

1/31/2024

Christ Cath Lab Sealed Bid - Q&A #2

1. Please provide Fire Alarm drawings and Sprinkler drawing listed in the Drawing List on sheet T-100.

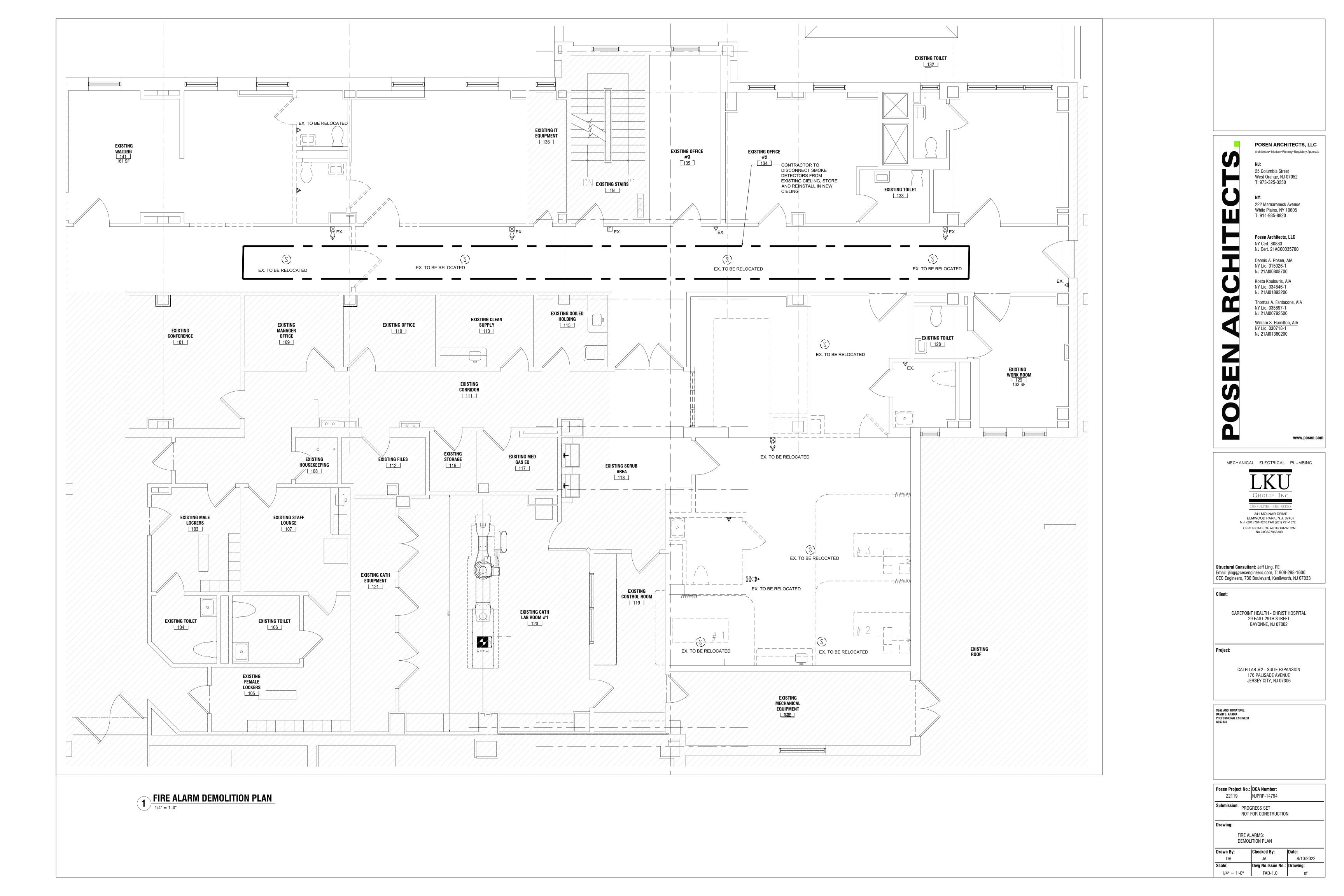
Please see Fire Alarm and Fire Protection drawing attachments.

- 2. Please clarify who provides and installs items 117, 200, 401, 402, 720, and 726 in the Equipment Schedule on sheet A-121.
 - 117 We will provide and install the items.
 - 200 We will provide and install the items.
 - 401 We will provide and install the items.
 - 402 We will provide and install the items.
 - 720 We will provide and install the items.
 - 726 We will provide and install the items.
- 3. Please clarify if a bond is to be provided or just the surety information requested in Section 4.3 under References.

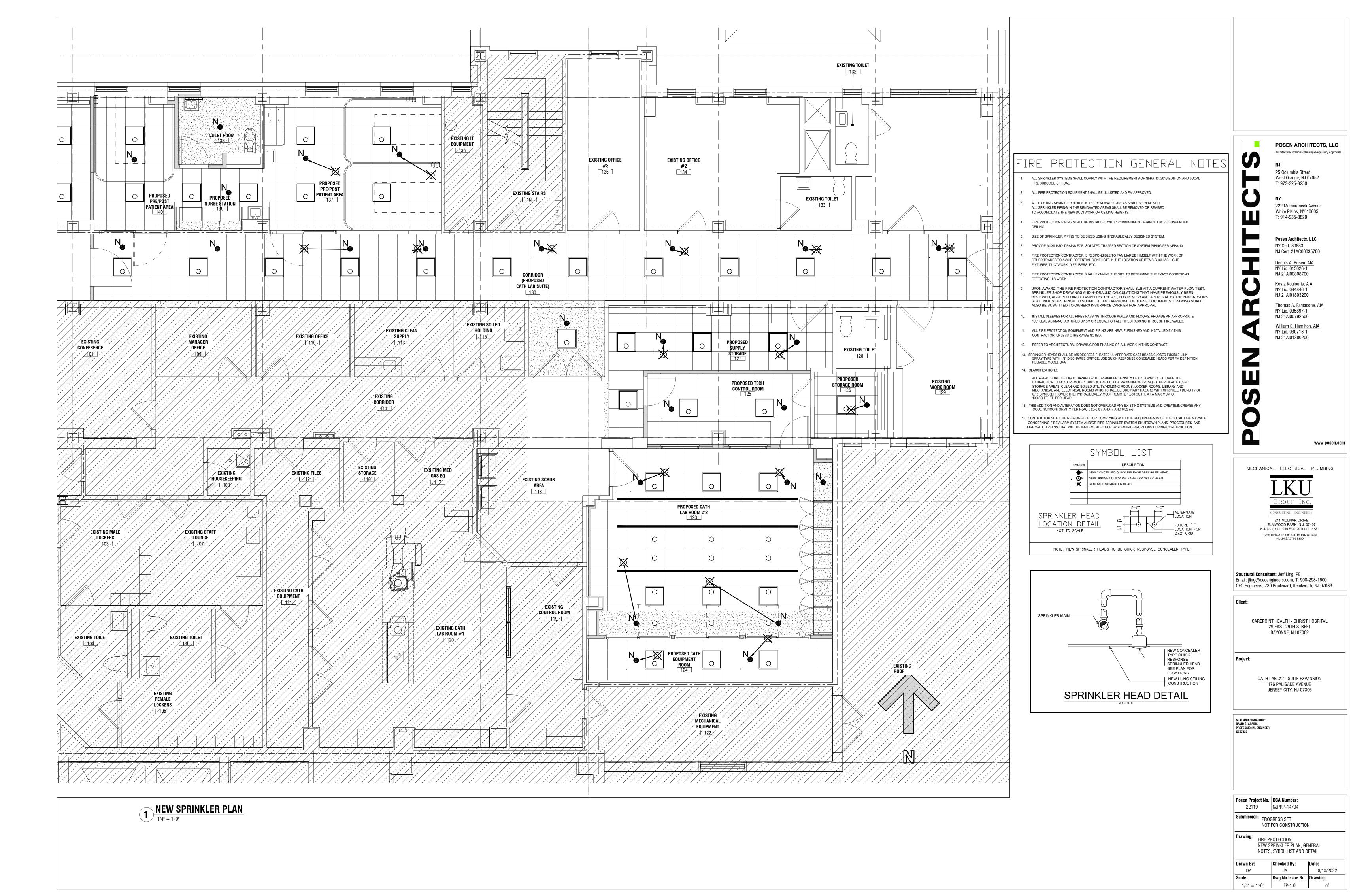
A bond is to be provided.

- **4.** Please confirm all GE Equipment will be supplied and install by others. All GE Equipment will be supplied and installed by GE.
- 5. Please provide specifications for ceiling tile, ceramic tile, window treatments, cubicle curtains/track, Cath Lab Cabinets, etc.
 Ceiling tiles, ceramic tiles, window treatments, cubicle curtains/track, Cath Lab Cabinets, etc. should match existing supplies and equipment.
- 6. Please issue the latest GE Vendor drawings for the equipment.

 Latest GE vendor drawings for the equipment attached.









REV	DATE	MODIFICATIONS
Α	11/Jul/2022	Final (DC-348010)

Hudson Hospital Opco LLC Jersey City, NJ United States of America

01 - C1 - Cover Sheet

02 - C2 - Disclaimer - Site Readiness

03 - A1 - General Notes

04 - A2 - Equipment Layout 05 - A3 - Section Views

06 - A4 - Equipment Details (1)

07 - A5 - Equipment Details (2)

08 - A6 - Delivery

09 - S1 - Structural Notes 10 - S2 - Structural Layout

11 - S3 - Structural Details (1)

12 - S5 - Structural Details (3)

13 - M1 - HVAC

14 - E1 - Electrical Notes

15 - E2 - Electrical Layout (2)

16 - E3 - Electrical Elevations

17 - E4 - Power Requirements

18 - E5 - Interconnections

19 - E6 - Power requirements (Light Signaling)

20 - E8 - Electrical Details



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INNOVA IGS 520/530/540/330 WITH AUTORIGHT FINAL STUDY

Dra	wn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
JM		JM	- 5200462		5813633-8EN	3
Format	Scale		File Name			Sheet
A3	1/4"=1'-0"	IGS-M318201-FIN-00-A.DWG			11/Jul/2022	01/20

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.

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							

CUSTOMER SITE READINESS REQUIREMENTS

REQUIRED MANUALS FOR SYSTEM PRE-INSTALLATION						
Description Document Number*						
Product specific Pre-installation Manual	Refer to cover page					
*documents can be accessed in multiple languages at https://customer-doc.cloud.gehealthcare.com/#/cdp/dashboard						

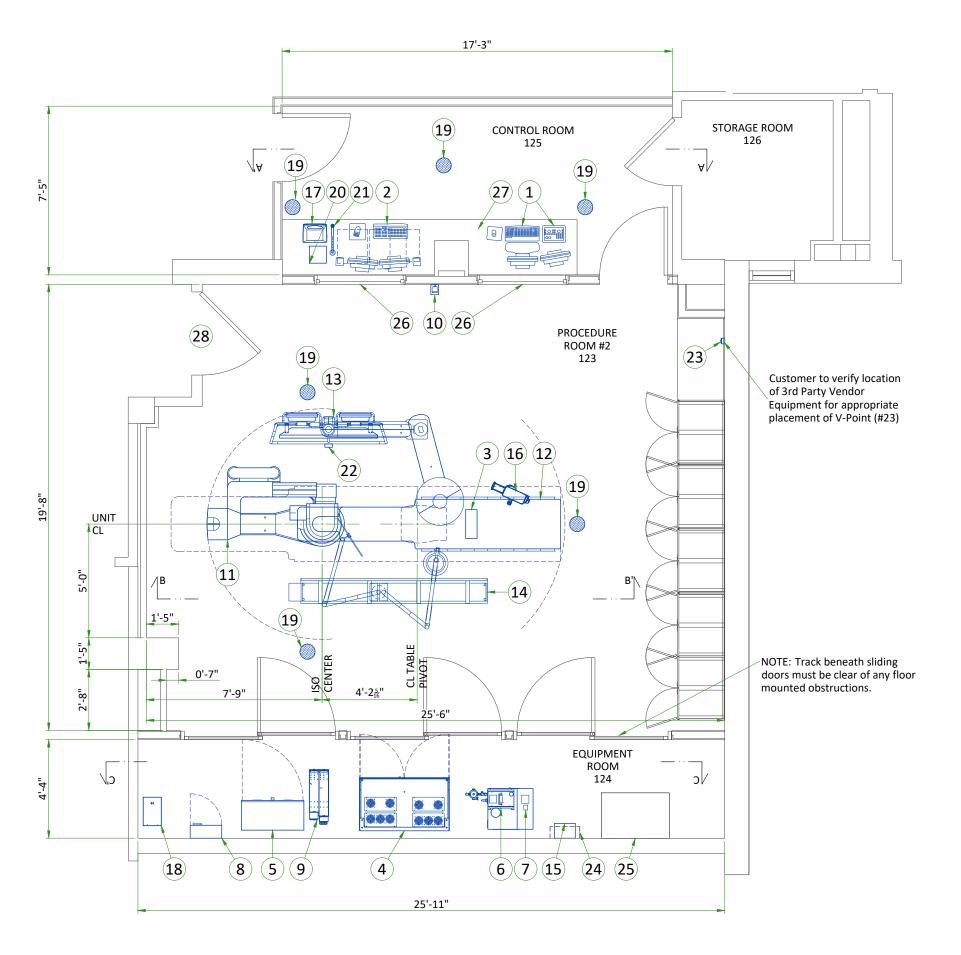
- A mandatory component of this drawing set is the GE Healthcare Pre-installation manual. Failure to reference the Pre-installation manual will result in incomplete documentation required for site design and preparation.
- The items on the GE Healthcare Site Readiness Checklist DOC1809666 are REQUIRED to facilitate equipment delivery to the site. Equipment will not be delivered if these requirements are not satisfied.
 - 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, 2.
 - Restrooms.
 - Provide for refuse removal and disposal (e.g. crates, cartons, packing)

ELECTROMAGNETIC INTERFERENCE

The IGS System is intended for use in the electromagnetic environment specified below. The Customer or the user of the System should assure that it is used in such an environment.

EMISSIONS	TEST COMPLIANCE	ELECTROMAGNETIC ENVIRONMENT
Radio–Frequency Emissions	Group1 Class A limits	The IGS System uses Radio Frequency energy only for its internal function. Therefore, its Radio Frequency emissions are very low and are not likely to cause any interference in nearby electronic equipment.
CISPR11	Group1 Class A mints	The IGS System is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000–3–2	Not applicable	The IGS System is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations/ flicker emissions IEC 61000–3–3	Not applicable	The IGS System is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.





Α	GE Su	pplied	D	Avai	ilable from G	E	
В	GE Su	pplied/contractor installed	E	Equi	ipment existi	ng in room	
С	Custo	mer/contractor supplied and installed	*	Item	to be reinst	alled from a	nother site
вү	ITEM	TEM DESCRIPTION MAX HEAT OUTPUT (btu) (lbs)				MAX HEAT OUTPUT (W)	WEIGHT (kg)
Α	1	Operator console	34	11	19.6	100	9
Α	2	MACLAB Monitoring system	40	94	-	1200	-
Α	3	TRAM		-	8	-	4
Α	4	C-FRT Cabinet	73	70	1226	2160	556
Α	5	System Interface Cabinet (PDU)	17	06	642	500	291
Α	6	Detector conditioner	7:	17	32	210	14.5
Α	7	COOLIX 4100 tube chiller	236	546	265	6930	120
В	8	Main Disconnect Panel	20)5	49	60	22
Α	9	8kVA UPS	17	60	185	520	84
Α	10	Xray buzzer		-	1	-	0.5
Α	11	LC gantry	55	28	1733	1620	786
Α	12	OMEGA V long patient table		- 1635		-	741.5
Α	13	Mavig Large Display Monitor Suspension with two backup monitors	34	341 688		100	312
Α	14	Mavig rad shield and LED lamp with 2.5m ceiling track		- 143		-	65
D	15	External Transformer for LED Surgical lamp		- 6		-	3
Α	16	Injector head on table rail		-	15	-	7
Α	17	Injector control		-	4	-	2
Α	18	Injector electronics	32	20	37	94	17
В	19	Vitaling speaker		_	-	-	-
В	20	Vitaling console		_	-	-	-
В	21	Vitaling microphone		_	-	-	-
В	22	Vitalinq microphone (one on monitor bridge in exam room)		-	-	-	-
Α	23	V-point		- 1		-	0.5
В	24	Light signaling control box	<u> </u>	- 26		-	12
С	25	Storage cabinet					
С	26	Control wall to ceiling with lead glass vie	wing w	/indov	٧.		
С	27	Counter top for equipment- provide gro				ired to route	e cables
С	Minimum door opening for equipment delivery is 46 in. w x 87 in. h [1160mm x 2200mm], contingent on a 96 in. [2438mm] corridor width						х

EXAM ROOM HEIGHT								
	Mini	mum	Recomi	mended				
FINISHED FLOOR TO FALSE CELLING	9'-0"	2.74m	10'-0"	3.05m				

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

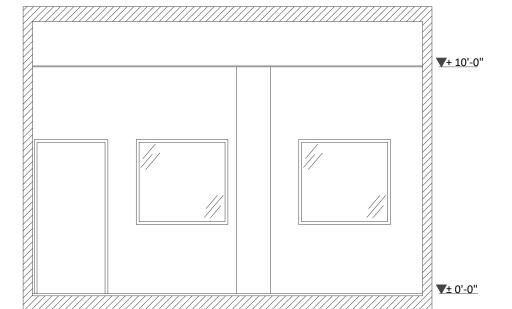
Hudson Hospital Opco LLC

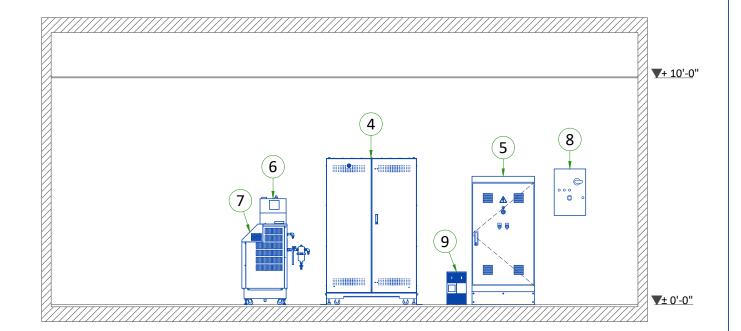
CONTROL ROOM VIEW

TECHNICAL ROOM VIEW

SECTION A-A'

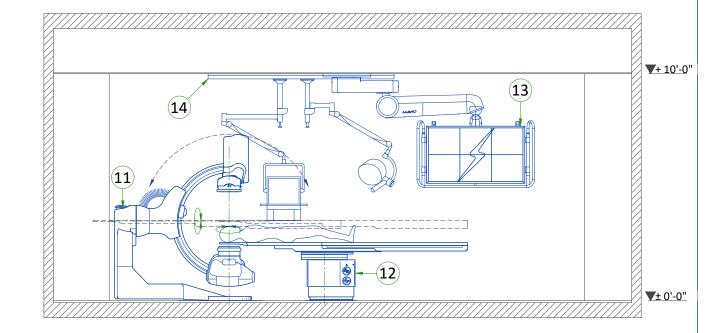


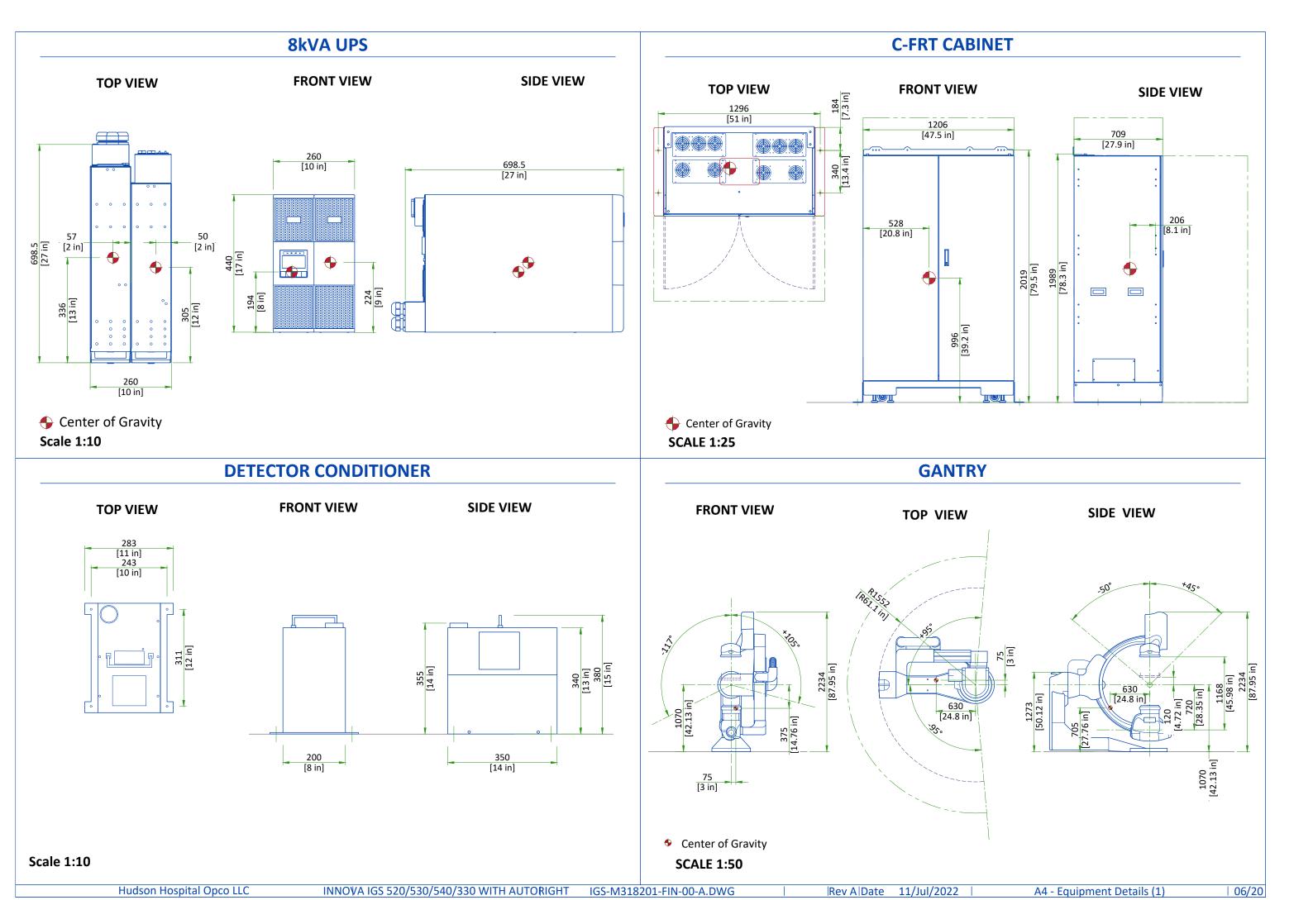




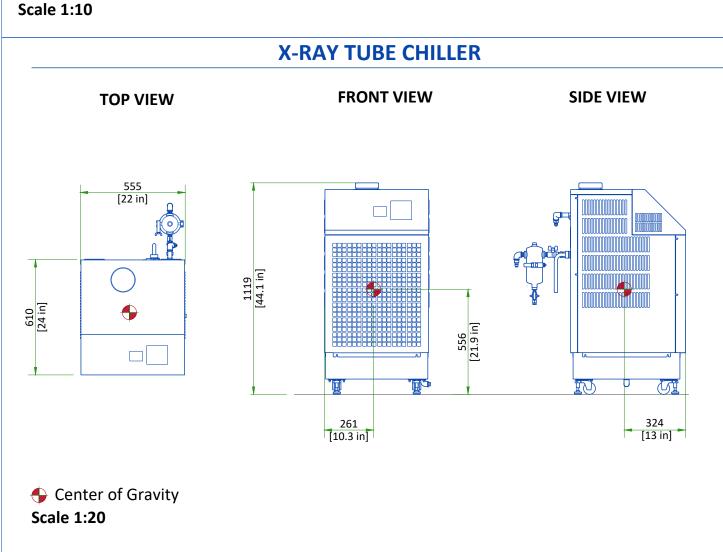
EXAM ROOM VIEW

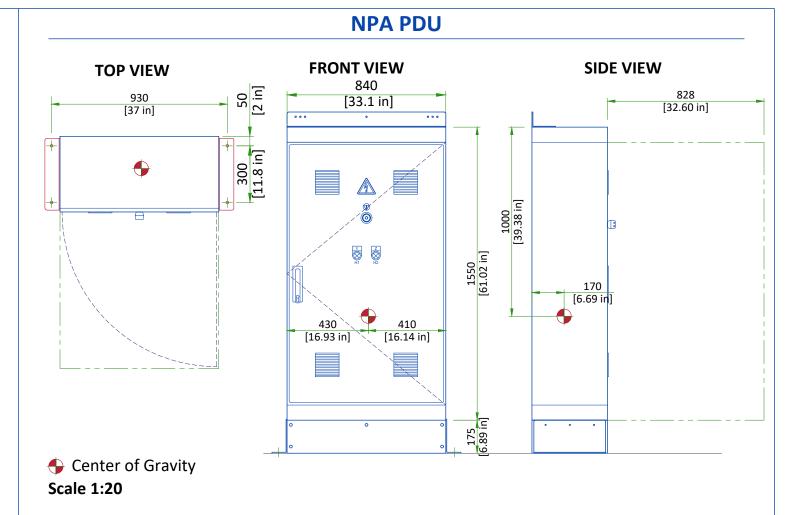
SECTION B-B'

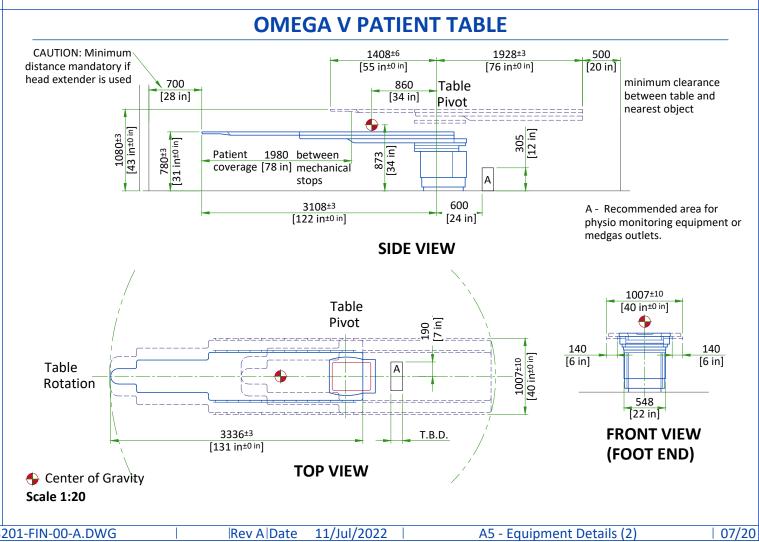




MAIN DISCONNECT PANEL FRONT VIEW SIDE VIEW TOP VIEW 424 [16.7 in] 386 [15.2 in] 174 [6.9 in] [3.5 in] \bigcirc 914 [36 in] Center of Gravity







DELIVERY

THE CUSTOMER/CONTRACTOR SHOULD:

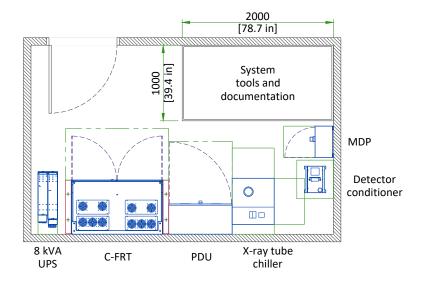
- Provide an area adjacent to the installation site for delivery and unloading of the GE equipment.
- Ensure that the dimensions of all doors, corridors, ceiling heights are sufficient to accommodate the movement of GE equipment from the delivery area into the definitive installation room.
- Ensure that 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								
EQUIPMENT		DIMENSIONS WEIGHT						
	LENGTH	2820 mm	111 in					
GANTRY (SHIPPING DOLLY)	WIDTH	1230 mm	48.4 in	1060 kg	2340 lb			
	HEIGHT	2000 mm	79 in					
ONATION TABLE BASE ASSENABLY	LENGTH	2060 mm	81 in					
OMEGA TABLE BASE ASSEMBLY (ON PALLET)	WIDTH	840 mm	33 in	585 kg	1290 lb			
(0.1.1.1.22.1,	HEIGHT	1032 mm	41 in					
	LENGTH	850 mm	34 in					
C-FRT CABINET (ON PALLET)	WIDTH	1500 mm	59 in	630 kg	1388 lb			
	HEIGHT	2200 mm	87 in					

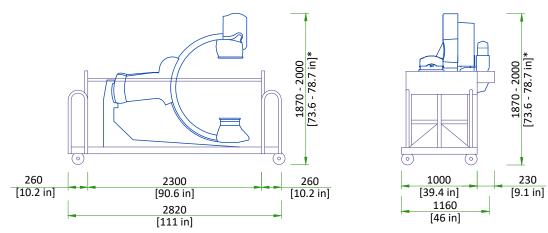
RECOMMENDED AREA IN THE TECHNICAL ROOM

THE TECHNICAL ROOM NEED EXTRA SPACE FOR TOOLS AND DOCUMENTATION

- GE recommend an extra area of 2.0 x 1.0 m (78.7 x 39.4 in) for storage of tools and documentation for the system
- This area doesn't need to be inside the technical room, but in a closer space from the system



SHIPPING DOLLY FOR LC GANTRY



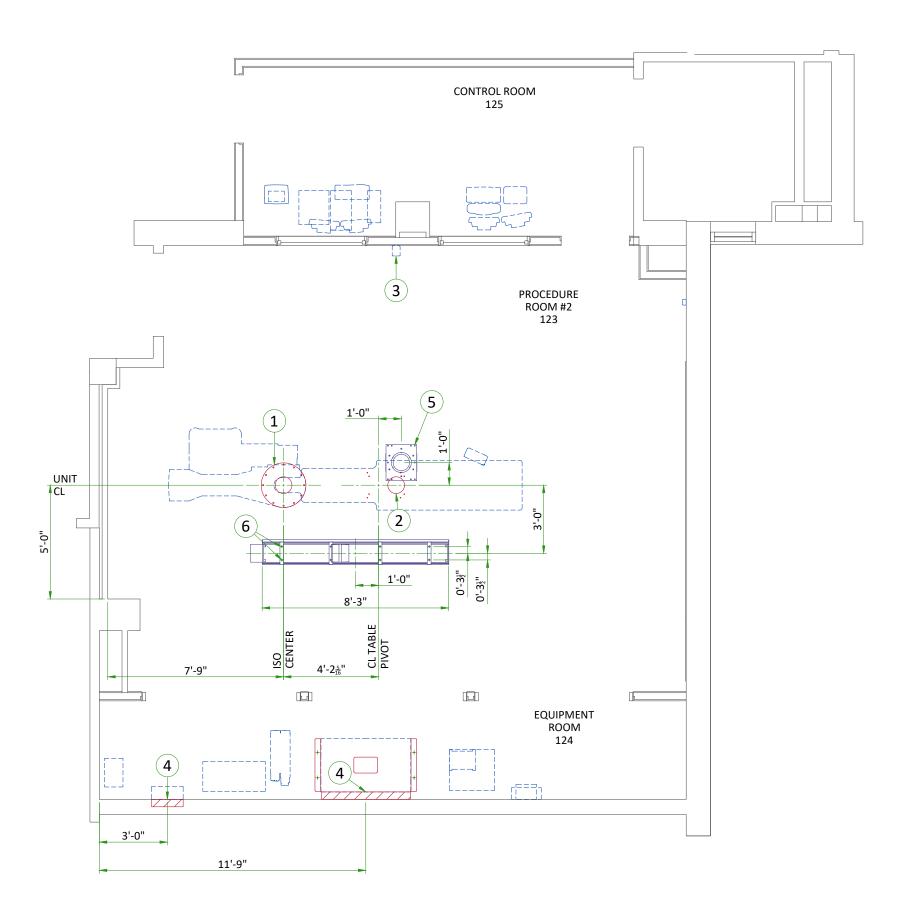
SHIPPING WEIGHT: 1060 kg [2337 lb].

DIMENSIONS								
HEIGHT WIDTH LENGTH								
Full configuration	1870-2000 mm [73.6 - 78.7 in]*	1230 mm [48.4 in]	2820 mm [111.0 in]					
Left top handle removed and right top handle inside	1870-2000 mm [73.6 - 78.7 in]*	1160 mm [45.7 in]	2820 mm [111.0 in]					
Short lifts configuration	2000 mm [78.7 in] 1160 mm [45.7 in] 2300 mm							
NOTE	* Height can be adjusted: ONLY when necessary on delivery path and IF floor rolling surface is flat and leveled (no obstacle), Dolly can be lowered down by 120-130 mm (it means dolly horizontal bars are at 10 mm from floor surface, to prevent any damage on gantry).							

SCALE 1:50

STRUCTURAL NOTES

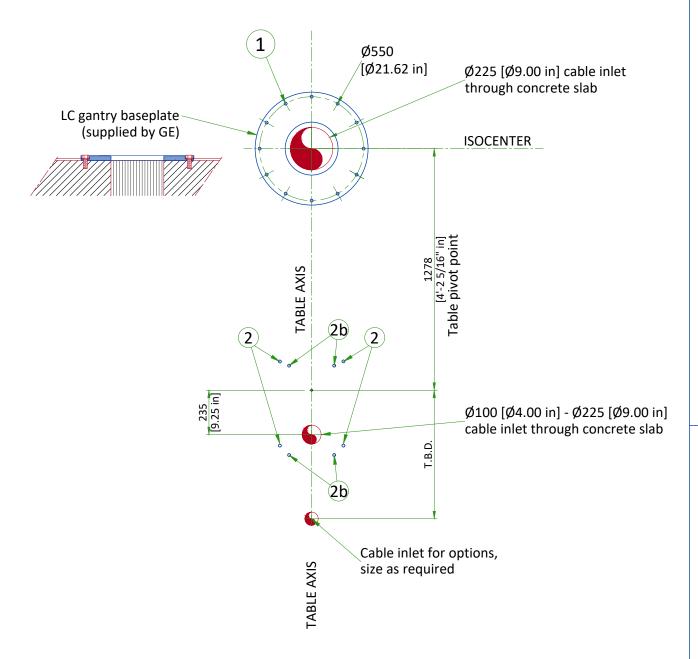
- All steel work and parts necessary to support ceiling mounted tube hanger or other equipment are to be supplied by the customer or his contractors. The unistrut or equivalent structure should run continuous with no fittings extending below face of unistrut channel, run wall to wall, be parallel, square and in the same horizontal plane flush with finished ceiling. The system is to be cross braced vertically, horizontally and diagonally to allow no movement and a maximum of 1,58mm(1/16") deflection. (10) 12,7mm (1/2") dia. X 38,1mm (1 1/2") long bolts with unistrut 12,7mm (1/2") nuts with springs are to be provided by customer or his contractors for each stationary and auxillary support rail. Closure strips shall be provided for areas of unistrut exposed and without mounting units.
- 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.
- Control walls with tube hanger passage above shall be constructed to 2130mm (7'-0") high.
- Floor slabs on which equipment is to be installed must be level to 3,17mm (1/8") in 3050mm (10'-0")
- Minimum floor thickness of 203mm (8").
- 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"



	STRUCTURAL LAYOUT ITEM LIST					
	(GE SUPPLIED / CONTRACTOR INSTALLED)					
Area occupied by GE supplied positioner baseplate						
2 Area occupied by GE supplied table baseplate						
3 Mount X-Ray buzzer bracket on wall above ceiling						
	(CUSTOMER SUPPLIED / CONTRACTOR INSTALLED)					
4 Support backing, locate as shown.						
5 Structural support in ceiling for Mavig dual-arm suspension						
6	Structural supports for fastening the overhead counterpoised suspension. Support to be located as shown. Support should run continuous with no fittings extending below face of channel, be parallel, square, and in the same horizontal plane, flush with finished ceiling. Suspension requires 102 lbs/bolt support. Methods of support that will permit attachment to structural steel or through bolts in concrete construction should be favored. Do not use screw anchors in direct tension.					

IF ACCESS IS NOT READILY AVAILABLE IT IS RECOMMENDED TO PROVIDE A TRAPDOOR IN THE CEILING TO ALLOW SERVICE ACCESS FOR CABLE MANAGEMENT.

LC GANTRY AND TABLE ANCHORING WITH NO BASEPLATE



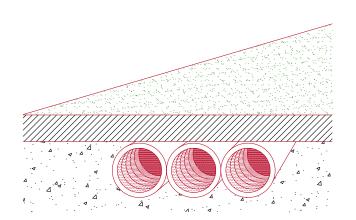
- 1 LC baseplate mounting location: 12 bolts Pullout strength on each bolt 736 daN
 - M20 Through-Bolts recommended (supplied by GE) Alternates:
 - M16 Mechanical anchors (supplied by GE)
 - Chemical anchors (not supplied by GE):
 - HILTIHVU adhesive capsule + HAS Anchor rod Table mounting location : 4 bolts required
 - Pullout strength on each bolt 4432 daN
 - M20 Through-Bolts recommended (supplied by GE) Alternates:
 - M16 Mechanical anchors (supplied by GE)
 - Chemical anchors (not supplied by GE):
 HILTIHVU adhesive capsule + HAS Anchor rod
- (2b) Alternate bolt holes for seismic zones 1 and 2

FLOOR REQUIREMENTS AND CABLE MANAGEMENT

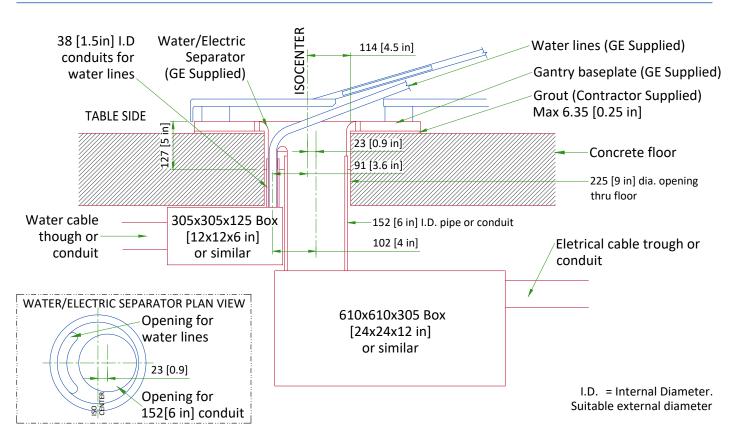
FLOOR REQUIREMENTS

- The maximum pullout force per GE supplied anchor was calculated assuming :
 - A concrete compression strength of **17.24 MPa** at 28 days (which is the minimum required compression stength).
 - Anchors installed to the required hole depth of **165.1 mm [6.5 in] minimum**.
 - Center of anchor hole to concrete edge distance **79.4 mm [3.1 in]**.
 - Make sure to obtain data on compression strength of the concrete before using floor anchors.
- The floor slab on which the equipment is to be installed must be flat and level (1 mm [0.04 in]/1 m [40 in] where equipment is installed and 5 mm [0.2 in]/2 m [79 in] general levelness).
- Anchoring to the floor is intended to the structural elements and not to common screed.
- Do not glue the floor covering in the gantry zone.

CONDUIT IN THE FLOOR



JUNCTION BOX BELOW FLOOR

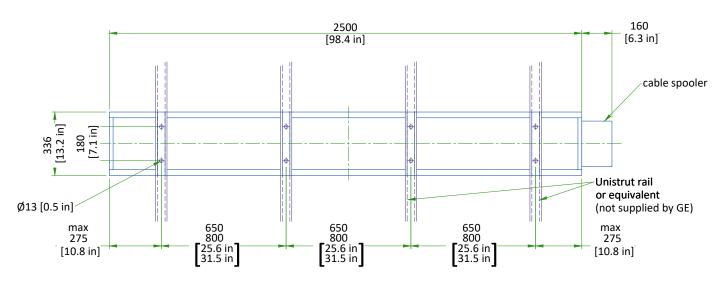


NOTE: PIPE, JUNCTION BOX, AND DUCT OR CONDUIT ARE TO BE SUPPLIED AND INSTALLED BY CUSTOMER OR CUSTOMER'S CONTRACTOR

NOT TO SCALE

MAVIG SUSPENSION MOUNTING METHOD

2.5m CEILING TRACK

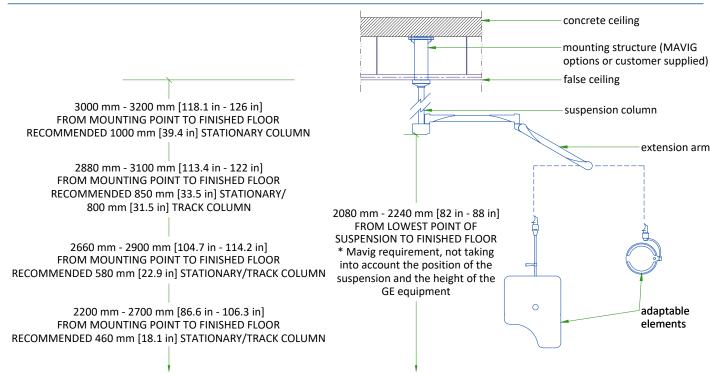


- Weight up to: 94 kg [207 lb] (75 kg [165 lb] system + 19 kg [42 lb] track)
- The required factor of safety is "4" for attaching to Unistrut or equivalent rails and "6" for attaching to the concrete ceiling.

CONSULT MAVIG INSTALLATION MANUAL REV: POR03001 TO DESIGN AND MOUNT THE CEILING SUPPORT.

SCALE 1:20

SUSPENSION COLUMN LENGTHS AND INSTALLATION DETAILS



- Available column lengths might differ, please refer to the GE commercial catalog for current selection options
- For rooms with higher mounting point than 3200 mm [126 in], a ceiling construction between structural ceiling and vertical column is suggested which needs to be designed by a structural engineer
- All design and pre-installation activity must be done in accordance of the MAVIG Installation manual
- Contact your GE Project Manager for OEM documentation
- Installation of mounting plate performed by GE or a GE sub-contractor

NOT TO SCALE

MAVIG FIX MONITOR SUSPENSION MOUNTING METHOD **CEILING PLATE (1) INTERFACE PLATE (3)** MIDDLE PLATE (2) Ceiling substructure 489x412x20 [19.3x16.2x0.8 in] 480x420x20 Ø416x20 [Ø16.4x0.8 in] Top view [18.9x16.5x0.8 in] [19 in] 449 M16 (6x) [18 in] [19 in M12 (4x) M16 (6x) Ø300 Ø270 412 16 ir 360 360 [14 i 258 [10 i [Ø12 in] [Ø11 in] φ370 Service Access: Ø577-Ø620 451 Ø17 [Ø0.7 in] (6x) Ø16.5 [Ø0.6 in] (12x) Ø16.5 [Ø0.6 in] (6x)

CAUTION

The maximum axial load per bolt: 7210 N

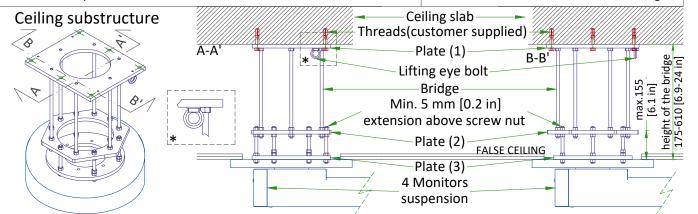
[17.8 in]

- The maximum shear load per bolt: 957 N
- The max. pull out force is defined in accordance with local codes

NOTE

- steel threaded pins & nuts
- threads (supplied by customer)
- screws secured with Loctite 270 glue

[Ø22.7-Ø24.4 in



CEILING SUSPENSION DISCLAIMER

Safety and precautionary comments:

Only qualified, licensed technicians can perform electrical connections, installation, removal and repair. It is strongly recommended that at least two persons perform the installation.

Installing the system: Prior to installation, a structural engineer must confirm that the mounting structure is strong enough to provide proper support for the entire system and any attached end devices. Installation must be completed according to local building codes.

Determination of required installation hardware and torque values for installation of the ceiling column and ceiling track is the sole responsibility of the structural engineer.

Ceiling mounted systems must be installed properly. Failure to follow the instructions provided may lead to a potentially dangerous and unstable condition of the system.

GE and/or MAVIG is not responsible for unauthorized modifications made to the system or use of the system for unintended purposes. GE and/or MAVIG cannot be held liable for improper operation and modifications. Since improper modifications may impair proper operation, safety or reliability of the system, product modifications require written authorization from MAVIG.

Under GE responsibility or under Customer responsibility, for all pre-installations, whatever is the supporting structure (bridge, chair, Unistrut channel, other channels, direct anchorage in concrete, transversal beam, etc. ...) a certificate must be obtained from a structural engineer.

This certificate shall include the definition of fasteners and of their tightening torque, especially for the non-standard cases described in MAVIG PIM and for which the standard anchoring/screws delivered with product shall not be used but shall be defined (and implemented in most cases) by the structural company.

WARNING:

It is prohibited to alter the length of the ceiling column or remove any securing screws.

TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

001 001121110110										
		EXAM ROOM			CONTROL ROOM			TECHNICAL ROOM		
	Min	Recommended	Max	Min	Recommended	Max	Min	Recommended	Max	
Temperature	15 °C [59 °F]	20 °C [68 °F]	32 °C [90 °F]	15 °C [59 °F]	20 °C [68 °F]	35 °C [95 °F]	15 °C [59 °F]	20 °C [68 °F]	25 °C [77 °F]	
Temperature gradient	mperature gradient ≤ 10 °C/h			≤ 10 °C/h			≤ 10 °C/h			
RH (1) non condensing	() ===================================		20% to 75%			20% to 75%				
Humidity gradient				≤ 10%/h		≤ 10%/h				

8 kVA UPS

storage temperature is above +25 °C.

Systems with 8 kVA UPS shall be stored for less than 14 weeks if the storage temperature is above +30°C, and less than 25 weeks if

STORAGE CONDITIONS

Temperature	+10 °C [50 °F] to +40 °C [104 °F]				
RH (1) non condensing	10% to 80%				
Pressure	700 hPa to 1030 hPa				
Overall storage time shall be less than 6 months.					

⁽¹⁾ Relative humidity

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

	DESCRIPTION		HEAT OUTPUT (kW)			HEAT OUTPUT (BTU/hr)			
ROOM		STAND BY	MODERATE ¹	TYPICAL ²	MAX ³	STAND BY	MODERATE ¹	TYPICAL ²	MAX ³
	Gantry and table	0.41	0.55	0.89	1.62	1399	1877	3037	5528
Exam room	Large Display Monitor (LDM) with 2 backups	0.10	0.10	0.10	0.10	341	341	341	341
100111	Typical injector	0.09	0.09	0.09	0.09	307	307	307	307
	TOTAL	0.60	0.74	1.08	1.81	2047	6176	3685	6176
	DL console and live monitor	0.10	0.10	0.10	0.10	341	341	341	341
Control room	MACLAB	-	-	1.20	1.20	-	-	4094	4094
	TOTAL	0.10	0.10	1.30	1.30	341	4435	4435	4435
	C-FRT Cabinet	0.70	1.02	1.53	2.16	2388	3480	5221	7370
	PDU	0.50	0.50	0.50	0.50	1706	1706	1706	1706
Technical	Tube Chiller	2.53	4.49	5.49	6.93	8633	15321	18733	23646
room	Detector Conditioner	0.21	0.21	0.21	0.21	717	717	717	717
	UPS 8 kVA	0.52	0.52	0.52	0.52	1760	1760	1760	1760
	TOTAL	4.46	6.74	8.25	10.32	15204	35199	28137	35199

The list contains only the principal components of the system and doesn't contain any non-GE supplied equipment.

¹ Moderate Use corresponds to 8 cases in 10 hours.

² Typical Use corresponds to 11 cases in 10 hours.

³ Maximum Use is during the case.

ELECTRICAL NOTES

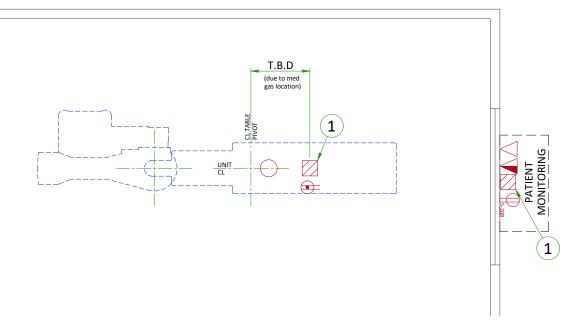
- 1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag 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.
- Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
- 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.
- 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.
- 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
- Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
- 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.

TYPICAL PHYSIO MONITORING

ı	TEM	Outlet Legend for Physio Equipment
Г	•	Duplex hospital grade, dedicated outlet 120-v emergency, single phase power, 15a
	9-20R	5-15R NEMA Receptacle, dedicated outlet 120-v, single phase power
	\triangleright	Dedicated telephone line(s)
	lack	Network outlet

	ELECTRCAL LAYOUT ITEM LIST
1	J-Box or area of conduit stubs for patient monitoring - Size per local code



CONNECTIVITY REQUIREMENTS

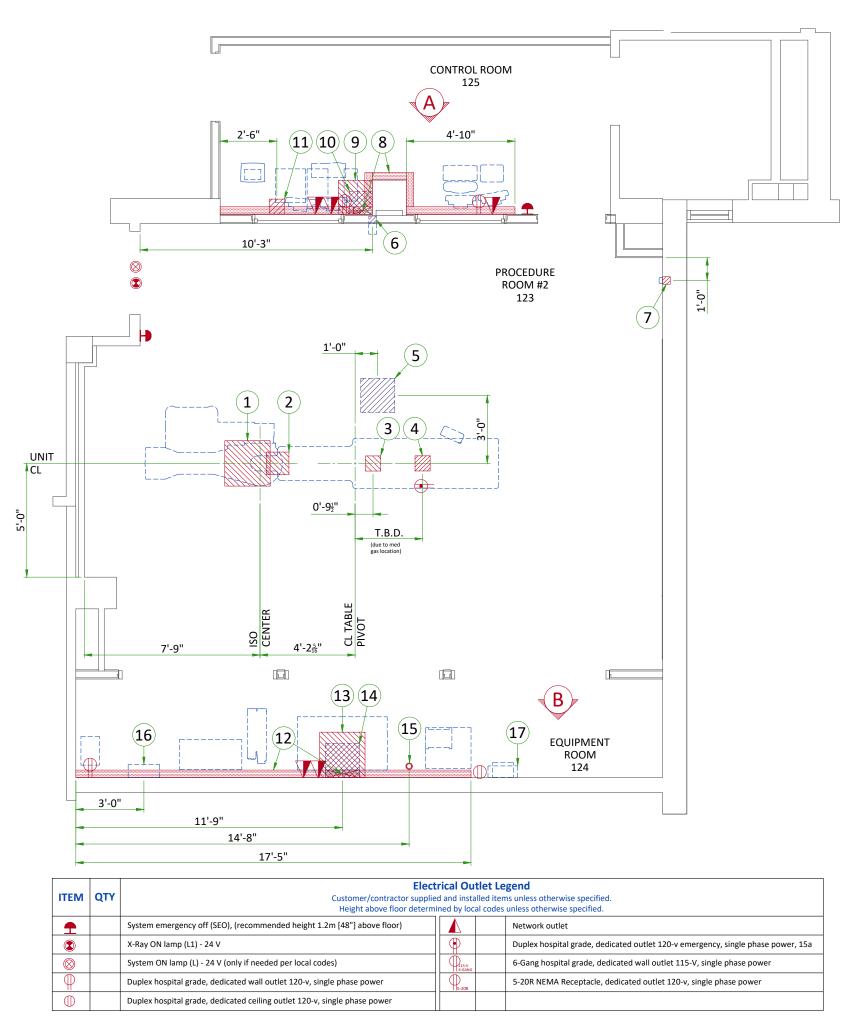
Your new GE Healthcare imaging modality will require local and remote connectivity to enable our full range of digital support:

- Local connectivity This allows your system to connect to local devices such as PACS and modality worklist. We will require network information to configure the system(s), and a live ethernet port(s) prior to the delivery of the system(s).
- Remote connectivity Your GE Healthcare service warranty includes InSite™ (applicable to InSite capable products), a powerful broadband-based service which enables digital tools that can help guard your hospital against equipment downtime and revenue loss by quickly connecting you to a GE Healthcare expert.

Depending on product family and software version, imaging systems can be connected in one of the following methods:

- 1. TLS over TCP Port 443 (Preferred method for new products) via:
 - a. DNS resolution
 - b. Customer-provided Proxy or
 - c. GE Proxy (Available in some regions)
- 2. Site-to-Site IPsec VPN tunnel

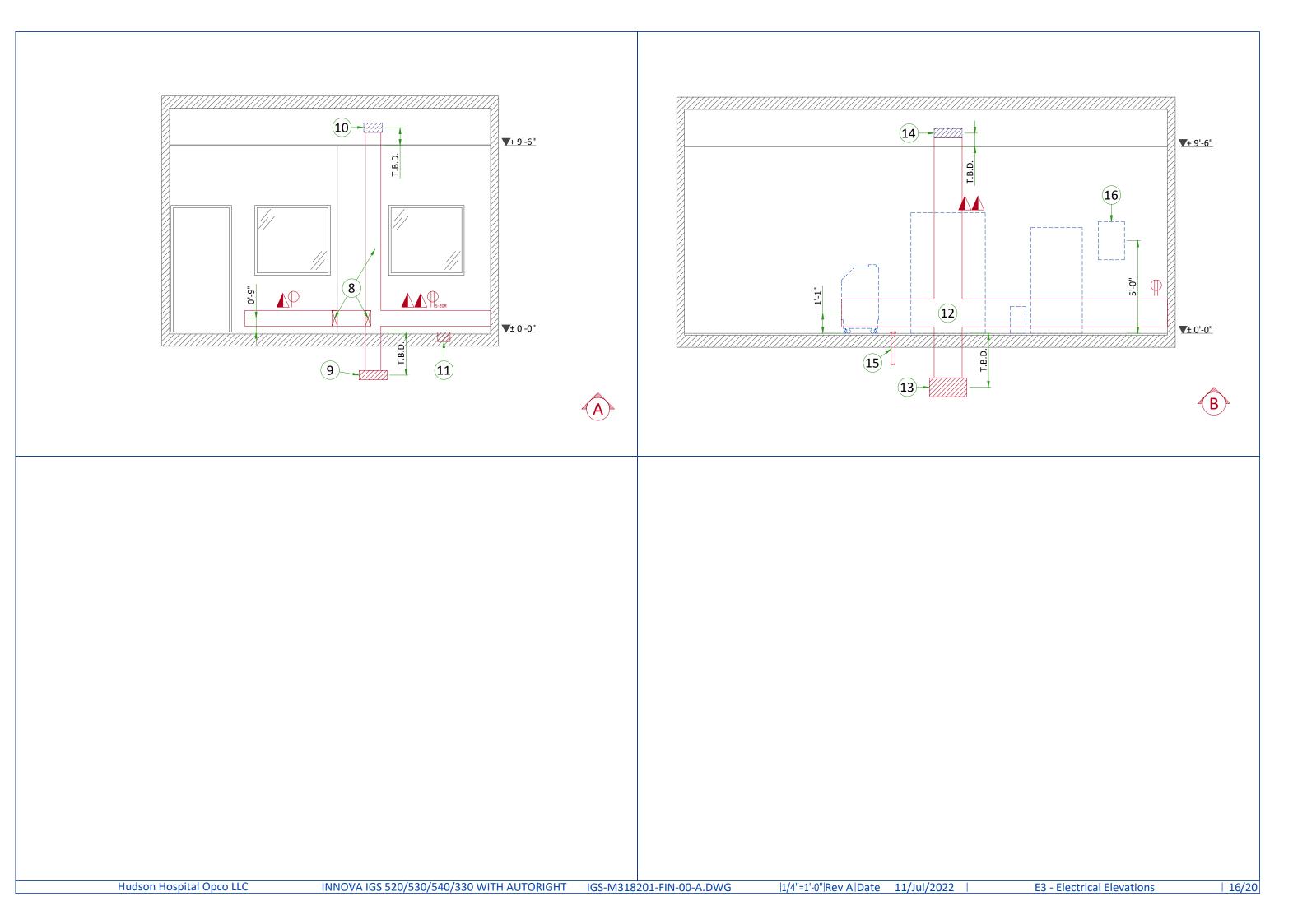
Please provide the GE project manager with the contact information for the resource that can provide information required to set up these connections. GEHC will send out communication to these contacts, which will include the project's Connectivity requirements, and a Connectivity form. This form will need to be completed and returned to GEHC prior to delivery of the system to ensure the system is tested and connectivity is enabled prior to the completion of the installation.



	ELECTRICAL LAYOUT ITEM LIST				
	Exam Room				
1	Box below floor, 24"x24"x12" (Gantry)				
2	Box below floor, 12"x12"x6" (Gantry water lines)				
3	Box below floor, 8"x8"x6" (Table)				
4	Box below floor, 8"x8"x6" (Patient Monitoring)				
5	Box above ceiling, 18"x18"x6" (Monitors)				
6	Flush box, 4" x 4" @ 12" below finished ceiling (X-Ray Buzzer)				
7	Flush box, 4" x 4" @ 32"- 48" above finished floor (V-Point)				
Control Room					
8	Surface wall duct, 10"x 3 1/2" with minimum 2 dividers				
9	Box below floor, 18"x18"x6"				
10	Box above ceiling, 12"x12"x6"				
11	Box below floor, 8"x8"x6" (Patient Monitoring)				
Equipment Room					
12	Surface wall duct, 18"x 3 1/2" with minimum 2 dividers				
13	Box below floor, 24"x24"x12"				
14	Box above ceiling, 18"x18"x6"				
15	Empty 3" conduit below floor (water lines)				
16	Main Disconnect Panel				
17	Light Signaling Control Box				

Additional Conduit Runs (Contractor Supplied and Installed)

	From (Bubble # / Item)		To (Bubble # / Item)	Qty	Usable length	Size (in)
1	Gantry	13	CFRT Cabinet	4	52 ft.	4
1	Gantry	3	Table	1	13 ft.	4&2
9	Control Room	13	CFRT Cabinet	1 & 2	59 ft.	$3\frac{1}{2}\&2\frac{1}{2}$
15	Water Line	2	Gantry	1	59 ft.	3
17	Light Signaling Control Box		Warning light	1	-	<u>1</u> 2
17	Light Signaling Control Box	14	System Interface Cab. (PDU)	1	-	<u>1</u> 2
17	Light Signaling Control Box		120-V 1 phase power	1	-	As Req'd
	LED Transformer		Spooler	1	-	As Req'd
	LED Transformer		120-V 1 phase power	1	-	As Req'd
	LED Lamp		Spooler	1	-	Cables come with spooler
6	X-Ray Buzzer	14	CFRT Cabinet	1	90 ft.	1 ¹ / ₂
6	X-Ray Buzzer	10	Control Room	1	90 ft.	1 ¹ / ₂
5	Monitor Boom	10	Control Room	1	88 ft.	2 <u>1</u>
5	Large Display Monitor	14	CFRT Cabinet (LDM server)	1	88 ft.	3& 3
13	CFRT Cabinet (LDM server)	9	Control Room	1	59 ft.	3
13	CFRT Cabinet (LDM server)	4	TRAM/PDM	2	-	3
14	System Interface Cab. (PDU)		Emergency off	1	-	<u>1</u> 2
14	System Interface Cab. (PDU)		Emergency off	1	-	<u>1</u>
16	Main Disconnet Panel		480-V 3 phase power	1	-	As Req'd
13	Injector Electronics	3	Injector Head	1	-	3
13	Injector Electronics	3	Injector Control	1	-	3
3	Table	4	TRAM/PDM	1	-	3
11	Patient Monitoring Console	5	Monitor Boom	1	-	3
11	Patient Monitoring Console	4	TRAM/PDM	2	-	3
7	V-Point	14	CFRT Cabinet	1	100 ft.	1 ¹ / ₂
ev A C	v A Date 11/Jul/2022 E2 - Electrical Layout (2) 15/20					



POWER REQUIREMENTS

POWER SUPPLY	3 PHASES+G 380/400/415/480 V ±10%
FREQUENCIES for 380/400/415V	50/60 Hz ± 3 Hz
FREQUENCY for 480V	60 Hz ± 3Hz
PEAK POWER CONSUMPTION	150 kVA
MOMENTARY POWER CONSUMPTION	100 kVA
LONG TIME POWER CONSUMPTION	18 kVA
MINIMUM PROTECTION	100 A (D curve or equivalent)
MAXIMUM LINE IMPEDANCE PHASE TO PHASE	380 V : 0.09 Ω / 400 V : 0.096 Ω / 415 V : 0.102 Ω / 480 V : 0.12 Ω

- Power supply should come into a Mains Disconnect 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 line impedance phase to phase and rating of protection.

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 installed with IGS system components must be powered separately (e.g. lighting, power outlets)
- Transients must be less than 2,000 V peak in common mode and 1,000 V in differential mode, with a duration limited to a few microseconds.

GROUND SYSTEM

- At least 35 mm² copper from main ground point to the MDP.
- 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 IGS cableways and to additional equipotential connections linking up all the conducting units in the rooms where IGS units are located.

CABLES

- Power and cable installation must comply with the distribution diagram.
- MDP to PDU cable shall be copper cable and cable insulation temperature shall be 90°C.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signalling and remote control (SEO, L...) will go to PDU with a pigtail lenght of 2.0 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:

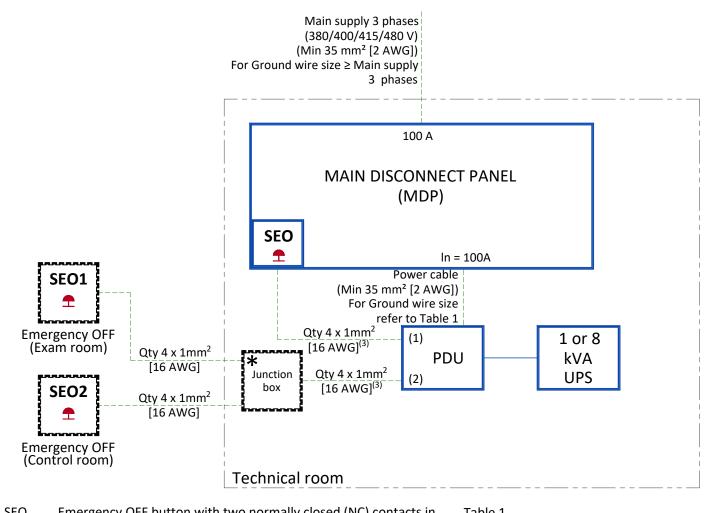
- Protecting cables against water (Cableways should be waterproof),
- Protecting cables against abnormal temperatures (Proximity to heating pipes or ducts),
- Protecting cables against temperature shocks,
- Replacing cables (Cableways should be large enough for cables to be replaced),
- Only GE cables are running inside cableways.
- Metal cableways should be grounded.

MANDATORY LOTO REQUIREMENTS

- The MDP shall provide means of disconnecting the mains power from the system, with LOTO capability to ensure safe service operation. It can be done by the input breaker if it has disconnecting capability, or by a separate disconnection device.
- An operator should be able to apply LOTO without opening the MDP box. When a LOTO device is installed on the MDP input breaker or on the disconnecting device, there shall be no voltage at the output of the MDP.

POWER DISTRIBUTION FOR IGS SYSTEM

POWER SUPPLY FOR MAIN SYSTEM



- SEO Emergency OFF button with two normally closed (NC) contacts in the door of MDP
- SEO 1-2 Emergency OFF button with two NC contacts located 1.50 m [5 ft] above floor.

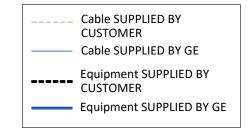
The EPO button shall be protected against accidental activation. *Series connection of SEO1 and SEO2 NC contacts

PDU Power Distribution Unit/System Interface Cabinet

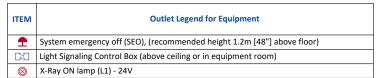
NOTES:

- (1) Emergency power off: MDP EPO
- (2) Emergency power off: Remote EPO
- (3) Cable with 2 m [6.6 ft] extra length on the floor behind the PDU

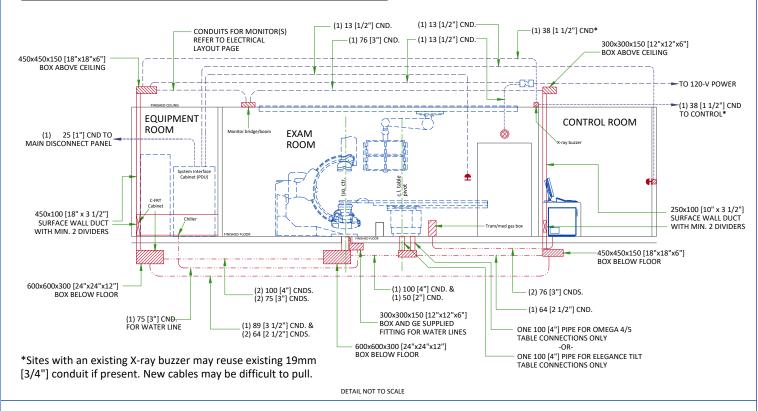
I able 1		
LENGTH	<6 m [20 ft]	<15.1 m [50 ft]
GAUGE	Qty 1x2 AWG	Qty 2x2 AWG
GAUGE	Qty 1x35 mm ²	Qty 2x35 mm ²



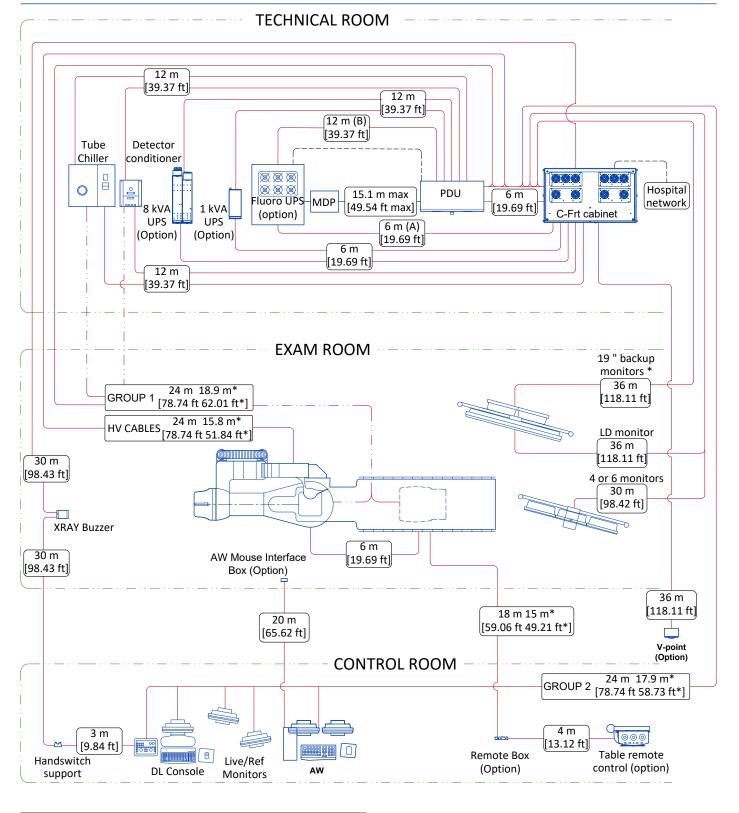
TYPICAL ELECTRICAL SECTION VIEW



This diagram displays a typical interconnection method for GE equipment and should be used to determine electrical routing per local site conditions and regulatory requirements. Refer to Electrical Layout page for site-specific planning information.



INTERCONNECTIONS



		Cable supplied by the client
		Cable supplied by GE
		Cable supplied by GE (contains water hoses)
		Room wall
ft		Total length
ft*		Usable length

(A): A 6 m Ethernet cable between the C-FRT Cabinet and the Fluoro UPS is provided with the system. If a longer cable is needed, it shall be provided by the hospital; it shall be Cat5 minimum.

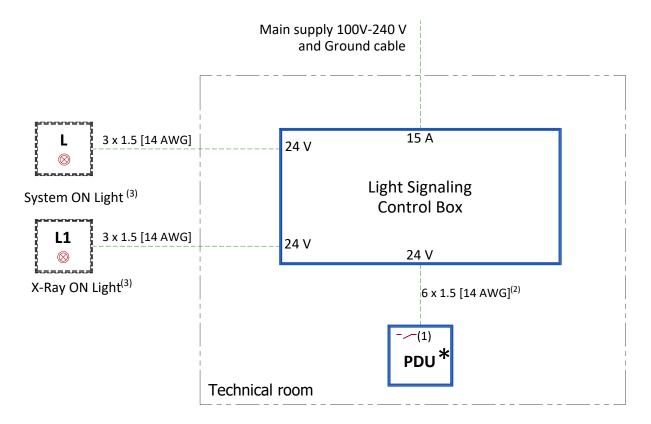
(B): A 12 m EPO cable between the PDU and the Fluoro UPS is provided with the system. If a longer cable is needed, it shall be provided by the hospital, its minimum gauge shall be 1 mm² [17 AWG].

POWER REQUIREMENTS (LIGHT SIGNALING)

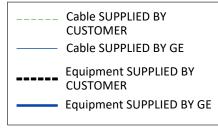
SPECIFICATIONS OF POWER INPUT

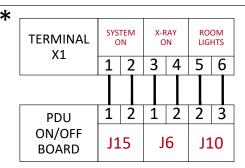
FOR ELECTRICAL BOX LIGHT SIGNALING		
POWER DEMAND	15 A	
VOLTAGE	Single Phase 120V or 240V	
FREQUENCY	50/60 Hz ± 3Hz	

POWER DISTRIBUTION (LIGHT SIGNALING)

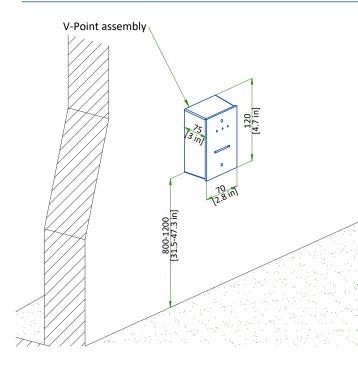


- L System ON light Located near access doors (3)(4)
- L1 XRay ON light 24 V, Located near access doors and inside the exam room (3)(4)
- PDU Power Distribution Unit/System Interface Cabinet NOTES:
- (1) Three dry contacts: "System ON", "X-Ray ON" and Room lights control are released by PDU. Max. voltage = 24 V
- (2) Cable with 2m [6.6ft] extra length on the floor behind the back of PDU
- (3) Location and/or quantity: refer to layout





V-POINT



V-POINT INSTALLATION

- The V-Point is provided with a box that allows the installation on walls. It is mandatory to install the V-Point with its box.
- The V-Point should be near an electrical distribution such as a cable tray or technical sheath, otherwise provide one to route cables towards the floor or the ceiling.
- Cable path trough the V-Point wall box can be located on one of the four sides of the box or on the back of the box.
- The V-Point wall box is attached on the wall with four screws and four flat washers. (The V-Point screws and washers are not provided with the kit. They should be provided under customer responsibility.)

	V-POINT
FIXATION	To the wall
QUANTITY IN EXAM OR CONTROL ROOM	up to 3
INSTALL HEIGHT FROM FINISHED FLOOR	800-1200 mm [31.5-47.3 in]
CABLE DIAMETER	20 mm [0.8 in]
MINIMUM BENDING RADIUS OF CABLE	30 mm [1.2 in]