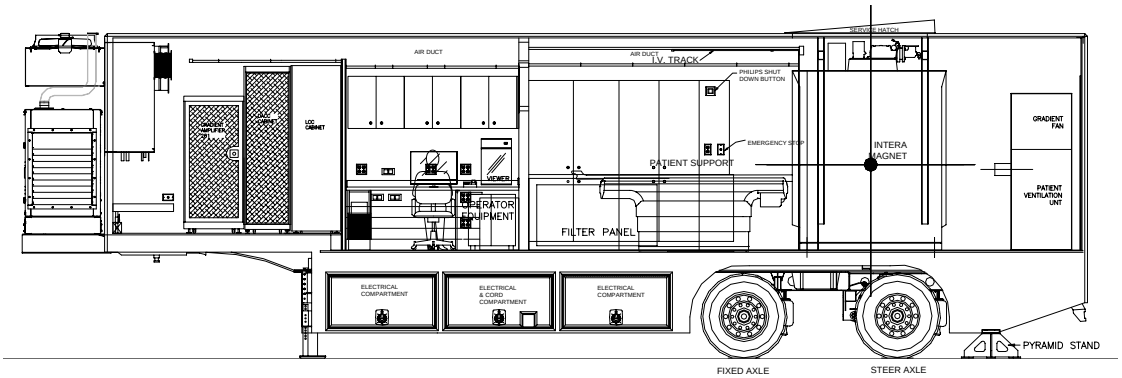
OSHKOSH SPECIALTY VEHICLES

Site Planning Guide

PHILIPS INTERA 1.0/1.5 T
MOBILE MR SYSTEM
12.5m L x 2.5m W x 3.8m H Japan Unit



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List of Revisions

Revisions

00	Initial Release	November 2007

Notice

In accordance with our policy of continued product improvement, Oshkosh Specialty Vehicles reserves the right to make changes in the equipment, design, specifications and materials of the product described herein.

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OSHKOSH SPECIALTY VEHICLES

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 Oshkosh Specialty Vehicles.

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 platform lift, entry stair and optional platform require additional space on the left side of the mobile unit. Refer to the drawings provided for actual locations of doors, platform lift, and stair sizes and locations.

Warnings & Safety Alert Conventions

The following terms define the various precautions and notices used in this manual:

NOTE: **Whenever information exists that requires additional emphasis beyond the standard textual information, the term "NOTE" is used.**

IMPORTANT — The term "IMPORTANT" is used whenever information exists that requires special attention to procedures to ensure proper operation of the equipment or to prevent its possible failure.

CAUTION — The term "CAUTION" is used whenever potential damage to equipment exists, requiring correct procedures / practices for prevention.

WARNING — The term "WARNING" is used whenever potential personal injury or death situations exist, requiring correct procedures / practices for prevention.

DANGER — The term "DANGER" is used whenever immediate hazards exist that will result in personal injury or death that cannot be eliminated by design safeguards.

⚠ — This safety alert symbol indicates important safety messages in the manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

WARNING — Electrical, mechanical, pneumatic, and hydraulic safety devices have been installed on this vehicle to help protect against personal injury and / or damage to equipment. Under no circumstances should any attempt be made to disconnect or in any way render any of these devices inoperative.

If a malfunction of any safety device is discovered to exist, DO NOT operate the vehicle, but immediately notify appropriate maintenance personnel.

Oshkosh Specialty vehicles shall have no liability with respect to: . . . . . REPAIRS IMPROPERLY PERFORMED OR REPLACEMENTS IMPROPERLY INSTALLED (or) USE OF REPLACEMENT PARTS OR ACCESSORIES NOT CONFORMING TO Oshkosh SPECIALTY VEHICLE'S SPECIFICATIONS, WHICH ADVERSELY AFFECT PERFORMANCE OR DURABILITY (or) ALTERATIONS OR MODIFICATIONS NOT RECOMMENDED OR APPROVED IN WRITING BY Oshkosh SPECIALTY VEHICLES (or) FOR EQUIPMENT DAMAGE OR PERSONAL INJURY OR DEATH AS A RESULT OF RENDERING ANY SAFETY DEVICE INOPERABLE.

Certain inherent risks are associated with heavy trailers due to the nature of their use. Personnel working in the area of these trailers are subject to certain hazards that cannot be met by mechanical means but only by the exercise of intelligence, care, and common sense. It is therefore essential for the owner of this equipment to have personnel involved in the use and operation of these trailers who are competent, careful, physically and mentally qualified, and trained in the safe operation of this equipment.

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Support Pad Requirements

IMPORTANT It is recommended that non-ferrous reinforcement materials be used for pad reinforcement.

IMPORTANT Philips must approve plans for pad construction.

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

Trailer Weight

The weight of the trailer should be considered in the design of the support and service pads. The overall weight of the trailer is approximately 57,298 lbs (25,990kg). The weight on the rear axles is approximately 41,226 lbs (18,700kg). The weight on the King Pin is approximately 16,072 lbs (7,290kg).

Recommended Support Pad Requirements

The measurements for the recommended support pad are as follows, 10'-11" x 32'-3-1/2" (3.33m x 9.84m). The cross hatching as shown on **Figure 1: Pad Layout** and **Figure 2: Right Side Elevation** represents the recommended support pad.

Support Pad Depth

Recommendations for the width and length of the pad are given above. Based upon the weight distribution information given on **Figure 2: Right Side Elevation** and existing site conditions, the depth should be determined by a local contractor.

Support Pad Levelness

In order to ensure proper operation of the MRI system, the support pad(s) must be level and the deviation must not exceed .125" in 10'-0" (0.318 cm in 3.048m).

Recommended Service Pad

A service pad is recommended to provide adequate service access. The recommended size of the pad is 19' 11" x 49' 2-1/2" (6.07m x 15m). See **Figure 1: Pad Layout** , for details.

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.

Steel Reinforced Concrete Pad

Nonferrous reinforcement materials are recommended. If ferrous materials are used, contact Philips for the maximum weight allowed per foot.

IMPORTANT The use of ferrous metal in the Support Pad or inside the trailer can interfere with the imaging equipment. Avoid the use of ferrous metal.

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 Oshkosh Specialty Vehicles or the local Philips representative prior to construction if the proposed connection varies from the recommended.

Vehicle Movement

The MRI system is very sensitive to vibration and moving metal. Consequently, all vehicle traffic must be kept as far away as possible from the pad. Moving ferrous materials having the listed masses should be limited to areas as described in the Philips site planning publication. Contact Philips to obtain the latest version.

Exclusion Zone

An area of 5’-0” x 5’-0” (1.52m x 1.52m), located directly below the magnet vent should be fenced off to prevent injury in the event of magnet quenches. The helium gas must be allowed to vent, unrestricted, to a non-accessible area, allowing the helium gas to dissipate.

WARNING

To avoid the risk of injury and cold burns and the possibility of asphyxiation, access to the quench tube must be restricted by 10’ to each side and below, and 20’ vertically above the exit vent. Failure to do so could result in severe personal injury or death.

Vibration / Foundation Design

It is essential to minimize vibration to ensure high-resolution image quality. Please contact Philips to obtain the latest system specific vibration requirements.

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 5: Turning Requirements** for proper tractor sizing information.

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Customer Power Requirements

WARNING It is the operators' responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles.

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 Always inspect the power cable, connectors, and fasteners prior to usage. If during inspection, it is suspected that either internal or external damage has occurred, have a certified electrician inspect and repair the damage before using.

IMPORTANT Follow the maintenance schedule in the Operator and Service Manual for safe operation of the mobile unit.

Lockout/Tagout

A Lockout/Tagout provision in accordance with OSHA Standard 1910.147 and/or local codes or standards 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

200V AC, 3 Phase, fused at 400 Amps, with A-B-C Phase Rotation.

Configuration

Three phase, four wire, wye connection, with ground.

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 then 2% of the nominal voltage for the rated load of the mobile unit.

Frequency

50/60Hz $\pm$ 1.0 Hz.

Phase Balance

The phase balance is 2% maximum of lowest phase-to-phase voltage.

Maximum Voltage Variation

The maximum voltage variation is $\pm$ 5% from a nominal steady state (under the worst case conditions of line voltage). Regulation is 5% maximum at 35 KVA maximum Philips system power demand.

Connector Type

The mobile unit Leviton connectors from the Trailer Panel are as specified below:

- Ground – Leviton #17d21-G, Green, Female
- L_1 – Phase “A” – Leviton #17d21-E, Black, Female
- L_2 – Phase “B” – Leviton #1d21-H, Brown, Female
- L_3 – Phase "C" – Leviton #17d21-W, Grey, Female

Cable Plugs

There are four cables supplied with the trailer for connection between the trailer and the facility and are configured as follows:

Shore Power Cable: This cable has connectors at one end only. The bare end is to be connected to shore power.

- Ground – Leviton #17D23-G, Green, Male
- L_1 – Phase “A” – Leviton #17D23-E, Black, Male
- L_2 – Phase “B” – Leviton #17D23-H, Brown, Male
- L_3 – Phase "C" – Leviton #17D23-W, Grey, Male

Customer Facility

A set of Leviton loose cam-lock connectors for use at sites with raw ended power cables are included to enable connection to the trailer via the 50’ power cables.

Input Power

- Frequency: 50/60Hz ±1.0 Hz
- Regulation: Load regulation must not exceed 6%.
- Phase Imbalance: The difference between the highest line-to-line voltage and lowest line-to-line voltage must not exceed 2% of the lowest line-to-line voltage.

Power Source Monitoring (Facility Only)

NOTE: Perform a power audit first.

Use a power analyzer to check the proposed Mobile MR Series facility site power for average line voltage, surges, sags, reclosures, impulses, frequency and microcuts. A period that includes two weekends should be used to measure 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

Ground Conductor

An insulated ground conductor sized in accordance with National, State, and local codes shall be installed between the facility vault and the MRI System ground bus location in the power distribution unit.

Magnetic Shielding

The MRI unit is equipped with magnetic shielding. The exclusion zone for cardiac pacemakers, neurostimulators, and other biostimulation devices is recommended at 5 gauss (0.5mT).

Signs provided by Philips, must be posted to alert all who approach the unit of this requirement.

The appropriate warning signs are permanently attached to the scan room doors.

The 1.0T and 1.5T magnet systems exclusion zone (5) gauss is restricted to within 8” of the exterior walls of the mobile unit.

R.F. Shielding

The R.F. shield is included with the MRI system and will provide minimum level of attenuation:

15 MHz – 128 MHz, 90db.

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Mobile Grounding Requirements

IMPORTANT All work is to be done in accordance with the local and national electrical codes.

IMPORTANT Information shown here is only a recommendation and must be verified with both local and national site codes.

IMPORTANT Ground wires inside enclosures are to be taped green for the entire visual length for identification purposes.

IMPORTANT If a separately derived, secondary system transformer is used, a bonding jumper between the grounded conductor (neutral) and the equipment – grounding conductor must be used.

Special Ground Note

The mobile unit must have an earth driven ground rod within 5'-0" (1.524m) of the facility power receptacle. A grounding cable of a minimum #1/0 AWG must be connected between the grounding rod and the grounding pin of the facility power receptacle. A separate grounding conductor must still be run with the phase conductors to the source of the power from the grounding pin of the hospital power receptacle.

Telephone and Data Service Requirements

Telephone Service

The mobile unit is supplied with three (3) RJ-45 telephone connections.

Three (3) telephone-connecting cables are supplied with the mobile unit. These cables measure 50’-0” (15.24m).

The customer is required to purchase and install three (3) all weather RJ-45 telephone connections for use at the site.

Data Service

The mobile unit is supplied with three (3) data line connections that utilize RJ-45 outlets.

The customer is required to purchase the data connection cables for use with the data line connections. The data line connections require a 50’-0” (15.24m) CAT-5E cable with RJ-45 connections.

Water Requirements

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

Humidifier Water Fill

The mobile unit contains a water storage tank for the humidifier. This tank is located in the equipment room and must always contain water to ensure the specified humidity level remains constant. There are two options for filling the tank.

- A ¾” (1.90 cm) I.P.S. male threaded hose connection is located on the left wall near the front wall of the mobile unit.
- A fill port is located on the water tank itself for manual fill capability.

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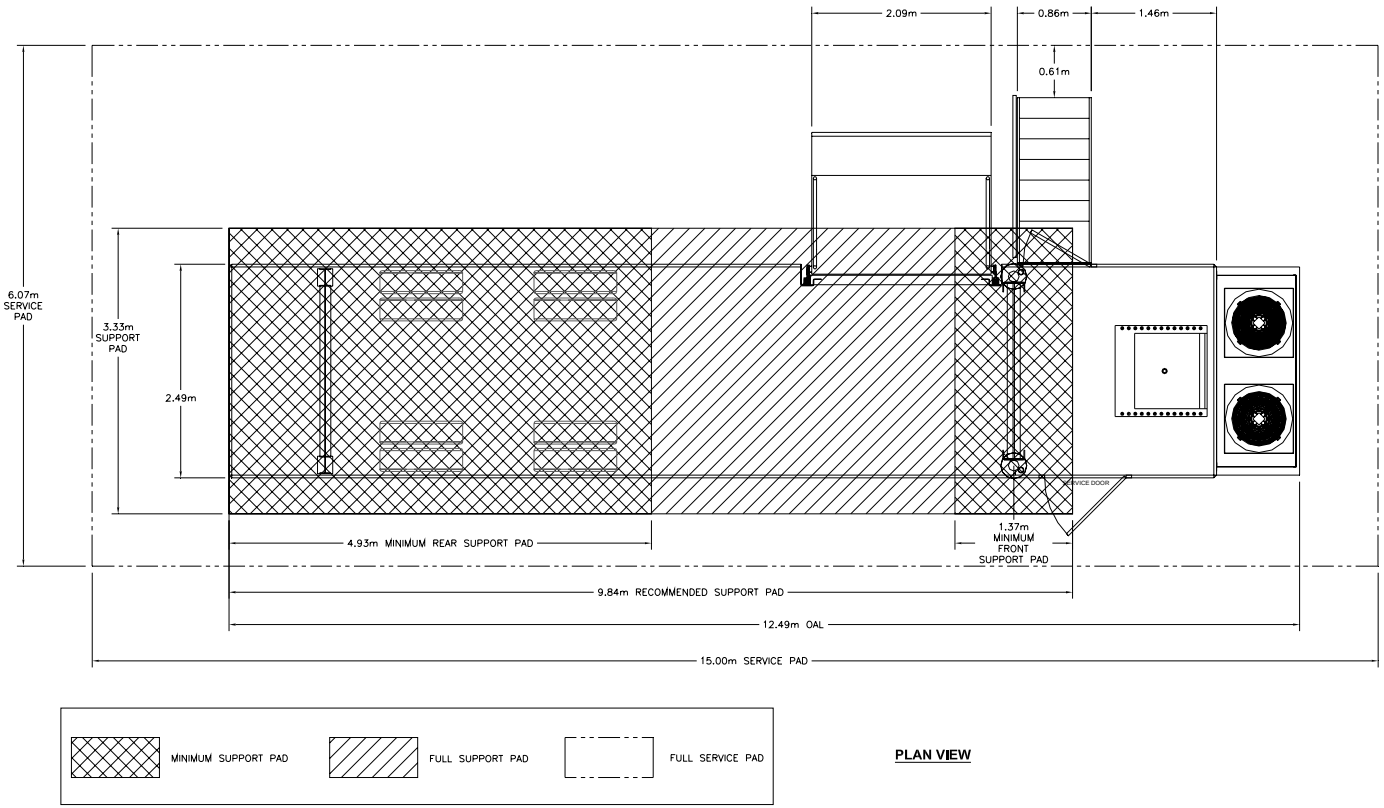

Figure 1: Pad Layout

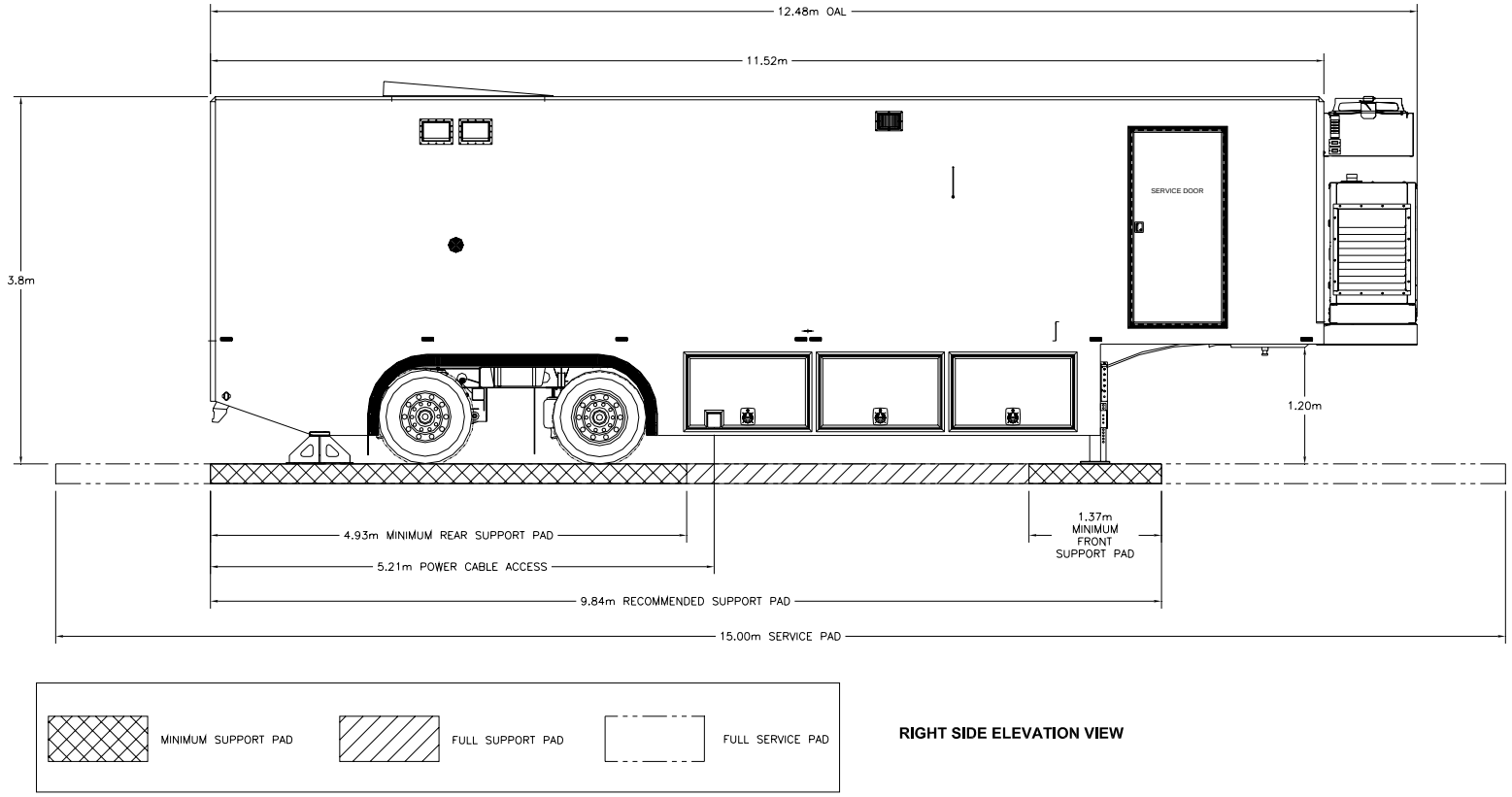

Figure 2: Right Side Elevation

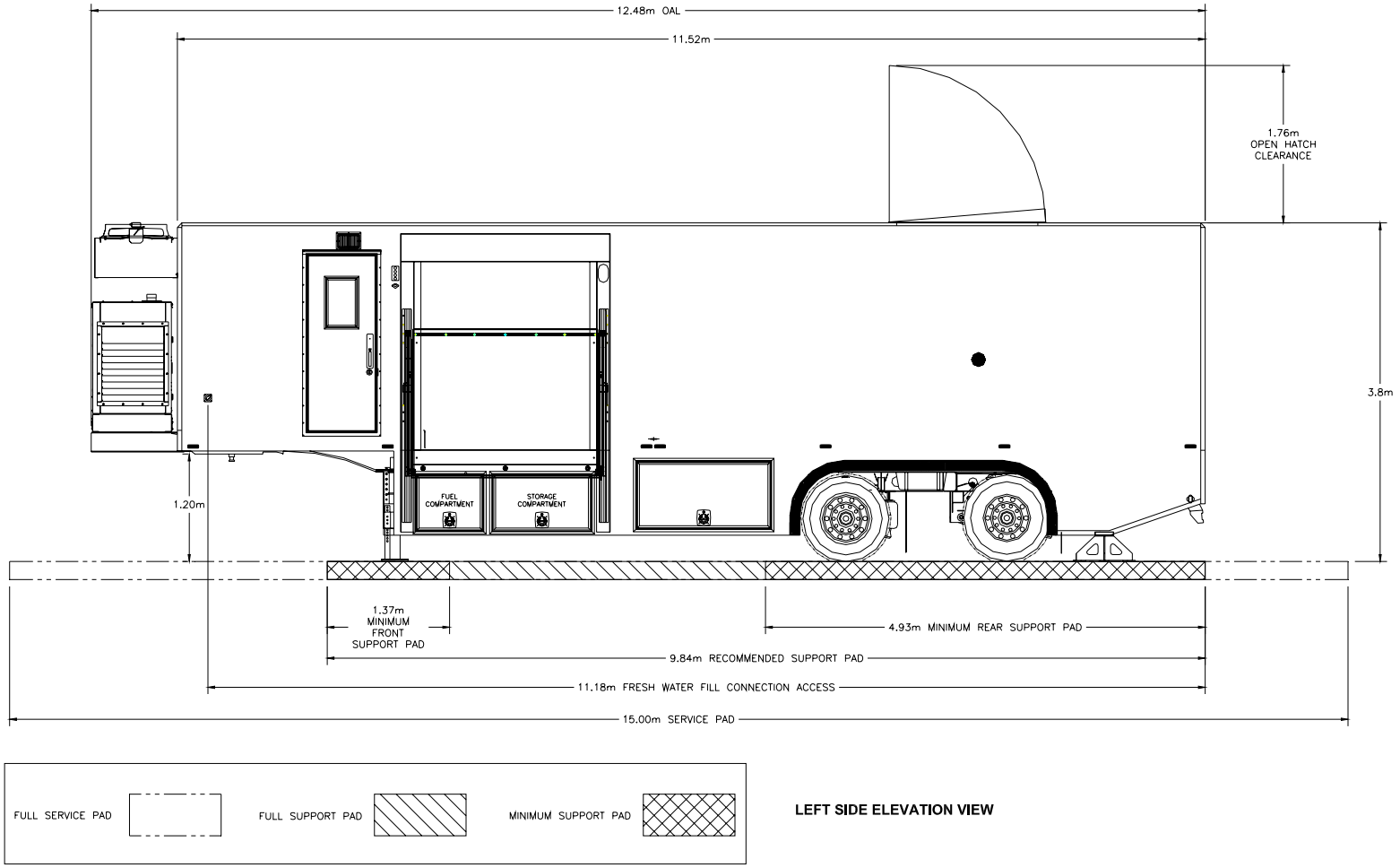

Figure 3: Left Side Elevation

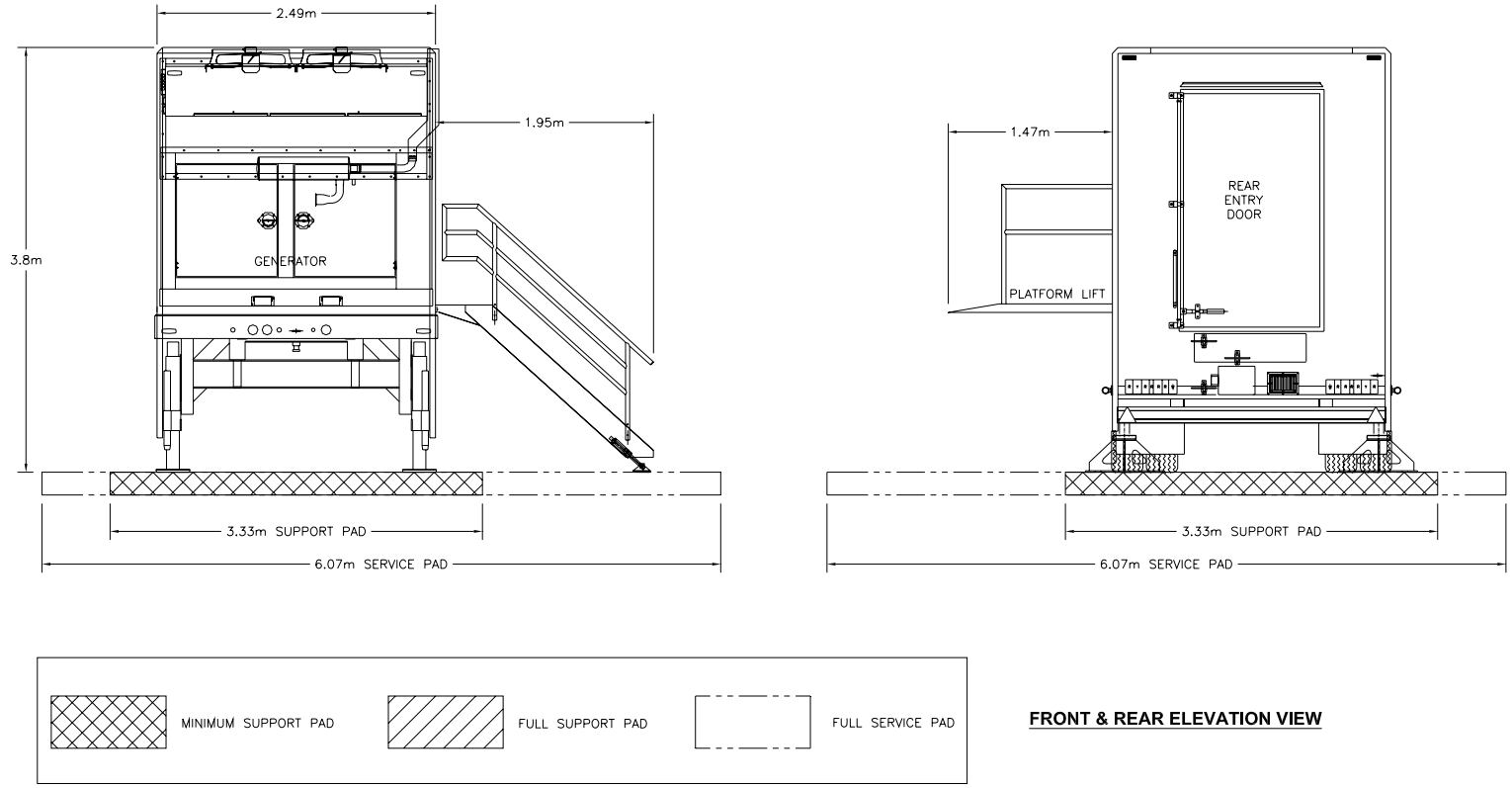

Figure 4: Front & Rear Elevation

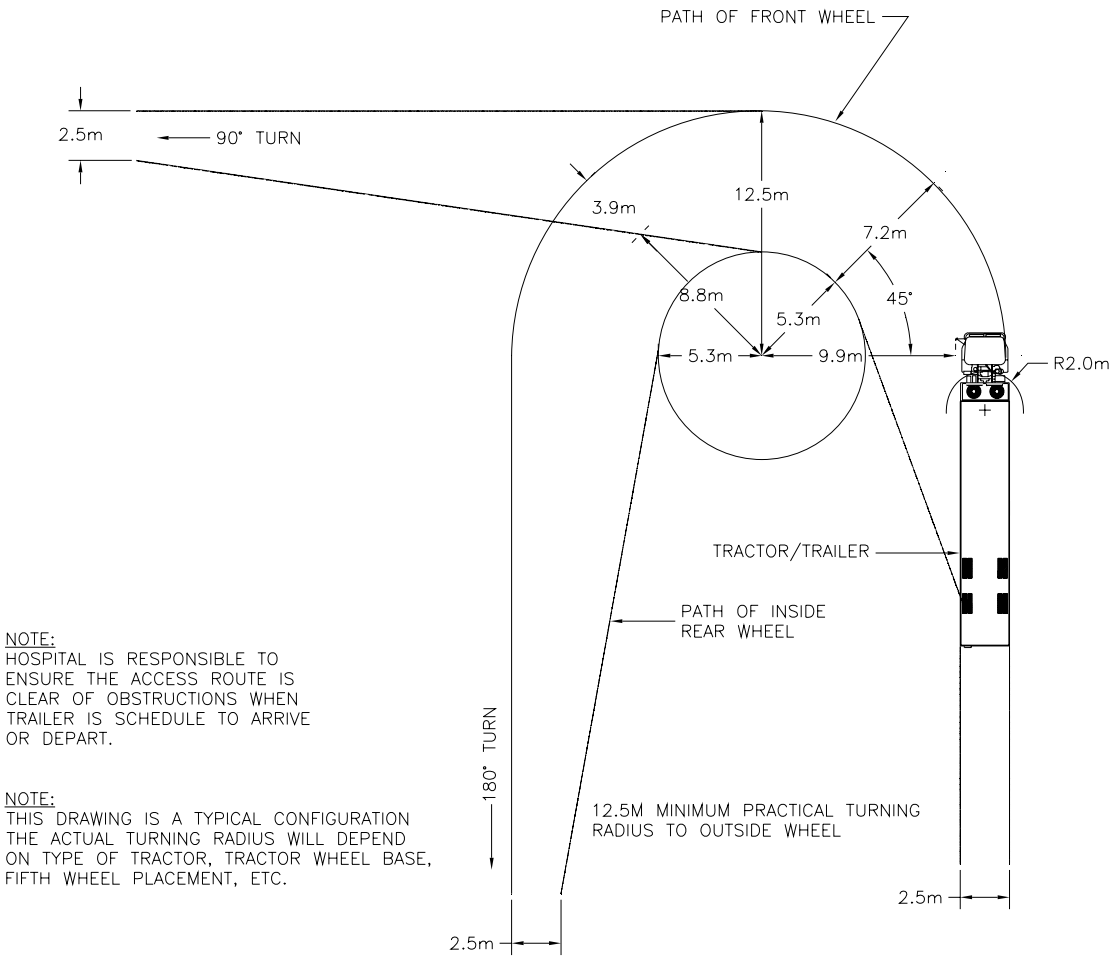

Figure 5: Turning Requirements

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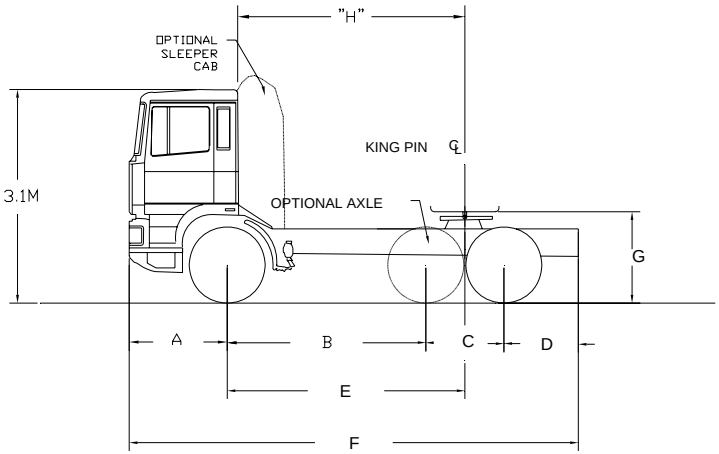

DIMENSIONS:

A FRONT VEHICLE OVERHANG	1.37M (54")
B WHEELBASE	2.99M (118")
C AXLE SPREAD	1.2M (47")
D REAR VEHICLE OVERHANG	1.04M (41")
E THEORETICAL WHEELBASE	3.34M (131")
F OVERALL LENGTH	6.0M (236")
G FIFTH WHEEL HEIGHT	1.21M (48")
H CAB TO FIFTH WHEEL	3.0M (118")

CHASSIS

FRONT AXLE WT.	4355 Kg
REAR AXLE WT.	2940 Kg
TOTAL WEIGHT	7295 Kg

ENGINE/TRANSMISSION

6 CYLINDER, DIESEL 350-400 H.P. PLUS

TRANSMISSION 9 SPEED OR MORE

CLUTCH-SINGLE PLATE, AIR ASSISTED, HYDRAULIC

GEARBOX-16 SPEED DIRECT DRIVE
SYNCHROMESH WITH RANGE CHANGE
AND SPLITTER

SUSPENSION

FRONT AXLE: PARABOLIC SPRINGS WITH DOUBLE-ACTING
TELESCOPIC SHOCK ABSORBERS
REAR AXLE: AIR SUSPENSION WITH DOUBLE-ACTING
TELESCOPIC SHOCK ABSORBERS AND
STABILISERS

WHEELS

SIZE 8.25 X 22.5, 10 STUD

TIRES

SIZE 295/80R22.5 RADIAL

FUEL TANK

SIZE 400 LITRES

ELECTRICAL

BATTERY: 2 (MIN.) X 24 VOLT, 170Ah

WIRING CONNECTIONS: 2 X 7 PIN

Figure 6: Suggested Tractor Specifications