



User's Manual

2007

SAM 550



City of New York

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User's Manual



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The technological cutting-edge mobile stage unit you operate has been carefully engineered, designed and manufactured under Stageline® Mobile Stage inc® precise quality standards to give you complete satisfaction and dependable operation throughout the years.

Over the years, your SAM 550 mobile stage unit may require some adjustment, maintenance or replacement parts. Should you need any technical assistance or parts, please contact us at:

Toll free in North America **1-800-26 STAGE** or dial **1 (450) 589-1063**

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Replacement parts are available. Prices for parts and delivery can be quoted in advance.

You can contact our customer support service at customer@stageline.com

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***A complete structural and mechanical inspection of stage unit is mandatory and should be performed annually.**

Read all instructions carefully before set up

The Stageline® SAM 550 is designed to give safe and reliable service if operated according to instructions. This stage unit should be properly maintained and correctly operated for total efficiency throughout the years. **Follow instructions in sequence and respect cautionary notes.** For your safety and the safety of others, always exercise basic safety precautions.

- The SAM 550 stage unit must be operated by trained personnel certified by Stageline®.
- This stage unit should be installed on a relatively smooth and levelled surface. The ground must be firm enough to support wheel stabilizers and dollies without sinking.
- Levelling the stage unit is a very important step. To avoid difficulties, make sure the SAM 550 is properly levelled before proceeding with set up.
- The load capacity of floor stabilizers (or legs) is limited by their length. Distance from ground to top of floor must not exceed 7' (2.10 m). In situations where it is impossible to do otherwise, contact Stageline® engineers for more information on the special measures to adopt.
- Operate hydraulic system with caution at all times.
 - Never overtax the hydraulic system by running engine at full throttle for a long period of time or by jerking levers.
 - Never let the gas engine idle unnecessarily. This causes oil to foam in tank.
- Every pin has a purpose. Always pin and secure designated components and structure.
- During each event, a visual and structural inspection is your priority. During set up, the structure must be inspected repeatedly.
- Keep in mind that hydraulics are much stronger than the human body.

1.1 Safety and Preventive Instructions

- When walking on roof, proceed delicately and shift weight on metal structure only. Avoid unsupported fibre. Wear skid resistant footwear. Certain regulations require you to wear a safety harness.
- Do not attempt to customize the SAM 550 stage unit or make any structural changes without first consulting Stageline®.
- When replacing hardware or accessories, use same type as supplied by Stageline®. Pins and bolts which are frequently lost must be replaced with same grade and calibre.
- Safety netting or equivalent must be attached to guardrails if the general public is given access to the stage.



	Imperial	Metric
Trailer		
Length	52'6"	16 m
Width	8'2"	2.5 m
Height	13'6"	4.12 m
Cargo Space	44'10" x 5' x 5'	13.68 x 1.5 x 1.5 m
Vehicle Weight	61 700 lbs	28 000 kg
Stage Floor		
Type of Surface	Plywood on steel	Plywood on steel
Length x Depth	50' 2" x 37' 10"	15.31 x 11.55 m
Height from Ground	6'	1.83 m
Capacity	150 lbs/sq ft	720 kg/m ²
Roof		
Type of Surface	Fiberglass bonded on steel	Fiberglass bonded on steel
Length x Depth	51'11" x 38'2"	15.82 x 11.63 m
Clearance		
Roof Height from Deck	29'3"	8.93 m
Clearance T1	26'6"	8.08 m
Overall Height from Ground	39'9"	12.16 m
Rigging Heights	25'11" to 29'3"	7.90 m to 8.93 m
Load Bearing Capacity	24 000 lbs	10 910 kg
12 Rated Rigging Points	2 200 lbs each	1 000 kg each
2 Front Overhang Extensions	1 000 lbs at 2'3" each	454 kg at 0.7 m each
2 Custom Overhang Sound Wings		
12' Aluminum trusses from ground	6600 lbs each	2 995 kg each
Vinyl Roof Canopy	6'9"	2.05 m

Figures are within inch or cm to actual size.

1. Introduction to the SAM 550

1.3 Standard Features

Item	Standard Features	Imperial	Metric
5501	Built-in Rigging Points	2 200 lbs each	1 000 kg each
5502	Load Bearing Trusses		
5503	Front Overhang Extension Bars	1 000 lbs at 2'3"	454 kg at 0.7 m
5504	4 Aluminum Corner Posts		
5505	Fiberglass Roof Total Load Bearing Capacity	52' x 40' 24 000 lbs	15.8 x 12.2 m 10 910 kg
5506	Roof Extension Panels Integrated Floor Panel / Stage Rear		
5507	High Power Hydraulic System		
5508	Gas Engine		
5509	Stage Deck with quick-levelling legs	50'2" x 37'10"	15.31 x 11.55 m
5510	Support Legs for Trailer Corners		
5511	Air Ride Suspension / Tandem Axle		
5512	ABS Braking System		
5513	Spare Wheel and Integrated Storage		
5514	Cargo Tie-down		
5515	500W Quartz Worklights		

Figures are within inch or cm to actual size.



	Options	Imperial	Metric
1	Trailer Dolley		
1	Back up Alarm System		
1	Stage Floor Capacity	150 lbs/ft ²	720 kg/m ²
2	Side Overhang Truss	6 600 lbs at 11'3"	2995 kg at 3.6m
1	Line Array Rigging System	4 000 lbs	1814 kg
10	Removable Rigging Beams	12'	3.66 m
8	Removable Rigging Beams	6'10"	2.08 m
1	Vinyl Roof Canopy	3' to 6'	0.9 to 1.8 m
2	Side Overhang Extension Truss		
9	Horizontal Banner Supports		
1	Electric Motor	10 hp	7.46 kw
1	Vandalism Protection		
1	Counterbalance Valves		
1	Upstage Fire Retardant Windwall		
1	Upstage Fire Retardant Windwall 70% Mesh		
1	Downstage Fire Retardant Windwall		
1	Downstage Fire Retardant Windwall 70% Mesh		
4	Skirting		
17	Guardrails / Galvanized Steel / Upstage		
32	Guardrails / Aluminium / Extension Platform		
51	Extension platforms / accessories incl.	4' x 8'	1.2 x 2.4 m
4	Aluminum stairway with handrails		
6	500W Work Lights		
1	Handicap Ramp with Handrails		
4	Spare Tires		
1	Customized Lettering Package		
4	Portable Shelter	15' x 15'	4.57 x 4.57
2	Loading ramps / aluminum	4' x 12'	1.22 x 3.66 m
1	Electric Chain Hoists		
1	Rigging Hardware Accessories		
1	Genie Portabe Lift model AWP 25 S		

Figures are within inch or cm to actual size.

1.5 Supplied Tools and Spare Parts

Supplied Tools

- 2 Tool Boxes
- 2 Level 2'
- 1 Jerrycan
- 1 Structure Punch
- 1 Allen Key 4mm
- 1 Key 1/2" - 9/16"
- 1 Key 3/4"
- 2 Keys 1 1/8"
- 1 Ratchet & Box 3/4"
- 1 Adjustable Spanner 1 X 15"
- 1 Spark Plug Key and Spark Plug
- 20 Lynch Pins
- 20 Hair Clip Pins
- 5 Snap Hooks
- 5 Strap Ratchets 1"

Spare Parts

- 2 Pins B-1
- 2 Pins B-2
- 4 Pins B-4
- 2 Pins S-1
- 4 Pins S-3
- 4 Pins S-6
- 2 Pins S-7
- 8 Pins S-8

Documents

Honda Maintenance Guide
Haldex ABS Installation and Service Manual

HOW TO OPERATE THE HYDRAULIC SYSTEM

It is important to fully understand this section before proceeding with set up.

CAUTION For stage equipped with both gas engine and electric motor, use one power unit only at a time. Do not use two power units simultaneously. When motor is running, leave compartment doors opened. For electric motor, use a grade #12 protective resistance supply cord or more.

IMPORTANT Levers are spring-loaded. In case of problems release controls. System will stop.

2.1 Gas Engine Instructions


This model is equipped with an electric starter, a crank-cord handle, and a hazard warning device. In order to start the engine the hazard warning device must be activated. When the engine is stopped, the hazard warning device has to be deactivated.

- Turn hazard warning device on.
- Turn engine on.
- Turn choke on.
- Turn key for ignition or pull crank-cord handle.
- Turn choke off. In cold weather, it may be necessary to keep choke at mid-position.
- Do not leave motor idling. Keep throttle slightly engaged.
- The hydraulic system requires a different RPM minimum for different operations. For example, floor cylinders and stabilizers require less revolutions.

Sliding controls are on the right-hand side. Arrows point to “On” position:

THROTTLE 

CHOKE 

GAS LINE 

2.2 Electric Motor Instructions

2.2 Electric Motor Instructions

- Switch gas engine off.
- Connect electric back-up system hydraulic connectors to hydraulic system.
- Connect motor to electrical power source. “On” / “Off” switch is located near engine.
- Make sure that your country’s power source is compatible with the motor voltage requirements. Have a certified electrician check all electrical connexions.

2.3 Raising Roof Structure

CAUTION Always remove end tie downs and open roof panels first before proceeding with any other opening maneuvers.

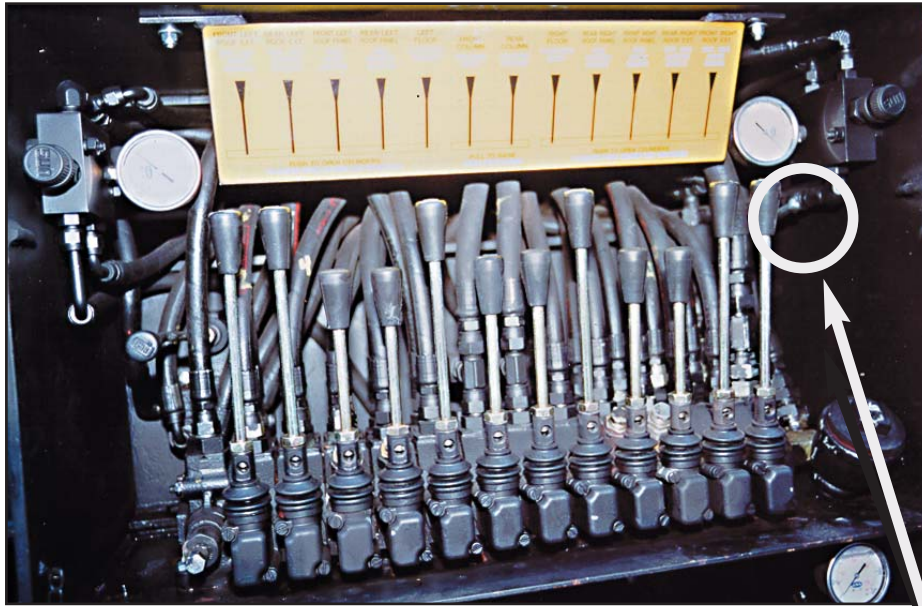
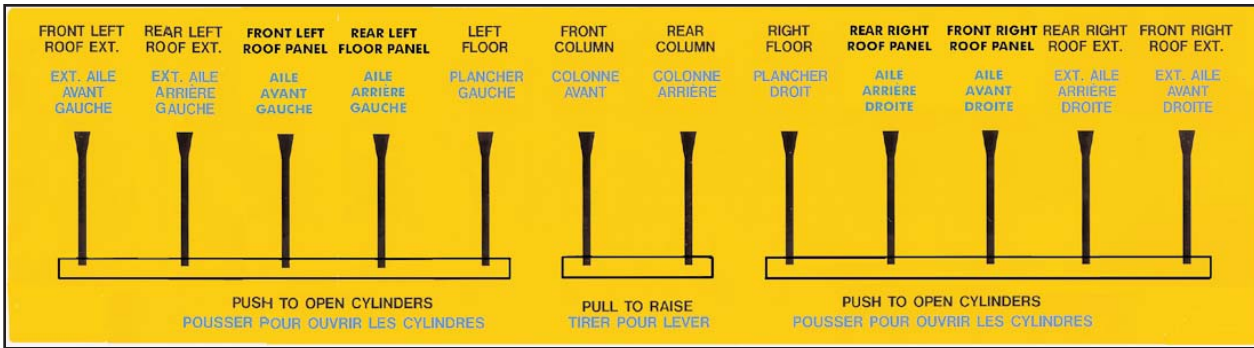
- Switch roof cylinder valve on before handling levers for set up operations. Roof cylinder valve is located behind rear hydraulic control panel on the right-hand side.
- Roof is raised with two (2) levers respectively operating front and back of hydraulic cylinders. Both levers can be operated simultaneously with caution.

2.4 Opening Roof Extensions

- The roof extensions can be operated using both levers simultaneously with caution.

CAUTION For this operation, run engine at low RPM in order to avoid bearing breakage. Roof extensions must slide out evenly. When maneuvering, refer to white indicators located on roof structure otherwise jamming and serious damage can occur to structure.

NOTE The mentions “open”, “close”, “raise”, and “lower” refer to parts of the stage unit that move when levers are activated.



ROOF CYLINDER VALVE

3. Set-up Instructions

3.1 Levelling Trailer Unit

SET-UP INSTRUCTIONS

FOLLOW INSTRUCTIONS IN SEQUENCE. RESPECT CAUTIONARY NOTES.

Make sure the area where the SAM 550 will be installed is clear of aerial cables, tree limbs, street lamps and other hazards. Trailer size is not ultimate configuration. Driver side is downstage.

3.1 Levelling Trailer Unit

CAUTION Levelling is important. To avoid difficulties, make sure the trailer unit is adequately levelled before starting set-up.

- To level ground where trailer unit will be installed, lay out planks of 2' x 10' (61 x 3 cm). Once levelled, park trailer unit over planks.
- Remove all three (3) aluminum panels from hydraulic control compartment.
- Remove the two (2) red mechanical ratchets found at each end of trailer.
- Open side panels one at a time. Make sure trussing clears trailer wheels and those of tractor, if still attached.
- Open side panels approximately 24" (60 cm).
- Remove bolts (4) retaining hydraulic roof extension. You may need to use the hydraulic system to work them free.



3.2 Opening Roof Panels

Levelling and Ground Support

- Once rear of trailer is levelled on its width, install rear dollies and remove tractor.
- Open roof panels slightly to access frame.
- Complete stage levelling, width and length, with trailer dollies and front stabilizers. Check and secure.
- Check that air is not seeping from suspension.



- Raise both roof panels until horizontal.

CAUTION Always open roof panels one at a time. In case of problems, release controls. System will stop.

- Remove staircase from under chassis.

3.3 Opening Floor Panels

Open both upstage and downstage floor panels alternately.

CAUTION When installing sound extensions without sound wing platforms, open upstage floor panel first.

- Raise roof slowly and evenly about 6" (15 cm).
- Lower floor panel close to ground level.

3. Set-up Instructions

3.3 Opening Floor Panels

- Remove components stored inside floor structure.
- Lock unfolding floor panel in position with hinged, yellow metal rod.
- Raise floor panels enough to clear swinging support beams.



CAUTION Open floor panel slowly. Make sure it clears roof panels. Severe structural damage can occur.



- Swing out support beams and secure with aluminum cross-braces.
- Install floor stabilizers and level beams with screw jacks. Install the four yellow-coded steel stabilizers under support beams below corner towers. (Special yellow, steel leg extensions can be added to yellow-coded steel stabilizers when needed).
- Lower floor on support beams. Make sure floor center guides are well aligned with beam angle.
- Located under floor structure at all six (6) support beam are holes for which to lock and secure floor. Bolt floor panels to beams. Install the eight (8) 45° cross-braces from floor to support beams.
- Install removable aluminum beams 4" x 4" (10 x 10 cm) between support beams. Assure a snug fit against floor with stabilizers and screw jacks. Aluminum beams are stored in floor structure. Pin and secure.
- Pin and secure all support beam stabilizers.

- Install cross braces between stabilisers and floor beams, vertically and horizontally.
- Install cover plates over stage floor hinges.



CAUTION Floor capacity is 150 lbs/sq. ft. only when aluminum support beams and all floor supports required are installed. Do not disregard. Severe structural damage can occur.

Installing Floor Extension Platforms

- Layout frames, support beams and screw jacks on both sides of downstage floor. (**Refer to 8.5, page 43**)
- Install aluminium 2X4 to upstage floor. Install supports with screwjack and level.
- Install X-shaped support beam to side of stage floor. Support with screwjacks and level.
- Start building platform with floor extensions, a row of four (4).
- Install next X-shaped support beams with supports and screwjack. Add platforms and so on.
- Install four (4) sets of cross braces between supports on each side.
- Install aluminium 2X4 to downstage floor.

3.4 Opening Roof Extensions

3.4 Opening Roof Extensions

- Using the two control levers slide roof extensions out by alternating front and back lever movements, shifting from one end to the other in small increments of approximately 6” (15 cm) or by pushing levers simultaneously with caution.

CAUTION	Open hydraulic roof extensions slowly.
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IMPORTANT	For this operation run engine at low RPM in order to avoid bearing breakage. Roof extensions must slide out evenly. When maneuvering, refer to white indicators located on roof structure otherwise jamming and serious damage can occur to structure.
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3.5 Installing Cross Braces to Roof

- Follow same procedures for downstage and upstage. Cross braces can be coded with colors, letters or numbers.
- Install all cross braces inside roof extension. Pin and secure to T2 and T3.
- Insert main cross braces between secondary cross braces. Pin and secure to T2 and T3. Pin and secure cross brace components to one another.

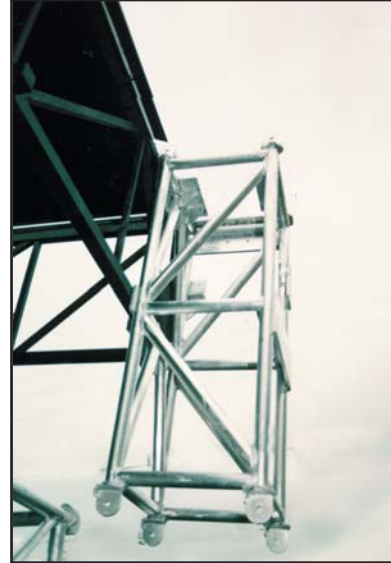
3.6 Installing Sound Extensions

CAUTION	If sound wing platforms are not to be installed, erect sound extensions from ground level. If sound-wings are to be installed, erect later from atop platforms.
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- Slide roof extension out. (Refer to 3.4 “Opening Roof Extensions”)
- Lower downstage roof panel to desired working height.
- Distribute corner tower sections for assembly such as, pyramid truss sections, cross braces, sound trusses, etc. Prepare and check rigging equipment.

3.6 Installing Sound Extensions

- Install corner upper tower sections on roof extension trusses.
- Install sound extensions on downstage upper tower sections. Pin and secure.
- Install aluminum cross-braces running from sound extensions to edge of roof panel.
- Install pyramid truss section over downstage upper tower sections.
- Install 4" x 4" (10 x 10 cm) rigging movable beams where needed in roof structure.



Canopy

- Install both FOH pyramid sections for canopy cable supports to corner upper towers section.
- Install front FOH extensions.
- Unfold front central support of canopy.
- Install banner poles.

3.7 Counterweight System

- Attach canopy cable on small hooks located on downstage roof extension truss and tie each end to FOH pyramid section.
- Attach canopy lower cable to FOH pyramid section. Do not tighten, this will be done later.
- Raise side panels to a horizontal position.
- **Sound extension cable installation is accomplished more easily from atop.** Install cables and tighten until sound extensions begin to raise slightly. To facilitate insertion of cables, have someone relieve weight from both sound extensions. Stay alert and cautious during this operation. Only experience will dictate correct angles for trusses in reference to the weight needed for rigging.

3.7 Counterweight System

Setting equipment downstage such as sound trusses, FOH extensions and others, causes the roof structure to raise in a slant. By installing the counterweight system it becomes possible to set all rigging equipment needed downstage while keeping the raising roof structure straight and balanced.

In order to operate the counterweight system, it is essential to fully understand how it works. The mechanics is somewhat complex and sensitive, but user friendly.

- 1. Hydraulic Assisted System:** Acts directly on hoist system through cables. The hydraulic cylinders located under upstage floor are used to increase or decrease the tension to shift the force of gravity back to the middle of the stage unit.
- 2. Hoist System:** Delivers the tension vertically through cable system.
- 3. Cable System:** Combines the whole to allow a four (4) to one (1) ratio movement in order to ease the shift of gravity from side to center.

3.7 Counterweight System

This reference chart offers six stage set-up options. No. 6 is the most common.

Set-up Options	Downstage Weight	Raising Roof	Lowering Roof
1. Front and rear corner towers (4)	392 lb (178 kg)	150 psi (1034 kPa)	550 psi (3792 kPa)
2. Corner towers (4) + windwalls	96 lb (43.5 kg)	nil	nil
3. Corner towers (4) + FOH + awning	688 lb (312 kg)	400 psi (2758 kPa)	1000 psi (6895 kPa)
4. Corner towers (4) + FOH + awning + windwalls	392 lb (178 kg)	150 psi (1034 kPa)	550 psi (3792 kPa)
5. Corner towers (4) + FOH + awning + sound trusses (rig)	1200 lb (544 kg)	650 psi (4482 kPa)	1650 psi (11 377 kPa)
6. Corner towers (4) + FOH + awning + sound trusses (rig) + windwalls	903 lb (409.5 kg)	450 psi (3103 kPa)	1250 psi (8619 kPa)

This chart reveals two different psi settings: one for raising the roof structure and the other for lowering it. Again, this chart is only a reference guide. Many factors come into play during a set-up, such as climate variations, wind speed, different equipment options and others. In addition, when raising roof structure, if it tilts downstage, increase psi; if it tilts upstage, decrease psi.

3. Set-up Instructions

3.8 Installing Counterweight System



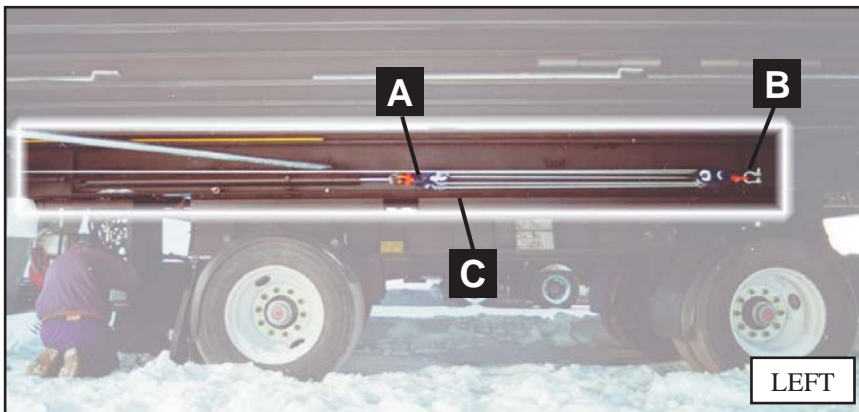
To change psi settings for each cylinder, use the adjustment knobs located next to the hydraulic control levers. There is an adjustment knob for each hydraulic cylinder.



Below the left hand knobs, you will find a lever with both "On" and "Off" settings.

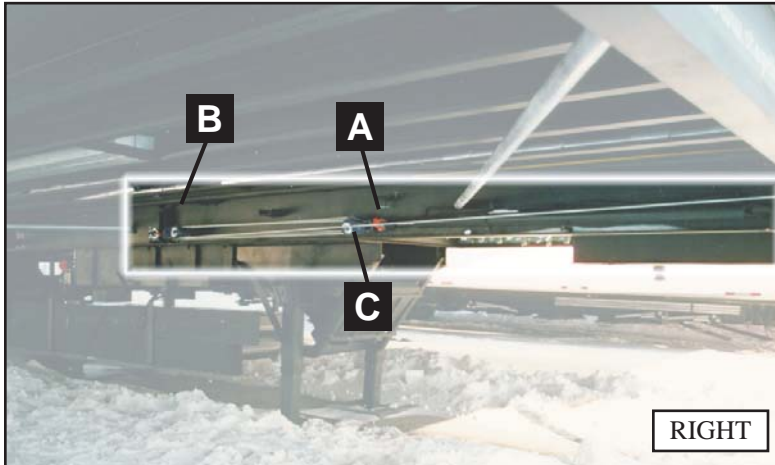
3.8 Installing Counterweight System

This set-up is identical for both left and right upstage sides



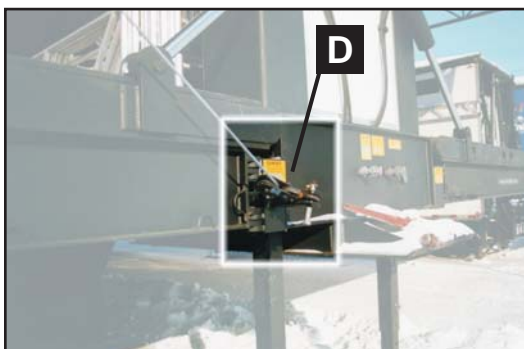
CAUTION Make sure cables do not twist or knot during set-up. Severe structural damage can occur.

3.8 Installing Counterweight System



CAUTION Make sure cables do not twist or knot during set-up. Severe structural damage can occur.

- Attach one end of cable to beam bracket (A) using ½” shackle.
- Install double pulley block (B) on tip of hydraulic cylinder (B) using 5/8” shackle.
- Install double pulley block (C) on binding plate (C).
- Install single pulley block to frame bracket near floor outrigger.
- Install single pulley block to bracket at end of floor outrigger.
- Pass cable through single pulley blocks.



- Install bracket to T3 truss. Pin and secure.
- Attach cable to bracket using ½” shackle.

3. Set-up Instructions

3.8 Installing Counterweight System

Installing Back and Side Windwalls

The SAM 550 standard windwalls include four sections: two rear and two side sections.

- Attach upper horizontal straps to upstage roof panel. Once roof structure is completely raised, attach bottom horizontal straps to floor panel. Tighten upper straps.
- Do not tighten lower straps until roof is fully raised and corner towers completely set-up.

CAUTION	Do not fasten lower end of vertical cables until roof structure rests completely on corner towers and on telescopic column pins.
----------------	--

DANGER	Do not hang any extra loads other than banners from roof structure or outriggers. Wait until corner towers and roof columns have been locked with pins (8), and sound extensions have been levelled. Hydraulic cylinders are not rated to lift any load other than roof structure.
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3.9 Installing Towers and Roof Components

Corner Towers

- Place trussing on deck. Downstage towers are square, upstage are triangular. (Main segments of upstage towers are in one section)
- Assemble center sections of both downstage towers. Observe tower configuration.
- Position upstage corner towers to T3 with pivot brackets.



3.9 Installing Towers and Roof Components

- Install upstage tower with two (2) pins. Upstage towers run onstage and downstage towers run offstage.
- Install casters at base of assembled towers.

Roof Structure

CAUTION Install T1 stiffeners (acme rod with handle) through telescopic columns and **lock with nuts**.

- Raise roof structure section by section, as each will have to be pinned.
- Manipulate hydraulics gently and steadily. Verify that counterweight system is functioning accordingly. Lift roof as evenly and levelled as possible.
- Raise roof structure alternating front and back hydraulic cylinder control levers at approximately every 8” (20 cm).
- If any section of telescopic columns jam while raising roof structure, place a hook arrester on the wedge located on the rim at the bottom section of the column and on the rim of the jammed column. Resume raising manoeuvre, columns will separate and raise accordingly. Remove the hook arrester.
- Pin and secure every section of telescopic columns.
- Once roof is fully raised, pinned and secured, ease hydraulic pressure. Lower roof smoothly until it rests on telescopic column pins. Do not rush this step.

CAUTION Never climb on telescopic columns when they are not locked and secured with square pins. Serious injuries can occur.

3. Set-up Instructions

3.10 Completing Corner Towers Installation



Check for jamming and snagging of windwalls as roof is raised.

3.10 Completing Corner Tower Installation

- Start with both upstage towers.
- Install bottom sections of towers. Make sure vertical wind wall cables are loose.
- Slightly raise roof panel until holes of corner tower bottom section align with those on beam extremity. Towers may tend to push on windwalls. If pressure on windwalls seems excessive, release side horizontal cables.
- Pin and secure towers. Beams are light therefore torsion is normal. May need convincing to pin.
- Follow same procedure for downstage towers.

Installing Quick-shelter, Guardrails and Skirting

- Once all chains have been hoisted, the quick shelter and the self-erecting platform can be installed.
- Install monitor supports and platforms.

3.10 Completing Corner Towers Installation

- When deck configuration is complete, install skirting and guardrails.

IMPORTANT It is strongly recommended to install guardrails upstage and on extension floors after every set-up.

IMPORTANT During set-up, inspect the stage structure regularly. At the end of set-up, make a final inspection of all stabilizers, especially those related to loaded sound wings.



DISMANTLING INSTRUCTIONS

Dismantling procedures begin once all sound, lighting equipment, set and accessories have been removed. Make sure floor is clear.

- Remove skirting and fold.
- Clear stage floor and surroundings.
- Release all vertical cables on windwalls and loosen horizontal cables.
- Remove pins from bottom sections of corner towers. (May use hydraulics to free pins)
- Climb towers and remove offstage pins from backstage towers and onstage pins from downstage towers. This will allow towers to hinge freely from their upper sections when lowering roof.
- Ensure emergency switch button is deactivated. Start engine.
- Ease weight from column pins by slightly inching roof up.
- Remove lower section of corner towers.
- Remove first section of square pins from center columns.
- Engage counterweight system with lever.
- Adjust to appropriate psi setting. Refer to counterweight system chart for an accurate psi setting. **(Refer to counterweight system chart on page 17)**

CAUTION

Lower roof slowly and evenly. Clear corner towers from deck as roof is lowered. Install casters at base of corner towers as soon as roof is low enough.

- Lower roof smoothly and evenly until next set of square pins. Remove pins.

CAUTION Pull windwalls in as roof lowers. Check for jamming or snagging.

- Continue lowering roof structure until all square pins have been removed.
- Lower roof to desired working height. Usual preference: heads clear trussing.
- Disengage counterweight system, switching counterweight lever off.
- Turn engine off.
- Remove T1 stiffeners from telescopic columns.
- Remove mid section of corner towers completely.
- Remove back and side windwalls. Fold and store for transport.
- Remove aluminum FOH extensions and store.
- Remove canopy. Release strap ratchets. Detach canopy from roof extension truss.
- Remove all cross braces between T2 and T3 trusses.
- Remove banner poles.
- Lower roof structure until it sits 6” (15 cm) from completely closed position.
- Start engine.
- Close roof extensions less than halfway, approximately 4’3” (1.3 m).

CAUTION Make sure all aluminum rigging beams are removed from roof structure. Do not disregard. Severe damage can occur.

- Lower roof panels to desired working height.
- Turn engine off.

- Remove remaining canopy support components.
- Remove banner posts.
- Remove sound extensions.
- Remove pyramid truss sections.
- Remove upper corner tower sections.
- Dismantle sound wing platforms and store.
- Remove hinge cover plates.
- Remove pins from aluminum frames and legs.
- Slide in sound wing supports and frames for transport.
- Dismantle counterweight system.
- Remove bolts holding support beams and stage floor together.
- Detach floor to support beam braces and store.
- Remove cross braces from floor to dollies.
- Remove aluminum support beams and store.

CAUTION

Make sure all aluminum support beams, bolts from the six (6) beams to stage floor, as well as cover plates over hinges are removed. Disregarding these steps can result in severe structural damage.

- Start engine for closure of floor panels, beginning with downstage panel.
- Raise floor panel.
- Insert rods in yellow metal cups as floor is closing. Continue raising floor panel until it

clears support beams.

CAUTION Close floor panels slowly, one at a time. Make sure floor panels clear roof panels. Otherwise severe structural damage can occur.

- Swing in support beams. Pin and secure for transport.
- Lower floor panel close to the ground and remove yellow rods.
- Load remaining components in floor structure.
- Close downstage floor panel completely.
- Close downstage roof extension completely.
- Follow same procedure for upstage floor.
- Store staircases under chassis.

CAUTION Organize all material inside the truss of the stage unit. Make sure all equipment is stored considering that roof structure must be lowered another 6” (15 cm). If needed, slightly lower roof to evaluate available space. Disregarding this important step can cause severe damage to structure.

- Lower roof structure completely.

CAUTION Close roof structure slowly.

IMPORTANT Front hydraulic cylinders tend to close more slowly than rear cylinders. Make sure roof is fully closed before proceeding any further.

- Remove dollies and stabilizers from trailer. Store, lock and secure.
- Load remaining parts and tools.

- Close both side panels completely one at a time while checking for obstructions.
- Turn engine off. Switch fuel valve off.
- Install mechanical ratchets and other retaining mechanisms.
- Switch roof cylinder valve off.
- Install panels on rear hydraulic control box.
- Stage units height should reach approximately 13'4" (4.1 m) from ground level.
- Before moving trailer, check unit Haldex brake system.

5. Warning and Special Measures

5.1 Special Loads and Overload

5.1.1 Dynamic Loads

All loading criteria used for the design of the Stageline mobile stages equal or exceed the requirements of the American, Canadian and European standards. Moreover, when designing our products, dynamic loads generated by a normal operation of a stage were taken into account, such as lighting and sound equipment movement, winch operation as well as dancers and acrobatic performances.

However, some unusual dynamic loads, like stunt performances on the stage floor or trapeze artists securing themselves to the structure could be dangerous for the users and the equipment. When special dynamic loads are anticipated, please communicate with our technical department beforehand.

CAUTION

Certain dynamic loads may provoke sudden and excessive movements of floor and roof structures. This could jeopardize the stage stability and its users' safety.

5.1.2 Additional Load from Peripheral

Standard binding points are provided around the floor sides to hang floor extensions. The stages are not designed to support additional vertical and horizontal loads brought on by this peripheral equipment. It is therefore necessary to plan the position of peripheral equipment in such a way as to not add significant loads to the stage structure. If in doubt, contact our Technical Department.

5.1.3 Prevention of Floor Overload

All mobile stages manufactured by Stageline are designed to support a uniformly distributed load of 500 kg/m² (100 PSF) on the stage floor. To support this weight, the stage must be in good condition and set up in accordance with the procedure found in this manual.

Taking into account the floor surface, its total capacity is substantial when all the equipment is equally distributed. However, a significantly smaller load applied on a small surface area could damage the floor.


Overload occurs when a local curvature of the floor structure exceeds 10 mm ($\frac{3}{8}$ ") or a curvature in the plywood between its support girders exceeds 3 mm ($\frac{1}{8}$ ").

If the floor structure is overloaded, it can be supported locally by adding legs. These must be placed underneath the structure girders. They must also be solidly secured in order not fall if the stage were to move.

5. Warning and Special Measures

5.1 Special Loads and Overload


If the plywood floor covering is overloaded, the load must be moved or redistributed on the girders using beams or platforms.

	<p>CAUTION Even if the floor seems to support an overload, this does not necessarily mean that the load is acceptable and safe. Vibrations or a slight weight addition could cause a sudden rupture.</p>
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5.1.4 Rigging Load Management

All mobile stages manufactured by Stageline are designed with rigging points. The positioning and the load capacity of these points have been studied to allow the highest number of light and sound layouts.

A presentation of all rigging points, their maximum capacity as well as the load combinations permitted can be found in section 8.5.

	<p>CAUTION Under no circumstances can loads other than those shown be added without a prior written approval by Stageline.</p>
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In the case of a unusual layout, please communicate with our technical department and submit a proposed rigging plan before installing any light and sound system.


5.1.5 Anticipation of Extreme Wind

All mobile stages are designed to resist wind gusts up to 97 km/h (60 mph) with windwalls in place and 145 km/h (90 mph) without windwalls. However, this wind resistance depends on a proper installation of all support equipment and cross braces. If moderate wind conditions are forecasted, the stage must be inspected and all its components secured.

In windy conditions, the windwall is the element most at risk. It is therefore essential to fasten it tightly to prevent any flapping. Winds exceeding 97 km/h (60 mph) are rare but possible. Wind this strong will cause damages: trees will be uprooted, windows broken, etc. In such situations, it is important to take emergency measures to protect the public, the sound and lighting equipment as well as the stage.

1. The public and all personnel present have to evacuate the premises and remain at least 30 m (100 ft) away from the stage.
2. When possible, all sound and lighting equipment will be lowered, secured or stored away.
3. Windwalls must be unhooked or removed while winds are still moderate. If winds intensify suddenly and windwalls were not removed, they should be slashed in several locations as it is better to sacrifice a windwall than to possibly damage the stage as well as the sound and light equipment.


4. Roof structure will be lowered to reduce exposed surface, only if winds are below 50 km/h (30 mph). The stage is more vulnerable during lowering and raising operations.

CAUTION  The most probable scenario during a violent rainstorm is that the windwall will be torn away. This is why it is so important to keep the crowd and your staff at a safe distance.

5.1.6 Set-up and Dismantling of Windwall in Windy Conditions

Windwall installation during strong wind is problematic. It is preferable to wait until the wind has subsided before installing windwall. If this is impossible, fasten windwall to stage floor and roof panels before raising the roof structure so as to not lash and hurt someone. We also suggest the installation team be increased in number to have this operation done faster and more safely.


It is not recommended to install windwall if wind speeds exceed 30 km/h (20 mph). In windy conditions, windwall installation can become dangerous. If the stage must be set up, do not install windwall.

CAUTION  Any component attached to a windwall, such as snap hooks and strap ratchets can be moved or lifted suddenly by the wind. To prevent any injuries, these components must always be secured.

5.2 Damaged Components

Stage components can get damaged for different reasons. When you find a damaged component, it is important to identify the reason(s) why it broke. A damaged component can be the result of a failure of another component.

In the case of a damaged component, stop using the component at once. Evaluate the damage to see if the component can be repaired or should be replaced.

CAUTION  A small breakage can indicate a major problem, such as microscopic cracks in metal or in the weld.


5.3 Ground and Geographic Status

Stage stability is ensured by stabilizers and legs set down on the ground. The ground has to be firm enough to support the concentrated load applied by these support points (refer to section 8.5).

Sinking trailer tires is a sign of weak ground capacity. If tires should sink more than 3 to 4 cm (1" to 1½"), install struts to reinforce the ground. If in doubt, contact a soil engineer to design a certified strut system.

5. Warning and Special Measures

5.3 Ground and Geographic Status

	<p>CAUTION Supporting properties of certain soils are highly dependent on their humidity level. A site that seems quite firm may lose all its support capacity due to a rainstorm.</p>
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Before setting up a stage, it is important to check the ground support capacity. If the stage is positioned on a slope or atop a bulkhead, make sure there is no risk of landslide. It may be necessary to refer to a soil engineer.

5.4 Trailer Transportation Hazard

A Stageline mobile stage is a combination of different panels that can be deployed and closed down using hydraulic cylinders. These panels are joined to a trailer frame. Once closed, this assembly looks like any other trailer.

However, because of its design, the stage has a slightly higher centre of gravity on the vertical axis than a standard trailer. Therefore, the unit could tend to overturn more easily when forced into a sharp turn or as a result of a driver's mistake.

5.5 Freight Capacity

Stageline mobile stages can transport 10000 lbs (4540 kg) of freight. However, in the case of this SAM 550, it is totally used up to transport basic stage equipment such as corner posts, windwalls, skirting, floor extension platforms, guardrails, etc.

The load of the freight must be carefully distributed between the kingpin and the axles in order to limit load on axles.



The table below indicates how the weight should be distributed between the kingpin and the centre of the axles according to load positioning.

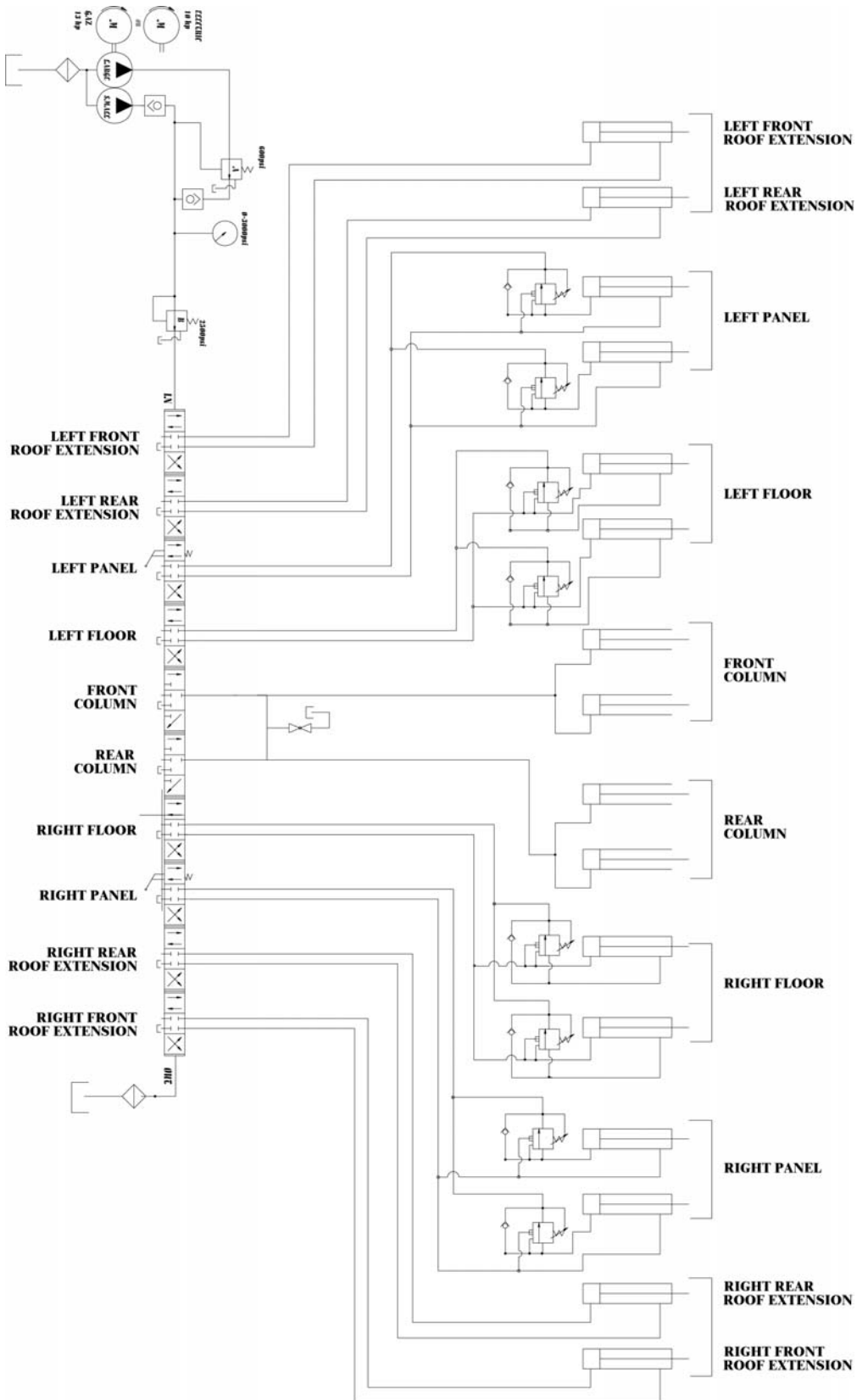
Load Positioning (From Gooseneck)	Load Distribution	
	Gooseneck / Front of Stage	Axles / Rear of Stage
0 x D	100 %	0 %
0.25 x D	75 %	25 %
0.5 x D	50 %	50 %
0.75 x D	25 %	75 %
1.0 x D	0 %	100 %
1.25 x D	- 25 %	125 %

D: Distance between the kingpin and the centre of the axles.

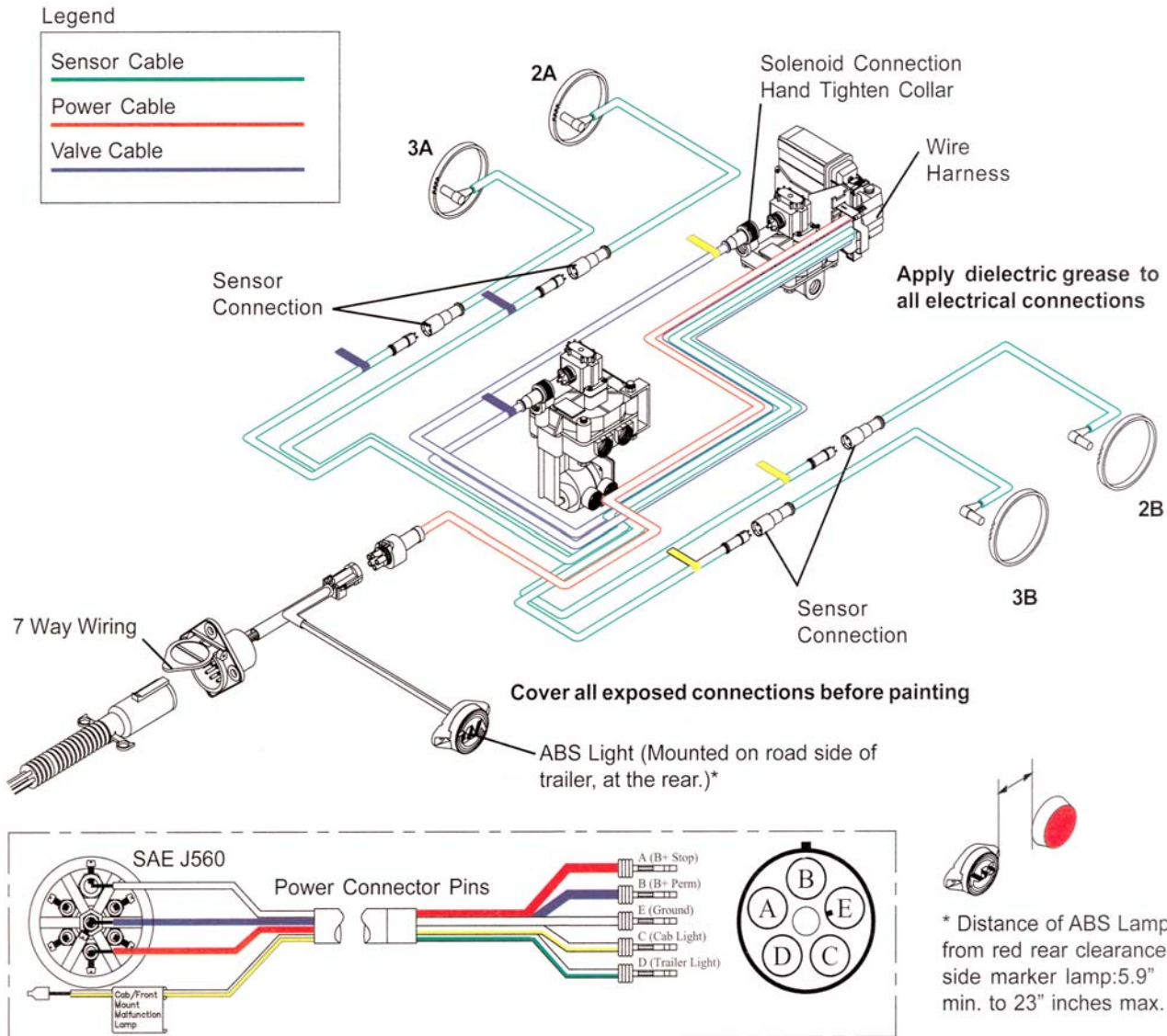
SITUATIONS	SOLUTIONS
Gas engine will not start	<ul style="list-style-type: none"> • Check fuel level. • Check that fuel valve is open. (Under gas reservoir) • Check spark plug connection. • Check oil level. (Safety valve is off) • The hazard warning device is “Off” and /or emergency brake is “On”.
Gas engine will not idle properly	<ul style="list-style-type: none"> • Make sure choke is “Off”. (Lever is under gas tank). • Replace spark plug. • Clean air filter with solvent or gas.
Electric motor stopped working	<ul style="list-style-type: none"> • Check if electrical circuit supplies 115V, 20 amps minimum. • Check if electric motor compartment door is open for ventilation. • Check if motor casing is hot. Let motor cool down for 30 to 60 minutes.
Floor panels will not raise	<ul style="list-style-type: none"> • Remove any material (extra weight) from floor panels.
Air ride suspension will not inflate	<ul style="list-style-type: none"> • The air reservoir is empty. Hook the red hose from the tractor parking brakes to the trailer and release parking brakes. Air reservoir will inflate.
Hydraulic system will not work	<ul style="list-style-type: none"> • Check all pins. • Check main valve at the tank. • Check pump and engine coupling. • Check oil level. • Check for leaks.

MAINTENANCE TIP:

Check hydraulic oil pan frequently. It is located close to truss T1, center of ceiling under hydraulic hose joints. This pan prevents hydraulic oil leakage on deck. Remove pan, empty and clean, if needed. Tighten hose joints if required. Insert pan in position. For easier access to oil pan, lower roof to head level.



7. Maintenance Documents
7.2 Haldex Brake System Wiring



System check:

- 1) Connect control gladhands and charge system.
- 2) Check for leaks.
- 3) Apply control line pressure, brakes should engage. Release pressure.
- 4) Disconnect supply gladhand. Brakes should automatically engage.



7.3 Stage Maintenance Record

Items	Required Service Interval	Lubricator or Fluid Required	Date	Date	Date	Date	Notes
Brake Adjustment	Self-adjusting. Test before each use. Thorough inspection once a year.						
Brake Cam Shaft Lubrication	Grease once a year.	Synth. based lub w/teflon Permatex #82328 or equiv.					
Axle Lubrication	Check and fill up before each use.	SAE - 80W90					
Electric System	Check before each use. Thorough inspection once a year.						
Air System	Check before each use. Thorough inspection once a year.						
Hydraulic System	General inspection after each use for leaks, breakage, cuts. Thorough inspection once a year.						
Hydraulic Filter	Change once a year.						
Cylinders and Hinges	Grease once a year or prior to a long period storage.	Synth. based lube w/teflon Permatex #82328 or equiv.					
Steel and aluminium Structures	General inspection of stress and welded points before each use. Thorough inspection once a year.						
Hydraulic Fluid	Check for contamination once a year. If necessary flush system and fill up, leaving 4" from top of tank for air.	Dextron III or equivalent approx.					Hydraulic fluid can last for years if uncontaminated. Oil should be a clear red colour, not a cloudy pink colour.

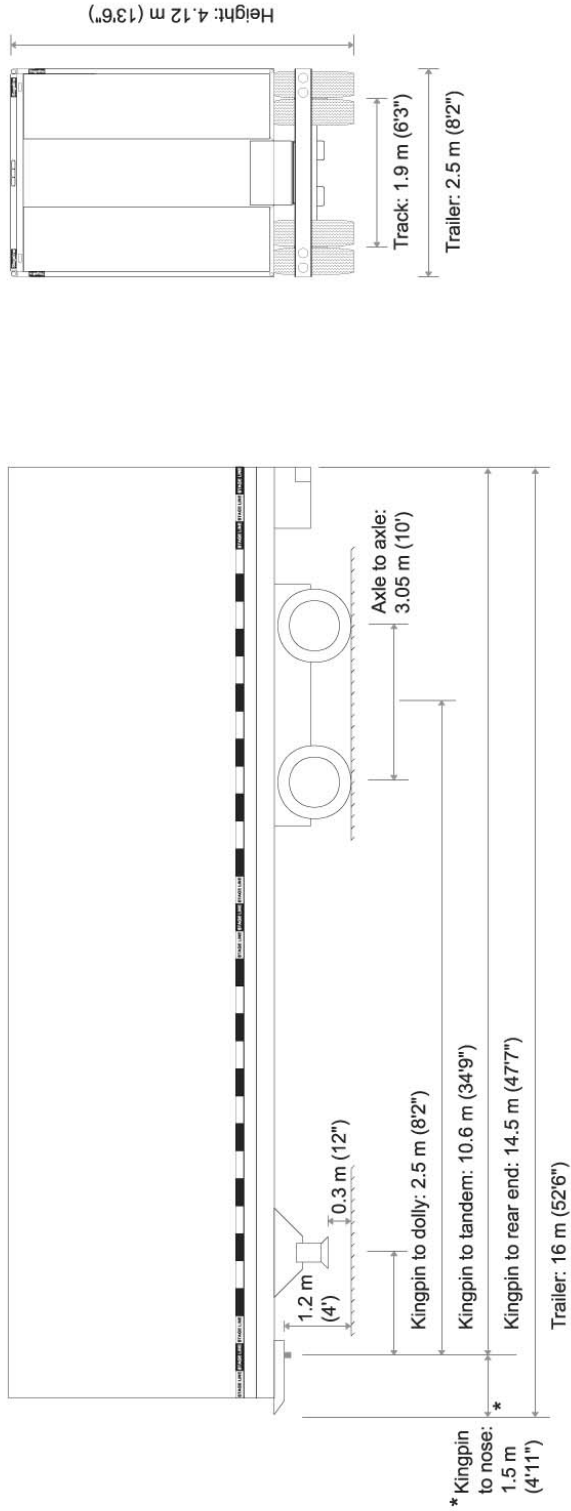
Note: The frequency of inspection for the trailer and stage components set by Stageline® Mobile Stage Inc is a minimum safety requirement and does not prevail over the laws and regulations of the country, state, province or town where it is operated.

Important: During each event, a visual structural inspection must be your priority. Structure must be inspected repeatedly during set up and full inspections must be done frequently. As metal tends to rust with time, all parts subjected to friction should be sanded and repainted as necessary.

7.4 Honda Engine Maintenance Records

Item	Required Service Interval	Date		Date		Date		Date		Notes
		Checked	Changed	Checked	Changed	Checked	Changed	Checked	Changed	
Motor Oil 10W30 (-20°C and above) (-5°F and above) 5W30 (0°C and below) (30°F and below)	Check before each use. Change every 6 months / 100 hrs or less.									
Air Filter	Check before each use. Clean every 3 months / 50 hrs or less.									
Spark Plug	Check, clean or change every 6 months / 100 hrs or less.									
Sediment Cup	Clean every 6 months / 100 hrs or less.									
Fuel Line	Check every 2 years and replace when necessary.									

Note: Refer to Honda Engines Owner's Manual for other maintenance tips, i.e. valve clearance, etc.

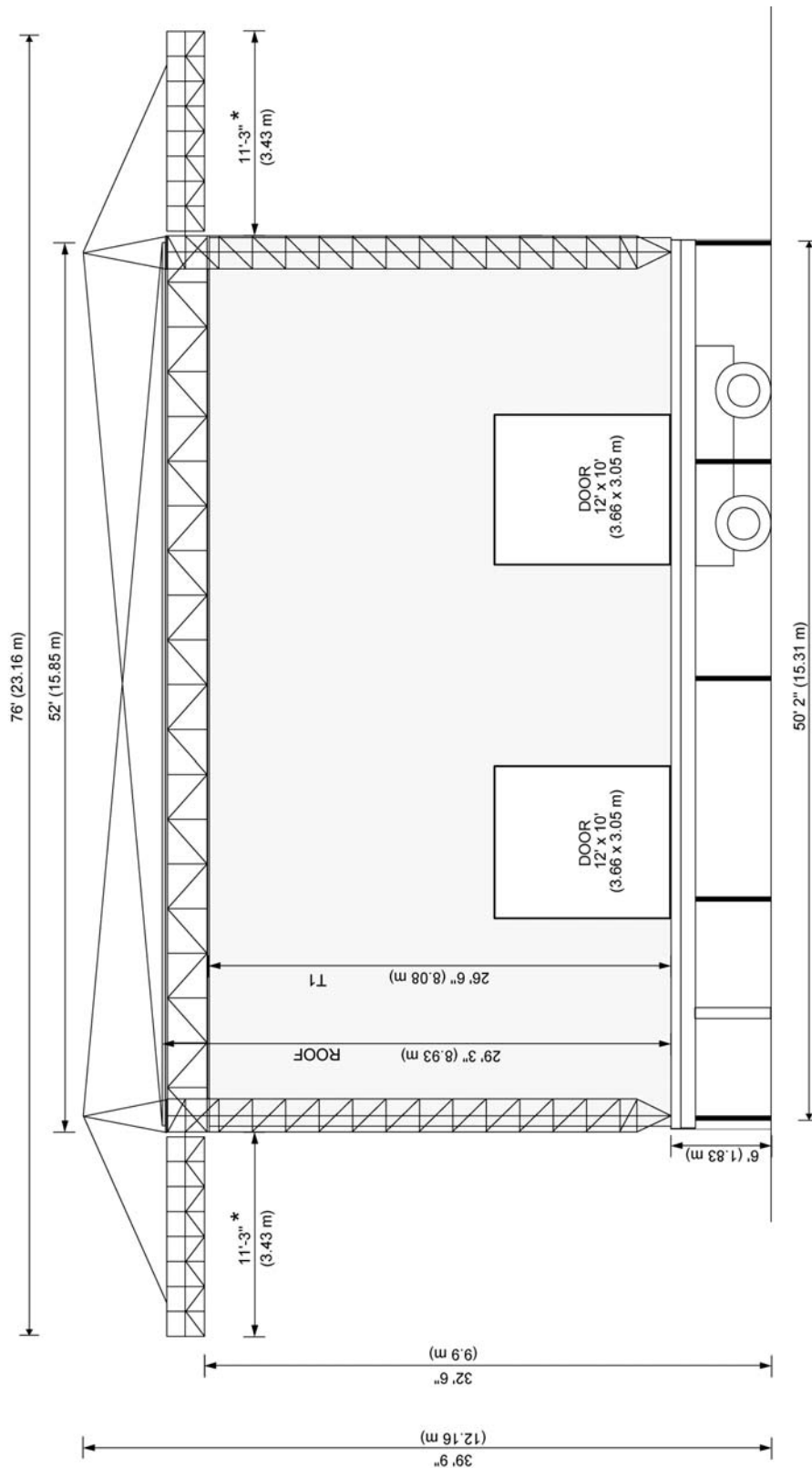


	Mass	Kg	Lb
Total mass		28 000	61 700
Mass on tandem		18 200	40 000
Allowable load of axle		9 000	19 800

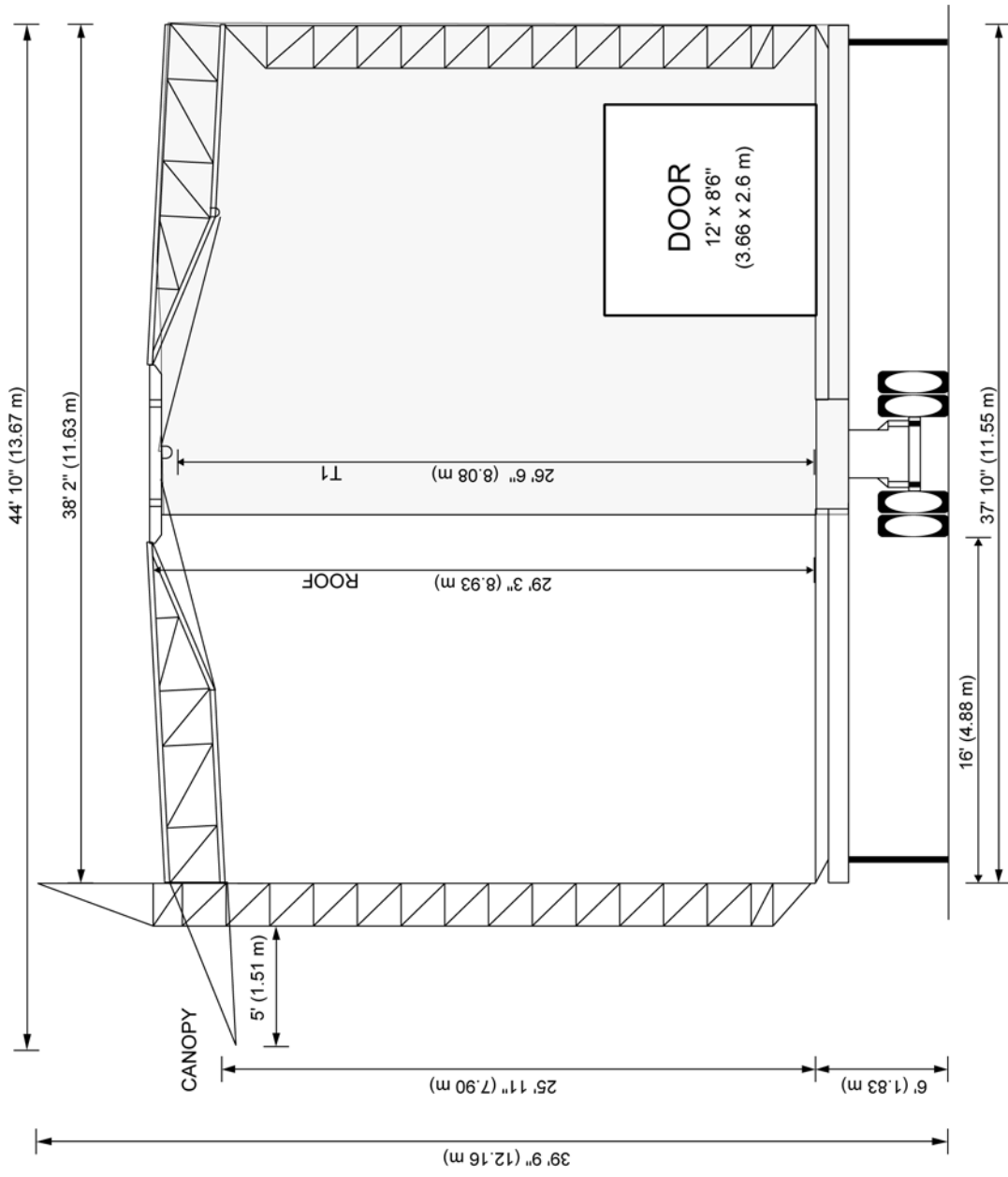
Standard : 2 axles

Drawings are not to scale.

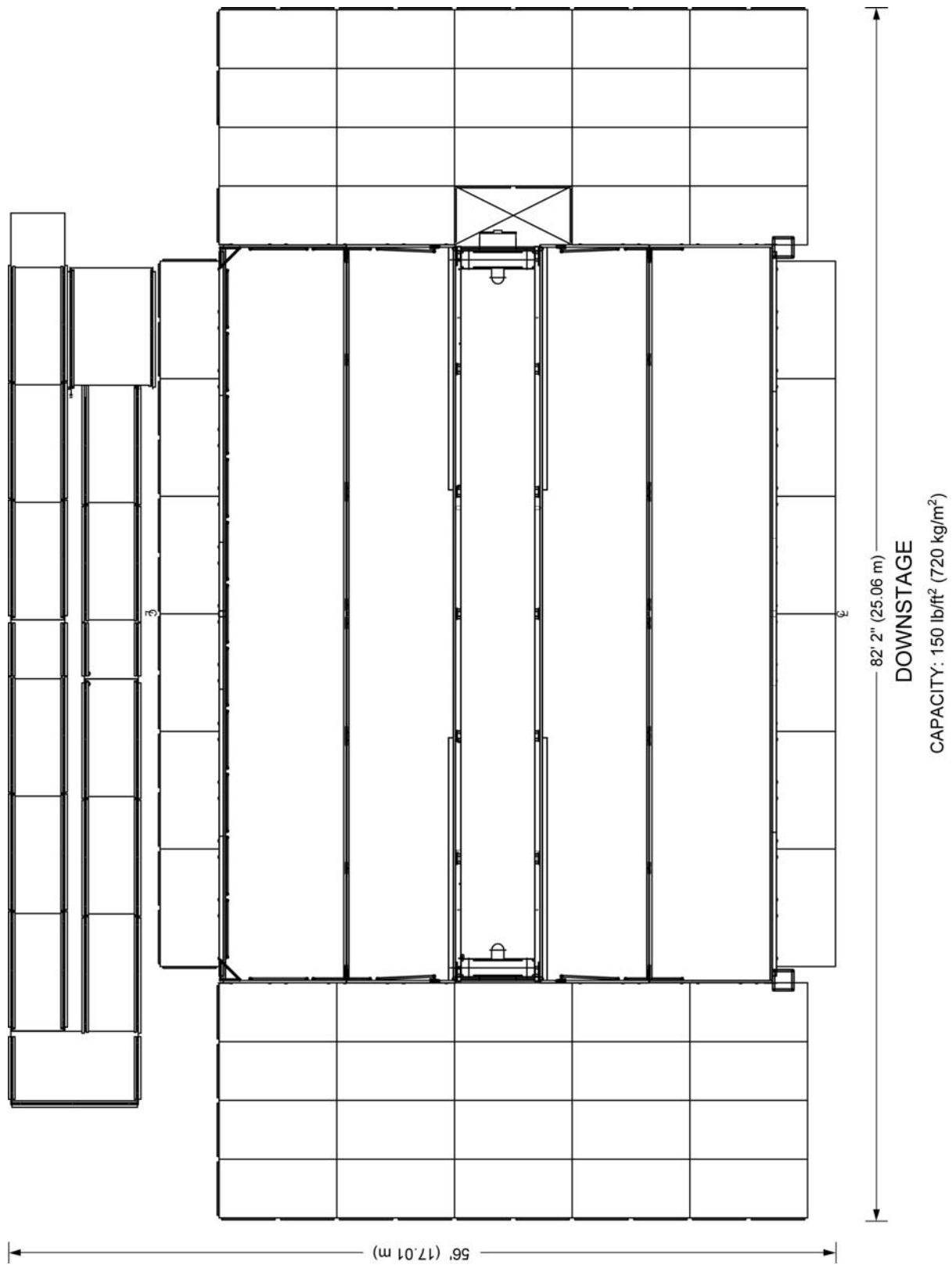
8. Technical Drawings
 8.2 Front View

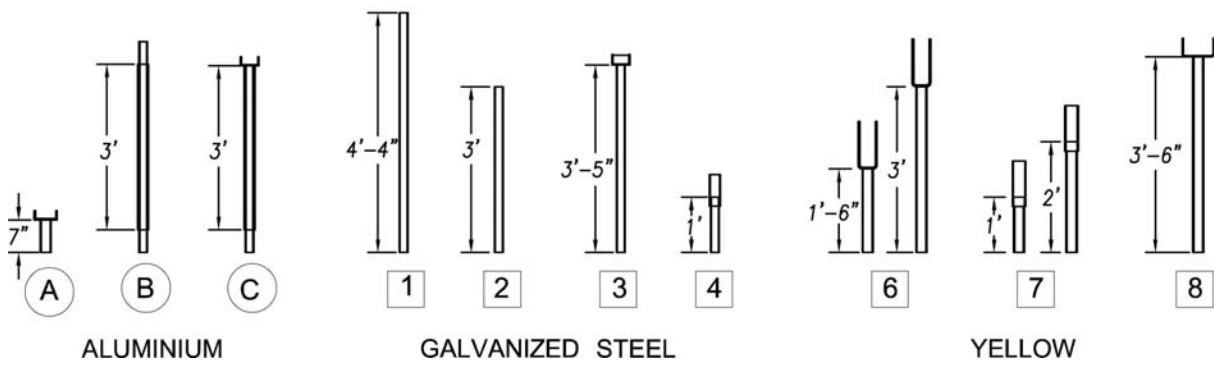
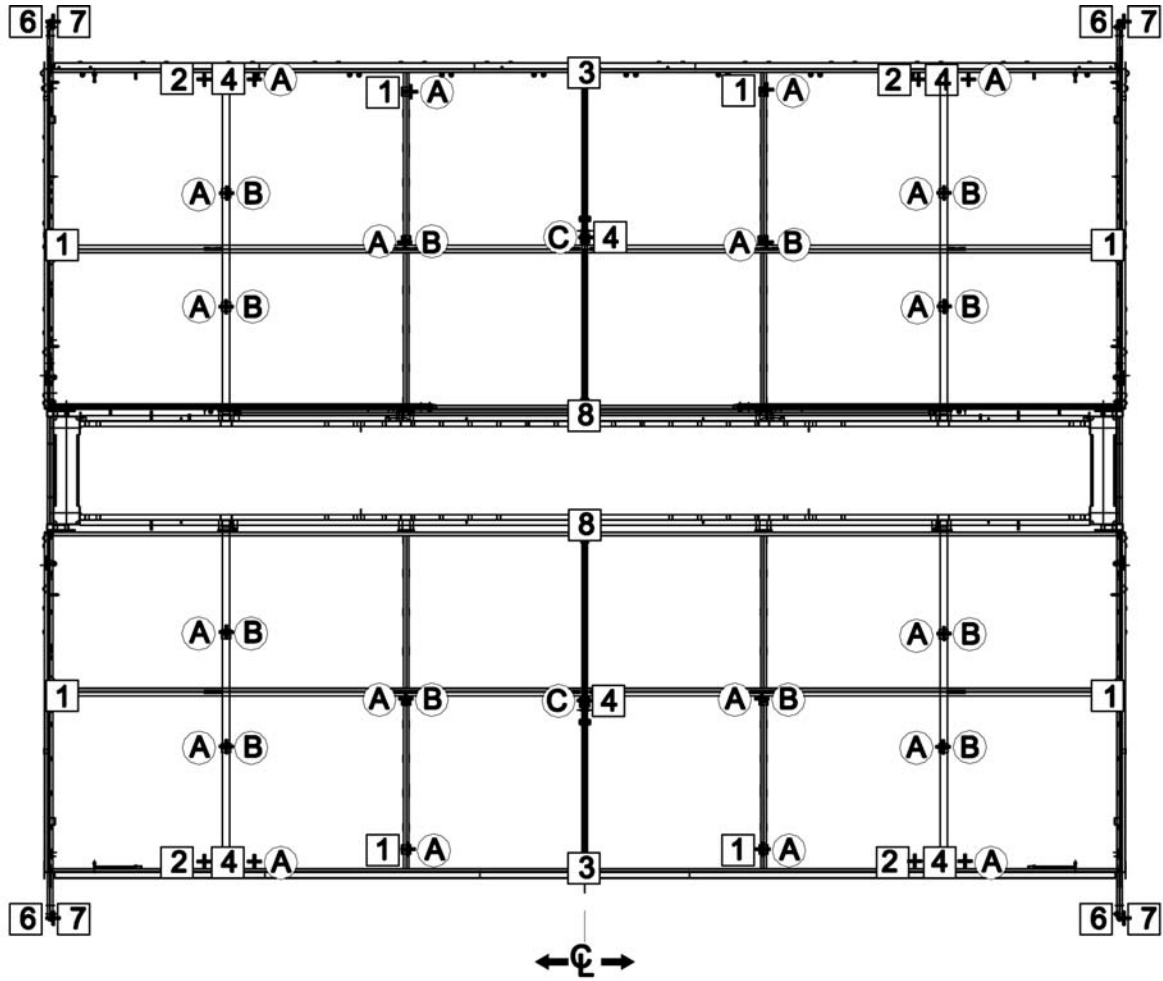


* Up to 22' 8" (6.91 m) with banner extension



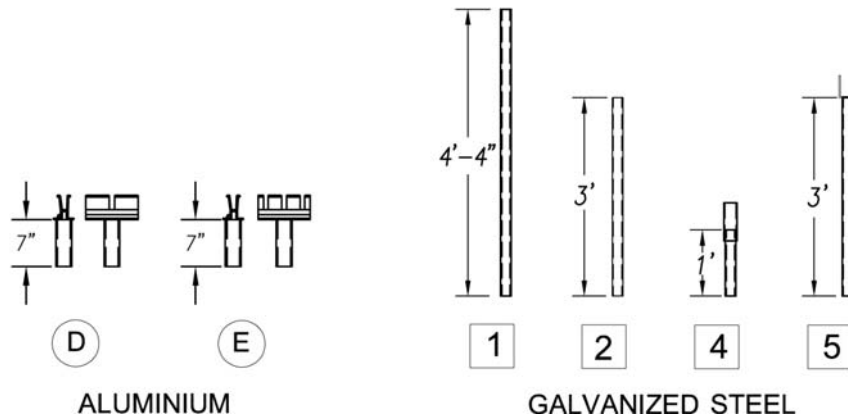
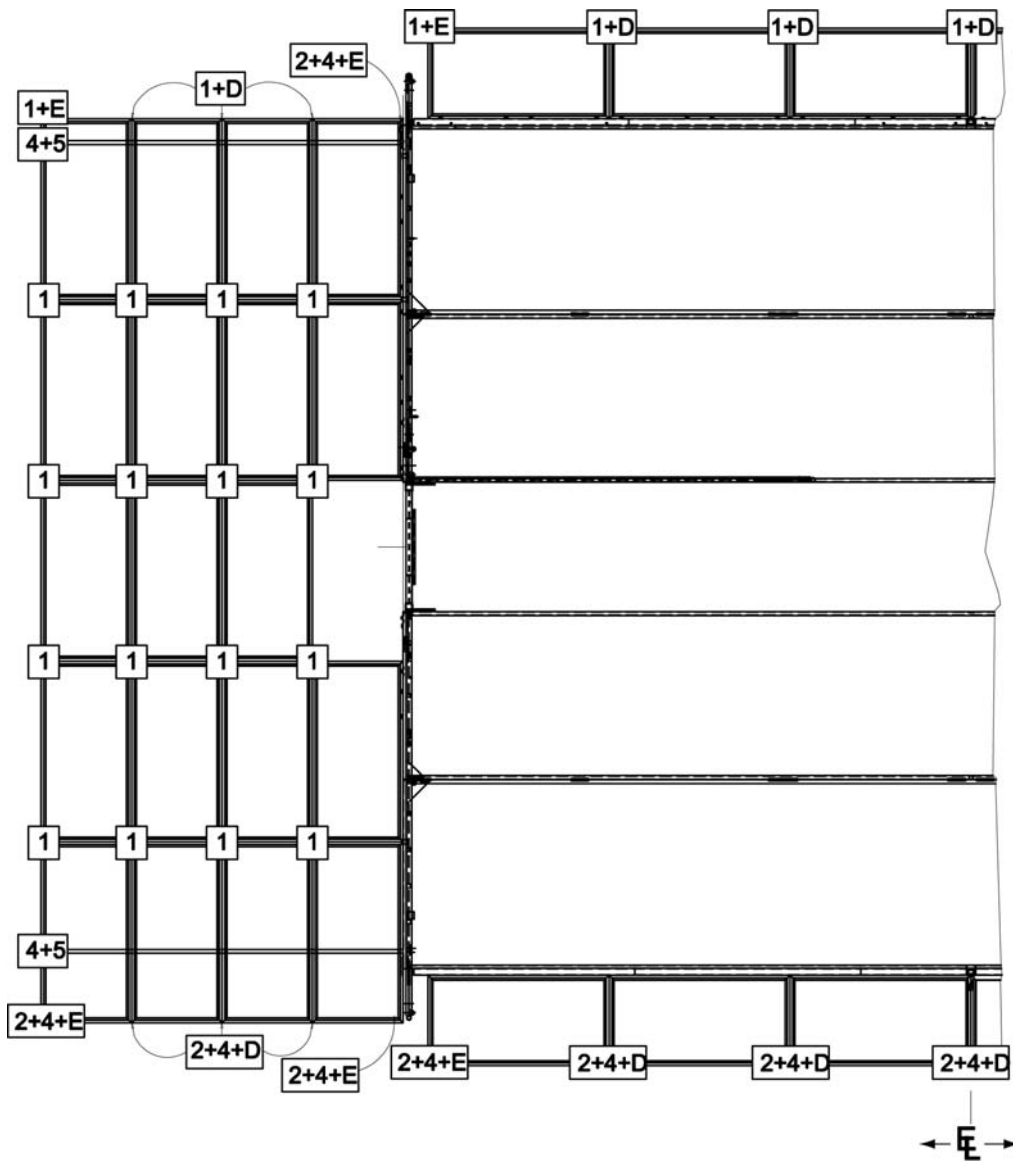
8.4 Floor View





8. Technical Drawings

8.6 Platform Support Chart



A thorough understanding of the inter-related loadings shown in this rigging plan is needed in order to safely use this mobile stage roof and to take full advantage of the many rigging opportunities it offers.

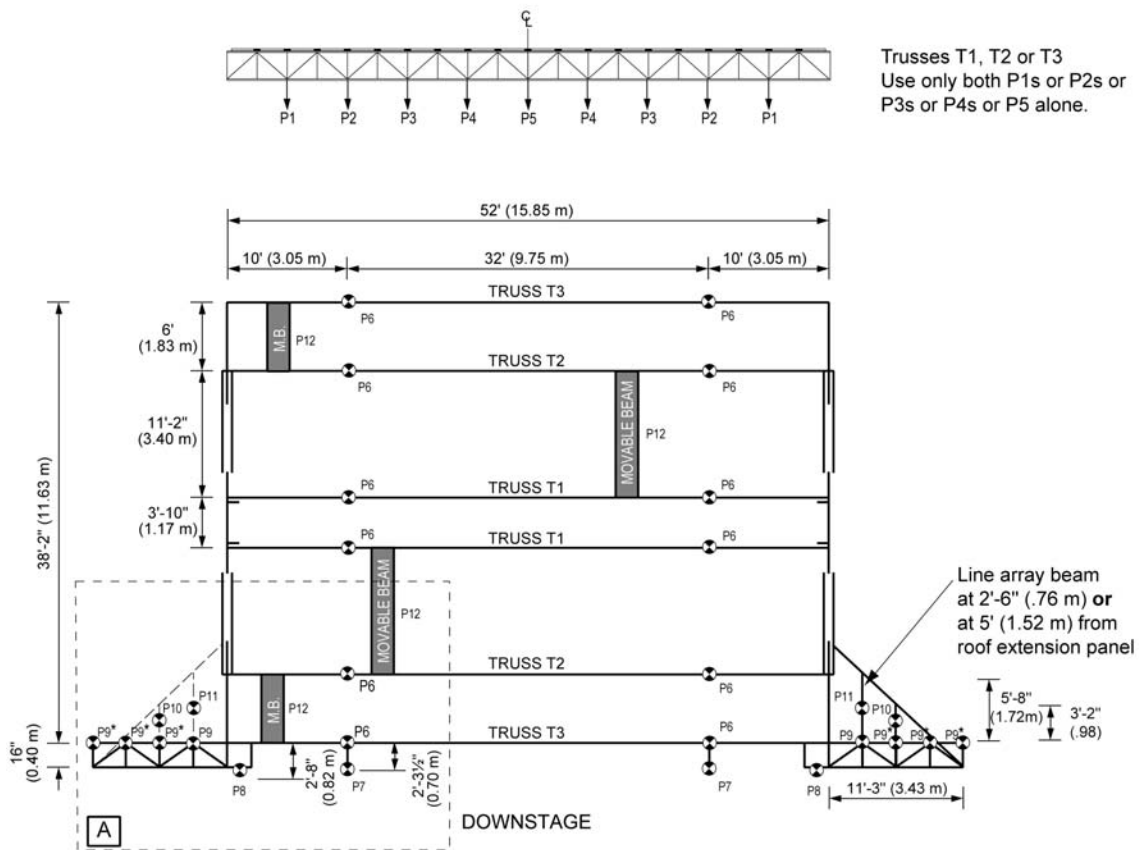
This mobile stage roof offers a variety of rigging options with regard to load capacity, placement and type.

There are trusses, front overhang rigging points, side overhang rigging trusses, line array rigging beams and movable rigging beams.

This rigging plan locates and defines these rigging features, includes load capacity for each and describes maximum combinations of loads amongst features.

Take note of exclusions, maximum sub-totals in a group, load balance requirements and maximum rigging load on roof.

The maximum load on the roof is less than the sum of the maximum load on each rigging feature.



MAXIMUM LOAD BEARING CAPACITY: 24000 lbs (10910 kg)

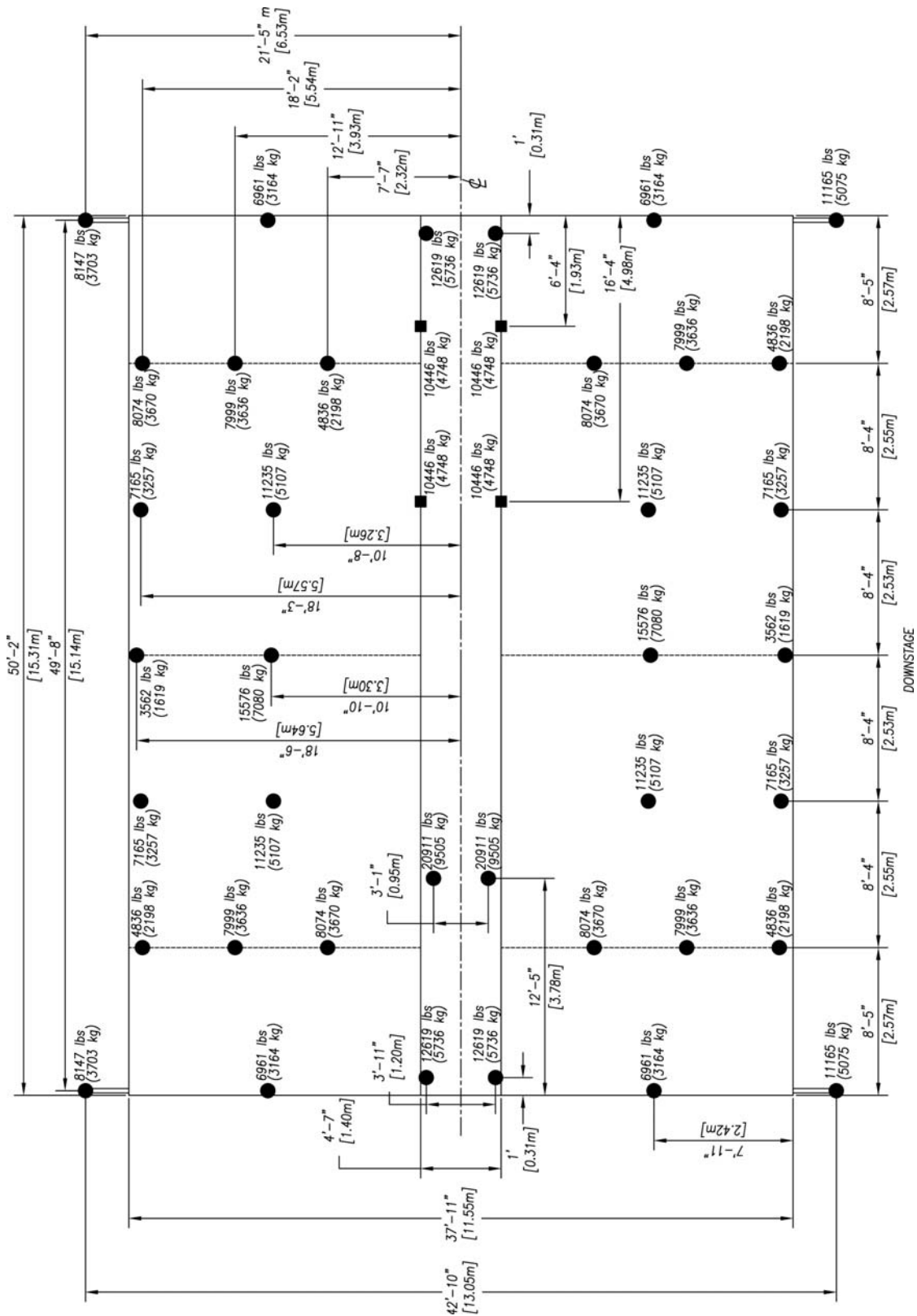
MAXIMUM LOAD CAPACITY		
Point No.	Kg	Lbs
P10 & P11	1814	4000
P1, P2, P6, P8, P9 & P12	1000	2200
P3 & P5	680	1500
P4 & P7	454	1000

Rigging Restrictions:

- The sum of all rigging points shown in area A of both sides of roof panels cannot exceed 9 000 lbs (4090 kg).
- Total load of P9s must not exceed 6600 lbs (2995 kg) per side, 6000 lbs (2722 kg) if using P9*s.
- Total load of P6s on T3 and P7s must not exceed 4400 lbs (2000 kg).
- Total load of P10 or P11 must not exceed 4000 lbs (1814 kg) per side on 1 or 2 points.
- No additional load can be rigged on side overhang truss when using line array system.
- * If using only these P9s, never load more than 2000 lbs (908 kg) per point.

Figures are nominal.

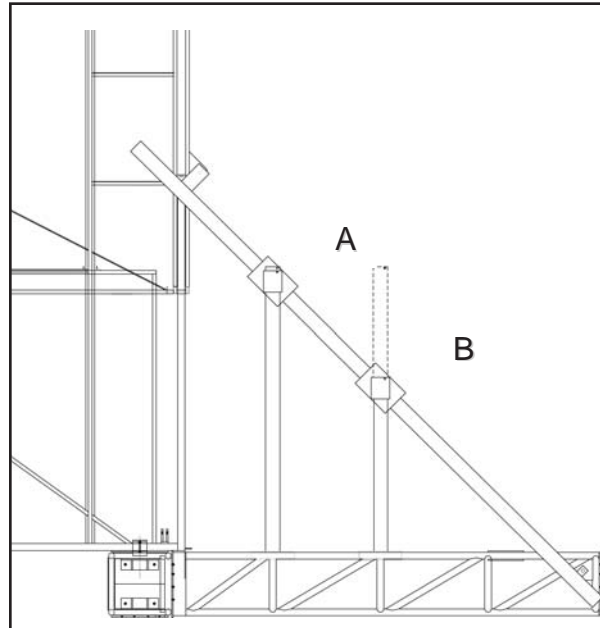
8.8 Ground Support Capacity



9.1 Installing Line Array Rigging System

9.1 Installing Line Array Rigging Beams

- Bolt diagonal support to front right corner of side overhang truss and to downstage roof panel.
- Select position of line array beam, either A or B as indicated in drawing.
- Adjust line array holder. Pin and secure.
- Slide line array beam in holder.
- Sit front of line array beam on beam member of side overhang truss. Pin and secure.

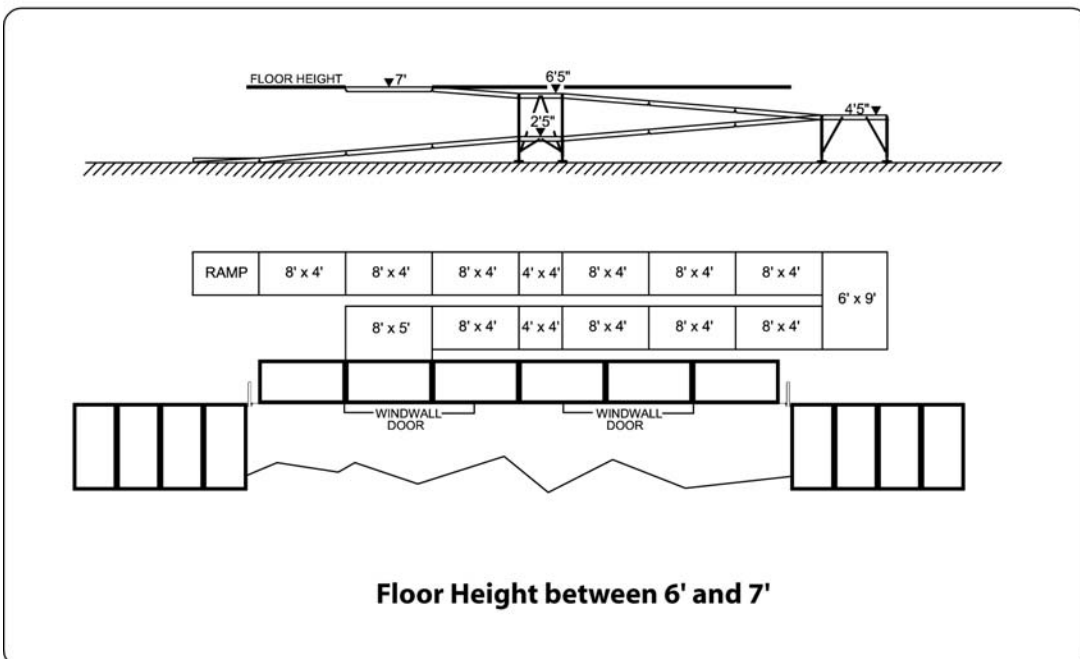
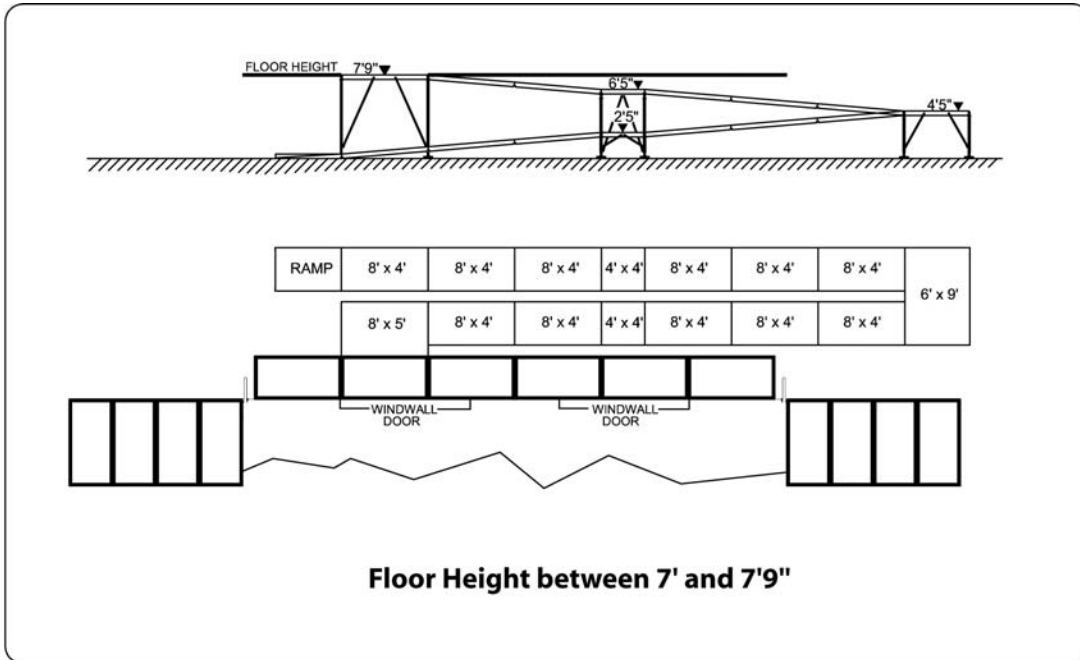


9. Options

9.2 Installing Disabled People Access Ramp

9.2 Installing Disabled People Access Ramp

- Start installation from stage floor using diagram that corresponds to floor height.
- Built ramp section by section. Pin braces of horizontal platforms. Install guardrails.



9.2 Installing Disabled People Access Ramp

