

Date	Feb 23, 2023
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SUBJECT: Light Bar, Pylon, and Exterior Lighting Details
PURPOSE: Integrated Wrecker – Final Installation & Dressout

Lightbar Installation

The lightbar on a temporary mounted unit is typically shipped inside the cab. It must be mounted to the pylon and the wiring harness installed to the main electrical junction box.





Run the lightbar wires out of the bottom of the pylon:



Determine the mounting position of the pylon and drill the mounting holes in the top of the toolboxes. Prior to setting the pylon in place, apply liberally RTV Silicone Sealant around the bolt holes that are drilled into the top of the toolboxes.



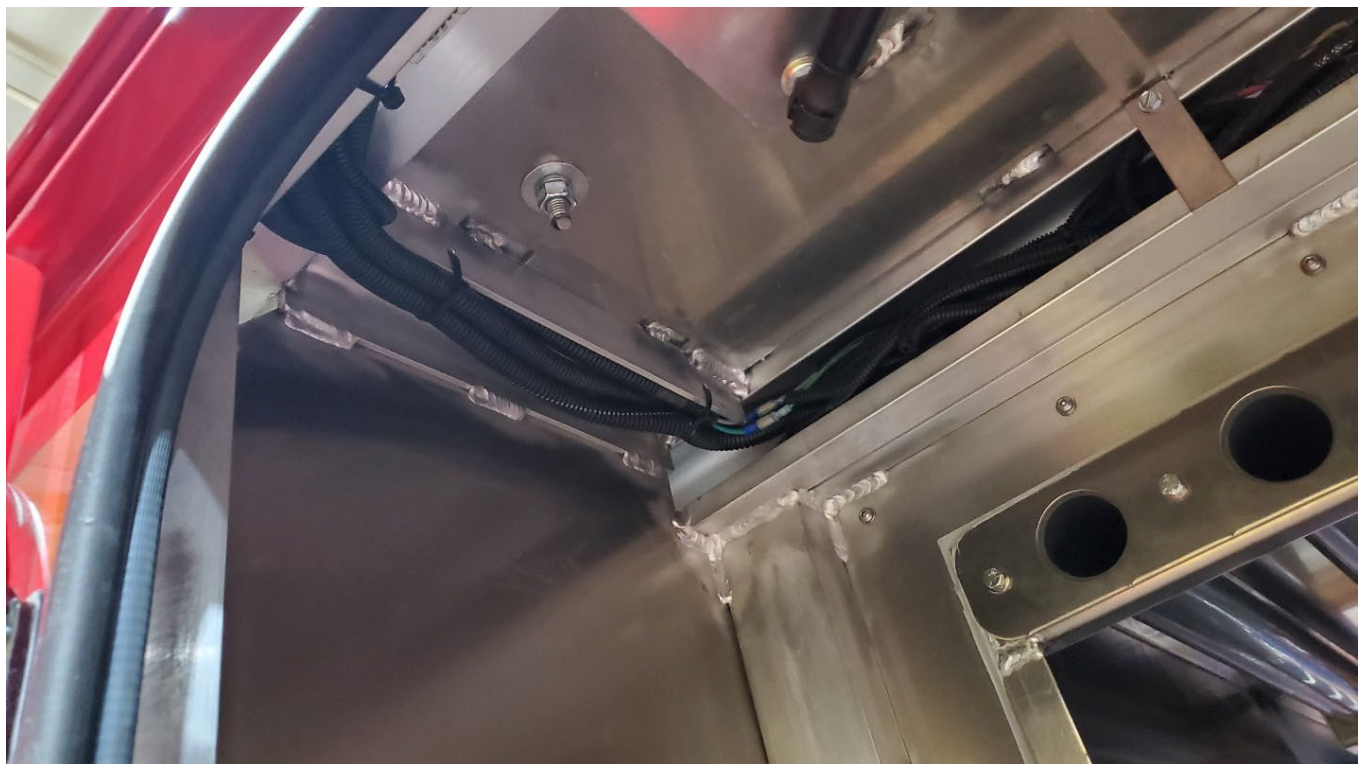
Where the pylon harnesses enter the toolboxes, cut a 1-3/8" hole and install the grommet included in the installation kit. Seal the bolt holes by liberally applying the RTV Silicone Sealant after the pylon installation.

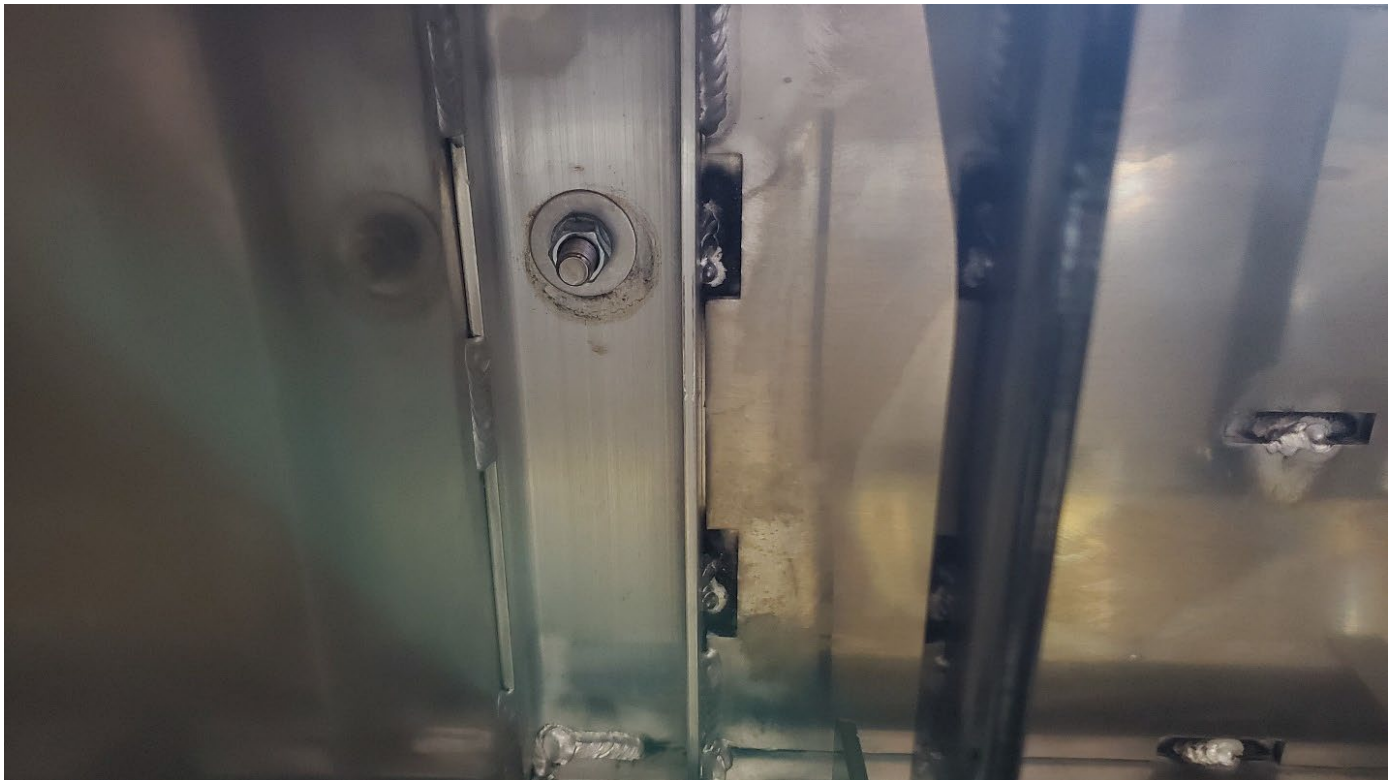


Apply (1) rubber gasket to the bottom of the pylon on each side:



Bolt the pylon to the toolboxes:





Wiring Instructions / Color Key for Low Current Freedom IV – MLR 472LC:

Power Wires

Wire the red +12V power wire to a 20A fuse in the fuse block located at the bottom of the junction box.

Wire the black (ground) power wire to the ground stud in the upper left corner of the junction box.

Main Control Cable

Wire each wire from the lightbar control cable to the appropriate stud in the junction box:

Amber Lightheads to Main Beacon STUD #35

Traffic Advisor to TA Left STUD #6

Traffic Advisor to TA Right STUD #5

Low Power* to DVI STUD #4

BTT Cable

Since there are brake lights installed in the pylon separate from the lightbar, the Driver and Passenger Brake light wires from the lightbar are used as turn signals:

Driver Brake Light to Left Turn STUD #21

Passenger Brake Light to Right Turn STUD #22

Tail Lights to Marker Stud #30

***Note: Low Power Mode** will only lower the brightness of the center section of the Low Current Freedom IV – MLR 472LC. The corner amber lightheads will remain at full brightness to maintain an SAE Class 1 rating.

Wiring Instructions / Color Key (cont'd)

Additional Lights on the Pylon

Brakes to Brake STUD #10

Marker Lights to Marker STUD #30

M6 Lights Power to Side Beacon (Aux1) STUD #7

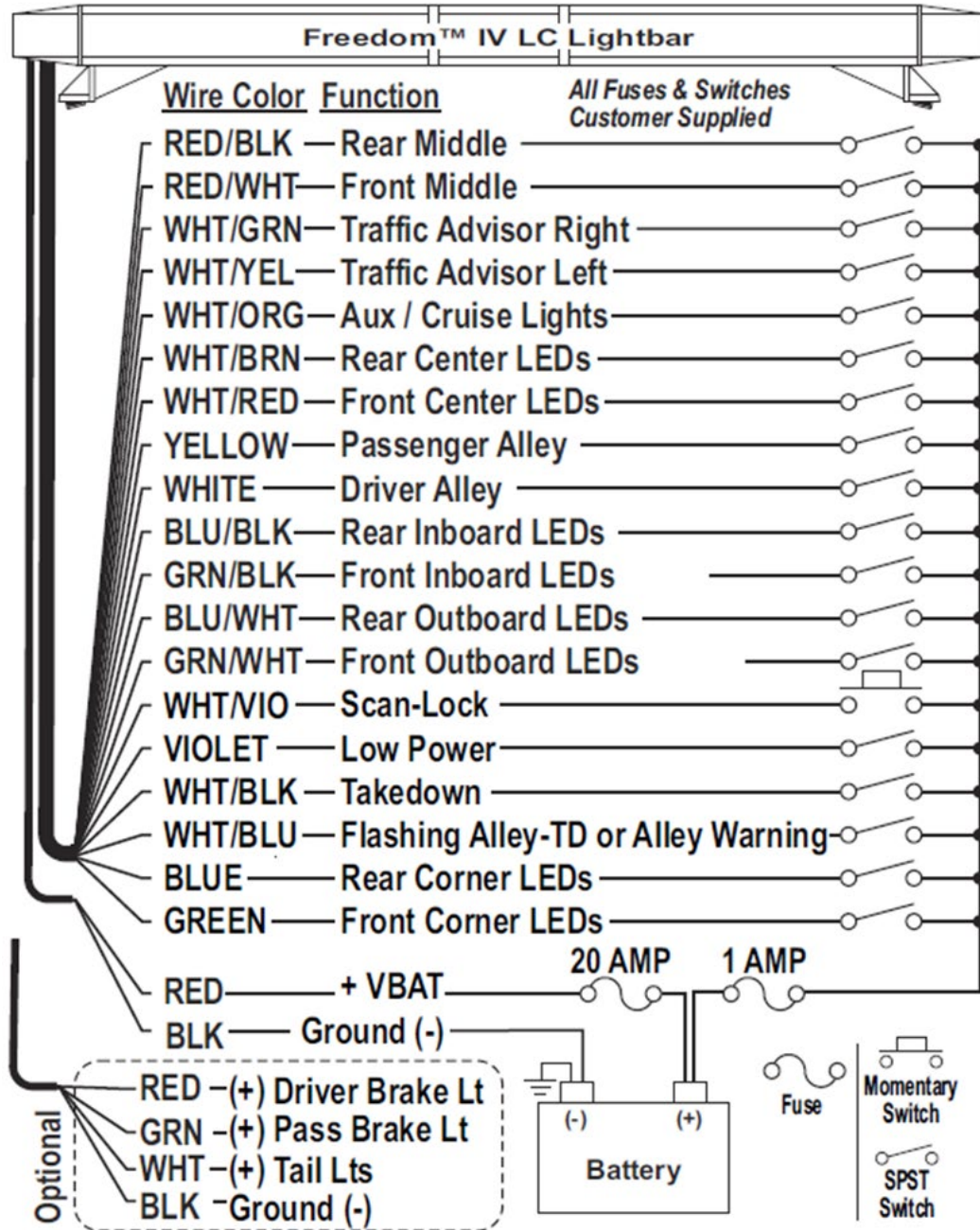
(note: a relay is necessary if more than 3 sets M6 lights are installed)

M6 Purple Wires to DVI STUD #4

MCFLD lights to Aux Beacon STUD #9

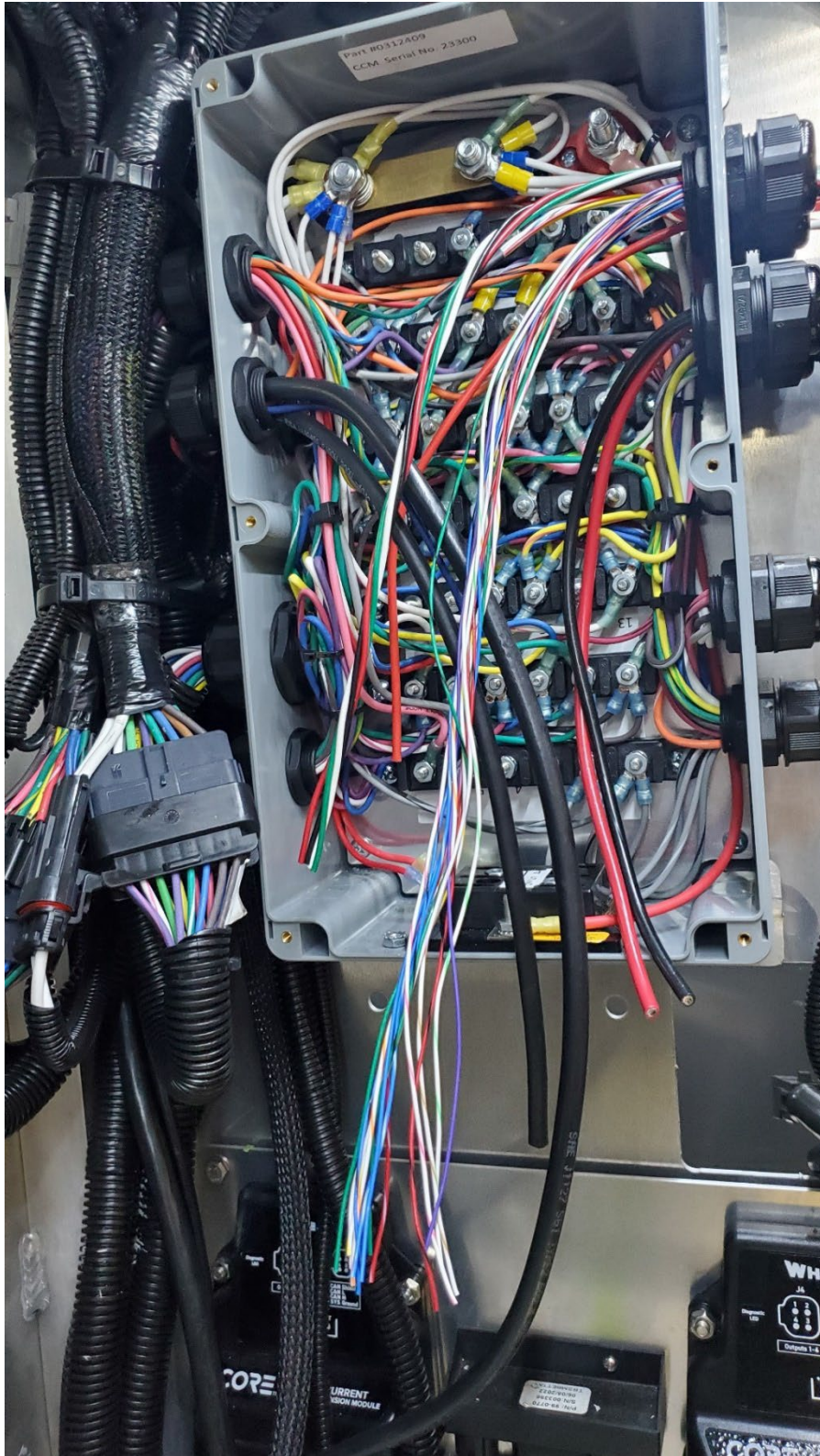
Connect any ground wires to the GROUND posts in the junction box.

Wiring Instructions / Color Key (cont'd)



Applying +VBAT to both the WHT/YEL and WHT/GRN at the same time will give you a split TA
Applying +VBAT to a function wire activates that function.

Wiring Instructions / Color Key (cont'd)



Exterior Lighting Details

This is how the unit will arrive from Miller.



Exterior Lighting (cont'd)

The body lighting on the rear will connect to harness part number 0311800 which connects to the main harness. The harness part number 0311800 is labeled A – F. The letter A starts at the top light and F ends at the round 3” light on side of tailboard. The E drop connects to the Flex Light (if equipped). All lights will be installed upon delivery but will need to be removed to add additional lighting.

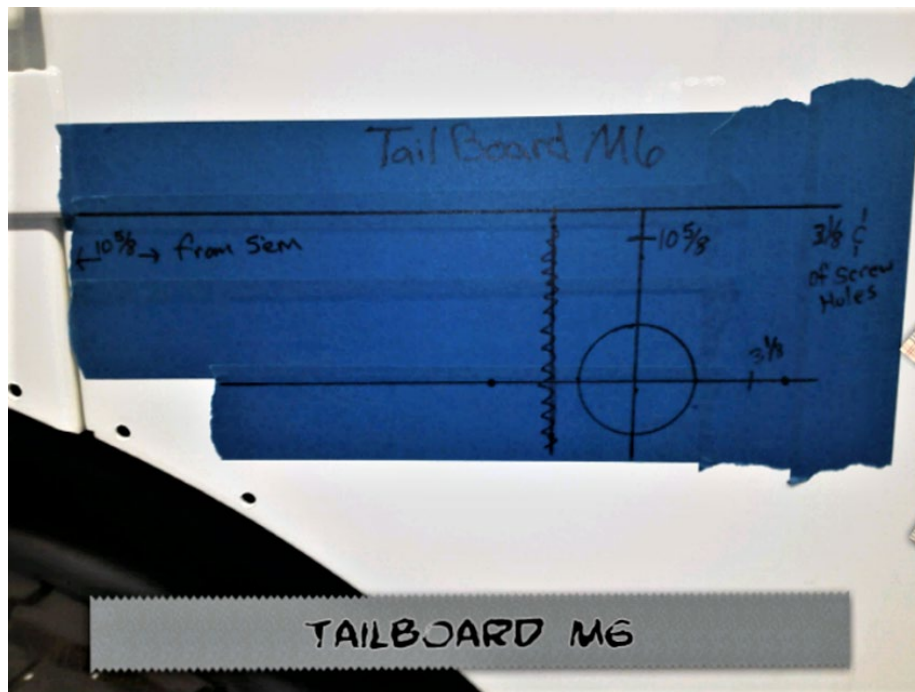


Exterior Lighting (cont'd)



Exterior Lighting (cont'd)

The first image is the layout for M6 light on side of tailboard. After laying the light out on tape, use the rubber gasket supplied with light as a template. The screw holes are a #28 drill bit and then tapped with a #8-32 tap. The center hole is a 7/8" hole for the function wires on the light. Once the light is installed, use the supplied 2-pin Deutsch connector & pins to build connector to connect the main harness in tailboard with M6 drop (Brown/White wire).



Exterior Lighting (cont')

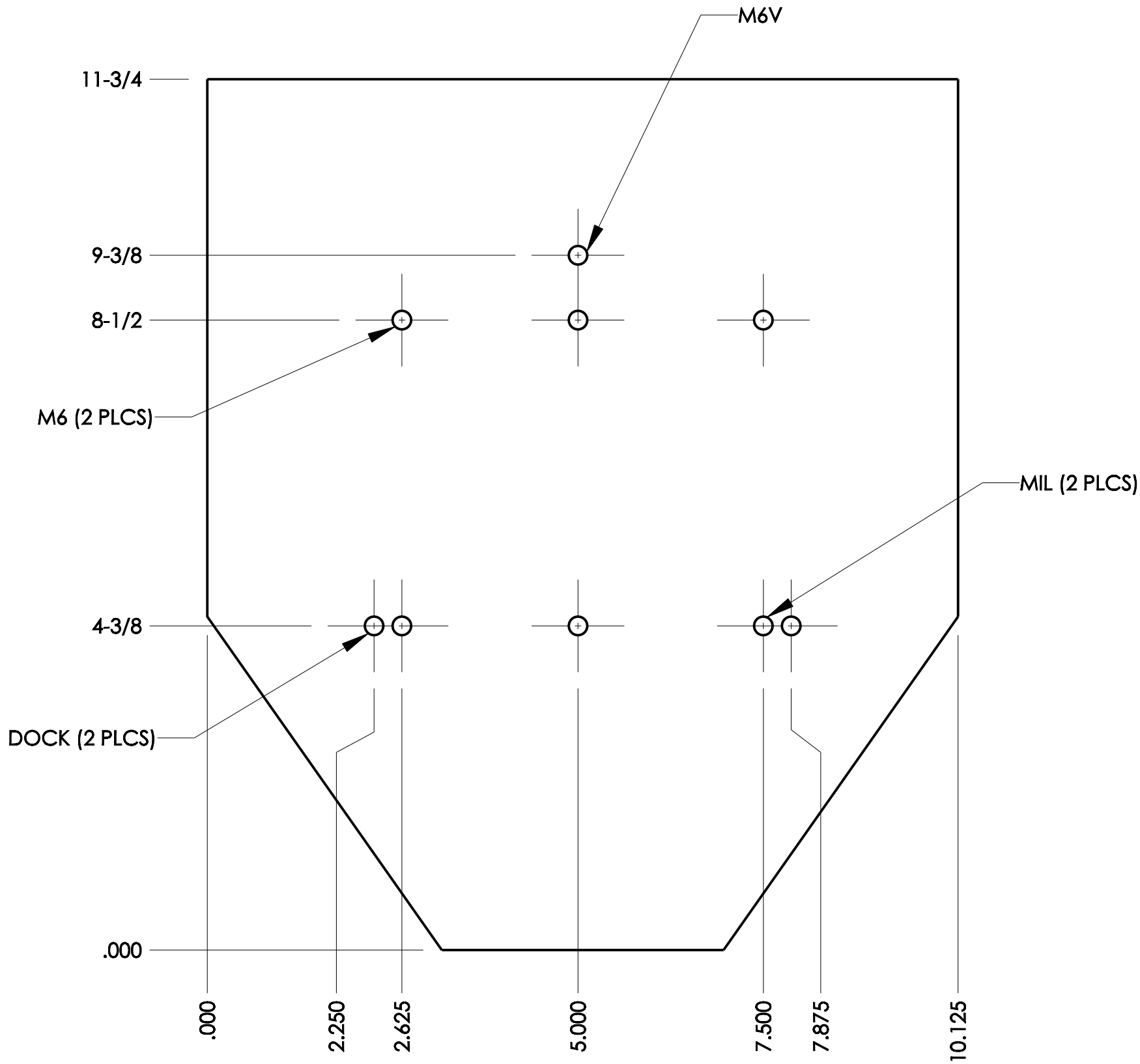
To install M6 on tailboard, find the vertical center from bottom of taillight cutout to bottom of tailboard. Once you find the horizontal center, and line is level, use M6 rubber gasket as template. Hole sizes are the same 7/8" and #29, tapped #8-32.



Exterior Lighting (cont'd)

If the unit doesn't get an M6 or docking light then it will get a Millennium light in between the tandems and lift axle (if applicable). Apply tape to the fender and find center at the bottom of fender between tandems and lift axle. The Millennium light should be located 7 1/4" down from bottom of channel. Note that these lights may already be factory installed.





Exterior Lighting (cont'd)

Lights shown after installation.



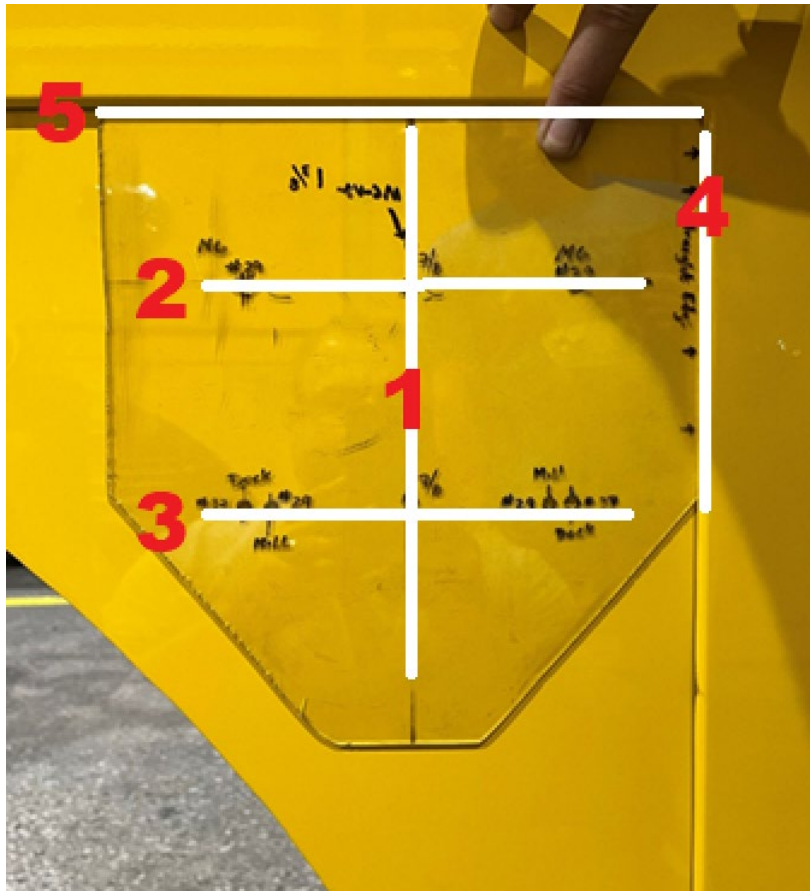
Exterior Lighting (cont'd)

The wires on the millennium light will route straight up. Put them in p-clamps using the fender bolts, to the hole drilled in floor of box. This will be the procedure for both lights if two are installed. The lights may already be factory installed upon delivery. Once the lights are installed and routed into the box, there will be a harness in the above channel to connect the lights to. Once everything is connected and clamped up, apply silicone to the back of the light and the hole the wire entered the toolbox to keep water out.



Exterior Lighting (cont'd)

The top image is the layout template. Line #4 is where you will measure from to find center for lights being installed. Center will be $4\frac{3}{4}$ " over from there. The M6 (if applicable), will be $3\frac{1}{8}$ " down from line #5 and use rubber gasket to mark the holes. Note that these may already be factory installed.



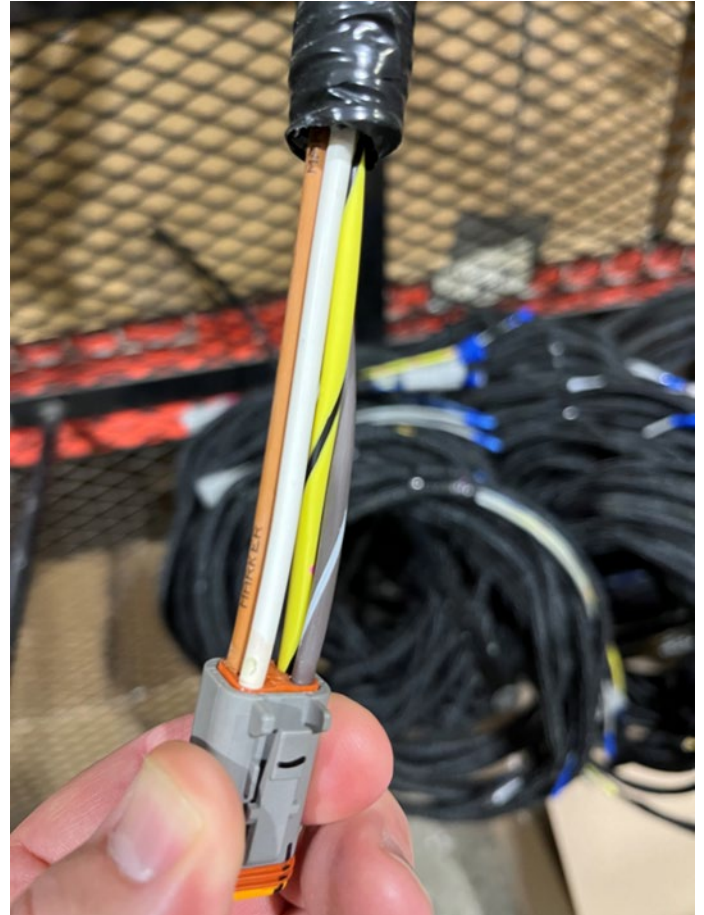
Exterior Lighting (cont'd)

View from the back side of the M6 light mounted from previous step. Silicone the back of all mounted lights. Route wires down the angle pictured and secure it to the angle with a zip tie. Look inside toolbox before drilling hole. Remove any wires from channel on the left inside the door to prevent damage to the wires. Drill a 7/8" hole at bottom of angle. Once wire is routed inside toolbox, silicone that hole as well. Use supplied 4-pin Deutsch connector and pins to build connector for lights to connect to harness in toolbox.



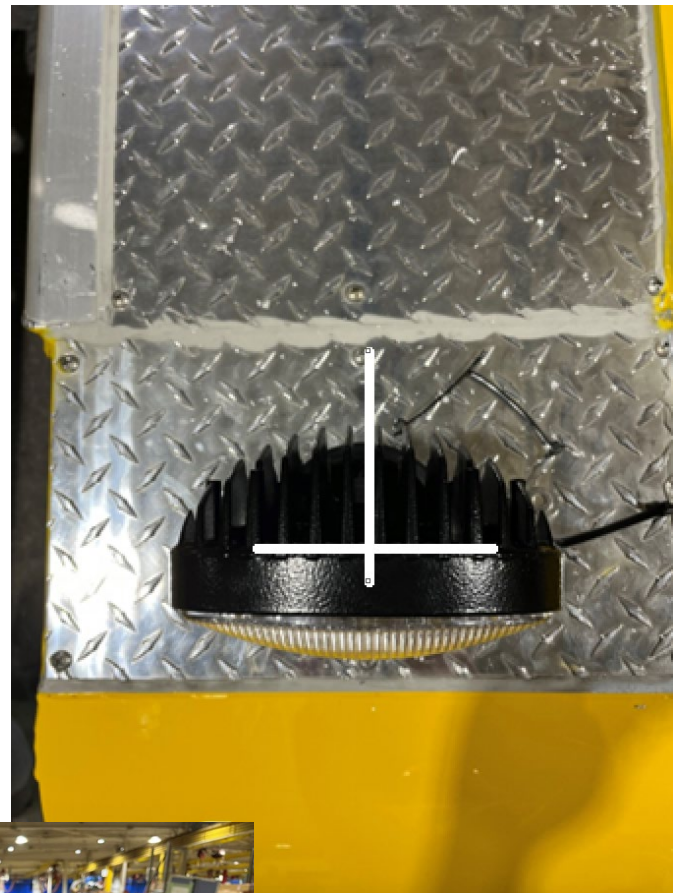
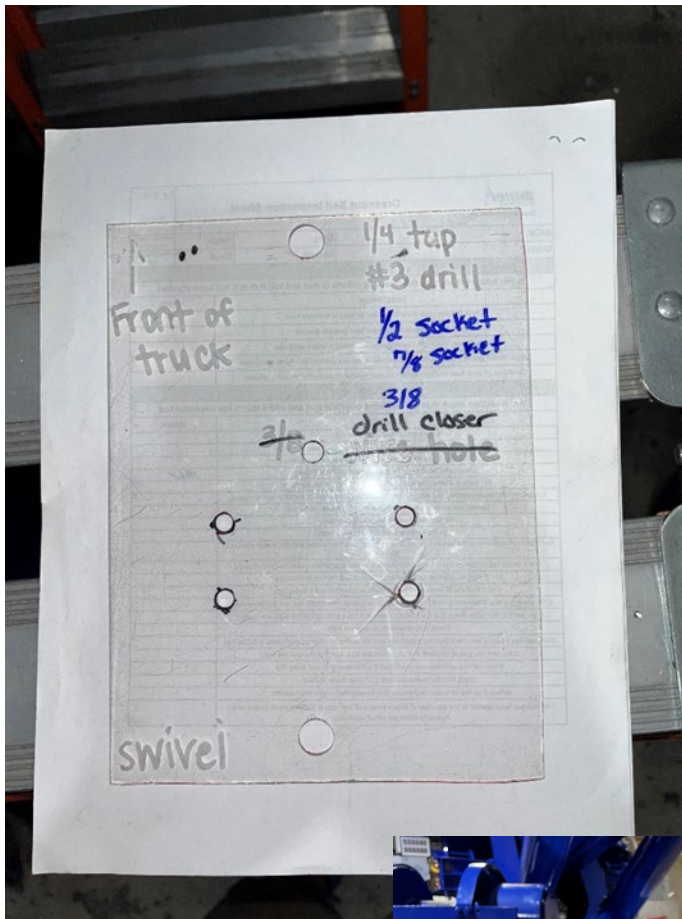
Exterior Lighting (cont'd)

This is the M6 and docking light harness (part number 0311796). This harness will be in between the tandems in the toolbox (horizontal doors) for lights on side of the box, and in the door (vertical doors) in front of the lift axle for the lighting on the front fender. This page is a reference for all above lighting.



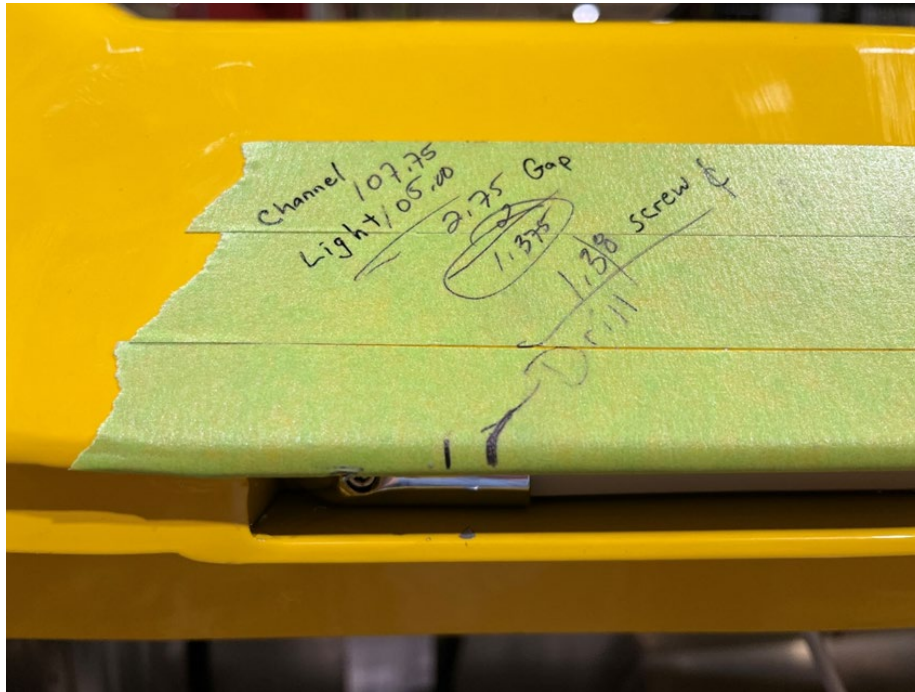
Exterior Lighting (cont'd)

The swivel spotlights mount on top of the tailboard. From the screw marked to center of the light mounting bracket is 4-½". Find center then put bolt in bracket on that center mark to mark the bolt holes and wire hole. Drill holes with a #3 drill bit and tap ¼"-20. Drill wire hole in line with the rear mounting hole. This is to keep the wire inside the rubber boot that goes around the mounting bracket. Use the supplied 2-pin Deutsch to connect to harness inside the tailboard. The wires will have to be extended on the swivel lights, to make it easier to put Deutsch connector on wires.



Estxerior Lighting (cont'd)

Installation of strip lights mounted in the small channel above the doors. To find the correct mounting location, measure the length of the channel and measure the strip light (without the chrome cap). Then center the light in the channel place chrome cap in channel to mark the screw hole. Drill the screw holes with a #37 drill bit and tap the hole #6-32.



Exterior Lighting (cont'd)

The Razor light mounting location will vary depending on what the customer wants. If unit has handrails measure box for handrail stanchions placement before mounting razor light.



Exterior Lighting (cont'd)

3212/V30 unit M6 and docking lights locations.



Exterior Lighting (cont'd)

Lower work location will vary depending on customer. If lights are mounted on the toolbox, the wire will go straight into the toolbox to connect to the main harness. If the lights are mounted on the subframe, the wire will need to be extended to go inside the toolbox to connect to the harness.



Exterior Lighting (cont'd)

Location to install swivel lights on a 3212/V30. Center the mounting bracket with bolt in toolbox and follow the same installation instruction as the other swivel lights. The harness to connect the swivel lights will be below in tailboard.



Exterior Lighting (cont'd)

Unit after all accessories are installed. Some lights may not be standard or the same type of light. This will vary based on unit specs and customer preference.



Exterior Lighting (cont'd)

Rear of unit after accessories are installed. Some lights may not be standard or the same type of light. This will vary based on unit specs and customer preference.



Exterior Lighting (cont'd)

Vulcan lighting installation.



Exterior Lighting (cont'd)

When mounting M6 lights on the hood it is not unit specific but is truck specific. All M6 lights will mount in different spots depending on type of truck. Also check with customer or Miller and see if they have another unit with lights, they can send a photo to see mounting location. The strip lights mounted on the top of the bumper will also vary on mounting location, some mount on bumper but they could also mount straight to the hood. Check with customer or Miller for light location if unsure. A 2-strand wire will be used for both sets of lights Miller part number 0313063.



Exterior Lighting (cont'd)

M6 lights on a V30 unit will be centered horizontally and vertically. Once center is found, use M6 rubber gasket as template. The screw holes are made with a #29 drill bit and #8-32 tap. The center hole for wires is a 7/8" hole.



Exterior Lighting (cont'd)

Lighting installed on the rear and side of a V30.



Exterior Lighting (cont'd)

When mounting the swivel lights on a V30 unit, center the light on the back edge of the toolbox. If mounting a swivel on a V70 or V100 the light will mount on the jack leg cover (not shown here). The lower work lights will mount in this location and the wires will route up the back of the truck frame and up to the sub frame to route into the toolbox to connect to the main harness.



Exterior Lighting (cont'd)

When installing M6, docking lights or Millennium lights on the Vulcan fenders that protrude out, put a straight edge on top of the fender and measure down 3" for the M6 and measure 7-1/8" down for docking/millennium lights. Find center by measuring the bottom of the fender (before trim is installed). If you are installing the M6 V2 (as pictured) move the wire hole up 5/8" and the wire hole size will be 1-1/8" (M6 stays 7/8" hole).



Exterior Lighting (cont'd)

After lights are installed the wires for the M6 and dock/millennium lights will be in fender or in the toolbox. If in the toolbox, feed the wires through the hole in the channel into fender. The 6" oval light on bottom will be wired to the docking light function also (even with docking lights installed).



Exterior Lighting (cont'd)

This is M6 and docking lights layout. From the upper corner where the channels meet is where you will measure from to find center for lights being installed. Center will be 4-³/₄" over. The M6 (if applicable), will be 3-¹/₈" down from upper channel and use rubber gasket to mark the holes. The docking light will be measured from same channel, its 7-¹/₄" down and the same center mark. Once marked drill both center holes 7/8". The docking light will get a 7/8" rubber grommet. Drill the 7/8" holes on your center mark. After 7/8" hole is drilled place docking light on the box to mark bolt holes (#29 drill bit and then #8-32 tap).



Exterior Lighting (cont'd)

Standard light configuration.

