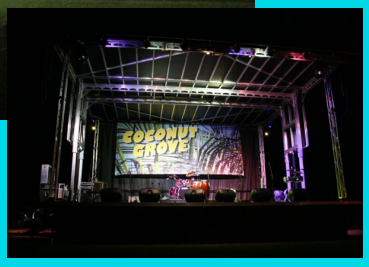
APEX 3224
MOBILE STAGE



mobilestages.miami / apex.miami

786-504-2369
786- 255-4949

Apex 3224 Mobile Hydraulic Stage

Rental/Sales/Service 786-504-2369 / 786-255-4949 apex.miami / mobilestages.miami

The APEX 3224 features a 32' wide x 24' deep x 17' tall stage area, with the capability of additional flooring, utilizing our connectable deck extensions. This stage comes standard with a swing-down gooseneck trailer hitch and/or king- pin style hitch, 2000# capacity speaker wing extensions, steel wheels, hydraulic out-riggers, all aluminum floors, all aluminum trailer frame construction, two dual axles, and a gas powered motor. Aluminum wheels, aluminum stairs, aluminum handrails, 70% blow-through back drops, 4' x 8' deck extensions, out-rigger pads, a wind deflector, an electric back-up motor.

Specifications:
Trailer:
Trailer Length- 34', Trailer Width 102" Trailer Height 12'2" Trailer Weight 14,150# Tongue Weight 1,800# Axle Rating 2x10,000#

Stage Deck:
Floor Size 32' by 23'8" Floor Height 46"-66" Ground to Roof 23'1"
Structure Floor Support Marine ply/Alum 16 - 8,000# jacks

Stage Roof:
Covered Roof 26'3" x 34' Deck to Roof Top 16'6"
Deck to Front-stage 17' I-beam Deck to Center 16'6" I-beam Deck to Back-stage I-beam 16'
Surface Fiberglass/Alum

Beam Loads:
Fly Bays 4@2,000each
Front-stage I-beam 1,000# evenly dist.
Center I-beams 2@750# evenly dist.
Back-stage I-beam 1,000# evenly dist.
PTR Cantilever 1,000 evenly dist.
Total Roof Capacity 14,500#
Fly Bay Bar Length 2'3"

Other:
Install Time 30min-1 hour with 2 guys
Hauling Mode- Gooseneck hitch

Power Source Secondary Power
5hp Honda Motor 1.5hp electric 110

REFLECTIONS PRODUCTIONS INC.

APEX XXXII SHOWMOBILE 3224 Contact: Thomas G. Mitchell 786-255-4949

APEX 3224 SPECIFICATIONS

Trailer:

Length	34'
Width	102"
Height	12'2"
Cargo Space	6'11" x 31'4"
Cargo Capacity	4050#
Trailer Weight	14150#
Tongue Weight	1800#
Rear Axle Rating	9100#
Front Axle Rating	9100#
GVWR	20000#

Stage Deck:

Floor Size	32' x 23'8"
Floor Height	46" to 66"
Ground to Roof	22'7"
Floor Rating	85" sq/ft
Plywood Rating	150# sq/ft
Structure	Marine Plywood/Alum
Floor Support	16-7000# Jacks

Stage Roof:

Covered Roof	26'3" x 34'
Deck to Roof Top	16'7"
Deck to Bottom of Ctr I-Beam	15'4"
Deck to Bottom of Downstage I-Beam	15'7"
Deck to Bottom of Upstage I-Beam	15'1"
Surface	Fiberglass/Alum
Roof Lifting Capacity	4500#
Fly Bays	1000# ea.
Downstage I-Beam	1000# evenly distr.
Upstage I-Beam	1000# evenly distr.
Center I-Beam	1000# evenly distr.
Total Roof Capacity	8000#
Slide Out Bar Length	2'3"

Other:

Personnel	2
Required Site Prep	None
Hauling Mode	Pick-Up Truck
Power Source	5 hp Honda Motor
Secondary Power	1.5 hp electric 110 Motor

Tires:

Tire Size	235/85/R16
Rims	16x6
Cold Tire Infl.	109 PSI

APEX STAGES, INC.

CLARK REDER ENGINEERING

3/7/2023

Progressive Products & Apex Stages
3305 Airport Circle
Pittsburg, KS 66762
Attn: Todd Allison

RE: Apex 3224 Mobile Stage
CRE Project No: 23.534.01

Dear Todd:

Clark Reder Engineering Inc. has completed our review of the Apex Stages 3224 Mobile Stage for conformance to the 2018 IBC as well as the 2021 IBC for general use in the United States. Our scope was to review the engineering calculations previously developed by Clark Reder Engineering in accordance with earlier versions of the International Building Code, ASCE 7, and the Aluminum Design Manual.

Our review confirms that the mobile stage structure requires no changes to the High Wind Action Plan or Allowable Loading criteria, which are included with this package. CRE has determined that the 3224 Apex Mobile Stage Unit represents a safe design in accordance with the structural provisions of the 2018 and 2021 International Building Code and is fit for use in all 50 states. Our assumption is based on the following:

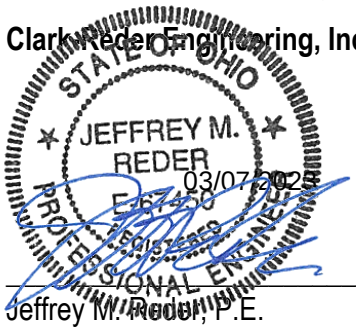
- The unit is built and used in accordance with the manufacturer's guidelines.
- The unit is routinely inspected, and an inspection log is kept current.
- The unit is not damaged and is in good condition.

This stamped document is valid for use through the expiration of the Engineering stamps located on the subsequent pages or when the building code changes to a more current edition of the International Building Code than listed above.

We trust this information is suitable for your needs at this time. Please do not hesitate to contact our office with any questions or comments.

Regards,

Clark Reder Engineering, Inc.



Jeffrey M. Reder, P.E.
OH Registration No. 67450

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Fax: (513) 297-0934
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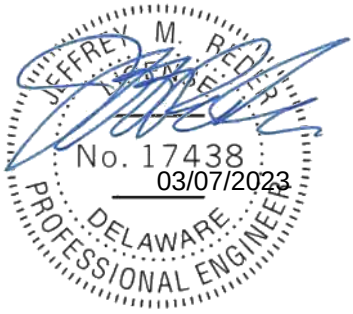
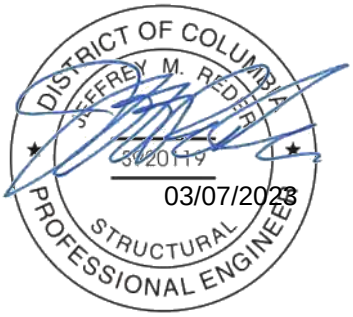
Arkansas	**California**	**Colorado**
		
Daniel J. Clark, P.E. P.E. # 14355	Daniel J. Clark, S.E. P.E. # S5317	Jeffrey M. Reder, P.E. P.E. # PE0051394
Connecticut	**Delaware**	**District of Columbia**
		
Daniel J. Clark, P.E. P.E. # 27576	Jeffrey M. Reder, P.E. P.E. # 17438	Jeffrey M. Reder, P.E. P.E. # S920119

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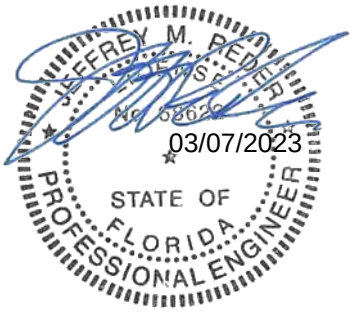
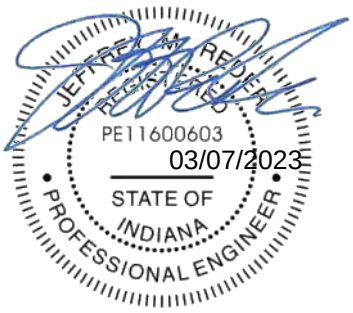
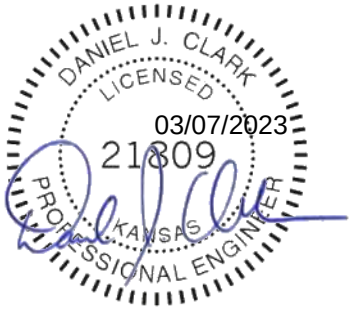
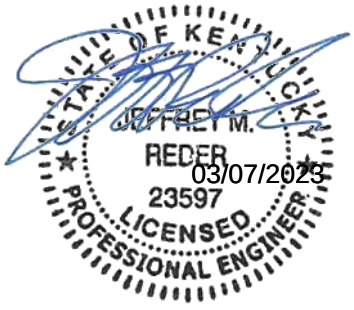
Florida	Georgia	Hawaii
		
Jeffrey M. Reder, P.E. P.E. # 68622	Jeffrey M. Reder, P.E. P.E. # PE034581	Jeffrey M. Reder, P.E. P.E. # 14362-S
Idaho	**Illinois**	**Indiana**
		
Daniel J. Clark, P.E. P.E. # 14947	Jeffrey M. Reder, S.E. P.E. # 81006866	Jeffrey M. Reder, P.E. P.E. # PE11600603
Iowa	**Kansas**	**Kentucky**
		
Jeffrey M. Reder, P.E. P.E. # 19998	Daniel J. Clark, P.E. P.E. # 21809	Jeffrey M. Reder, P.E. P.E. # 23597

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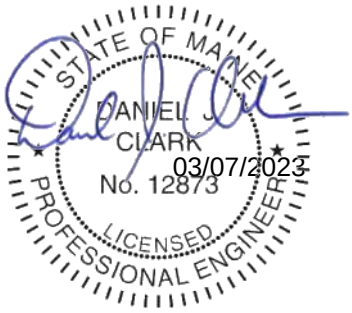
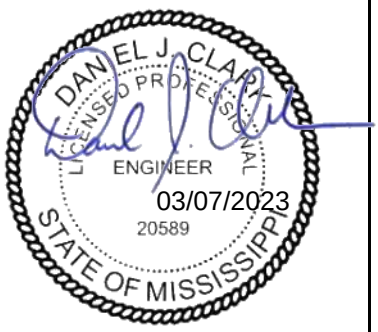
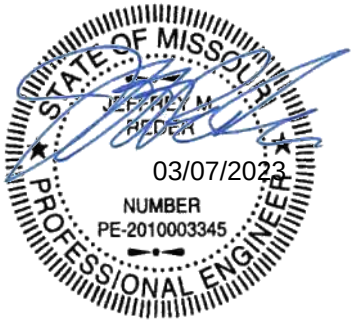
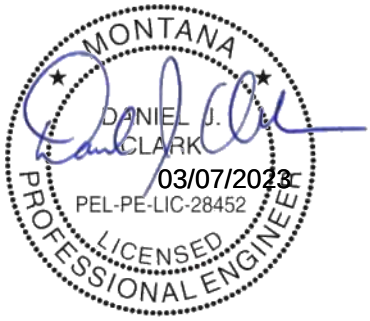
Louisiana	Maine	Maryland
		 Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License # 38421 Expiration Date: 01/29/2024
Jeffrey M. Reder, P.E. P.E. # 30304	Daniel J. Clark, P.E. P.E. # 12873	Jeffrey M. Reder, P.E. P.E. # 38421
Massachusetts	**Michigan**	**Minnesota**
		 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota. Signature: Typed or Printed Name: JEFFREY M. REDER Date: 03/07/2023 License #: 56104
Jeffrey M. Reder, P.E. P.E. # 48535	Jeffrey M. Reder, P.E. P.E. # 6201056952	Jeffrey M. Reder, P.E. P.E. # 56104
Mississippi	**Missouri**	**Montana**
		
Daniel J. Clark, P.E. P.E. # 20589	Jeffrey M. Reder, P.E. P.E. # PE-2010003345	Daniel J. Clark, P.E. P.E. # 28452

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Nebraska	Nevada	New Hampshire
		
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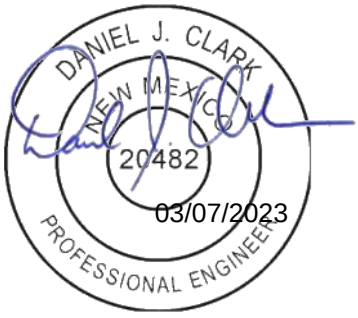
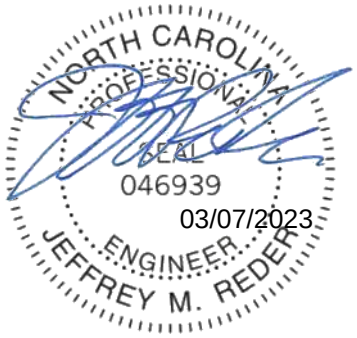
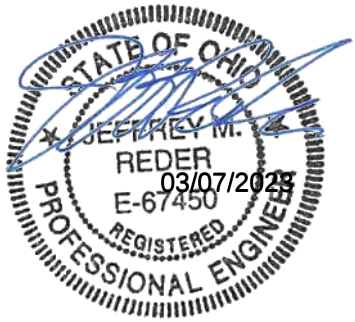
New Jersey	**New Mexico**	**New York**
		 It is a violation of law for any person, unless acting under the direction of a licensed professional engineer, to alter this document in any way. If any part of this document is altered, the altering engineer shall affix to this document their seal and the notation "altered by" followed by their signature, the date, and description.
Jeffrey M. Reder, P.E. P.E. # 24GE05300600	Daniel J. Clark, P.E. P.E. # 20482	Jeffrey M. Reder, P.E. P.E. # 097763-1
North Carolina	**North Dakota**	**Ohio**
		
Jeffrey M. Reder, P.E. P.E. # 046939	Daniel J. Clark, P.E. P.E. # PE-6586	Jeffrey M. Reder, P.E. P.E. # E-67450

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Rhode Island	**South Carolina**	**South Carolina**
		
Jeffrey M. Reder, P.E. P.E. # 9610	Jeffrey M. Reder, P.E. P.E. # 35797	Clark Reder Engineering # 4827
South Dakota	**Tennessee**	**Texas**
		 Clark Reder Engineering F-12154
Daniel J. Clark, P.E. P.E. # 10989	Jeffrey M. Reder, P.E. P.E. # 00113846	Jeffrey M. Reder, P.E. P.E. # 124100

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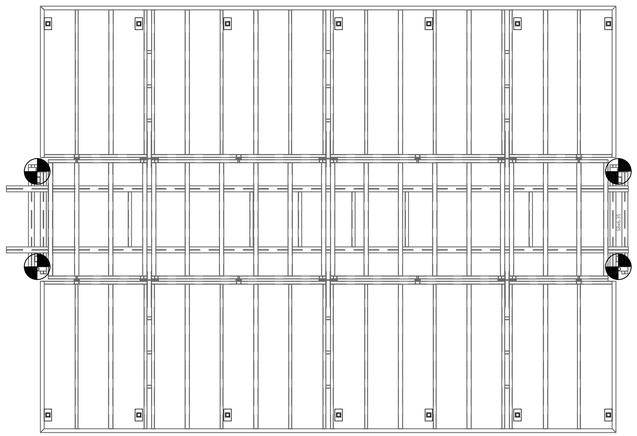
Washington	**West Virginia**	**Wisconsin**
		
Jeffrey M. Reder, P.E. P.E. # 56469	Jeffrey M. Reder, P.E. P.E. # 18628	Daniel J. Clark, P.E. P.E. # E-41230
Wyoming		
		
Jeffrey M. Reder, P.E. P.E. # 13434		



- INDICATES NO BALLAST FOR AN OPEN STRUCTURE (NO SCRIM OR RIGGING) @ 40 MPH (64 km/hr), SCRIM INSTALLED ON BACK DROP, ROOF 1 SIDEWALL AND BANNER KIT SCRIMS @ 15 MPH (24 km/hr) OR SCRIM INSTALLED ON BACKDROP AND ROOF 1 SIDEWALL ONLY @ 20 MPH (32 km/hr).

- INDICATES 500# (230 Kg) BALLAST FOR AN OPEN STRUCTURE (NO SCRIM OR RIGGING) @ 45 MPH (72 km/hr), SCRIM INSTALLED ON BACKDROP, ROOF 1 SIDEWALL AND BANNER KIT SCRIMS @ 15 MPH (24 km/hr) OR SCRIM INSTALLED ON BACKDROP AND ROOF 1 SIDEWALL ONLY @ 20 MPH (32 km/hr).

- INDICATES 2,000# (910 Kg) BALLAST FOR AN OPEN STRUCTURE (NO SCRIM OR RIGGING) @ 45 MPH (72 km/hr), SCRIM INSTALLED ON BACKDROP, ROOF 1 SIDEWALL AND BANNER KIT SCRIMS @ 15 MPH (24 km/hr) OR SCRIM INSTALLED ON BACKDROP AND ROOF 1 SIDEWALL ONLY @ 30 MPH (48 km/hr).

NOTE: SEE HIGH WIND ACTION PLAN THIS SHEET.

UPLIFT BALLAST PLAN
1/4" = 1'-0"

GENERAL STRUCTURAL NOTES

CODES AND REFERENCE

1. 2015 INTERNATIONAL BUILDING CODE
2. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
3. ASCE 37-14 DESIGN LOADS ON STRUCTURES UNDER CONSTRUCTION
4. ANSI E1.21-2013 ENTERTAINMENT TECHNOLOGY, "TEMPORARY GROUND-SUPPORTED OVERHEAD STRUCTURES USED TO COVER THE STAGE AREAS AND SUPPORT EQUIPMENT IN THE PRODUCTION OF OUTDOOR ENTERTAINMENT EVENTS"
5. ANSI E1.2-2006 ENTERTAINMENT TECHNOLOGY, "DESIGN, MANUFACTURE AND USE OF ALUMINUM TRUSSES AND TOWERS"
6. ALUMINUM DESIGN MANUAL, 2015 EDITION
7. AISC STEEL MANUAL, 14TH EDITION

DESIGN LOADS

1. DEAD LOAD: SELFWEIGHT OF STRUCTURE

2. ROOF RIGGING LOADS:
   A. SEE BEAM LOADING CHART ON SHEET S1.2
   NOTE: ROOF IS A SUN SHADE SYSTEM ONLY. IT HAS NOT BEEN DESIGNED FOR PERSONNEL ACCESS OR TO SUPPORT RAIN OR SNOW LOADS.

3. STAGE DECK LOADS:
   A. LIVE LOAD: 50 PSF

4. WIND LOAD:**
   A. DESIGN WIND SPEED: 45 MPH (BARE STRUCTURE - NO SCRIMS ATTACHED)
   B. DESIGN WIND SPEED :30 MPH (WITH ONLY BACKDROP, ROOF 1 SIDEWALL SCRIM, AND FRONT SKIRT SCRIM ATTACHED)
   C. DESIGN WIND SPEED: 15 MPH (WITH BACKDROP, ROOF 1 SIDEWALL SCRIM, FRONT SKIRT AND BANNER KIT SCRIMS*** ATTACHED)
   D. EXPOSURE C
   E. IMPORTANCE FACTOR: 1.0

5. SEISMIC LOADS DO NOT CONTROL THE DESIGN OF THIS STRUCTURE.

** SEE UPLIFT BALLAST PLAN THIS SHEET FOR REQUIRED BALLAST
*** BANNER KIT CONSISTS OF (X1) UPPER CENTER CROSS BANNER, (X1) LEFT AND (X1) RIGHT SIDE BANNER (3 SCRIMS TOTAL)

CONSTRUCTION AND SAFETY

1. ENGINEER SHALL NOT BE RESPONSIBLE FOR MEANS, METHODS, OR SEQUENCE OF CONSTRUCTION UNLESS SPECIFICALLY STATED ON THE DRAWINGS.
2. ENGINEER HAS DESIGNED THE STRUCTURES FOR THEIR FINAL AS-BUILT CONDITION. ENGINEER IS NOT RESPONSIBLE FOR TEMPORARY STABILITY OF STRUCTURES DURING ERECTION UNLESS SPECIFICALLY STATED ON THE DRAWINGS.
3. STRUCTURE HAS BEEN DESIGNED AS A TEMPORARY STRUCTURE THAT SHALL BE IN PLACE FOR LESS THAN 6 WEEKS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:
   A. ROLLED WIDE FLANGE SHAPES: ASTM A992, FY = 50 KSI
   B. MISC PLATE, BAR, ANGLES AND CHANNELS: ASTM A36, FY = 36 KSI
   C. PIPE SHAPES: ASTM A53, TYPE E OR S, GRADE B, FY = 35 KSI
   D. HSS RECTANGULAR TUBE: ASTM A500 GR B, FY = 46 KSI
   E. HSS ROUND TUBE: ASTM A500 GR B, FY = 42KSI
   F. BOLTS OR SCAFFOLD CONNECTION PINS: SAE J429 GRADE 5 BOLTS (FY=92 KSI) UNLESS NOTED OTHERWISE
2. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY LATEST EDITION.
3. FIELD CONNECTIONS SHALL BE BOLTED OR CONNECTED WITH APPROVED SCAFFOLD CONNECTORS.

ALUMINUM

1. ALUMINUM SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:
   A. MEMBER ALLOY: 6061-T6 UNLESS NOTED OTHERWISE
   B. MEMBER ALLOY FOR STAGE ROOF BEAM EXTRUSIONS: 6063-T5
   C. MEMBER ALLOY FOR STAGE DECK EXTRUSIONS; 6063-T6
   D. WELD FILLER ALLOW: 4043 (MIN)
2. ALL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE ALUMINUM ASSOCIATION ALUMINUM DESIGN MANUAL, 2010 EDITION.
3. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY LATEST EDITION.
4. FIELD CONNECTIONS SHALL BE BOLTED UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.

WIRE ROPE AND RIGGING ACCESSORIES

1. WIRE ROPE 3/8" OR LESS IN DIAMETER: 7X19 GAC, MEETING FEDERAL SPEC, RR-W-410E
2. WIRE ROPE 7/16" OR GREATER IN DIAMETER: 6X19 IWRC, MEETING FEDERAL SPEC, RR-W-410D, TYPE 1 CLASS 2
3. SHACKLES: GALVANIZED, SCREW PIN ANCHOR TYPE, ASTM A153
4. TURNBUCKLES: GALVANIZED, ASTM F-1145
5. FORGED WIRE ROPE CLIPS: GALVANIZED, MEETING FEDERAL SPEC, FF-C-450 TYPE I CLASS I
6. WIRE ROPE THIMBLES: GALVANIZED, MEETING FEDERAL SPEC, FF-T-276B TYPE II
7. WIRE ROPE THIMBLES: GALVANIZED, MEETING FEDERAL SPEC, FF-T-276B TYPE II
8. RATCHET STRAPS:
   a. RATCHET STRAPS SHALL BE INSTALLED PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS TO DEVELOP THE RATED WORKING LOAD OF THE STRAP.
   b. RATCHET STRAPS WITH OPEN ENDED HOOKED CONNECTION SHALL HAVE A POSITIVE CONNECTION TO THE ATTACHMENT POINT. EXAMPLE: USE A 5/8" SHACKLE BETWEEN THE BARS OF A J-HOOK.

FOUNDATIONS

1. PER CLIENTS REQUEST, THE FOUNDATION DESIGN AND GENERAL FOUNDATION NOTES BASED ON THE ASSUMPTION OF FAVORABLE SOIL CONDITIONS. ALL FOUNDATION ASSEMBLIES SHALL BEAR ON LEVEL (WITHIN 1 IN 12) GROUND

ROOF HOISTING

1. ALL BALLAST SHALL BE IN PLACE PRIOR TO HOISTING ROOF SYSTEM.
2. ROOF SYSTEM SHALL NOT BE HOISTED IN WIND SPEEDS GREATER THAN 10 MPH.

RIGGING

1. BRIDLES SHALL NOT BE USED UNLESS SPECIFICALLY NOTED BY THE ENGINEER OF RECORD.
2. DO NOT EXCEED THE ALLOWABLE RIGGING LOADS SHOWN ON SHEET S1.2 WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

INSPECTIONS

1. ALL TRUSS UNITS, SCAFFOLD AND/OR OTHER RIGGING EQUIPMENT SHALL BE VISUALLY INSPECTED PRIOR TO ERECTION. DAMAGED OR CORRODED EQUIPMENT SHALL NOT BE USED. FIELD MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO INSTALLATION.

OPERATIONS MANAGEMENT PLAN

IMPLEMENTATION OF PLAN

1. PRIOR TO EACH INSTALLATION, THE **VENUE/STAGE OWNER** SHALL DESIGNATE A RESPONSIBLE PERSON IN CHARGE OF IMPLEMENTING ALL PHASES OF THE OPERATIONS MANAGEMENT PLAN.
2. A MEETING SHALL BE HELD AT THE VENUE WITH THE PROMOTER, OWNER OR STAGE MANAGER TO DISCUSS THE HIGH WIND ACTION PLAN AND OTHER OPERATIONAL ITEMS.
3. THE METHOD OF INITIATING EVENT CANCELLATION MUST BE OUTLINED EXPLICITLY PRIOR TO THE EVENT ALLOWING FOR IMMEDIATE ACTION IF NECESSARY.
4. A COPY OF THIS PLAN SHOULD BE PROVIDED TO LOCAL POLICE OR FIRE DEPARTMENTS IN ORDER TO HELP USHER PATRONS IN THE EVENT OF AN EVACUATION.

HIGH WIND ACTION PLAN WITH NO BALLAST INSTALLED

1. THE HIGH WIND ACTION PLAN SHALL BE IN EFFECT FOR THE ENTIRETY OF THE EVENT. AN EVENT SHALL BE DEFINED AS STARTING AT THE INITIAL COMMENCEMENT OF THE STRUCTURE INSTALLATION AND ENDING ONCE THE STRUCTURE IS COMPLETELY DISMANTLED.
2. A COMPETENT RESPONSIBLE PERSON FROM THE VENUE OR RIGGING COMPANY SHALL BE PRESENT FOR THE DURATION OF THE EVENT (SEE ABOVE) TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. A REGULAR LIAISON WITH LOCAL AIRPORTS AND/OR WEATHER INFORMATION CENTERS SHALL BE MAINTAINED TO ASCERTAIN IF ANY SIGNIFICANT WEATHER EVENTS ARE EXPECTED IN THE IMMEDIATE VICINITY OF THE STRUCTURE
4. AN ANEMOMETER SHALL BE PLACED ON THE STRUCTURE TO MONITOR WIND SPEEDS. THE ANEMOMETER SHALL BE PLACED AT THE TOP OF A TOWER OR AN ADJACENT STRUCTURE AT A HEIGHT EQUIVALENT TO THE HEIGHT OF THE TOWER. THE ANEMOMETER SHALL BE LOCATED WITHIN 50 YARDS OF THE STRUCTURE.
5. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH (24 km/hr)**: ALL SCRIM ASSOCIATED WITH THE BANNER PACKAGE SHALL BE REMOVED FROM THE SYSTEM. THIS INCLUDES THE BANNER SCRIM ON TOP OF THE STAGE THAT CONCEALS THE SPEAKER WING WIRES AND THE SPEAKER WING BANNER SCRIM. LOWERING OF SCRIM SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
6. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 20 MPH (32 km/hr)**: ALL SCRIM SHALL BE REMOVED FROM THE SYSTEM. ALL RIGGING EQUIPMENT AND SPEAKER CLUSTERS SHALL BE LOWERED TO THE GROUND AND SECURED. LOWERING OF SCRIM OR EQUIPMENT SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
7. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 40 MPH (64 km/hr)**: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED. LOWER ROOF IF TIME PERMITS AND WIND SPEEDS ARE BELOW 15 MPH. ALL PERSONNEL SHOULD MAINTAIN SAFE DISTANCE FROM THE ROOF SYSTEM AS COLLAPSE MAY OCCUR.
8. THE HIGH WIND ACTION PLAN SHALL BE POSTED AT A CONSPICUOUS AREA ON SITE. IT MUST BE AVAILABLE AT ALL TIMES TO VENUE OPERATORS AND CREW.

HIGH WIND ACTION PLAN WITH 500# (230 kg) BALLAST INSTALLED @ 4 LOCATIONS

1. THE HIGH WIND ACTION PLAN SHALL BE IN EFFECT FOR THE ENTIRETY OF THE EVENT. AN EVENT SHALL BE DEFINED AS STARTING AT THE INITIAL COMMENCEMENT OF THE STRUCTURE INSTALLATION AND ENDING ONCE THE STRUCTURE IS COMPLETELY DISMANTLED.
2. A COMPETENT RESPONSIBLE PERSON FROM THE VENUE OR RIGGING COMPANY SHALL BE PRESENT FOR THE DURATION OF THE EVENT (SEE ABOVE) TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. A REGULAR LIAISON WITH LOCAL AIRPORTS AND/OR WEATHER INFORMATION CENTERS SHALL BE MAINTAINED TO ASCERTAIN IF ANY SIGNIFICANT WEATHER EVENTS ARE EXPECTED IN THE IMMEDIATE VICINITY OF THE STRUCTURE
4. AN ANEMOMETER SHALL BE PLACED ON THE STRUCTURE TO MONITOR WIND SPEEDS. THE ANEMOMETER SHALL BE PLACED AT THE TOP OF A TOWER OR AN ADJACENT STRUCTURE AT A HEIGHT EQUIVALENT TO THE HEIGHT OF THE TOWER. THE ANEMOMETER SHALL BE LOCATED WITHIN 50 YARDS OF THE STRUCTURE.
5. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH (24 km/hr)**: ALL SCRIM ASSOCIATED WITH THE BANNER PACKAGE SHALL BE REMOVED FROM THE SYSTEM. THIS INCLUDES THE BANNER SCRIM ON TOP OF THE STAGE THAT CONCEALS THE SPEAKER WING WIRES AND THE SPEAKER WING BANNER SCRIM. LOWERING OF SCRIM SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
6. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 20 MPH (32 km/hr)**: ALL SCRIM SHALL BE REMOVED FROM THE SYSTEM. ALL RIGGING EQUIPMENT AND SPEAKER CLUSTERS SHALL BE LOWERED TO THE GROUND AND SECURED. LOWERING OF SCRIM OR EQUIPMENT SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
7. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 45 MPH (72 km/hr)**: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED. LOWER ROOF IF TIME PERMITS AND WIND SPEEDS ARE BELOW 15 MPH. ALL PERSONNEL SHOULD MAINTAIN SAFE DISTANCE FROM THE ROOF SYSTEM AS COLLAPSE MAY OCCUR.
8. THE HIGH WIND ACTION PLAN SHALL BE POSTED AT A CONSPICUOUS AREA ON SITE. IT MUST BE AVAILABLE AT ALL TIMES TO VENUE OPERATORS AND CREW.

HIGH WIND ACTION PLAN WITH 2000# (910 kg) BALLAST INSTALLED @ 4 LOCATIONS

1. THE HIGH WIND ACTION PLAN SHALL BE IN EFFECT FOR THE ENTIRETY OF THE EVENT. AN EVENT SHALL BE DEFINED AS STARTING AT THE INITIAL COMMENCEMENT OF THE STRUCTURE INSTALLATION AND ENDING ONCE THE STRUCTURE IS COMPLETELY DISMANTLED.
2. A COMPETENT RESPONSIBLE PERSON FROM THE VENUE OR RIGGING COMPANY SHALL BE PRESENT FOR THE DURATION OF THE EVENT (SEE ABOVE) TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. A REGULAR LIAISON WITH LOCAL AIRPORTS AND/OR WEATHER INFORMATION CENTERS SHALL BE MAINTAINED TO ASCERTAIN IF ANY SIGNIFICANT WEATHER EVENTS ARE EXPECTED IN THE IMMEDIATE VICINITY OF THE STRUCTURE
4. AN ANEMOMETER SHALL BE PLACED ON THE STRUCTURE TO MONITOR WIND SPEEDS. THE ANEMOMETER SHALL BE PLACED AT THE TOP OF A TOWER OR AN ADJACENT STRUCTURE AT A HEIGHT EQUIVALENT TO THE HEIGHT OF THE TOWER. THE ANEMOMETER SHALL BE LOCATED WITHIN 50 YARDS OF THE STRUCTURE.
5. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH (24 km/hr)**: ALL SCRIM ASSOCIATED WITH THE BANNER PACKAGE SHALL BE REMOVED FROM THE SYSTEM. THIS INCLUDES THE BANNER SCRIM ON TOP OF THE STAGE THAT CONCEALS THE SPEAKER WING WIRES AND THE SPEAKER WING BANNER SCRIM. LOWERING OF SCRIM SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
6. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 30 MPH (48 km/hr)**: ALL SCRIM SHALL BE REMOVED FROM THE SYSTEM. ALL RIGGING EQUIPMENT AND SPEAKER CLUSTERS SHALL BE LOWERED TO THE GROUND AND SECURED. LOWERING OF SCRIM OR EQUIPMENT SHALL BE DONE FROM THE GROUND BY MEANS OF REMOTELY ACTIVATED EQUIPMENT SUCH AS MOTORS OR MECHANICAL RELEASES.
7. **WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 45 MPH (72 km/hr)**: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED. LOWER ROOF IF TIME PERMITS AND WIND SPEEDS ARE BELOW 15 MPH. ALL PERSONNEL SHOULD MAINTAIN SAFE DISTANCE FROM THE ROOF SYSTEM AS COLLAPSE MAY OCCUR.
8. THE HIGH WIND ACTION PLAN SHALL BE POSTED AT A CONSPICUOUS AREA ON SITE. IT MUST BE AVAILABLE AT ALL TIMES TO VENUE OPERATORS AND CREW.

SNOW/RAIN REMOVAL

1. THE ROOF SKIN HAS NOT BEEN DESIGNED TO SUPPORTED PONDED WATER OR SNOW. REMOVE ANY AND ALL SUCH ACCUMULATIONS.

CLARK REDER ENGINEERING
10091 Mosteller Lane
West Chester, OH 45069
513 851 1223

STATE OF OHIO
JEFFREY M. REDER
03/07/2018
PROFESSIONAL ENGINEER

PROGRESSIVE PRODUCTS INC.
APEX

32X24 MOBILE STAGE

PROGRESSIVE PRODUCTS
PITTSBURG, KS 66762

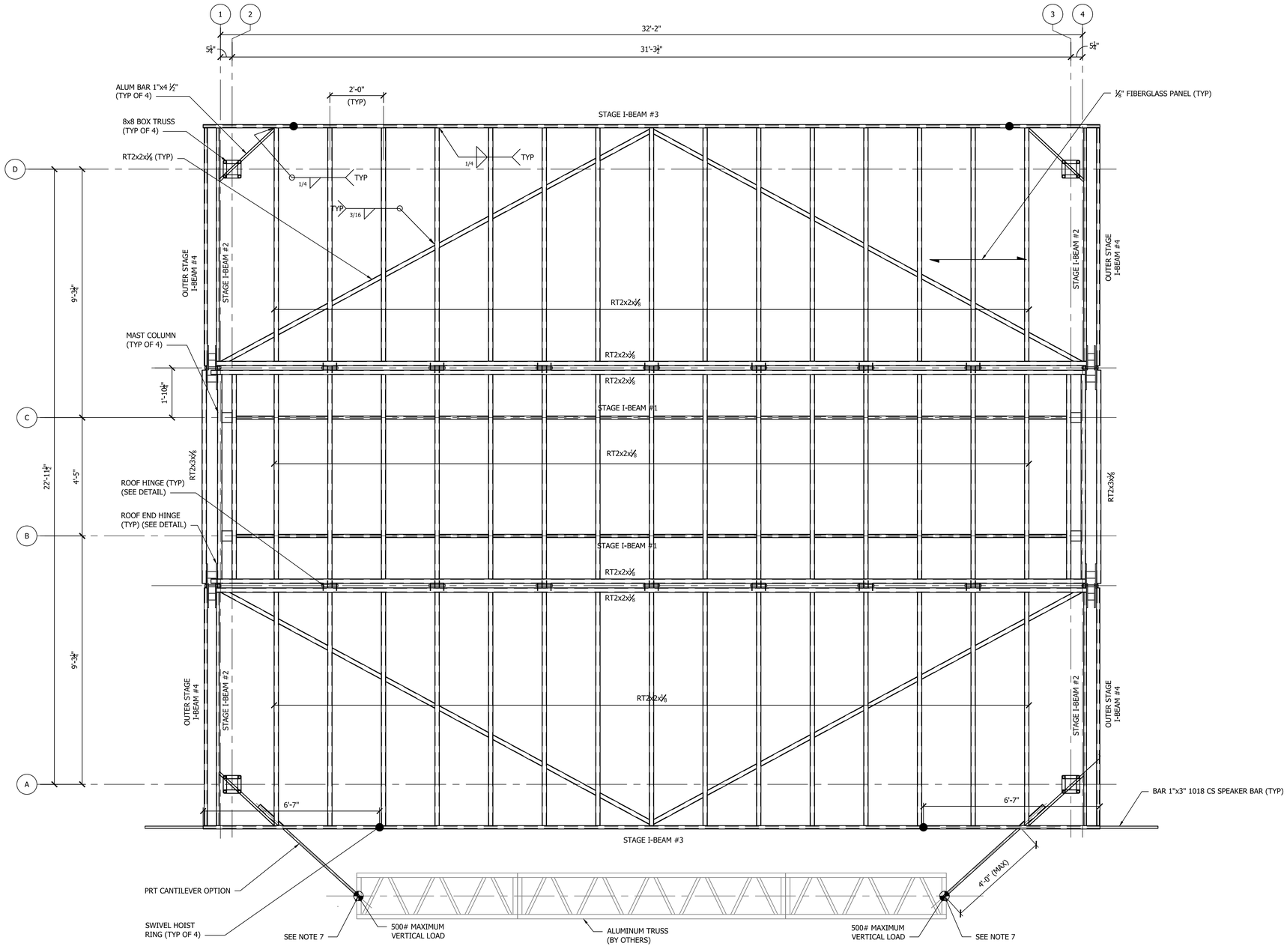
ISSUE/REVISIONS

	REVISION DESCRIPTION - DATE
1	

DATE: 1/8/2018
CRE PROJECT NO: 17.534.03
DRAWN BY: AAW/DDL

GEN NOTES, OPS PLAN, BALLAST PLAN

S1.1



BEAM LOADING CHART WITHOUT PRT CANTILEVER

BEAM CALLOUT	UNIFORMLY DISTRIBUTED LOAD	CENTER POINT LOAD	THIRD POINT LOAD	QUARTER POINT LOAD
I-BEAM #1	25 lb/ft	400 lb	300 lb	200 lb
I-BEAM #2	57 plf	-	-	-
I-BEAM #3	50 lb/ft	800 lb	500 lb	330 lb
SPEAKER BEAM	-----	2,000 lb	-----	-----

ROOF FRAMING PLAN

1/2" = 1'-0"

NOTE:

1. REFERENCE EL = GRADE = 100'-0"
2. FLOOR EL 103'-9"±
3. SEE SHEET S5.1 FOR GENERAL NOTES, HIGH WIND ACTION PLAN, AND BALLAST REQUIREMENTS
4. SCRIM ON SIDES OF STRUCTURE MUST BE INSTALLED WITH A 3 FOOT SAG AT MIDSPAN TO PREVENT EXCESSIVE LATERAL LOADS ON THE STRUCTURAL MEMBERS
5. FRAMING MEMBERS ARE ALUMINUM UNLESS OTHERWISE NOTED
6. PRT CANTILEVER OPTION IN DETAIL 10/S3.1 IS SHOWN ON ONE SIDE OF THE ROOF FRAMING PLAN FOR CLARITY. THE PRT CANTILEVER OPTION IS APPLICABLE ON BOTH SIDES OF THE ROOF FRAMING PLAN
7. RIGGING FOR PRT CANTILEVER SHALL BE A VERTICAL DEAD HANG ONLY. NO BRIDLE OR LATERAL COMPONENT OF LINE LOAD IS PERMITTED

BEAM LOADING CHART WITH PRT CANTILEVER

BEAM CALLOUT	UNIFORMLY DISTRIBUTED LOAD	CENTER POINT LOAD	THIRD POINT LOAD	QUARTER POINT LOAD
I-BEAM #1	25 lb/ft	400 lb	300 lb	200 lb
I-BEAM #2	57 plf	-	-	-
I-BEAM #3	40 lb/ft	610 lb	450 lb	309 lb
SPEAKER BEAM	-----	2,000 lb	-----	-----

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32X24 MOBILE STAGE

PROGRESSIVE PRODUCTS
PITTSBURG, KS 66762

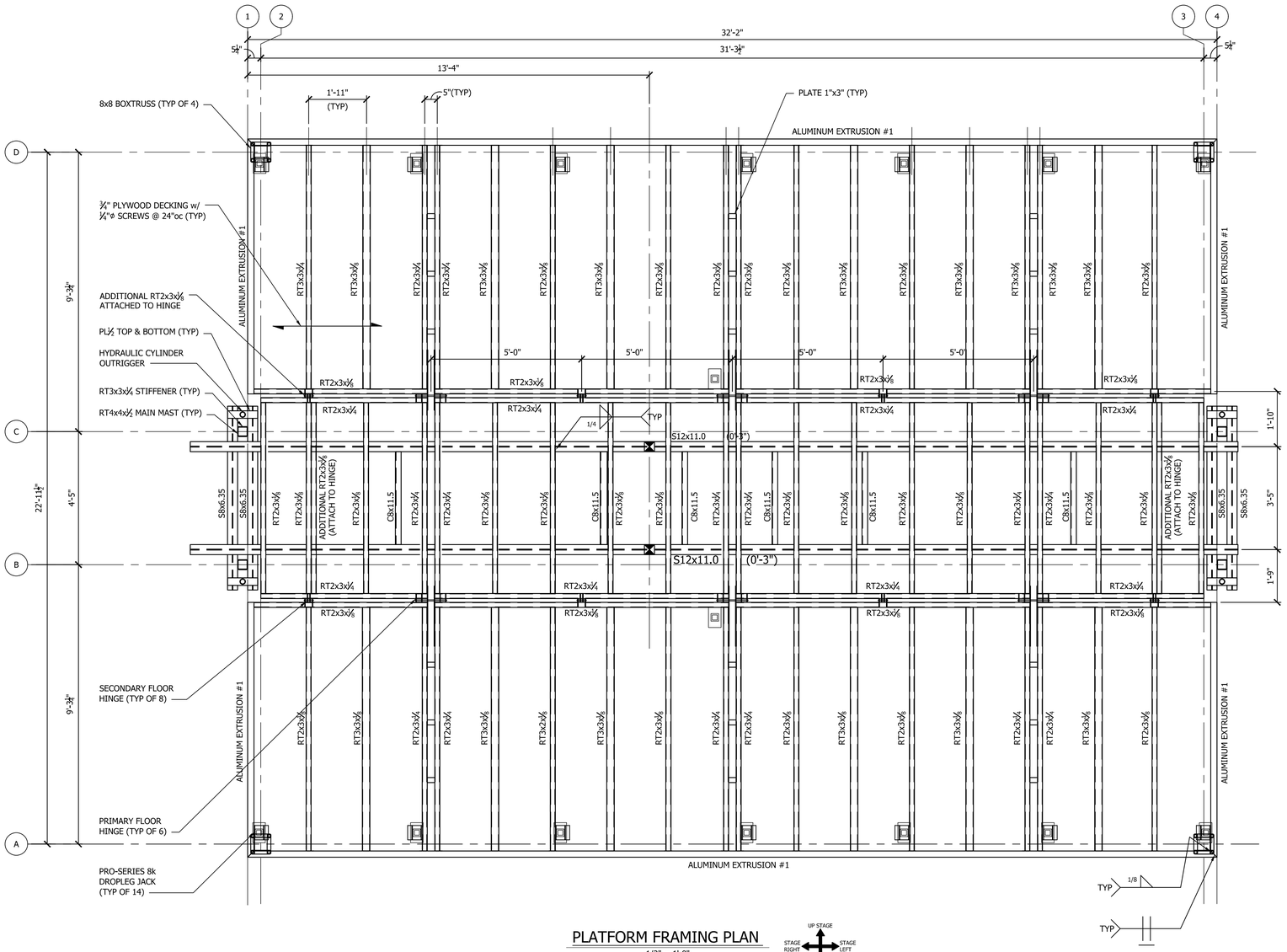
ISSUE/REVISIONS

	REVISION DESCRIPTION - DATE

DATE: 1/8/2018
CRE PROJECT NO.: 17.534.03
DRAWN BY: AAW/DDL

ROOF FRAMING PLAN

S1.2



PLATFORM FRAMING PLAN

1/2" = 1'-0"

UP STAGE
STAGE RIGHT
STAGE LEFT
DOWN STAGE

NOTE:
1. REFERENCE EL = GRADE = 100'-0"
2. FLOOR EL 103'-9"±
3. SEE SHEET S5.1 FOR GENERAL NOTES, HIGH WIND ACTION PLAN, AND BALLAST REQUIREMENTS.
4. SCRIM ON SIDES OF STRUCTURE MUST BE INSTALLED WITH A 3 FOOT SAG AT MIDSPAN TO PREVENT EXCESSIVE LATERAL LOADS ON THE STRUCTURAL MEMBERS.
5. FRAMING MEMBERS ARE ALUMINUM UNLESS OTHERWISE NOTED.

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PROGRESSIVE PRODUCTS INC.
APEX

32X24 MOBILE STAGE

PROGRESSIVE PRODUCTS
PITTSBURG, KS 66762

ISSUE/REVISIONS

	REVISION DESCRIPTION - DATE

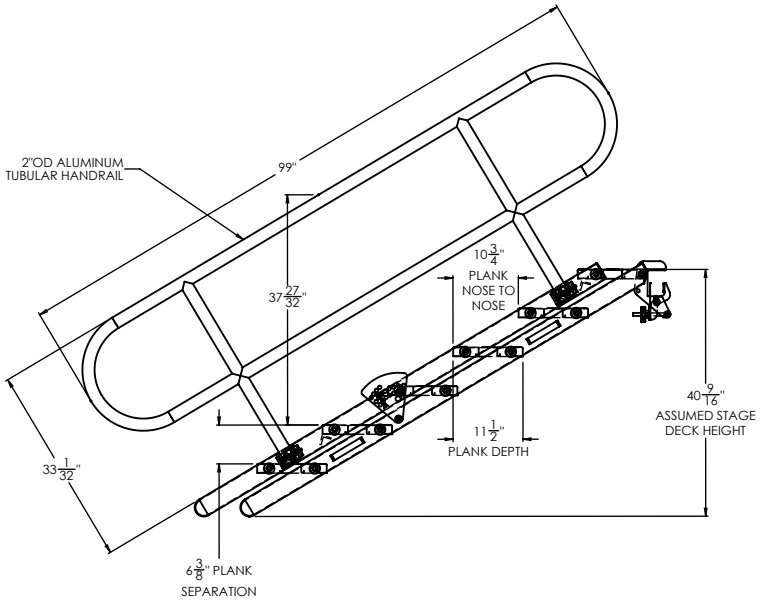
DATE: 1/8/2018
CRE PROJECT NO.: 17.534.03
DRAWN BY: AAW/DDL

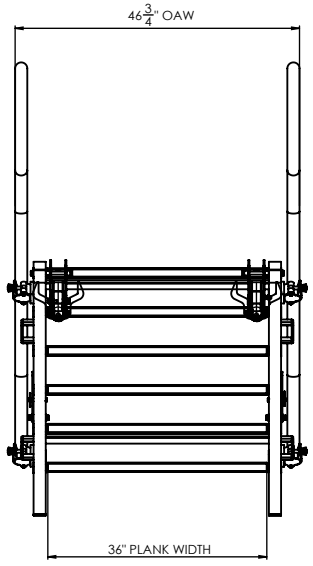
PLATFORM FRAMING PLAN

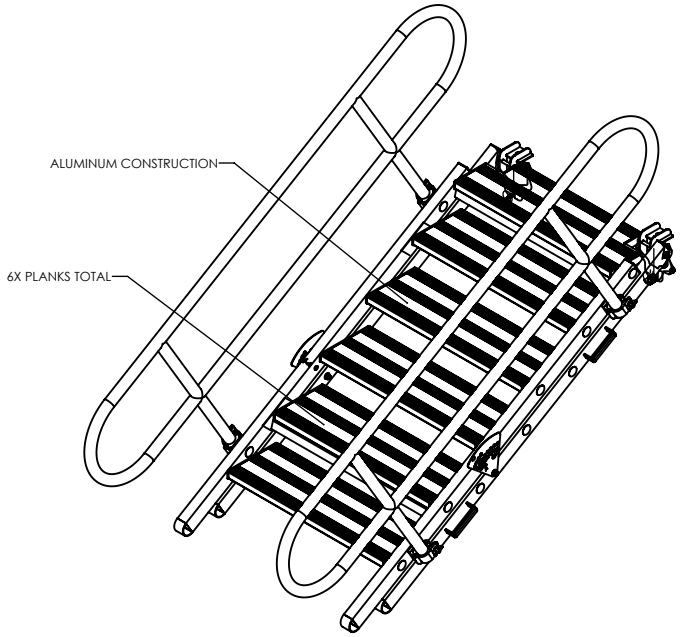
S1.3

APEX 2016/2420/3224 Mobile Stage

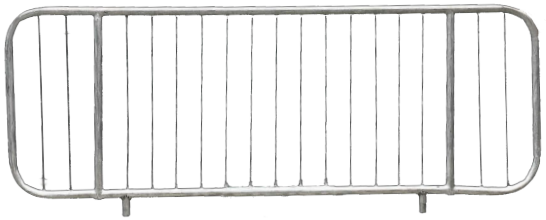
STAIRS
Measurements





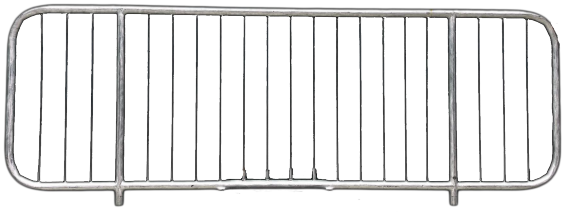


UPDATED RAILS FOR THE 6 STEP VERSION OF THE MOBILE STAGE WHEN PUBLIC ACCESS IS REQUIRED



6 STEP HAND RAILS ARE 9 4.5 " IN LENGTH WITH INSIDE SPACING AT 4" APART

UPDATED RAILS FOR THE 8STEP VERSION OF THE MOBILE STAGE WHEN PUBLIC ACCESS IS REQUIRED



8 STEP HAND RAILS ARE 104" IN LENGTH WITH INSIDE SPACING AT 4" APART

NOTES:

1. DRAWING IS MEANT TO SERVE AS GENERAL DIMENSIONAL REFERNECE ONLY. INFORMATION CONTAINED IS SUBJECT TO CHANGE WITHOUT NOTICE.
2. STAIRCASE IS PRIMARILY CONSTRUCTED FROM ALUMINUM, WITH EXCEPTION OF FASTENING CLAMPS AND ALL HARDWARE.
3. DIMENSIONS SHOWN ARE REPRESENTATIVE OF STAIRCASE SET UP AT A GIVEN SLOPE THAT CORRESPONDS TO A 40-9/16" STAGE DECK HEIGHT. DIMENSIONS WILL VARY WITH A DIFFERENT STAGE DECK HEIGHT OTHER THAN WHAT IS LISTED.
4. DETAIL IS THE SAME FOR THE 6 FLIGHT STAIRCASE USED ON THE APEX 2016 & ON THE 8 FLIGHT STAIRCASE USED ON THE APEX 2420, 3224, 4240 & 5040 STAGES

STAIRCASE GENERAL DIMENSIONS
STH - 9/19/17

Progressive Products Inc. 3305 Airport Circle Pittsburgh KS 66762 620.235.1712 apexstages.com

Haulotte GROUP
BILJAX

125 TAYLOR PARKWAY
ARCHBOLD, OH 43502
PHONE: (419) 445-8915
FAX: (419) 445-0367
www.biljax.com

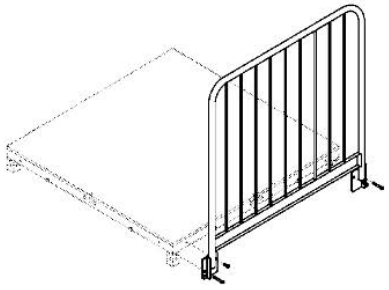
Guard Rail / Bracing

Guard Railing

4' Vertical Guard Rail

2' Vertical Guard Rail

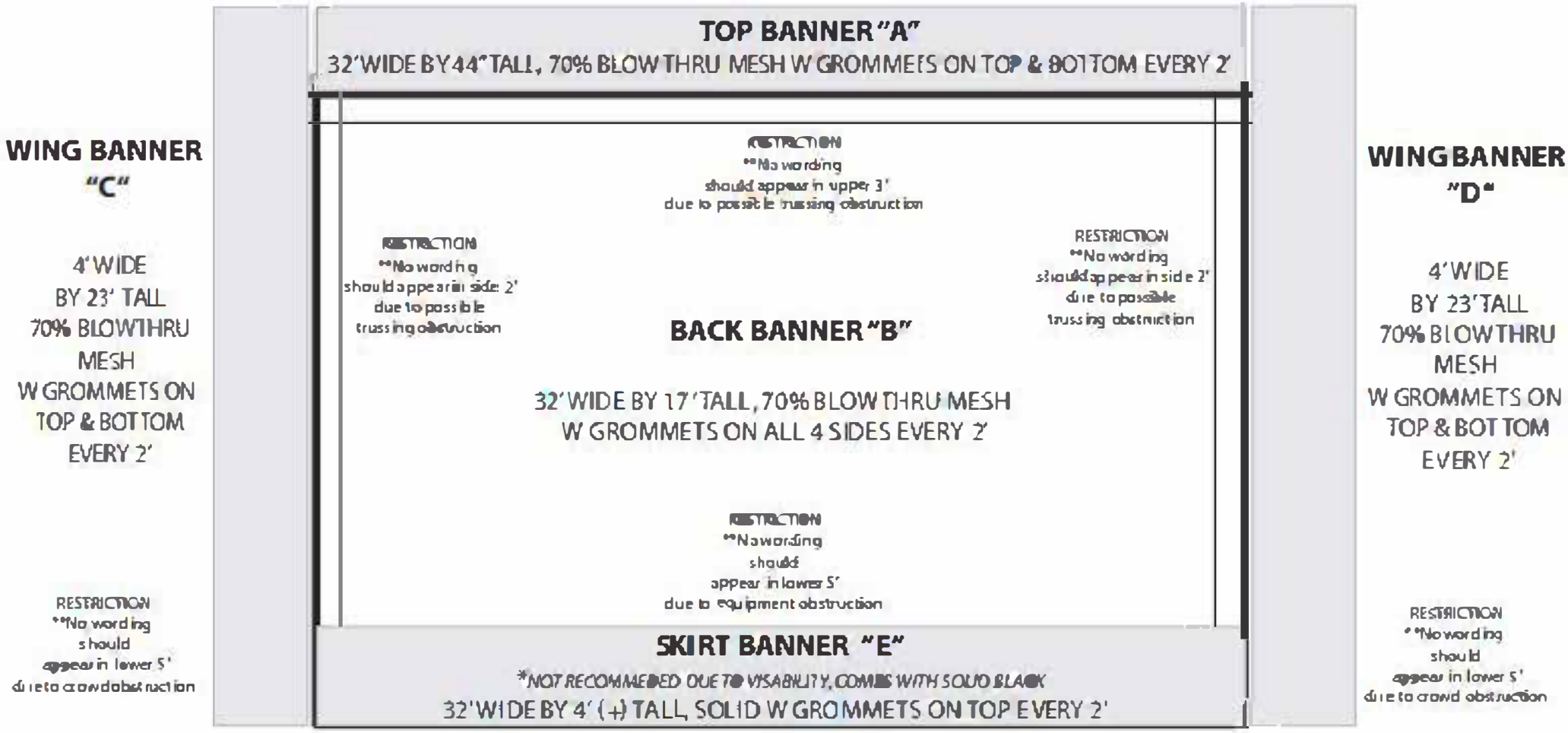
Description	Weight
Guard Rail Panel, Vertical, 2'W x 42"H	22
Guard Rail Panel, Vertical, 4'W x 42"H	32



SAMPLE BANNER OPTIONS for

APEX 3224

updated 1/24/2017 fm



40'WIDE

** Barricades may obstruct the lower 4' across the lower stage as well as attendees

Questions? call 786-504-2369 / 786-255-4949