SERVICE MANUAL SECTION

5500*i*, 5600*i*, 5900*i*, 9200*i*, and 9900*i* Chassis Built March 1, 2007 and After — ELECTRICAL CIRCUIT DIAGRAMS

Model: 5500i
Start Date: 03/01/2007

Model: 5600i
Start Date: 03/01/2007

Model: 5900i
Start Date: 03/01/2007

Model: 9200i
Start Date: 03/01/2007

Model: 9900i
Start Date: 03/01/2007

S08326

04/14/2008

Table of Contents

1. INSTRUCTIONS AND CHARTS (CHAPTER 1)

1.1. CIRCUIT IDENTIFICATION CHART, P. 1

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION & COLOR CHART

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	
7	RD	ALTERNATOR-RESISTANCE
8		
9	GY	ZERO VOLT REFERENCE (ZVR)
10	WH	CHASSIS/ENGINE GROUND
11	WH	CAB/SLEEPER GROUND
12	LTBL	ACCESORY 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	INSTRUMENT & GAUGES
29	TN	ENGINE WATER TEMPERATURE
30	TN	ENGINE OIL TEMPERATURE
31	TN	TRANSMISSION OIL TEMPERATURE
32	TN	AXLE OIL TEMPERATURE
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

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888F	DATE 29OCT05

PART NO. AE08-56715 SHEET 01

Figure 1 Circuit Identification Chart, page 1

1.2. CIRCUIT IDENTIFICATION CHART, P. 2

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER
IDENTIFICATION & COLOR CHART

CIRCUIT NUMBER	COLOR	DESCRIPTION
50	YL	LIGHT SWITCH FEED
51	YL	DIMMER SWITCH FEED
52	YL	HEADLIGHT HI-BEAM
53	YL	HEADLIGHT LO-BEAM
54	BN	PARKING/MARKERS 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)
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	PK	GLOW PLUG/PRE-HEATER
66	YL	DAYTIME RUNNING LIGHTS
67		
68	BN	TAIL LIGHTS
69	BN	LICENSE PLATE LIGHT
70	OR	STOP LIGHTS
	RD	STOP LIGHTS (BODY BUILDER CONNECTION)
71	OR	BACKUP-LIGHTS
	LTBL	BACKUP-LIGHTS (BODY BUILDER CONNECTION)
72	OR	TRAILER AUXILARY 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
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	YL	AIR BAG
90	LTGN	HYDRAULIC BRAKE PUMP
91	VT	INTERCOMMUNICATION
92	TN	TRANSMISSION CONTROLS-ELECTRONICS
93	TN	AXLE SHIFT CONTROL
94	GY	ANTILOCK BRAKE SYSTEM
95	TN	EXHAUST EMISSION
96	YL	SNOW PLOW LIGHTS/CRUISE CONTROLS

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05 — PART NO. AE08-56715 — SHEET 02

Figure 2 Circuit Identification Chart, page 2

1.3. CIRCUIT IDENTIFICATION CHART, P. 3

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER
IDENTIFICATION & COLOR CHART

CIRCUIT NUMBER	COLOR	DESCRIPTION
97	VT	ENGINE CONTROLS-ELECTRONICS
98	BK	DATALINK AND DIAGNOSTICS
99	VT	ACCELERATOR POSITON SENSOR (APS)
100	GY	AIR HORN (ELECTRONIC 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 SHEETS
106	GY	5V SUPPLY FROM INSTRUMENT CLUSTER
107	TN	BRAKE WEAR SENSOR
108	TN	BRAKE STROKE/SLACK ADJUSTER
109	GY	ZERO VOLT REF FROM GAUGE CLUSTER
110	TN	FUEL FILTER SENSING

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS	
					RELEASE NO. 59888F	DATE 29OCT05	PART NO. AE08-56715 SHEET 03

Figure 3 Circuit Identification Chart, page 3

1.4. CIRCUIT DIAGRAM INSTRUCTIONS, P. 4

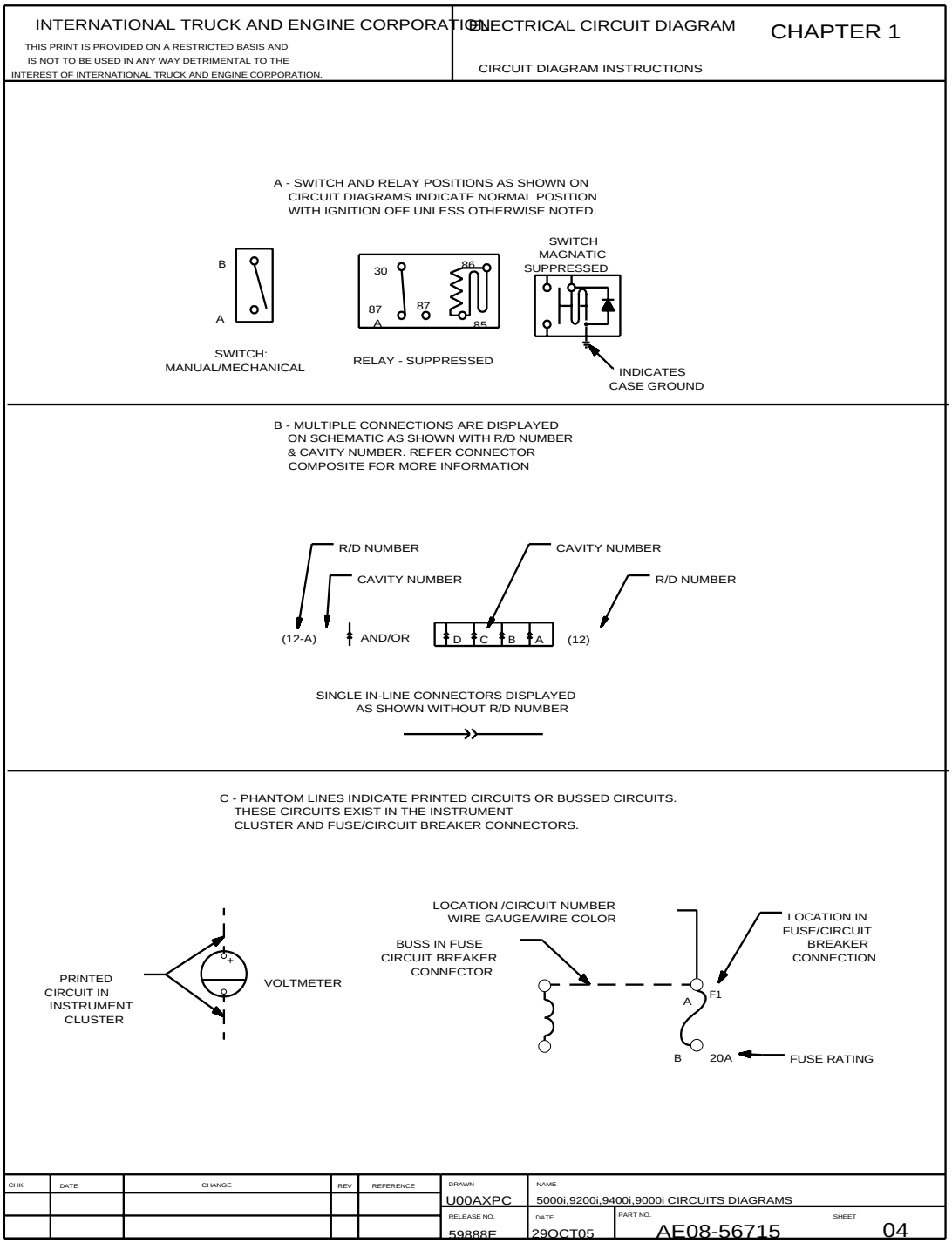

Figure 4 Circuit Diagram Instructions, page 4

1.5. CIRCUIT DIAGRAM INSTRUCTIONS, P. 5

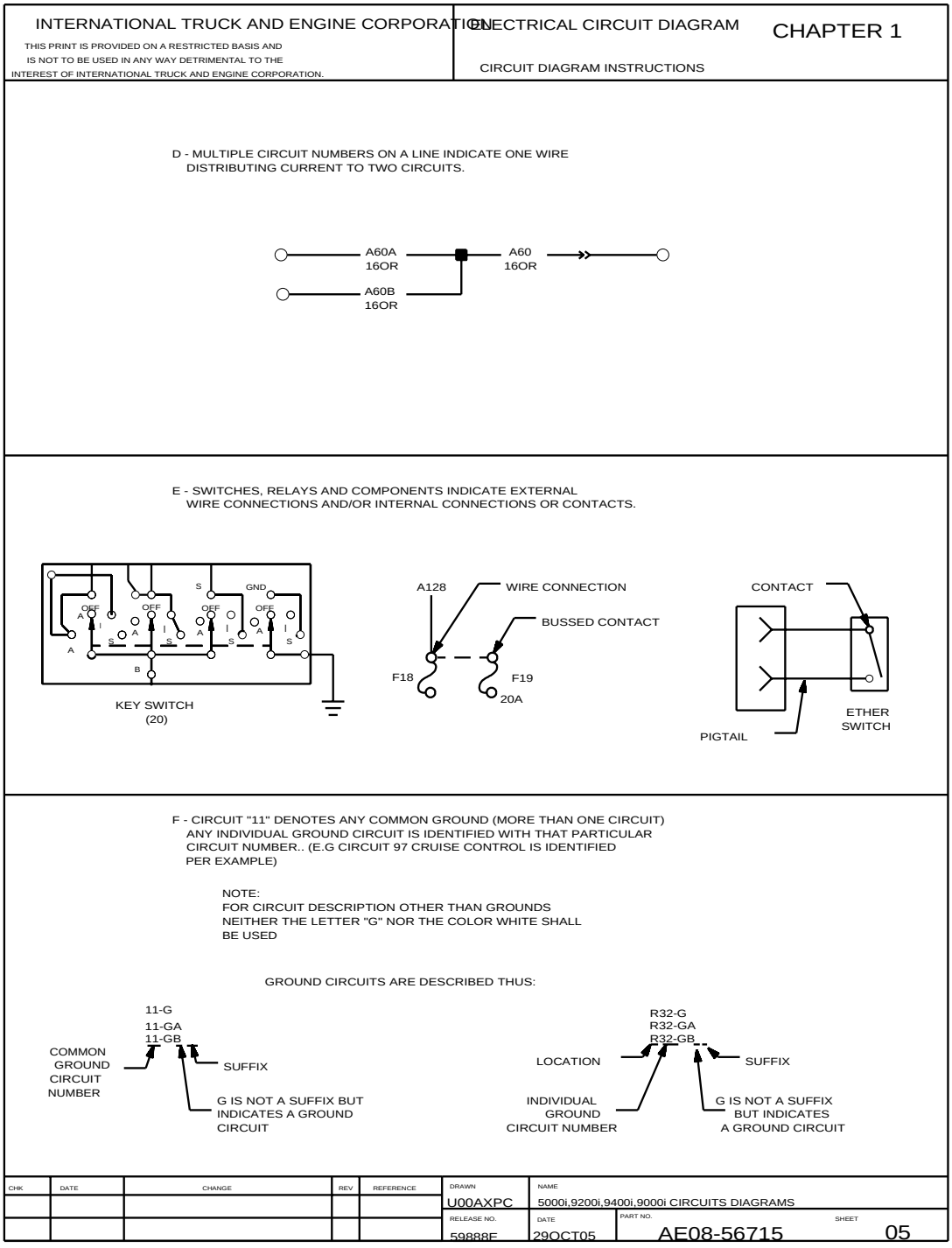

Figure 5 Circuit Diagram Instructions, page 5

1.6. CIRCUIT DIAGRAM INSTRUCTIONS, P. 6

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

CIRCUIT DIAGRAM INSTRUCTIONS

ABBREVIATION: COLOR AND NOUN

COLOR ABBREVIATION	
AQ	AQUA
BK	BLACK
BL	BLUE
BN	BROWN
DKGN	DARK GREEN
GD	GOLD
GY	GRAY
GN	GREEN
LTBL	LIGHT BLUE
LTGN	LIGHT GREEN
OR	ORANGE
PK	PINK
PL	PURPLE
RD	RED
SIL	SILVER
TN	TAN
VT	VIOLET
WH	WHITE
YL	YELLOW

NOUN ABBREVIATION	
ACC	ACCESSORY
AC	AIR CONDITIONER
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BAT	BATTERY
CONN	CONNECTION OR CONNECTOR
DRL	DAYTIME RUNNING LIGHTS
ENG	ENGINE
FWD	FORWARD
GA	GAUGE
GND	GROUND
IGN	IGNITION
IND	INDICATOR
L	LEFT
LT	LIGHT
W/O	WITHOUT
OPT	OPTIONAL
R	RIGHT
S	START OR SENDER
THERMO	THERMOSTAT
W/	WITH

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05

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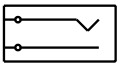
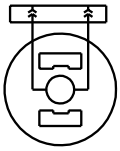
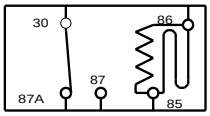
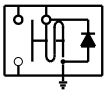
Figure 6 Circuit Diagram Instructions, page 6

1.7. SCHEMATIC SYMBOL CHART, P. 7

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

SCHEMATIC SYMBOL CHART

SYMBOL	DESCRIPTION
	CIGAR LIGHTER
	MOTOR - ELECTRIC
	RELAY-SUPPRESSED
	HORN
	SPEAKER - SOUND SYSTEM
	MAGNETIC SWITCH
	LIGHT - SINGLE FILMENT
	LIGHT - DOUBLE FILAMENT
	SENDER - OIL, WATER, FUEL, TEMPERATURE

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05 — PART NO. AE08-56715 — SHEET 07

Figure 7 Schematic Symbol Chart

1.8. SCHEMATIC SYMBOL CHART, P. 8

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

SCHEMATIC SYMBOL CHART

SYMBOL	DESCRIPTION
	MALE/FEMALE IN-LINE CONNECTION
	FEMALE TERMINAL
	MALE TERMINAL
	GROUND
	FUSE
	LIGHT EMITTING DIODE
	RESISTOR
	SWITCH CONTACT NORMALLY OPEN
	SWITCH CONTACT NORMALLY CLOSED
	JUNCTION POINT
	SPLICE
	SWITCH-PRESSURE
	SWITCH MANUAL/MECHANICAL
	SOLENOID GENERAL USAGE

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05

PART NO. AE08-56715 SHEET 08

Figure 8 Schematic Symbol Chart

1.9. SCHEMATIC SYMBOL CHART, P. 9

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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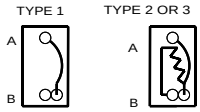
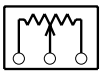
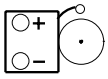
ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

SCHEMATIC SYMBOL CHART

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	DIODE
	FUSIBLE LINK
	SWITCH-PUSH BUTTON
	SWITCH-WITH LIGHT
	ACCELERATOR POSITION SENSOR
	ALARM-ELECTRONIC
	FLASHER-TURN SIGNAL,HAZARD

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05 / PART NO. AE08-56715 / SHEET 09

Figure 9 Schematic Symbol Chart

1.10. RELAY FUNCTIONS AND WIRING GUIDE, P. 10

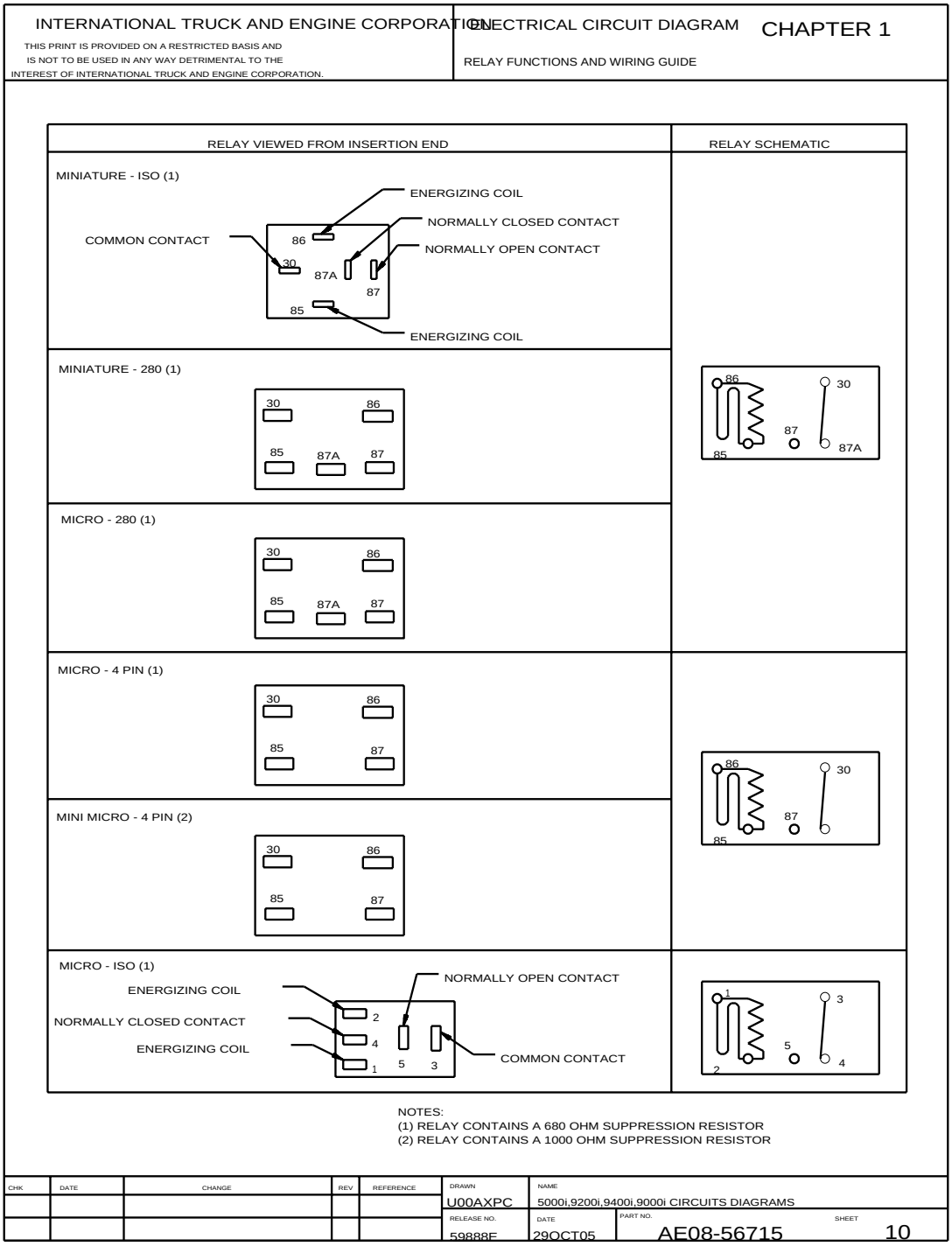


Figure 10 Relay Functions and Wiring Guide

1.11. RELAY PINOUT AND FUNCTION DATA SEALED MINIATURE RELAY DATA, P. 11

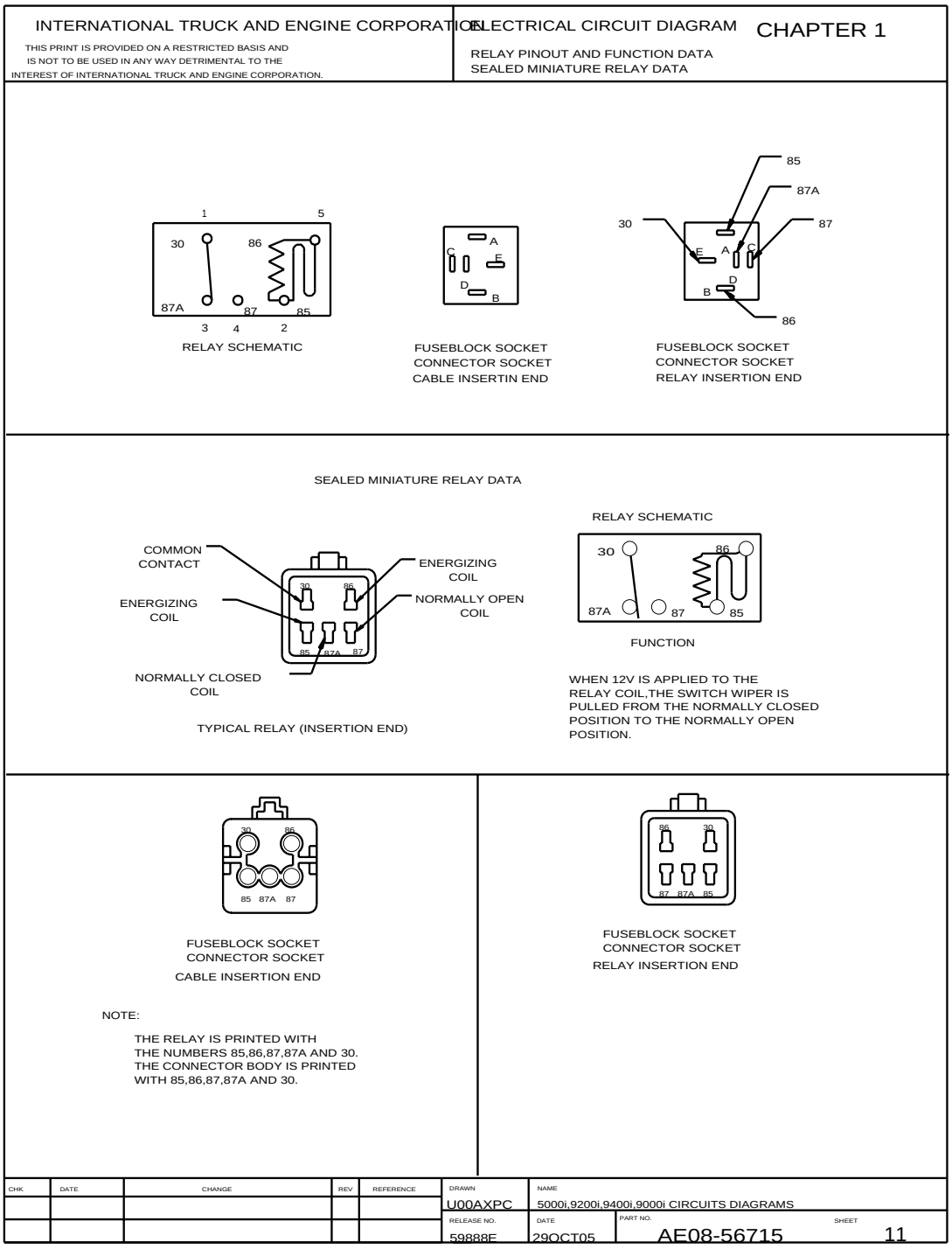


Figure 11 Relay Pinout and Function Data Sealed Miniature Relay Data

1.12. LAMP BULB CHART, P. 12

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

LAMP BULB CHART

BULB APPLICATION	CANDLE POWER OR WATTS	BULB TRADE NUMBER
BACK-UP LIGHTS	32 CANDLE POWER	GE1156
CLEARANCE & IDENTIFICATION SMALL	3 CANDLE POWER	GE168
COURTESY LIGHT	21 CANDLE POWER	1142
DOME LIGHTS	21 CANDLE POWER	1142
FOG LIGHTS	100 WATT	4921-1
LOW BEAMS	55 WATT	GE9007
HIGH BEAMS	60 WATT	GE9007
CIGAR LIGHTER	1 CANDLEPOWER	1455
GAUGE BACKLIGHT	2 CANDLEPOWER	194
GAUGE WARNING LED (RED)	2 CANDLEPOWER	194
COLD AMBIENT PROTECTION LED (RED)	2 CANDLEPOWER	194
FUEL FILTER LED (YELLOW)	2 CANDLEPOWER	194
WARN ENGINE LED (YELLOW)	2 CANDLEPOWER	194
STOP ENGINE LED (RED)	2 CANDLEPOWER	194
BRAKE PRESSURE LED	2 CANDLEPOWER	194
CHECK TRANSMISSION LED	2 CANDLEPOWER	194
TRAILER ABS LED	2 CANDLEPOWER	194
WASHER FLUID LED	2 CANDLEPOWER	194
LEFT TURN SIGNAL LED (GREEN)	2 CANDLEPOWER	194
TRACTION CONTROL LED (GREEN)	2 CANDLEPOWER	194
WATER IN FUEL LED (YELLOW)	2 CANDLEPOWER	194
PARK FLUID LED (RED)	2 CANDLEPOWER	194
CHECK ELECTRICAL SYSTEMS LED (YELLOW)	2 CANDLEPOWER	194
PARK BRAKE LED (RED)	2 CANDLEPOWER	194
CRUISE CONTROL ACTIVE LED (YELLOW)	2 CANDLEPOWER	194
ANTILOCK BRAKING SYSTEM LED (YELLOW)	2 CANDLEPOWER	194
RIGHT TURN LED (GREEN)	2 CANDLEPOWER	194
COOLANT LEVEL LED (RED)	2 CANDLEPOWER	194
SEAT BELT LED (RED)	2 CANDLEPOWER	194
HIGH BEAM ICON LED (BLUE)	2 CANDLEPOWER	53
CHECK AIR CONDITIONER LED (YELLOW)	2 CANDLEPOWER	82S272109-4
MAP LIGHT	3 CANDLEPOWER	1816
SIDE MARKER		2548
STOP & TURN/TAIL & LICENSE PLATE	32/3 CANDLEPOWER	3157
TURN SIGNAL/MARKER (FENDER)	32/3 CANDLEPOWER	3157
TURN SIGNAL & MARKER LIGHT		2356
WORK (TRAILER HOOK)	35 WATTS	4411
BACK-UP LIGHTS-UPPER AND LOWER BUNK READING LIGHT	15 CANDLEPOWER	1003
CABINET/WARDROBE LIGHT	5W	7575
UNDER BUNK LIGHT	21 CP/2(12CP)	577/211
ACCENT LIGHT	2(12CP)	211
DOME LIGHT	15 WATT	F15T8-CW
SLEEPER FLOOR LIGHT	4CP	W5W
HEATER AND AIR CONDITIONER CONTROL	3 CANDLEPOWER	168
LUGGAGE COMPARTMENT LIGHT	6 CANDLEPOWER	99
READING LIGHT	15 CANDLEPOWER	1003

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05 — PART NO. AE08-56715 — SHEET 12

Figure 12 Lamp Bulb Chart

1.13. CUMMINS ISX07/ISM07 PINOUTS — 50 PIN CONNECTOR, P. 13

INTERNATIONAL TRUCK AND ENGINE CORPORATION

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

CUMMINS ISX07 / ISM07 PIN OUTS - 50 PIN CONNECTOR

PIN NO.	DESCRIPTION
2	DIAGNOSTICS/DUAL SWITCH
3	REMOTE ACCELERATOR ON/OFF SWITCH
4	REMOTE PTO ON/OFF SWITCH
5	SERVICE BRAKE SWITCH
6	AC PRESSURE SWITCH
7	CSF DELTA PRESSURE SENSOR SIGNAL
8	ENGINE BRAKE LEVEL SWITCH 1
9	ACCELERATOR POSITION SIGNAL 1
10	J1587 DATALINK (+)
13	ACCELERATOR INTERLOCK/TORQUE LIMIT SWITCH
14	MAX OPERATING SPEED/GOVERNOR TYPE SWITCH
15	CLUTCH/EP OVERRIDE SWITCH
16	CC/PTO ON/OFF SWITCH
17	FAN CONTROL ACCESSORY SWITCH
18	ENGINE BRAKE LEVEL SWITCH 2
19	AMBIENT AIR TEMPERATURE SENSOR
20	J1587 DATALINK (-)
21	SENSOR SUPPLY (5V DC)
23	ACCELERATOR POSITION RETURN 1
24	SET/RESUME SWITCH (RESUME)
25	SET/RESUME SWITCH (SET)
26	REMOTE ACCELERATOR POSITION
27	MAGNETIC PICKUP VSS (+)/DIGITAL VSS
28	COOLANT LEVEL SIGNAL
29	ECM RETURN (GENERAL)
30	HALL EFFECT SPEED INPUT (FEATURE USE)
31	RPF MID TEMPERATURE SENSOR
32	ECM RETURN (SENSOR)
33	ECM RETURN (TEMPERATURE/LEVEL)
34	ECM RETURN (SWITCH)
35	ACCELERATOR POSITION SIGNAL 2
36	MAGNETIC PICKUP VSS (-)
37	RPF INLET TEMPERATURE SENSOR
38	FAN CONTROL OUTPUT
39	IGNITION (KEYSWITCH)
40	ETHER INJECTION SOLENOID
41	TACHOMETER OUTPUT
42	ACCELERATOR POSITION SUPPLY 1
42	ECM RETURN (GENERAL)
43	STOP LIGHT
44	WARNING LAMP
46	J1939 DATALINK (+)
47	J1939 DATALINK (-)
48	IDLE SHUTDOWN RELAY
49	STARTER LOCKOUT RELAY
50	RPF OUTLET TEMPERATURE SENSOR

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888F	DATE 29OCT05

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Figure 13 Cummins ISX07/ISM07 Pinouts — 50 Pin Connector

1.14. EATON GEN 3 TCM PINOUTS — 38 PIN CONNECTOR, P. 14

INTERNATIONAL TRUCK AND ENGINE CORPORATION

ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

EATON GEN - 3 TCM - PIN OUTS - 38 PIN CONNECTOR

PIN NO	DESCRIPTION
1	J1939 SHIELD (CAN)
2	J1939 LOW (CAN)
3	J1939 HIGH (CAN)
4	START ENABLE RELAY (-)
5	NOT USED
6	NOT USED
7	J1939 SHIELD PASS THROUGH
8	J1939 SHIELD LOW THROUGH
9	J1939 SHIELD HIGH THROUGH
10	J1587 (+)
11	J1587 (-)
12	ISO9141-K COMMUNICATION
13	NOT USED
14	NOT USED
15	RESISTIVE LADDER 1 (MODE AUTO)
16	RESISTIVE LADDER 2 (MODE MANUAL)
17	LADDER RETURN (MODE COMMON)
18	ANALOG /SWITCH INPUT 1
19	ANALOG /SWITCH INPUT 2
20	MEIIR CONTACT
21	MEIIR (-)
22	MEIIR (+)
23	SERVICE LIGHT OUTPUT
24	NEUTRAL OUTPUT
25	COBRA LEVER RETURN (-)
26	START ENABLE LATCH
27	PNL LOW (PROPRIETARY CAN)
28	PNL HIGH (PROPRIETARY CAN)
29	NOT USED
30	NOT USED
31	COBRA LEVER POWER (+)
32	START ENABLE RELAY (+)
33	NOT USED
34	NOT USED
35	IGNITION
36	BATTERY (-)
37	NOT USED
38	BATTERY (+)

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
					U00AXPC	5000i,9200i,9400i,9900i CIRCUIT DIAGRAMS
					RELEASE NO. 59888E	DATE 29OCT05

PART NO. AE08-56715 SHEET 14

Figure 14 Eaton GEN 3 TCM Pinouts — 38 Pin Connector

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

2.1. 12 VOLT POWER FEED, P. 1

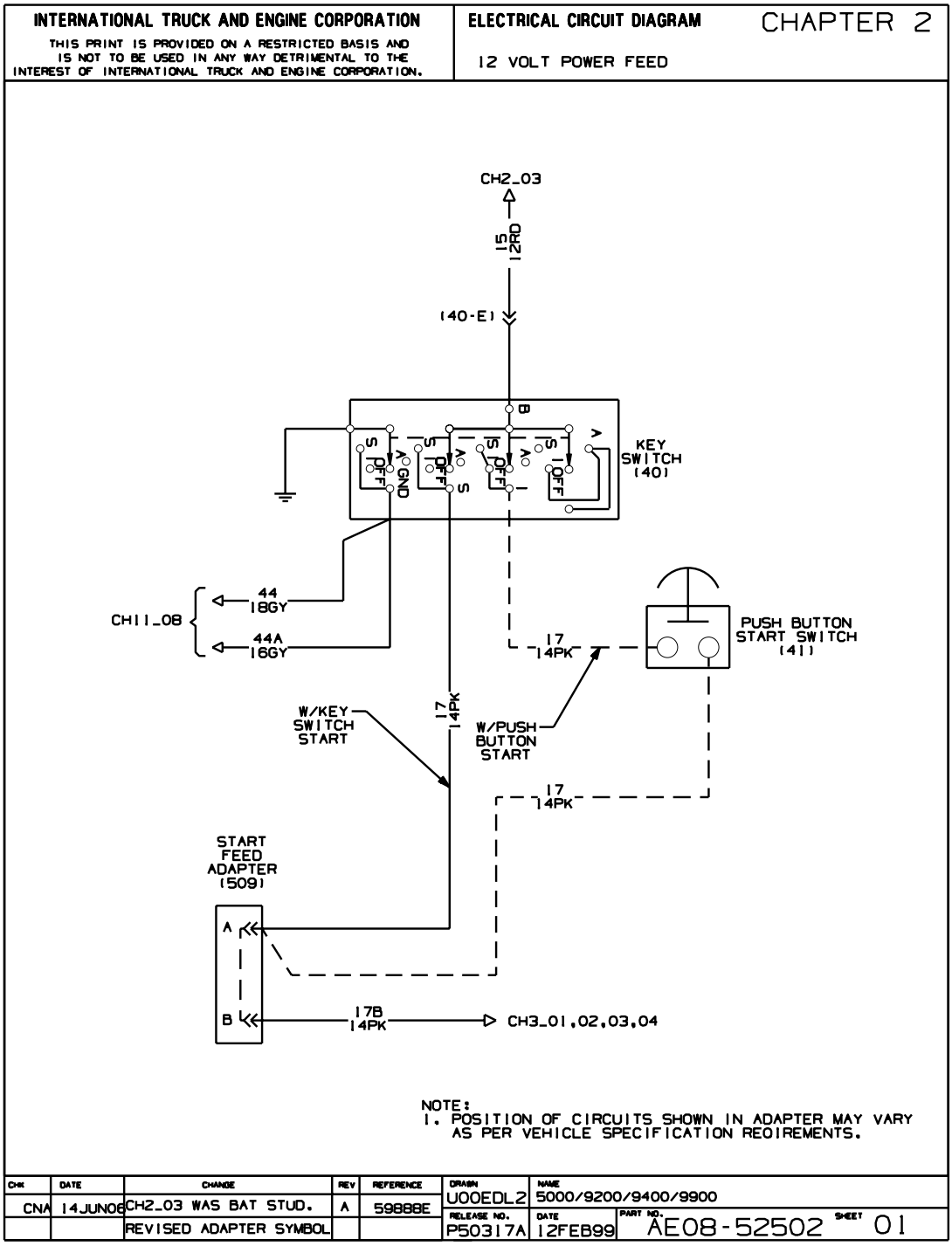


Figure 15 12 Volt Power Feed

2.2. ACCESSORY, P. 2

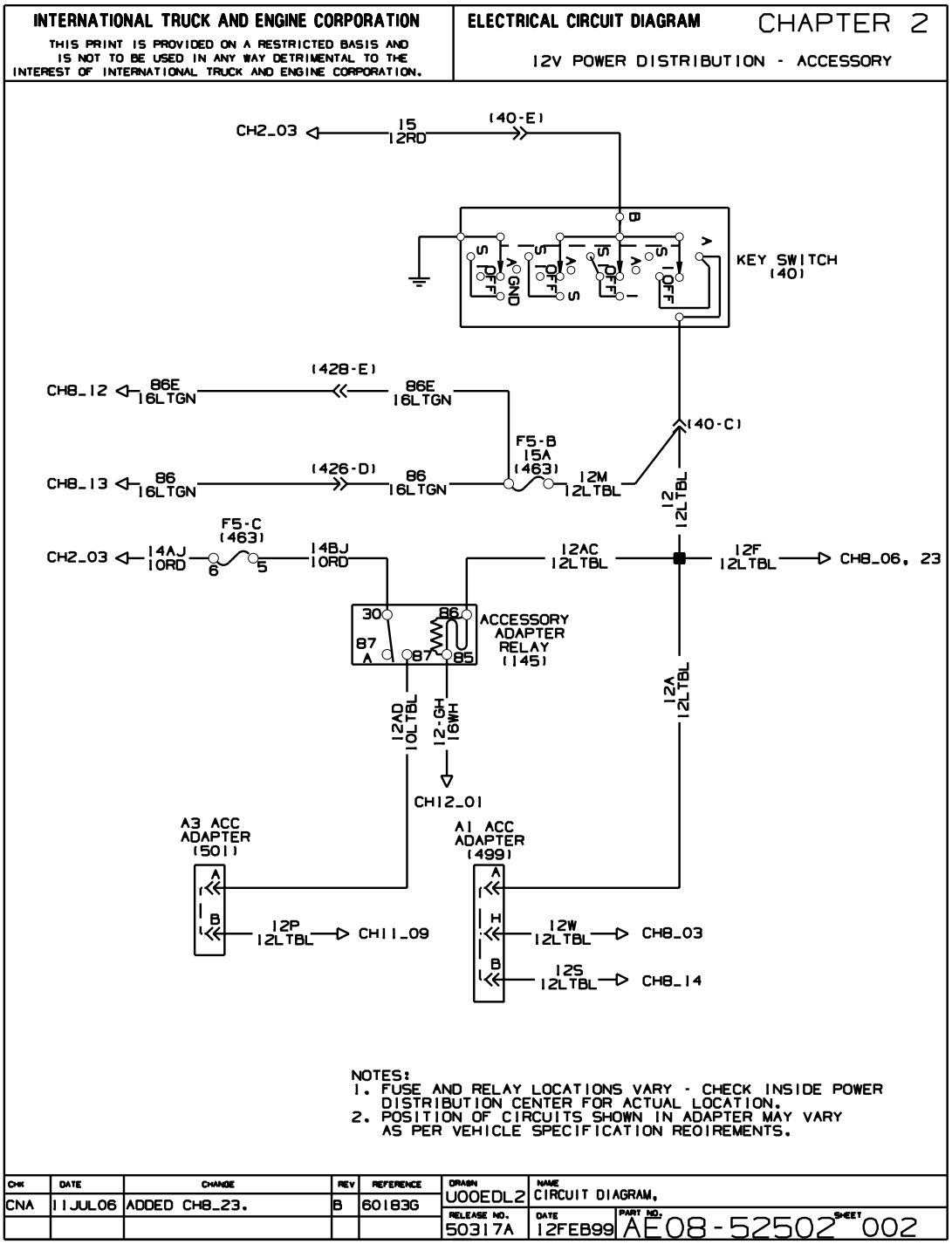


Figure 16 Accessory

2.3. BATTERY B1, P. 3

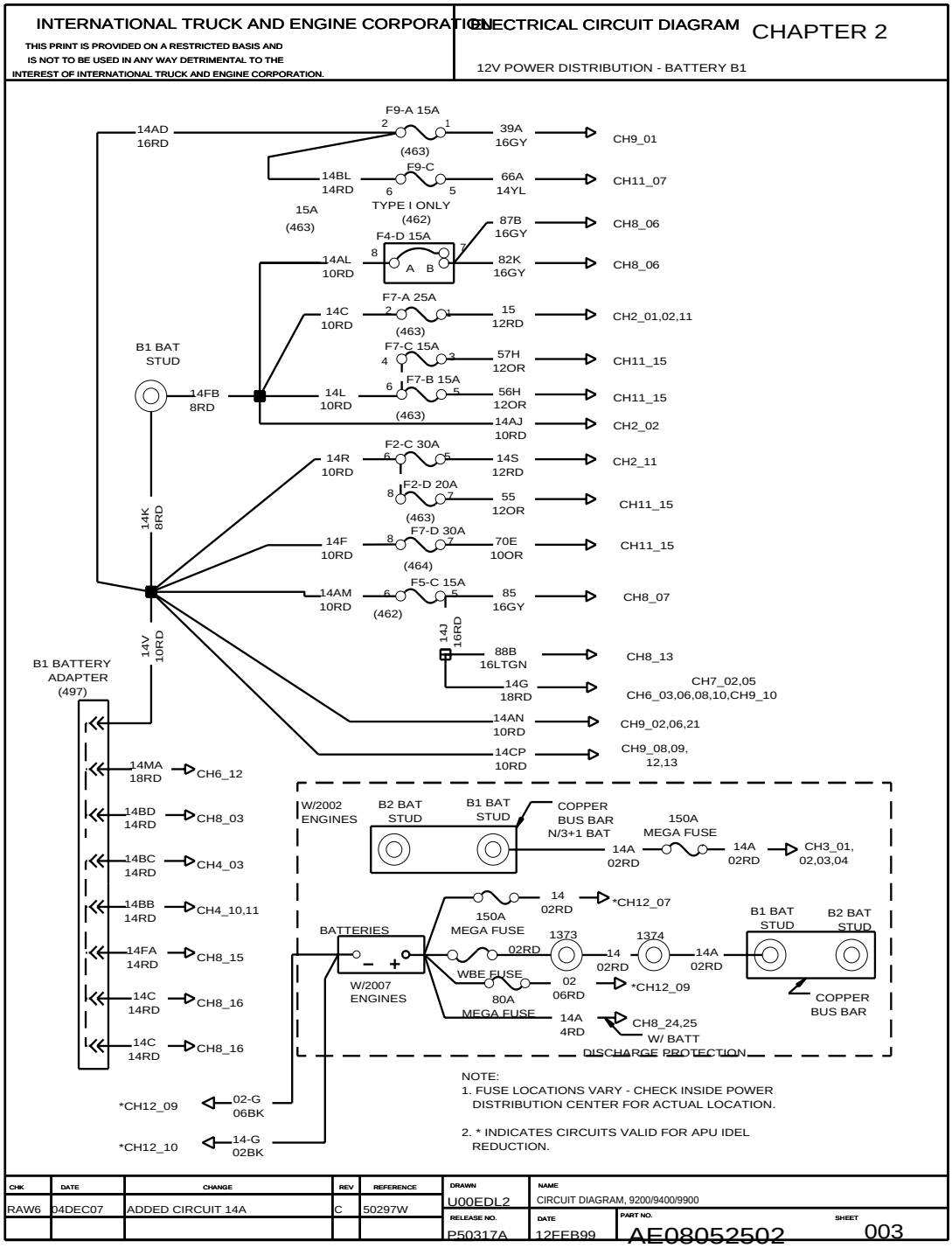


Figure 17 Battery, B1

2.4. B2 BATTERY STUD, P. 4

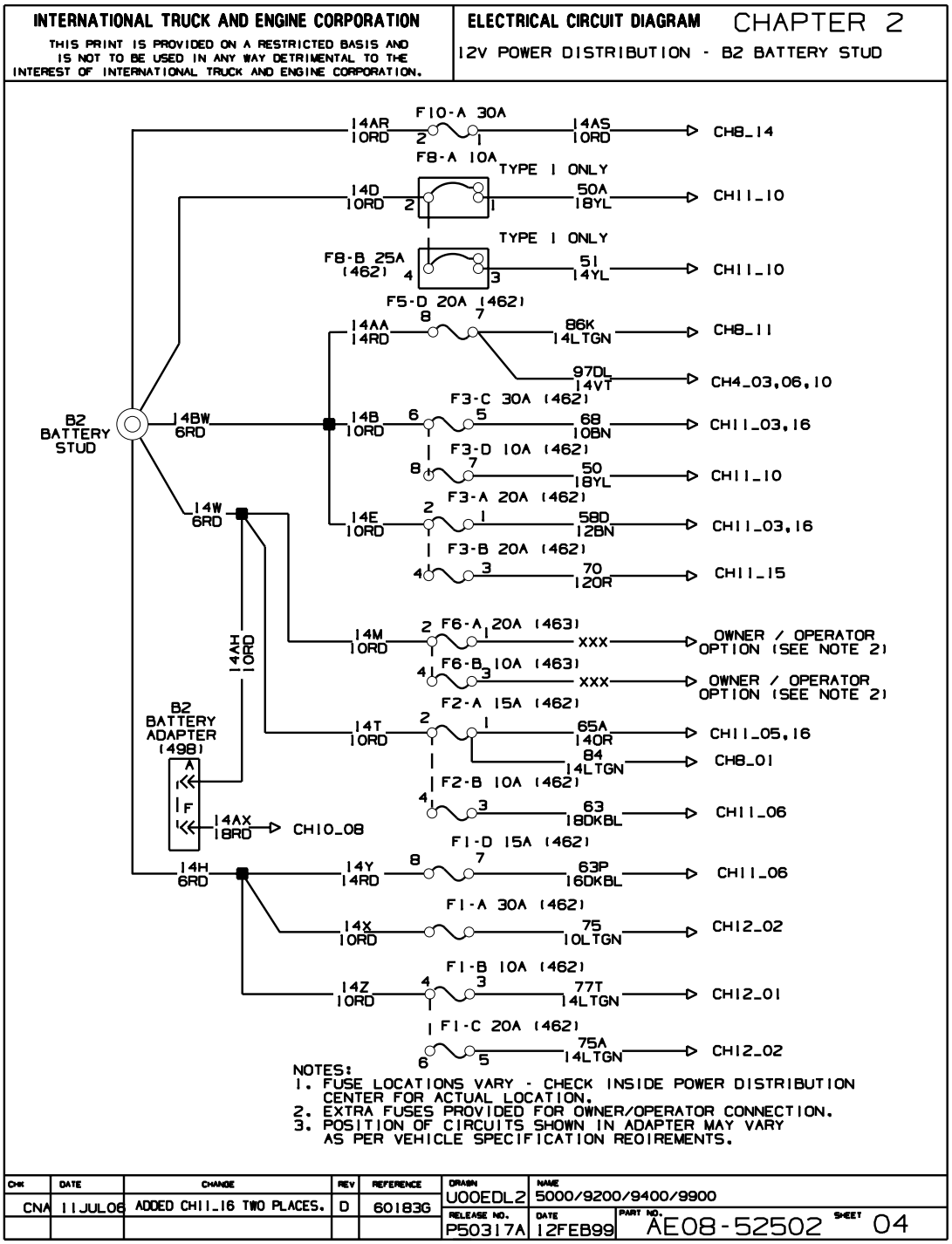


Figure 18 B2 Battery Stud

2.5. B2 BATTERY STUD, P. 5

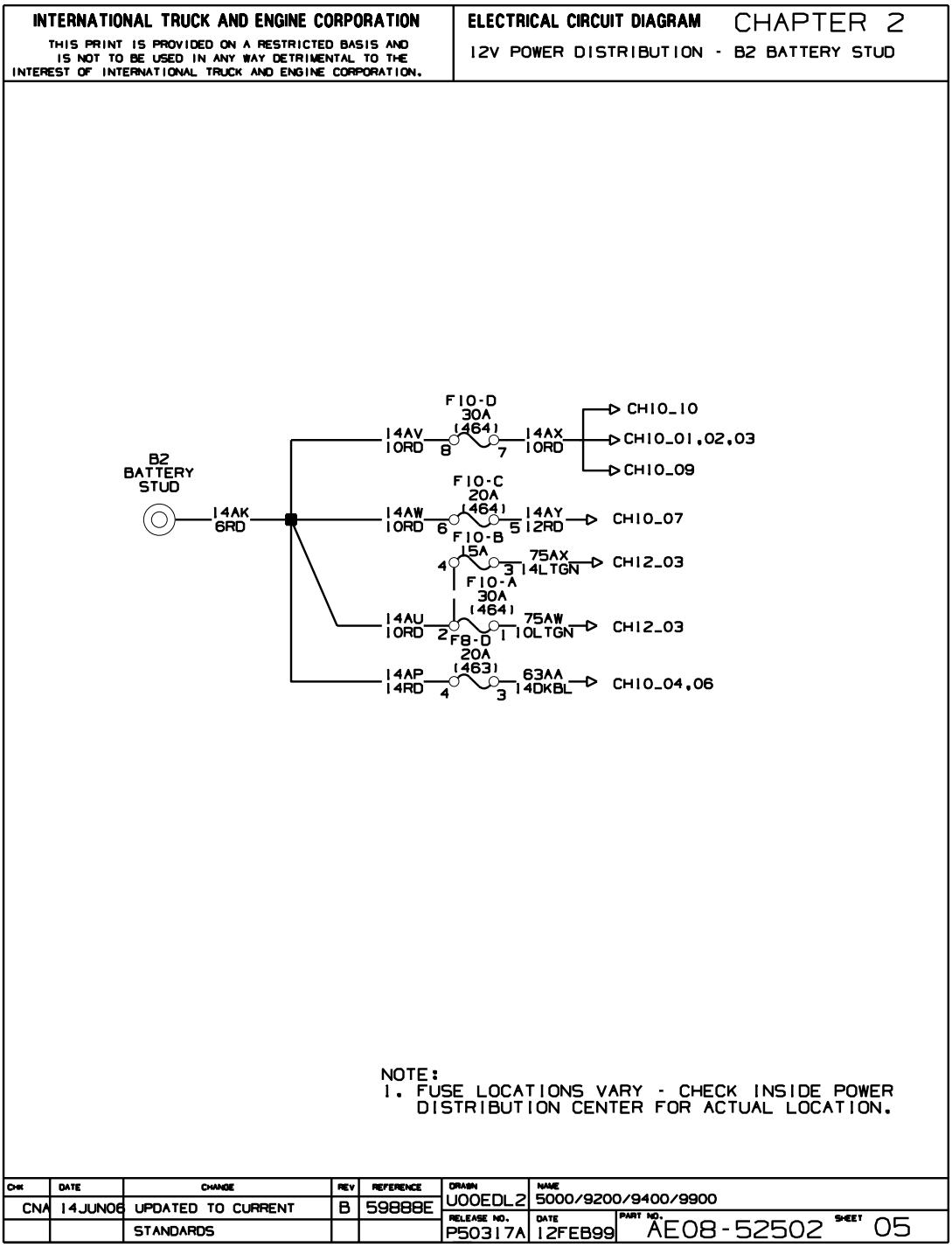


Figure 19 B2 Battery Stud

2.6. 3+1 BATTERY SYSTEM, P. 6

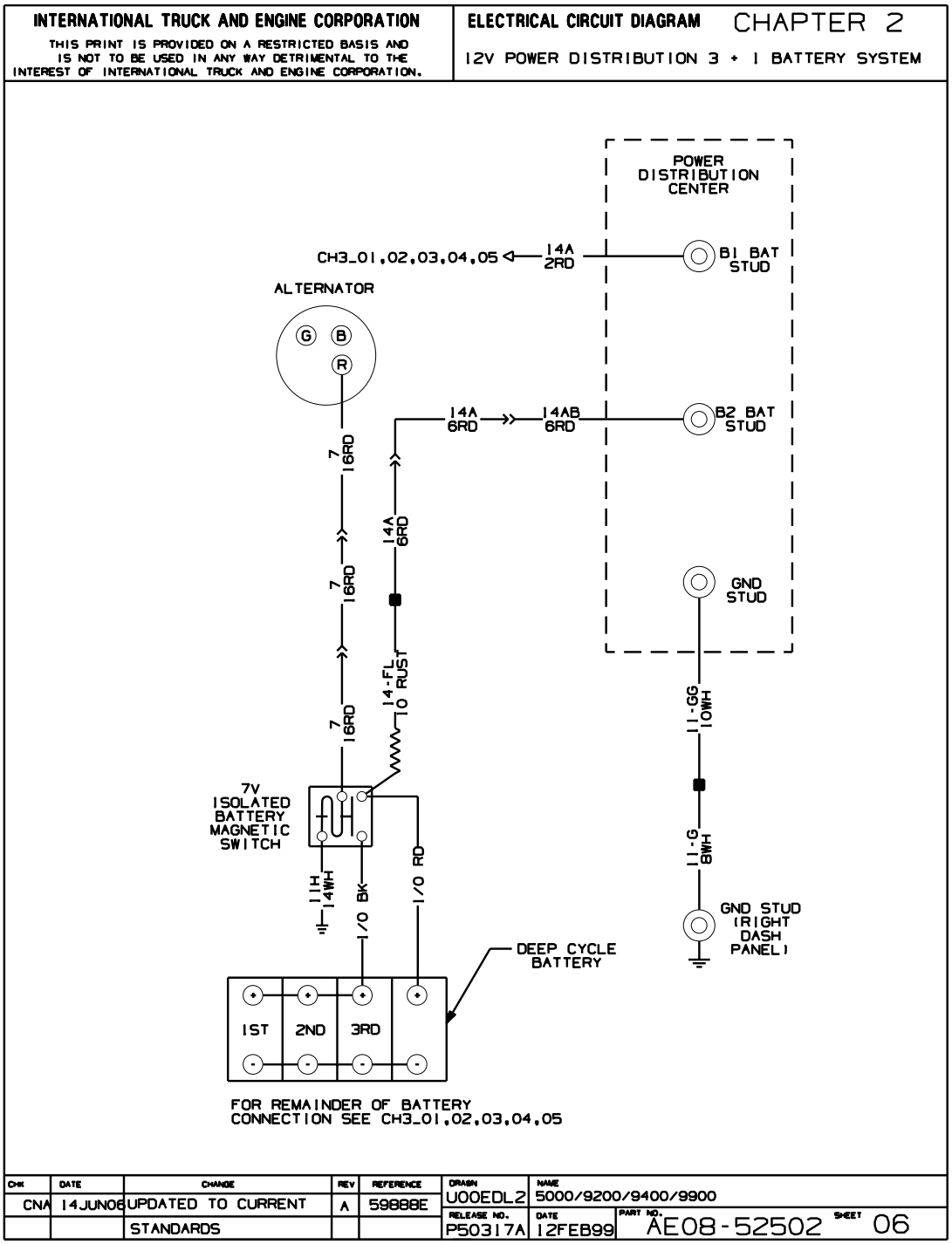


Figure 20 3+1 Battery System

2.7. GROUND ADAPTER COMPOSITE, P. 7

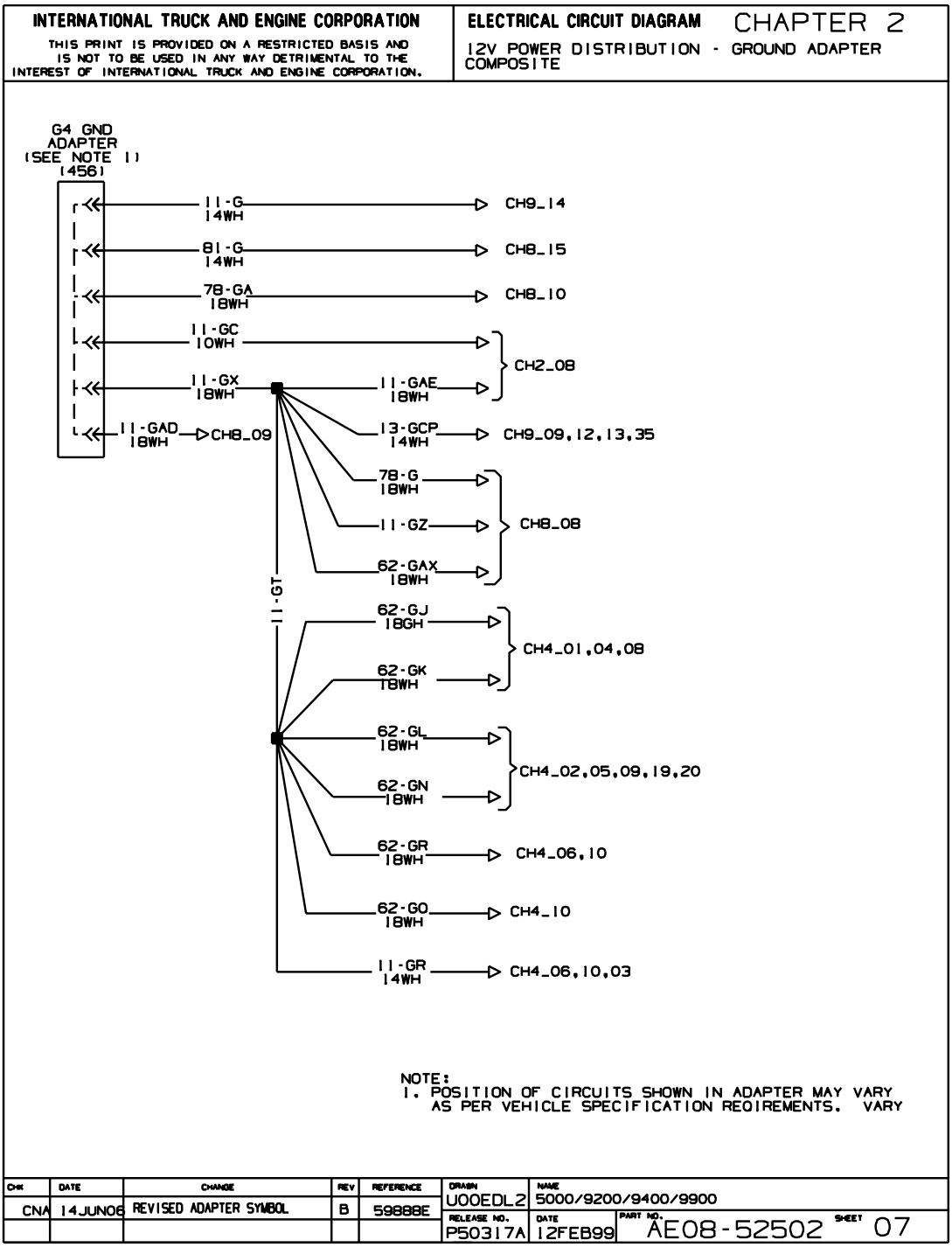


Figure 21 Ground Adapter Composite

2.8. GROUND STUD COMPOSITE, P. 8

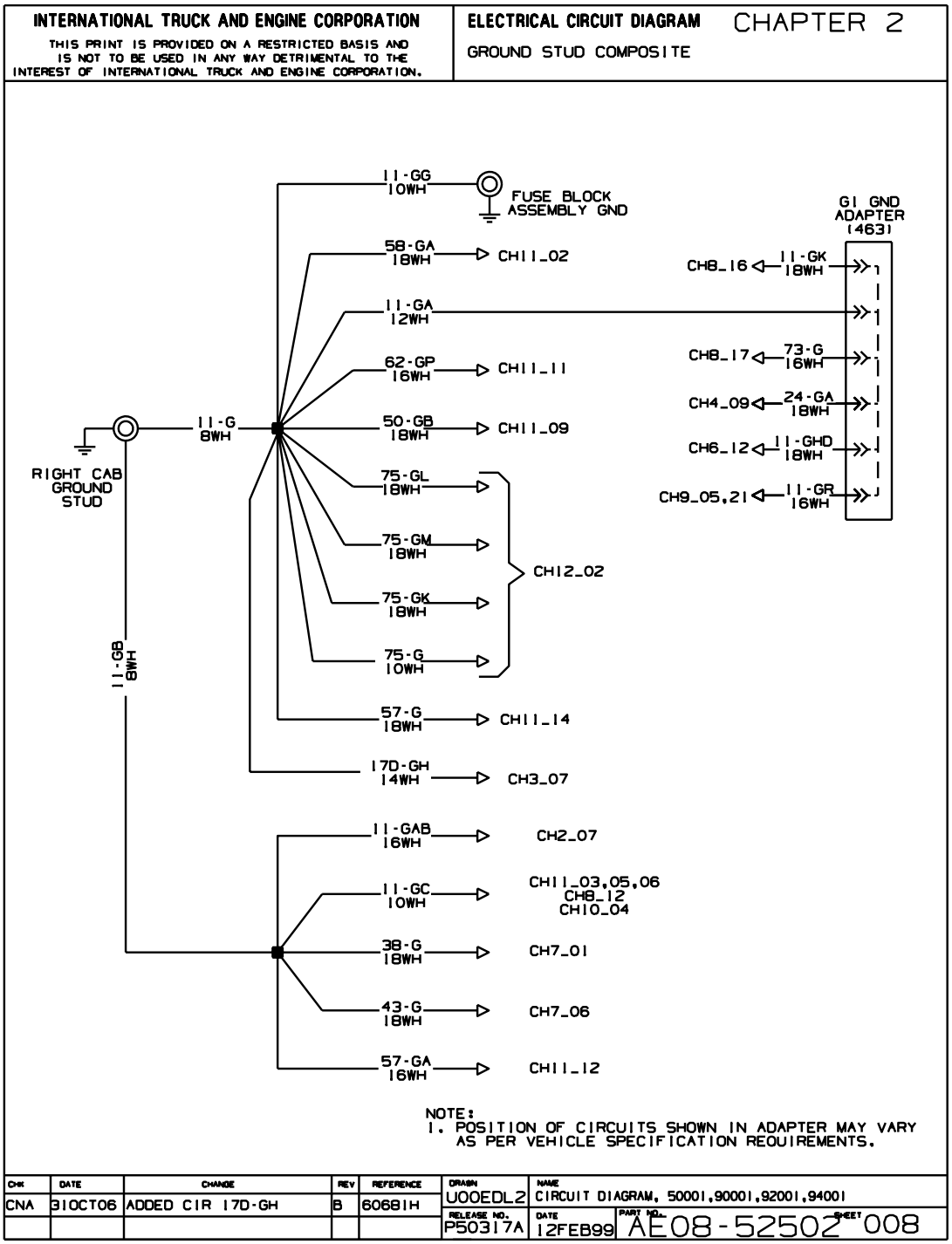


Figure 22 Ground Stud Composite

2.9. GROUND STUD COMPOSITE, P. 9

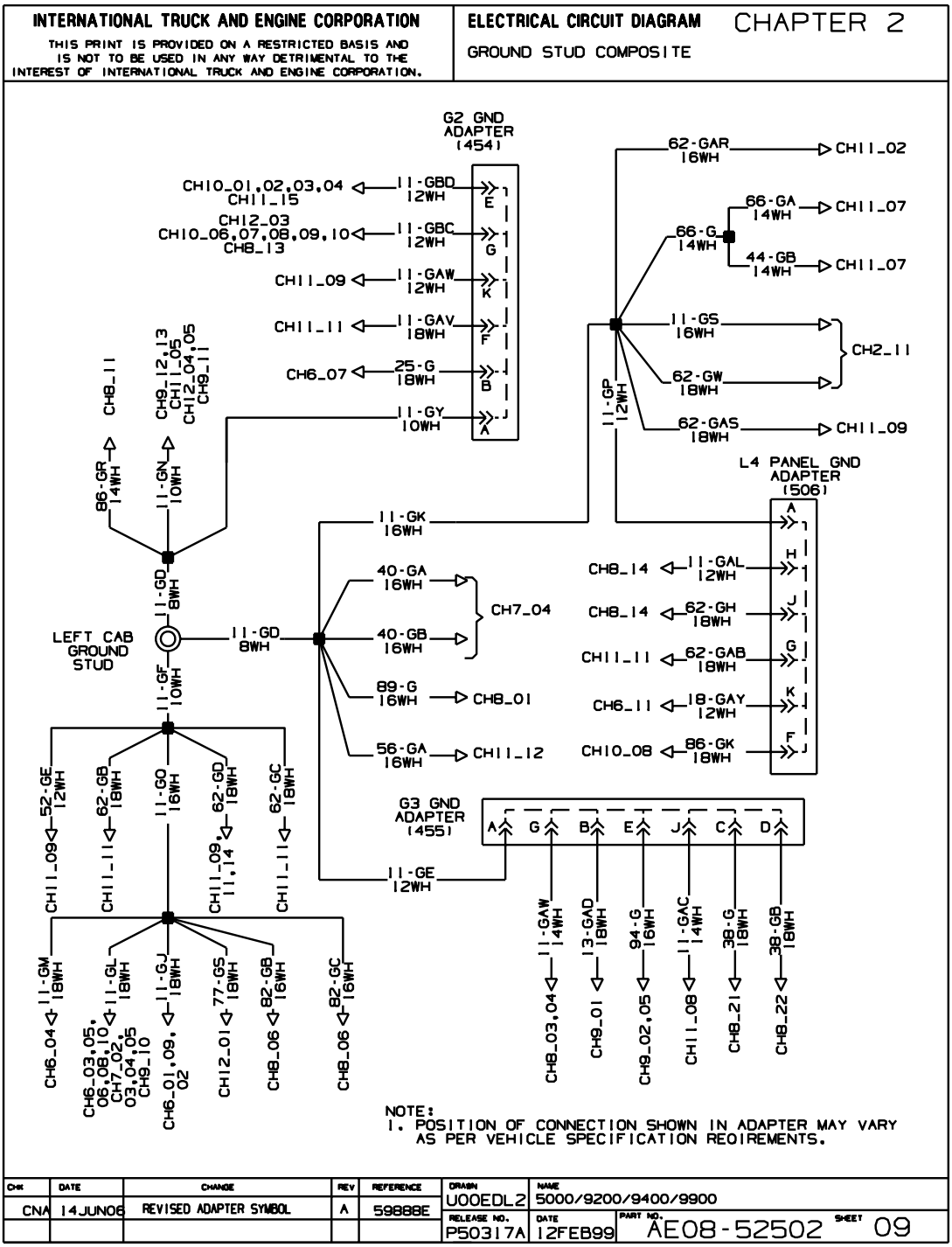


Figure 23 Ground Stud Composite

2.10. IGNITION, P. 10

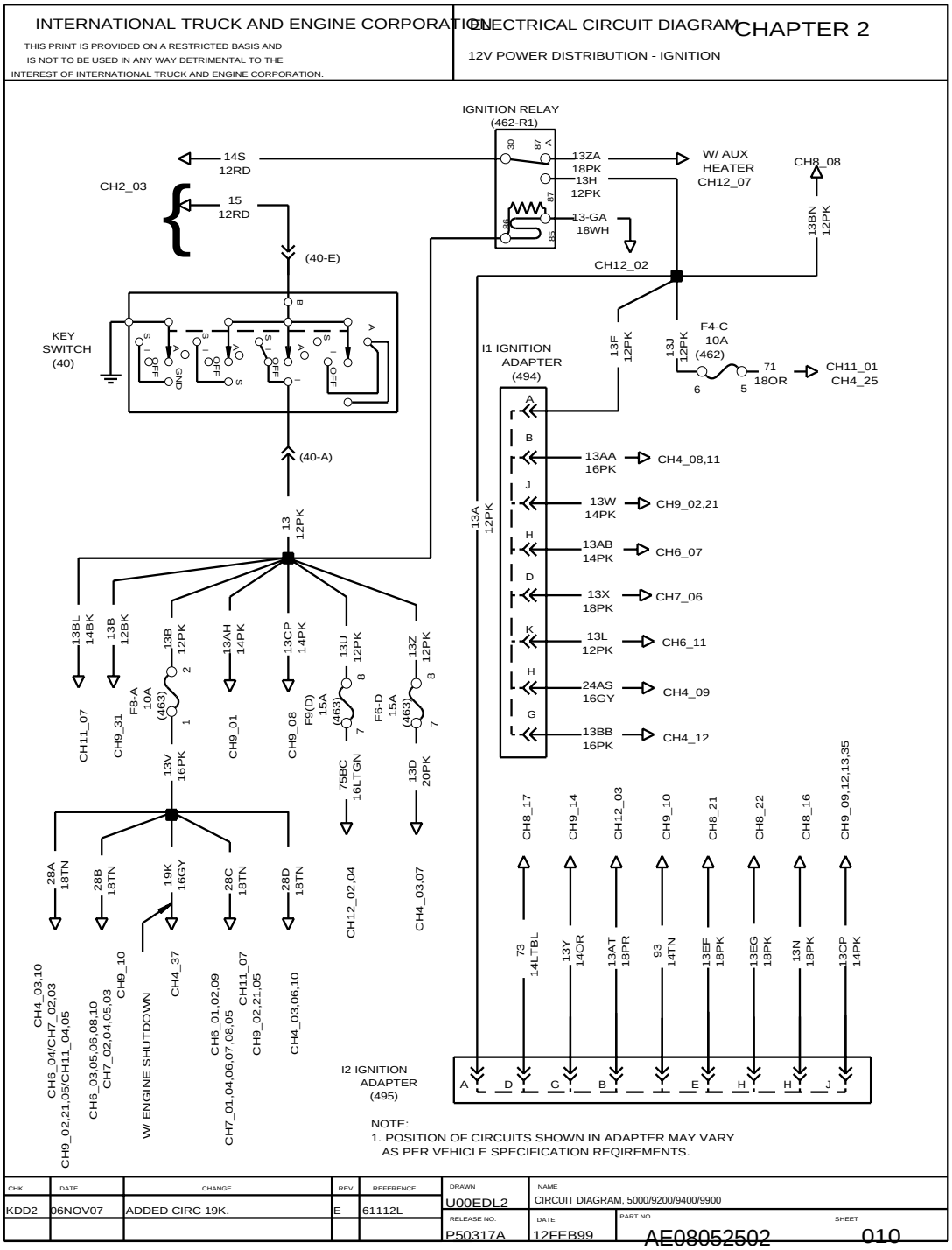


Figure 24 Ignition

2.11. PANEL LIGHTS ADAPTER COMPOSITE, P. 11

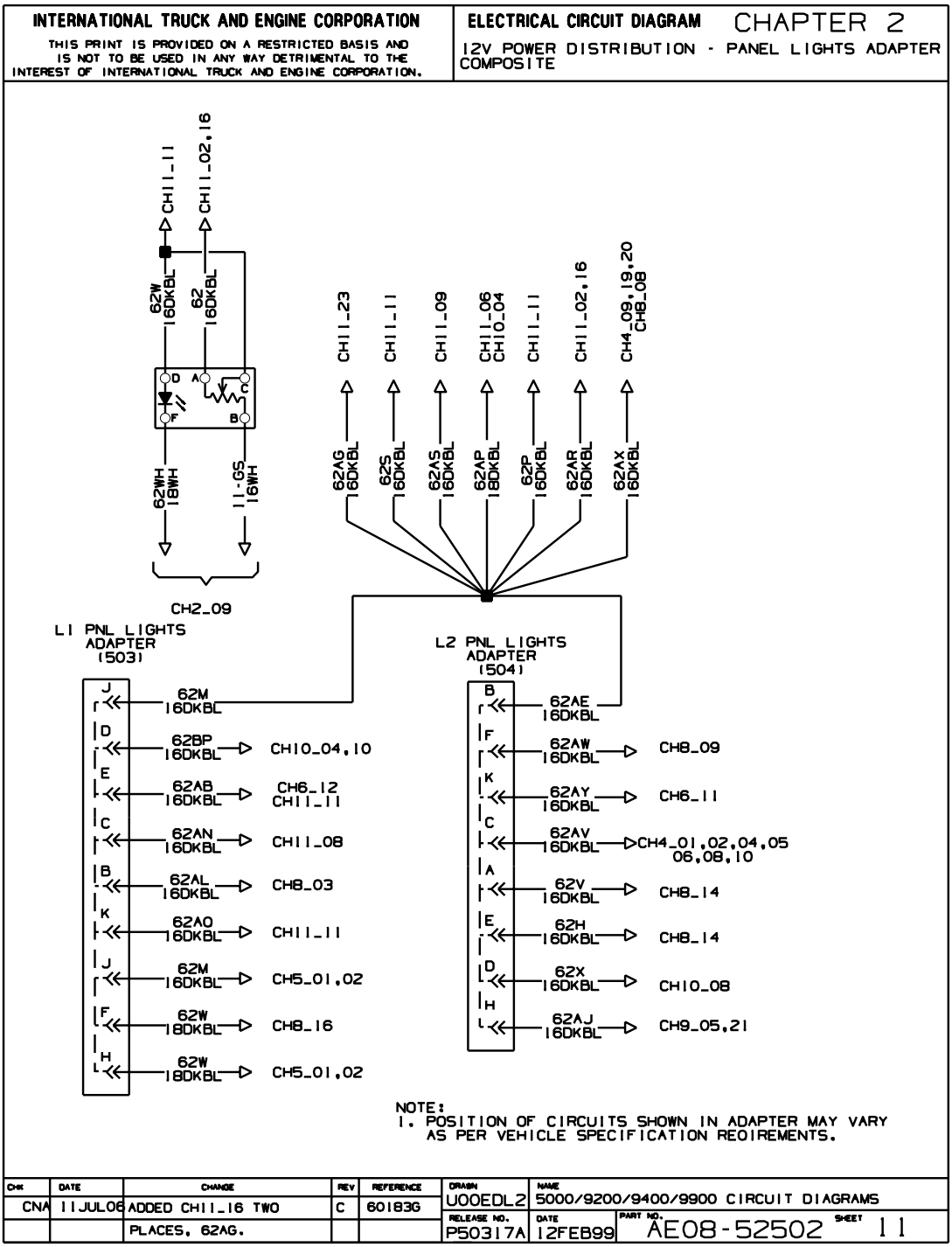


Figure 25 Panel Lights Adapter Composite

3. 12 VOLT CHARGING AND CRANKING SYSTEM (CHAPTER 3)

3.1. WITH CAT AND CUMMINS ENGINES, P. 1

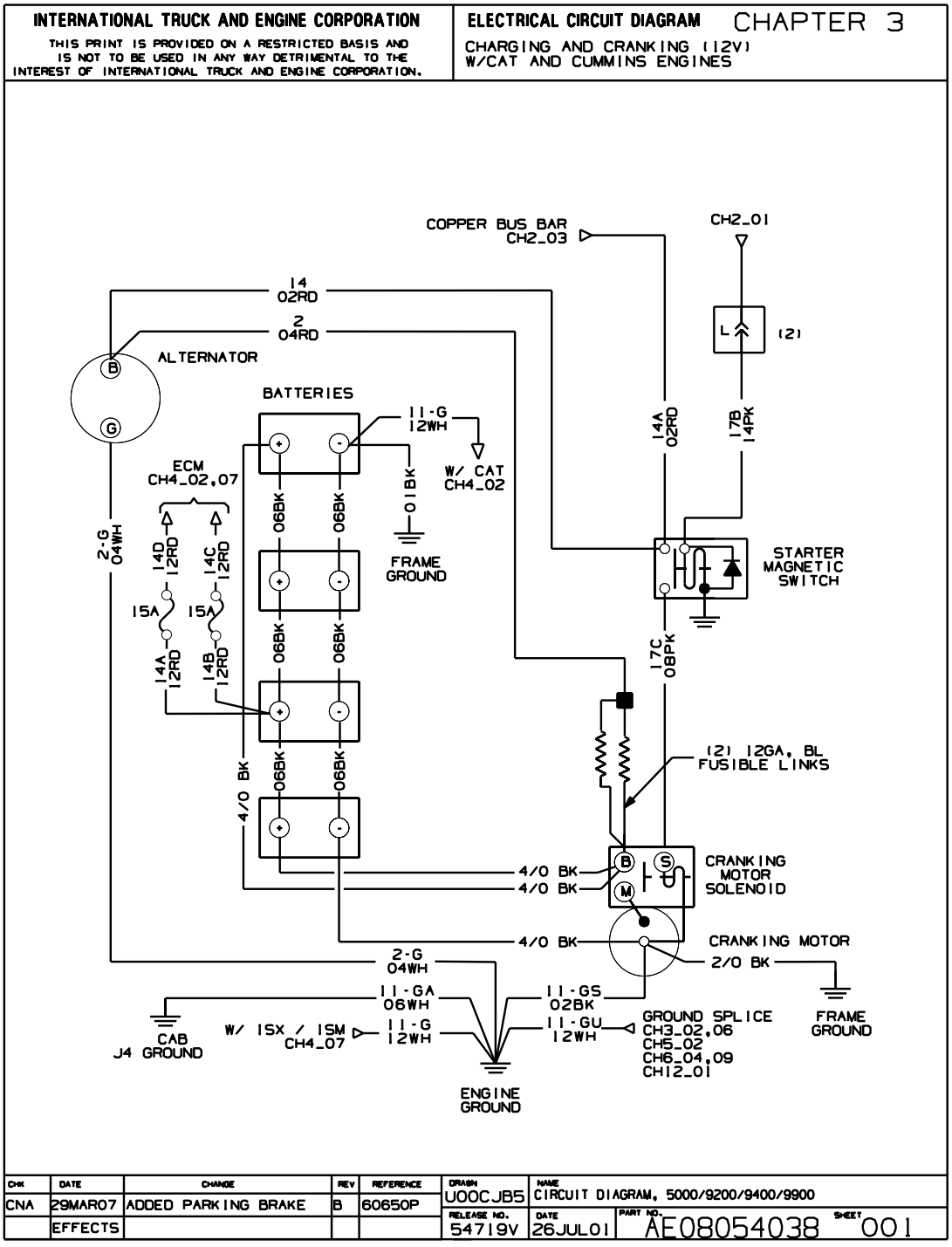


Figure 26 With Cat and Cummins Engines

3.2. WITH OVERCRANK PROTECTION WITH 2002 CAT AND CUMMINS ENGINES, P. 2

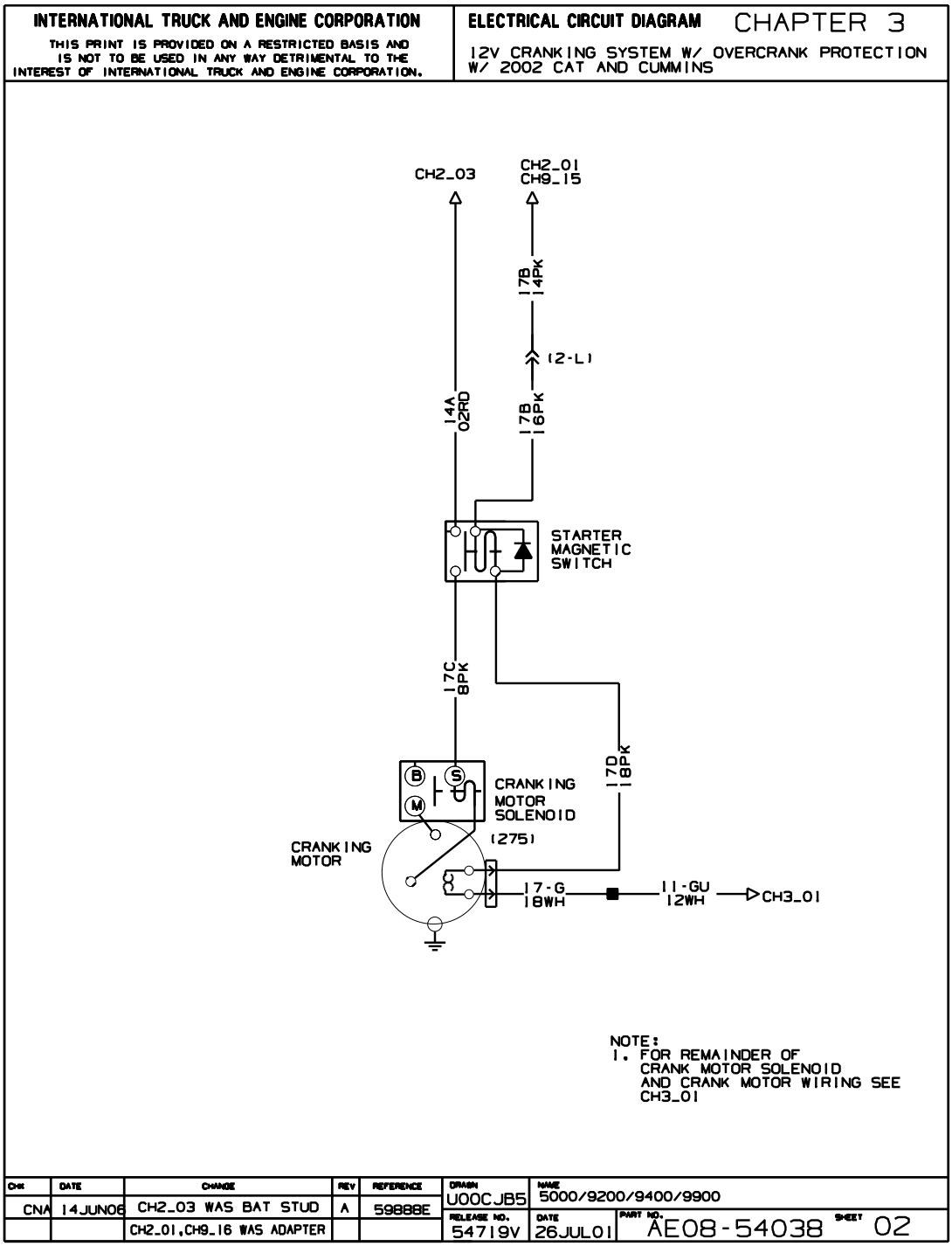


Figure 27 With Overcrank Protection With 2002 Cat and Cummins Engines

3.3. WITH I6 HEUI ENGINE, P. 3

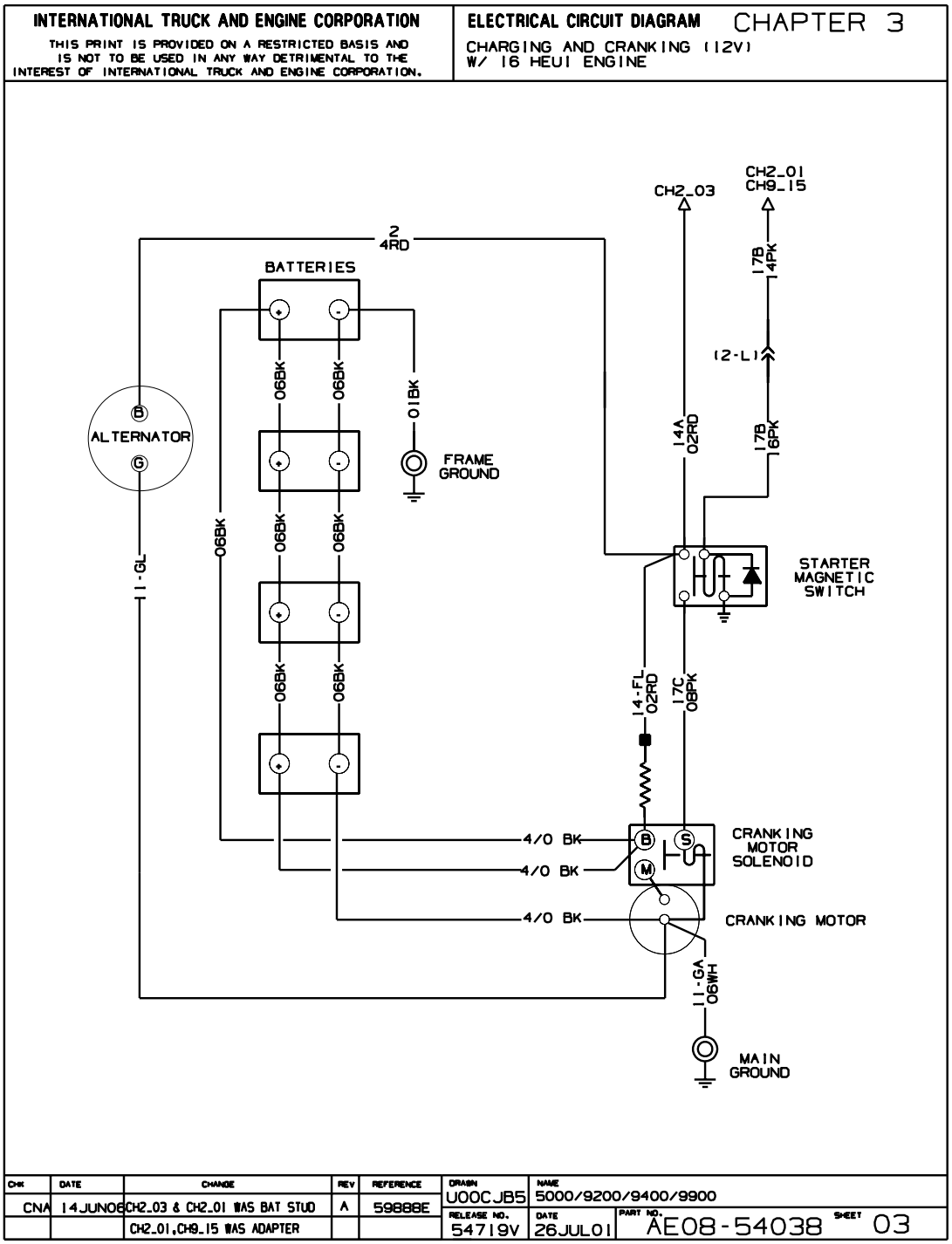


Figure 28 With I6 HEUI Engine

3.4. WITH OVERCRANK PROTECTION WITH I6 HEUI, P. 4

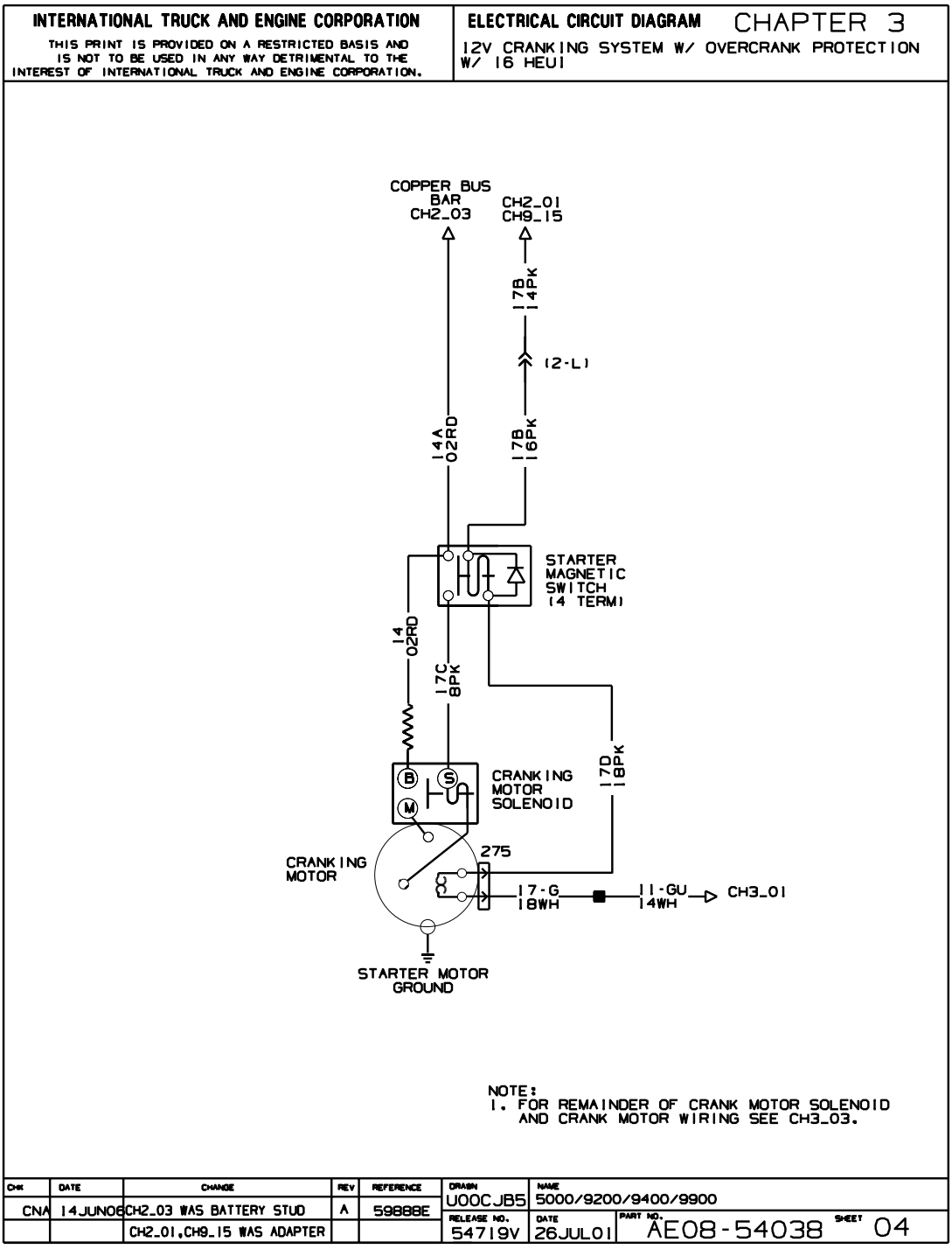


Figure 29 With Overcrank Protection With I6 HEUI

3.5. WITH CUMMINS ISX07/ISM07 ENGINES, P. 5

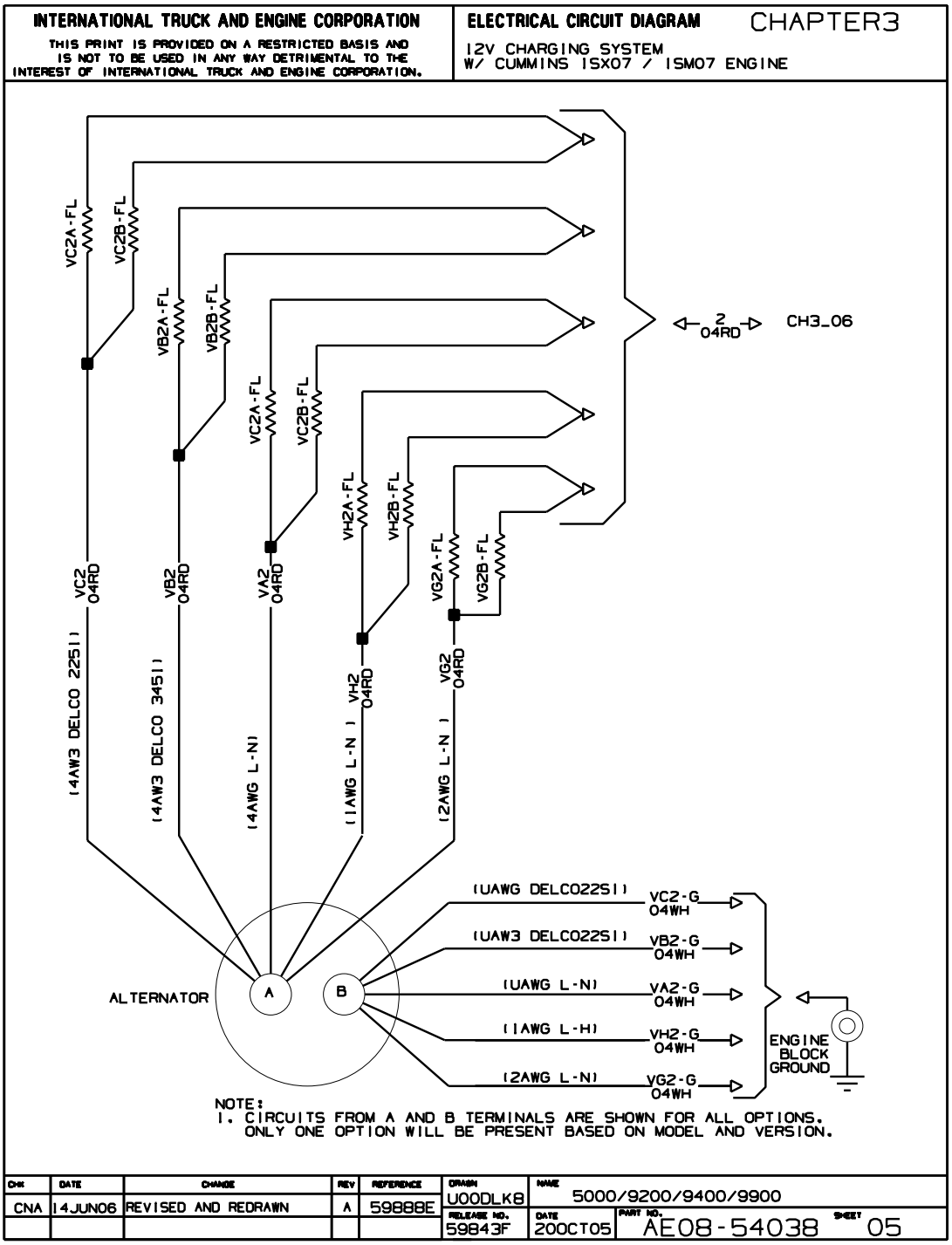


Figure 30 With Cummins ISX07/ISM07 Engines

3.6. WITH CUMMINS ISX07/ISM07 ENGINES, P. 6

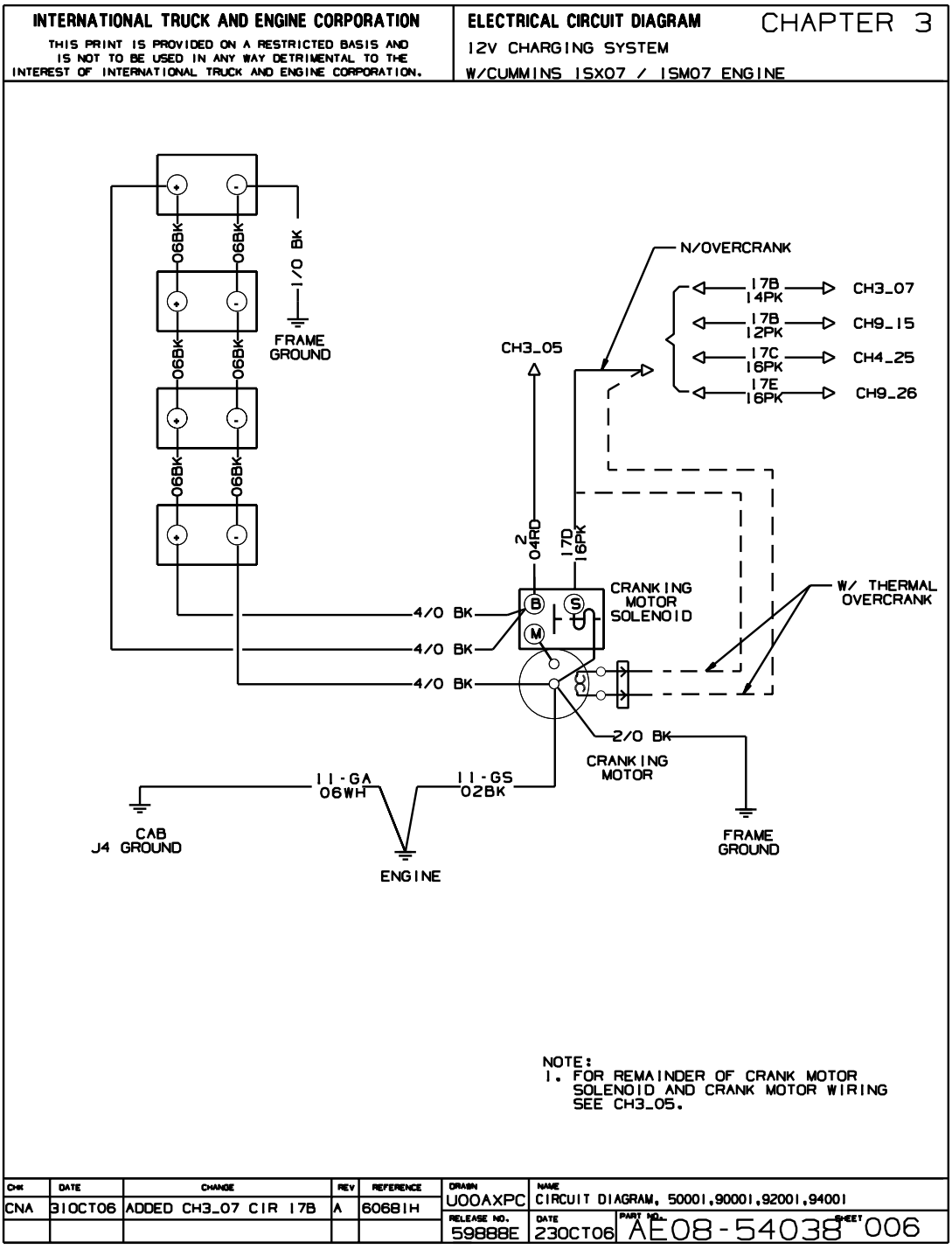


Figure 31 With Cummins ISX07/ISM07 Engines

3.7. STARTER INTERLOCK WITH CAT AND CUMMINS ENGINES (MANUAL XMSN), P. 7

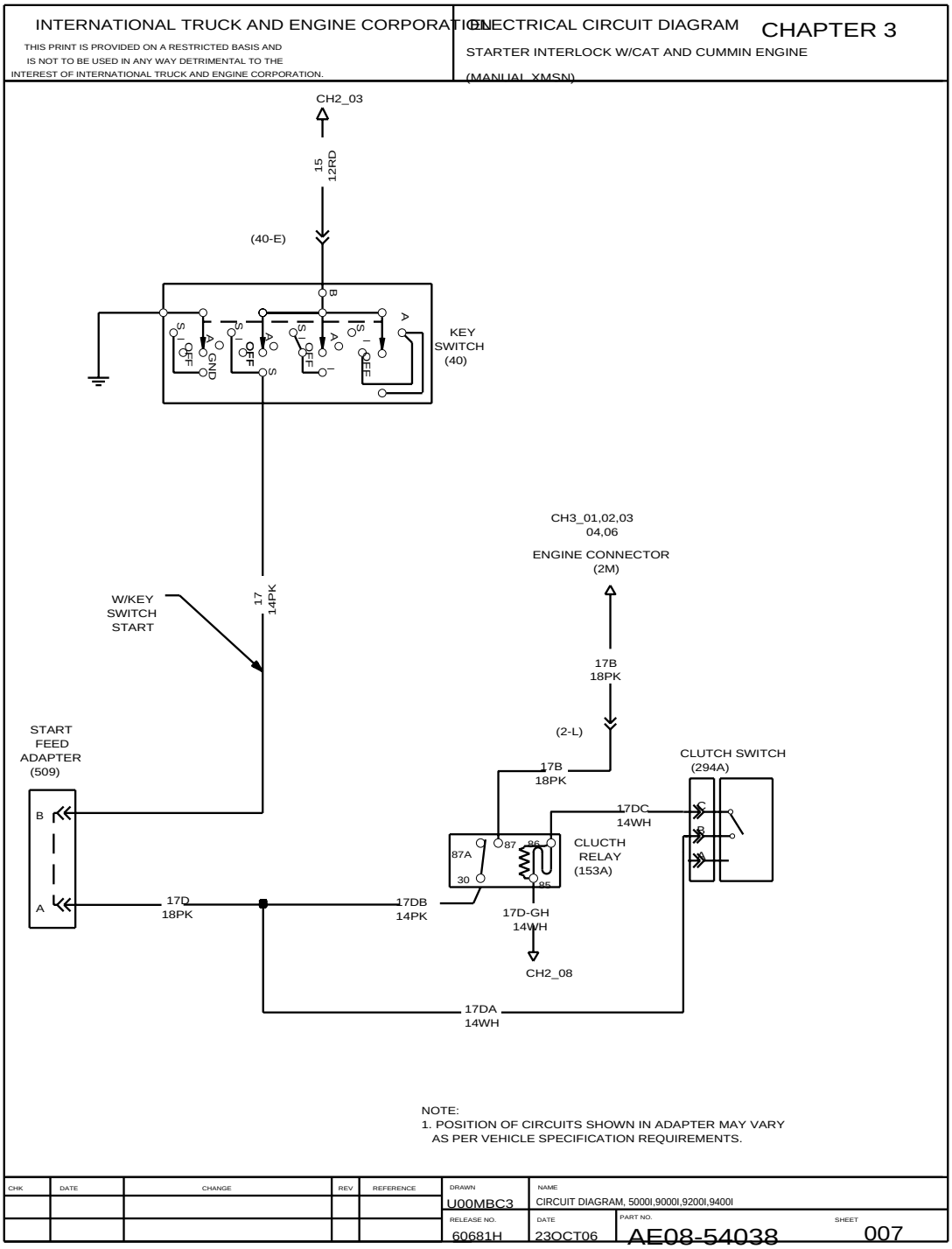


Figure 32 Starter Interlock With Cat and Cummins Engines (Manual Xmsn)

3.8. 12V CRANKING SYSTEM WITH OVERCRANK PROTECTION WITH 2007 CAT ENGINE, P. 8

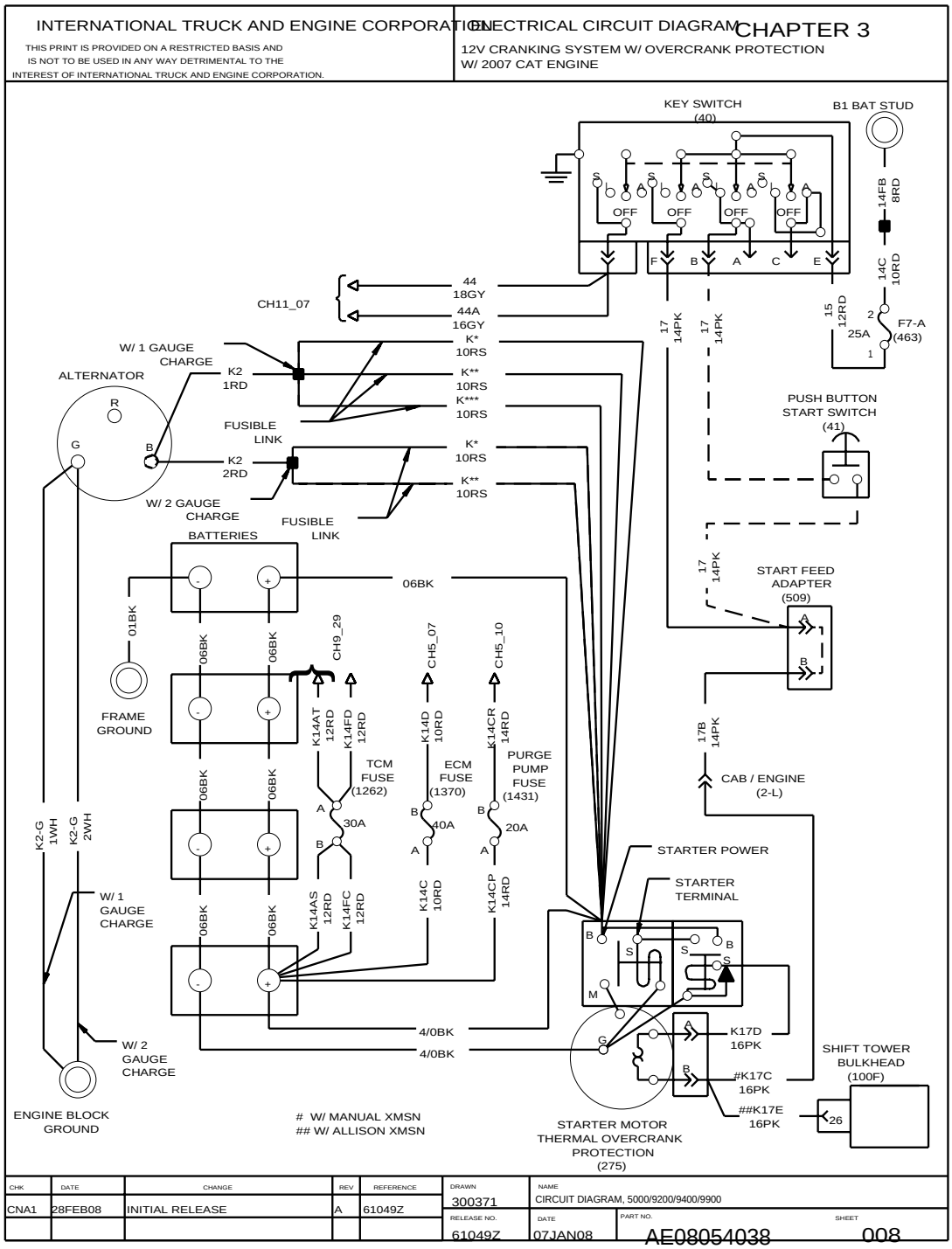


Figure 33 12V Cranking System with Overcrank Protection with 2007 Cat Engine

4. ENGINE SYSTEMS (CHAPTER 4)

4.1. CATERPILLAR C10, C11, C12, C13, C15, AND C16 CRUISE CONTROL, P. 1

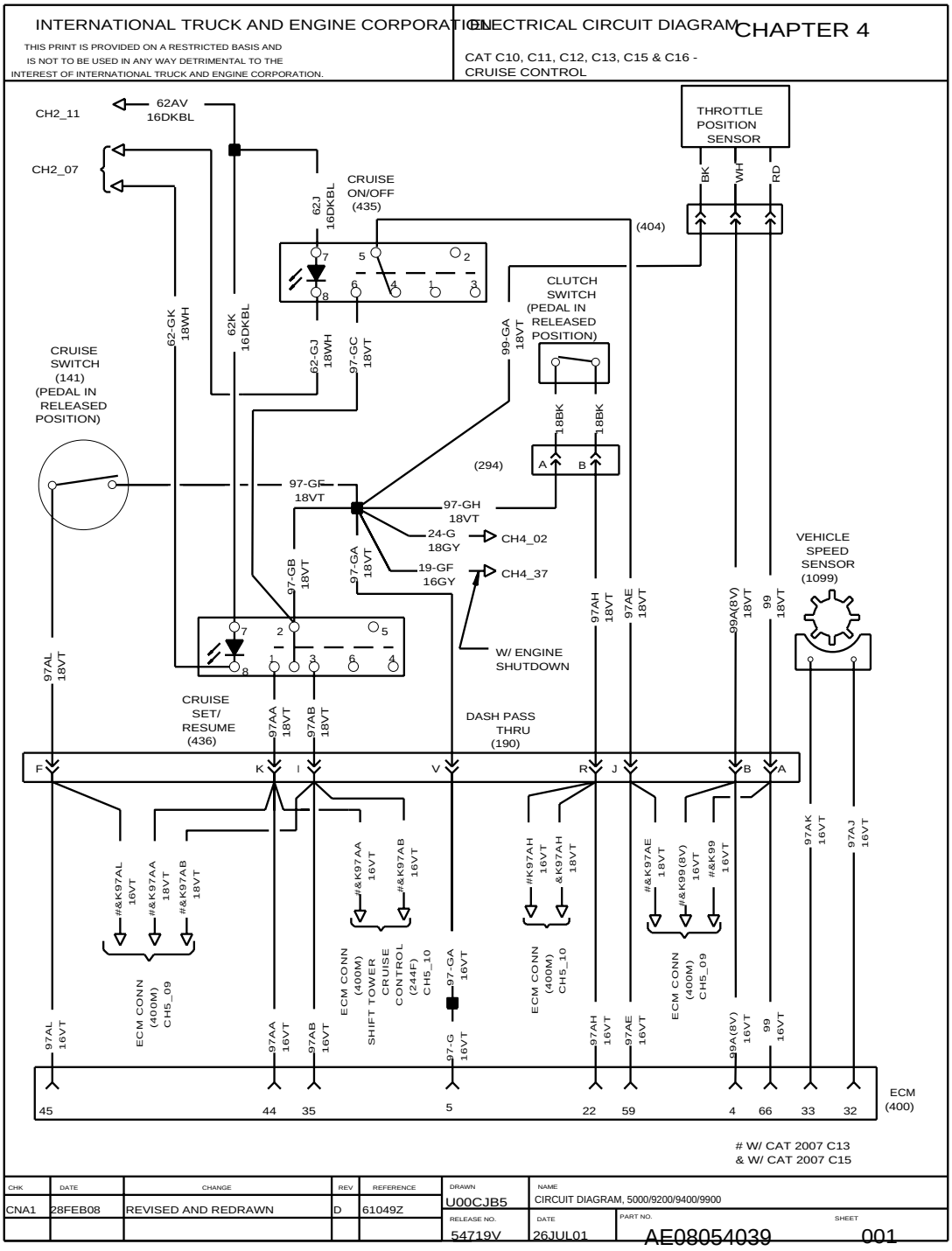


Figure 34 Caterpillar C10, C11, C12, C13, C15, and C16 Cruise Control

4.2. CATERPILLAR C10, C11, C12, C13, C15, AND C16 ENGINE BRAKE, P. 2

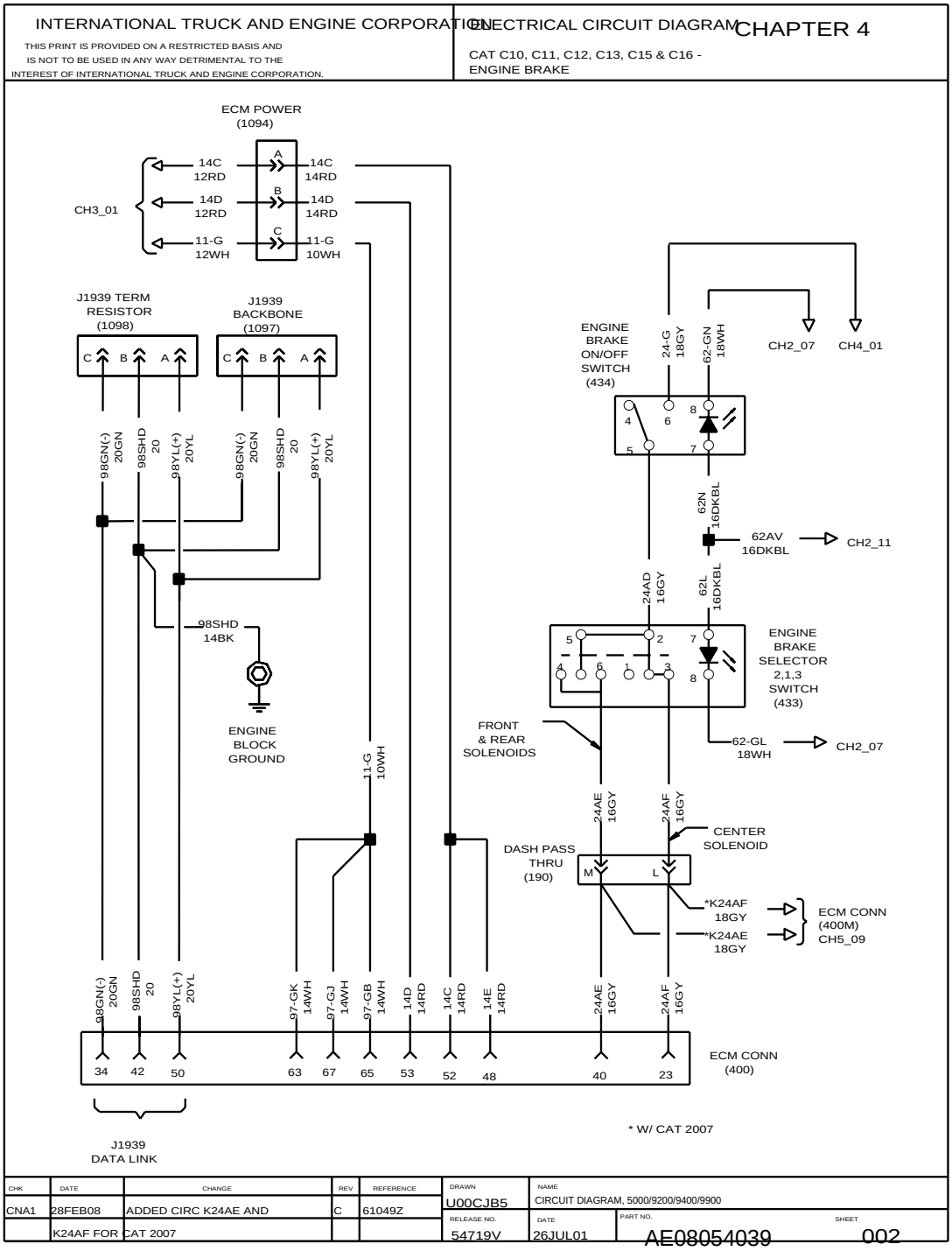


Figure 35 Caterpillar C10, C11, C12, C13, C15, and C16 Engine Brake

4.3. CATERPILLAR C10, C11, C12, C13, C15, AND C16 ENGINE CONTROLS, P. 3

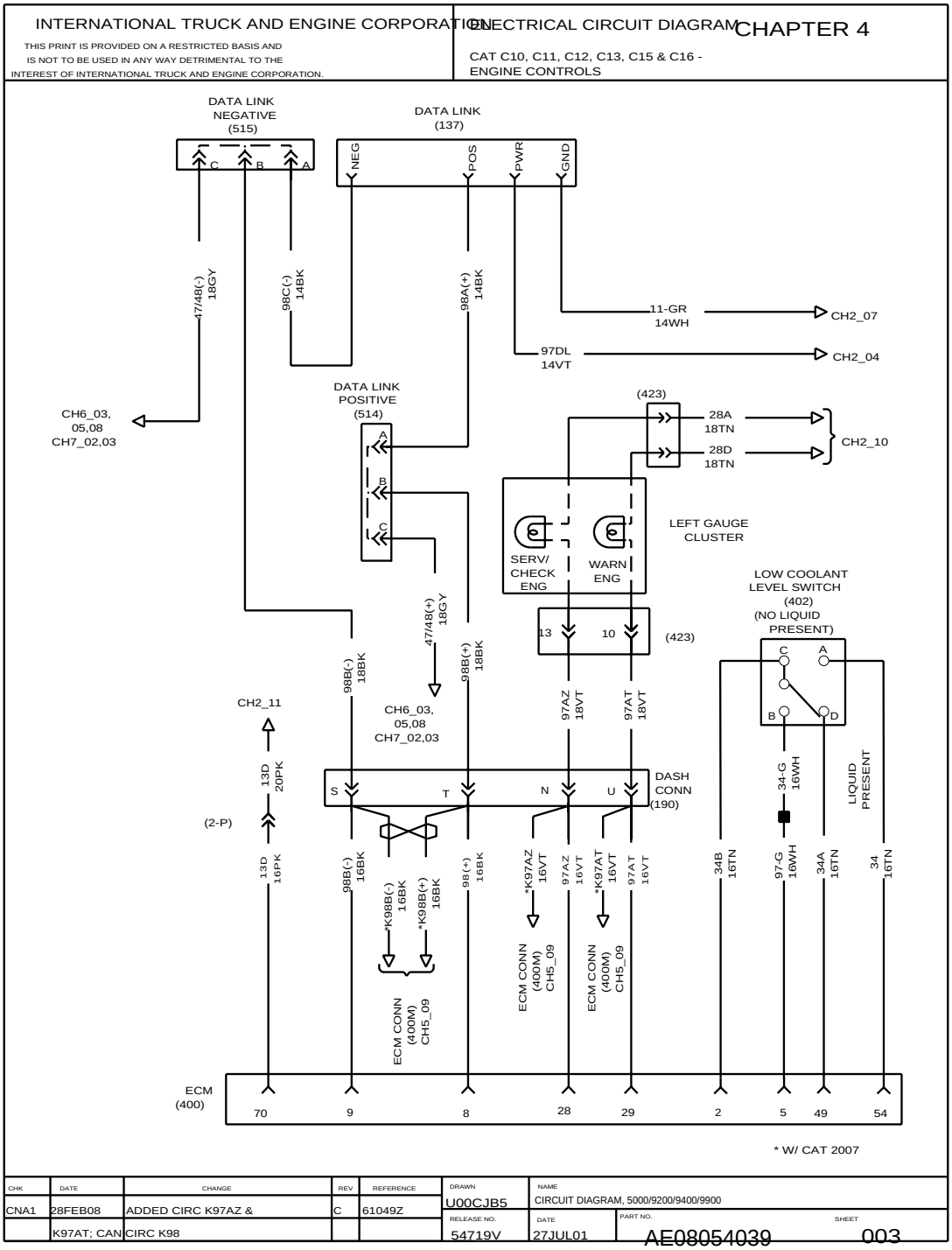


Figure 36 Caterpillar C10, C11, C12, C13, C15, and C16 Engine Controls

4.4. CUMMINS ISM, ISX CRUISE CONTROL, P. 4

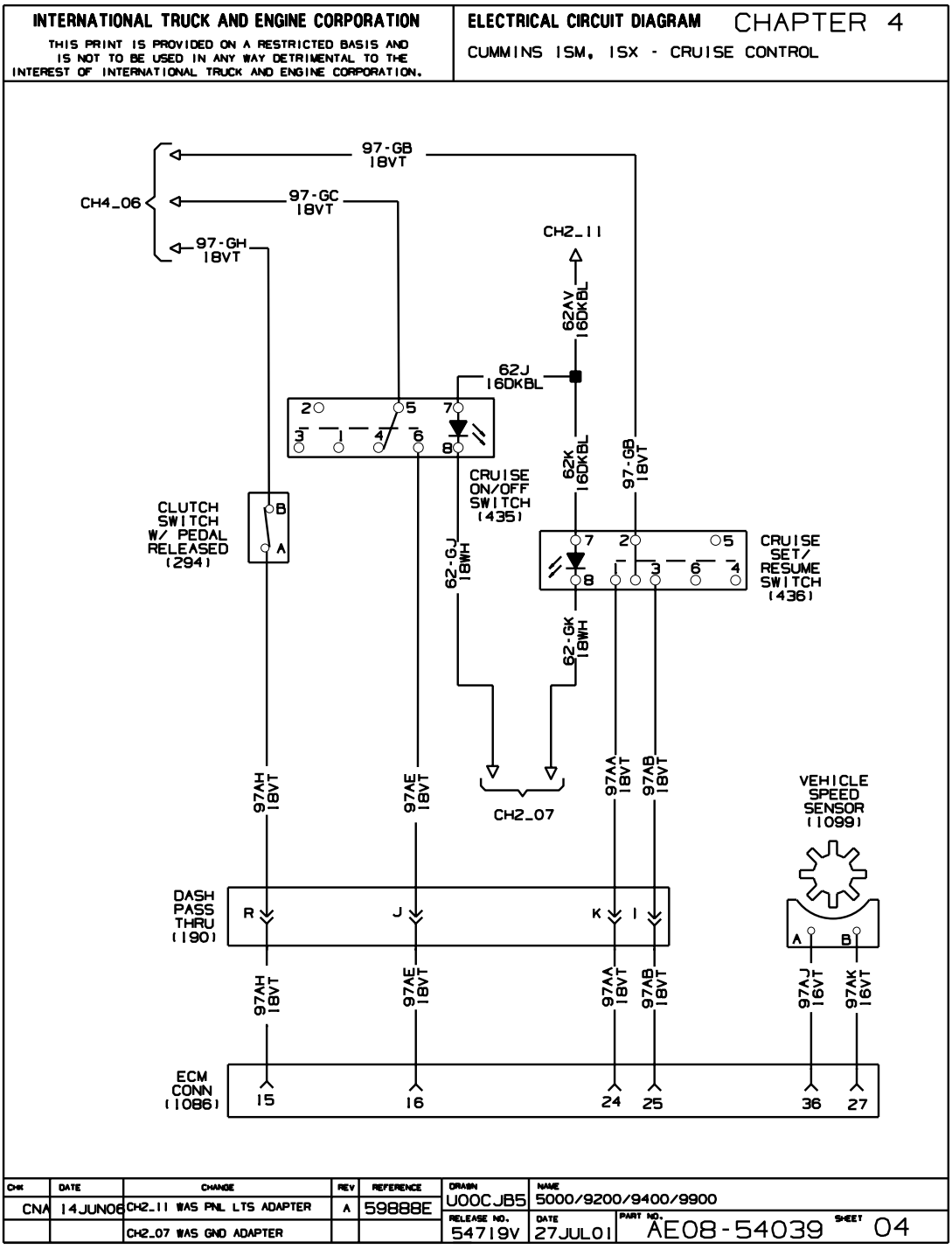


Figure 37 Cummins ISM, ISX Cruise Control

4.5. CUMMINS ISM, ISX ENGINE BRAKE, P. 5

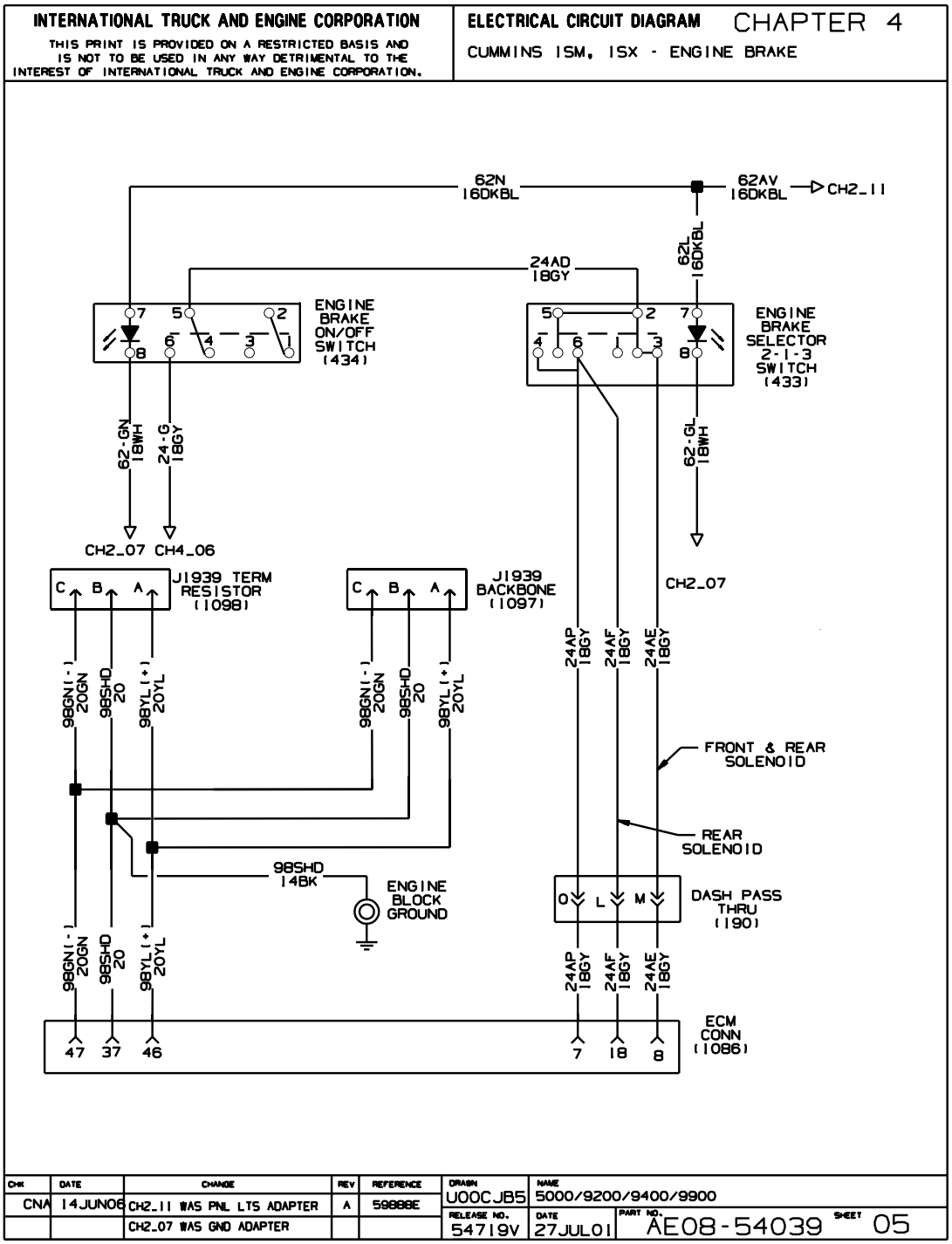


Figure 38 Cummins ISM, ISX Engine Brake

4.6. CUMMINS ISM , ISX — ENGINE CONTROLS, P. 6

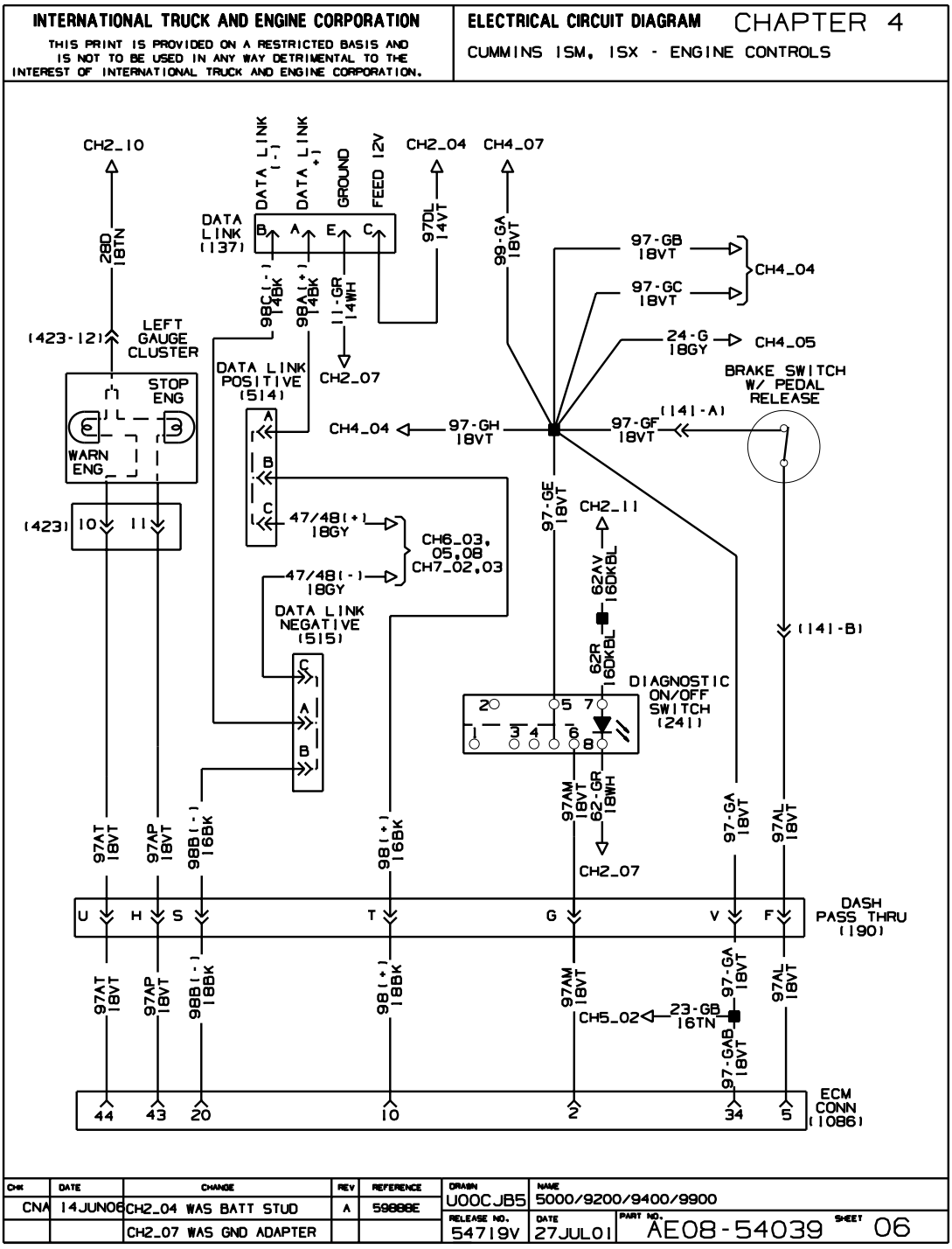


Figure 39 Cummins ISM, ISX – Engine Controls

4.7. CUMMINS AHD, ISM AND ISL – ENGINE CONTROLS, P. 7

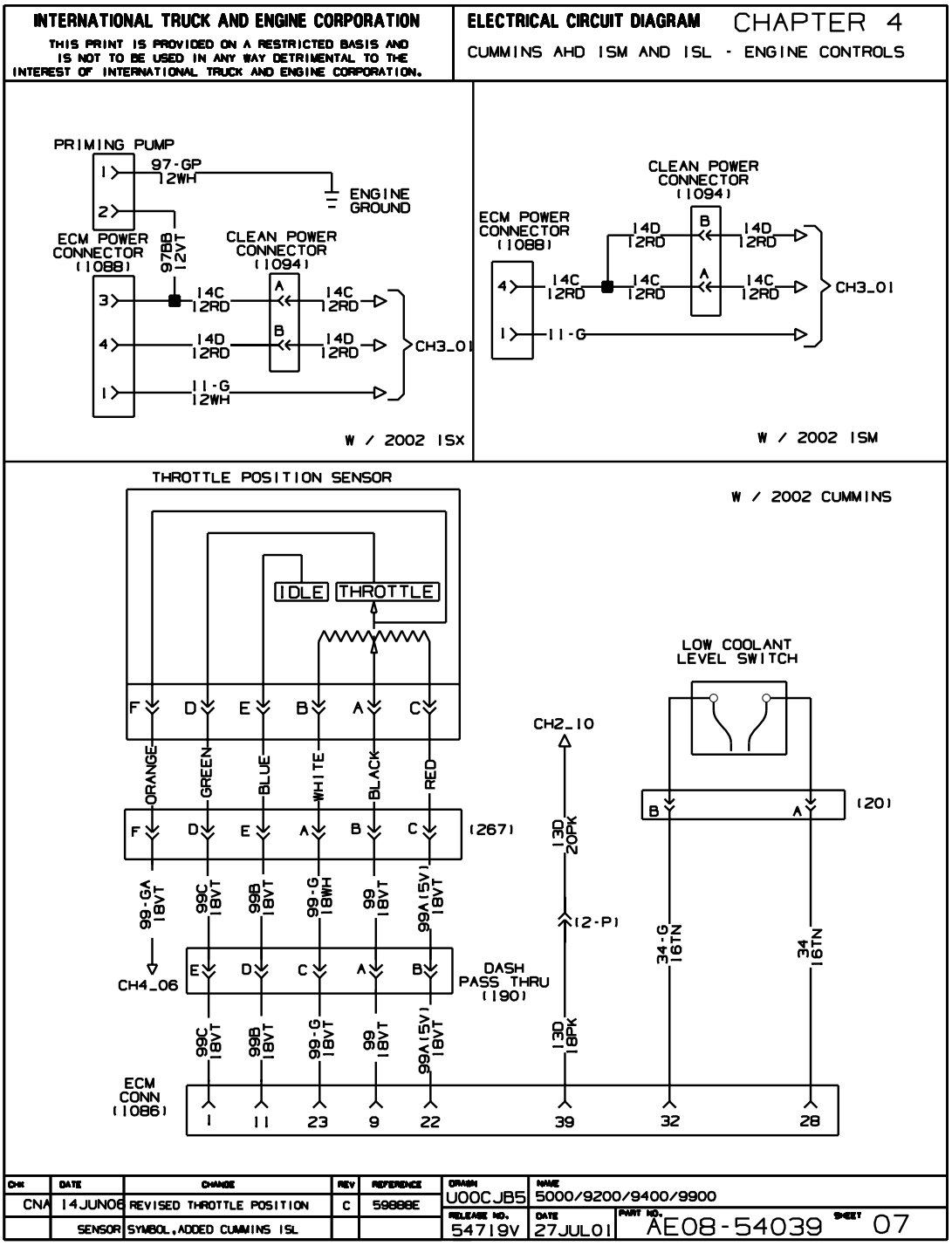


Figure 40 Cummins AHD, ISM and ISL – Engine Controls

4.8. I6 HEUI — CRUISE CONTROL, P. 8

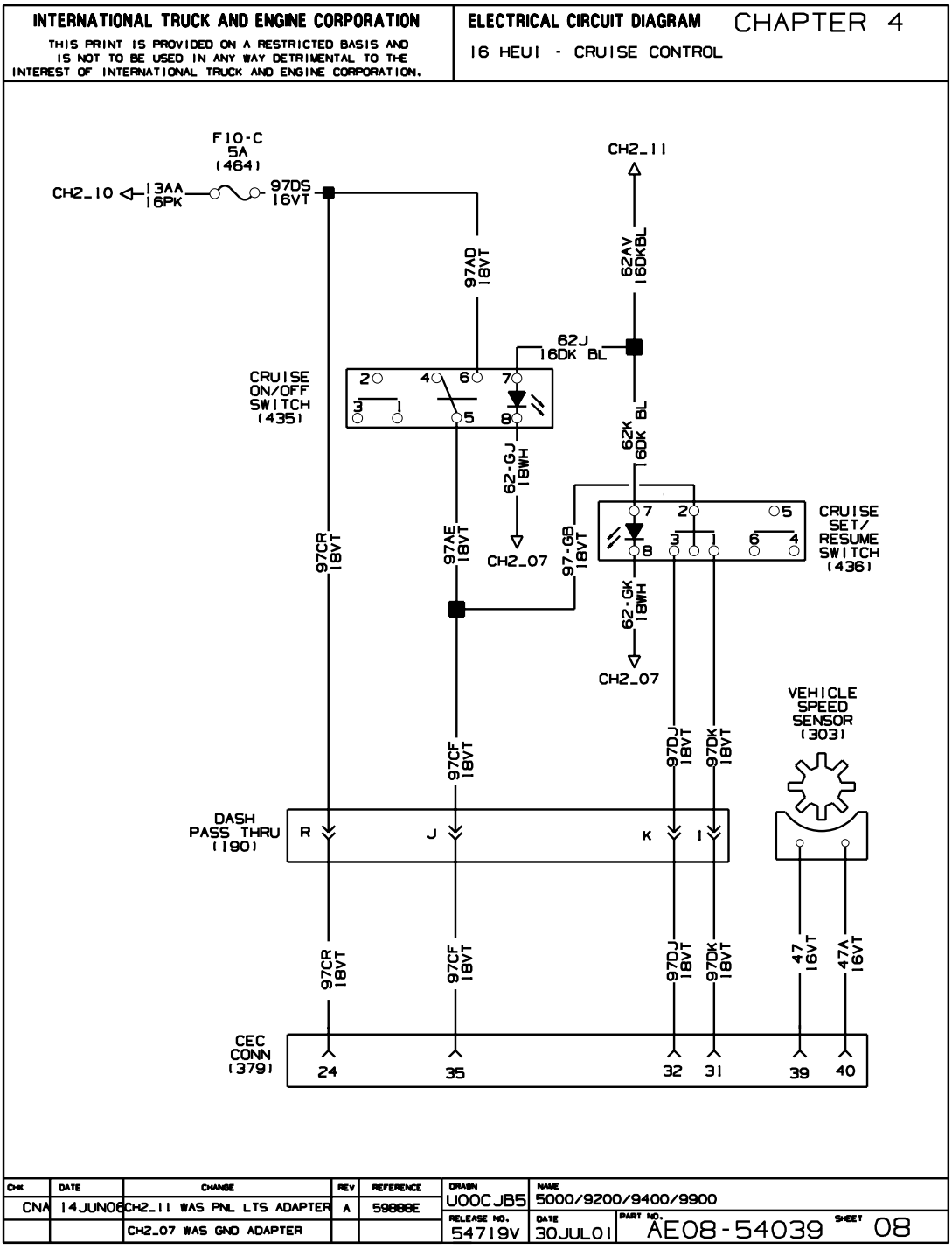


Figure 41 I6 HEUI — Cruise Control

4.9. I6 HEUI — ENGINE BRAKE, P. 9

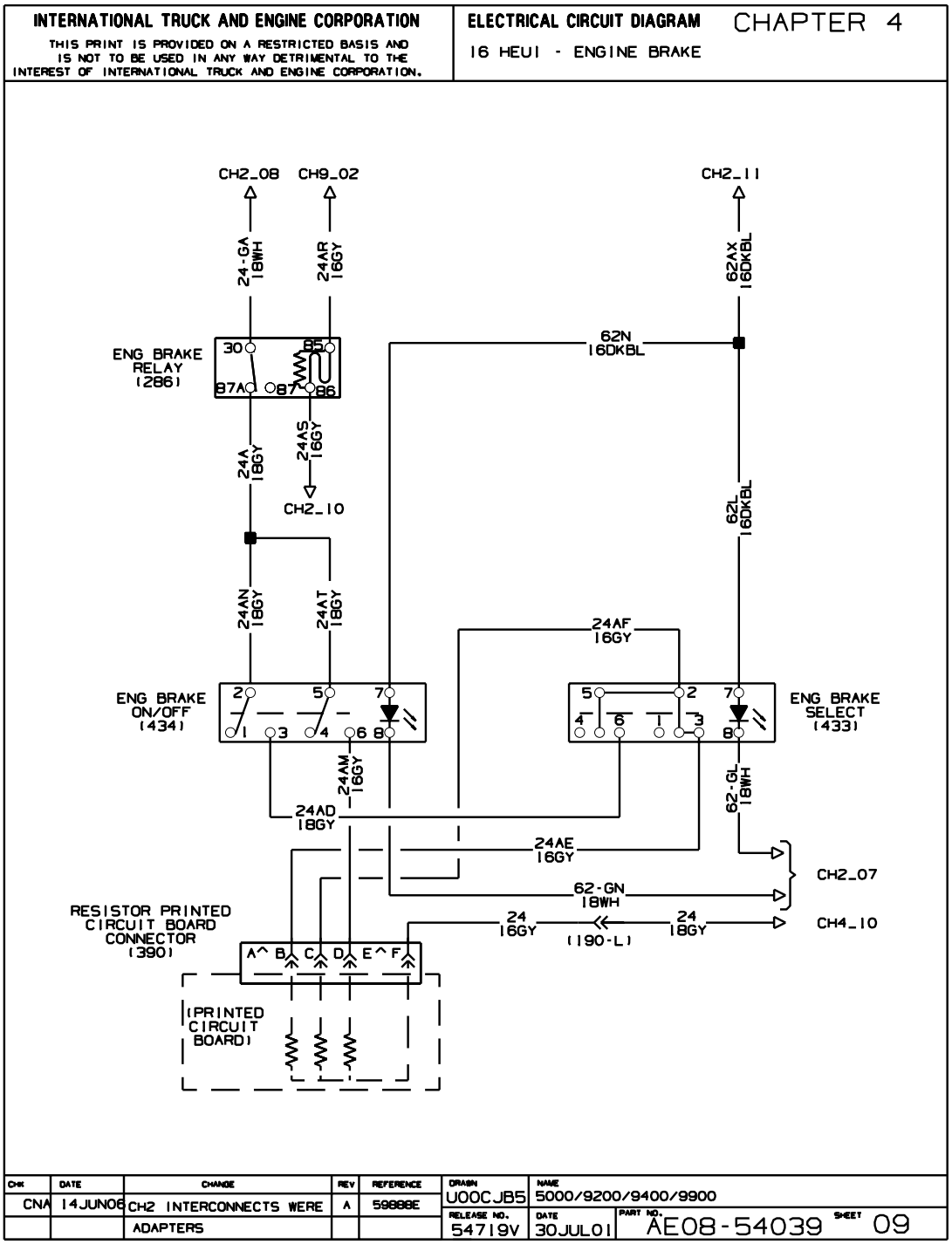


Figure 42 I6 HEUI — Engine Brake

4.10. I6 HEUI — ENGINE CONTROLS, P. 10

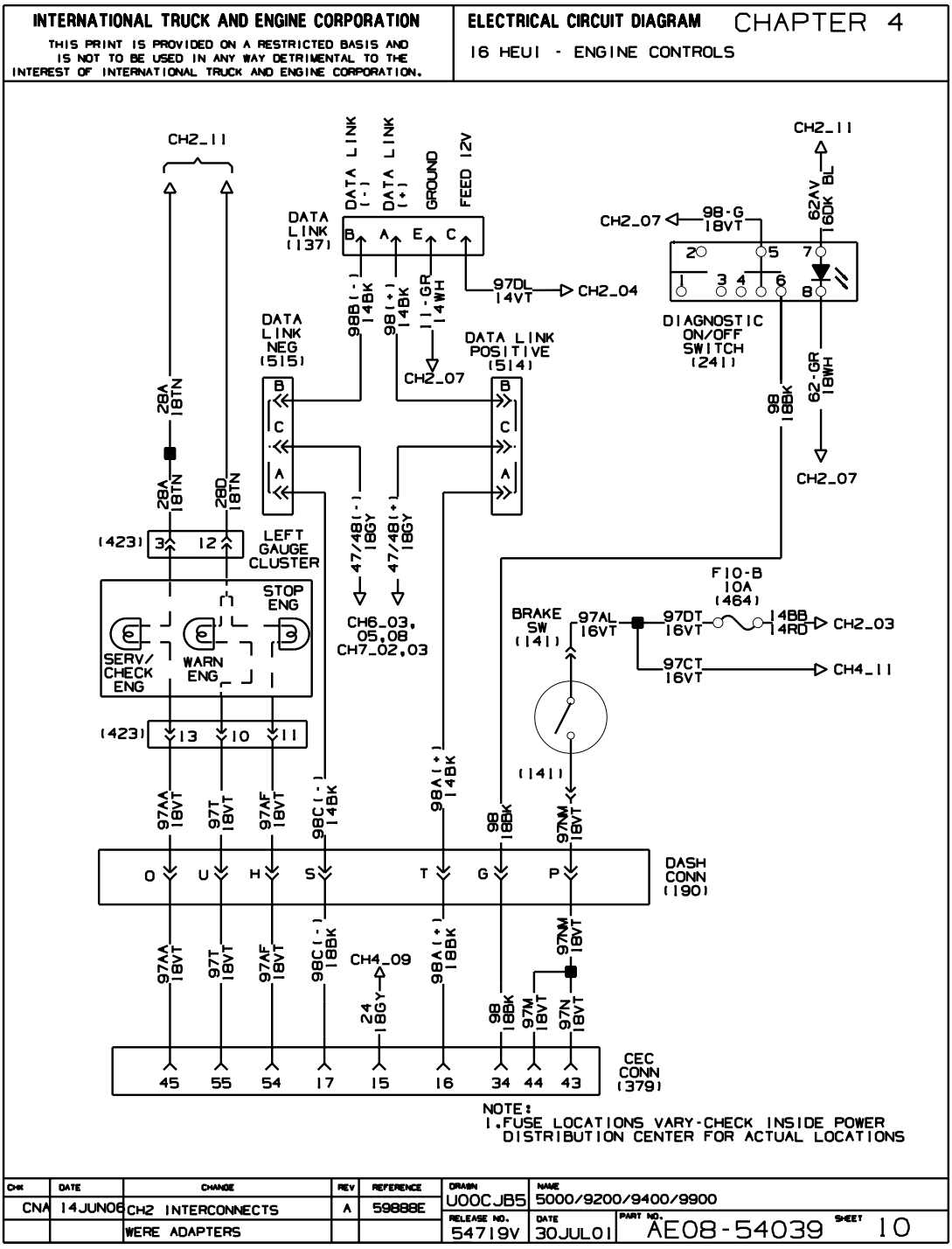


Figure 43 I6 HEUI — Engine Controls

4.11. I6 HEUI — MODULE POWER AND GROUND SYSTEM, P. 11

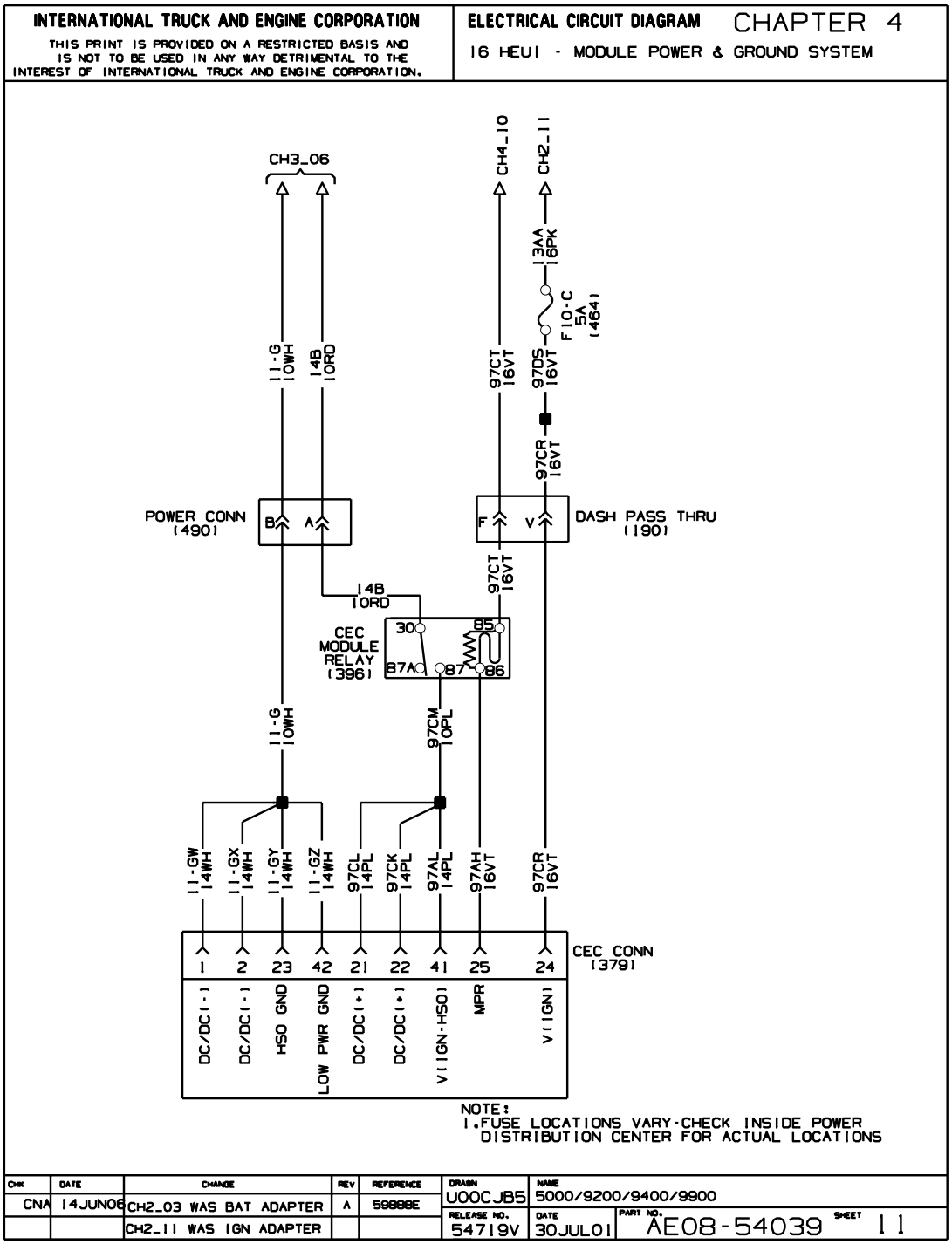


Figure 44 I6 HEUI — Module Power and Ground System

4.12. I6 HEUI — ACCELERATOR, BAP, AMBIENT AIR TEMP SENSOR SYSTEM, P. 12

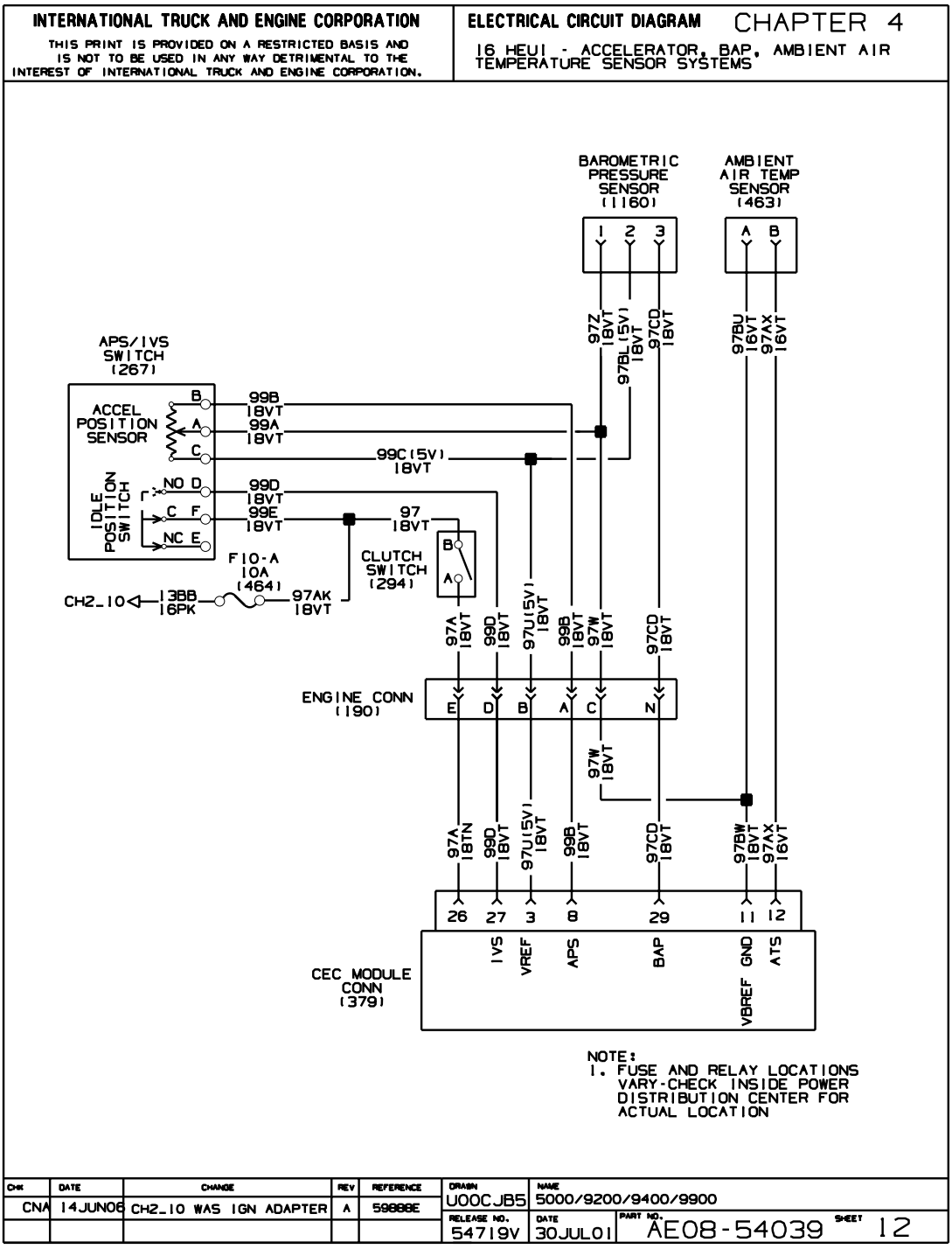


Figure 45 I6 HEUI — Accelerator, BAP, Ambient Air Temp Sensor System

4.13. I6 HEUI — SURGE TANK AND EXHAUST BRAKE SOLENOID, P. 13

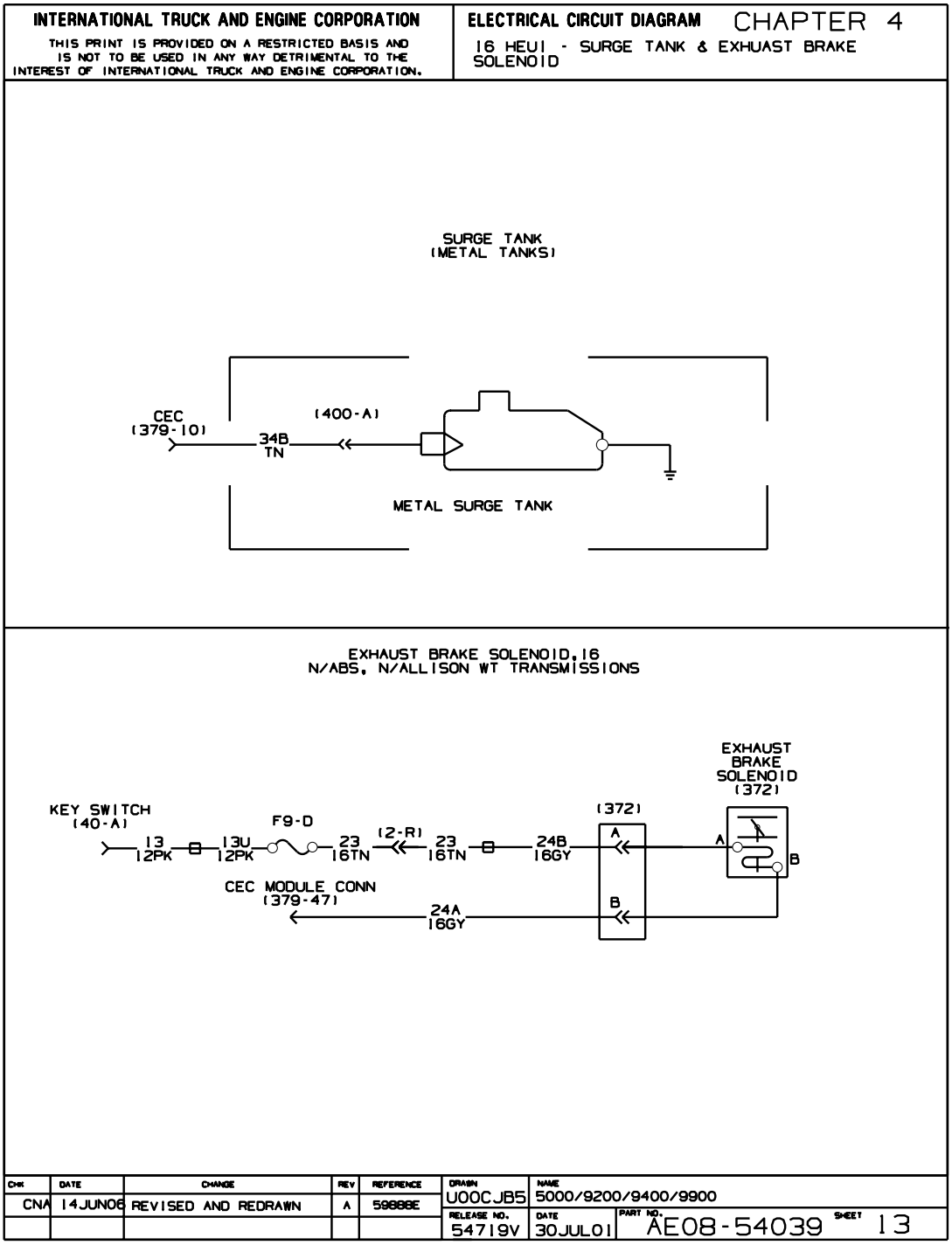


Figure 46 I6 HEUI — Surge Tank and Exhaust Brake Solenoid

4.14. CUMMINS ISX07/ISM07 ECM PIN LAYOUT, P. 14

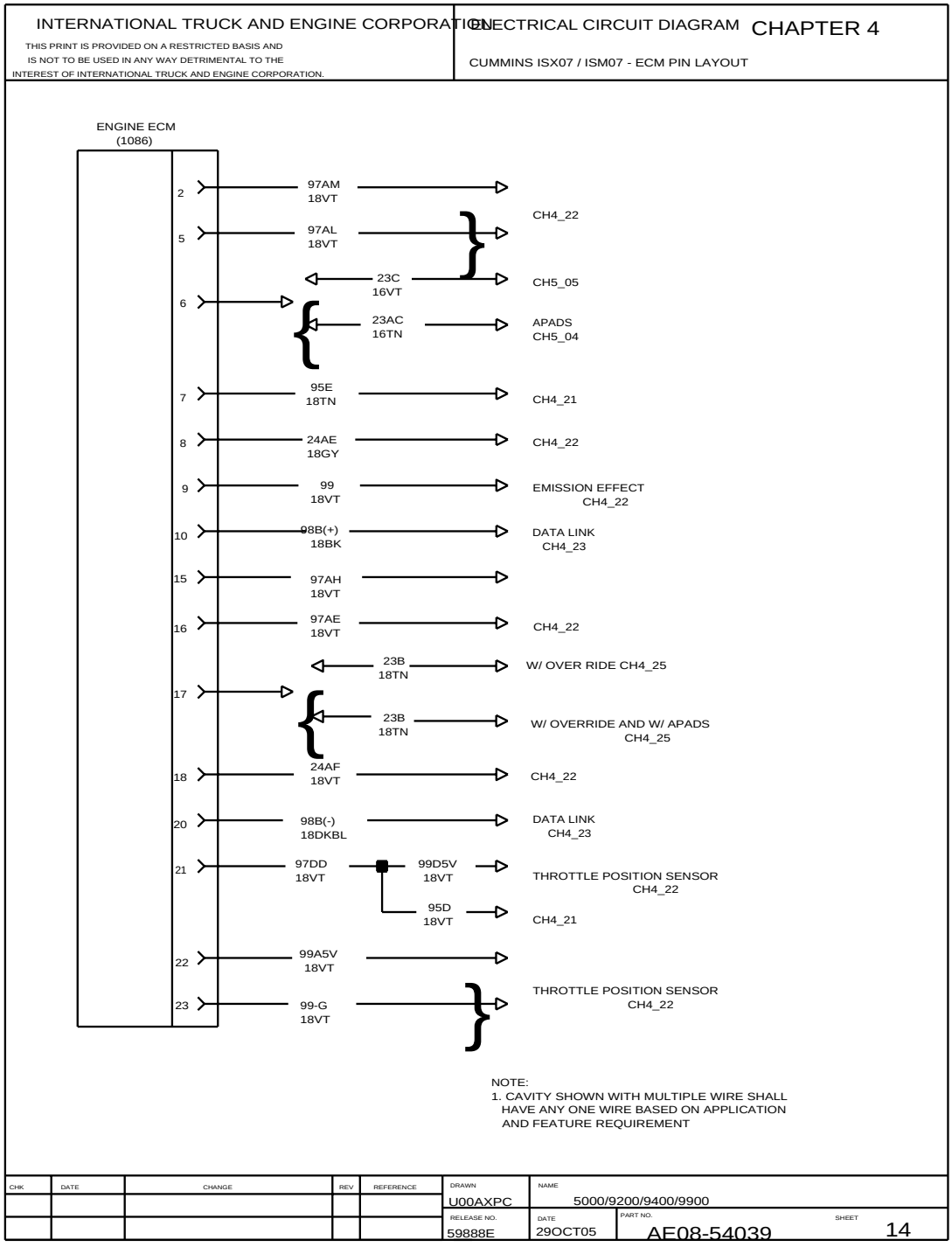


Figure 47 Cummins ISX07/ISM07 ECM Pin Layout

4.15. CUMMINS ISX07/ISM07 ECM PIN LAYOUT, P. 15

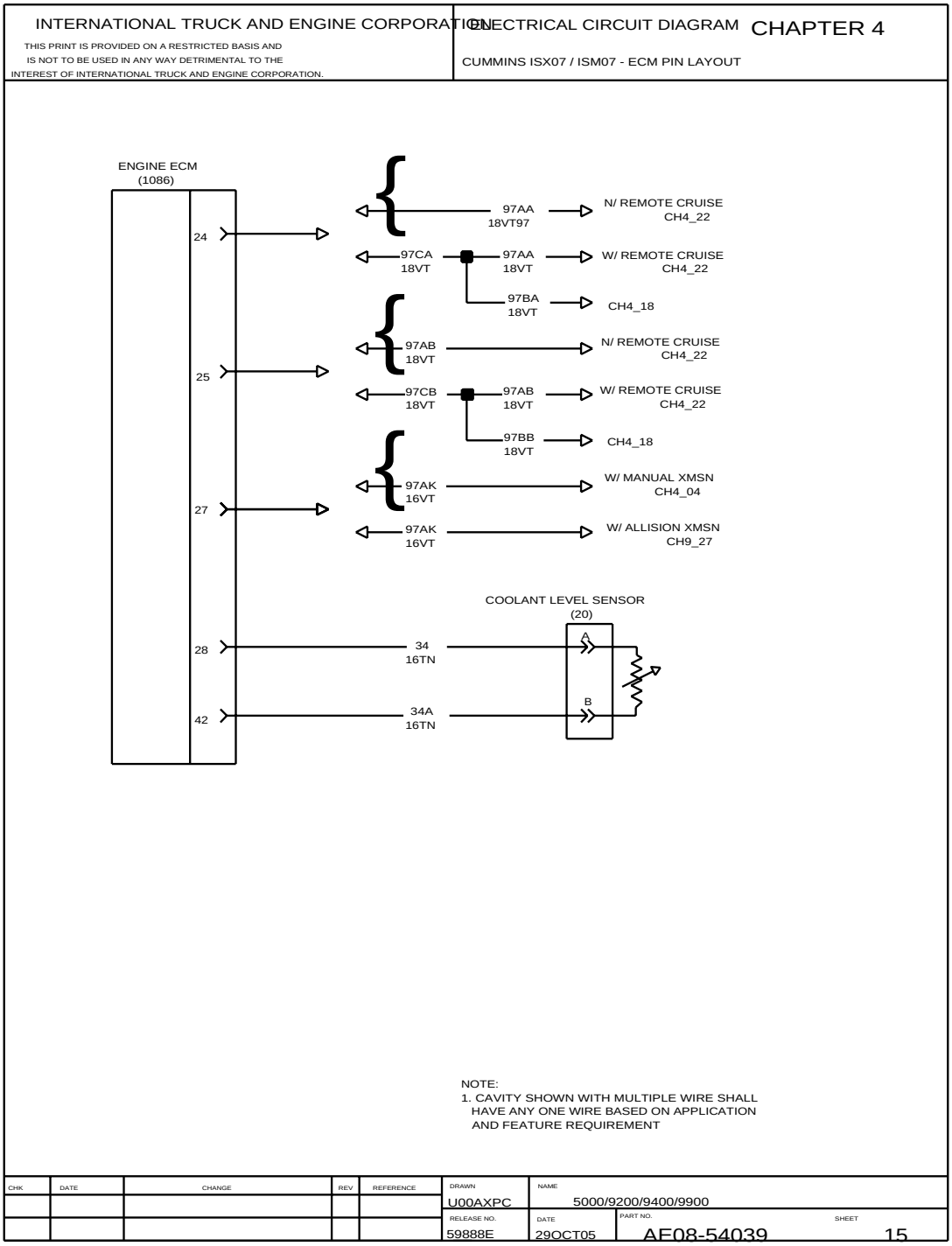


Figure 48 Cummins ISX07/ISM07 ECM Pin Layout

4.16. CUMMINS ISX07/ISM07 ECM PIN LAYOUT, P. 16

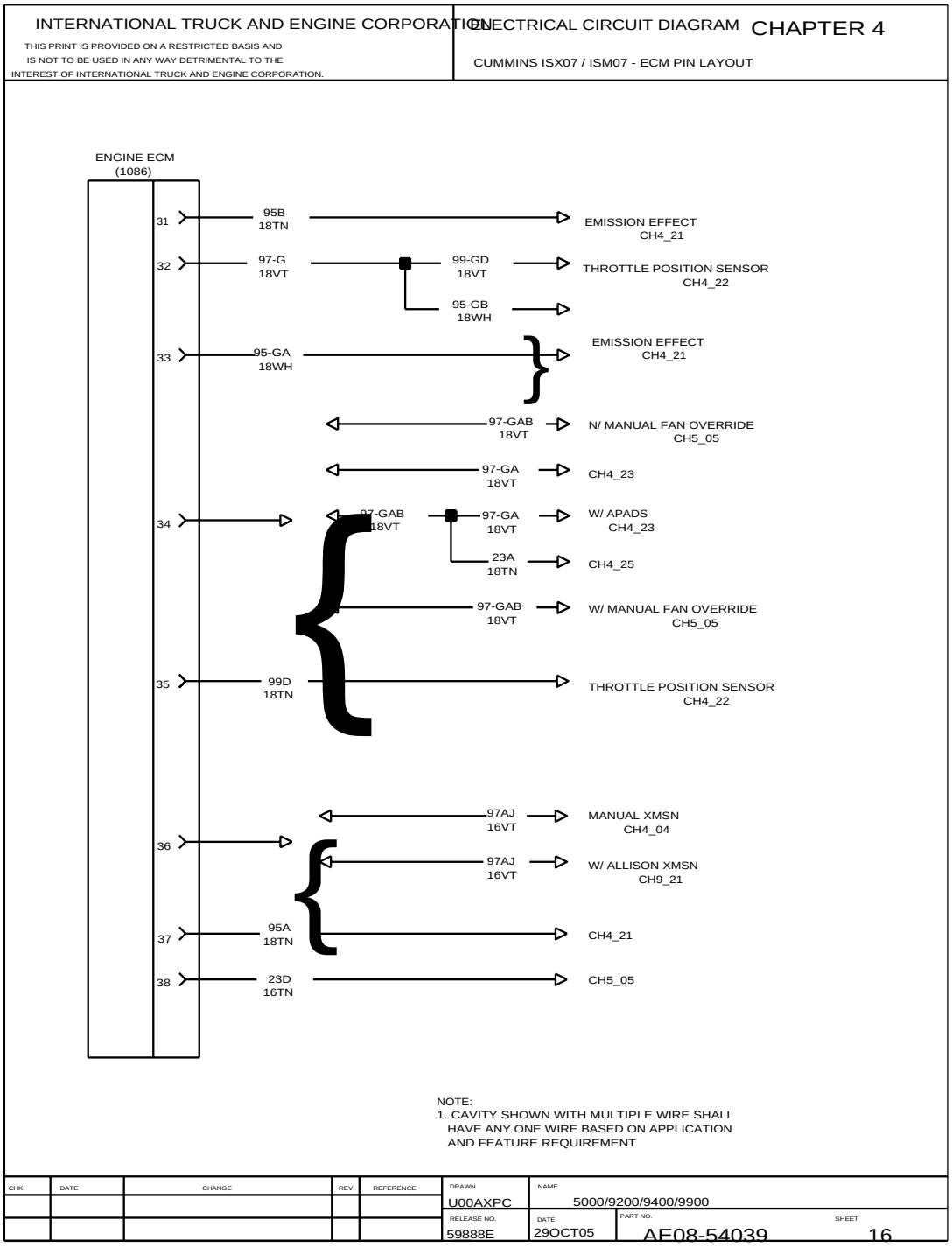


Figure 49 Cummins ISX07/ISM07 ECM Pin Layout

4.17. CUMMINS ISX07/ISM07 ECM PIN LAYOUT, P. 17

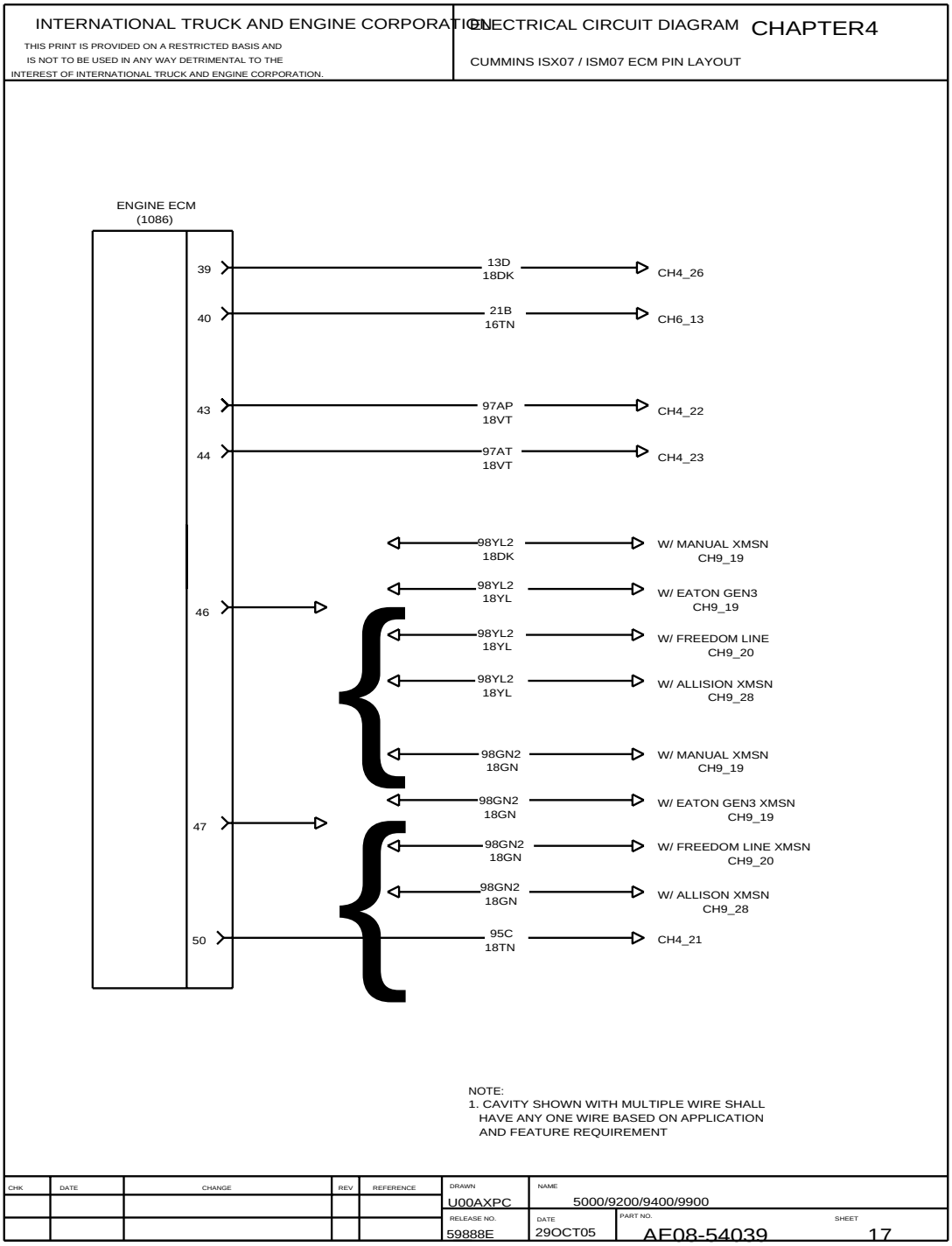


Figure 50 Cummins ISX07/ISM07 ECM Pin Layout

4.18. CUMMINS ISX07/ISM07 REMOTE CRUISE CONTROL, P. 18

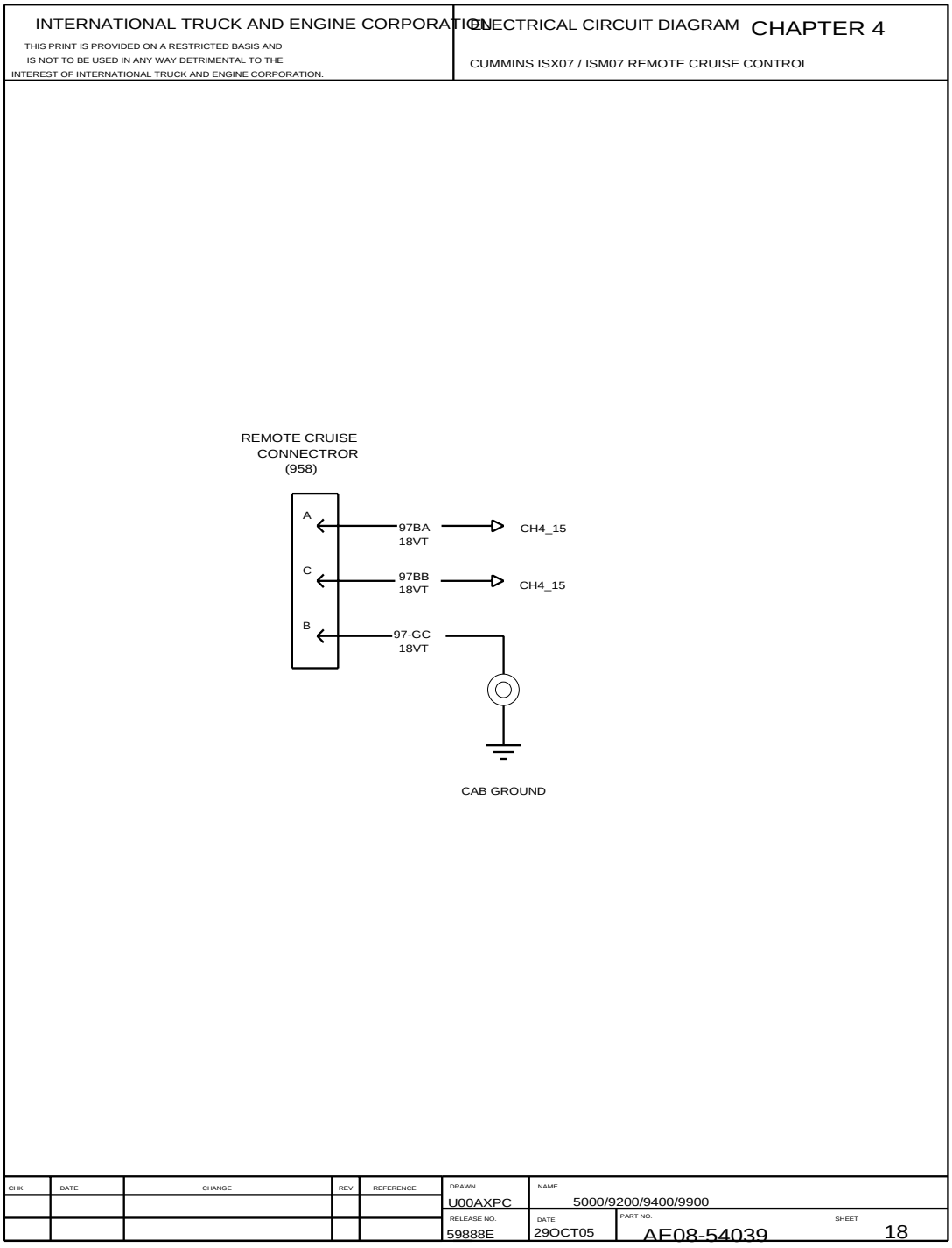


Figure 51 Cummins ISX07/ISM07 Remote Cruise Control

4.19. CUMMINS ISX 07/ISM 07 ENGINE BRAKE WITH ALLISON TRANSMISSION, P. 19

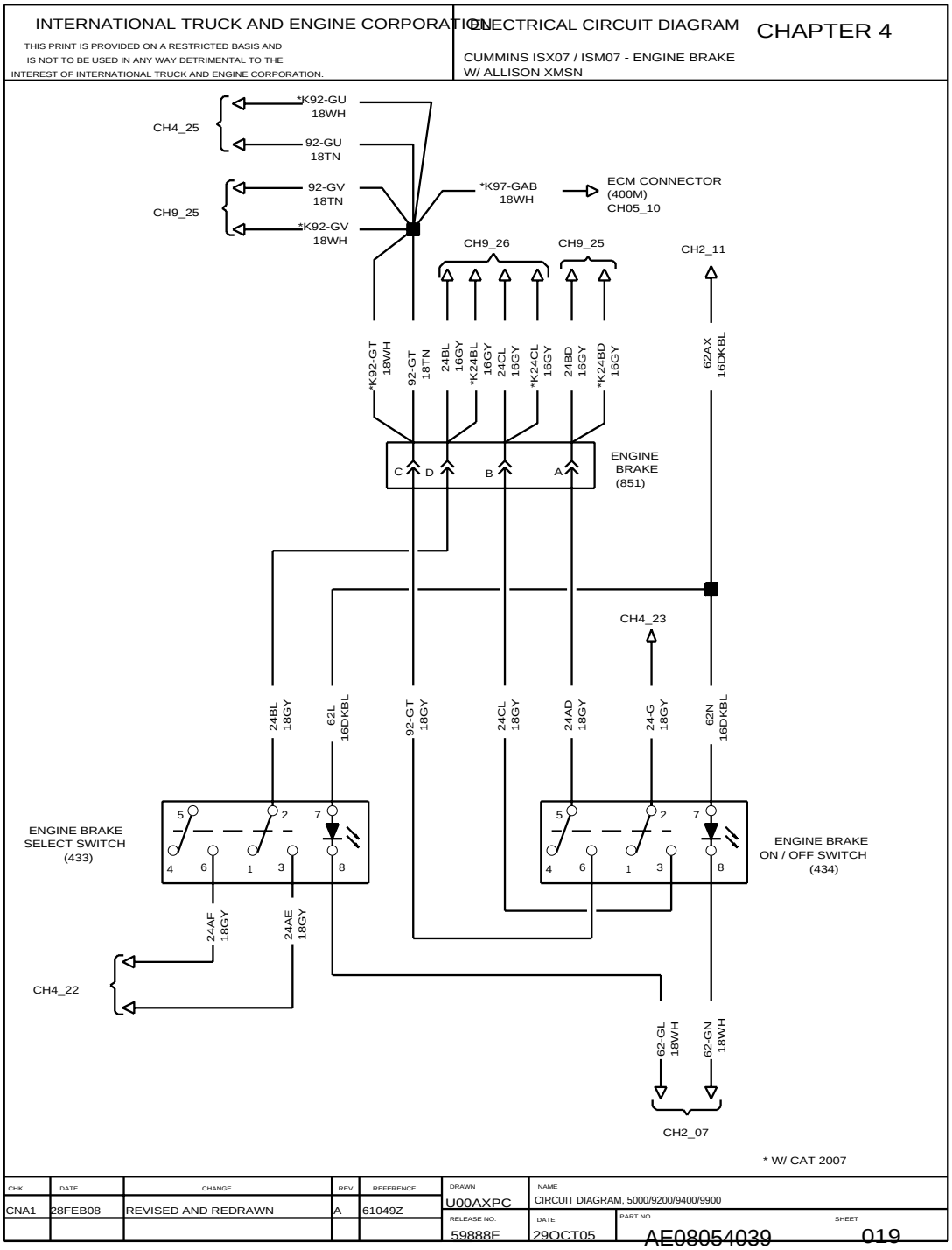


Figure 52 Cummins ISX 07/ISM 07 Engine Brake with Allison Transmission

4.20. CUMMINS ISX07/ISM07 ENGINE WITH JAKE BRAKE FOOT SWITCH, P. 20

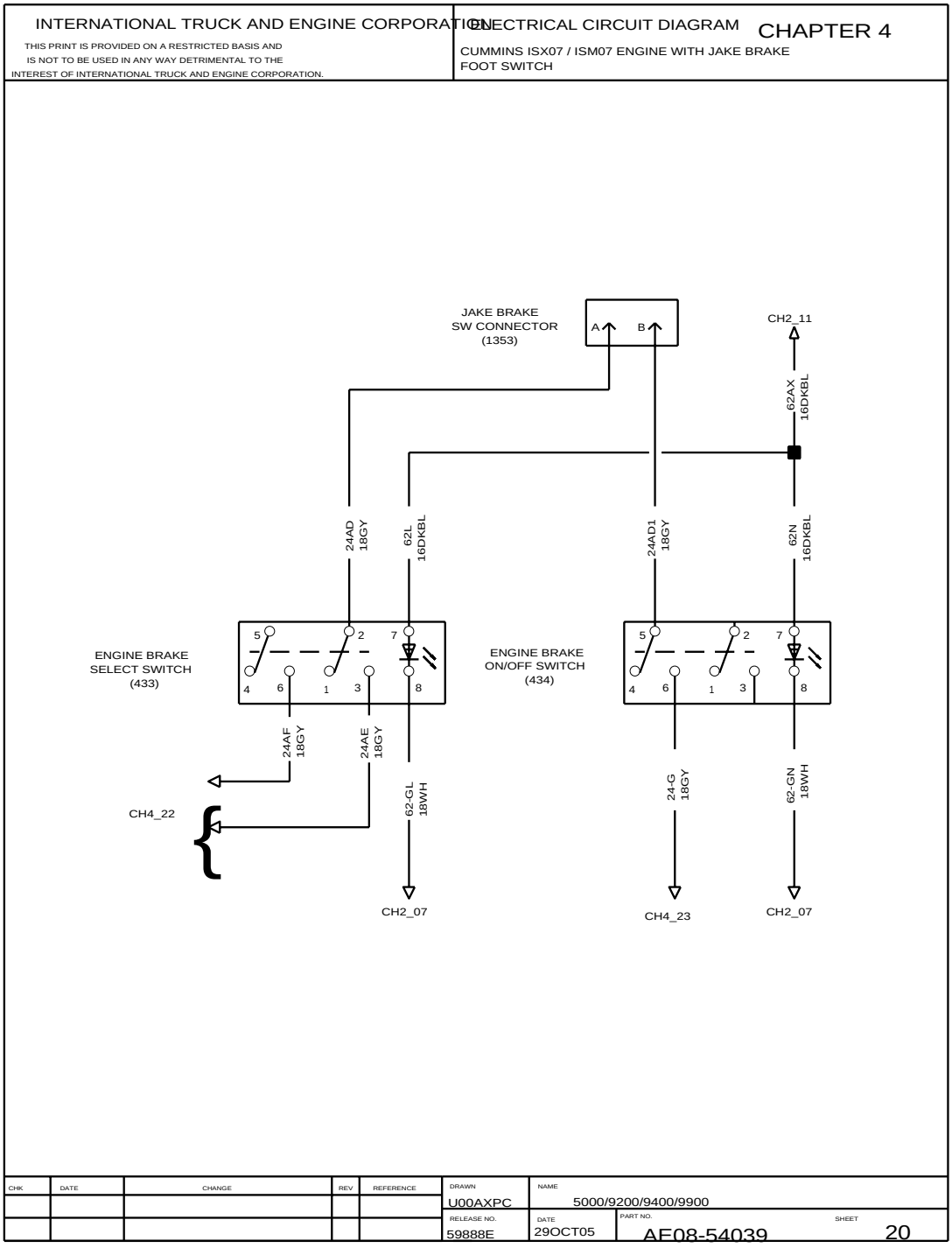


Figure 53 Cummins ISX07/ISM07 Engine with Jake Brake Foot Switch

4.21. CUMMINS ISX/ISM AFTERTREATMENT INTERFACE EMISSION, P. 21

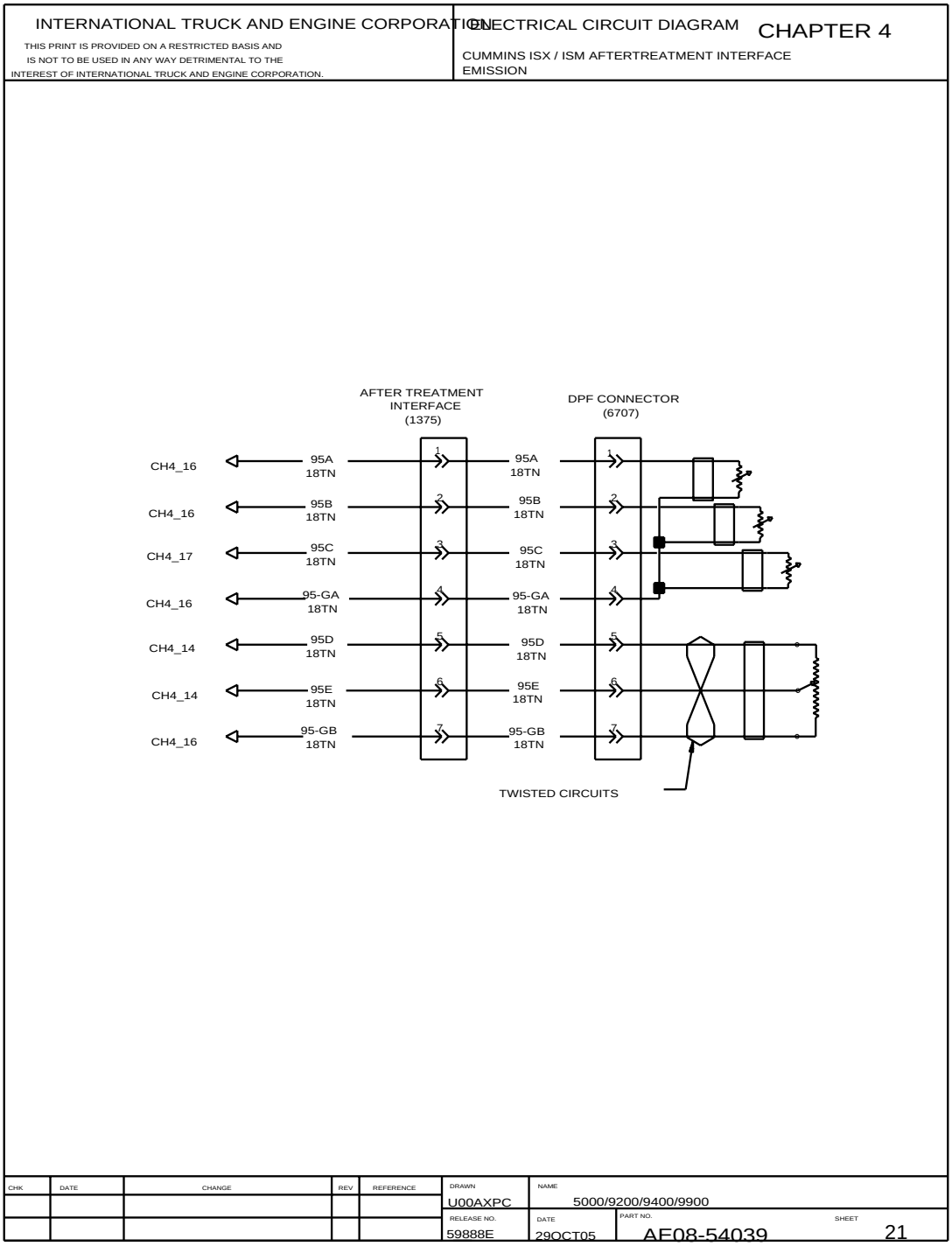


Figure 54 Cummins ISX/ISM Aftertreatment Interface Emission

4.22. CUMMINS ISX07/ISM07 ELECTRONIC ENGINE CONTROL, P. 22

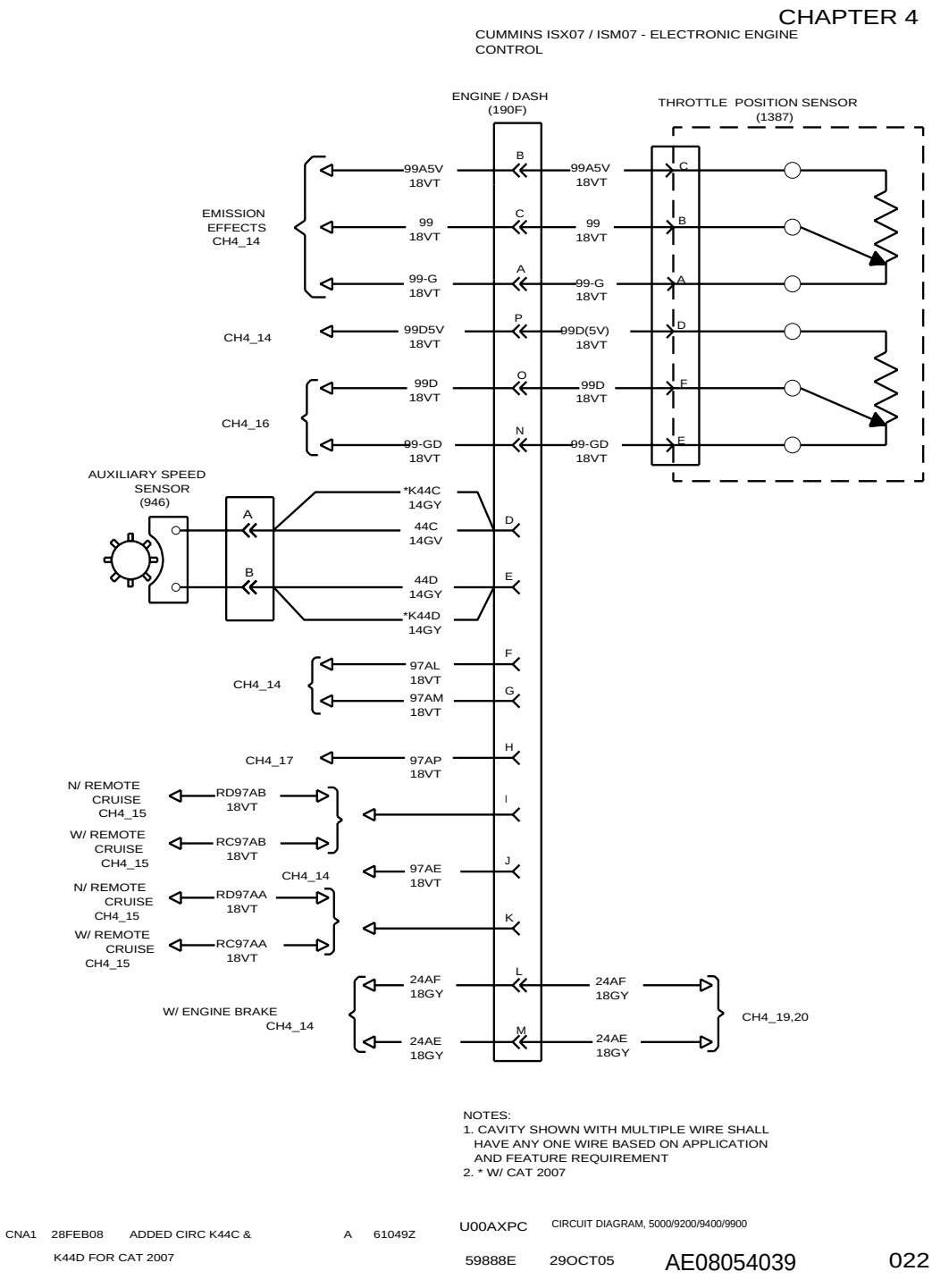


Figure 55 Cummins ISX07/ISM07 Electronic Engine Control

4.23. CUMMINS ISX07/ISM07 ELECTRONIC ENGINE CONTROL, P. 23

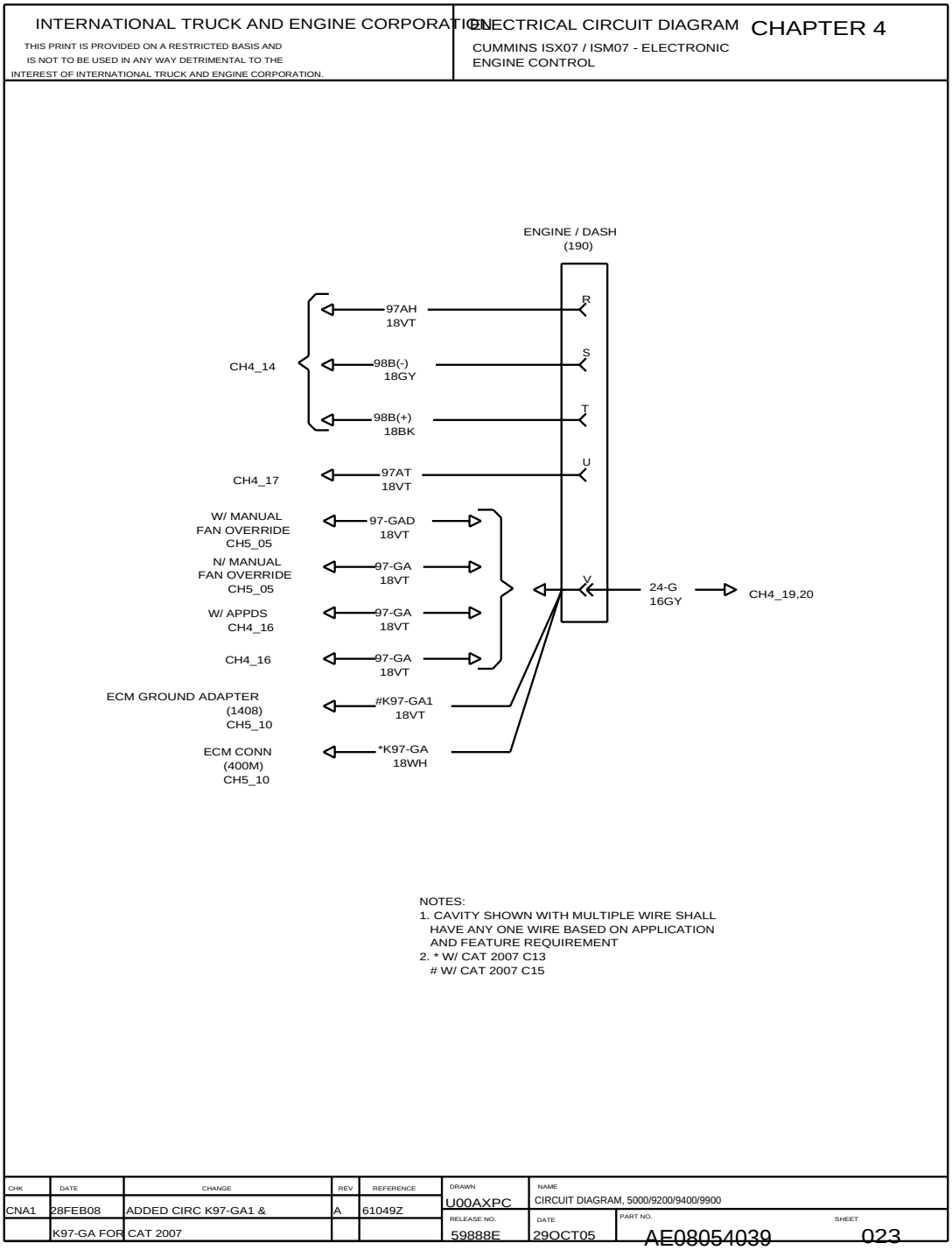


Figure 56 Cummins ISX07/ISM07 Electronic Engine Control

4.24. CUMMINS ISX07/ISM07 PRIMING PUMP, P. 24

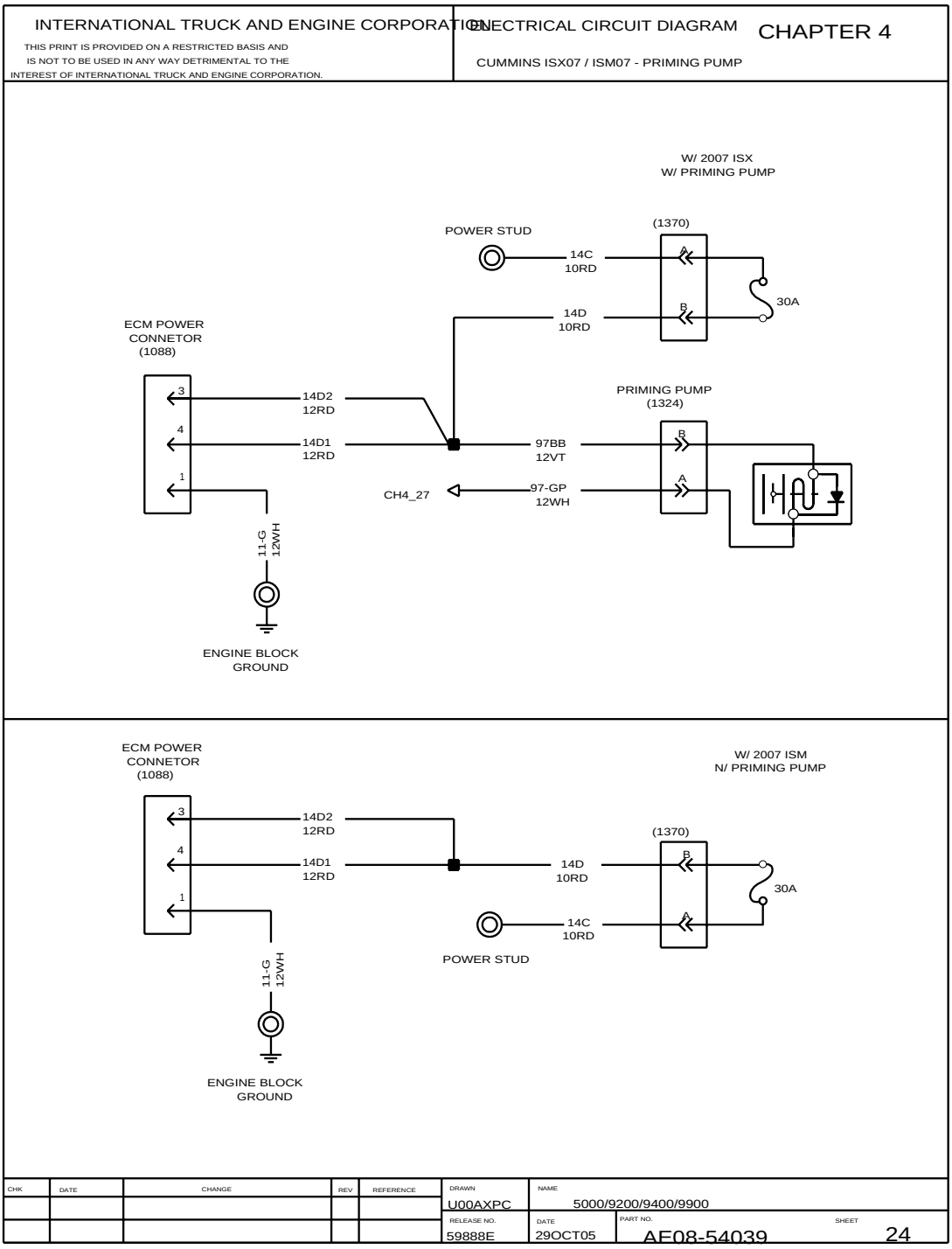


Figure 57 Cummins ISX07/ISM07 Priming Pump

4.25. CUMMINS ISX07/ISM07 ELECTRONIC ENGINE CONTROL, P. 25

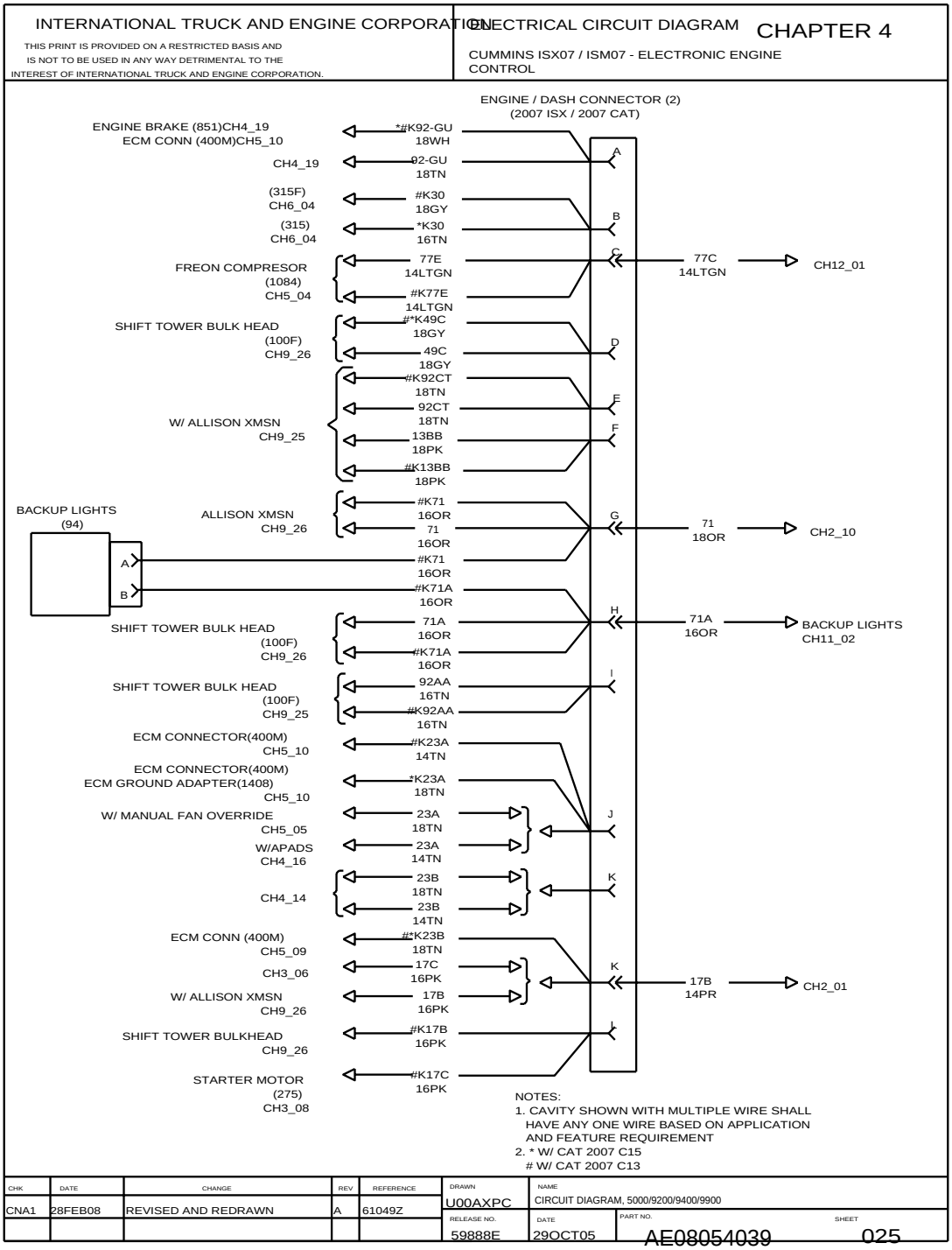


Figure 58 Cummins ISX07/ISM07 Electronic Engine Control

4.26. CUMMINS ISX07/ISM07 ELECTRONIC ENGINE CONTROL, P. 26

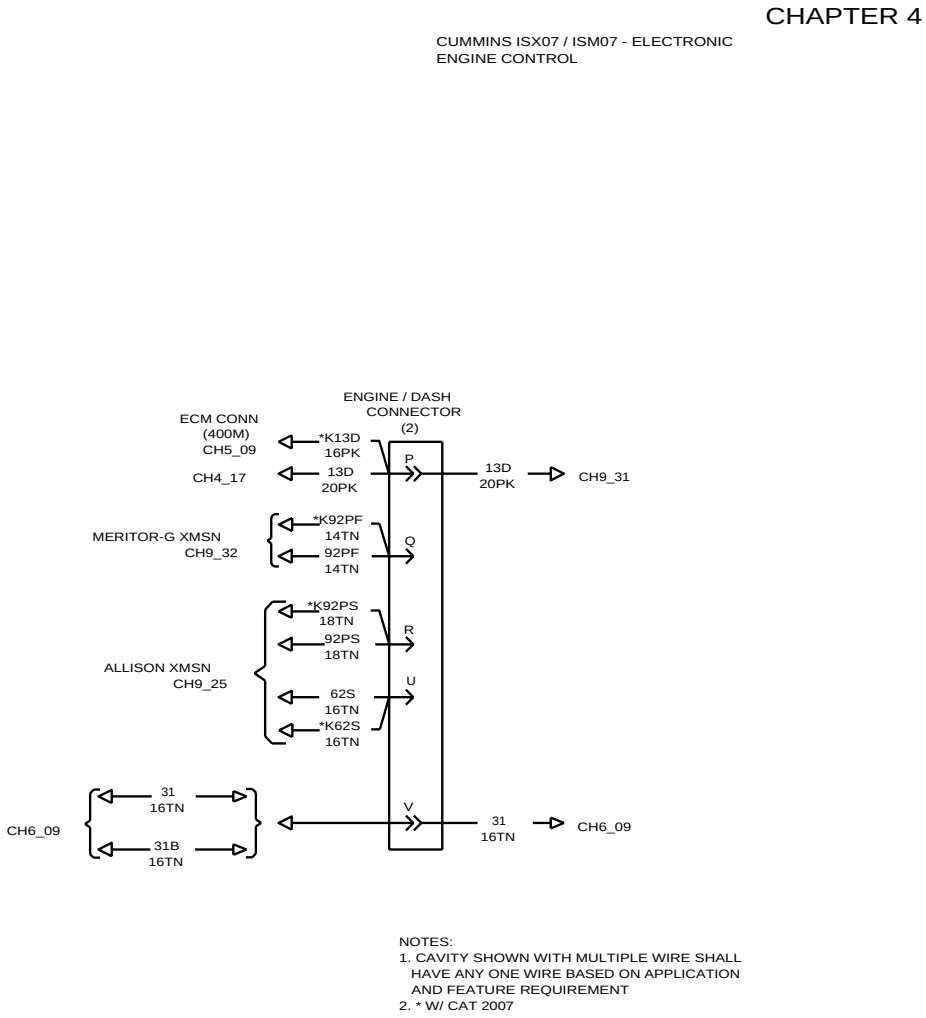


Figure 59 Cummins ISX07/ISM07 Electronic Engine Control

4.27. CUMMINS ISX07/ISM07 ENGINE BLOCK GROUND ADAPTER, P. 27

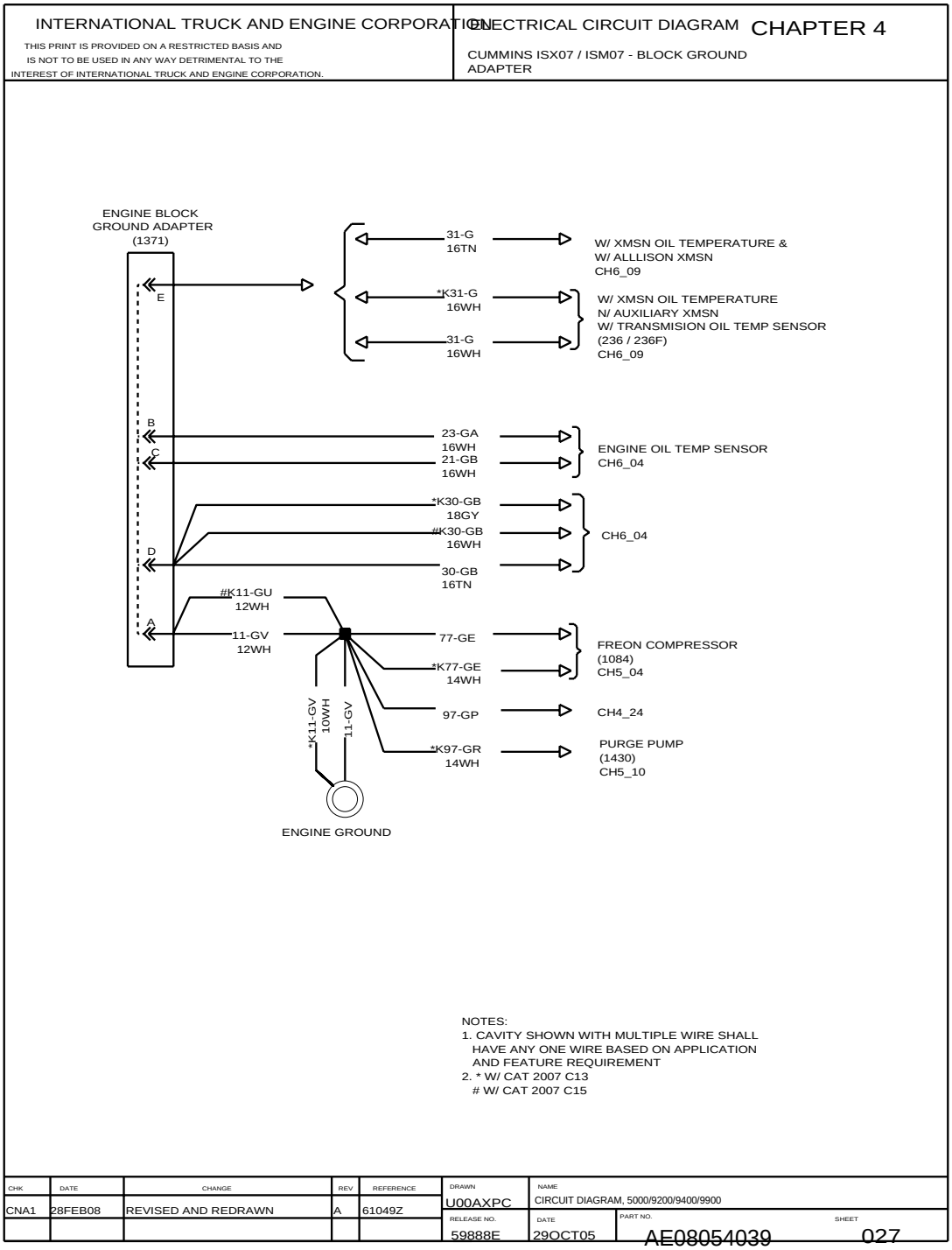


Figure 60 Cummins ISX07/ISM07 Engine Block Ground Adapter

4.28. CUMMINS ISL INTAKE HEATER, P. 28

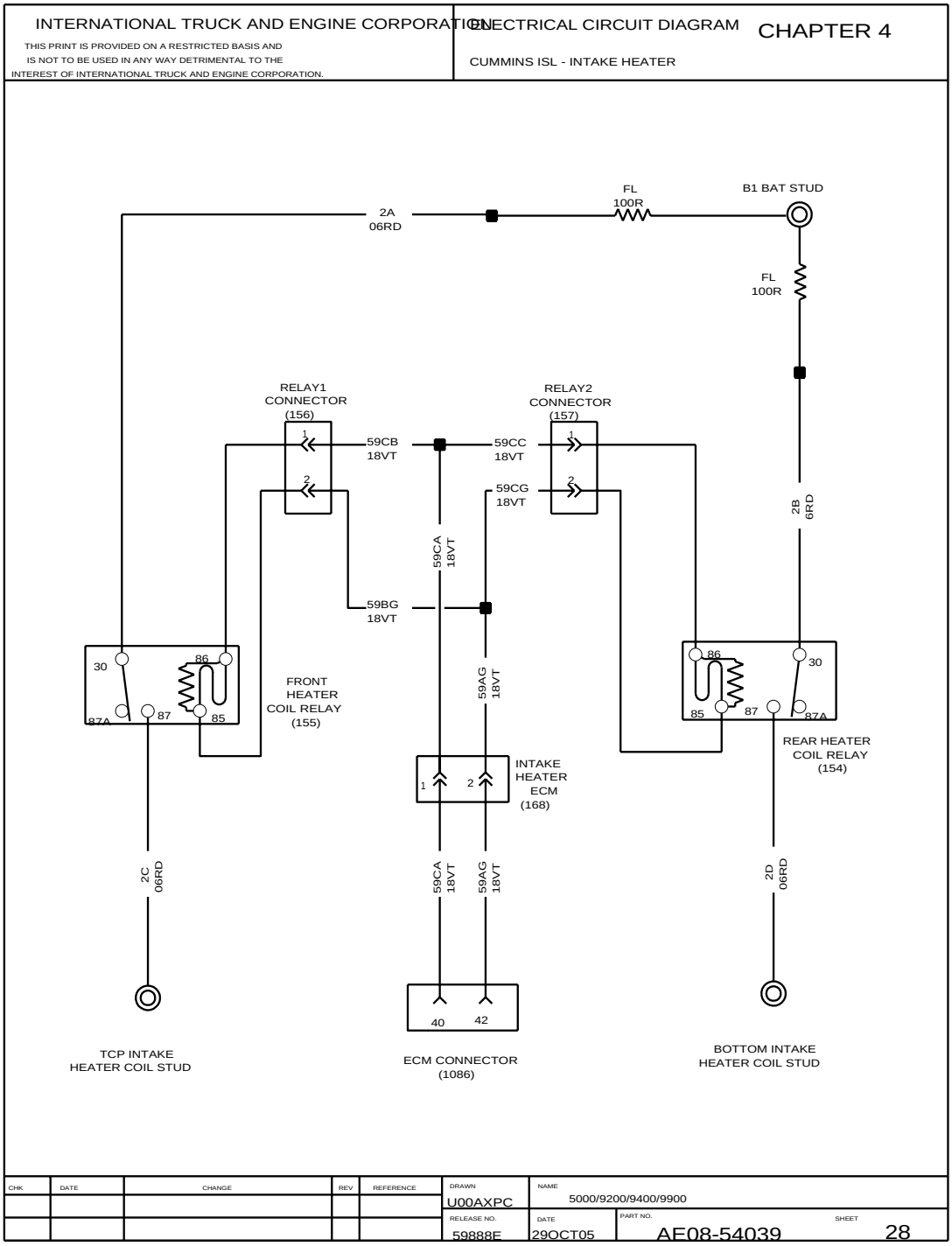


Figure 61 Cummins ISL Intake Heater

4.29. AFTERTREATMENT CONTROL, P. 29

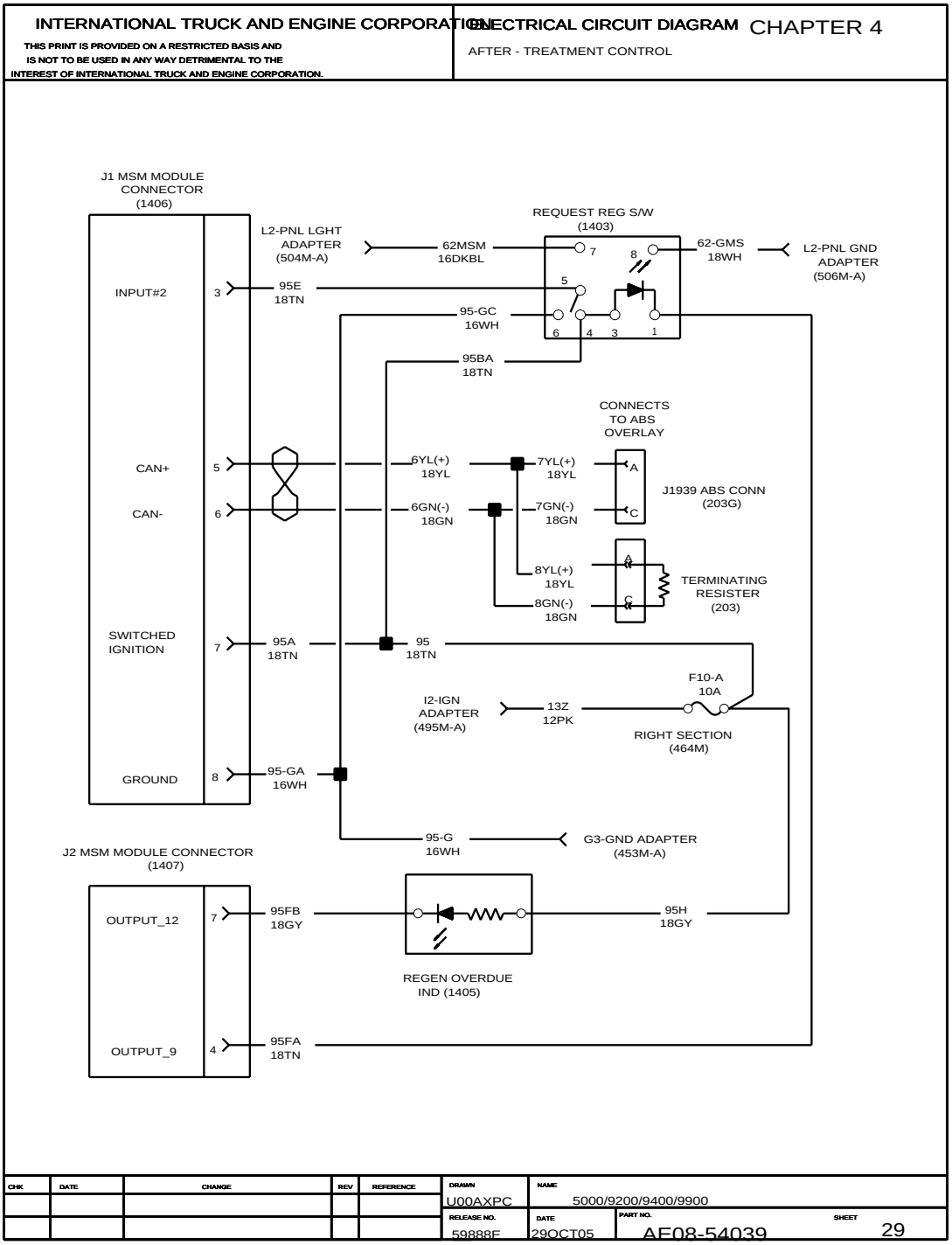


Figure 62 Aftertreatment Control

4.30. AFTERTREATMENT CONTROL, P. 36

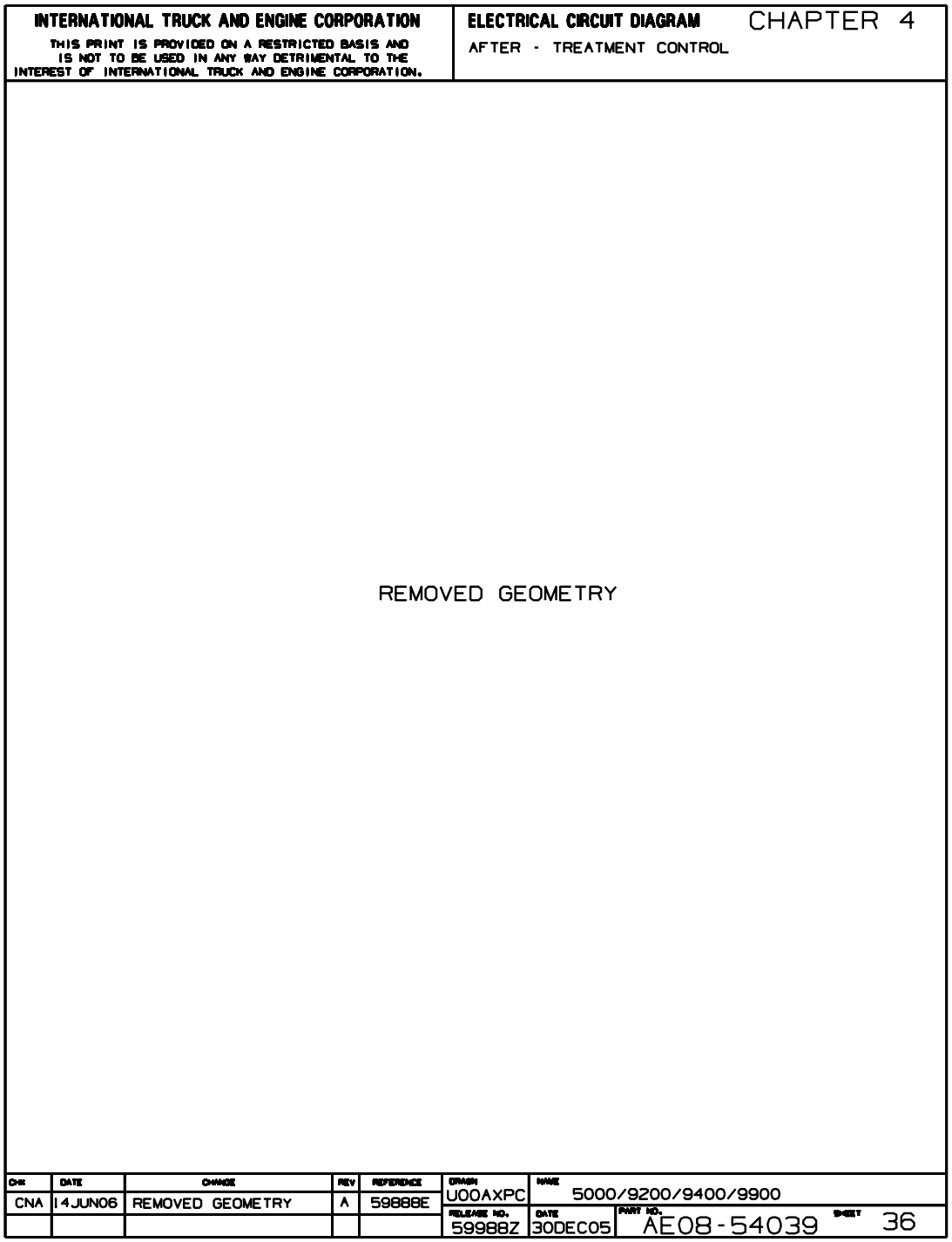


Figure 63 Aftertreatment Control

4.31. 2007 CAT NO IDLE ENGINE SHUTDOWN SYSTEM, P. 37

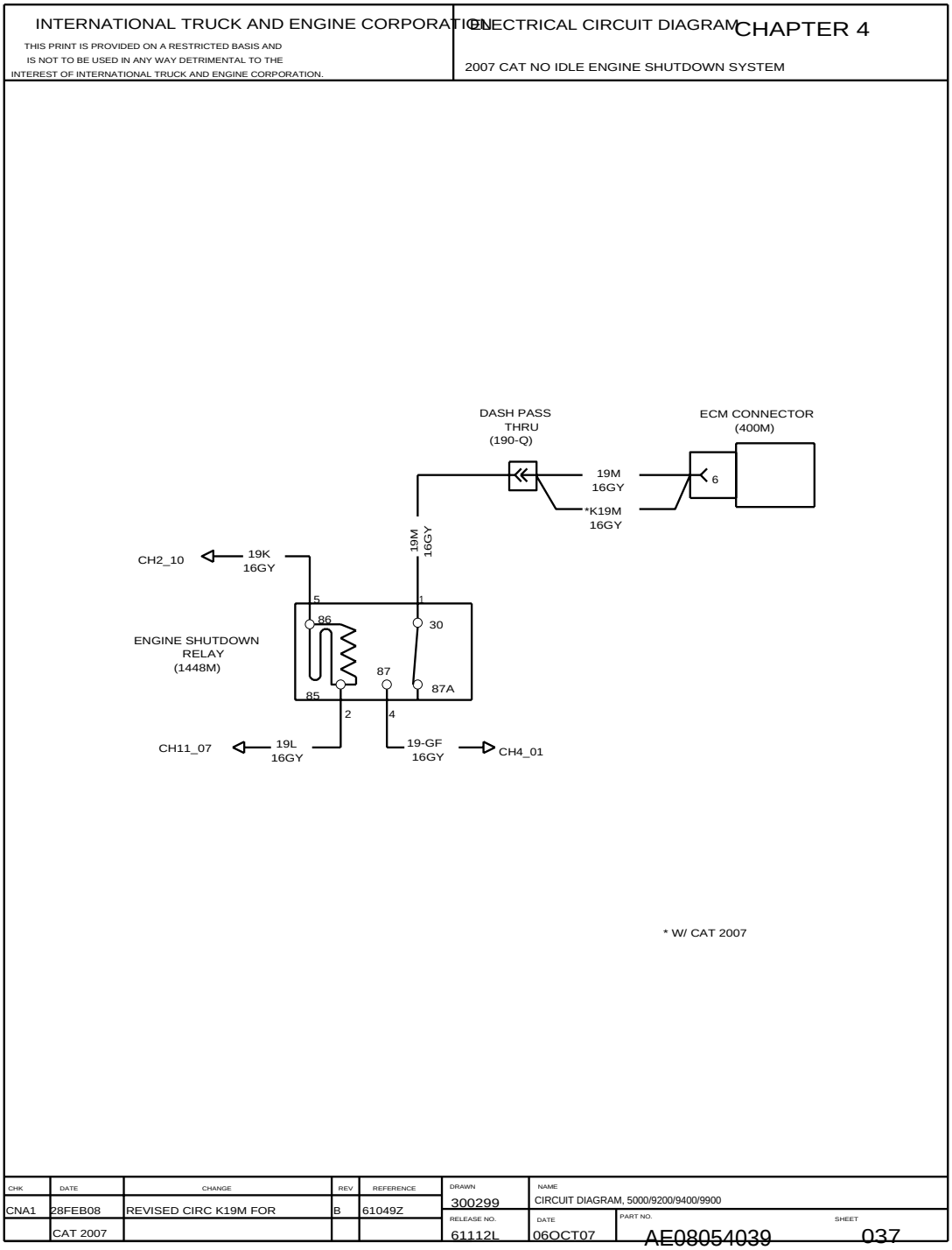


Figure 64 2007 Cat No Idle Engine Shutdown System

4.32. AFTERTREATMENT CONTROL CAT 2007, P. 38

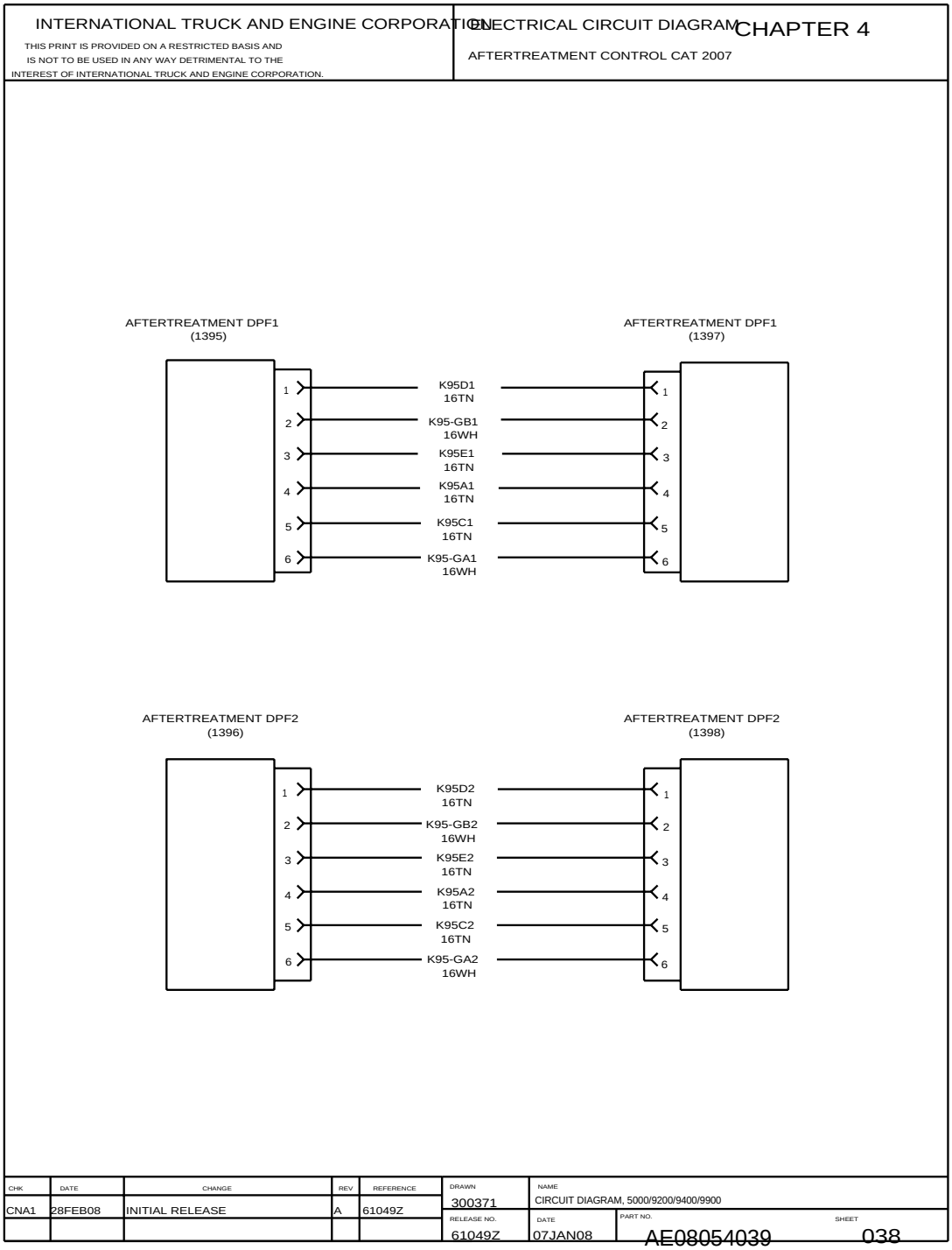


Figure 65 Aftertreatment Control Cat 2007

5. FANS (CHAPTER 5)

5.1. HORTON AND KYSOR ENGINE FAN WITH CAT C10, C11, C12, C13, C15 AND C16 W/ AND N/ A/C, W/ AND N/ MANUAL FAN OVERRIDE SWITCH, P. 1

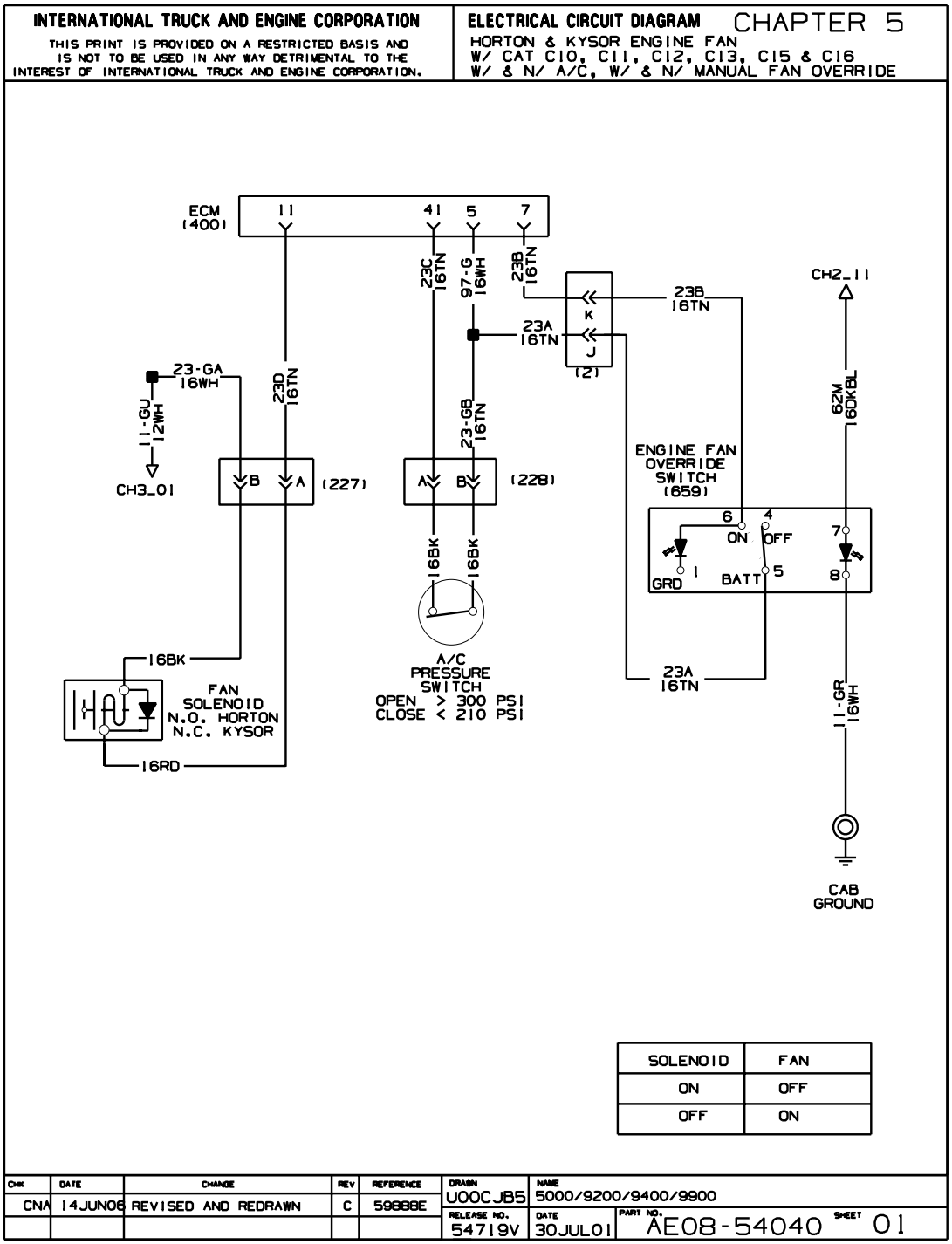


Figure 66 Horton and Kysor Engine Fan With Cat C10, C11, C12, C13, C15 and C16 W/ and N/ A/C, W/ and N/ Manual Fan Override Switch

5.2. HORTON AND KYSOR ENGINE FAN WITH CUMMINS ISM, ISX W/ AND N/ A/C, W/ AND N/ MANUAL FAN OVERRIDE SWITCH, P. 2

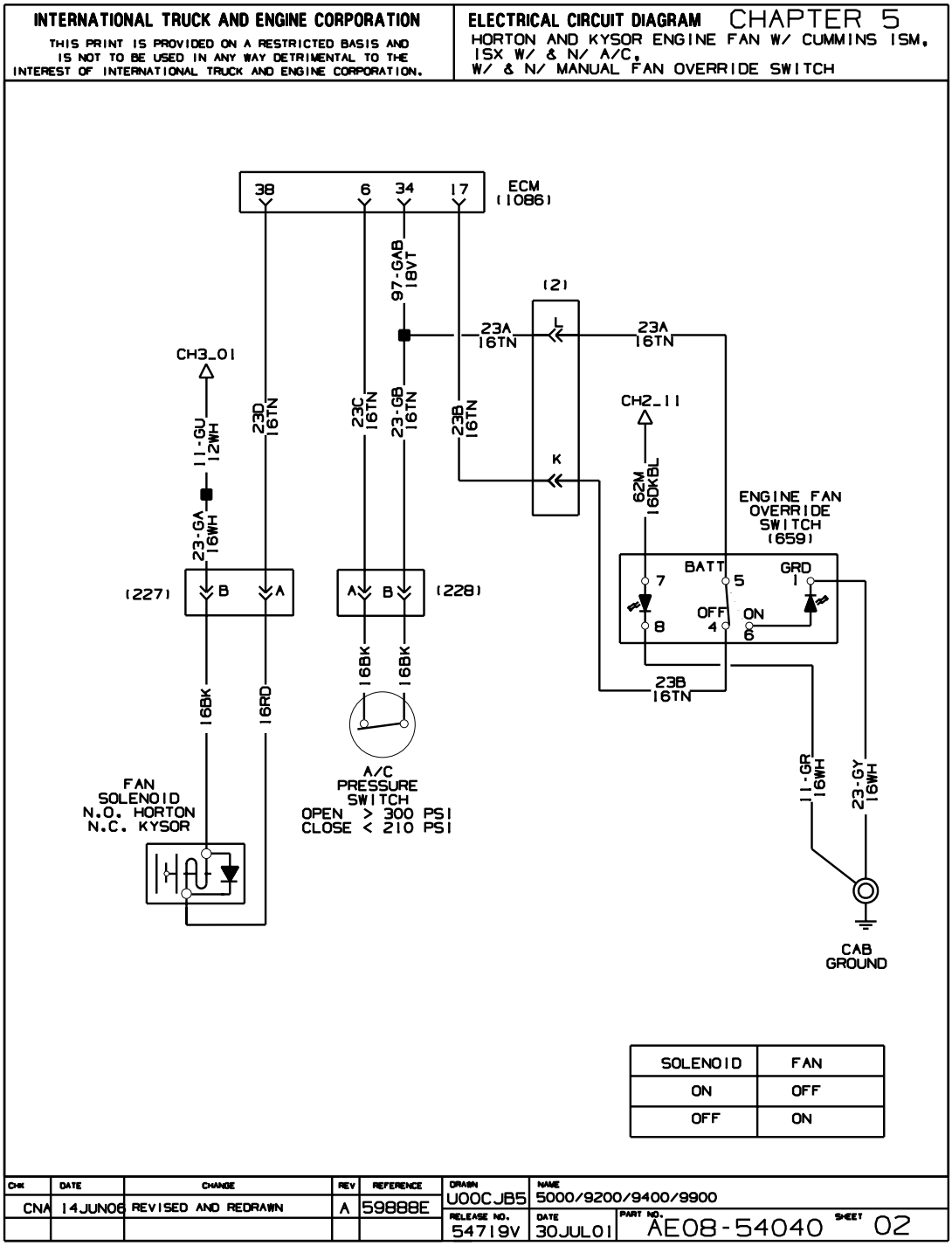


Figure 67 Horton and Kysor Engine Fan With Cummins ISM, ISX W/ and N/ A/C, W/ and N/ Manual Fan Override Switch

5.3. HORTON AND KYSOR ENGINE FAN WITH I6 HEUI ENGINES W/SHUTTER, P. 3

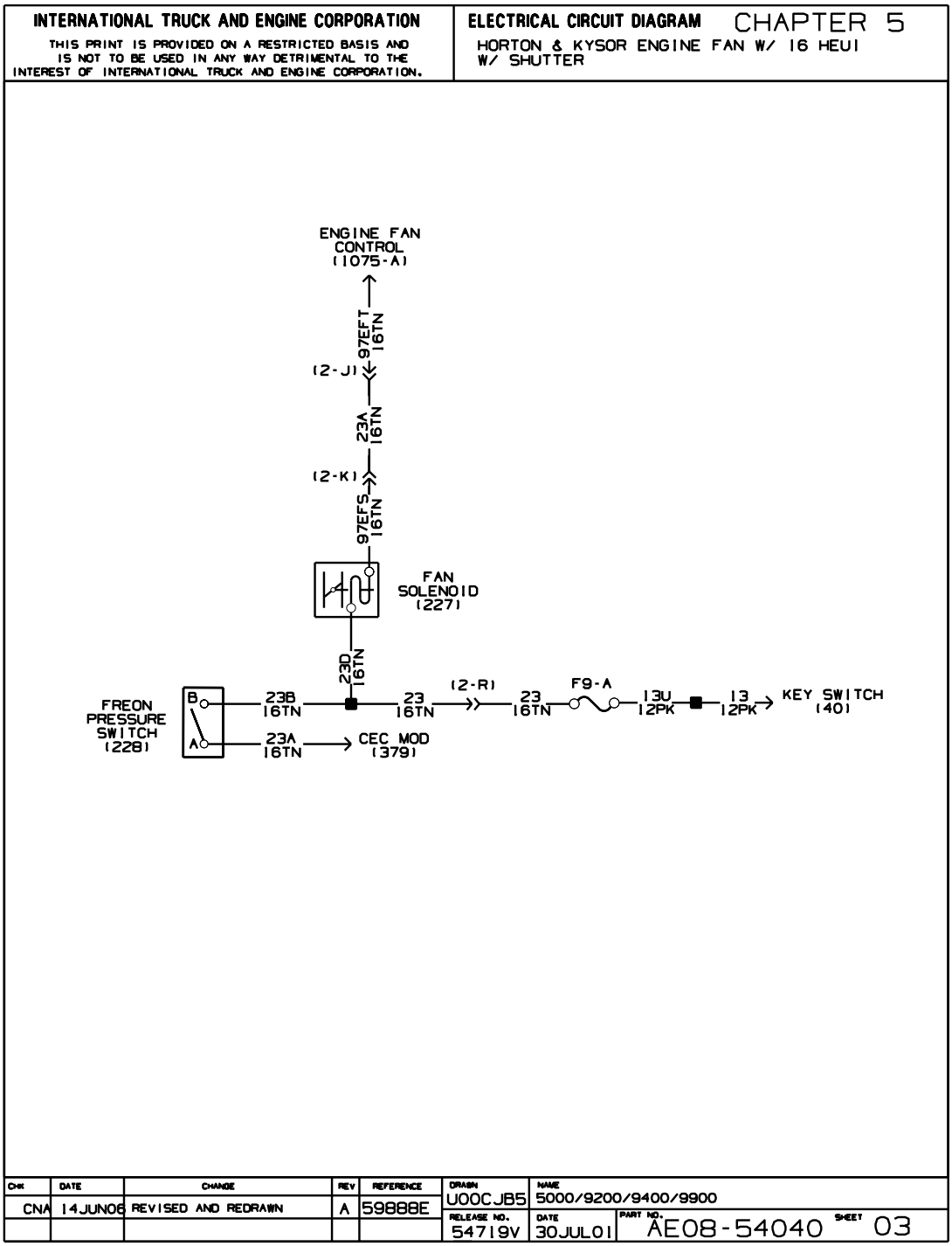
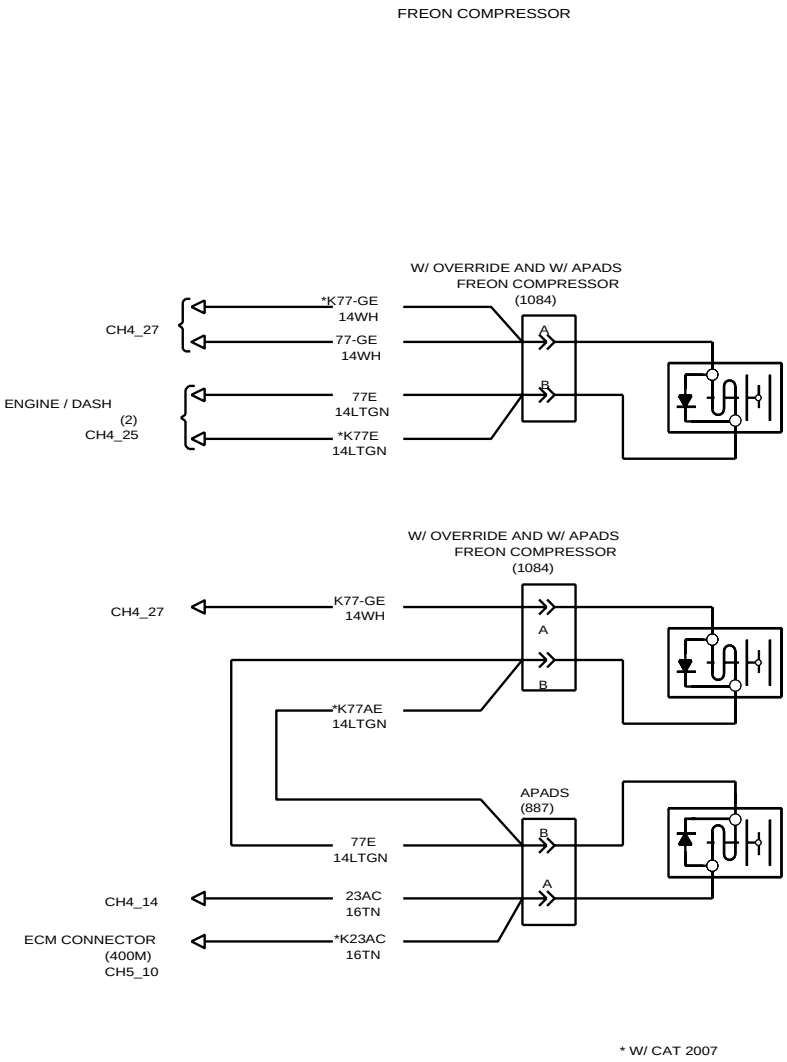


Figure 68 Horton and Kysor Engine Fan With I6 HEUI Engines W/Shutter

5.4. FREON COMPRESSOR, P. 4



CNA1 28FEB08 REVISED AND REDRAWN A 61049Z U00AXPC CIRCUIT DIAGRAM, 5000/9200/9400/9900

59888E 24OCT05 AE08054040 004

Figure 69 Freon Compressor

5.5. CUMMINS ISM ON/OFF FAN, P. 5

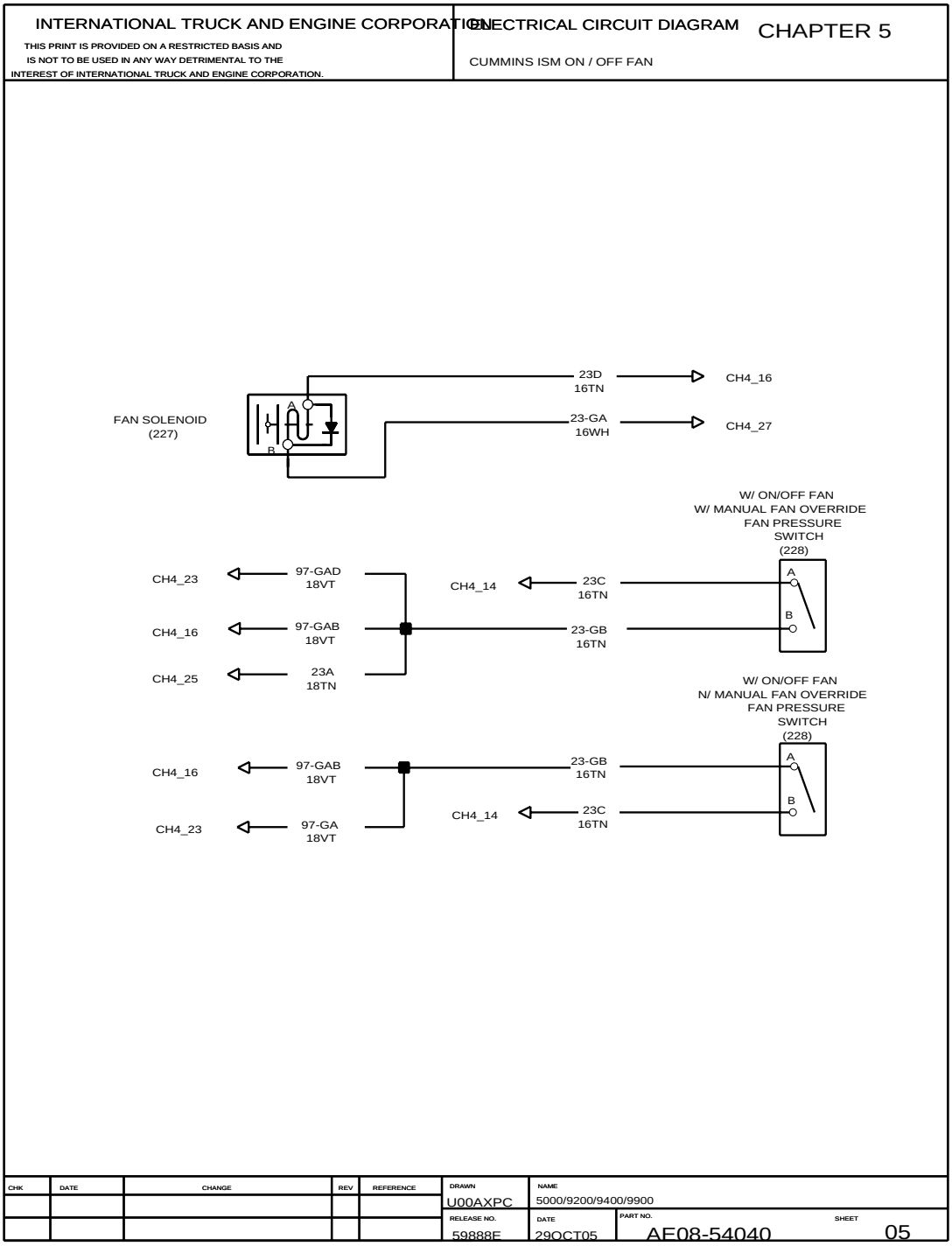


Figure 70 Cummins ISM On/Off Fan

5.6. HORTON AND KYSOR ENGINE FAN W/CUMMINS ISM, ISX W/ AND N/ A/C, W/ AUTO FAN DRIVE OVERRIDE, P. 6

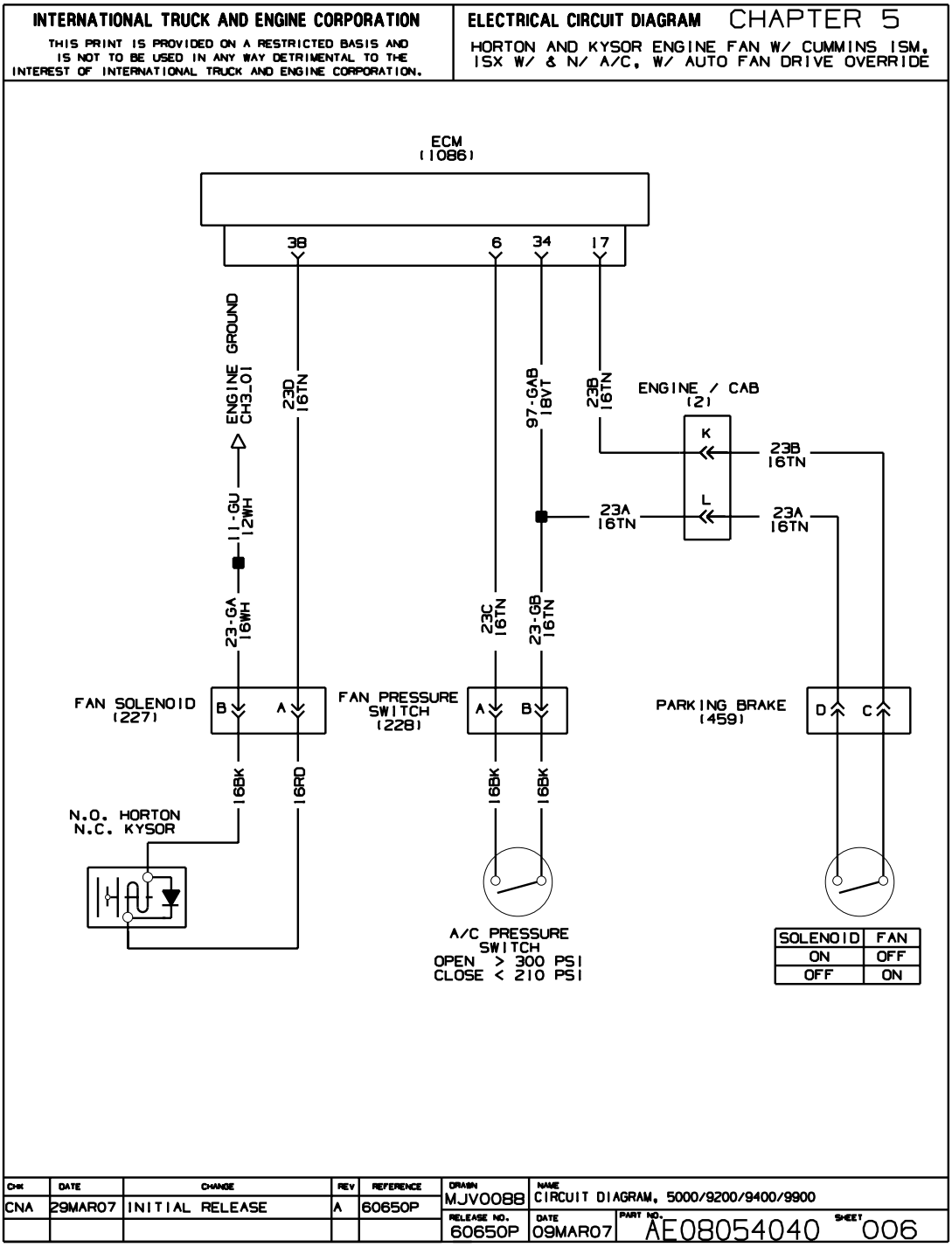


Figure 71 Horton and Kysor Engine Fan W/Cummins ISM, ISX w/ and N/ A/C, W/ Auto Fan Drive Override

5.7. ECM CONNECTOR CAT 2007, P. 7

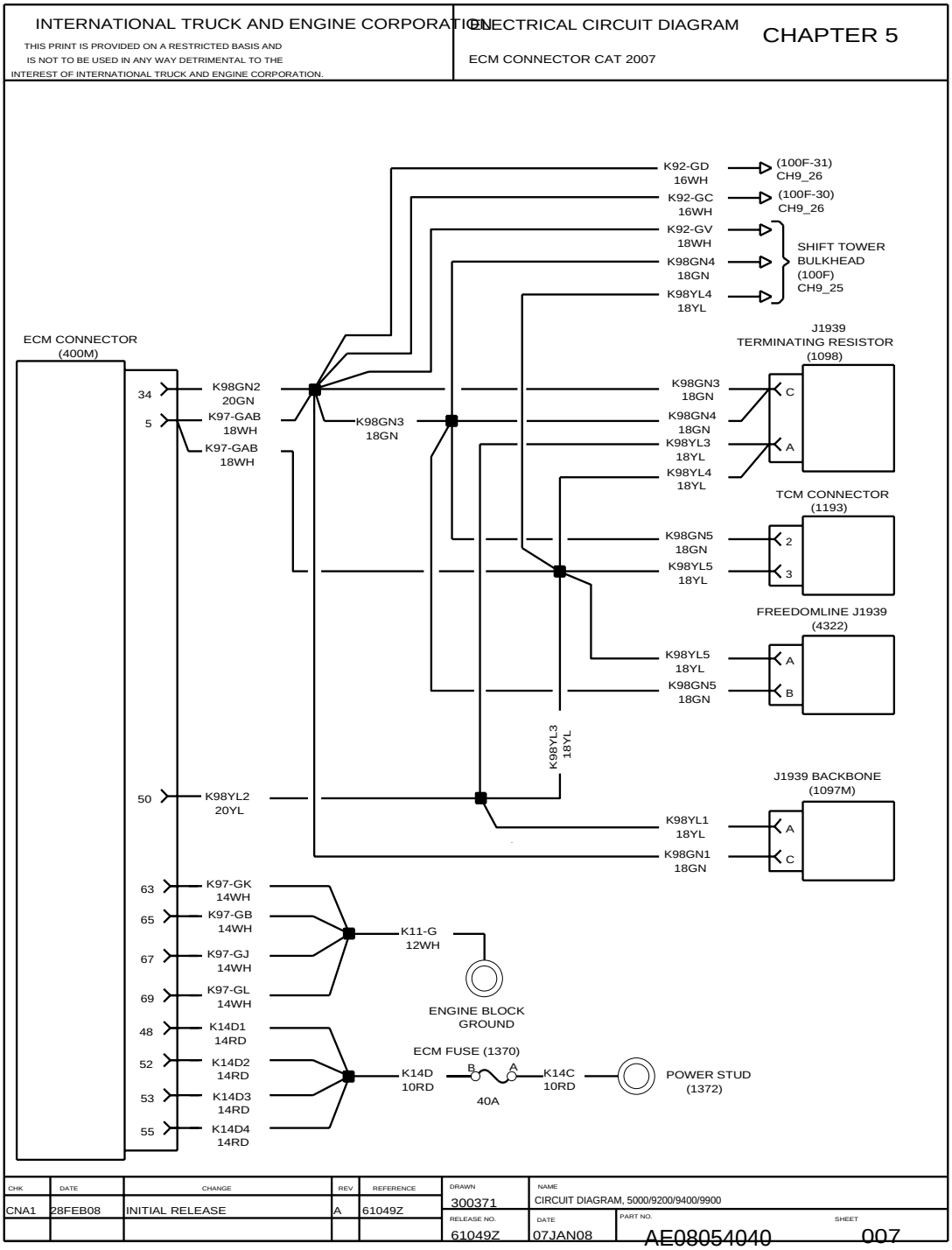


Figure 72 ECM Connector Cat 2007

5.8. ECM CONNECTOR CAT 2007, P. 8

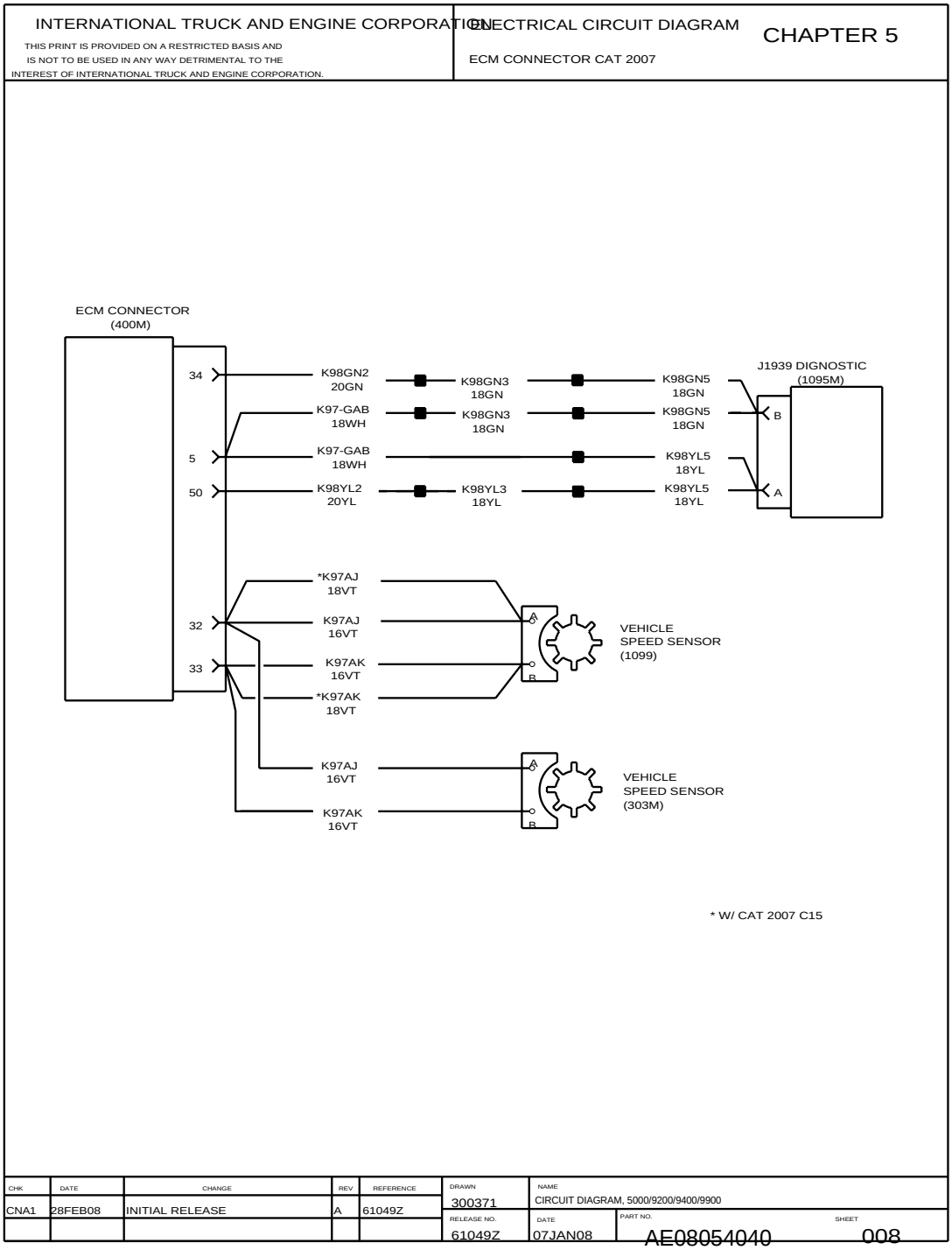


Figure 73 ECM Connector Cat 2007

5.9. ECM CONNECTOR CAT 2007, P. 9

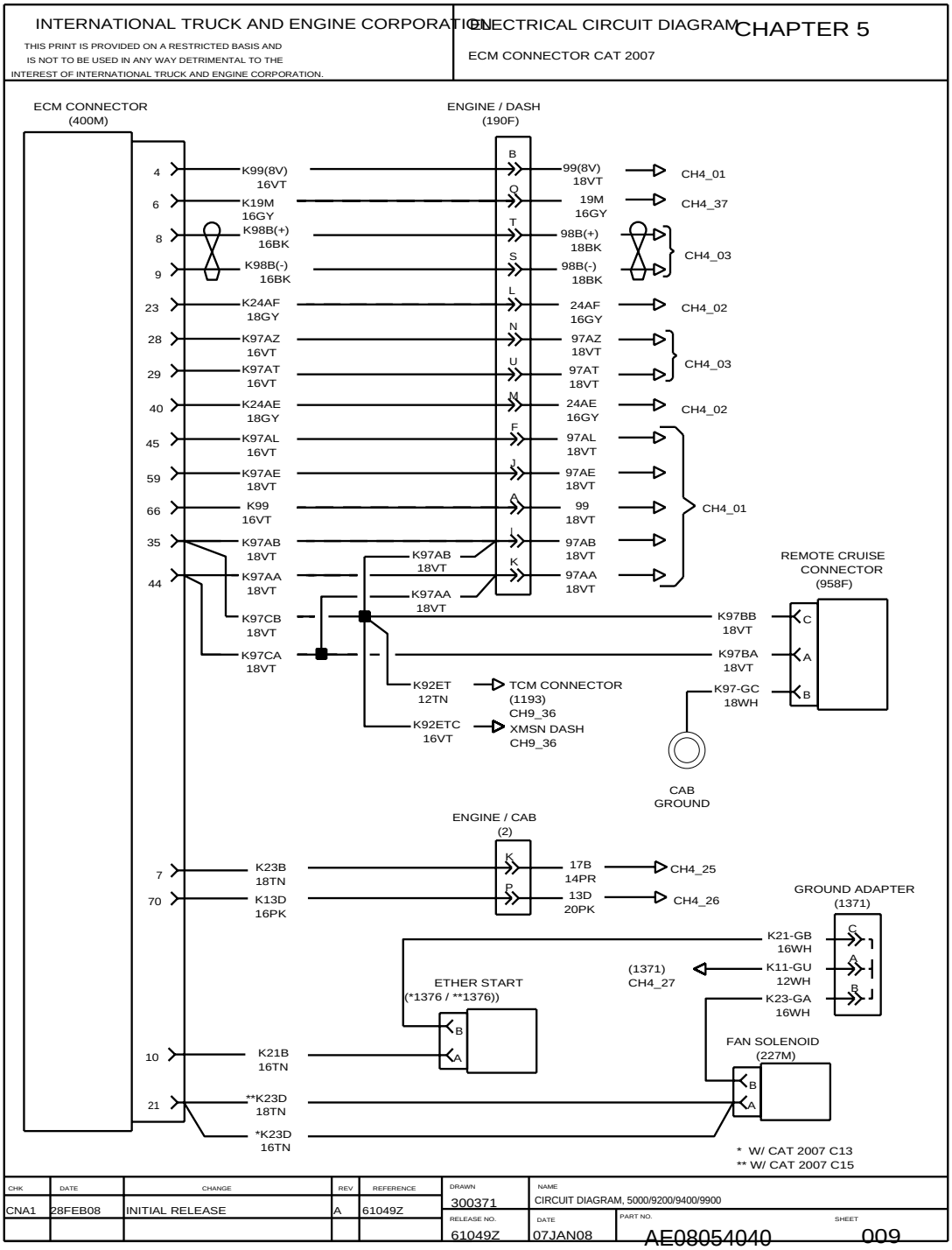


Figure 74 ECM Connector Cat 2007

5.10. ECM CONNECTOR CAT 2007, P. 10

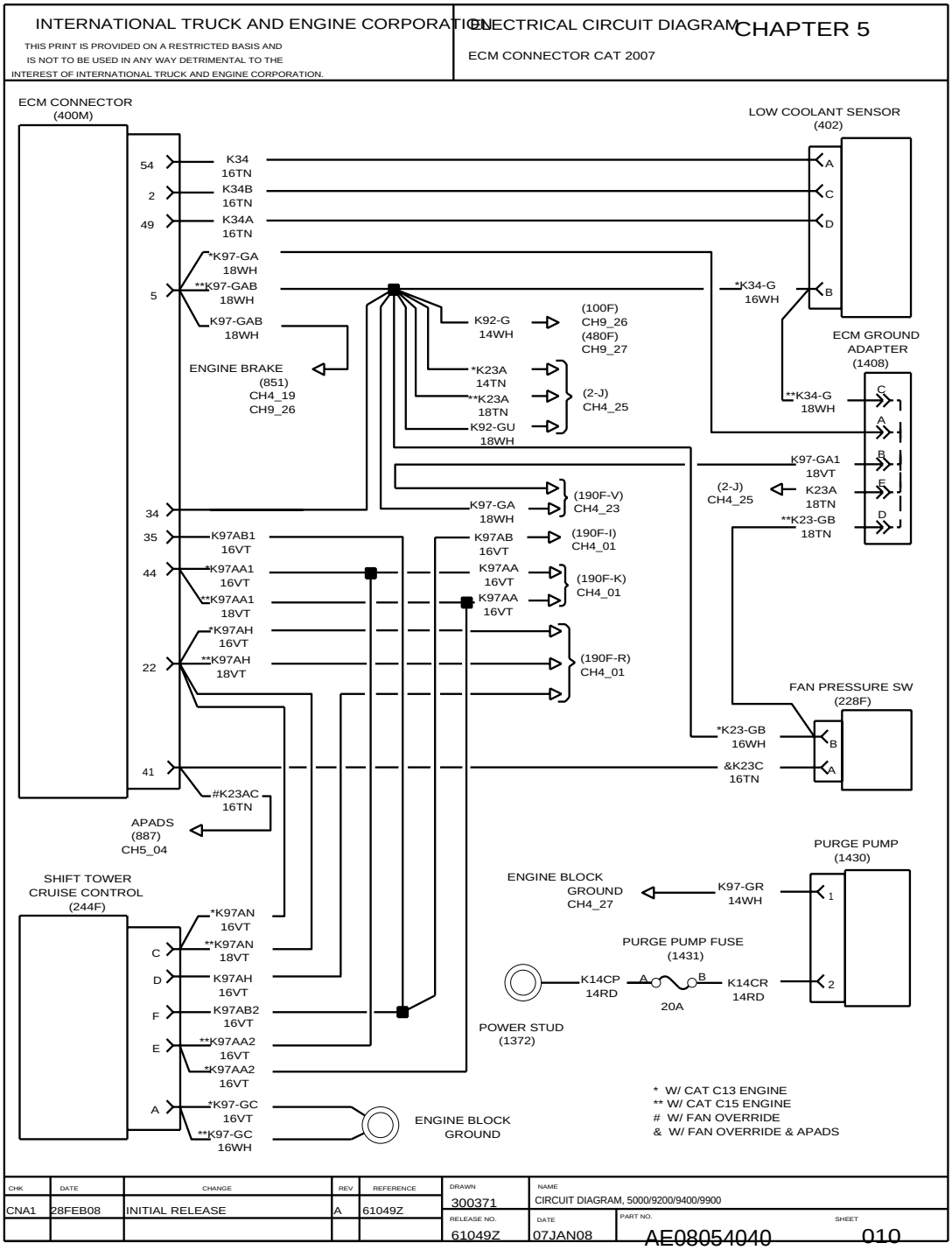


Figure 75 ECM Connector Cat 2007

6. GAUGES AND SYSTEMS (CHAPTER 6)

6.1. 4X2 REAR AXLE OIL TEMPERATURE GAUGE, P. 1

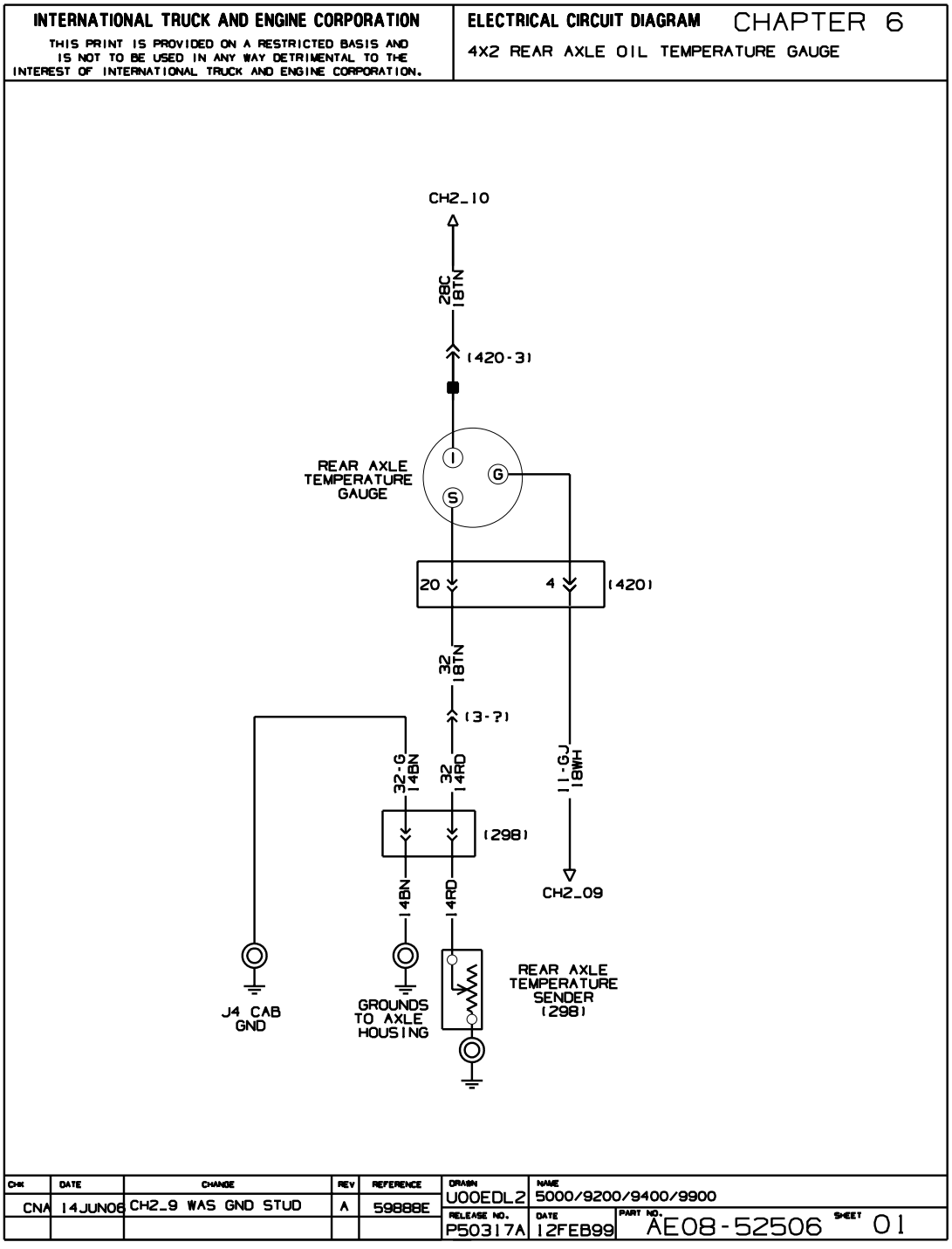


Figure 76 4x2 Rear Axle Oil Temperature Gauge

6.2. 6X4 AXLE FORWARD-REAR AND REAR-REAR TEMPERATURE GAUGE, P. 2

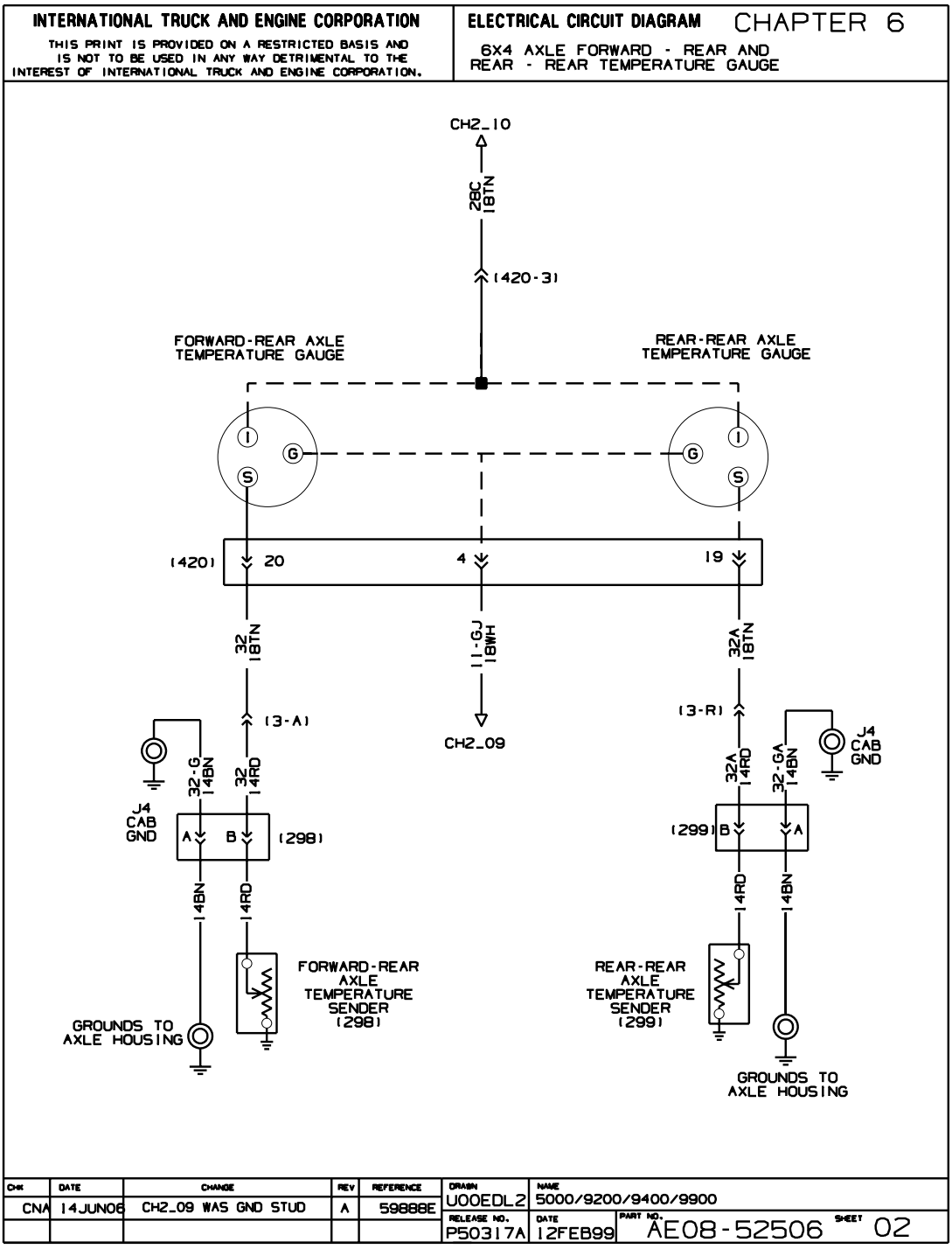


Figure 77 6x4 Axle Forward-Rear and Rear-RearTemperature Gauge

6.3. ENGINE OIL PRESSURE GAUGE, P. 3

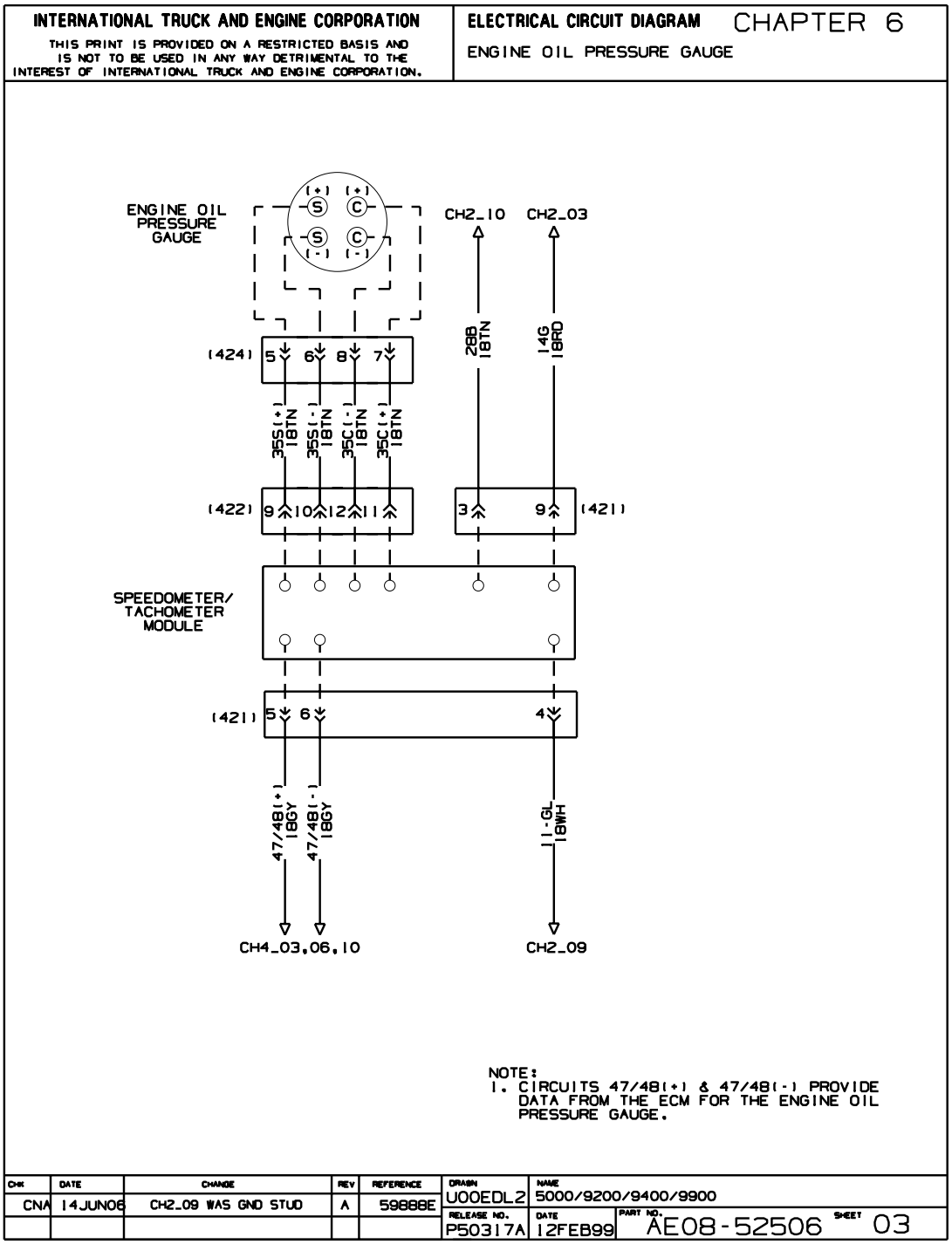


Figure 78 Engine Oil Pressure Gauge

6.4. ENGINE OIL TEMPERATURE GAUGE, P. 4

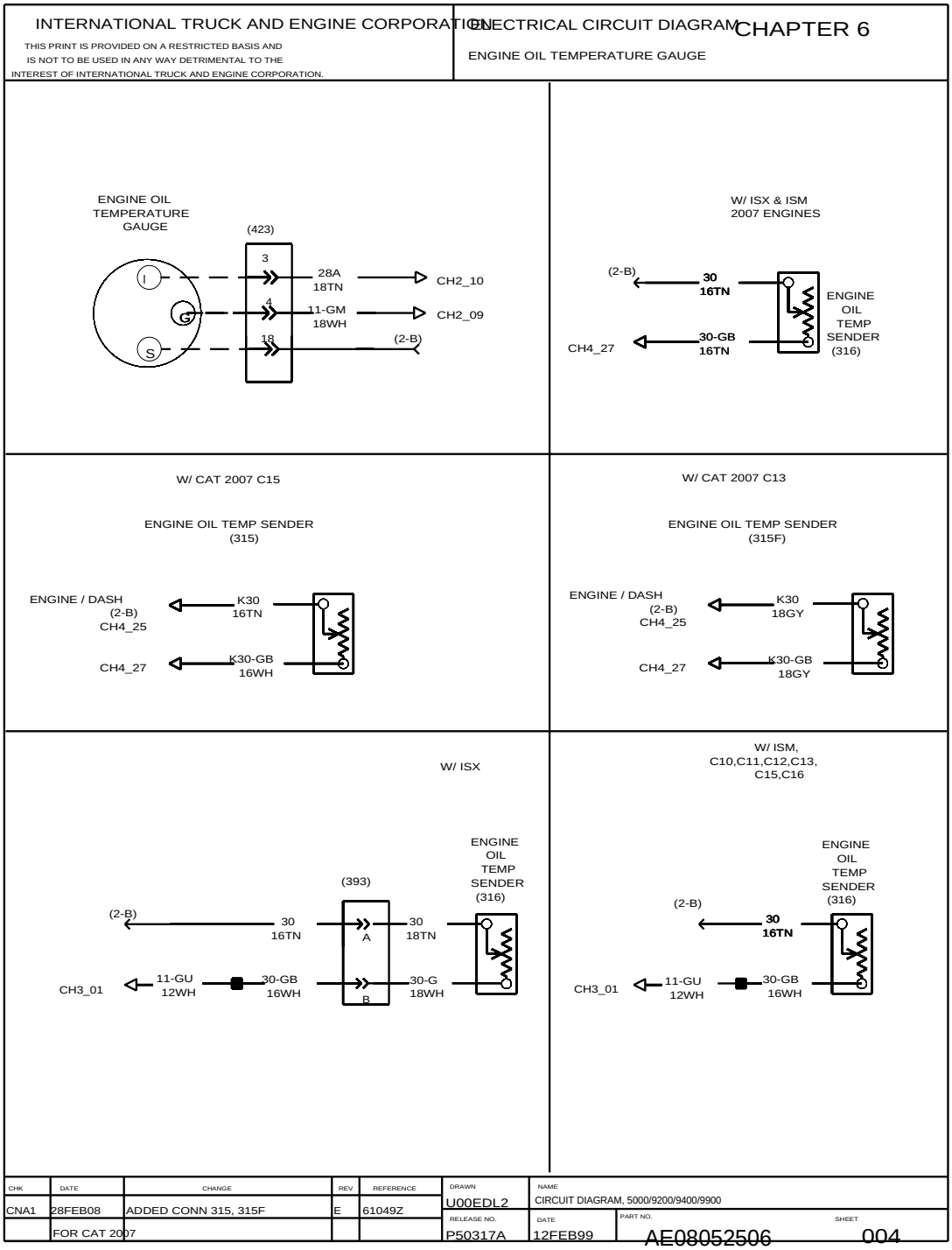


Figure 79 Engine Oil Temperature Gauge

6.5. ENGINE WATER TEMPERATURE GAUGE, P. 5

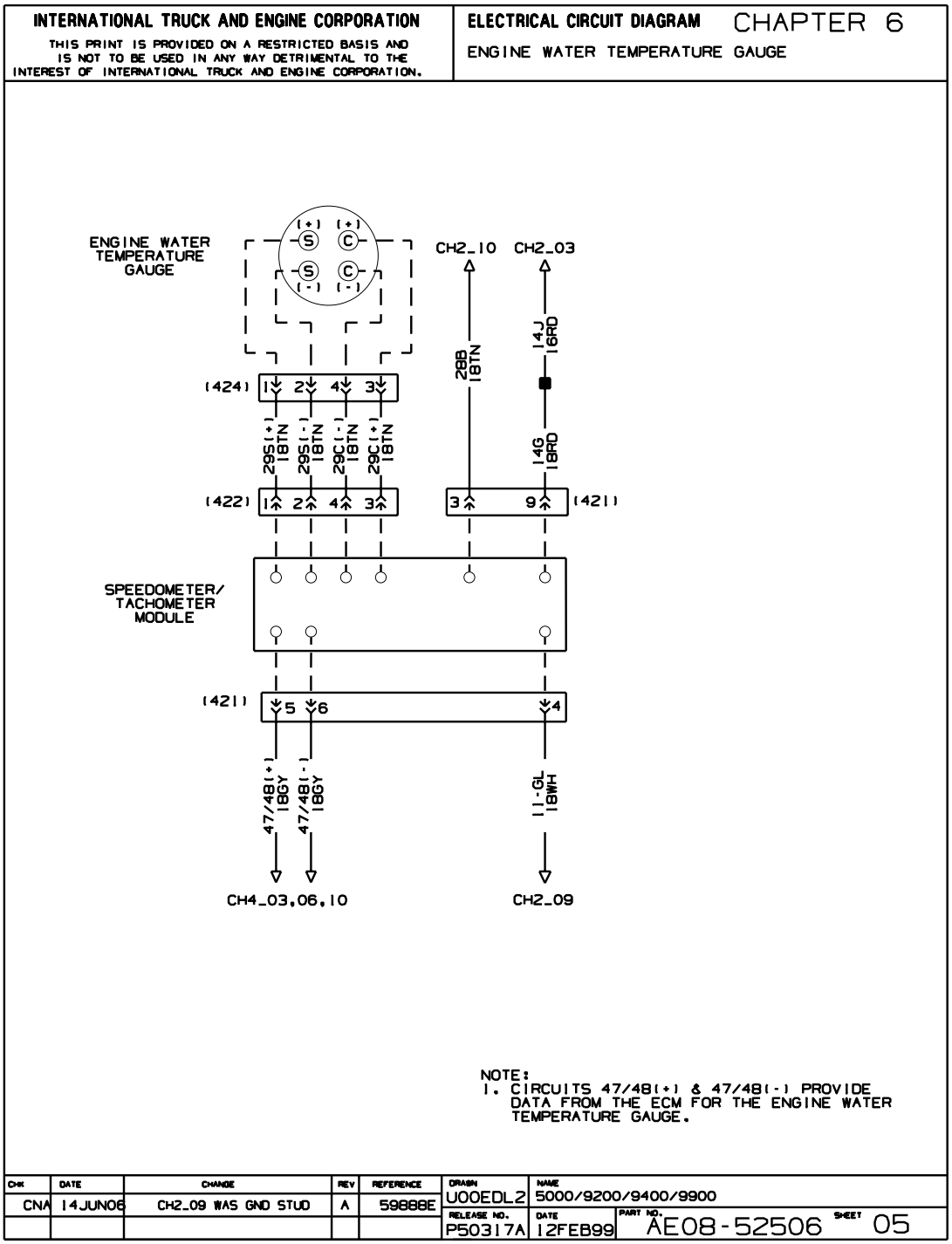


Figure 80 Engine Water Temperature Gauge

6.6. FUEL LEVEL GAUGE, P. 6

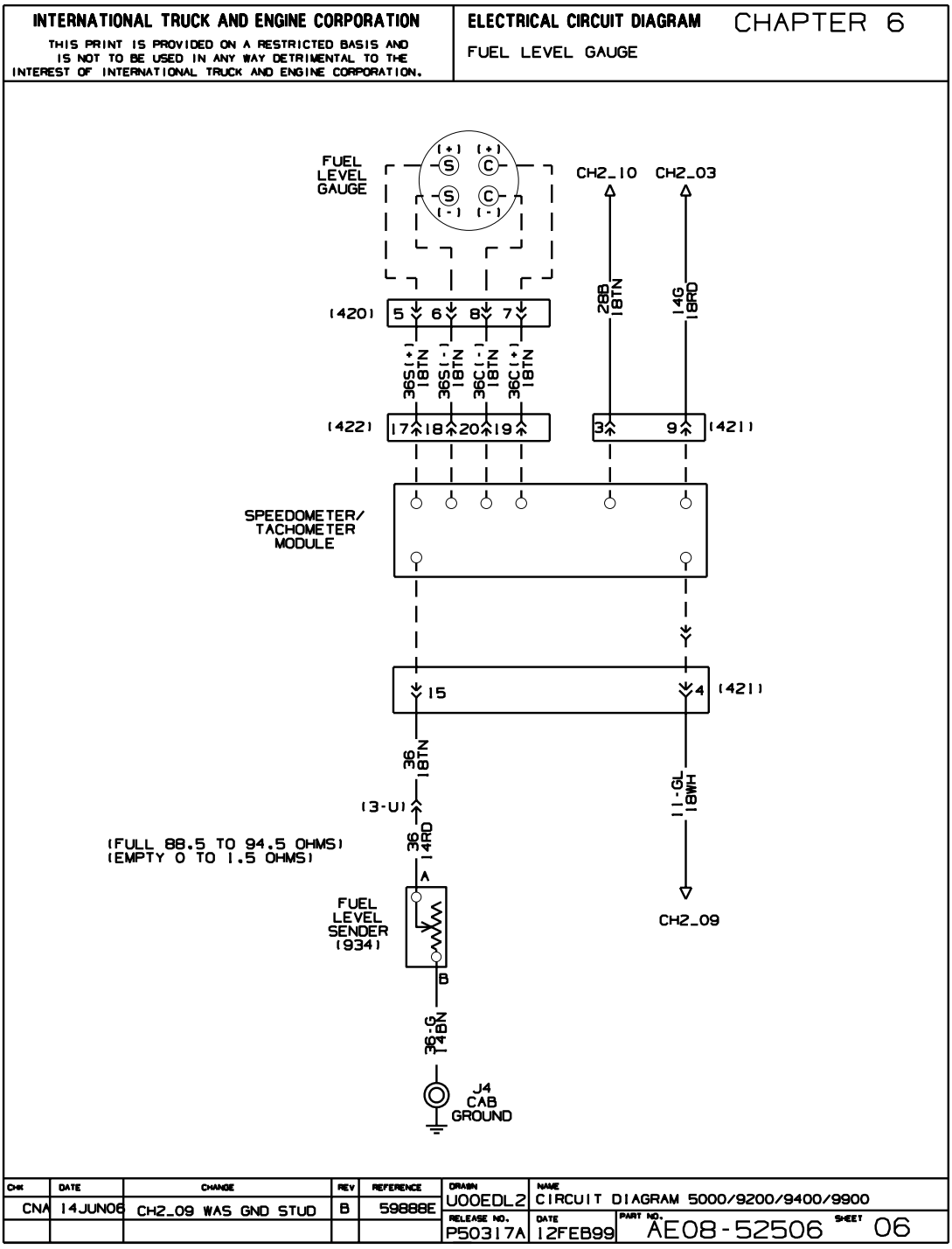


Figure 81 Fuel Level Gauge

6.7. PYROMETER GAUGE, P. 7

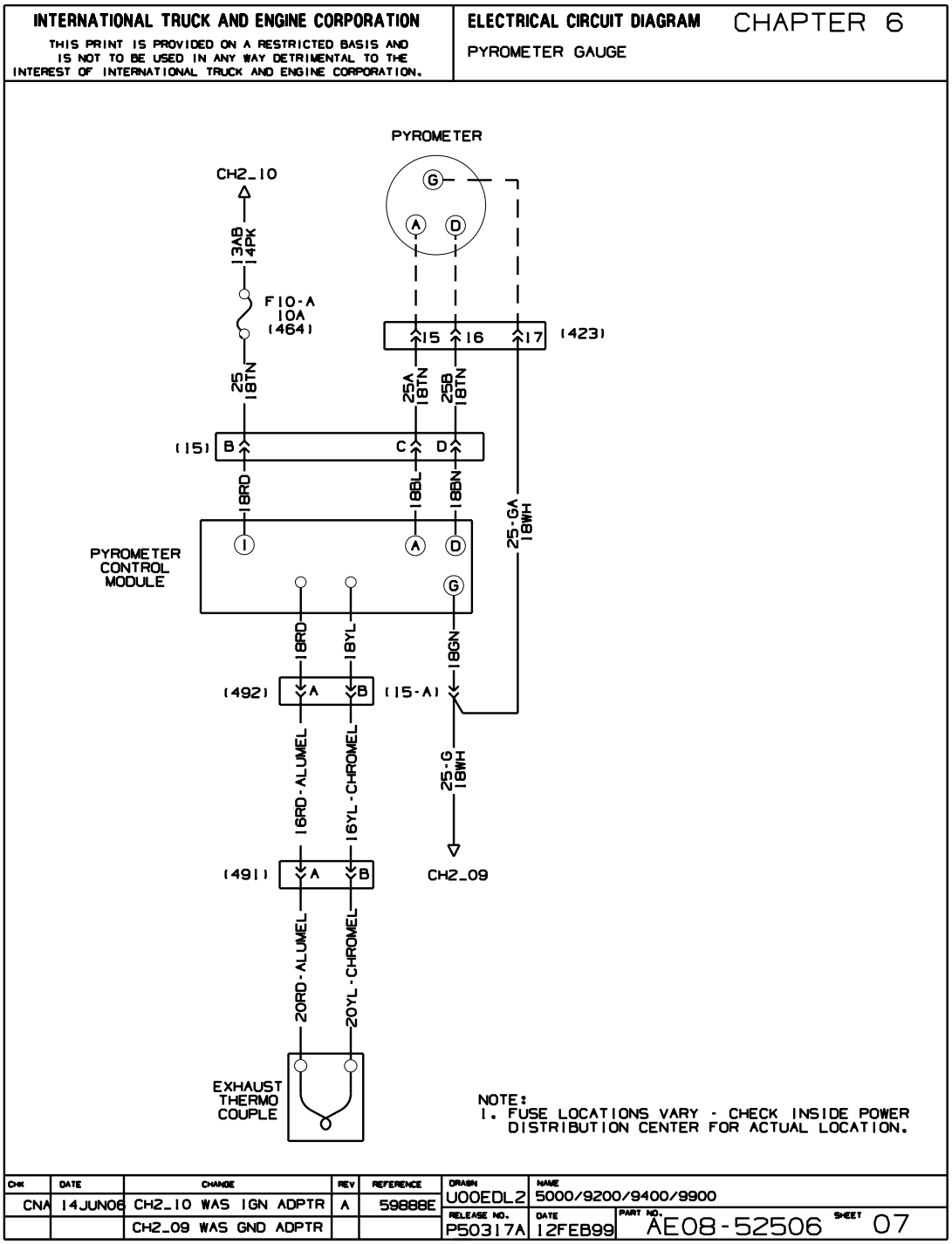


Figure 82 Pyrometer Gauge

6.8. SPEEDOMETER GAUGE — TACHOMETER GAUGE, P. 8

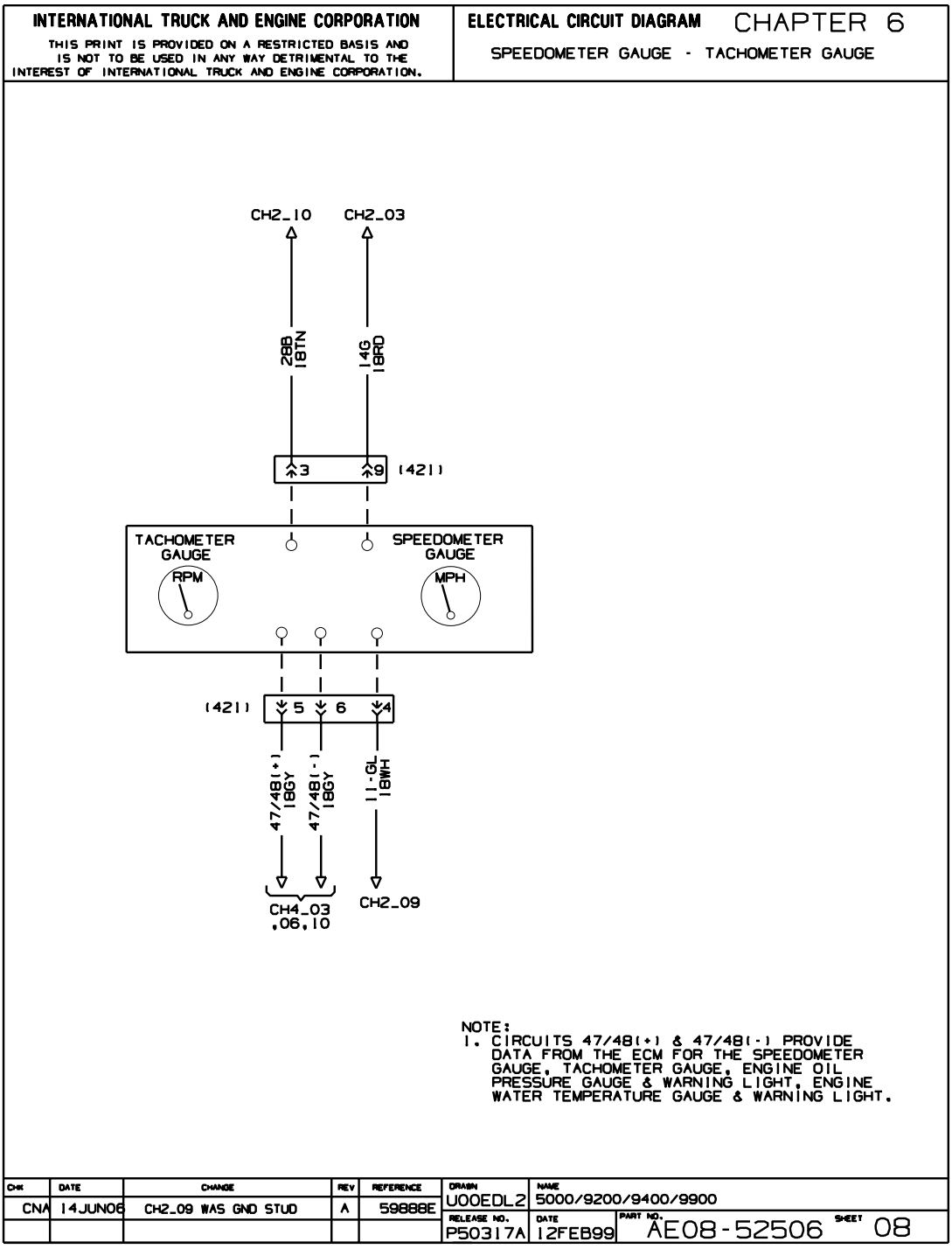


Figure 83 Speedometer Gauge — Tachometer Gauge

6.9. TRANSMISSION OIL TEMPERATURE GAUGE, P. 9

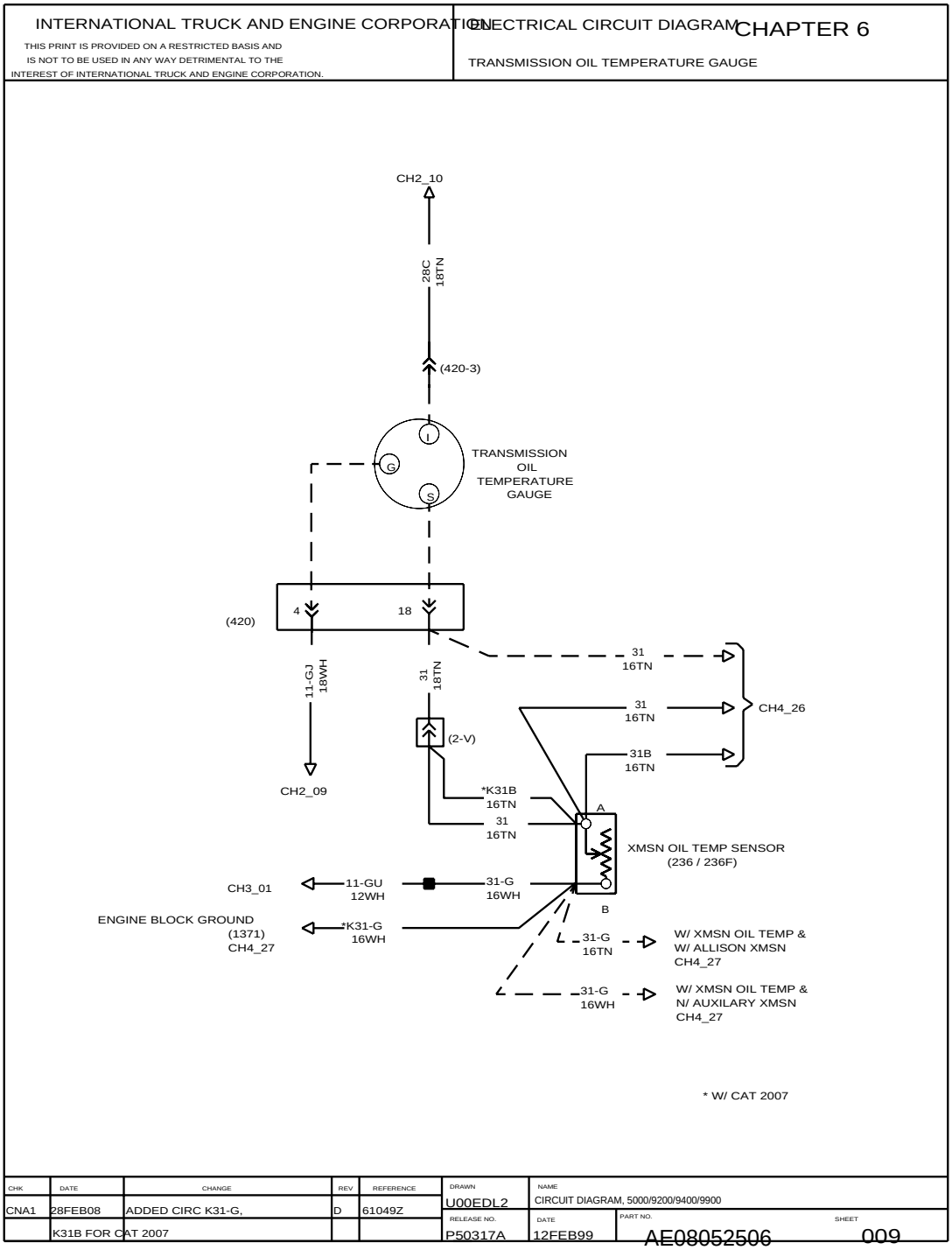


Figure 84 Transmission Oil Temperature Gauge

6.10. VOLTMETER GAUGE, P. 10

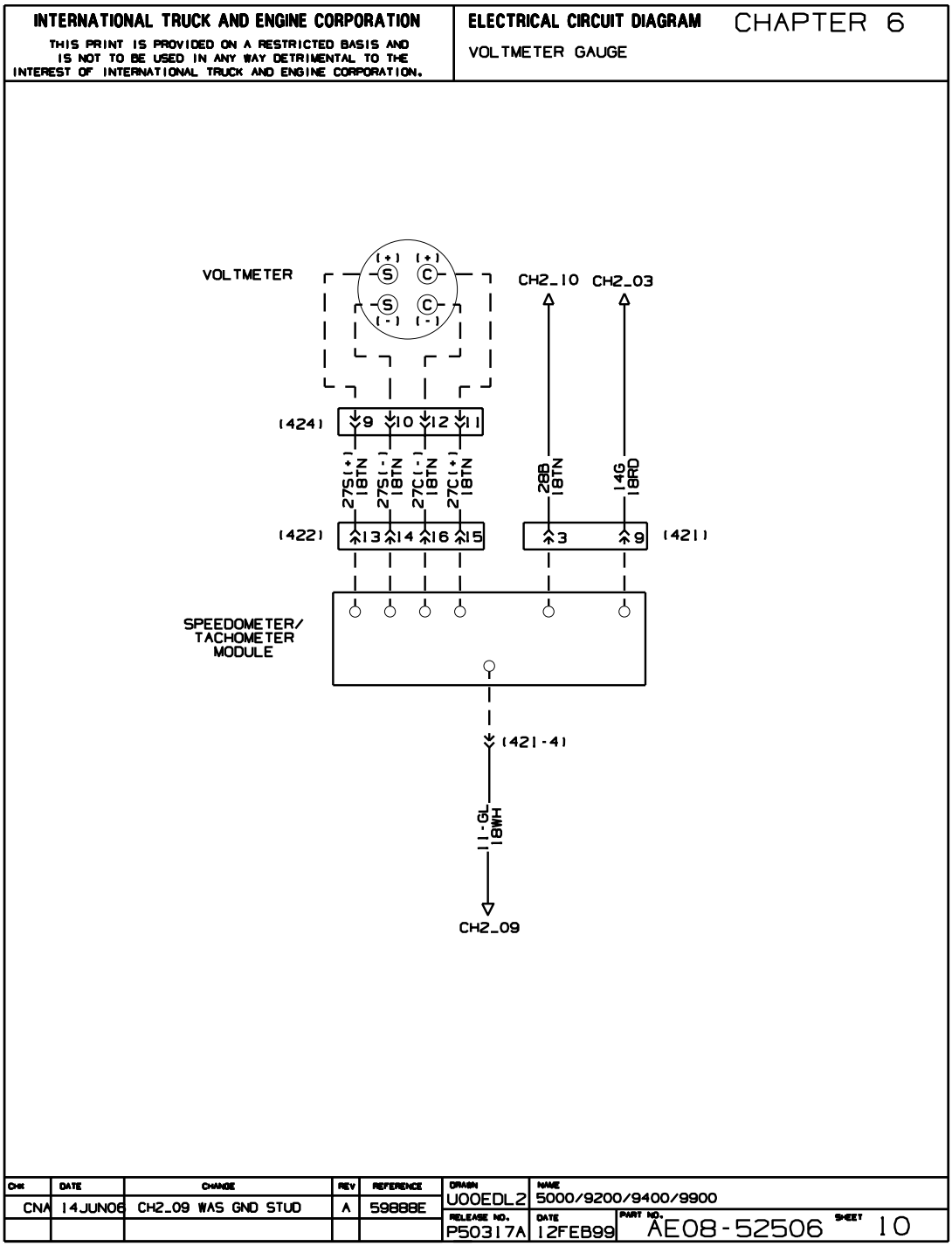


Figure 85 Voltmeter Gauge

6.11. ETHER START, P. 11

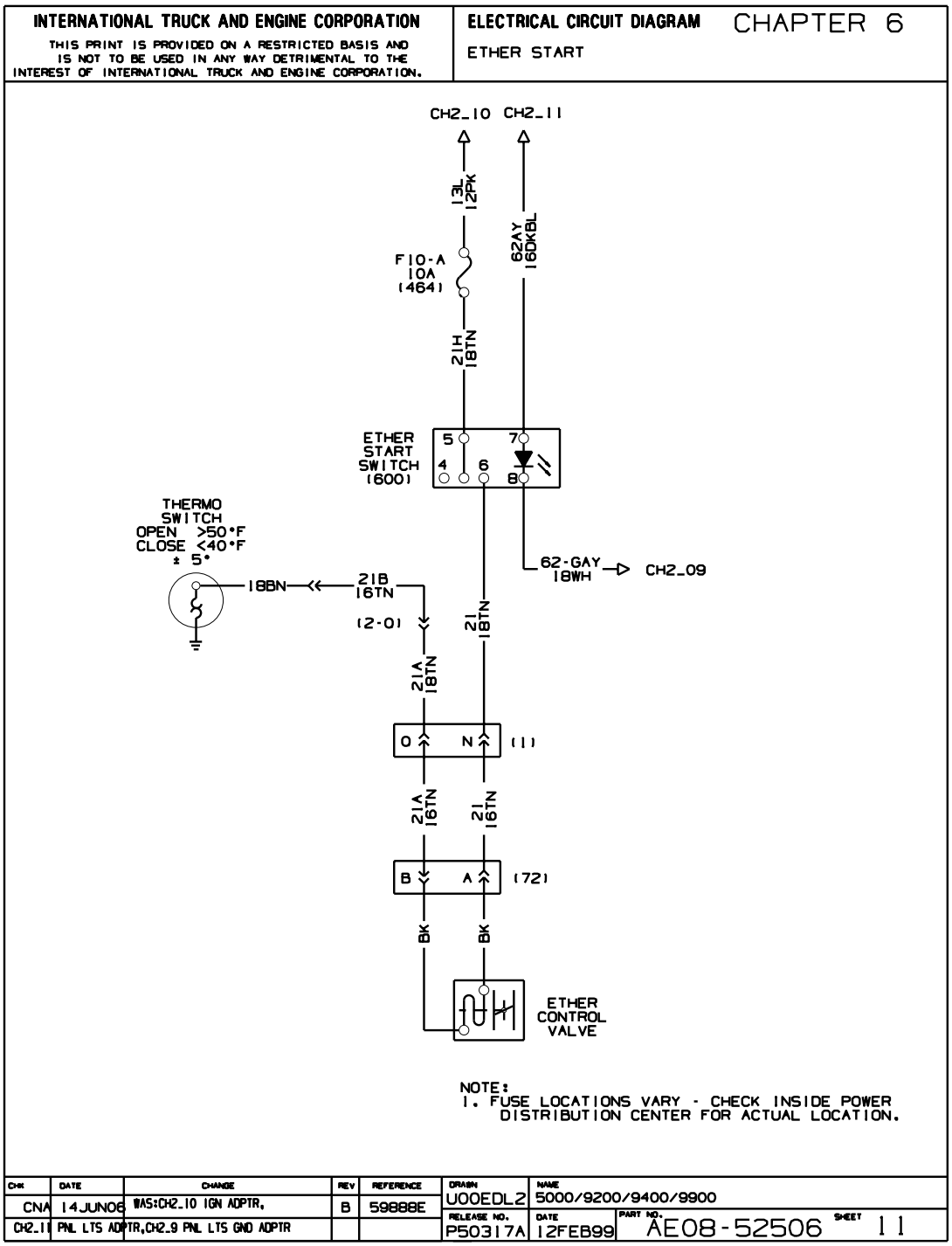


Figure 86 Ether Start

6.12. MANIFOLD PRESSURE GAUGE, P. 12

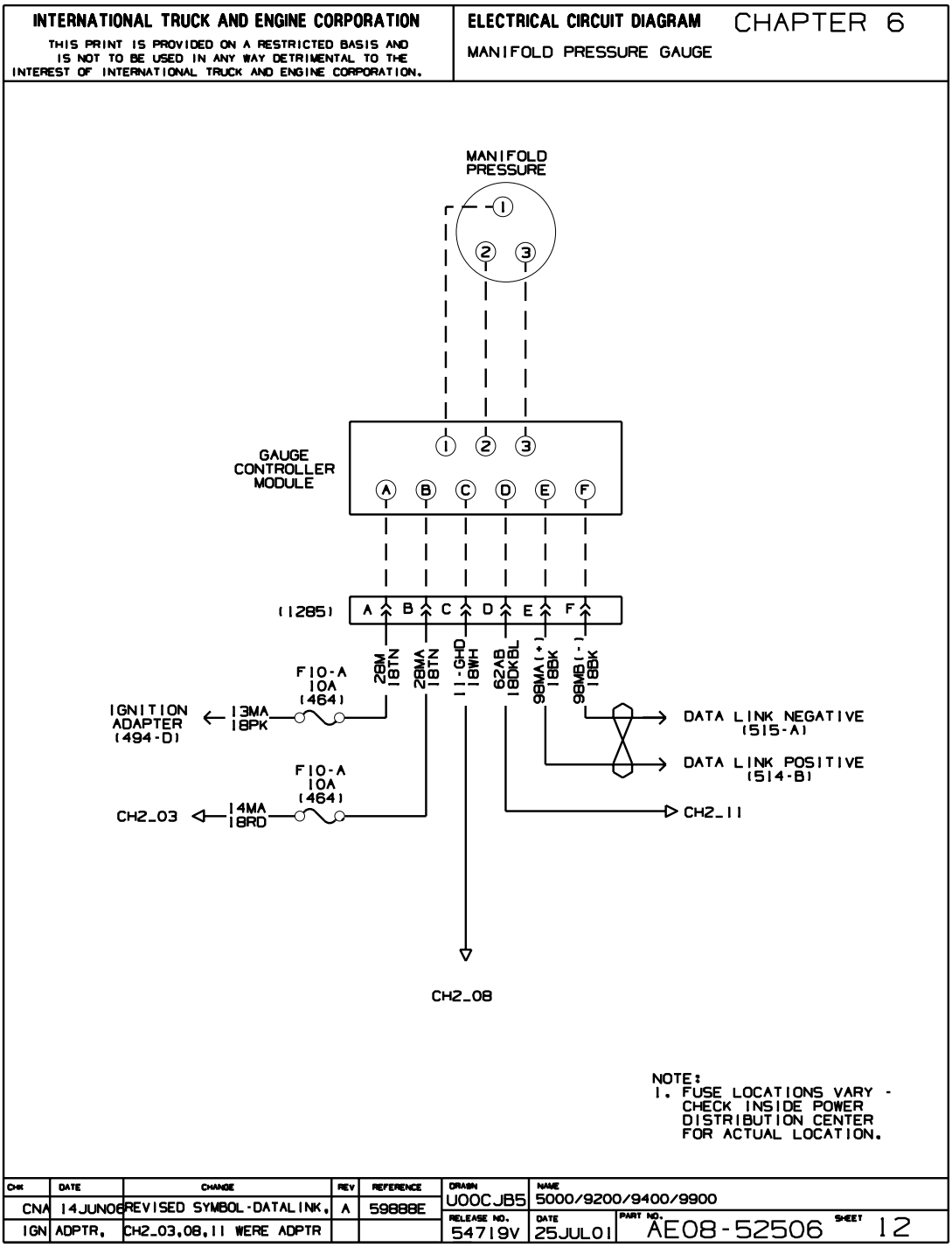


Figure 87 Manifold Pressure Gauge

6.13. CUMMINS ISX07/ISM07 AUTO ETHER START, P. 13

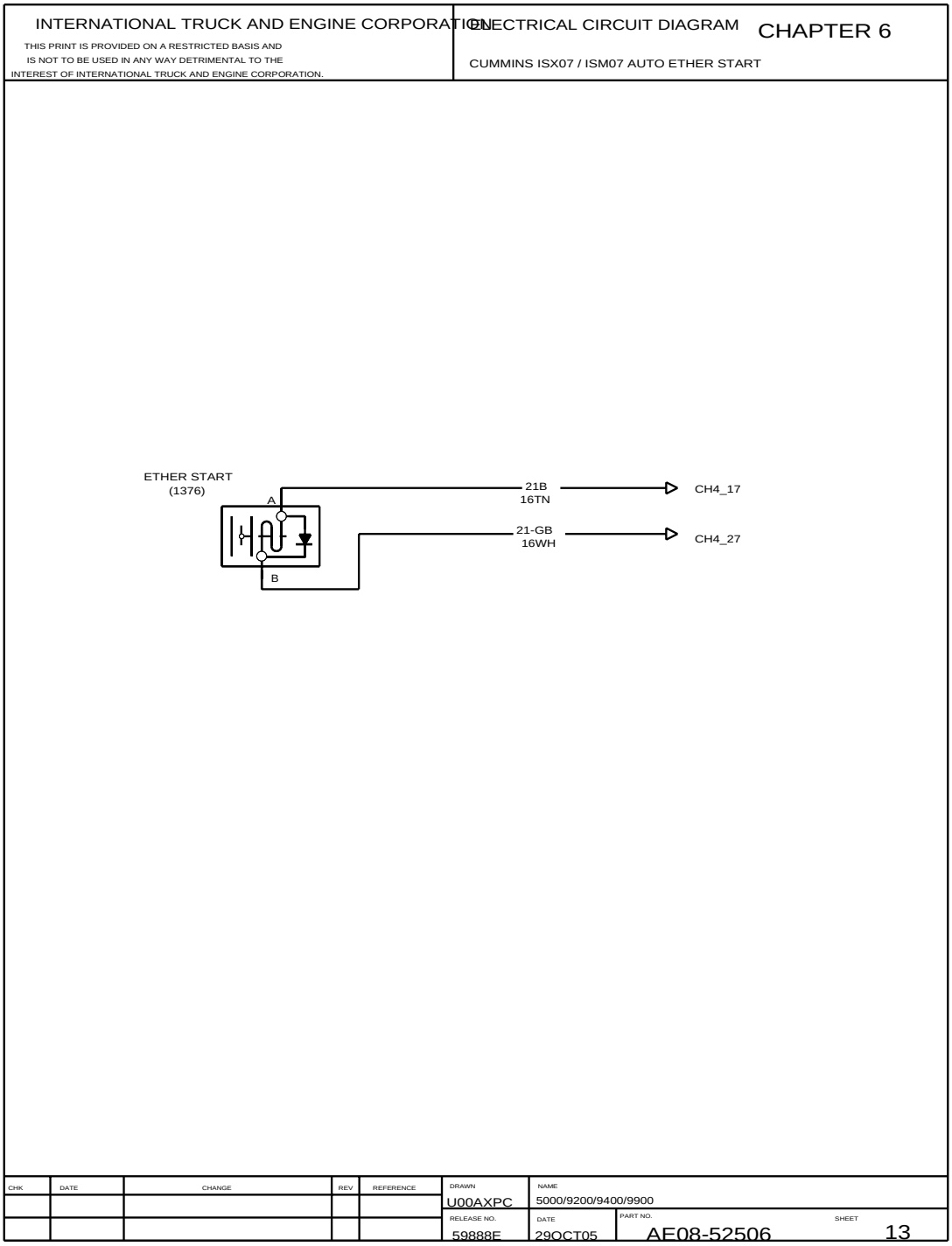


Figure 88 Cummins ISX07/ISM07 Auto Ether Start

7. WARNING LIGHTS (CHAPTER 7)

7.1. AIR SUSPENSION RELEASE WARNING LIGHT, P. 1

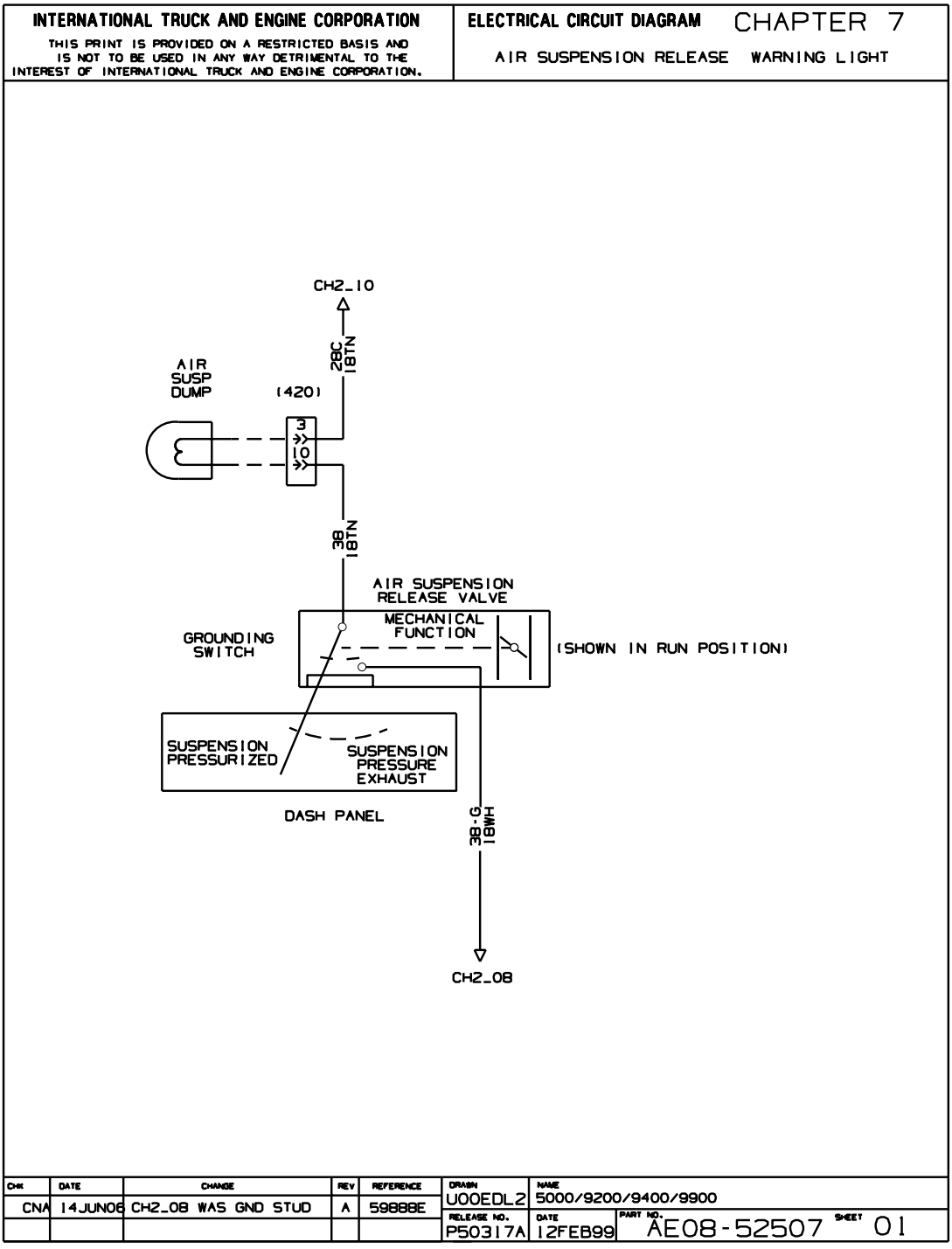


Figure 89 Air Suspension Release Warning Light

7.2. ENGINE OIL PRESSURE WARNING LIGHT, P. 2

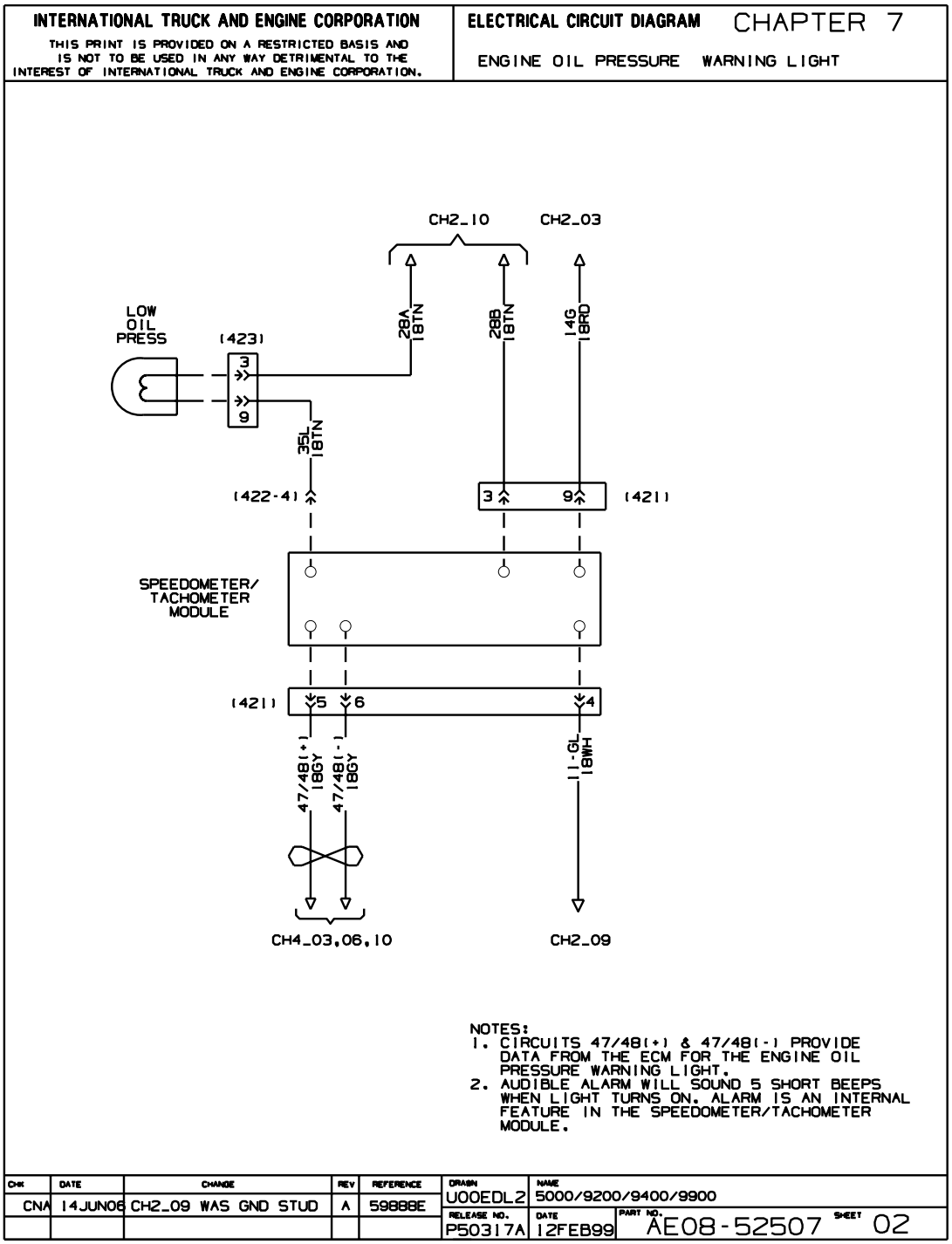


Figure 90 Engine Oil Pressure Warning Light

7.3. ENGINE WATER TEMPERATURE WARNING LIGHT, P. 3

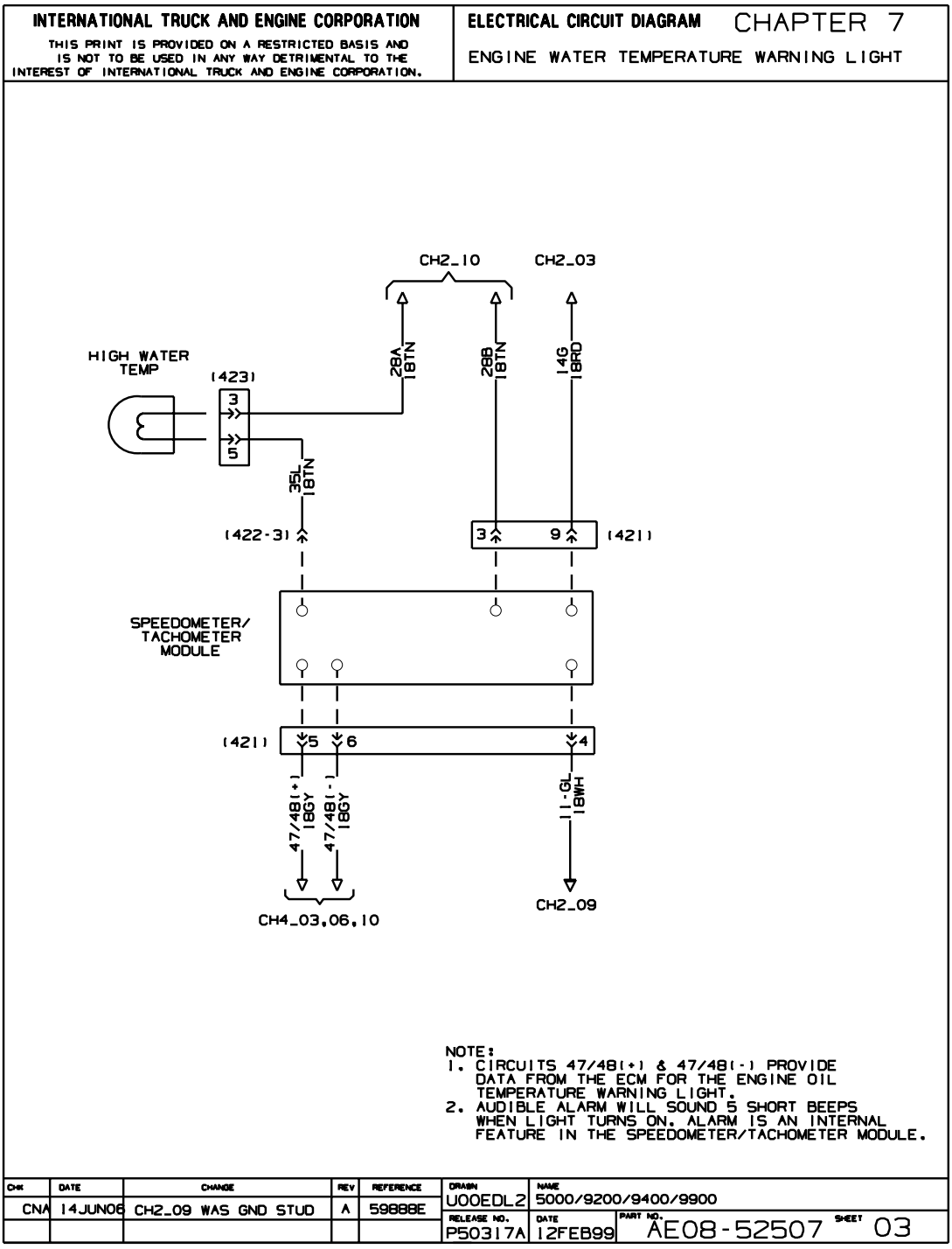


Figure 91 Engine Water Temperature Warning Light

7.4. LOW AIR PRESSURE WARNING LIGHT, P. 4

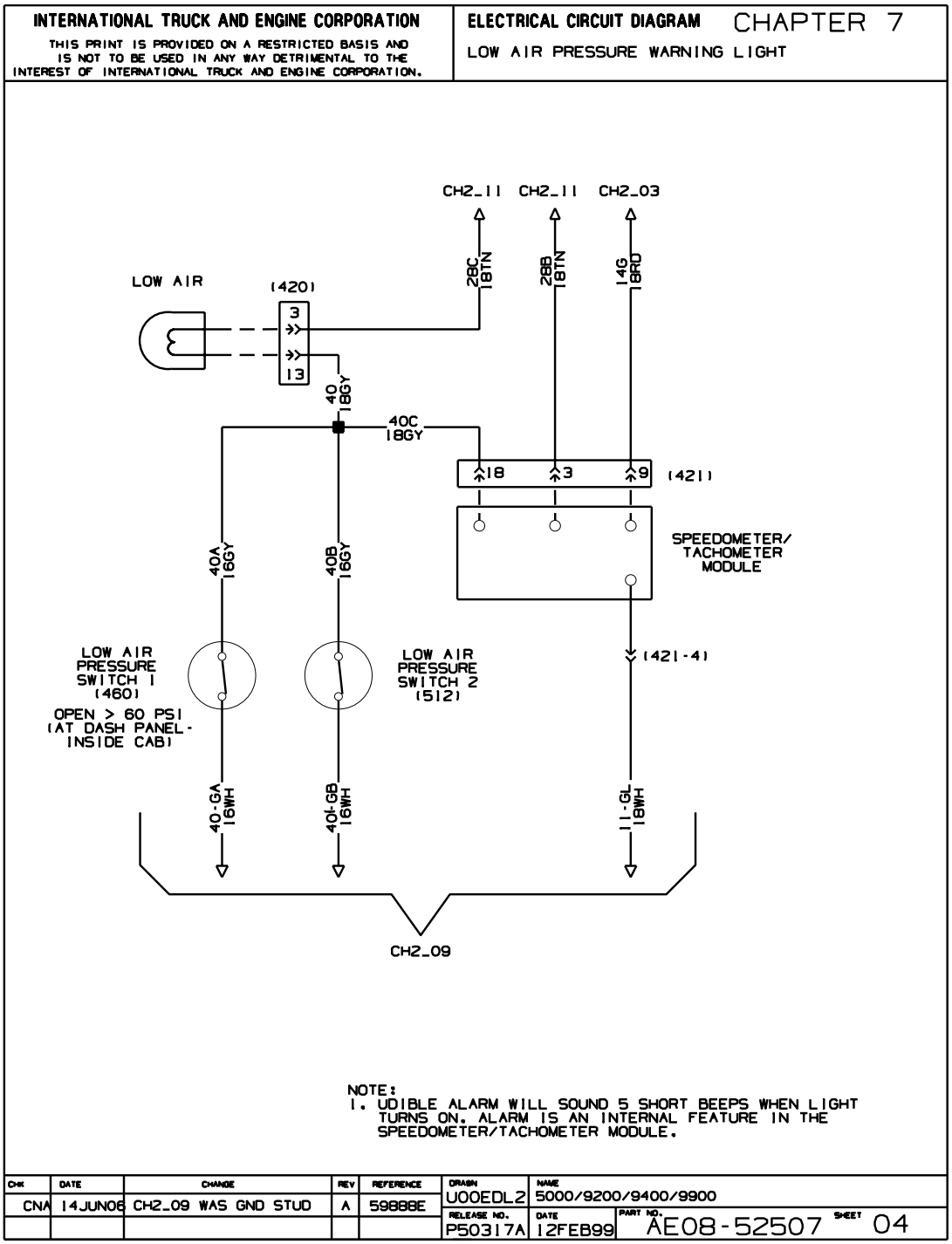


Figure 92 Low Air Pressure Warning Light

7.5. LOW FUEL LEVEL WARNING LIGHT, P. 5

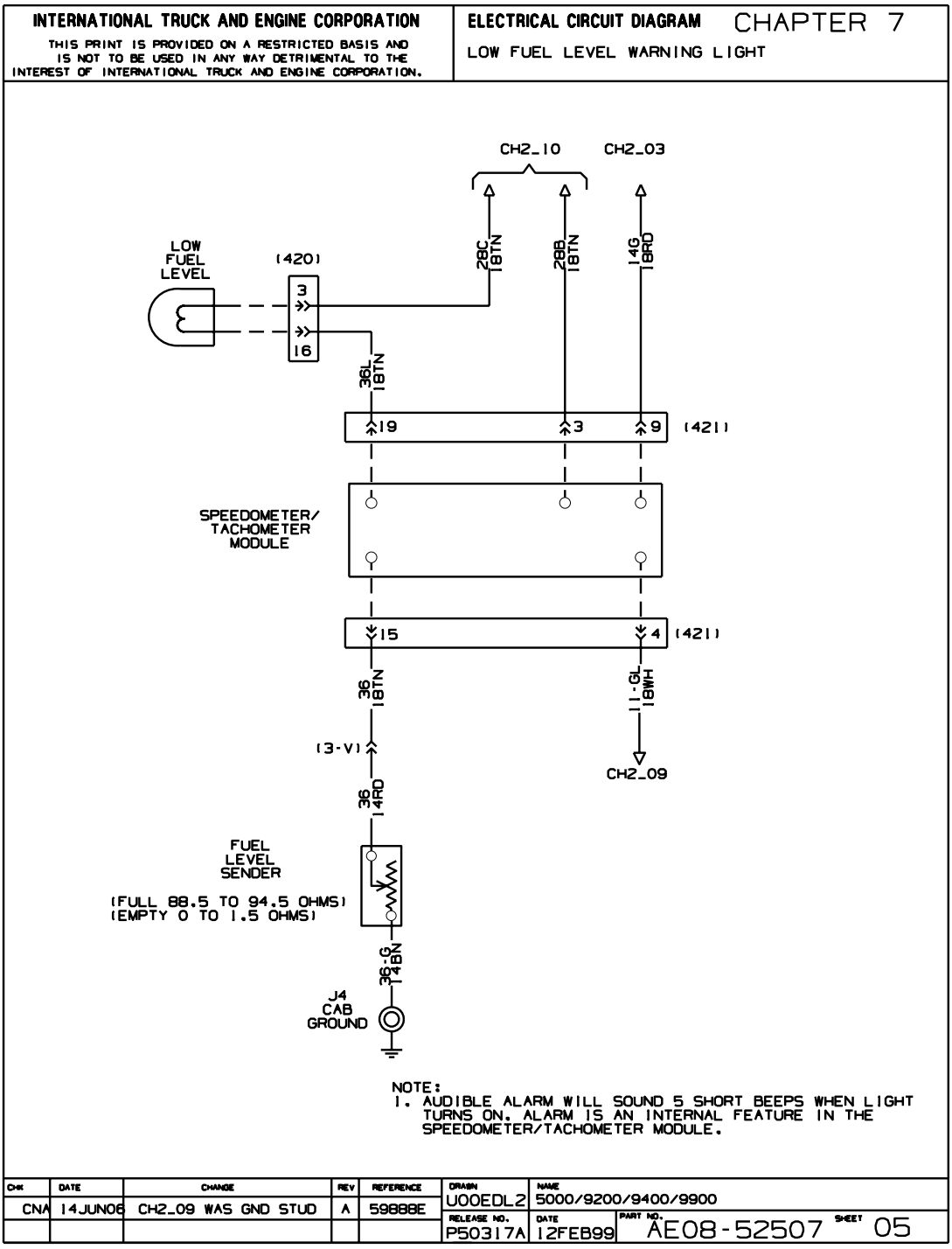


Figure 93 Low Fuel Level Warning Light

7.6. POWER DIVIDER LOCK (PDL) WARNING LIGHT AND BUZZER, P. 6

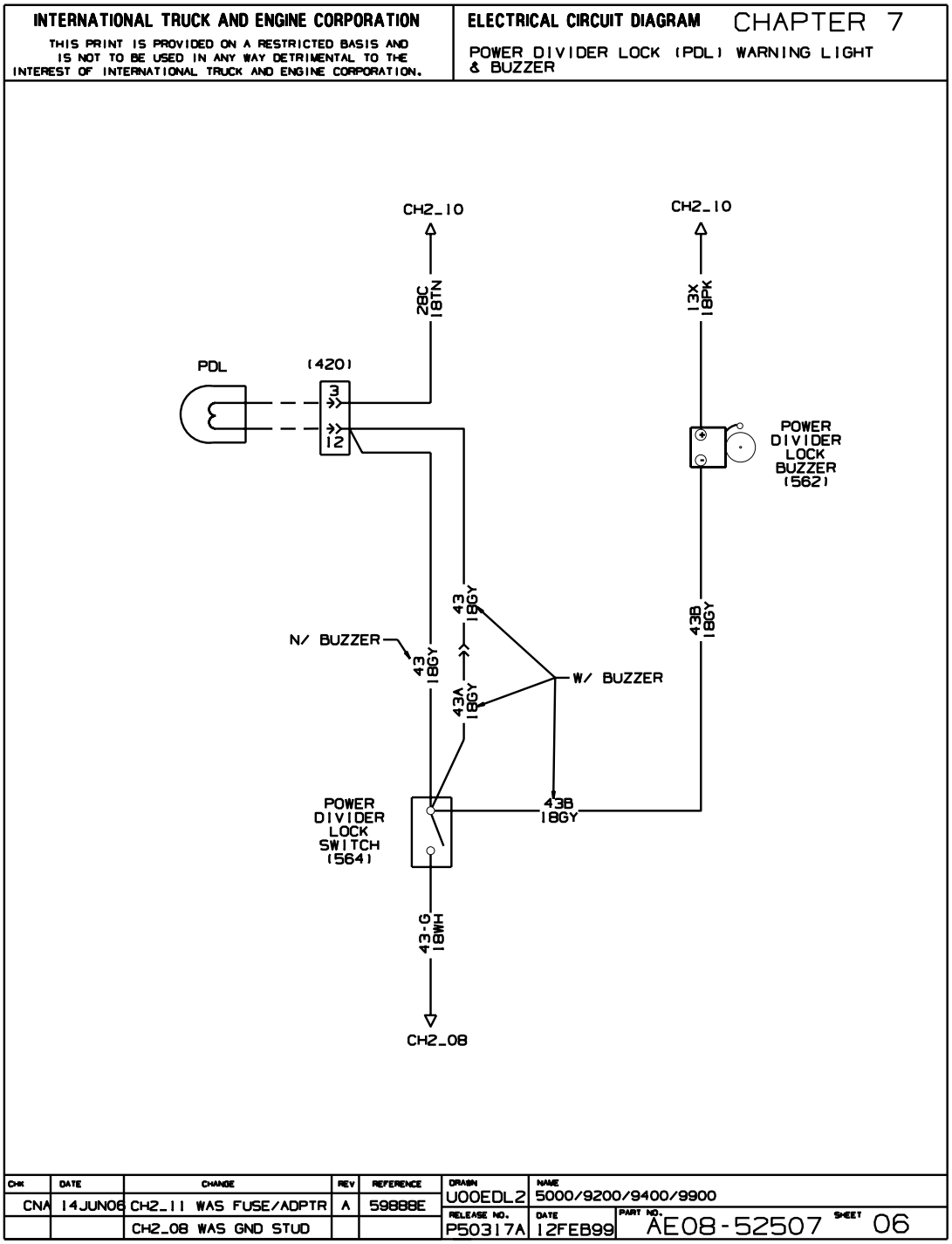


Figure 94 Power Divider Lock (PDL) Warning Light and Buzzer

7.7. DIFFERENTIAL LOCK WARN LIGHT — 4X2, P. 7

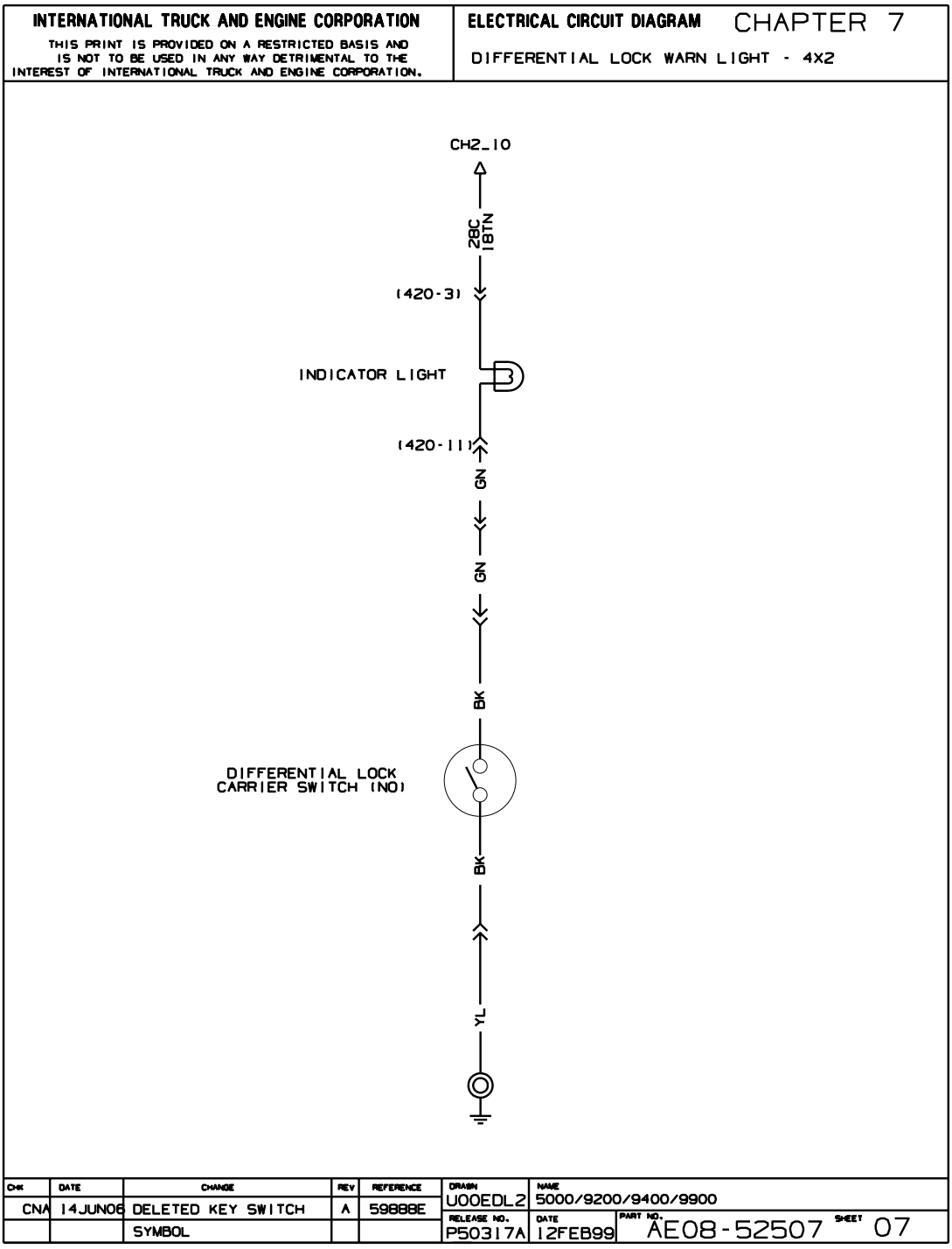


Figure 95 Differential Lock Warn Light — 4x2

7.8. DIFFERENTIAL LOCK WARN LIGHT — 6X4, P. 8

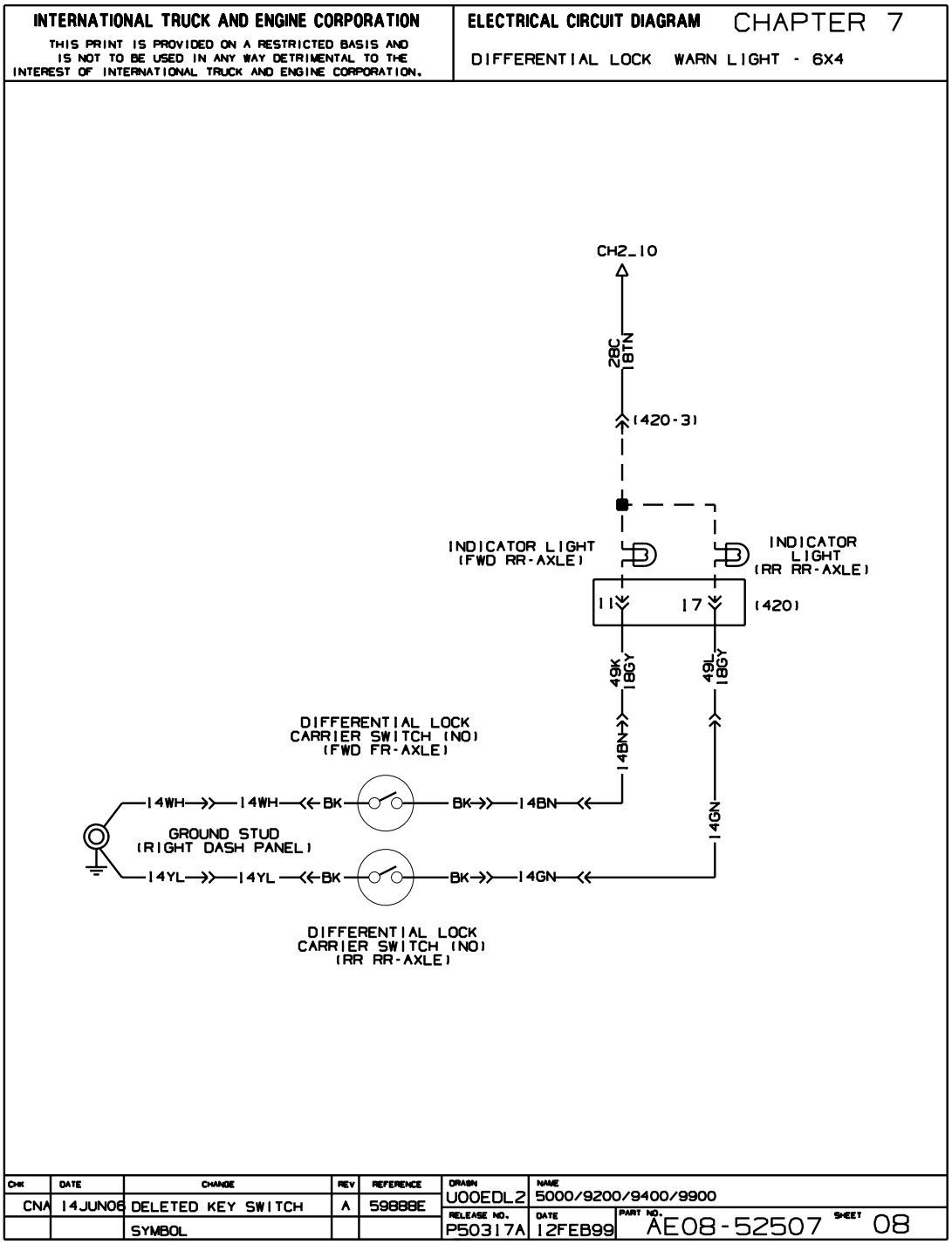


Figure 96 Differential Lock Warn Light — 6x4

7.9. CUMMINS ISL — WAIT TO START, P. 9

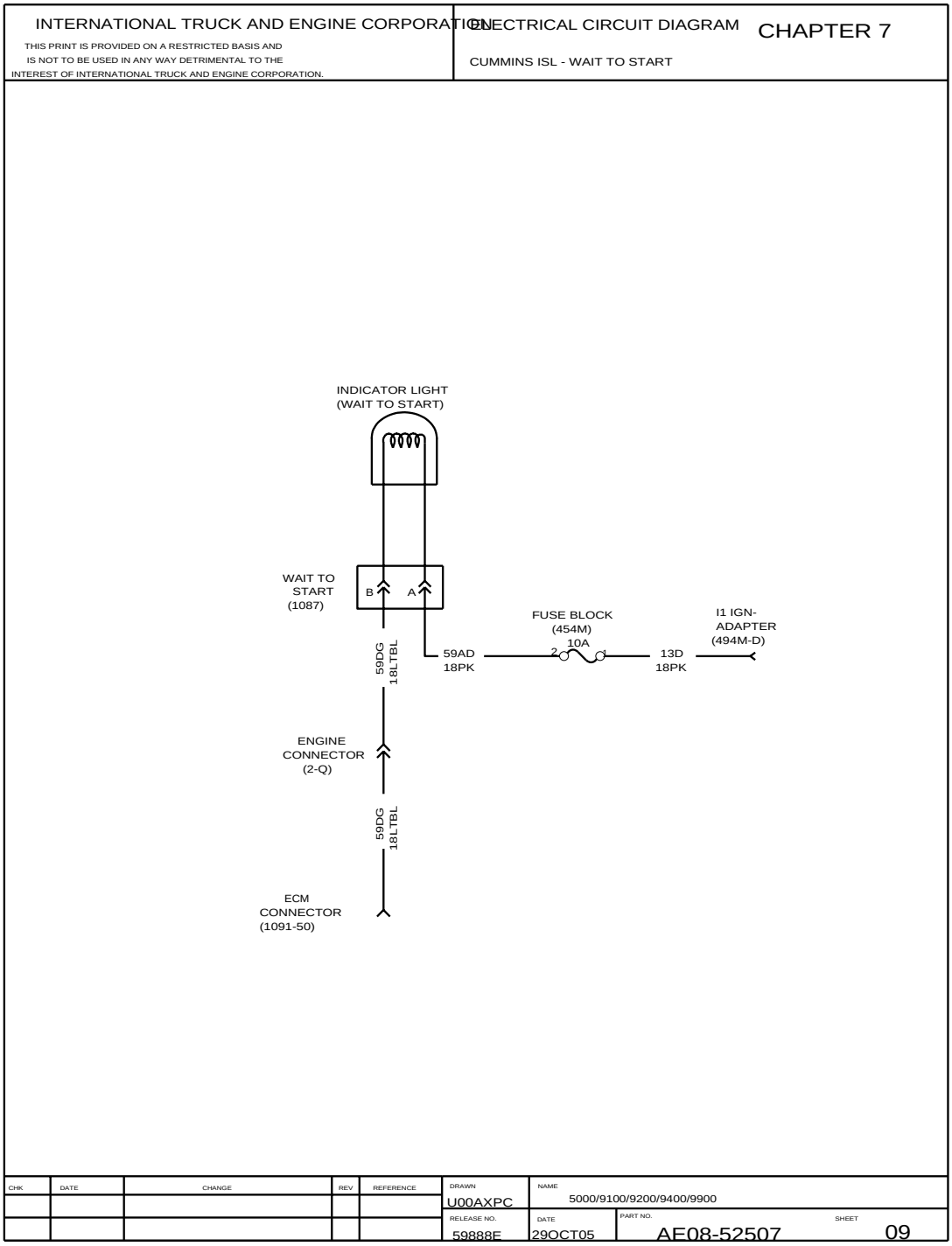


Figure 97 Cummins ISL — Wait to Start

8. CAB ACCESSORIES (CHAPTER 8)

8.1. CIGAR LIGHTER (CAB), P. 1

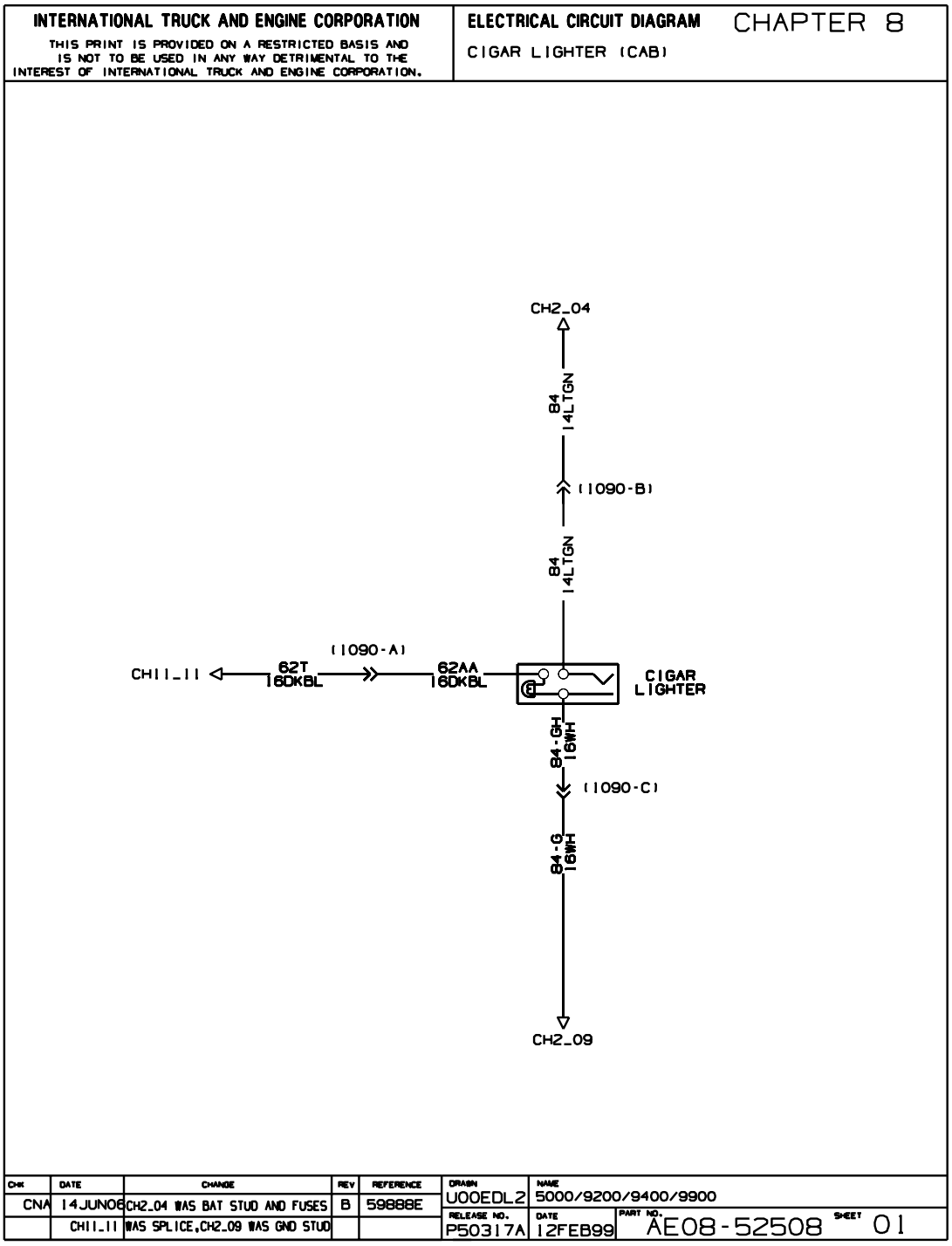


Figure 98 Cigar Lighter

8.2. CLOCK (CAB), P. 2

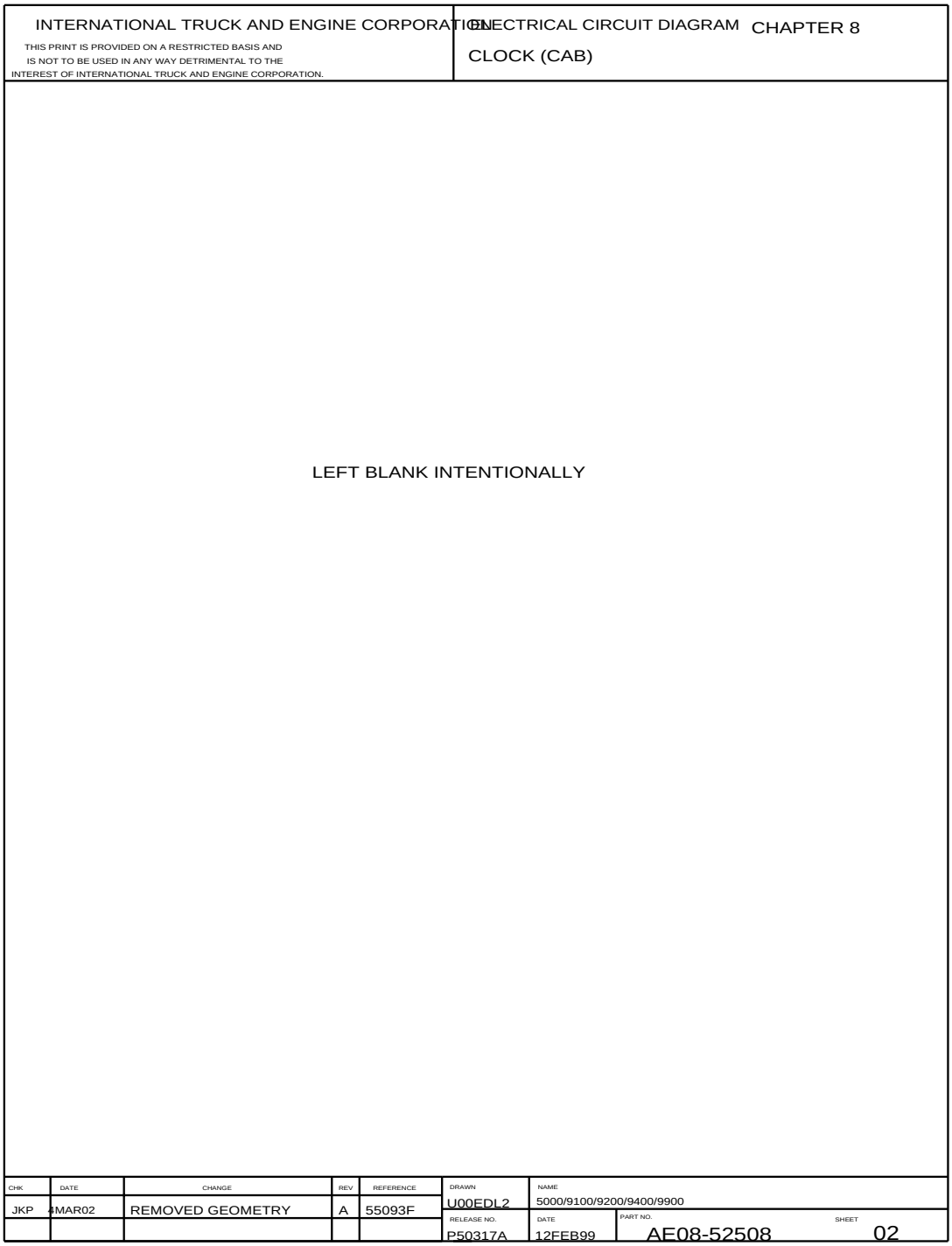


Figure 99 Clock

8.3. ELECTRIC WINDOW — RIGHT, P. 3

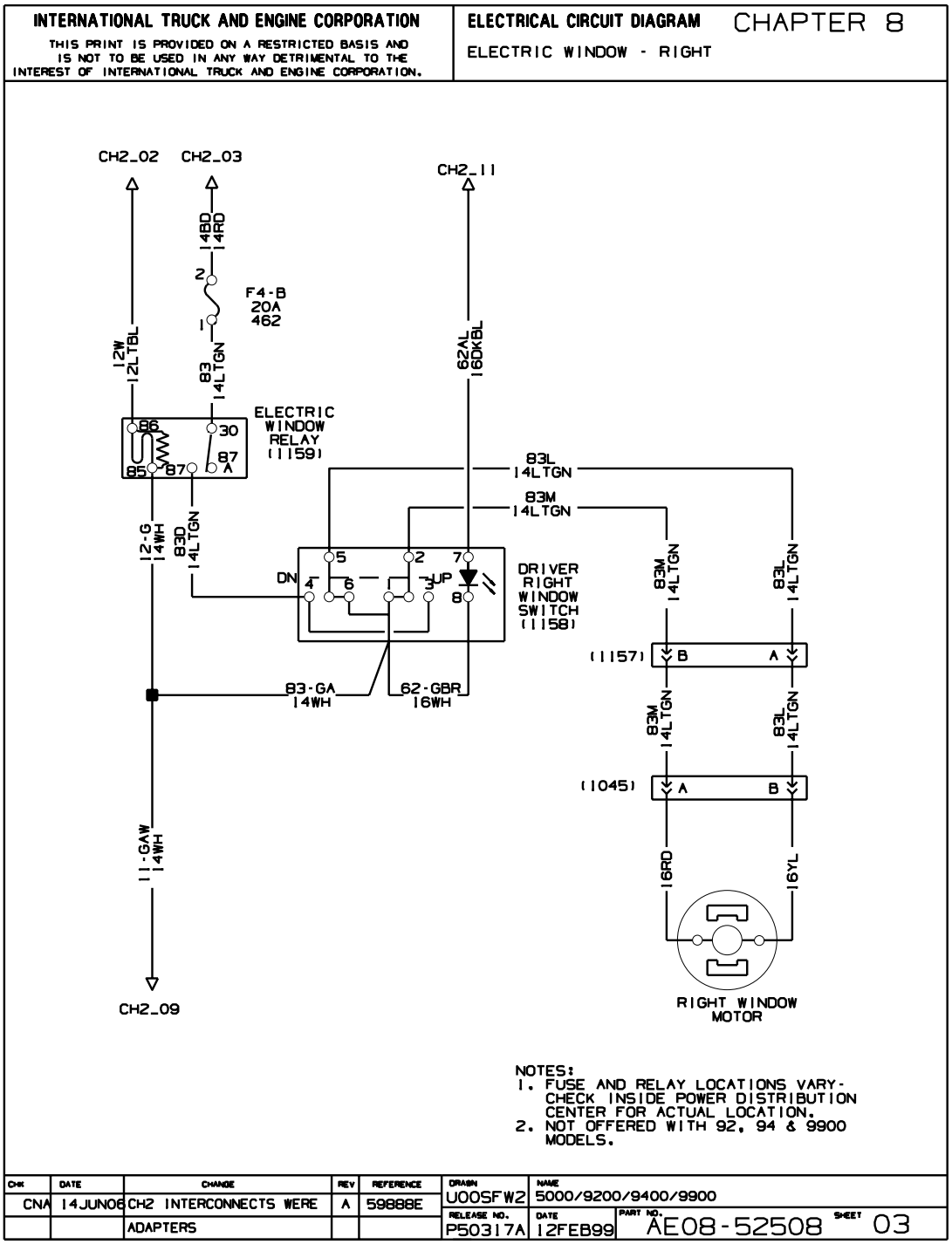


Figure 100 Electric Window — Right

8.4. ELECTRIC WINDOW — RIGHT AND LEFT, P. 4

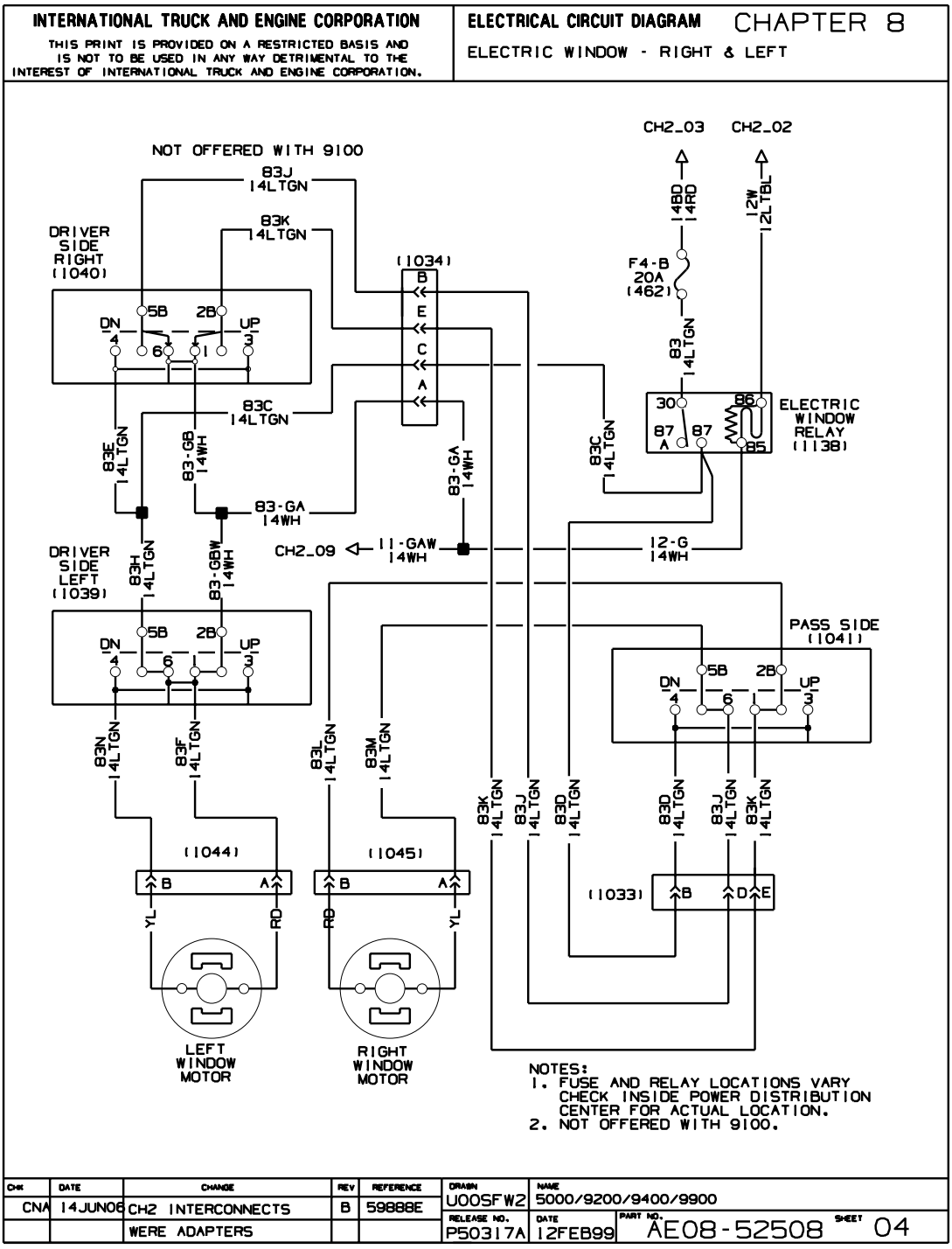


Figure 101 Electric Window — Right and Left

8.5. DEFROSTER FAN(S), P. 5

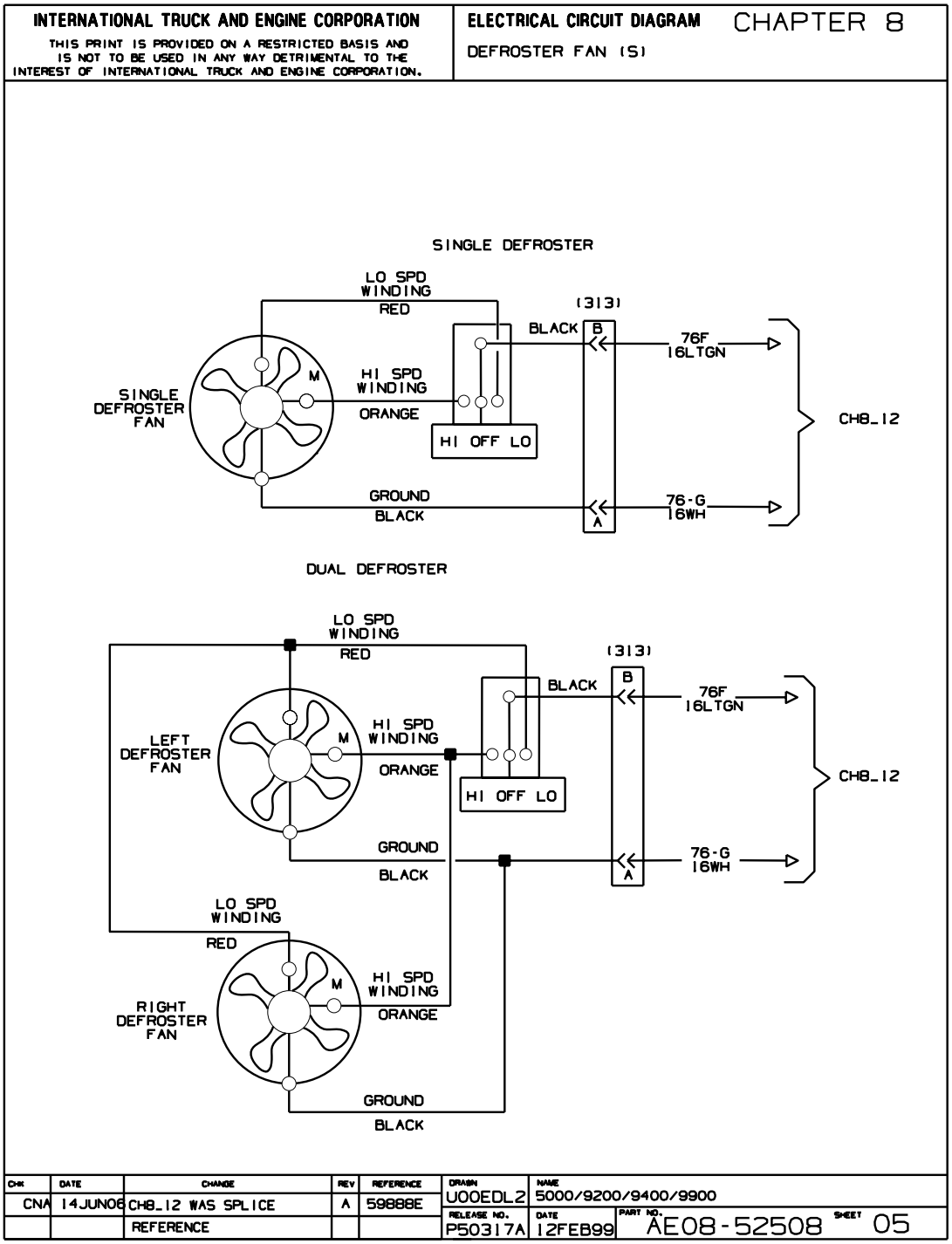


Figure 102 Defroster Fan(s)

8.6. ELECTRIC WINDSHIELD WIPERS WITH INTERMITTENT WIPE AND WASH, P. 6

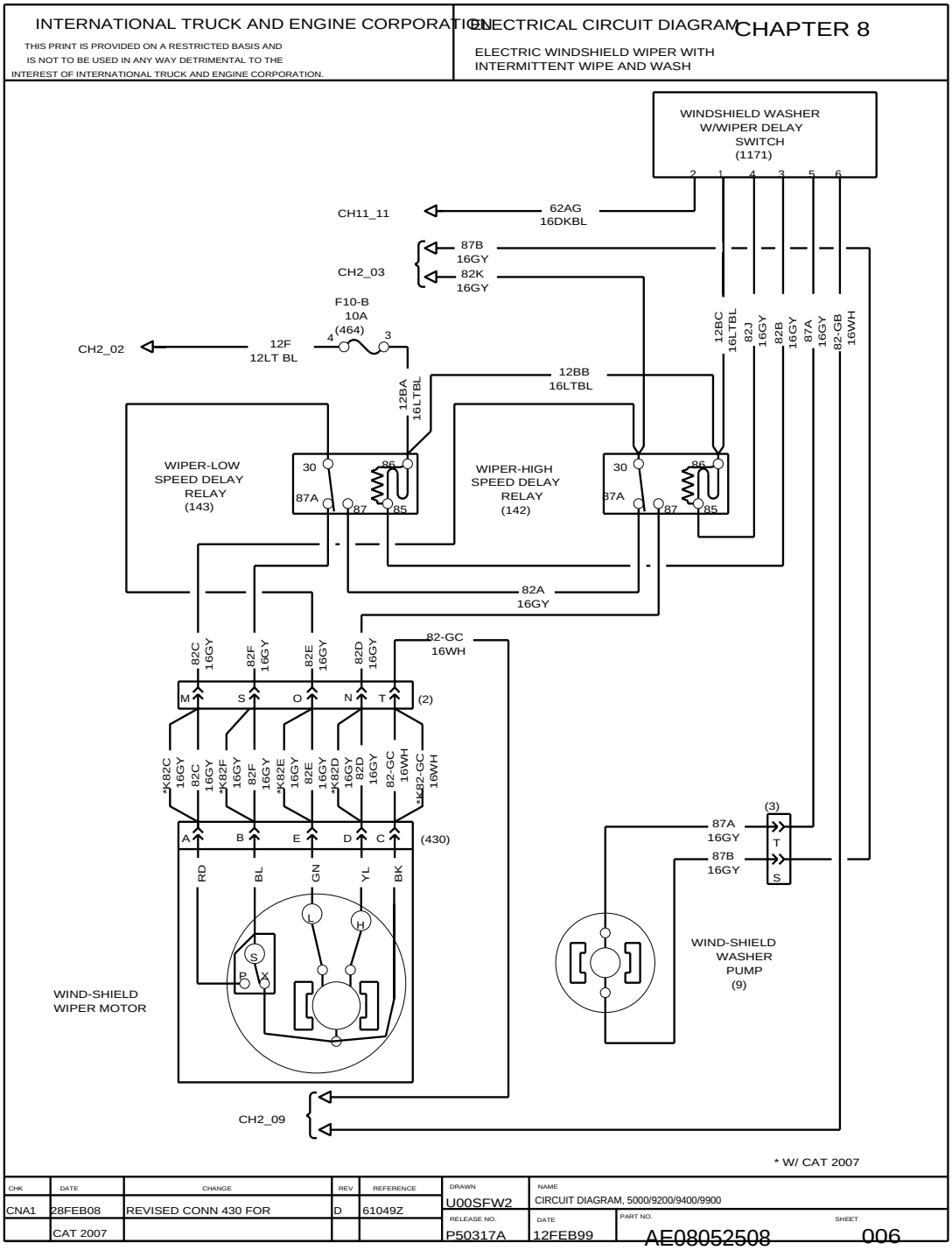


Figure 103 Electric Windshield Wipers with Intermittent Wipe and Wash

8.7. HORN, P. 7

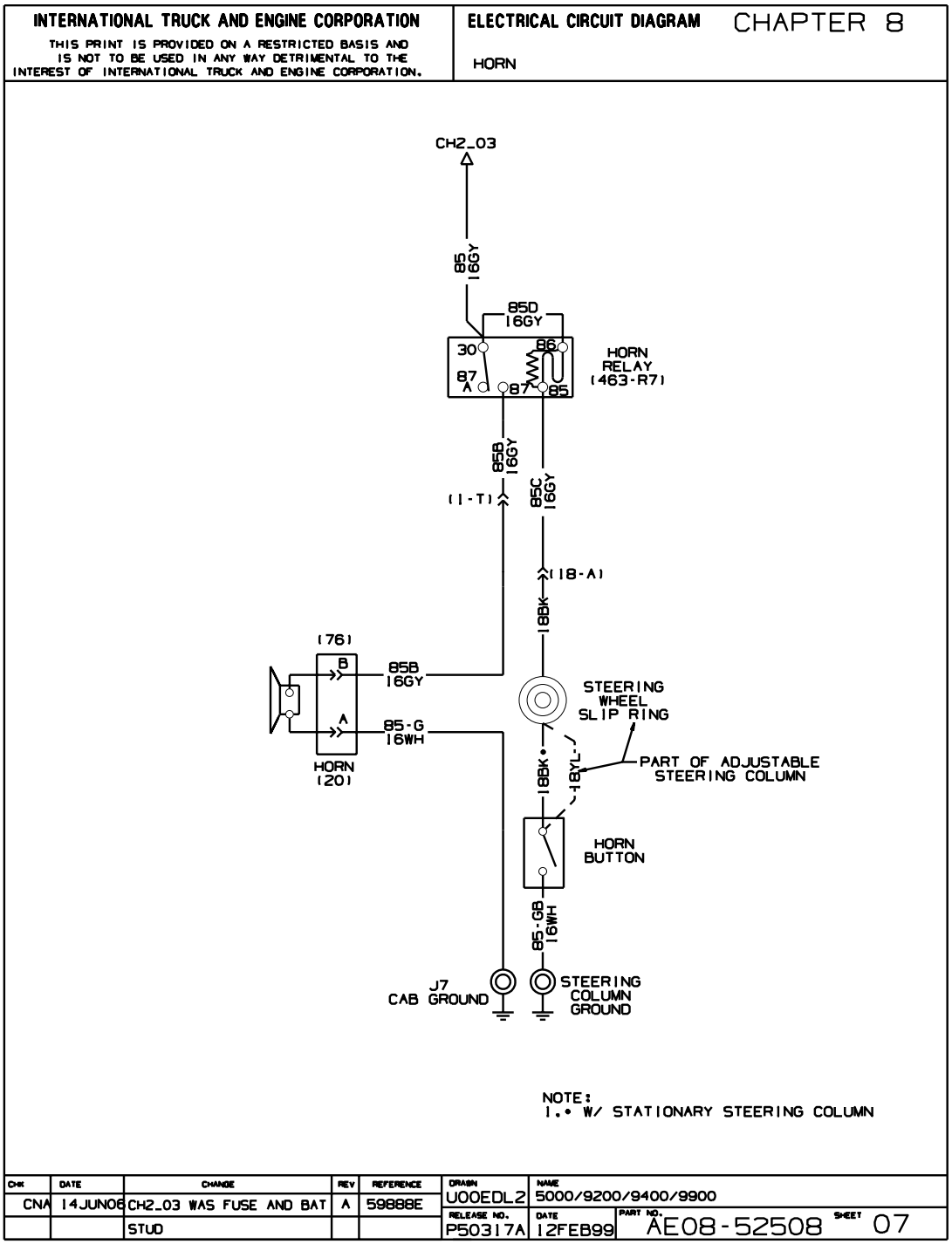


Figure 104 Horn

8.8. MIRROR LIGHTS AND HEATED MIRRORS, P. 8

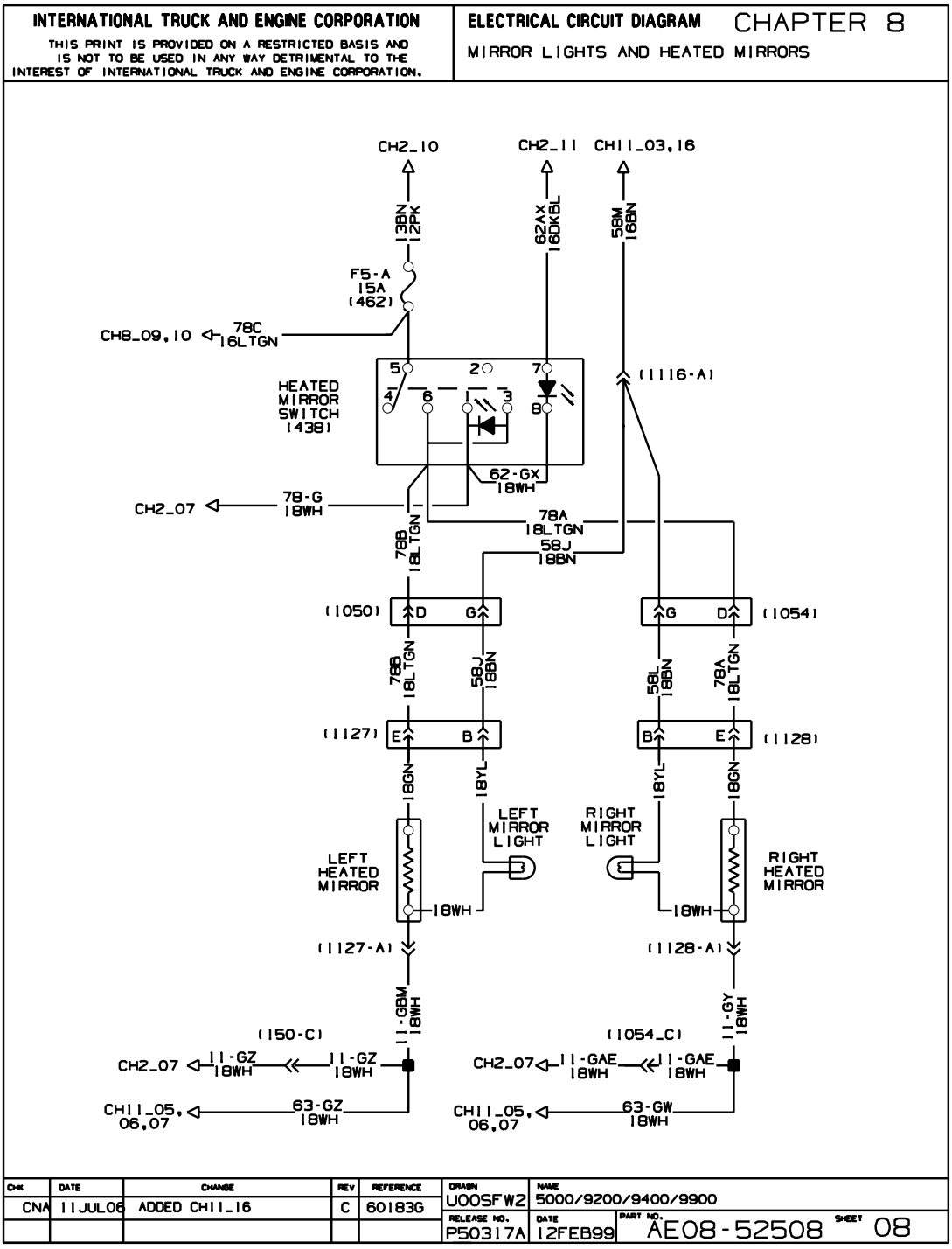


Figure 105 Mirror Lights and Heated Mirrors

8.9. LEFT AND RIGHT MOTORIZED MIRROR, P. 9

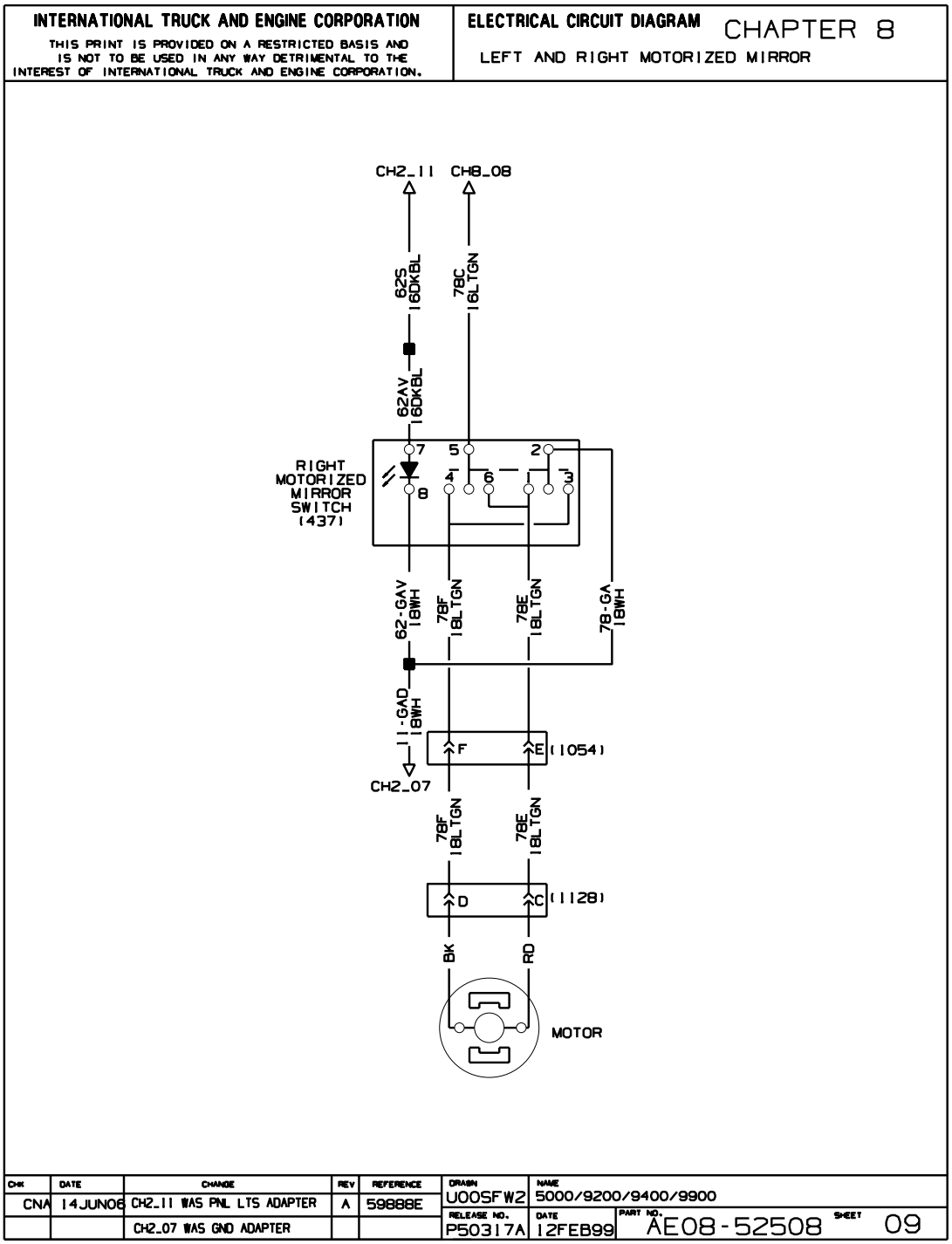


Figure 106 Left and Right Motorized Mirror

8.10. DUAL AXIS MOTORIZED MIRRORS, P. 10

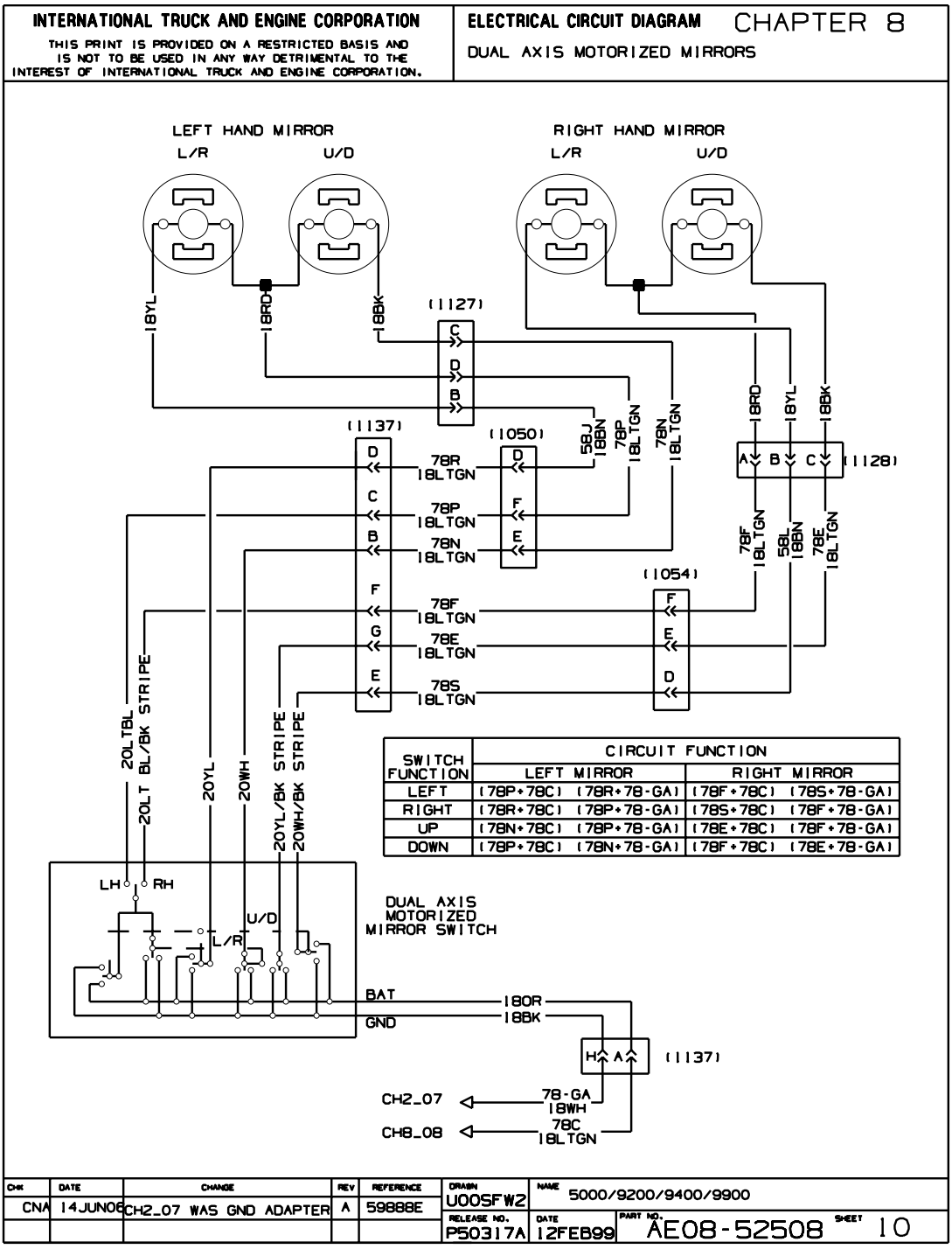


Figure 107 Dual Axis Motorized Mirrors

8.11. POWER SOURCE (CB), P. 11

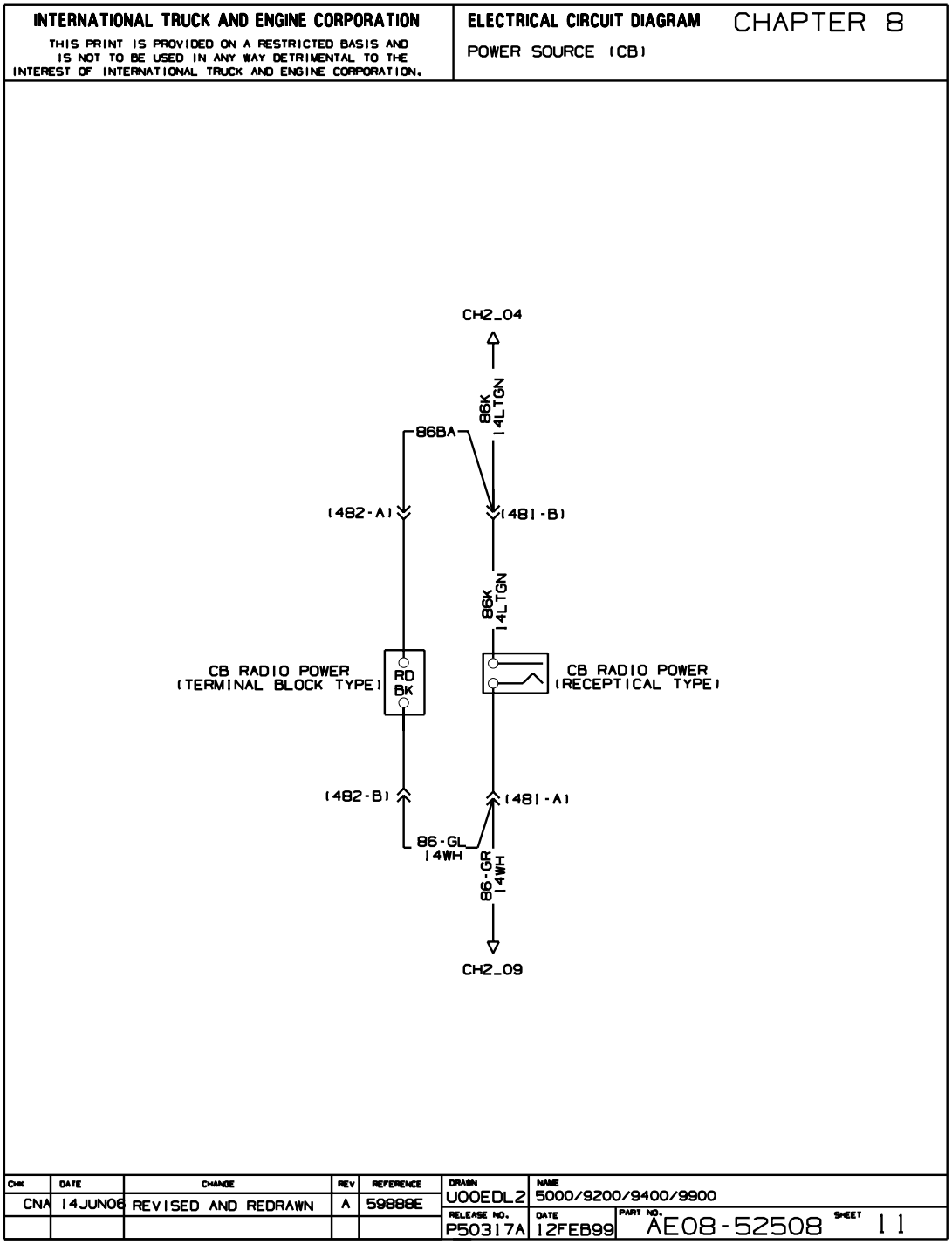


Figure 108 Power Source (CB)

8.12. RADIO-CB ACCOMMODATION PACKAGE, P. 12

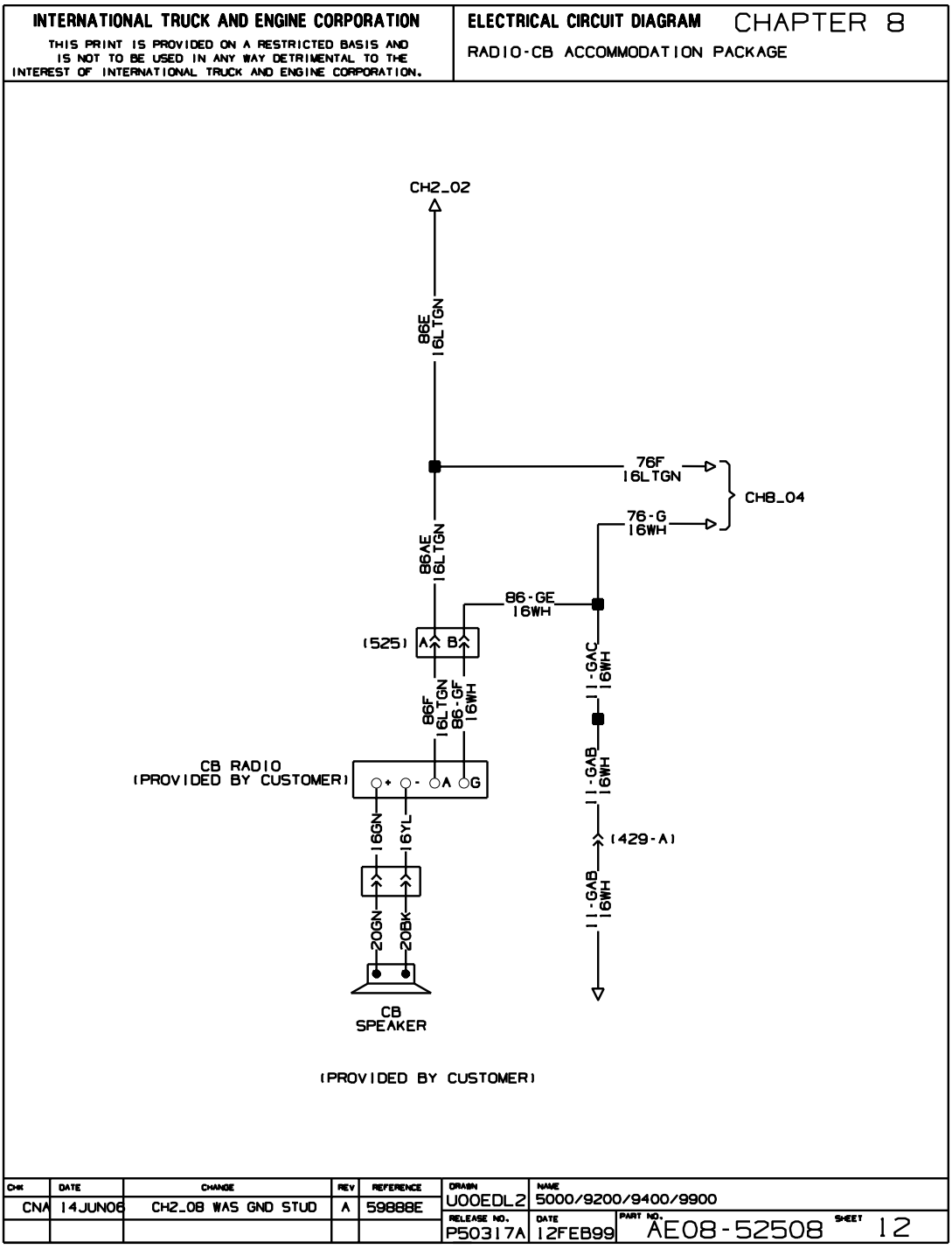


Figure 109 Radio-CB Accommodation Package

8.13. RADIO-CAB, SPEAKERS, P. 13

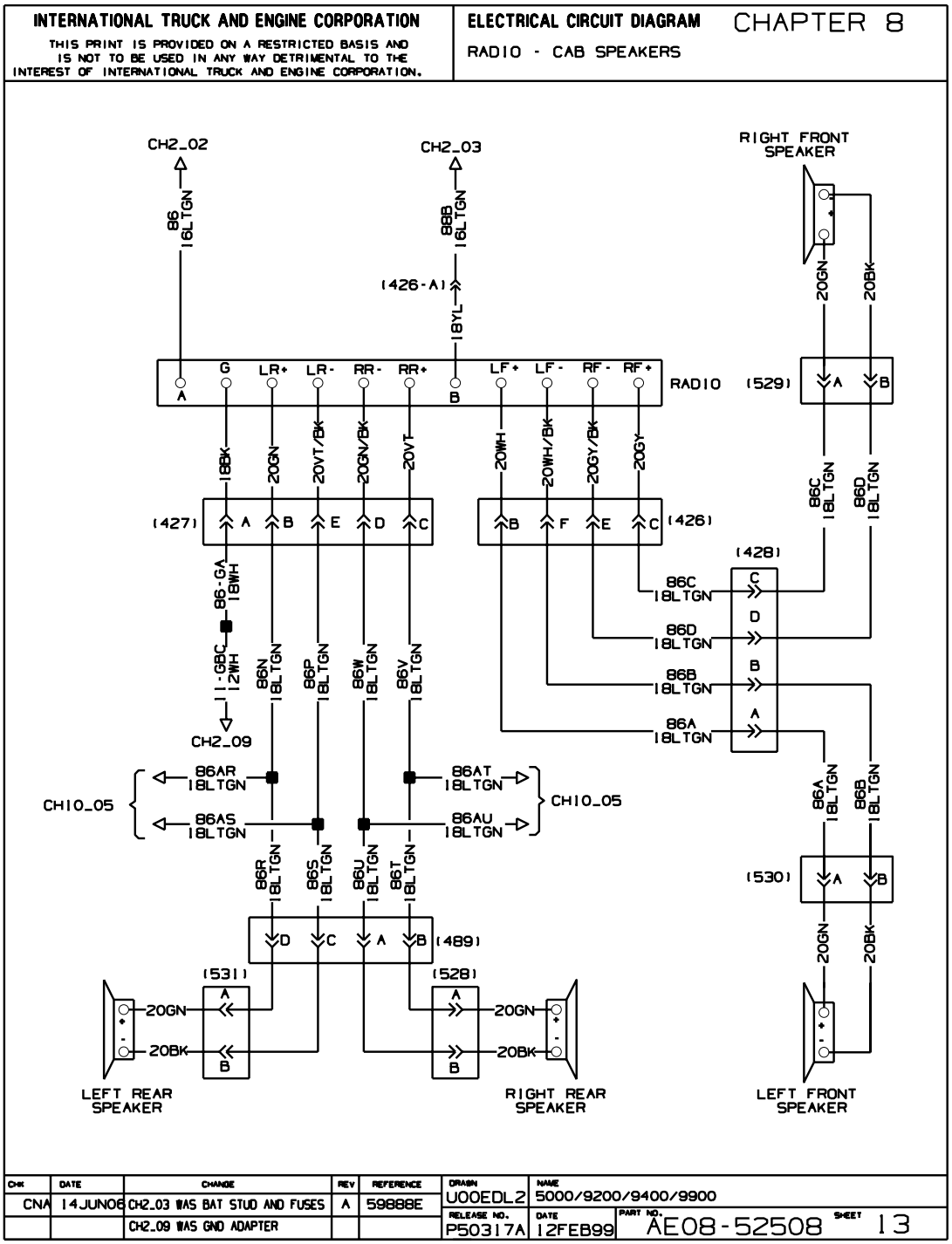


Figure 110 Radio-Cab Speakers

8.14. OWNER/OPERATOR SPARE SWITCH, P. 14

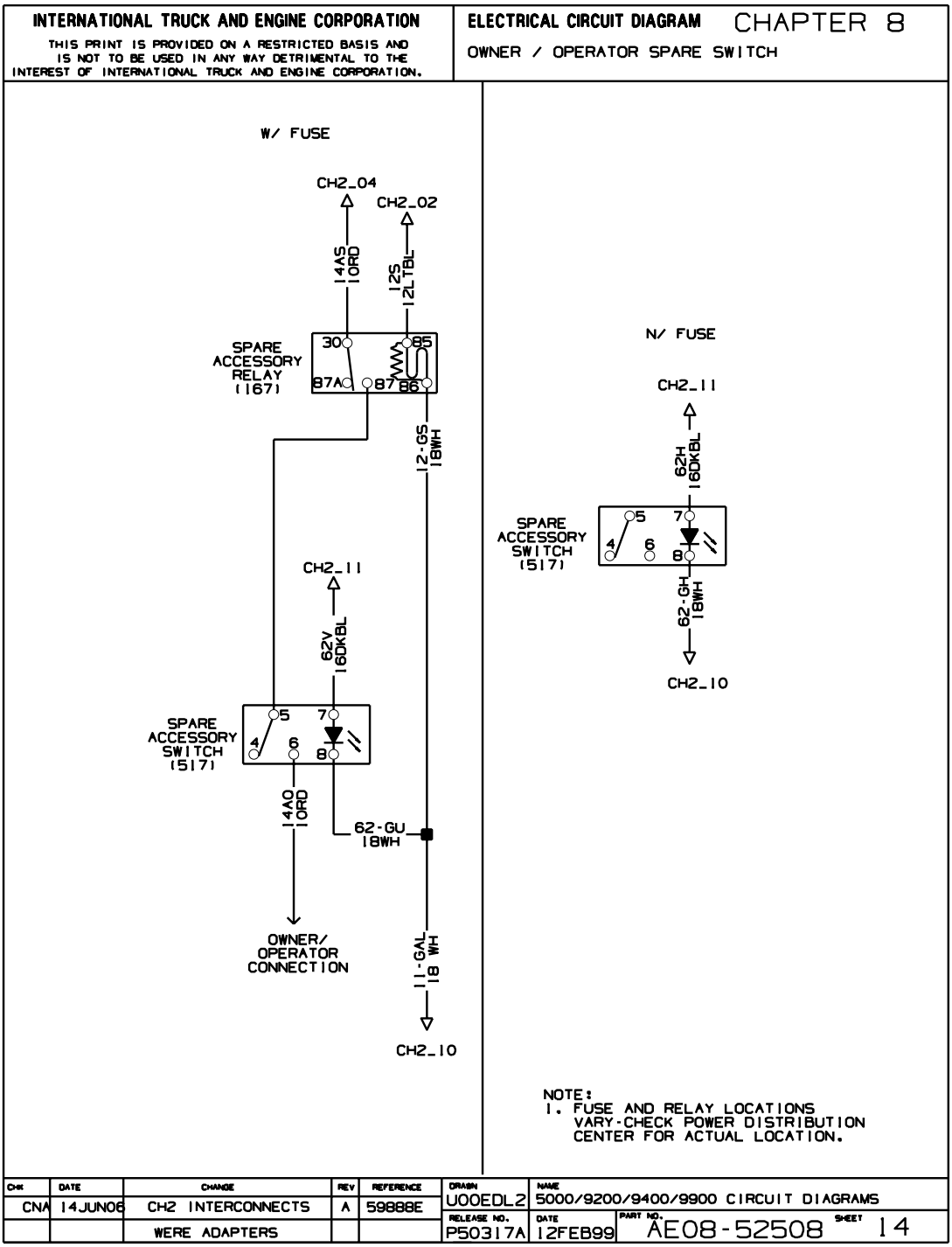


Figure 111 Owner/Operator Spare Switch

8.15. ELECTRIC LOCK — RIGHT AND LEFT, P. 15

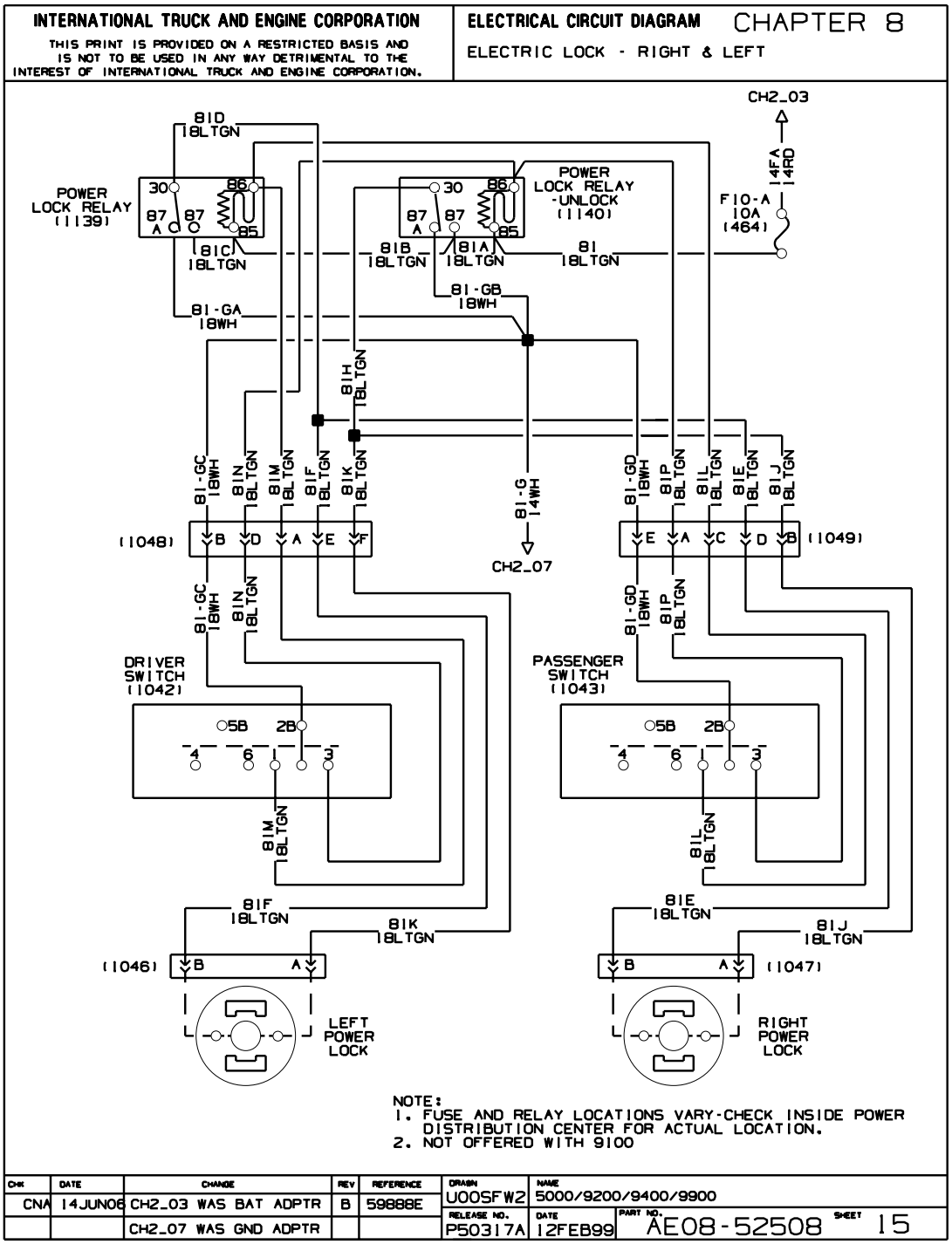


Figure 112 Electric Lock — Right and Left

8.16. INTERVISION DISPLAY, P. 16

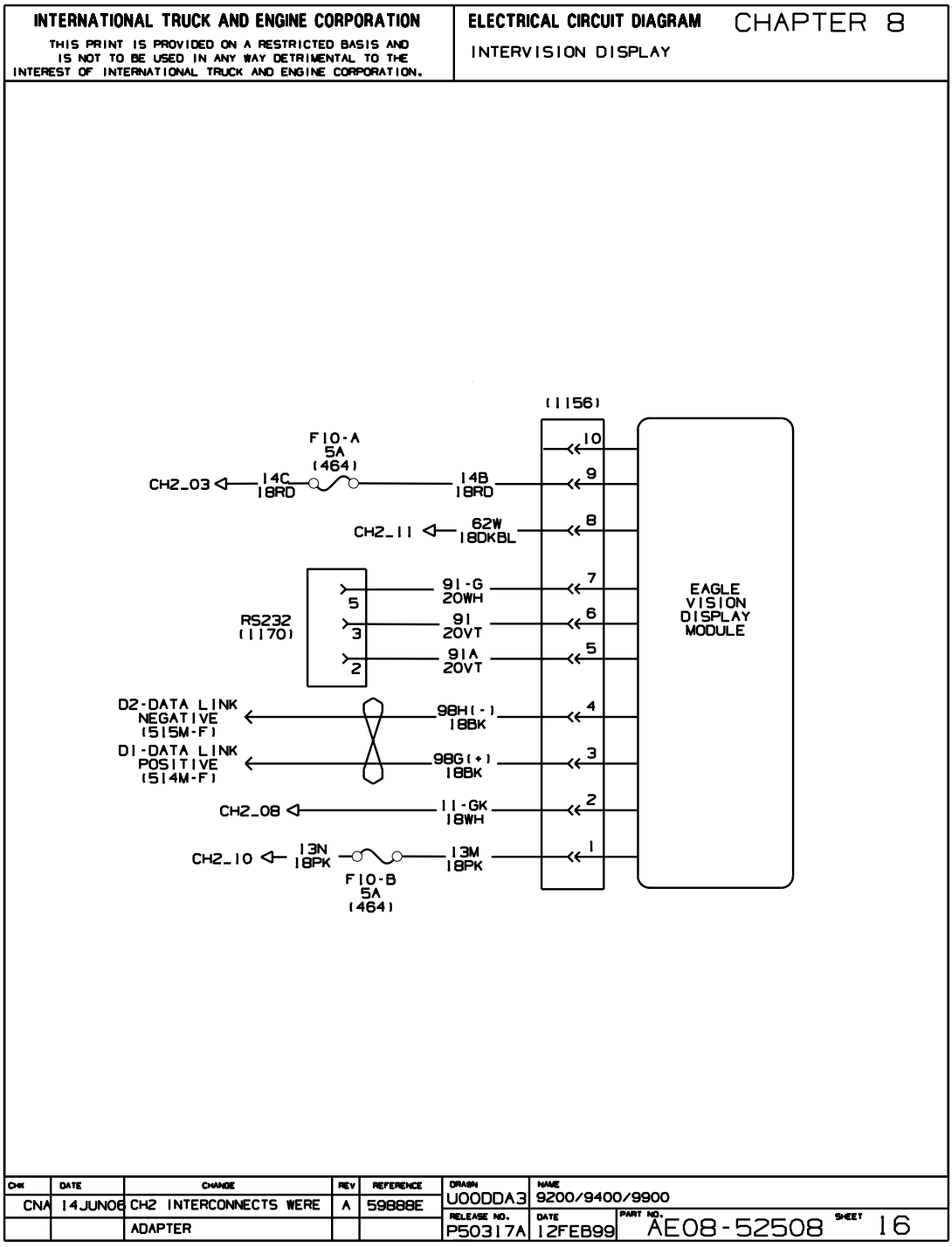


Figure 113 Intervision Display

8.17. EATON VORAD — COLLISION AVOIDANCE, P. 17

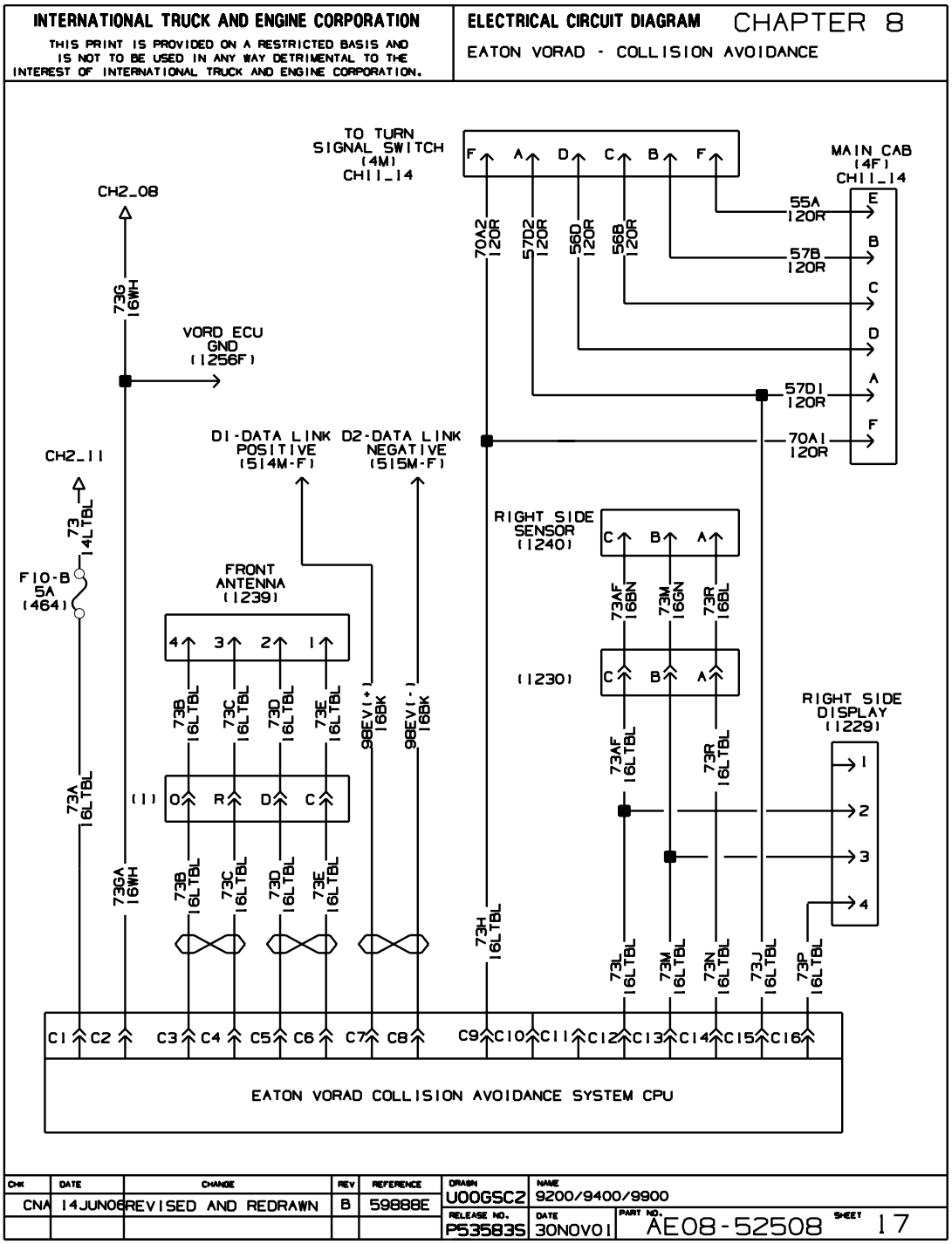


Figure 114 Eaton Vorad — Collision Avoidance

8.18. EATON VORAD — COLLISION AVOIDANCE, P. 18

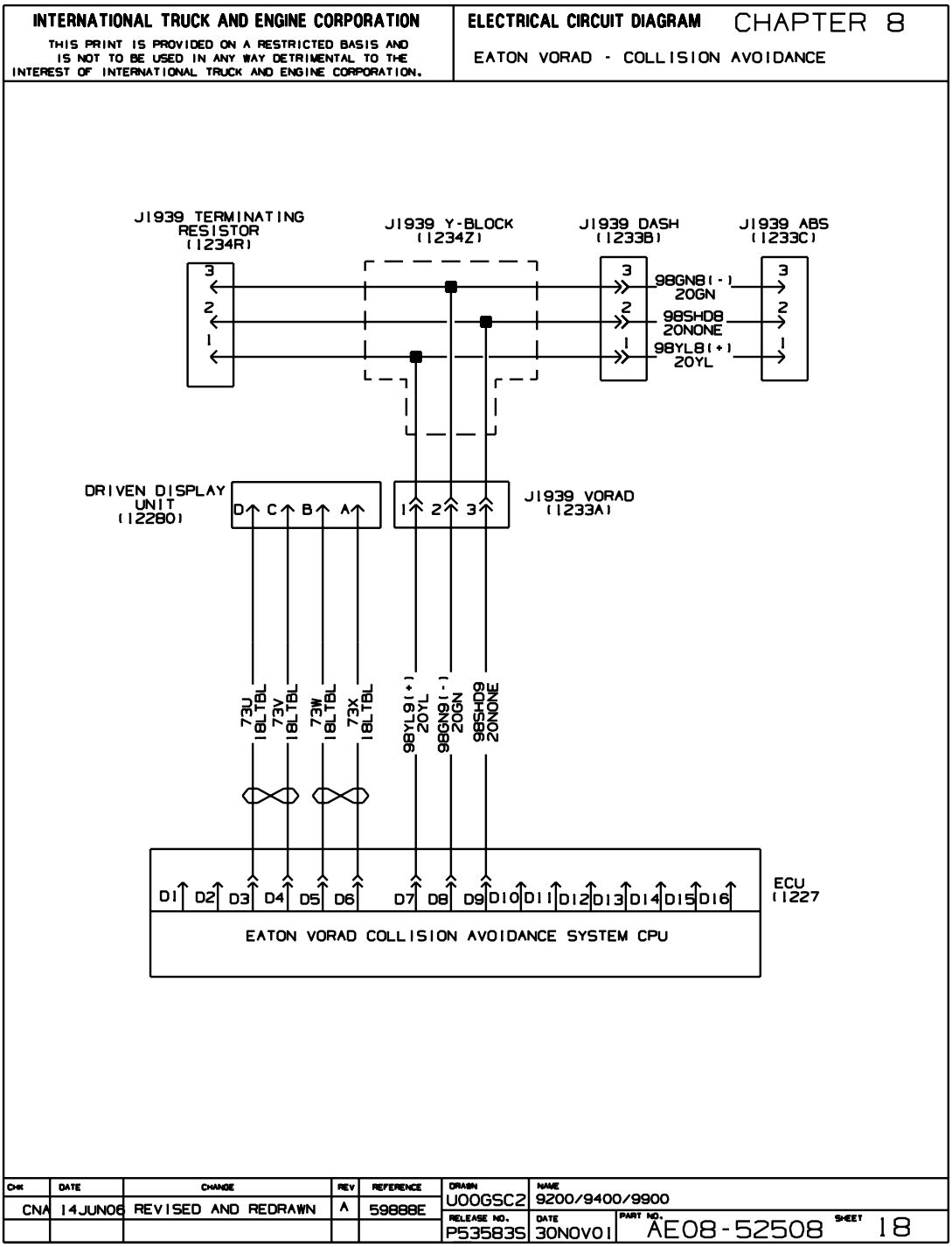


Figure 115 Eaton Vorad — Collision Avoidance

8.19. TEMPERATURE/COMPASS DISPLAY, P. 19

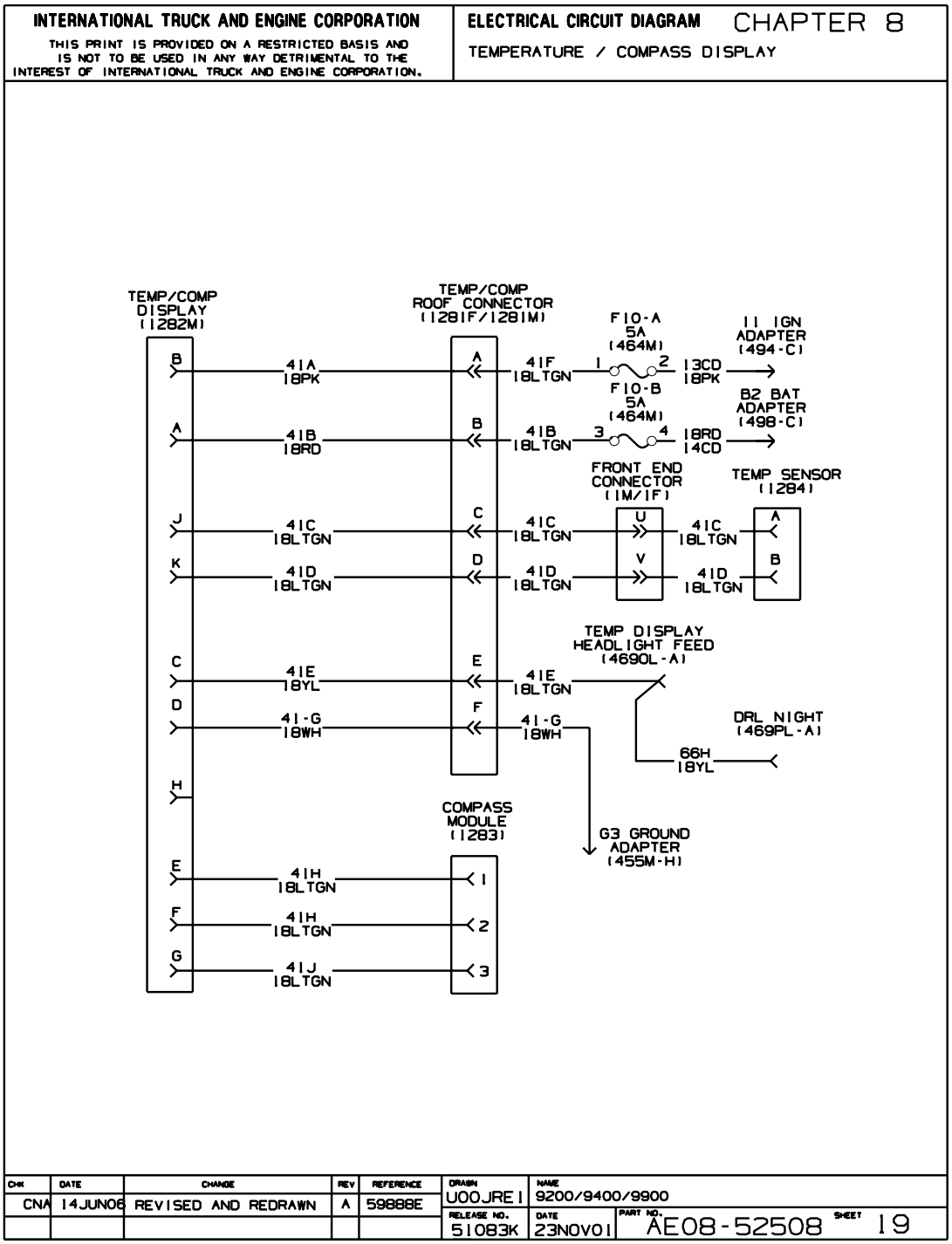


Figure 116 Temperature/Compass Display

8.20. ROAD RELAY IV, P. 20

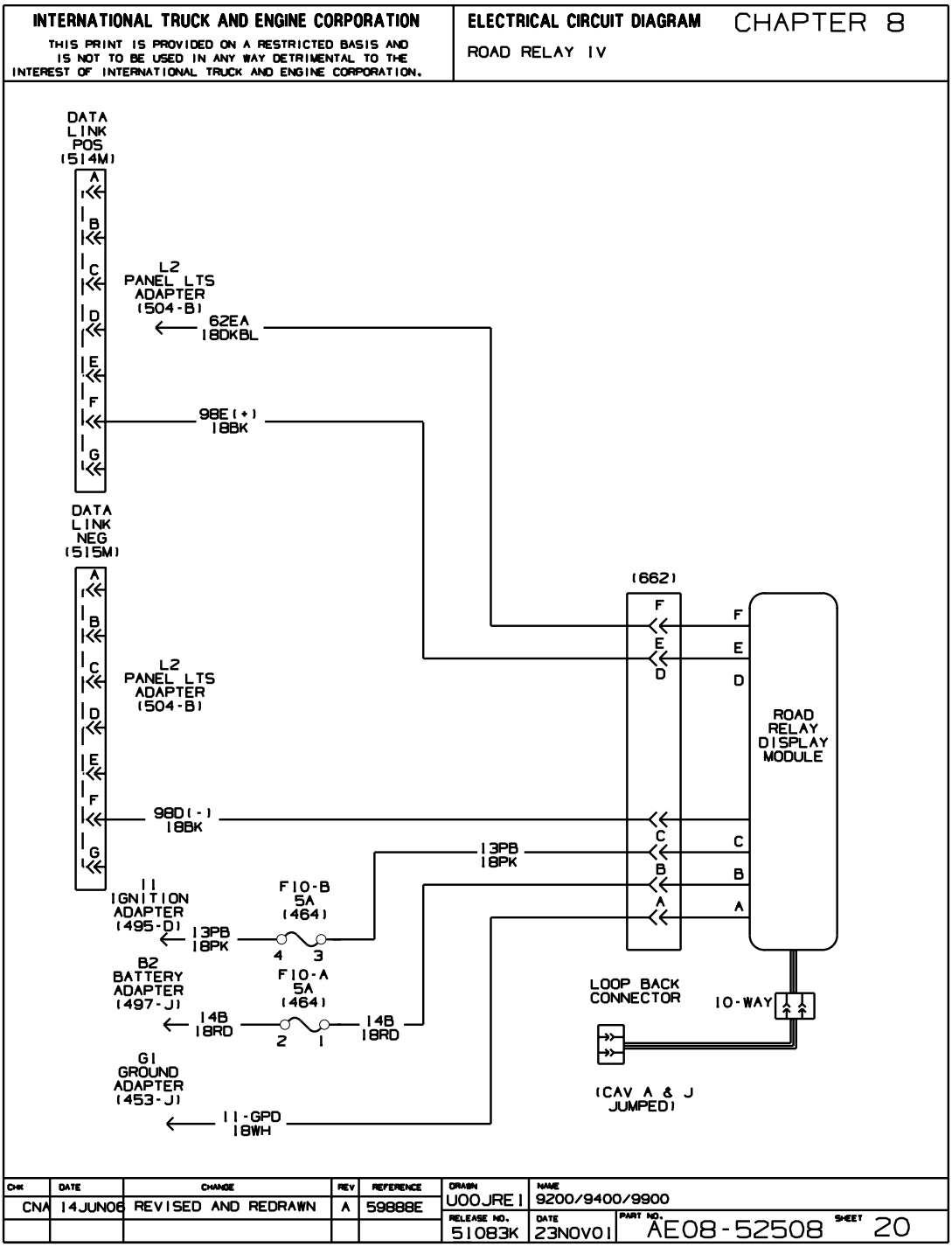


Figure 117 Road Relay IV

8.21. HEATED SEAT — DRIVER, P. 21

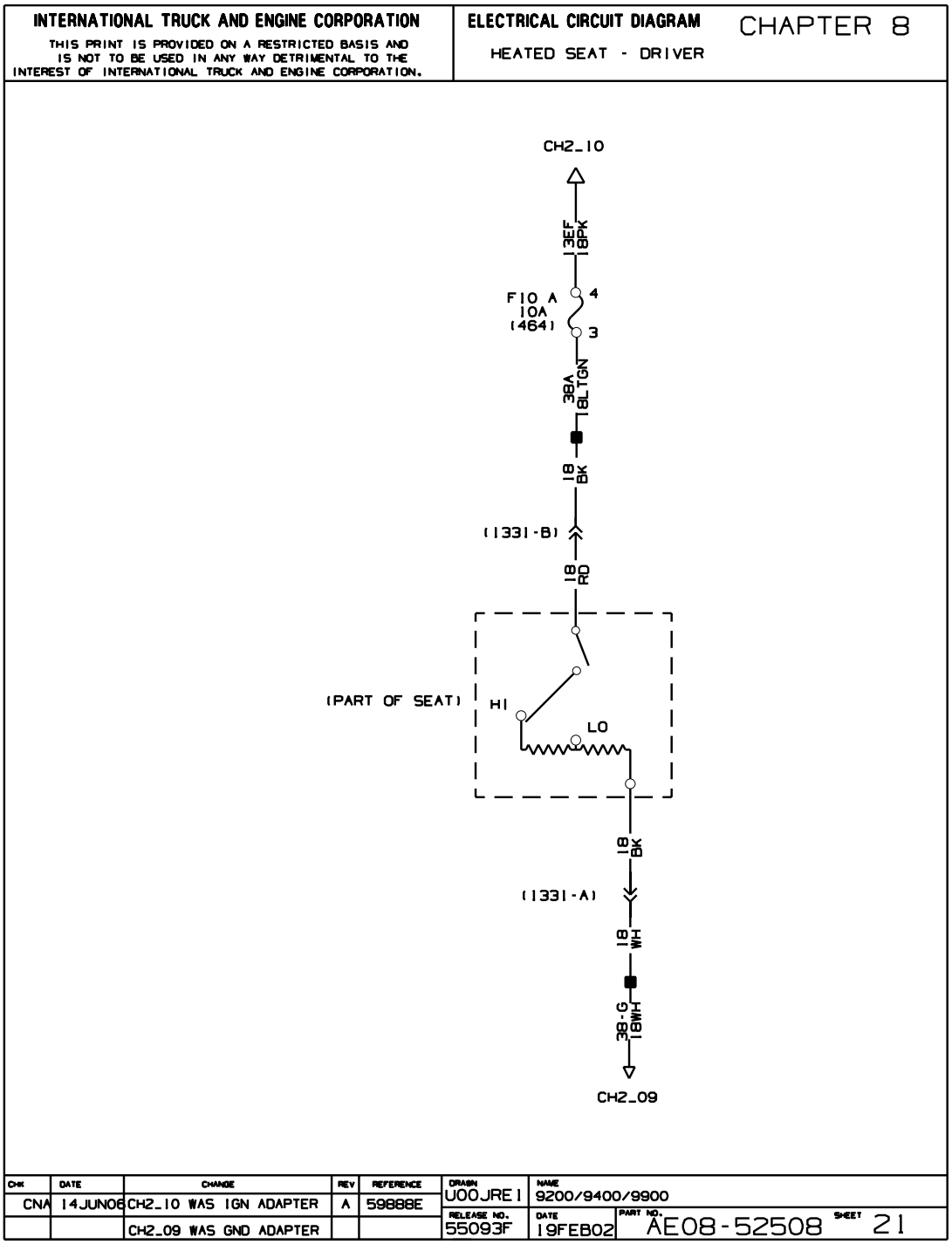


Figure 118 Heated Seat — Driver

8.22. HEATED SEAT — PASSENGER, P. 22

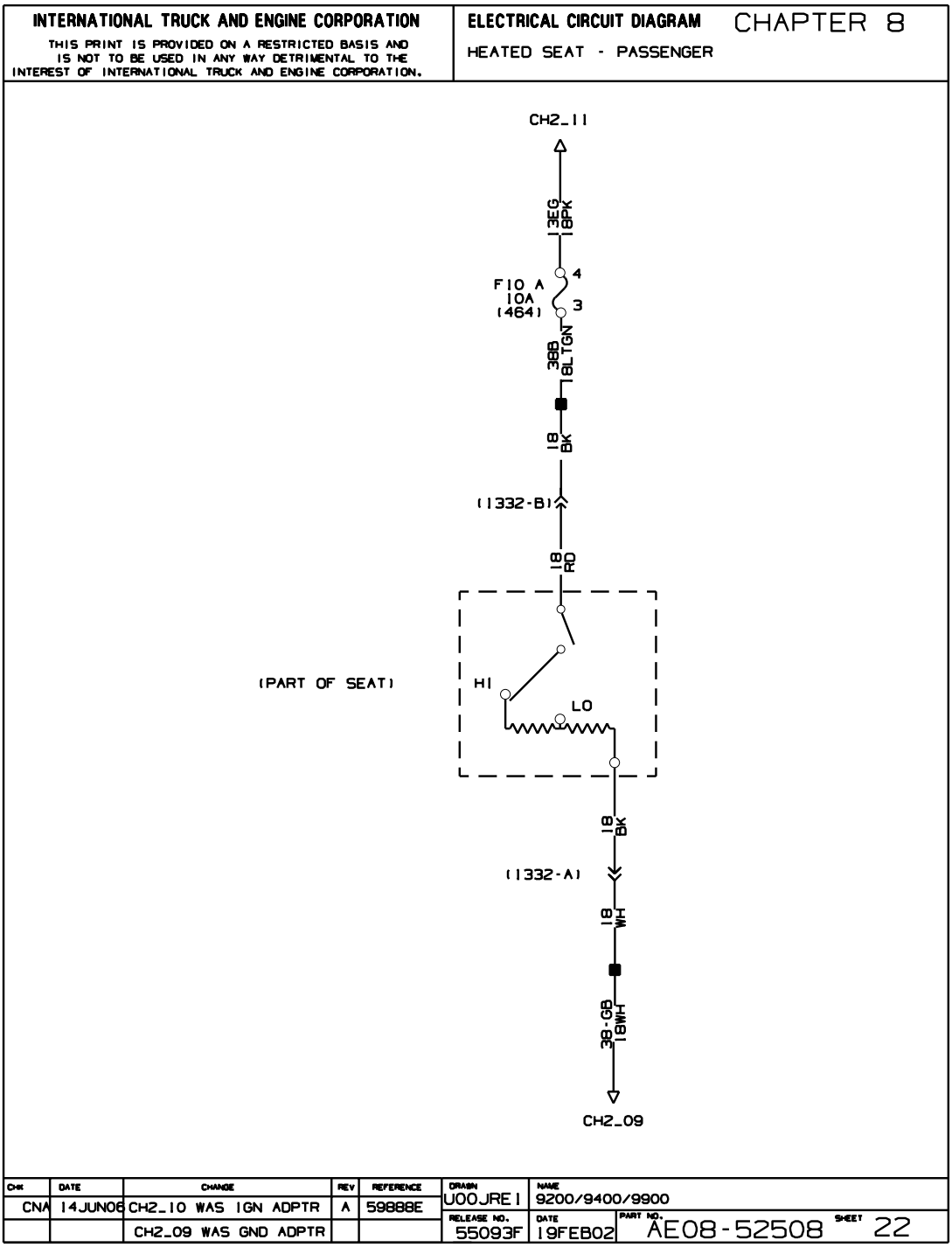


Figure 119 Heated Seat — Passenger

8.23. ELECTRIC WINDSHIELD WIPER WITH INTERMITTENT WIPE AND WASH WITH ARMORED CAB, P. 23

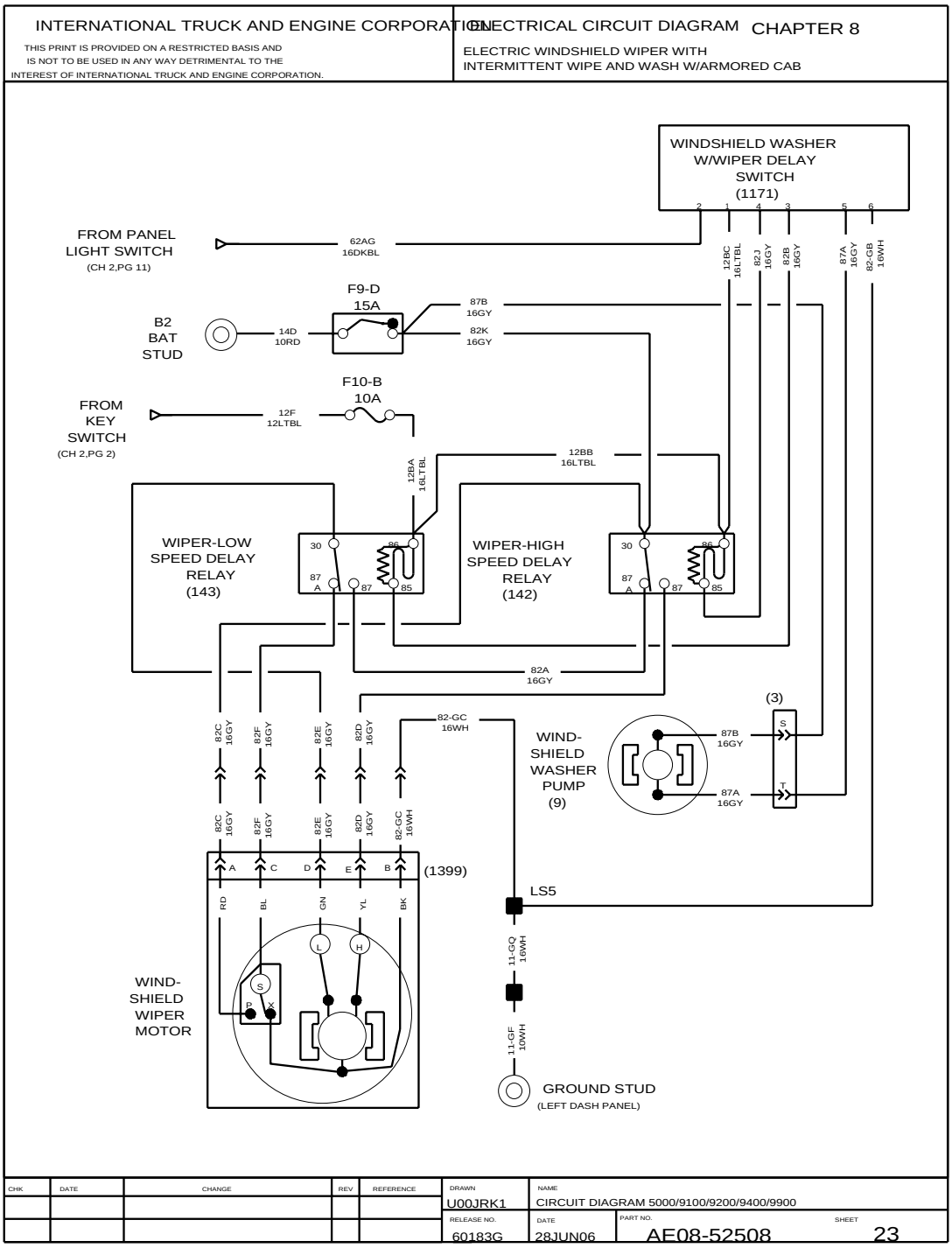


Figure 120 Electric Windshield Wiper with Intermittent Wipe and Wash with Armored Cab

8.24. BATTERY DISCHARGE PROTECTION SYSTEM, P. 24

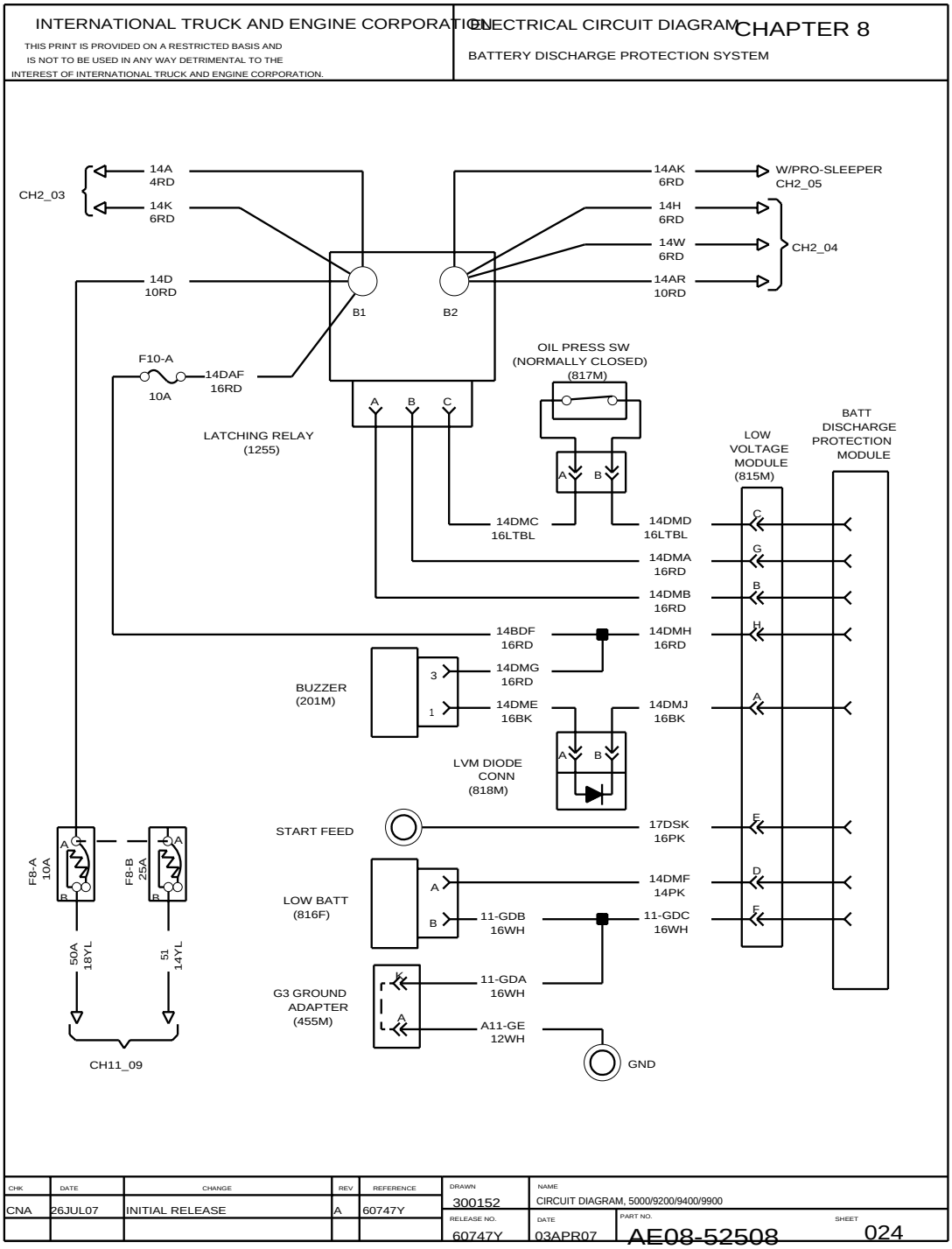


Figure 121 Battery Discharge Protection System

8.25. BATTERY DISCHARGE PROTECTION SYSTEM WITH TEMPERATURE COMPENSATION, P. 25

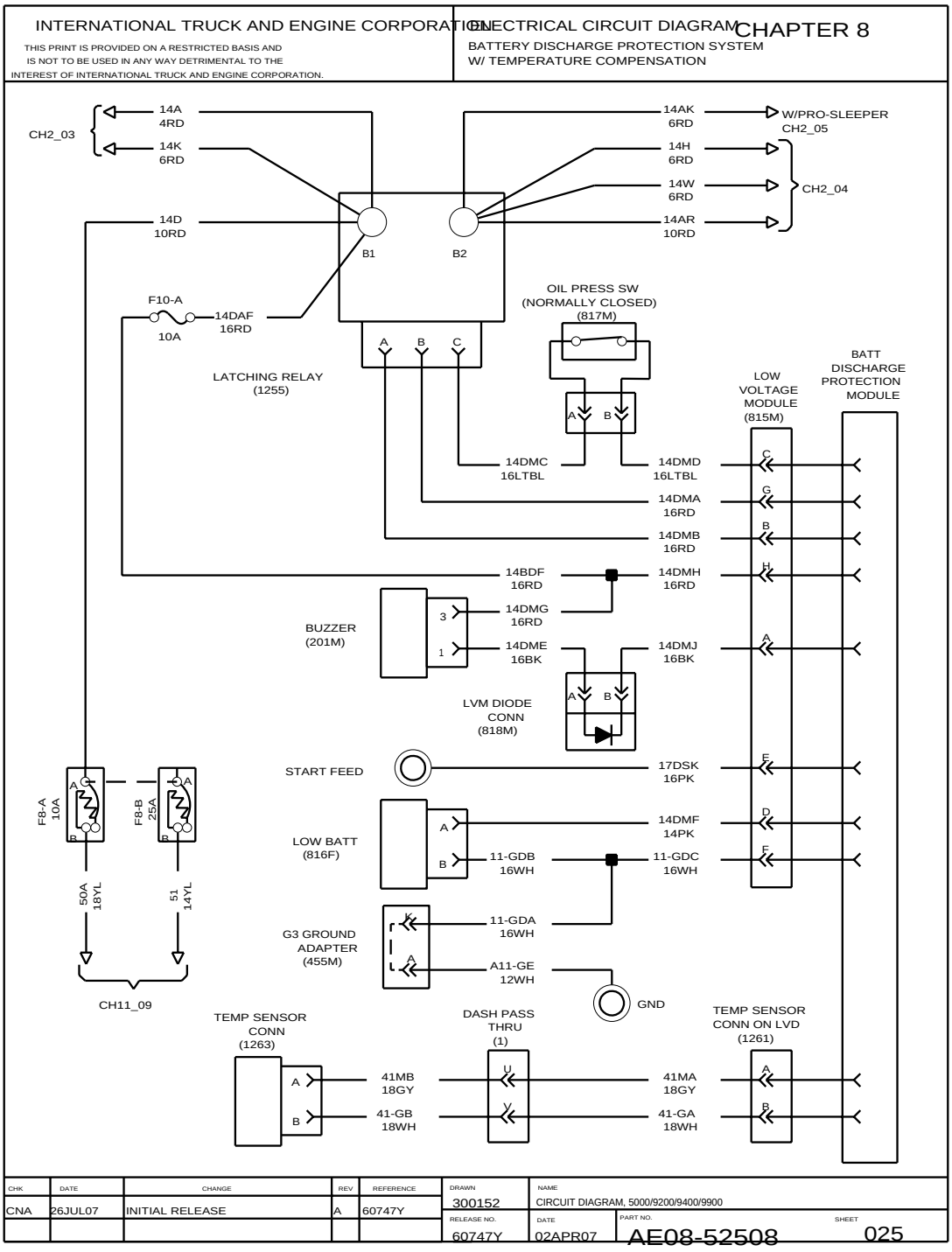


Figure 122 Battery Discharge Protection System with Temperature Compensation

9. CHASSIS ACCESSORIES (CHAPTER 9)

9.1. AIR DRYER, P. 1

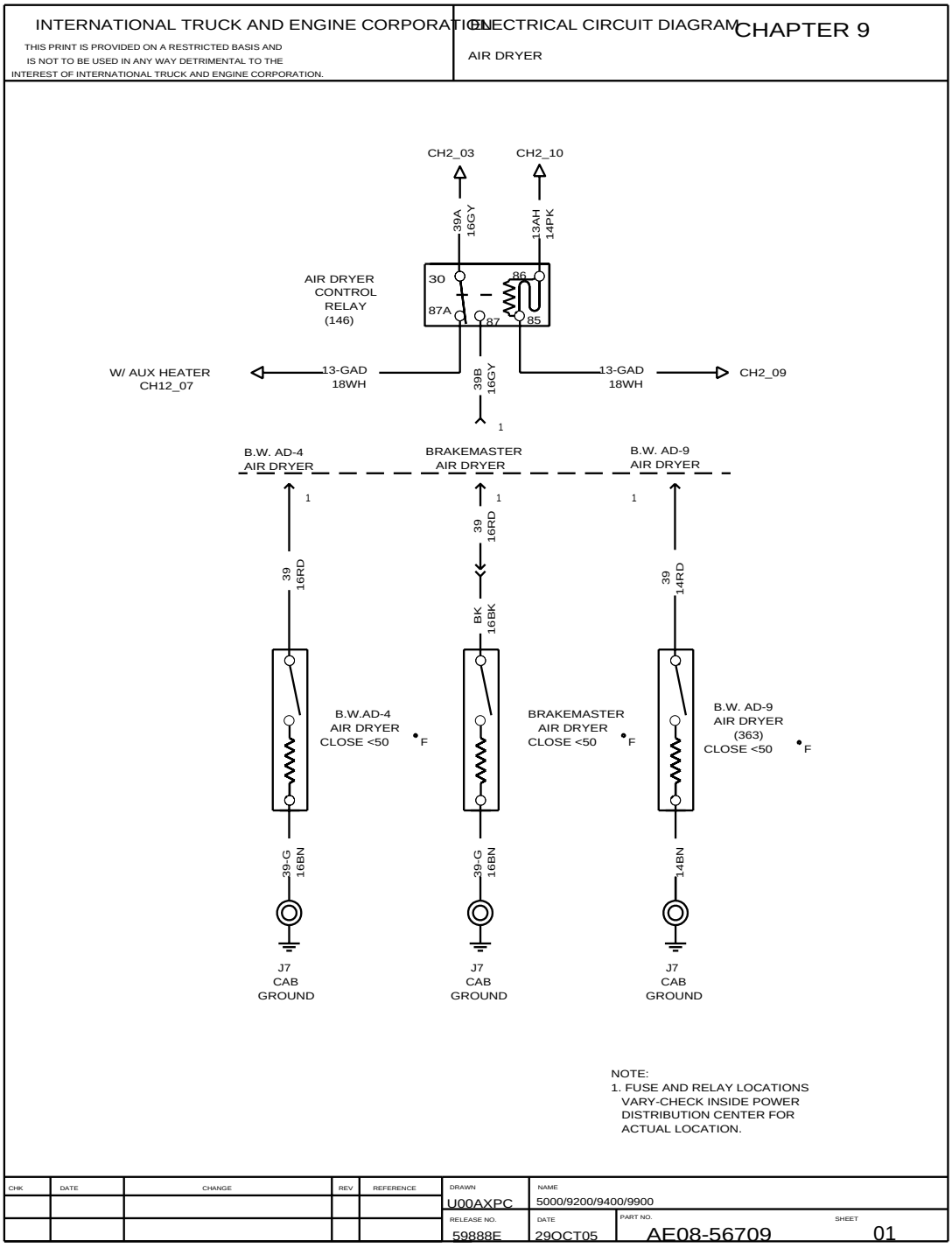


Figure 123 Air Dryer

9.2. ABS/ATC (BENDIX), P. 2

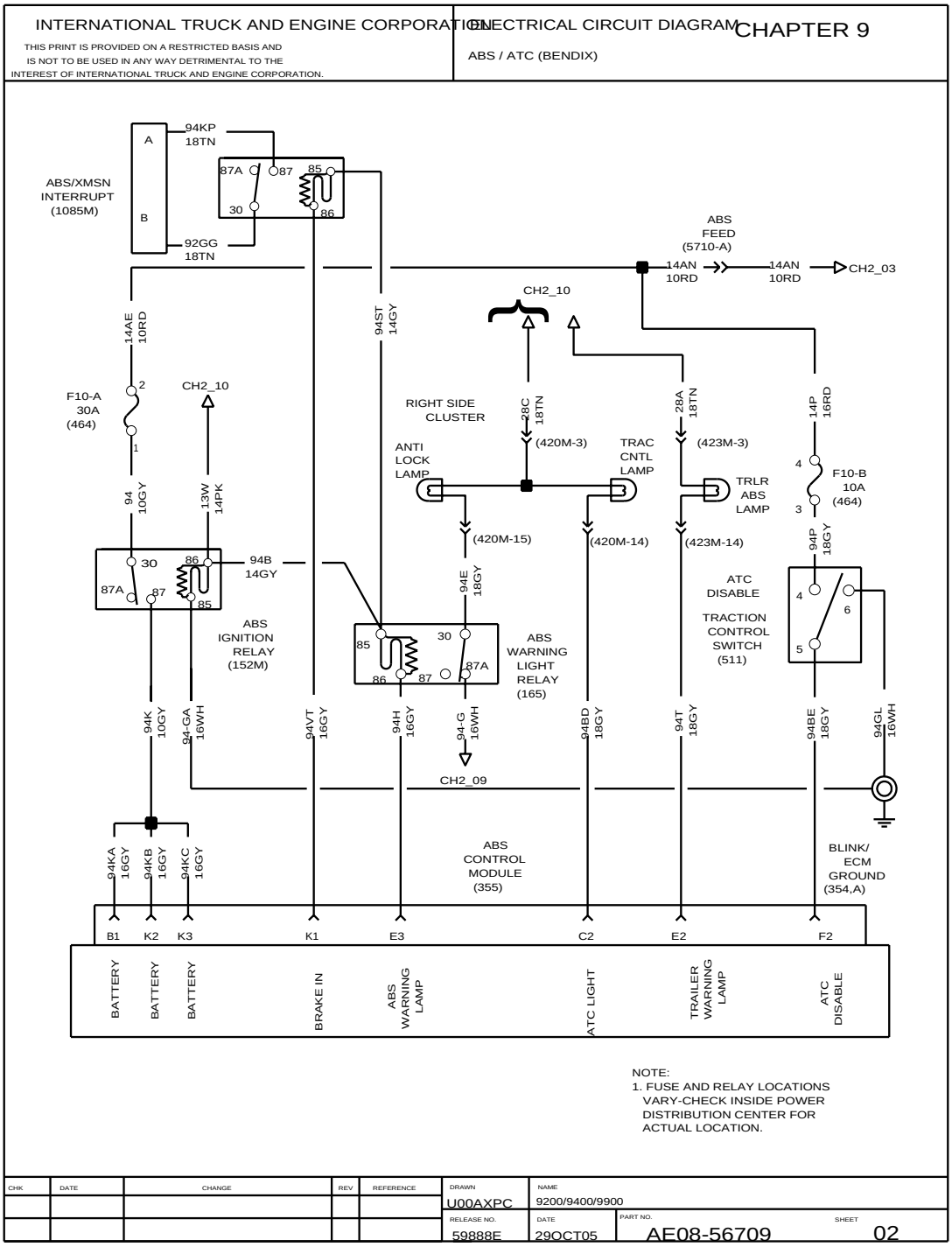


Figure 124 ABS/ATC (Bendix)

9.3. ABS/ATC (BENDIX) (CONT.), P. 3

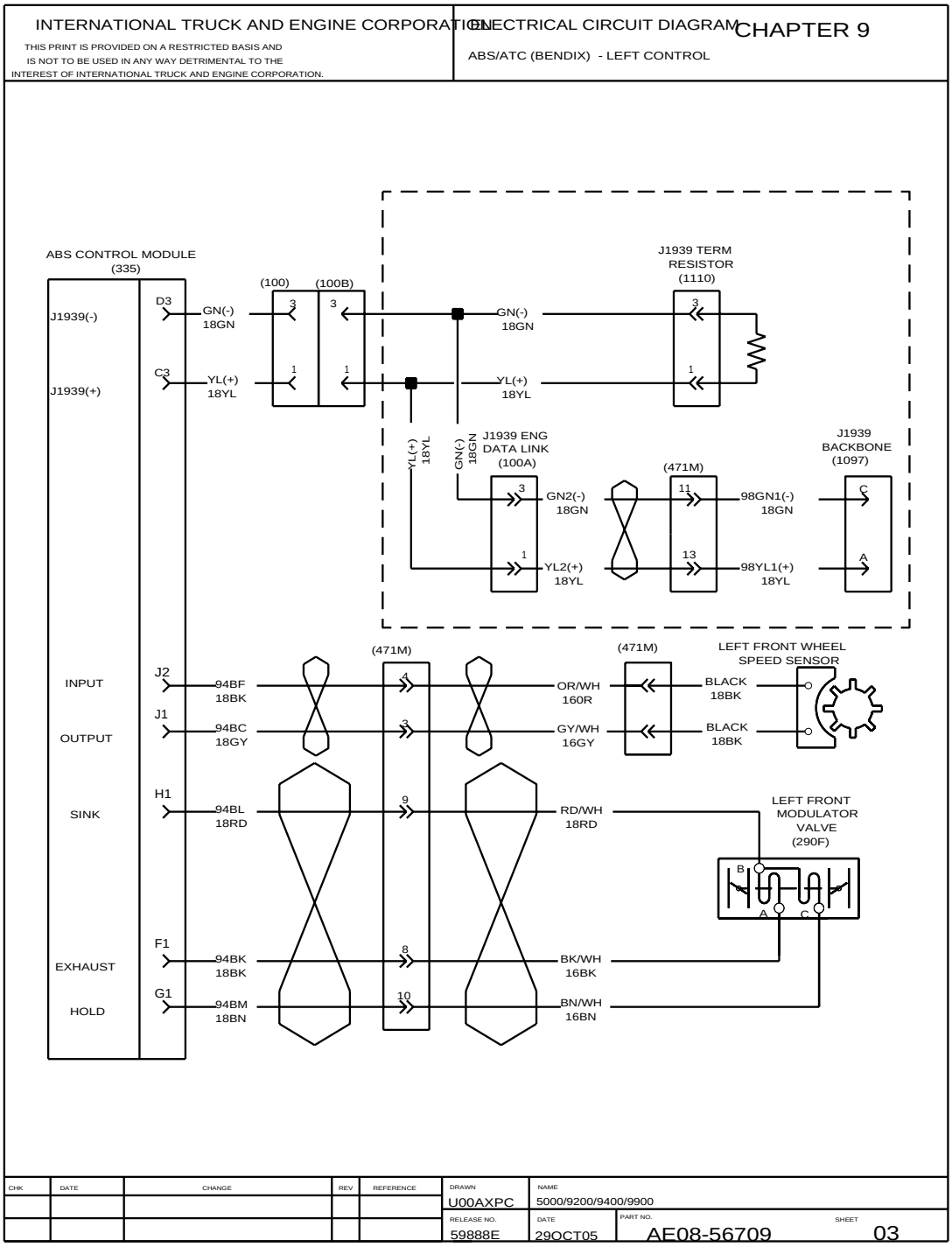


Figure 125 ABS/ATC (Bendix) (cont.)

9.4. ABS/ATC (BENDIX) (CONT.), P. 4

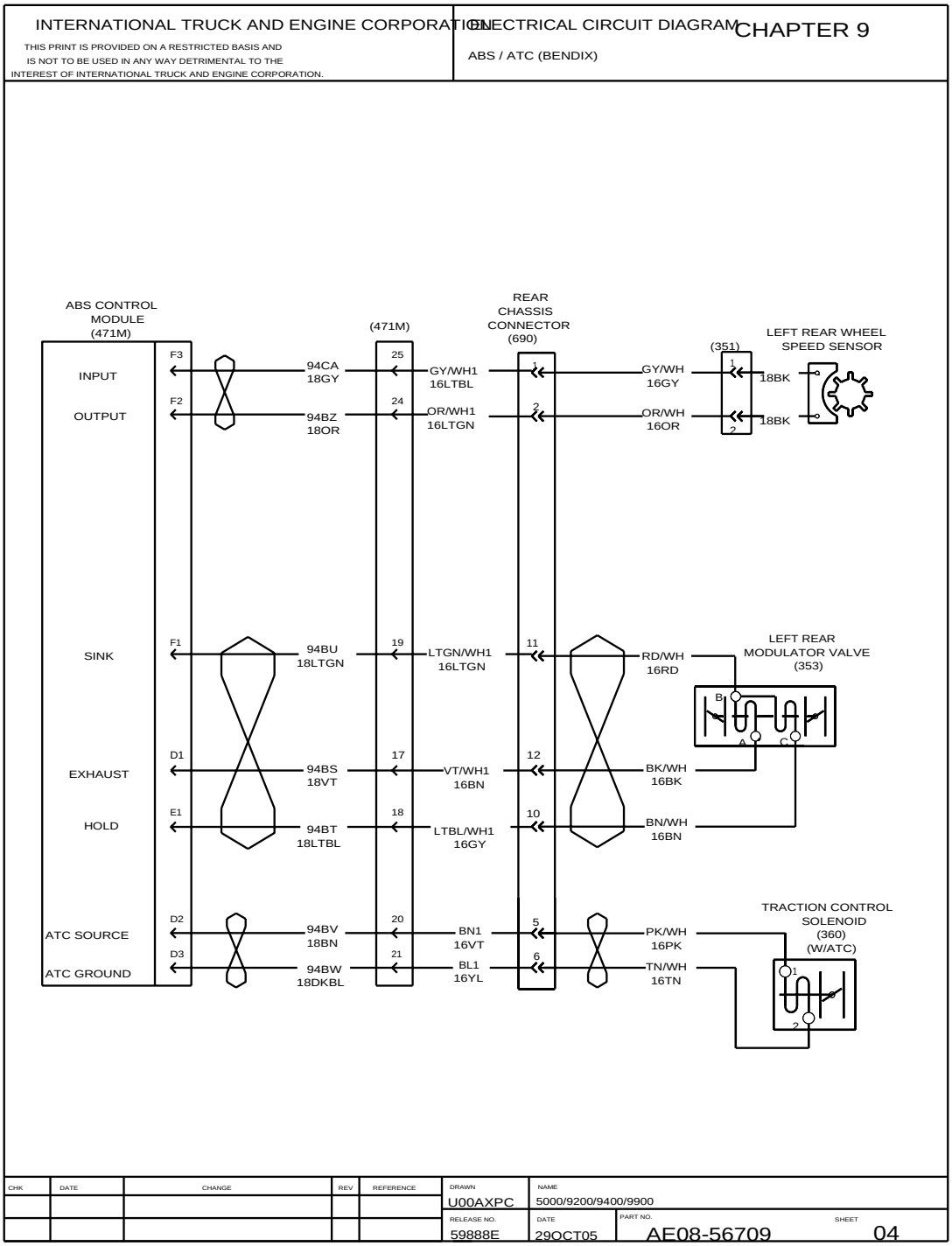


Figure 126 ABS/ATC (Bendix) (cont.)

9.5. ABS/ATC (WABCO), P. 5

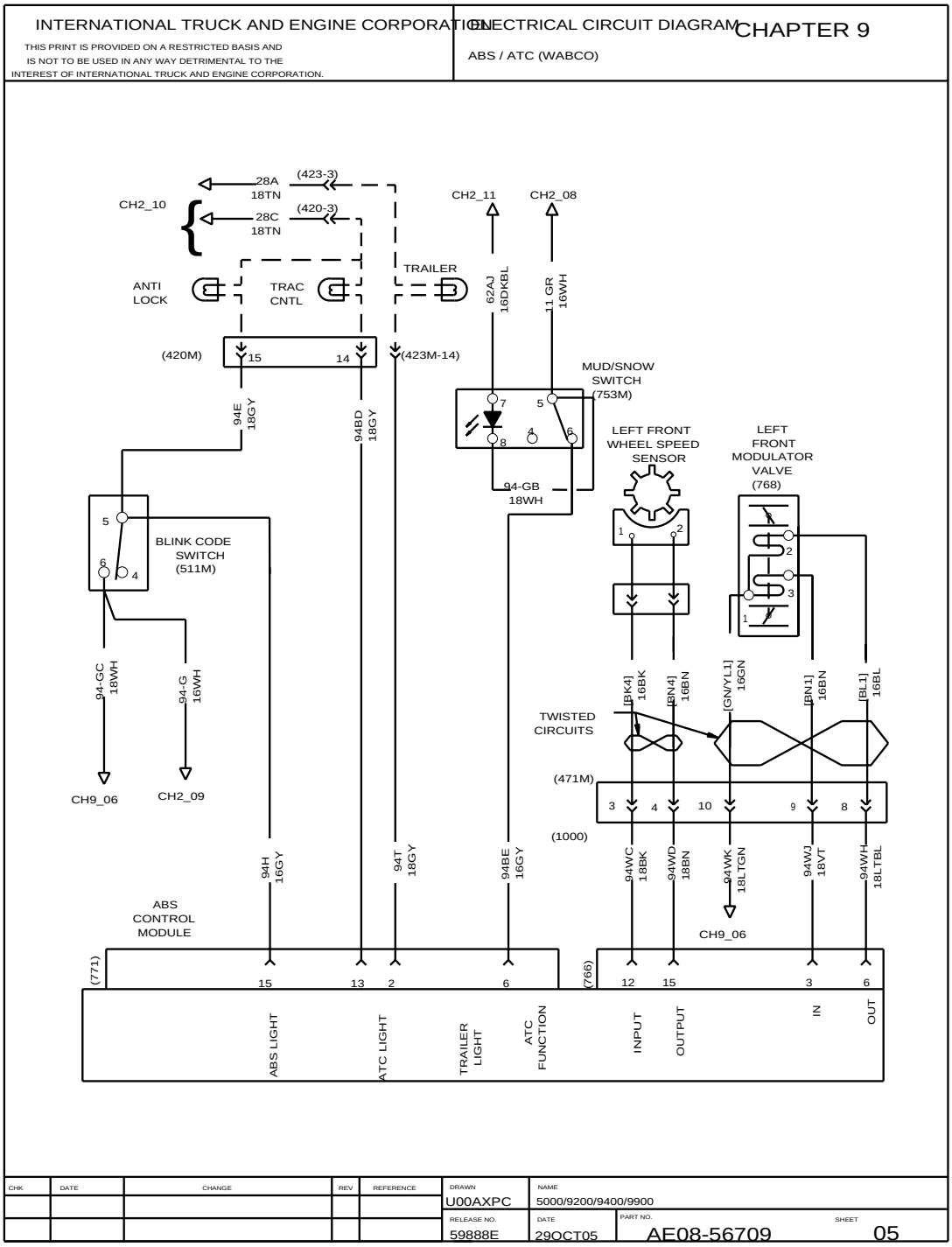


Figure 127 ABS/ATC (WABCO)

9.6. ABS/ATC (WABCO) (CONT.), P. 6

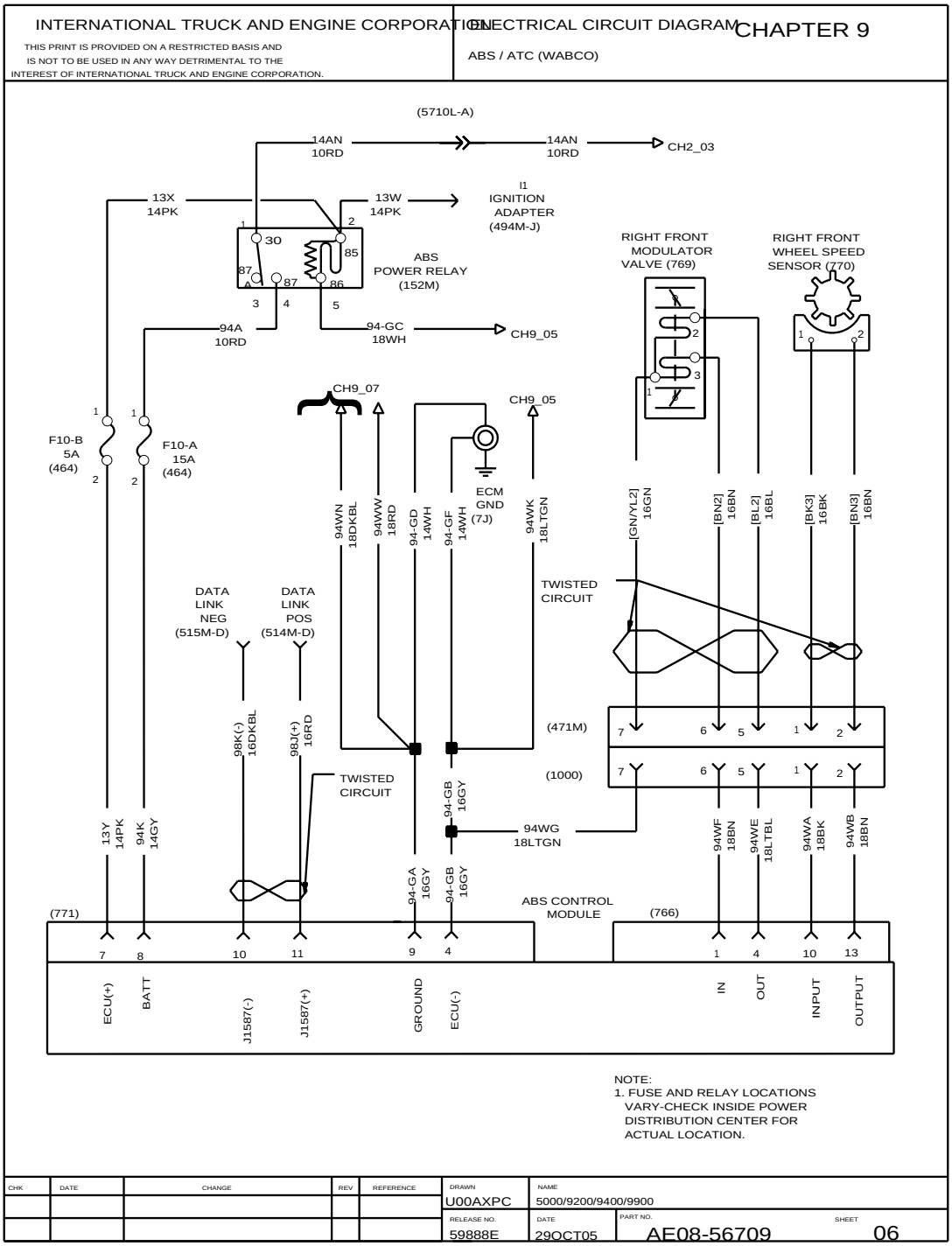


Figure 128 ABS/ATC (WABCO) (cont.)

9.7. ABS/ATC (WABCO) (CONT.), P. 7

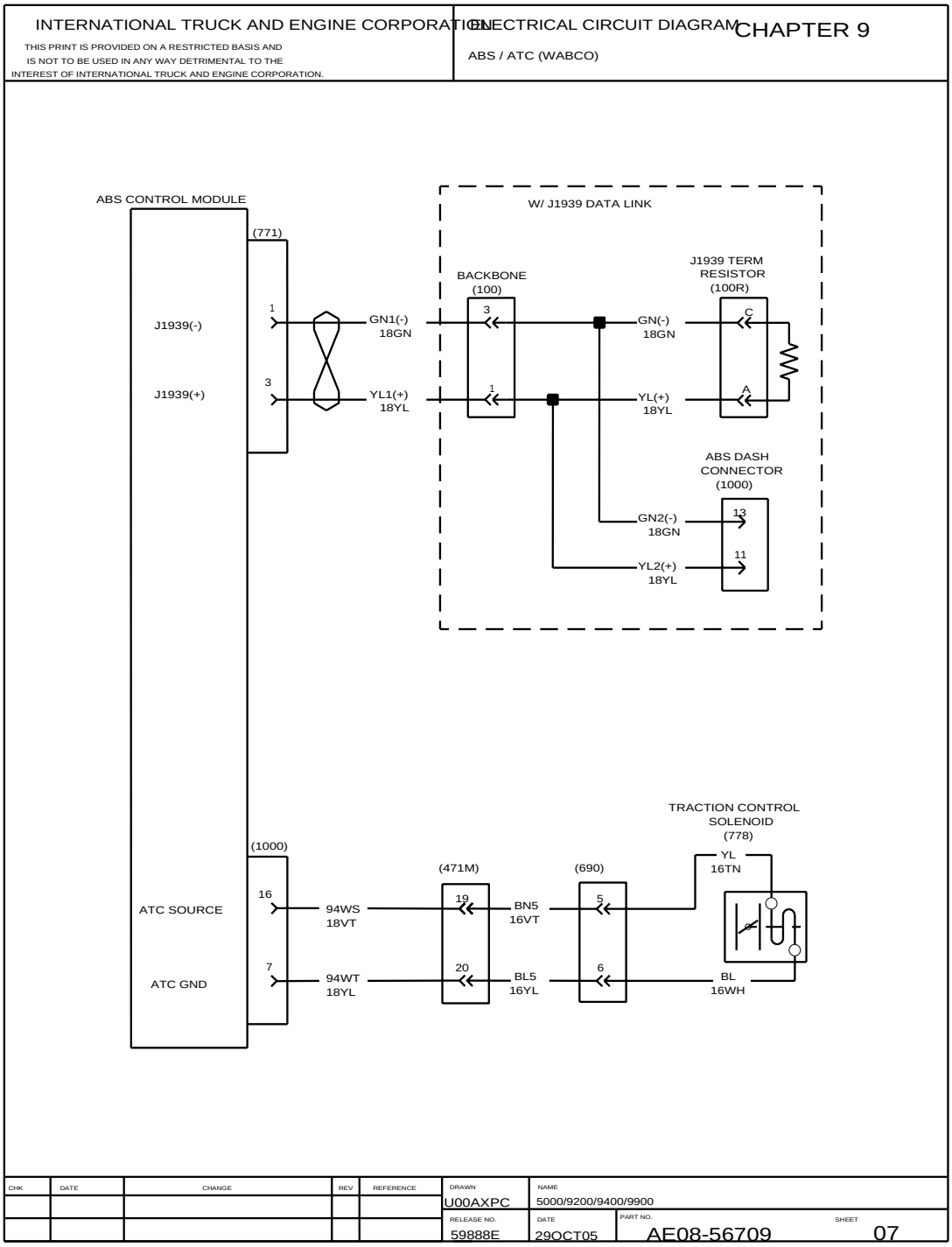


Figure 129 ABS/ATC (WABCO) (cont.)

9.8. ABS/ATC (WABCO) (CONT.), P. 8

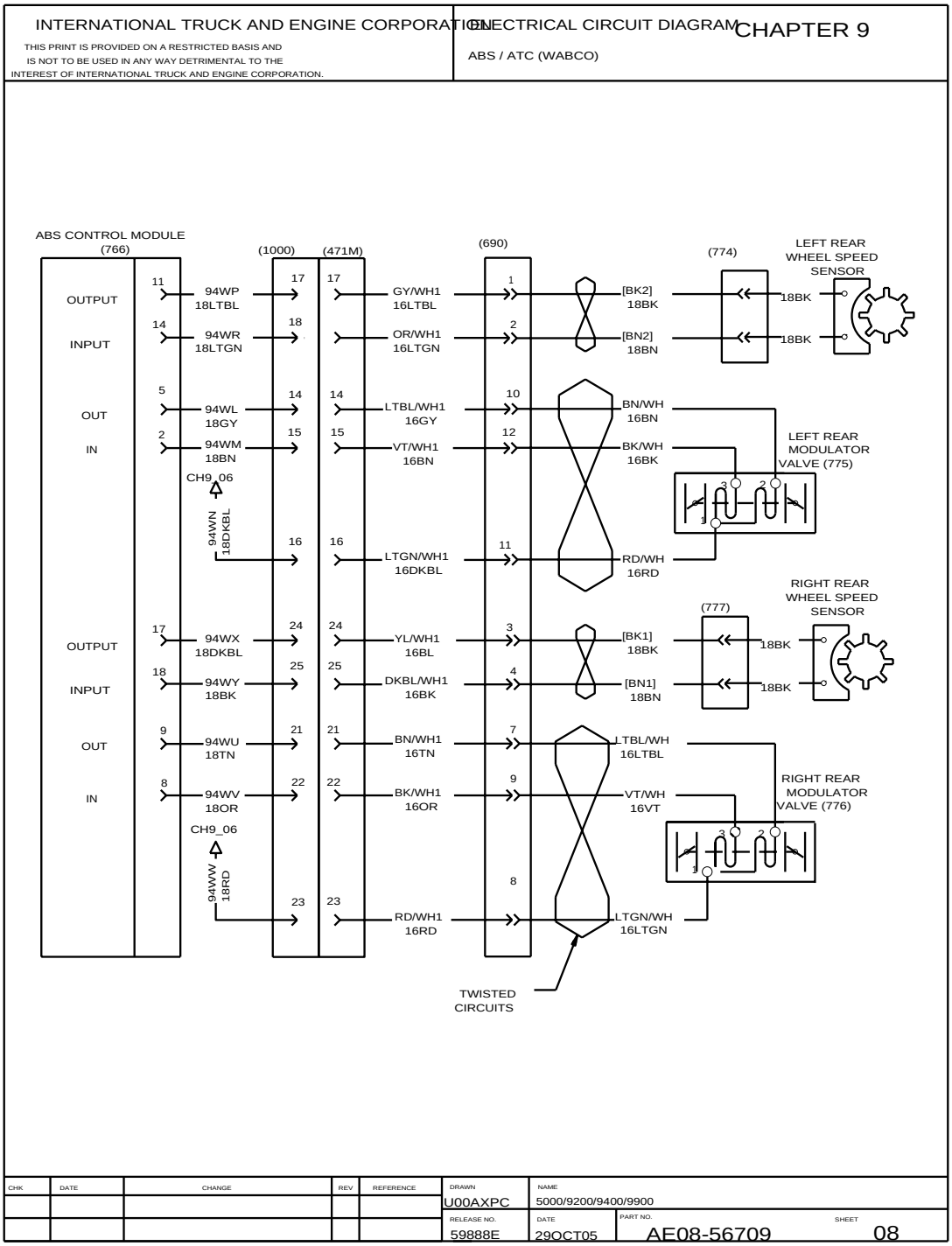


Figure 130 ABS/ATC (WABCO) (cont.)

9.9. TRAILER CONNECTION W/FOUR WHEEL TRAILER — FRAME MOUNTED, P. 9

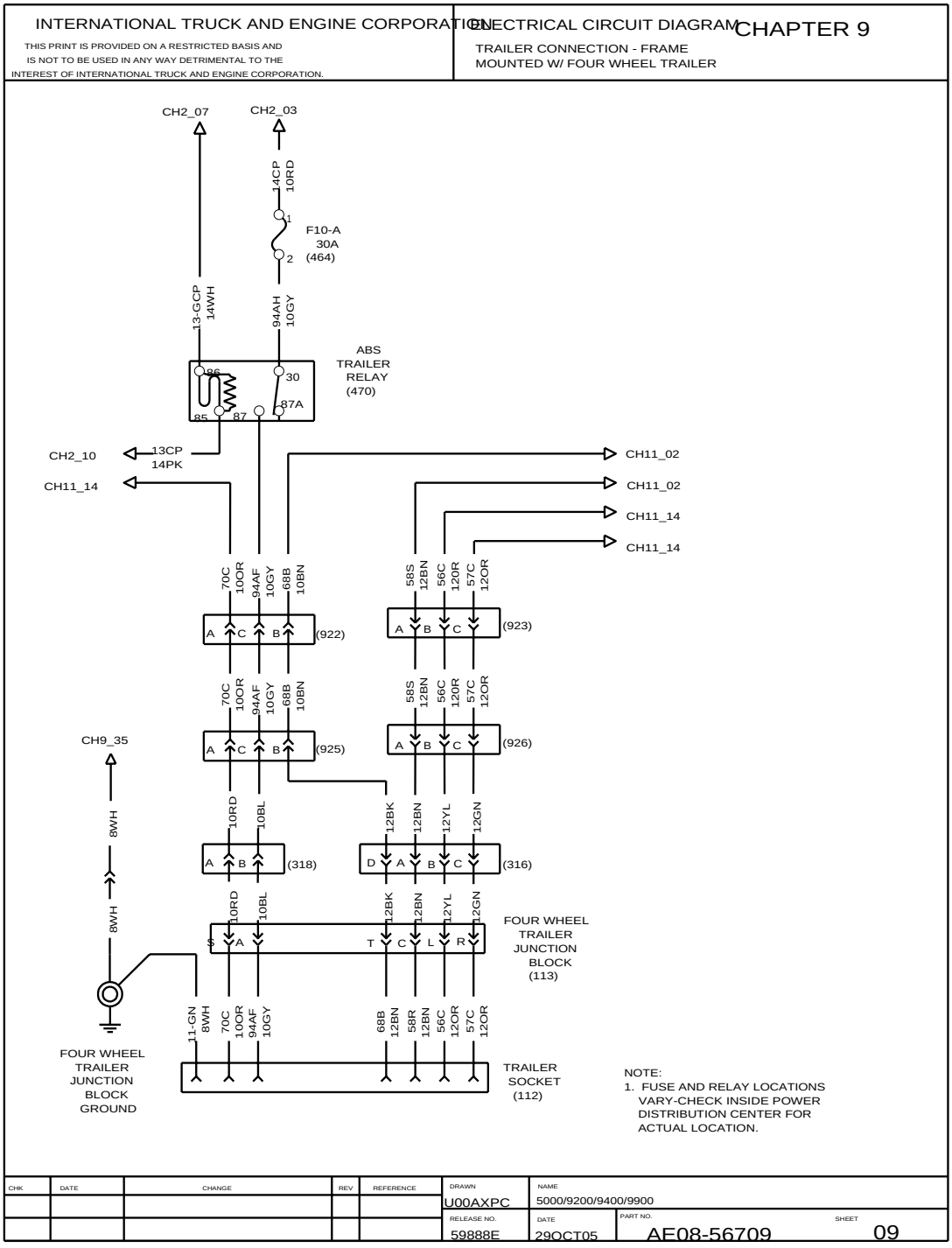


Figure 131 Trailer Connection W/Four Wheel Trailer — Frame Mounted

9.10. TWO SPEED AXLE WIRING, P. 10

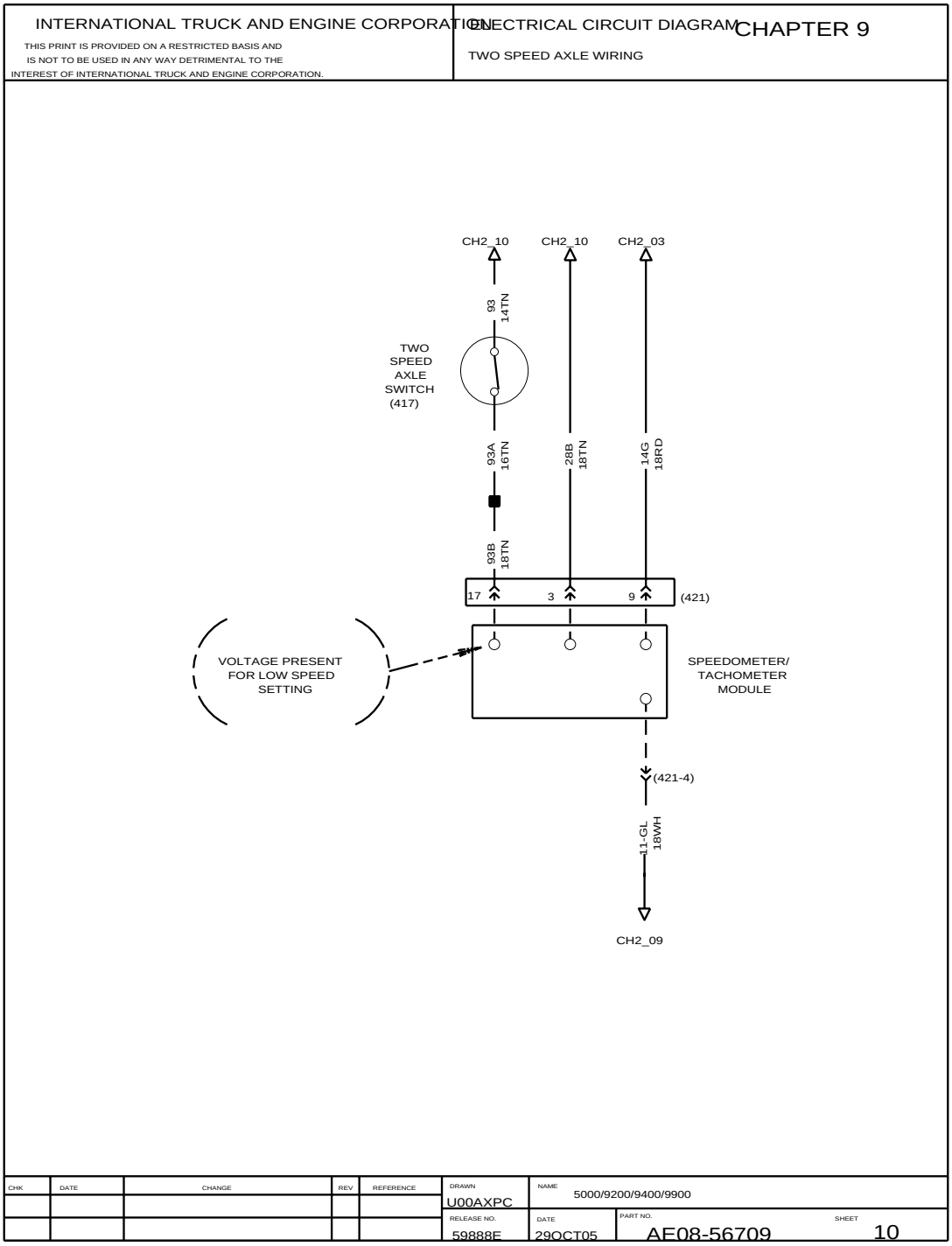


Figure 132 Two Speed Axle Wiring

9.11. TRUCK BODY CONNECTION, P. 11

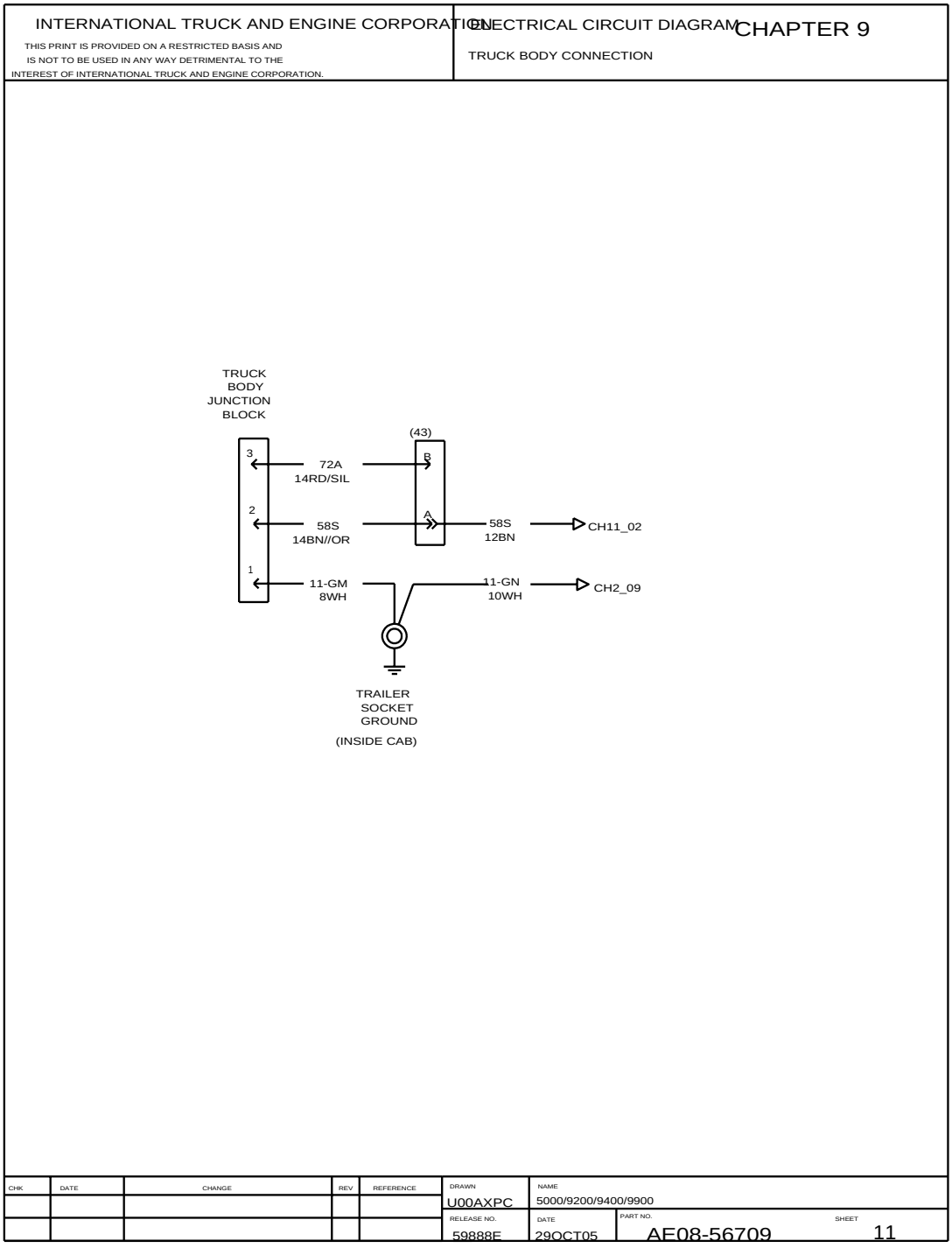


Figure 133 Truck Body Connection

9.12. TRAILER CONNECTION N/SLEEPER — BACK OF CAB MOUNTED WITH TRACTOR ABS, P. 12

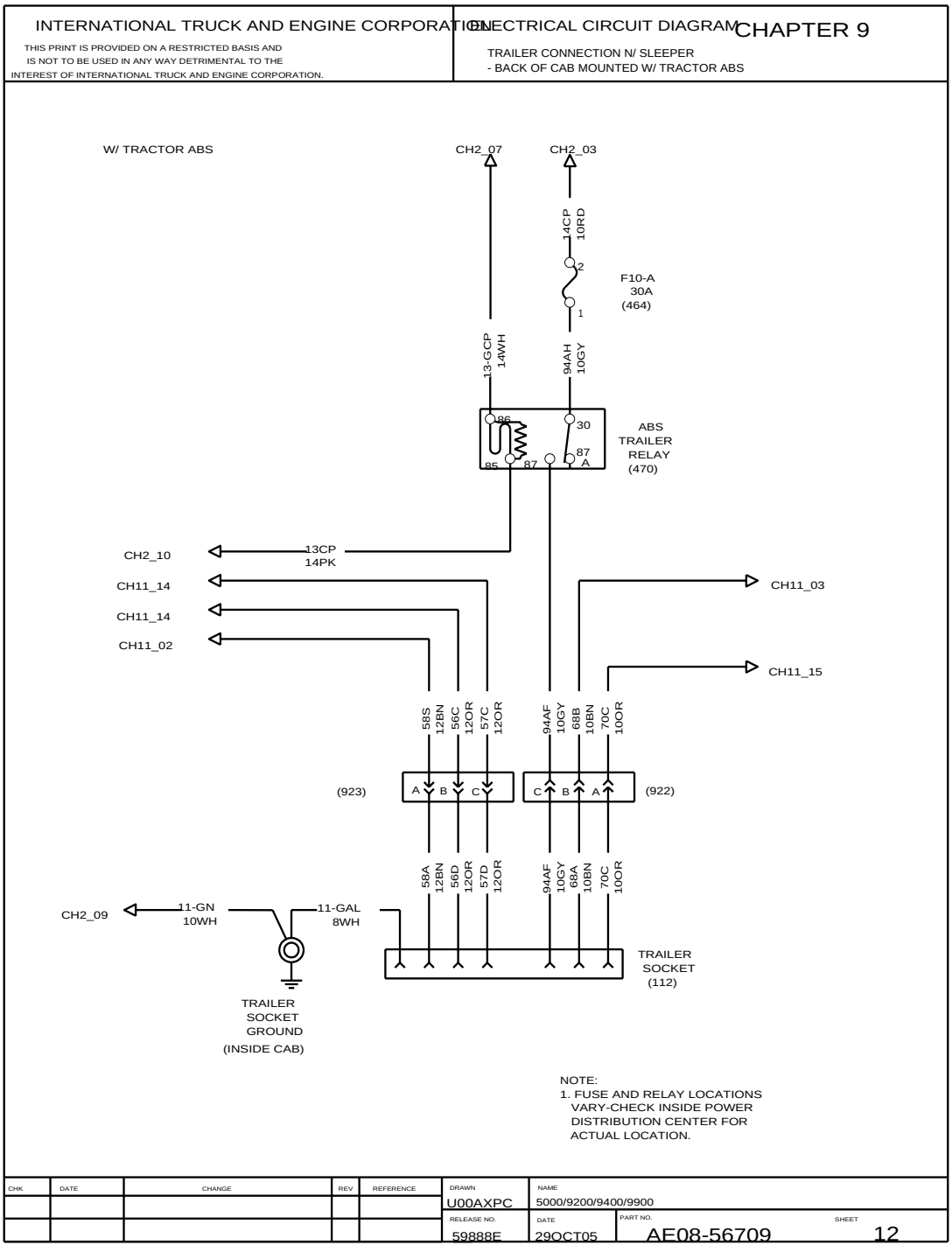


Figure 134 Trailer Connection N/Sleeper — Back of Cab Mounted

9.13. TRAILER CONNECTION W/FOUR WHEEL TRAILER — FRAME MOUNTED W/5000, P. 13

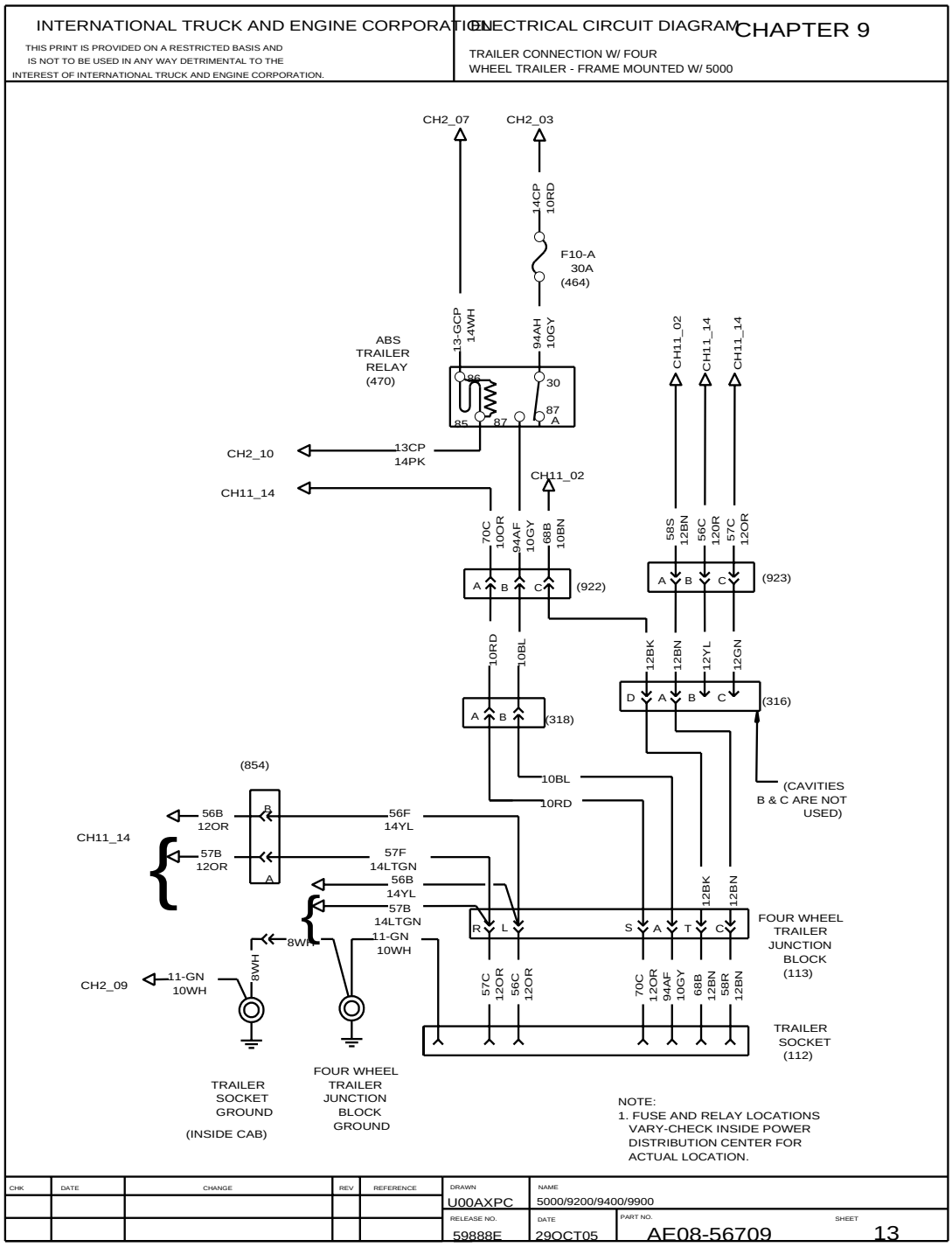


Figure 135 Trailer Connection W/Four Wheel Trailer — Frame Mounted W/5000

9.14. MERITOR G SERIES TRANSMISSION, P. 14

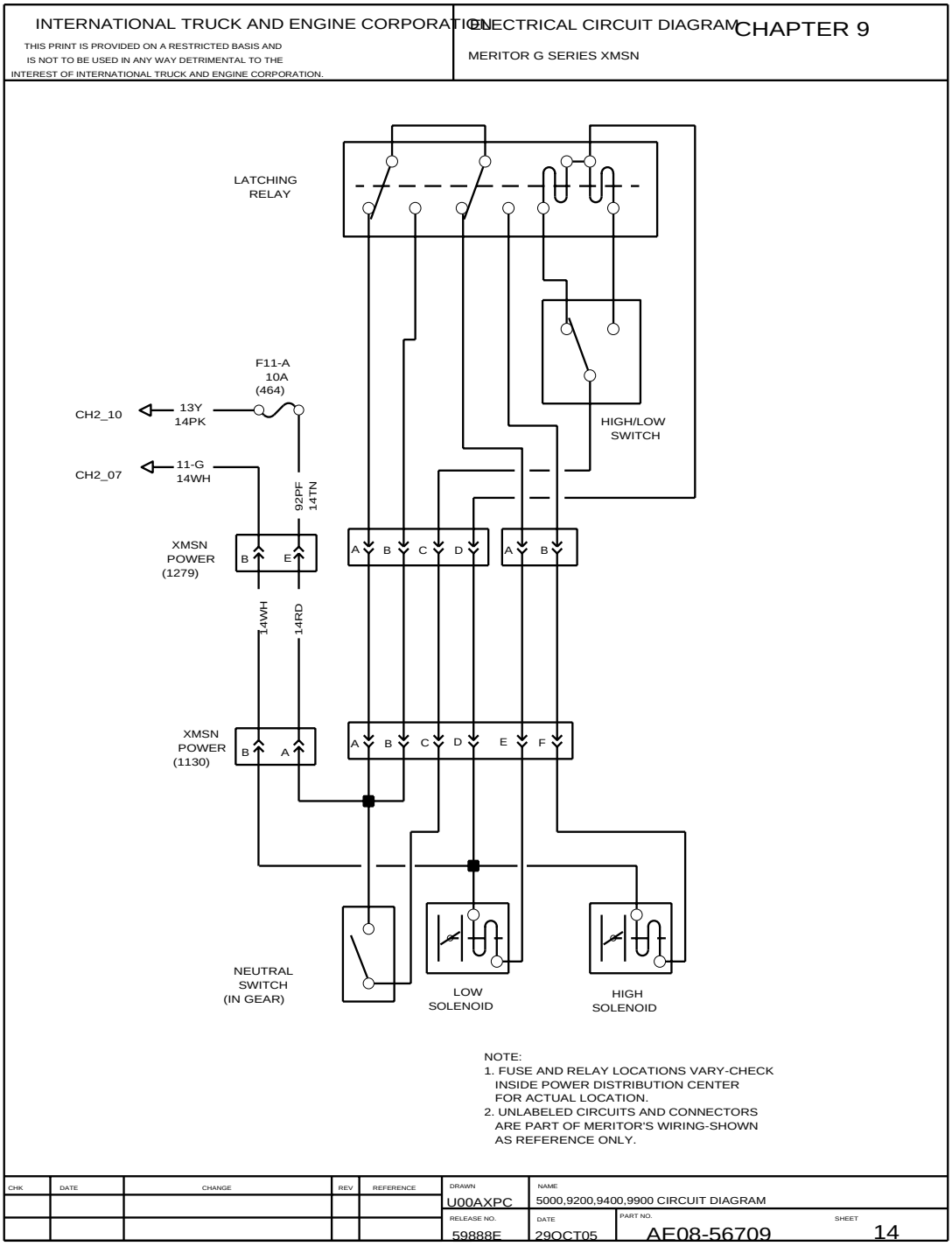


Figure 136 Meritor G Series Transmission

9.15. EATON AUTOSHIFT GEN III TRANSMISSION, P. 15

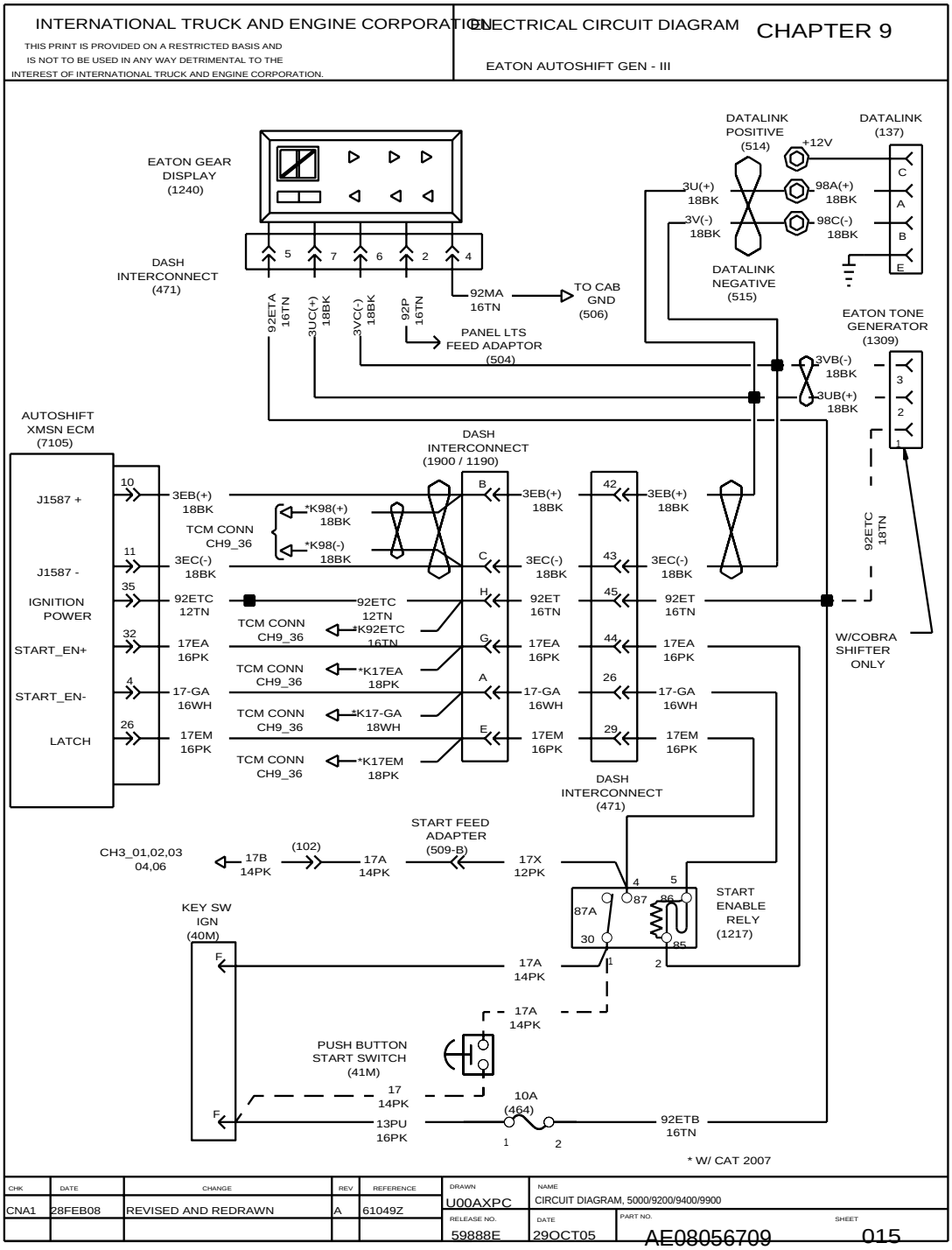


Figure 137 Eaton Autoshift Gen III Transmission

9.16. EATON ULTRASHIFT GEN III TRANSMISSION, P. 16

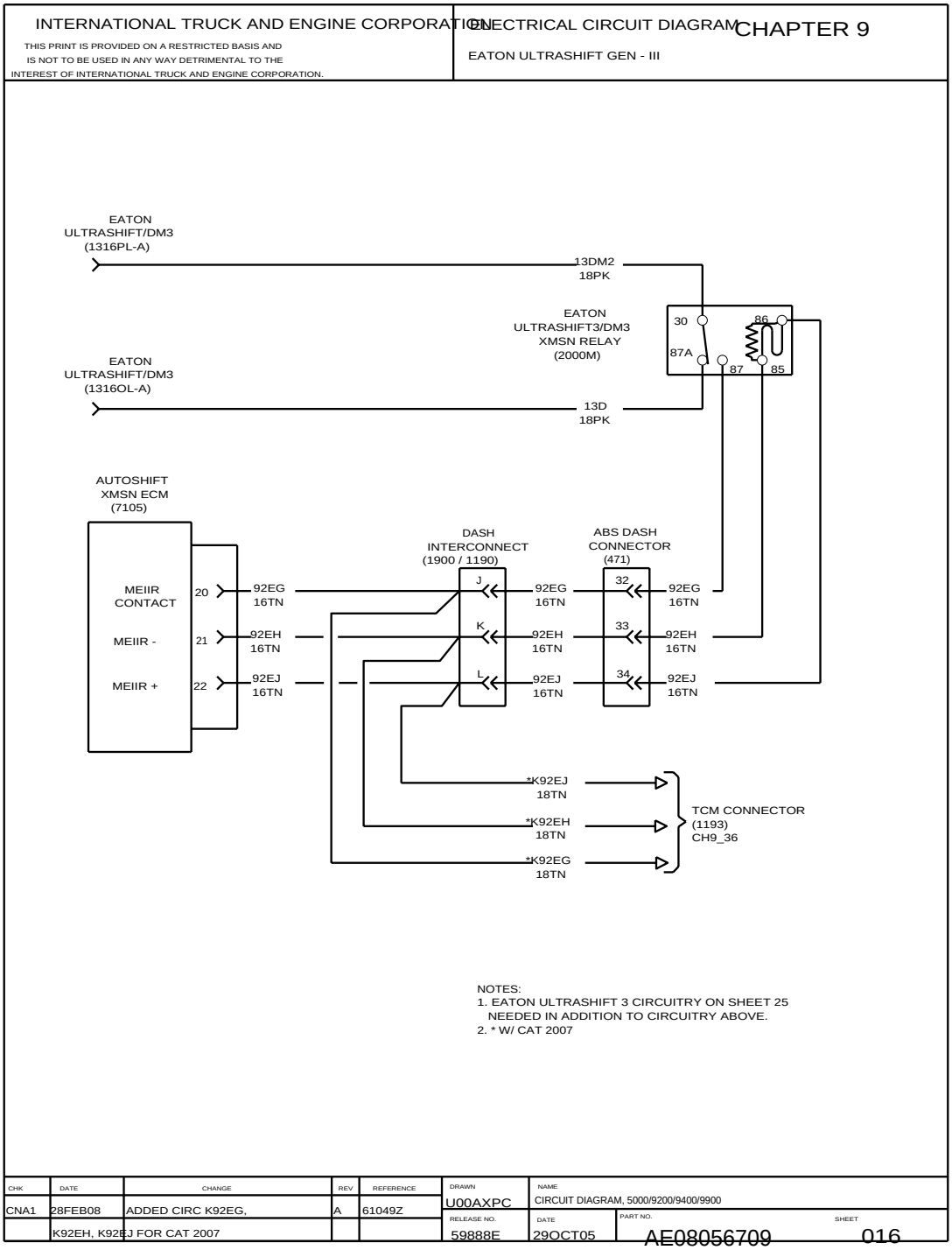


Figure 138 Eaton Ultrashift Gen III

9.17. EATON AUTOSHIFT GEN III WITH PUSH BUTTON SHIFTER, P. 17

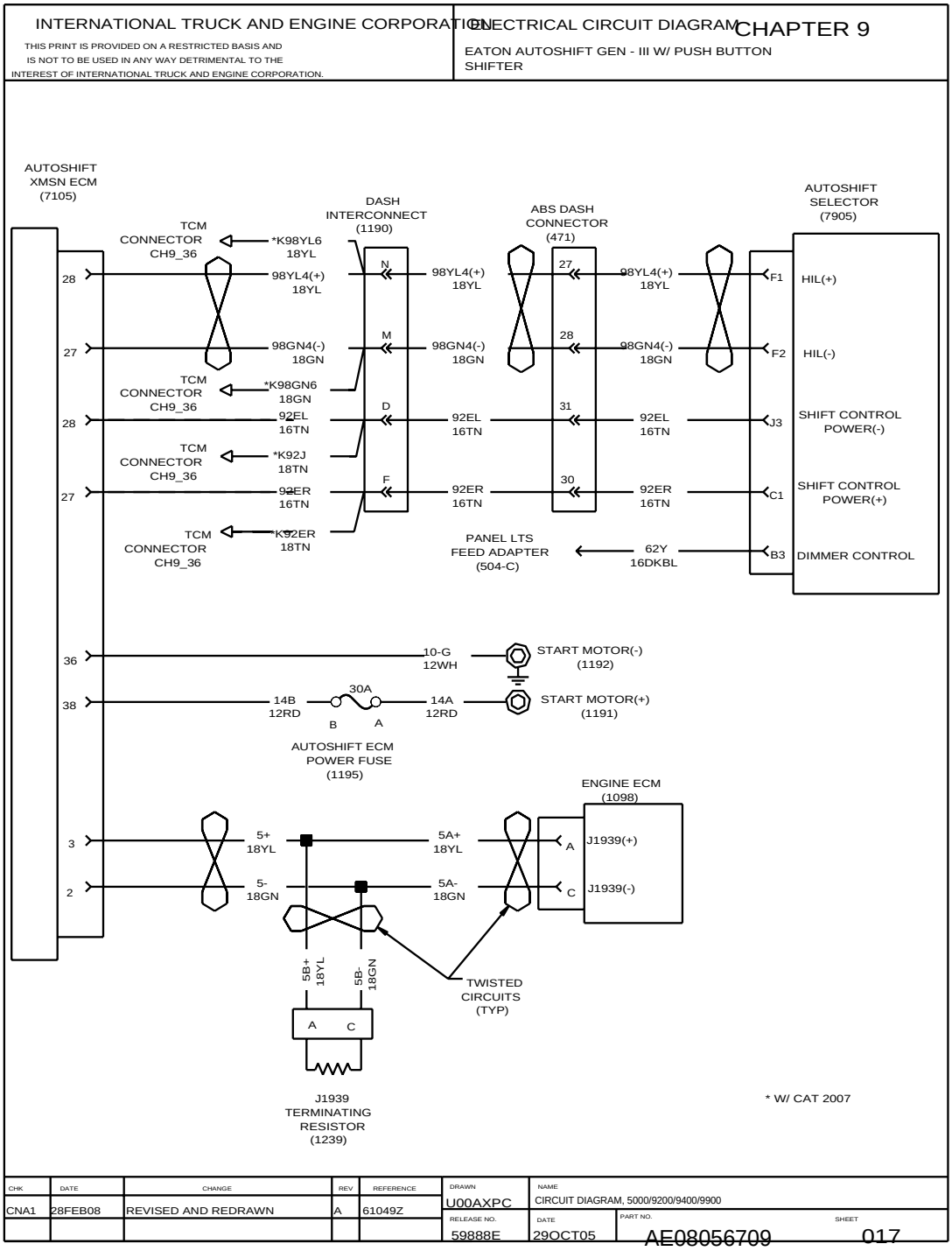


Figure 139 Eaton Autoshift Gen III with Push Button Shifter

9.18. EATON AUTOSHIFT GEN III WITH COBRA SHIFTER, P. 18

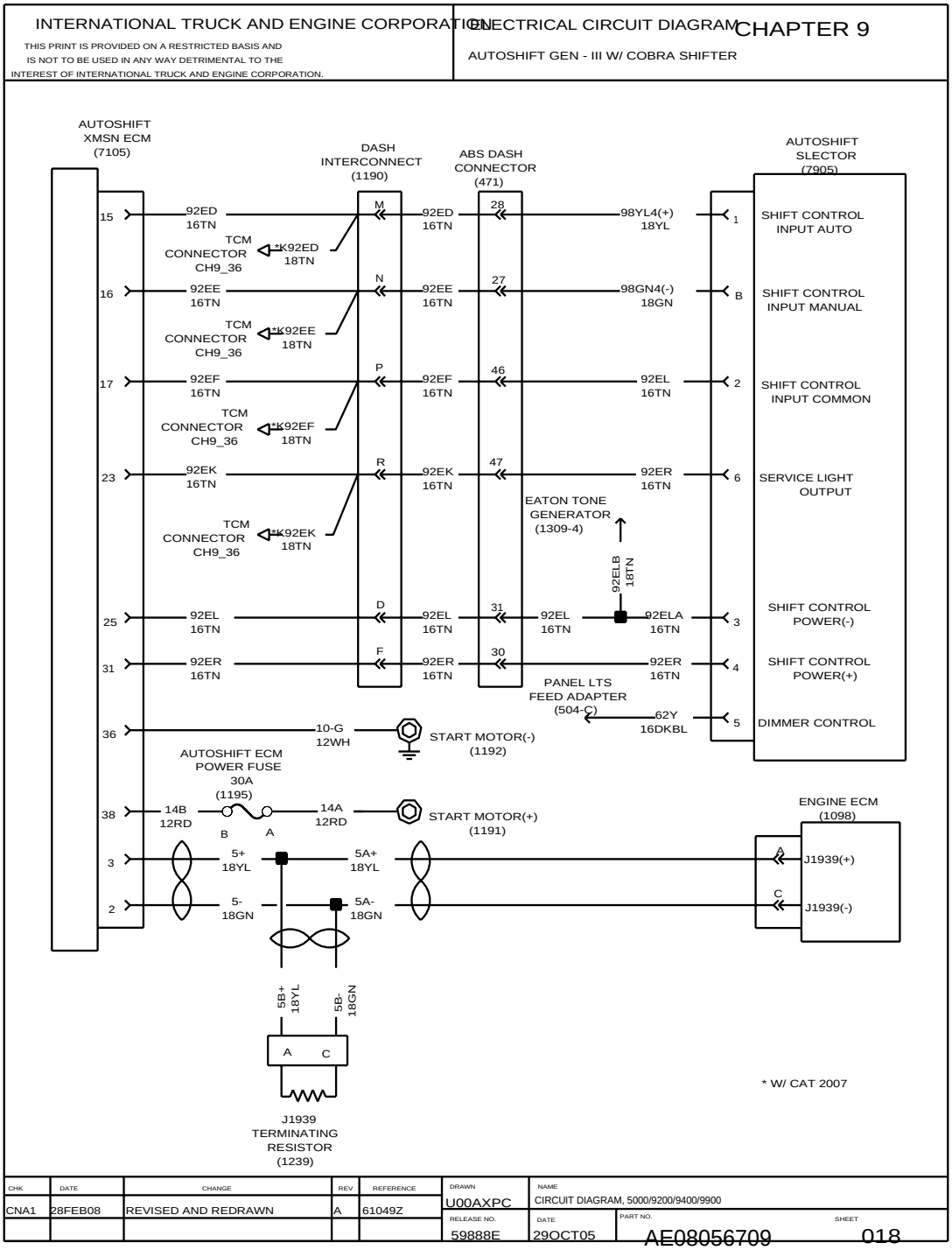


Figure 140 Eaton Autoshift Gen III with Cobra Shifter

9.19. TRANSMISSION DATA LINK WITH ENGINE BACK BONE, P. 19

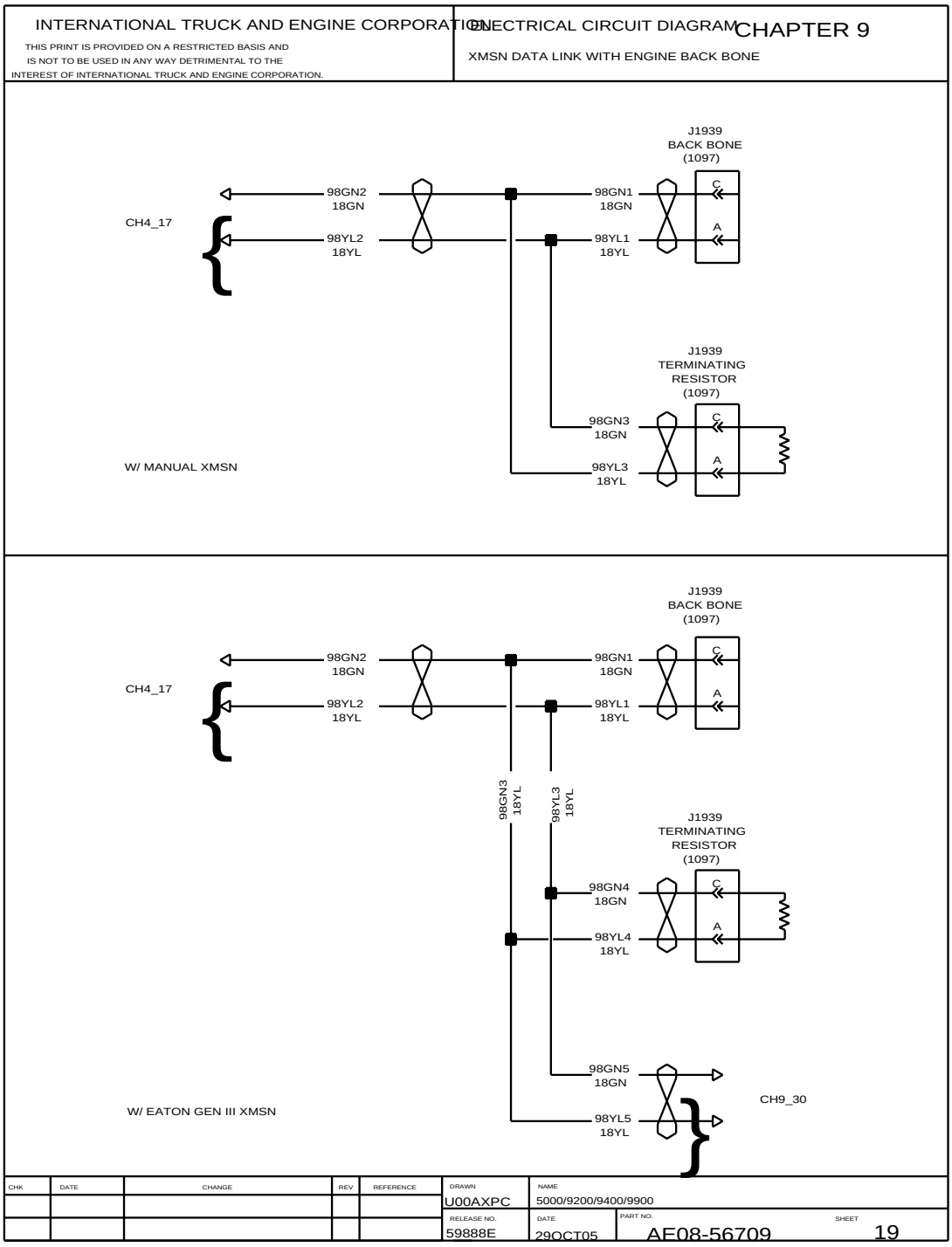


Figure 141 Transmission Data Link with Engine Back Bone

9.20. TRANSMISSION DATA LINK — FREEDOM LINE, P. 20

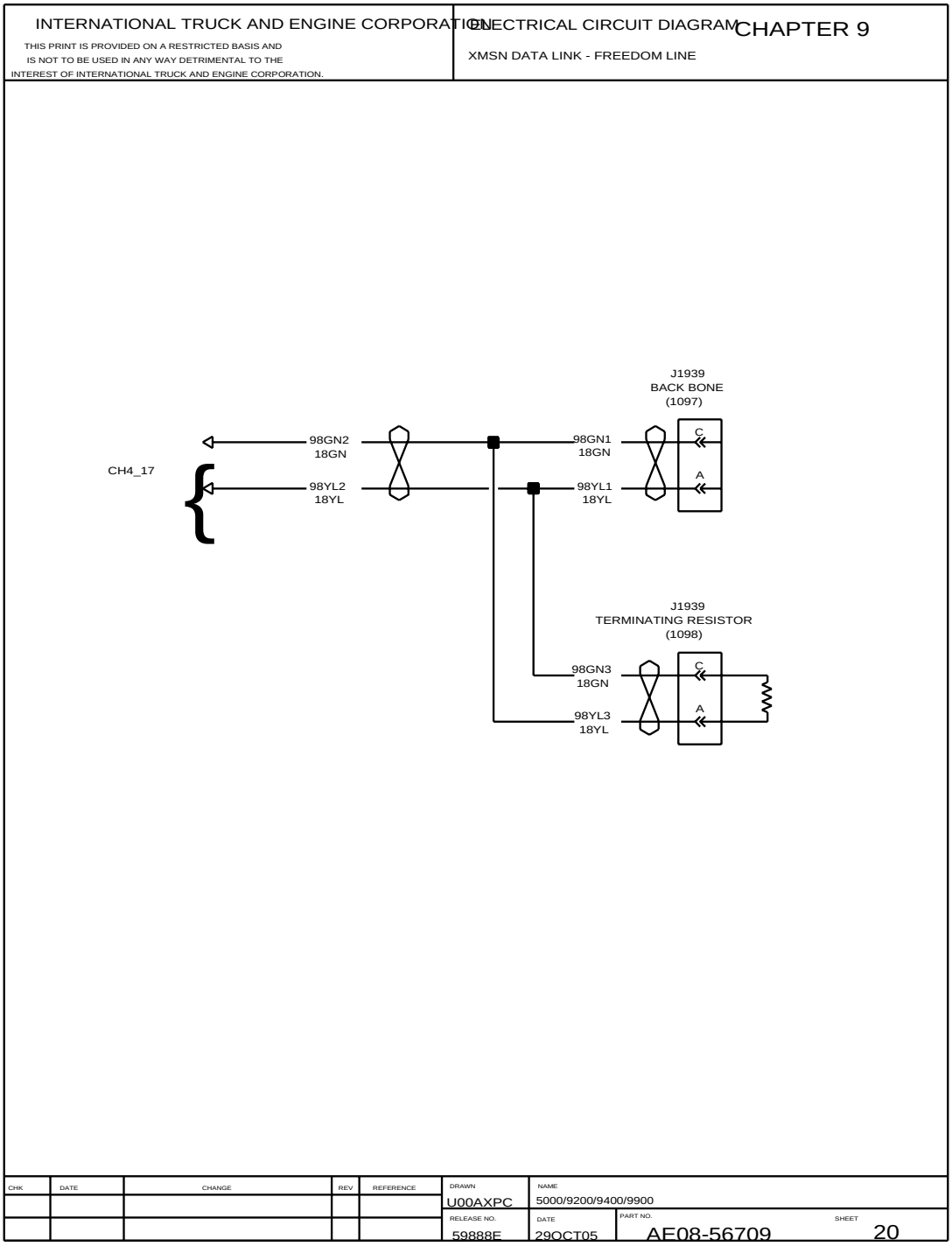


Figure 142 Transmission Data Link — Freedom Line

9.21. ABS6/ATC BENDIX AIR, P. 21

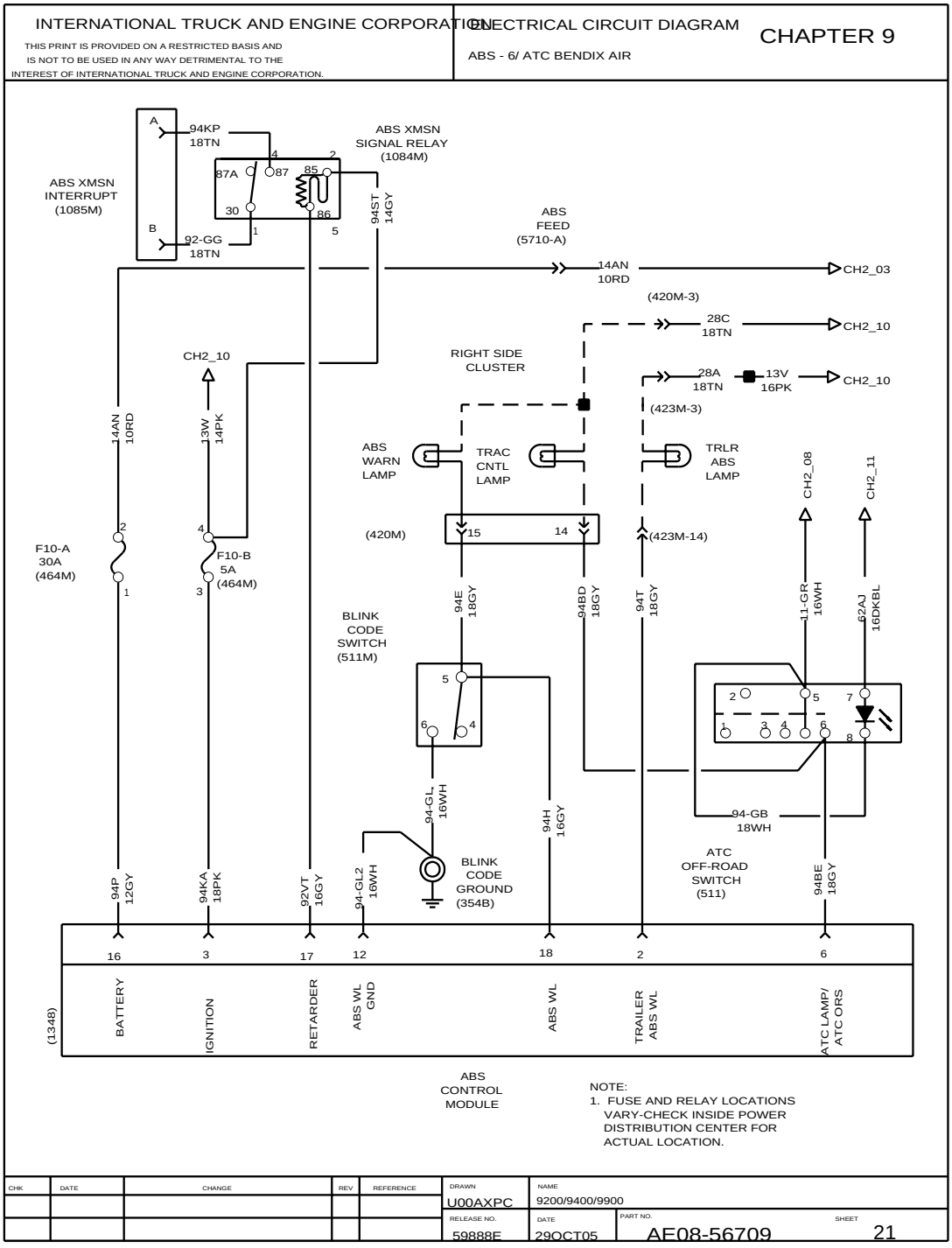


Figure 143 ABS6/ATC Bendix Air

9.22. ABS6/ATC BENDIX AIR, P. 22

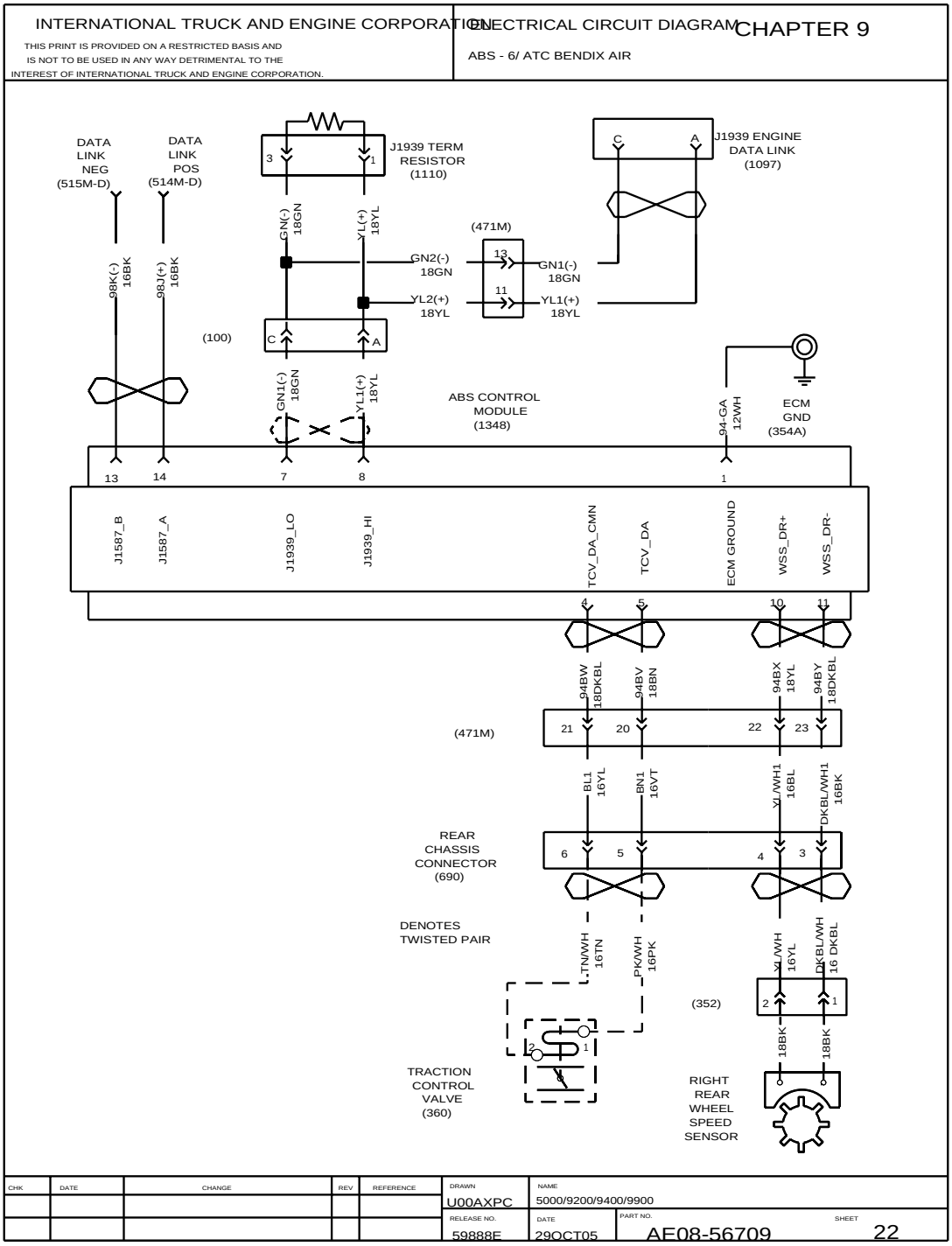


Figure 144 ABS6/ATC Bendix Air

9.23. ABS6/ATC BENDIX AIR, P. 23

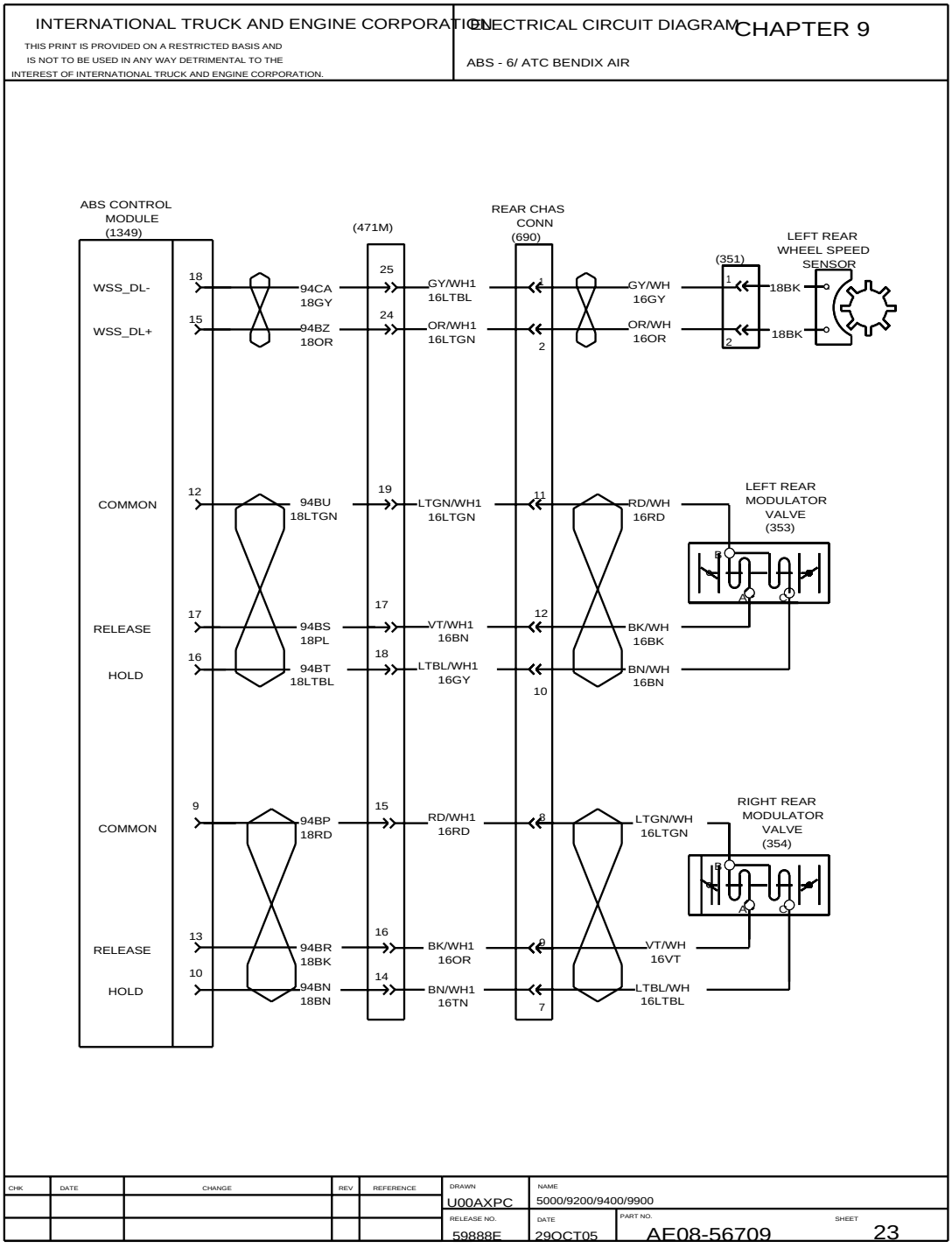


Figure 145 ABS6/ATC Bendix Air

9.24. ABS6/ATC BENDIX AIR, P. 24

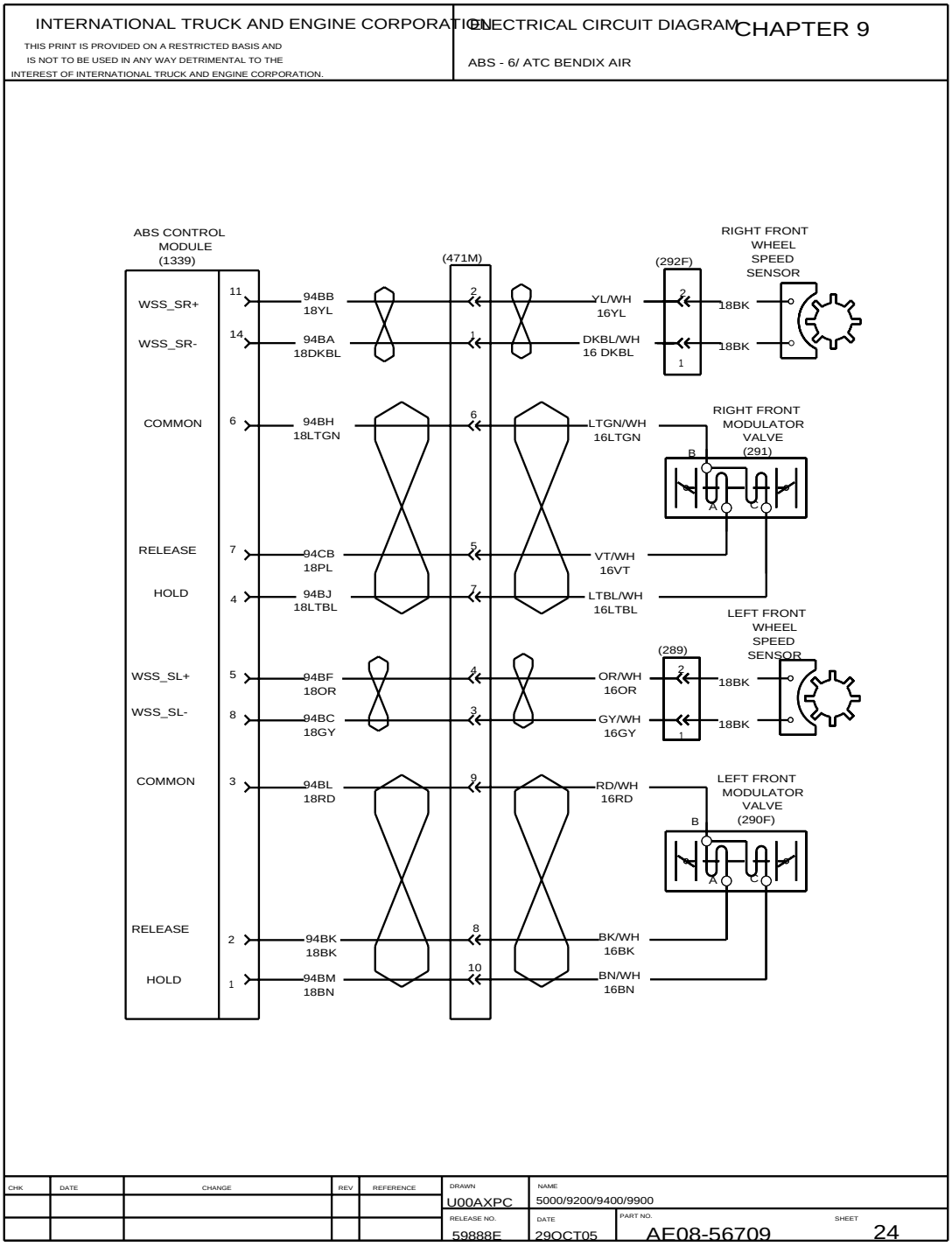


Figure 146 ABS6/ATC Bendix Air

9.25. ALLISON TRANSMISSION SHIFT TOWER BULK HEAD, P. 25

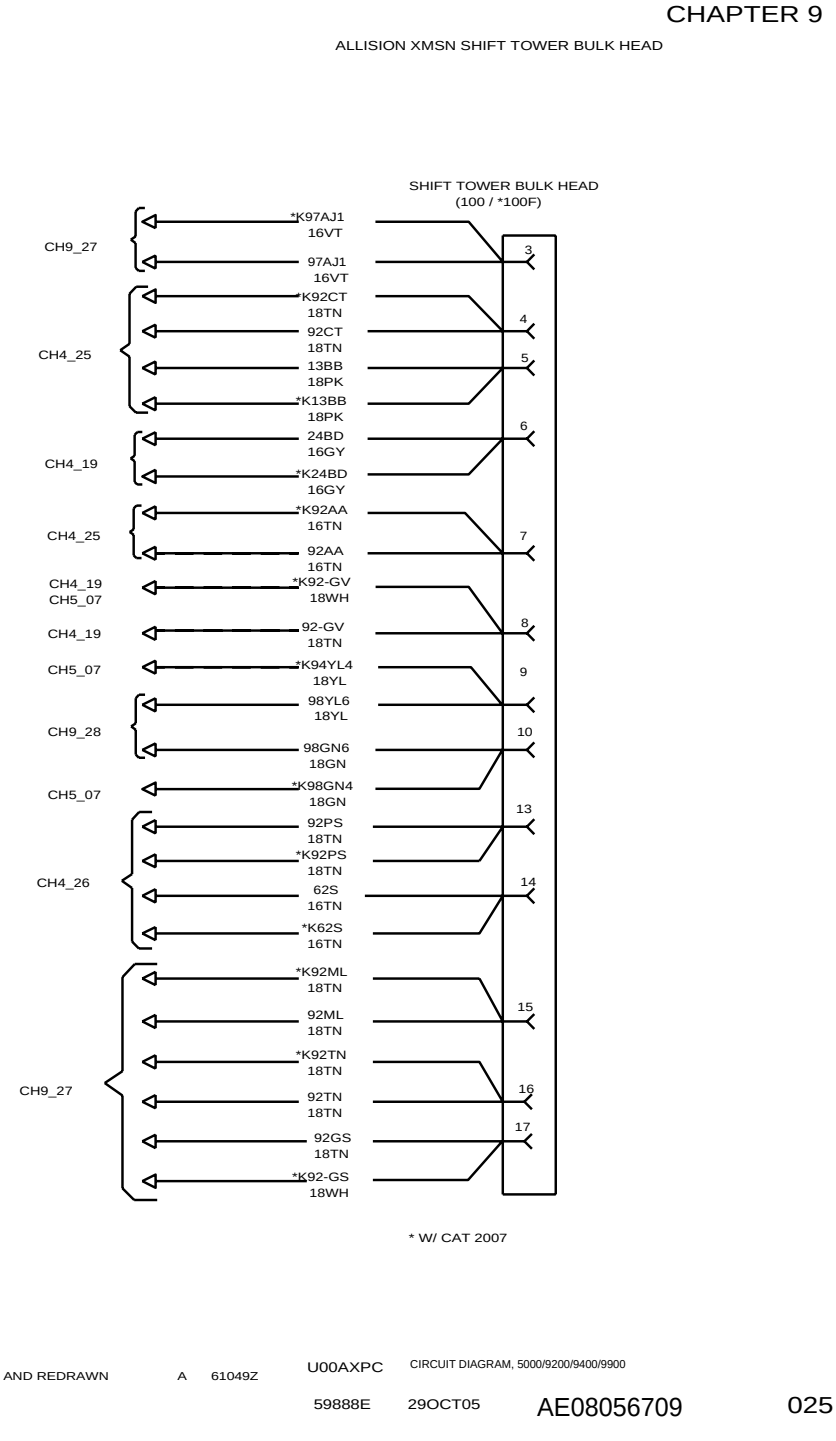


Figure 147 Allison Transmission Shift Tower Bulk Head

9.26. ALLISON TRANSMISSION SHIFT TOWER BULK HEAD, P. 26

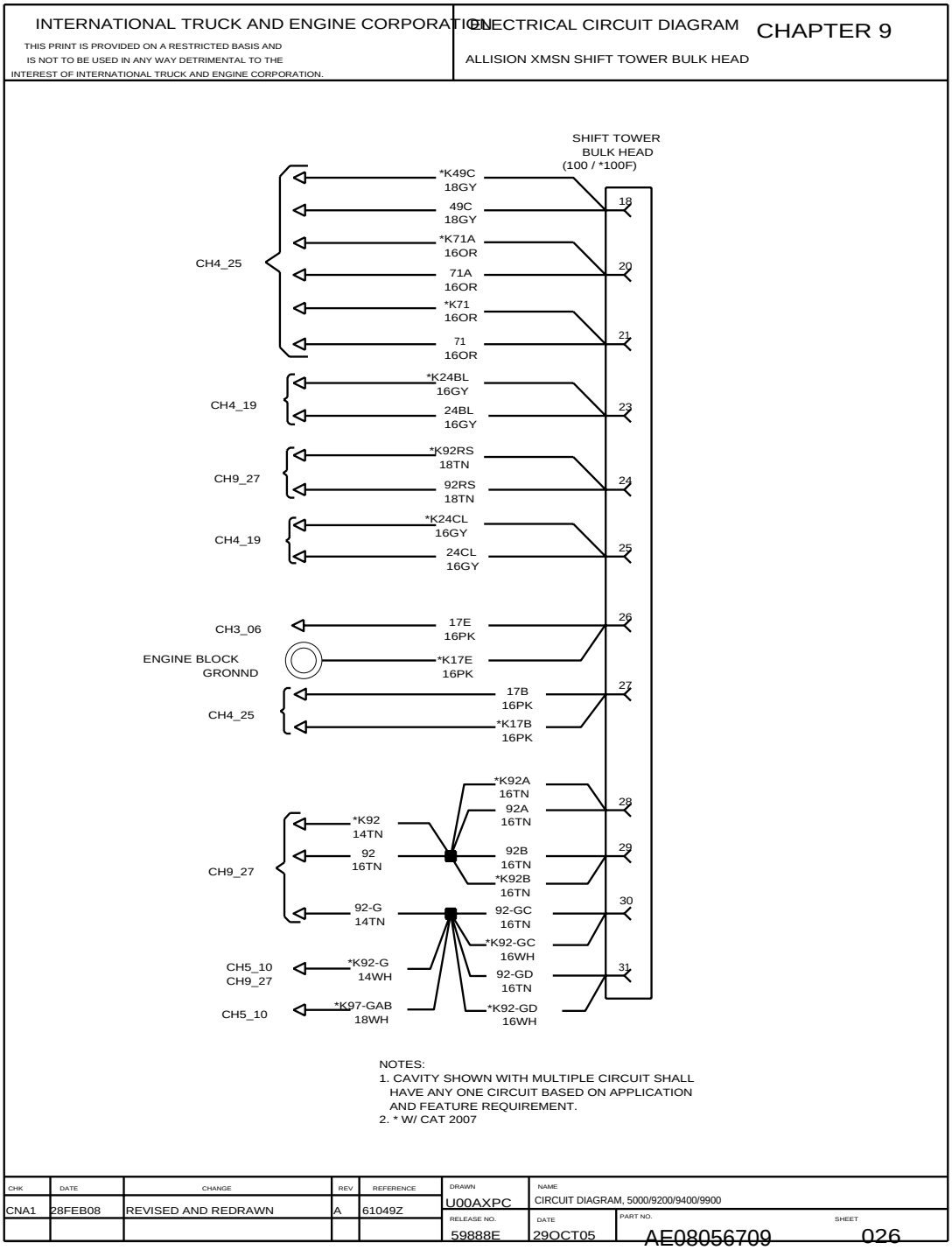


Figure 148 Allison Transmission Shift Tower Bulk Head

9.27. ALLISON TRANSMISSION SHIFT TOWER BULK HEAD, P. 27

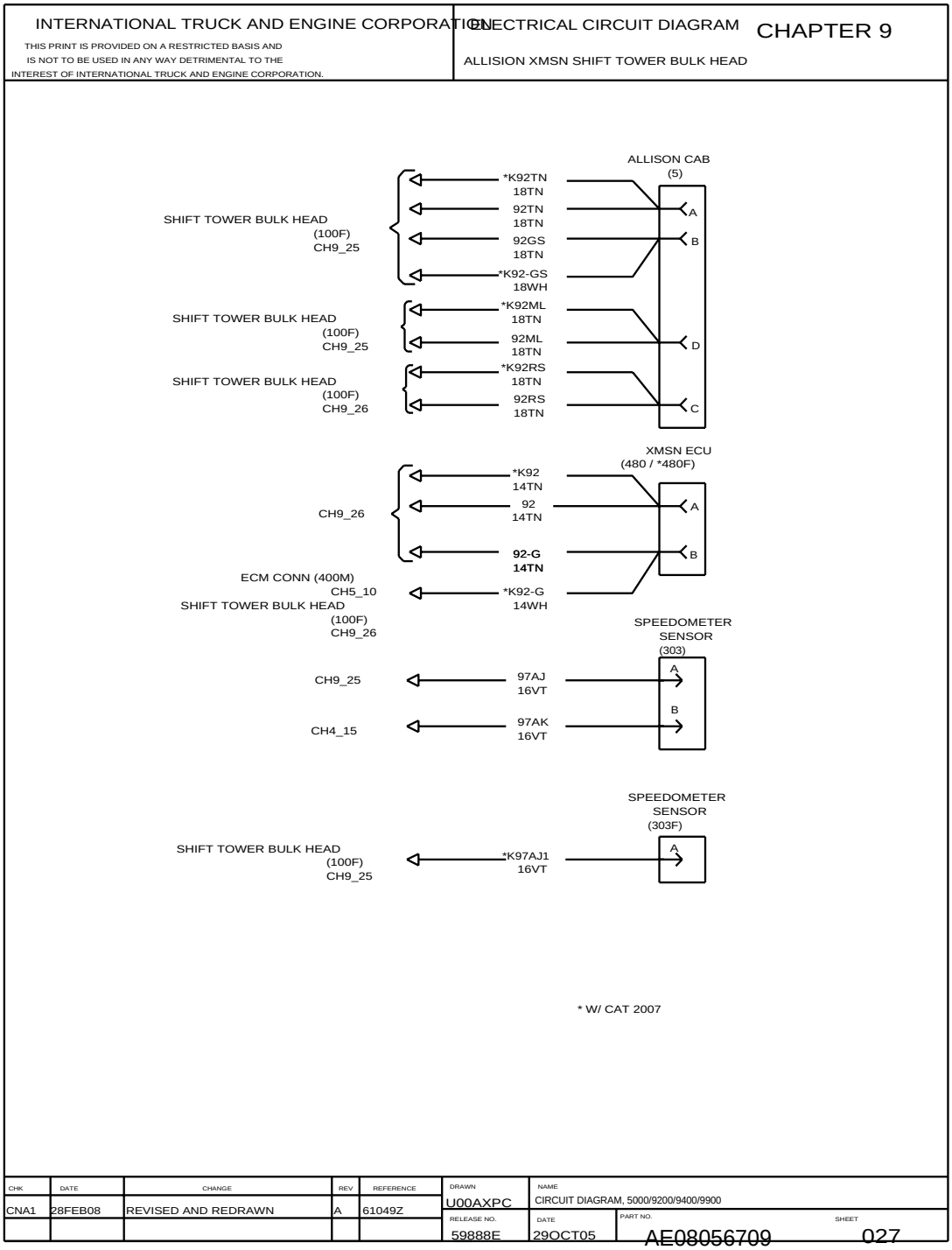


Figure 149 Allison Transmission Shift Tower Bulk Head

9.28. ALLISON TRANSMISSION DATA LINK, P. 28

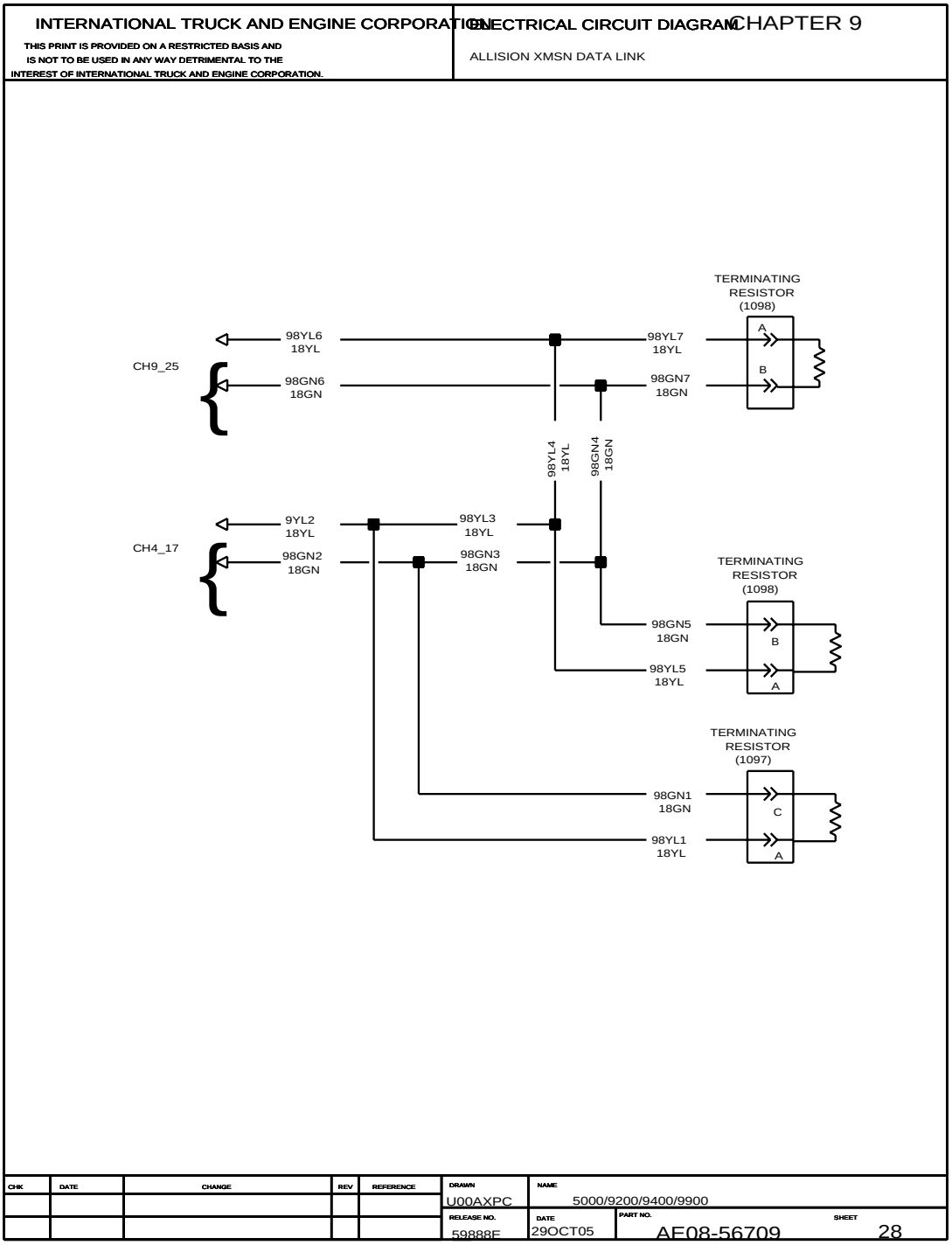


Figure 150 Allison Transmission Data Link

9.29. FREEDOM LINE TRANSMISSION, P. 29

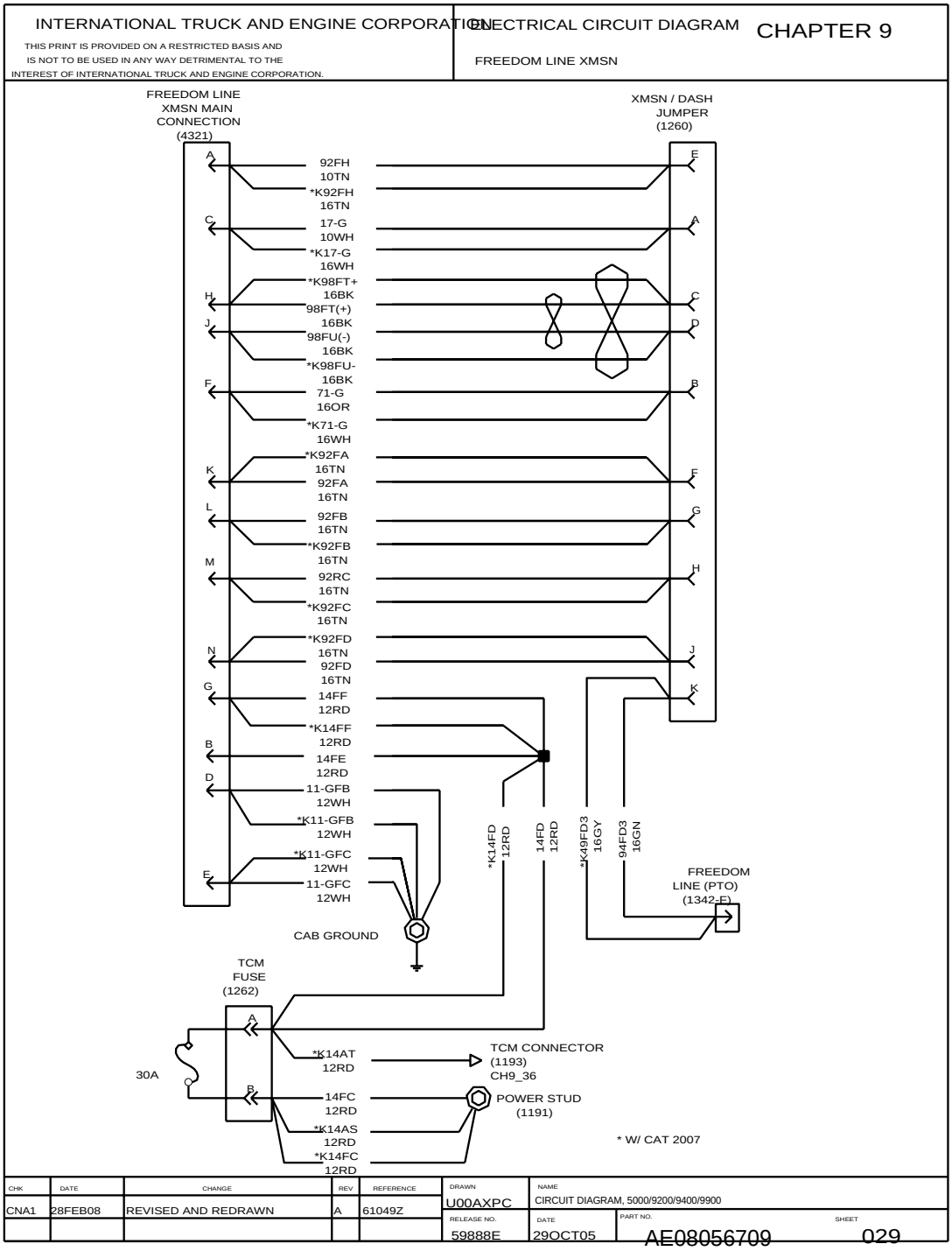


Figure 151 Freedom Line Transmission

9.30. EATON GEN3 TRANSMISSION, P. 30

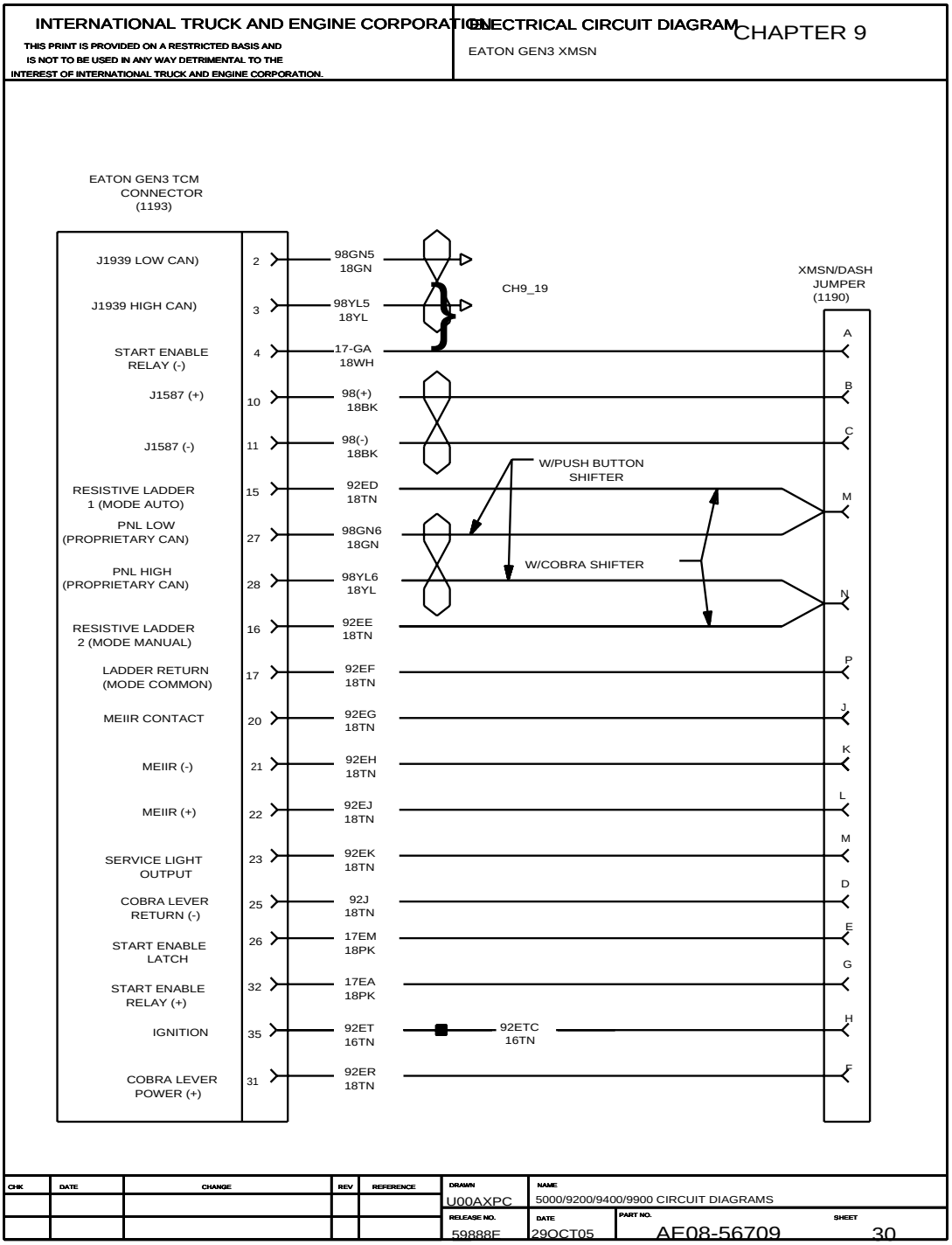


Figure 152 Eaton Gen3 Transmission

9.31. EATON GEN3 TRANSMISSION, P. 31

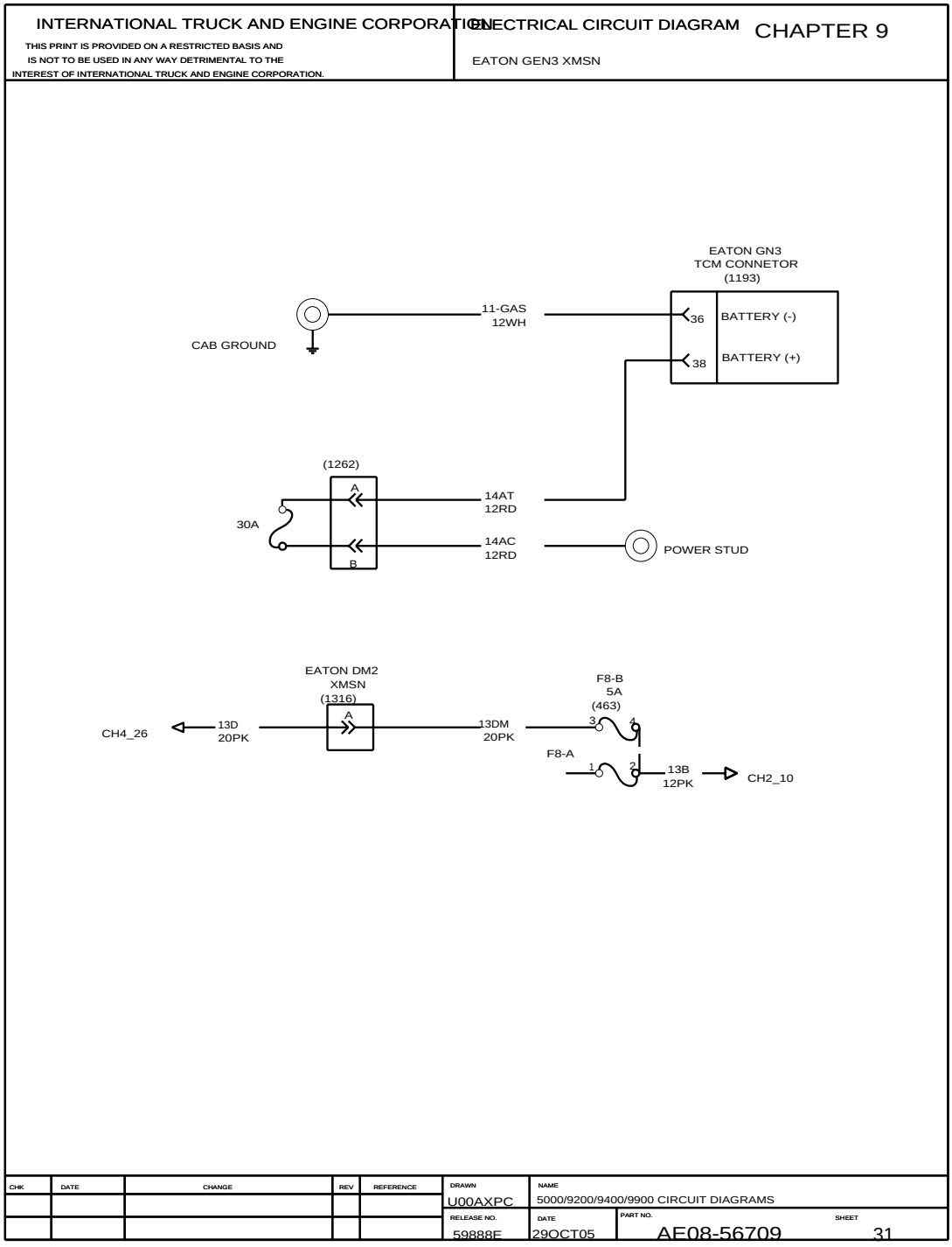


Figure 153 Eaton Gen3 Transmission

9.32. TRANSMISSION MERITOR — G POWER CONNECTOR, P. 32

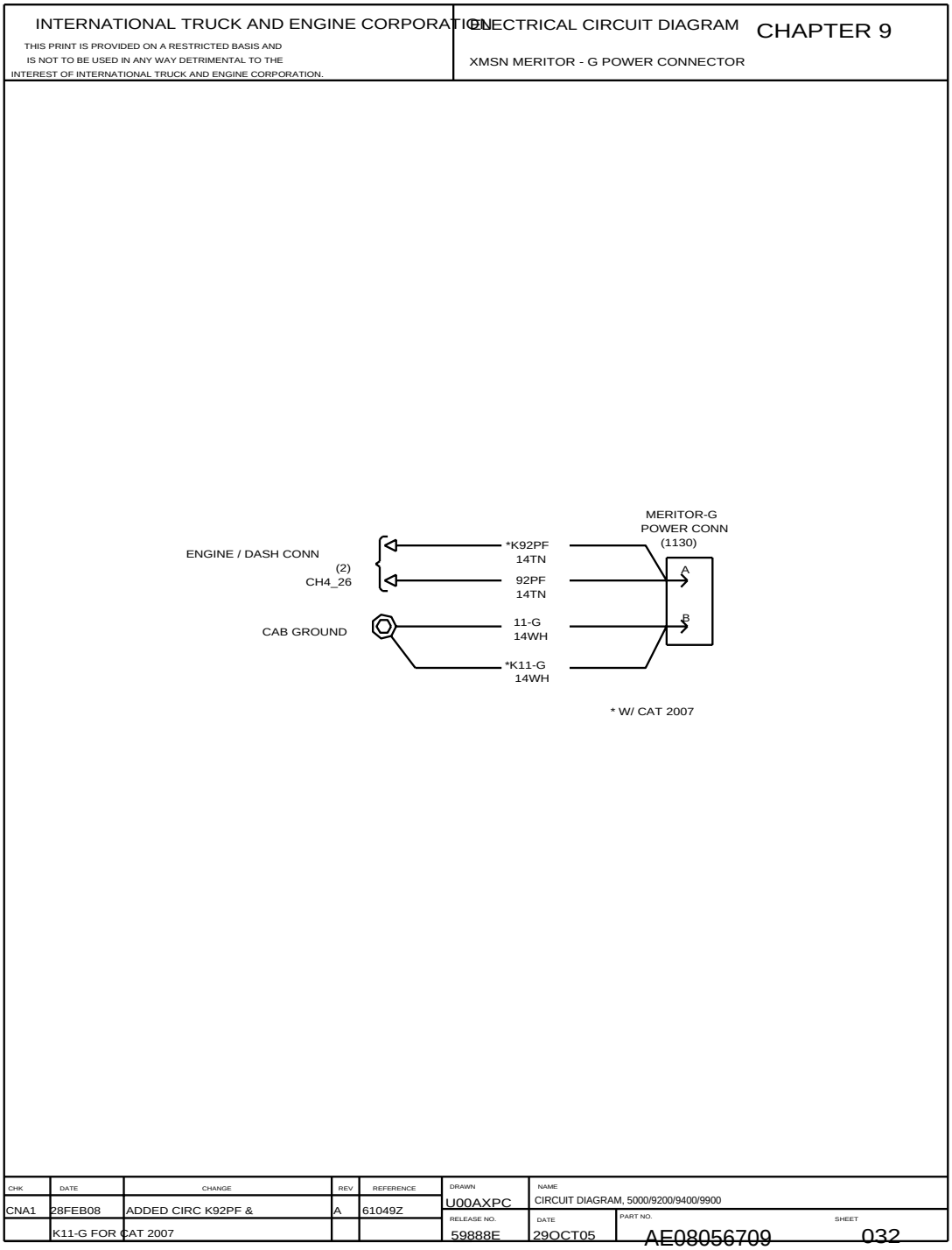


Figure 154 Transmission Meritor — G Power Connector

9.33. ABS/ATC (BENDIX) — LEFT CONTROL, P. 33

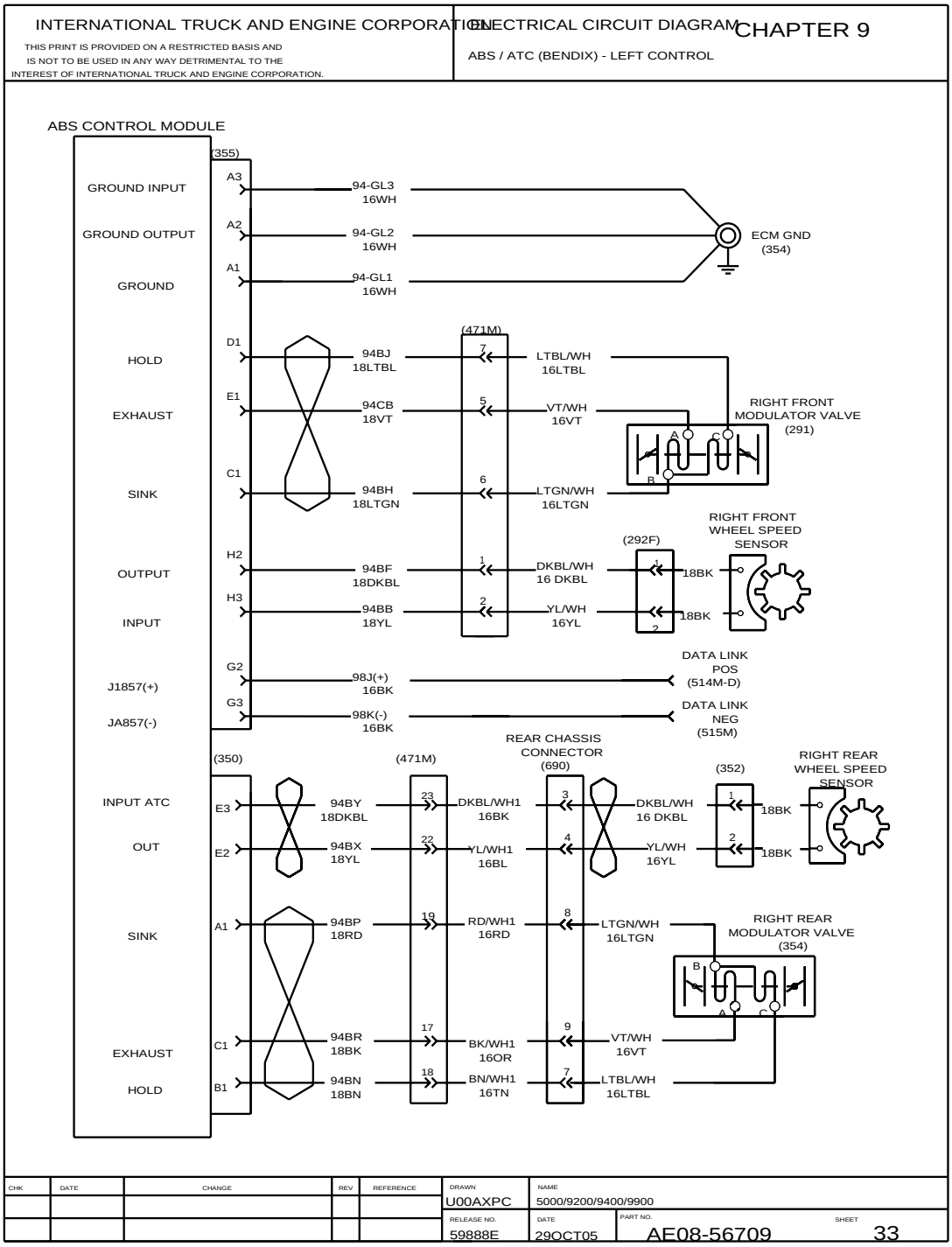


Figure 155 ABS/ATC (Bendix) — Left Control

9.34. ABS–6 ADVANCE ECU, WITH BENDIX RSP, P. 34

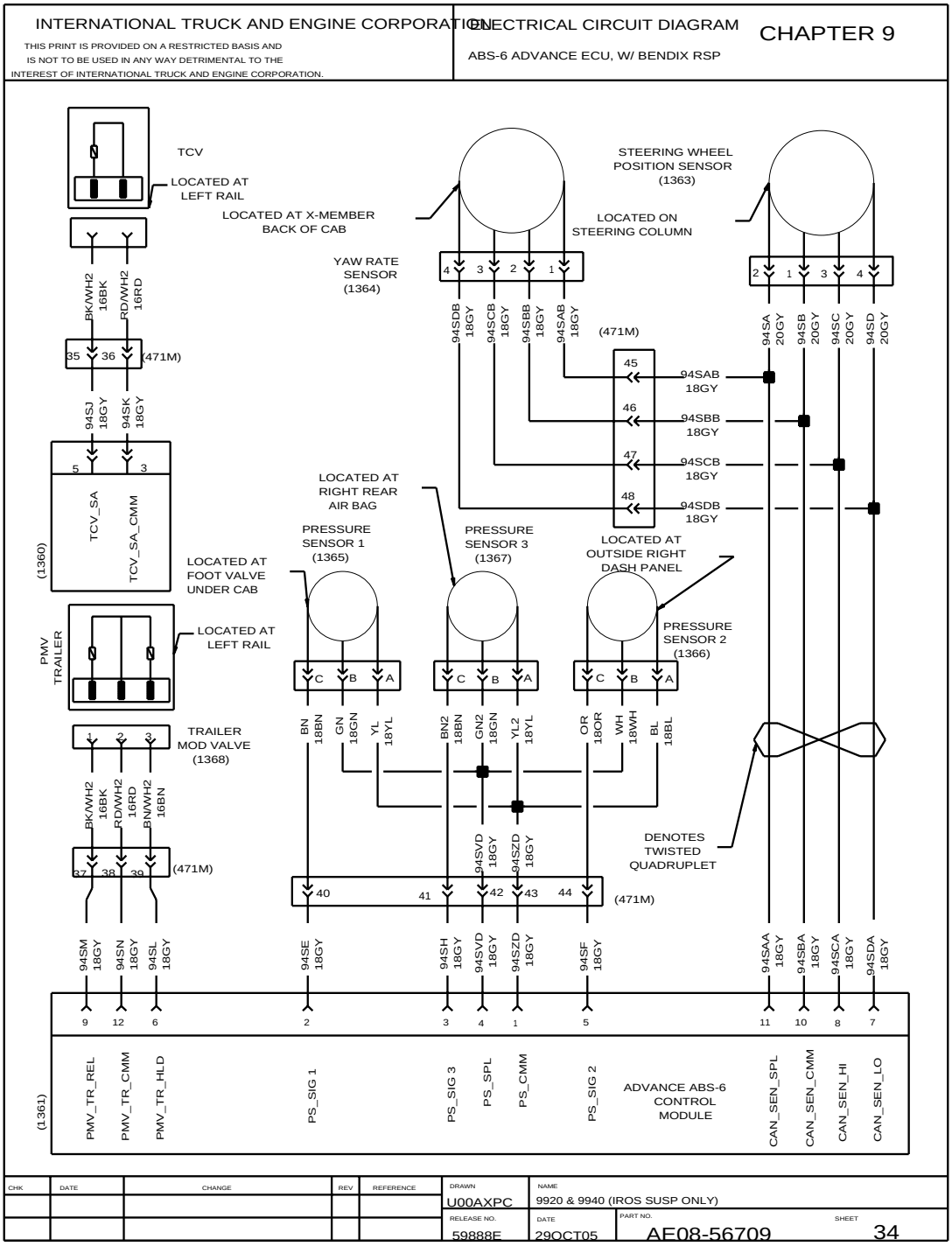


Figure 156 ABS–6 Advance ECU, with Bendix RSP

9.35. TRAILER CONNECTION — BACK OF SLEEPER MOUNTED WITH TRACTOR ABS, P. 35

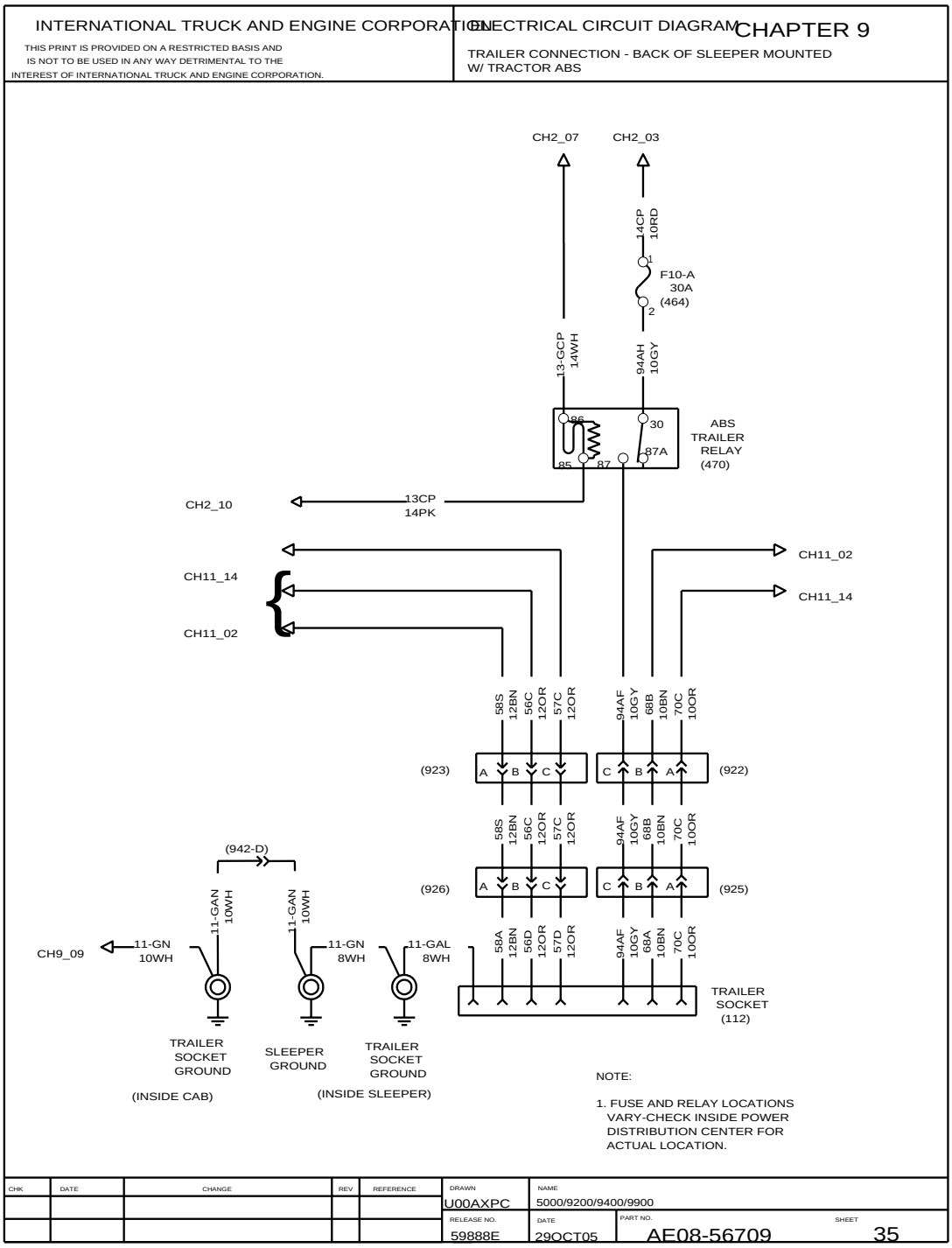


Figure 157 Trailer Connection — Back of Sleeper Mounted with Tractor ABS

9.36. TCM CONNECTOR CAT 2007, P. 36

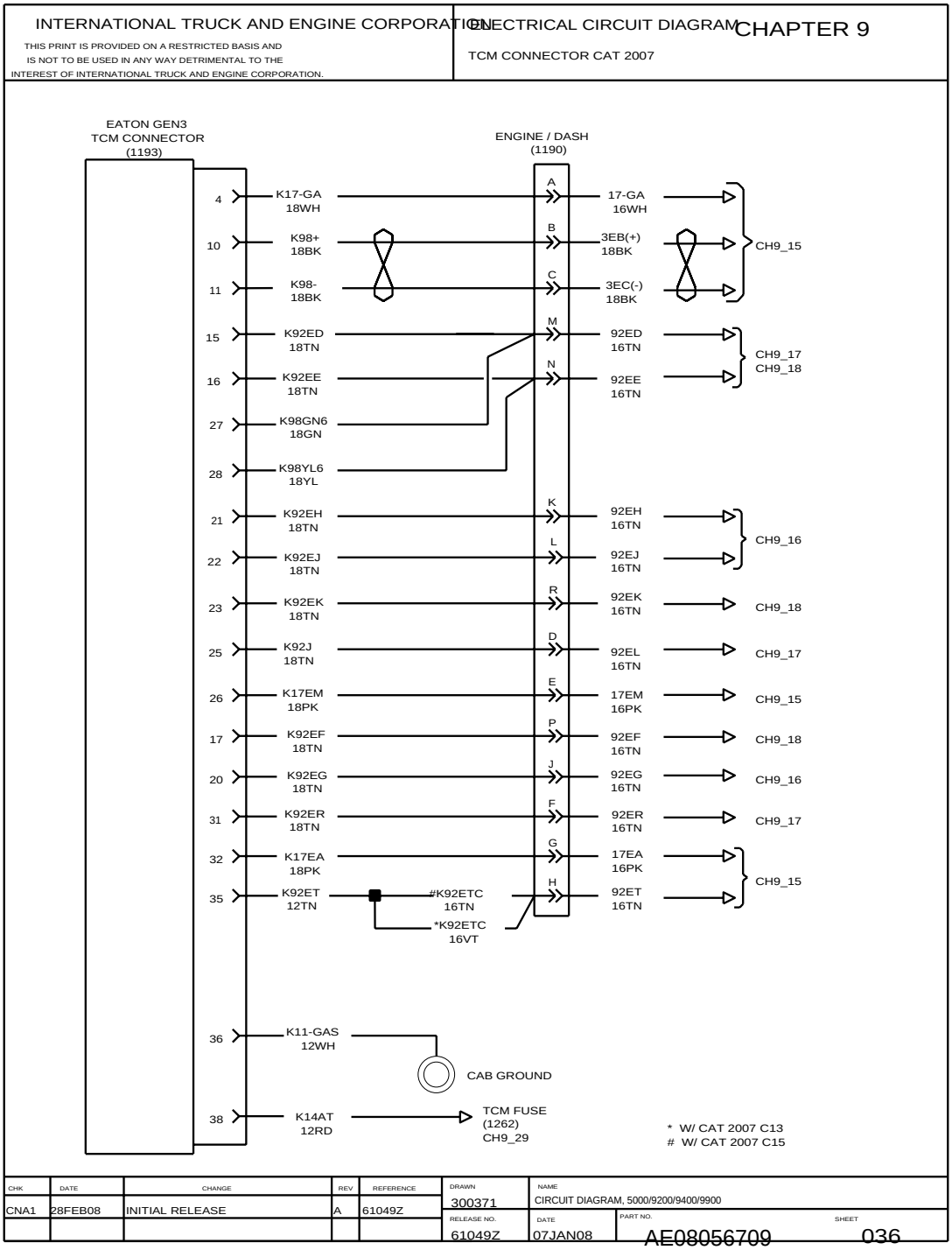


Figure 158 TCM Connector Cat 2007

10. SLEEPER LIGHTING AND ACCESSORIES (CHAPTER 10)

10.1. AUXILIARY CIRCULATION FAN (LOW ROOF), P. 1

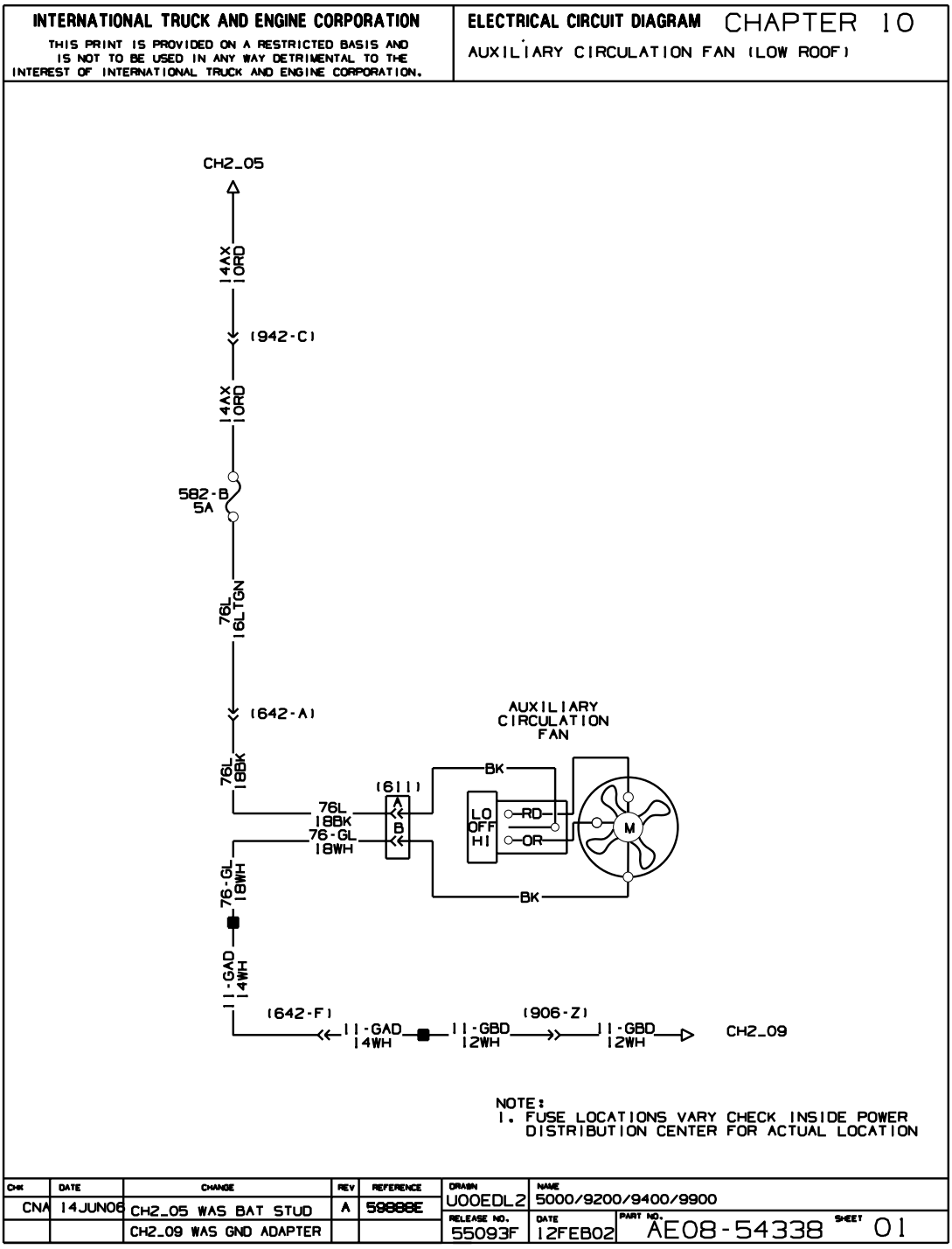


Figure 159 Auxiliary Circulation Fan (Low Roof)

10.2. AUXILIARY CIRCULATION FAN (HIGH ROOF), P. 2

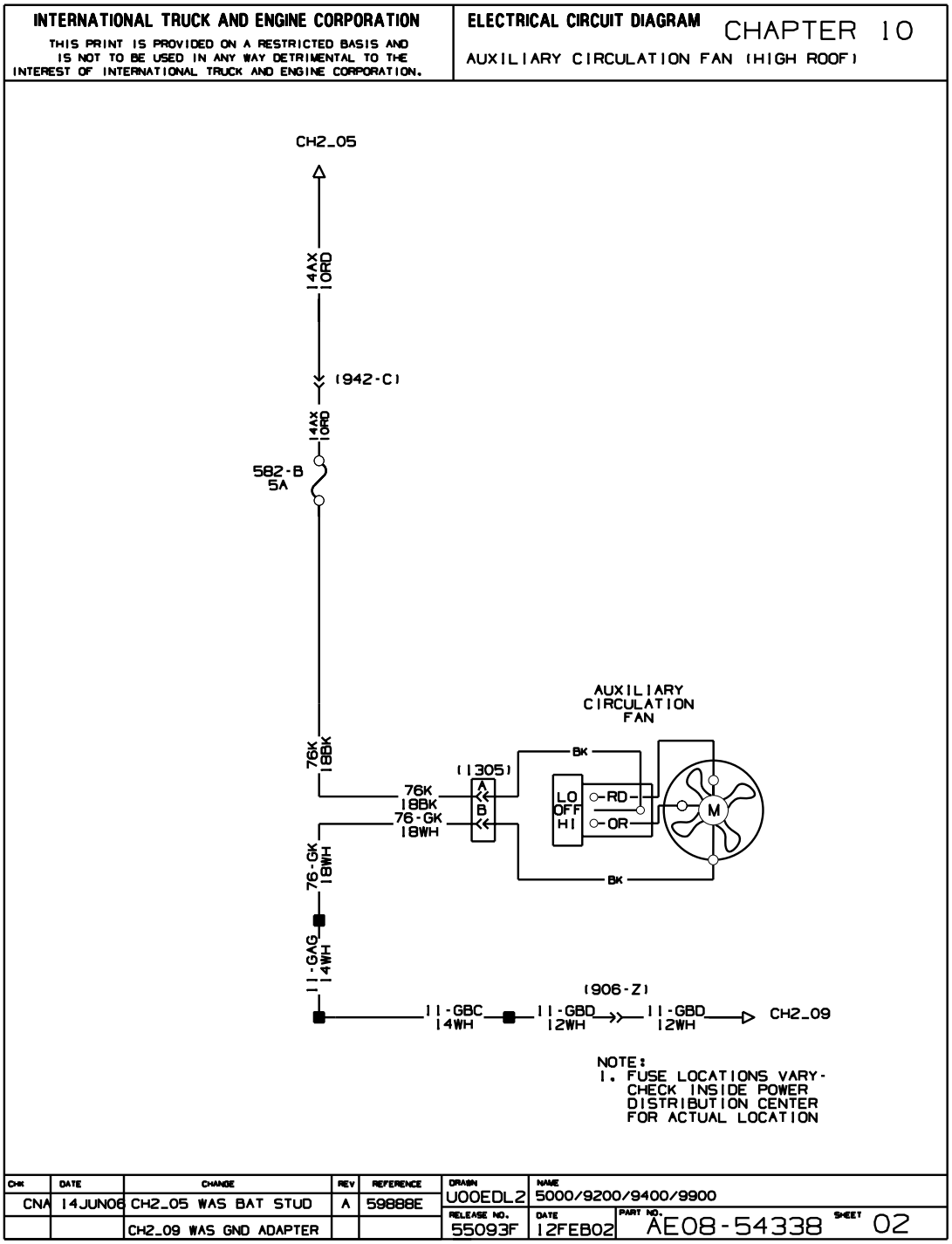


Figure 160 Auxiliary Circulation Fan (High Roof)

10.3. AUXILIARY CIRCULATION FAN (SKYRISE), P. 3

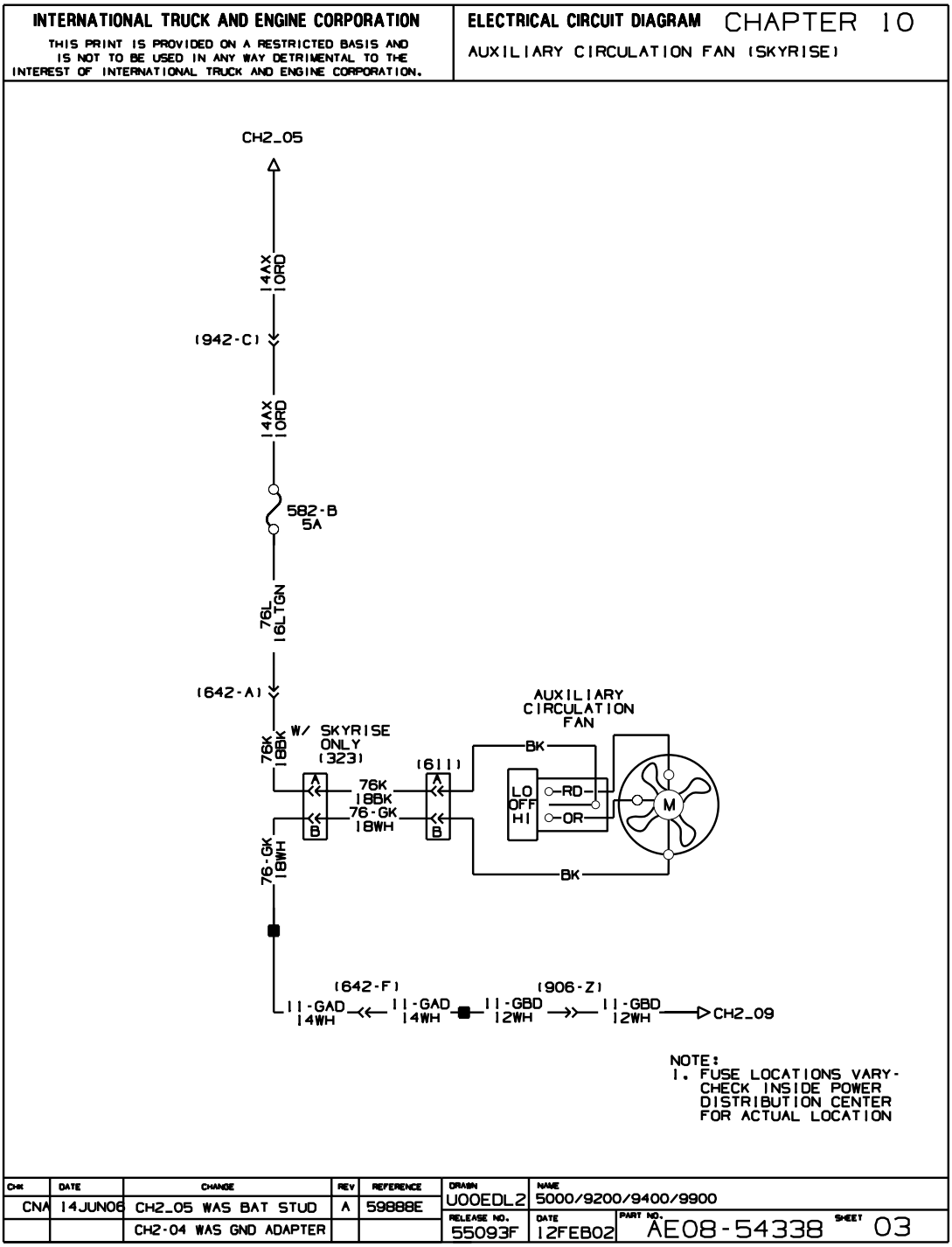


Figure 161 Auxiliary Circulation Fan (Skyrise)

10.4. BUNK FLUORESCENT AND READING LIGHTS, P. 4

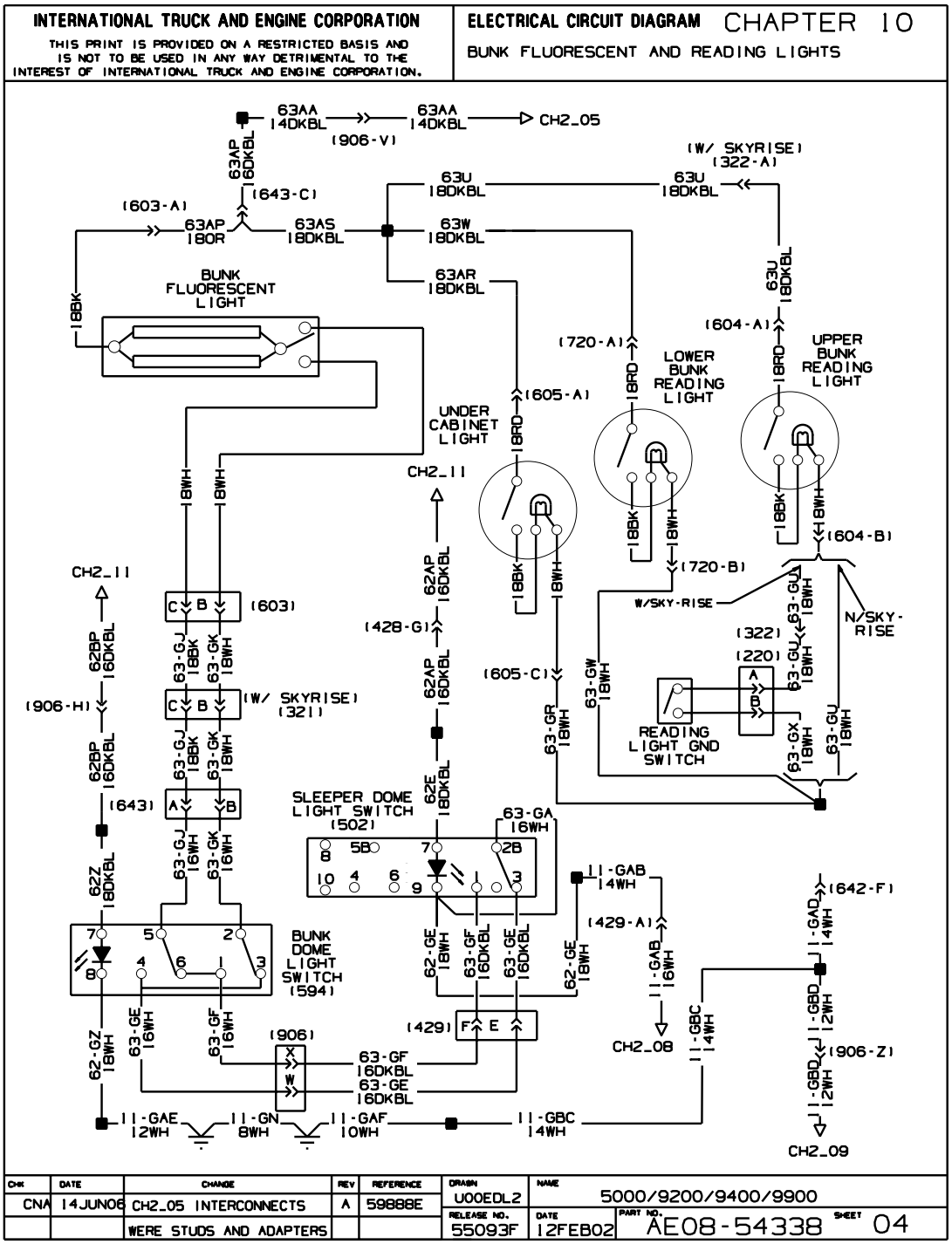


Figure 162 Bunk Fluorescent and Reading Lights

10.5. BUNK SPEAKERS, P. 5

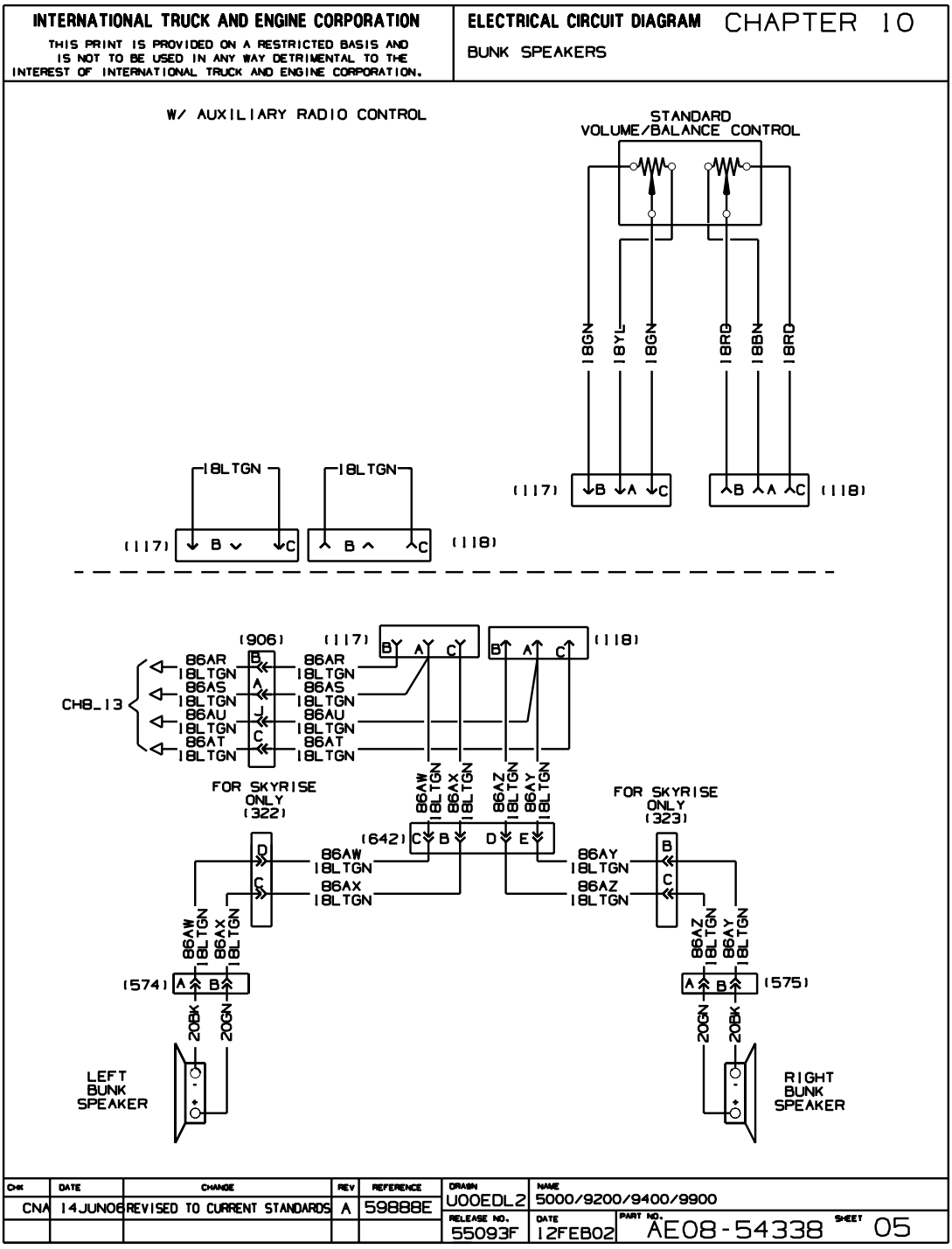


Figure 163 Bunk Speakers

10.6. LUGGAGE COMPARTMENT LIGHTS, P. 6

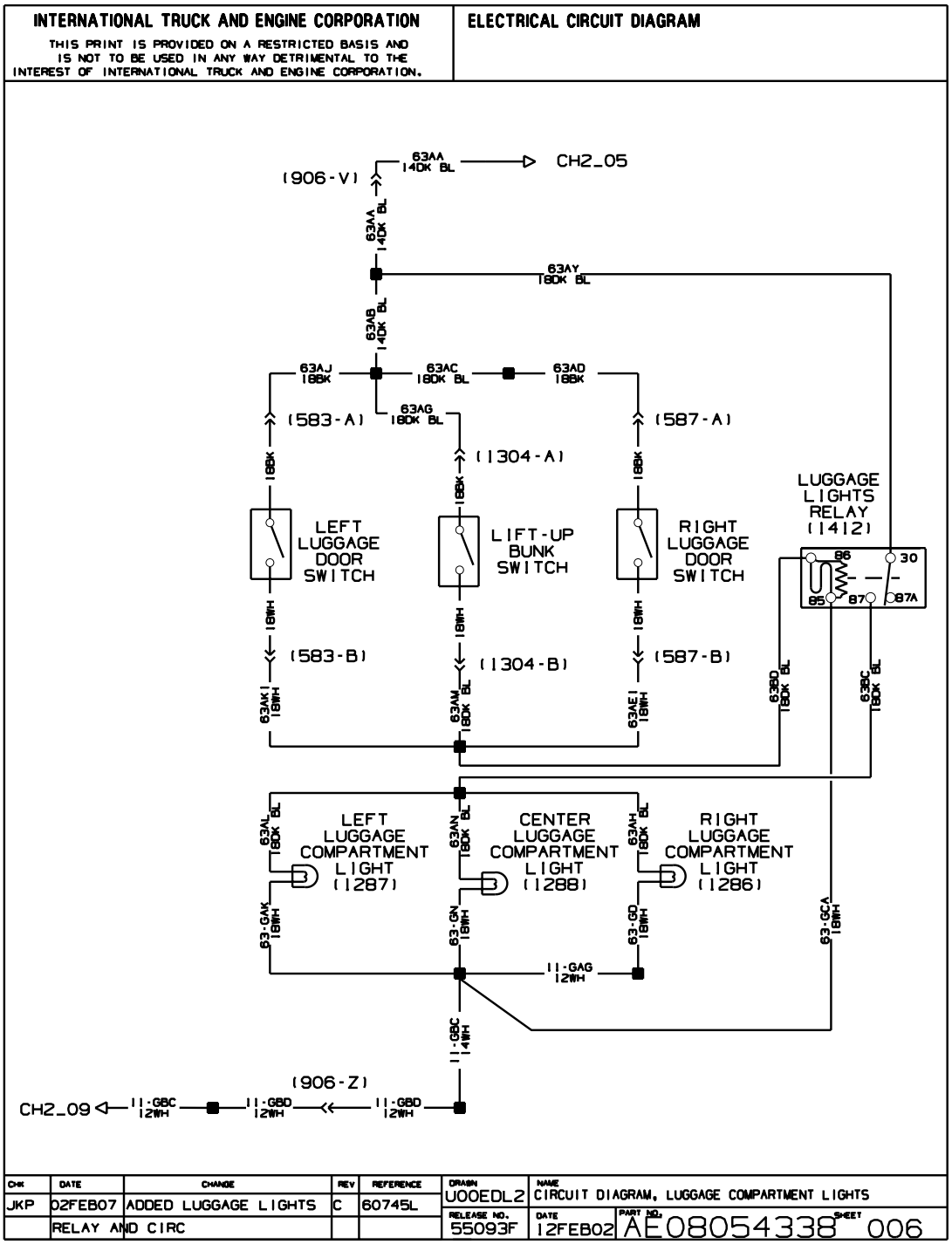


Figure 164 Luggage Compartment Lights

10.7. POWER SOURCE, P. 7

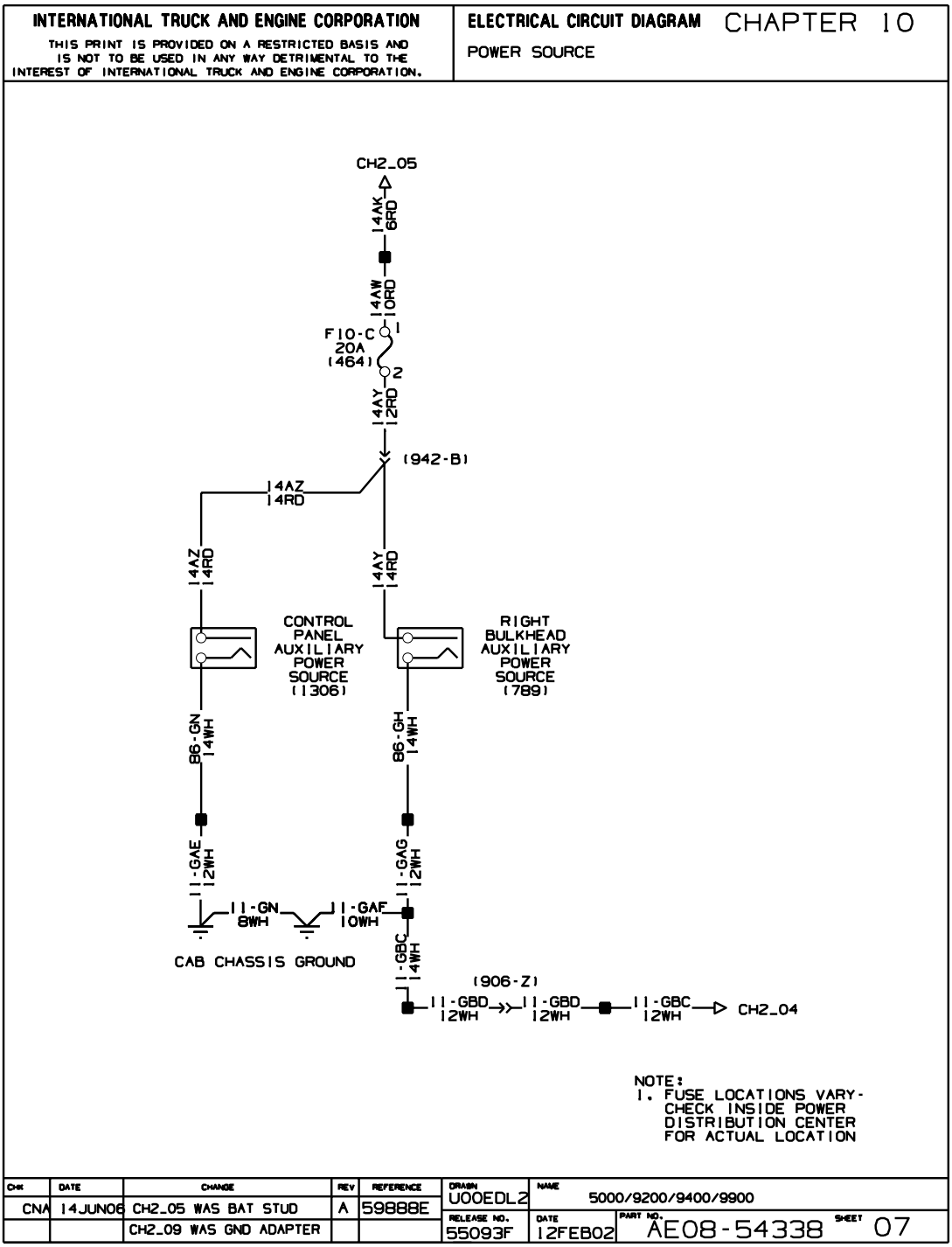


Figure 165 Power Source

10.8. REFRIGERATOR WIRING, P. 8

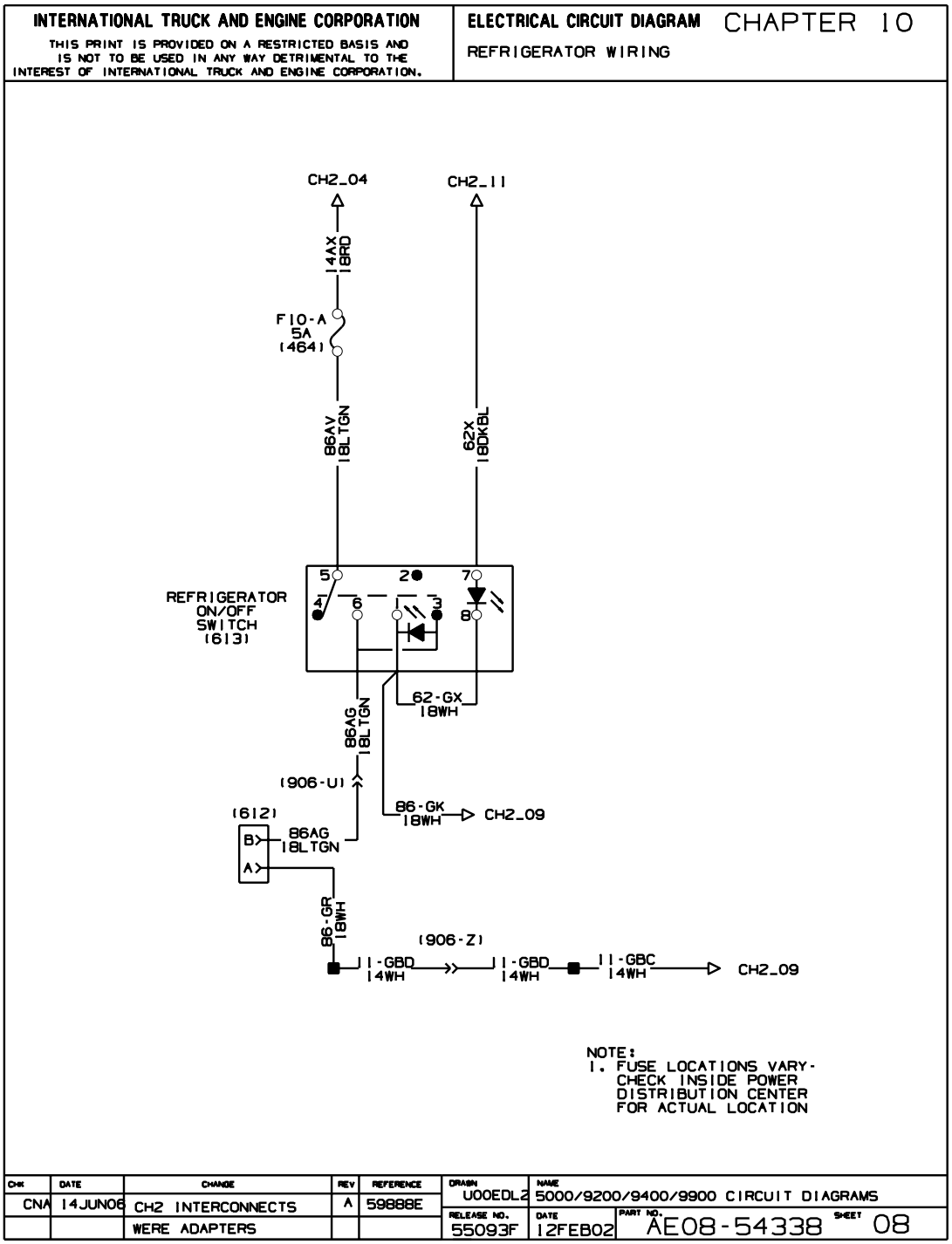


Figure 166 Refrigerator Wiring

10.9. TV/VCR WIRING, P. 9

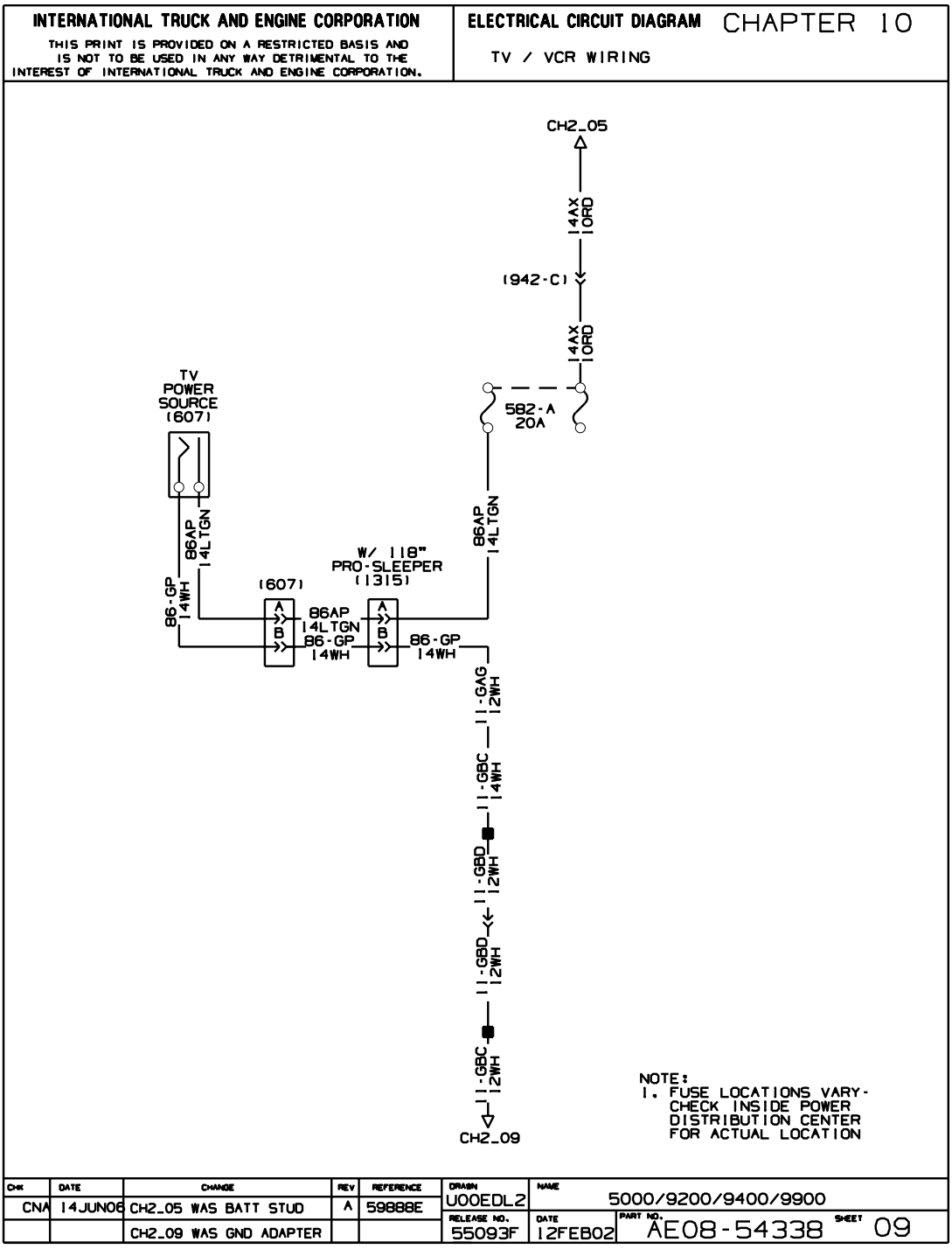


Figure 167 TV/VCR Wiring

10.10. OVERHEAD CABINETS, ACCENT LIGHTS, P. 10

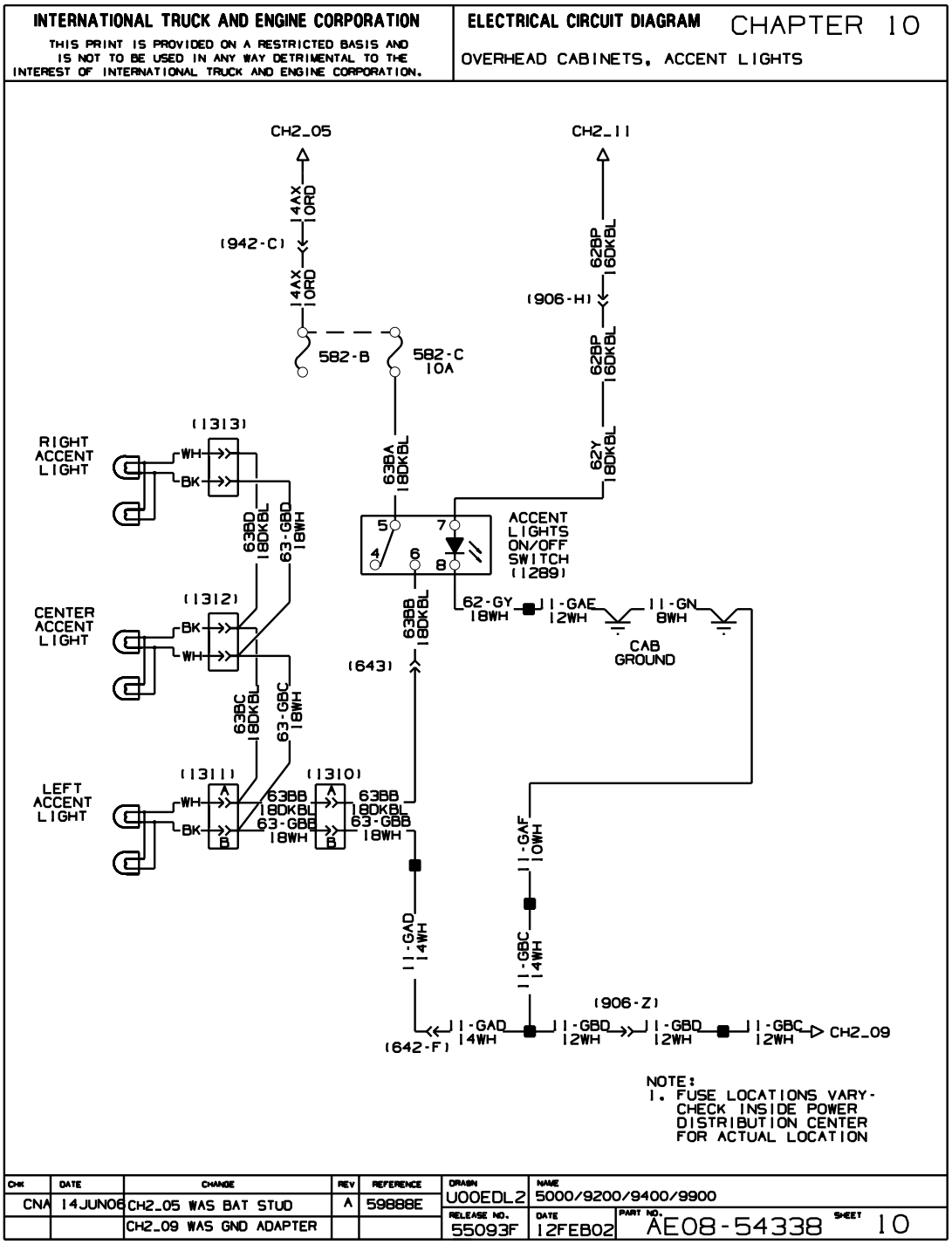


Figure 168 Overhead Cabinets, Accent Lights

10.11. OPTIONAL SLEEPER MOUNTED RADIO CONTROLS, P. 11

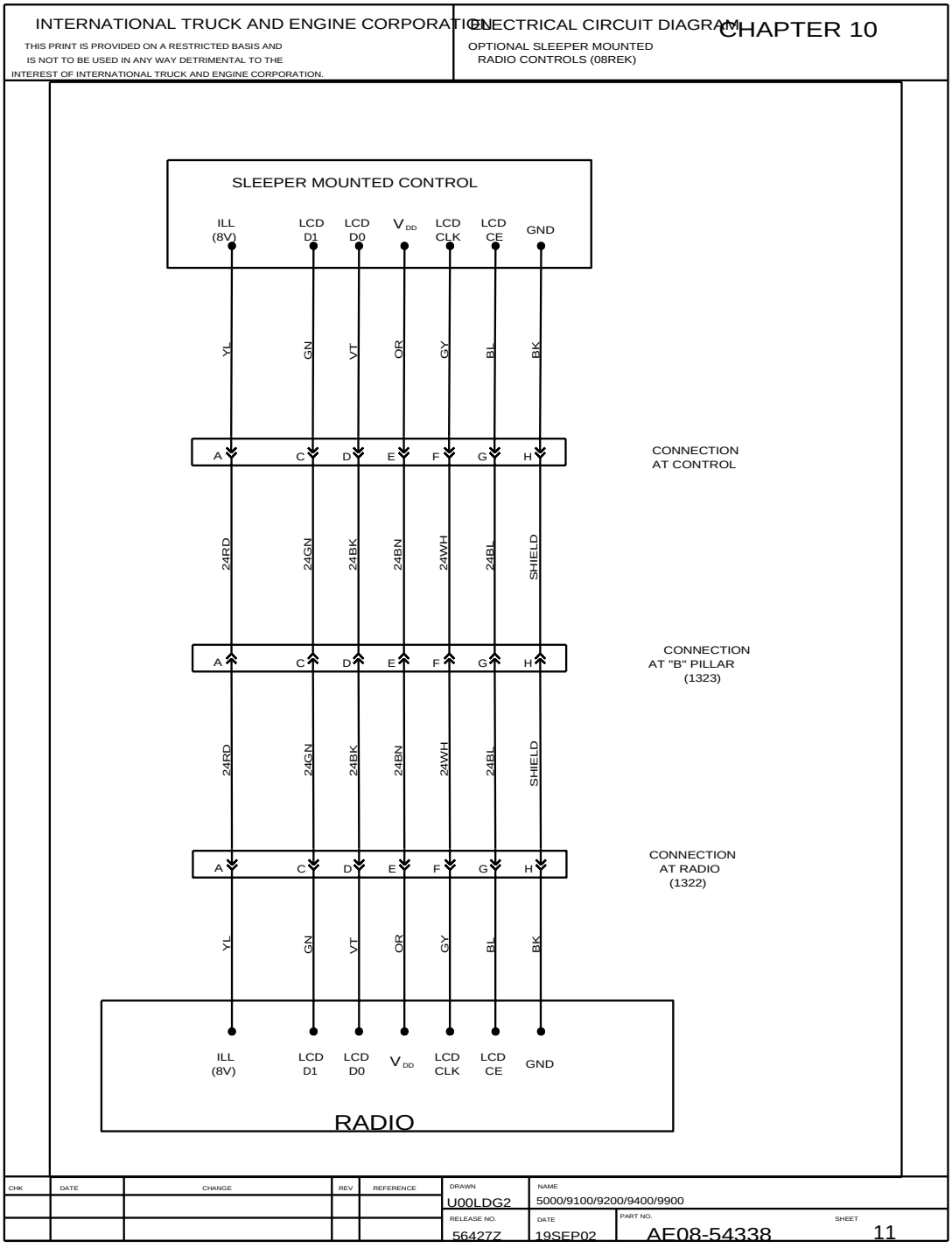


Figure 169 Optional Sleeper Mounted Radio Controls

10.12. SHORE POWER WIRING (08WET) NOT WITH INVERTER, P. 12

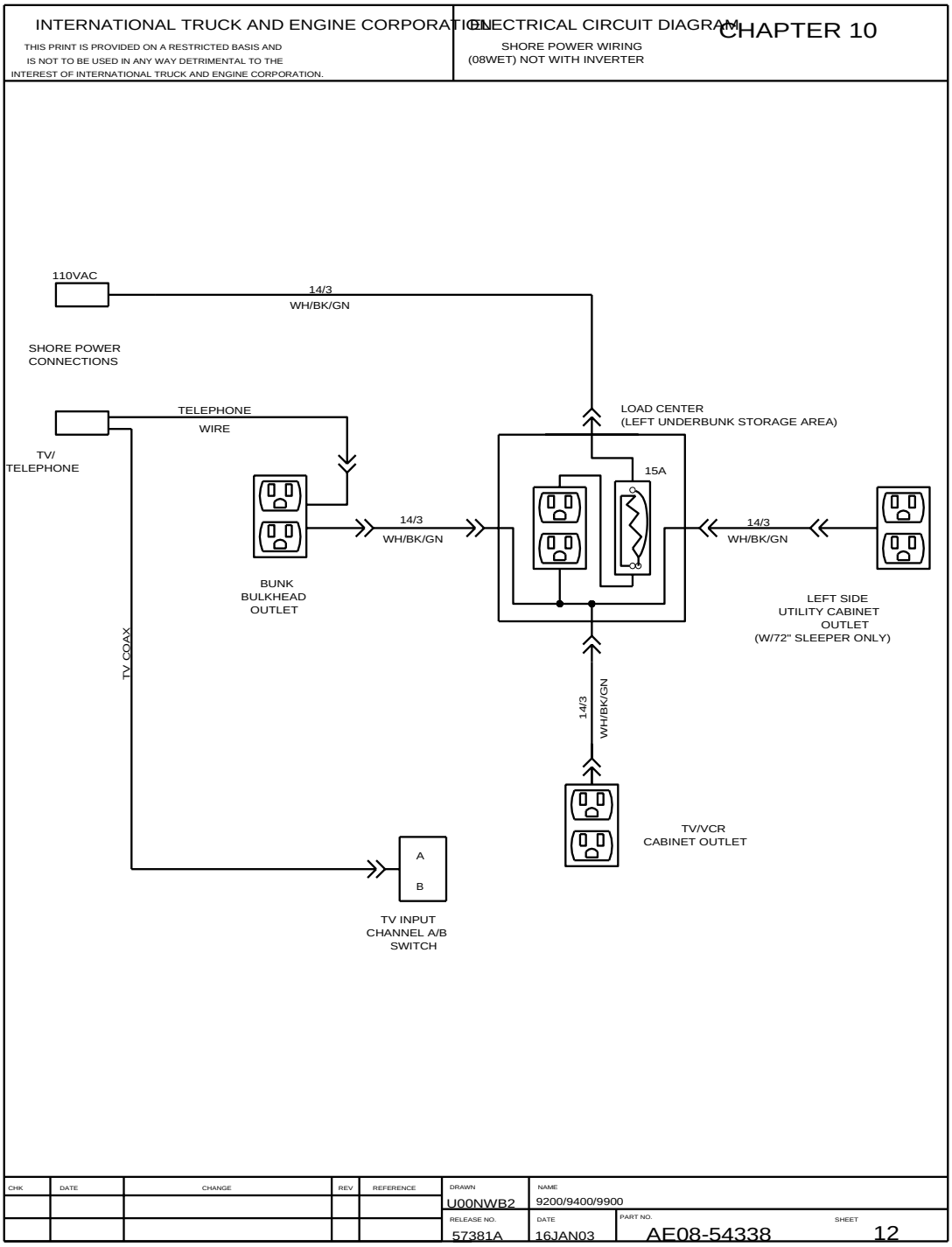


Figure 170 Shore Power Wiring (08WET) Not With Inverter

10.13. SHORE POWER WIRING (08WET) WITH INVERTER (08WES), P. 13

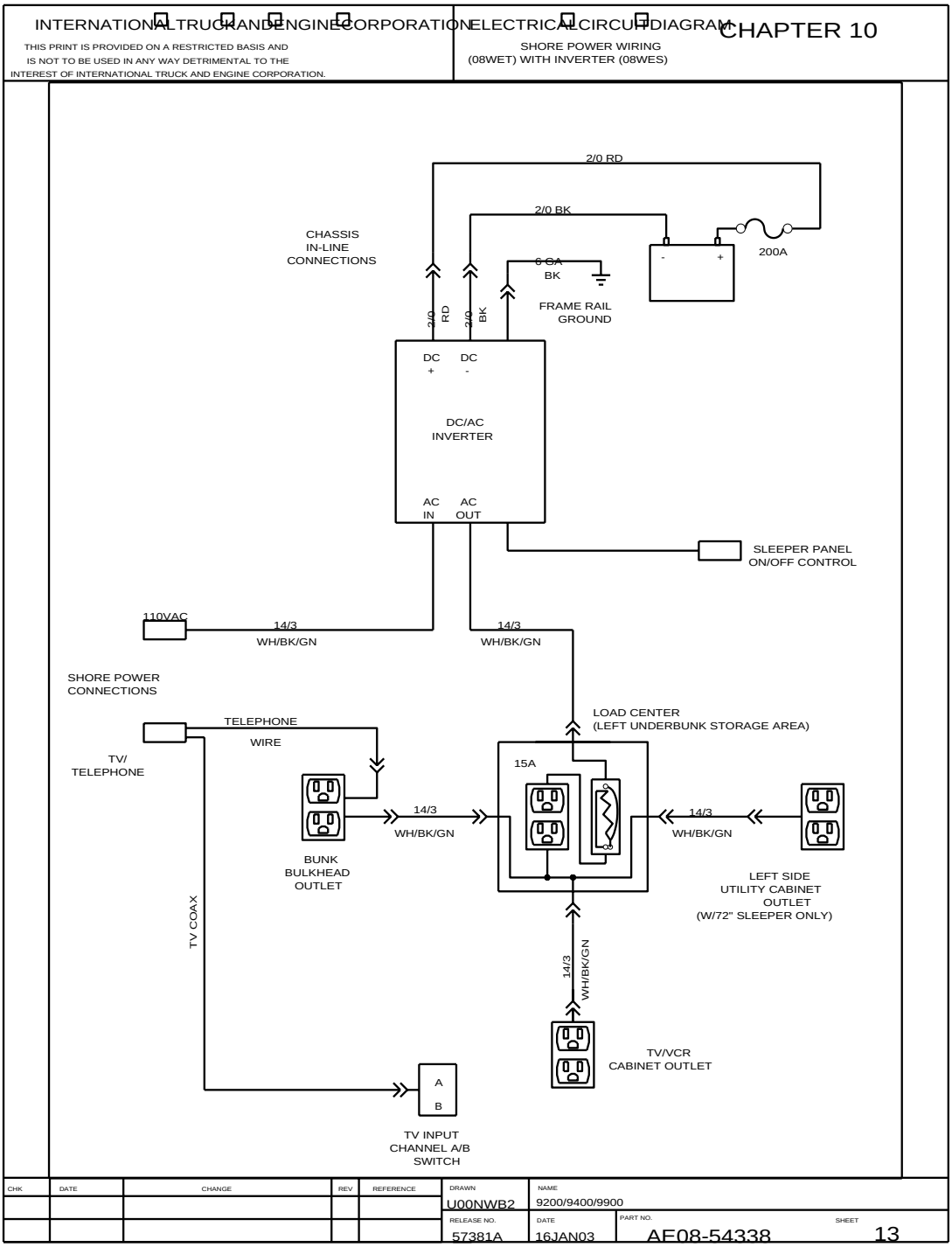


Figure 171 Shore Power Wiring (08WET) With Inverter (08WES)

11. LIGHT SYSTEMS (CHAPTER 11)

11.1. BACK-UP LIGHTS, P. 1

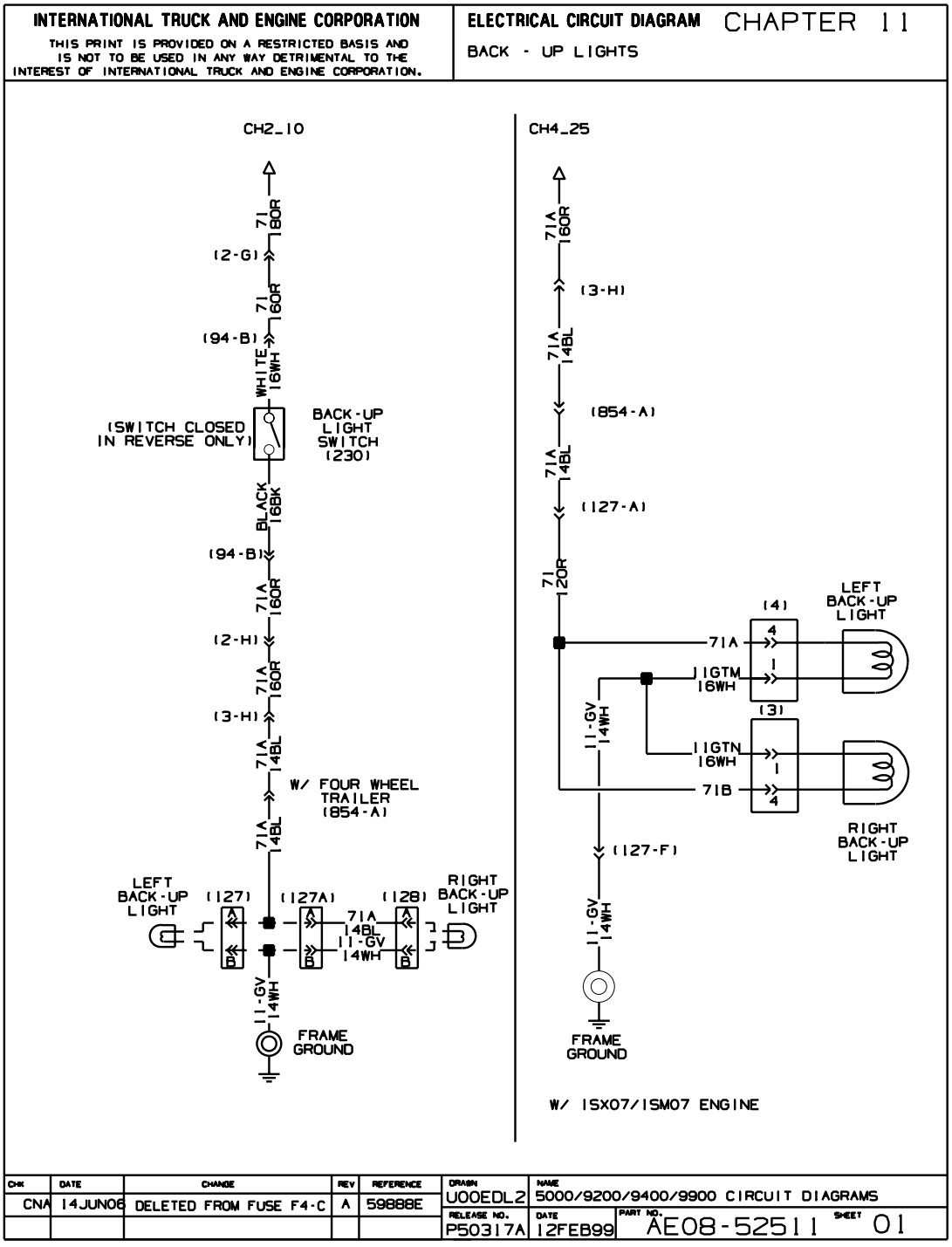


Figure 172 Back-Up Lights

11.2. CAB AND TRAILER LIGHTS SWITCH AND RELAYS WIRING, P. 2

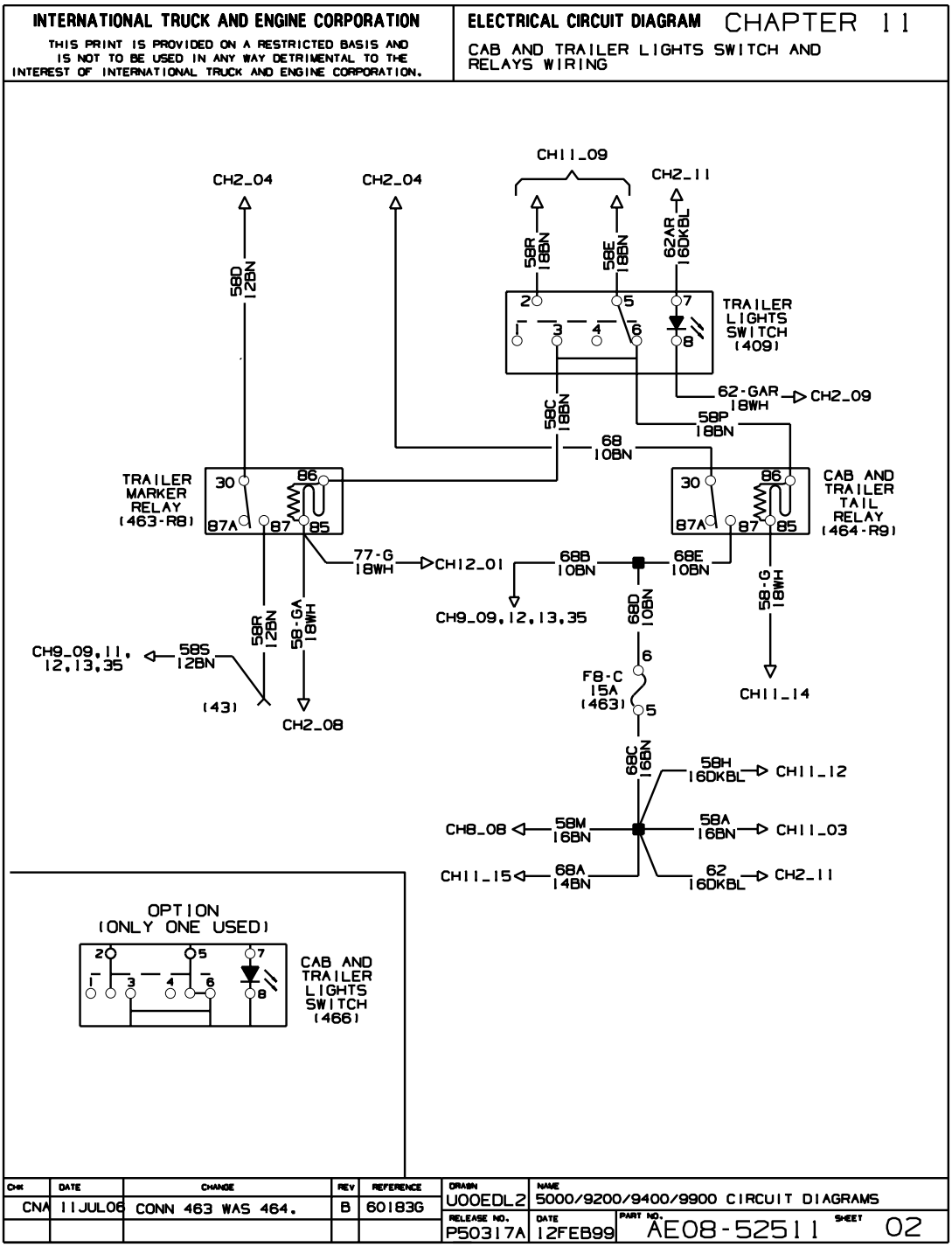


Figure 173 Cab and Trailer Lights Switch and Relays Wiring

11.3. CAB CLEARANCE AND IDENTIFICATION LIGHTS, P. 3

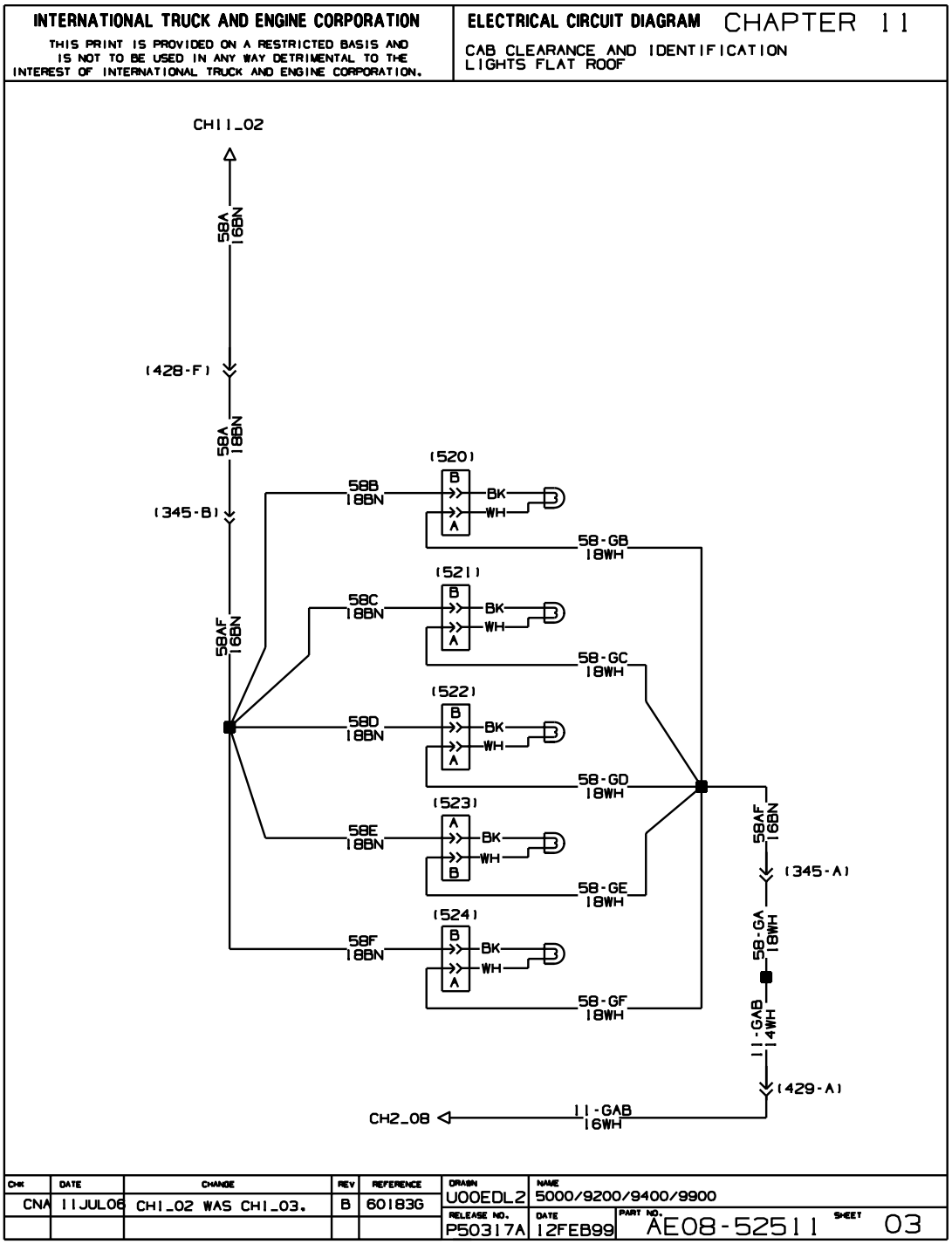


Figure 174 Cab Clearance and Identification Lights

11.4. WORK LIGHT N/SLEEPER, P. 4

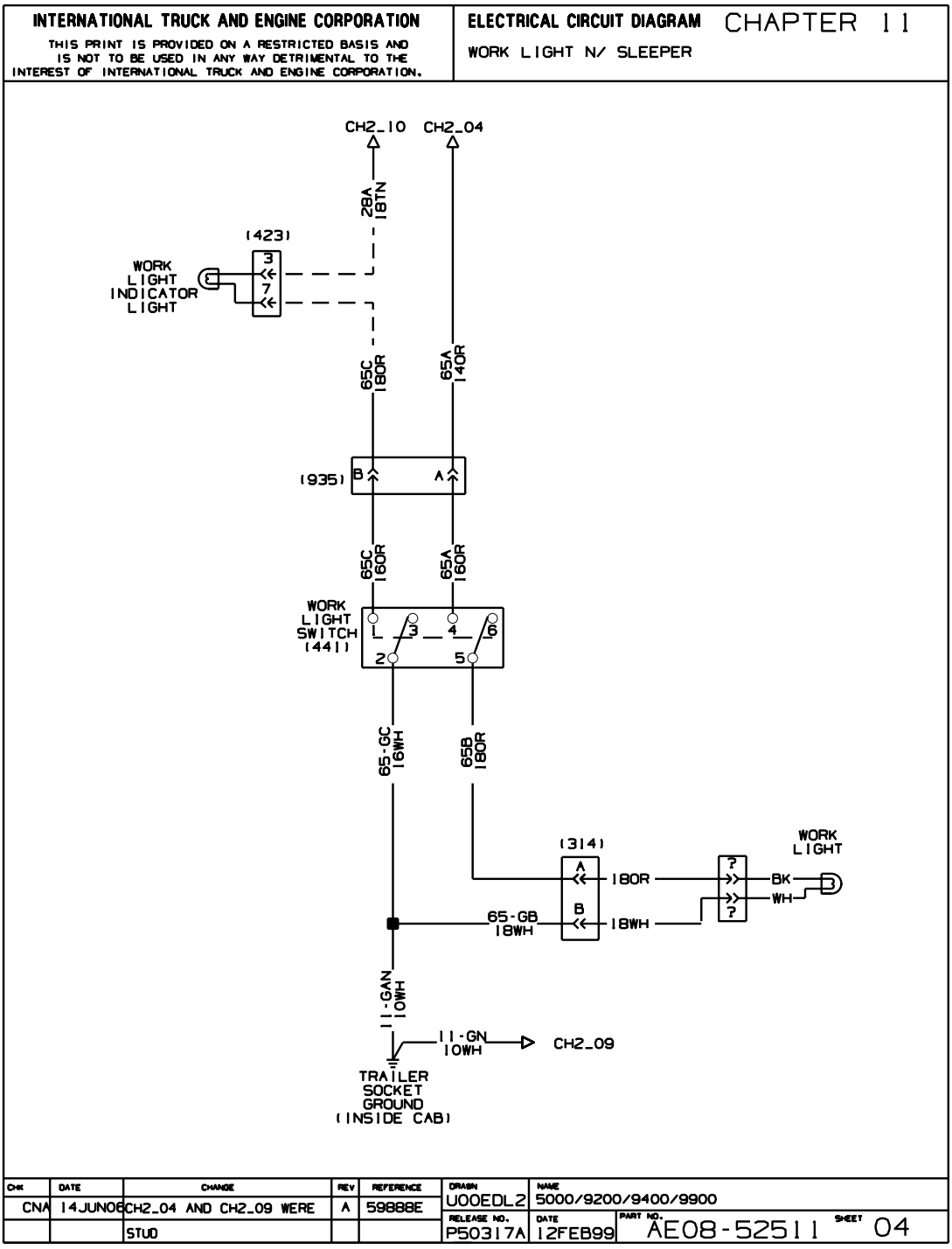


Figure 175 Work Light N/Sleeper

11.5. CAB DOME, READING AND COURTESY LIGHTS N/SKYRISE, P. 5

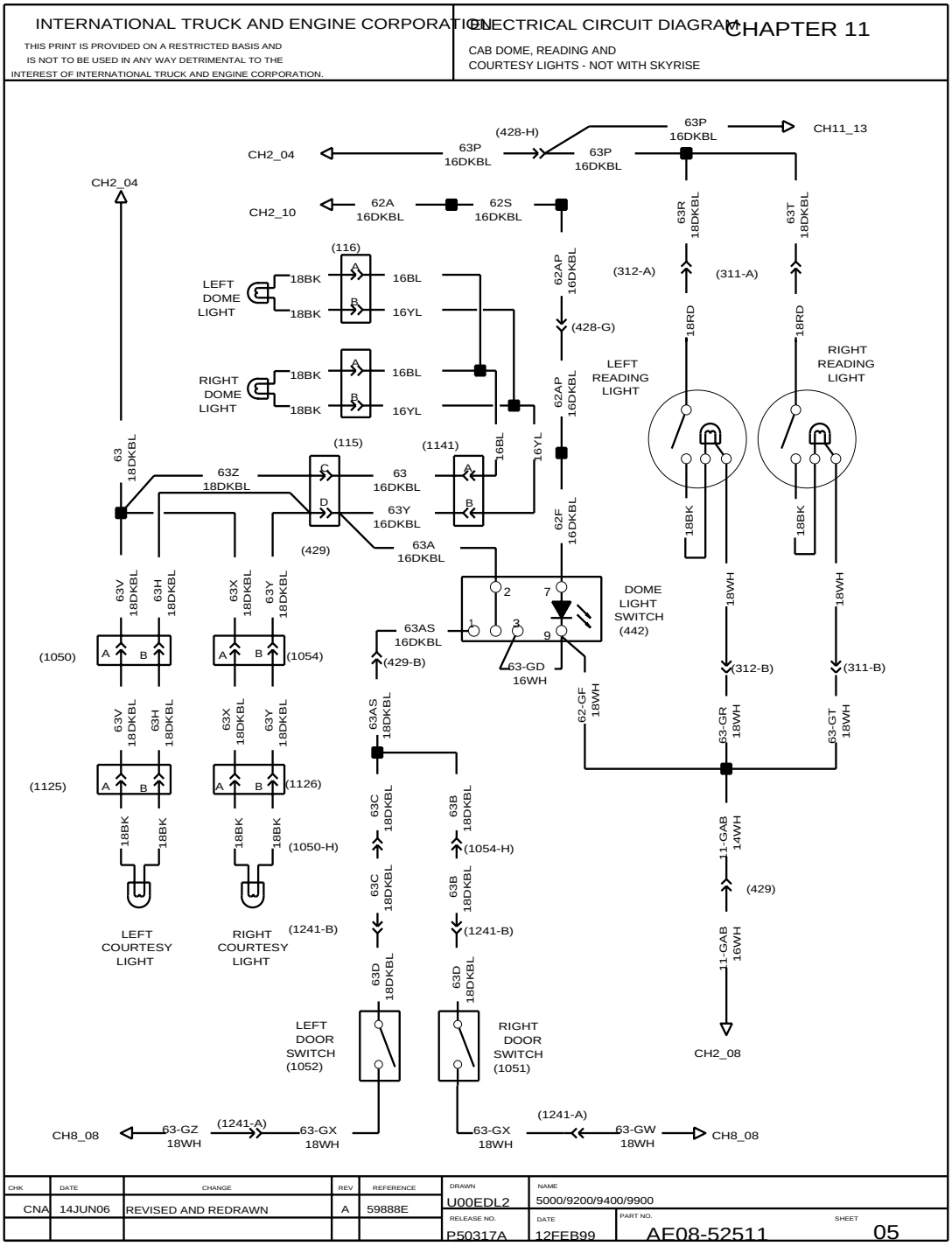


Figure 176 Cab Dome, Reading and Courtesy Lights N/Skyrise

11.6. CAB DOME, READING AND COURTESY LIGHTS W/SKYRISE, P. 6

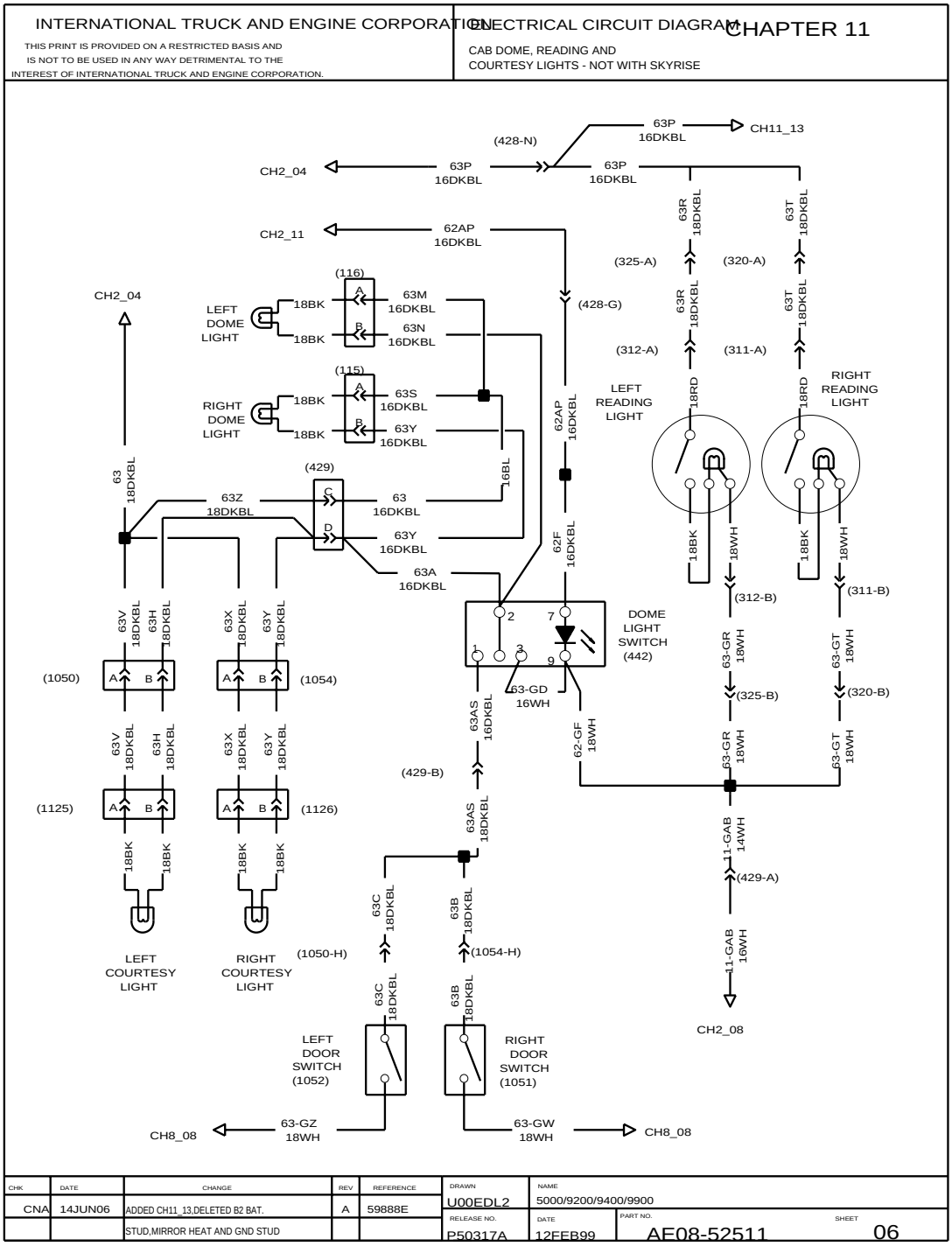


Figure 177 Cab Dome, Reading and Courtesy Lights W/Skyrise

11.7. DAYTIME RUNNING LIGHTS (DRL) — USA, P. 7

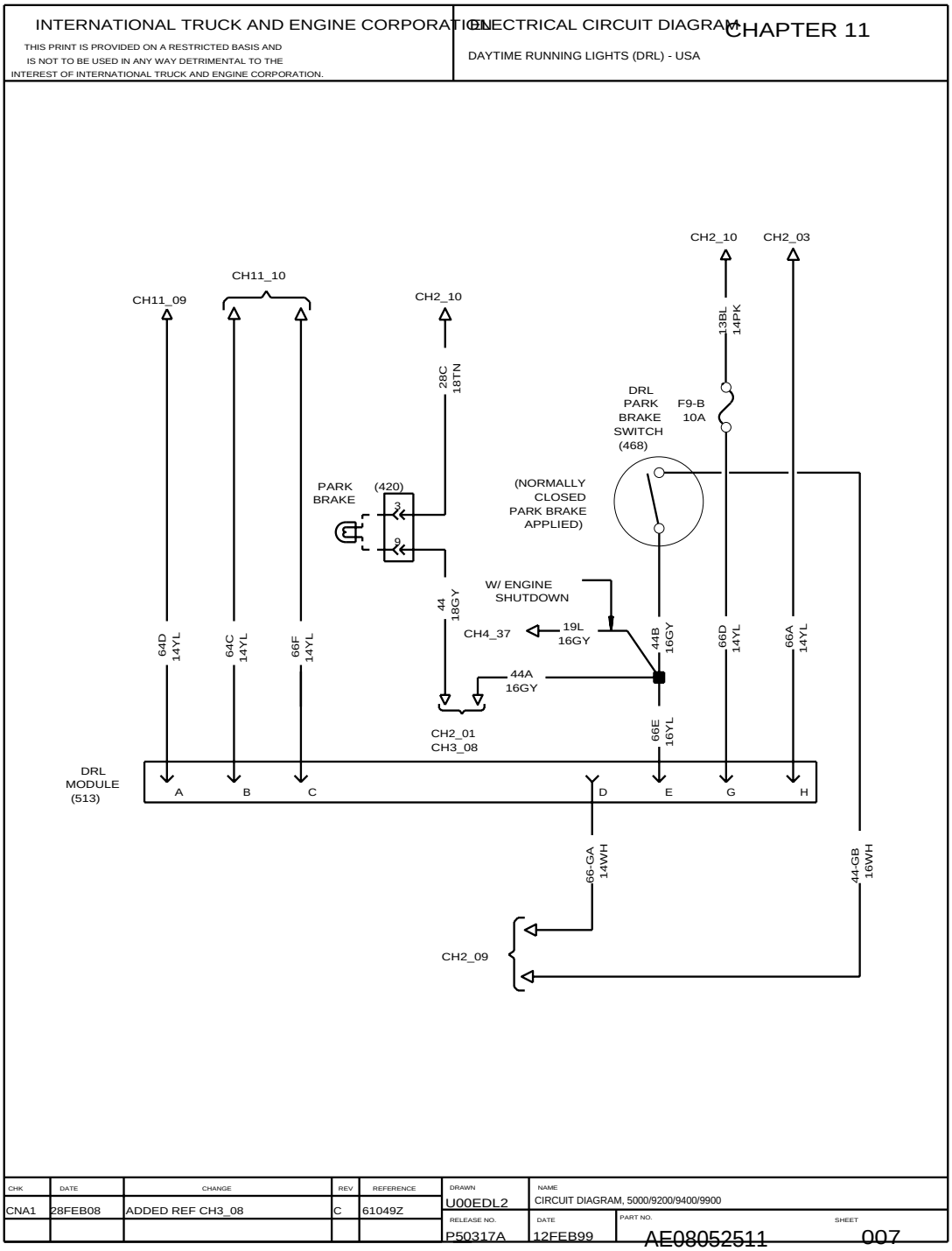


Figure 178 Daytime Running Lights (DRL) — USA

11.8. FOGLIGHTS — CAB/FRONT END EFFECTS, P. 8

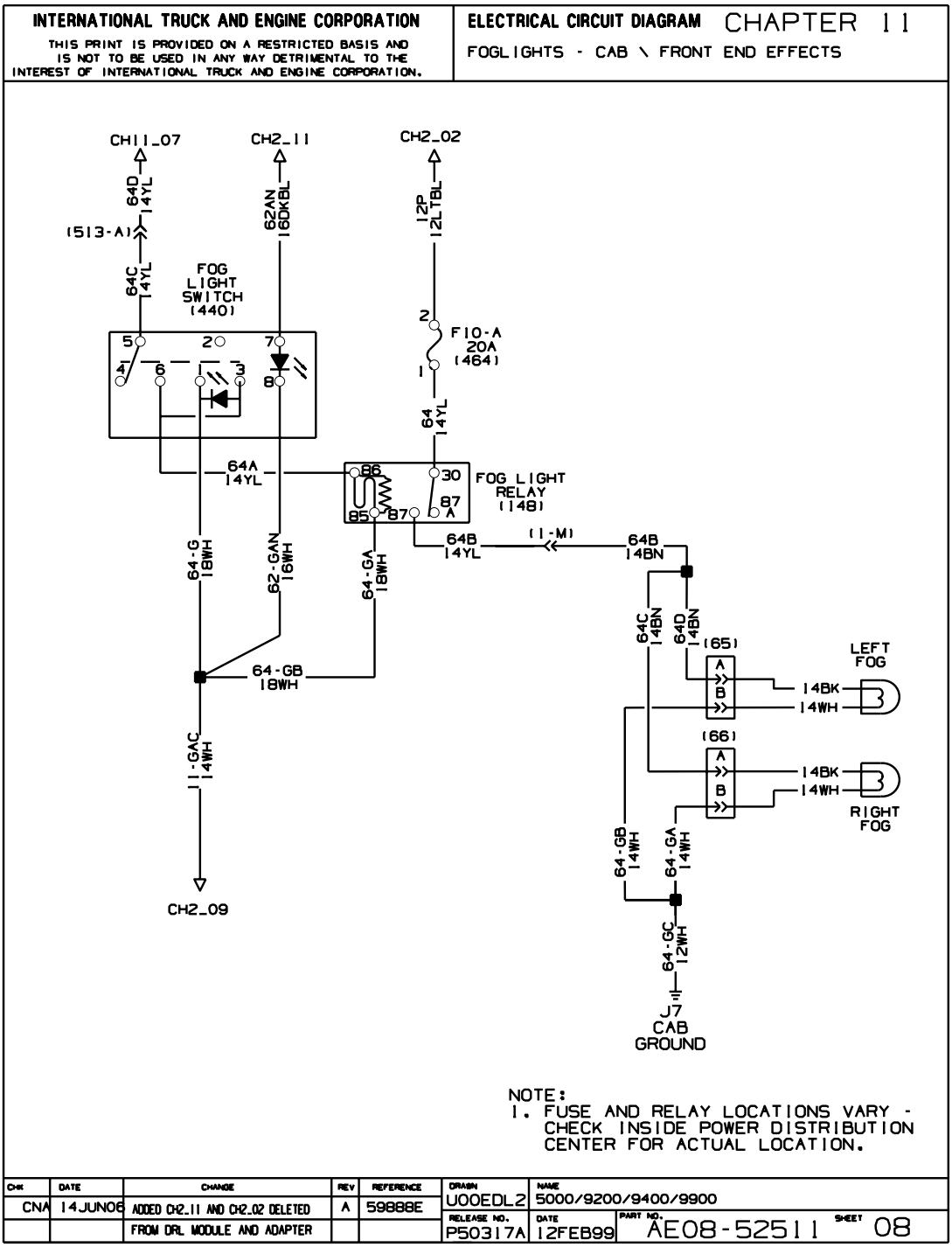


Figure 179 Foglights — Cab/Front End Effects

11.9. HEADLIGHT SWITCH AND DIMMER SWITCH WIRING, P. 9

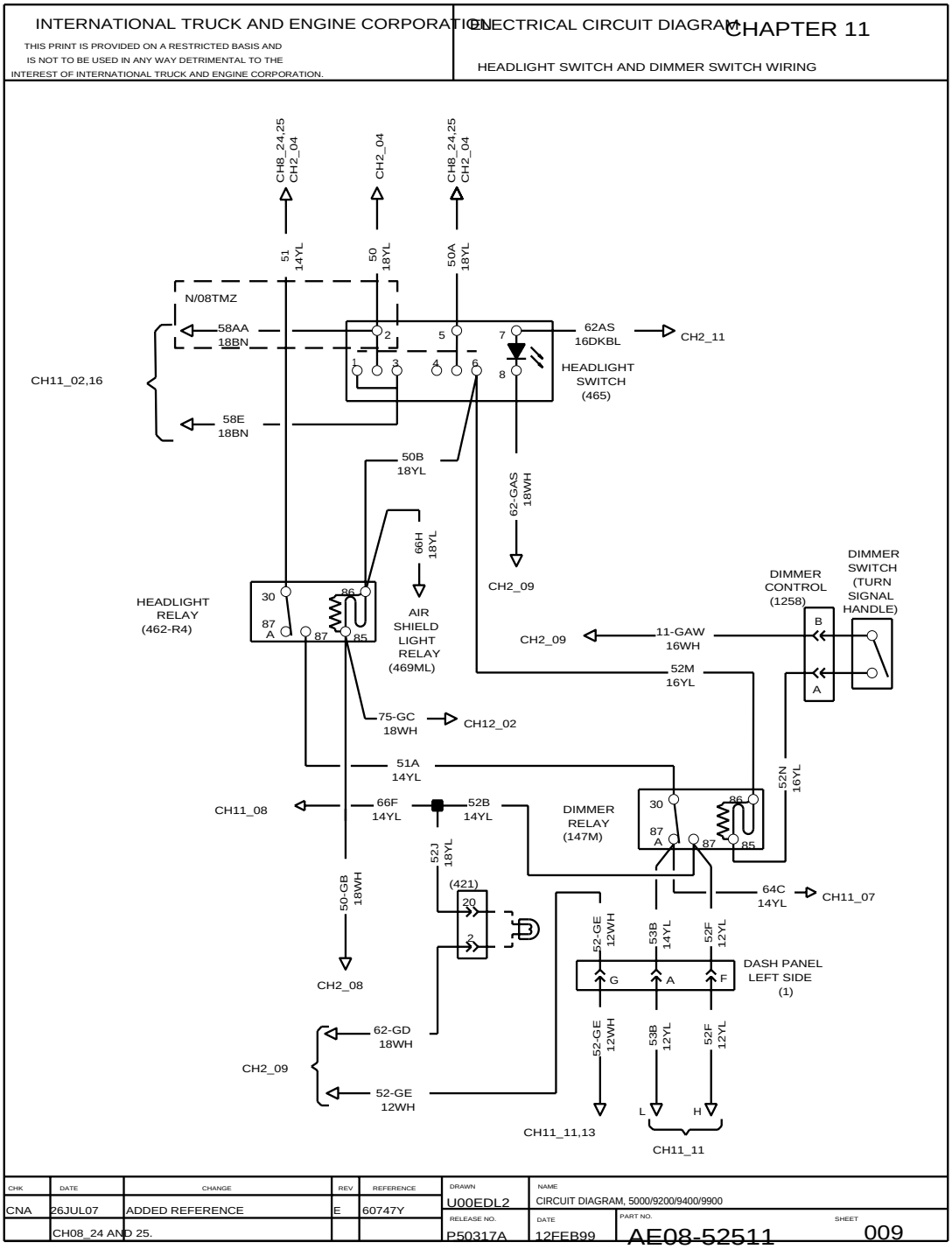


Figure 180 Headlight Switch and Dimmer Switch Wiring

11.10. HEADLIGHTS, P. 10

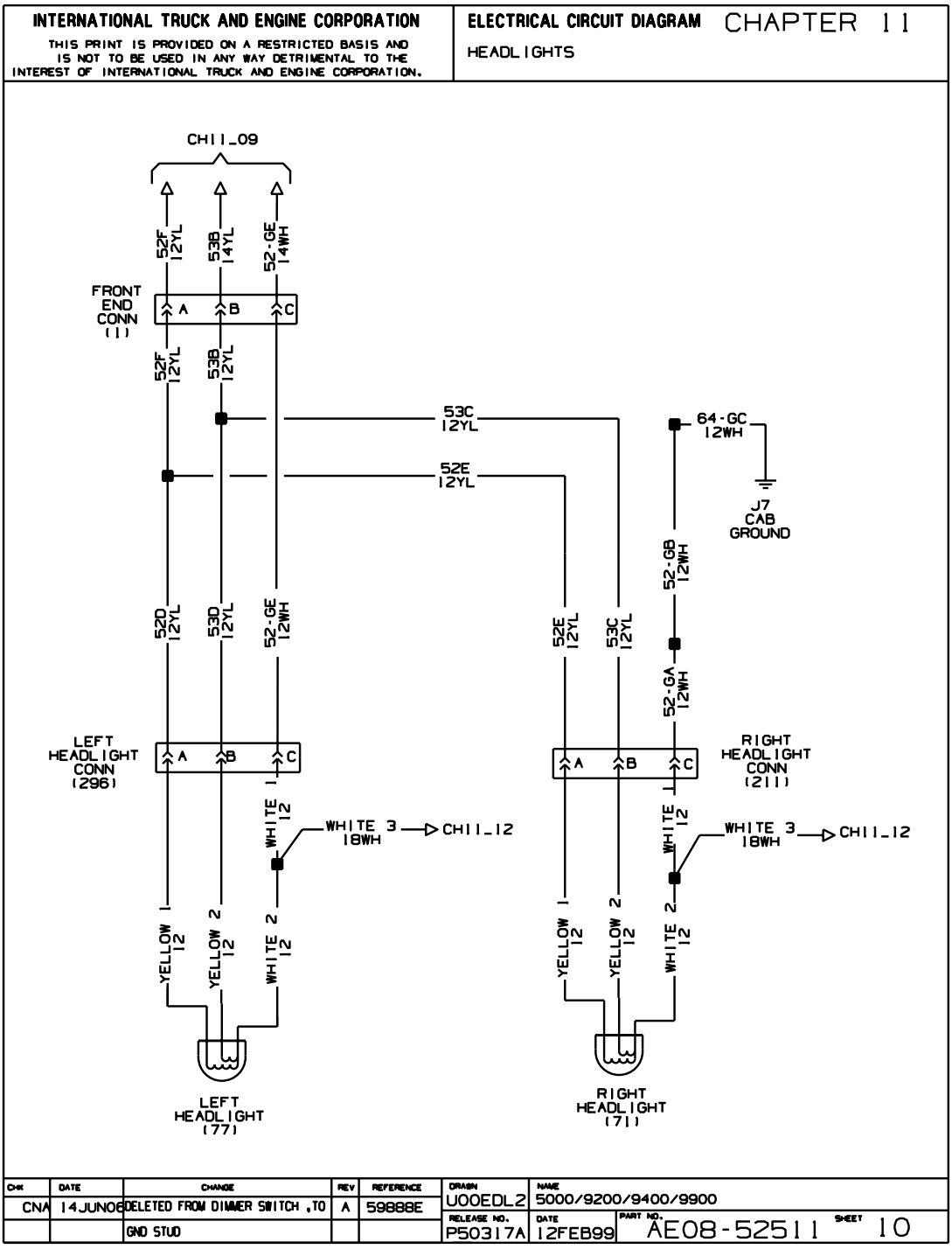


Figure 181 Headlights

11.11. PANEL LIGHTS, P. 11

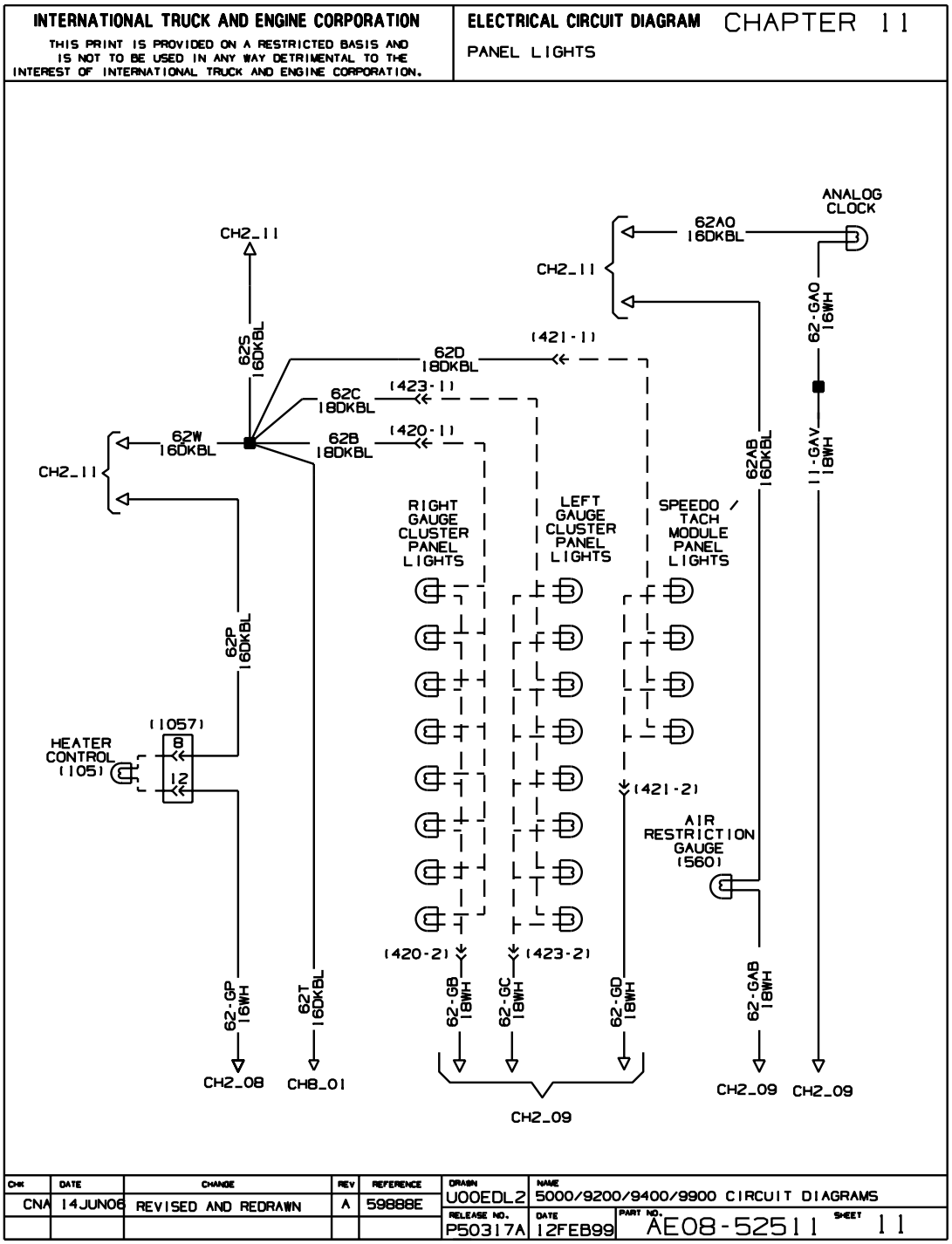


Figure 182 Panel Lights

11.12. PARK/TURN/SIDE MARKER LIGHTS — WITH DRL, P. 12

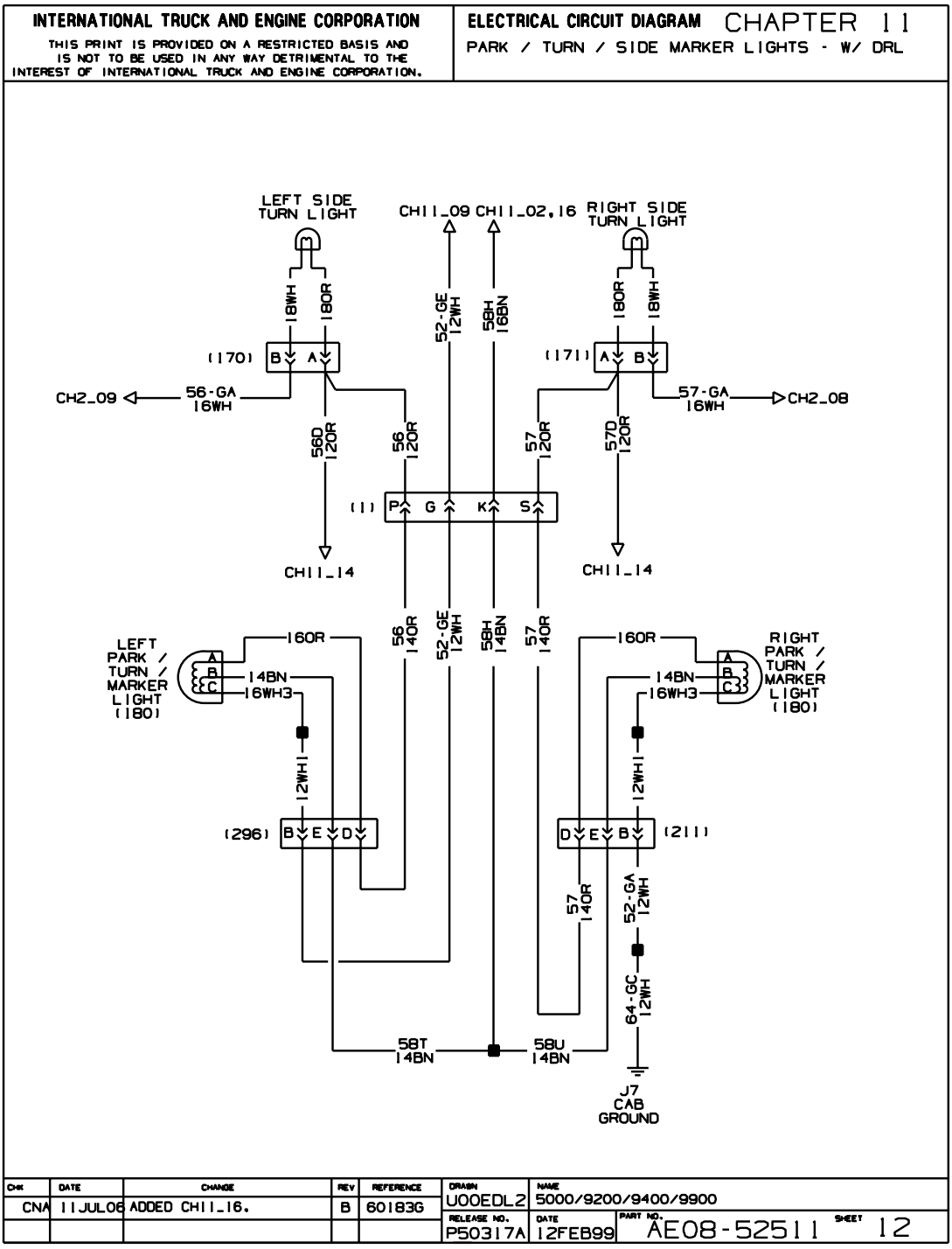


Figure 183 Park/Turn/Side Marker Lights — With DRL

11.13. SPOTLIGHT, P. 13

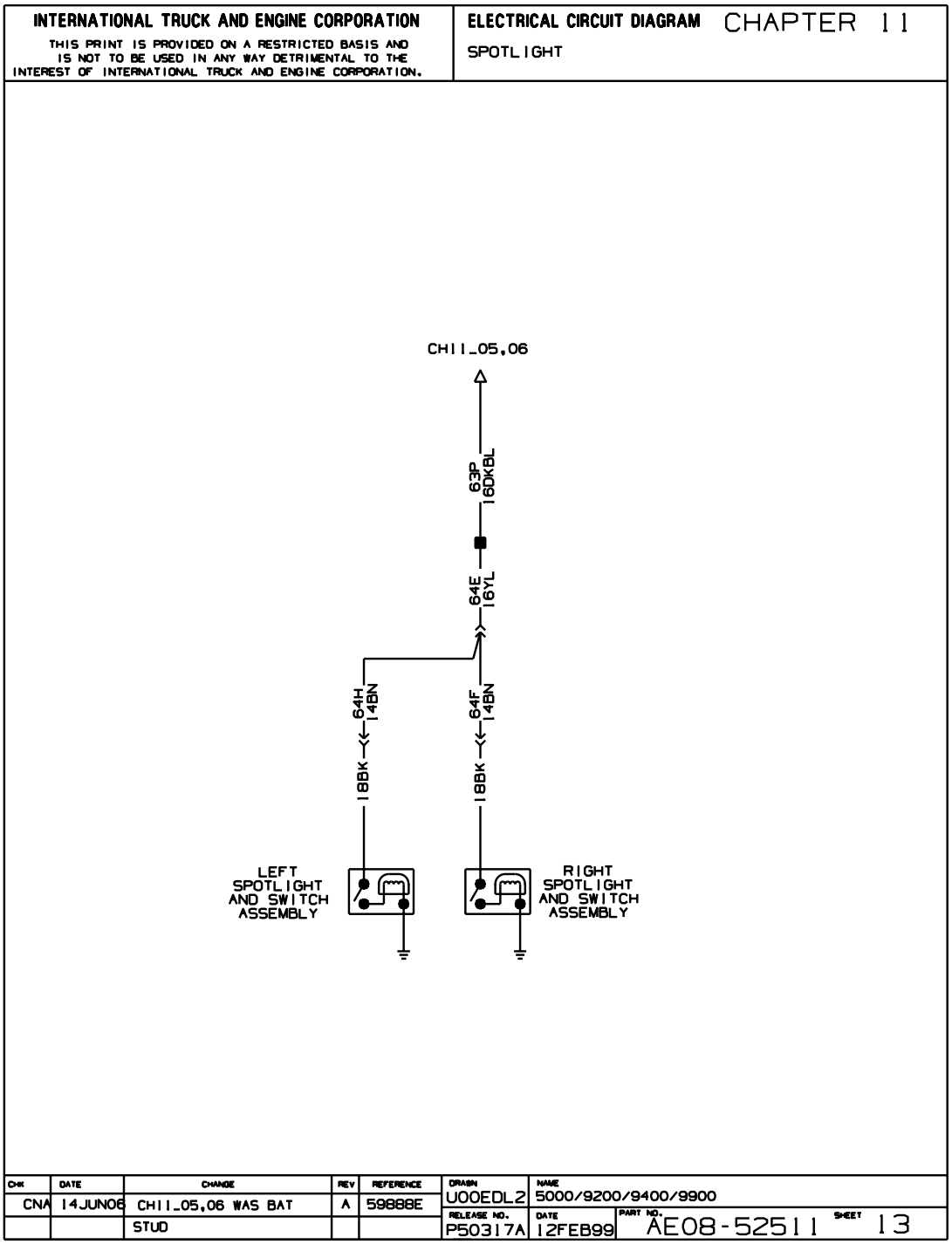


Figure 184 Spotlight

11.14. STOP, TAIL, TURN AND HAZARD SIGNAL LIGHTS WITH FLASHER, P. 14

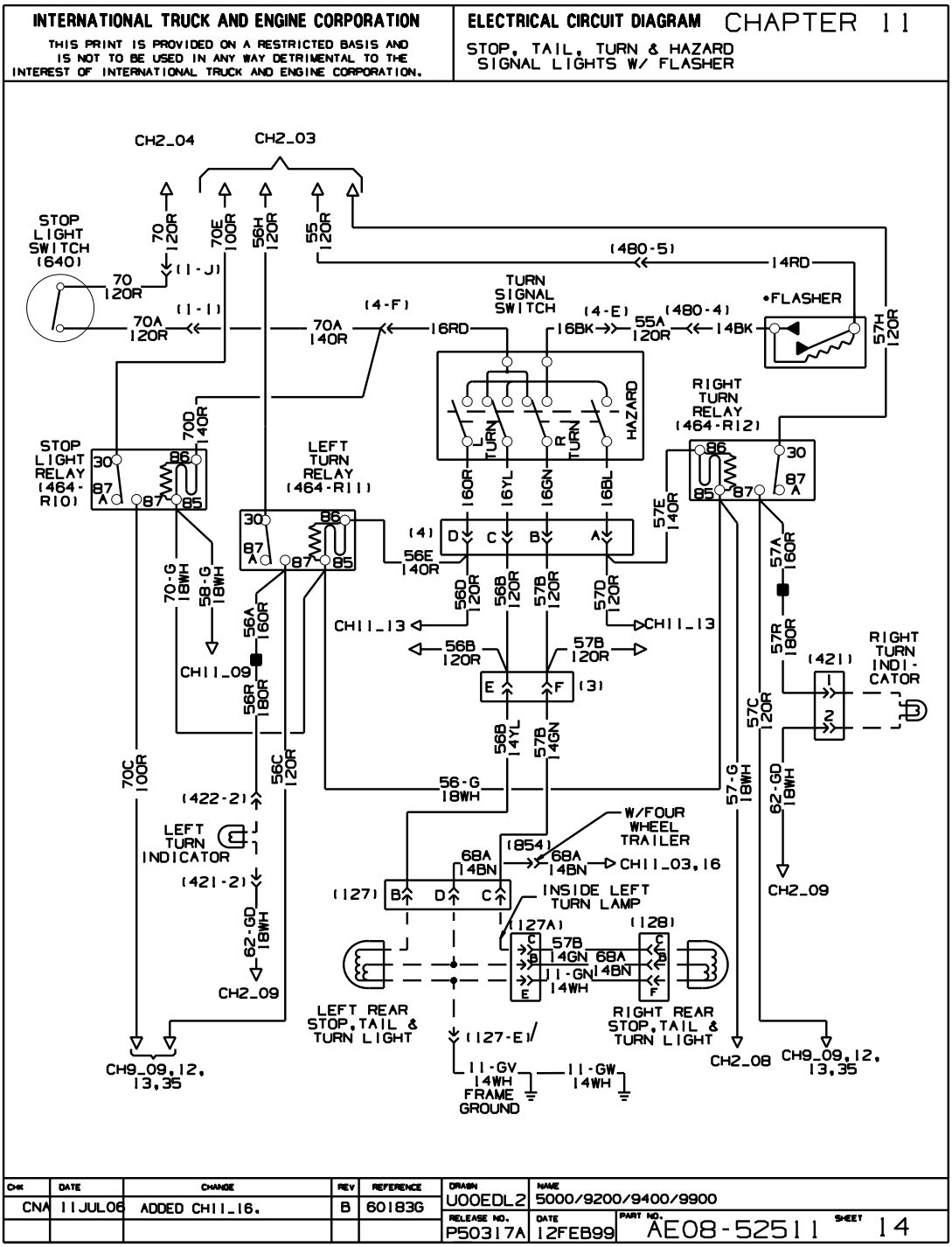


Figure 185 Stop, Tail, Turn and Hazard Signal Lights With Flasher

11.15. WORK LIGHT W/SLEEPER, P. 15

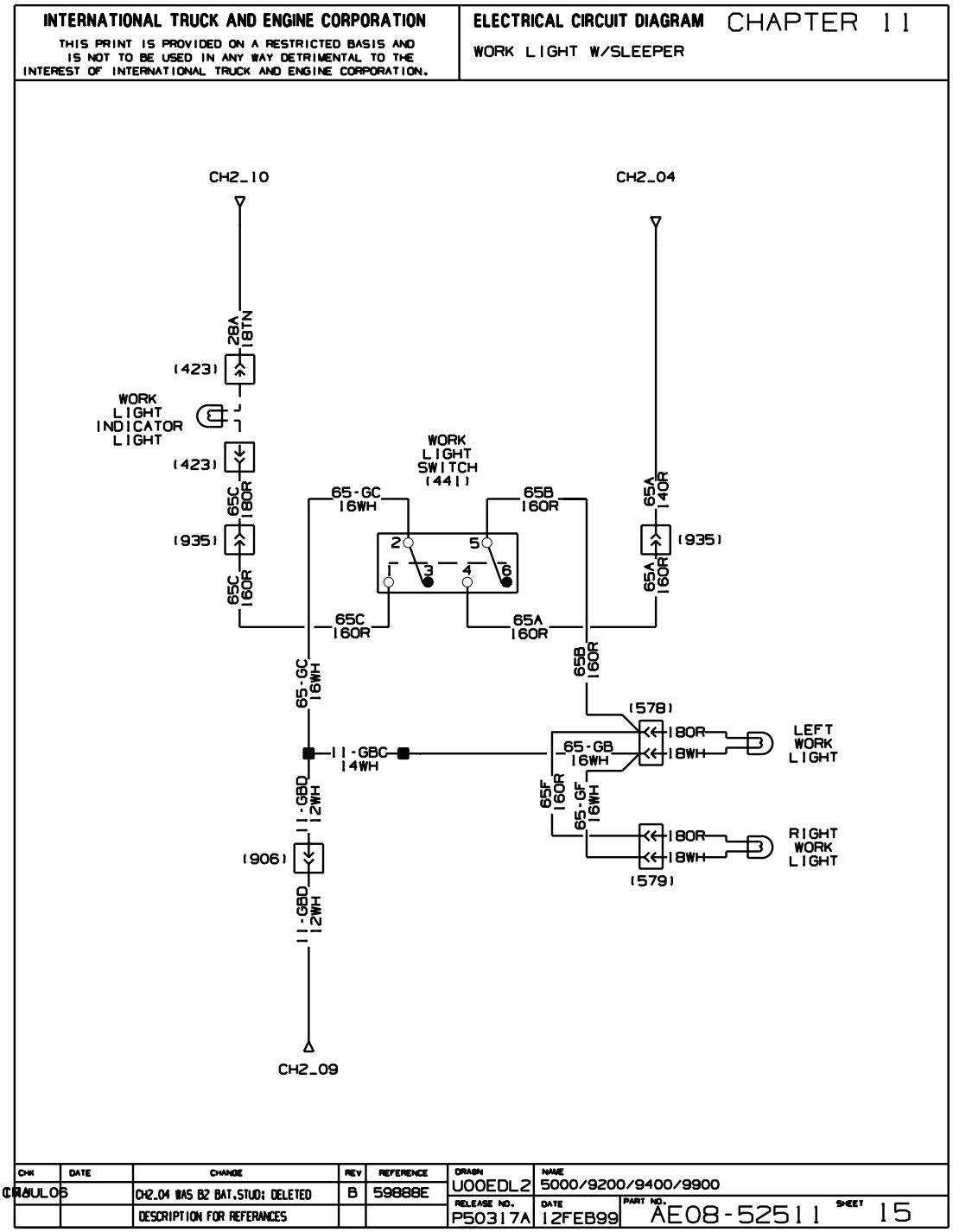


Figure 186 Work Light W/Sleeper

11.16. CAB AND TRAILER LIGHT SWITCH AND RELAY WIRING W/BISTABLE MARKER ON/OFF SWITCH, P. 16

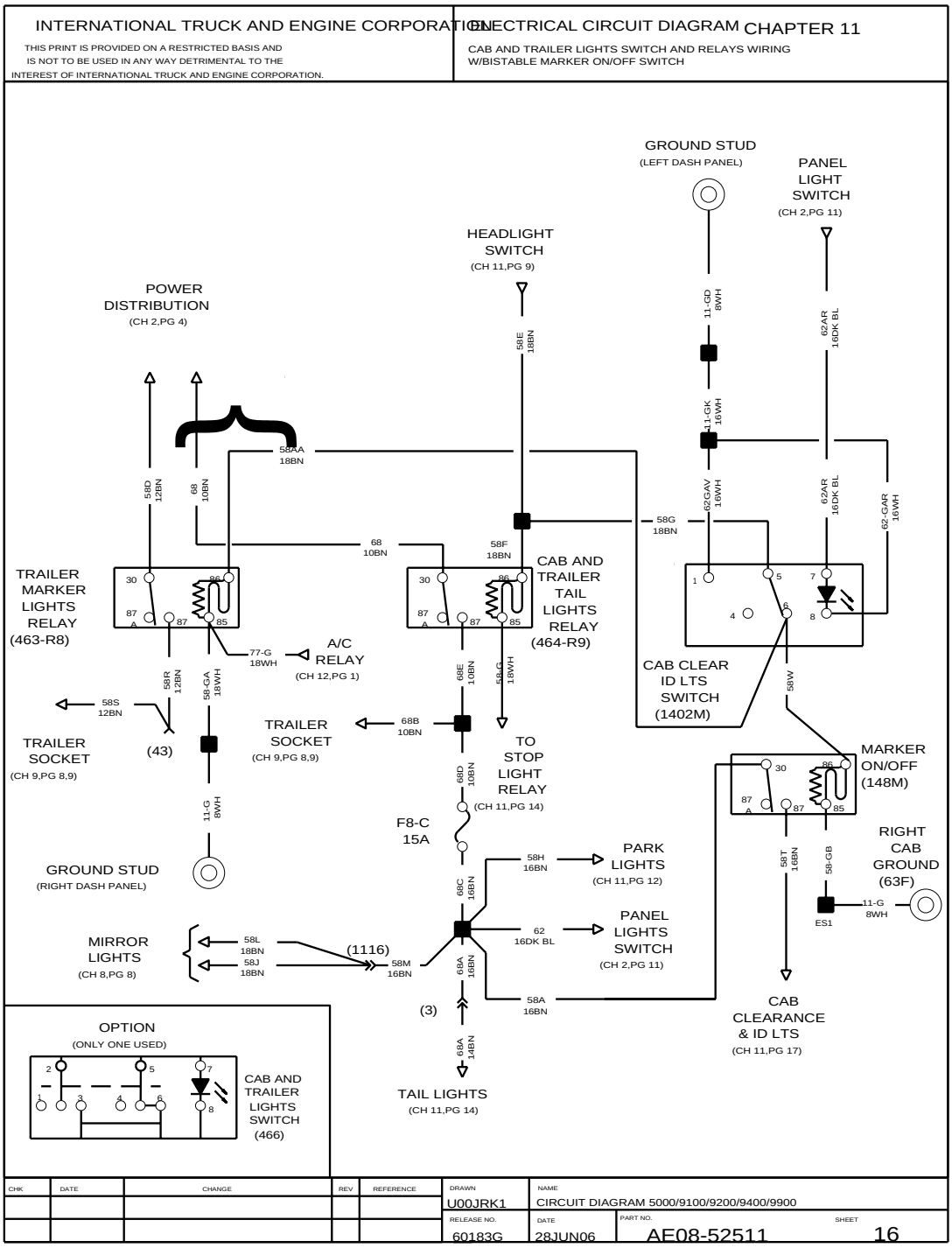


Figure 187 Cab and Trailer Light Switch and Relay Wiring W/Bistable Marker On/Off Switch

11.17. CAB CLEARANCE AND IDENTIFICATION LIGHTS W/BISTABLE MARKER ON/OFF SWITCH, P. 17

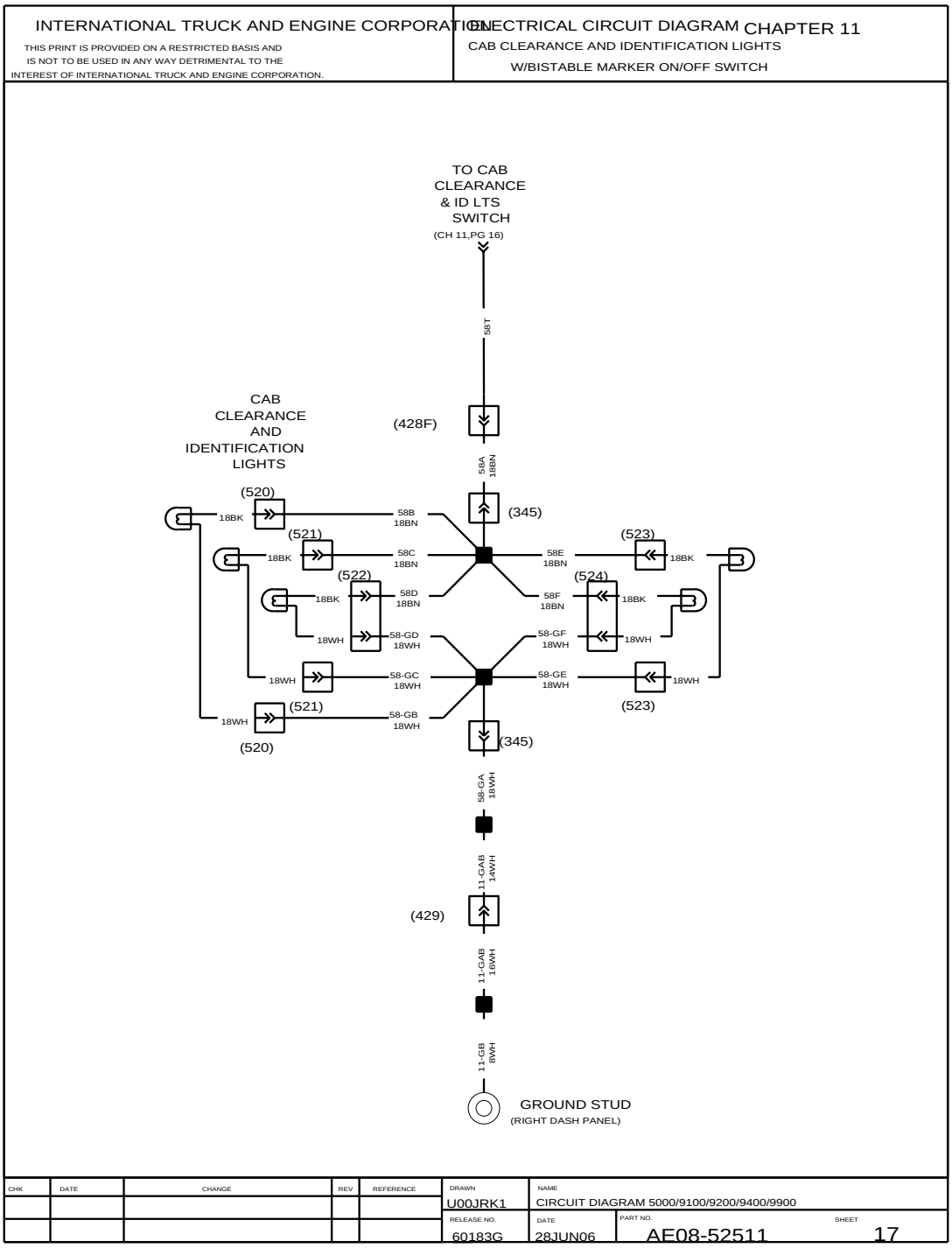


Figure 188 Cab Clearance and Identification Lights W/Bistable Marker On/Off Switch

12. HEATER AND AIR CONDITIONER (CHAPTER 12)

12.1. AIR CONDITIONER — CAB, P. 1

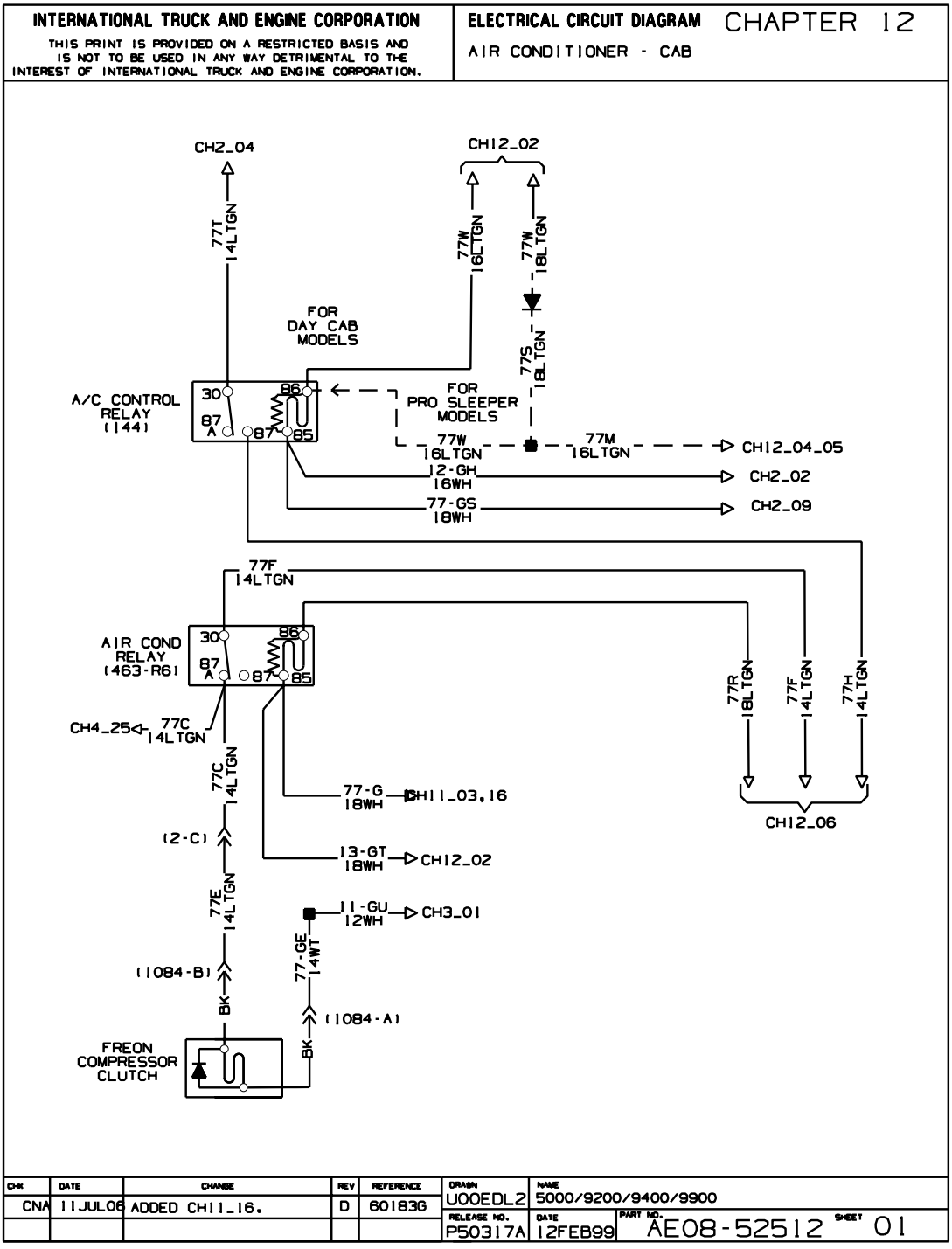


Figure 189 Air Conditioner — Cab

12.2. HEATER — CAB, P. 2

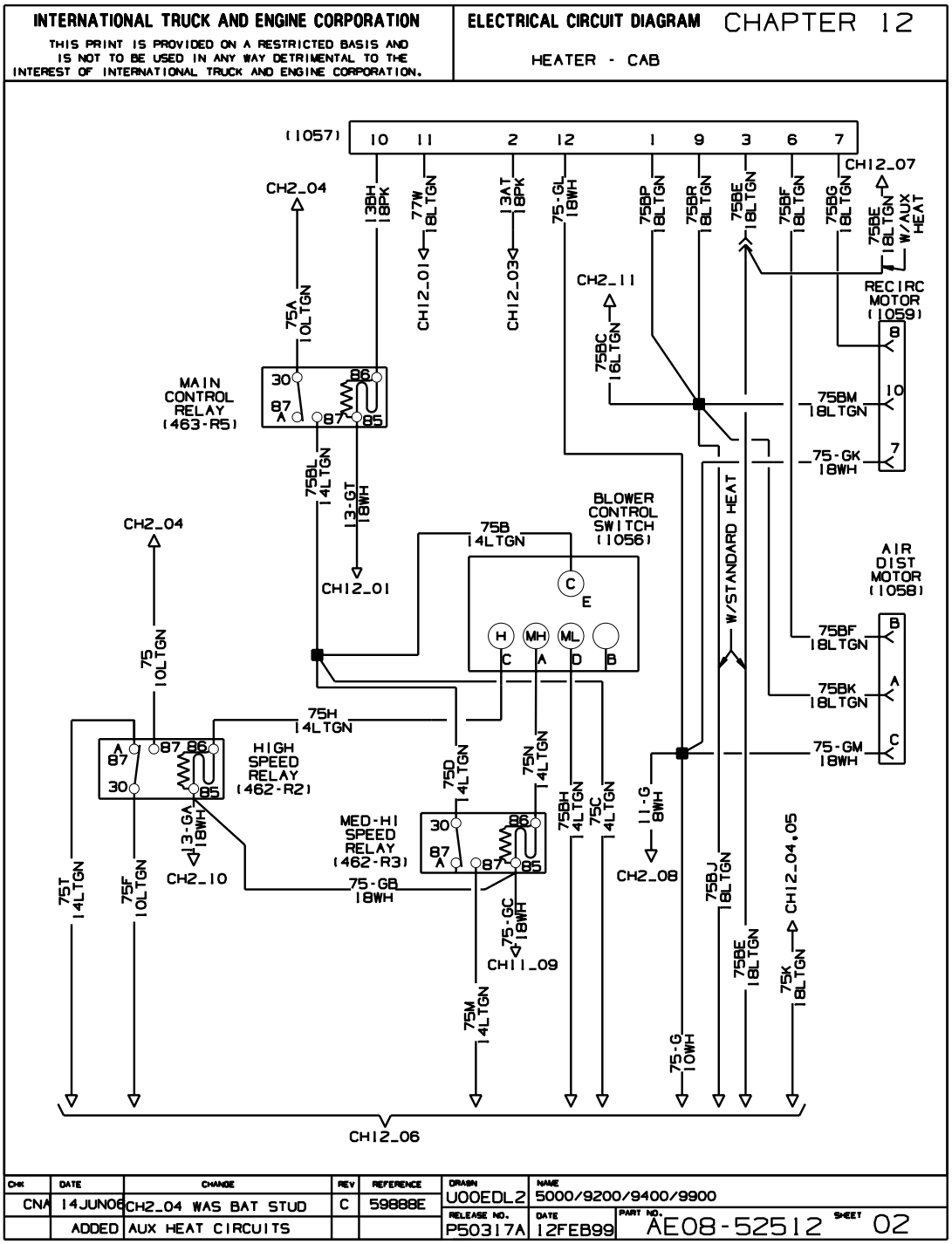


Figure 190 Heater — Cab

12.3. HEATER — BUNK AUXILIARY BLOWER, P. 3

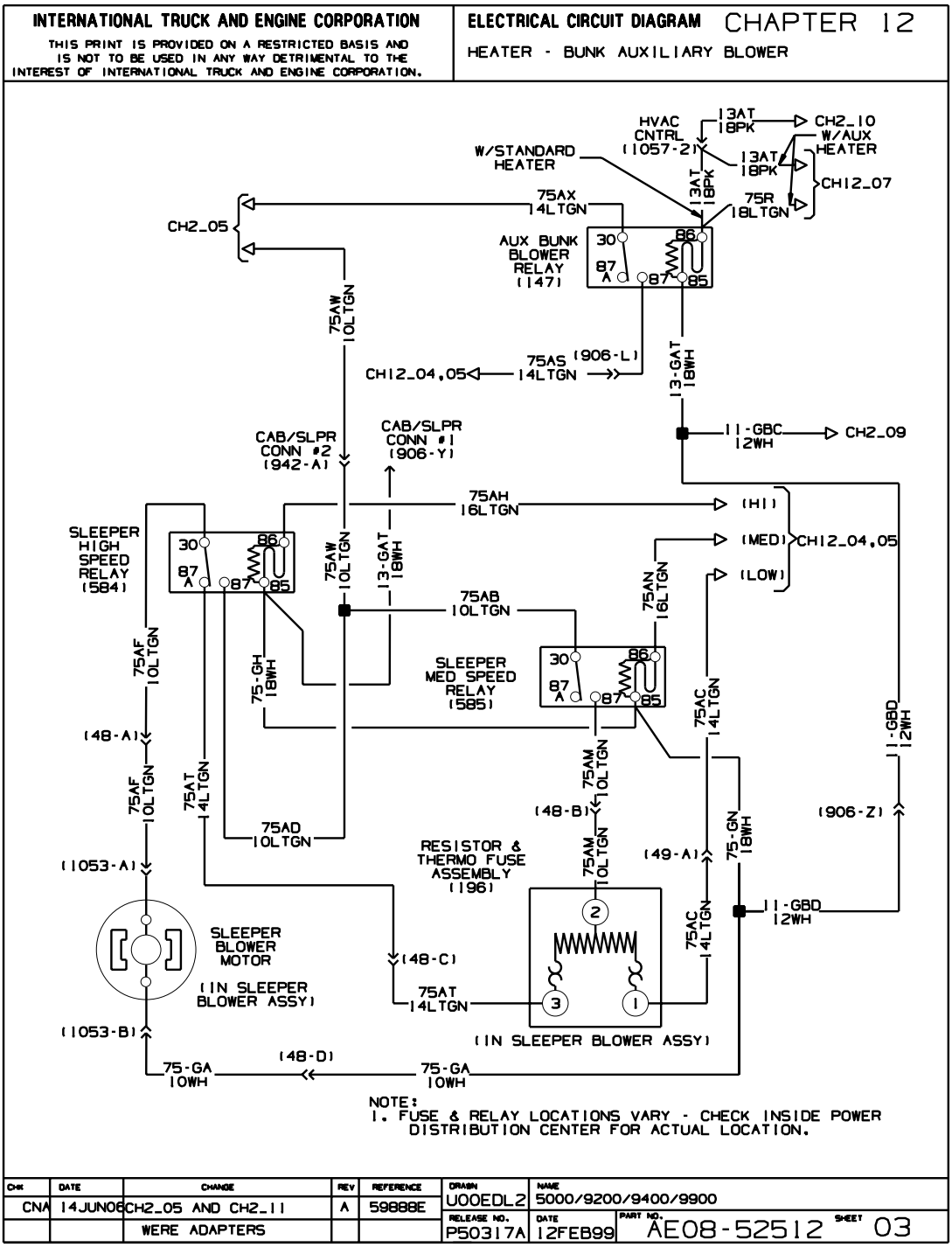


Figure 191 Heater — Bunk Auxiliary Blower

12.4. HEATER — BUNK W/STANDARD TEMPERATURE CONTROL, P. 4

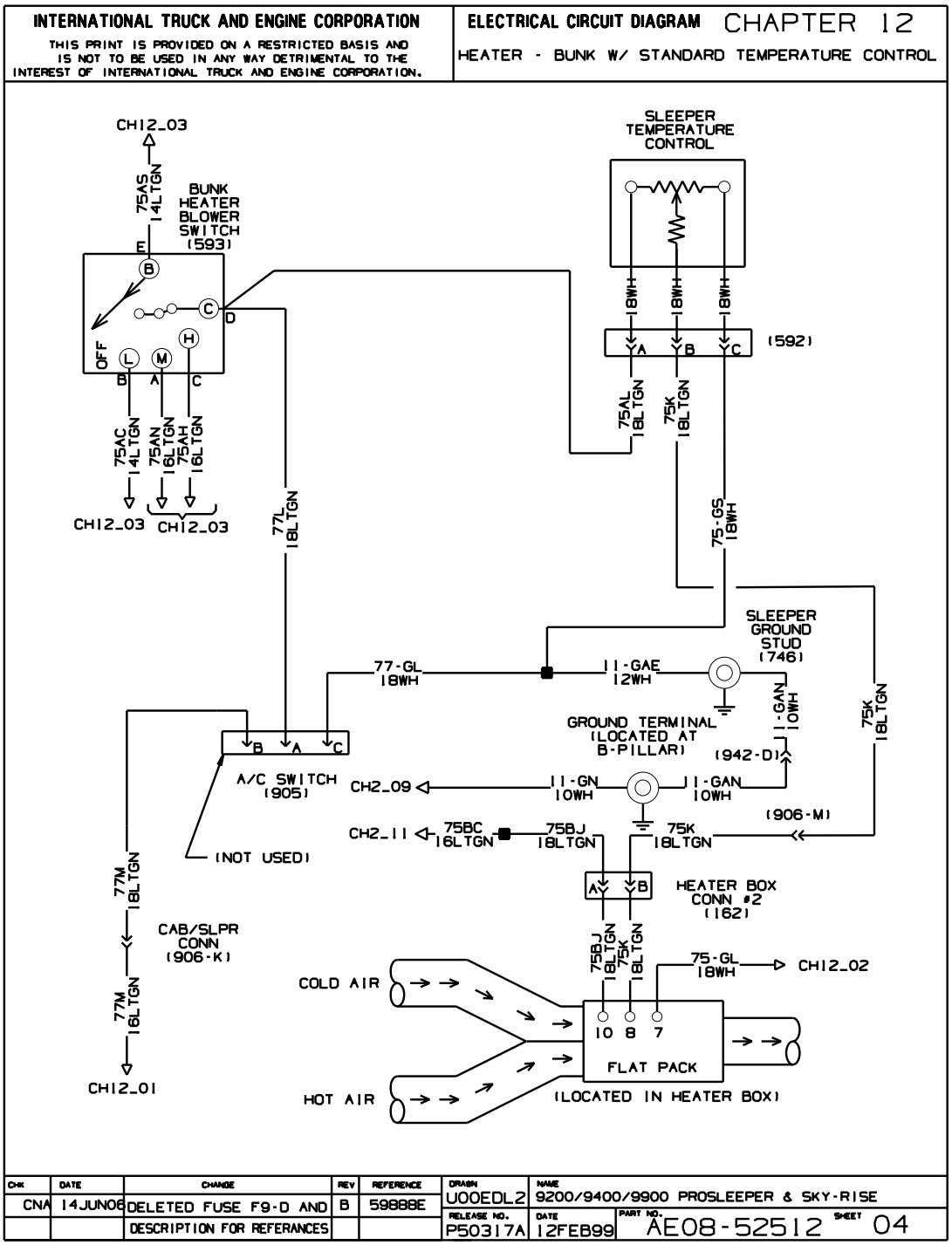


Figure 192 Heater — Bunk W/Standard Temperature Control

12.5. HEATER — BUNK W/THERMOSTAT TEMPERATURE CONTROL, P. 5

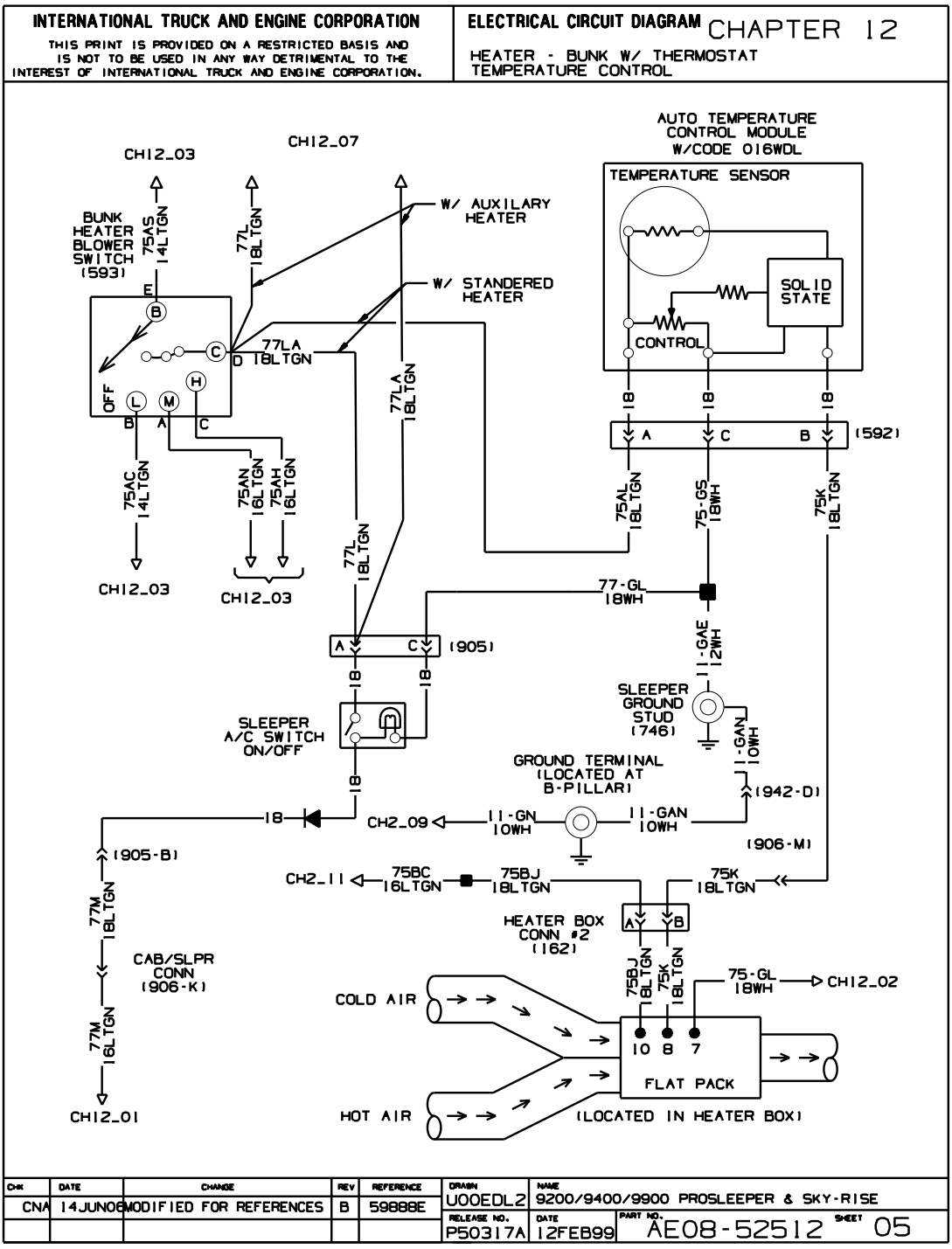


Figure 193 Heater — Bunk W/Thermostat Temperature Control

12.6. LOWERED HEATER BOX, P. 6

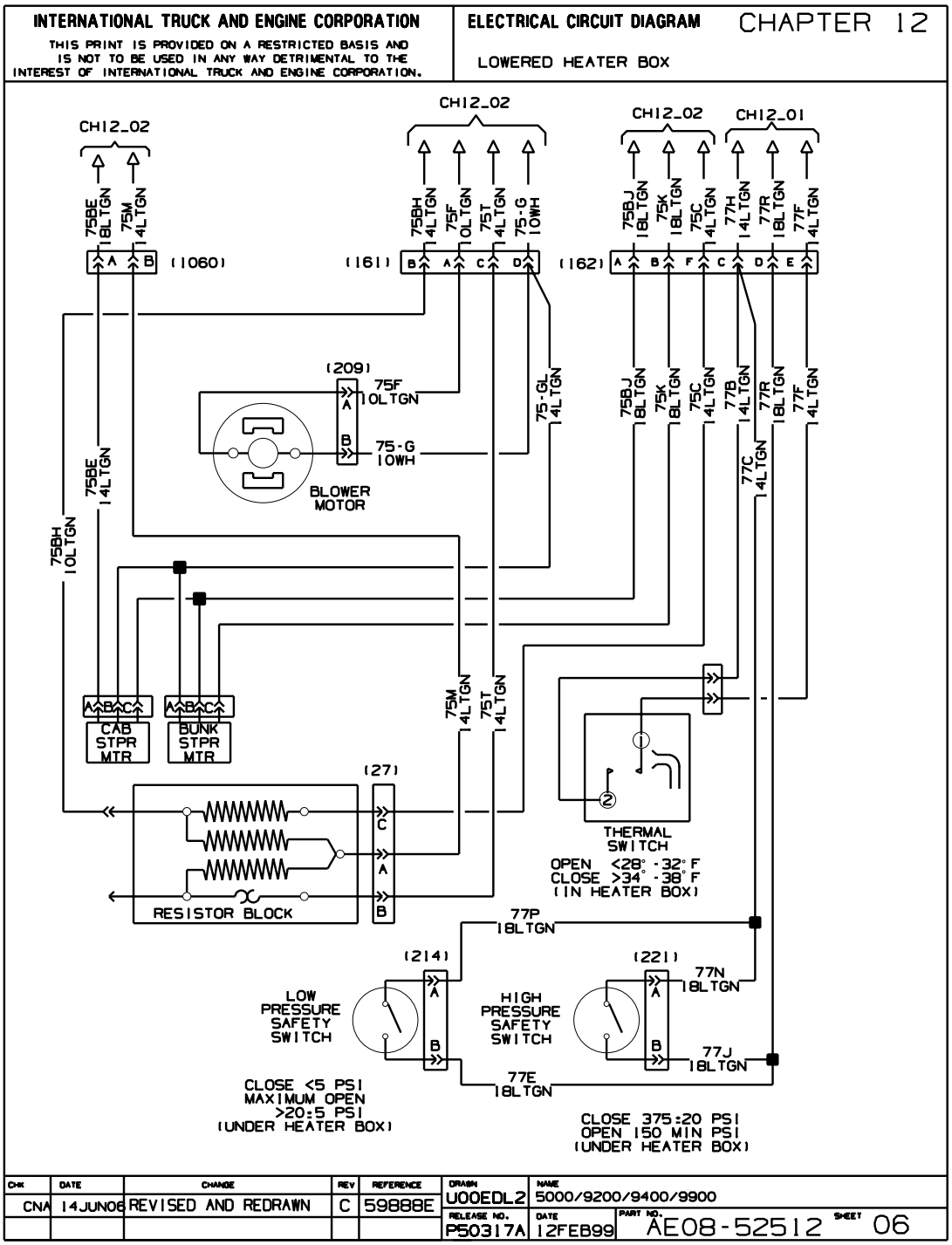


Figure 194 Lowered Heater Box

12.7. AUX HEATER, P. 7

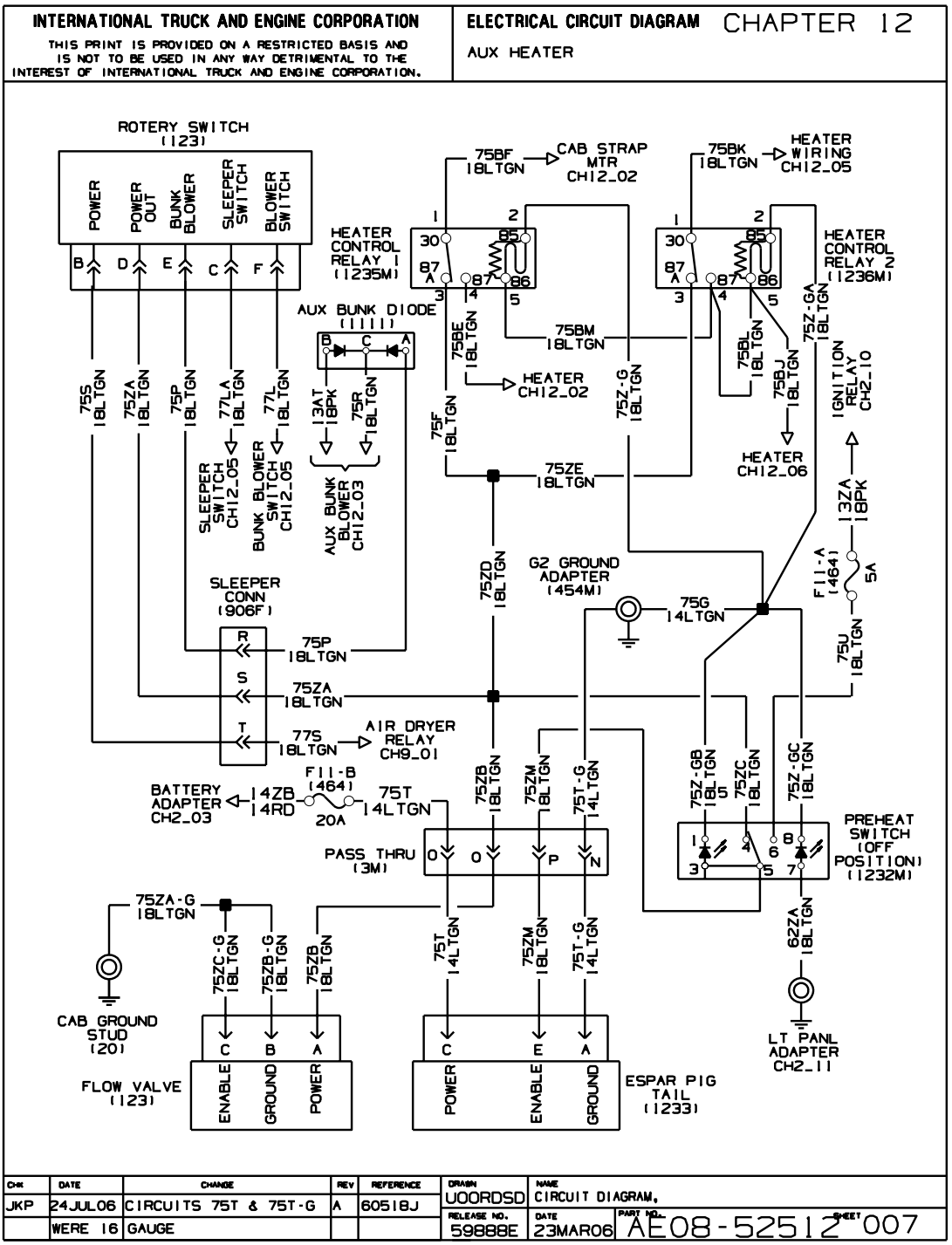


Figure 195 Aux Heater

12.8. APU SYSTEM: DISTRIBUTION BOX, P. 8

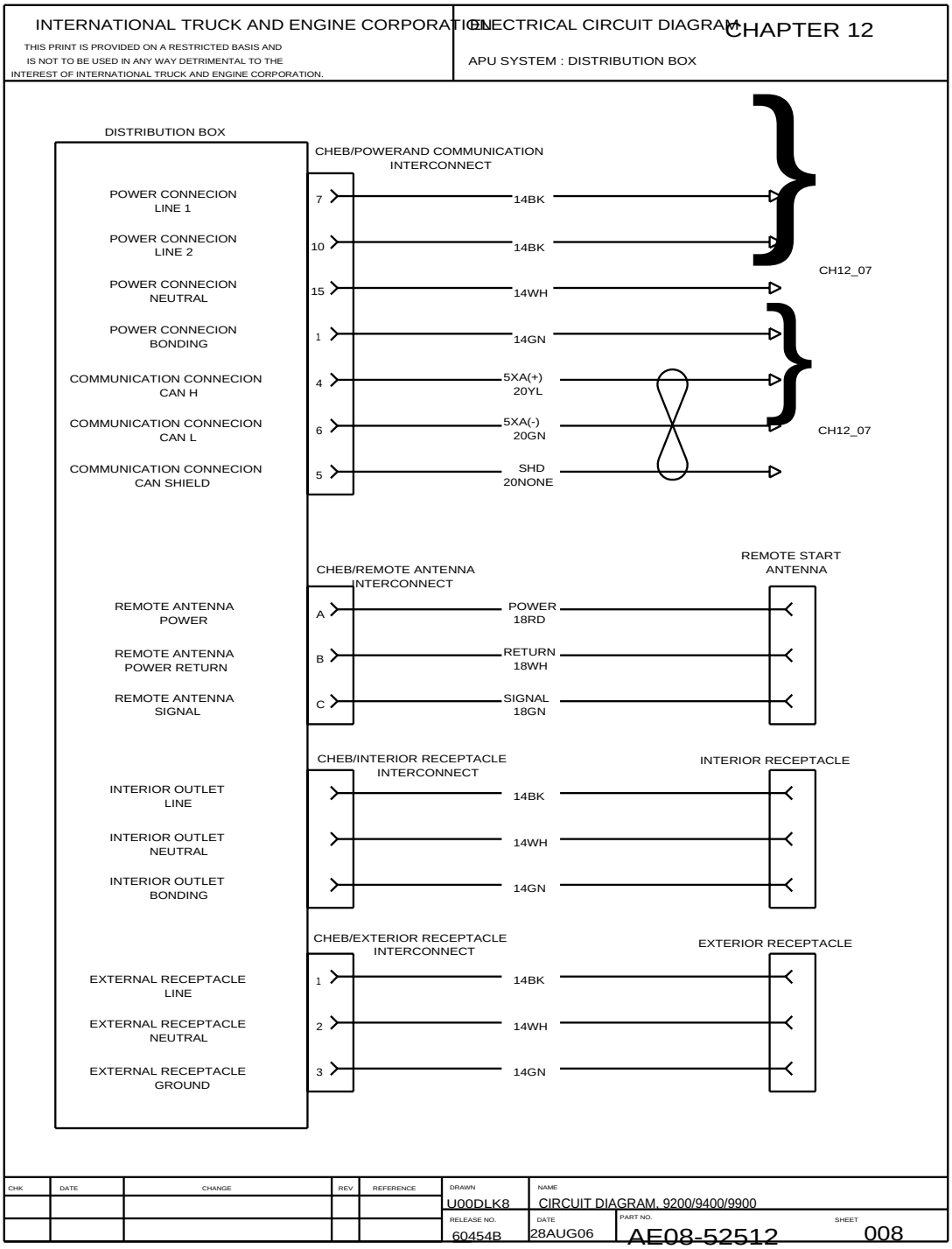


Figure 196 APU System: Distribution Box

12.9. APU SYSTEM: DISTRIBUTION BOX, P. 9

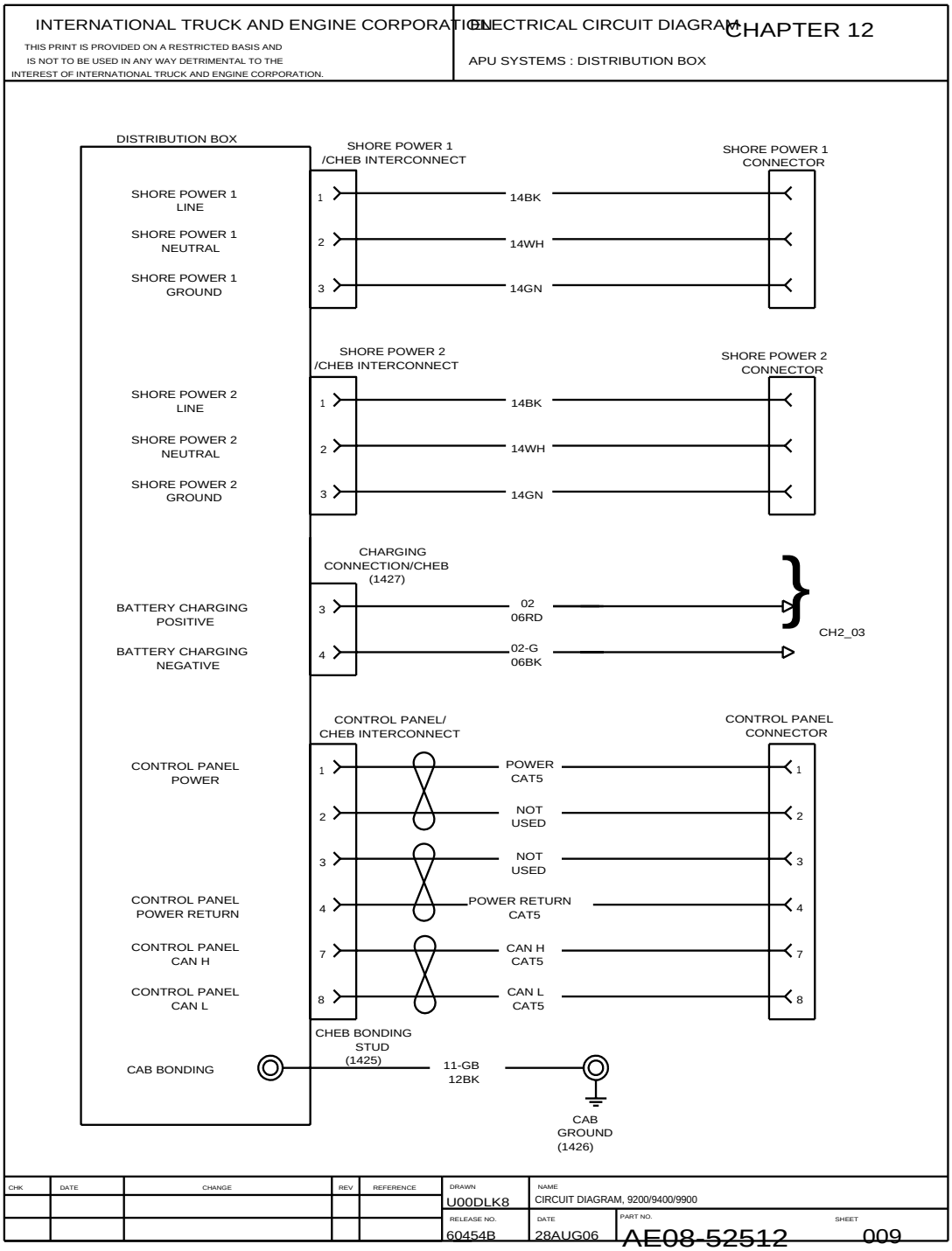


Figure 197 APU System: Distribution Box

12.10. APU SYSTEM, P. 10

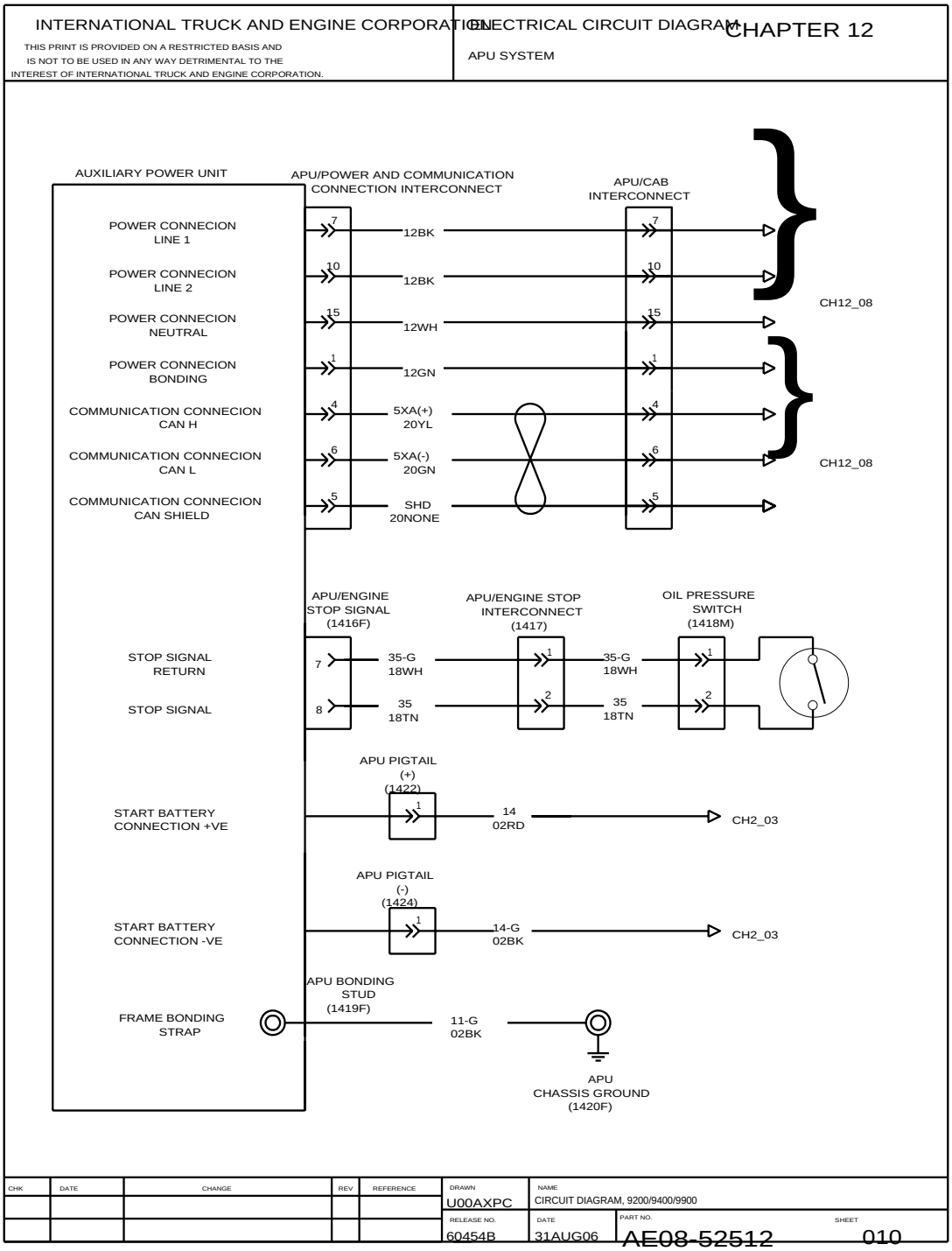


Figure 198 APU System