

**NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.**

*NOTE: Numbers in parenthesis ( ) are reference numbers for parts listed in Bill of Materials.*

Installation instructions for **kit number 9006316**

## SYNOPSIS:

This kit contains the parts needed to install a backup alarm / flashing light kit on S20 Electric machines equipped with overhead guards.  
Please follow step-by-step instructions.

## SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 1.5 hours)

## PREPARATION:

1. Park the machine on a clean level surface, turn off the machine, remove the key, and set the parking brake.

**FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, and remove key.**

2. Disconnect the battery cables from the battery.

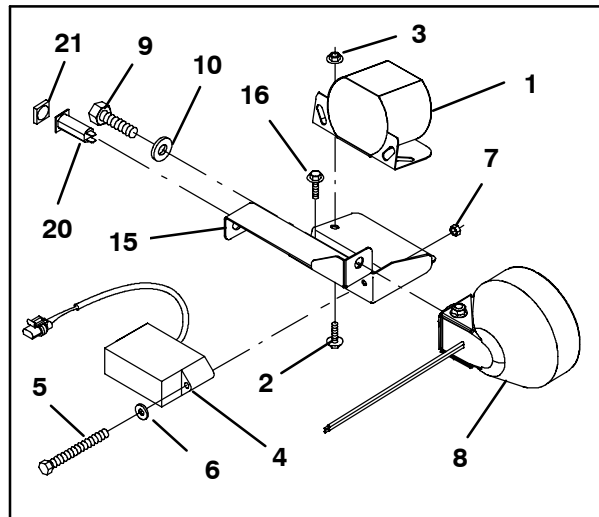


**WARNING: Always disconnect battery cables from machine before working on electrical components.**

3. Open the main cover.

## INSTALLATION:

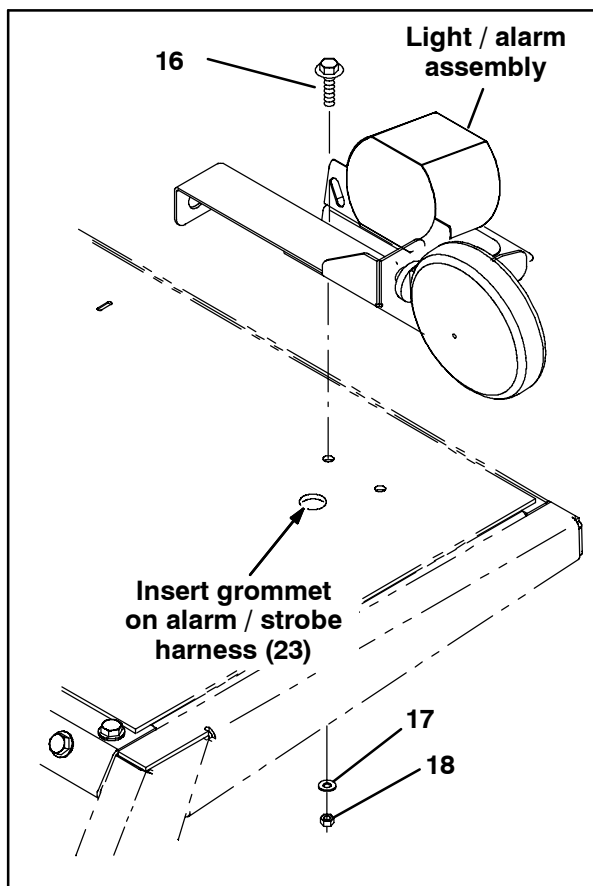
1. Use a two hex screws (5), two flat washers (6), and two hex nuts (7) to install the flasher (4) onto the mounting bracket (15). Refer to Fig. 1.



**FIG. 1**

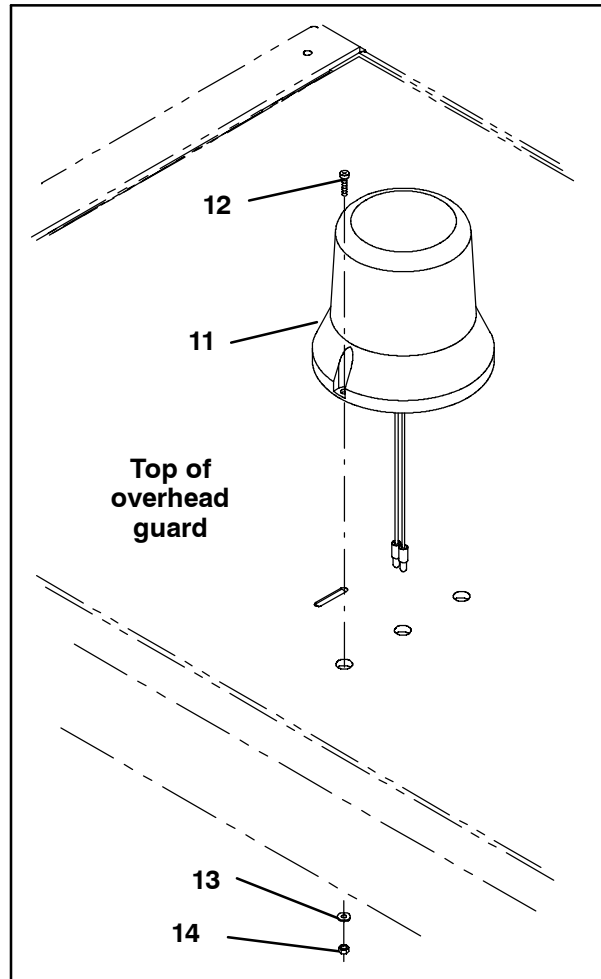
2. Trim the backup alarm (1) wires to 5".
3. Crimp a bullet terminal (28) onto each backup alarm (1) wire.
4. Use two hex screws (2) and two hex nuts (3) to install the backup alarm (1) onto the mounting bracket (15). Refer to Fig. 1.

5. Trim the spot light (8) wires to a 6" length and crimp the QF terminals (29) onto the wires.
6. Use a hex screw (9) and a flat washer (10) to install the spot light (8) onto the mounting bracket (15). Refer to Fig. 1.
7. Install the boot (21) onto the 5 Amp circuit breaker (20). Refer to Fig. 1.
8. Insert the 5 Amp circuit breaker (20) into the alarm bracket (15). Refer to Fig. 1.
9. Use two hex screws (16), two flat washers (17), and two hex nuts (18) to install the light / alarm assembly assembled in the previous several steps onto the overhead guard. Refer to Fig. 2.

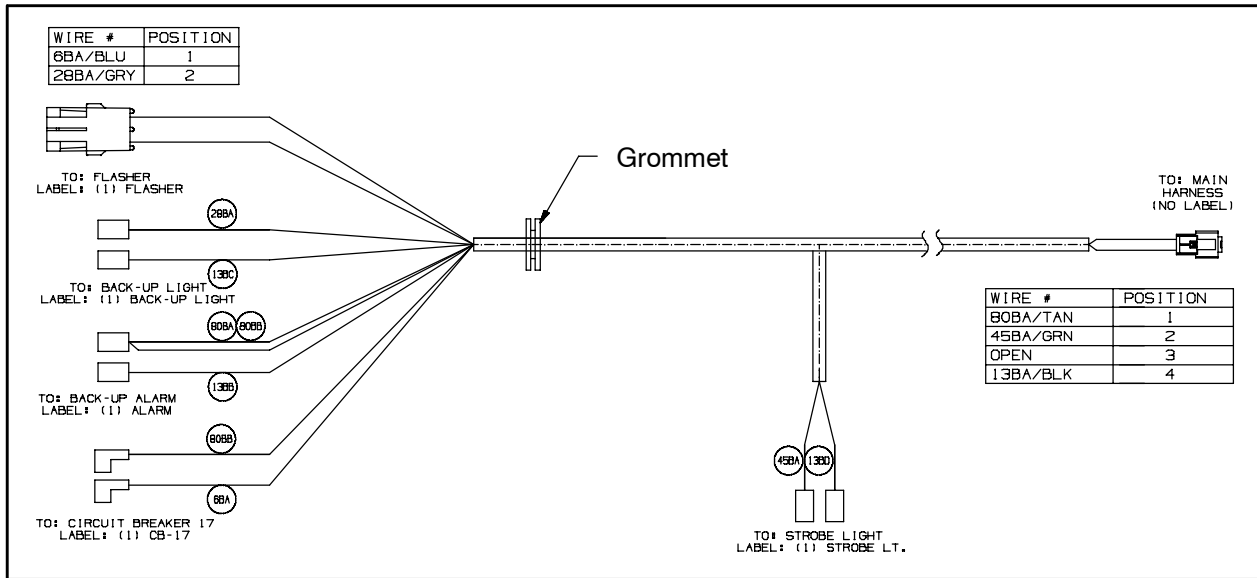


10. Trim the flashing light wires (17) to 6".
11. Crimp a bullet terminal (28) onto each flashing light (11) wire.

12. Route the flashing light (11) cable through the hole in the overhead guard and use two pan screws (12), two flat washers (13), and two hex nuts (14) to install the light onto the guard. Refer to Fig. 3.

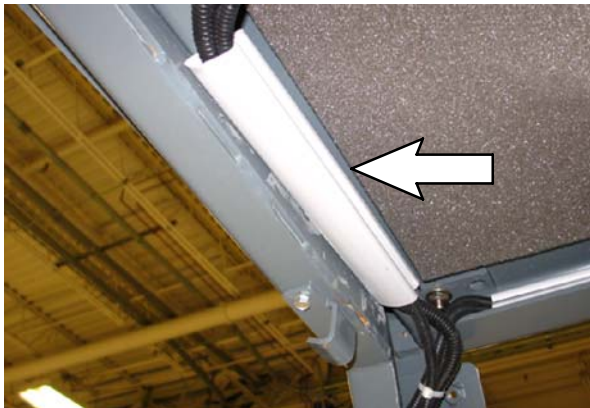


13. Connect the alarm / strobe harness (19) to the flashing light (11). Refer to Fig. 3 and Fig. 4.
14. Connect the alarm / strobe harness (19) to the backup alarm (1), spot light (16), 2.5 Amp circuit breaker (20), and flasher (4). Refer to Fig. 1 and Fig. 4.
15. Insert the grommet on the alarm / strobe harness (19) into the hole in the top of the overhead guard. Refer to Fig. 2.



**FIG. 4**

16. Cut the vinyl duct (27) into one 28" section and two 10" sections.
17. Install the sections of vinyl duct (27) cut in the previous step onto the overhead guard. Refer to Fig. 5, Fig. 6, and Fig. 7.



**FIG. 5**

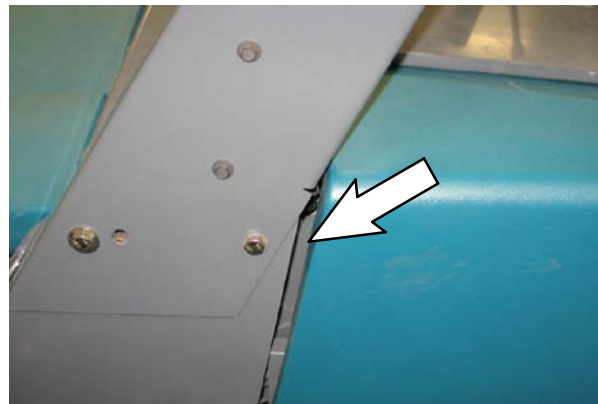


**FIG. 6**



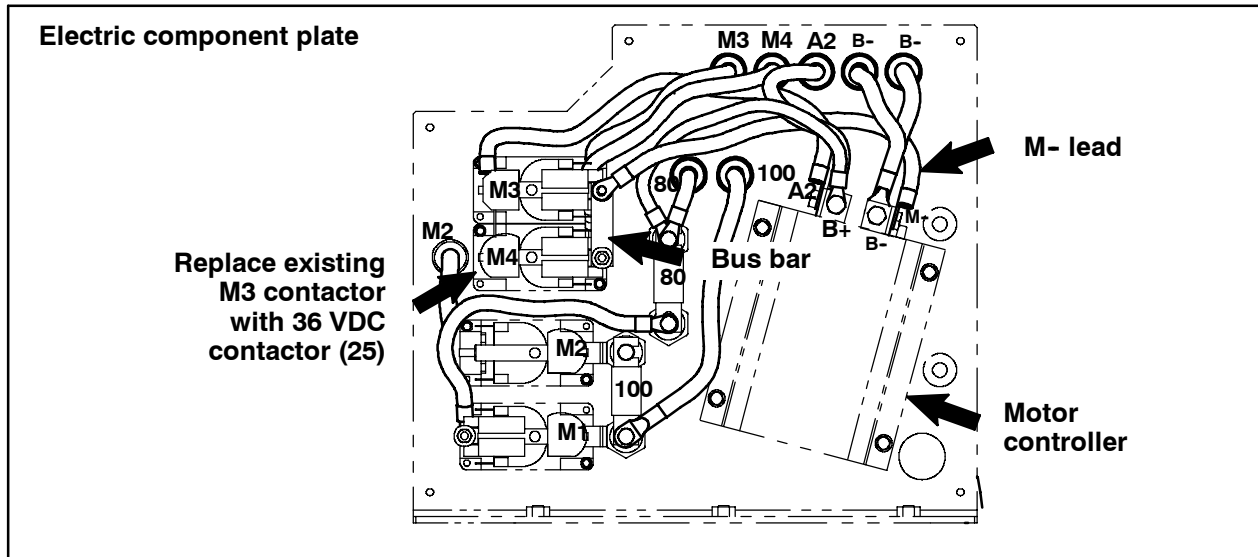
**FIG. 7**

18. Route the alarm / strobe harness (19) through the sections of vinyl duct, down between the main cover and frame of the machine, and connect the alarm / strobe harness to the main wire harness. Refer to Fig. 4, Fig. 8, and Fig. 13.



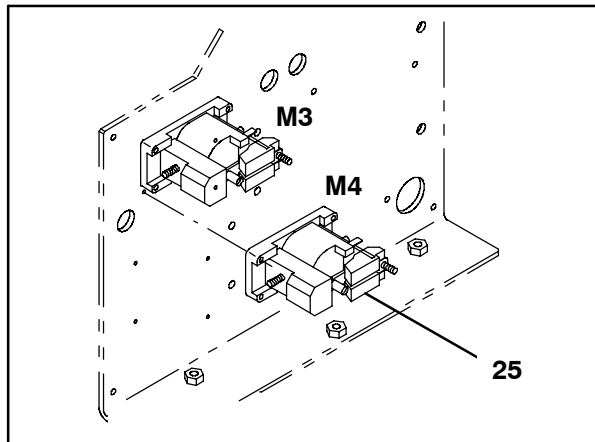
**FIG. 8**

19. Open and close the main cover several times to ensure the cable is not being pinched when the cover is closed.



**FIG. 9**

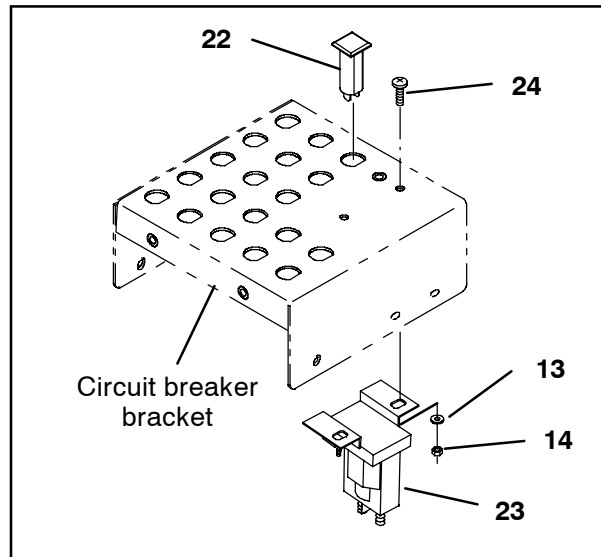
20. Remove the cover from the electrical control box. Set the cover and hardware aside.
21. Remove the existing M4 contactor from the electric component plate. Discard the contactor. Refer to Fig. 10.



**FIG. 10**

22. Install the 36 VDC contactor (25) into M4 on the electric component plate. Refer to Fig. 10.
23. Reinstall the bus bar onto the M3 and M4 contactors and reconnect the M- lead to the M4 contactor. Refer to Fig. 9.
24. Connect the auxiliary leads on the main wire harness to the 36 VDC contactor (25) M4. Refer to Fig. 9 and Fig. 14.
25. Reinstall the cover onto the electrical control box.
26. Install the 2.5 Amp resettable circuit breaker (22) into the circuit breaker bracket. Refer to Fig. 10.

27. Use two screws (24), two flat washers (13), and two hex nuts (14) to install the 36 VDC contactor (23) onto the circuit breaker bracket. Refer to Fig. 11.



**FIG. 11**

28. Connect the main wire harness to the 2.5 Amp circuit breaker (22) and 36 VDC contactor (22) installed in the circuit breaker bracket. Refer to Fig. 11 and Fig. 12.
29. Plug the diode (26) into the main wire harness. Refer to Fig. 12.
30. Reconnect the battery cables to the batteries.
31. Start and test the machine. Use the headlight/ flashing light switch to turn on the flashing light. Operate the machine in reverse and to ensure the alarm / light function.

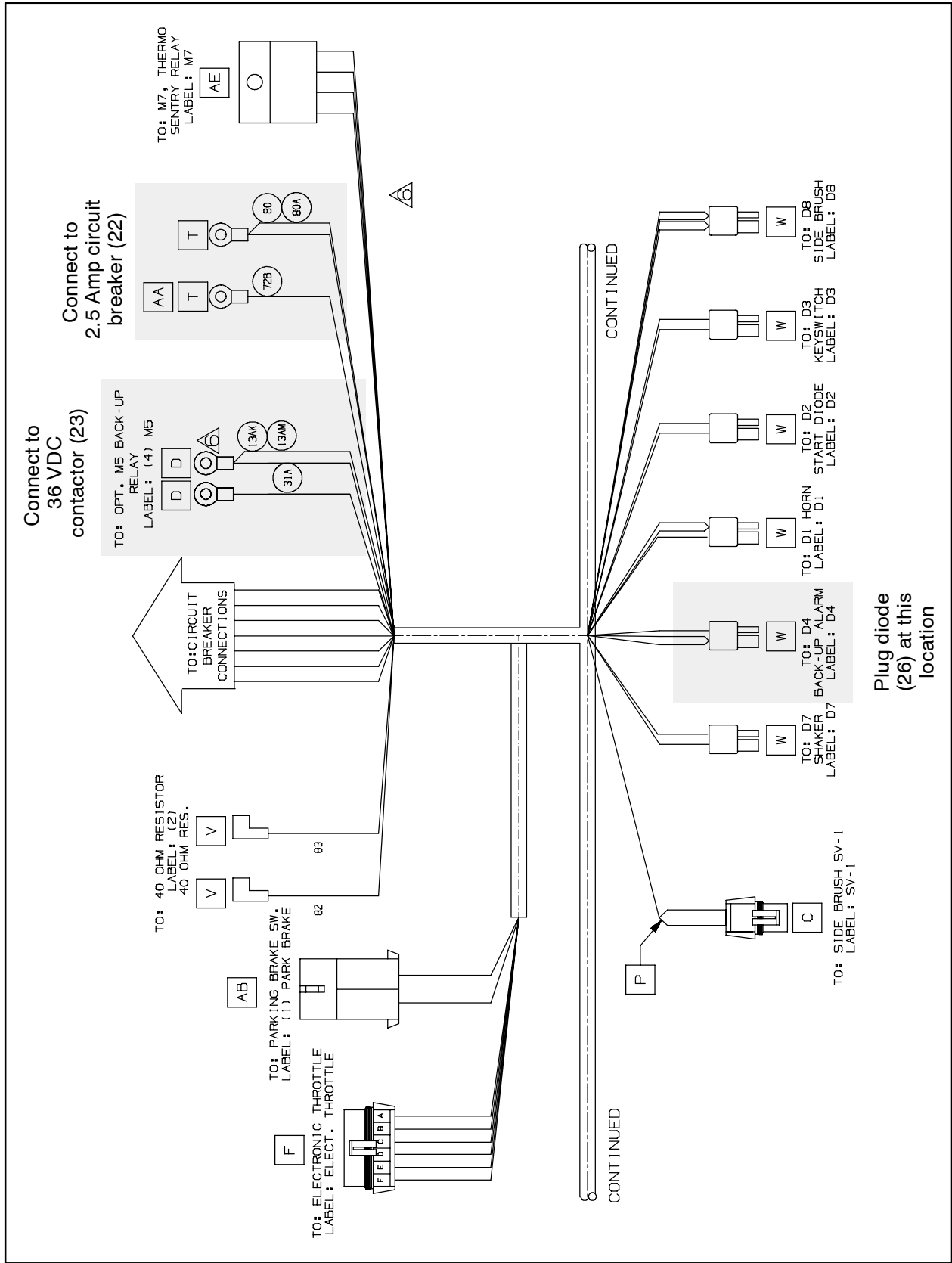


FIG. 12

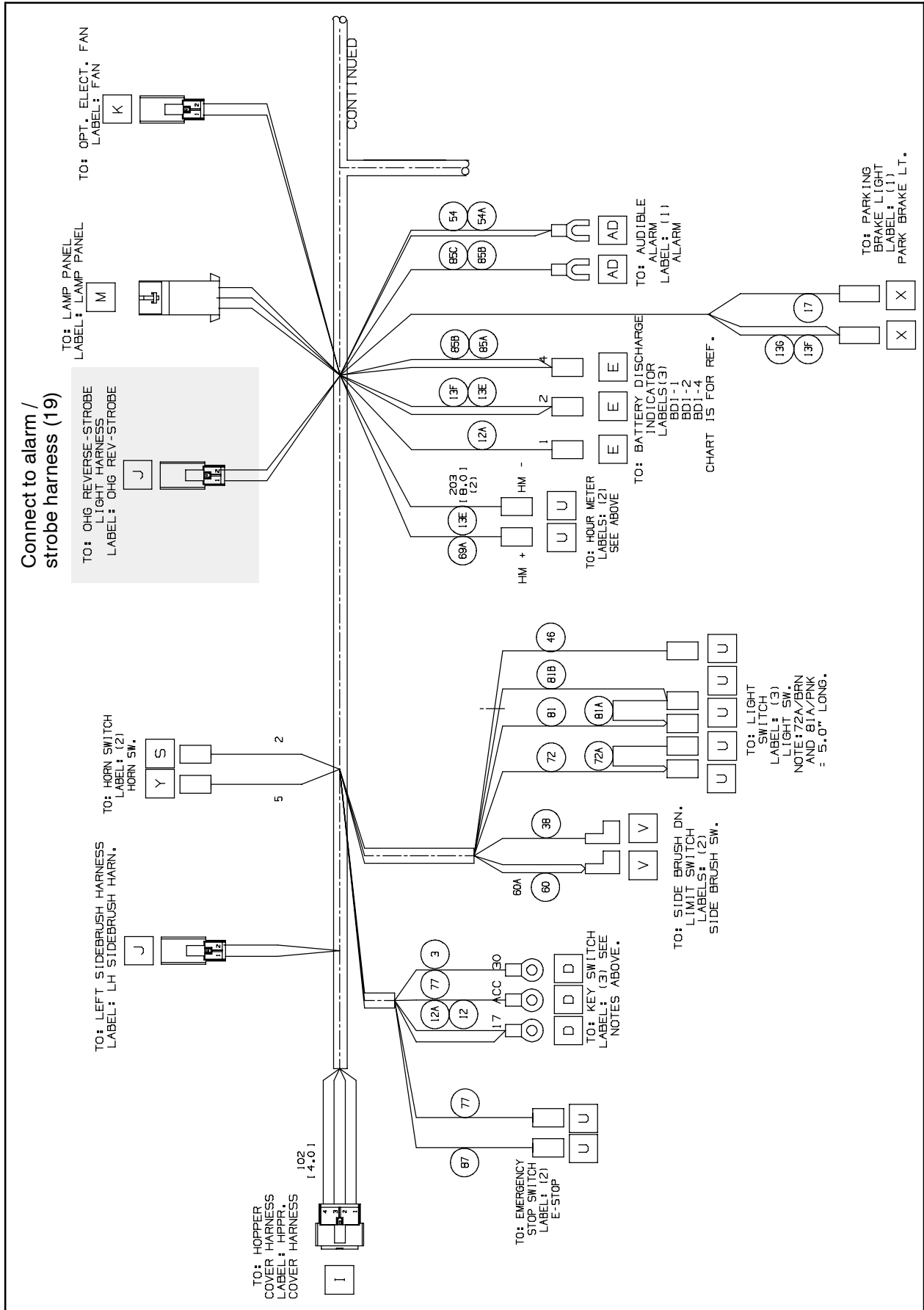


FIG. 13

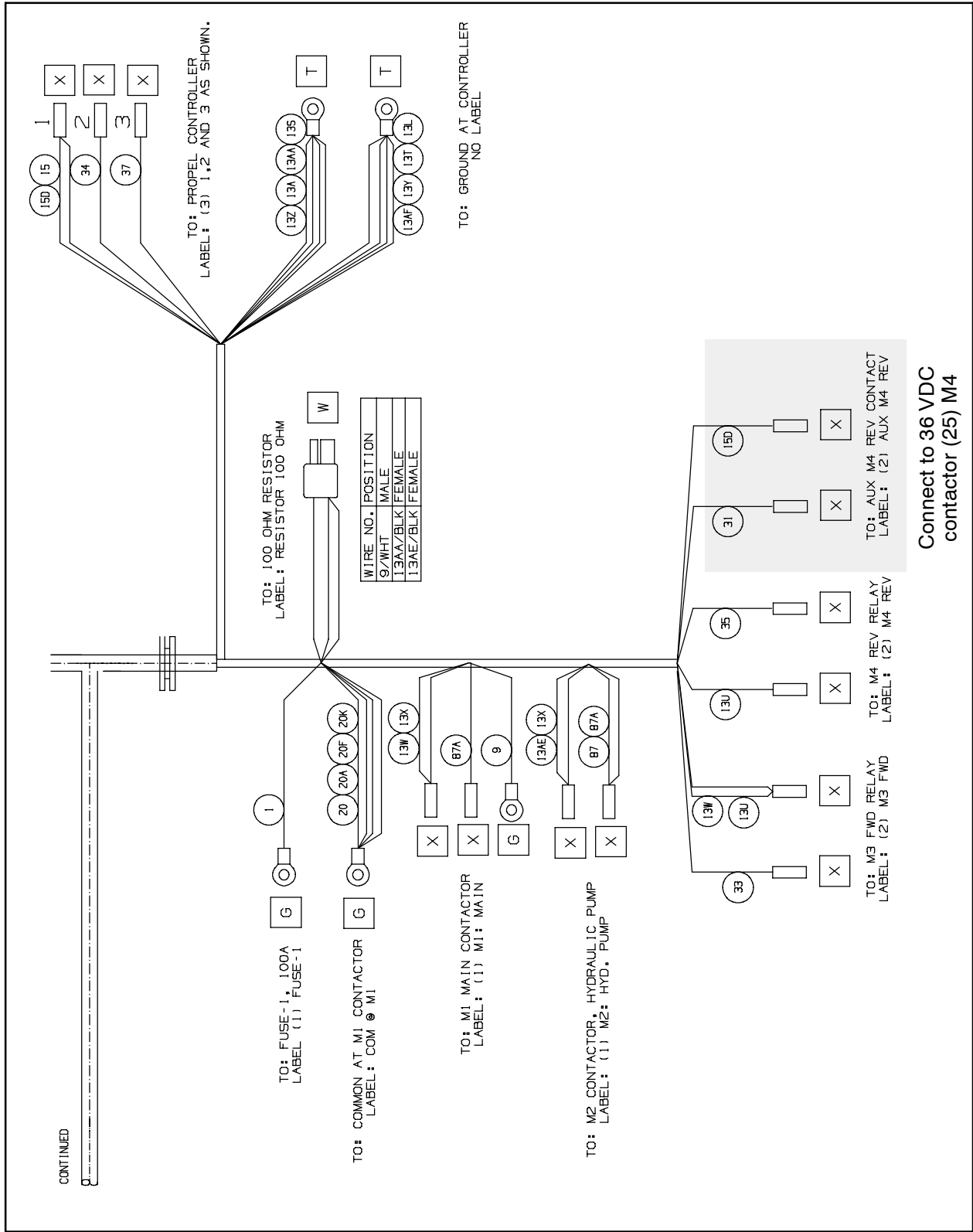


FIG. 14

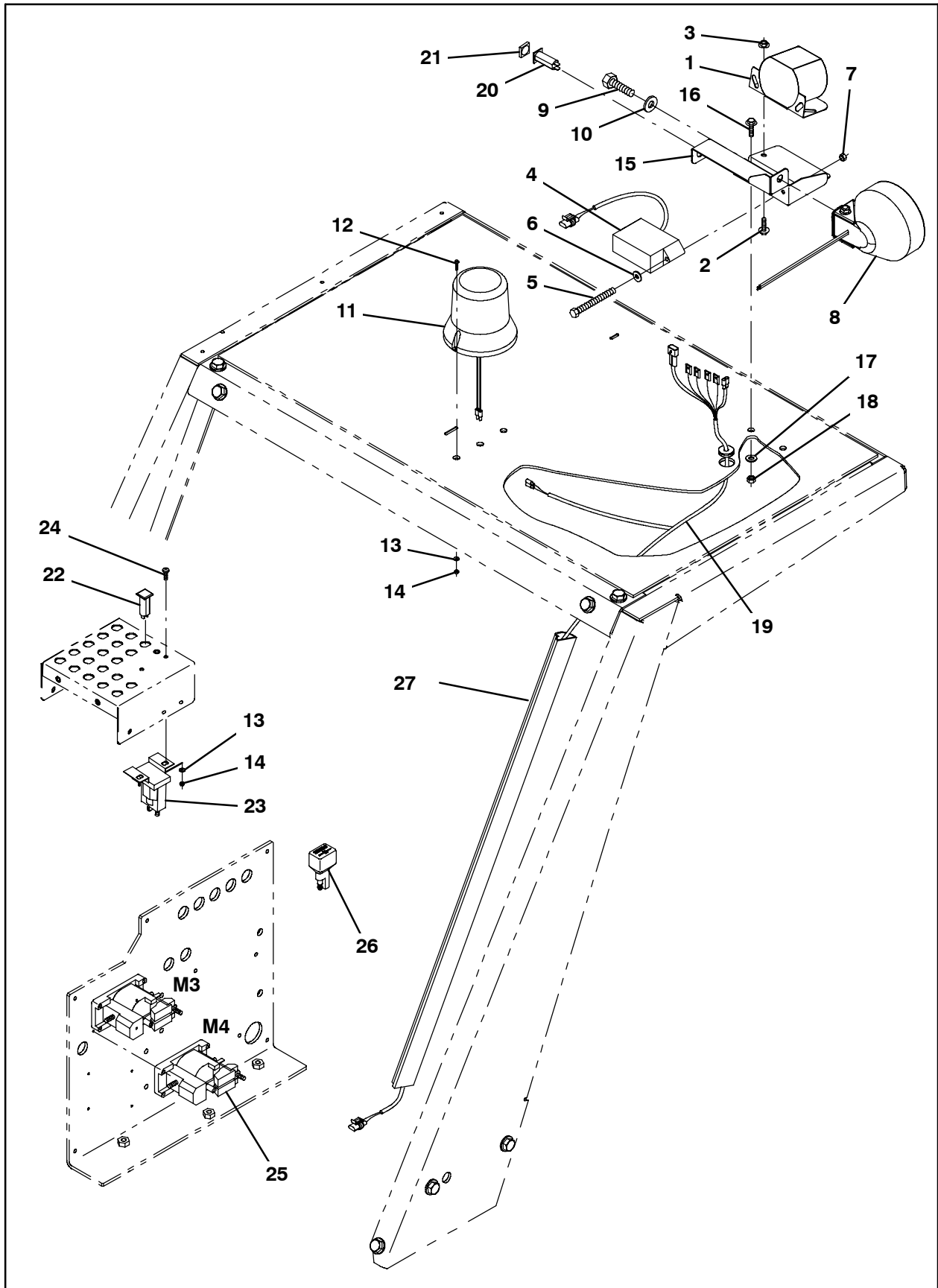


FIG. 15



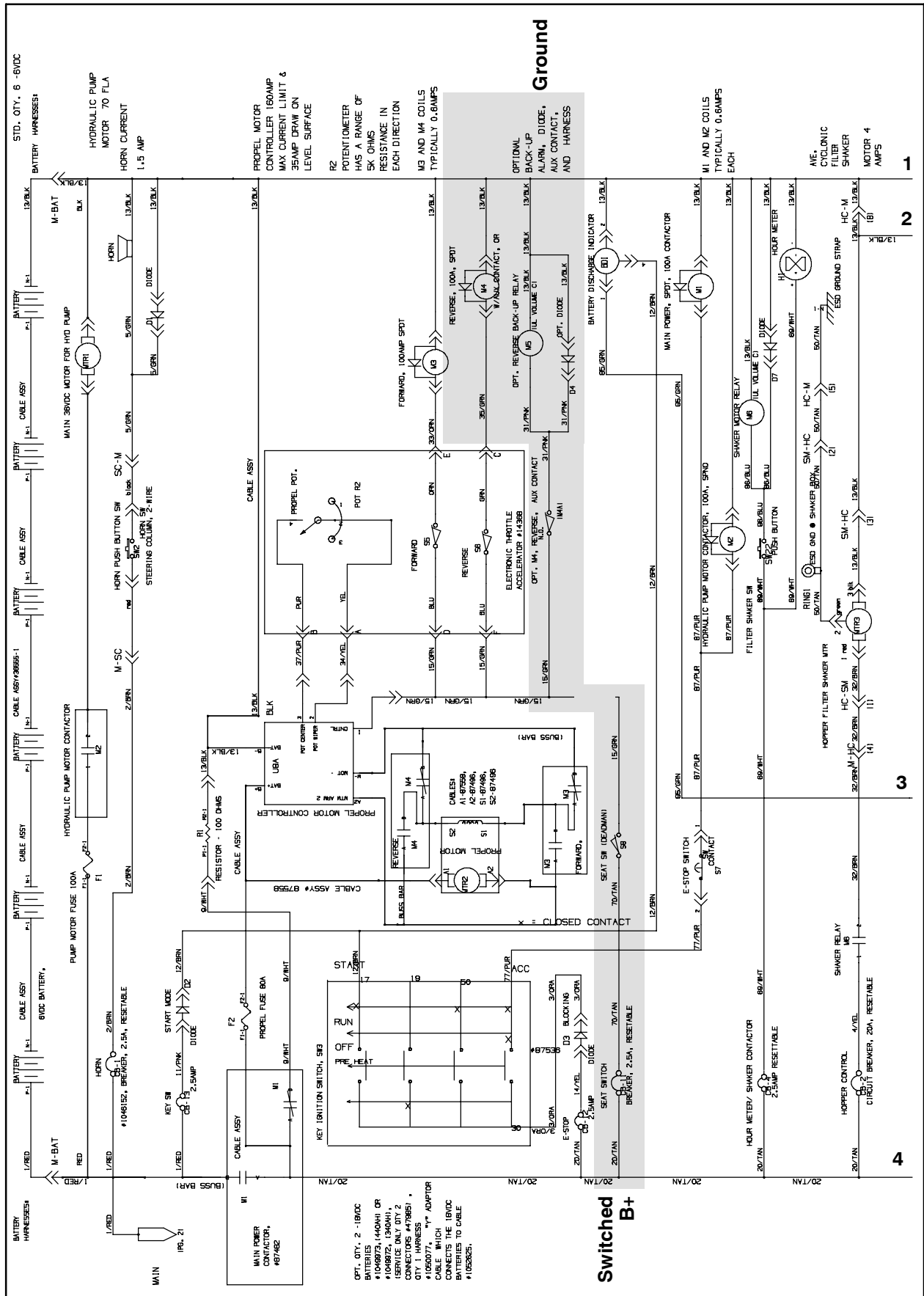


FIG. 16 - Schematic Provided For Troubleshooting

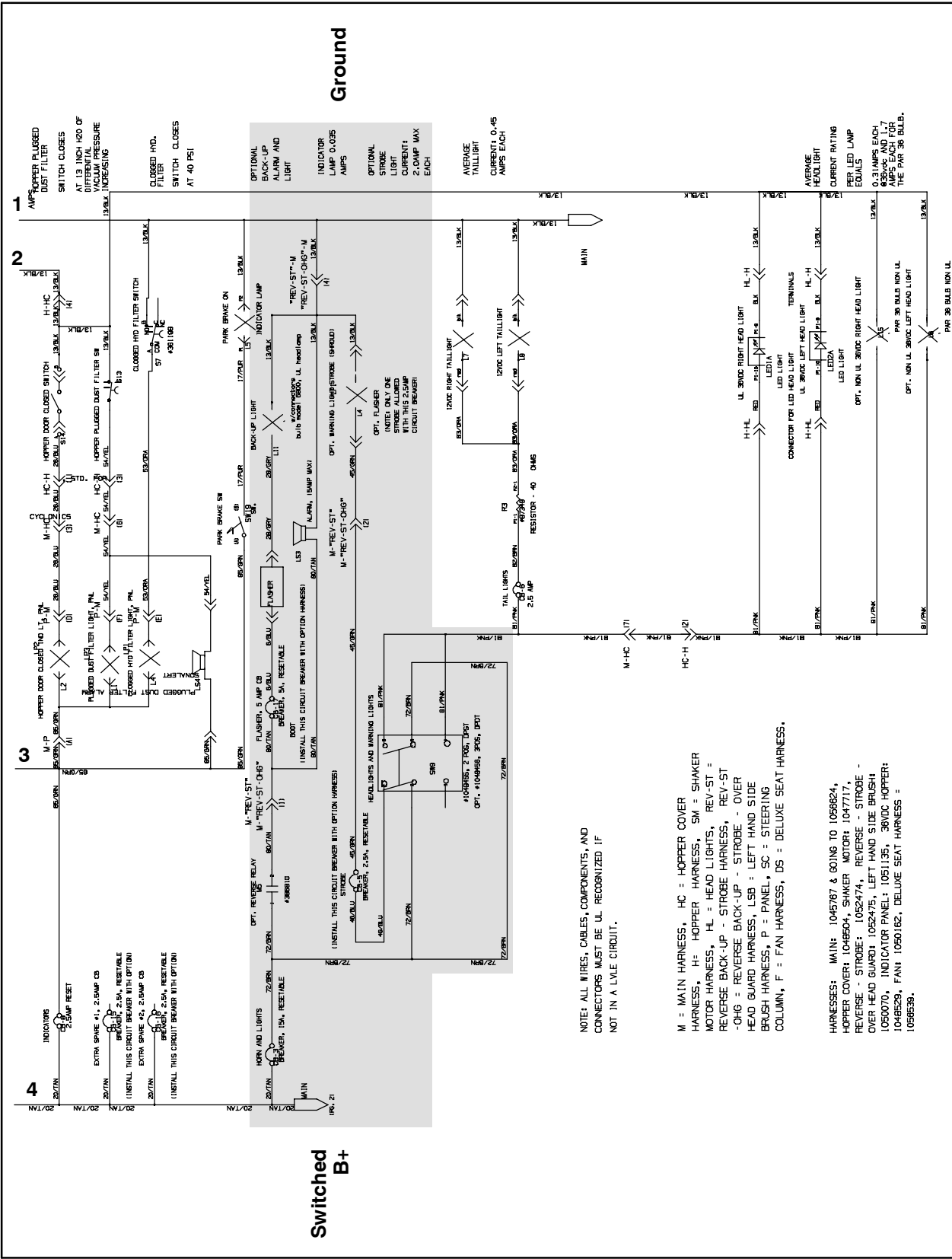


FIG. 17 - Schematic Provided For Troubleshooting

**Bill of Materials for Alarm Kit, Backup, Flsh, OHG, EV, CI - 9006316**

Ref.	Part No.	Description	Qty.
▽	9006316	Alarm Kit, Backup, Flsh, OHG, EV, CI	1
▲	1 72171	Alarm Assy, Backup, 12-48vdc 82-102dba	1
▲	2 1037346	Screw, Hex, M8 X 1.25 X 25, 9.8, SEMS	2
▲	3 07791	Nut, Hex, Flng, M8 X 1.25	2
▲	4 72164	Flasher, 12/48vdc 5a [6309/12-48v]	1
▲	5 06949	Screw, Hex, M6 X 1.00 X 50, 8.8	2
▲	6 32483	Washer, Flat, 0.25, SAE	2
▲	7 08708	Nut, Hex, Lock, M6 X 1.00, NI	2
▲	8 72173	Light, Spot, 36vdc, 60watt. A 4.8d	1
▲	9 39807	Screw, Hex, .50-13 X 0.75, G5	1
▲	10 32486	Washer Flat,0.50,SAE	1
▲	11 1017248	Light, Flsh, Amb, 12-48vdc	1
▲	12 06933	Screw, Pan, Phl, M5 X 0.80 X 16, 4.8	2
▲	13 19066	Washer, Flat, 10	4
▲	14 06549	Nut, Hex, Lock, M5 X 0.80, NI	4
▲	15 1050046	Bracket, Mtg, Horn	1
▲	16 1020341	Screw, Hex, M8 X 1.25 X 20, SS, SEMS	2
▲	17 32491	Washer, Flat, 0.31, Std	2
▲	18 08709	Nut, Hex, Lock, M8 X 1.25, NI	2
▲	19 1052475	Harness, Alarm / Strobe, Ohg, 36vdc[S20]	1
▲	20 1046882	Circuit Breaker, 05.0a, Resettable	1
▲	21 1046173	Boot, Circuit Breaker	1
▲	22 1046152	Circuit Breaker, 2.5a, Resettable	1
▲	23 386810	Contactora, 36vdc, 100a, Sp, No	1
▲	24 09200	Screw, Pan, Phl, M5 X 0.80 X 12, SS	2
▲	25 86377	Contactora, 36vdc [Spco]	1
▲	26 222290	Diode, Ele, Plug	1
▲	27 55034	Duct, Vyl, 0.74 X 1.50 .75d Max 48.0l	1
▲	28 55272	Terminal, Bullet, Mal, .157d, 12ga	4
▲	29 50470	Terminal, QF, .25 16-14ga, Blu	2

TENNANT COMPANY  
P. O. Box 1452  
Minneapolis, MN 55440-1452