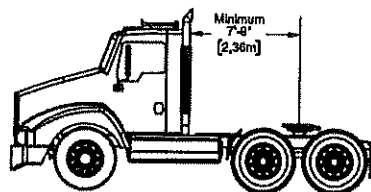
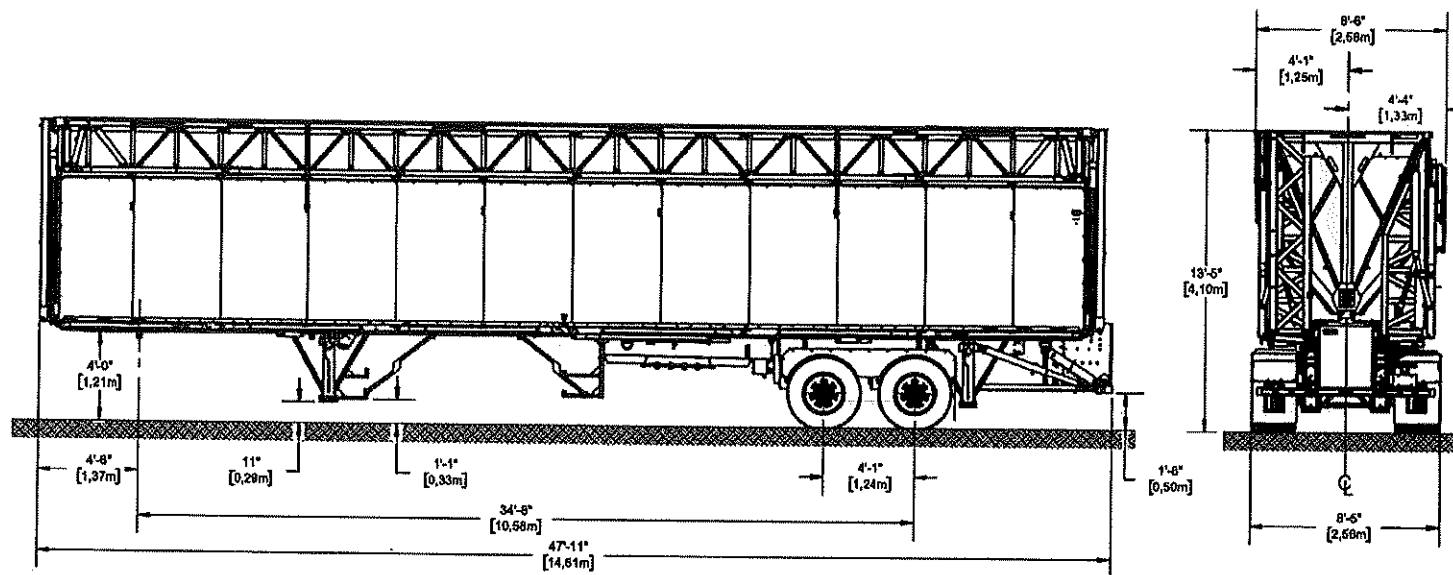




RENTAL DIVISION - DIVISION LOCATION

**SAM450**

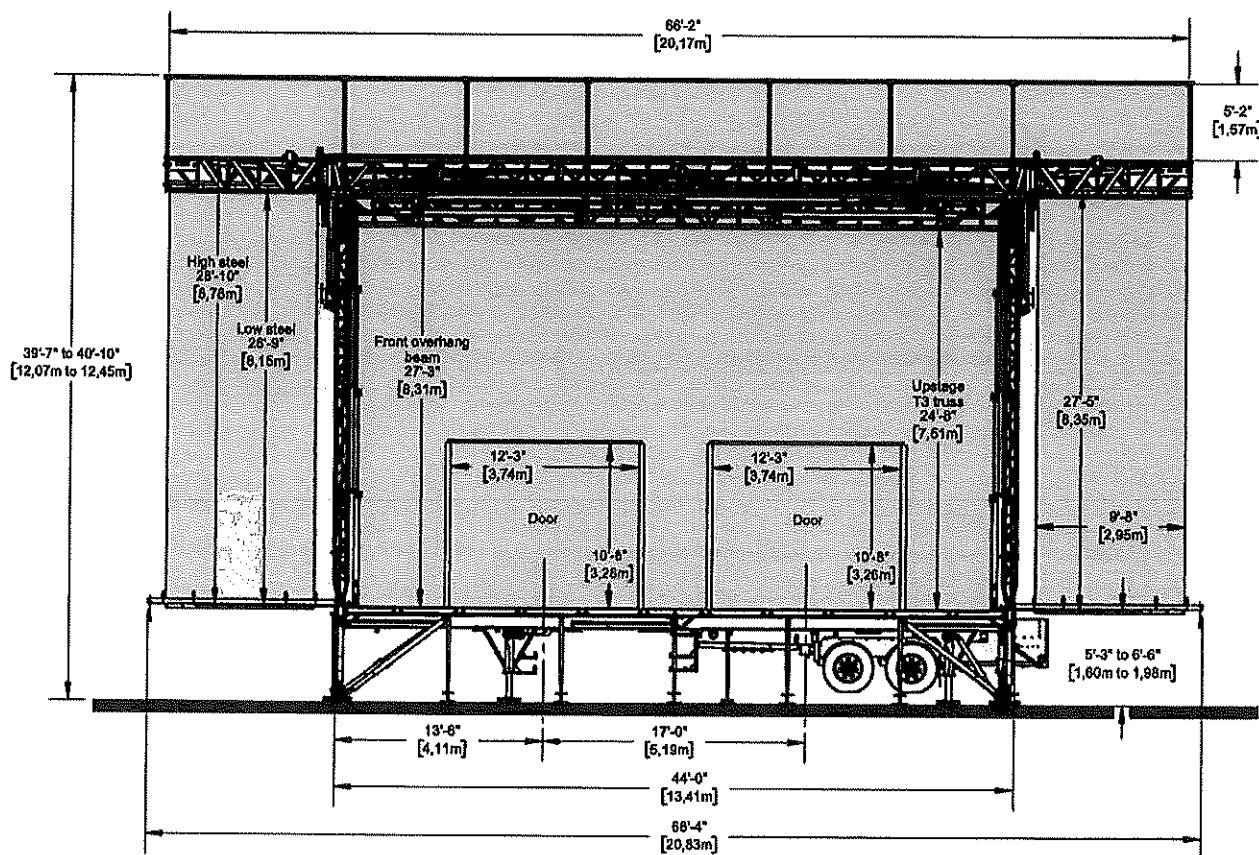
**TECHNICAL DRAWINGS**  
2020



Mass SAM450	Unladen		Maximum Capacity	
	Lbs	Kg	Lbs	Kg
Total Mass	42480	19265	58000	26304
Mass on Axle	27220	12345	34000	15420
Mass on Hitch	15260	6920	24000	10884

Drawings may show stage equipped with optional accessories. May be sold separately.

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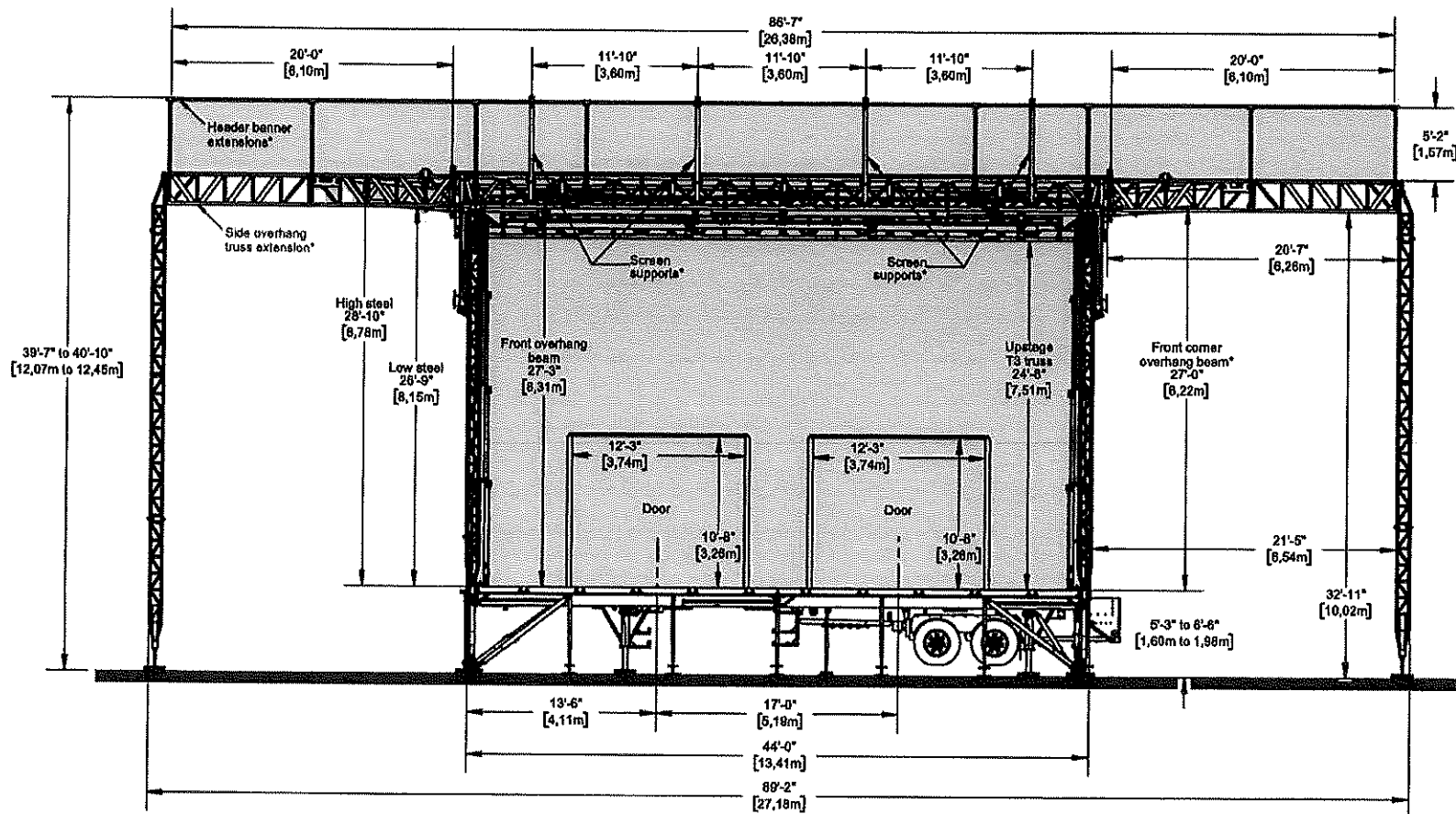
WINDWALL

BANNER (For dimensions, please refer to Banner Book)

\* Optional items, see stage specifications.

Drawings may show stage equipped with optional accessories. May be sold separately.

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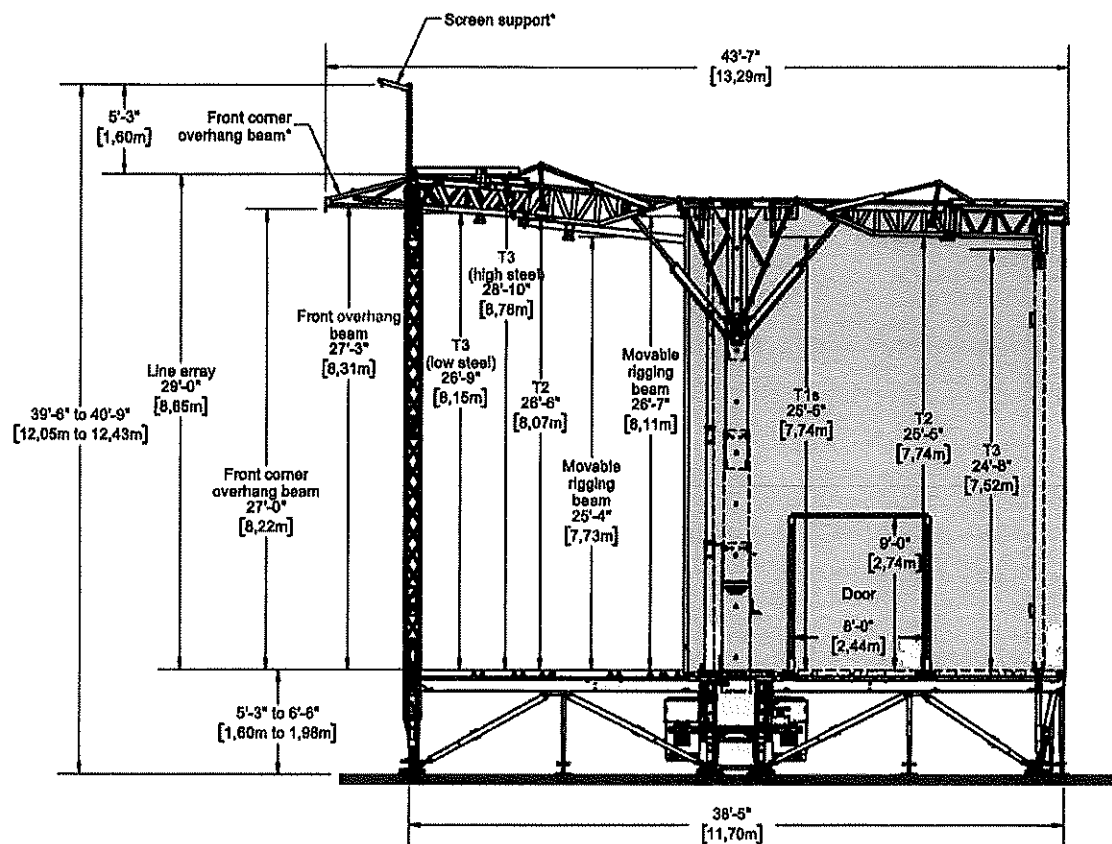
WINDWALL

BANNER (For dimensions, please refer to Banner Book)

\* Optional items, see stage specifications.

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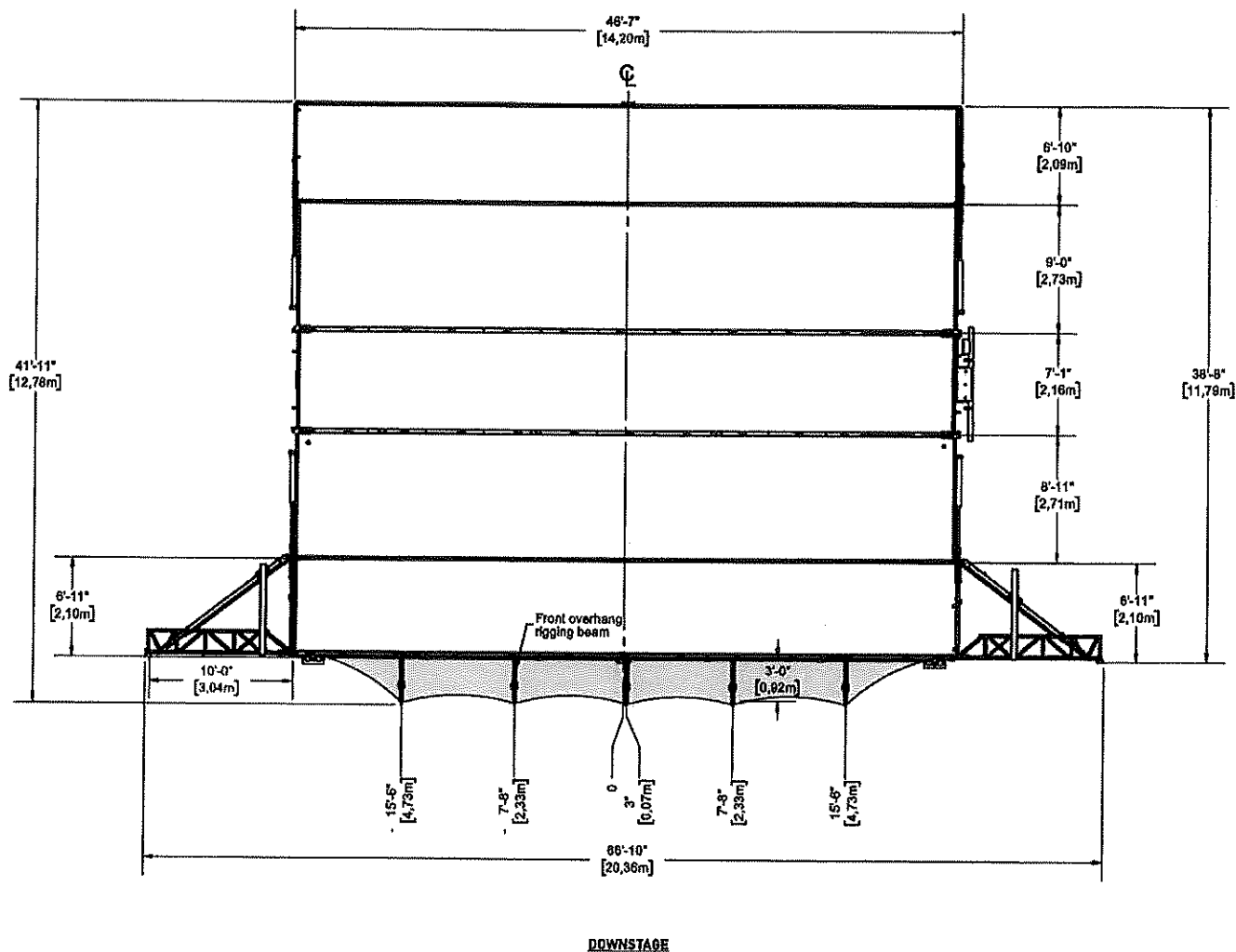
WINDWALL

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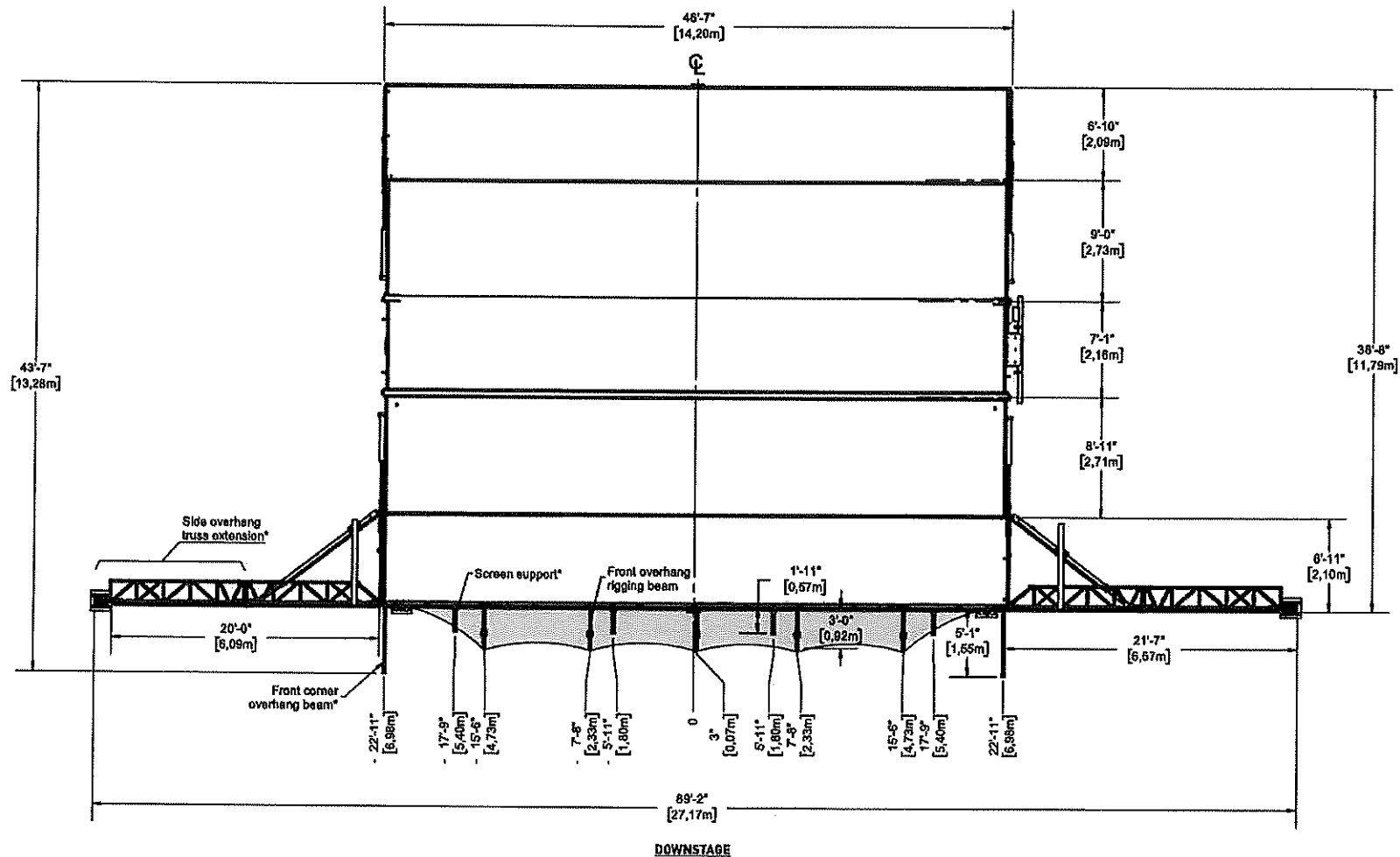
tech\_drawings-I-SAM450-001-2020



WINDWALL

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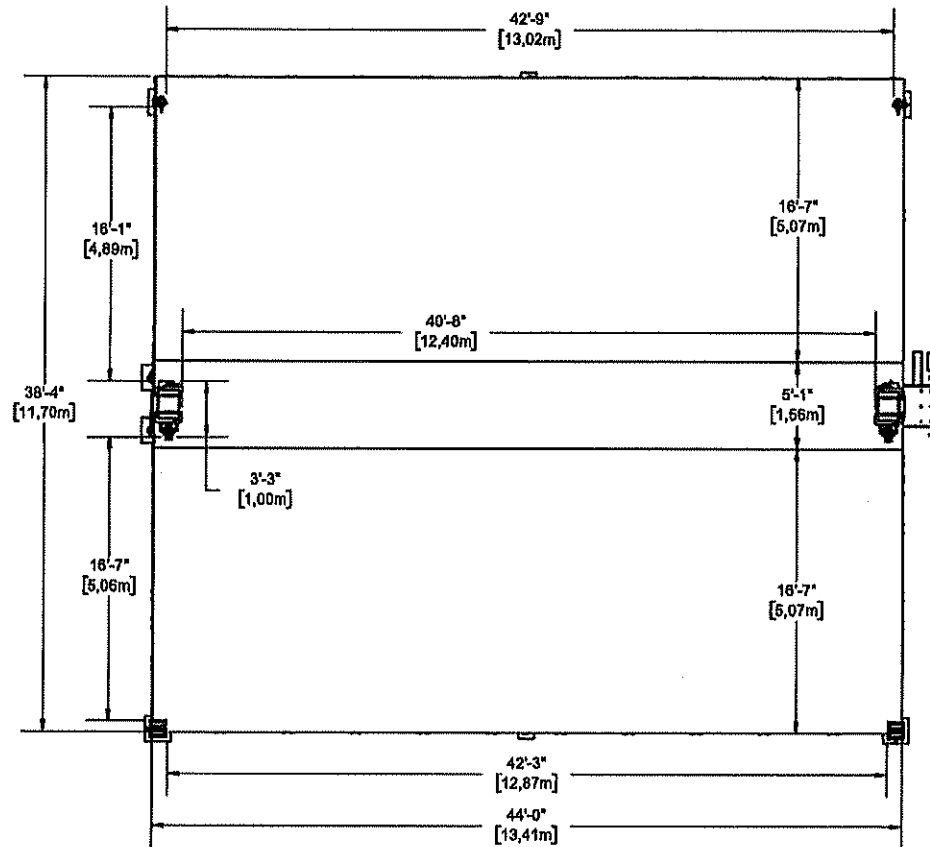


WINDWALL

NOTE: Configuration with Side Overhang Beam Extensions requires installation with ballasts. See BALLAST VIEW for details.

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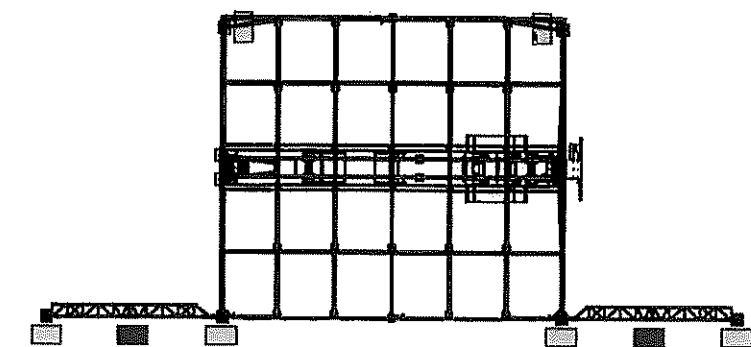


**DOWNSTAGE**

**FLOOR CAPACITY: 150lbs/ft<sup>2</sup> (732kg/m<sup>2</sup>)**

Drawings may show stage equipped with optional accessories. May be sold separately.

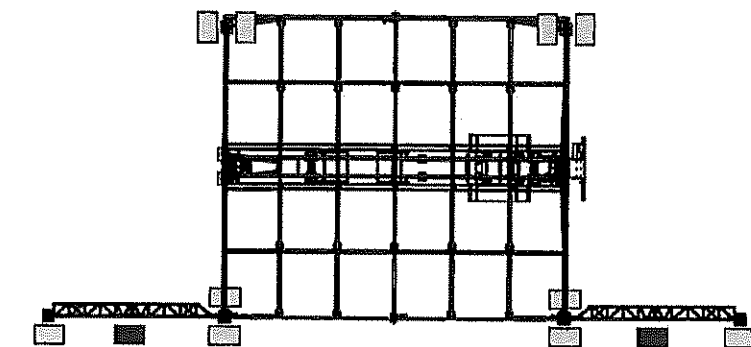
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#### SMALL SCREENS OR RETRACTABLE BANNERS

- Small screens with an effective surface of less than 240 ft<sup>2</sup> (22.30 m<sup>2</sup>).
- If retractable, banners may have an effective surface of up to 480 ft<sup>2</sup> (44.59 m<sup>2</sup>).
- Stage ballasts are mandatory and must be installed at locations shown.
- Each ballast must have a minimum weight of 2000 lb (907 kg).

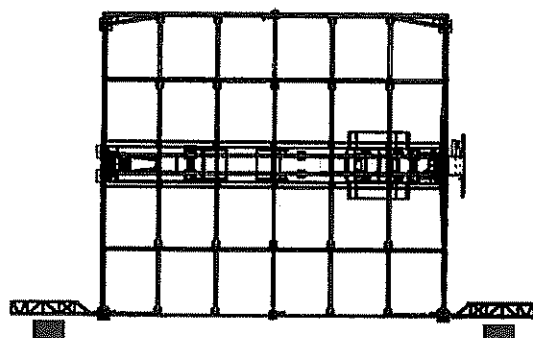
■ ADDITIONAL OPTIONAL BANNER BALLAST



#### FULL SCREENS OR NON-RETRACTABLE BANNERS

- Full screens or non-retractable banners with an effective surface of 240 ft<sup>2</sup> (22.30 m<sup>2</sup>) to 480 ft<sup>2</sup> (44.59 m<sup>2</sup>).
- Maximum screen or banner dimensions (W x H) are 20' x 24' (6.10m x 7.32m).
- Stage ballasts are mandatory and must be installed at locations shown.
- Each ballast must have a minimum weight of 2000 lb (907 kg).

■ ADDITIONAL OPTIONAL BANNER BALLAST



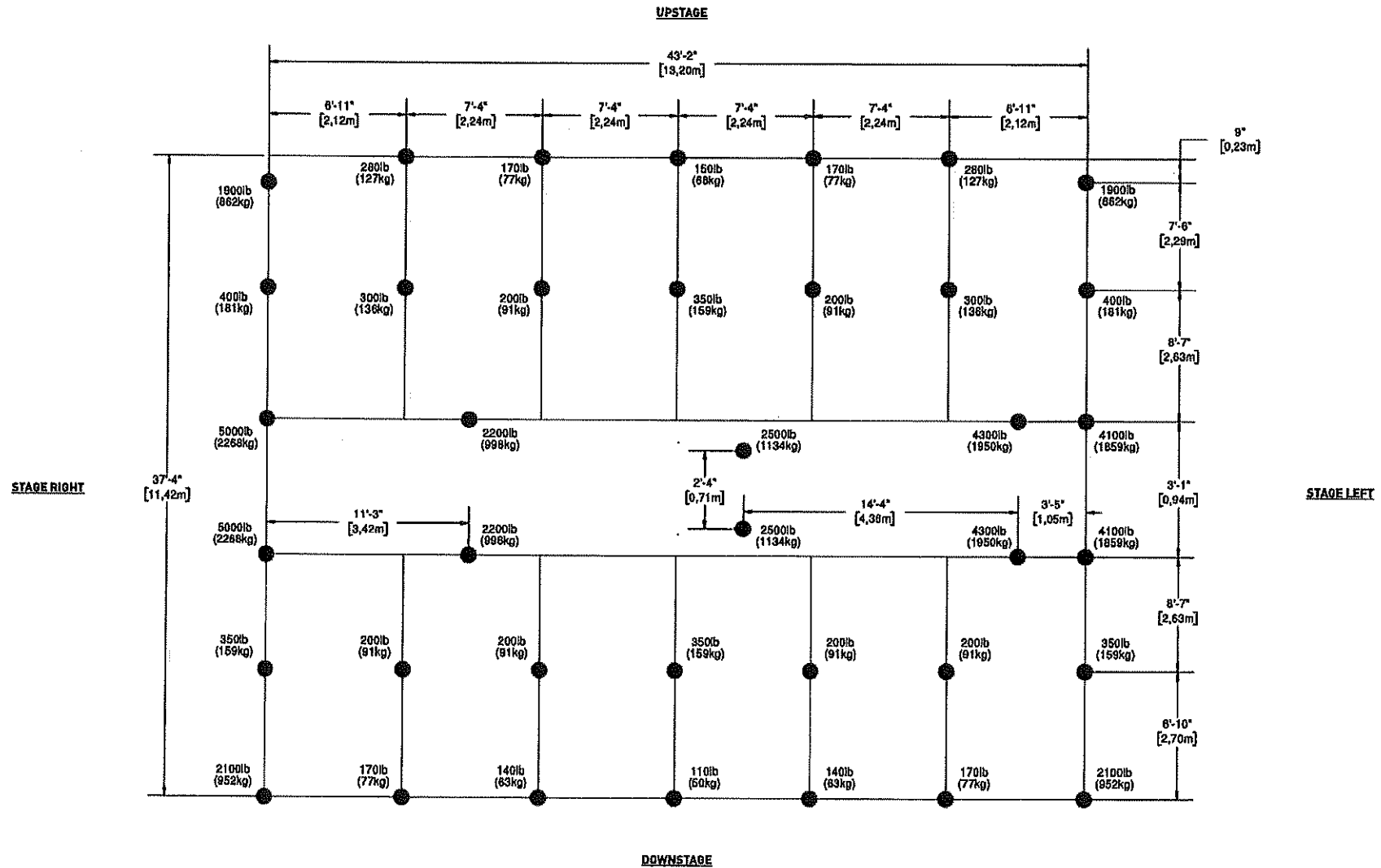
#### STANDARD CONFIGURATION

- No ballast required.

■ ADDITIONAL OPTIONAL BANNER BALLAST

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● FLOOR STABILIZERS, EXTENSIONS AND LEVELLING JACKS

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**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 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.

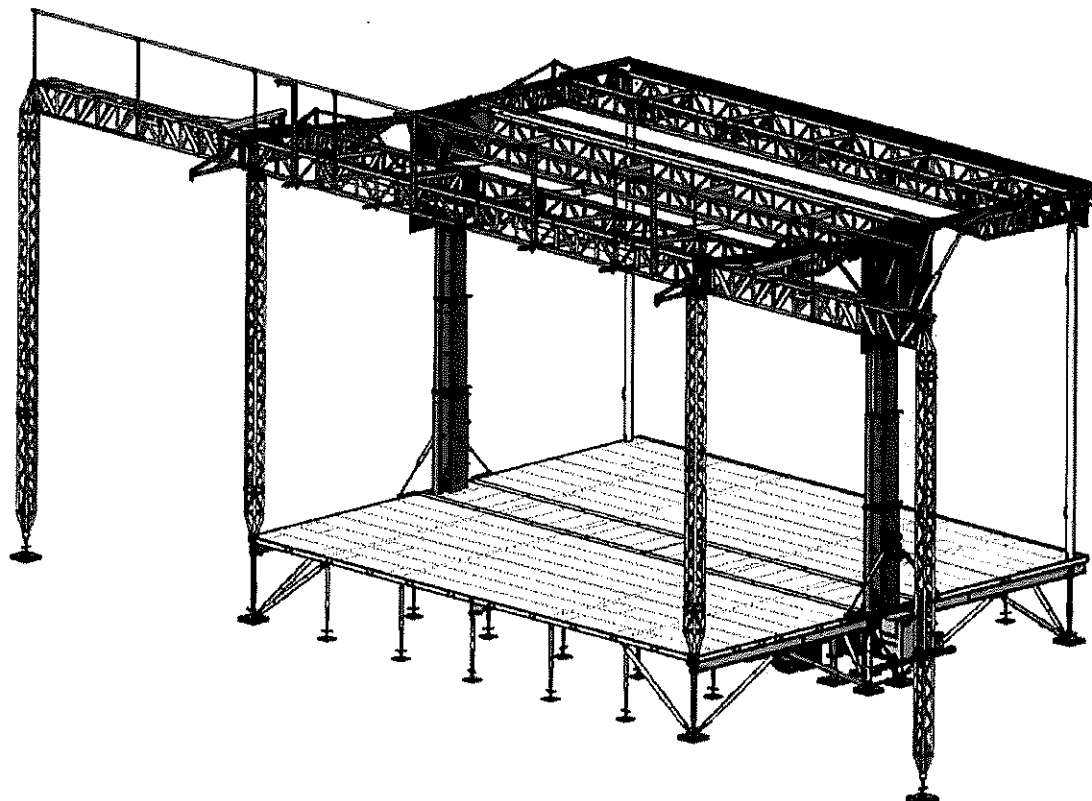
There are rigging pipes, trusses, roof rigging points and slide overhang rigging trusses.

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, maximum lifting capacity of roof 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.

**Refer to Operator's Manual for procedures in regards to proper setup and setup methods of the stage and its options.**



The information contained in the current document is final must be considered as such. They are derived from design briefs and summarized to help the user plan rigging configurations safely. It is therefore mandatory that the user follows and respects the capabilities and limitations described herein. Overloading of stage components above their specified capacity may result in structural failure, equipment damage, injury or death. Stageline cannot be held responsible if the user, himself or subcontractors under his supervision, derogate from this document and/or the approved rigging plan. If a desired configuration cannot meet these requirements, the user must contact Stageline to analyse the case and obtain further instructions. Special restrictions and limitations may apply.

Certain authorities may require that a rig configuration plan, signed and sealed by a recognized member of a professional body, be available to allow the stage to be setup on their territory. This document was not intended to and cannot be used or considered as an official document or certificate to serve this purpose. Contact responsible authorities or Stageline for details.

Drawings may show stage equipped with optional accessories. May be sold separately.

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#### RIGGING RESTRICTIONS:

- MAXIMUM LOAD BEARING CAPACITY: 66 000 lb (29 937 kg).  
Capacity with optional side overhang truss extension. All corner posts must be installed and pinned, and telescopic columns pinned and secured.
- The sum of all rigging points in area "A" cannot exceed 6000 lb (2722 kg).
- The sum of all rigging points in area "B" cannot exceed 10 000 lb (4535 kg).
- Capacity of downstage Truss T3 must take into account loads on points P24 and P33 to P35.
- Capacities of downstage and upstage Trusses T1 must take into account loads on points P25.
- Capacities of downstage and upstage Trusses T2 and T3 must take into account loads on points P24 and movable beams.
- Movable beams can be installed at any available location in the roof. Loads on movable beams must be transferred to their supporting trusses and/or points.
- Do not rig on overhang portion of the movable beams and the line arrays.
- For each front overhang beam, use either P33 or P34.
- For additional rigging details for the side overhang trusses and/or the optional side overhang truss extensions, refer to appropriate pages in this rigging plan.

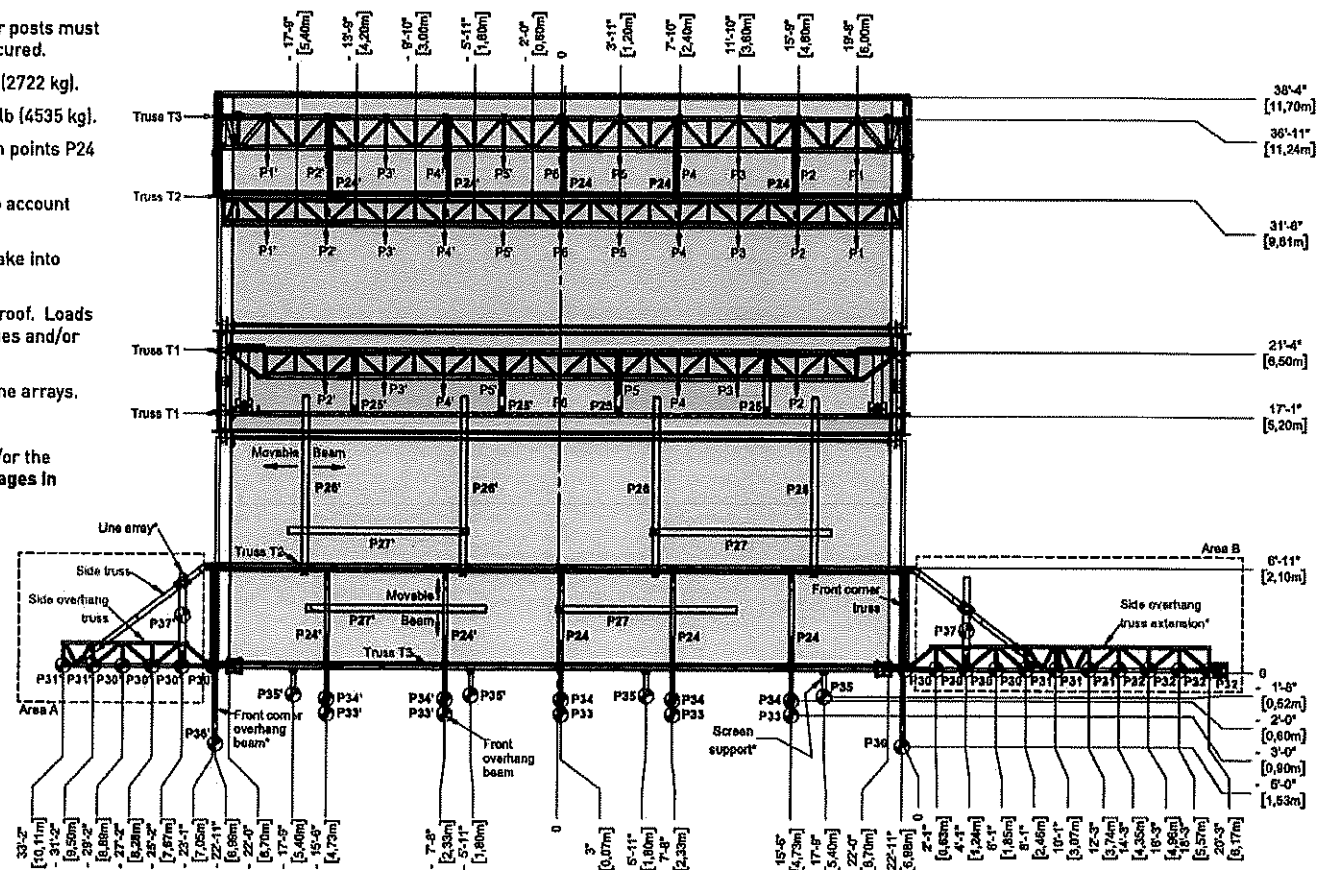
#### LIFTING RESTRICTIONS

- MAXIMUM LIFTING CAPACITY IS 4000 lb (1814 kg).
- Maximum asymmetric load difference between front and rear of stage is 1750 lb (794 kg). This includes loads on T1 trusses.
- Optional side overhang truss extensions and posts total empty weight is 1000 lb (454 kg). This weight must be considered as an additional load during lifting operations.
- Maximum load on each roof wing is 2000 lb (907 kg).
- Load must be symmetrically distributed between right and left side of stage.

#### NOTES:

- Line array can be positioned at 2'1" (0.63 m) or 4'1" (1.24 m) from roof extension panel.
- Movable beams must be attached to truss rigging points.

\* Optional items, see stage specifications.

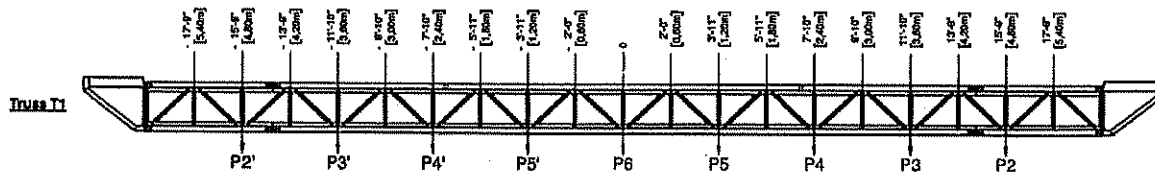


ROOF

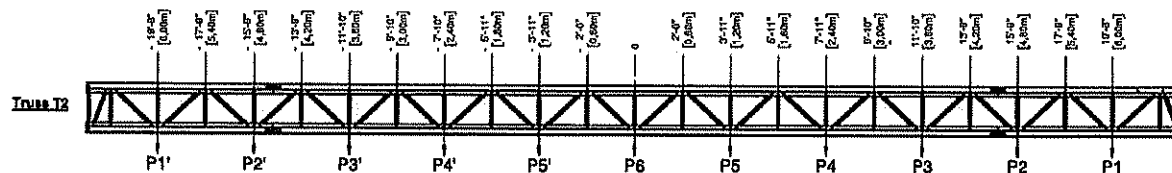
FLOOR

Drawings may show stage equipped with optional accessories. May be sold separately.

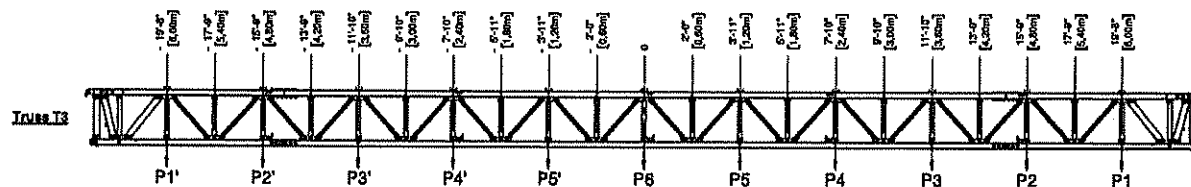
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$$\text{Truss T1}^{**}: \frac{\text{Load P2}}{\text{Capacity P2}} + \frac{\text{Load P3}}{\text{Capacity P3}} + \frac{\text{Load P4}}{\text{Capacity P4}} + \frac{\text{Load P5}}{\text{Capacity P5}} + \frac{\text{Load P6}}{\text{Capacity P6}} \leq 1.00$$



$$\text{Truss T2}^{**}: \frac{\text{Load P1}}{\text{Capacity P1}} + \frac{\text{Load P2}}{\text{Capacity P2}} + \frac{\text{Load P3}}{\text{Capacity P3}} + \frac{\text{Load P4}}{\text{Capacity P4}} + \frac{\text{Load P5}}{\text{Capacity P5}} + \frac{\text{Load P6}}{\text{Capacity P6}} \leq 1.00$$



$$\text{Truss T3}^{**}: \frac{\text{Load P1}}{\text{Capacity P1}} + \frac{\text{Load P2}}{\text{Capacity P2}} + \frac{\text{Load P3}}{\text{Capacity P3}} + \frac{\text{Load P4}}{\text{Capacity P4}} + \frac{\text{Load P5}}{\text{Capacity P5}} + \frac{\text{Load P6}}{\text{Capacity P6}} \leq 1.00$$

#### NOTE:

The downstage T3 truss has less capacity than the upstage T3 truss in anticipation of allowing additional rigging possibilities on that side.

\* Optional items, see stage specifications.

\*\* Valid for symmetric loads only. In other cases, contact Stageline for assistance.

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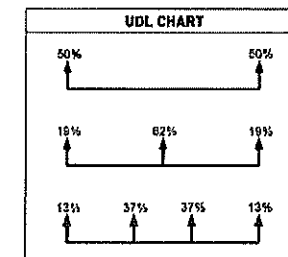
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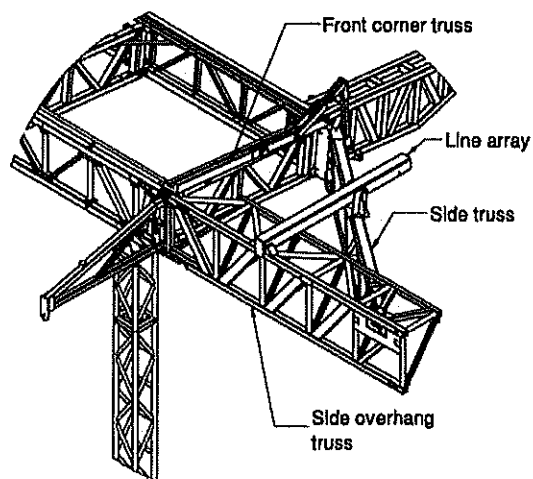
#### TRUSSES CAPACITY

	P1	P2	P3	P4	P5	P6
T1	N/A	3000 Lb 1360 Kg	3000 Lb 1360 Kg	2400 Lb 1089 Kg	2000 Lb 907 Kg	3000 Lb 1360 Kg
T2	3000 Lb 1360 Kg	3000 Lb 1360 Kg	3000 Lb 1360 Kg	2400 Lb 1089 Kg	2000 Lb 907 Kg	3000 Lb 1360 Kg
Upstage T3	3000 Lb 1360 Kg	3000 Lb 1360 Kg	3000 Lb 1360 Kg	3000 Lb 1360 Kg	3000 Lb 1360 Kg	4000 Lb 1815 Kg
Downstage T3	3000 Lb 1360 Kg	3000 Lb 1360 Kg	3000 Lb 1360 Kg	2700 Lb 1225 Kg	2400 Lb 1089 Kg	3000 Lb 1360 Kg

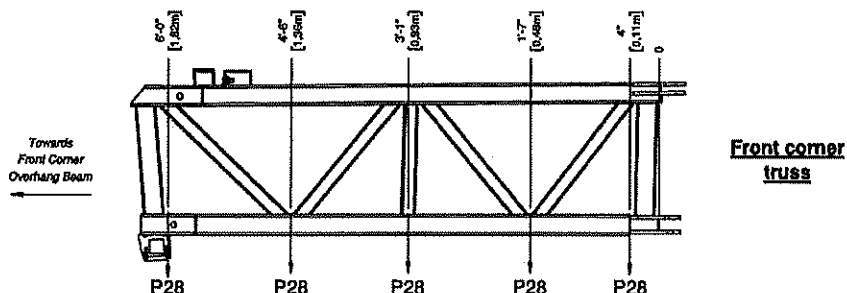
#### MAXIMUM LOAD CAPACITY

Point No.	Lbs	Kg
P24	2000	907
P25*	4000	1815
P26*, P27*	3000	1360
P28, P30, P31, P32*	2000	907
P33	650	295
P34	1000	454
P35*	1500	680
P36	3000	1360
P37*	4000	1815
P38	2000	907
P39	4000	1815
P40	2000	907

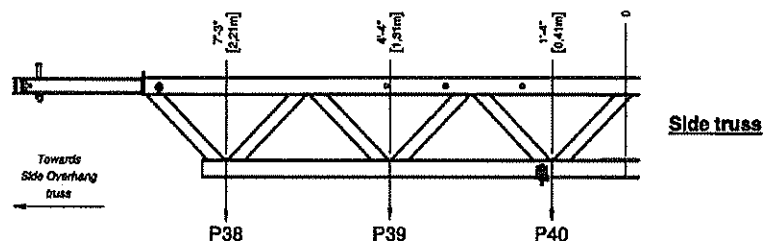




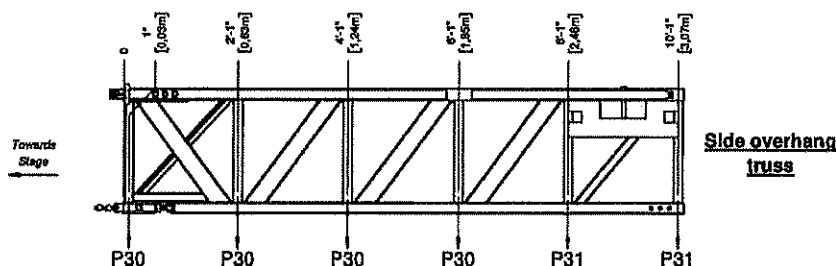
DETAIL A  
SCALE 1 : 50



Front corner truss



Side truss



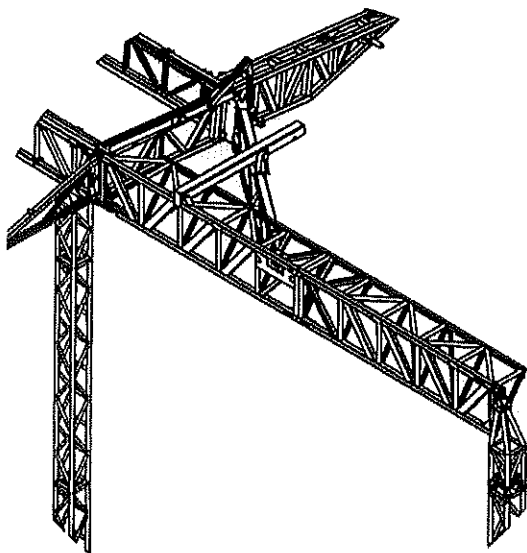
Side overhang truss

#### RIGGING RESTRICTIONS:

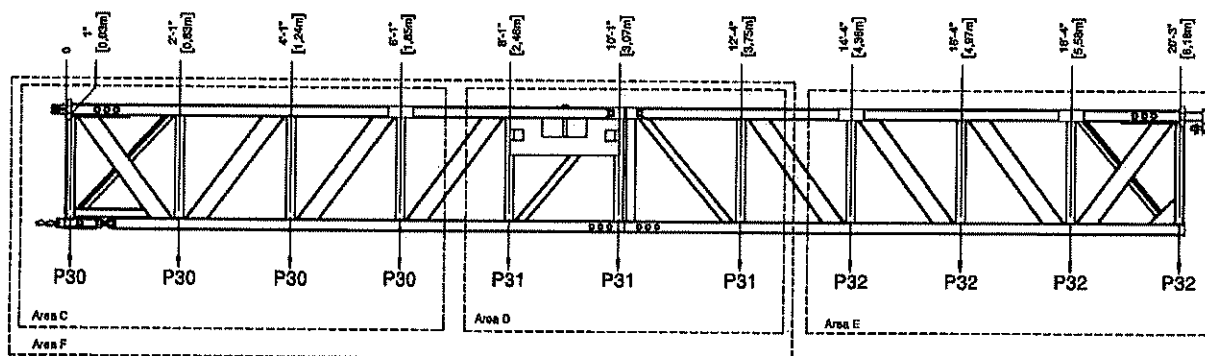
- Capacity of points P30 and P31 must take into account loads from points P38, P39 and the line array.
- Maximum total capacity of the front corner truss 2000 lb (907 kg).
- Maximum total capacity of side overhang truss is 6000 lb (2721 kg).
- For the side truss, only use either P38 or P39 or P40.
- If the side truss is used, the total maximum capacity of points P31 is 2000 lb (907 kg).
- Loads on the line array must be transferred to the side overhang truss and to the side truss.

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DETAIL B  
SCALE 1 : 60



#### RIGGING RESTRICTIONS:

- Maximum total capacity of the optional side overhang truss extension is 10 000 lb (4535 kg).
- Maximum total capacity per area:
  - Area C is 4000 lb (1814 kg).
  - Area D is 4000 lb (1814 kg).
  - Area E is 3000 lb (1360 kg).
  - Area F is 7000 lb (3175 kg).
- Capacity of points P30 to P32 can be raised to 2500 lb (1134 kg) when the side overhang truss extension is used.

#### NOTES:

- These rigging instructions are valid only for the optional side overhang beam extensions.
- Optional side overhang beam extensions require ballast weights to be installed. Refer to drawing BALLAST VIEW for details.

Drawings may show stage equipped with optional accessories. May be sold separately.

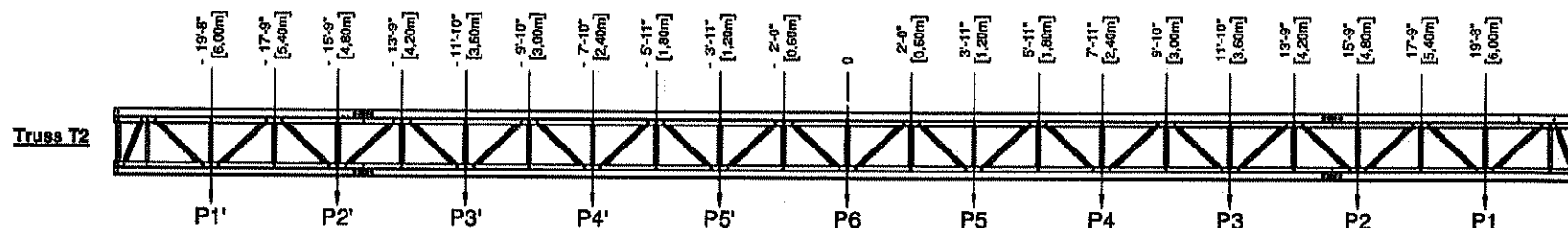
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### WHEN CALCULATING THE LOAD ON A SAM450 TRUSS, USE FOLLOWING METHOD.

Each truss in the roof must be visualized as 2 trusses put together that share a center point.

**Examples:** Truss T2 on a SAM450.

Points from left to right are P1', P2', P3', P4', P5', P6, P5, P4, P3, P2, P1. We will only verify loads on 1 side of the truss, Meaning P1 thru P6.



#### CALCULATION EXAMPLE #1:

1 lighting truss on 2 motors, total uniformly distributed weight of the truss is 4000lbs.

Each motor will be hung from the P1 points.

- $0.50 \times 4000$  (50% of weight, see UDL chart) / 3000 (the capacity of the P1 on the T2 truss) = 0.67
- $0.67 = 67\%$ , as 1.00 would equal 100 %.

So the T2 truss is at 67 % of its total capacity.

#### CALCULATION EXAMPLE #2:

1 lighting truss on 3 motors, total uniformly distributed weight of the truss is 4000 lbs. The motors will be hung from P1', P6, P1.

- **P1**  
 $0.19 \times 4000$  (19% of weight, see UDL chart) / 3000 (capacity P1) = 0.25, so this one point will use 25 % of the truss capacity.
- **P6**  
 $0.62 \times 4000$  (62% of weight, see UDL chart) / 3000 (capacity P6) = 0.83, so this point will use 83% of the truss capacity.

Now that we have the loads for both points, we add them together to determine the total load on the truss.

$$0.25 + 0.83 = 1.08$$

So the T2 truss is at 108 % of its total capacity.

#### CALCULATION EXAMPLE #3:

1 lighting truss on 4 motors, total uniformly distributed weight of the truss is 4000lbs. The motors will be hung from P1', P4', P4 and P1.

- **P1**  
 $0.13 \times 4000$  (13% of weight, see UDL chart) / 3000 (capacity P1) = 0.17, so this one point will use 17 % of the truss capacity.
- **P4**  
 $0.37 \times 4000$  (37% of weight, see UDL chart) / 2400 (capacity P4) = 0.62.

Now that we have the loads for both points, we add them together to determine the total load on the truss.

$$0.17 + 0.62 = 0.79$$

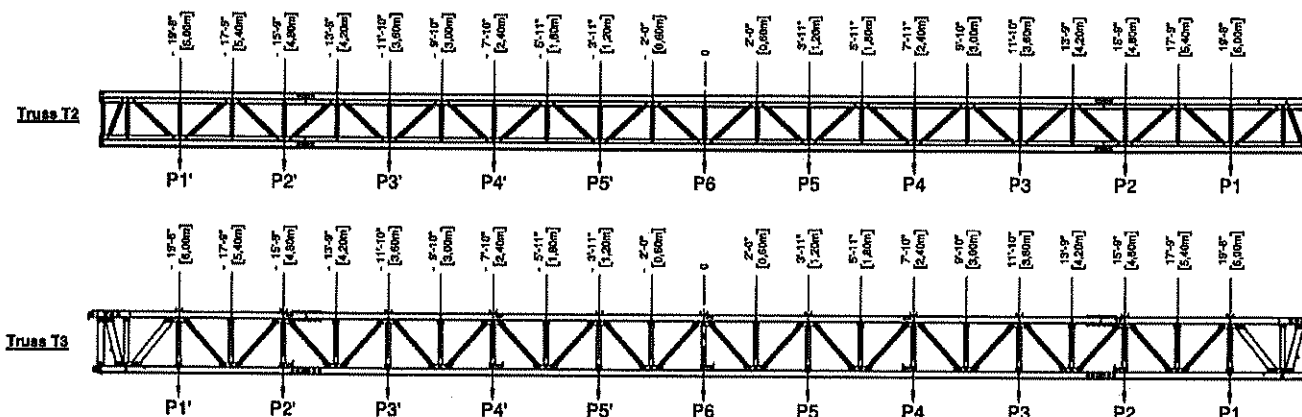
So the T2 truss is at 79 % of its total capacity.

### WHEN CALCULATING THE LOAD ON A SAM450 TRUSS, USE FOLLOWING METHOD.

Each truss in the roof must be visualized as 2 trusses put together that share a center point.

**Examples:** Trusses T2 and T3 on a SAM450.

Points from left to right are P1', P2', P3', P4', P5', P6, P5, P4, P3, P2, P1. We will only verify loads on 1 side of the truss, Meaning P1 thru P6.



### CALCULATION EXAMPLE #4:

1 screen on 4 motors, total uniformly distributed weight of the screen is 4000lbs. The motors will be hung 4' from the upstage T3 truss, on P24 points (movable beams), at P1', P4', P4 and P1.

#### - Weight distribution

T2 truss = 4' (distance from T3 truss) / 5'5" (distance between T2 and T3 trusses) = 0.74, so 74% of the weight from each motor will be distributed to the T2 truss,

T3 truss = 1'5" (distance from T2 truss) / 5'5" (distance between T2 and T3 trusses) = 0.26, so 26% of the weight will be distributed to the T3 truss.

#### - T2, P1

$0.13 \times 4000$  (13% of weight, see UDL chart)  $\times 0.74$  (weight transfer on T2) / 3000 (capacity P1) = 0.13, so this one point will use 13 % of the truss capacity.

#### - T2, P4

$0.37 \times 4000$  (37% of weight, see UDL chart)  $\times 0.74$  (weight transfer on T2) / 2400 (capacity P4) = 0.46.

Now that we have the loads for both points, we add them together to determine the total load on the T2 truss.

$$0.13 + 0.46 = 0.59$$

So the T2 truss is at 59 % of its total capacity.

#### - T3, P1

$0.13 \times 4000$  (13% of weight, see UDL chart)  $\times 0.26$  (weight transfer on T3) / 3000 (capacity P1) = 0.05, so this one point will use 5 % of the truss capacity.

#### - T3, P4

$0.37 \times 4000$  (37% of weight, see UDL chart)  $\times 0.26$  (weight transfer on T3) / 2700 (capacity P4) = 0.14.

Now that we have the loads for both points, we add them together to determine the total load on the T3 truss.

$$0.05 + 0.14 = 0.19$$

So the T3 truss is at 19 % of its total capacity.

#### - P24 @ P1

$0.13 \times 4000$  (13% of weight, see UDL chart) / 2000 (capacity P24) = 0.26, so this one point will use 26 % of the beam capacity.

#### - P24 @ P4

$0.37 \times 4000$  (37% of weight, see UDL chart) / 2000 (capacity P24) = 0.74, so this one point will use 74 % of the beam capacity.

So none of the points on the P11s exceed the movable beams capacity.

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