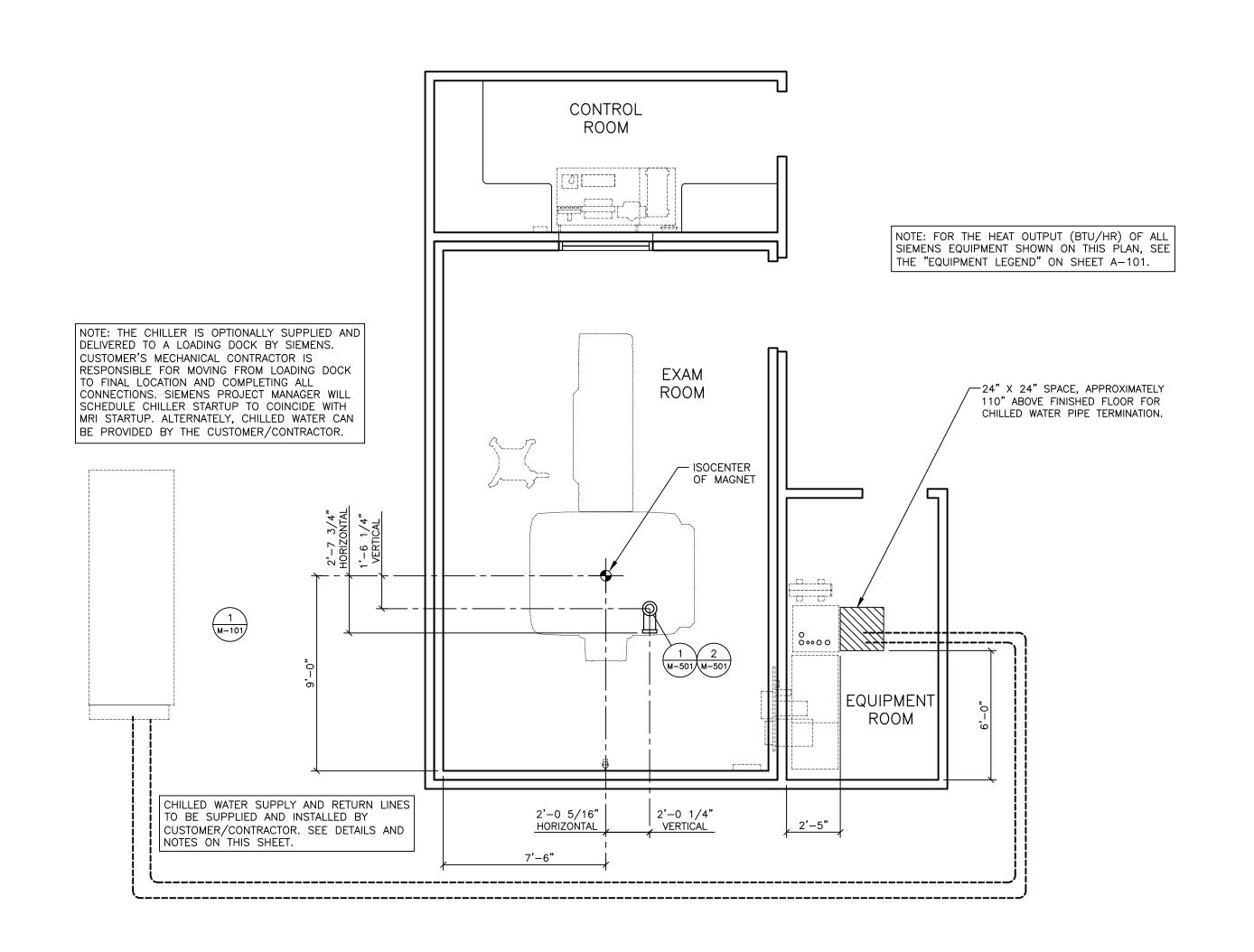
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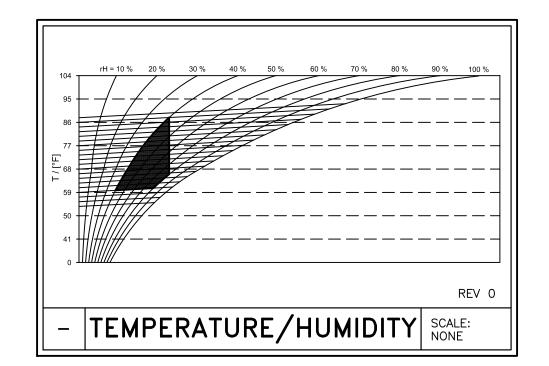
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MECHANICAL PLAN

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



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 AÍR 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.

FULL PORT SHUT-OFF VALVES FOR SERVICING SEP CABINET. CHILLED WATER SYSTEM BYPASS WITH FULL SIZE PIPING TO - 6 FOOT MAX. HOSE LENGTH INCLUDE 3/4" MINIMUM BOILER DRAIN AND MINIMUM 3/4" 1-1/4" MALE THREAD BYPASS PIPE WITH BALL VALVE AND 3/4" BOILER DRAIN PROVIDED BY SIEMENS FOR 60 kW SEP. 16 FOOT MAX. DIMPLEX FILTER KIT, PROVIDED WITH HOSE LENGTH DIMPLEX CHILLER CONSISTING OF CARTRIDGE FILTER, BLOCK AND DIMPLEX CHILLER BYPASS VALVES AND FLOW METER PROVIDE FULL PORT SHUTOFF TO BE INSTALLED BY MECHANICAL VALVES INSTALLED ON CHILLER CONTRACTOR. SUPPLY AND RETURN LINES AT ----REFER TO THE DIMPLEX WEBSITE FOR LENGTH AND DIAMETER SPECIFICATIONS FULL PORT SHUT OFF VALVE REGARDING THE PIPE OR HOSE FROM THE DIMPLEX CHILLER TO THE SEP CABINET. THERMOMETER WITH RANGE FROM 30°F SEP GPA EPC WWW.KOOLANTKOOLERS.COM/SIEMENS H TO 80°F (LOCATED NEAR SEP) THE CONNECTION MUST BE 1-1/4" NPT PRESSURE GAUGE WITH RANGE FROM 40 FEMALE THREAD. TO 110 PSI (LOCATED NEAR SEP) BOILER DRAIN -- FILTER - PROVIDED BY DIMPLEX, INSTALLED BY CONTRACTOR. SIEMENS SUPPLIED AND INSTALLED CABINETS

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

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.

SYSTEM MUST BE PROVEN TO BE FREE FROM LEAKAGE.

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 MUST BE LABELED TO SHOW FLOW DIRECTION AND CONTENT (WATER/GLYCOL).

PIPING SCHEMATIC FOR CHILLED WATER - DIMPLEX CHILLER | SCALE: NONE

CHILLED WATER REQUIREMENTS

WATER REQUIREMENTS TO BE MEASURED AT THE SEP CABINET.

FLOW RATE:	26.42 GPM ± 2.5 GPM
WATER TEMPERATURE:	43°F-53°F
BTU DISCHARGE TO THE WATER	204,911 BTU/HR
WATER PRESSURE	MAXIMUM 87 PSI
LOSS OF PRESSURE FOR SEP CABINET	14.5 PSI MAXIMUM
CHILLED WATER ACIDITY RANGE	6 pH TO 8 pH
CHILLED WATER HARDNESS	<250 ppm CALCIUM CARBONATE
CHLORINE GAS CONCENTRATION	<200 ppm
FILTRATION	700 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.

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) REQUIREMENTS. THE CHILLED WATER CAN ALSO BE SUPPLIED BY A DEDICATED KRAUS ECO 133 CHILLER AND INTERFACE PANEL. WITHOUT THE DIMPLEXAUS CHILLER, A SEP (SYSTEM SEPARATOR CABINET), MUST BE INCLUDED WITH THE SIEMENS ORDER. THE PIPE SIZE FROM THE CHILLER TO THE SEP CABINET IS 1 1/4". 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.

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.

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

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.

DELIVERY OF THE EQUIPMENT.

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. SEE CONSTRUCTION REQUIREMENTS.

4) ALL PENETRATIONS IN THE RF CABIN/SHIELD SHALL BE THROUGH A WAVE GUIDE TO BE EQUIPPED WITH A DIELECTRIC COUPLER ON BOTH ENDS OF THE WAVE GUIDE. ALL WAVE GUIDES SHALL BE DESIGNED, DETAILED AND SPECIFIED BY THE RF CABIN/SHIELD CONTRACTOR WITH ALL LOCATIONS TO BE DETERMINED BY THE ARCHITECT AND MECHANICAL ENGINEER OF RECORD TO BE ESTABLISHED IN A PRE-PLANNING MEETING PRIOR TO THE DESIGN, SPECIFICATION, AND FABRICATION OF THE RF CABIN/SHIELD.

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 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 OF RECORD 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 1

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.

SKYRA REV 24

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

ı						REV 24
			PROJECT MANAGER: TEL: VMAIL: FAX: EMAIL:	EXT:		SIEMENS
			MA	GN	TYPICAL FINAL DRAWING SET	KYRA
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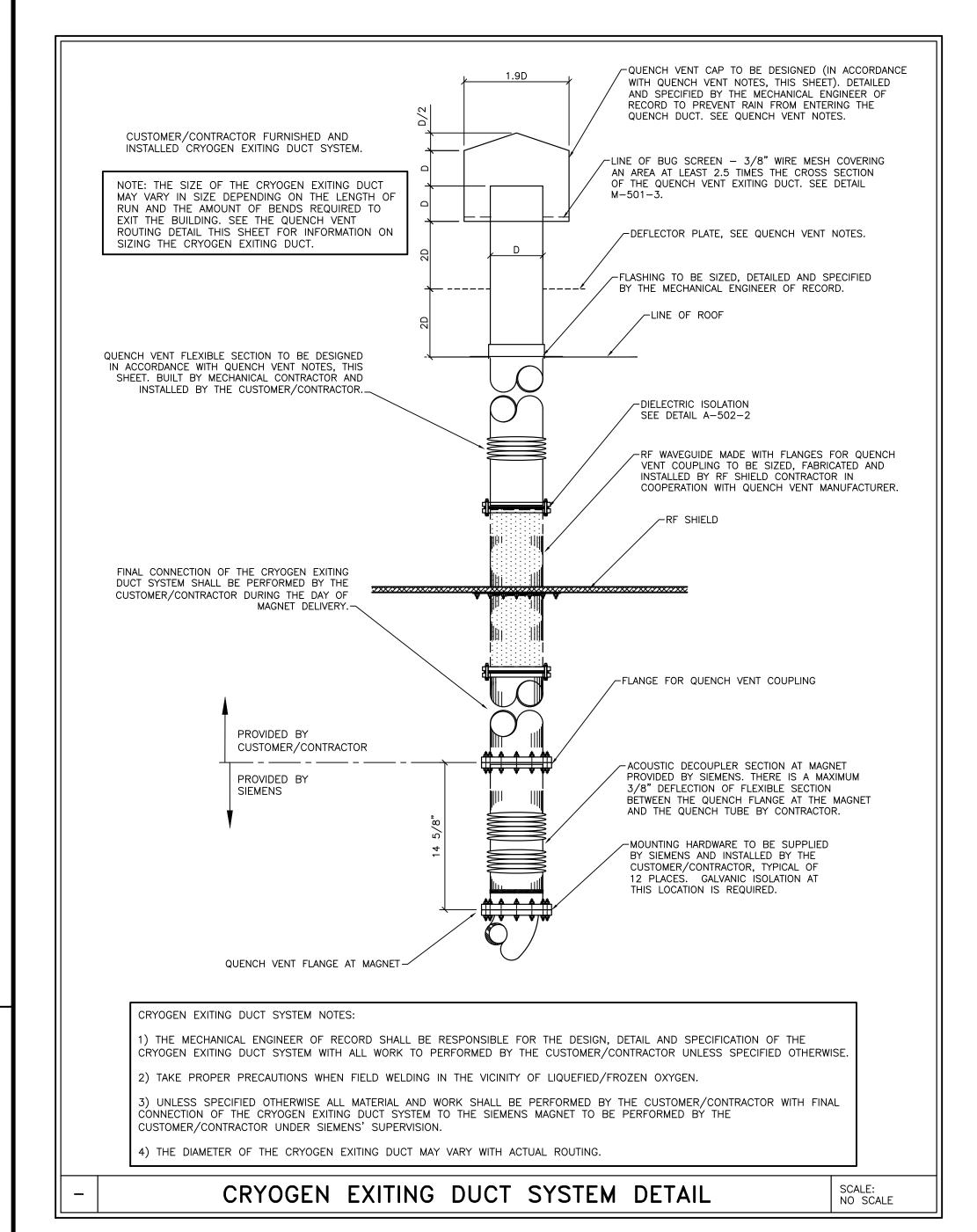
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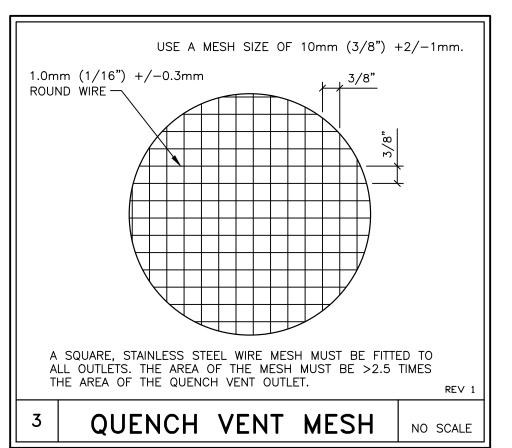
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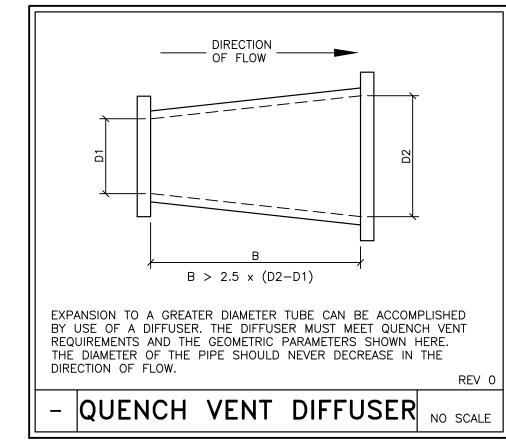
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-ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES. THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

ALL RIGHTS ARE RESERVED. DESCRIPTION B. HERRMANN SCALE: AS NOTED -ISSUE BLOCK-







CRYOGEN NOTES

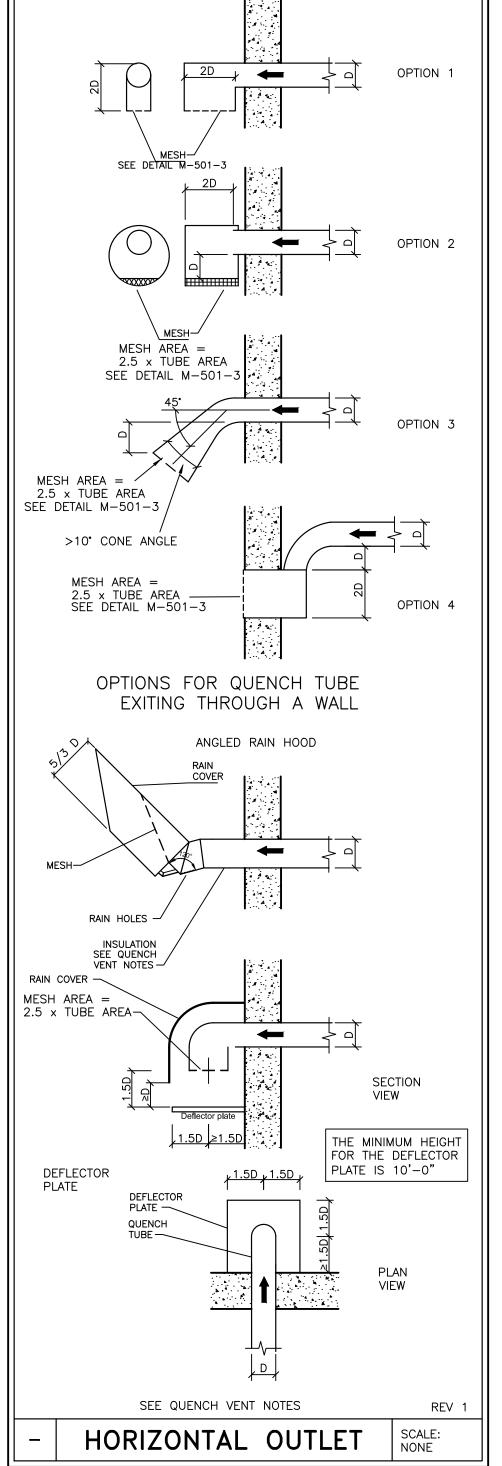
) "CRYOGENS" IS A TERM USED TO IDENTIFY THE REFRIGERANT USED TO MAKE THE MAGNET "SUPER-CONDUCTING", IN THIS APPLICATION, LIQUID AND GASEOUS HELIUM. SPECIAL CARÉ MUST BE TAKEN DURING THE TRANSFILLING OF THE MAGNET WITH CRYOGENS AND NORMAL EXHAUST OF CRYOGENS FROM THE SYSTEM. ASIDE FROM THE OBVIOUS DANGER OF FREEZING, HELIUM GAS WILL ALSO DISPLACE THE OXYGEN IN THE ROOM. THE INSTALLATION OF AN APPROVED TOXGARD MONITORING SYSTEM IS RECOMMENDED.

2) THERE SHALL BE A TRANSPORT ROUTE FOR DELIVERY OF CRYOGENS TO THE EXAM ROOM. SPECIAL VESSELS CALLED DEWARS ARE USED TO TRANSPORT HELIUM. A 250 LITER DEWAR WEIGHS 335 POUNDS AND HAS A 32" DIAMETER, A 500 LITER IS 540 POUNDS, AND IS 42" IN DIAMETER.

3) HELIUM GAS CYLINDERS MAY BE USED DURING THE INITIAL FILLING OF HELIUM INTO THE MAGNET. THE FACILITY IN WHICH THESE MAY BE USED NEEDS TO HAVE THE ABILITY TO TEMPORARILY STORE AND SECURE THESE CYLINDERS THAT WILL PREVENT THEM FROM INADVERTENTLY FALLING OVER.

4) OUTSIDE VENTING OF THE HELIUM IS TO BE PROVIDED BY MEANS OF A VENT PIPE OF NON-MAGNETIC MATERIAL CALLED A QUENCH

REV 0



QUENCH VENT NOTES

QUENCH VENT DESIGN INSTRUCTIONS

GENERATED AT THE APPROXIMATE EXPANSION RATIO OF 1:700 FROM THIS DOCUMENT MUST BE FOLLOWED. SINCE HELIUM VENTED IN A NOT POSSIBLE. QUENCH TUBE PLANNING MUST ONLY BE DONE BY THAT THE QUENCH TUBE IS MAINTAINED IN AN OPERABLE STATE.

FOREIGN OBJECTS. ROUND SECTIONS ONLY, NO SQUARE SECTIONS.

ALSO BE FLEXIBLE.

PRESSURE CALCULATION 5) THE MAXIMUM INTERNAL PRESSURE IS CALCULATED AT 1.45 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 INTERNAL PIPE DIAMETER RATIO OF 1.5 TO 5.0. EXPANSIONS TO PIPE DIAMETER CAN BE DONE WITH A DIFFUSER. ONLY ROUND TUBE SECTIONS MAY BE USED, RECTANGULAR SECTIONS ARE NOT ALLOWED.

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 GREATER THAN 4" (1.5T) OR 6" (3.0T) 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, VEE CLAMPED FLANGES MAY NOT BE USED.

9) THE PROTECTION AT THE END OF THE TUBE SHALL BE 3/8" WIRE MESH WITH 1/16 INCH WIRES, COVERING AN AREA AT LEAST 2.5 TIMES THE CROSS SECTION AREA OF THE QUENCH PIPE.

10) WHERE THE QUENCH TUBE EXITS THROUGH A FLAT ROOF, THE THE OUTLET MUST BE ABOVE A LEVEL WHERE WATER COULD ENTER IN THE EVENT THAT THE ROOF DRAINS BECOME BLOCKED. IN THE CASE OF A HORIZONTAL EXIT THROUGH A WALL, THE OUTLET SHALL BE ANGLED DOWNWARD NOT LESS THAN 1 PIPE DIAMETER TO PREVENT RAIN INGRESS. THE EXIT SHALL BE LOCATED ABOVE THE LEVEL OF

MUST ALSO BE FITTED WITH THE DIAMETER TO BE TWO TIMES THE DIAMETER OF THE QUENCH TUBE. THE CLEARANCE BETWEEN THE RAIN GUARD AND THE MESH SHALL 2 TIMES THE DIAMETER OF THE TUBE. A DEFLECTOR PLATE SHALL BE WELDED TO THE TUBE WHERE IT EXITS THE ROOF TO PREVENT HELIUM FROM RE-ENTERING THE BUILDING. THE DEFLECTOR SHALL BE AT LEAST 3 TIMES THE DIAMETER OF THE QUENCH TUBE AND LOCATED TWO PIPE DIAMETERS ABOVE THE ROOF AND TWO PIPE DIAMETERS BELOW THE

BE AT TEMPERATURES OF LESS THAN -400°F. DUE TO THIS TEMPERATURE ROOFING MATERIALS OR ITEMS AROUND THE VENT EXIT MAY BE ADVERSELY AFFECTED. CONSIDERATION OF MATERIALS AND ITEMS PLACED NEAR THE VENT EXIT SHOULD BE TAKEN INTO ACCOUNT SO DAMAGE DOES NOT OCCUR.

MUST CONFORM TO OPTIONS 1-4 OR THE ANGLED RAIN HOOD. THE OUTLET SHOULD NOT BE LOCATED WHERE HELIUM GAS CAN BE DRAWN INTO AN AIR INLET, ENTER AN OPEN WINDOW, OR BLOW DIRECTLY ONTO STRUCTURE OR EQUIPMENT. RESTRICT ACCESS TO WINDOWS AND DOORS TO AVOID INJURY FROM COLD BURNS AND ASPHYXIATION BY 9'-11" ON EACH SIDE, BELOW AND 19'-9" ABOVE, IF THE OUTLET IS POSITIONED TOO LOW A

13) AREAS WITH ACCESS IN THE AREA OF THE OUTLET MUST BE CLÉARLY IDENTIFIED AND FENCED, FOR EXAMPLE, A ROOF OUTLET WITH MAINTENANCE ACCESS.

INSULATION AND GALVANIC SEPARATION 14) 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 " CLASS O OR CLASS AP ARMAFLEX. OUTDOOR PIPES MUST BE WEATHERPROOF. THE INSULATION MUST NOT TOUCH THE MAGNET COVERS. TO AVOID RF DISTURBANCES THE INSULATION MUST NOT MAKE ELECTRICAL CONTACT WITH THE WAVEGUIDE.

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.

1) IN THE EVENT OF A QUENCH, THE THERMAL ENERGY DISSIPATED CAUSES AN EXTREMELY RAPID BOIL OFF OF THE LIQUID HELIUM. THE SYSTEM MUST BE CAPABLE OF VENTING THE LARGE VOLUME OF GAS LIQUID AT 4.2°K TO ROOM TEMPERATURE GAS. THE EXHAUST SYSTEM IS CRITICAL FOR THE SAFE OPERATION OF THE MAGNET, THE DATA IN QUENCH IS AN ASPHYXIANT & AN EXTREMELY COLD GAS, THE QUENCH TUBE MUST ALWAYS END AT A POINT WHERE ACCESS BY PEOPLE IS QUALIFIED PERSONNEL. IT IS THE OWNER'S RESPONSIBILITY TO ENSURE

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 NOT BE VENTED IN AN ENCLOSED SPACE. THE OPERATOR OF THE 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

4) THE SIEMENS MAGNET HAS A QUENCH VALVE ASSEMBLY FOR CONNECTION TO THE TUBE LOCATED AT THE TOP LEFT SIDE OF THE MAGNET (SEE MAGNET ELEVATION). THE MECHANICAL CONTRACTOR WILL SUPPLY AND INSTALL A QUENCH VENT TUBE WITH CAP. TO BE NON-MAGNETIC STAINLESS STEEL (≥22 GAUGE RECOMMENDED) GRADES AISI304, 309, 316, OR 321 ONLY. THERMAL CONDITIÓNS MAY CAUSE THE TUBE TO CONTRACT UP TO 3mm/METER SO A STAINLESS STEEL BELLOWS OR FLEXIBLE SECTION MUST BE INSTALLED A MINIMUM OF EVERY 32'-9" NOT TO EXCEED 2% OF THE OVERALL LENGTH. THE OUFNCH TUBE MAY ALSO BE MADE OF ALUMINUM, EXTRUDED TUBE ALUMINUM GRADES 6063 AND 6082 ONLY MUST BE USED. ROLLED AND WELDED TUBE FROM SHEET ALUMINUM GRADE 5083 ONLY MUST BE USED. THE WALL SECTIONS OF ALUMINUM TUBE MUST BE A MINIMUM 14 GAUGE. THERMAL CONTRACTION OF 4.5 MM/METER MUST BE CONSIDERED FOR ALUMINUM QUENCH TUBES. THE MOVEMENT OF THE BELLOWS MUST BE RESTRICTED TO PREVENT EXCESSIVE EXPANSION DUE TO PRESSURE. THE WEIGHT OF THE TUBE MUST BE SUPPORTED BY THE BUILDING AND BE FLEXIBLE ENOUGH TO ALLOW MOVEMENT FROM THERMAL CONTRACTION. THE WALL EXIT SHOULD

THE MAXIMUM PRESSURE SHOULD BE ENGINEERED FOR 6.5 PSI.

CONNECTING SECTIONS

11) WHERE THE QUENCH TUBE EXITS VERTICALLY, A RAIN COVER

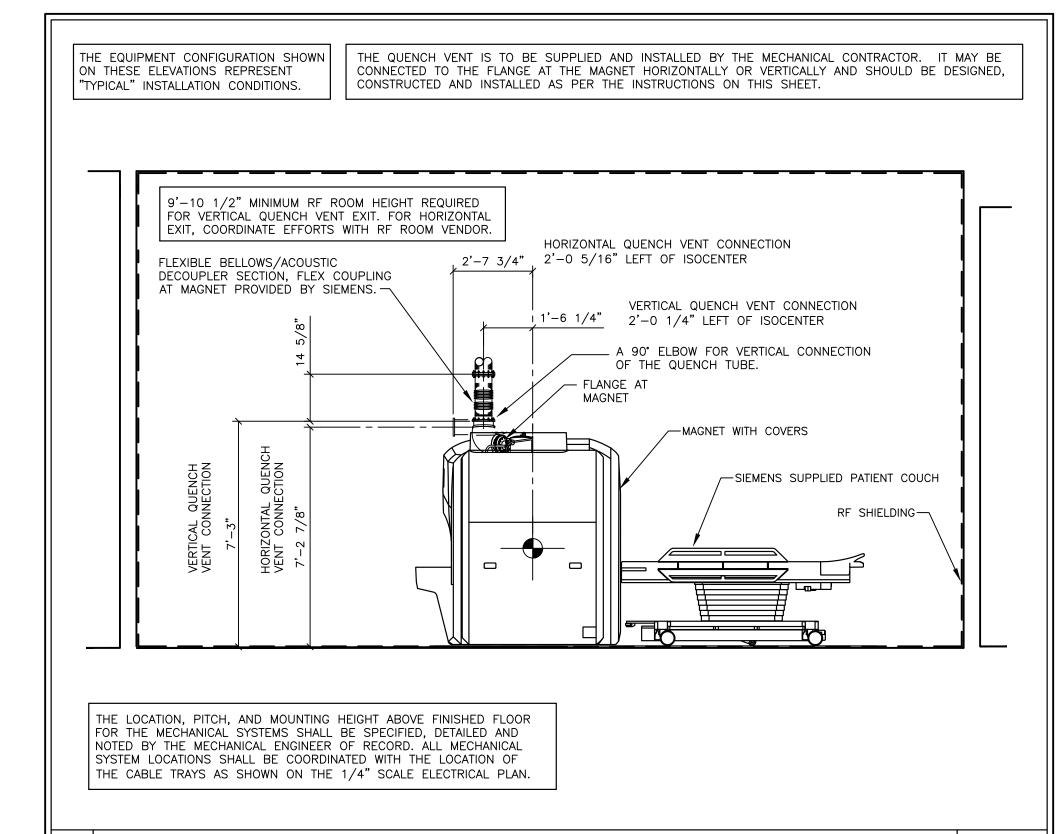
DURING A QUENCH THE HELIUM GAS EXITING THE QUENCH PIPE MAY

12) WHERE THE QUENCH TUBE EXITS HORIZONTALLY, THE OUTLET DEFLECTOR PLATE CAN BE USED WITH OPTION 1 AND 3.

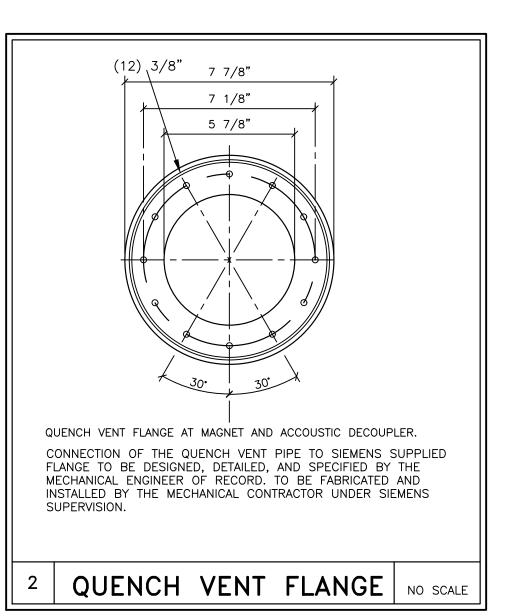
WARNING SIGNS AND OUTLET RESTRICTIONS
A WARNING SIGN MUST BE FIXED AND VISIBLE NEAR THE QUENCH VENT OUTLET. THE TUBE MUST HAVE A WARNING POSTED ALONG IT'S ENTIRE LENGTH FOR EXTREMELY COLD HELIUM GAS -AUTHORIZED PERSONNEL ONLY.

15) GALVANIC SEPARATION MUST BE PROVIDED BETWEEN THE

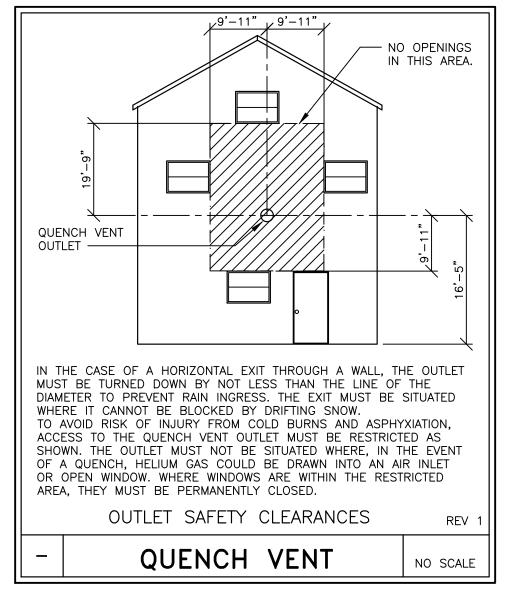
16) THE DESIGN AND CONSTRUCTION OF THE QUENCH PIPE MUST BE DOCUMENTED WITH DRAWINGS AND CALCULATIONS THAT ARE KEPT WITH INSTALLATION DOCUMENTS. IT MUST COMPLY WITH THE REQUIREMENTS IN THIS DOCUMENT BEFORE BEING CONNECTED TO THE MAGNET.



MAGNET SIDE ELEVATION



-ISSUE BLOCK-



HELIUM CONTENT					
LITERS AT 100%	1,190				
TYPICAL BOIL OFF RATE	0.0 L/HR	FOR TYPICAL CLINICAL USE, DEPENDING ON SEQUENCES			
TYPICAL REFILL INTERVAL	10 YEARS	AND OPERATING TIME.			
WITHOUT THE COLD HEAD RUNNING THE LIQUID HELIUM WILL BOIL OFF FROM 98% TO 0% IN APPROX. 29 DAYS. THE LOSS DURING SHIPPING IS APPROX. 3.3% PER DAY.					

B. HERRMANN

SKYRA REV 24

NO SCALE

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			PROJECT MANAGER: TEL: VMAIL: EX FAX: EMAIL:	T:	SIEME	ENS
			MAG	NETC TYPICAL FINAL	DRAWING SET	A
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