



# SPECIFICATION MANUAL

TRAVELIFT® CRANE P/N 1492R1

	<u>Model</u>	<u>Serial Number</u>
MACHINE:	MJ50	1492



Hazel Crest, IL 60429 • 708/596-5200 • FAX: 708/225-2302

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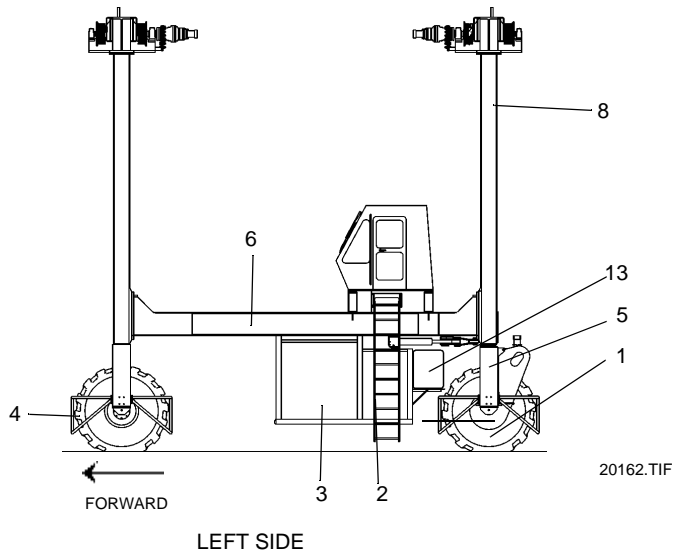
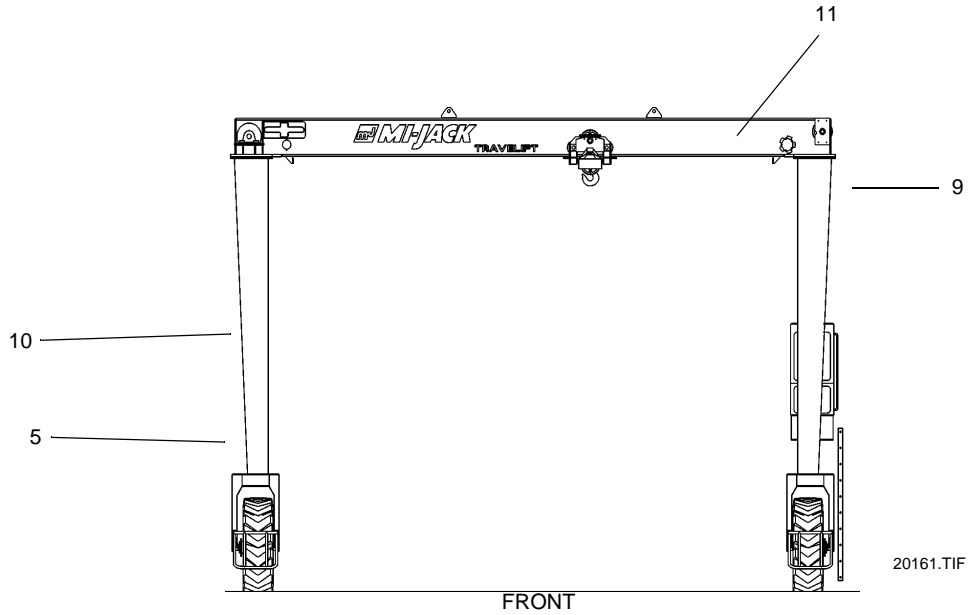
## **INTRODUCTION**

The following specifications are specific only for the TRAVELIFT © MJ50 crane with the serial number listed on the cover. If you have any questions about the operating specifications, consult MI-JACK Technical Services personnel at Hazel Crest for assistance.

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- E. ENGINE SPEEDS**

**NOMENCLATURE  
TRAVELIFT® CRANE MJ50  
(Typical Forward Facing Cab)**



- 1. Drive Wheel
- 2. Location of Hydraulic Pumps and Filters
- 3. Diesel Engine
- 4. Wheel Guards
- 5. Wheel Yoke
- 6. Left Side Beam
- 7. Operator's Cab and Controls

- 8. Column, Left Rear
- 9. Column, Left Front
- 10. Column, Right Front
- 11. Front Top Beam
- 12. Ladders
- 13. Fuel Tank

**A. GENERAL MACHINE SPECIFICATIONS**

**Capacity**

Capacity..... 100,000 lbs  
Maximum Capacity of Attachment..... 86,000 lbs  
Maximum Capacity of Attachment at Center Pick Point ..... 70,000 lbs

**Engine**

**Type**

Standard Model ..... Detroit Diesel 40E Engine  
Type..... Diesel, Six cylinder, four stroke cycle, in-line,W/TurboCharger  
Horsepower (rated).....210 @ 2150 RPM

**Engine Fuel System**

Fuel Tank Capacity ..... 100 gal.  
Fuel Type..... (See engine manual)  
Fuel Filter..... Spin-on type / with strainer

**Engine Air Intake System**

Type..... Dry type, with air cleaner indicator gauge

**Engine Cooling System**

Type..... Radiator with belt driven fan  
Thermostat ..... Refer to engine manual

## Electrical Systems

### Electrical System - DC

Type of System.....	24 VDC, negative ground
Batteries (2).....	12 volt connected in series (supplies power to drive lights, power unit lights and the crane's control system)
Alternator with Internal Regulator .....	24 VDC, 85 amp

### Drive System

Type.....	Hydraulic motors with chain drive
Drive Chain Type.....	Roller
Main Pump .....	Variable displacement
Supercharge Pump (Integral with main pump) .....	Fixed displacement, gear type
Motors (2) .....	Fixed displacement, piston
Tires.....	21.00-25 36 PLY 109 psi

### Hoist System

Type.....	Hydraulic
Actuator .....	Fixed displacement - one on each top beam.
Hoist Brake .....	Multi-disc SAHR (Spring applied, hydraulically released). Located between the hoist motor and the hoist drum.
Main Pump .....	Pressure/flow compensated variable displacement

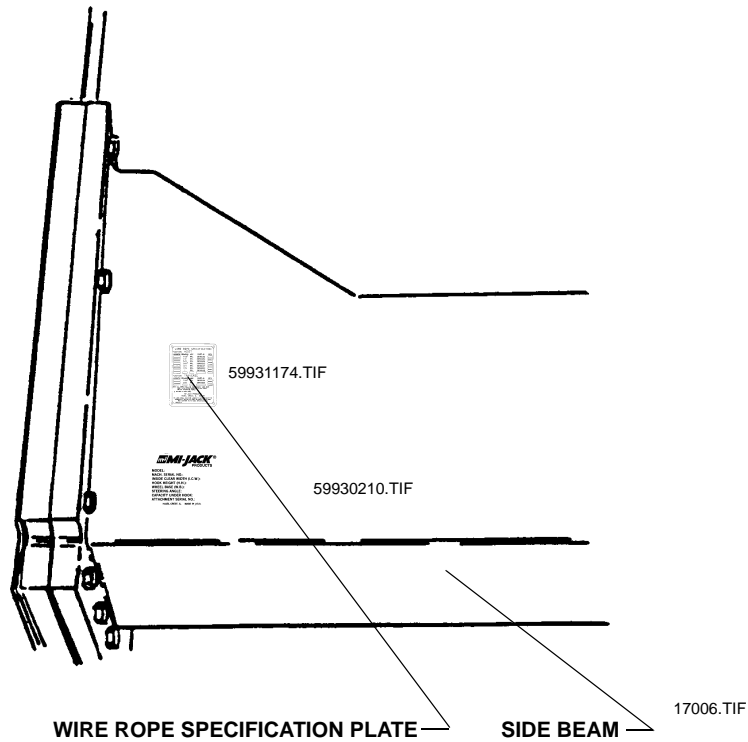
### Traverse System

Type ..... Hydraulic  
Drive ..... Hydraulic motor with chain drive.  
Motor ..... Fixed displacement.  
Pump ..... Pressure/flow compensated variable displacement  
Brake ..... Spring applied, hydraulically released (SAHR).

### Park Brake System

Type (Parking - Drive wheels) ..... Spring applied, hydraulically released (SAHR).

NOTE: Unless otherwise specified, RPM as referenced in these specifications indicate engine RPM as measured at the engine.



### WIRE ROPE

PART #	LENGTH	DESCRIPTION	
38900200	543'	Type:	6 Strands
		Classification:	6 X 37
		Diameter:	5/8"
		Construction:	6 X 36 Warrington Seale
		Lay:	RRL
		Grade:	EIPS
		Minimum Breaking Force:	41,200 lbs.
		Core:	WRC



## B. COMPONENT LUBRICANT/FLUID CAPACITY CHART

COMPONENT	CAPACITY	LUBRICANT/FLUID
Engine Crankcase	17 quarts with filter change. (Fill to level)	See engine manufacturer's manual.
Cooling System (Including Radiator)	25 Quarts (Fill to Capacity)	See engine manufacturer's manual.
Fuel Tank	100 gallons	Diesel fuel as specified in the engine manufacturer's manual.
Hydraulic Reservoir	75 gallons (Fill to level)	Kendall Hyken Golden or equivalent.
Pump Drive Transmission	4 quarts (1¼ quarts above level plug)	E. P. 85W-140 API GL5 gear lube
Drive/Hoist Transmission	Fill to level	E.P. 80W-90 API GL5 gear lube

## C. MACHINE HYDRAULIC PRESSURE SETTINGS

### HOIST • Hydraulic Pressures

Counterbalance Valve ..... 1500 psi

### TRAVERSE • Hydraulic Pressures

Counterbalance Valve ..... 2650 psi

### RIGHT MAIN PUMP • Hydraulic Pressures

Stand by Pressure ..... 350 psi

Pressure Compensator ..... 4300 psi

Main Relief ..... 4700 psi

### LEFT MAIN PUMP • Hydraulic Pressures

Stand by Pressure ..... 350 psi

Pressure Compensator ..... 4300 psi

Main Relief ..... 4700 psi

### DRIVE • Hydraulic Pressures

Supercharge ..... 450 psi

Relief Forward ..... 4900psi

Relief Reverse ..... 4900 psi

Pressure Override (P.O.R.) ..... 4500 psi

Park Brake Relief Pressure ..... 450psi

### STEERING • Hydraulic Pressures

Steering Relief Valve ..... 2100 psi

## D. CRANE FUNCTION SPEEDS (EMPTY)

### HOIST

Hoist Up ..... 31 fpm

Hoist Down ..... 31 fpm

### TRAVERSE

Trolley (Both Directions) ..... 123 fpm

### DRIVE

Drive (Both Directions) ..... 440 fpm

## E. ENGINE SPEEDS

Low Engine ..... 1000 rpm  
High Engine (maximum w/ no load)..... 2150 rpm

## NOTES

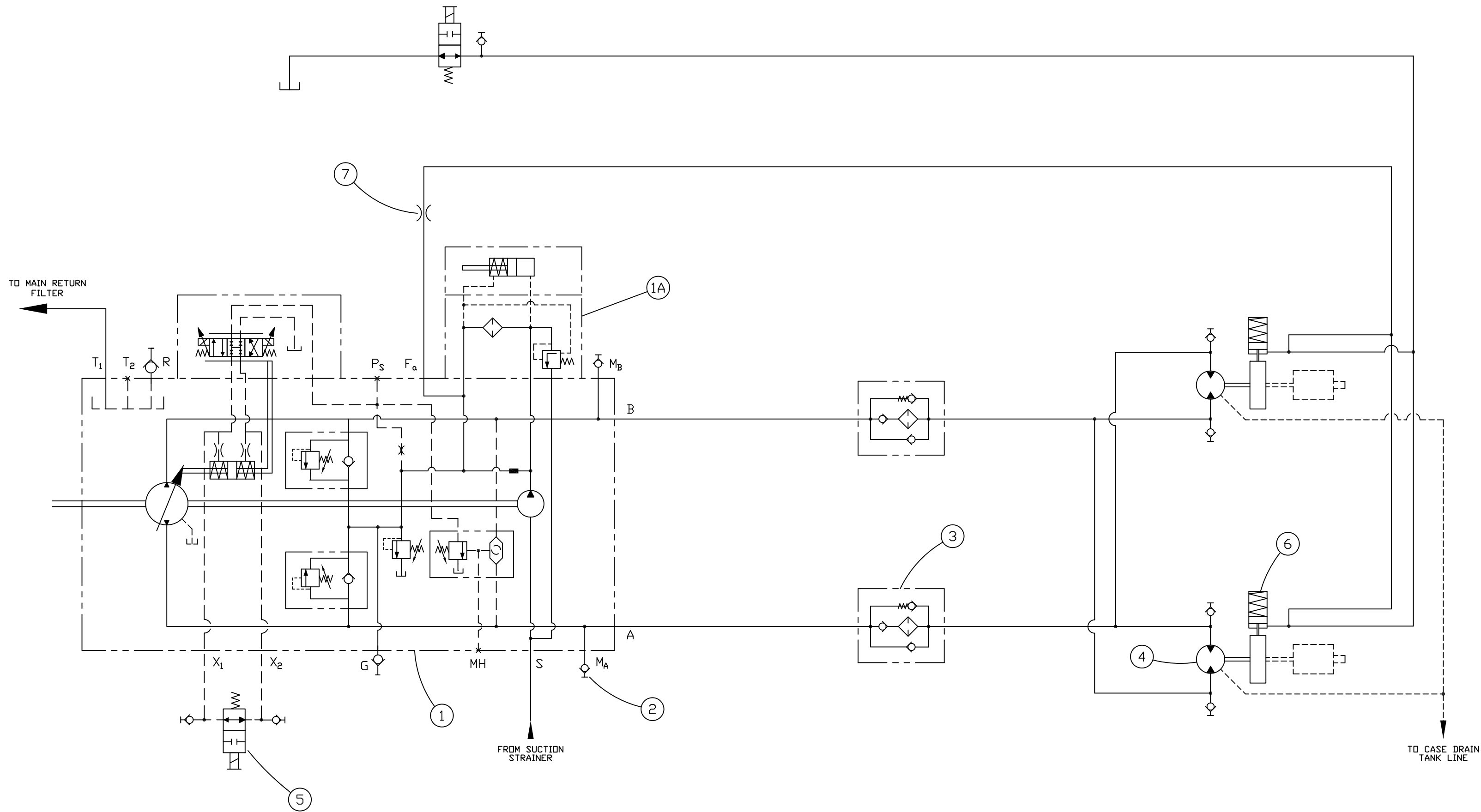
## **SCHEMATIC PAGE**

### **Hydraulic**

**61090377-1  
61090382-4  
61090430-0**

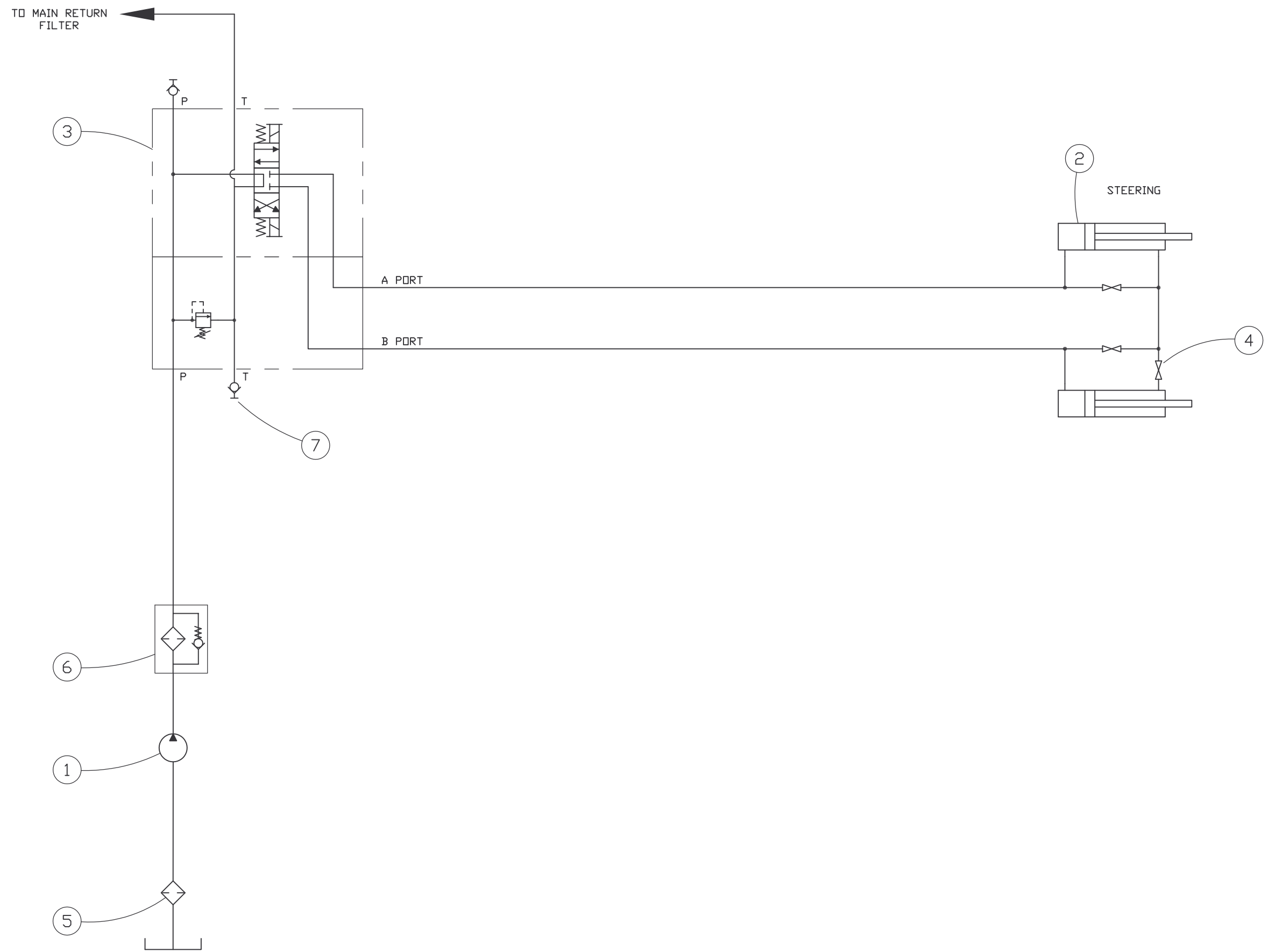
### **Electrical**

**62090641-0**

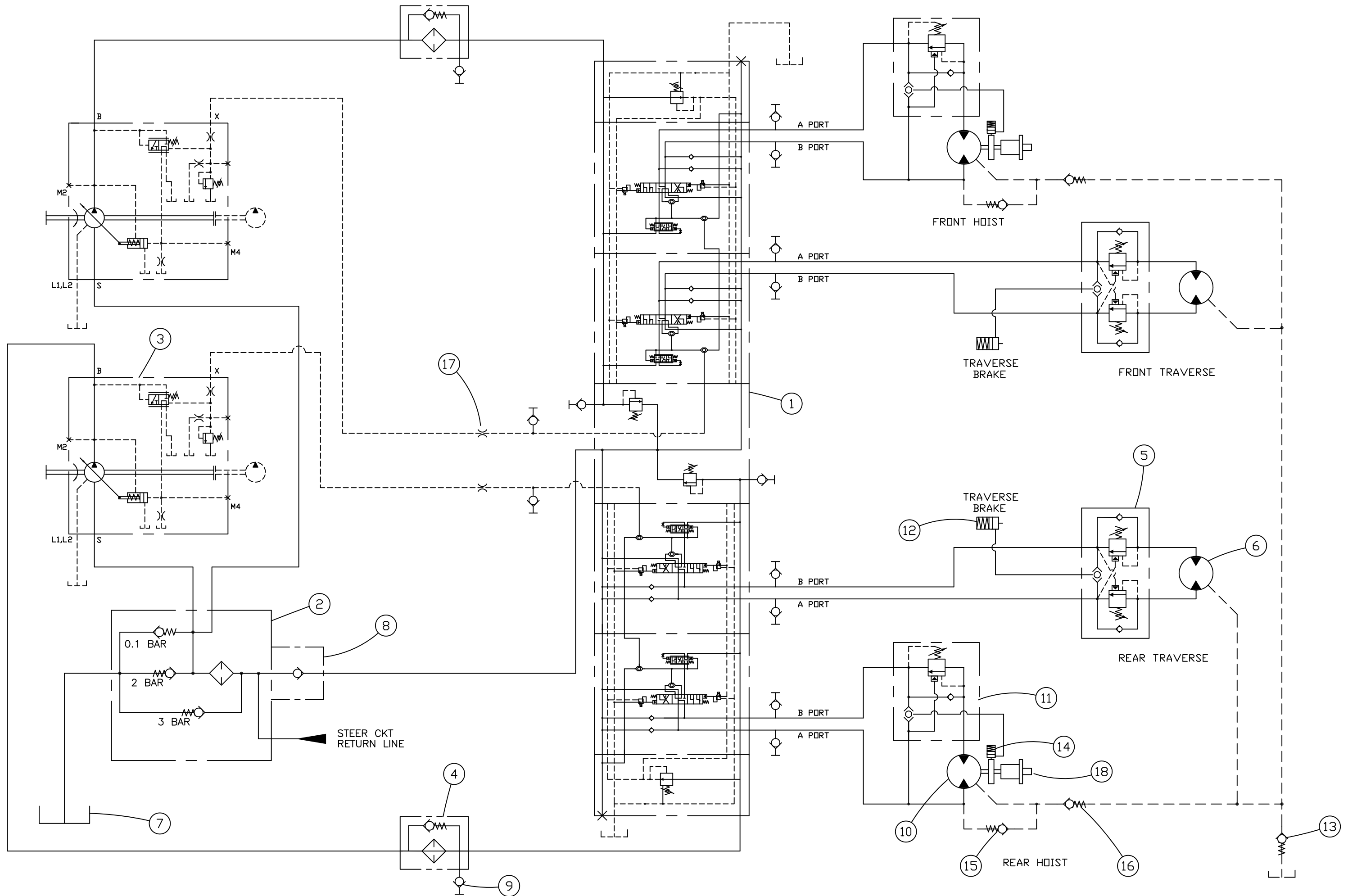


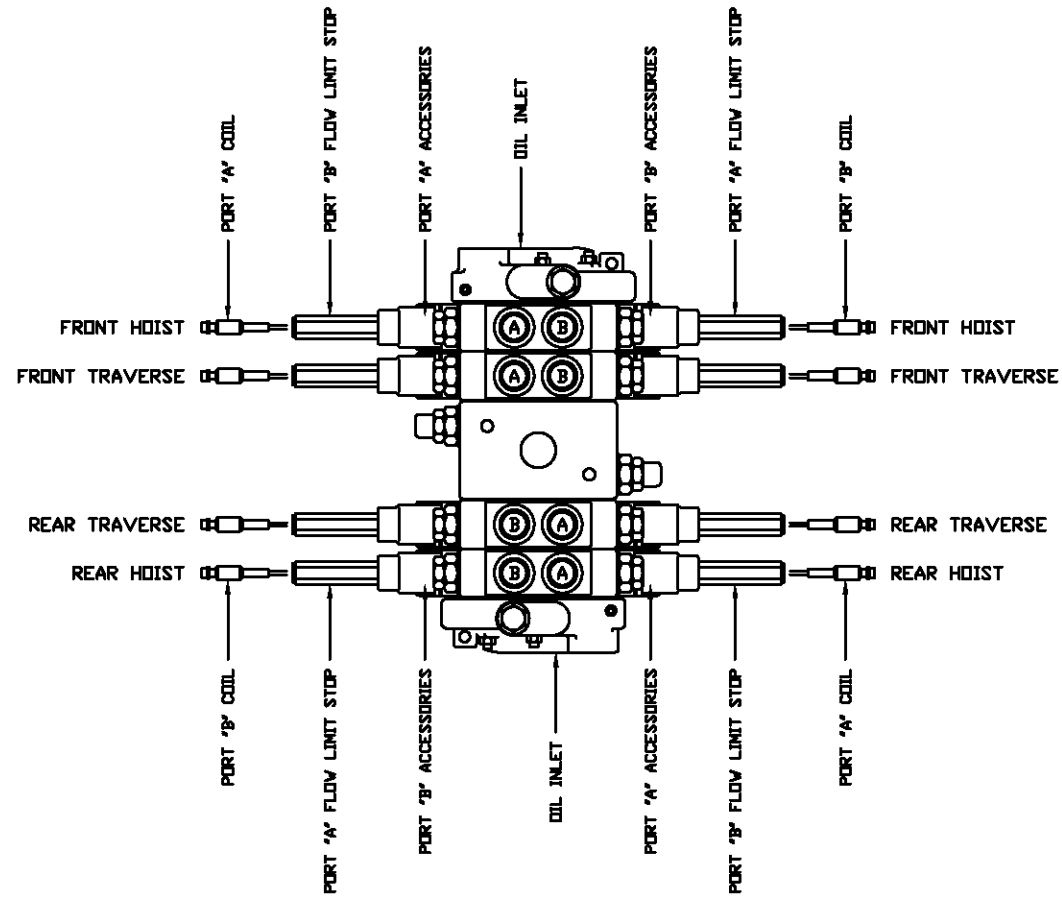
IT.	QTY.	DESCRIPTION	PART NUMBER
1	1	PUMP	41080035
1A	1	ELEMENT, FILTER	31040009
2	REF	TEST SPUD	79830404
3	2	FILTER	41040824
3A	2	ELEMENT, FILTER	31050177
4	2	MOTOR	41060018
5	2	VALVE, VENT	31200115
6	2	BRAKE	43020003
7	1	DRIFICE	31680004



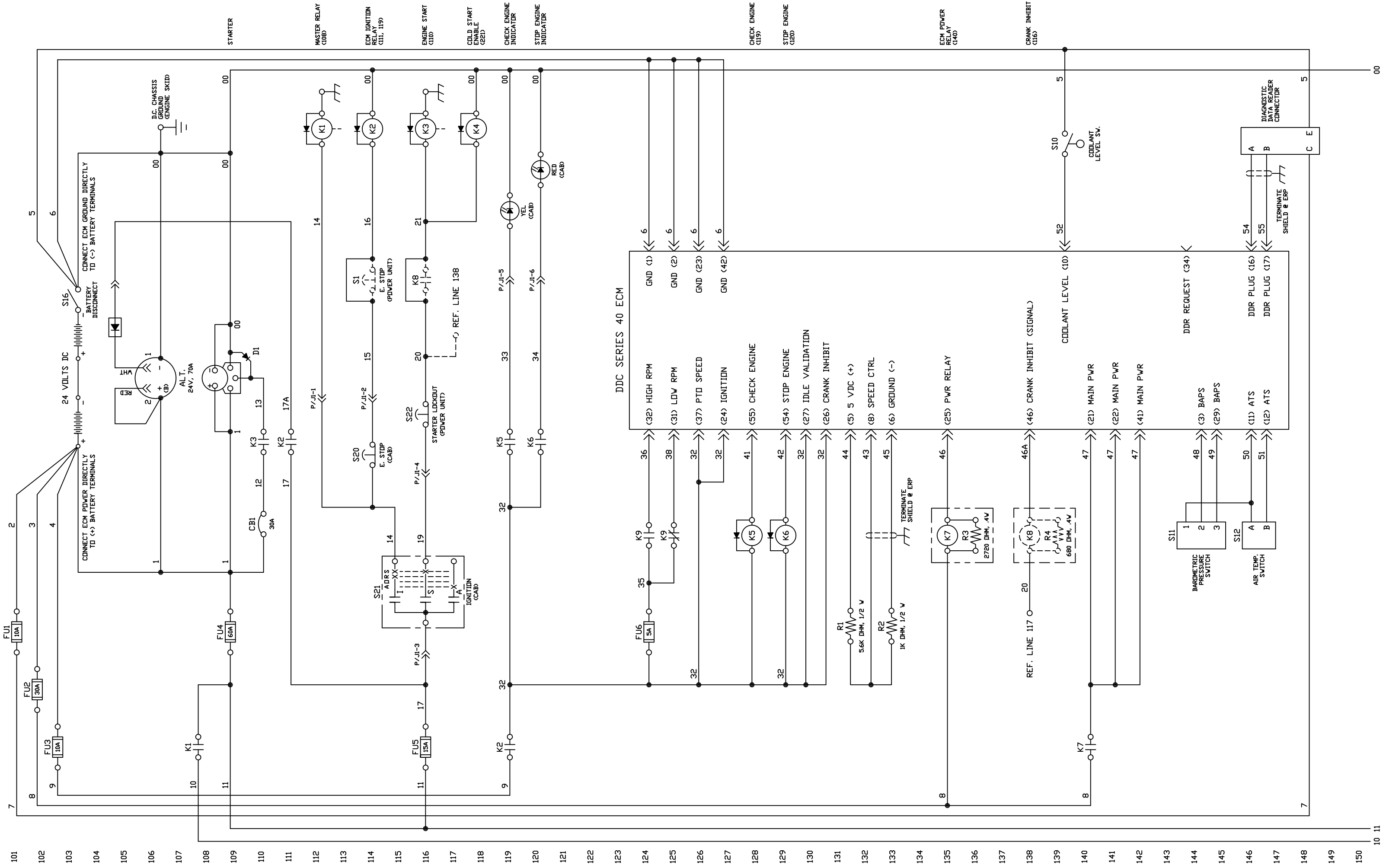


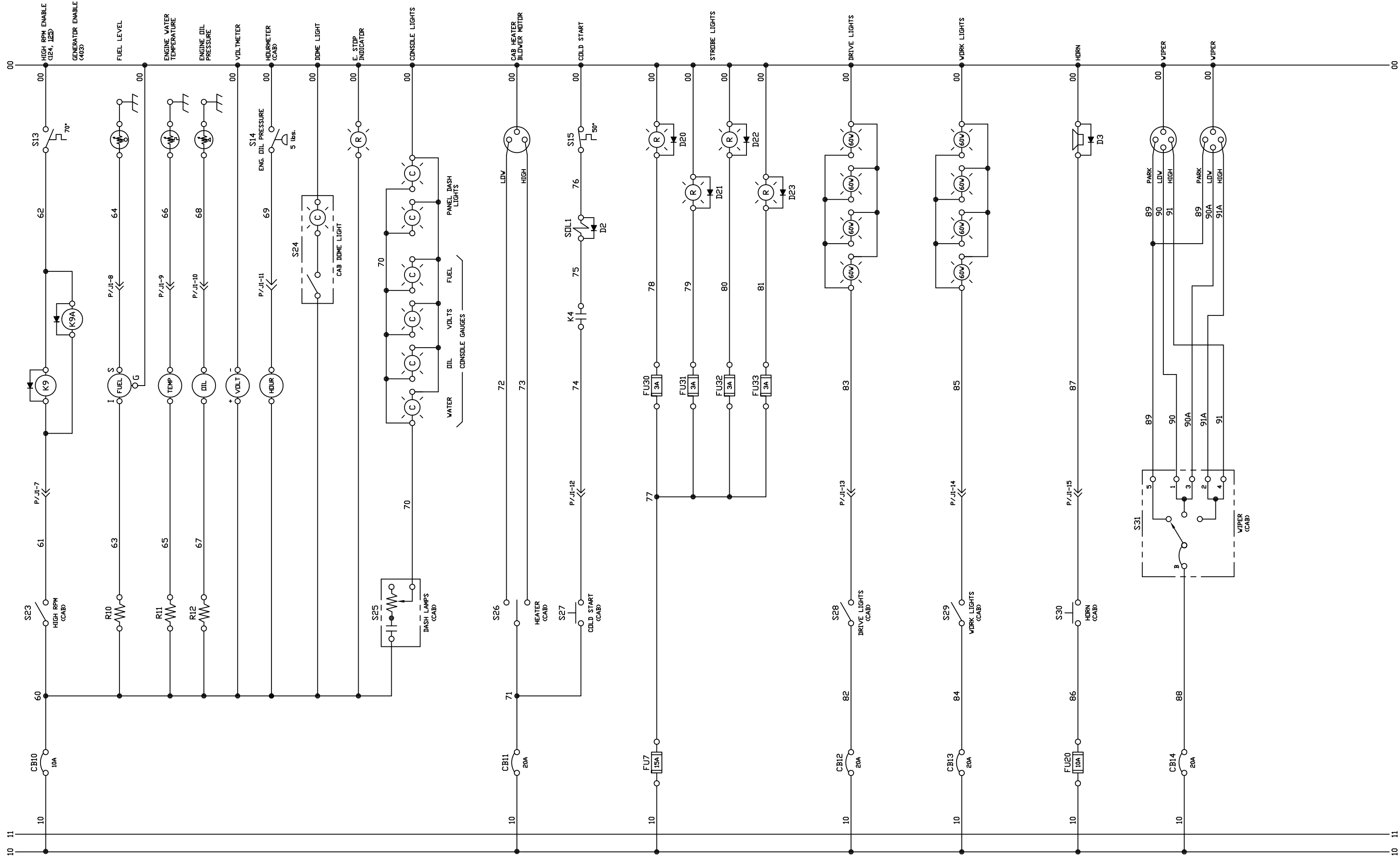
IT.	QTY.	DESCRIPTION	PART NUMBER	DWG. SIZE
1	1	PUMP	41080037	
2	2	CYLINDER	61020071	
3	1	VALVE	41200008	
3A	1	BODY	31370128	
3B	1	RELIEF CARTRIDGE	31540143	
3C	1	VALVE, DIR	31200019	
4	3	ALIGNMENT VALVE	31210125	
5	1	STRAINER	31040013	
6	1	FILTER ASSY	41040006	X
6A	2	ELEMENT, FILTER	31040011	
7	REF	TEST SPUD	79830404	

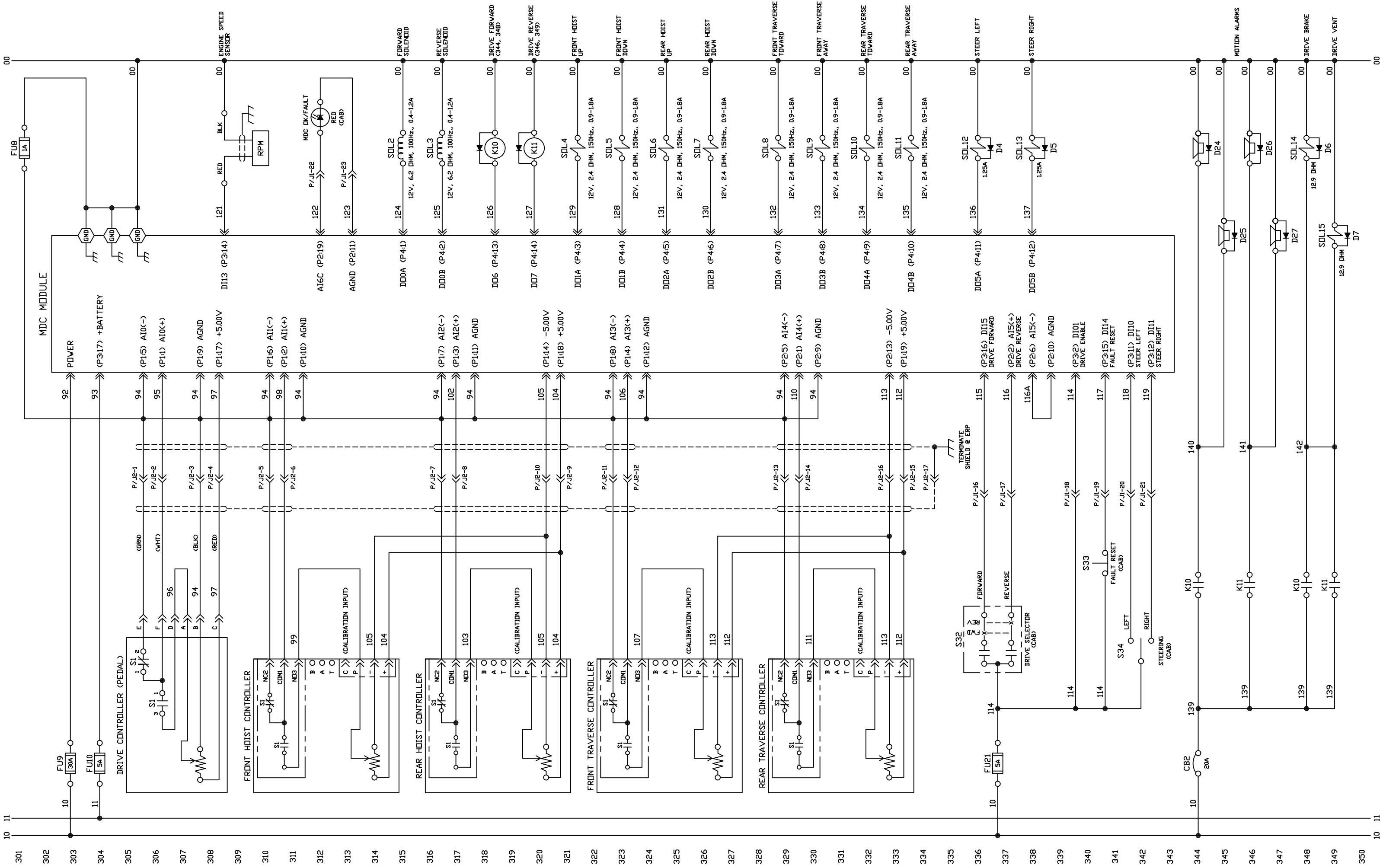




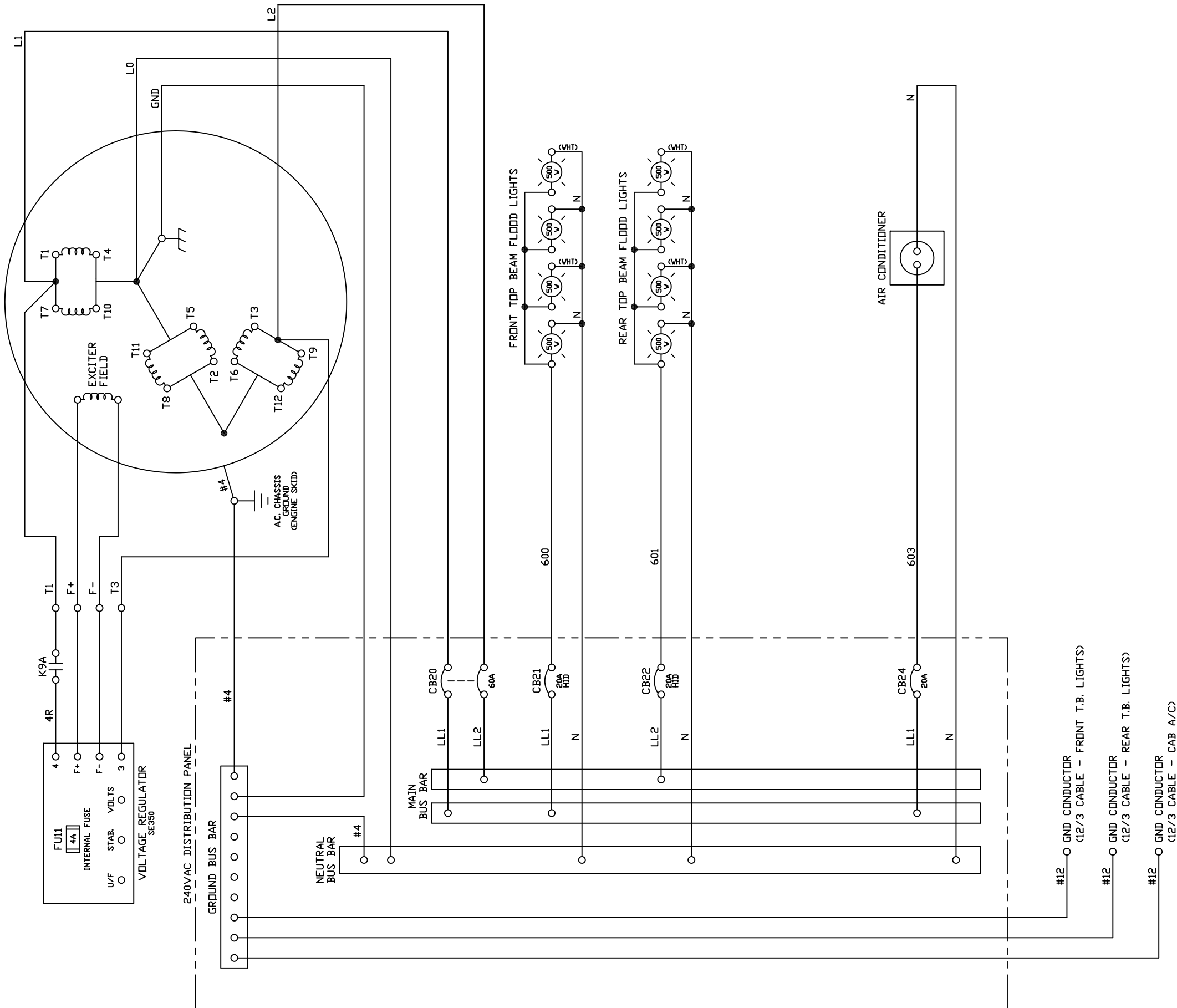
IT.	QTY.	DESCRIPTION	PART NUMBER
1	1	DIRECTIONAL CONTROL	41240047
2	1	FILTER	41040005
2A	1	ELEMENT, FILTER	31040010
3	2	PUMP	41080036
4	2	FILTER	41040823
4A	2	ELEMENT, FILTER	31050178
5	2	VALVE, DUAL C/BALANCE	41260005
5A	4	CARTRIDGE	21260010
5B	2	BODY	21520010
6	2	MOTOR	41060016
7	1	TANK	50540008
8	1	VALVE, CHECK (15 PSI)	41230002
9	REF	TEST SPUD	65020102
10	2	MOTOR	41060018
11	2	VALVE, C/BALANCE	41260014
11A	2	CARTRIDGE	21540060
11B	2	BODY	21520011
11C	2	CARTRIDGE	21230004
12	2	BRAKE	33020003
13	1	VALVE, CHECK (15 PSI)	31231010
14	2	BRAKE	31120002
15	2	VALVE, CHECK (2 PSI)	31230003
16	2	VALVE, CHECK (5 PSI)	31230631
17	2	DRIFICE	31590093
18	2	GEAR BOX	31120001







GENERATOR  
12.5KV, 120/240 VAC,  
1 PHASE, 60 Hz,  
1.0 P.F.



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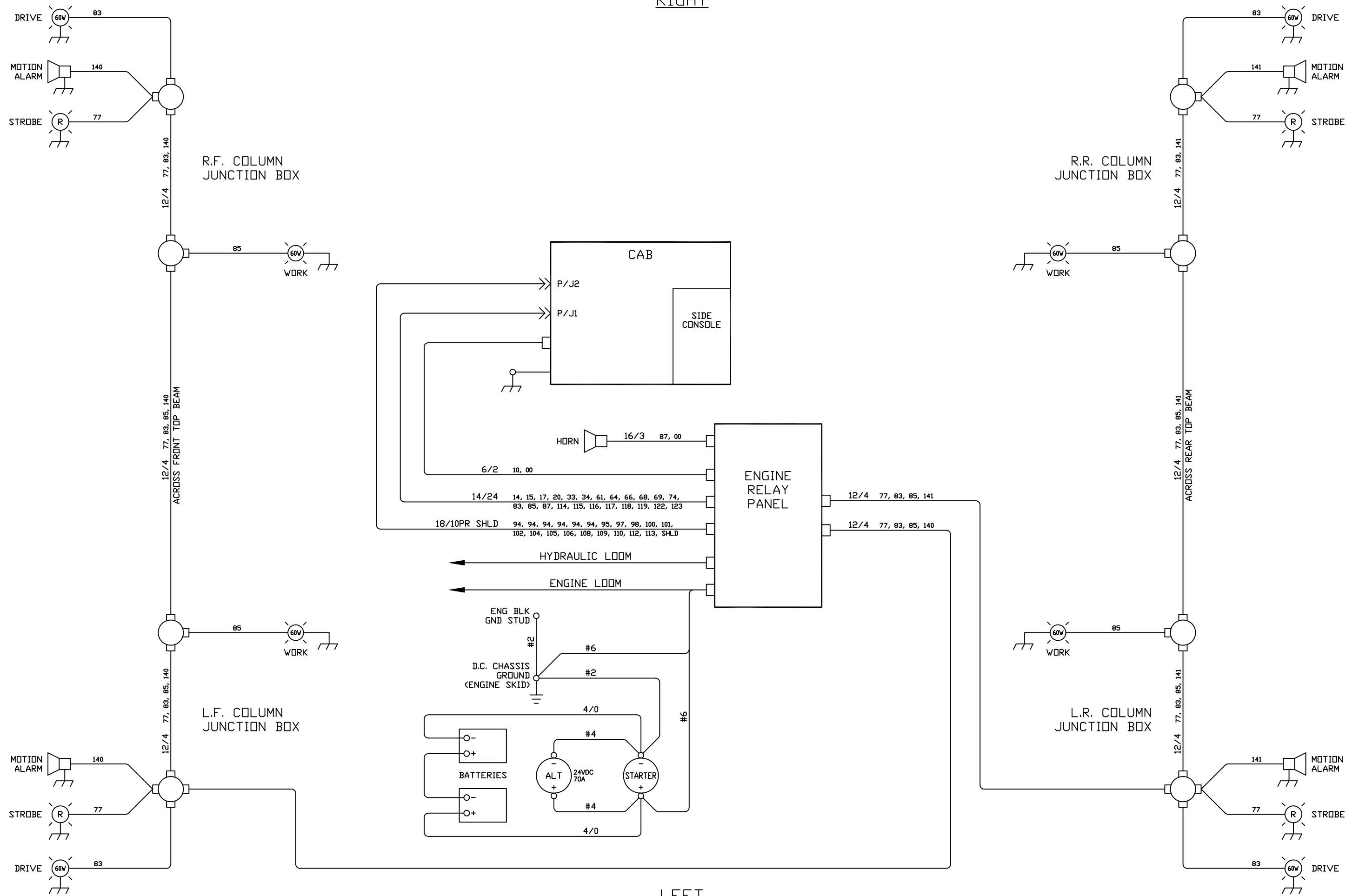
SCHEMATIC LEGEND

RELAY				CONTACT				SWITCH			
NAME	FUNCTION/CIRCUIT	J-BOX LINE#	TYPE	LINE#	FUNCTION	NAME	FUNCTION/CIRCUIT	J-BOX LINE#	NAME	FUNCTION/CIRCUIT	J-BOX LINE#
K1	MASTER RELAY	ERP 112	SPST	108	CAB POWER	S1	EMERGENCY STOP	ERP 114	S10	COOLANT LEVEL	PU 139
K2	ECM IGNITION	ERP 114	SPDT	111	ALTERNATOR	S11	BAROMETRIC PRESSURE	PU 144	S11	BAROMETRIC PRESSURE	PU 144
K3	ENGINE START	ERP 116	SPST	110	STARTER SOLENOID	S12	AIR TEMPERATURE	PU 146	S12	AIR TEMPERATURE	PU 146
K4	COLD START ENABLE	ERP 118	SPDT	221	COLD START	S13	ENGINE WATER 70°	PU 202	S13	ENGINE WATER 70°	PU 202
K5	CHECK ENGINE	ERP 128	SPDT	119	CHECK ENGINE INDICATOR	S14	ENGINE OIL PRESSURE 5 lbs.	PU 210	S14	ENGINE OIL PRESSURE 5 lbs.	PU 210
K6	STOP ENGINE	ERP 129	SPDT	120	STOP ENGINE INDICATOR	S15	ENGINE BLOCK 50°	PU 221	S15	ENGINE BLOCK 50°	PU 221
K7	ECM POWER	ERP 135	SPDT	140	ECM - MAIN POWER	S16	BATTERY DISCONNECT	PU 103	S16	BATTERY DISCONNECT	PU 103
K8	CRANK INHIBIT	ERP 138	SPDT	116	ENGINE START/COLD START	S20	EMERGENCY STOP	CAB 114	S20	EMERGENCY STOP	CAB 114
K9	HIGH RPM ENABLE	ERP 202	SPDT	124	ECM - HIGH RPM	S21	IGNITION	CAB 115	S21	IGNITION	CAB 115
				125	ECM - LOW RPM						
K9A	GENERATOR ENABLE	ERP 203	SPDT	403	VOLTAGE REGULATOR INTERLOCK	S22	STARTER LOCKOUT	CAB 116	S22	STARTER LOCKOUT	CAB 116
K10	DRIVE FORWARD	ERP 318	DPDT	344	FRONT MOTION ALARMS	S23	HIGH RPM	CAB 202	S23	HIGH RPM	CAB 202
				348	DRIVE BRAKE/VENT SOLENOID	S24	CAB DOME LIGHT	CAB 212	S24	CAB DOME LIGHT	CAB 212
				346	REAR MOTION ALARMS	S25	DASH LAMPS	CAB 215	S25	DASH LAMPS	CAB 215
K11	DRIVE REVERSE	ERP 320	DPDT	349	DRIVE BRAKE/VENT SOLENOID	S26	HEATER	CAB 219	S26	HEATER	CAB 219
						S27	COLD START	CAB 221	S27	COLD START	CAB 221
						S28	DRIVE LIGHTS	CAB 231	S28	DRIVE LIGHTS	CAB 231
						S29	WORK LIGHTS	CAB 235	S29	WORK LIGHTS	CAB 235
						S30	HORN	CAB 239	S30	HORN	CAB 239
						S31	WIPERS	CAB 243	S31	WIPERS	CAB 243
						S32	DRIVE SELECTOR	CAB 336	S32	DRIVE SELECTOR	CAB 336
						S33	FAULT RESET	CAB 341	S33	FAULT RESET	CAB 341
						S34	STEERING	CAB 342	S34	STEERING	CAB 342
SOLENOID/COIL											
NAME	FUNCTION/CIRCUIT	LOC	LINE#	NAME	FUNCTION/CIRCUIT	LOC	LINE#				
SOL1	COLD START	PU	221	D1	ERP	109					
SOL2	FORWARD PUMP	PU	315	D2	ERP	221					
SOL3	REVERSE PUMP	PU	316	D3	ERP	239					
SOL4	FRONT HOIST UP	PU	321	D4	ERP	336					
SOL5	FRONT HOIST DOWN	PU	323	D5	ERP	338					
SOL6	REAR HOIST UP	PU	325	D6	ERP	348					
SOL7	REAR HOIST DOWN	PU	326	D7	ERP	349					
SOL8	FRONT TRAVERSE TOWARD	PU	329	D20	SB	224					
SOL9	FRONT TRAVERSE AWAY	PU	330	D21	SB	225					
SOL10	REAR TRAVERSE TOWARD	PU	332	D22	SB	226					
SOL11	REAR TRAVERSE AWAY	PU	333	D23	SB	227					
SOL12	STEER LEFT	PU	336	D24	SB	344					
SOL13	STEER RIGHT	PU	338	D25	SB	345					
SOL14	DRIVE BRAKE	PU	348	D26	SB	346					
SOL15	DRIVE VENT	PU	349	D27	SB	347					
RESISTOR											
NAME	J-BOX LINE#	LINE#									
R1	ERP	131									
R2	ERP	133									
R3	ERP	136									
R4	ERP	139									
R10	CAB	205									
R11	CAB	206									
R12	CAB	208									

FRONT

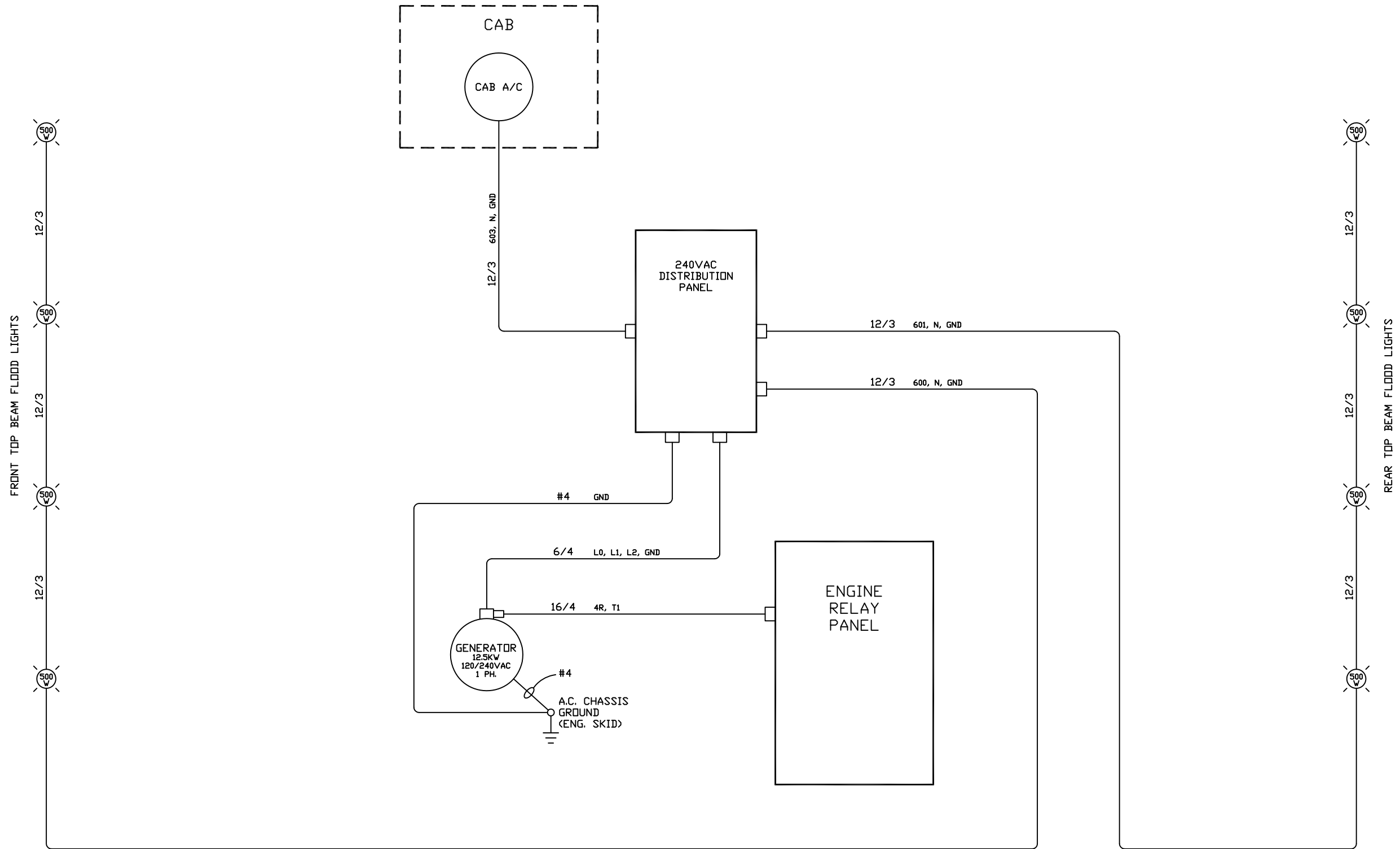
RIGHT

REAR



LEFT

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