

SERVICE MANUAL

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**

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06/17/2004

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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

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

CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 2

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											
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.							
					P52778H	09AUG00	AE08-52365							
										SHEET				
										02				

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

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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.	
						P52778H		15 MAY 00		AE08-52365	
SHEET 03											

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

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

CIRCUIT NUMBER IDENTIFICATION AND LOCATION CHART, P. 4

INTERNATIONAL TRUCK AND ENGINE CORPORATION				ELECTRICAL CIRCUIT DIAGRAM			
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.				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.)

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

5

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		
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	DATE	PART NO.
					P52778H	15MAY00	AE08-52365	05

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

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

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

INTERNATIONAL TRUCK AND ENGINE CORPORATION			ELECTRICAL CIRCUIT DIAGRAM		
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.			CHAPTER 1		
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 DISENGAGED INPUT	5	VCREF(5V)	REMOTE ACCELERATOR SENS. SUPPLY
42	DPS	GROUND	7	VCREF GND	REMOTE ACCELERATOR SENSOR GND
46	ECI	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	56774T	U00JXP9	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

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

7

CIRCUIT DIAGRAM INSTRUCTIONS, P. 7

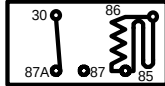
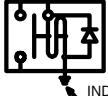
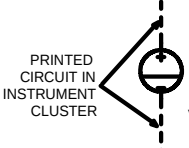
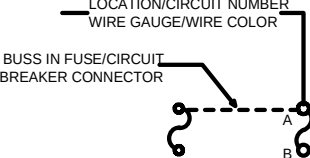
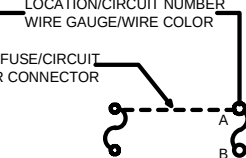
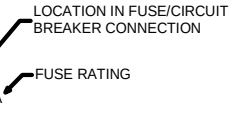
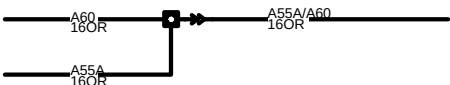
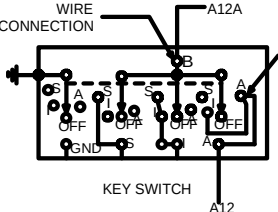
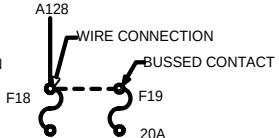
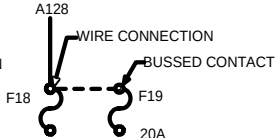
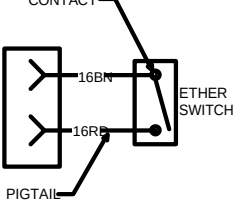
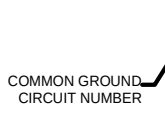
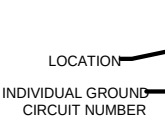
INTERNATIONAL TRUCK AND ENGINE CORPORATION THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.	ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1 CIRCUIT DIAGRAM INSTRUCTIONS																																																								
A - SWITCH AND RELAY POSITIONS AS SHOWN ON CIRCUIT DIAGRAMS INDICATE NORMAL POSITION WITH IGNITION OFF UNLESS OTHERWISE NOTED.  SWITCH: MANUAL/MECHANICAL  RELAY - SUPPRESSED  INDICATES CASE MAGNETIC SUPPRESSED	B - MULTIPLE CONNECTIONS ARE DISPLAYED ON SCHEMATIC AS SHOWN. REFER TO CONNECTOR COMPOSITE WITH APPLICABLE NUMBER FOR MORE COMPLETE INFORMATION.  12 AND/OR 12 SINGLE IN-LINE CONNECTORS DISPLAYED AS SHOWN WITH OR WITHOUT CONNECTOR NUMBER. 																																																								
C - PHANTOM LINES INDICATE PRINTED CIRCUITS OR BUSSED CIRCUITS. THESE CIRCUITS EXIST IN THE INSTRUMENT CLUSTERS AND FUSE/CIRCUIT BREAKER CONNECTORS.  PRINTED CIRCUIT IN INSTRUMENT CLUSTER  BUSS IN FUSE/CIRCUIT BREAKER CONNECTOR  LOCATION/CIRCUIT NUMBER WIRE GAUGE/WIRE COLOR  LOCATION IN FUSE/CIRCUIT BREAKER CONNECTION	D - MULTIPLE CIRCUIT NUMBERS ON A LINE INDICATE ONE WIRE DISTRIBUTING CURRENT TO TWO CIRCUITS. 																																																								
E - SWITCHES, RELAYS AND COMPONENTS INDICATE EXTERNAL WIRE CONNECTIONS AND/OR INTERNAL CONNECTIONS OR CONTACTS.  KEY SWITCH  CONTACT  BUSSED CONTACT  PIGTAIL																																																									
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). NOTE: FOR CIRCUIT DESCRIPTION OTHER THAN GROUNDS, NEITHER THE LETTER "G" NOR THE COLOR WHITE SHALL BE USED. GROUND CIRCUITS ARE DESCRIBED THIS:  COMMON GROUND CIRCUIT NUMBER  SUFFIX G IS NOT A SUFFIX BUT INDICATES A GROUND CIRCUIT.  INDIVIDUAL GROUND CIRCUIT NUMBER  SUFFIX G IS NOT A SUFFIX BUT INDICATES A GROUND CIRCUIT.																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">CHK</td> <td style="width: 10%;">DATE</td> <td style="width: 20%;">CHANGE</td> <td style="width: 10%;">REV</td> <td style="width: 10%;">REFERENCE</td> <td style="width: 10%;">DRAWN</td> <td style="width: 30%;">NAME</td> </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 & 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

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

CIRCUIT DIAGRAM INSTRUCTIONS, P. 8

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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ELECTRICAL CIRCUIT DIAGRAM

CIRCUIT DIAGRAM INSTRUCTIONS

CHAPTER 1

G - ABBREVIATIONS: COLOR, NOUN AND ENGINE

COLOR ABBREVIATION

AQ - AQUA

BK - BLACK

BL - BLUE

BN - BROWN

DK GN - DARK GREEN

GD - GOLD

GY - GRAY

GN - GREEN

LT BL - LIGHT BLUE

LT GN - LIGHT GREEN

OR - ORANGE

PK - PINK

PL - PURPLE

RD - RED

SIL - SILVER

TN - TAN

VT - VIOLET

WH - WHITE

YL - YELLOW

NOUN ABBREVIATION

A

ACC

AC

AUX

AWG

B

BAT

CONN

DRL

ENG

FWD

GA

ACCESSORY

AIR CONDITIONER

AUXILIARY

AMERICAN WIRE GAUGE

BATTERY

CONNECTION OR CONNECTOR

DAYTIME RUNNING LIGHTS

ENGINE

FORWARD

GAUGE

G

GND

I

IGN

IND

L

LT

W/O

OPT

R

S

THERMO

W/

GROUND

IGNITION

INDICATOR

LEFT

LIGHT

WITHOUT

OPTIONAL

RIGHT

START OR SENDER

THERMOSTAT

WITH

ENGINE ABBREVIATION

ISM

N14E PLUS

C-10,C-12

V8-AVNT

I6-HEUI

- MFG (CUMMINS) 10.8 LITER ELECTRONIC ENGINE CONTROL

- MFG (CUMMINS) 14 LITER ELECTRONIC ENGINE CONTROL

- MFG (CATERPILLAR) 10.3 LITER ELECTRONIC ENGINE CONTROL

- MFG (INTERNATIONAL) V8 6.0 LITER ELECTRONIC ENGINE CONTROL

- MFG (INTERNATIONAL) NGD I6 DT466 & DT/HT530 ELECTRONIC ENGINE CONTROL

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	10AUG00	AE08-52365	08		

Figure 8 Circuit Diagram Instructions (Cont.)

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

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SCHEMATIC SYMBOL CHART, P. 9

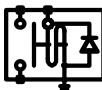
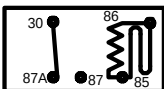
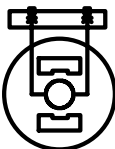
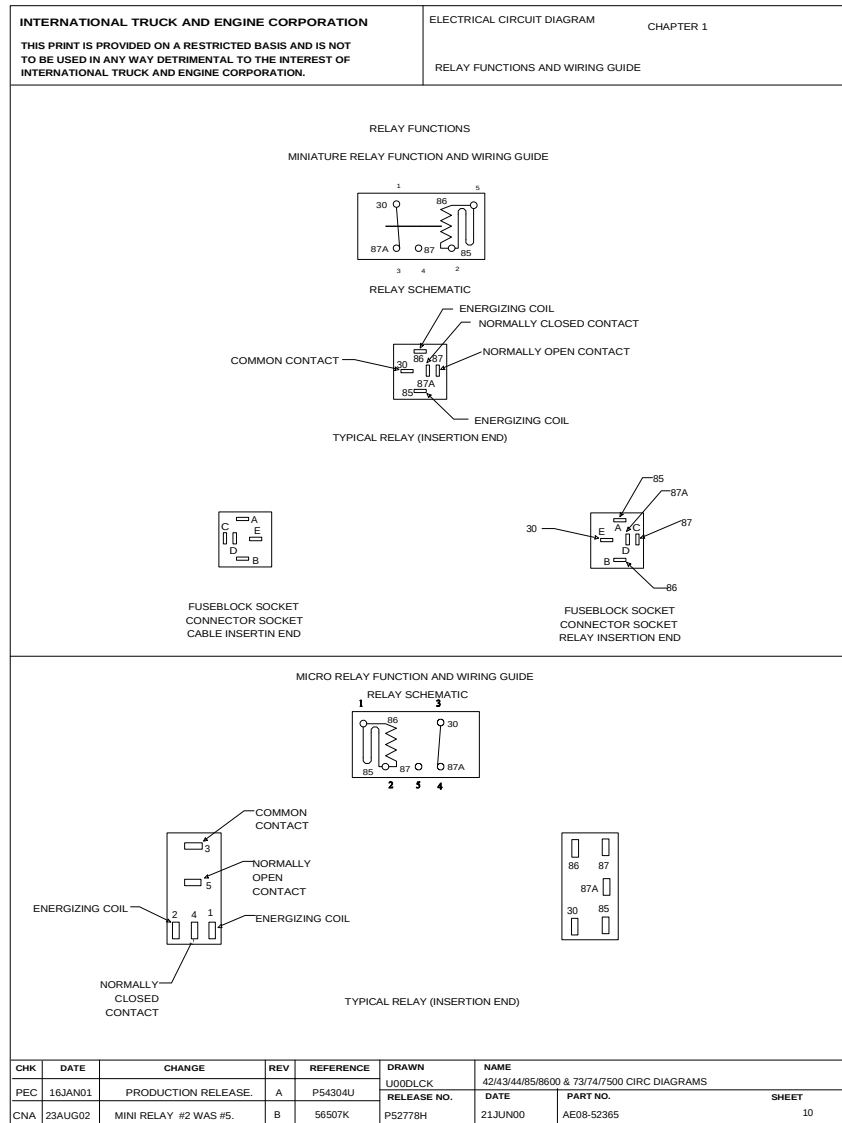
INTERNATIONAL TRUCK AND ENGINE CORPORATION					ELECTRICAL CIRCUIT DIAGRAM		CHAPTER 1	
THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF INTERNATIONAL TRUCK AND ENGINE CORPORATION.					SCHEMATIC SYMBOL CHART			
SYMBOL		DESCRIPTION			DESCRIPTION		SYMBOL	
		MALE/FEMALE IN-LINE CONNECTION			HORN			
		FEMALE TERMINAL			SPEAKER - SOUND SYSTEM			
		MALE TERMINAL			MAGNETIC SWITCH			
		GROUND			LIGHT - SINGLE FILMENT			
		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						
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	19MAY00	AE08-52365	
							SHEET 09	

Figure 9 Schematic Symbol Chart

RELAY FUNCTIONS, P. 10**Figure 10 Relay Functions**

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

11

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
DOME 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. P52778H	DATE 20JUN00
					PART NO. AE08-52365	SHEET 11

Figure 11 Lamp Bulb Chart

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

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

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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ELECTRICAL CIRCUIT DIAGRAM

INTERNATIONAL V8 & I6 ECM
CONTROLLER CONNECTORS PIN
NUMBER IDENTIFICATION

CHAPTER 1

CONNECTOR X3 REFERENCE (6020)

ECM PIN #	TERM	DESCRIPTION
1	FPM	FUEL PUMP MONITOR
2	FLI	FUEL LEVEL INDICATOR
3	KL.15	IGNITION FEED
4	ECL	ENGINE COOLANT LEVEL
5	MPR	MAIN POWER RELAY
6	KL.31	GROUND
7	KL.31	GROUND
8	DDS	DRIVELINE DISENGAGE SWITCH
9	FPC	FUEL PUMP CONTROL
10	TCSS	TORQUE CURVE SELECT SWITCH
11	TACH	TACHOMETER CONTROL
12	CAN1+	DRIVETRAIN J1939 DATALINK +
13	CAN1-	DRIVETRAIN J1939 DATALINK -
14	RAS	RESUME/ACCELERATE
15	CAN1-SHLD	DRIVETRAIN J1939 DATALINK SHLD
16		NOT POPULATED
17	VSS_CAL	VEHICLE SPEED SENSOR CALIBRATION
18	VRE	VEHICLE RETARDER ENABLE
19	RPRE	REMOTE PRESET PTO ENABLE
20	RVAR	REMOTE VARIABLE PTO ENABLE
21	SCS	SET/COAST
22	ESHTR	ELECTRONIC SHUTTER RELAY
23	ECI	ENGINE CRANK INHIBIT
24	BAP	BAROMETRIC AIR PRESSURE

CONNECTOR X4 REFERENCE (6021)

ECM PIN #	TERM	DESCRIPTION
1	KL.87	BATTERY POWER
2	KL.87	BATTERY POWER
3		NOT POPULATED
4	VBREF	SENSOR REFERENCE VOLTAGE
5		NOT POPULATED
6	LSI_SPARE2	LOW SPEED INPUT 2
7		NOT POPULATED
8		NOT POPULATED
9	VSS-	VEHICLE SPEED SENSOR-
10	VSS+	VEHICLE SPEED SENSOR+
11		NOT POPULATED
12	IVS	IDLE VALIDATION SWITCH
13		NOT POPULATED
14	EFAN	ELECTRIC FAN CONTROL
15	LSO_SPARE4	LOW SIDE OUTPUT 4
16		NOT POPULATED
17		NOT POPULATED
18	APS	ACCELERATION POSITION SENSOR
19		NOT POPULATED
20	ATA+	J1708 DATALINK +
21	ATA-	J1708 DATALINK -
22		NOT POPULATED
23	GSC	GENSET SPEED CONTROL
24	KL.31B	SENSOR REFERENCE GROUND

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
CNA	25FEB03	PIN 6 OF CONN X4 INPUT CHANGED TO INPUT	B	58928S	U000DLCK RELEASE NO P54304U	42/43/44/85/9600 & 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

BATTERY FEEDS, CAB, P. 2

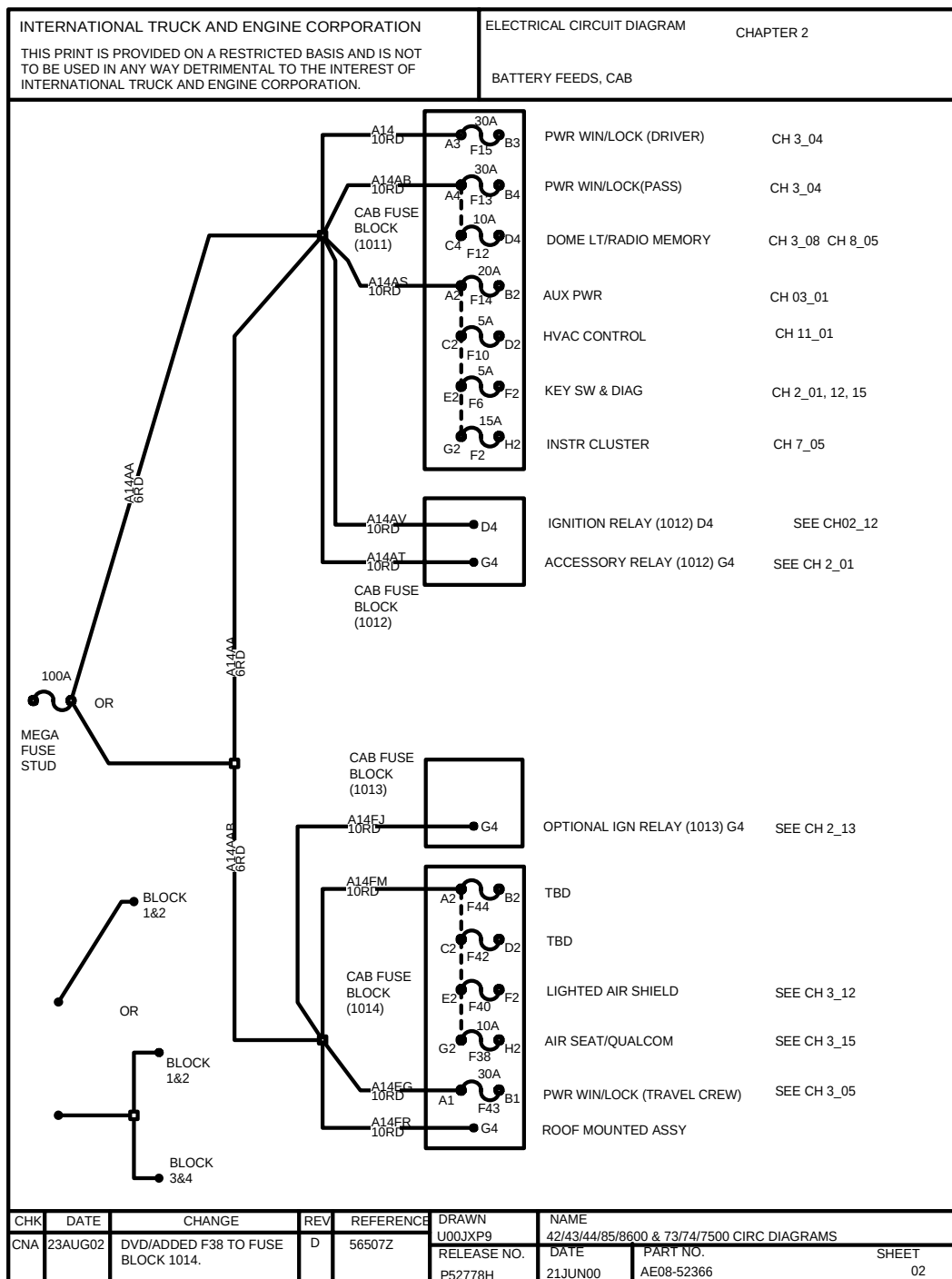
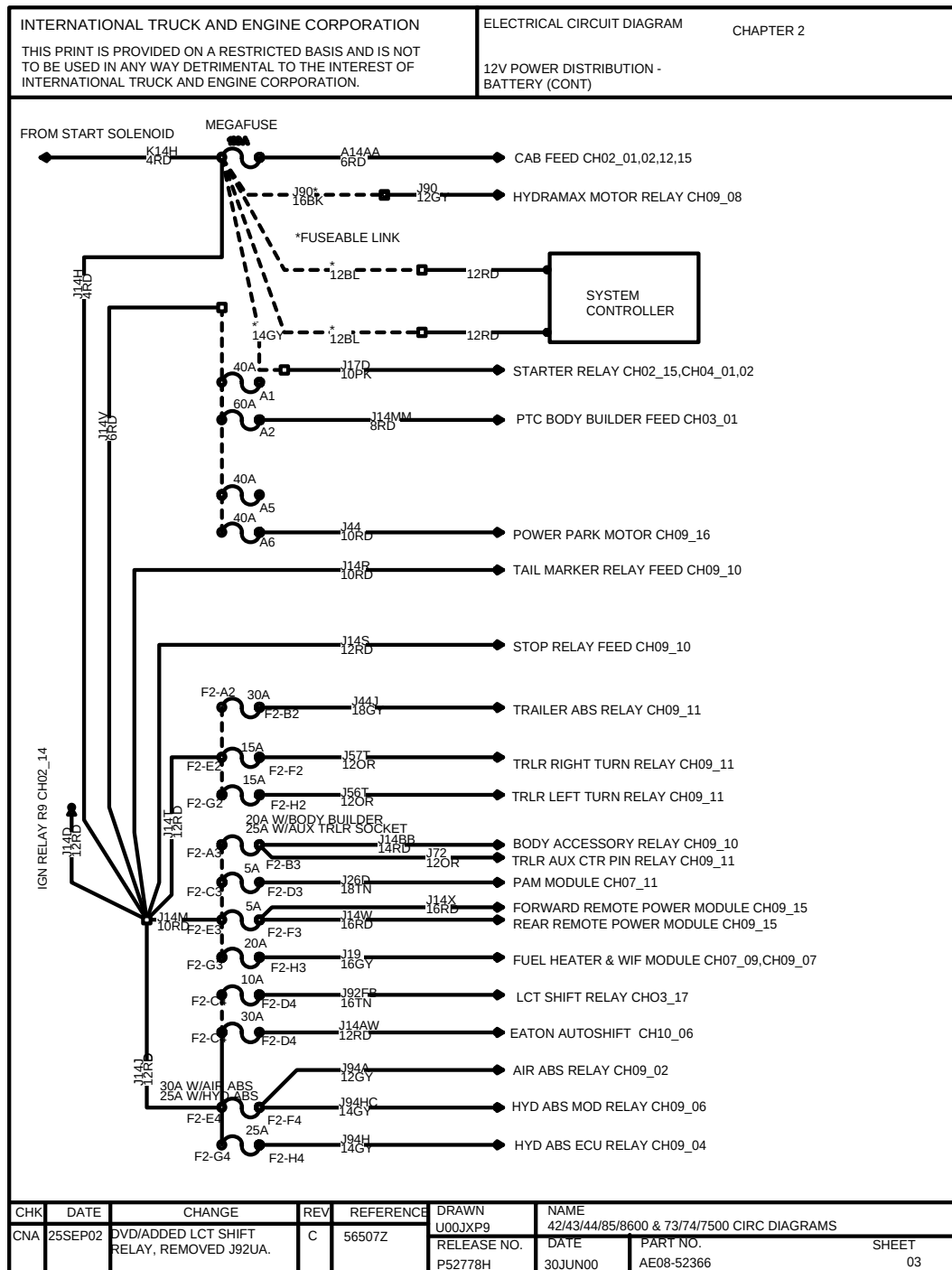


Figure 14 Battery Feeds, Cab

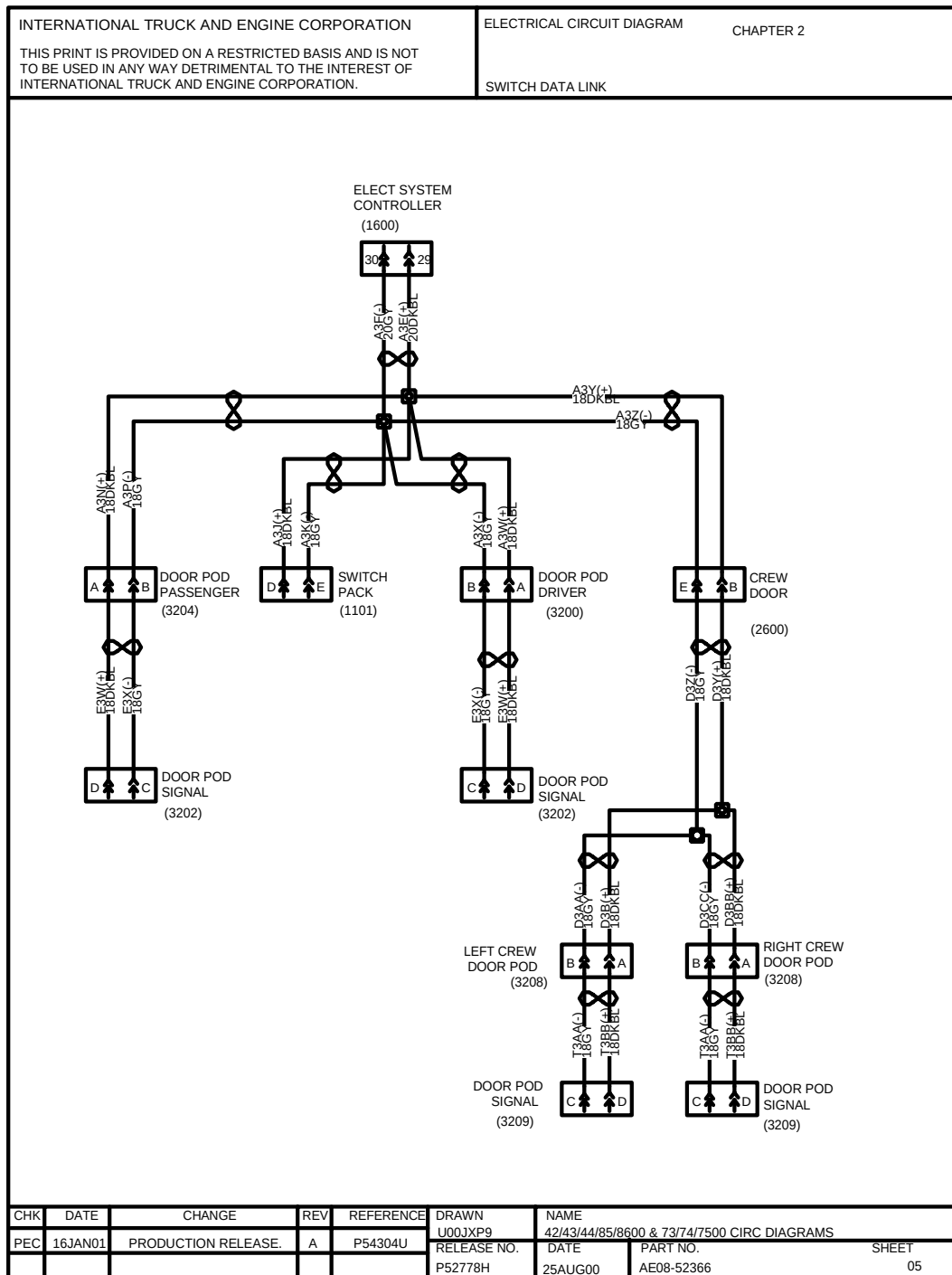
**3200, 4200, 4300, 4400, 7300, 7400, 7500, 7600, 8500, 8600 SERIES Built After
March 10, 2004 — ELECTRICAL CIRCUIT DIAGRAMS**

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BATTERY, P. 3**Figure 15 Battery**

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

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SWITCH DATA LINK, P. 5**Figure 17 Switch Data Link**

DRIVETRAIN 1939 DATA LINK (CAB), P. 6

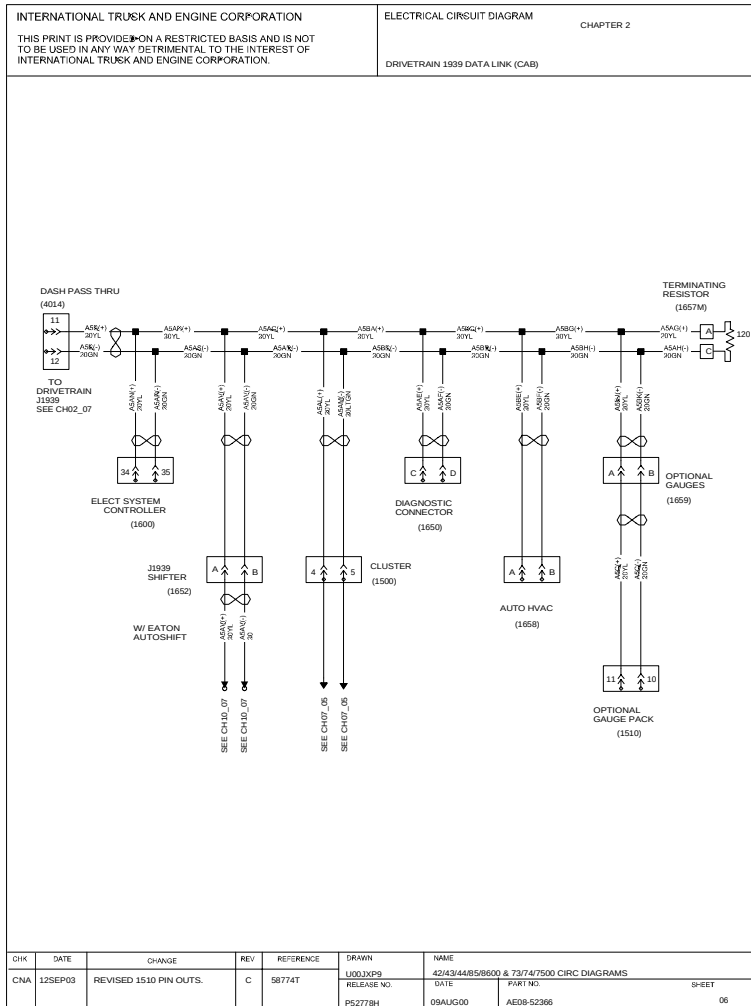


Figure 18 Drivetrain 1939 Data Link (Cab)

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

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DRIVETRAIN 1939 DATA LINK (CHASSIS), P. 7

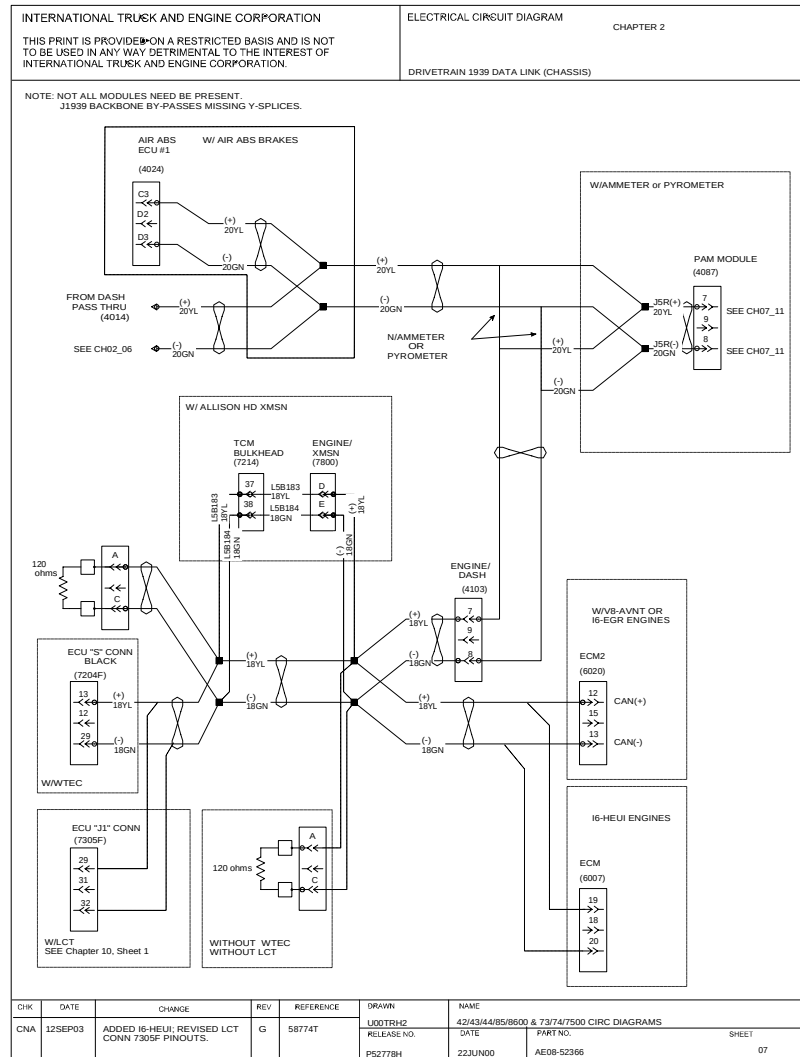


Figure 19 Drivetrain 1939 Data Link (Chassis)

GROUPS CHASSIS, P. 8

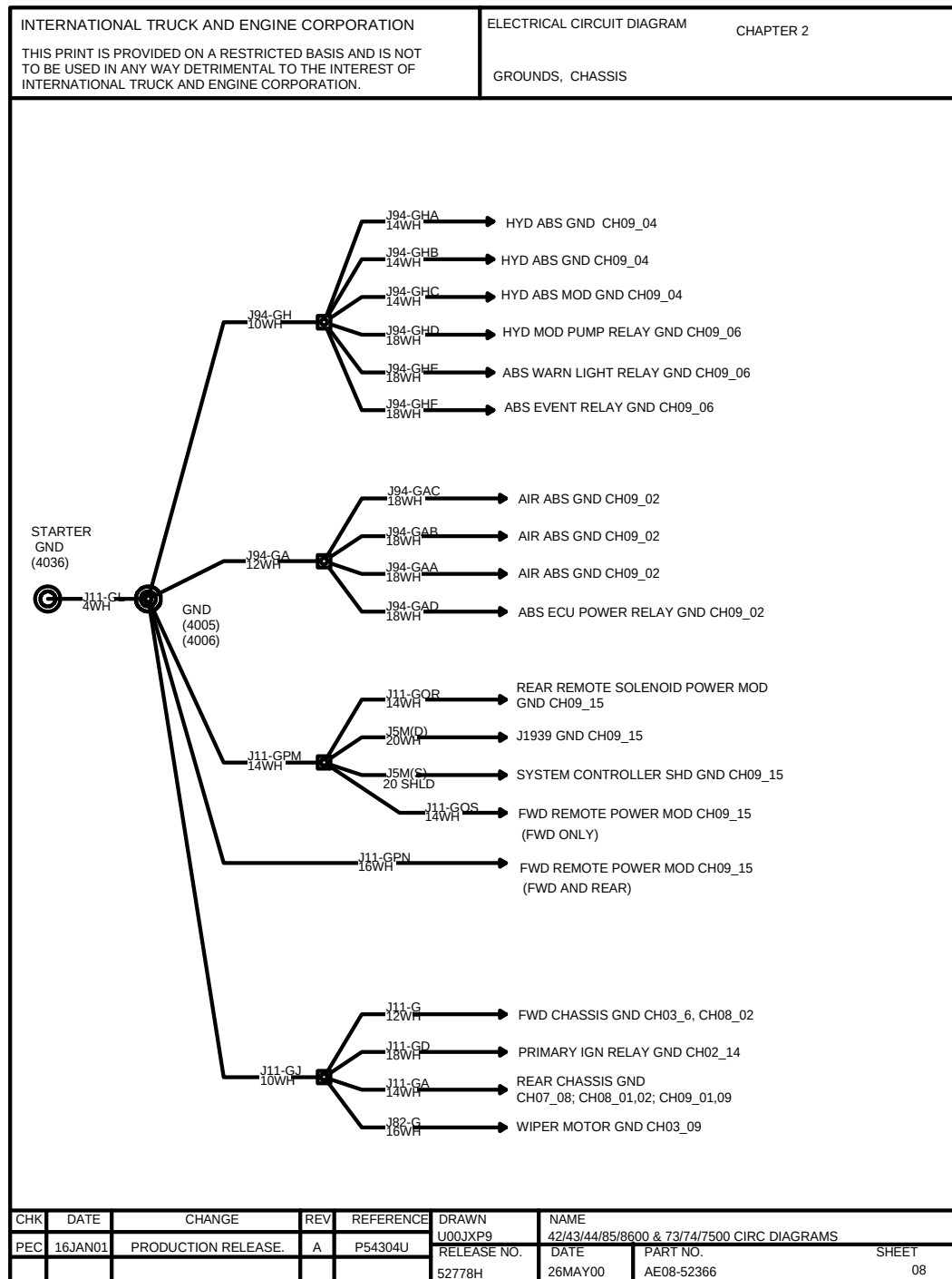


Figure 20 Grounds Chassis

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

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GROUNDS CHASSIS, P. 9

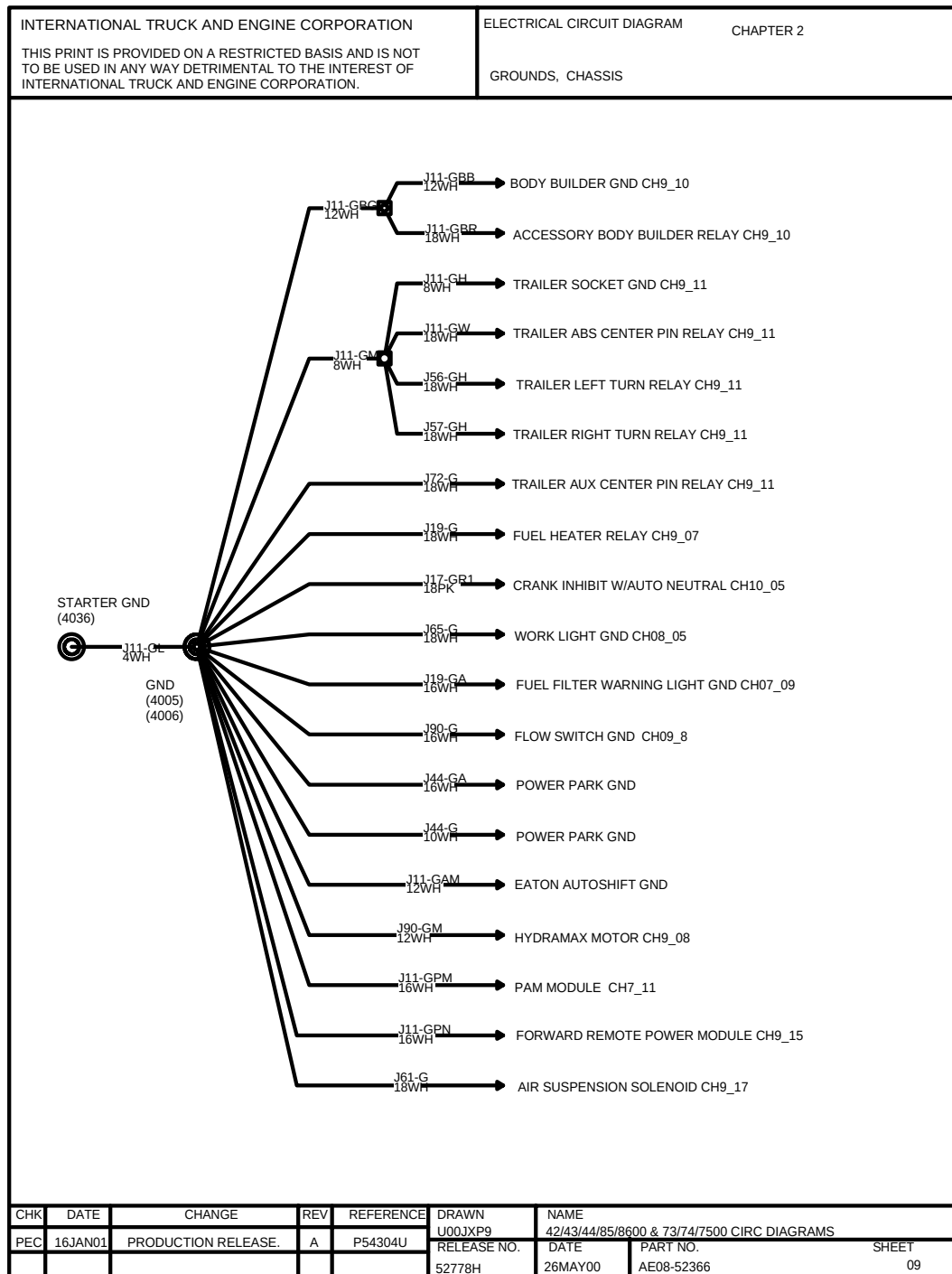


Figure 21 Grounds Chassis (Cont.)

GROUNDS IP, P. 10

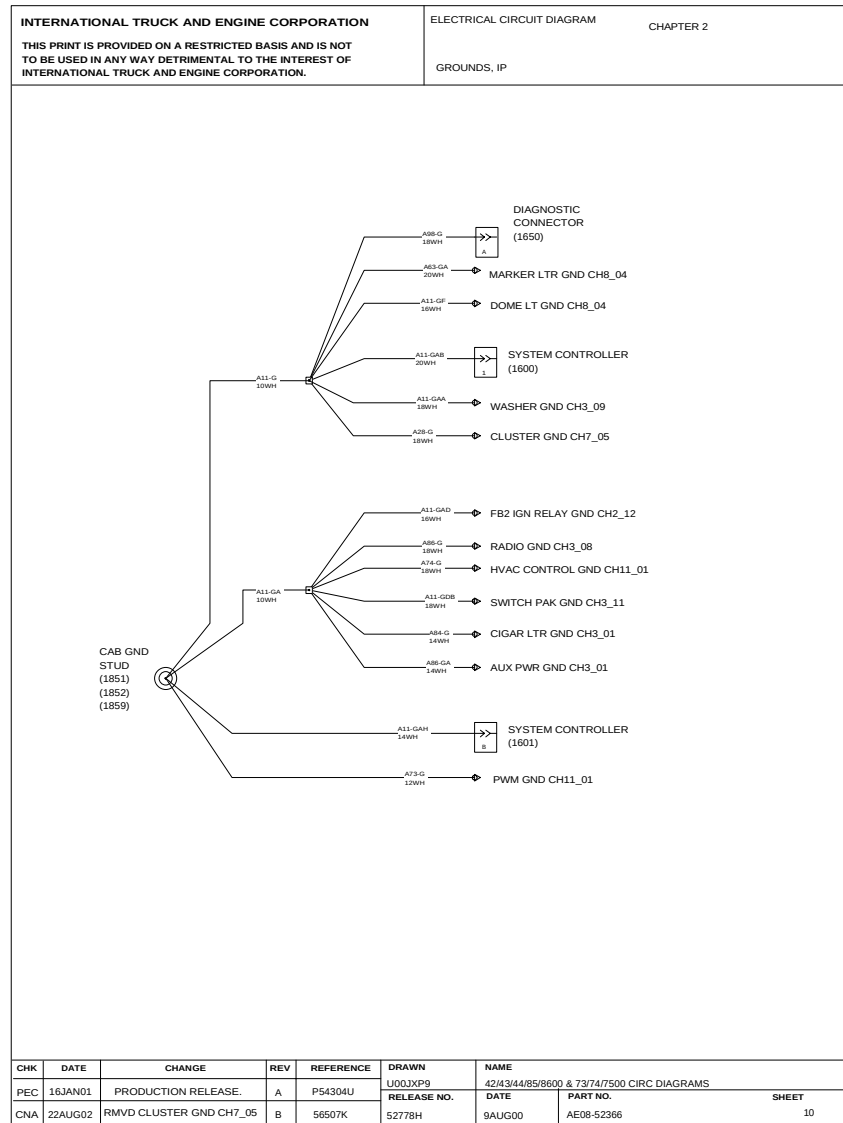
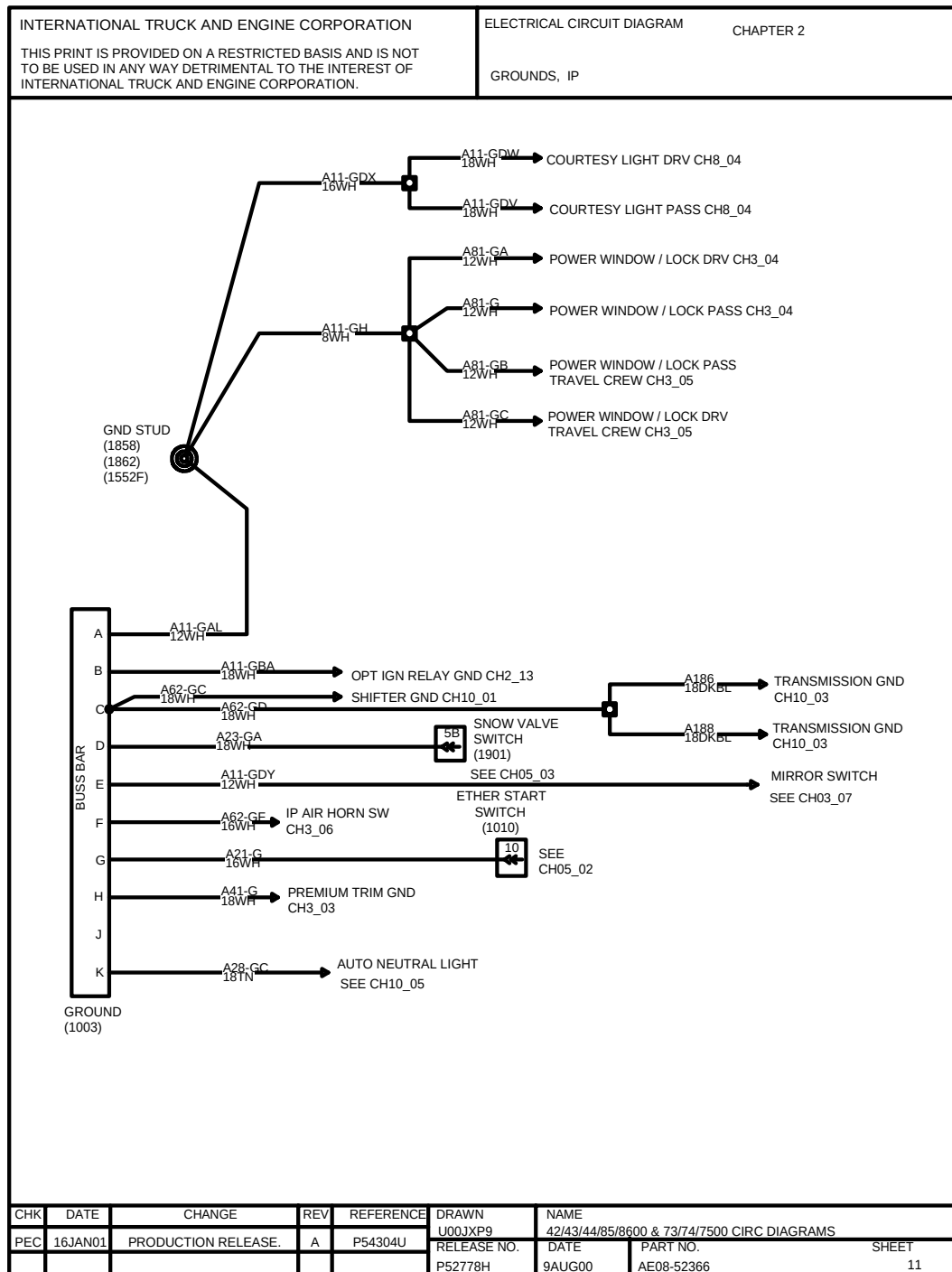


Figure 22 Grounds IP

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

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GROUND S IP, P. 11**Figure 23 Grounds IP**

IGNITION CAB, P. 12

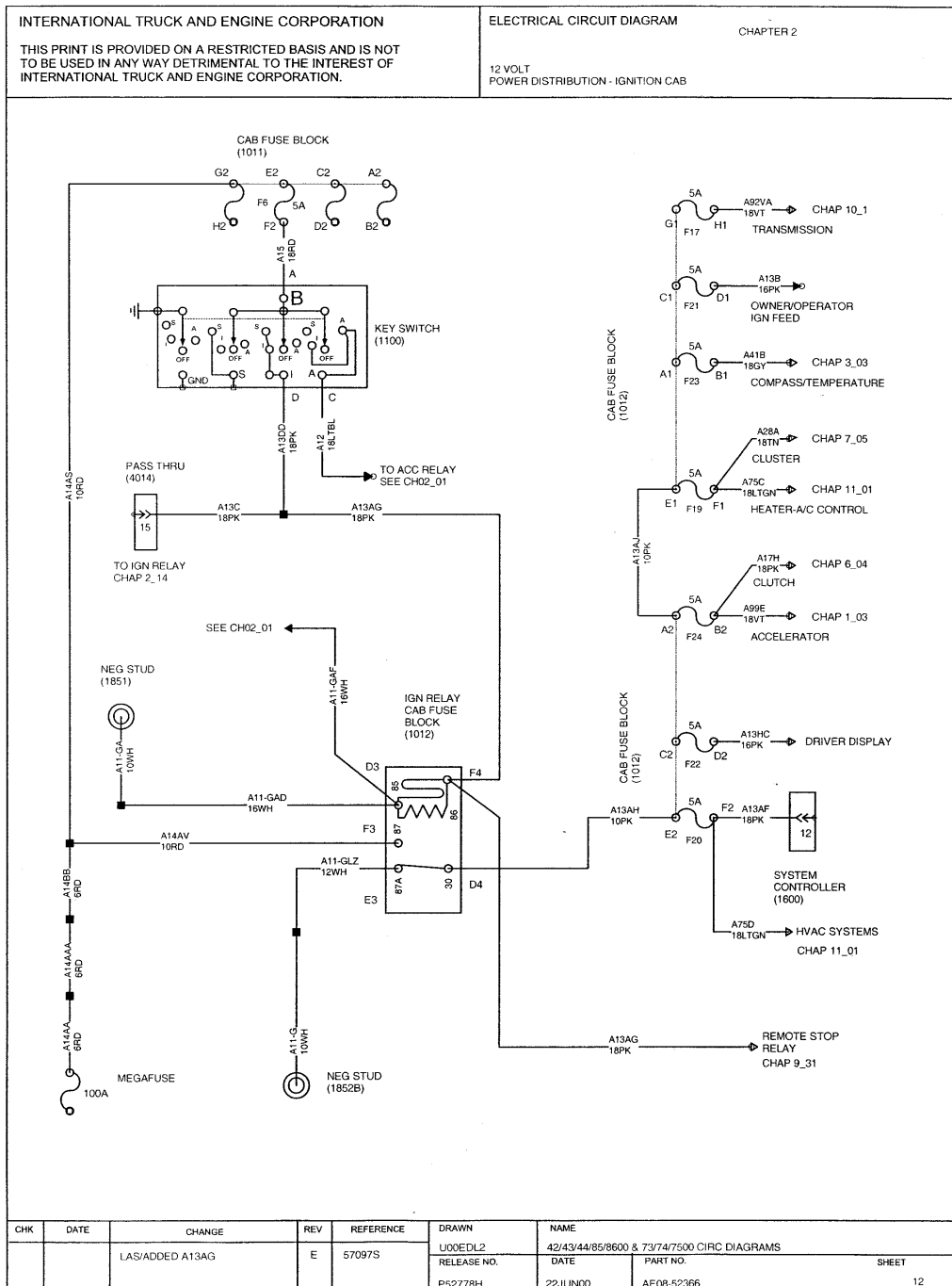


Figure 24 Ignition Cab

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

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IGNITION CAB, P. 13

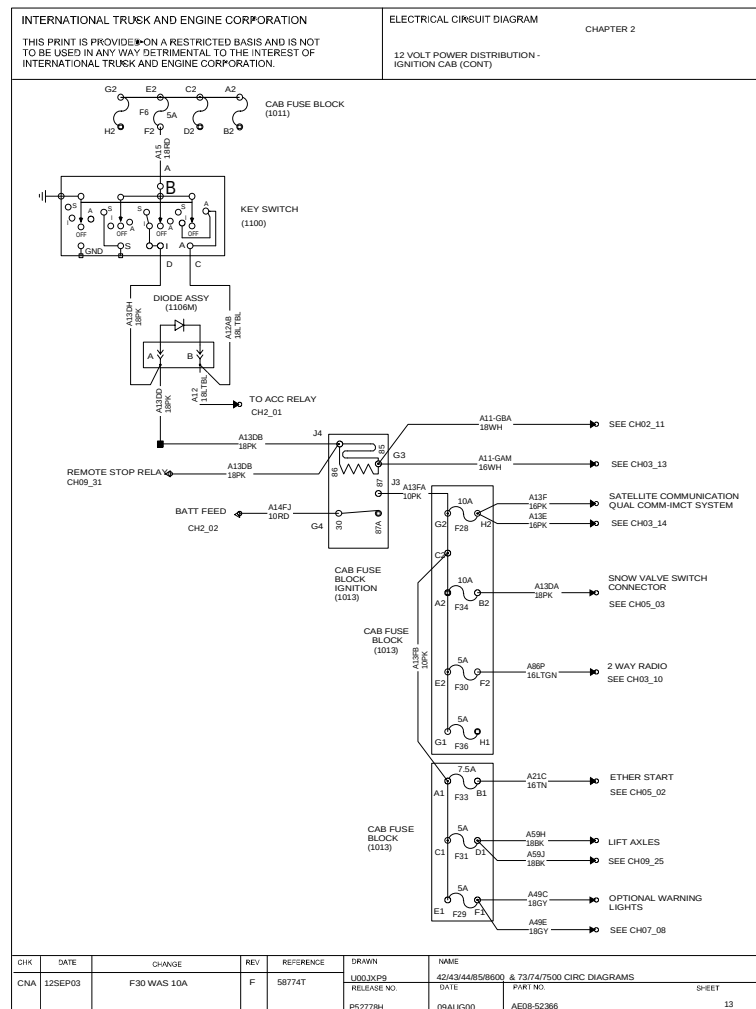


Figure 25 Ignition Cab (Cont.)

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

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START, P. 15

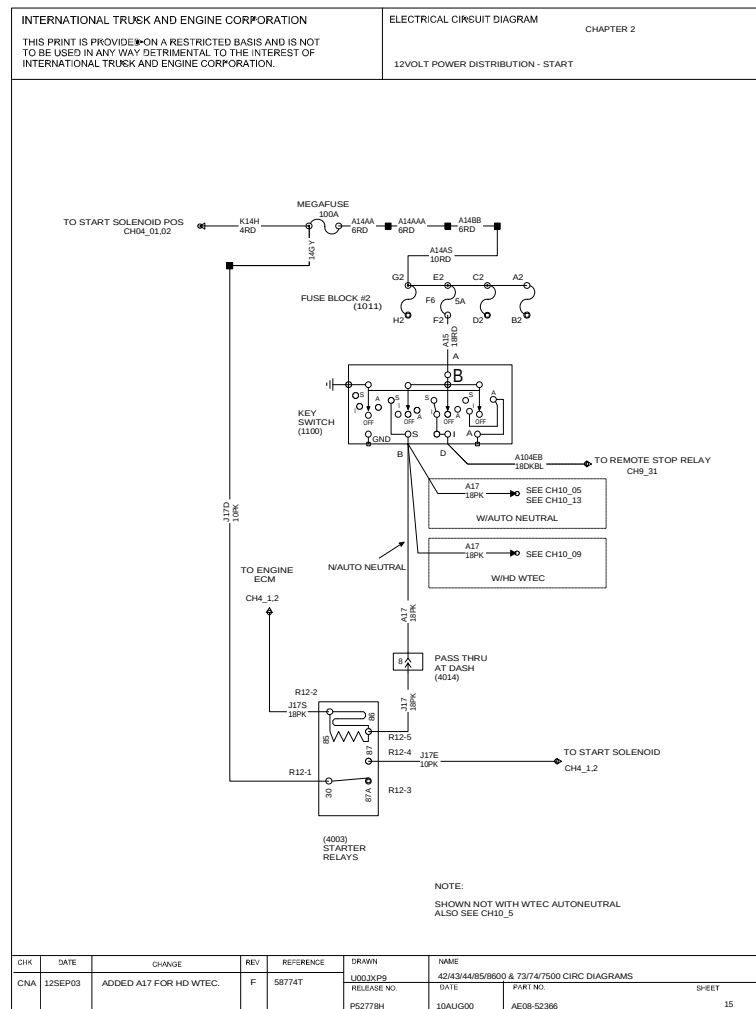


Figure 27 Start

CAB ACCESSORIES (CHAPTER 3)

CIGAR LIGHTER AND POWER FEEDS, P. 1

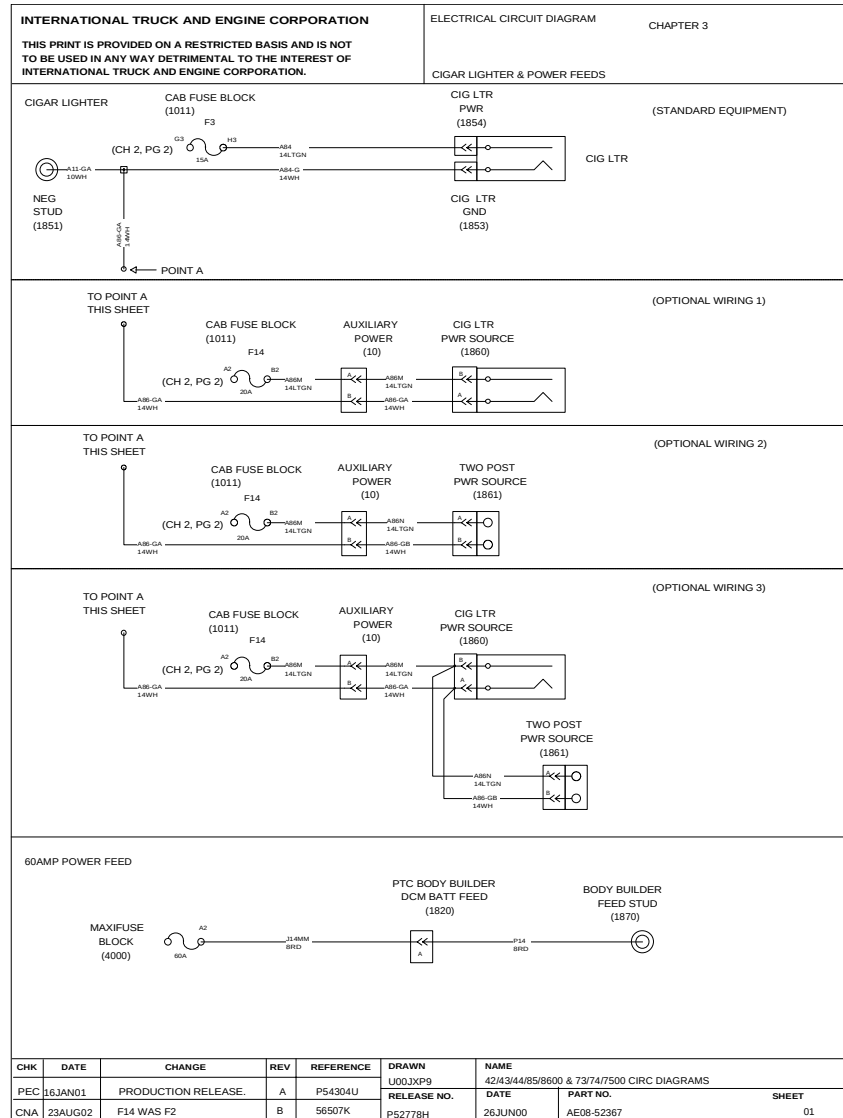


Figure 28 Cigar Lighter and Power Feeds

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

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CB POWER, P. 2

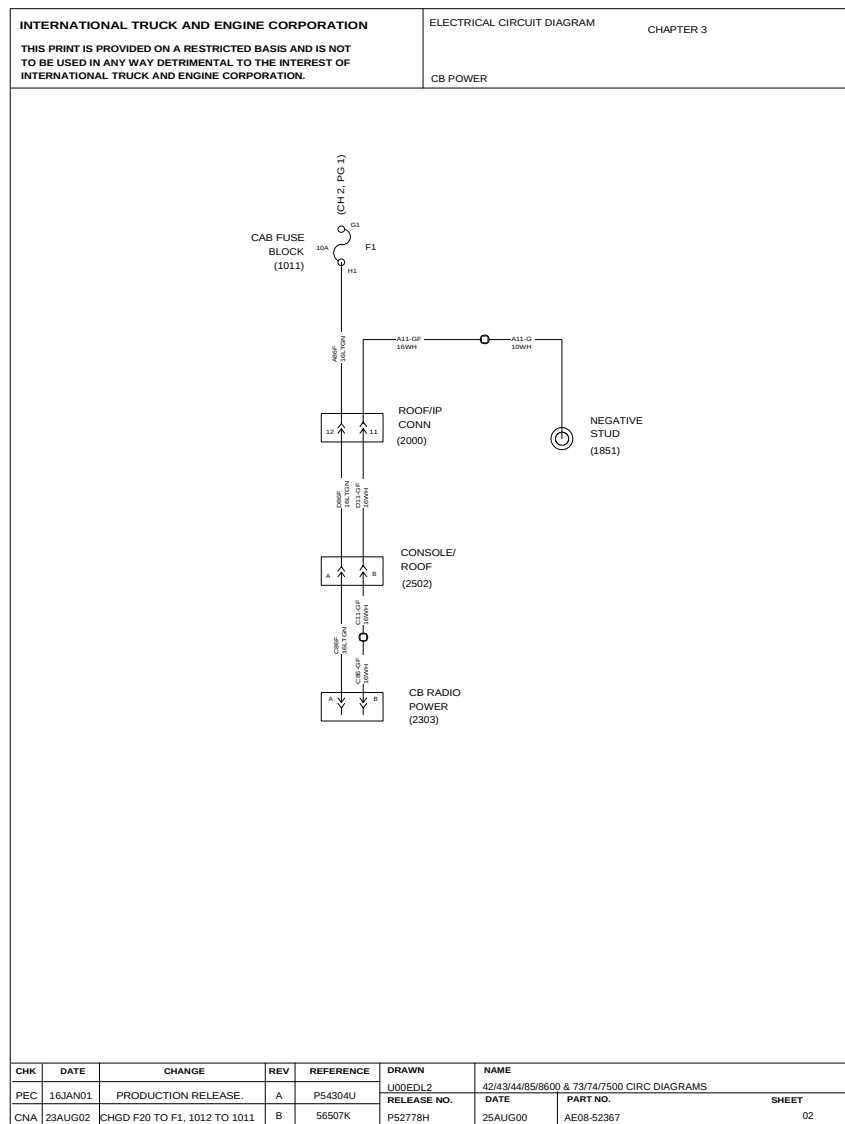


Figure 29 CB Power

COMPASS AND TEMPERATURE DISPLAY, P. 3

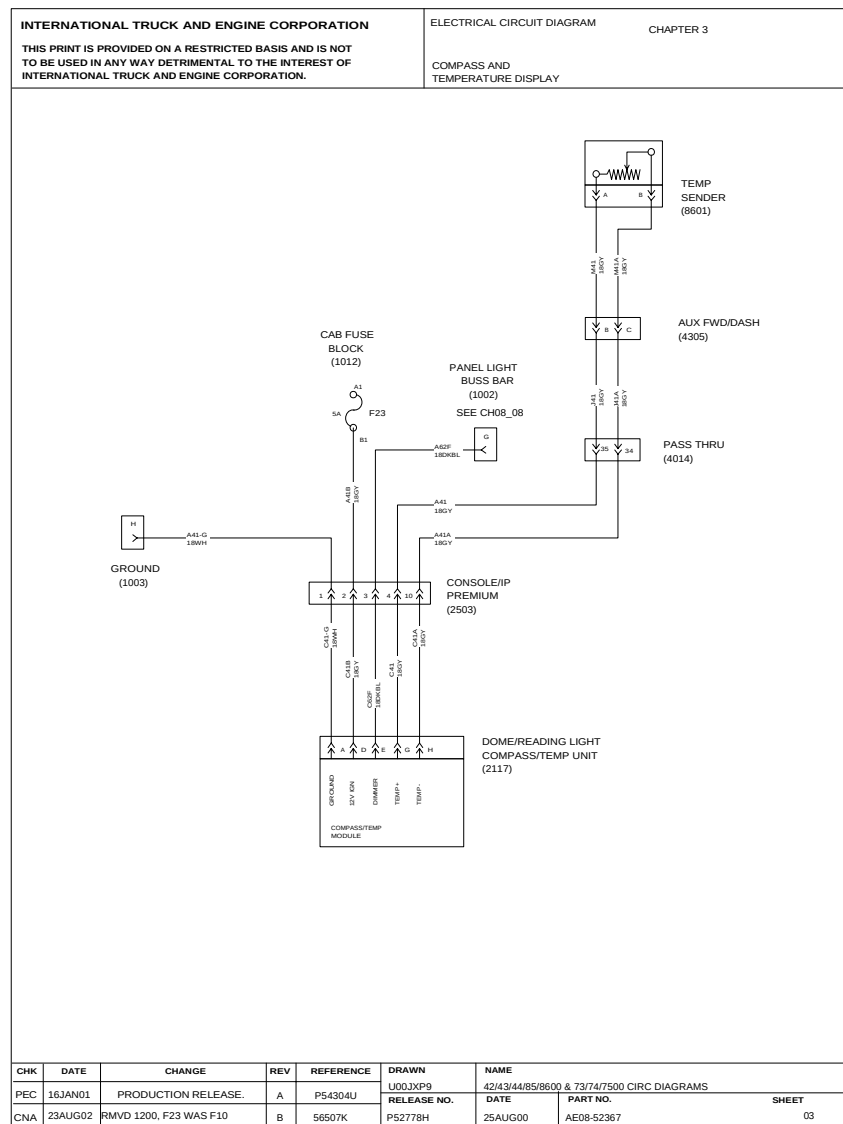


Figure 30 Compass and Temperature Display

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

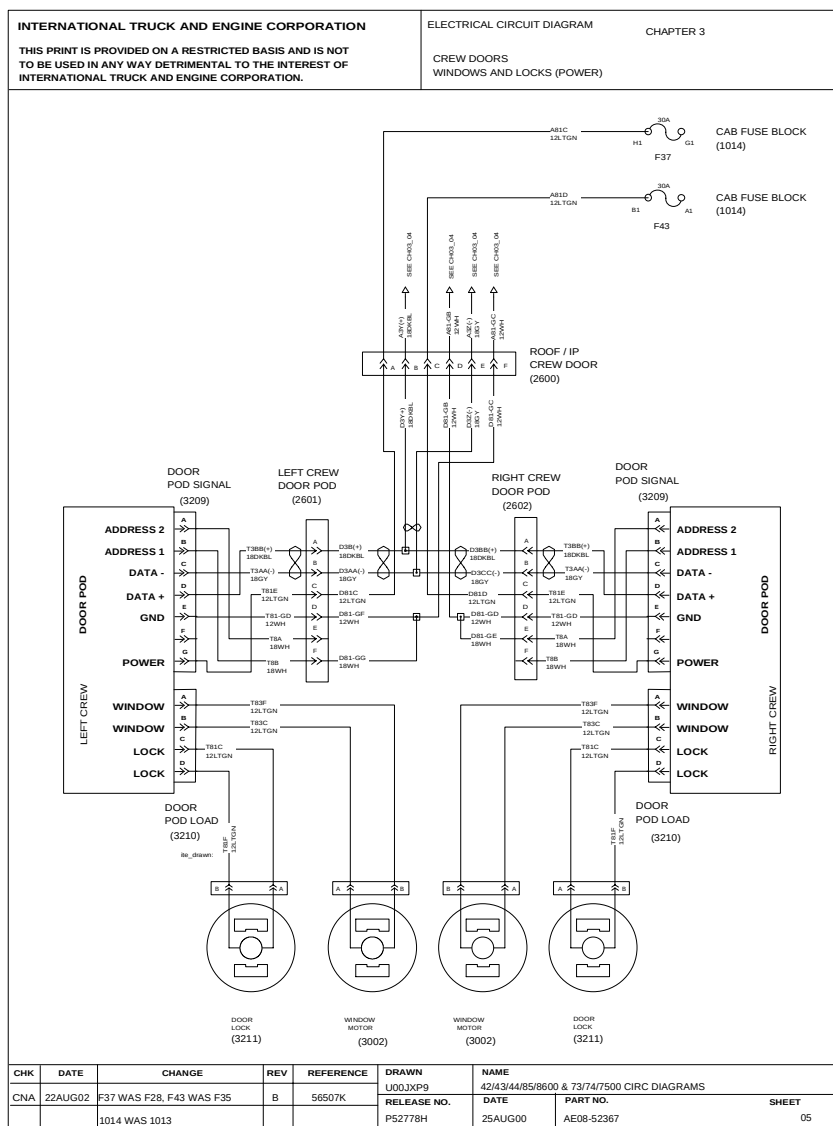


Figure 32 Crew Doors Windows and Locks (Power)

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

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HORN, DUAL ELECTRIC, P. 6

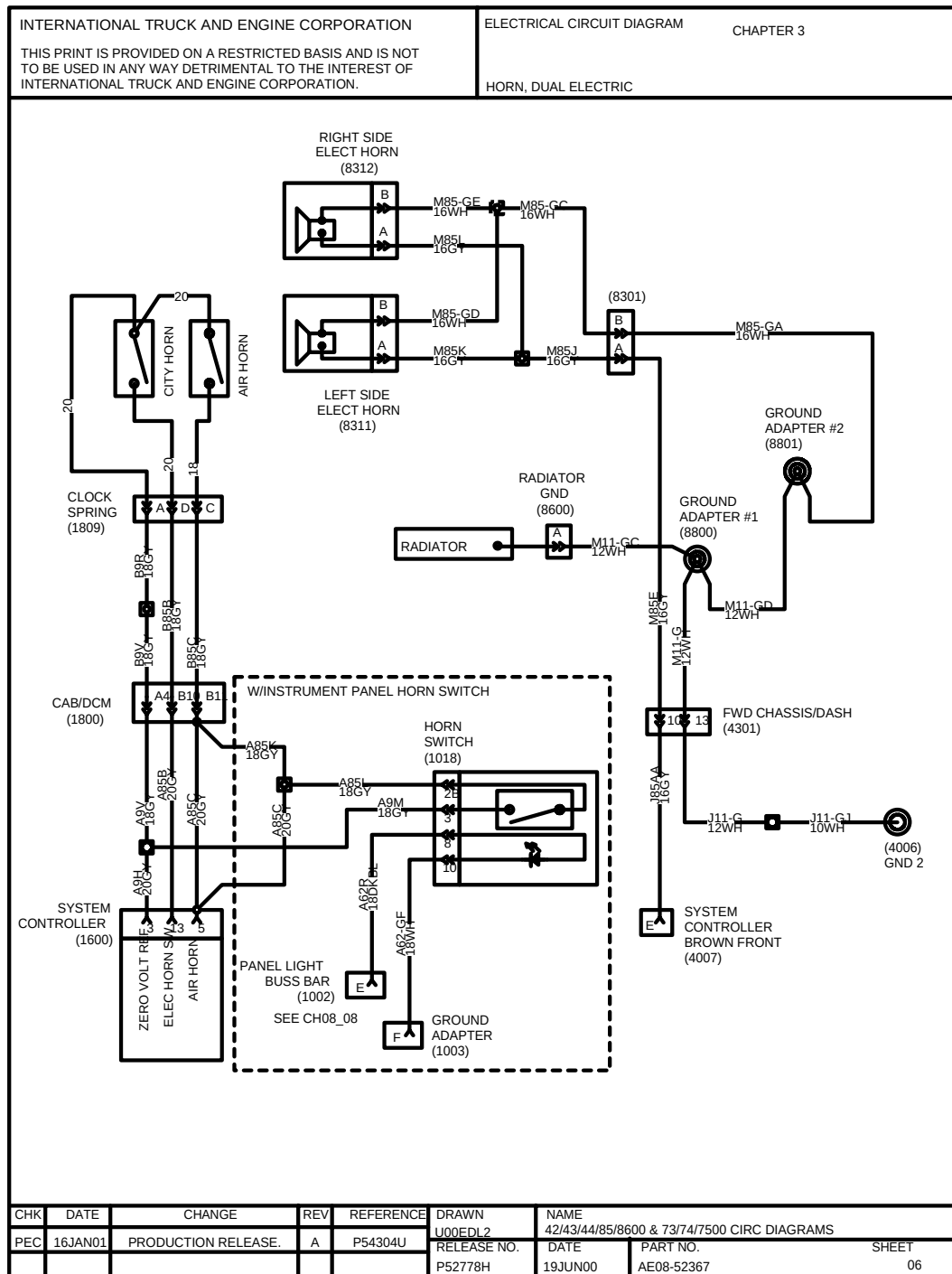


Figure 33 Horn, Dual Electric

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

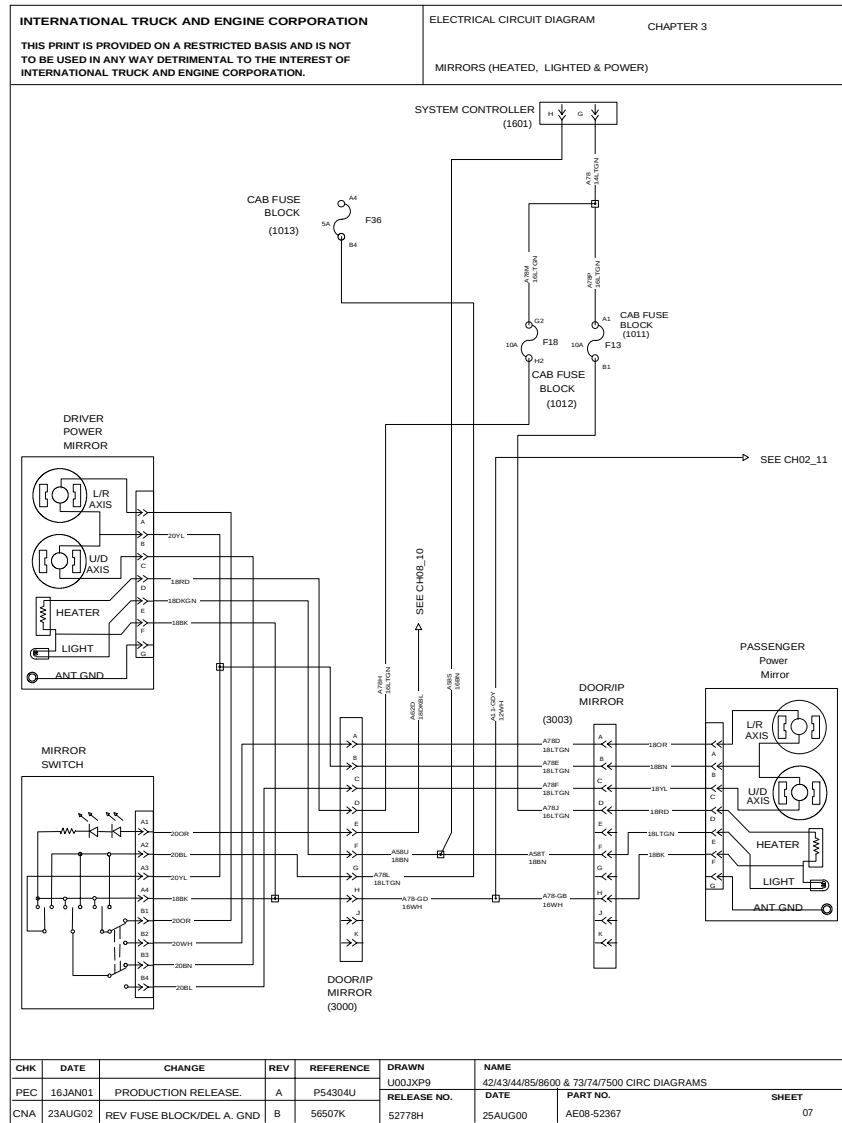
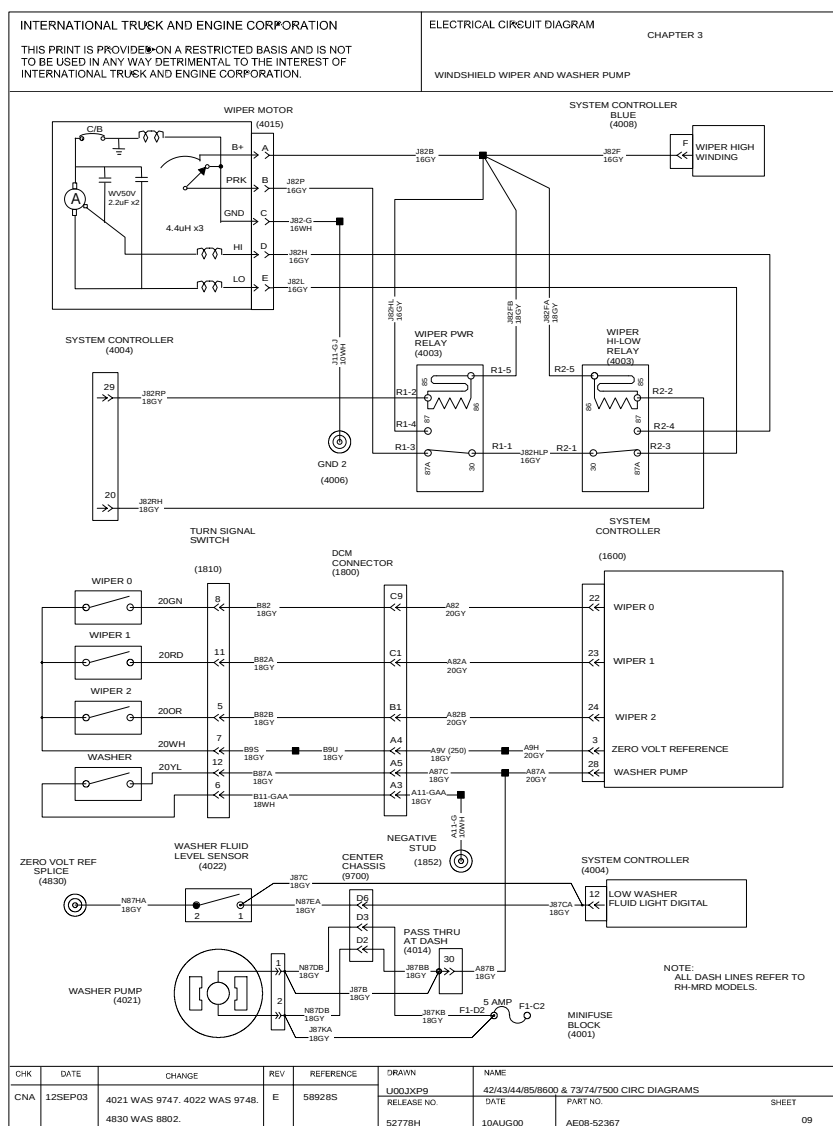


Figure 34 Mirrors (Heated, Lighted and Power)



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

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2-WAY RADIO, P. 10

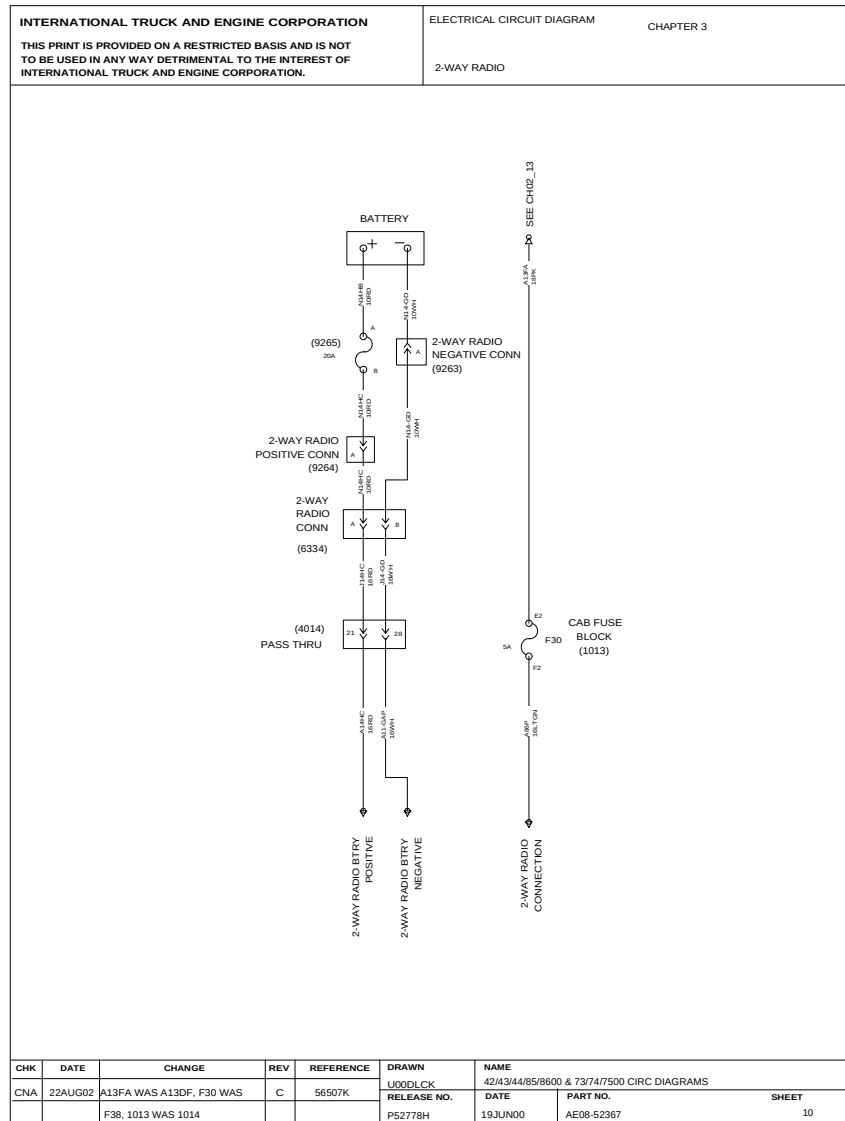


Figure 37 2-Way Radio

SWITCH PACK, OPTIONAL GAUGE PACK, P. 11

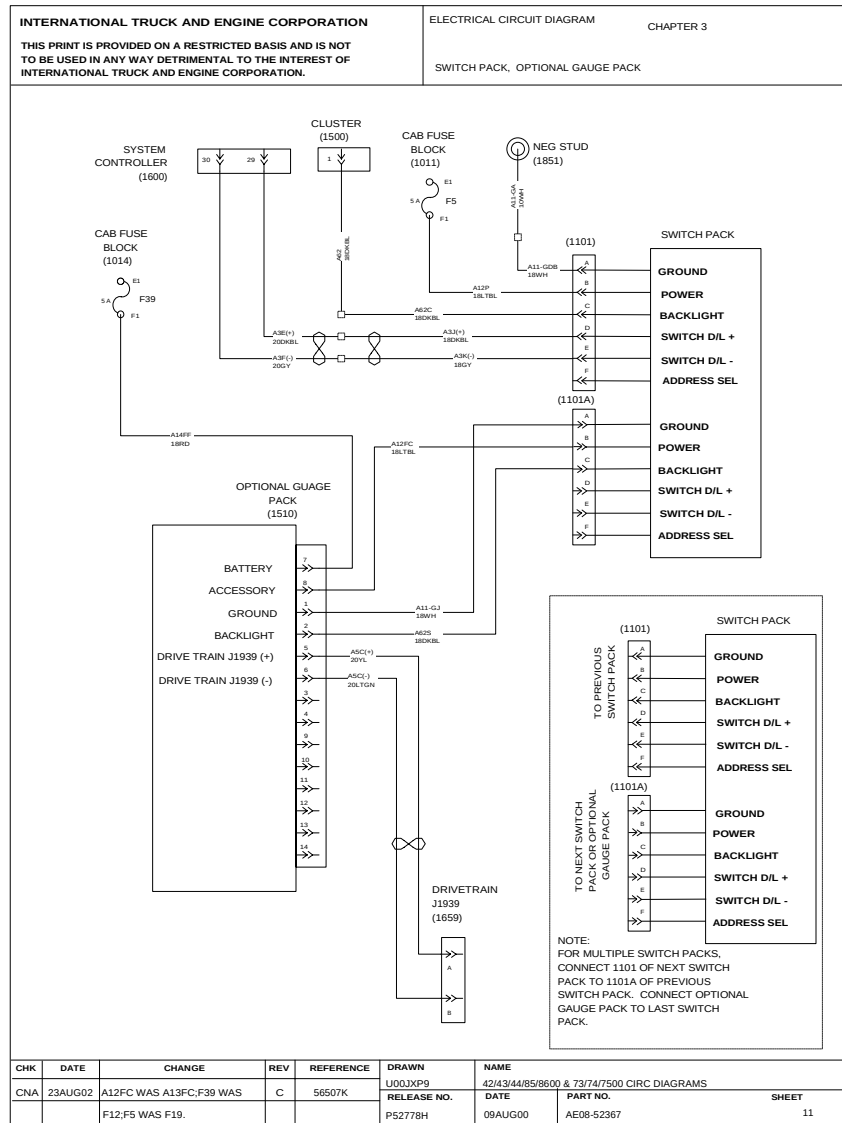


Figure 38 Switch Pack, Optional Gauge Pack

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

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LIGHTED AIR SHIELD, P. 12

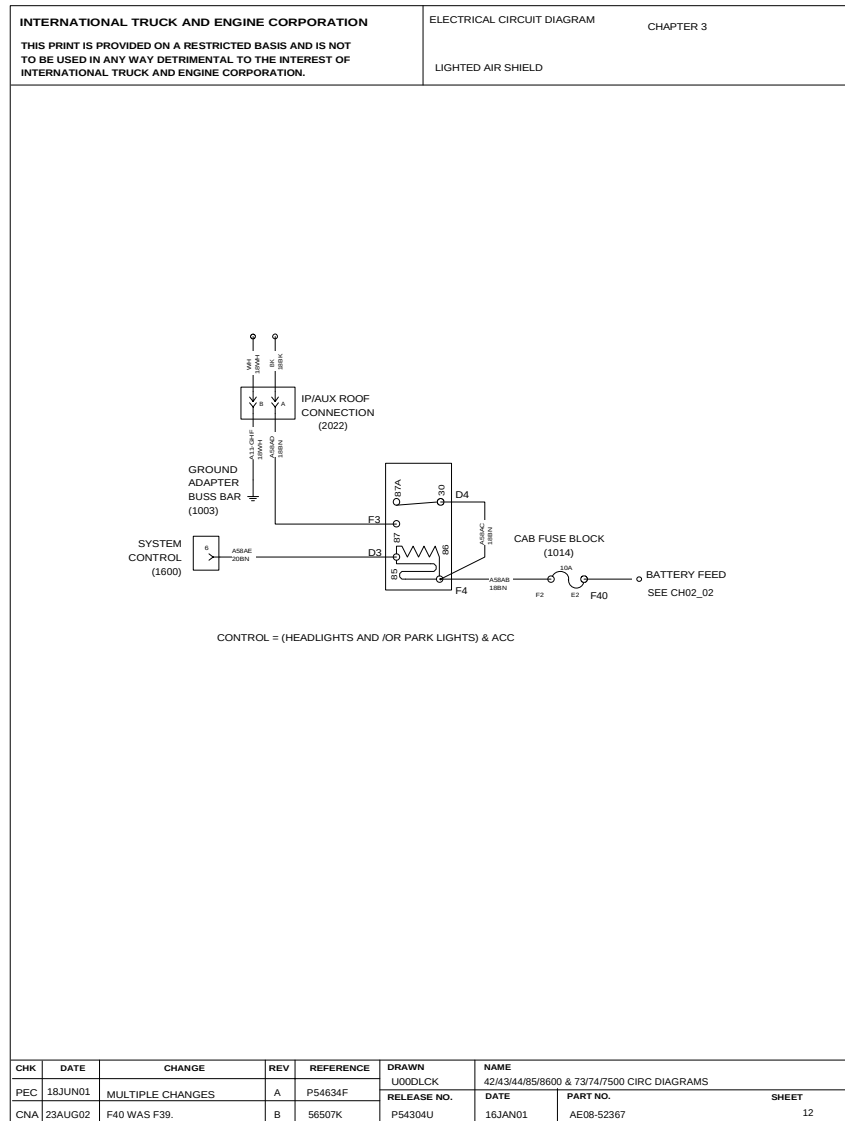


Figure 39 Lighted Air Shield

ROOF AUX. LOAD, P. 13

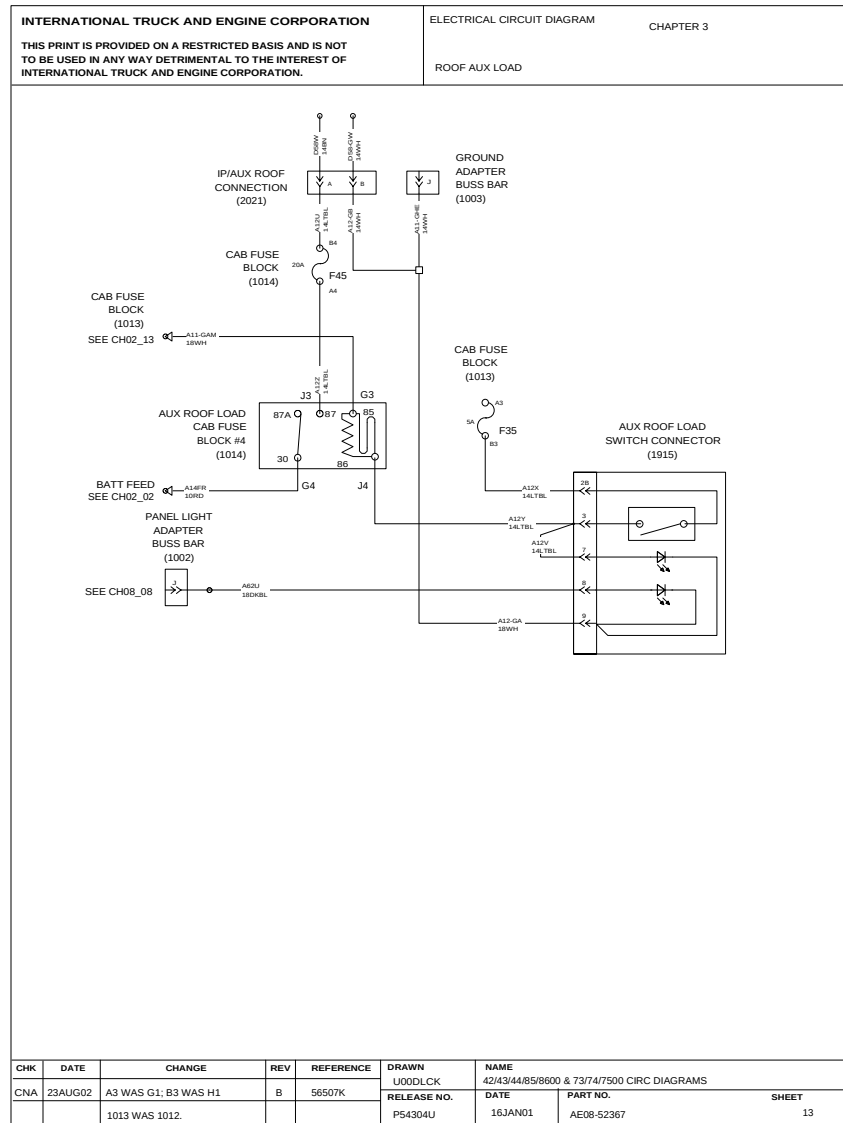
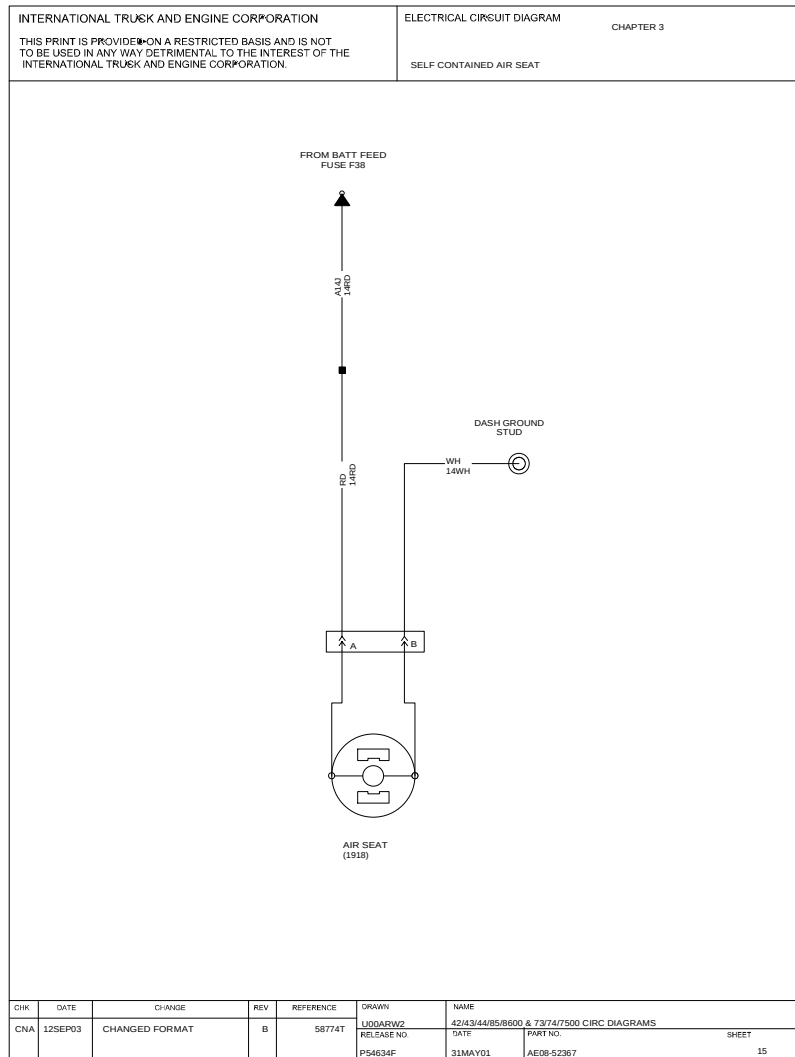


Figure 40 Roof Aux. Load

SELF CONTAINED AIR SEAT, P. 15**Figure 42 Self Contained Air Seat**

DIGITAL CLOCK PTC, P. 16

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GEOMETRY WAS REMOVED							
CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
CNA	12SEP03	CHANGED FORMAT	8	58774T	U000DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					RELEASE NO.	DATE	PART NO.
					P54634F	05MAY01	AE08-52367
						SHEET	16

Figure 43 Digital Clock PTC

TRANSMISSION ALLISON LCT COLUMN SHIFTER, P. 17

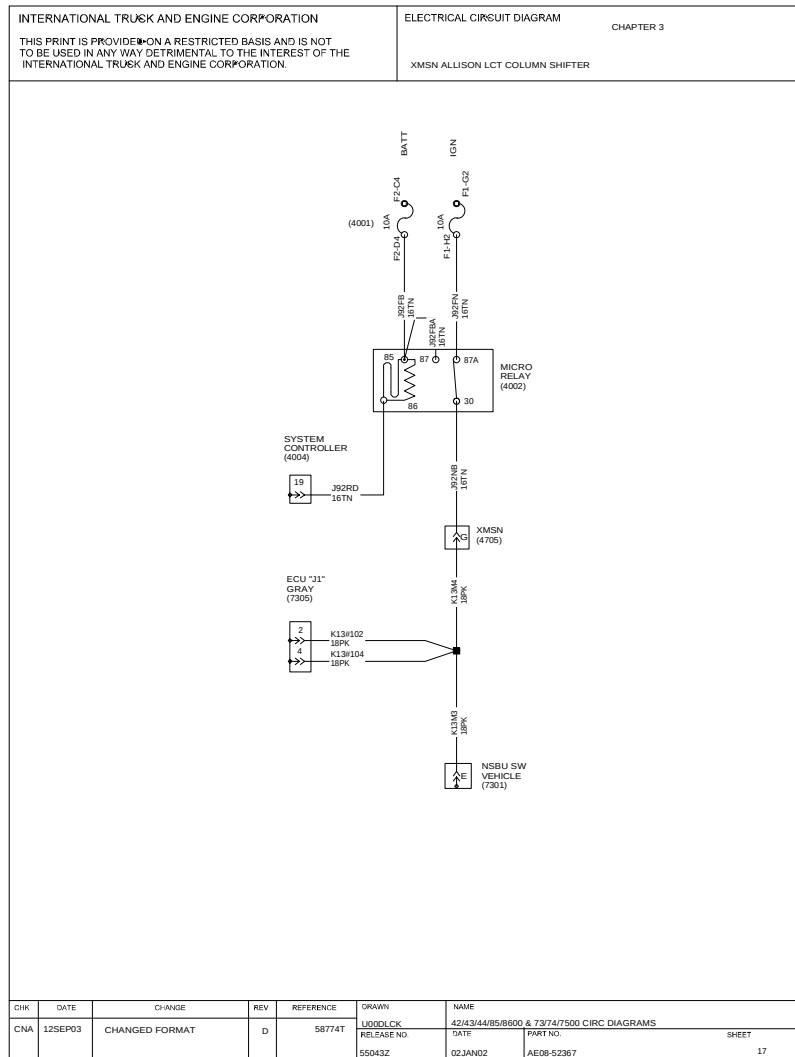


Figure 44 Transmission Allison LCT Column Shifter

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

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HEATED SEATS FOR 7700 MODELS ONLY, P. 18

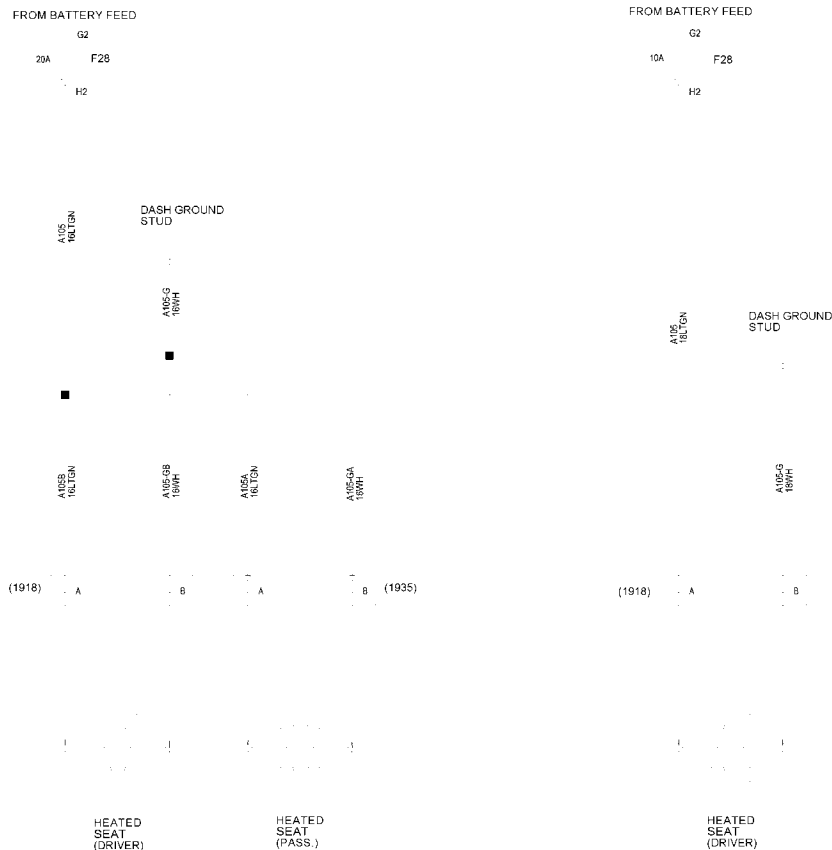
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ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 3

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HEATED SEATS FOR 7700 MODELS ONLY



CHK	DATE	CHANGE	REV	REFERENCE	DRIVER	NAME
JKP	30MAY03	RELEASE FOR PRODUCTION	58205F	U00DLCK	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
				RELEASE NO.	DATE	PART NO.
				58205F	28MAY03	AE08-52367

SHEET 18

Figure 45 Heated Seats for 7700 Models Only

BACKUP CAMERA, P. 19

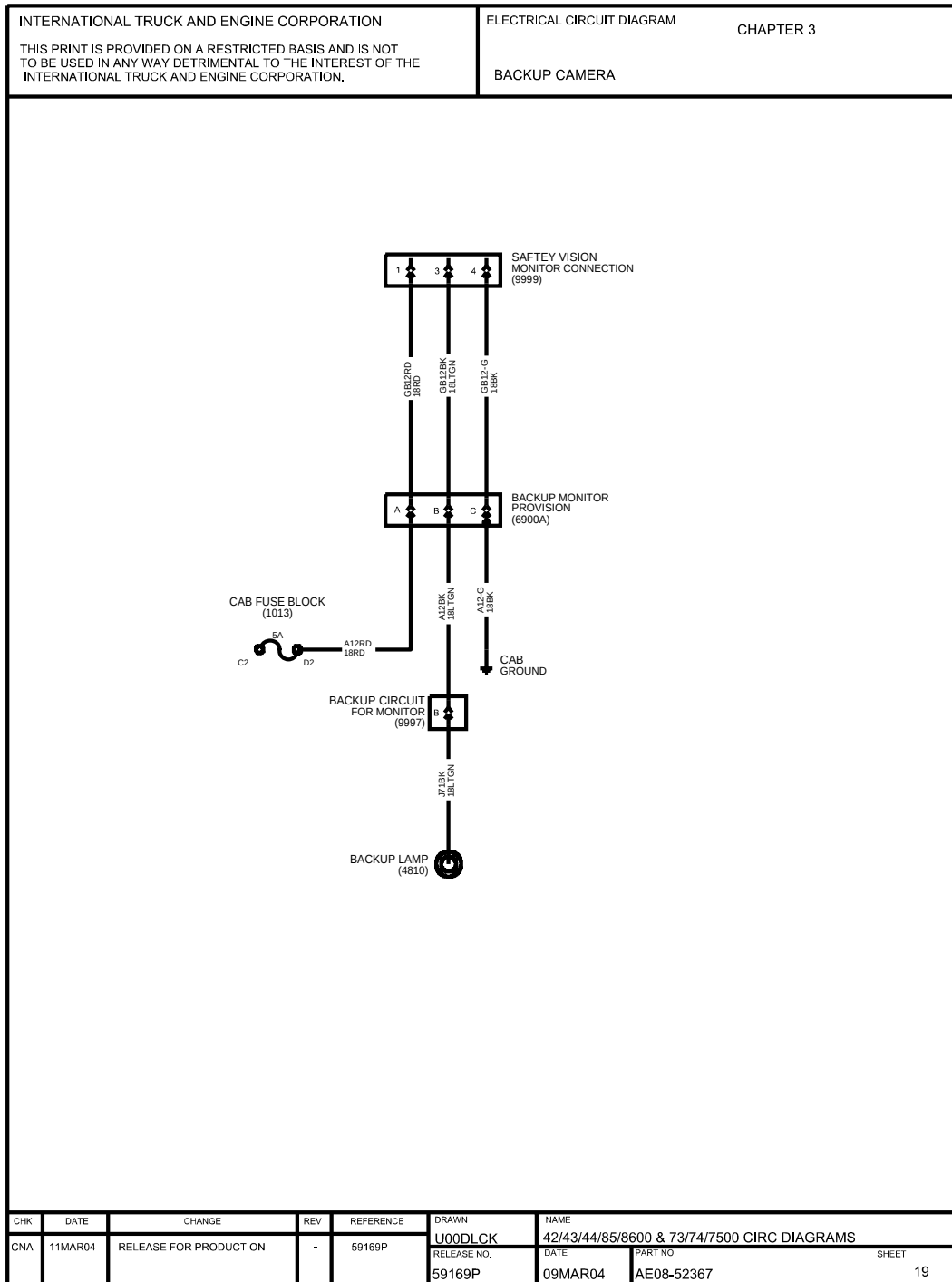


Figure 46 Backup Camera

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

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XATA COMPUTER, P. 20

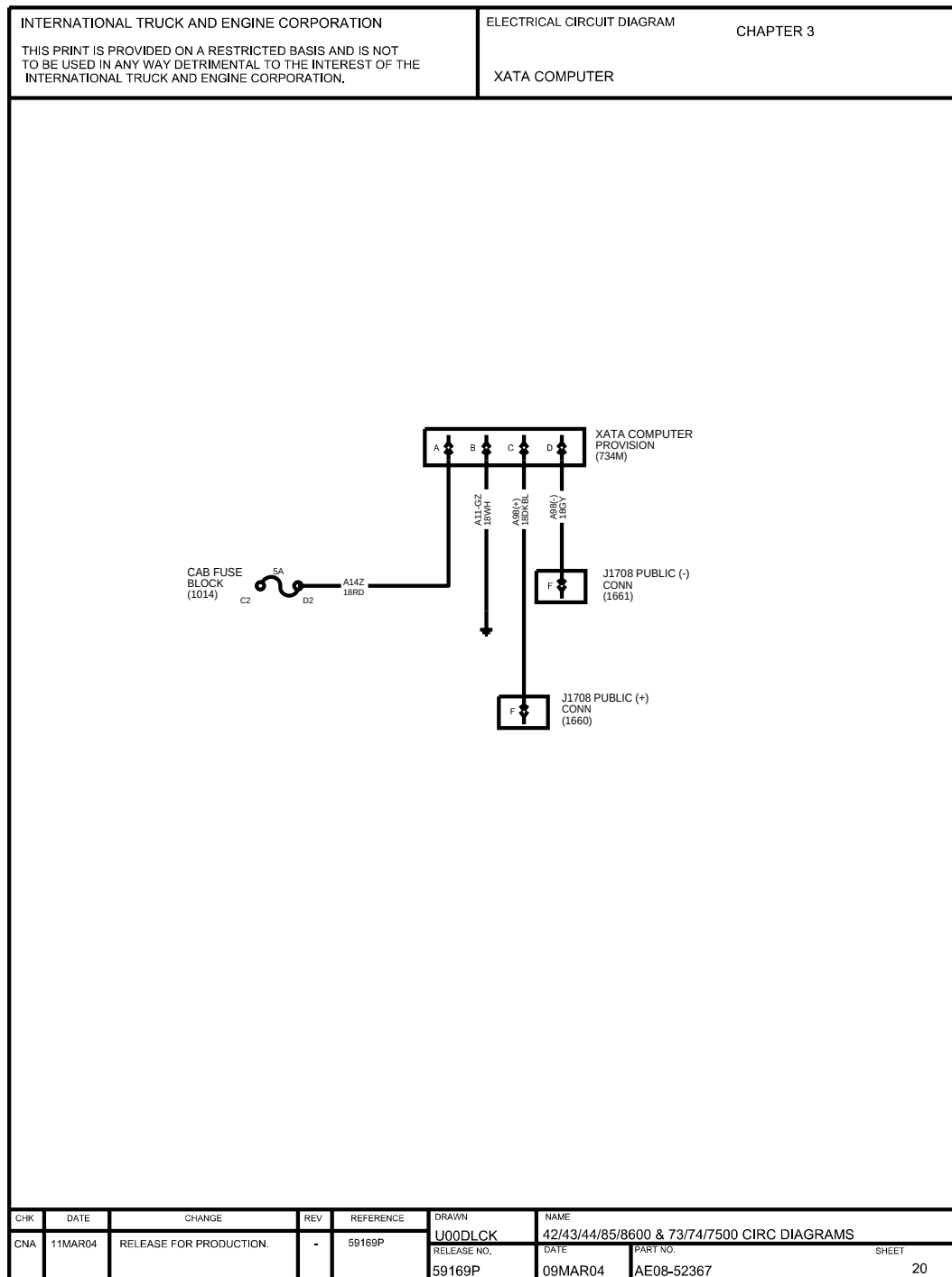
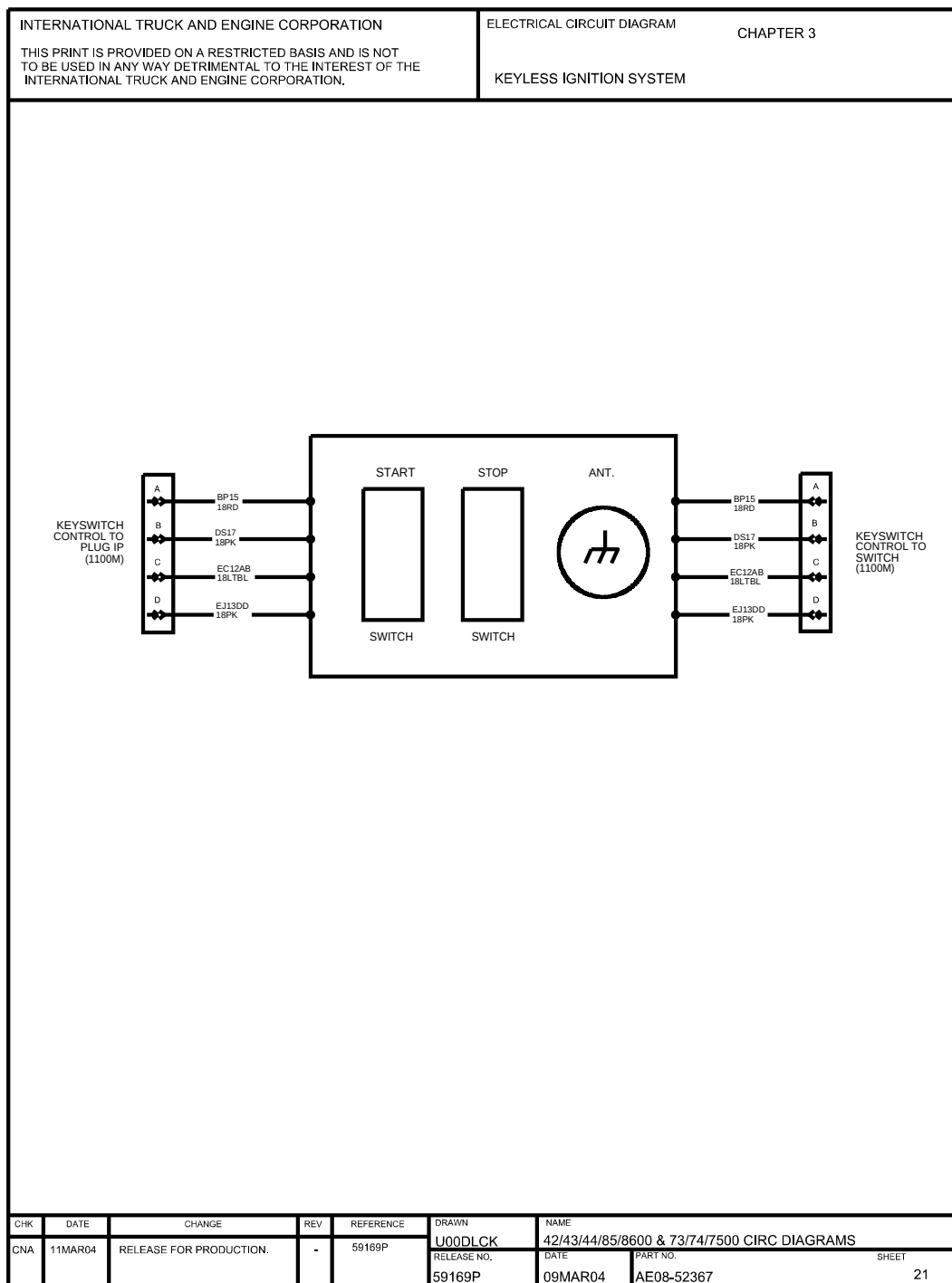


Figure 47 XATA Computer

KEYLESS IGNITION SYSTEM, P. 21**Figure 48 Keyless Ignition System**

12V CHARGING + CRANKING SYSTEM (CHAPTER 4)

16 EGR ENGINES, P. 1

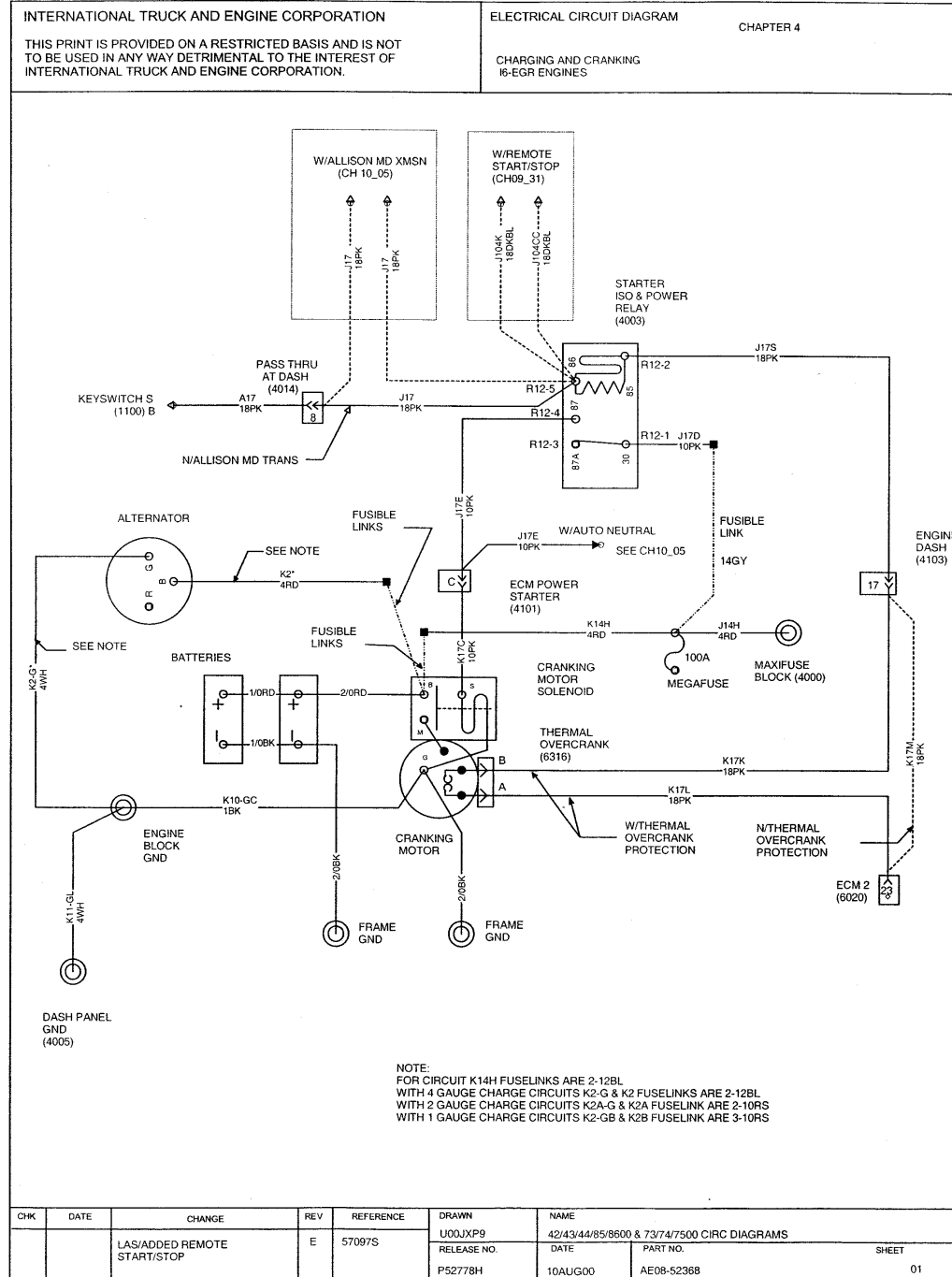


Figure 49 16 EGR Engines

V8 AVNT ENGINES, P. 2

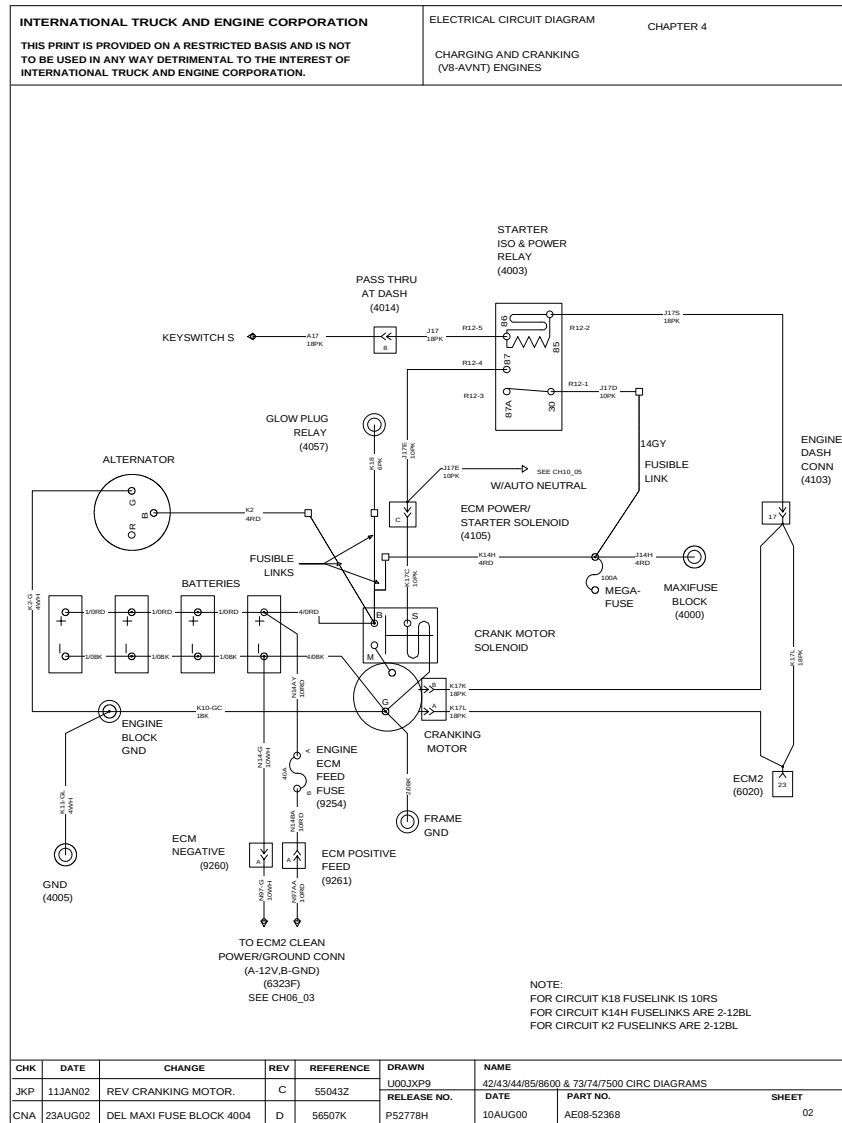


Figure 50 V8 AVNT Engines

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

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CATERPILLAR, CUMMINS ISM ENGINES, P. 3

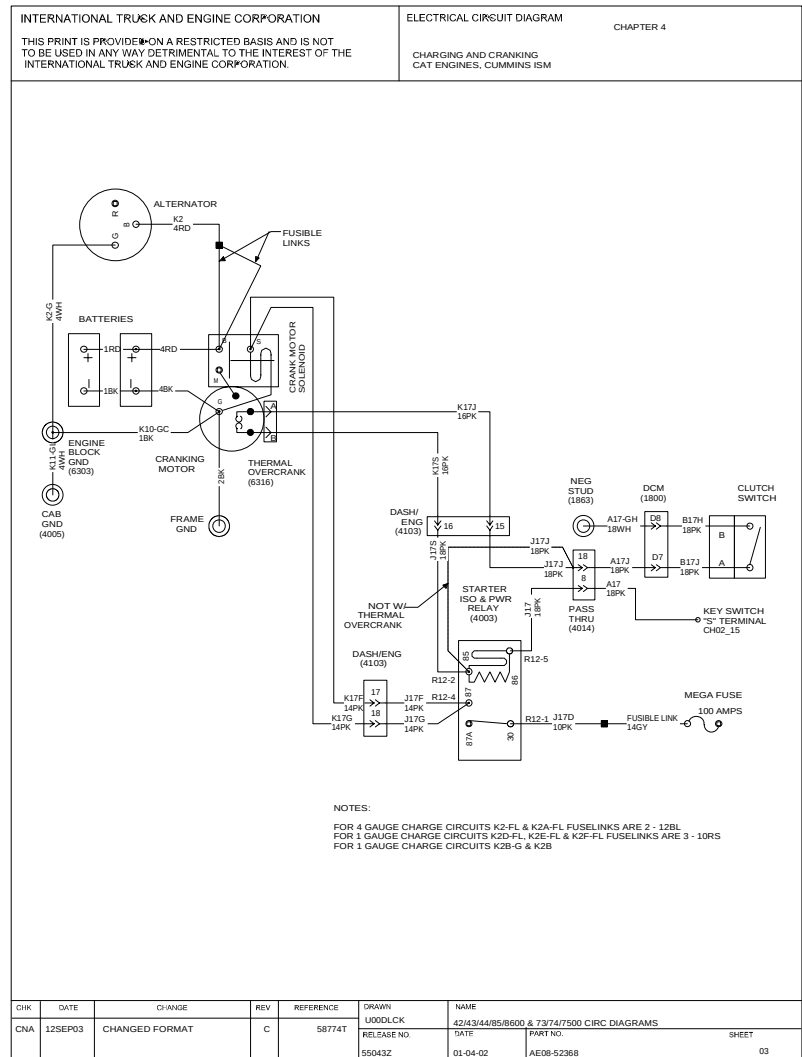


Figure 51 Caterpillar, Cummins ISM Engines

I6 HEUI ENGINES, P. 4

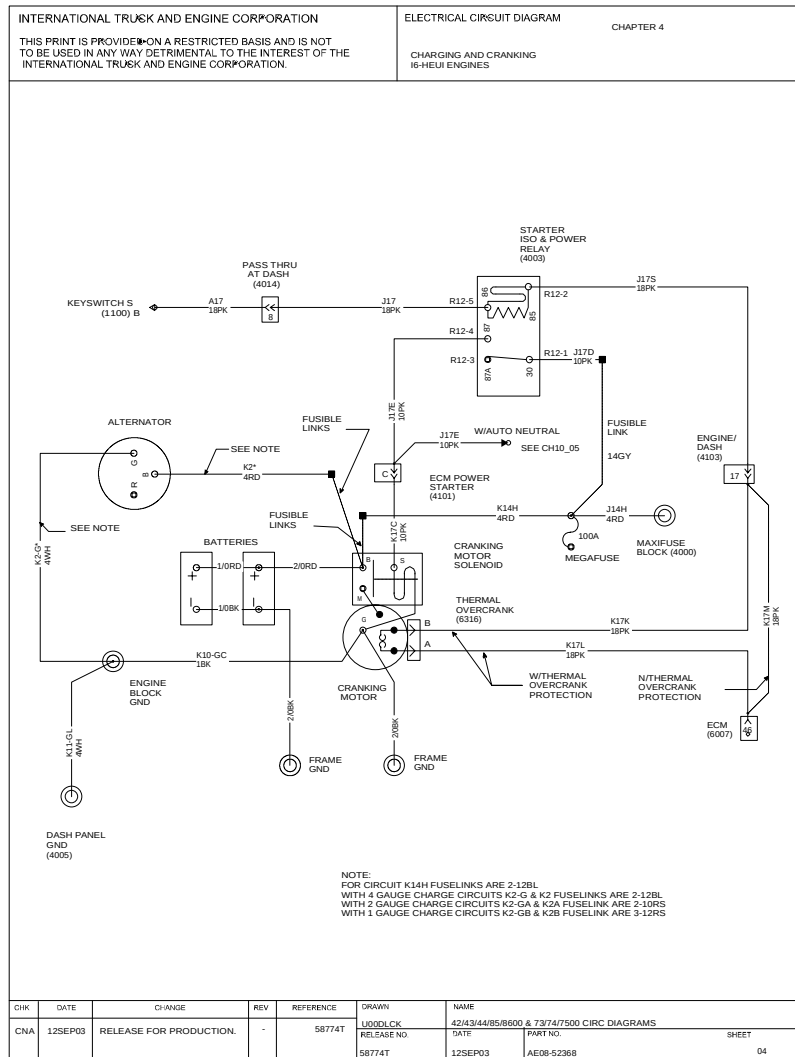


Figure 52 I6 HEUI Engines

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

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

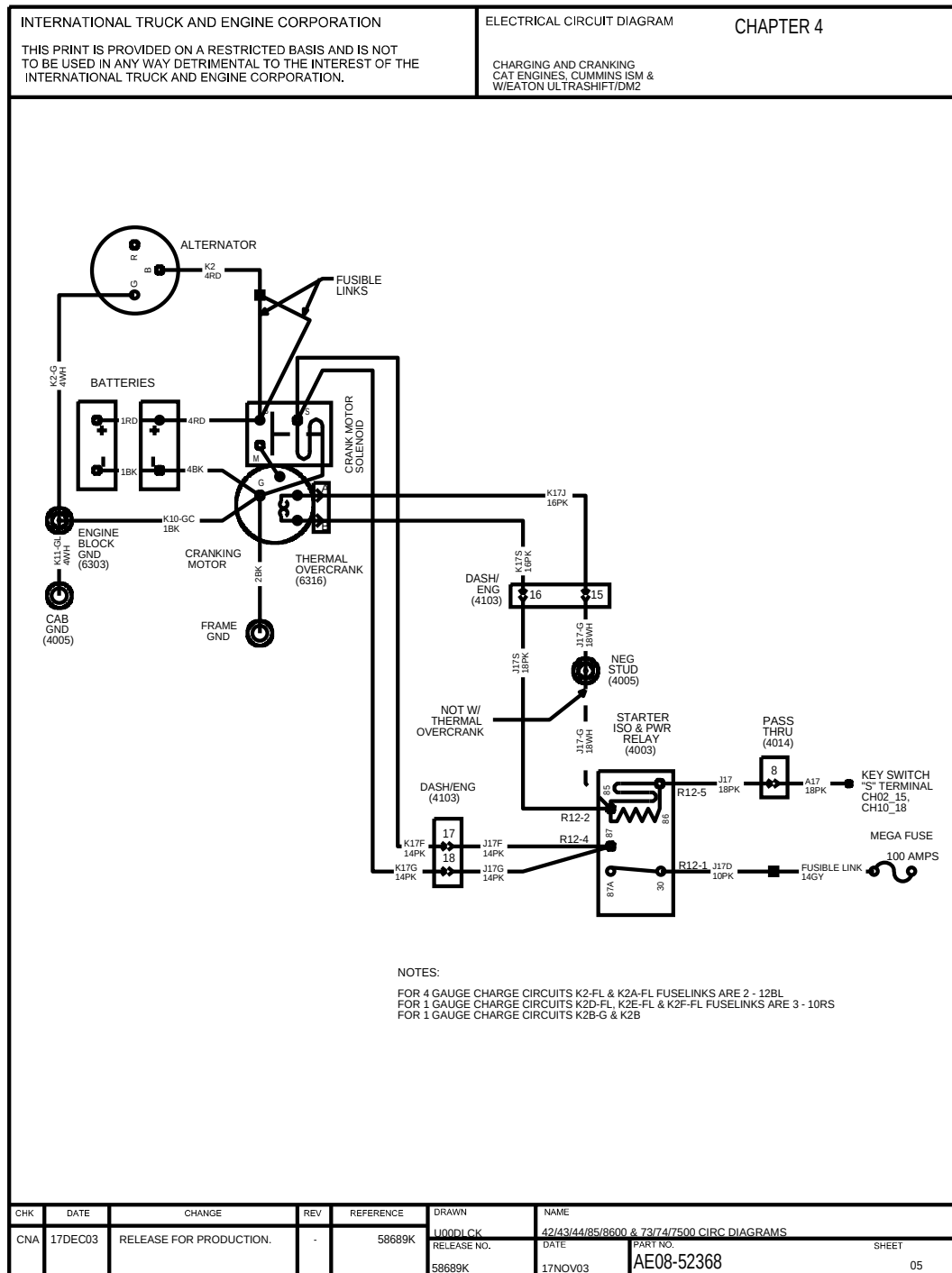


Figure 53 Caterpillar Engines, Cummins ISM and with Eaton Ultrashift/DM2

16 EGR ENGINES WITH AIR START, P. 6

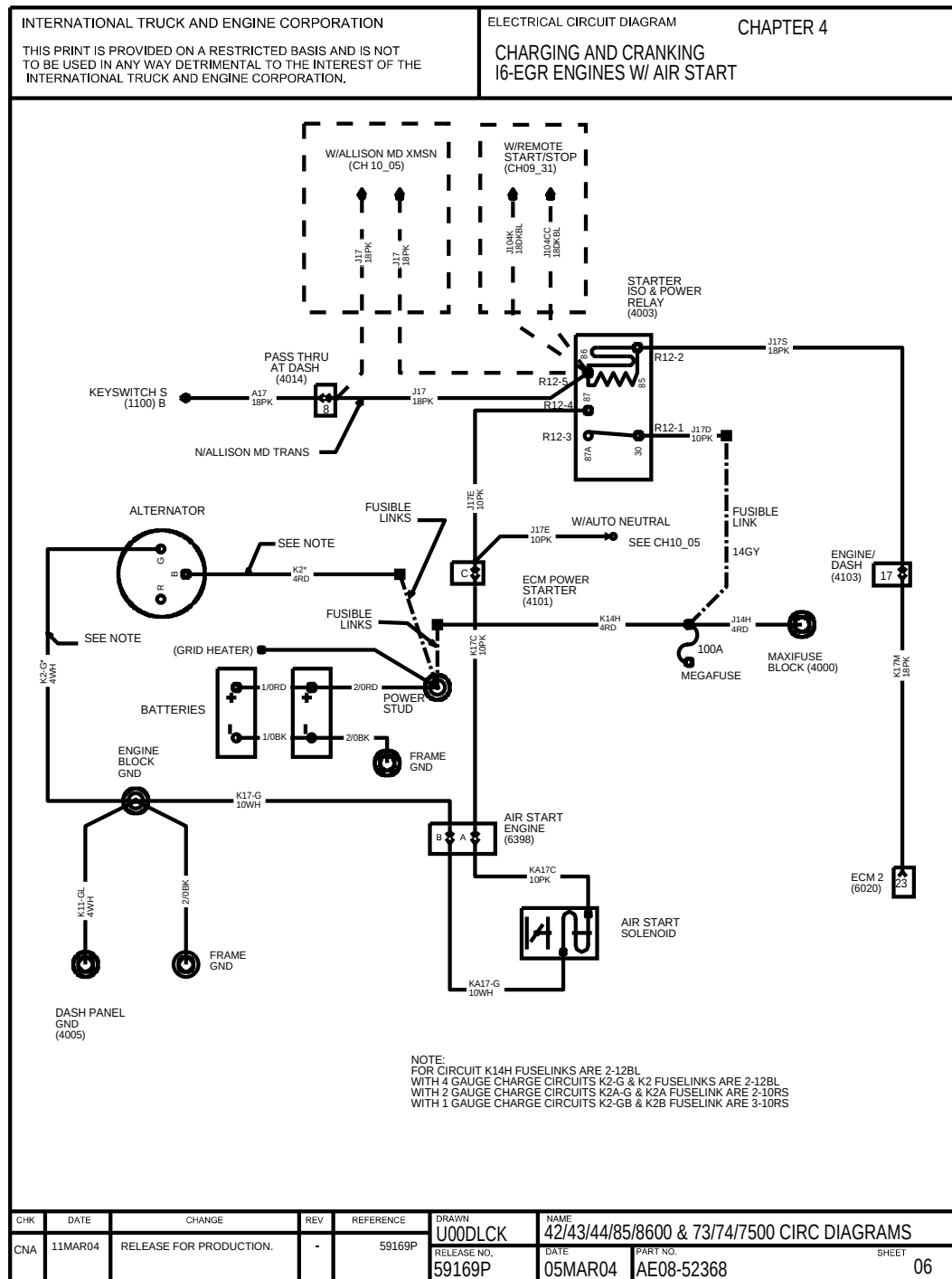


Figure 54 16 EGR Engines with Air Start

FANS AND ENGINE ACCESSORIES (CHAPTER 5)

FAN WIRING, P. 1

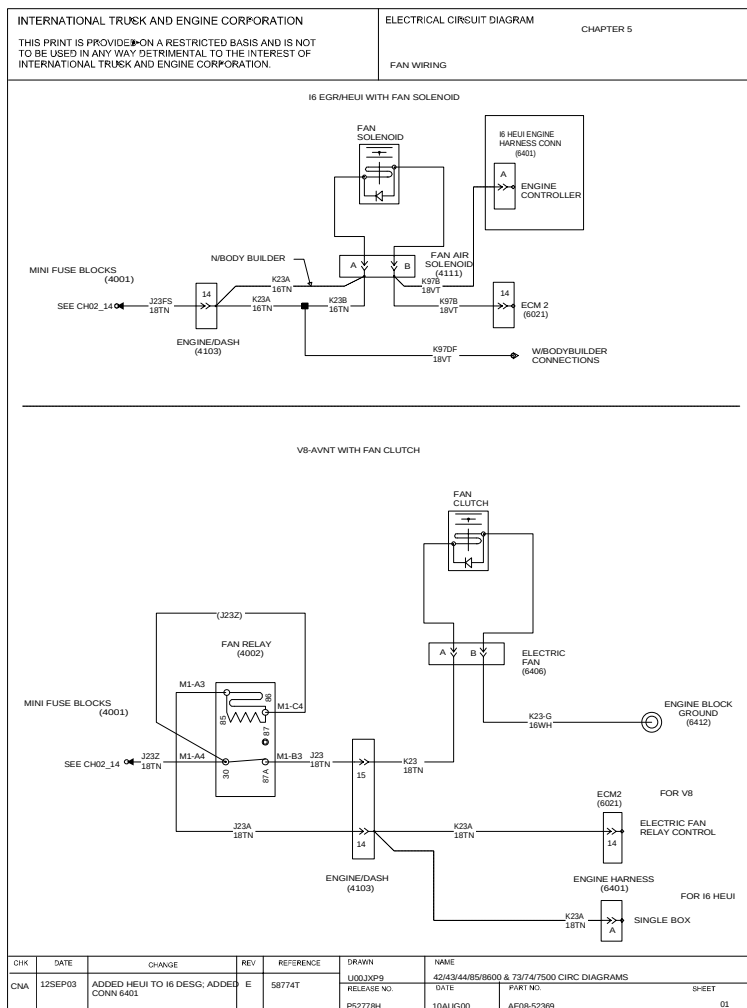


Figure 55 Fan Wiring

ETHER START, P. 2

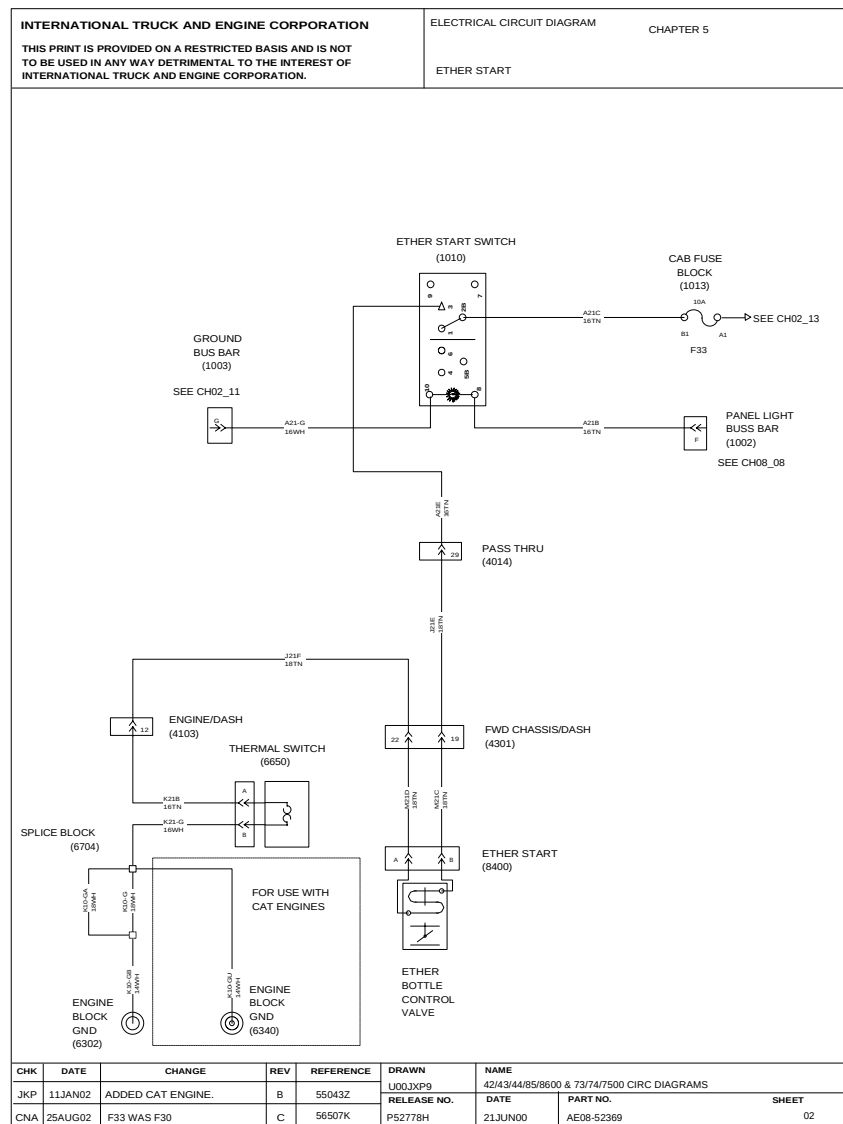


Figure 56 Ether Start

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

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SNOW VALVE, P. 3

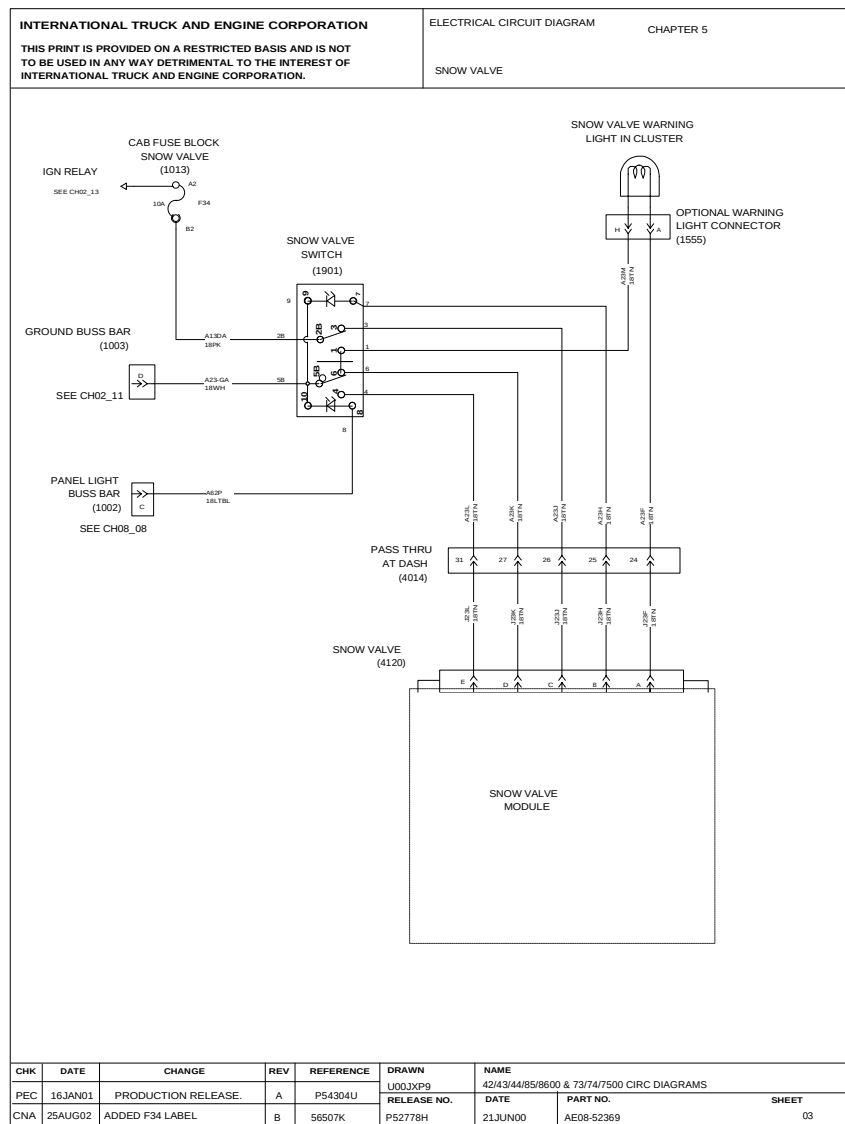


Figure 57 Snow Valve

FAN WIRING, CATERPILLAR AND CUMMINS, P. 4

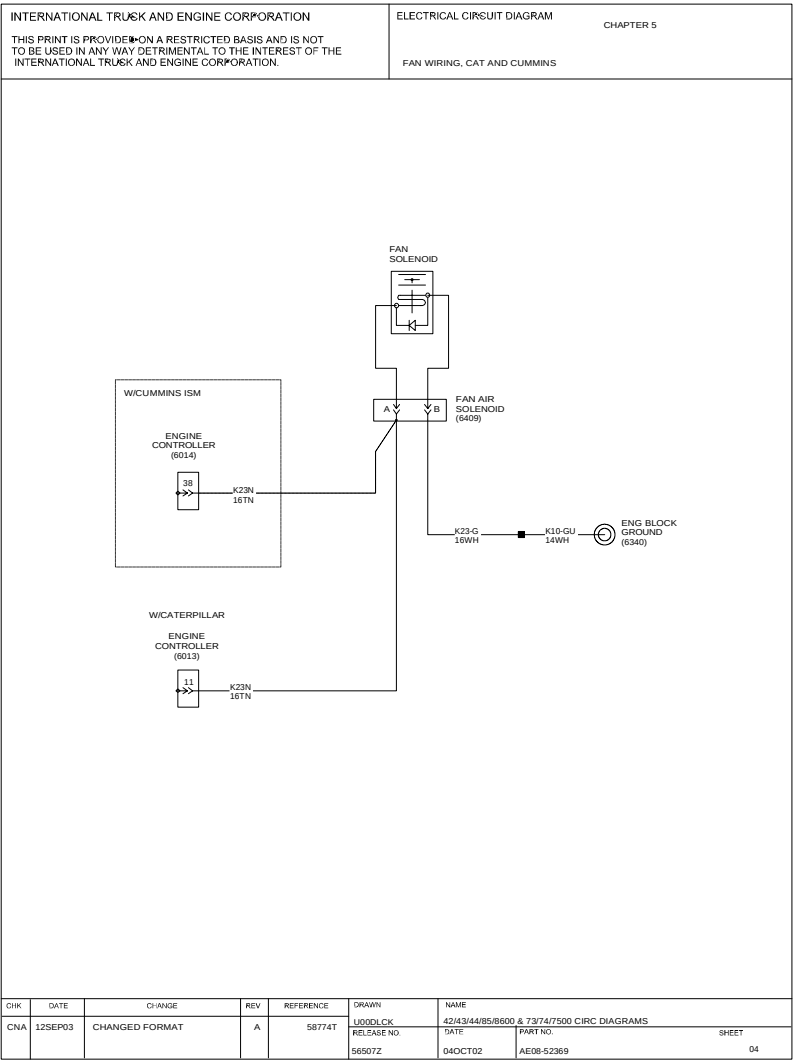


Figure 58 Fan Wiring, Caterpillar and Cummins

ELECTRONIC ENGINES (CHAPTER 6)

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

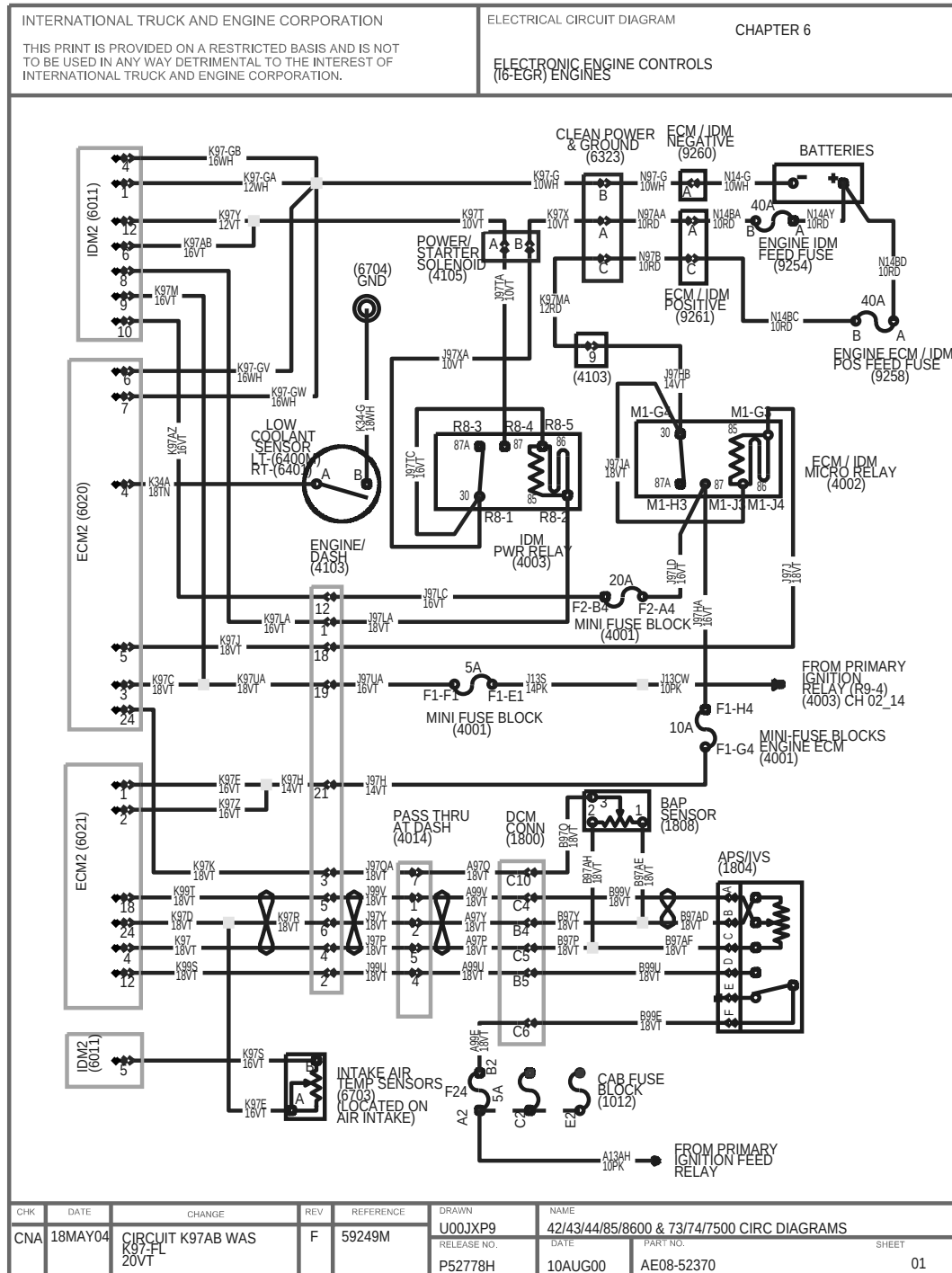


Figure 59 Electronic Engine Controls, I6-EGR Engines

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

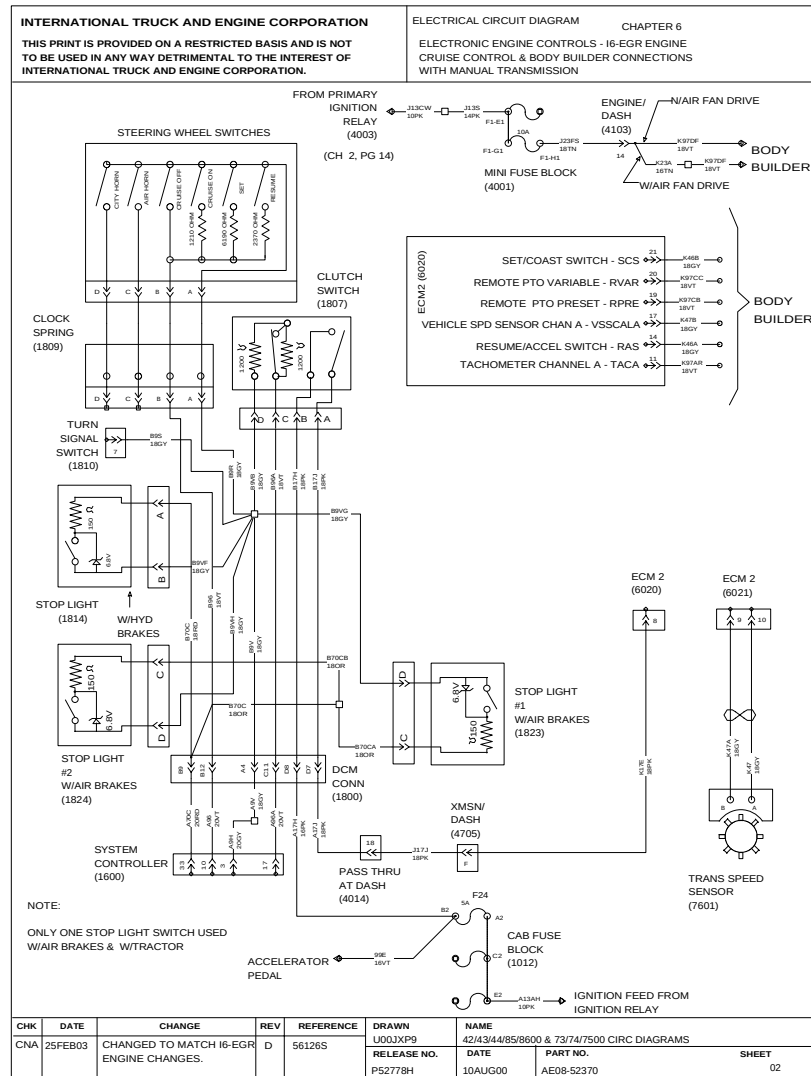


Figure 60 Electronic Engine Controls, I6-EGR Engine Cruise Control and Body Builder Connections

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

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

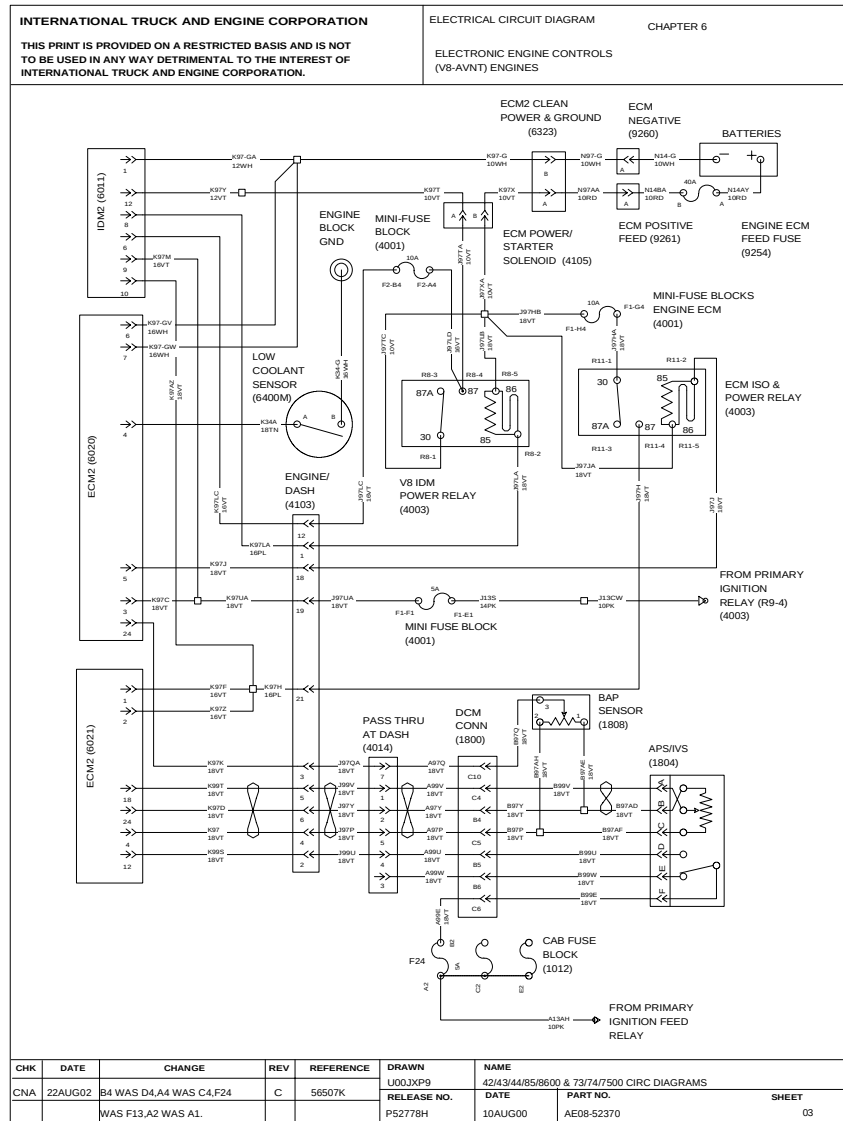


Figure 61 Electronic Engine Controls, (V8-AVNT) Engines

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

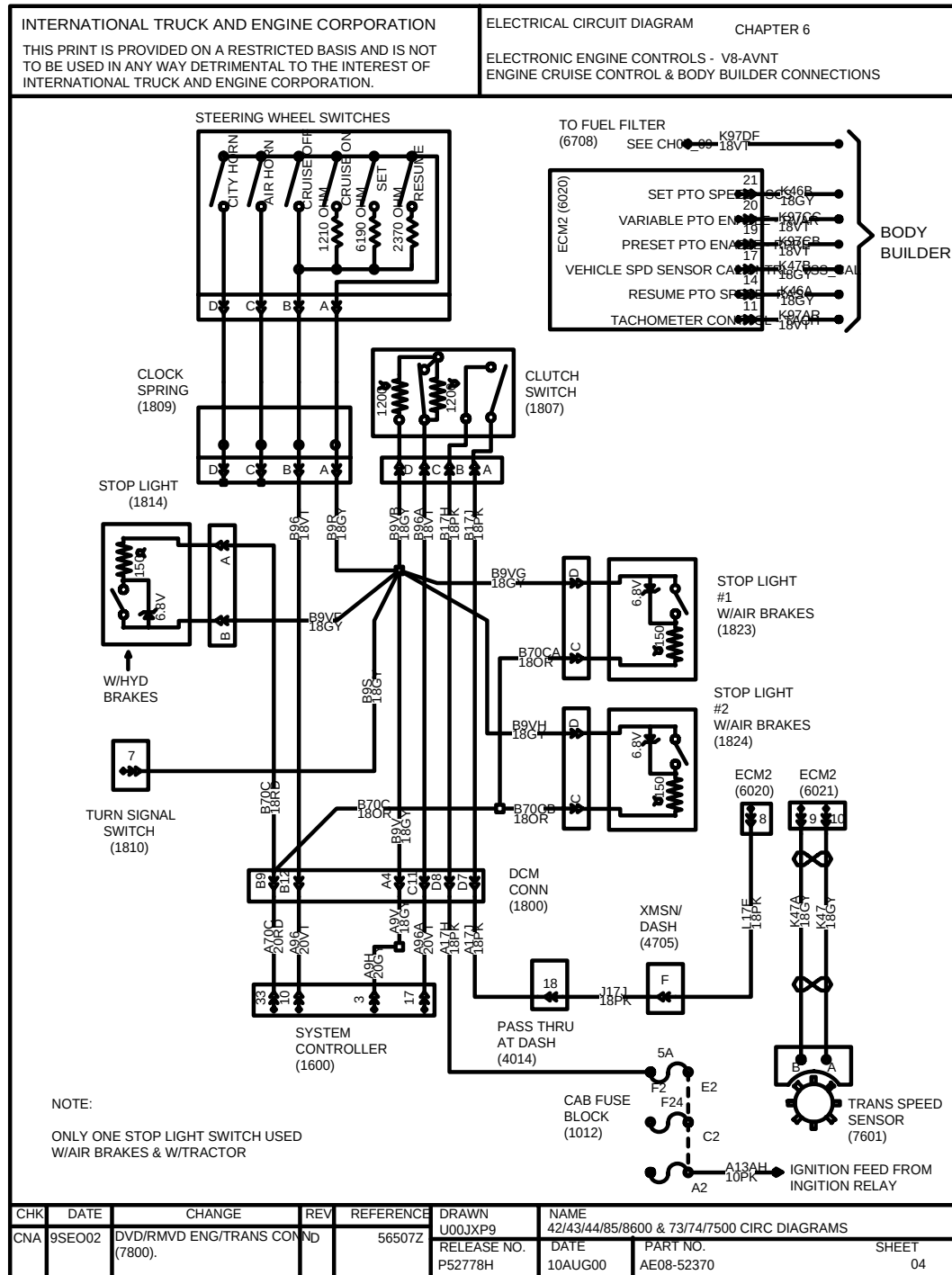


Figure 62 Electronic Engine Controls, V8-AVNT Engine Cruise Control and Body Builder Connections

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

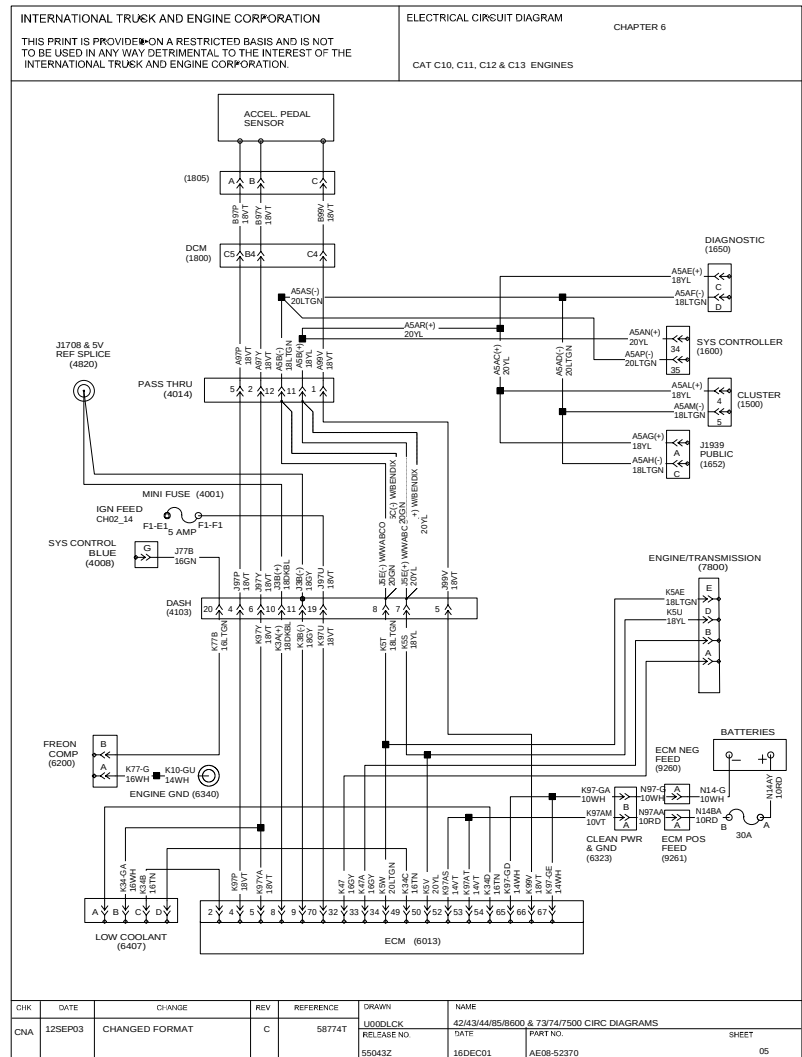
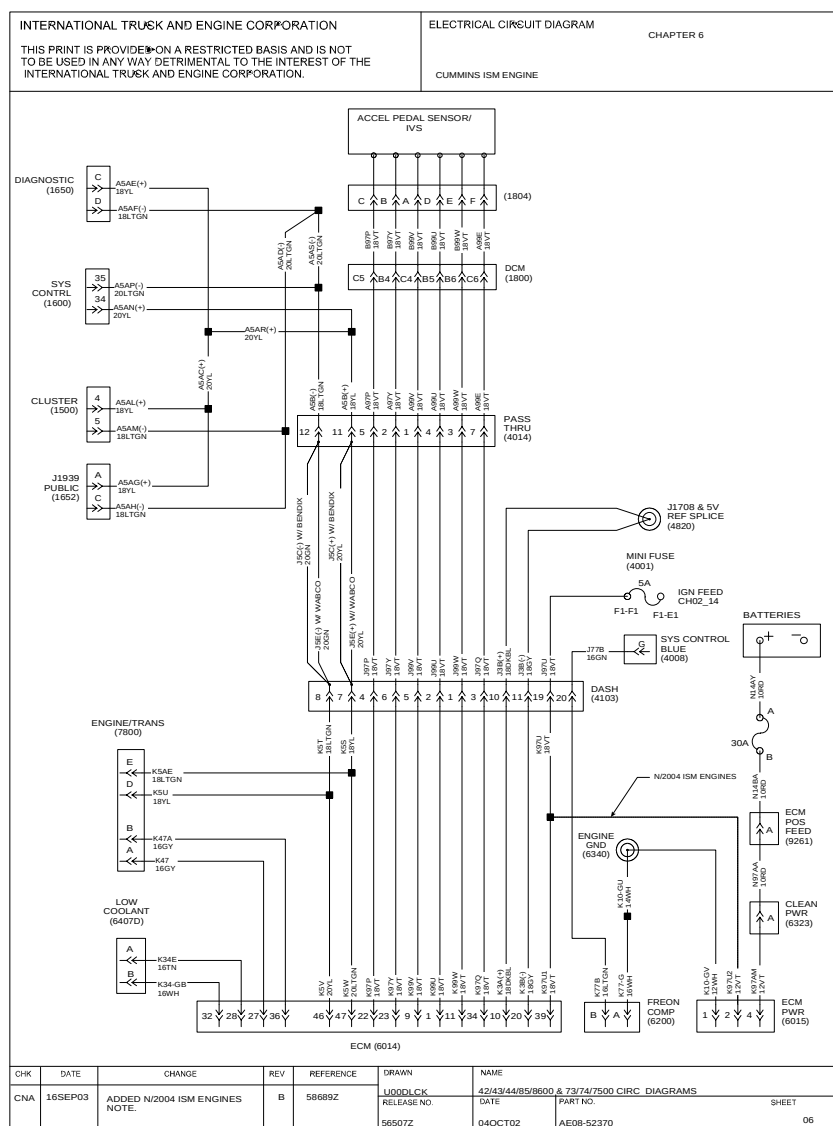


Figure 63 Caterpillar C10, C11, C12, and C13 Engines



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

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I6 HEUI ENGINE, P. 7

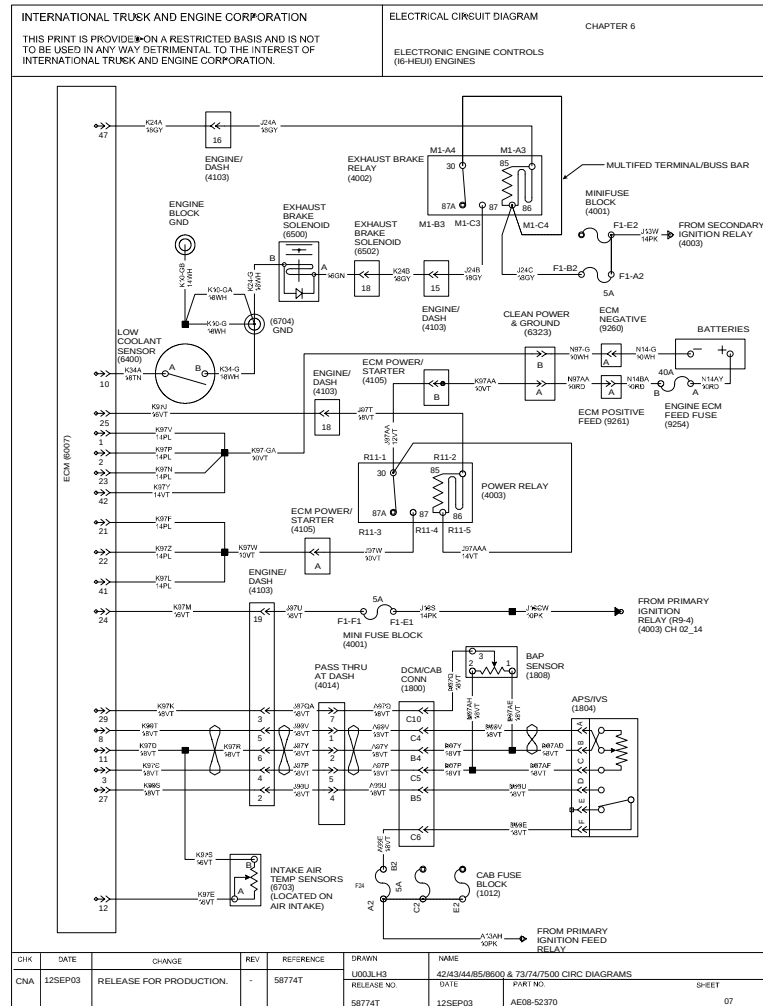


Figure 65 I6 HEUI Engine

I6 HEUI ENGINE CRUISE CONTROL AND BODY BUILDER CONNECTIONS WITH MANUAL TRANSMISSION, P. 8

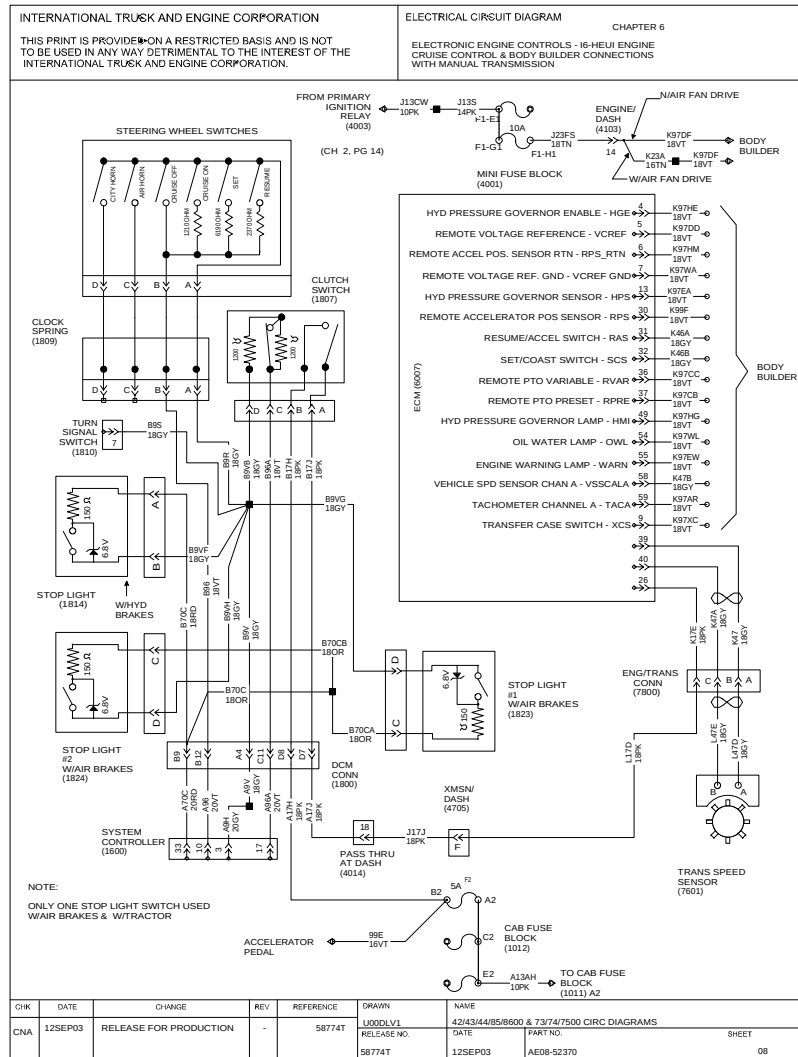


Figure 66 16 HEUI Engine Cruise Control and Body Builder Connections with Manual Transmission