

this procurement will include a modular building, specs are listed below.

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Optima - CT660 Systems

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The Optima CT660 is GE's latest generation intelligent CT system. It is a scalable 128 slice platform including advanced innovations from our Discovery Series (TM), This means that Optima CT660 is capable of addressing your advanced clinical needs. Optima CT660 with Xstream gantry display is ready to help you deliver personalized care for your demanding patient schedule and quickly manage your unscheduled ED exams. With the Optima CT660 you get fast, high-quality acquisition at optimized dose for patients young and old, large and small, across a wide spectrum of procedures: angiography, brain, chest, abdomen, orthopedic, and more.

Key Features:

- Exclusive V-Res (TM) Detector technology providing 40mm of 0.625mm acquisitions
- Volara* XT DAS (Data Acquisition System): The Volara* XT digital DAS for faster sampling and improved image performance and reduced artifacts
- Fast coverage speed of 110mm/sec with sub-mm resolution
- Full 360 degree rotation in 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0 and 2.0(axial) seconds, ensuring short breath holds, comfortable exams and flexibility to customize protocols for unique patient needs with minimal coverage impact
- Routine thin slice scanning, as thin as 0.625mm optimizing the use of thinner images for sagittal, coronal, oblique, and volume image presentation and review
- The overlapped reconstruction feature enables 384 slices reconstruction in helical acquisitions and 128 slices per rotation in axial mode delivering improved Z-axis visualization performance relative to non-overlapped reconstruction
- Highly efficient compact geometry design delivering optimum performance of the x-ray tube and generator
- Image decomposition to:
 - Retrospective thin images from data sets where thicker images were initially reconstructed
 - Facilitates more detailed image analysis
 - Improves 3D and reformat visualization
- ASiR reconstruction technology may enable reduction in pixel noise standard deviation (a measurement of image noise). The ASiR reconstruction algorithm may allow for reduced mA in the acquisition

of images, thereby reducing the dose required(**).

- A reconstruction technology that may enable improvement in low contrast detectability(**)

(**) In clinical practice, the use of ASiR may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

Fast, User-Friendly, Simultaneous Workflow:

- Advanced Workflow Platform, the next evolution of GE's workflow platform built to help you maximize productivity.
 - Delivers up to 35 images per second (ips) reconstruction
 - Image Check delivers up to 55 images per second (ips) reconstruction (340x340 matrix)
 - Up to 10 fps network transfer rates
 - Direct Multiplanar Reformats (DMPR) that enables the move from 2D review to prospective 3D review of sagittal, coronal and oblique planes automatically
 - Data Export and Interchange that allow you to easily share images with referring physicians and patients
- One Stop ED mode: Optima CT660's exclusive 12" Xstream touch display on the gantry enables unique one stop ED scanning to streamlined ED exam workflow allowing patient selection, protocol selection and confirming exam parameters directly at the gantry, without having to leave the patients side.
- Includes reference protocols and the ability to customize your own for a total of 6,840 programmable protocols
- SmartPrep with Dynamic Transition allows low dose intermittent monitoring of intravenous contrast enhancement in a user-selected section of anatomy. With Dynamic Transition when the prescribed contrast enhancement is reached the system will automatically transition from the monitoring phase to the scan phase
- 10 Prospective Multiple Reconstructions: Up to 10 reconstructions can be pre-programmed as part of the scan protocol prior to acquisition. The operator can select different start/end location, slice thickness, interval, interval reconstruction algorithms and display fields of view for each reconstruction. Assisting to prospectively prescribing the

image reconstructions needed, even for complex trauma exams and freeing the user up to focus on the patient

- Remote tilt from the operator console to increase exam speed
- Built-in breathing lights with a countdown timer, so the patient does not have to guess how much longer to hold their breath
- New built-in 12-inch touch screen gantry display allows technologists to deliver personalized care by displaying the patient's name on it. When not scanning, the video of relaxing scenes or cartoons may have a calming effect on children or patients of all ages.
- By using One Step patient positioning on built-in 12-inch touch screen gantry display the bed provides automatic positioning according to the type of exam, reducing manual positioning and streamlining workflow
- In room start button mounted on gantry with countdown display, facilitates single technologist operation and improved departmental productivity
- GE software allows you to automate or build every task into the protocols to increase throughput
- Has up to 250,000 uncompressed 512 x 2 image files storage capacity, and 3,520 scan rotations or up to 1,500 scan data files, or up to 300 exams.

Dose Management Leadership:

- OptiDose management features: new bowtie filters optimized for adult and pediatric body exams, full 3D dose modulation, color coding for kids, tracking collimator hardware and software for x-ray beam tracking to name a few of GE's dose optimization features, all based on the ALARA principle
- Dynamic Z-axis tracking provides automatic and continuous correction of the x-ray beam shape to block unused x-ray at the beginning and end of a helical scan to reduce unnecessary patient radiation
- 3D Dose modulation - Before the scan, clinicians must select the desired Noise Index as well as the minimum and maximum mA setting. The system automatically accounts for the changing dimensions of the patient's anatomy, enabling patient to patient reproducibility in this aspect of image quality and real-time x-y-z during each scan.
- Tracking collimator hardware and software for x-ray beam tracking to minimize patient dose

- Filtration of the x-ray beam is optimized independently for body and head applications
- DLP (dose length product), and dose efficiency display during scan prescription provides the patient's dose information to the operator
- Dose Reporting provides access to the CT DIvol and DLP with the patient record prior and post exam. DICOM Structured Dose Report is also supported.
- Dose Check provides the user with tools to help them manage CT dose in clinical practice and is based on the standard XR-25-2010 published by The Association of Electrical and Medical Imaging Equipment Manufacturers (NEMA). Dose Check provides the following:
 - Checking against a Notification Value if the estimated dose for the scan is above your site established value
 - Checking against an Alert Value where the user needs specific authority to continue the scan at the current estimated dose without changing the scan parameters if the estimated dose exceeds the alert value
 - The ability to define Alert Values for Adult and Pediatric with age threshold
 - Audit logging and review capabilities
 - Protocol Change Control capabilities

The Advanced Reconstruction breaks through existing limits on speed, image quality and flexibility to provide an optimized volumetric workflow solution from acquisition to final report and has the capability to deliver up to 16 full fidelity images per second (ips) reconstruction and 10 fps network transfer rates.

Clinical Benefits:

- CTA runoffs
- Thin slices fast; routine use of thin slices
- Organ coverage in arterial phase
- Long helical scans
- Multi-phase organ studies
- Improved multi-planar reformats with isotropic microvoxel imaging
- Fast scanning with outstanding image performance and GE's proprietary cross beam and hyperplane helical reconstruction

algorithms

- System designed for optimization of z-axis resolution and dose with 0.625mm slice thickness

System Components:

Gantry:

- Advanced slip ring design continuously rotates the generator, Performix 40 X-ray tube, detector and Volara XT digital data acquisition system around the patient.
 - Aperture: 70 cm
 - Maximum SFOV: 50 cm
 - Rotational Speeds: 360 degrees in 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0 and 2.0(axial) seconds
 - Tilt: +/- 30 degrees, speed 1 degree/sec
 - Remote tilt from operator's console
 - Integrated breathing lights and countdown timer
 - Integrated 12-inch touch screen on gantry with workflow features
 - Integrated start scan button with countdown timer to indicate when x-ray will turn on
- Visual readout is easy to read from the tableside or from the operator console. Gantry tilt controls are located on the side of the gantry.

Laser Alignment Lights:

- Defined internal and external scan planes to +/- 1mm accuracy
- Operate over full range of gantry tilt
- Coronal light remains perpendicular to axial light as gantry tilts

Table:

- Cantilever design for easy access
- Vertical range: 43.0 cm to 99.1 cm
- Vertical scannable range: 79.1 cm to 99.1
- Horizontal range: 1,745 mm (VT1700 table) or 2,045 mm (VT2000 table)
- Horizontal Speed: up to 137.5 mm/sec
- Table load capacity: 227 kg (500 lb) +/- 0.25mm positional accuracy

X-ray Tube: Performix 40 metal-ceramic tube unit

- Performix 40 tube with 6.3 MHU of storage and capable of 72kW

operation provides increased helical performance with greater patient throughput

- Wide range of technique (10 mA to 560 mA, in 5 mA increments) gives technologist and physician flexibility to tailor protocols to specific patient needs, while optimizing patient dose, and providing the power needed to perform a broad spectrum of examinations.
- Maximum anode heat storage capacity: 6.3 MHU
- Dual Focal Spots:
 - Small Focal Spot: 0.9 x 0.7 IEC60336:2005
 - Large Focal Spot: 1.2 x 1.1 IEC60336:2005
- Maximum power: 72 kW
- Beam collimated to 56 degree fan angle

High Voltage Generator: High Frequency

on-board generator allows for continuous operation during scan.

- 72 kW Output Power
- kV: 80, 100, 120, 140 kV
- mA: 10 to 560 mA, 5 mA increments

Maximum mA for each kV Selection (large focal spot):

- 400mA @ 80kV
- 480mA @ 100kV
- 560mA @ 120kV
- 515mA @ 140kV

V-Res Detector: The V-Res detector was designed for high performance imaging. The V-res detector benefits are:

- Solid 40mm coverage per rotation
- GE's patented ceramic detector material

Volara XT Digital DAS (Data Acquisition System): The Volara XT digital DAS dramatically reduces electrical noise for improved imaging performance.

- 2,460Hz maximum sample rate
- Effective analog to digital conversion

Optima CT660 Operator Console:

- 1,792GB of total system storage
- Up to 250,000 512 x 2 images and 3,520 scan or up to 1,500 scan data

files or up to 300 exams

- 4.7 GB DVD-R/CD-R for DICOM interchange (not recommended as a long term archive)

Image Networking: Exams can be selected and moved between the Optima CT660 CT System and any imaging system supporting DICOM protocol for network send, receive and pull/inquiry.

- Standard Auto-configuring Ethernet
- Direct Network Connection
- Supports 1GB or 1000/100/10 BaseT

DICOM Conformance Standards

- DICOM Storage Service Class
- Service Class User (SCU) for image send
- Service Class Provider(SCP)for image receive
- DICOM Query/Retrieve Service Class
- DICOM Storage Commitment Class Push
- DICOM Modality Worklist (incl. Performed Procedure Step) (through ConnectPro option)
- DICOM Print

The Optima CT660 workflow platform is designed to deliver high performance in each of these tasks:

- SmartTools Simplifies Scan Setup and Includes All Reconstructions, Filming, Archiving, Transferring Propsectively
- Workflow platform built on the LINUX operating system delivers up to 35 fps reconstruction and 55 fps with Image Check, and the fastest network transfer rates of up to 10fps
- Data Export and Interchange allow you to easily share images with referring physicians and patients
- Direct MPR that enables the move from 2D review to 3D image review of axial, sagittal, coronal and oblique planes automatically
- Exam Split delivers the capability to split a series of patient images into seperate groups for networking
- Exam Rx desktop environment provides the clinical tools desired for fast, efficient control of patient studies. Exam Rx tools include patient scheduling and data entry, exam protocol selection, protocol viewing and editing, scan data acquisition, image display and routine analysis,

AutoTransfer, AutoStore, and AutoFilm

- ImageWorks is a desktop environment designed to take advantage of the Optima CT660 CT System advanced computer systems. Standard features include archive, network and manual film control, as well as some advanced image processing such as Direct multi-planar reformatting (DMPR), multi-projection volume rendering (MPVR) and display. The ImageWorks desktop also provides a gateway for DICOM 3.0 image transactions, either through a local area network, or via DICOM-formatted media
- Volume Viewer includes Volume Analysis, Volume Rendering and Navigator software. This combination allows the user to render volumetric data in three dimensions for use in analysis of patient condition, i.e. CT Angiography (CTA), gives more information on the spatial relationships of structures than standard 3D, allows the translucent visualization of structures for improved problem solving, can perform "virtual endoscopies" of air and contrast filled structures. Enables 3D reformats in any plane, ALL on the Xstream ready console

Scan Modes: The Optima CT660 system can perform virtually any clinical application due to its wide variety of scan modes. Helical scan mode offers continuous 360 degree scanning with table incrementation and no interscan delay. Axial scan mode allows for up to 64 contiguous axial slices acquired simultaneously with each 360 degree rotation.

- Helical scanning pitches: 0.516:1, 0.984:1, 1.375:1
- Retrospective reconstruction image thicknesses: 32 x 0.625, 64 x 0.625, 128 x 0.625*

* Available only with Overlapped Reconstruction option (axial mode & 40 mm coverage)

Scan Enhancements:

- Anatomical programmer: a ten region anatomical selector allows quick and easy access to user programmable protocols and a separate selector for adult and pediatric exams with greater than 6,840 protocol storage available.
- Protocols include preset scan time, kV, mA, scan mode, image thickness and spacing, table speed, scan FOV, display FOV and center, recon algorithm, and special image acquisition and processing options like DMPR

- Any scan parameters may be edited for each scan or all scans - either before or during an exam. The number of scans may also be easily changed
- AutoScan: Automates longitudinal table movement and start of each scan
- Auto-Voice: 3 preset (9 languages) and 17 user defined messages automatically deliver patient breathing instructions, especially useful for multiple helical scanning
- Trauma Patient: Allows patient scans and image display/analysis without entering patient data before scanning
- Reconstruction Algorithms: Soft Tissue, Standard, Detail, Chest, Bone, Bone Plus, Lung, and Edge

For US and Canadian Customers, this quotation includes access to the DoseWatch Explore application for a period of time concurrent with the system warranty. DoseWatch Explore is an introductory dose management software application that provides you secure access, via any PC with internet access, to dose and protocol data from this system. An InSite connection to the system and completion of the registration process is required to use the DoseWatch Explore application.

Warranty: The published Company warranty in effect on the date of shipment shall apply. The Company reserves the right to make changes. All specifications are subject to change. Regulatory compliance: This product is designed to comply with applicable standards under the radiation control for Health and Safety Act of 1968.

Laser alignment devices contained within this product are appropriately labeled according to the requirements of the Center for Devices and Radiological Health.

Siting Considerations: See the Pre-Installation manual for details of the siting requirements for the Optima CT660.

This product is a CE-compliant device that satisfies IEC60601-1:1998 and applicable collateral and particular standards, including regulations regarding Electro-Magnetic Compatibility (EMC) and Electro-Magnetic Interference (EMI), pursuant to IEC-60601-1-2:2004.

This product complies with NEMA Standard 29-2013 / MITA Smart Dose Standard.

1	Optima standard cable set
1	<p>The Optima 1700 table enables volume scanning. Key features of this 1700 table include: easy patient access by lowering to <17 inches from the floor, 500lb seight capacity, up to 1700mm scannable range, 137.5 mm/sec travel time, real-time Z-axis position feedback between gantry and table.</p>
1	<p>The Freedom workspace is an ergonomic working environment specifically designed for use with the GE Healthcare imaging systems. The sleek table design enables the efficient use of space while enhancing clinical workflow and technologist comfort.</p> <p>The Freedom workspace provides a minimalist footprint to improve patient visibility and giving the user easier access to patients in the imaging suite.</p> <p>It offers sit/stand and horizontal/vertical monitor flexibility. It can also help reduce noise and heat with remote location options of the console. The non-adjustable Freedom workspace version is 1300mm long x 895mm wide x 850mm height and weighs 55.8kg.</p>
1	<p>Uninterruptible Power Supply</p> <p>Exide Uninterruptible Power Supply. Custom Designed Firmware to Interconnect with LightSpeed Pro, LightSpeed RT, Optima and BrightSpeed Systems. The UPS Primarily Backs Up the System Computer Functions. Bridges Short Power Outages and Provides Time for Crossover from Normal Main Power to Emergency Power. Must be Located Within Eight Feet of the PDU.</p>
1	Service cabinet for system accessories storage
1	<p>The 90Amp CT system main disconnect panel (MDP) serves as the main facility power disconnect source installed ahead of the system PDU. The MDP will disconnect system power on first loss of incoming power, helping to prevent damage to system components. It also includes an automatic restart control circuit which restores power to the CT System PDU after a power outage.</p> <ul style="list-style-type: none"> • Can reduce installation time and cost by eliminating delays in obtaining individually enclosed components and on site assembly (ex: main circuit breaker, feeder overcurrent devices, magnetic contactors and UPS emergency power off are combined into a single panel) • Configuration flexibility - can be used as a stand-alone main

disconnect or with the optional partial system UPS. (On systems where the optional partial system UPS is used the main disconnect panel also provides NEC mandated emergency power off control to both the PDU and UPS

- Designed and tested for GEHC CT products

Specifications:

- Automatic restart incorporates an adjustable time delay to delay main power until the power has stabilized for 5 seconds
- One flush wall mounted remote emergency off pushbutton furnished with each system
- UL, cUL and CE labeled

1 Medrad Stellant D Dual-Flow Ceiling Mount Injection System with Short Post. Requires E8007PJ Mounting Plate be added to the order....E

1 OCS III MOUNTING PLATE

1 CT Table Slicker with Cushion - 1700 Systems (2 Piece Set)

FEATURES/BENEFITS

- Two-piece, sealed slicker cushion set has comfort pads enclosed inside the slicker cover and extender cover
- Durable, clear PVC plastic cover facilitates faster, more thorough cleanup of blood and fluids
- Increase system uptime by protecting table from spills and particulate contaminants
- Thermo-sealed seams and flaps prevent contaminate buildup in hard to clean areas

COMPATIBILITY

- VCT with GT 1700 Table, CT HD750

1 CT Footswitch Slicker - 2000 & 1700 Systems

The footswitch slicker for CT VCT 2000 and 1700 systems is made of durable, clear PVC plastic that protects the footswitch and facilitates faster, more thorough cleanup of contamination caused by blood and other body fluids. Cover is held securely in place with Velcro...H

1 TiP CT Basic Training 6 Days Onsite 10 Hours TVA

TiP Applications CT Basic Training for LightSpeed, LightSpeed VCT and BrightSpeed Systems includes:

- 6 onsite days covered in two site
- 10 hrs. TVA

All elements of the programs are completed within 36 months post installation. Onsite training and TVA are delivered Monday through Friday between 8AM and 5PM. T&L expenses are included.

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4 Days CT TiP Onsite Training

Four Days CT Onsite Training provided from 8AM to 5PM, Monday through Friday. Includes T&L expenses. Days provided consecutively.

This training program must be scheduled and completed within 12 months after the date of product delivery.

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CT LightSpeed 7x and Optima 660 (Class/Lab)

The CT LightSpeed 7x & Optima 660 course is a differences class and is intended for Engineers who have completed (R0026CT) LightSpeed Pro Training. It will equip the Engineer with system and subsystem theory and hands-on lab activities to address technical service issues for the 32/64-slice family of scanners (including LightSpeed VCT, LightSpeed VCT XT, LightSpeed VCT Select, and Optima 660. This training must be used within 2 years from the purchase date.

5

Meals and Lodging Expense has been developed to allow the customer the convenience of prepaying for their meals and lodging expenses when attending Technical Service Training at the GE Healthcare Institute located in Waukesha, WI.

The price of this convenience is based on a per day basis. Thus a quantity of 1 is equal to 1 day's meals and lodging expense. When purchasing the meals and lodging expense please be mindful of weekend days during the training stay and include 2 days to cover a weekend in the purchase quantity.

Examples: A 5-day course needs a quantity of 5. Any course longer than 5 days should include 2 days to account for the weekend stay. Any course longer than 10 days will require an additional 4 days of the meals and lodging expense to cover the 2 weekends of the stay. Thus a 15-day course would have a quantity of 19 days to cover the 2 weekends of the stay. This expense must be used within 2 years from the purchase date.

Three meals a day Monday thru Thursday, 2 meals on Friday, plus breaks are provided in the onsite cafeteria. The GE Healthcare Institute cafeteria closes Friday after lunch and reopens Monday morning for breakfast. Weekend meals are the responsibility of the customer.

Only for In-resident courses to be taken at the GE Healthcare Institute.

- 1 The AIRFARE EXPENSE has been developed to allow the customer the convenience to prepay their roundtrip Airfare expenses when attending Technical Service Training at the GE Healthcare Institute located in Waukesha, WI. To be used for engineers attending In-Resident Class/Lab courses for Diagnostic Imaging.

Customer will make their Airfare arrangements thru the GE Travel Center. Specific directions will be provided to the customer upon confirmation of class. Please note that this expense must be used within 2 years of the purchase date

- 1 Lodging Weekend Expense

Weekend Lodging Expense is to cover Saturday and Sunday lodging expenses for those engineers who are staying at the Rivers Edge Condos while attending Diagnostic Imaging Biomed training at the Healthcare Institute. Please note that there are no meals included on the weekend. Must be used within 2 years from the purchase date.

- 1 Optima CT660 Service (web)

This upgrade course taken online is intended for Support Engineers who have previous LightSpeed VCT training. Topics covered include: New gantry display, new power saving mode, new gantry axial motor and control, new gantry covers removal and installation, safety awareness with gantry cover mounting hardware, new operators console (RIO), load from cold-Saturn detector. This course must be taken within 2 years from the purchase date or it expires without refund.

- 1 Service package delivered for the lifetime of the equipment (20 years)

1 The CT system 2000 table enables volume scanning. Key features of the VT 2000 table include: 500 lb weight capacity, 2000 mm scannable range, 175 mm/sec travel time, real-time position control to support advanced application such as SnapShot Pulse, VolumeShuttle, and Volume Helical Shuttle.

1 The Snapshot Imaging Package allows the user to acquire cardiac scans utilizing up to 0.35 second rotation speed for excellent cardiac exams. This package contains the following items necessary for CT Coronary Angiography on these systems.

The features associated with the Snapshot package are:

- Edge preserving cardiac filters which allows the user to reduce dose up to 30% with the 3 levels of filtration available
- ECG trace on the gantry and console allowing the user to display the live trace of the patients heart rate and display the actual location of the window of time when the image is being acquired.

Snapshot Imaging package can be used to acquire helical retrospective ECG Gated CT Images of the coronary arteries, cardiac anatomy and various other applications that require temporal resolution to reduce heart motion effects. The Snapshot imaging package includes the following hardware and software necessary to acquire cardiac studies with CT.

Snapshot imaging software for the operator console is designed to produce optimized cardiac images with minimum cardiac motion effects. Three different imaging acquisition techniques are available to the user

- Snapshot segment - single sector with temporal resolution of 175ms
- Snapshot Burst-dual sector with temporal resolution of 87ms
- Snapshot Burst Plus-4 sector with temporal resolution of

43ms

Ivy monitor: The Ivy ECG Monitor comes in this cardiac package. It will be used to monitor patient cardiac output and synchronize acquisition with that output.

Xtream 12" Gantry and Operator Console ECG Trace: The ECG trace provided by the Ivy monitor will be displayed on the CT gantry and operator's console with this option. Allowing the user to display the live trace of the patient's heart rate and display the actual location of the window of time when the images are being acquired. It will provide easy access to patient cardiac output status and assist in providing visual feedback for optimum acquisition start.

R-Peak Editor: The R-Peak Editor allows user to retrospectively modify trigger points identifying R-peaks on ECG trace as displayed on the console. The capability may improve successful cardiac acquisition rate by enabling users to perform the modification in the cases where there is irregular heartbeat or suboptimal triggers.

Cardiac Enhancement Filters are noise reduction filters, providing three new levels of image filtration while preserving of edge image detail coupled with patient dose reduction of up to 30%.

ECG Dose Modulation ECG gated dose modulation reduces patient dose by modulating x-ray technique during acquisition based on heart phase.

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The SmartScore package provides ECG-gated hardware for both prospective and retrospective gating for coronary artery calcium scoring.

Xtream 12" Gantry and Operator Console ECG Trace: The ECG trace provided by the Ivy monitor will be displayed on the CT gantry and operator console with this option. Allowing the user to display the live trace of the patient's heart rate and display the actual location of the window of time when the image is being acquired. It will provide easy access to patient cardiac output status and assist in providing visual feedback for optimum acquisition start.

The Ivy Monitor comes in this calcium scoring package. It will be used to monitor patient cardiac output and synchronize acquisition with that output.

Calcium scoring analysis software is not provided with this package.

The Low Dose 5-Beat Cardiac package allows the user to acquire cardiac imaging exams with retrospective or prospective gated acquisitions utilizing up to 0.35 second rotation speed for excellent cardiac exams. This package contains the following items necessary for CT Coronary Angiography:

SnapShot Imaging can be used to acquire ECG Gated CT Images of the coronary arteries, cardiac anatomy and various other applications that require temporal resolution to reduce heart motion effects. The SnapShot Imaging package includes hardware and software necessary for cardiac studies with CT.

SnapShot imaging is designed to produce optimized cardiac images with minimum cardiac motion effects. Three different imaging acquisition techniques are available for the user

- SnapShot segment - single sector algorithm with temporal resolution (TR) of 175ms
- SnapShot Burst - dual sector algorithm with TR of 87ms
- SnapShot Burst Plus - 4 sector algorithm with TR of 43ms

Xtream 12" Gantry and Operator Console ECG Trace:

- The ECG trace provided by the Ivy monitor will be displayed on the CT gantry and operator's console with this option. Allowing the user to display the live trace of the patient's heart rate and display the actual location of the window of time when the images are being acquired. It will provide easy access to patient cardiac output status and assist in providing visual feedback for optimum acquisition start.
- The ECG Editor allows the user to retrospectively modify trigger points identifying R-peaks on ECG trace as displayed on the console. The capability may improve successful cardiac acquisition rate by enabling users to

perform the modification in the cases with irregular heartbeat or suboptimal triggers.

Cardiac Enhancement Filters:

- Noise reduction filters, providing three levels of image filtration while preserving of edge image detail coupled with patient dose reduction of up to 30%.

ECG Dose Modulation:

- ECG gated dose modulation reduces patient dose by modulating x-ray technique during acquisition based on heart phase.

SnapShot Pulse is a cardiac scanning technique that helps reduces patient dose by up to 83%, and improves cardiac workflow, with uncompromised image quality. SnapShot Pulse uses prospectively triggered axial acquisitions synchronized by the patient heart rate, in which X-rays are turned on only during the required heart phase and turned off completely at all other times. In essence, the technique captures a complete picture of the heart using a series of three to four snap shots taken at precise patient table positions and precisely timed to correspond to (relative to conventional cardiac CT acquisitions).

SnapShot Pulse helps improve workflow by reducing the size of image set to be reconstructed, reviewed and post processed. A typical SnapShot Pulse series consists of 280 to 400 images, compared with up to 3,000 images in a typical helical cardiac scan series. Since there's a smaller number of images to reconstruct, SnapShot Pulse takes less time, yet still delivers the same amount of information as a helical cardiac exam.

The Ivy Monitor comes in the cardiac package. It will be used to monitor patient cardiac output and synchronize acquisition with that output.

CT AVA is a Highly Automated Software Post Processing Package for the CT Operator's Console. It is an Additional Tool for the Analysis of 3D Angiography Data Providing a Number of Display, Measurement and Batch Filming/Archive Features

to Study User-Selected Vessels Which Include Stenosis Analysis; Pre/Post Stent Planning Procedures and Directional Vessel Tortuosity Visualization.

Clinical Benefits

- Decreased Operator Dependence: Currently there is Heavy Operator Dependence to Produce True Vessel Cross Sections and Vessel Profiles. This Software Eliminates the Need for the Operator to Manually Identify the Center of the Vessel.
- Automated Batch Filming and the Ability to Rotate Around a Vessel, Reduces the Risk of Overlooking Vascular Structures.
- Quick AVA - Two click vessel analysis
- Measurement Tools: Quantitative Information on User-Selected Vessel Segments , Aids in the Proper Selection of Prosthesis
- Distances to Bifurcations or Other Landmarks are Critical for Clinical Decisions
- Increased Value of Reports: A Single Report Provides a Complete 3D Context; Measurements Cross-References and 3D Views. Consistency in the Format and Style of the Reports Also Help Referring Physicians.

Productivity Benefits

- Decreased Time to First Clinically Relevant Image: Automatic Centerline Detection Provides a Quick 3D Value Understanding of a Selected Vessel. The Anatomy Becomes Visible Once Two Points Identifying the Section of Interest Have Been Defined.
- Background Auto-Filming: Replaces Manual Filming.

System Requirements: VolumeViewer on the Console - B7870JA

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AutoBone Express is a Software Package that provides Automatic Segmentation of Bony Structures and Calcified Plaques Optimized for the latest CTA Acquisition Techniques.

AutoBone Xpress Clinical Benefits:

- Click Segmentation of Bony Structures to facilitate

Vascular Structures Visualization for any Anatomy including Head and Neck CTA.

- 1-Click Automatic Segmentation of Calcifications for Abdominal CTA and Run-Off Exams. Side-by-Side display of Vessels in 3D MIP with and without Calcifications provides a Direct Access to Calcified Plaques effect on Vessel Lumen.

Operator Productivity Benefits Include:

- Decreased time to First Clinically Relevant Image Segmenting Automatically Bony Structures and providing a Quick 3D MIP Overview of Vascular Structures.
- Synchronized Viewports enabling Fast confirmation of Results on Reformatted and Native Images.
- AutoSelect Segmentation Tools may be used to Refine Segmentation by Quickly Adding or Removing Structures.
- The resulting Volume Rendered Image can be Manipulated to View Vessels Only. Transparent Bones can be Restored for Landmarks. Calcifications can also be Visualized in Transparency to Show Lumen.
- Optimized Layouts for each Anatomy for Fast and Relevant Visualization.

System Requirements: VolumeViewer on the Console - B7870JA

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Medrad Stellant P3T Cardiac Protocol Option

P3T Cardiac computes custom injection protocols as well as scan timing for each patient, enabling personalized care and patient safety while maintaining efficient workflow.

- Utilizes the power of DualFlow technology (simultaneous injection of contrast and saline) to obtain functional cardiac data
- Enables more consistent images across varied patients, studies and technologists
- Eliminates the need to estimate injection protocols for complicated studies

CT Table Slicker with Cushion - 2000 Systems (2 Piece Set)

FEATURES/BENEFITS

- Two-piece, sealed slicker cushion set has comfort pads enclosed inside the slicker cover and extender cover
- Durable, clear PVC plastic cover facilitates faster, more thorough cleanup of blood and fluids
- Increase system uptime by protecting table from spills and particulate contaminants
- Thermo-sealed seams and flaps prevent contaminate buildup in hard to clean areas

COMPATIBILITY

- VCT with GT 2000 Table, CT HD750

Portland VA Medical Center, Vancouver Campus, Vancouver, Washington

Healthcare Diagnostic Imaging Facility using a Modular Building System – Unit B

Customer: Department of Veterans Affairs

Customer Facility: Portland VA Medical Center, Vancouver, Washington Campus
1601 E. Fourth Plain Blvd.
Vancouver, Washington 98661

Site Preparation for: A Diagnostic Imaging Facility consisting of the following modular building unit: Unit B

1) A PDC modular building housing a GE Healthcare Optima

The site preparation work ("work") consists of furnishing the design, construction, labor, materials, equipment, and related services set forth in the specifications contained in this Scope of Work related to:

- 1) Preparing the site for the installation of a 14' x 28' GE CT Cassette® modular building manufactured by PDC Facilities, Inc., Hartland, Wisconsin for the purpose of housing a new system.
- 2) Furnishing and installing the modular building. Unit B

The work (defined below) will conform to the general configuration (floor plan) represented in the "Work Drawings" which consist of the following drawing(s), incorporated herein by reference.

- The drawing prepared by Colin Construction Company, Grass Valley, California, for its Outpatient Modular MR/CT project, sheet A1, revision 4, Unit B, and dated September 17, 2015.
- c., Hartland, Wisconsin, floor plan drawing labeled

Work Elements Included:

1. General:
 - a. Coordinate and attend design meetings to define the work.
 - b. Furnishing applicable architectural/engineering services and construction drawings.
 - c. Coordinating the VA furnished physicist's shielding design with the CT room design specifications.
 - d. Coordinating the VA furnished geotechnical information into the structural foundation design of the diagnostic imaging facility.
 - e. Submitting construction documents to facility for approvals.
 - f. Coordinate and attend a pre-construction meeting and periodic progress meetings throughout the project.
 - g. Providing record drawings and associated closeout documentation at project completion.
 - h. Furnishing project management and on site supervision.
 - i. Furnishing the rigging of the modular building unit on the weekend.
 - j. Davis-Bacon wages and benefits.
2. Sitework and Foundations:
 - a. Maintain a reasonably clean and safe job site in compliance with OSHA regulations.
 - b. Furnishing site erosion control measures, temporary construction fencing, debris removal, and a dumpster.
 - c. Furnishing the excavation and removal of the existing soils to the design depth for placement of the concrete foundations.

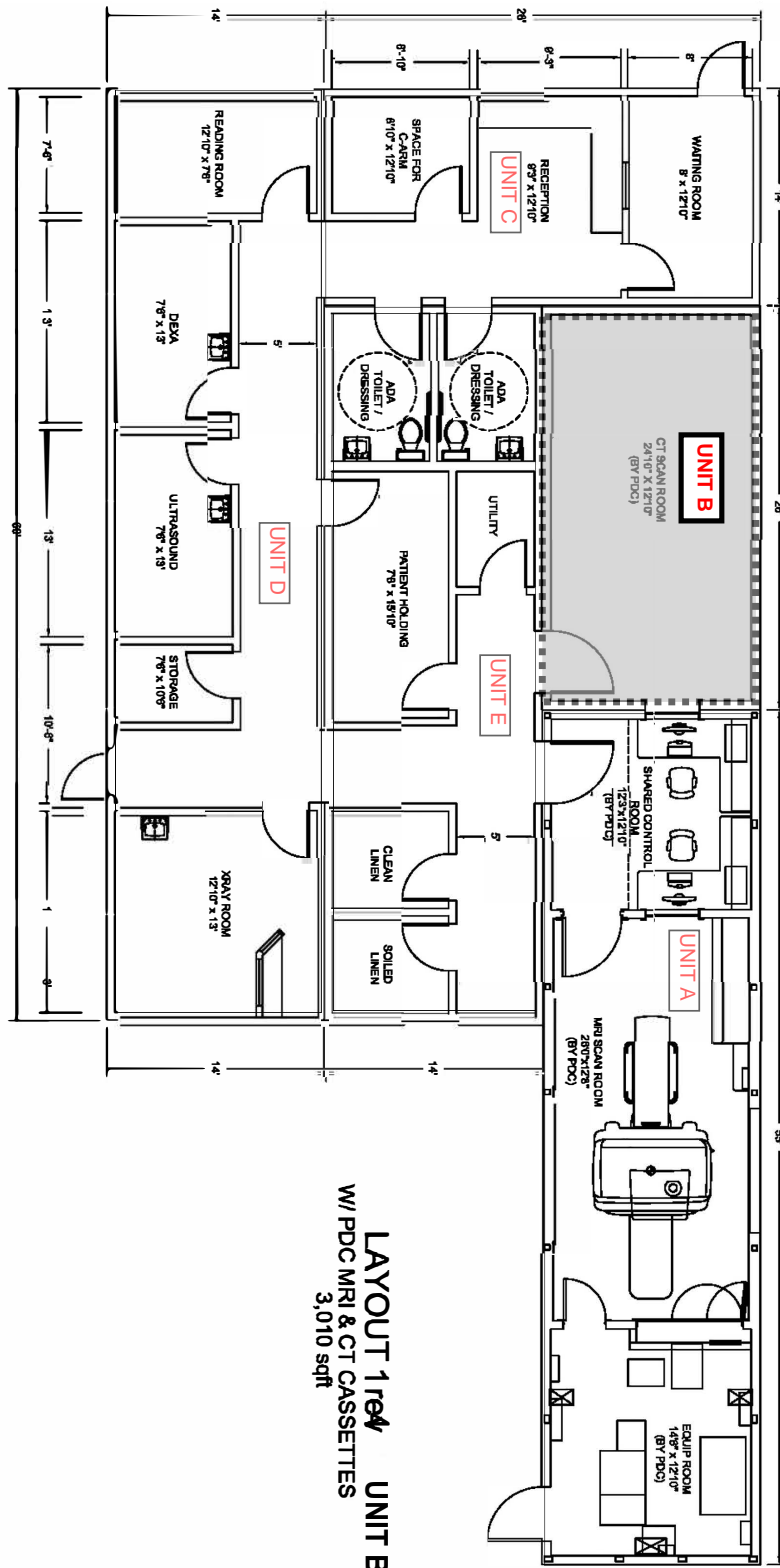
- d. Furnishing and installing reinforced concrete stem wall foundations and footings over existing undisturbed soil and/or engineered fill at the bottom of the foundation trenches for the diagnostic imaging facility.
 - e. Furnishing and installing the steel anchoring plates and grouting required for the placement and attachment of the modular building units to the reinforced concrete foundations.
 - f. Furnish the backfilling and rough grading after construction of the reinforced concrete foundations.
3. Exterior Elements:
- a. Furnishing and installing a brick veneer around the entire diagnostic imaging facility.
4. Modular Buildings Specifications:
- a. Refer to the outline specification documents described above under "Site Preparation."
 - b. All modular building interior design elements and finishes will be coordinated with the VA interior design staff.
5. Radiation Shielding:
- a. Provide radiation shielding in the walls, door, and window of the CT Scan room.
6. Mechanical:
- a. Provide wet pipe fire suppression system throughout the entire diagnostic imaging facility. Provide connection to water source within the site provided by the VA.
 - b. Provide domestic water connection to water source within the site provided by the VA.
 - c. Provide sanitary and storm sewer connections to sanitary and storm sewer tie in points within the site provided by the VA.
 - d. Provide medical gas connections to medical gas connection tie in points within the site provided by the VA.
7. Electrical:
- a. Provide fire alarm system design, devices, controls, wiring, and programming to tie the diagnostic imaging facility fire alarm system into the VA's fire alarm system.
 - b. Provide nurse call system design, devices, controls, wiring, and programming to tie the diagnostic imaging facility nurse call system into the VA's nurse call system.
 - c. Provide phone and data wall plates, conduits, and wiring to patch panels within the diagnostic facility. VA to provide wiring, final connections, and programming from the patch panels to the VA main panels.
 - d. Paging and security systems by the VA.

Work Elements Excluded:

- 1. Providing any work elements that are not specifically listed in the above Work Elements Included section.
- 2. Providing state and local drawing reviews and building permits and associated fees.
- 3. Providing any rough and finish site work, grading, landscaping, sidewalks, curb, etc.
- 4. Reinforcing any adjacent existing building structural system or elements.
- 5. Providing radiation designs, surveys or radiation safety plans.
- 6. Providing vibration remediation of excessive site vibration levels.

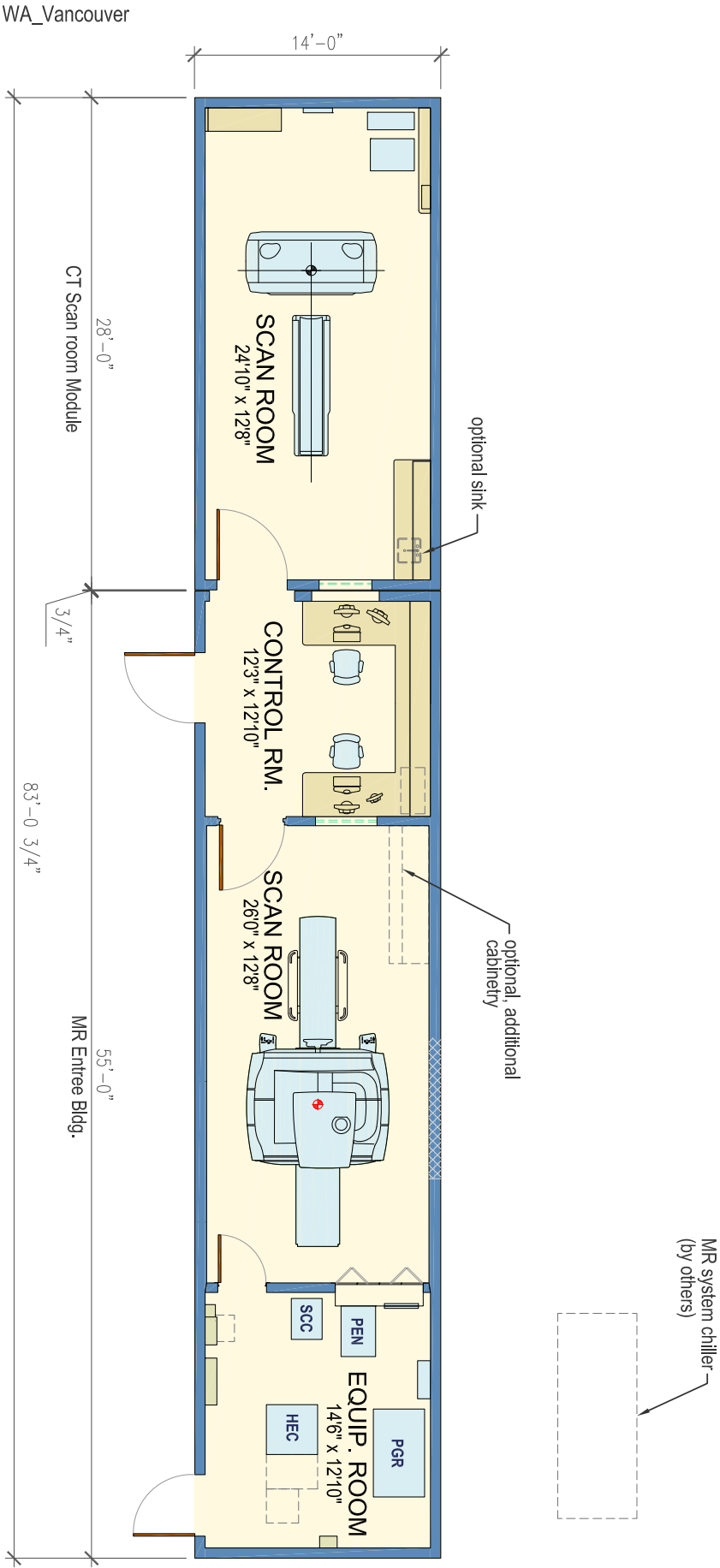
7. Removal or abatement of asbestos, mold, biohazard, or hazardous materials.
8. Providing a UPS system or associated battery cabinet(s) and bypass panel.
9. Piles or subsurface caissons.
10. Excavation and removal of rock or other subgrade impediments.
11. Site surveys.

gwh)



FEATURES

- Institutional occupancy
- 1-hour fire rated walls
- 1-hour fire rated roof
- Hospital code-compliant bldg.
- MR electronics pre-installed
- CT system site installed
- Fully finished interior
- Fully finished exterior
- Fully contained HVAC
- GE Design Certified & Tested
- Limited lifetime RF shield warranty
- 5 Gauss containment
- IBC seismic zone D
- IBC 120 mph structure
- HHS compliant
- MR magnet site installed



& CT Scan Module - Diagnostic Imaging Suite Building

Customer Facility: Portland VA Medical Center, Vancouver, Washington Campus
1601 E. Fourth Plain Blvd.
Vancouver, Washington 98661

Base Entree® Features:

1. GE Certified Entree® 14' x 28' with Limited Five Year Building Warranty
2. Entree® Fully Finished Movable Structure
3. GE PIM Compliant and Institutional Type-II-A State Building Code Compliance

Entree® Extended Features:

1. Health Care Facility Guidelines / OSHA, ADA' Health Department Compliance
2. IBC 120 MPH Structural Wind Exposure "C"
3. IBC 110 MPH Roof System (mandated up-grades available)
4. IBC Seismic Zone "E" Structure (mandated up-grades available)
5. UL Listed / Classified Designs & Materials Throughout
6. UL One Hour (1) Fire Rated Ceiling & Exterior Walls (All Sides)
7. State Permits, In-Plant State Inspection Fees & PDC Site Entree® install Services

Entree® Included Options:

1. Scan Room 1/8" Lead Shielding (1/8" Lead Door and Window)
2. Wet Fire Suppression Piping
3. LED Lights / Emergency Call / Imaging Conduits / Fire Alarm Conduits
4. Oxygen/Suction Medical Gas Piping and Face Plates in Scan Room
5. One Self Contained Rooftop HVAC Unit with Humidification
6. 90% HVAC Filter Air In Scan Room
7. Hand Wash Sink & Plumbing (counter top w/ electric heater)
8. Interior Scan Room Cabinets & Counter Tops
9. Interior Control Area Cabinets & Counter Tops
10. Transportation, Permits, Insurance FOB Hartland, WI

gwh

The following outline describes generally the design parameters and materials used to construct the 14'x28' CT Scan-Room Module, which is designed specifically for

I. **NOMINAL DIMENSIONS**

- A. The CT Scan-Room Module is a nominal 14'-0" x 28'-0" or 392 GSF, consisting of a Scan Room.
- B. The Modular Building overall height is 12'-4" high.
- C. Gross Weight: approx. 52,000 lbs.

II. **NATIONAL CODE COMPLIANCE**

- A. Building manufacturing documents are reviewed and approved, and the building is inspected by State Inspectors, and/or nationally recognized 3rd party inspection agencies and is listed to meet the following Institutional Healthcare Building Codes:

OCCUPANCY CLASSIFICATION		FIRE RATINGS	
COMMERCIAL - BUSINESS or INSTITUTIONAL - HEALTH CARE		Exterior walls:	UL U425 - 1 HR.
		Roof/Ceiling:	UL P518 - 1 Hr.
APPLICABLE BUILDING CODES	CONSTRUCTION TYPE	Floor:	Non-Combustible
International Building Code IBC 2012	Type II A		
International Plumbing Code IPC 2012	DESIGN CRITERIA		
International Mechanical Code IMC 2012	Structural Wind Load	120 mph, exp. 'C'	
	Roof Wind Load	120 mph, exp. 'C'	
	Snow Load	90 lbs/sf	
	Seismic Zone ..	D	
National Electric Code NEC 2011	Outside Ambient Air	-20° thru 115°F	
	Min. Water Pressure:	30 lbs. Residual	

III. **FLOOR ASSEMBLY**

- A. Perimeter structural steel beam with cold formed metal joist in-fill.
- B. Joists: 8" x 16 ga. metal joists @ 16" o.c.
- C. Floor Decking: 1" nominal metal deck with 2 1/2" reinforced light-weight concrete.
- D. Insulation: R-19, 8" Fiberglass batts.
- E. Bottom Decking: 9/16" metal deck welded to bottom of steel floor joists.
- F. Finish Floor Covering
 - 1. Scan Room: medical grade VCT

IV. **EXTERIOR WALL ASSEMBLY**

- A. Structural Studs: 4" x 16 ga. steel studs @ 16" o.c.
- B. Insulation: R-11, 4" fiberglass batts
- C. Sheathing: One (1) layer of 5/8" *DensGlass®* Fireguard gypsum board at the exterior and (1) layer of 5/8" gypsum type X wallboard at the interior side of all exterior walls.
- D. Finish: Standard exterior insulation finish system (EIFS) shall be *Dryvit® Outsulation*, fine sand finish, with high impact matt for first 2'-0" above foundation and at four (4) outside corners and standard mesh imbedded in RFP coat over 1-1/2" rigid insulation board (R-4) on all surfaces.
 - 1. Options: Custom finish available upon request.

V. **INTERIOR WALLS**

- A. Studs: 18 ga. metal studs @ 16" o.c. minimum.
- B. Wall Height: Full height to bottom of roof assembly. Nominal 10'-1" height.
- C. Finish Wall Covering:
 - 1. Scan Room: paint.
 - 2. Vinyl Base: Coordinated with wall finish.
- D. Scan room is lined with leaded gypsum board. Doors and frames in the Scan room are lead lined.
- E. Doors: Solid core oak veneered, stained and varnished. Main entrance shall be fire-rated "B" label H.M. with alkide enamel paint.

VI. **ROOF ASSEMBLY**

- A. Perimeter: Perimeter structural steel beam with cold form metal joist infill.
- B. Joists: 8" x 16 ga. metal joist at 16" o.c.
- C. Insulation: 8" batt insulation with vapor barrier.
- D. Roofing: fully adhered EPDM membrane. 120mph, exp. "C" rated.
- E. Finish Ceiling: 2 x 2 Armstrong ceiling tile in 2 x 2 aluminum grid.

VII. FIRE PROTECTION

A. Fire Alarm System

A PDC Fire Protection Plan will be provided to the customer for its local fire alarm contractor's design review and approval for compliance with local codes. Empty electrical conduit and junction boxes to accommodate smoke detectors, audio/visual annunciators, pull stations and an alarm control panel (if required), will be provided in the Entree. Wiring and devices will be provided, installed, tested, and certified by customer's local contractor. Existing fire alarm panel capacity checks are the customer's responsibility. New sub-panel installations are the customer's responsibility unless specifically pre-ordered for installation into the Entree

B. Wet Sprinkler System

A PDC Fire Protection Plan will be provided to the customer for its local fire suppression contractor's design review and approval for compliance with local codes. A Wisconsin licensed contractor hired by PDC will install, test and certify a schedule 40 copper pipe sprinkler system attached to automatic sprinkler heads, rated for 165°F, at the ceiling. Concealed type sprinkler heads will be provided in rooms with acoustic ceilings. System contains water and shall be connected to a water supply so that water discharges immediately from sprinkler head opened by heat from a fire. The system can be provided with a back flow prevention device, and an indicating type control valve with built-in tamper switch, if pre-ordered by the customer. The entire system will be connected to the customer's existing system by the customer's contractor who will re-test and certify the entire system. Power shall be supplied to the flow switch and any other such alarm devices by the customer's electrical contractor. Sprinkler pipe sizing will be determined by NFPA 13 Light Hazard Pipe Schedule. Head spacing also will be determined by NFPA 13 Light Hazard Occupancy 225 sq. ft. maximum per head.

C. Dry Sprinkler System

The "dry" fire suppression system shall be a single interlock preaction type system. The system will consist of a complete preaction deluge valve with the necessary trim for proper operation and will be controlled by an indicating type control valve. The system can be provided with a backflow prevention device, and an indicating type control valve with built-in tamper switch, if pre-ordered by the customer. Air compressor is a wall mounted unit. Detection for the preaction system will be by fixed temperature and/or heat detectors, and connected by owner's contractor. An alarm contact will be provided at the preaction valve. The piping system will consist of a schedule 40 copper pipe, attached to automatic sprinkler heads, rated for 165°F, at the ceiling. Concealed type sprinkler heads will be provided in rooms with acoustic ceilings, and protected heads will be provided in the Equipment room.

VIII. HVAC

- A. The HVAC system maintains one (1) zone of space temperature, relative humidity, and provides ventilation. Duct mounted electric heaters provide heat as required to the zone. A stand-alone wall mounted electric steam generating humidifier provides humidity to the HVAC ducts via a short absorption grid.
- B. The AC units deliver 2400 cfm of air including 240 cfm of outside air for ventilation.
- C. The HVAC system maintains all critical temperatures within the space during all modes of CT system operation and at outside ambient temperature from -20°F to 115°F.
- D. 90% air filtration package can be provided.

IX. ***ELECTRICAL***

A. Main Distribution Panel:

1. 480V 3-phase, consisting of 3 phase conductors, 1 neutral and 1 ground. Amperage varies with CT system (200A to 300A)

B. Lighting:

1. Control Room shall be provided with 2 x 2 fluorescent in suspended ceiling grid and incandescent down lights controlled by a dimmer located at the Cassette Entry Door.
2. Scan Room shall be provided with 2 x 2 fluorescent in suspended ceiling grid and incandescent down lights controlled by a dimmer located in the Scan Room.

14'x40'

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- 1.2 Standard Plumbing
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I-A Cassette Building Delivery and Installation Program

The GE Design Certified Building Program is comprised of three components.

1. A GE design certified, pre-manufactured, Cassette® building.
2. A GE tested and GE certified building foundation design.
3. A GE design certified and FDA validated, "fixed site" imaging system, pre-installed and shipped within the Cassette building.

This Site Planning Guide ("SPG") is a generic site planning and reference document. This SPG describes the Cassette building. The SPG presents tested, isolated foundation designs, utility requirements, and site design parameters that are specific to the Cassette Building. The SPG highlights the scope-of-work to be performed by those engaged with the foundation design, site construction and installation of a GE Certified Cassette building.

The Site Planning Document ("SPD") is a limited set of documents produced by PDC and specific to the project. The SPD clarifies SPG information following SPG investigation. The SPD will identify final building size, site orientation, utility connection locations and building entrance points. The SPD can be relied upon as being accurate and compliant with GE Design Certified Building Program foundation design and Cassette building installation requirements.

I-A-1.0 Program Summary

The Customer will hire the architect, hereinafter (Architect) and engineer(s) hereinafter (Engineer) to analyze the site(s) based upon the SPG. The Architect will prepare its final site work construction documents based upon the SPG and SPD. The Customer will hire a general contractor hereinafter (Contractor) to prepare the foundation, extend the utilities, rig and install the building onto the foundation according to architectural plans and SPG directives. PDC will manufacture the Cassette building, install the imaging equipment, coordinate delivery to the site, and perform specialty installation work as outlined in this SPG.

1. Preliminary Site Analysis Work

- a. **Ambient Site Vibration Analysis:** Contact your local
- b. **Existing Site Information:** The Customer shall provide to PDC an accurate site plan along with digital site photos of the proposed "building envelope" site and adjacent buildings. This information should identify existing and proposed utility extension locations, site access photos and building connection points
- c. **Building Envelope Location:** The Customer or Architect should indicate the preferred building orientation on the building envelope site and preferred door opening locations. (see options sheet)
- d. **Proposed Cassette Building:** PDC will evaluate the building and prepare a suggested Cassette building installation plan highlighting any potential building or system performance issues.

- e. **Accepted Building Solution:** Following the Customer's acceptance of a final building design and siting solution, PDC will provide a Cassette Building Quotation. Following acceptance of the quotation, PDC will prepare the Site Planning Directive ("SPD").

2. **Site Planning Document (SPD):** The site specific SPD information prepared by PDC will include the following:

- Foundation (Example) Plan & Details
- 'A', 'B' and 'EP' Plate Locations
- Foundation Base Plate Reaction Table
- Utilities Extension Plan
- Floor Plan
- Exterior Elevations
- Fire Protection Plan
- Plumbing Plan
- Comm/Data Plan

3. **Site Work Construction Documents:** Site work construction documents are prepared by the Customer's Architect and Engineer based upon site specific SPD information and SPG scope-of-work and Cassette building installation guidelines. One complete set of Site Work Construction Documents shall be provided to PDC for its review and comment. Deviations from SPD and SPG documents should be avoided and discussed with PDC.
4. **Cassette Building Plans:** PDC will prepare Cassette building documents for state, local and health department review. All PDC plans will be reviewed and sealed by an appropriate, state licensed professional engineer or architect.
5. **Project Plan Submissions & Approvals:** In the absence of a state agency Cassette building plan review and approval program, the Architect shall submit Cassette building plans along with its foundation plans, to all state, local and health departments for necessary reviews and approvals.
6. **Foundation Site Work:** The Contractor shall construct the Cassette foundation, with utility extensions according the Architect's plans. PDC will provide telephone consultation throughout the planning and implementation process. PDC will provide a "Site Readiness" document for completion and return to PDC by the Contractor prior to the Cassette shipment.
7. **Site Rigging Work:** The Contractor shall hire a crane and rigger (rigging company) to lift and set the Cassette, along with any HVAC units or chiller systems that are being provided.
8. **Site Access Work:** The Contractor shall provide "traffic control" and an unobstructed route and staging area for the rigger and the Cassette transporter.

9. **Building Installation Work:** The Contractor shall provide and install all required hold-down attachments, as specified in the SPG and SPD, for anchoring the Cassette to the foundation. Building installation work also includes adjacent building attachment work and other utility and communication device installation, connections and certifications as required in the SPG and SPD. (Note: A-plates are provided by PDC, but are installed by the Site Contractor).
10. **Utility Connections:** The Contractor shall make all utility connections to Cassette within the time frames specified in the SPG and SPD.

I-A-2.0 Responsibilities

1. Customer

- a. Hires the Architect & Engineers to investigate the site according to SPG requirements and information.
- b. Hires the Architect & Engineers to design a foundation, utility and building installation plan according to SPG requirements and site specific SPD information provided by PDC.
- c. Hires a general contractor to prepare the site, and to install the Entree according to Architect's plans and SPG information.
- d. Hires PDC to manufacture the Cassette.
- e. Hires the transportation company to deliver the Cassette.
- f. Commences with a routine HVAC service and maintenance program following the Cassette building installation.

2. Architect & Engineer

- a. Reviews SPG and investigates the proposed site for compliance with SPG requirements. Further investigates existing site conditions. Assists the Customer in establishing a complete project scope-of-work. Assists Customer in establishing a site work budget estimate.
- b. Creates all site work documents that incorporate SPG requirements and SPD information provided by PDC.
- c. Secures all state, local and health department reviews and approvals including Cassette building plan review and approvals in the absence of a state agency pre-manufactured building program.

3. Contractor

- a. Hires appropriate subcontractors to perform the site work.
- b. Hires a crane and local rigging company to lift & set the Cassette building onto the site foundation.
- c. Provides and installs 'EP' plates and Anchor plates as designed by the Architect and Engineer.
- d. Installs 'A' plates, provided by PDC and 'EP' plates provided by Contractor.
- e. Provides minimal materials and labor assistance to PDC during the building delivery and installation phase (as specified in this SPG).
- f. Receives, stores, and delivers to the site, any critical materials and items (ie. GE chiller systems) that may be shipped by GE or PDC prior to the arrival of the Cassette.
- g. Provides "traffic" control services on the Customer's property and on the surrounding streets to facilitate the arrival, and a clear site access, for the crane and Cassette building transporter.
- h. Completes the Cassette building installation and utility connections to, and within the Cassette, as prescribed in the SPG.
- i. Completes the extension, installation, connection and state and local certification of any medical gases lines, alarm systems; fire suppression systems; and communication systems as prescribed in the SPG and included in the plans.
- j. Performs all other functions per the Customer contract.

4. PDC

- a. Provides a SPG for a specific GE Design Certified and tested Cassette Building.
- b. Provides a "site specific" SPD, (Site Planning Document) following Cassette Building contract acceptance.
- c. Provides Cassette Building "Foundation Base Plate Reaction Table" to the Architect for foundation design purposes.
- d. Provides four (4) "A" plate units to Contractor for installation.
- e. Provides Cassette Building and GE equipment "electrical load values" to the Architect for site electrical power design purposes.
- f. Provides PDC consultation services throughout the project planning and implementation process.
- g. Creates and provides state "sealed" and state reviewed and approved Cassette Building documents in the quantity required for state, local and health department plan submittals.
- h. Manufactures the GE Cassette Building in compliance with state mandated "third party" building inspections throughout the manufacturing process.
- i. Provides all required independent tests and secures state building certifications and insignia for shipment of the Cassette Building into the state.
- j. Provides, on behalf of the Contractor, accurate building information and rigging requirements to local riggers for competitive bidding purposes. Coordinates rigger site visits with the contractor.
- k. Provides, on behalf of the Customer, accurate building transportation bids for their

- selection and contracting purposes.
- l. Coordinates Cassette Building delivery logistics with the Contractor, logistics company and the rigger and conducts a final site readiness inspection one day prior to delivery.
- m. Installs and certifies GE equipment delivery within the Cassette Building following building installation.
- n. Performs Cassette Building orientation and systems training.

I-A-3.0 Site Foundation Details - Division of Work & Responsibilities

1. Primary Building Bearing Plates ('A' Plates Assemblies)

PDC:

- a. Provides Architect with the location of the four (4) primary 'A' Plate bearing locations for foundation design purposes.
- b. Provides Contractor with four (4) primary 'A' Plate Assemblies for installation into the foundation work.

Contractor:

- a. Installs the four (4) primary 'A' Plate Assemblies as shown in the SPG and detailed in the SPD.
- b. Installs, levels, and grouts in place, the 'A' Plates Assemblies, a minimum of 24 hours prior to the delivery of the Cassette Building.
- c. Provides clear site access and a foundation clean of all debris.
- d. Ensures a concrete bearing strength to meet specifications.

2. Secondary Building Bearing Plates ('B' Plates Assemblies)

PDC:

- a. Provides, installs and adjusts multiple 'B' Plates Assemblies within 24 hours following the Cassette installation onto the foundation.
- b. Provides the non-shrink grout material for 'B' Plate Assemblies.

Contractor:

- a. Provides tools and labor to mix and pack PDC provided, non-shrink grout material at all 'B' Plate Assembly locations following PDC installation of 'B' Plates Assemblies.

3. Foundation - Embed Plates ('EP' Plates) & Anchor Plates

Architect/Engineer:

- a. Relies upon PDC provided SPD "Foundation Base Plate Reaction Table" (reaction forces) and SPG and SPD design examples to determine exact number and size of "EP" plates, embed studs and "hold-down" weld sizes that are required at the foundation.

Contractor:

- a. Provides and installs 'EP' plates into the foundation.
- b. Welds into place all 'EP' Anchor Plates following the grouting of all 'A' and 'B' Plate Assemblies.
- c. Provides a copy of EP-plate fabrication quotation to PDC for review. PDC can fabricate and ship EP-plates, based on Engineer's design, to site if local fabrication is not available or economical.

4. Utility Extensions And Connections

PDC:

- a. Provides conduit "pass through" penetration access points in the exterior walls of the Cassette for "above grade" utility extensions into the Cassette from an adjacent building.
- b. Provides a network of empty conduit and "J" boxes in the walls and in the ceiling of the Cassette for the installation of fire alarm wiring and alarm devices within the Cassette, by others.
- c. Provides a network of empty conduit and "J" boxes on the walls and in the ceiling of the Cassette for the site installation of comm/data systems wiring and devices for communication & data systems within the Cassette, by others.
- d. Provides convenient utility connection within the Cassette.
- e. Provides convenient utility floor access and connection points for "below-grade" utility extensions.
- f. Provides NFPA compliant pneumatic pressure tests, reports, and system certifications on the pre-installed, fire suppression piping system.
- g. Provides state compliant pneumatic pressure tests, reports, and system certifications on the pre-installed, capped, medical gas piping system.
- h. Provides all utility splice pieces between multiple Cassette buildings.

Contractor:

- a. Provides all utility extensions to the Cassette Building.
- b. Provides all alarm boxes, alarm panels, water or medical gas shut-off valves or boxes, and fire suppression risers and shut-off valve systems in adjacent buildings

- prior to their connection to the Cassette Building, unless otherwise noted.
- c. Provides all utilities connections within the Cassette Building.
 - d. Provides all utility connections between multiple Cassette buildings, unless otherwise noted.
 - e. Provides all final pneumatic or water pressure tests and system certifications on the entire fire suppression system including that portion pre-installed within the Cassette Building.
 - f. Provides all final pneumatic pressure tests and system certifications on the entire medical gas piping system including that portion pre-installed within the Cassette Building.
 - g. Provides for the extension, installation, connection, testing and certification of any fire alarm and fire device installations within the Cassette Building.
 - h. Verifies fire alarm system zone capacity and compatibility for the project.
 - i. Provides MDP power to the Cassette Building within four (4) hours following installation onto the foundation.
 - j. Completes all mechanical and electrical connections and tests for the remote chiller system within 24 hours following the Cassette installation onto the foundation.

5. Cassette Delivery - Transportation Arrangements

PDC:

- a. Provides, on behalf of Customer and Contractor, pertinent Cassette shipping and rigging information to qualified transportation firms for competitive bidding purposes.
- b. Reviews and qualifies, on behalf of Customer and Contractor, all competitive bids for their final selection and direct contracting purposes.

Contractor:

- a. Provides for both on-site and surrounding area traffic control and parking restrictions to facilitate a direct and unobstructed access to the installation site for both the crane and the Cassette building delivery vehicle ("transporter").
- b. Provides a suitable "over-night" parking location in the immediate installation vicinity ... if necessary.
- c. Provides a suitable staging area for both the crane and transporter the evening prior to the Cassette delivery (if requested to do so).
- d. Removes all obstructions (permanent or temporary) on the Customer's property as well as those along the delivery route within two (2) blocks of the Customer's property.
- e. Provides reasonable protection to existing structures on the Customer's property.
- f. Provides for the repair to structures that may be damaged during the delivery process.
- g. Provides a foundation that is clean of all debris.
- h. Provides grout mixing tools and one labor person to prepare the grout for PDC use during the Cassette building installation process.

6. Cassette Site Rigging

PDC:

- a. Provides, on behalf of Customer and Contractor, pertinent Cassette shipping and rigging information to qualified crane and rigging firms for competitive bidding purposes.
- b. Reviews and qualifies, on behalf of Customer and Contractor, all competitive bids for their final selection and direct contracting purposes.
- c. Provides specialty rigging devices ("hoist-rings") for rigger's use in lifting the Cassette building onto the foundation.
- d. Opens and seals "hoist ring" attachment points on the Cassette roof.
- e. Provides specialty rigging devices for rigger's use in removing and replacing the Cassette building wall (or roof) access panel (if appropriate).
- f. Opens and seals the Cassette Building wall (or roof) access panel, internally and externally, (if appropriate).

Contractor:

- a. Hires and issues a contract to the crane and rigging company to rig the Cassette building, any HVAC units, and the GE chillers into place at the site.
- b. Coordinates a site access and Cassette building delivery meeting with the chosen rigger and transportation company no later than 4 weeks prior to the Cassette building delivery.
- c. Coordinates a pre-delivery meeting with PDC, the rigger and the transport driver the day prior to the Cassette building delivery.
- d. Coordinates all sub-contractor tasks.
- e. Coordinate site delivery access and rigging issues involved with a separate magnet delivery by GE.

7. Cassette Grout Cylinder Installation

PDC:

- a. Provides grout materials and cylinders for the building installation.
- b. Installs grout and cylinders during the building installation process.

Contractor:

- a. Provides mixing tools and labor assistance to prepare grout mixture and to assist PDC in the installation process.

8. Cassette Building Weather-Proofing Attachments

PDC:

- a. Provides tested weather proofing details in the SPG.
- b. Provides and installs all roof venting systems and roof membrane flashing and patching materials that are required for PDC work.

Contractor:

- a. Provides all weather proofing material and labor for attachment of the Cassette building and any adjacent buildings that may be required.
- b. Maintains "soft" building connections per SPG directives.
- c. Seals and weather proofs all utility openings into the Cassette building.

9. Exterior Lighting (Optional)

PDC:

- a. Provides and installs any electrical circuitry, conduit and exterior junction boxes if specified on the plans and ordered as an optional item.

Contractor:

- a. Provides fixtures and install work following Entree building delivery.

10. Signage (Interior & Exterior)

Contractor:

- a. Provides all signs and labels as required.

11. Gutters & Down Spouts (Optional)

PDC:

- a. Provides a standard roof drip edge flashing system that can be modified, if requested, to accommodate a rain gutter system.

Contractor:

- a. Provides material and labor to installs any gutter & down-spout system.

12. HVAC Installation & Start-Up (Wall Hung, DX System)

PDC:

- a. Provides and installs the appropriate wall hung HVAC system onto the Entree Building.
- b. Performs certification tests on the HVAC system prior to shipment.
- c. Provides a "Service & Routine Maintenance Manual".
- d. Performs a HVAC orientation and training session prior to departing the site.

Contractor:

- a. Performs a system acceptance inspection, performs the system start-up tasks and confirms the operating condition of the HVAC system.
- b. Performs final system HVAC system balancing and provides an acceptance report to the Customer.
- c. Participates in a PDC HVAC Orientation and Training session prior to PDC departing the site.

Customer:

- a. *Establishes a routine service and maintenance program on the building and its HVAC system immediately following the installation of the Entree building. Failure to do so may jeopardize OEM warranties.*

13. HVAC Installation & Start-Up (Roof Top Systems)

PDC:

- a. Provides, installs and de-installs, and performs certification tests on roof top HVAC systems during the Entree manufacturing process.
- b. Crates and separately ships the HVAC systems to arrive at the site prior to the Entree Building arrival.
- c. Provides a "Service & Routine Maintenance Manual".
- d. Performs the HVAC orientation and training session prior to departing the site.

Contractor:

- a. Accepts, stores (if necessary), and has available at the site any HVAC roof top units that may have been shipped for installation at the site.
- b. Provides labor, materials and means to rig the HVAC unit(s) onto the Entree roof.
- c. Provides a delivery inspection and acceptance report.
- d. Provides labor, materials and means to install the HVAC units, performs all mechanical and electrical connections, performs prescribed start-up work per OEM

- instructions and warranty requirements, and confirms the operating condition of the units for sign-off and acceptance purposes.
- d. Performs final system HVAC system balancing and provides an acceptance report to the Customer.
- e. Participates in a PDC HVAC Orientation and Training session prior to PDC departing the site.

Customer:

- a. *Establishes a routine service and maintenance program on the building and its HVAC system immediately following the installation of the Entree building. Failure to do so may jeopardize OEM warranties.*

14. Mechanical Equipment Roof Screens / Safety Railings (Optional)

PDC:

- a. Provides engineering services and the structural roof "blocking" system, if specified and ordered as an optional item.

Contractor:

- a. Purchases and provides labor and materials for system installation.

15. Imaging Equipment - Remote Chiller(s) Installation

GE imaging systems often require the installation of separate, "closed looped", separate pad mounted and anchored, "remote" water chillers. These water chillers require mechanical and electrical connections, as well as insulated piping, above or under ground, that connects to the Cassette building. Chiller selections, installation techniques, unit purchases and delivery arrangements are coordinated by GE.

PDC:

- a. Provides all interior chilled water insulated piping lines within the Cassette along with "capped" pipe stubs and wired conduit for exterior building connections by the Contractor.
- b. Provides in the Cassette a 480V, 3-phase power circuit for a remote package chiller.

Contractor:

- a. Receives the chiller(s), inspects for damage, unloads, temporarily stores, delivers to the site, and performs final installation and system start-up no later than 24 hours after the Cassette building is installed at the site.
- b. Provides materials and labor for final chiller utility connections to the Cassette

- building per the SPG & SPD.
- c. Provides all materials and labor to perform chiller(s) installation per OEM installation manual.
- d. Performs full system purge and operational tests on the fully installed closed-loop piping system between the outside chiller and within the Cassette building.

Customer:

- a. Purchases the chiller(s) and provides PDC and the Contractor with appropriate manufacturer's system installation information.
- b. Arranges chiller(s) delivery to coincide with the Cassette building delivery schedule.

16. Miscellaneous Items (To Simplify The Work)

PDC:

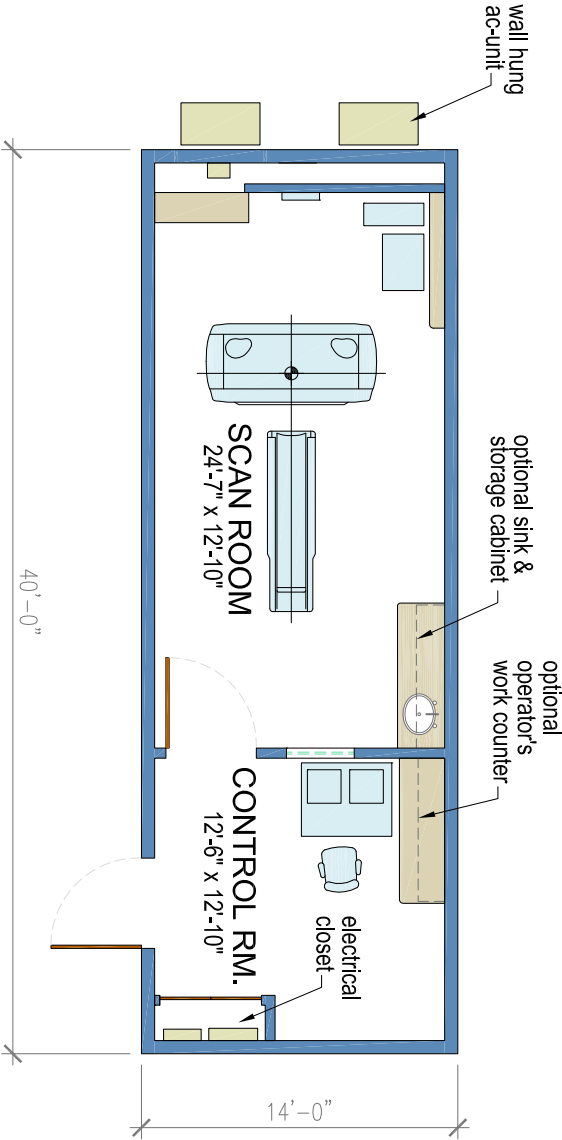
- a. Participates, at no additional cost, in telephone planning conferences as the need arises.
- b. Provides telephone assistance, at no additional cost to Contractor's sub-contractors, during the planning and the installation phases of the project.
- c. Provides a "site specific" Site Planning Document (SPD).

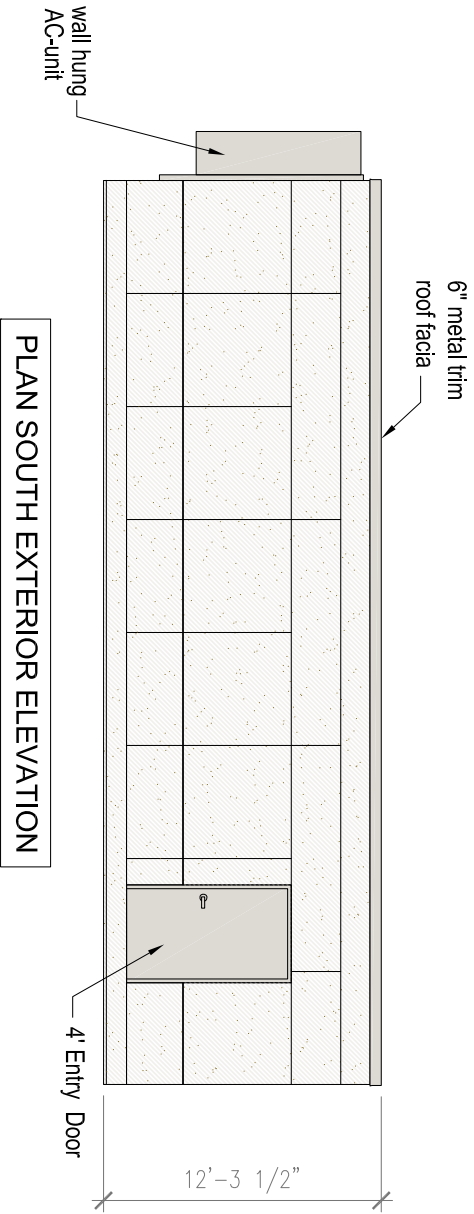
Contractor:

Provides the following miscellaneous items and labor to assist PDC personnel during the building installation process:

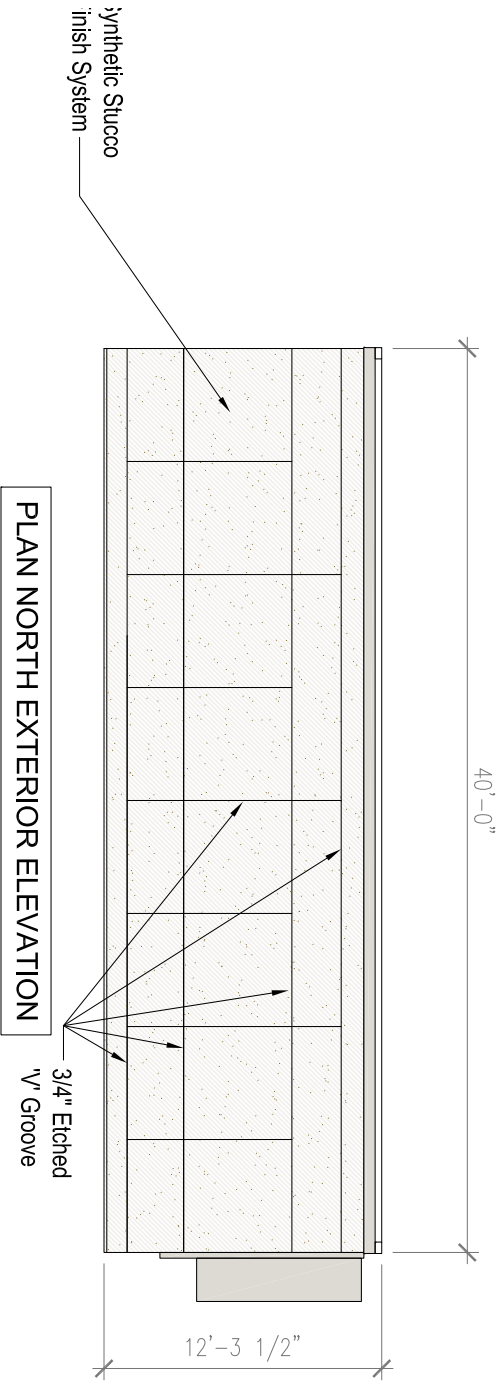
- a. Provides a water source, hoe, grout mixing tub, and one laborer to mix the grout immediately prior to setting the Cassette building on the foundation.
- b. Provide temporary 110v power and lighting, if permanent power is not immediately available after the Cassette is installed on the foundation. (A temporary power condition must be pre-arranged with PDC).
- c. Provides one 20' extension ladder.
- d. Provides one 6' step ladder.

FEATURES	
<ul style="list-style-type: none"> • Institutional construction • 2-hour fire rated walls • 1-hour fire rated roof • CT system pre -installed • Fully finished interior • Fully finished exterior 	<ul style="list-style-type: none"> • Fully contained HVAC • UL designs • GE Design Certified • IBC seismic zone D • IBC 150 mph structure • HHS compliant





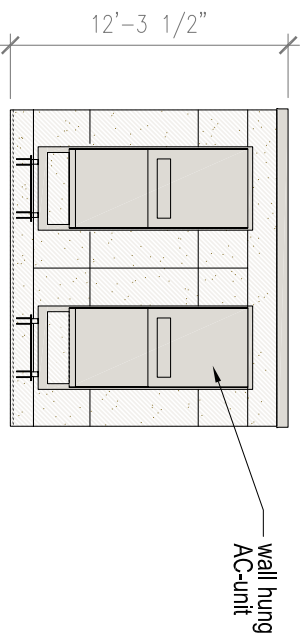
PLAN SOUTH EXTERIOR ELEVATION



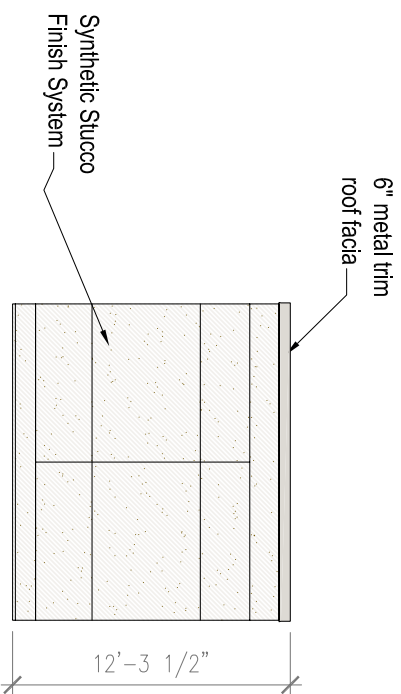
PLAN NORTH EXTERIOR ELEVATION

Exterior - Elevations

1/8" = 1'-0"

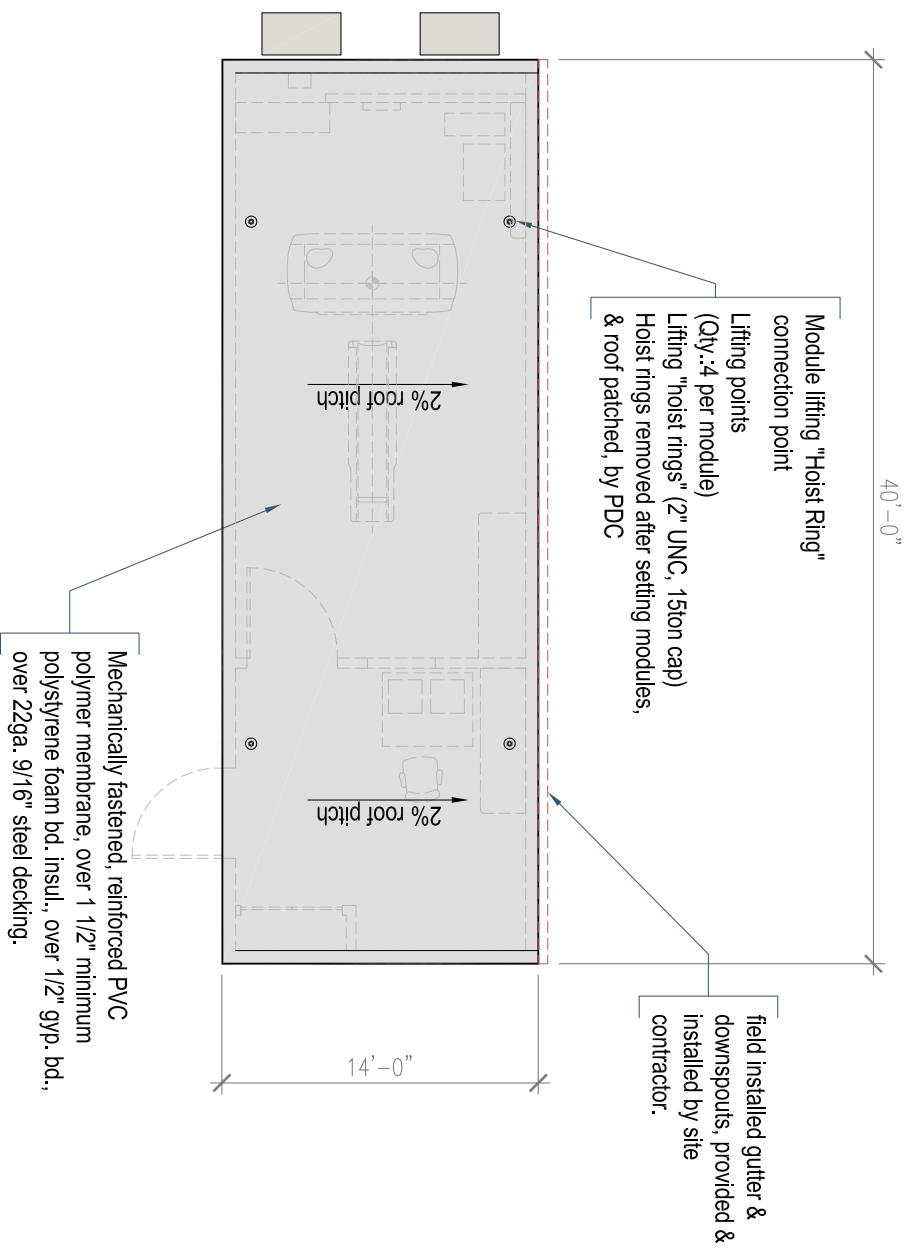


PLAN WEST EXTERIOR ELEVATION



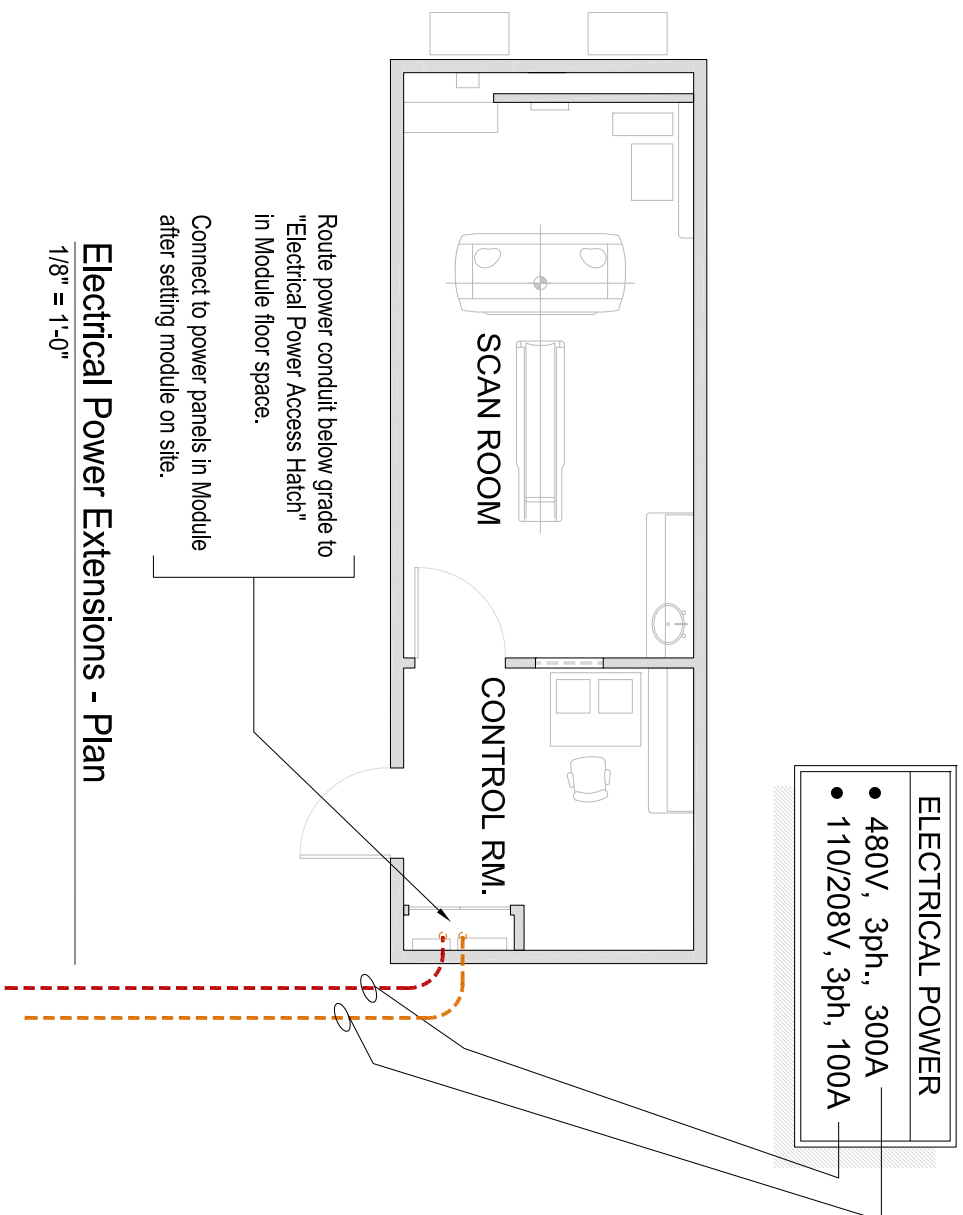
PLAN EAST EXTERIOR ELEVATION

Exterior - Elevations
1/8" = 1'-0"



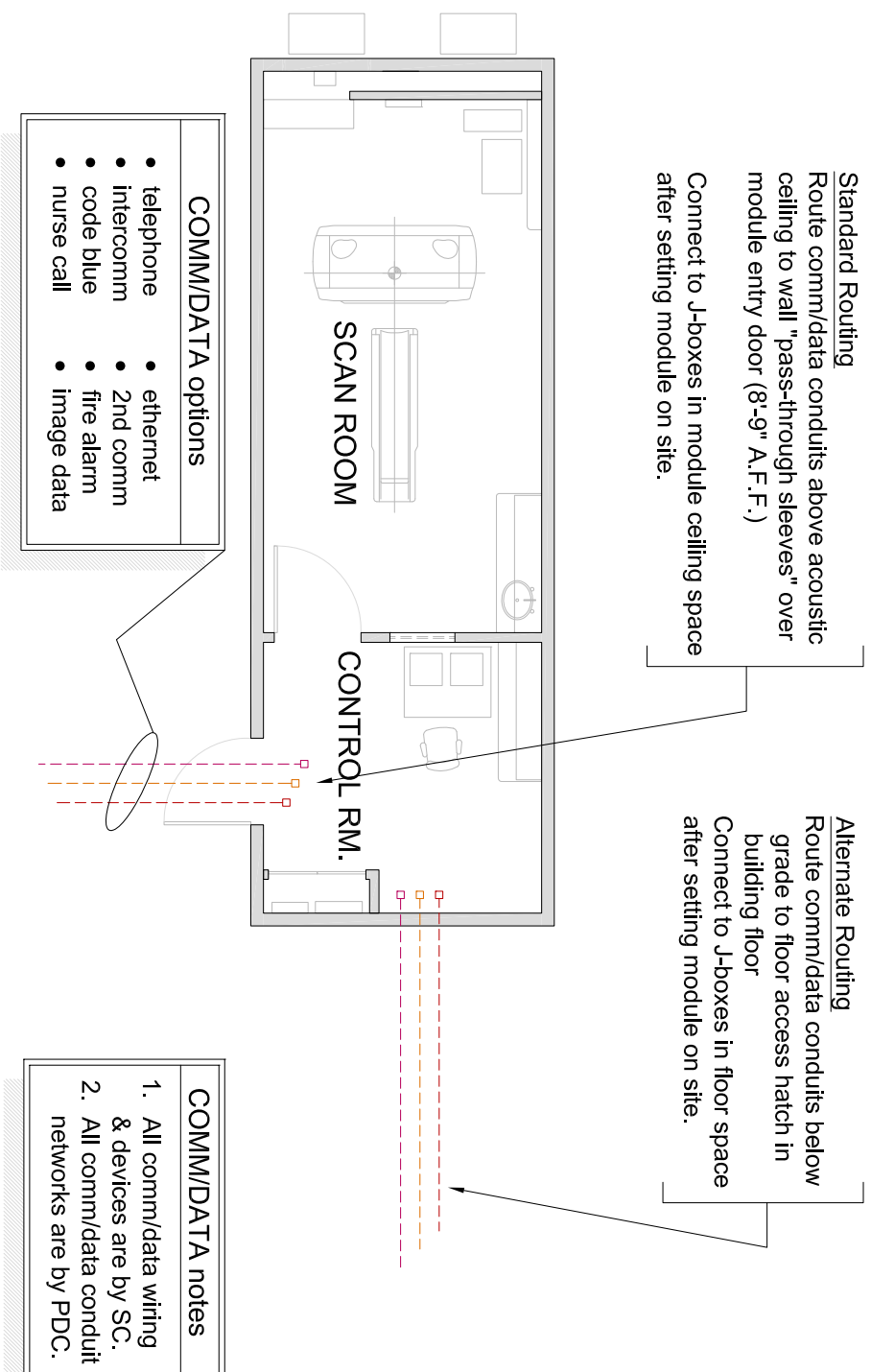
Roof - Plan

1/8" = 1'-0"



Electrical Power Extensions - Plan

1/8" = 1'-0"



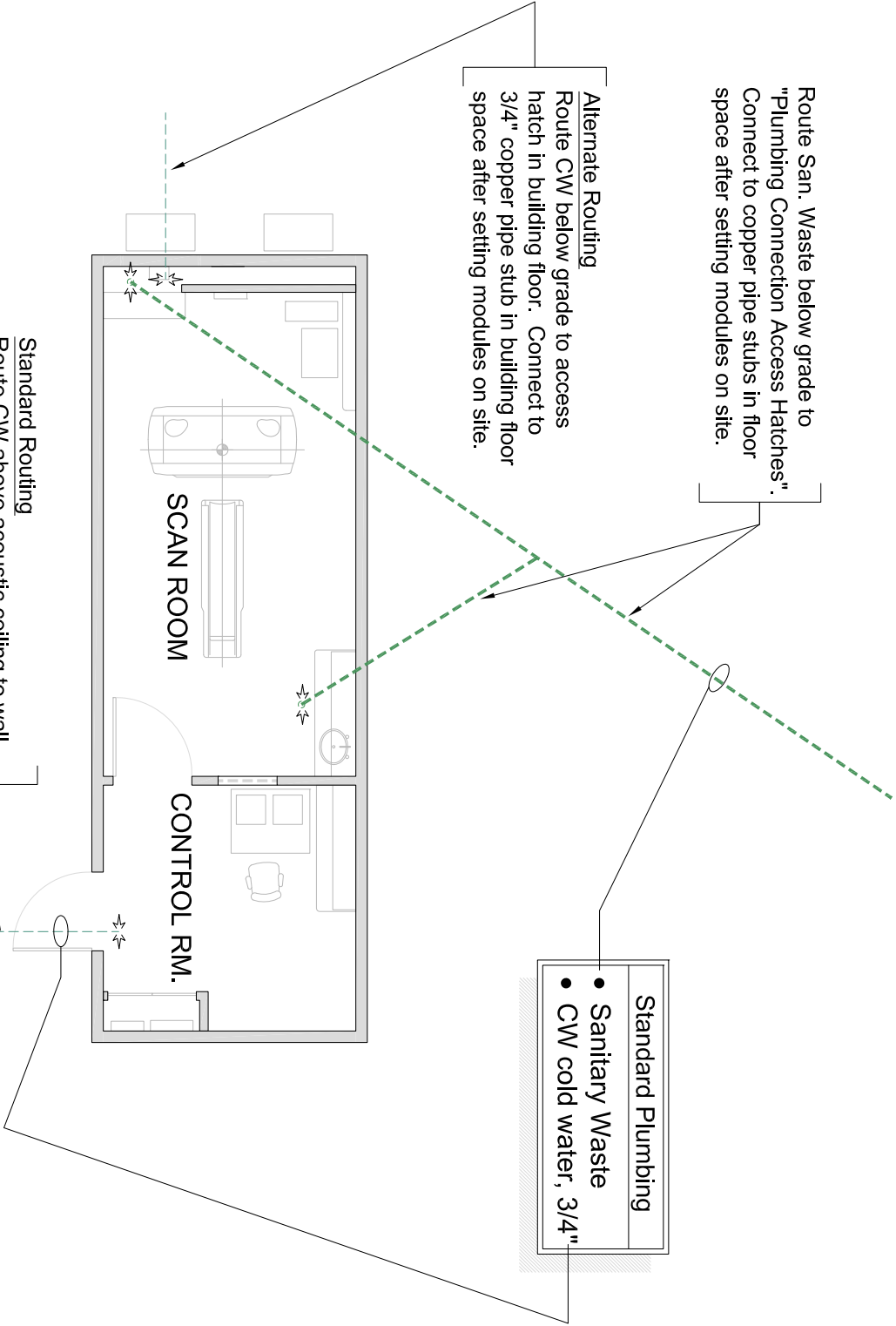
Electrical Communication Extensions - Plan

1/8" = 1'-0"

Route San. Waste below grade to "Plumbing Connection Access Hatches". Connect to copper pipe stubs in floor space after setting modules on site.

Alternate Routing
Route CW below grade to access hatch in building floor. Connect to 3/4" copper pipe stub in building floor space after setting modules on site.

- | |
|-----------------------|
| Standard Plumbing |
| • Sanitary Waste |
| • CW cold water, 3/4" |



Standard Routing
Route CW above acoustic ceiling to wall "pass-through-sleeves" over module entry door (8'-9" A.F.F.)
Connect to 3/4" copper pipe stub in module ceiling space after setting modules on site.

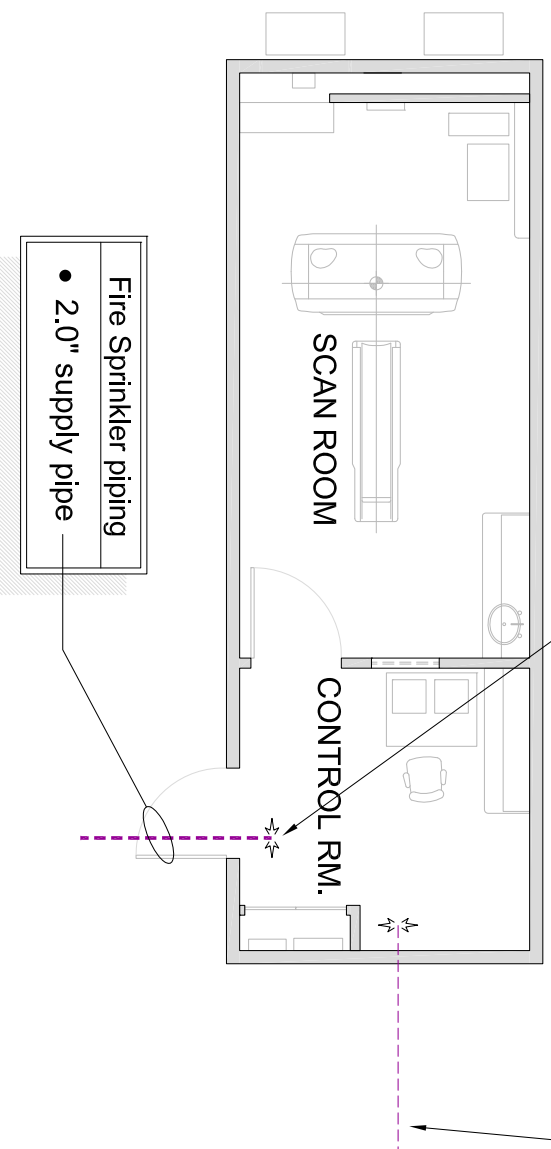
Standard Plumbing Extensions - Plan
1/8" = 1'-0"

Standard Routing

Route Fire Sprinkler pipe above acoustic ceiling to wall "pass-through-sleeves" over module entry door (8'-9" A.F.F.)
Connect to 2.0" copper pipe stub in module ceiling space after setting modules on site.

Alternate Routing

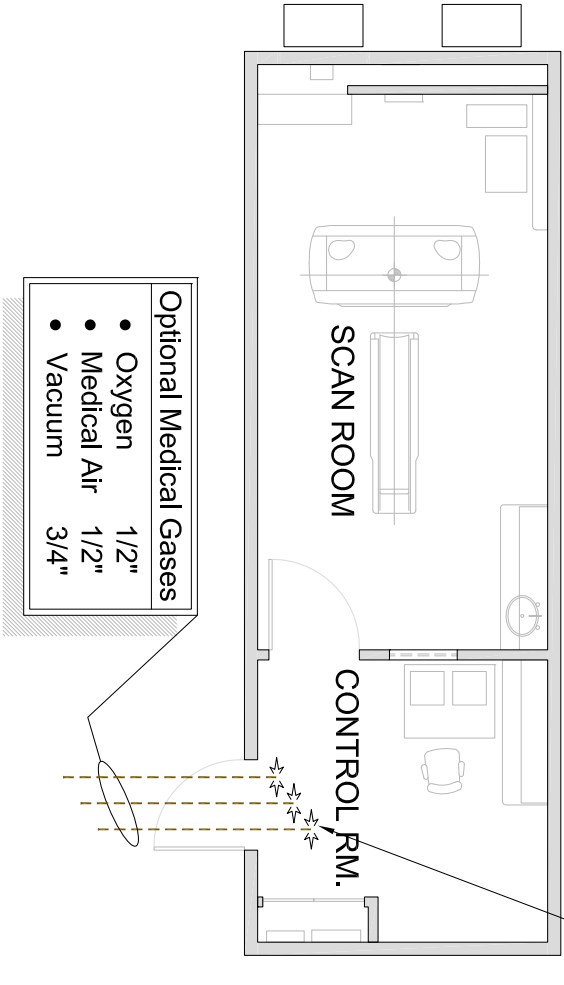
Route Fire Sprinkler pipe below grade to access hatch in building floor.
Connect to 2.0" copper pipe stub in building, after setting modules on site.



Fire Sprinkler Extension - Plan

1/8" = 1'-0"

Route Medical Gas pipes above acoustic ceiling to wall "pass-through-sleeves" over module entry door (8'-9" A.F.F.)
Connect to copper pipe stubs in module ceiling space after setting modules on site.

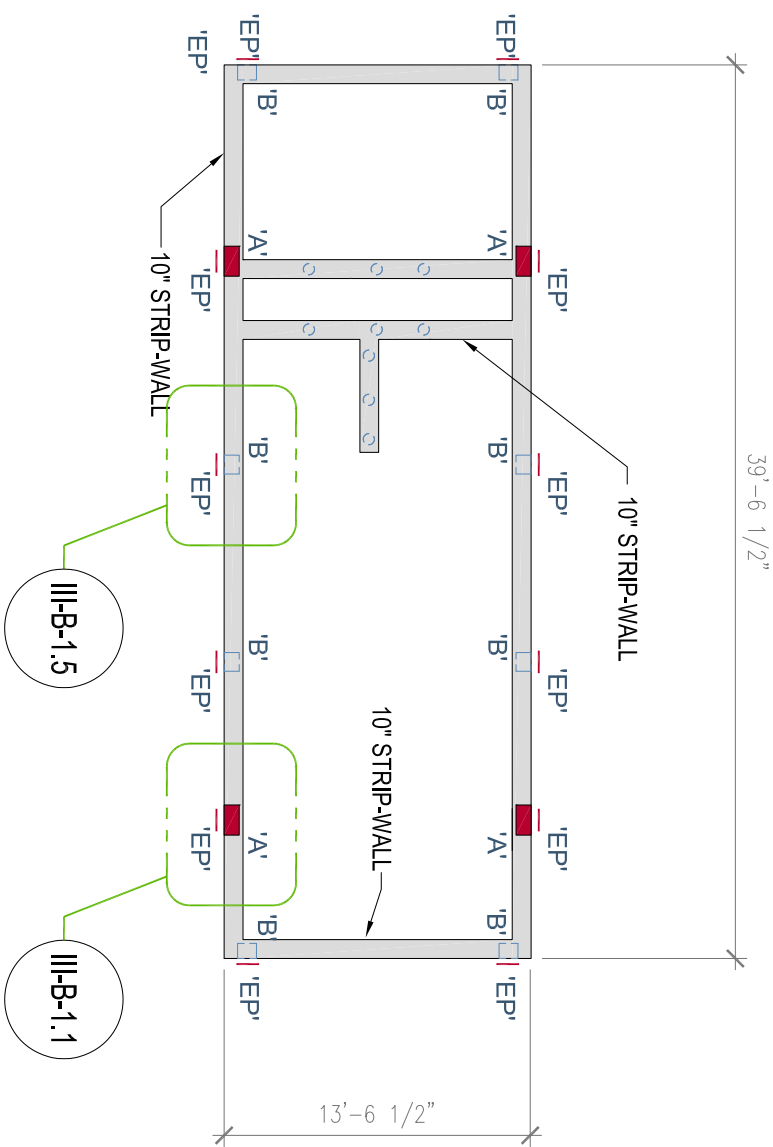


Medical Gas Extensions - Plan

1/8" = 1'-0"

FOUNDATION - notes

- 'A' plates, by SC (main bearing plates)
- 'B' plates, by PDC (secondary bearing plts.)
- 'EP' plates for building hold-down, by SC
(vertical embed plates)
- PDC shall provide "base plate reaction force values"
for foundation engineer.

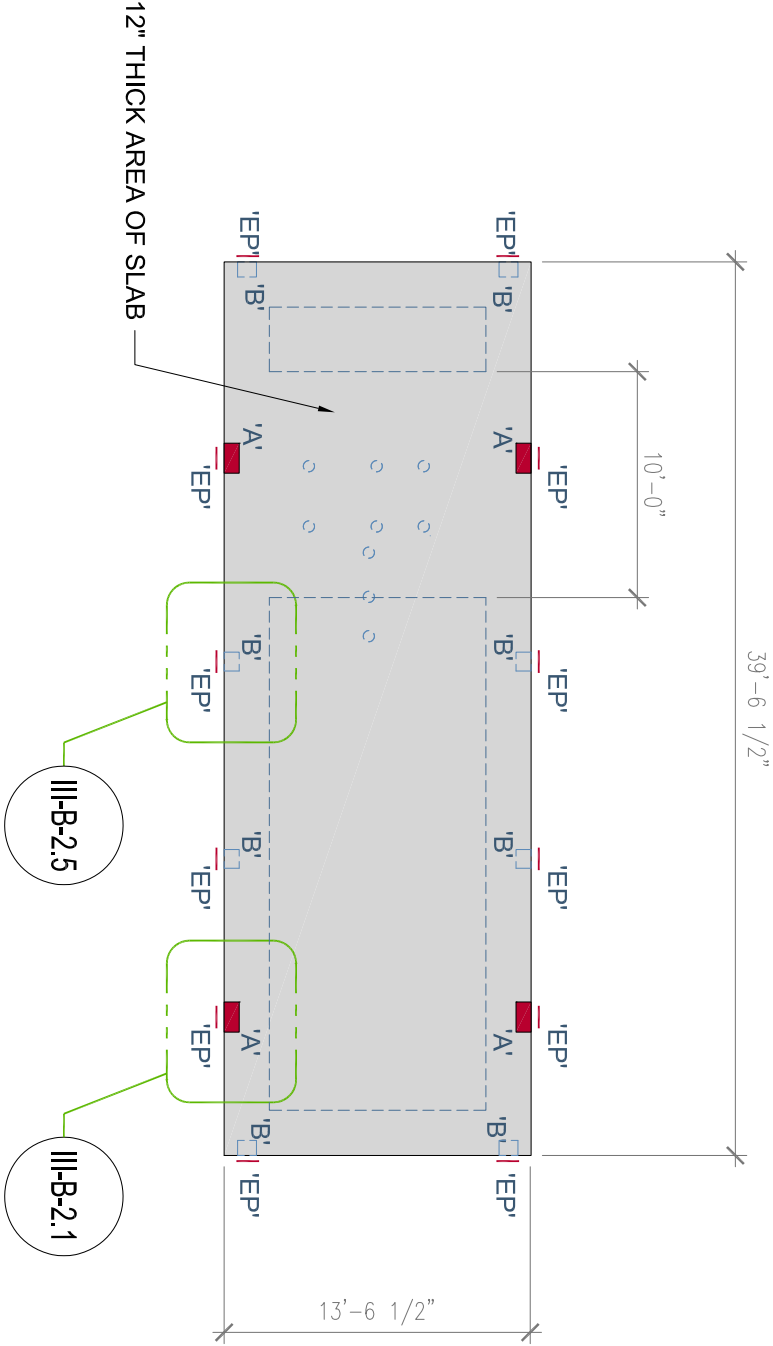


Strip-wall Foundation Example - Plan

1/8" = 1'-0"

FOUNDATION - notes

- 'A' plates, by SC (main bearing plates)
- 'B' plates, by PDC (secondary bearing plts.)
- 'EP' plates for building hold-down, by SC
(Vertical embed plates)
- PDC shall provide "base plate reaction force values"
for foundation engineer.



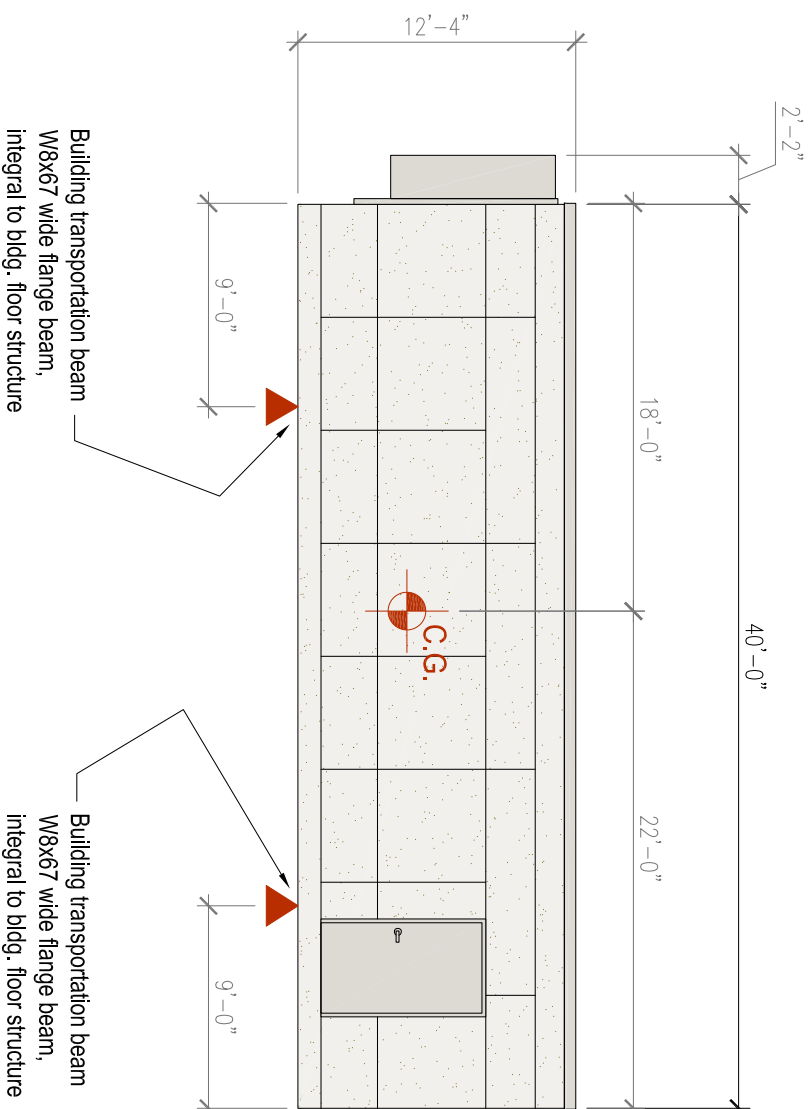
Slab-on-Grade Foundation Example - Plan
1/8" = 1'-0"

TRANSPORTATION - notes

- bearing location 8 ft wide minimum bearing surface.
- All bearing locations must be given support during transportation.

Cassette Module - WEIGHT

72,000 lbs.



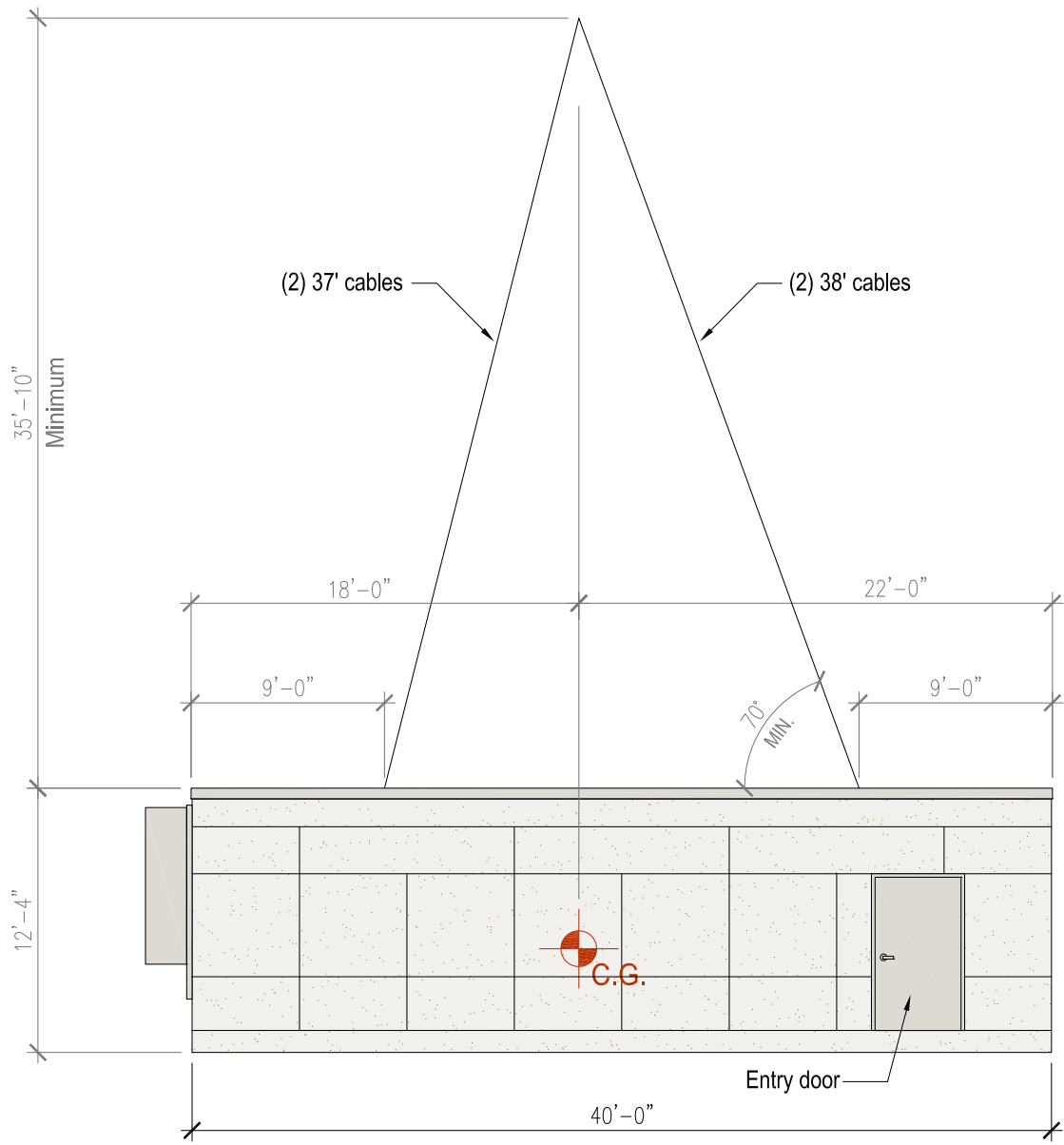
Module Transportation Bearing - Elevation

1/8" = 1'-0"

Module - WEIGHT
72,000 lbs.

RIGGING - notes

- PDC provides "hoist rings" for connection to module roof superstructure.
- SC provides all other rigging
- Module must not tip more than 1 degree (9" in 40'-0").



Module Rigging - Elevation

1/8" = 1'-0"