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THIS DRAWING SET IS
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			<div>Typical</div> <div>----</div> <div>----</div>					
A	28/Sep/2021	First issue drawing						
REV	DATE	MODIFICATIONS						
01 - C1 - Cover Sheet		10 - M1 - HVAC			<div> GE Healthcare</div> <div>----</div> <div>----</div> <div>----</div>			
02 - C2 - Disclaimer - Site Readiness Checklist		11 - E1 - Electrical Notes						
03 - A1 - General Notes		12 - E2 - Electrical Layout						
04 - A2 - Equipment Layout		13 - E3 - Electrical Elevations						
05 - A3 - Equipment Dimensions		14 - E4 - Power Requirements						
06 - A4 - Delivery		15 - E5 - Electrical Details - Interconnect						
07 - S1 - Structural Notes								
08 - S2 - Structural Layout								
09 - S3 - Structural Details (1)								
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								
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A3	1/4"=1'-0"	EN-NUC-TYP-MYOSPECT-WEB.DWG				12/Nov/2021		01/15

DISCLAIMER

GENERAL SPECIFICATIONS

- GE is not responsible for the installation of developers and associated equipment, lighting, cassette trays and protective screens or derivatives not mentioned in the order.
- The final study contains recommendations for the location of GE equipment and associated devices, electrical wiring and room arrangements. When preparing the study, every effort has been made to consider every aspect of the actual equipment expected to be installed.
- The layout of the equipment offered by GE, the dimensions given for the premises, the details provided for the pre-installation work and electrical power supply are given according to the information noted during on-site study and the wishes expressed by the customer.
- The room dimensions used to create the equipment layout may originate from a previous layout and may not be accurate as they may not have been verified on site. GE cannot take any responsibility for errors due to lack of information.
- Dimensions apply to finished surfaces of the room.
- Actual configuration may differ from options presented in some typical views or tables.
- If this set of final drawings has been approved by the customer, any subsequent modification of the site must be subject to further investigation by GE about the feasibility of installing the equipment. Any reservations must be noted.
- The equipment layout indicates the placement and interconnection of the indicated equipment components. There may be local requirements that could impact the placement of these components. It remains the customer's responsibility to ensure that the site and final equipment placement complies with all applicable local requirements.
- All work required to install GE equipment must be carried out in compliance with the building regulations and the safety standards of legal force in the country concerned.
- These drawings are not to be used for actual construction purposes. The company cannot take responsibility for any damage resulting therefrom.

CUSTOMER RESPONSIBILITIES

- It is the responsibility of the customer to prepare the site in accordance with the specifications stated in the final study. A detailed site readiness checklist is provided by GE. It is the responsibility of the customer to ensure all requirements are fulfilled and that the site conforms to all specifications defined in the checklist and final study. The GE Project Manager of Installation (PMI) will work in cooperation with the customer to follow up and ensure that actions in the checklist are complete, and if necessary, will aid in the rescheduling of the delivery and installation date.
- Prior to installation, a structural engineer of record must ensure that the floor and ceiling is designed in such a way that the loads of the installed system can be securely borne and transferred. The layout of additional structural elements, dimensioning and the selection of appropriate installation methods are the sole responsibility of the structural engineer. Execution of load bearing structures supporting equipment on the ceiling, floor or walls are the customer's responsibility.

RADIO-PROTECTION

- Suitable radiological protection must be determined by a qualified radiological physicist in conformation with local regulations. GE does not take responsibility for the specification or provision of radio-protection.

THE UNDERSIGNED, HEREBY CERTIFIES THAT I HAVE READ AND APPROVED THE PLANS IN THIS DOCUMENT.		
DATE	NAME	SIGNATURE

GLOBAL SITE READINESS CHECKLIST (DI)

DOC1809666 Rev. 7

Site Ready Checks at Installation
EHS Site Requirements
Overall access route to the scan room free from obstruction / high hazards.
Enough space to store tools, equipment, parts, install waste and the general area free from obstruction and trip hazards.
Enough necessary facilities for the GE employees available.
No 3rd parties working in the area that may affect the safety of the installation activity.
Area free from any chemical, gas, dust, welding fume exposure and has painting been completed and dry.
All emergency routes identified, signed and clear from obstruction.
Accessible single source lockable panel that LOTO can be applied to for GE equipment installation (MDP and/or PDU).
There are no other conditions or hazards that you have observed or have been made aware of by the customer or contractors on site.
Required for Mechanical Install start
Room dimensions, including ceiling height, for all Exam, Equipment/Technical & Control rooms meets GE specifications.
Ceiling support structure, if indicated on the GE drawing, is in the correct location and at the correct height according to the Original Equipment Manufacturer specifications.
Levelness and spacing has been measured, and is ready for the installation of any GE supplied components.
Overhead support Structure (unistrut) has been confirmed with customer/contractor to meet required GE provided criteria.
Finished ceiling is installed. If applicable ceiling tiles installed per PMI discretion.
Floor levelness/flatness is measured and within tolerance, and there are no visible defects per GEHC specifications.
Entry door threshold meets PIM requirement
Floor Strength and thickness have been discussed with customer/contractor and they have confirmed GE requirements are met.
Rooms that will contain equipment, including staging areas if applicable, are construction debris free. Precautions must be taken to prevent debris from entering rooms containing equipment.
Cable ways (floor/wall/ceiling/Access Flooring) are available for installation of GE cables are of correct length and diameter.
Cable ways routes per GE Final drawings and cable access openings areas installed at a time determined by GEHC PM. Surface floor duct can be installed at time of system installation.
Adequate room illumination installed and working.
Customer supplied countertops where GE equipment will be installed are in place.
Nuclear Medicine systems levelness measurement survey must be provided to GE prior the delivery.
Required for Calibration start
HVAC systems Installed, and the site meets minimum environmental operational system requirements.
System power & grounding (PDB/MDP) is available as per GE specifications.
System power & grounding (PDB/MDP) is installed at point of final connection and ready to use. Lock Out Tag Out is available.
PMI to confirm all feeder wires and breaker are size appropriately. EPO installed if needed.
PMI to confirm with electrician all power and signal cables are well terminated ensuring there are no loose connections.
Network outlets installed.
Computer network available and working.
Site has license for using/importing radioactive sources and a Hot Lab is available. Radioactive Sources should be available for system calibration during installation.
Lead doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotection regulatory approval for installation obtained.

Note: The details shown here are only an extract from DOC1809666. For the complete document please contact your PMI.

ENVIRONMENT

ALTITUDE

- Operating altitude: from -150 m [-492 ft] to 3000 m [9,843 ft].

MAGNETIC FIELD SPECIFICATIONS

- In order to avoid interference on the system, the static field limits from the surrounding environment must be less than 1 Gauss in both the scan and the operator rooms.
- The ambient static magnetic field in the system location must be less than 1 Gauss.
- The ambient AC magnetic fields must be below 0.01 Gauss peak.

MAXIMUM GANTRY AUDIBLE NOISE LEVEL

- The system creates acoustic noise. In compliance with IEC 601-1-1 standard the measured noise (at 1 m [3.3 ft] distance away from the system) is less than 70 db. It is recommended that the wall and ceiling surface is of a sound dampening material to avoid noise reverberation and amplification.

VIBRATION SPECIFICATIONS

- The system components are sensitive to vibration in the frequency range of 0.5 to 20 Hz, depending on the amplitude of the vibration. It is the customer’s responsibility to contract a vibration consultant or qualified engineer to verify that these specifications are met and implement an appropriate solution.
- To minimize vibrations, the system must be installed on a solid floor, as far as possible from vibration sources (parking lots, roadways, subways, heliports, trains, hallways, elevators, hospital power plants... etc).

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;
 - Secure area for equipment,
 - Power for drills and other test equipment,
 - Capability for image analysis,
 - Restrooms.
- Provide for refuse removal and disposal (e.g. crates, cartons, packing)
- For CT, MR, PET/CT, and SPECT systems it is required to minimize vibrations within the scan room. 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 vibration specifications.

RADIOACTIVE ISOTOPES

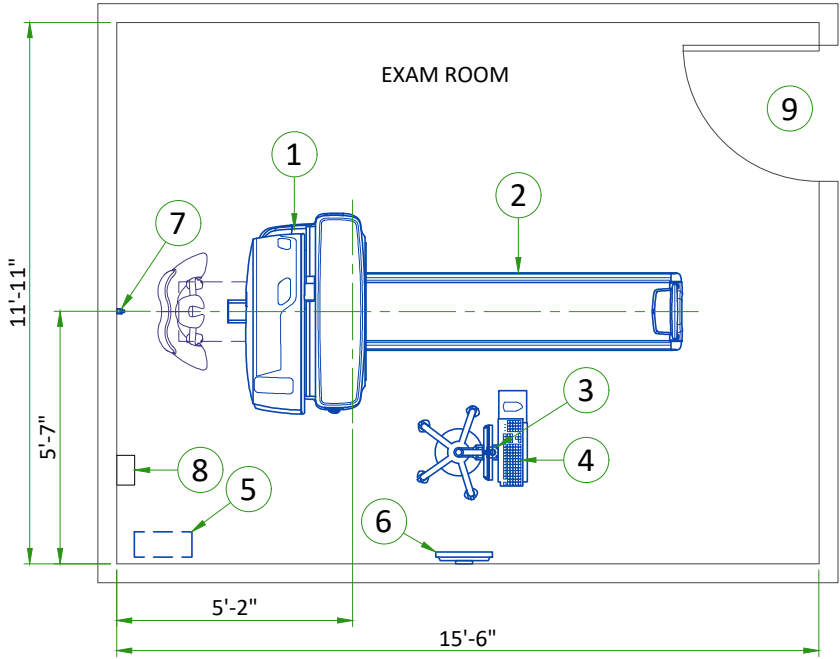
USING RADIOACTIVE ISOTOPES

Since the system involves the use of radioactive isotopes, compliance with Nuclear Regulatory Commission regulations, or similar regulatory requirements (depending on the country), must be adhered to and all permissions obtained well in advance. It is recommended that regulatory compliance is arranged early in the site planning process.

It is essential that all preparations are completed so that required source materials can be obtained prior to installation, including calibration sources. Take into consideration that these sources may have fairly long delivery lead times, yet may also have a short half life, so that it may not be advisable to store them over long periods of time.

RADIOACTIVE ISOTOPES FOR SYSTEM CALIBRATION

DESCRIPTION	
Basic calibration	Site has license for Tc ^{99m}
	Tc ^{99m} will be available during installation



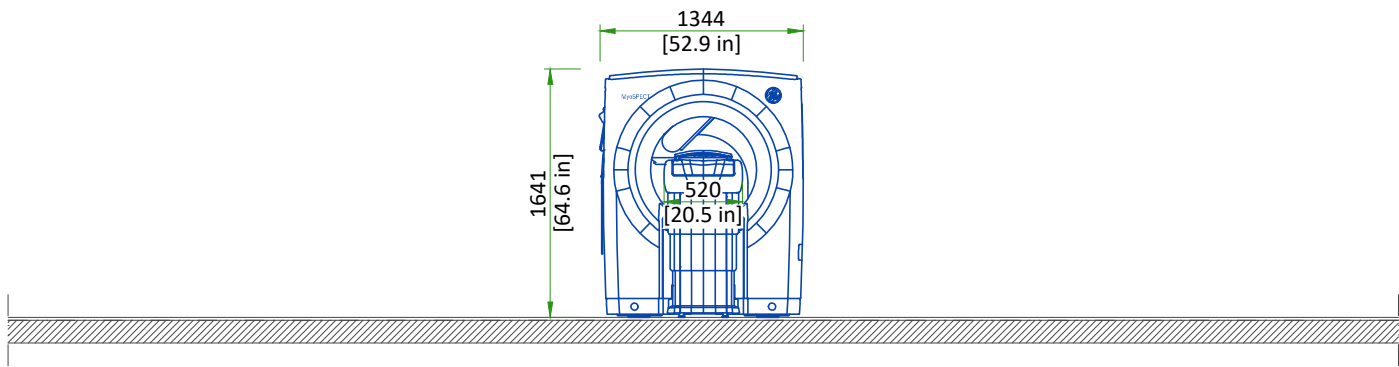
LEGEND						
A	GE Supplied			D	Available from GE	
B	GE Supplied/contractor installed			E	Equipment existing in room	
C	Customer/contractor supplied and installed			*	Item to be reinstalled from another site	
BY	ITEM	DESCRIPTION	MAX HEAT OUTPUT (btu)	WEIGHT (lbs)	MAX HEAT OUTPUT (W)	WEIGHT (kg)
A	1	Gantry	2390	1797	700	815
A	2	Patient Table	682	818	200	371
A	3	EMO Switch	-	-	-	-
A	4	Operators console on cart	-	-	-	-
A	5	Acquisition computer	512	25	150	11
A	6	Patient Positioning Monitor	102	-	30	-
A	7	Patient Positioning Camera	-	-	-	-
B/D	8	Main Disconnect Panel	-	-	-	-
C	9	Minimum opening for equipment delivery is 36" w x 67" h [910mm w x 1700mm h], contingent on a 60" [1520mm] corridor width				

EXAM ROOM HEIGHT		
Finished ceiling height	MIN. 7'-5"	REC. 9'-0"

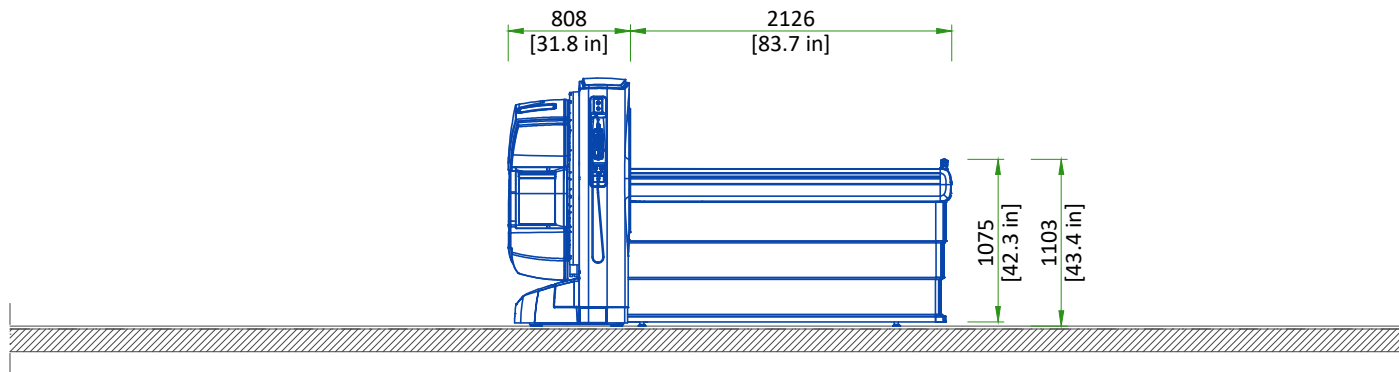
For Accessory Sales: (866) 281-7545 Options 1, 2, 1, 2 or mail to: gehcaccessorysales@ge.com

GANTRY WITH PATIENT TABLE

FRONT VIEW

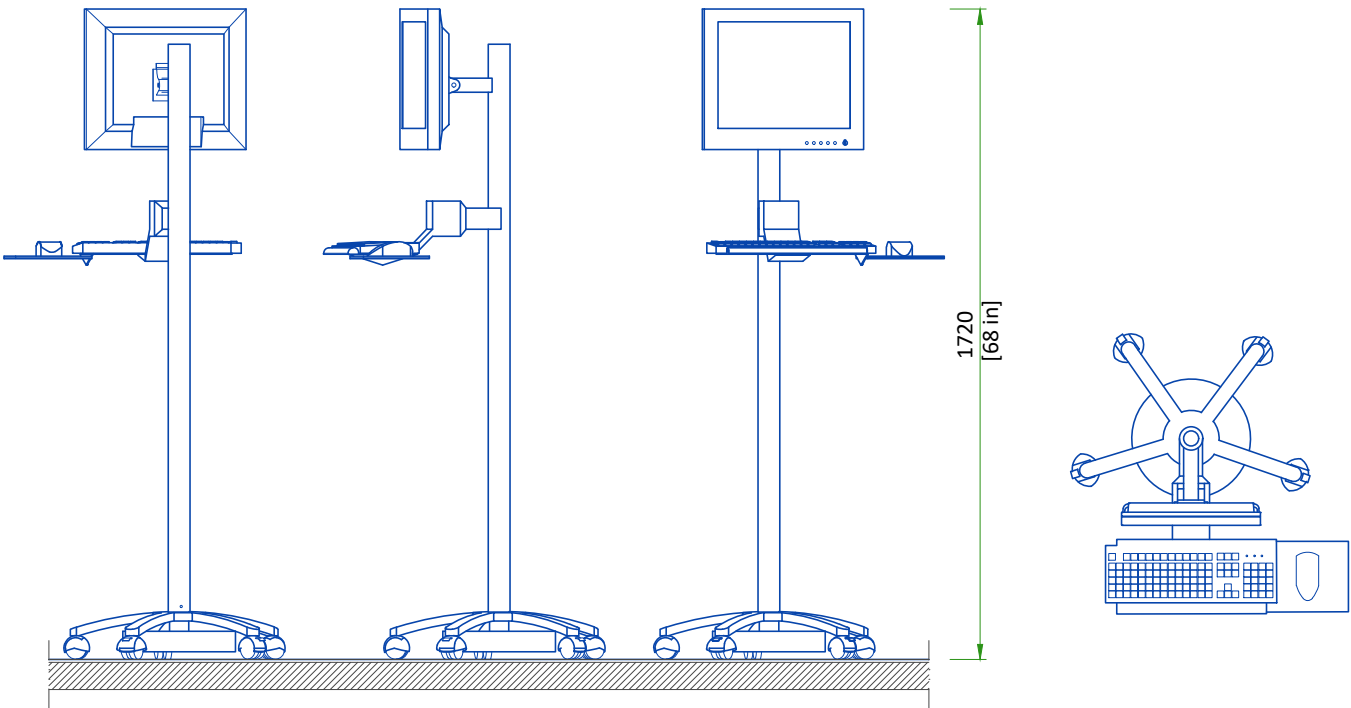


SIDE VIEW



SCALE 1:50

ACQUISITION STATION ON CART (AC2)



SIDE VIEWS

TOP VIEW

DELIVERY

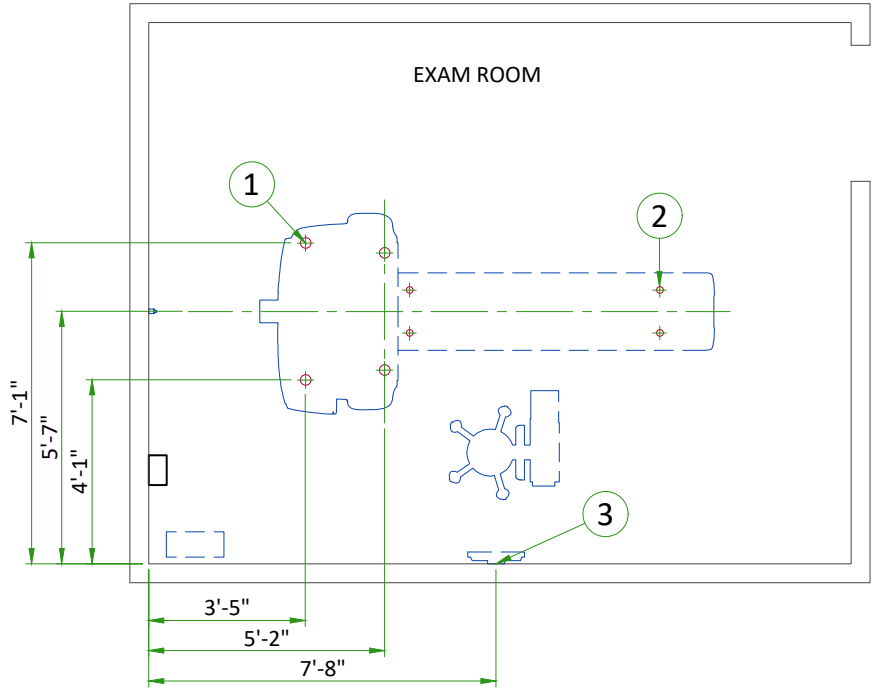
THE CUSTOMER/CONTRACTOR SHOULD:

- Provide an area adjacent to the installation site for delivery and unloading of the GE equipment.
- Ensure that the dimensions of all doors, corridors, ceiling heights are sufficient to accommodate the movement of GE equipment from the delivery area into the definitive installation room.
- Ensure that access routes for equipment will accommodate the weights of the equipment and any transportation, lifting and rigging equipment.
- Ensure that all necessary arrangements for stopping and unloading on public or private property not belonging to the customer have been made.

DIMENSIONS OF DELIVERY WITH DOLLY TRANSPORT EQUIPMENT			
EQUIPMENT	DIMENSIONS		WEIGHT
GANTRY	LENGTH	2000 mm [78.7 in]	815 kg [1797 lb]
	WIDTH	910 mm [35.8 in]	
	HEIGHT	1700 mm [66.9 in]	
PATIENT TABLE	LENGTH	2300 mm [90.6 in]	371 kg [818 lb]
	WIDTH	910 mm [35.8 in]	
	HEIGHT	Any	

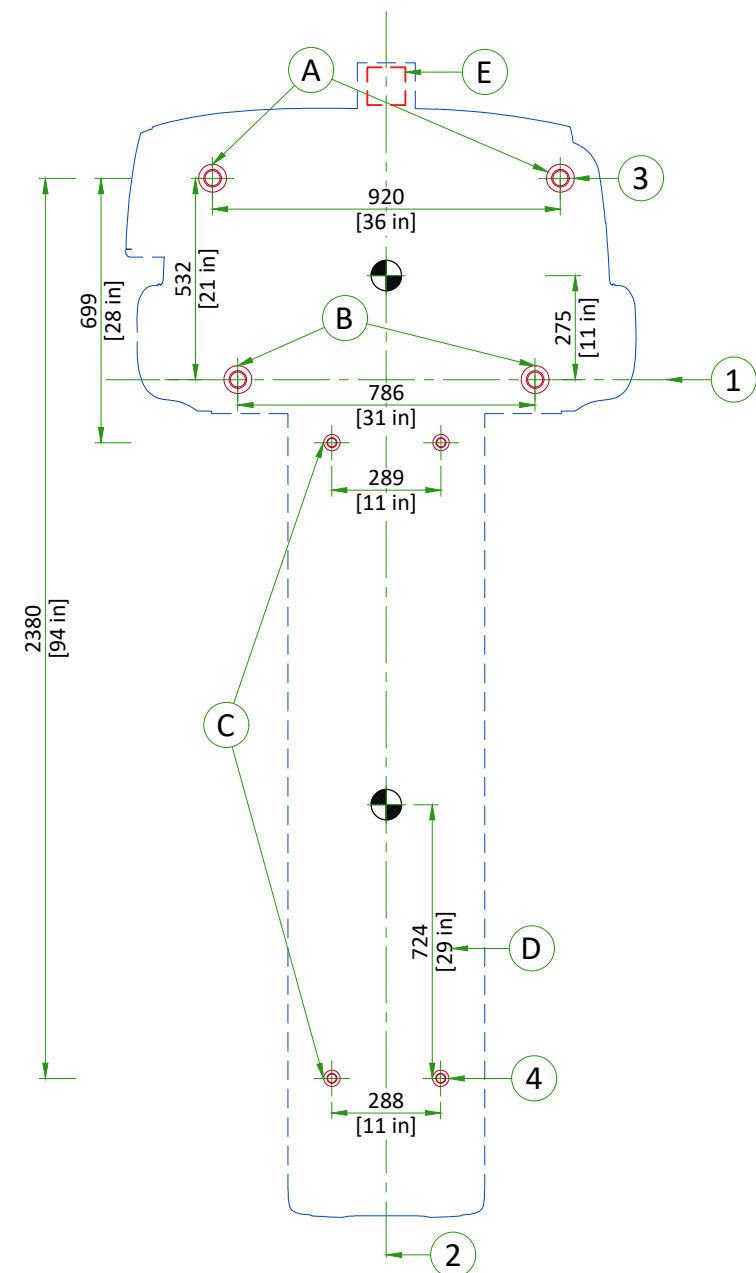
STRUCTURAL NOTES

- 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.
- Floor slabs on which equipment is to be installed must be flat and level to specifications.
- Dimensions are to finished surfaces of room.
- For seismic regions ensure supports span three members.
- 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.
- 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"



ITEM	DESCRIPTION
(GE SUPPLIED / CONTRACTOR INSTALLED)	
1	Gantry leveling pads (see Structural Details)
2	Patient table leveling pads (see Structural Details)
3	Structural wall backing

LOADING DISTRIBUTION TO THE FLOOR



- (1) Gantry Axis
- (2) Longitudinal Axis
- (3) 4 Gantry leveling pads
- (4) 4 Patient Table leveling pads
- Leveling pads
- Center of gravity

- A. Gantry rear pads 183 Kg [403 lb] on each Ø90 mm [Ø3.5 in] pad
- B. Gantry front pads 225 Kg [496 lb] on each Ø90 mm [Ø3.5 in] pad
- C. Patient Table load 371 Kg [818 lb] distributed on 4 pads
- D. Center of gravity position without patient in the table
- E. Cable access

SCALE 1:25

FLOOR SPECIFICATIONS

FLOOR LOADING

- For seismic installations, in order to enable system mounting using the supplied floor anchors, concrete floors must have a minimum cube strength of $f'c = 4350 \text{ psi}$ (30 MPa) at 28 days (curing time) for 25/30 concrete.
- It is the customer/contractor responsibility to have appropriate tests performed to determine and measure concrete strength

FLOOR LEVELING SPECIFICATIONS

Floor Leveling Area (covering the entire planned area of table and gantry surface)	2900 mm x 1500 mm [9.5 ft x 4.9 ft]
Slope	less than 30 mm [1 3/16 in] over 4300 mm [14.1 ft]
Flatness	5 mm [0.2 in] over 1500 mm [4.9 ft] in any direction
Floor surface	Floor should have one single poured surface

TEMPERATURE AND HUMIDITY SPECIFICATIONS			
IN-USE CONDITIONS			
	EXAM/CONTROL ROOM		
Temperature	Min	Recommended	Max
	18°C [64°F]	22°C [72°F]	26°C [79°F]
Temperature gradient	≤ 3°C/h [≤ 5.4°F/h]		
Relative humidity (1)	30% to 60%		
Humidity gradient	≤ 5%/h		
STORAGE CONDITIONS (1-12 months)			
	Gantry and Table	Triplets (CZT Modules)	
Temperature	+4°C to +27°C [39°F to 80°F]	+18°C to +26°C [64°F to 79°F]	
Relative humidity (1)	20% to 60%	30% to 60%	
Humidity gradient	≤ 5%/h		
Air pressure	700 hPa to 1060 hPa		
(1) non condensing			
AIR RENEWAL			
According to local standards.			
NOTE			
In case of using air conditioning systems that have a risk of water leakage it is recommended not to install it above electric equipment or to take measures to protect the equipment from dropping water.			

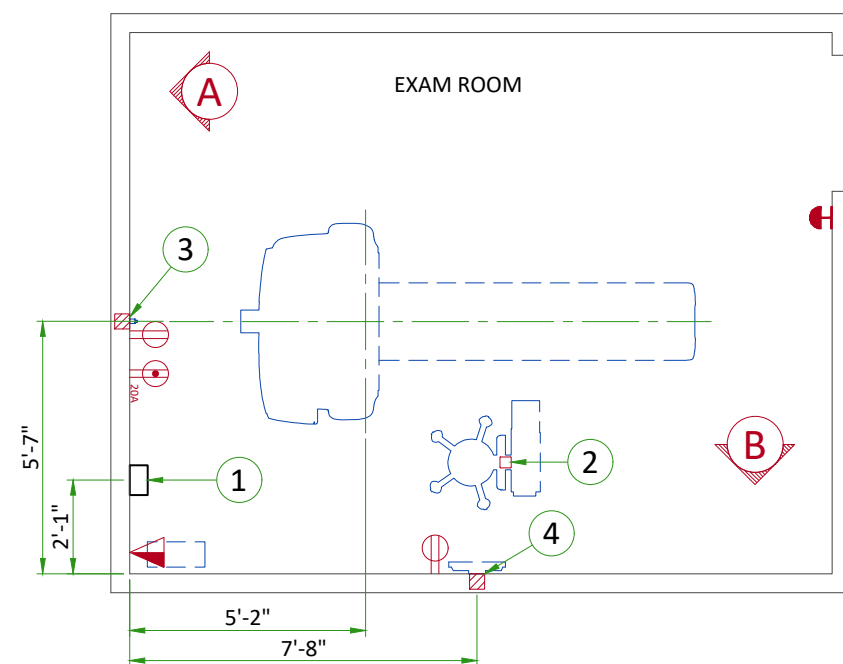
HEAT DISSIPATION			
ROOM	DESCRIPTION	HEAT DISSIPATION (kW)	HEAT DISSIPATION (BTU/hr)
		MAX	MAX
Exam Room	Gantry	0.70	2390
	Patient Table	0.20	682
	Acquisition Station Computer	0.15	512
	TOTAL	1.05	3584

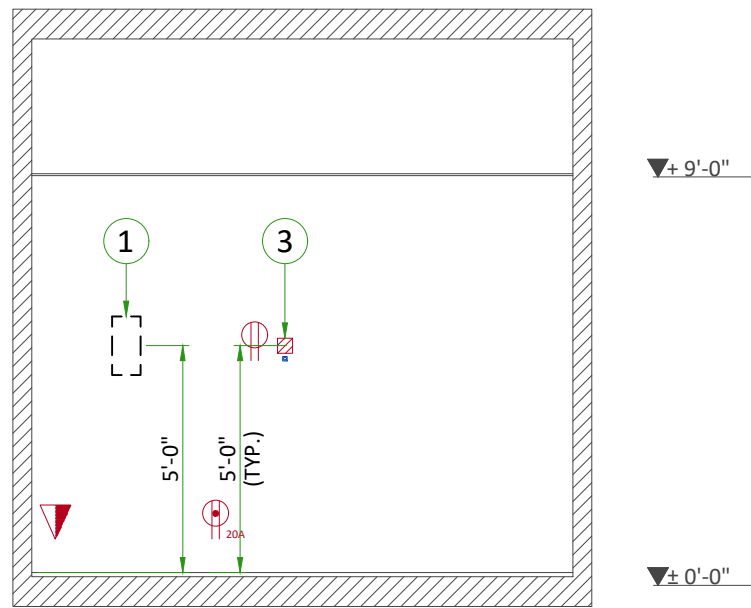
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ELECTRICAL NOTES

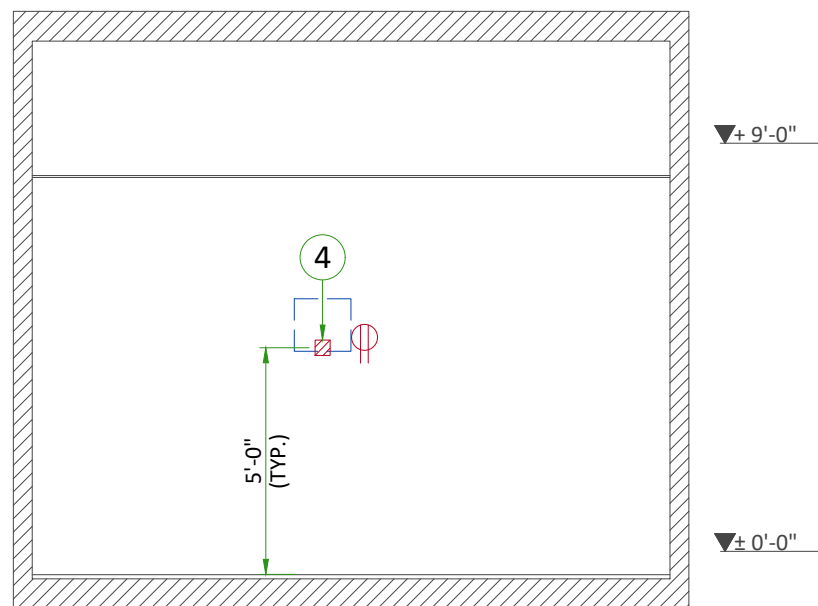
1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all wires at both ends. Wire runs must be continuous copper stranded and free from splices.
 - 1.1. Aluminum or solid wires are not allowed.
2. Wire sizes given are for use of equipment. Larger sizes may be required by local codes.
3. It is recommended that all wires be color coded, as required in accordance with national and local electrical codes.
4. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
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.
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.
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).
8. Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
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.
10. The maximum point to point distances illustrated on this drawing must not be exceeded.
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.
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.

- All junction boxes, conduit, duct, duct dividers, switches, circuit breakers, cable tray, 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:
 1. Ductwork shall be metal with dividers and have removable, accessible covers.
 2. Ductwork shall be certified/rated for electrical power purposes.
 3. Ductwork shall be electrically and mechanically bonded together in an approved manner.
 4. PVC as a substitute must be used in accordance with all local and national codes.
- All openings in raceway and 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.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.





A



B

POWER REQUIREMENTS

POWER SUPPLY

POWER SUPPLY	SINGLE PHASE+N+G 110 to 240 V ±10%
FREQUENCIES	50/60 Hz ±3 Hz
MAXIMUM POWER DEMAND	1.4 kVA
AVERAGE (CONTINUOUS) POWER DEMAND	0.6 kVA

- Power supply should come into a Main Distribution Panel (MDP) containing the protective units and controls.
- The section of the supply cable should be calculated in accordance with its length and the maximum permissible voltage drops.
- There must be discrimination between supply cable protective device at the beginning of the installation (main low-voltage transformer side) and the protective devices in the MDP.

SUPPLY CHARACTERISTICS

- Power input must be separate from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers...).
- All equipment (lighting, power outlets, etc...) installed with GE system components must be powered separately.
- Phase imbalance 2% maximum.
- Maximum voltage variation at full load = 6% (Including line impedance).
- Transients must be less than 1500 V peak.

GROUND SYSTEM

- Equipotential: The equipotential link will be by means of an equipotential bar. This equipotential bar should be connected to the protective earth conductors in the ducts of the non GE cableways and to additional equipotential connections linking up all the conducting units in the rooms where GE system units are located.

CABLES

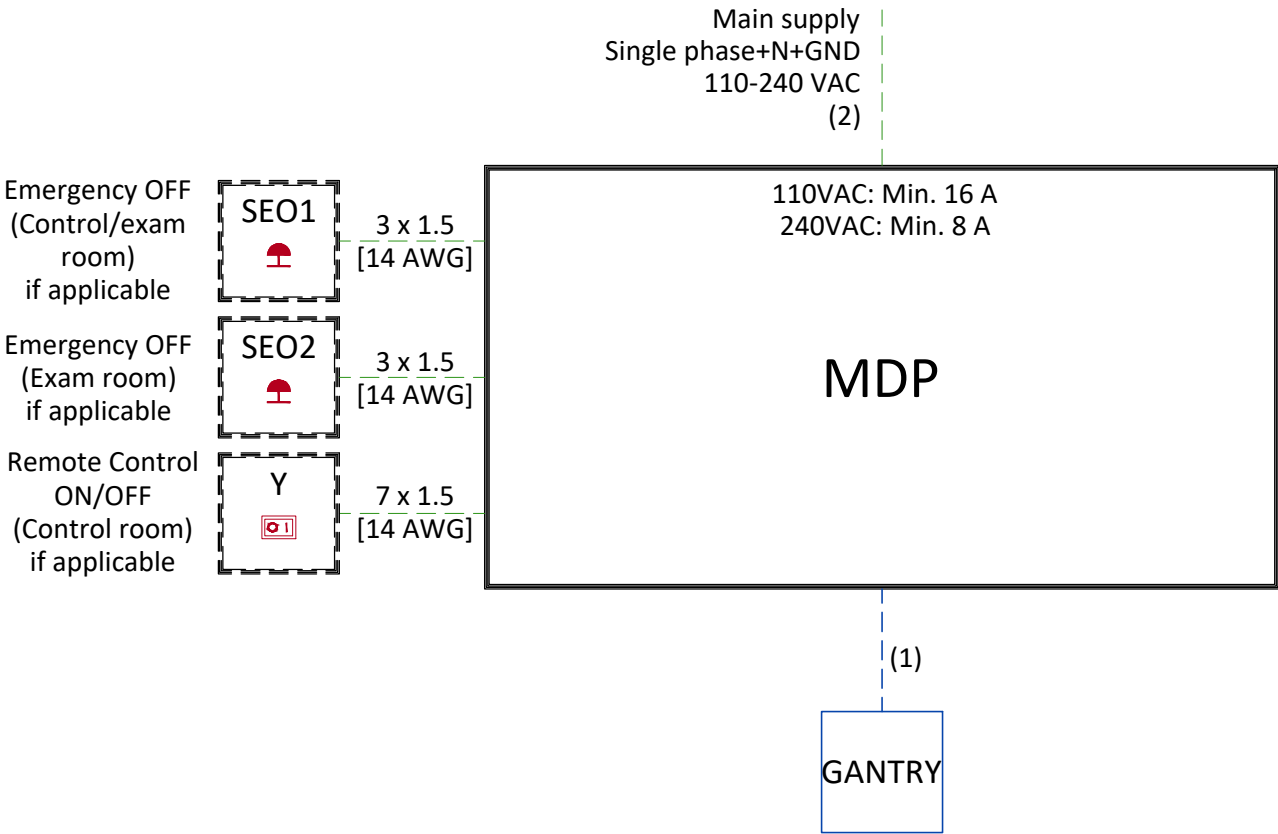
- Power and cable installation must comply with the distribution diagram below.
- All cables must be isolated and flexible, cable color codes must comply with standardsfor electrical installation.
- The cables from signaling and remote control (Y, SEO, L ...) will go to MDP with a pigtail length of 1.5 m, and will be connected during installation. Each conductor will be identified and isolated (screw connector).

CABLEWAYS

The general rules for laying cableways should meet the conditions laid down in current standards and regulations, with regard to :

- Protecting cables against water (cableways should be waterproof)
- Protecting cables against abnormal temperatures (proximity to heating pipes or ducts)
- Protecting cables against temperature shocks
- Replacing cables (cableways should be large enough for cables to be replaced)
- Metal cableways should be grounded

POWER DISTRIBUTION



MDP Main Disconnect Panel

Notes :

- (1) Cable with a usable length of 8 m [26 ft] is delivered with the system.
- (2) GE gantry contains transformer with multiple taps that can accomodated listed voltages.

Cable SUPPLIED BY CUSTOMER

Cable SUPPLIED BY GE

Equipment SUPPLIED BY CUSTOMER

Equipment SUPPLIED BY GE

INTERCONNECTIONS

