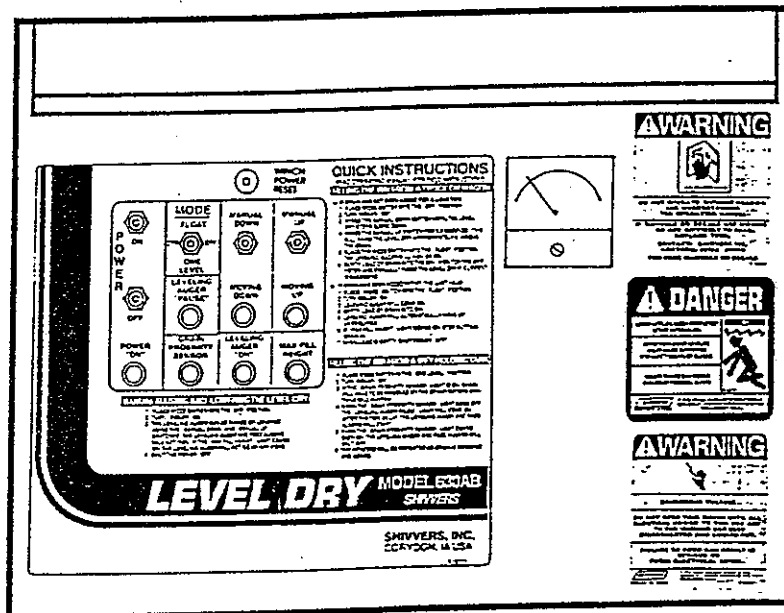


LEVEL-DRY DELUXE

MODEL 630AB

PATENT PENDING



ELECTRICAL INSTALLATION INSTRUCTIONS



SHIVERS INCORPORATED
 614 WEST ENGLISH ST.
 CORYDON, IA 50060
 515/872-1005

P-10819
 3/28/94

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SAFETY

The installer of this machinery must assume the responsibility for his own safety, and that of those who are working with him. He must also make sure that the equipment is installed as shown in this manual.

If any items covered in this manual are not completely understood, or there is a concern with the safety of the product, contact Shivvers Incorporated at the address shown on the front page.



TAKE NOTE ANYTIME THIS SYMBOL APPEARS.
YOUR SAFETY, AND THAT OF PERSONS AROUND
YOU IS AT STAKE.

ALL ELECTRICAL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH THE LATEST EDITION OF THE ANSI/NFPA STANDARD 70, NATIONAL ELECTRICAL CODE, AS A MINIMUM REQUIREMENT, AND IN COMPLIANCE WITH LOCAL WIRING CODES AS APPLICABLE.

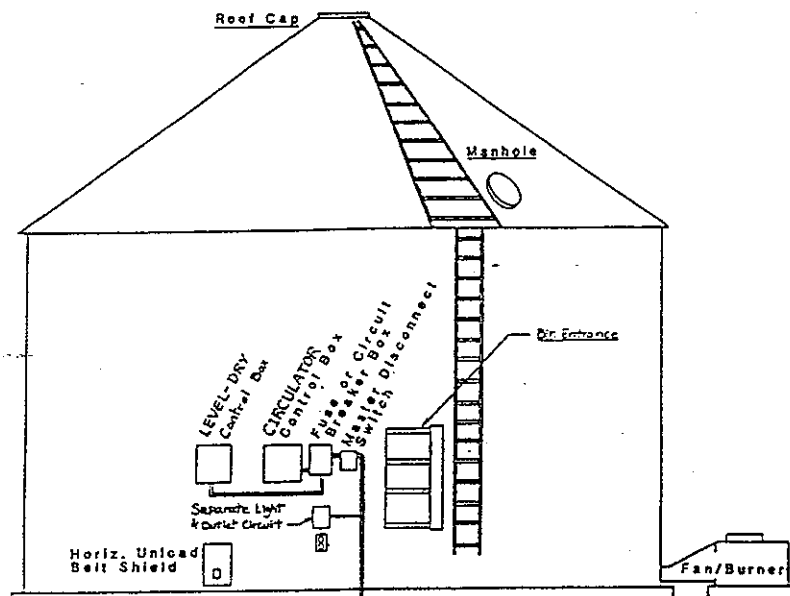
WIRING MUST BE DONE BY A COMPETENT ELECTRICIAN. A LICENSED ELECTRICIAN IS RECOMMENDED, AND MUST BE USED WHEN REQUIRED BY LOCAL OR STATE STATUTES.

INSTALLING A MASTER DISCONNECT

A master disconnect switch box must be wired immediately ahead of the Circulator/Dri-flow and Level-Dry control boxes. It must be of sufficient capacity to safely switch the grain removal system, (i.e., Circulator and Continuous Flow augers), Level-Dry, fans and heaters, and if applicable, the grain input system. It should not switch off lights or electrical outlets. This switch must also have the capability of being locked into the OFF position. It should be placed in close proximity to the grain bin's main entry door. Contact Shivvers Incorporated if assistance is needed to size the proper disconnect.


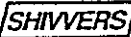
When the Level-Dry is lowered, and this switch is locked off, it will be electrically safe to enter the drying bin, or open the control panels. If the separate light and outlet circuit is provided, it is more convenient to use the disconnect. The fans and heaters must be switched off with the same disconnect because their circuits can run into the Circutrol or Compudry control boxes. If the fans and heaters have to be on a separate disconnect, make sure they are clearly labeled. In this case, the control boxes should not be opened until both disconnects are thrown and locked off.

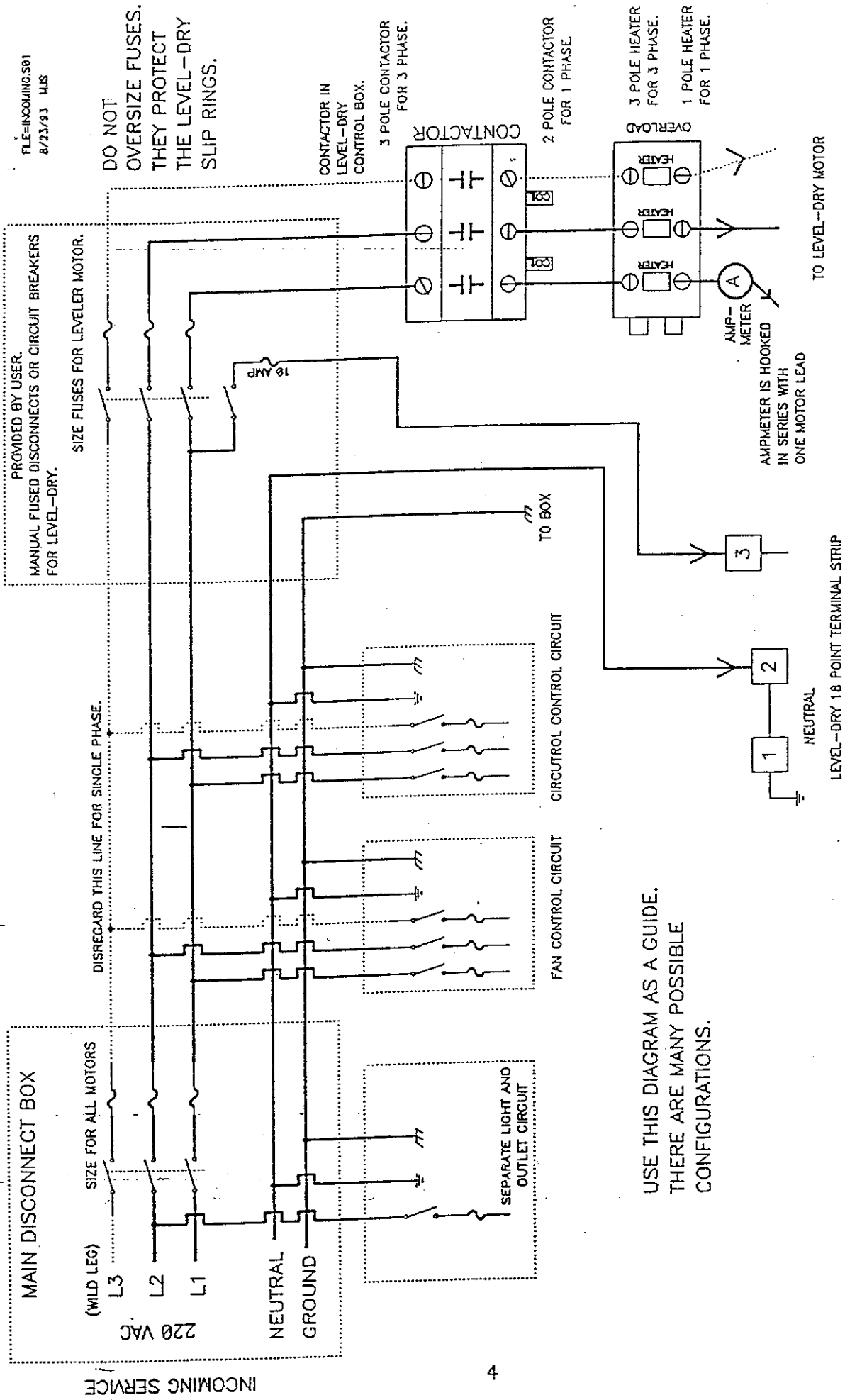
Page 4 shows a possible configuration of disconnects. Note that the Level-Dry requires both 220 VAC and 110 VAC power. In certain areas, a step down transformer may be required to get the 110 VAC power. Consult the local electrical codes for verification. Note that the Level-Dry is not designed for 440 VAC power.



On or near the Main disconnect switch install decal P-10811. Make sure the mounting surface is clean and dry. Locate the decal where it is easily readable.

Peel off the proper labels from the bottom part of the decal and stick them in the marked area of the main decal. If only one of a certain piece of equipment is installed, cut the (s) off, or black it out. If more decals are required, contact Shivers Incorporated.

 CAUTION	
THIS IS THE MAIN POWER DISCONNECT FOR THE FOLLOWING EQUIPMENT:	
ELECTRICIAN MUST PUT ACTUAL EQUIPMENT LIST IN THIS AREA.	
ALWAYS SHUT THIS SWITCH OFF AND LOCK IT OFF, BEFORE WORKING ON ANY OF THE ABOVE EQUIPMENT OR GOING INTO THE DRYING BIN.	
MAKE SURE EVERYONE IS OUTSIDE OF DRYING BIN AND AWAY FROM ALL THE ABOVE EQUIPMENT BEFORE TURNING THE POWER BACK ON.	
 Corydon, IA 50060	If this decal becomes difficult to read, replace it. Contact Shivers for a free replacement decal. P-10811
LEVEL-DRY DISTRIBUTION AUGER	
DRYING BIN FLOOR (SWEEP) AUGER(S)	
DRYING BIN UNLOADING AUGER(S)	
LEVEL-DRY CONTROL BOX	
CONTINUOUS FLOW TRANSFER AUGER(S)	
DRYING SYSTEM GRAIN SPREADER(S)	
WET GRAIN INPUT SYSTEM	
DRYING BIN FAN(S) AND BURNER(S)	

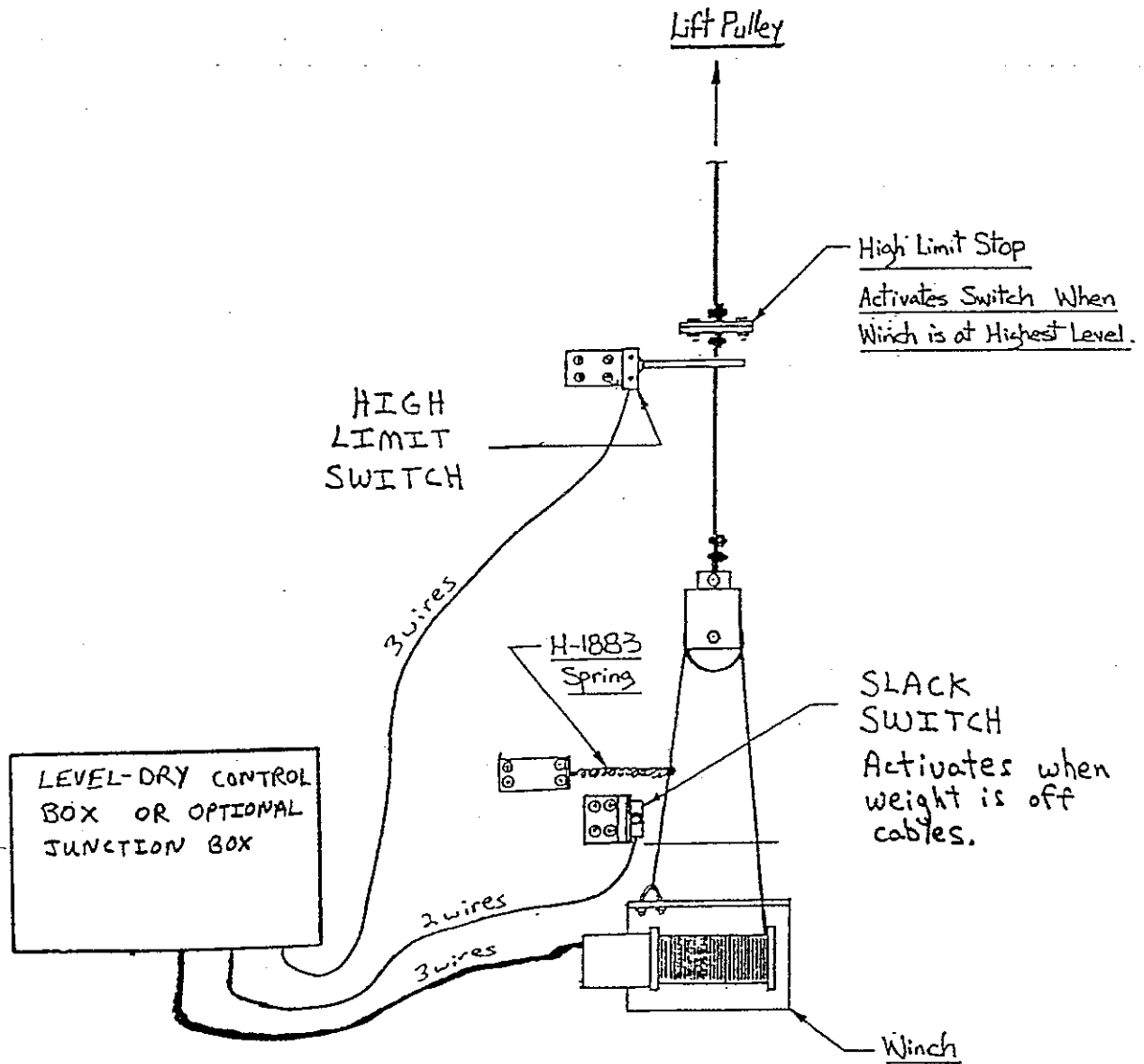


FILE=INCOMING.S01
8/23/93 MJS

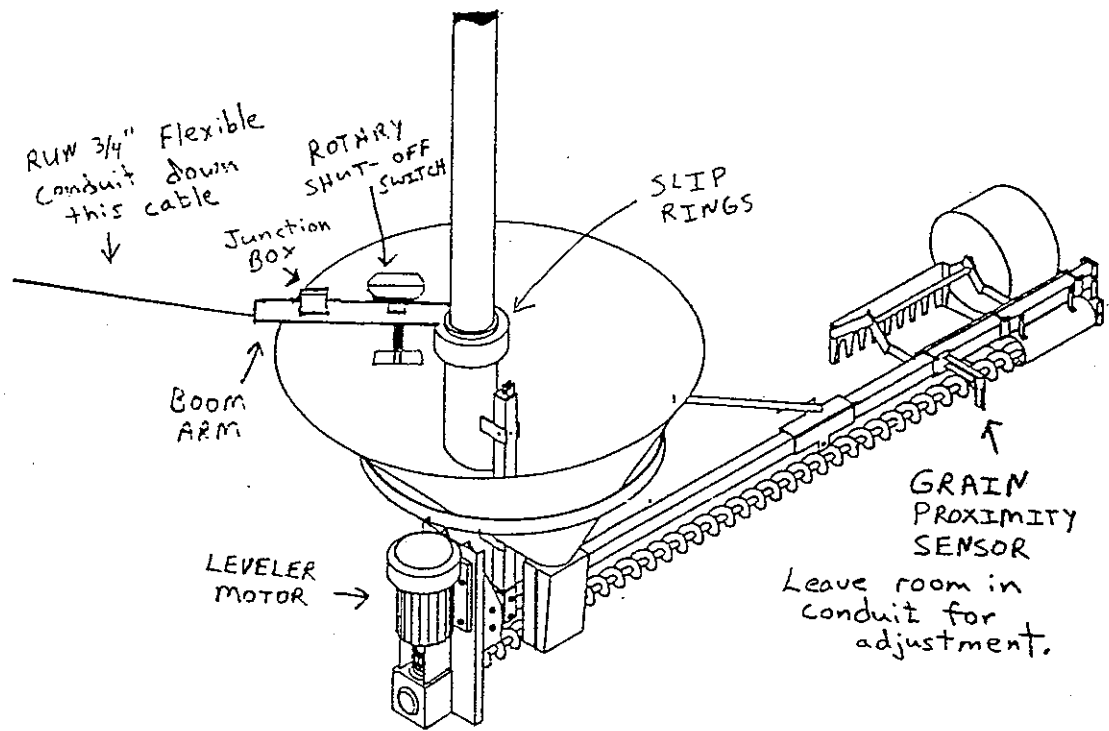
USE THIS DIAGRAM AS A GUIDE.
THERE ARE MANY POSSIBLE
CONFIGURATIONS.

LEVEL-DRY INCOMING POWER CONNECTIONS

IDENTIFYING THE SWITCH LOCATIONS

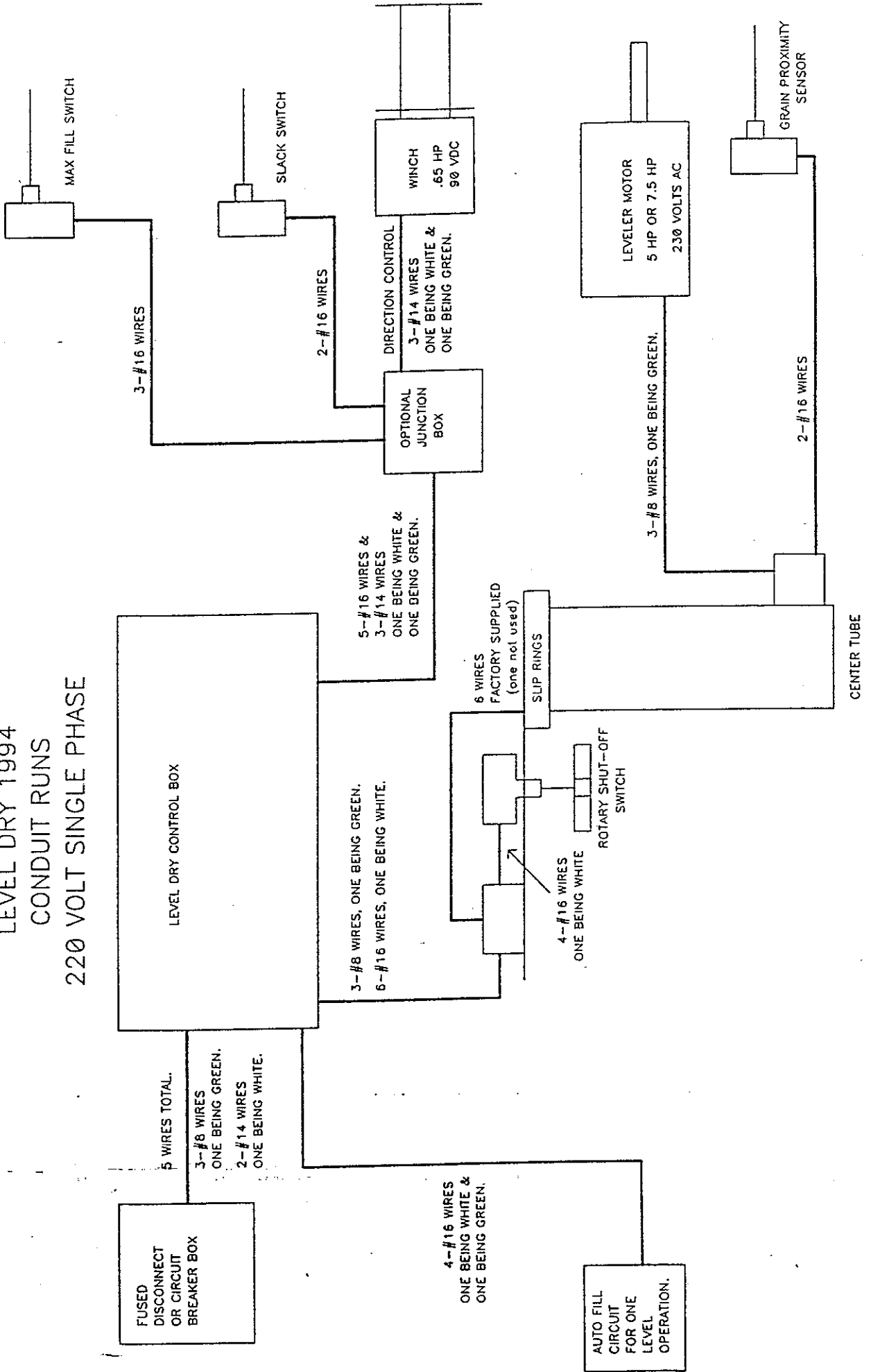


OUTSIDE THE BIN

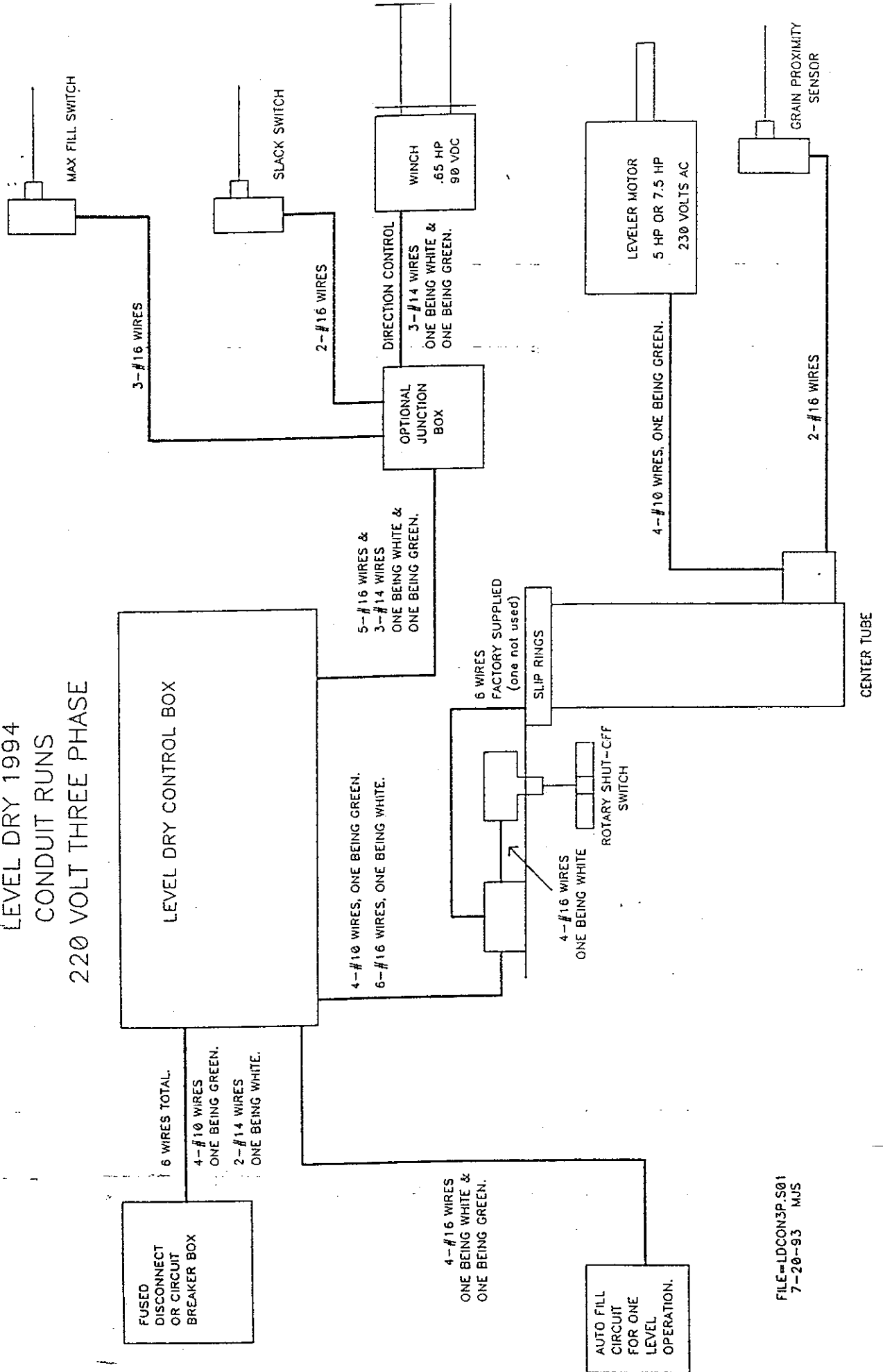


INSIDE THE BIN

LEVEL DRY 1994
 CONDUIT RUNS
 220 VOLT SINGLE PHASE

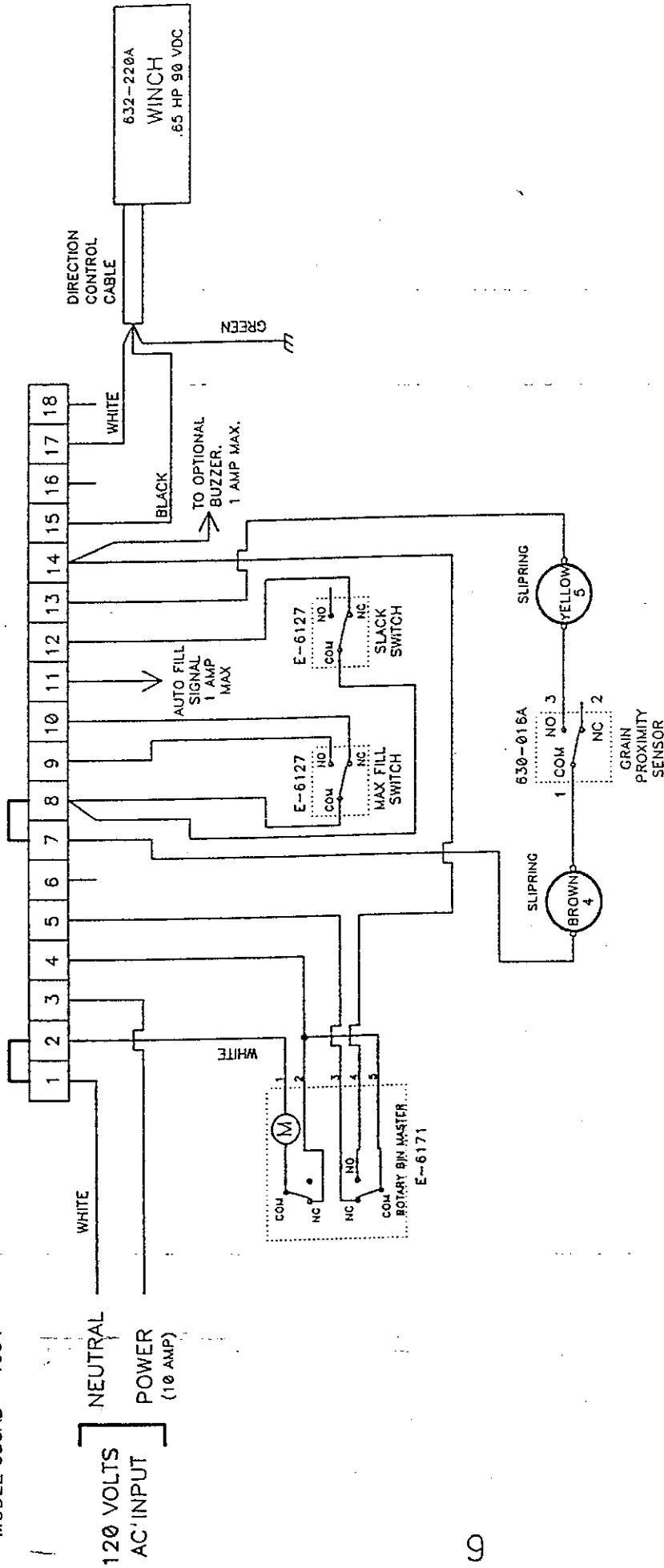


LEVEL DRY 1994
CONDUIT RUNS
220 VOLT THREE PHASE



FILE=LDCON3P.S01
7-20-93 MJS

DELUXE LEVEL DRY WIRING.
MODEL 630AB 1994



NOTE: MAKE SURE TEMPORARY WINCH JUMPERS HAVE BEEN REMOVED.

POWER FROM MAIN DISCONNECT

L1 L2 L3 (WILD LEG)
NEUTRAL
GROUND

DISREGARD THIS LINE FOR SINGLE PHASE.

SIZE FUSES AT ABOUT 2X MOTOR CURRENT

2 POLE CONTACTOR FOR SINGLE PHASE, ONE POLE OVERLOAD FOR SINGLE PHASE.

LEVEL-DRY 18 POINT TERMINAL STRIP

TO LEVEL-DRY BOX

POWER IS ON 11 WHEN LEVEL-DRY WANTS GRAIN.

E-5006-01 SWITCH DPDT. CENTER OFF.

E-5764 RELAY

E-5436 TIMER

423-246-001A INCLUDES TIMER POTENTIOMETER AND KNOB.

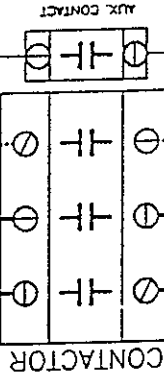
INITIATE

WHEN 4 CONNECTS TO 5, 2 CONNECTS TO 1, WHEN 4 AND 5 OPEN, 2 STAYS CONNECTED TO 1 FOR DELAY PERIOD.

DELAY ON BREAK

3 MEG

INDICATOR LIGHT



2 POLE CONTACTOR FOR SINGLE PHASE, ONE POLE OVERLOAD FOR SINGLE PHASE.

WHEN 4 CONNECTS TO 5, 2 CONNECTS TO 1, WHEN 4 AND 5 OPEN, 2 STAYS CONNECTED TO 1 FOR DELAY PERIOD.

DELAY ON BREAK

3 MEG

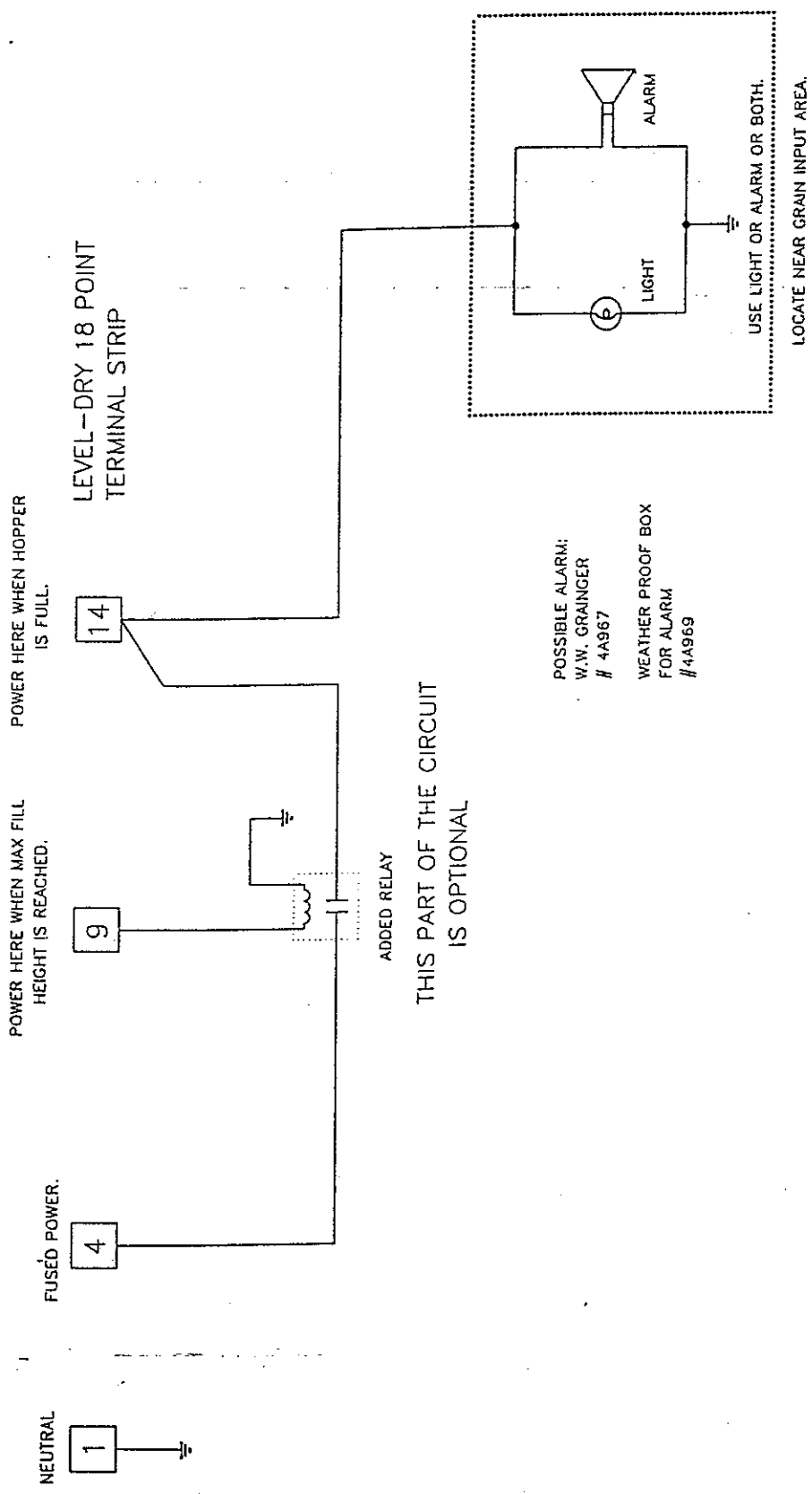
EXAMPLE OF WET STORAGE TANK TO LEVEL-DRY WITH INCLINED AUGER CLEAN-OUT.

SHORT HORIZONTAL AUGER

INCLINED AUGER (GETS CLEANED OUT)

USE THIS DIAGRAM AS A GUIDE. THERE ARE MANY POSSIBLE CONFIGURATIONS.

FILE=WETFILB.S01
3-28-94 MJ5



POSSIBLE ALARM:
W.W. GRAINGER
4A967

WEATHER PROOF BOX
FOR ALARM
#4A969

LEVEL-DRY ALARM CIRCUIT
RECOMMENDED WHEN RUNNING IN FLOAT MODE.

OVERLOAD HEATER SIZES

Check the full load amps on the name plate of the Level-Dry motor and verify that the proper overload heaters are installed. Take the maximum motor amps shown in this table by 115% to get the overload trip amps. Use only dual element fuses, or inverse time delay circuit breakers.

FURNAS OVERLOAD	SHIVVERS PART #	THREE PHASE		SINGLE PHASE	
		MAX MOTOR AMPS	RECOMMENDED BREAKER OR FUSE	MAX MOTOR AMPS	RECOMMENDED BREAKER OR FUSE
E-47	E-5718	5.54	10	6.84	15
E-50	E-5719	6.70	15	8.24	20
E-51	E-5720	7.29	15	9.13	20
E-52	E-5721	8.2	15	10.09	20
E-53	E-5722	8.96	20	11.04	20
E-54	E-5723	9.74	20	12.17	25
E-55	E-5724	10.70	20	13.13	25
E-56	E-5725	11.39	20	14.09	25
E-61	E-5726	17.04*	30	20.00	30
E-67	E-5727	23.48	35	29.39*	40
E-69	E-5728	26.09	40	33.20	50
E-72	E-5729	33.57	50	44.80	60
E-73	E-5730	36.09	50	46.00	60

* = Standard size delivered with Level-Dry.

CHECK-OUT PROCEDURES



DANGER

MAKE SURE THE CIRCULATOR OR DRI-FLOW IS DISENGAGED AND THE POWER FOR IT IS LOCKED OFF.

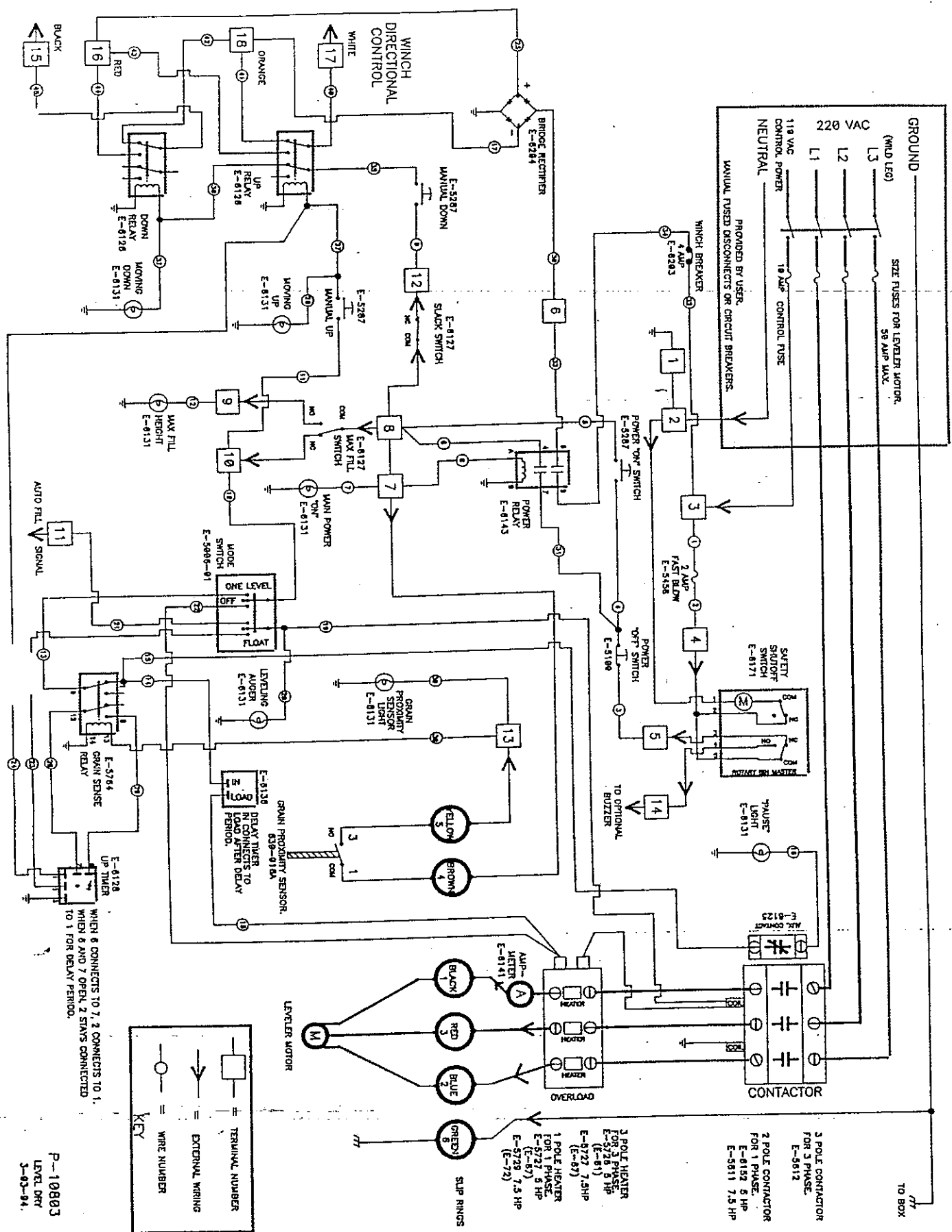
MAKE SURE EVERYONE IS OUTSIDE THE BIN AND CLEAR OF ALL THE EQUIPMENT BEFORE TURNING THE MAIN POWER ON.

DO NOT GET UNDER THE LEVELING AUGER WHEN IT IS IN THE RAISED POSITION.

THE FOLLOWING PROCEDURES SHOULD ONLY BE PERFORMED BY TRAINED SERVICE PERSONNEL.

- 1). Place the MODE switch in the "OFF" position. Press the Level-Dry POWER ON switch. The POWER "ON" light should come on. If it doesn't check the rotary paddle switch wiring.
- 2). Press the MANUAL UP switch. Do not run it for more than 10 seconds. Do not rapidly jog it. The MOVING UP light should come on, and the winch should start raising the leveling auger. Carefully watch the MAX FILL switch on the side of the bin, and make sure the winch shuts off when the plate hits the switch. The MAX FILL HEIGHT light should come on.
- 3). Press the MANUAL DOWN switch. The MOVING DOWN light should come on, and the winch should start lowering the leveling auger. When the auger is all the way down, the spring should pull the cable into the SLACK switch on the side of the bin. This should shut the winch off and MOVING DOWN light off.
- 4). Go inside the bin and stall out the rotary paddle switch on the boom arm. If the alarm circuit is wired, it should come on. The Level-Dry POWER "ON" light should go off and stay off even when the paddle switch is released.
- 5). Put the MODE switch in the "FLOAT" position. Press the Level-Dry POWER ON switch. The POWER "ON" light, and the LEVELING AUGER "ON" light, should come on. The leveling auger should be running.

- 6). Go inside the bin and carefully press the GRAIN PROXIMITY SENSOR switch on the leveling auger. The winch should come on and move the auger up. When the switch is released, the auger should continue to move up for 1-5 seconds depending how the orange timer in the control box is set. Shut the Level-Dry power off to adjust the timer. Make sure it is adjusted for about 4-8" of vertical auger movement when the grain proximity sensor switch is briefly activated.
- 7). Press the MANUAL DOWN switch until the leveling auger is all the way down. Press the MANUAL UP switch until the leveling auger is about an inch above the bottom stop. Press the Level-Dry POWER OFF switch to shut the system off.
- 8). Put the MODE switch into the "ONE LEVEL" position. Press the Level-Dry POWER ON switch. The LEVELING AUGER "PAUSE" light should come on and will stay on for whatever time the black delay timer in the control box is set for. After the time delay, the LEVELING AUGER "ON" light should come on and the auger start. If a wet grain input system is wired, it should come on also.
- 9). Go inside the bin and carefully press the GRAIN PROXIMITY SENSOR switch on the leveling auger. The auger should shut off, and the GRAIN PROXIMITY SENSOR light on the control box should come on for as long as the switch is held. When the switch is released, the GRAIN PROXIMITY SENSOR light should go off, and the LEVELING AUGER PAUSE light should come on. After the delay period, the auger should start again. Press the POWER OFF switch to shut the system off.
- 10). After checking out the system, shut the power off and adjust the black timer in the Level-Dry control box for a 5-8 minute delay. This keeps the input auger system from cycling on and off all the time.
- 11). Either close up the bin and lock it shut, or shut off the main disconnect switch and lock it off.



P-10803
 LEVEL DRV
 3-83-94

