# SERVICE MANUAL SECTION

# 3300 Model From March, 2004 to December, 2006 — ELECTRICAL CIRCUIT DIAGRAMS

**Model: 3300**
**Start Date: 03/01/2004 End Date: 12/31/2006**

**S08299**

**01/30/2007**

# Table of Contents

# 1. INSTRUCTIONS AND CHARTS (CHAPTER 1)

## 1.1. CIRCUIT NUMBER IDENTIFICATION CHART, P. 1

**INTERNATIONAL TRUCK AND ENGINE CORPORATION**

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

**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION

PREFIX DESIGNATIONS

| PREFIX | LOCATION |
|---|---|
| A | CAB-INSTRUMENT PANEL |
| K | ENGINE/TRANSMISSION |
| L | DRIVE TRAIN DATA LINK/FAN SOLENOID |
| M | HORN |
| N | CHASSIS, FRONT SECTION |
| R | CHASSIS, REAR SECTION |
| U | HOOD HARNESS |

CIRCUIT NUMBER AND IDENTIFICATIONS

| CIRCUIT NUMBER | COLOR | DESCRIPTION |
|---|---|---|
| 1 | LTBL | ALTERNATOR-FIELD |
| 2 | RD | ALTERNATOR-CHARGE |
| 3 | DKBL | J1708 DATALINK, SWITCH DATA LINK (+) |
| | GY | J1708 DATALINK, SWITCH DATA LINK (-) |
| 4 | | |
| 5 | YL | DRIVE TRAIN J1939 DATA LINK (+) |
| | GN | DRIVE TRAIN J1939 DATA LINK (-) |
| 6 | GY | LOW VOLTAGE ELECTRONIC FEED ( LESS THAN 9 VOLTS ) |
| 7 | RD | ALTERNATOR-RESISTANCE |
| 8 | | |

| CHK | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 PART NO. AE08-54425 SHEET 01 |

**Figure 1 Circuit Number Identification Chart**

## 1.2. CIRCUIT NUMBER IDENTIFICATION CHART, P. 2

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)

CIRCUIT NUMBER AND IDENTIFICATION (CONT.)

| CIRCUIT NUMBER | COLOR | DESCRIPTION |
|---|---|---|
| 9 | GY | ZERO VOLT REFERENCE (ZVR) |
| 10 | WH | CHASSIS/ENGINE GROUND |
| 11 | WH | CAB GROUND |
| 12 | LTBL | ACCESSORY FEED |
| 13 | PK BK | IGNITION FEED IGNITION FEED(BODY BUILDER CONNECTOR) |
| 14 | RD | BATTERY FEED |
| 15 | RD | KEY SWITCH FEED |
| 16 | | |
| 17 | PK | STARTER CONTROL |
| 18 | PK | GLOW PLUG/PRE-HEATER |
| 19 | GY | ENGINE SHUTDOWN |
| 20 | LTGN | REMOTE POWER MODULE |
| 21 | TN | COLD START CONTROLS (ETHER) |
| 22 | | |
| 23 | TN | ENGINE FAN/SHUTTERS |
| 24 | GY | ENGINE EXHAUST BRAKE |
| 25 | TN | PYROMETER |
| 26 | TN | AMMETER |
| 27 | TN | VOLTMETER |
| 28 | TN | INSTRUMENTS & GAUGES |
| 29 | TN | ENGINE WATER TEMPERATURE |
| 30 | TN | ENGINE OIL TEMPERATURE |
| 31 | TN | TRANSMISSION OIL TEMPERATURE |
| 32 | TN | AXLE OIL TEMPERATURE |

| CHK | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 PART NO. AE08-54425 SHEET 02 |

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

## 1.3. CIRCUIT NUMBER IDENTIFICATION CHART, P. 3

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)

CIRCUIT NUMBER AND IDENTIFICATION (CONT.)

| CIRCUIT NUMBER | COLOR | DESCRIPTION |
|---|---|---|
| 33 | TN | ENGINE OIL LEVEL |
| 34 | TN | COOLANT LEVEL |
| 35 | TN | ENGINE OIL PRESSURE |
| 36 | TN | FUEL LEVEL |
| 37 | TN | FUEL PUMP |
| 38 | | |
| 39 | GY | AIR DRYER HEATER |
| 40 | GY | LOW AIR PRESSURE WARNING |
| 41 | TN | AIR TEMPERATURE |
| 42 | GY | FRONT AXLE ENGAGED |
| 43 | GY | POWER DIVIDER LOCK(PDL) WARNING |
| 44 | GY | PARK BRAKE WARNING |
| 45 | LTGN | ANTI-THEFT WARNING |
| 46 | GY | POWER TAKE -OFF WARNING |
| 47 | GY | SPEEDOMETER |
| 48 | GY | TACHOMETER |
| 49 | GY | DIFFERENTIAL LOCK WARNING |
| 50 | YL | LIGHT SWITCH FEED |
| 51 | YL | DIMMER SWITCH FEED |
| 52 | YL | HEADLIGHT HI-BEAM |
| 53 | YL | HEADLIGHT LO-BEAM |
| 54 | BN | PARKING/MARKER LIGHTS |
| 55 | OR | TURN SIGNAL-FEED |
| 56 | OR | TURN SIGNAL LIGHTS-LEFT |
| | YL | TURN SIGNAL LIGHTS-LEFT (BODY BUILDER CONNECTION) |
| 57 | OR | TURN SIGNAL LIGHTS-RIGHT |
| | LTGN | TURN SIGNAL LIGHTS-RIGHT(BODY BUILDER CONNECTION) |

| CH# | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE + CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 / PART NO. AE08-54425 / SHEET 03 |

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

## 1.4. CIRCUIT NUMBER IDENTIFICATION CHART, P. 4

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATION AND LOCATION (CONT.)

CIRCUIT NUMBER AND IDENTIFICATION (CONT.)

| CIRCUIT NUMBER | COLOR | DESCRIPTION |
|---|---|---|
| 58 | BN | CLEARANCE IDENTIFICATION LIGHTS |
| 59 | GY | SOLENOID |
| 60 | OR | HAZARD LIGHTS |
| 61 | GY | AIR SUSPENSION |
| 62 | DKBL | PANEL LIGHTS |
| 63 | DKBL | COURTESY/DOME LIGHTS |
| 64 | YL | FOG/DRIVING LIGHTS |
| 65 | OR | CAB REAR FLOOD LIGHTS |
| 66 | YL | DAY TIME RUNNING LIGHTS |
| 67 | | |
| 68 | BN | TAIL LIGHTS |
| 69 | BN | LICENSE PLATE LIGHT |
| 70 | OR | STOP LIGHTS |
| | | STOP LIGHTS(BODY BUILDER CONNECTION) |
| 71 | OR | BACK-UP LIGHTS |
| | | BACK-UP LIGHTS(BODY BUILDER CONNECTION) |
| 72 | OR | TRAILER AUXILIARY FEED -BATTERY |
| 73 | | |
| 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 |

| CH# | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 PART NO. AE08-54425 SHEET 04 |

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

## 1.5. CIRCUIT NUMBER IDENTIFICATION CHART, P. 5

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ELECTRICAL CIRCUIT DIAGRAM CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATIOIN AND LOCATION (CONT.)

CIRCUIT NUMBER AND IDENTIFICATIONS (CONT.)

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

| CHK | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 / PART NO. AE08-54425 / SHEET 05 |

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

## 1.6. CIRCUIT DIAGRAM INSTRUCTIONS, P. 6

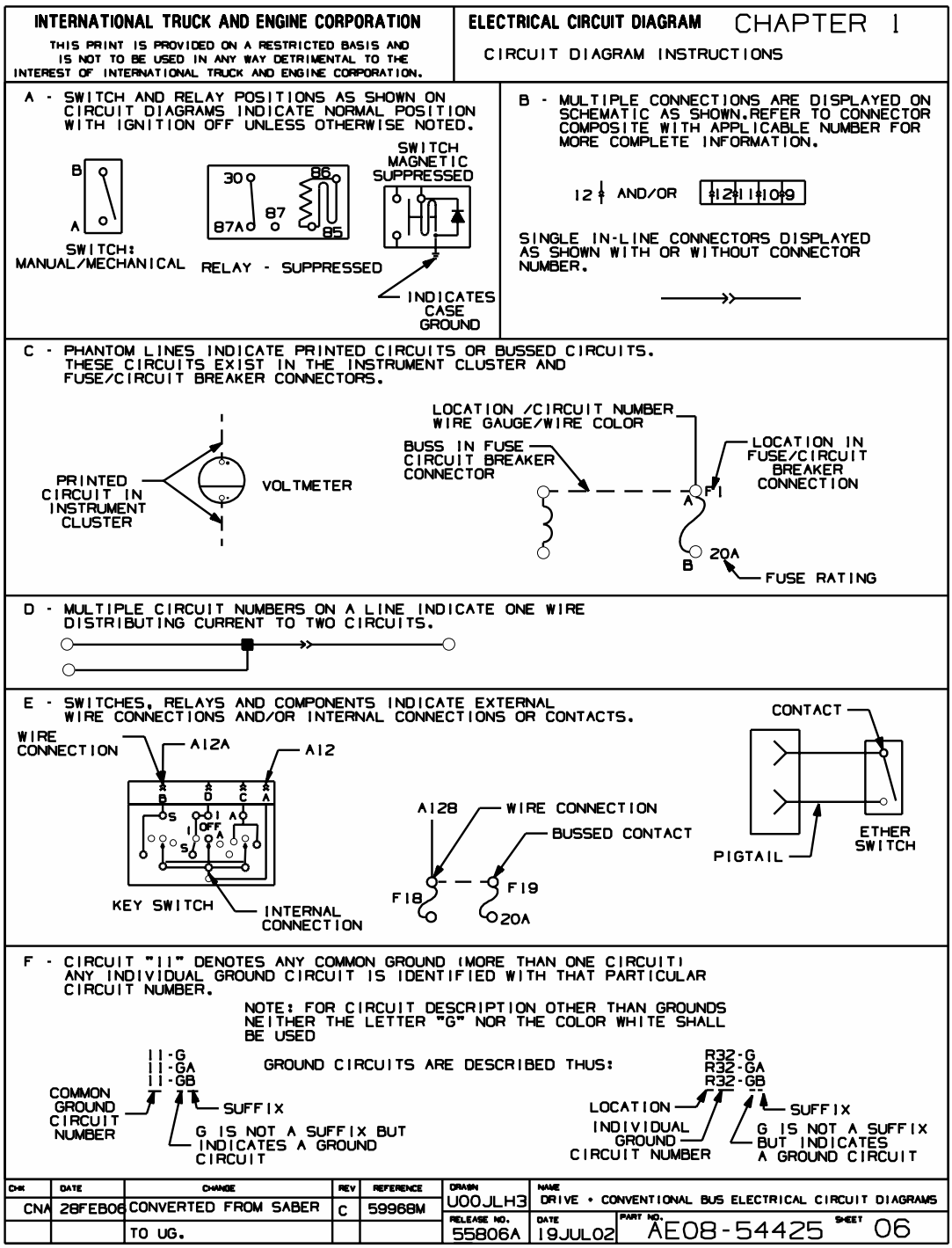


**Figure 6 Circuit Diagram Instructions**

## 1.7. CIRCUIT NUMBER IDENTIFICATION AND LOCATION, P. 7

**INTERNATIONAL TRUCK AND ENGINE CORPORATION**

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 1

INTERNATIONAL CIRCUIT NUMBER IDENTIFICATIOIN AND LOCATION

G - ABBREVIATIONS: COLOR, NOUN AND ENGINE

COLOR ABBREVIATION

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

NOUN ABBREVIATION

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

ENGINE ABBREVIATION :

V8- MFG (INTERNATIONAL) V8 6.0 LITER ELECTRONIC ENGINE CONTROL

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

IDM- MFG (INTERNATIONAL) INJECTOR DRIVE MODULE

| CH# | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JLH3 | DRIVE + CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 19JUL02 / PART NO. AE08-54425 / SHEET 07 |

**Figure 7 Circuit Number Identification and Location**

## 1.8. SCHEMATIC SYMBOL CHART, P. 8

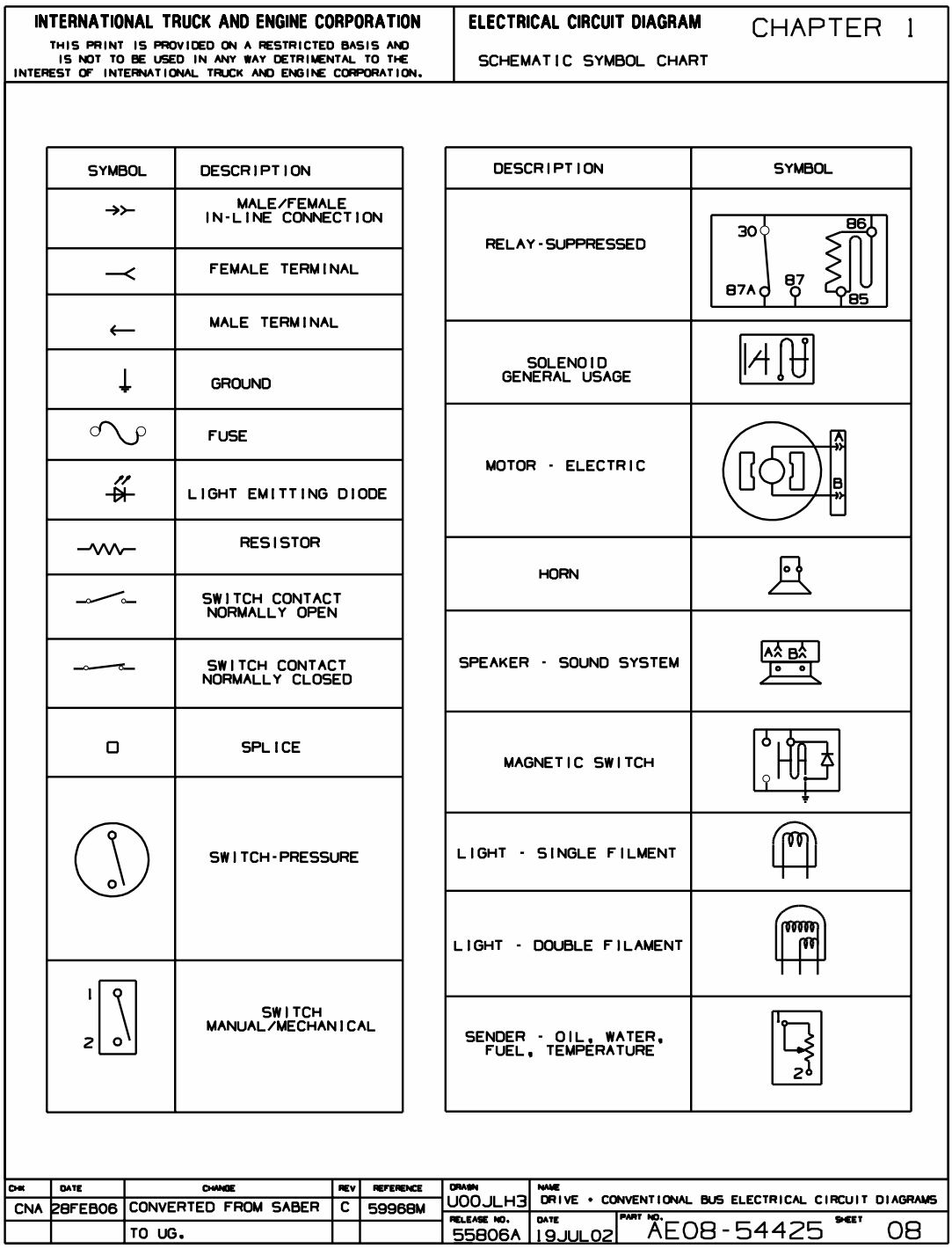


**Figure 8 Schematic Symbol Chart**

## 1.9. CIRCUIT NUMBER IDENTIFICATION AND LOCATION, P. 9

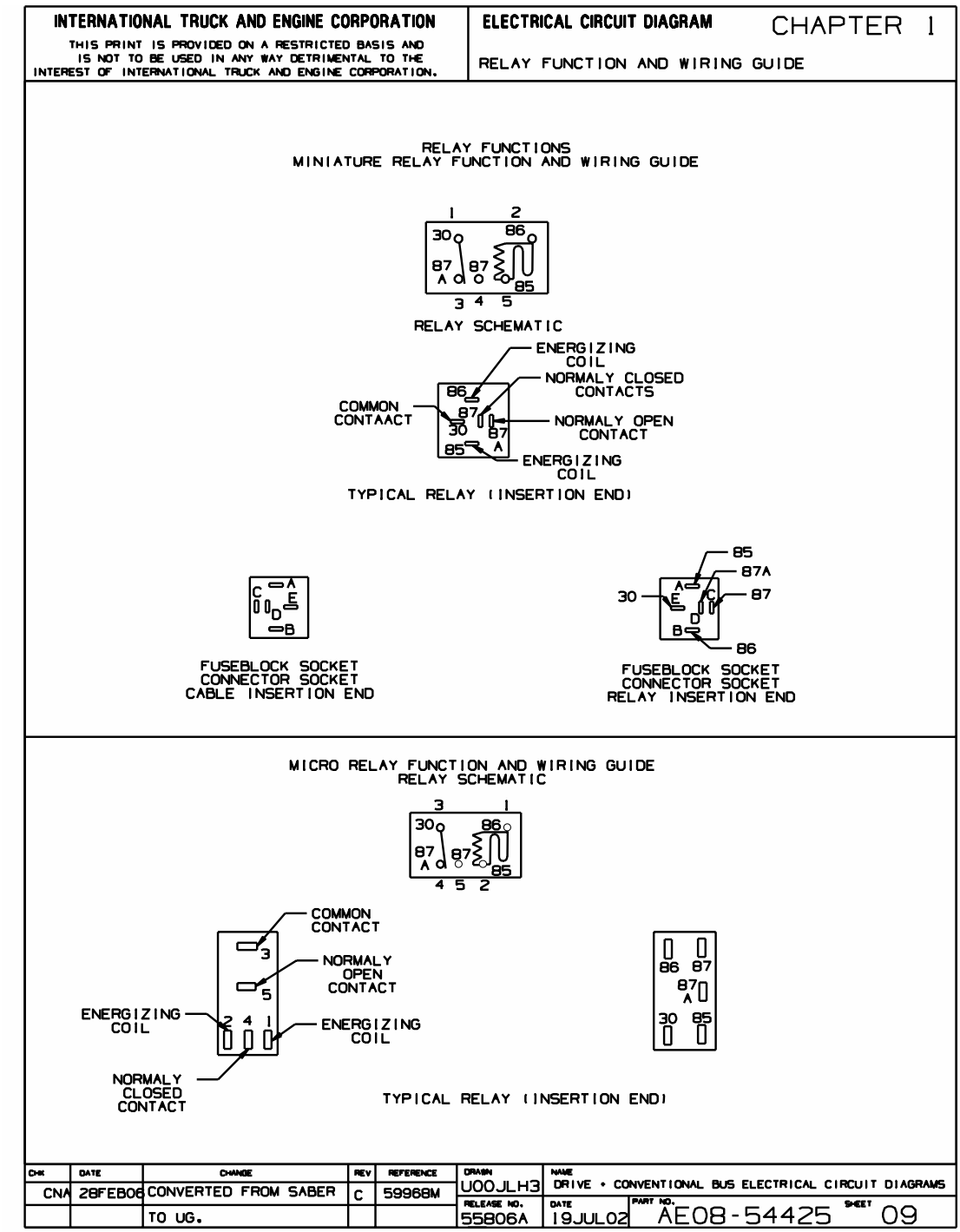


**Figure 9 Circuit Number Identification and Location**

## 1.10. LAMP BULB CHART, P. 10

**INTERNATIONAL TRUCK AND ENGINE CORPORATION**

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 1

LAMP BULB CHART

| BULB APPLICATION | BULB CANDLE POWER OR WATTS | BULB TRACE NUMBER |
|---|---|---|
| FOG LIGHTS | 121 CANDLE POWER | H355 |
| HEAD LIGHTS | | |
| LOW BEAMS | 65 WATTS | 9007 |
| HIGH BEAMS | 55 WATTS | 9007 |
| MISC LIGHTS | | |
| SIDE MARKER | 3.8 WATTS | 194NA |
| TURN SIGNAL MARKER (FENDER) | 27/8 WATTS | 3157 |
| TURN SIGNAL & FRONT MARKER LIGHT | 27/8 WATTS | 3157NA |

| CH# | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JAHP | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 23APR02 PART NO. AE08-54425 SHEET 10 |

**Figure 10 Lamp Bulb Chart**

# 2. 12 VOLT POWER DISTRIBUTION AND DATA LINK (CHAPTER 2)

## 2.1. ACCESSORY, P. 1

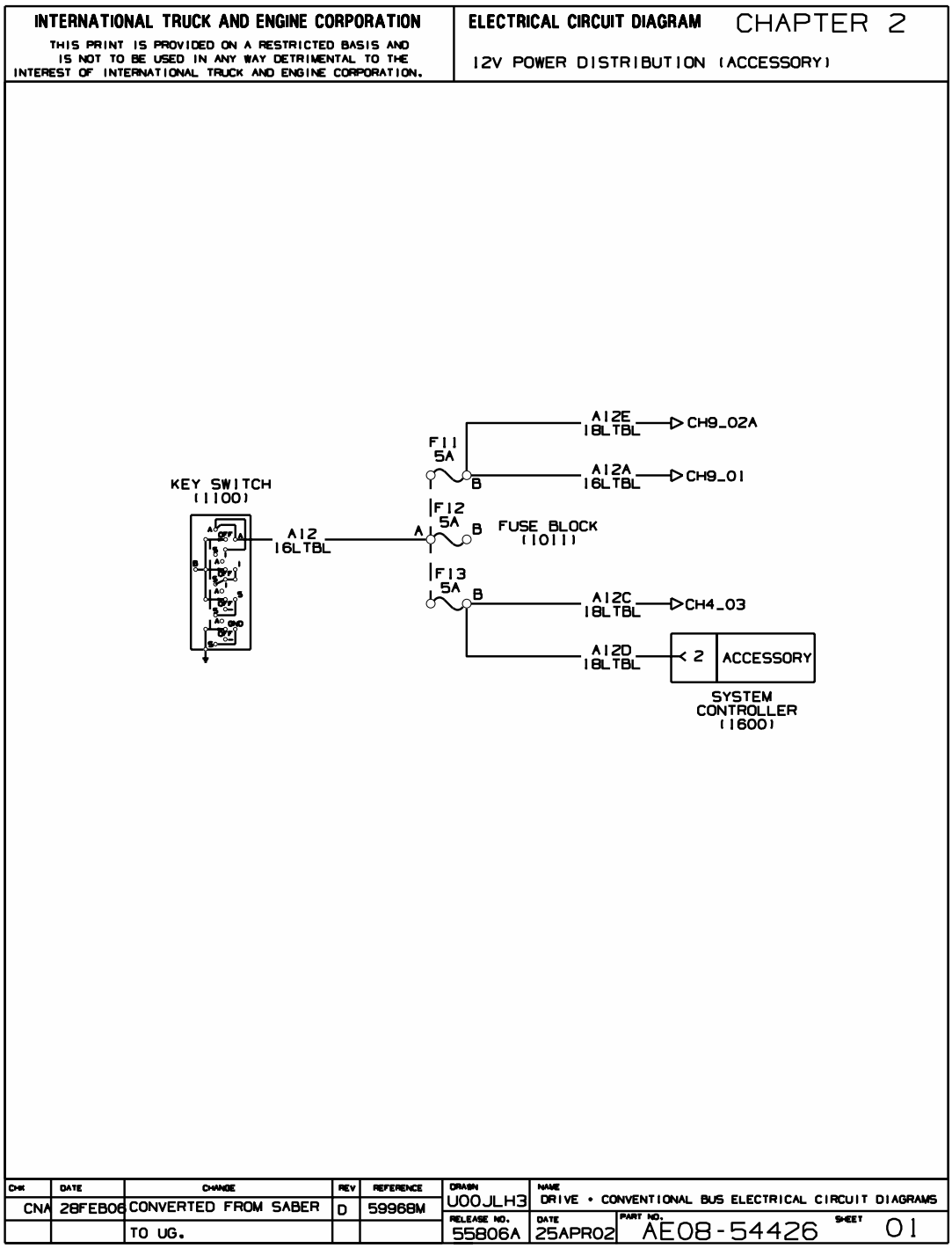


**Figure 11 Accessory**

## 2.2. BATTERY, P. 2

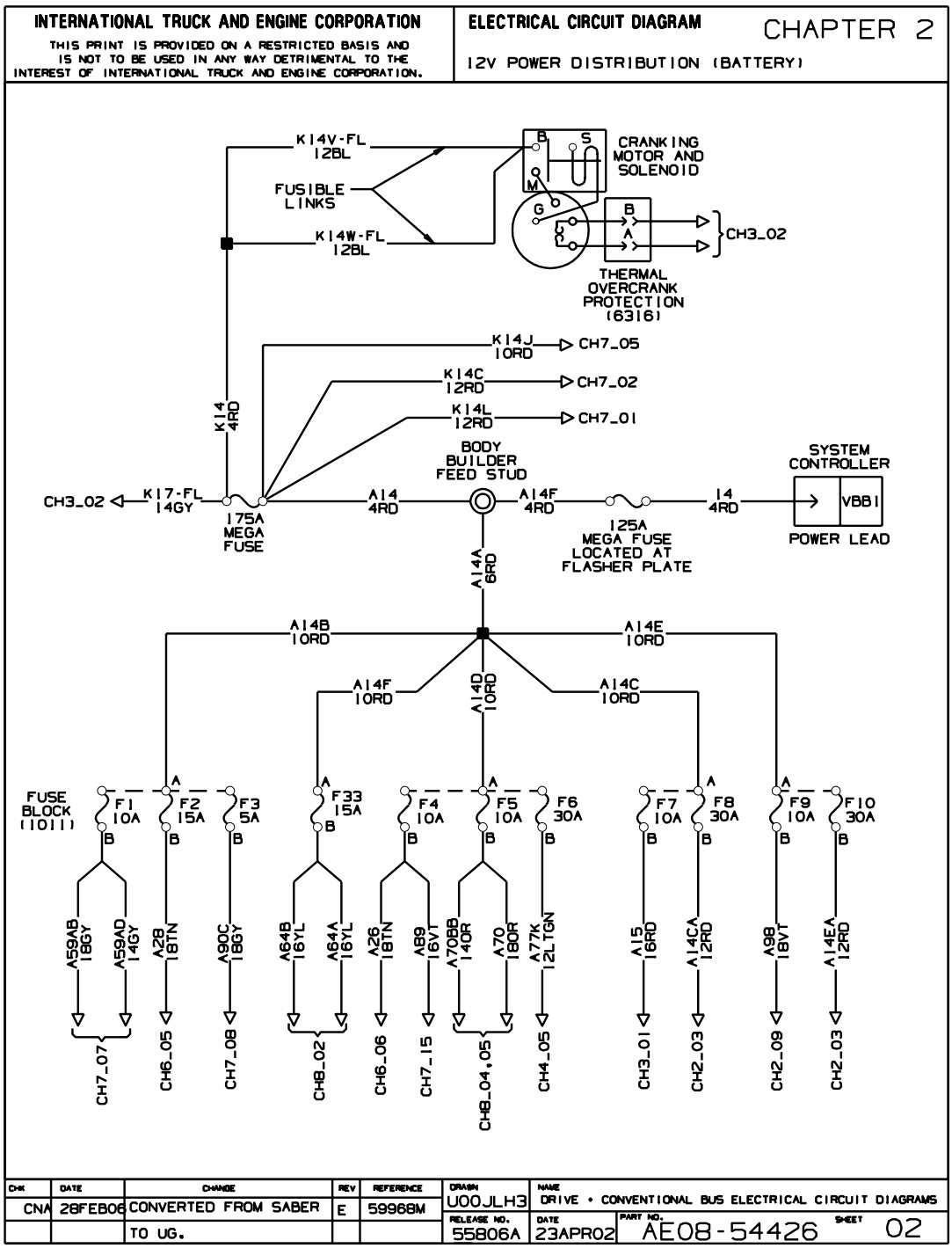


**Figure 12 Battery**

## 2.3. IGNITION, P. 3

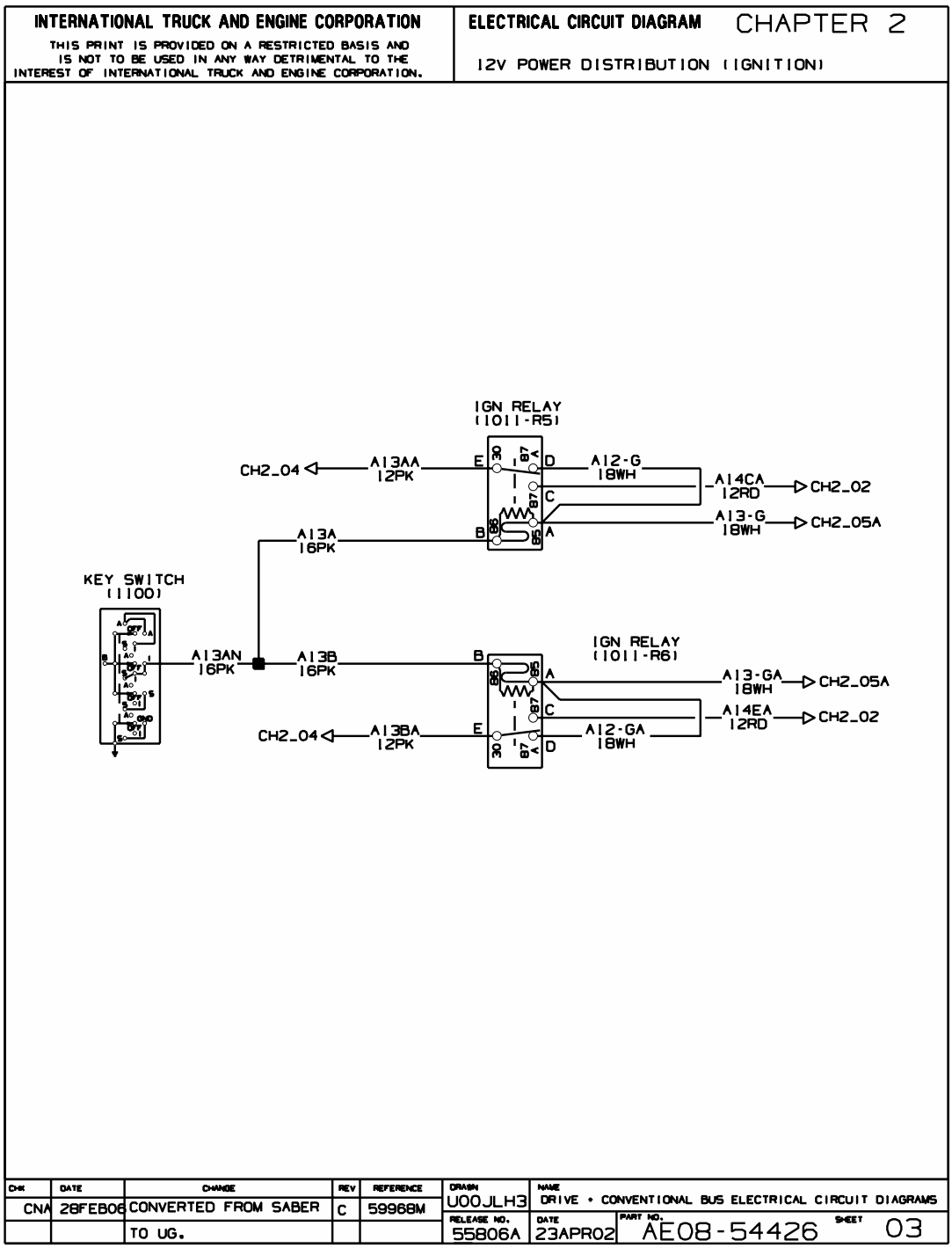


**Figure 13 Ignition**

## 2.4. IGNITION, P. 4

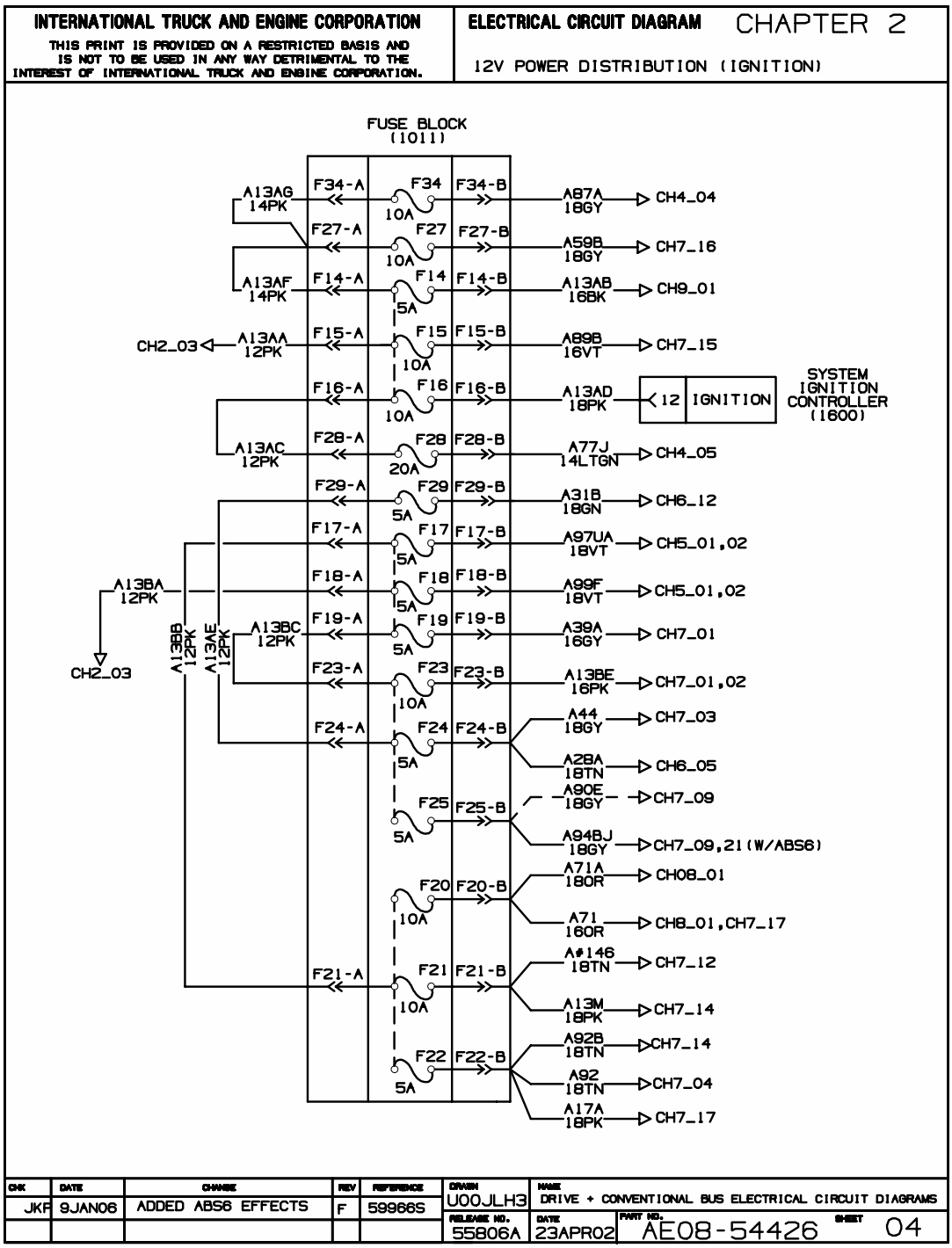


**Figure 14 Ignition (Cont.)**

## 2.5. GROUND, P. 5

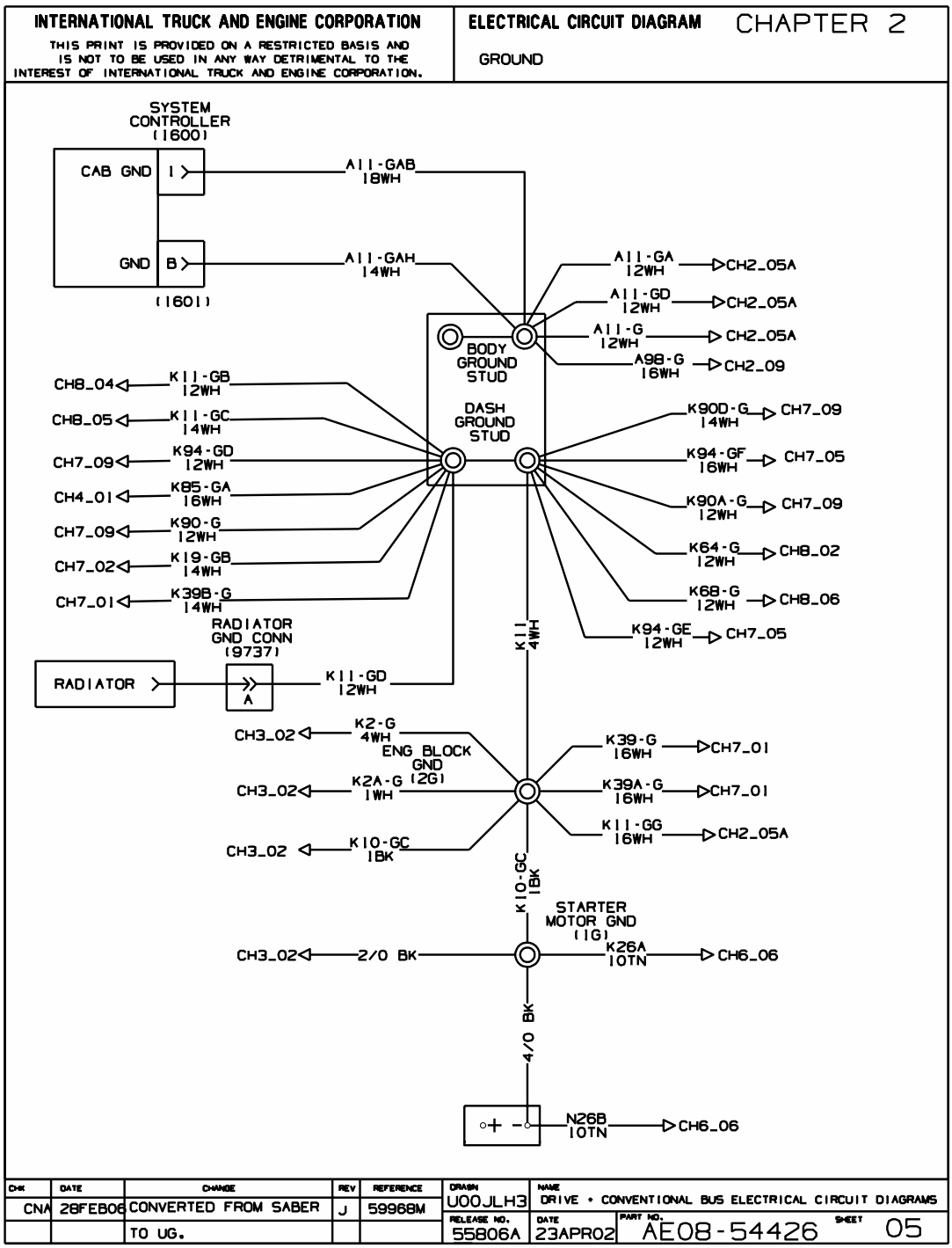


**Figure 15 Ground**

## 2.6. DRIVETRAIN J1939 DATA LINK (CAB), P. 6

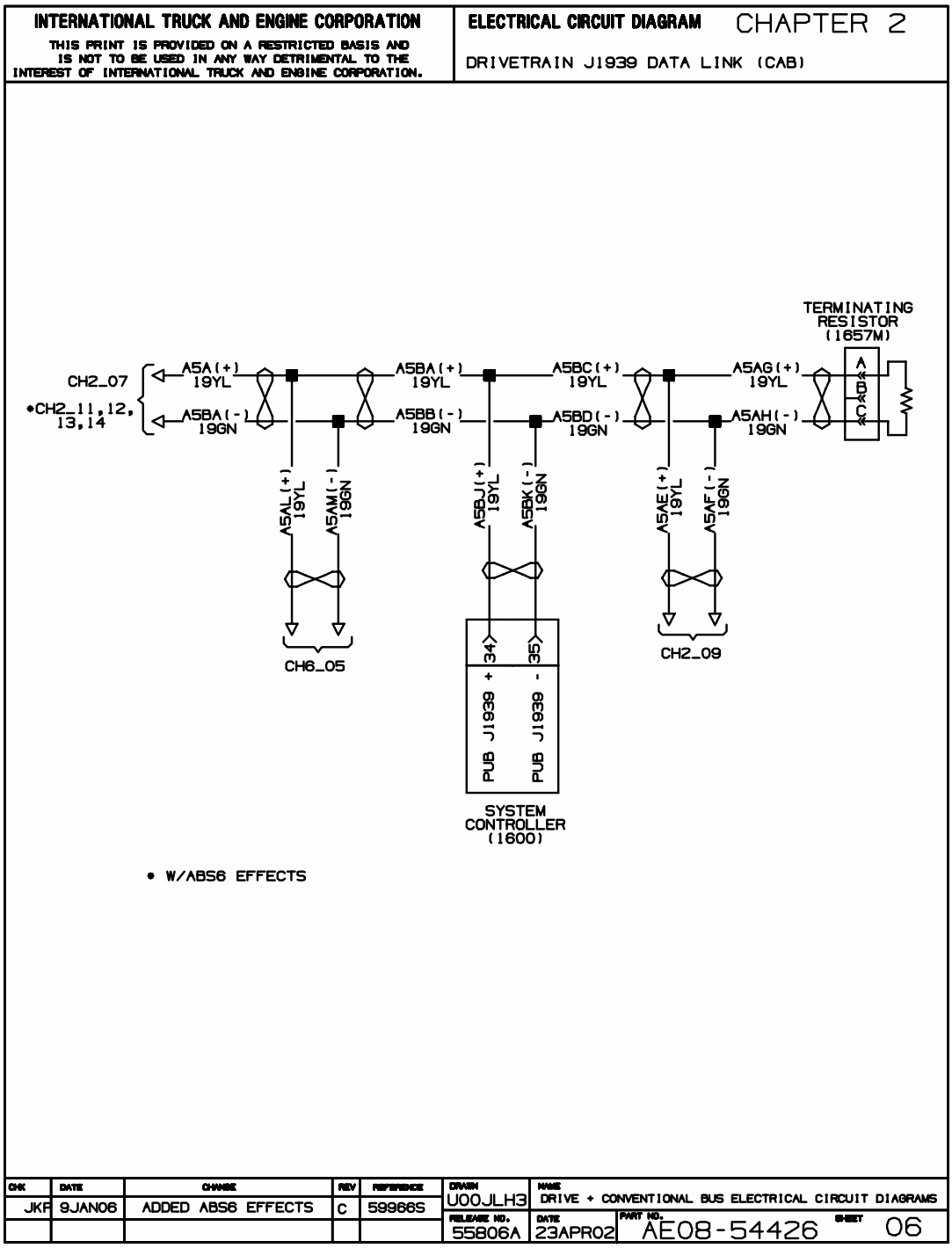


**Figure 16 Drivetrain J1939 Data Link (Cab)**

## 2.7. DRIVETRAIN J1939 DATA LINK (CHASSIS), P. 7

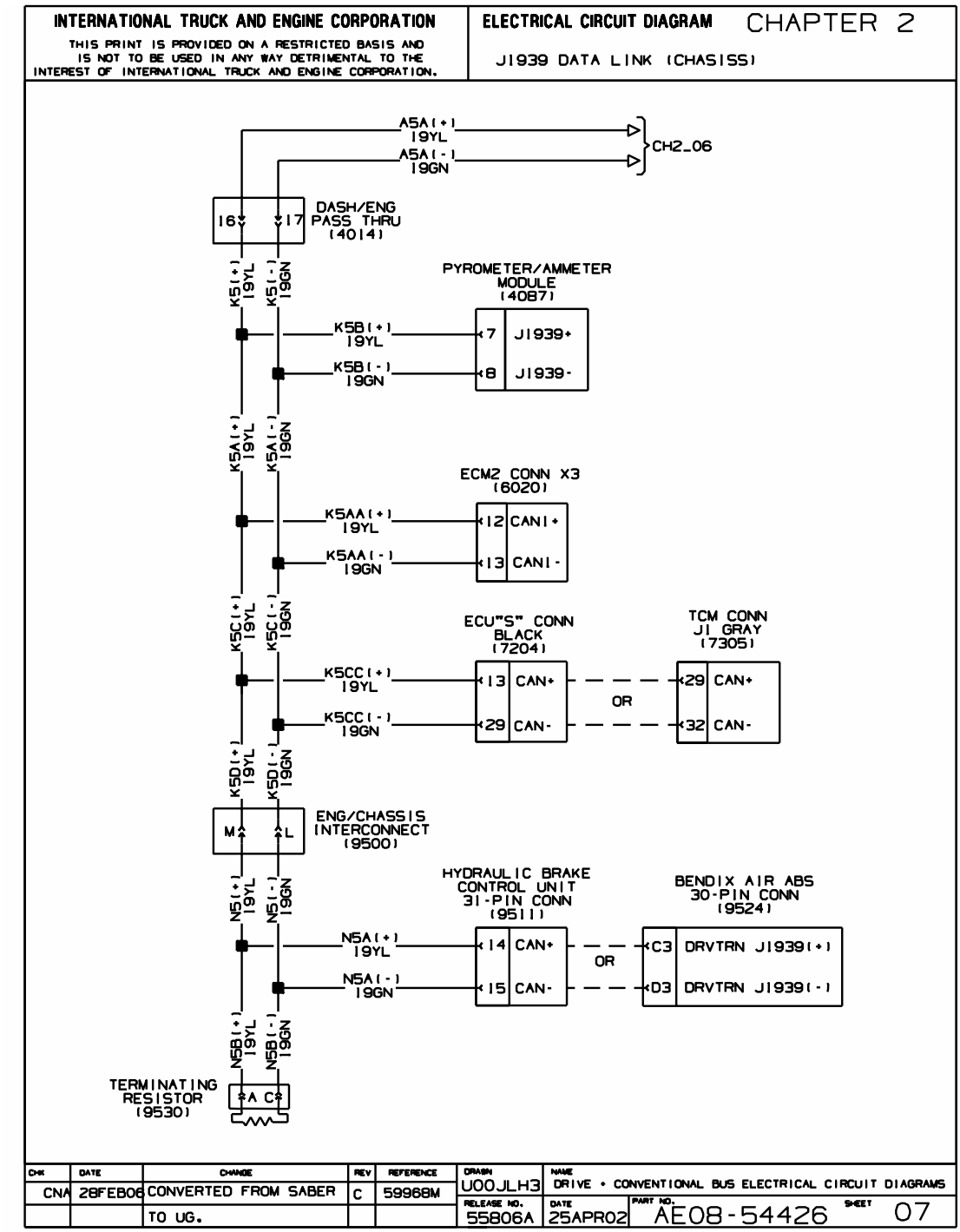


**Figure 17 Drivetrain J1939 Data Link (Chassis)**

## 2.8. J1708 DATA LINK DIAGNOSTIC, P. 8

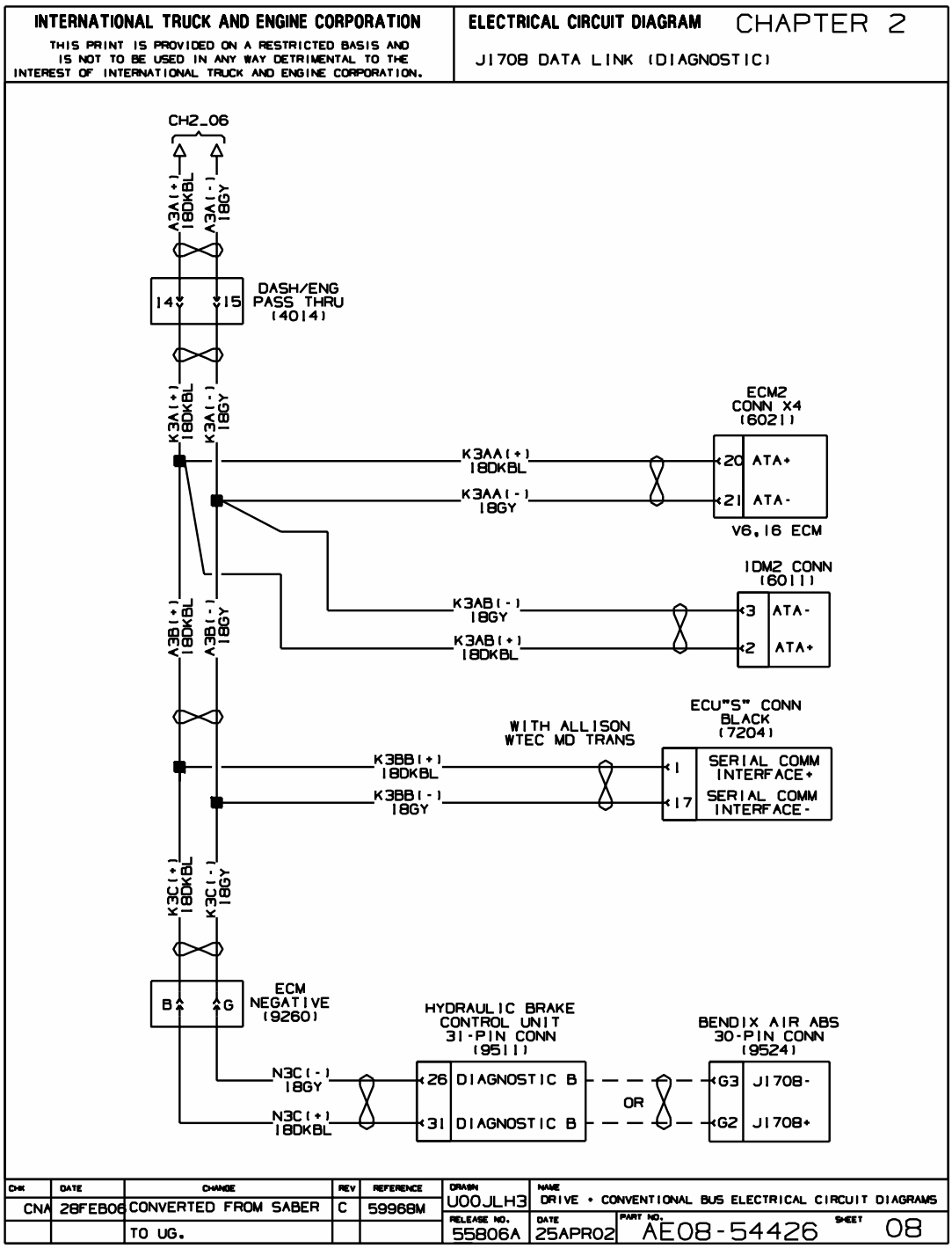


**Figure 18 J1708 Data Link Diagnostic**

## 2.9. DIAGNOSTICS AND PROGRAMMABLE CONNECTOR, P. 9

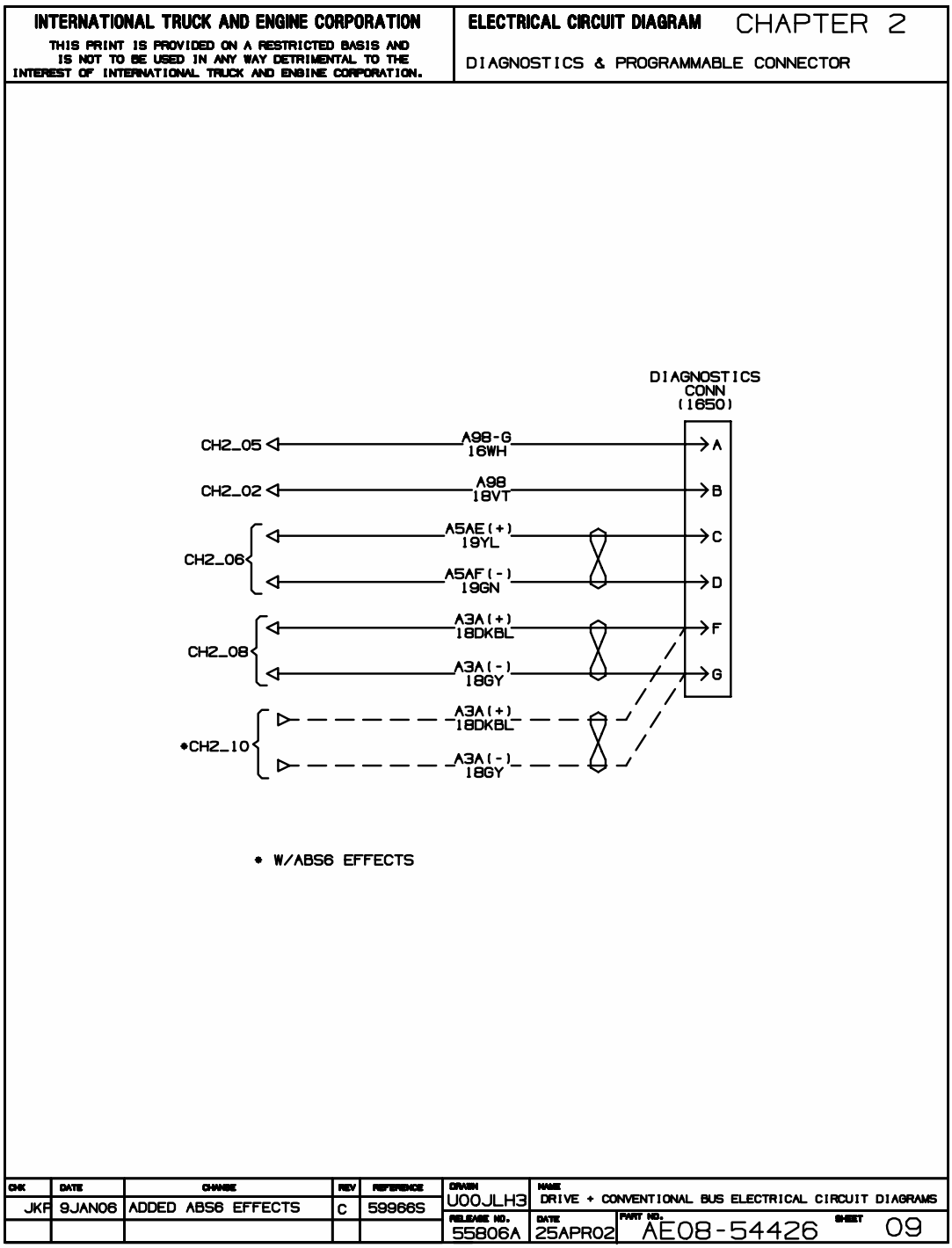


**Figure 19 Diagnostics and Programmable Connector**

## 2.10. J1708 DATALINK DIAGNOSTIC W/ABS6, P. 10

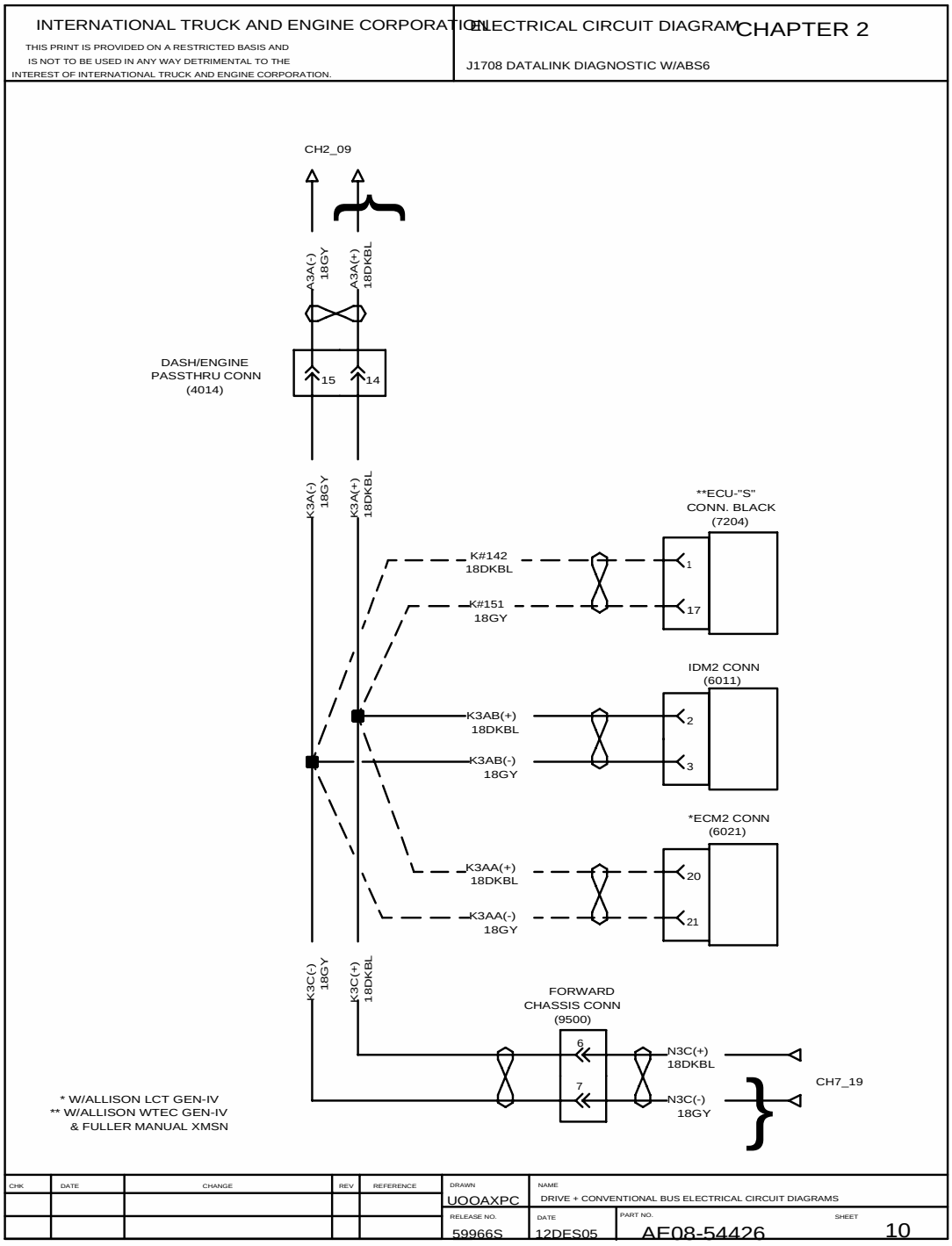


**Figure 20 J1708 Datalink Diagnostic W/ABS6**

## 2.11. DRIVETRAIN J1939 DATALINK W/ABS6, W/LCT, W/WTEC XMSN, P. 11

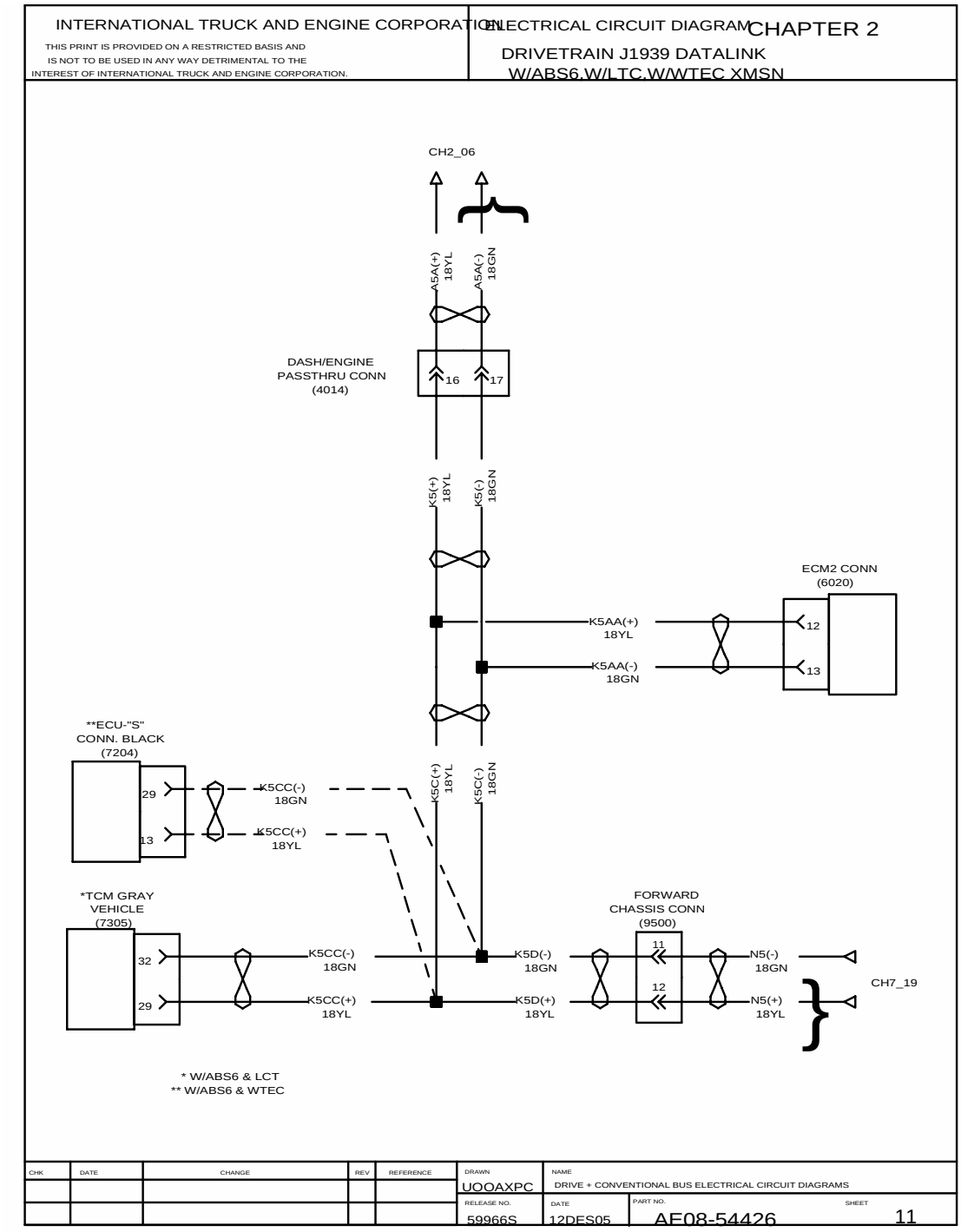


**Figure 21 Drivetrain J1939 Datalink W/ABS6, W/LCT, W/WTEC XMSN**

## 2.12. DRIVETRAIN J1939 DATALINK W/ABS6, W/AMMETER, W/LCT, W/WTEC XMSN, P. 12

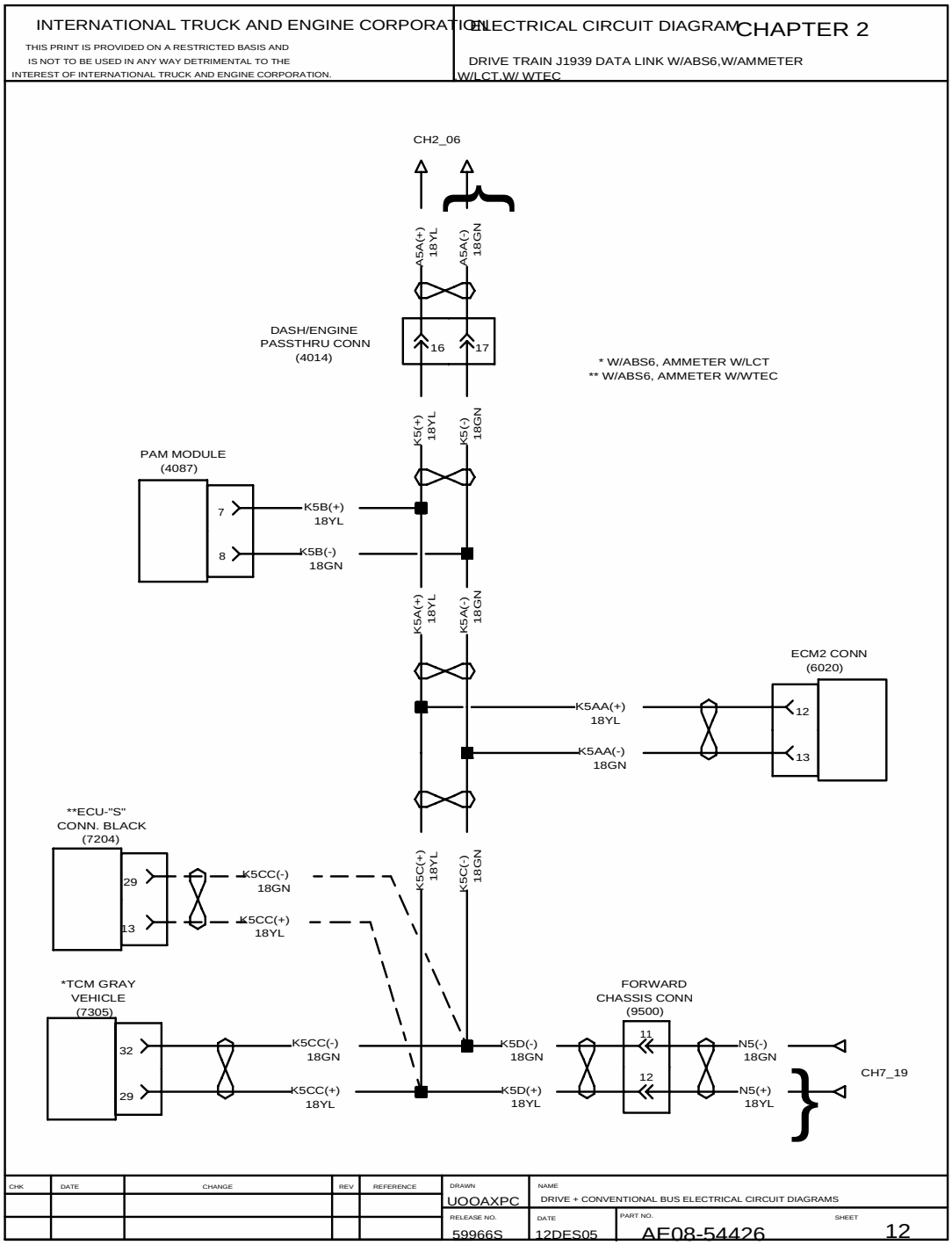


**Figure 22 Drivetrain J1939 Datalink W/ABS6, W/Ammeter, W/LCT, W/WTEC XMSN**

## 2.13. DRIVETRAIN J1939 DATALINK W/ABS6, W/ALLISON GEN IV, W/MANUAL XMSN, P. 13

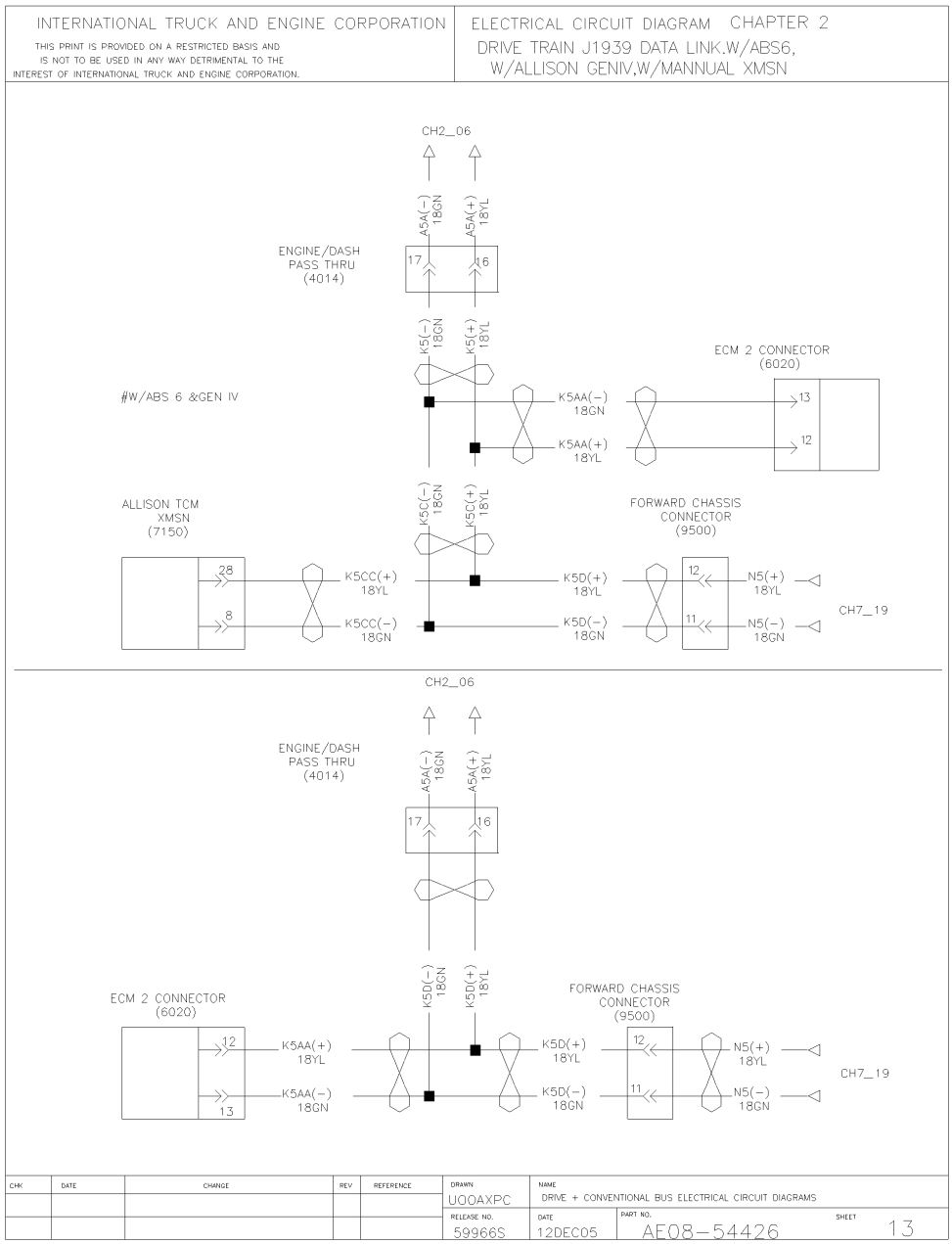


**Figure 23 Drivetrain J1939 Datalink W/ABS6, W/Allison Gen IV, W/Manual XMSN**

## 2.14. DRIVETRAIN J1939 DATALINK W/ABS6, W/AMMETER, W/ALLISON GEN IV, P. 14

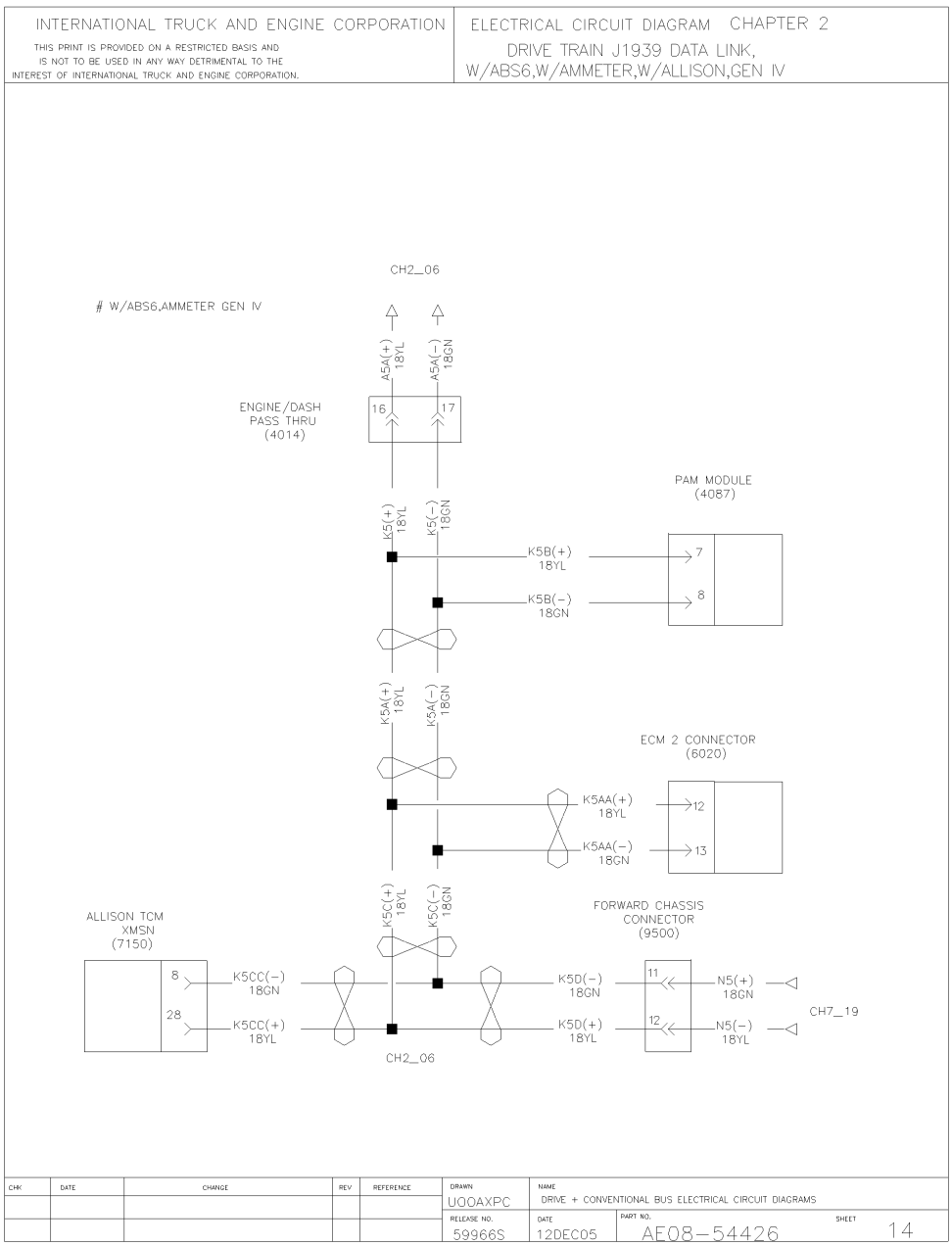


**Figure 24 Drivetrain J1939 Datalink W/ABS6, W/Ammeter, W/Allison Gen IV**

# 3. 12V CHARGING AND CRANKING SYSTEM (CHAPTER 3)

## 3.1. KEY SWITCH START CIRCUIT, P. 1

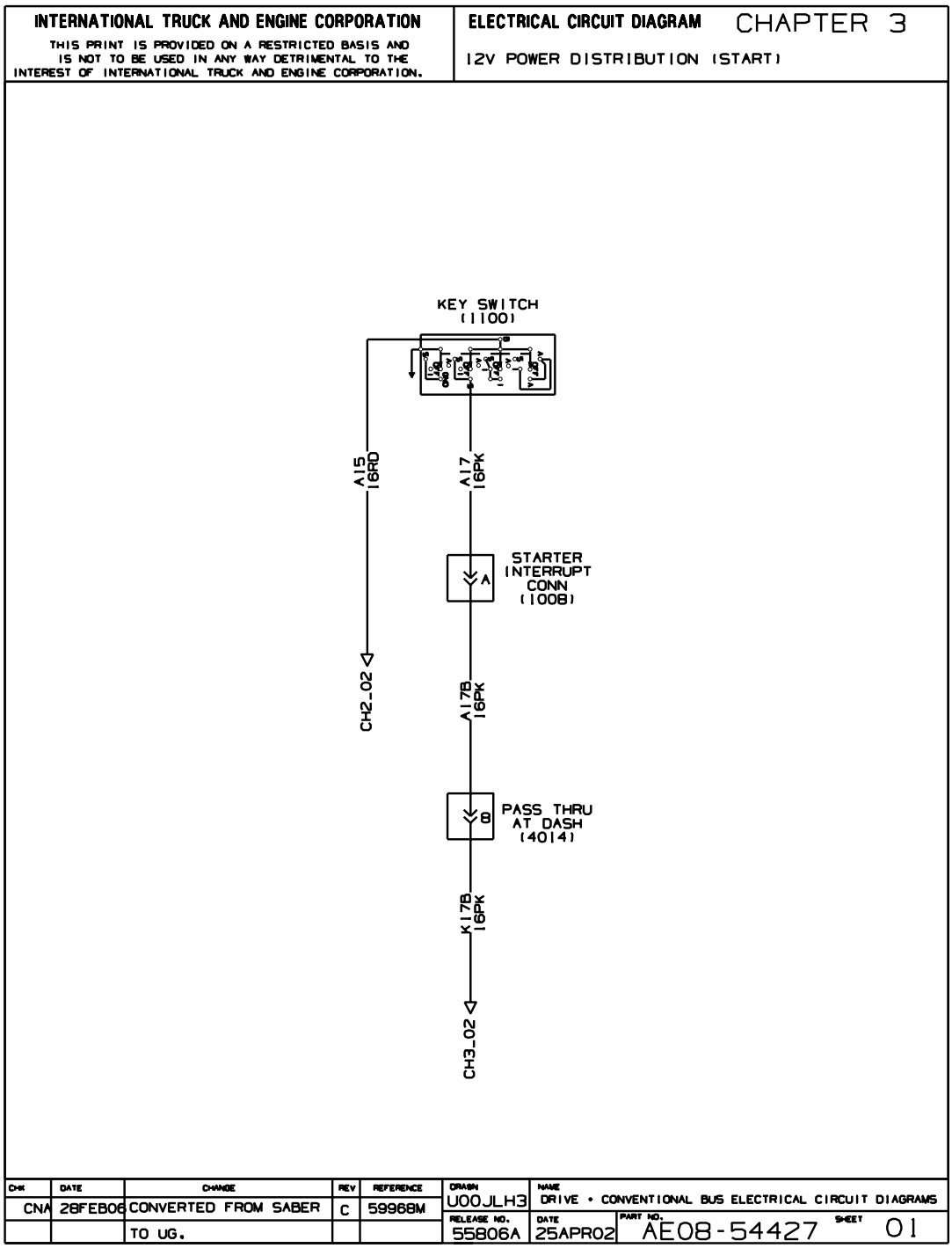


**Figure 25 Key Switch Start Circuit**

## 3.2. CHARGING AND CRANKING, P. 2

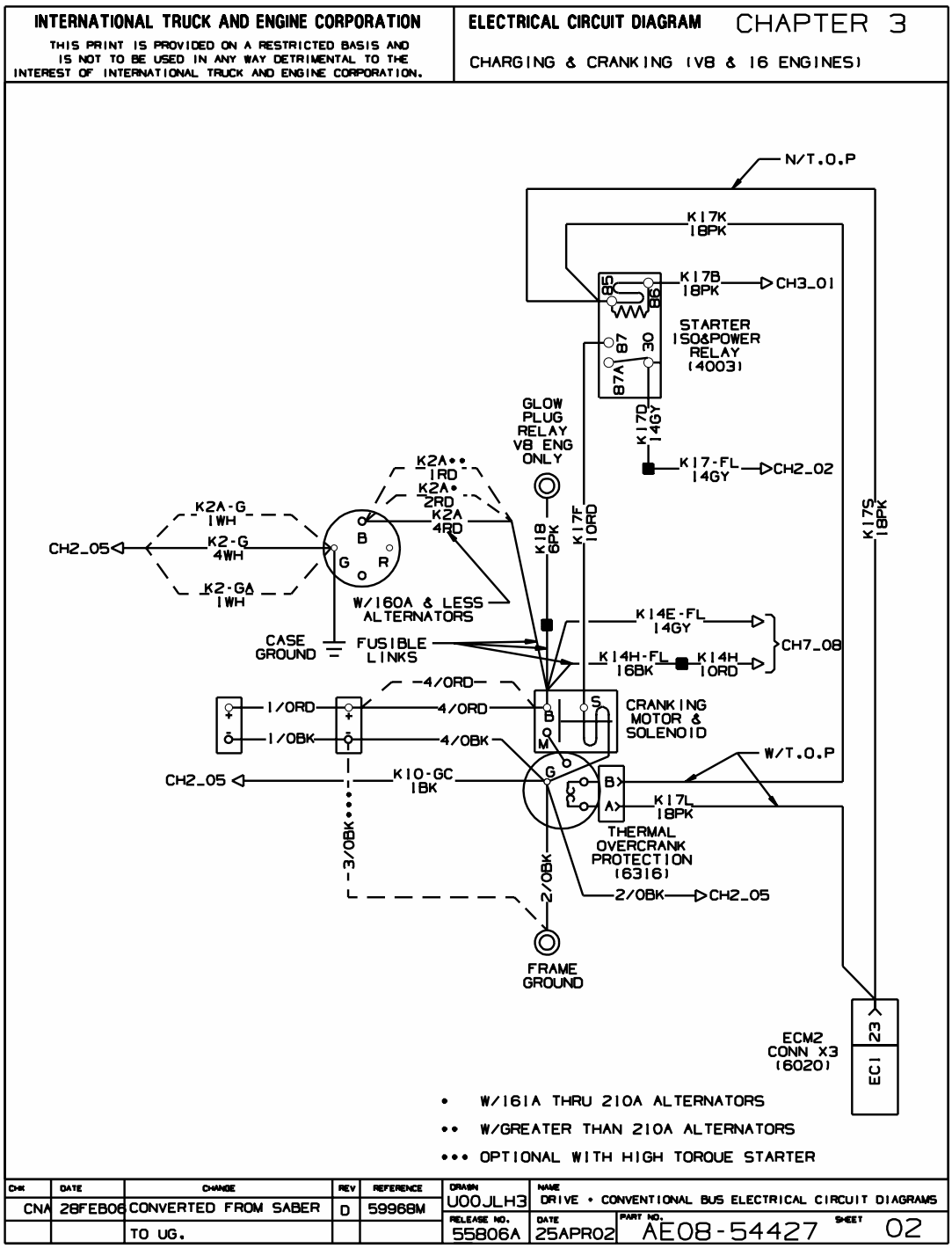


**Figure 26 Charging and Cranking**

# 4. CAB ACCESSORIES (CHAPTER 4)

## 4.1. HORN, DUAL ELECTRIC, P. 1

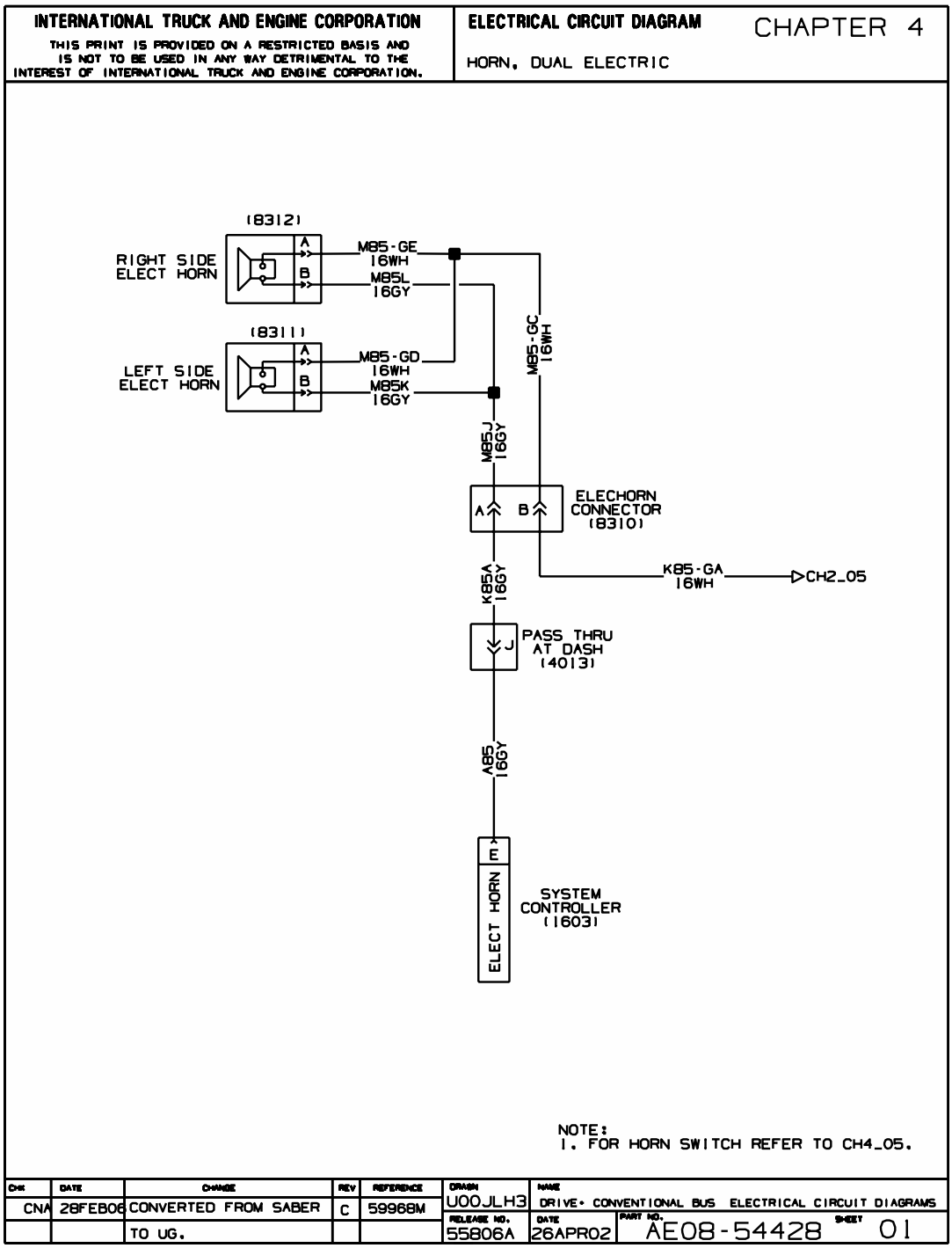


**Figure 27 Horn, Dual Electric**

## 4.2. STEERING WHEEL SWITCHES, P. 2

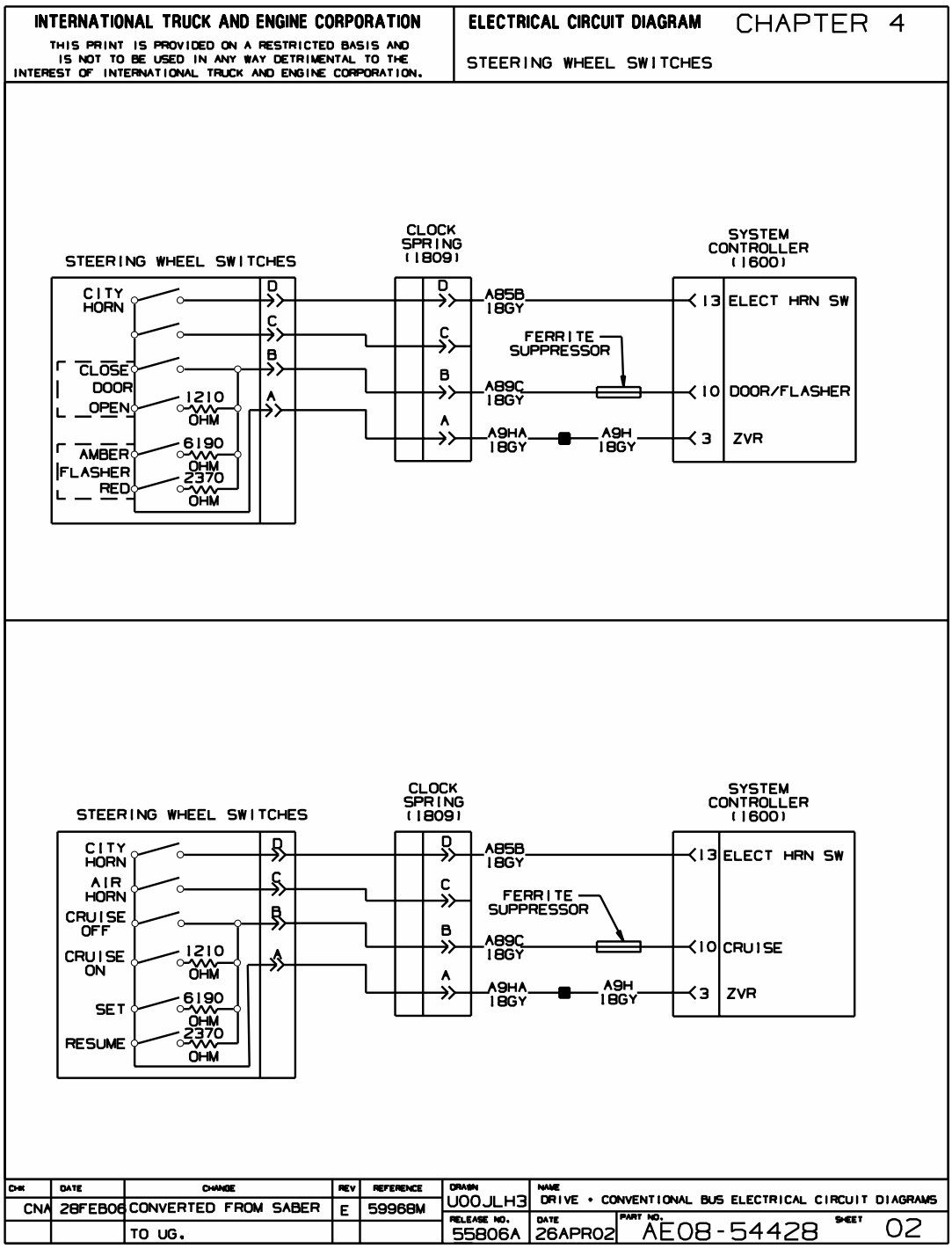


**Figure 28 Steering Wheel Switches**

## 4.3. SWITCH PACKS, P. 3

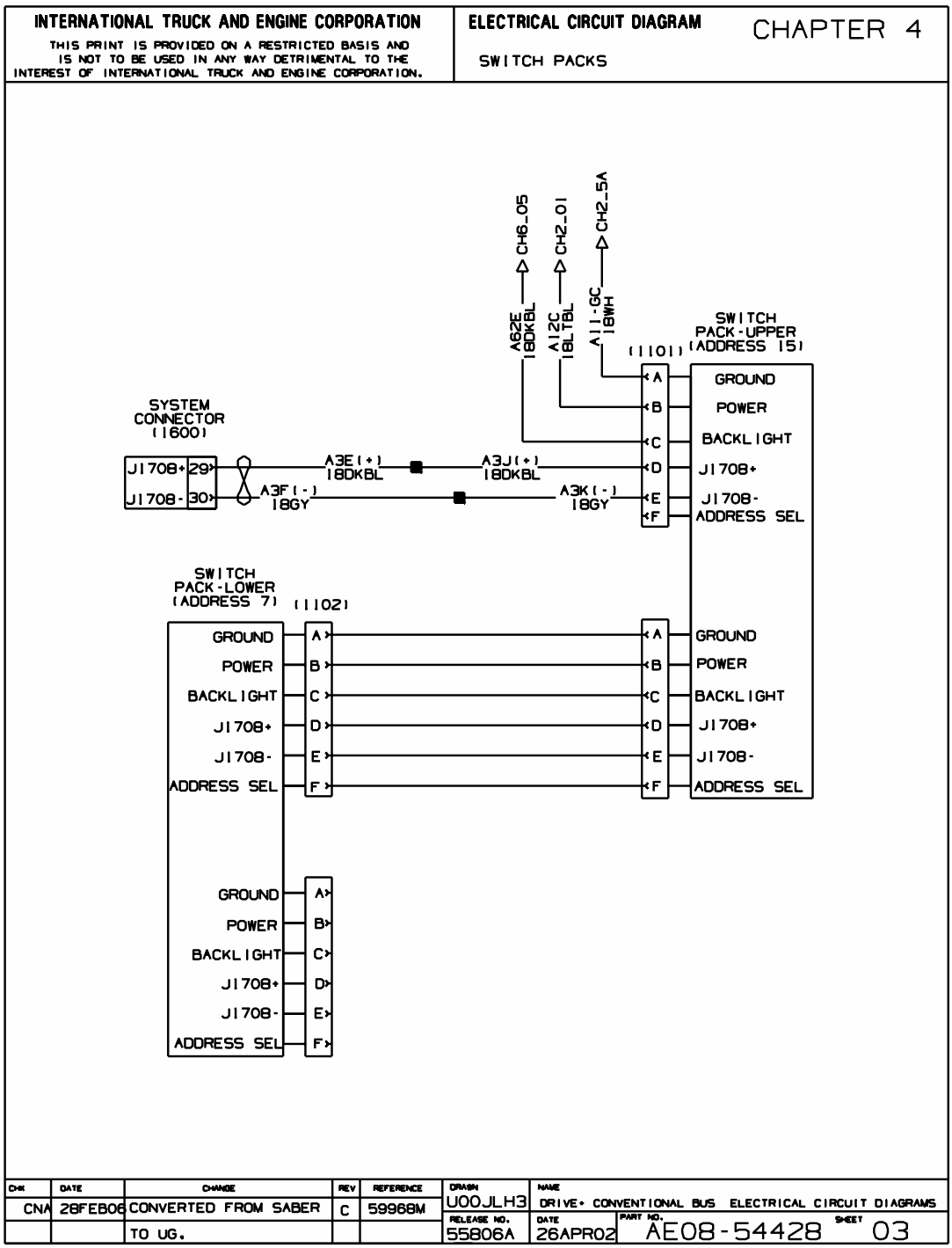


**Figure 29 Switch Packs**

## 4.4. WINDSHIELD WIPER AND WASHER SYSTEMS, P. 4

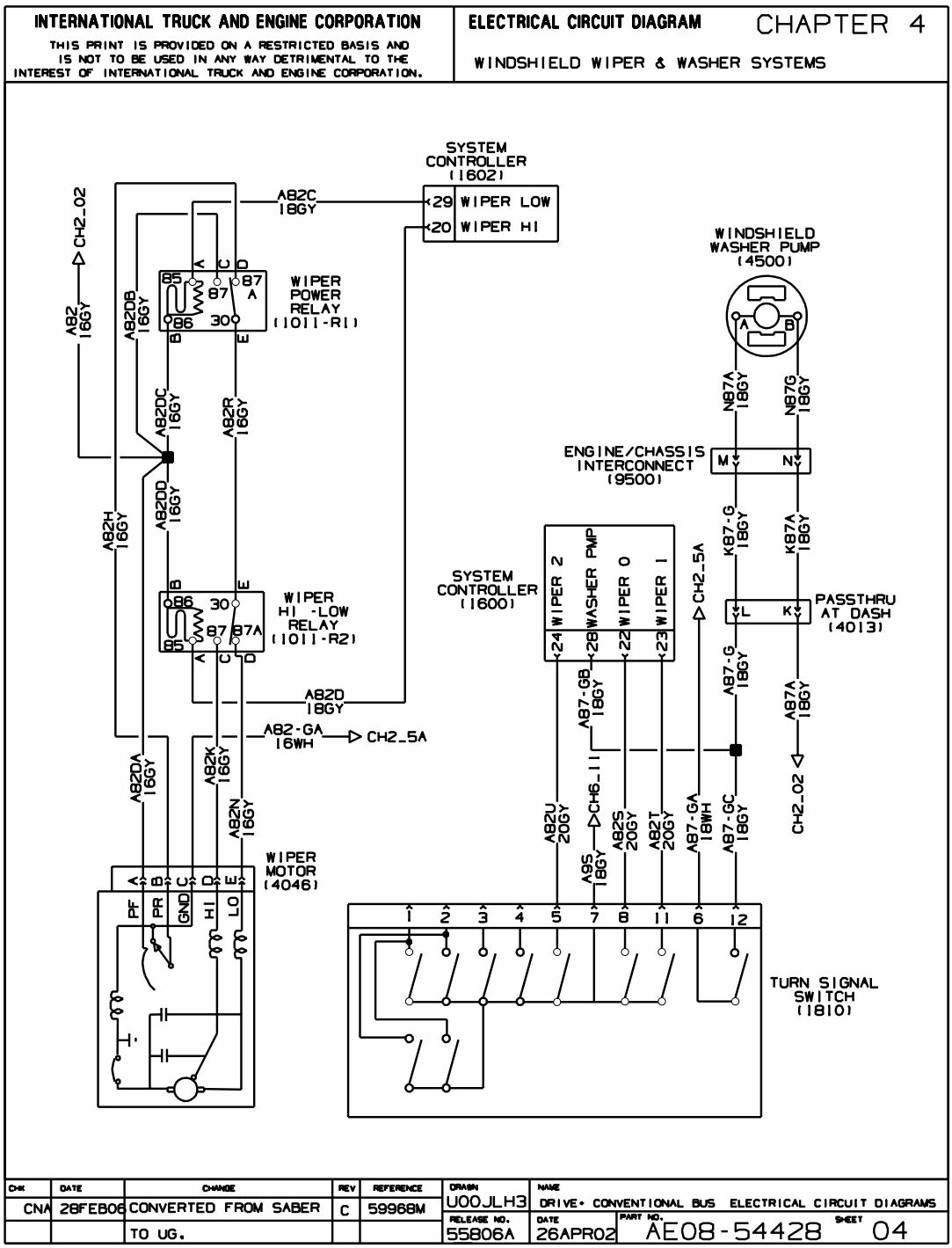


**Figure 30 Windshield Wiper and Washer Systems**

## 4.5. DRIVER'S AIR CONDITIONING, P. 5

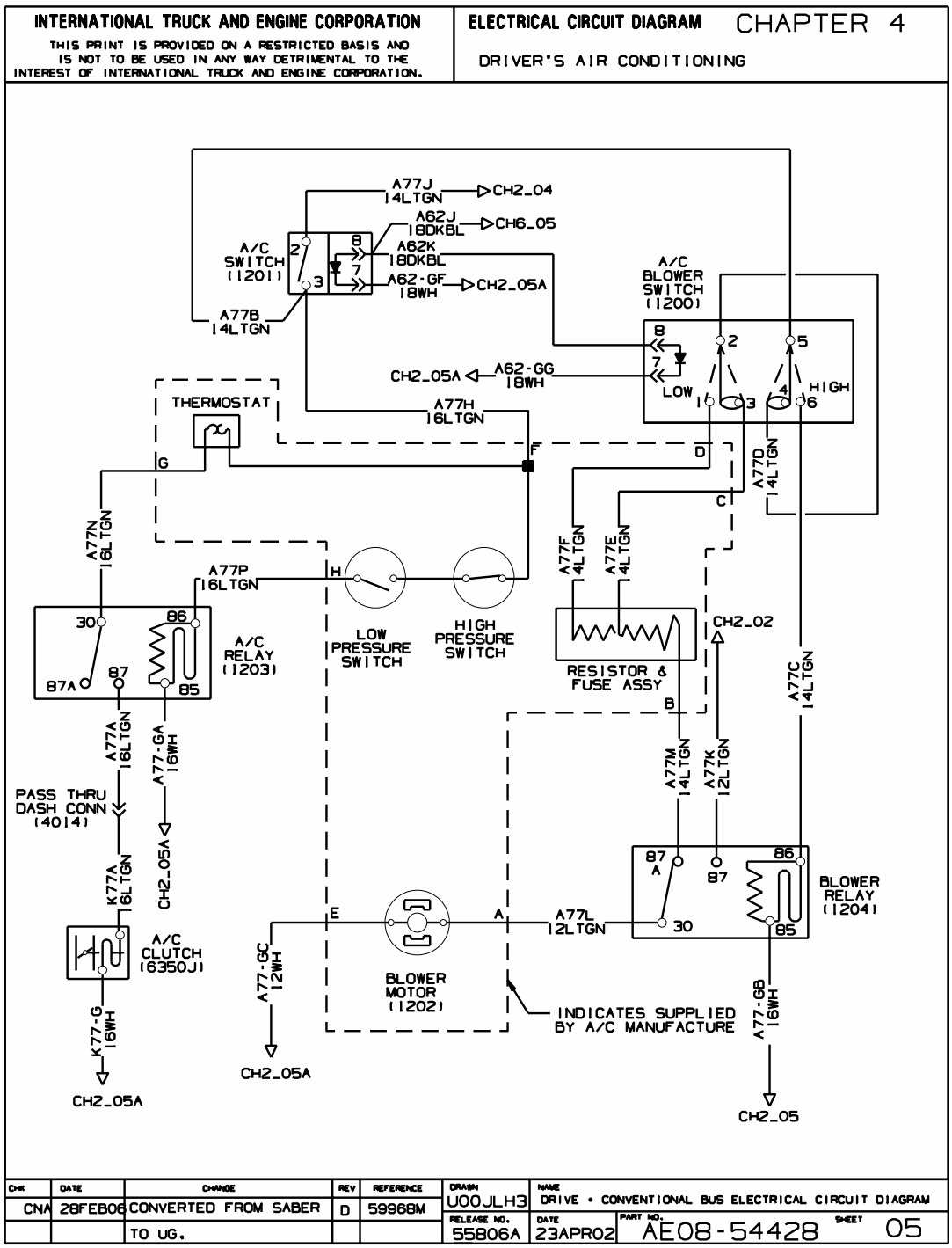


**Figure 31 Driver's Air Conditioning**

# 5. ENGINE ELECTRONICS (CHAPTER 5)

## 5.1. ELECTRONIC ENGINE CONTROLS — V8 ENGINE, P. 1

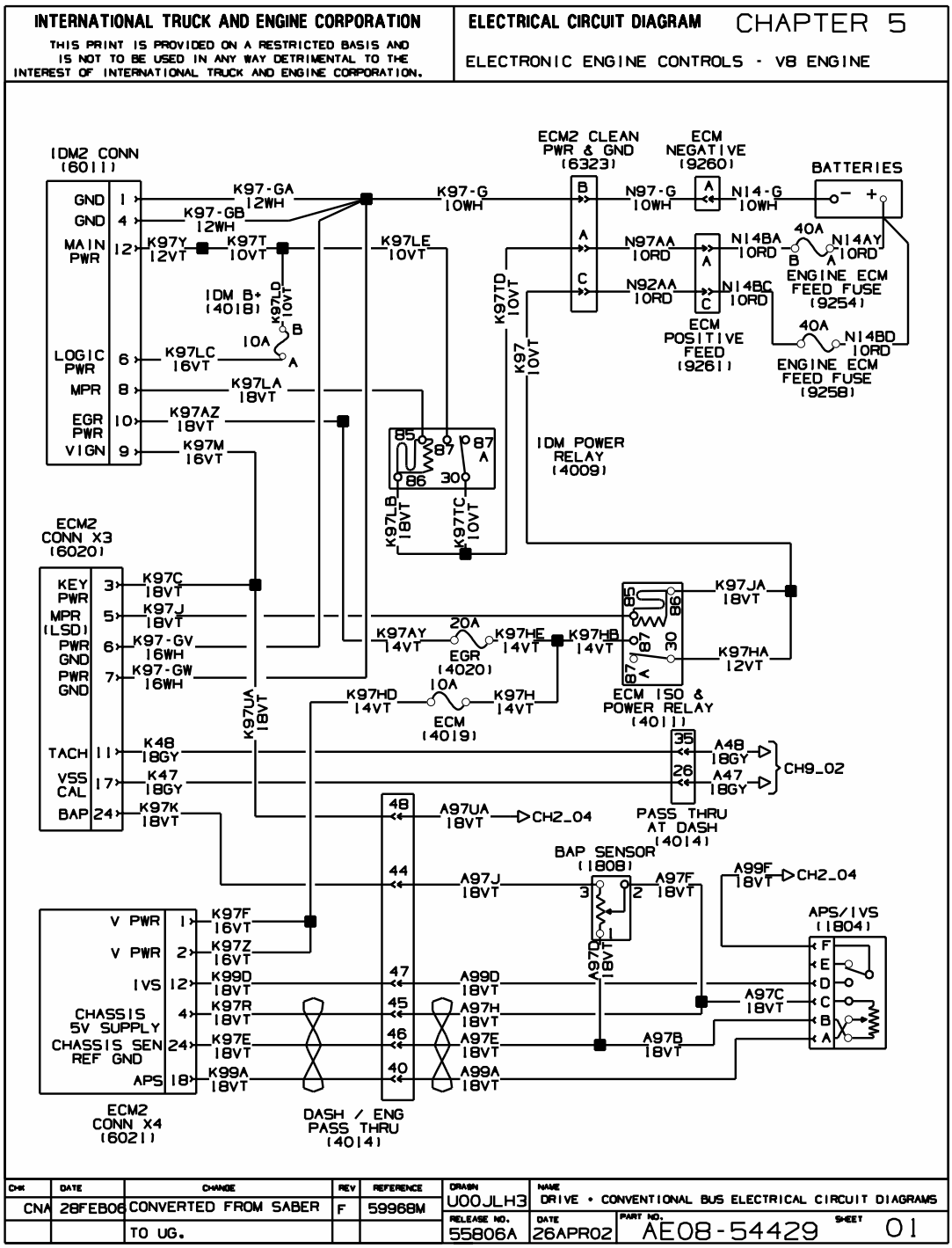


**Figure 32 Electronic Engine Controls — V8 Engine**

## 5.2. ELECTRONIC ENGINE CONTROLS — I6 ENGINE, P. 2

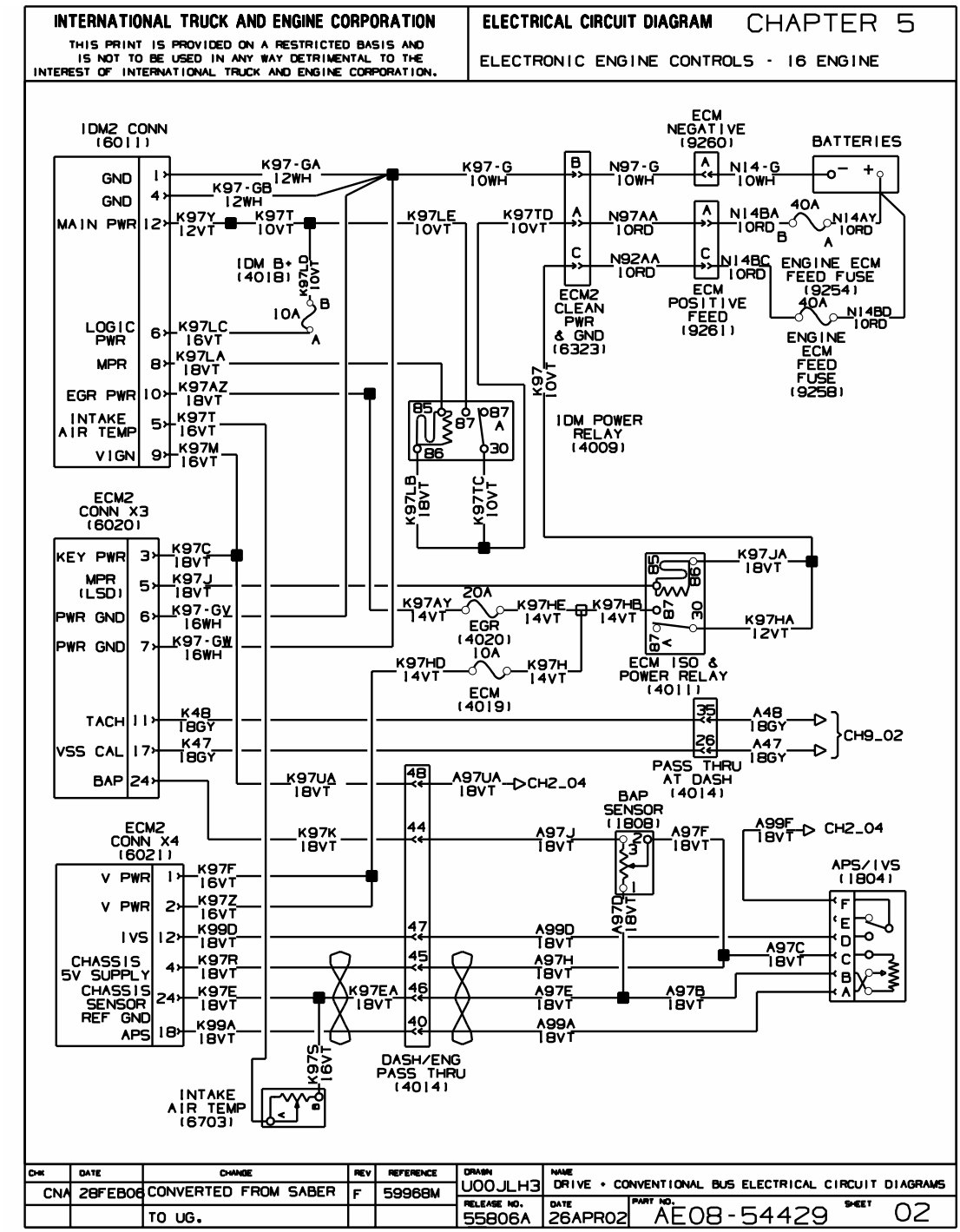


**Figure 33 Electronic Engine Controls — I6 Engine**

## 5.3. I6 FAN AND SHUTTER WIRING, P. 3

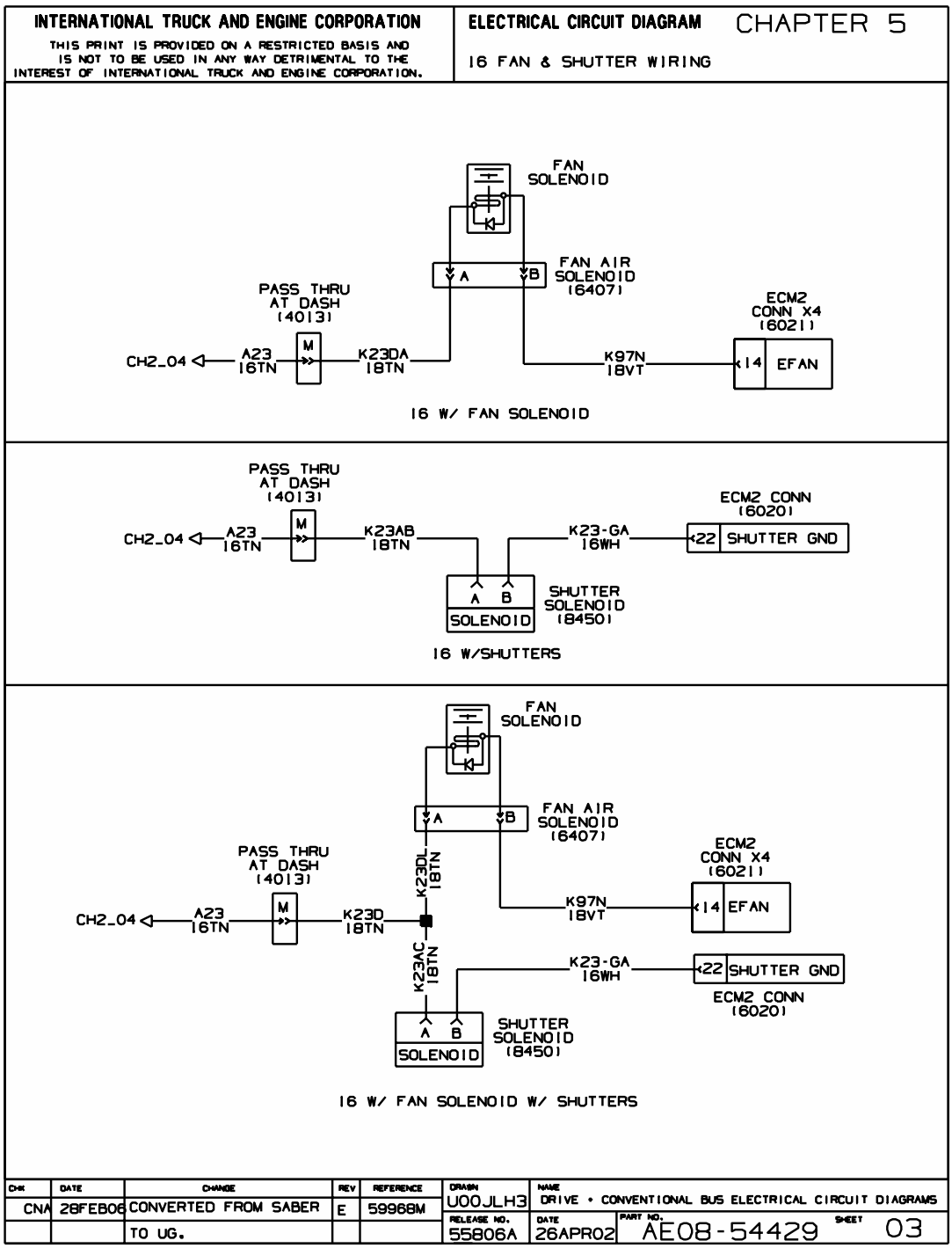


**Figure 34 I6 Fan and Shutter Wiring**

## 5.4. V8 FAN AND SHUTTER WIRING, P. 4

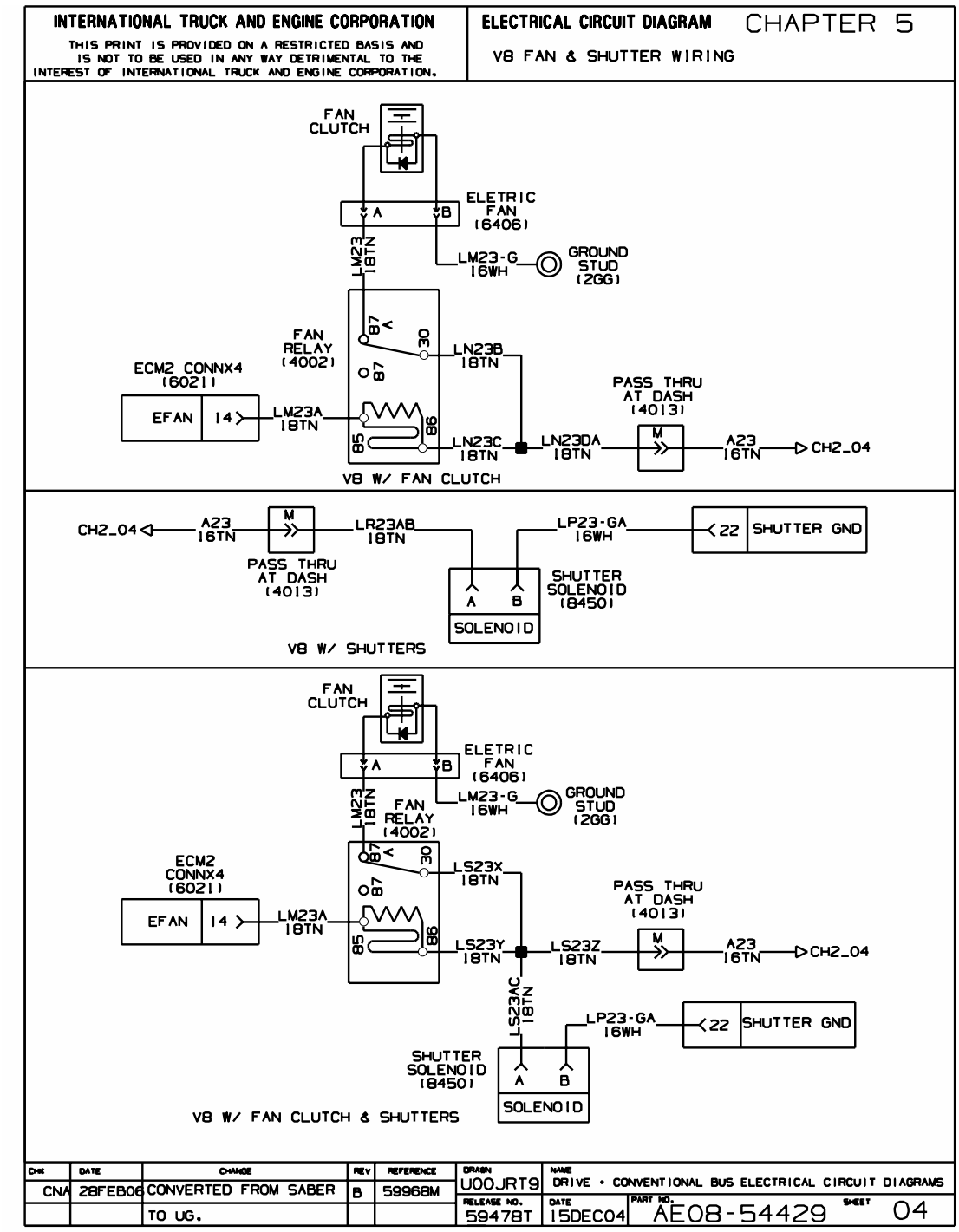


**Figure 35 V8 Fan and Shutter Wiring**

## 5.5. V8 FAN AND SHUTTER WIRING, P. 5

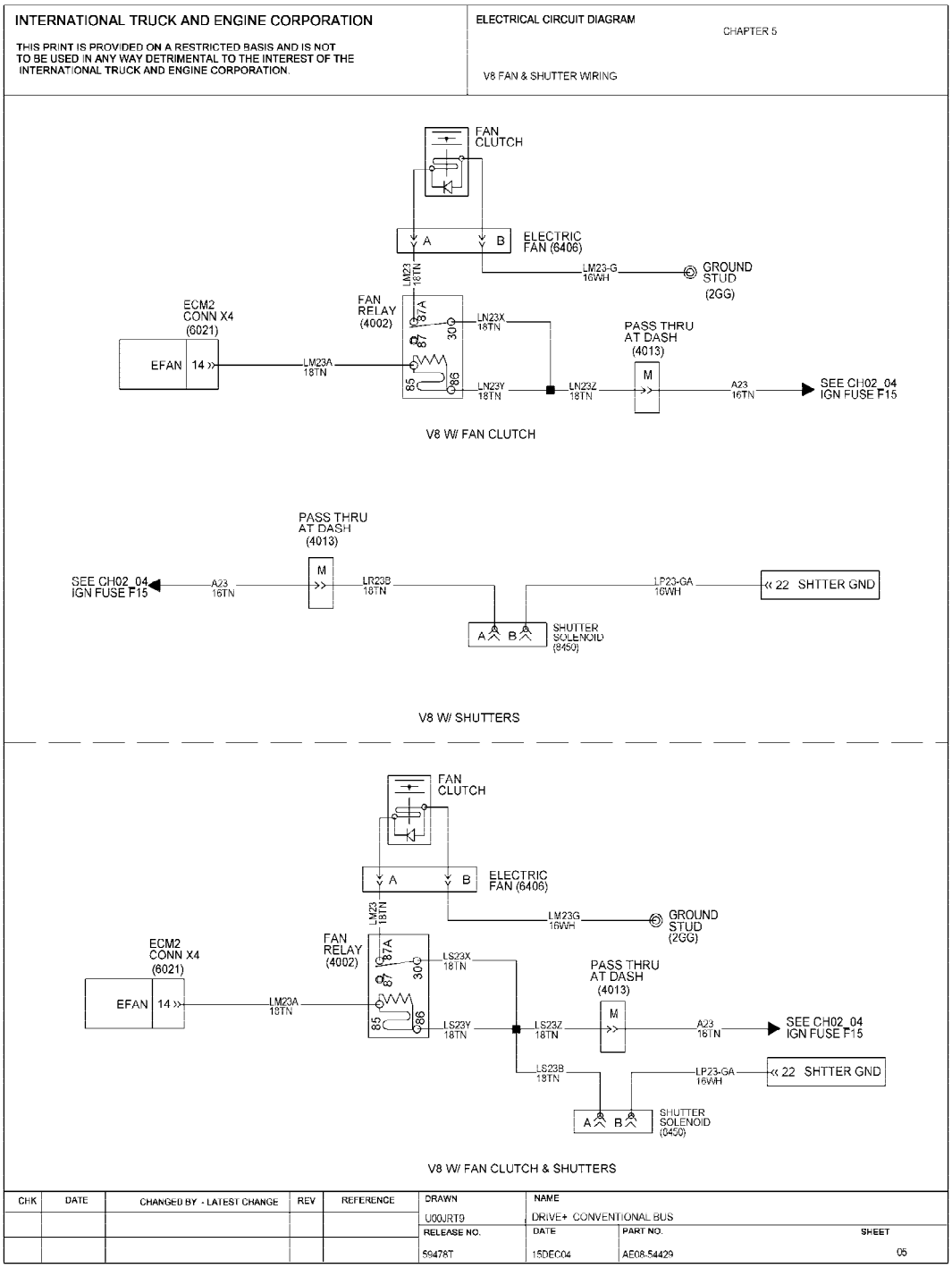


**Figure 36 V8 Fan and Shutter Wiring**

# 6. GAUGES AND WARNING LIGHTS (CHAPTER 6)

## 6.1. IP GAUGES, P. 1

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 6

IP/GAUGES

INSTRUMENT PANEL GAUGES

| GAUGE | WARNING LIGHT | SIGNAL PATH | SENSOR LOCATION |
|---|---|---|---|
| RPM (TACH) | NO | ENGINE CTRL/DRIVE TRAIN J1939 CLUSTER | ENGINE |
| MPH/KPH (SPD) | NO | ENGINE CTRL/DRIVE TRAIN J1939 CLUSTER | TRANSMISSION |
| FUEL | YES | SYSTEM CTRL/DRIVE TRAIN J1939 CLUSTER | FUEL TANK |
| VOLT | YES | SYSTEM CTRL/DRIVE TRAIN J1939 CLUSTER | - |
| AIR1 (PRES) | YES | SYSTEM CTRL/DRIVE TRAIN J1939 CLUSTER | INSIDE CAB- DASH PNL |
| AIR2 (PRES) | YES | SYSTEM CTRL/DRIVE TRAIN J1939 CLUSTER | STEERING COL AREA |
| WATER (TEMP) | YES | ENGINE CTRL/DRIVE TRAIN J1939 CLUSTER | ENGINE |
| ENGINE OIL (TEMP) | YES | ENGINE CTRL/DRIVE TRAIN J1939 CLUSTER | ENGINE |
| OIL (PRES) | YES | ENGINE CTRL/DRIVE TRAIN J1939 CLUSTER | ENGINE |
| TRANS (TEMP) | YES | XMSN CTRLR/SYSTEM CTRLR/DRIVE TRAIN J1939 CLUSTER | TRANSMISSION |
| AMMETER | NO | PAM MODULE/DRIVE TRAIN J1939 CLUSTER | ENGINE |

NOTE :

1) WARNING LIGHTS ARE PART OF THE GAUGES AND LOCATED IN THE GAUGE CLUSTER

| CHK | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | C | 59968M | U00JAHP | DRIVE • CONVENTIONAL ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 23APR02 PART NO. AE08-54430 SHEET 01 |

**Figure 37 IP Gauges**

## 6.2. WARNING LIGHTS, P. 2

**INTERNATIONAL TRUCK AND ENGINE CORPORATION**

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**ELECTRICAL CIRCUIT DIAGRAM** CHAPTER 6

WARNING LIGHTS

| IP WARNING LIGHTS | | |
|---|---|---|
| WARNING LIGHT TITLE | SIGNAL PATH | SENSOR LOCATION |
| RANGE INHIBITED LCT | 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 (AIR) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | SWITCH |
| BRAKE PRESSURE (HYD) | HYD BRK ECU CTRLR/DRIVE TRAIN J1939/CLUSTER | SWITCH |
| BRAKE/PARK/BRAKE FLUID | HYD BRK ECU CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| PARK (HYD BRAKE) (P) | HYD BRK ECU CTRLR/DRIVE TRAIN J1939/CLUSTER | SAHR TRAVEL SW |
| BRAKE FLUID HYD BRK | HYD BRK ECU CTRLR/DRIVE TRAIN J1939/CLUSTER | BRK RESERVOIR |
| TRAC CTRL | TRUCK ABS CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| CHECK TRANS | TRUCK ABS CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| (LEFT TURN) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | TURN SIG SW |
| 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 (AIR BRAKE) (P) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | PARK BRAKE VALVE |
| ABS | TRUCK CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| (RIGHT TURN) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| WAIT TO START | ENGINE CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| (HIGH BEAM IND) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| COLD AMB PROTEC | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| THROTTLE | ENGINE CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| LIFT DOOR | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | LIFT DOOR SWITCH |
| ECON | TRANS CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| SERVICE (P) | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| AMBER FLASHER | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| RED FLASHER | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| EMERG EXIT | SYSTEM CTRLR/DRIVE TRAIN J1939/CLUSTER | |
| | | |

| CHK | DATE | CHANGE | REV | REFERENCE | DRAWN | NAME |
|---|---|---|---|---|---|---|
| CNA | 28FEB06 | CONVERTED FROM SABER | D | 59968M | U00JAHP | DRIVE • CONVENTIONAL BUS ELECTRICAL CIRCUIT DIAGRAMS |
| | | TO UG. | | | RELEASE NO. 55806A | DATE 23APR02 PART NO. AE08-54430 SHEET 02 |

**Figure 38 Warning Lights**

## 6.3. WARNING LIGHTS CONTROLLED BY ENGINE, TRANSMISSION, ABS CONTROLLERS, P. 3

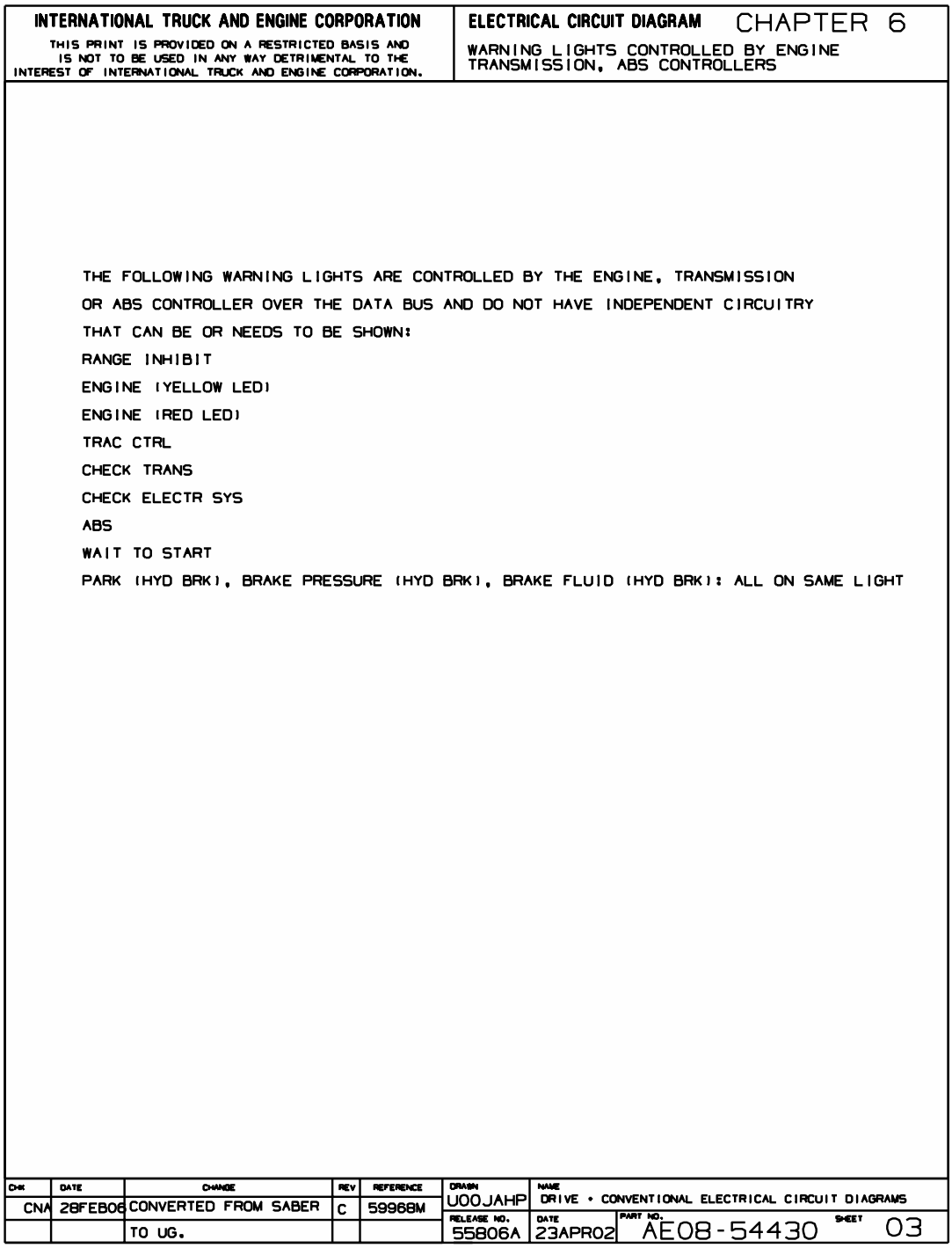


**Figure 39 Warning Lights Controlled by Engine, Transmission, ABS Controller**

## 6.4. ENG. OIL PRESS. AND TEMP., SPEEDOMETER, TACH., VOLTMETER AND WATER TEMP. GAUGE CIRCUITS, P. 4

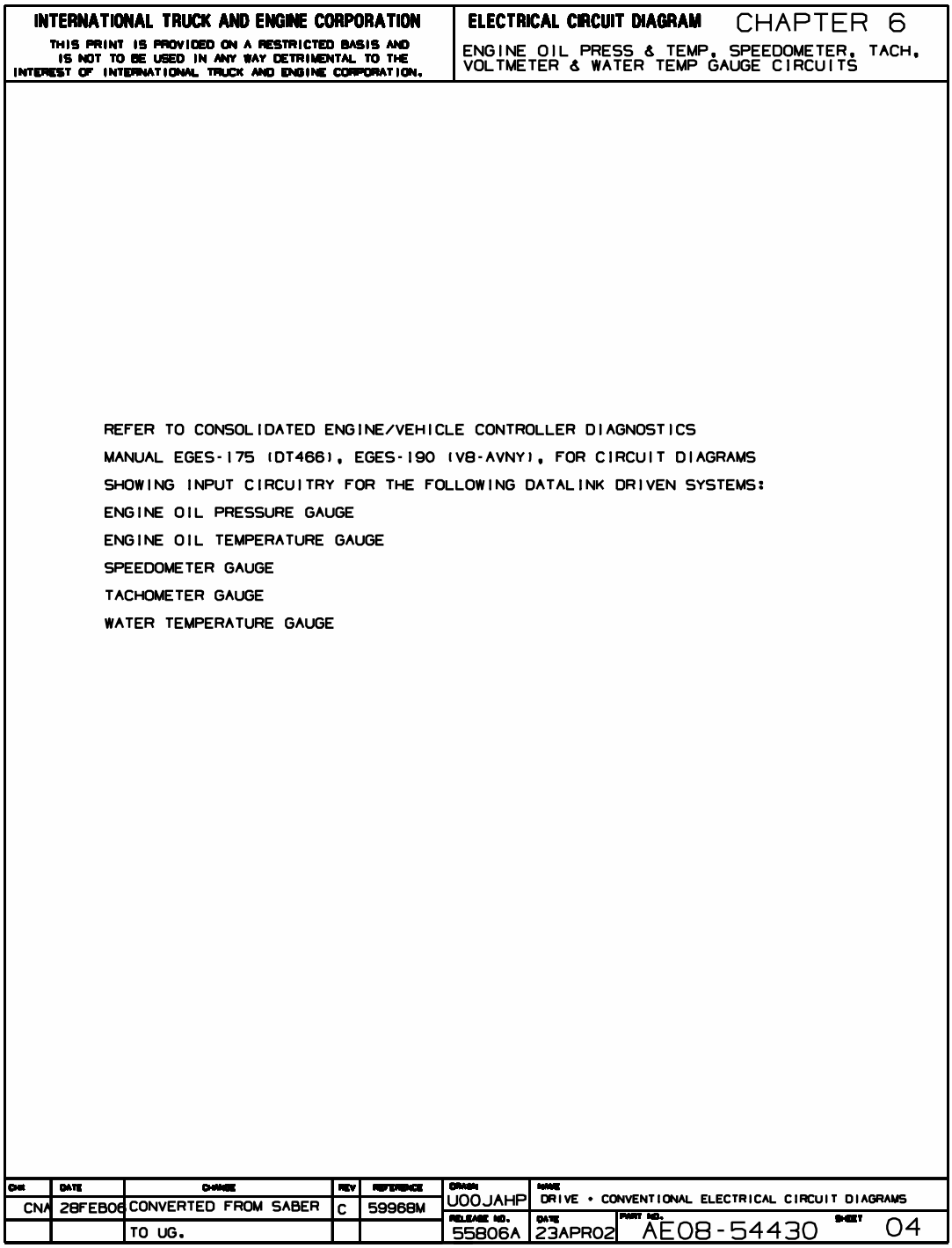


**Figure 40 Eng. Oil Press. and Temp., Speedometer, Tach., Voltmeter and Water Temp. Gauge Circuits**

## 6.5. GAUGES AND WARNING LIGHTS — INSTRUMENT CLUSTER, P. 5

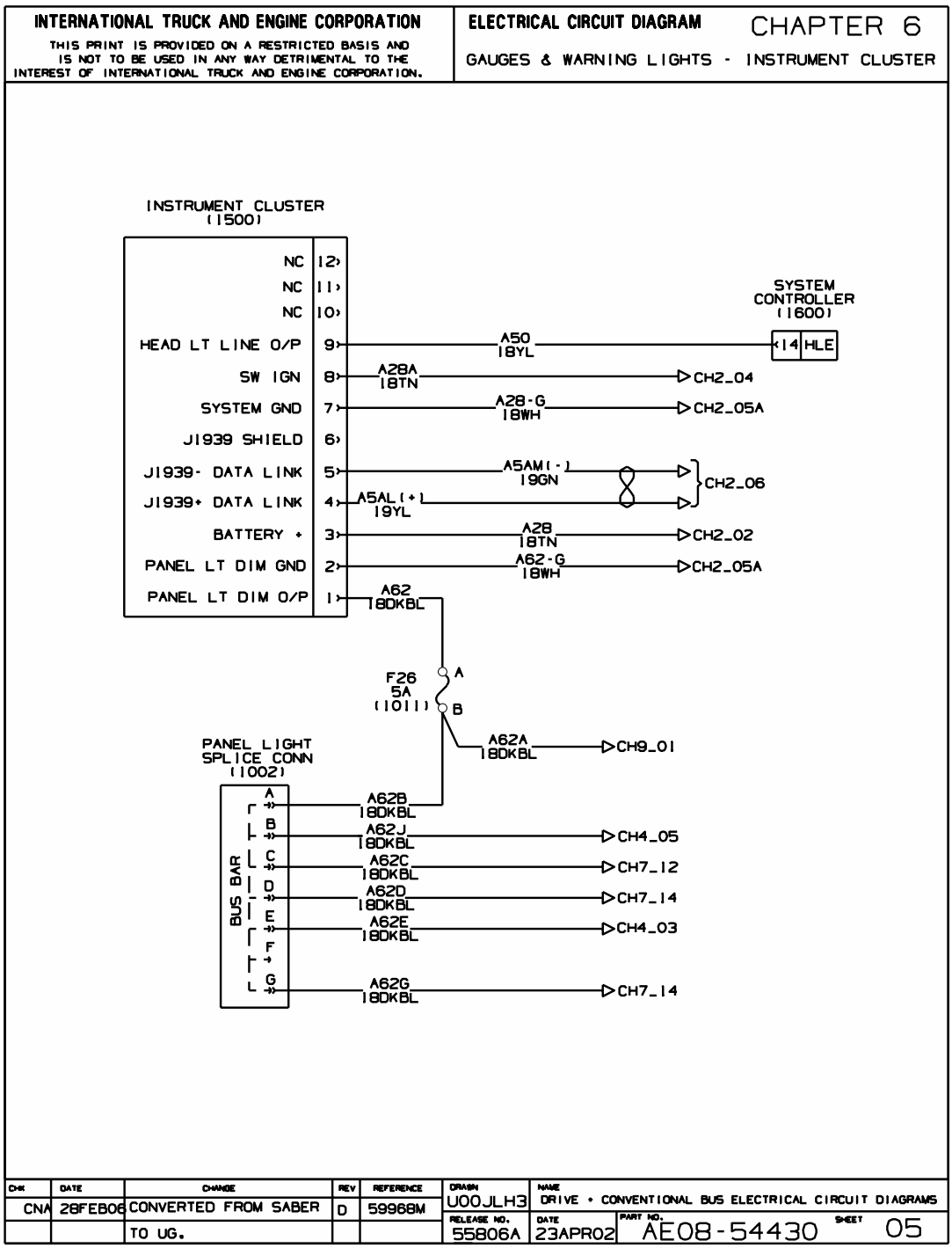


**Figure 41 Gauges and Warning Lights — Instrument Cluster**

## 6.6. GAUGES AND WARNING LIGHTS — AMMETER, P. 6

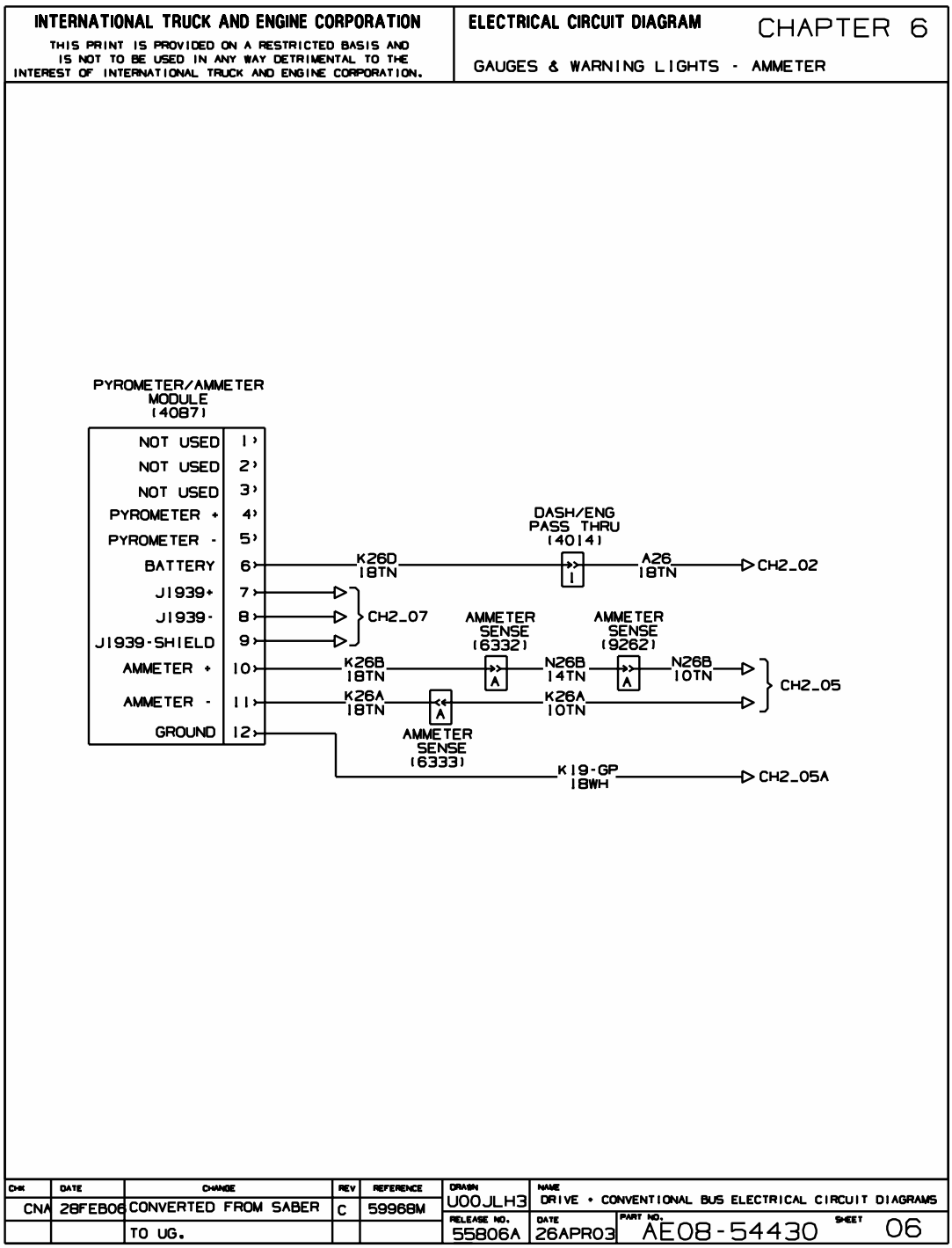


**Figure 42 Gauges and Warning Lights — Ammeter**

## 6.7. GAUGES AND WARNING LIGHTS — COOLANT TANK LEVEL, P. 7

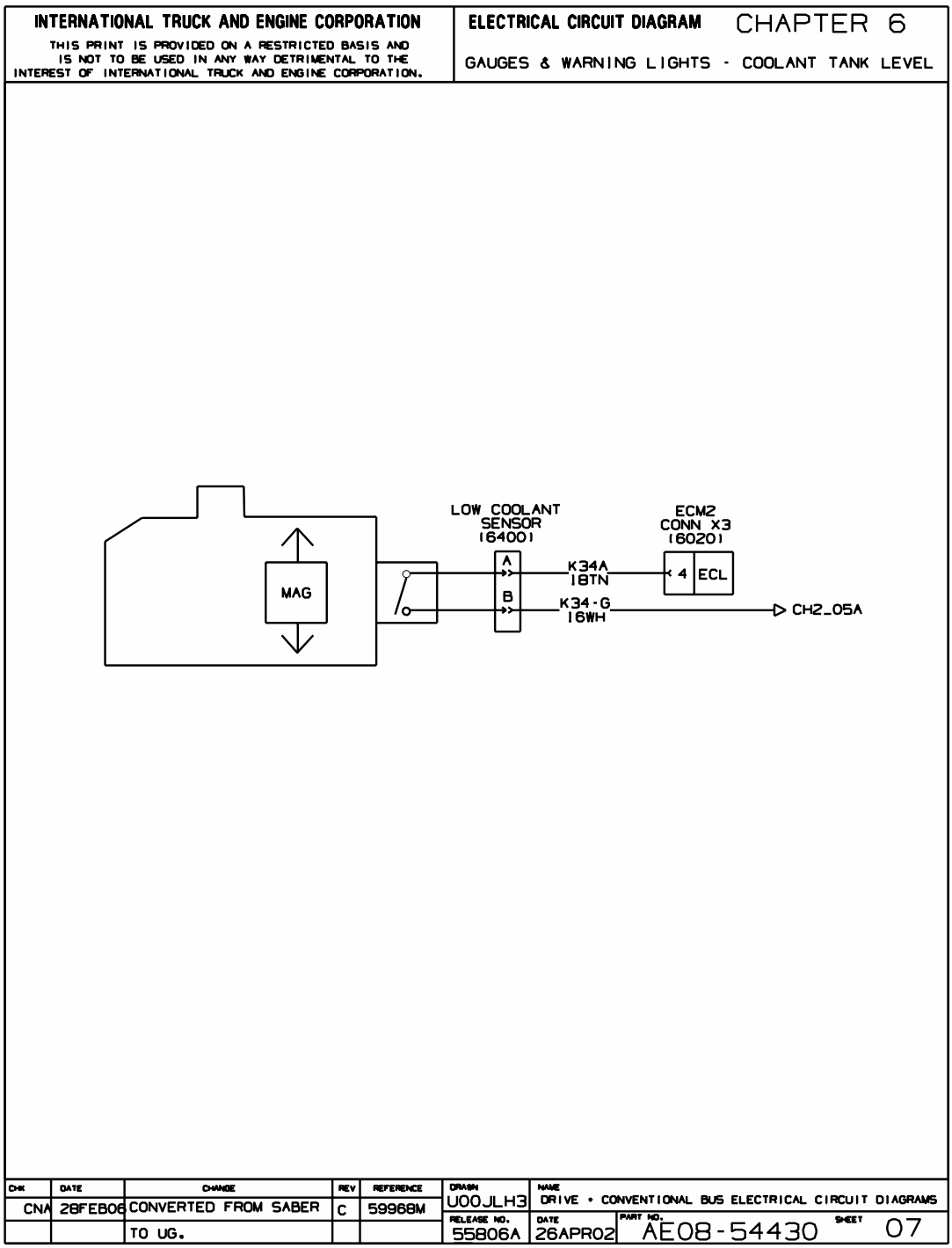


**Figure 43 Gauges and Warning Lights — Coolant Tank Level**

## 6.8. GAUGES AND WARNING LIGHTS — FUEL GAUGE WITH AIR BRAKE CHASSIS, P. 8

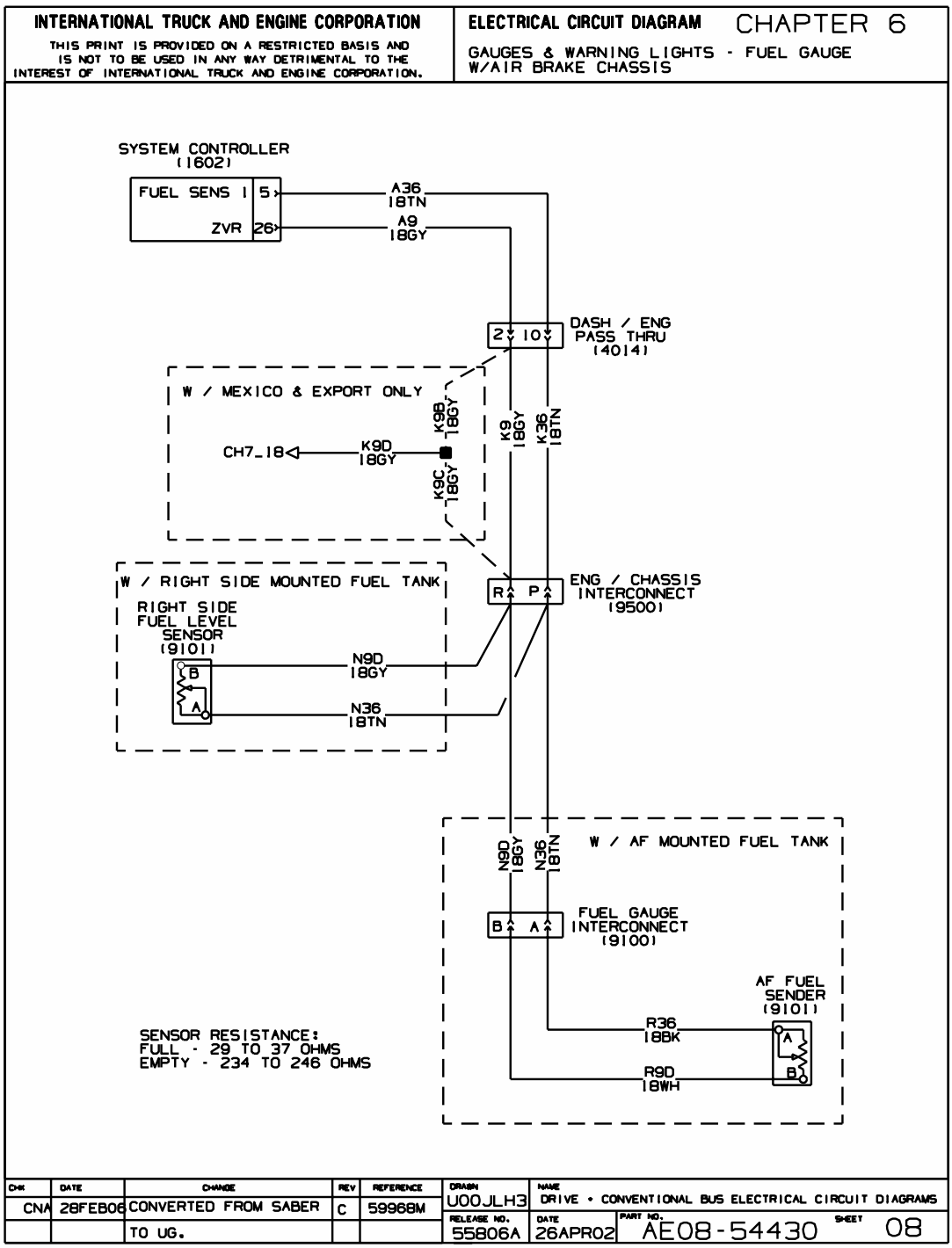


**Figure 44 Gauges and Warning Lights — Fuel Gauge with Air Brake Chassis**

## 6.9. GAUGES AND WARNING LIGHTS — FUEL GAUGE WITH HYDRAULIC BRAKE CHASSIS, P. 9

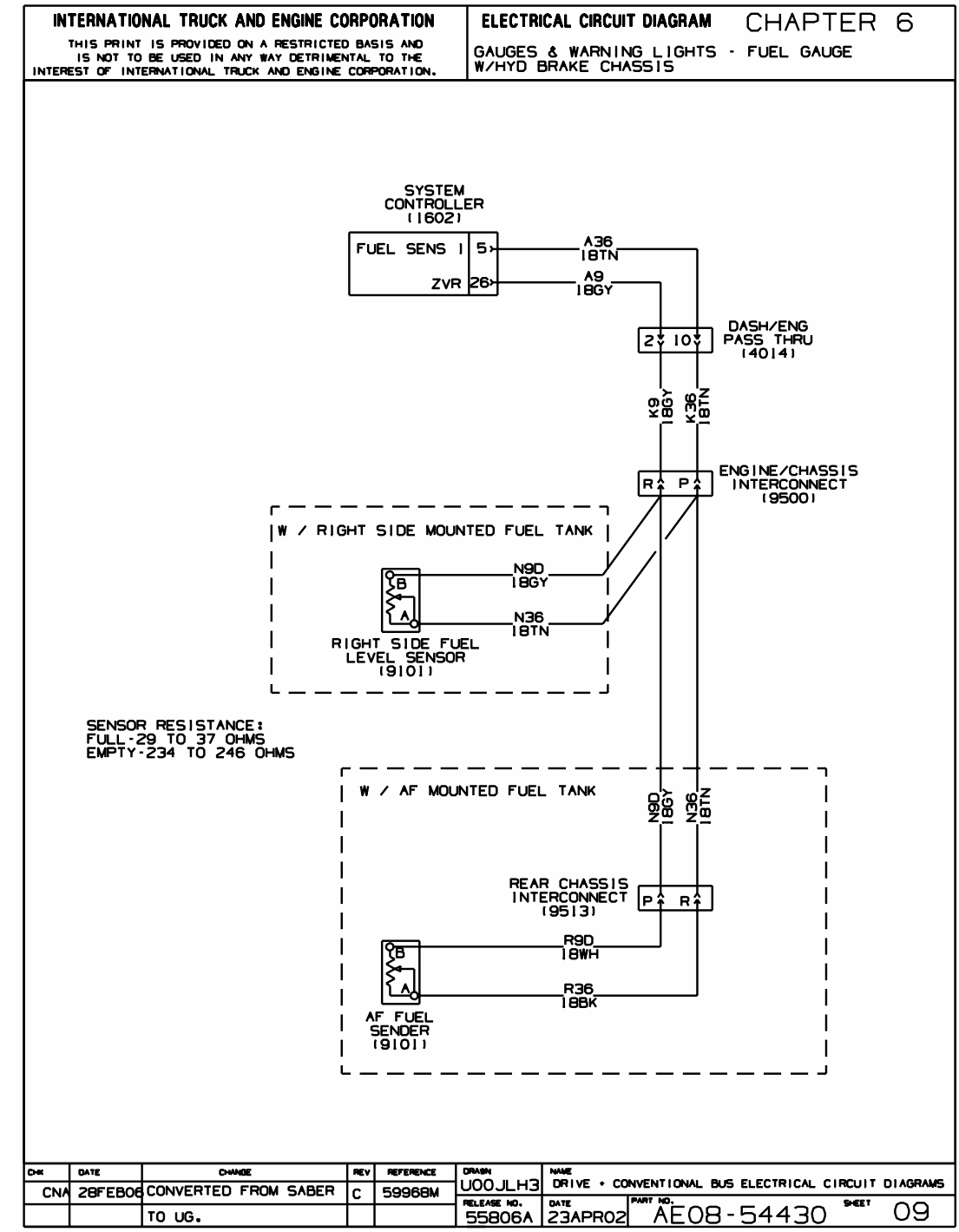


**Figure 45 Gauges and Warning Lights — Fuel Gauge with Hydraulic Brake Chassis**

## 6.10. GAUGES AND WARNING LIGHTS — PARK BRAKE LIGHT, P. 10

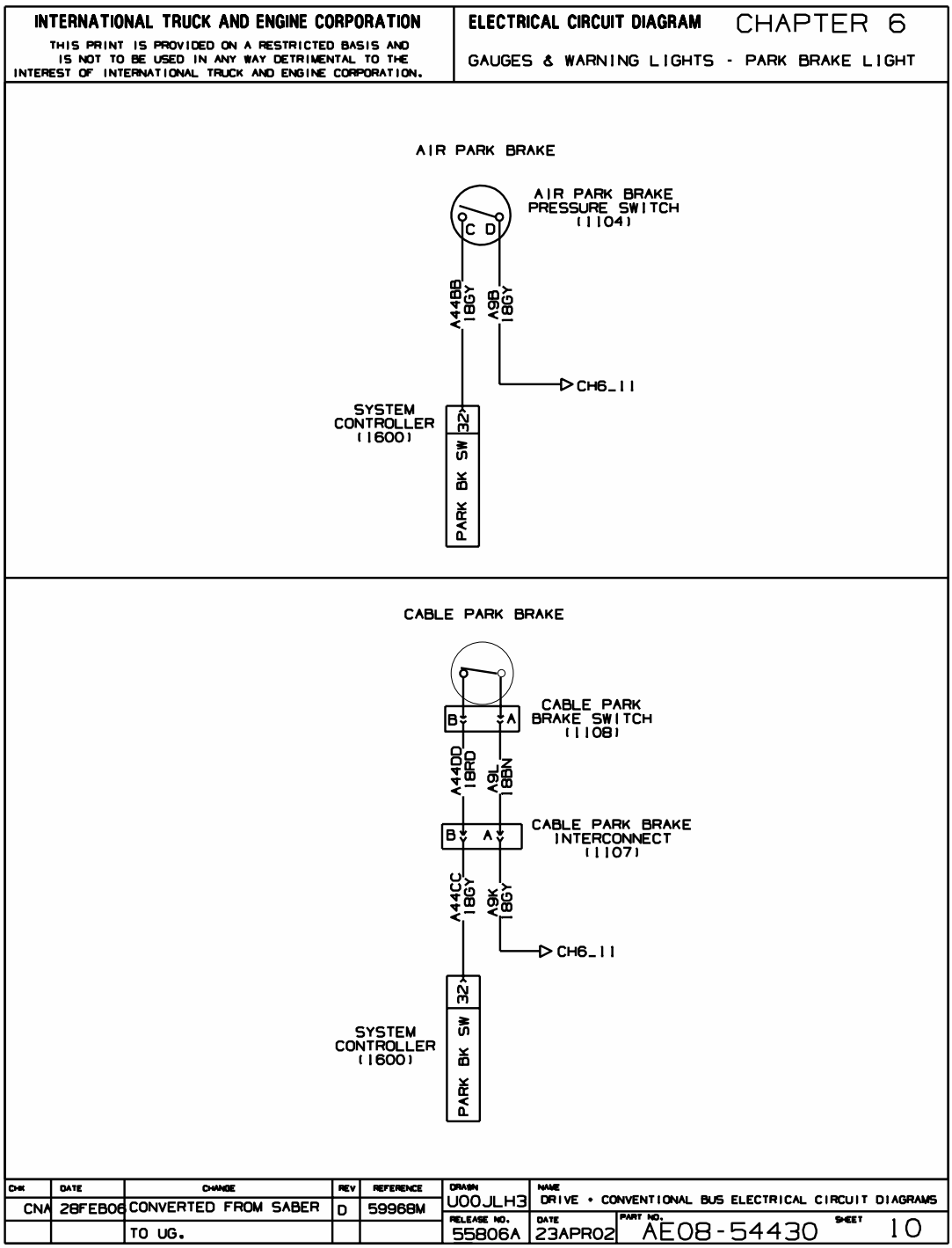


**Figure 46 Gauges and Warning Lights — Park Brake Light**

## 6.11. GAUGES AND WARNING LIGHTS — AIR PRESSURE INPUT CIRCUIT AND ZERO VOLT REFERENCE SPLICE, P. 11

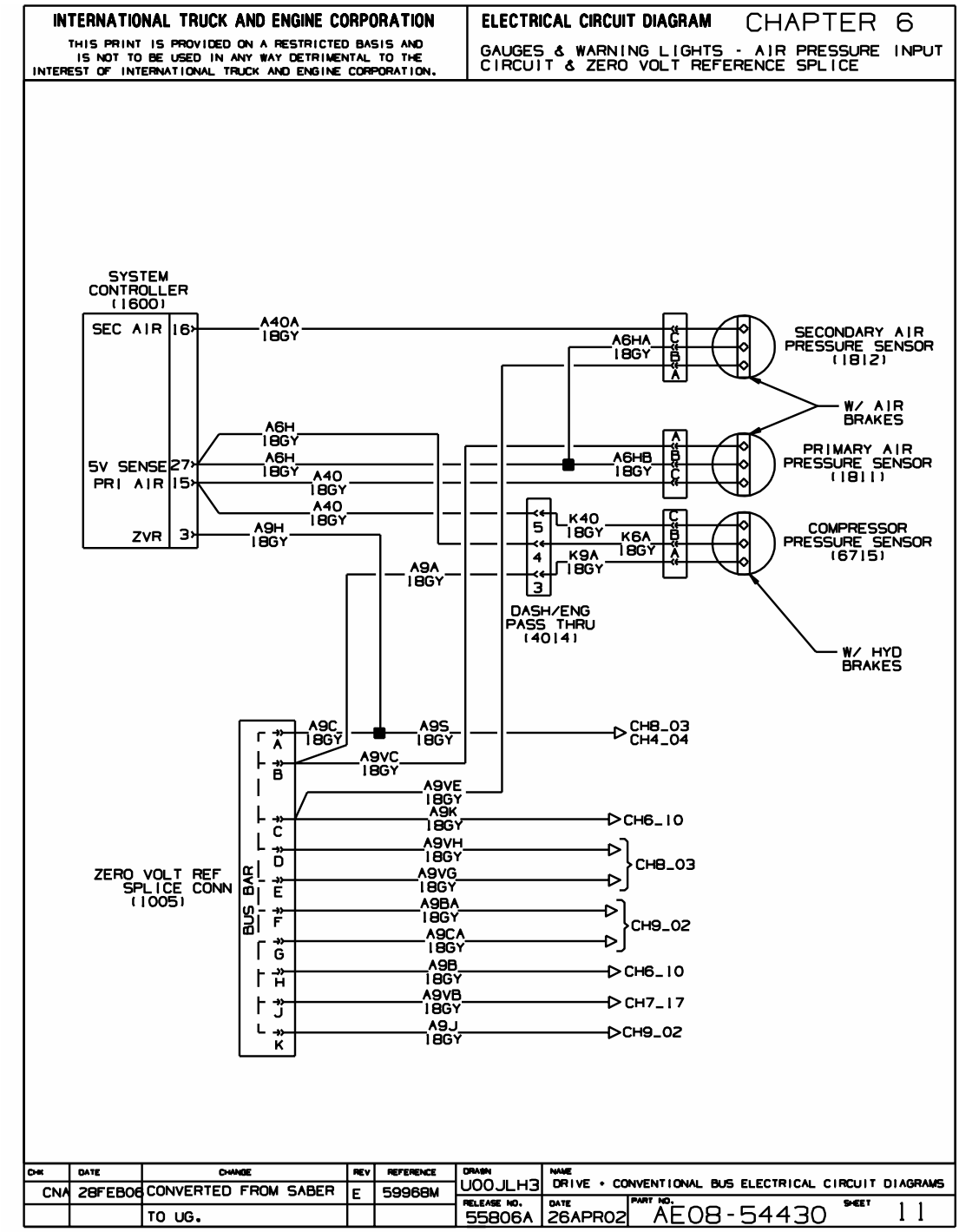


**Figure 47 Gauges and Warning Lights — Air Pressure Input Circuit and Zero Volt Reference Splice**

## 6.12. GAUGES AND WARNING LIGHTS — CHANGE TRANSMISSION FILTER LIGHT, P. 12

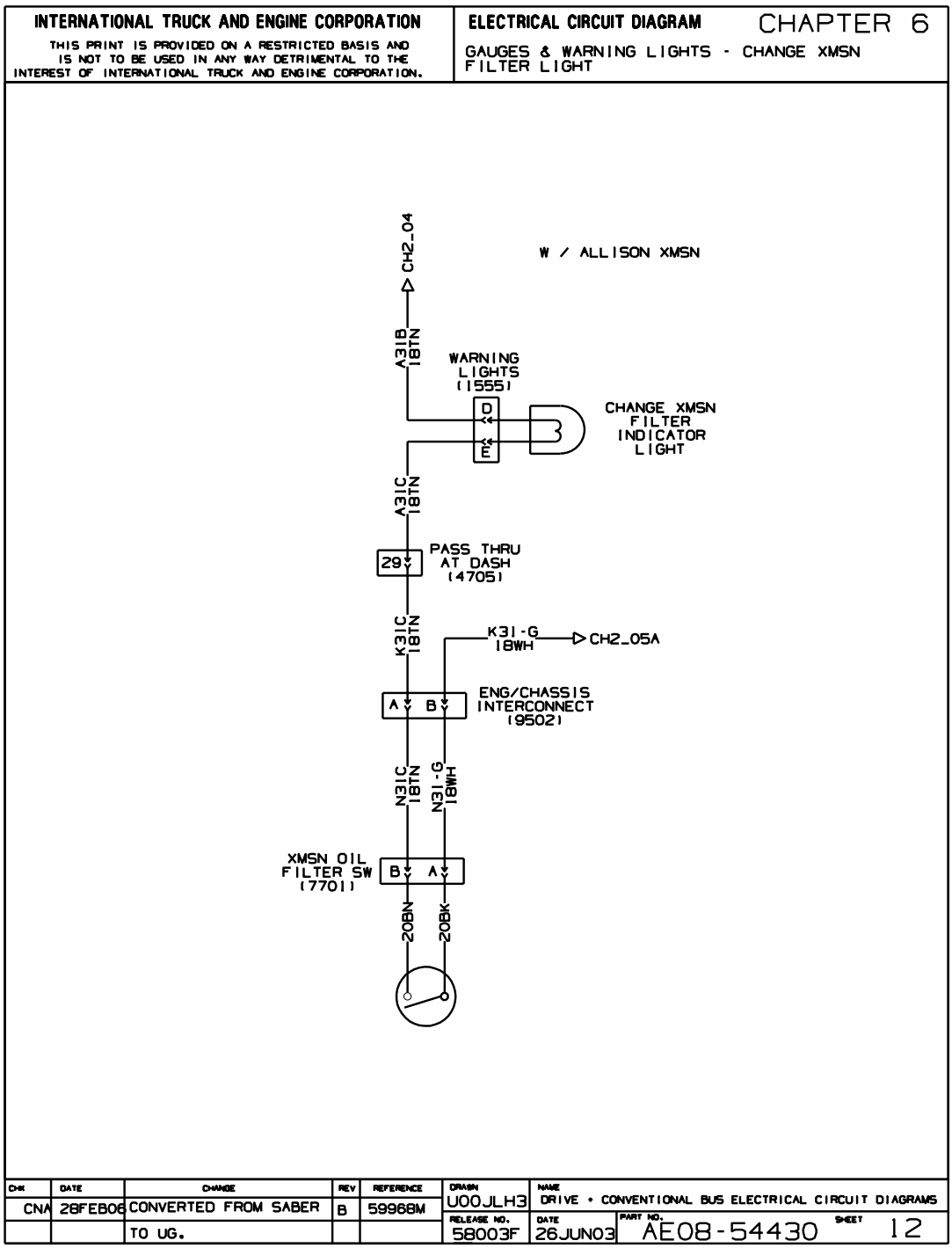


**Figure 48 Gauges and Warning Lights — Change Transmission Filter Light**

# 7. CHASSIS ACCESSORIES (CHAPTER 7)

## 7.1. AIR DRYER AND DRAIN VALVE, P. 1

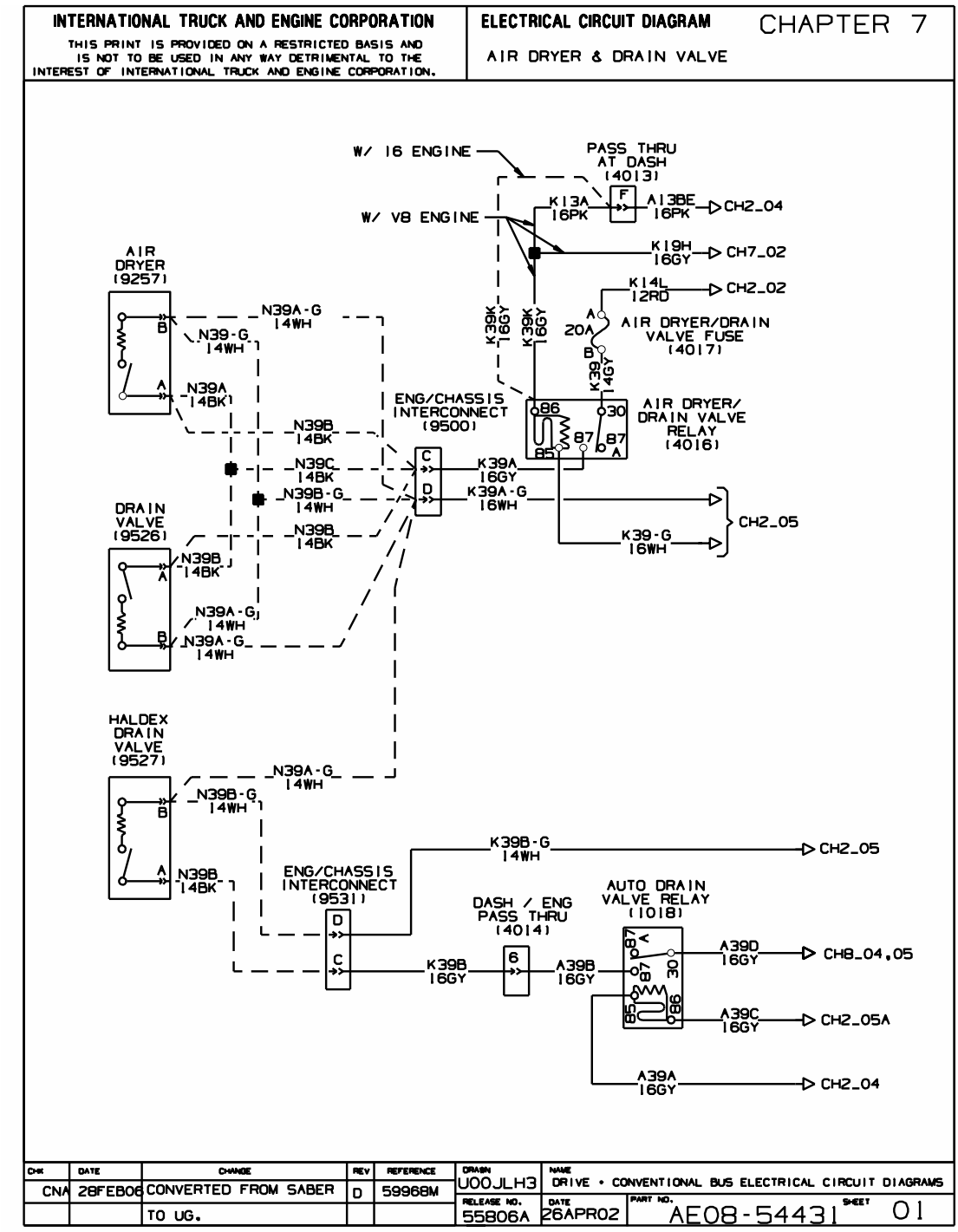


**Figure 49 Air Dryer and Drain Valve**

## 7.2. FUEL FILTER WIRING SYSTEM, P. 2

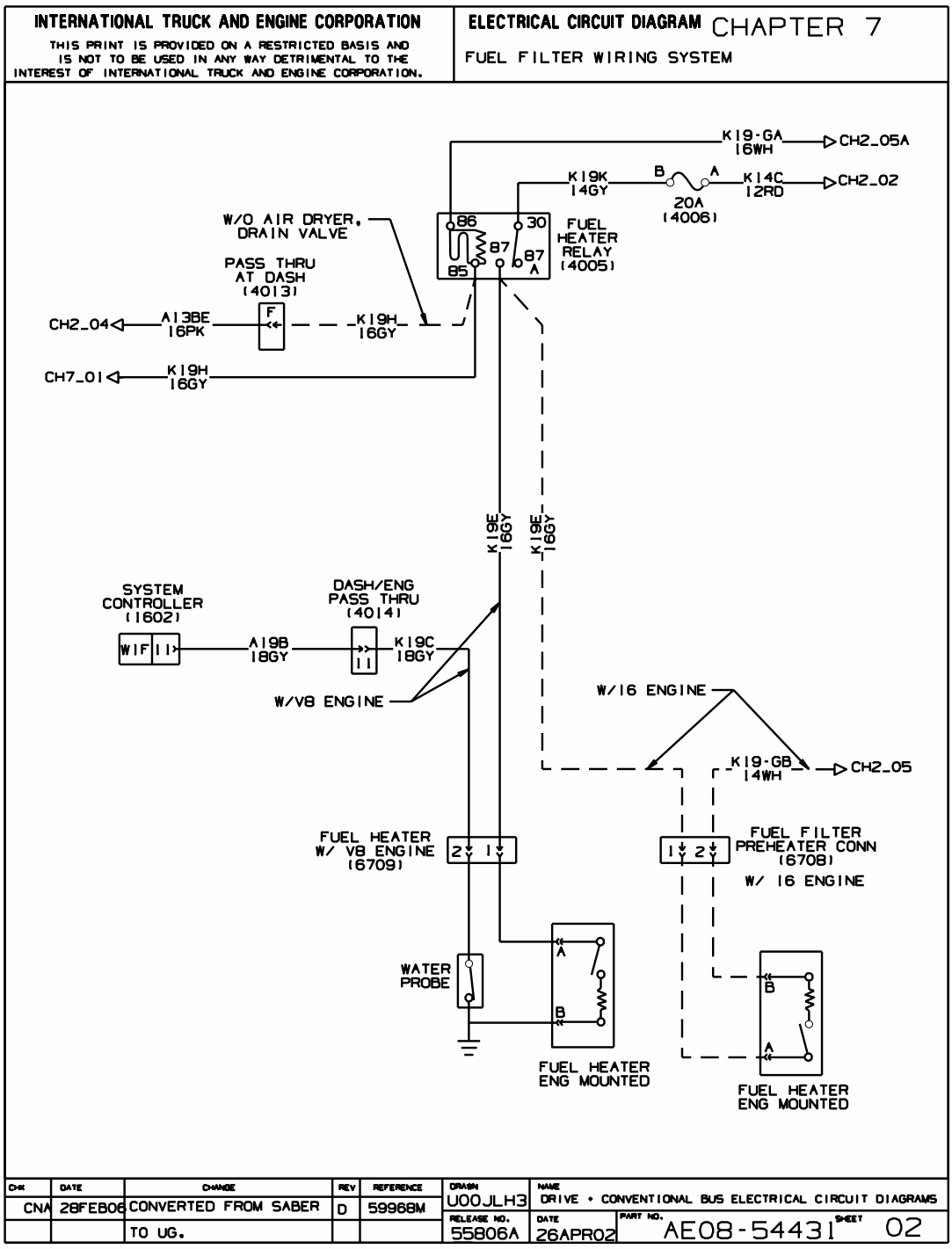


**Figure 50 Fuel Filter Wiring System**

## 7.3. AIR PARK BRAKE INTERLOCK, P. 3

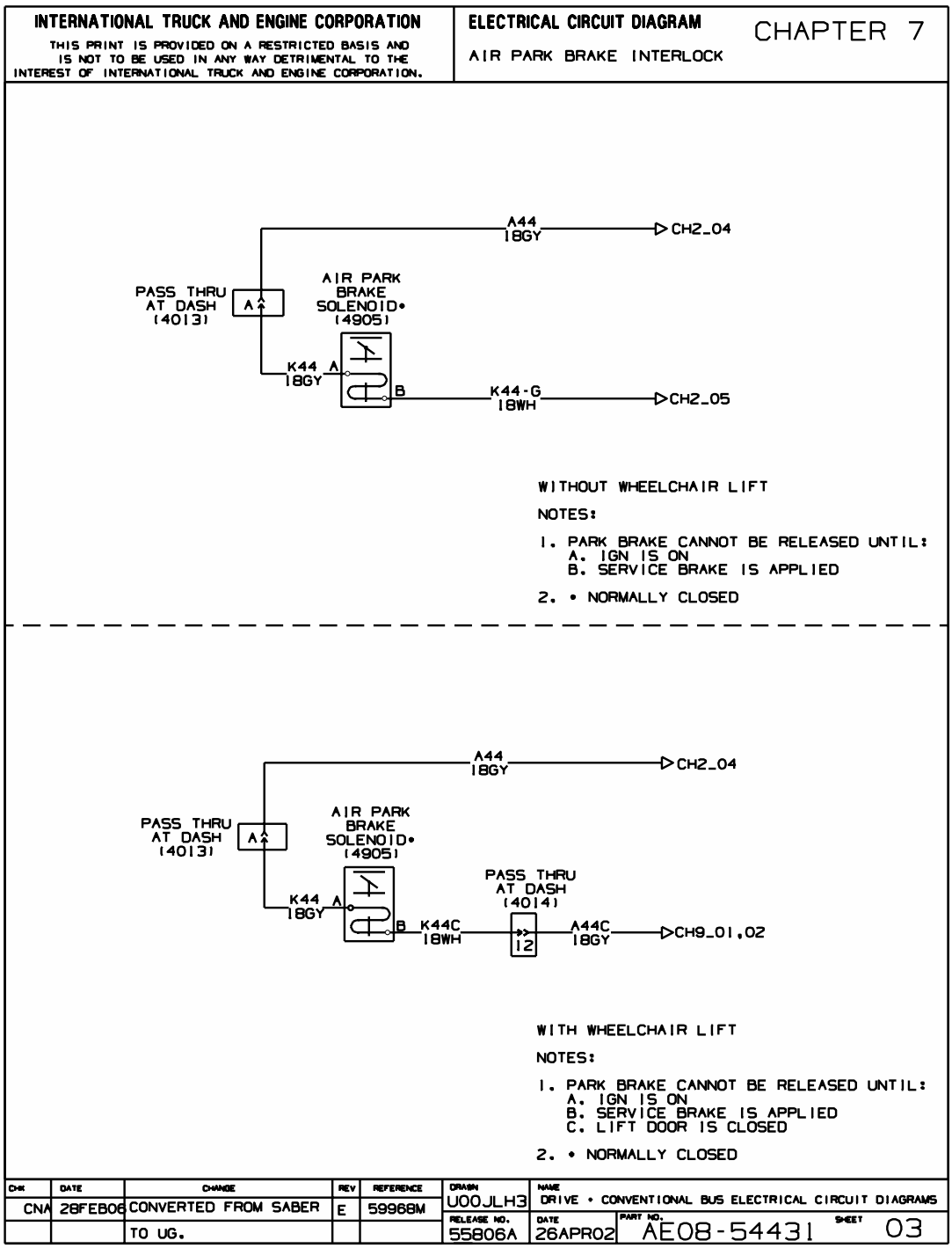


**Figure 51 Air Park Brake Interlock**

## 7.4. PARK BRAKE / SHIFTER INTERLOCK — WITH LCT TRANSMISSION ONLY, P. 4

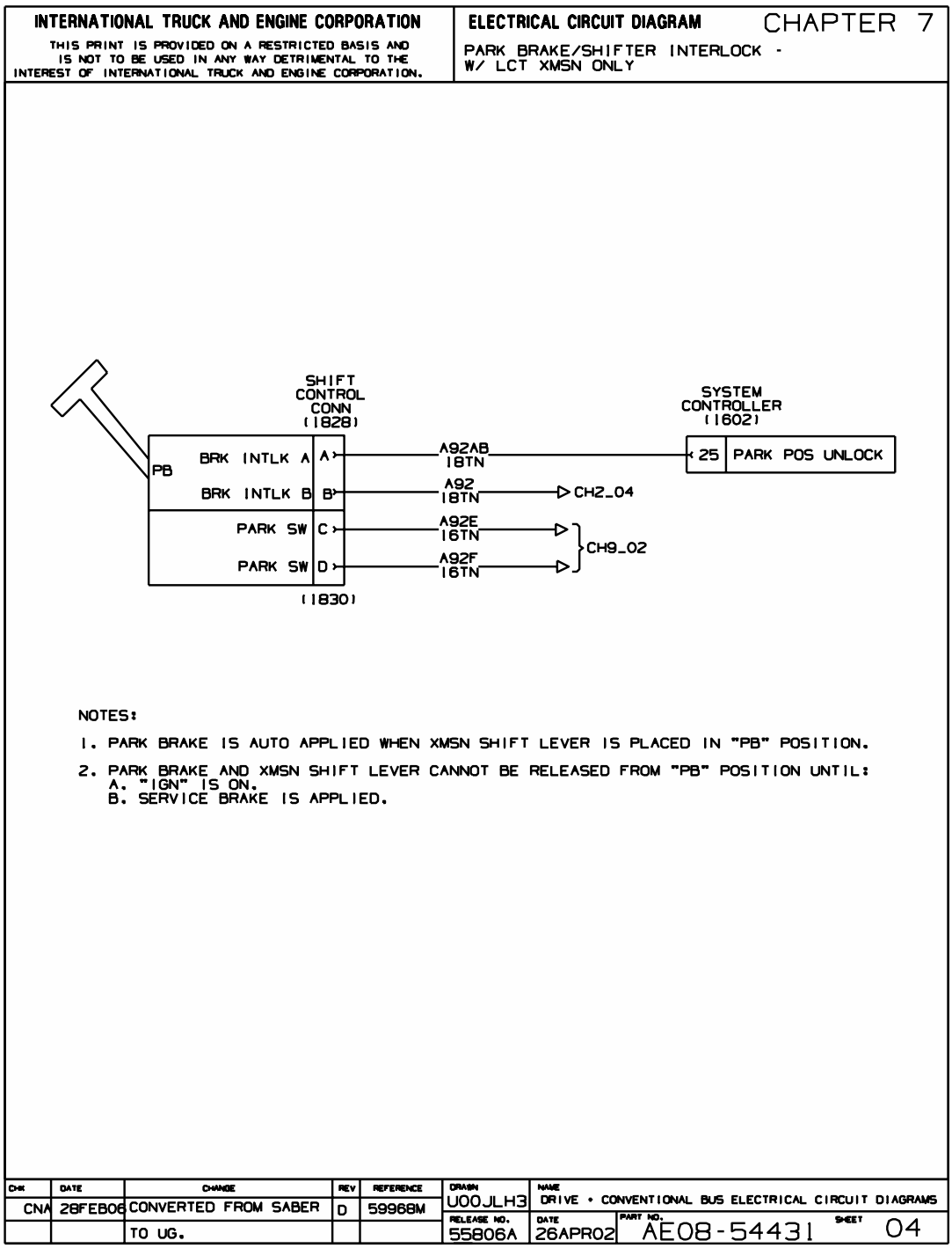


**Figure 52 Park Brake / Shifter Interlock — with LCT Transmission Only**

## 7.5. ANTILOCK BRAKE SYSTEM (ABS), AIR, P. 5

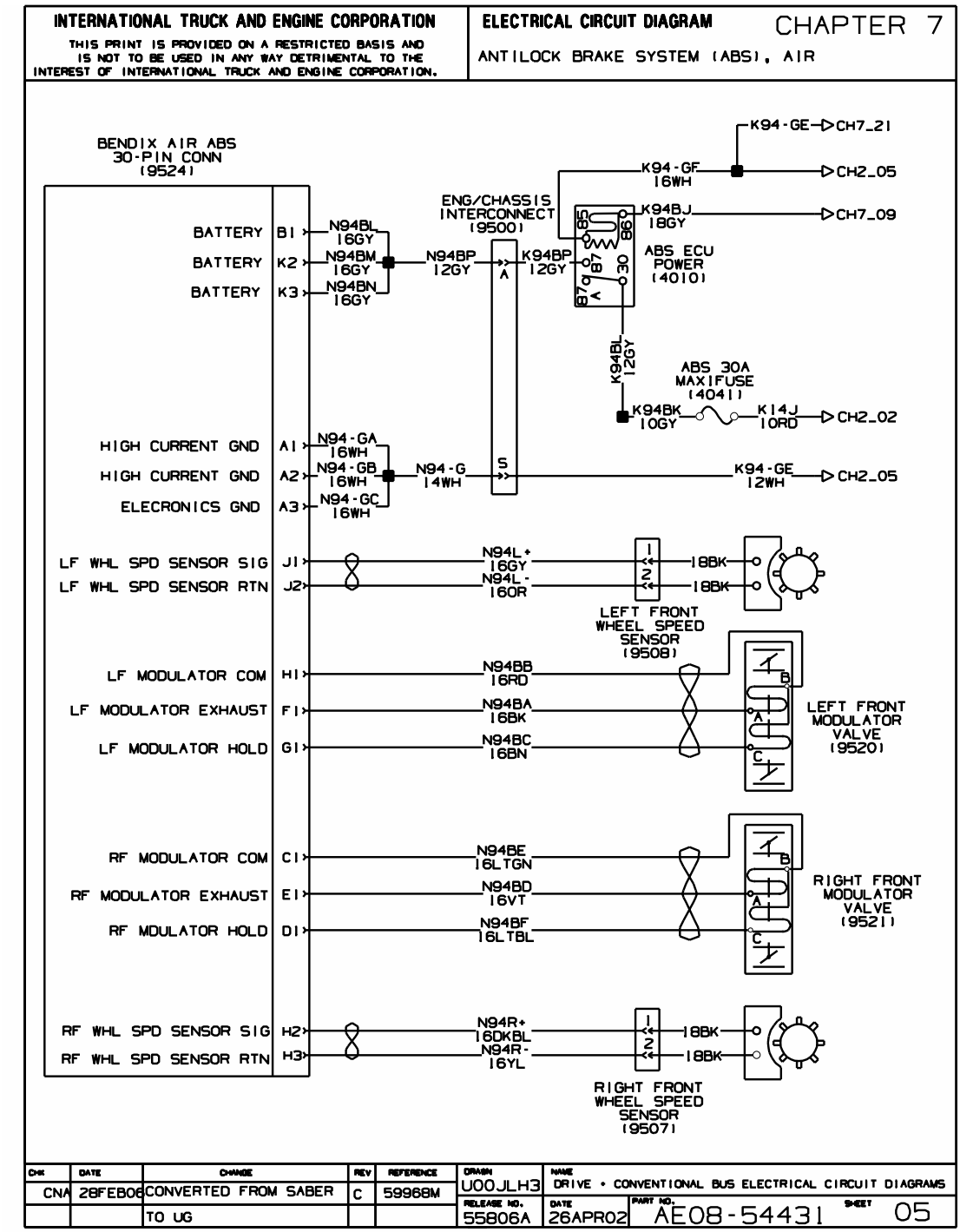


**Figure 53 Antilock Brake System (ABS), Air**

## 7.6. ANTILOCK BRAKE SYSTEM (ABS), AIR, P. 6

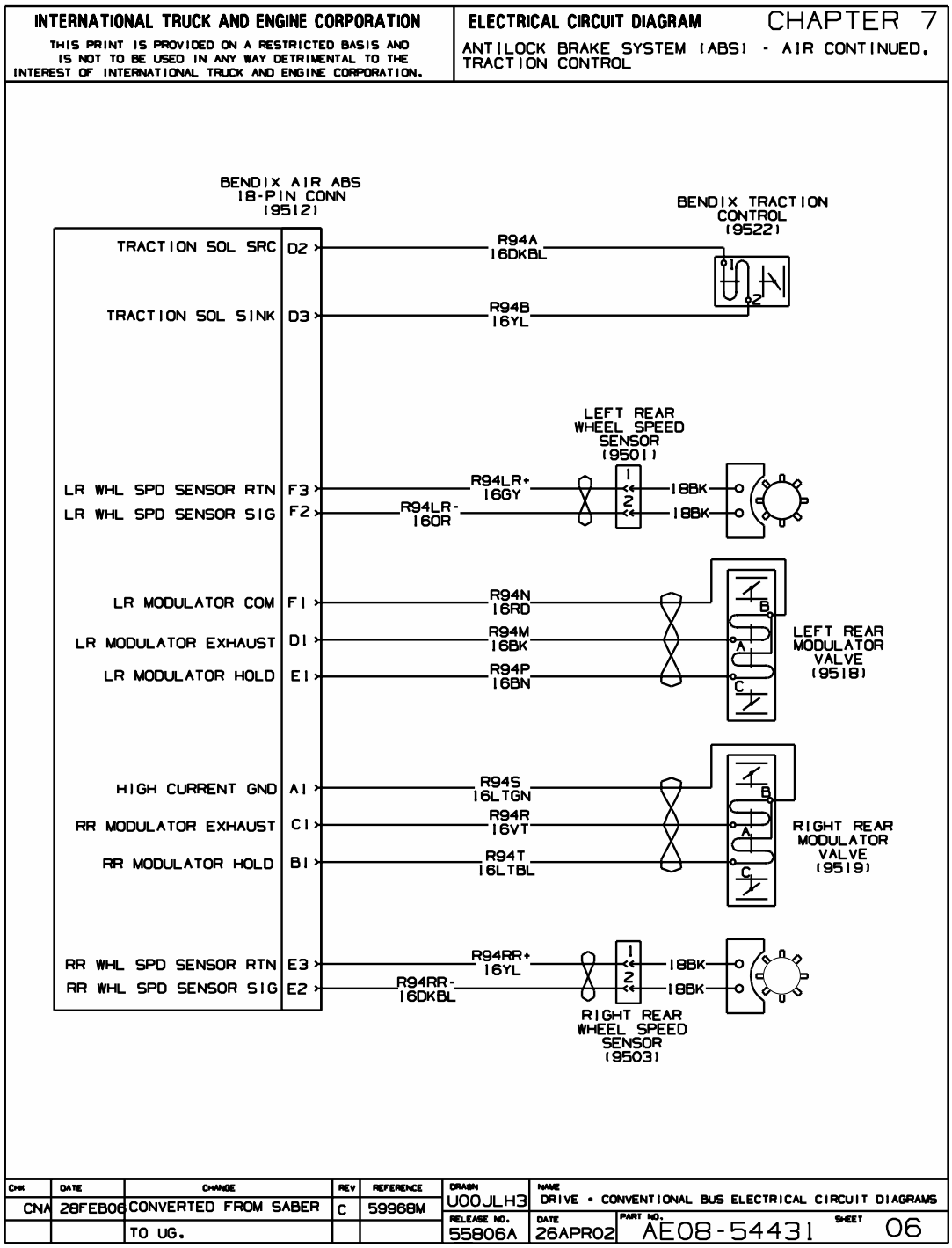


**Figure 54 Antilock Brake System (ABS), Air (Cont.)**

## 7.7. AIR SOLENOID MODULE, P. 7

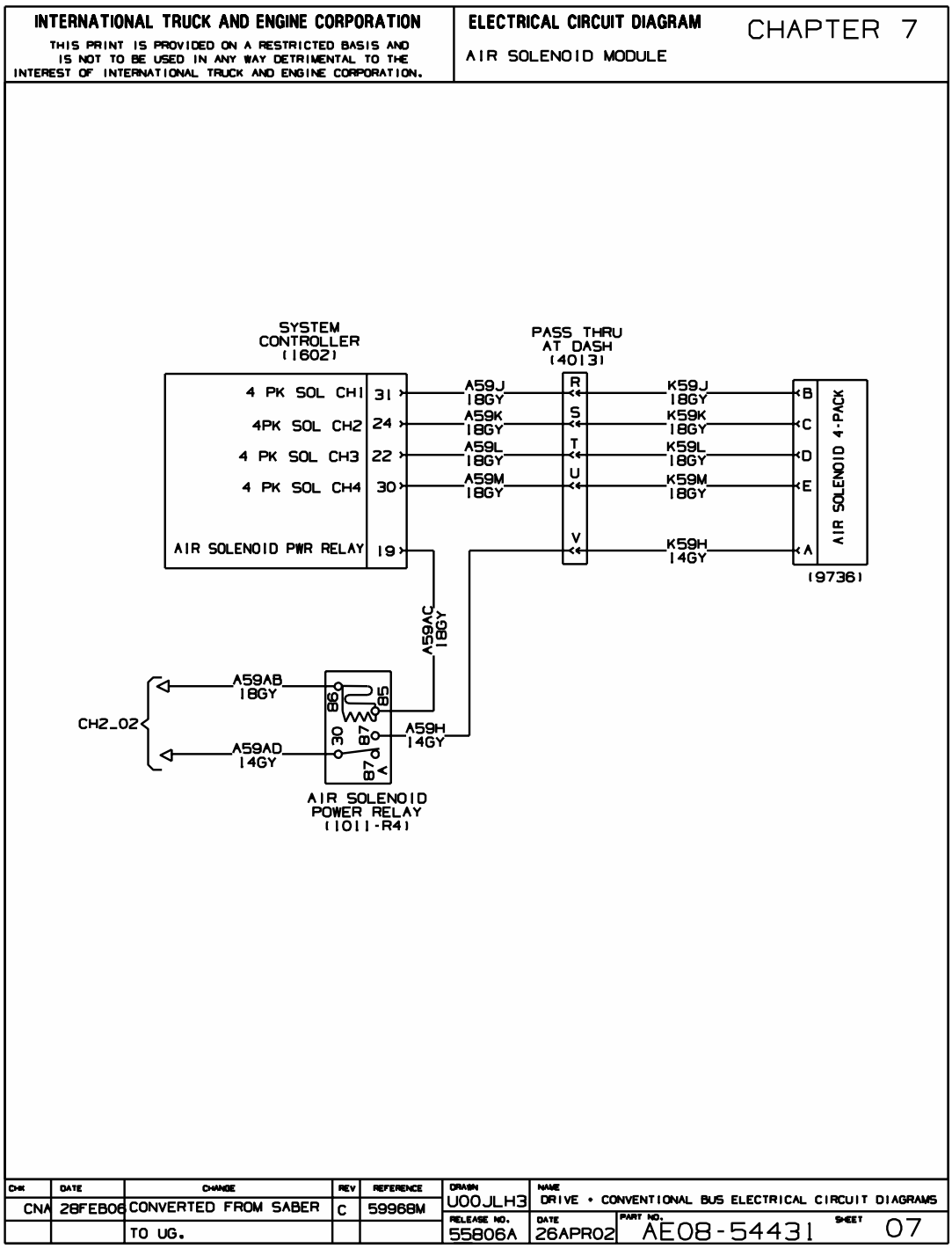


**Figure 55 Air Solenoid Module**

## 7.8. HYDRAULIC ANTILOCK BRAKES, P. 8

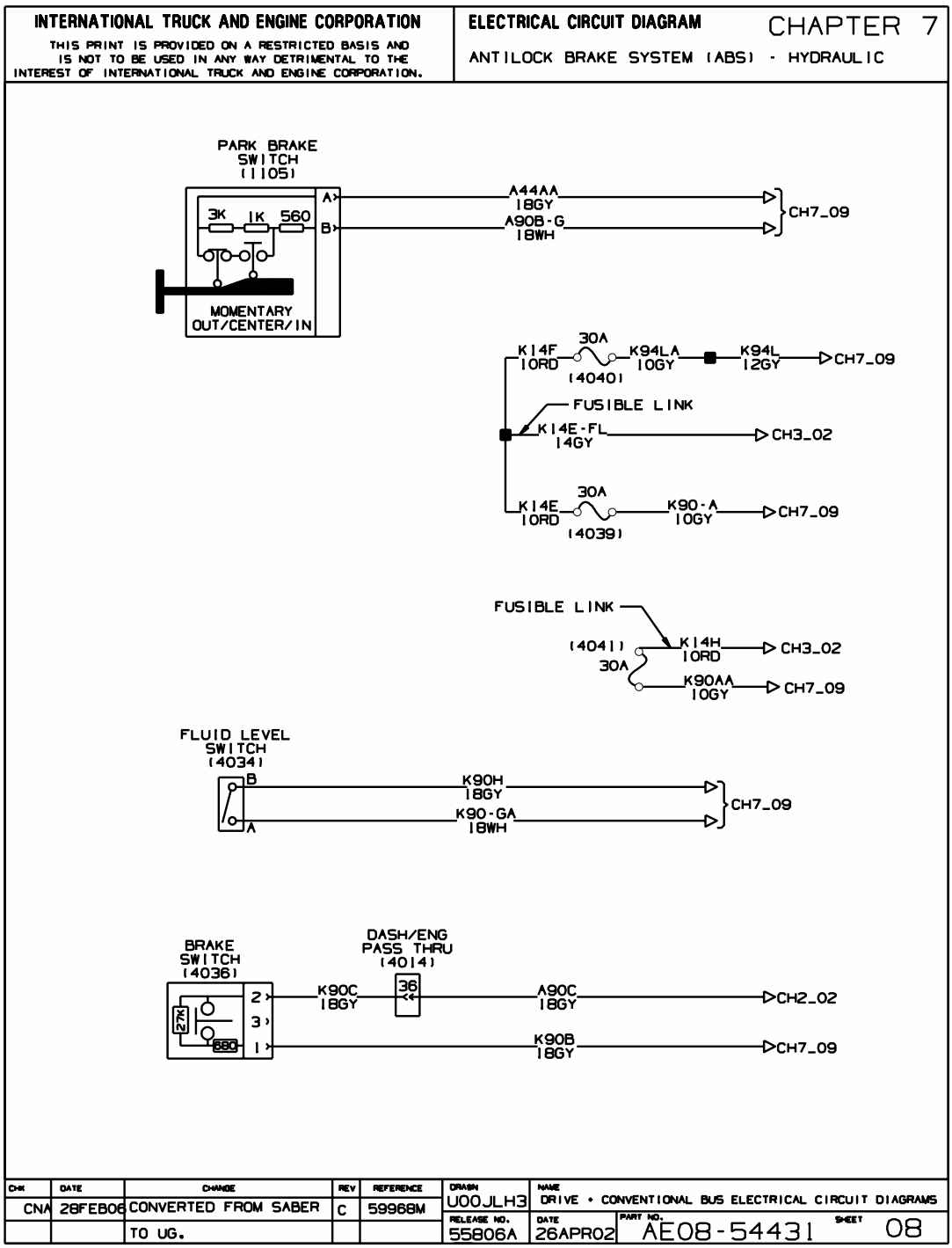


**Figure 56 Hydraulic Antilock Brakes**

## 7.9. HYDRAULIC ANTILOCK BRAKES, P. 9

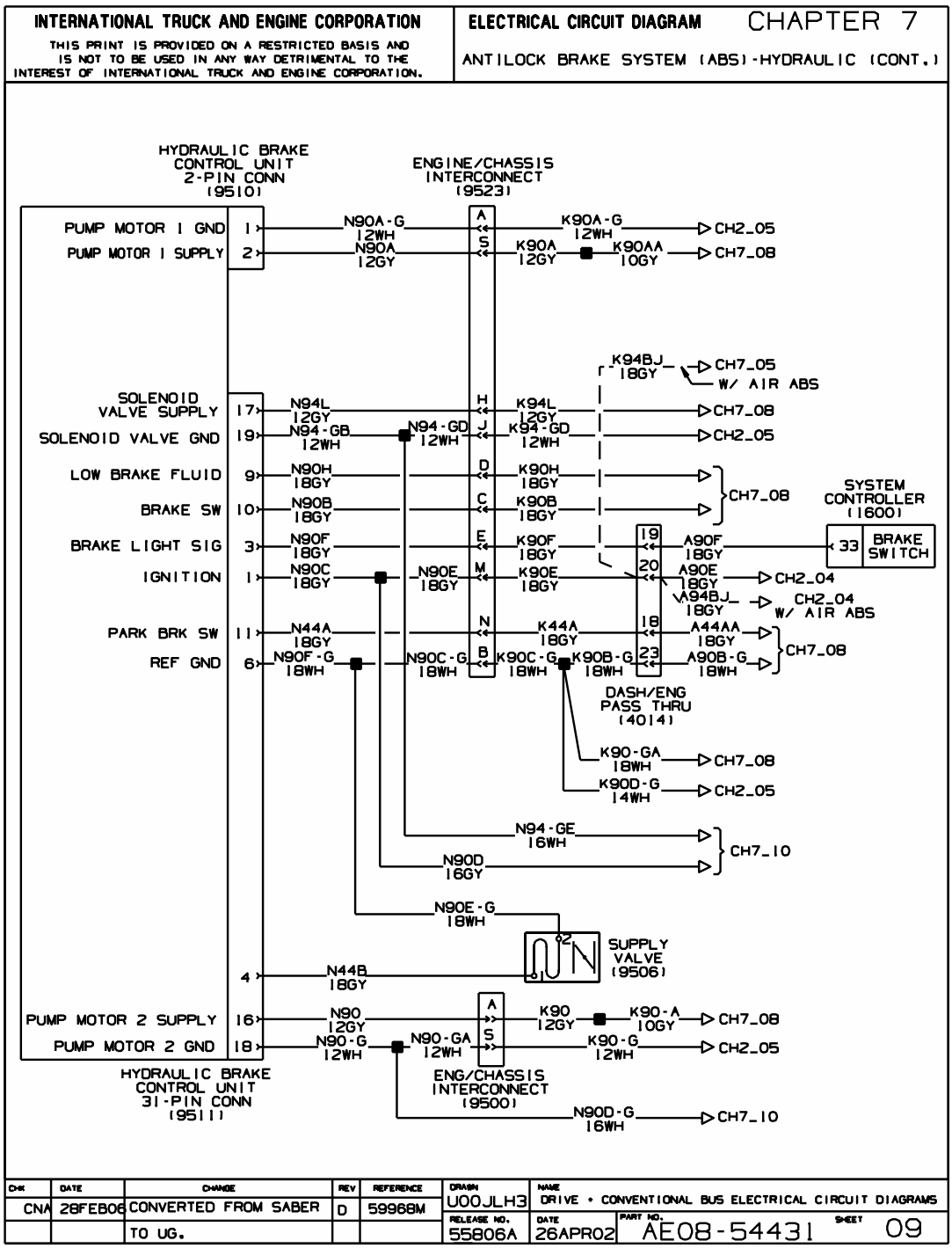


**Figure 57 Hydraulic Antilock Brakes (Cont.)**

## 7.10. HYDRAULIC ANTILOCK BRAKES, P. 10

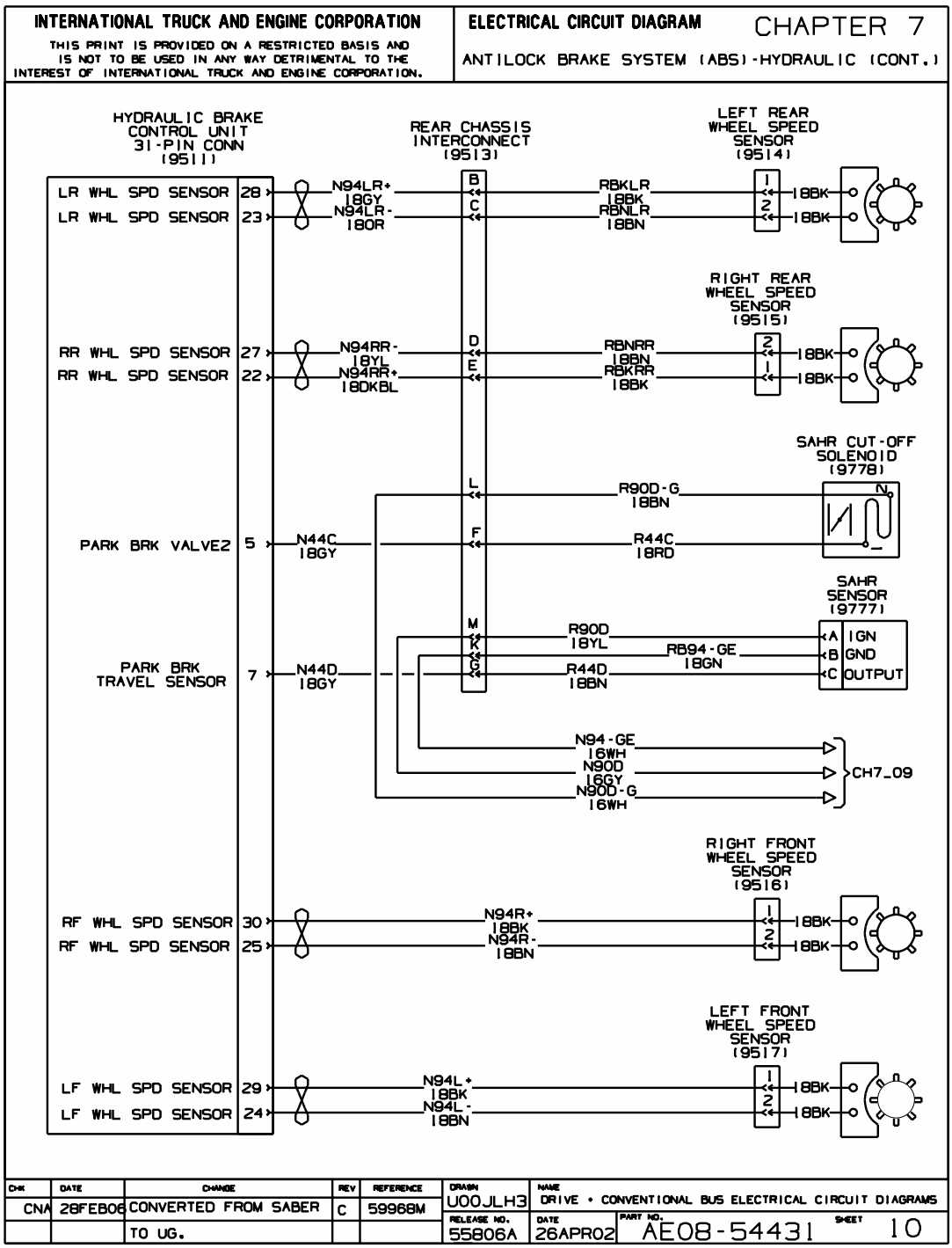


**Figure 58 Hydraulic Antilock Brakes (Cont.)**

## 7.11. ALLISON WTEC MD TRANSMISSION, P. 11

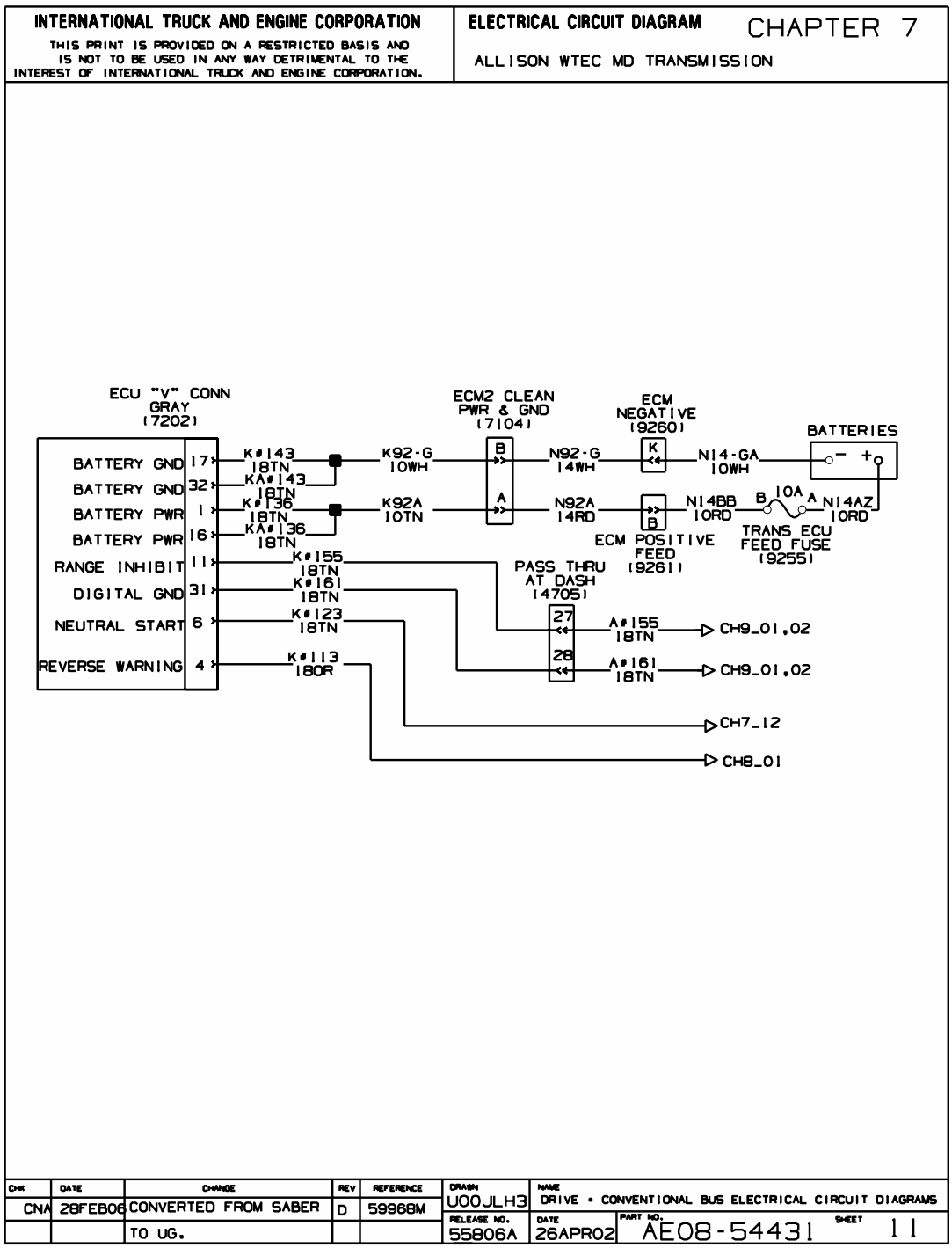


**Figure 59 Allison WTEC MD Transmission**

## 7.12. ALLISON WTEC MD TRANSMISSION, P. 12

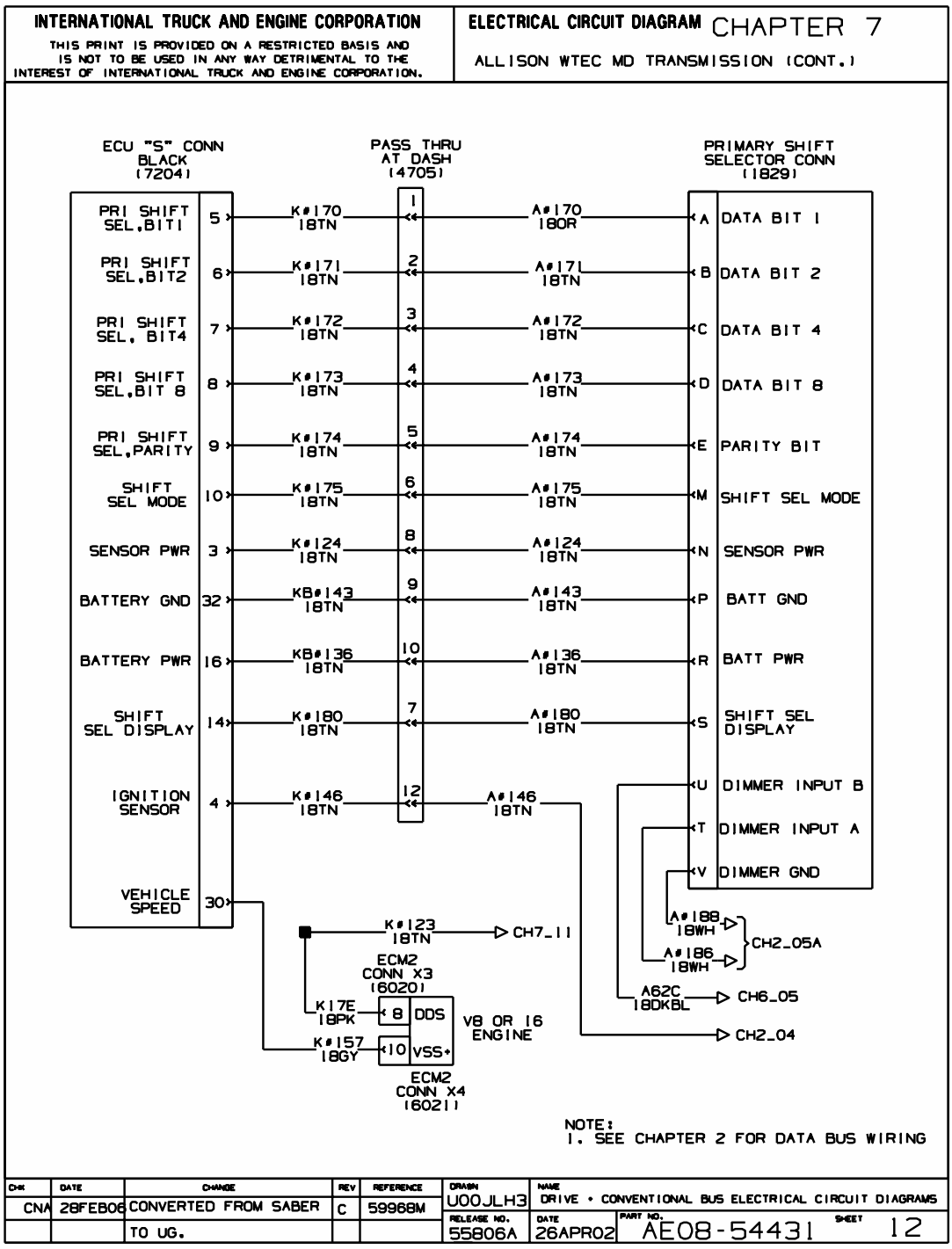


**Figure 60 Allison WTEC MD Transmission (Cont.)**

## 7.13. ALLISON WTEC MD TRANSMISSION, P. 13

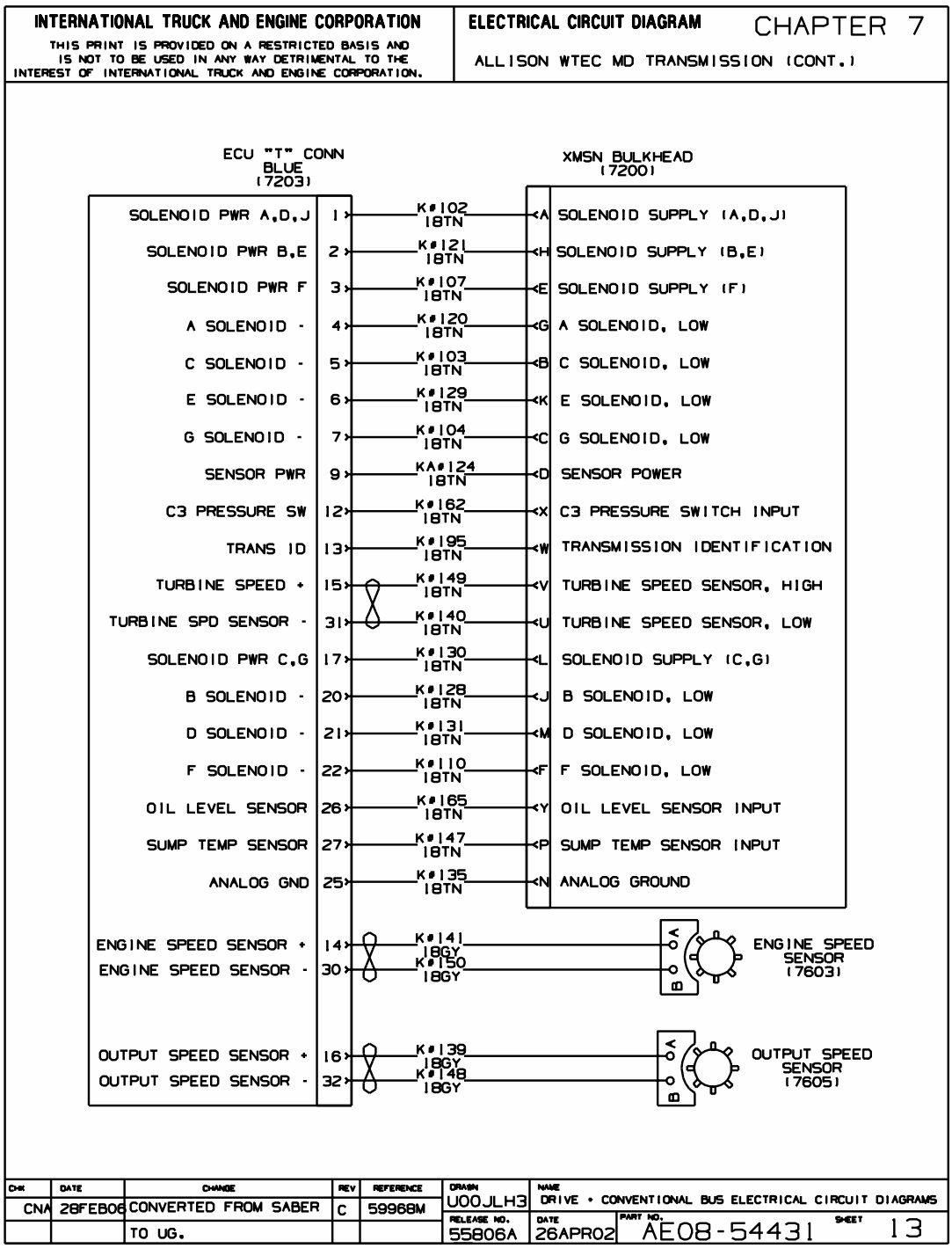


**Figure 61 Allison WTEC MD Transmission (Cont.)**

## 7.14. ALLISON LCT TRANSMISSION, P. 14

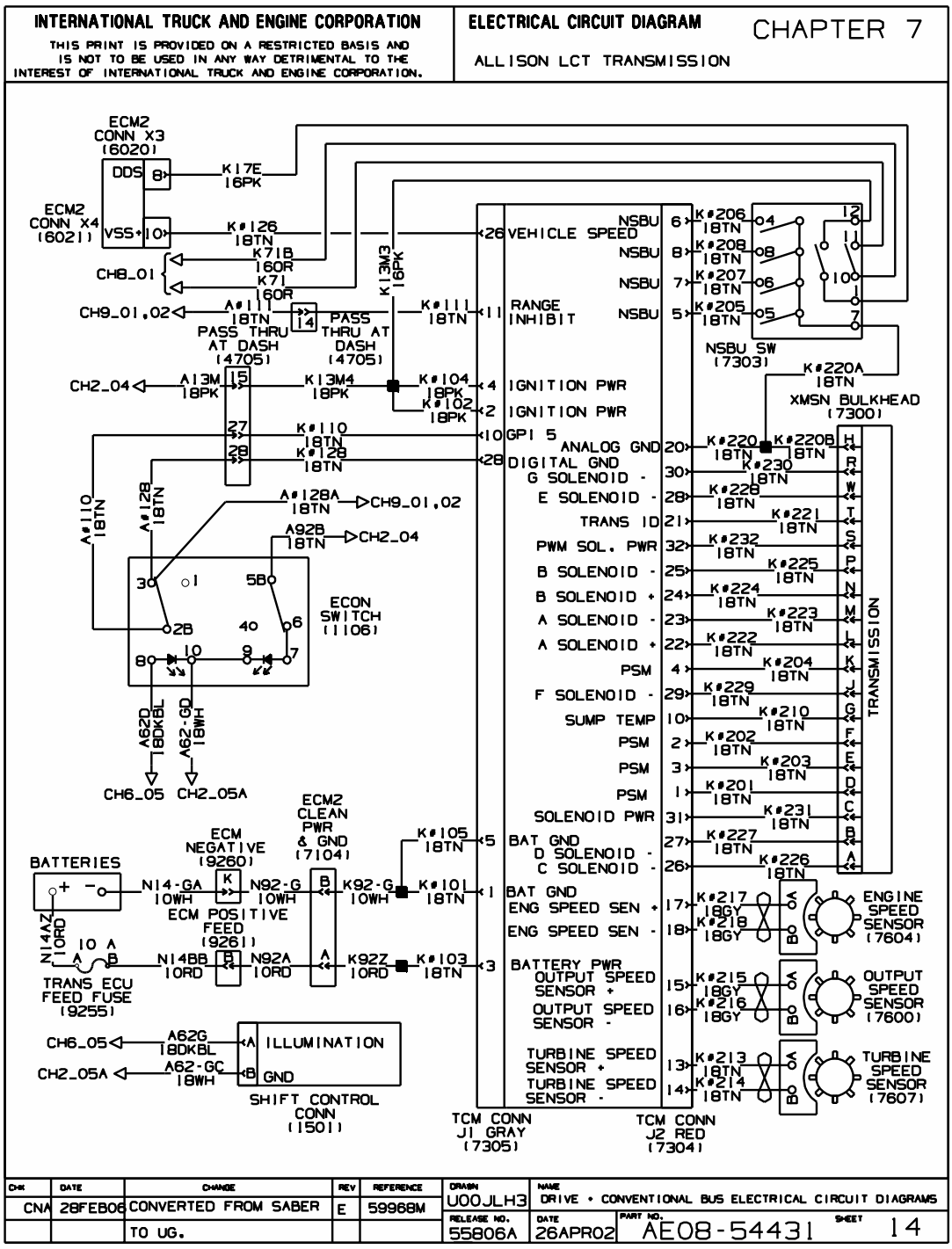


**Figure 62 Allison LCT Transmission**

## 7.15. CROSSING GATE, P. 15

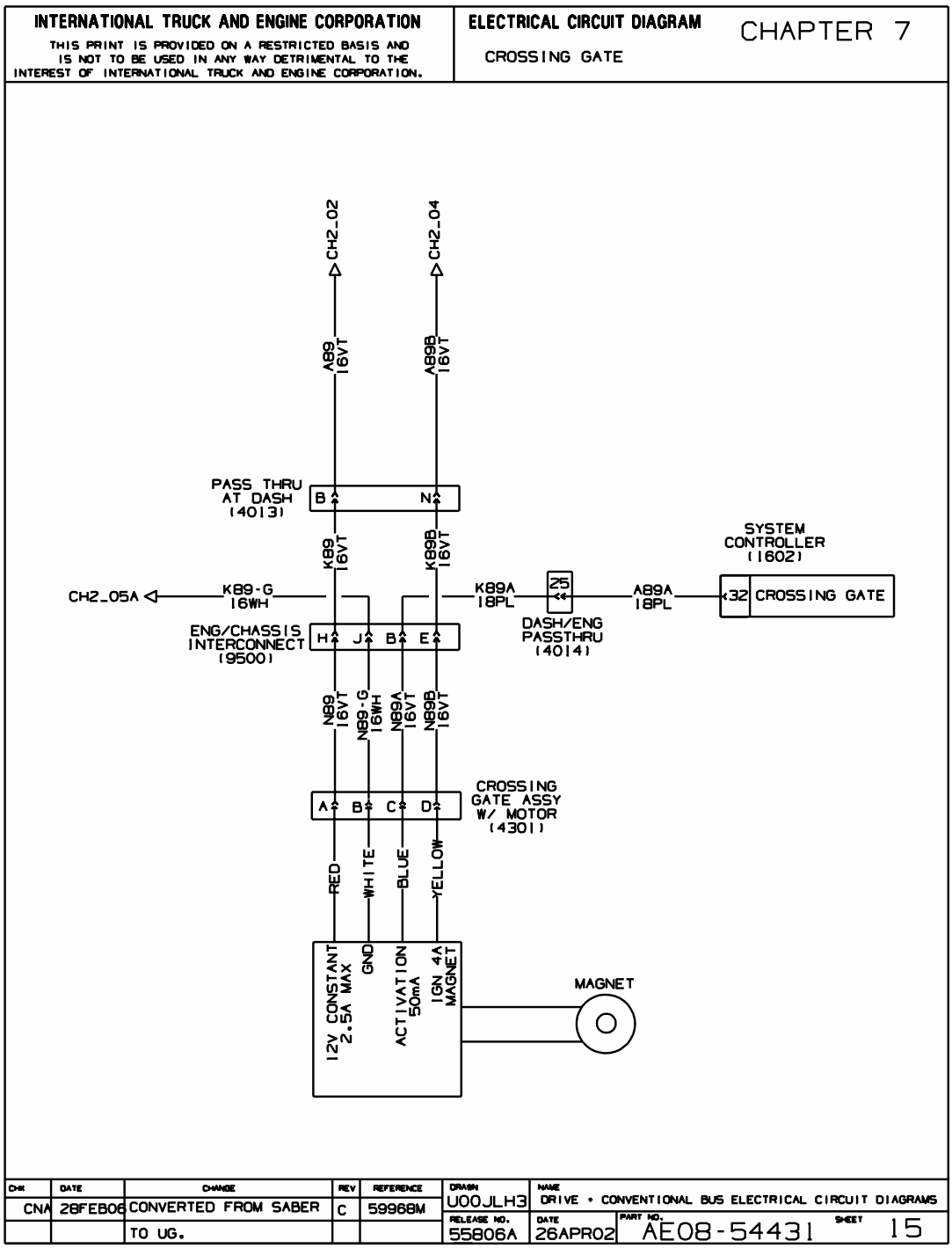


**Figure 63 Crossing Gate**

## 7.16. BRAKE MONITOR, P. 16

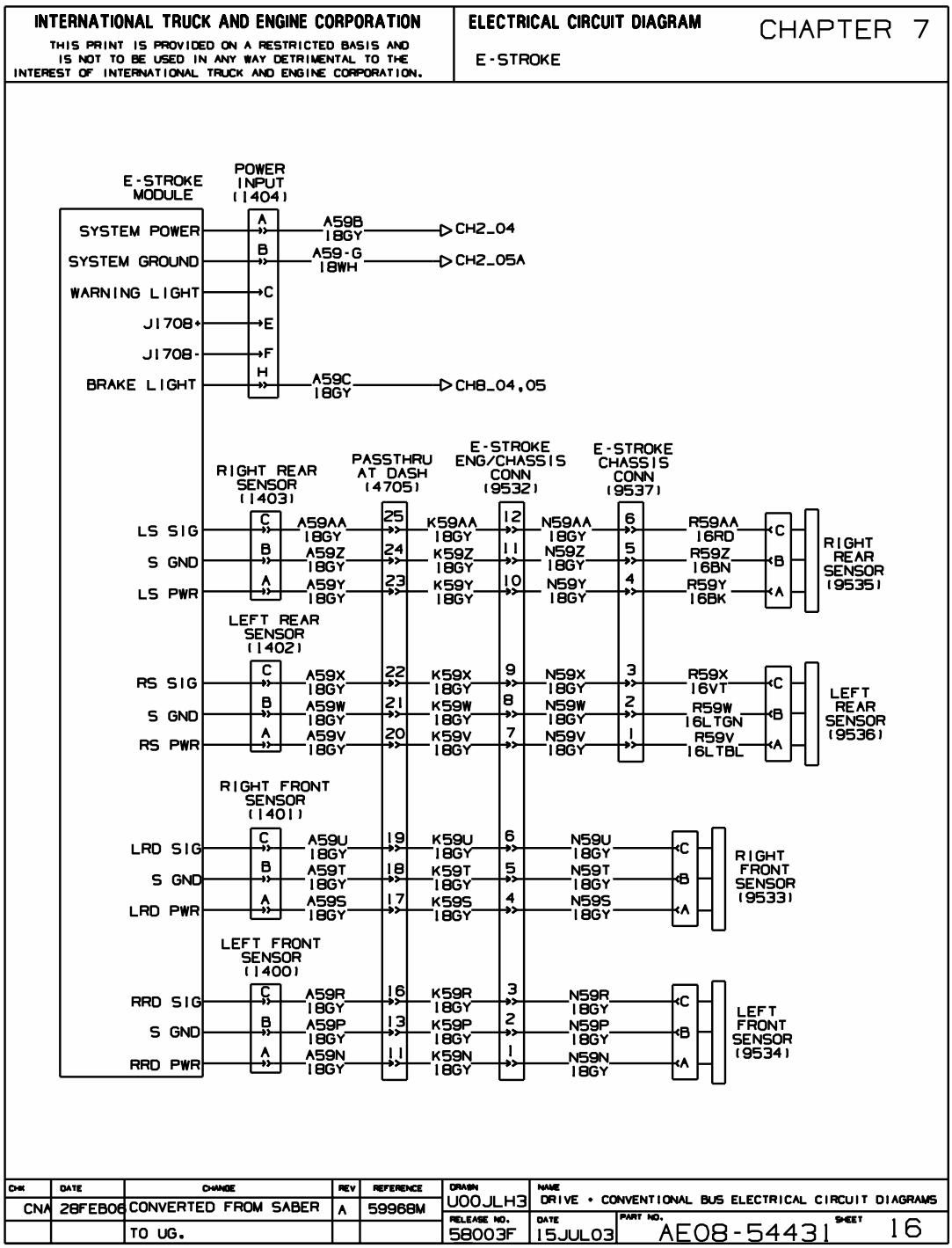


**Figure 64 Brake Monitor**

## 7.17. MANUAL TRANSMISSION, P. 17

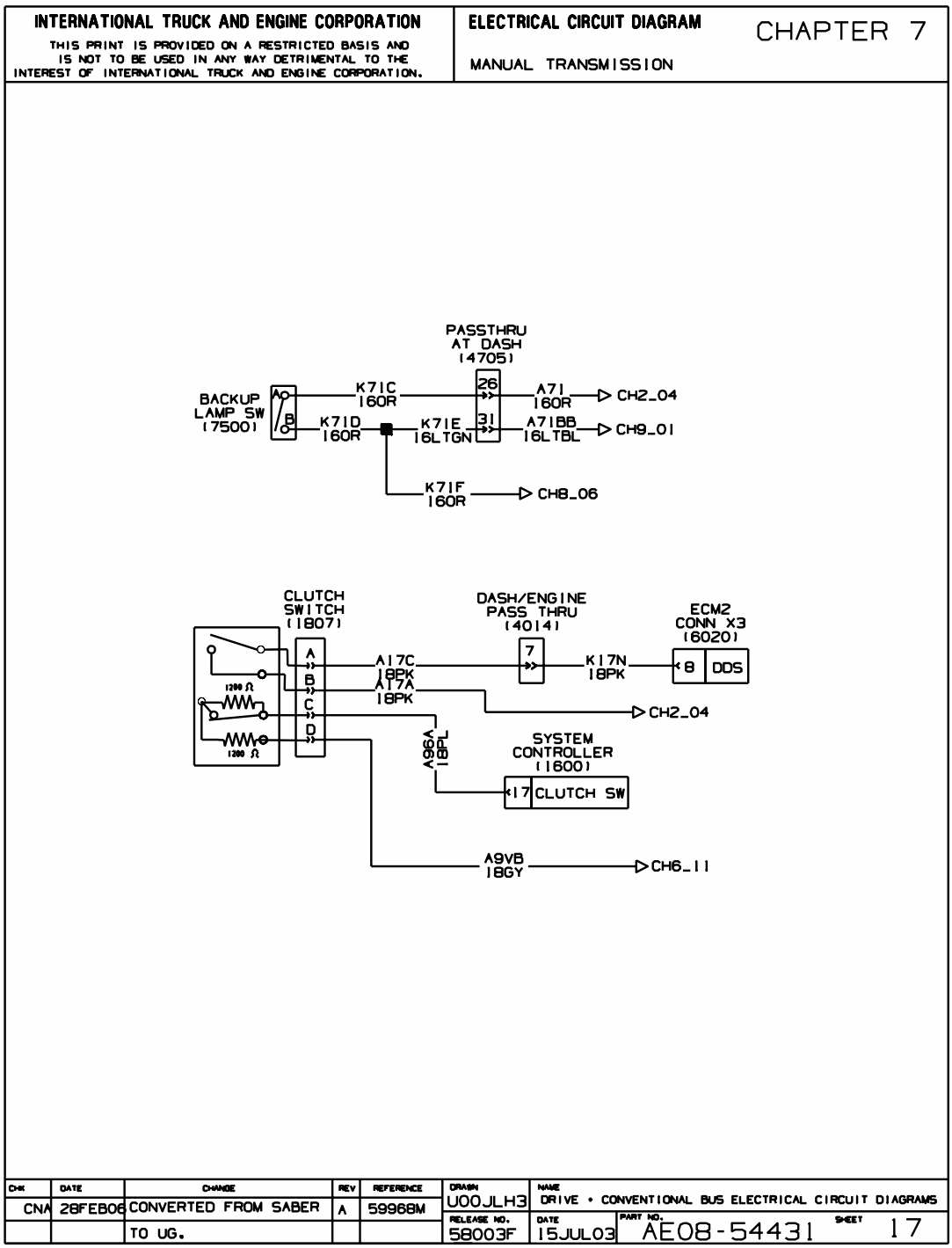


**Figure 65 Manual Transmission**

## 7.18. TWO SPEED AXLE, P. 18

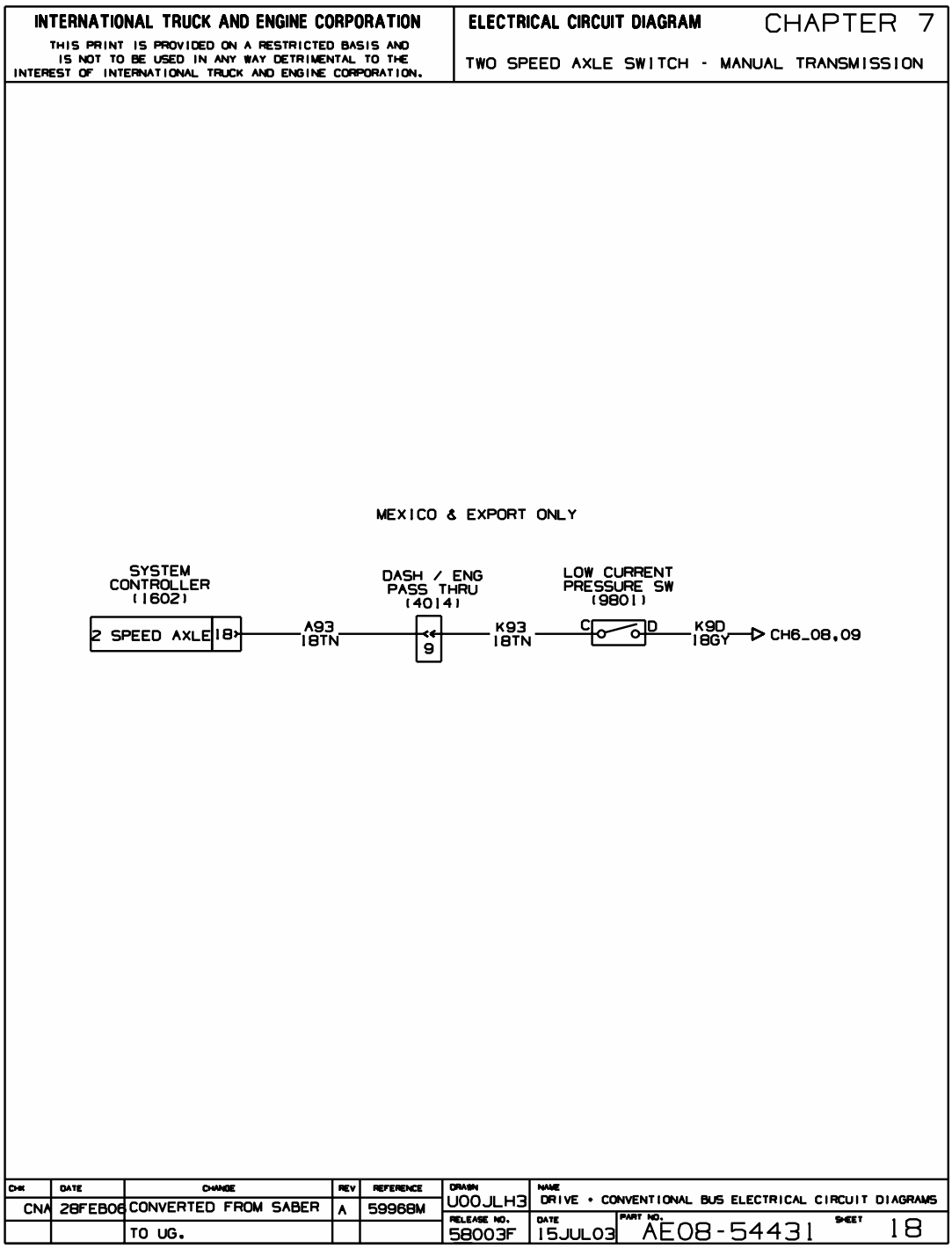


**Figure 66 Two Speed Axle**

## 7.19. CHASSIS ACCESSORIES W/ABS6 — BENDIX AIR — ECU PIN OUT, P. 19

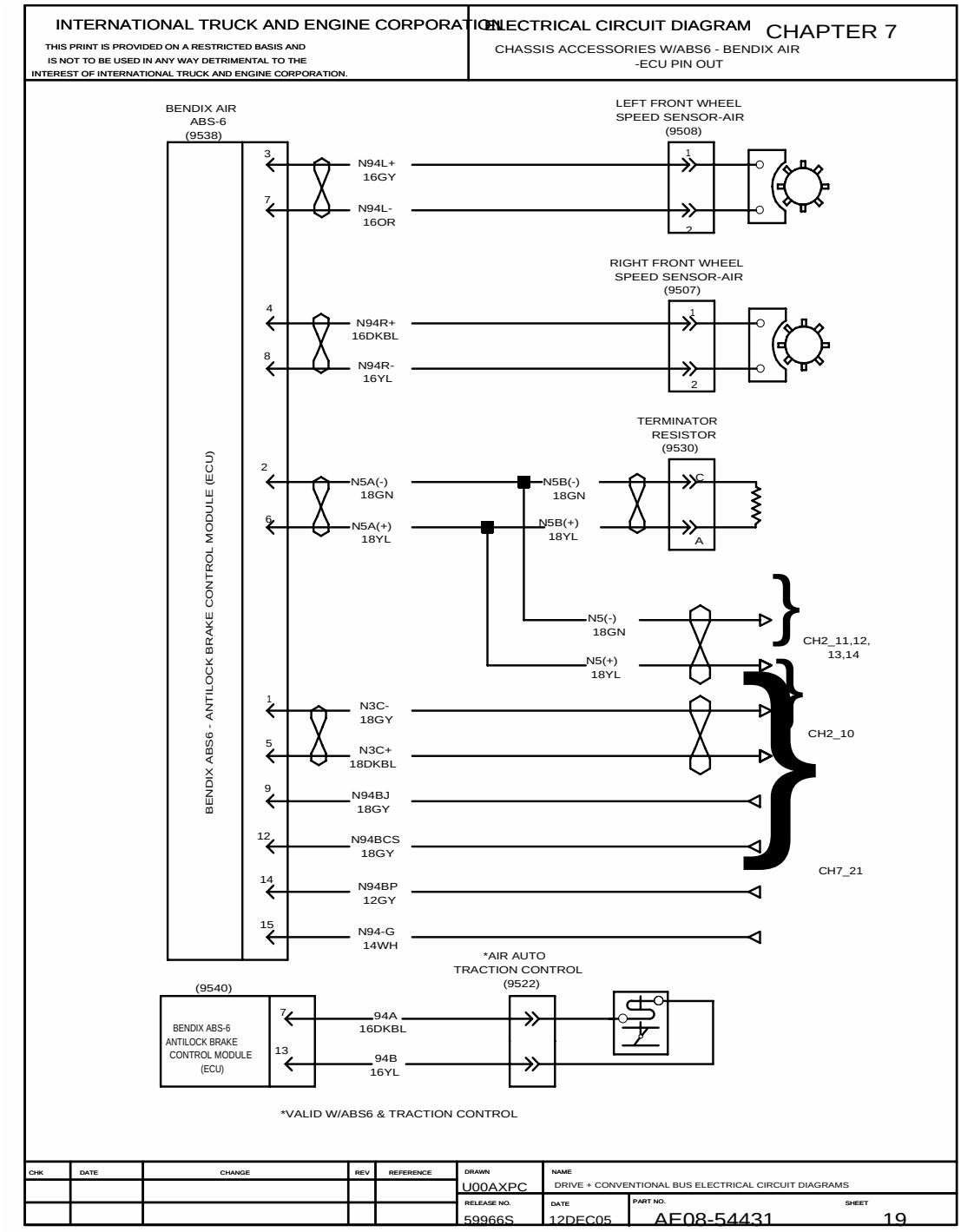


**Figure 67 Chassis Accessories W/ABS6 — Bendix Air — ECU Pin Out**

## 7.20. CHASSIS ACCESSORIES W/ABS6 — BENDIX AIR — ECU PIN OUT, P. 20

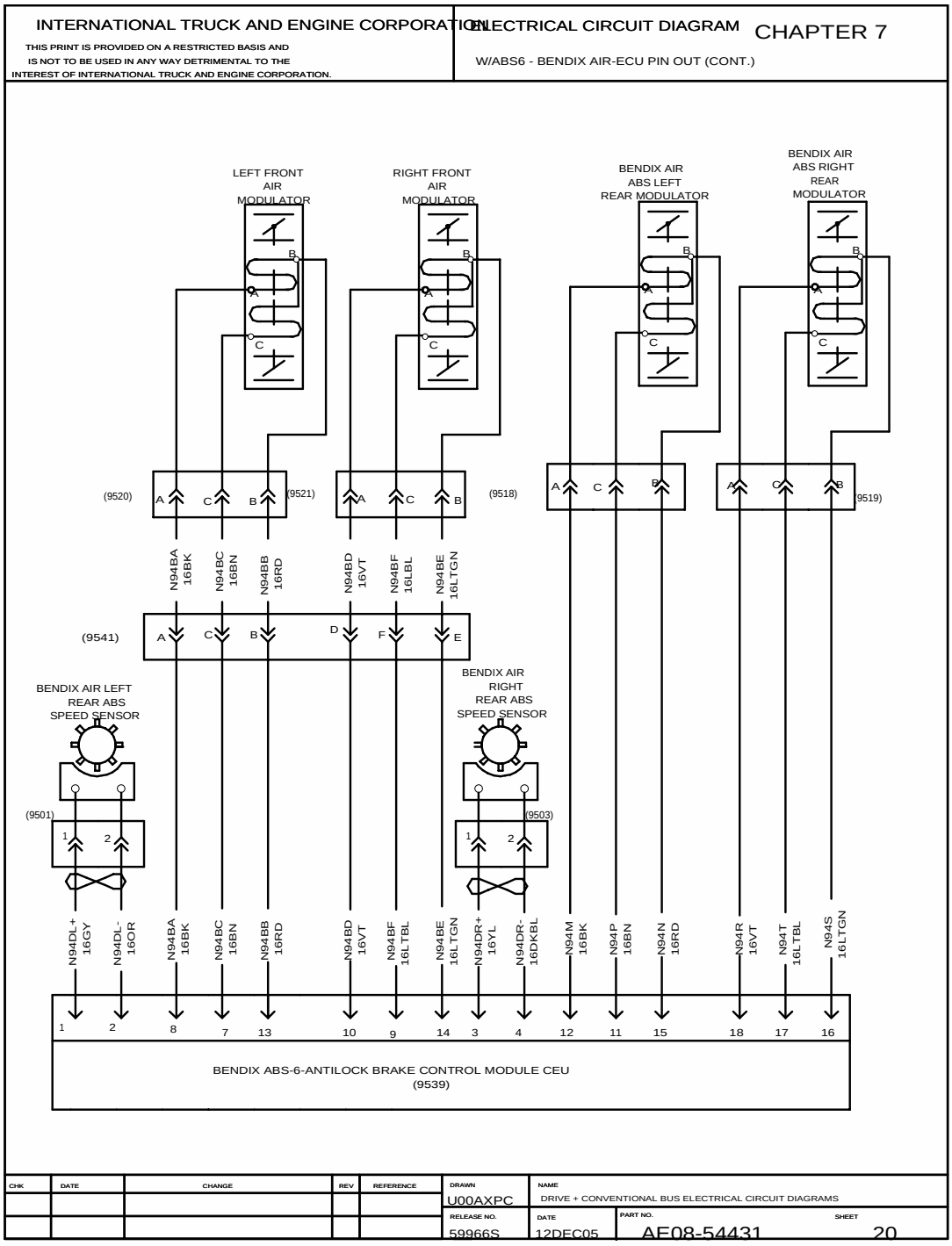


**Figure 68 Chassis Accessories W/ABS6 — Bendix Air — ECU Pin Out (Cont.)**

## 7.21. CHASSIS ACCESSORIES W/ABS6 — BENDIX AIR ECM POWER, P. 21

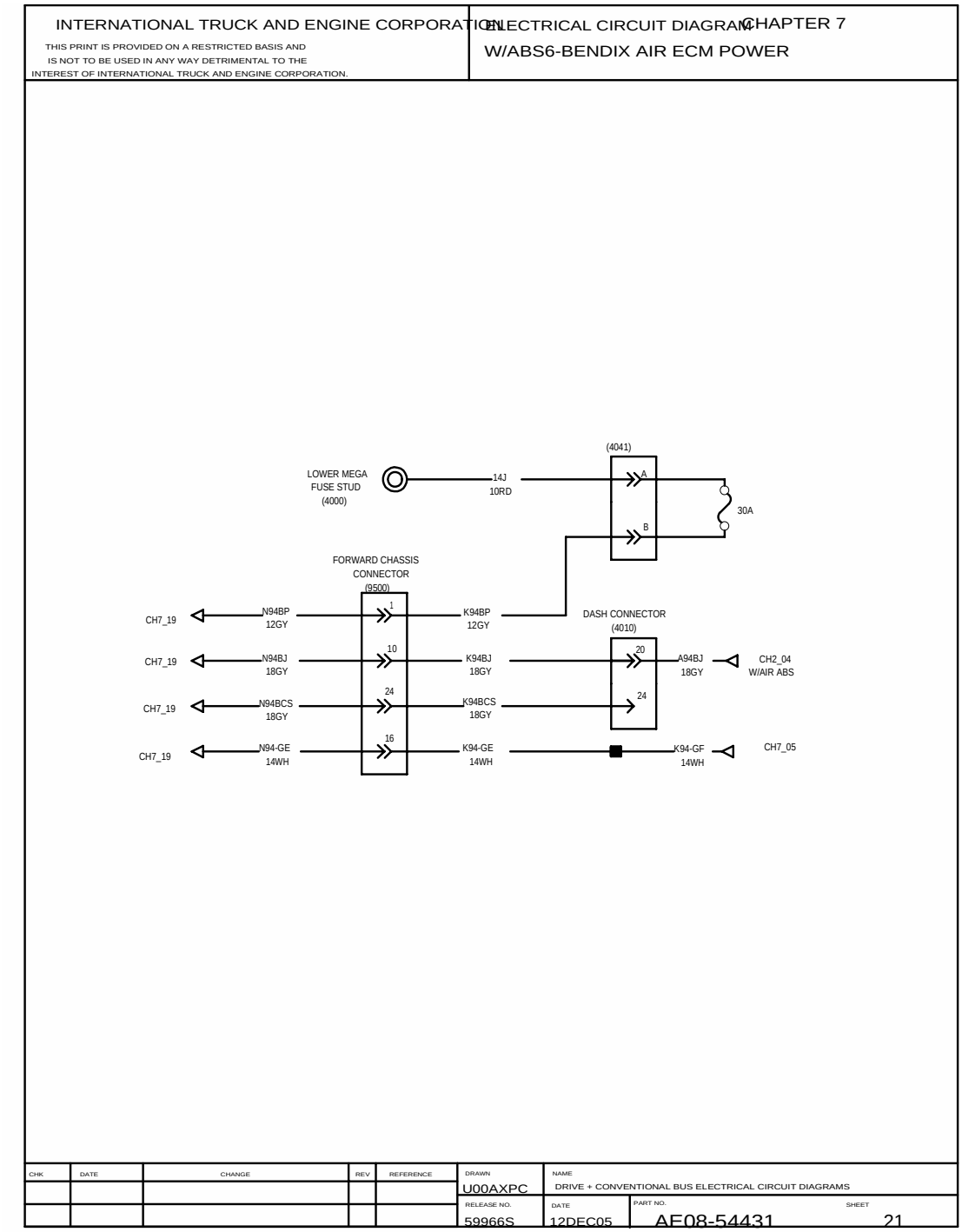


**Figure 69 Chassis Accessories W/ABS6 — Bendix Air ECM Power**

# 8. LIGHT SYSTEMS (CHAPTER 8)

## 8.1. BACK-UP LIGHTS / EXTERIOR LIGHT CHECK, P. 1

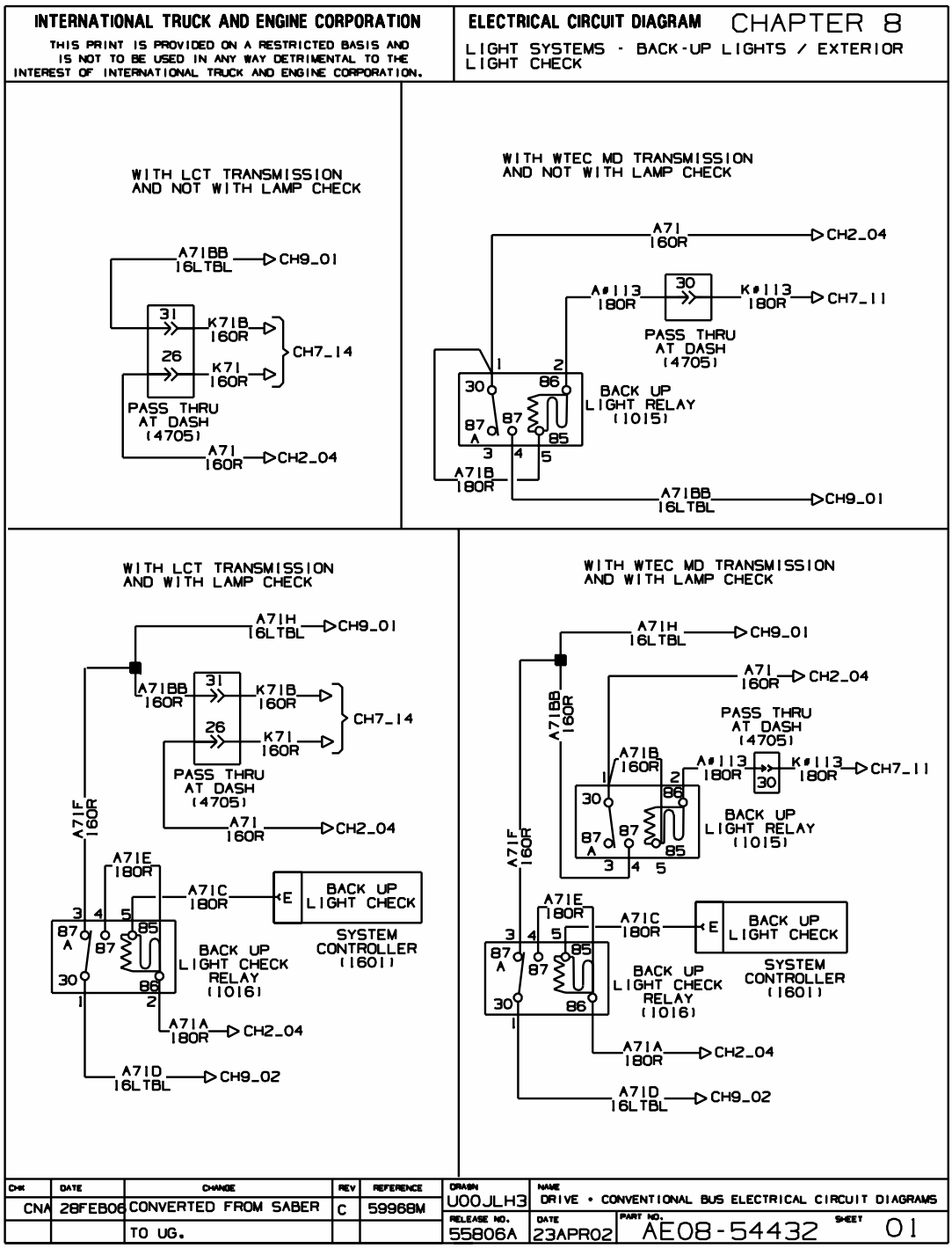


**Figure 70 Back-Up Lights / Exterior Light Check**

## 8.2. FOG LIGHTS, P. 2

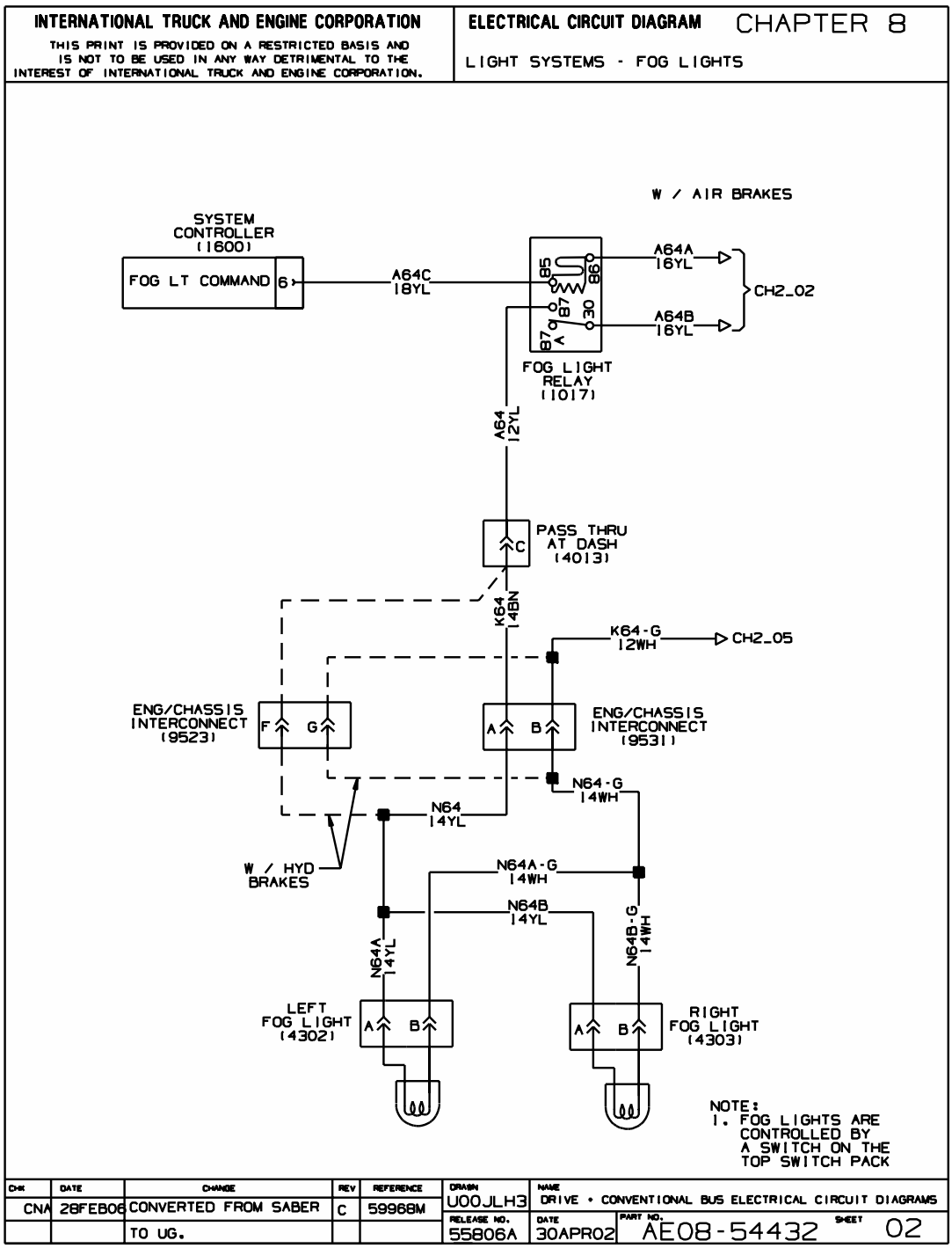


**Figure 71 Fog Lights**

## 8.3. HIGH BEAM, FLASH TO PASS, TURN SIGNAL, AND AIR BRAKE STOP SWITCHES, P. 3

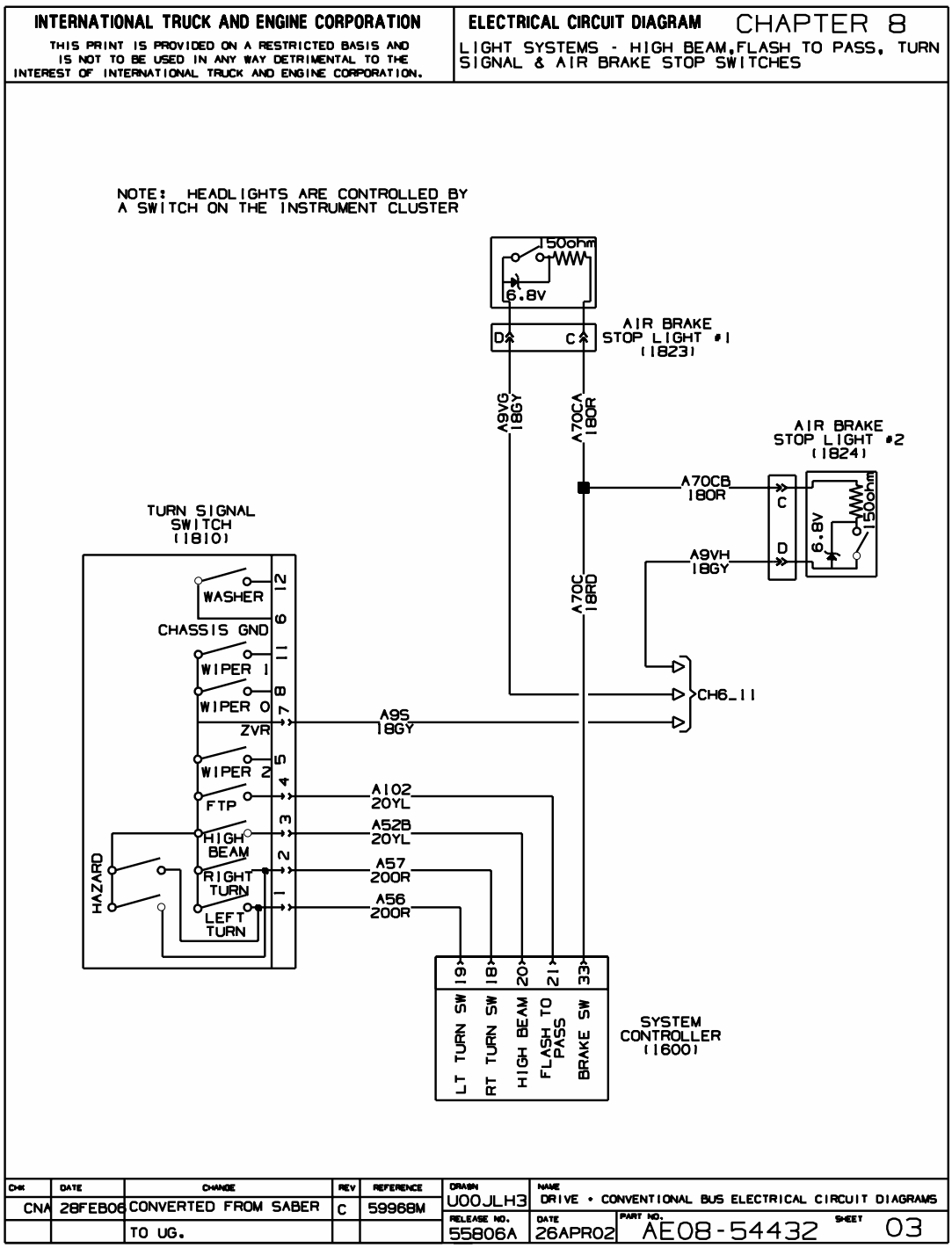


**Figure 72 High Beam, Flash to Pass, Turn Signal, and Air Brake Stop Switches**

## 8.4. HEADLIGHTS, MARKER, PARK, TURN, AND STOP RELAY — WITHOUT FENDER MOUNT LIGHTS, P. 4

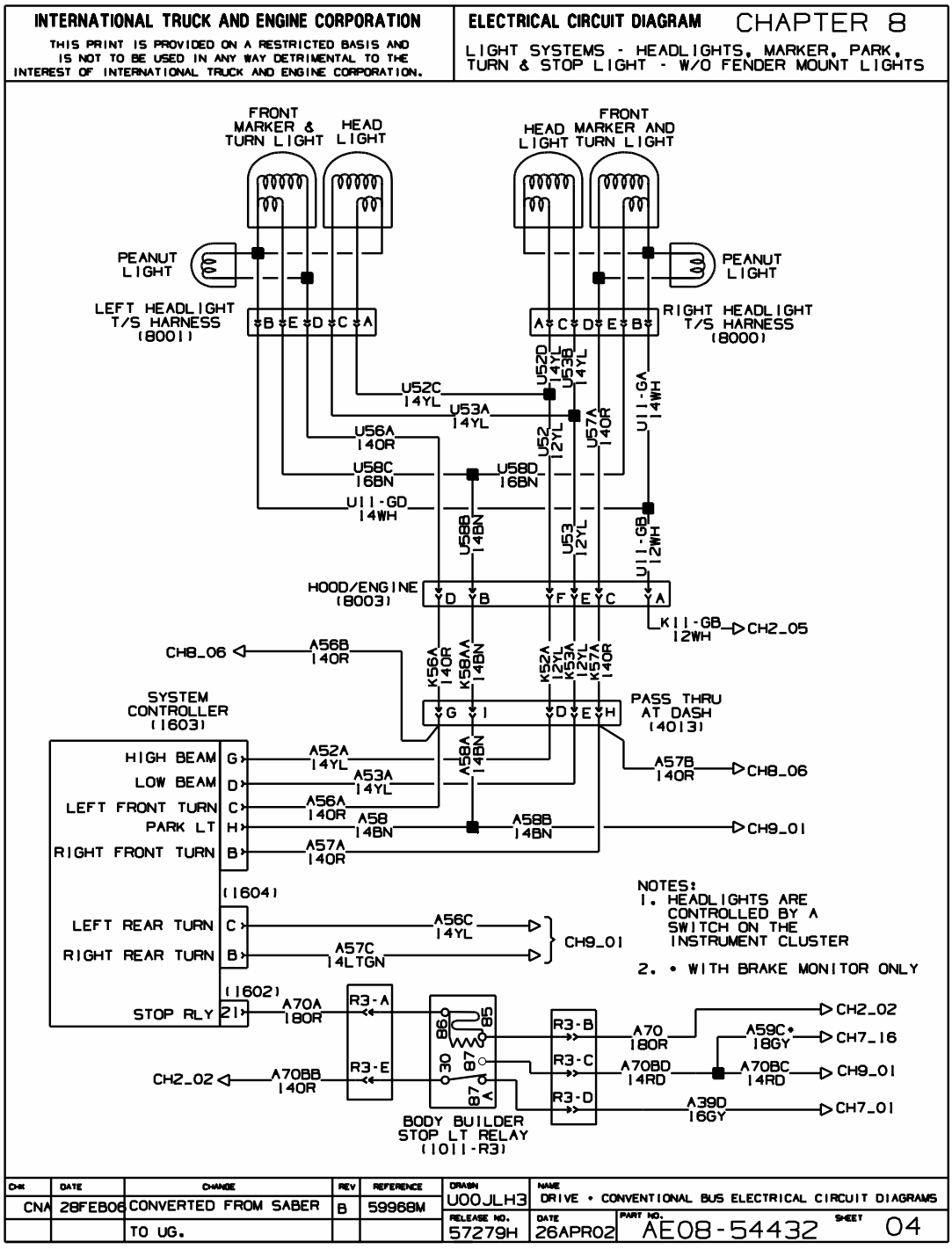


**Figure 73 Headlights, Marker, Park, Turn, and Stop Relay — Without Fender Mount Lights**

## 8.5. HEADLIGHTS, MARKER, PARK, TURN, AND STOP RELAY — WITH FENDER MOUNT LIGHTS, P. 5

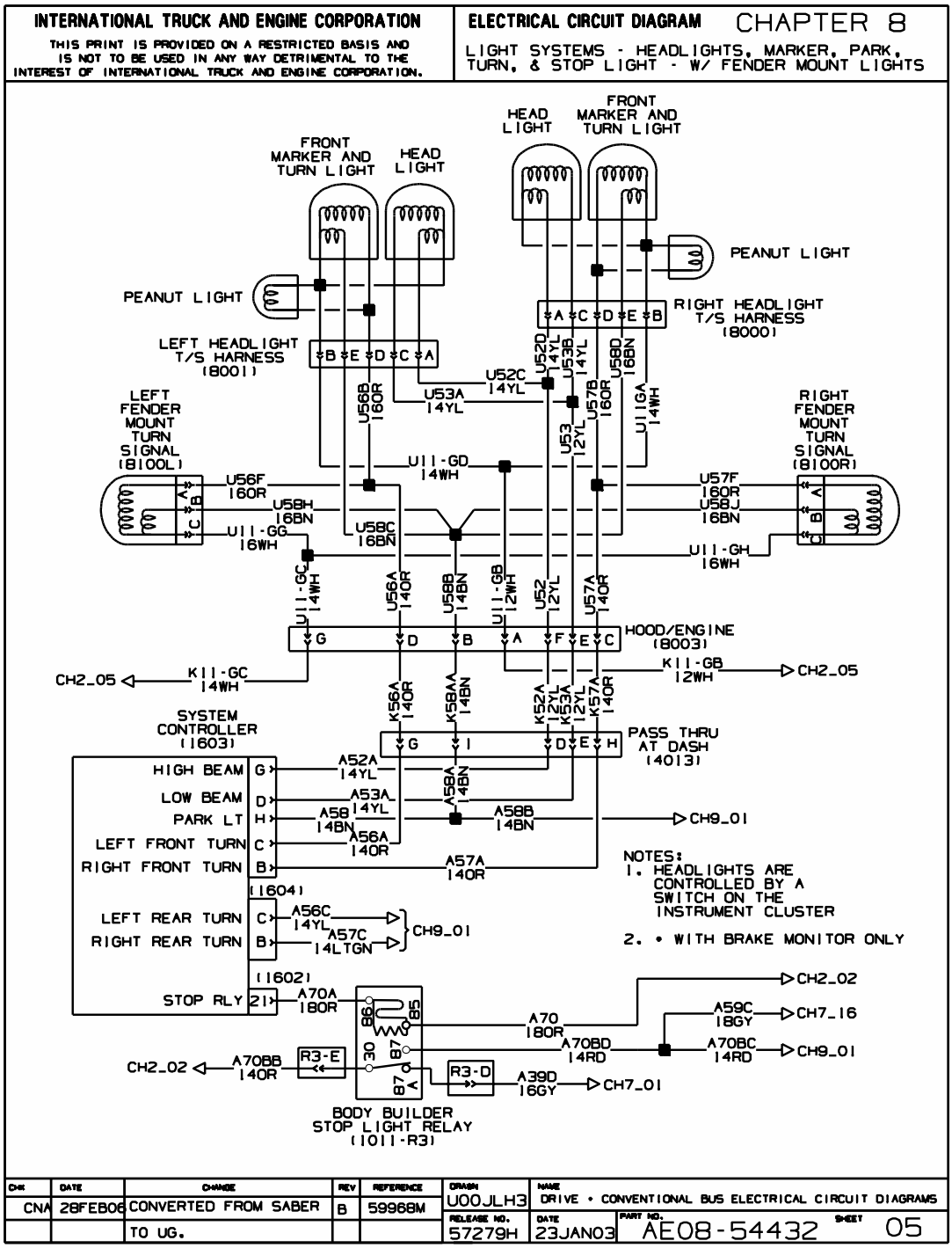


**Figure 74 Headlights, Marker, Park, Turn, and Stop Relay — With Fender Mount Lights**

## 8.6. EXPORT STOP, TURN, TAIL AND BACK-UP LIGHTS, P. 6

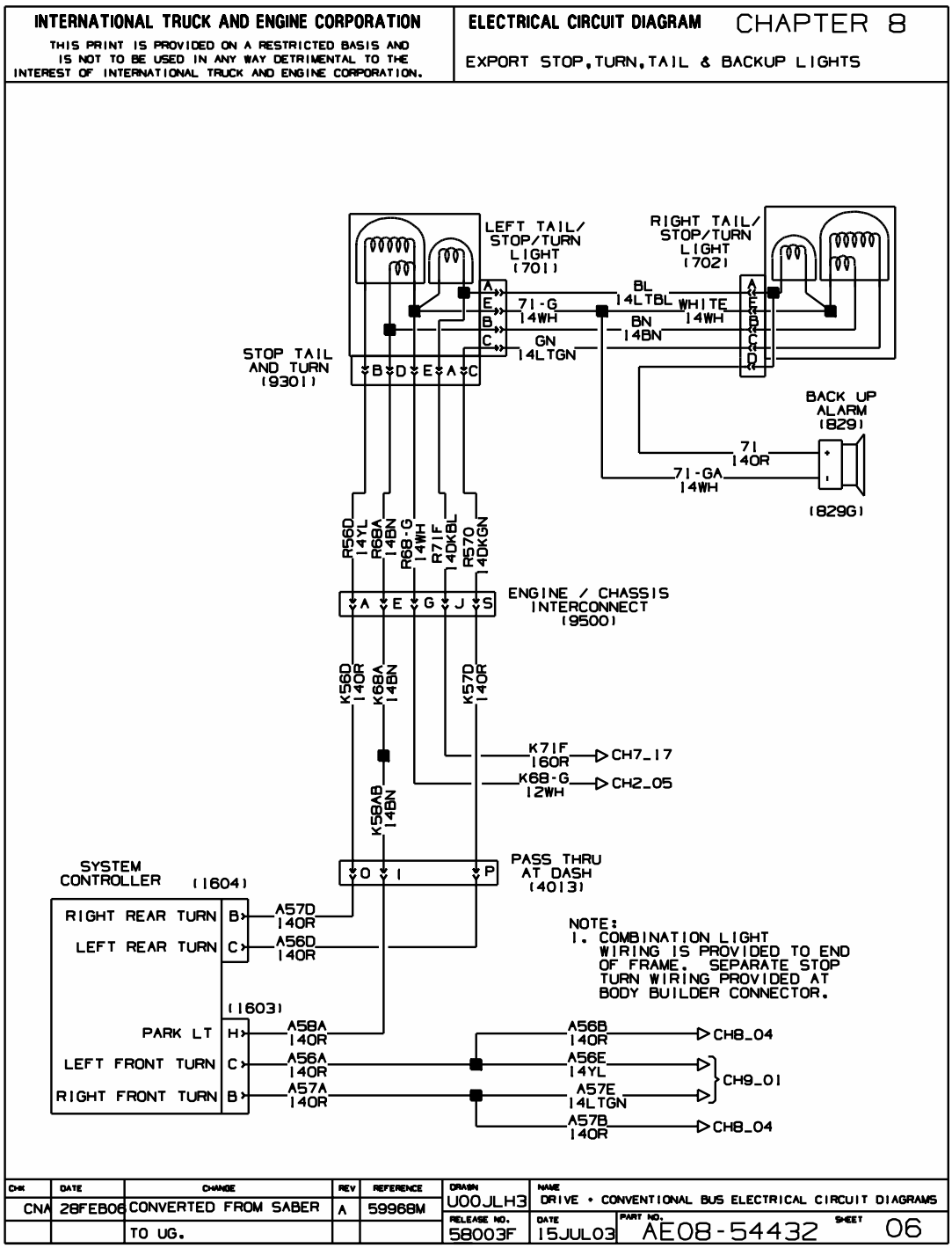


**Figure 75 Export Stop, Turn, Tail, and Back-Up Lights**

# 9. BODY BUILDER CONNECTION DATA (CHAPTER 9)

## 9.1. BODY BUILDER ELECTRICAL CONNECTION DATA FOR ALL MODELS, P. 1

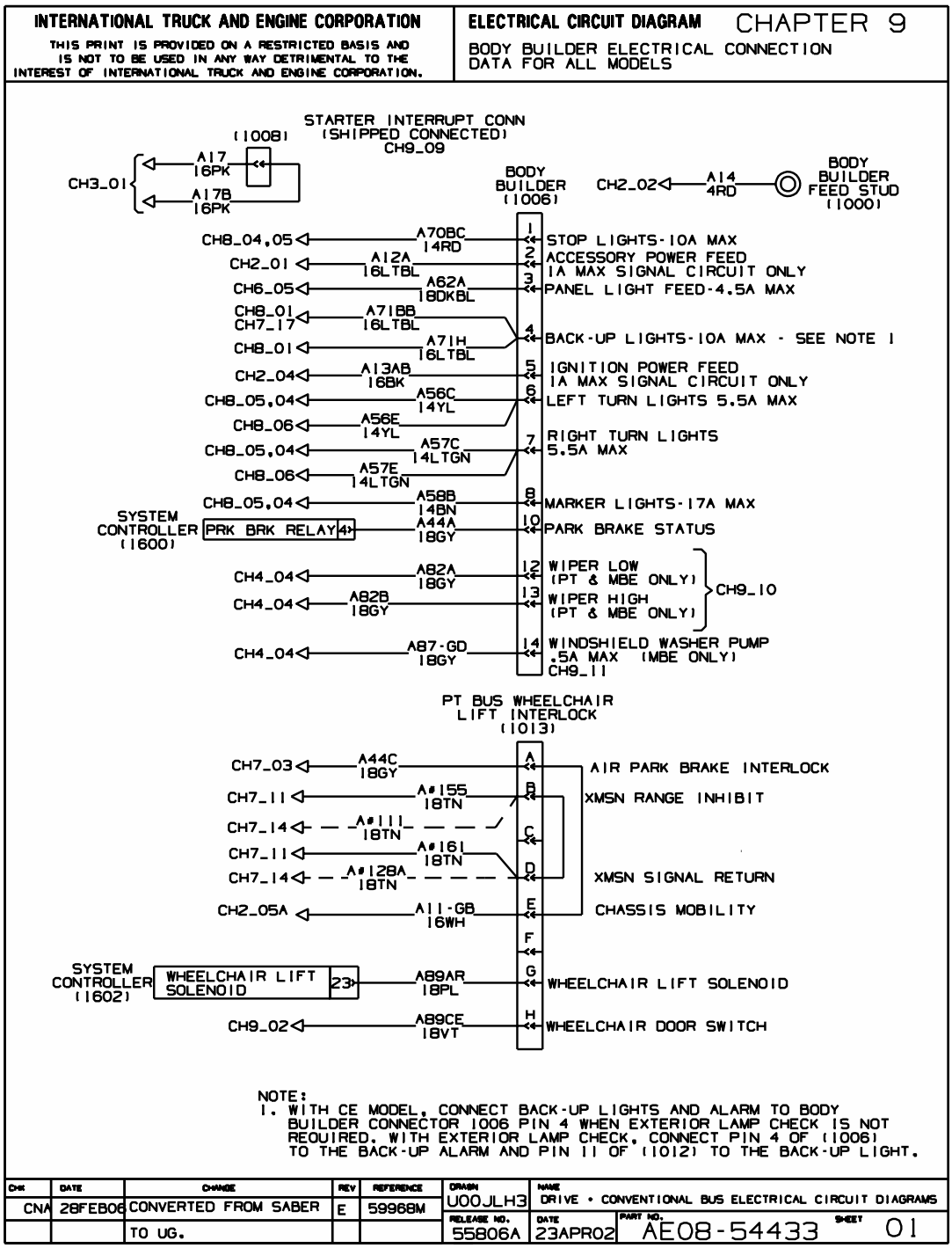


**Figure 76 Body Builder Electrical Connection Data for All Models**

## 9.2. BODY BUILDER ELECTRICAL CONNECTION DATA FOR CE MODEL, P. 2

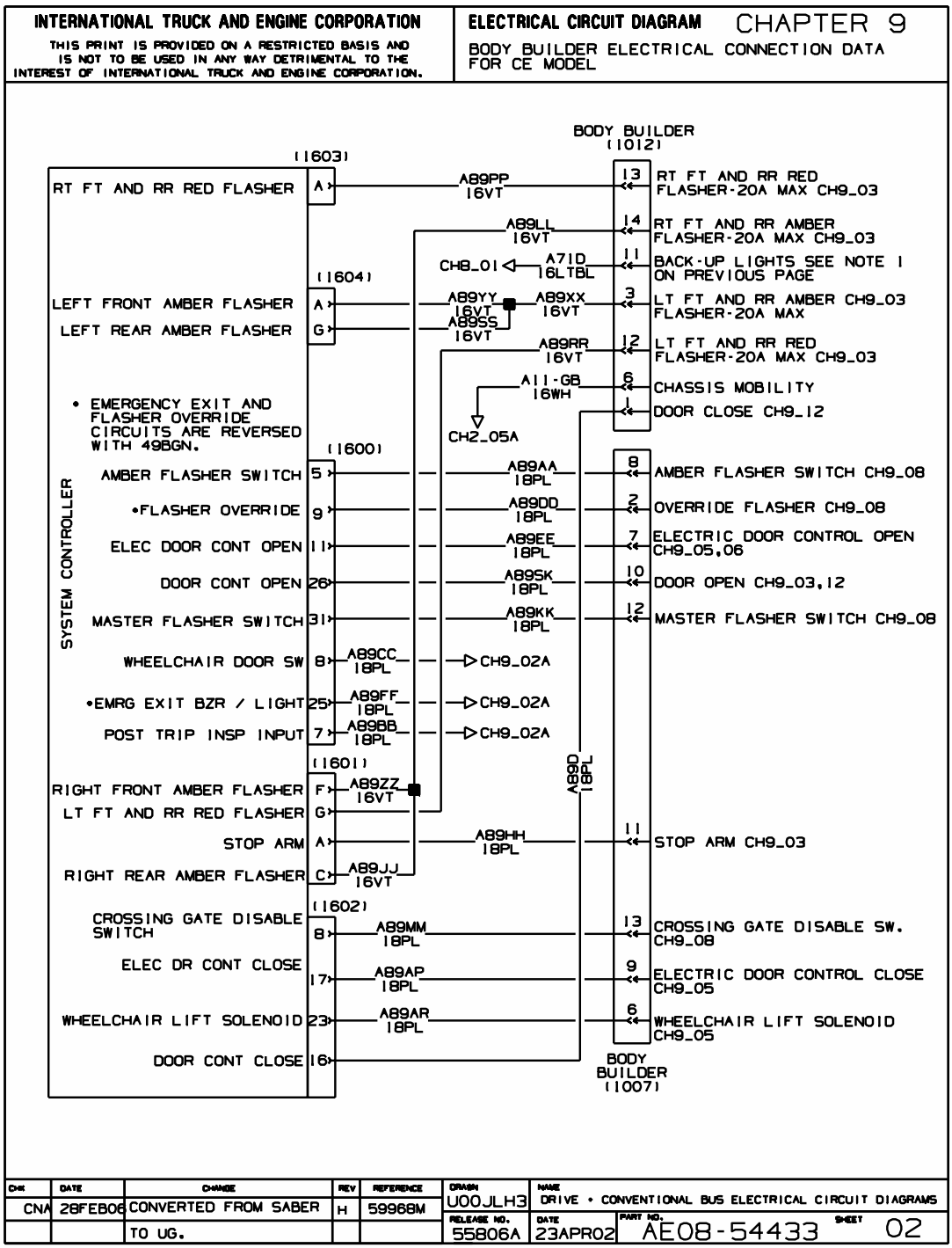


**Figure 77 Body Builder Electrical Connection Data for CE Model**

## 9.3. STOP ARM AND RED / AMBER LIGHTS, P. 3

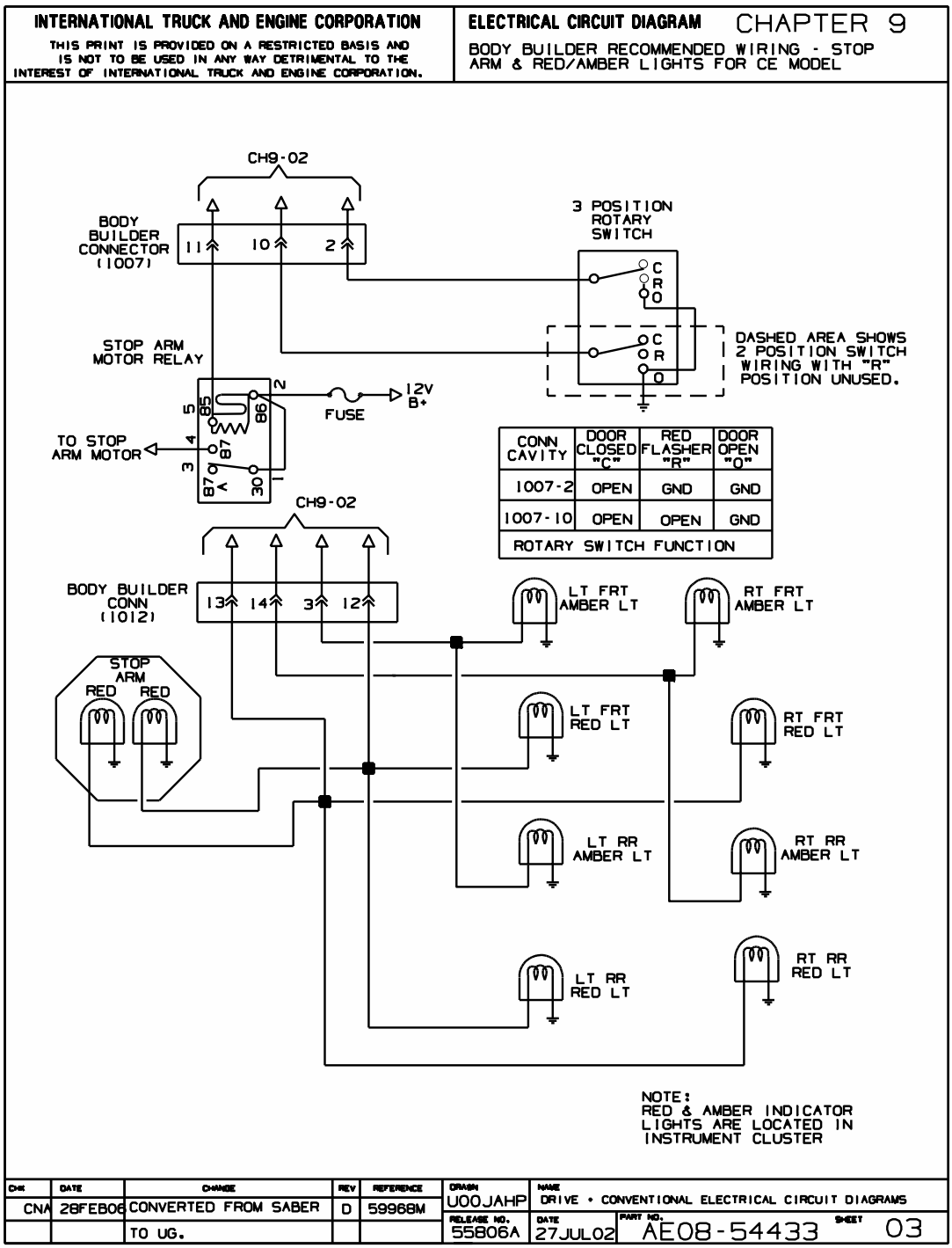


**Figure 78 Stop Arm and Red / Amber Lights**

## 9.4. EMERGENCY EXIT BUZZER AND POST TRIP INSPECTION, P. 4

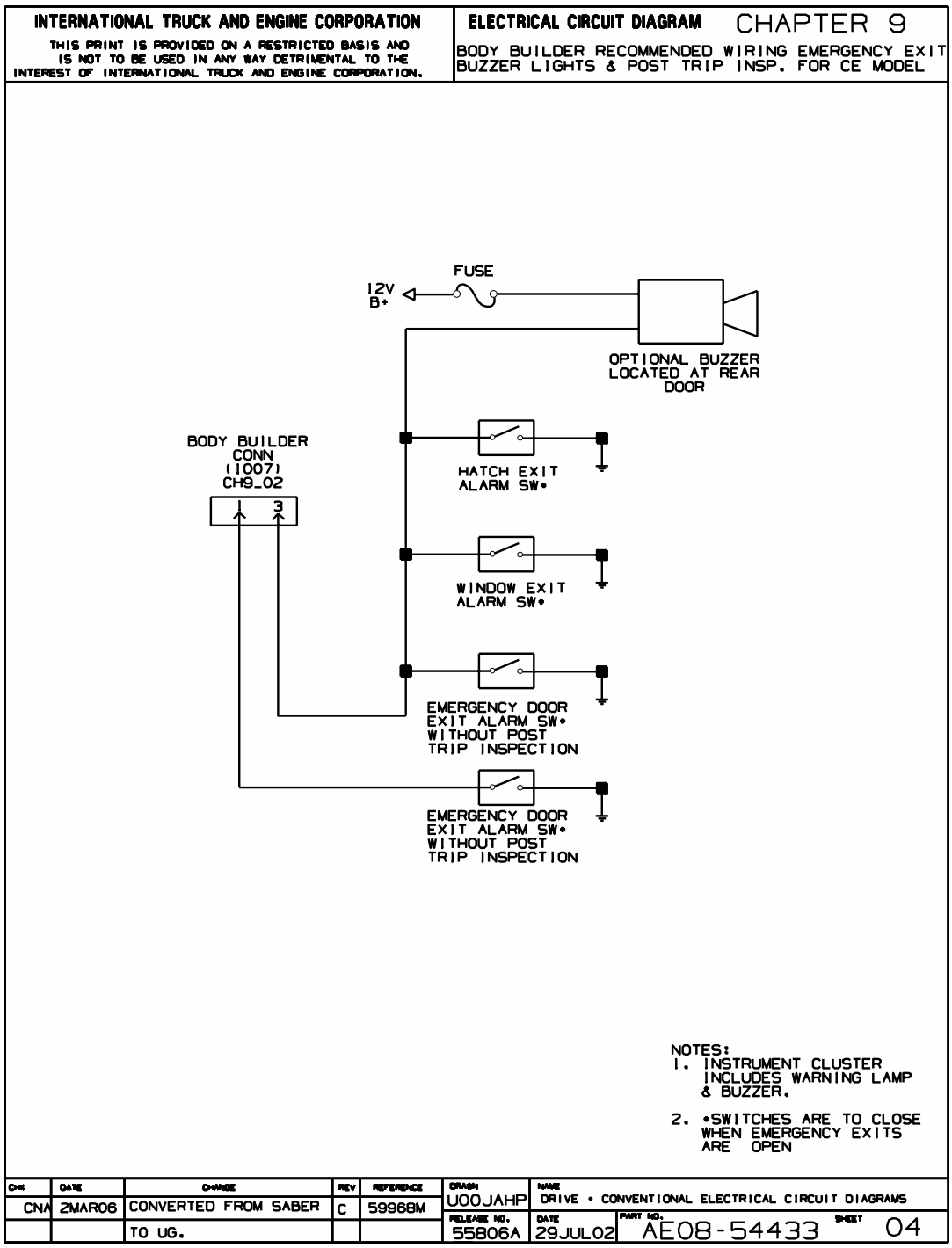


**Figure 79 Emergency Exit Buzzer and Post Trip Inspection**

## 9.5. DOOR OPEN / CLOSE WITH ELEC. CONTROL, P. 5

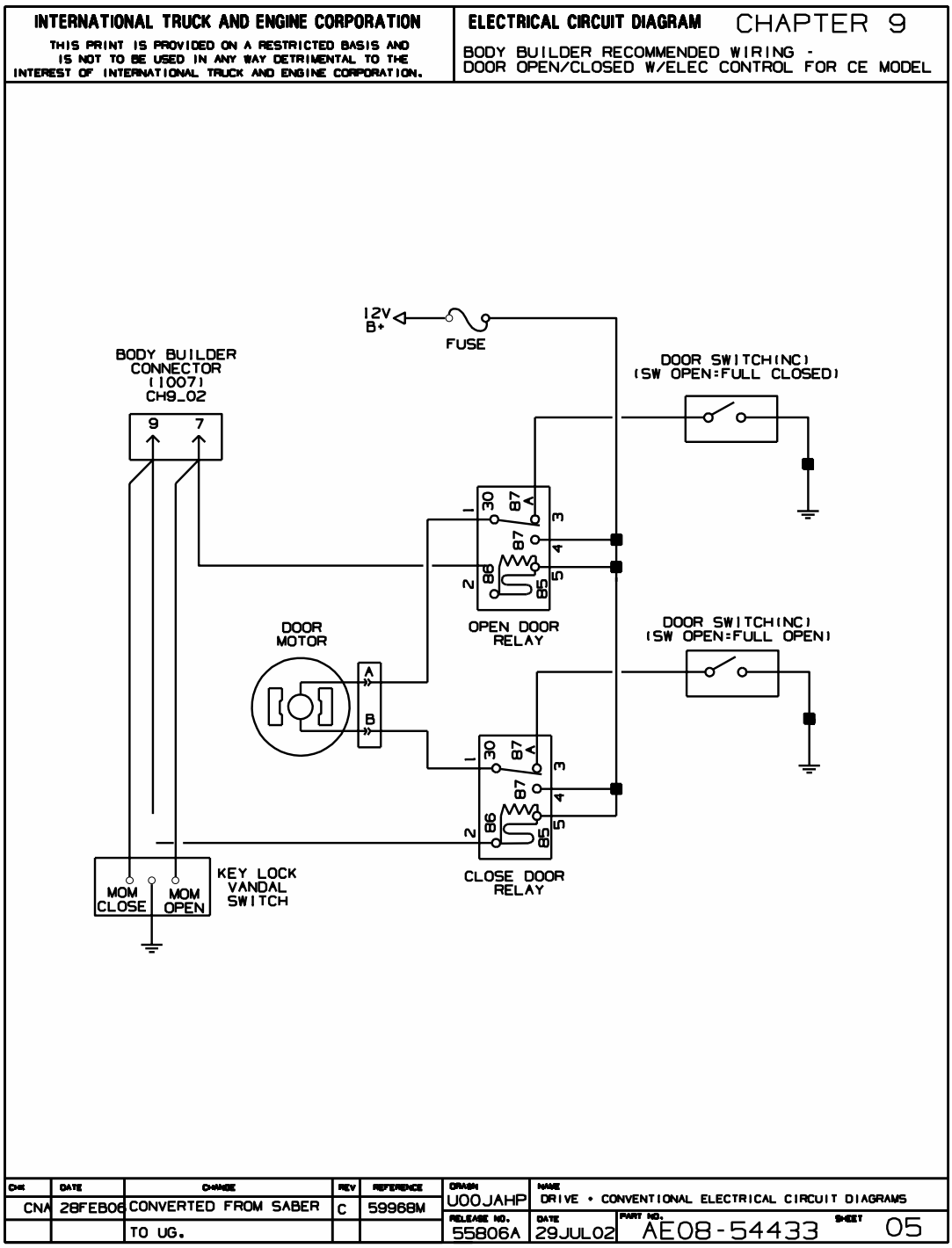


**Figure 80 Door Open / Close with Elec. Control**

## 9.6. DOOR OPEN / CLOSE WITH AIR CONTROL FOR CE MODEL, P. 6

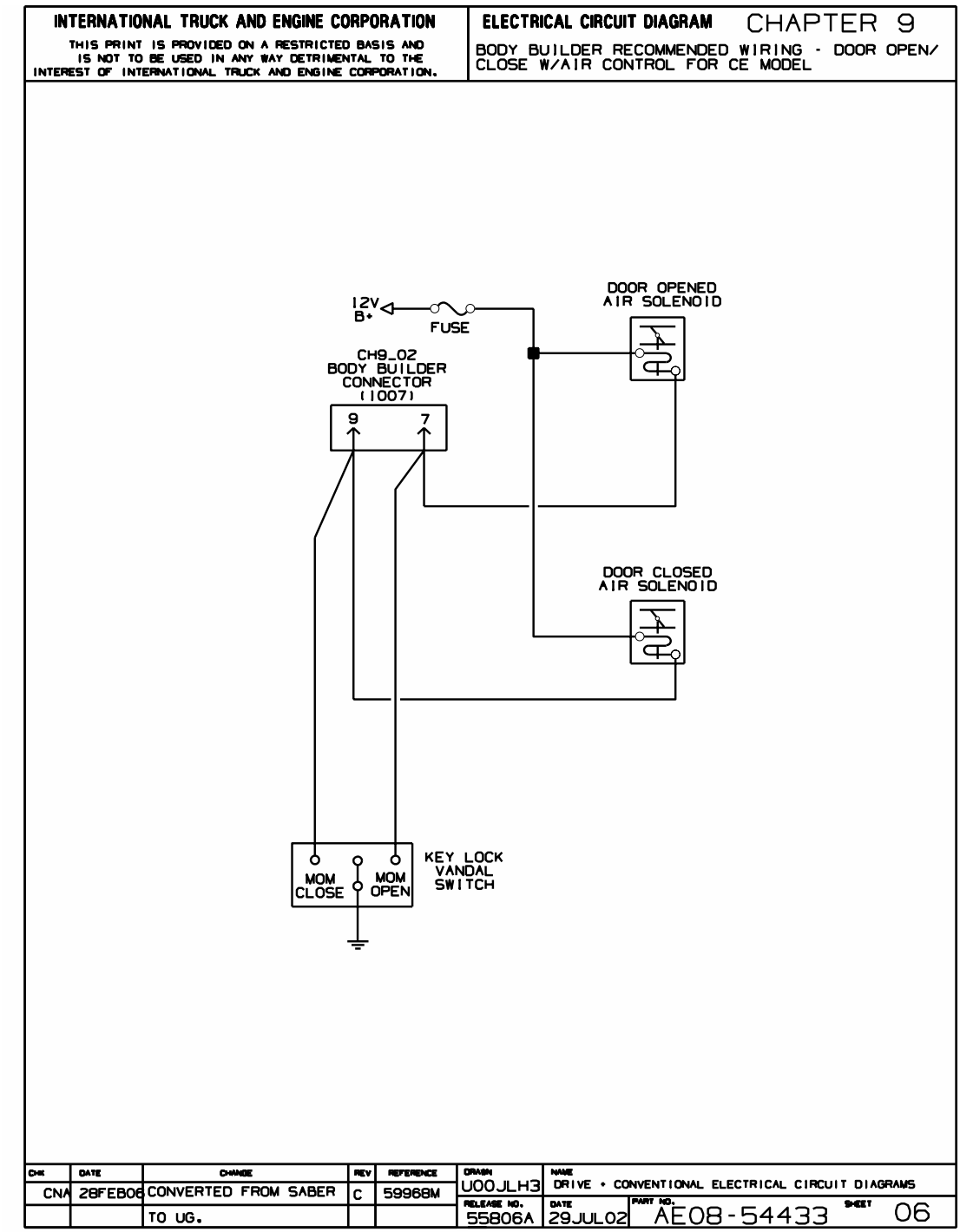


**Figure 81 Door Open / Close with Air Control for CE Model**

## 9.7. WHEELCHAIR LIFT INTERLOCK, P. 7

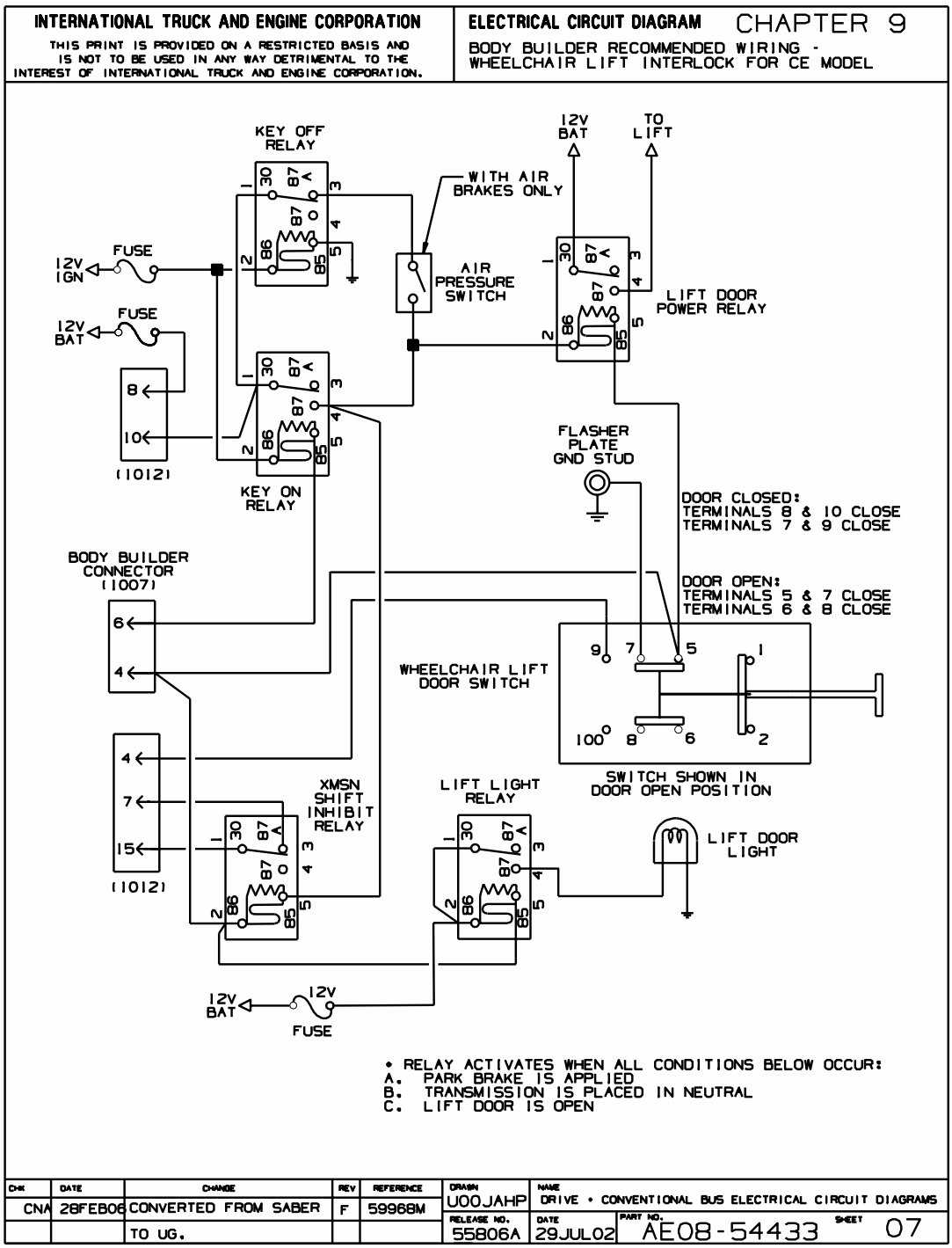


**Figure 82 Wheelchair Lift Interlock**

## 9.8. FLASHER SWITCHES FOR CE MODEL, P. 8

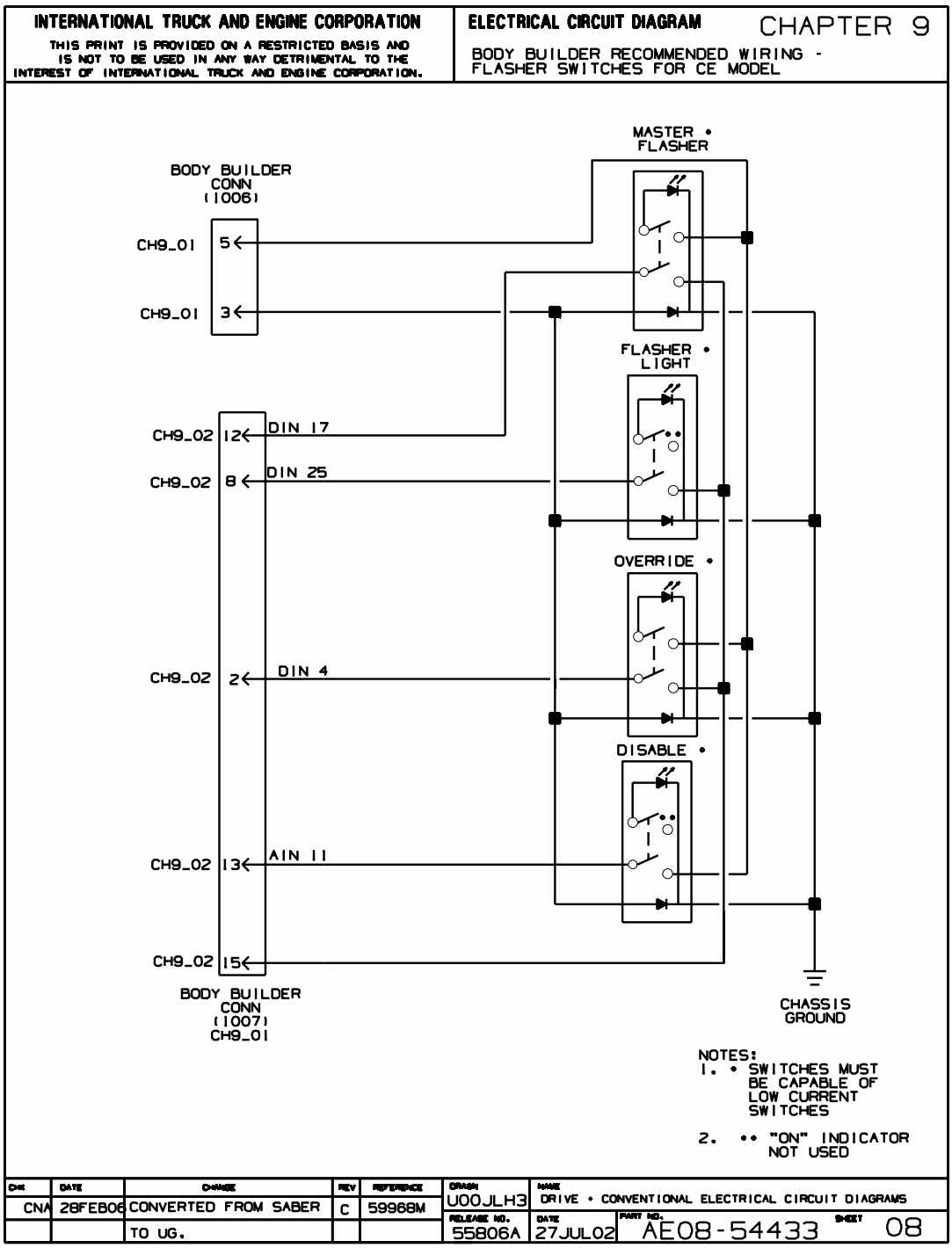


**Figure 83 Flasher Switches for CE Model**

## 9.9. PARK BRAKE STATUS, P. 9

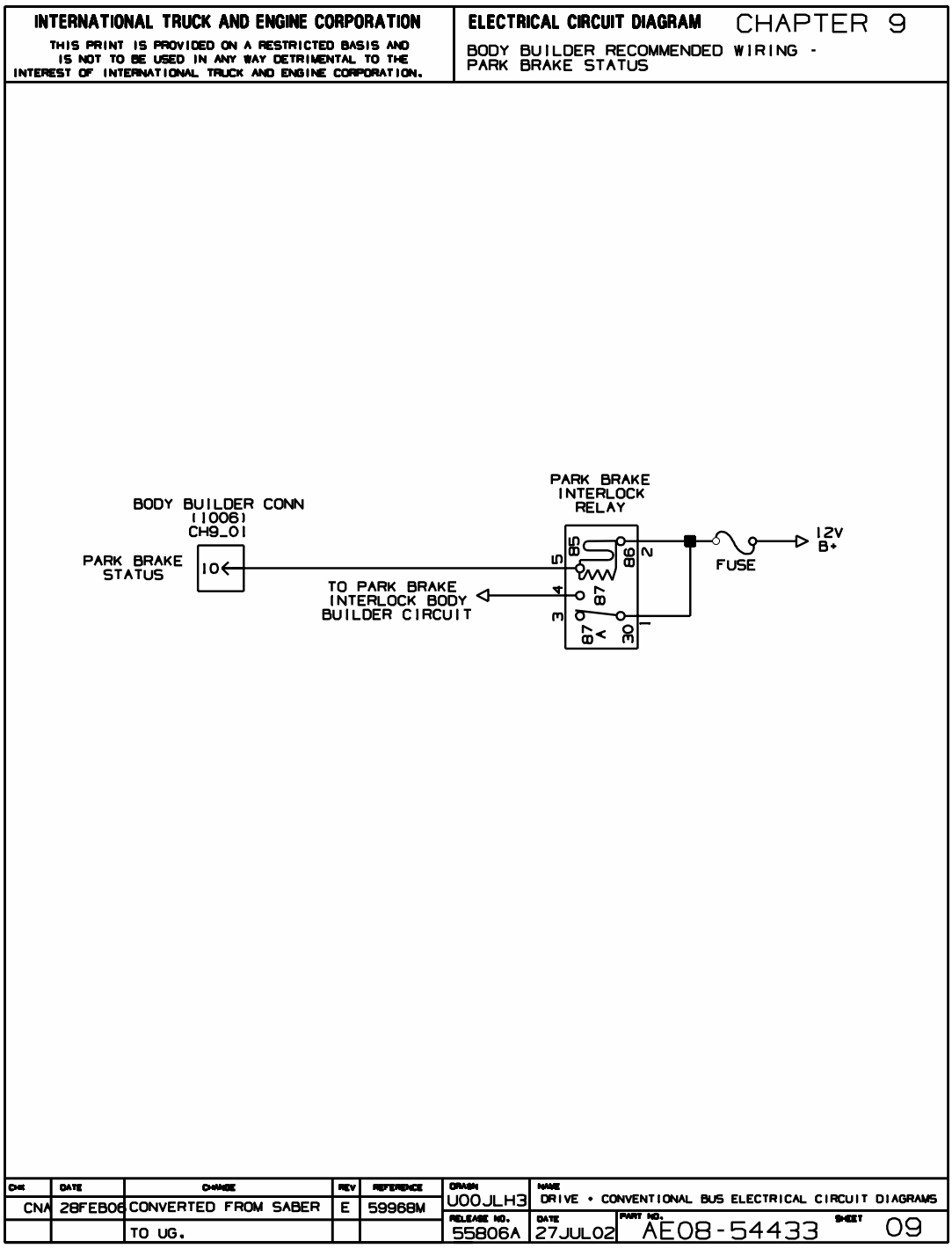


**Figure 84 Park Brake Status**

## 9.10. DUAL WIPER MOTORS FOR PT / MEXICO AND EXPORT MODELS, P. 10

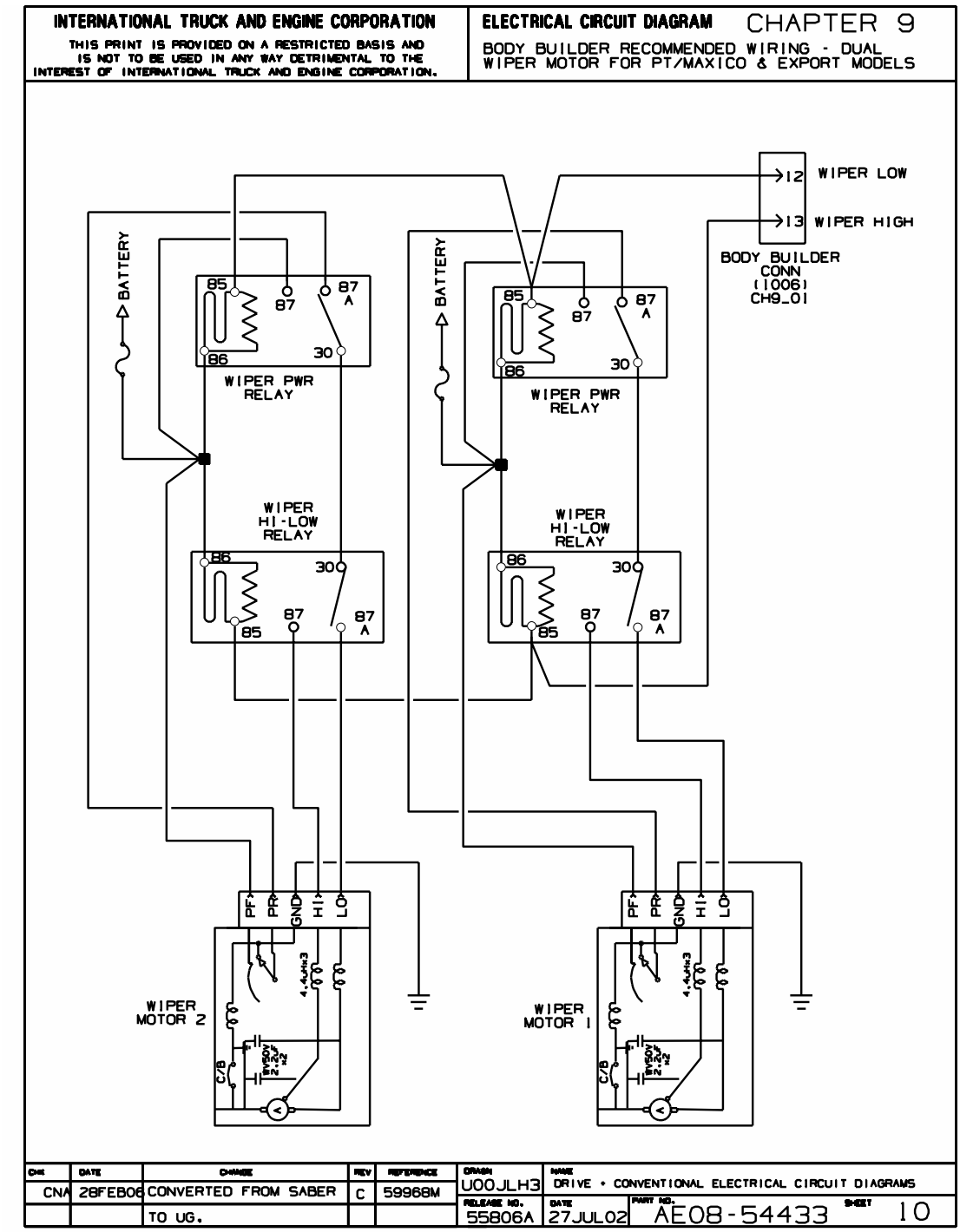


**Figure 85 Dual Wiper Motors for PT / Mexico and Export Models**

## 9.11. MEXICO AND EXPORT BUS WINDSHIELD WASHER PUMP, P. 11

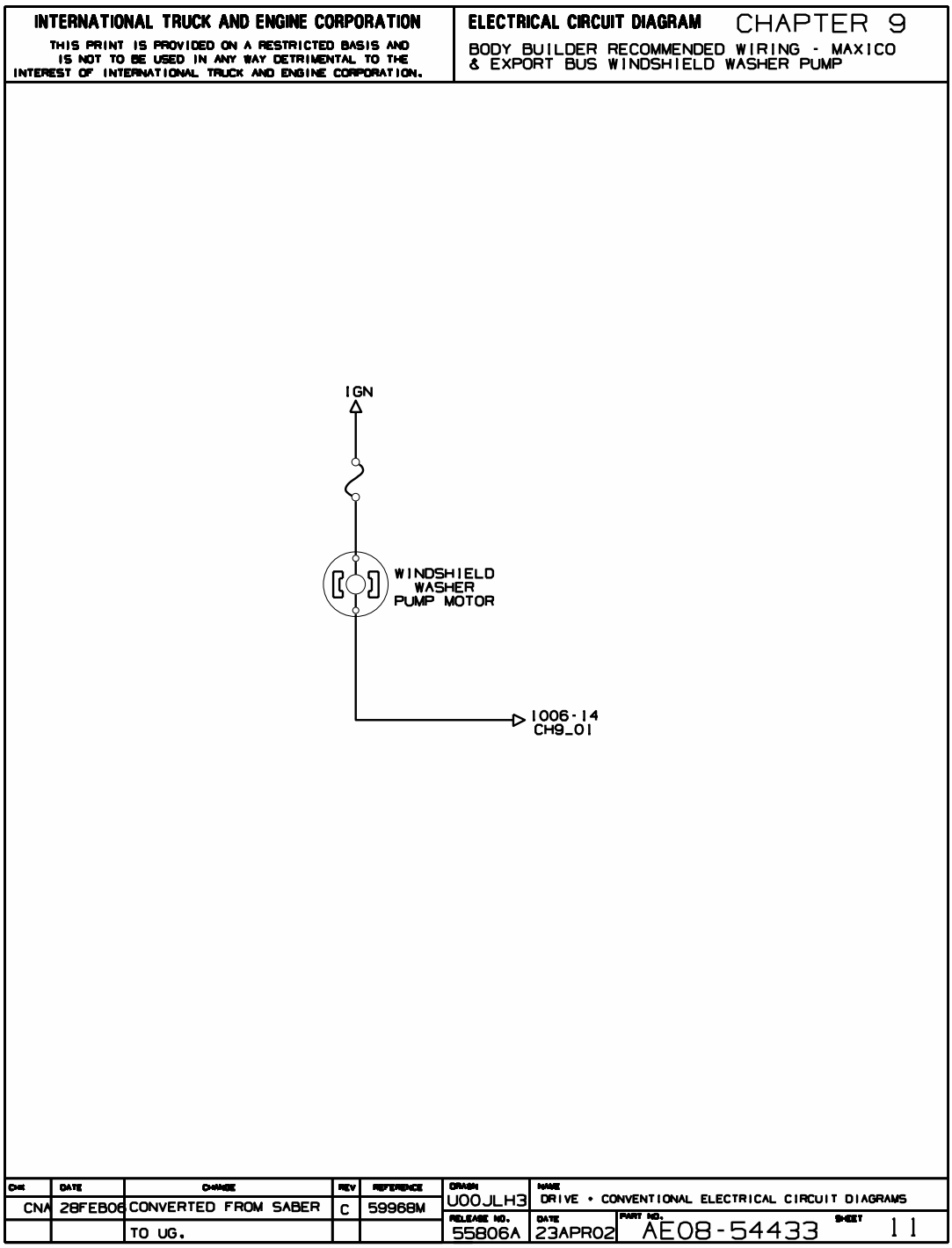


**Figure 86 Mexico and Export Bus Windshield Washer Pump**

## 9.12. CE BUS REDUNDANT DOOR CONTROLS, P. 12

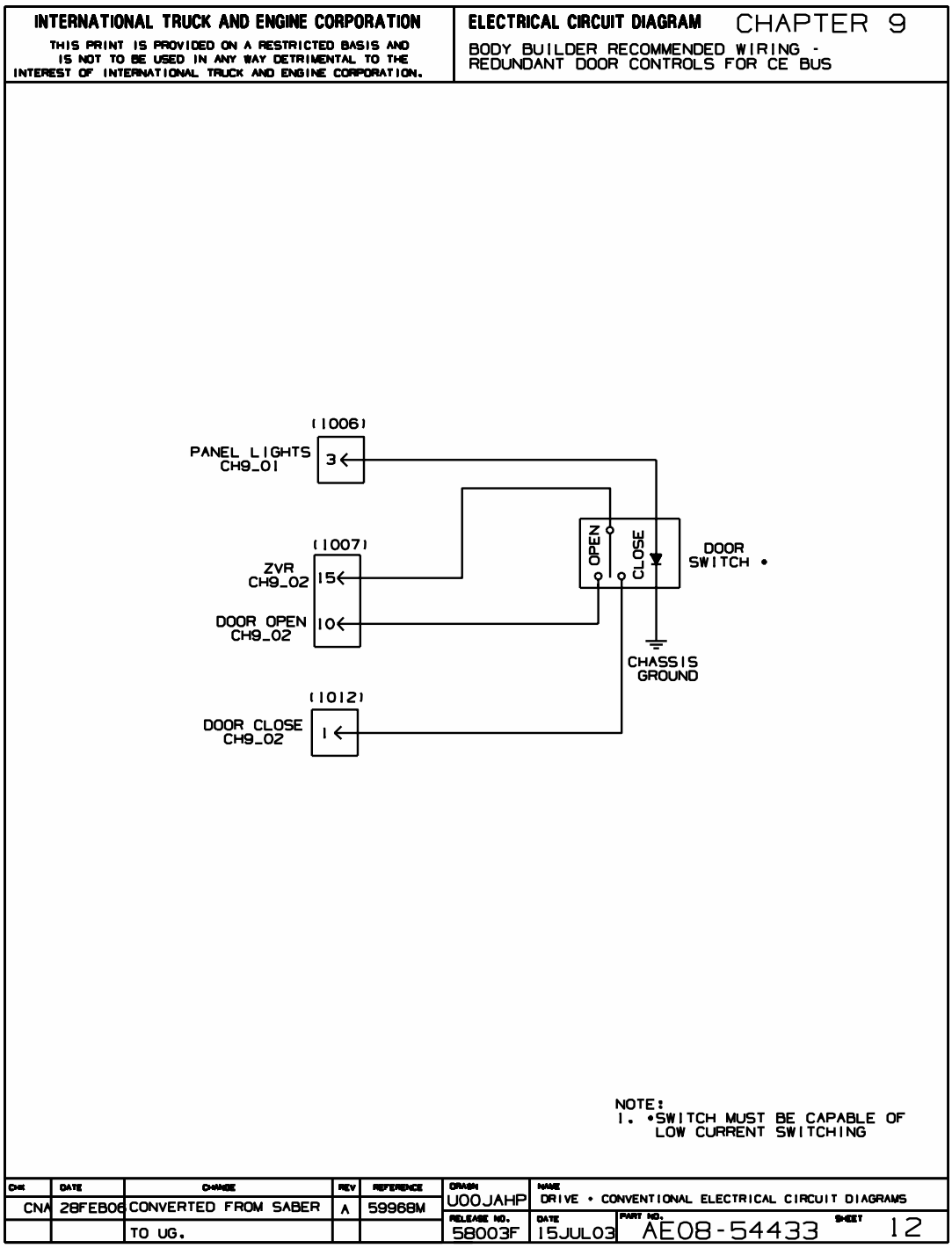


**Figure 87 CE Bus Redundant Door Controls**

## 9.13. MANUAL DOOR FOR CE BUS, P. 13

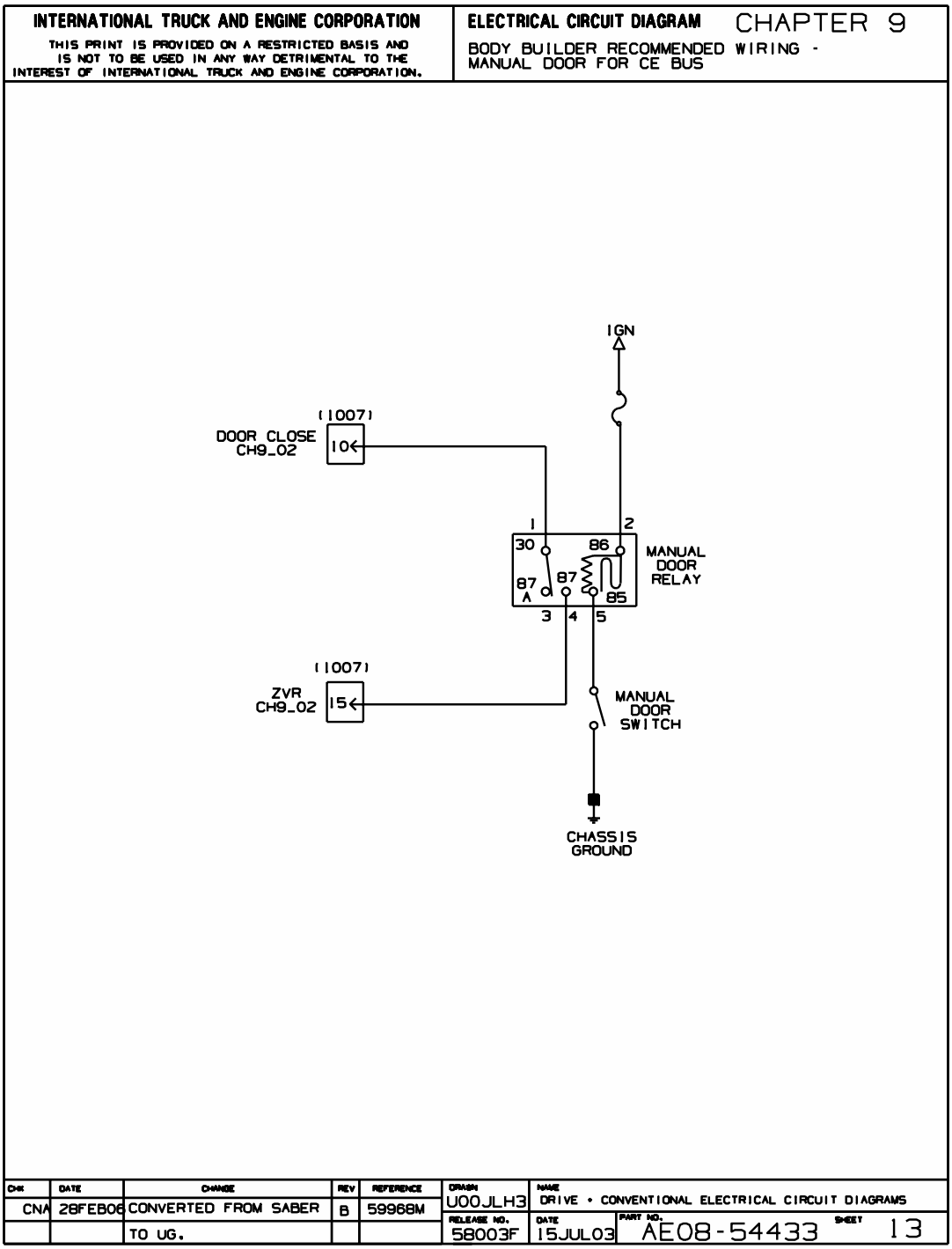


**Figure 88 Manual Door for CE Bus**