

8. GAUGES WITH AND WITHOUT INTERNAL WARNING LIGHT (CHAPTER 8)

8.1. IP/GAUGES, P. 1

INTERNATIONAL TRUCK AND ENGINE CORPORATION <small>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.</small>				ELECTRICAL CIRCUIT DIAGRAM IP / GAUGES		CHAPTER 8																																																					
<div style="text-align: center; margin-bottom: 20px;">INSTRUMENT PANEL GAUGES</div> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 20px;"> <thead> <tr> <th style="width: 15%;">GAUGE</th> <th style="width: 10%;">WARN LIGHT</th> <th style="width: 45%;">SIGNAL PATH</th> <th style="width: 30%;">SENSOR LOCATION</th> </tr> </thead> <tbody> <tr> <td>RPM (TACH)</td> <td>NO</td> <td>ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>ENGINE</td> </tr> <tr> <td>MPH/KPH (SPD)</td> <td>NO</td> <td>ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>TRANSMISSION</td> </tr> <tr> <td>FUEL</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>FUEL TANK</td> </tr> <tr> <td>VOLT</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>-</td> </tr> <tr> <td>AIR 1 (PRES)</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>INSIDE CAB-DASH PNL</td> </tr> <tr> <td>AIR 2 (PRES)</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>STEERING COL AREA</td> </tr> <tr> <td>WATER (TEMP)</td> <td>YES</td> <td>ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>ENGINE</td> </tr> <tr> <td>ENG OIL (TEMP)</td> <td>YES</td> <td>ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>ENGINE</td> </tr> <tr> <td>OIL (PRES)</td> <td>YES</td> <td>ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>ENGINE</td> </tr> <tr> <td>TRANS (TEMP)</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>TRANSMISSION</td> </tr> <tr> <td>AIR APPLICATION</td> <td>NO</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>FWD CHASSIS</td> </tr> <tr> <td>REAR AXLE TEMP</td> <td>YES</td> <td>SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER</td> <td>AXLE</td> </tr> </tbody> </table> <p>NOTES: 1. WARNING LIGHTS ARE PART OF THE GAUGES AND LOCATED IN THE GAUGE</p>								GAUGE	WARN LIGHT	SIGNAL PATH	SENSOR LOCATION	RPM (TACH)	NO	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	ENGINE	MPH/KPH (SPD)	NO	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	TRANSMISSION	FUEL	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	FUEL TANK	VOLT	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	-	AIR 1 (PRES)	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	INSIDE CAB-DASH PNL	AIR 2 (PRES)	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	STEERING COL AREA	WATER (TEMP)	YES	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	ENGINE	ENG OIL (TEMP)	YES	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	ENGINE	OIL (PRES)	YES	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	ENGINE	TRANS (TEMP)	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	TRANSMISSION	AIR APPLICATION	NO	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	FWD CHASSIS	REAR AXLE TEMP	YES	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	AXLE
GAUGE	WARN LIGHT	SIGNAL PATH	SENSOR LOCATION																																																								
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CHK	DATE	CHANGE	REV	REFERENCE	DASH	NAME	SHEET																																																				
CNA	9MAY07	REVISED & REDRAWN	A	60782A	U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS																																																					
					RELEASE NO. 59974G	DATE 20APR06	PART NO. AE08-56614																																																				
							01																																																				

Figure 116 IP/Gauges

8.2. WARNING LIGHT LIST, P. 2

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 8

WARNING LIGHTS LIST

IP WARNING LIGHTS		
WARNING LIGHT TITLE	SIGNAL PATH	SENSOR LOCATION
RANGE INHIBITED	TRANS CTRLR / DRIVE TRAIN J1939 / CLUSTER	
FUEL FILTER	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	FUEL FILTER
ENGINE (YELLOW LED)	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	
ENGINE (RED LED)	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	
BRAKE PRESSURE (O)	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	SWITCH
BRAKE FLUID	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	BRK RESERVOIR
TRAC CTRL	TRUCK ABS CTRLR / DRIVE TRAIN J1939 / CLUSTER	
CHECK TRANS	TRANS CTRLR / DRIVE TRAIN J1939 / CLUSTER	
TRAILER ABS	TRLR ABS CTRLR / DRIVE TRAIN J1939 / CLUSTER	
WASHER FLUID	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	WASHER BOTTLE
(LEFT TURN)	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	TURN SIG SW
AIR BAG	DISCRETE NOT ON DATA BUS	
WATER IN FUEL	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	FUEL FILTER
COOLANT LEVEL	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	SURGE TANK
CHECK ELECT SYS	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
PARK (P)	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	SWITCH
CRUISE	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
ABS	TRUCK CTRLR / DRIVE TRAIN J1939 / CLUSTER	
(RIGHT TURN)	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
WAIT TO START	ENGINE CTRLR / DRIVE TRAIN J1939 / CLUSTER	
FASTEN BELTS	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
(HIGH BEAM IND)	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
COLD AMB PROTEC	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
RETARD OVERHEAT	TRANS CTRLR / DRIVE TRAIN J1939 / CLUSTER	TRANSMISSION
CHECK AC	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
AUTO NEUTRAL	DISCRETE NOT ON DATA BUS	SWITCH
ALTERNATOR	DISCRETE NOT ON DATA BUS	
PTO/THROTTLE	SYSTEM CTRLR / DRIVE TRAIN J1939 / CLUSTER	
OPTIMIZED IDLE	DISCRETE NOT ON DATA BUS	
SNOW VALVE	DISCRETE NOT ON DATA BUS	SNOW VALVE
FR AXLE DIFF LOCK	DISCRETE NOT ON DATA BUS	FWD RR AXLE
RR AXLE DIFF LOCK	DISCRETE NOT ON DATA BUS	RR RR AXLE
MESSAGE WAIT	DISCRETE NOT ON DATA BUS	
PTO	DISCRETE NOT ON DATA BUS	
CONVERTER TEMP	DISCRETE NOT ON DATA BUS	
TOUCH LOC RELEASE	DISCRETE NOT ON DATA BUS	
PARK FLUID	SYSTEM CTRLR/DRIVE TRAIN	
FR AXLE ENGAGED	DISCRETE NOT ON DATA BUS	TRANSFER CASE

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
CNA	9MAY07	REVISED & REDRAWN	A	60782A	U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS
					RELEASE NO.	DATE
					59974G	20APR06
					PART NO.	SHEET
					AE08-56614	02

Figure 117 Warning Light List

8.3. WARNING LIGHTS CONTROLLED BY ENGINE, TRANSMISSION, ABS
CONTROLLER, P. 3

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ELECTRICAL CIRCUIT DIAGRAM

WARNING LIGHTS CONTROLLED BY ENGINE, TRANSMISSION, ABS CONTROLLER

CHAPTER 8

THE FOLLOWING WARNING LIGHTS ARE CONTROLLED BY THE ENGINE,TRANSMISSION, OR ABS CONTROLLER OVER THE DATA BUS AND DO NOT HAVE INDEPENDENT CIRCUITS THAT CAN BE OR NEEDS TO BE SHOWN:

DO NOT SHIFT

ENGINE (YELLOW LENS)

ENGINE (RED LENS)

TRAC CTRL

CHECK TRANS

TRAILER ABS

CHECK ELECTR SYS

ABS

WAIT TO START

RETARD OVERHEAT

AUTO NEUTRAL

OPTIMIZED IDLE

CHG	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	
CNA	9MAY07	REVISED & REDRAWN	A	60782A	U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					RELEASE NO.	DATE	PART NO.
					59974G	20APR06	AE08-56614
							SHEET 03

Figure 118 Warning Lights Controlled by Engine, Transmission, ABS Controller

8.4. ENGINE OIL PRESSURE AND TEMP, SPEEDOMETER, TACHOMETER, VOLTMETER AND WATER TEMP GAUGE CIRCUITS, P. 4

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<p>REFER TO CONSOLIDATED ENGINE / VEHICLE CONTROLLER DIAGNOSTICS MANUAL EGES-175 (DT466E), EGES-190 (T444E), FOR CIRCUIT DIAGRAMS SHOWING INPUT CIRCUIT FOR THE FOLLOWING DATALINK DRIVEN SYSTEM:</p> <p>ENGINE OIL PRESSURE GAUGE ENGINE OIL TEMPERATURE GAUGE SPEEDOMETER GAUGE TACHOMETER GAUGE WATER TEMPERATURE GAUGE</p>							
<small>CHK</small>	<small>DATE</small>	<small>CHANGE</small>	<small>REV</small>	<small>REFERENCE</small>	<small>DRAWN</small>	<small>NAME</small>	
CNA	9MAY07	REVISED & REDRAWN	A	60782A	U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS	
					<small>RELEASE NO.</small>	<small>DATE</small>	<small>PART NO.</small>
					59974G	20APR06	AE08-56614 SHEET 04

Figure 119 Engine Oil Pressure and Temp, Speedometer, Tachometer, Voltmeter and Water Temp Gauge Circuits

8.5. IP/GAUGES AND WARNING LIGHTS — GAUGE CLUSTER, P. 5

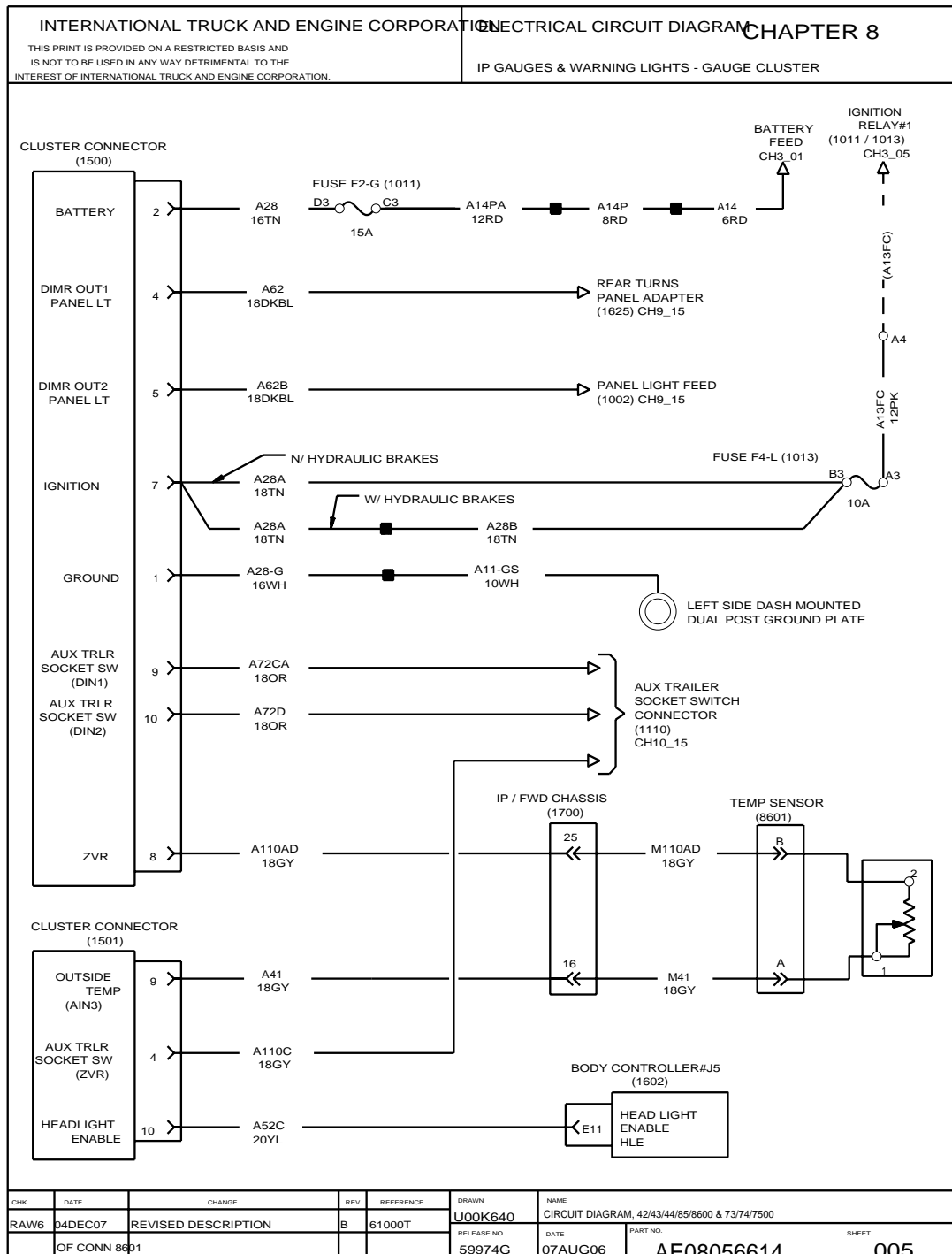


Figure 120 IP/Gauges and Warning Lights — Gauge Cluster

8.6. AIR PRESSURE INPUT CIRCUIT, P. 6

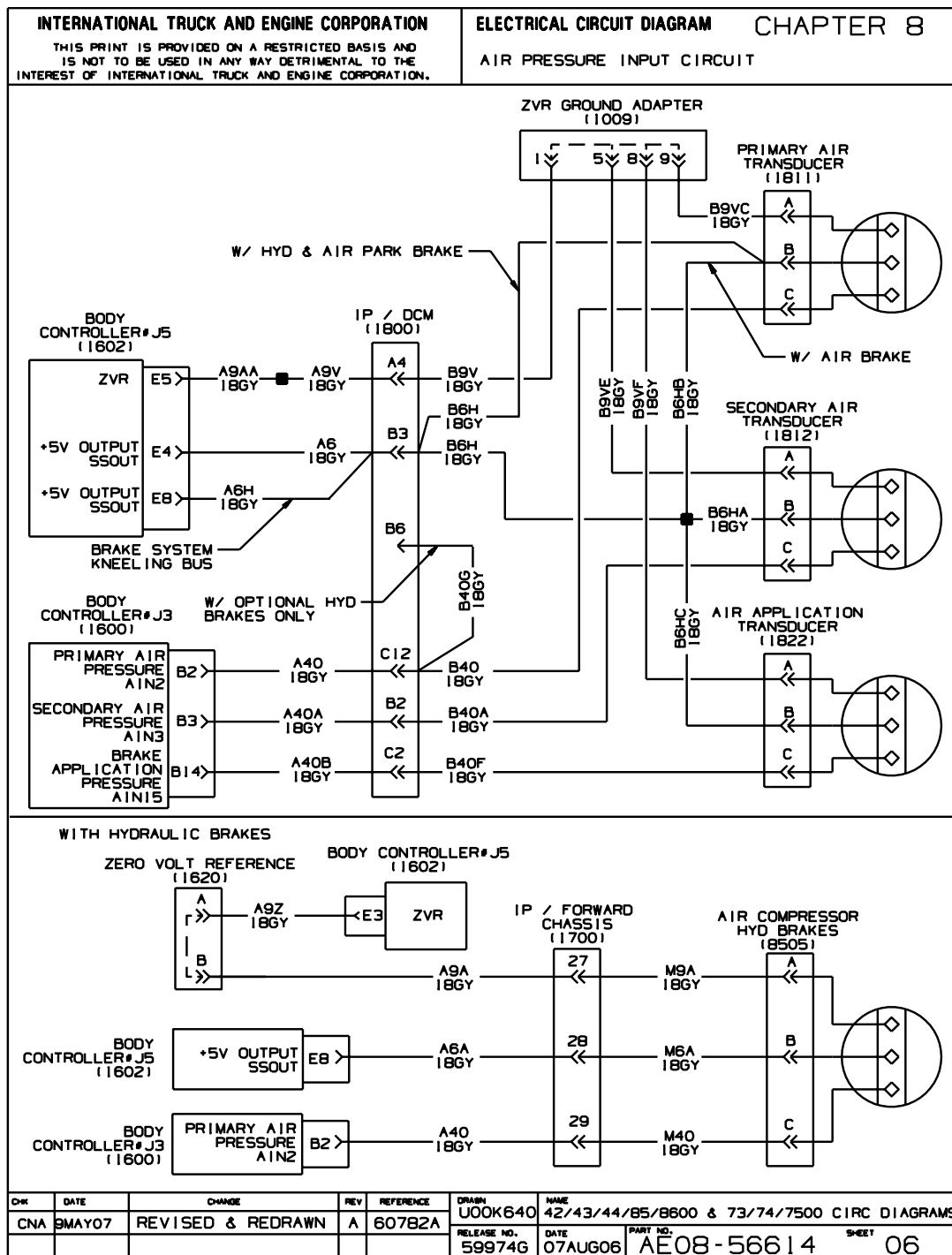


Figure 121 Air Pressure Input Circuit

8.7. AXLE TEMPERATURE, GAUGE INPUT CIRCUIT, P. 7

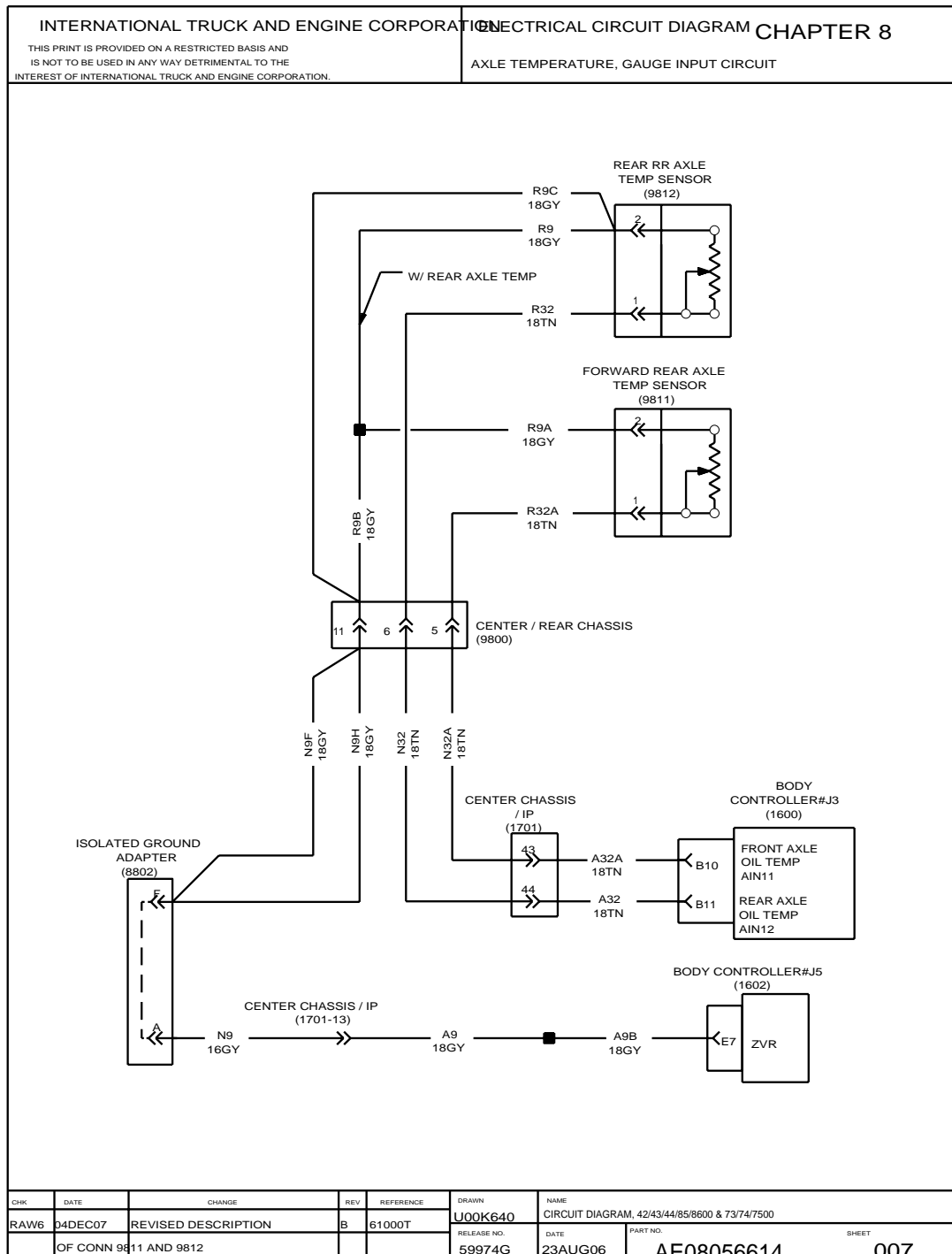


Figure 122 Axle Temperature, Gauge Input Circuit

8.8. FUEL GAUGE CIRCUITRY (SINGLE TANK), P. 8

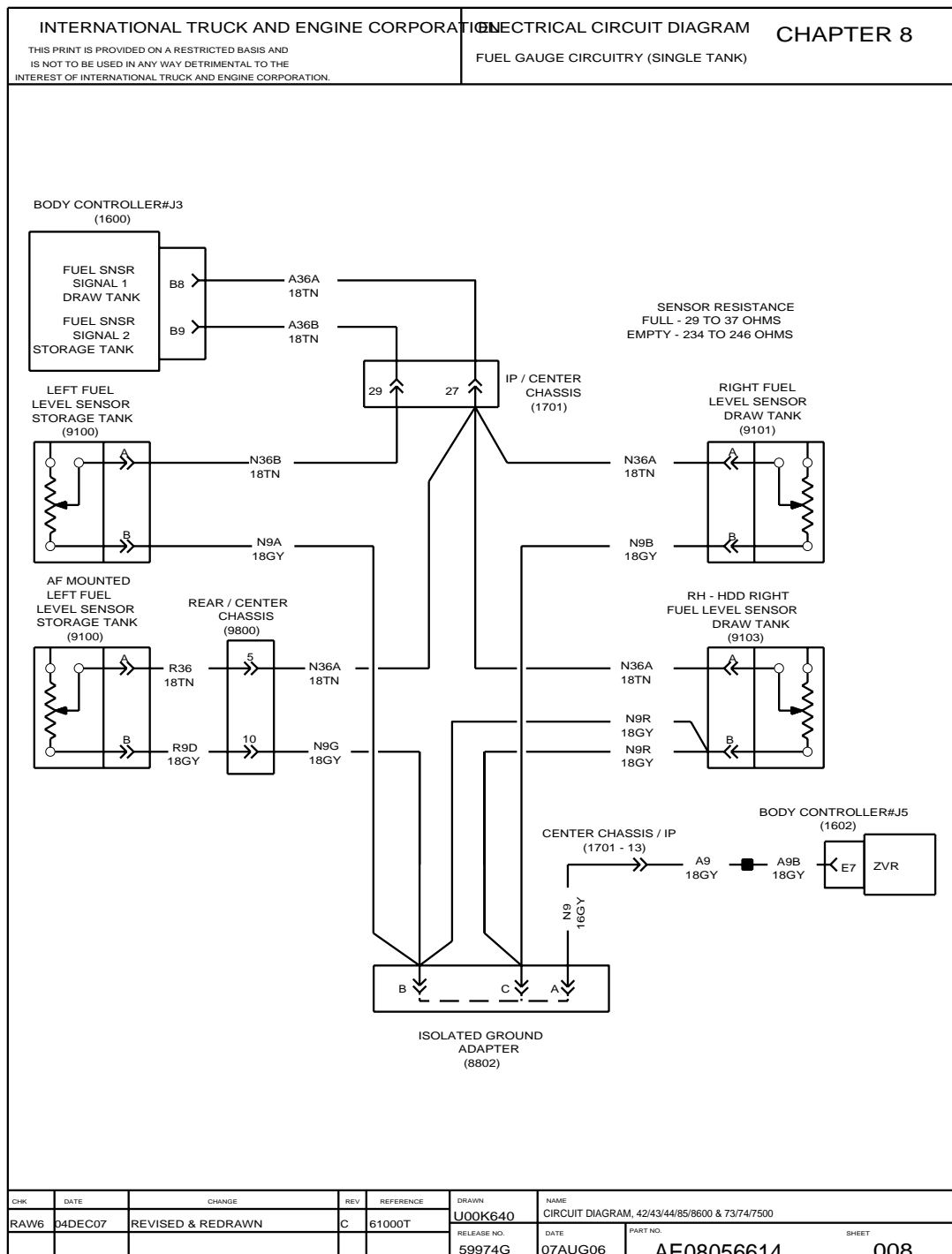


Figure 123 Fuel Gauge Circuitry (Single Tank)

8.9. DIFFERENTIAL LOCK WARNING LAMPS, P. 9

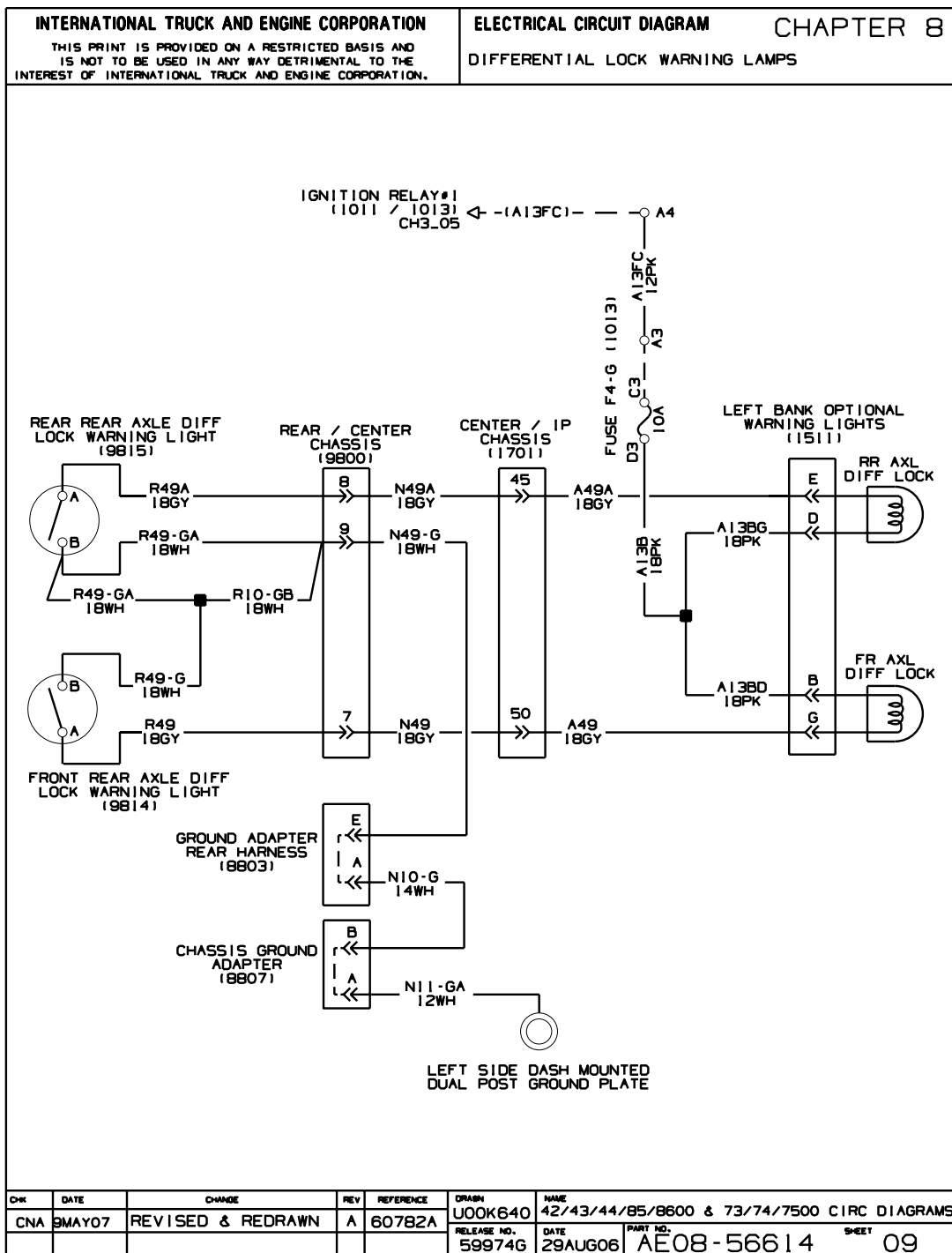


Figure 124 Differential Lock Warning Lamps

8.10. AIR PARK BRAKE AND MANUAL TRANSMISSION OIL TEMP GAUGE, P. 10

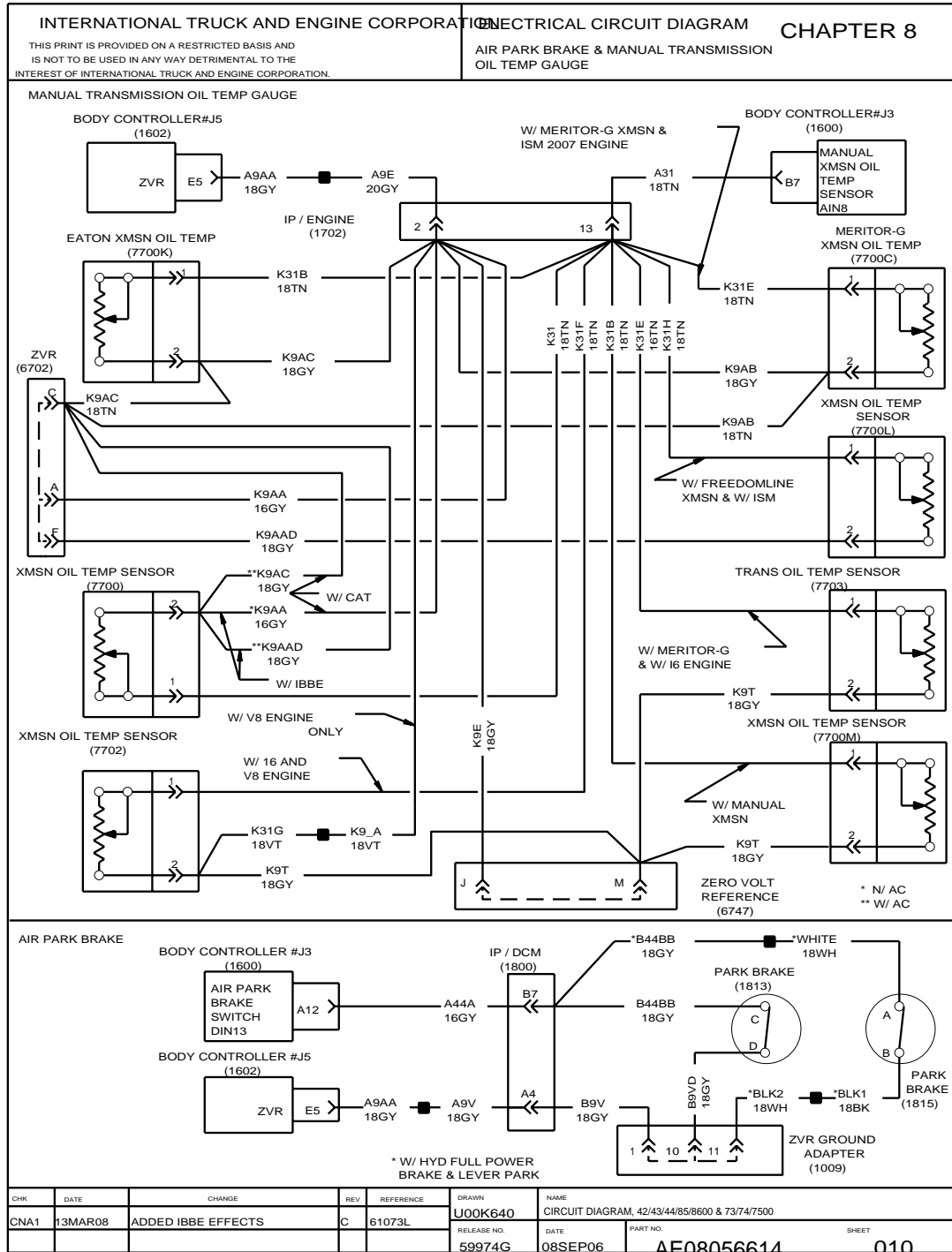


Figure 125 Air Park Brake and Manual Transmission Oil Temp Gauge

8.11. GAUGES AND WARNING LIGHTS — AMMETER, P. 11

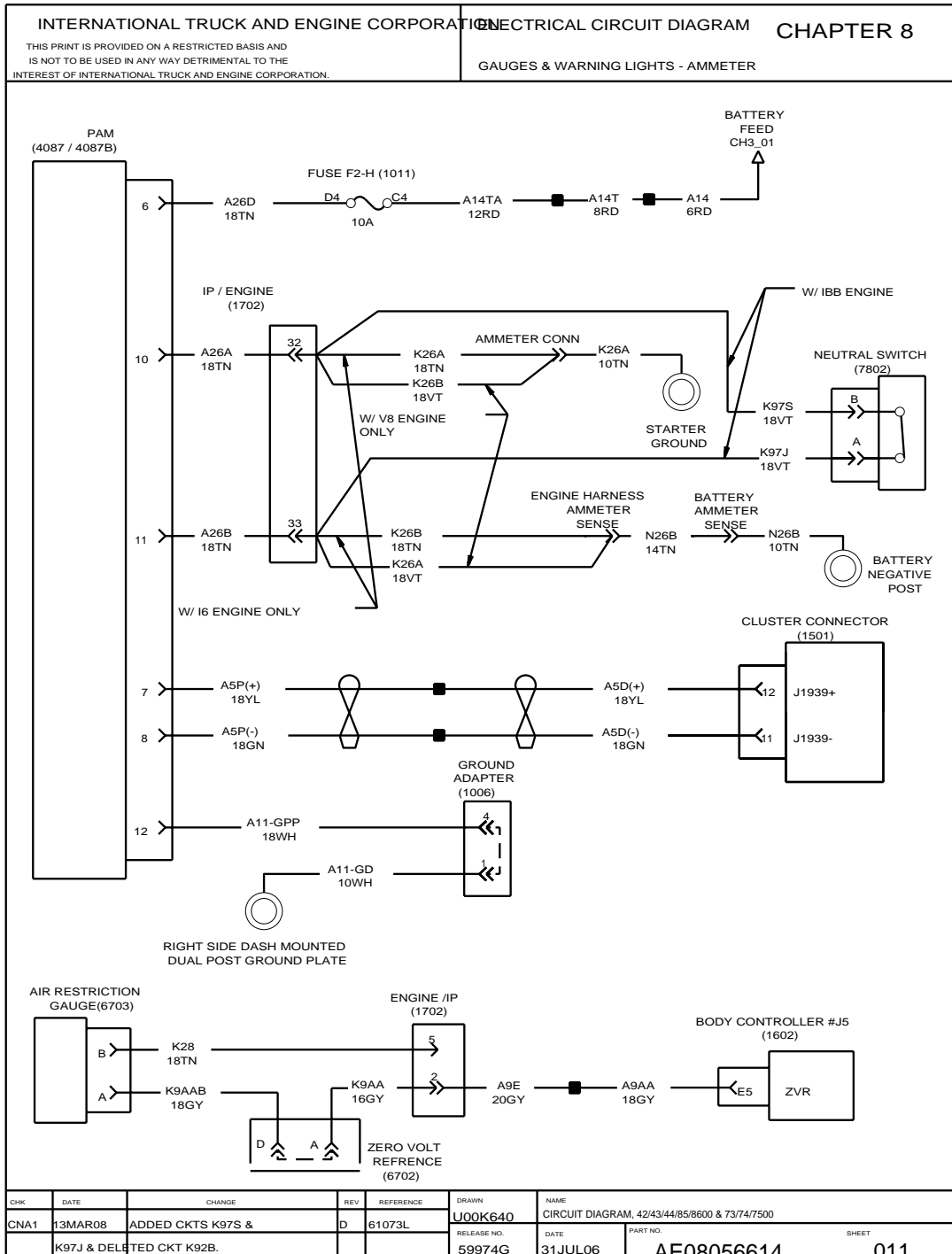


Figure 126 Gauges and Warning Lights — Ammeter

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Figure 127 Engine Oil Temperature Gauge With Caterpillar

8.13. FRONT AXLE ENGAGEMENT LAMP, P. 13

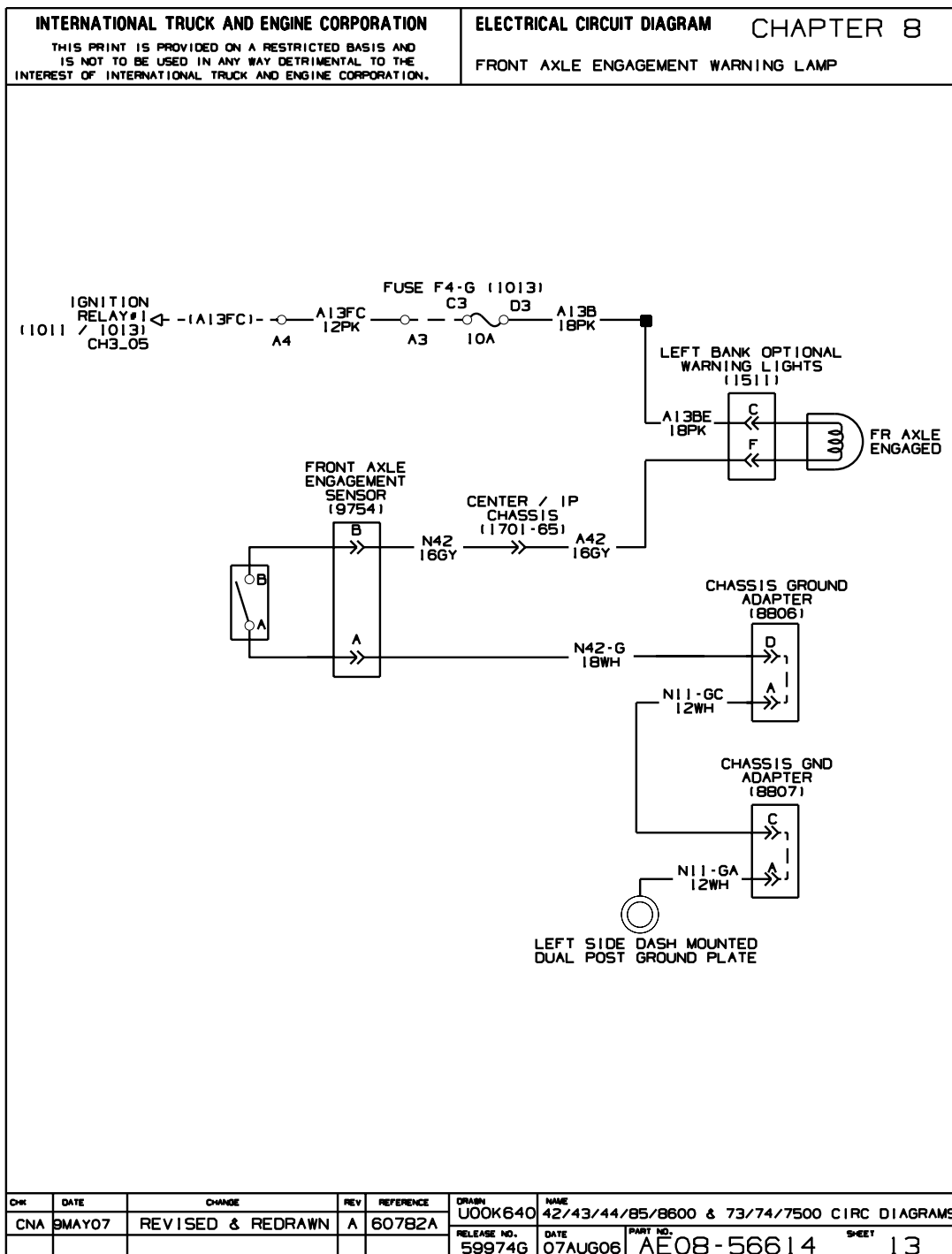


Figure 128 Front Axle Engagement Lamp

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ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 8

WARNING LIGHTS - OPTIONAL

RIGHT BANK OPTIONAL WARNING LIGHTS (1510)

BRAKE PRESSURE / RETARD ON / MESSAGE WAIT

RETARDER RELAY (1019) CH11-15

BRAKE WARNING LAMP RELAY - R3 (1019) CH10-08

QUALCOMM (11902 - F1)

QUALCOMM (12701 - A)

MOBILE MAX DISCRETE (1243-B1)

BODY CONTROLLER# J4 (1601)

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST HIGH TEMP

DPF CLOGGED

AUTO NEUTRAL

W/ BRAKE SYSTEM - FULL POWER

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST HIGH TEMP

DPF CLOGGED

AUTO NEUTRAL

W/ BRAKE SYSTEM - FULL POWER

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

GROUND ADAPTER (11003)

W/ HYD BRAKES FUSE F4-L (1013)

FUSE F4-G (1013)

W/ RT RH

W/ BOTH RH

W/ QUALCOMM SATELLITE COMMUNICATION SYSTEM

W/ MOBILEMAX SATELLITE

N/ AUTONTRL W/ RETARDER

EXHAUST SYSTEM HIGH TEMP INDICATOR RD31 (HSD)

PARTICULATE TRAP INDICATOR RD32 (HSD)

LEFT SIDE DASH MOUNTED DUAL POST STUD

<

Figure 129 Warning Lights — Optional

8.15. WARNING LIGHTS — OPTIONAL, P. 15

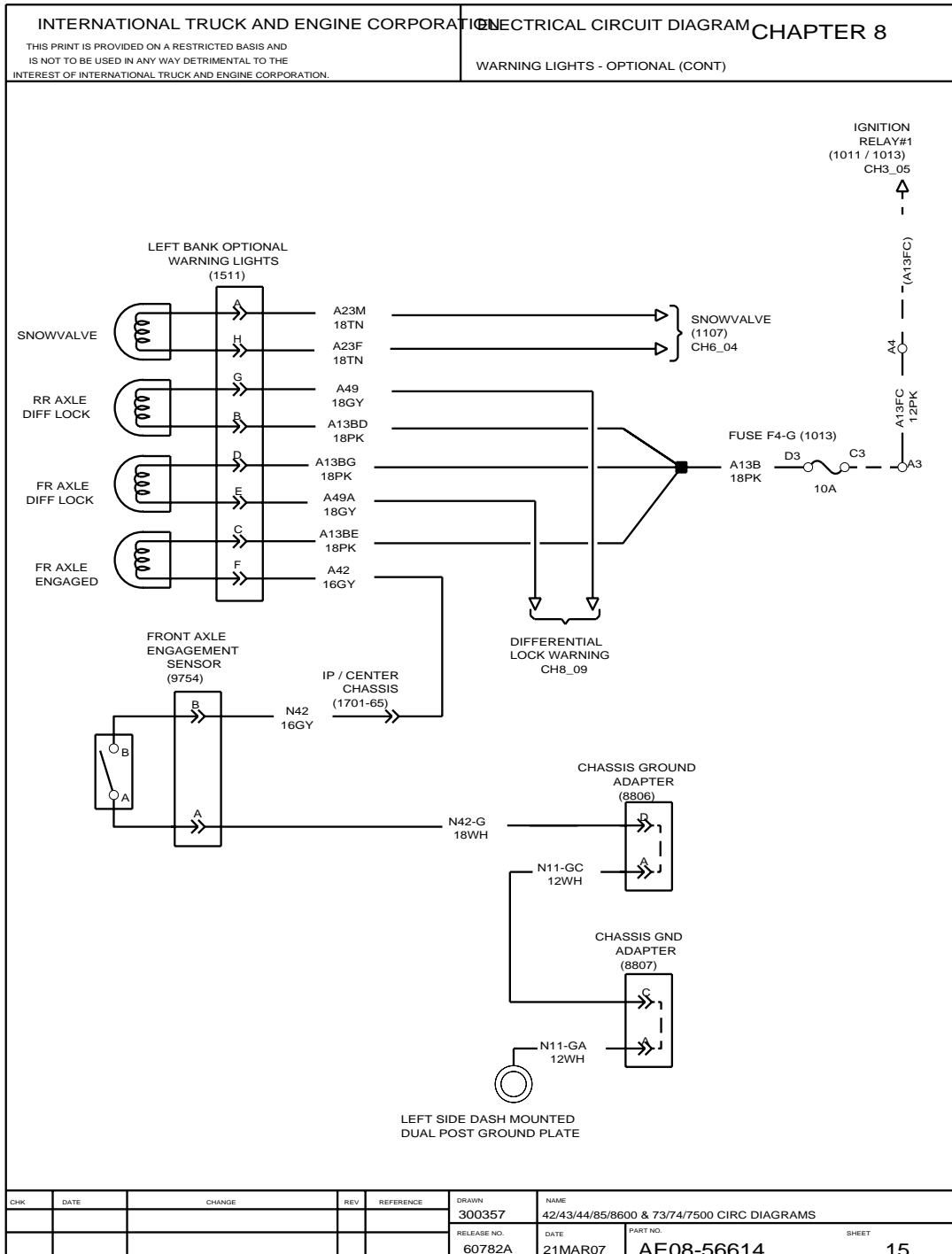


Figure 130 Warning Lights — Optional (Cont.)

8.16. LOAD MONITORING, P. 16

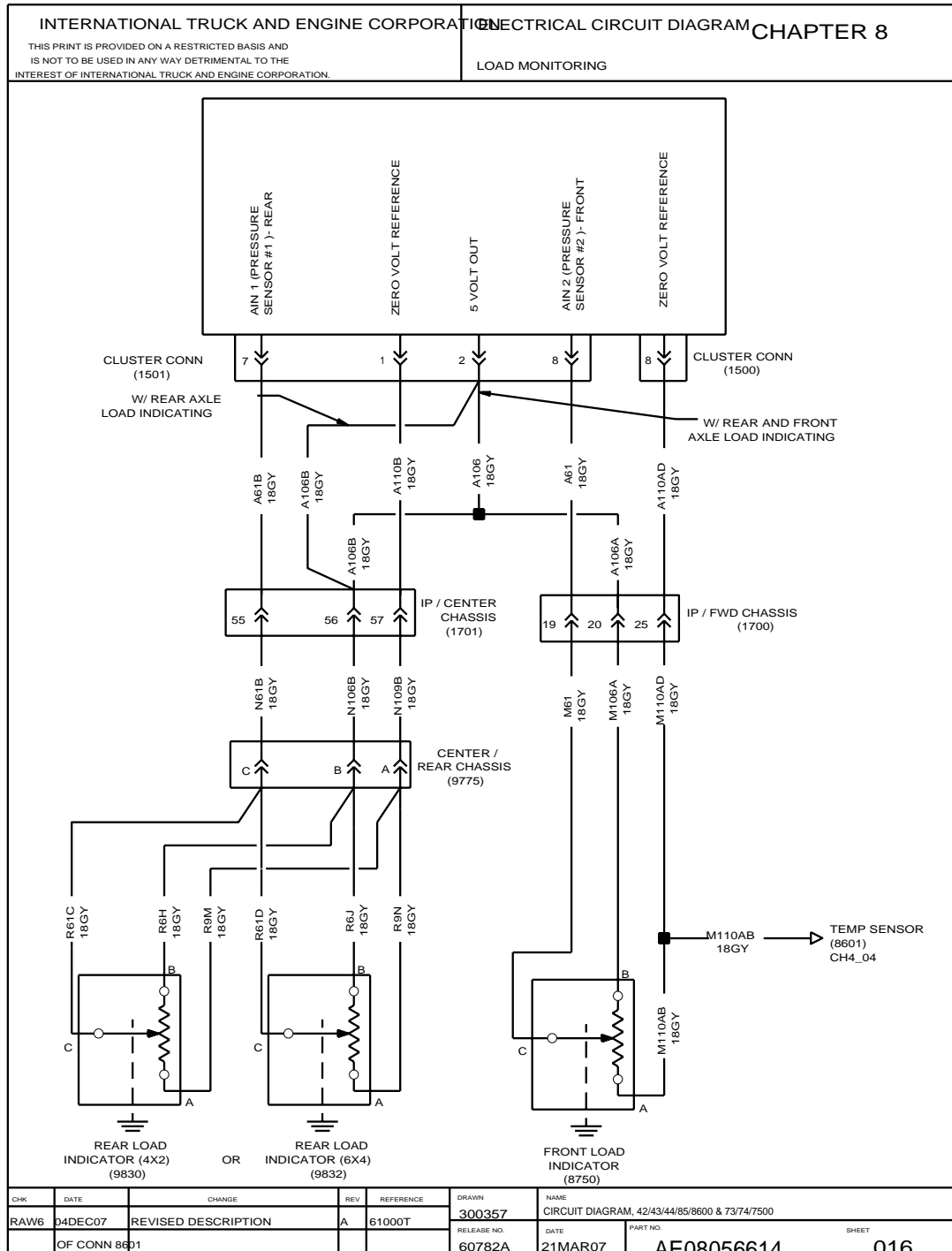


Figure 131 Load Monitoring

9. LIGHTS (CHAPTER 9)

9.1. BACKUP LIGHTS N/ ALLISON TRANSMISSION, P. 1

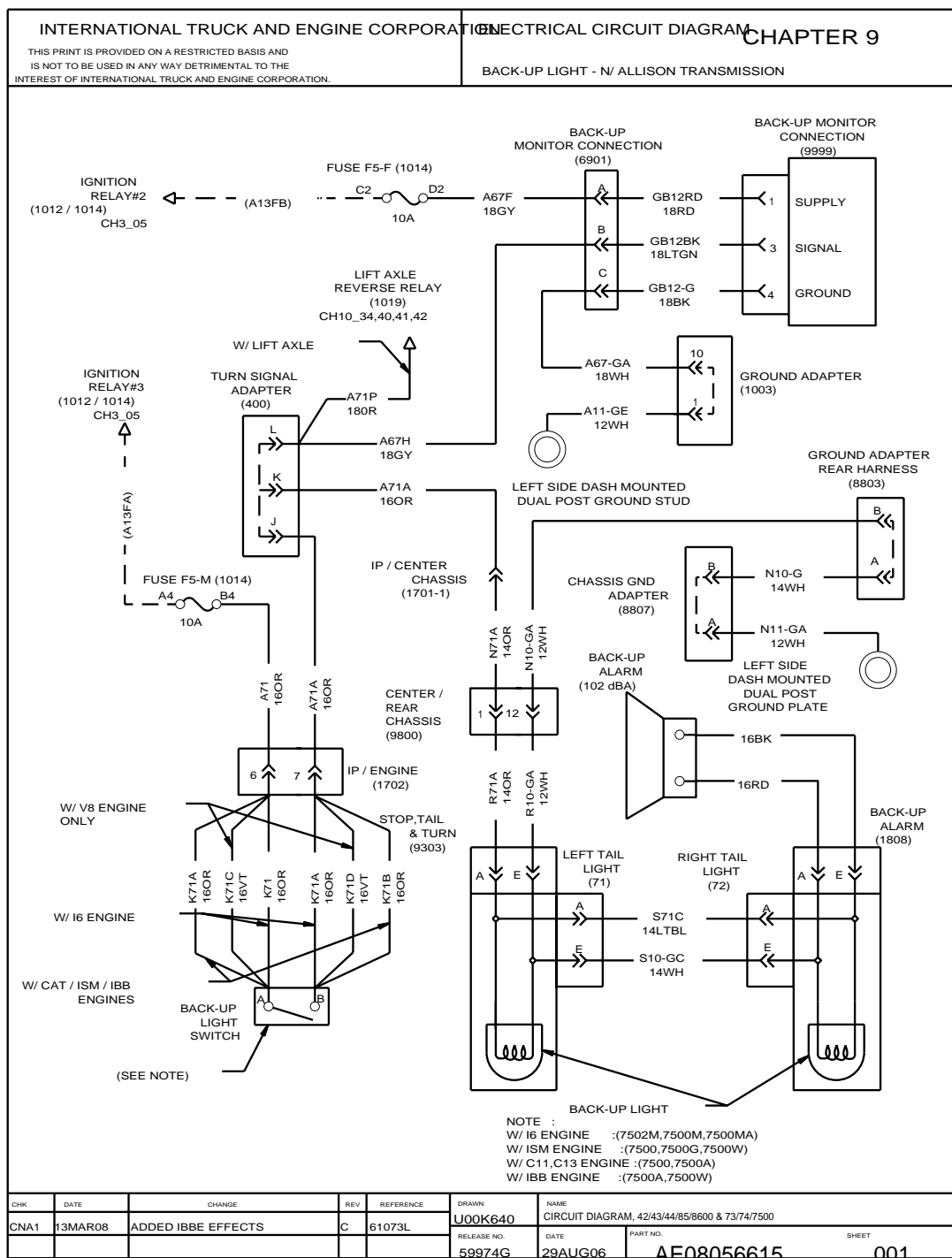


Figure 132 BackUp Lights N/ Allison Transmission

9.2. BACKUP LIGHTS W/ ALLISON TRANSMISSION, P. 2

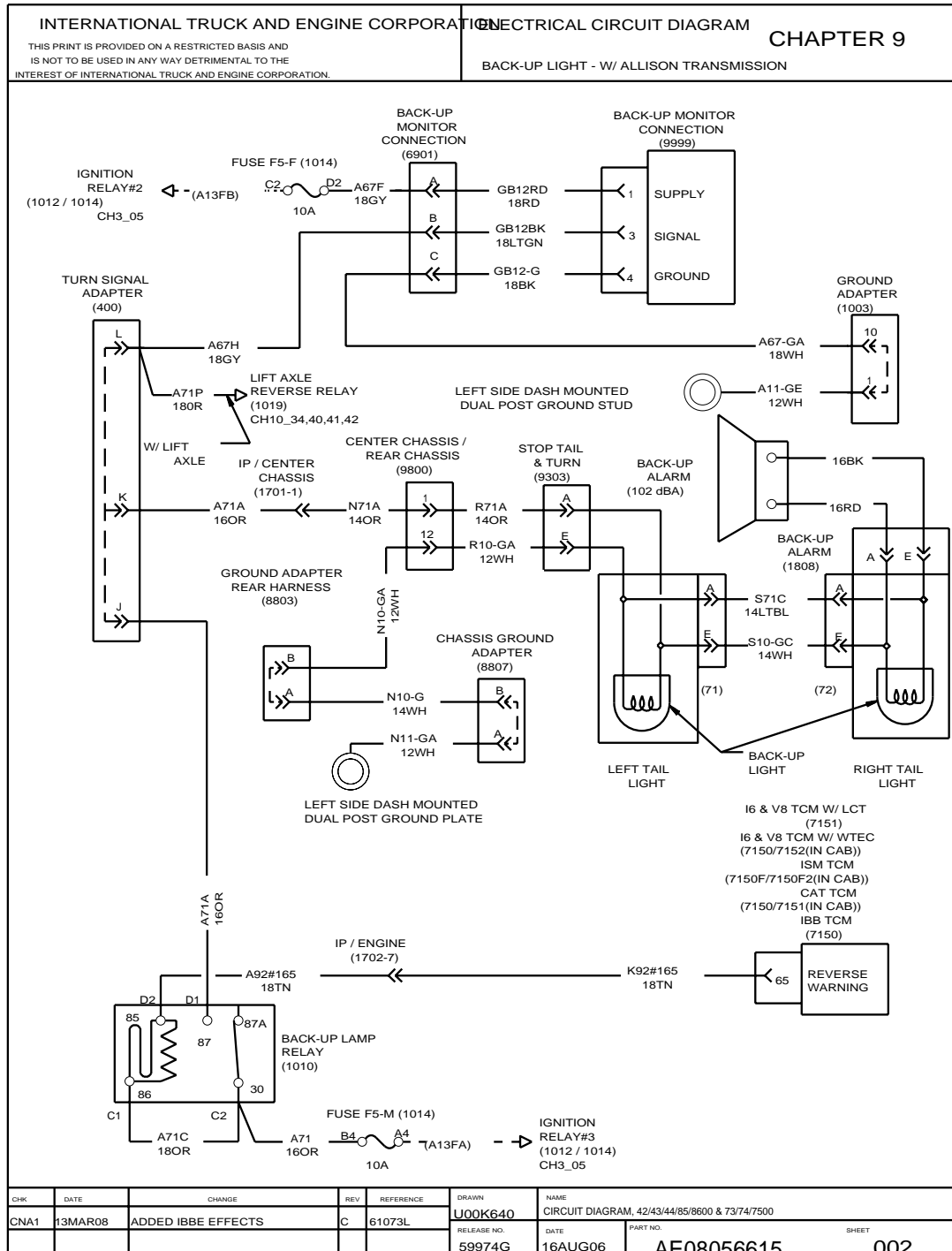
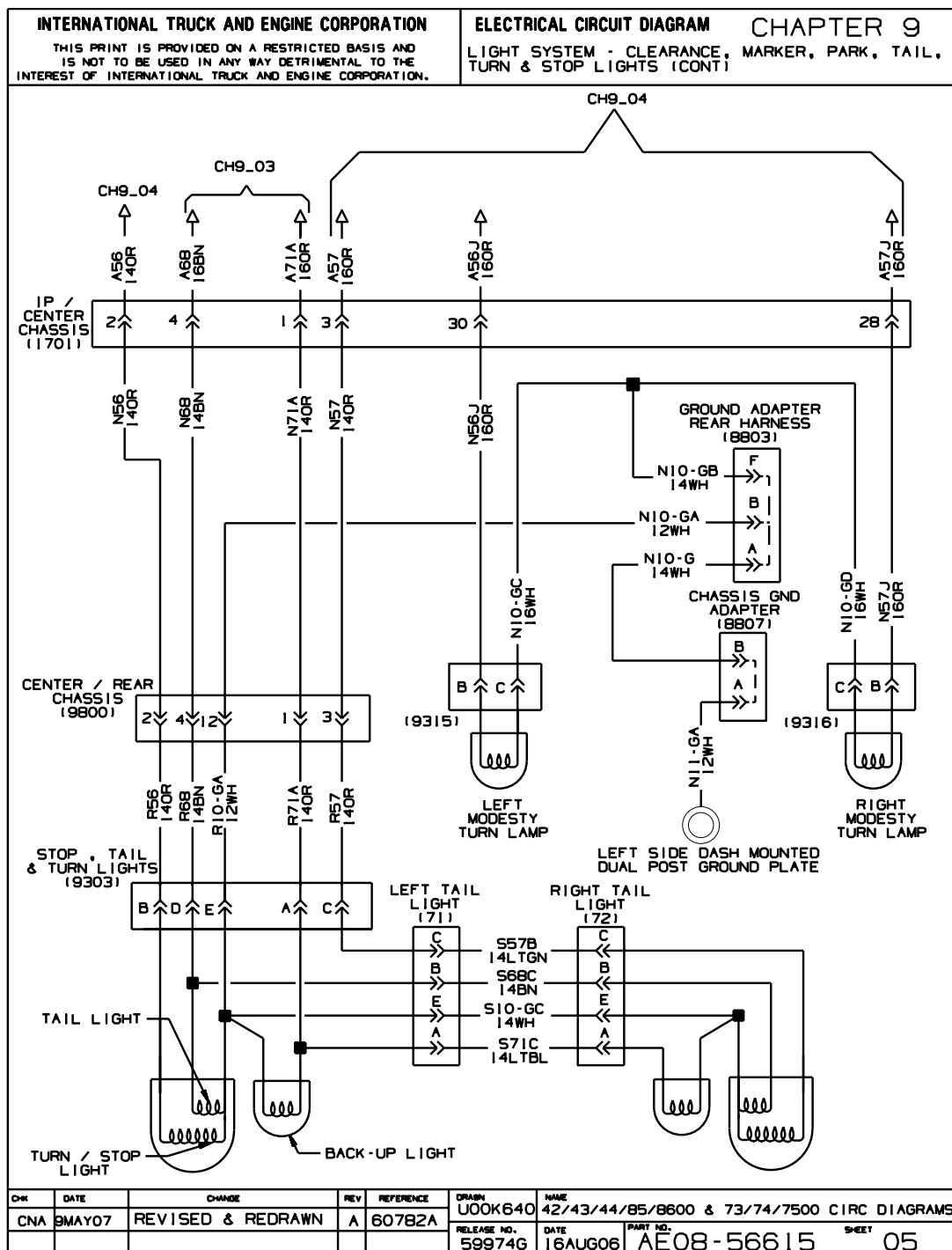


Figure 133 BackUp Lights W/ Allison Transmission

[illegible]

Figure 135 Light Systems — Clearance, Marker, Park, Tail, Turn and Stop Lights (Cont.)

9.5. LIGHT SYSTEMS — CLEARANCE, MARKER, PARK, TAIL, TURN AND STOP LIGHTS (CONT.), P. 5**Figure 136 Light Systems — Clearance, Marker, Park, Tail, Turn and Stop Lights (Cont.)**

[illegible]

Figure 137 Light Systems — Clearance, Marker, Park, Tail, Turn and Stop Lights (Cont.)

9.7. LIGHT SYSTEMS — TURN SIGNAL AND STOP SWITCHES, P. 7

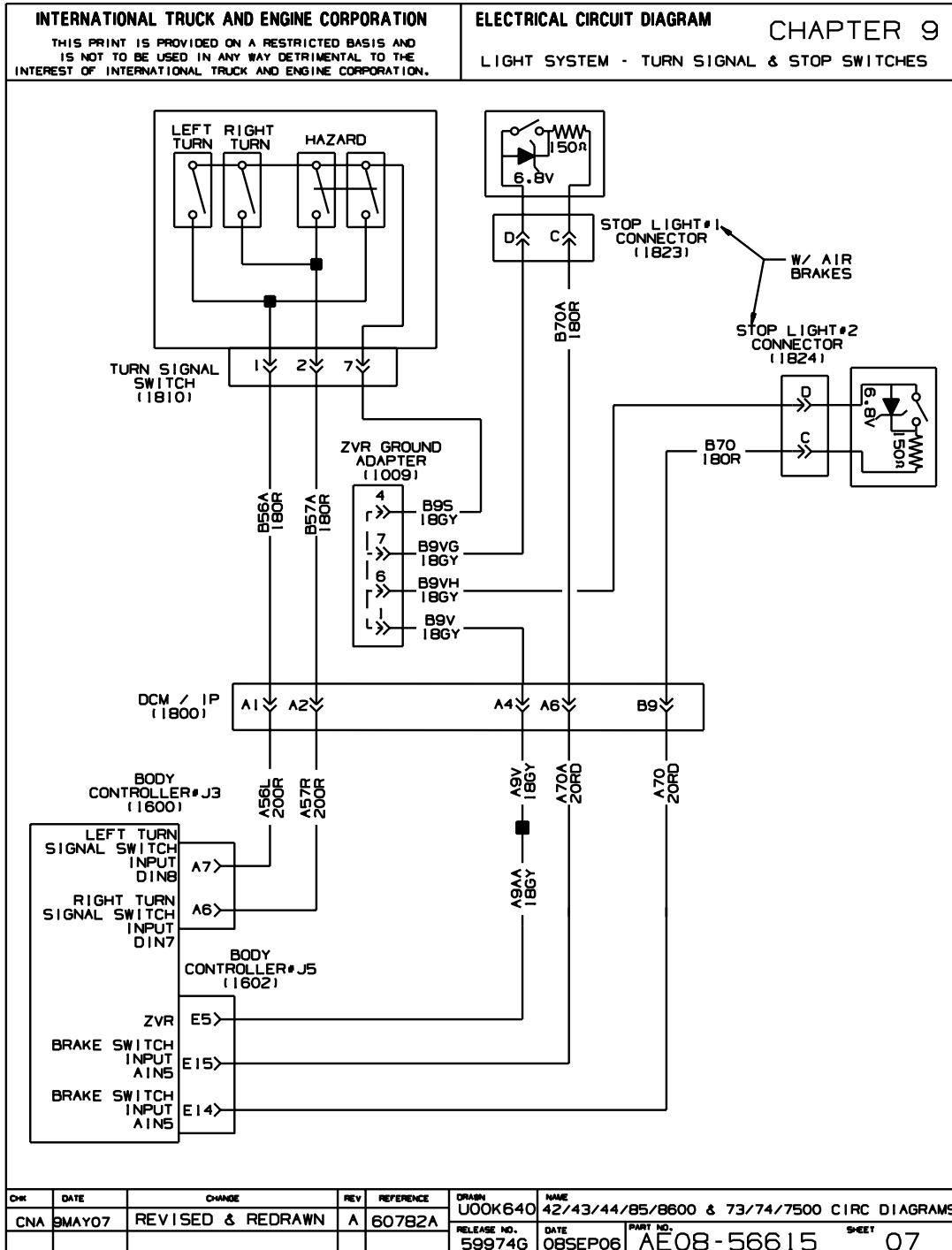


Figure 138 Light Systems — Turn Signal and Stop Switches

9.8. DOME LIGHT, MAP LIGHT, P. 8

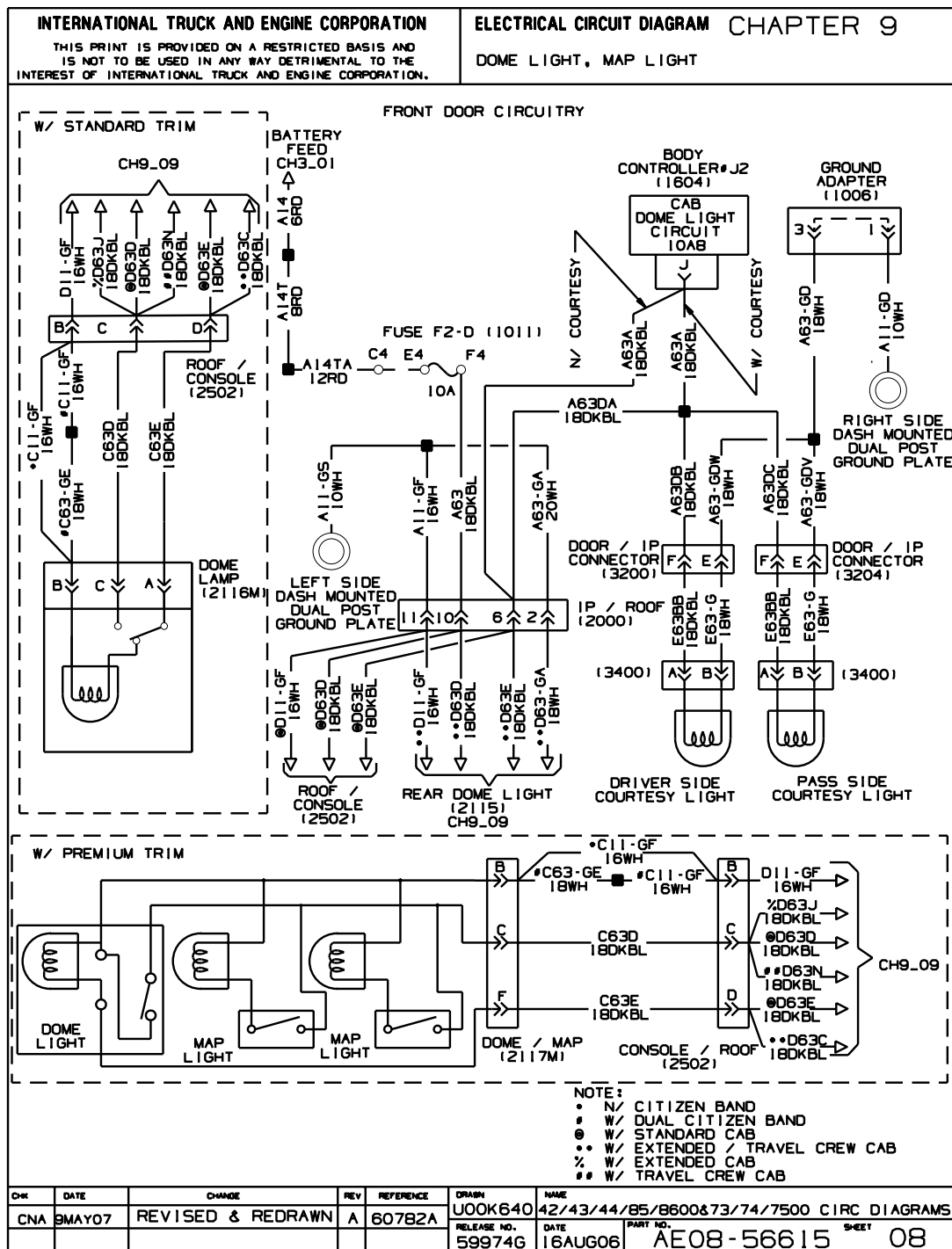


Figure 139 Dome Light, Map Light

9.9. DOME LIGHT, MAP LIGHT (CONT.), P. 9

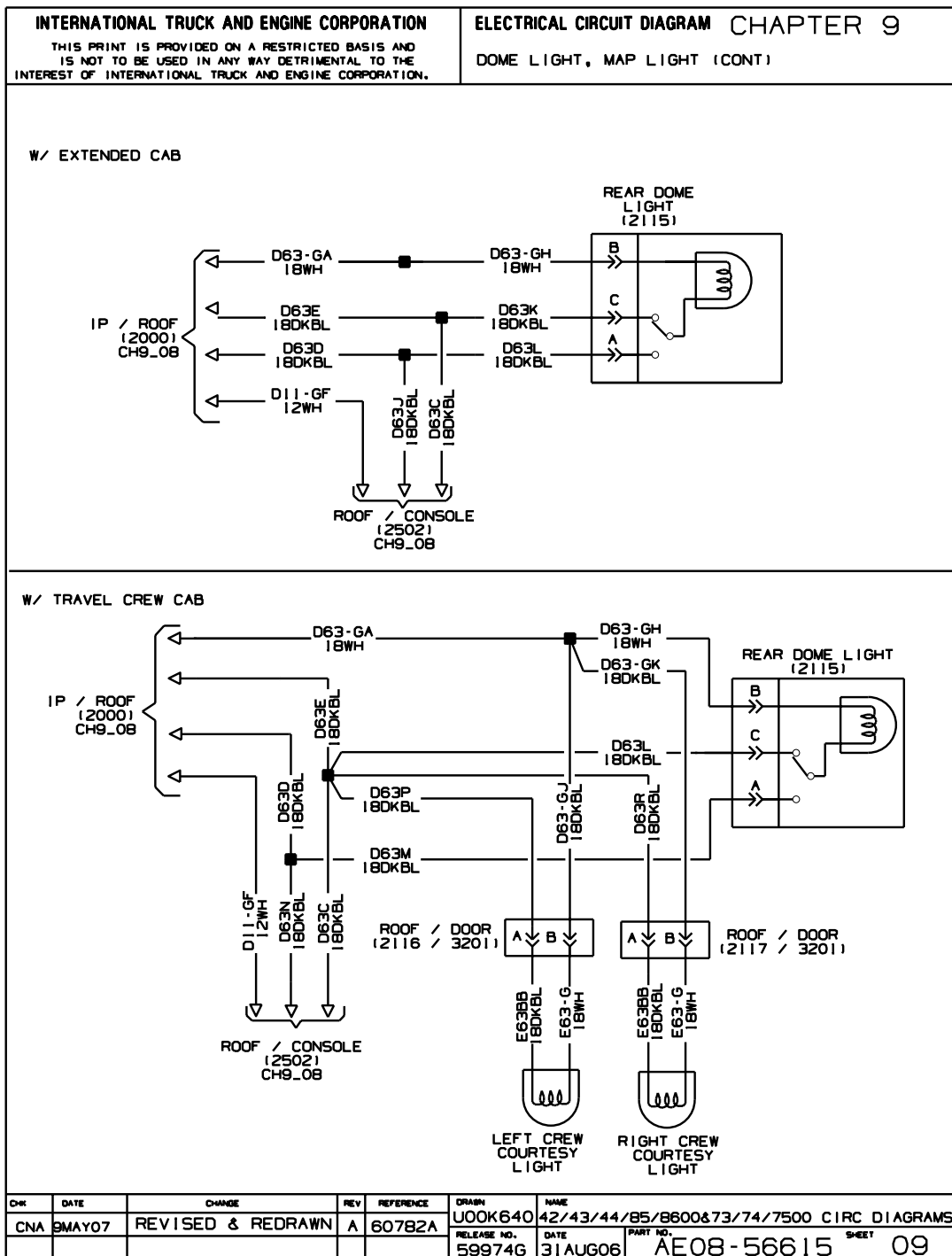


Figure 140 Dome Light, Map Light (Cont.)

9.10. DOME LIGHT, MAP LIGHT (CONT.), P. 10

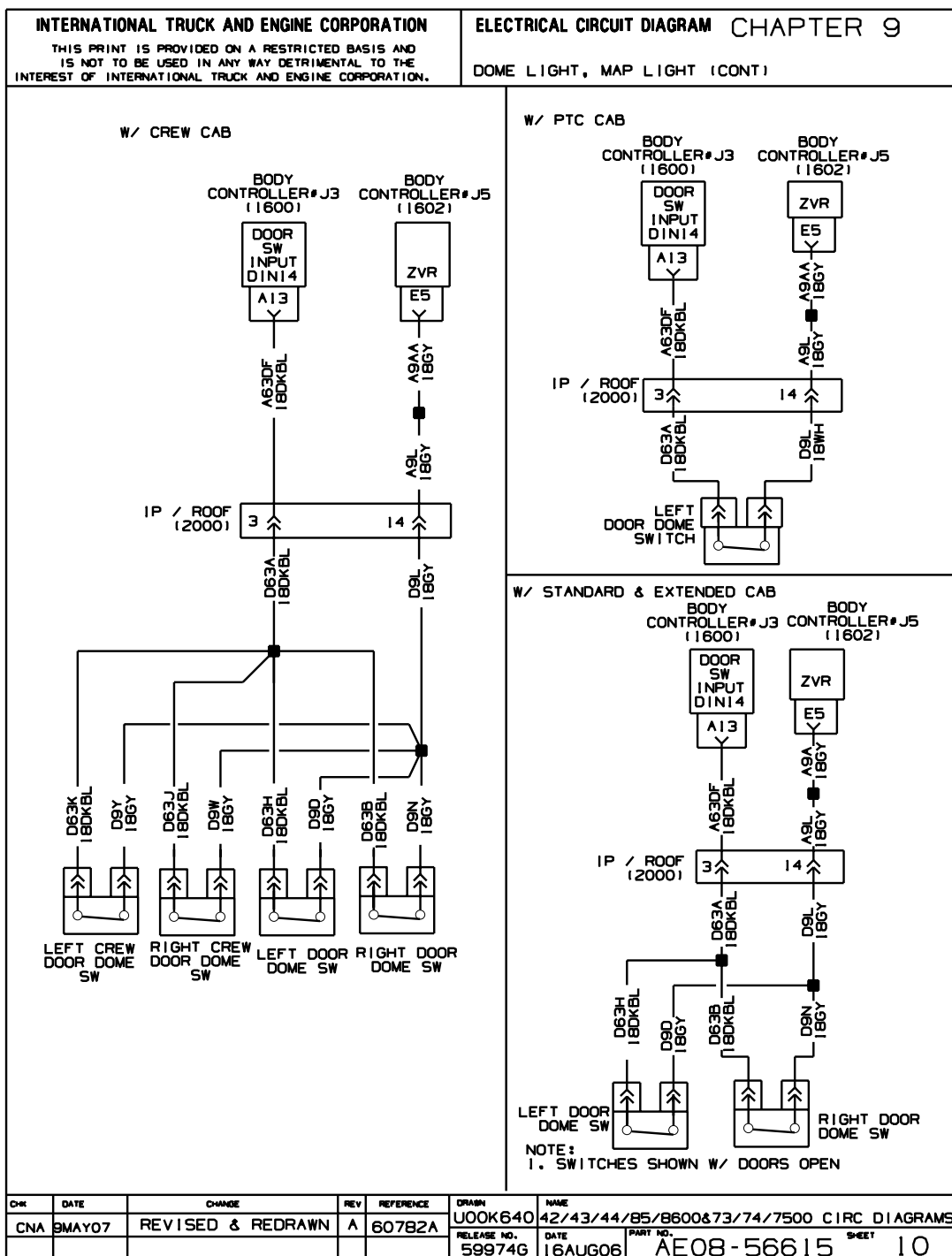


Figure 141 Dome Light, Map Light (Cont.)

9.11. FOG LIGHT AND WORK LIGHT, P. 11

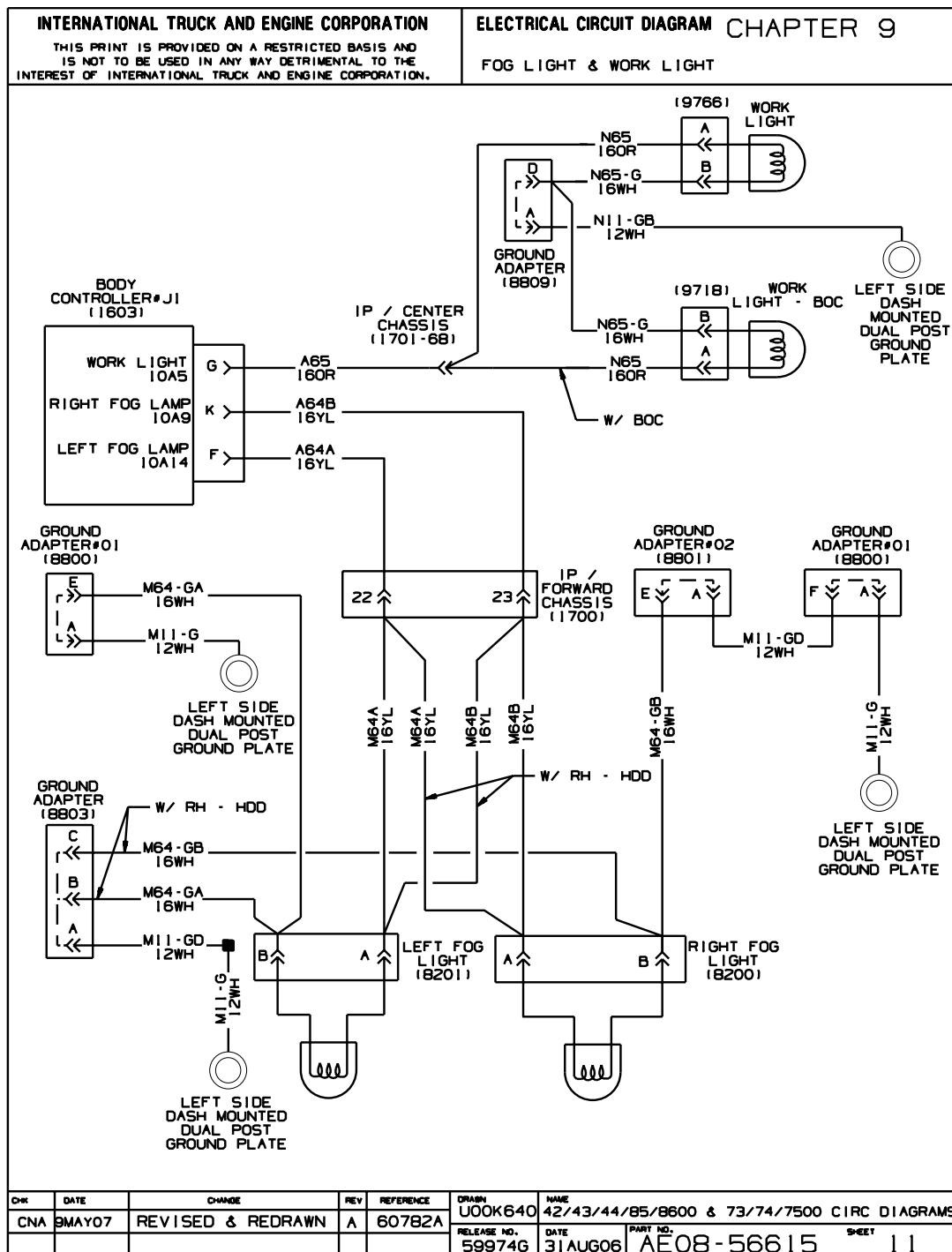


Figure 142 Fog Light and Work Light

9.12. HEADLIGHTS, P. 12

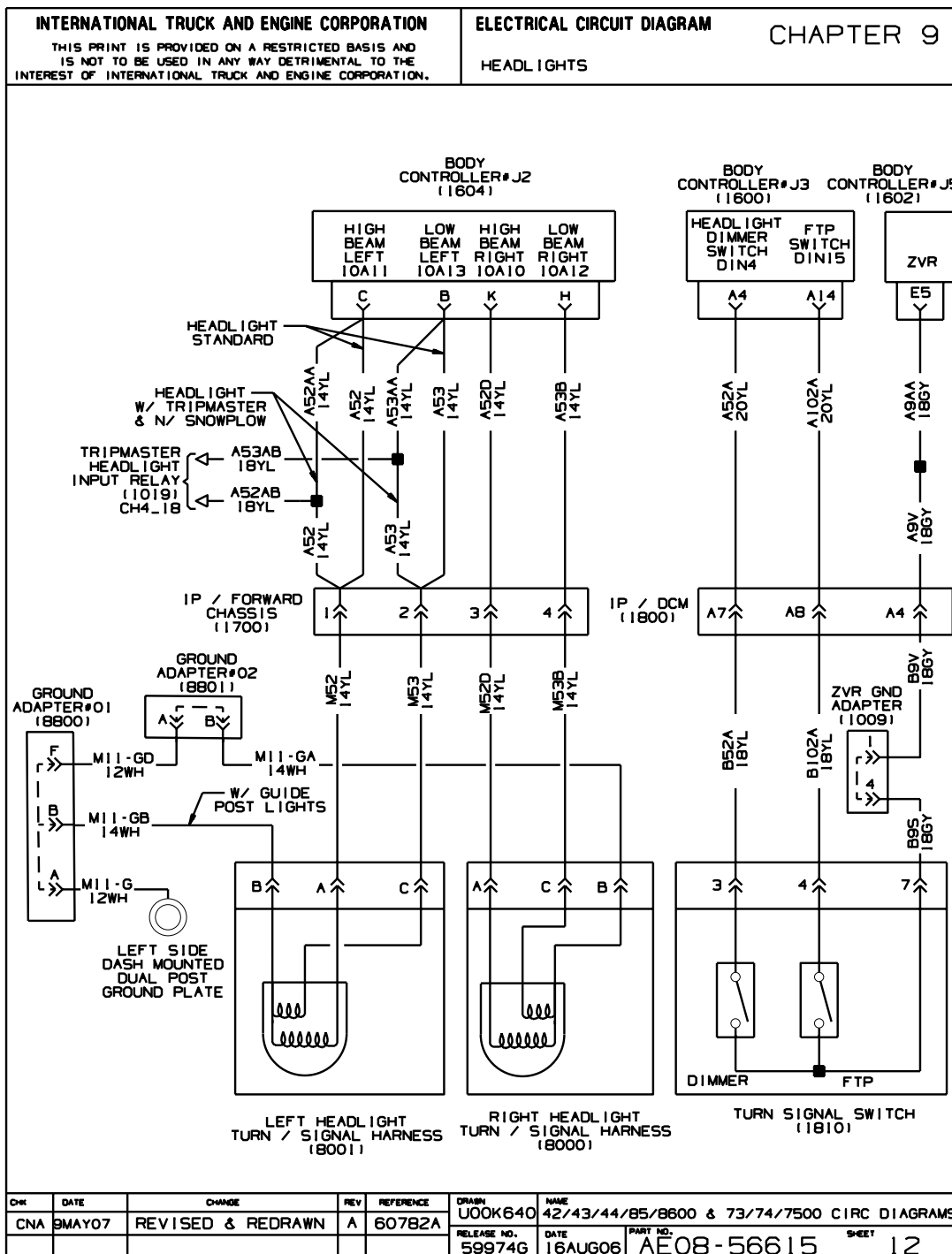


Figure 143 Headlights

9.13. AUX. HEADLIGHTS, SNOW PLOW LIGHTS, P. 13

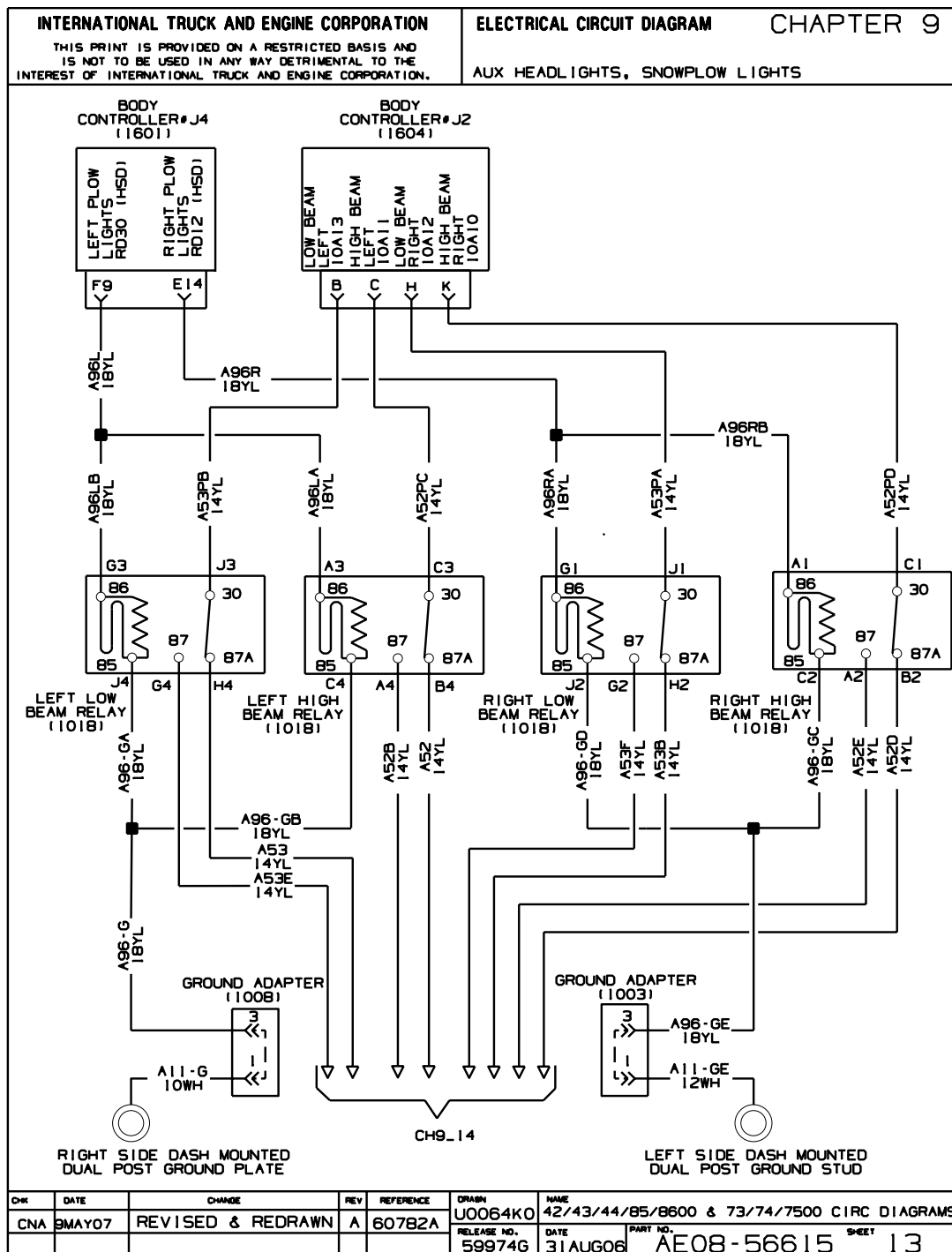


Figure 144 Aux. Headlights, Snow Plow Lights

9.14. AUX. HEADLIGHTS, SNOW PLOW LIGHTS (CONT), P. 14

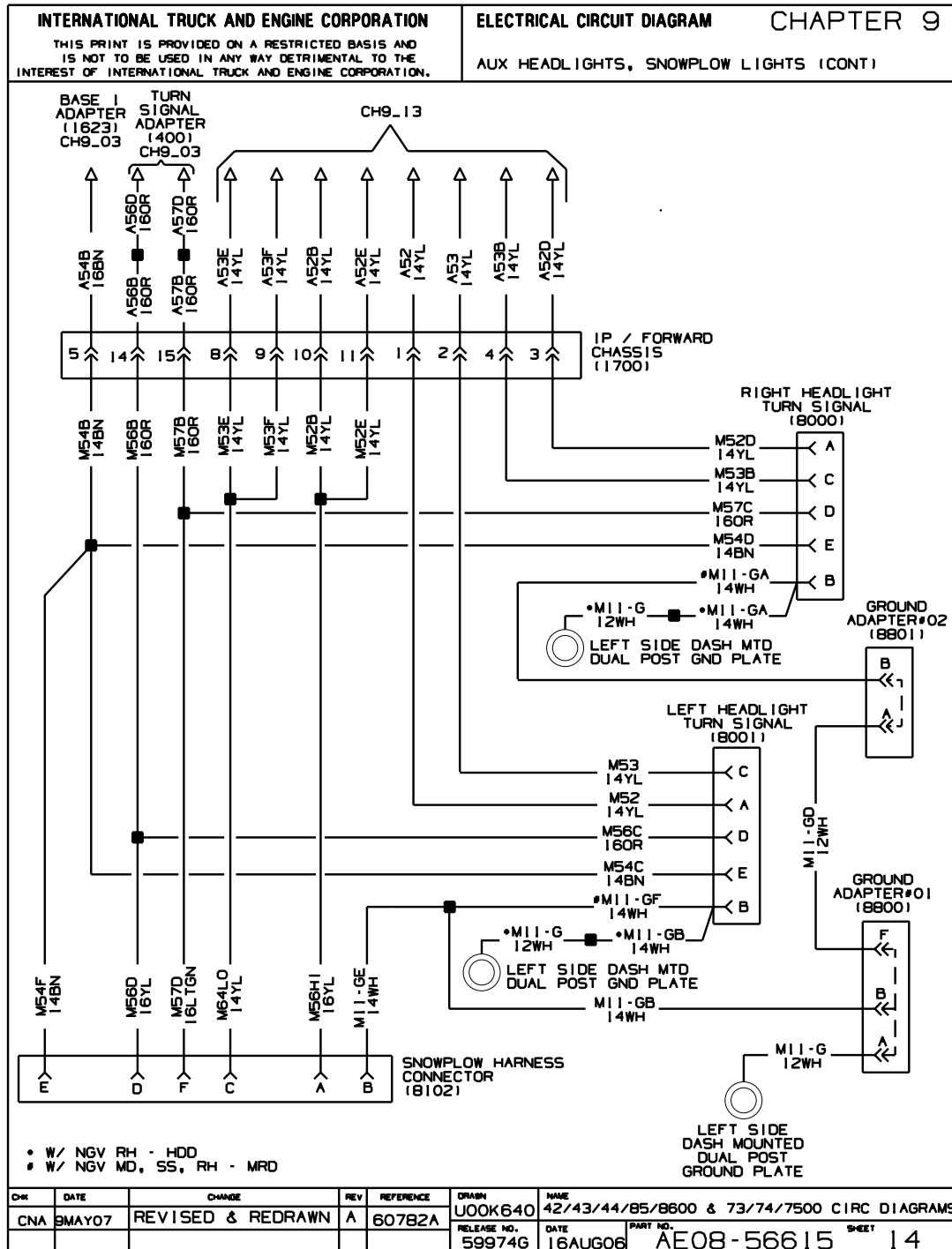


Figure 145 Aux. Headlights, Snow Plow Lights (Cont)

9.15. PANEL LIGHTS, P. 15

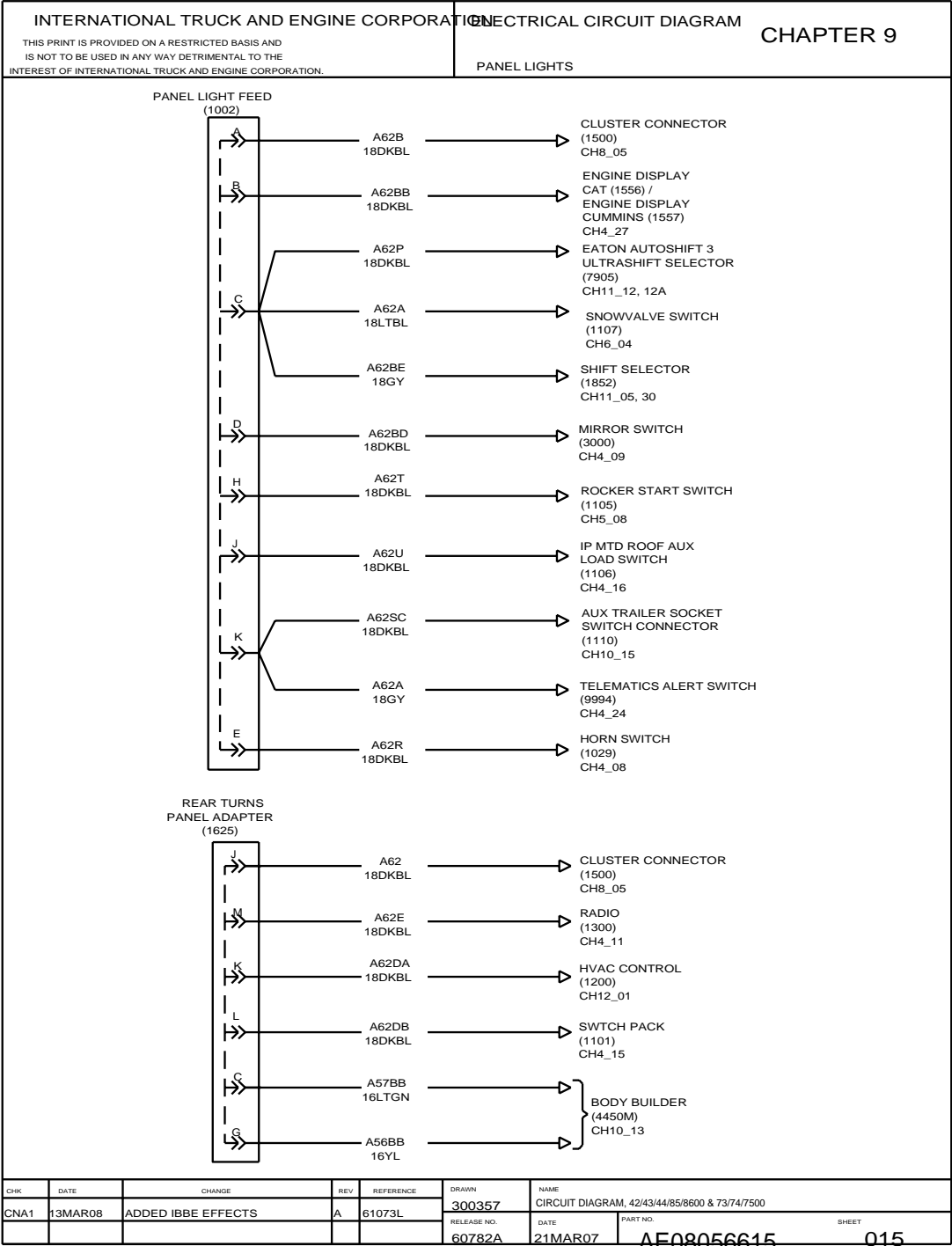


Figure 146 Panel Lights

10. CHASSIS ACCESSORIES (CHAPTER 10)

10.1. ABS — BENDIX AIR, P. 1

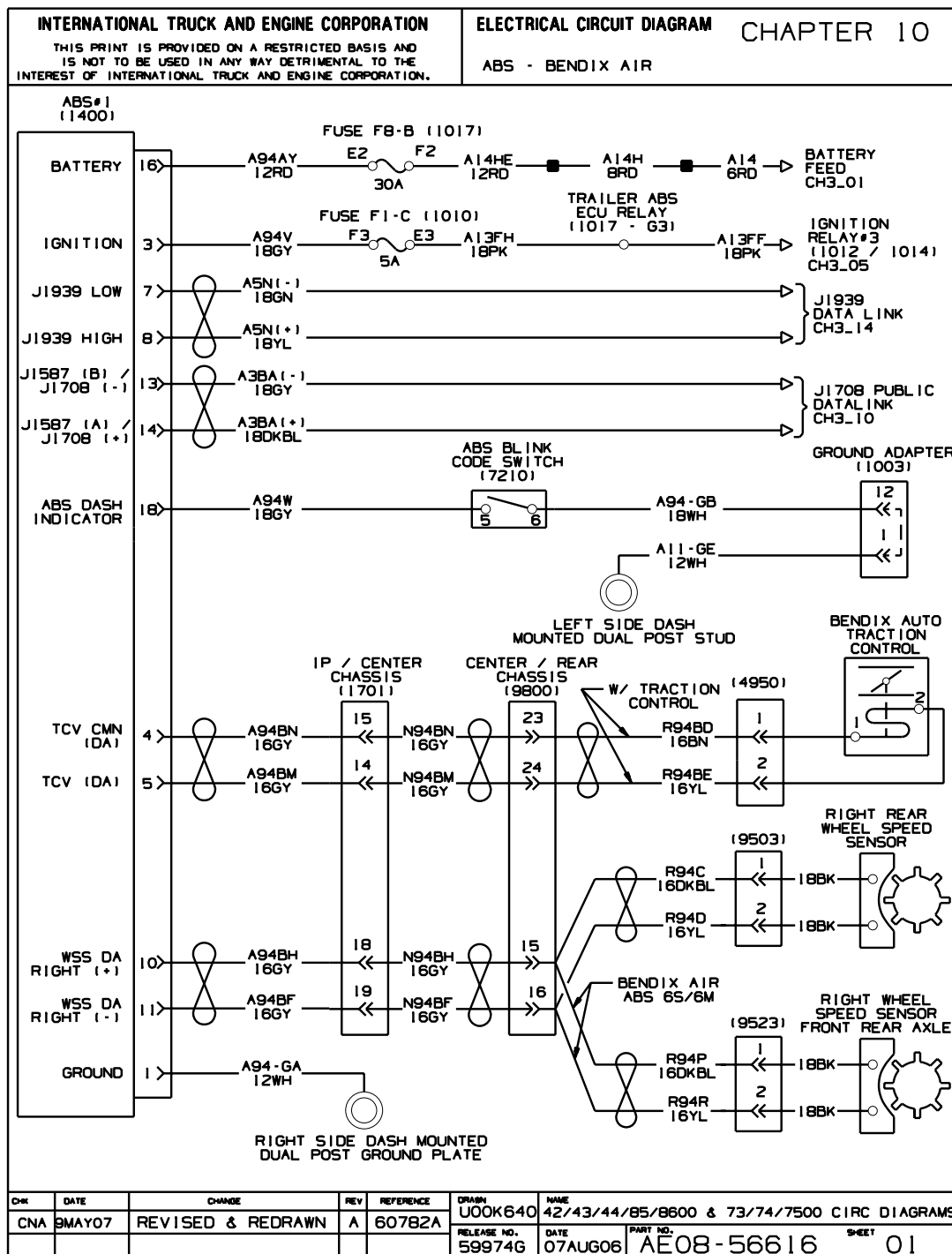


Figure 147 ABS — Bendix Air

10.2. ABS — BENDIX AIR, P. 2

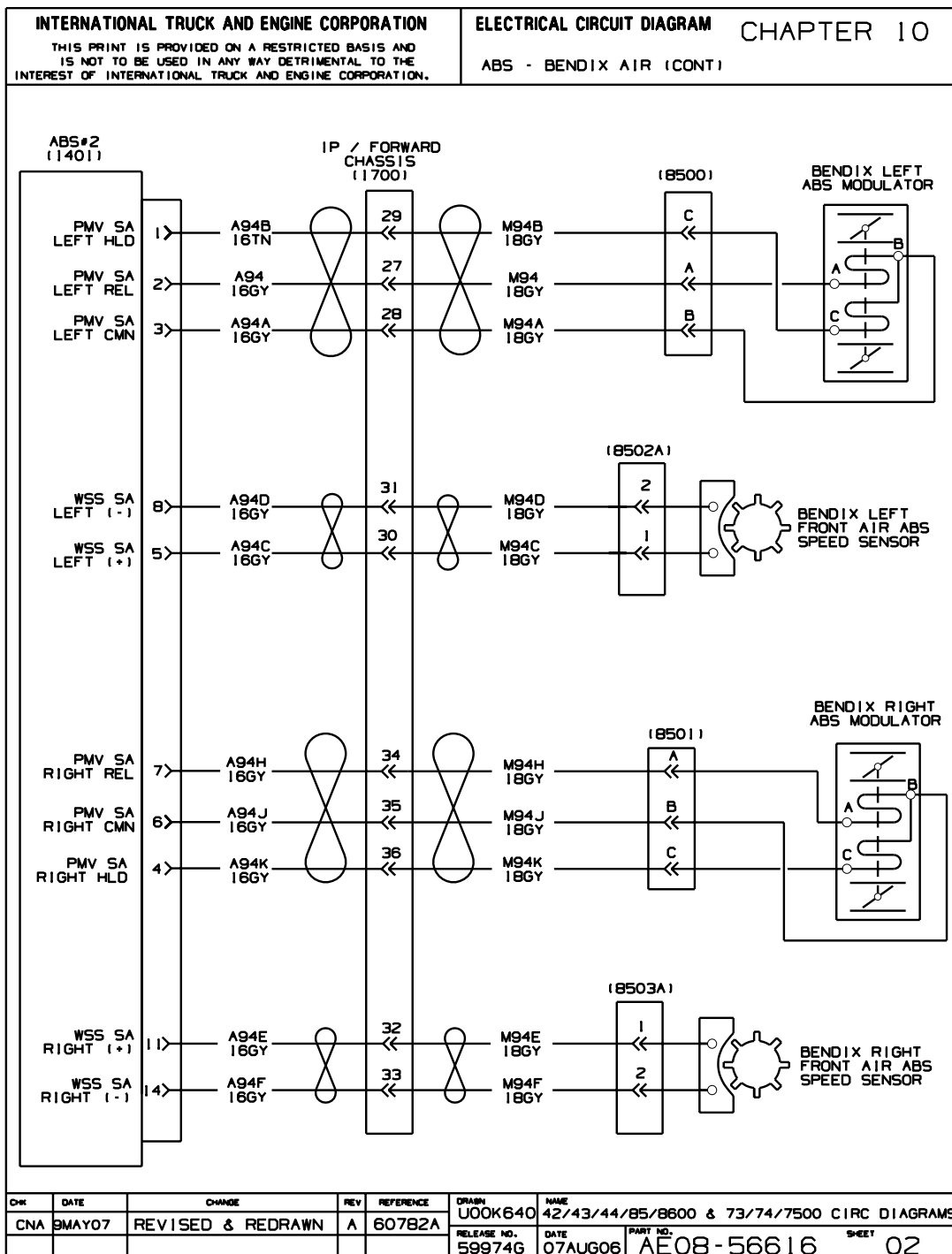


Figure 148 ABS — Bendix Air (Cont.)

10.3. ABS — BENDIX AIR, P. 3

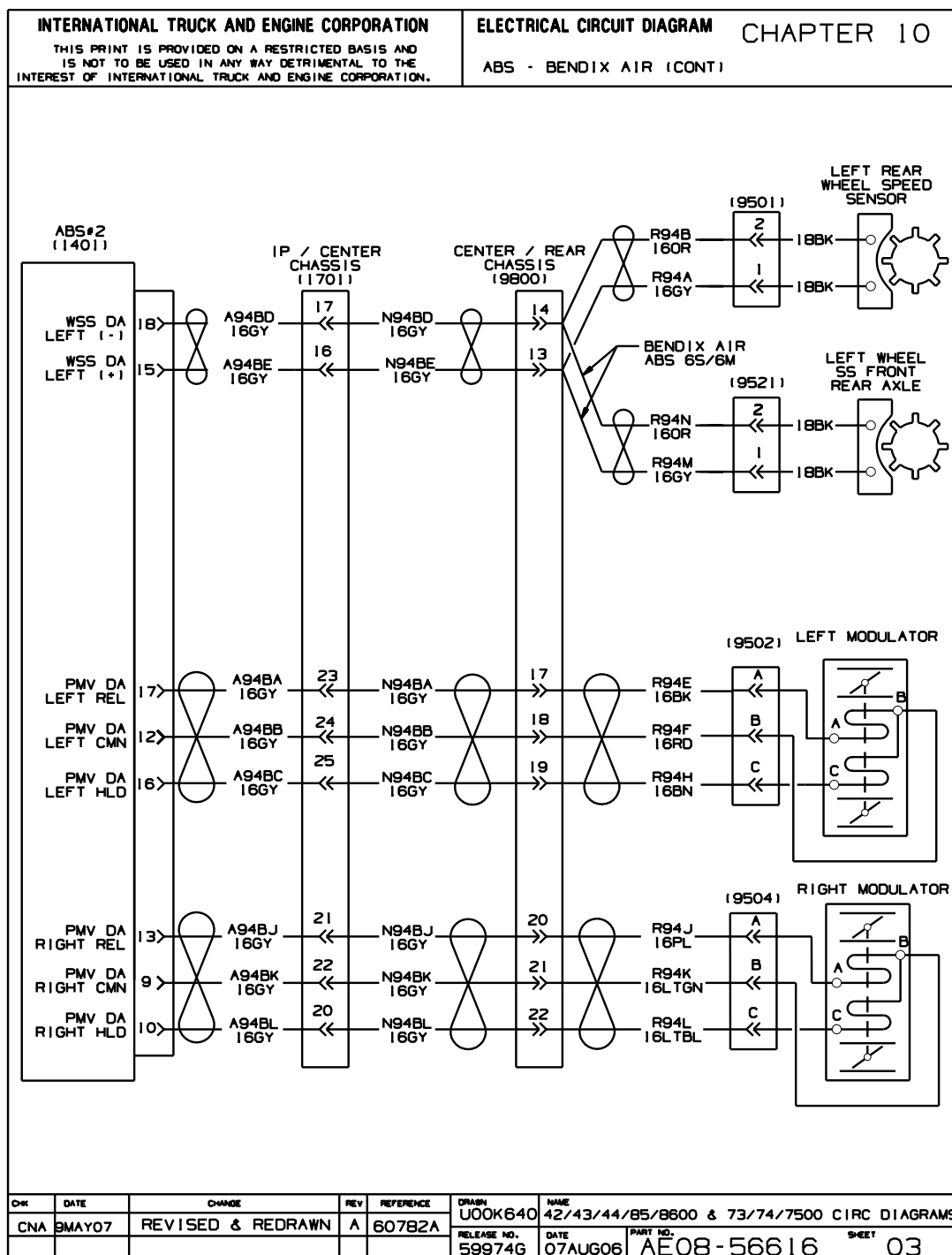


Figure 149 ABS — Bendix Air (Cont.)

10.4. ABS — WABCO AIR, P. 4

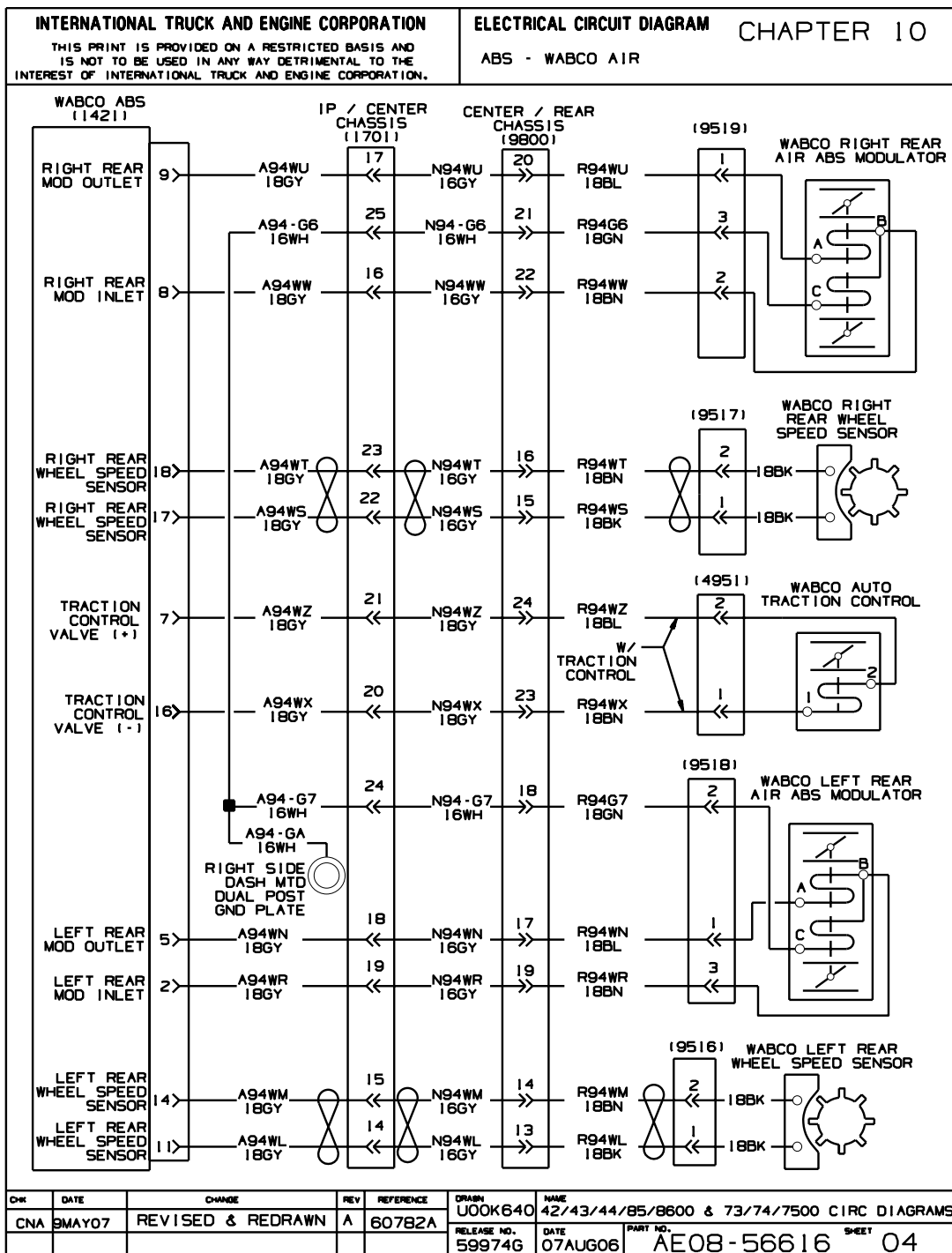


Figure 150 ABS — Wabco Air

10.5. ABS — WABCO AIR, P. 5

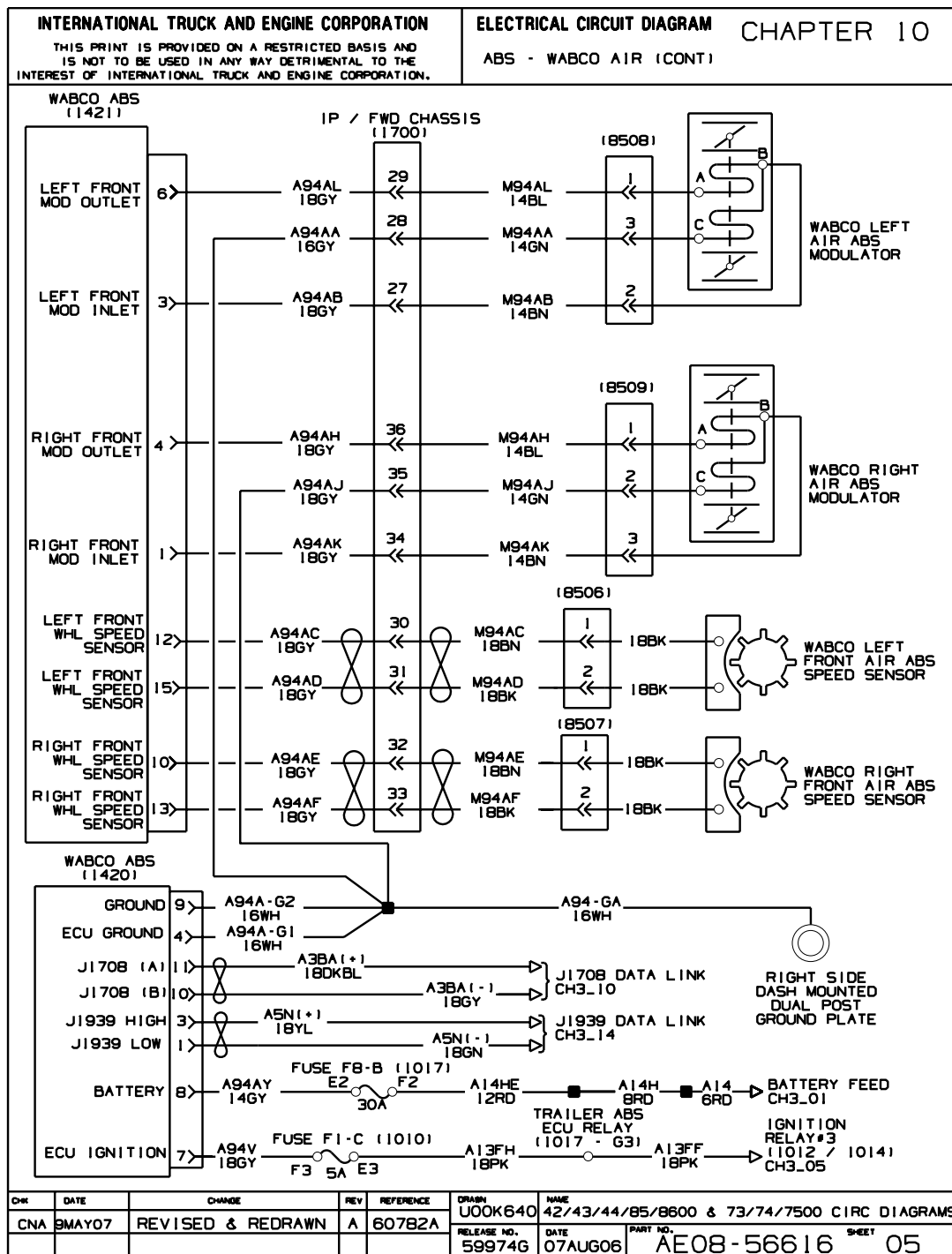


Figure 151 ABS — Wabco Air (Cont.)

10.6. WABCO FULL POWER BRAKES, P. 6

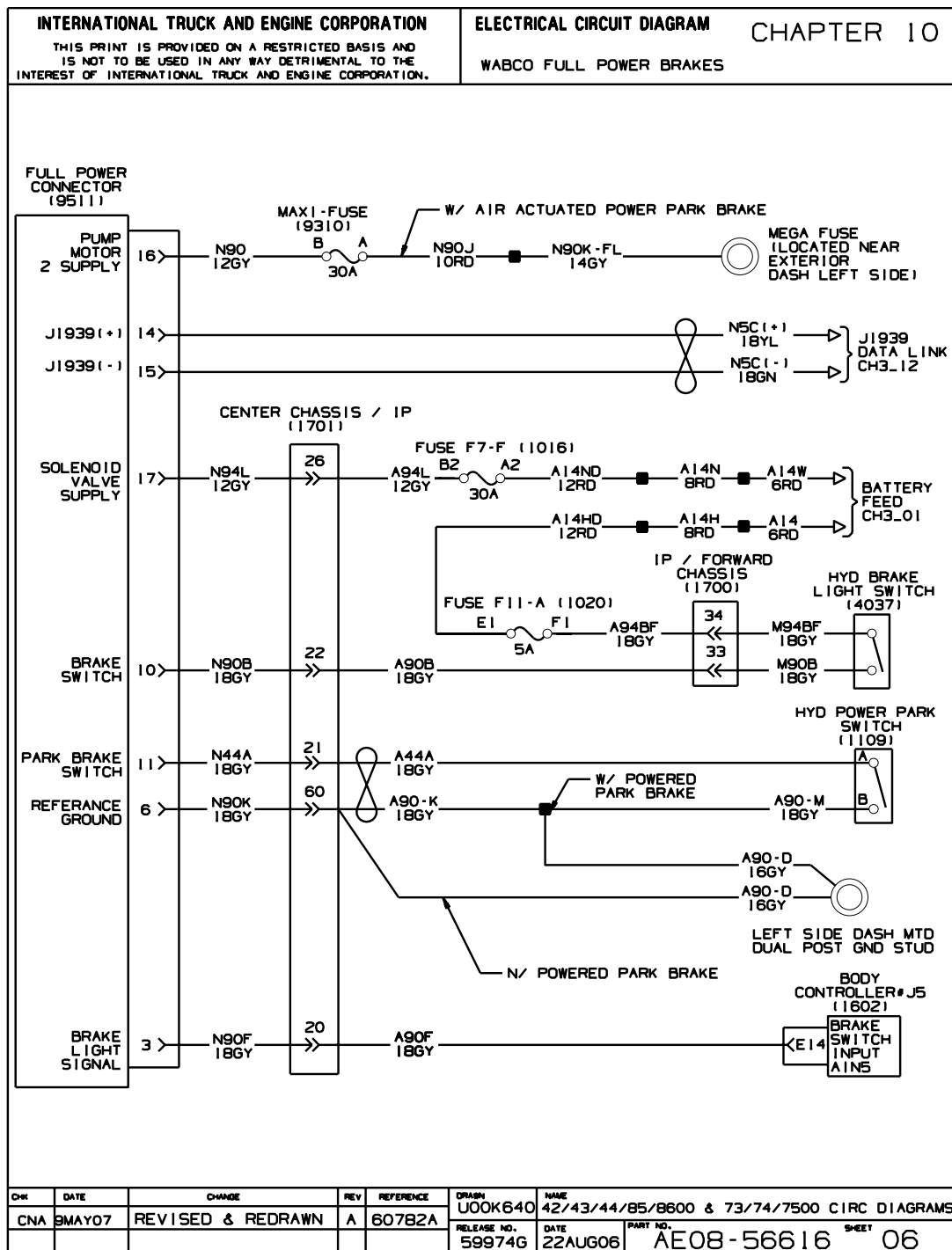


Figure 152 Wabco Full Power Brakes

10.7. WABCO FULL POWER BRAKES, P. 7

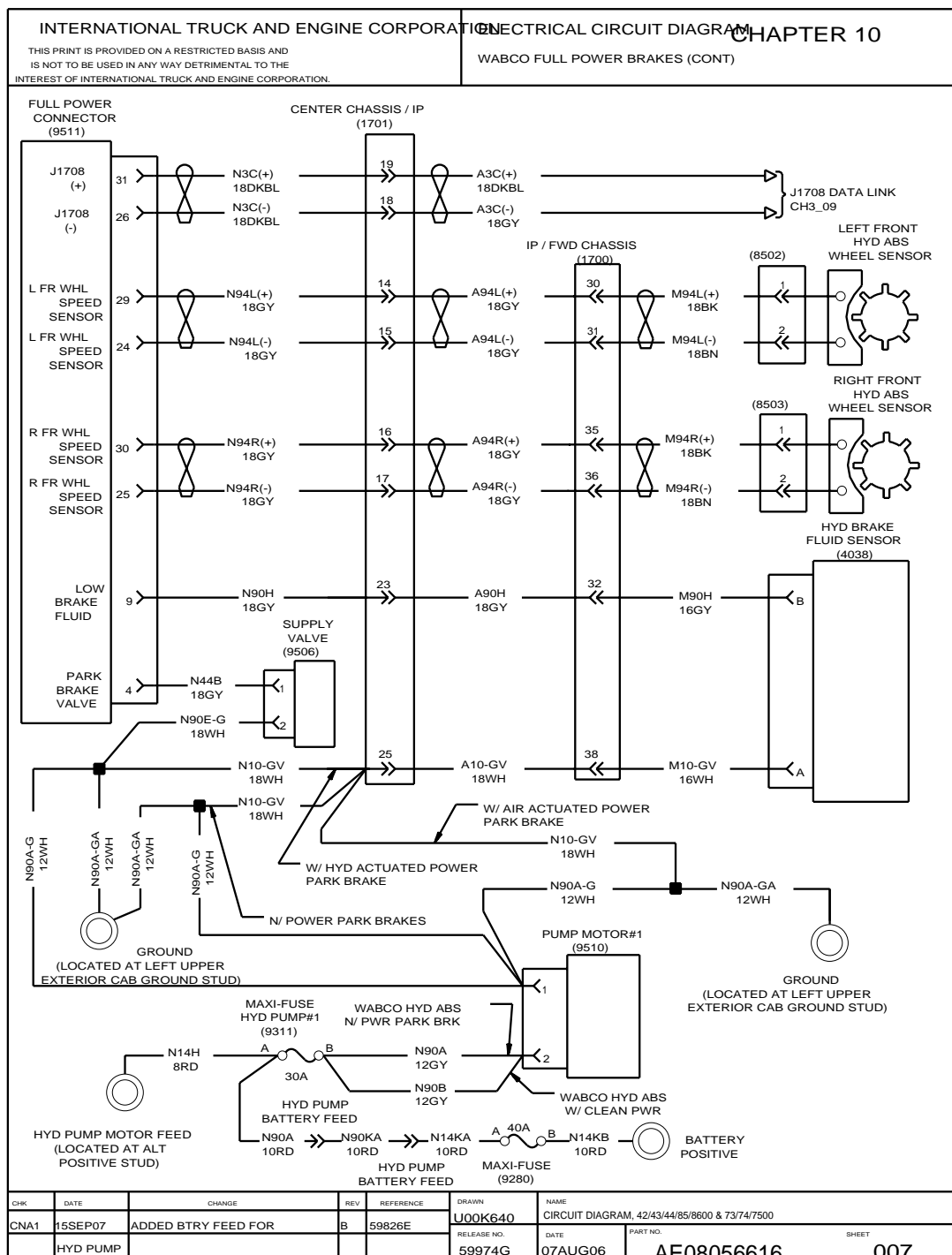


Figure 153 Wabco Full Power Brakes

10.8. WABCO FULL POWER BRAKES, P. 8

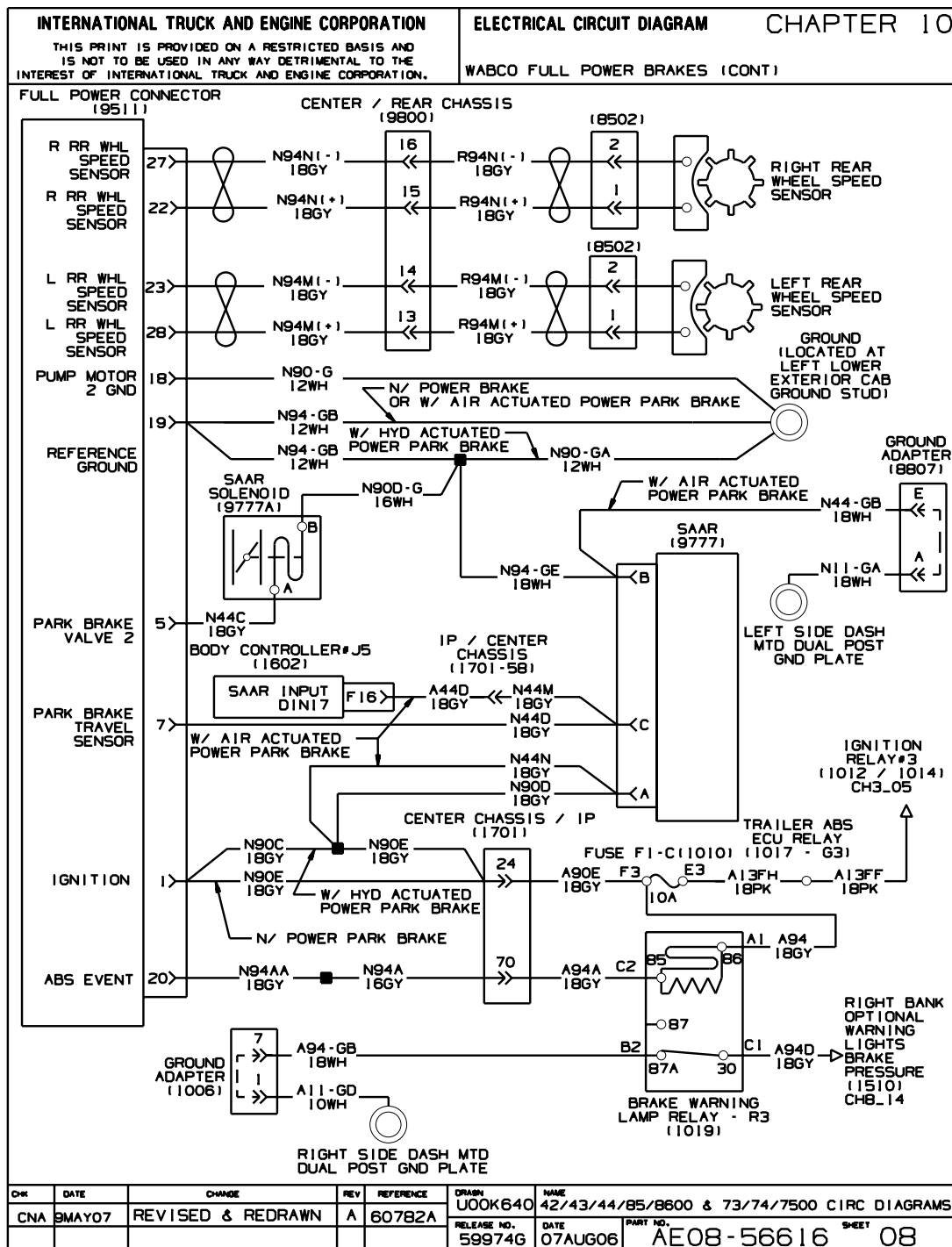


Figure 154 Wabco Full Power Brakes (Cont.)

10.9. BODY BUILDER AND TRAILER — TURN, MARKERS AND STOP, P. 9

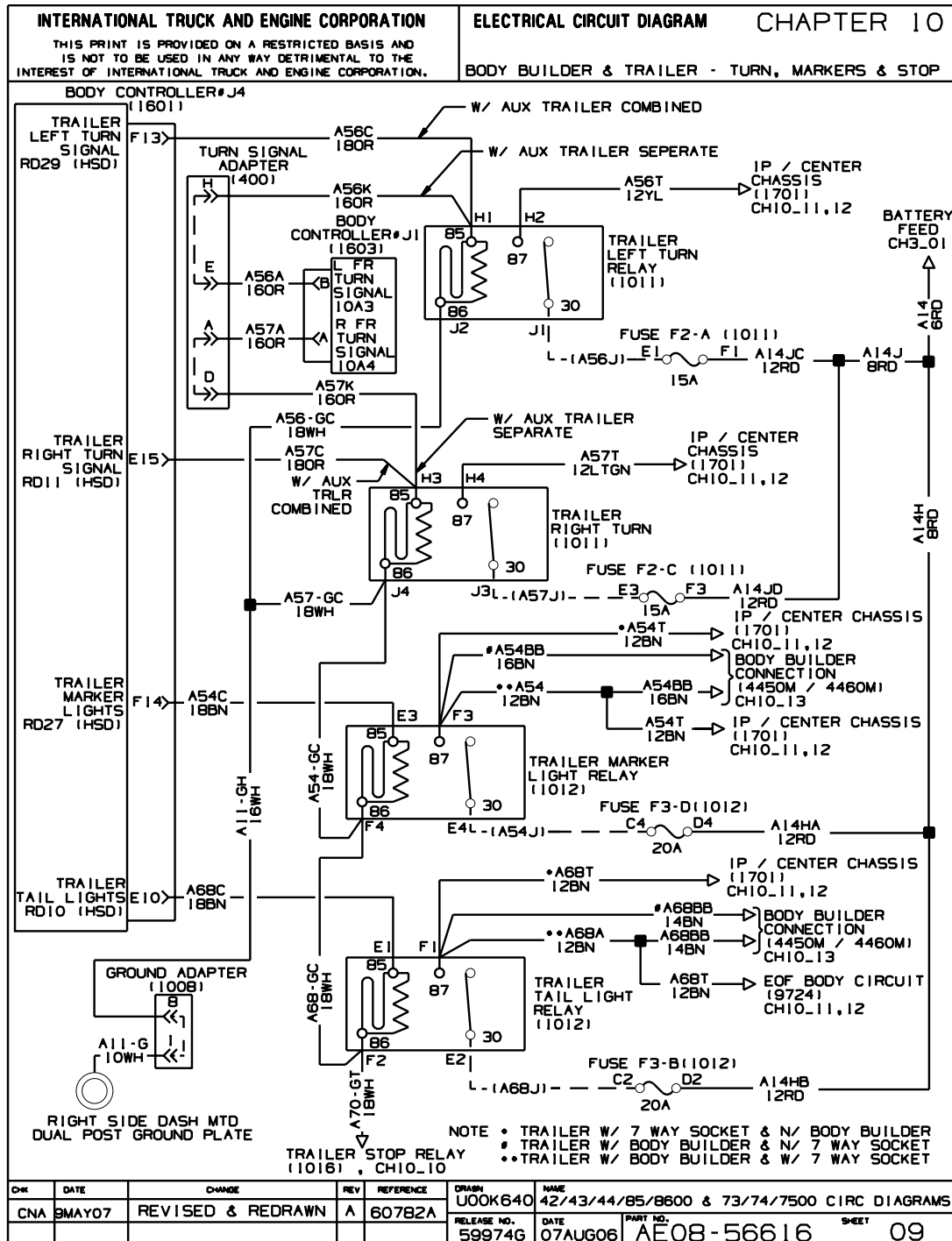
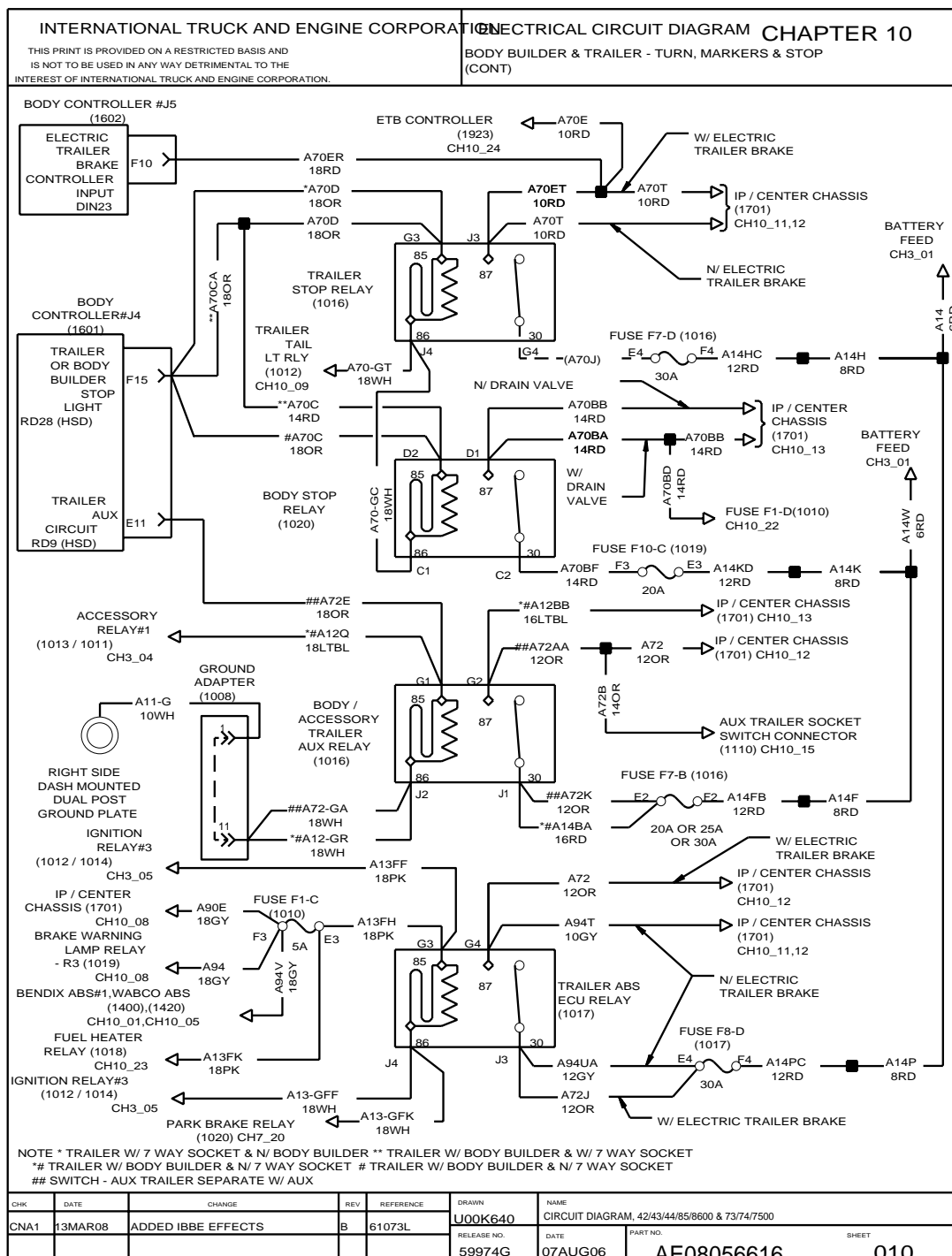


Figure 155 Body Builder and Trailer — Turn, Markers and Stop



10.11. TRAILER SOCKET — SOC AND EOF, P. 11

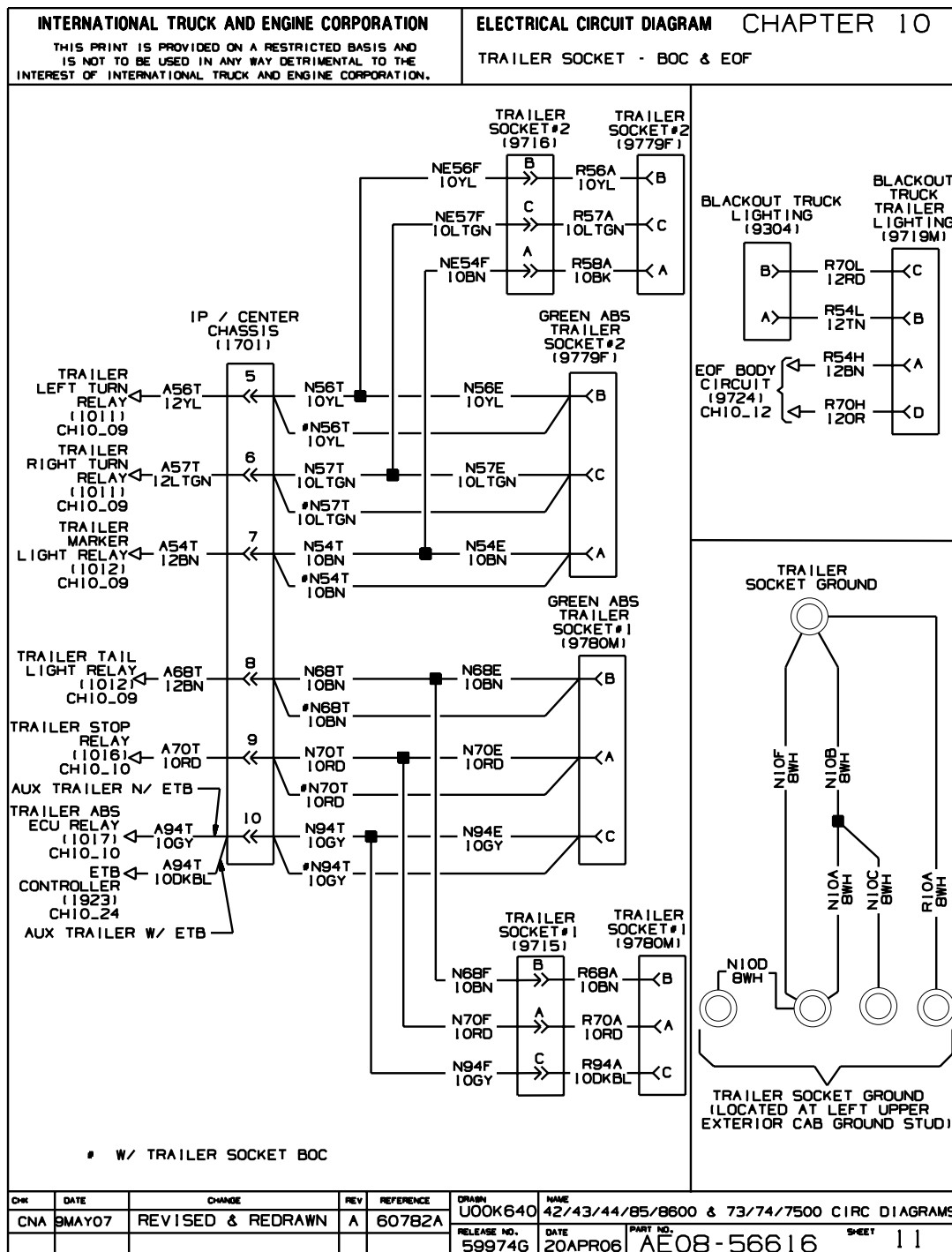


Figure 157 Trailer Socket — SOC and EOF

10.12. BODY BUILDER AND TRAILER SOCKET — SOC AND EOF, P. 12

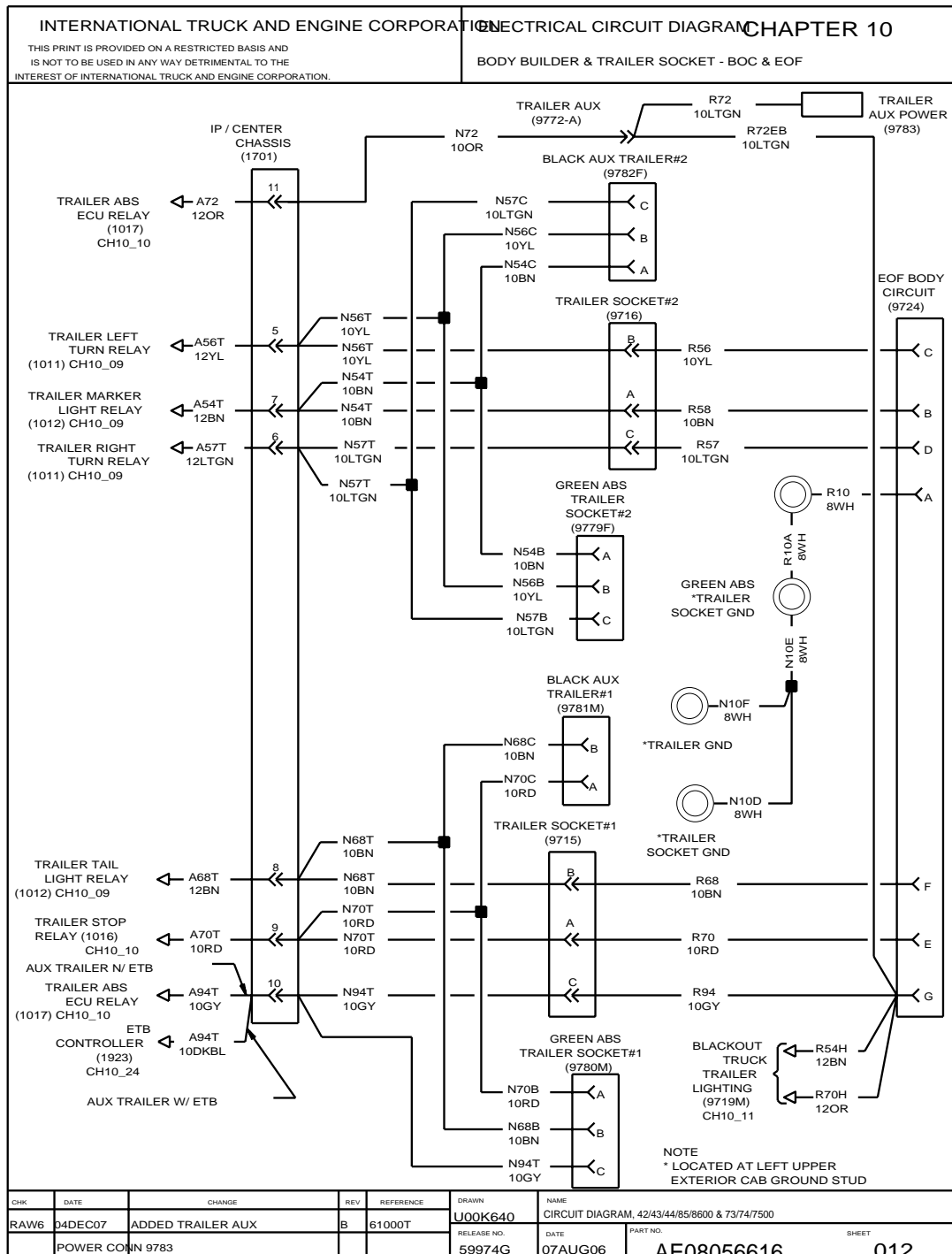


Figure 158 Body Builder and Trailer Socket — SOC and EOF

Figure 159 Body Builder Connections



10.14. REMOTE START / STOP, P. 14

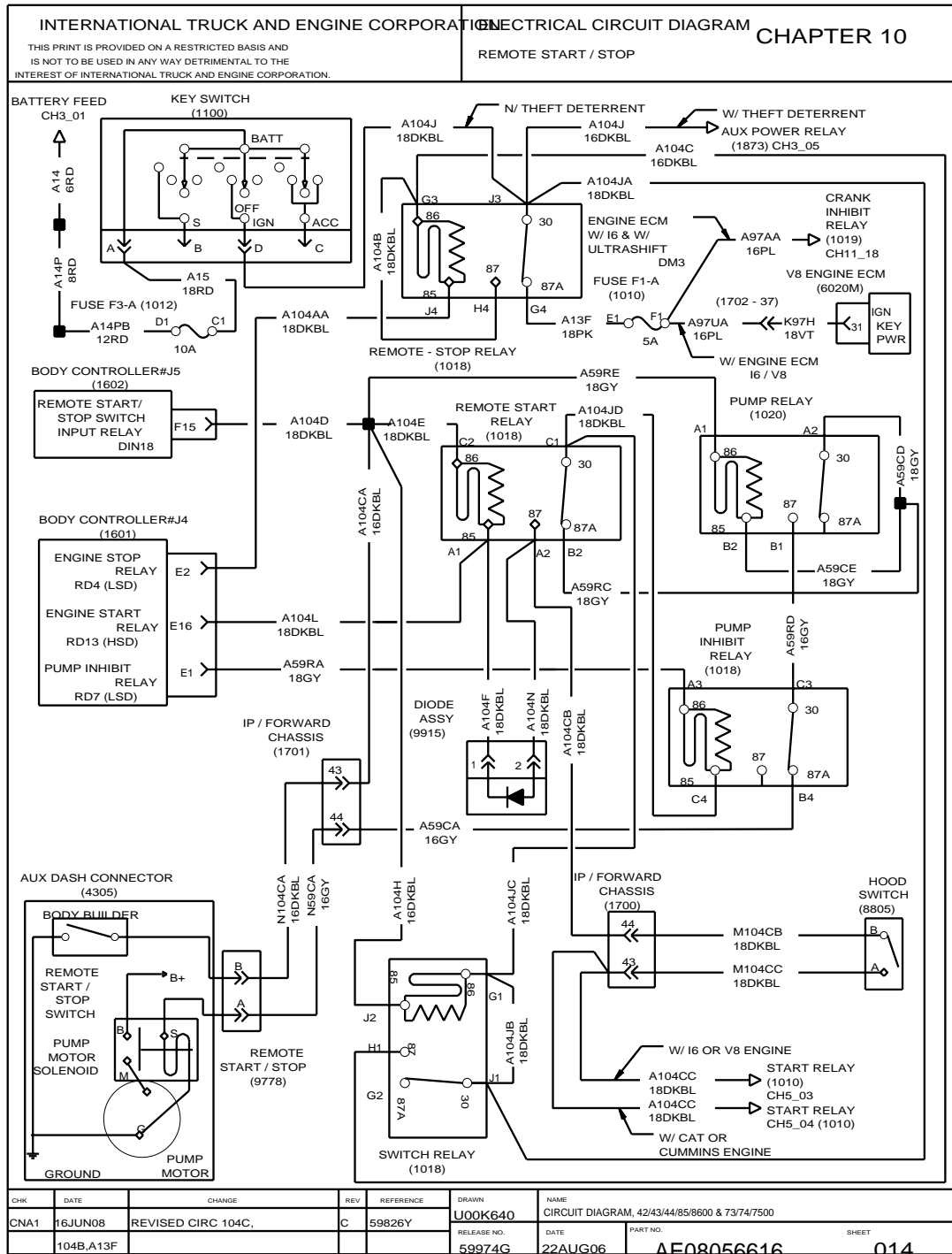


Figure 160 Remote Start / Stop

10.15. AUX TRAILER CIRCUIT, P. 15

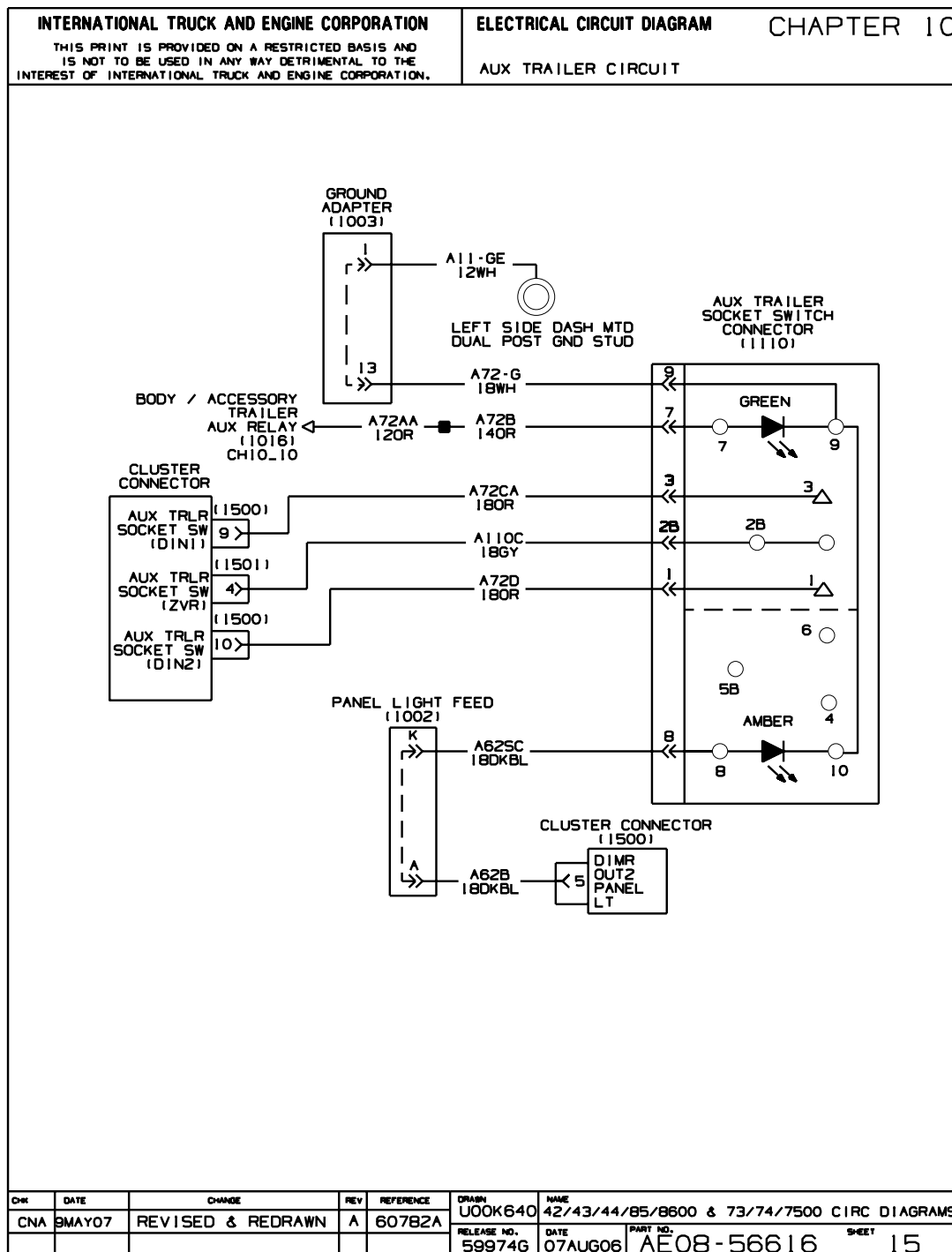


Figure 161 Aux Trailer Circuit

10.16. TWO SPEED AXLE SWITCH, P. 16

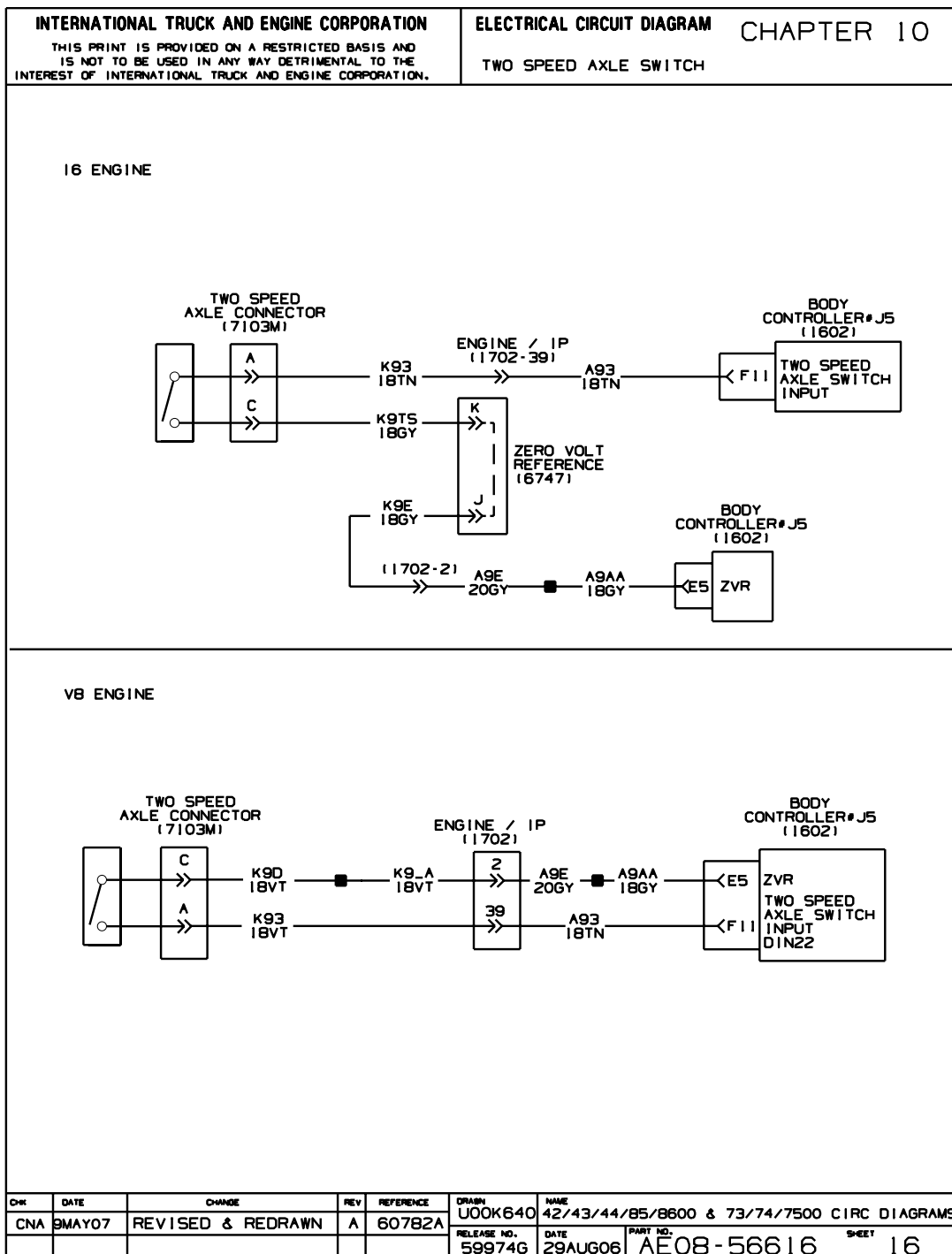


Figure 162 Two Speed Axle Switch

10.17. AIR SOLENOID, P. 17

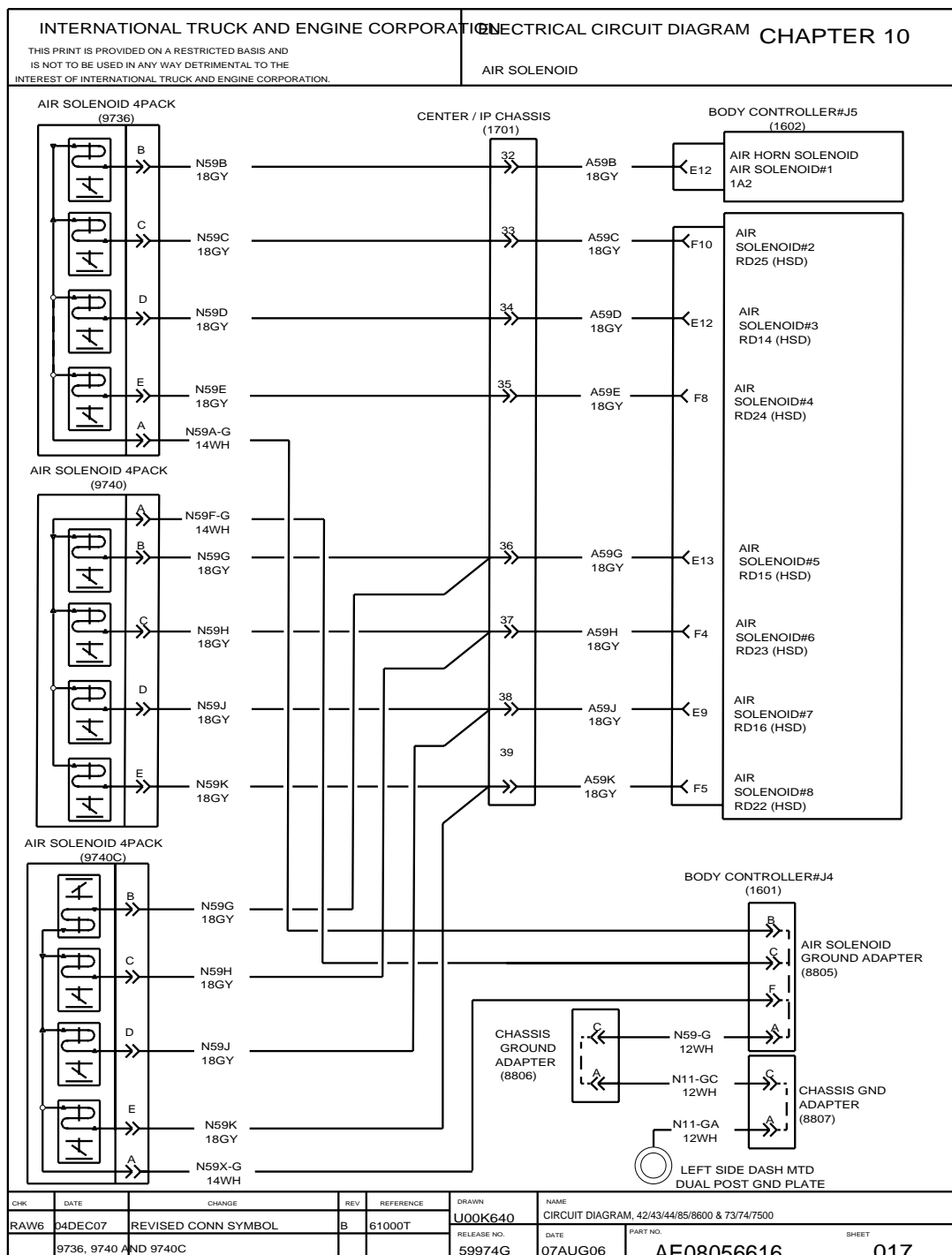


Figure 163 Air Solenoid

10.18. AIR SOLENOID, P. 18

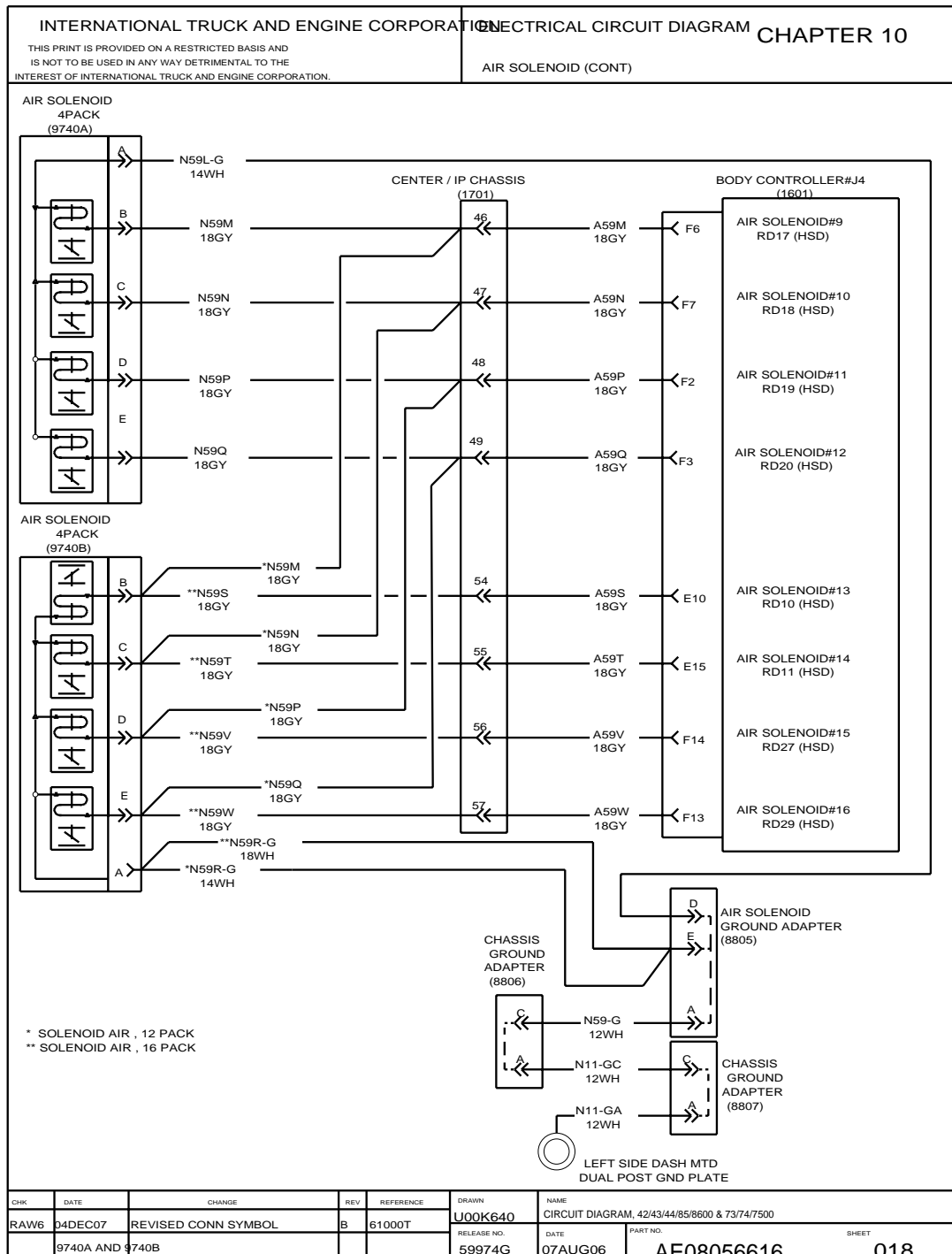


Figure 164 Air Solenoid (Cont.)

10.19. REMOTE POWER UNITS, SOLENOID PACKS, REMOTE ENGINE SPEED CONTROLLER, P. 19

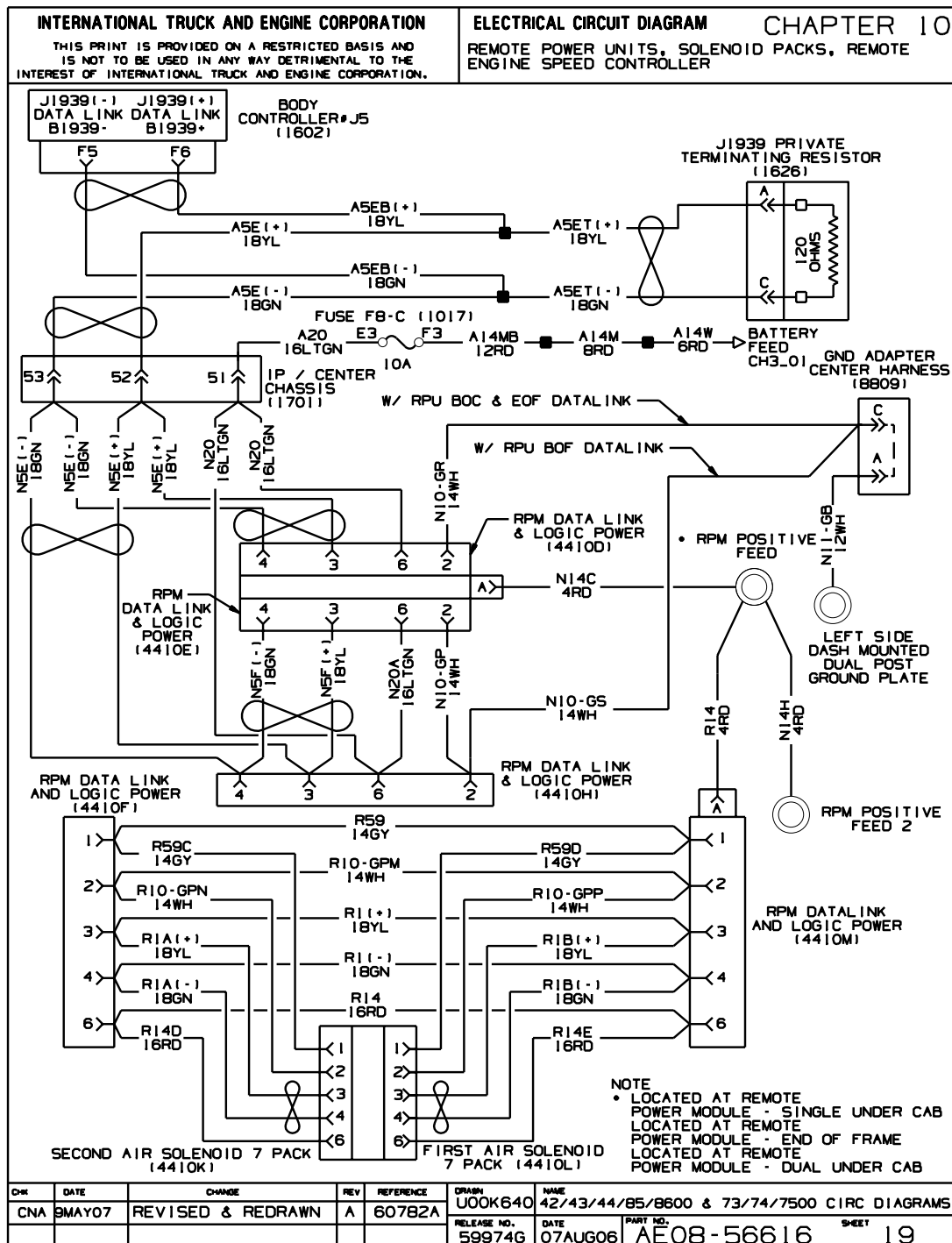


Figure 165 Remote Power Units, Solenoid Packs, Remote Engine Speed Controller

10.20. BLANK PAGE, P. 20

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CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME								
					U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS								
					RELEASE NO.	DATE	PART NO.	SHEET						
					59974G	20APR06	AF08-56616	20						

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10.21. AUX AND POWER SOURCE, P. 21

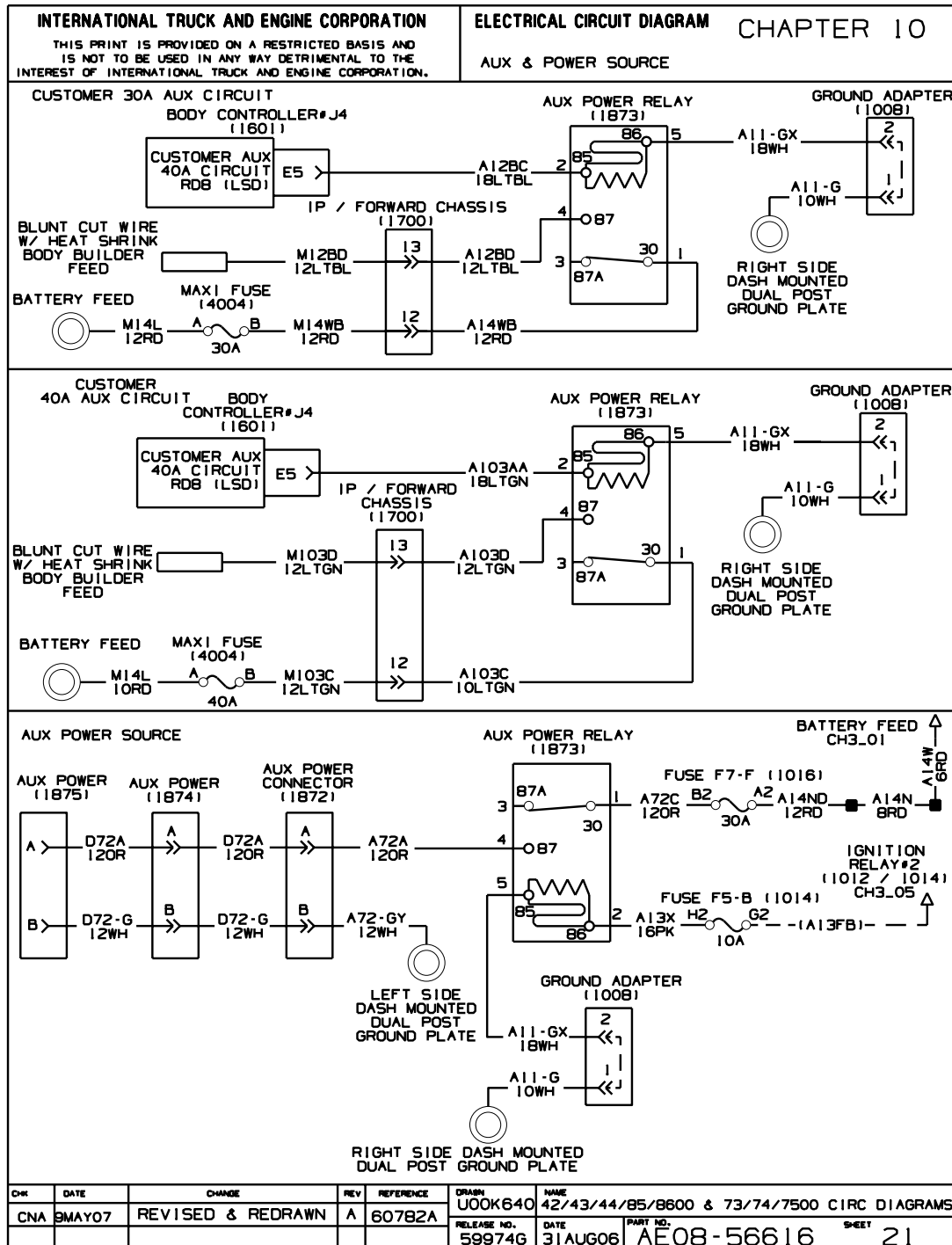


Figure 167 Aux and Power Source

10.22. AIR DRYER AND HEATED DRAIN VALVE, P. 22

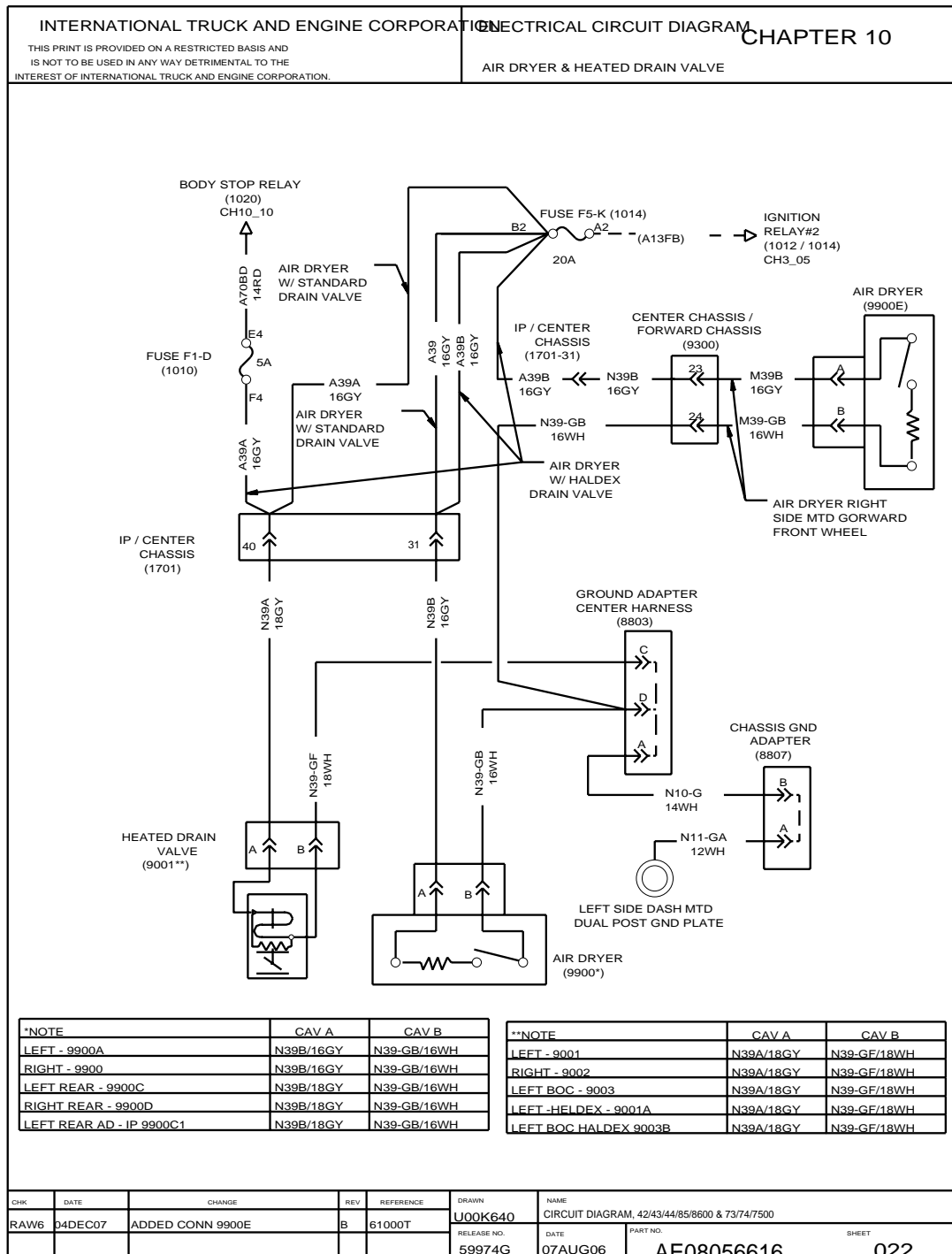


Figure 168 Air Dryer and Heated Drain Valve

10.23. FUEL / WATER SEPARATOR, P. 23

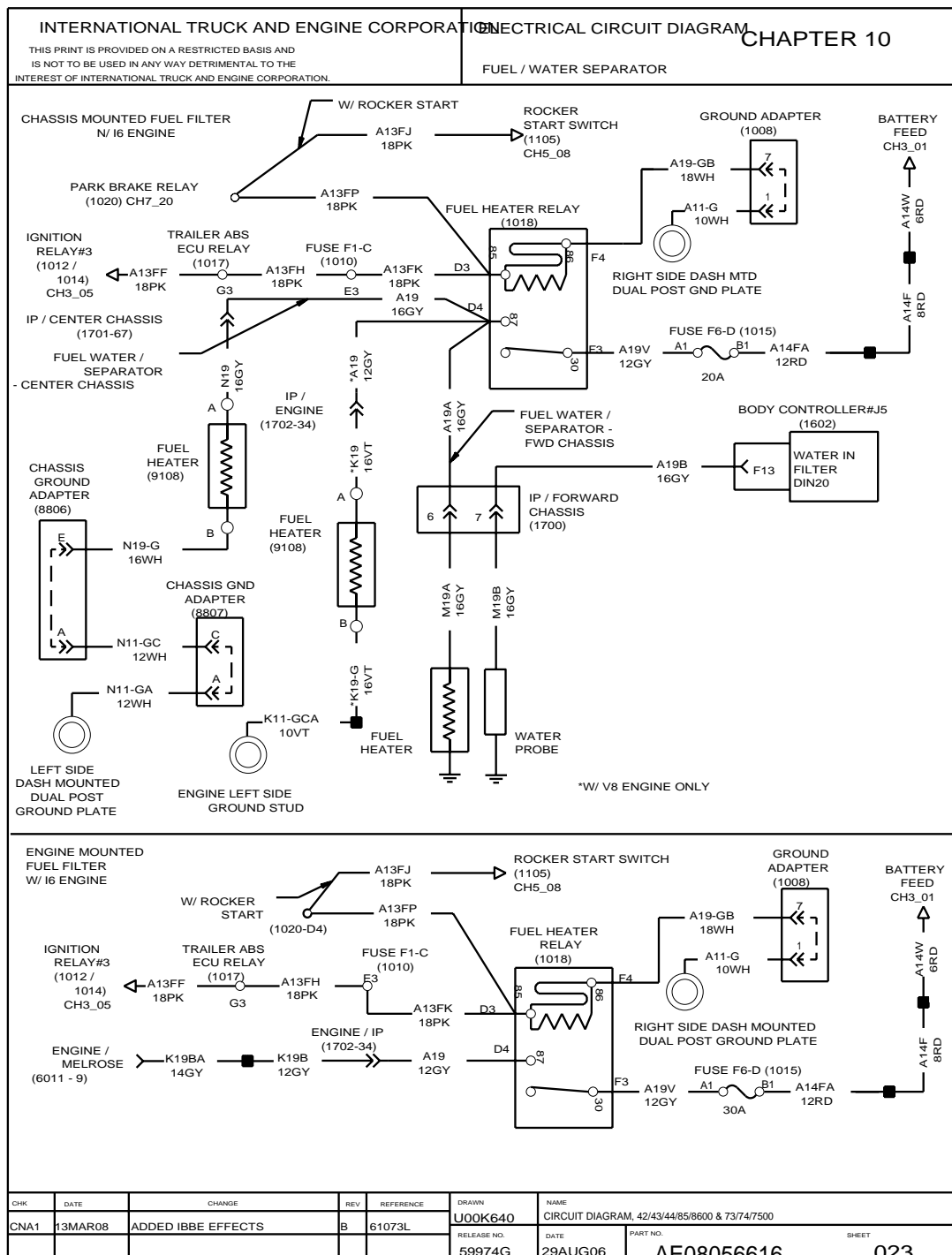


Figure 169 Fuel / Water Separator

10.24. ELECTRIC TRAILER BRAKE, P. 24

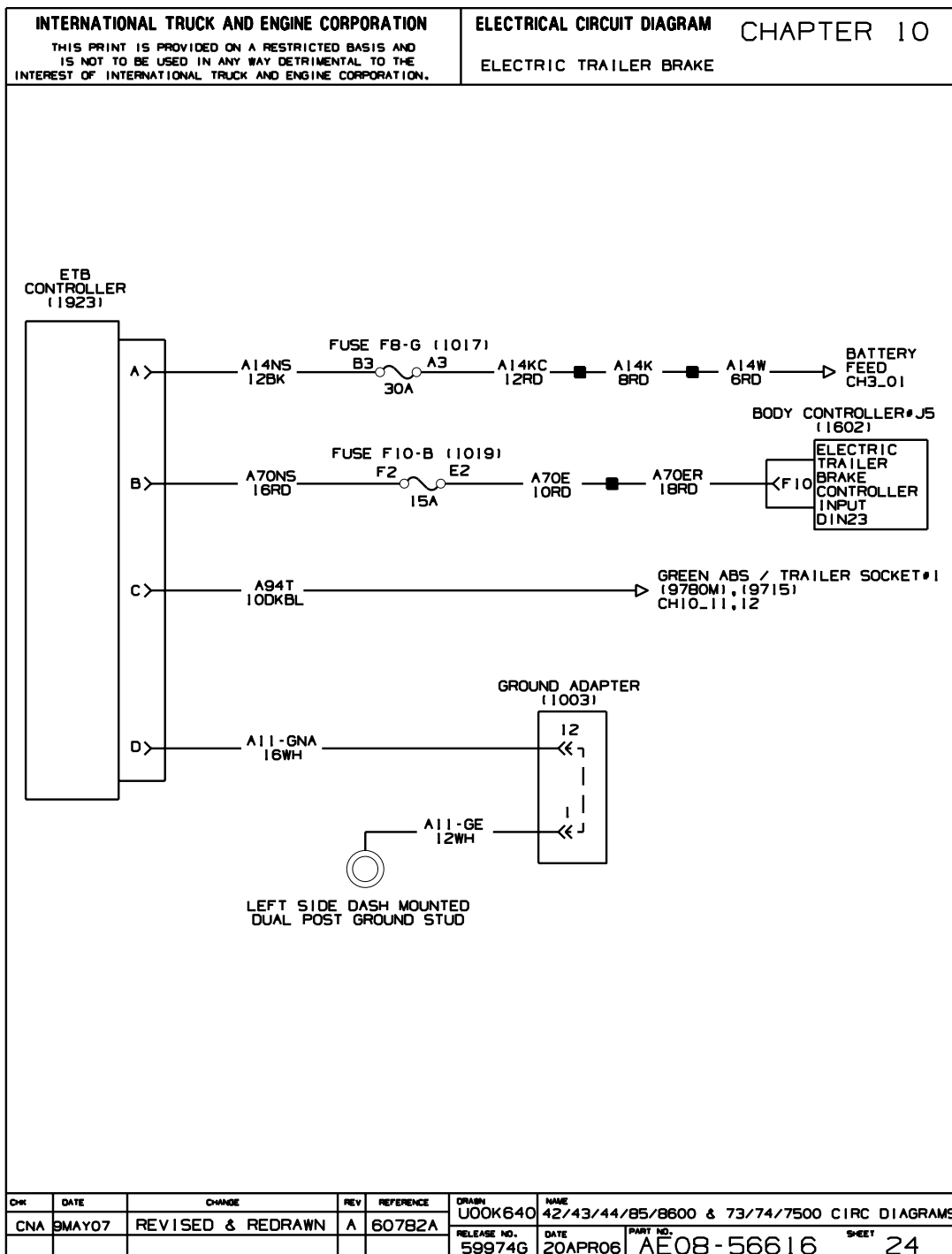


Figure 170 Electric Trailer Brake

10.25. LECTRASHIFT ACCOMMODATION, P. 25

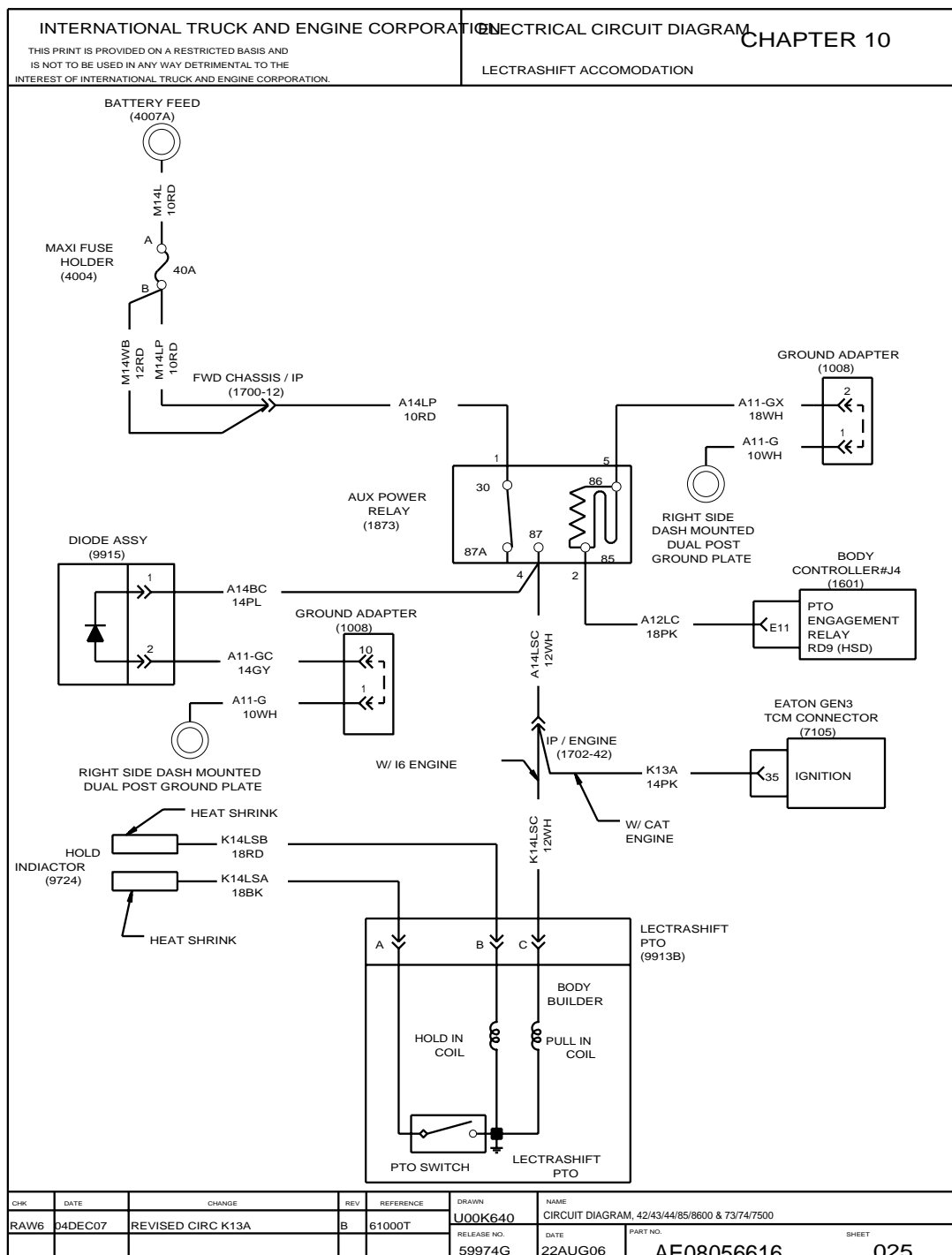


Figure 171 Lectrashift Accommodation

10.26. HOUR METER — PTO, P. 26

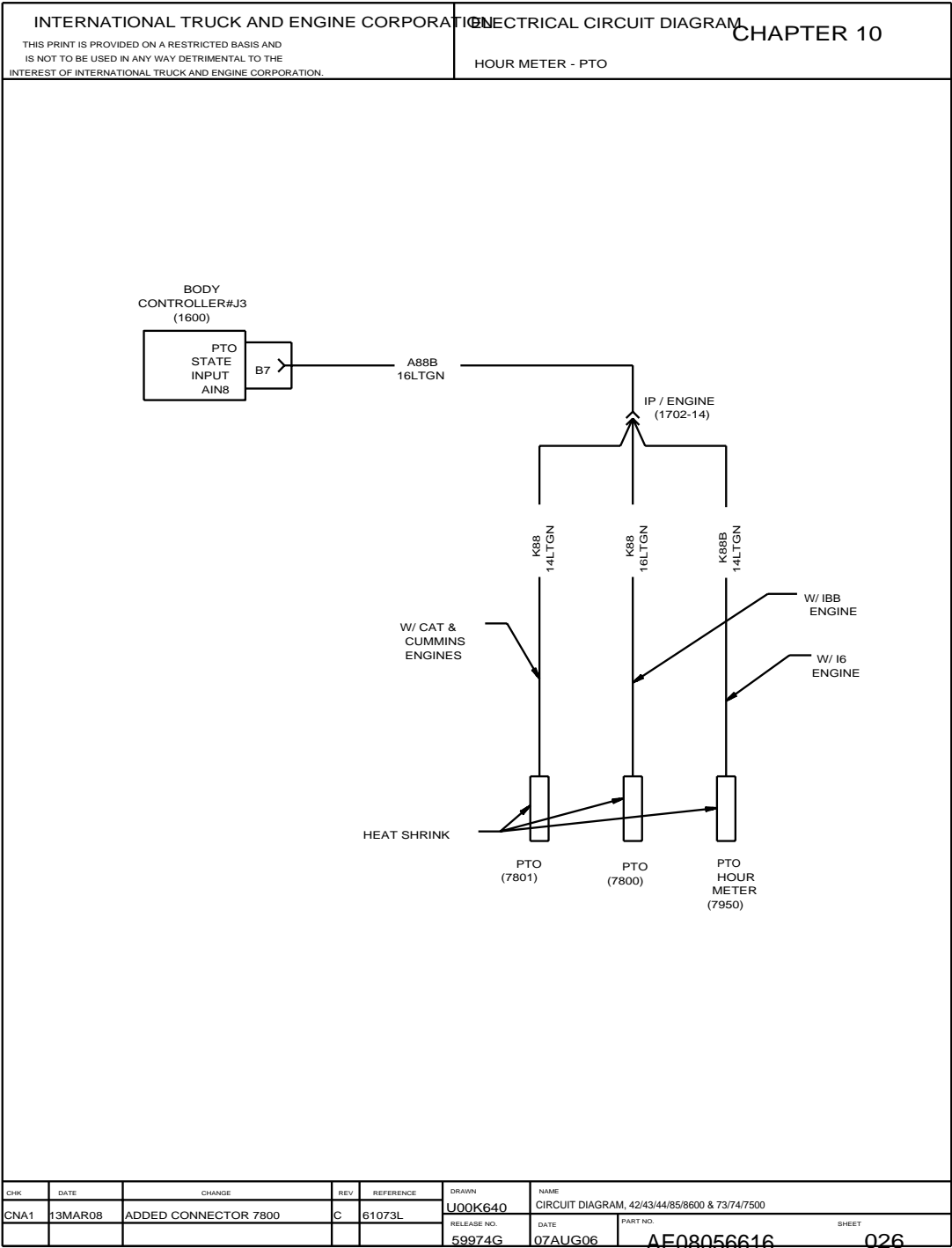


Figure 172 Hour Meter — PTO

10.27. AUX INPUTS AND DRIVERS, P. 27

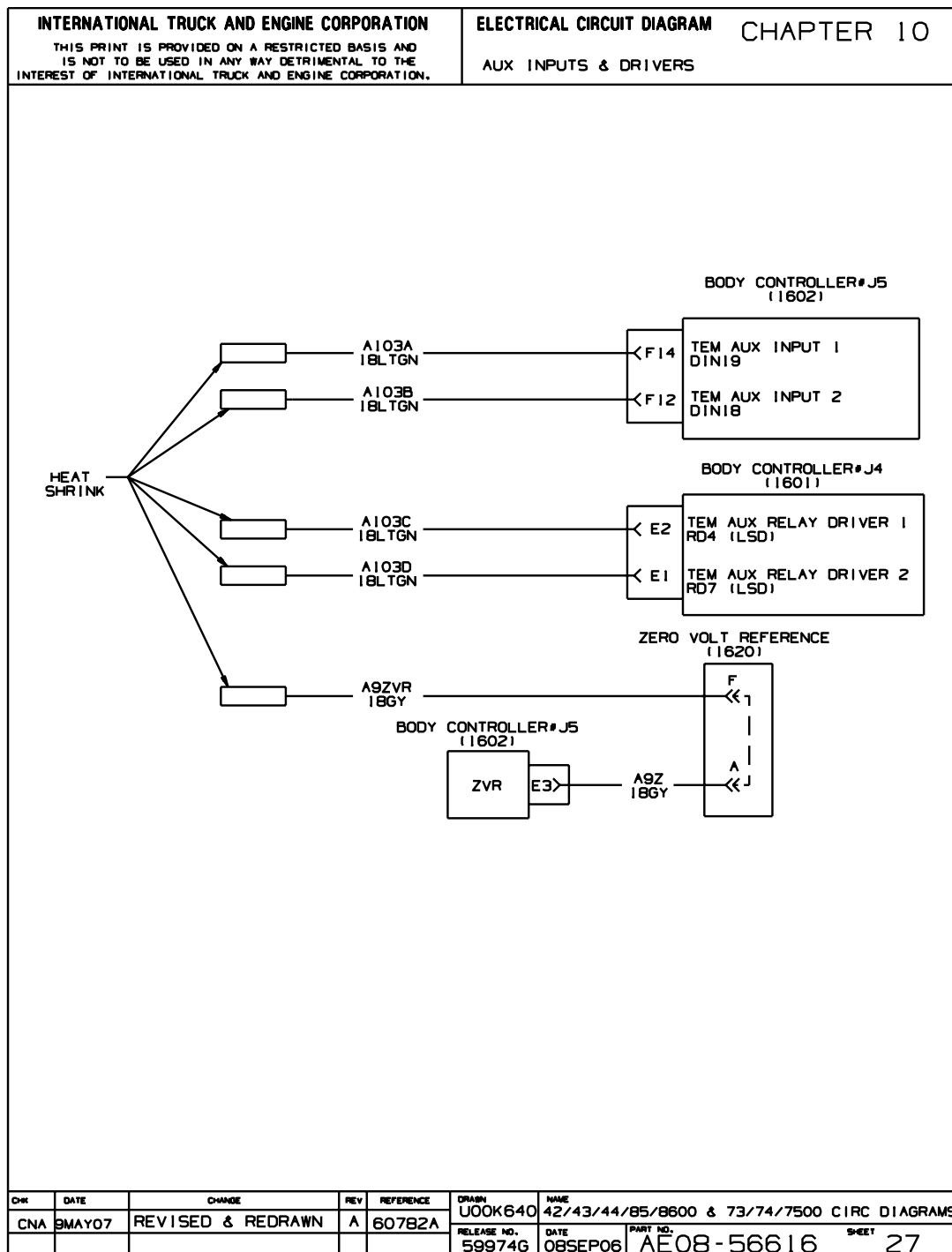


Figure 173 Aux Inputs and Drivers

10.28. FUEL TRANSFER PUMP, P. 28

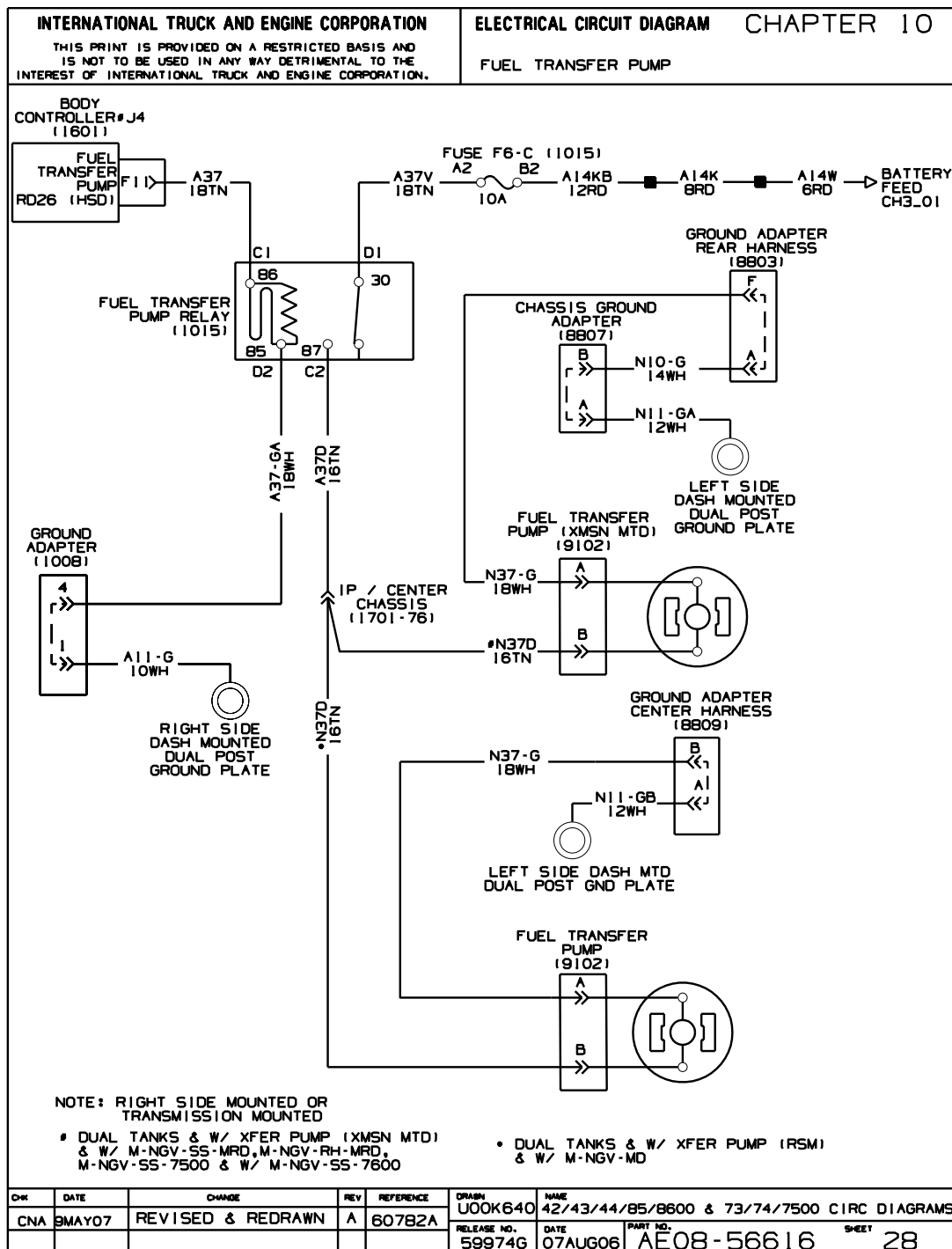


Figure 174 Fuel Transfer Pump

10.29. BLANK PAGE, P. 29

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CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME			
					U00K640	42/43/44/85/8600 & 73/74/7500 CIRC DIAGRAMS			
					RELEASE NO.	DATE	PART NO.	SHEET	
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Figure 175 Blank Page

10.30. TELEMATICS AWARE — BODY BUILDER, P. 30

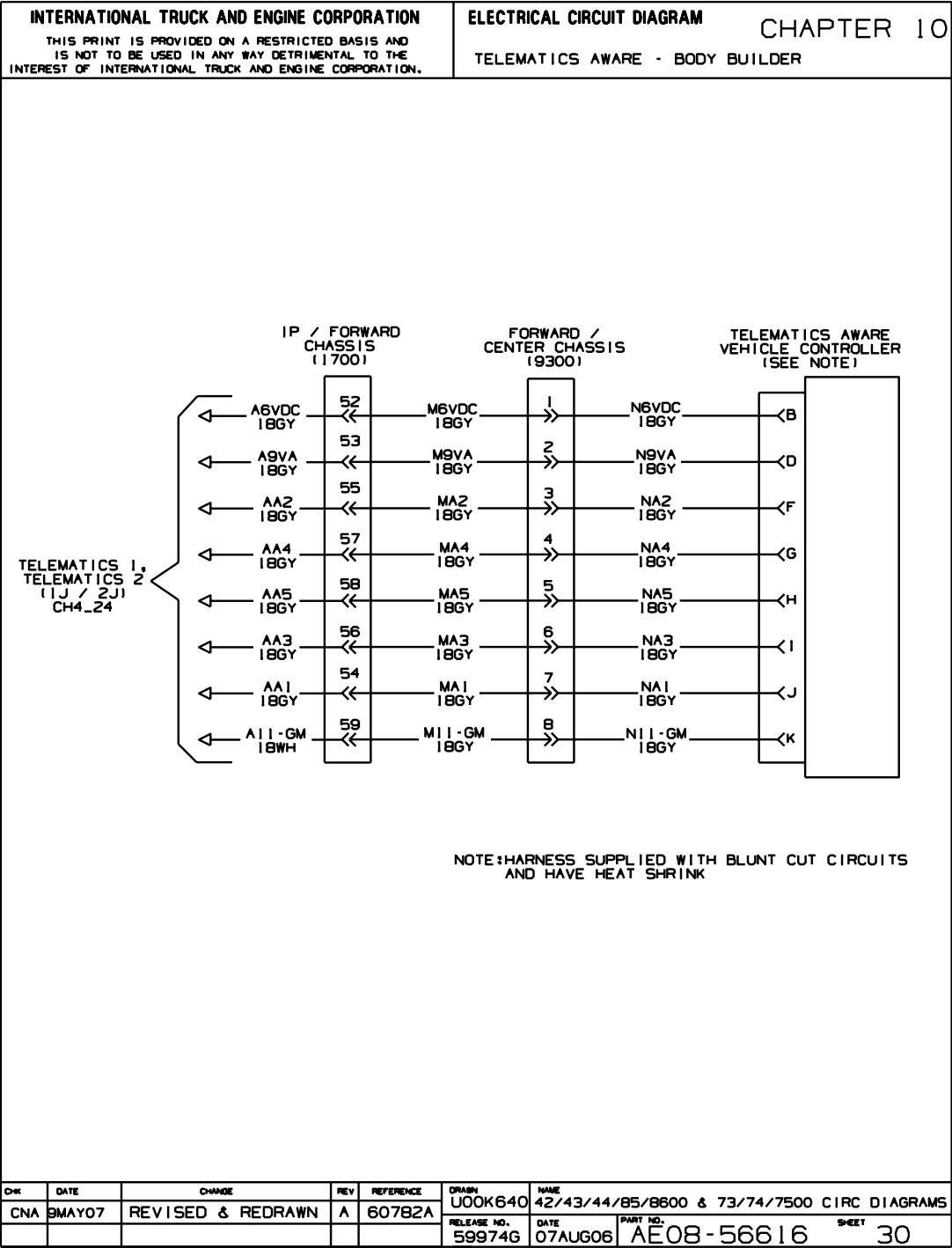


Figure 176 Telematics Aware — Body Builder

10.31. PRESSURE SWITCH, P. 31

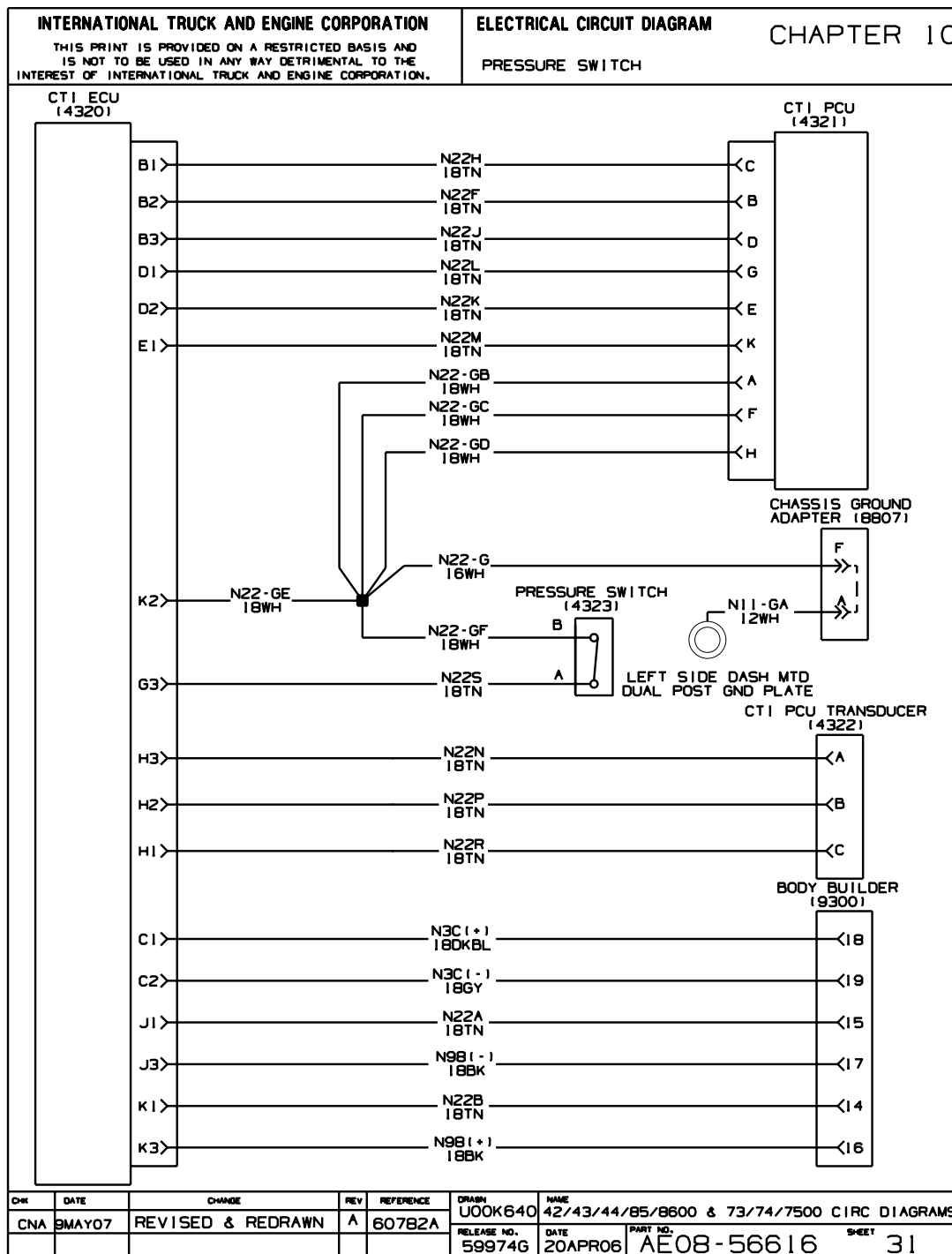


Figure 177 Pressure Switch

10.33. WHEELCHAIR LIFT INTERLOCK, P. 33

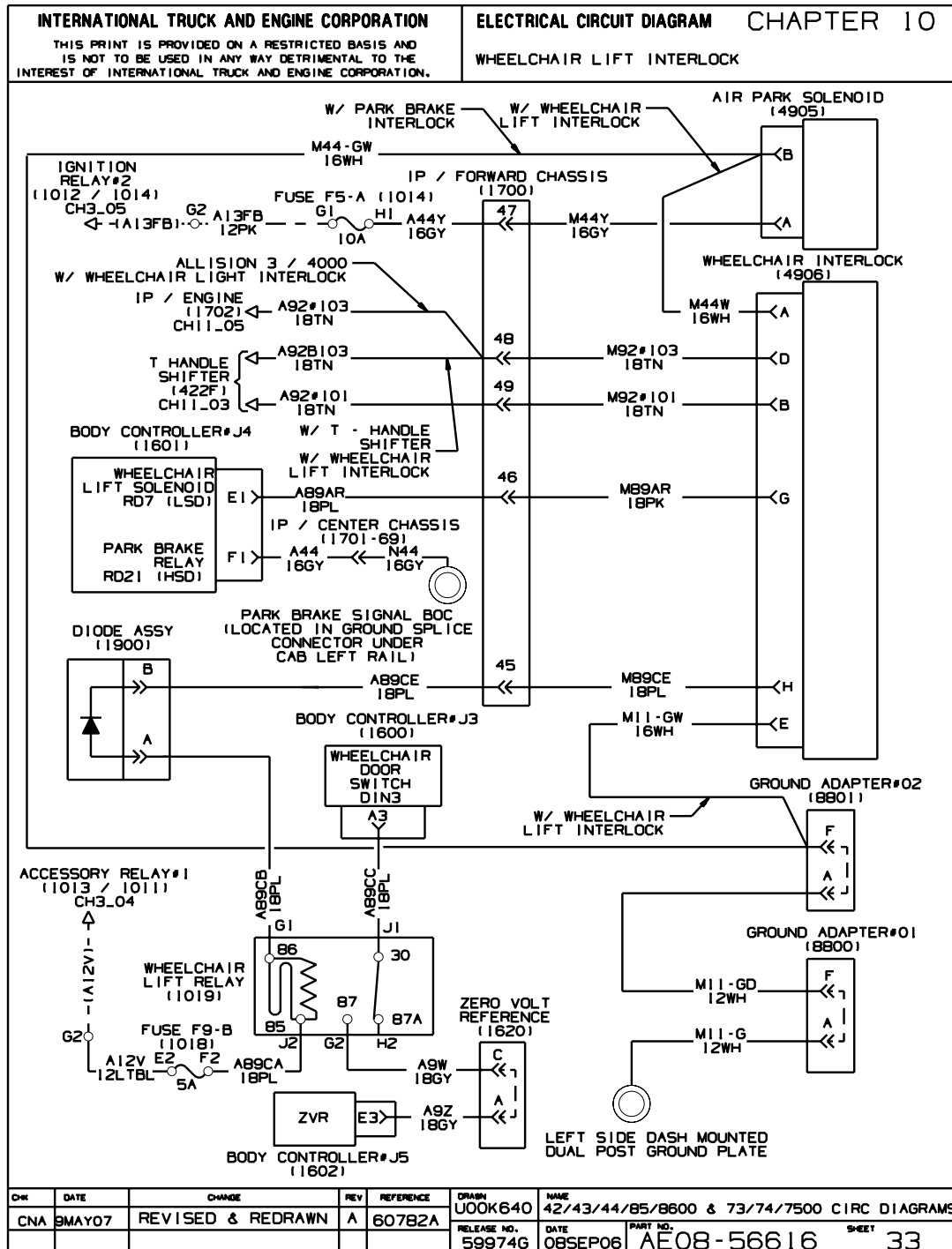


Figure 179 Wheelchair Lift Interlock

10.34. LIFT AXLE WITH CONTROLS FOR ONE LIFT AXLE, P. 34

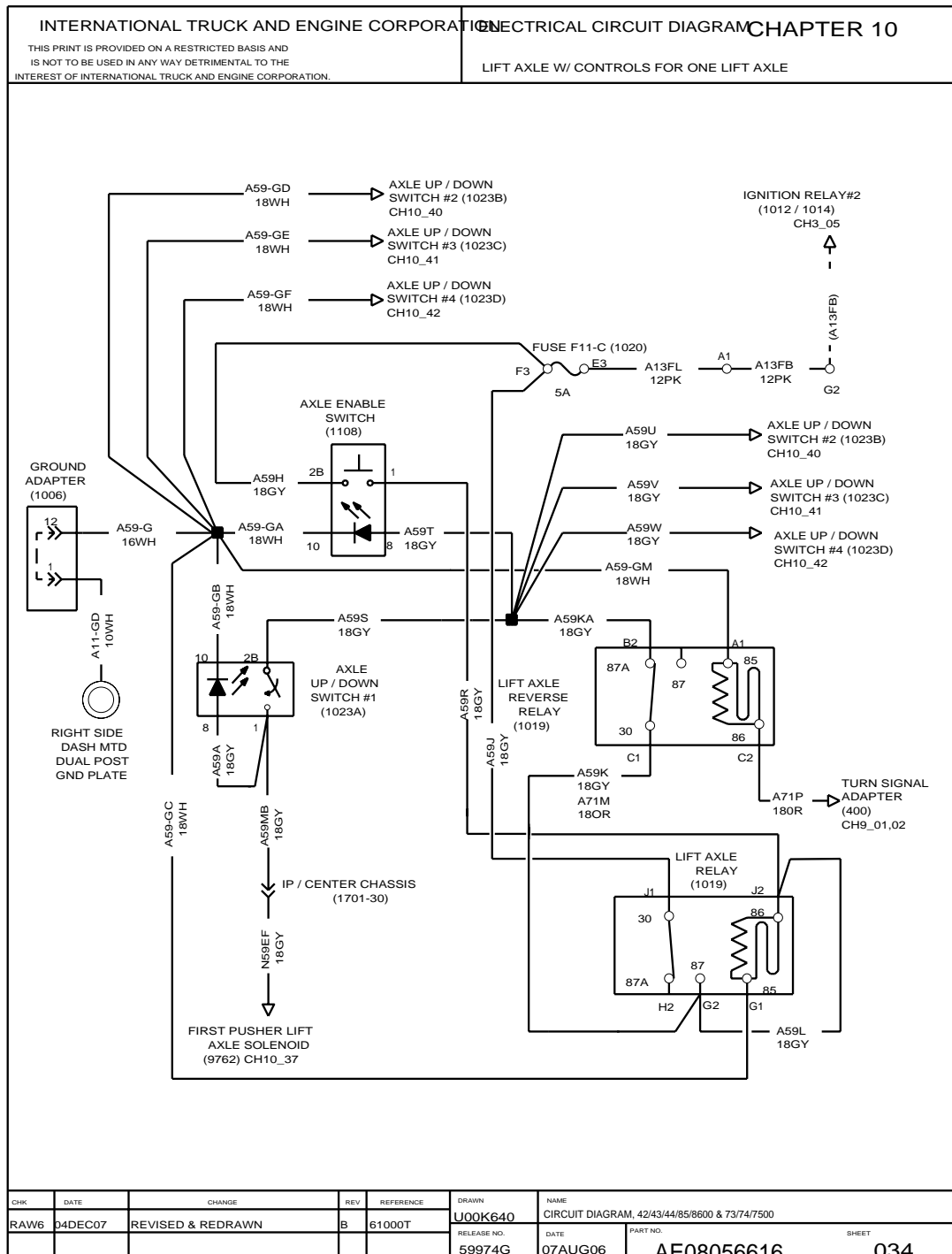


Figure 180 Lift Axle with Controls for One Lift Axle

10.35. LIFT AXLE (NON-STEERABLE), P. 35

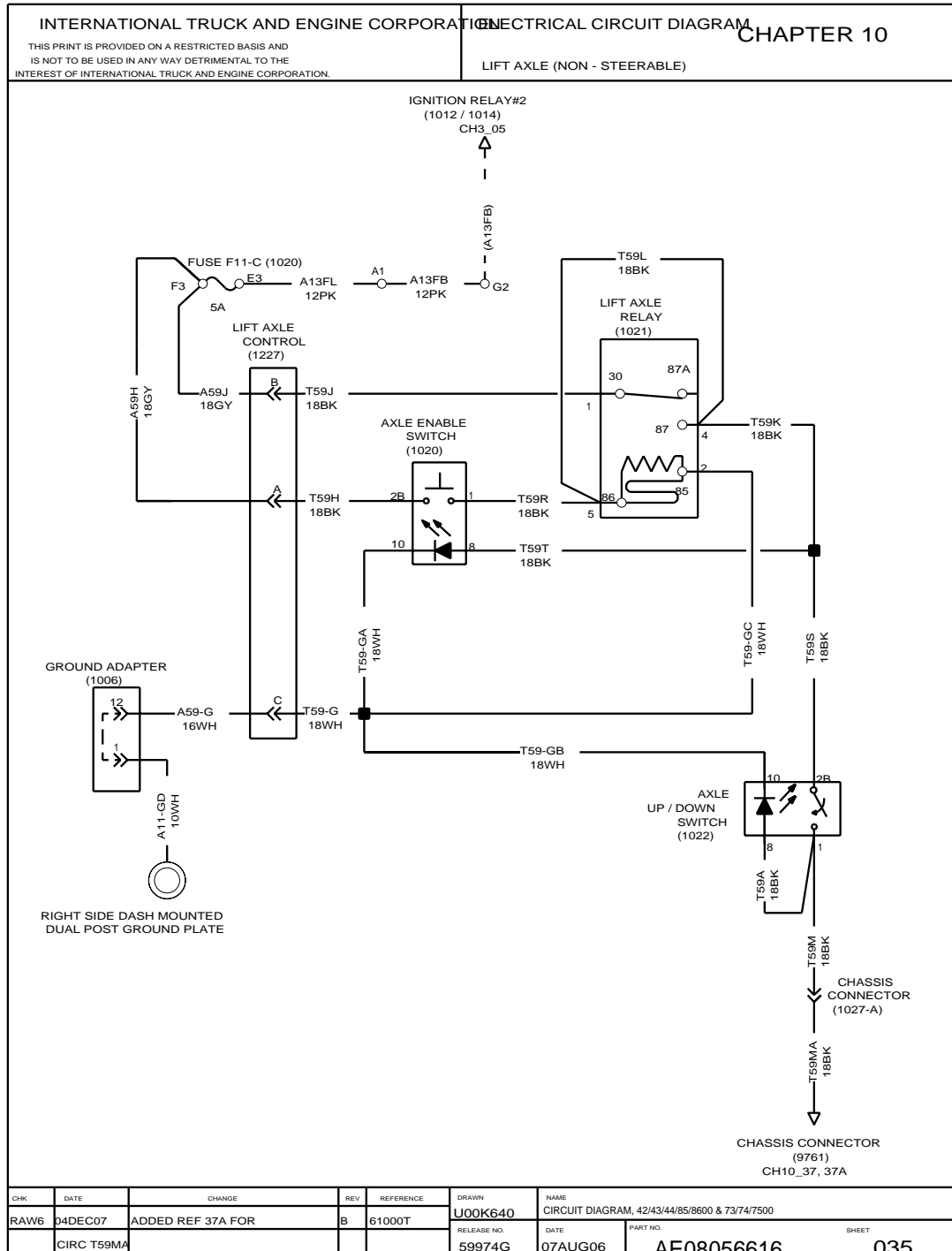


Figure 181 Lift Axle (Non-Steerable)

10.36. LIFT AXLE (STEERABLE), P. 36

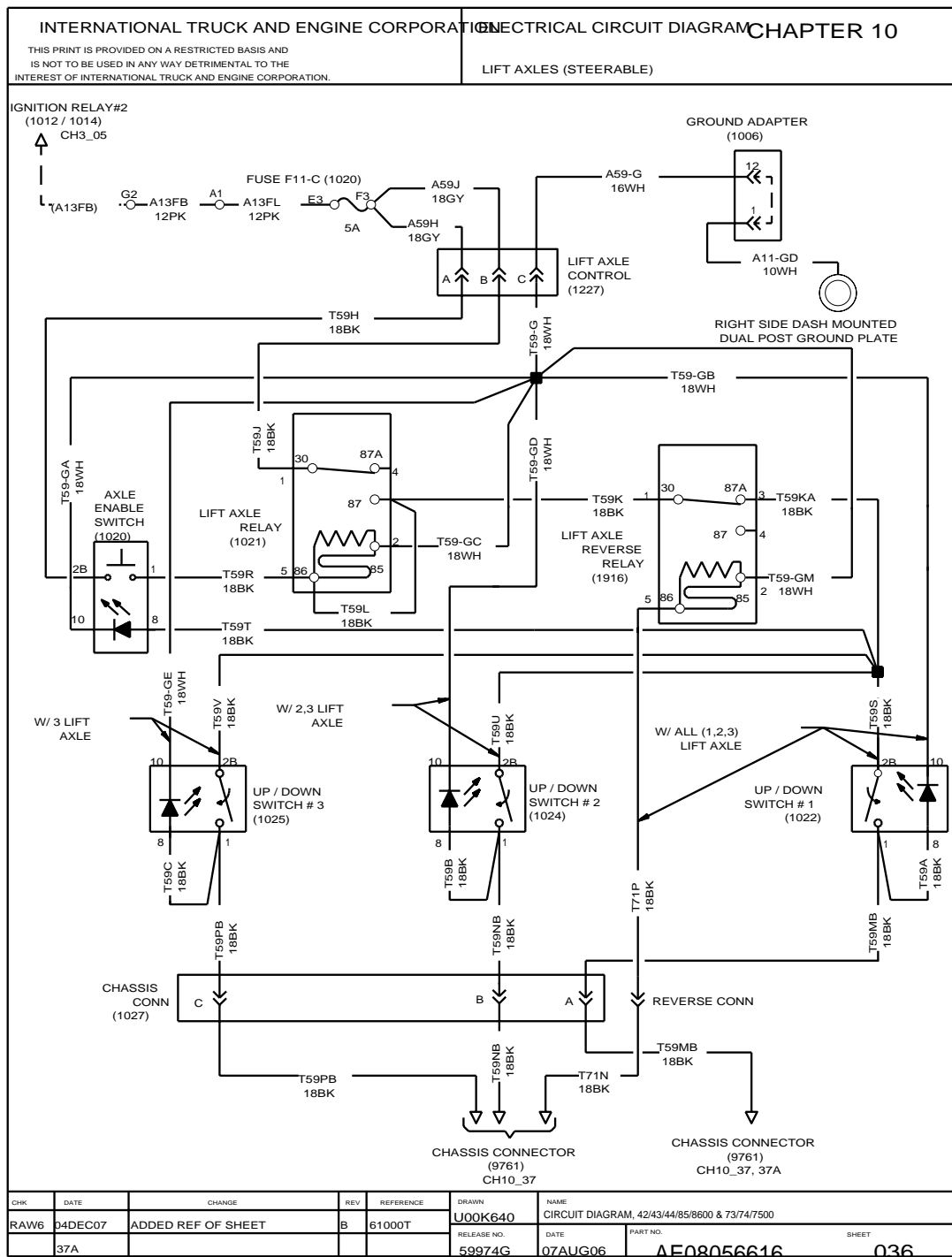


Figure 182 Lift Axle (Steerable)

10.37. LIFT AXLES, P. 37

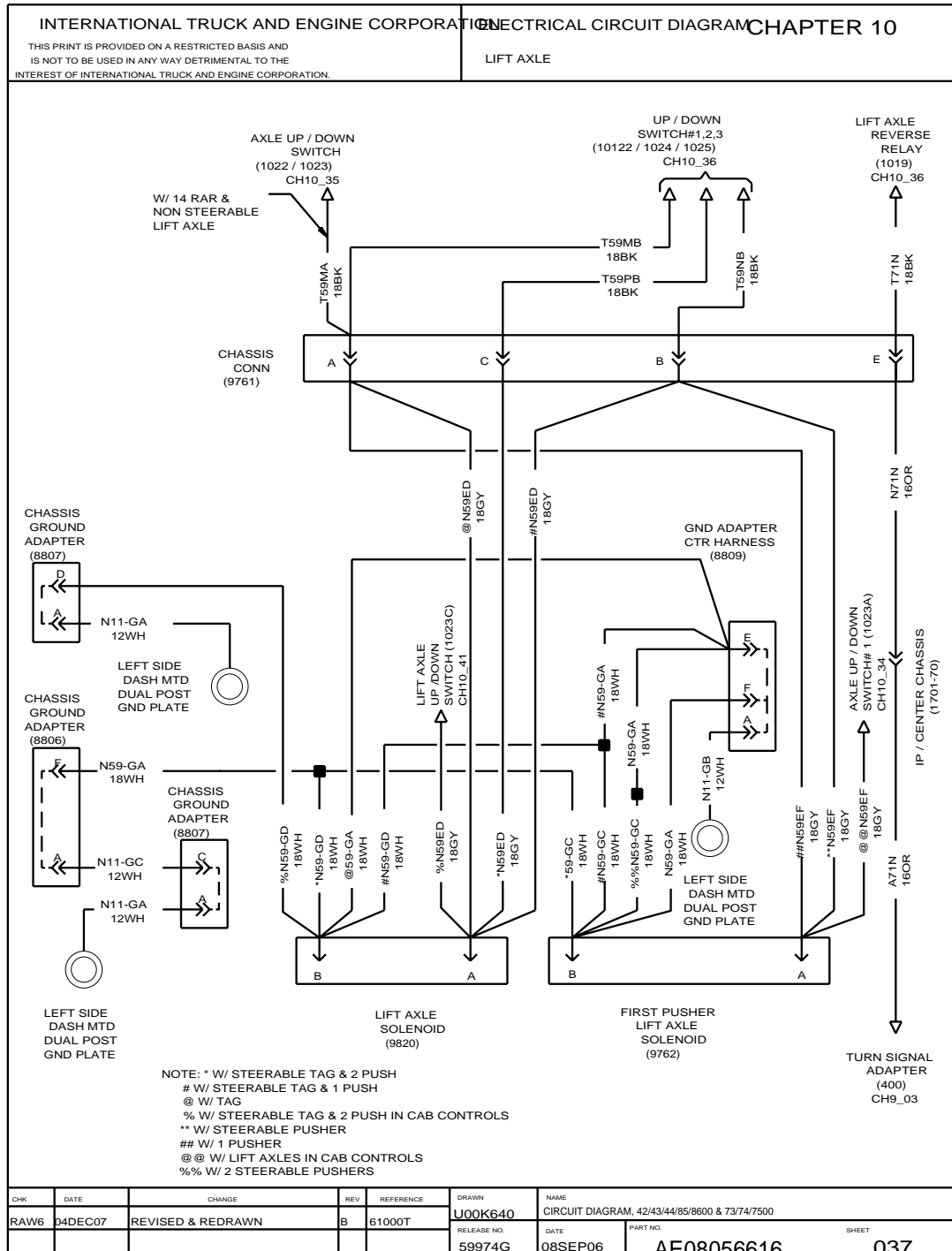
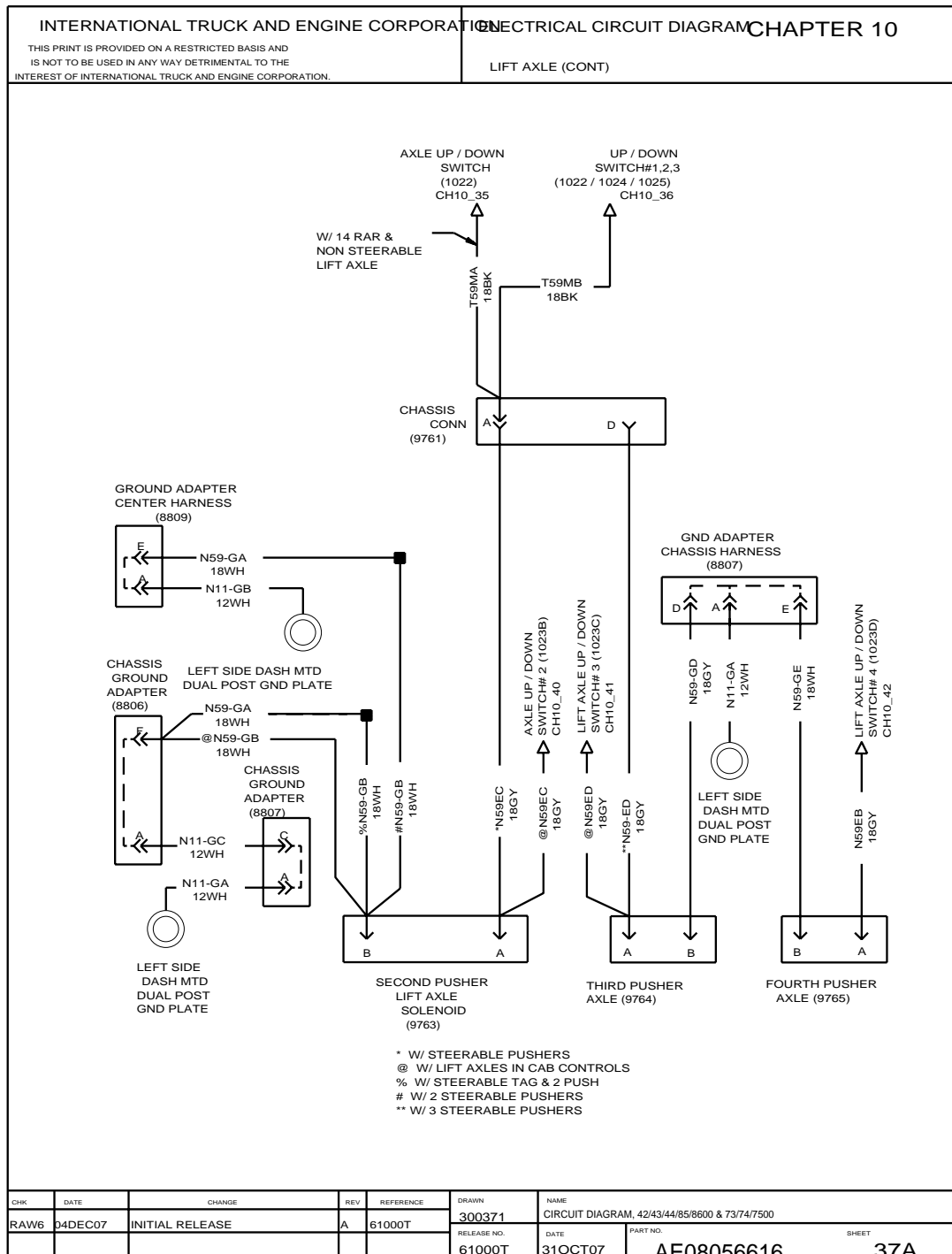


Figure 183 Lift Axles

10.38. LIFT AXLES, P. 37A

Figure 184 Lift Axles

10.39. ABS — BENDIX AIR 6S/6M, P. 38

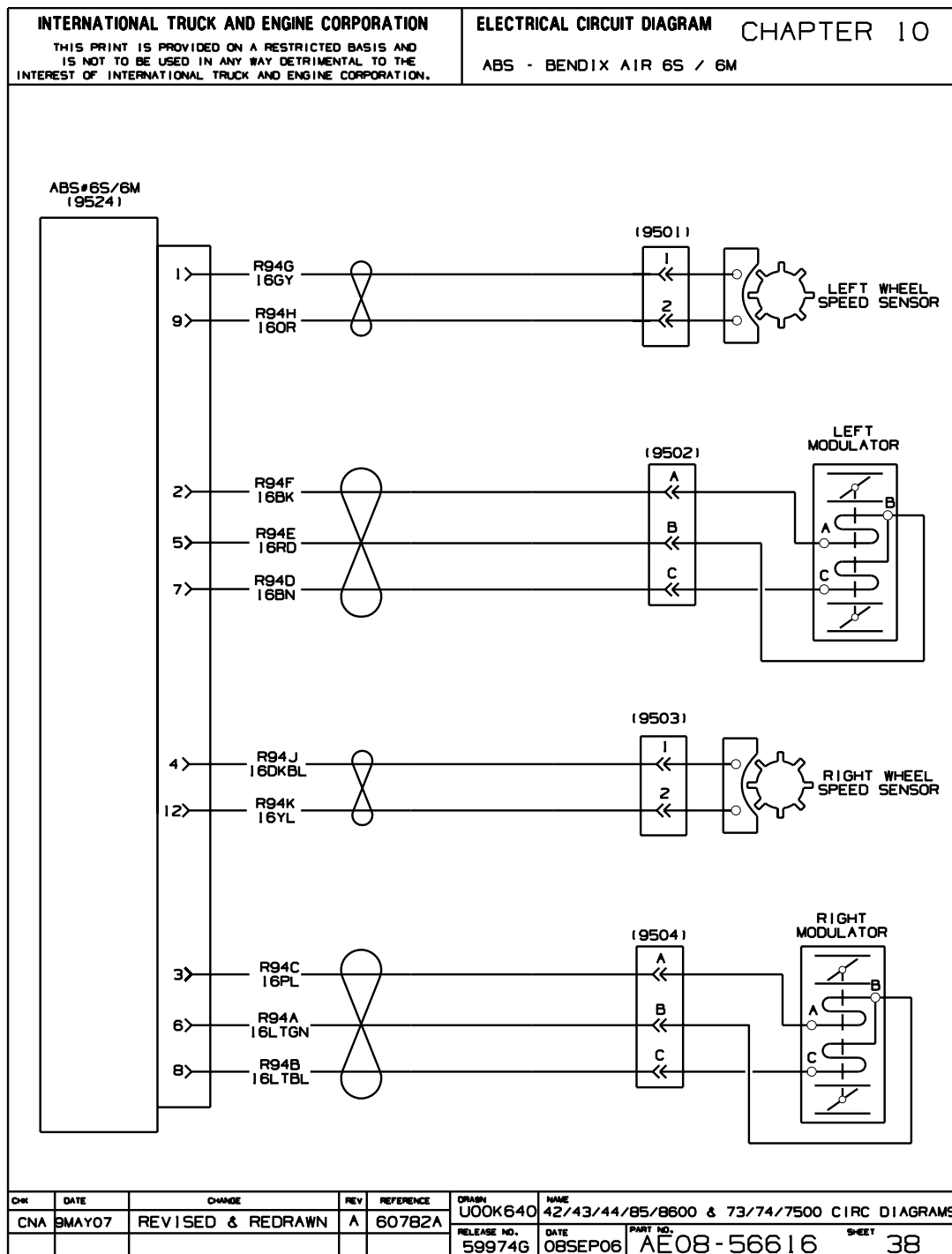


Figure 185 ABS — Bendix Air 6S/6M

10.40. ABS — BENDIX AIR 6S/6M, P. 39

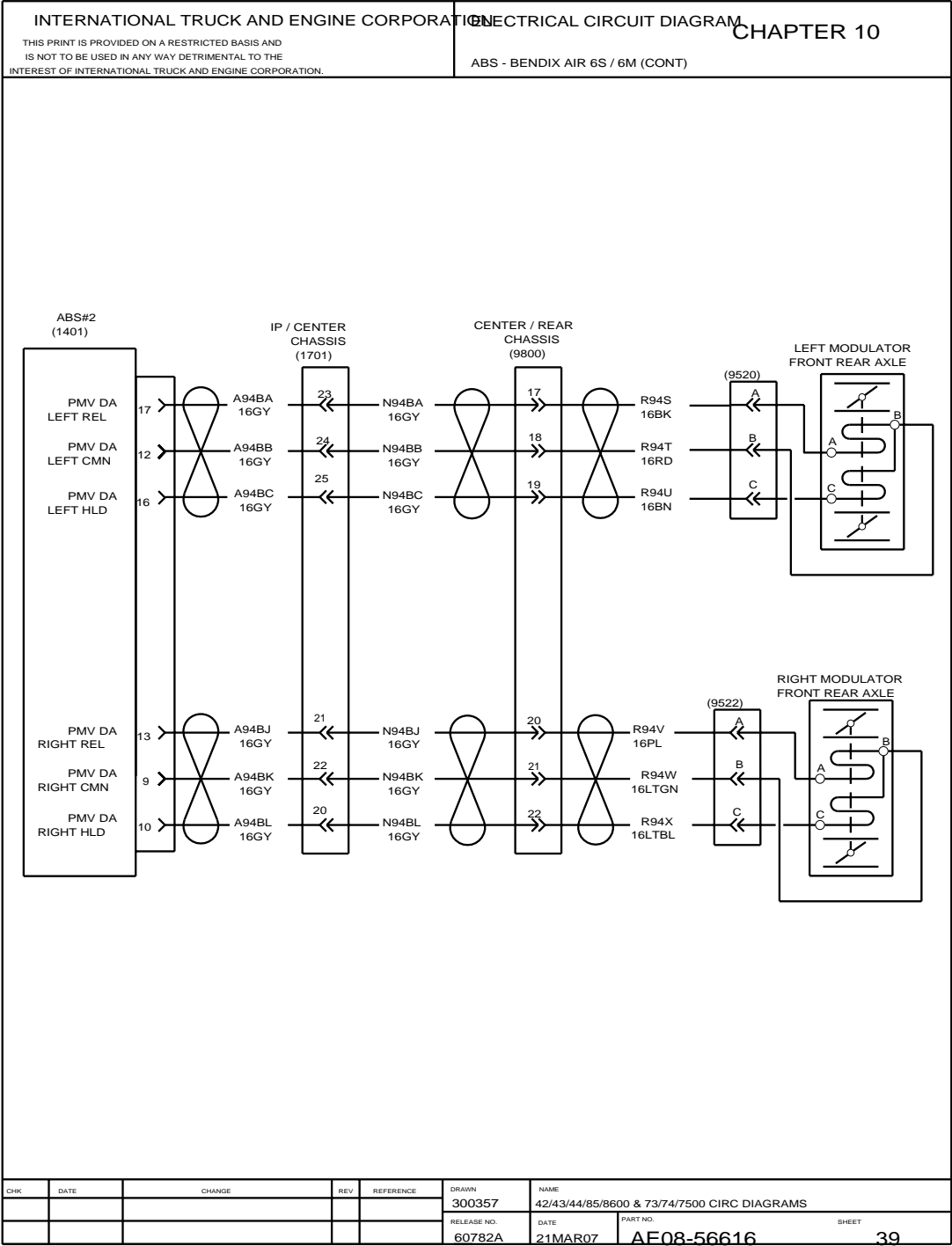


Figure 186 ABS — Bendix Air 6S/6M

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ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 10

LIFT AXLE W/ CONTROLS FOR TWO LIFT AXLES

Diagram illustrating the electrical circuit for the lift axle system, showing connections for various switches, relays, and solenoids.

Wiring Connections:

- AXLE UP / DOWN SWITCH #1 (1023A) CH10_34** (A59-GB 18WH)
- AXLE UP / DOWN SWITCH #3 (1023C) CH10_41** (A59-GE 18WH)
- AXLE UP / DOWN SWITCH #4 (1023D) CH10_42** (A59-GF 18WH)
- AXLE ENABLE SWITCH (1108)** (A59H 18GY, A59T 18GY, A59G 16WH, A59-GD 18WH, A59B 18GY, A59U 18GY, A59R 18GY, A59J 18GY)
- AXLE UP / DOWN SWITCH #2 (1023B)** (A59B 18GY, A59U 18GY, A59R 18GY, A59J 18GY)
- LIFT AXLE REVERSE RELAY (1019)** (A59K 18GY, A71M 18OR, A59L 18GY)
- LIFT AXLE RELAY (1019)** (A59K 18GY, A71M 18OR, A59L 18GY)
- TURN SIGNAL ADAPTER (400) CH9_01,02** (A71P 18OR)
- SECOND PUSHER LIFT AXLE SOLENOID (9763) CH10_37A** (A59-GB 18WH, A59-GE 18WH, A59-GF 18WH, A59-GA 18WH, A59-GB 18WH, A59-GE 18WH, A59-GF 18WH, A59-GA 18WH)

Grounding and Power Sources:

- GROUND ADAPTER (1006)**
- RIGHT SIDE DASH MTD DUAL POST GND PLATE**
- IP / CENTER CHASSIS (1701-61)**
- N59EC 18GY**

Other Components:

- IGNITION RELAY#2 (1012 / 1014) CH3_05**
- FUSE F11-C (1020) 5A**
- A13FL 12PK**
- A13FB 12PK**
- A13FB (A13FB) G2**

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
RAW6	04DEC07	INITIAL RELEASE	A	61000T	300371	CIRCUIT DIAGRAM, 42/43/44/85/8600 & 73/74/7500
					RELEASE NO. 61000T	PART NO. A508056616
					DATE 31OCT07	SHEET 040

Figure 187 Lift Axle with Controls for Two Lift Axles

10.43. LIFT AXLE WITH CONTROLS FOR FOUR LIFT AXLES, P. 42

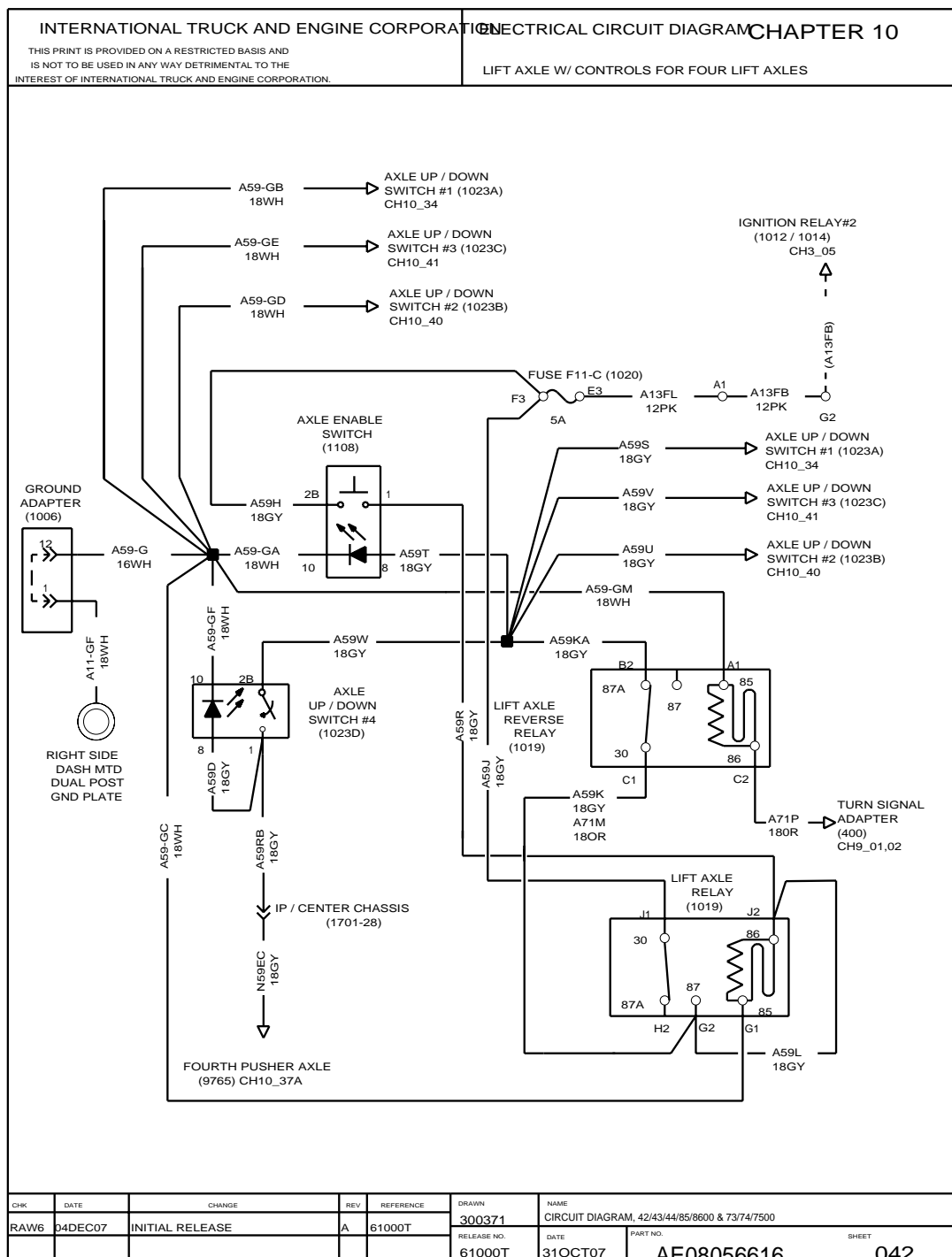


Figure 189 Lift Axle with Controls for Four Lift Axles

10.44. ABS ESP / RSP, P. 43

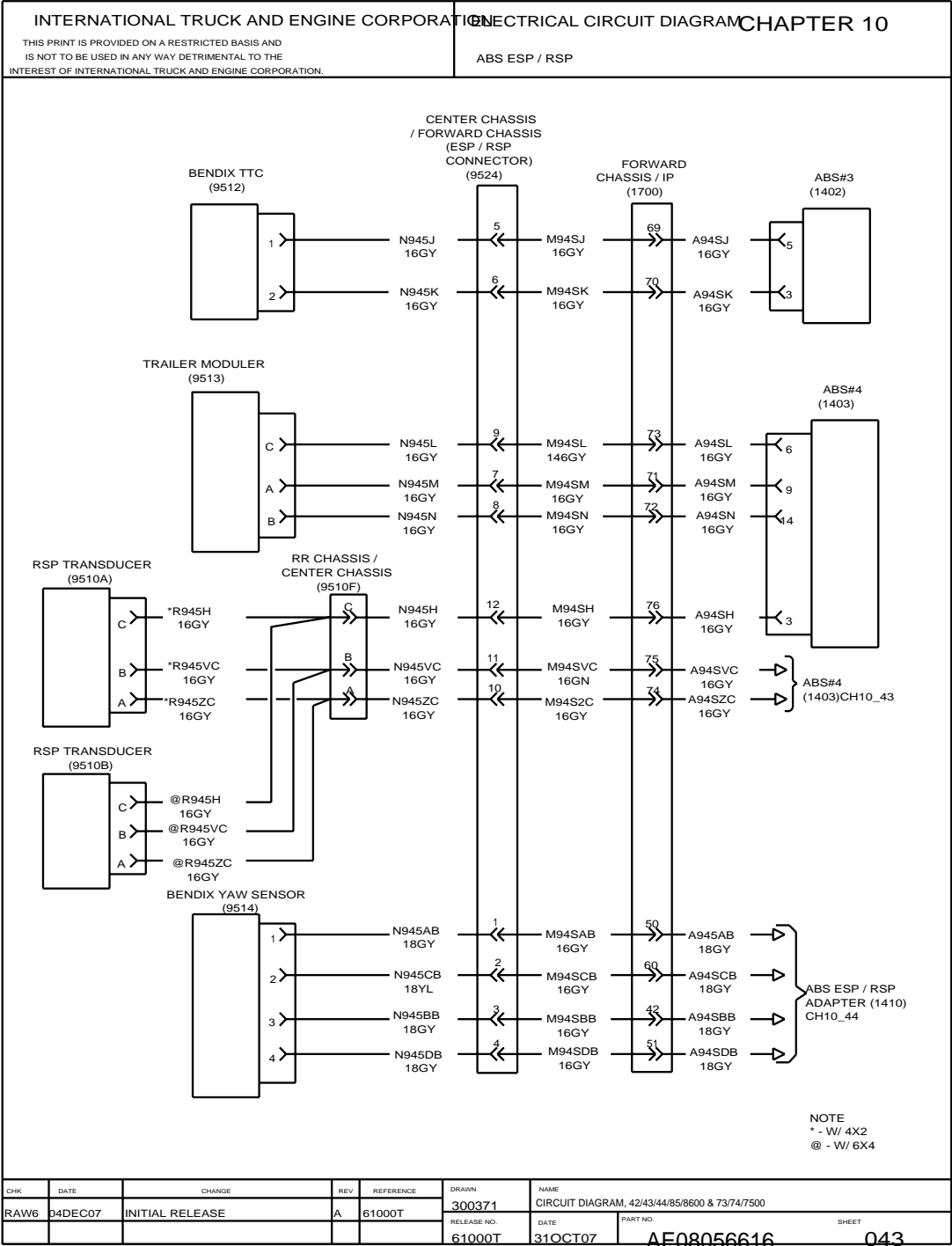


Figure 190 ABS ESP / RSP

10.45. ABS ESP / RSP, P. 44

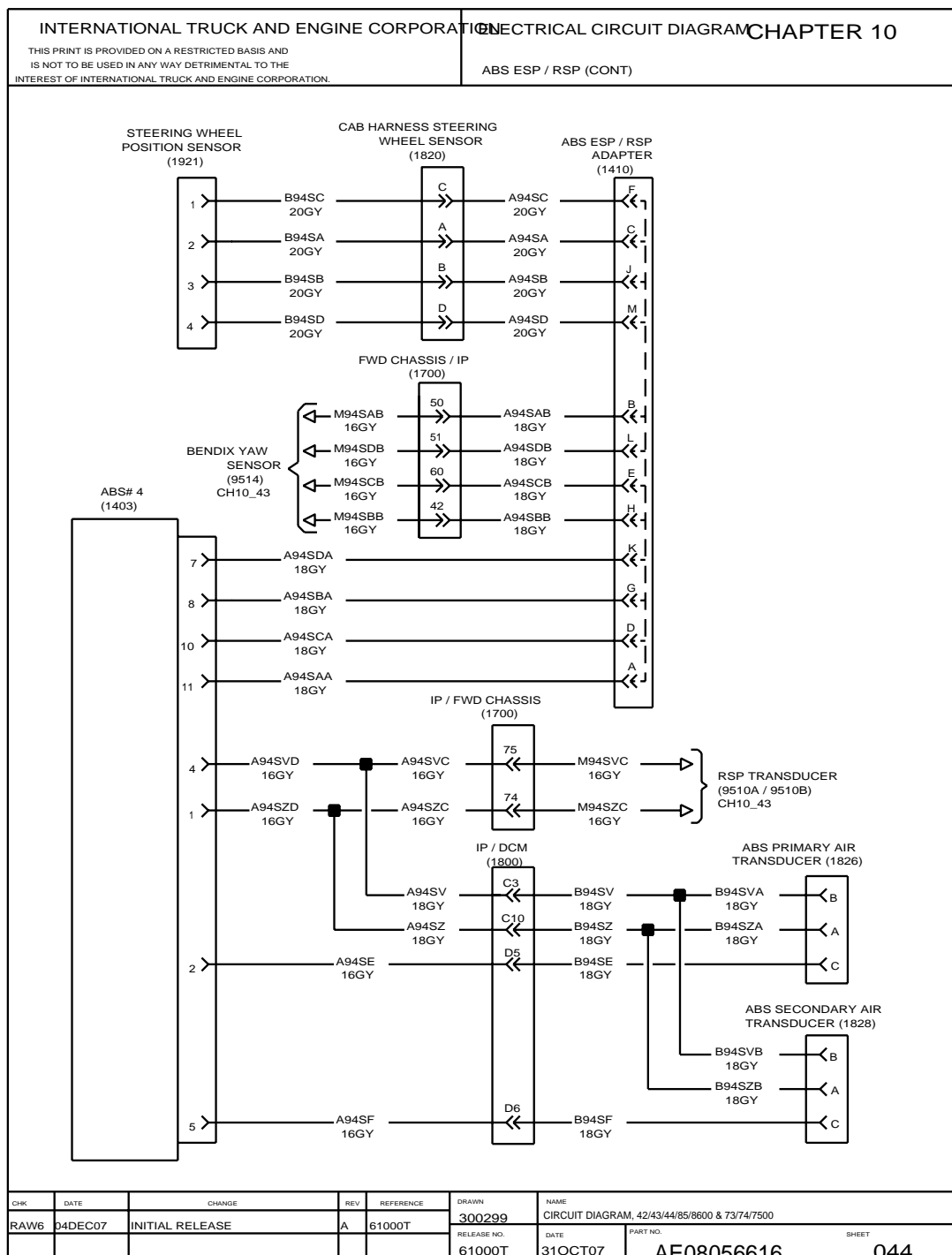


Figure 191 ABS ESP / RSP

11.2. ALLISON GEN 4 1/2000 TRANSMISSION WITH I6 AND WITH V8 ENGINE, P. 2

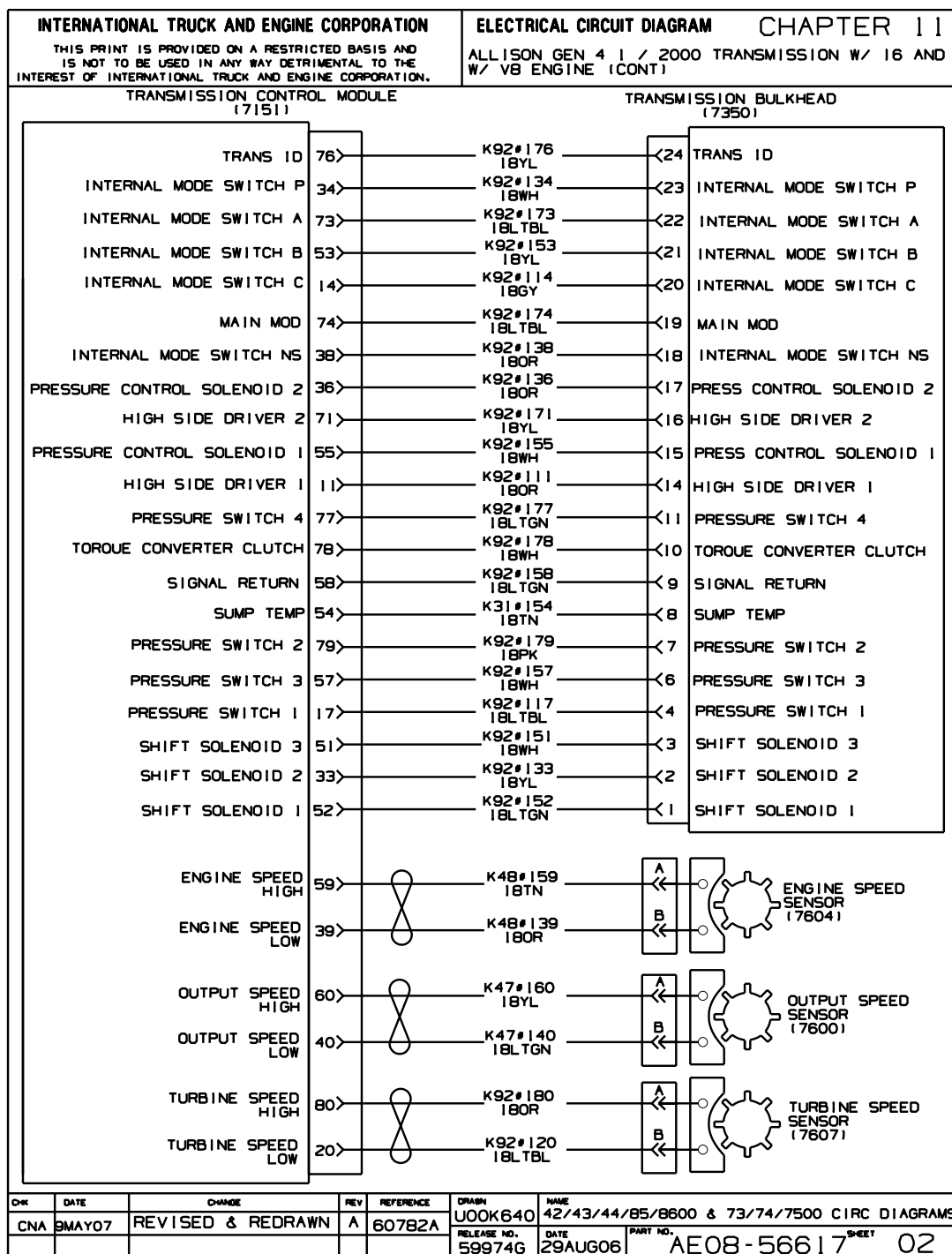


Figure 193 Allison GEN 4 1/2000 Transmission with I6 and with V8 Engine (Cont.)

[illegible]

S08337

11.4. TRANSMISSION, ALLISON MD WITH I6 AND WITH V8 ENGINE, P. 4

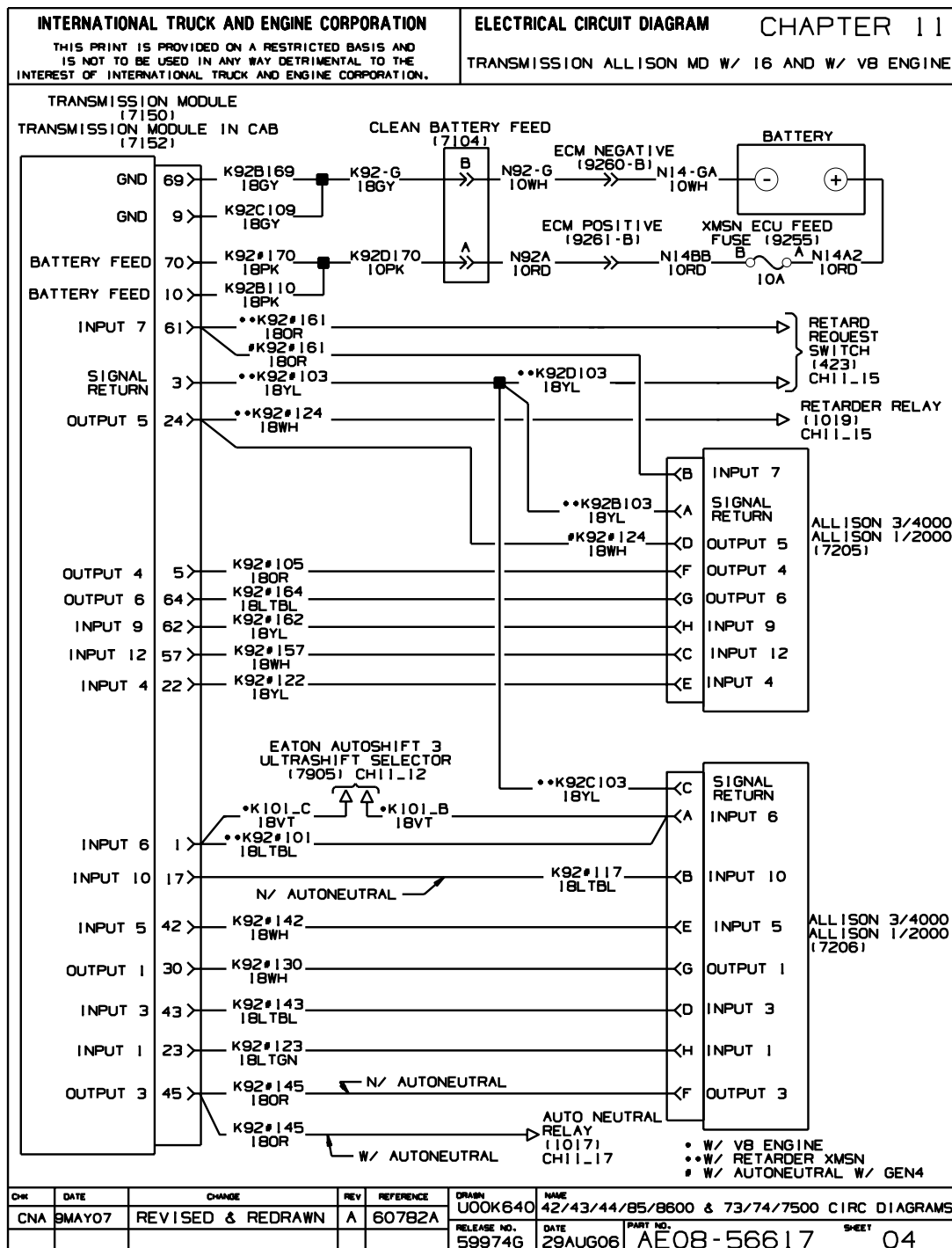
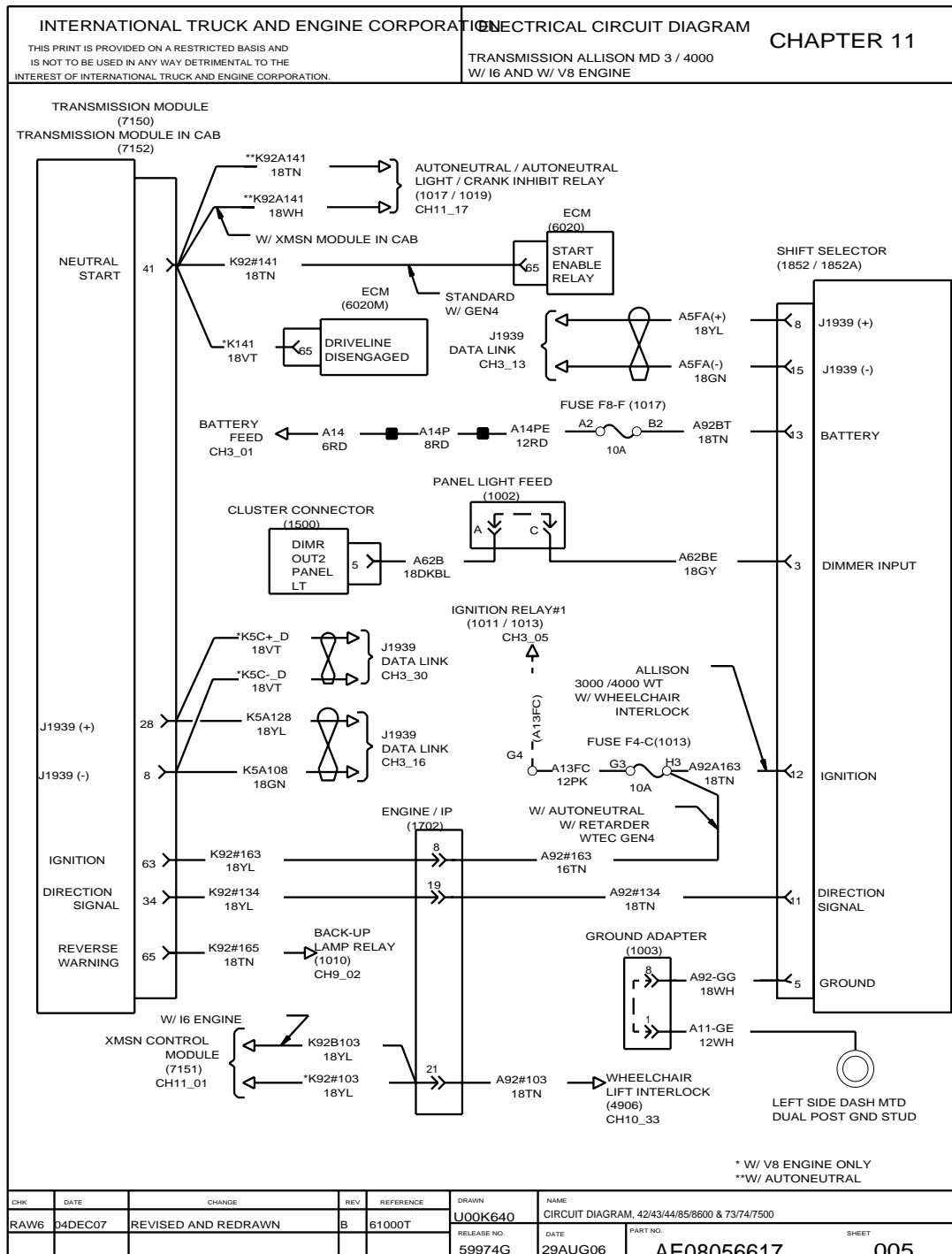


Figure 195 Transmission, Allison MD with I6 and with V8 Engine

11.5. TRANSMISSION, ALLISON MD 3/4000 WITH I6 AND WITH V8 ENGINE, P. 5

Figure 196 Transmission, Allison MD 3/4000 with I6 and with V8 Engine

11.6. TRANSMISSION, ALLISON MD/HD (WTEC) WITH I6 AND WITH V8 ENGINE, P. 6

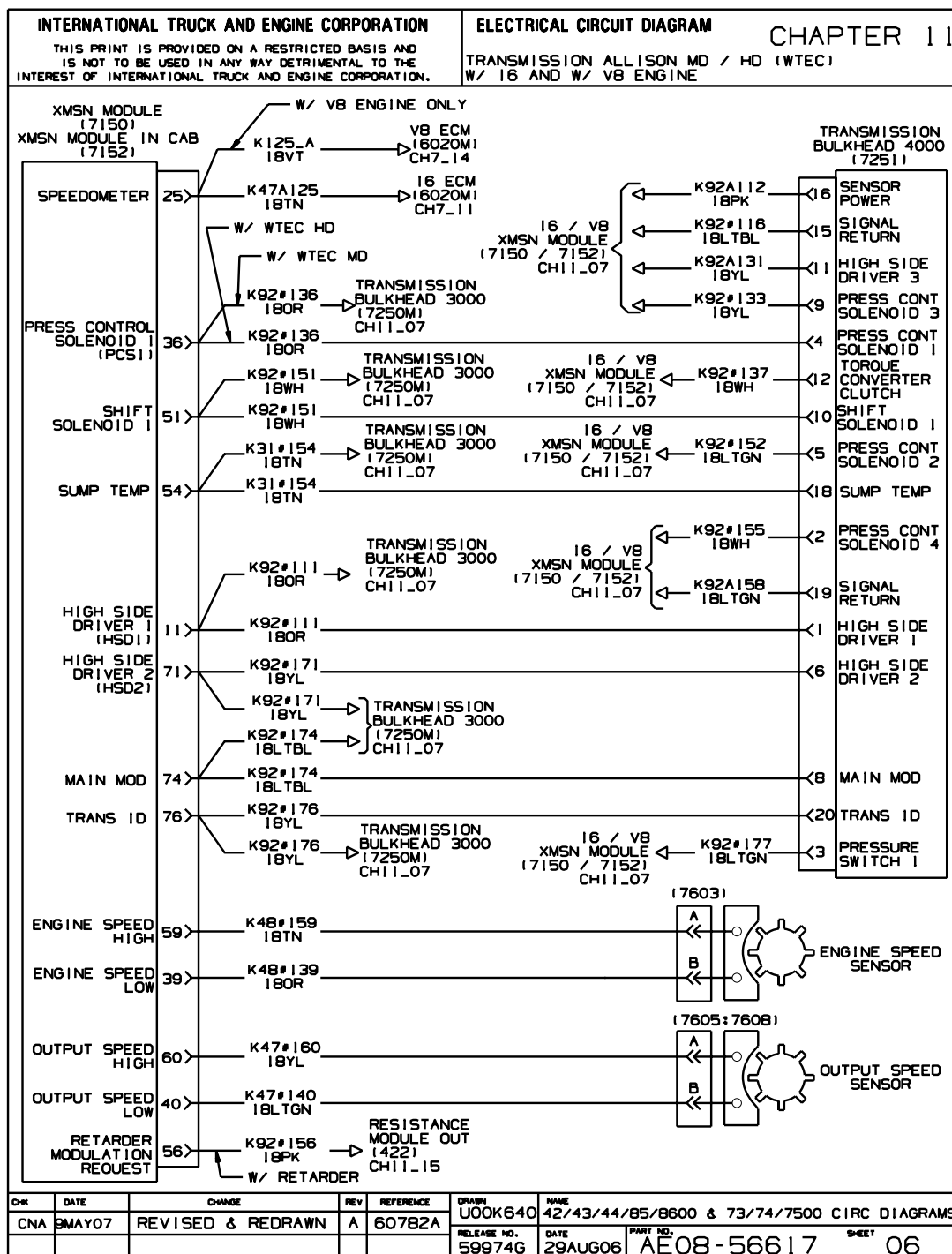


Figure 197 Transmission, Allison MD/HD (WTEC) with I6 and with V8 Engine

[illegible]

Figure 198 Transmission, Allison MD/HD (WTEC) with I6 and with V8 Engine (Cont.)

11.8. TRANSMISSION, ALLISON MD (WTEC), P. 8

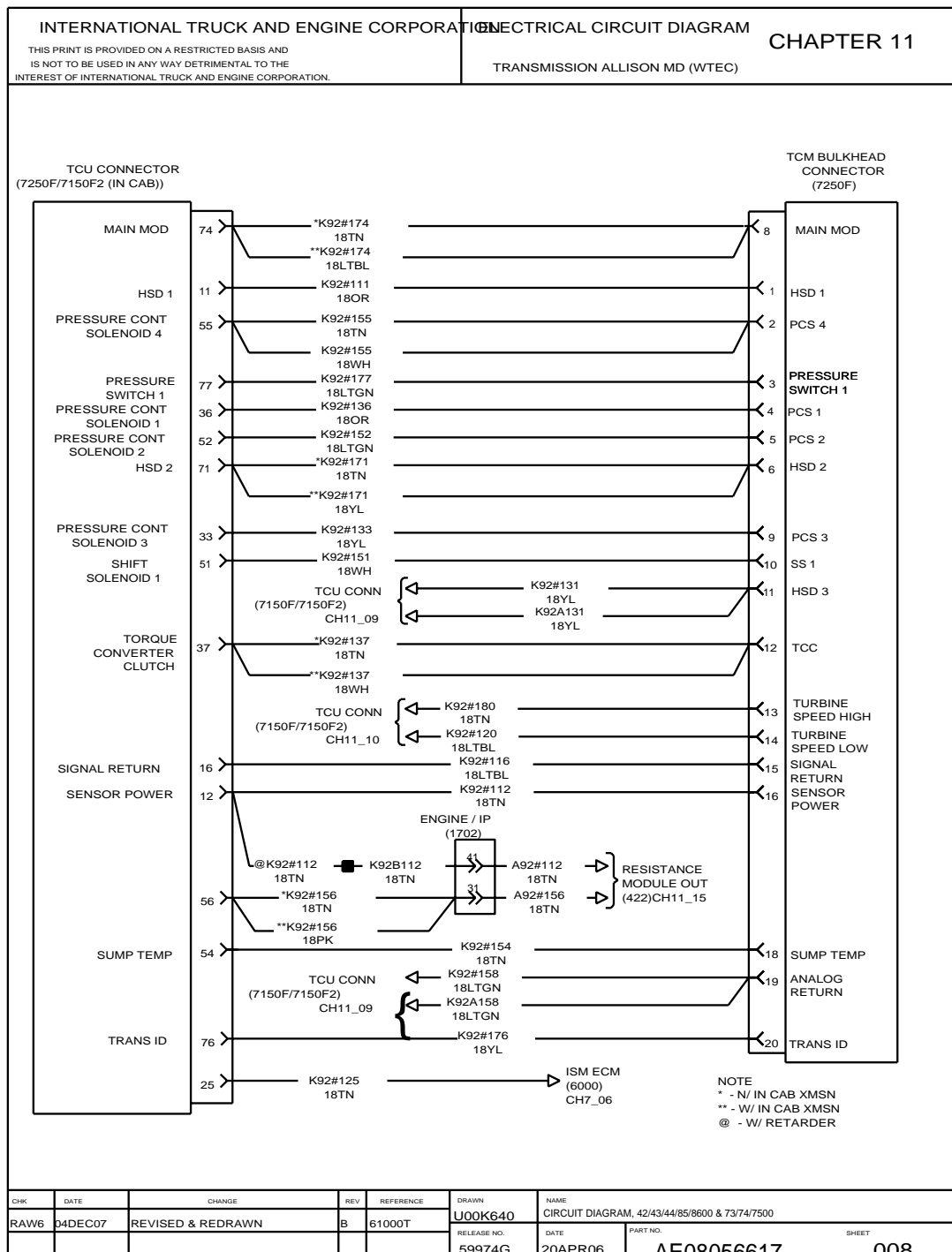
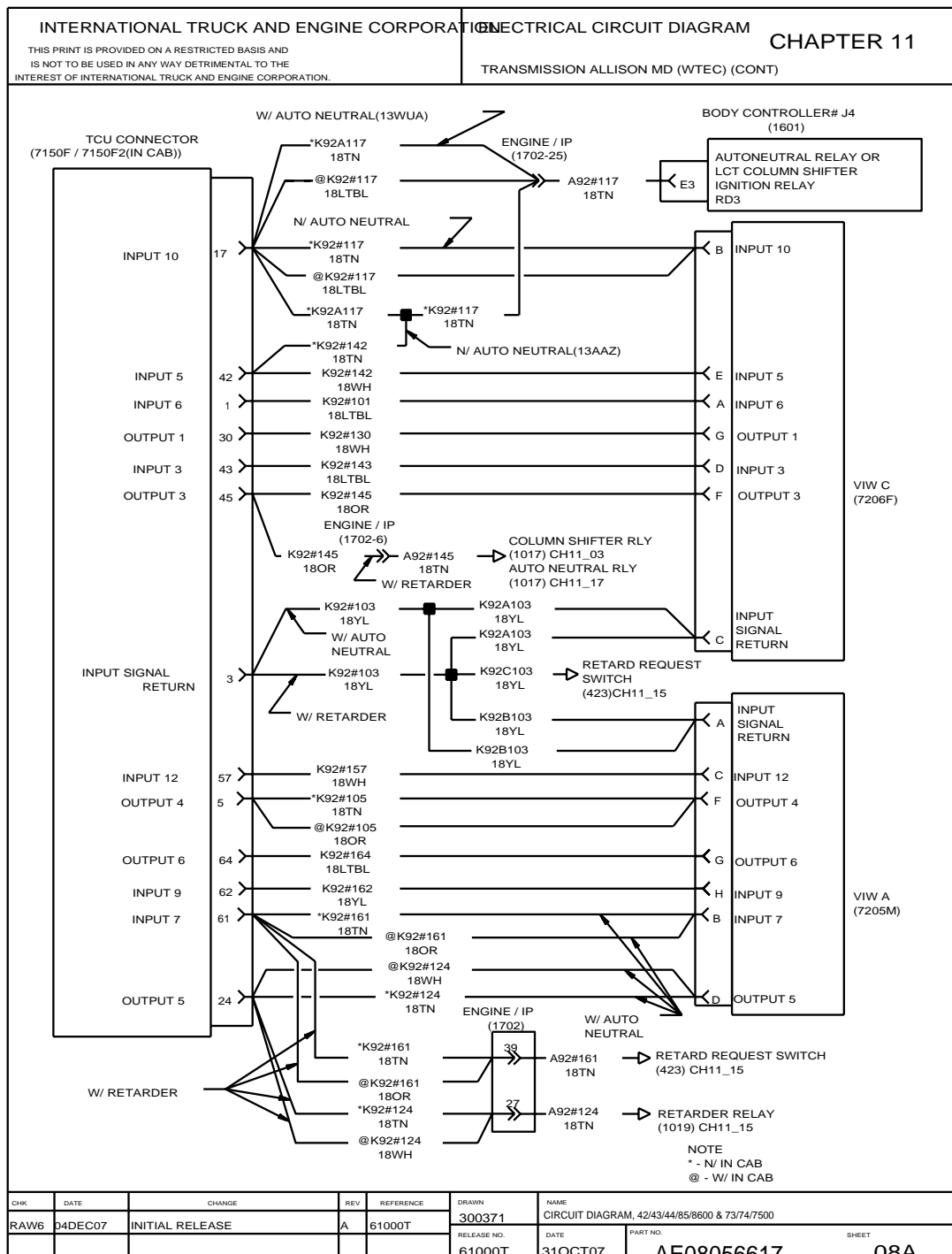


Figure 199 Transmission, Allison MD (WTEC)

11.9. TRANSMISSION, ALLISON MD (WTEC), P. 8A

Figure 200 Transmission, Allison MD (WTEC)

11.10. TRANSMISSION, ALLISON MD (WTEC) (ISM ENGINE), P. 9

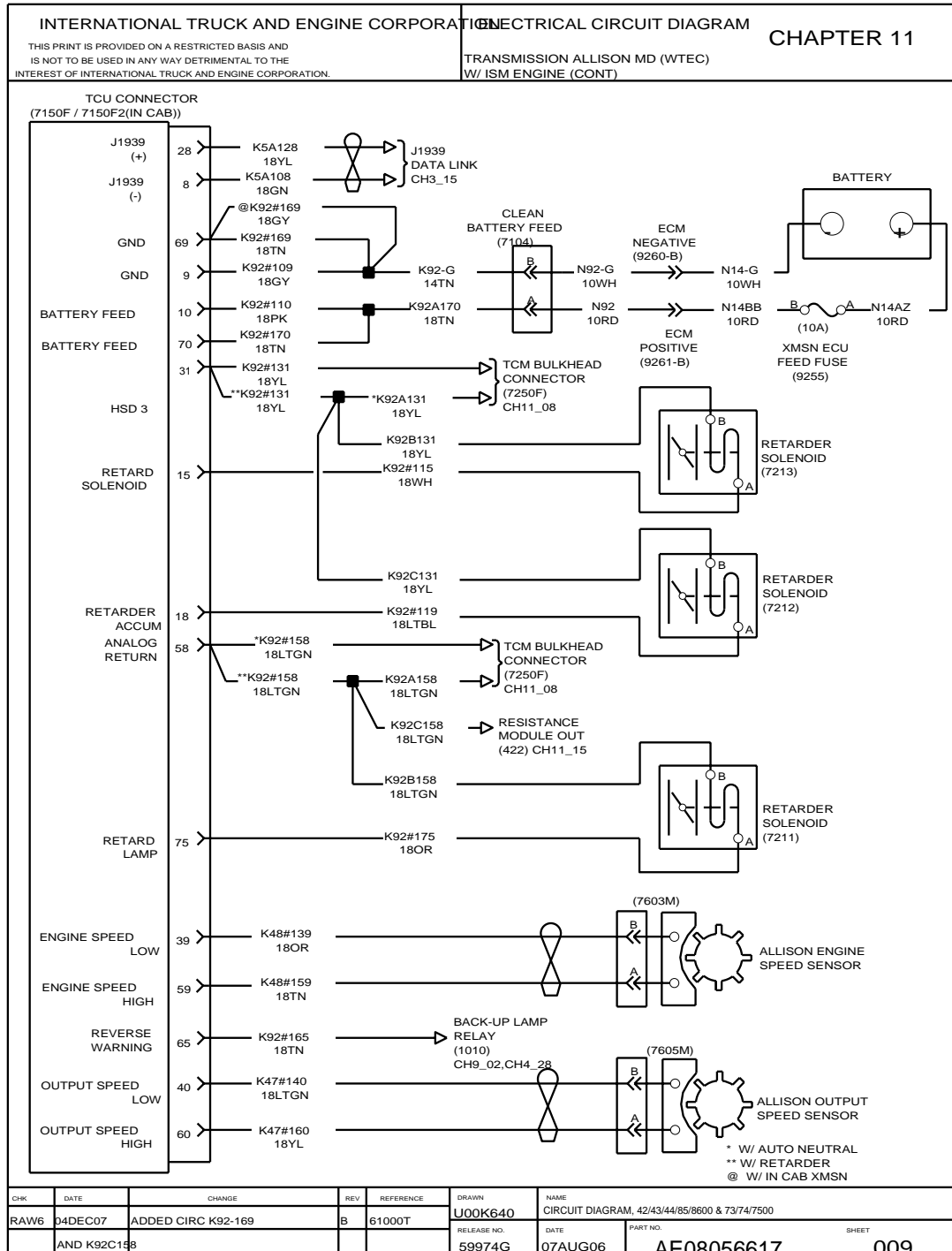
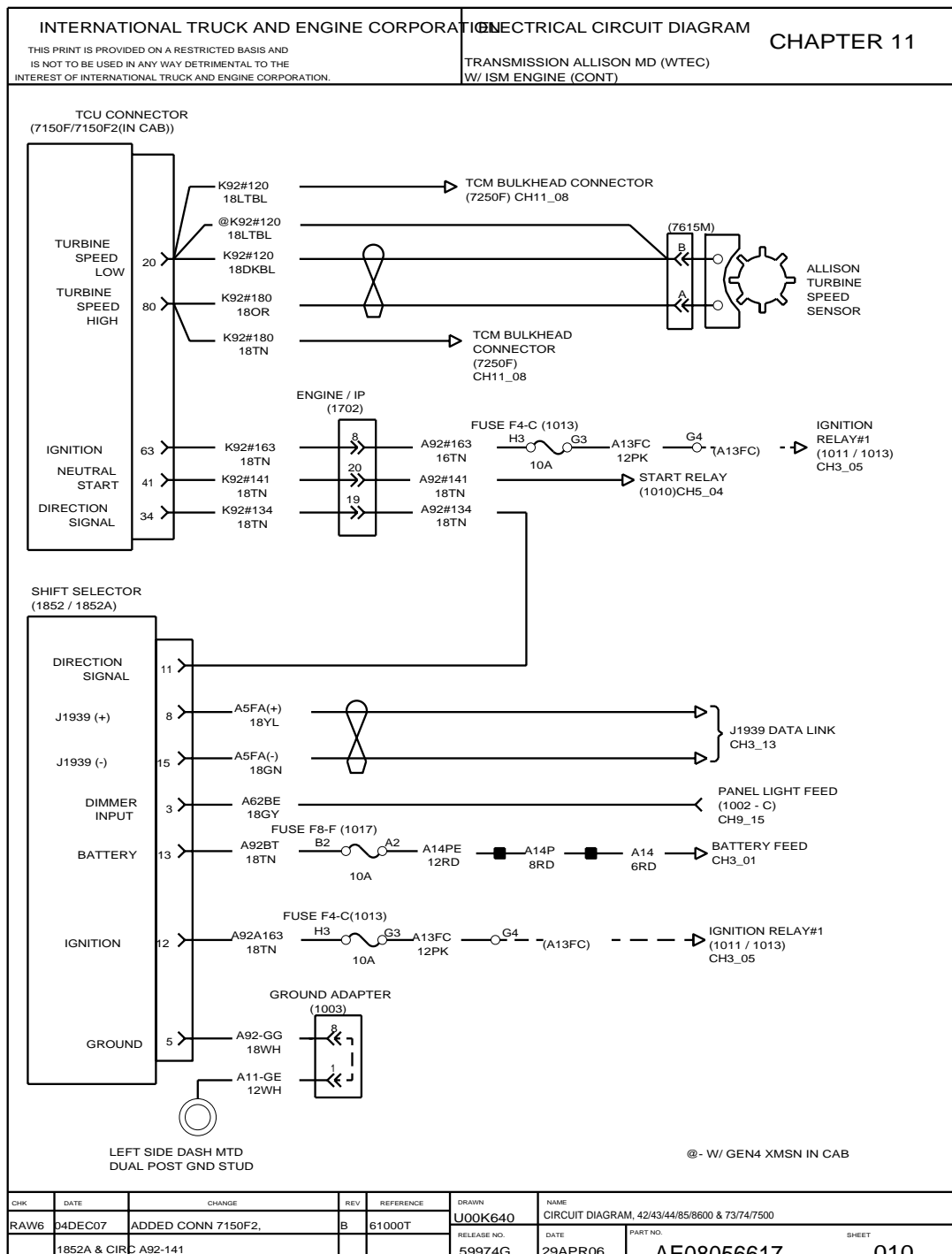


Figure 201 Transmission, Allison MD (WTEC) (ISM Engine)

11.11. TRANSMISSION, ALLISON MD (WTEC) (ISM ENGINE), P. 10

Figure 202 Transmission, Allison MD (WTEC) (ISM Engine) (Cont.)

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 11

EATON AUTOSHIFT TRANSMISSION W/ I6 ENGINE

EATON GEN3 TCM CONN (7105)

BATTERY +

IGNITION

MEIR CONTACT

MEIR +

MEIR -

INPUT 2

INPUT 1

COMMON

SHIFT CONTROL POWER +

J1939 +

J1939 -

SHIFT CONTROL POWER -

J1708 -

J1708 +

START ENABLE RELAY +

START ENABLE LATCH

START ENABLE RELAY -

GROUND

ENGINE / IP (1702)

ENGINE BLOCK LEFT SIDE GROUND

Figure 203 Eaton Autoshift Transmission W/ I6 Engine

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ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 11

EATON AUTOSHIFT

XMSN MODULE(7150) / ALLISON 3 / 4000, 1 / 2000 (7206)

XMSN CONTROL MODULE (7151) / ALLISON 3 / 4000 VIW A, 1 / 2000 VIW C (7205M)

CH11_01,04

EATON AUTOSHIFT 3
ULTRASHIFT SELECTOR
(7905)

* W/ V8 ENGINE ONLY

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME	DATE	PART NO.	SHEET
CNA1	13MAR08	ADDED IBBE EFFECTS	C	61073L	U00K640	CIRCUIT DIAGRAM, 42/43/44/85/8600 & 73/74/7500	20APR06	AE08056617	012
					RELEASE NO.	DATE	PART NO.		
					59974G	20APR06	AE08056617		

Figure 204 Eaton Autoshift Transmission

11.14. EATON AUTOSHIFT TRANSMISSION, P. 12A

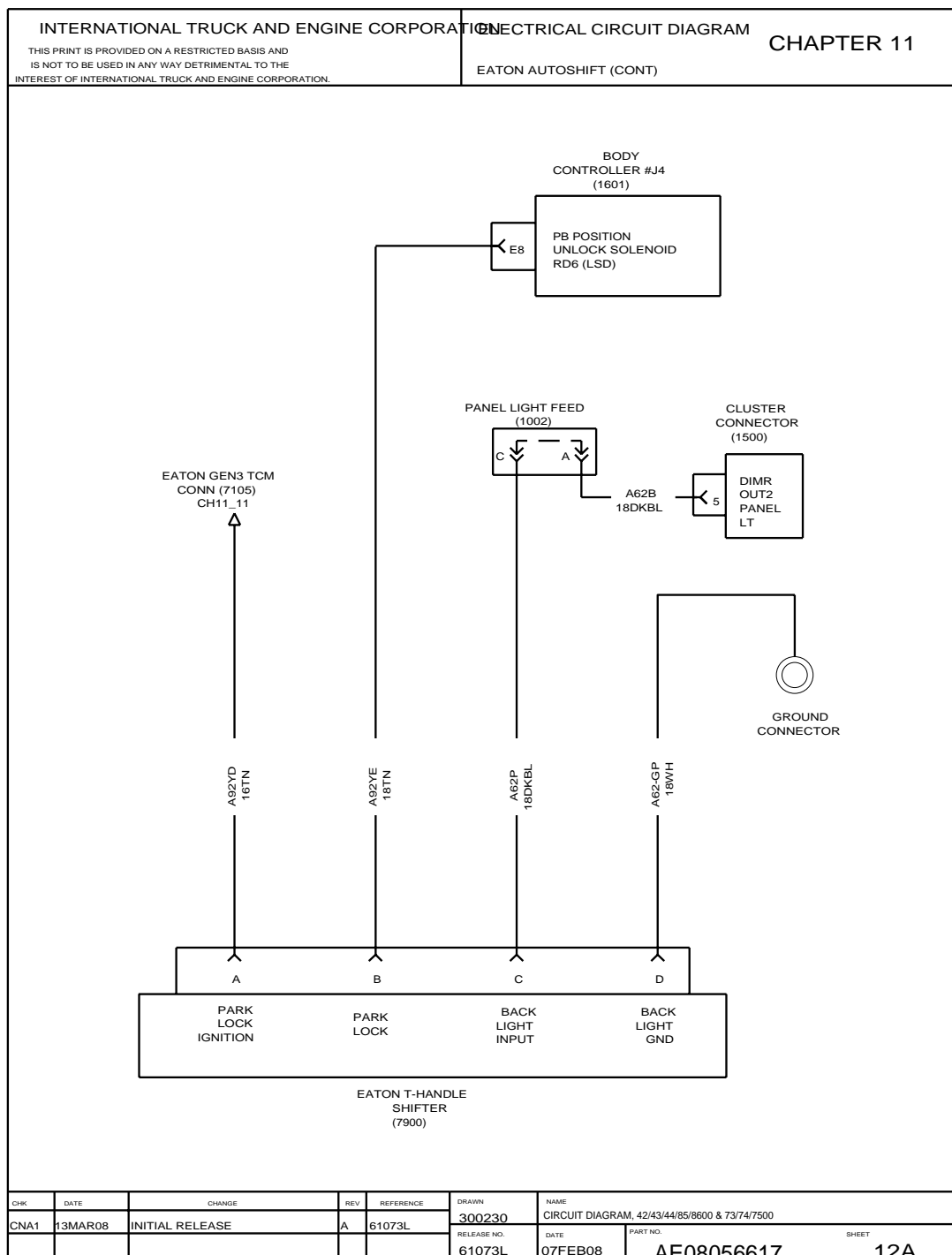


Figure 205 Eaton Autoshift Transmission

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 11

TRANSMISSION ALLISON MD (WTEC) W/ CAT ENGINE

TCU CONNECTOR (7150 / 7151 IN CAB)

TCU Connector Pin	Wire Label	Component / Note
63	K92#163 18TN	IGNITION
1	K92#101 18LTBL	INPUT 6
17	K92#117 18TN	INPUT 10
30	K92#130 18WH	OUTPUT 1
42	K92#142 18WH	INPUT 5
43	K92#143 18LTBL	INPUT 3
45	K92#145 18OR	OUTPUT 3
3	K92#103 18YL	INPUT SIGNAL RETURN
5	K92#105 18OR	OUTPUT 4
24	K92#124 18TN	OUTPUT 5
57	K92#157 18WH	INPUT 12
61	K92#161 18TN	INPUT 7
62	K92#162 18YL	INPUT 9
64	K92#164 18LTBL	OUTPUT 6
25	K92#125 18TN	SPEEDO METER
70	K92#170 18PK	BATTERY +
10	K92#110 18PK	BATTERY +
9	K92#109 18GY	GROUND
69	K92#169 18TN	GROUND
11	K92#111 18OR	ACTUATOR SUPPLY VOLTAGE 1
12	K92#112 18TN	OIL LEVEL SENSOR PWR
16	K92#116 18LTBL	OIL LEVEL SENSOR RETURN
28	K5A128 18YL	J1939 +
8	K5A108 18GN	J1939 -

ENGINE / IP (1702 - 8)

IGNITION RELAY#1 (1011 / 1013) CH3_05

VIW C (7206 / 7206F)

VIW C (7205 / 7205M)

ECM CONNECTOR (6013) CH7_01

TRANSMISSION CLEAN POWER (7104F)

ECM POSITIVE (9261-A)

ECM NEGATIVE (9260-A)

TRANS ECU FEED FUSE (9255)

BATTERY

TCM BULKHEAD CONNECTOR (7250)

TCU CONNECTOR (7150) CH11_14

J1939 DATALINK CH3_17

ACTUATOR SUPPLY VOLTAGE 1

OIL LEVEL SENSOR PWR

OIL LEVEL SENSOR RETURN

TURBINE SPEED HIGH

TURBINE SPEED LOW

HSD 3

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
RAW6	04DEC07	REVISED AND REDRAWN	B	61000T	U00K640	CIRCUIT DIAGRAM, 42/43/44/85/8600 & 73/74/7500
					59974G	DATE 29AUG06 PART NO. A509056617

SHEET 013

Figure 206 Transmission Allison MD (WTEC) W/ Cat Engine

11.16. TRANSMISSION ALLISON MD (WTEC) W/ CAT ENGINE, P. 14

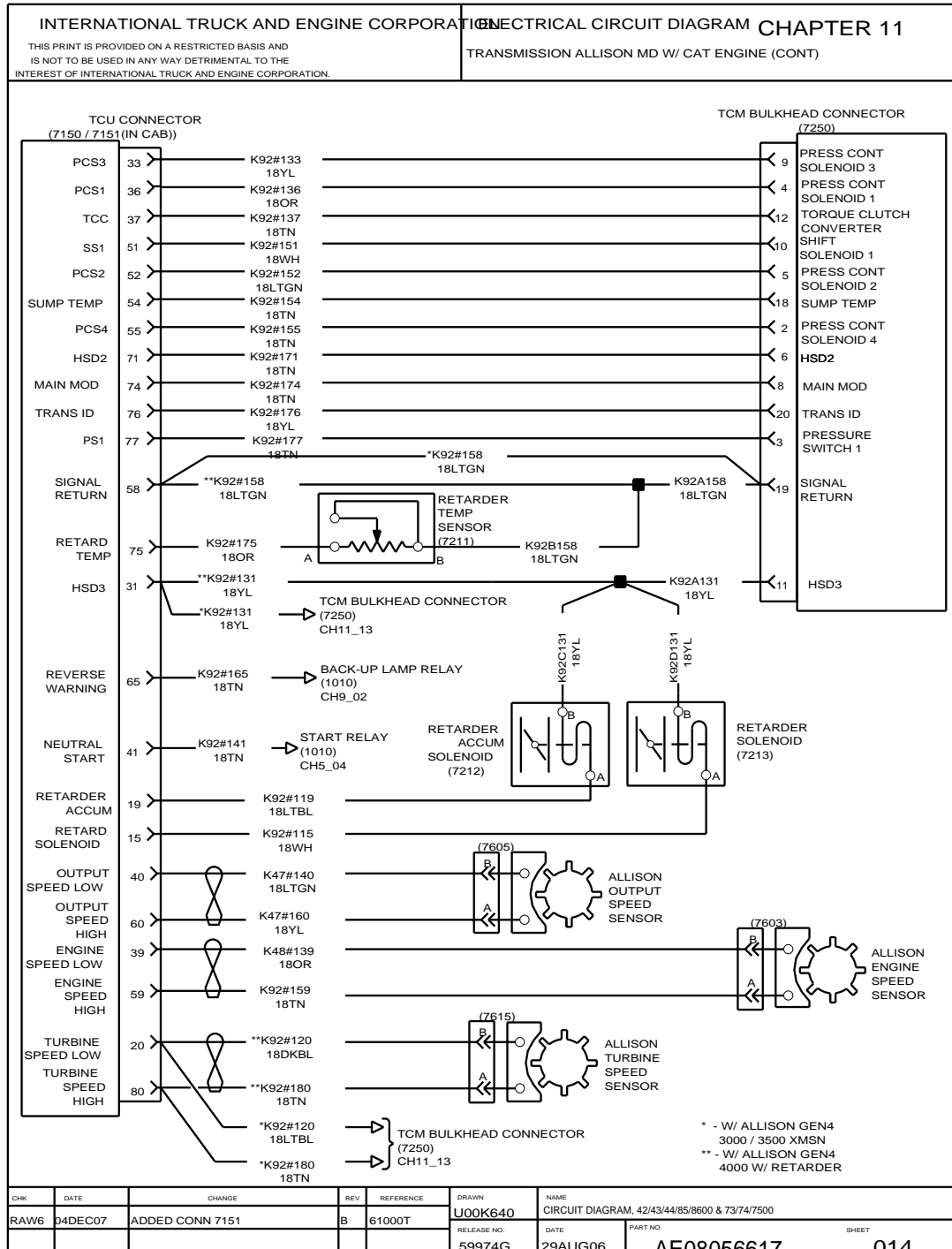


Figure 207 Transmission Allison MD (WTEC) W/ Cat Engine

11.17. TRANSMISSION RETARDER CONTROLS WIRING WITH MD TRANSMISSION HARD WIRED EFFECTS, P. 15

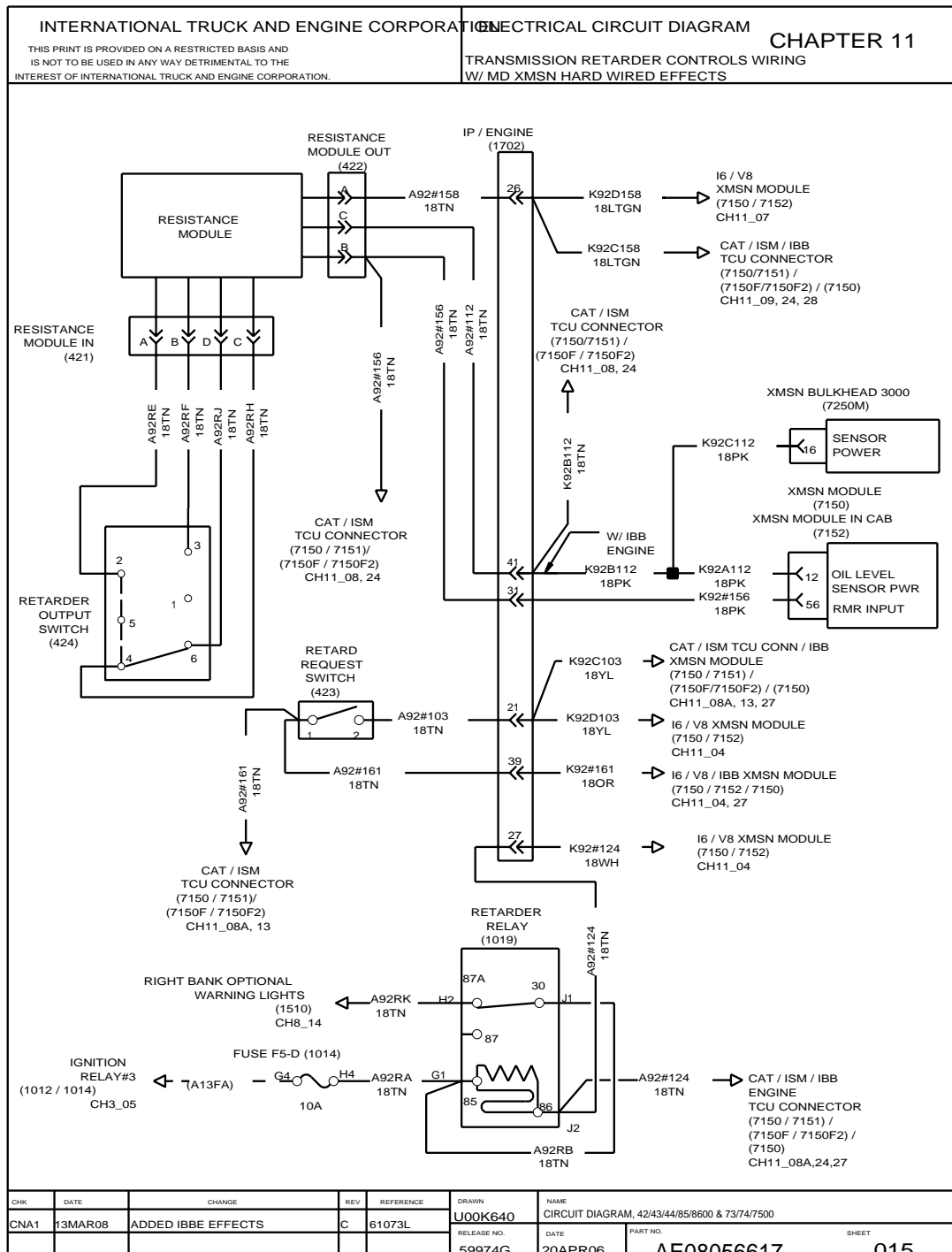


Figure 208 Transmission Retarder Controls Wiring with MD Transmission Hard Wired Effects

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ELECTRICAL CIRCUIT DIAGRAM

CHAPTER 11

EATON AUTO & ULTRASHIFT GEN 3 TRANSMISSION

W/ CAT AND W/ ISM ENGINE

EATON GEN3 TCM CONNECTOR (7105)

- BATTERY + (38) → K14A 12RD → XMSN FUSE (8103) 30A
- BATTERY + (38) → K14D 12RD → XMSN FUSE (8103) 30A
- BATTERY + (38) → K14AA 12RD → XMSN FUSE (8103) 30A
- BATTERY + (38) → K14AB 12RD → XMSN FUSE (8103) 30A
- BATTERY + (38) → K13A 14PK → FREEDOMLINE XMSN MAIN CONNECTION (7104)
- BATTERY + (38) → K13A 14PK → W/ LECTRASHIFT ACCOMODATION
- IGNITION (35) → K13A 14PK → ENGINE / IP (1702) 8 → A13D 14PK → FUSE F4-C (1013) 10A → A13FC 12PK → G4 → (A13FC) → IGNITION RELAY#1 (1011 / 1013) CH3_05
- MEIIR CONTACT (20) → K92E 18TN → A92E 16TN → CRANK INHIBIT RELAY (1019) CH11_18
- MEIIR + (22) → K92H 18TN → A92H 16TN → CRANK INHIBIT RELAY (1019) CH11_18
- MEIIR - (21) → K92F 18TN → A92F 16TN → CRANK INHIBIT RELAY (1019) CH11_18
- J1708 + (10) → K3BC(+) 18DKBL → K3BA(+) 18DKBL → J1708 DATA LINK CH3_09
- J1708 - (11) → K3BC(-) 18GY → K3BA(-) 18GY → J1708 DATA LINK CH3_09
- J1939 - (2) → K5V(-) 18GN → J1939 RESISTOR (7110) CH3_15, 17
- J1939 + (3) → K5V(+) 18YL → J1939 RESISTOR (7110) CH3_15, 17
- START ENABLE RELAY - (4) → K17-GC 18WH → START RELAY (1010) CH5_06
- J1939 - (27) → K92(-) 18GN → START RELAY (1010) CH5_06
- J1939 + (28) → K92(+) 18YL → START RELAY (1010) CH5_06
- SHIFT CONTROL POWER - (25) → K92AE 18TN → EATON AUTOSHIFT 3 ULTRASHIFT SELECTOR (7905) CH11_12
- SHIFT CONTROL POWER + (31) → K92YB 18TN → EATON AUTOSHIFT 3 ULTRASHIFT SELECTOR (7905) CH11_12
- SHIFT CONTROL MANUAL NEUTRAL (16) → K92A 18TN → EATON AUTOSHIFT 3 ULTRASHIFT SELECTOR (7905) CH11_12
- SHIFT CONTROL COMMON NEUTRAL (17) → K92B 18TN → EATON AUTOSHIFT 3 ULTRASHIFT SELECTOR (7905) CH11_12
- START ENABLE LATCH (26) → K17C 18PK → START RELAY (1010) CH5_06
- START ENABLE RELAY + (32) → K17B 18PK → START RELAY (1010) CH5_04,06
- BATTERY - (GROUND) (36) → K11-GE 12WH → ENGINE LEFT SIDE GROUND

CHK	DATE	CHANGE	REV	REFERENCE	DRAWN	NAME
CNA1	13MAR08	DELETED REF CH8_11	C	61073L	U00K640	CIRCUIT DIAGRAM, 42/43/44/85/8600 & 73/74/7500
		FOR CKT K92B			59974G	
					20APR06	
						AE09056617
						016

Figure 209 Eaton Auto and Ultrashift Gen 3 Transmission W/ Cat and W/ ISM Engine

11.19. ALLISON TRANSMISSION 3/4000 GEN 4 WITH AUTO NEUTRAL, P. 17

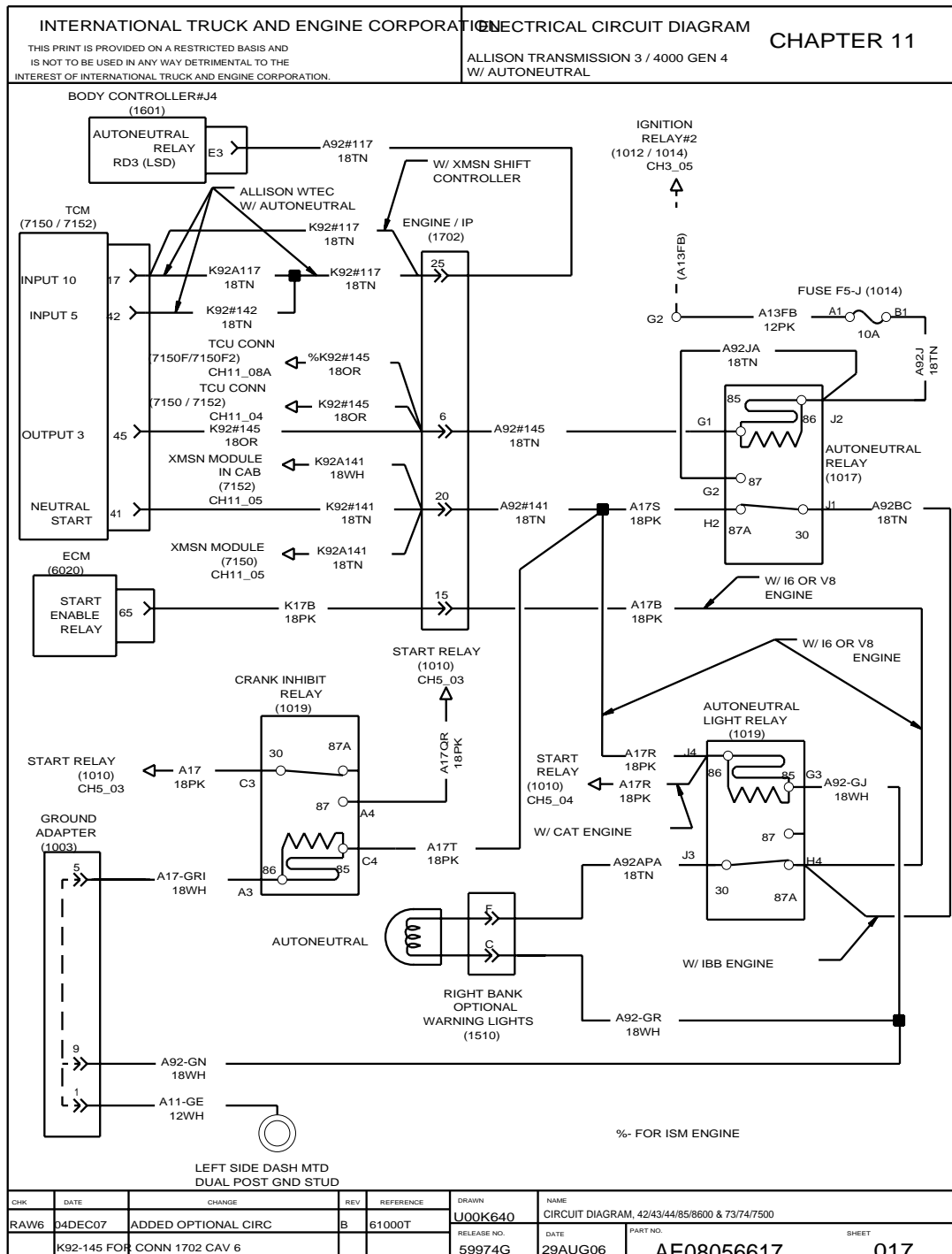


Figure 210 Allison Transmission 3/4000 Gen 4 With Auto Neutral

11.20. EATON ULTRASHIFT GEN 3 / MERITOR G — MANUAL TRANSMISSION, P. 18

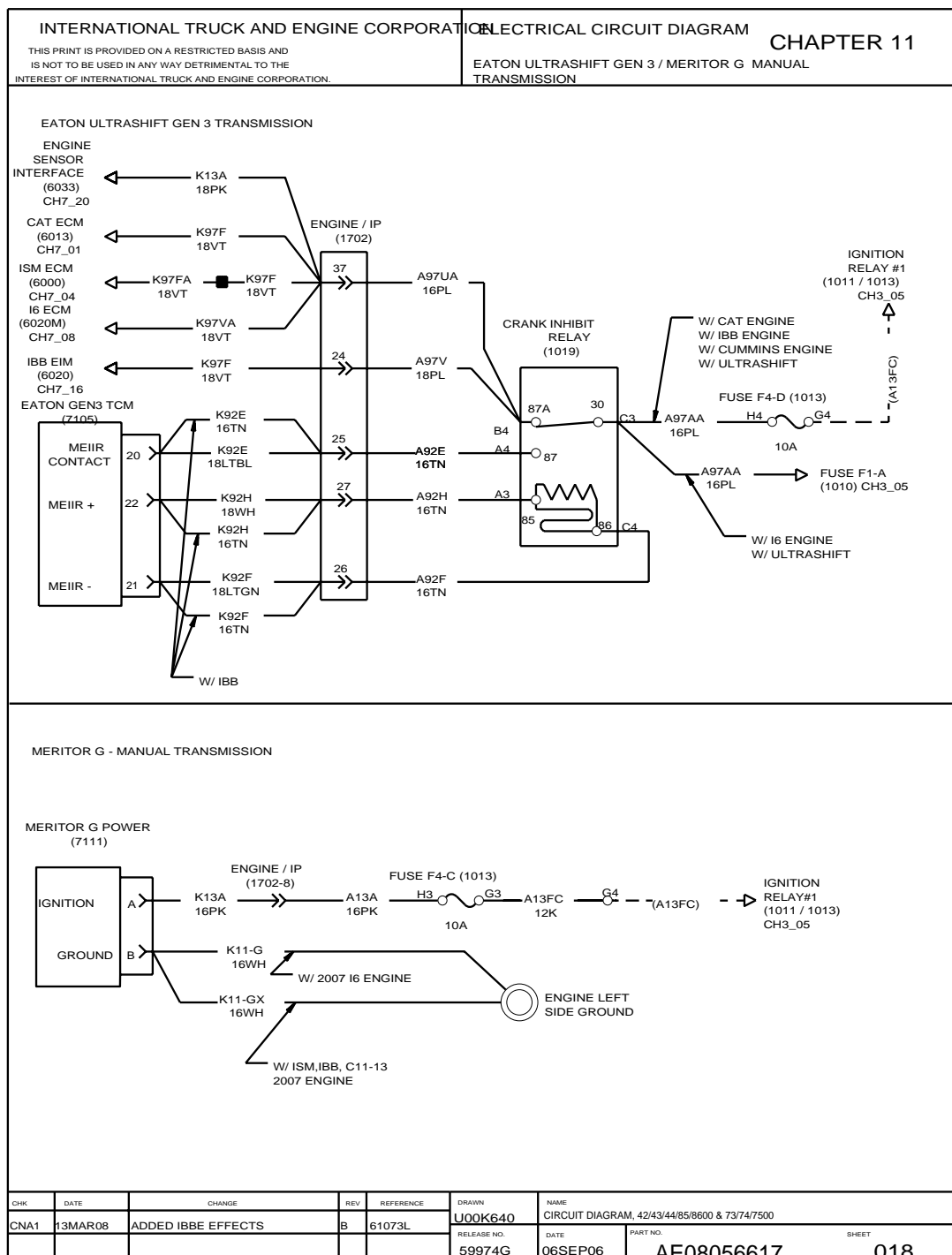
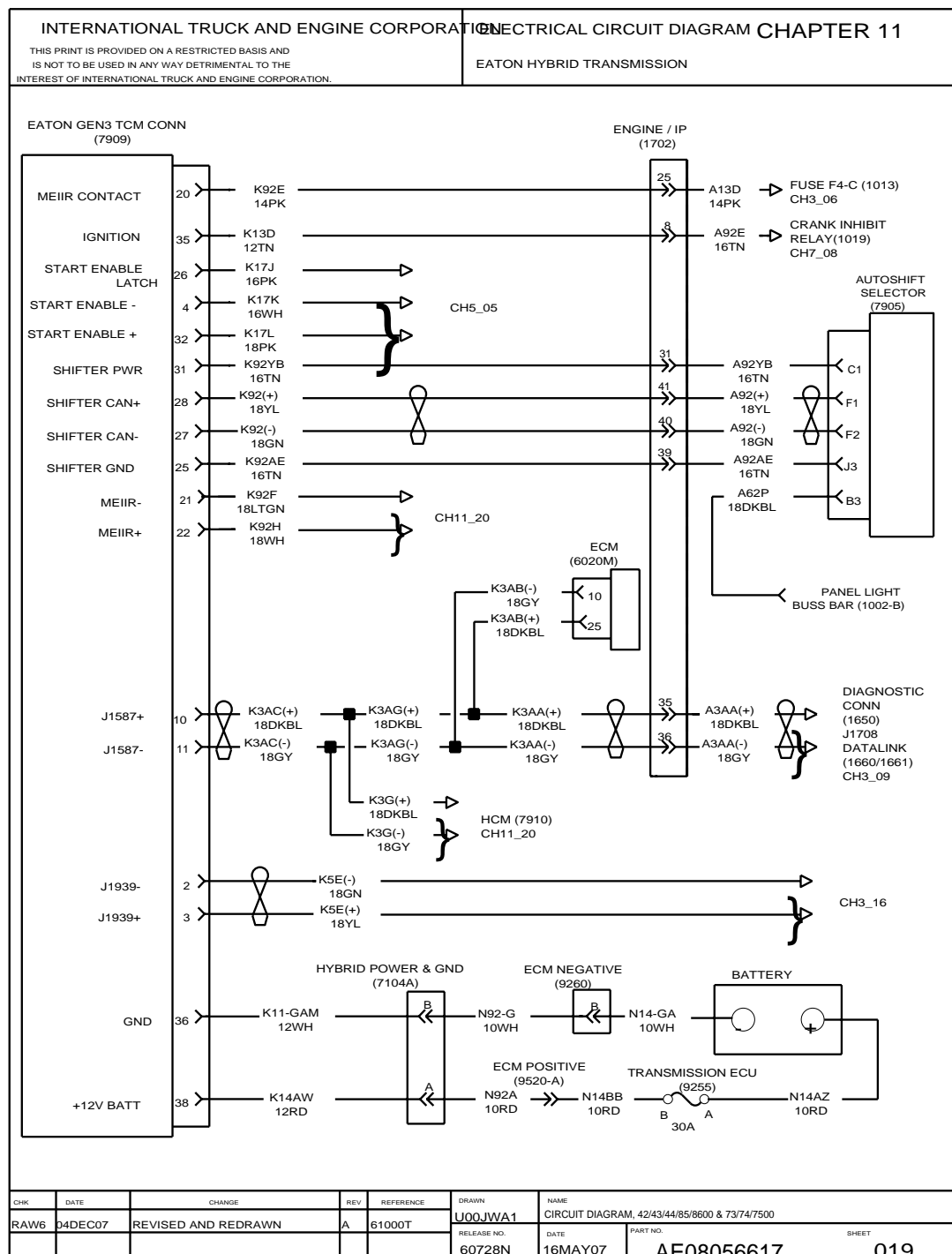


Figure 211 Eaton Ultrashift Gen 3 / Meritor G — Manual Transmission

11.21. EATON HYBRID TRANSMISSION, P. 19

Figure 212 Eaton Hybrid Transmission

11.22. EATON HYBRID TRANSMISSION, P. 20

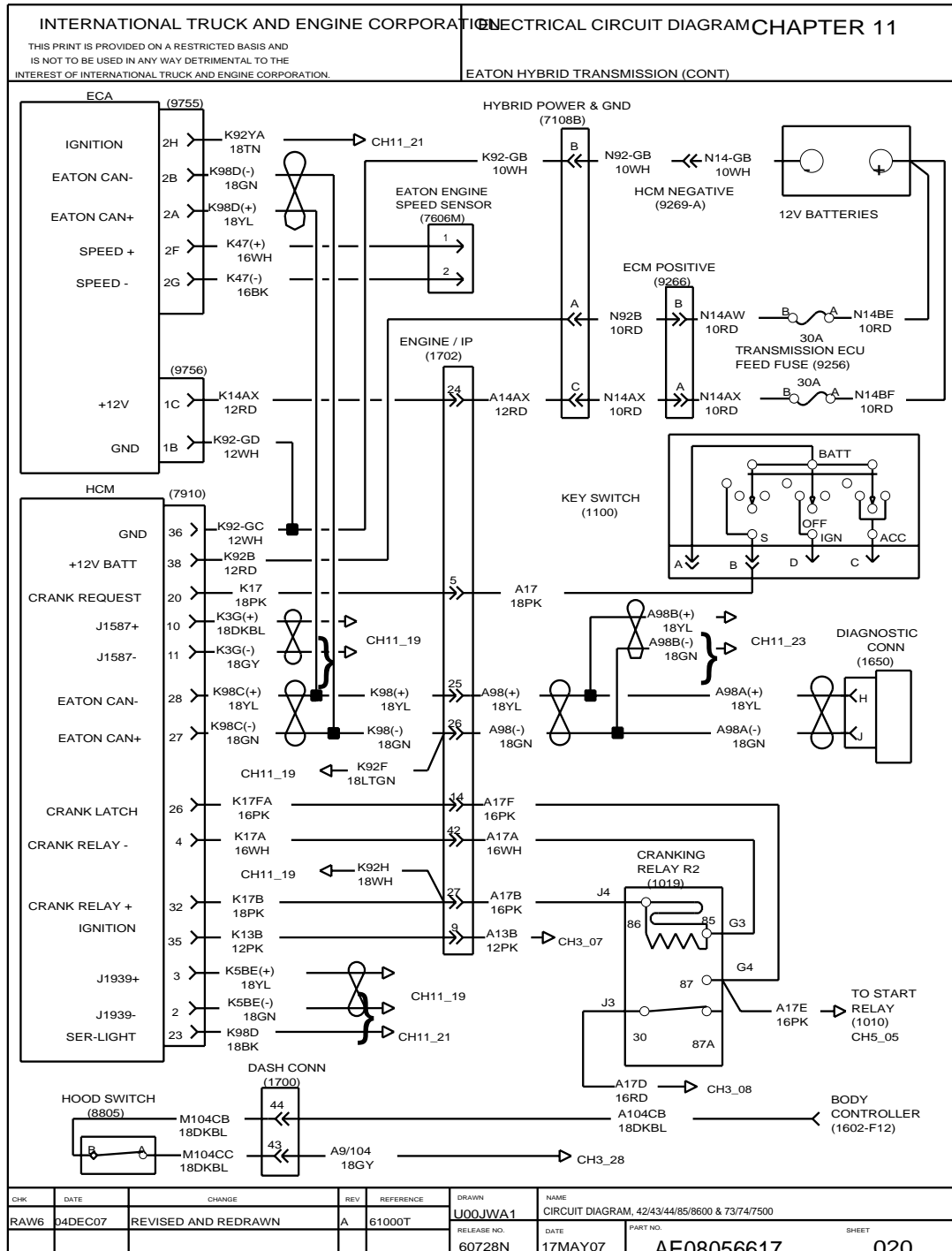


Figure 213 Eaton Hybrid Transmission

11.23. EATON HYBRID TRANSMISSION, P. 21

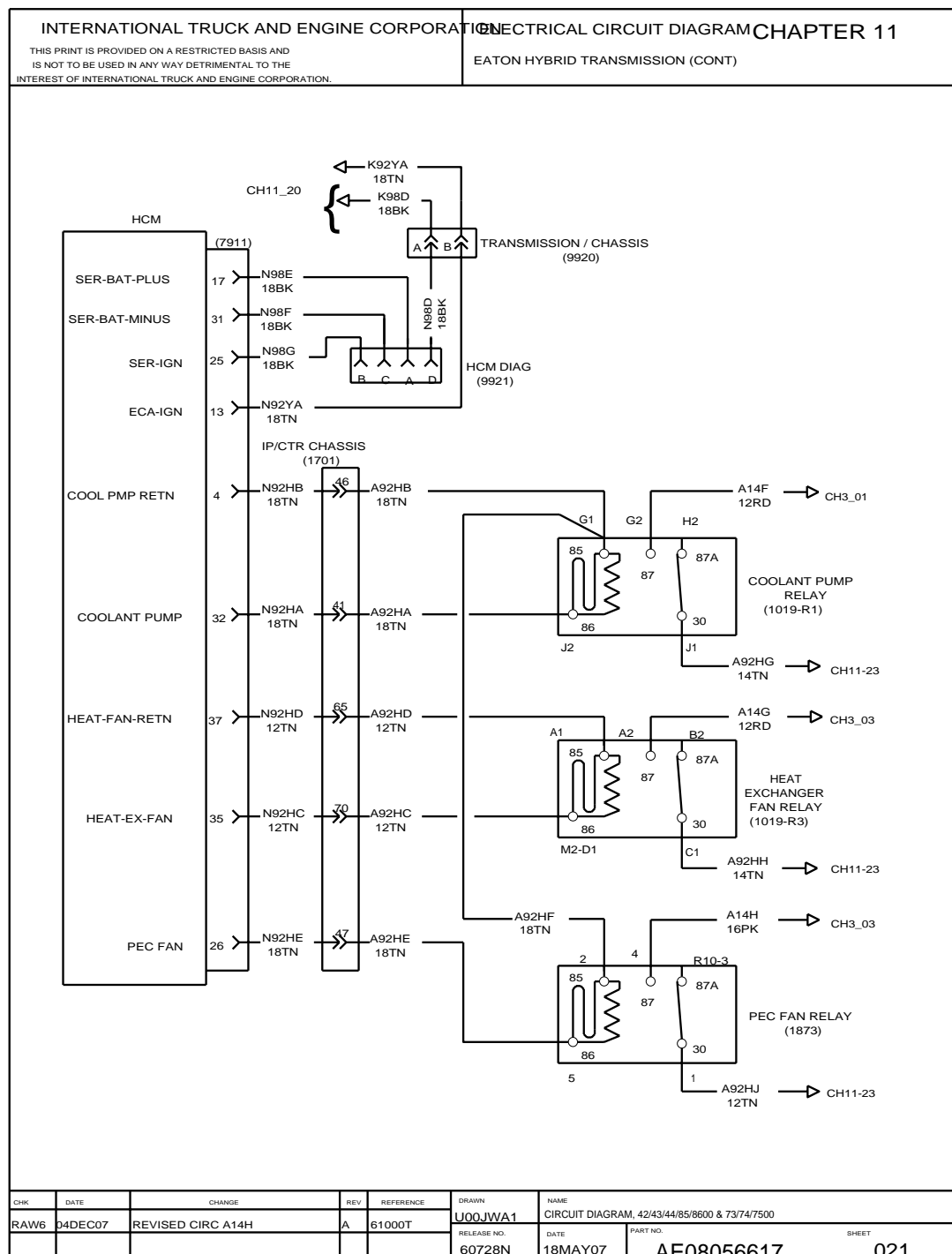


Figure 214 Eaton Hybrid Transmission

11.24. EATON HYBRID TRANSMISSION, P. 22

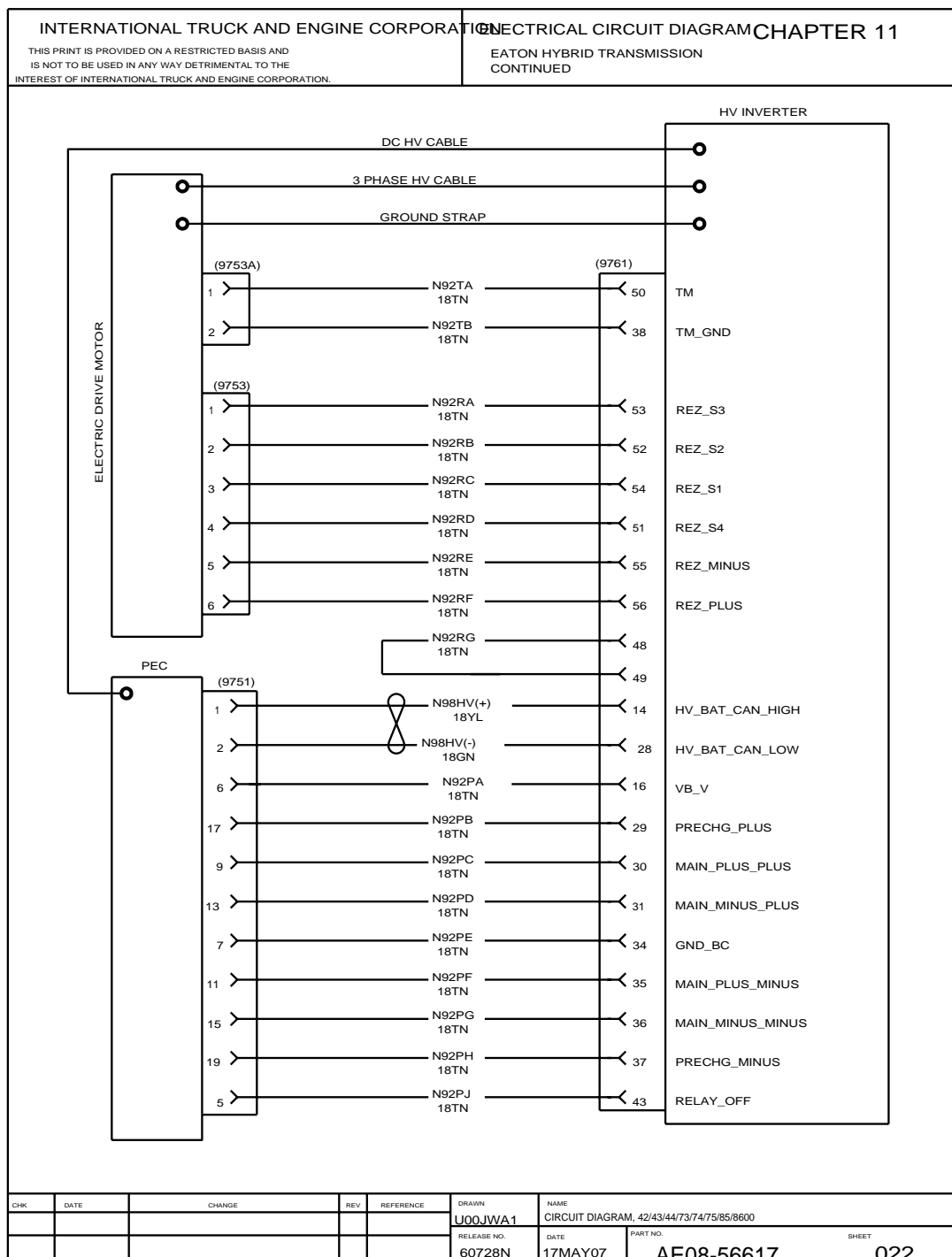
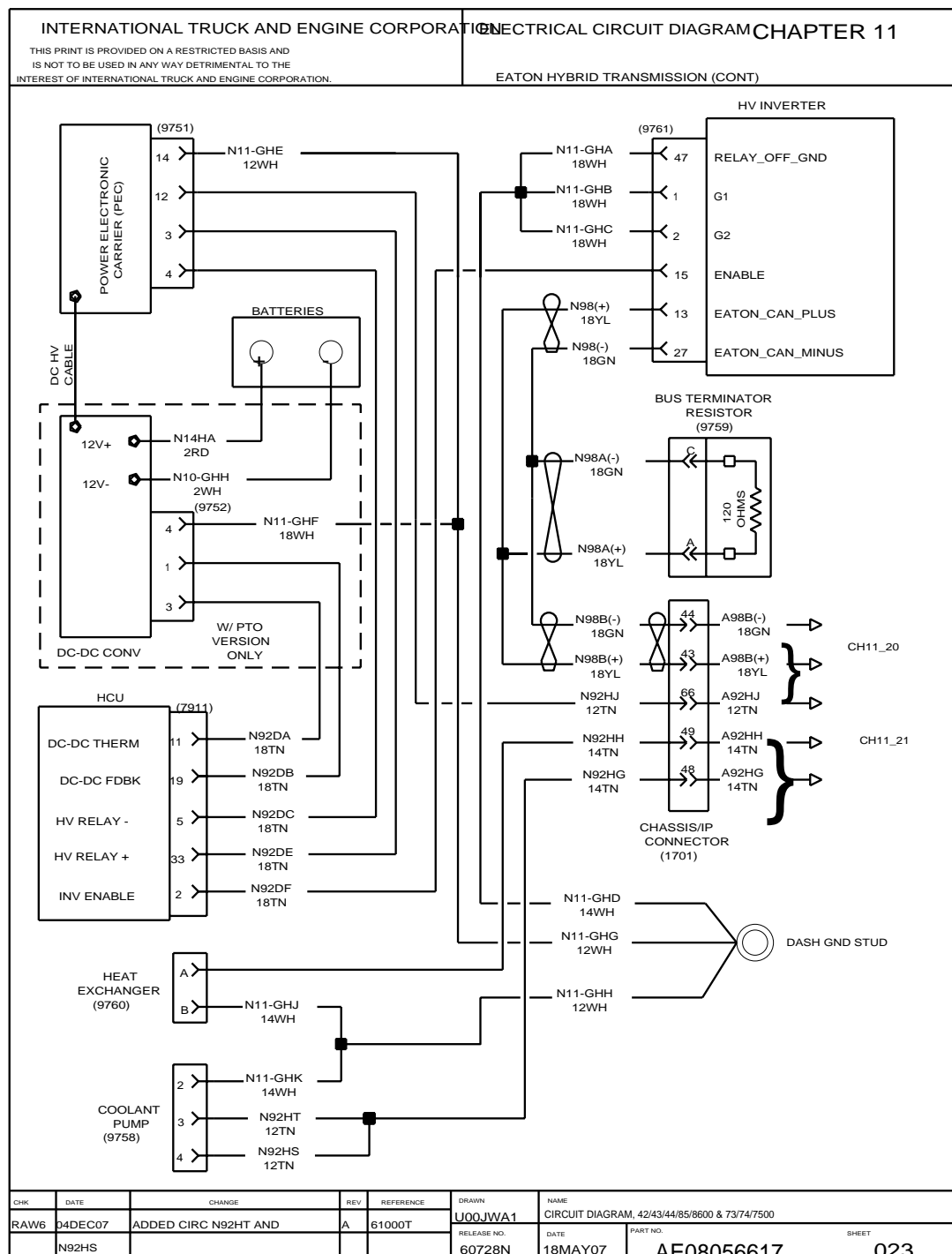


Figure 215 Eaton Hybrid Transmission

11.25. EATON HYBRID TRANSMISSION, P. 23

Figure 216 Eaton Hybrid Transmission

11.26. TRANSMISSION ALLISON MD (WTEC) WITH CAT ENGINE, P. 24

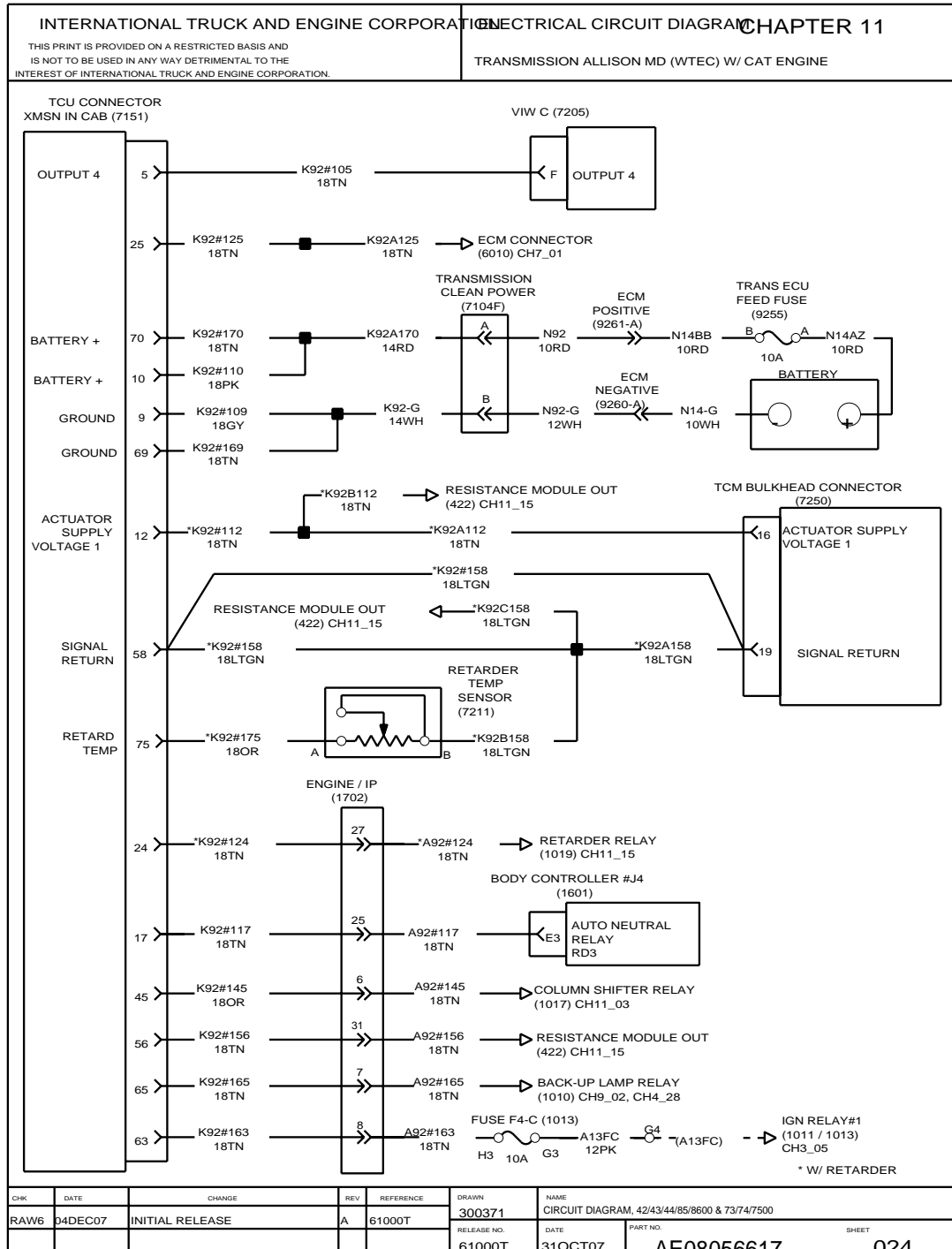


Figure 217 Transmission Allison MD (WTEC) with Cat Engine

11.27. FREEDOMLINE TRANSMISSION WITH CAT AND ISM ENGINE, P. 25

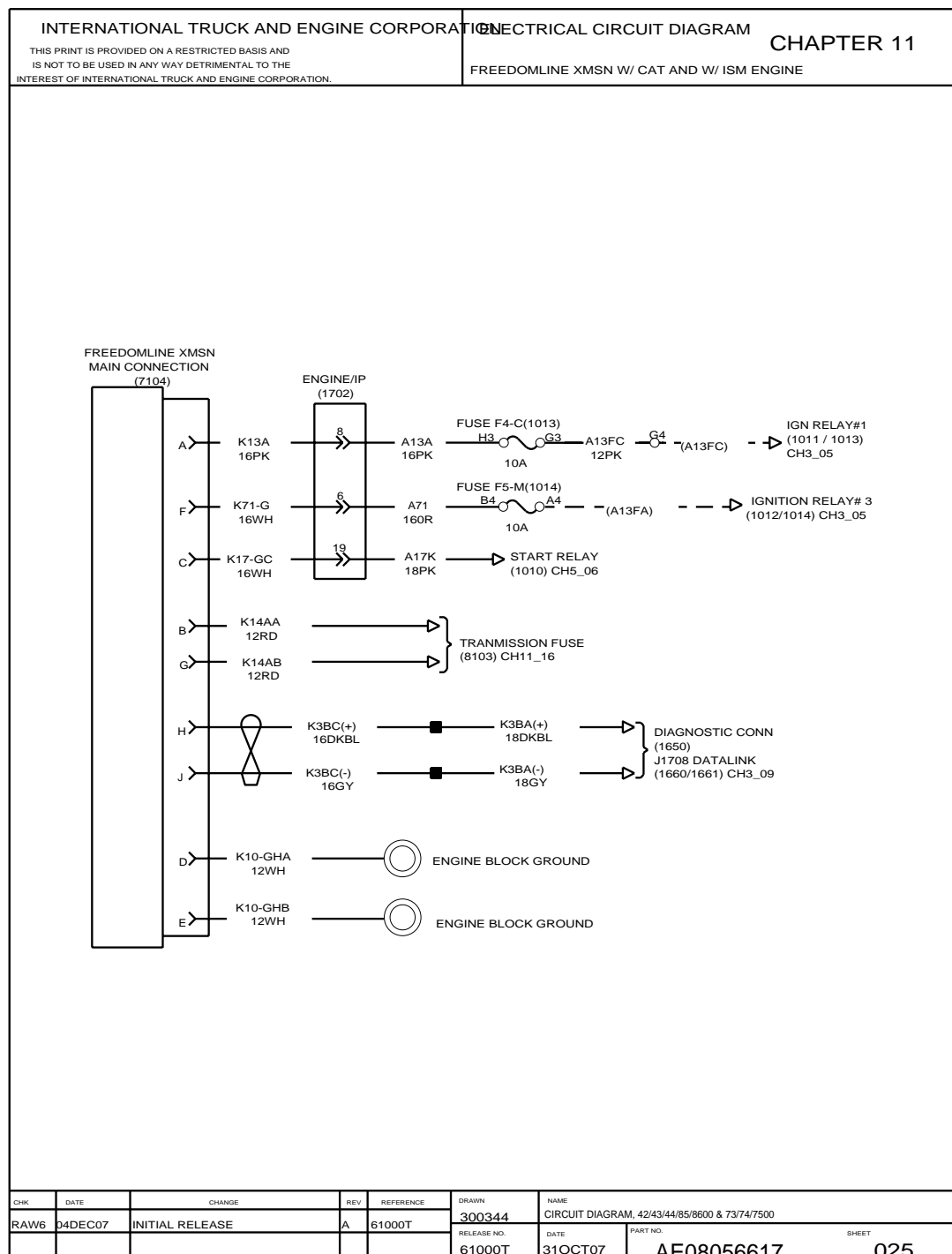


Figure 218 Freedomline Transmission with Cat and ISM Engine

11.28. EATON AUTO AND ULTRASHIFT GEN 3 TRANSMISSION WITH IBB ENGINE, P. 26

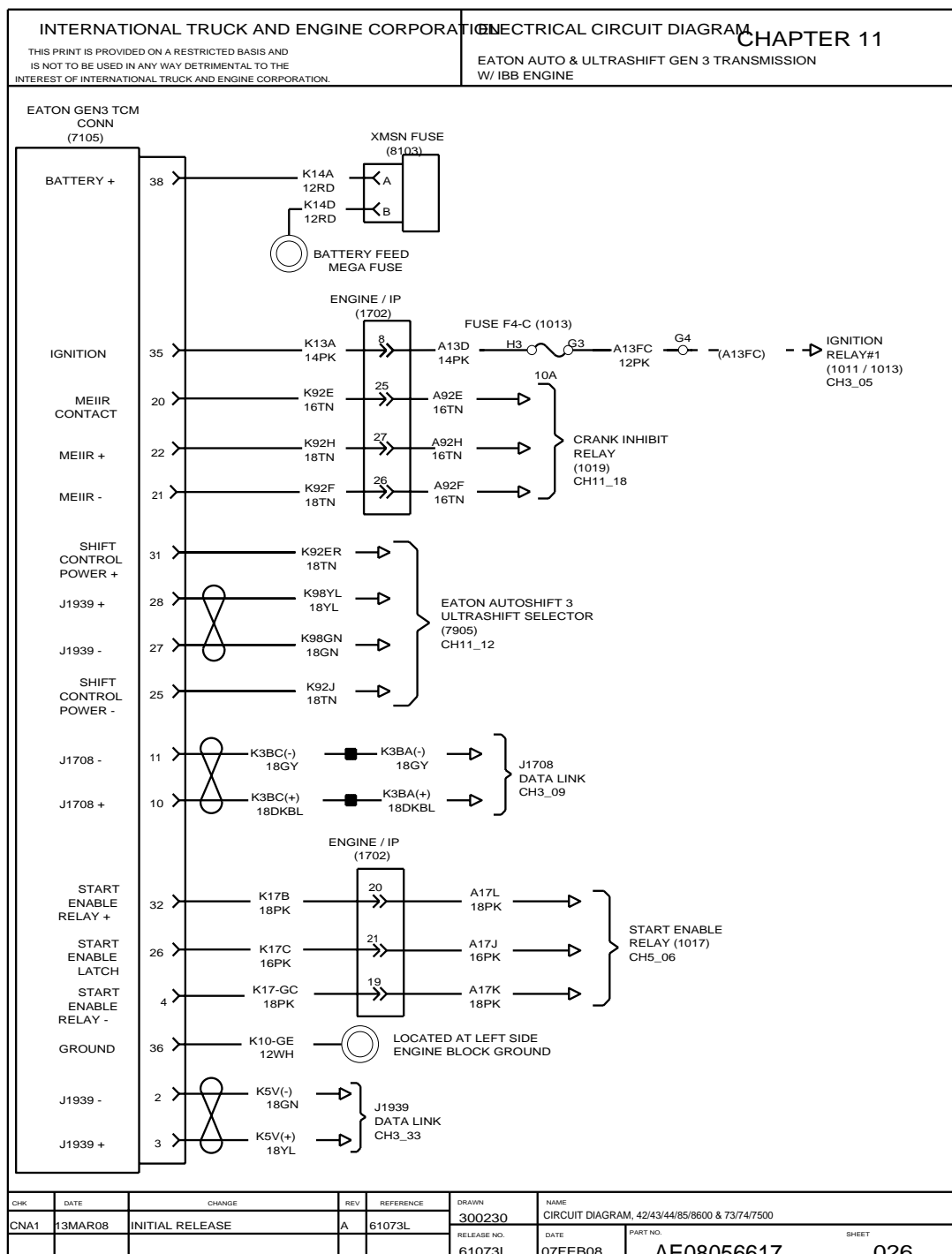


Figure 219 Eaton Auto and Ultrashift Gen 3 Transmission with IBB Engine

11.29. TRANSMISSION ALLISON WITH IBB ENGINE, P. 27

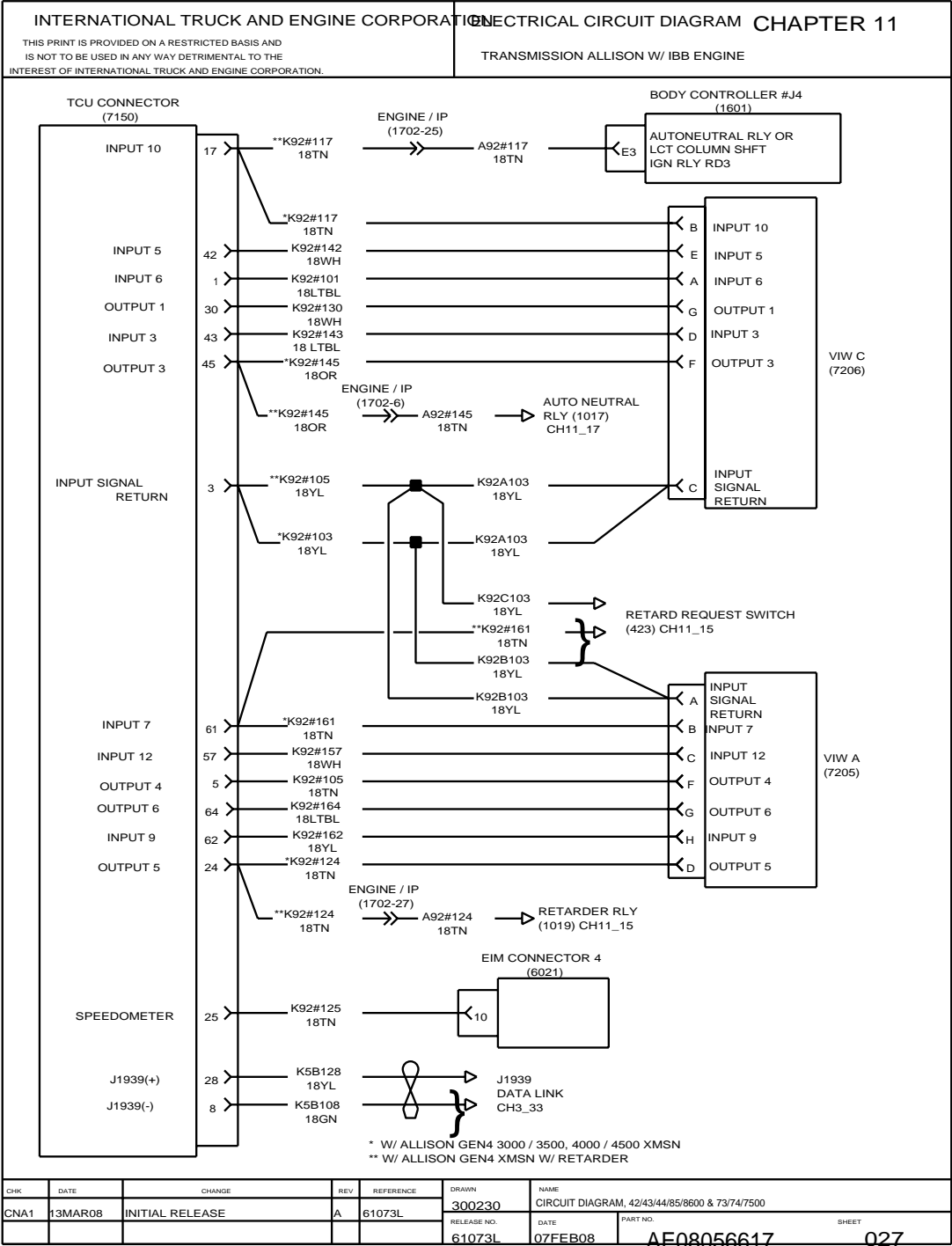


Figure 220 Transmission Allison with IBB Engine

11.30. TRANSMISSION ALLISON WITH IBB ENGINE, P. 28

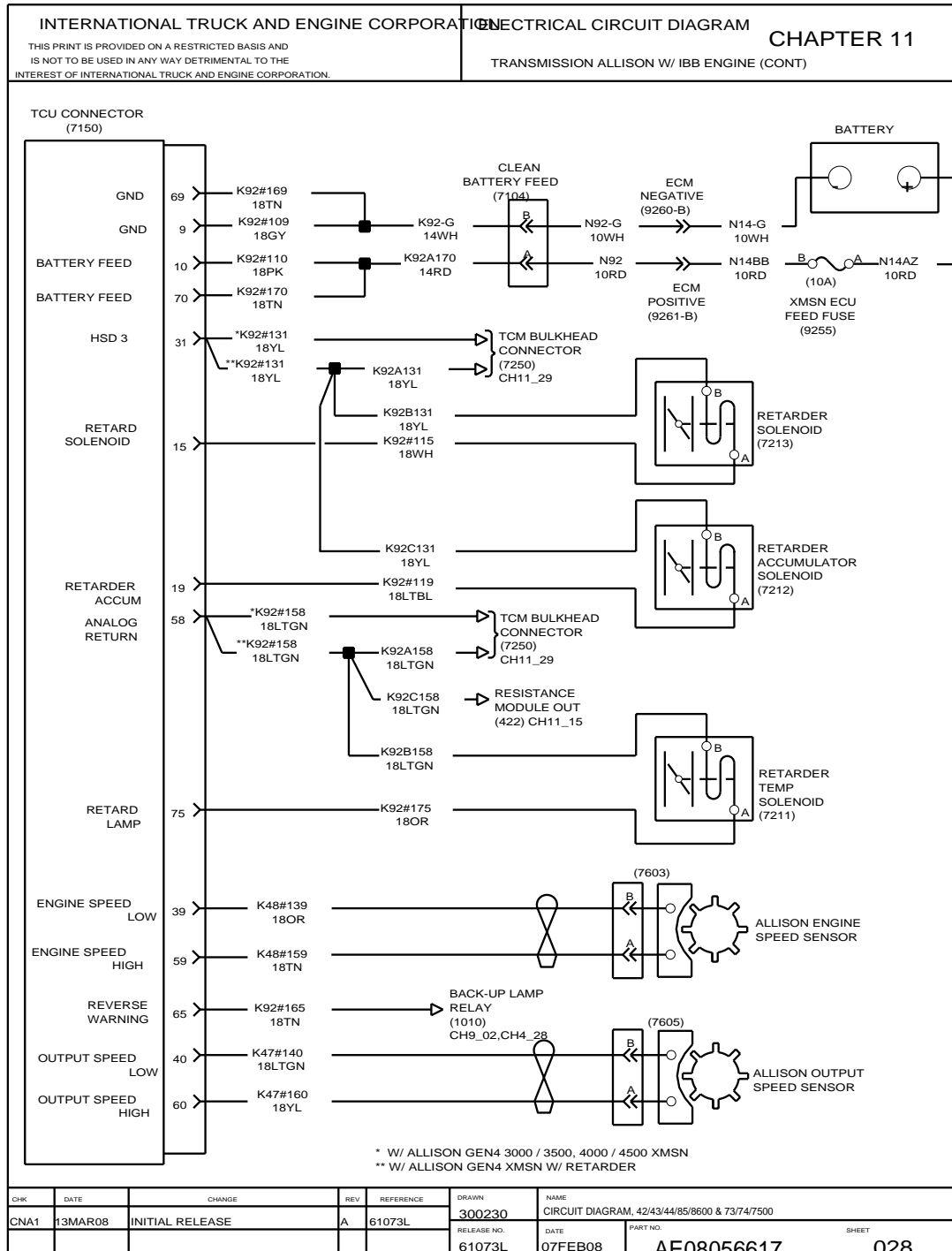


Figure 221 Transmission Allison with IBB Engine

11.31. TRANSMISSION ALLISON WITH IBB ENGINE, P. 29

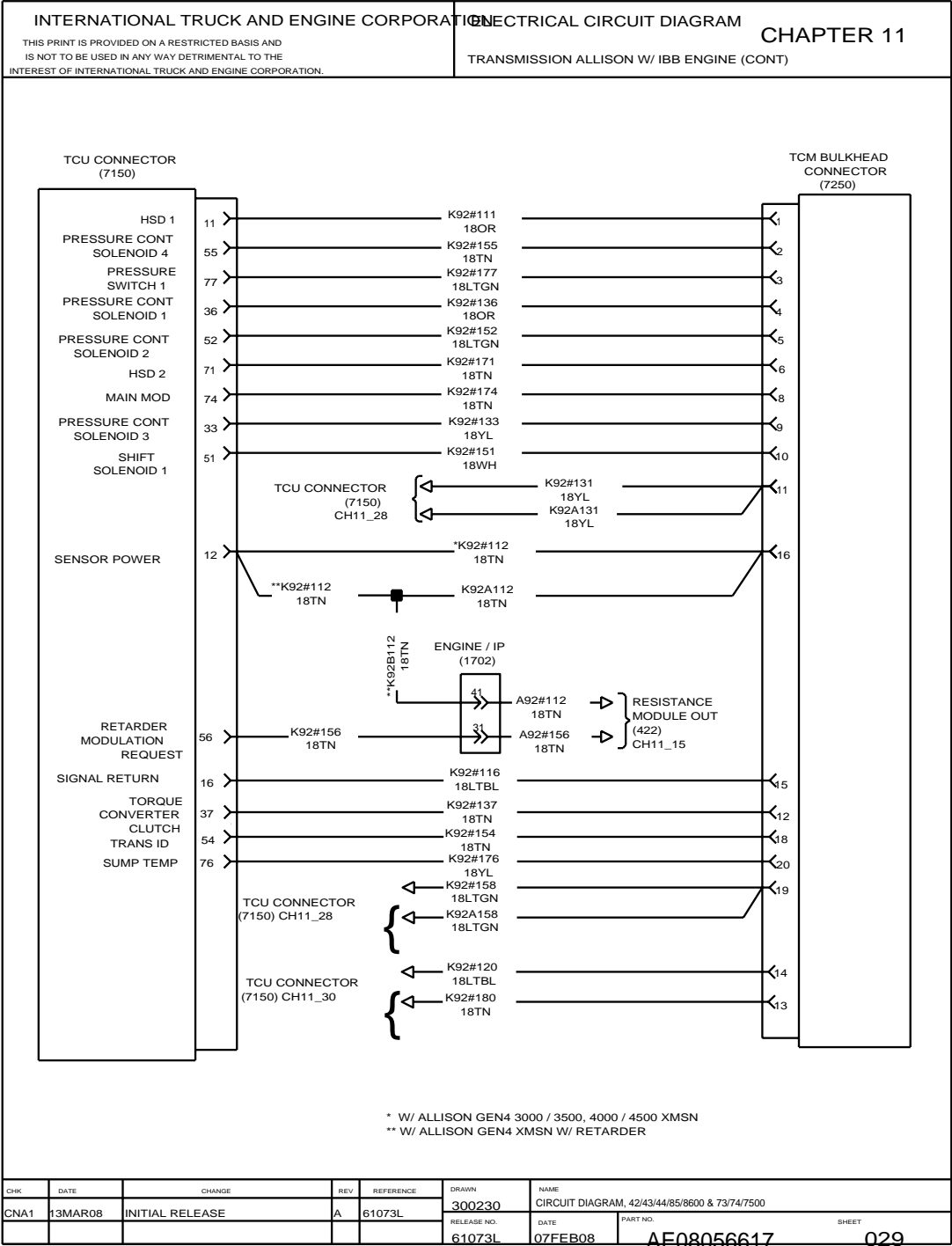


Figure 222 Transmission Allison with IBB Engine

11.32. TRANSMISSION ALLISON WITH IBB ENGINE, P. 30

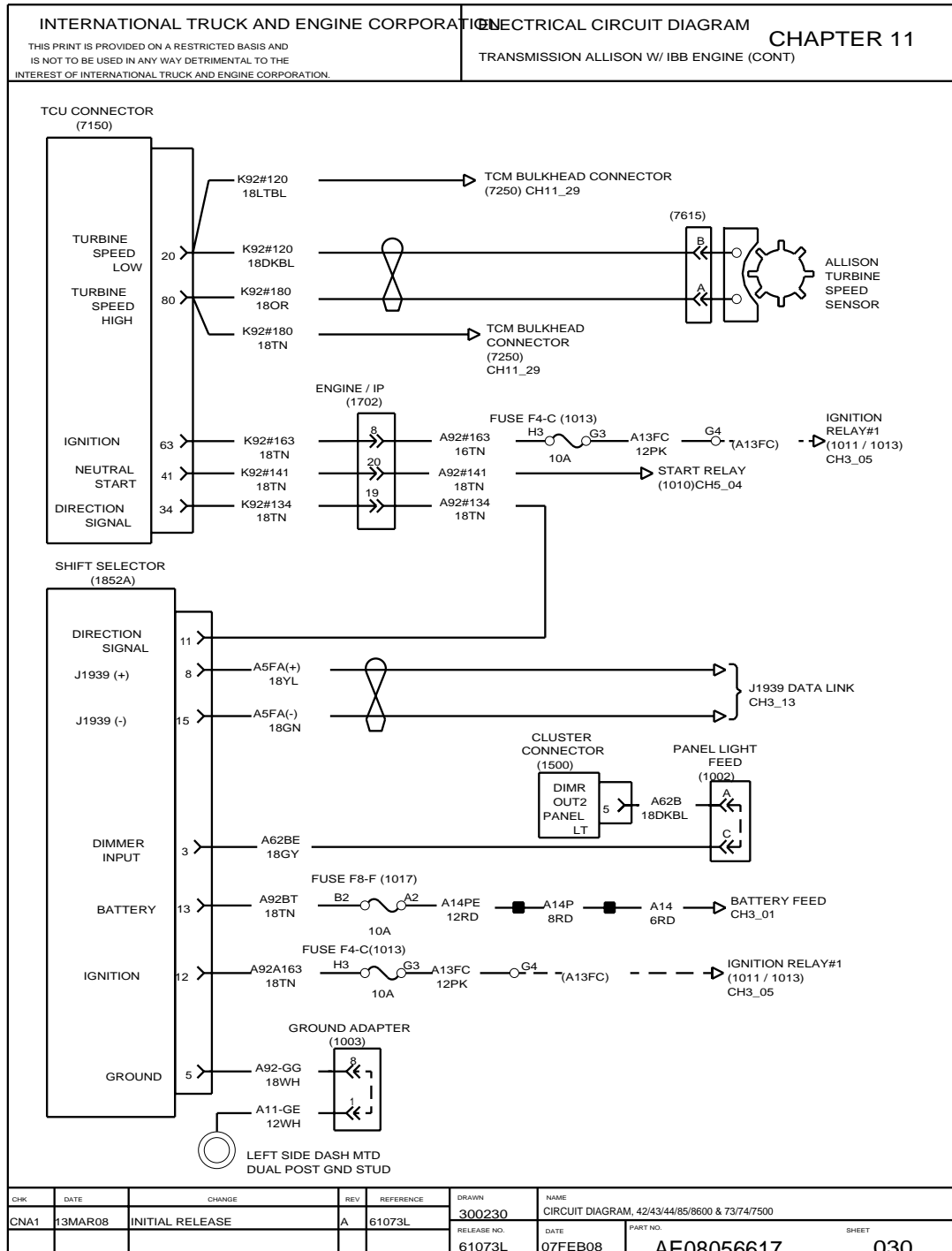


Figure 223 Transmission Allison with IBB Engine

12. AIR CONDITIONING (CHAPTER 12)

12.1. AIR CONDITIONING, P. 1

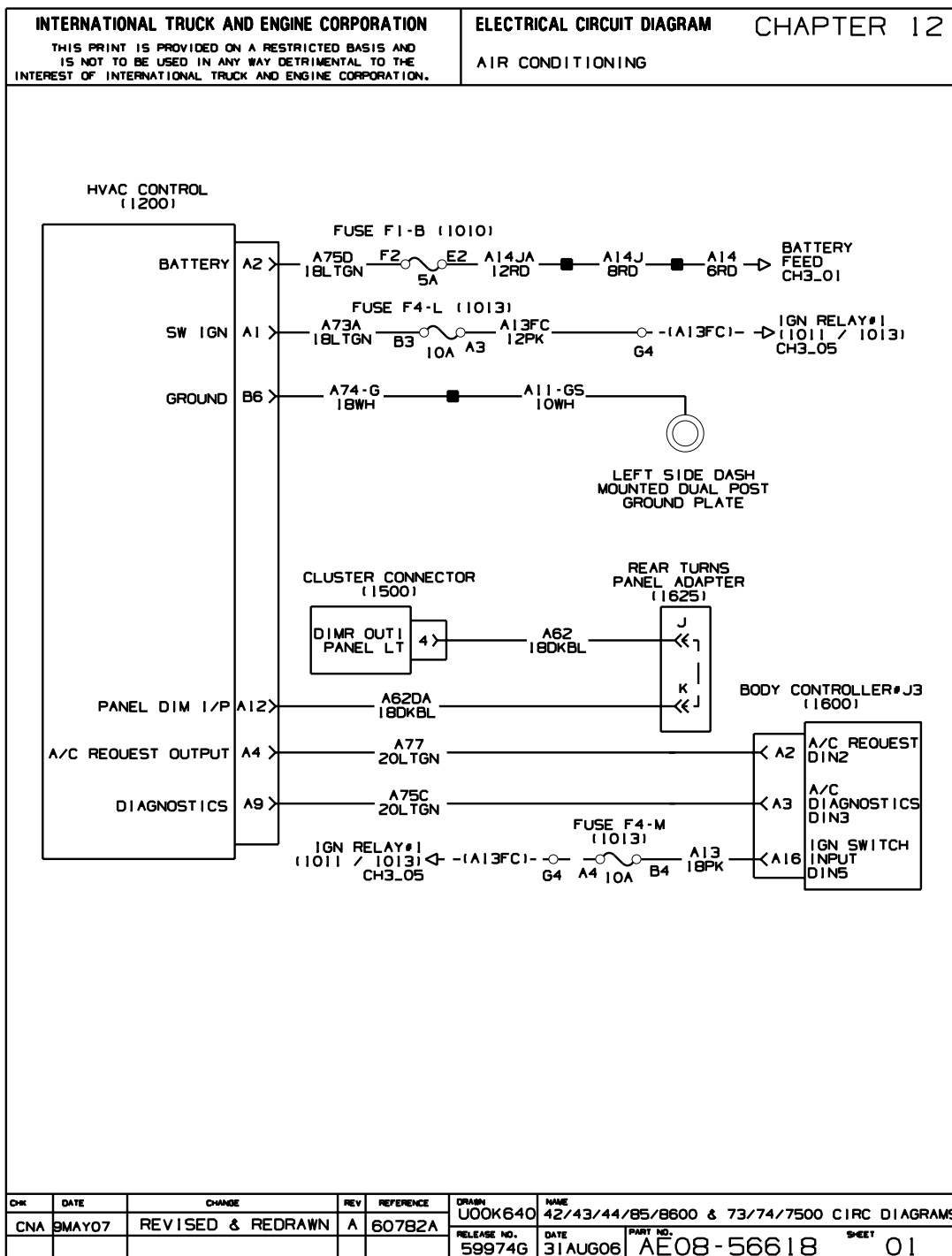


Figure 224 Air Conditioning

12.2. AIR CONDITIONING, P. 2

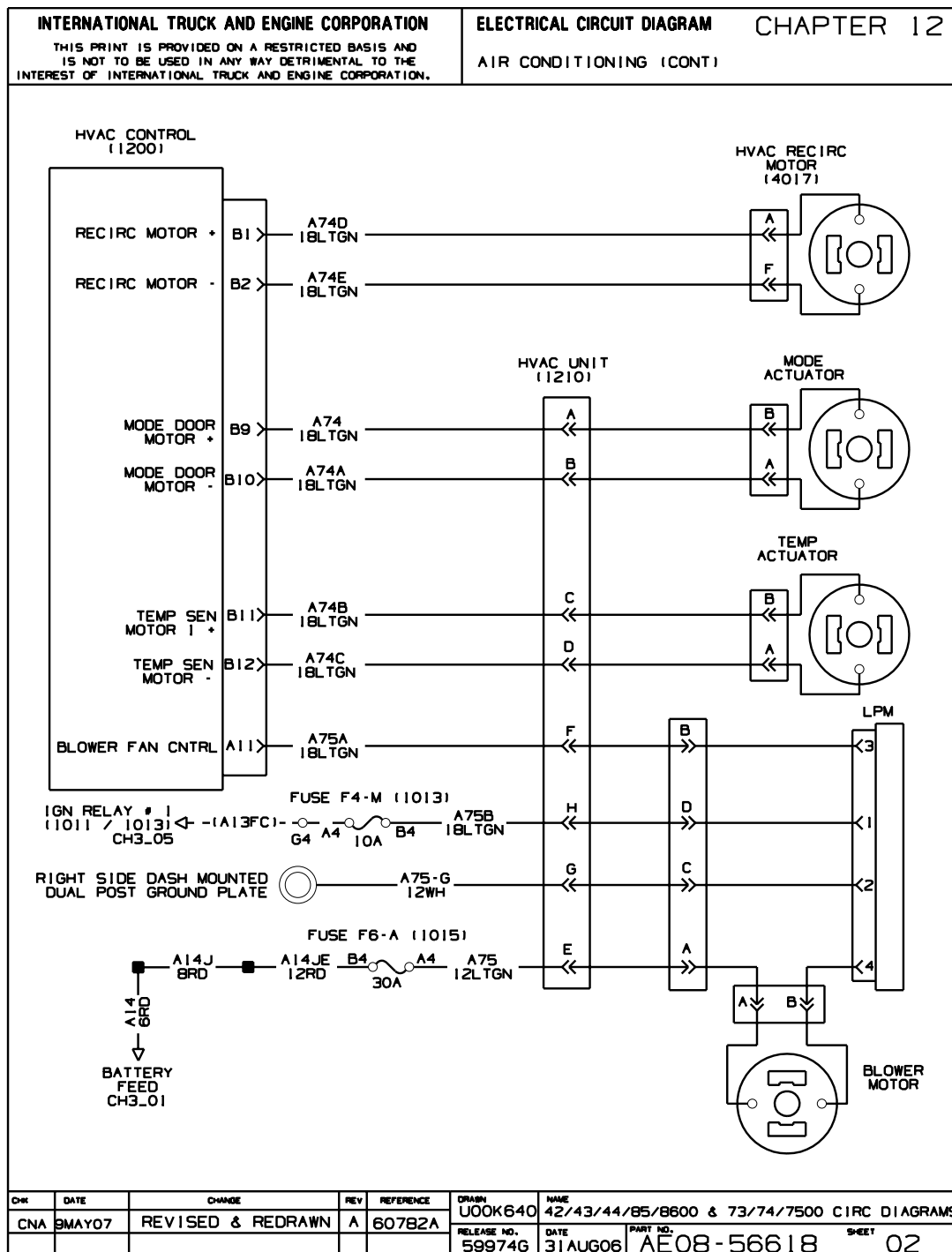


Figure 225 Air Conditioning (Cont.)

12.3. HVAC SYSTEM, P. 3

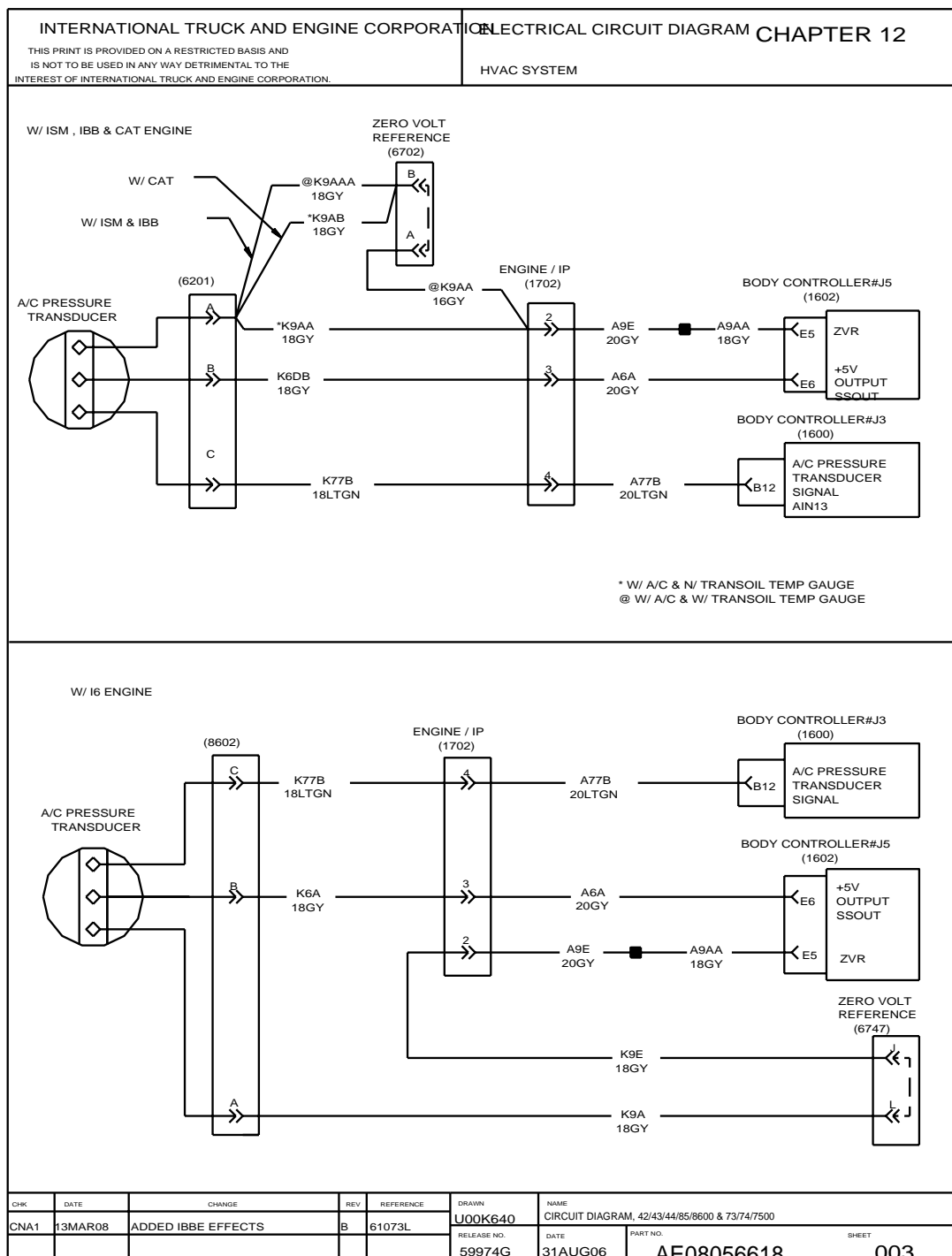


Figure 226 HVAC System

12.4. HVAC SYSTEM, P. 4

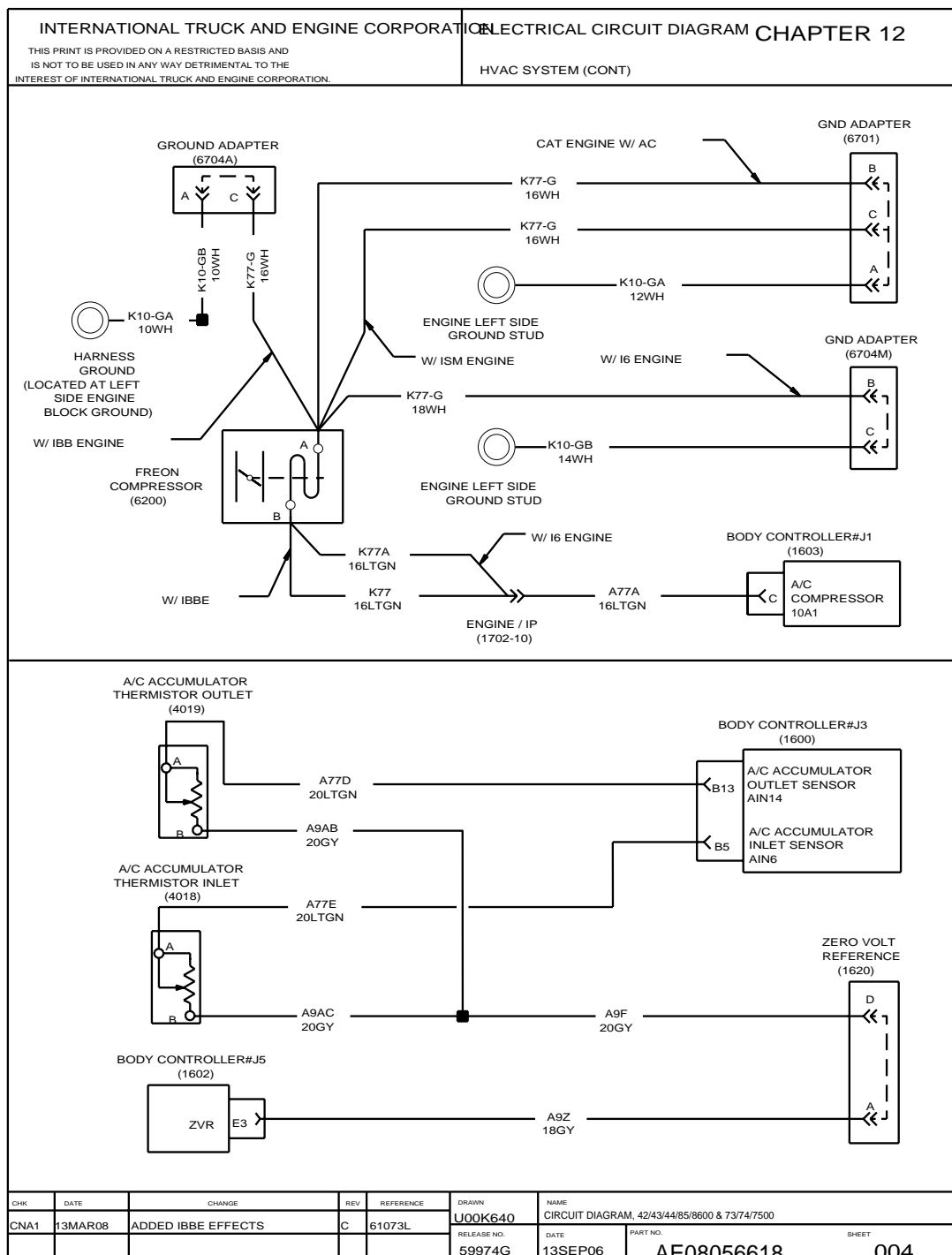


Figure 227 HVAC System (Cont.)

12.5. HVAC SYSTEM, P. 5

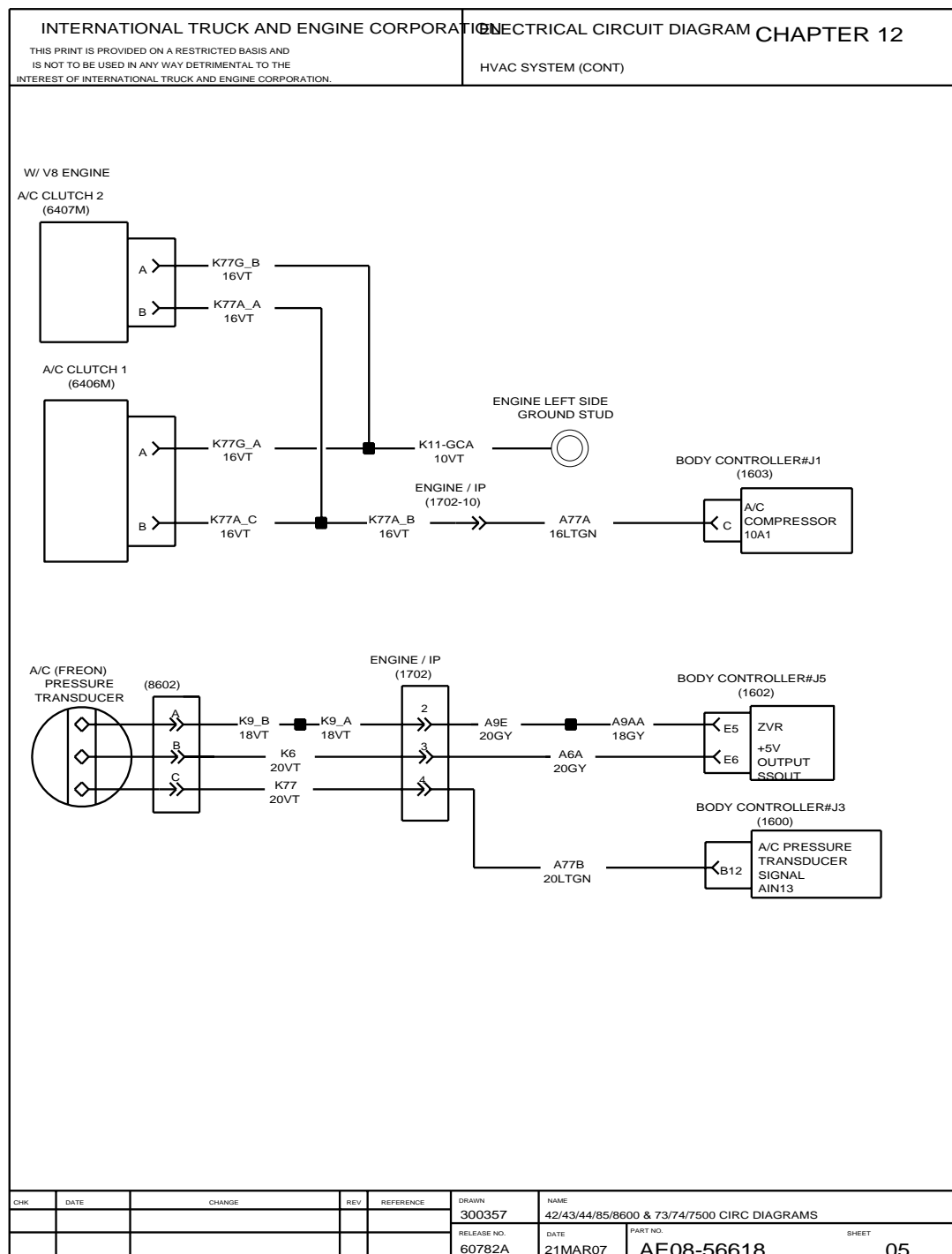


Figure 228 HVAC System (Cont.)

12.6. AUTOTHERM SYSTEM, P. 6

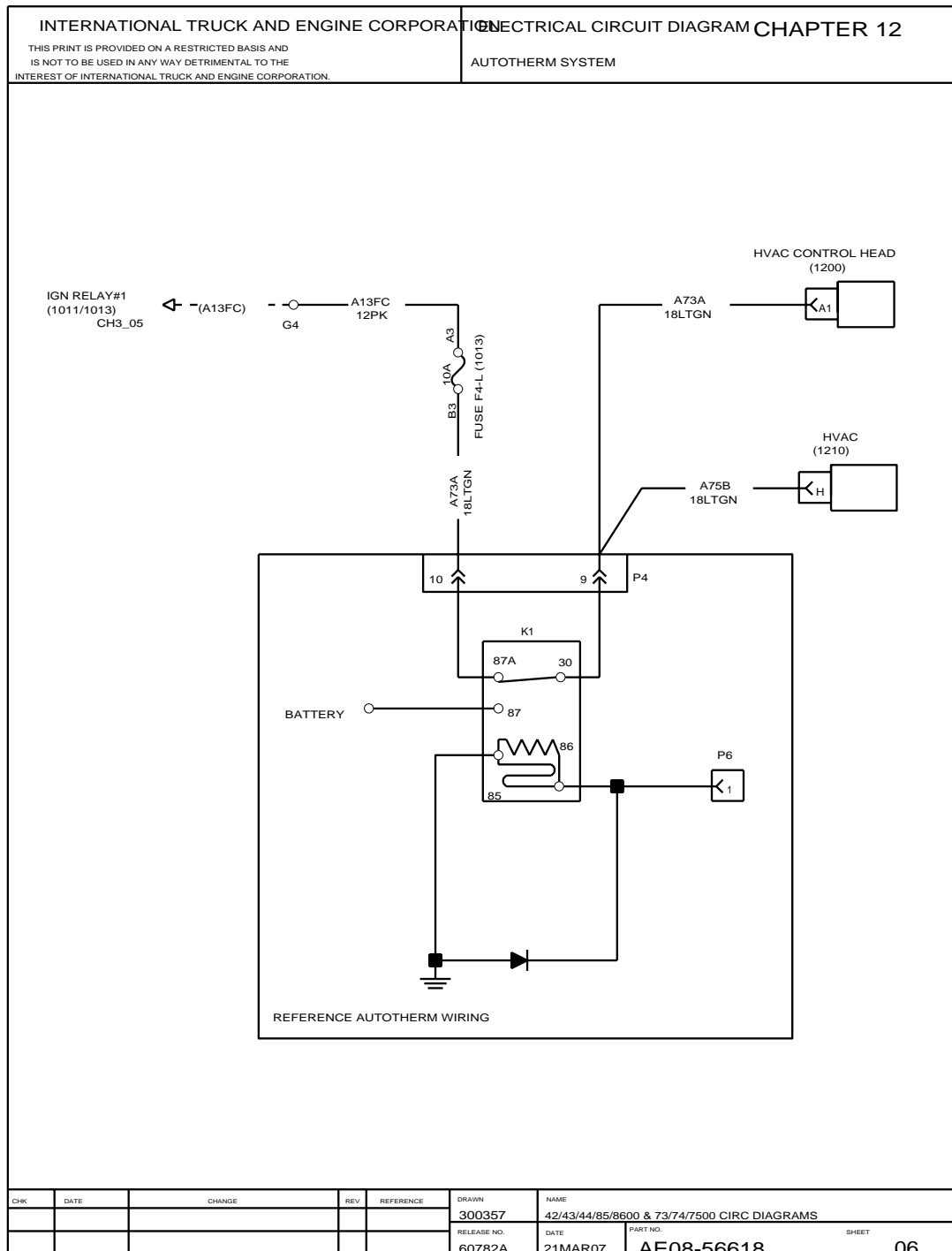


Figure 229 Autotherm System