SECTION 3 - ELECTRICAL SYSTEM

ELECTRICAL SYSTEM M1585
ELECTRICAL SCHEMATICS (S/N SPECIFIC)

ELECTRICAL SYSTEM

DESCRIPTION

Each truck has two electrical systems:

1. A 24 Vdc control system to power various system functions.

2. A high voltage electoral propulsion system that serves as the propulsion and retarding system.

OPERATION

The 24 Vdc system provides the energy required to operate many of the systems that operate the truck including the engine and electrical propulsion, lights, system monitoring, and other related systems.

This system is maintained by 12 Vdc batteries connected in pairs in series with each other. On trucks with the standard electric start system, 3 or more pairs of batteries are used. On trucks equipped with optional pneumatic start, this may be reduced to a single pair.

The power for the system and to maintain the charge in the batteries is provided by an engine mounted 24 Vdc battery charging alternator. An internal voltage regulator controls its operation, keeping the batteries at their maximum state of charge.

To aid in maintenance of the system, the schematics for this system are included at the end of this module.

The high voltage propulsion system provides the power to propel the truck. The directly coupled, engine driven traction alternator provides the electrical energy which is routed to the wheelmotors in each of the rear dual tire and rim assemblies. These motors convert the electrical energy to mechanical power to propel the truck. A computer based control system monitors the operation and controls the operation of the truck's engine and traction alternator to provide efficient operation of the system.

The high voltage system also provides an operation mode called dynamic retarding. This system is used to slow the truck and control its speed on downgrades. During dynamic retarding, the truck's kinetic energy (force that keeps the truck moving) is converted by the wheelmotors (functioning as generators) into electrical energy. This energy is then dissipated to the atmosphere through air cooled grids. The energy conversion controls the wheelmotor speed. This system also controls the systems computer.

SERVICE

⚠WARNING

Turn the Master Switch and any extra battery disconnect switch Off at all times that servicing is being done on any components in the electrical system (both 24 V and high voltage).

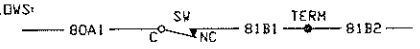
For complete operation and service details, refer to the appropriate manufacturer's service manuals and the Unit Rig Electrical Manual.

ENG. NO. 90916	90978	91938	92071	92179	92472	93396	94577	ELLIS	GAP	SLF

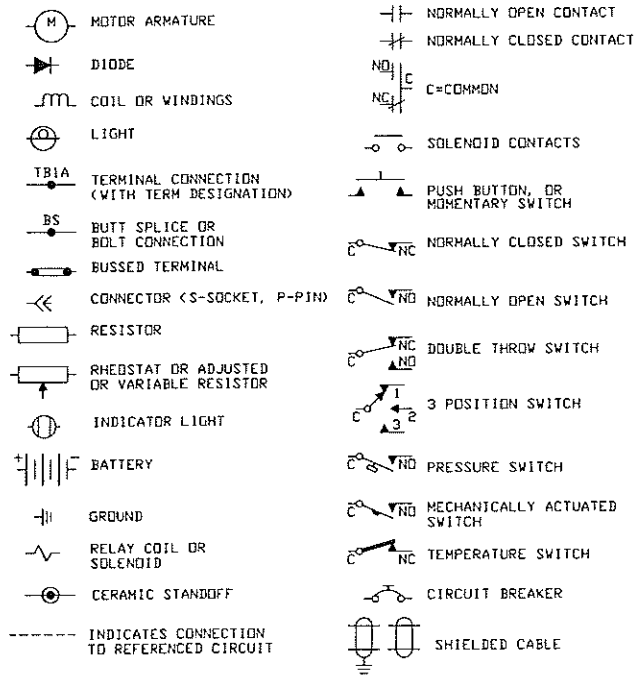
S10324

GENERAL NOTES:

1. THIS SCHEMATIC SHOWS THE CIRCUITRY IN A TRUCK 24 VOLT ELECTRICAL SYSTEM. THE CIRCUIT IS ILLUSTRATED USING SYMBOLS EXPLAINED IN THE FOLLOWING NOTES. THIS DOCUMENT IS FOR TRACING CURRENT FLOW AND TROUBLE SHOOTING.
2. INDIVIDUAL NUMBERS ARE ASSIGNED TO EACH WIRE AND ARE SHOWN AS FOLLOWS:



3. ZONE NUMBERS ARE USED TO LOCATE CIRCUITS AND ARE SHOWN IN THE LEFT HAND MARGIN OF EACH SHEET. THE FIRST ONE OR TWO DIGITS OF THE ZONE NUMBER REFERS TO THE SHEET NUMBER, THE LAST TWO DIGITS ARE THE LINE NUMBERS OF THE CIRCUITS. EXAMPLE: 321 REFERS TO SHEET 3, LINE 21.
4. A CIRCUIT CONTINUATION IS SHOWN BY A ZONE NUMBER IN A HEXAGON. SOME CIRCUITS WILL CONTINUE ON THE POWER AND CONTROL SCHEMATIC AND WILL FOLLOW NOTE #3.
5. CURRENT FLOW ON THIS SCHEMATIC IS FROM LEFT TO RIGHT
6. ALL DEVICES ARE SHOWN IN THEIR NORMAL OR DE-ENERGIZED POSITION
7. A COMMON CHASSIS GROUND SYSTEM IS USED. ALL GROUND WIRES BEGIN WITH 'X' AND ARE CONNECTED TO A SPECIFIC GROUND POINT OR A 'NEAREST' GROUND POINT. 'NEAREST' DEFINES THE CLOSEST MOST DEPENDABLE CHASSIS GROUND POINT TO THE COMPONENT.
8. TERMINAL BOARD AND GROUND POINT LOCATIONS ARE AS FOLLOWS:
   TB1 THRU TB9 & GND1 THRU GND9.....CONTROL BOX
   TB10 THRU TB19 & GND10 THRU GND19.....CAB
   TB20 THRU TB29 & GND20 THRU GND29.....ENGINE
   TB30 THRU TB39 & GND30 THRU GND39.....FRAME
   TB50 THRU TB59 & GND50 THRU GND59.....SUPERSTRUCTURE
   TB60 THRU TB69 & GND60 THRU GND69.....AXLEBOX



ITEM	DESCRIPTION	LOCATION SCHEMATIC	LOCATION TRUCK
11H D	11H DIODE (BETWEEN X15A AND TB11H)	557	CAB
24/12V CONV	24/12V DC CONVERTER	645	CAB
24V ALT	24 VOLT ALTERNATOR	8__	ENGINE
AA1, AA2	AUDIBLE ALARM 1,2	354	CAB
ABXSVLT SW	AXLE BOX SERVICE LIGHT SWITCH	432	AXLE BOX
AC CMP	AIR CONDITIONER COMPRESSOR	658, 8__	ENGINE
AL PSW	AUTO LUBE PRESSURE SWITCH	630	HYD BOX
AL TMR	AUTO LUBE TIMER	633	CAB
ALSV1 SOL	AUTO LUBE SV1 SOLENOID	628	S/S
ALT SW	AUTO LUBE TEST SWITCH	627	CAB
BF IND	BLOWER FAULT INDICATOR	738	CAB
BI SW	BATTERY ISOLATION SWITCH	201	FRAME
BU H	BACK UP HOOTER	758	AXLE BOX
CE IND	CHECK ENGINE INDICATOR	357, 9__	CAB
CS	CERAMIC STANDOFF	653	CAB
DBU IND	DUMP BODY UP INDICATOR	726	CAB
DC/AC CONV1	DC/AC CONVERTER 1 (DASH PANEL)	415	CAB
DC/AC CONV2	DC/AC CONVERTER 2 (CENTER CONSOLE)	415	SHIFT TOWER
DOME LT	DOME LIGHT	459	CAB
DOS	DUMP-UP OVERRIDE SWITCH (GE)	729	SHIFT TOWER
DS SW	DATA STORE SWITCH	733	CAB
EBBF SN	ENGINE BLOWBY FLOW SENSOR (GE)	9__	ENGINE
ECL SN	ENGINE COOLANT LEVEL SENSOR	9__	RADIATOR
ECT GA	ENGINE COOLANT TEMPERATURE GAUGE	255, 421, 615, 8__	CAB
ECT SN	ENGINE COOLANT TEMPERATURE SENSOR	615, 8__	ENGINE
ECT SN2	ENGINE COOLANT TEMP. SENSOR (GE)	9__	ENGINE
EDC	ENGINE DIAGNOSTIC CONNECTOR	9__	CAB
EDT SW	ENGINE DIAGNOSTIC TEST SWITCH	9__	CAB
EF IND	ENGINE FAULT INDICATOR	9__	CAB
EK R	ENGINE KILL RELAY	9__	CAB
EK SW	ENGINE KILL SWITCH	747, 9__	HOOD
EO PSW	ENGINE OIL PRESSURE SWITCH (CAB)	618	CAB
EOP GA	ENGINE OIL PRESSURE GAUGE	421	CAB
EOP SN	ENGINE OIL PRESSURE SENSOR (GE)	9__	ENGINE
ES/S SW	ENGINE START/STOP SWITCH	354, 751, 9__	CAB
ESVLT SW	ENGINE SERVICE LIGHT SWITCH	449	HOOD
F GA	FUEL GAUGE	421, 606	CAB
FAN MOT	FAN MOTOR (1, 2)	650, 655	CAB
FAN RES	FAN RESISTOR (1A, 1B, 2A, 2B)	650, 655	CAB
FAN SW	FAN SWITCH	653	CAB
FBK XSW	FOOT BRAKE PROXIMITY SWITCH	504	CAB
FLSH	FLASHER	433	CAB
H	HOOTER	624	S/S
H/TLT SW	HEAD/TAIL LIGHT SWITCH	403	CAB
HBK XSW	HAND BRAKE PROXIMITY SWITCH	508	HYD BOX
HBXSV LT	HYDRAULIC BOX SERVICE LIGHT	456	HYD BOX
HI DP	HIGH SIDE DIODE PANEL	342	CAB
HIB R	HIGH BEAM RELAY	406	FRAME
HIHOT SN	HIGH HYDRAULIC OIL TEMP. SENSOR	543	FRAME
HM	HOURMETER	618	CAB
INDPC	INDICATOR PANEL CONNECTOR	311, 408, 430, 439, 511, 705, 726	CAB
LBK SOL	LOAD BRAKE SOLENOID	525	HYD BOX
LBU LT	LEFT BACK UP LIGHTS	755	AXLE BOX
LESV LT	LEFT ENGINE SERVICE LIGHT	448	HOOD
LFT/C LT	LEFT FRONT TURN/CLEARANCE LIGHT	431	S/S
LO DP	LOW SIDE DIODE PANEL	342	CAB
LOB R	LOW BEAM RELAY	402	FRAME
LOBK PSW	LOW BRAKE PRESSURE SWITCH	539	HYD BOX
LOF SN	LOW FUEL SENSOR	611	FRAME
LOHOL SN	LOW HYDRAULIC OIL LEVEL SENSOR	548	FRAME
LOSTR PSW	LOW STEERING PRESSURE SWITCH	552	FRAME
LRET LT	LEFT RETARD LIGHT	427	AXLE BOX
LRT/C LT	LEFT REAR TURN/CLEARANCE LIGHT	433	DUMP BODY
LT IND	LEFT TURN INDICATOR	430	CAB
LT/S LT	LEFT TURN/STOP LIGHT	435	AXLE BOX
M SW	MASTER SWITCH	226	CAB
MF SW	MULTI-FUNCTION SWITCH	403, 431	CAB
MPS SW	MANUAL POWER SUPPLY SWITCH	534	CAB
MSW R	MASTER SWITCH RELAY	555	CAB
PBK PSW	PARK BRAKE PRESSURE SWITCH	521	HYD BOX
PBKAPP SOL	PARK BRAKE APPLY SOLENOID	519	HYD BOX
PBKREL SOL	PARK BRAKE RELEASE SOLENOID	517	HYD BOX
PBKSO SOL	PARK BRAKE SHUT OFF SOLENOID	515	HYD BOX
PL PMP	PRELUBE PUMP (CUMMINS)	8__	FRAME
PL TMR	PRELUBE TIMER (CUMMINS)	9__	FRAME
PLD RH	PANEL LIGHT DIMMER RHEOSTAT	421	CAB
PLEO PSW	PRELUBE ENGINE OIL PRESSURE SWITCH	9__	ENGINE
PLSTRTR R	PRELUBE STARTER RELAY (CUMMINS)	9__	ENGINE
PTT SW	PRESS TO TEST SWITCH	340	CAB
RBU LT	RIGHT BACK UP LIGHTS	757	AXLE BOX
RESV LT	RIGHT ENGINE SERVICE LIGHT	450	HOOD
RFT/C LT	RIGHT FRONT TURN/CLEARANCE LIGHT	440	S/S
RP RH	RETARD PEDAL RHEOSTAT	712	CAB
RRET LT	RIGHT RETARD LIGHT	429	AXLE BOX
RRT/C LT	RIGHT REAR TURN/CLEARANCE LIGHT	442	DUMP BODY
RSC RH	RETARD SPEED CONTROL RHEOSTAT	708	SHIFT TOWER
RT IND	RIGHT TURN INDICATOR	439	CAB
RT/S LT	RIGHT TURN/STOP LIGHT	437	AXLE BOX
S LT	STAIRWAY LIGHT	446	HOOD
SE IND	STOP ENGINE INDICATOR	359, 9__	CAB
SEI R	STOP ENGINE INDICATOR RELAY	9__	CAB
SF IND	SYSTEM FAULT INDICATOR	735	CAB
SLT SW1	STAIRWAY LIGHT SWITCH 1	446	CAB
SLT SW2	STAIRWAY LIGHT SWITCH 2	446	HOOD
SPD M	SPEEDOMETER	421, 720	CAB
SPD R	SPEED (EVENT) RELAY	530	CAB
SR SW	SYSTEM RESET SWITCH	731	CAB
SSW	SELECTOR SWITCH	745	SHIFT TOWER
STRAD SOL	STEERING ACCUMULATOR DRAIN SOLENOID	557	FRAME
STRTR R	STARTER RELAY	9__	ENGINE
STRTR1	STARTER 1	8__	ENGINE
STRTR2	STARTER 2	8__	ENGINE
T1	TERMINAL ONE	201, 8__	BATT BOX
TAC M	TACHOMETER	421, 723	CAB
TP RH	THROTTLE PEDAL RHEOSTAT	715	CAB
TX	TERMINAL X	201	BATT BOX
VM	VOLTMETER	421, 601	CAB
WR MOT	WIPER MOTOR	637	CAB
WSHR PMP	WASHER PUMP	641	HYD BOX

MT4400 CAD

INDEX

SHEET	CONTENTS
1	NOTES AND REFERENCE DATA
2	24V DISTRIBUTION
3	GROUND DIST., DIODE PANELS
4	LIGHTS
5	HYDRAULICS
6	GAUGES, FAN, WIPER, AUTOLUBE
7	STATEX INTERFACE, SELECTOR SW
8A&9A	DETROIT 16V4000 DDEC IV
8B&9B	CUMMINS QSK60 QUANTUM/CENSE

SHEETS 2-7 COVER 'STANDARD 24V CIRCUITS'.
SHEETS 8-9 COVER 'ENGINE UNIQUE CIRCUITS'.

ELECTRICAL SCHEMATIC TRUCK 24 VOLT

S10324 SHEET 1 OF 9

E.N. NO. 90916	90978	91938	92071	92179	92472	93396	94577	REL. DR.	ENG. APP.	DR. SLF

S10324

BATTERIES & BATTERY ISOLATION SWITCH

T1 — 1A1 — A1 BATT + — 2A1 — A2 BATT + — X30A — TX — B1 SW (C / NC) — X30E — X30E — GND30

1B1 — B1 BATT + — 2B1 — B2 BATT + — X30B

1C1 — C1 BATT + — 2C1 — C2 BATT + — X30C

SEE SHEET 8 FOR ENGINE UNIQUE CIRCUITS — 8__ — 8__

1L1 — 536 — MPS PMP

1B2 — S10492-901 — CB20 (TB2P)

TB30H — 1P1 — 1P2 — CB1A (AUTO RESET) — 10AA1 — 401 — LOB R

1P3 — 747 — EK SW

1F1

CB1 (AUTO RESET) — 1G1 — 10A1 — TB14E — 10B1 — 406 — H/TLT SW

10B2 — 404 — H/TLT SW

TB14F — 10C1 — 622 — H

1G2 — 10D1 — 429 — FLSH

CB2 — 20A1 — 20E1 — 758 SSW-6C — 20E2 — 525 — LBK SW

TB14A — 20B1 — 459 — DOME LT

20D1 — 449 — ESVLT SW

TB55G — 20F1 — 20F2 — 508 — HBK XSW

20F5 — 456 — HBXSV LT

TB14B — 20F3 — 501 — FBK XSW

20G1 — 447 — SLT SW

20H1 — 509 — HBK R

20A2 — 454 — CBXSV LT

MASTER SWITCH — M SW

1M1 — 645 — 24/12V CONV

1J1

CB9 — 90A1 — TB15B — PJ02 — S10639-SHT1 — OPTION: WEIGH SYSTEM DISPLAY

90C1 — 452 — ABXSVLT SW

90B1 — 755 — SSW

90D1 — S10492-913 — CONTROL BOX POWER (TB6G)

80A2 — S10492-910 — CONTROL BOX POWER (TB2L)

CB8 — 80A1 — TB15C — SSW-1C 745 — SSW-3C 751 — SSW-5C 753 — 80B1 — 80B5 — 729 — OPTION: DDS

80B3 — 701 — RSC SW

80C1 — 738 — BF IND

TB15D — 80E1 — 521 — PBK PSW

80F1 — 735 — SF IND

80G1 — 731 — SR SW

80H1 — 530 — SPD R

CB7 — SPARE

CB6 — SPARE

628 AL TMR — 50C1 — 50B1 — 627 — ALT SW

8__ — ENGINE UNIQUE CIRCUITS

50K1 — 531 — SPD R

CB5 — TB15E — 50A1 — 50K2 — 534 — MPS SW

50D1 — 543 — HIHOT IND

TB15F — 50E1, 50E2 — 555 — MSW R, STRAD R

50F1 — 552 — LOSTR PSW

50G1 — 720 — SPD M, TAC M

8__ — ENGINE UNIQUE CIRCUITS

CB4 — 40A1 — TB15G — 40E1 — 750 — ES/SSW D

40B1 — 638 — WR SW

40C1 — 653 — FAN SW

40D1 — 618 — EO PSW

CB3 — 30A1 — TB14C — 601 VM — 30B1 — 30C1 — 602 — F GA

30D1 — 609 — LOF SN

TB14D — 615 ECT GA — 30G1 — 30F1 — 340 — PTT SW

30K1 — 548 — LOHOL IND

30L1 — 539 — LOBKP IND

30E1 — 611 — LOF IND

30J1 — 547 — LOHOL SN

ALL CB'S = 25A — 30H1 — 354 — ES/S SW

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ELECTRICAL SCHEMATIC TRUCK 24 VOLT

SHEET 2 OF 9

S10324

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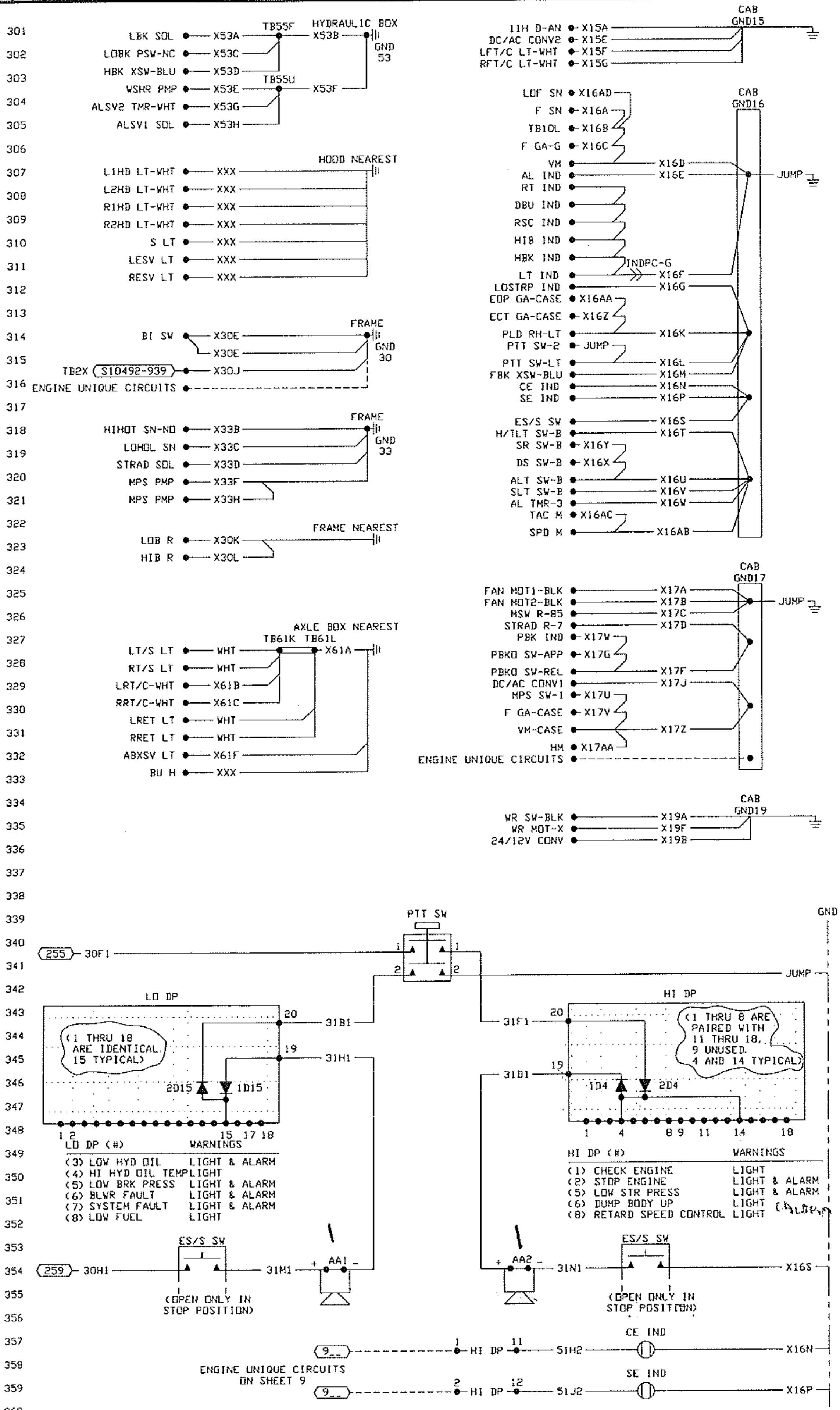

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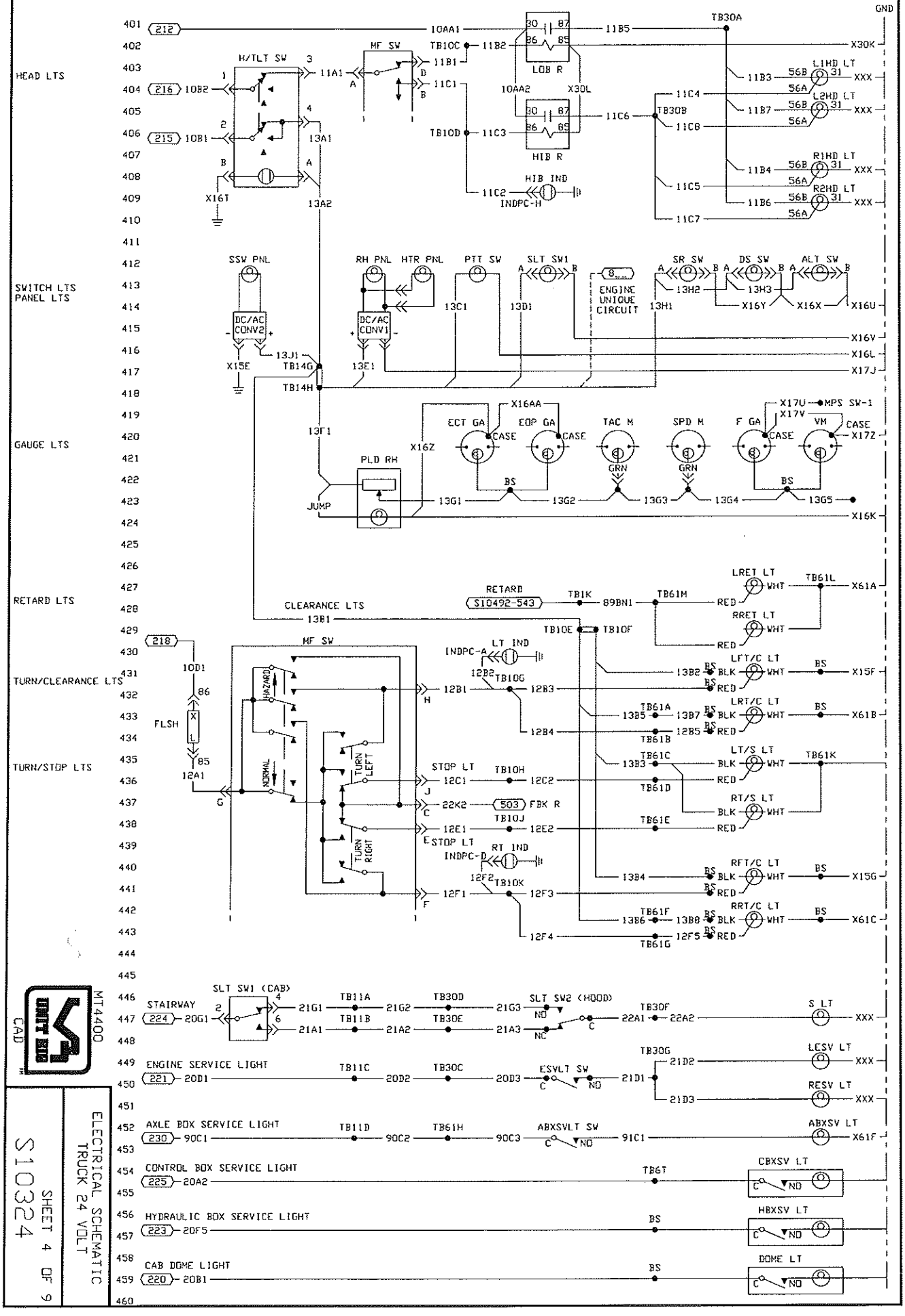
ELECTRICAL SCHEMATIC
TRUCK 24 VOLT

S10324

SHEET 3 OF 9



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ELECTRICAL SCHEMATIC
TRUCK 24 VOLT

SHEET 4 OF 9

S10324

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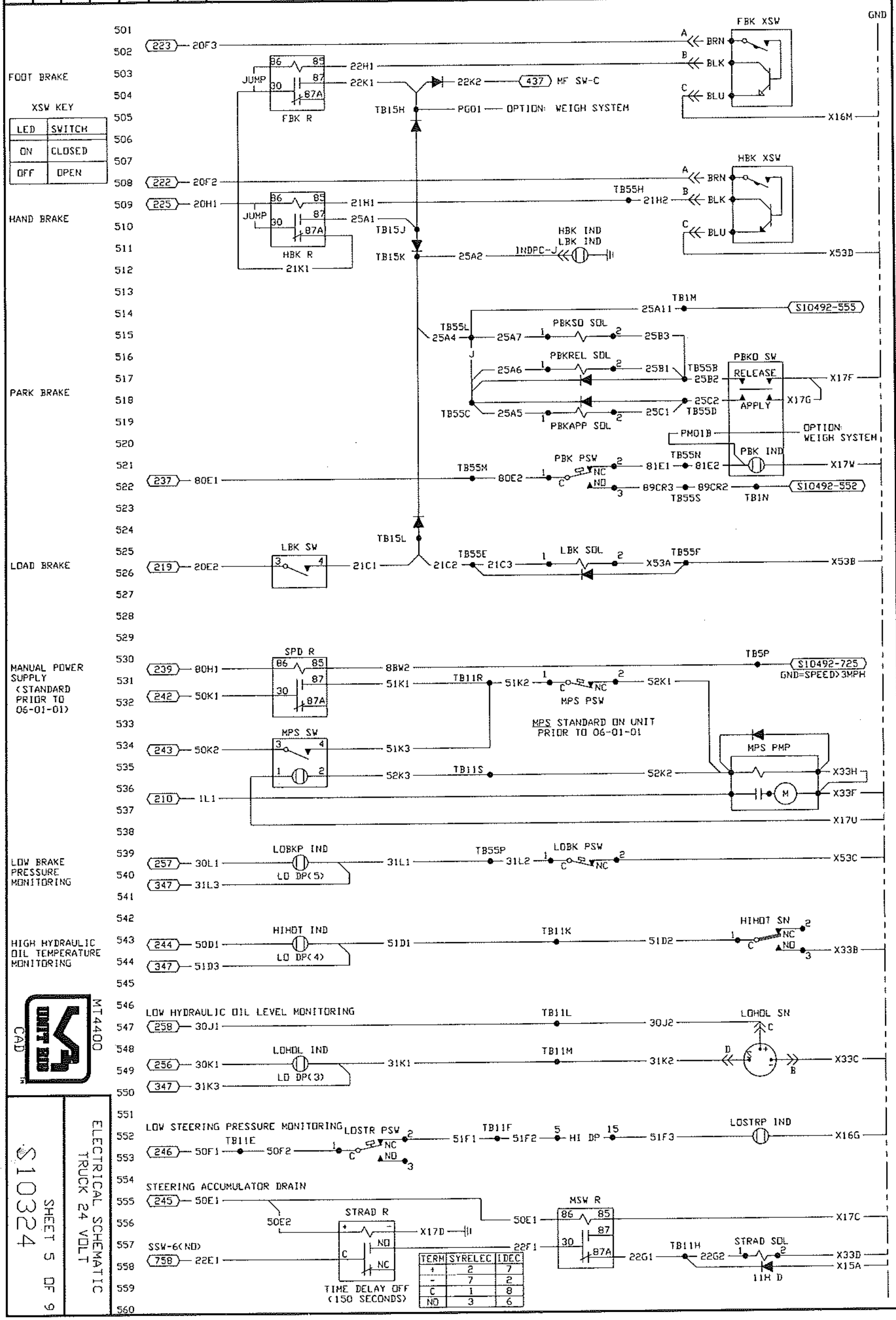
GND
FOOT BRAKE
FBK XSW
FBK R
JUMP
22H1
22K1
22K2
437 MF SW-C
TB15H
PG01 — OPTION: WEIGH SYSTEM
X16M
XSW KEY
LED | SWITCH
ON | CLOSED
OFF | OPEN
HAND BRAKE
HBK XSW
HBK R
222 20F2
225 20H1
21H1
25A1
TB55H 21H2
TB15J
TB15K
25A2
HBK IND
LBK IND
INDPC-J
X53D
21K1
PARK BRAKE
TB1M
25A11
S10492-555
TB55L
25A4
25A7
PBKSO SOL
25B3
PBKREL SOL
25A6
25B1
TB55B
25B2
PBKO SW
RELEASE
APPLY
X17F
X17G
25C2
TB55D
TB55C
25A5
PBKAPP SOL
25C1
PM01B
OPTION: WEIGH SYSTEM
PBK IND
TB55M
PBK PSW
81E1
TB55N
81E2
X17W
237 80E1
80E2
NC
NO
89CR3
89CR2
TB55S
TB1N
S10492-552
LOAD BRAKE
TB15L
LBK SW
219 20E2
21C1
21C2
TB55E
21C3
LBK SOL
TB55F
X53A
X53B
MANUAL POWER SUPPLY (STANDARD PRIOR TO 06-01-01)
SPD R
239 80H1
8BW2
TB5P
S10492-725
GND=SPEED>3MPH
242 50K1
51K1
TB11R
51K2
MPS PSW
52K1
MPS STANDARD ON UNIT PRIOR TO 06-01-01
MPS SW
243 50K2
51K3
MPS PMP
52K3
TB11S
52K2
X33H
X33F
210 1L1
X17U
LOW BRAKE PRESSURE MONITORING
LOBKP IND
257 30L1
31L1
TB55P
31L2
LOBK PSW
X53C
LO DP(5)
347 31L3
HIGH HYDRAULIC OIL TEMPERATURE MONITORING
HIHOT IND
244 50D1
51D1
TB11K
51D2
HIHOT SN
X33B
LO DP(4)
347 51D3
LOW HYDRAULIC OIL LEVEL MONITORING
TB11L
LOHOL SN
258 30J1
30J2
LOHOL IND
TB11M
256 30K1
31K1
31K2
X33C
LO DP(3)
347 31K3
LOW STEERING PRESSURE MONITORING
LOSTR PSW
TB11F
51F1
51F2
HI DP
51F3
LOSTRP IND
X16G
TB11E
246 50F1
50F2
STEERING ACCUMULATOR DRAIN
245 50E1
MSW R
STRAD R
50E2
50E1
X17C
X17D
SSW-6(NO)
758 22E1
22F1
TB11H
22G1
22G2
STRAD SOL
X33D
X15A
11H D
TIME DELAY OFF (150 SECONDS)

TERM	SYRELEC	IDEC
+	2	7
-	7	2
C	1	8
NO	3	6

UNIT RIG CAD

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ELECTRICAL SCHEMATIC
TRUCK 24 VOLT

S10324

SHEET 5 OF 9

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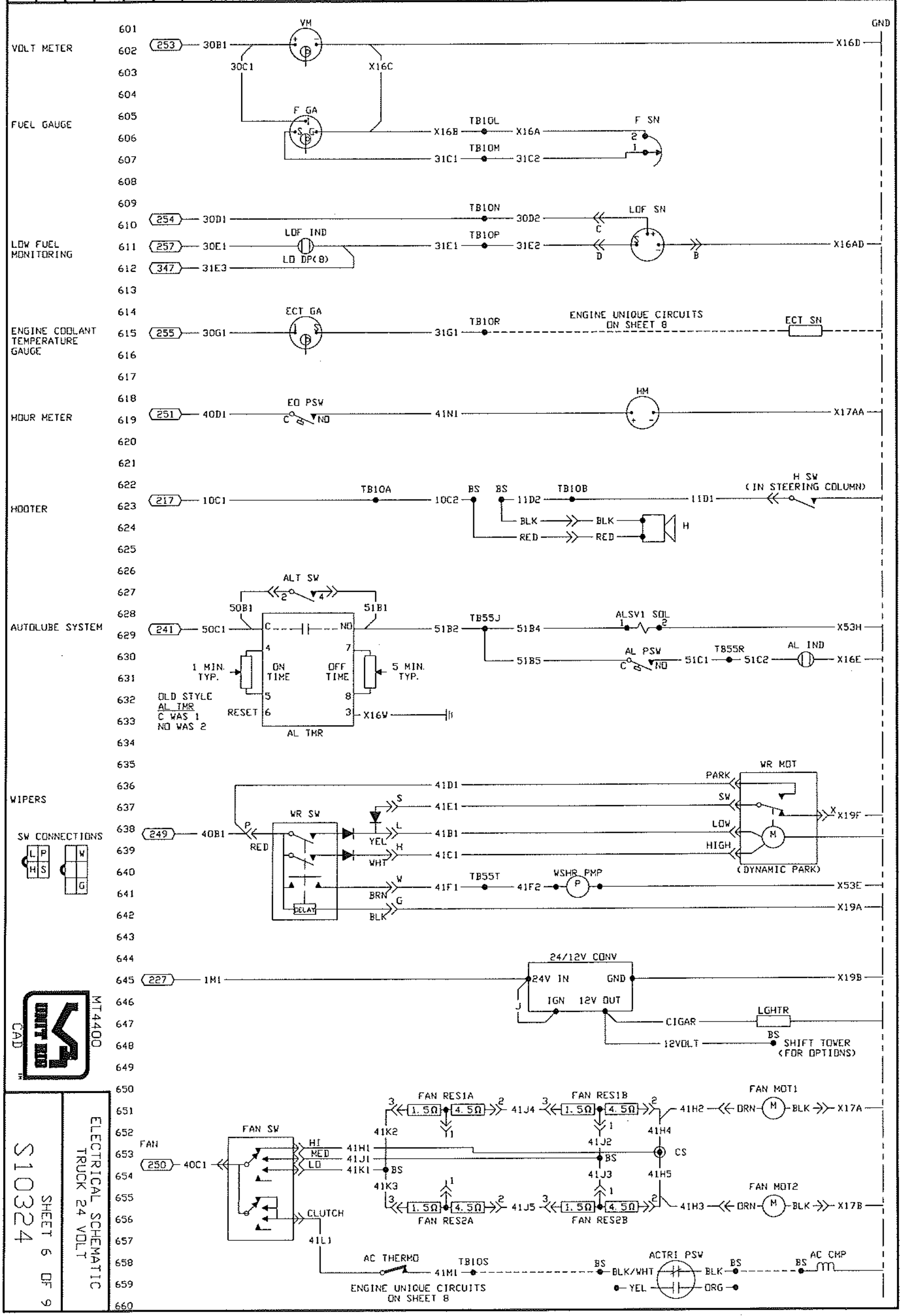

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S10324

RETARD SPEED CONTROL

RETARD PEDAL

THROTTLE PEDAL

SPEEDOMETER

TACHOMETER

DUMP BODY UP

SYSTEM RESET SWITCH

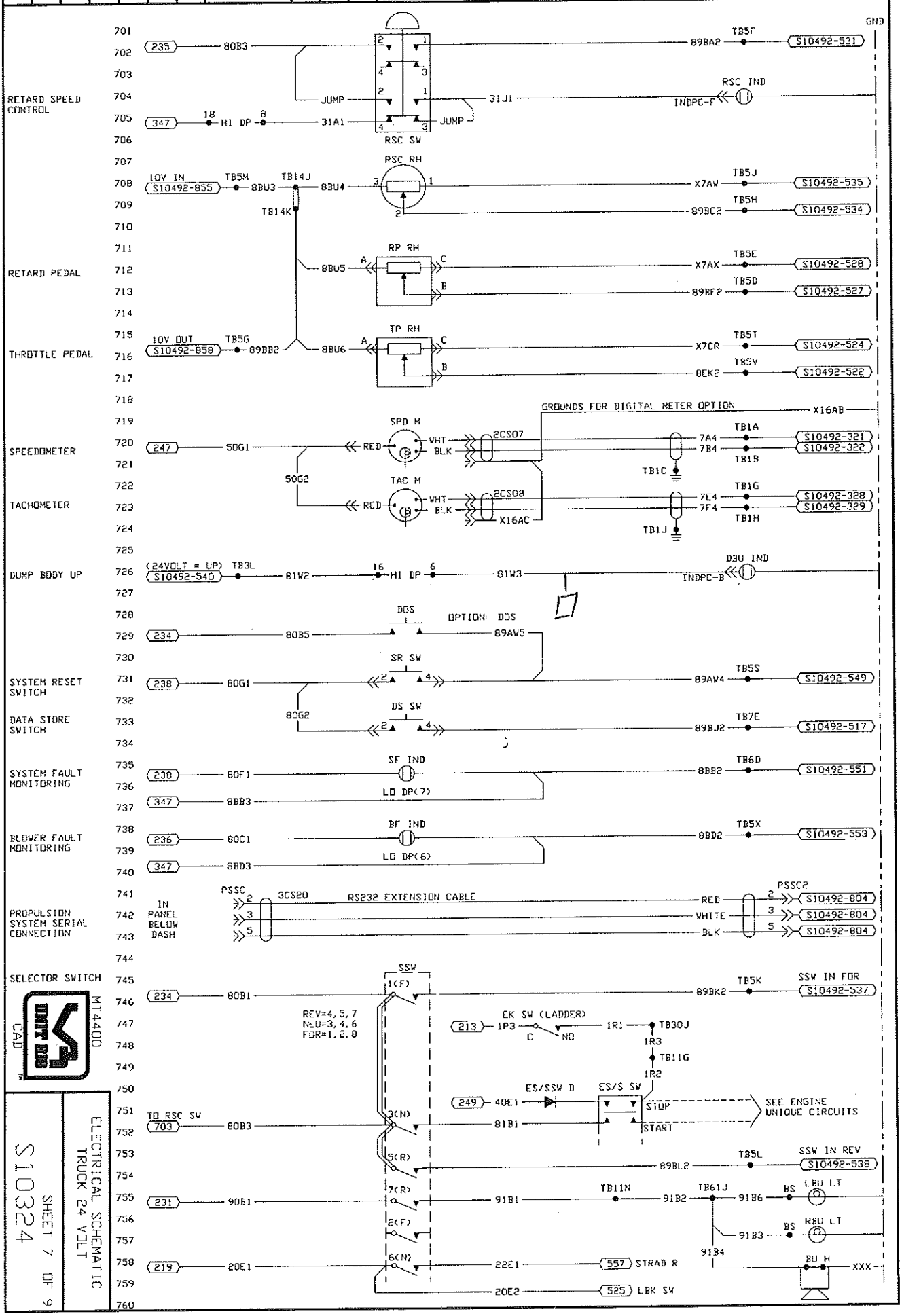
DATA STORE SWITCH

SYSTEM FAULT MONITORING

BLOWER FAULT MONITORING

PROPULSION SYSTEM SERIAL CONNECTION

SELECTOR SWITCH



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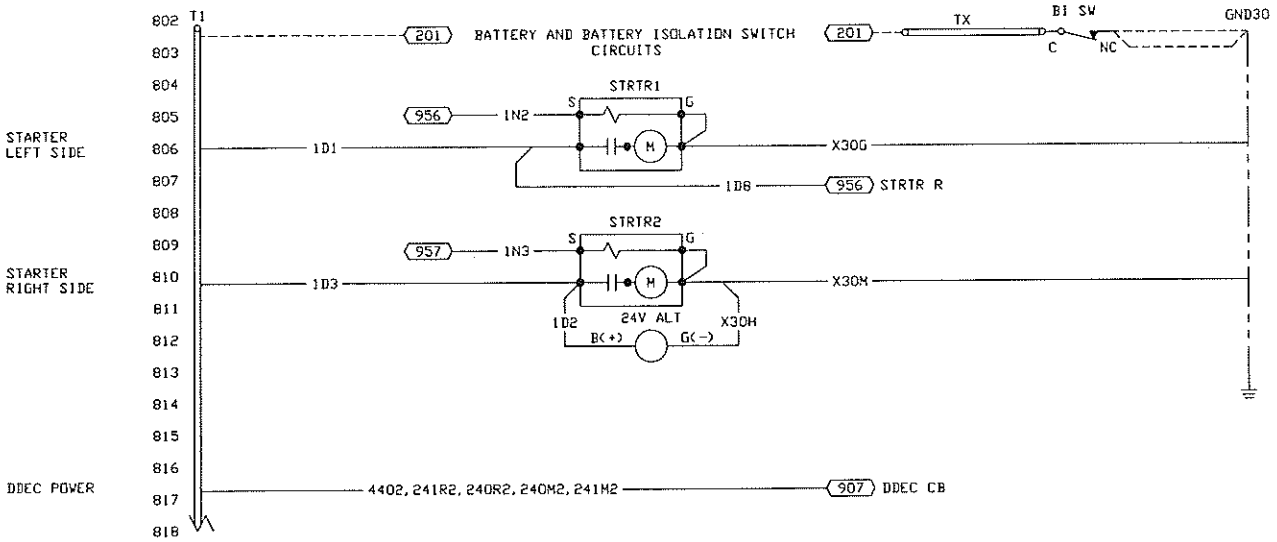
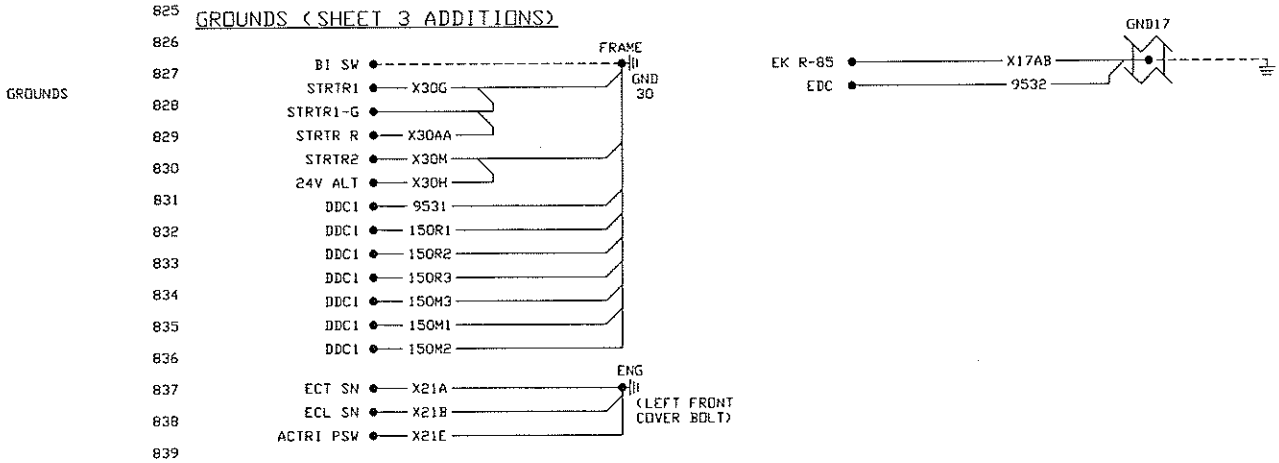
ELECTRICAL SCHEMATIC
TRUCK 24 VOLT

S10324 SHEET 7 OF 9

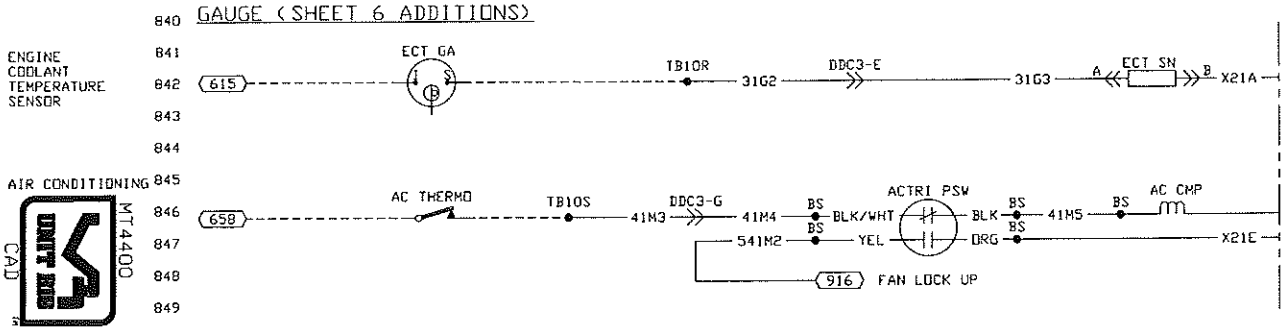
24V POWER DISTRIBUTION (SHEET 2 ADDITIONS)



GROUNDS (SHEET 3 ADDITIONS)



GAUGE (SHEET 6 ADDITIONS)



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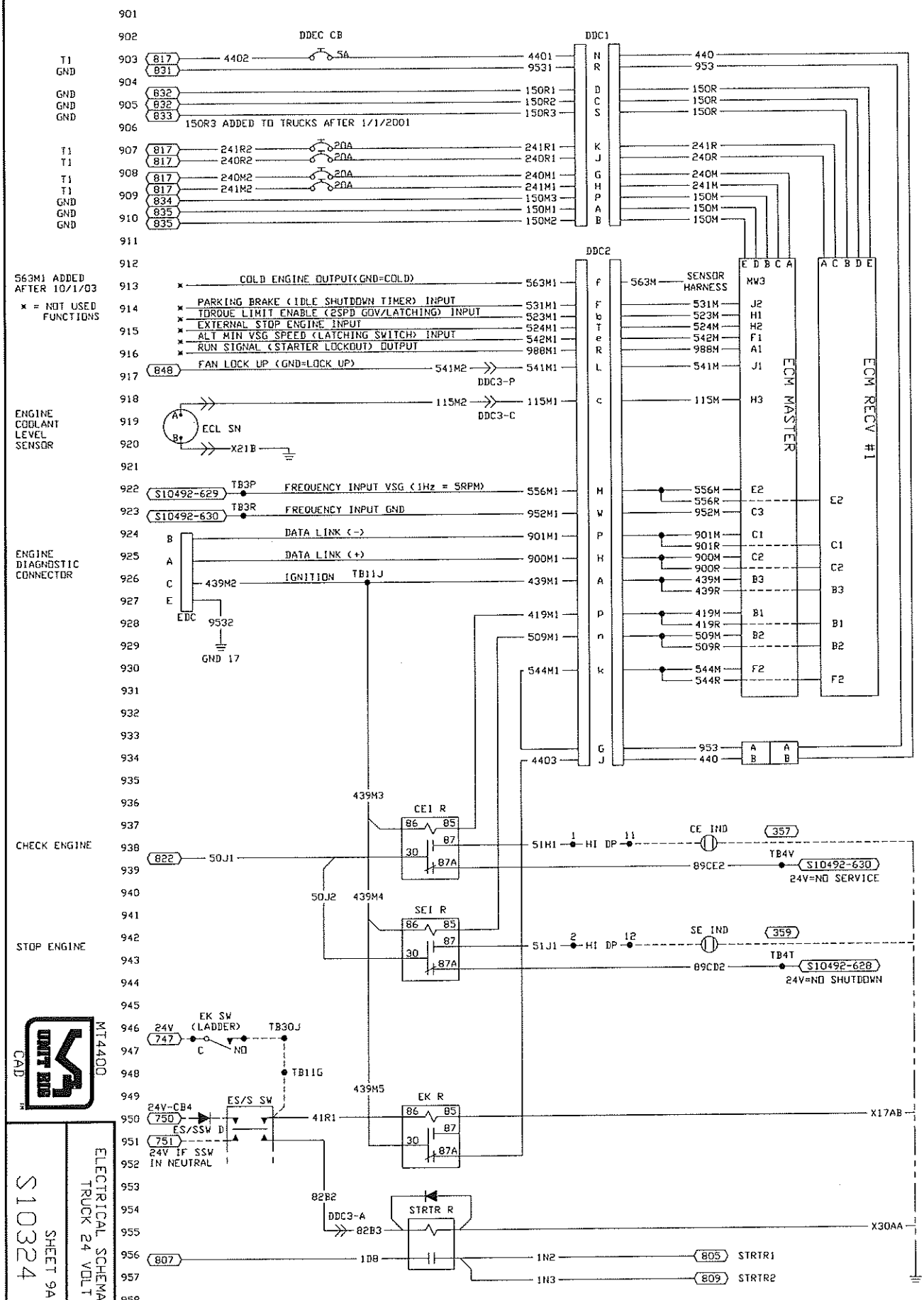
ELECTRICAL SCHEMATIC TRUCK 24 VOLT

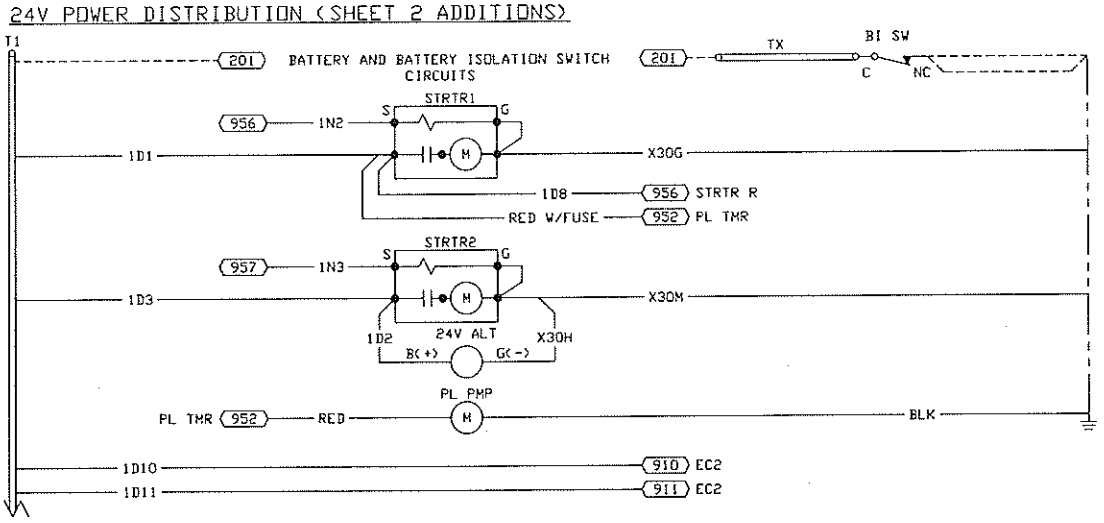
S10324 SHEET 8A OF 9

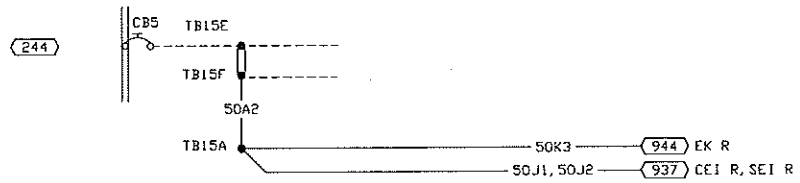
SHEET 8A & 9A---DETROIT 16V4000 ENGINE W/DDEC IV CONTROLS



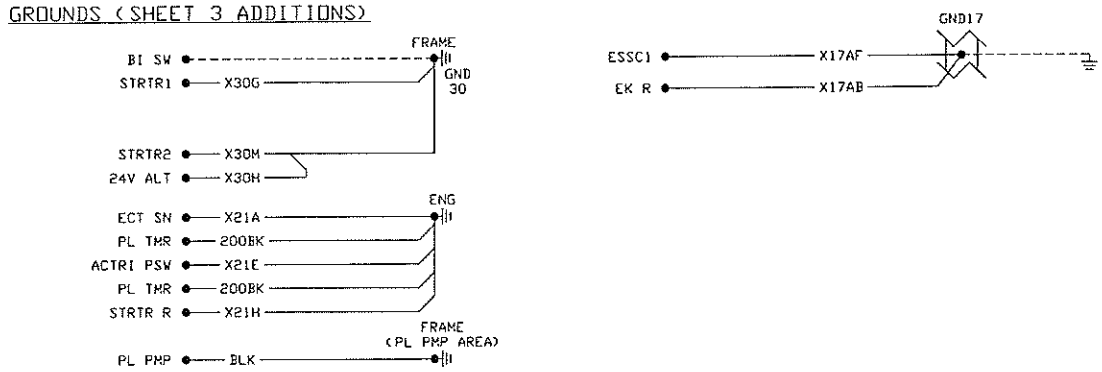
SHEET 8A & 9A---DETROIT 16V4000 ENGINE W/DDEC IV CONTROLS

24V POWER DISTRIBUTION (SHEET 2 ADDITIONS)

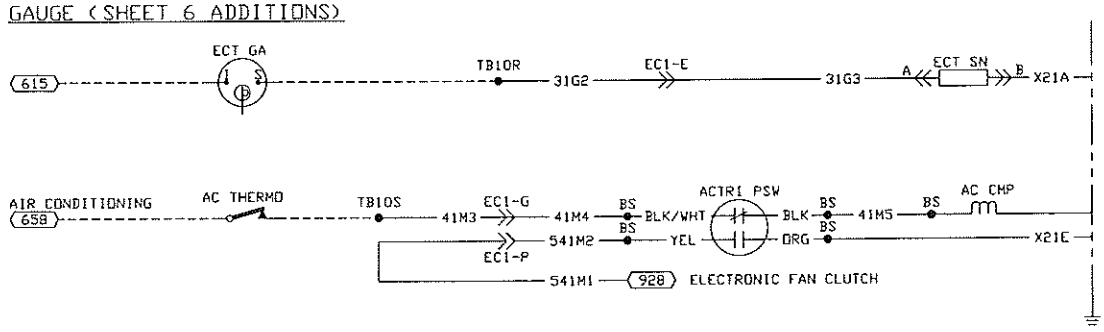




GROUNDS (SHEET 3 ADDITIONS)



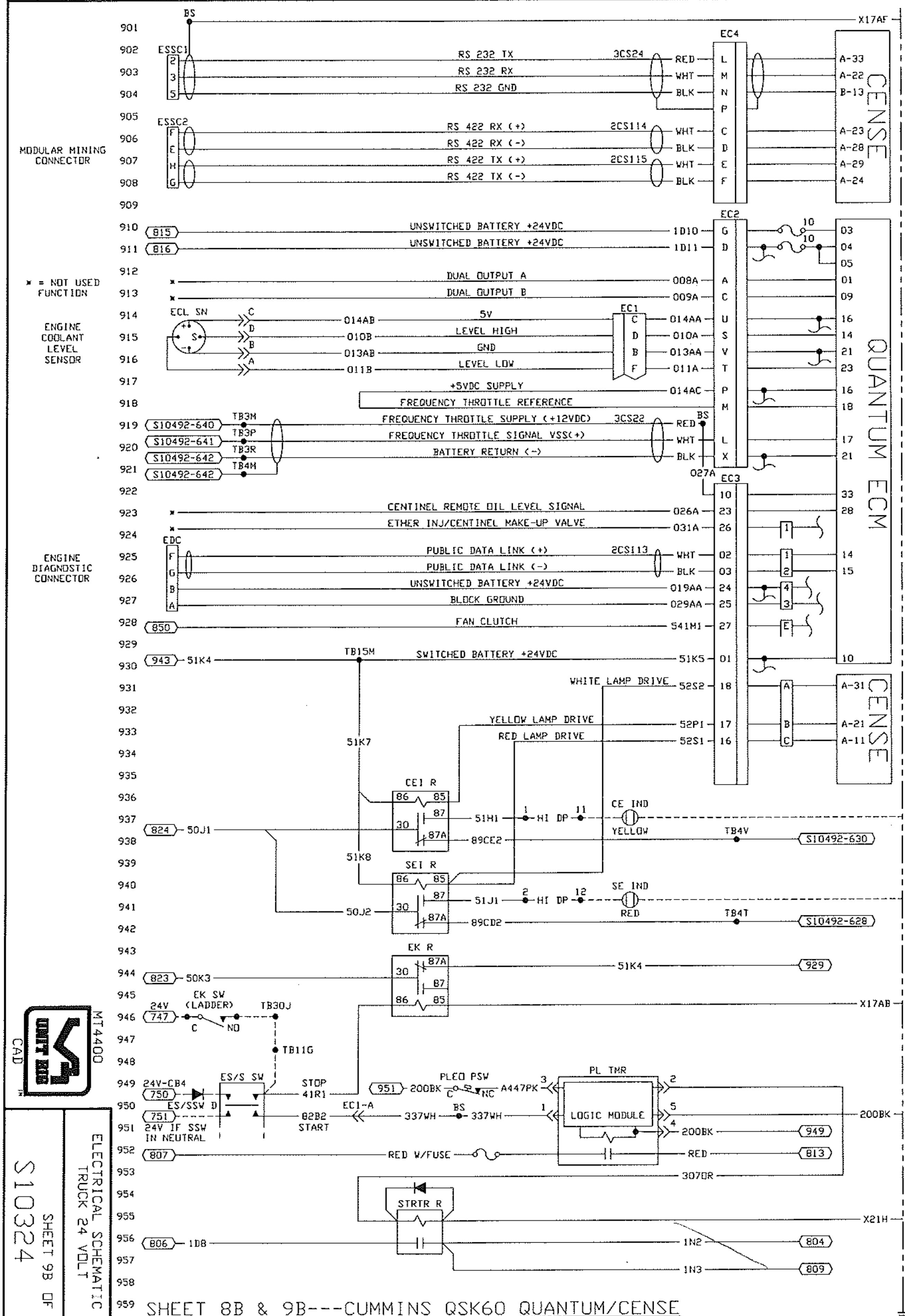
GAUGE (SHEET 6 ADDITIONS)



SHEET 8B & 9B---CUMMINS QSK60 QUANTUM/CENSE

EN. NO.											
90916	90978	91938	92071	92179	92472	93396	94577				SLF

S10324



MT4400
CAD

ELECTRICAL SCHEMATIC
TRUCK 24 VOLT

SHEET 9B OF 9

S10324

SHEET 8B & 9B---CUMMINS QSK60 QUANTUM/CENSE

NOTES:

THIS DRAWING SHOWS 24V WIRING THAT IS UNIQUE TO A SPECIFIC CUSTOMER ORDER. THE CIRCUITS SHOWN BELOW TAKE PRECEDENCE OVER THE STANDARD CIRCUITS SHOWN ON;

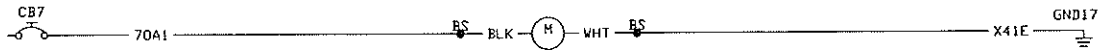
- S10324 ELECTRICAL SCHEMATIC, TRUCK 24V
- S10492 ELECTRICAL SCHEMATIC, POWER/CONTROL

REFER TO S10324 AND S10492 SHEET 1 FOR GENERAL INFORMATION AND NOTES.

SOME FUNCTIONAL INFORMATION HAS been ADDED TO AID TROUBLESHOOTING AS FOLLOWS;

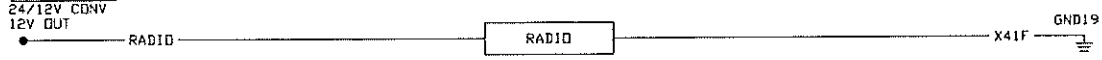
- B+ 24V SUPPLY FROM BATTERY
- B+(MS) 24V SUPPLY FROM BATTERY THAT IS CONTROLLED BY THE MASTER SWITCH.
- (S10324-201) REFERS TO ANOTHER SCHEMATIC (IE S10324) AND LINE NUMBER (IE -201) WHERE THIS OPTION CONNECTS TO THE STANDARD CIRCUITS. THE LINE NUMBERS WERE ACCURATE WHEN THIS SCHEMATIC WAS RELEASED. FUTURE REVISIONS TO S10324 AND S10492 WILL NOT BE REFLECTED ON THIS SCHEMATIC.
- (EXISTING) INDICATES A CONNECTION TO THE STANDARD CIRCUIT SHOWN ON S10324 OR S10492.
- ---------- INDICATES A CONNECTION TO THE STANDARD CIRCUIT SHOWN ON S10324 OR S10492.
- 24V= INDICATES THAT 24V EXISTS WHEN THE CONDITION IS TRUE.
- GND= INDICATES THAT A GROUND EXISTS WHEN THE CONDITION IS TRUE.

(S10324-239)



CAB CLEANING ASSY (84503B)

(S10324-645)
24/12V CONV
12V OUT



RADIO INSTALLATION (76032T)

SEE SCHEMATIC S10639

WEIGH SYSTEM ASSEMBLY (83990X)

MT4400 S/N111-137
BORAX

CAD

ELECTRICAL SCHEMATIC
TRUCK 24 VOLT - OPTIONS

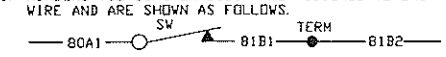
S10324E

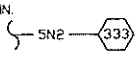
E.N. NO.	88470	88883	90394	91938	93415	93728	94067
REC'D.	ELLIS						
ENG. APP.	GAP						
DR.	SLF						

S10492

GENERAL NOTES:
THIS SCHEMATIC SHOWS THE CIRCUITRY IN A TRUCKS POWER AND CONTROL SYSTEM (OR PROPULSION SYSTEM). THIS DOCUMENT IS FOR TROUBLESHOOTING POWER AND CONTROL CIRCUITS. SOME CIRCUITS IN CAB ARE ONLY SHOWN FUNCTIONALLY. FOR CAB CIRCUITS (AND CIRCUITS NOT RELATED TO POWER AND CONTROL SYSTEM) USE THE TRUCK ELECTRICAL SCHEMATICS.

THE CIRCUITS ARE ILLUSTRATED USING SYMBOLS EXPLAINED IN THE FOLLOWING NOTES.

1. NUMBERS (IE 80A1 OR 81B1) ARE ASSIGNED TO EACH WIRE AND ARE SHOWN AS FOLLOWS.


2. MAIN POWER CIRCUITS ARE SHOWN BY HEAVY LINES. OPTIONAL CIRCUITS ARE SHOWN BY DASH LINES.
3. ZONE NUMBERS ARE USED TO LOCATE CIRCUITS AND ARE SHOWN IN THE LEFT HAND MARGIN OF EACH SHEET. THE FIRST DIGIT OF THE ZONE NUMBER REFERS TO THE SHEET NUMBER. THE SECOND AND THIRD DIGITS ARE THE LINE NUMBERS OF THE CIRCUITS. EXAMPLE: 321 REFERS TO SHEET 3, LINE 21.
4. A CIRCUIT CONTINUATION IS SHOWN BY A ZONE NUMBER IN A HEXAGON.


5. THE LETTERS SHOWN IN PARENTHESIS AFTER THE SELECTOR SWITCH CALL OUT INDICATE THE POSITION IN WHICH THE CONTACTS ARE CLOSED. EXAMPLE: SS3(N) MEANS SWITCH IS CLOSED IN NEUTRAL.
6. ALL DEVICES ARE SHOWN IN THEIR NORMAL OR DE-ENERGIZED POSITION. THE REVERSER IS SHOWN IN THE FORWARD MOVEMENT POSITION.

MOTOR ARMATURE OR ALT
COMMUTATING FIELD
SERIES FIELD
SHUNT OR SEPERATE FIELD
TB1A — TERMINAL CONNECTION
BS/BC — (WITH TERM DESIGNATION) BUTT SPLICE OR BOLT CONNECTION
BUSSED TERMINAL
CN5D — CONNECTOR 5 PIN/SOCKET D
RESISTOR
ADJUSTED RESISTOR
RHEOSTAT OR VARIABLE RESISTOR
THYRITE RESISTOR
BATTERY
SHUNT
ELECTRONIC GROUND
FRAME GROUND
RELAY COIL OR SOLENOID OR TEMP SENSOR
NORMALLY OPEN SWITCH OR RELAY CONTACT
NORMALLY CLOSED SWITCH OR RELAY CONTACT

MAIN CONTACTOR
SOLENOID CONTACTS
PUSH BUTTON SWITCH
NORMALLY CLOSED SWITCH
NORMALLY OPEN SWITCH
DOUBLE THROW SWITCH
3 POSITION TOGGLE SWITCH
ROTARY SWITCH
PRESSURE SWITCH
MECH ACTUATED SWITCH
TEMPERATURE SWITCH
CIRCUIT BREAKER
SUP — SUPPRESSION NETWORK
DIODE
SILICONE CONTROLLED RECTIFIER DIODE
ZENER DIODE
TRANSFORMER
INDICATOR LIGHT
LIGHT
MAGNETIC PICKUP
METER WITH CIRCUIT SYMBOL INSIDE
CAPACITOR
SHIELDED CABLE

----------EQUIPMENT LIST----------

ITEM	DESCRIPTION	LOCATION
2DD	2 DIGIT DISPLAY	816-841, 9XX
ACF	A.C. FILTER	204
AFSE	ALT FIELD STATIC EXCITER	402-435, 9XX
ALT	ALTERNATOR	202, 413, 432, 443
ASYN	ALT SYNCRONIZATION TRANFORMER	429
BATT	BATTERIES A AND B	901
...	BATTERY ISOLATION SWITCH	902
BM1	GRID BLOWER MOTOR 1	226
BM2	GRID BLOWER MOTOR 2	226
BPS	BLOWER PRESSURE SW	556
CB2	CIRCUIT BREAKER 2	9XX
CB20	CIRCUIT BREAKER 20	9XX
CB8	CIRCUIT BREAKER 8	9XX
CB9	CIRCUIT BREAKER 9	9XX
CBSL	CONTROL BOX SERVICE LIGHT	907
CF1	CAPACITOR FILTER (+15VDC)	949
CF2	CAPACITOR FILTER (-15VDC)	954
CPR	CONTROL POWER RELAY	538, 9XX
CT	CURRENT TRANSFORMER	433
CTR	CURRENT TRANSFORMER RESISTOR	431
DBU	DUMP BODY UP SWITCH	541, 9XX
DDEC	DDEC (WARNING CIRCUITS)	628
DFDP	DIODE FAULT DETECTION PANEL	406, 9XX
DDS	DUMPBODY OVERRIDE SWITCH	548
DR LT	DYNAMIC RETARDING LIGHT	543, 545
DS SW	DATA STORE SWITCH	518
EFPA	ELECTRONIC FOOT PEDAL ASSY	522
...	ENGINE BLOWBY FLOW SENSOR	642
...	ENGINE COOLANT PRESSURE SENSOR	647
...	ENGINE COOLANT TEMP SENSOR	652
...	ENGINE SERVICE LIGHT	647
...	ENGINE SHUTDOWN LIGHT	645
...	FAILED DIODE LIGHT	722
FDT	FAULT DETECTION TRANSFORMER	412
FL275	CARD RACK 3XX, 4XX, 5XX, 6XX, 7XX, 8XX, 9XX	

----------EQUIPMENT LIST----------

ITEM	DESCRIPTION	LOCATION
GF	GEN FIELD CONTACTOR	413, 505, 9XX
GFDR	GEN FIELD DISCHARGE RESISTOR	415
GFIP	GROUND FAULT INPUT PANEL	250, 9XX
GFN	GEN FIELD CONTACTOR NETWORK	506, 9XX
GFR	GEN FIELD RELAY	402, 507, 9XX
GFRN	GEN FIELD RELAY NETWORK	507, 9XX
...	GROUND FAULT IND LIGHT	718
GRR	GROUND REFERENCE RESISTOR	245, 9XX
HB SW	HAND BRAKE SWITCH	554
IA3	ISOLATION AMPLIFIER 3	340, 9XX
IA4	ISOLATION AMPLIFIER 4	344, 9XX
IA5	ISOLATION AMPLIFIER 5	348, 9XX
IA6	ISOLATION AMPLIFIER 6	435, 9XX
IA7	ISOLATION AMPLIFIER 7	440, 9XX
IA8	ISOLATION AMPLIFIER 8	419, 9XX
...	LOW BLOWER PRESS LIGHT(CAB IND)	553
...	MASTER SWITCH	905
M1	MOTOR 1 (LEFT WHEEL)	240
M1 FLD	MOTOR 1 FIELD	457
M1TS	MOTOR 1 TEMPERATURE SENSOR	307
M2	MOTOR 2 (RIGHT WHEEL)	240
M2 FLD	MOTOR 2 FIELD	457
M2TS	MOTOR 2 TEMPERATURE SENSOR	311
MF	MOTOR FIELD CONTACTOR	456, 504, 9XX
MFDR	MOTOR FIELD DISCHARGE RESISTOR	455
MFN	MOTOR FIELD CONTACTOR NETWORK	505, 9XX
MFSE	MOTOR FIELD STATIC EXCITER	439-456, 9XX
...	MOTOR OVER TEMPERATURE LIGHT	716
MPU 1	MAGNETIC PICK-UP (WHEEL MOTOR 1)	322
MPU 2	MAGNETIC PICK-UP (WHEEL MOTOR 2)	325
MPU 3	MAGNETIC PICK-UP (ALTERNATOR)	329
MSYN	MOTOR SYNCRONIZATION TRANFORMER	443
...	OIL PRESSURE SENSOR	638
...	OVERSPEED LIGHT	720
P1	PROPULSION POWER CONTACTOR	211, 508, 9XX
P1N	PROPULSION POWER CONT NETWORK	509, 9XX
P2	PROPULSION POWER CONTACTOR	705, 9XX
P2N	PROPULSION POWER CONT NETWORK	706, 9XX
PBP SW	PARK BRAKE PRESSURE SWITCH	552
PTUA	PTU CONNECTOR A	805
PTUB	PTU CONNECTOR B	810
R1	RESISTOR 1	402
R100B	RESISTORS FOR PTUB	814
R88A	RESISTORS FOR PTUA	805
R90B	RESISTORS FOR PTUB	809
R98A	RESISTORS FOR PTUA	808
RCL	CONTROL LOGIC RESISTOR	855
RECT	RECTIFIER	211
RETARD	RETARDING ELECTRONIC RHEOSTAT	527
REV-F	REVERSER (FORWARD FEED BACK)	502, 9XX
REV-R	REVERSER (REVERSE FEED BACK)	503, 9XX
REV(F)	REVERSER (FORWARD)	502, 9XX
REV(F)N	REVERSER (FORWARD) NETWORK	503
REV(R)	REVERSER (REVERSE)	503, 9XX
REV(R)N	REVERSER (REVERSE) NETWORK	504
REVERSER	REVERSER (MAIN CONTACTS)	452
RFR	REVERSER FORWARD RELAY	545
RG1	RET GRID 1	232
RG2	RET GRID 2	232
RLR	RETARD LIGHT RELAY	543, 9XX
RP1	RET POWER CONTACTOR 1	235, 511, 9XX
RP1N	RET POWER CONTACTOR 1 NETWORK	512, 9XX
RP2	RET POWER CONTACTOR 2	235, 512, 9XX
RP2N	RET POWER CONTACTOR 2 NETWORK	513, 9XX
RP3	RET POWER CONTACTOR 3	227, 513, 9XX
RP3N	RET POWER CONTACTOR 3 NETWORK	514, 9XX
RP4	RET POWER CONTACTOR 4	226, 515, 9XX
RP4N	RET POWER CONTACTOR 4 NETWORK	515, 9XX
RP5	RET POWER CONTACTOR 5	224, 516, 9XX
RP5N	RET POWER CONTACTOR 5 NETWORK	517, 9XX
RP6	RET POWER CONTACTOR 6	223, 707, 9XX
RP6N	RET POWER CONTACTOR 6 NETWORK	708, 9XX
RP7	RET POWER CONTACTOR 7	222, 708, 9XX
RP7N	RET POWER CONTACTOR 7 NETWORK	709, 9XX
RP8	RET POWER CONTACTOR 8	221, 709, 9XX
RP8N	RET POWER CONTACTOR 8 NETWORK	710, 9XX
RP9	RET POWER CONTACTOR 9	219, 711, 9XX
RP9N	RET POWER CONTACTOR 9 NETWORK	711, 9XX
RSC LT	RETARD SPEED CONTROL LIGHT	530
RSC SW	RETARD SPEED CONTROL SWITCH	530
RSR	RETARD SPEED RHEOSTAT	534
S1	SHUNT 1	240
S2	SHUNT 2	240
S3	SHUNT 3	456
S4	SHUNT 4	412
S6	SHUNT 6	430
S7	SHUNT 7	442
SS	SELECTOR SWITCH	537, 538
...	SPEEDOMETER	318
...	SYSTEM FAULT LIGHT (CAB IND)	551
...	SYSTEM RESET SWITCH	550
...	TACHOMETER	331
TAFSE	AFSE TEMPERATURE SENSOR	422
TAMB	AMBIENT TEMPERATURE SENSOR	315
TMFSE	MFSE TEMPERATURE SENSOR	448
VDR3	VOLTAGE DIVIDER RESISTOR 3	414
VMM1	VOLTAGE MEASURING MODULE 1	336, 9XX
VMM2	VOLTAGE MEASURING MODULE 2	332, 9XX

INDEX

SHEET	CONTENTS
1	NOTES AND REFERENCE DATA
2A	POWER CIRCUIT & GND FAULT (12 GRIDS, 3 STEP ERR)
2B	POWER CIRCUIT & GND FAULT (18 GRIDS, 3 STEP ERR)
2C	POWER CIRCUIT & GND FAULT (18 GRIDS, 7 STEP ERR)
2D	POWER CIRCUIT & GND FAULT (20 GRIDS, 7 STEP ERR)
2E	POWER CIRCUIT & GND FAULT (14 GRIDS, 3 STEP ERR)
2F	POWER CIRCUIT & GND FAULT (14 GRIDS, 7 STEP ERR)
3	FL275 INPUTS
4	AFSE & MFSE
5	FL275 INPUTS & OUTPUTS
6	FL275 INPUTS & OUTPUT ENGINE OPTIONS
7	FL275 INPUTS & OUTPUT OPTIONS
8	FL275 ±15V, 19V, 24V, DISPLAY
9	24V, ±15V AND GND DISTRIBUTION
10	TERMINAL BOARDS

ABBREVIATIONS FOR ABOVE LIST:

3XX	MULTIPLE LINES OF SHEET 3
4XX	MULTIPLE LINES OF SHEET 4
5XX	MULTIPLE LINES OF SHEET 5
6XX	MULTIPLE LINES OF SHEET 6
7XX	MULTIPLE LINES OF SHEET 7
8XX	MULTIPLE LINES OF SHEET 8
ALT	ALTERNATOR
AUTO	AUTOMATIC
CONT	CONTACTOR
GEN	GENERATOR
IND	INDICATOR
LT	LIGHT
PRESS	PRESSURE
PTU	PORTABLE TEST UNIT
RET	RETARD
SW	SWITCH
TEMP	TEMPERATURE

CAD

ELECTRICAL SCHEMATIC
POWER / CONTROL

STATEX III FUEL ENHANCED
LOAD BOX, ELECTRIC P1 & REV
TB CONTROL WIRE INTERFACE
12, 14, 18, OR 20 GRIDS

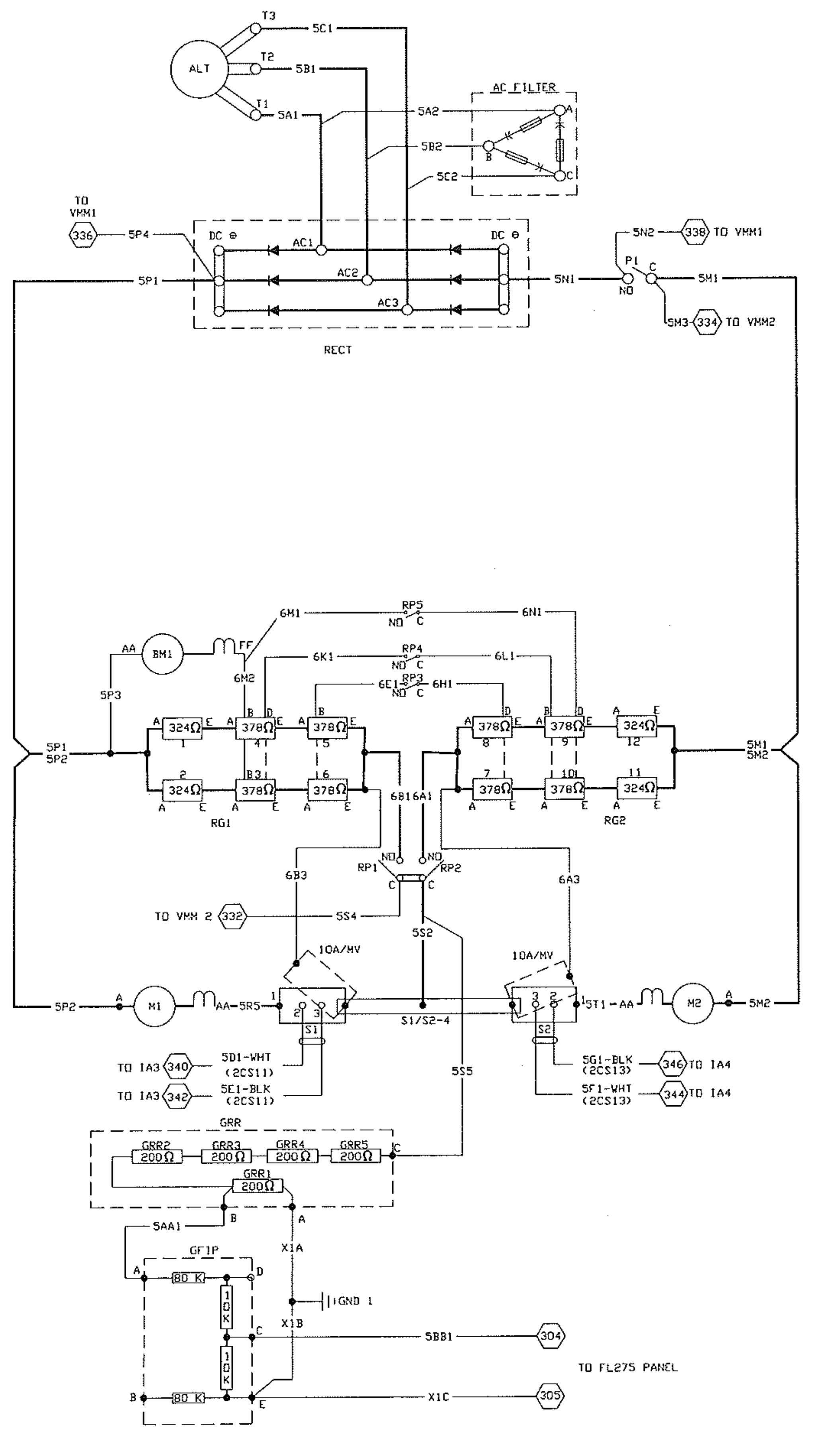
S10492

SHEET 1 OF 10

E.N. NO.	88470	88883	90394	91938	93415	93728	94067

REL CK | ENG APP. | DR SLF

S10492



12 SWING-SHUNT LOAD BOX
12 GRIDS, 3 STEP ERR

CAD

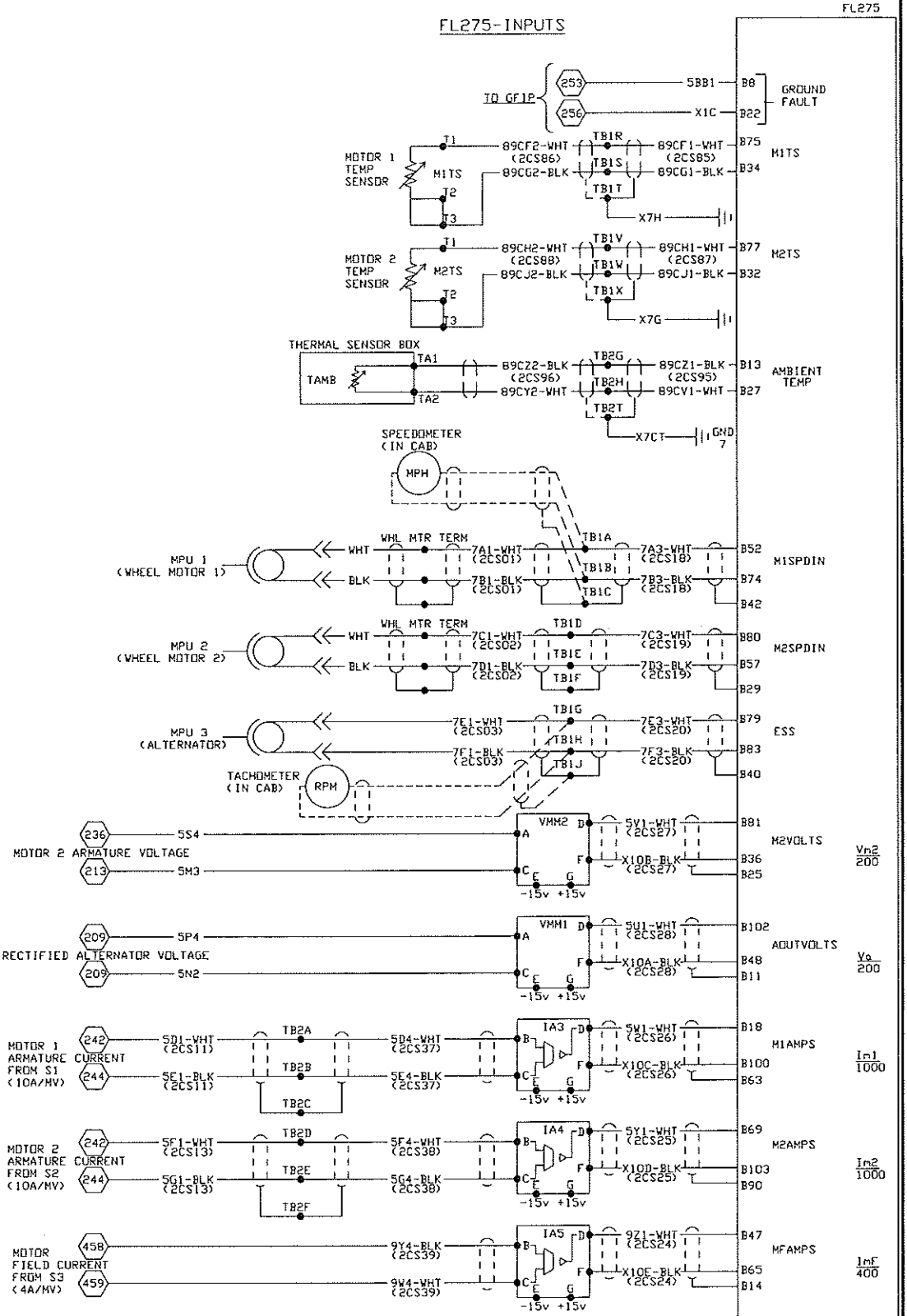
ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 2A OF 10

S10492

FL275

FL275-INPUTS

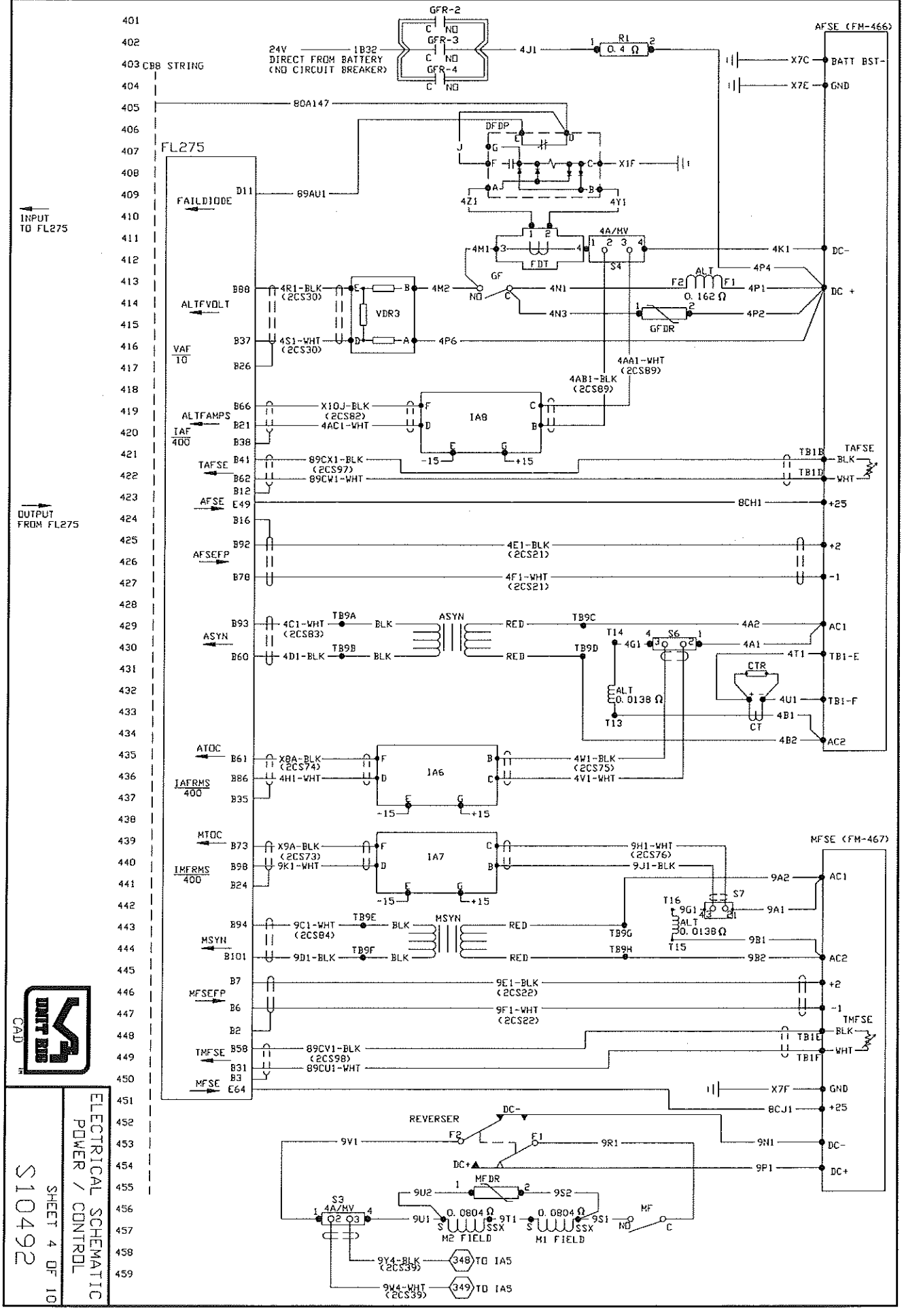


CAD

ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 3 OF 10

S10492

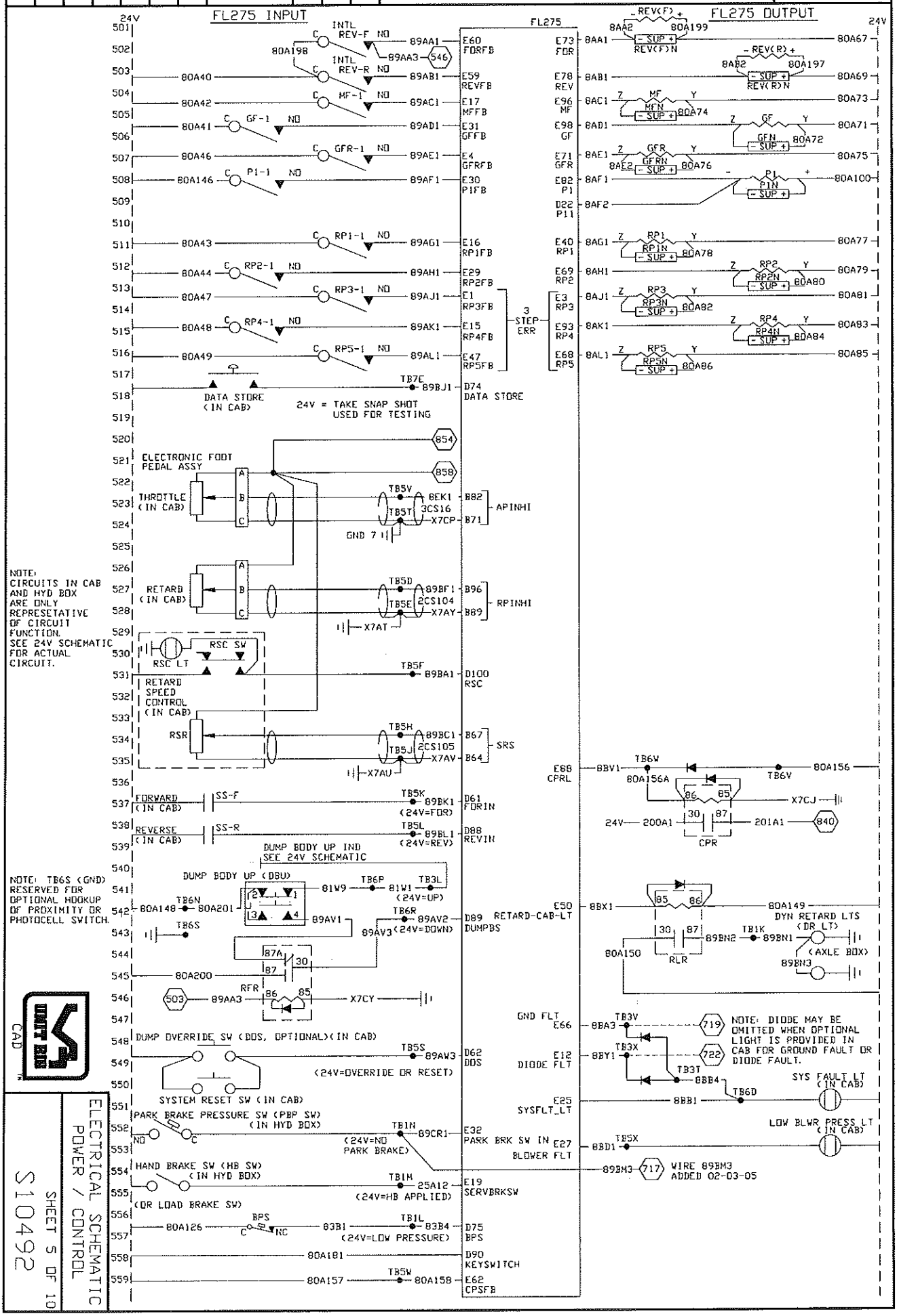


ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 4 OF 10
S10492

E.N. NO.	88470	88883	90394	91938	93415	93728	94067	REL'D.	CHK'D. APP'D.	SLF

S10492



ELECTRICAL SCHEMATIC
POWER / CONTROL

S10492

E.N. NO.	88470	88883	90394	91938	93415	93728	94067	REL CK	ENG APP	DR. SLF

S10492

MTU

NOTE:
CAB CIRCUITS ARE ONLY REPRESETATIVE OF CIRCUIT FUNCTION. SEE 24V SCHEMATIC FOR ACTUAL CIRCUIT.

DDEC OR QSK60 OR CUMMINS W/CENSE

KTA

CAB

ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 6 OF 10

S10492

OPTIONAL INPUT/OUTPUT OF FL275 ARE SHOWN BELOW. THE INPUT/OUTPUT ARE ALWAYS WIRED FROM FL275 TO TB. IF OPTION IS FULLY WIRED ON TRUCK, IT WILL BE SHOWN ON 24 VOLT SCHEMATIC.

FL275 INPUT

FL275

FL275 OUTPUT

80A102 — C P2-1 NO — 89AT2 — TB3B — 89AT1 — E43 P2FB

80A133 — C RP6-1 NO — 89AN2 — TB3D — 89AN1 — E89 RP6FB

80A136 — C RP7-1 NO — 89AP2 — TB3F — 89AP1 — E75 RP7FB

80A139 — C RP8-1 NO — 89AR2 — TB3H — 89AR1 — E74 RP8FB

80A142 — C RP9-1 NO — 89AS2 — TB3K — 89AS1 — E9 RP9FB

USE WITH RP3, 4, &5 FOR 7 STEP ERR (OPTION)

E44 P2 E33 8BU4 — TB3A — 8BU1 — 8BU2 — P2 (P2N SUP) — 80A101

P22 E54 RP6 — TB3C — 8AN1 — 8AN2 — RP6 (RP6N SUP) — 80A131 / 80A132

E92 RP7 — TB3E — 8AP1 — 8AP2 — RP7 (RP7N SUP) — 80A134 / 80A135

E28 RP8 — TB3G — 8AR1 — 8AR2 — RP8 (RP8N SUP) — 80A137 / 80A138

E39 RP9 — TB3J — 8AS1 — 8AS2 — RP9 (RP9N SUP) — 80A140 / 80A141

WIRE 89BM3 ADDED 02-03-05

554 — 89BM3 — TB3N — 89BM1 — D103 ACCINH
INHIBIT SELECTABLE AS 0V OR 24V

TB6M — 89CS1 — D73 LDWT
(24V=TRUCK EMPTY)

E72 MOT-LT — 8CD1 — TB3S — MOTOR OVER TEMP (IN CAB)

547 — GND FAULT LT (IN CAB)

E91 DS_LT — 8BE1 — TB3W — OVER SPEED LT (IN CAB)

548 — FAILED DIODE LT (IN CAB)

E58 OEM_SPD_EVENT — 8BW1 — TB5P
TURNED ON=SPEED GREATER THAN SET POINT

NOTE:
CAB CIRCUITS ARE ONLY REPRESETATIVE OF CIRCUIT FUNCTION. SEE 24V SCHEMATIC FOR ACTUAL CIRCUIT.

+A44 — 8EF1 — TB6H
A46 — 8EG1 — TB6J
+A61 — 8EH1 — TB6K
A60 — 8EJ1 — TB6L
DEFAULT USE FUTURE ENHANCEMENT

A33 SIG 2 — 8CR1-WHT (2CS92) — TB7J
A32 — 8CS1-BLK — TB7K / TB7L
DEFAULT USE= TRUCK SPEED 10V = 50 MPH

A34 SIG 3 — 8CT1-WHT (2CS99) — TB7M
A23 — 8CU1-BLK — TB7N / TB7P
DEFAULT USE= MOTOR FIELD PPI 10V = FULL FIRING

A64 SIG 4 — 8CV1-WHT (2CS100) — TB7R
A31 — 8CW1-BLK — TB7S / TB7T
DEFAULT USE= ALTERNATOR FIELD PPI 10V = FULL FIRING

A47 SIG 5 — 8CX1-WHT (2CS101) — TB7V
A24 — 8CY1-BLK — TB7W / TB7X
DEFAULT USE= UNDEFINED

+15V=INHIBIT — TB7A — 89CK1 — B28 + INHIBIT ALT
TB7B — 89CL1 — B45 -

+15V=INHIBIT — TB7C — 89CM1 — B85 + INHIBIT MOT
TB7D — 89CN1 — B1 -

A65 SIG 1 — 8EA1-WHT (2CS102) — TB8A
A63 — 8EB1-BLK — TB8B / TB8C
DEFAULT USE= ENGINE SPEED 10V = 2500 RPM

A53 SIG 7 — 8EC1-WHT (2CS103) — TB8D
A62 — 8ED1-BLK — TB8E / TB8F
DEFAULT USE= GE TESTING

INPUT AND OUTPUT NOT USED FOR FUEL ENHANCED CONFIGURATIONS.

TB5A — 89BH1 — D25 AS
(24V=ACCEL)

TB5B — 86A1 — D87 RS
(24V=NO RETARD)

TB5N — 81E8 — D24 IDLE SW
(24V=LOW IDLE)

E76 LIS — 81F16 — TB6E
(TURNED ON=LOW IDLE)

E65 TS — 87B1 — TB6F
(TURNED ON=THROTTLE SHUTOFF)

E.N. NO.	DSK	ENG. APP.	REL. DR.
88470	SLF		
88883			
90394			
91938			
93415			
93728			
94067			

S10492

FL275 INPUT

FL275

FL275 OUTPUT

RS232 CHANNEL-FEMALE 9 PIN CONNECTOR FOR USE WITH PTUCPORTABLE TEST UNIT)

(3CS20) CAB PTU EXTENSION CABLE

R88A 4.7K

TB232

PTUA

RXDA A88 — WHITE — 8CE1 (3CS01) — WHITE — 8CE2 (3CS11) — O2
TXDA A98 — RED — 8CF1 — RED — 8CF2 — O3
GND A82 — BLACK — 8CG1 — BLACK — 8CG2 — O5
A16 — SHLD — BS

R98A 4.7K

R90B 4.7K

PTUB

RXDB A90 — WHITE — 8CK1 (3CS06) — WHITE — 8CK2 (3CS12) — O2
TXDB A100 — RED — 8CL1 — RED — 8CL2 — O3
GND A84 — BLACK — 8CM1 — BLACK — 8CM2 — O5
A17 — SHLD

R100B 4.7K

BS

2 DIGIT DISPLAY (2DD)

DOUBLE SEVEN SEGMENT DISPLAY

D51	2DD4	2DD4	A	DOUBLE SEVEN SEGMENT DISPLAY
D65	2DD5	2DD5	B	
D14	2DD8	2DD8	C	
D50	2DD25	2DD25	D	
D49	2DD13	2DD13	E	
D53	2DD1	2DD1	F	
D67	2DD10	2DD10	G	
D66	2DD14	2DD14	H	
D27	2DD12	2DD12	DM	
D77	2DD2	2DD2	DL	

LOCAL RESET D63 — 2DD21 — 2DD21 LOCAL RESET — RESET SWITCH / LED

LAST SEARCH D104 — 2DD22 — 2DD22 LAST SEARCH — LAST SEARCH SWITCH / LED

PS1 D91 — 2DD11 — 2DD11 PS1
PS2 D38 — 2DD3 — 2DD3 PS2 — LED

FIRST SEARCH D12 — 2DD17 — 2DD17 FIRST SEARCH — FIRST SEARCH SWITCH / LED

24V — 80A159 — 2DD7 B+

GND D97 — 2DD6 — 2DD6 GND

FROM CPR RELAY — (538) — 201A1 — TB6X — 201A2, 3, 4 — 24V INPUT A39, A52, A54

CPD

CPD ADDED 02-03-05

201A5 — 24V INPUTS FOR CPR DRIVER E99

24V — 80A153 — 24V INPUT B44

24V — 80A154, 5 — 24V INPUTS FOR HIGH SIDE DRIVERS E36, E63

X7P, R, S, T
X7U, V, W
X7BX, BY — GNDS FOR LIGHTS E13, E48, E51, E67 E77, E83, E104 E87, E102

X7X, Y, Z, AA — GNDS FOR CONTACTORS FEED BACKS D48, D64, E24, E34

X7BC, BD, BE, BF
X7BG, BH, BJ, BK
X7BM, BN, BP, BR
X7BS, BT, BU, BV
X7CU, X7CV — GNDS FOR CONTACTOR COILS D99, E2, E22, E20, E23, E41, E42, E52, E55, E56 E57, E61, E79, E84 E85, E94, E95, E97

X7AB, AC, BW — GNDS FOR SOLENOIDS E37, E38, E70

X7AD, AE, AF, AG
X7AH, AJ, AK, AL, AM
X7AN, CP, CU — GNDS-SYSTEM A48, B71, D13, D34 D36, D47, D76, E5, E7 E35, E46, E90

X7BZ, CA, CB, CC
X7CD, CE, CF, CG — GNDS FOR POWER SUPPLIES A1, A20, A21, A28 A29, A41, A42, A55

GND 7

TB5M — (520) (10V) — RCL = 1KΩ — TB5C

PS4 +19V A7 A8 — 8BT1 — 8BT2

CONTROL VOLTAGE B56 FEEDBACK — 89BB1 — TB5G (522) — INPUT

CAD

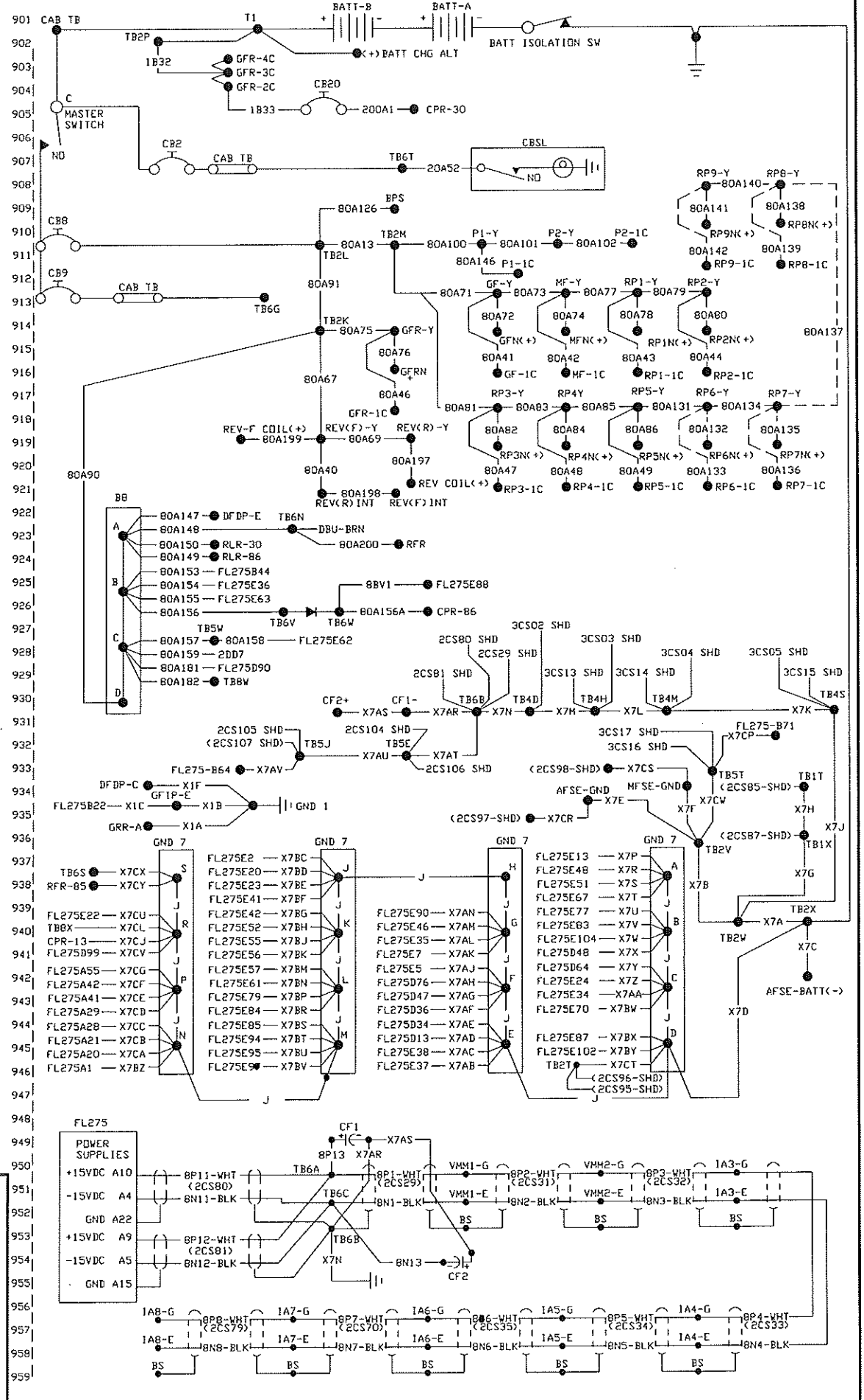
ELECTRICAL SCHEMATIC
POWER / CONTROL

S10492

SHEET 8 OF 10

E.N. NO.	88470	88883	90394	91938	93415	93728	94067	REL. BY	ENG. APP.	BY SLF

S10492



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ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 9 OF 10

S10492

E.N. NO.	88470	88883	90394	91938	93415	93728	94067

RLL CK. ENG APP. DR SLF

S10492

TB#	WIRE NUMBER	DESCRIPTION	TB#	WIRE NUMBER	DESCRIPTION
			TB9A	4C1-WHT	ASYN OUTPUT
			TB9B	4D1-BLK	ASYN OUTPUT
			TB9C	4A2	ASYN INPUT
			TB9D	4B2	ASYN INPUT
			TB9E	9C1-WHT	MSYN OUTPUT
			TB9F	9D1-BLK	MSYN OUTPUT
			TB9G	9A2	MSYN INPUT
			TB9H	9B2	MSYN INPUT

NORMALLY USED FOR; ENGINEERING TESTS (TB8A–TB8X)

SEE LINE 612 FOR CCP SW WIRING PRE 10/97. (TB8G–TB8J)

TB#	WIRE NUMBER	DESCRIPTION	TB#	WIRE NUMBER	DESCRIPTION
TB8A	8EA1-WHT	SIG 1	TB7A	89CK1	+INHIBIT ALT
TB8B	8EB1-BLK	SIG 1	TB7B	89CL1	-INHIBIT ALT
TB8C	SHD	SIG 1	TB7C	89CM1	+INHIBIT MOT
TB8D	8EC1-WHT	SIG 7	TB7D	89CN1	-INHIBIT MOT
TB8E	8ED1-BLK	SIG 7	TB7E	89BJ1	DATA STORE
TB8F	SHD	SIG 7	TB7F	-----------	-----
TB8G	-----------	-----	TB7G	-----------	-----
TB8H	-----------	-----	TB7H	-----------	-----
TB8J	-----------	-----	TB7J	8CR1-WHT	SIG 2
TB8K	-----------	-----	TB7K	8CS1-BLK	SIG 2
TB8L	-----------	-----	TB7L	SHD	SIG 2
TB8M	-----------	-----	TB7M	8CT1-WHT	SIG 3
TB8N	-----------	-----	TB7N	8CU1-BLK	SIG 3
TB8P	-----------	-----	TB7P	SHD	SIG 3
TB8R	-----------	-----	TB7R	8CV1-WHT	SIG 4
TB8S	-----------	-----	TB7S	8CW1-BLK	SIG 4
TB8T	-----------	-----	TB7T	SHD	SIG 4
TB8V	-----------	-----	TB7V	8CX1-WHT	SIG 5
TB8W	80A182	24V(TEST)	TB7W	8CY1-BLK	SIG 5
TB8X	X7CL	GND(TEST)	TB7X	SHD	SIG 5

NORMALLY USED FOR; TEST POINTS FOR CIRCUITS CONNECTED TO CN4 AND CN5 (TB6A–TB6X)

TB#	WIRE NUMBER	DESCRIPTION	TB#	WIRE NUMBER	DESCRIPTION
TB6A	8P11-WHT	+15VDC	TB5A	89BH1	AS
TB6B	SHD	GND	TB5B	86A1	RS
TB6C	8N11-BLK	-15VDC	TB5C	8BT3	+19V FOR RETARD
TB6D	8BB1	SYS FAULT LIGHT	TB5D	89BF1	RETARD LEVEL INPUT
TB6E	81F16	LOW IDLE SOLENOID	TB5E	X7AY	RETARD LEVEL INPUT
TB6F	87B1	THROTTLE CUTOUT SOLENOID	TB5F	89BA1	RETARD SPEED CONTROL
TB6G	90A25	CONTROL BOX OPTIONS	TB5G	89BB1	RETARD SPEED CONTROL
TB6H	8EF1	FUTURE ENHANCEMENT	TB5H	89BC1	RETARD SPEED CONTROL
TB6J	8EG1	FUTURE ENHANCEMENT	TB5J	X7AV	RETARD SPEED CONTROL
TB6K	8EH1	FUTURE ENHANCEMENT	TB5K	89BK1	SS FWD
TB6L	8EJ1	FUTURE ENHANCEMENT	TB5L	89BL1	SS REV
TB6M	89CS1	LDWT (24V=EMPTY)	TB5M	8BU3	+10V FOR FUEL ENHANCEMENT
TB6N	80A148, BRN	DBU-24V	TB5N	81E8	LOW IDLE SW
TB6P	81W1, WHT	DBU-NC	TB5P	8BW1	OEM SPEED EVENT
TB6R	89AV2, BLK	DBU-NO	TB5R	-----------	-----
TB6S	X7CX, BLU	DBU-GND	TB5S	89AW3	DUMP BODY UP OVERRIDE SW
TB6T	20A52	CTRL BOX SERVICE LIGHT	TB5T	X7CP	THROTTLE SENSOR GROUND
TB6V	80A156	CPR RAW POWER	TB5V	8EK1	THROTTLE SENSOR SIGNAL
TB6W	80A156A	CPR ISOLATED POWER	TB5W	80A157	CPS FEEDBACK
TB6X	201A1	24V FROM CPR	TB5X	8BD1	LOW BLOWER PRESS LIGHT

NORMALLY USED FOR; CONNECTION POINTS FOR OPTIONS (TB4A–TB4X)

TB#	WIRE NUMBER	DESCRIPTION	TB#	WIRE NUMBER	DESCRIPTION
TB4A	89BP1	OIL PRESS SENSOR	TB3A	8BU1	P2 COIL
TB4B	89BR1	OIL PRESS SENSOR	TB3B	89AT1	P2 FEEDBACK
TB4C	89BS1	OIL PRESS SENSOR	TB3C	8AN1	RP6 COIL
TB4D	SHD	OIL PRESS SENSOR	TB3D	89AN1	RP6 FEEDBACK
TB4E	89BT1	ENGINE BLOWBY FLOW SENSOR	TB3E	8AP1	RP7 COIL
TB4F	89BU1	ENGINE BLOWBY FLOW SENSOR	TB3F	89AP1	RP7 FEEDBACK
TB4G	89BV1	ENGINE BLOWBY FLOW SENSOR	TB3G	8AR1	RP8 COIL
TB4H	SHD	ENGINE BLOWBY FLOW SENSOR	TB3H	89AR1	RP8 FEEDBACK
TB4J	89BW1	ENGINE COOLANT PRESS	TB3J	8AS1	RP9 COIL
TB4K	89BX1	ENGINE COOLANT PRESS	TB3K	89AS1	RP9 FEEDBACK
TB4L	89BY1	ENGINE COOLANT PRESS	TB3L	81W1	DUMP BODY UP SW (24V=UP)
TB4M	SHD	ENGINE COOLANT PRESS	TB4M	8CC4	DDEC ENGINE CONTROL
TB4N	89CA1	ENGINE COOLANT TEMP	TB3N	89BM1	ACCINH
TB4P	89CB1	ENGINE COOLANT TEMP	TB3P	8CB1	FUTURE ENHANCEMENT
TB4R	89CC1	ENGINE COOLANT TEMP	TB3R	8EL1	DDEC ENG GND RETURN
TB4S	SHD	ENGINE COOLANT TEMP	TB3S	8CD1	MOTOR OVER TEMP LIGHT
TB4T	89CD1	DDEC-ENG SHT DOWN	TB3T	8BB4	SYS FAULT LT
TB4V	89CE1	DDEC-ENG SERV	TB3V	8BA3	GROUND FAULT
TB4W	8BZ1	DDEC-ENG SHT DOWN LIGHT	TB3W	8BE1	OVERSPEED LIGHT
TB4X	8CA1	DDEC-ENG SERV LIGHT	TB3X	8BY1	FAILED DIODE

NORMALLY USED FOR; CONNECTIONS POINTS FOR OUTSIDE WIRING THAT DOES NOT ENTER THROUGH A CONNECTOR (TB2A–TB2X)

TB#	WIRE NUMBER	DESCRIPTION	TB#	WIRE NUMBER	DESCRIPTION
TB2A	5D4-WHT	MOTOR 1 ARMATURE CURRENT	TB1A	7A3-WHT	MOTOR 1 SPEED/SPEEDOMETER
TB2B	5E4-BLK	MOTOR 1 ARMATURE CURRENT	TB1B	7B3-BLK	MOTOR 1 SPEED/SPEEDOMETER
TB2C	SHD	MOTOR 1 ARMATURE CURRENT	TB1C	SHD	MOTOR 1 SPEED/SPEEDOMETER
TB2D	5F4-WHT	MOTOR 2 ARMATURE CURRENT	TB1D	7C3-WHT	MOTOR 2 SPEED
TB2E	5G4-BLK	MOTOR 2 ARMATURE CURRENT	TB1E	7D3-BLK	MOTOR 2 SPEED
TB2F	SHD	MOTOR 2 ARMATURE CURRENT	TB1F	SHD	MOTOR 2 SPEED
TB2G	89CZ1-BLK	AMBIENT TEMPERATURE SENSOR	TB1G	7E3-WHT	ENGINE SPEED/TACHOMETER
TB2H	89CY1-WHT	AMBIENT TEMPERATURE SENSOR	TB1H	7F3-BLK	ENGINE SPEED/TACHOMETER
TB2J	-----------	-----	TB1J	SHD	ENGINE SPEED/TACHOMETER
TB2K	80A91	24V SUPPLY	TB1K	89BN1	OUTPUT TO DYNAMIC RETARD LIGHT
TB2L	80A23	24V SUPPLY	TB1L	83B4	BLOWER PRESSURE SW INPUT
TB2M	80A13	24V SUPPLY	TB1M	25A12	HAND BRAKE (SERVBRKSW INPUT)
TB2N	-----------	-----	TB1N	89CR1	PARK BRAKE SW INPUT
TB2P	1B32	24V-NO BREAKER	TB1P	-----------	-----
TB2R	-----------	-----	TB1R	89CF1-WHT	MOTOR 1 TEMP
TB2S	2A5	12V-NO BREAKER	TB1S	89CG1-BLK	MOTOR 1 TEMP
TB2T	X	GROUND-BATTERY	TB1T	SHD	MOTOR 1 TEMP
TB2V	X	GROUND-BATTERY	TB1V	89CH1-WHT	MOTOR 2 TEMP
TB2W	X	GROUND-BATTERY	TB1W	89CJ1-BLK	MOTOR 2 TEMP
TB2X	X	GROUND-BATTERY	TB1X	SHD	MOTOR 2 TEMP

UNIT RIG

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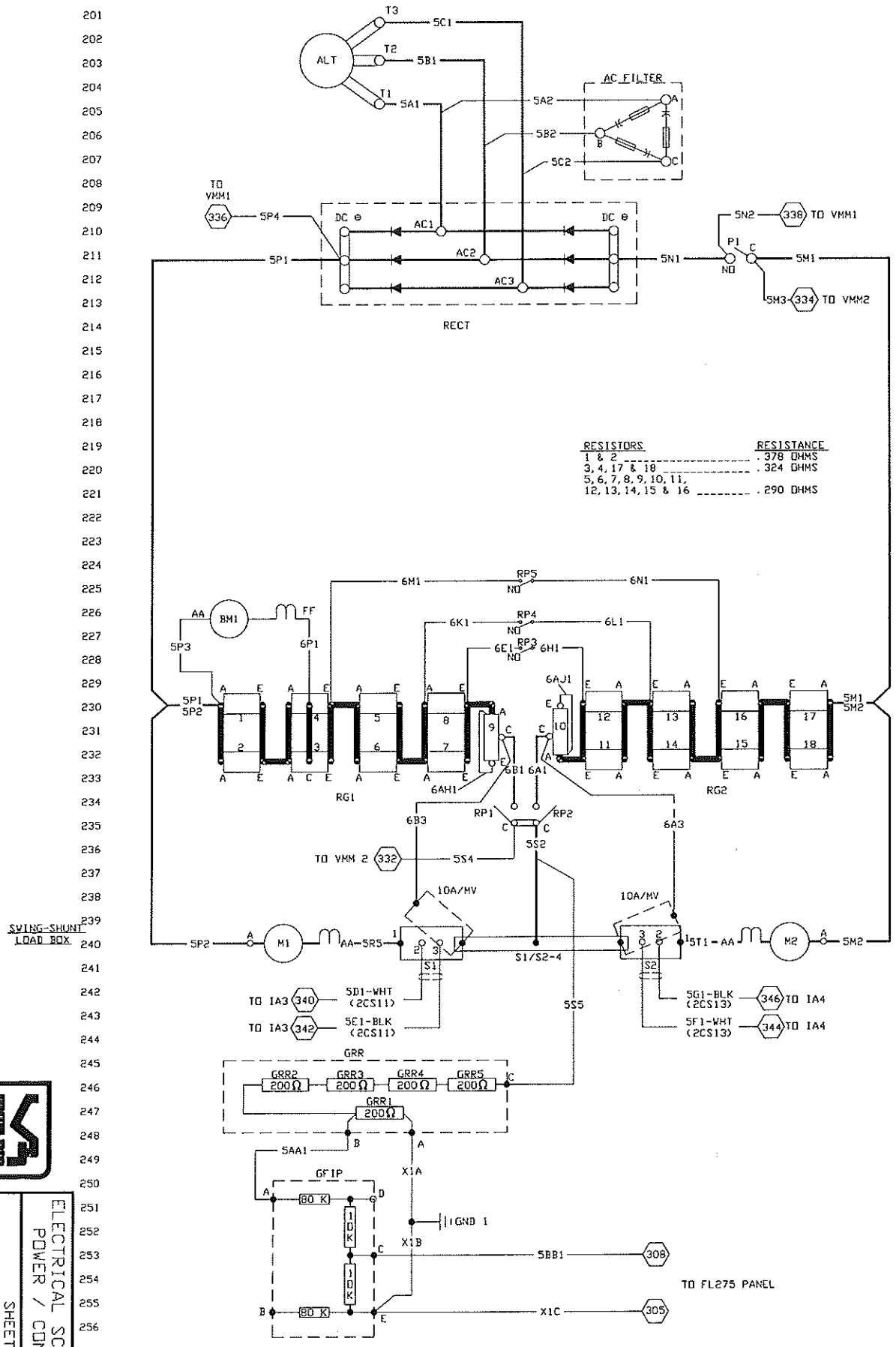
ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 10 OF 10

S10492

E.N. NO.	DR	ENG APPR.	REV. CHK.
88470	SLF		
88883			
90394			
91938			
93415			
93728			
94067			



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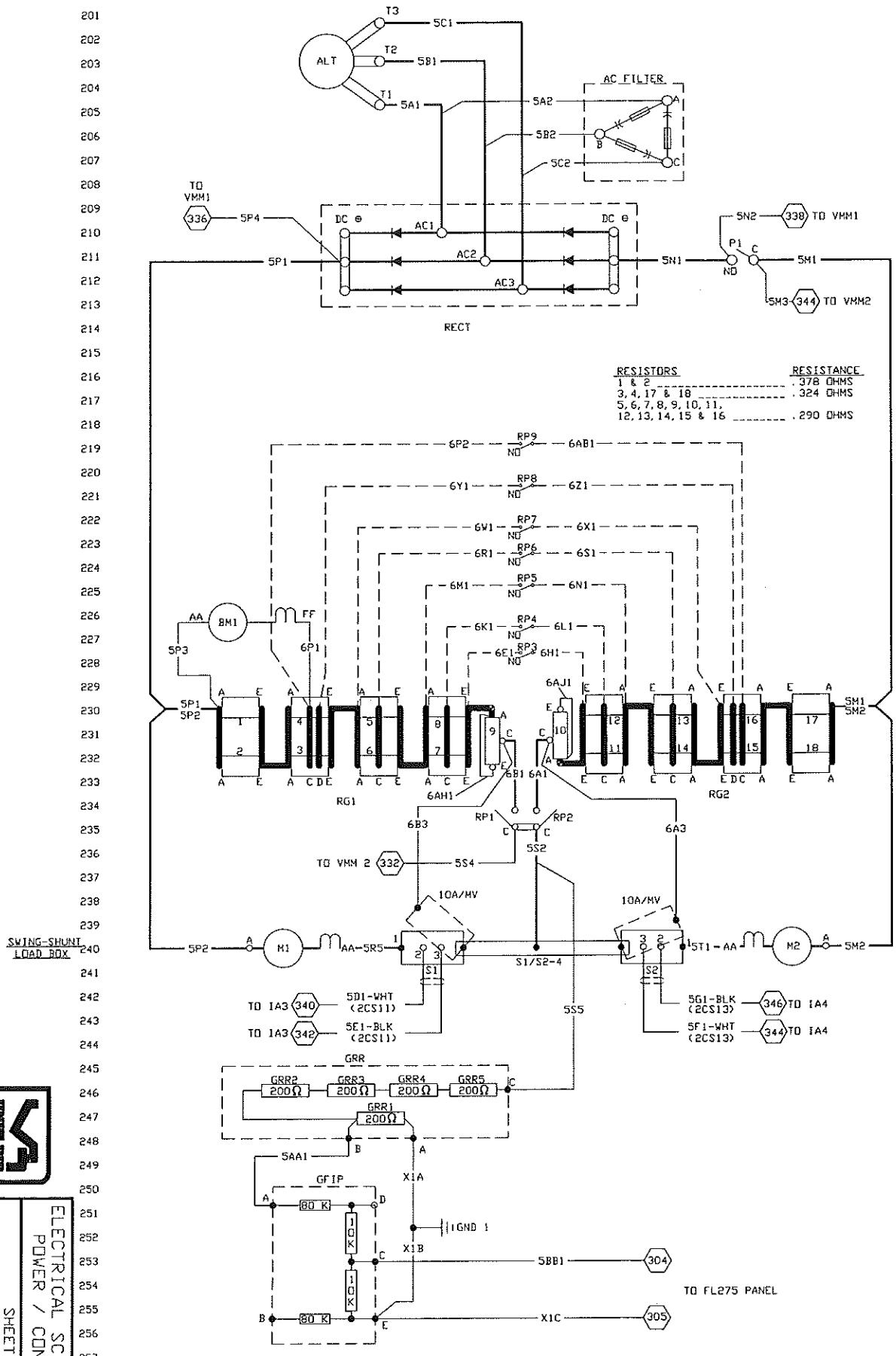
ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 28 OF 10

S10492



18 GRIDS, 7 STEP ERR. & P1 ONLY

CAD

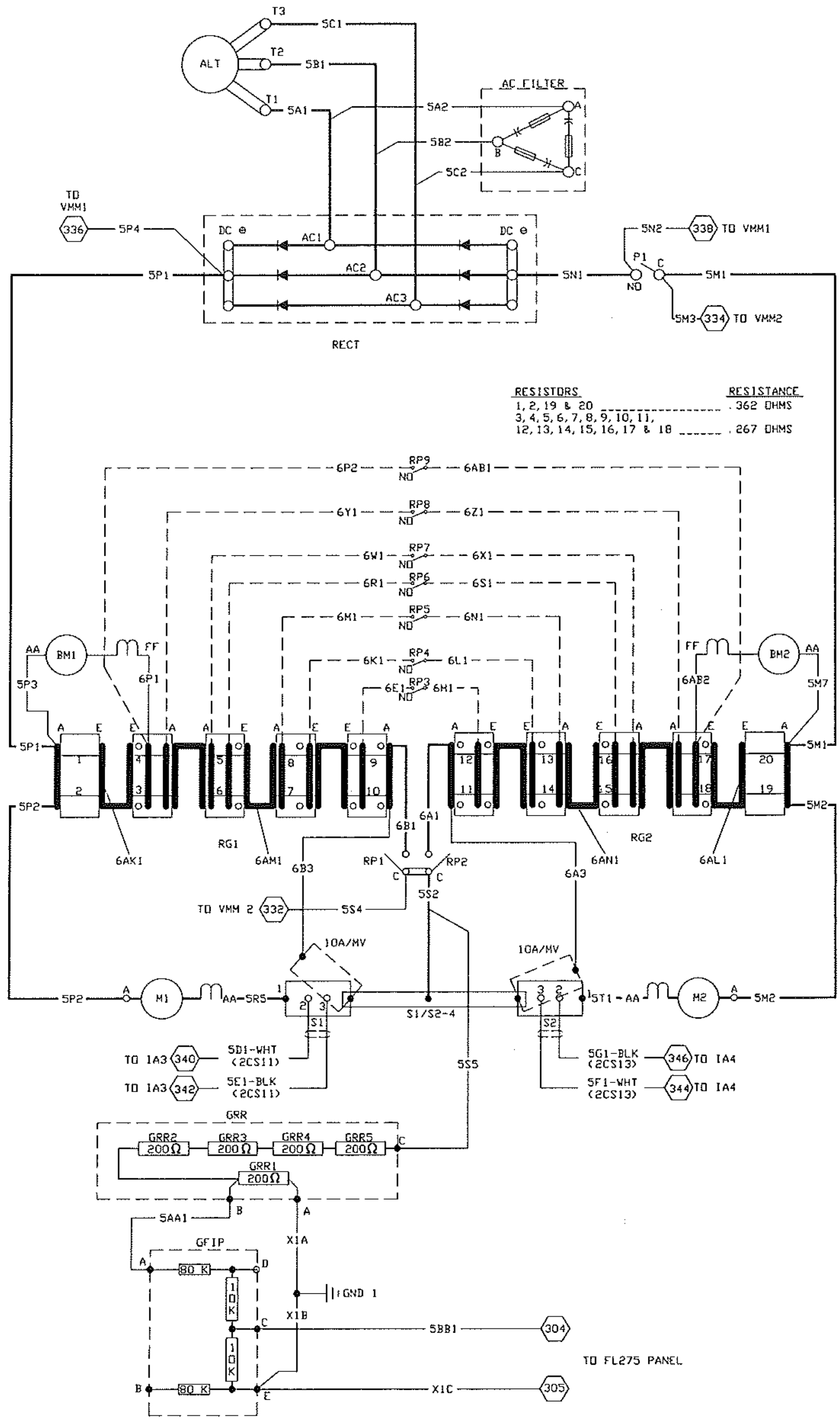
ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 2C OF 10

S10492

E.N. NO.	88470	88883	90394	91938	93415	93728	94067	REL. CK.	ENG. APP.	DR. SLF

S10492



RESISTORS	RESISTANCE
1, 2, 19 & 20	.362 OHMS
3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 & 18	.267 OHMS

SWING-SHUNT LOAD BOX

20 GRIDS, 7 STEP ERR

UNIT RIG

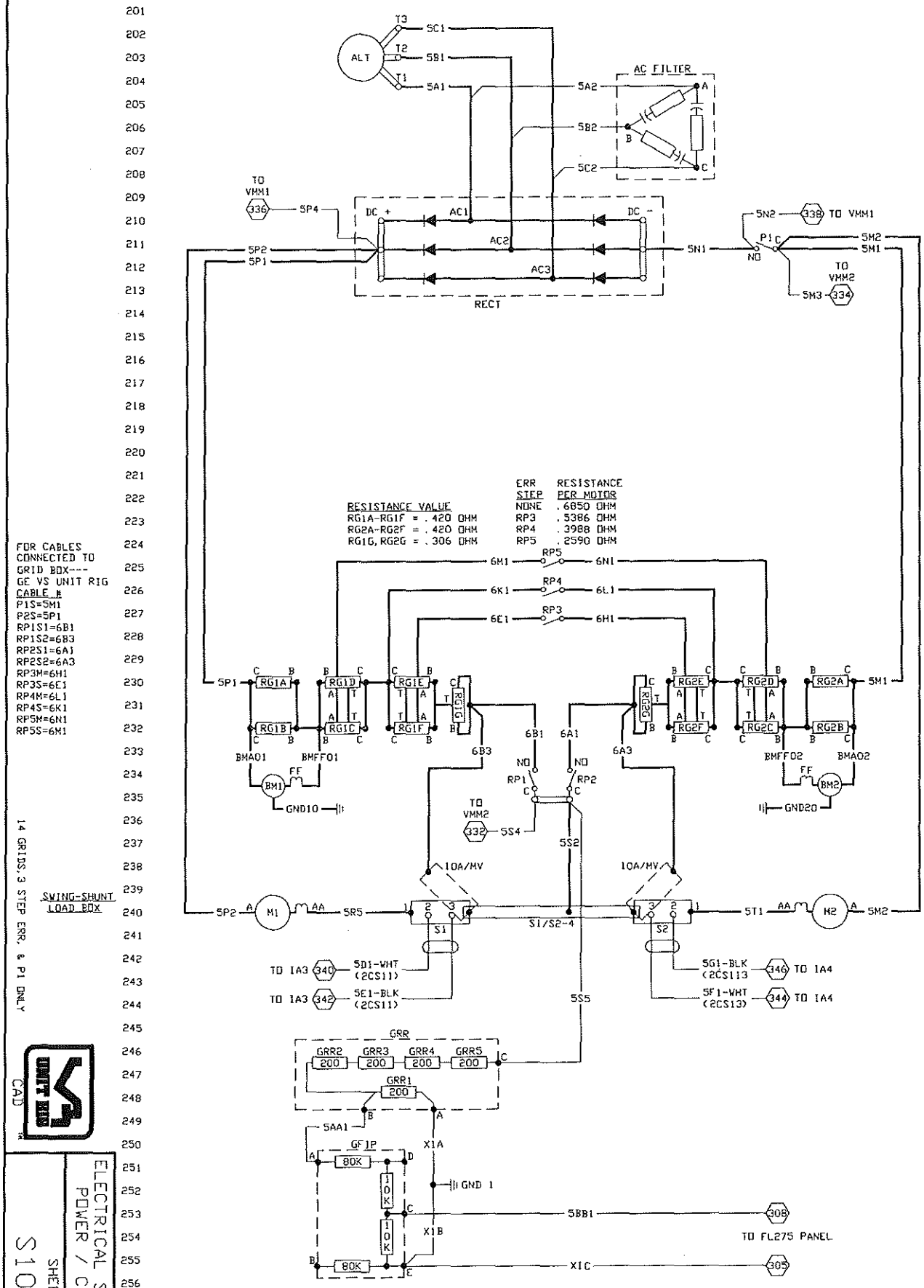
CAD

ELECTRICAL SCHEMATIC POWER / CONTROL

SHEET 2D OF 10

S10492

E.N. NO.	RCC CK.	ENG APPR.	DR.
88470			
88883			
90394			
91938			
93415			
93728			
94067			SLF



FOR CABLES CONNECTED TO GRID BOX--- GE VS UNIT RIG

CABLE #
P1S=5M1
P2S=5P1
RP1S1=6B1
RP1S2=6B3
RP2S1=6A1
RP2S2=6A3
RP3M=6H1
RP3S=6E1
RP4M=6L1
RP4S=6K1
RP5M=6N1
RP5S=6M1

14 GRIDS, 3 STEP ERR. & P1 ONLY

SWING-SHUNT LOAD BOX

CAD

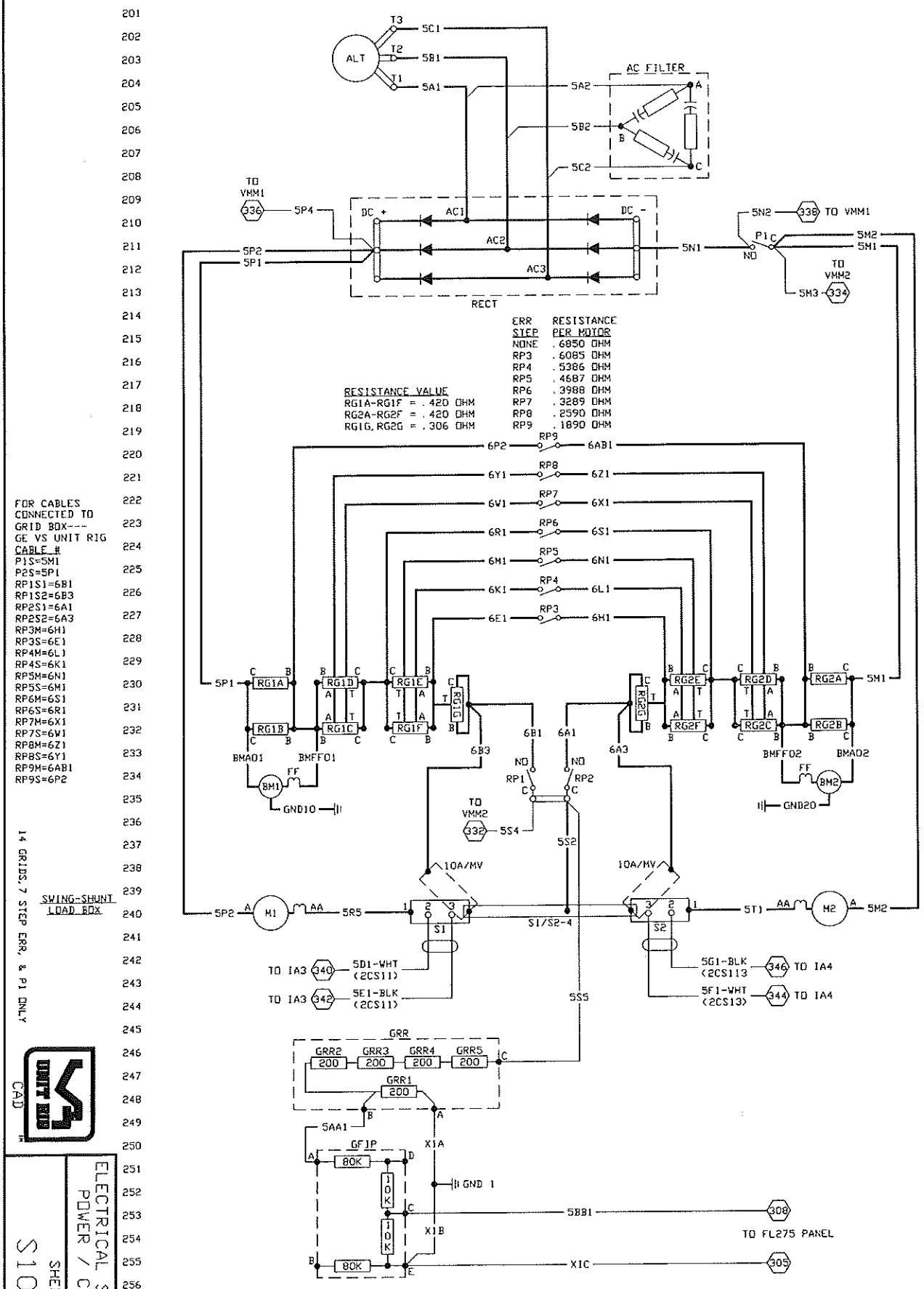
ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 2E OF 10

S10492

E.N. NO.	DR	ENG APP.	SCL CK	
88470	SLF			
88883				
90394				
91938				
93415				
93728				
94067				

S10492



FOR CABLES CONNECTED TO GRID BOX--- GE VS UNIT RIG

CABLE #
P1S=5M1
P2S=5P1
RP1S1=6B1
RP1S2=6B3
RP2S1=6A1
RP2S2=6A3
RP3M=6H1
RP3S=6E1
RP4M=6L1
RP4S=6K1
RP5M=6N1
RP5S=6M1
RP6M=6S1
RP6S=6R1
RP7M=6X1
RP7S=6W1
RP8M=6Z1
RP8S=6Y1
RP9M=6AB1
RP9S=6P2

SWING-SHUNT LOAD BOX

14 GRIDS, 7 STEP ERR, & P1 ONLY

CAD

ELECTRICAL SCHEMATIC
POWER / CONTROL

SHEET 2F OF 10
S10492