

VA CENTRAL IOWA HEALTH CARE SYSTEM

3600 30th St.

Des Moines, IA 50310-5774

MAGNETOM AERA W/MOBILE TABLE



Contents:

Sheet No. Description

|       |   |
|-------|---|
| A-101 | EQUIPMENT PLAN-DETAILS, LEGEND, AND NOTES       |
| A-102 | SAFETY/SERVICE CLEARANCE PLAN                   |
| A-501 | FILTER PANEL/CABINET DETAILS                    |
| A-502 | DETAILS AND NOTES                               |
| S-101 | STRUCTURAL PLAN-DETAILS AND NOTES               |
| E-101 | ELECTRICAL PLAN(S)-LEGEND AND NOTES             |
| E-102 | ELECTRICAL PLAN-LEGEND AND NOTES                |
| E-501 | ELECTRICAL DIAGRAMS AND NOTES                   |
| M-101 | MECHANICAL PLAN-CHILLED WATER AND ENVIRONMENTAL |
| M-501 | QUENCH VENT SPECIFICATIONS                      |

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Project #: 1302382

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SIEMENS MEDICAL SOLUTIONS

51 Valley Stream Parkway

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Issue #: 0

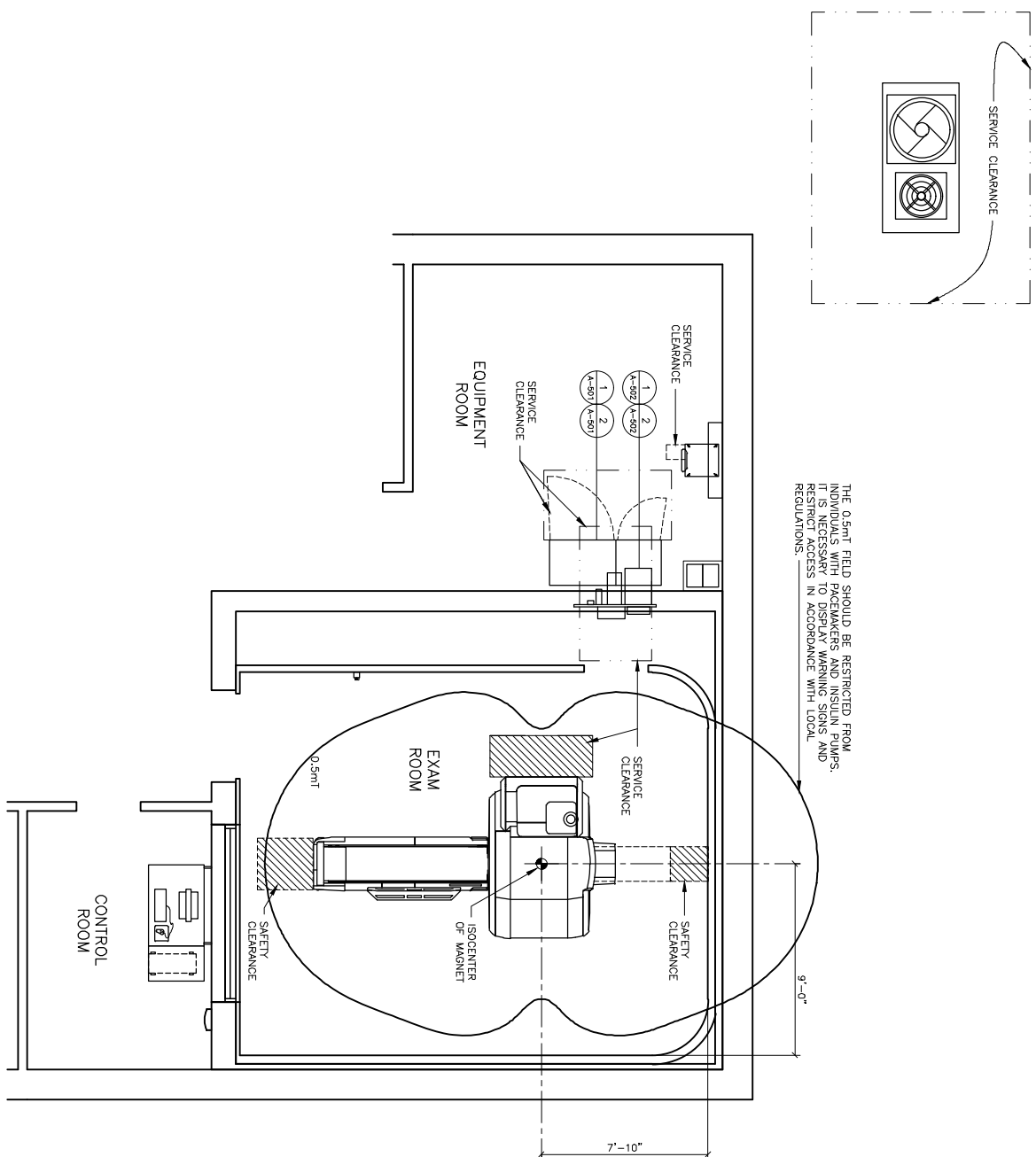
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MAGNETOM AERA W/MOBILE TABLE

MRI SUITE 1815

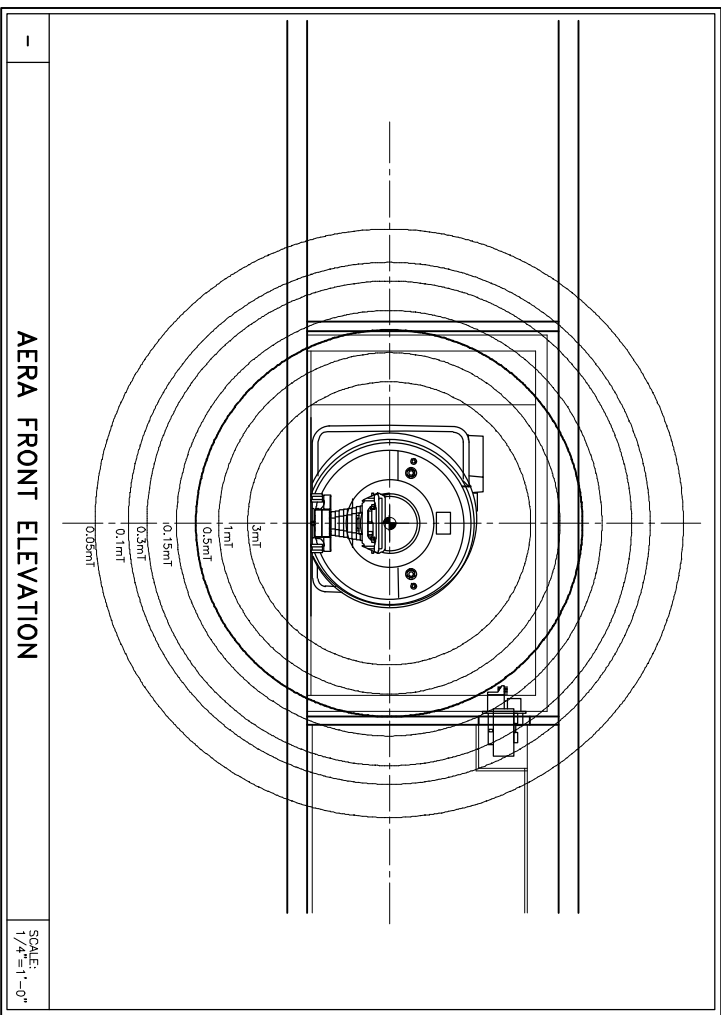
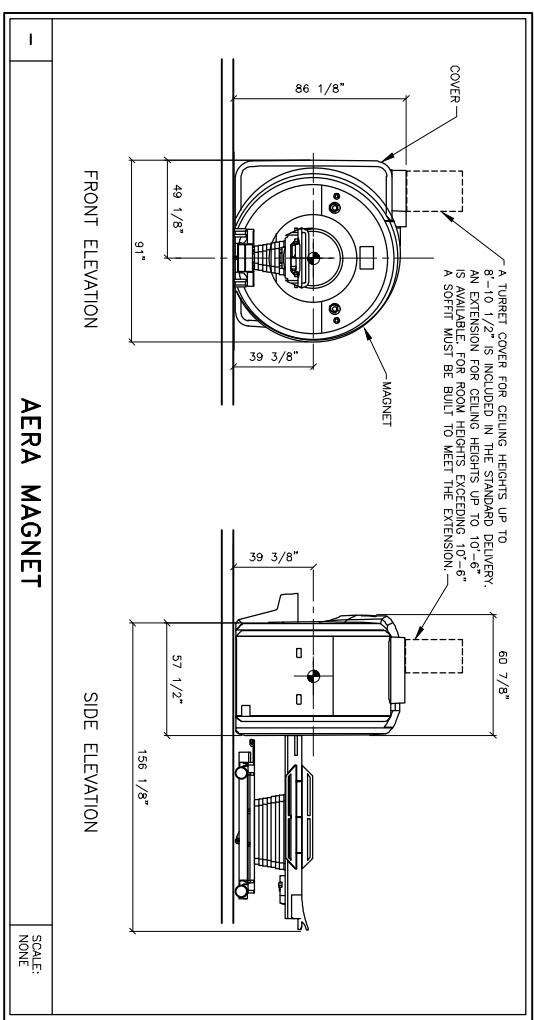
● VA CENTRAL IOWA HEALTH CARE SYSTEM





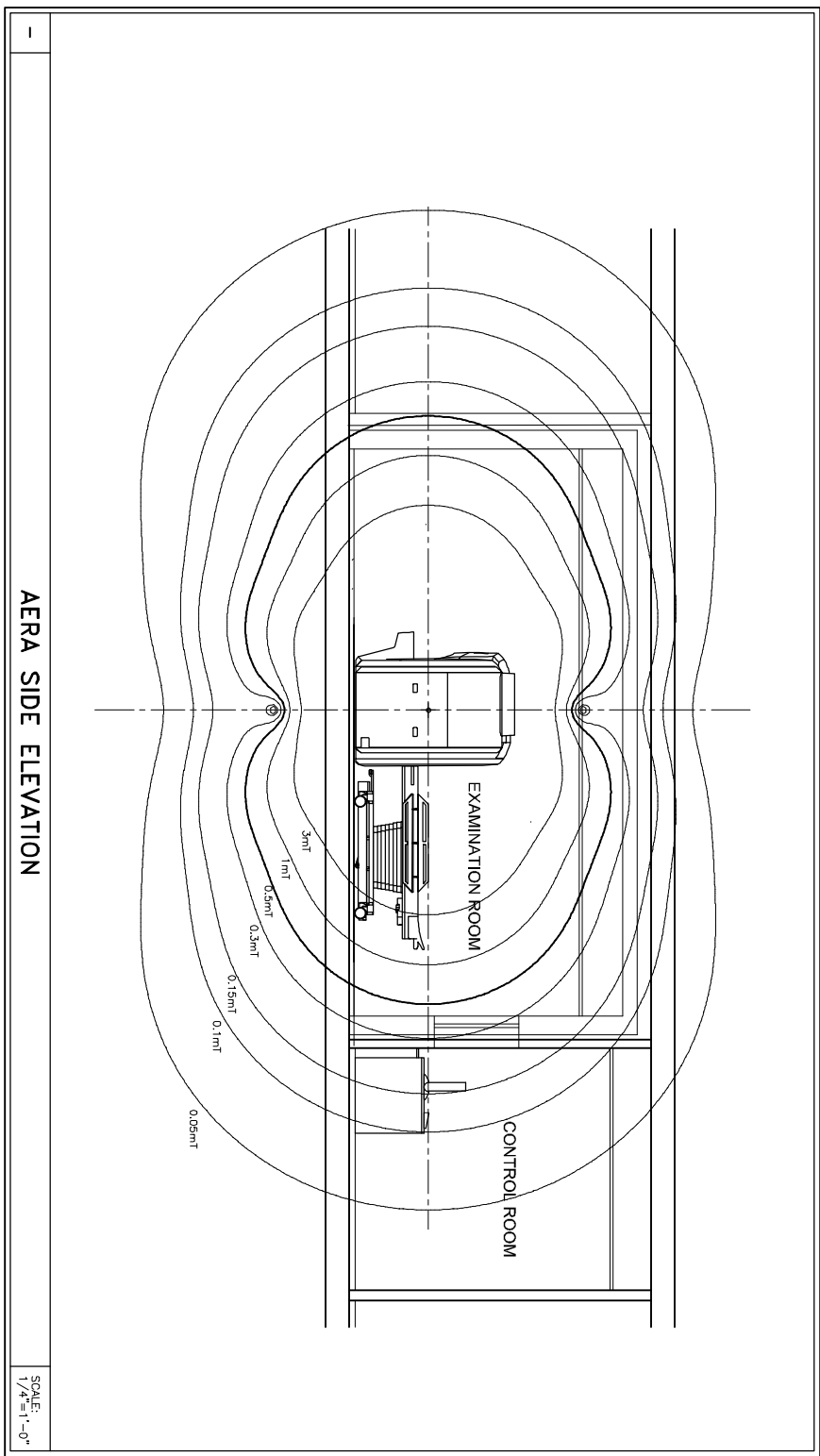
## SAFETY/SERVICE CLEARANCE PLAN

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



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: BILL HERREN |  |
| TEL: (402) 960-7636          |  |
| FAX: (531) 685-2010          |  |
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|   |                |
|---|----------------|
| <b>VA CENTRAL IOWA HEALTH CARE SYSTEM</b><br>3600 30TH ST., DES MOINES, IA 50310-5774<br>MR SUITE 1815 - MAGNETUM AREA W/MOBILE TABLE | <b>SIEMENS</b> |
|---|----------------|

## 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.

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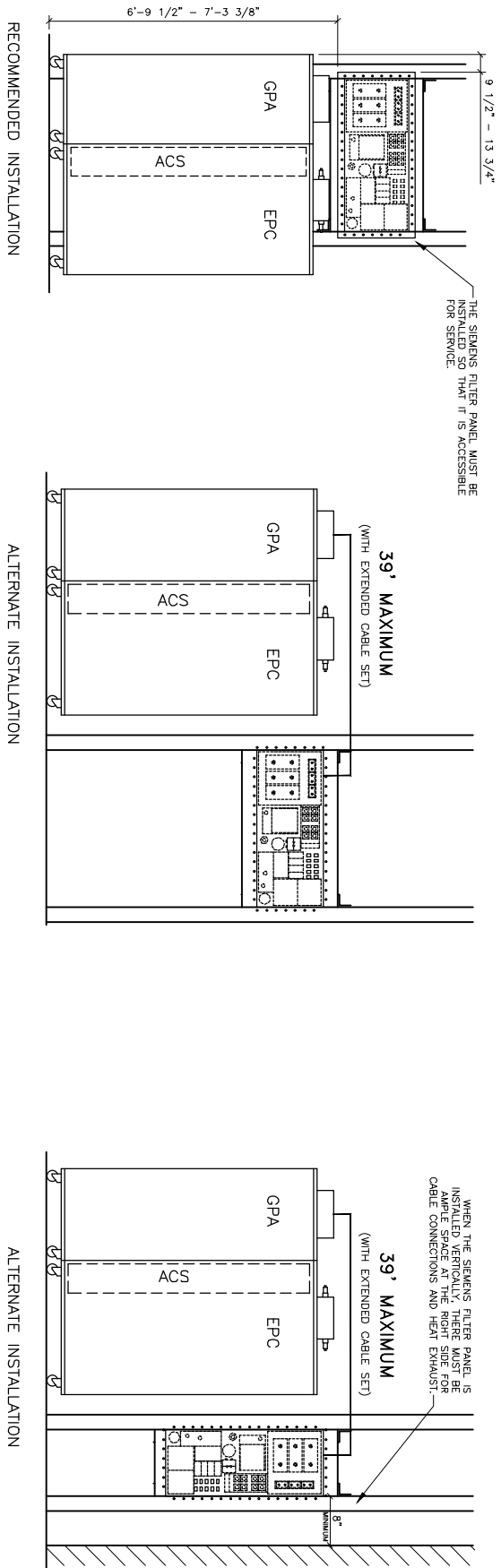
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| SYM           | DATE | DESCRIPTION |
|---------------|------|-------------|
| -ISSUE BLOCK- |      |             |

|                          |                |                        |
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| SCALE: AS NOTED          | REF. # -SA7AEQ | DATE: 08/14/13         |

A-102

SHEET:



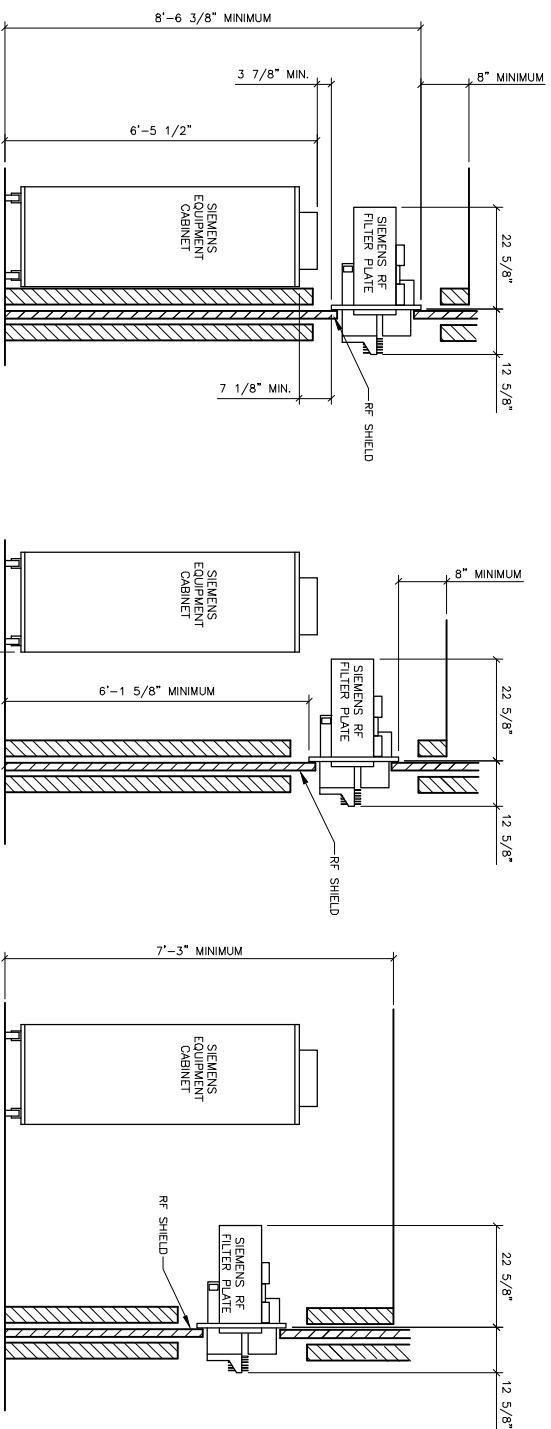
ELECTRONICS CABINET AND RF FILTER PLATE FRONT VIEW

1

ELECTRONICS CABINET AND RF FILTER PLATE FRONT VIEW

SCALE:  
1/2"=1'-0"

| SURFACE COIL SIZES     |              |               |        |        |
|------------------------|--------------|---------------|--------|--------|
| COIL NAME              | ROUND WEIGHT | LENGTH INCHES | HEIGHT |        |
| 4" BORO COIL 16        | 4            | 15 5/8        | 23 1/4 | 5      |
| 4" BORO/COIL COIL 20   | 11           | 17 3/8        | 13     | 14 3/8 |
| 5" SPAN COIL 32        | 24           | 47 1/4        | 19 1/4 | 3      |
| 5" FLEX COIL 48        | 1,2          | 20 3/8        | 8 7/8  | -      |
| 6" FLEX COIL 24ML 4    | 1            | 14 5/8        | 6 7/8  | -      |
| PERIPHERAL ANOD 36     | 18           | 33 7/8        | 26     | 11     |
| ANNO/ANST COIL 16      | 6            | 13 5/8        | 8 1/2  | 4 1/2  |
| ANNO/ANST COIL BASE    | 4            | 20 5/8        | 12 3/8 | 1 1/4  |
| FOOT/ANTEL COIL 16     | 7            | 18 1/8        | 13     | 15 3/8 |
| FOOT/ANTEL COIL BASE   | 16           | 18 3/4        | 13 1/8 | 15 3/8 |
| SHOULDER COIL LARG 16  | 15           | 15            | 17     | 19     |
| SHOULDER COIL SMALL 16 | 15           | 12            | 17     | 19     |
| COIL EXPANDY           | 15           | 16            | 10 5/8 | 11 3/8 |
| 7"X15 1/2 CHANNEL KNEE | 15           | 10 7/8        | 14 3/8 | 12 1/4 |
| 8" B REACT COIL 4 CH   | 23           | 34 5/8        | 18 1/2 | 8 1/4  |
| 8" B REACT COIL 16 CH  | 24           | 28            | 18 1/2 | 7 7/8  |
| SPANNING ANVARD        | 45           | 43 1/4        | 22 7/8 | 11     |
| ANNUBILIZERS           |              |               |        |        |



ELECTRONICS CABINET AND RF FILTER PLATE SIDE VIEW

|  |  |  |  |
|--|--|--|--|
| PROJECT MANAGER: BILL HERNER<br>TEL: (402) 960-7636 EXT: 111<br>FAX: (415) 685-2010<br>E-MAIL: bherner@siemens.com                                     |  | PROJECT MANAGER: BILL HERNER<br>TEL: (402) 960-7636 EXT: 111<br>FAX: (415) 685-2010<br>E-MAIL: bherner@siemens.com                                     |  |
| VA CENTRAL IOWA HEALTH CARE SYSTEM   |  | VA CENTRAL IOWA HEALTH CARE SYSTEM   |  |
| 3600 30TH ST., DES MOINES, IA 50319-9774   |  | 3600 30TH ST., DES MOINES, IA 50319-9774   |  |
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| 1302382  |  | 1302382  |  |
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| 3  |  | 3  |  |
| DRAWN BY   |  | DRAWN BY   |  |
| F. CARUSO  |  | F. CARUSO  |  |
| DATE: 08/14/13   |  | DATE: 08/14/13   |  |
| SHEET:   |  | SHEET:   |  |
| A-501  |  | A-501  |  |

AREA  
REV 0

# ATTENTION:

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| DATE   | DESCRIPTION |
|--------|-------------|
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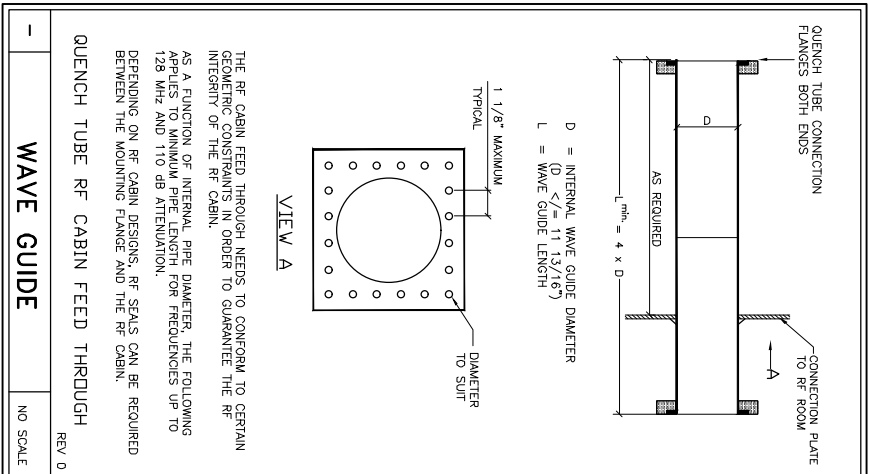
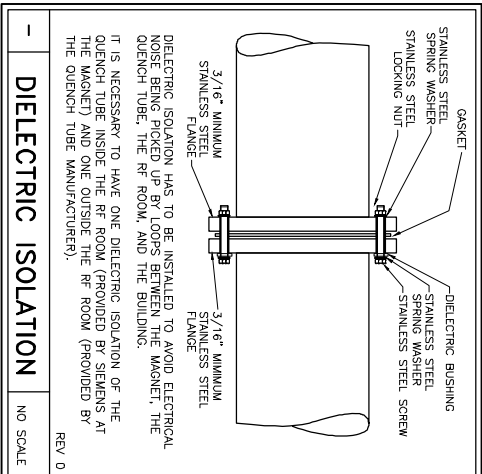
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| SHEET | 01       | DRAWN |
| 3     |          |       |
| DATE: | 08/14/13 |       |

F. CARUSO

A-501

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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 PRESSURE.

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 EVACUATED.

THE OPENINGS WILL HAVE PANELS INSTALLED IN THE RE ROOM OR DOOR COULD BE UNLOCKED AND OPENED TO THE OUTSIDE IN CASE OF EMERGENCY. THESE PANELS REQUIRE AN AIR 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".

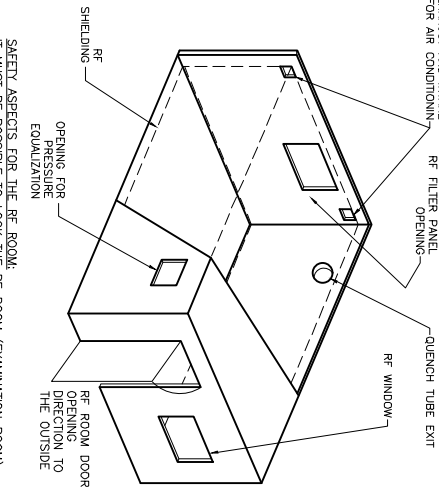
TO ENSURE UNOBTURBATED VENTING THIS OPENING CANNOT BE SUBSTITUTED WITH ANY OTHER MEANS THAT FOR EXAMPLE, RE SEALED CONDUIT OR GROUNDED AIR CONDITIONER REPLENISHMENT.

[illegible]

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.

REV 0

SCALE:  
NONE



### SAFETY ASPECTS FOR THE RF ROOM

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 OF THE RF DOOR.

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.

## SHIELDING GENERAL NOTES

THE EXAMINATION AREA MUST BE SHIELDED TO PROVIDE A REDUCTION OF RADIO FREQUENCY WAVES EMANATING FROM EXISTING EQUIPMENT. THE FREQUENCY RANGE OF 128 MHz TO 1,300 MHz, INCLUDING TWO SYSTEMS EACH ROOM, SHOULD BE 100 DB. THE RF SHIELD MUST BE TESTED BEFORE AND AFTER MAINTENANCE PLACEMENT IN THE RF ROOM AND AFTER THE SIEMENS RF FILTER PANEL IS INSTALLED. THE RF-SHIELDING MUST BE INSULATED FROM ALL GROUNDS SUCH THAT THE ONLY GROUND MUST BE THE SINGLE POINT GROUND. 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). 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.

1) ONLY NON-MAGNETIC MATERIALS ARE TO BE USED AND INSTALLED IN THE RF ROOM.

- 2) A SUSPENDED CEILING MUST BE STATICALLY SUSPENDED, NOT SUPPORTED WITH MOVER, CLAMPS, SPRINGS, ETC.
- 3) CORRUGATED ROOF IN SUSPENDED CEILINGS MUST BE INSTALLED SECURELY. GALVANIC CONTENT BETWEEN THE CORRUGATED ROOF MUST BE GUARANTEED. THEY MUST NOT JUST LIE ON TOP OF ONE ANOTHER. A WIRE JOINDER BETWEEN ROOFS MAY BE USEFUL.
- 4) ELECTRICAL, HEATING, FOR AMBIENT LIGHTS FOR EXAMPLE, MUST NOT SIMPLY REST ON THE SUSPENDED CEILING, THEY MUST BE FASTENED OR INSIDE A CONDUIT TO PREVENT MOTION.

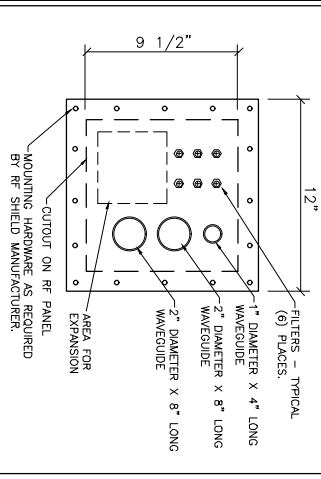
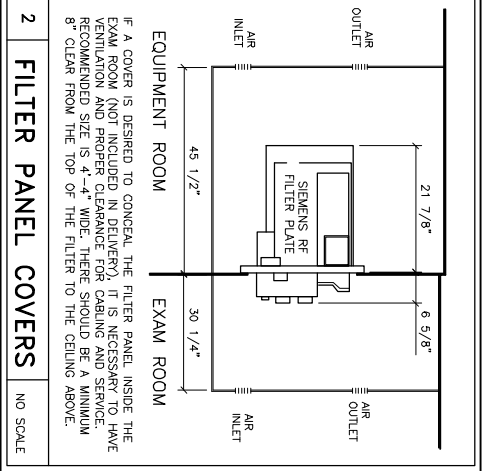
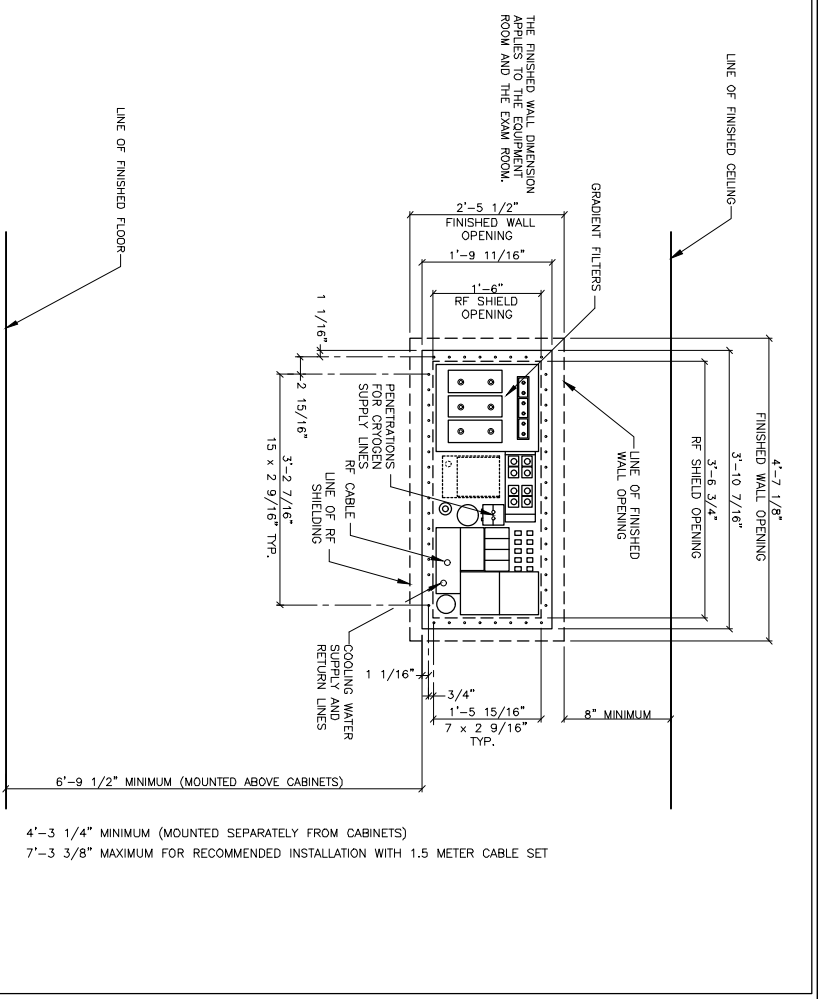
## FILTER PLATE GENERAL NOTES

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.

REV

## RE

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.



|                  |          |
|------------------|----------|
| OEM FILTER PANEL | NO SCALE |
|------------------|----------|

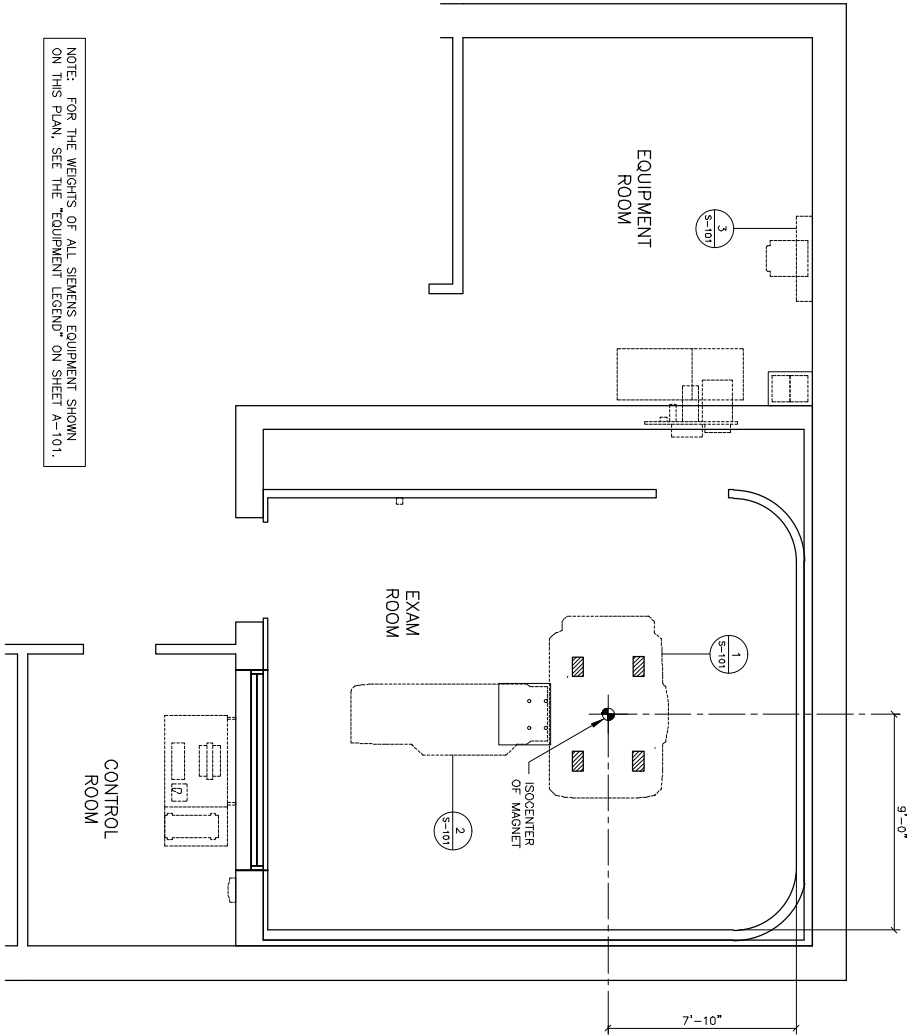
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| VA CENTRAL IOWA HEALTH CARE SYSTEM  |  | PROJECT #:     |  | SHEET:              |  |
| 3600 30TH ST., DES MOINES, IA 50301-9774  |  | 1302382        |  | A-502               |  |
| MR. SUITE 1815 - MAGNETOM AERA W/MOBILE TABLE   |  | SHEET 4 OF     |  |                     |  |
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| DESCRIPTION:  |  | DATE: 08/14/13 |  |                     |  |
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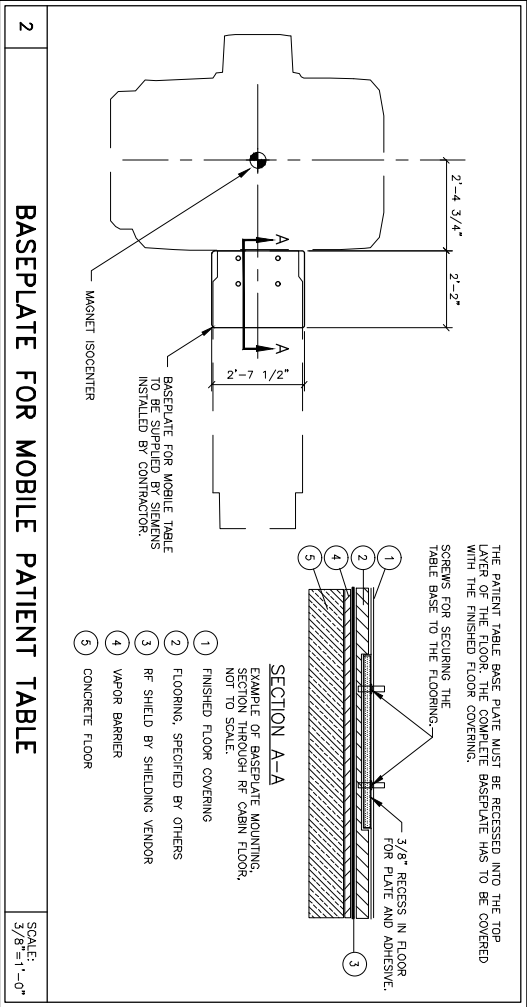
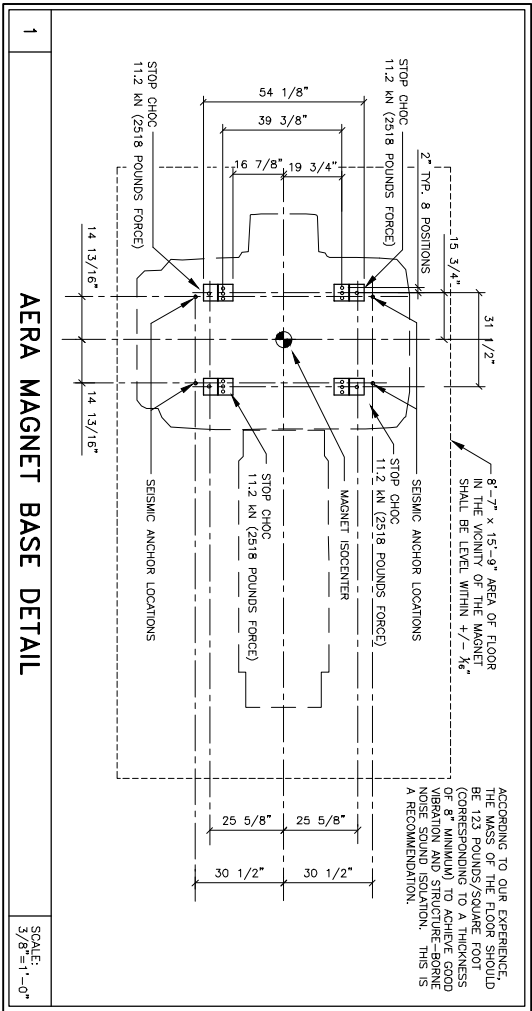
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NOTE: FOR THE WEIGHTS OF ALL SIEMENS EQUIPMENT SHOWN ON THIS PLAN, SEE THE "EQUIPMENT LEGEND" ON SHEET A-101.

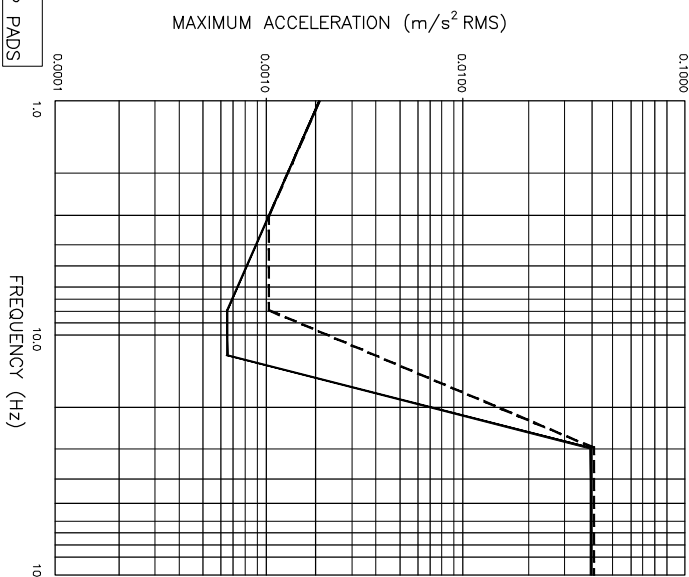
## STRUCTURAL FLOOR PLAN

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



## STRUCTURAL NOTES

- [illegible]



THE VIBRATORY OF THE SITE HAS THE ABILITY TO AFFECT THE STABILITY AND HOMOGENEITY OF THE MANTLE FIELD, AFFECTING THE MANTLE WAVE DEGREE IMAGE QUALITY. IN THE THREE SPINAL ORIGINATIONS THE BUILDING MUST BE AVOID COLLECTORIAL OF 0.001  $m/s^2$  OR LESS (40) (0.001  $m/s^2$ )

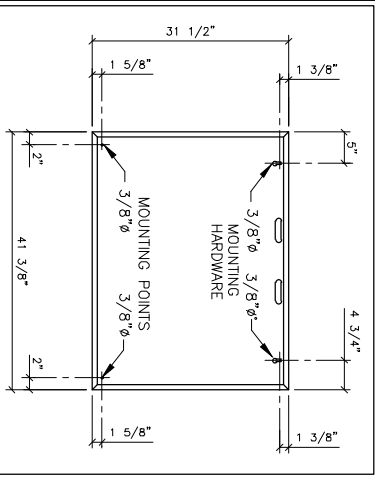
THE REQUIREMENT FOR FORCE IS MEASURED AS MAXIMUM FORCE IN THE SPINAL ORIGINATIONS OF THE BUILDING IN THE FOURIER TRANSFORMATION OF THE RECORDED SIGNAL (SPECTRUM).

THE VIBRATION LEVEL OF CONTINUOUS VIBRATIONS (CALLED BY AN CONDITION, COMPRESSION, ETC.) AT SPECIFIED VALUES FOR FLOOR AND NON-CONTROLLED VIBRATIONS (CALLED BY AN CONDITION, COMPRESSION, ETC.) MULTIPLIED BY 4 (OR 12 dB).

CONTACT PERSONS PROJECT MANAGER FOR MORE DETAILS.

--- MAGNET ON ISOLATORS  
--- MAGNET ON SYLOMER+SYLODAMP PADS

## PERMISSIBLE ACCELERATION



THE INTERFACe PANEL (IFP) IS THE INTERFACe BETWEEN THE K&A CHILLER AND THE AC CABINET OF THE NA SYSTEM, AND IS THE COLD WATER SUPPLY FOR THE COOL HEAD COMPRESSOR. IT IS CONNECTED WITH THE CHILLER PRIOR TO THE DELIVERY OF THE MAGNET SYSTEM. THE IFP, WHICH WEIGHs 28 POUNDS, IS TO BE MOUNTED TO THE WALL IN THE EQUIPMENT ROOM IN SHOWN LOCATION BY THE CUSTOMER/CONTRACTOR.

MOUNTING HARDWARE AND SUPPORT STRUCTURE TO BE SUPPLIED LOCALLY.

THE IFP SHALL BE LOCATED SO THAT THE 16 FOOT HOSE LENGTH FROM THE IFP TO THE ACC IS NOT EXCEEDED.

|   |              |
|---|--------------|
| 3 | IFP MOUNTING |
|---|--------------|

SALE

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

[illegible]

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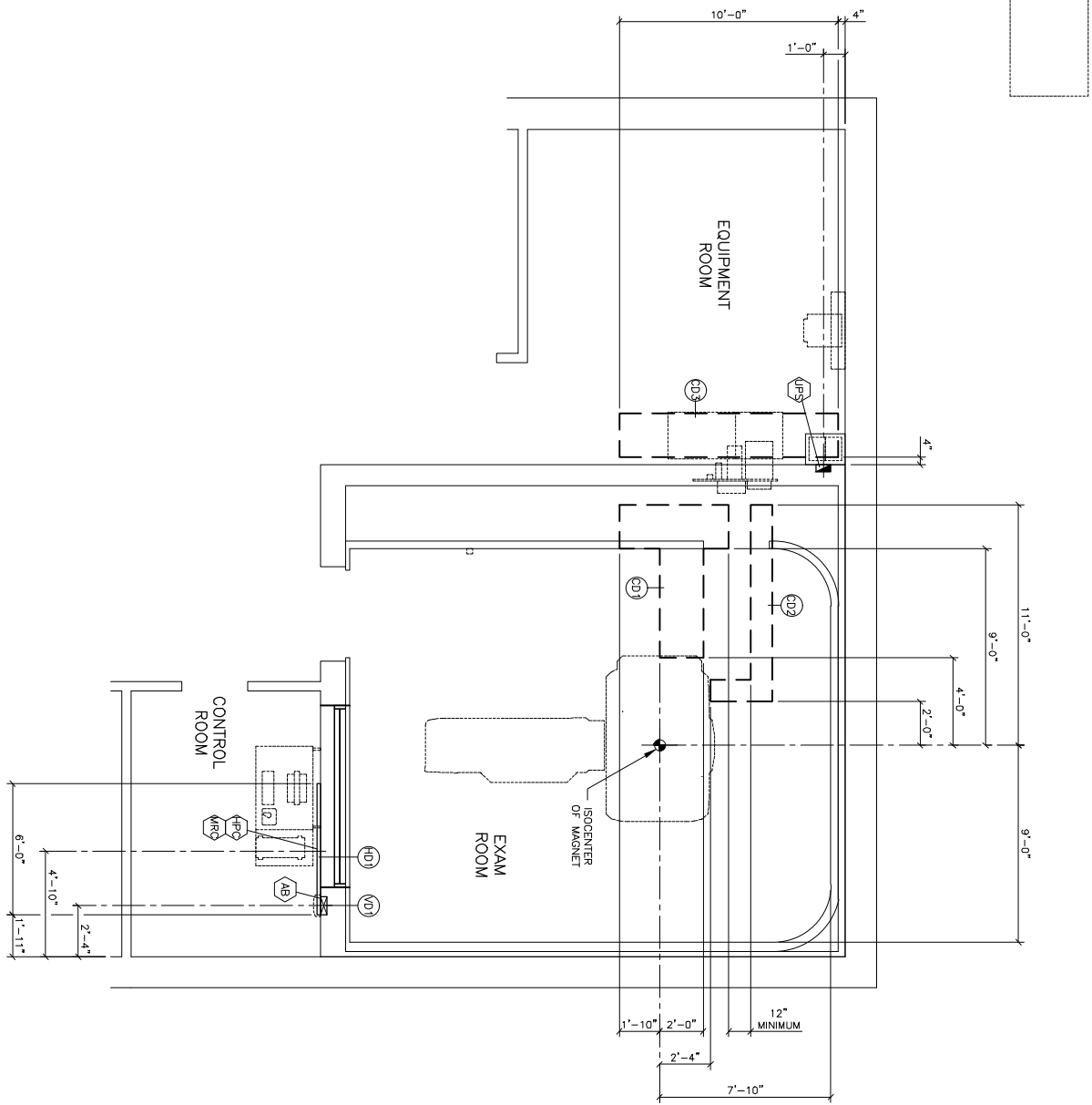
| SYM           | DATE | DESCRIPTION |
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| -ISSUE BLOCK- |      |             |

|   |   |
|---|---|
| PROJECT MANAGER: BILL HETEM<br>PHONE: (402) 960-7638 EXT: 200<br>FAX: (415) 885-2010<br>E-MAIL: bhetem@siemens.com  |   |
| <b>VA CENTRAL IOWA HEALTH CARE SYSTEM</b><br>3600 30TH ST., DES MOINES, IA 50310-5774<br>WA SUITE 1815 - MAGNETRON AERO W/MOBILE TABLE                              |   |
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| <b>S-101</b>  |   |

REV 0

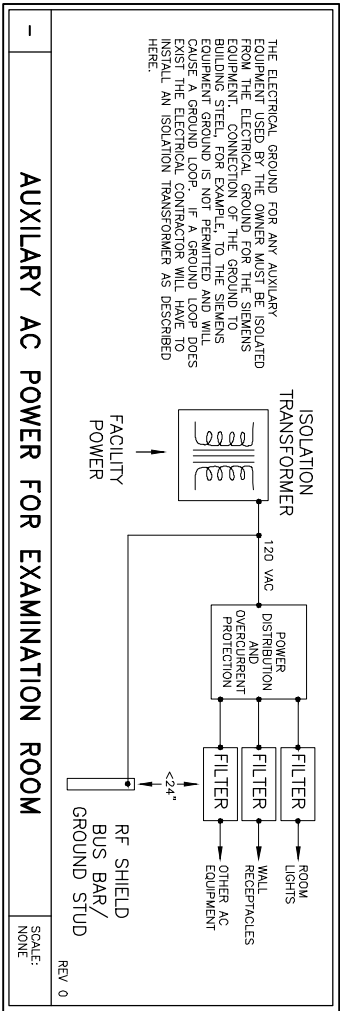






## ELECTRICAL DIMENSION PLAN

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



## POWER QUALITY NOTES

- [illegible]

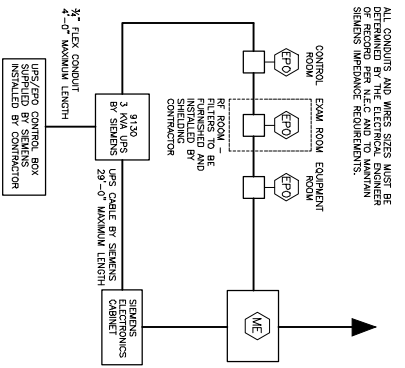
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SCALE:  
NONE

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## POWER SCHEDULE



| ITEM                                      | QTY   | DESCRIPTION   |
|---|-------|---|
| ME  | 1     | MAIN BREAKER WITH MAIN BREAKER FLUSH OR SURGE MOUNTED. MAIN BREAKER MUST HAVE A 15 AMPERE TRIP. THE MAIN BREAKER TRIPS, THIS TRIPPING DEVICE CONTROL CIRCUIT MUST BE OF FULL-SIZE DESIGN. THE CONTROL CIRCUIT MUST BE 5 MUST HAVE AN ENERGY STORAGE SOURCE SO THAT THE CONTROL CIRCUIT NEVER LOSTS POWER. |
| MAIN BREAKER AMPs: SEE POWER REQUIREMENTS |       |   |
|   | VOLTS | PHASES  |
|   | 480   | 3   |
|   |       | NEUTRAL   |
|   |       | GROUND  |
|   |       | 1   |
|   |       | 4 (NOTE 1)  |
|   |       | TOTAL WIRES   |

|               |   |
|---------------|---|
| EPO<br>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 MAN BRAKING CAN BE RESET. |
|---------------|---|

IF ANY OPTIONS, UPS EQUIPMENT IS PROVIDED BY SEPARATE THE CUSTOMER/CONTRACTOR SHALL PROVIDE SEPARATE WIRING FOR AN ADDITIONAL EPD PROGRAM AS REQUIRED. PLEASE ADVISE THE EPD MANUFACTURER OF ANY ADDITIONAL EPD PROGRAMS WITH STUDENT PROJECT MANAGER.

THE EPD'S MUST BE INSTALLED BY A QUALIFIED ELECTRICIAN. THE EPD'S MUST BE INSTALLED TO ELECTRICAL CODE, STATE AND LOCAL REGULATIONS, AND ALL APPLICABLE CODES. THE EPD'S MUST BE INSTALLED TO THE STUDENT'S SCHEDULED WORK SCHEDULE. THE EPD'S MUST BE INSTALLED WHEN THE MECH/EQ EQUIPMENT IS POWERED. THE EPD'S MUST BE INSTALLED TO THE STUDENT'S IMPLEMENTATION OF THE EPD'S AND THEIR ASSOCIATED CHAIRS AND MUST HAVE THE FINAL APPROVAL OF THE STUDENT PROJECT MANAGER. EACH EPD MUST HAVE 2 SETS OF CONNECTIONS AND REINFORCING FACTORS.

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

## POWER REQUIREMENTS

|   |                    |
|---|--------------------|
| LINE FREQUENCY                            | 60 Hz $\pm$ 1.0 Hz |
| IMPEDANCE                                 | < 95 ohms          |
| STANDARD BY POWER CONSUMPTION DURING EXAM | 9.0 kW             |
| CONNECTION VOLTAGE                        | 201 kVA            |
| MOMENTARY POWER                           | 110 kVA            |
| MIN SYSTEM BREAKER SIZE                   | 114 kVA            |
| RECOMMENDED UPS RATION                    | 150 AMP            |
| UPS SYSTEM BREAKER SIZE                   | 160 kVA            |
| ALL BREAKERS ARE RATED AT 100%            | 250 AMP            |

## POWER QUALITY

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.

## WER REQUIREMENTS

## DEMAND AND CAPACITY REQUIREMENTS NOTES

- [illegible]

REV 0

## CHILLER POWER REQUIREMENTS

|                        |                            |
|------------------------|----------------------------|
| KRAUS ECO CHILLER      | 480 VOLTS, 3-PHASE 60 AMPS |
| KRAUS SC-218 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) THE MAIN RING SYSTEM CIRCUIT BREAKER IN OR NEAR THE EQUIPMENT ROOM, THE PERMITTED RANGE FIELD FOR THE PANELS, THE MAIN RING SYSTEM CIRCUIT BREAKER, THE MAIN MAGNETIC TRIPPING MUST BE PROVIDED AT THE DISTANCE FROM THE MOUNT MUST BE INDICATED.
- 2) AN ACCEPTABLE LEADS OR SIGNALING CABLE FROM POWER ON IS REQUIRED TO BE PROVIDED TO THE EQUIPMENT ROOM, THERE IS SIGNALING SHUTDOWN BUTTONS IN EACH ROOM WHERE THERE IS SIGNALING EQUIPMENT.
- 3) THE ELECTRICAL FEEDER TO THE SIGNALING EQUIPMENT MUST BE PROVIDED TO THE EQUIPMENT ROOM, THERE IS ELECTRICAL FEEDERS TO VALVES, MOTORS, PUMPS, COMPRESSORS, INTERFERENCE.
- 4) THE EMERGENCY POWER OFF (EPO) BUTTONS TO BE MISUSE THE MAIN PUMP LOCK-OUT PLUGS TO RELEASE.
- 5) WALL RECEPTABLES MADE OF FERROMAGNETIC MATERIALS ARE NOT PERMITTED IN THE EXAM ROOM. PERIPHERAL UNITS SUCH AS MONITORS, VIDEO RECORDERS, AND OTHERS MUST BE PROVIDED IN ENVIRONMENT CAN INFLUENCE THE MAGNETIC FIELD. COMPOUNDING MATERIALS AND SOLID RECEPTABLES FOR THE EXAM ROOM. REFRIGERANT AND RECEPTABLES AND THE FILTERS REQUIRED ARE TO BE COMBINED WITH THE PE FIELDING SUPPLIER.
- 6) THE PE FIELD MUST BE FILLED WITH A GROUND STUD OR PE SHIELD LIGHTS AND OUTLETS, SPELLED AND INSTALLED BY THE PE SHIELD SUPPLIER.
- 7) IN ORDER TO PROTECT GROUND LOSS, ALL CUSTOMER OR EXAMINATOR ROOM (I.E. OUTLETS, PUMP, ETC.) SHOULD BE TRANSFERRED SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE PE SHIELD GROUND STUD OR BUS BAR. TRANSFERRED SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE PE SHIELD GROUND STUD OR BUS BAR. TRANSFERRED SECONDARY WINDING GROUND CONDUCTOR SHOULD BE CONNECTED TO THE PE SHIELD GROUND STUD OR BUS BAR.

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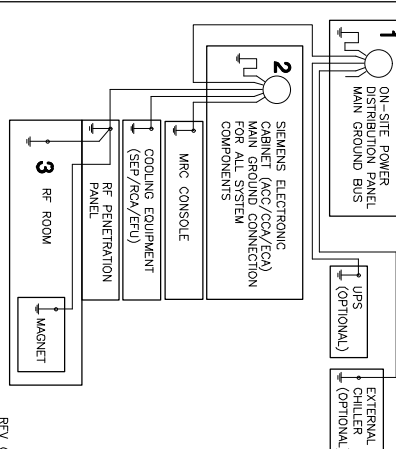
## GROUNDING NOTES

EQUIPMENT GROUND CONDUCTOR TO COMPLY WITH THE FOLLOWING:

- 1) SIZED EQUIPMENT TO THE PHASE CONDUCTORS (FULL SIZE EQUIPMENT);
- 2) RATED TO THE ELECTRICAL SERVICE TRANSFORMER OR MAIN DISTRIBUTION PANEL FEEDING THE SIEMENS EQUIPMENT;
- 3) THE SAME COND. / TROUGH OR RACEWAY AS THE PHASE CONDUCTORS;
- 4) CONTINUOUS, WITH NO BREAKS OR USE OF CONDUT. SPLITTER OR BUSH AS THE SOIL GROUNDING PATH;
- 5) WITH THE SAME CONDUIT OR CONDUIT IN ACCORDANCE WITH THE NEC REQUIREMENTS;
- 6) NUNAVIZ CONNECTIONS OF TERMINALS TO ENSURE PROPER CONNECTIONS;
- 7) AS THE EQUIPMENT SHOULD NOT BE INSTALLED IN CURRENT PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS ACCEPTABLE TO HAVE SECONDARY DURING OPERATION OF THE EQUIPMENT;
- 8) THERE MAY BE SOME APPLICATIONS WHICH REQUIRE AN ISOLATED GROUND AS PER NEC 250-98B.

## MR GROUNDING NOTES

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

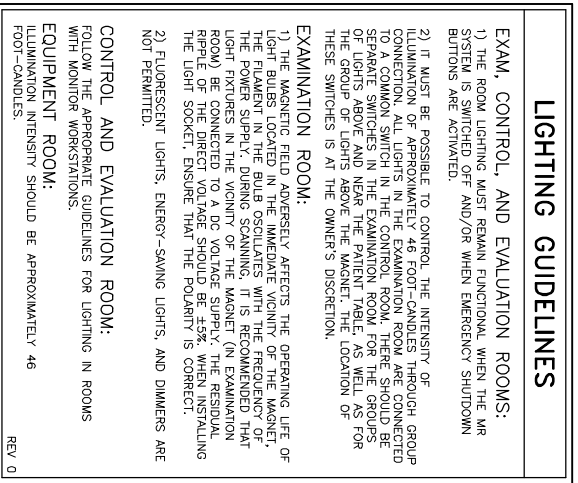
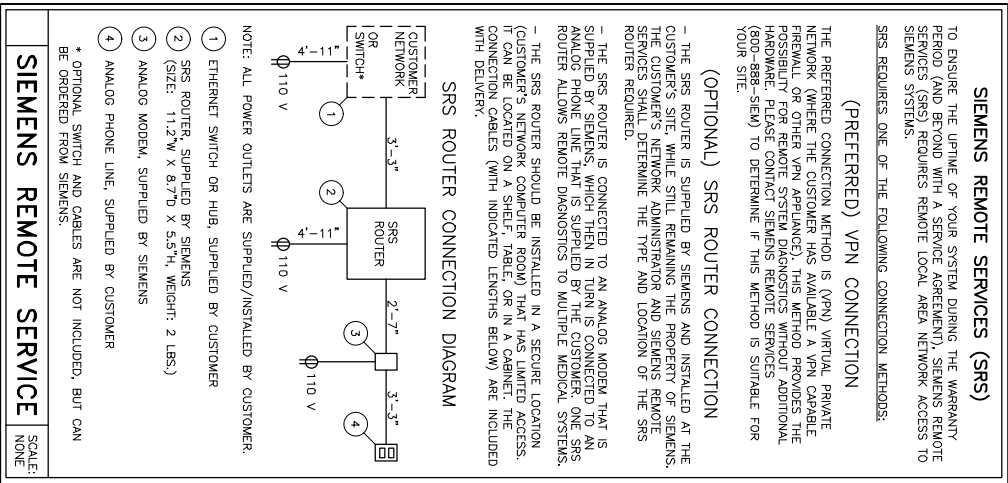
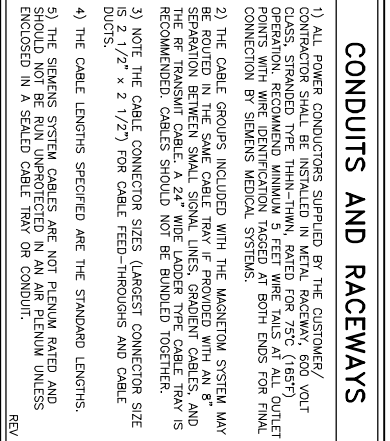
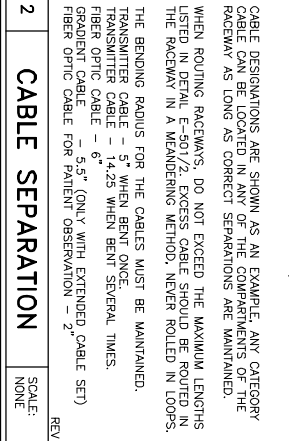
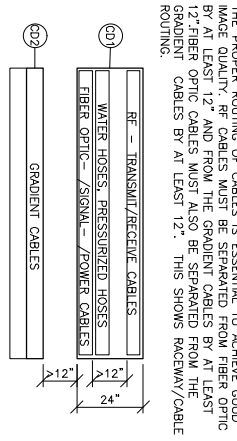
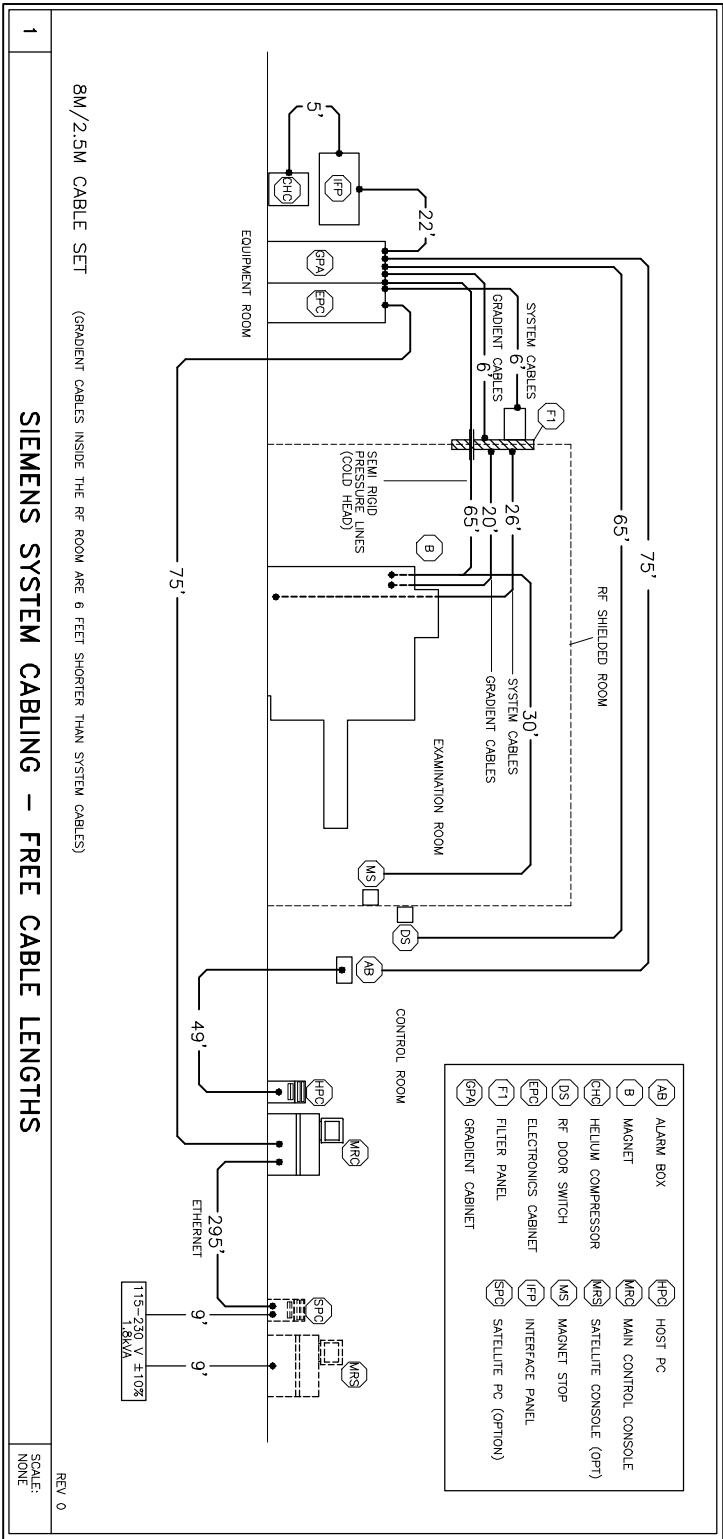


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|  |  |  |  |                |  |
|--|--|--|--|----------------|--|
| PROJECT MANAGER: BILL HERRIN<br>BILL HERRIN<br>TEL: (402) 960-7636 EXT:<br>FAX: (319) 885-2010<br>E-MAIL: b.herrin@siemens.com |  | PROJECT #:                               |  | DATE:          |  |
| VA CENTRAL IOWA HEALTH CARE SYSTEM   |  | 3600 20TH ST., DES MOINES, IA 50319-5774 |  | DATE: 08/14/13 |  |
| MRI SUITE 1815 - MAGNETOM AERA V/MOBILE TABLE  |  | SHEET:                                   |  | DATE: 08/14/13 |  |
| THIS USE FOR REPRODUCTION OF<br>SIEMENS AUTHORIZATION WILL<br>FILL ENTIRE OF THE PAGE  |  | PROJECT #:                               |  | DATE: 08/14/13 |  |
| ALL RIGHTS ARE RESERVED  |  | 13022382                                 |  | DATE: 08/14/13 |  |
| SHEET 7 OF   |  | DRAWN BY: CARLOS                         |  | DATE: 08/14/13 |  |
| E-102  |  | DATE: 08/14/13                           |  | DATE: 08/14/13 |  |

E-102



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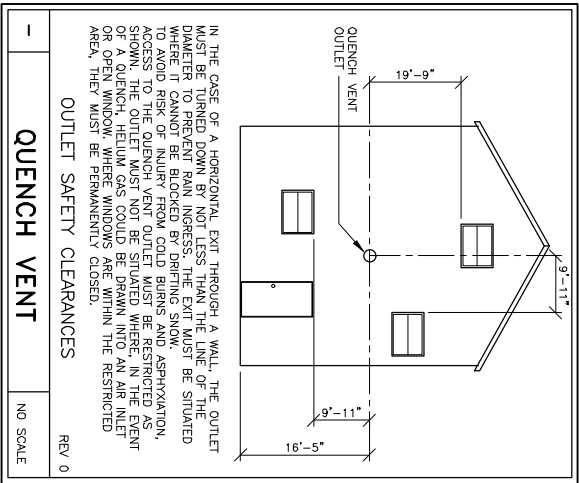
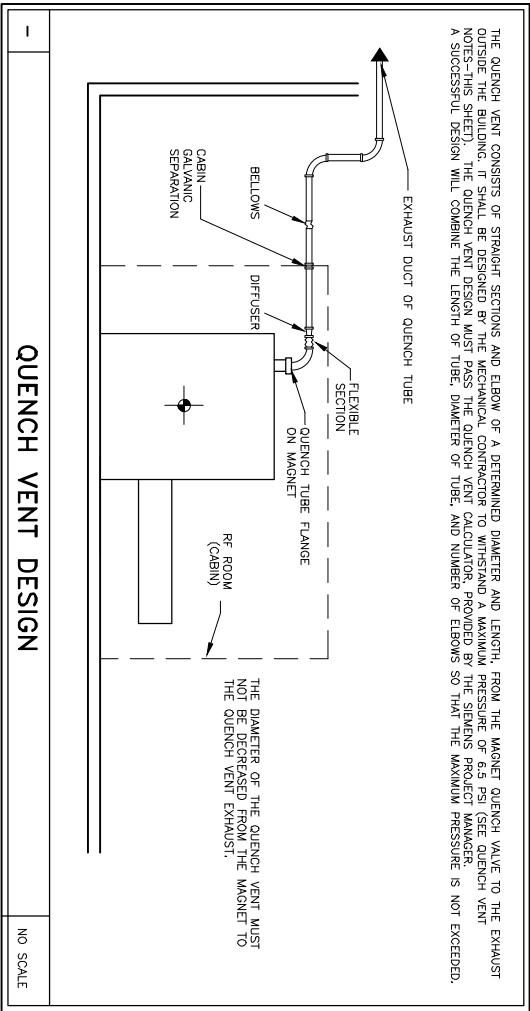
## ATTENTION:

- 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.





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

WITHOUT THE COLD HEAD RUNNING THE LIQUID HELIUM WILL BOIL OFF AT A RATE OF APPROXIMATELY 0.0 L/HR. THE LOSS DURING SHIPPING IS APPROXIMATELY 3.3% PER DAY.

## HELIUM CONTENT

|                         |          |  |
|-------------------------|----------|--|
| LITERS A 100%           | 1.280    | FOR TYPICAL CLINICAL<br>DEPENDING ON SEVERE<br>AND OPERATING TIME. |
| TYPICAL BOIL OFF RATE   | 0.0 L/HR |  |
| TYPICAL REFILL INTERVAL | 10 YEARS |  |

WITHOUT THE COLD HEAD RUNNING THE LIQUID HELIUM WILL BOIL OFF FROM 92% TO 0% IN APPROXIMATELY 30 DAYS. THE LOSS DURING SHIPPING IS APPROXIMATELY 3.3% PER DAY.

## QUENCH VENT NOTES

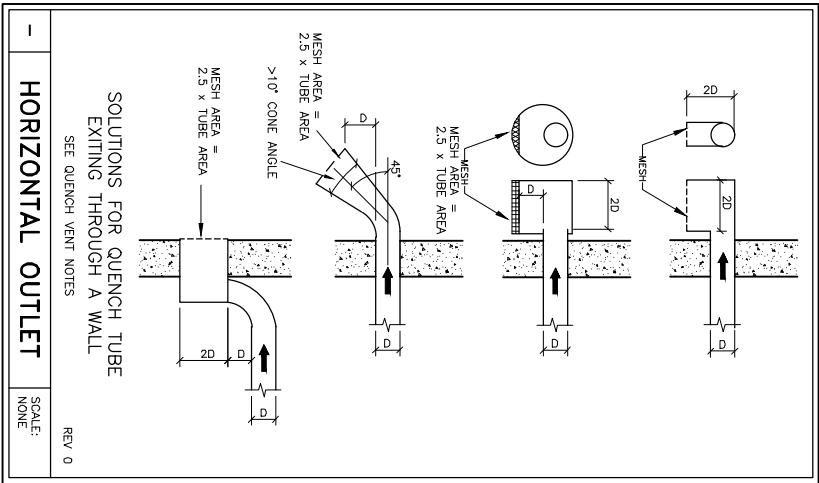
- ## CROZGEN NOTES
- 1) "THERMOGEN" IS A TERM USED TO DENOTE THE INTERMEDIATE USED TO MAKE THE HELIUM "SINTER" CONDUCTING IN THIS APPLICATION.
  - 2) THE HELIUM IS PRODUCED BY THE REACTION OF HYDROGEN WITH LIQUID AIR AND CARBON. HELIUM SPECIAL CASE MUST BE TAKEN INTO ACCOUNT. THE REACTION OF HYDROGEN WITH LIQUID AIR IS A NORMAL DURING OF PROCESSES FROM THE SYSTEM ASIDE FROM THE REACTION OF HYDROGEN WITH CARBON. THE INSTALLATION OF AN OVERFLOW IN THE ROOM, THE INSTALLATION OF AN APPROVED TOWARD MONITORING SYSTEM IS RECOMMENDED.
  - 3) THERE SHALL BE A TRANSPORT ROUTE FOR DELIVERY OF REMAINS USED TO TRANSFER HELIUM. A 250 LITER DRAIN WEIGHTS 335 POUNDS AND HAS A 525 DIAMETER. A 500 LITER IS 540 POUNDS.
  - 4) HELIUM GAS CHANGERS WILL BE USED DURING THE INITIAL FILLING OF HELIUM INTO THE CRYSTAL, THE FACILITY IN WHICH THESE ARE USED WILL BE THE SAME AS THE FACILITY IN WHICH THEY WILL BE USED TO SCOUR THESE CRYSTALS. THEY WILL PREVENT HELIUM FROM INDEPENDENTLY FILLING OVER.
  - 5) DURING FILLING OF THE HELIUM IS TO BE PROVIDED BY MEANS OF A TRANSPORT ROUTE.
  - 6) THE USE OF AN INDEPENDENT AIRPANEL CRYSTAL TO CONTROL RE-ENTRY

## CRYOGEN NOTES

- [illegible]

QUENCH VENT

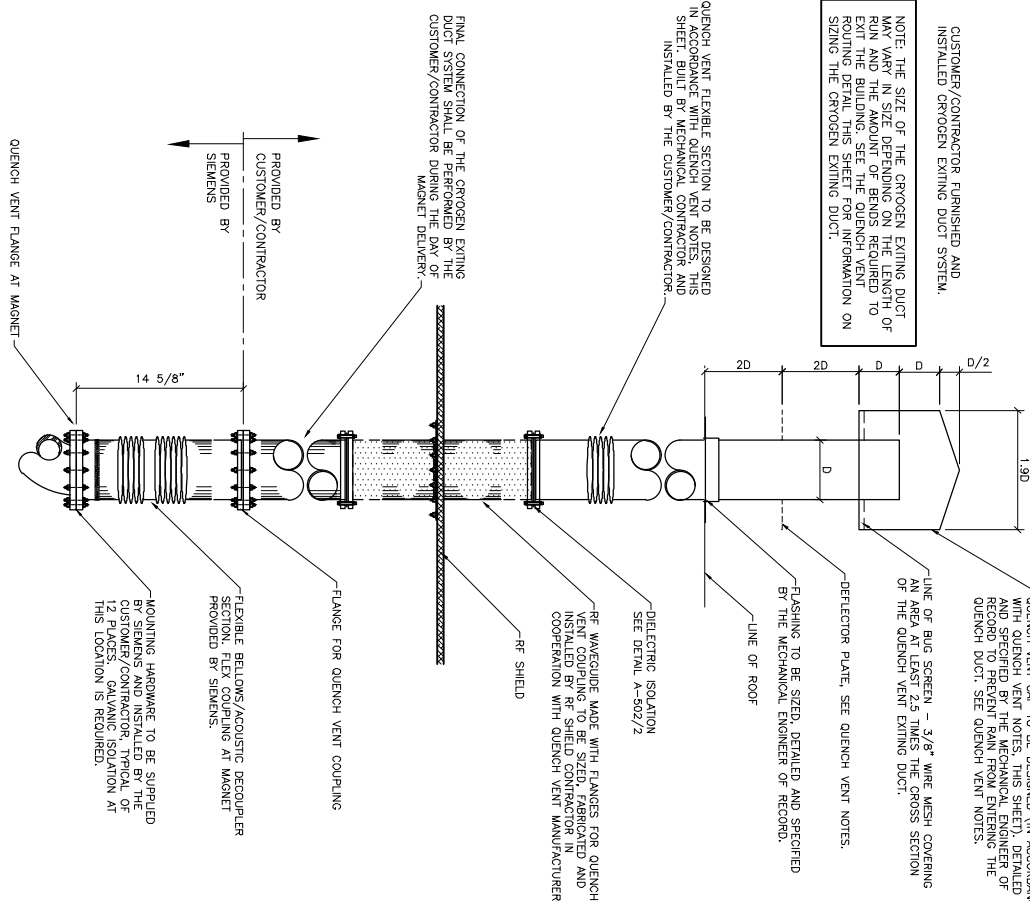
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|--------------------------|-------------|----------|
| OUTLET SAFETY CLEARANCES |             | REV 0    |
| -                        | QUENCH VENT | NO SCALE |



## CRYOGEN EXITING DUCT SYSTEM DETAIL

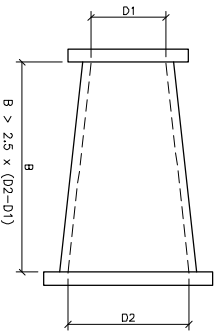
CRYOGEN EXITING DUCT SYSTEM DETAIL

- 1) THE MECHANICAL DESIGNER OR RECORD SHALL BE RESPONSIBLE FOR THE DESIGN, DETAIL, AND SPECIFICATION OF THE CHROSEN EXTING DUCT SYSTEM WITH ALL WORK TO BE PERFORMED BY THE CUSTOMER/CONTRACTOR UNLESS SPECIFIED OTHERWISE.
  - 2) TAKE PROPER PRECAUTIONS WHEN FIELD WELDING IN THE VICINITY OF LIQUID/FROZEN OXYGEN.
  - 3) UNLESS SPECIFIED OTHERWISE ALL MATERIAL AND WORK SHALL BE PERFORMED BY THE CUSTOMER/CONTRACTOR WITH FINAL CONNECTION OF THE CHROSEN EXTING DUCT SYSTEM TO THE STUBS WELDED TO BE PERFORMED BY THE CUSTOMER/CONTRACTOR UNDER SUPERVISION.
- 7) THE DIAMETER OF THE EXTING EXTING DUCT MAY VARY WITH ACTUAL ROLLING.

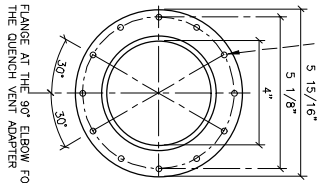


## SER

|       |                               |
|-------|-------------------------------|
| REV 0 |                               |
| -     | QUENCH VENT DIFFUSER NO SCALE |



## - QUENCH VENT DIFFUSER



CONNECTION OF THE QUENCH VENT PIPE TO FLANGE TO BE DESIGNED, DETAILED, AND SPECIFIED BY THE MECHANICAL ENGINEER OF RECORD TO BE FABRICATED AND INSTALLED BY THE MECHANICAL CONTRACTOR UNDER SIEMENS SUPERVISION. THE 90° ELBOW IS PART OF THE DELIVERY VOLUME, THE TWO FLANGES ARE IDENTICAL.

## CONNECTING FLANGE

|                   |             |          |
|-------------------|-------------|----------|
| CONNECTING FLANGE |             | REV 0    |
| 2                 | QUENCH VENT | NO SCALE |

# ATTENTION:

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

|  |  |                           |  |  |  |
|--|--|---------------------------|--|--|--|
| PROJECT MANAGER: BILL HERRN                    |  | DATE: 08/14/13            |  | ISSUE: BLOCK -                           |  |
| TEL: (402) 960-7636 EXT:                       |  | PROJECT VERSION: 08/07/13 |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| FAX: (402) 960-7636                            |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| E-MAIL: b.herrn@siemens.com                    |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| PROJECT: VA CENTRAL IOWA HEALTH CARE SYSTEM    |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| 3600 30TH ST., DES MOINES, IA 50310-9774       |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| MAP SHEET: 1B15 - MAGNETOM AERA W/MOBILE TABLE |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| PROJECT #:                                     |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| 1302382  |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| SHEET: 10 OF 10                                |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| DRAWN BY: F. CARRO                             |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |
| M-501  |  | DATE: 08/14/13            |  | SYNOPSIS: APPROVED BY CUSTOMER FOR FINAL |  |