DISCOVERY RF180
FINAL STUDY

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 drawings. 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.
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 local and 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 conformance 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.

<table>
<thead>
<tr>
<th>DATE</th>
<th>NAME</th>
<th>SIGNATURE</th>
</tr>
</thead>
</table>

GLOBAL SITE READINESS CHECKLIST (DI)

Customer Name: __________________________
PMI Name: __________________________
GON/SD Number: __________________________
Equipment: __________________________
Site Visit Date for SRC: __________________________

Site Ready Checks at Installation

General Site Planning

- Room dimensions, including ceiling height, for all Exam, Equipment/Technical & Control rooms meets GE specifications.
- Ceiling support structure, if on the GE drawing, is at correct location and height according to the drawing specifications. Levelness and spacing has been measured. Overhead support Structure has been confirmed with contractor to meet GE 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.
- Delivery route from truck to installation space has been reviewed, all communications have occurred, arrangements made for special handling (if needed). Floors along delivery route will support weight of the equipment, 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 confirm if needed.
- Adequate room illumination installed and working.
- Cableways (floor, wall, ceiling, etc.) ready for GE cables and are of correct length and diameter. Cableways routed per GE final drawings and access openings installed as determined by GEHC PM. Surface floor duct 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 & K-ray

- Doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotection regulatory approval for installation obtained.
- PMI Signature: __________________________
- Customer Signature: __________________________
- FS Signature: optional

DISCOVERY RF180 | EN-RF-DISCOVERY_RF180 WEB.DWG | C2 - Disclaimer - Site Readiness | 02/16
ENVIRONMENTAL SPECIFICATIONS

MAGNETIC INTERFERENCE
To guarantee specified imaging performance:
X-ray tubes and control console equipment must be located in ambient static field of less than 10 gauss.

LIGHT REQUIREMENTS
For the electronic ballast of fluorescent lamp in exam room, the operating frequency should be above 42KHz.

ACOUSTIC OUTPUT
Measured 1 m from any point in system.
In-use: less than 65 dBA
Stand-by: less than 45 dBA

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.

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**PRELIMINARY NOTE:**
ALL INFORMATION IN THIS DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE!!

<table>
<thead>
<tr>
<th>BY</th>
<th>Item</th>
<th>Description</th>
<th>Max Heat Output (BTU)</th>
<th>Weight (lbs)</th>
<th>Max Heat Output (W)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>Table (with over-floor plate)</td>
<td>2388</td>
<td>3060</td>
<td>700</td>
<td>1388</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>Generator</td>
<td>3300</td>
<td>200</td>
<td>1026</td>
<td>91</td>
</tr>
<tr>
<td>A</td>
<td>3</td>
<td>Digital Systems Cabinet</td>
<td>1092</td>
<td>242</td>
<td>320</td>
<td>110</td>
</tr>
<tr>
<td>B/D</td>
<td>4</td>
<td>15 kVA Transformer</td>
<td>120</td>
<td>-</td>
<td>95</td>
<td>-</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>Operators Console</td>
<td>149</td>
<td>17</td>
<td>57</td>
<td>8</td>
</tr>
<tr>
<td>A</td>
<td>6</td>
<td>Single Monitor Cart</td>
<td>149</td>
<td>37</td>
<td>57</td>
<td>16.6</td>
</tr>
<tr>
<td>B/D</td>
<td>7</td>
<td>Power Distribution Box (PDB)</td>
<td>-</td>
<td>175</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>4410m Kalos Rails</td>
<td>-</td>
<td>661</td>
<td>-</td>
<td>300</td>
</tr>
<tr>
<td>D</td>
<td>9</td>
<td>OTS with 3m Bridge</td>
<td>1190</td>
<td>171</td>
<td>350</td>
<td>78</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>Non-Tilting Wallstand</td>
<td>-</td>
<td>376</td>
<td>-</td>
<td>171</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
<td>Partial UPS</td>
<td>171</td>
<td>74</td>
<td>50</td>
<td>33.60</td>
</tr>
<tr>
<td>A</td>
<td>12</td>
<td>TIMMS 2000 on cart (TPC)</td>
<td>-</td>
<td>200</td>
<td>-</td>
<td>90</td>
</tr>
<tr>
<td>C</td>
<td>13</td>
<td>Minimum opening for equipment delivery is 47 in. w x 73 in. h, contingent on a 102 in. corridor width</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>14</td>
<td>Counter top for equipment- provide grommeted openings as required to route cables</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>Control wall, to ceiling with lead glass viewing window</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>16</td>
<td>Counter top with sink, base, and wall cabinets</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Exam room height**

- Finished floor to slab height: 78D
- Recommended finished ceiling height: 9'-10"'

Please note that your Discovery RF180 installation in the selected room does not meet the following minimal requirement:

- 530 mm required distance between the Tube Head and any stationary object.

Therefore we must apply a warning label on both Tube Head sides to remind the Operator about entrapment hazard during Gantry motions.

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The GE HI Technical Support Group is an additional resource that can provide answers for general GE product siting questions and can be reached at (877) 305-9677 or mail to: HPItechCOE@ge.com

For Accessory Sales: (866) 281-7545 Options 1, 2, 2 or mail to:/gehcaccessorysales@ge.com
## EXAM ROOM CEILING HEIGHTS

### RECOMMENDED AND MINIMUM ROOM HEIGHTS

<table>
<thead>
<tr>
<th>CONFIGURATION</th>
<th>SPECIFICATION</th>
<th>CEILING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>mm</td>
</tr>
<tr>
<td>Table</td>
<td>Minimum</td>
<td>2600</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
<td>3000</td>
</tr>
<tr>
<td>Overhead Tube Suspension</td>
<td>Minimum</td>
<td>2600</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
<td>2920</td>
</tr>
<tr>
<td>Monitor Suspension</td>
<td>Minimum</td>
<td>2600</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
<td>2920</td>
</tr>
<tr>
<td>Tilting Wall Stand*</td>
<td>Minimum</td>
<td>2650</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
<td>2650</td>
</tr>
<tr>
<td>Non-tilting Wall Stand</td>
<td>Minimum</td>
<td>2400</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
<td>2800</td>
</tr>
</tbody>
</table>

Note: Minimum room height for the table must take into consideration the most protruding object from the ceiling that is in the system area (for example the rails for OTS).

*Not available in USA
**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.

The unit (table main frame and body) can be shipped through a 1200 mm [47 in] door width and 1200 mm [47 in] minimum hallway width. The unit can be divided and the major assemblies can be maneuvered through a 1020 mm [40 in] doorway and 1300 mm [51 in] hallway width (Order has to be placed accordingly, table is shipped in one piece by default). The OTS can be shipped through a 900 mm [35 in] door width and 2600 mm [102.4 in] minimum hallway width or through a 1400 mm [55 in] door width and 1800 mm [71 in] minimum hallway width.

**DIMENSIONS OF DELIVERY WITH DOLLY TRANSPORT EQUIPMENT**

<table>
<thead>
<tr>
<th>MAJOR ASSEMBLIES</th>
<th>LENGTH (mm)</th>
<th>WIDTH (mm)</th>
<th>HEIGHT (mm)</th>
<th>WEIGHT (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table main frame and body</td>
<td>2460 [97 in]</td>
<td>1000 [39 in]</td>
<td>1630 [64 in]</td>
<td>TBD</td>
</tr>
<tr>
<td>Table main frame</td>
<td>2460 [97 in]</td>
<td>680 [27 in]</td>
<td>1535 [60 in]</td>
<td>300 [661 lb]</td>
</tr>
<tr>
<td>Table body</td>
<td>1268 [50 in]</td>
<td>1000 [39 in]</td>
<td>1630 [64 in]</td>
<td>680 [1499 lb]</td>
</tr>
<tr>
<td>OTS (Optional)</td>
<td>3010 [118.5 in]</td>
<td>798.2 [31.5 in]</td>
<td>-</td>
<td>378 [833 lb]</td>
</tr>
</tbody>
</table>

*NOTE:* The recommended service area behind the table is 500mm (19.6 in). The minimum service area behind the table must be 336 mm (13.2 in).

**CLEARANCE AREAS**

**TABLE**

*Distance depends on bridge length

**FOCAL SPOT TRAVEL**

**KALOS SUSPENSION**

*Distance depends on bridge length

SCALE 1:20

SCALE 1:50
CEILING REQUIREMENTS

To allow installation of the stationary rail cross-members, clearance is required between the ends of the stationary rails and the walls.

It is recommended that sprinkler heads not be placed between the stationary rails. All sprinkler heads should be mounted so they do not extend downward more than 6.35 mm from the ceiling while in the 'resting' position.

In addition, there should not be anything mounted in the ceiling (i.e. lights, A/C returns, etc) between the stationary rails. This is because the OTS longitudinal drive belt assembly is located on the movable bridge, approximately centered between the two stationary rails, and may come into contact with those ceiling-mounted items during normal use.

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 for suggested locations.
- Control walls shall be constructed to minimum 2130mm (7'-0") high.
- 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".
- Different anchor types are used to install the components of the system. Refer to Structural Requirements Section(s) of the Pre-Installation Manual for each anchor requirement.
- Refer to the Structural Requirements Section for the required minimum embedment.
- The ground surface must be flat and leveled, maximum tolerance for leveling is ±1.5 mm per 1 m (0.2 in per 10 feet). A grout pad provided by the contractor is required to meet this specification. The maximum pad thickness is 6.3 mm (0.25 in).
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(GE SUPPLIED / CONTRACTOR INSTALLED)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Area occupied by GE supplied table baseplate</td>
</tr>
<tr>
<td>2</td>
<td>Area occupied by GE supplied wall stand baseplate</td>
</tr>
<tr>
<td>3</td>
<td>Area occupied by GE supplied transformer</td>
</tr>
<tr>
<td>(CONTRACTOR SUPPLIED &amp; INSTALLED)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Support backing, locate as shown.</td>
</tr>
<tr>
<td>5</td>
<td>Structural support in ceiling for fastening ceiling supported equipment. Supports to run continuous with no fittings extending below face of channel, run wall to wall, be parallel, square, and in the same horizontal plane, flush with the finished ceiling. Rails are mounted to these supports every 26.0&quot; (660mm) and require 452 lbs. (205 kg) per bolt load. Methods of support that permit attachment to structural steel or through bolts in concrete should be favored. Do not use screw anchors in direct tension.</td>
</tr>
</tbody>
</table>
- Floor plate, M10 screws and washers are delivered with the system.
- The floor thickness must be at least 200 mm (7.9 in).
- Critical flatness region must be flat and level, with deviations of no more than 1.5 mm (1/16 in).
- Shims may be used along perimeter of baseplate to improve surface contact.
- Floor coating is used for underfloor area.
- Maximum load on each bolt: 205 kg (452 lb).
- Longitudinal ceiling rails.
- Rail extremities must be separated from the wall by a 150 mm (6 in) distance.
- Fire sprinklers, lights, air conditioning returns located in the suspension area must not be below the false ceiling.
- Unistrut or equivalent structural support must be fixed perfectly parallel and on the same plane.
- 660 mm (26 in) steps are also possible.
- Scale 1:20
### Temperature and Humidity Specifications

#### In-Use Conditions

<table>
<thead>
<tr>
<th>Room</th>
<th>Description</th>
<th>Standby (kW)</th>
<th>In-Use (kW)</th>
<th>Standby (BTU/hr)</th>
<th>In-Use (BTU/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam Room</td>
<td>Table</td>
<td>0.700</td>
<td>0.700</td>
<td>2388</td>
<td>2388</td>
</tr>
<tr>
<td></td>
<td>Generator</td>
<td>0.022</td>
<td>1.026</td>
<td>75</td>
<td>3500</td>
</tr>
<tr>
<td></td>
<td>Digital Systems Cabinet</td>
<td>0.320</td>
<td>0.320</td>
<td>1092</td>
<td>1092</td>
</tr>
<tr>
<td></td>
<td>Partial UPS</td>
<td>0.050</td>
<td>0.050</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Monitor (Single, for all devices)</td>
<td>0.057</td>
<td>0.057</td>
<td>149</td>
<td>149</td>
</tr>
</tbody>
</table>

#### Storage Conditions

Material should not be stored for more than 90 days.

(1) non-condensing

#### Air Renewal

According to local standards.

#### Heat Dissipation Details

<table>
<thead>
<tr>
<th>Room</th>
<th>Description</th>
<th>Standby (kW)</th>
<th>In-Use (kW)</th>
<th>Standby (BTU/hr)</th>
<th>In-Use (BTU/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam Room</td>
<td>Table</td>
<td>0.700</td>
<td>0.700</td>
<td>2388</td>
<td>2388</td>
</tr>
<tr>
<td></td>
<td>Generator</td>
<td>0.022</td>
<td>1.026</td>
<td>75</td>
<td>3500</td>
</tr>
<tr>
<td></td>
<td>Digital Systems Cabinet</td>
<td>0.320</td>
<td>0.320</td>
<td>1092</td>
<td>1092</td>
</tr>
<tr>
<td></td>
<td>Partial UPS</td>
<td>0.050</td>
<td>0.050</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Monitor (Single, for all devices)</td>
<td>0.057</td>
<td>0.057</td>
<td>149</td>
<td>149</td>
</tr>
</tbody>
</table>

#### Temperature and Humidity Details

**Exam Room**

- **Temperature**
  - Min: 15°C (59°F)
  - Recommended: 23°C (73°F)
  - Max: 35°C (95°F)
- **Relative humidity (1)**: 75%
- **Heat dissipation**: max 2.5 kW [8490 BTU/hr]

**Control Room**

- **Temperature**
  - Min: 15°C (59°F)
  - Recommended: 23°C (73°F)
  - Max: 35°C (95°F)
- **Relative humidity (1)**: 75%
- **Heat dissipation**: 0.41 kW [1399 BTU/hr]

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**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.
**CONNECTIVITY REQUIREMENTS**

All Digital systems are equipped with Broadband fast Ethernet hardware for Service Diagnostics. The systems equipped with Digital Imaging are capable of placing electronic images on the Hospital image Ethernet Network (DICOM).

The Digital PC (part of the Digital subsystem) is the connectivity point between the system and the hospital. For a Broadband connection, it is the purchaser’s responsibility to provide the connection at the Ethernet port on the Digital PC via a Cat 5 Ethernet cable and the hospital Ethernet connection.

Note: System hardware is rated at 100/1000Mbps transfer rate. Hospital connections must be rated for 100/1000Mbps for optimal performance. One RJ45 Ethernet plus should be present in the room.

**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.
- PVC as a substitute must be used in accordance with all local and national codes.
- All openings in access flooring are to be cut out and finished off with grommet material by the customers contractor.
- General contractor to insert pull cords for all cable run conduits between the equipment room and the operators control room.
- 10 foot pigtails at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.
### Outlet Legend for GE Equipment

- **System emergency off (SEO)**, (recommended height 1.2m [48"] above floor)
- **X-Ray room warning light control panel**
- **X-Ray ON lamp (L1) - 24V**
- **Door interlock switch** (needed only if required by state/local codes)
- **Duplex hospital grade, dedicated wall outlet 120-v, single phase power**
- **Network outlet**

### Typical Electrical Layout

#### Electrical Layout Item List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Power Distribution Box</td>
<td>1</td>
</tr>
<tr>
<td>2. 10&quot; x 3 1/2&quot; [250mm x 100mm] Surface floor wall duct with minimum 2 dividers</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>3. 10&quot; x 3 1/2&quot; [250mm x 100mm] Surface horizontal wall duct with minimum 2 dividers</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>4. 10&quot; x 3 1/2&quot; [250mm x 100mm] Surface vertical wall duct with minimum 2 dividers</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>5. 10&quot; x 3 1/2&quot; [250mm x 100mm] Duct above ceiling with minimum 2 dividers</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>6. 10&quot; x 3 1/2&quot; [250mm x 100mm] Riser duct, flush to finish ceiling with minimum 2 dividers</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>7. Box attached to duct (TIMS Readiness Kit)</td>
<td>AS REQ'D</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Qty</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 phase power</td>
<td>Power Distribution Box</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>Transformer</td>
<td>Power Distribution Box</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>Power Distribution Box</td>
<td>Emergency off</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td>Transformer</td>
<td>Generator</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>Warning light</td>
<td>Generator</td>
<td>1</td>
<td>AS REQ'D</td>
</tr>
<tr>
<td>1 phase power</td>
<td>Warning light control</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td>Generator</td>
<td>Door Switch</td>
<td>1</td>
<td>1/2</td>
</tr>
</tbody>
</table>
**POWER REQUIREMENTS**

<table>
<thead>
<tr>
<th>GENERATOR TYPE</th>
<th>65 kW</th>
<th>80 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER SUPPLY</td>
<td>3 PHASES+N+G 480V ±10%</td>
<td></td>
</tr>
<tr>
<td>MAINS FREQUENCY</td>
<td>50/60 Hz ± 2%</td>
<td></td>
</tr>
<tr>
<td>LINE INPUT REACTIVE POWER (PEAK)</td>
<td>95 kVA</td>
<td>115 kVA</td>
</tr>
<tr>
<td>LINE INPUT ACTIVE POWER</td>
<td>65 kW</td>
<td>80 kW</td>
</tr>
</tbody>
</table>

- Line 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 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 PDB.

**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**

- 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 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 standards for electrical installation.
- Case PDB furnished by GE: The cables for signals and remote control (Y, SEO, L...) will go to PDB with a pigtail length of 1.5m, 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 shock
- Replacing cables (cableways should be large enough for cables to be replaced)
- Metal cableways should be grounded.

**POWER DISTRIBUTION**

- Metal cableways should be grounded.
- Replacing cables (cableways should be large enough for cables to be replaced)
- Protecting cables against temperature shocks
- Protecting cables against abnormal temperatures (proximity to heating pipes or ducts)
- Power and cable installation must comply with the distribution diagram below.
- Equipotential: equipotential connections linking up all the conducting units in the rooms where GE units are located.

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