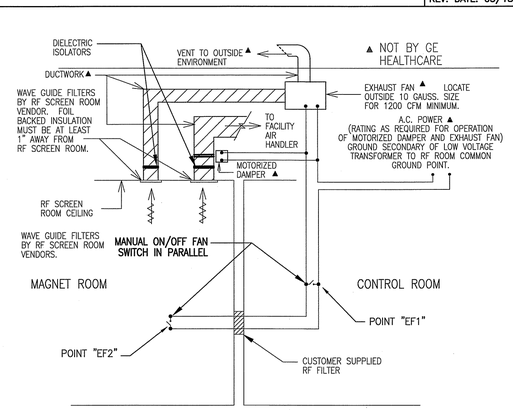
ELECTRICAL DETAIL
TYPICAL RF SCREEN ROOM EXHAUST FAN SET-UP

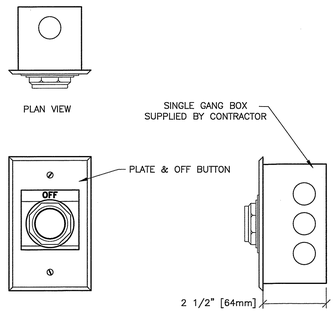
ELEC-55
REV. DATE: 03/18/05



(REQUIRED IN ADDITION TO CRYOGEN VENT)

ELECTRICAL DETAIL
EMERGENCY OFF BUTTON

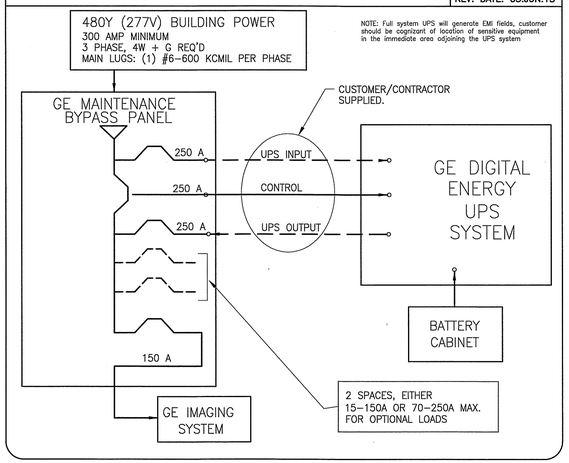
ELEC-16
REV. DATE: 05/14/09



DETAIL NOT TO SCALE

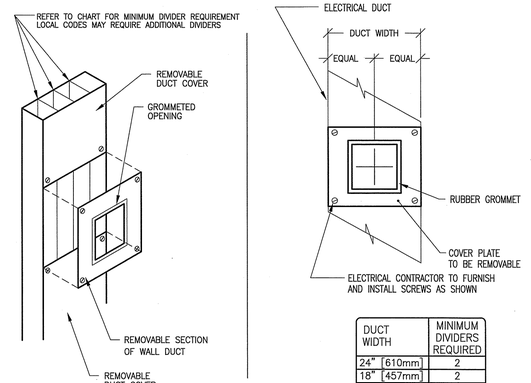
ELECTRICAL DETAIL
GEDE 150 KVA UPS SETUP

ELEC-119
REV. DATE: 05.JUN.13



ELECTRICAL DETAIL
VERTICAL WALL DUCT (TYPICAL)

ELEC-6
REV. DATE: 03/19/04

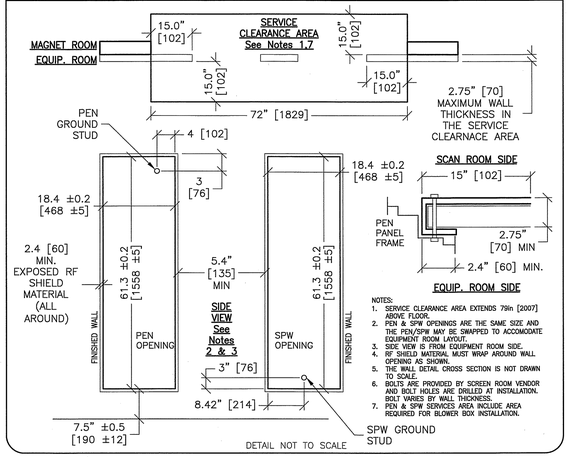


DUCT WIDTH		MINIMUM DIVIDERS REQUIRED
24"	610mm	2
18"	457mm	2
10"	254mm	2
6"	152mm	1
4"	102mm	1

DETAIL NOT TO SCALE

EQUIPMENT DETAIL
PENETRATION BRACKET INSTALL

ELEC-153
REV. DATE: 12/18/10



NOTES:
1. SERVICE CLEARANCE AREA EXTENDS 79in [2007] ABOVE FLOOR.
2. PEN & SPW OPENINGS ARE THE SAME SIZE AND THE PEN/SPW MAY BE SWAPPED TO ACCOMODATE EQUIPMENT ROOM LAYOUT.
3. SIDE VIEW IS FROM EQUIPMENT ROOM SIDE.
4. RF SHIELD MATERIAL MUST WRAP AROUND WALL OPENING AS SHOWN.
5. THE WALL DETAIL CROSS SECTION IS NOT DRAWN TO SCALE
6. BOLTS ARE PROVIDED BY SCREEN ROOM VENDOR AND BOLT HOLES ARE DRILLED AT INSTALLATION. BOLT VARIES BY WALL THICKNESS.
7. PEN & SPW SERVICES AREA INCLUDE AREA REQUIRED FOR BLOWER BOX INSTALLATION.

DETAIL NOT TO SCALE

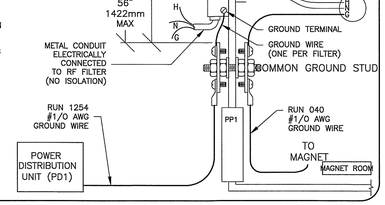
ELECTRICAL DETAIL
TYPICAL MAGNET ROOM GROUNDING

ELEC-166
REV. DATE: 05.JUN.13

ELECTRICAL LINE AND FILTER REQUIREMENTS
1. RF SHIELDED ROOM VENDOR AND ELECTRICAL CONTRACTOR MUST DESIGN AND INSTALL ALL ELECTRICAL LINES THROUGH THE RF SHIELDING
2. THE RF SHIELDED ROOM VENDOR MUST SUPPLY ELECTRICAL LINE FILTERS FOR ALL LINES THROUGH THE RF SHIELDING (EXCLUDING ELECTRICAL LINES THROUGH THE GE SUPPLIED PENETRATION PANELS) TO ENSURE COMPLIANCE WITH THE RF SHIELDED ROOM ATTENUATION REQUIREMENTS
3. ELECTRICAL LINE FILTERS MUST BE LOCATED OUTSIDE THE 200 GAUSS (20 MT) LINE

LIGHTING REQUIREMENTS
1. ALL LIGHTING FIXTURES AND ASSOCIATED COMPONENTS MUST MEET ALL RF SHIELDED ROOM AND RF GROUNDING REQUIREMENTS (E.G., TRACK LIGHTING IS NOT RECOMMENDED DUE TO POSSIBLE RF NOISE)
2. ALL REMOVABLE LIGHTING FIXTURES AND ASSOCIATED COMPONENTS MUST BE NON-MAGNETIC
3. ALL LIGHTING MUST USE DIRECT CURRENT (THE DC MUST HAVE LESS THAN 5% RIPPLE)
4. 300 LUX MUST BE PROVIDED AT THE FRONT OF THE MAGNET FOR PATIENT ACCESS AND ABOVE THE MAGNET FOR SERVICING
5. FLUORESCENT LIGHTING MUST NOT BE USED IN THE MAGNET ROOM
6. LIGHTING MUST BE ADJUSTED USING A DISCRETE SWITCH OR A VARIABLE DC LIGHTING CONTROLLER
7. SCR DIMMERS OR RHEOSTATS MUST NOT BE USED
8. DC LED LIGHTING MAY BE USED IF THE DC POWER CONVERTER IS LOCATED OUTSIDE THE MAGNET ROOM RF SHIELD
9. BATTERY CHARGERS (E.G., USED FOR EMERGENCY LIGHTING) MUST BE LOCATED OUTSIDE THE MAGNET ROOM
10. SHORT FILAMENT LENGTH BULBS ARE RECOMMENDED
11. LINEAR LAMPS ARE NOT RECOMMENDED DUE TO THE HIGH BURNOUT RATE

GROUNDING REQUIREMENTS
1. THE PENETRATION PANEL PEN WALL AND SECONDARY PEN WALL (SPW) ARE CONNECTED TO THE RF COMMON GROUND STUD WITH THE GE HEALTHCARE SUPPLIED GROUND CABLE (REFER TO ILLUSTRATION 3-172CHAPTER 4, PEN AND SPW WALL OPENING REQUIREMENTS)
2. ALL RF POWER FILTERS OVER 30V (INCOMMING) MUST BE LOCATED WITHIN 40 IN. (1016 MM) OF THE RF COMMON GROUND STUD
3. ALL POWER LINES INTO THE RF SHIELDED ROOM REQUIRE AN RF FILTER
4. ALL ELECTRICAL DEVICES (E.G., OUTLETS, LIGHT FIXTURES, ETC.) MUST HAVE A GROUND WIRE FROM DEVICE POWER SOURCE AND BE GROUNDED TO THE RF SHIELD AT THE RF COMMON GROUND STUD
5. RESISTANCE BETWEEN ANY TWO GROUNDED DEVICES MUST NOT EXCEED 0.1 OHM TO ENSURE EQUAL POTENTIAL GROUND SYSTEM WITHIN THE MAGNET ROOM (E.G., MGD TO PDU)
6. DO NOT GROUND NON-MR EQUIPMENT TO THE MR GROUND SYSTEM
7. ALL METALLIC PIPES (INCLUDING WATER, MEDICAL GAS, SPRINKLERS, ETC.) ENTERING THE RF SHIELD, EXCLUDING THE CRYOGENIC VENT AND FLOOR DRAINS, MUST BE LOCATED WITHIN 56 INCHES (1422 MM) OFTHE RF COMMON GROUND STUD
8. THE ILLUSTRATION BELOW SHOWS A TYPICAL GROUND LAYOUT

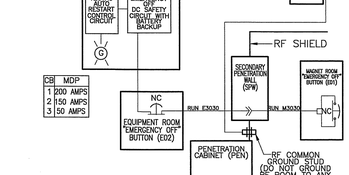


DETAIL NOT TO SCALE

ELECTRICAL DETAIL
PROTECTIVE DISCONNECT SETUP

ELEC-152
REV. DATE: 05.JUN.13

NOTE:
THE HEAT EXCHANGER CABINET (HEC) PROVIDES POWER TO THE CRYOCOOLER COMPRESSOR (CRY) WHICH MUST OPERATE 24 HOURS PER DAY, 7 DAYS PER WEEK TO MAXIMIZE PROPER UNINTERRUPTED MAGNET OPERATION.
RUNS E3030, M0009, M3030 AND E4002 ARE GE SUPPLIED CABLES. ALL OTHER WIRING IS CUSTOMER SUPPLIED.
TWO REMOTE FLUSH WALL MOUNTED EMERGENCY OFF BUTTONS ARE SUPPLIED WITH THE MDP.
MDP PROVIDES CIRCUIT BREAKERS FOR PDU (LOCATED IN THE POWER CABINET (PGR)) AND THE HEAT EXCHANGER CABINET (HEC).
ALL MDP OUTPUT CIRCUITS DROP OUT ON LOSS OF POWER. THE HEC CIRCUIT WILL AUTOMATICALLY RESTART UPON RESTORATION OF POWER. EMERGENCY OFF LOCKS OUT ALL CONTRACTORS.
GE MDP SHORT CIRCUIT CURRENT RATING IS 25,000 AMPERES AT 480 VAC.
GE MDP IS UL AND cUL LABELED.
ALL CIRCUITS REQUIRE GROUND WIRES.

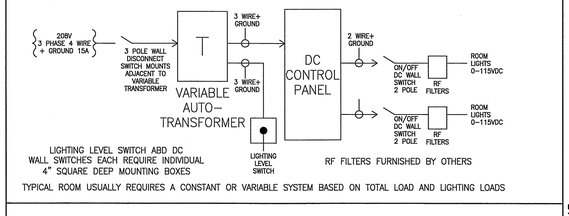


CB	MDP
1	200 AMPS
2	150 AMPS
3	50 AMPS

ELECTRICAL DETAIL
DC LIGHTING CONTROLLER SYSTEM DIAGRAM

ELEC-54
REV. DATE: 07/20/09

VARIABLE SYSTEMS (E4502SD/SF INCLUDE 3 POLE WALL DISCONNECT SWITCH, VARIABLE AUTO TRASNFORMER, DC CONTROL PANEL, LIGHTING LEVEL SWITCH, AND 2 DC RATED FLUSH WALL SWITCHES)

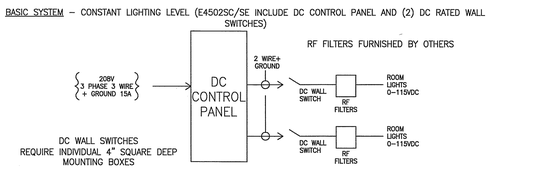


LIGHTING LEVEL SWITCH ABD DC WALL SWITCHES EACH REQUIRE INDIVIDUAL 4" SQUARE DEEP MOUNTING BOXES

RF FILTERS FURNISHED BY OTHERS

TYPICAL ROOM USUALLY REQUIRES A CONSTANT OR VARIABLE SYSTEM BASED ON TOTAL LOAD AND LIGHTING LOADS

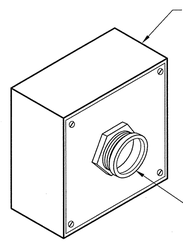
BASIC SYSTEM – CONSTANT LIGHTING LEVEL (E4502SC/SE INCLUDE DC CONTROL PANEL AND (2) DC RATED WALL SWITCHES)



DC WALL SWITCHES REQUIRE INDIVIDUAL 4" SQUARE DEEP MOUNTING BOXES

ELECTRICAL DETAIL
BOX WITH COVERPLATE (TYPICAL)

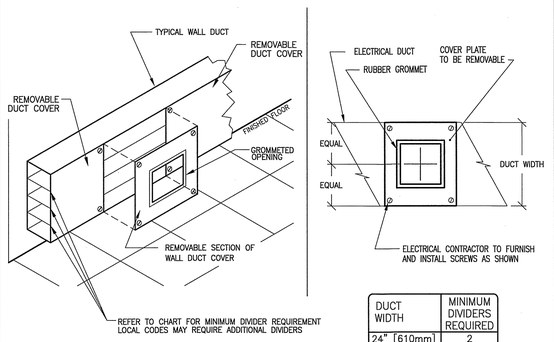
ELEC-8
REV. DATE: 09/30/94



DETAIL NOT TO SCALE

ELECTRICAL DETAIL
HORIZONTAL WALL DUCT (TYPICAL)

ELEC-5
REV. DATE: 03/19/04

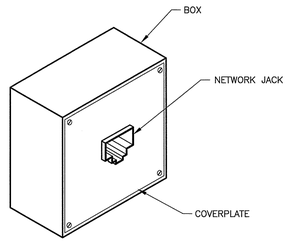


DUCT WIDTH		MINIMUM DIVIDERS REQUIRED
24"	610mm	2
18"	457mm	2
10"	254mm	2
6"	152mm	1
4"	102mm	1

DETAIL NOT TO SCALE

ELECTRICAL DETAIL
BOX WITH COVERPLATE AND NETWORK JACK

ELEC-83
REV. DATE: 10/06/98

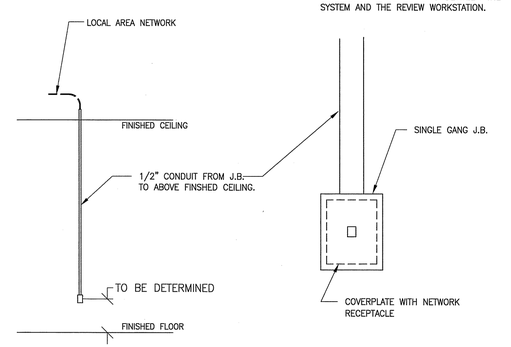


DETAIL NOT TO SCALE

ELECTRICAL DETAIL
NETWORK CONNECTION (TYPICAL)

ELEC-84
REV. DATE: 03/06/04

○ FOR NUCLEAR SYSTEMS A DIRECT NETWORK CONNECTION IS TO BE MADE BETWEEN THE SYSTEM AND THE REVIEW WORKSTATION.



DETAIL NOT TO SCALE

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED

GE Healthcare
Healthcare Project Implementation – Design Center
Wisconsin
Milwaukee,

SHEET TITLE: ELECTRICAL DETAILS
MODALITY TYPE: DISCOVERY MR 750w GEM

THIS PLAN IS SUBMITTED TO SUGGEST 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 TO ACTUAL CONSTRUCTION PURPOSES, HOWEVER, AND THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE: MAINE MEDICAL CENTER
PORTLAND, MAINE

This drawing is based on Sketch No.: 13nef045
PIM R4
RQ – 137547

PROJECT	REVISION
132054	01

DATE: 02.Jul.13
DRAWN BY: MCK
CHECKED BY: JGA
GON NO: 4108424
GON DT: 27.Jun.13

REVISION HISTORY:
KMR – 26.Aug.13
CHECKED BY: PMM

SHEET
E3