APEX 2420
MOBILE STAGE

mobilestages.miami / apex.miami

786-504-2369
786- 255-4949

Apex 2420 Mobile Hydraulic Stage

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

The APEX 2420 is equipped with steel wheels, hydraulic out-riggers, all steel floors, all steel construction trailer frame, two single axles, and a gas powered motor. One set of wide aluminum stairs, aluminum handrails, with 70% blow- through back drops available.

Ease of operation, maneuverable in tight areas, and budget friendly, this mobile stage maintains the professional APEX quality, and makes it "the perfect fit" for facilitating smaller venues.

Specifications:
Trailer:
Trailer Length- 26, Trailer Width 102" Trailer Height 10' Trailer Weight 12,500# Tongue Weight 1,350# Axle Rating 2x10,000#

Stage Deck:
Floor Size 24' by 20' Floor Height 39"-54" Ground to Roof 16'2"
Structure Floor Support Marine ply/Alum 10 - 7,000# jacks

Stage Roof:
Covered Roof 22'9"" x 26' Deck to Roof Top 12'10"
Deck to Front-stage 11'11"' I-beam Deck to Center 11'8" I-beam Deck to Back-stage I-beam 11'5"
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

CLARK | REDER
ENGINEERING

3/20/2023

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

RE: 2420 Mobile Stage – 2023 Certification
CRE Project No: 23.534.02

Dear Todd:

Clark Reder Engineering Inc. has completed our review of the Apex Stages 2420 Mobile Stage for conformance to the 2018 IBC as well as for general use in the United States in the calendar year of 2023. 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 2420 Apex Mobile Stage Unit, when built and used in accordance with the manufacturer's guidelines, represents a safe design in accordance with the structural provisions of the 2018 International Building Code and is fit for use in all 50 states. This stamped document is valid for use through December 31, 2023.

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.

Daniel J. Clark, P.E.
KS Registration No. 21809

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

Clark Reder Engineering
10091 Mosteller Lane
West Chester, OH 45069

Phone: (513) 851-1223
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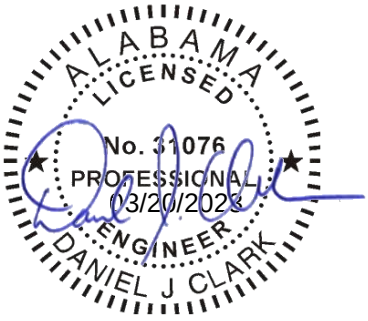
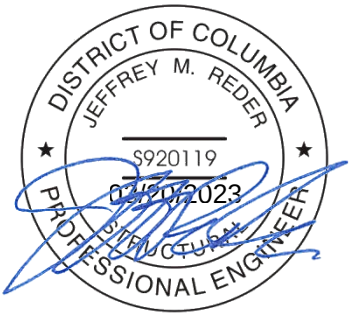
www.clarkreder.com

Alabama	Alaska	Arizona
		
Daniel J. Clark, P.E P.E #: 31076	Daniel J. Clark, P.E P.E #: SE14360	Daniel J. Clark, P.E P.E #: 50654
Arkansas	**California**	**Colorado**
		
Daniel J. Clark, P.E P.E #: 14355	Daniel J. Clark, P.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 #: S2920119

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023

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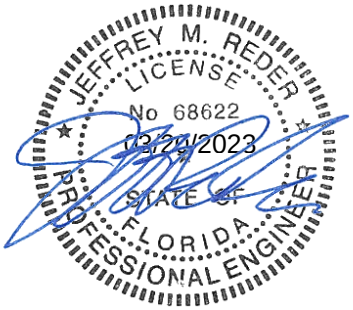
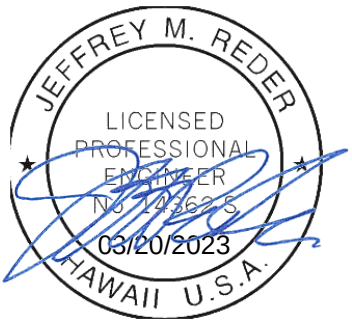
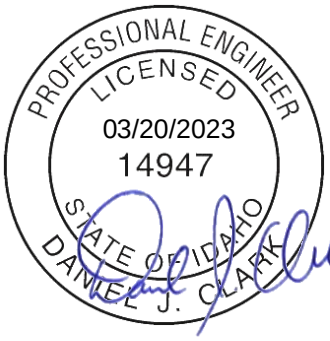
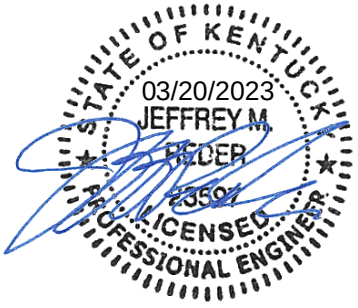
Florida	Georgia	Hawaii
		
Jeffrey M. Reder, P.E P.E #: 68622	Jeffrey M. Reder, P.E P.E #: PE034581	Jeffrey M. Reder, P.E P.E #: 14362-S
Idaho	**Illinois**	**Indiana**
		
Daniel J. Clark, P.E P.E #: 14947	Clark Reder Engineering, Inc. is a professional design firm registered in Illinois #184.006693 Jeffrey M. Reder, P.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

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023

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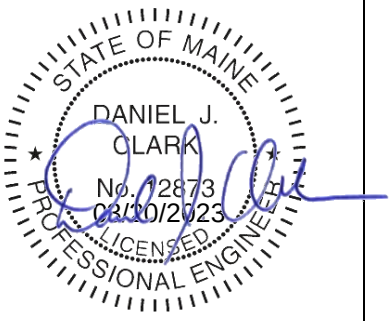
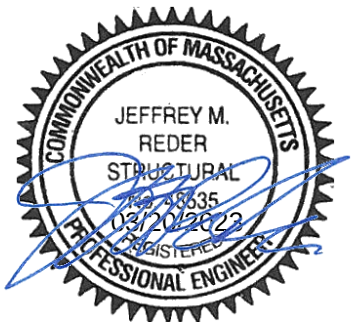
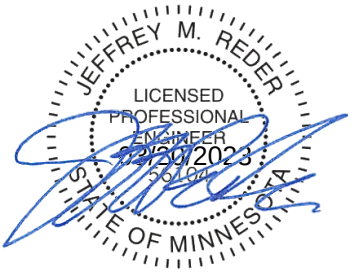
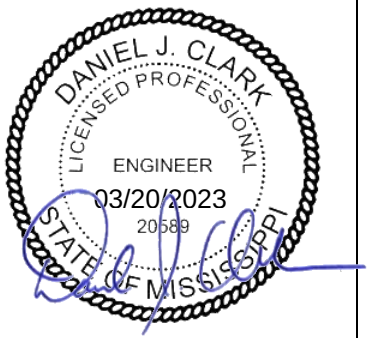
Louisiana	Maine	Maryland
		 Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License #38321
Jeffrey M. Reder, P.E P.E #: 30304	Daniel J. Clark, P.E P.E #: 12873	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. Date: 03/20/2023 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

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023

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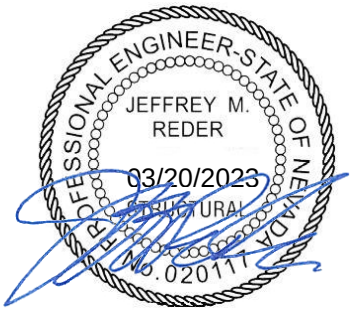
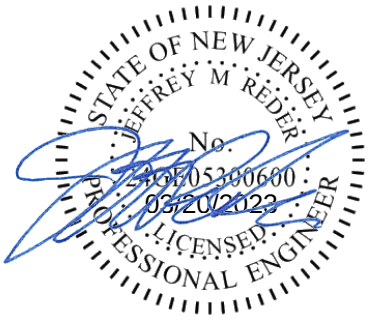
Nebraska	Nevada	New Hampshire
		
Daniel J. Clark, P.E P.E #: E-14098	Jeffrey M. Reder, P.E P.E #: 020117	Daniel J. Clark, P.E P.E #: 13605
New Jersey	**New Mexico**	**New York**
		 It is a violation of law for any person, unless acting under the direction of a licensed professional engineer, to alter this drawing in any way. If any part of this drawing is altered, the altering engineer shall affix to this drawing 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

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023

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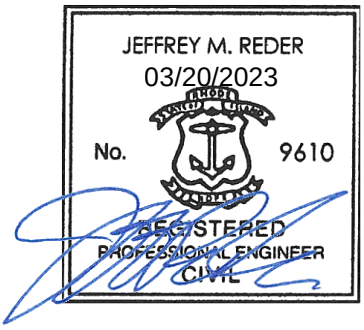
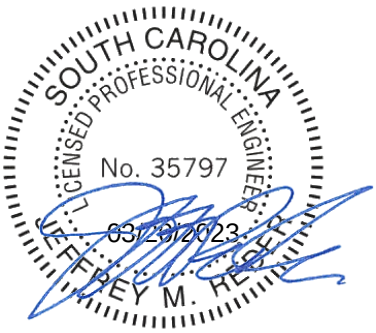
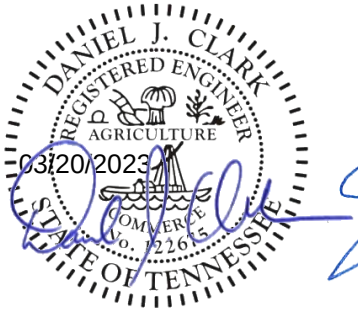
Oklahoma	Oregon	Pennsylvania
		
Jeffrey M. Reder, P.E P.E #: 24780	Jeffrey M. Reder, P.E P.E #: 93904PE	Jeffrey M. Reder, P.E P.E #: PE77455
Rhode Island	**South Carolina**	**South Carolina**
		
Jeffrey M. Reder, P.E P.E #: 9610	Jeffrey M. Reder k, P.E P.E #: 35797	Clark Reder Engineering #4827
South Dakota	**Tennessee**	**Texas**
		
Daniel J. Clark, P.E P.E #: 10989	Daniel J. Clark, P.E P.E #: 00113846	Jeffrey M. Reder, P.E P.E #: 124100

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F-12154

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023

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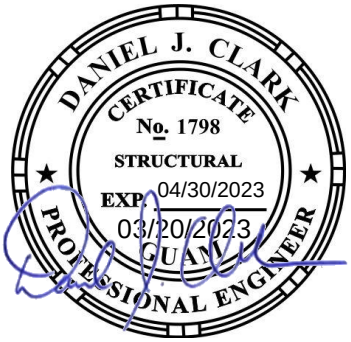
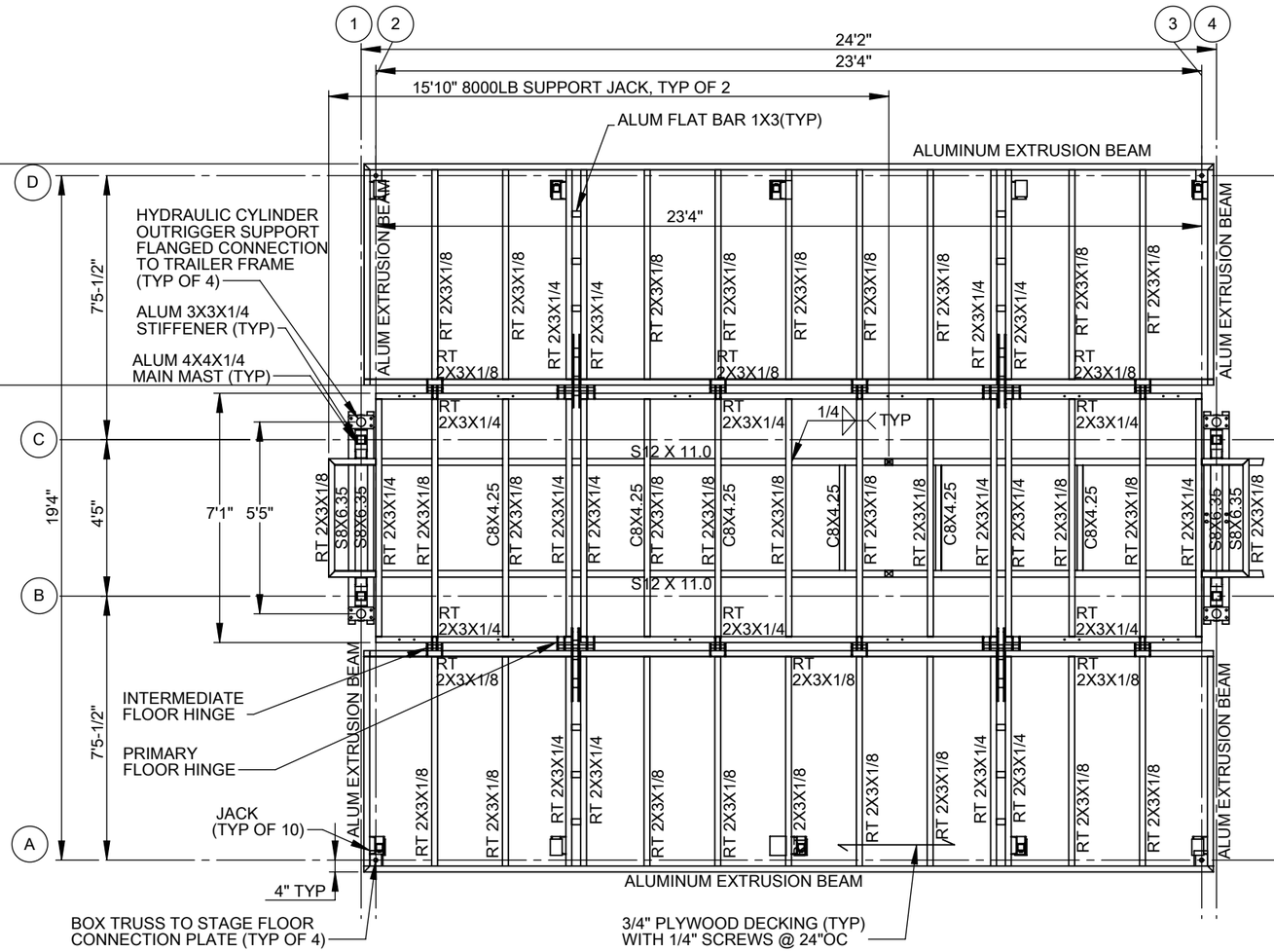
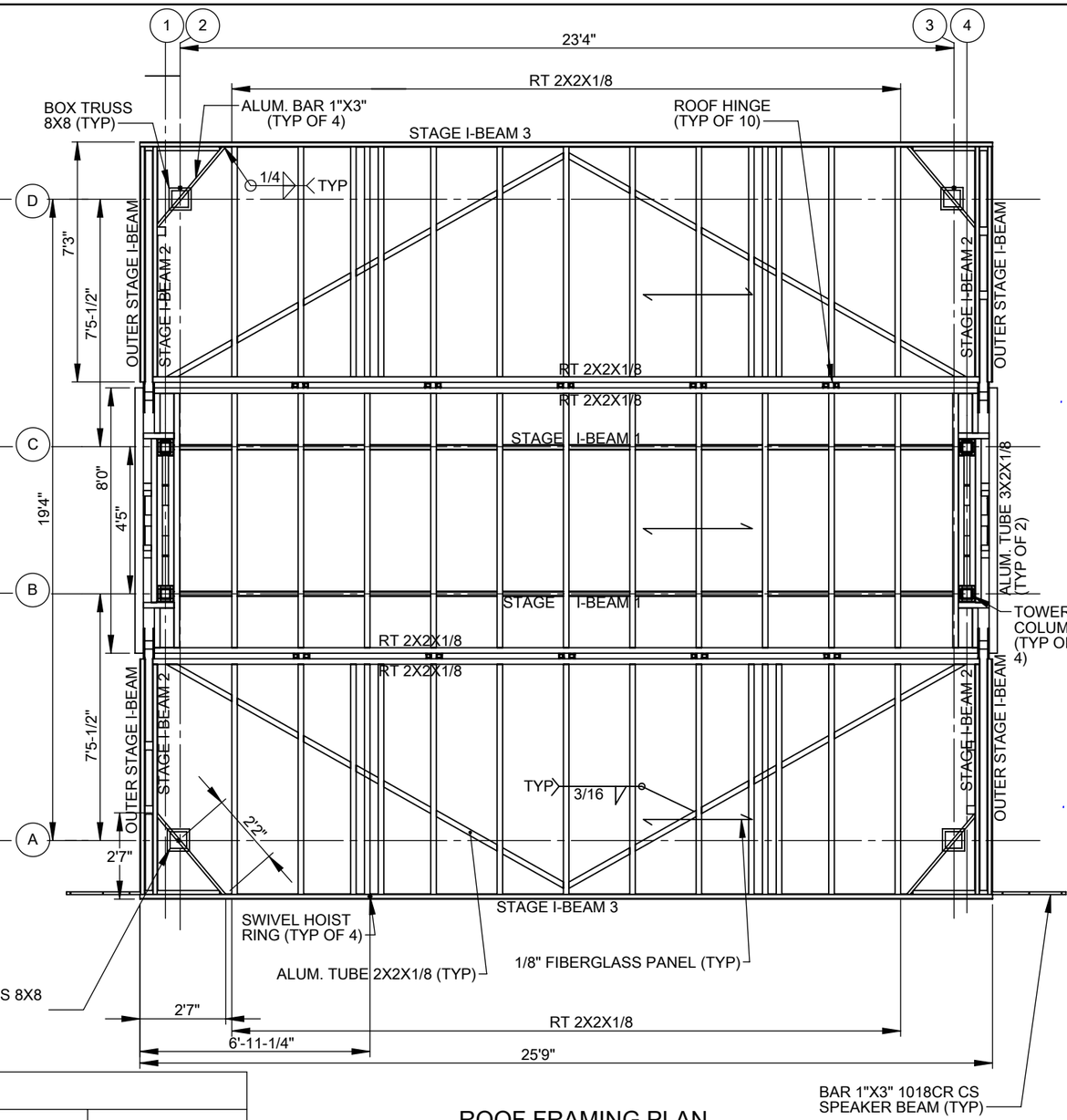
Utah	Vermont	Virginia
		
Jeffrey M. Reder, P.E P.E #: 7536302-2203	Daniel J. Clark, P.E P.E #: 31076	Daniel J. Clark, P.E P.E #: SE14360
Washington	**West Virginia**	**Wisconsin**
		
Daniel J. Clark, P.E P.E #: 50654	Jeffrey M. Reder, P.E P.E #: 14355	Daniel J. Clark, P.E P.E #: S5317
Wyoming	**Puerto Rico**	**Guam**
		
Jeffrey M. Reder, P.E P.E #: PE0051394	Jeffrey M. Reder, P.E P.E #: 27576	Daniel J. Clark, P.E P.E #: 17438

Project: Apex 2420
Client: Progressive Products

CRE Project #: 23.53.02
Date: 3/20/2023



PLATFORM FRAMING PLAN
SCALE 1:50



ROOF FRAMING PLAN
SCALE 1:50

NOTE:

1) Reference EL = Grade = EL 100'-0"

2) T/Floor EL = 103'-6" (+/-)

3) Framing material is aluminum unless otherwise noted.

4) See sheet S-5 for General Notes, High Wind Action Plan and Ballast Requirements

BEAM LOADING CHART

BEAM CALLOUT	UNIFORM LOAD (PLF)	1/2 POINTS (LBS)	1/3 POINTS (LBS)	1/4 POINTS (LBS)
BEAM 1	60	700	550	375
BEAM 2	80	---	---	---
BEAM 3	75	850	650	450
SPEAKER BEAM	----	2000	----	----

STAGE & ROOF FRAMING PLAN
APEX STAGES
APEX STAGE 24' X 20'
PITTSBURG, KS

DATE: 1/8/2018

DRAWN BY: STH

PROJECT: 17.534.02

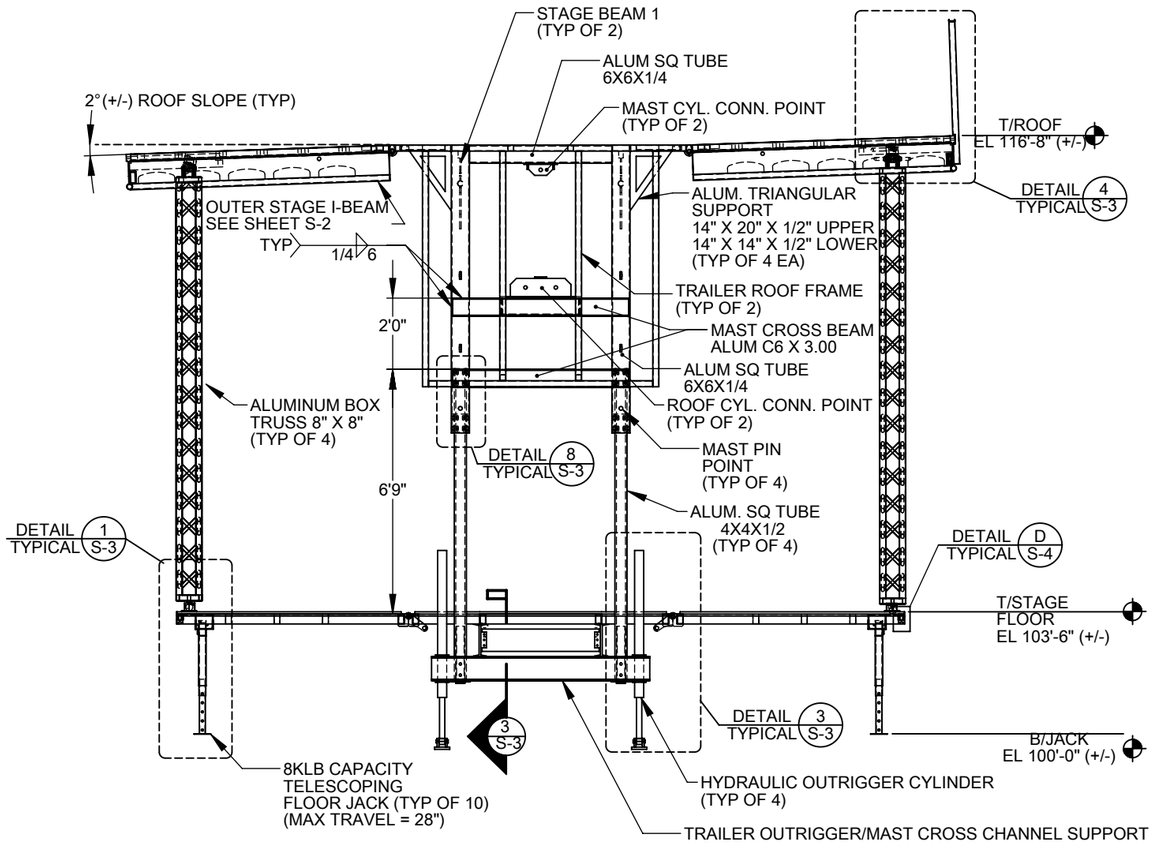
FILE NAME: 2420FLALPG1.SLDDRW

PROGRESSIVE PRODUCTS INC.

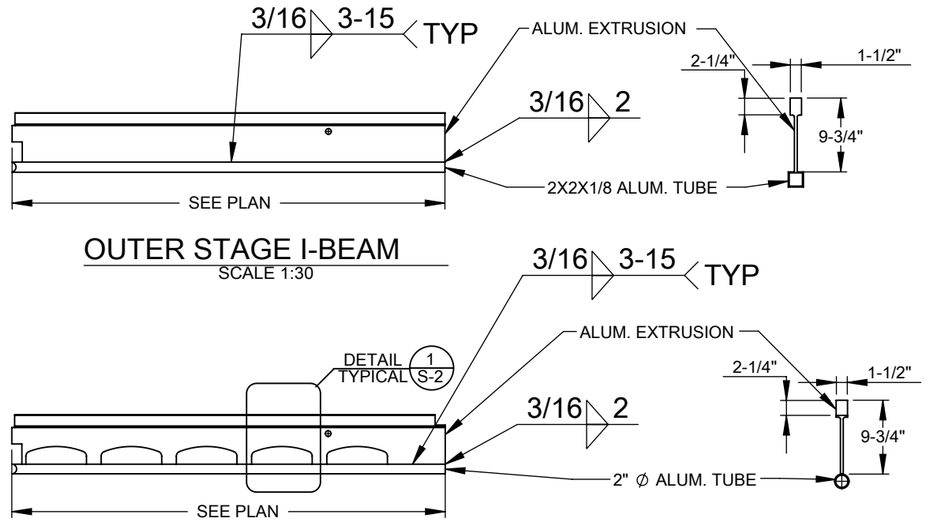
APEX STAGES
a division of Progressive Products, Inc

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

S-1
1 of 5

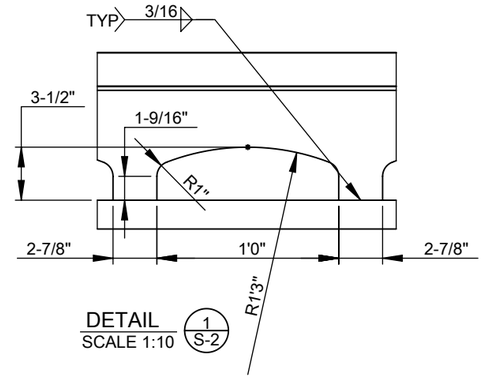


ELEVATION A
SCALE 1:50 S-2

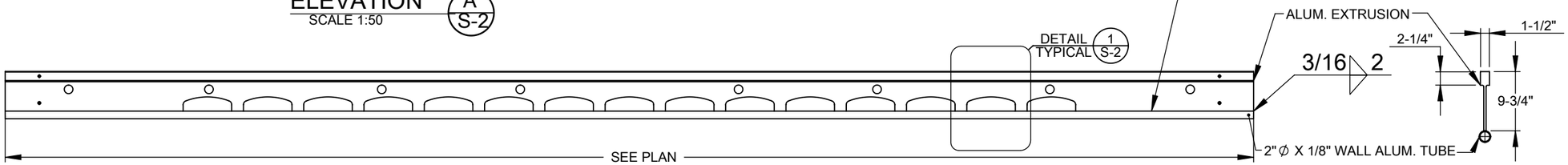


OUTER STAGE I-BEAM
SCALE 1:30

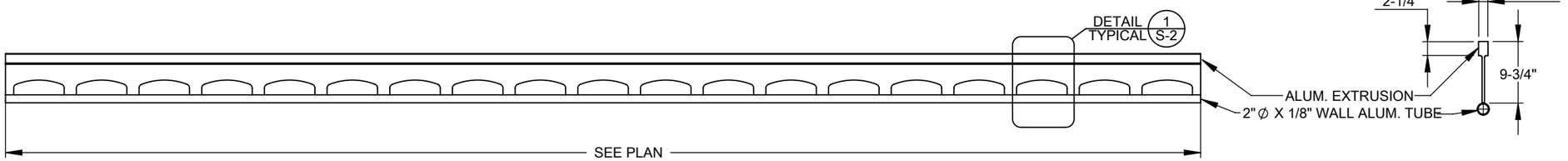
STAGE I-BEAM 2
SCALE 1:30



DETAIL 1
SCALE 1:10 S-2



STAGE I-BEAM 3
SCALE 1:30



STAGE I-BEAM 1
SCALE 1:30

ELEVATIONS, DETAILS
APEX STAGES
APEX STAGE 24' X 20'
PITTSBURG, KS

DATE: 5/2/2014
DRAWN BY: STH
PROJECT NUMBER: 14.534.05
FILE NAME: 2420FLALPG2SD.DWG

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APEX STAGES a division of Progressive Products, Inc

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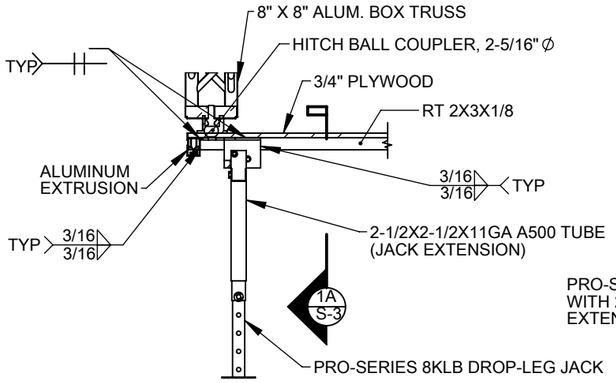
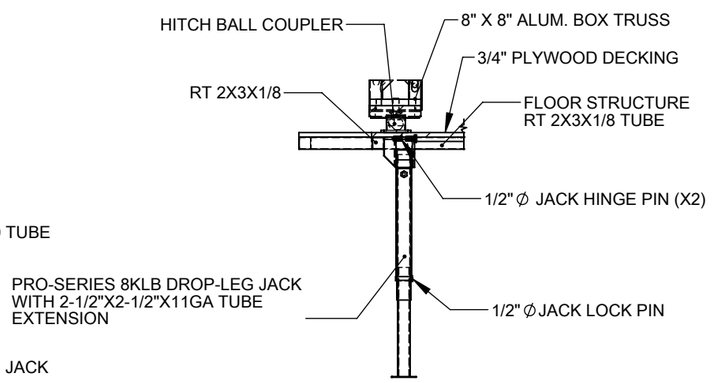
10091 Mosteller Lane
West Chester, OH 45069
513 851 1223

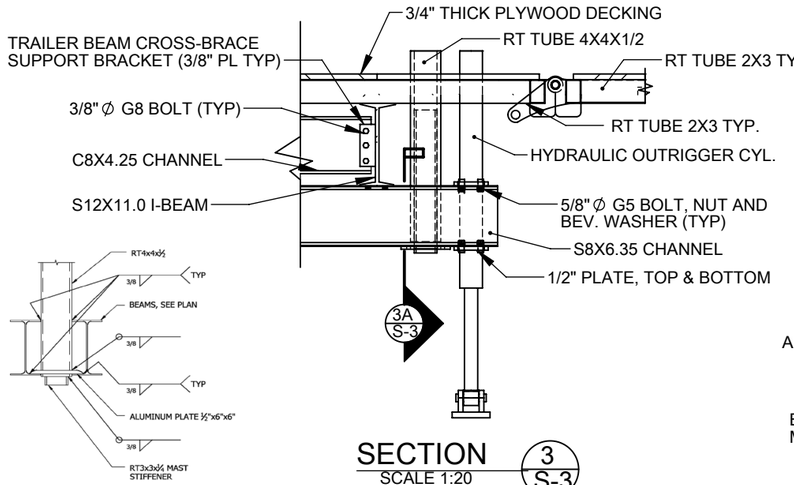
S-2
2 of 5



SECTION 1 / SCALE 1:25 / S-3

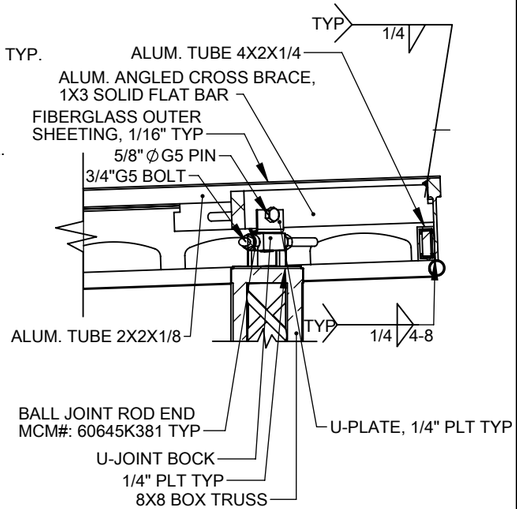


SECTION 1A / SCALE 1:25 / S-3



SECTION 3A / SCALE 1:20 / S-3

SECTION 3 / SCALE 1:20 / S-3



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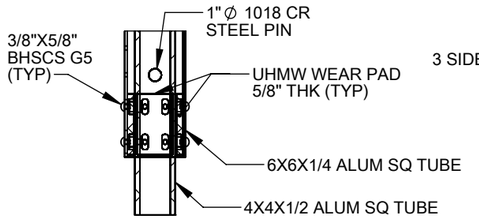
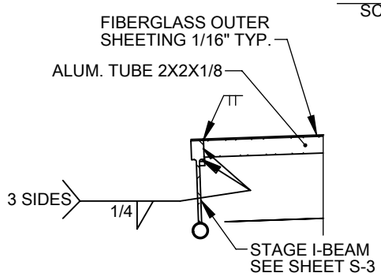


SECTION 8 / SCALE 1:15 / S-3



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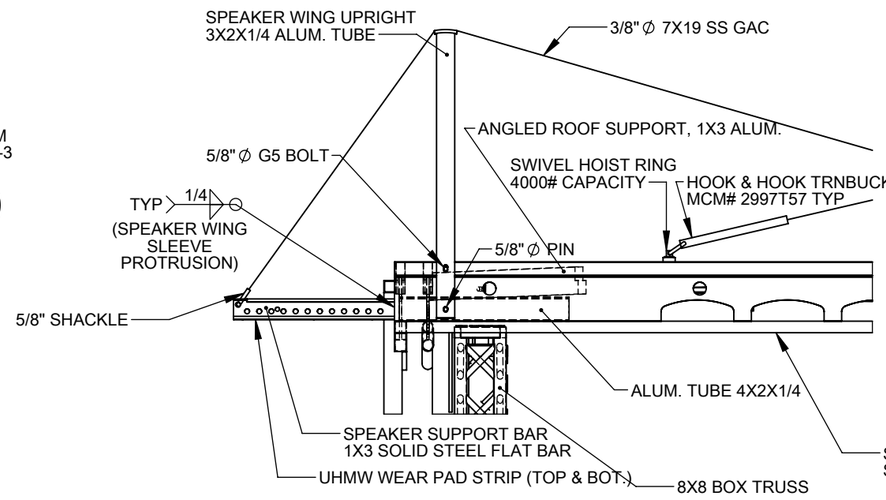

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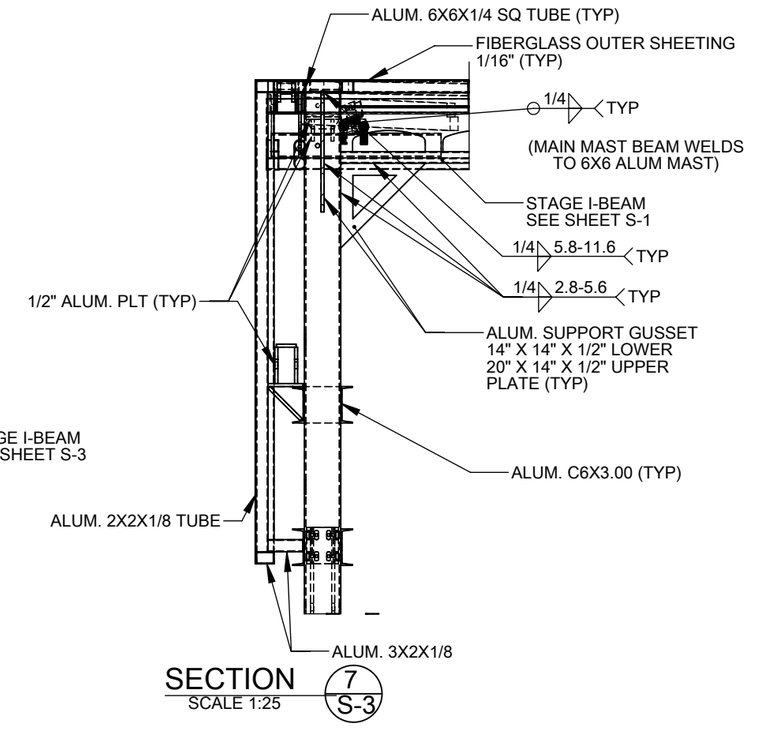
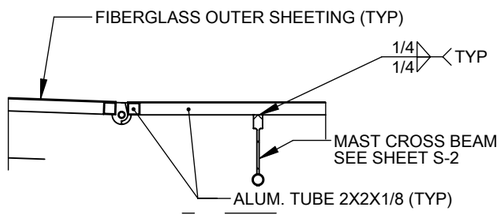
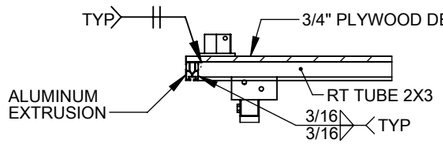


SECTION 7 / SCALE 1:25 / S-3



SECTION 9 / SCALE 1:25 / S-3



SECTION 2 / SCALE 1:25 / S-3

FRAMING SECTIONS, DETAILS
APEX STAGES
APEX STAGE 24' X 20'
PITTSBURG, KS

DATE: 5/2/2014
DRAWN BY: STH
PROJECT NUMBER: 14.534.05
FILE NAME: 2420FLALPG3SD.DWG

PROGRESSIVE PRODUCTS INC.
APEX STAGES a division of Progressive Products, Inc

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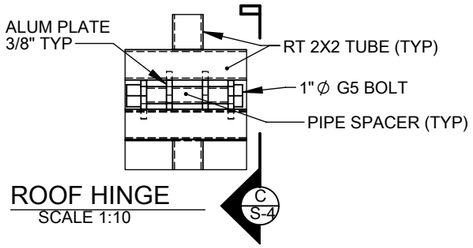
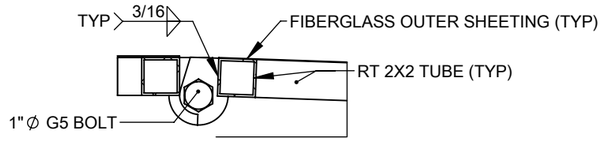
West Chester, OH 45069
513 851 1223

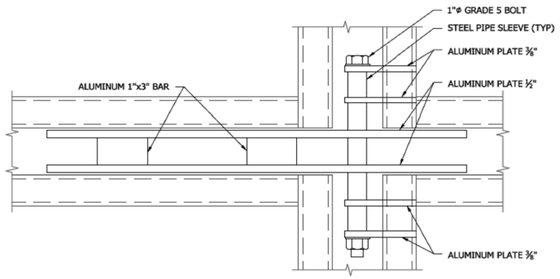
S-3
3 of 5



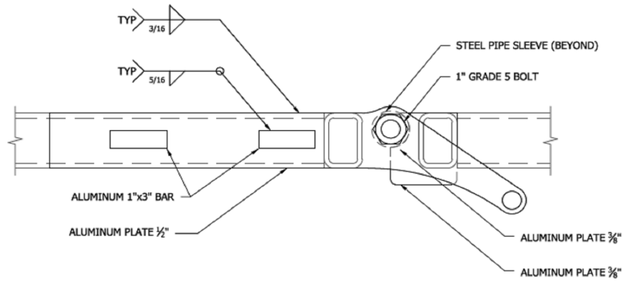
ROOF HINGE
SCALE 1:10



SECTION C S-4
SCALE 1:8

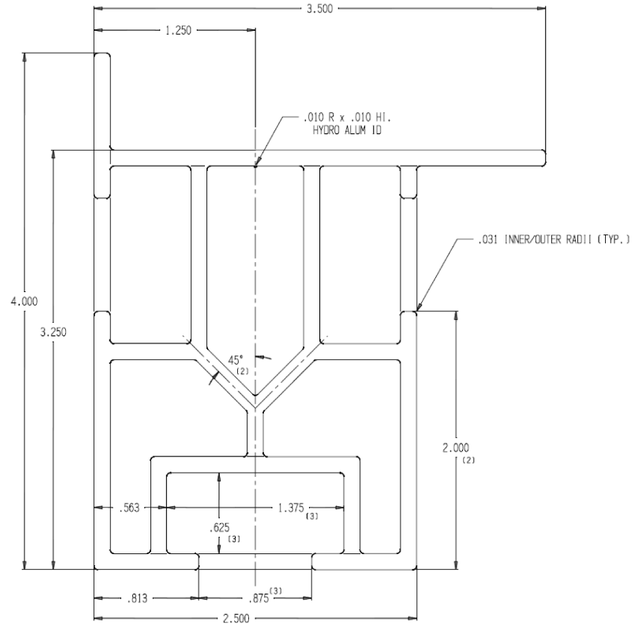


PLAN VIEW

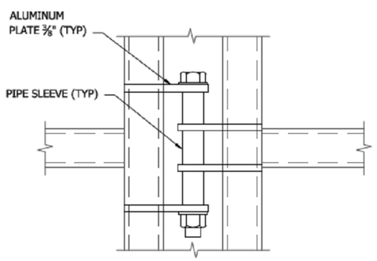


SECTION VIEW

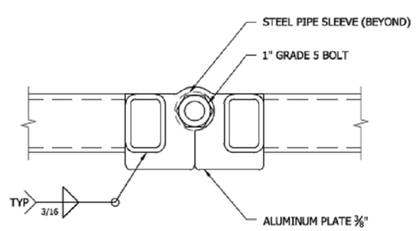
PRIMARY FLOOR HINGE
SCALE 1:15



DETAIL D S-4



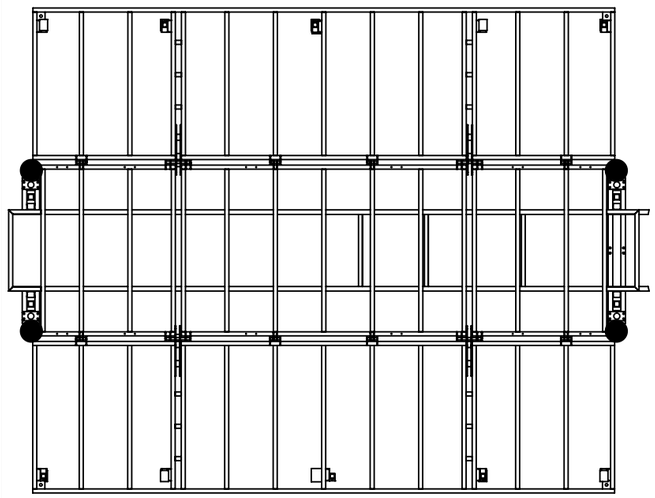
PLAN VIEW



SECTION VIEW

INTERMEDIATE FLOOR HINGE
SCALE 1:10

	HINGE DETAILS APEX STAGES APEX STAGE 24' X 20' PITTSBURG, KS	DATE: 5/2/2014 DRAWN BY: STH PROJECT NUMBER: 14.534.05 FILE NAME: 2420FLALPG4SD.DWG	PROGRESSIVE PRODUCTS INC. APEX STAGES a division of Progressive Products, Inc	CLARK REDER ENGINEERING 10091 Mosteller Lane West Chester, OH 45069 513 851 1223	S-4 4 of 5



UPLIFT BALAST PLAN
SCALE 1:50

- -- INDICATES 1100# BALAST FOR AN OPEN STRUCTURE (NO SCRIM) @ 67.5MPH OR WITH SCRIM INSTALLED ON UPSTAGE WALL AND BANNER PACKAGE SCRIM INSTALLED AT 20MPH
- -- INDICATES 2500# BALAST WITH SCRIM INSTALLED ON UPSTAGE WALL @ 40MPH (BANNER PACKAGE SCRIM REMOVED AT 20MPH)
- -- INDICATES NO BALLAST REQUIRED FOR AN OPEN STRUCTURE (NO SCRIM) @ 50MPH OR WITH SCRIM INSTALLED ON UPSTAGE WALL AND BANNER PACKAGE SCRIM INSTALLED @20MPH.

NOTES:
1. SEE HIGH WIND ACTION PLAN ON THIS SHEET.

GENERAL STRUCTURAL NOTES

CODES AND REFERENCE

1. 2018 INTERNATIONAL BUILDING CODE
2. ASCE 7-16 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 S-1
NOTE: ROOF SKIN 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: 67.5 MPH* (BARE STRUCTURE - NO SCRIMS ATTACHED)
B. DESIGN WIND SPEED : 40 MPH (WITH ONLY BACKDROP, ROOF 1 SIDEWALL SCRIM AND FRONT SCRIM ATTACHED)
C. DESIGN WIND SPEED: 20 MPH (WITH BACKDROP, ROOF 1 SIDEWALL SCRIM, FRONT SKIRT AND BANNER SCRIMS ATTACHED***)
D. EXPOSURE C
E. IMPORTANCE FACTOR: 1.0

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

*115 MPH WIND SPEED REQUIREMENT REDUCED IN ACCORDANCE WITH ASCE 37-02 DUE TO THE TEMPORARY NATURE OF STRUCTURE.
** SEE UPLIFT BALLAST PLAN AND HIGH WIND ACTION 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.

HIGH WIND ACTION PLAN FOR 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 TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. AN ANEMOMETER SHALL BE PLACED AT THE TOP OF A STRUCTURE 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.
4. NOTED WINDS SPEEDS ARE 3 SECOND GUSTS IN ACCORANCE WITH ASCE 7.
5. SEE UPLIFT BALLAST PLAN THIS SHEET FOR REQUIRED BALLAST.
6. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH: A TEAM OF QUALIFIED PERSONNEL SHALL BE PUT ON ALERT.
7. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 20 MPH: ALL SIDEWALL SCRIM SHALL BE REMOVED FROM THE SYSTEM INCLUDING THE BANNER SCRIM CONCEALING THE SPEAKER WING WIRE ON TOP OF STAGE AND THE BANNER SCRIM ON THE SPEAKER WINGS. ALL VIDEO WALLS AND LARGE 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.
8. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 50 MPH: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED.
9. 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 FOR 1100# 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 TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. AN ANEMOMETER SHALL BE PLACED AT THE TOP OF A STRUCTURE 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.
4. NOTED WINDS SPEEDS ARE 3 SECOND GUSTS IN ACCORANCE WITH ASCE 7.
5. SEE UPLIFT BALLAST PLAN THIS SHEET FOR REQUIRED BALLAST.
6. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH: A TEAM OF QUALIFIED PERSONNEL SHALL BE PUT ON ALERT.
7. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 20 MPH: ALL SIDEWALL SCRIM SHALL BE REMOVED FROM THE SYSTEM INCLUDING THE BANNER SCRIM CONCEALING THE SPEAKER WING WIRE ON TOP OF STAGE AND THE BANNER SCRIM ON THE SPEAKER WINGS. ALL VIDEO WALLS AND LARGE 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.
8. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 50 MPH: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED.
9. 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 FOR 2500# 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 TO IMPLEMENT THE HIGH WIND ACTION PLAN.
3. AN ANEMOMETER SHALL BE PLACED AT THE TOP OF A STRUCTURE 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.
4. NOTED WINDS SPEEDS ARE 3 SECOND GUSTS IN ACCORANCE WITH ASCE 7.
5. SEE UPLIFT BALLAST PLAN THIS SHEET FOR REQUIRED BALLAST.
6. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 15 MPH: A TEAM OF QUALIFIED PERSONNEL SHALL BE PUT ON ALERT.
7. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 20 MPH: ALL BANNER SCRIM SHALL BE REMOVED FROM THE SYSTEM INCLUDING THE BANNER SCRIM CONCEALING THE SPEAKER WING WIRE ON TOP OF STAGE AND THE BANNER SCRIM ON THE SPEAKER WINGS.
8. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 40 MPH: ALL THE REMAINING SIDEWALL SCRIM SHALL BE REMOVED FROM THE SYSTEM. ALL VIDEO WALLS AND LARGE 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.
9. WHEN WIND SPEEDS ARE EXPECTED TO EXCEED 50 MPH: ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED.
10. 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.

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 S-1 WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:
A. MISC PLATE, BAR, AND ANGLES: ASTM A36, FY = 36 KSI
B. 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, 2005 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 POSTIIVE 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

INSPECTIONS

1. THE MOBILE STAGE AND 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.

GENERAL STRUCTURE NOTES
APEX STAGES
APEX STAGE 24' X 20'
PITTSBURG, KS

DATE: 1/8/2018
DRAWN BY: STH
PROJECT NUMBER: 17.534.02
FILE NAME: 2420FLALPG2.SLDDRW

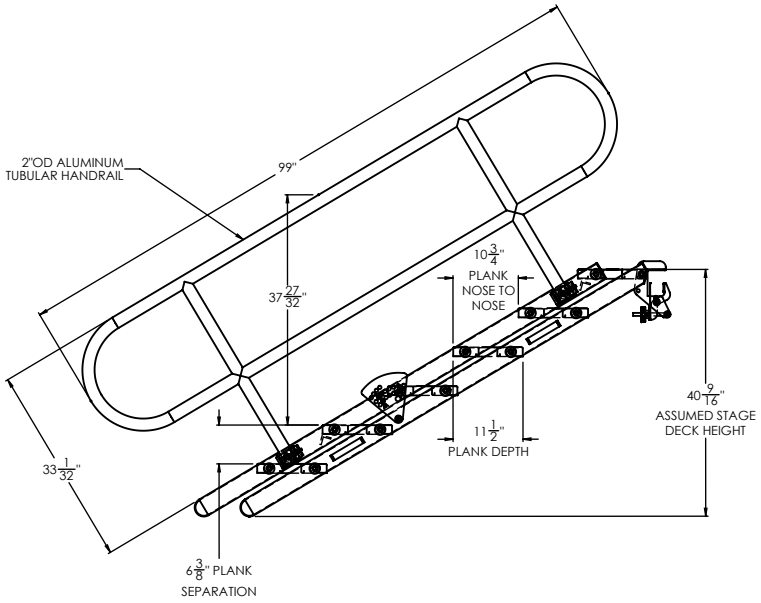
PROGRESSIVE PRODUCTS INC.
APEX STAGES
a division of Progressive Products, Inc

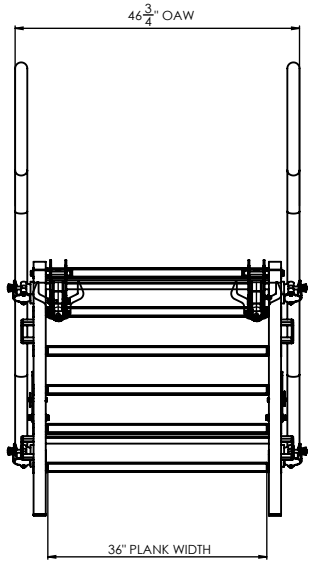
CLARK REDER ENGINEERING
10091 Mosteller Lane
West Chester, OH 45069
513 851 1223

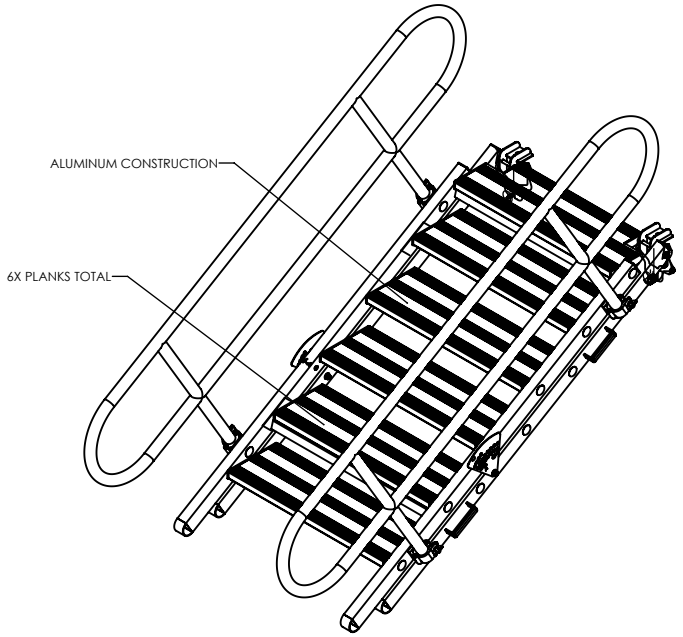
S-5
5 of 5

APEX 2016/2420/3224 Mobile Stage

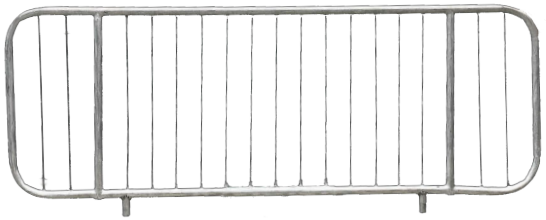
STAIRS
Measurements





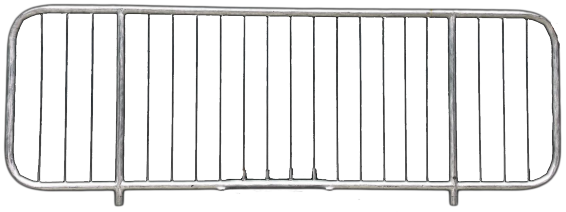


UPDATED RAILS FOR THE 6 STEP VERSION OF THE MOBILE STAGE WHEN PUBLIC ACCESS IS REQUIRED



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

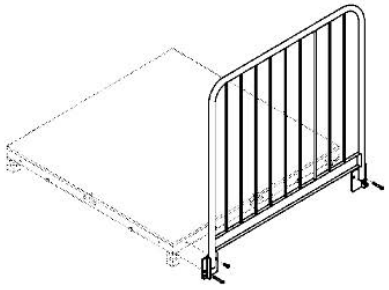
Guard Rail / Bracing

Guard Railing

4' Vertical Guard Rail

2' Vertical Guard Rail

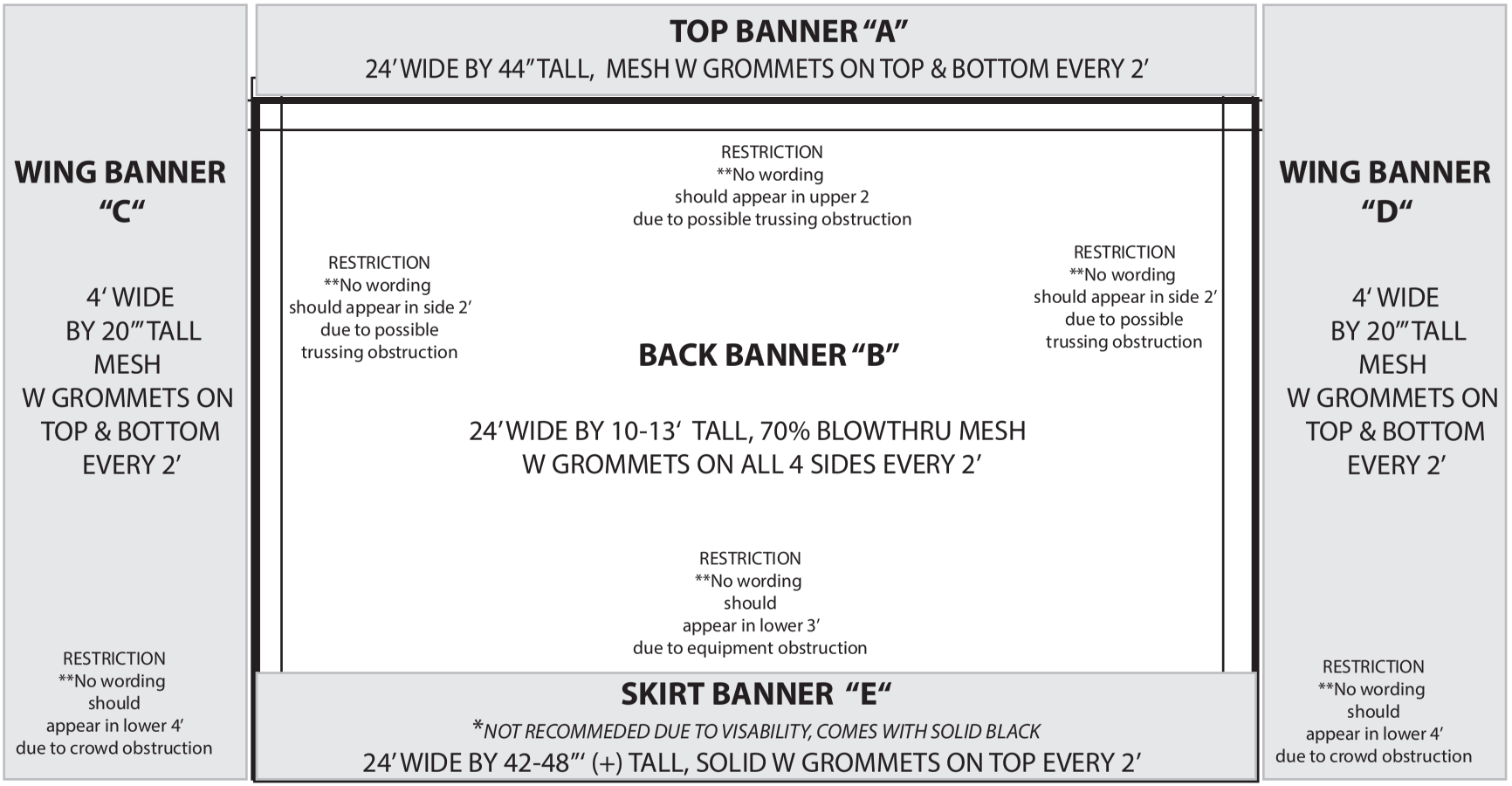
Description	Weight
Guard Rail Panel, Vertical, 2'W x 42"H	22
Guard Rail Panel, Vertical, 4'W x 42"H	32



BANNER OPTIONS for

APEX 2420

updated 1/24/2017 tm



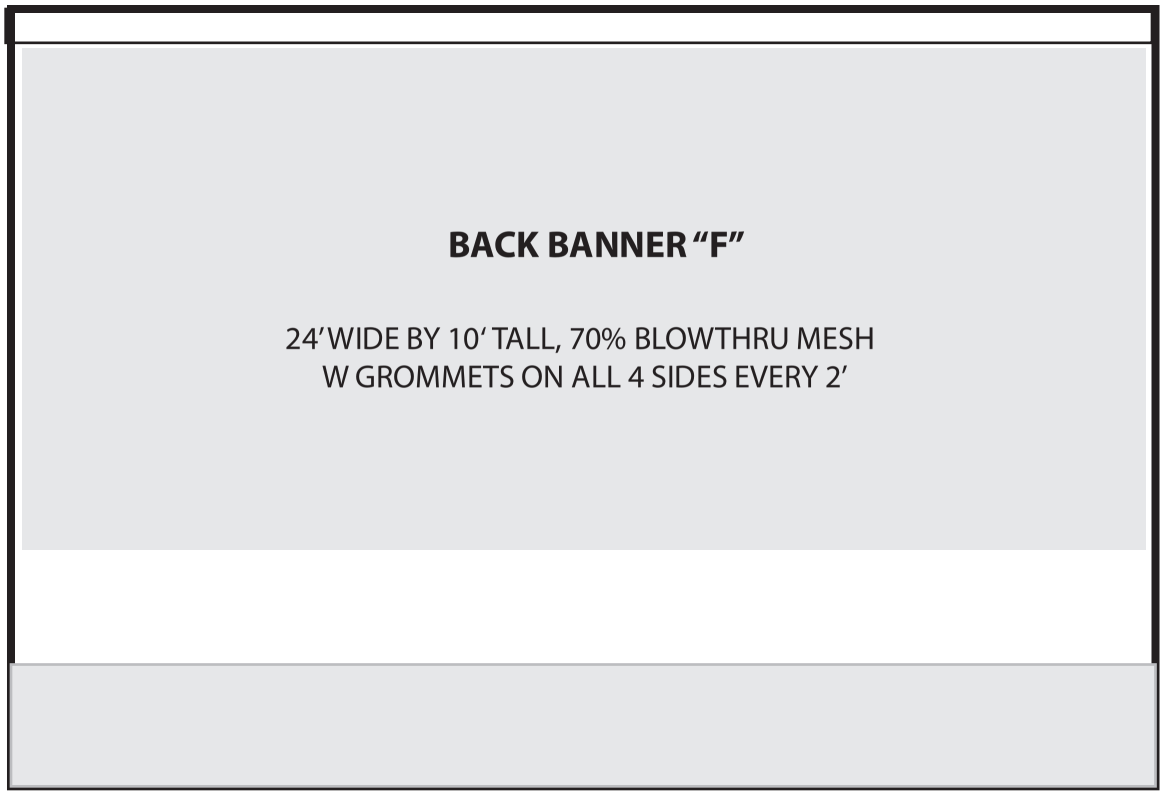
** Barricades may obstruct the lower 4' across the lower stage as well as attendees

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

BANNER OPTIONS for

APEX 2420

updated 1/24/2017 tm



24'WIDE

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

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