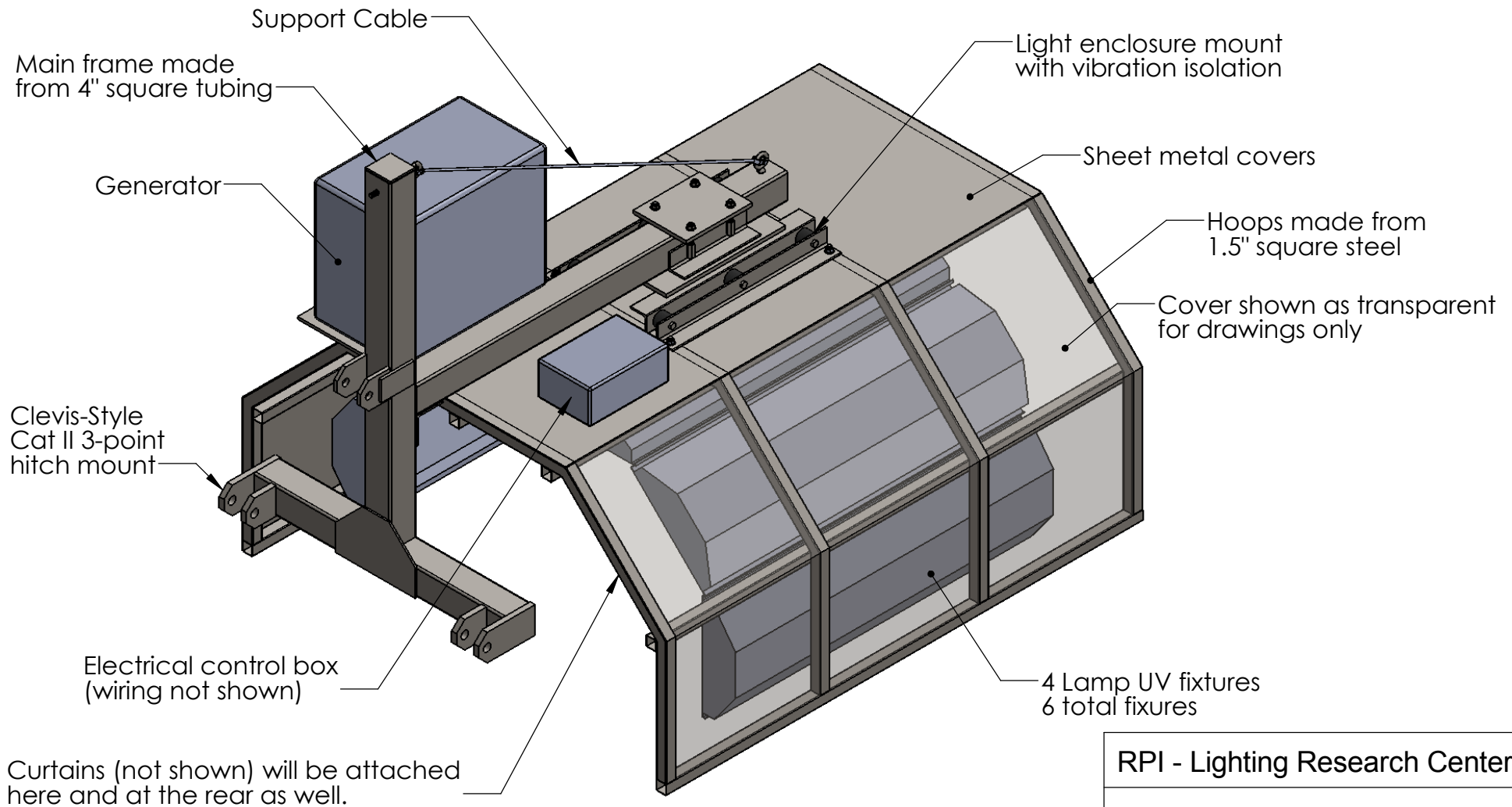


UV-C Treatment Attachment Construction Drawings

Designed for Ward's Berry Farm, Sharon, MA.

Funded By: NE SARE - Award Number: LNE19-388R-33243



Notes:

- Approximate total weight = 640 lbs
- Remote low-voltage ON/OFF switch provided for tractor operator's platform (not shown)
- **All dimensions in INCHES unless otherwise noted.**

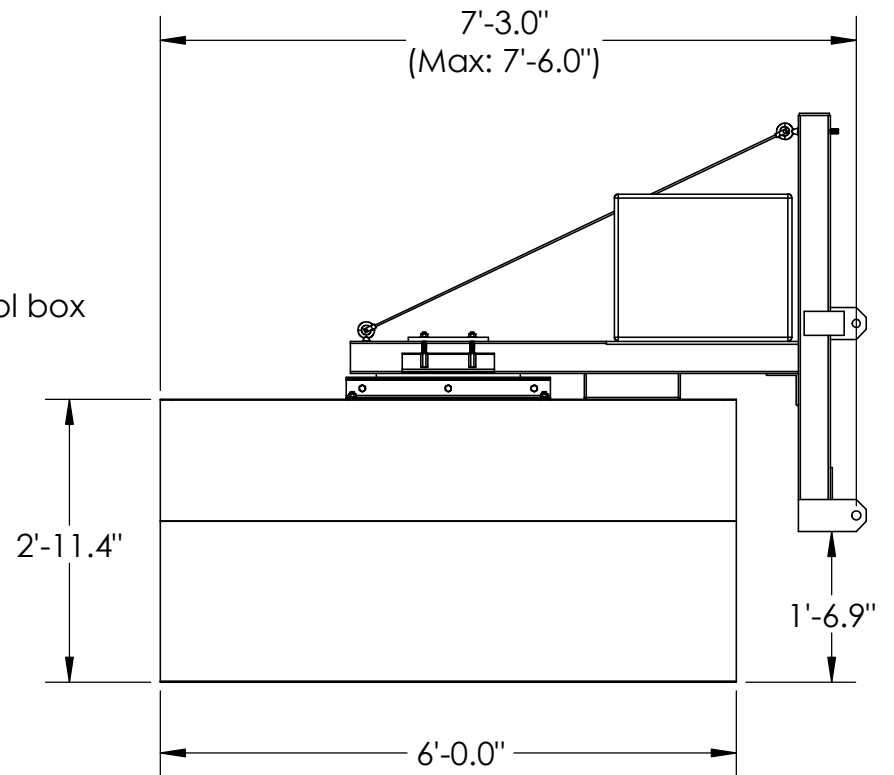
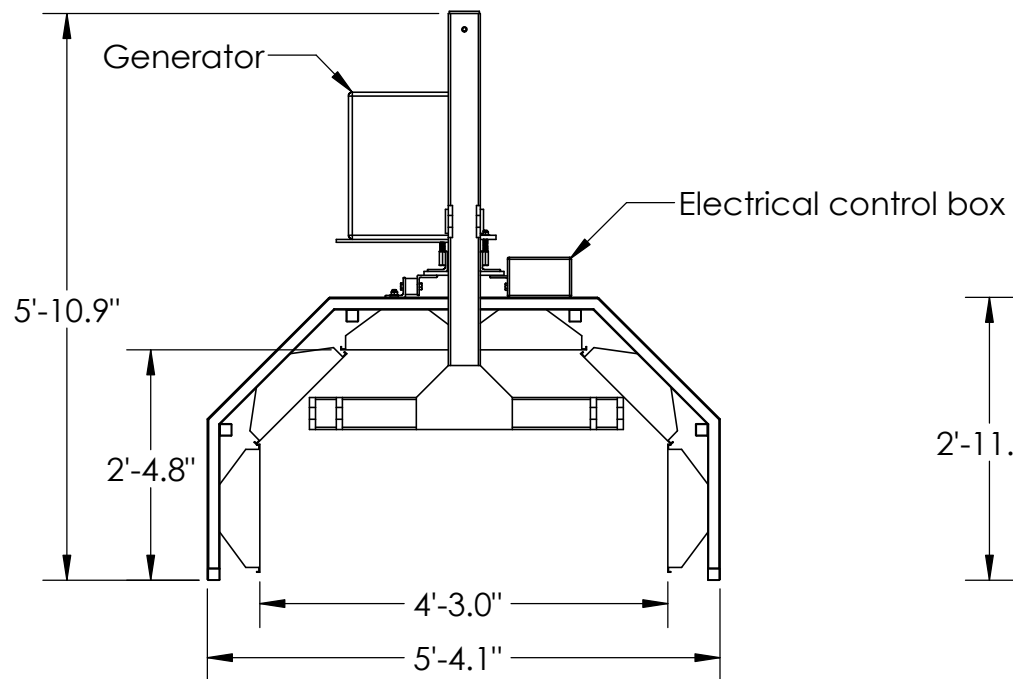
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UV-C Treatment
Attachment
Key Features

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1

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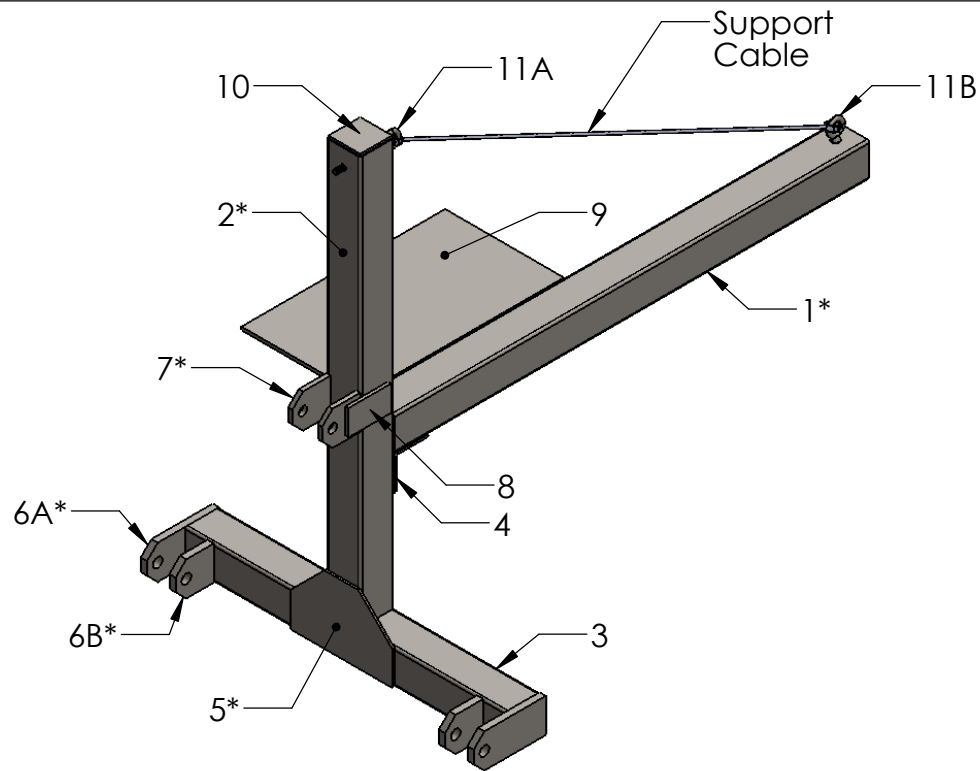
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UV-C Treatment
Attachment
Overall Dimensions

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Note: Items with asterisk (*) have special fabrication details on following pages.

Reference	Description	Profile	Dimensions	Length	No. Required
1*	Boom	Square Tubing	4" x 4" x 1/4"	56"	1
2*	Hitch Upright	Square Tubing	4" x 4" x 1/4"	48"	1
3	Hitch Bottom Member	Square Tubing	4" x 4" x 1/4"	37-3/4"	1
4	Boom Brace	Angle Iron	4" x 4" x 1/4"	4"	1
5*	Hitch Upright Brace	HR or CR Sheet	8" x 12" x 1/4"		1
6A*	Lower Pin Brackets (Outer)	Flat Bar	4" x 8-1/2" x 3/4"		2
6B*	Lower Pin Brackets (Inner)	Flat Bar	4" x 4-1/2" x 3/4"		2
7*	Top Link Brackets	Flat Bar	4" x 4-1/2" x 1/2"		2
8	Reinforcing Plate	Flat Bar	3" x 5" x 3/8"		2
9	Generator Platform	HR or CR Sheet	14" x 24" x 3/8"		1
10	Top Cap	HR or CR Sheet	3-3/4" x 3-3/4" x 1/4"		1

Reference	Description	Part Number	No. Required
11A	Shouldered Eye Bolt	1/2"-13 x 1-3/4" - McMaster 3014T491 or equivalent	1
11B	Shouldered Eye Bolt	1/2"-13 x 6" - McMaster 3014T972 or equivalent	1

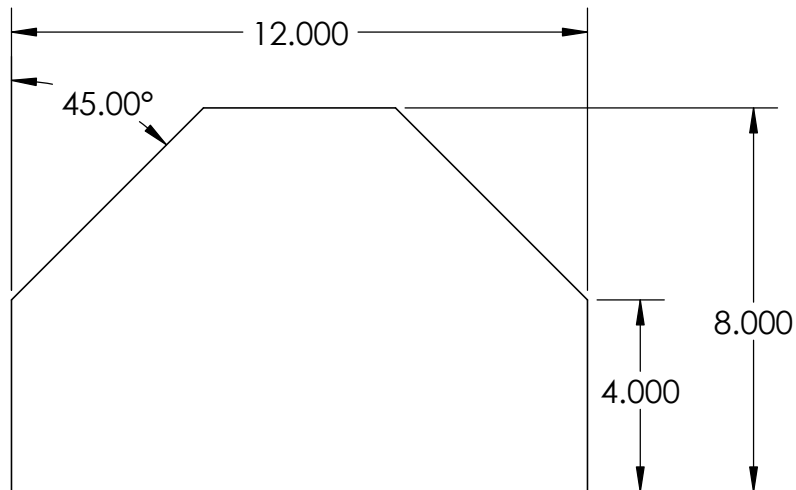
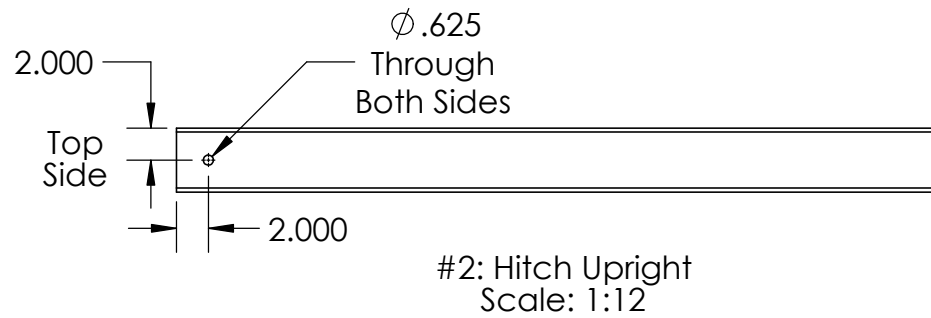
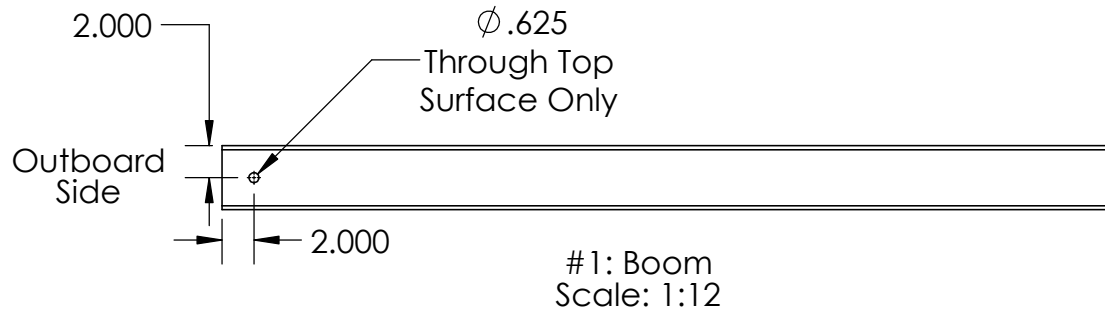
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Hitch Structure Component Breakdown

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#5: Hitch Upright Brace

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Fabrication Details
Hitch Assembly Parts:
1, 2, & 5

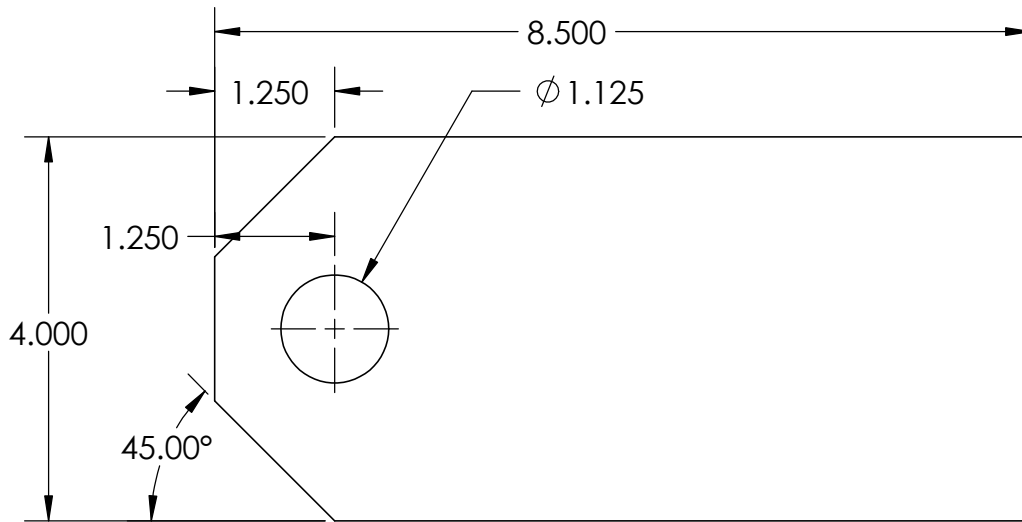
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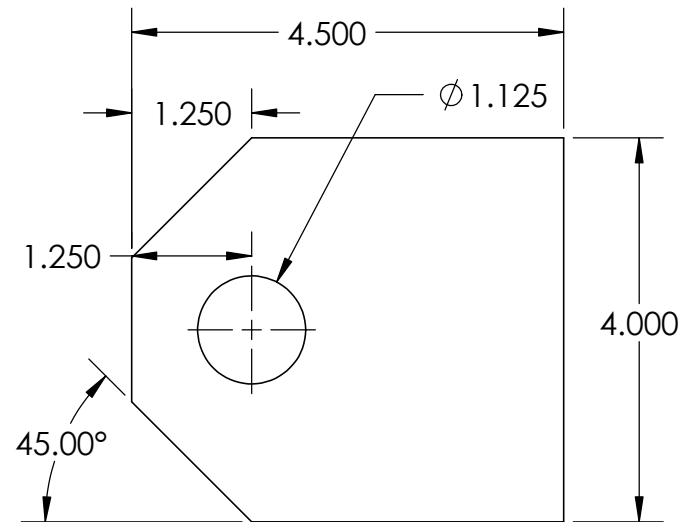
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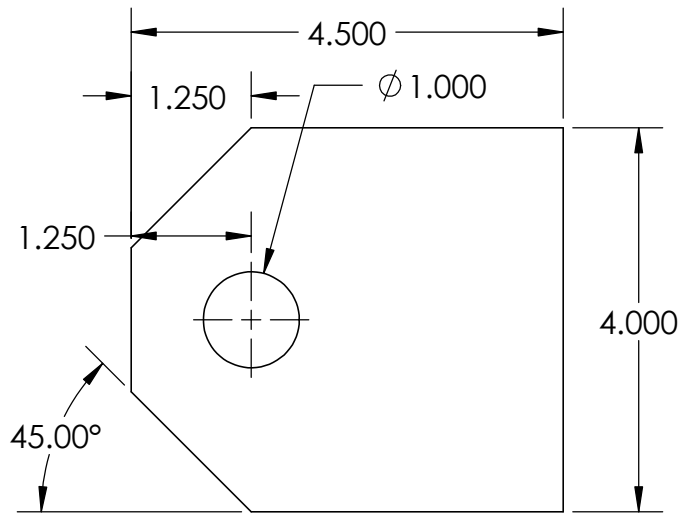
SHEET 4 OF 15



#6A: Lower Pin Bracket (Outer)
Thickness = 3/4", 2 Required



#6B: Lower Pin Bracket (Inner)
Thickness = 3/4", 2 Required



#7: Top Link Bracket
Thickness = 1/2", 2 Required

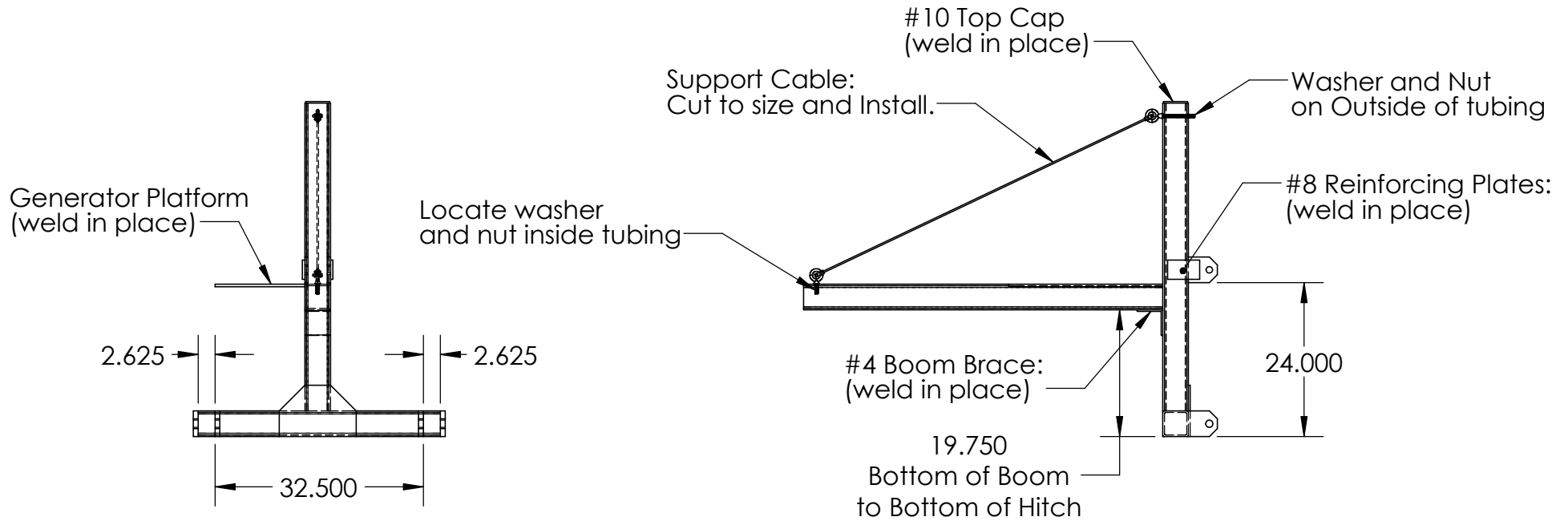
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Fabrication Details
Hitch Assembly Parts:
6A, 6B, & 7

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REV
1

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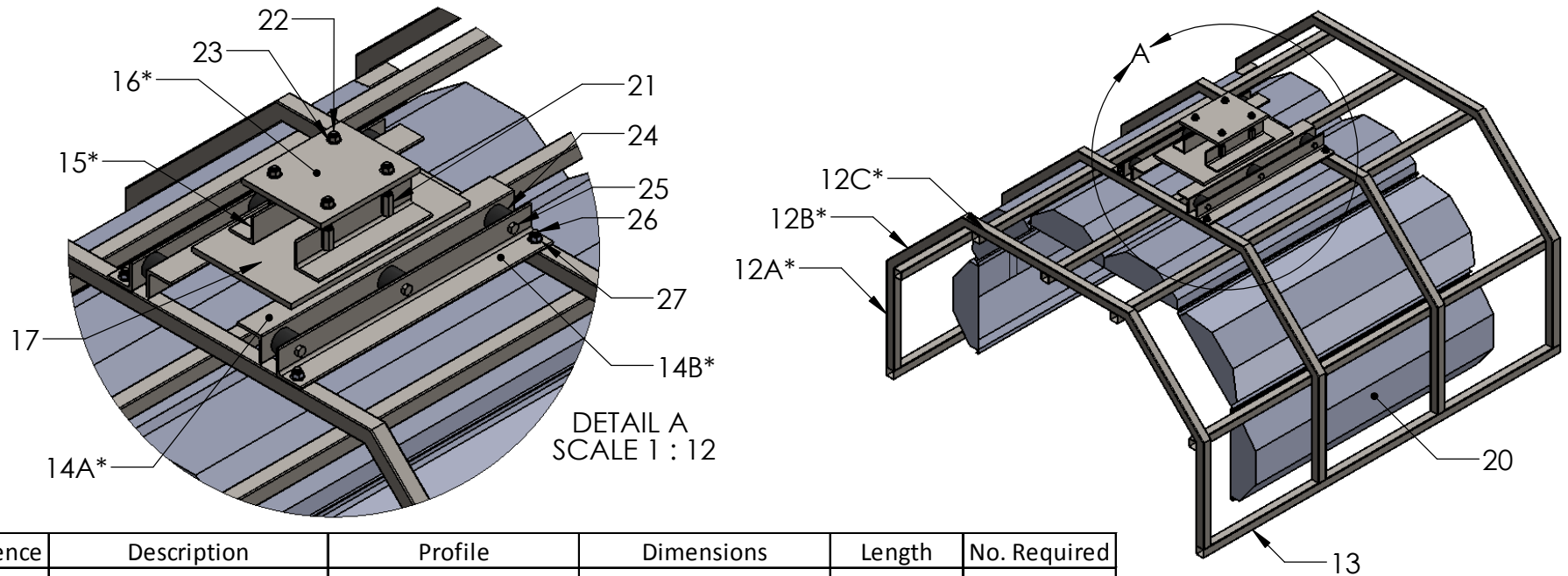


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3 Point Hitch Dimensions
& Construction Notes

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Reference	Description	Profile	Dimensions	Length	No. Required
12A*	Hoop Part A	Square Tubing	1-1/2" x 1-1/2" x 1/16"	18"	8
12B*	Hoop Part B	Square Tubing	1-1/2" x 1-1/2" x 1/16"	22"	8
12C*	Hoop Part C	Square Tubing	1-1/2" x 1-1/2" x 1/16"	34"	4
13	Longitudinal Support	Square Tubing	1-1/2" x 1-1/2" x 1/16"	6'	7
14A*	Isolator Mount	Angle Iron	2-1/2" x 2-1/2" x 1/4"	25-1/2"	4
14B*	Isolator Mount	Angle Iron	2-1/2" x 2-1/2" x 1/4"	25-1/2"	2
15*	Hitch Boom Mount	Angle Iron	2-1/2" x 2-1/2" x 1/4"	11-1/2"	2
16*	Boom Top Plate	HR or CR Sheet	8" x 10" x 1/2"		1
17	Boom Bottom Plate	HR or CR Sheet	10" x 18" x 1/2"		1
18*	Top Sheet Metal Cover	HR or CR Sheet	33-1/2" x 72" x 18 Ga		1
19*	Side Sheet Metal Cover	HR or CR Sheet	41-1/2" x 72" x 18 Ga		2

Note: Items with asterisk (*) have special fabrication details on following pages.

Reference	Description	Part Number	No. Required
20	Light Fixture	LaMar - MO4LTAUV-R87-AL	6
21	Coupler Nut	1/2"-13 x 1-3/4" Rod - McMaster 90977A195 or equivalent	4
22	Boom Clamping Stud	1/2"-13 x 12" Rod - McMaster 90322A155 or equivalent	4
23	Boom Clamping Nut	1/2"-13 Flange Nut - McMaster 94612A104 or equivalent	4
24	Vibration Isolator	McMaster 64885K32 or equivalent	6
25	Isolator Bolt	1/2"-13 x 5/8" - McMaster 92240A751 or equivalent	12
26	Mount Bolt	Socket Head Screw 1/2"-13 - McMaster 92220A272 or eq.	4
27	Mount Nut	1/2"-13 Serrated Nut - McMaster 99904A104 or equivalent	4

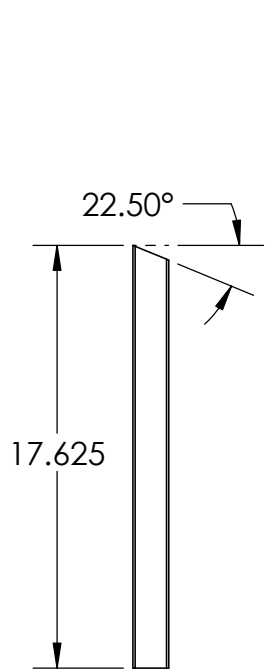
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Light Enclosure Component Breakdown

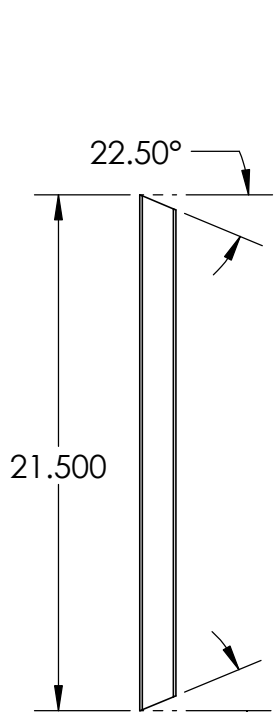
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REV
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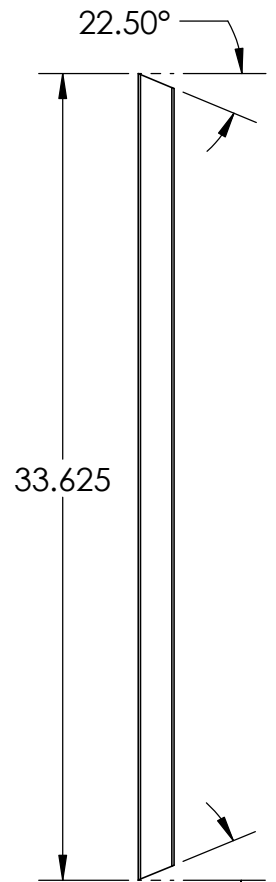
SCALE: 1:24 | 3/24/2020 | SHEET 7 OF 15



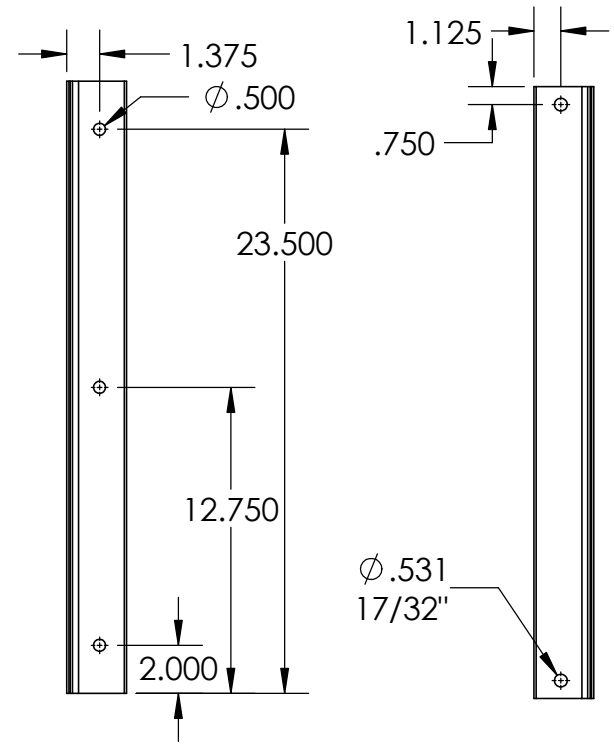
#12A: Hoop Part A



#12B: Hoop Part B



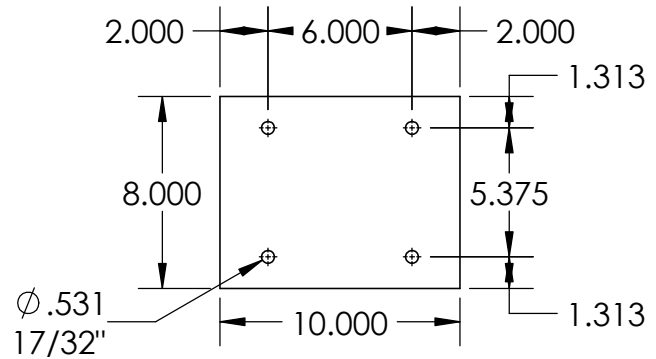
#12C: Hoop Part C



#14A: Isolator Mount

#14B: Isolator Mount

Note: 14B is the same as 14A with the addition of the two additional holes shown in the detail for 14B.



#16: Boom Top Plate

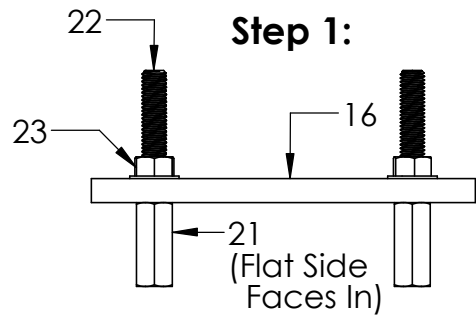
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Fabrication Details
Light Enclosure Parts:
12A-C, 14, & 16

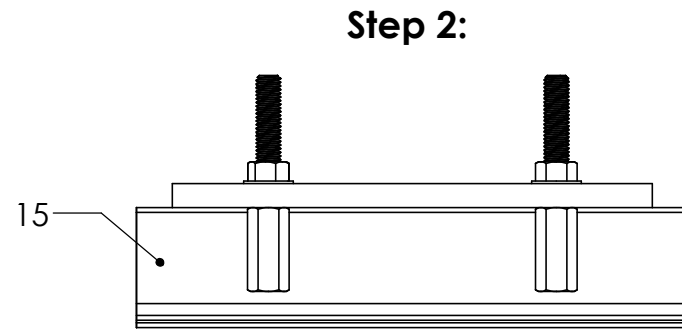
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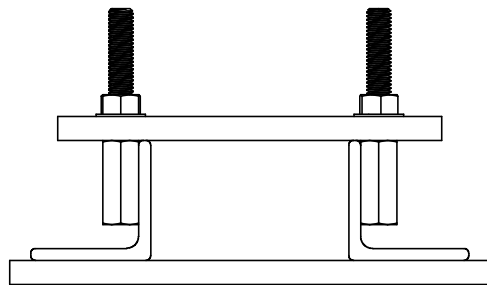
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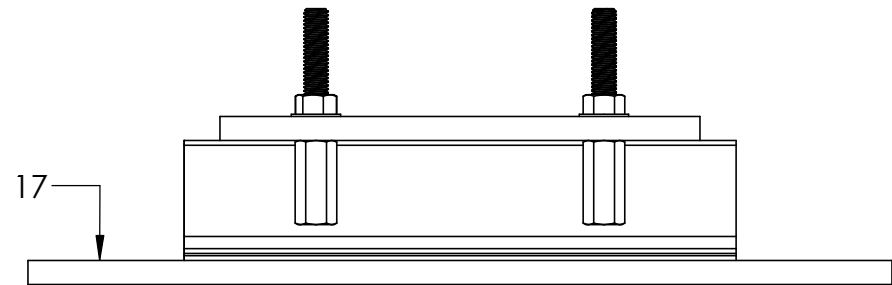
Use stud (#22) and clamp nut (#23) to secure lower coupling nuts (#21) to top plate (#16). Flat sides of the coupling nuts should be aligned with the center of the assembly.



Center assembly created in Step 1 on hitch-boom mounts (#15), clamp, and weld in place.



Center assembly created in Step 2 on boom bottom plate (#17) and weld in place.



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Light Enclosure Mount
Construction Notes
1 of 2

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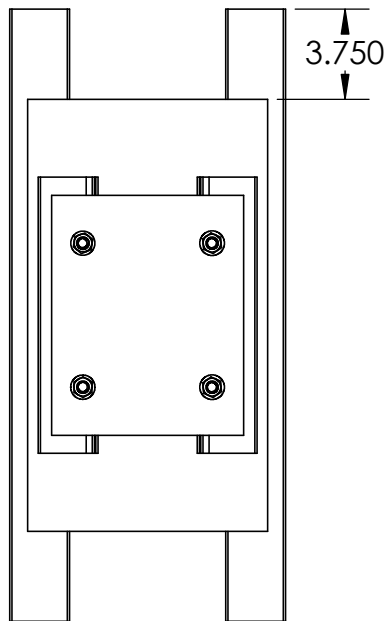
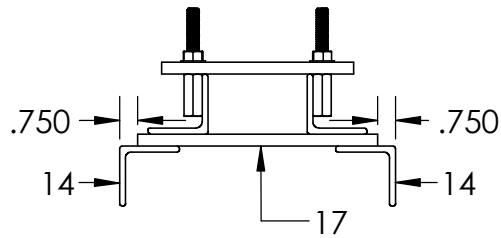
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3/24/2020

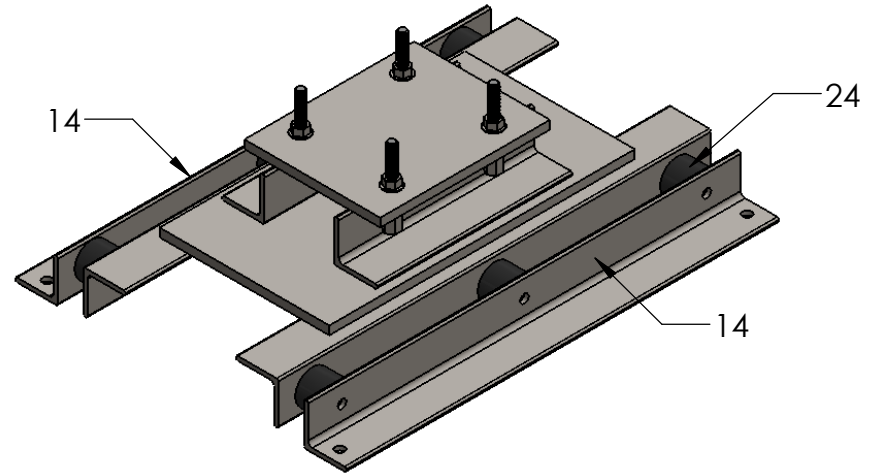
SHEET 9 OF 15

Step 4:



Weld isolator mounts (#14A) to boom bottom plate (#17) in the position shown above.

Step 5:



Mount six vibration isolators (#24) and the remaining two isolator mounts (#14B) to the assembly as shown using isolator bolts (#25, not shown). The assembly when completed as shown can now be bolted to the frame of the light pod (see page 12 for location information).

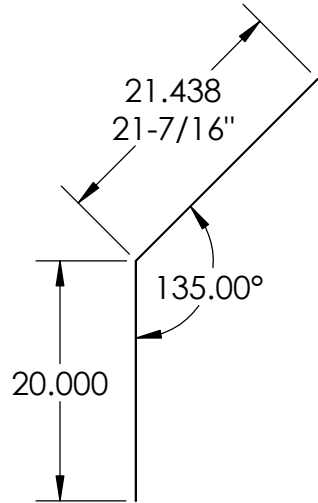
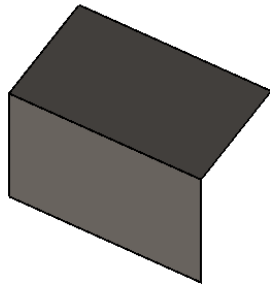
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Light Enclosure Mount
Construction Notes
2 of 2

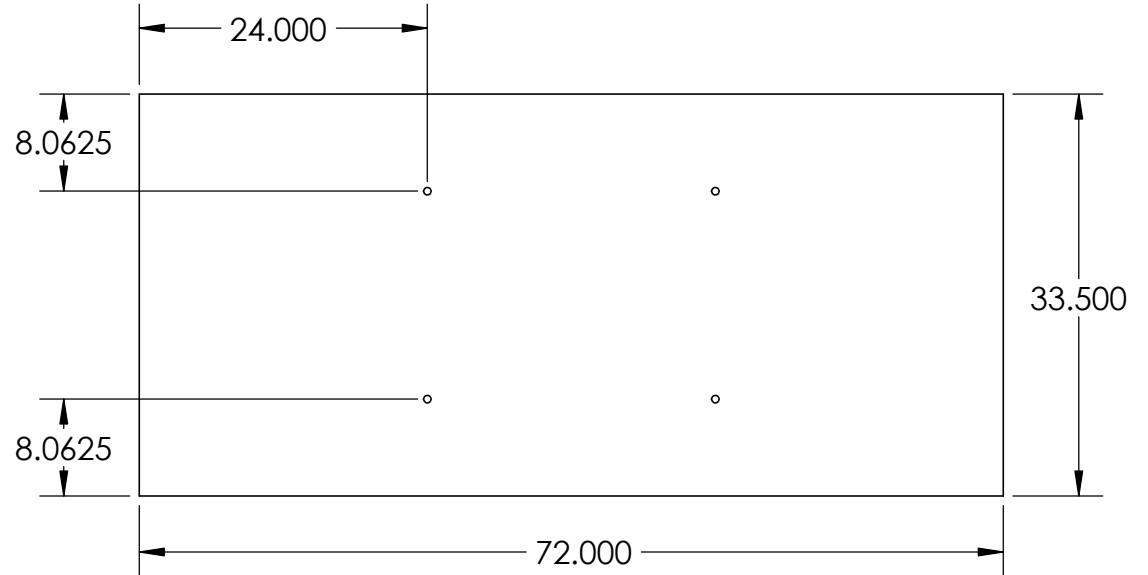
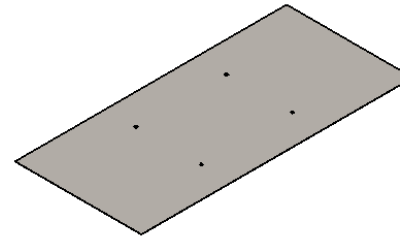
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1

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#19: Sheet Metal Side
2 Required



#18: Sheet Metal Top
1 Required

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Fabrication Details
Light Enclosure Parts:
18, & 19

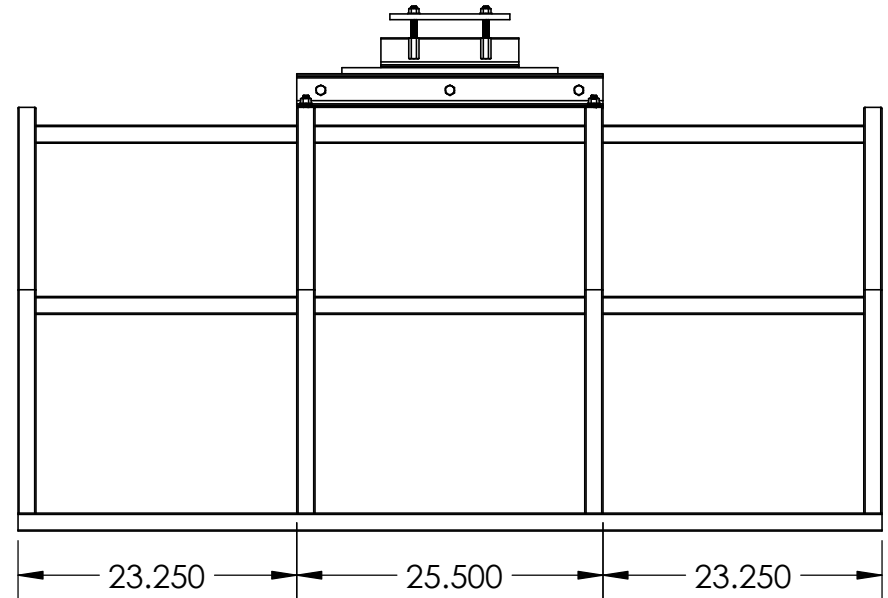
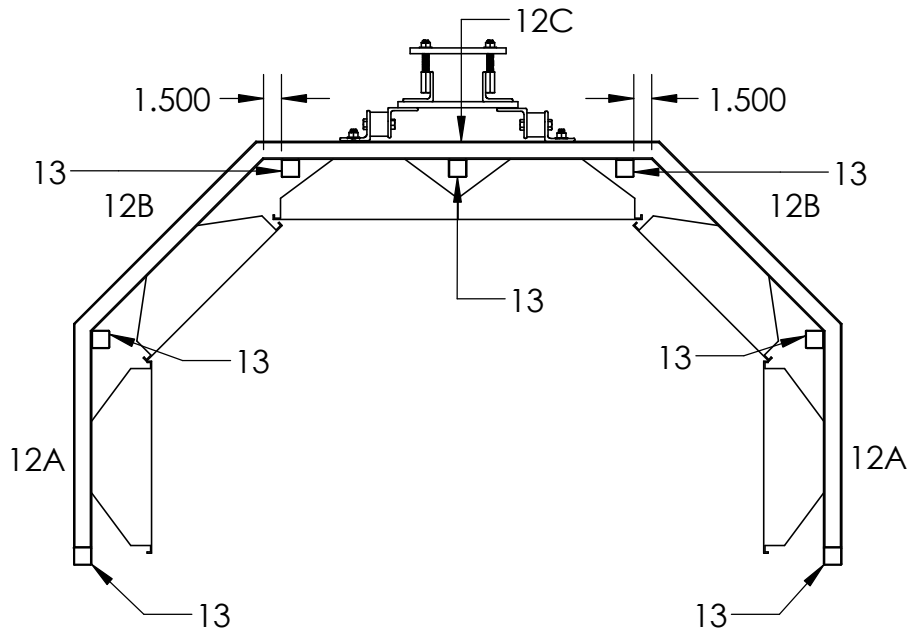
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REV
1

SCALE: 1:16 | 3/24/2020 | SHEET 11 OF 15

Notes:

- Butt-weld hoop parts #12A, #12B, & #12C as shown below to construct 4 hoop sections. See page 8 for dimensions of hoop parts #12A, #12B, & #12C.
- Weld longitudinal supports (#13) as shown below to connect the 4 completed hoop sections.
- Light enclosure mount assembly can be clamped in place and used as a template for drilling the tubes of the frame. This is illustrated below. The mount should be permanently bolted in place once the top sheet metal is installed.
- Light fixture units are secured to the hoop sections using self-drilling screws (McMaster-Carr 94059A247 or equivalent).
- The inner edge of the center two light fixtures should be trimmed off so that the units can be butted up against each other. Top fixtures should be installed before side fixtures.
- Upper fixture housings will require holes to be drilled to pass the light enclosure mount assembly bolts (#26) through the frame hoops.



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Light Enclosure
Construction Notes

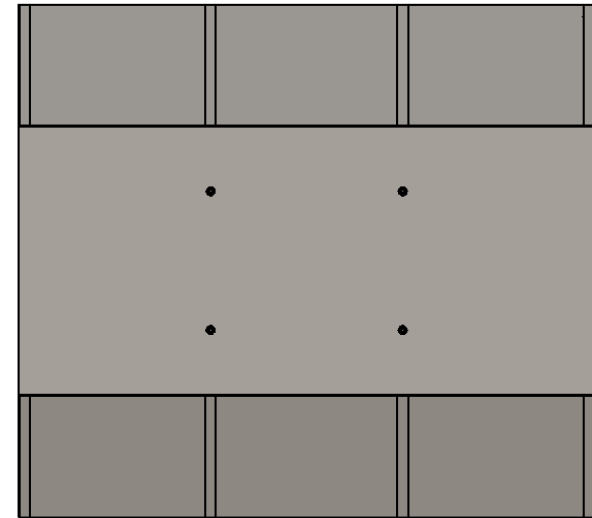
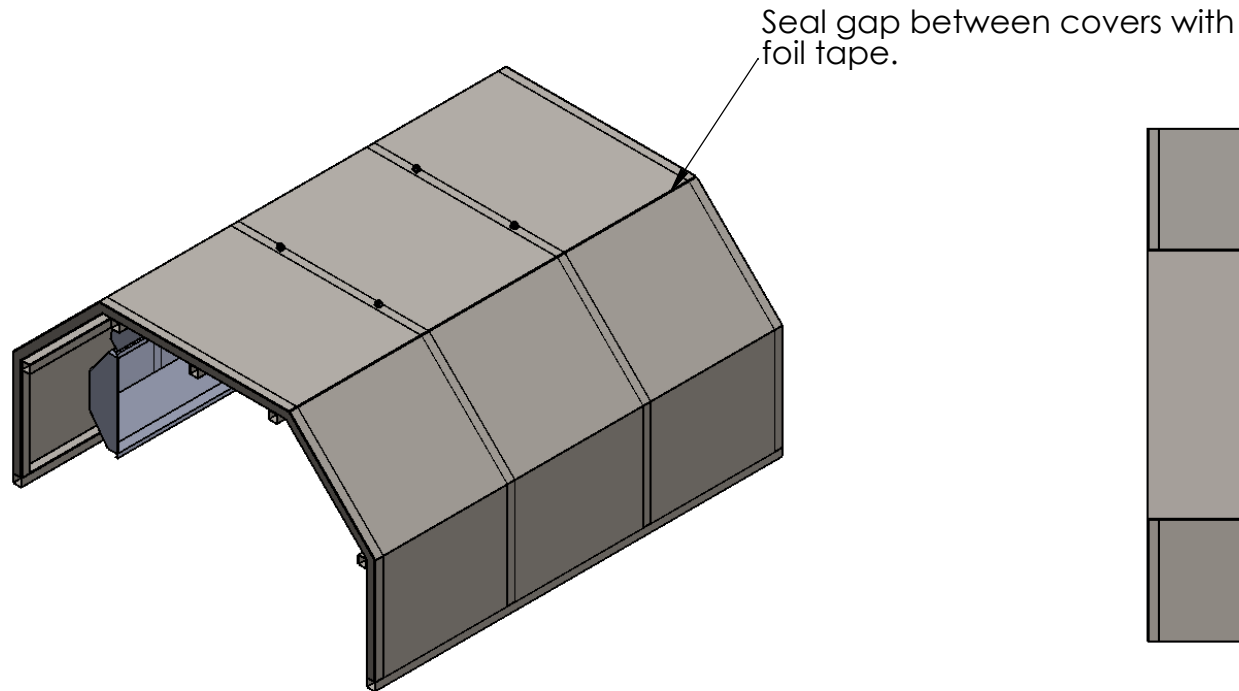
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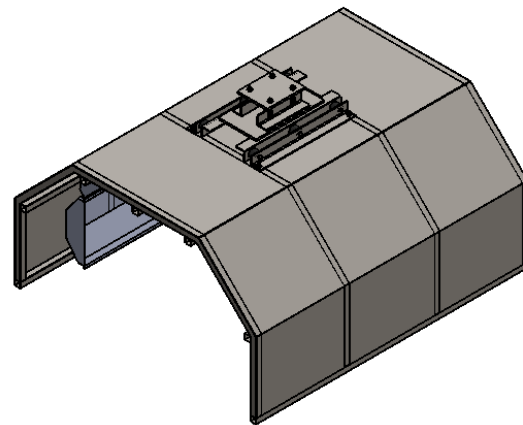
SCALE: 1:16 | 3/24/2020 | SHEET 12 OF 15

Suggested Procedure for attachment of covers:

- Install sheet metal covers, secure to the outside of the hoop sections using self-drilling screws (McMaster-Carr 94059A247 or eq).
- Place light enclosure mount assembly and bolt into place.



View with light enclosure mount assembly removed and coverings installed



View with light enclosure mount assembly and coverings installed

Scale: 1:36

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Light Enclosure
Sheet Metal Coverings
Installation Notes

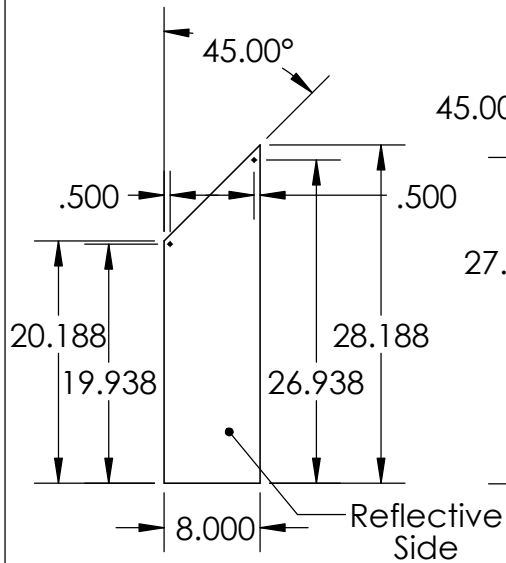
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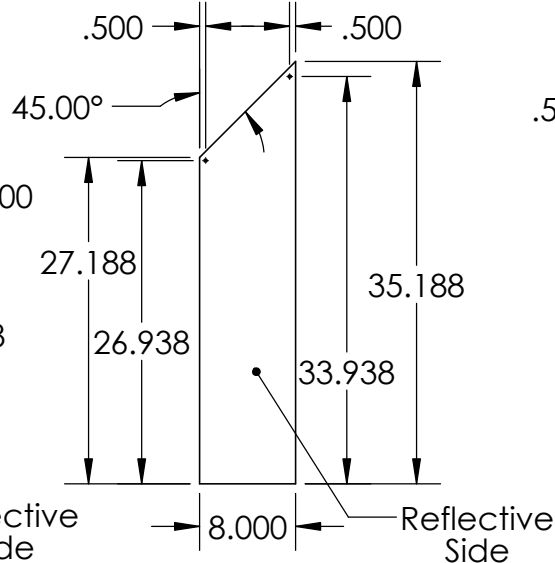
SCALE: 1:24 | 3/24/2020 | SHEET 13 OF 15

- Notes:
- Curtains made from vinyl stippling, 0.08" thick. Aluminum HVAC tape should be applied to one side to create a reflective surface. See instruction document for further information.
 - Attach curtains with self-drilling screws. Holes may be pre-drilled or punched, but this isn't necessary with self-drilling screws.
 - Types B, C, and D have two configurations required: Left (L) and Right (R).
 - Curtains are shown at full height. They may be cut shorter in the field to avoid contact with the crop.

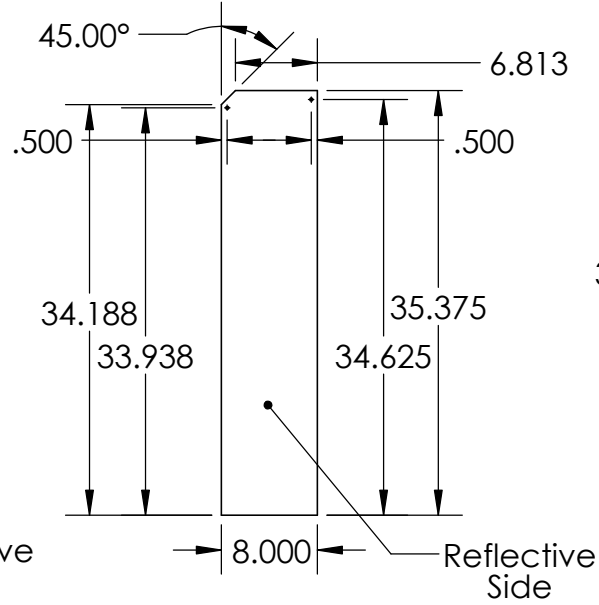
Type D
4 total Required
Type DR: 2 Req.



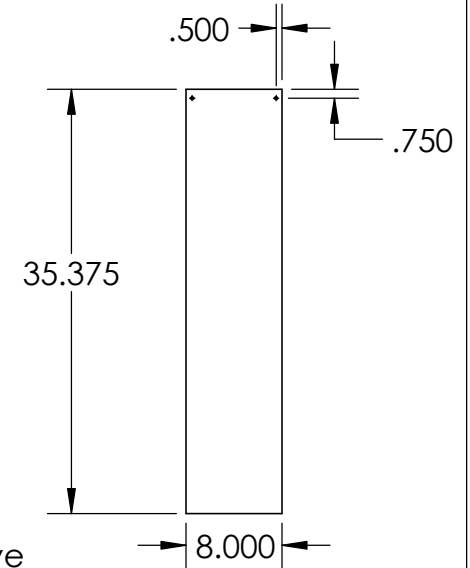
Type C
4 total Required
Type CR: 2 Req.



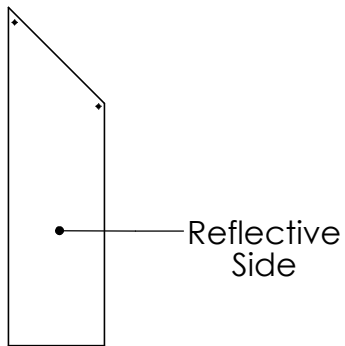
Type B
4 total Required
Type BR: 2 Req.



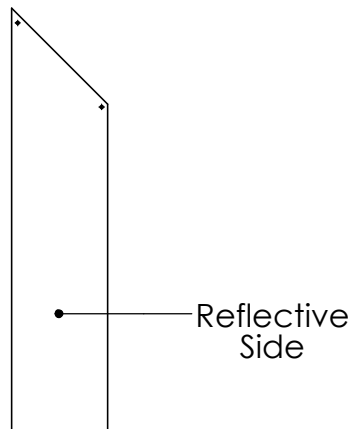
Type A
8 Required



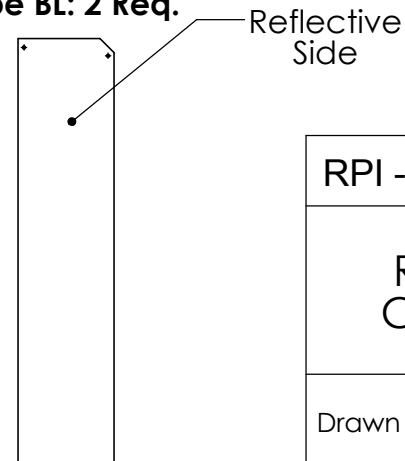
Type DL: 2 Req.



Type CL: 2 Req.



Type BL: 2 Req.

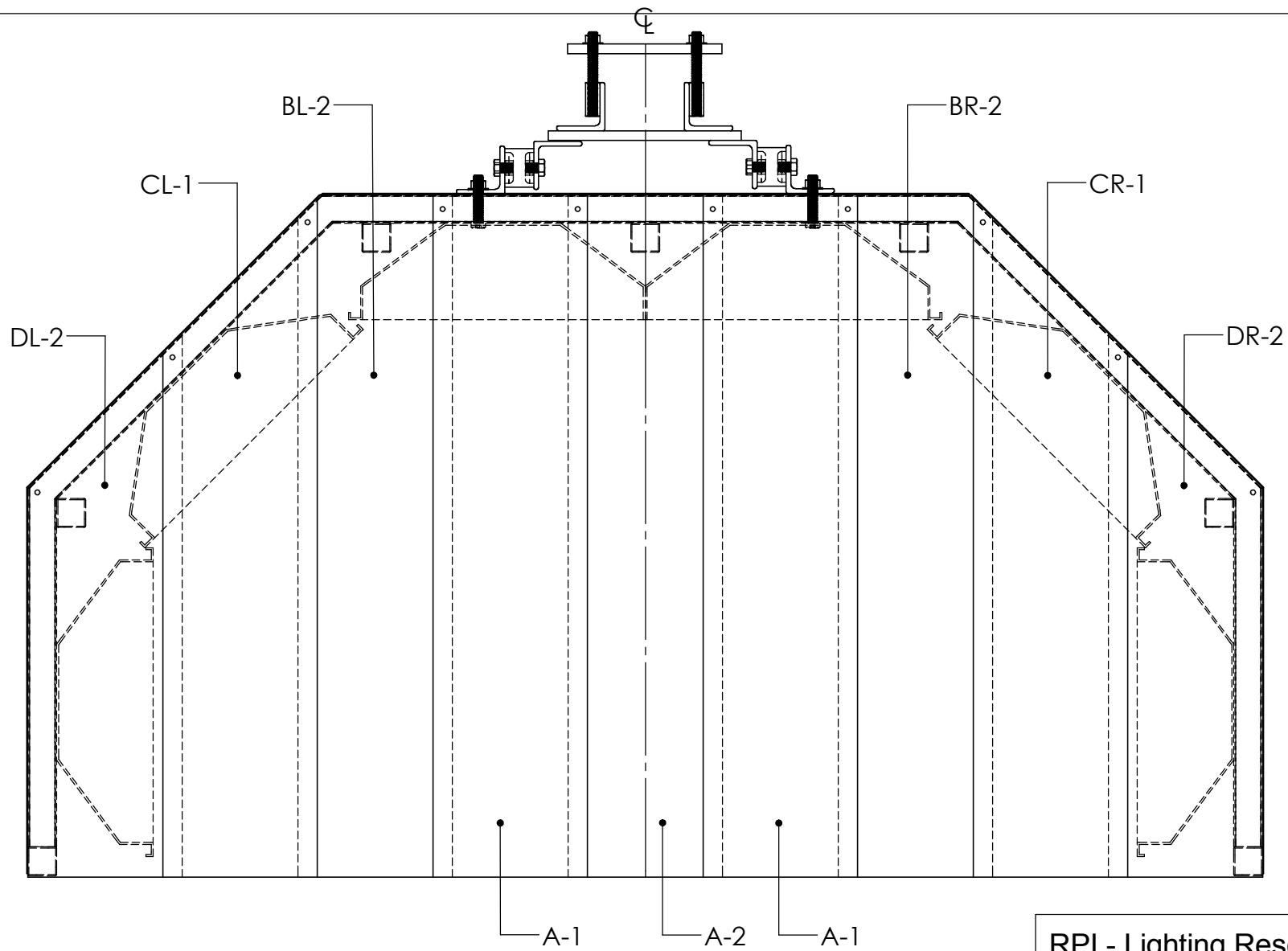


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Reflective Curtain
Construction Notes

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1



Notes:
 Start at centerline and move outward, overlap adjacent curtain panels (1" overlap).
 Install reflective side facing inward on both front and rear of light enclosure.
 Curtain types shown with "-1" suffix are mounted on top of those with "-2" suffix.
 Secure curtain panels with self-drilling screws (McMaster #94059A247 or equivalent).

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Reflective Curtains
 Installation Notes

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