



AMERICAN SIGNAL COMPANY

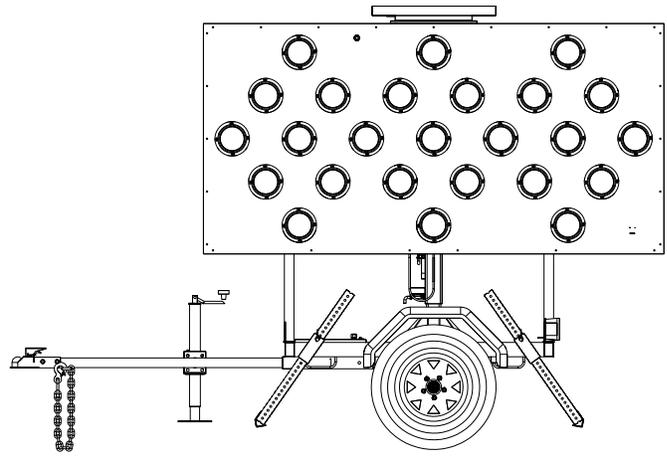
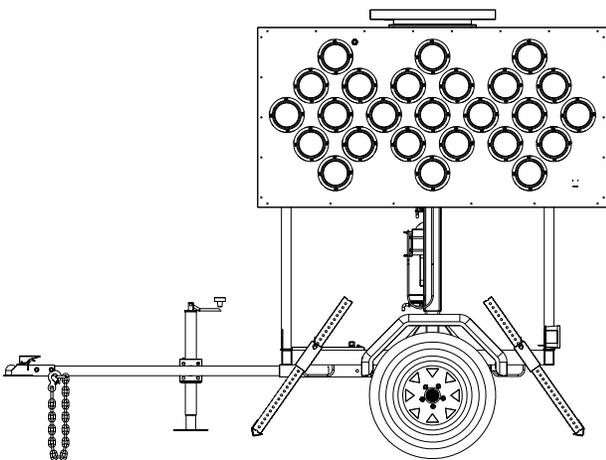
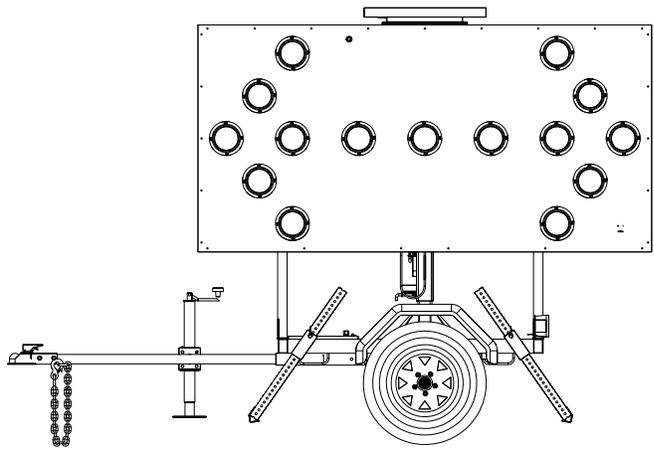
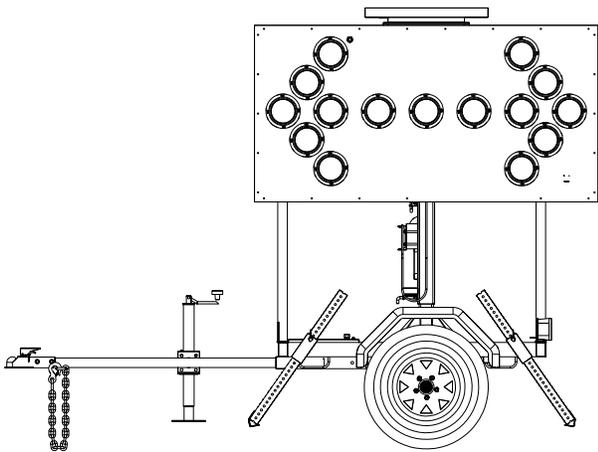
2755 Bankers Industrial Dr.

Atlanta, GA 30360

MAN00000130, Rev. C

FAP X15 / FAP X25

Flashing Arrow Panel Operation Manual





Contents

| | |
|---|----|
| 1. TRANSPORT | 3 |
| 1.1 TRANSPORTING THE FLASHING ARROW PANEL..... | 3 |
| 2. DEPLOYMENT | 4 |
| 2.1 DEPLOYING THE FLASHING ARROW PANEL..... | 4 |
| 2.2 LOWERING THE DISPLAY AND PREPARING FOR TRANSPORT..... | 7 |
| 3. OPERATIONS..... | 8 |
| 3.1 DISPLAY OPERATION | 8 |
| 3.2 Arrow Display Modes - 15 Lamp Display..... | 9 |
| 3.3 Additional Arrow Display Modes - 25 Lamp Display..... | 9 |
| 4. MAINTENANCE | 10 |
| 4.1 SOLAR PANEL..... | 10 |
| 4.2 BATTERY OPERATION AND CHARGING | 10 |
| 4.2.1 Charge the Batteries | 10 |
| 5. WIRING DIAGRAMS | 12 |
| 5.1 FAP 15 | 12 |
| 5.2 FAP 25 | 14 |
| 6. PARTS GUIDE..... | 16 |
| 6.1 Display Case Assembly..... | 16 |
| 6.2 Battery Box | 17 |
| | 17 |
| 6.3 Control Box..... | 18 |
| 6.4 Trailer and Mast..... | 19 |
| 6.5 Drawings..... | 21 |
| 6.5.1 Trailer | 21 |
| 6.5.2 T-615 Flashing Arrow Panel Trailer | 23 |
| 6.5.3 T-815 Flashing Arrow Panel Trailer | 24 |
| 6.5.4 T-625 Flashing Arrow Panel Trailer | 25 |
| 6.5.5 T-825 Flashing Arrow Panel Trailer | 26 |
| 7. SERVICE CONTACT | 27 |

1. TRANSPORT

1.1 TRANSPORTING THE FLASHING ARROW PANEL

Remove the pin to raise the stabilizing legs. Replace the pin to stow the raised legs and raise the tongue with the jack.



Remove the locking pin from the locking lever on the trailer hitch

Lift the locking lever on the trailer hitch



Position the hitch receiver over the towing vehicle ball hitch and lower the hitch to firmly seat around the ball

Push the locking lever down to engage the lock

Insert the locking pin through the hole in the lever to prevent accidental unlocking



Attach the safety chains to the appropriate attach points on the towing vehicle



Attach the electrical connector from the tongue assembly to the electrical connector on the towing vehicle (for tag, trailer and brake lights).



2. DEPLOYMENT

2.1 DEPLOYING THE FLASHING ARROW PANEL

Deploy and lower all 4 stabilizing legs.



Disengage spring-loaded latch pin from its locked, travel position by pulling the latch pin out past the detent and rotating 90 degrees to hold it in the disengaged position.



Turn the hand crank clockwise to raise the display just past the latch pin hole on the mast (the bottom of display should be approximately 7' from the ground).

Rotate the spring-loaded latch pin to release it from the detent. The spring will force the pin against the mast.

Turn the hand crank counter clockwise to lower the display until the latch pin slides into the upper mast safety hole.



To rotate the display, pull the locking pin down and turn it so the small pin fits into the notch detent. Rotate the display to the desired position. Release the locking pin from the notch detent and move the display until the locking pin slides into a hole on the assembly.

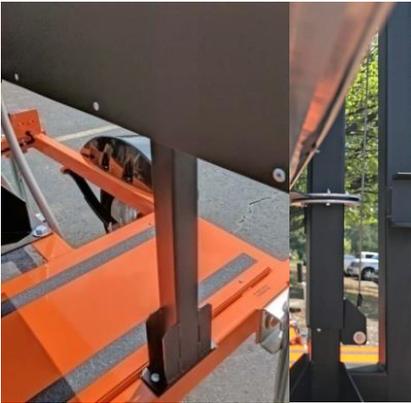




2.2 LOWERING THE DISPLAY AND PREPARING FOR TRANSPORT

Rotate the display until it is parallel with the trailer. Lock into position with the locking pin.

Turn the hand crank counter-clockwise to lower the display until it rests on the 2 support arms



Engage the latch pin, locking it into the lower mast safety hole



Before towing raise and stow the stabilizing legs.





3. OPERATIONS

3.1 DISPLAY OPERATION

Open the control box

Cycle through the displays using the button on the controller module until the desired mode is displayed. (See page 9 for display modes) The system is turned off when mode display is blank or black, no lights on.



3.2 Arrow Display Modes - 15 Lamp Display

| | |
|--------------------------------|--|
| Merge Left – Flashing Arrow | |
| Merge Right – Flashing Arrow | |
| Merge Right or Left - Flashing | |
| Flashing Caution | |
| Flashing Caution | |
| OFF | |

3.3 Additional Arrow Display Modes - 25 Lamp Display

| | | | |
|-----------------------------------|--|--|--|
| Merge Left – Sequential Arrow | | | |
| Merge Right – Sequential Right | | | |
| Merge Left – Sequential Chevrons | | | |
| Merge Right – Sequential Chevrons | | | |
| Alternating Diamond Caution | | | |
| Off | | | |

4. MAINTENANCE

4.1 SOLAR PANEL

The solar panel mounted at the top of the FAP display board is the primary battery charging component.

- To ensure optimal charging capability the solar panel should be exposed to as much sunlight as possible. Storing or deploying your FAP under a tree, bridge, or other object that restricts sunlight will negatively impact your FAP's run time
- Keep the solar panel's surface clear of debris, dirt, and ice by wiping the surface with a non-abrasive material (such as cloth or paper towels) as necessary.
- Do not scrape the solar panel to remove build-up, as that may damage the solar cells.
- Do not apply industrial type cleaning fluids or solutions to the surface of the solar panel. If a rag or cloth is not sufficient to clean the surface then apply warm water or household type cleaner such as Windex.

4.2 BATTERY OPERATION AND CHARGING

The 12V lead acid batteries contained in the Amsig FAP are designed with AGM (Absorbent Glass Mat) technology and for general application purpose. All batteries are DOT approved.

Access to the batteries and charger is gained by removing the battery box lid's tamper-resistant Torx bolts (TT-27 socket needed)



4.2.1 Charge the Batteries

The solar assisted battery power supply system furnished with the Amsig FAP includes multiple deep-cycle 12V batteries which are uniquely able to withstand the deep discharges that occur periodically during normal operation. The system has been designed to provide display operation over all the usable state of charge level of the batteries.



Battery compartment
with cover removed



Depending upon several factors (i.e. length & duration of message displayed, the brightness level, the number of solar panels, the amount of available sunlight, the number of batteries, the age of the batteries and the ambient temperature), voltage level of the battery pack can eventually drop below 9.0VDC (Default Low Voltage shut off) and the FAP will stop operating. At that time (or sooner if desired), it will be necessary to recharge the batteries with 120VAC (from a landline or generator). An abbreviated summary of steps to charge the batteries with the included 2A charger is shown below:



- Turn the FAP system off. (Note: The system can be left on during charging, however, it will require more time to fully recharge the batteries.)
- Bring 120VAC to the trailer and plug into the AC receptacle inside the mast-mounted control box.
- For fully discharged batteries, charge for approximately 54hours. Batteries in a higher state of initial charge can be charged for less than 54hours. [FYI, battery bank Ah divided by charge amps equals charging hours]
- When batteries are fully charged, unplug 120VAC power source from pedestal.



Battery Maintenance

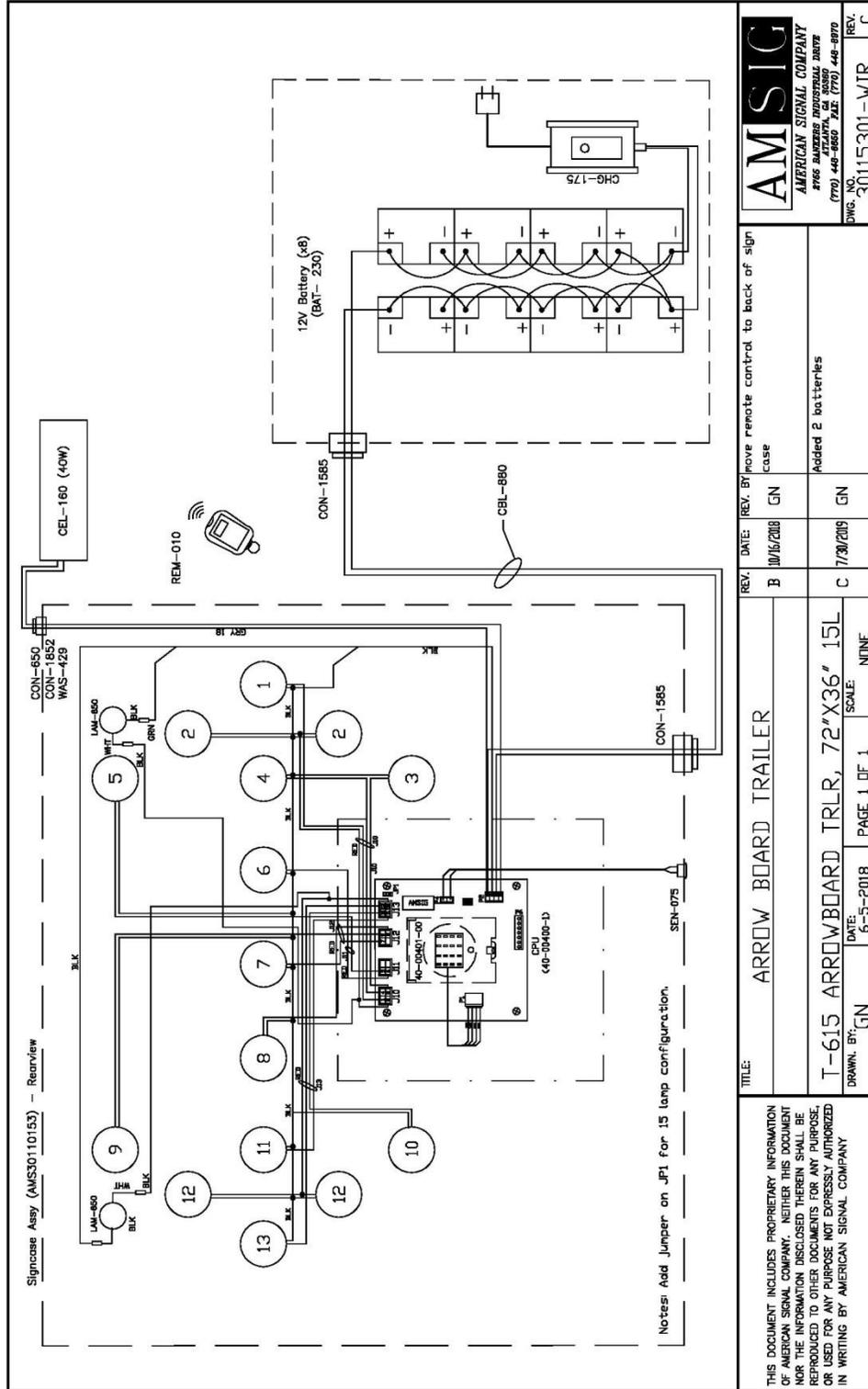
The non-spillable, 12V, 18.0Ah sealed lead-acid batteries in the Amsig FAP are sealed and require no maintenance.

Replacement Part# **BAT-230**

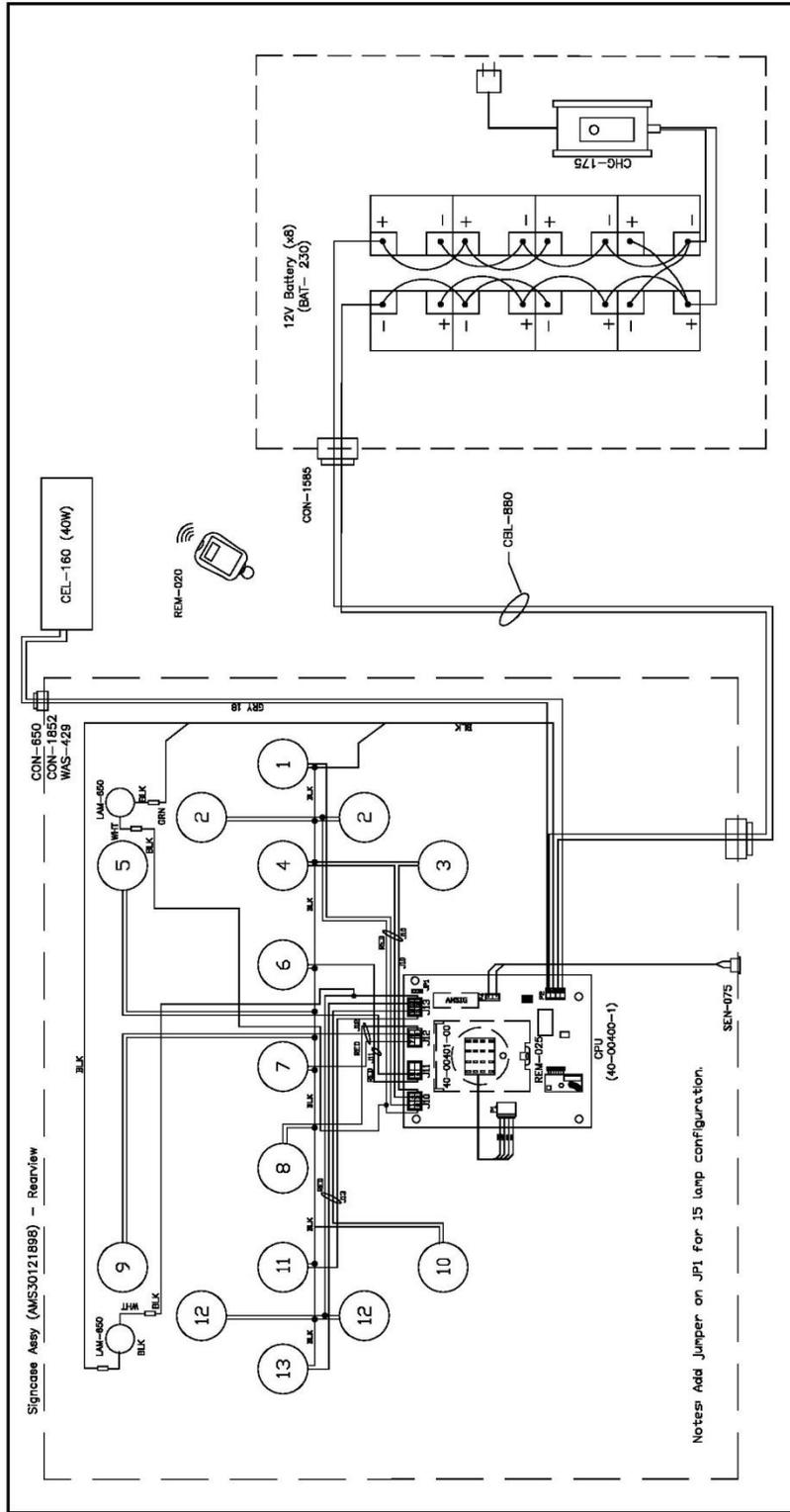


5. WIRING DIAGRAMS

5.1 FAP 15



| | | | | | | | |
|--|--|-----------------------|--|-------------------------|--|--|--|
| <p>THIS DOCUMENT INCLUDES PROPRIETARY INFORMATION OF AMERICAN SIGNAL COMPANY. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED TO OTHER DOCUMENTS FOR ANY PURPOSE, OR USED FOR ANY PURPOSE NOT EXPRESSLY AUTHORIZED IN WRITING BY AMERICAN SIGNAL COMPANY</p> | | <p>REV. B</p> | | <p>DATE: 10/16/2008</p> | | <p>REV. BY: move remote control to back of sign case</p> | |
| <p>TITLE: ARROW BOARD TRAILER</p> | | <p>REV. C</p> | | <p>DATE: 7/30/2009</p> | | <p>REV. BY: Added 2 batteries</p> | |
| <p>T-615 ARROWBOARD TRLR, 72"X36" 15L</p> | | <p>SCALE: NONE</p> | | <p>PAGE 1 OF 1</p> | | <p>DWG. NO. 30115301-WIR</p> | |
| <p>DRAWN BY: GN</p> | | <p>DATE: 6-5-2018</p> | | <p>SCALE: NONE</p> | | <p>REV. C</p> | |



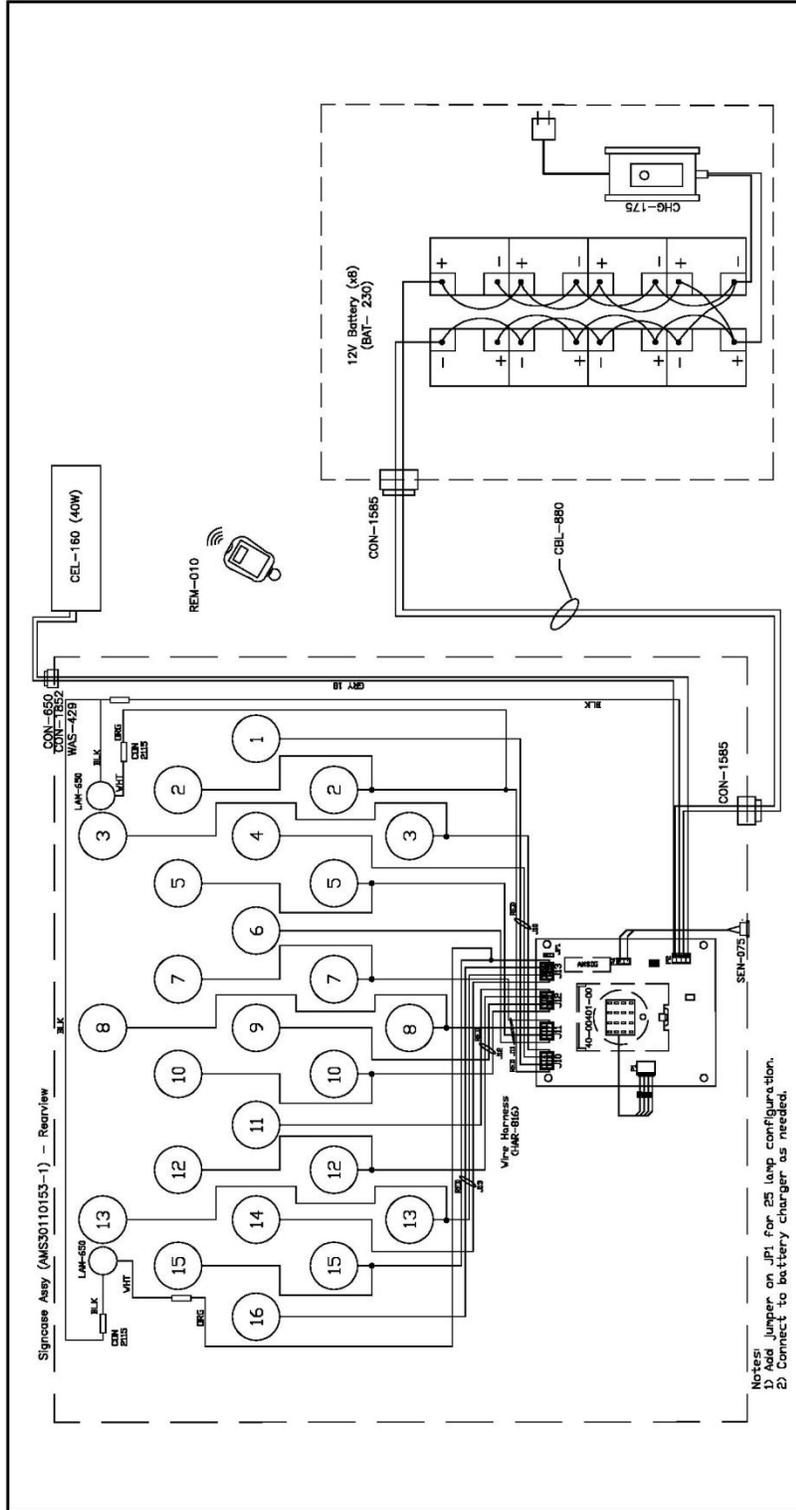
Signcase Assy (AMS30121898) - Rearview

Notes: Add Jumper on JPI for 15 lamp configuration.

| | | | | | |
|---|--|------------------------------|------------------------|--------------------|--------------------------|
| <p>THIS DOCUMENT INCLUDES PROPRIETARY INFORMATION OF AMERICAN SIGNAL COMPANY. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED TO OTHER DOCUMENTS FOR ANY PURPOSE, OR USED FOR ANY PURPOSE NOT EXPRESSLY AUTHORIZED IN WRITING BY AMERICAN SIGNAL COMPANY.</p> | | <p>REV. D</p> | <p>DATE: 7/30/2019</p> | <p>REV. BY: GN</p> | <p>Added 2 batteries</p> |
| <p>TITLE: ARROWBOARD</p> | | | | | |
| <p>DRWN. BY: GN</p> | | <p>DATE: 5/1/2017</p> | <p>PAGE 1 OF 1</p> | <p>SCALE: NONE</p> | <p>REV. D</p> |
| <p>AMSIG AMERICAN SIGNAL COMPANY 4765 BANKERS INDUSTRIAL DRIVE SPRINGFIELD, MA 01104 (770) 448-8970</p> | | <p>DWG. NO. 30115401-WIR</p> | | | |



5.2 FAP 25

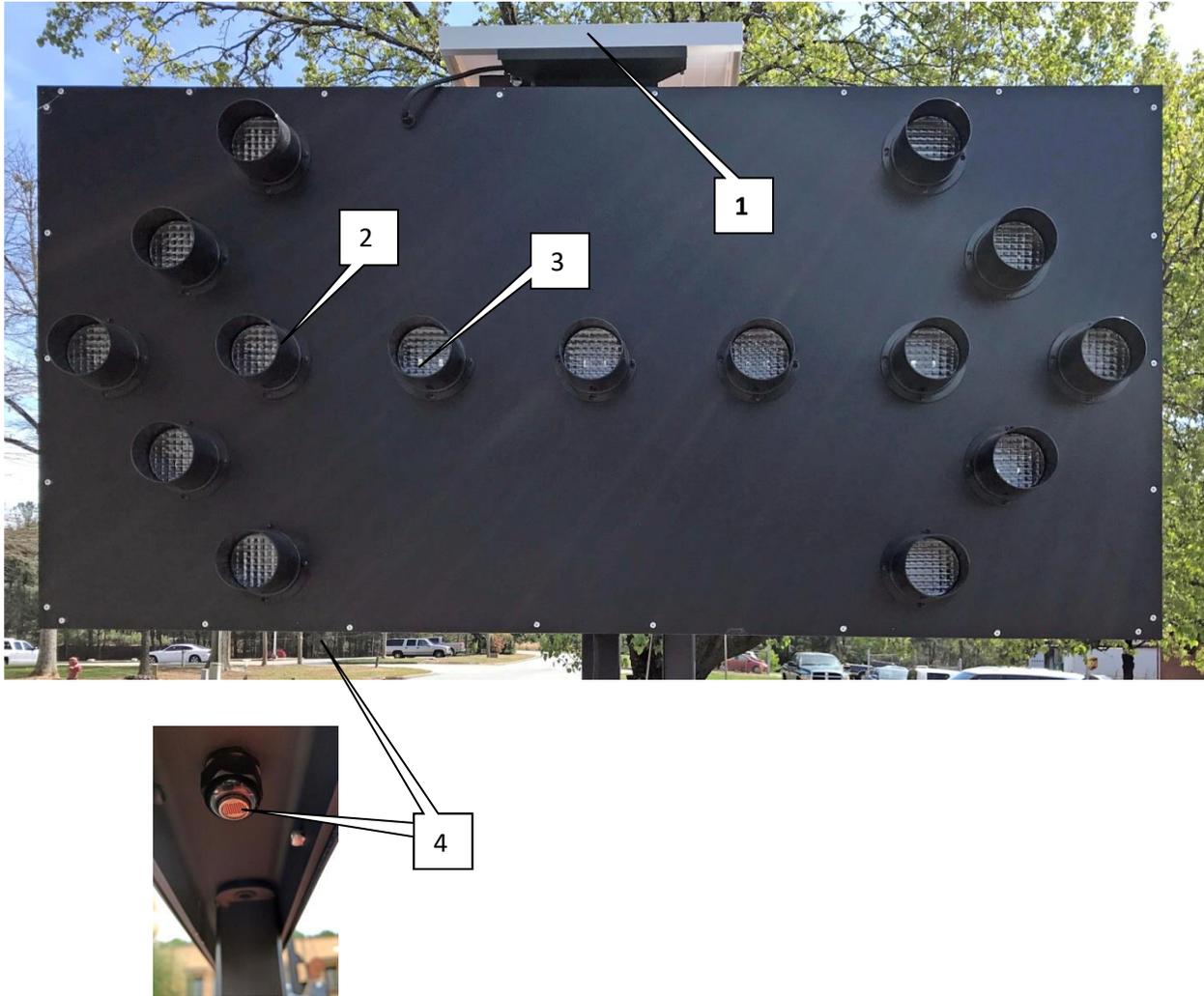


Notes:
 1) Add jumper on Jp1 for 25 lamp configuration.
 2) Connect to Battery Charger as needed.

| | | |
|--|--------------------|--|
| <p>AM SIG AMERICAN SIGNAL COMPANY 4700 W. 44th St., Suite 100 Tulsa, OK 74106 (770) 446-3600 Fax: (770) 446-8870</p> | | <p>REV. C DWG. NO. 30115321-WIR</p> |
| <p>DATE: 10/23/2018</p> | <p>REV. B</p> | <p>REV. BY: move remote control to back of sign case</p> |
| <p>DATE: 7/30/2019</p> | <p>REV. C</p> | <p>REV. BY: Added 2 batteries</p> |
| <p>SCALE: NONE</p> | <p>PAGE 1 OF 1</p> | <p>DRAWN BY: PRP</p> |
| <p>TITLE: ARROW BOARD TRAILER</p> | | |
| <p>T-625 ARROWBOARD TRLR, 72"X36" 25L</p> | | |
| <p>THIS DOCUMENT INCLUDES PROPRIETARY INFORMATION OF AMERICAN SIGNAL COMPANY. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED TO OTHER DOCUMENTS FOR ANY PURPOSE, OR USED FOR ANY PURPOSE NOT EXPRESSLY AUTHORIZED IN WRITING BY AMERICAN SIGNAL COMPANY</p> | | |

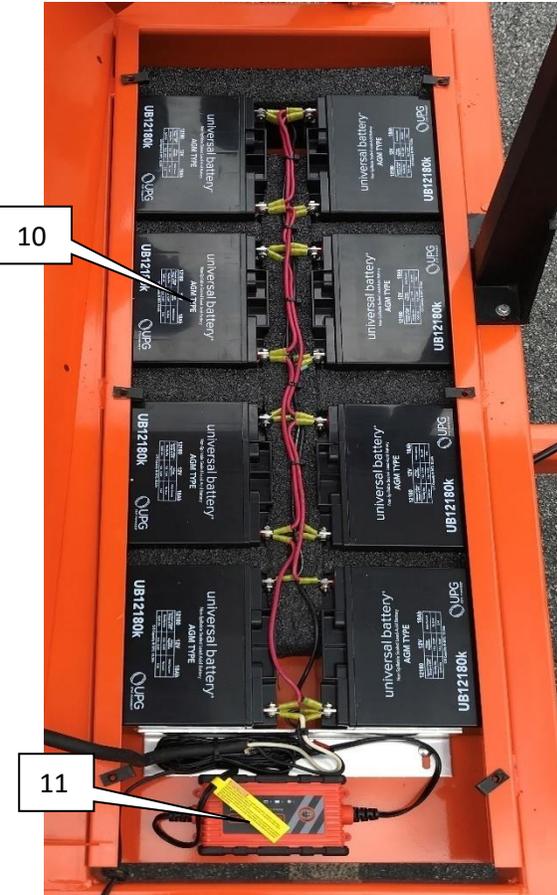
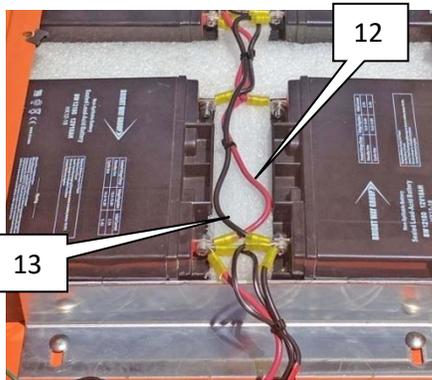
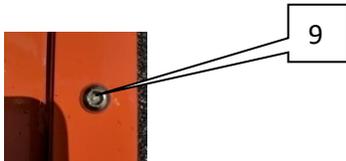
6. PARTS GUIDE

6.1 Display Case Assembly



| # | Part Description | Part Number |
|---|--|-------------|
| 1 | Solar Panel Assembly, 40W AB | 30110051 |
| 2 | Visor, Sun 130mm | VIS-25 |
| 3 | LED Module, Amber 130mm ARWBRD SZ C | LED-21 |
| 4 | Photo Sensor (Bottom of Case Assembly) | SEN-075 |

6.2 Battery Box



| # | Part Description | Part Number |
|----|--------------------|-------------|
| 8 | Lid, Battery | AMS30110178 |
| 9 | Torx Screw | BOL-144 |
| 10 | Battery, 12V 18 AH | BAT-230 |
| 11 | Battery Charger | CHG00000175 |
| 12 | Wire 10GA Red | WIR-1003 |
| 13 | Wire 10GA Black | WIR-1001 |



6.3 Control Box



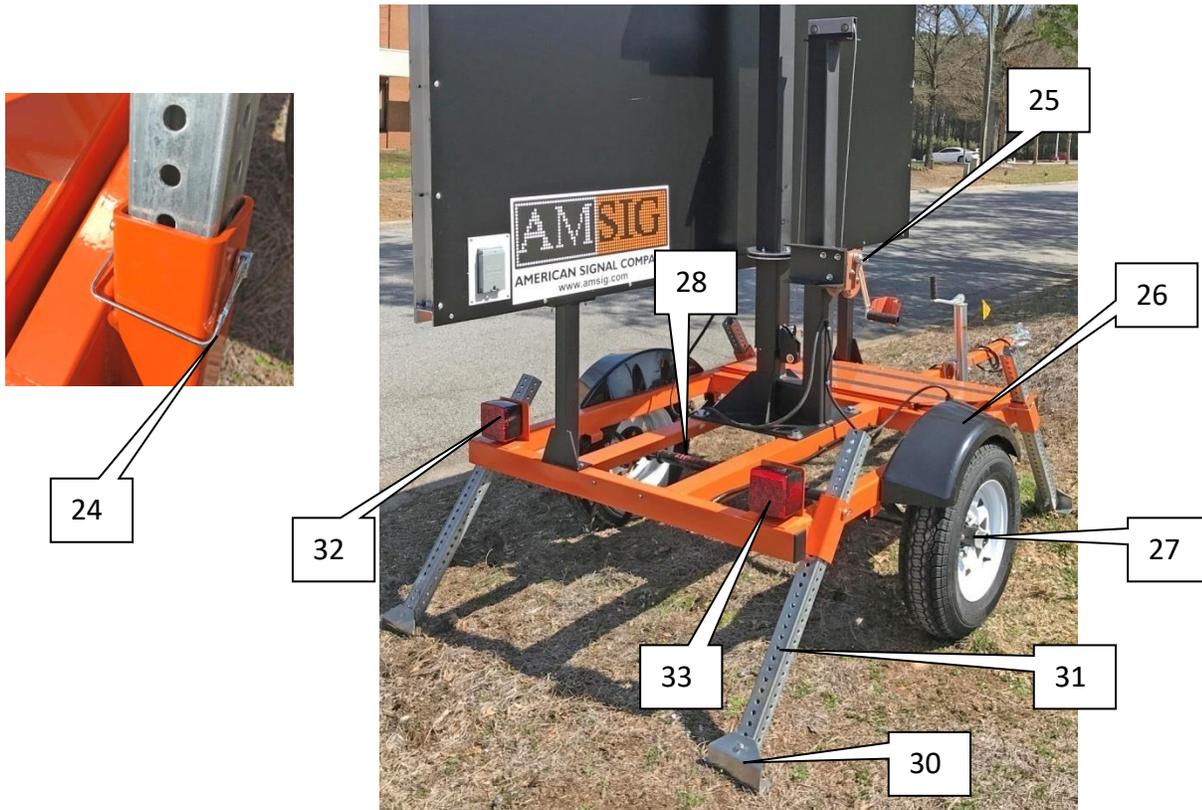
20



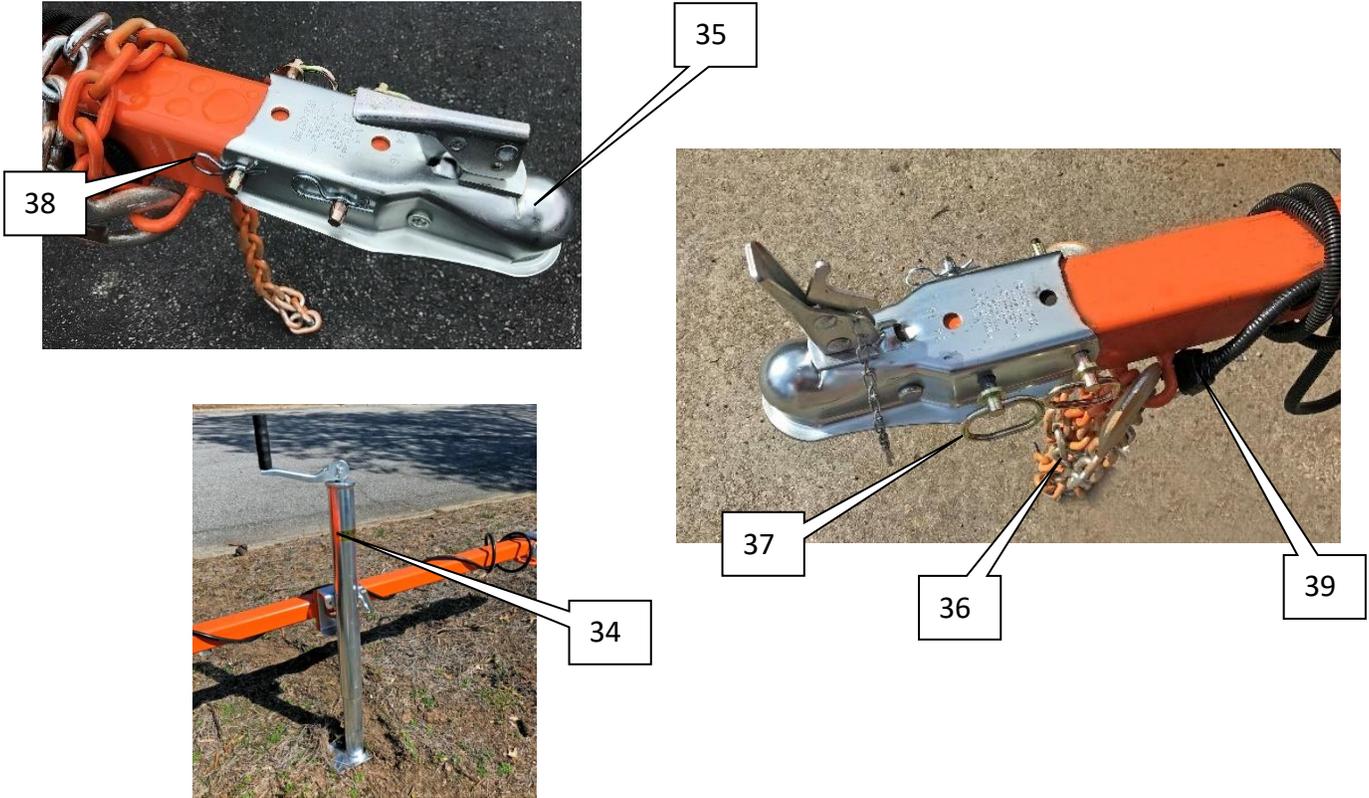
19

| # | Part Description | Part Number |
|----|------------------|-------------|
| 19 | Controller | 40-00401-00 |
| 20 | Remote | REM-020 |

6.4 Trailer and Mast



| # | Part Description | Part Number |
|----|--|--------------------|
| 24 | Pin 3/8 X 3" long w/square retainer ZP | PIN126-1 |
| 25 | Winch | WIN-50 |
| 26 | Fender, 7.5" wide Round Plastic Black | FEN-45 |
| 27 | Wheel and Tire Assembly, ST175/80D13 | WHE-50 |
| 28 | Axle,1900# CAP, Straight Tube | AXL-111 |
| | | |
| 30 | Foot | AMS30110109 |
| 31 | Stabilizing Leg | AMS30110095 |
| 32 | Lamp, Tail Left Side | LAM-23 |
| 33 | Lamp, Tail Right Side | LAM-33 |



| # | Part Description | Part Number |
|----|---------------------------------------|-------------|
| 34 | Jack, 2000# Top Wind 15" Travel | JAC-85 |
| 35 | 2" Ball Hitch | HIT-180 |
| 36 | Safety Chains with Hooks | AMS30015031 |
| 37 | Hitch Pin | PIN30 |
| 38 | Cotter Pin | PIN130 |
| 39 | Trailer Brake and Tail Lights Harness | HAR820 |



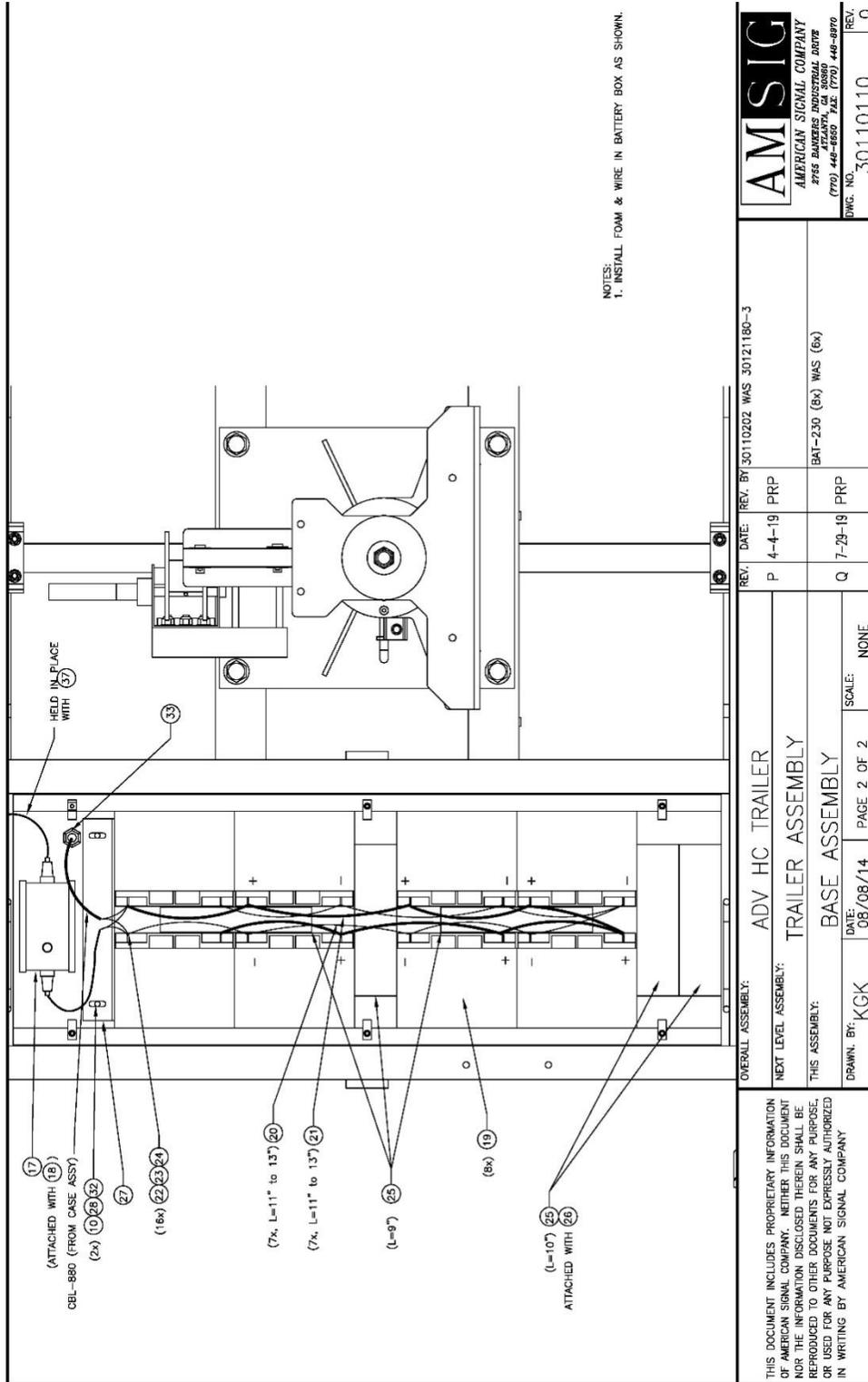
6.5 Drawings

6.5.1 Trailer

| ITEM | PART | DESCRIPTION | QTY | UNIT |
|------|---------------|--|-----|------|
| 1 | AMIS0110202 | FRAME WELDMENT, AERBASIC | 1 | EA |
| 2 | AMIS0110202-4 | RAST ASSEMBLY, ARROWBOARD | 1 | EA |
| 3 | ROL0000087 | BOLT, 3/4-10 X 2 HEX ZINC ORG | 8 | EA |
| 4 | WAS0000040 | WASHER, 3/4 FLAT ZINC 8100 X 2.0 | 8 | EA |
| 5 | NJF0000050 | NUT, 3/4-10 HEX NYLON ZINC | 4 | EACH |
| 6 | AMIS0000014 | ALUMINUM ANGLE, 1/2 X 1/2 X 1/8 | 1 | EA |
| 7 | AMIS0000014 | ALUMINUM ANGLE, 1/2 X 1/2 X 1/8 | 1 | EA |
| 8 | WHE0000060 | WHEEL, 6 TRF ASSEMBLY ST175R0013 | 2 | EA |
| 9 | FEND0000045 | FENDER, 7.5" WIDE ROUND PLASTIC BLK | 10 | EACH |
| 10 | BOL0000070 | BOLT, 1/4-20 X 3/4 PAN PHL SS | 4 | EA |
| 11 | AMIS0110202 | STABILIZER TUBE | 4 | EA |
| 12 | AMIS0110202 | STABILIZER FOOT | 4 | EA |
| 13 | AMIS0000030 | WASHER, 3/8 FLAT SS | 8 | EACH |
| 14 | WAS0000030 | WASHER, 3/8 FLAT SS | 8 | EACH |
| 15 | NJF0000034 | NUT, 3/8-16 NYLON SS | 4 | EA |
| 16 | NJF0000034 | NUT, 3/8-16 NYLON SS | 4 | EA |
| 17 | CHG0000015 | CHARGER, 2A 100CS WATERPROOF | 1 | EA |
| 18 | TAP0000071 | TAPE DEL COATED, 0.625" X 1/2" | 0.7 | EA |
| 19 | AMIS0000014 | ALUMINUM ANGLE, 1/2 X 1/2 X 1/8 | 8 | EA |
| 20 | AMIS0000014 | ALUMINUM ANGLE, 1/2 X 1/2 X 1/8 | 8 | EA |
| 21 | WHD0000103 | WIRE, 10GA TWISTED RED 19 STRAND | 12 | FEET |
| 22 | TER0000022 | TERMINAL, RING #10 STD NYLON VEL | 25 | EACH |
| 23 | SCR0000070 | SCRREV, 10-32 X 1/2 PAN HD PHL SS | 16 | EACH |
| 24 | NJF0000030 | NUT, 10-32 NYLON ZINC | 16 | EA |
| 25 | AMIS0000050 | FOAM BATTERY BOX, 6V TOP (LONG) | 1 | EA |
| 26 | AMIS0000050 | FOAM BATTERY BOX, 6V TOP (LONG) | 1 | EA |
| 27 | AMIS0000050 | ANGLE BATTERY POSITION SHORT | 0.1 | EA |
| 28 | NJF0000025 | NUT, 1/4-20 NYLON ZINC | 2 | EA |
| 29 | NJF0000025 | NUT, 1/4-20 NYLON ZINC | 2 | EA |
| 30 | NJF0000025 | NUT, 1/4-20 NYLON ZINC | 2 | EA |
| 31 | BOL0000044 | BOLT, 1/4-20 X 3/8 TORX PHL SS | 6 | EA |
| 32 | WAS0000040 | WASHER, 1/4 FLAT SS | 6 | EA |
| 33 | WAS0000040 | WASHER, 1/4 FLAT SS | 6 | EA |
| 34 | AMIS0110202 | BRACE & TAIL LIGHT ASSEMBY, ARROWBOARD | 1 | EACH |
| 35 | CLIP0000005 | CLIP, BODY LARGE 1/4" BLACK | 4 | EA |
| 36 | PLU0000005 | PLUS, TURNING 270° 10-4 GA BLACK | 4 | EA |
| 37 | CLAMP0000075 | CLAMP, 3/8 DIA PLASTIC AMBER | 1 | EA |

NOTES:
 1. NEXT LEVEL ASSEMBLY: ALL TOP-LEVEL ARROWBOARDS
 2. NEXT LEVEL ASSEMBLY: ALL TRAILER ASSEMBLY
 3. CLIPS (CLIP-103) ARE USED TO SECURE TAG & TAIL LIGHT WIRING
 4. SEE TAG & TAIL LIGHT ASSEMBLY (30110202) FOR P/N AND WIRING INFO

| | | | | |
|---|---|---|---|---|
| | | AMERICAN SIGNAL COMPANY 2745 BARKERS INDUSTRIAL DRIVE (770) 448-8882 FAX: (770) 448-8870 | | DWG. NO. 30110110 REV. Q |
| OVERALL ASSEMBLY: ADV. HC. TRAILER NEXT LEVEL ASSEMBLY: TRAILER ASSEMBLY THIS ASSEMBLY: BASE ASSEMBLY | REV. DATE: 30110202 WAS 30121180-3 P 4-4-19 PRP Q 7-29-19 PRP | SCALE: NONE | REV. DATE: 30110202 WAS 30121180-3 P 4-4-19 PRP Q 7-29-19 PRP | REV. DATE: 30110202 WAS 30121180-3 P 4-4-19 PRP Q 7-29-19 PRP |



NOTES:
1. INSTALL FOAM & WIRE IN BATTERY BOX AS SHOWN.

AMSIG
 AMERICAN SIGNAL COMPANY
 2765 BARKERS INDUSTRIAL DRIVE
 (770) 446-6666 FAX: (770) 448-8970
 DWG. NO. 30110110 REV. Q

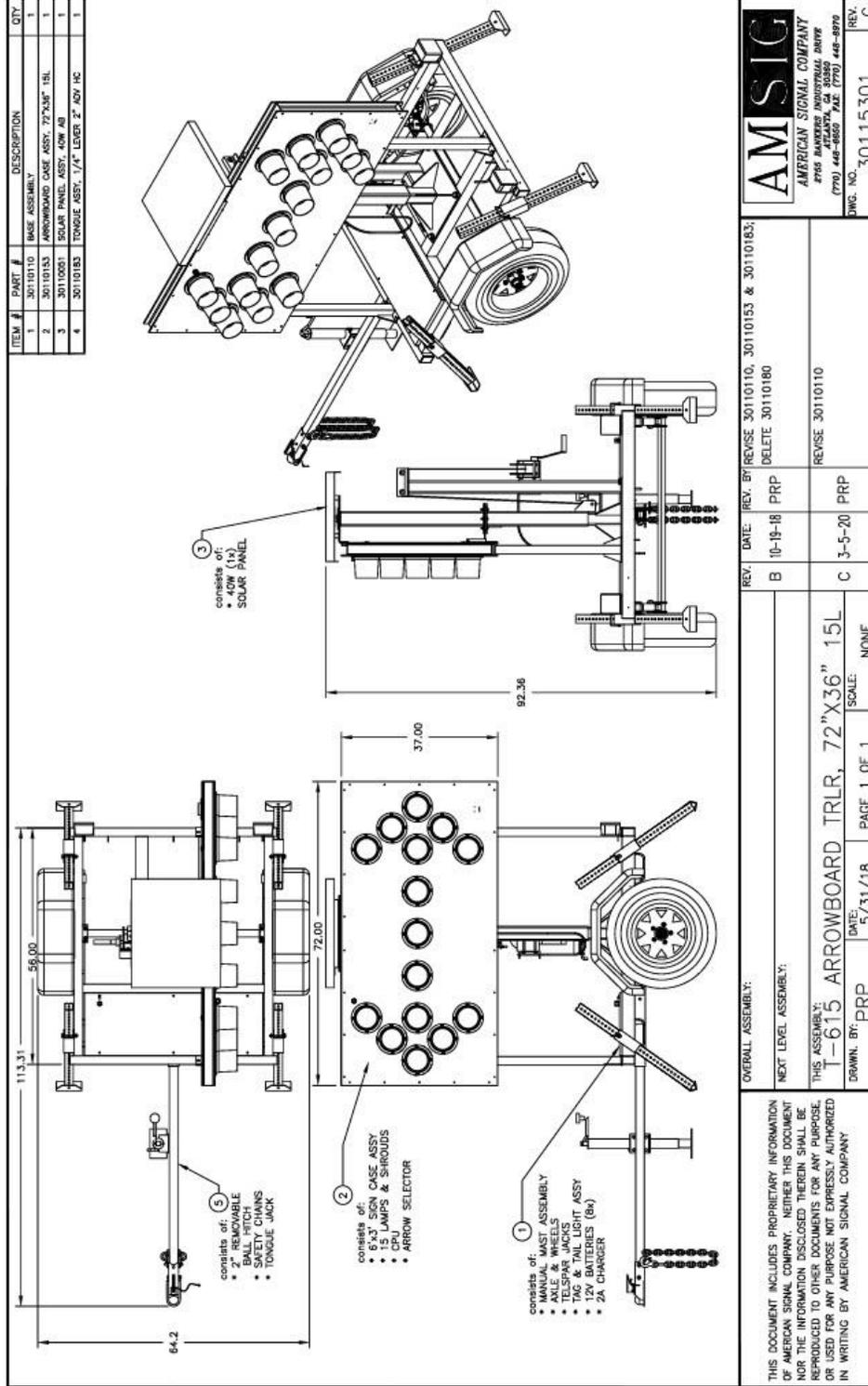
| | | |
|------------|---------|-------------------------|
| REV. DATE: | REV. BY | 30110202 WAS 30121180-3 |
| P | 4-4-19 | PRP |
| Q | 7-29-19 | PRP |
| SCALE: | | NONE |

OVERALL ASSEMBLY: ADV HC TRAILER
 NEXT LEVEL ASSEMBLY: TRAILER ASSEMBLY
 THIS ASSEMBLY: BASE ASSEMBLY
 DRAWN BY: KGK DATE: 08/08/14 PAGE 2 OF 2

THIS DOCUMENT INCLUDES PROPRIETARY INFORMATION OF AMERICAN SIGNAL COMPANY. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED TO OTHER DOCUMENTS FOR ANY PURPOSE, OR USED FOR ANY PURPOSE NOT EXPRESSLY AUTHORIZED IN WRITING BY AMERICAN SIGNAL COMPANY

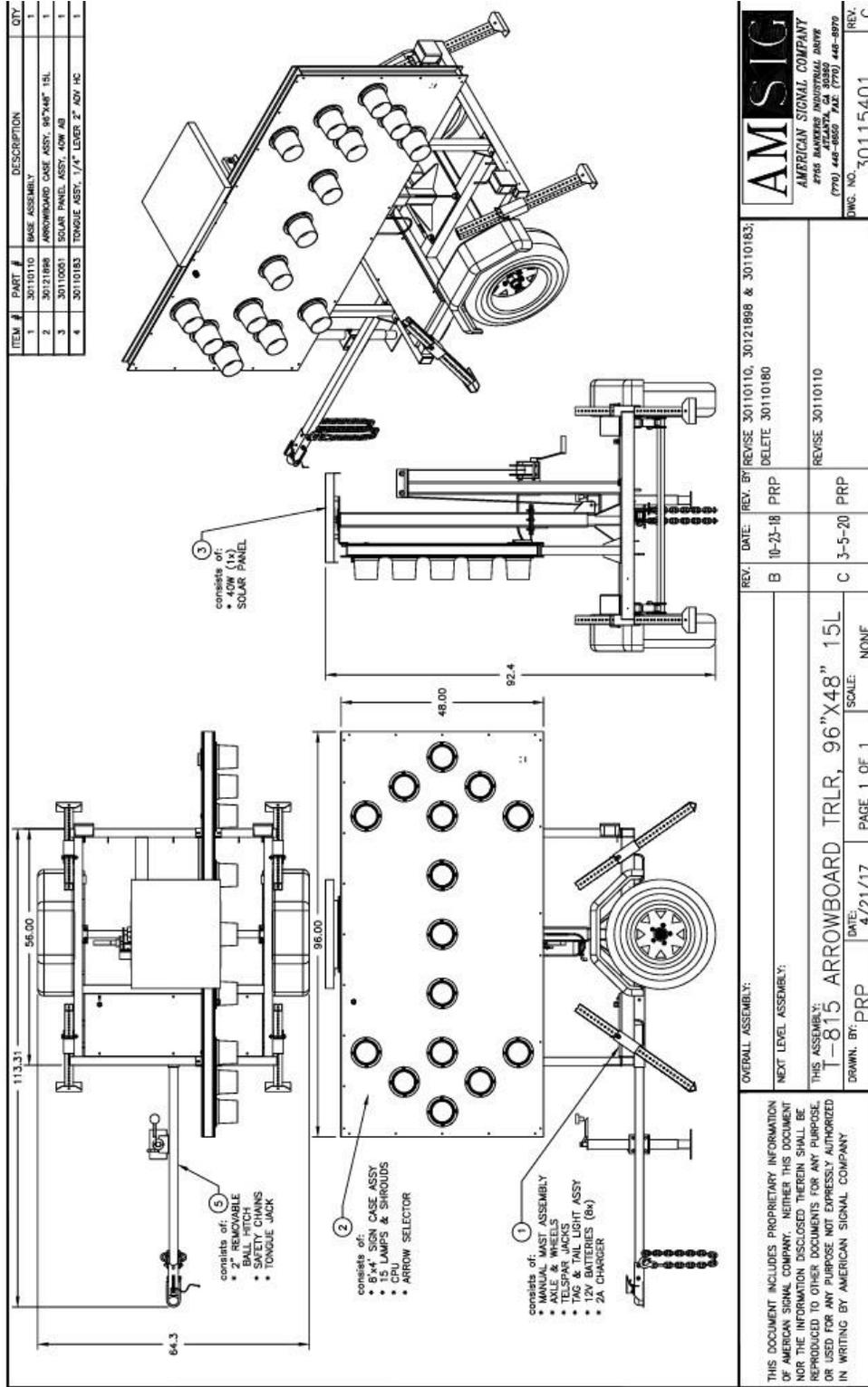


6.5.2 T-615 Flashing Arrow Panel Trailer





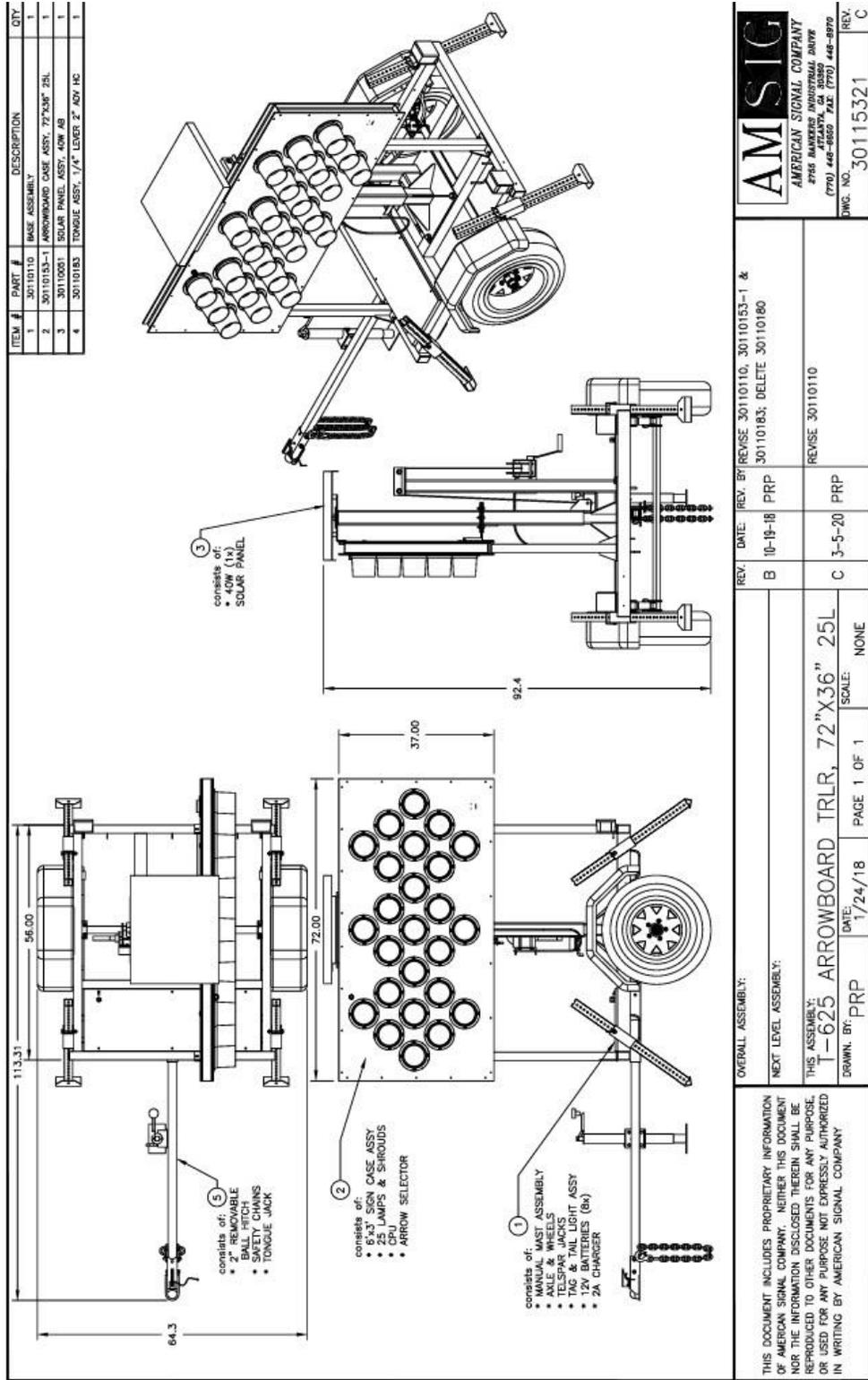
6.5.3T-815 Flashing Arrow Panel Trailer



| | |
|--|--|
| AM SIG AMERICAN SIGNAL COMPANY 2765 BANKERS INDUSTRIAL DRIVE PHOENIX, AZ 85029 (770) 448-8888 FAX: (770) 448-8970 | |
| OVERALL ASSEMBLY: THIS ASSEMBLY: DRAWN BY: PRP DATE: 4/21/17 PAGE 1 OF 1 SCALE: NONE | REV. DATE: REV. BY B 10-23-18 PRP C 3-5-20 PRP REVISE 30110110 DELETE 30110180 REVISE 30110183; |
| THIS DOCUMENT INCLUDES PROPRIETARY INFORMATION OF AMERICAN SIGNAL COMPANY. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED THEREIN SHALL BE REPRODUCED TO OTHER DOCUMENTS FOR ANY PURPOSE, OR USED FOR ANY PURPOSE NOT EXPRESSLY AUTHORIZED IN WRITING BY AMERICAN SIGNAL COMPANY. | |
| DWS. NO. 30115401 REV. C | |

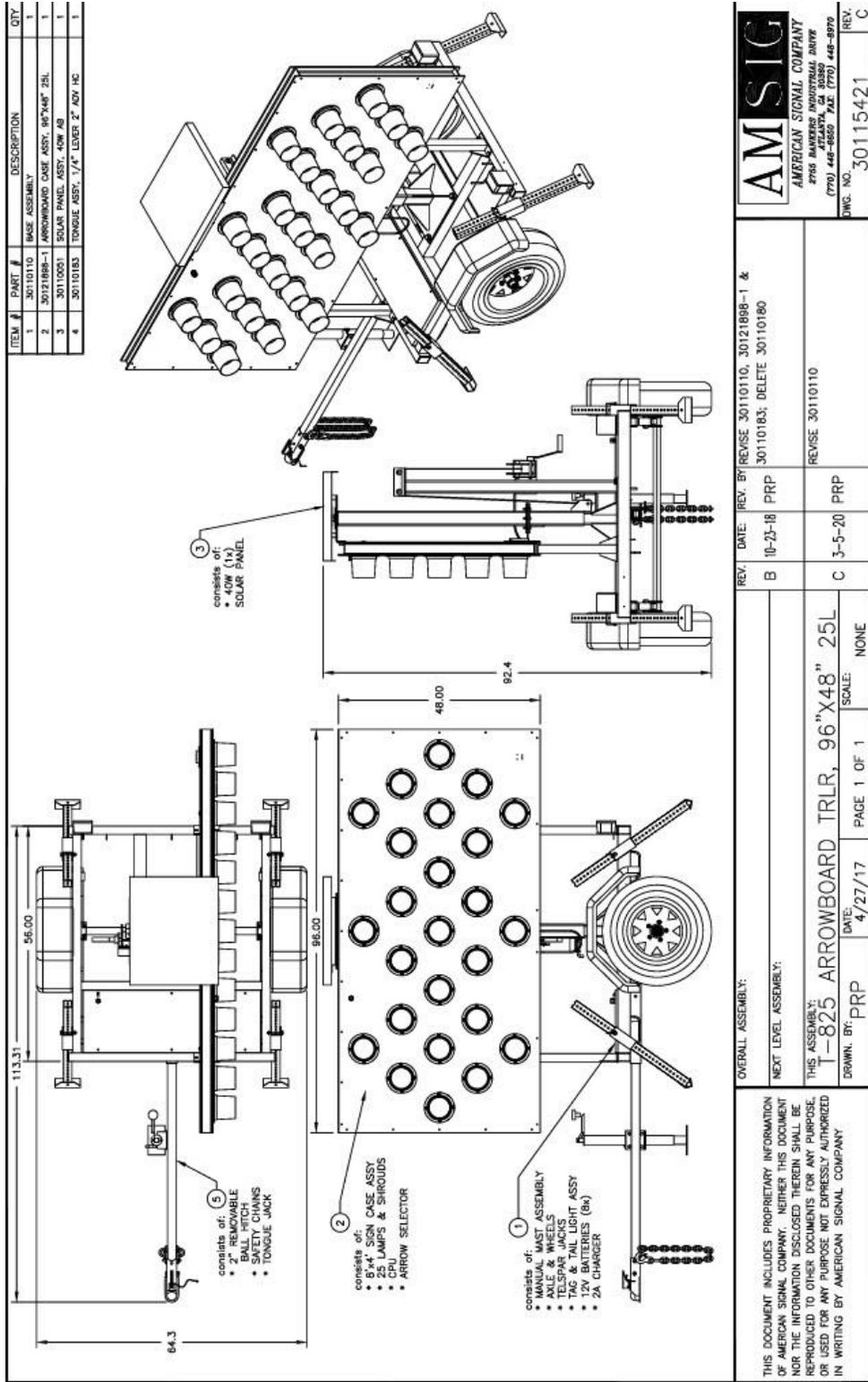


6.5.4 T-625 Flashing Arrow Panel Trailer





6.5.5 T-825 Flashing Arrow Panel Trailer





7. SERVICE CONTACT

Online Support: <http://amsig.com/support/>, where you will find manuals, quick guides, and other resources. You can also submit an inquiry through our website at <http://amsig.com/contact-us/>.

Email: service@amsig.com

Phone: 770.448.6650 (use extension 3 to reach the Service Department)

Fax: 770.448.8970

Write: American Signal Company – Service Department
2755 Bankers Industrial Drive
Atlanta, GA 30360