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REV	DATE	MODIFICATIONS
01 - C1 - Cover Sheet		10 - S3 - Structural Details
02 - C2 - Disclaimer - Site Readiness		11 - E1 - Electrical Notes
03 - A1 - General Notes		12 - E2 - Electrical Layout
04 - A2 - Equipment Layout		13 - E3 - Elevations-Details-Interconnects
05 - A3 - Equipment Details		14 - E5 - Power Requirements
06 - A4 - Storage & Delivery		
07 - M1 - HVAC		
08 - S1 - Structural Notes		
09 - S2 - Structural Layout		

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 does not take responsibility for any damages resulting from changes on drawings made by others. Errors may occur by not referring to the complete set of final issue drawing. GE cannot accept responsibility for any damage due to the partial use of GE final issue drawings, however caused. All dimensions are in millimeters unless otherwise specified. Do not scale from printed pdf files. GE accepts no responsibility or liability for defective work due to scaling from these drawings.

Typical

GE Healthcare

SENOGRAPHE PRISTINA FINAL STUDY

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
PMM	MKL	-	----	5729303-1EN	4
Format	Scale	File Name		Date	Sheet
A3	1/4"=1'-0"	EN-MAM-TYP-SENO_PRISTINA-WEB.DWG		18/Dec/2018	01/14

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. 5

Customer Name:	PMI Name:	
GON/SO Number:	Field Service Name:	
Equipment:	Country/City or City/State:	
Required site assessment milestones	Date of completion (dd/mm/yyyy)	
1) Check site before Equipment Delivery to Storage		
2) Check site before installation start		
Place an "X" in either Y or N column		
Site Ready Checks at Installation		Y
General Site Planning		N
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 has been confirmed with customer/contractor to meet required GE provided criteria.		
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.		
Finished ceiling is installed. If applicable ceiling tiles installed per PMI discretion.		
Adequate delivery route from truck to final place of installation has been reviewed with all stakeholders, all communications/notifications have occurred, arrangements have been made for special handling (rigging, elevator, fork lift, etc.). All floors along delivery route will support weight of the equipment, temporary reinforcements arranged if needed.		
System power & grounding (PDB/MDP) is available as per GE specifications, installed at point of final connection and ready to use. Lock Out Tag Out is available.		
System power and grounded audit has been scheduled to be completed during installation of equipment. (If Required) GEHC PM to confirmed if needed.		
Adequate room illumination installed and working.		
Cable ways (floor/wall/ceiling/Access Flooring) are available for installation of GE cables and 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.		
HVAC systems Installed, and the site meets minimum environmental operational system requirements.		
Network outlets installed and computer network available and working.		
Hospital IT/connectivity contacts have been engaged and information has been added to Project management tool. (If Required)		
Floor levelness/flatness is measured and within tolerance, and there are no visible defects per GEHC specifications. Floor Strength and thickness have been discussed with customer/contractor and they have confirmed GE requirements are met.		
Customer supplied countertops where GE equipment will be installed are in place.		
Specific for CT & X-ray		
Doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotection regulatory approval for installation obtained.		
Status of work		
General comments		
System can be delivered	PMI signature	
Site ready for installation	FS signature: optional	

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.

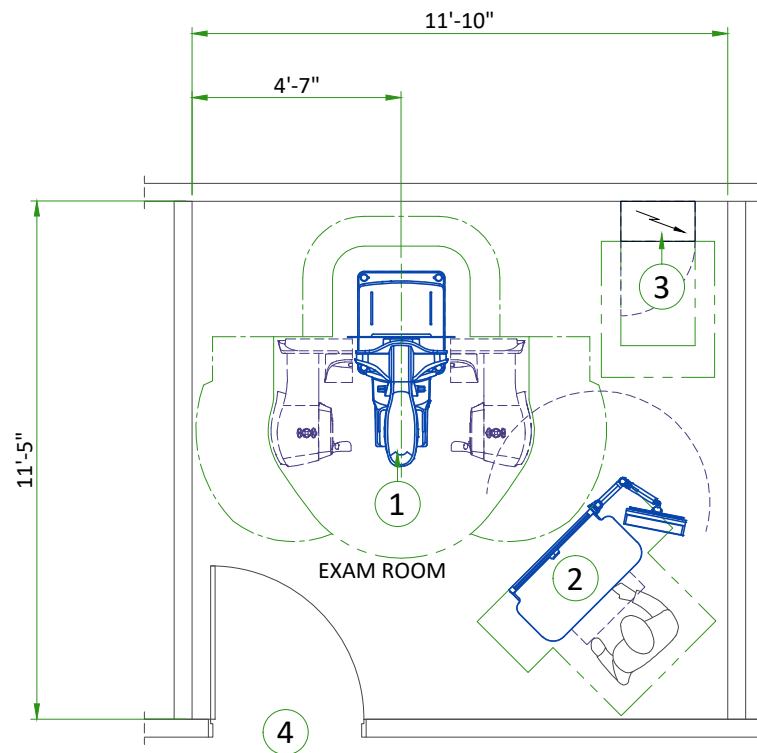
ENVIRONMENTAL SPECIFICATIONS

MAGNETIC INTERFERENCE

The Senographe Pristina system is immune to surrounding magnetic fields of up to 37.5 mGauss.

LIGHT REQUIREMENTS

In order to obtain a room brightness value of 100 lux or less for correct viewing of monitor images, the room lights must be equipped with a dimmer switch. Shades and/or drapes must be fitted to windows.

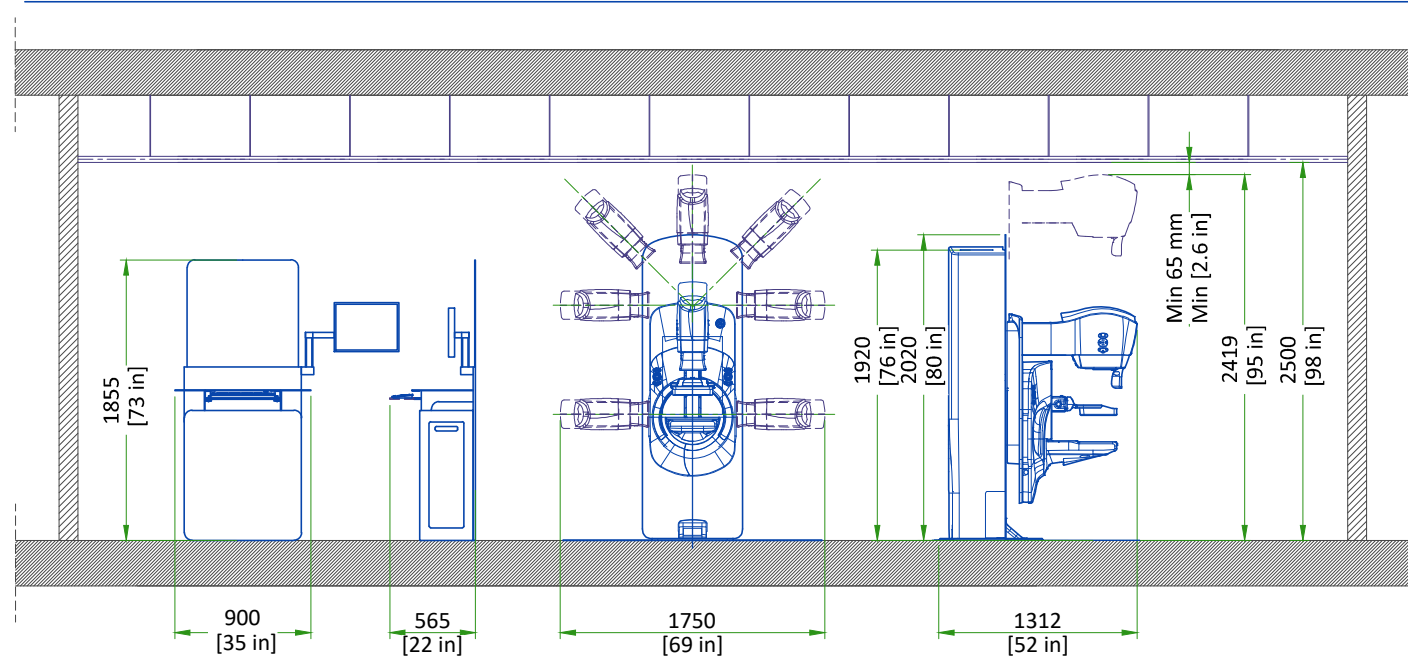


LEGEND

A	GE Supplied	C	Customer/contractor supplied and installed			
B	GE Supplied/contractor installed	D	Available from GE			
BY	ITEM	DESCRIPTION	MAX HEAT OUTPUT (btu)	WEIGHT (lbs)	MAX HEAT OUTPUT (W)	WEIGHT (kg)
A	1	Gantry	2061	926	604	420
A	2	Control Station	716	353	210	160
D	3	Power Distribution Box	-	-	-	-
C	4	Minimum opening for equipment delivery is 27.6" [700mm] W x 77.1" [1958mm] H.				

Exam room height	
Finished floor to slab height	TBD
Recommended finished ceiling height	8'-2 1/2"

ROOM HEIGHT REQUIREMENTS



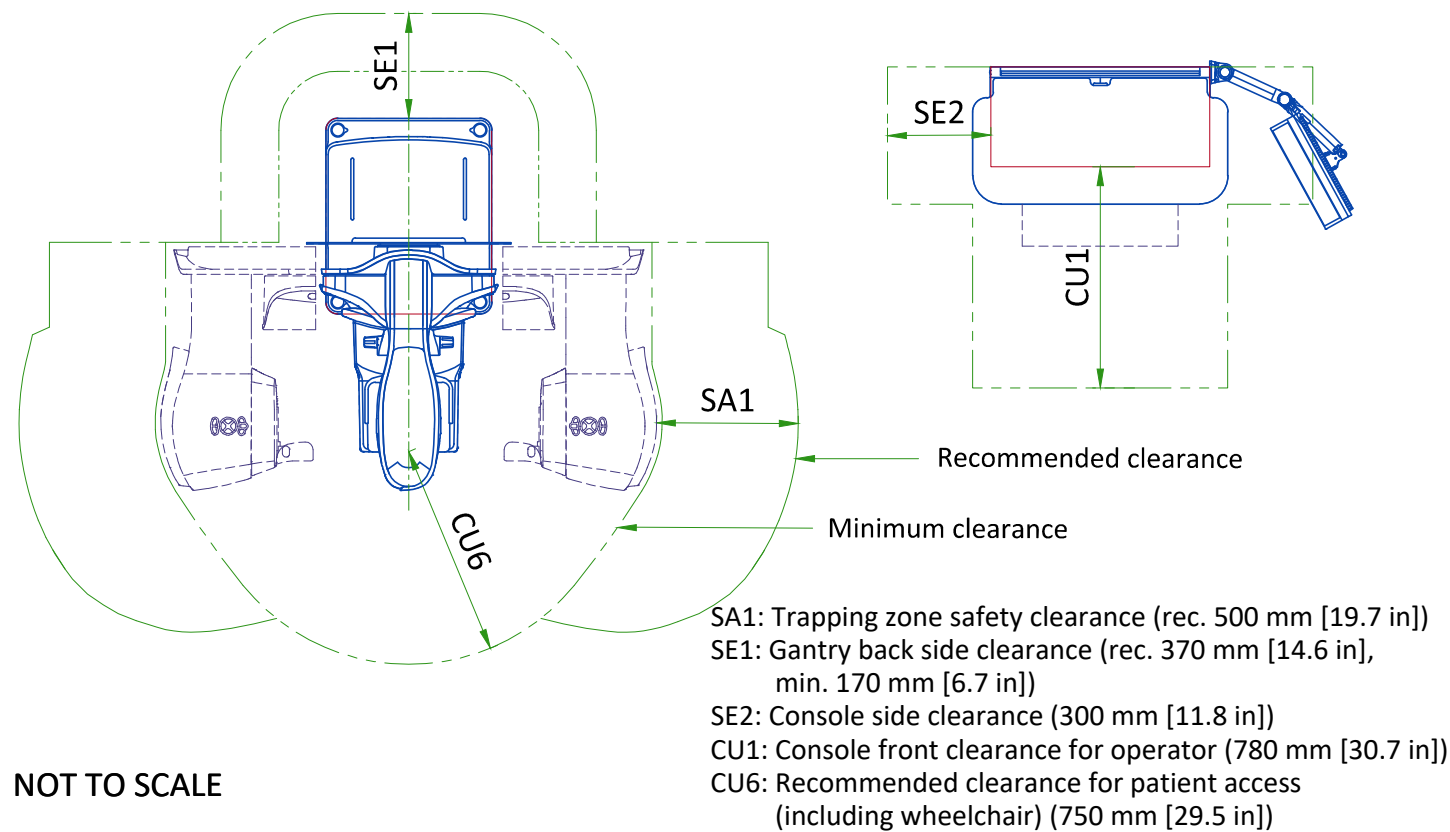
LIFT UPPER LIMIT BUMPER STOPPER POSITION	CORRESPONDING TUBE HEAD HEIGHT	MINIMUM CEILING HEIGHT	CORRESPONDING BUCKY PLANE MAXIMUM HEIGHT
Bottom	2235 mm [87.99 in]	2300 mm [90.55 in]	1340 mm [52.76 in]
Middle	2335 mm [91.93 in]	2400 mm [94.49 in]	1440 mm [56.69 in]
Top (default setting)	2395 mm [94.29 in]	2500 mm [98.43 in]	1500 mm [58.86 in]

NOT TO SCALE

CLEARANCE

GANTRY

CONTROL STATION



NOT TO SCALE

DELIVERY

THE CUSTOMER/CONTRACTOR MUST :

- Provide an area, adjacent to the GE suite, 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 to the specific rooms of the GE site.
- Ensure that the access route will accommodate the weights of the equipment and any transportation, lifting and rigging equipment,
- If the parking and dock facilities are on property which does not belong to the customer, ensure that all necessary steps have been taken to ensure their temporary use by GE.

DIMENSIONS

	CRATE 1	CRATE 2	CRATE 3	CRATE 4	CRATE 5	CRATE 6	CRATE 7
DEPTH (mm [in])	1531 [60.3]	1075 [43.3]	695 [27.4]	1010 [39.7]	1255 [49.4]	Vary	
WIDTH (mm [in])	845 [33.3]	1055 [41.5]	1074 [42.3]	670 [26.4]	885 [34.8]	Vary	
HEIGHT (mm [in])	2160 [85.0]	1452 [57.2]	1510 [59.4]	160 [6.3]	100 [3.9]	Vary	
WEIGHT (kg [lb])	486 [1071.5]	120 [264.6]	129.2 [284.8]	8 [17.6]	15 [33.0]	Vary	

NOTE

- The dimensions and mass of crates 6 and 7 can vary according to the options chosen by the customer

DELIVERY WITH DOLLIES/TRANSPORTATION TOOL

Minimum dimensions for door :

Width 700 mm [27.6 in]

Height without gantry column front covers 1958 mm [77.1 in]

Height without gantry column rear covers 1908 mm [75.1 in]

STORAGE REQUIREMENTS

Part of all installation:

Name	Size
GANTRY TRANSPORTATION TOOL ¹	860x650x300 mm [33.9x25.6x11.8 in] (Depends on arrangement of parts)
Part of Mobile Pristina installation only:	
TUBE EXTENDER ²	333x50x149 mm [13.1x2x5.9 in]
BASEPLATE KIT ²	550x100x230 mm [21.7x3.9x9.1 in]
CONTROL STATION WORKTOP PROTECTION FOAM ²	760x500x215 mm [29.9x19.7x8.5 in]

1. Gantry transportation tool is supplied with all installations and it is the customers responsibility to provide means to store it on site.
2. For Mobile Pristina a locking kit is also provided with the system to allow secure in-transit position for all components. It is the responsibility of the truck vendor to provide sufficient storage space to allow the storing of the locking kit and the gantry transportation tool in the truck.

TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

Environmental conditions must ensure patient and operator comfort and must be maintained within the range below:

	Min	Recommended	Max
Temperature	15°C [59°F]	23°C ± 3°C [73°F ± 5°F]	30°C [86°F]
Temperature gradient	≤ 15°C/hour [≤ 59°F/hour]		
Relative humidity (non-condensing)	10% to 80%		
System heat dissipation	Standby		Max
	0.36 kW [1228 BTH/h]		0.814 kW [2777 BTH/h]

STORAGE AND TRANSIT CONDITIONS

	Short term (< 5 days)	Long term (> 5 days)*
Temperature	-5°C to +50°C [23°F to 122°F]	Relatively low
Relative humidity (non-condensing)	10 to 95%	< 50% (recommended)

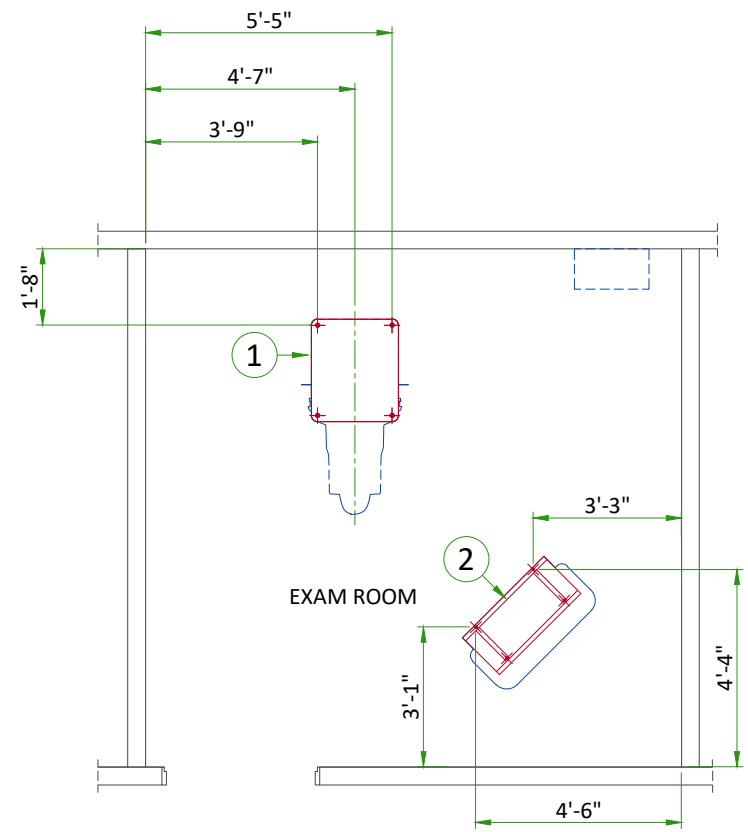
*for the detector assembly

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.

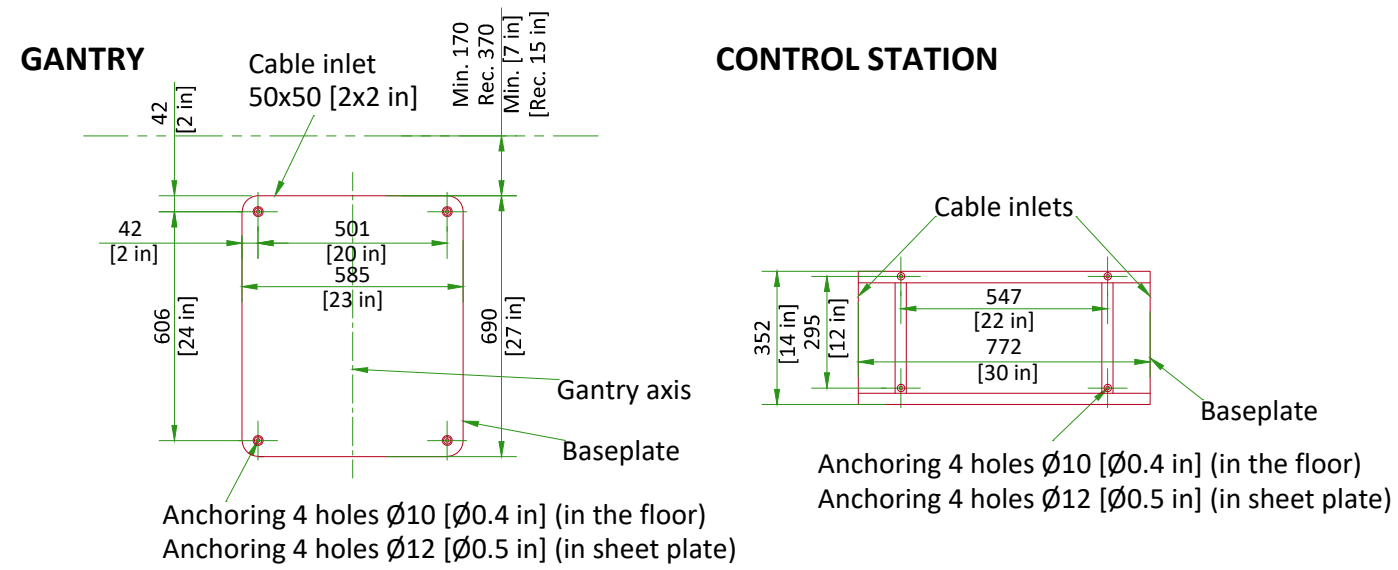
STRUCTURAL NOTES

- Methods of support for the steelwork that will permit attachment to structural steel or through bolts in concrete construction should be favored. Do not use concrete or masonry anchors in direct tension.
- 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.
- All ceiling mounted fixtures, air vents, sprinklers, etc. To be flush mounted, or shall not extend more than 6,35mm (1/4") below the finished ceiling.
- Floor slabs on which equipment is to be installed must be level to 3,17mm (1/8") in 3050mm (10'-0")
- Dimensions are to finished surfaces of room.
- 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	Area occupied by GE supplied Gantry baseplate
2	Area occupied by GE supplied Console baseplate

ANCHORING TO THE FLOOR



NOTE :

- Anchors supplied by GE (For non-seismic areas only)
- Min floor thickness 120 mm [5 in] (102 mm [4 in] for seismic areas)
- The floor surface must remain horizontal and flat within ± 2.5 mm [± 0.1 in] per 1 meter [39 in] after installation of the Gantry and the Control Station.
- If customer floor is not concrete slab floor (e.g. raised technical flooring, timber etc.) or the floor thickness is less than 120 mm [5 in], consultation is mandatory with a structural engineer, qualified and authorized in accordance with local building regulations.

SCALE 1:20

CONNECTIVITY REQUIREMENTS

Broadband Connections are necessary during the installation process and going forward to ensure full support from the Engineering Teams for the customers system. Maximum performance and availability for the customers system is maintained and closely monitored during the lifetime of the system. Proactive and reactive maintenance is available utilising the wide range of digital tools using the connectivity solutions listed below:

- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network
- Internet Access - connectivity for InSite 2.0

The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).

The Senographe Pristina system must be connected to the hospital Ethernet network via the AXIS Computer within the Control Station in order to exchange data with other medical equipment (network hosts) on the hospital network. Typical medical equipment (network hosts) usually connected to the Senographe Pristina system include the following:

- Worklist providers (HIS or RIS)
- Mass archiver (Storage or PACS)
- Review stations (i.e. GE SenoIris)
- CAD (Computer Aided Detection)
- Network transfer systems (i.e. DICOM Shuttle)
- Printers

Before installation, the following information must be obtained for each network host so that it can be declared in the AXIS Computer:

- IP address for the network host
- Host name
- Port Number
- Application Entity Title (AET)
- Subnet mask

The hospital network administrator usually supplies this information.

The customer must provide an RJ-45 Ethernet cable (CAT 6 or higher) of a sufficient length so that it can be easily run from the AXIS Computer within the Control Station to the Ethernet wall outlet connected to the hospital network.

Before installation, so that the AXIS Computer within the Control Station can communicate with the hospital network, the following information must be obtained:

- An IP address assigned to the AXIS Computer
- IP address of the hospital Gateway
- Subnet mask
- If additional routers and/or static routes are used by the hospital, those must also be provided

The hospital network administrator usually supplies this information.

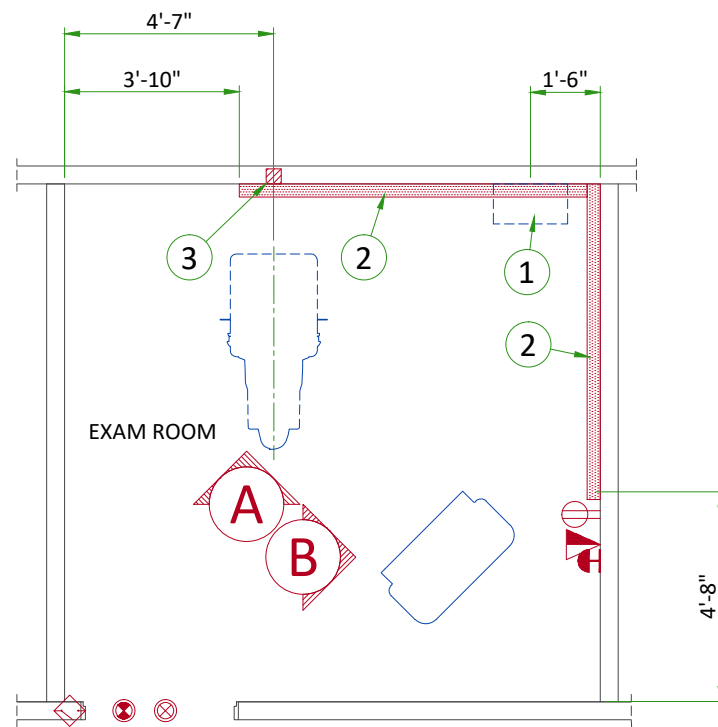
NOTE

Connection of Senographe Pristina to the hospital network that includes other equipment could result in previously unidentified risks to patients, operators or third parties.

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 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 pigtailed at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.



ELECTRICAL LAYOUT ITEM LIST

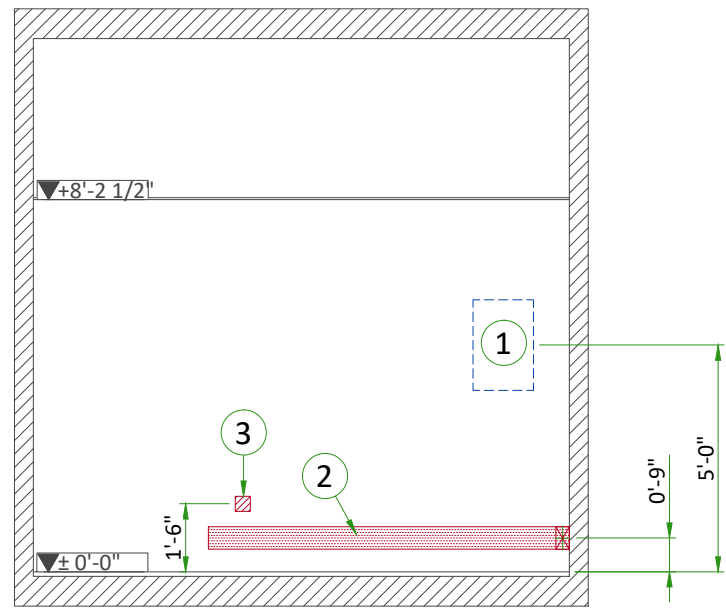
1	Power Distribution Box
2	6" x 3.5" [150mm x 100mm] Surface wall duct with minimum 1 divider
3	4" x 4" x 4" Flush J-box for Gantry. NOTE: Gantry is hardwired to PDB

ITEM	QTY	Outlet Legend for GE Equipment
		System emergency off (SEO), (recommended height 1.2m [48"] above floor)
		System on light (L) - 24V
		X-ray on lamp (L1) - 24V (needed only if required by state/local codes)
		Door interlock switch (needed only if required by state/local codes)
		Network outlet
		Duplex hospital grade, dedicated wall outlet 120-v, single phase power

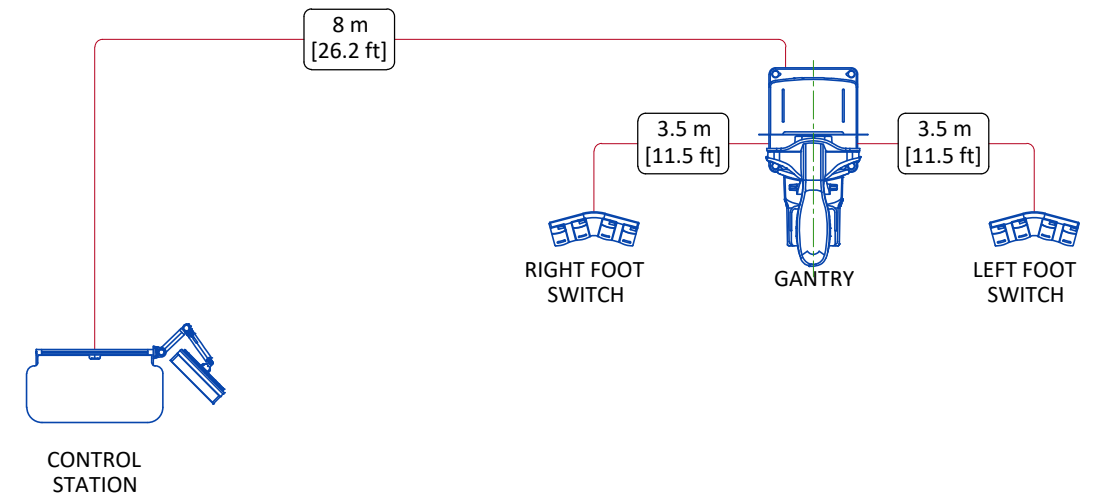
**Additional Conduit Runs
(Contractor Supplied and Installed)**

From	To	Qty	Size	
			In.	mm
1 phase power	Power Distribution Box	1	AS REQ'D	AS REQ'D
System emergency off (SEO)		1	1/2	16
Door Switch		1	1/2	16
X-ray on light		1	AS REQ'D	AS REQ'D
System on light		1	1/2	16

INTERCONNECTIONS

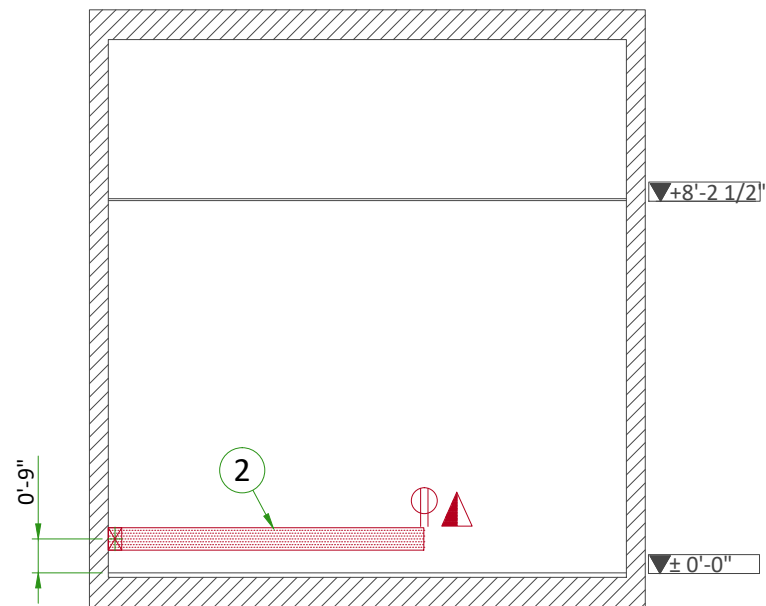


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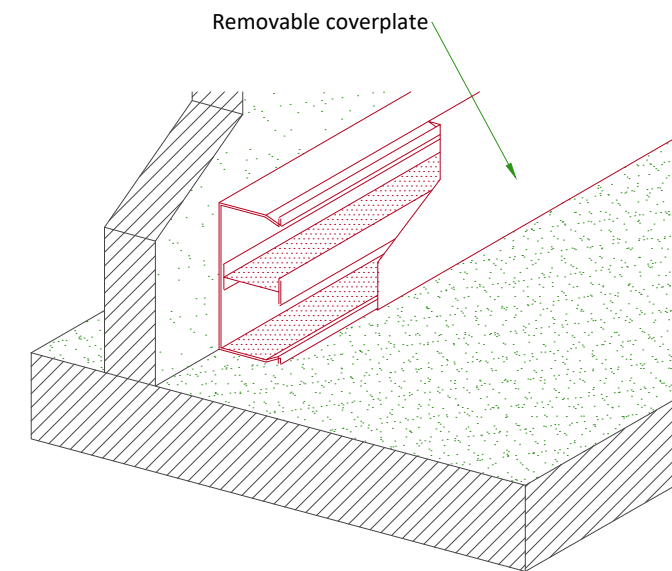


CABLE MANAGEMENT

DUCT ON THE WALL



B



NOT TO SCALE

POWER REQUIREMENTS

POWER SUPPLY	Single phase + Ground
VOLTAGES	200V 208V 220V 230V 240V ± 10%
MAXIMUM INSTANTANEOUS POWER (DURING EXPOSURE)	4.6 kVA
MAXIMUM POWER IN STAND BY	1.2 kVA
FREQUENCIES	50/60Hz ± 3Hz
LINE IMPEDANCE PER WIRE (6% DROP FOR 4.6 kVA)	0.4 Ohm/200V 0.43 Ohm/208V 0.48 Ohm/220V 0.53 Ohm/230V 0.57 Ohm/240V

- Power supply should come into a Power Distribution Box (PDB) containing the protective units and controls.
- The section of the supply cable should be calculated in accordance with its length and the maximum line resistance phase.

SUPPLY CHARACTERISTICS

- Power input must be separated 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.

GROUND SYSTEM

- 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 units are located.

CABLES

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

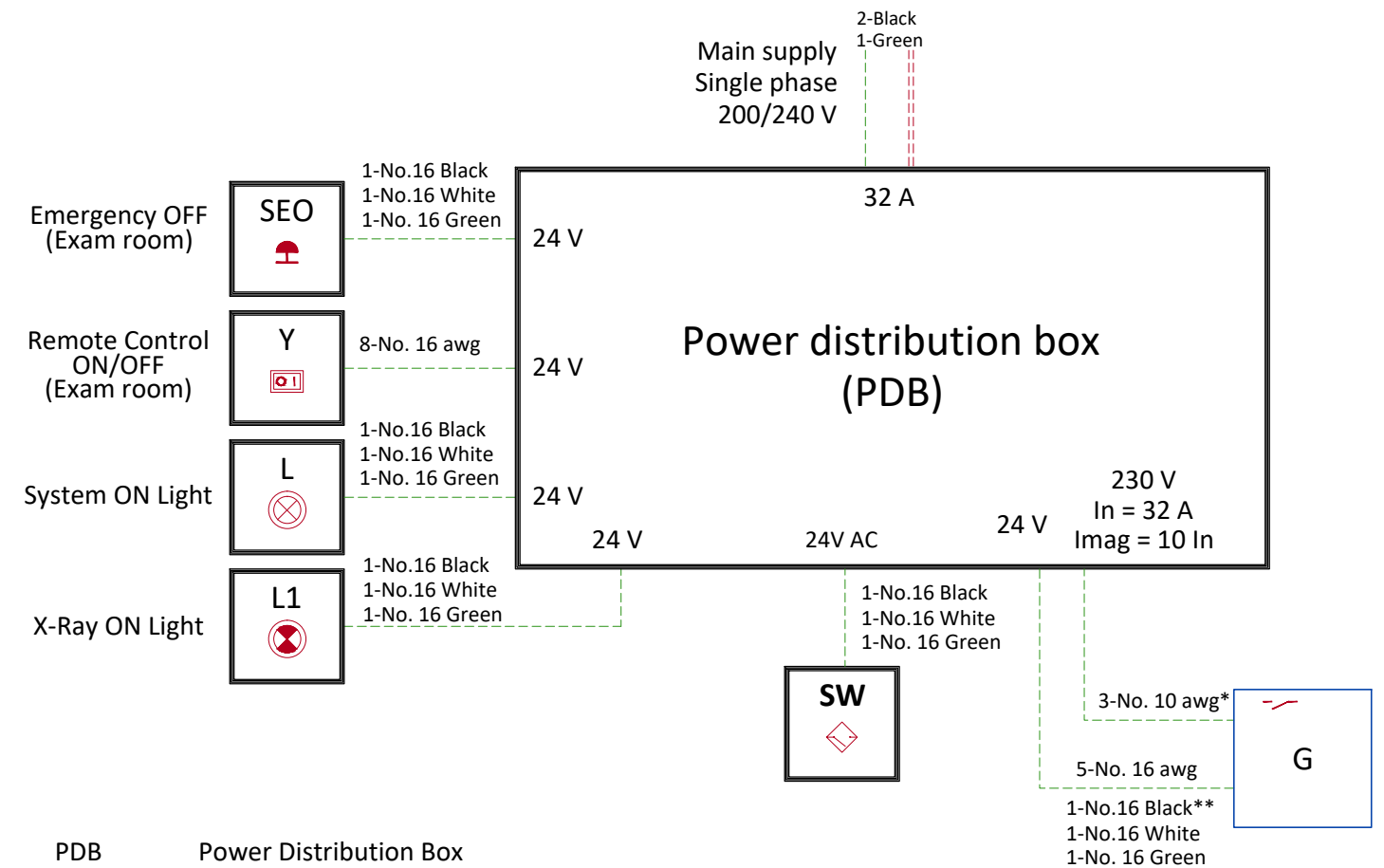
CABLEWAYS

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) ,
- Only GE cables are running inside cableways.
- Metal cableways should be grounded.

POWER DISTRIBUTION

NOTE : Depending on local regulations fuses may be required on the incoming supply lines



- PDB Power Distribution Box
 SEO System emergency OFF, located at 1.20m [48 in] above floor
 Y System remote control, locked when power OFF "ON" and "OFF" impulse buttons with indicator lamps, red=ON / green=OFF, located at 1.50m [59 in] above floor
 G Generator cabinet built into the Gantry
 L System ON lamp max 30V, located near access doors
 L1 XRay ON light max 30V, located near access doors
 SW Room door switch
 * Appropriate section of the cable must be validated by the local electrician
 ** Only if room door switch is installed

