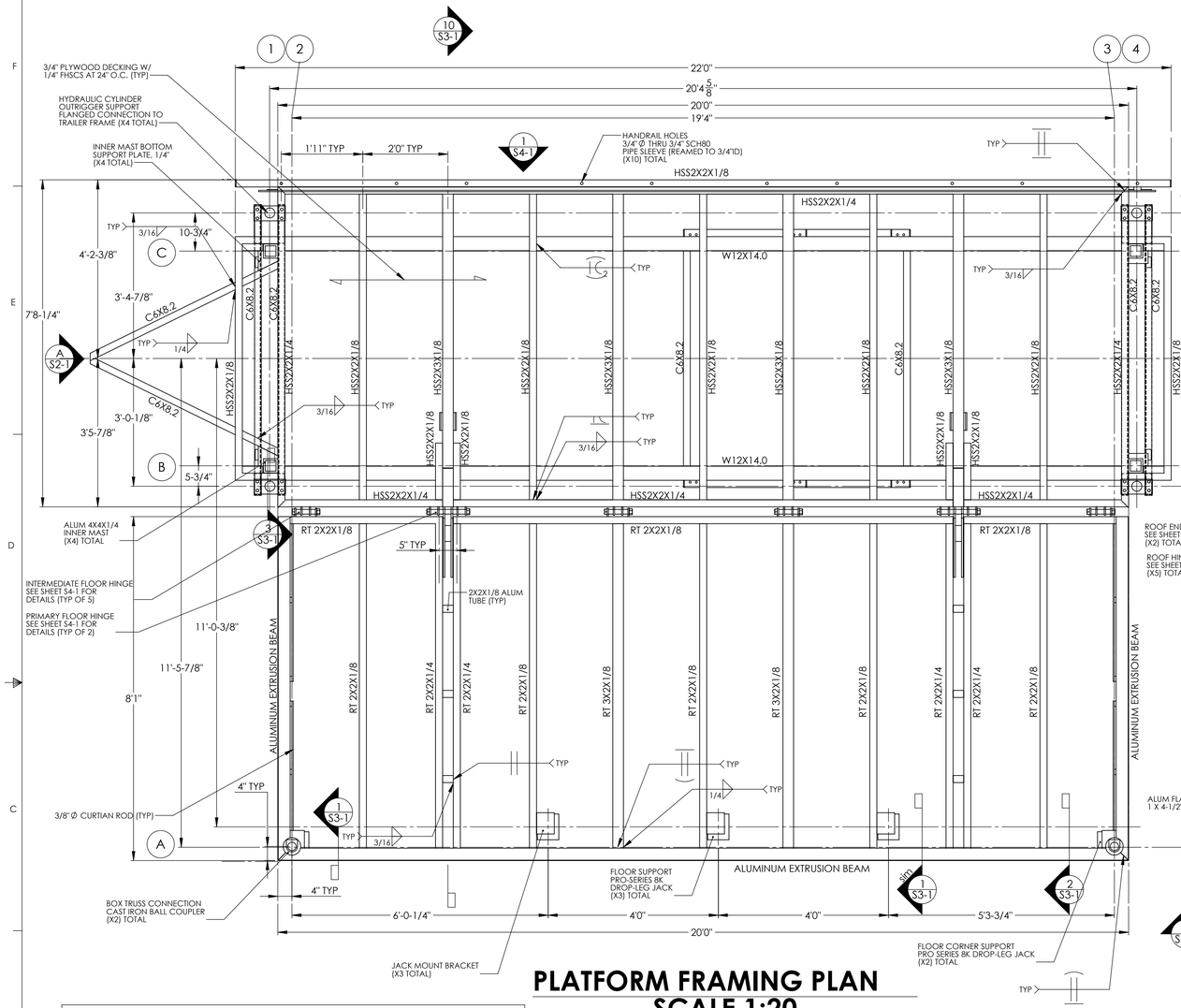
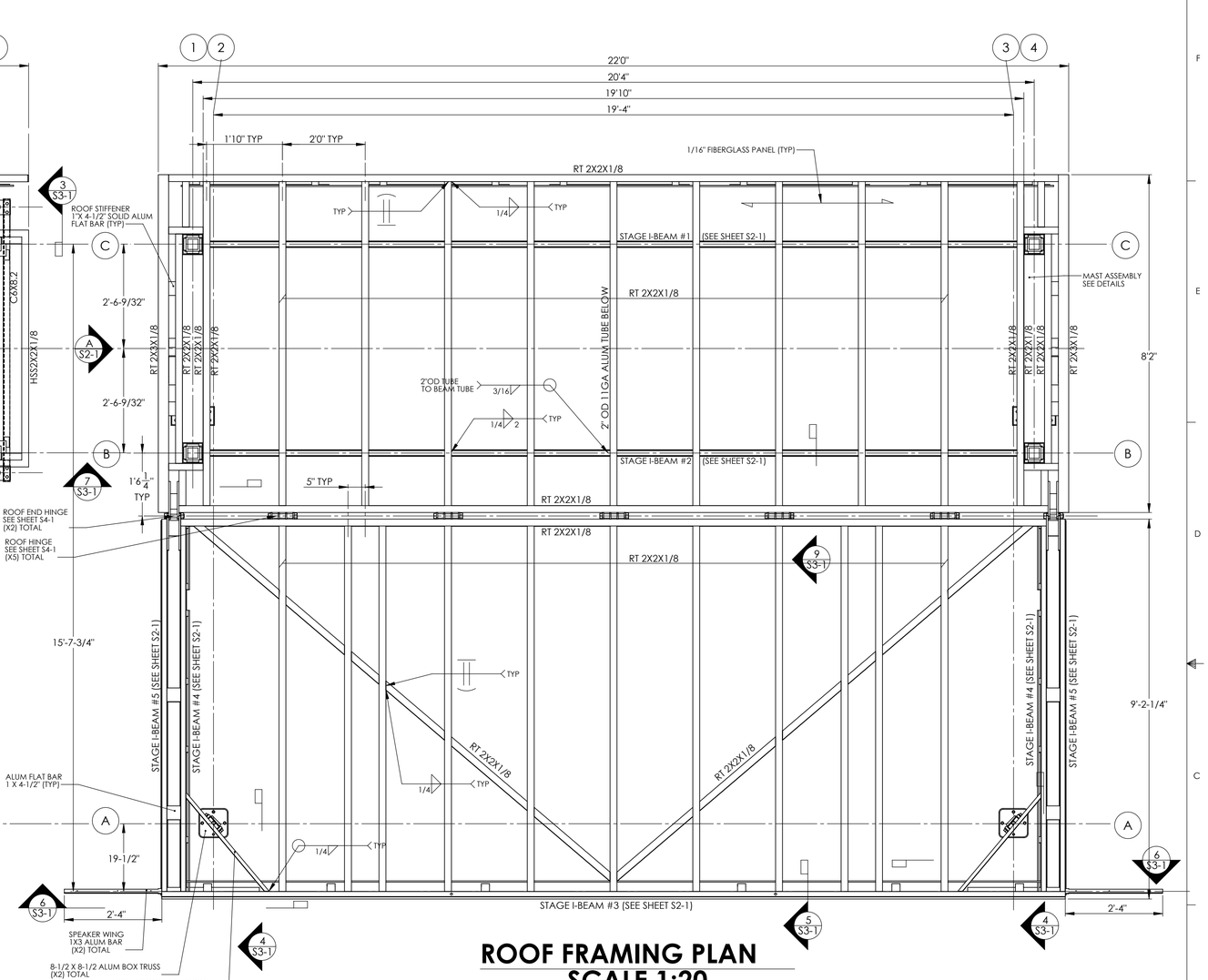


PLATFORM FRAMING PLAN
SCALE 1:20



ROOF FRAMING PLAN
SCALE 1:20

NOTES:

1) REFERENCE EL = GRADE = EL 100'-0"

2) T/FLOOR EL = 103'-4" (+/-)

3) PLATFORM FRAMING MATERIAL IS STEEL UNLESS OTHERWISE NOTED.

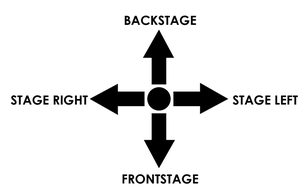
4) SEE SHEET S5-1 FOR GENERAL NOTES, HIGH-WIND ACTION PLAN AND BALLAST REQUIREMENTS.

5) RIGGING LOADS SUPPORTED ON THE 1"X3" ALUMINUM SPEAKER BAR SHALL BE VERTICAL ONLY.

6) SCRIM ON SIDES OF STRUCTURE MUST BE INSTALLED WITH 3FT SAG AT MIDSPAN TO PREVENT EXCESSIVE LATERAL LOADS ON STRUCTURAL MEMBERS.

BEAM LOADING CHART

BEAM CALLOUT	UNIFORM LOAD (PLF)	SINGLE POINT (LBS)	1/3 POINTS (LBS)	1/4 POINT (LBS)
BEAM 1	52	550	425	275
BEAM 2	0	0	0	0
BEAM 3	46	725	550	350
BEAM 4	44	-	-	-
SPEAKER BEAM	-	700	-	-



STAGE & ROOF FRAMING PLAN
APEX STAGES
APEX STAGE 16' X 20'
PITTSBURG, KS

DATE: 2.12.2014

DRAWN BY: STEPHEN HINTON

PROJECT NUMBER: 13.533.01

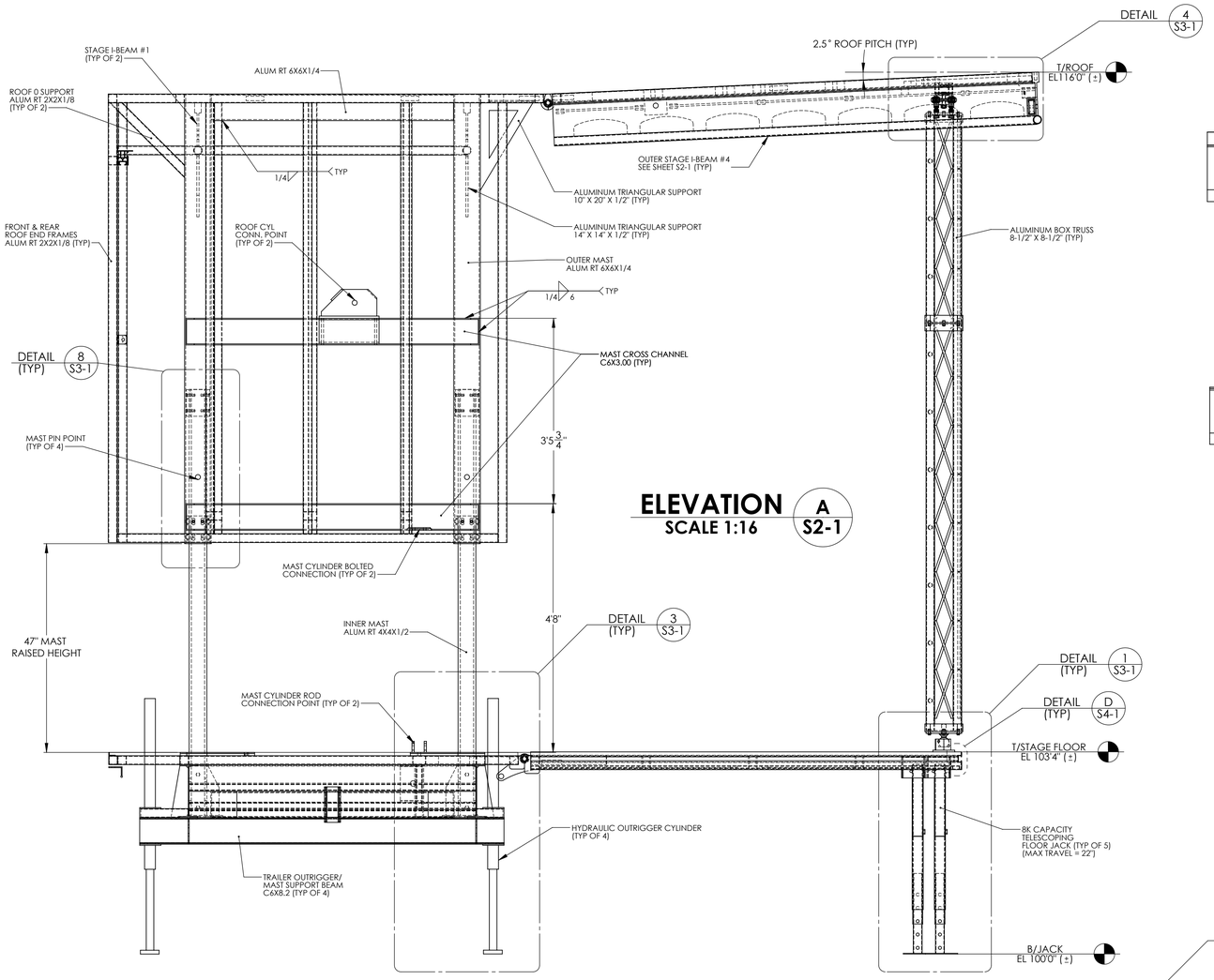
FILE NAME: 1620V1PG1SD.SLDDWG

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

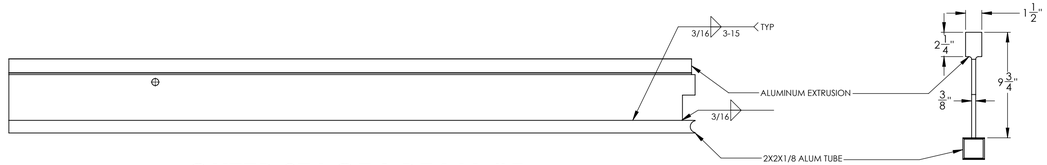
CLARK REDER ENGINEERING
4828 Business Center Way
Cincinnati, OH 45246
Office: 513 851 1223
Fax: 513 297 0934

PROFESSIONAL ENGINEER, STATE OF KS
JEFF REDER
Exp. 12/31/15
No. 20117
12/12/2014

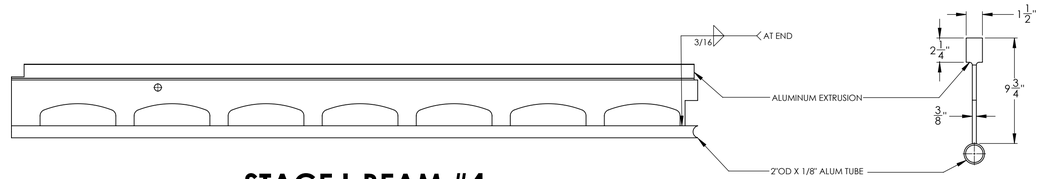
S1-1
1 OF 5



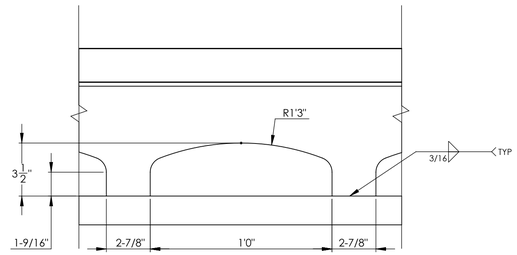
ELEVATION A S2-1
SCALE 1:16



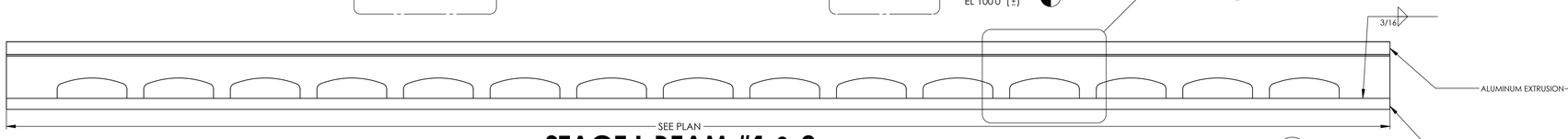
OUTER STAGE I-BEAM #5
SCALE 1:12



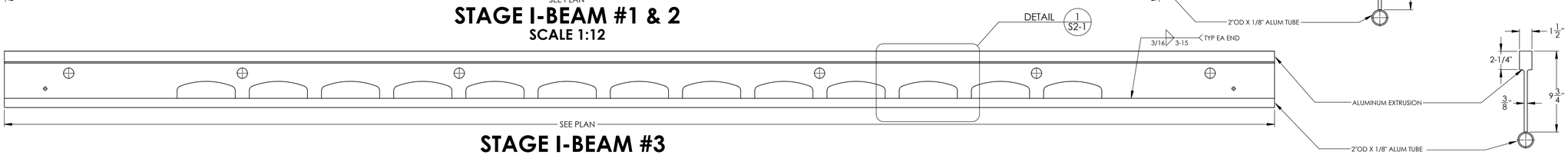
STAGE I-BEAM #4
SCALE 1:12



DETAIL 1 S2-1
SCALE 1:5



STAGE I-BEAM #1 & 2
SCALE 1:12



STAGE I-BEAM #3
SCALE 1:12

STAGE & BEAM ELEVATIONS, DETAILS
APEX STAGES
APEX STAGE 16' X 20'
PITTSBURG, KS

DATE: 2.12.2014

DRAWN BY: STEPHEN HINTON

PROJECT NUMBER: 13.533.01

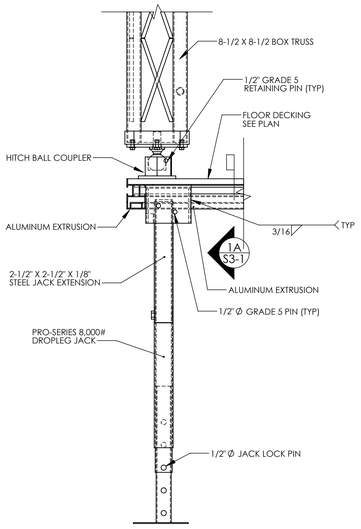
FILE NAME: 1620V1PG2SD.SLDDWG

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

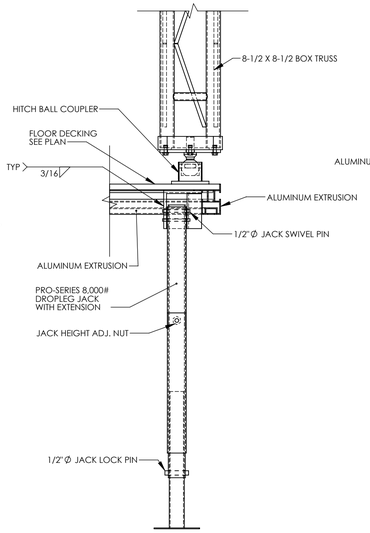
CLARK REDER ENGINEERING
4828 Business Center Way
Cincinnati, OH 45246
Office: 513 851 1223
Fax: 513 297 0934

PROFESSIONAL ENGINEER - STATE OF KANSAS
JEFF REDER
Exp. 12/31/15
CIVIL/STRUCTURAL
No. 20111
12/12/2014

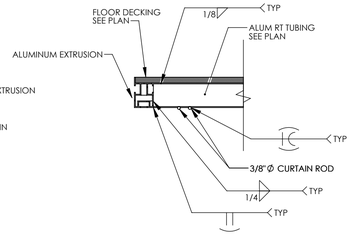
S2-1
2 OF 5



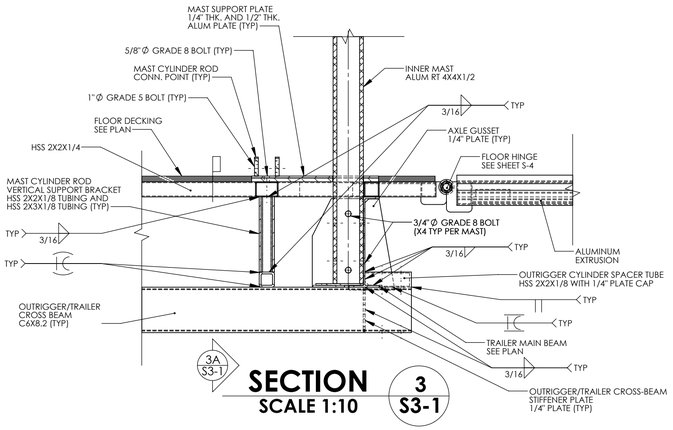
SECTION 1
SCALE 1:10 S3-1



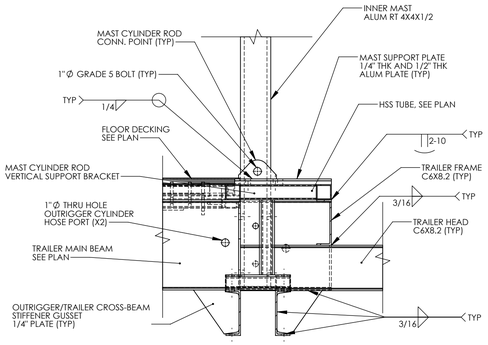
SECTION 1A
SCALE 1:10 S3-1



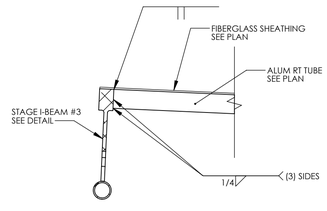
SECTION 2
SCALE 1:10 S3-1



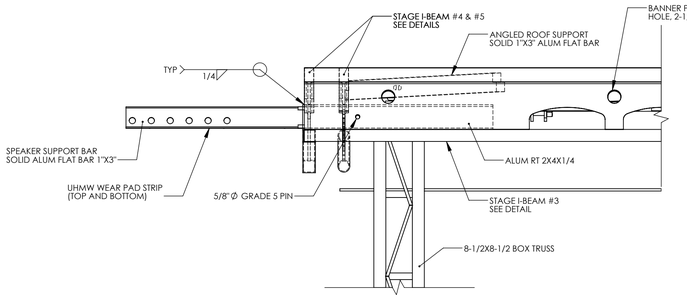
SECTION 3
SCALE 1:10 S3-1



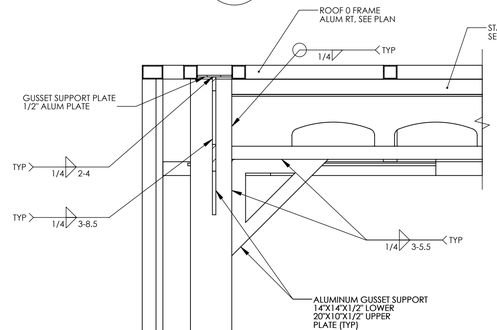
SECTION 3A
SCALE 1:10 S3-1

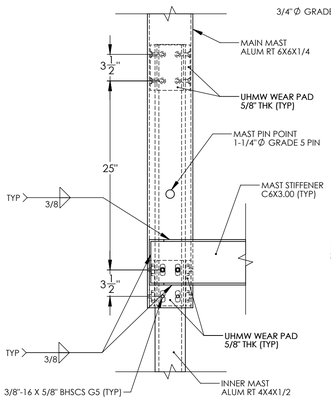


SECTION 5
SCALE 1:8 S3-1

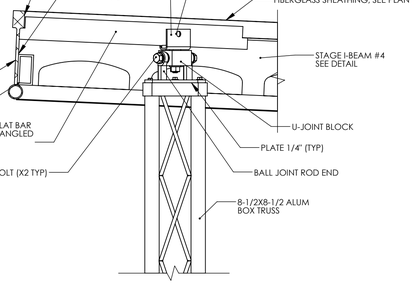


SECTION 6
SCALE 1:12 S3-1

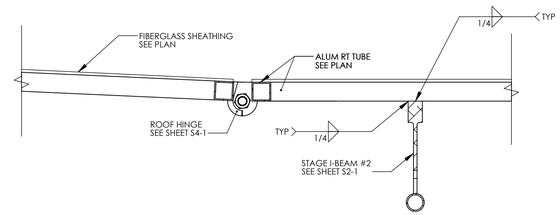




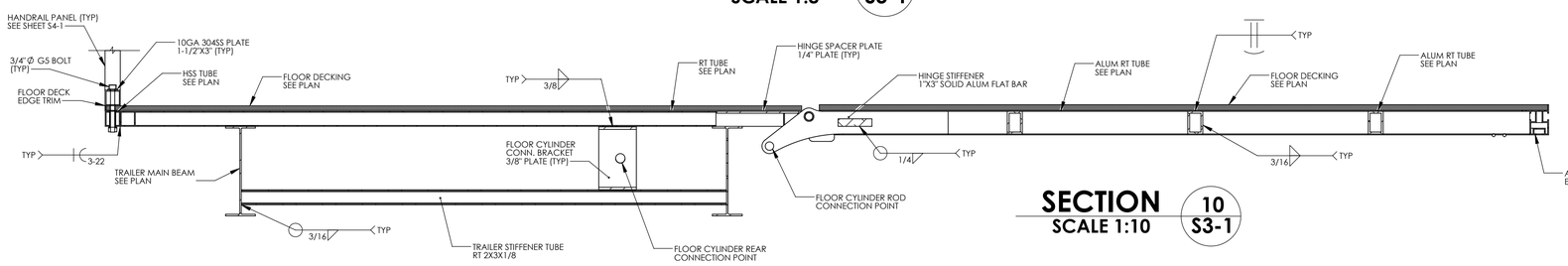
DETAIL 8
SCALE 1:10 S3-1



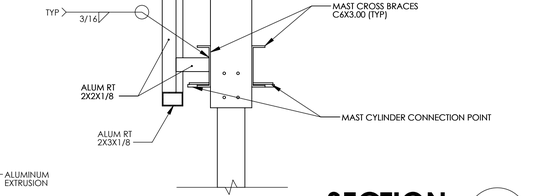
SECTION 4
SCALE 1:10 S3-1



SECTION 9
SCALE 1:8 S3-1



SECTION 10
SCALE 1:10 S3-1



SECTION 7
SCALE 1:11 S3-1

FRAMING SECTIONS, DETAILS
APEX STAGES
APEX STAGE 16' X 20'
PITTSBURG, KS

DATE: 2.12.2014

DRAWN BY: STEPHEN HINTON

PROJECT NUMBER: 13.533.01

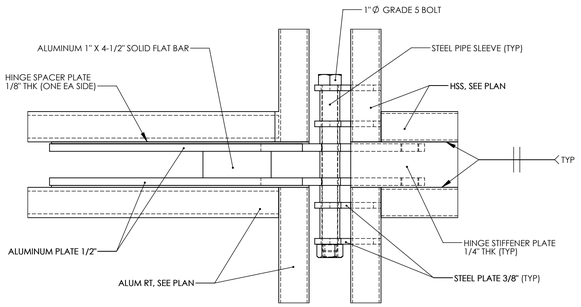
FILE NAME: 1620V1PG3SD.SLDDWG

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

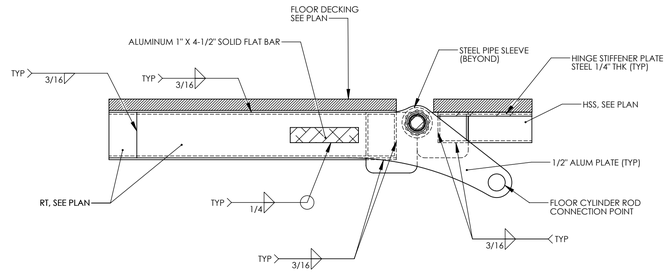
CLARK REDER ENGINEERING
4828 Business Center Way
Cincinnati, OH 45246
Office: 513 851 1223
Fax: 513 297 0934

PROFESSIONAL ENGINEER - STATE OF OHIO
JEFF REDER
Exp: 12/31/15
CIVIL/STRUCTURAL
No. 20117
12/2/2014

S3-1
3 OF 5

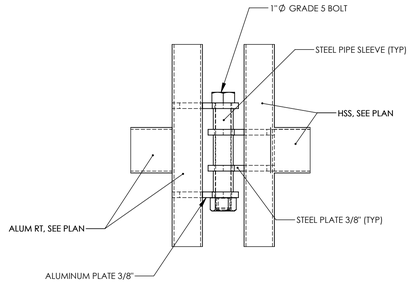


PLAN VIEW

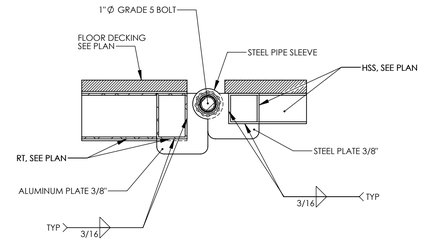


SECTION VIEW

PRIMARY FLOOR HINGE
SCALE 1:5

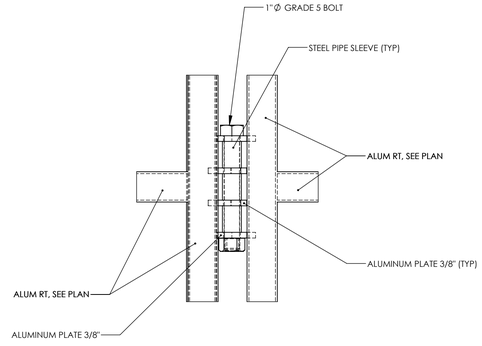


PLAN VIEW

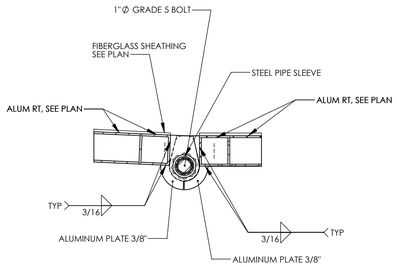


SECTION VIEW

SECONDARY FLOOR HINGE
SCALE 1:5

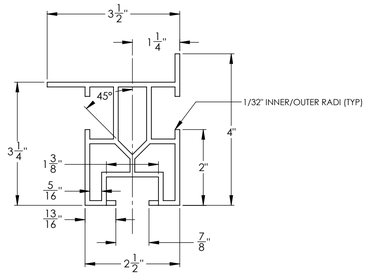


PLAN VIEW

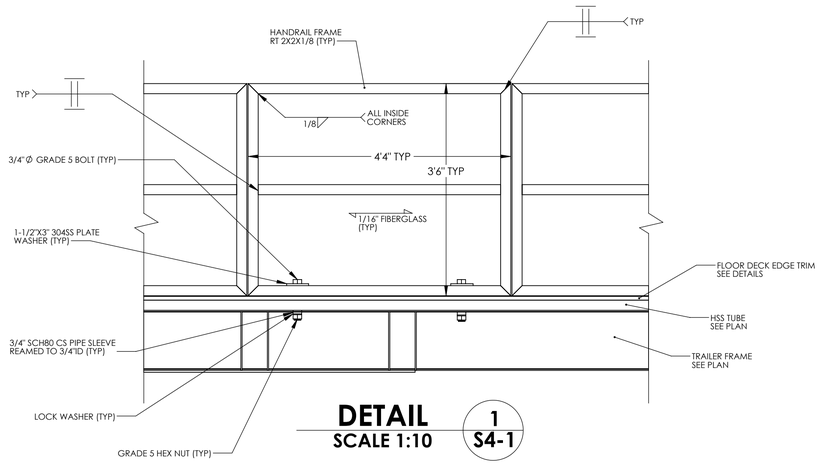


SECTION VIEW

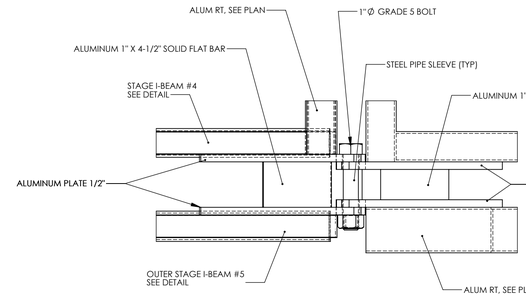
ROOF HINGE
SCALE 1:5



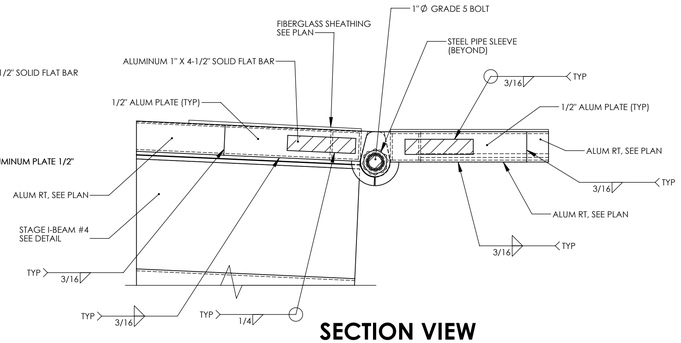
ALUMINUM EXTRUSION
SCALE 1:2



DETAIL 1
SCALE 1:10 S4-1



PLAN VIEW



SECTION VIEW

ROOF END HINGE
SCALE 1:5

FRAMING SECTION, HINGE DETAILS
APEX STAGES
APEX STAGE 16' X 20'
PITTSBURG, KS

DATE: 2.12.2014

DRAWN BY: STEPHEN HINTON

PROJECT NUMBER: 13.533.01

FILE NAME: 1620V1PG4SD.SLDDWG

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

CLARK REDER ENGINEERING
4828 Business Center Way
Cincinnati, OH 45246
Office: 513 851 1223
Fax: 513 297 0934

PROFESSIONAL ENGINEER - STATE OF OHIO
JEFF REDER
Exp: 12/31/15
CIVIL/STRUCTURAL
No. 20117
02/12/2014

S4-1
4 OF 5

GENERAL STRUCTURAL NOTES

CODES AND REFERENCE
1. 2012 INTERNATIONAL BUILDING CODE
2. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
3. ASCE 37-02 DESIGN LOADS ON STRUCTURES UNDER CONSTRUCTION
4. ANSI E1.21-2006 ENTERTAINMENT TECHNOLOGY, "TEMPORARY GROUND-SUPPORTED OVERHEAD STRUCTURES USED TO COVER THE STAGE AREAS AND SUPPORT EQUIPMENT IN THE PRODUCTION OF OUTDOOR ENTERTAINMENT EVENTS"
5. ALUMINUM DESIGN MANUAL, 2010 EDITION
6. AISC STEEL MANUAL, 14TH EDITION

DESIGN LOADS
1. DEAD LOAD: SELFWEIGHT OF STRUCTURE

2. ROOF RIGGING LOADS:
A. SEE BEAM LOADING CHART ON SHEET S1-1
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.
4. STAGE DECK LOADS:
A. LIVE LOAD: 50 PSF

5. WIND LOAD*:
A. DESIGN WIND SPEED: 30 MPH (BARE STRUCTURE OR WITH ONLY BACKDROP SCRIM AND FRONT SKIRT SCRIM ATTACHED)
B. DESIGN WIND SPEED: 20 MPH (WITH BACKDROP, FRONT SKIRT AND BANNER KIT SCRIMS** ATTACHED)
C. EXPOSURE C
6. SEISMIC LOADS DO NOT CONTROL THE DESIGN OF THIS STRUCTURE.

* SEE OPERATIONS MANAGEMENT PLAN THIS SHEET.
** BANNER KIT CONSISTS OF (X1) UPPER CENTER CROSS BANNER AND (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 = 42 KSI
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 LIFTING

1. ROOF SYSTEM SHALL NOT BE LIFTED 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 S1-1 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 20 MPH: ALL SCRIM ASSOCIATED WITH THE BANNER PACKAGE SHALL BE REMOVED FROM THE SYSTEM. THIS INCLUDES THE BANNER SCRIM ON TOP OF THE STAGE 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: 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. ALL SHOW OPERATIONS SHALL CEASE AND THE IMMEDIATE AREA SHALL BE EVACUATED. LOWER ROOF IF TIME PERMITS AND WIND SPEEDS ARE BELOW 10 MPH. ALL PERSONNEL SHOULD MAINTAIN SAFE DISTANCE FROM THE ROOF SYSTEM AS COLLAPSE MAY OCCUR.
7. 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.

GENERAL STRUCTURE NOTES & OPERATIONS MANAGEMENT PLAN
APEX STAGES
APEX STAGE 16' X 20'
PITTSBURG, KS

DATE: 2.12.2014
DRAWN BY: STEPHEN HINTON
PROJECT NUMBER: 13.533.01
FILE NAME: 1620V1PG5SD.SLDDWG

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

CLARK REDER ENGINEERING
4828 Business Center Way
Cincinnati, OH 45246
Office: 513 851 1223
Fax: 513 297 0934

PROFESSIONAL ENGINEER, STATE OF KANSAS
JEFF REDER
No. 20117
Exp. 12/31/15
PROFESSIONAL STRUCTURAL
12/12/2014

S5-1
5 OF 5