AMST
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A Marmon | Berkshire Hathaway Company

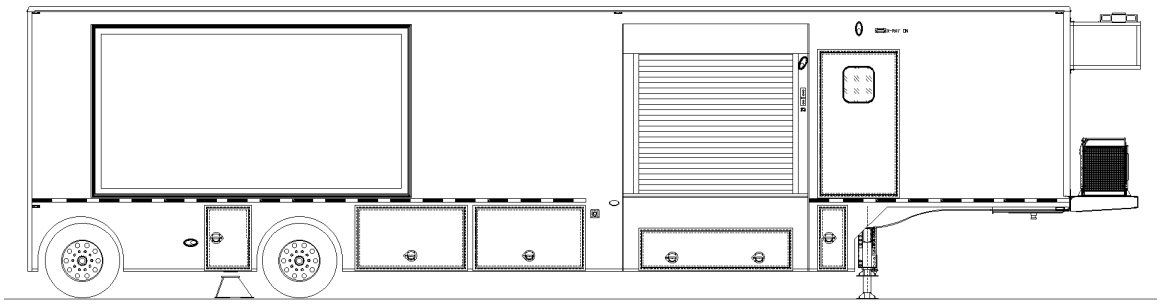
Custom Specialty Solutions

Site Planning Guide

AMST Spread Axle

GE Mobile CT Systems

48’ L x 8’-6” W x 13’-6” H USA Unit



List of Revisions

Revisions

Date	Revision Number	Revised by	Description
December 2020	00	Ramon A Lopez III	Initial Release
March 2023	01	Ramon A Lopez III	Added Maxima System & Updated Header

Notice

In accordance with our policy of product development, AMST reserves the right to make changes in the equipment, design, specifications, and materials of the product described herein. If there are any inconsistencies between this manual and the mobile unit that inhibit serviceability, please contact AMST for assistance.

This manual is provided in the mobile unit. The documentation package should be kept in the mobile unit at all times.

Any problems or questions related to the components or systems covered in this manual please direct to:

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Introduction

The purpose of this document is to provide the basic information needed for site planning. For specific information not contained in this document, please contact AMST.

The mobile unit requires sufficient room to be maneuvered and positioned for setup and takedown. The mobile unit has many storage compartments and service doors that require access during these procedures as well as during operation. The expanding wall sections, patient lift, entry stairs, and optional platform require additional space on the right side of the mobile unit. Refer to the drawings provided for actual locations of doors, patient lift, and stair sizes and locations.

Warnings & Safety Alert Conventions

Three types of statements are used throughout this document to warn the operator of potential situations. Always read these statements carefully and take the appropriate safety precautions to ensure a safe environment for all personnel and all property. The statements are as follows:

⚠WARNING This type of notice indicates a potentially hazardous situation, which if not avoided, could result in injury or death to the operator of the mobile unit.

⚠CAUTION This type of notice indicates a potentially hazardous situation, which if not avoided, could result in irreparable damage to the mobile unit.

IMPORTANT This type of notice is meant to inform the operator of useful information.

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Support and Service Pad Requirements

IMPORTANT If other modalities utilize the same support pad, it is recommended that non-ferrous reinforcement materials be used for pad reinforcement.

IMPORTANT OEM must approve plans for pad construction.

The following is a list of recommendations and requirements for a concrete support and service pad. However, due to varying site conditions, the actual pad design should be prepared by an appropriately licensed structural or architectural engineer.

Recommended Support and Service Pad Requirements

The measurements for the recommended support and service pads are in

Figure 1: Plan Layout

Pad Depth

Recommendations for the width and length of the pad are given above. Based upon the existing site conditions, the depth should be determined by a local Engineer.

Pad Levelness

In order to ensure proper operation of the CT system, the support pad(s) must be level and the set-up deviation must not exceed .125” in 10’-0.

Electro Magnetic Interference

The ambient static magnetic field within the region of the gantry should not exceed 1 Gauss (10^{-4} Tesla) peak at the detector.

Vehicle Access

A firm, level surface is required around the mobile unit in order to provide access to the site, patient access to the mobile unit, and servicing of the mobile unit.

Recommended Attachment to the Facility

An inflatable air bag or soft seal is recommended at the point of connection from the unit to the facility. Fixed or solid connections may hinder imaging quality. Contact AMST or the local Canon Medical representative prior to construction if the proposed connection varies from the recommended.

Swing Clearance Note

Please verify the actual dimensions of the rearmost projections on the cab of your tractor to the centerline of tandem suspension or centerline of the fifth wheel plate on your tractor. Refer to **Figure 8: Turning Requirements** for proper tractor sizing information.

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Radiation Shielding Requirements

Radiation Shielding

IMPORTANT Radiation exposure limits must be in accordance with all local, state, and federal requirements. It is the responsibility of the customer to perform a proper radiation survey in order to determine the exclusion zone.

Care should be taken when determining a site location. Factors such as shielding design, proximity to buildings, and occupancy of the surrounding areas must be considered. An exclusion zone around the mobile unit may be necessary. Refer to

Figure 4: Radiation Shielding Plan View for additional information.

Radiation Field Information

It is the responsibility of the customer to ensure a safe environment with respect to the radiation field. Due to radioactivity levels associated with patient handling and diagnostic procedures used in CT scanning, an exclusion zone must be maintained while in use.

Customer must contact their local Radiation Safety Operation Official for the federal, state, and local guidelines and must comply with these safety requirements.

Operator needs to make their own exposure dose measurements to include radiation from patients when determining the outside “Keep Away Zone” (chained-off area).

Customer Power Requirements

WARNING It is the operator’s responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by AMST. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

CAUTION The standard connector for the unit is a Russellstoll DS2504MP 480V 200A Plug. If an existing site currently implements a different connector or connector configuration, please contact AMST in order to arrange for a compatible power connector before the unit leaves the facility.

Lockout/Tagout

A Lockout/Tagout provision in accordance with OSHA Standard 1910.147 is required. The facility shore power disconnect device must be located within 40’- 0” of the unit and must provide for an effective lockout/tagout to facilitate safe service and maintenance of the unit.

Electrical Service

One electrical power source receptacle is required for operation of the CT system. It must be capable of providing 480 Volt A.C., 3 Phase, 112.5 KVA, fused at 150 Amps. One source provides power to the medical system and the trailer systems, such as lighting and air conditioning.

Manufacturer	System	Power	Phase	Amps	Neutral Required	Connection Type
GE Healthcare	Revolution EVO	480	3 Phase	150	No	4 Wire Delta
	Revolution Maxima	480	3 Phase	150	No	4 Wire Delta

Configuration

The connector is wired for three phase, four wire, Delta connection, with ground dependent on system (not less than AWG #1/0).

Load Regulation at Line Frequency

Wires are to be sized such that the line voltage drops from the power source to the mobile unit is less than 2.5% of the nominal voltage for the rated load of the mobile unit.

Frequency

60Hz ±2.0Hz.

Phase Balance

The phase balance is 3% maximum of lowest phase-to-phase voltage.

Maximum Voltage Variation

The maximum voltage variation is +11% / -4% from a nominal steady state (under the worst case conditions of line voltage).

Connector Type

The mobile unit is supplied with a 50'-0" power cable and male conductor. Unless otherwise specified, the connector type is a Russellstoll DS2504MP000/DF2504FRAB0 480V 200A rated plug.

Customer Facility

The customer facility must have the matching receptacle as specified in **Figure 6: Russellstoll Receptacle, Service Disconnect** and **Figure 7: Russellstoll Receptacle Chart**. Unless otherwise specified, the receptacle type to be used must be a Russellstoll DF2504FRAB0 female connector.

Input Power

- Frequency: 60Hz ±2.0Hz
- Regulation: Load regulation must not exceed 2.5%.
- Phase Imbalance: The difference between the highest line-to-line voltage and lowest line-to-line voltage must not exceed 3% of the lowest line-to-line voltage.

Power Source Monitoring (Facility Only)

NOTE: Perform a power audit first.

A power analyzer should be used to check the proposed Mobile facility site power for average line voltage, surges, sags, reclosures, impulses, frequency and microcuts. A period that includes two weekends should be used to simulate several days of normal use. Analysis of the data and site history of any previous power problems with other X-ray systems or computer installations should be reviewed with your power and ground representative. Verify “brown-out” (low voltage) conditions, which may occur during summer months, will not exceed the allowable range.

Some analyzer models that are suitable for power monitoring are:

- Dranetz Model 658
- Dranetz Model 656A
- BMI 3630
- RPM

Mobile Grounding Requirements

Special Ground Note

It is recommended that the unit have an earth driven ground rod within five (5) feet of the facility power receptacle. A grounding cable of a minimum of #3/0 AWG is recommended to be connected between the grounding rod and the grounding pin of the facility power receptacle. Another cable to be kept as short as possible may also be connected between the ground stud on the Incoming Power Distribution Panel and an earth driven ground rod. A separate grounding conductor is highly recommended to be ran with the phase conductors to the source of power from the grounding pin of the facility power receptacle in accordance with NEC 2017 Article 250-24.

Telephone and Data Service Requirements

Data & Phone Services

The mobile unit is equipped with a customer supplied fibre optic cable for both data & telephone connections. Utilizing RJ-45 connectors; there are seven (7) data lines with an additional eighth for the medical system, and two (2) phone line connections all routed from their respective locations throughout the unit to a patch location in the control room where the fibre cable is also located.

The customer is responsible for connecting the fibre to the RJ-45 in the patch location.

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Water Requirements

IMPORTANT winter conditions, provisions must be made to ensure that water lines do not because of weather conditions.

Water Supply Tank

A 35-gallon water supply tank is located on the right side of the mobile unit in the underbody compartments, which supplies the HVAC system.

The water supply tank can be filled from within the compartment by using the supplied adapter or from the exterior of the mobile unit by using the connection on the underbody compartment door and the supplied hose.

The drain for the water supply tank is located below the underbody compartment door. The drain valve is located in the underbody compartment.

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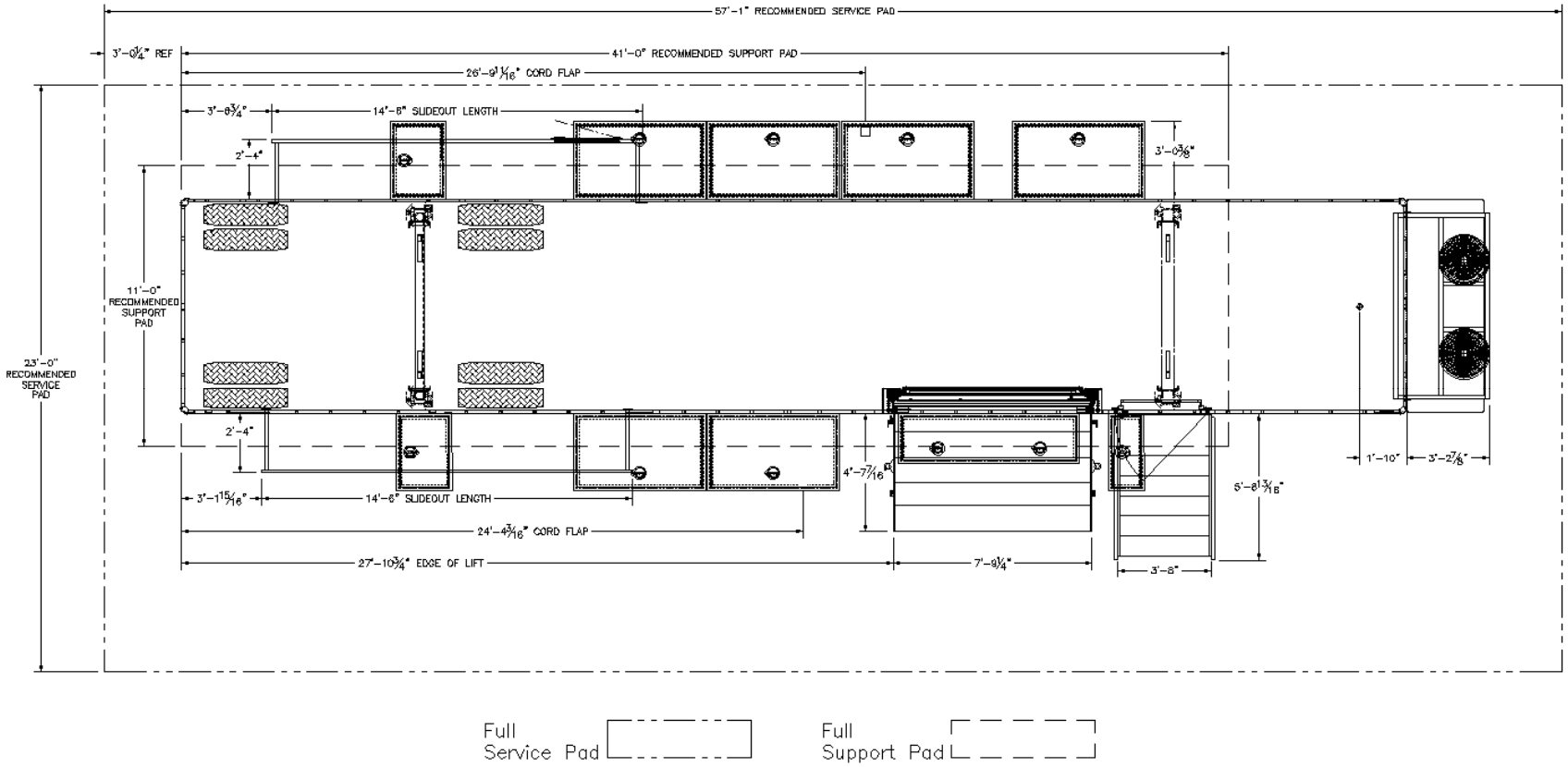

Figure 1: Plan Layout

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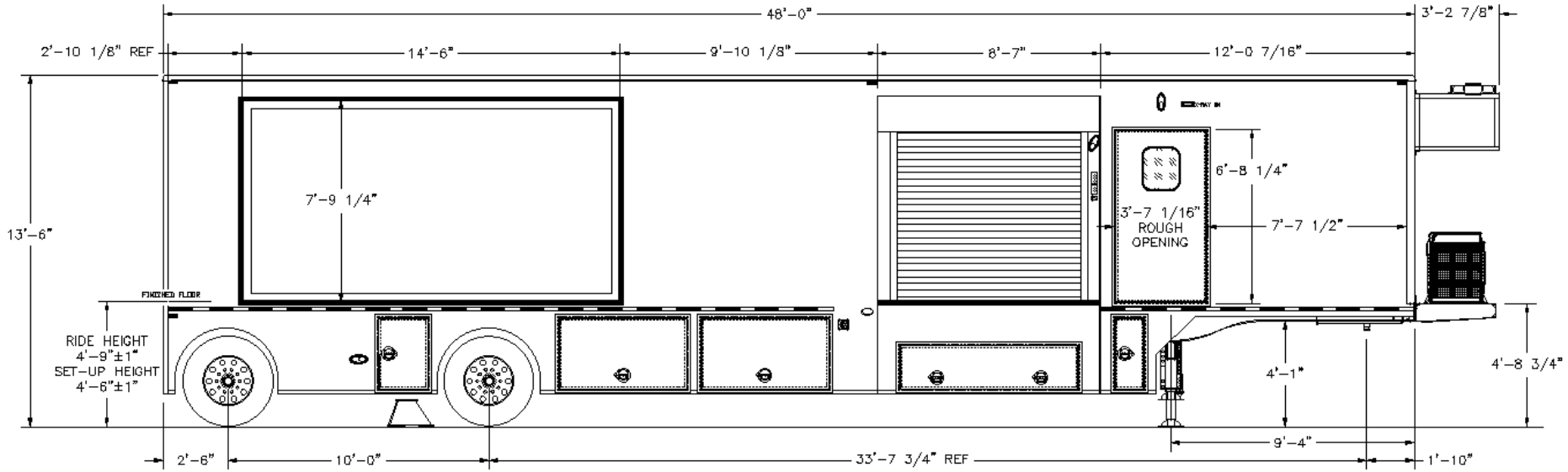

Figure 2: Right Side Elevation

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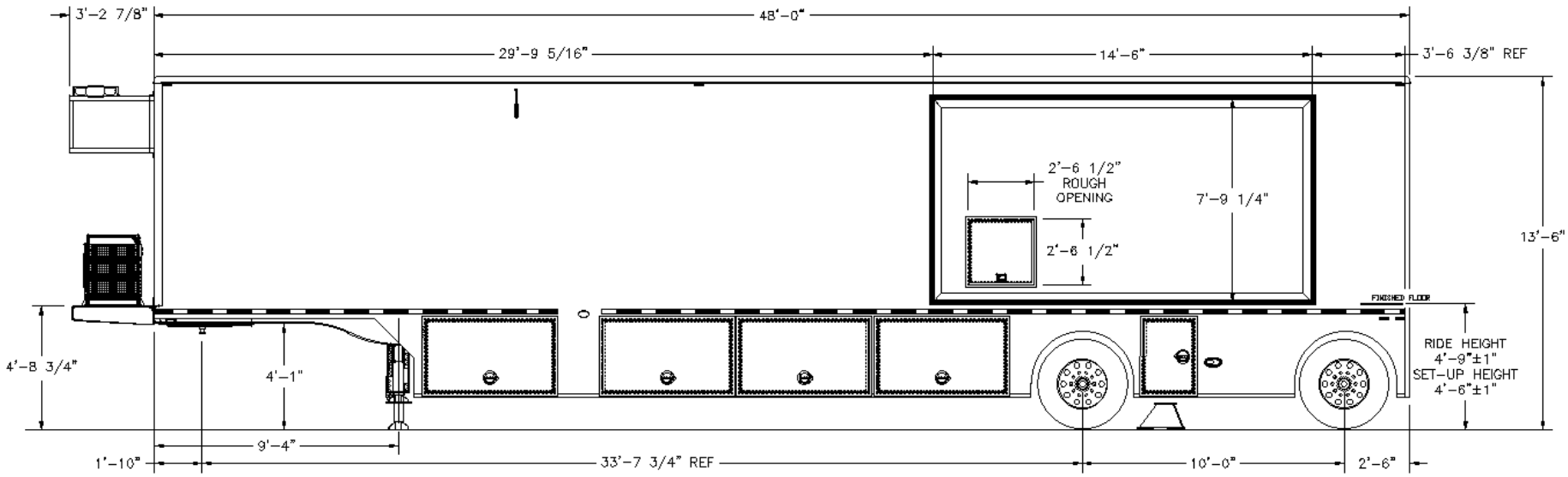

Figure 3: Left Side Elevation

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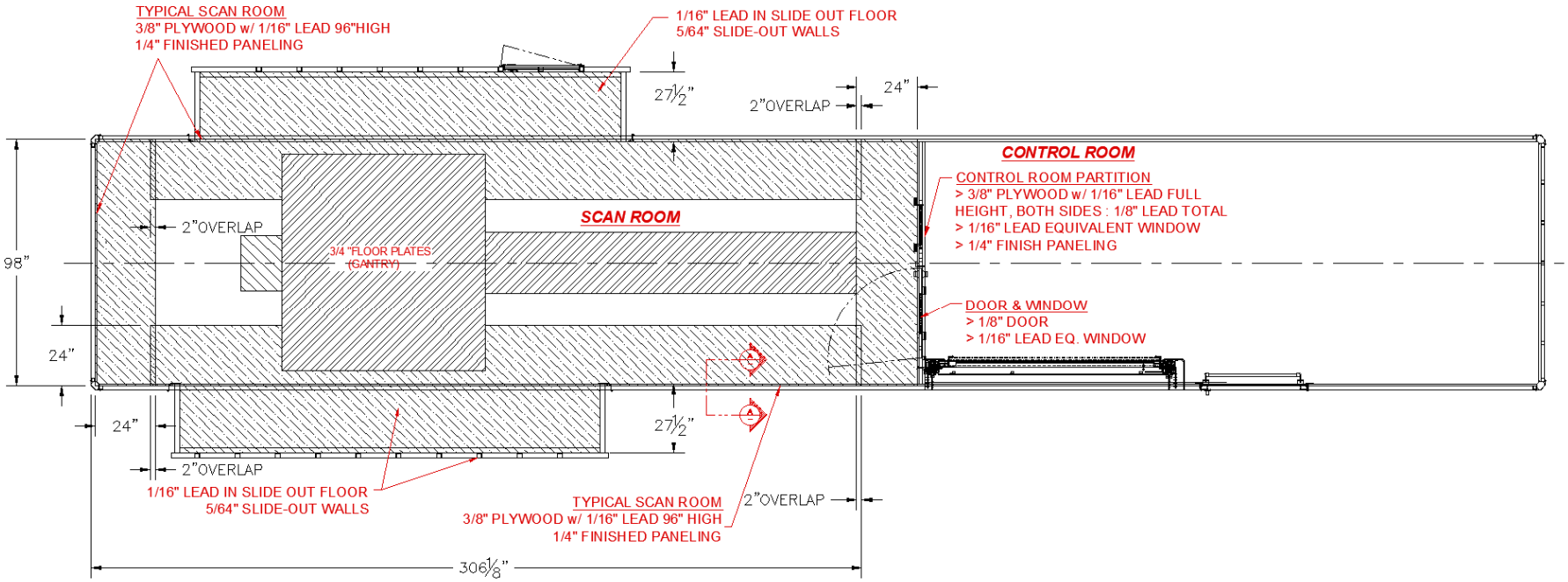

AMST 48' CT LEAD LAYOUT

Figure 4: Radiation Shielding Plan View

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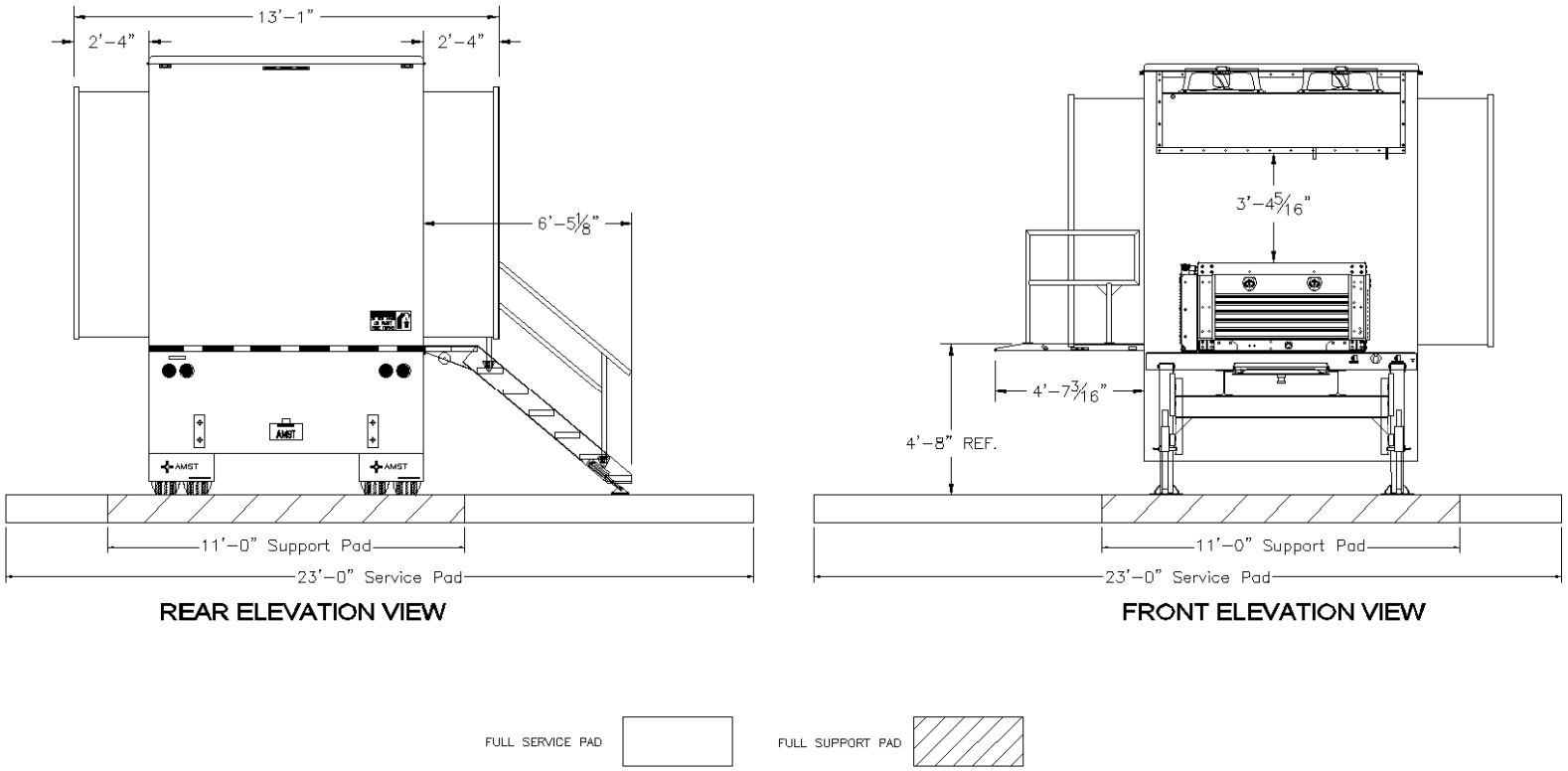

Figure 5: Stair / Lift / Wall Elevation

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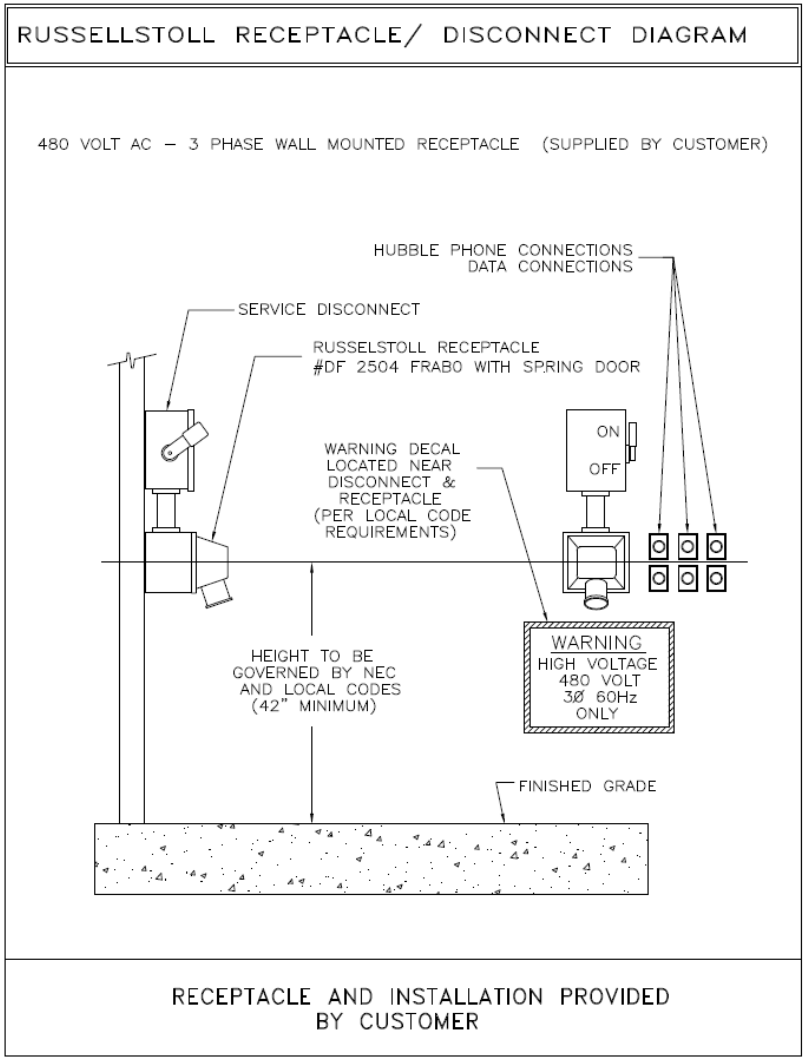

Figure 6: Russellstoll Receptacle, Service Disconnect

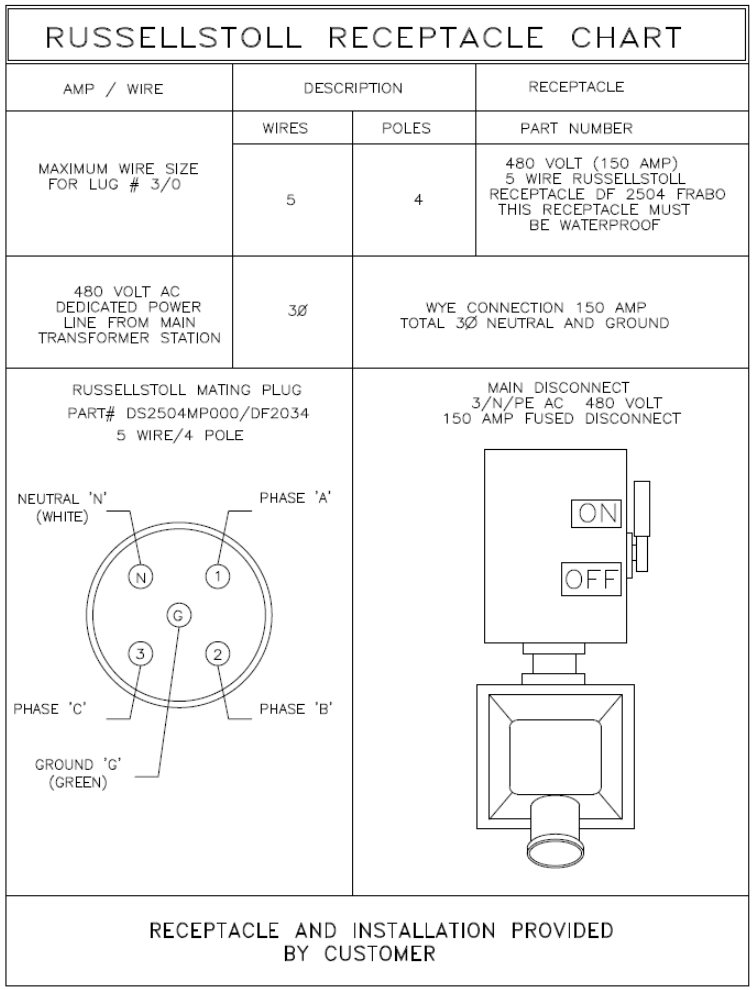

Figure 7: Russellstoll Receptacle Chart

NOTE: The Neutral wire shown in the Shore Power receptacle may be required for certain units. The power Plug does have a Neutral wire terminal if the unit requires it.

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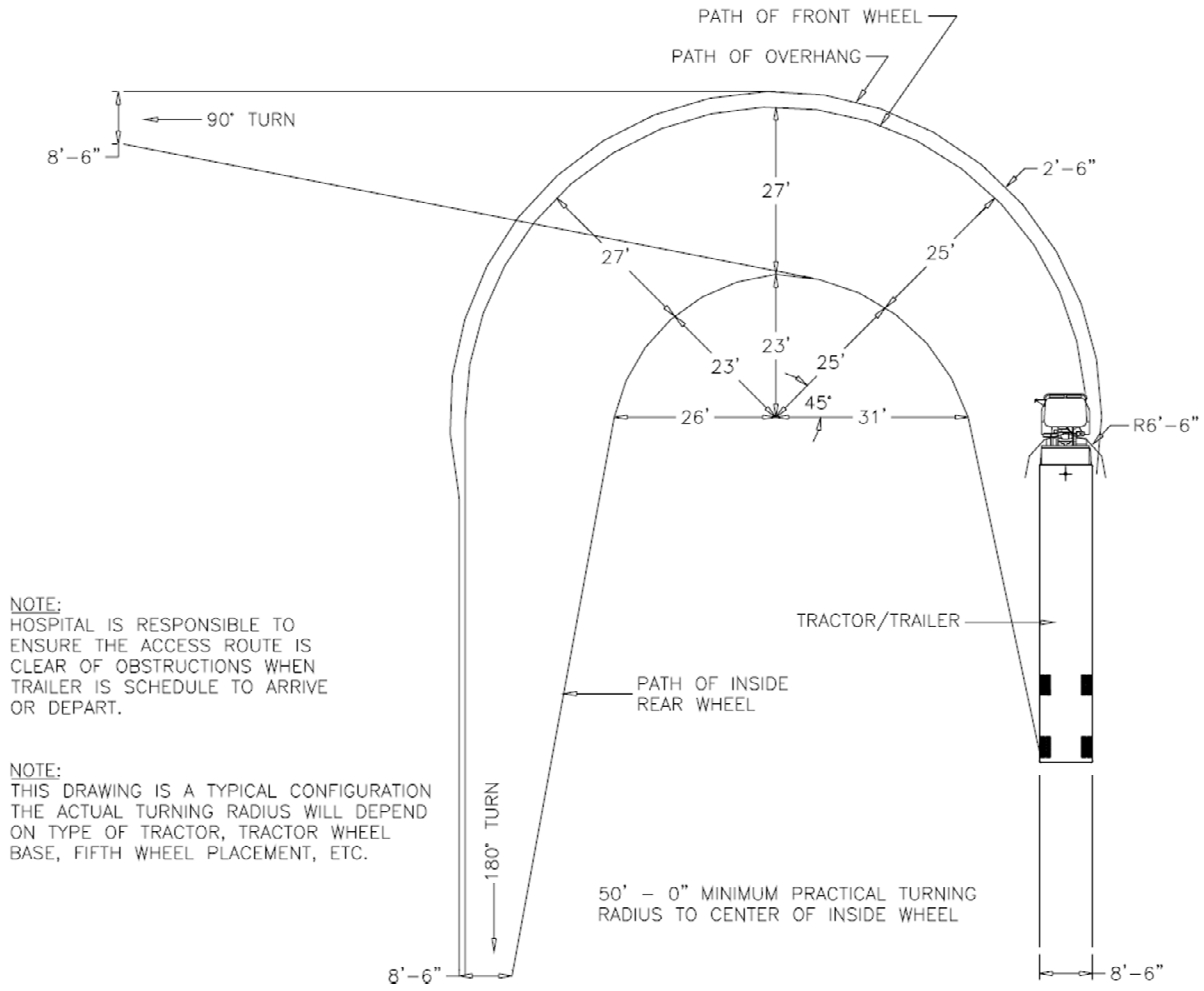

Figure 8: Turning Requirements