MiTek®

SERVICE BULLETIN

Document ID:

SB256

Title:

Replacing Light Curtains

Affected machinery: *RoofTracker II*™ and *RoofTracker I*™ roller press

Distribution: Customers upon order

Applies to: All *RoofTracker II* and *RoofTracker I* roller presses with discontinued light curtains

MiTek Automation
Phone: 800-523-3380
Fax: 636-328-9218
www.mitek-us.com

Part # and Rev.	SB256 rev. A
Print Date	17 February 2023
Revision Date	
Revised By	
Orig. Release Date	12 April 2022
Created By	A McIntire
Approved By	R Tucker

CAUTION: The document should only be printed in color with adequate resolution.
Graphics may be unclear and could create an unsafe condition if this recommendation is not followed.

Purpose and Scope

This service bulletin instructs how to replace the discontinued light curtains previously used in the *RoofTracker II* or *RoofTracker I* with updated light curtains.

Overview

Parts Included

The parts included in this kit are shown in Table 1.

Please make sure all parts and supplies are present before starting the procedure.

Table 1: Parts in SB256KIT

Quantity	Description	Part #
2	Transmitter and receiver light curtains	92311-501
2	Transmitter cable (5 pin)	515709
2	Receiver root cable (8 pin)	515719
2	Receiver extension cable (8 pin)	515708
4	Adjustment brackets	515714
4	Light curtain bracket	67319
8	3/8" washers	364042
8	Bolts 3/8"-16x1	354011
16	Bolts 1/4"-20x1/2	354012
1	5/32" tamper proof hex key	354015
1	7/32" tamper proof hex key	354004
4 ft	Blue wire 18g	508003-06
1	Service bulletin document	SB256

If you have any questions, call MiTek Automation Support at 1-800-523-3380.

Supplies Needed

- Diagonal wire cutter
- Flat blade or terminal block screwdriver
- Hex key set

Procedure

Electrical Lockout/Tagout Procedure

	**⚠ WARNING** **ELECTROCUTION HAZARD.** **All electrical work must be performed by a qualified electrician.** **Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.** **If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and person protective equipment.**

Before opening the main electrical enclosure or attempting to repair or replace an electrical transmission line, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures, which should include, but are not limited to, the steps here.

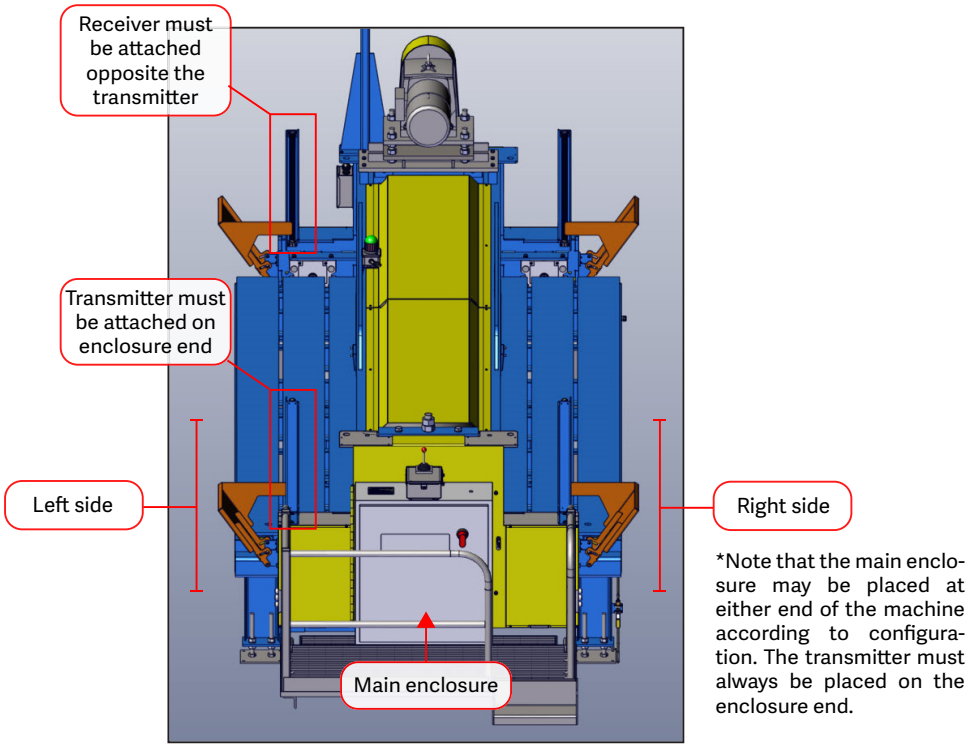
1. Engage an E-stop on the machine.
2. Turn the machine's disconnect switch to the Off position. This is usually required to open the main electrical enclosure's door.
3. Shut the power to the machine off at the machine's power source, which is usually an electrical service entry panel on the facility wall. One example of a locked-out power source panel is shown in Figure 1.
4. Attach a lock and tag that meet OSHA requirements for lockout/tagout to the electrical service entry panel.
5. Open the door to the enclosure to which you need access. Using a multimeter, verify that the power is off.

Figure 1: Lockout/Tagout on the Power Source Panel

Overview

The overview graphic in Figure 2 identifies important configuration information and components referenced in these instructions. Light curtains are secured to mounting brackets on the left and right sides of the machine (2 on each side). Left and right is determined from the perspective on the main enclosure end.

Figure 2: Overview Graphic

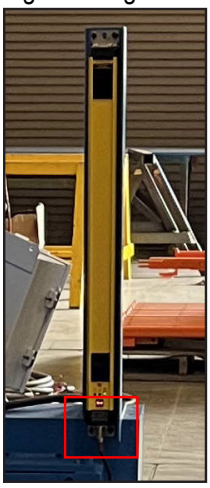


Replacing Light Curtains

	**⚠ WARNING** **MOVING PARTS CAN CRUSH AND CUT.** **Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.**

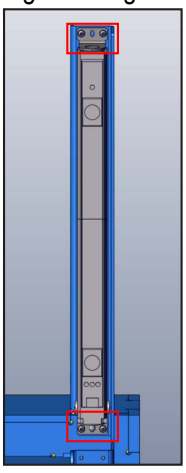
1. With power locked out as previously described, disconnect the cables from the bottom of the existing light curtains on the left and right sides of the machine. Standing at the main electrical enclosure, pull all existing transmitter and receiver cables free of the machine. All cables will be fully disconnected from the enclosure at a later step.

   Figure 3: Light Curtain Cable Location (*hardware may differ from image*)

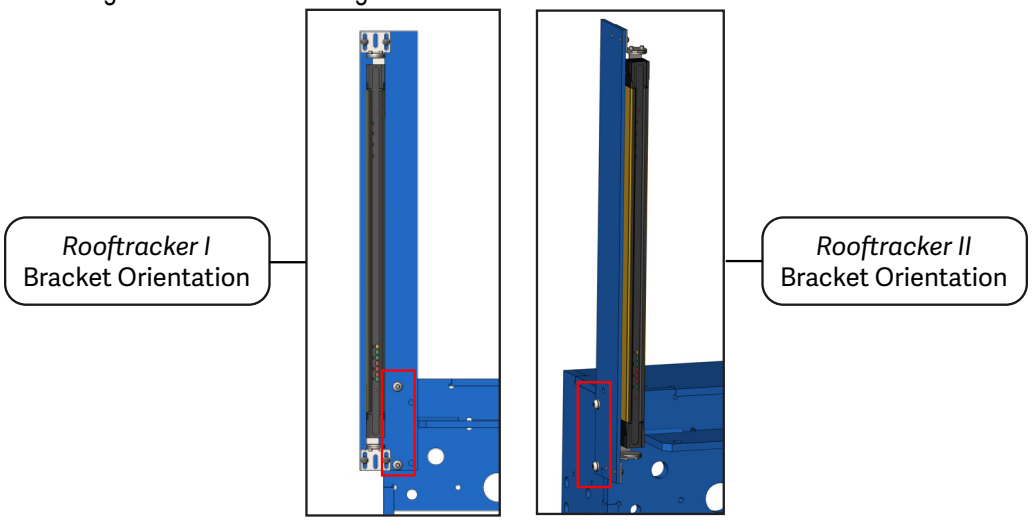
2. Use the 5/32" tamper-resistant hex key to remove the 4 bolts that secure the light curtains to the mounting brackets at the top and bottom of light curtain. Remove and set aside the light curtain. Repeat this step for each curtain (4 total).

   Figure 4: Light Curtain Adjustment Bracket Location (*hardware may differ from image*)

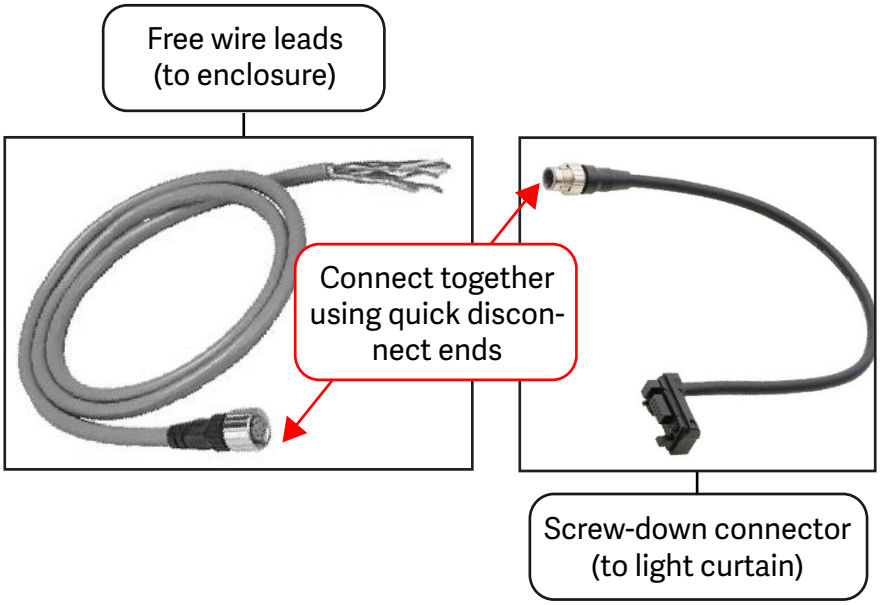
3. Remove existing light curtain bracket from *RoofTracker II* or *RoofTracker I*.
4. Use the 7/32" tamper-resistant hex key to install the new light curtain brackets (4 total) using supplied 3/8" bolts and washers. The orientation of the brackets will different depending on the *RoofTracker* model (see Figure 5).

Figure 5: Orientation of Light Curtain Brackets



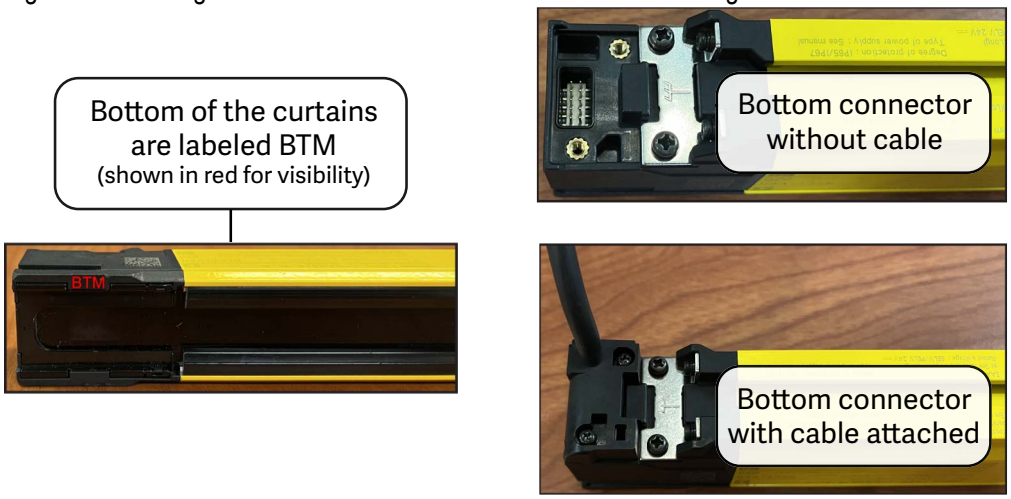
5. Connect the 8-pin root and extension receiver cables together via quick disconnect before proceeding to the next step (see Figure 6).

Figure 6: Connecting Root and Extension Receiver Cables



6. Attach the (now combined) receiver cables to both light curtains labeled RECEIVER and the supplied transmitter cables (5 pin) to the light curtains labeled TRANSMITTER / EMITTER. These cables must be attached to the BTM (bottom) end of each curtain (see Figure 7).

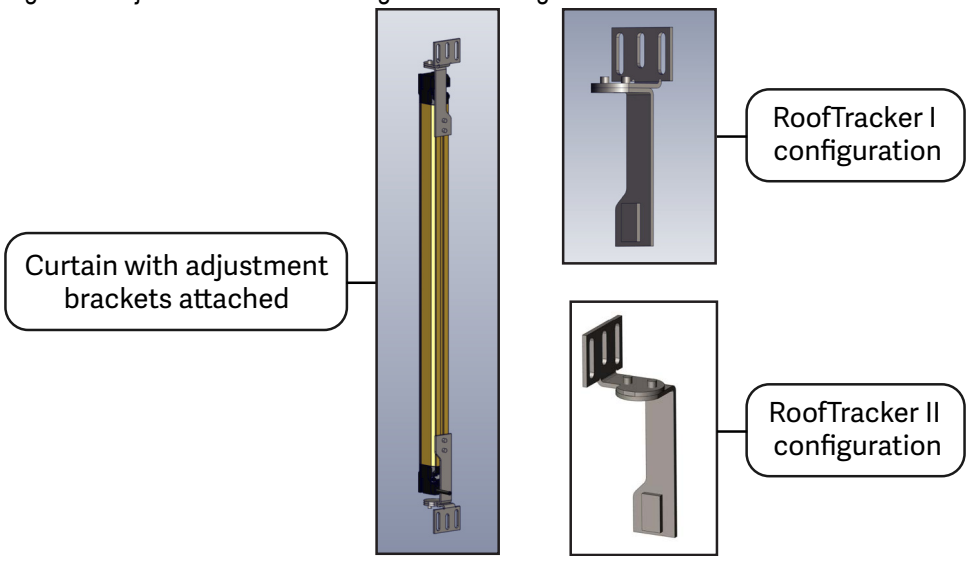
Figure 7: Attaching Receiver and Transmitter Cables to Bottom of Light Curtains



7. Locate and properly orient the supplied adjustment brackets (see Figure 8).

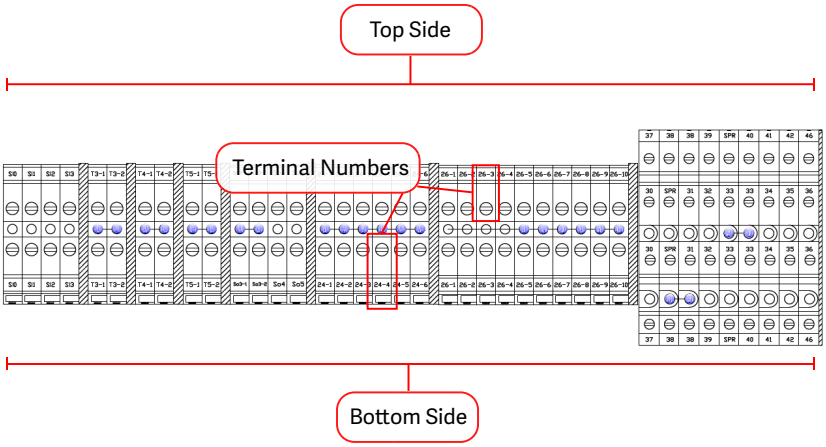
8. Use a standard hex key to loosen the adjustment brackets. Slide them into place using the grooves on the back of the curtains. Tighten the adjustment brackets to secure them in place. See Figure 8 for example of a curtain with the brackets properly installed.

Figure 8: Adjustment Bracket Configurations for Light Curtains



9. With the adjustment brackets now attached to the light curtains, use the 5/32" tamper-resistant hex key to remove the 1/4" bolts for following steps (see Figure 5)
   - attach the transmitter curtains to mounting brackets on the main enclosure end
   - attach the receiver curtains to mounting brackets on the opposite end
10. Access the main electrical enclosure. See Figure 2 for location. These instructions will call out specific terminals using the corresponding numbers at the top and bottom of the terminals.

Figure 9: Terminal Layout Key (*terminal layout may vary from image*)



11. Disconnect the following wires for the **Left Transmitter** from the enclosure end**:**

RoofTracker I	***RoofTracker II***
Brown 42-2 Top	Brown 42-4 Top
White 41-2 Bottom	White 41-3 Bottom

12. Set aside the now loose **Left Transmitter** cable.
13. Run the supplied transmitter cable (5-pin) from the **Left Transmitter** light curtain, using the same routing and bundling excess to keep clear of moving parts.
14. Using the supplied 5-conductor transmitter cable for the **Left Transmitter**, connect the following wires:

RoofTracker I	***RoofTracker II***
Blue (0 VDC) 42-1 Top	Blue (0 VDC) 42-4 Top
Brown (24 VDC) 41-1 Bottom	Brown (24 VDC) 41-3 Bottom

15. Remove the following wires from respective terminal blocks for the **Left Receiver**:

RoofTracker I	*RoofTracker II*
Yellow 61 Bottom	Yellow Si1 Bottom
Red 62 Bottom	Red Si0 Bottom
White 41-2 Bottom	White 41-3 Bottom
Pink and Brown 42-2 Bottom	Pink and Brown 42-4 Bottom
Grey 63 Bottom	Grey 63 Bottom
Blue 64 Bottom	Blue 64 Bottom

16. Set aside the now loose **Left Receiver** cable.
17. Run the supplied receiver cable (8 pin) from the **Left Receiver** light curtain, using the same routing and bundling excess to keep clear of moving parts.
18. Using the 8-conductor receiver cable for the **Left Receiver**, connect all listed wires to respective terminal blocks:

RoofTracker I	*RoofTracker II*
Black 62 Bottom	Black Si0 Bottom
White 61 Bottom	White Si1 Bottom
Brown 41-2 Bottom	Brown 41-3 Bottom
Blue 42-2 Bottom	Blue 42-4 Bottom
Yellow 63 Bottom	Yellow 63 Bottom
Red 64 Bottom	Red 64 Bottom

19. Disconnect the following wires for the **Right Transmitter** from the enclosure end:

RoofTracker I	*RoofTracker II*
White 41-2 Bottom	White 41-4 Bottom
Brown 42-1 Top	Brown 42-5 Top

20. Set aside the now loose **Right Transmitter** cable.
21. Run the supplied receiver cable (5 pin) from the **Right Transmitter** light curtain, using the same routing and bundling excess to keep clear of moving parts.
22. Using the supplied 5-conductor transmitter cable for the **Right Transmitter**, connect the following wires:

RoofTracker I	*RoofTracker II*
Blue (0 VDC) 42-1 Top	Blue (0 VDC) 42-5 Top
Brown (24 VDC) 41-1 Bottom	Brown (24 VDC) 41-4 Bottom

23. Disconnect the following wires for the **Right Receiver** from the enclosure end:

RoofTracker I	*RoofTracker II*
Yellow 71 Bottom	Yellow Si3 Bottom
Red 72 Bottom	Red Si2 Bottom
White 41-2 Bottom	White 41-4 Bottom
Pink and Brown 70 and 42-2 Bottom	Pink and Brown 42-5 Bottom
Blue 74 Bottom	Blue 74 Bottom
Grey 73 Bottom	Grey 73 Bottom

24. Set aside the now loose **Right Receiver** cable.
25. Run the supplied receiver cable (8 pin) from the **Right Receiver** light curtain, using the same routing and bundling excess to keep clear of moving parts.
26. Using the 8-conductor receiver cable for the **Right Receiver**, connect all listed wires to respective terminal blocks:

RoofTracker I	*RoofTracker II*
White 71 Bottom	White Si3 Bottom
Black 72 Bottom	Black Si2 Bottom
Brown 41-2 Bottom	Brown 41-4 Bottom
Blue 42-2 Bottom	Blue 42-5 Bottom
Red 74 Bottom	Red 74 Bottom
Yellow 73 Bottom	Yellow 73 Bottom

27. Disconnect and remove the following wires:

RoofTracker I	*RoofTracker II*
White/Blue 42 (connected to terminal 22) on CR6 and CR8 (one end) and to 42-2 Top and 42-4 Top (other end)	White/Blue 42 (connected to terminal 22) on CR16 and CR15 (one end) and to 42-5 Top (other end)

28. Use supplied blue wire to connect the following:

RoofTracker I	*RoofTracker II*
CR6 (connected to terminal 12) to 41-2	CR16 (connected to terminal 22) to 41-5

29. Use supplied blue wire to create a jumper:

RoofTracker I	*RoofTracker II*
Between CR6 (connected to terminal 12) and CR8 (connected to terminal 12)	Between CR16 (connected to terminal 22) and CR15 (connected to terminal 22)

30. Remove lockout/tagout devices and restore power to the machine.

Aligning Light Curtains

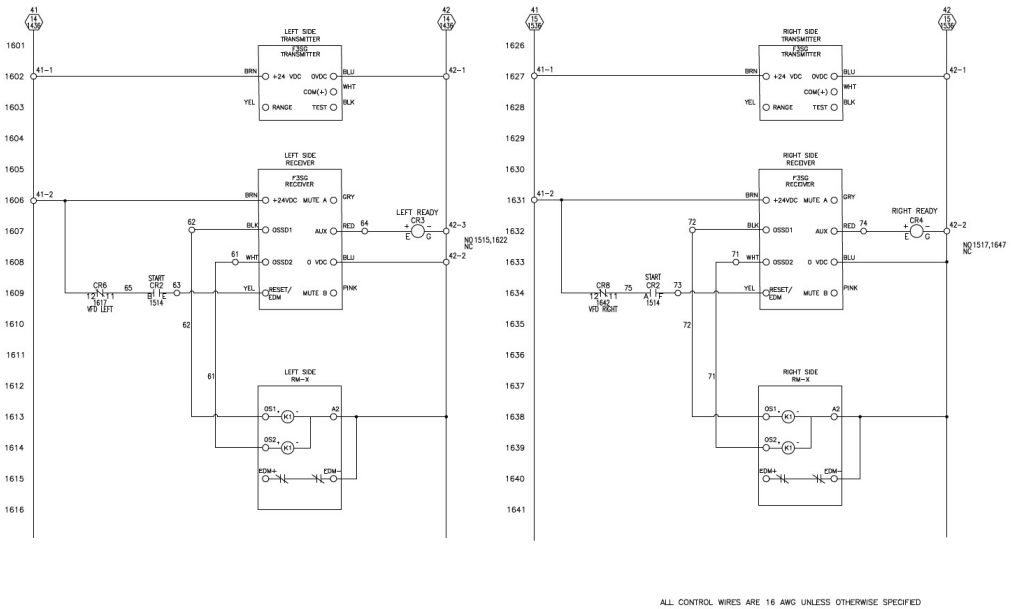
As long as the curtains are out of alignment, an E-stop will be active and prevent movement of the gantry. Make certain no other personnel interact with the gantry during the alignment process.

1. Verify the optical surface of the light curtain sensors are clean and that there are no interrupting objects in the detection zone of the sensors.
2. To adjust the light curtains, loosen (but do not remove) the adjustment and mounting bracket bolts as needed.
3. Rotate and move the transmitter and receiver vertically until the following state is achieved:
   - the indicator lights at the top and bottom of the light curtains turn blue
   - the indicator lights in the middle of the curtains alternate every second between green / orange
4. Once the light curtains are aligned, tighten the adjustment and mounting bracket bolts to secure alignment.
5. Clear E-stop according to instructions in the machine manual.
6. Run standard safety test according to instructions in the equipment manual.
   - If the machine does function per the manual description, lockout/tagout the machine and contact Automation Support (1-800-523-3380).

Appendix

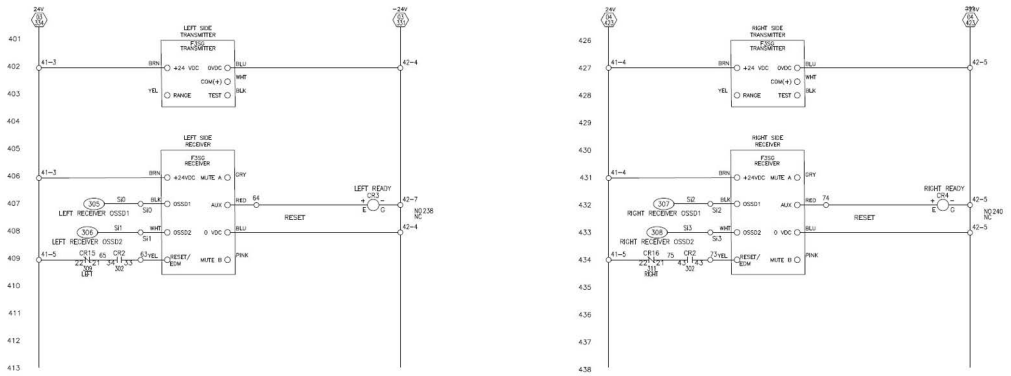
Updated *Rooftracker I* Schematics

Figure 10: Updated Light Curtain Wiring



Updated *Rooftracker II* Schematics

Figure 11: Updated Light Curtain Wiring



END OF SERVICE BULLETIN