

Drawing Index

These sheets are a document set and should not be separated. Electrical information and references are contained on all sheets.

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These drawings indicate the placement and interconnection of the listed equipment components. These drawings are not construction or site preparation drawings. Customer remains ultimately responsible for preparing the site to accommodate the operation of such equipment in compliance with GE Healthcare's written specifications and all applicable federal, state, and/or local requirements.

*** REQUIRED REFERENCE ***

Optima MR430
Pre Installation Manual
DOC0797563

A mandatory component of this drawing set is the GE Healthcare Pre Installation manual. Failure to reference the Pre Installation manual will result in incomplete documentation required for site design and preparation.

Pre Installation documents for GE Healthcare products can be accessed on the web at:

www.gehealthcare.com/siteplanning

GE Healthcare



MRi Site Planning



imagination at work

Customer Site Readiness Requirements

- Any deviation from these drawings must be communicated in writing to and reviewed by your local GE Healthcare Installation Project Manager prior to making changes.
- Make arrangements for any rigging, special handling, or facility modifications that must be made to deliver the equipment to the installation site. If desired, your local GE Healthcare Installation Project Manager can supply a reference list of rigging contractors.
- New construction requires the following; 1. Secure area for equipment, 2. Power for drills and other test equipment, 3. Capability for image analysis, 4. Restrooms.
- Provide for refuse removal and disposal (e.g. crates, cartons, packing)
- It is the customer's responsibility to contract a vibration consultant/engineer to implement site design modifications to meet the GE vibration specification. Refer to the system preinstallation manual for the vibration specification.

GE Equipment Delivery Requirements

The items on the GE Healthcare Site Readiness Checklist are REQUIRED to facilitate equipment delivery to the IS site. Equipment will not be delivered if these requirements are not satisfied.

GE Healthcare Site Readiness Checklist Rev 19					
Before using this document ensure you have the latest Rev from MyWorkshop on DOC0422752					
GEHC Global Order #:		Customer:			
GEHC PMI:		FE / Installer:			
The customer is responsible for proper site preparation regardless of any GEHC measurements/inspections/assessments.					
Inspection Date:	Storage is ready?	PHI is ready?	FE is ready?	Comments	If "N", enter comments or action plan
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

GE Healthcare
Healthcare Project Implementation - Design Center
Milwaukee, Wisconsin
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SHEET TITLE: SITE READINESS
MODALITY TYPE: OPTIMA MR430S
THIS PLAN IS SUBMITTED TO SURVEY LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS. IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM TO ALL APPLICABLE REGULATORY REQUIREMENTS AND TO THE USER'S OR ACTUAL CONSTRUCTION PURPOSES. GE HEALTHCARE AND THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:
TYPICAL MR
8-234
WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02
DATE:	18.Mar.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

SHEET
C1

PIM R3
RQ - 142108

GE EQUIPMENT LISTING

EQUIPMENT ON ORDER FROM GE HEALTHCARE, INSTALLED BY GE HEALTHCARE, PER : NEITHER A QUOTE OR CON WAS ISSUED AT THE DATE OF THESE DRAWINGS

NOTE: LOCAL CONDITIONS MAY DICTATE THAT ITEMS IDENTIFIED IN THIS CATEGORY BE INSTALLED BY OTHERS.

EQUIPMENT CROSS REFERENCE CHART
 P = PREAPPROVAL
 C = CALCULATIONS/ PENDING APPROVAL
 S = SPECIFICATIONS ONLY

ITEM NO.	QUANTITY ORDERED	REFER TO SHEET "D"	ITEM DESCRIPTION (* = EXISTING/REINSTALL)	WEIGHT	HEAT OUTPUT (PER HOUR)	DETAIL NO.	STRC PLAN	ELEC PLAN
1	1		LIFTING FIXTURE	26 lbs		BB112	-	PP
2	1		PENETRATION PANEL			BB113 BB114 BB115	-	-
3	1		PENETRATION COVER	11 lbs			-	-
4	1		MAGNET ASSEMBLY	1000 lbs	331 btu	BB1049 BB1051	-	MA
5	1		PATIENT SUPPORT	169 lbs			-	-
6	1		SYSTEM ELECTRONICS	842 lbs	15003 btu	BB1052	-	SE
7	1		HELIUM COMPRESSOR	308 lbs	16003 btu	BB1050	-	HC
8	1		OPERATORS CONSOLE	26 lbs	136 btu	BB1048	-	DC
9	1		EMERGENCY QUENCH BUTTON				-	EQ

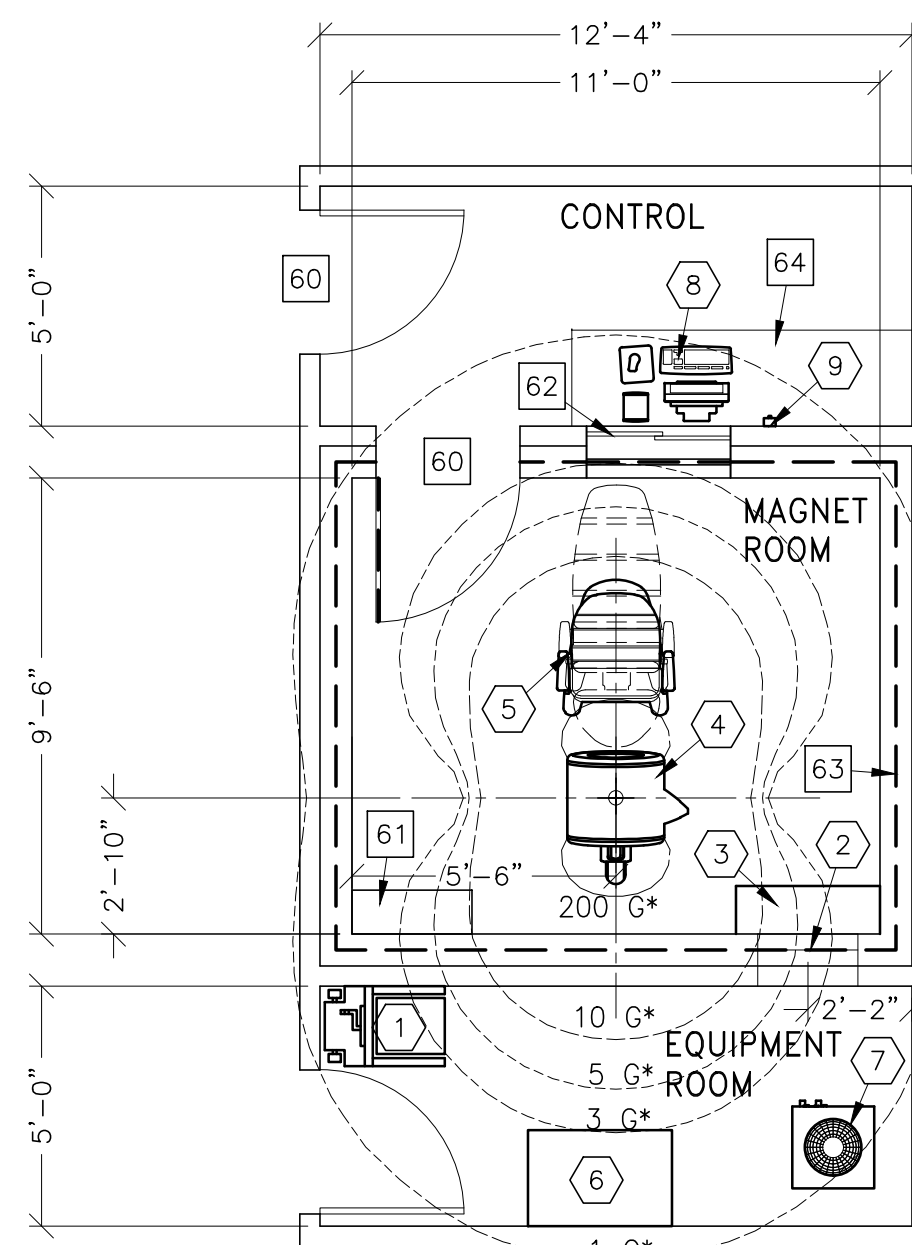
THE FOLLOWING ITEMS, WHICH HAVE BEEN ORDERED FROM GE HEALTHCARE, ARE TO BE INSTALLED BY THE CUSTOMER OR HIS CONTRACTOR.

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

EQUIPMENT LAYOUT

RECOMMENDED CEILING HEIGHT = 8'-9"

This equipment layout indicates the placement and interconnection of the indicated equipment components. There may be federal, state, and/or local requirements that could impact the placement of these components. It remains the Customer's responsibility for ensuring the site and final equipment placement complies with all applicable federal, state, and/or local requirements.



ANCILLARY ITEMS
 CUSTOMER/CONTRACTOR SUPPLIED AND INSTALLED ITEMS

ITEM NO.	ITEM DESCRIPTION (* INDICATES EXISTING)
60	DOOR OPENING MUST BE A MINIMUM OF 36 IN. x 84 IN. (915mm x 2134mm). IT SHOULD NOT INTERFERE WITH THE PATIENT CHAIR ACCESS AREA ANY THRESHOLD SHOULD BE MINIMIZED WITH A RAMP AND NO GAPS IN THE FLOORING ACCORDING TO LOCAL CODES.
61	STORAGE CABINET
62	A SCREENED WINDOW SHOULD BE PROVIDED TO ALLOW CONTINUOUS AUDIO & VISUAL CONTACT WITH PATIENT WINDOW SHOULD NOT DEGRADE EFFECTIVENESS OF THE RF SHIELD. SLIDING GLASS OVER THE SCREEN WINDOW ON OPERATOR SIDE IS RECOMMENDED FOR PRIVACY.
63	THE RF SHIELD MUST BE ELECTRICALLY ISOLATED FROM ANY POINT WITH A LOW IMPEDANCE TO GROUND, INCLUDING NON-GE ELECTRICAL EQUIPMENT, PLUMBING, AND THE QUENCH VENT. THE ISOLATION REQUIRED IS > 1000 OHMS BEFORE MAGNET ANCHORING.
64	COUNTERTOP WITH DRAWERS FOR MISCELLANEOUS ITEMS.

THE FOLLOWING ITEMS ARE AVAILABLE FROM GE HEALTHCARE TECHNOLOGIES. CONTACT YOUR LOCAL GE HEALTHCARE SERVICE REPRESENTATIVE FOR PRICING AND AVAILABILITY.

GENERAL SPECIFICATIONS

- THE REQUIRED CEILING HEIGHT INDICATED ON THESE PLANS IS TO ENSURE EQUIPMENT FUNCTION IS NOT INHIBITED. CONSULT WITH YOUR LOCAL GEHC SPECIALIST REGARDING ACCEPTABILITY OF OTHER CEILING HEIGHTS.
- CHECK ALL DOOR OPENINGS AND HALLWAYS FROM DELIVERY LOCATION TO WHERE EQUIPMENT IS TO BE INSTALLED TO ENSURE THE ROUTE PHYSICALLY AND STRUCTURALLY WILL ACCOMMODATE THE EQUIPMENT AS SHIPPED.
- RADIATION PROTECTION REQUIREMENTS ARE NOT INDICATED ON THIS PLAN. WHERE NEEDED PER NATIONAL OR LOCAL CODE THEY SHALL BE SPECIFIED BY A QUALIFIED RADIOLOGICAL PHYSICIST.
- THE DEVELOPMENT OF THE EQUIPMENT LAYOUT, ROOM DIMENSIONS, MECHANICAL AND ELECTRICAL SUGGESTIONS IS PREDICATED UPON THE BEST INFORMATION OBTAINABLE FROM THE SITE, COUPLED WITH THE CUSTOMER'S KNOWN DESIRES. ARCHITECTURAL OR ELECTRICAL CHANGES INCLUDING RELOCATION OF EQUIPMENT ILLUSTRATED ON THIS DRAWING IS ALLOWED ONLY WITH NOTIFICATION, IN WRITING, AND REVIEW BY GEHC SERVICE DEPARTMENT. EQUIPMENT OPERATION, SERVICEABILITY, AND RESTRICTING CABLE LENGTHS, ETC. MAKE THIS ESSENTIAL FOR A PROPER IS. GEHC RESERVES THE RIGHT TO MAKE ON THE JOB CHANGES BECAUSE OF CUSTOMER REQUIREMENTS AND/OR OBSTACLES IN CONSTRUCTION, ETC..
- ALL WORK TO BE IN COMPLIANCE WITH NATIONAL AND LOCAL BUILDING SAFETY CODES.
- DIMENSIONS ARE TO FINISHED SURFACES OF ROOM.

SITE ENVIRONMENT SPECIFICATIONS

- AMBIENT OPERATING TEMPERATURE: 66-75 DEG (F) [19-24 (C)] FOR THE MAGNET AND EQUIPMENT AREAS. CONTROL IS AS REQUIRED FOR COMFORT.
- ALLOWABLE TEMPERATURE CHANGE OF 5 DEG (F)/HR [3 (C)/HR] IN EQUIPMENT ROOM. ALLOWABLE TEMPERATURE CHANGE OF 2.5 DEG (F)/HR [1.4 (C)/HR] IN MAGNET ROOM.
- HUMIDITY: NON-CONDENSING
- ENVIRONMENTAL RESTRICTIONS ABOVE MUST NOT BE EXCEEDED FOR THE ELECTRONICS.
- DO NOT RESTRICT THE AIR INTAKE OR AIR EXHAUST OF THE SYSTEM COMPONENTS.
- ENVIRONMENTAL CONDITIONS LISTED ABOVE MUST BE MAINTAINED AT ALL TIMES INCLUDING FOR EXAMPLE OVERNIGHT, WEEKENDS, AND HOLIDAYS.
- CRYOGEN VENTING AND MAGNET ROOM EXHAUST FAN SYSTEMS MUST BE COMPLETED IN THE MAGNET ROOM PRIOR TO DELIVERY.
- FLUORESCENT LIGHTING IS NOT ALLOWED IN THE MAGNET ROOM DUE TO RF NOISE.

MAGNETIC INTERFERENCE SPECIFICATIONS

- THE CUSTOMER MUST ESTABLISH PROTOCOLS TO PREVENT PERSONS WITH CARDIAC PACEMAKERS, NEUROSTIMULATORS, AND BIOSTIMULATION DEVICES FROM ENTERING MAGNETIC FIELDS OF GREATER THAN 5 GAUSS (EXCLUSION ZONE).
- MAIN POWER TRANSFORMERS MUST REMAIN OUTSIDE THE 1 GAUSS FIELD.
- THE FERROUS METAL OBJECTS LISTED BELOW MUST NOT MOVE INTO OR INSIDE OF THE MOVING METAL SENSITIVITY LINE DURING SCANS.

TYPICAL MOVING MAGNETIC MASS	DISTANCE FROM ISO
CARTS, GURNEYS 100-400 lbs [45-182 kg]	N/A
FORKLIFTS, SMALL ELEVATOR, CARS, MINIVANS VANS, PICKUP TRUCKS, AMBULANCES BUSES AND TRUCKS (DUMP, TRACTOR TRAILER, UTILITY, FIRE TRUCKS)	30 ft. [9.2 m]

GE Healthcare
 Healthcare Project Implementation - Design Center
 Milwaukee, WI

SHEET TITLE: EQUIPMENT LAYOUT
 MODALITY TYPE: OPTIMA MR430s
 THIS PLAN IS SUBMITTED TO SUGGEST LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS. IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:
 TYPICAL MR
 8-234
 WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02
DATE:	18.Mar.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

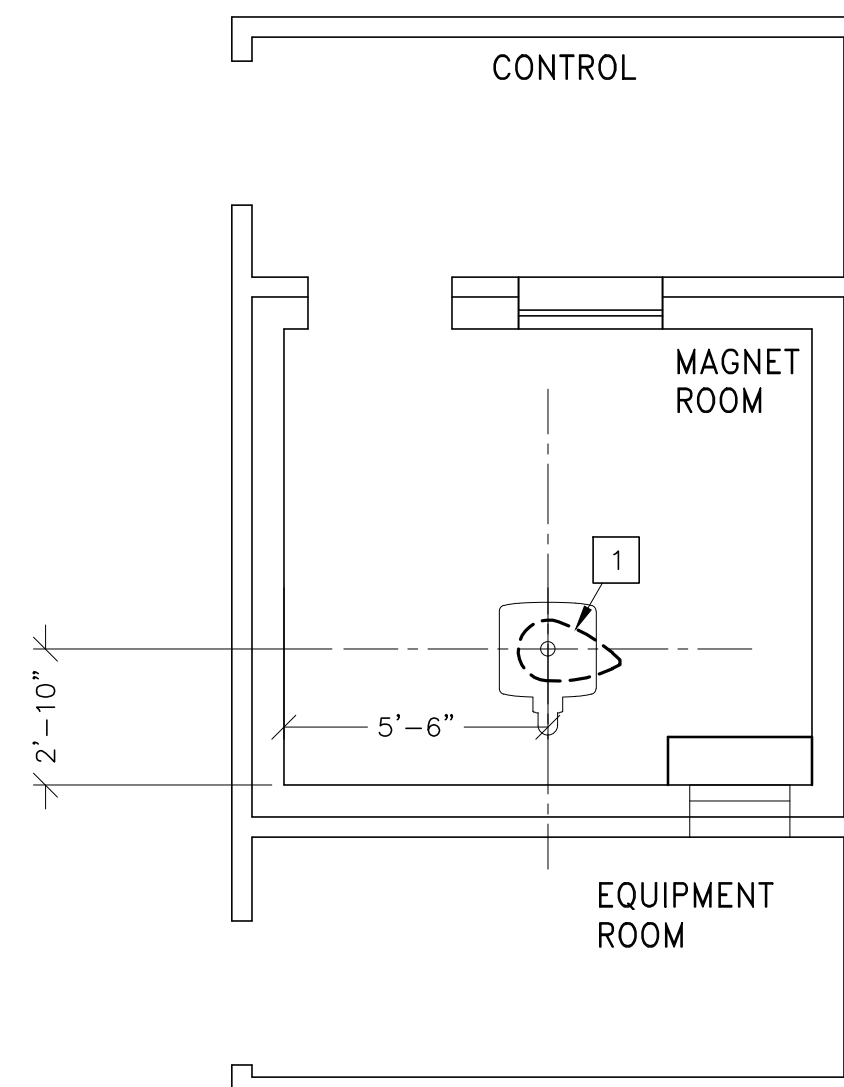
SHEET
 A1



PIM R3
 RQ - 142108

CUSTOMER/CONTRACTOR SUPPLIED AND INSTALLED ITEMS

ITEM NO.	ITEM DESCRIPTION (* INDICATES EXISTING)
1	THE EXAM ROOM FLOOR MUST ACCOMMODATE THE FLOOR LOADING FROM THE EQUIPMENT. SEE TABLE 2-3 FOR SPECIFIC REQUIREMENTS. THE FLOOR MUST BE SMOOTH TO ALLOW THE PATIENT SUPPORT TO MOVE FREELY. COMMERCIAL GRADE VINYL COMPOSITION TILE (VCT) OR COMMERCIAL GRADE SHEET FLOORING CAPABLE OF WITHSTANDING HEAVY CASTERS OR ROLLERS IS REQUIRED. THE MAXIMUM LOCAL FLOOR PRESSURE IS ESTIMATED TO BE 1800 PSI (12.4 MPa). FELT UNDERLAYMENT, TEXTURED OR SOFT VINYL OR RUBS ARE NOT ACCEPTABLE. THE FLOOR LEVEL MUST BE +/- 0.078 in. (2mm) BETWEEN DEPRESSIONS AND HIGH SPOTS OVER 3 FT LONG (1524mm) X 6 FT WIDE (1829mm) (CENTERED IN FRONT OF MAGNET BORE OPENING) FLOOR AREA. SEE DETAIL 87866 SPECIFICS ANCHOR BOLT TYPE AND SHOWS THE BOLT PATTERN FOR MOUNTING THE MAGNET TO THE FLOOR. THIS PATTERN MUST BE ACCOMMODATED IN THE FLOOR TO ENABLE THE MAGNET STAND BASE TO BE INSTALLED FLAT ON THE FINISH FLOOR FOR SITES THAT HAVE EARTHQUAKE MOUNTING REQUIREMENTS. RF SHIELDING SHOULD BE INSTALLED ACCORDINGLY.



STRUCTURAL NOTES

- ALL UNITS THAT ARE WALL MOUNTED OR WALL SUPPORTED ARE TO BE PROVIDED WITH SUPPORTS WHERE NECESSARY. WALL SUPPORTS ARE TO BE SUPPLIED AND INSTALLED BY THE CUSTOMER OR HIS CONTRACTORS. SEE PLAN AND DETAIL SHEETS FOR SUGGESTED LOCATIONS AND MOUNTING HOLE LOCATIONS.
- DIMENSIONS ARE TO FINISHED SURFACES OF ROOM.
- CERTAIN MR PROCEDURES REQUIRE AN EXTREMELY STABLE ENVIRONMENT TO ACHIEVE HIGH RESOLUTION IMAGE QUALITY. VIBRATION IS KNOWN TO INTRODUCE FIELD INSTABILITIES INTO THE IMAGING SYSTEM. THE VIBRATION EFFECTS ON IMAGE QUALITY CAN BE MINIMIZED DURING THE INITIAL SITE PLANNING OF THE MR SUITE BY MINIMIZING THE VIBRATION ENVIRONMENT. **SEE MOUNTING DETAIL ON SHEET S2 FOR ADDITIONAL INFORMATION.**
- STANDARD STEEL STUDS, NAILS, SCREWS, CONDUIT, PIPING, DRAINS AND OTHER HARDWARE ARE ACCEPTABLE IF PROPERLY SECURED. ANY LOOSE STEEL OBJECTS CAN BE VIOLENTLY ACCELERATED INTO THE BORE OF THE MAGNET. CAREFUL THOUGHT SHOULD BE GIVEN TO THE SELECTION OF LIGHT FIXTURES, CABINETS, WALL DECORATIONS, ETC. TO MINIMIZE THIS POTENTIAL HAZARD. FOR SAFETY, ALL REMOVABLE ITEMS WITHIN THE MAGNET ROOM SUCH AS FAUCET HANDLES, DRAIN COVERS, SWITCH BOX COVER PLATES, LIGHT FIXTURE COMPONENTS, MOUNTING SCREWS, ETC. MUST BE NON-MAGNETIC. IF YOU HAVE A SPECIFIC QUESTION ABOUT MATERIAL, BRING IT TO THE ATTENTION OF YOUR GE PROJECT MANAGER OF INSTALLATIONS.
- FLOOR LEVELNESS IN THE MAGNET ROOM SHOULD NOT EXCEED 0.125 in. (3 mm) WHEN MEASURING BETWEEN DEPRESSIONS AND HIGH SPOTS OVER ANY 120 in. (3048 mm) DISTANCE WITHIN THE 87.5 in. (2178 mm) BY 139.3 in. (3539 mm) AREA OF THE MAGNET ENCLOSURE AND THE AREA IN FRONT OF THE ENCLOSURE. THIS FLOOR LEVELNESS REQUIREMENT IS IMPORANT FOR ACCURATE PATIENT TABLE DOCKING.
- NON-MOVABLE STEEL SUCH AS WALL STUDS OR HVAC COMPONENTS WILL PRODUCE NEGLIGIBLE EFFECT ON THE ACTIVE SHIELD MAGNET.
- CUSTOMERS CONTRACTOR MUST PROVIDE ALL PENETRATIONS IN POST TENSION FLOORS.
- CUSTOMERS CONTRACTOR MUST PROVIDE AND INSTALL ANY NON-STANDARD ANCHORING. DOCUMENTS FOR STANDARD ANCHORING METHODS ARE INCLUDED WITH GE EQUIPMENT DRAWINGS FOR GEOGRAPHIC AREAS THAT REQUIRE SUCH DOCUMENTATION.
- CUSTOMERS CONTRACTOR MUST PROVIDE AND INSTALL HARDWARE FOR "THROUGH THE FLOOR" ANCHORING AND/OR ANY BRACING UNDER ACCESS FLOORS. THIS CONTRACTOR MUST ALSO PROVIDE FLOOR DRILLING THAT CANNOT BE COMPLETED BECAUSE OF AN OBSTRUCTION ENCOUNTERED WHILE DRILLING BY THE GE INSTALLER SUCH AS REBAR ETC.
- CUSTOMERS CONTRACTOR TO PROVIDE AND INSTALL APPROPRIATE SUPPORTS FOR THE STORAGE OF EXCESS CABLES.
- IT IS THE CUSTOMER'S RESPONSIBILITY TO PERFORM ANY FLOOR OR WALL PENETRATIONS THAT MAY BE REQUIRED. THE CUSTOMER IS ALSO RESPONSIBLE FOR ENSURING THAT NO SUBSURFACE UTILITIES (E.G., ELECTRICAL OR ANY OTHER FORM OF WIRING, CONDUITS, PIPING, DUCT WORK OR STRUCTURAL SUPPORTS (I.E. POST TENSION CABLES OR REBAR)) WILL INTERFERE OR COME IN CONTACT WITH SUBSURFACE PENETRATION OPERATIONS (E.G. DRILLING AND INSTALLATION OF ANCHORS/SCREWS) PERFORMED DURING THE INSTALLATION PROCESS. TO ENSURE WORKER SAFETY, GE INSTALLERS WILL PERFORM SURFACE PENETRATION OPERATIONS ONLY AFTER THE CUSTOMER'S VALIDATION AND COMPLETION OF THE "GE SURFACE PENETRATION PERMIT"

SHEET TITLE: STRUCTURAL LAYOUT

MODALITY TYPE: OPTIMA MR430s

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PROJECT TITLE:

TYPICAL MR
8-234

WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02

DATE: 18.Mar.14
DRAWN BY: PMM
CHECKED BY: TMS

REVISION HISTORY:

SHEET

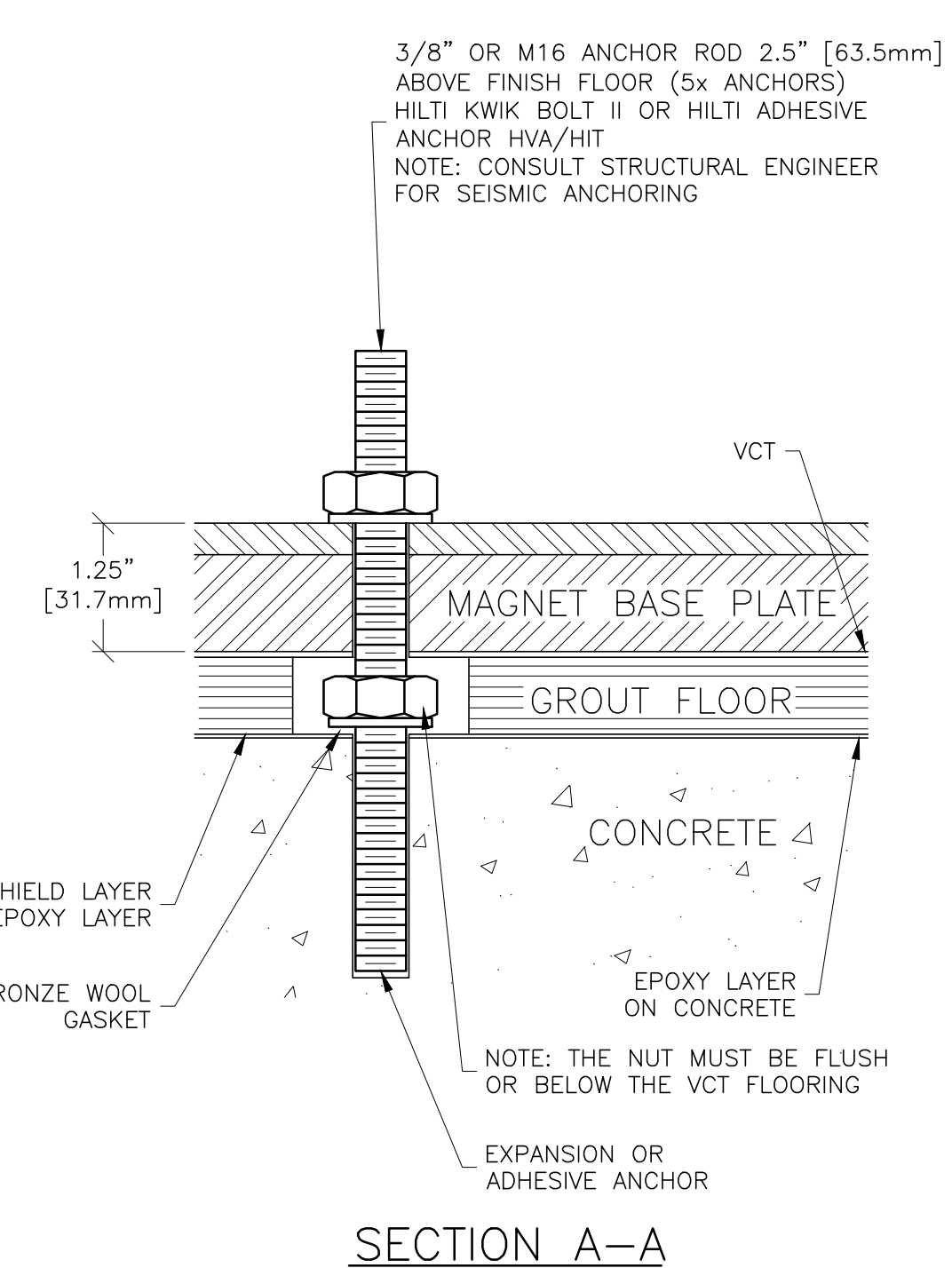
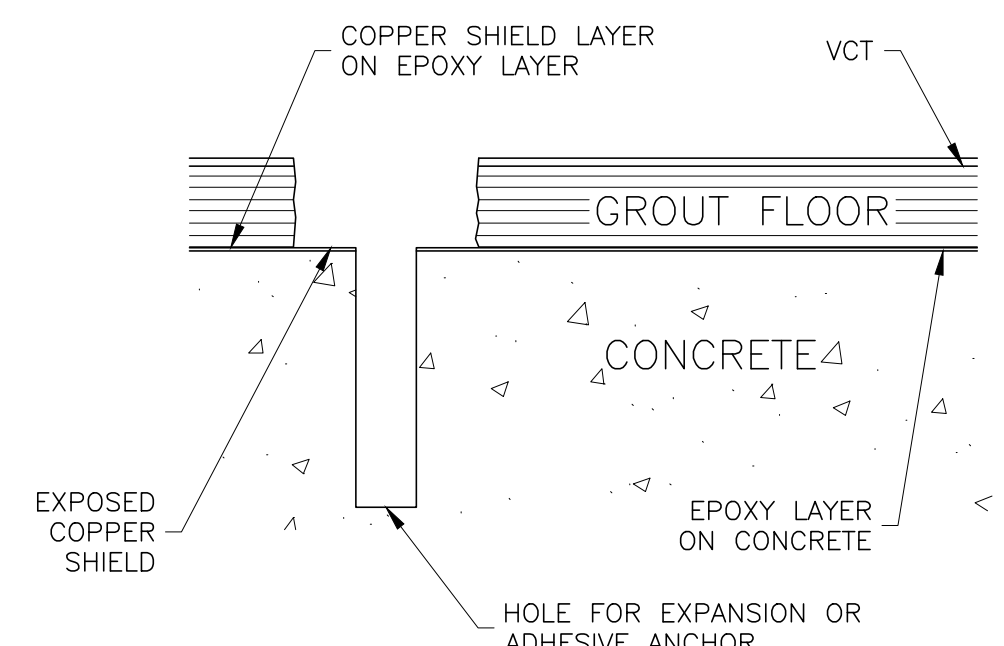
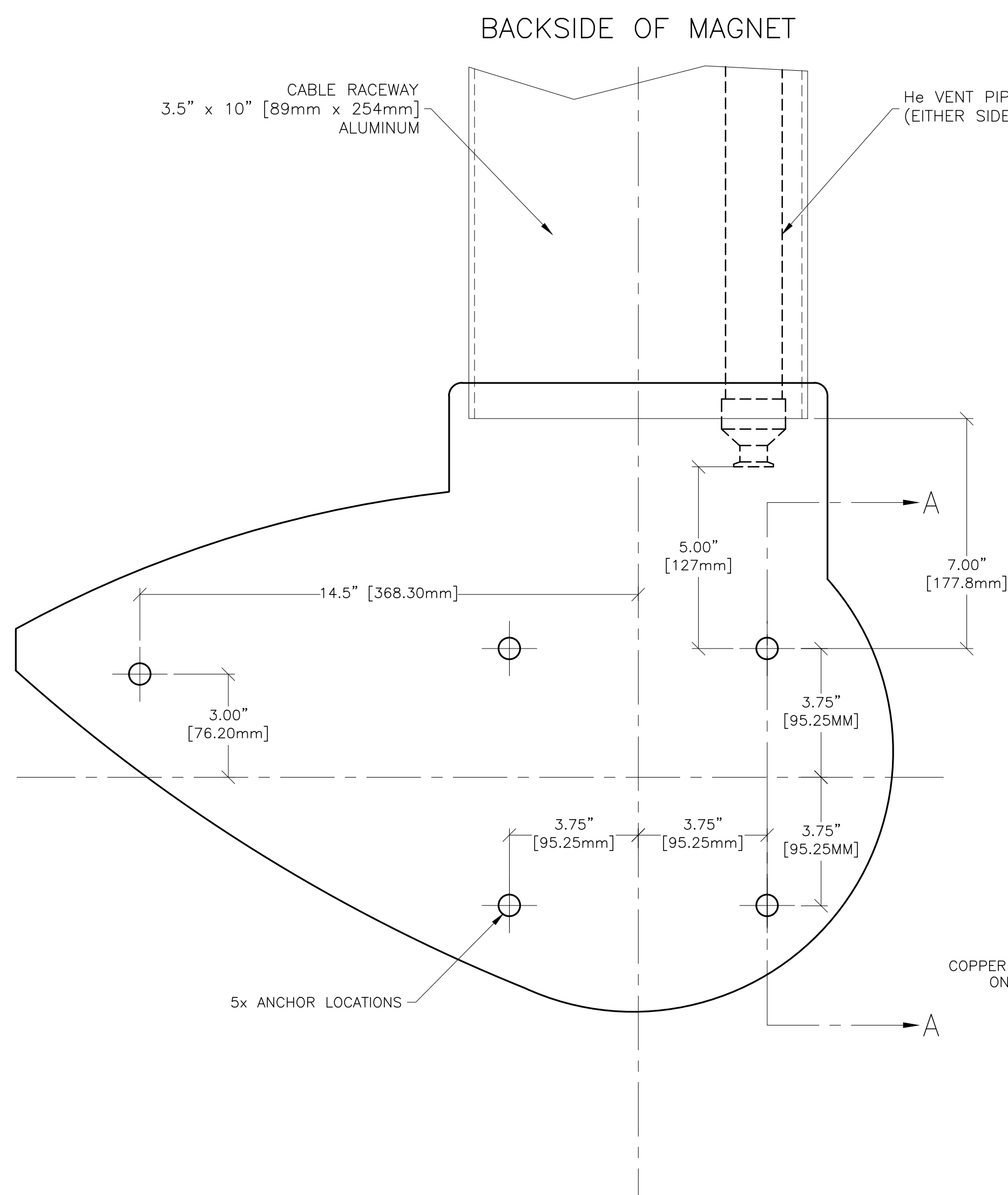
S1



MAGNET GANTRY MOUNTING PATTERN

B78-65

REV. DATE: 10.FEB.14



SHEET TITLE: STRUCTURAL DETAILS
 MODALITY TYPE: OPTIMA MR430s

THIS PLAN IS SUBMITTED TO SURVEY LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED APPARATUS, ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS. IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO THE MANUFACTURER'S DRAWINGS. THE USER OF THIS PLAN SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:

TYPICAL MR
 8-234
 WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02
DATE:	18.Mar.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

SHEET
 S2

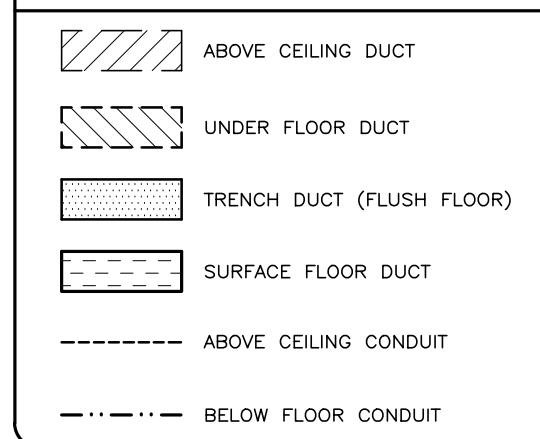
PIM R3
 RQ - 142108

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

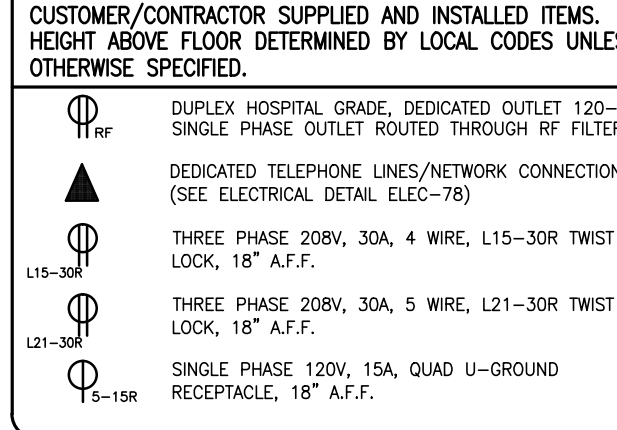
ELECTRICAL PLAN

RECOMMENDED CEILING HEIGHT = 8'-9"

DUCT HATCHING LEGEND



ELECTRICAL OUTLET LEGEND



RUN LENGTH IN FEET	POWER SUPPLY VOLTAGE									
	180-220 200		187-229 208		342-418 380		360-440 400		374-456 415	
	FEEDER	GROUND	FEEDER	GROUND	FEEDER	GROUND	FEEDER	GROUND	FEEDER	GROUND
100	8	(8)	8	(8)	12	(12)	14	(14)	14	(14)
150	6	(6)	6	(6)	10	(10)	12	(12)	12	(12)
200	4	(4)	4	(4)	10	(10)	10	(10)	10	(10)
250	3	(3)	4	(4)	8	(8)	10	(10)	10	(10)
300	2	(2)	3	(3)	8	(8)	8	(8)	8	(8)
350	2	(2)	2	(2)	8	(8)	8	(8)	8	(8)
400	1	(1)	1	(1)	6	(6)	8	(8)	8	(8)
450	1/0	(1/0)	1	(1)	6	(6)	6	(6)	6	(6)

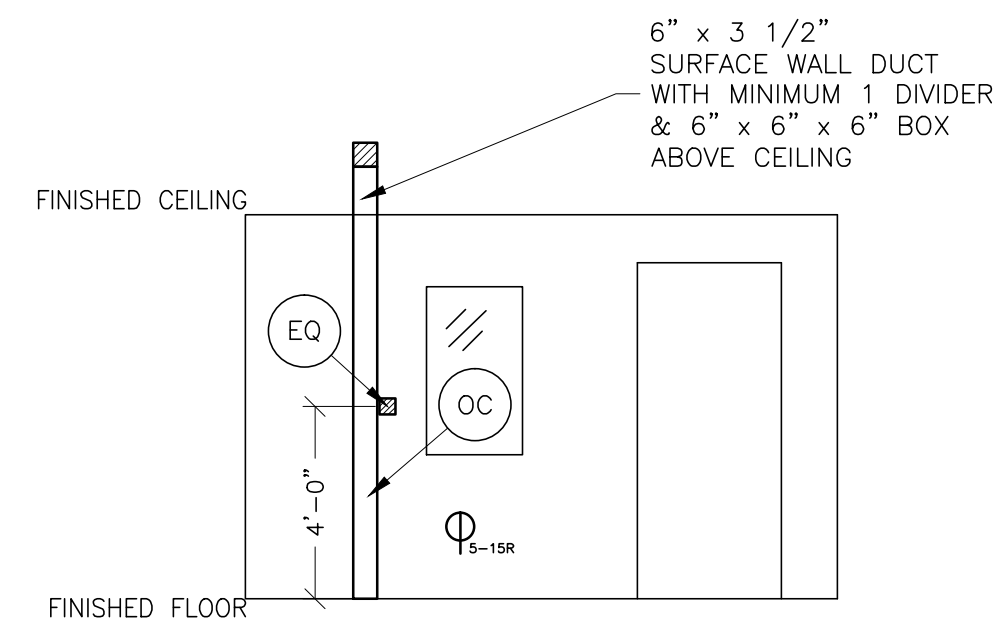
REV. DATE: 04/20/10

JUNCTION POINT NOTES

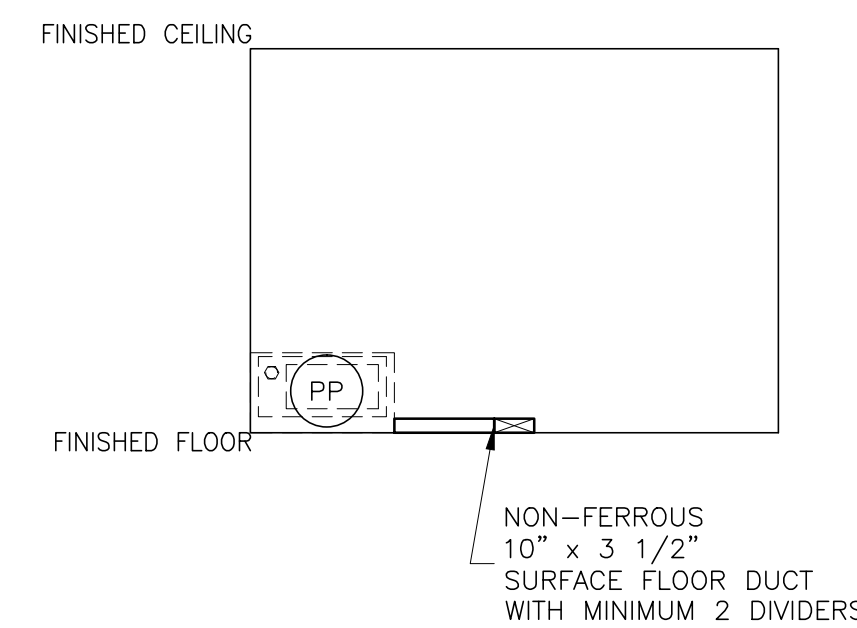
- ALL JUNCTION BOXES, CONDUIT, DUCT, DUCT DIVIDERS, SWITCHES, CIRCUIT BREAKERS, ETC., ARE TO BE SUPPLIED AND INSTALLED BY CUSTOMERS ELECTRICAL CONTRACTOR.
- CONDUIT AND DUCT RUNS SHALL HAVE SWEEP RADIUS BENDS.
- CONDUITS AND DUCT ABOVE CEILING OR BELOW FINISHED FLOOR MUST BE INSTALLED AS NEAR TO CEILING OR FLOOR AS POSSIBLE TO REDUCE RUN LENGTH.
- CEILING MOUNTED JUNCTION BOXES ILLUSTRATED ON THIS PLAN MUST BE INSTALLED FLUSH WITH FINISHED CEILING.
- ALL DUCTWORK MUST MEET THE FOLLOWING REQUIREMENTS:
 - DUCTWORK SHALL BE METAL WITH DIVIDERS AND HAVE REMOVABLE, ACCESSIBLE COVERS.
 - DUCTWORK SHALL BE CERTIFIED/RATED FOR ELECTRICAL POWER PURPOSES.
 - DUCTWORK SHALL BE ELECTRICALLY AND MECHANICALLY BONDED TOGETHER IN AN APPROVED MANNER.
 - PVC AS A SUBSTITUTE MUST BE USED IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- ALL OPENINGS IN ACCESS FLOORING ARE TO BE CUT OUT AND FINISHED OFF WITH GROMMET MATERIAL BY THE CUSTOMERS CONTRACTOR.
- GENERAL CONTRACTOR TO INSERT PULL CORDS FOR ALL CABLE RUN CONDUITS BETWEEN THE EQUIPMENT ROOM AND THE OPERATORS CONTROL ROOM.
- 10 FOOT PIGTAILS AT ALL JUNCTION POINTS.
- ALL WIRING MUST BE THIN OR TFFN STRANDED COPPER THERMOPLASTIC 600 VOLT OR EQUIVALENT INSULATION. ALUMINUM OR SOLID WIRES ARE NOT ALLOWED.
- GROUNDING IS CRITICAL TO EQUIPMENT FUNCTION AND PATIENT SAFETY. SITE MUST CONFORM TO WIRING SPECIFICATIONS SHOWN ON THIS PLAN.

JUNCTION POINT DESCRIPTIONS

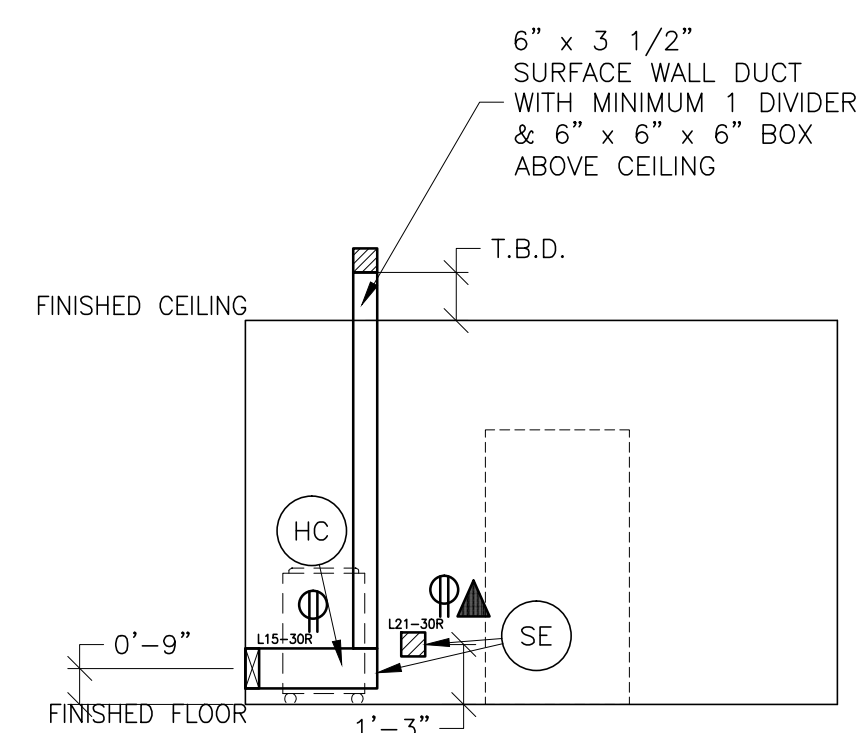
POINT	DESCRIPTION	QTY.	THE FOLLOWING MATERIALS ARE TO BE SUPPLIED AND INSTALLED BY THE CUSTOMER'S ELECTRICAL CONTRACTOR	
			HARDWARE	DETAIL NO., SHT. E3
EQ	EMERGENCY QUENCH BUTTON	1	SINGLE GANG 2 1/2 IN. DEEP FLUSH MOUNTED JUNCTION BOX.	
HC	HELIUM COMPRESSOR	1	48 IN. OF GROMMET MATERIAL FOR A 3 X 3 IN. OPENING IN DUCT COVER.	ELEC-5 ELEC-6
MA	MAGNET ASSEMBLY	1	28 IN. OF GROMMET MATERIAL	ELEC-14
OC	OPERATORS CONSOLE	1	48 IN. OF GROMMET MATERIAL FOR A 3 X 3 IN. OPENING IN DUCT COVER.	ELEC-5 ELEC-6
PP	PENETRATION PANEL	1	48 IN. OF GROMMET MATERIAL FOR A 3 X 3 IN. OPENING IN DUCT COVER.	ELEC-5 ELEC-6
SE	SYSTEM ELECTRONICS	1	CONNECT EXTERNALLY 1 1/2 IN. DIA. CHASE NIPPLE COVERPLATE	ELEC-8 ELEC-8 ELEC-8



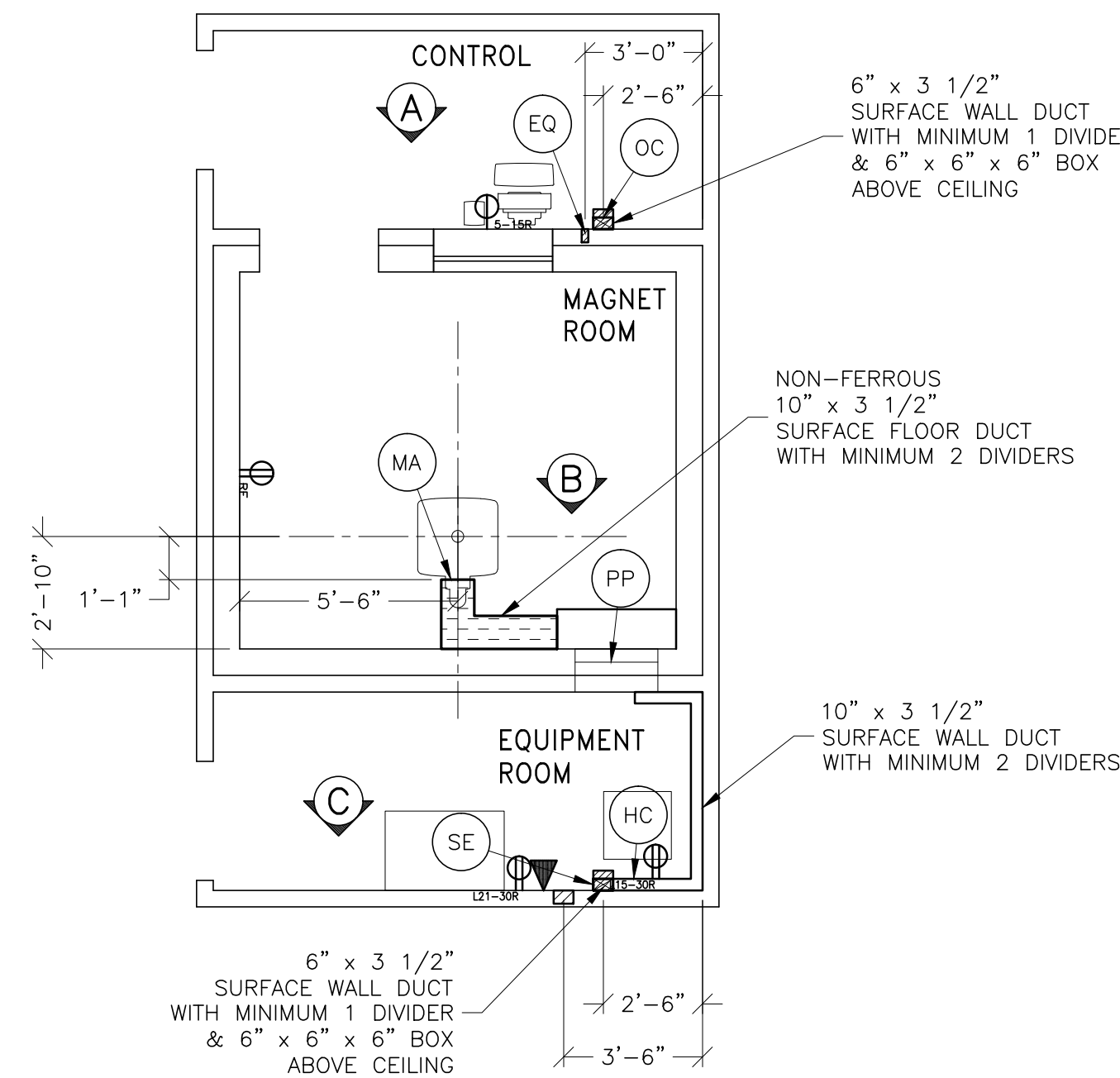
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B



C



ADDITIONAL CONDUIT RUNS (CONTRACTOR SUPPLIED AND INSTALLED)			
CONDUITS REQUIRED FOR BASE SYSTEM			
REV DATE: 06/25/10			
EQ	TO	SE	ONE 3/4" CND.
OC	TO	SE	ONE 3 1/2" CND.

NOTE: SEE EQUIPMENT LIST FOR CALL OUTS

CONTRACTOR SUPPLIED AND INSTALLED WIRING

ELECTRICAL CONTRACTOR SHALL RING OUT AND TAG ALL WIRES AT BOTH ENDS.

WIRE RUN, FROM - TO	QUANTITY, WIRE SIZE/COLOR
RF GND STUD > RF FILTER	1-GREEN <SIZE AS REQUIRED FOR EACH FILTER>

GE Healthcare
Healthcare Project Implementation - Design Center
Milwaukee, Wisconsin

SHEET TITLE: ELECTRICAL LAYOUT
MODALITY TYPE: OPTIMA MR430s

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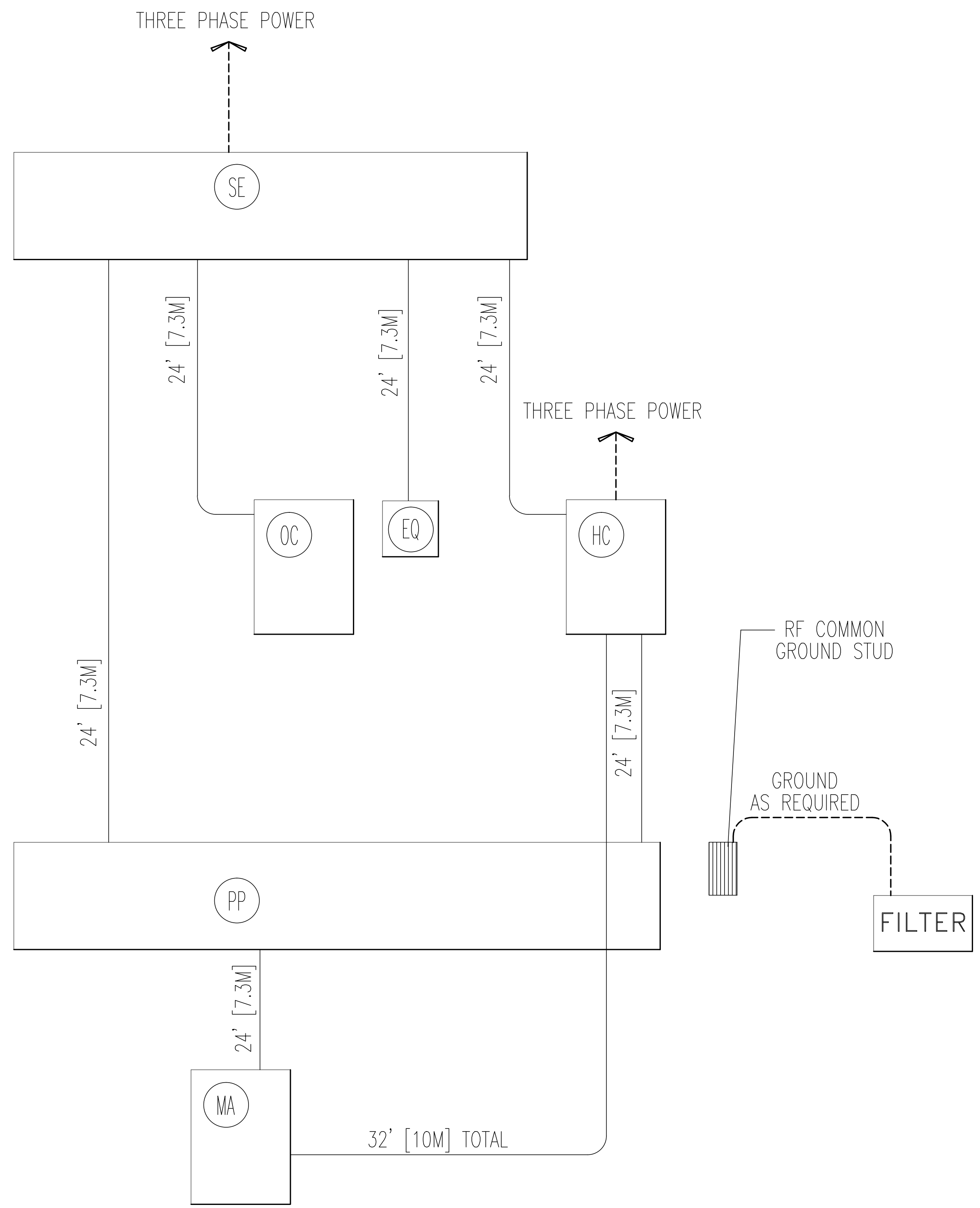
PROJECT TITLE: TYPICAL MR
8-234
WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02
DATE:	18.Mar.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

SHEET
E1

INTERCONNECT DIAGRAM



From	To	Panel	Length
SE	TO	OC	25' [7.62M]
			50' [15.24M]
			75' [22.86M]
SE	TO	HC	25' [7.62M]
			50' [15.24M]
			75' [22.86M]
SE	TO	PP	25' [7.62M]
			50' [15.24M]
HC	TO	MA	32.8' [10M] TOTAL
			65.6' [20M] TOTAL

POWER SPECIFICATIONS

MSK EXTREMITY (REV. DATE 04/20/10)

VOLTAGE PRIMARY SOURCE IS REQUIRED FOR ALL INSTALLATIONS. RANGE OF LINE VOLTAGES: NOMINAL LINE VOLTAGE OF 200 TO 415, 3 PHASE, 50 OR 60 HZ. MAXIMUM DAILY VOLTAGE VARIATION MUST FALL WITHIN ONE OF THE RANGES IN TABLE A.

TABLE A ALLOWABLE INPUT VOLTAGES/CURRENT DEMAND

NOMINAL VOLTAGE	ABSOLUTE RANGE	CURRENT (AMPS)	
		MOMENTARY	CONTINUOUS
200	180-220	32	18
208	187-229	31	17
380	342-418	17	9
400	360-440	16	9
415	374-456	15	8

PHASE-BALANCE. PHASE-TO-PHASE VOLTAGES MUST BE WITHIN 2 PERCENT OF THE LOWEST PHASE-TO-PHASE VOLTAGE. MAXIMUM ALLOWABLE TRANSIENT VOLTAGE EXCURSIONS ARE 1.8 PERCENT OF RATED LINE VOLTAGE AT A MAXIMUM DURATION OF 75 MICROSECONDS AND FREQUENCY OF 10 TIMES PER HOUR.

VOLTAGE TRANSIENT OR IMPULSE ON THE INCOMING POWER MUST BE HELD TO A MINIMUM. TRANSIENTS CAUSED BY LIGHTNING SURGES, LOAD SWITCHING, STATIC ELECTRICITY ETC. CAN CAUSE SCAN ABORTS OR, IN EXTREME INSTANCES, COMPONENT FAILURE IN THE COMPUTER SUBSYSTEM.

POWER DEMAND MAXIMUM POWER DEMAND = 11.1 KVA. CONTINUOUS = 6.1 KVA

REFER TO DIRECTION LISTED ON C1 FOR ADDITIONAL INFORMATION.

ELECTRICAL NOTES

- NOTE 1: ALL WIRES SPECIFIED SHALL BE COPPER STRANDED, FLEXIBLE, THERMO-PLASTIC, COLOR CODED, CUT 10 FOOT LONG AT OUTLET BOXES, DUCT TERMINATION POINTS OR STUBBED CONDUIT ENDS. ALL CONDUCTORS, POWER, SIGNAL AND GROUND, MUST BE RUN IN A CONDUIT OR DUCT SYSTEM. ELECTRICAL CONTRACTOR SHALL RING OUT AND TAG ALL WIRES AT BOTH ENDS. WIRE RUNS MUST BE CONTINUOUS COPPER STRANDED AND FREE FROM SPLICES. **ALUMINUM OR SOLID WIRES ARE NOT ALLOWED.**
- NOTE 2: WIRE SIZES GIVEN ARE FOR USE OF EQUIPMENT. LARGER SIZES MAY BE REQUIRED BY LOCAL CODES.
- NOTE 3: IT IS RECOMMENDED THAT ALL WIRES BE COLOR CODED, AS REQUIRED IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.
- NOTE 4: CONDUIT SIZES SHALL BE VERIFIED BY THE ARCHITECT, ELECTRICAL ENGINEER OR CONTRACTOR, IN ACCORDANCE WITH LOCAL OR NATIONAL CODES.
- NOTE 5: CONVENIENCE OUTLETS ARE NOT ILLUSTRATED. THEIR NUMBER AND LOCATION ARE TO BE SPECIFIED BY OTHERS. LOCATE AT LEAST ONE CONVENIENCE OUTLET CLOSE TO THE SYSTEM CONTROL, THE POWER DISTRIBUTION UNIT AND ONE ON EACH WALL OF THE PROCEDURE ROOM. USE HOSPITAL APPROVED OUTLET OR EQUIVALENT.
- NOTE 6: GENERAL ROOM ILLUMINATION IS NOT ILLUSTRATED. CAUTION SHOULD BE TAKEN TO AVOID EXCESSIVE HEAT FROM OVERHEAD SPOTLIGHTS. DAMAGE CAN OCCUR TO CEILING MOUNTING COMPONENTS AND WIRING IF HIGH WATTAGE BULBS ARE USED. RECOMMEND LOW WATTAGE BULBS NO HIGHER THAN 75 WATTS AND USE DIMMER CONTROLS (EXCEPT MR). DO NOT MOUNT LIGHTS DIRECTLY ABOVE AREAS WHERE CEILING MOUNTED ACCESSORIES WILL BE PARKED.
- NOTE 7: **ROUTING OF CABLE DUCTWORK, CONDUITS, ETC., MUST RUN DIRECT AS POSSIBLE OTHERWISE MAY RESULT IN THE NEED FOR GREATER THAN STANDARD CABLE LENGTHS (REFER TO THE INTERCONNECTION DIAGRAM FOR MAXIMUM USABLE LENGTHS POINT TO POINT).**
- NOTE 8: CONDUIT TURNS TO HAVE LARGE, SWEEPING BENDS WITH MINIMUM RADIUS IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.
- NOTE 9: A SPECIAL GROUNDING SYSTEM IS REQUIRED IN ALL PROCEDURE ROOMS BY SOME NATIONAL AND LOCAL CODES. IT IS RECOMMENDED IN AREAS WHERE PATIENTS MIGHT BE EXAMINED OR TREATED UNDER PRESENT, FUTURE, OR EMERGENCY CONDITIONS. CONSULT THE GOVERNING ELECTRICAL CODE AND CONFER WITH APPROPRIATE CUSTOMER ADMINISTRATIVE PERSONNEL TO DETERMINE THE AREAS REQUIRING THIS TYPE OF GROUNDING SYSTEM.
- NOTE 10: THE MAXIMUM POINT TO POINT DISTANCES ILLUSTRATED ON THIS DRAWING MUST NOT BE EXCEEDED.
- NOTE 11: PHYSICAL CONNECTION OF PRIMARY POWER TO GE EQUIPMENT IS TO BE MADE BY CUSTOMERS ELECTRICAL CONTRACTOR WITH THE SUPERVISION OF A GE REPRESENTATIVE. THE GE REPRESENTATIVE WOULD BE REQUIRED TO IDENTIFY THE PHYSICAL CONNECTION LOCATION, AND INSURE PROPER HANDLING OF GE EQUIPMENT.
- NOTE 12: GEHC CONDUCTS POWER AUDITS TO VERIFY QUALITY OF POWER BEING DELIVERED TO THE SYSTEM. THE CUSTOMER'S ELECTRICAL CONTRACTOR IS REQUIRED TO BE AVAILABLE TO SUPPORT THIS ACTIVITY.

DIAGRAM KEY

- CUSTOMER/CONTRACTOR SUPPLIED WIRING. ROUTE IN ADEQUATE CONDUIT OR RACEWAY.
- GE FURNISHED CABLE RUNS. ROUTE IN EMPTY CONDUIT OR RACEWAY.
- 59' [18M] MAXIMUM RUN LENGTH BETWEEN JUNCTION POINTS. Feet, [Meters]

GE Healthcare
 Healthcare Project Implementation - Design Center
 Milwaukee, Wisconsin

SHEET TITLE: **ELECTRICAL SPECIFICATIONS**
 MODALITY TYPE: **OPTIMA MR430S**

THIS PLAN IS SUBMITTED TO SURVEY LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED APPARATUS. ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE AND THE LOCAL ELECTRICAL CODES. GE HEALTHCARE ACCEPTS NO LIABILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:
TYPICAL MR
8-234
 WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02

DATE: 18.Mar.14
 DRAWN BY: PMM
 CHECKED BY: TMS

REVISION HISTORY:

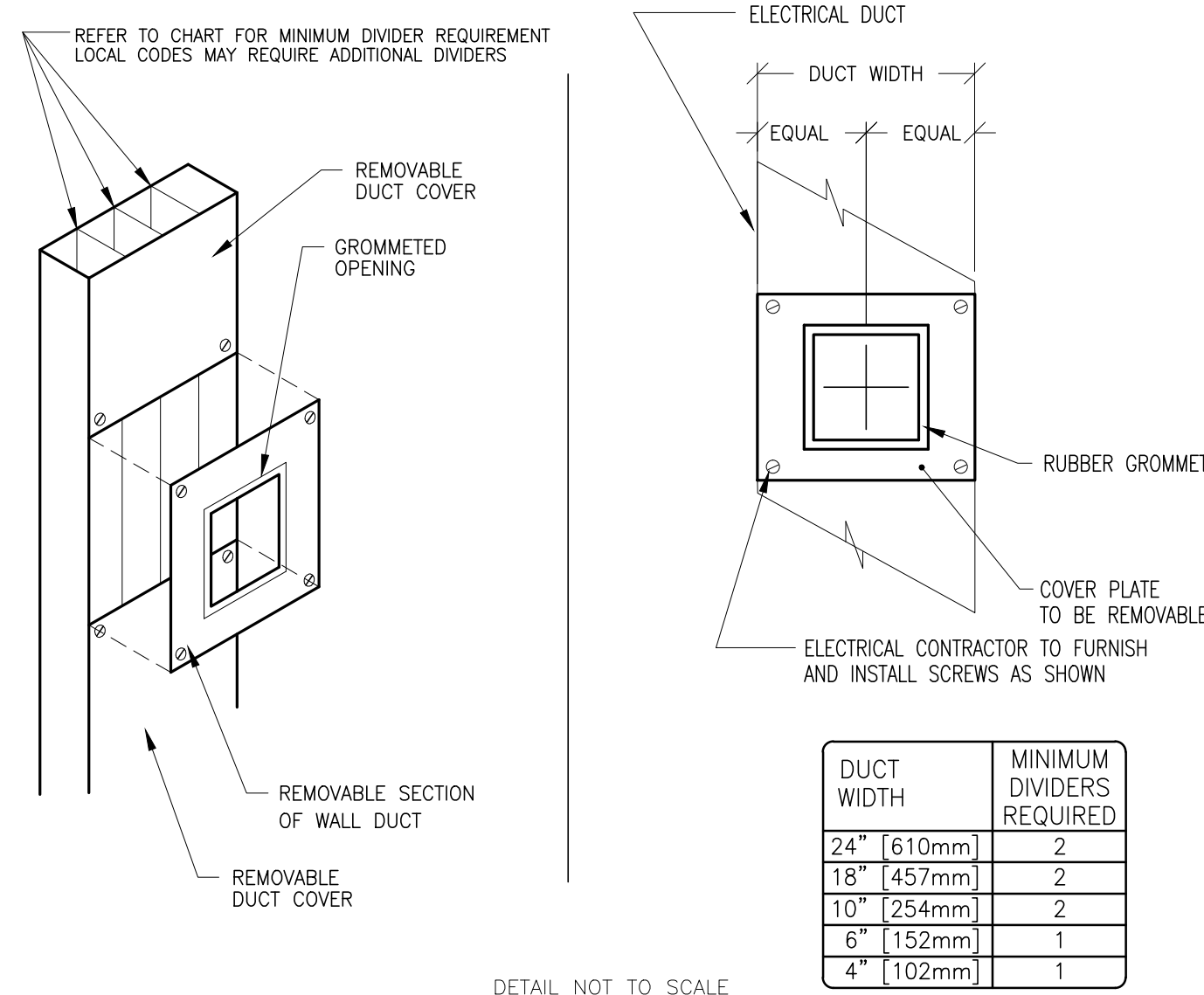
SHEET
E2

PIM R3 RQ - 1142108

ELECTRICAL DETAIL
VERTICAL WALL DUCT (TYPICAL)

ELEC-6

REV. DATE: 03/19/04

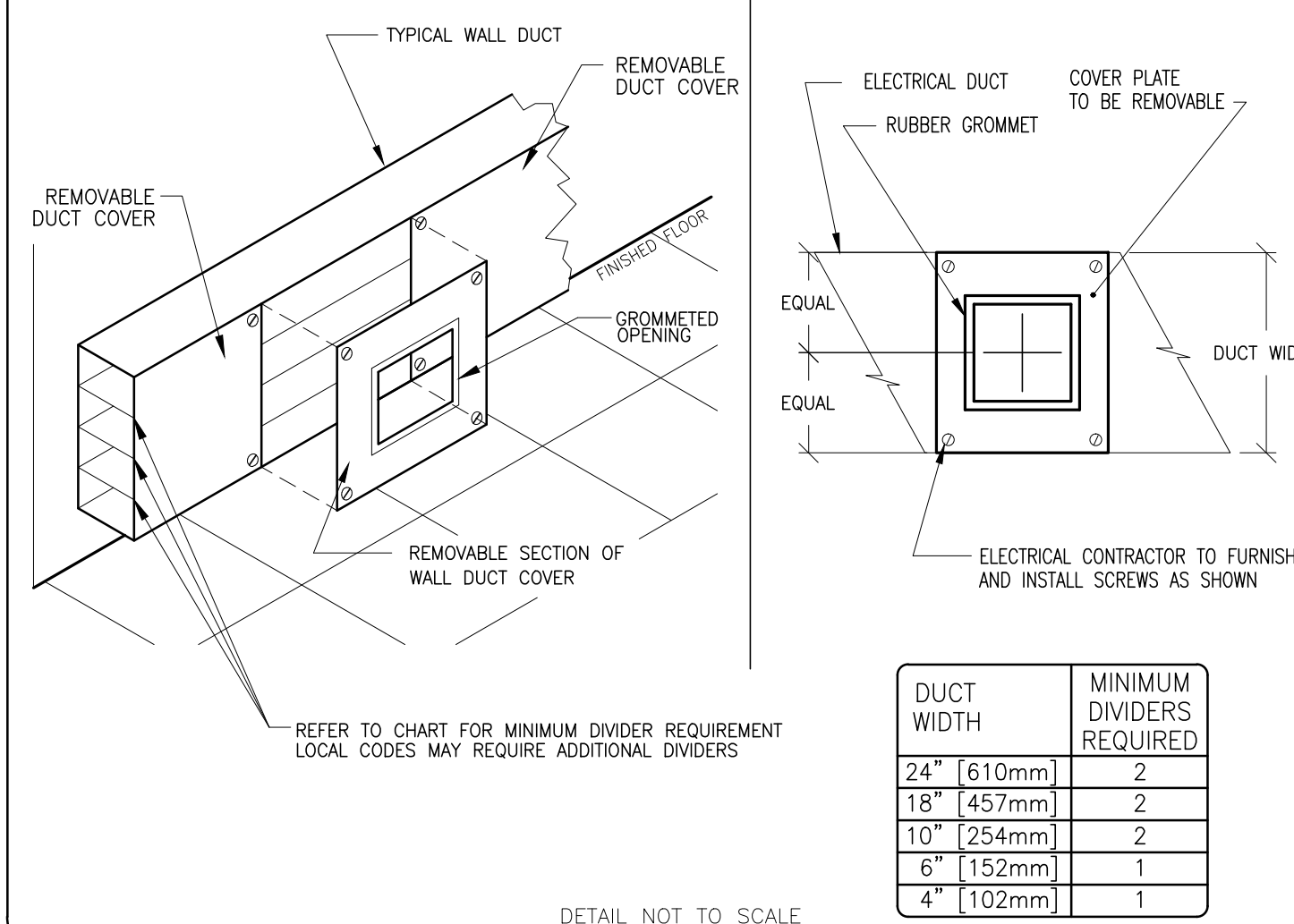


DETAIL NOT TO SCALE

ELECTRICAL DETAIL
HORIZONTAL WALL DUCT (TYPICAL)

ELEC-5

REV. DATE: 03/19/04

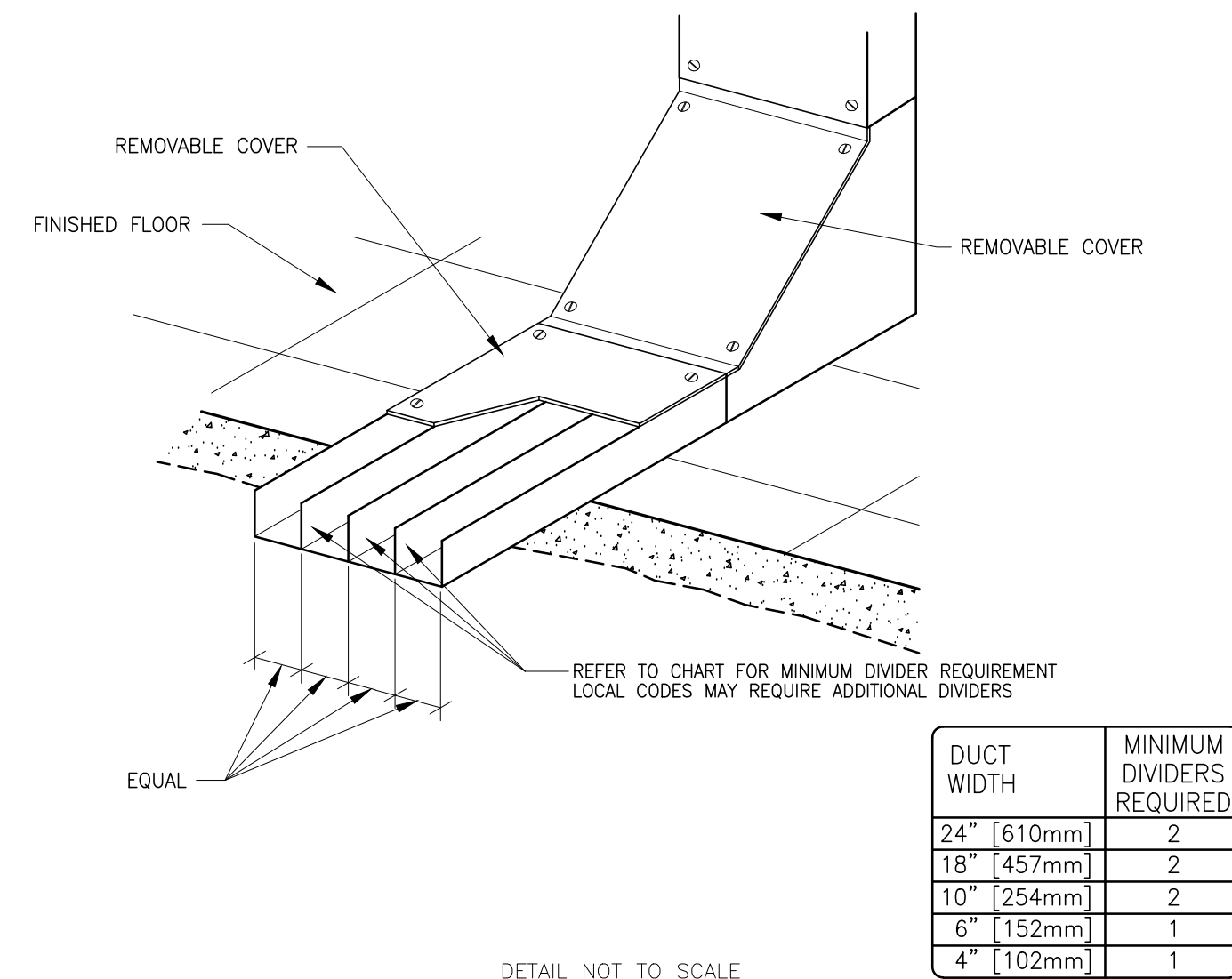


DETAIL NOT TO SCALE

ELECTRICAL DETAIL
SURFACE FLOOR DUCT (TYPICAL)

ELEC-14

REV. DATE: 4/02/04

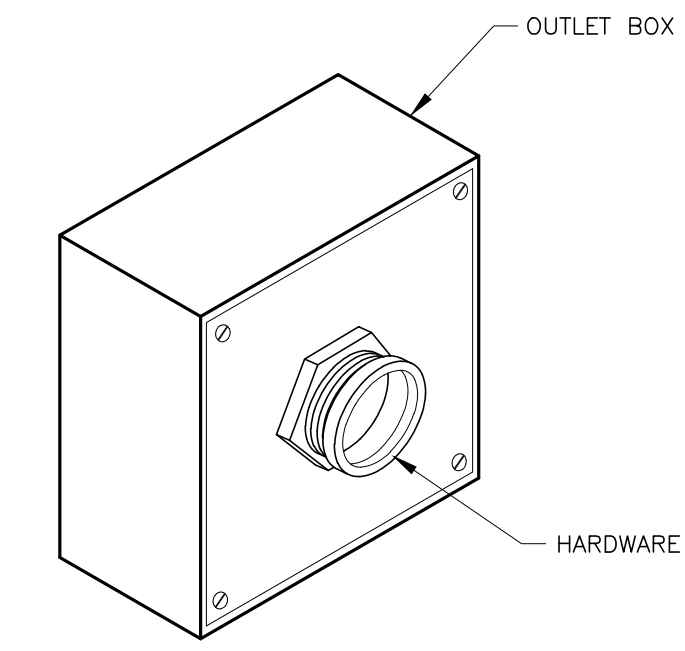


DETAIL NOT TO SCALE

ELECTRICAL DETAIL
BOX WITH COVERPLATE (TYPICAL)

ELEC-8

REV. DATE: 09/30/94



DETAIL NOT TO SCALE

SHEET TITLE: ELECTRICAL DETAILS
MODALITY TYPE: OPTIMA MR430s

THIS PLAN IS SUBMITTED TO SUGGEST LOCATION OF HEALTHCARE EQUIPMENT AND ASSOCIATED APPARATUS. ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL CONTRACTORS' BOARD OF STANDARDS AND PRACTICES. THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:
TYPICAL MR
8-234
WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02

DATE: 18.Mar.14
DRAWN BY: PMM
CHECKED BY: TMS

REVISION HISTORY:

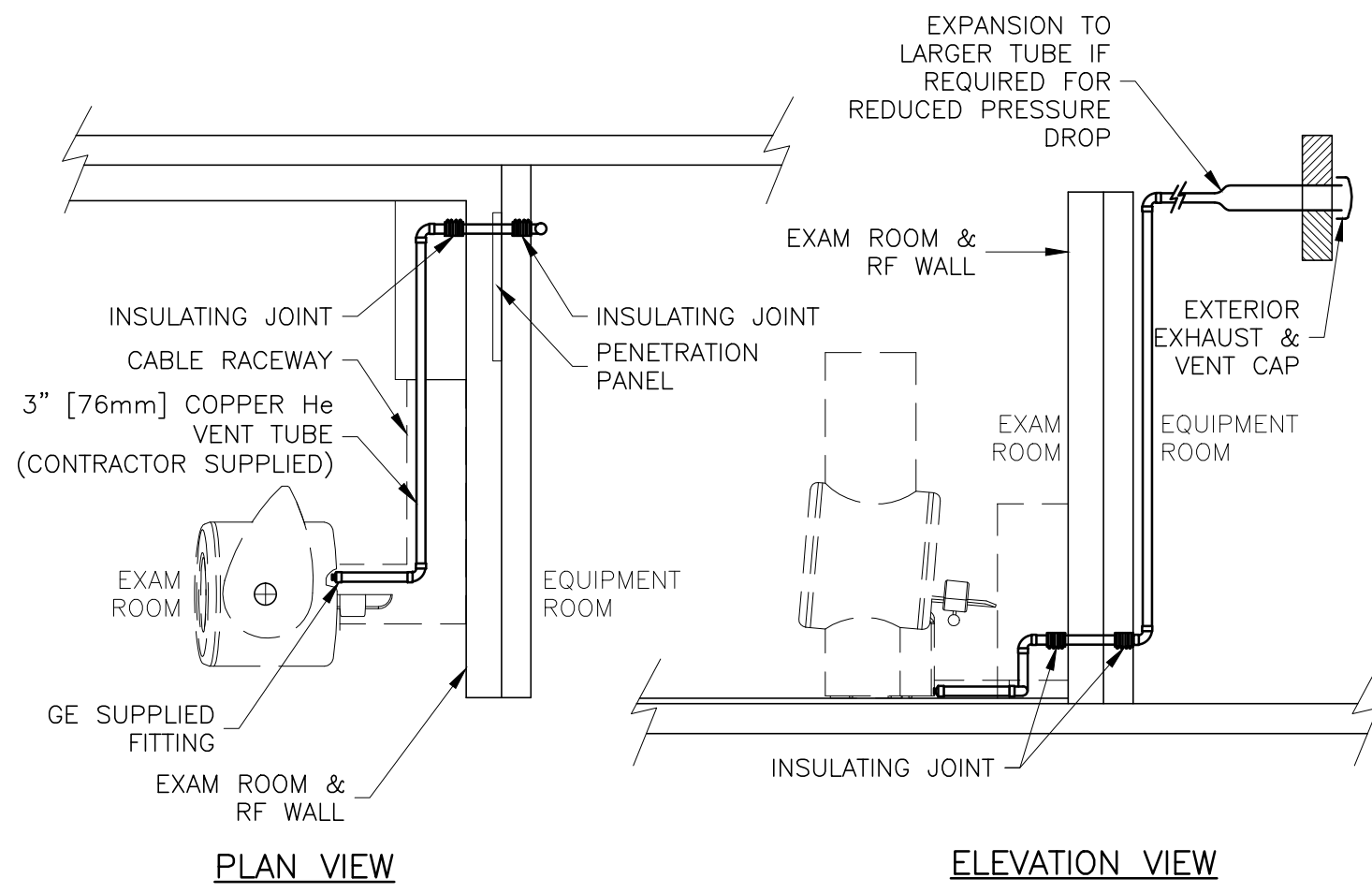
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E3

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RQ - 142108

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CRYOGENIC VENTING SYSTEM

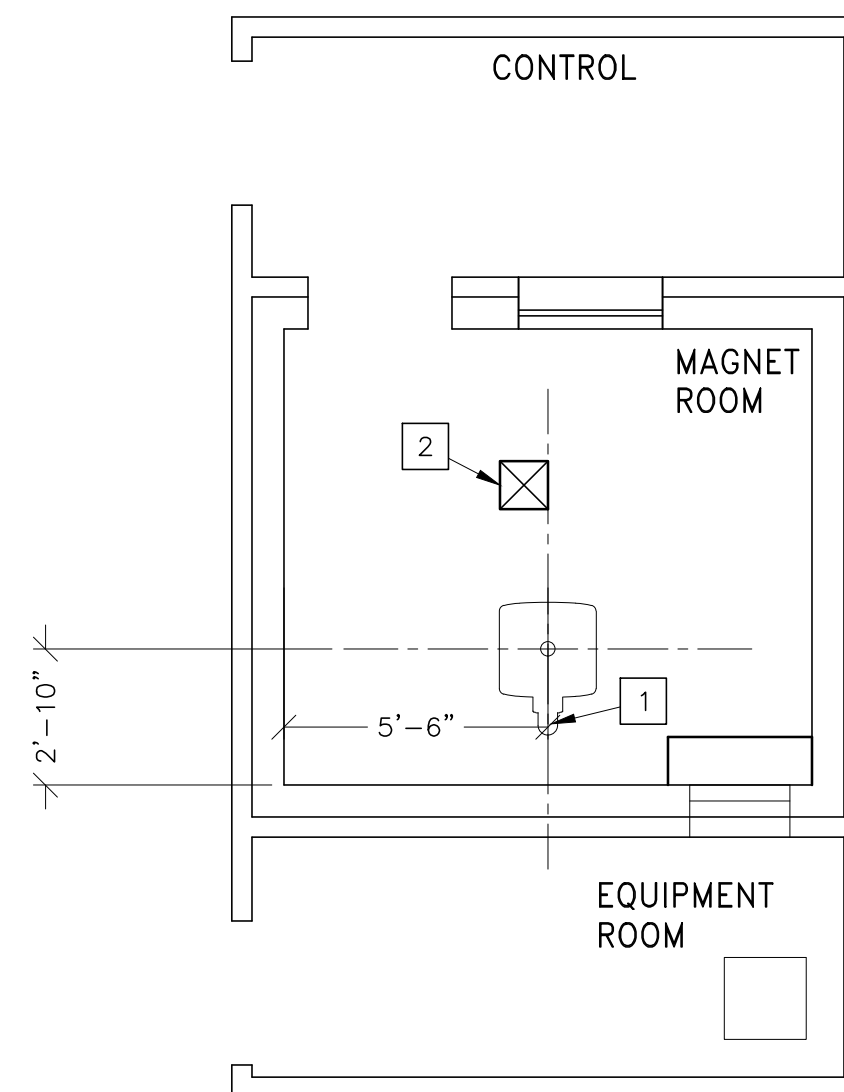
MECH-48
REV. DATE: 17.MAR.14



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

MECHANICAL/PLUMBING LAYOUT

RECOMMENDED CEILING HEIGHT = 8'-9"



MECHANICAL/PLUMBING ITEMS

CUSTOMER/CONTRACTOR SUPPLIED AND INSTALLED ITEMS

ITEM NO. ITEM DESCRIPTION (* INDICATES EXISTING)

- 1 A HELIUM VENT PIPE PENETRATION IS REQUIRED. THE SHIELD CONTRACTOR IS TO SUPPLY A 3 IN. (76 MM) WAVEGUIDE SECTION OF TUBE AND MECHANICALLY AND ELECTRICALLY SECURE THE TUBE TO THE SHIELD. REFER TO CHAPTER 9 OF MANUAL FOR MORE DETAILS ON HELIUM VENTING.
- 2 A MINIMUM 18 IN. x 18 IN. (305 MM x 305 MM) EMI-SHIELDED VENTILATION PANEL WITH HONEYCOMB CONSTRUCTION SHOULD BE INSTALLED IN THE CEILING.

MECHANICAL/PLUMBING NOTES

- o ALL PIPING, FITTINGS, SUPPORTS, HOSES, CLAMPS, VENTILATION SYSTEMS, ETC. ARE TO BE SUPPLIED AND INSTALLED BY THE CUSTOMER OR HIS CONTRACTORS.
- o FOR COMPLETE DESIGN AND REQUIREMENTS, SPECIFICATIONS AND GUIDELINES REFER TO THE PRE-INSTALLATION MANUAL:
MR SYSTEMS - SYSTEM COOLING, CRYOGEN VENTING, WAVEGUIDES AND EXHAUST VENTING.
CYCLOTRON SYSTEMS - CHEMISTRY LINES, GAS LINES, AND SYSTEM COOLING.
- o AN EMERGENCY WATER COOLING BACK-UP SUPPLY IS RECOMMENDED FOR CONTINUOUS CRYOGEN COMPRESSOR OPERATION.
 IF USING AN OPEN LOOP BACK-UP DESIGN, ENSURE A DRAIN IS PROVIDED.
 PLEASE REFER TO THE PRE-INSTALL MANUAL FOR OPTIONAL BACK-UP COOLANT SUPPLY REQUIREMENTS

SHEET TITLE: MECHANICAL LAYOUT
MODALITY TYPE: OPTIMA MR430s

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PROJECT TITLE:
TYPICAL MR
8-234
WAUKESHA, WISCONSIN

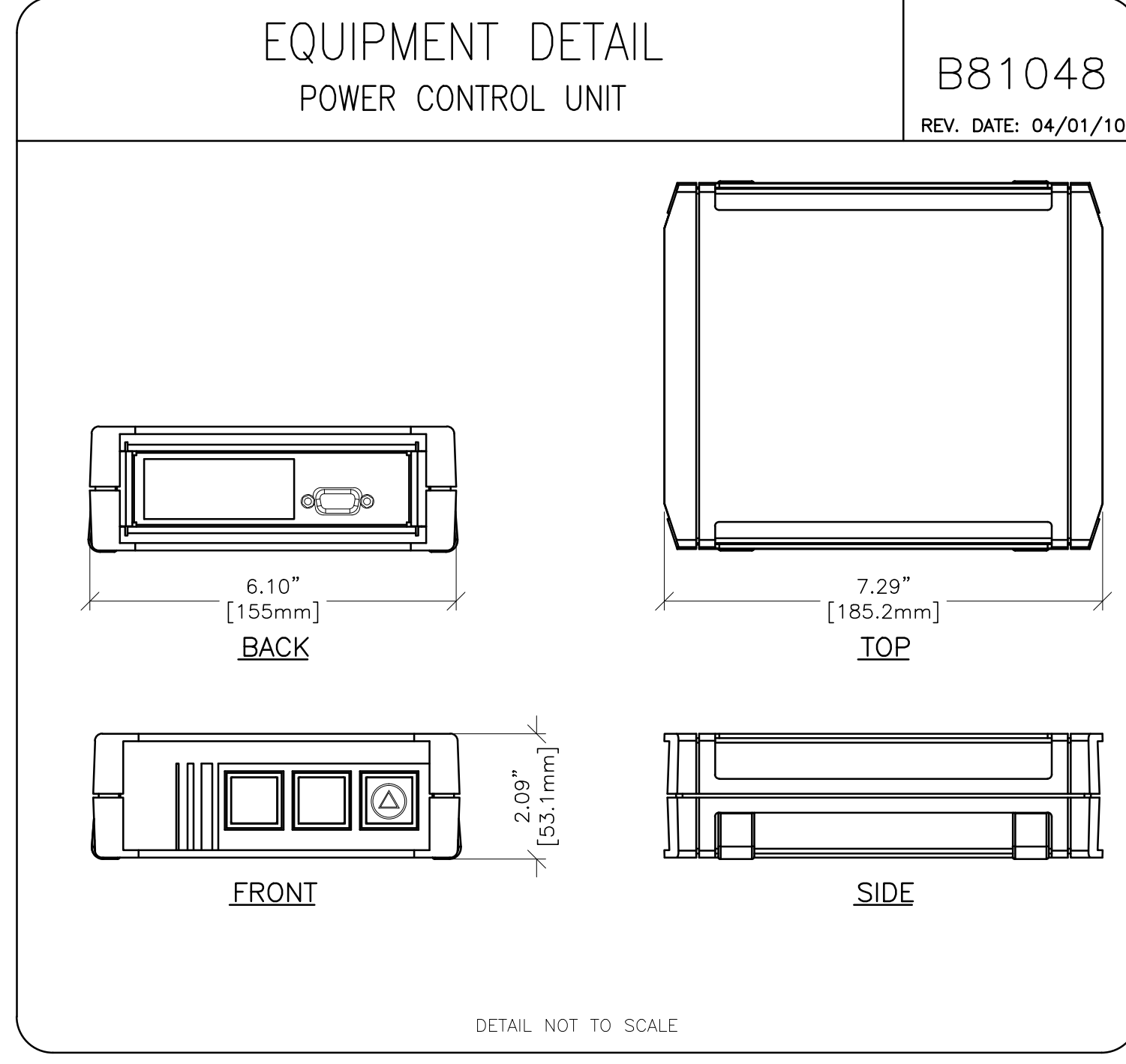
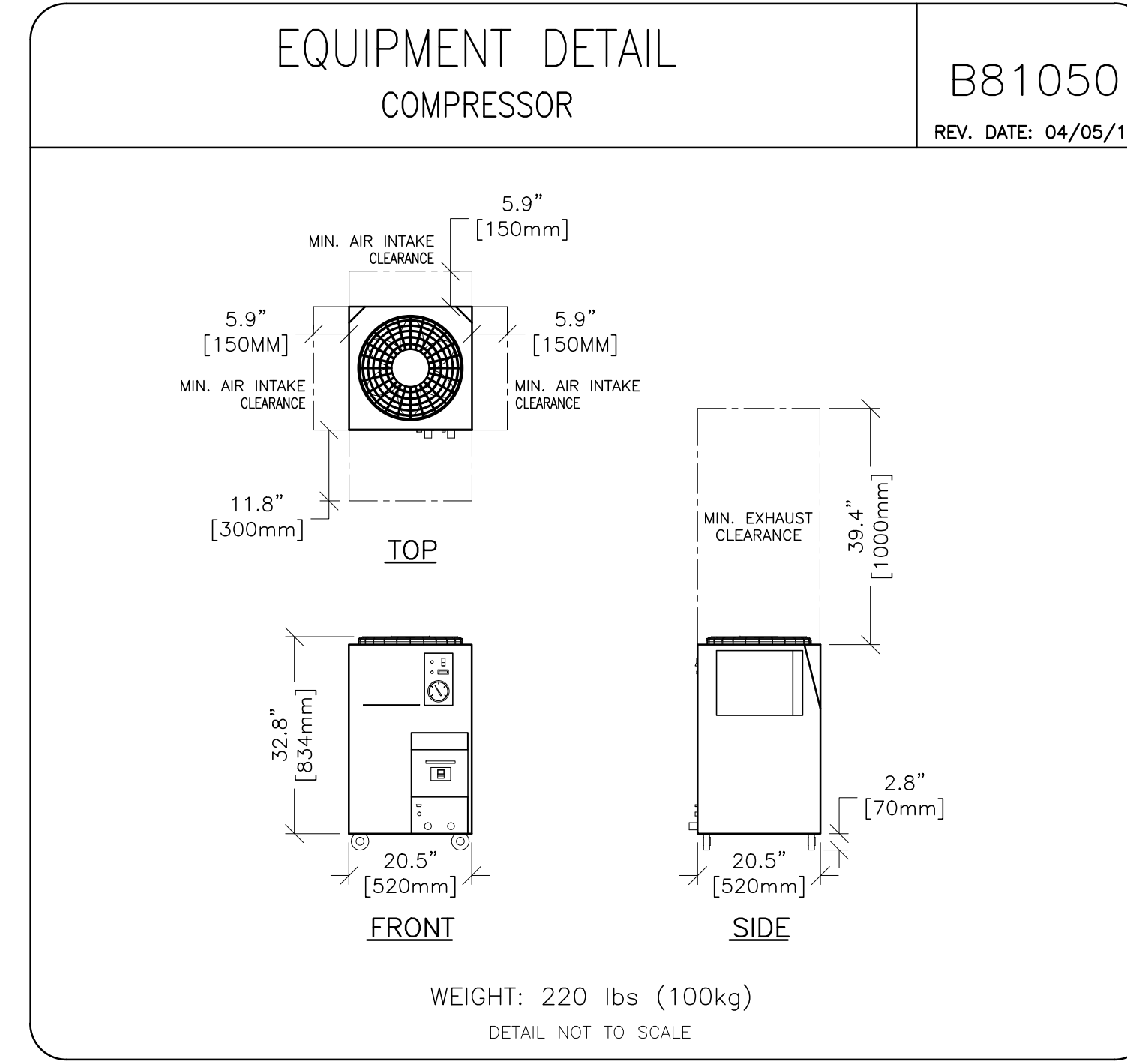
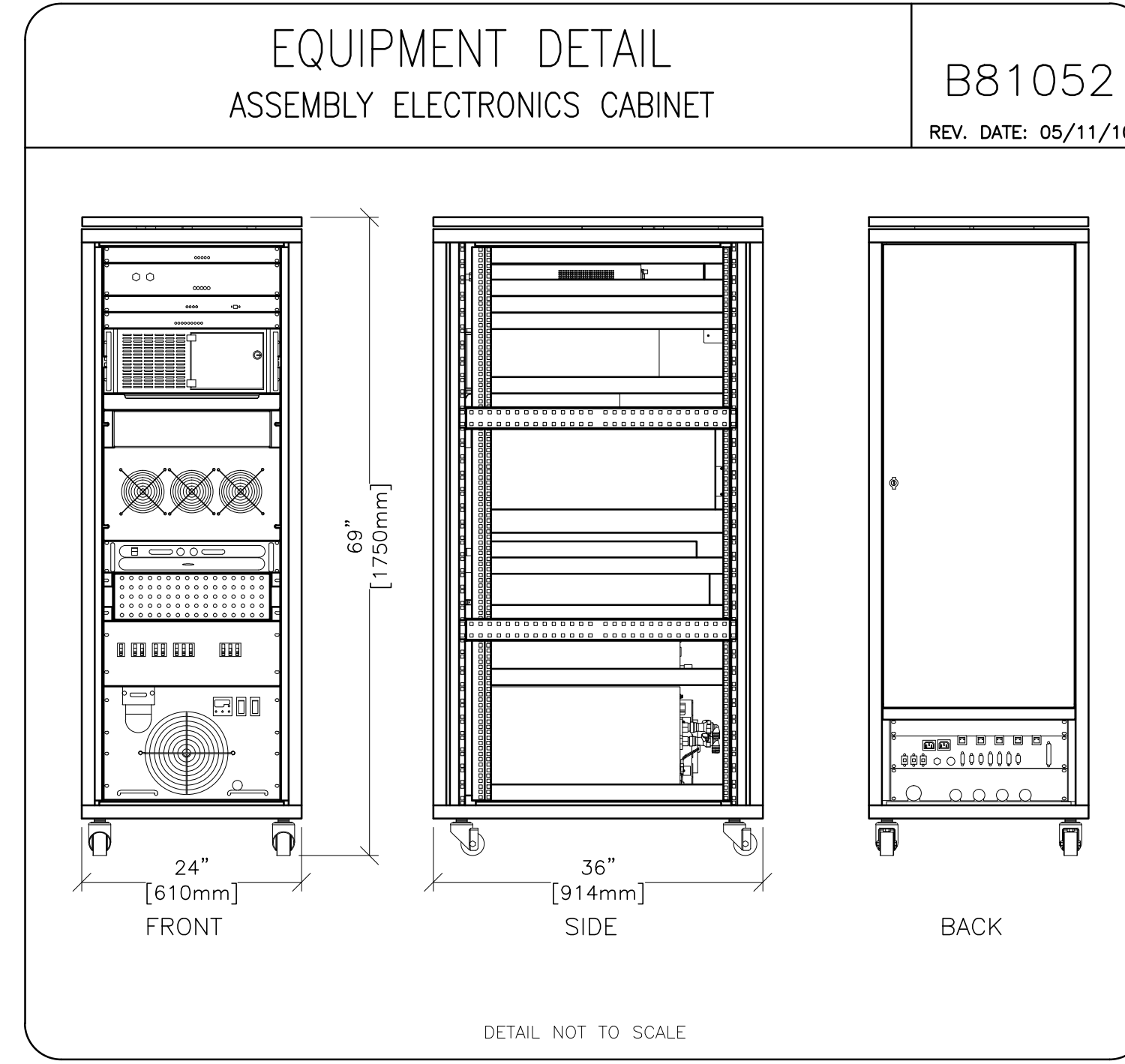
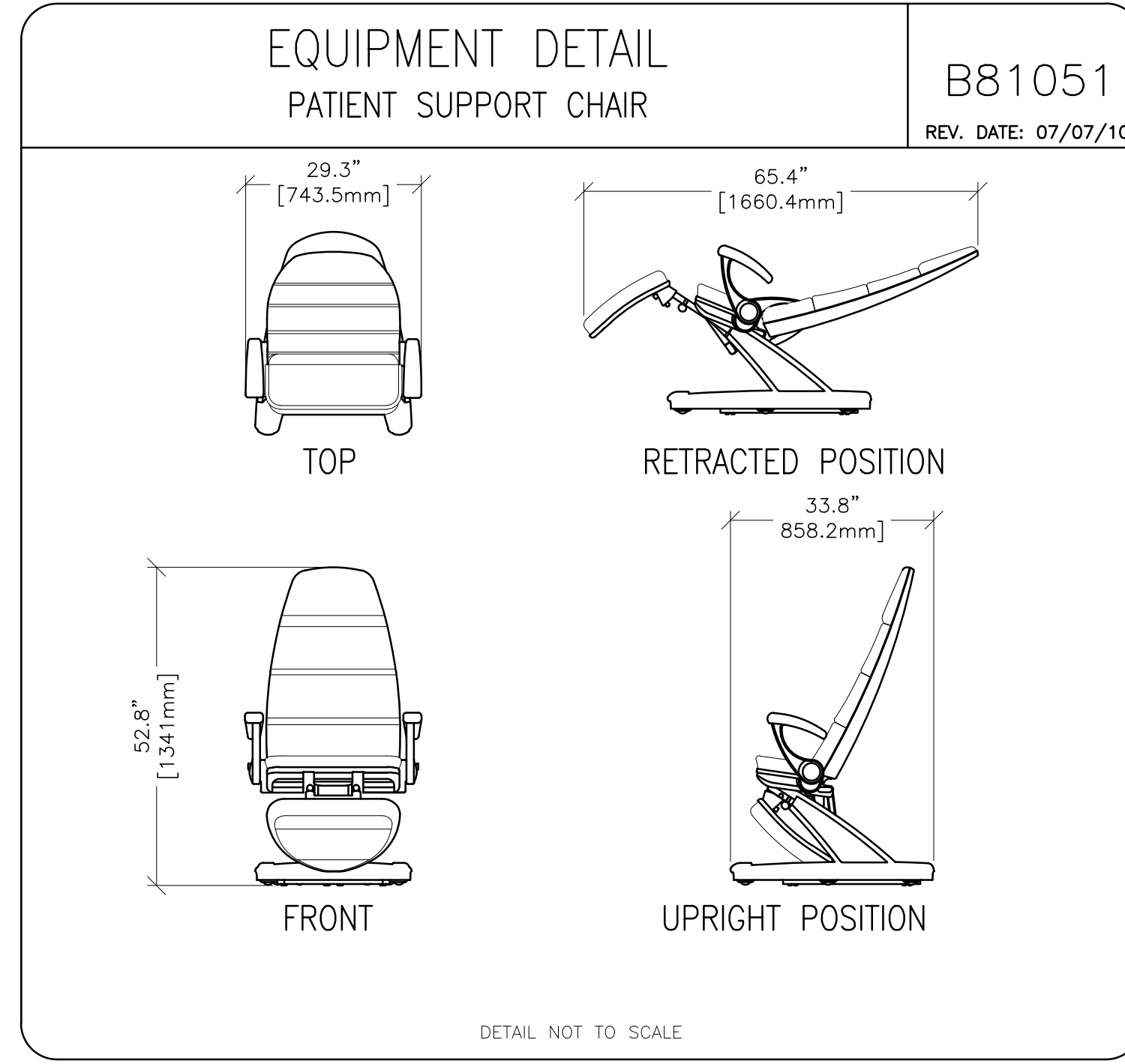
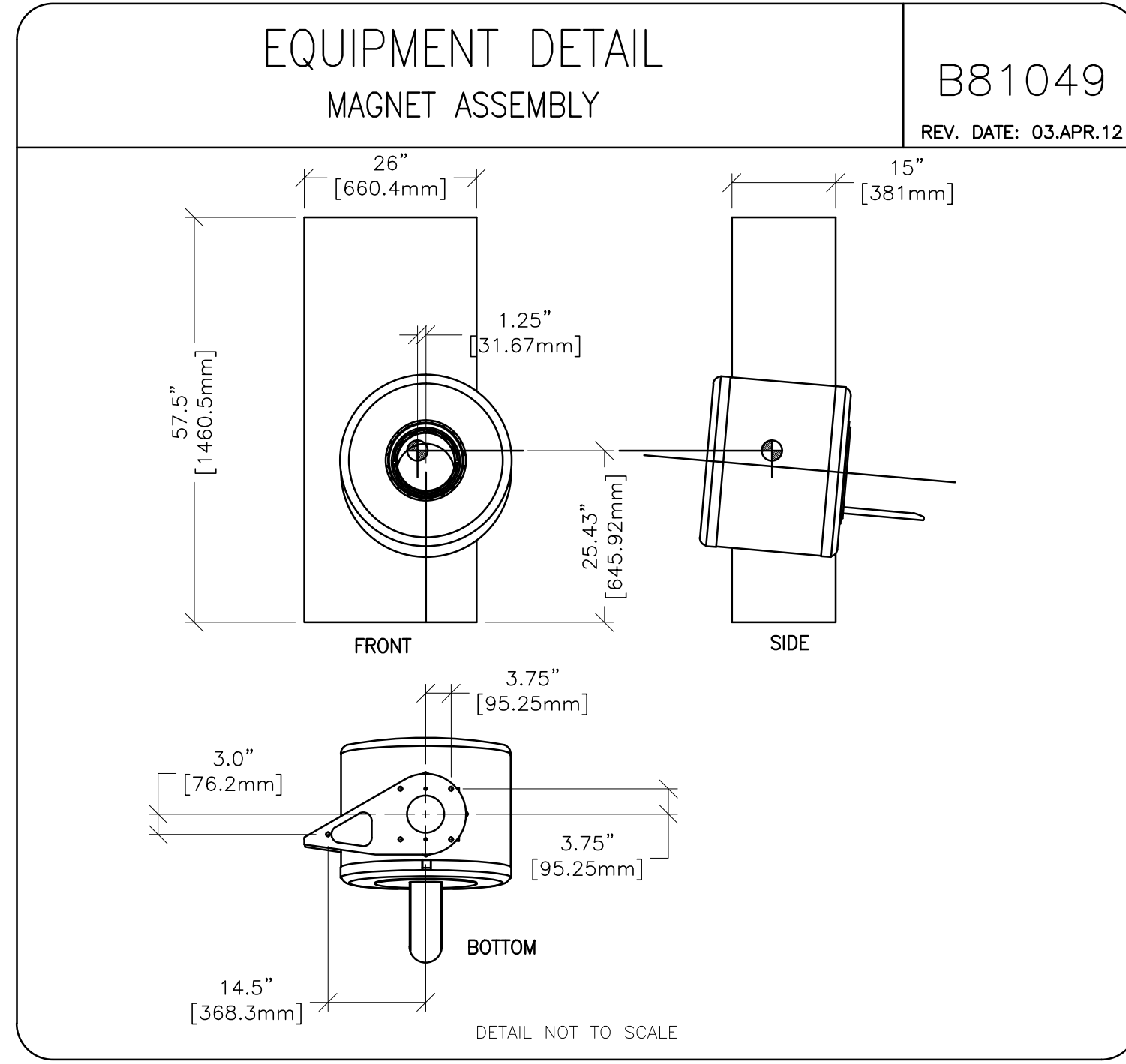
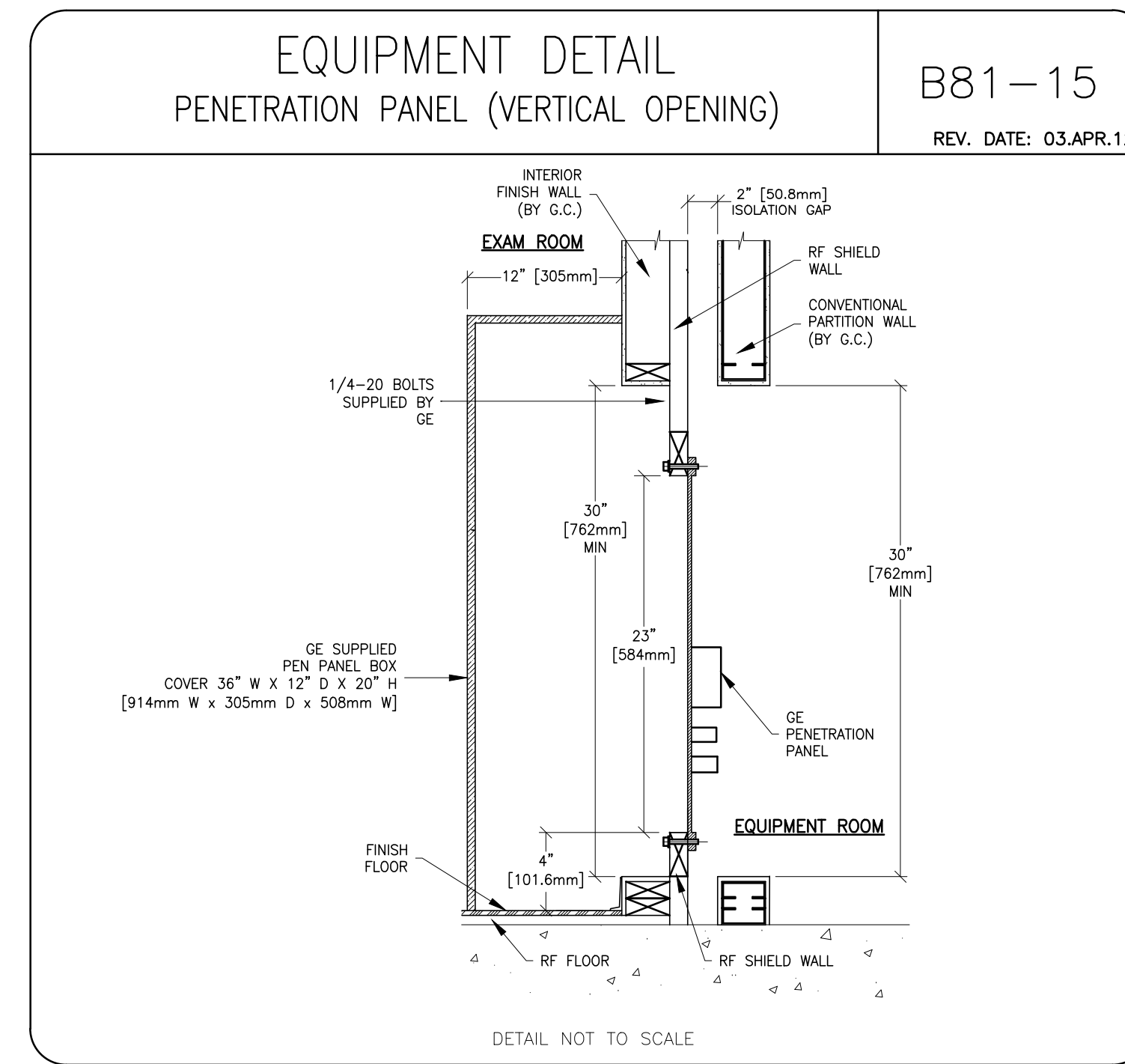
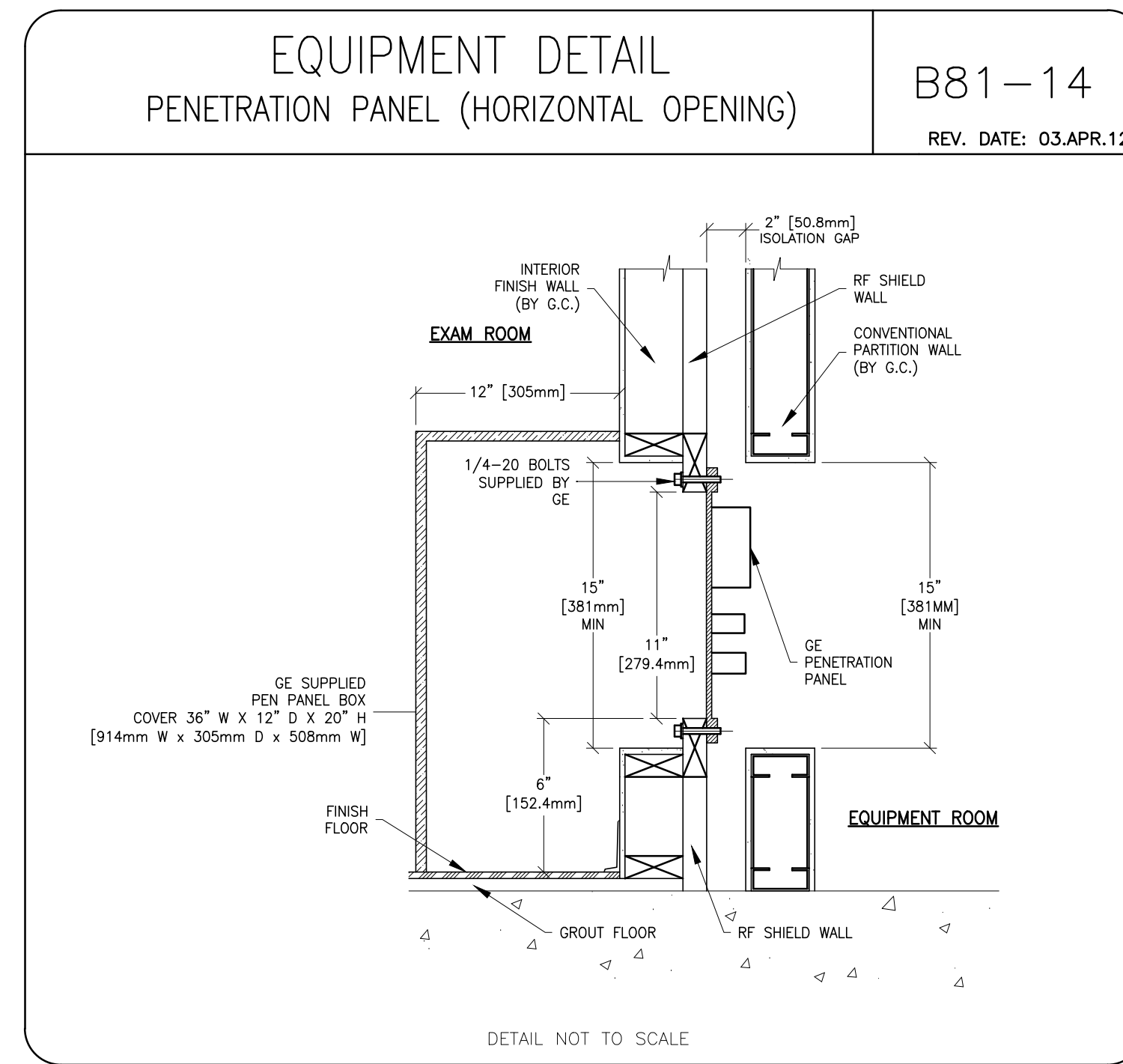
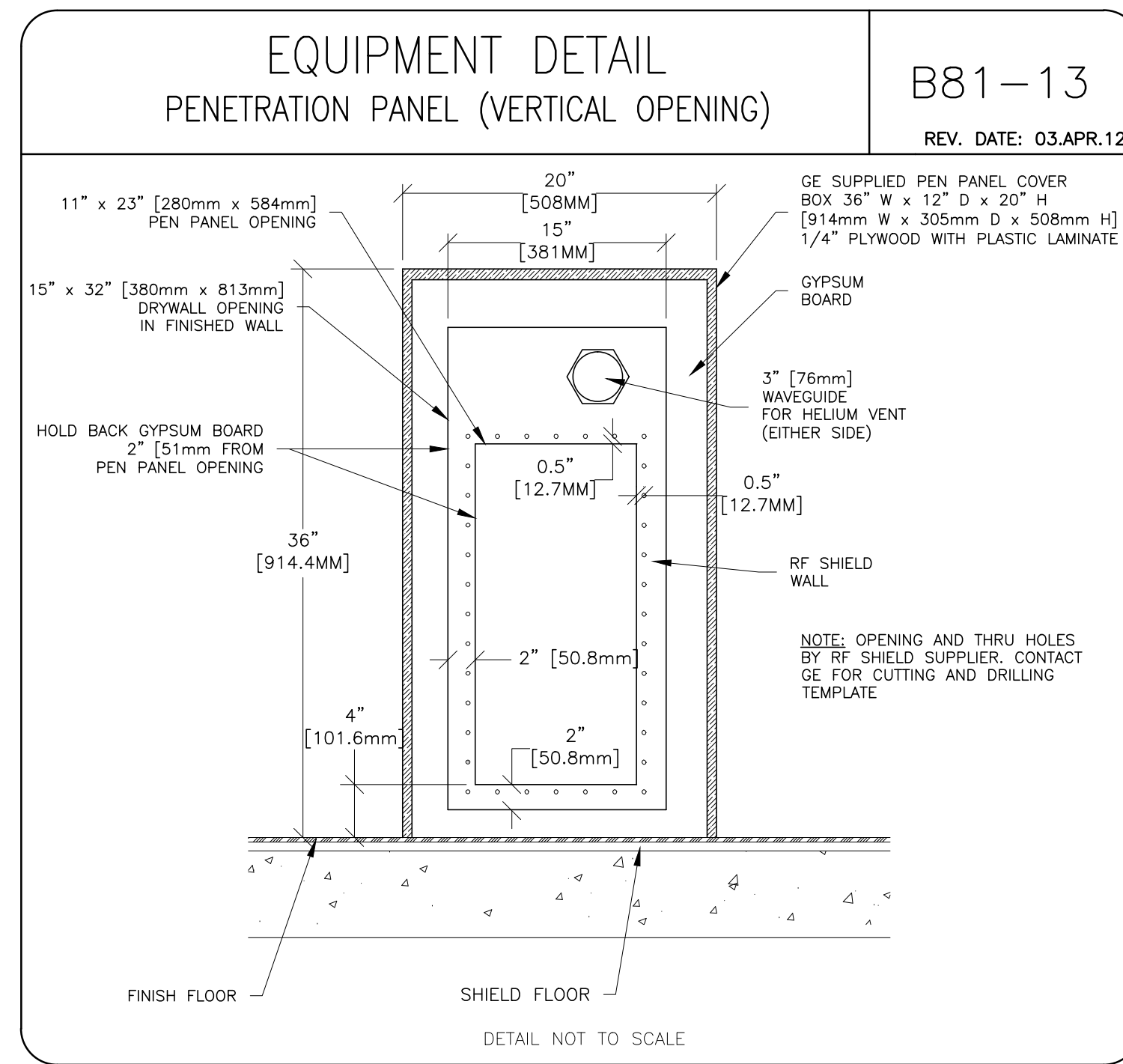
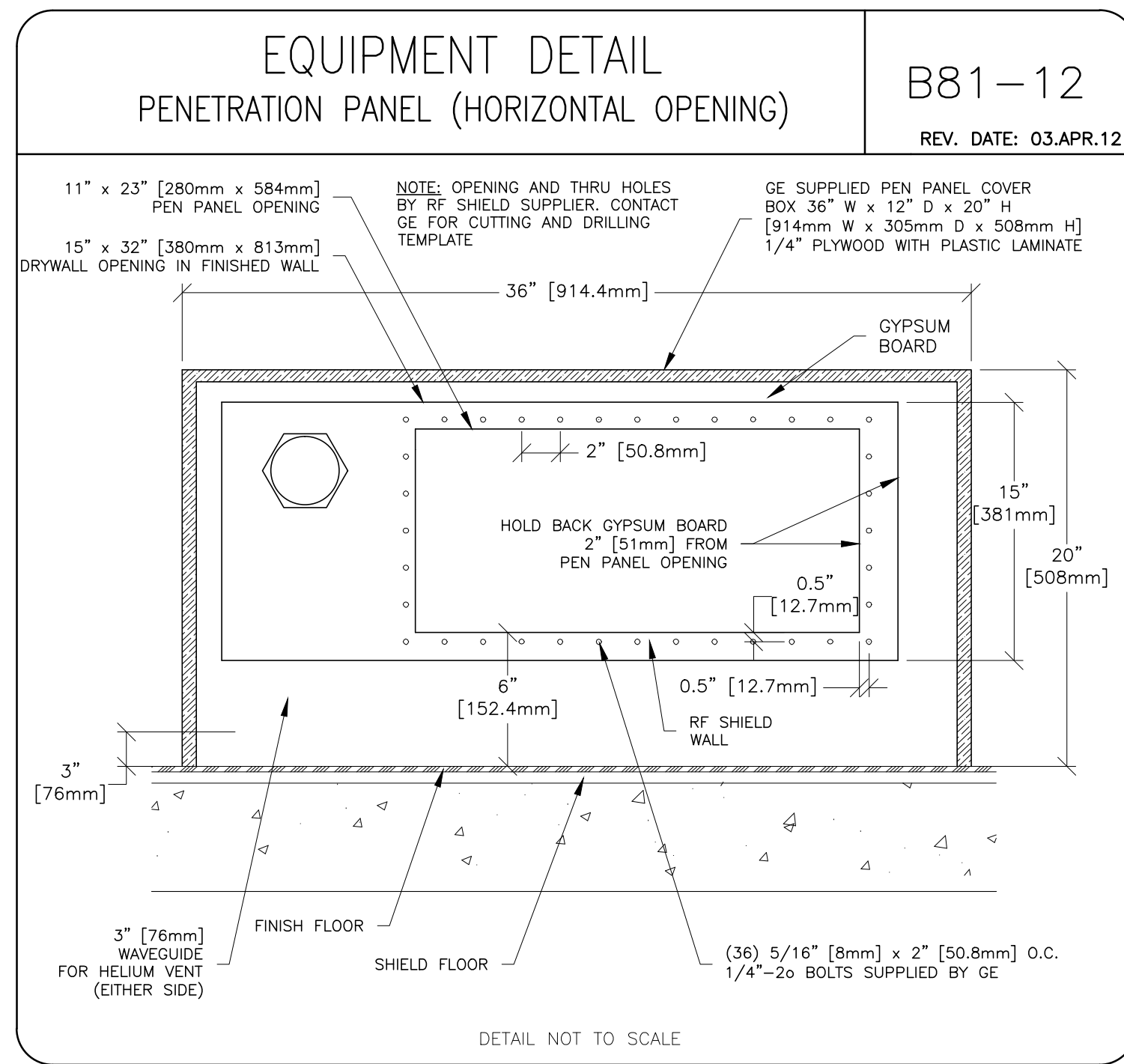
PROJECT	REVISION
8-234f	02
DATE:	18.MAR.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

SHEET
M1

GE Healthcare
Healthcare Project Implementation - Design Center
Milwaukee, Wisconsin

PIM R3
RQ - 142108



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Healthcare Project Implementation - Design Center
Milwaukee, WI

SHEET TITLE: EQUIPMENT DETAILS
MODALITY TYPE: OPTIMA MR430s

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PROJECT TITLE:
TYPICAL MR 8-234
WAUKESHA, WISCONSIN

PROJECT	REVISION
8-234f	02
DATE:	18.Mar.14
DRAWN BY:	PMM
CHECKED BY:	TMS

REVISION HISTORY:

SHEET
D1

PIM 83
RQ - 142108