

GLOBAL ENVIRON
0.2T SIGNA PROFILE
SITE PLANNING AND INSTALLATION
USED ON VB302 & UP

LIST OF AFFECTED PAGES

<u>Revision</u>	<u>Date</u>
Rev. 0	2/3/98
Rev. 1	5/6/98
Rev. 2	7/9/98
Rev. 3	9/1/98
Rev. 4	10/12/98
Rev. 5	9/9/99

Asterisk (*) reflects pages with content change:

<u>Page</u>	<u>Rev.</u>	<u>Rev.</u> <u>Page</u>	<u>Page</u>	<u>Rev.</u>	<u>Rev.</u> <u>Page</u>
1	5		16	5	*
2	5	*	17	5	*
3	5	*	18	5	*
4	5	*	19	5	*
5	5		20	5	*
6	5		21	5	*
7	5		22	5	*
8	5		23	5	*
9	5		24	5	*
10	5		25	5	*
11	5		26	5	*
12	5	*	27	5	*
13	5	*	28	5	*
14	5	*			
15	5	*			

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	LIST OF AFFECTED PAGES	2
	TABLE OF CONTENTS	3
	LIST OF ILLUSTRATIONS	4
1	INTRODUCTION	
1.2	Division of Responsibilities	5
2	SITE PLANNING	
2.1	Location	7
2.2	Support Pad	10
2.3	Power	11
2.4	Water	14
2.5	Telephone	14
2.6	Air Conditioners	15
2.7	Local Codes	15
2.8	Ancillary Space Modules	15
3	INSTALLATION	
3.1	General	17
3.2	Packaging	17
3.3	Trailer/Transporter	17
3.4	Tractor	17
3.5	Permits	17
3.6	Site Riggers	18
3.7	Off Loading	18
3.8	Placing GLOBAL ENVIRON	18
3.9	Seismic Zone 4	24
3.10	Power Hookup	24
3.11	Telephone Hook-Up	26
3.12	Water Hook-Up	26
3.13	Magnet Field Warnings	26
3.14	Exterior Paint	27
3.15	Remote Camera Hook-up	27
4	RELOCATION PROCEDURES	
4.1	Preparation for Movement	28

LIST OF ILLUSTRATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
2.1	Sample GLOBAL ENVIRON PROFILE Layout.....	8
2.2	Transporter Turning Radius	10
2.3	Sample Ancillary Space Modules	16
3.1	Rigging Illustration	20
3.2	Conduit Locations	25
	Pad Requirements	See Attached SP-33

SECTION 1 INTRODUCTION

1.1 There are three related topics discussed in this guide - site planning, installation, and relocation. For additional instructions on set-up, transport, operation and maintenance, please refer to the Ellis & Watts Service Manual, Document #SR4010.SE1 and the Ellis & Watts Operator's Manual, Document #SR4010.OP1. For specific siting information, also refer to Site Plan Drawing SP-33.

1.1.1 Site Planning includes that portion of the MR project in which the ultimate resting place and orientation of the GLOBAL ENVIRON is selected. Also referenced are the concrete pad, power, telephone, and water requirements necessary prior to installation.

1.1.2 Installation looks at all activities which take place once the GLOBAL ENVIRON has been prepared for shipment, through power hook up at the site.

1.1.3 Relocation describes the procedure to follow when the GLOBAL ENVIRON is moved from the site.

1.2 **Division of Responsibilities**

The following shows the division of responsibilities between Ellis & Watts and the customer. Any exceptions should be communicated to Ellis & Watts in writing as early in the planning stages as possible to avoid delays in the schedule.

Ellis & Watts will provide:

- Standard price includes transportation from Ellis & Watts to the site or port of exit from the continental USA (48 States).
- Five (5) leveling blocks, per SP-33. (E&W P/N 51-2-5)
- Three (3) shim blocks, per SP-33.
- As required aluminum shims. See section 3.8.2
- Torque Wrench (Overseas Units Only)
- Torque Wrench Extension (Overseas Units Only)

Customer to provide:

- Transportation of unit on approved carrier to site including required permits outside of the continental USA.
- Foundation constructed in compliance with this document and Site Plan Drawing SP-33, including plumbing and electrical. Depth of foundation below grade shall meet applicable local and national codes.
- Four (4) lifting lugs for use crane unloading.
- A reasonable means of entry and exit for the unit on its transporter. Approximate total length of GLOBAL ENVIRON transport trailer and its tractor is 26689mm (81').
- Provide crane of proper lifting capacity, spreader beam, slings per SP-33, and riggers to lower unit into position and shim as required. It is recommended that the rigger look at the site prior to the unit's arrival in order to plan where the transporter should be located for crane unloading. The rigger must verify that the crane has the required lifting capacity to swing the unit into position. The rigger must have adequate insurance.
- Labor to connect plumbing, telephone, electrical power and HVAC start-up.
- Any local, state or national building permits.
- All paperwork, taxes and fees required by customs.
- Any connecting corridor or walkway.
- GLOBAL ENVIRON Tie Downs.
- Optional Seismic Tie Down Angles. Available from Ellis & Watts.

Notes:

To power up and operate your GLOBAL ENVIRON, consult the Operator's Manual, Ellis & Watts Document #SR4010.OP1, and General Electric PROFILE Operator's Manual.

For any questions which you may have, please contact our GLOBAL ENVIRON Site Planner at (513) 752-9000.

SECTION 2 SITE PLANNING

2.1 Location

2.1.1 Locating your GLOBAL ENVIRON is a function of the criteria you have developed for your operation, magnet field strength, and location of vehicular traffic relative to the unit. A list of criteria might include:

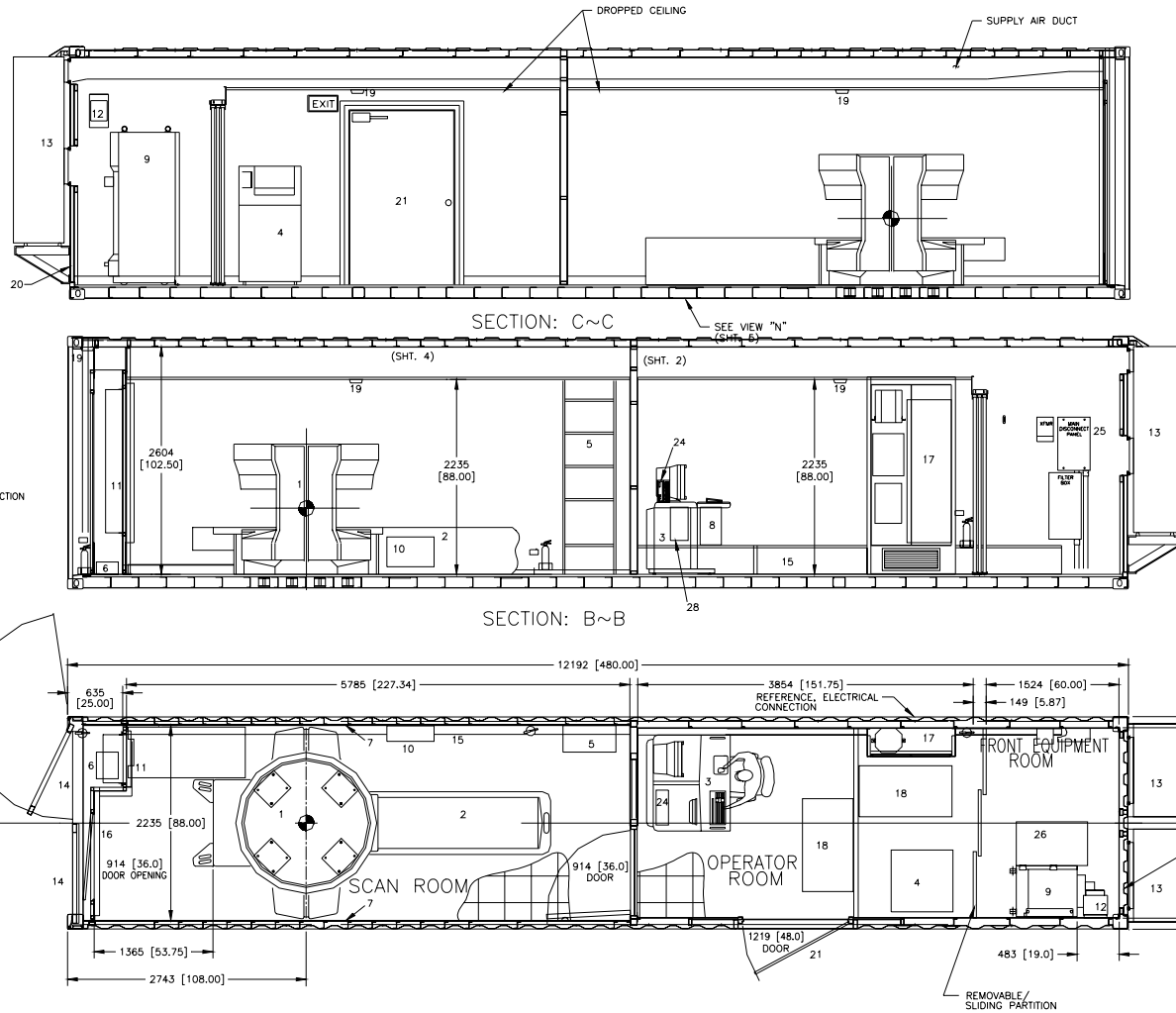
- A) Length of walkway to hospital or other facility.
- B) Service access to Global Environ.
- C) Side of building for best patient access.
- D) Impact of magnet field to surrounding areas such as parking lots or buildings.
(Vibration - moving metal)
- E) Adaptability to landscaping.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED. BRACKETS [] ARE IN INCHES.

LEGEND:

1. MAGNET
2. PATIENT TABLE
3. OPERATORS CONSOLE
4. OPTIONAL LASER CAMERA
5. OPEN SHELF
6. TEMPERATURE CONTROL UNIT
7. MAGNETIC SHIELDING
8. CIRCUIT BREAKER
9. INTEGRATED POWER SYSTEM
10. PAC
11. SCAN ROOM UNIT
12. HUMIDIFIER
13. AIR CONDITIONERS
14. REAR ACCESS DOORS
15. GE SYSTEM CABLES WIREWAY
16. PEN PANEL BOOTH
17. ELECTRICAL PANEL AREA
18. SHIPMENT POSITION, AIR CONDITIONING UNITS
19. SMOKE DETECTOR
20. WATER CONNECTION INTERFACE
21. PATIENT ENTRY DOOR
22. ELECTRICAL CONNECTION, 2" NPT CONDUIT COUPLING
23. 1/2" NPT CONDUIT COUPLING FOR COMMUNICATIONS/DATA CONNECTION
24. UNINTERRUPTIBLE POWER SUPPLY
25. MDC PANEL
26. BODY COIL STORAGE CABINET
27. ELECTRICAL CONNECTION, 2" NPT CONDUIT COUPLING USED WHEN 200 VOLT POWER IS REQUIRED ONLY
28. JUNCTION BOX



**Illustration 2.1
GLOBAL ENVIRON Layout G.E. PROFILE**

2.1.3 The following lists specifies the minimum distance from the GLOBAL ENVIRON for various **STATIONARY** items to prevent the gauss field from affecting the items and conversely having the items affect magnetic field homogeneity. The 5 gauss Exclusion Zone of the G.E. PROFILE is restricted to the scan room of the GLOBAL ENVIRON. People with pace makers should not enter magnet room.

1.5m (4.5 feet) from unit walls (less than .5 gauss):

- Nuclear Cameras

.5m (1.5 feet) from unit walls (less than 1 gauss):

- PET Scanner
- Ultrasound Equipment
- Cyclotrons
- Electron Microscope
- Accurate Measuring Scales
- Linear Accelerators
- Image Intensifiers
- Color Television
- CT Scanner

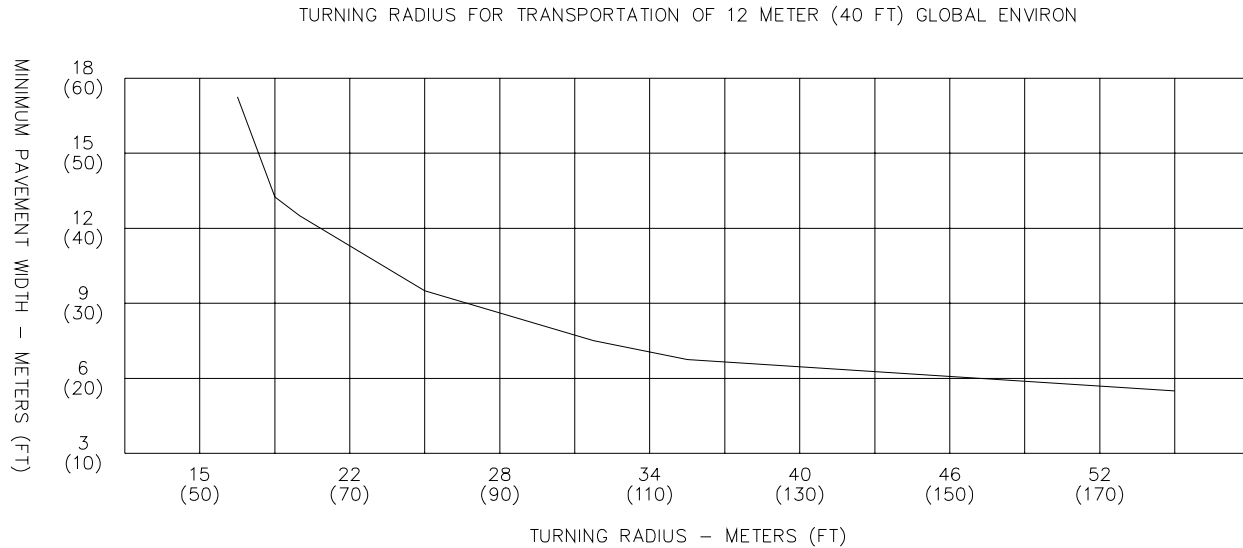
Contained in the Scan Room (less than 3 gauss):

- Truck Traffic *
- Passenger & Freight Elevators *
- Escalators *
- Power Transformer
- Buses *
- Emergency Vehicles *
- Dumb Waiter *
- Helicopter Landings *
- Forklift Trucks *
- Electric Transport Carts *
- Automobile Traffic *

* Asterisk denotes moving metal objects which can affect magnetic field homogeneity and therefore **MUST** be held a minimum of 5m (17 feet) from the unit walls. It is recommended to keep these objects 9m (30 feet) from the unit walls (Refer to G.E. for details on moving metal restrictions).

2.1.4 The GLOBAL ENVIRON is constructed with Radio Frequency Interference shielding in the scan room. The shielding is installed to meet the minimum General Electric shielding effectiveness requirement of 85 dB (with MR System installed).

2.1.5 The GLOBAL ENVIRON has already been installed in some hard-to-access locations, proving that it can be done. However, whenever possible, it is wise to consider the approach a 26689mm (81') tractor and trailer combination will have to make in order to reach the final resting place. In the event that it is not possible to negotiate the entire approach unassisted, cranes may be used (see Section 3). The minimum turning radius of the tractor and trailer combination is 17069mm (56'). Reference Illustration 2.2 for chart to verify turning radius per available road width.



**Illustration 2.2
Transporter Turning Radius**

2.2 Support Pad

2.2.1 It is necessary to consult with the architect designing the job with regard to soil conditions and local building codes prior to designing the support pad for the GLOBAL ENVIRON. If seismic zone designs are required, then the support pad will need to be designed accordingly.

2.2.2 Site Plan Drawing SP-33 indicates the foundation requirements and loads required to support the GLOBAL ENVIRON. When calculating the maximum weight that the pad will need to support, the method of installation of the GLOBAL ENVIRON should be considered. At most sites, the tractor and trailer carrying the GLOBAL ENVIRON will pull onto the pad, therefore, the total weight of the GLOBAL ENVIRON, tractor and trailer should be considered when designing the pad. At a few sites, the crane weight will need to be added into the total pad design weight.

2.2.3 The patient access finish floor is located 177mm (6.95") and the rear door finish floor is 169mm (6.63") above the bottom of the GLOBAL ENVIRON structure. Walkways, if any, should be structured accordingly. (Leveling blocks will add approximately 64mm (2.5") to the finish floor height).

2.2.4 If a sink is required, the plumbing lines (supply & drain) supplied to the GLOBAL ENVIRON should be run to the "plumbing pit" prior to the placement of the GLOBAL ENVIRON. The location and size of the pit is indicated on Drawing SP-33. (Consult local plumbing codes if necessary for applicable installation requirements.)

2.2.5 If it is necessary to raise the GLOBAL ENVIRON above the pad height, optional piers can be installed to support the GLOBAL ENVIRON at the required height. This is not the recommended installation and will be the responsibility of the customer to engineer, design and install the piers to fit existing site conditions. See drawing SP-33 for a typical pier design.

NOTE: Access must be provided to the rear doors and kept clear.

2.3 Power

2.3.1 Illustration 3.2 indicates the location for connecting the power source to the GLOBAL ENVIRON.

2.3.2 The GLOBAL ENVIRON is supplied with one of three different power configurations as listed below installed:

150 amp, 480 volt, 3 phase, 60hz, 5 wire wye power (A,B,C configuration) for the MRI system and two air handling units. (Ground and neutral must be minimum 1/0.)

150 amp, 380/400/415 volt, 3 phase, 50hz or 60hz, 5 wire wye power (A,B,C configuration) for the MRI system and two air handling units. (Ground and neutral must be minimum 1/0.)

Two 200 amp services, 100/200 volt, 3 phase, 50hz or 60hz, 5 wire delta or open delta power (A,B,C configuration) for the MRI system and two air handling units. (Ground and neutral must be minimum 1/0).

2.3.3 It is necessary to consult local electrical codes and GE, the MRI equipment supplier, for sizing of electrical service conductors supplying power to the GLOBAL ENVIRON.

2.3.4 The electrical service conductor is to be run through the 51mm (2" NPT) conduit coupling (quantity two for 100/200 volt systems) provided and connected to the terminals in the power distribution/circuit breaker box provided. This connection is to be accomplished by a qualified, local electrical contractor.

Bringing up Power to the GLOBAL ENVIRON

- a) Turn on Main breaker on Power Panel 2.
- b) Turn on Main breaker on Utility Power Panel 1.
- c) Turn on remaining breakers.
- d) Turn on UPS system (for Wet-Pipe or Pre-Action Fire Suppression System Options).
- e) Wait 24 hours before turning on HVAC units.
- f) Turn on HVAC units.

2.3.5 An earth ground connection is provided below the conduits provided for the incoming power service. Minimum 1/0 ground conductor required.

2.3.6 Power lines from the site source to the GLOBAL ENVIRON, power entering on the front roadside are not to be run underneath or above the magnet. If it is necessary to run the wires underneath or above the unit, route them so as to avoid the area underneath or above the scan room.

2.3.7 Power fluctuation limitations are specified by GE, the MRI equipment manufacturer. Contact GE representative for information or see GE PROFILE Direction.

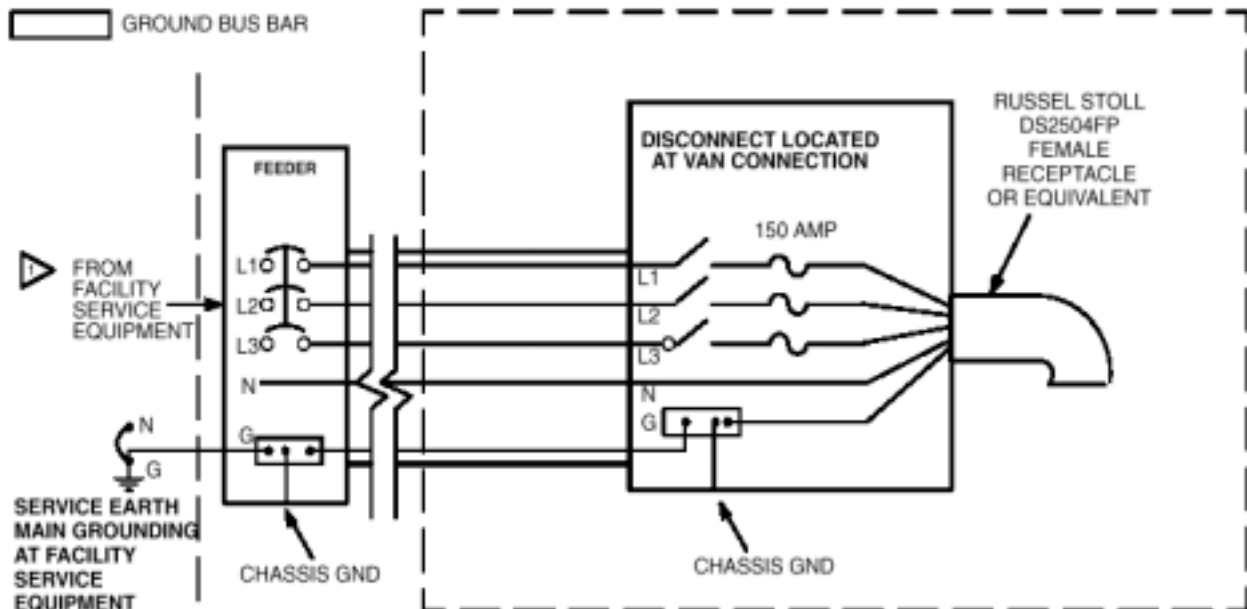
2.3.8 Mobile/Relocatable Grounding Requirements

Note:

- **All work to be done in accordance with national and local electric codes. Information shown here is only a recommendation and must be verified for site national and local codes.**
- Ground wires inside enclosures to be taped green for entire visual length for identification.



Main bonding jumper between grounded (neutral) conductor and equipment grounding conductor to be provided in facility service equipment and downstream at separately derived system transformer secondary as shown.



Grounding

The ground for our system shall originate at the system power source, i.e., transformer or first access point of power into a facility, and be continuous to our system power disconnect in the room. This ground can be spliced with “High Compression Fittings” and should be terminated at each distribution panel it passes through. When it is broken for a connection to a panel, it shall be connected into an approved grounding block with the incoming and outgoing ground in this same grounding block, which is then connected to the steel panel never using the steel panel never using the steel or other material of the panel as the block.

The connection at the power source shall be at the grounding point of the “Neutral-Ground” if a “Wye” transformer is used, or typical grounding points of a separately derived system. In the case of an external facility, it shall be bonded to the facility ground point at the service entrance.

Ground Wire

The ground wire shall be copper wire with a minimum of AWG 1/0 or the same size as the power feeders whichever is larger. This means that if there is a primary feeder to a distribution panel if 500 MCM with a secondary feeder to our system of AWG 1/0 wire, the ground to the distribution panel shall be 500 MCM with an AWWG 1/0 to our system. The ground wire impedance from our system disconnect, including the ground rod, shall not have an impedance greater than 2 ohms to earth as measured by one of the applicable techniques described in Section 4 of ANSI/IEEE Standard 142 – 1982.

Special Notes:

It is also recommended that a separate (#6 minimum copper) grounding conductor be installed from the main trailer ground lug in the rear curbside belly compartment to a driven ground rod as a supplemental grounding conductor for the trailer.

All specifications apply to measurements at the receptacle pins. Line voltage drops from the facility mains to the receptacle must be included in all power calculations.

Instantaneous fluctuations in the line voltage caused by loads other than this Mobile MR Imaging Unit **must not** exceed $\pm 5\%$, have a duration in excess of five (5) cycles, and frequency of their occurrence must not be more than ten (10) times per hour.

Power lines from the site source to the trailer are not to be run underneath or above the magnet. If it is necessary to run the wires underneath or above the unit, route them so as to avoid the area underneath or above the scan room.

Customer must install a label stating: "SERVICE DISCONNECT FOR MOBILE MRI UNIT" at hospital power source.

2.4 Water

2.4.1 Water is necessary for operation of the GLOBAL ENVIRON humidifier. A hose barb fitting is located on the front of the unit (see E & W drawing SP-33). Optional fire suppression systems, and optional sink requires a plumbing pit. Drawing SP-33 shows the location of the plumbing pit into which water lines can be connected (38mm (1-1/2 inch supply)). If a water line is not run to the GLOBAL ENVIRON, the optional humidifier water tank/pump option must be chosen. An optional FM200 system is available for fire suppression without water.

2.5 Telephones

2.5.1 Two telephone lines are terminated at the front roadside rearward of the incoming power (see Illustration 3.2).

Local telephone and data lines are to be brought to these lines by the local phone service company.

2.6 Air Conditioners

The air conditioners are located on the front of the GLOBAL ENVIRON.

The air conditioners are transported inside the GLOBAL ENVIRON and riggers should remove and install per drawing 35-4-10 which is attached to the HVAC units or see Ellis & Watts service manual.

The return air grills of the air conditioning units and the discharge area around these units must remain clear of obstructions to permit adequate air flow.

Local air conditioning specialist should start up units.

2.7 Local Codes

- 2.7.1 Although the GLOBAL ENVIRON is manufactured according to stringent quality engineering standards, it is wise to consult local, state or national building code authorities well in advance of installation to avoid any unnecessary delays in the event that special permits are required. Ellis & Watts can produce structural and schematic drawings when necessary, for these cases. In many states and localities, approval has already been granted. Note that it is the customer's responsibility to obtain required permits prior to E&W shipping the GLOBAL ENVIRON.

2.8 Ancillary Space Modules

When connected to the MRI Imaging module, the use of ancillary space modules or weather seals require special consideration.

To prevent vibration of any sort being transmitted from the ancillary space module, no hard connection should be made between the two modules. In addition, modules may not "share" or rest upon the same pad (i.e. each module must utilize its own pad). "Soft" connections must isolate the buildings and still ensure safe passage from one module to the other, and allow movement of support materials such as cryogen dewars (at thresholds also). Weather protection must be taken into consideration around the module doors as well. Consult with your architect and/or Ellis & Watts before proceeding with such a design. See Illustration 2.3 for sample design.

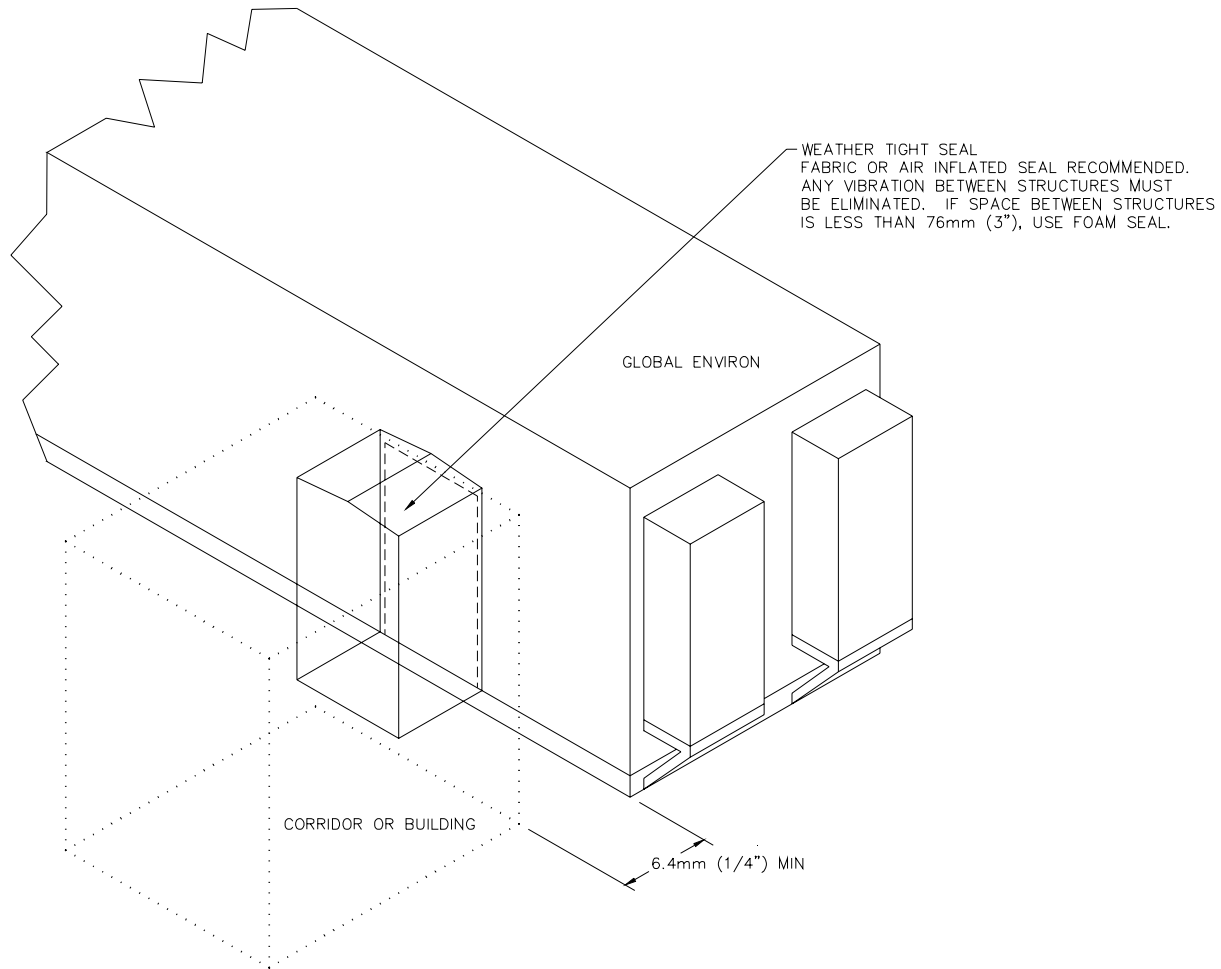


Illustration 2.3
Sample Ancillary Space Modules

SECTION 3 INSTALLATION

3.1 General

3.1.1 The GLOBAL ENVIRON represents a substantial investment and should be handled with care and expertise.

3.2 Packaging

3.2.1 The GLOBAL ENVIRON is released from the factory only after it has met the GE MR system and Ellis & Watts' specifications. All portions of the MR system are in place - magnet, electronics, etc. All articles are packed in boxes and strapped in the GLOBAL ENVIRON. The large GE service tools are packed in boxes for shipping and shall be stored inside the hospital building during MR operation (service tools only). The GLOBAL ENVIRON is complete, with the exception of the HVAC systems for overseas units. The HVAC systems are stored inside the GLOBAL ENVIRON until it reaches its final location. Once at site, the HVAC units are to be installed per section 2.6, and re-paint the exterior of the Global Environ per section 3.14 of this document. After power, communications and plumbing connections are made only activities typically associated with system start up at a fixed site remain.

3.3 Trailer/Transporter

3.3.1 The GLOBAL ENVIRON should be mounted on an air ride transporter and ready for hookup to a tractor which is capable of handling a 2440mm (8ft) wide x 12190mm (40ft) long x 2895mm (9.5ft) high ISO box.

3.3.2 The weight of the Global Environ is approximately 22,727kg (50,000lbs).

3.4 Tractor

3.4.1 An air ride tractor should be used with the transporter. Tractors range from 7258kg (16,000lbs) - 9979kg (22,000lbs).

3.5 Permits

3.5.1 It is the responsibility of the trucking firm involved to obtain any required permits prior to the move of the ISO box to avoid unnecessary problems or delays.

3.6 Site Riggers

3.6.1 There is some heavy lifting and moving involved at each site requiring the service of riggers. These firms are generally available locally on an hourly or per day rate and have access to the equipment needed for such installations.

3.6.2 Riggers will need to know the access routing planned for the GLOBAL ENVIRON once it arrives at the site. For example, if there are sharp turns in a driveway or parking lot, they may put planking next to curbs to help the trailer wheels, or temporarily move signs when necessary.

3.6.3 The rigger may also decide that cranes are necessary to help the GLOBAL ENVIRON trailer around the tight corner. In these situations, a crane can lift the back end of the trailer and move it right or left, thus enabling the tractor to pull straight ahead.

3.6.4 The riggers will be needed to remove the air conditioning units and support brackets from inside the Global Environ, bolt support brackets in place and located the air conditioners on the support brackets.

3.7 Off Loading The GLOBAL ENVIRON

3.7.1 When the trailer arrives on site, the driver will view the particular access situation and review details with the rigger. They will then be able to determine the best possible approach strategy to the final resting location of the GLOBAL ENVIRON. The ideal situation is to back the trailer next to the pad.

3.7.2 The trailer will usually be backed into place. Depending on the length of the approach and number of turns, this can be done in an hour; or require several hours.

3.8 Placing The GLOBAL ENVIRON

Note the GLOBAL ENVIRON is to be placed on a flat pad as indicated on Site Plan Drawing SP-33. The following section and steps are applicable to pad siting.

3.8.1 CRANE USE

(IMPORTANT: To expedite siting and reduce cost, ensure that steps 1 - 4 in Section 3.8.2, Leveling Procedure, are complete.)

- 3.8.1.1 Customer is responsible for retaining services of a professional rigger. The rigger should provide a crane of required lifting capacity, spreader beam, all required lifting devices to attach the crane to the GLOBAL ENVIRON and set up as shown on attached Drawing SP-33 (Ref. Ill. 3.1).

WARNING

UNIT IS DESIGNED TO BE LIFTED PER STANDARD ISO BOX LIFTING TECHNIQUES. SPREADER BEAM MUST BE USED. WHEN LIFTING FROM THE BOTTOM, 30 DEGREE MINIMUM SLING ANGLE IS REQUIRED. WHEN LIFTING AT TOP 90 DEGREE (VERTICAL) SLING ANGLE IS REQUIRED.

CAUTION:

THIS UNIT CONTAINS SENSITIVE ELECTRONIC EQUIPMENT WORTH SEVERAL MILLION DOLLARS. HANDLE WITH CARE. PICK UP SMOOTHLY WITHOUT JERKING AND PLACE GENTLY INTO POSITION WITHOUT JARRING.

- 3.8.1.3 After placing the GLOBAL ENVIRON over the leveling blocks and steel tubes, the unit is now ready for the Leveling Procedure. Refer to Section 3.8.2.

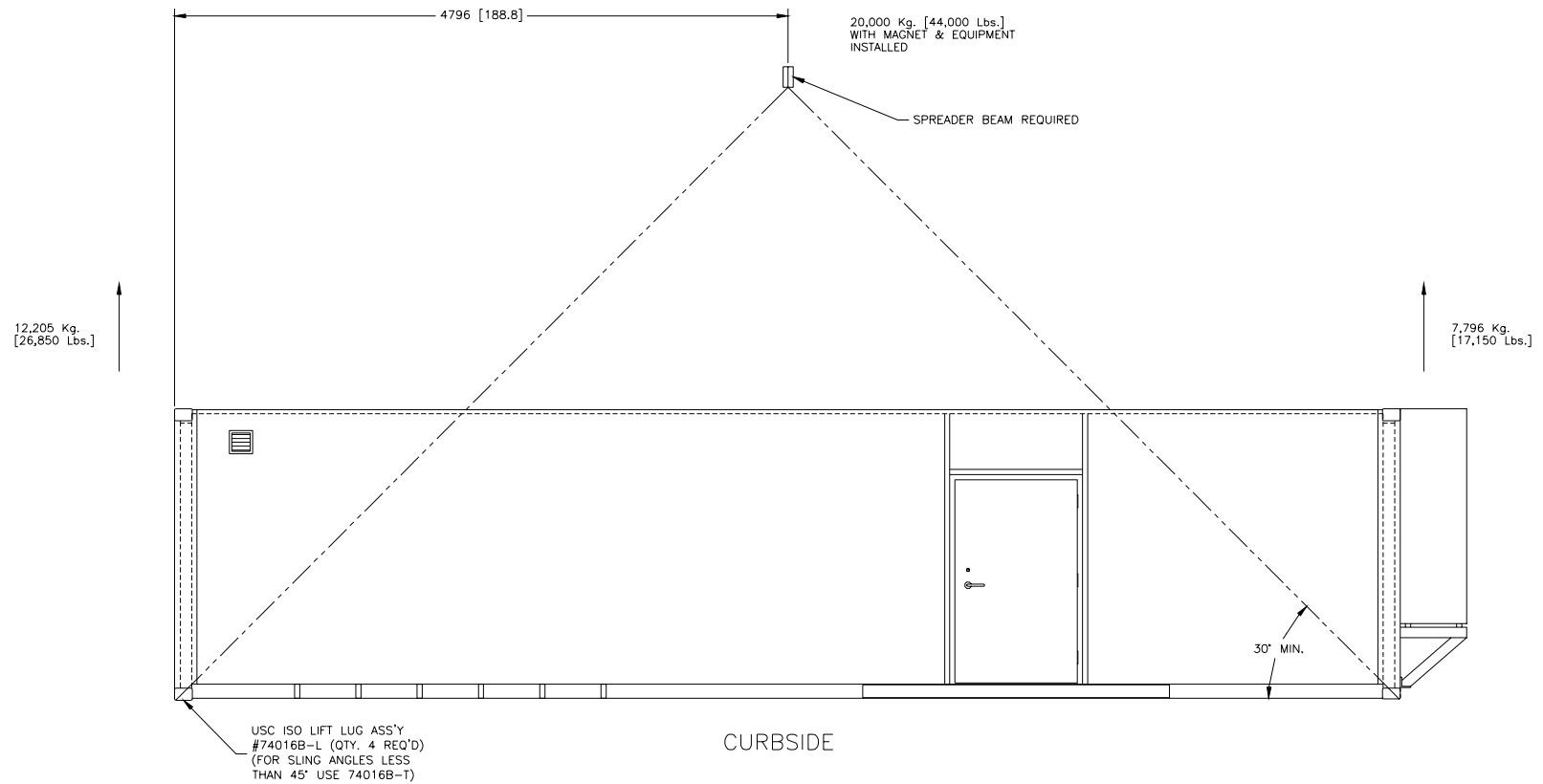


Illustration 3.1
Rigging Illustration

3.8.2 LEVELING PROCEDURE USING LEVELING WEDGE BLOCKS

Parts Required:

- (5) Leveling Blocks; Nu-Matics P/N JH-15; E & W P/N 51-2-5
Note: grease each leveling block prior to placement

- (1) 1829mm (6') Bubble level

- (1) Transit or water level

A/R Approx. 20 each aluminum shims 152mm (6") x 152mm (6") x in the following thicknesses 1.3mm (.050"), .8mm (.032"), 2.3mm (.090"), 3.2mm (.125"), 6.35mm (.250")

- (1) Torque wrench 1-8 kg-meter (8-60 ft.-lb.) range.
Associated fittings: 1" socket and (1) ea. 1219mm (4') extension and 1829mm (6') extension. (1219mm (4') or 1829mm (6') extensions can be made by welding a 1"x½" drive socket on one end of a 28.6mm (1-1/8") O.D. x 23.8mm (15/16") I.D. steel pipe with socket end exposed, and another 3/8"x½" drive socket on the other end with drive end exposed.)

- (3) 63.5mm (2 1/2") x 63.5mm (2 1/2") x 153mm (6") x 6.4mm (.25) wall steel tubes

PROCEDURE:

IMPORTANT: To expedite siting, Steps 1 - 5 should be completed prior to moving the GLOBAL ENVIRON into place.

- 1) Verify concrete pad configuration per Site Plan Drawing SP-33.
- 2) Using chalk, mark the following on the pad:
 - a) Placement of front and rear corners of GLOBAL ENVIRON
 - b) Placement of each leveling block and steel tubes
- 3) a) Place (3) steel tubes under three corners on the concrete pad.
 - b) Place (5) leveling blocks in areas marked on concrete pad. Ensure that each block is well lubricated. Set each block to its lowest position.

- 4) Use a transit or water level to determine the levelness of the blocks and tubes. Shim the blocks and tubes as necessary (center shim underneath the leveling block and tubes), to within 1.6mm (1/16") of level (accuracy of the water level). Do not change the actual setting of the height of the block. (If water level is used, ensure no air is in the line). The blocks under the magnet will need to be shimmed 17mm (.67") higher than the corner support blocks.

NOTE: It is important to take your time during this step to ensure level placement of the unit and to reduce time required in the final adjustment of the leveling blocks.

- 5) Move GLOBAL ENVIRON into place using a crane, leaving approximately 915mm (3') access underneath the unit. Refer to Section 3.8.1 (crane unloading), before continuing.
- 6) Lower the GLOBAL ENVIRON into position and perform the following:
 - a) Check that each leveling block and tube has complete contact with the bottom of the GLOBAL ENVIRON.
 - b) Raise GLOBAL ENVIRON and re-shim as necessary to ensure contact at each support point.
 - c) Now check each block to ensure that it is carrying an adequate load or is not carrying an excessive load. Adjust improperly loaded block with torque wrench as necessary, to RANGE shown on SP-33. Note all initial torque readings.
- 7) GLOBAL ENVIRON is now ready for the final load distribution procedure.

NOTES:

- a) Adjusting one block will affect the load on neighboring blocks.
- b) The full stroke of the leveling blocks is 12 full turns.

DO NOT TURN ADJUSTMENT BOLT PAST THESE LIMITS AS THE MECHANISM MAY BE DAMAGED OR INACCURATE TORQUE READINGS WILL BE MEASURED.

- c) All torque should be measured in the upward direction.
- d) A 25.4mm (1") high fulcrum placed at edge of the unit will help in maneuvering the extension into position for the inner leveling blocks placed on the flat pad.
- e) Symmetrical block loading (blocks directly across from each other) is to be within .55 kg-meter (4 ft-lbs.).

ADJUSTING BLOCKS:

- a) Using a torque wrench, adjust each leveling block to RANGE shown on SP-33, using the following steps:
 - 1) Adjust block 2a to range shown on SP-33. Check perimeter steel tubes to insure that they are still carrying an adequate load.
 - 2) Adjust blocks 1a and 1d; and then 1c and 1b, to range shown on SP-33 and to within .55 kg-meter (4 ft-lbs.) of each other.
 - b) Once all of the (5) blocks have been adjusted to accept the proper load, it is essential that each block is again checked in the same order. This is required because each adjustment made to one block can have a significant impact on the other blocks. It will probably be necessary to repeat the loading procedure 3 to 4 times.
 - c) If the wedge block does not make contact with the bottom of the frame, and it is in the full up position, remove the block, back the screw down to the lowest position, add the proper thickness of shim, place the block back into position, and retorque.
- 8) As a corresponding check, open and close each door on the GLOBAL ENVIRON. They should handle evenly and close smoothly. RF tight doors require slightly more pressure to close than standard doors, but not a dramatic amount more.
- 9) The riggers should now unload and install air conditioning units.

3.9 Seismic Zone: Installation/Bolting Procedure

THIS IS TO BE ENGINEERED AND DESIGNED BY A LOCAL ARCHITECT AND STRUCTURAL ENGINEER HIRED BY THE CUSTOMER TO ENSURE THAT IT IS IN COMPLIANCE WITH ALL LOCAL SEISMIC CODES. FOR GUIDELINES, SEE ELLIS AND WATTS DRAWING SP-33 FOR SLAB ANCHORING SYSTEM.

3.10 Power Hookup

- 3.10.1 The electrician connecting the 480 volt, 3 phase, 60 hz, 150 Amp power to the GLOBAL ENVIRON will choose a wire size compatible with the length of the run from the transformer. The power entry for the GLOBAL ENVIRON is designed for a maximum wire bending radius of 305mm (12"). The 480 volt, 3 phase, five wire cable should be connected to the power distribution center observing ABC phase rotation. Please verify the wire gauge size with the MR manufacturer as their requirements may exceed the local codes. (Ground and neutral must be minimum 1/0.)
- 3.10.2 The above statement (3.10.1) also applies to the connection of 415 volt 400 volt, or 380 volt, 3 phase, 50 hz or 60hz, 150 amp, (A, B, C) connection to the unit when installed overseas.
- 3.10.3 The above statement (3.10.1) also applies to the connection of 100/200 volt, 3 phase, 50 hz, or 60 hz, two 200 amp services (A, B, C) connection to the unit when installed overseas.
- 3.10.4 Power lines from the site source to the GLOBAL ENVIRON front roadside power entrance are not to be run underneath or above the magnet. If it is necessary to run the wires underneath or above the unit, route them so as to avoid the area underneath or above the scan room.
- 3.10.5 The 51mm (2" NPT) conduit for the incoming 480 volt or 380/400/415 volt electrical power is located 2438mm (96") from the front of the GLOBAL ENVIRON. The conduit is stubbed out on the "roadside" approximately 673mm (26.5") above the bottom of the GLOBAL ENVIRON.
- 3.10.6 The two 51mm (2" NPT) conduits for the incoming 100/200 volt electrical power are located 2159mm (85") and 2438mm (96") from the front of the GLOBAL ENVIRON. The conduits are stubbed out on the "roadside" approximately 673mm (26.5") above the bottom of the GLOBAL ENVIRON.

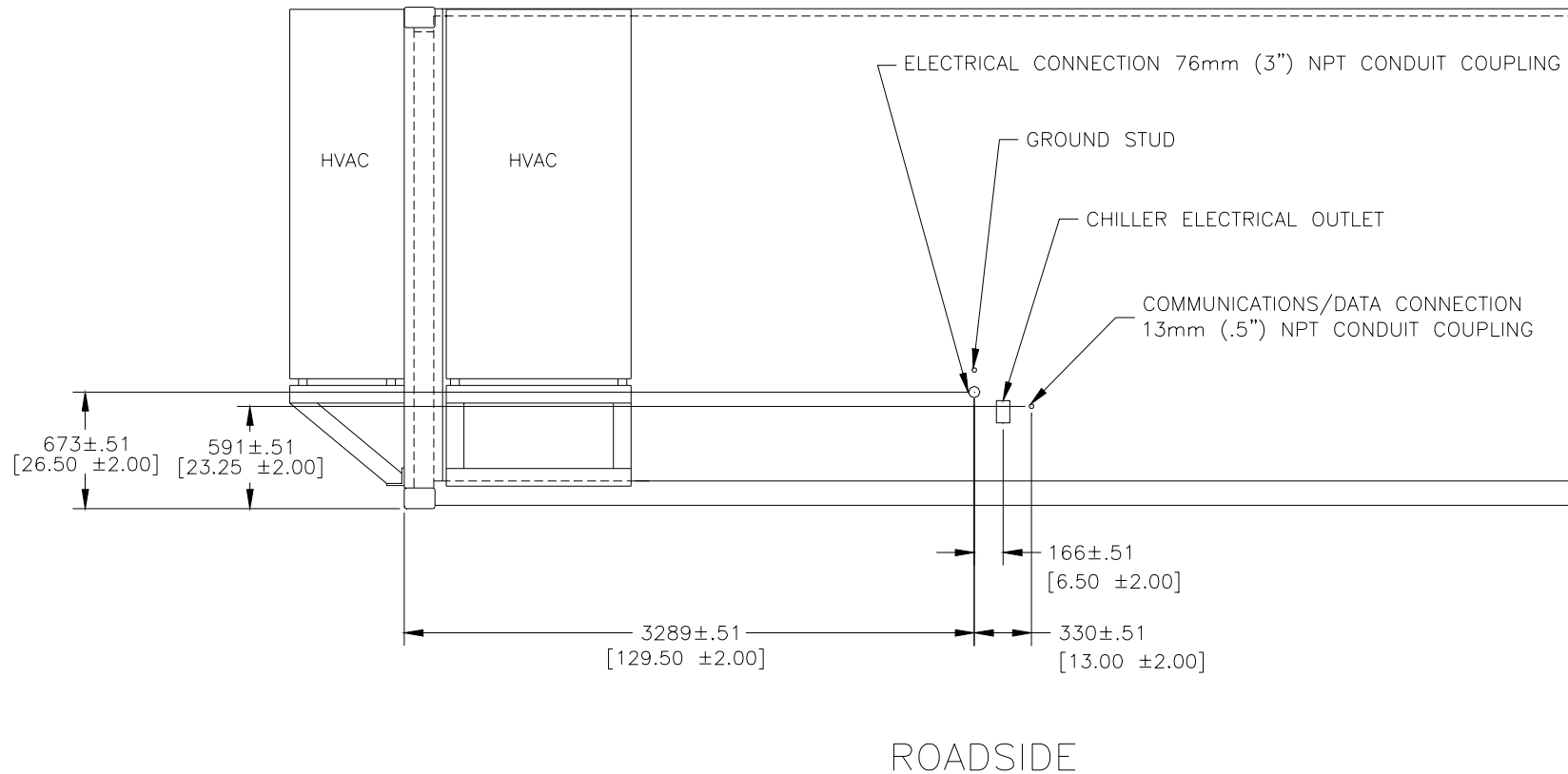


Illustration 3.2
Conduit Locations

3.11 Telephone Hookup

- 3.11.1 The telephone lines for the GLOBAL ENVIRON are terminated 2718mm (107") from the front roadside corner. The hospital and local phone service company should determine the best route and connection location for the incoming service.

3.12 Water Hookup

- 3.12.1 Humidifier Plumbing - The plumbing contractor will bring the incoming water to the GLOBAL ENVIRON through the hose barb plumbing connection located on the front approximately 445mm (17.5") from the curbside and 356mm (14") from the bottom of the GLOBAL ENVIRON. The humidifier drain is plumbed to an external drain tube located under the front curbside air handler.
- 3.12.2 Optional Sink Plumbing - The plumbing contractor will bring the incoming water and drain to the GLOBAL ENVIRON through the plumbing pit directly under the floor of the scan room on the roadside of the GLOBAL ENVIRON. The humidifier drain is plumbed to an external drain tube located under the front roadside air handler.

The exact opening and plumbing pit locations are shown on Document SP-33.

3.13 Magnetic Field Warnings

- 3.13.1 Warning signs are permanently attached to the RF doors of the magnet room. People with pace makers and/or people carrying ferrous material should not enter the magnet room.

3.14 Exterior Paint

- 3.14.1 The exterior paint top coat is a chlorinated rubber container paint: RAL 3005, article number PM 3-117, color ruby red.

The exterior can be repainted at site to match the surrounding facilities. Contact local paint manufacturer for paint type and procedure to prepare surface.

Prepare surfaces and apply paint per the manufacturers' specifications.
As a source of reference, the paint, primer and thinner can be obtained from:

Martec International
910 Oak Tree Road
South Plainfield, NJ 07080 (USA)
Telephone 908-756-6222

3.15 Remote Camera Hook-up

- 3.15.1 The camera cable for the remote camera can enter the GLOBAL ENVIRON by drilling the required size hole on the entry door side, at 1346mm (53") from the front exterior corner of the GLOBAL ENVIRON (HVAC end) and 457mm (18") down from the outer edge of the roof. The hole should be located on an inward corrugation.

SECTION 4 RELOCATION PROCEDURES

4.1 Preparation for Movement

When the GLOBAL ENVIRON is to be moved to another location, the following steps must be taken in order to prepare for movement:

- 1) Contact G.E. local service for system shutdown.
- 2) Pack loose components, tools and items in boxes and strap in place.
- 3) If G.E. equipment has been disconnected from the framework, the following procedures must be followed before moving the unit.
 - a) Obtain mounting angles and hardware.
 - b) Re-install mounting angles on the floor with bolts provided. Refer to Ellis & Watts Drawing #56-0-245 for details.
- 4) Contact your local service company to disconnect all electrical, plumbing and telephone hookups.
- 5) Pack wedge blocks, shim blocks and shims in a box and place it in the unit for reuse on next site.

CAUTION:

SECURE ANY MISCELLANEOUS LOOSE EQUIPMENT OR ITEMS PRIOR TO TRANSPORTATION TO PREVENT DAMAGE.

- 6) Disconnect any attached corridor or building.
- 7) Add four (4) 51mm (2") x 102mm (4") x 76mm (3") long pieces of wood underneath each Bard unit; two (2) on each side of the unit between the mounts. Place each block of wood as close as possible to each mount. Strap down the Bard to the steel platform using 32mm (1-1/4") x .8mm (.031") steel banding around the blocks of wood through the base of the Bard.
- 8) If the GLOBAL ENVIRON is being shipped overseas, remove the Bard units and mounting brackets and store inside the module. Refer to E & W drawing 35-4-10 for details. Reinstall cover plates over openings.