

# SERVICE MANUAL

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## SERVICE MANUAL SECTION

**3200, 4200, 4300, 4400, 7300, 7400, 7500, 7600, 8500, 8600 SERIES Built  
After March 10, 2004 — ELECTRICAL CIRCUIT DIAGRAMS**

**Truck Model: 3200  
Start Date: 03/11/2004**

**Truck Model: 4200  
Start Date: 03/11/2004**

**Truck Model: 4300  
Start Date: 03/11/2004**

**Truck Model: 4400  
Start Date: 03/11/2004**

**Truck Model: 7300  
Start Date: 03/11/2004**

**Truck Model: 7400  
Start Date: 03/11/2004**

**Truck Model: 7500  
Start Date: 03/11/2004**

**Truck Model: 7600  
Start Date: 03/11/2004**

**Truck Model: 8500  
Start Date: 03/11/2004**

**Truck Model: 8600  
Start Date: 03/11/2004**

**S082854**

**06/17/2004**

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**3200, 4200, 4300, 4400, 7300, 7400, 7500, 7600, 8500, 8600 SERIES Built After  
March 10, 2004 — ELECTRICAL CIRCUIT DIAGRAMS**

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## INSTRUCTIONS AND CHARTS (CHAPTER 1)

### CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 1

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.		ELECTRICAL CIRCUIT DIAGRAM      CHAPTER 1  INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION					
PREFIX DESIGNATIONS							
PREFIX	LOCATION						
A	Cab-Instrument Panel Module						
B	Cab-Driver Control Module						
C	Cab-Header/Clearance Lights						
D	Cab-Roof/Rear Panel						
E	Cab-Left Door/Doors						
F	Cab-Right Door/Doors						
H	Cab-Sleeper						
J	Cab-Dash(outside)						
K	Engine/Radiator						
L	Transmission						
M	Chassis/Front End (Cab Dash Panel Forward)						
N	Chassis/Center Section (Cab Dash Panel to Cab RR Xmbr)						
P	Chassis/Wheel Base Section						
R	Chassis/Suspension/Rear Axle/Axles						
S	Chassis/AF Section/Stop/Tail/Turn Lights						
CIRCUIT NUMBER AND IDENTIFICATIONS							
CIRCUIT NUMBER	COLOR	DESCRIPTION					
1	LTBL	ALTERNATOR - FIELD					
2	RD	ALTERNATOR - CHARGE					
3	DKBL GY	1708 DATA LINK, SWITCH DATA LINK (+) 1708 DATA LINK, SWITCH DATA LINK (-)					
4		SERIAL/DATA COMMUNICATION J1922					
5	YL GN	DRIVE TRAIN J1939 DATA LINK (+) DRIVE TRAIN J1939 DATA LINK (-)					
6	GY	LOW VOLTAGE ELECTRONIC FEED (< 9 VOLTS)					
7	RD	ALTERNATOR - RESISTANCE					
8							
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					RELEASE NO.	DATE	PART NO.
					P52778H	09AUG00	AE08-52365
						SHEET	01

**Figure 1 Circuit Number Identification and Location Chart**

**CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 2**

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.				ELECTRICAL CIRCUIT DIAGRAM      CHAPTER 1  INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)				
CIRCUIT NUMBER AND IDENTIFICATIONS (CONT.)								
CIRCUIT NUMBER	COLOR	DESCRIPTION						
9	GY	ZERO VOLT REFERENCE (ZVR)						
10	WH	CHASSIS/ENGINE GROUND						
11	WH	CAB/SLEEPER GROUND						
12	LTBL	ACCESSORY FEED						
13	PK BK	IGNITION FEED IGNITION FEED (BODY BUILDER CONNECTOR)						
14	RD	BATTERY FEED						
15	RD	KEY SWITCH FEED						
16								
17	PK	STARTER CONTROL						
18	PK	GLOW PLUG/PRE-HEATER						
19	GY	ENGINE SHUTDOWN						
20	LTGN	REMOTE POWER MODULE						
21	TN	COLD START CONTROLS (ETHER)						
22								
23	TN	ENGINE FAN/SHUTTERS						
24	GY	ENGINE EXHAUST BRAKE						
25	TN	PYROMETER						
26	TN	AMMETER						
27	TN	VOLTMETER						
28	TN	INSTRUMENTS AND GAUGES						
29	TN	ENGINE WATER TEMPERATURE						
30	TN	ENGINE OIL TEMPERATURE						
31	TN	TRANSMISSION OIL TEMPERATURE						
32	TN	AXLE OIL TEMPERATURE						
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME		
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00JXP9	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS		
					RELEASE NO.	DATE	PART NO.	SHEET
					P52778H	09AUG00	AE08-52365	02

**Figure 2 Circuit Number Identification and Location Chart (Cont.)**

**CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 3**

INTERNATIONAL TRUCK AND ENGINE CORPORATION				ELECTRICAL CIRCUIT DIAGRAM				CHAPTER 1			
THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.								INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)			
CIRCUIT NUMBER AND IDENTIFICATIONS (CONT.)											
CIRCUIT NUMBER	COLOR	DESCRIPTION									
33	TN	ENGINE OIL LEVEL									
34	TN	COOLANT LEVEL									
35	TN	ENGINE OIL PRESSURE									
36	TN	FUEL LEVEL									
37	TN	FUEL PUMP									
38											
39	GY	AIR DRYER HEATER									
40	GY	LOW AIR PRESSURE WARNING									
41	TN	AIR TEMPERATURE									
42	GY	FRONT AXLE ENGAGED									
43	GY	POWER DIVIDER LOCK (PDL) WARNING									
44	GY	PARK BRAKE WARNING									
45	LTGN	ANTI - THEFT WARNING									
46	GY	POWER TAKE - OFF WARNING									
47	GY	SPEEDOMETER									
48	GY	TACHOMETER									
49	GY	DIFFERENTIAL LOCK WARNING									
50	YL	LIGHT SWITCH FEED									
51	YL	DIMMER SWITCH FEED									
52	YL	HEADLIGHT HI - BEAM									
53	YL	HEADLIGHT LO - BEAM									
54	BN	PARKING/MARKER LIGHTS									
55	OR	TURN SIGNAL - FEED									
56	OR	TURN SIGNAL LIGHTS - LEFT									
	YL	TURN SIGNAL LIGHTS - LEFT (BODY BUILDER CONNECTION)									
57	OR	TURN SIGNAL LIGHTS - RIGHT									
	LT GN	TURN SIGNAL LIGHTS - RIGHT (BODY BUILDER CONNECTION)									
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME					
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS					
					RELEASE NO.	DATE	PART NO.		SHEET		
					P52778H	15 MAY 00	AE08-52365		03		

**Figure 3 Circuit Number Identification and Location Chart (Cont.)**

**CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 4**

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.				ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1 INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)			
CIRCUIT NUMBER AND IDENTIFICATIONS (CONT.)							
CIRCUIT NUMBER	COLOR	DESCRIPTION					
58	BN	CLEARANCE/IDENTIFICATION LIGHTS					
59	GY	SOLENOID					
60	OR	HAZARD LIGHTS					
61	GY	AIR SUSPENSION					
62	DKBL	PANEL LIGHTS					
63	DKBL	COURTESY/DOME LIGHTS					
64	YL	FOG/DRIVING LIGHTS					
65	OR	CAB REAR FLOOD LIGHT					
66	YL	DAYTIME RUNNING LIGHTS					
67							
68	BN	TAIL LIGHTS					
69	BN	LICENSE PLATE LIGHT					
70	OR RD	STOP LIGHTS STOP LIGHTS (BODY BUILDER CONNECTION)					
71	OR LTBL	BACK - UP LIGHTS BACK - UP LIGHTS (BODY BUILDER CONNECTION)					
72	OR	TRAILER AUXILIARY FEED - BATTERY					
73	LTGN	PWM					
74	LTGN	HEATER RECIRC MOTOR					
75	LTGN	HEATER BLOWER MOTOR					
76	LTGN	AUXILIARY FAN					
77	LTGN	AIR CONDITIONER					
78	LTGN	MIRRORS - HEATED; MOTORIZED					
79	GY	SEAT BELTS					
80	BK	SLEEPER BOX RELAY - FEED					
81	LTGN	POWER DOOR LOCKS					
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					RELEASE NO.	DATE	PART NO.
					P52778H	15MAY00	AE08-52365
							SHEET 04

**Figure 4 Circuit Number Identification and Location Chart (Cont.)**

**CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 5**

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 1

THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT  
 TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE  
 INTERNATIONAL TRUCK AND ENGINE CORPORATION.

INTERNATIONAL CIRCUIT NUMBER  
 IDENTIFICATION AND LOCATION (CONT.)

CIRCUIT NUMBER AND IDENTIFICATIONS (CONT.)

CIRCUIT NUMBER	COLOR	DESCRIPTION
82	GY	WINDSHIELD WIPER
83	LTGN	POWER WINDOWS
84	LTGN	CIGAR LIGHTER
85	GY	HORN
86	LTGN	RADIO - ENTERTAINMENT/CLOCK
87	GY	WINDSHIELD WASHER
88	LTGN	CLOCK/HOURMETER
89	VT	AIR BAG
90	GY	HYDRAULIC BRAKE PUMP
91	VT	INTERCOMMUNICATIONS
92	TN	TRANSMISSION CONTROLS - ELECTRONIC
93	TN	AXLE SHIFT CONTROL
94	GY	ANTILOCK BRAKE SYSTEM
95	TN	EXHAUST EMISSION
96	YL	SNOW PLOW LIGHTS/CRUISE CONTROL
97	VT	ENGINE CONTROLS - ELECTRONIC
98	BK	DATALINK AND DIAGNOSTICS
99	VT	ACCELERATOR POSITION SENSOR (APS)
100	GY	AIR HORN (ELECTRIC SOLENOID ACTUATED)
101	TN	BRAKE APPLICATION AIR
102	YL	FLASH TO PASS
103	LTGN	BODY BUILDER AUX. FEED
104	DKBL	REMOTE START/STOP
105	LTGN	HEATED SEATS

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	DATE	PART NO.	SHEET
JKP	30MAY03	ADDED 103, 104, 105 & COLOR TO 100, 101, 102.	C	58205F	U00DLCK RELEASE NO.	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	15MAY00	AE08-52365	05
					P52778H				

**Figure 5 Circuit Number Identification and Location Chart (Cont.)**

**NAVPAK/ECM I6 ENGINE CONTROLLER CONNECTOR PIN NUMBER IDENTIFICATION,  
P. 6**


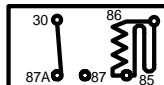


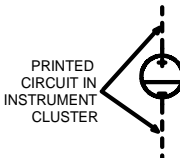
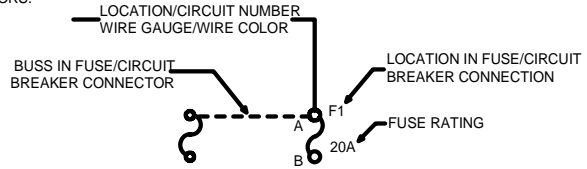
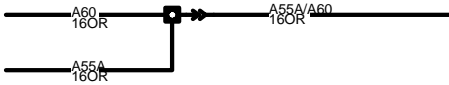
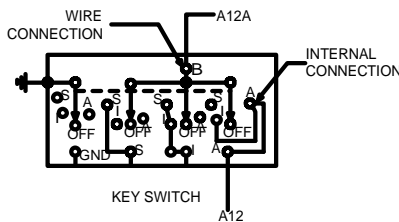
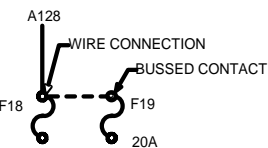
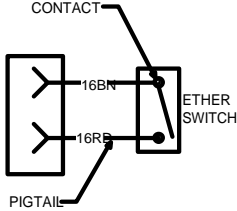
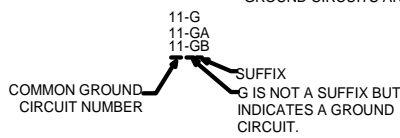
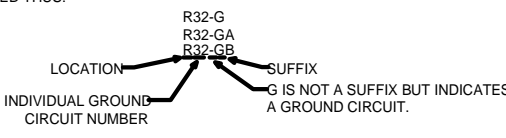
INTERNATIONAL TRUCK AND ENGINE CORPORATION			ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1		
THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.			INTERNATIONAL NAVPAK/ECM I6 ENGINE CONTROLLER CONNECTOR PIN NUMBER IDENTIFICATION		
ECM PIN #	TERM	DESCRIPTION	ECM PIN #	TERM	DESCRIPTION
12	AAT	AMBIENT AIR TEMP. SENSOR	27	IVS	IDLE VALIDATION SWITCH
33	ACD	A/C DEMAND	54	OWL	OIL/WATER WARNING LIGHT
8	APS	ACCELERATOR POS. SENSOR	25	PWR RLY	CEC MAIN POWER RELAY SIGNAL
16	ATA(+)	J1708 DATALINK (+)	31	RAS	RESUME/ACCELERATE
17	ATA(-)	J1708 DATALINK (-)	37	RPRF	PRESET SPEED
29	BAP	BAROMETRIC AIR PRESS. SENSOR	30	RPS	REMOTE ACCELERATOR POS. SENS. SIG.
43	BN01	BRAKE STATUS #1	6	RPS_RTN	REMOTE ACCELERATOR POS. SENS RTN.
44	BN02	BRAKE STATUS #2	36	RVAR	VARIABLE SPEED SWITCH
18	CAN SHLD	DRIVETRAIN J1939 DATALINK SHLD	32	SCS	SET/COAST
19	CAN(+)	DRIVETRAIN J1939 DATALINK (+)	45	SIL	SERVICE INTERVAL LIGHT
20	CAN(-)	DRIVETRAIN J1939 DATALINK (-)	34	STI	SELF TEST INPUT
15	CBE_SEL1	RETARDER/EXHAUST BRAKE REQUEST	48	SUL	SHIFT UP LIGHT
10	CLS	COOLANT LEVEL SENSOR	59	TACA	TACHOMETER A
35	COD	CRUISE ON/OFF	60	TACB	TACHOMETER B
21	DC (+)	POWER	38	TCSS	TORQUE CURVE SELECTION INPUT
22	DC (+)	POWER	28	TSA	TWO SPEED AXLE
1	DC (-)	GROUND	3	VBREF(5V)	ACCELERATOR SENSOR SUPPLY
2	DC (-)	GROUND	11	VBREF GND	ACCELERATOR SENSOR GROUND
26	DDS	DRIVELINE DISENGAUGED INPUT	5	VCREP(5V)	REMOTE ACCELERATOR SENS. SUPPLY
42	DPS	GROUND	7	VCREP GND	REMOTE ACCELERATOR SENSOR GND
46	ECl	ENGINE CRANK INHIBIT	24	VIGN	IGNITION FEED
56	EDL	TRANSMISSION KICKDOWN	47	VRE	RETARDER/EXHAUST BRAKE ENABLE
53	GPL	GLOW PLUG LIGHT	39	VSS(+)	VEHICLE SPEED SENSOR (+)
4	HGE	HYD. PRESS GOVERNOR ENABLE	40	VSS(-)	VEHICLE SPEED SENSOR (-)
49	HMI	HYDRAULIC PRESS GOVERNOR IND. LT	58	VSSCALA	SPEEDOMETER SIGNAL A
13	HPS	HYDRAULIC PRESSURE SENSOR	57	VSSCALB	SPEEDOMETER SIGNAL B
41	HSO (+)	POWER	55	WARN	ENGINE WARNING LIGHT
23	HSO (-)	GROUND			

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
CNA	12SEP03	ADDED PIN # CHART.	C	58774T	LJCJXP9	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS
					RELEASE NO.	DATE
					P52778H	09AUG00
						PART NO.
						AE08-52365
						SHEET
						06

**Figure 6 NAVPAK/ECM I6 Engine Controller Connector Pin Number Identification**

**CIRCUIT DIAGRAM INSTRUCTIONS, P. 7**

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.	ELECTRICAL CIRCUIT DIAGRAM      CHAPTER 1  CIRCUIT DIAGRAM INSTRUCTIONS																																																								
<p>A - SWITCH AND RELAY POSITIONS AS SHOWN ON CIRCUIT DIAGRAMS INDICATE NORMAL POSITION WITH IGNITION OFF UNLESS OTHERWISE NOTED.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">                   SWITCH:                  MANUAL/MECHANICAL             </div> <div style="text-align: center;">                   RELAY - SUPPRESSED             </div> <div style="text-align: center;">                   SWITCH INDICATES CASE MAGNETIC GROUND SUPPRESSED             </div> </div>	<p>B - MULTIPLE CONNECTIONS ARE DISPLAYED ON SCHEMATIC AS SHOWN. REFER TO CONNECTOR COMPOSITE WITH APPLICABLE NUMBER FOR MORE COMPLETE INFORMATION.</p> <div style="text-align: center;">                   SINGLE IN-LINE CONNECTORS DISPLAYED AS SHOWN WITH OR WITHOUT CONNECTOR NUMBER.             </div>																																																								
<p>C - PHANTOM LINES INDICATE PRINTED CIRCUITS OR BUSSED CIRCUITS. THESE CIRCUITS EXIST IN THE INSTRUMENT CLUSTERS AND FUSE/CIRCUIT BREAKER CONNECTORS.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">                   PRINTED CIRCUIT IN INSTRUMENT CLUSTER                  VOLTMETER             </div> <div style="text-align: center;">                   LOCATION/CIRCUIT NUMBER                  WIRE GAUGE/WIRE COLOR                  BUSS IN FUSE/CIRCUIT BREAKER CONNECTOR                  LOCATION IN FUSE/CIRCUIT BREAKER CONNECTION                  FUSE RATING                  20A             </div> </div>																																																									
<p>D - MULTIPLE CIRCUIT NUMBERS ON A LINE INDICATE ONE WIRE DISTRIBUTING CURRENT TO TWO CIRCUITS.</p> <div style="text-align: center;">                   A60 18OR, A55A/A60 18OR, A55A 18OR             </div>																																																									
<p>E - SWITCHES, RELAYS AND COMPONENTS INDICATE EXTERNAL WIRE CONNECTIONS AND/OR INTERNAL CONNECTIONS OR CONTACTS.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">                   KEY SWITCH                  WIRE CONNECTION, INTERNAL CONNECTION, A12A, A12             </div> <div style="text-align: center;">                   BUSSED CONTACT                  WIRE CONNECTION, CONTACT, F18, F19, 20A             </div> <div style="text-align: center;">                   ETHER SWITCH                  CONTACT, PIGTAIL, 16B, 16R             </div> </div>																																																									
<p>F - CIRCUIT "11" DENOTES ANY COMMON GROUND, (MORE THAN ONE CIRCUIT). ANY INDIVIDUAL GROUND CIRCUIT IS IDENTIFIED WITH THAT PARTICULAR CIRCUIT NUMBER. (E.G CIRCUIT 97 CRUISE CONTROL, IS IDENTIFIED PER EXAMPLE).</p> <p>NOTE: FOR CIRCUIT DESCRIPTION OTHER THAN GROUNDS, NEITHER THE LETTER "G" NOR THE COLOR WHITE SHALL BE USED.</p> <p style="text-align: center;">GROUND CIRCUITS ARE DESCRIBED THIS:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">                   COMMON GROUND CIRCUIT NUMBER                  SUFFIX G IS NOT A SUFFIX BUT INDICATES A GROUND CIRCUIT.             </div> <div style="text-align: center;">                   INDIVIDUAL GROUND CIRCUIT NUMBER                  SUFFIX G IS NOT A SUFFIX BUT INDICATES A GROUND CIRCUIT.             </div> </div>																																																									
<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <tr> <th>CHK</th> <th>DATE</th> <th>CHANGE</th> <th>REV</th> <th>REFERENCE</th> <th>DRAWN</th> <th>NAME</th> </tr> <tr> <td>PEC</td> <td>16JAN01</td> <td>PRODUCTION RELEASE.</td> <td>A</td> <td>P54304U</td> <td>U00DLCK</td> <td>42/43/44/85/8600 &amp; 73/74/7500 CIRC DIAGRAMS</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>RELEASE NO.</td> <td>DATE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>P52778H</td> <td>15MAY00</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>PART NO.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>AE08-52365</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>SHEET</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>07</td> </tr> </table>		CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS						RELEASE NO.	DATE						P52778H	15MAY00							PART NO.							AE08-52365							SHEET							07
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME																																																			
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS																																																			
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						PART NO.																																																			
						AE08-52365																																																			
						SHEET																																																			
						07																																																			

**Figure 7 Circuit Diagram Instructions**

**CIRCUIT DIAGRAM INSTRUCTIONS, P. 8**

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.		ELECTRICAL CIRCUIT DIAGRAM      CHAPTER 1  CIRCUIT DIAGRAM INSTRUCTIONS					
<p>G - ABBREVIATIONS: COLOR, NOUN AND ENGINE</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <p style="text-align: center;">COLOR ABBREVIATION</p> <p>AQ - AQUA BK - BLACK BL - BLUE BN - BROWN DK GN - DARK GREEN GD - GOLD GY - GRAY GN - GREEN LT BL - LIGHT BLUE</p> </td> <td style="width: 33%; vertical-align: top;"> <p style="text-align: center;">NOUN ABBREVIATION</p> <p>LT GN - LIGHT GREEN OR - ORANGE PK - PINK PL - PURPLE RD - RED SIL - SILVER TN - TAN VT - VIOLET WH - WHITE YL - YELLOW</p> </td> <td style="width: 33%; vertical-align: top;"> <p style="text-align: center;">NOUN ABBREVIATION</p> <p>A — ACCESSORY ACC — AIR CONDITIONER AUX - AUXILIARY AWG - AMERICAN WIRE GAUGE B — BATTERY BAT — CONNECTION OR CONNECTOR CONN- DAYTIME RUNNING LIGHTS DRL - ENGINE ENG - FORWARD FWD - GAUGE</p> </td> <td style="width: 33%; vertical-align: top;"> <p style="text-align: center;">NOUN ABBREVIATION</p> <p>G — GROUND GND — IGNITION I — INDICATOR IND - LEFT L - LIGHT LT - WITHOUT W/O - OPTIONAL OPT - RIGHT R - START OR SENDER S - THERMOSTAT THERMO - WITH</p> </td> </tr> </table> <p style="text-align: center;">ENGINE ABBREVIATION</p> <p>ISM - MFG (CUMMINS) 10.8 LITER ELECTRONIC ENGINE CONTROL</p> <p>N14E PLUS - MFG (CUMMINS) 14 LITER ELECTRONIC ENGINE CONTROL</p> <p>C-10,C-12 - MFG (CATERPILLAR) 10.3 LITER ELECTRONIC ENGINE CONTROL</p> <p>V8-AVNT - MFG (INTERNATIONAL) V8 6.0 LITER ELECTRONIC ENGINE CONTROL</p> <p>I6-HEUI - MFG (INTERNATIONAL) NGD I6 DT466 &amp; DT/HT530 ELECTRONIC ENGINE CONTROL</p>				<p style="text-align: center;">COLOR ABBREVIATION</p> <p>AQ - AQUA BK - BLACK BL - BLUE BN - BROWN DK GN - DARK GREEN GD - GOLD GY - GRAY GN - GREEN LT BL - LIGHT BLUE</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>LT GN - LIGHT GREEN OR - ORANGE PK - PINK PL - PURPLE RD - RED SIL - SILVER TN - TAN VT - VIOLET WH - WHITE YL - YELLOW</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>A — ACCESSORY ACC — AIR CONDITIONER AUX - AUXILIARY AWG - AMERICAN WIRE GAUGE B — BATTERY BAT — CONNECTION OR CONNECTOR CONN- DAYTIME RUNNING LIGHTS DRL - ENGINE ENG - FORWARD FWD - GAUGE</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>G — GROUND GND — IGNITION I — INDICATOR IND - LEFT L - LIGHT LT - WITHOUT W/O - OPTIONAL OPT - RIGHT R - START OR SENDER S - THERMOSTAT THERMO - WITH</p>
<p style="text-align: center;">COLOR ABBREVIATION</p> <p>AQ - AQUA BK - BLACK BL - BLUE BN - BROWN DK GN - DARK GREEN GD - GOLD GY - GRAY GN - GREEN LT BL - LIGHT BLUE</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>LT GN - LIGHT GREEN OR - ORANGE PK - PINK PL - PURPLE RD - RED SIL - SILVER TN - TAN VT - VIOLET WH - WHITE YL - YELLOW</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>A — ACCESSORY ACC — AIR CONDITIONER AUX - AUXILIARY AWG - AMERICAN WIRE GAUGE B — BATTERY BAT — CONNECTION OR CONNECTOR CONN- DAYTIME RUNNING LIGHTS DRL - ENGINE ENG - FORWARD FWD - GAUGE</p>	<p style="text-align: center;">NOUN ABBREVIATION</p> <p>G — GROUND GND — IGNITION I — INDICATOR IND - LEFT L - LIGHT LT - WITHOUT W/O - OPTIONAL OPT - RIGHT R - START OR SENDER S - THERMOSTAT THERMO - WITH</p>				
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
PEC	16JAN01	PRODUCTION RELEASE.	A	P54304U	U00JXP9	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					P52778H	DATE	PART NO.
						10AUG00	AE08-52365
							SHEET
							08

**Figure 8 Circuit Diagram Instructions (Cont.)**



**SCHEMATIC SYMBOL CHART, P. 9**

INTERNATIONAL TRUCK AND ENGINE CORPORATION				ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1			
THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.				SCHEMATIC SYMBOL CHART			
SYMBOL		DESCRIPTION		DESCRIPTION		SYMBOL	
		MALE/FEMALE IN-LINE CONNECTION		HORN			
		FEMALE TERMINAL		SPEAKER - SOUND SYSTEM			
		MALE TERMINAL		MAGNETIC SWITCH			
		GROUND		LIGHT - SINGLE FILAMENT			
		FUSE		LIGHT - DOUBLE FILAMENT			
		LIGHT EMITTING DIODE		SENDER - OIL, WATER, FUEL, TEMPERATURE			
		RESISTOR					
		SWITCH CONTACT, NORMALLY OPEN					
		SWITCH CONTACT, NORMALLY CLOSED					
		JUNCTION POINT					
		SPLICE					
		SWITCH-PRESSURE					
		SWITCH-MANUAL/MECHANICAL					
		RELAY-SUPPRESSED					
		SOLENOID - GENERAL USAGE					
		MOTOR - ELECTRIC					
		CIGAR LIGHTER					

**Figure 9 Schematic Symbol Chart**

RELAY FUNCTIONS, P. 10

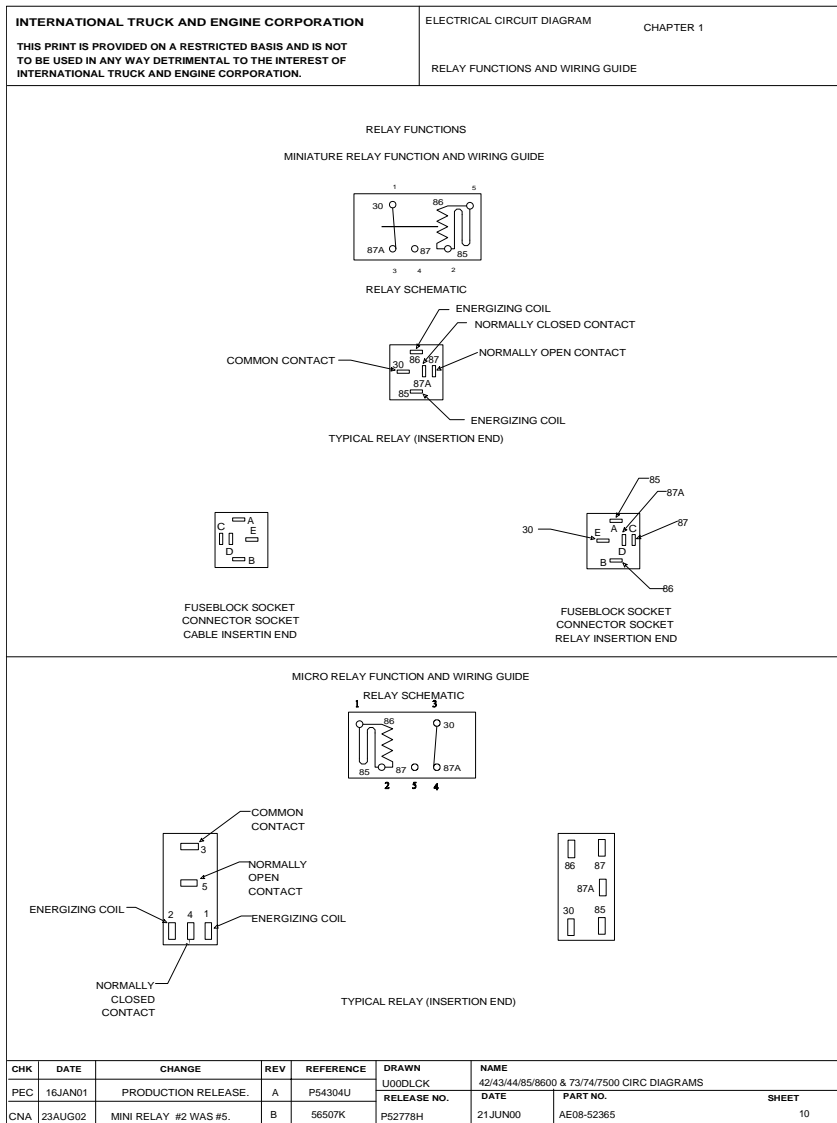


Figure 10 Relay Functions

**LAMP BULB CHART, P. 11**

INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.				ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1  LAMP BULB CHART		
BULB APPLICATION	CANDLEPOWER OR WATTS		BULB TRADE NUMBER			
BACK-UP LIGHTS	32 CANDLEPOWER		GE1156			
CLEARANCE & IDENTIFICATION	3 CANDLEPOWER		GE193			
COURTESY LIGHT	3 CANDLEPOWER		GE168			
DOVE LIGHTS	12 CANDLEPOWER		GE561			
FOG LIGHTS	55 CANDLEPOWER		VH550			
HEAD LIGHTS:						
LOW BEAMS	65 WATTS		GE9007			
HIGH BEAMS	65 WATTS		GE9007			
INSTRUMENT CLUSTER:						
GAUGE BACK LIGHT			082S270538-3			
GAUGE WARNING LED (RED)			082S272109-3			
RANGE INHIBIT LED (YELLOW)			082S272109-4			
COLD AMBIENT PROTECTION LED (YELLOW)			082S272109-4			
FUEL FILTER LED (YELLOW)			082S272109-4			
WARN ENGINE LED (YELLOW)			082S272109-4			
STOP ENGINE LED (RED)			082S272109-3			
BRAKE PRESSURE LED (RED)			082S272109-3			
BRAKE FLUID LED (RED)			082S272109-3			
WAIT TO START LED (YELLOW)			082S272109-4			
CHECK TRANSMISSION LED (YELLOW)			082S272109-4			
TRAILER ABS LED (YELLOW)			082S272109-4			
WASHER FLUID LED (YELLOW)			082S272109-4			
LEFT TURN SIGNAL LED (GREEN)			082S272109-2			
TRACTION CONTROL LED (GREEN)			082S272109-2			
WATER IN FUEL LED (YELLOW)			082S272109-4			
PARK FLUID LED LIGHT (RED)			082S272109-3			
CHECK ELECTRICAL SYSTEMS LED (YELLOW)			082S272109-4			
PARK BRAKE LED (RED)			082S272109-3			
CRUISE CTRL ACTIVE LED (GREEN)			082S272109-2			
ANTILOCK BRAKING SYSTEM LED (YELLOW)			082S272109-4			
RIGHT TURN LED (GREEN)			082S272109-2			
COOLANT LEVEL LED (RED)			082S272109-3			
SEAT BELT LED (RED)			082S272109-3			
HIGH BEAM ICON LED (BLUE)			082S272109-5			
CHECK AIR CONDITIONER LED (YELLOW)			082S272109-4			
RETARD OVER HEAT LED (RED)			082S272109-3			
PTO/THROTTLE LED (RED)			082S272109-3			
MAP LIGHT	3 CANDLEPOWER		1816			
SIDE MARKER			2458			
STOP & TURN/TAIL & LICENSE PLATE	32/3 CANDLEPOWER		1157			
TURN SIGNAL/MARKER (FENDER)			3157			
TURN SIGNAL & MARKER LIGHT			2356			
WORK (TRAILER HOOK-UP) LIGHT			4411			
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
PEC	16JAN01	PRODUCTION RELEASE	A	P54304U	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS
PEC	18JUN01	REVISED DRWG SHEET.	B	P54634F	RELEASE NO.	DATE
					P52778H	20JUN00
						PART NO.
						AE08-52365
						SHEET
						11

**Figure 11 Lamp Bulb Chart**

**INTERNATIONAL V8 AND I6 ECM CONTROLLER CONNECTORS PIN NUMBER IDENTIFICATION, P.12**

INTERNATIONAL TRUSK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUSK AND ENGINE CORPORATION.					ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1 INTERNATIONAL V8 & I6 ECM CONTROLLER CONNECTORS PIN NUMBER IDENTIFICATION.				
CONNECTOR X3 REFERENCE (6020)					CONNECTOR X4 REFERENCE (6021)				
ECM PIN #	TERM	DESCRIPTION	ECM PIN #	TERM	DESCRIPTION	ECM PIN #	TERM	DESCRIPTION	
1	FPM	FUEL PUMP MONITOR	1	KL.87	BATTERY POWER	1	KL.87	BATTERY POWER	
2	FLI	FUEL LEVEL INDICATOR	2	KL.87	BATTERY POWER	2	KL.87	BATTERY POWER	
3	KL.15	IGNITION FEED	3		NOT POPULATED	3		NOT POPULATED	
4	ECL	ENGINE COOLANT LEVEL	4	VBREF	SENSOR REFERENCE VOLTAGE	4	VBREF	SENSOR REFERENCE VOLTAGE	
5	MPR	MAIN POWER RELAY	5		NOT POPULATED	5		NOT POPULATED	
6	KL.31	GROUND	6	LSI_SPARE2	LOW SPEED INPUT 2	6	LSI_SPARE2	LOW SPEED INPUT 2	
7	KL.31	GROUND	7		NOT POPULATED	7		NOT POPULATED	
8	DDS	DRIVELINE DISENGAGE SWITCH	8		NOT POPULATED	8		NOT POPULATED	
9	FPC	FUEL PUMP CONTROL	9	VSS-	VEHICLE SPEED SENSOR-	9	VSS-	VEHICLE SPEED SENSOR-	
10	TCSS	TORQUE CURVE SELECT SWITCH	10	VSS+	VEHICLE SPEED SENSOR+	10	VSS+	VEHICLE SPEED SENSOR+	
11	TACH	TACHOMETER CONTROL	11		NOT POPULATED	11		NOT POPULATED	
12	CAN1+	DRIVETRAIN J1939 DATALINK +	12	IVS	IDLE VALIDATION SWITCH	12	IVS	IDLE VALIDATION SWITCH	
13	CAN1-	DRIVETRAIN J1939 DATALINK -	13		NOT POPULATED	13		NOT POPULATED	
14	RAS	RESUME/ACCELERATE	14	EFAN	ELECTRIC FAN CONTROL	14	EFAN	ELECTRIC FAN CONTROL	
15	CAN1-SHLD	DRIVETRAIN 1939 DATALINK SHLD	15	LSO_SPARE4	LOW SIDE OUTPUT 4	15	LSO_SPARE4	LOW SIDE OUTPUT 4	
16		NOT POPULATED	16		NOT POPULATED	16		NOT POPULATED	
17	VSS_CAL	VEHICLE SPEED SENSOR CALIBRATION	17		NOT POPULATED	17		NOT POPULATED	
18	VRE	VEHICLE RETARDER ENABLE	18	APS	ACCELERATION POSITION SENSOR	18	APS	ACCELERATION POSITION SENSOR	
19	RPRE	REMOTE PRESET PTO ENABLE	19		NOT POPULATED	19		NOT POPULATED	
20	RVAR	REMOTE VARIABLE PTO ENABLE	20	ATA+	J1708 DATALINK +	20	ATA+	J1708 DATALINK +	
21	SCS	SET/COAST	21	ATA-	J1708 DATALINK -	21	ATA-	J1708 DATALINK -	
22	ESHTR	ELECTRONIC SHUTTER RELAY	22		NOT POPULATED	22		NOT POPULATED	
23	ECI	ENGINE CRANK INHIBIT	23	GSC	GENSET SPEED CONTROL	23	GSC	GENSET SPEED CONTROL	
24	BAP	BAROMETRIC AIR PRESSURE	24	KL.31B	SENSOR REFERENCE GROUND	24	KL.31B	SENSOR REFERENCE GROUND	
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME			
CNA	25FEB03	PIN 6 OF CONN X4 INOUT CHANGED TO INPUT	B	58928S	LU00DLCK RELEASE NO. P54304U	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS DATE 16JAN01	PART NO. AE08-52365	SHEET 12	

**Figure 12 International V8 and I6 ECM Controller Connectors Pin Number Identification**

## 12 VOLT POWER DISTRIBUTION CIRCUIT DIAGRAMS (CHAPTER 2)

### ACCESSORY, P. 1

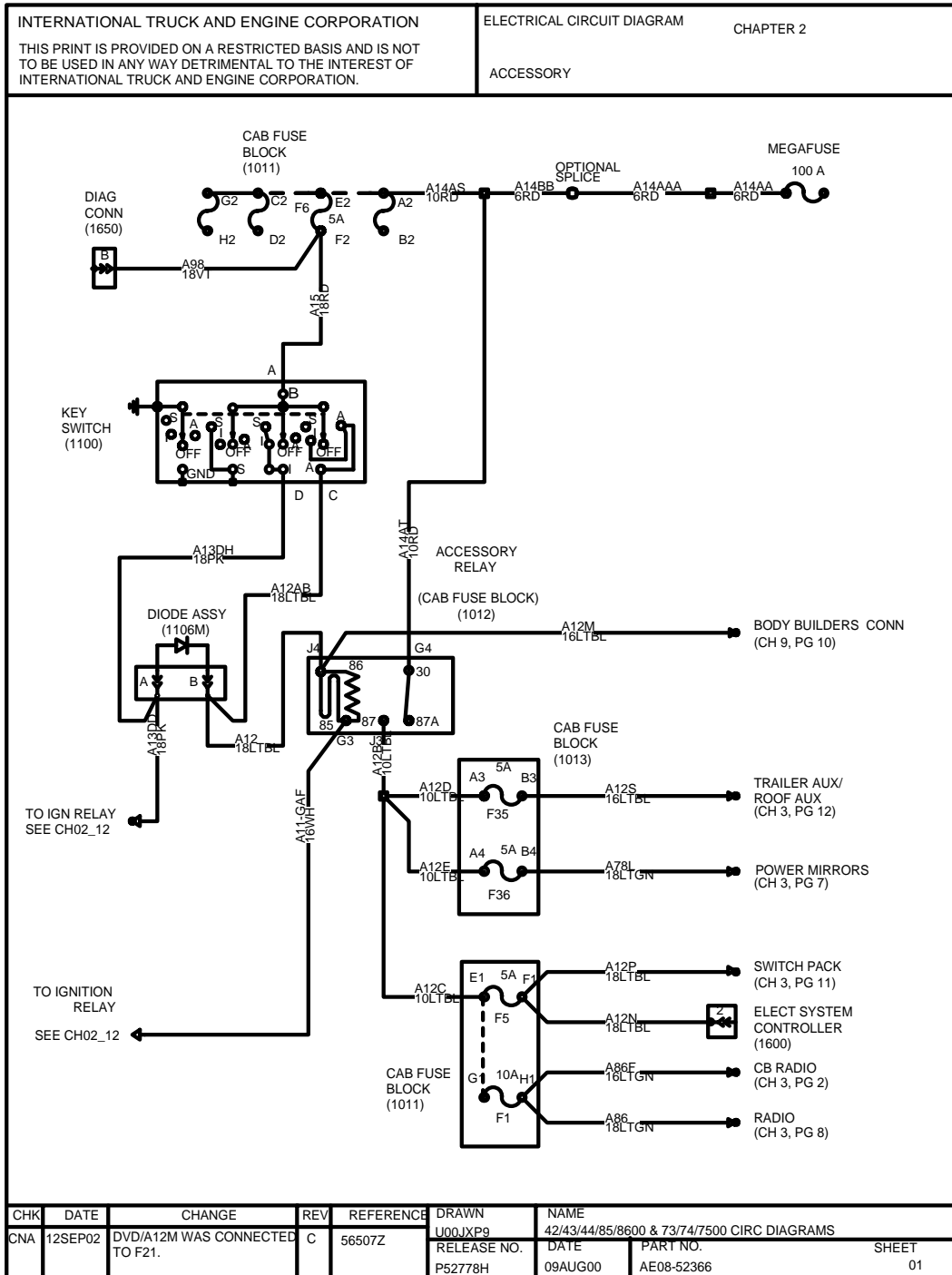


Figure 13 Accessory

BATTERY FEEDS, CAB, P. 2

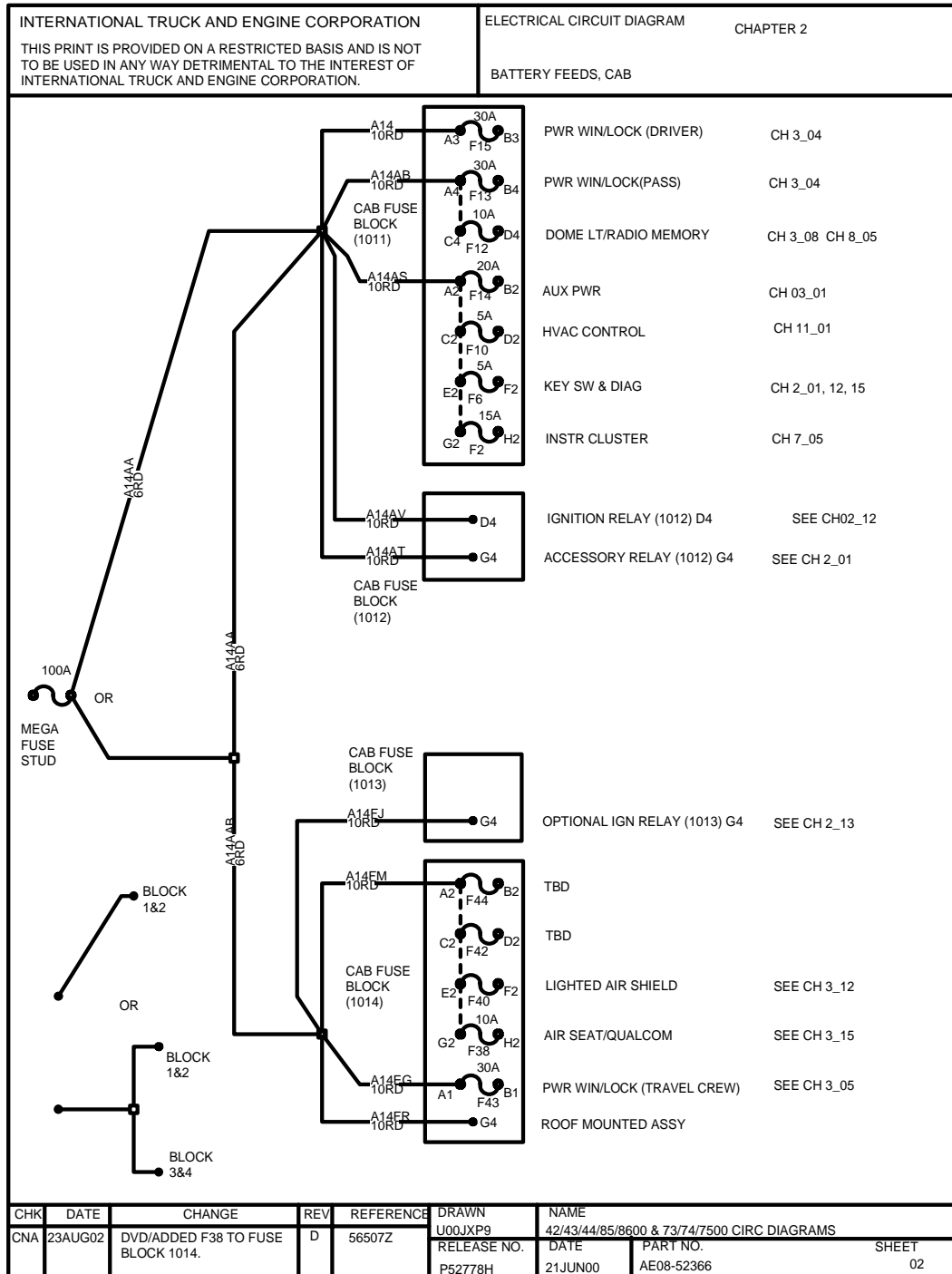


Figure 14 Battery Feeds, Cab

BATTERY, P. 3

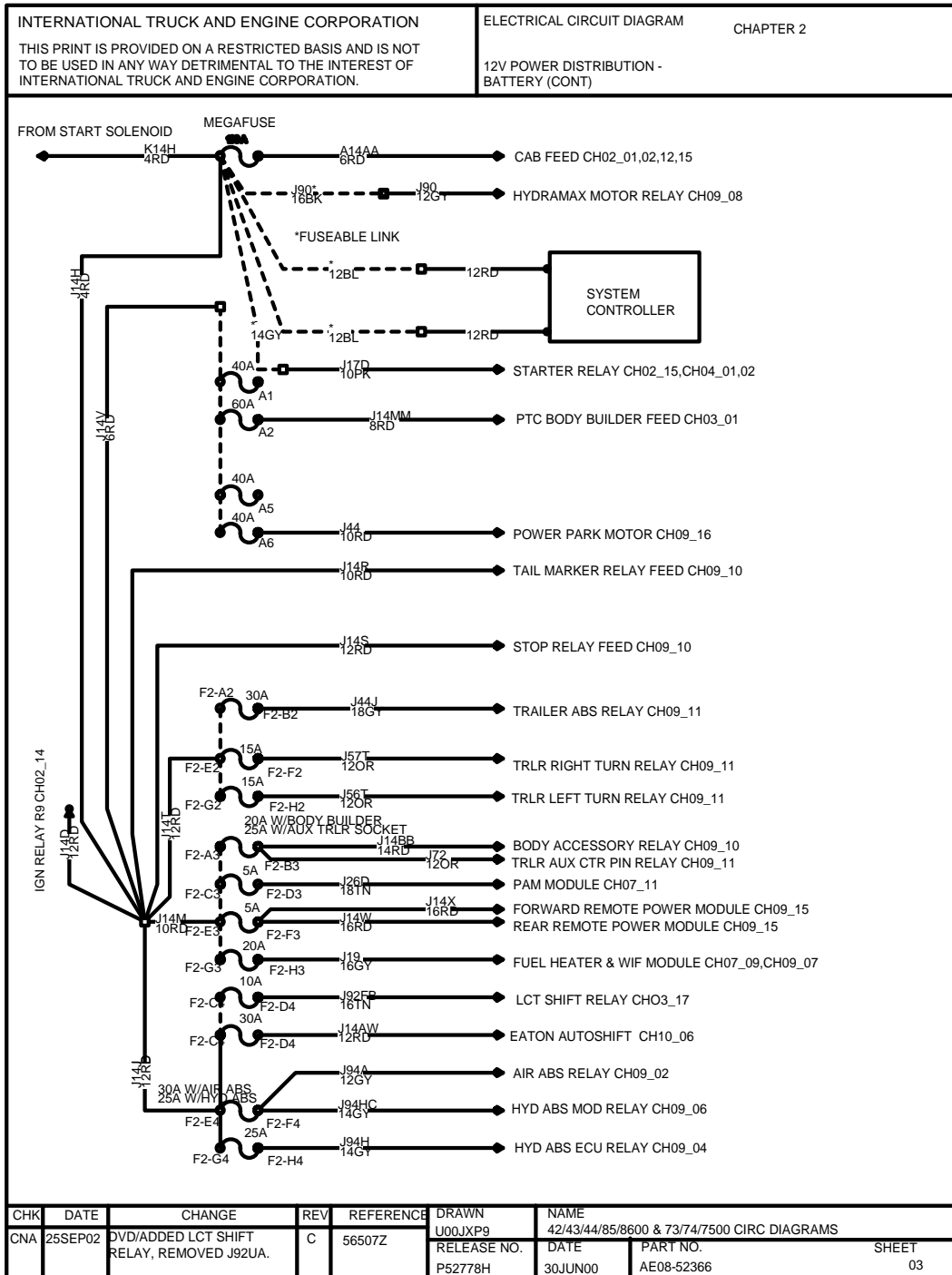


Figure 15 Battery

1708 DATA LINK, P. 4

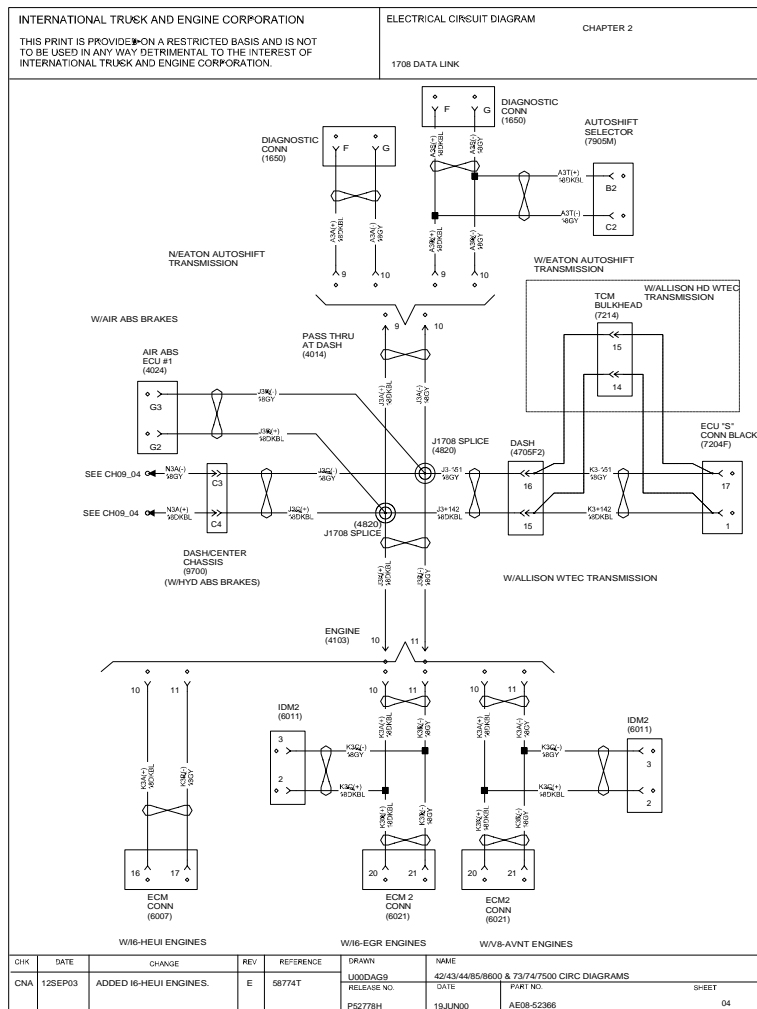


Figure 16 1708 Data Link



SWITCH DATA LINK, P. 5

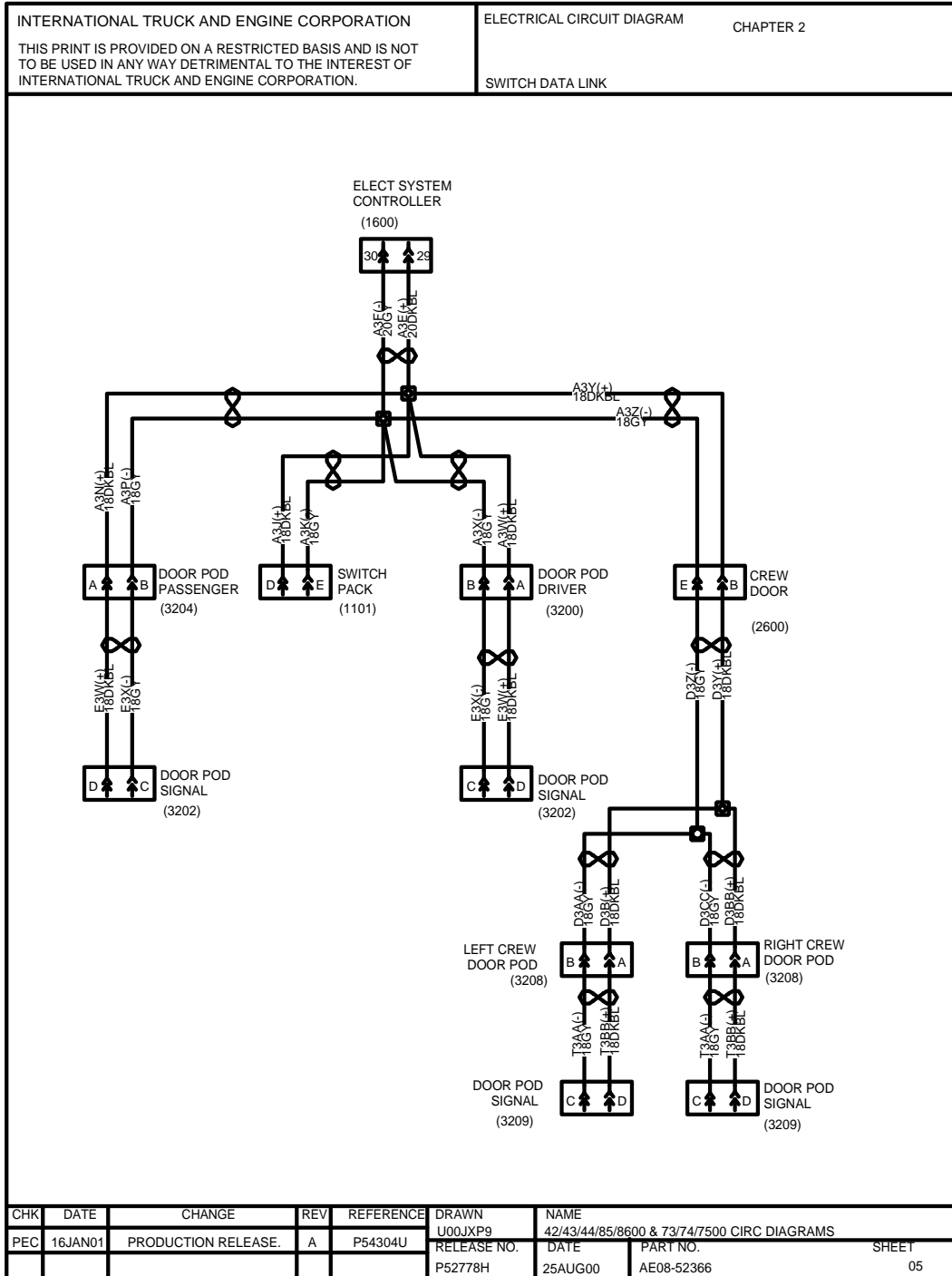


Figure 17 Switch Data Link

DRIVETRAIN 1939 DATA LINK (CAB), P. 6

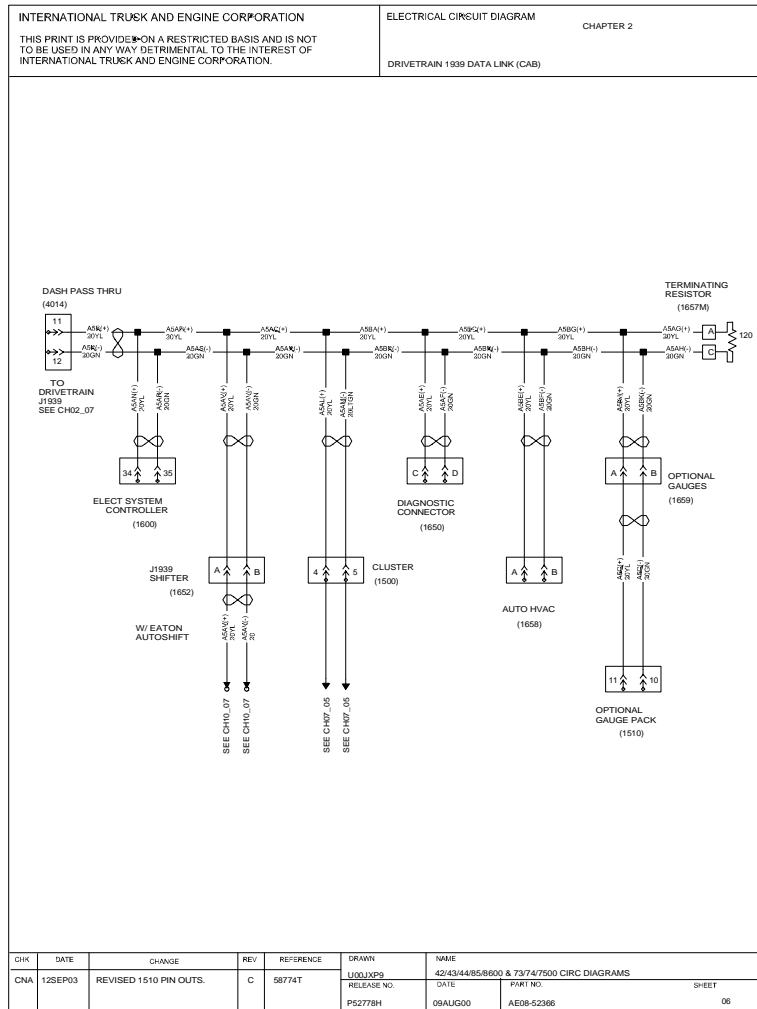


Figure 18 Drivetrain 1939 Data Link (Cab)

DRIVETRAIN 1939 DATA LINK (CHASSIS), P. 7

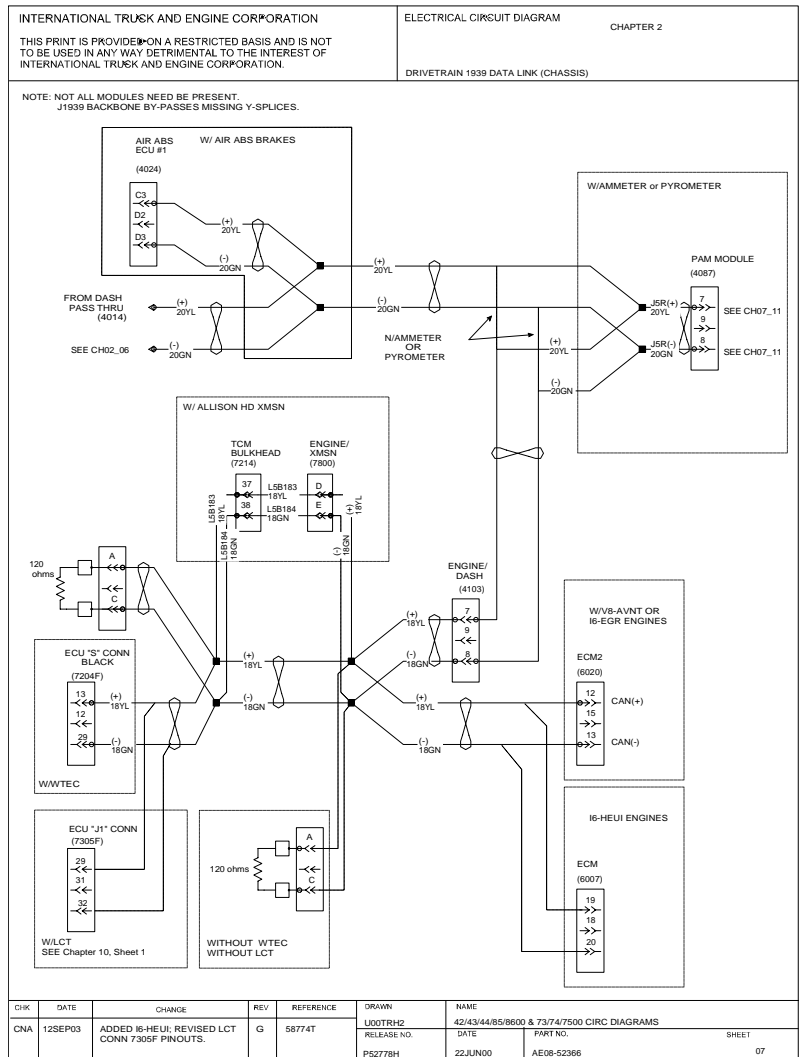


Figure 19 Drivetrain 1939 Data Link (Chassis)

GROUNDS CHASSIS, P. 8

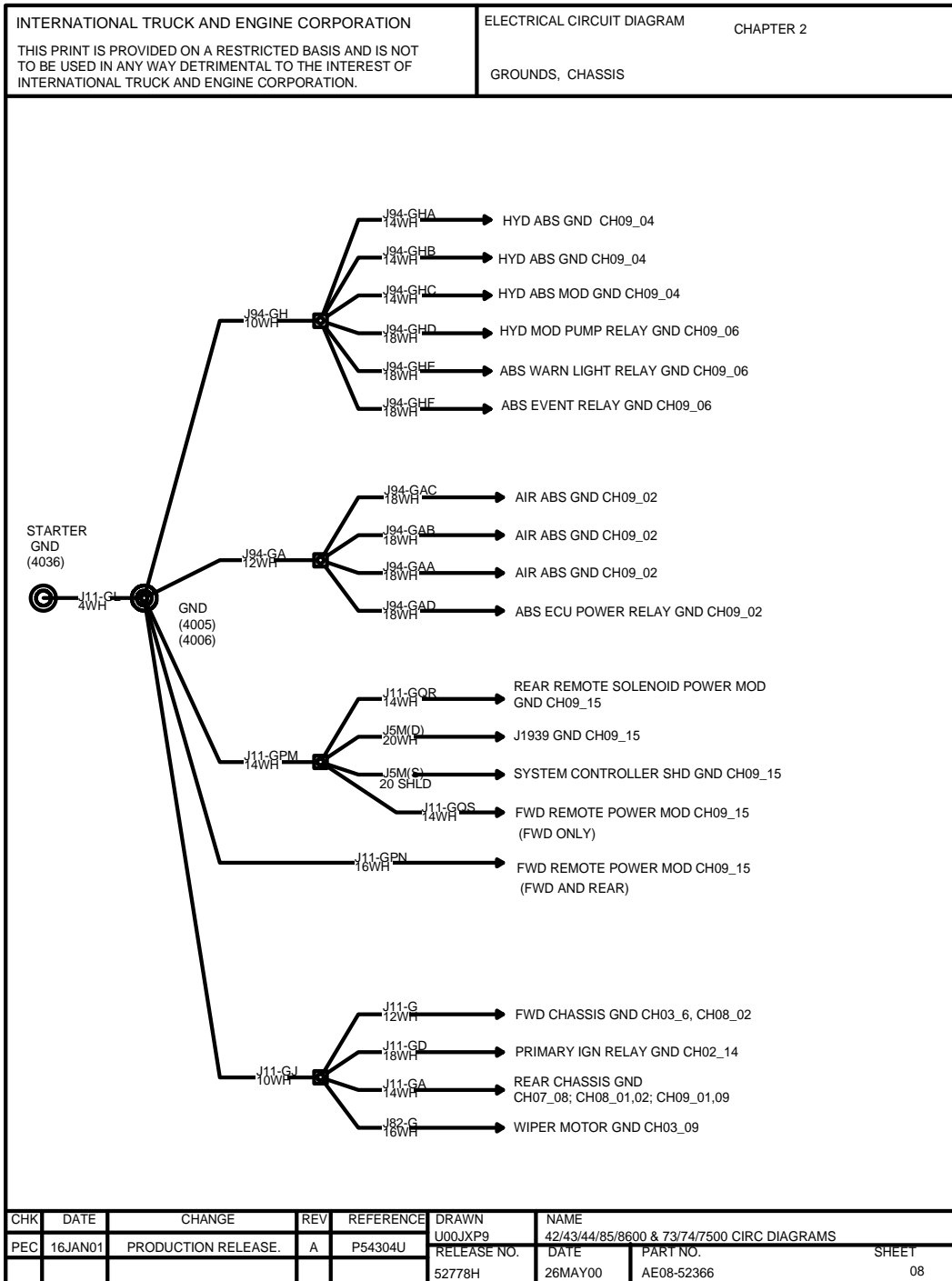
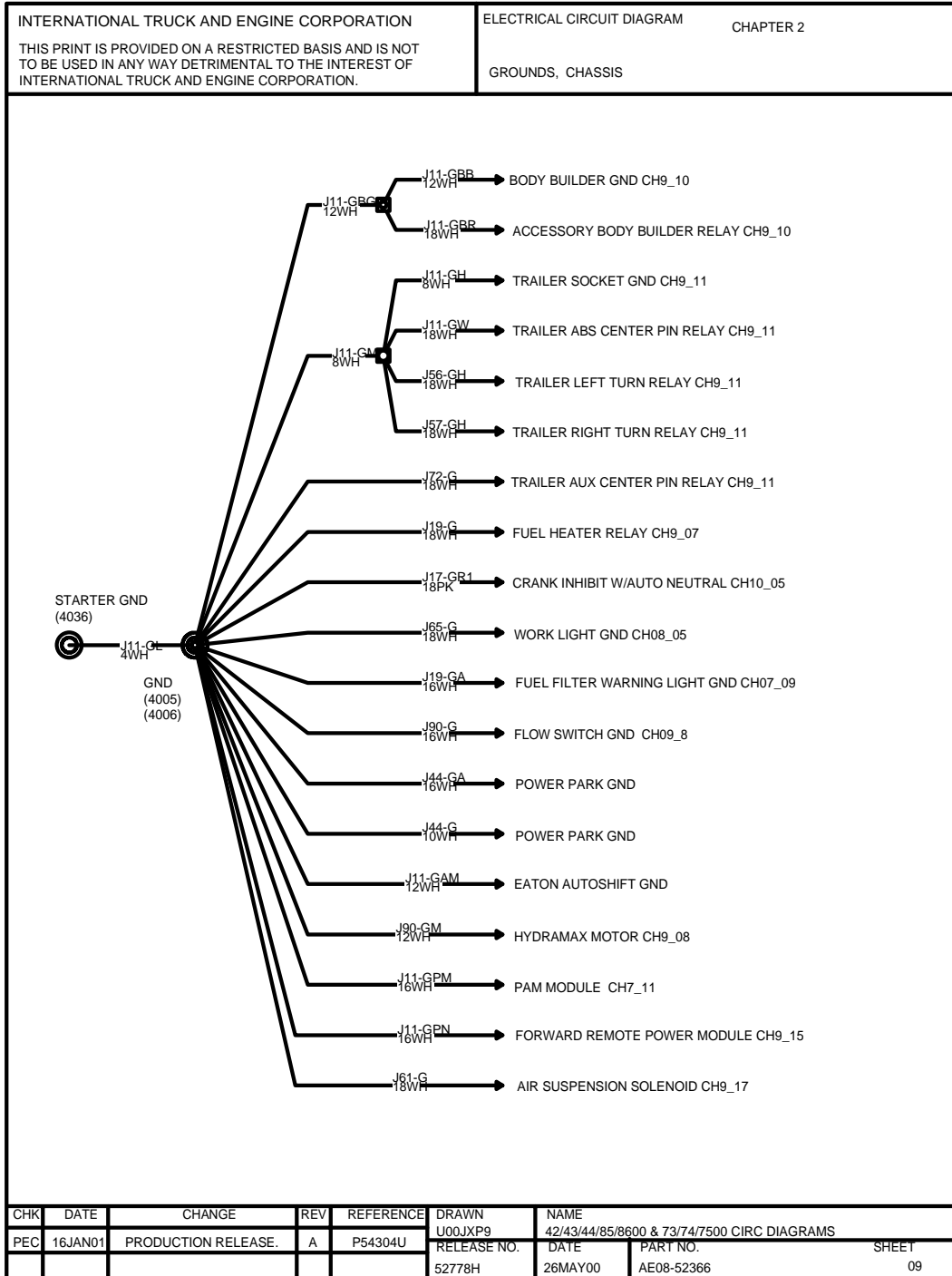


Figure 20 Grounds Chassis

**GROUNDS CHASSIS, P. 9**



**Figure 21 Grounds Chassis (Cont.)**

GROUNDS IP, P. 10

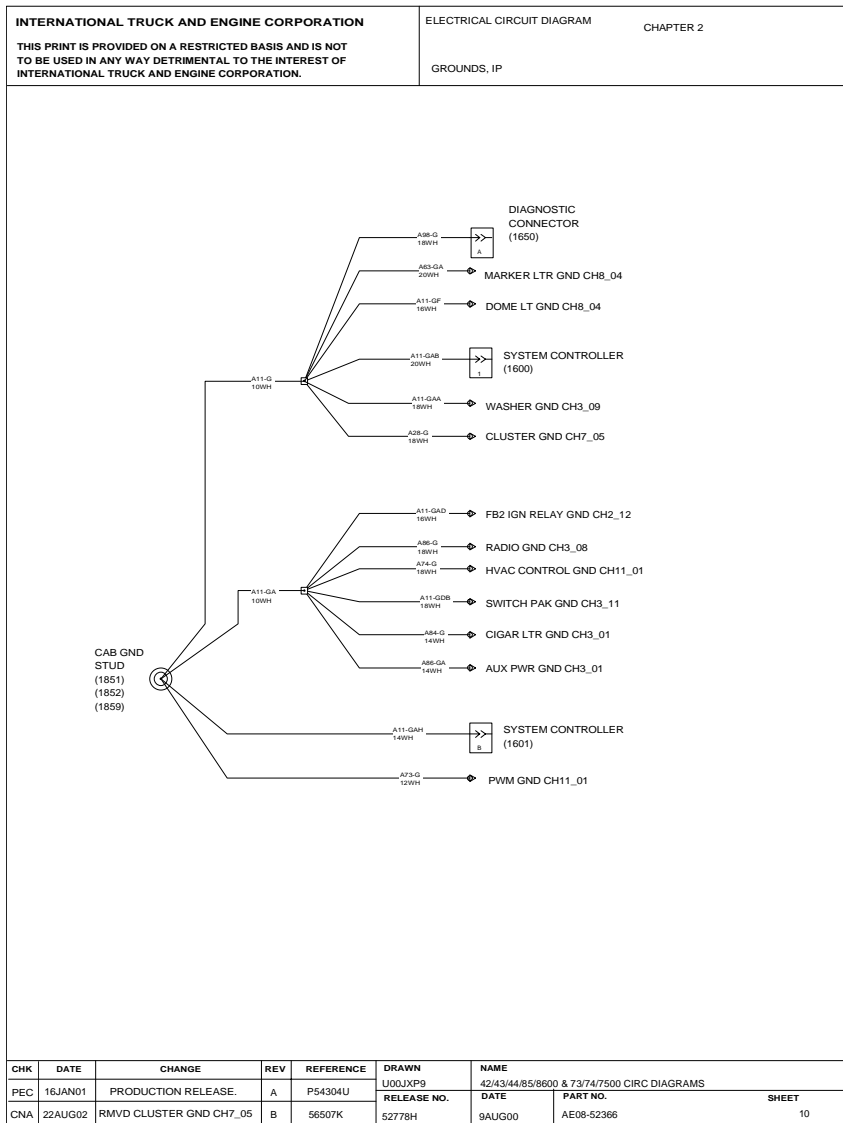


Figure 22 Grounds IP

GROUNDS IP, P. 11

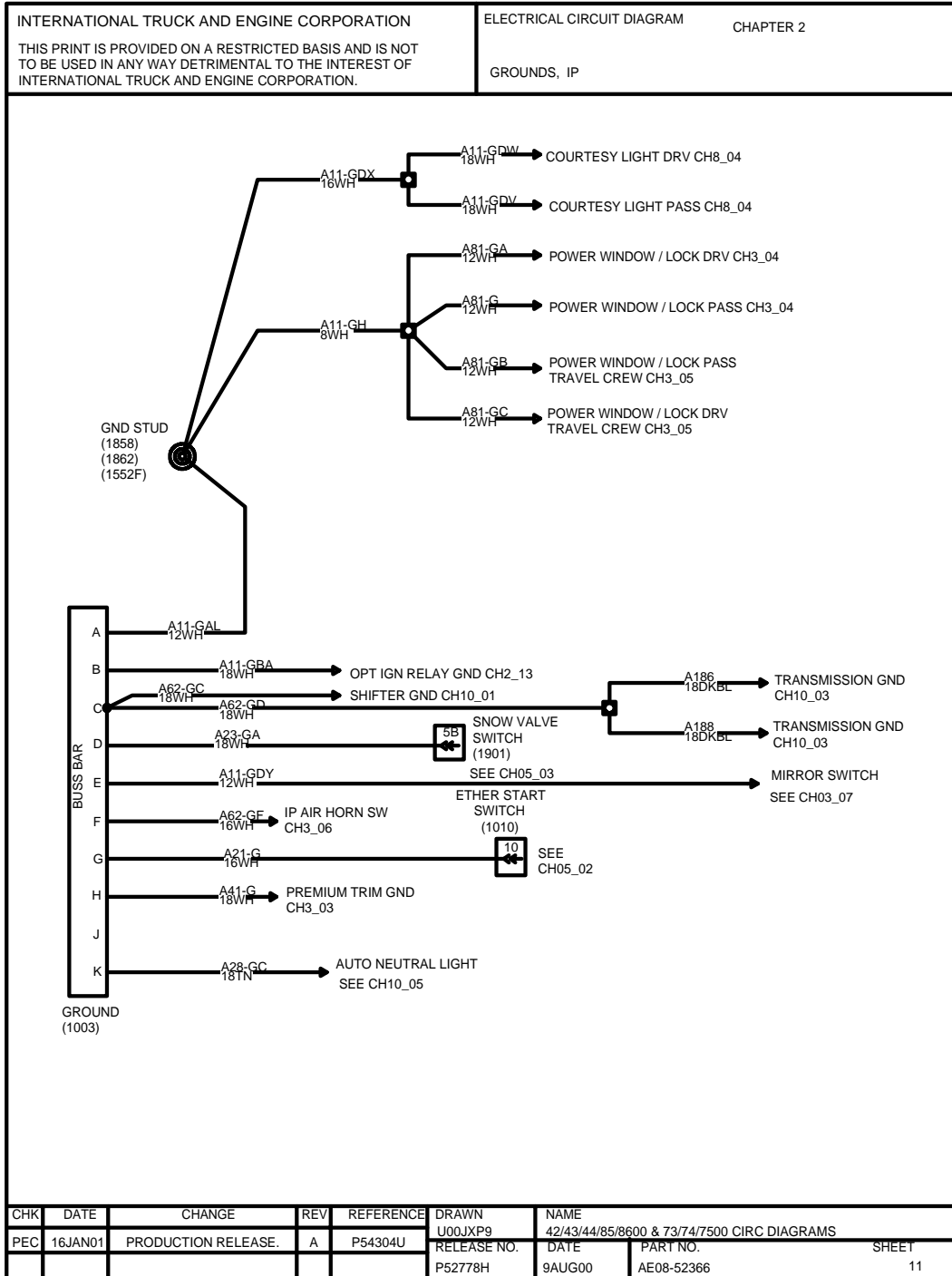


Figure 23 Grounds IP

IGNITION CAB, P. 12

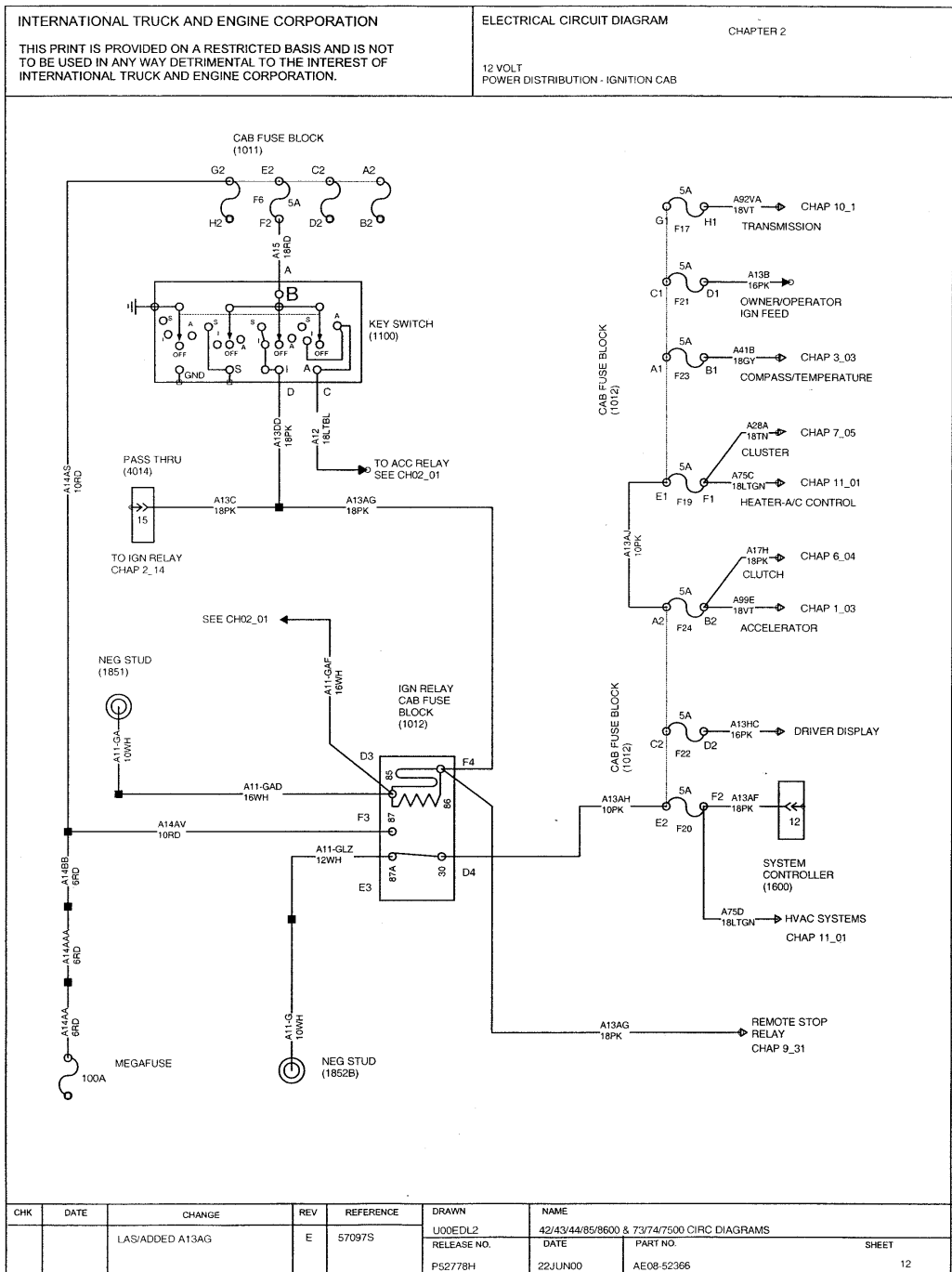


Figure 24 Ignition Cab



IGNITION CAB, P. 13

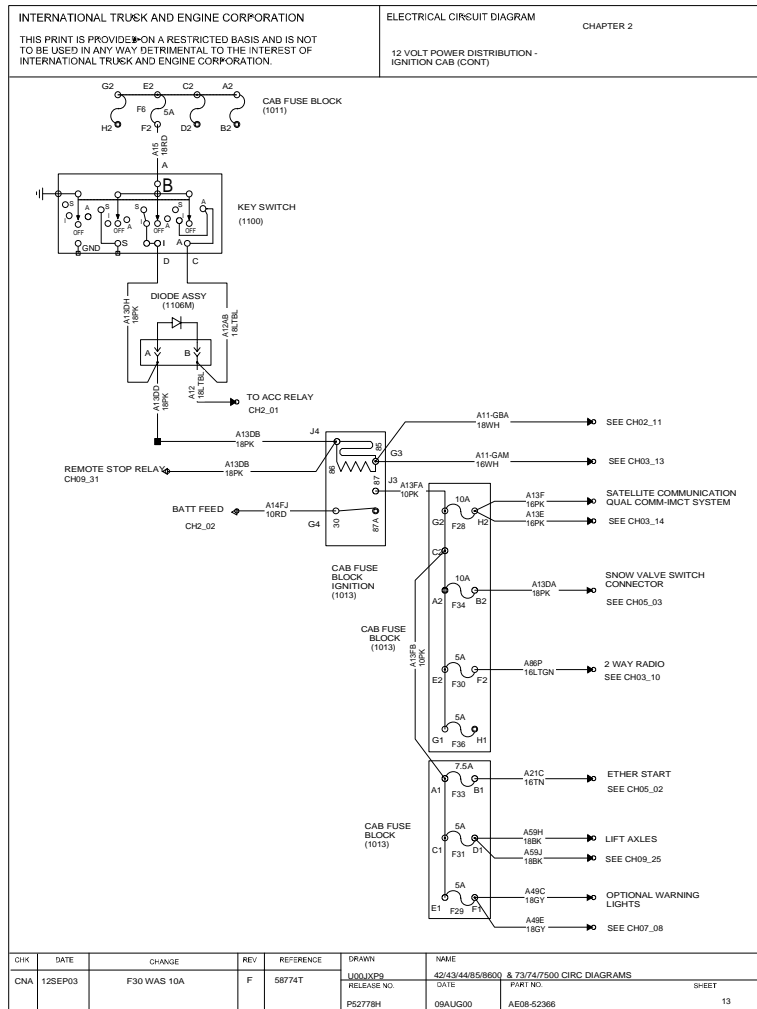


Figure 25 Ignition Cab (Cont.)

IGNITION FEEDS, CHASSIS, P. 14

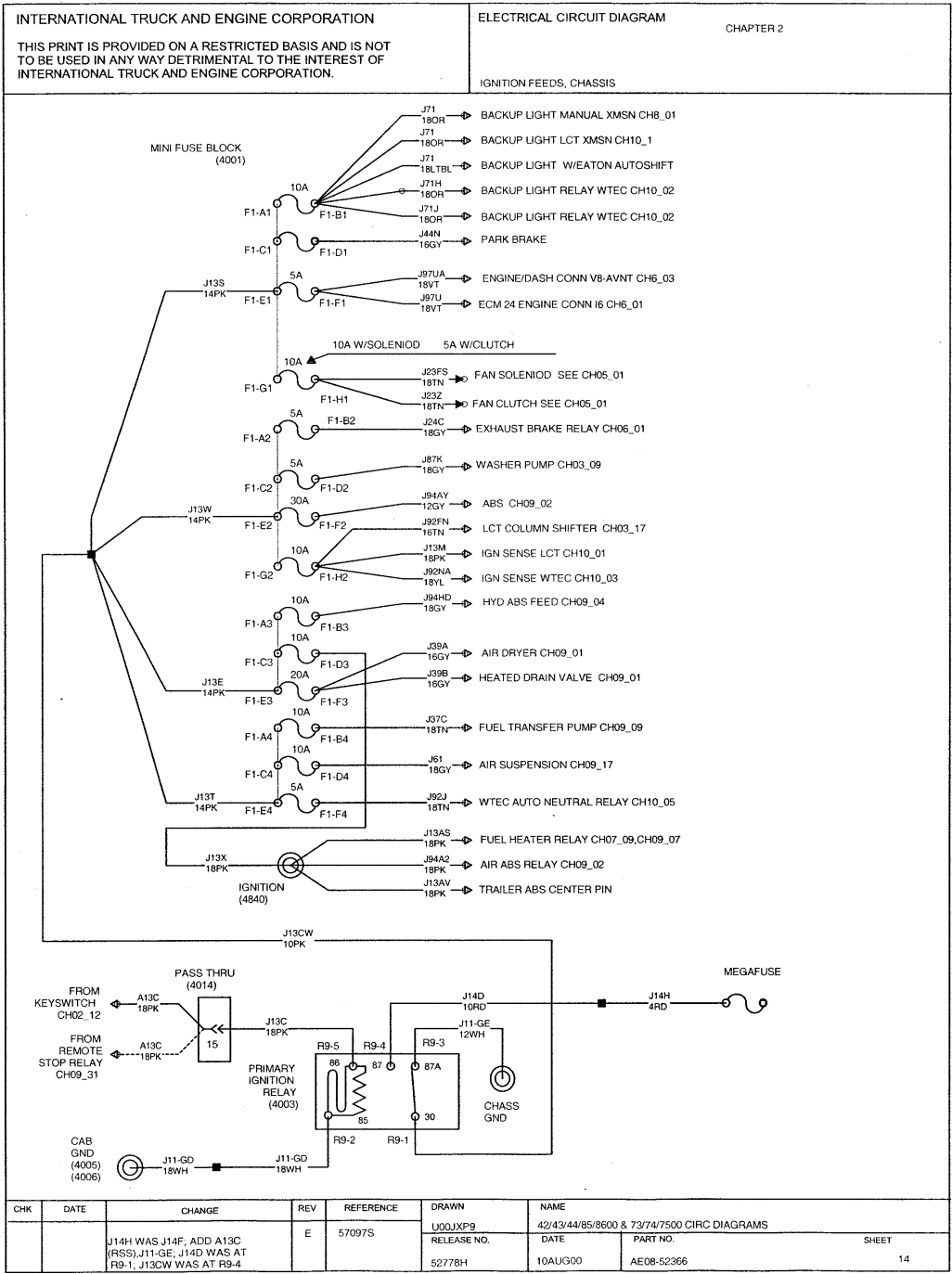


Figure 26 Ignition Feeds, Chassis

START, P. 15

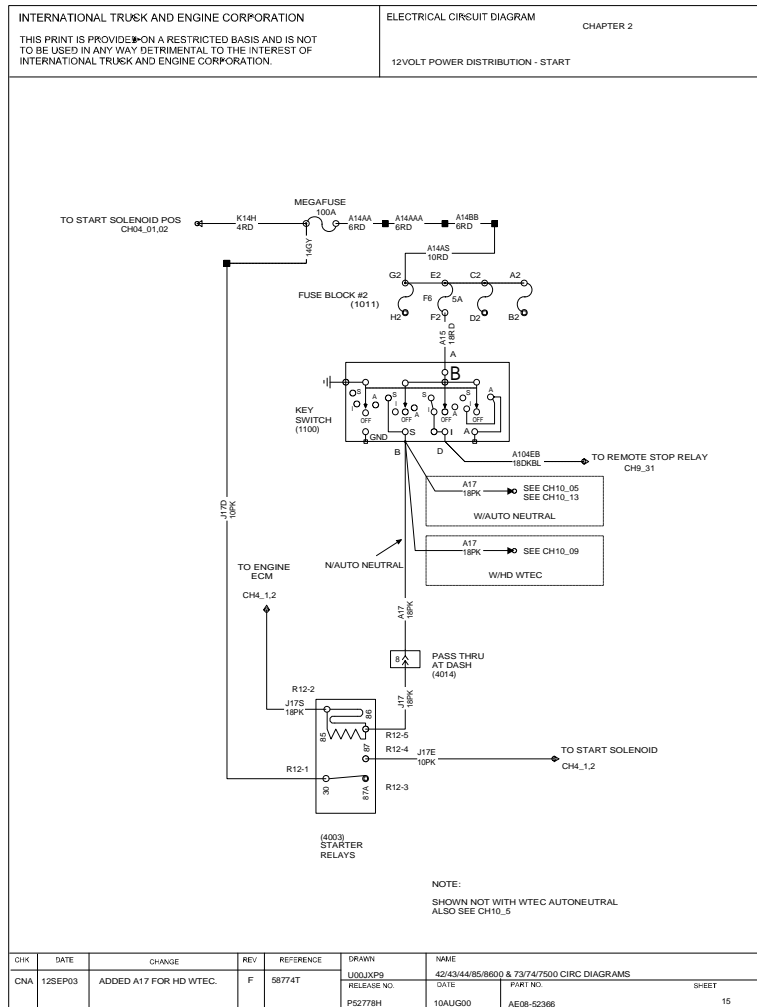


Figure 27 Start

## CAB ACCESSORIES (CHAPTER 3)

### CIGAR LIGHTER AND POWER FEEDS, P. 1

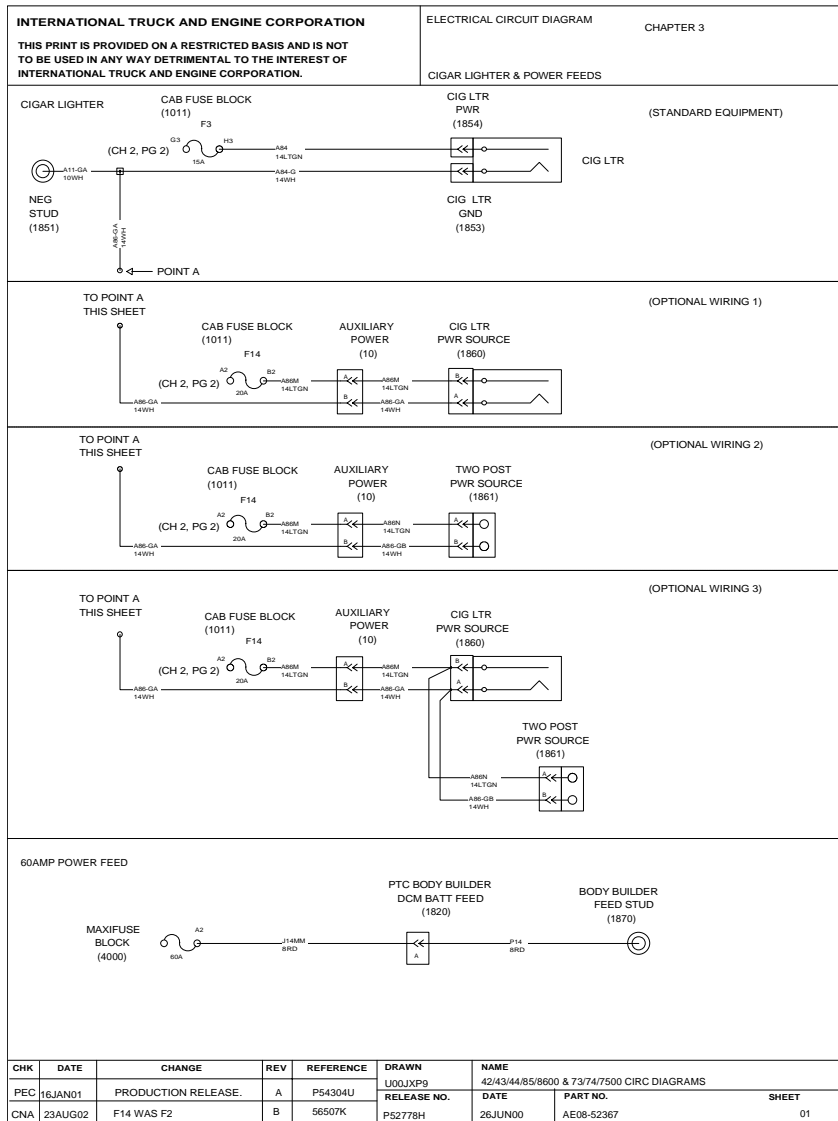


Figure 28 Cigar Lighter and Power Feeds

CB POWER, P. 2

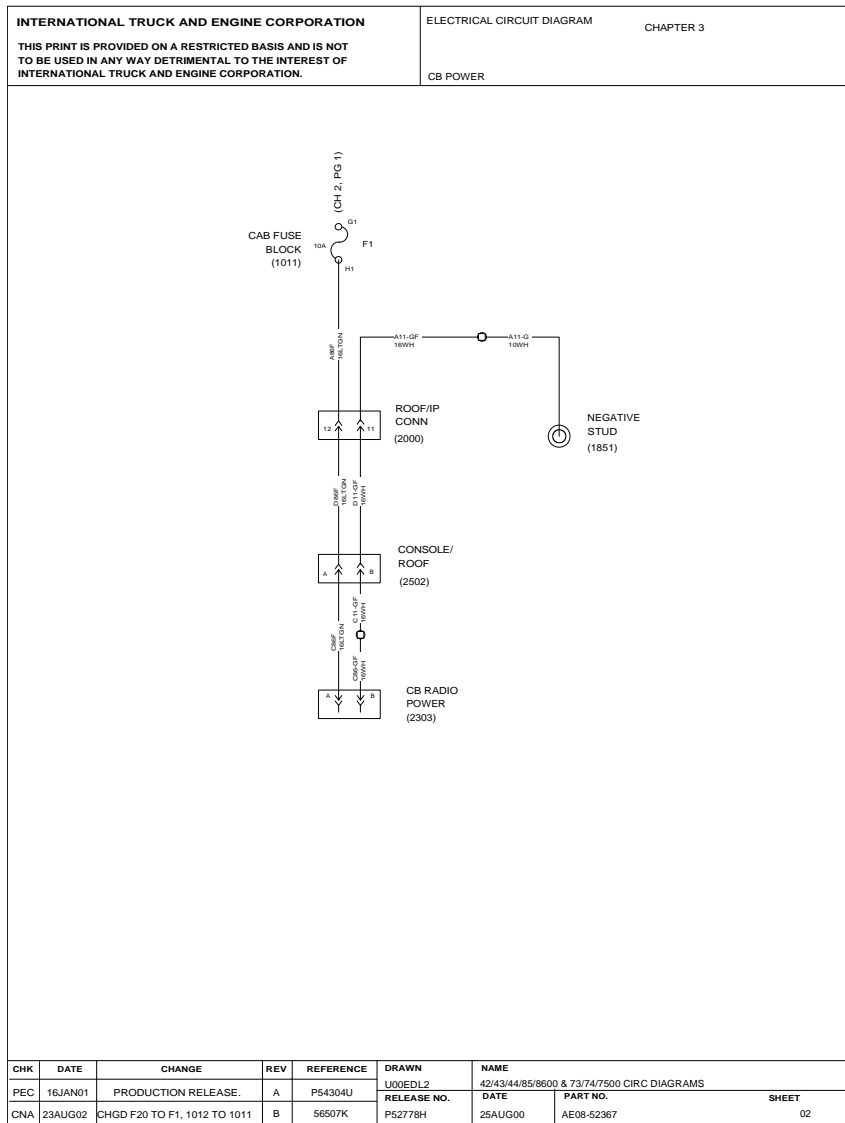


Figure 29 CB Power

COMPASS AND TEMPERATURE DISPLAY, P. 3

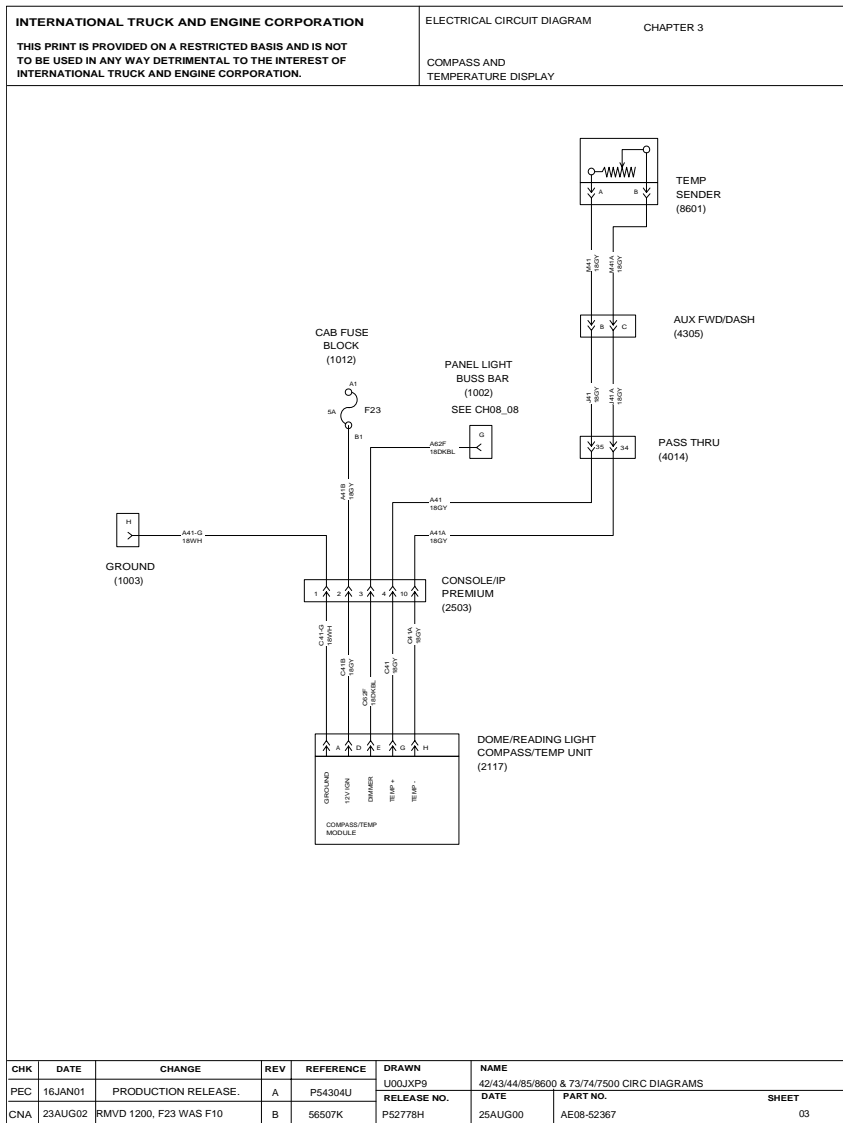


Figure 30 Compass and Temperature Display

FRONT DOORS WINDOWS AND LOCKS (POWER), P. 4

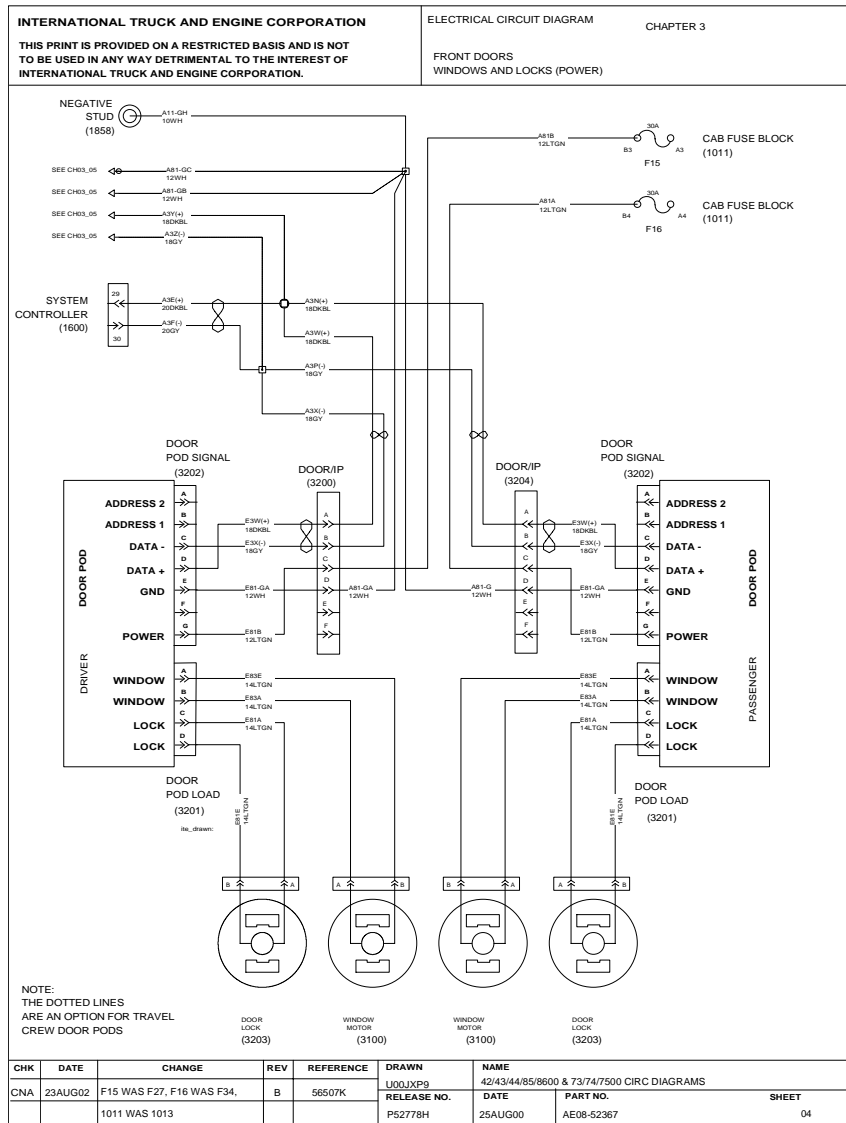


Figure 31 Front Doors Windows and Locks (Power)

CREW DOORS WINDOWS AND LOCKS (POWER), P. 5

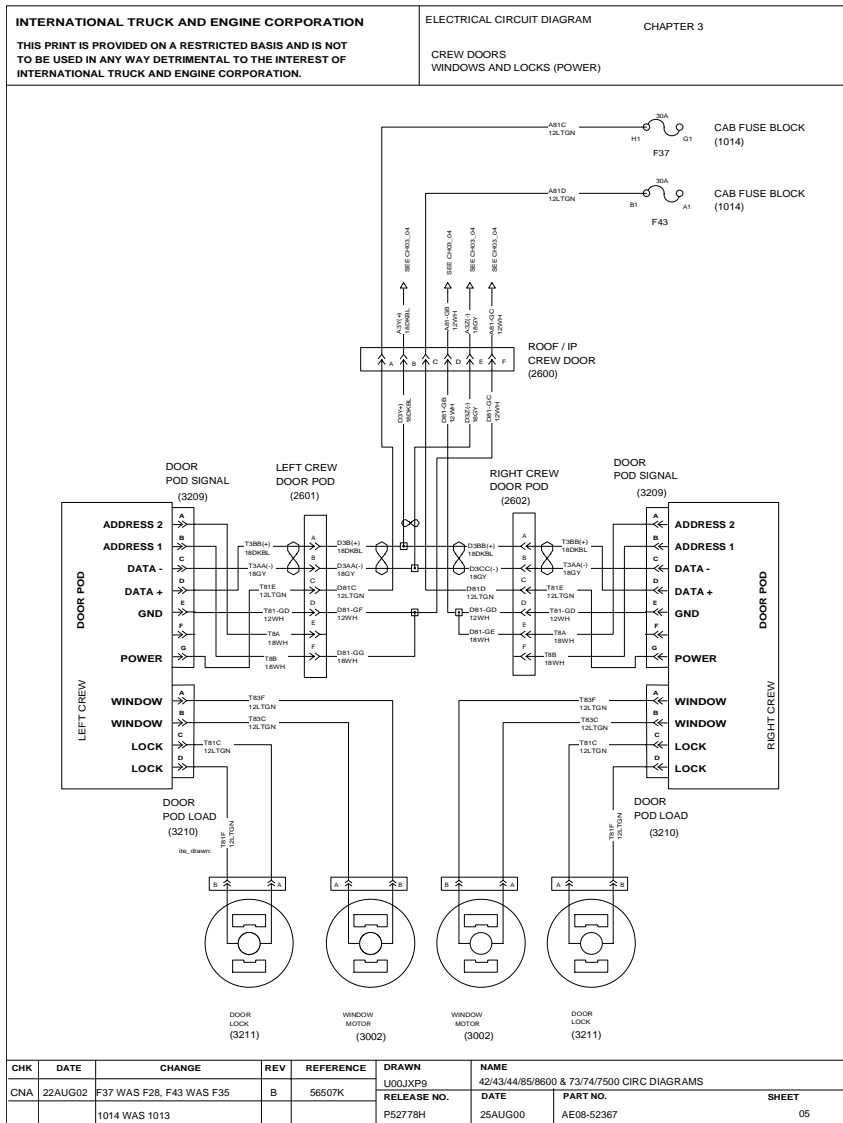
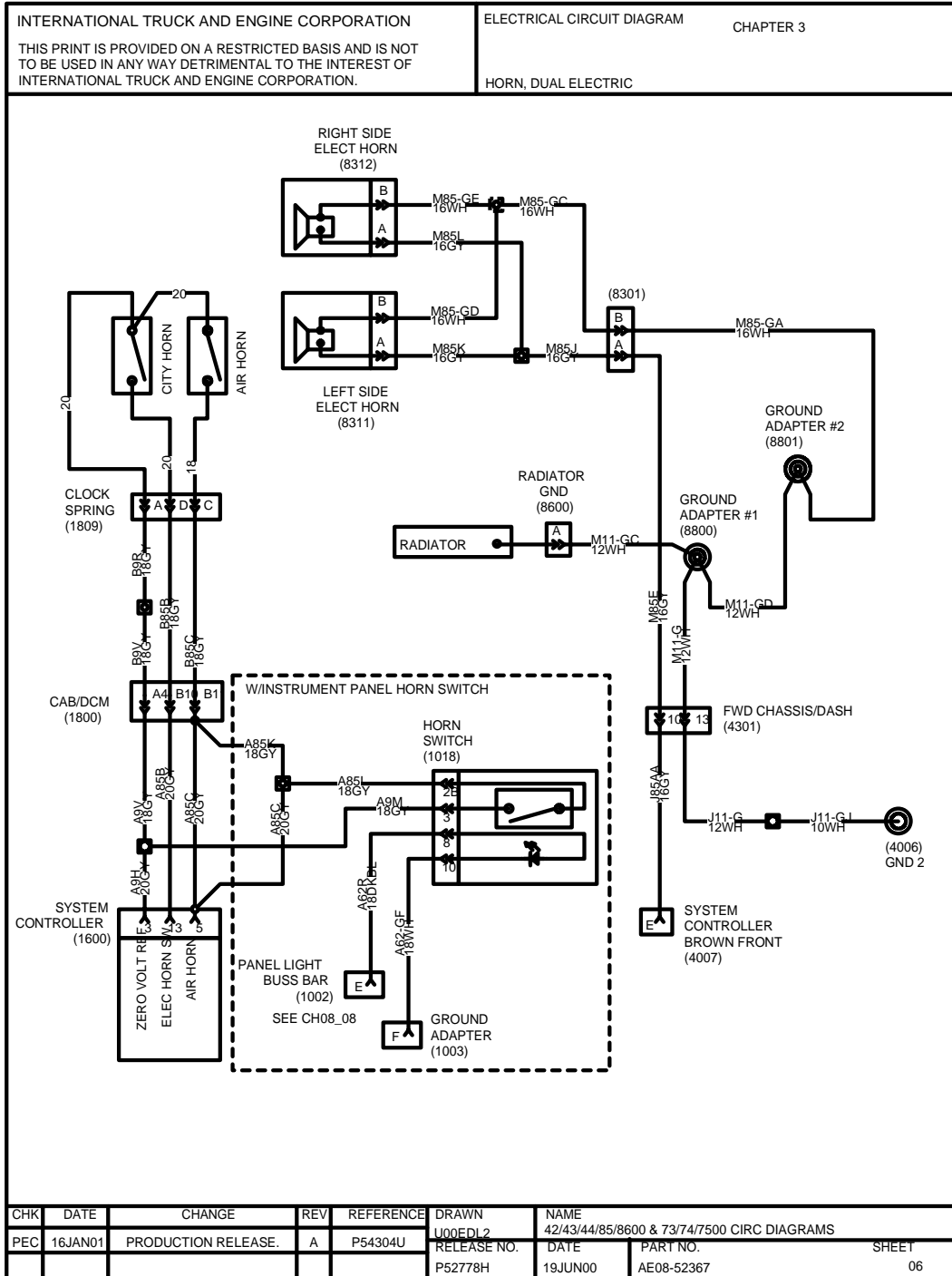


Figure 32 Crew Doors Windows and Locks (Power)



**HORN, DUAL ELECTRIC, P. 6**



**Figure 33 Horn, Dual Electric**

MIRRORS (HEATED, LIGHTED AND POWER), P. 7

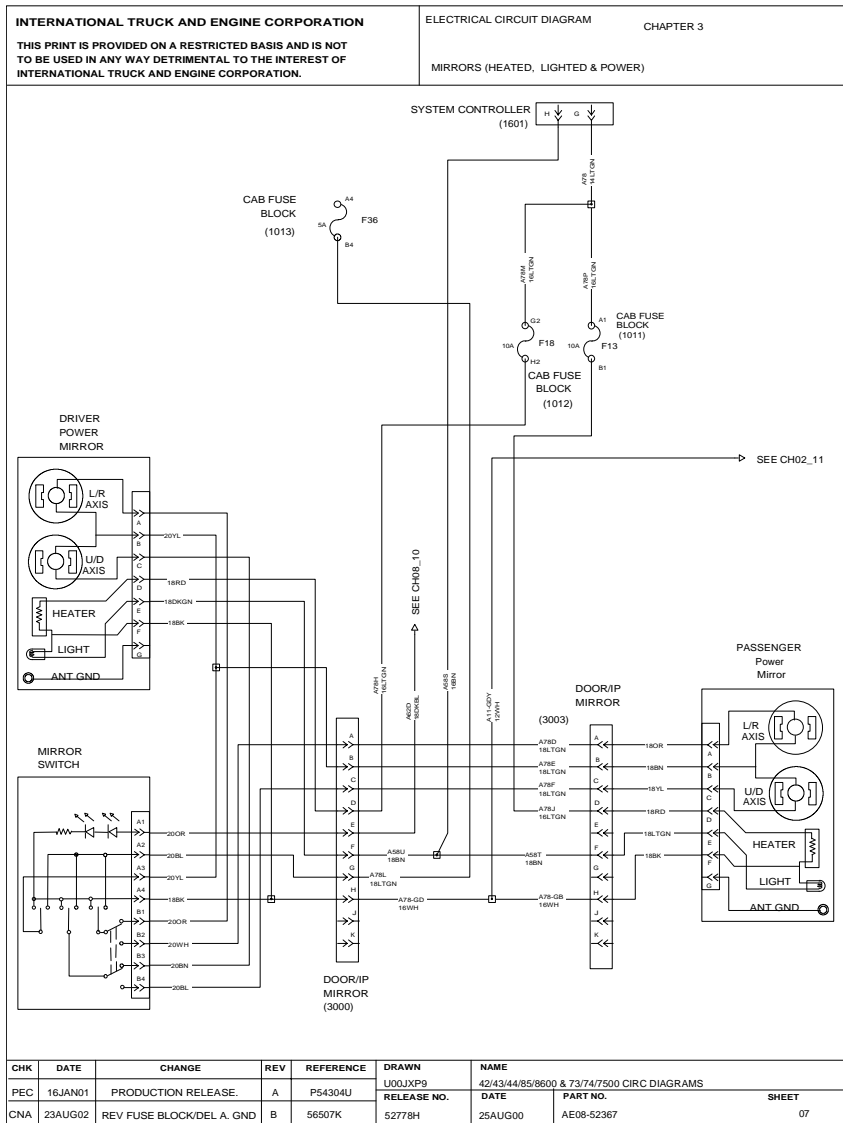
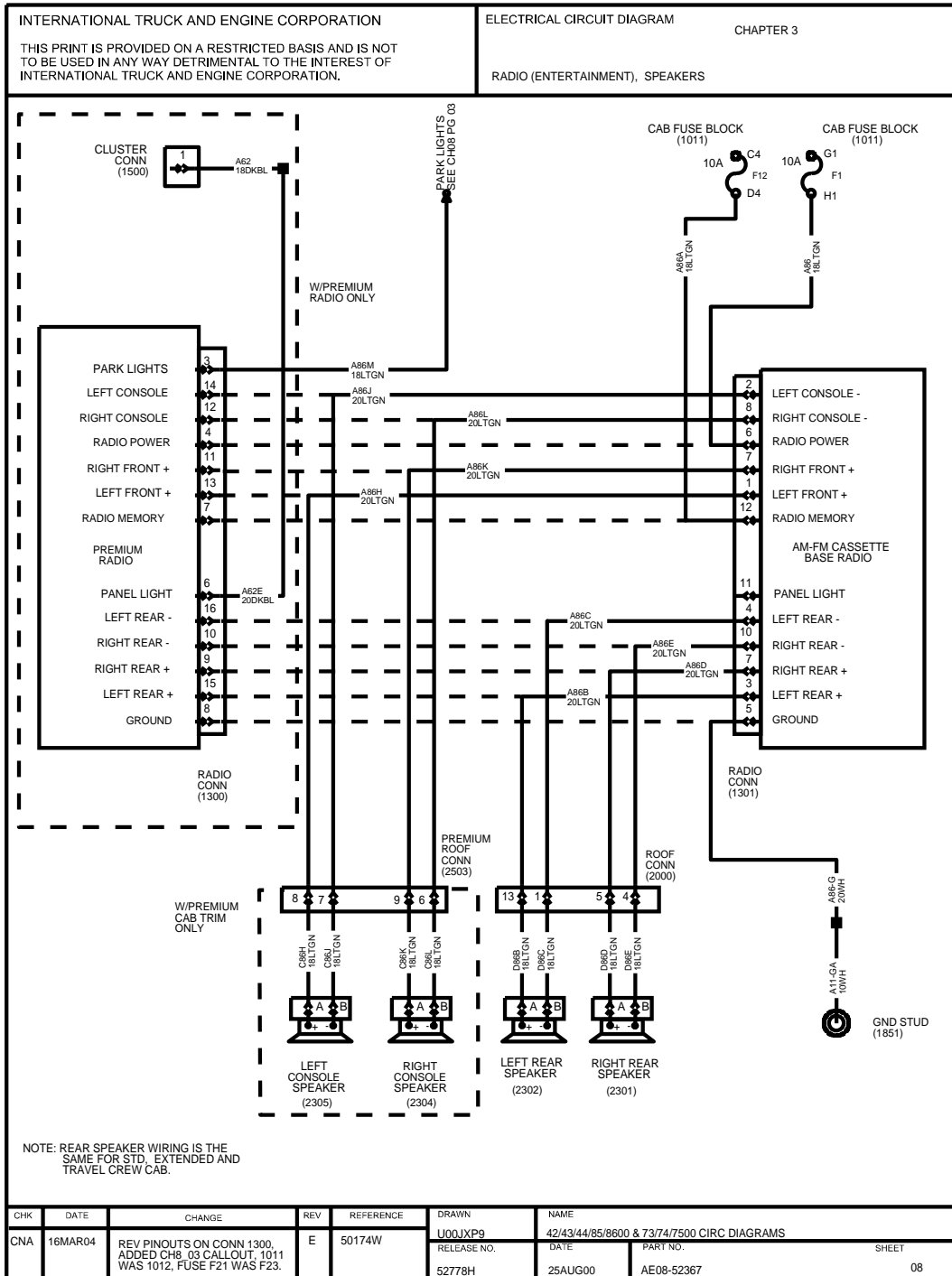


Figure 34 Mirrors (Heated, Lighted and Power)

**RADIO (ENTERTAINMENT), SPEAKERS, P. 8**



**Figure 35 Radio (Entertainment), Speakers**

WINDSHIELD WIPER AND WASHER PUMP, P. 9

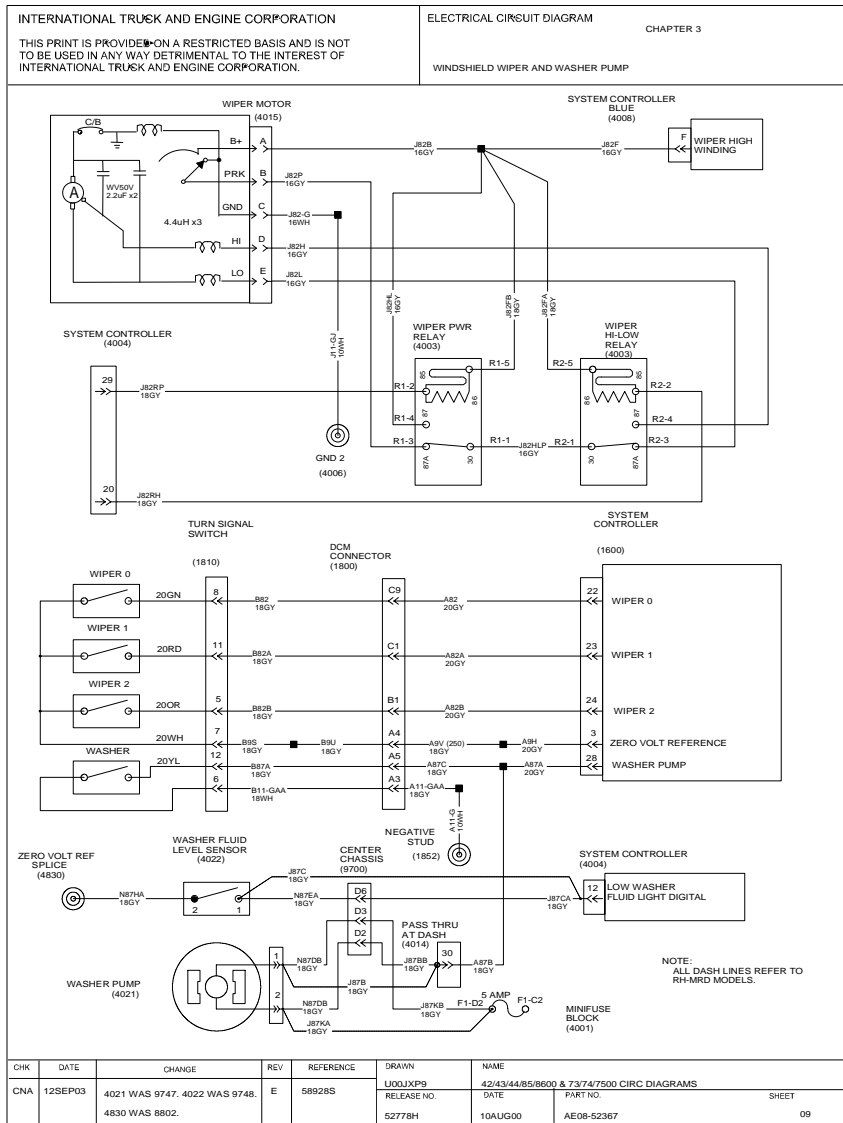


Figure 36 Windshield Wiper and Washer Pump

2-WAY RADIO, P. 10

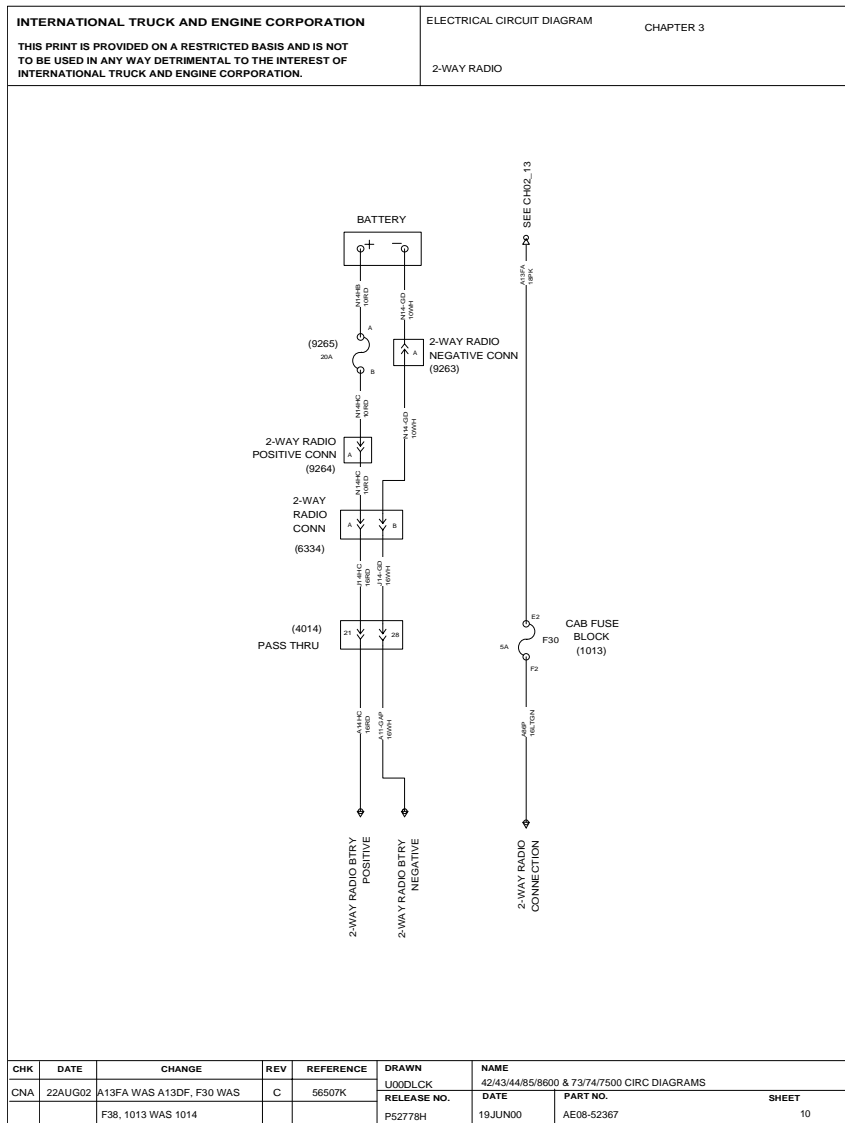


Figure 37 2-Way Radio



LIGHTED AIR SHIELD, P. 12

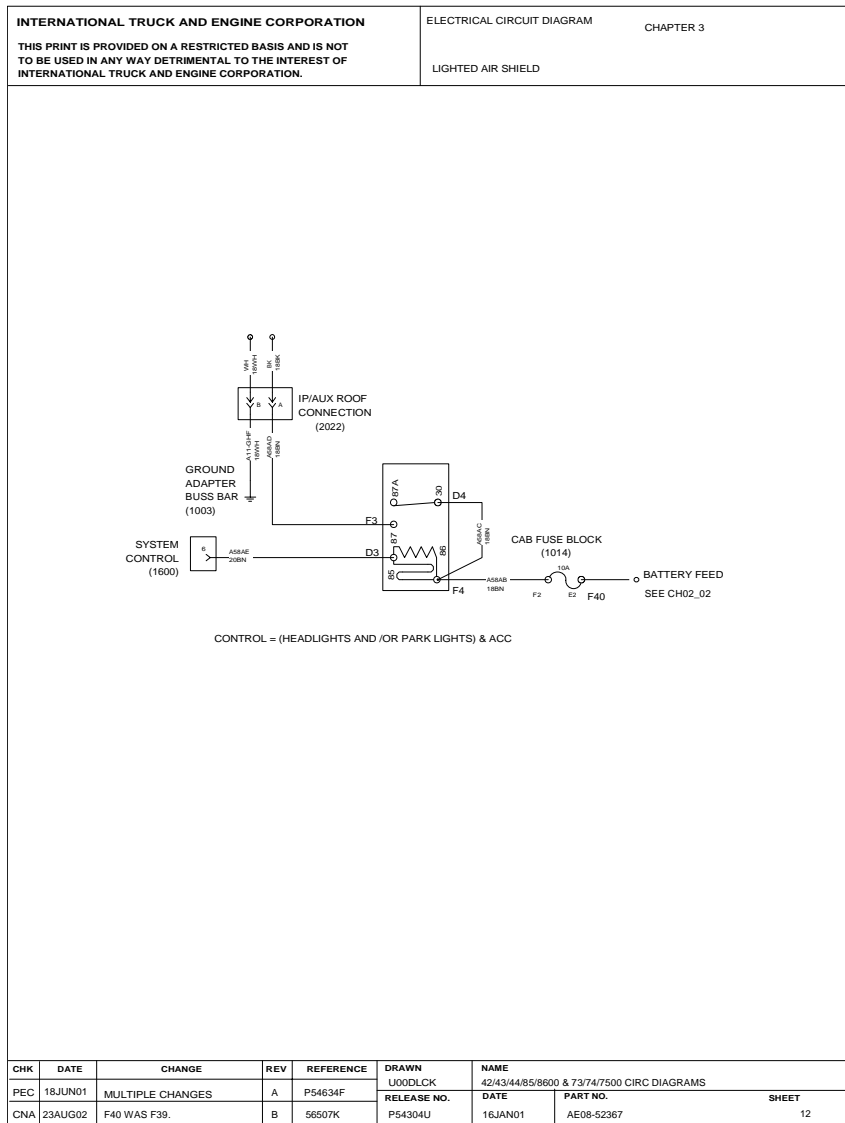


Figure 39 Lighted Air Shield

ROOF AUX. LOAD, P. 13

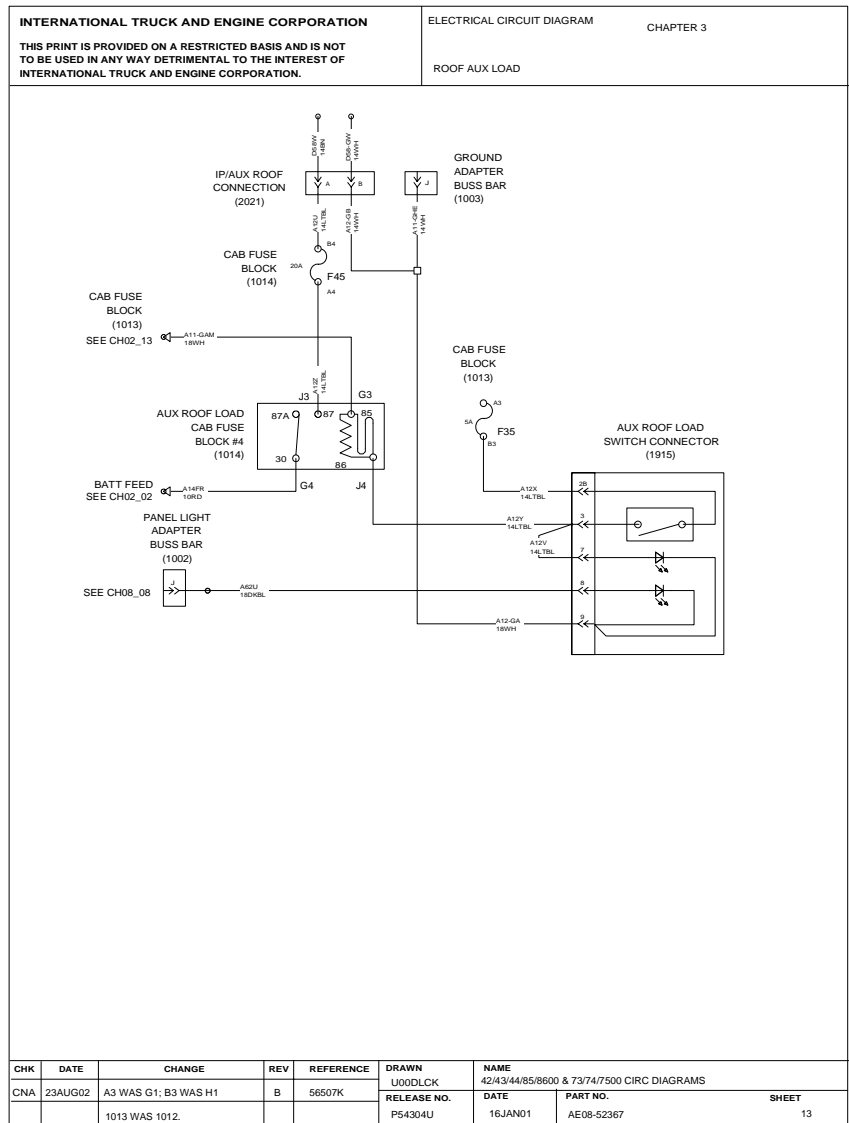
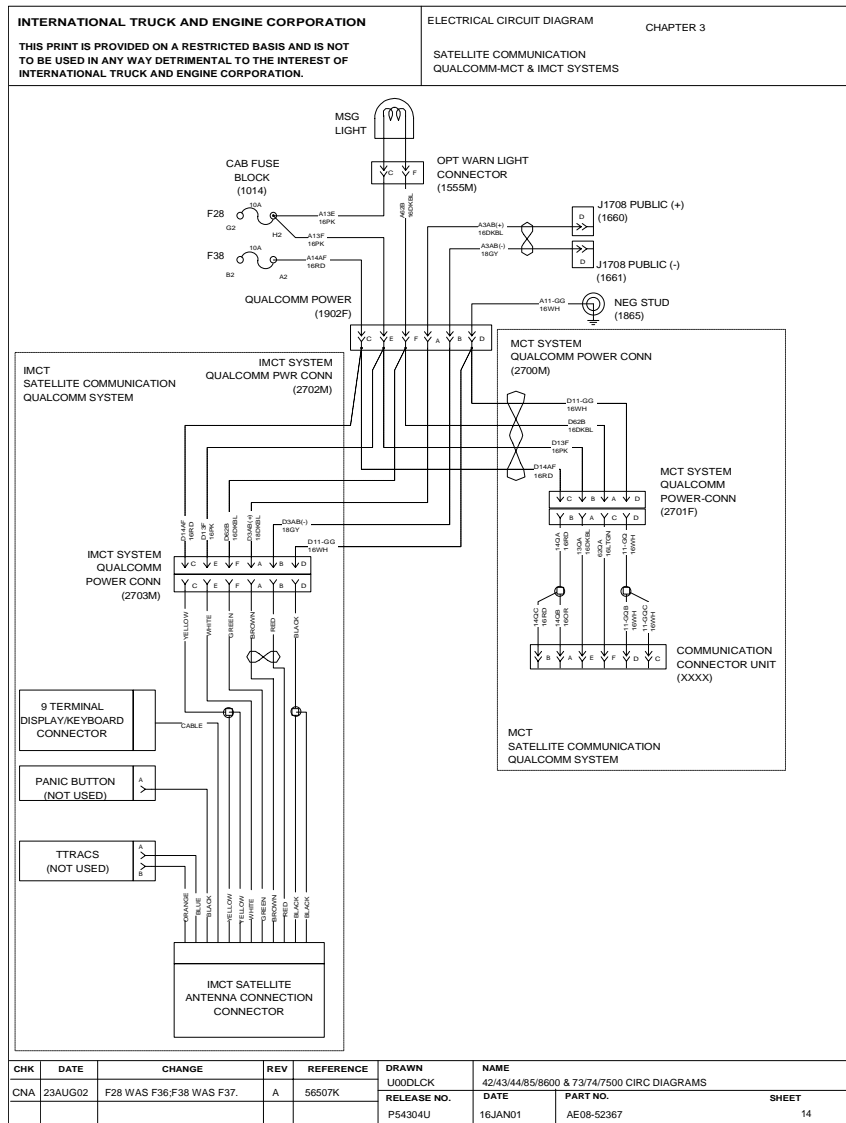


Figure 40 Roof Aux. Load



**SATELLITE COMMUNICATION QUALCOMM-MCT AND IMCT SYSTEMS, P. 14**



**Figure 41 Satellite Communication Qualcomm-MCT and IMCT Systems**

SELF CONTAINED AIR SEAT, P. 15

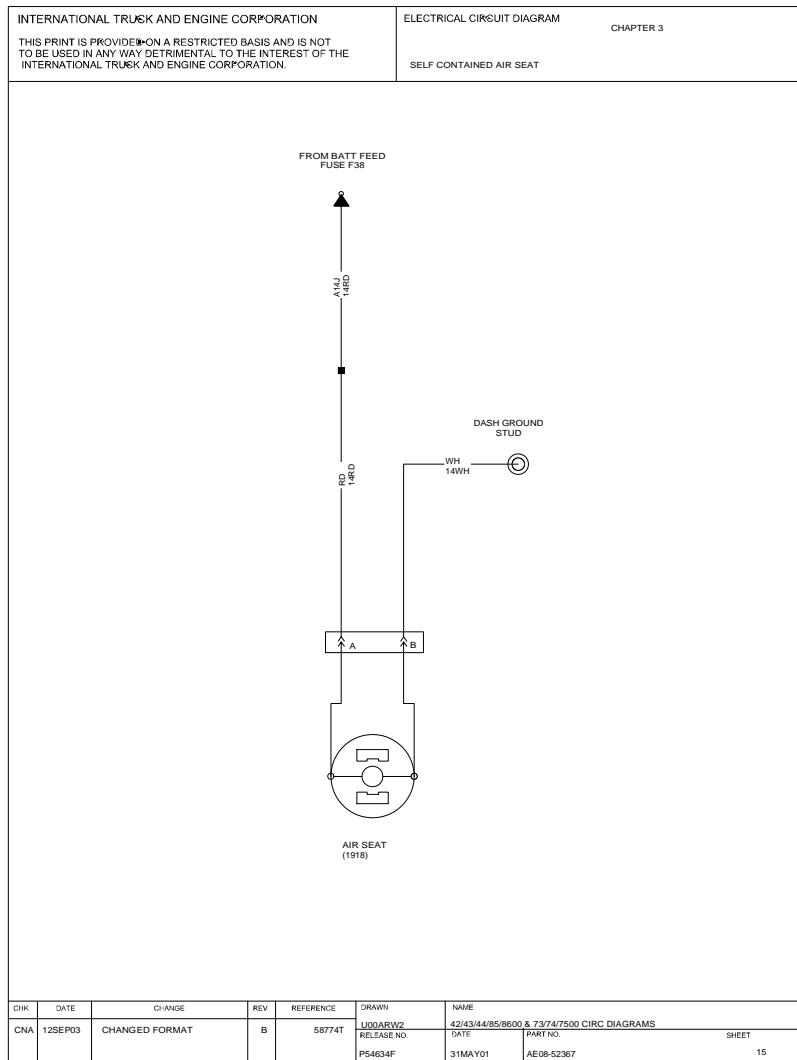


Figure 42 Self Contained Air Seat

DIGITAL CLOCK PTC, P. 16

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<p>GEOMETRY WAS REMOVED</p>							
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
CNA	12SEP03	CHANGED FORMAT	■	58774T	U00DLCK	42/43/44/85/8600 & 73747500 CIRC DIAGRAMS	
					RELEASE NO.	DATE	PART NO.
					P54834F	05MAY01	AE08-52387
							SHEET 16

Figure 43 Digital Clock PTC

TRANSMISSION ALLISON LCT COLUMN SHIFTER, P. 17

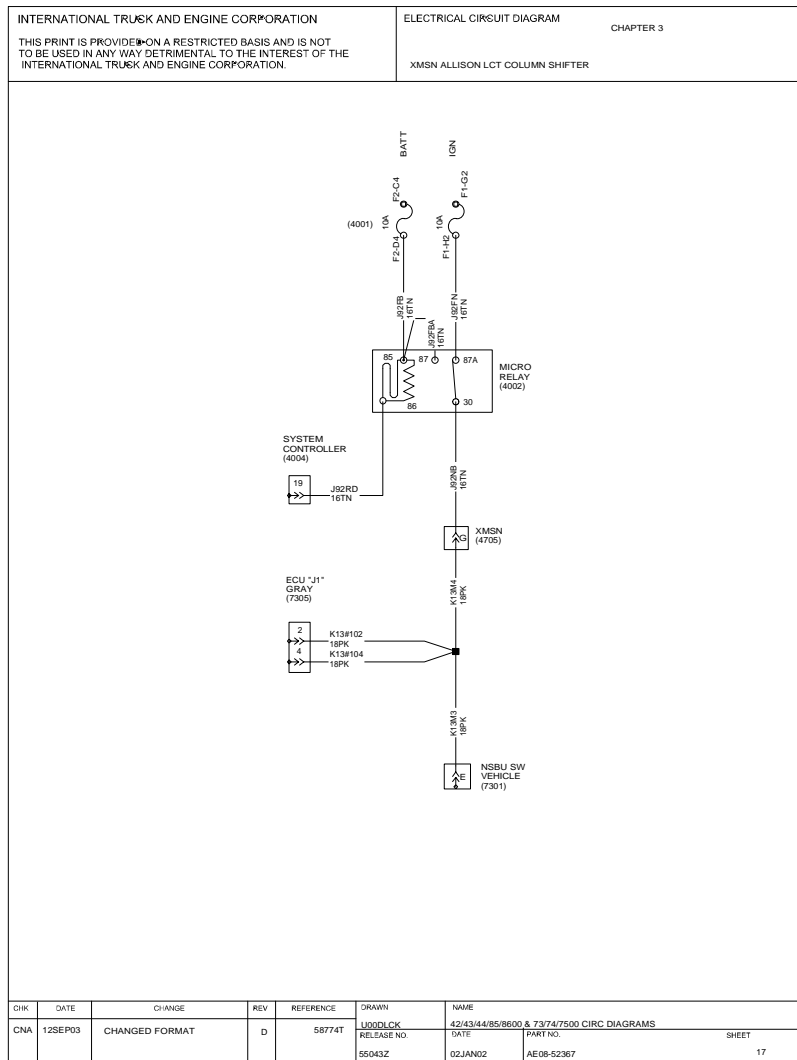


Figure 44 Transmission Allison LCT Column Shifter

**HEATED SEATS FOR 7700 MODELS ONLY, P. 18**

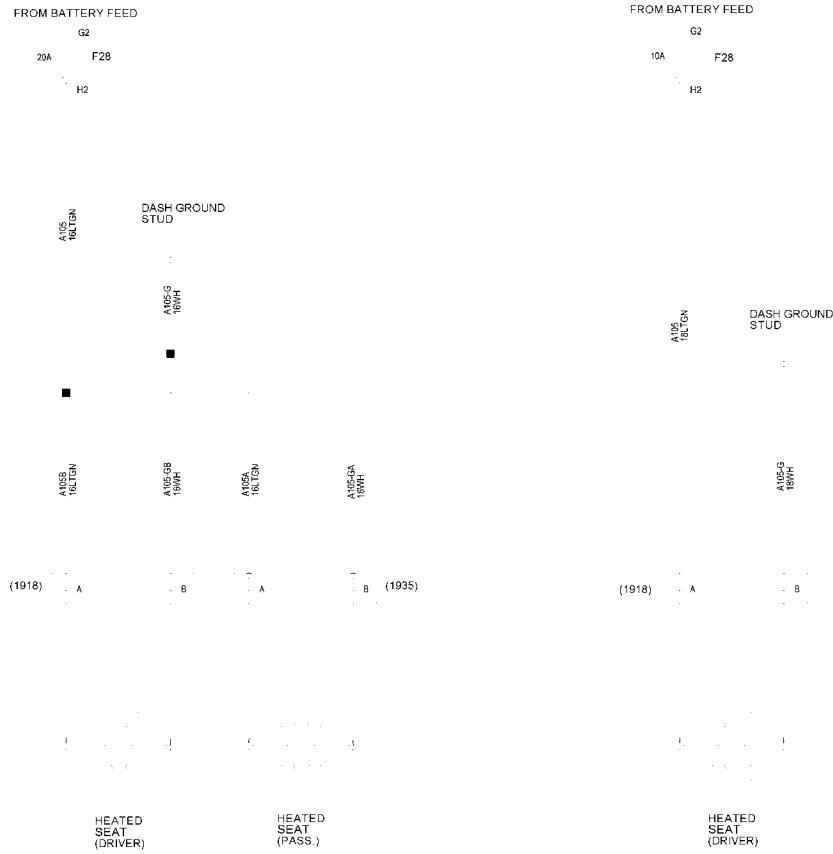
INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 3

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HEATED SEATS FOR 7700 MODELS ONLY



CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	DATE	PART NO.	SHEET
JKP	30MAY03	RELEASE FOR PRODUCTION		58205F	UOODLCK	42/43/44/85/8800 & 73/74/7500 CIRC DIAGRAMS	28MAY03	AE08-52367	18
					58205F				

**Figure 45 Heated Seats for 7700 Models Only**

BACKUP CAMERA, P. 19

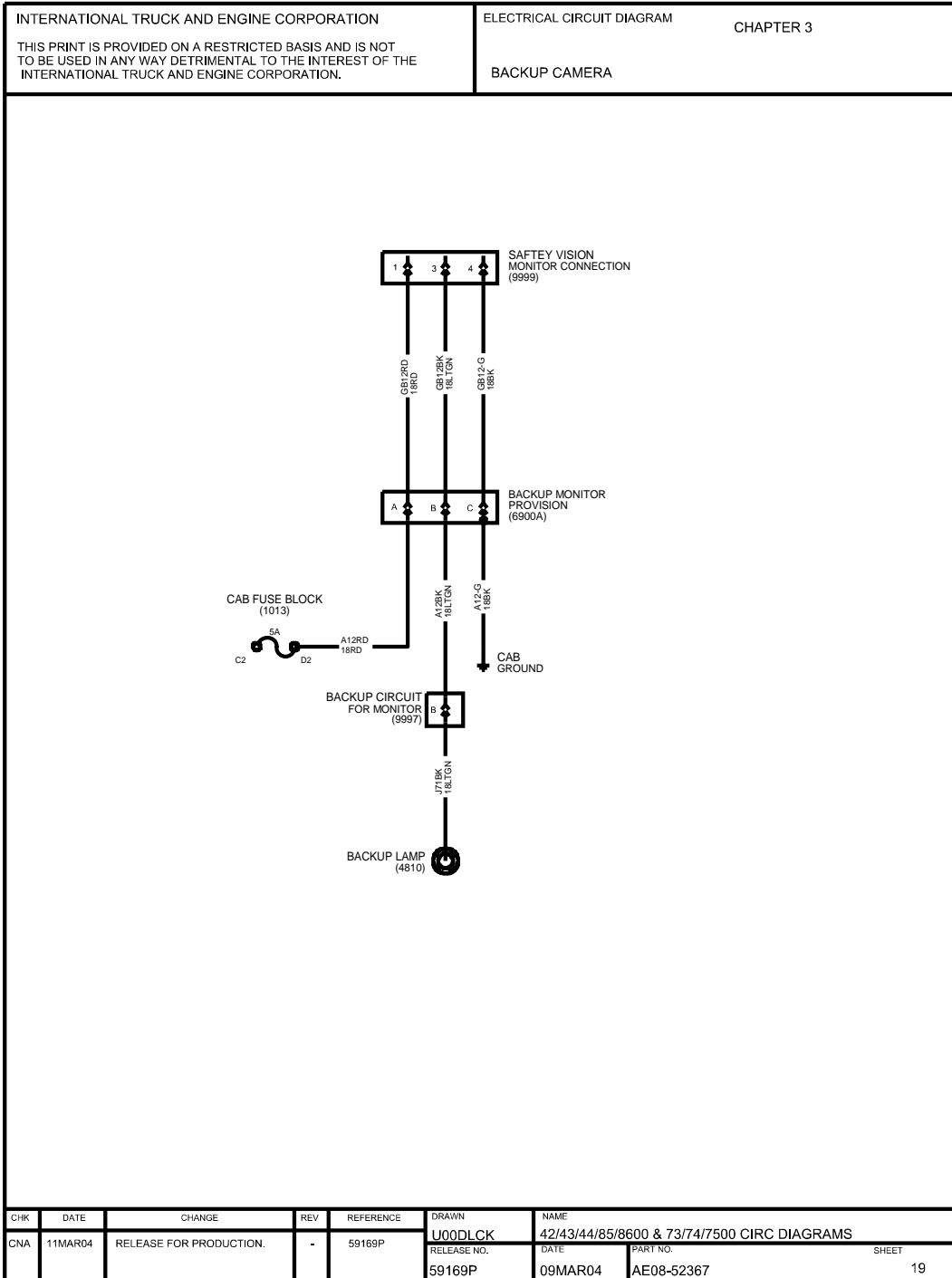
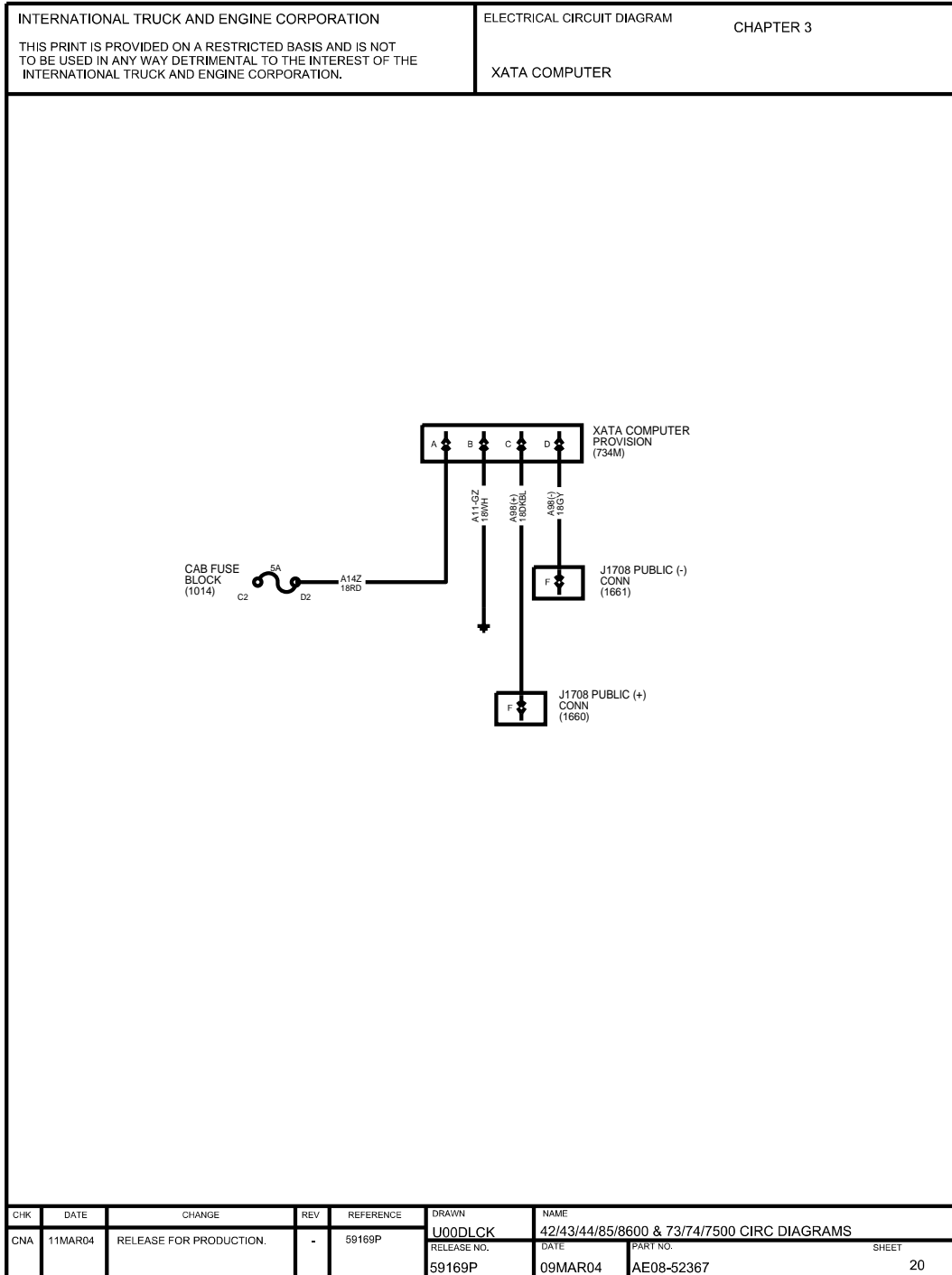


Figure 46 Backup Camera

**XATA COMPUTER, P. 20**



**Figure 47 XATA Computer**

KEYLESS IGNITION SYSTEM, P. 21

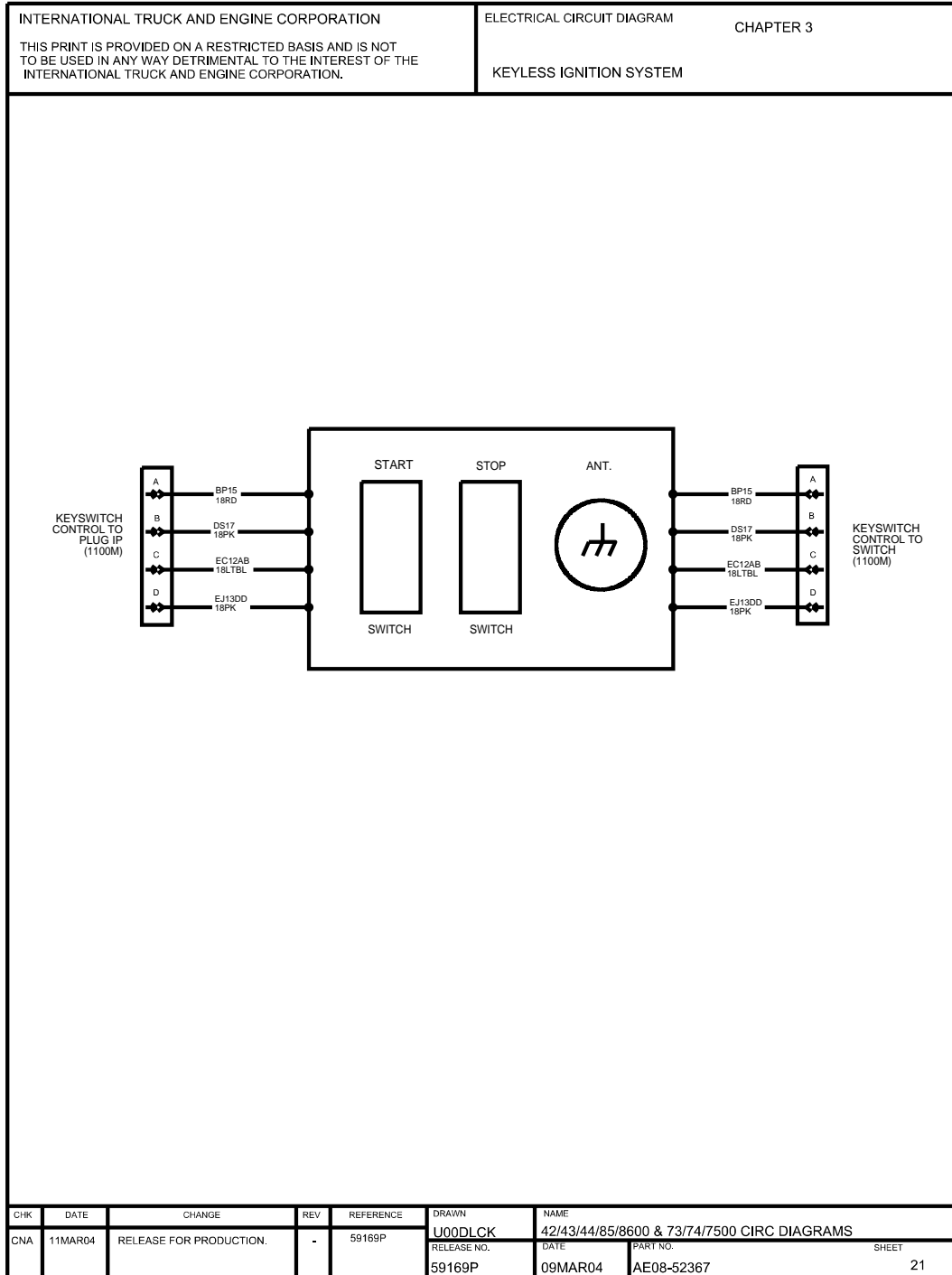


Figure 48 Keyless Ignition System



## 12V CHARGING + CRANKING SYSTEM (CHAPTER 4)

### 16 EGR ENGINES, P. 1

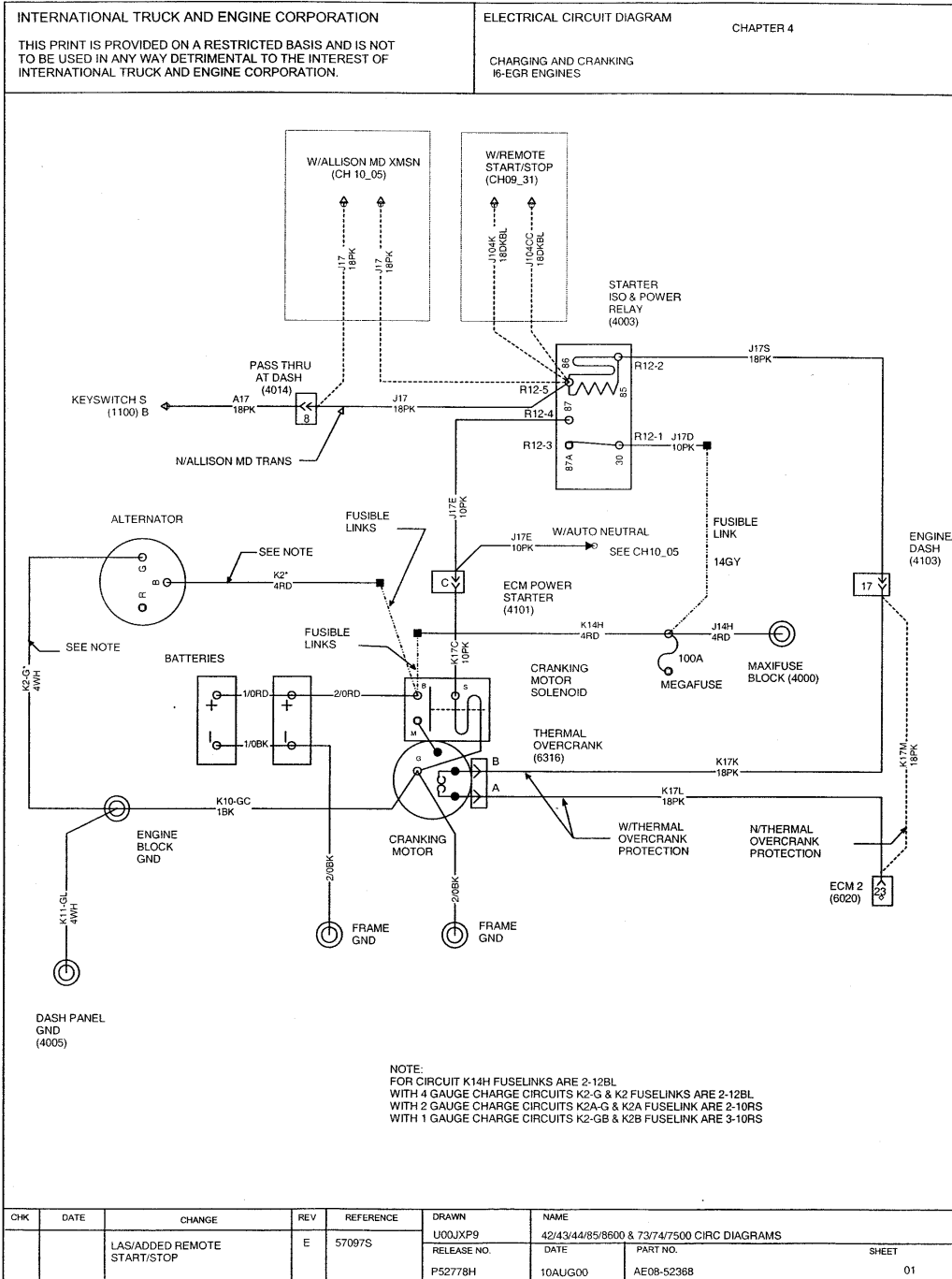


Figure 49 I6 EGR Engines

V8 AVNT ENGINES, P. 2

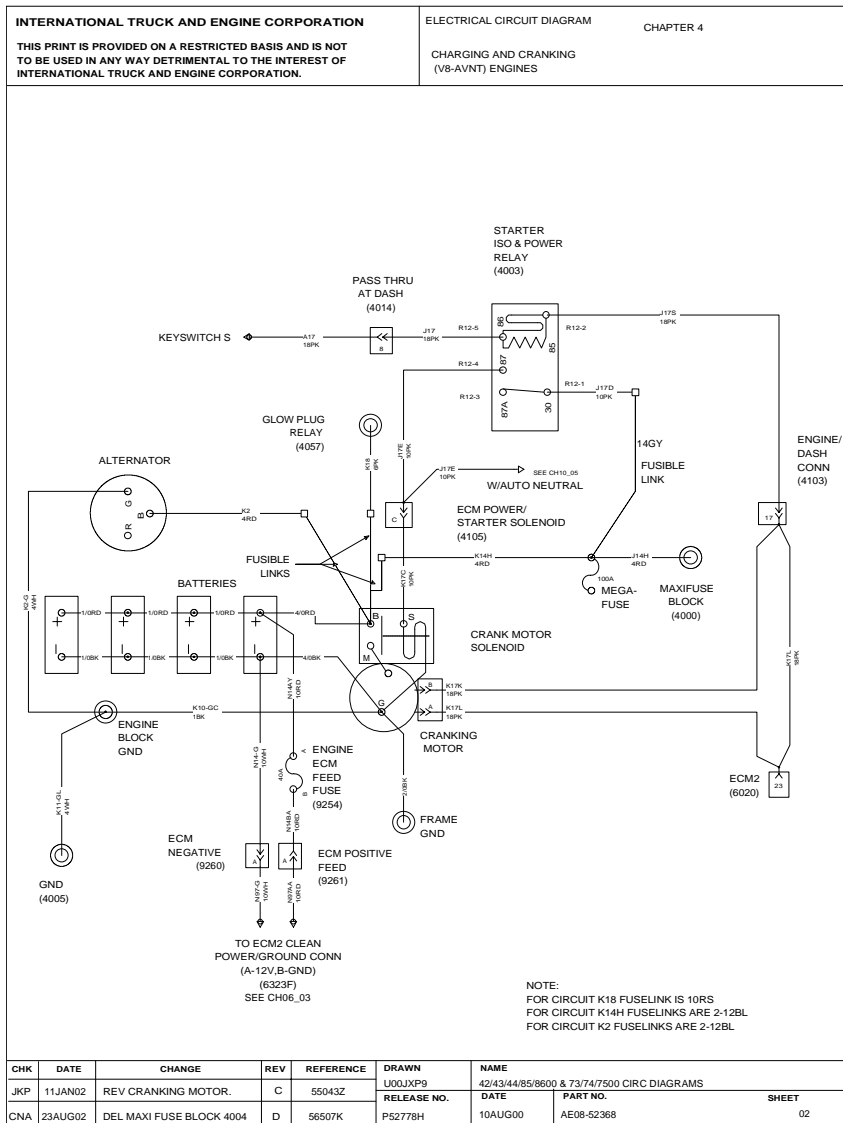


Figure 50 V8 AVNT Engines

CATERPILLAR, CUMMINS ISM ENGINES, P. 3

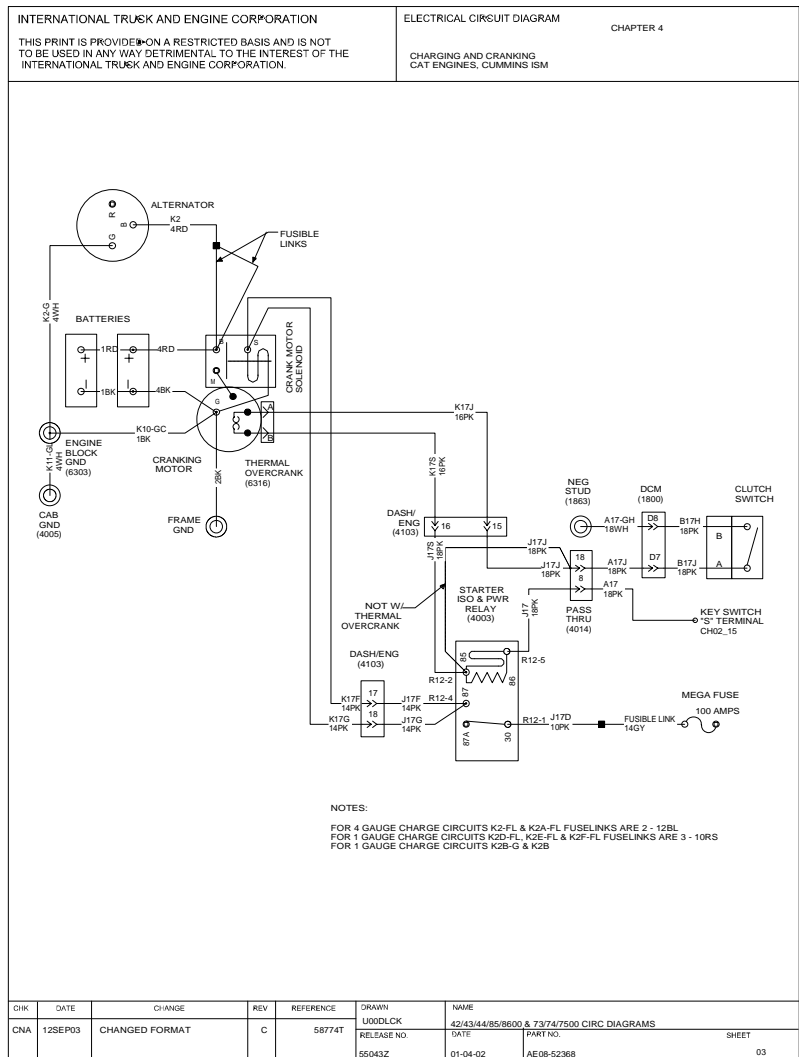


Figure 51 Caterpillar, Cummins ISM Engines

16 HEUI ENGINES, P. 4

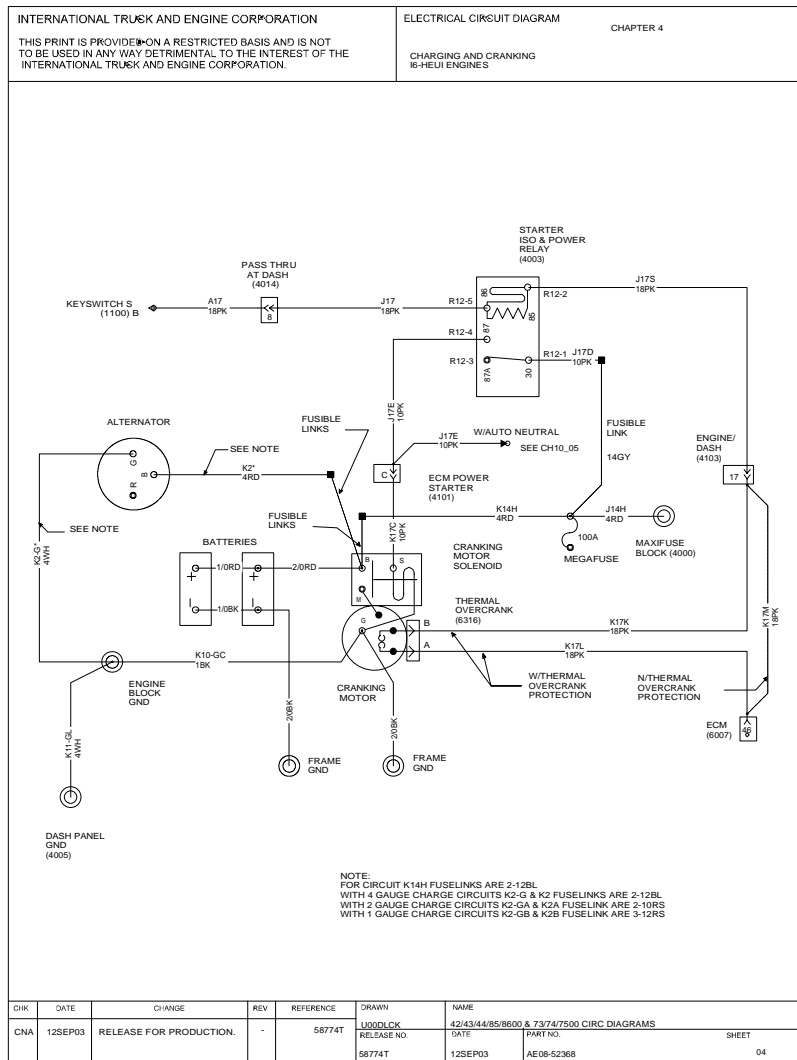


Figure 52 16 HEUI Engines

CATERPILLAR ENGINES, CUMMINS ISM AND WITH EATON ULTRASHIFT/DM2, P. 5

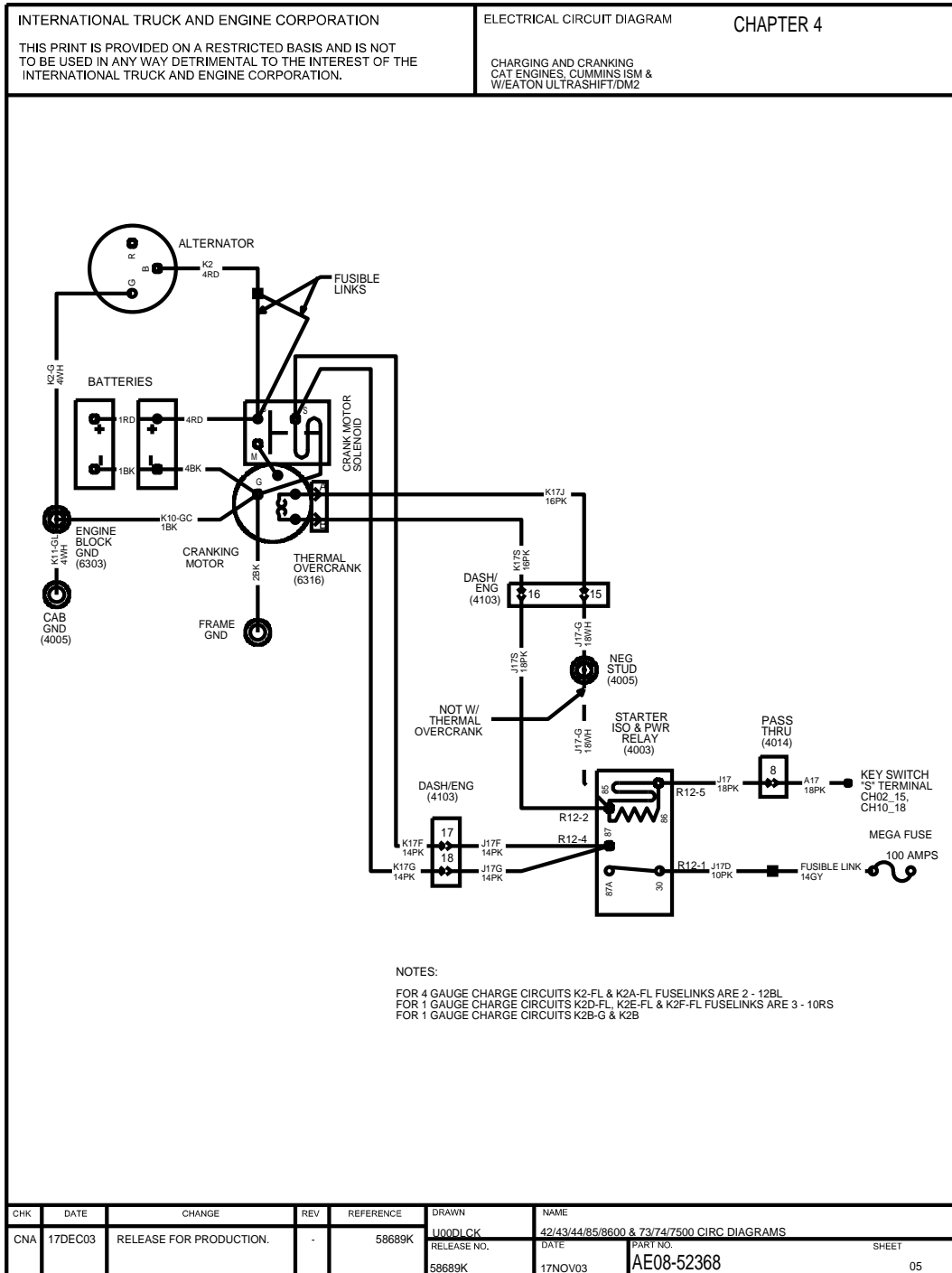


Figure 53 Caterpillar Engines, Cummins ISM and with Eaton Ultrashift/DM2

16 EGR ENGINES WITH AIR START, P. 6

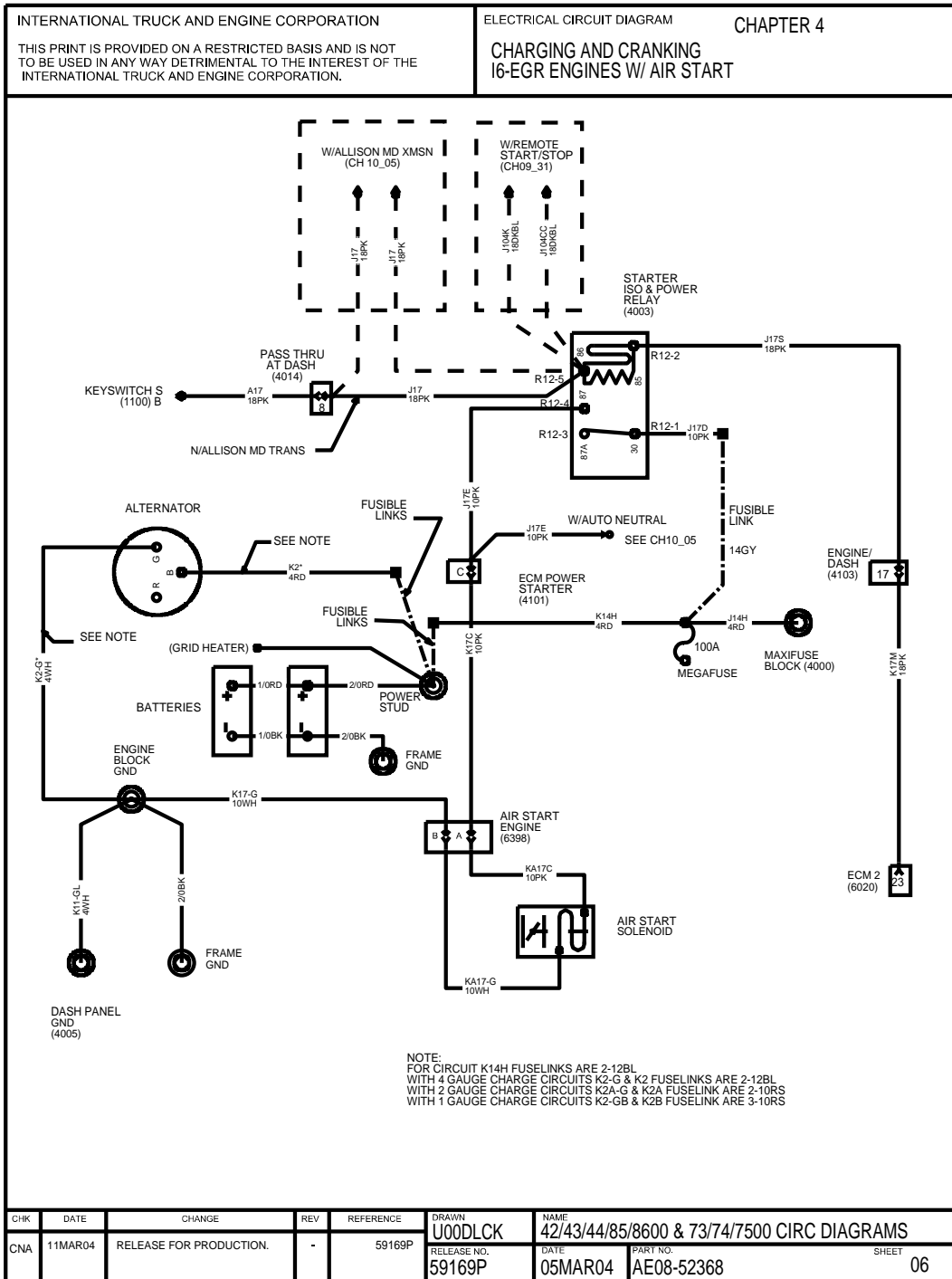


Figure 54 16 EGR Engines with Air Start

## FANS AND ENGINE ACCESSORIES (CHAPTER 5)

### FAN WIRING, P. 1

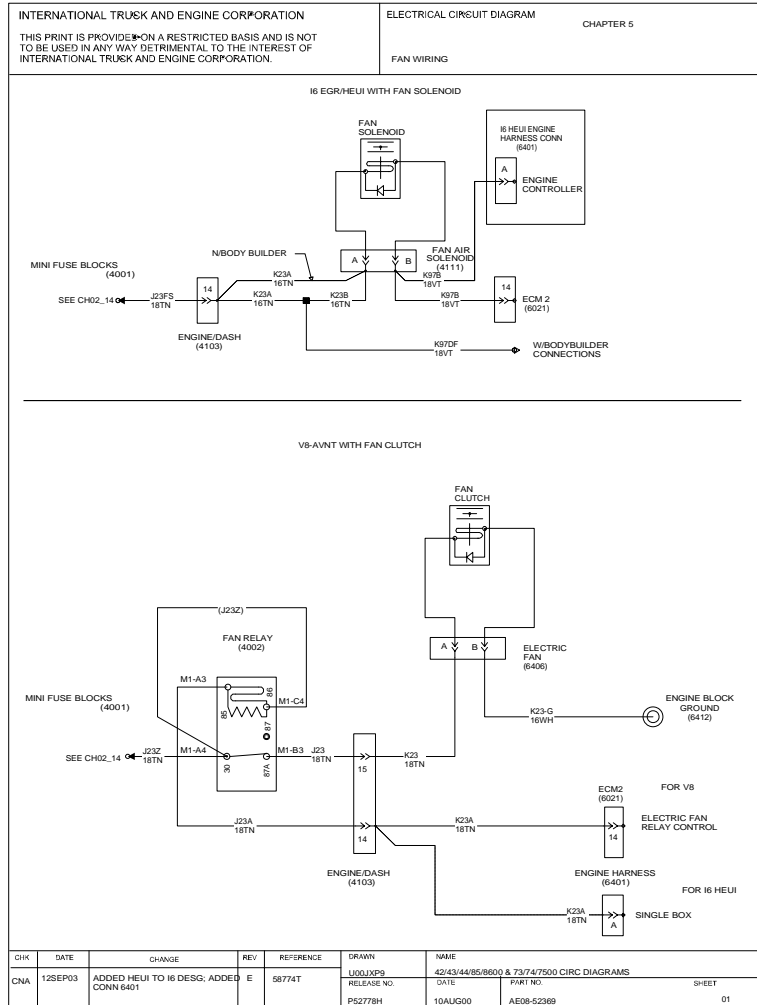


Figure 55 Fan Wiring

ETHER START, P. 2

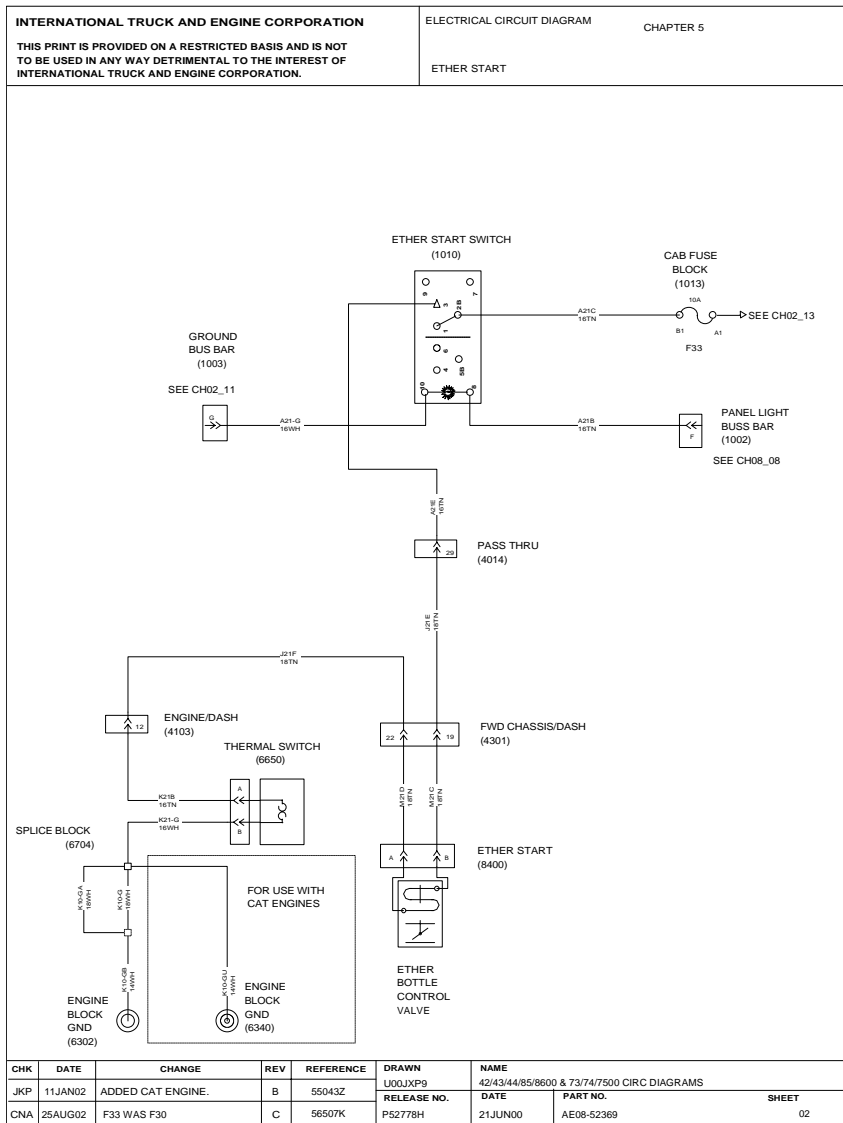


Figure 56 Ether Start



SNOW VALVE, P. 3

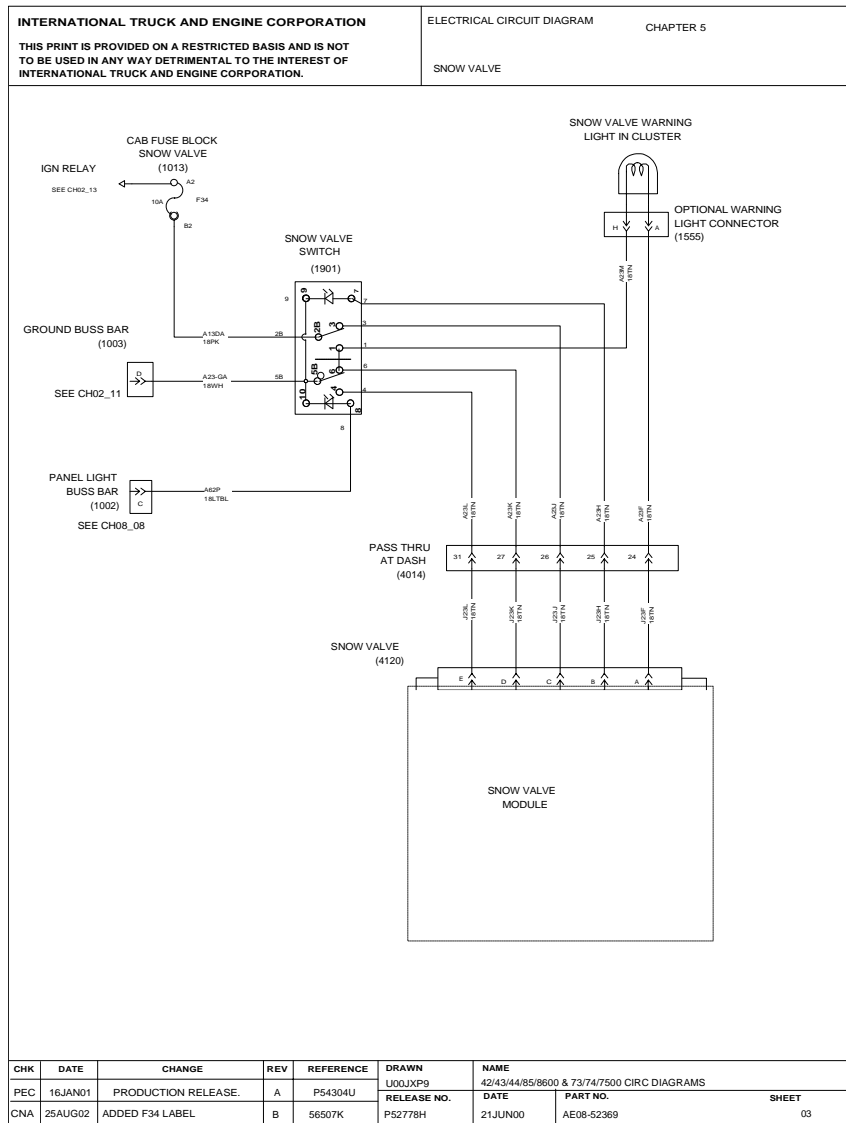


Figure 57 Snow Valve

FAN WIRING, CATERPILLAR AND CUMMINS, P. 4

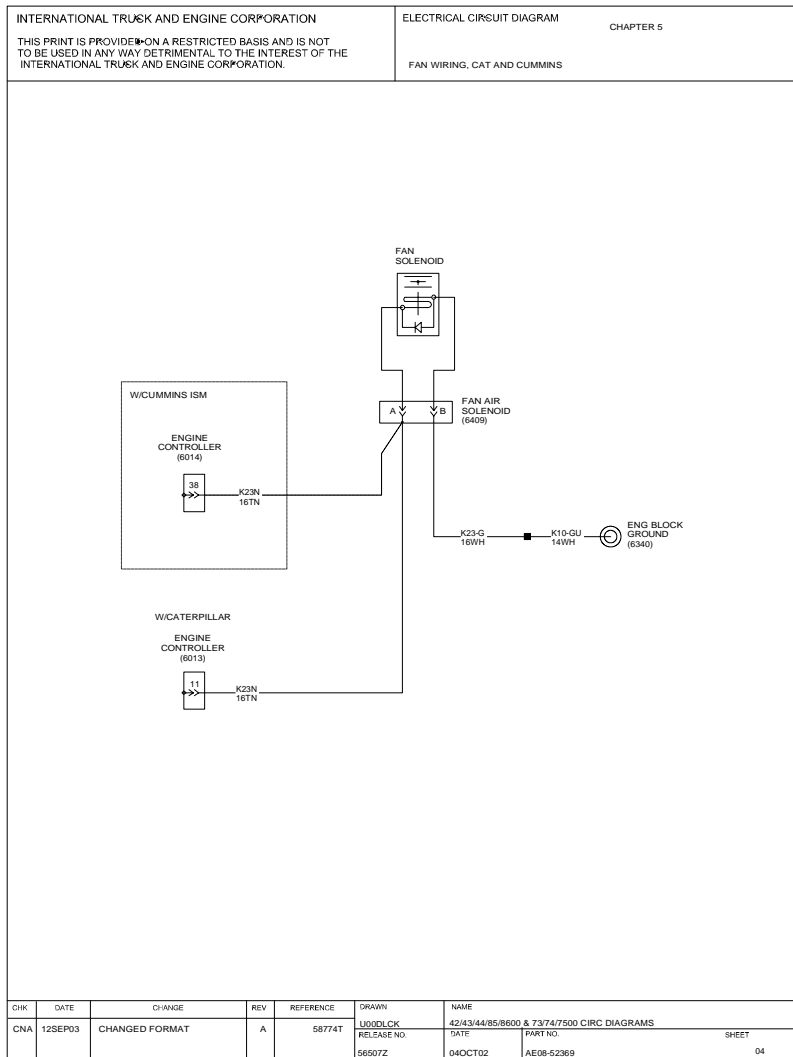
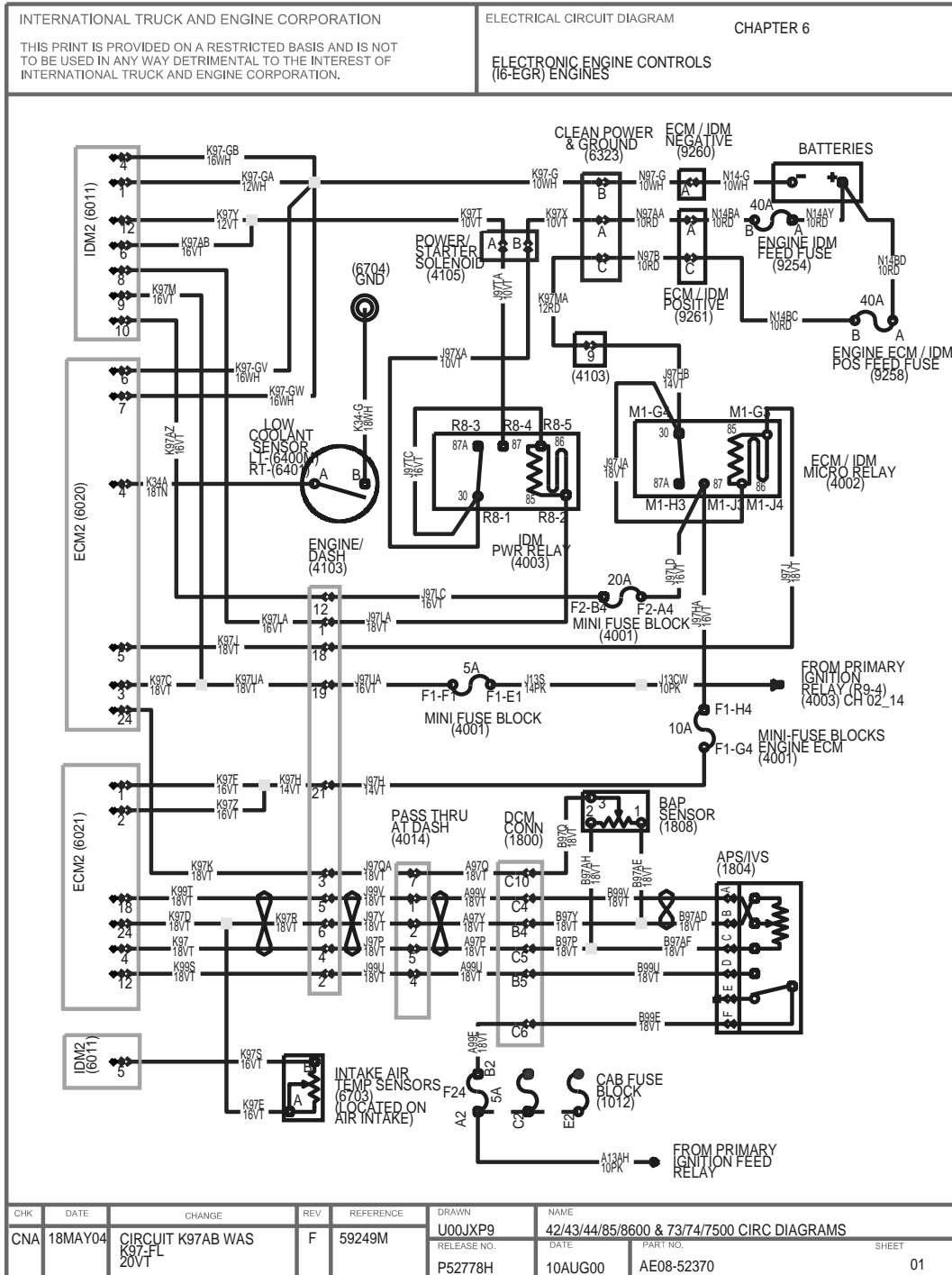


Figure 58 Fan Wiring, Caterpillar and Cummins

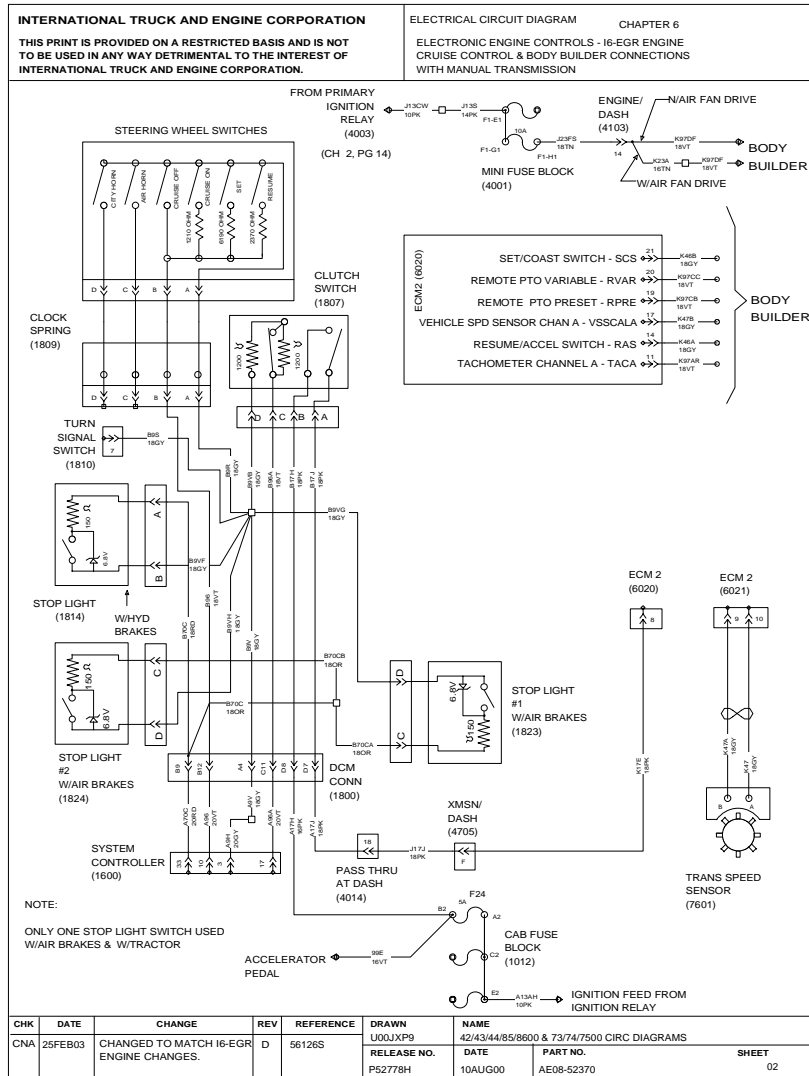
## ELECTRONIC ENGINES (CHAPTER 6)

### ELECTRONIC ENGINE CONTROLS, I6-EGR ENGINES, P. 1



**Figure 59 Electronic Engine Controls, I6-EGR Engines**

**ELECTRONIC ENGINE CONTROLS, I6-EGR ENGINE CRUISE CONTROL AND BODY BUILDER CONNECTIONS, P. 2**



**Figure 60 Electronic Engine Controls, I6-EGR Engine Cruise Control and Body Builder Connections**

**ELECTRONIC ENGINE CONTROLS, (V8-AVNT) ENGINES, P. 3**

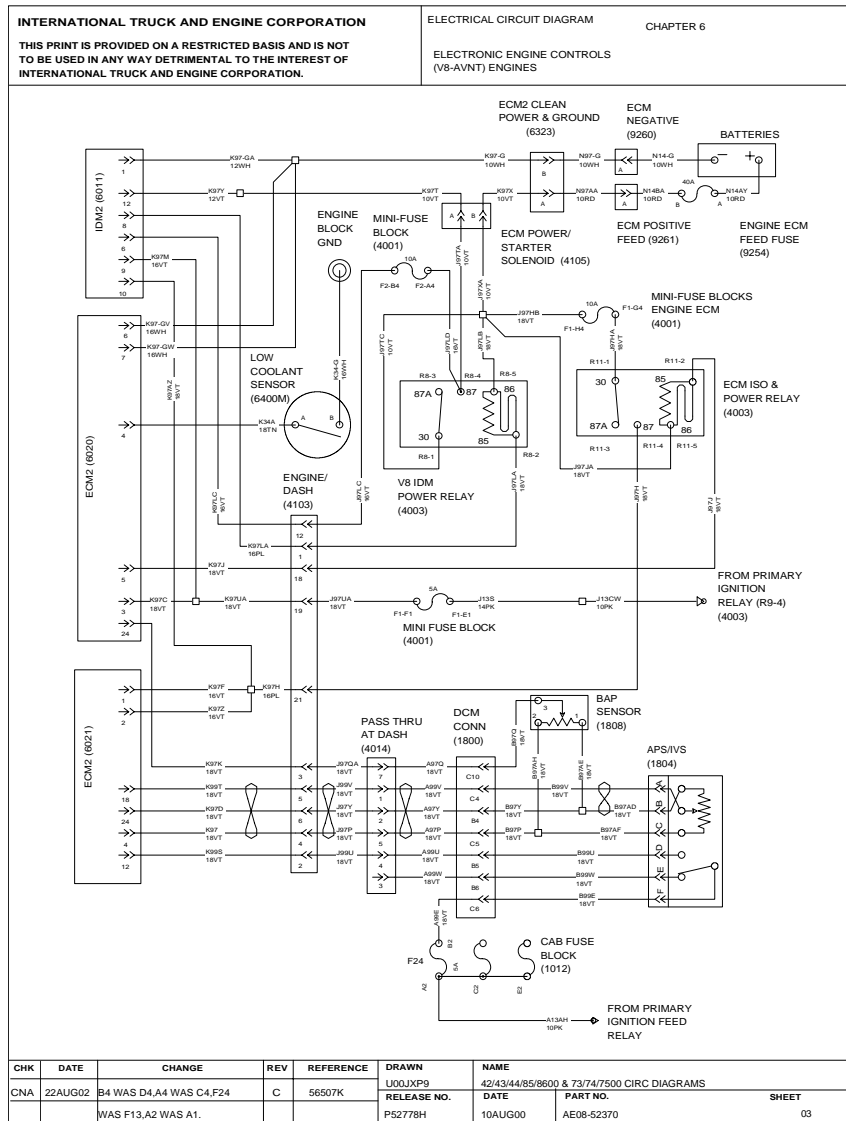


Figure 61 Electronic Engine Controls, (V8-AVNT) Engines

**ELECTRONIC ENGINE CONTROLS, V8-AVNT ENGINE CRUISE CONTROL AND BODY BUILDER CONNECTIONS, P. 4**

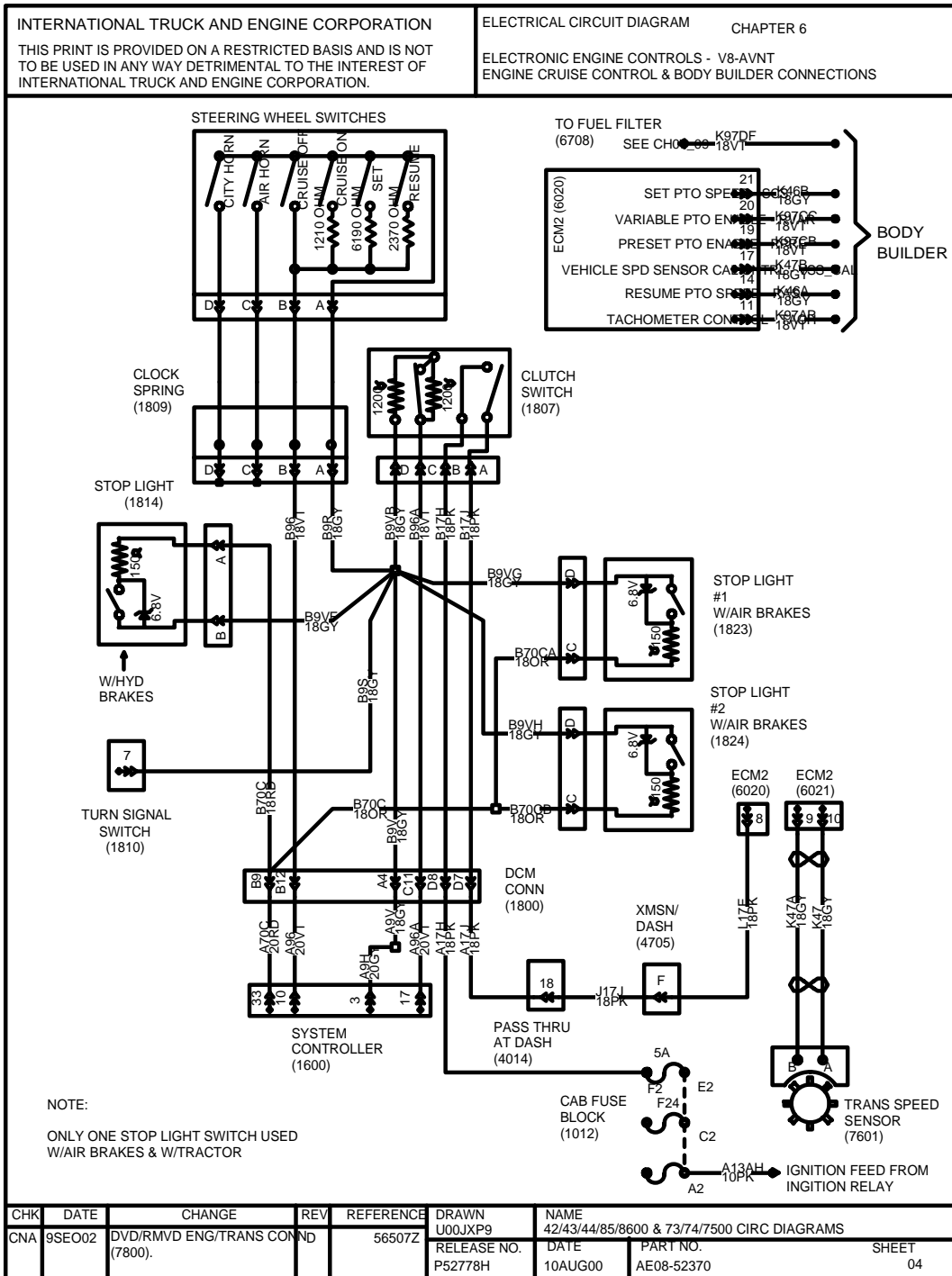


Figure 62 Electronic Engine Controls, V8-AVNT Engine Cruise Control and Body Builder Connections

CATERPILLAR C10, C11, C12, AND C13 ENGINES, P. 5

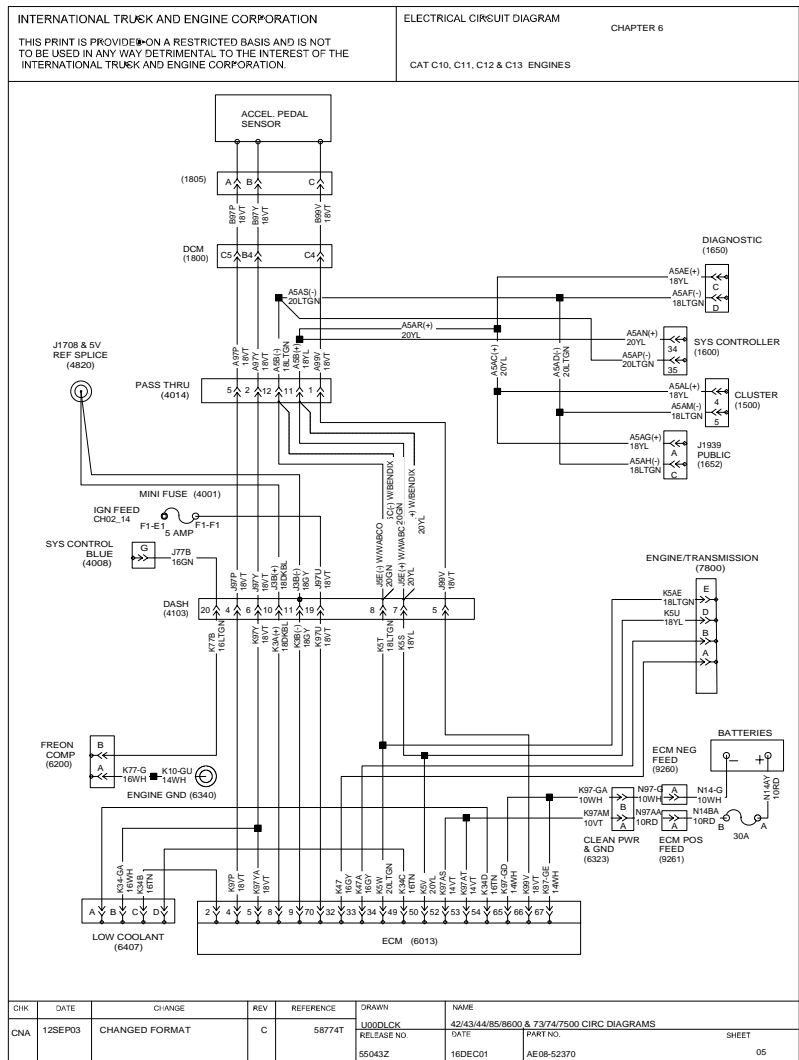


Figure 63 Caterpillar C10, C11, C12, and C13 Engines

CUMMINS ISM ENGINE, P. 6

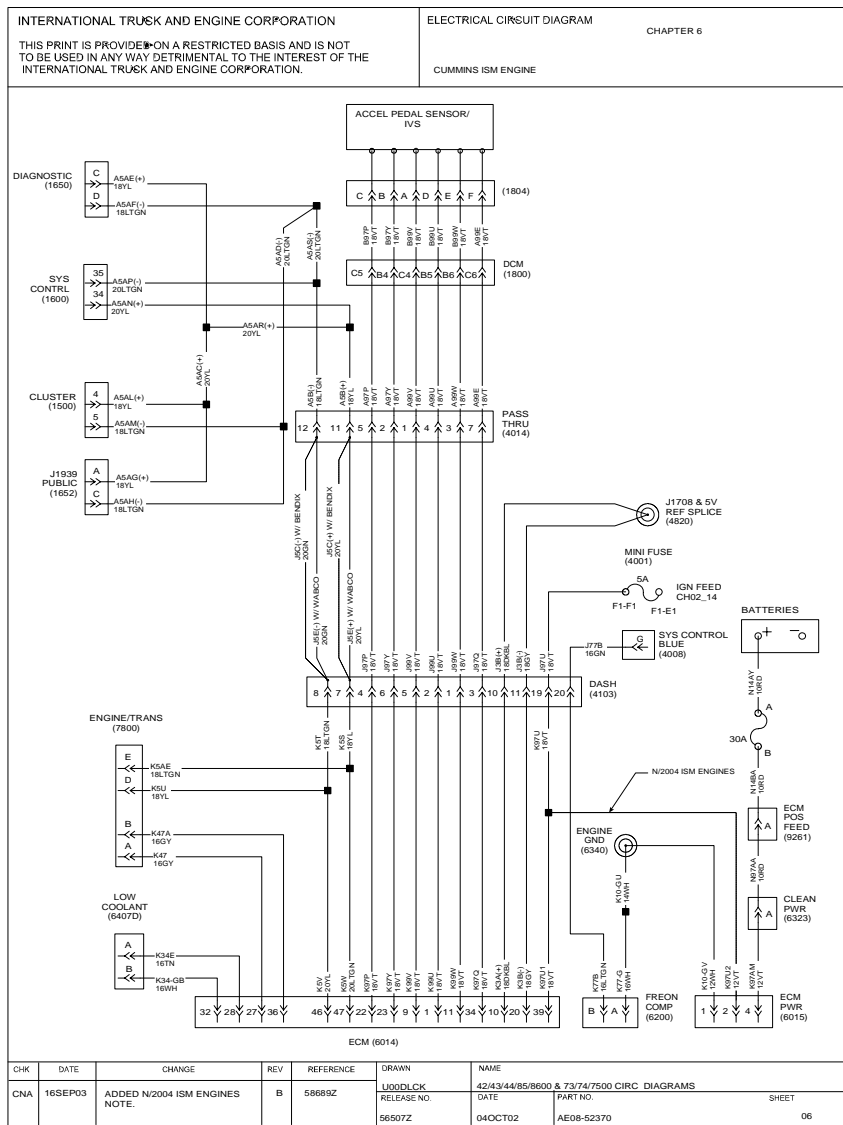


Figure 64 Cummins ISM Engine



16 HEUI ENGINE, P. 7

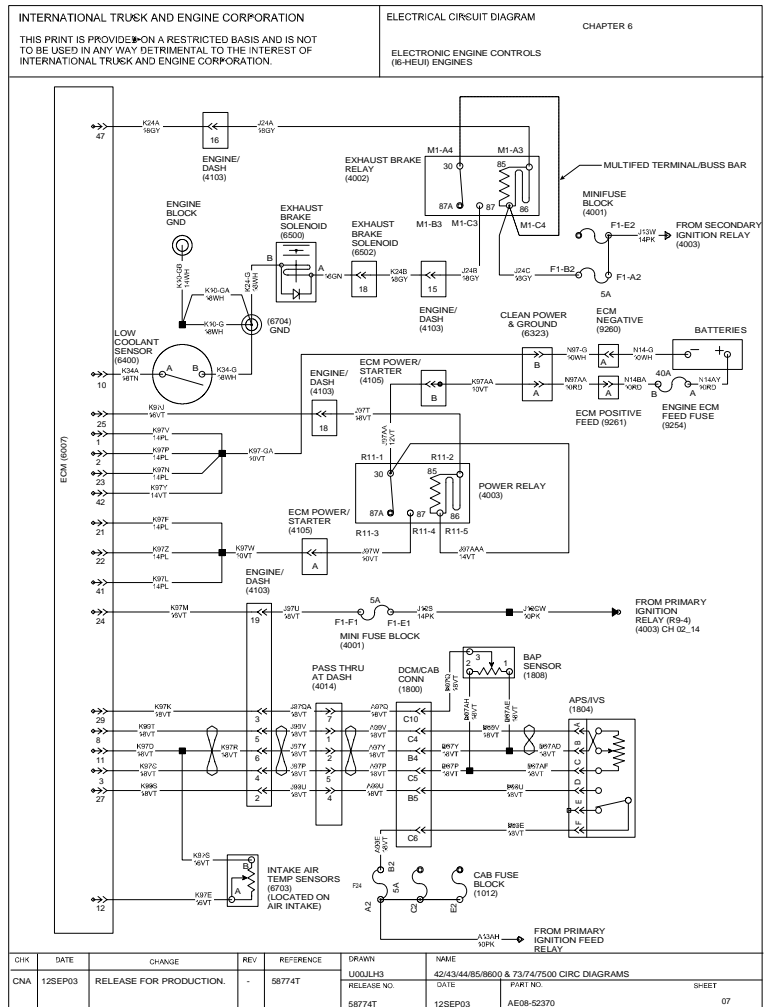


Figure 65 16 HEUI Engine

