NOTE A: SEE RENR7902 TO PROGRAM EMCP INPUTS AND OUTPUTS.
DIGITAL INPUT DI 1 IS DEDICATED TO EMERGENCY STOP
DIGITAL INPUT DI 2 IS DEDICATED TO REMOTE START/STOP

NOTE B: SEE RENR7841 FOR CDVR INPUTS, OUTPUTS AND SETTINGS

NOTE C: REMOVE THE EXISTING JUMPER "229-SJ5" FROM BATT- TO WIRE UP THE REMOTE ESTOP

NOTE D: EMCP3 3/3.2 ONLY

NOTE E: EMCP3.3 ONLY

NOTE F: ENGINE 40 PIN CONNECTOR INTERFACE

NOTE G: SEE LEBE5255 FOR MODBUS APPLICATIONS

NOTE H: FOR USE WITH OPTIONAL ELECTRICALLY OPERATED BREAKER INSTALLED

NOTE J: SIGNAL TO OPEN THE BREAKER NORMALLY. FAULT TRIP IS ISSUED BY EMCP3

NOTE K: OPTIONAL CIRCUIT BREAKER WITH JACKET WATER HEATER

NOTE L: STANDARD CIRCUIT BREAKER FOR GENERATOR HEATER

NOTE M: RESISTIVE SENDER - USE 1916587 TEMPERATURE SENSOR OTHERWISE CONSULT FACTORY

NOTE N: SEE SHEET "CUSTOMER INTERCONNECT-OPT DEVICES" FOR CONNECTION TO REMOTE DEVICES

NOTE P: DEDICATED OUTPUTS
RELAY OUTPUT #1 - R01: DEDICATED TO MOTOR STARTER THROUGH ENGINE INTERFACE HARNESS
RELAY OUTPUT #2 - R02: DEDICATED TO ENGINE START/RUN/STOP THROUGH ENGINE INTERFACE HARNESS
(R02 IS AVAILABLE TO THE CUSTOMER CONNECTION AS A NON PROGRAMMABLE RELAY OUTPUT)
RELAY OUTPUT #3 - R03: DEDICATED TO ENGINE PRELUBE THROUGH ENGINE INTERFACE HARNESS
DIGITAL OUTPUT #1 - DO 1: DEDICATED TO AUX RELAY "AC-CR2" (EMCP 3.2/3.3)
RELAY OUTPUT #6 - R06: DEDICATED TO AUX RELAY "AC-CR2" (EMCP 3.1)

NOTE R: ALL THE "DI RTN" ARE JUMPERED TOGETHER AND THEN TIED BACK TO THE BATT-

NOTE S: SEE RENR7902 TO PROGRAM DISCRETE I/O MODULE INPUTS & OUTPUTS

NOTE T: REMOVE THE EXISTING RESISTOR AND HOOK IT
UP TO REMOTE ANNUNCIATOR TERMINAL 272-8238 "CAN2".

NOTE U: 236-1158 (WITHOUT FILM) REQUIRES FILM KIT 2606898
236-1159 (INCLUDES STD FILM)
252-7504 (FLUSH MOUNT BOX ASSEMBLY INCLUDES 2361159)

NOTE W: THE REAR, LEFT AND RIGHT SIDES ARE BASED ON CUSTOMER PREFERENCE FOR LOCATION OF CONTROLS

NOTE X: PTs ARE USED IN MV (MEDIUM VOLTAGE), BUT IN CASE OF LV (LOW VOLTAGE)
IT IS DIRECT SENSING SEE SHEET 9 FOR MV WIRING

NOTE Y: 9-PIN CONNECTOR OF DB-9 TYPE FOR MODBUS RS485
COMMUNICATION TO EMCP3

NOTE Z: 7-PIN CONNECTOR FOR MODBUS RS485
COMMUNICATION TO SWITCHGEAR & ATS.

NOTE AA: CONFIGURATION PORT. REQUIRES NULL MODEM
FOR COMMUNICATIONS.

NOTE AB: ETHERNET PORT FOR CONFIGURATION & MONITORING.

NOTE AC: CONFIGURED BUT NOT USED, AVAILABLE TO BE USED.

NOTE AD: CUSTOMER LOADING FROM TERMINAL STRIP SHOULD BE LIMITED TO 5A RESISTIVE ONLY AND FOR EXCESS
DEMAND USE BATTERY CONNECTION.

NOTE AE: SUPPLY APPROPRIATE AC VOLTAGE FOR JWH 240VAC (208/220VAC).

NOTE AF: THE WIRE 838 GOES TO BATT- TERMINAL & EXISTS ONLY IN 267-8463 & 244-5405 AC/DC HARNESS.
THE AC/DC HARNESSES 341-8075 & 341-8076 DO NOT HAVE 838 WIRE. THE EMCP HARNESS 324-5610 & 324-5612
CONTAIN 838 (SHIELD) AND SPLICED INTO BATT- WIRE GOING INTO PIN 65

NOTE AG: 244-9599 IS A SIX(6) CONNECTOR HARNESS. 324-5608 IS A TWELVE(12) PIN CONNECTOR HARNESS.

SHEET INDEX	DESCRIPTION
1	NOTES & SHEET INDEX
2	ABBREVIATIONS & SYMBOLS
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4	CUSTOMER INTERCONNECT - OPTIONAL DEVICES
5	AC/DC BOX TERMINATIONS (EMCP 3.1)
6	AC/DC BOX TERMINATIONS (EMCP 3.2/3.3)
7	HARNESS LAYOUTS - EMCP3.1
8	HARNESS LAYOUTS - EMCP3.2/3.3
9	OPTIONAL HARNESS LAYOUTS
10	AC SCHEMATIC - LOW VOLTAGE
11	AC SCHEMATIC - MEDIUM VOLTAGE
12	DC SCHEMATIC - EMCP3.1
13	DC SCHEMATIC - EMCP3.2/3.3
14	DC SCHEMATIC - CDVR
15	AC OPTION - LOW VOLTAGE & MEDIUM VOLTAGE LOADSHARE MODULE
16	DC OPTIONS - CIRCUIT BREAKER, ETHER & LIGHTING
17	AC OPTIONS - SHORE POWER 240VAC (208/220VAC) JACKET WATER HEATER & SPACE HEATER (5 WIRE JWH HARNESS)
18	AC OPTIONS - SHORE POWER 240VAC (208/220VAC) JACKET WATER HEATER & SPACE HEATER (7 WIRE JWH HARNESS)
19	AC OPTIONS - SHORE POWER (480V JACKET WATER HEATER & SPACE HEATER)
20	DC OPTIONS - EXPANSION I/O MODULES (DI/DO, TC, RTD)
21	AC OPTIONS - POINTGUARD
22	COMMUNICATIONS - EMCP3.1
23	COMMUNICATIONS - EMCP3.2/3.3

NOTES & SHEET INDEX

CATERPILLAR: CONFIDENTIAL YELLOW

E2733 DRAWING-AUTOCAD
C01882 LETTERS
C01011 CONFIDENTIALITY
E0001 UNTOL & TOL
MEDIA/SIZE
A ASHEET
APP MA THOSKY
CHK
DATE 4MAY09
DATE 29NOV07
CATERPILLAR INC.
DIAGRAM-WIRING
GLOBAL DESIGN EMCP3 (OU)
290-9671 - W983

ABBREVIATIONS

AC	ALTERNATING CURRENT
AFCR	AUXILIARY FUEL CONTROL RELAY
AFTS	AUTOMATIC FUEL TRANSFER SYSTEM
ALH	ALARM MODULE
ALR	ALARM RELAY
ALT	ALTERNATOR
ASR	AIR SHUT-OFF RELAY
ATB	AC TRANSFORMER BOX
ATR	ALTERNATOR TEMPERATURE RELAY
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BATT	BATTERY
BC	BATTERY CHARGER
BCF	BATTERY CHARGER FAILURE SWITCH
BTR	BEARING TEMPERATURE RELAY
CAM	CUSTOM ALARM MODULE
CB	CIRCUIT BREAKER
CCM	CUSTOMER COMMUNICATION MODULE
CDL	CAT DATA LINK
CDVR	DIGITAL VOLTAGE REGULATOR
CIM	CUSTOMER INTERFACE MODULE
COM2	CONTACT SENSE COMMON
CONN	CONNECTOR
CR	CRANK RELAY
CSFS	CURRENT SCROLL FUEL SYSTEM
CT	CURRENT TRANSFORMER
CTR	CRANK TERMINATION RELAY
D	DIODE
DC	DIRECT CURRENT
ECLS	ENGINE COOLANT LOSS SENSOR
ECS	ENGINE CONTROL SWITCH
ECTS	ENGINE COOLANT TEMPERATURE SENSOR
EFCR	EMERGENCY FUEL CONTROL RELAY
EFR	ENGINE FAILURE RELAY
EG	ELECTRONIC GOVERNOR (SPEED SENSING)
EGA	ELECTRONIC GOVERNOR ACTUATOR
EGR	ELECTRONIC GOVERNOR RELAY
ELS	ENCLOSURE LIGHT SWITCH
EMSR	EMERGENCY STOP RELAY
ENFR	ENGINE FAILURE RELAY
EOPS	ENGINE OIL PRESSURE SENSOR
EOTS	ENGINE OIL TEMPERATURE SENSOR
ESDR	ENGINE SHUTDOWN RELAY
ESPB	EMERGENCY STOP PUSH BUTTON
ESTS	EMERGENCY STOP SWITCH ON ENCLOSURE
EXC	EXCITER
F	FUSE
FCR	FUEL CONTROL RELAY
FCS	FUEL CONTROL SOLENOID
FCTM	FUEL CONTROL TIMER MODULE
FPT	FUEL PUMP TIMER
FRBS	FUEL RUPTURE BASIN SWITCH
FRES	FAULT RESET
FS	FUEL SOLENOID
FSOS	FUEL SHUT-OFF SOLENOID
FTSPR	FUEL TRANSFER SYSTEM PUMP RELAY
GEN	GENERATOR
GFR	GENSET FAULT RELAY
GND	GROUND
GNDFCT	GROUND FAULT CT
GNDFR	GROUND FAULT RELAY
GOV	GOVERNOR
GRR	GENERATOR RUN RELAY
GS	GOVERNOR SWITCH
GSC	GENERATOR SET CONTROL
GSM	GOVERNOR SYNCHRONIZING MOTOR
HC	HEATER CONTACTOR
IC	REMOTE START/STOP INITIATE CONTACT
IRR	IDLE RATED RELAY
IRS	IDLE RATED SWITCH
KWR	KILOWATT RELAY
L	LOAD LEADS
LFLS	LOW FUEL LEVEL SWITCH
LSM	LOAD SHARE MODULE
LV	LOW VOLTAGE
LWR	CONTACT SENSE LOWER
MAN	MANUAL
MAX	MAXIMUM
MCS	MODE CLEAR SWITCH
MIN	MINIMUM
MPU	MAGNETIC SPEED PICKUP
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED
NIAR	NOT IN AUTO RELAY
NO	NORMALLY OPEN
OUVR	OVER/UNDER VOLTAGE RELAY
PB	PUSHBUTTON
PC	PUMP CONTACTOR
PCB	PRINTED CIRCUIT BOARD
PEEC	PROGRAMMABLE ELECTRONIC ENGINE CONTROL
PEECR	PEEC RELAY
PF	POWER FACTOR
PL	PANEL ILLUMINATION LIGHT
PLS	PANEL LIGHT SWITCH
PM	PERMANENT MAGNET
PMG	PERMANENT MAGNET GENERATOR
POT	POTENTIOMETER
PR	PUMP RELAY
PRL	PUMP RUN LIGHT
PRPB	PUMP RUN PUSHBUTTON
PS	PINION SOLENOID
PSL	PUMP STOP LIGHT
PSPB	PUMP STOP PUSHBUTTON
PWM	PULSE WIDTH MODULATED
RAN	REMOTE ANNUNCIATOR
RDM	RELAY DRIVER MODULE
REF	REFERENCE
RFI	RADIATED FREQUENCY IMMUNITY
RHLH	RIGHT HAND/LEFT HAND SWITCH
RR	RUN RELAY
RSE	CONTACT SENSE RAISE
SASV	START AID SOLENOID VALVE
SATS	START AID TEMPERATURE SWITCH
SAS	START AID SWITCH
SCS	SCROLL SWITCH
SEC	SECOND
SHTC	CIRCUIT BREAKER SHUNT TRIP COIL
SL	SYNCHRONIZING LIGHT
SLR	SYNCHRONIZING LIGHT RESISTOR
SM	STARTING MOTOR
SMMS	STARTING MOTOR MAGNETIC SWITCH
SMR	STARTING MOTOR RELAY
SP	SPEED ADJUST POTENTIOMETER
SS	SYNCHRONIZING SWITCH
T	GENERATOR LINE LEADS
TERM	TERMINATING
TSC	TRANSFER SWITCH POSITION (INDICATING CONTACT
TX	TRANSFORMER
VAR	VOLTAGE ADJUST RHEOSTAT
VAS	VOLTAGE ADJUST SWITCH
VR	VOLTAGE REGULATOR

SYMBOLS

- STANDARD WIRING
- CUSTOMER WIRING
- SHIELDED WIRE
- RELAY CONTACT (NORMALLY OPEN)
- RELAY CONTACT (NORMALLY CLOSED)
- GENERATOR FRAME (CHASSIS) GROUND
- EARTH GROUND
- LAMP
- FUSE
- RELAY COIL
- EMERGENCY STOP PUSH BUTTON
- 2 POSITION SWITCH
- 3 POSITION SWITCH
- SHUNT TRIP (MX)
- SHUNT CLOSE (XF)
- TRIP UNIT (TR)
- CHARGING MOTOR (MOT)
- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- EXCITER
- RESISTIVE SENDER
- VARIABLE VDC SOURCE
- DC TERMINAL
- AC TERMINAL
- CONNECTOR

ABBREVIATIONS AND SYMBOLS

FOR NOTES SEE SHEET 1

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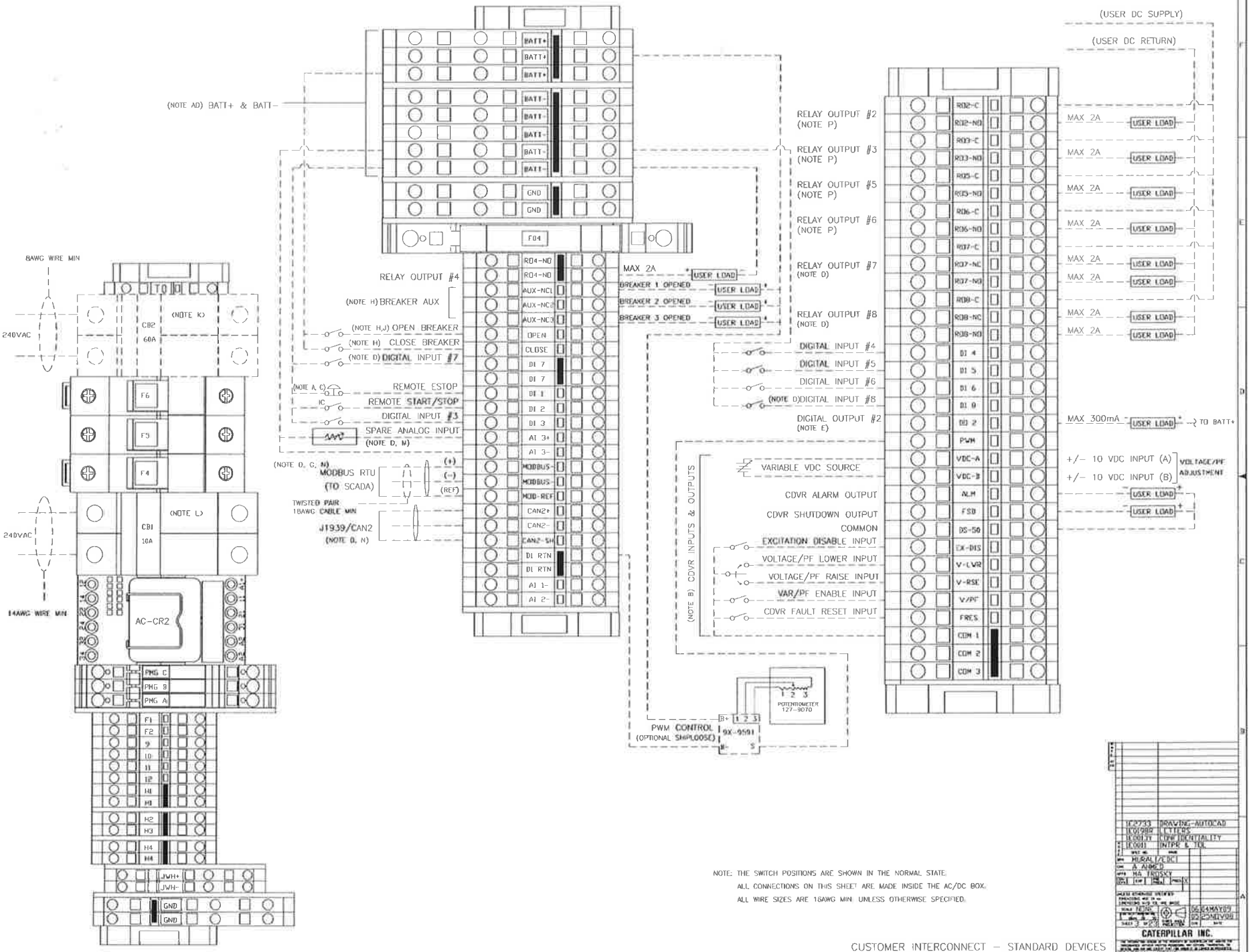
CATERPILLAR INC.

290-9671



NOTE: THE SWITCH POSITIONS ARE SHOWN IN THE NORMAL STATE.
ALL CONNECTIONS ON THIS SHEET ARE MADE INSIDE THE AC/DC BOX.
ALL WIRE SIZES ARE 16AWG MIN. UNLESS OTHERWISE SPECIFIED.

CUSTOMER INTERCONNECT - STANDARD DEVICES

FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

LC2733	DRAWING-AUTOCAD
LC0288	LETTERS
LC0017	CTPE INCENTIALITY
LC0081	INTPR & TOL

MURRAY/CDCI
A.ABBED
MA TROSKY

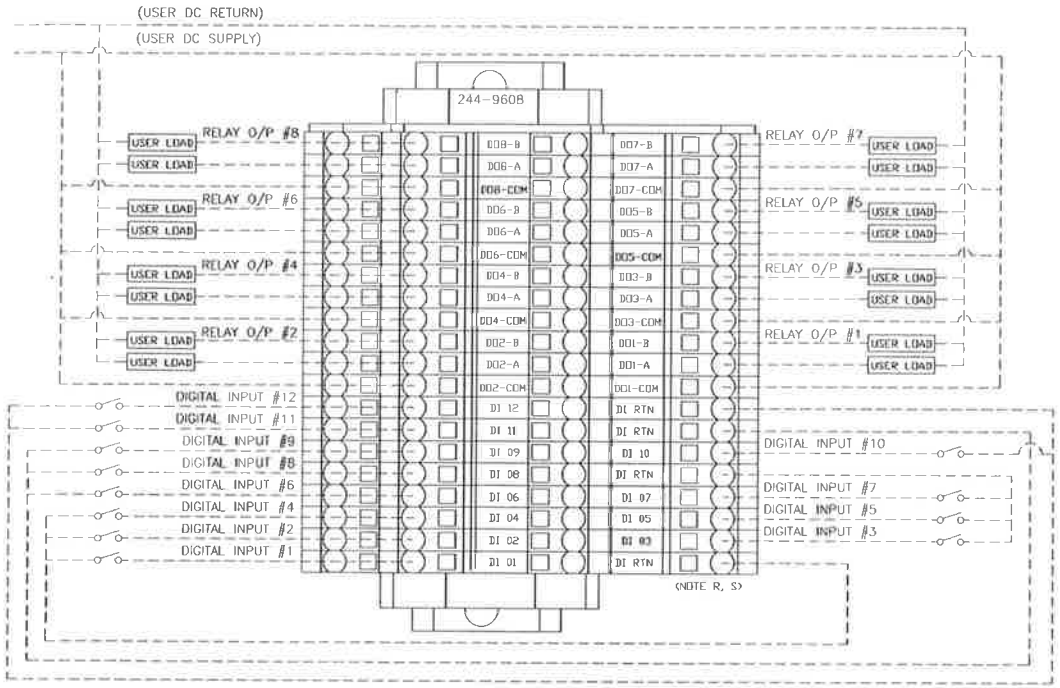
CATERPILLAR INC.

DIAGRAM-WIRING
GLOBAL ASSOCIATE CHECKS TOOLS

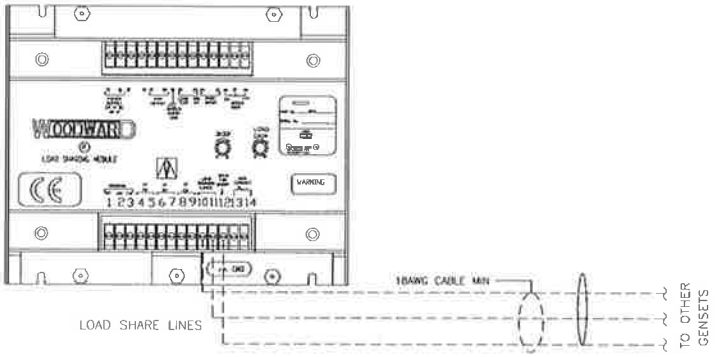
290-9671 - 05MAY09 02SEP08 V08

METRIC 290-9671

OPTIONAL DISCRETE I/O MODULE TERMINALS (INSTALLED IN AC/DC BOX)

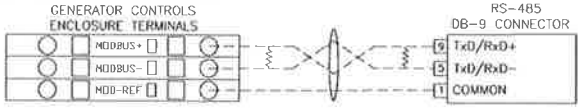


OPTIONAL LOAD SHARING MODULE

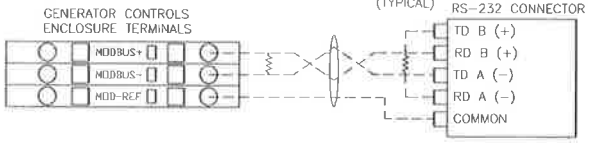


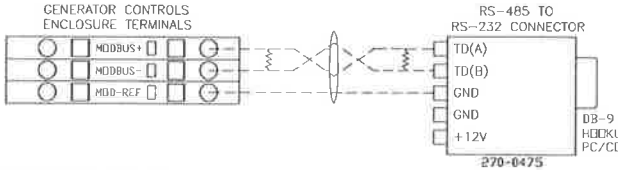
OPTIONAL MODBUS

POSSIBLE WIRING CONFIGURATION WITH RS485 DEVICE (TYPICAL)



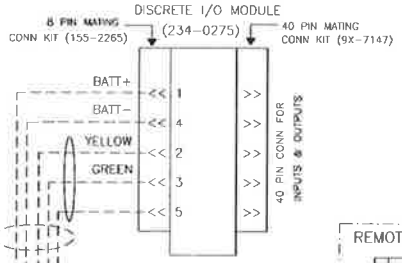
POSSIBLE WIRING CONFIGURATION WITH RS485 TO RS-232 CONVERTOR (TYPICAL)





FOR MULTIPOINT NETWORK TERMINATE WITH 150 OHM RESISTOR AT THE ENDS OF THE NETWORK

DISCRETE I/O MODULE (234-0275)

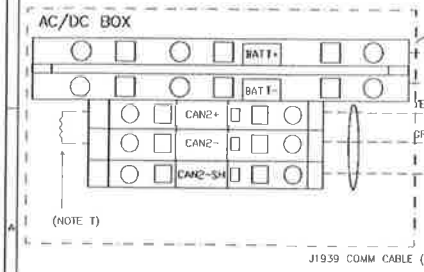


NOTE: THE SWITCH POSITIONS ARE SHOWN IN NORMAL STATE.
ALL WIRE SIZES ARE 16AWG MIN. UNLESS OTHERWISE SPECIFIED.

DROPS FROM THE TRUNK LINE SHOULD NOT EXCEED 2.7M(9FT)

GENERAL NOTE: DO NOT USE HARNESS 244-9600 FOR REMOTE ANNUNCIATOR.
HARNESS 244-9600 IS USED FOR LOCAL ANNUNCIATORS.
FOLLOW THIS DIAGRAM FOR REMOTE ANNUNCIATOR.

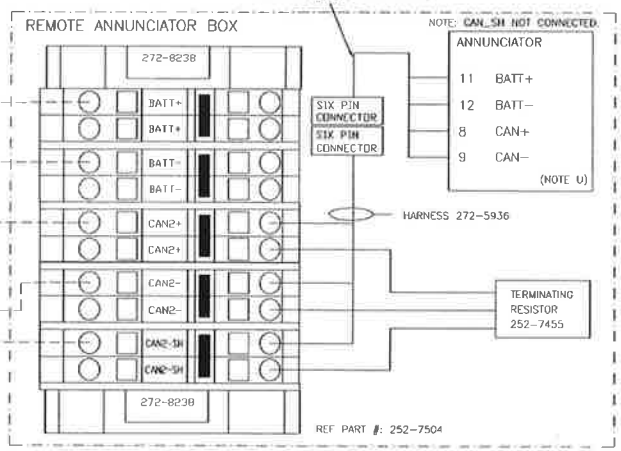
MAIN TRUNK (243M/800FT MAX)



J1939 COMM CABLE (P#: 1532707)

THIS HARNESS ALREADY COMES WITH THE REMOTE ANNUNCIATOR.

NOTE: CAN_SH NOT CONNECTED.



NOTE: SINCE J1939 CABLE 1 LENGTH VARIES AS PER CUSTOMER REQUIREMENT.
THAT'S WHY THE CUSTOMER ORDERS AS PER REQUIRED LENGTH.

CUSTOMER INTERCONNECT - OPT DEVICES

FOR NOTES SEE SHEET 1

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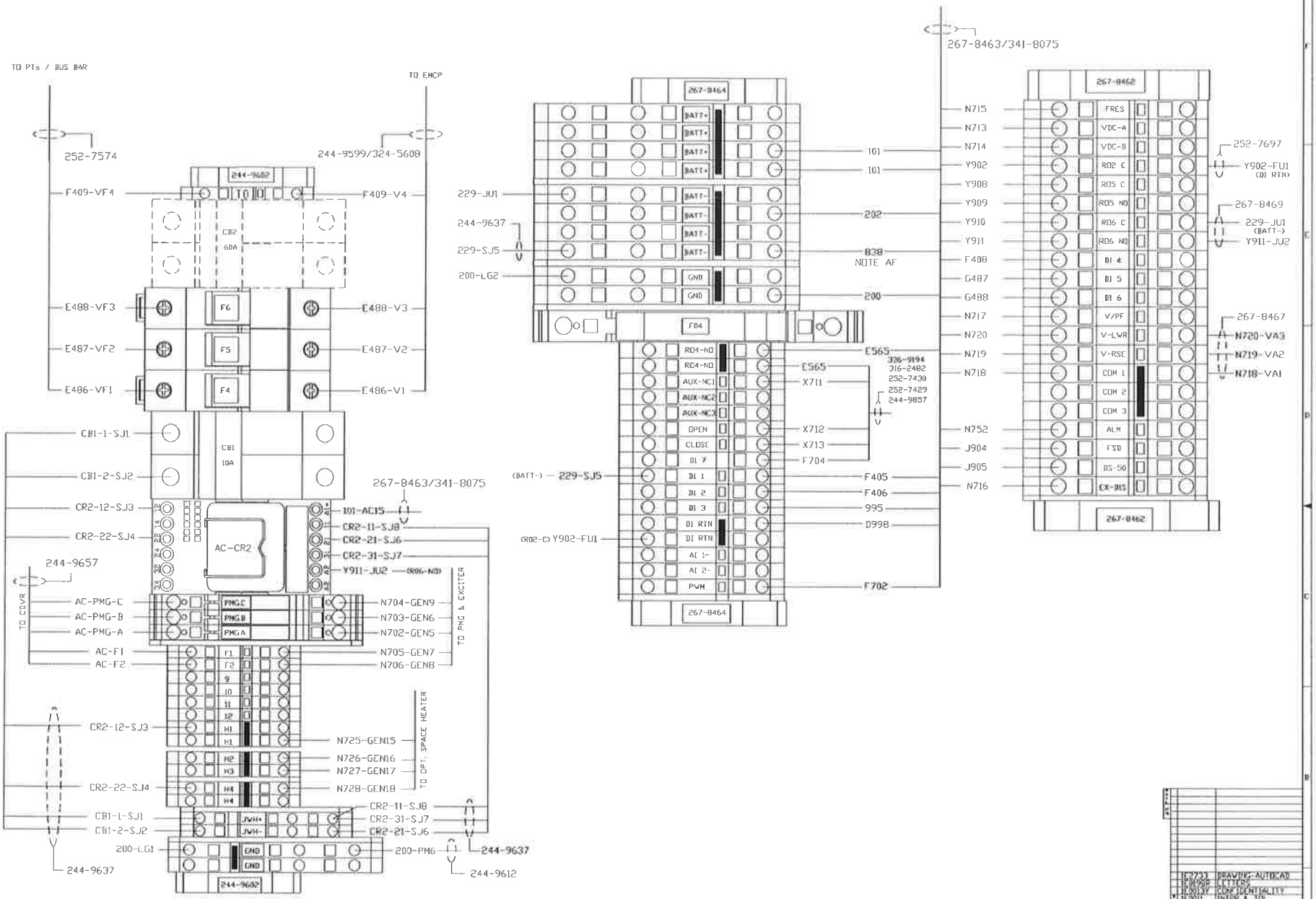
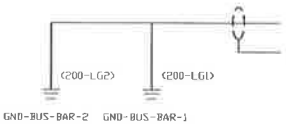
CAT.
DRAWING AUTOCAD
ENTITY
CONFIDENTIALITY
UNIPER & TDL
MEGA TADICI
A AHMED
MA TROSKY
04MAY09
CATERPILLAR INC.
DIAGRAM-WIRING
GLOBAL DESIGN, EMCP3, EMD
290-9671
V983





HARNESSES:

REQUIRED -- 267-8463/341-8075, 244-9657, 244-9599/324-5608, 252-7574, 244-9612, 244-9637, 252-7513, 252-7697, 267-8469
OPTIONAL -- Circuit Breaker Harnesses - 252-7430 (NSJ/P/R), 252-7429 (NSJ/P/R), 244-9857 (MASTERPAC), 316-2482(EMAX), 336-9194 (S8 ISOMAX)
OPTIONAL -- Voltage Adjust Pot Harness - 267-8467

EMCP 3.1 AC/DC BOX TERMINATIONS

FOR NOTES SEE SHEET 1

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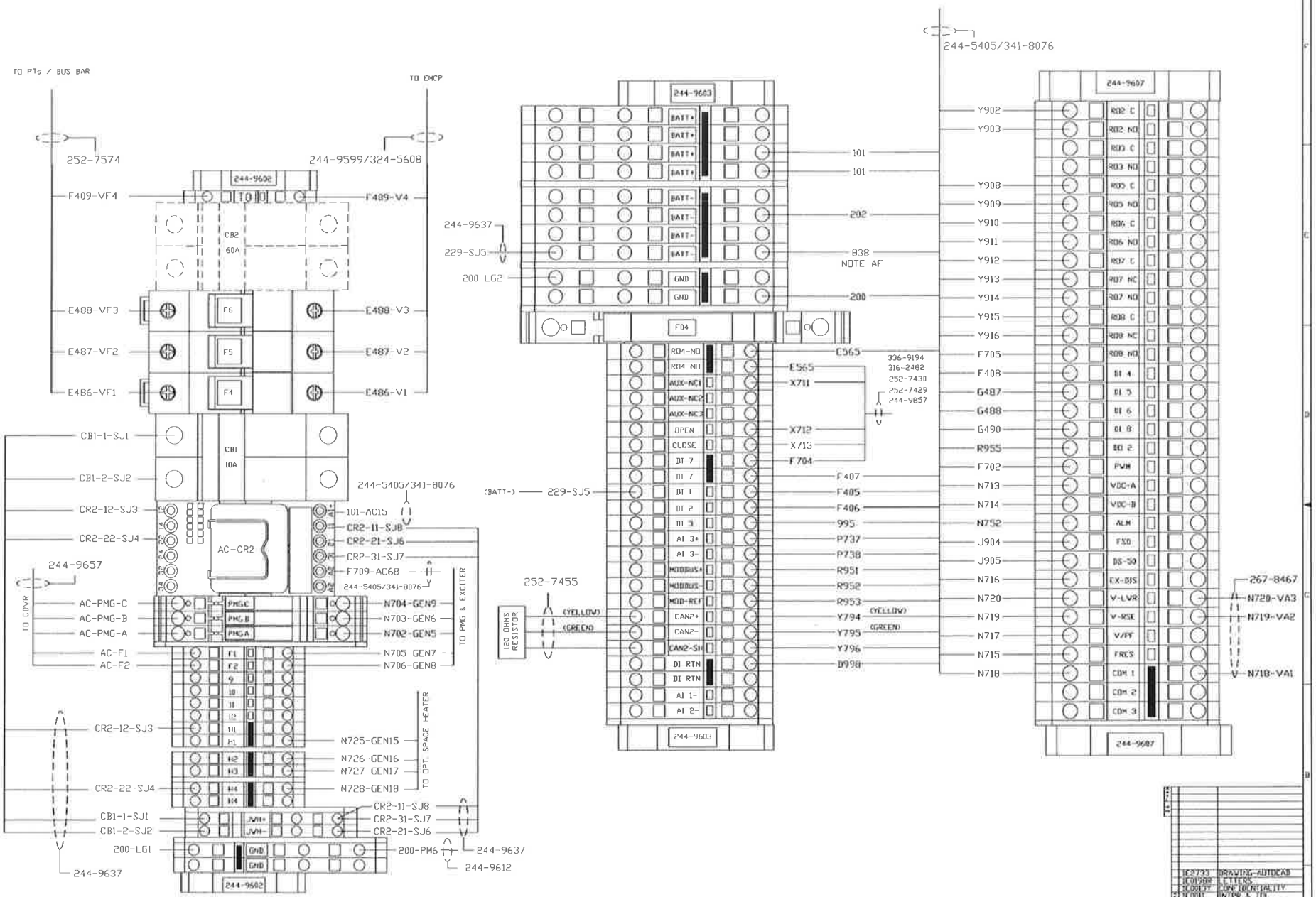
GLOBAL DESIGN EMCP3 FUDJ
290-9671 - W983



HARNESSES:

REQUIRED -- 244-9657, 244-9599/324-5608, 252-7574, 244-9612, 244-9637, 252-7513, 244-9612, 244-5405/341-8076
OPTIONAL -- Circuit Breaker Harnesses - 252-7430 (NSJ/P/R), 252-7429 (NSJ/P/R), 244-9857 (MASTERPAC), 316-2482 (EMAX), 336-9194 (S8 ISOMAX)
OPTIONAL -- Voltage Adjust Pot Harness - 267-8467

EMCP 3.2/3.3 AC/DC BOX TERMINATIONS

FOR NOTES SEE SHEET 1

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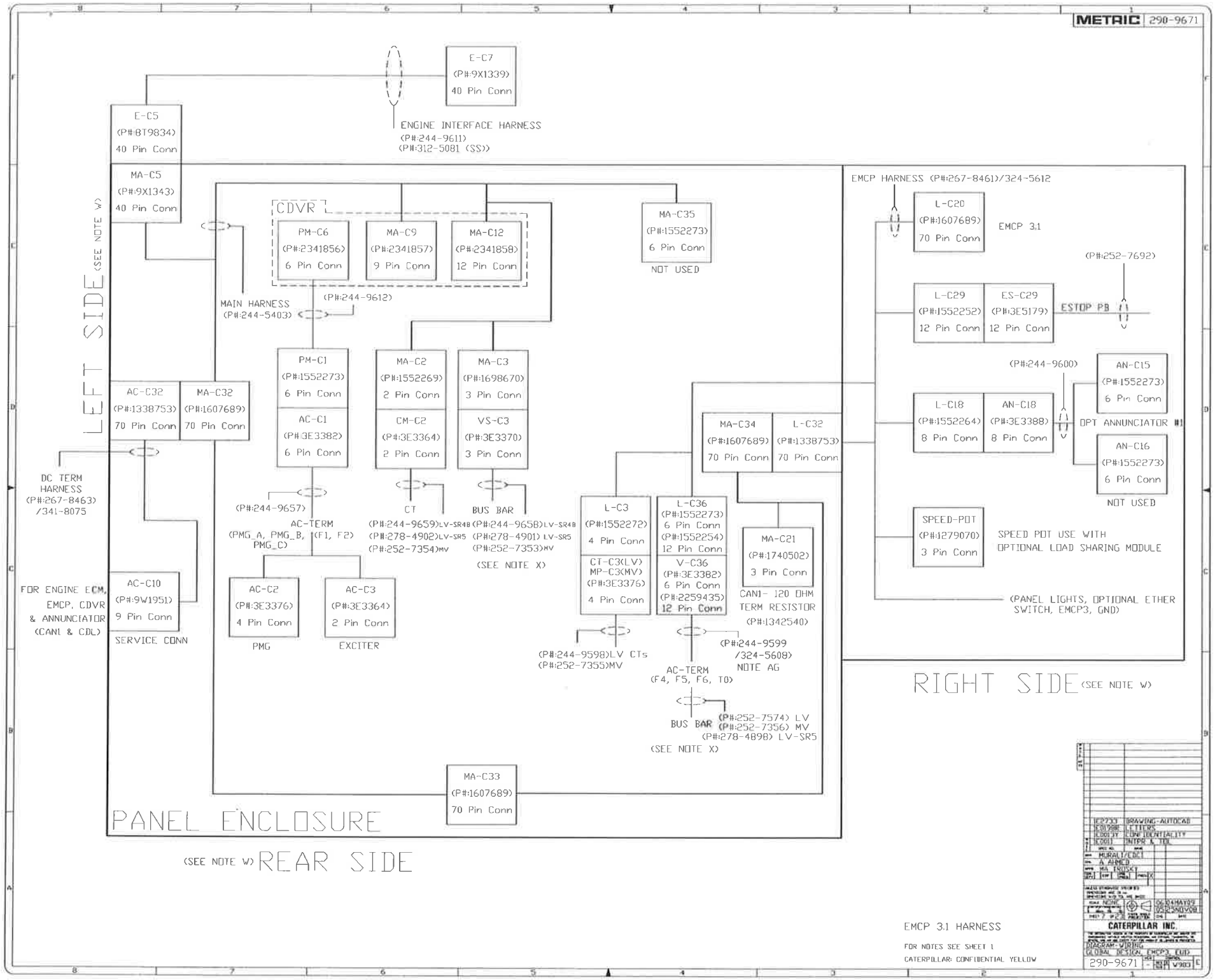

EMCP 3.1 HARNESS

FOR NOTES SEE SHEET 1

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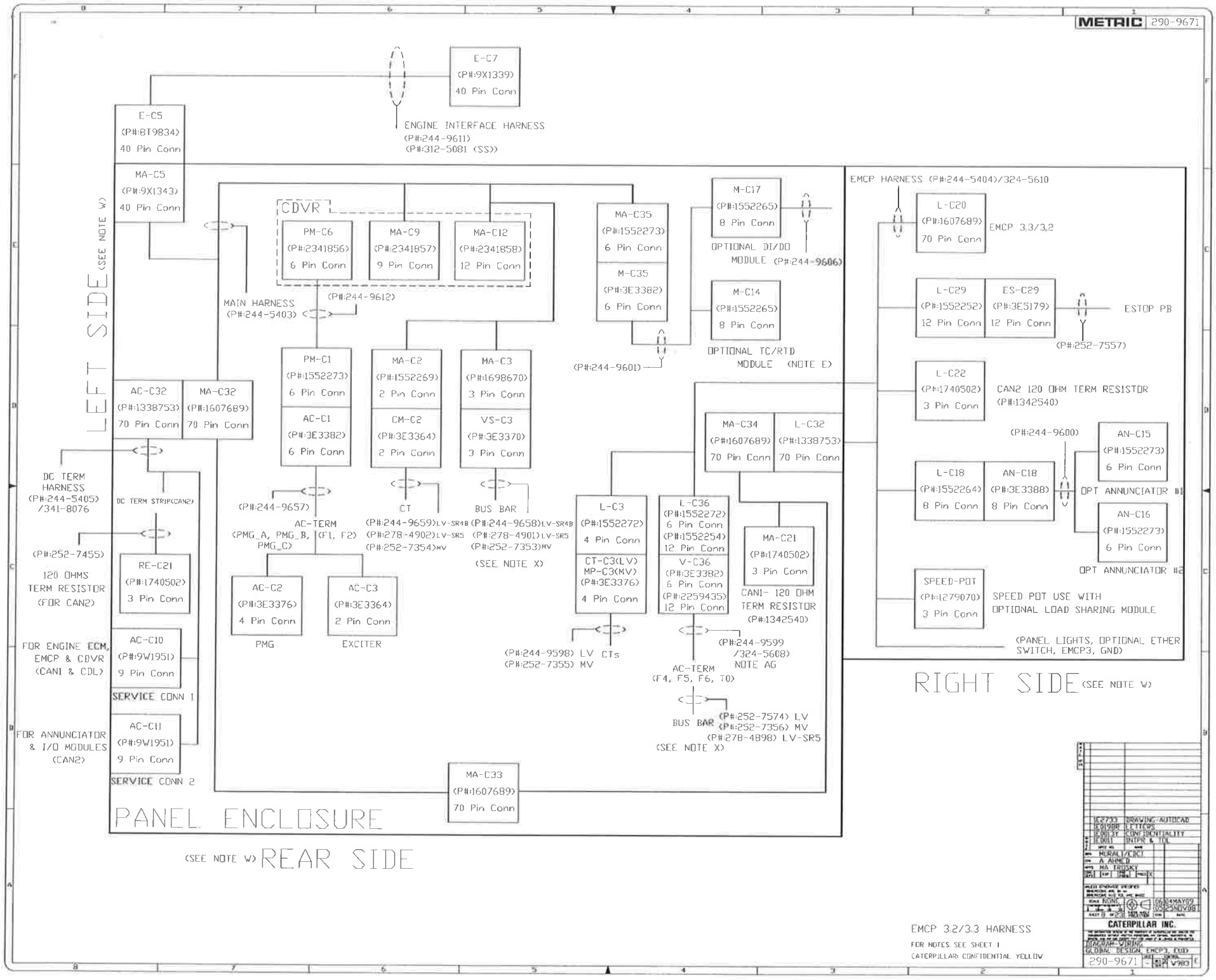


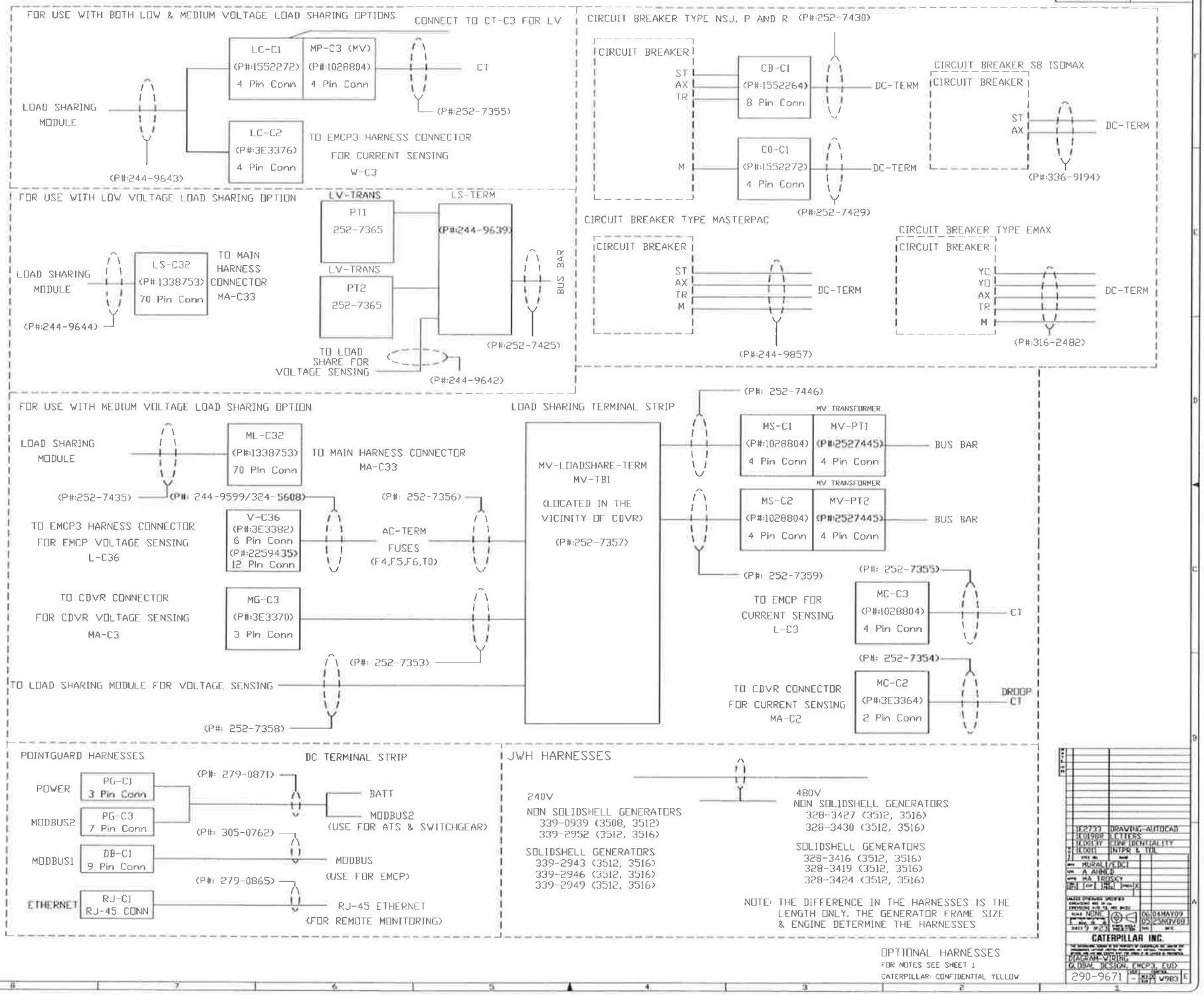
EMCP 3.2/3.3 HARNESS

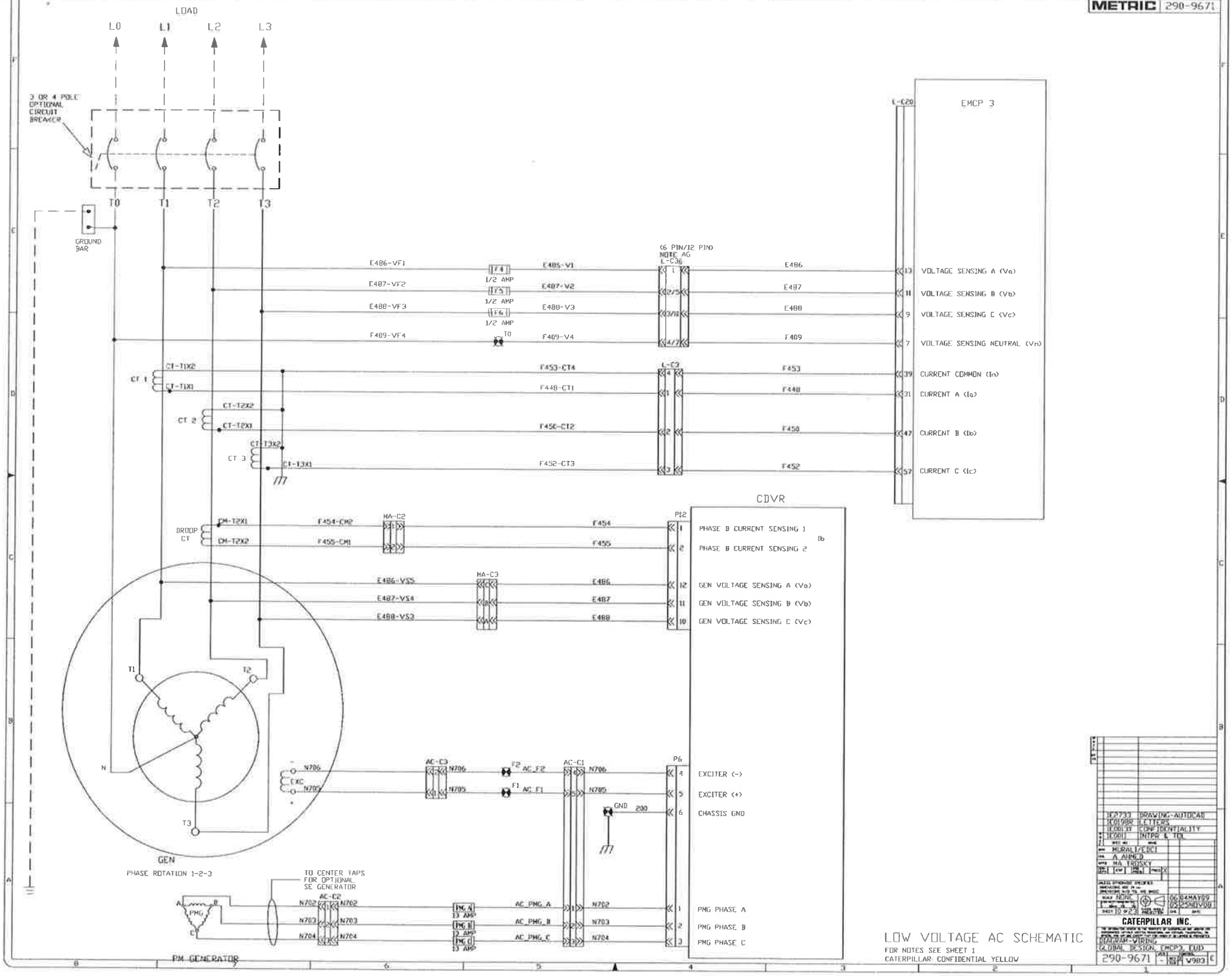
FOR NOTES SEE SHEET 1

CATERPILLAR: CONFIDENTIAL YELLOW

CATERPILLAR INC.

290-9671


FOR USE WITH BOTH LOW & MEDIUM VOLTAGE LOAD SHARING OPTIONS
CONNECT TO CT-C3 FOR LV
LC-C1 (P#:1552272) 4 Pin Conn
MP-C3 (MV) (P#:1028804) 4 Pin Conn
CT
(P#:252-7355)
LOAD SHARING MODULE
(P#:244-9643)
LC-C2 (P#:3E3376) 4 Pin Conn
TO EMCP3 HARNESS CONNECTOR FOR CURRENT SENSING W-C3
FOR USE WITH LOW VOLTAGE LOAD SHARING OPTION
LV-TRANS PT1 252-7365
LV-TRANS PT2 252-7365
LS-TERM (P#:244-9639)
LOAD SHARING MODULE
(P#:244-9644)
LS-C32 (P#:1338753) 70 Pin Conn
TO MAIN HARNESS CONNECTOR MA-C33
BUS BAR
(P#:252-7425)
TO LOAD SHARE FOR VOLTAGE SENSING
(P#:244-9642)
CIRCUIT BREAKER TYPE NSJ, P AND R (P#:252-7430)
CIRCUIT BREAKER
ST
AX
TR
CB-C1 (P#:1552264) 8 Pin Conn
DC-TERM
M
CO-C1 (P#:1552272) 4 Pin Conn
DC-TERM
(P#:252-7429)
CIRCUIT BREAKER S8 ISOMAX
CIRCUIT BREAKER
ST
AX
DC-TERM
(P#:336-9194)
CIRCUIT BREAKER TYPE MASTERPAC
CIRCUIT BREAKER
ST
AX
TR
M
DC-TERM
(P#:244-9857)
CIRCUIT BREAKER TYPE EMAX
CIRCUIT BREAKER
YC
YO
AX
TR
M
DC-TERM
(P#:316-2482)
FOR USE WITH MEDIUM VOLTAGE LOAD SHARING OPTION
LOAD SHARING TERMINAL STRIP
LOAD SHARING MODULE
ML-C32 (P#:1338753) 70 Pin Conn
TO MAIN HARNESS CONNECTOR MA-C33
(P#:252-7435)
(P#: 244-9599/324-5608)
TO EMCP3 HARNESS CONNECTOR FOR EMCP VOLTAGE SENSING L-C36
V-C36 (P#:3E3382) 6 Pin Conn (P#:2259435) 12 Pin Conn
(P#: 252-7356)
AC-TERM FUSES (F4,F5,F6,T0)
TO CDVR CONNECTOR FOR CDVR VOLTAGE SENSING MA-C3
MG-C3 (P#:3E3370) 3 Pin Conn
(P#: 252-7353)
TO LOAD SHARING MODULE FOR VOLTAGE SENSING
(P#: 252-7358)
MV-LOADSHARE-TERM MV-TB1
(LOCATED IN THE VICINITY OF CDVR)
(P#:252-7357)
(P#: 252-7446)
MV TRANSFORMER
MS-C1 (P#:1028804) 4 Pin Conn
MV-PT1 (P#:2527445) 4 Pin Conn
BUS BAR
MV TRANSFORMER
MS-C2 (P#:1028804) 4 Pin Conn
MV-PT2 (P#:2527445) 4 Pin Conn
BUS BAR
(P#: 252-7359)
TO EMCP FOR CURRENT SENSING L-C3
(P#: 252-7355)
MC-C3 (P#:1028804) 4 Pin Conn
CT
(P#: 252-7354)
TO CDVR CONNECTOR FOR CURRENT SENSING MA-C2
MC-C2 (P#:3E3364) 2 Pin Conn
DROOP CT
POINTGUARD HARNESSES
DC TERMINAL STRIP
POWER
PG-C1 3 Pin Conn
(P#: 279-0871)
BATT
MODBUS2
PG-C3 7 Pin Conn
MODBUS2 (USE FOR ATS & SWITCHGEAR)
(P#: 305-0762)
MODBUS1
DB-C1 9 Pin Conn
MODBUS (USE FOR EMCP)
(P#: 279-0865)
ETHERNET
RJ-C1 RJ-45 CONN
RJ-45 ETHERNET (FOR REMOTE MONITORING)
JWH HARNESSES
240V
NON SOLIDSHELL GENERATORS
339-0939 (3508, 3512)
339-2952 (3512, 3516)
SOLIDSHELL GENERATORS
339-2943 (3512, 3516)
339-2946 (3512, 3516)
339-2949 (3512, 3516)
480V
NON SOLIDSHELL GENERATORS
328-3427 (3512, 3516)
328-3430 (3512, 3516)
SOLIDSHELL GENERATORS
328-3416 (3512, 3516)
328-3419 (3512, 3516)
328-3424 (3512, 3516)
NOTE: THE DIFFERENCE IN THE HARNESSES IS THE LENGTH ONLY. THE GENERATOR FRAME SIZE & ENGINE DETERMINE THE HARNESSES
OPTIONAL HARNESSES
FOR NOTES SEE SHEET 1
CATERPILLAR: CONFIDENTIAL YELLOW
DRAWING-AUTOCAD
LETTERS
CONFIDENTIALITY
INTPR & TOL
MURAL/E/DCI
A AUBLE
MA TOOSKY
CATERPILLAR INC.
290-9671



LOW VOLTAGE AC SCHEMATIC

FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

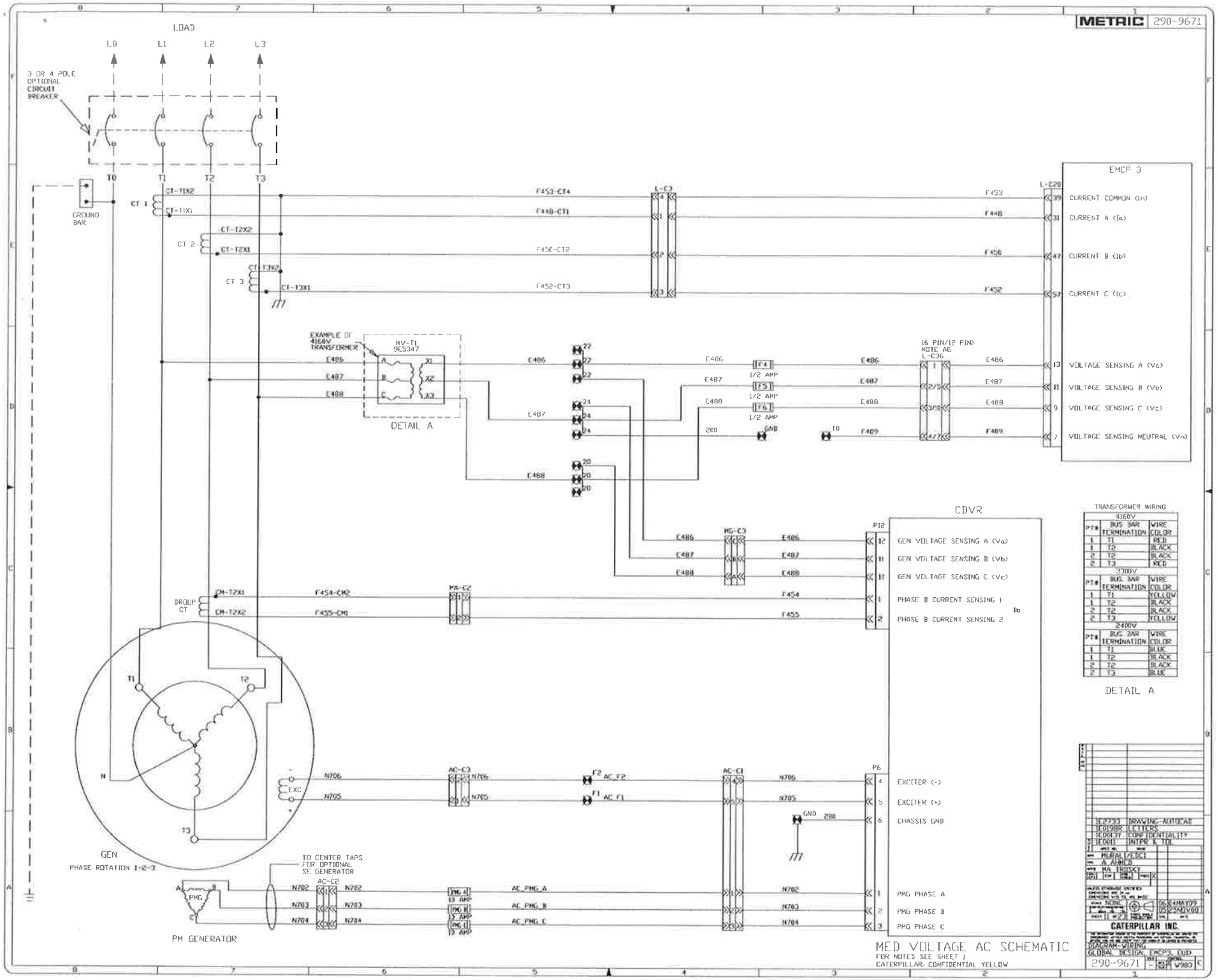
TEMPLATE	DRAWING-AUTOCAD
TOLERANCE	LETTERS
SECURITY	CAT CONFIDENTIALITY
SCHEMATIC	INTPR & TOL
DRAWN	MURALI/CECT
CHECKED	A AHMED
APPROVED	MA TROSKY
SCALE	NONE
SHEET	10 OF 10
REVISION	06JUN09
	052SSDV08

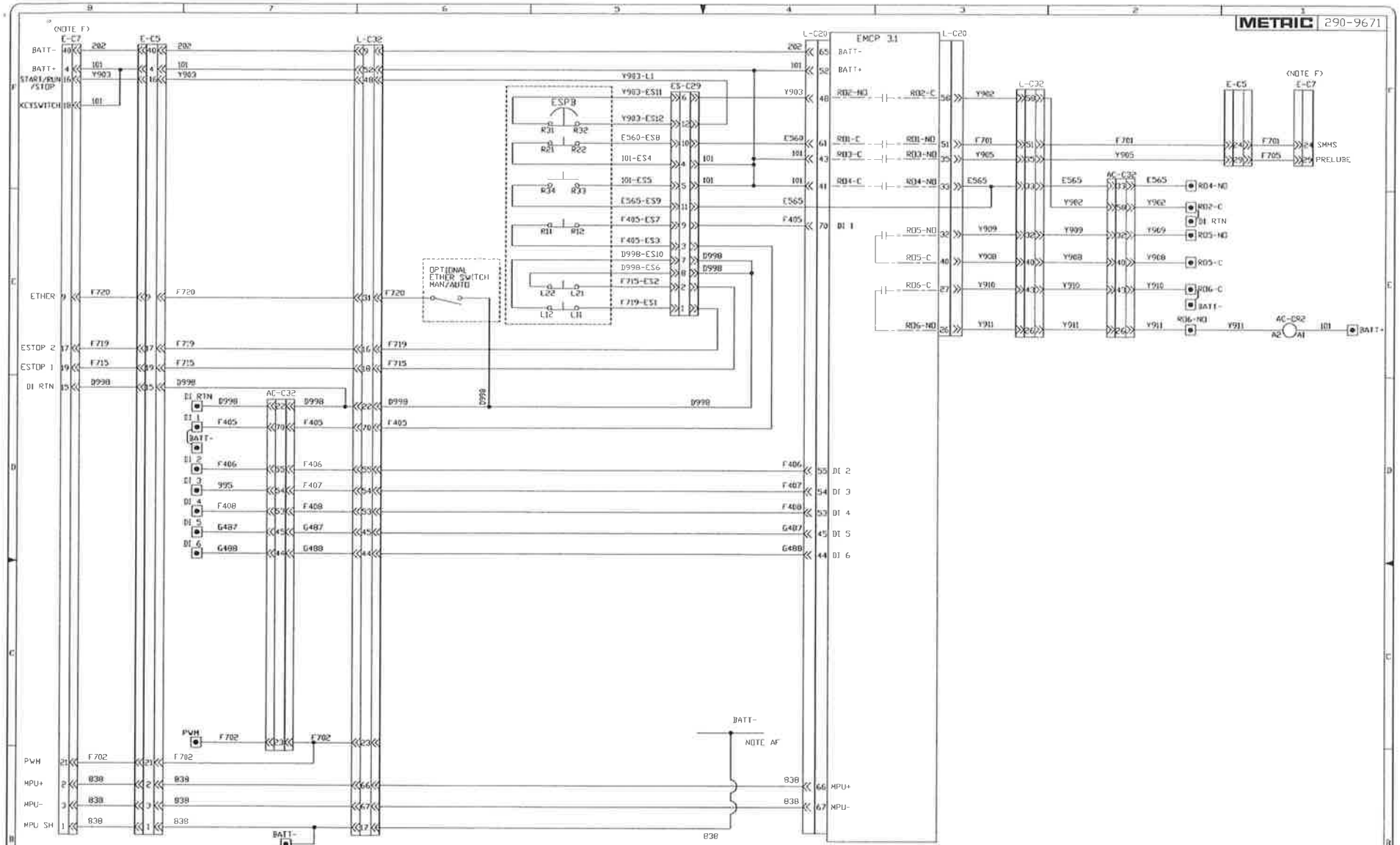
CATERPILLAR INC.

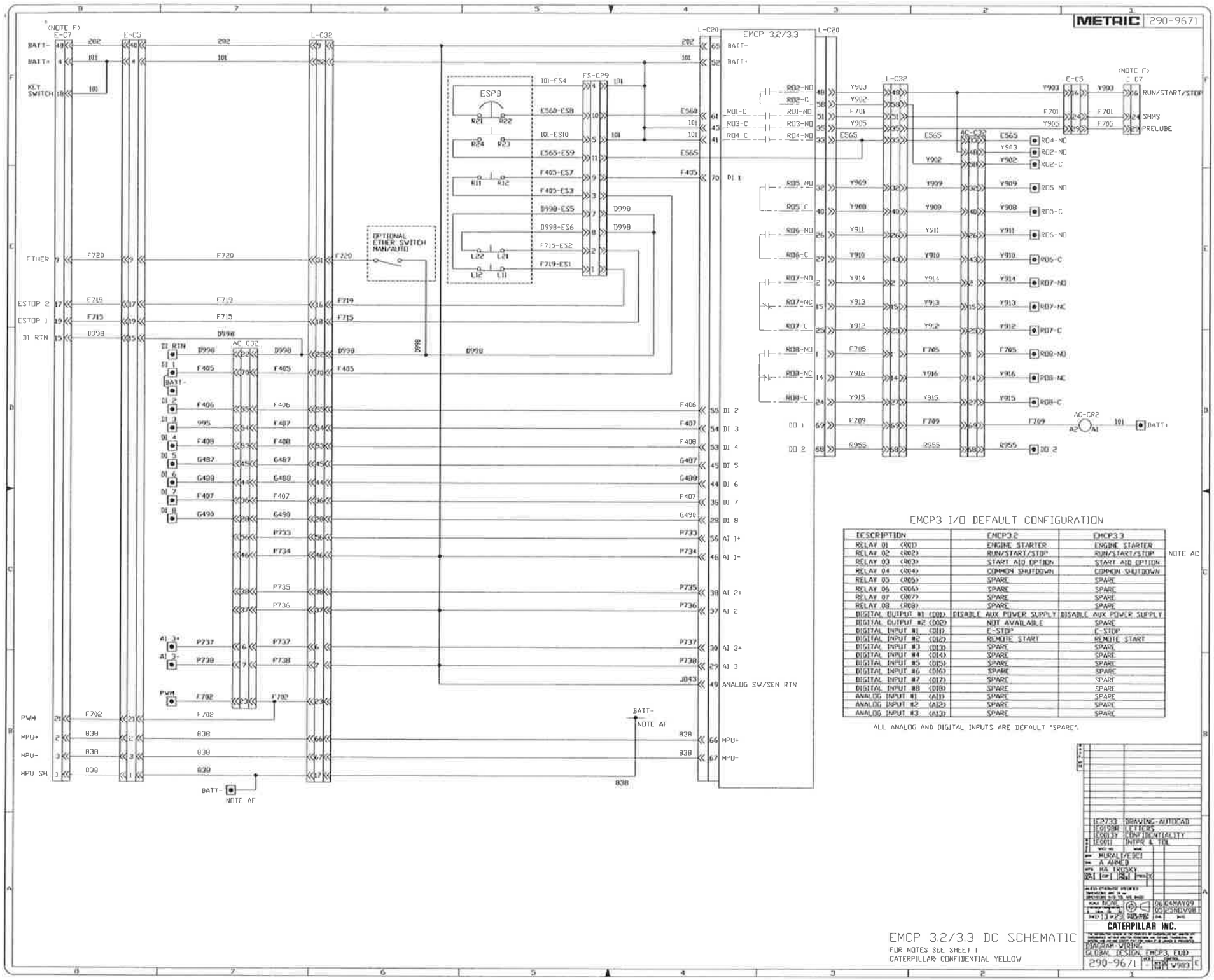
DIAGRAM-WIRING

GLOBAL DESIGN, (MCP2) [10]

290-9671 - V983


METRIC 290-9671
LOAD
L0
L1
L2
L3
3 OR 4 POLE OPTIONAL CIRCUIT BREAKER
T0
T1
T2
T3
GROUND BAR
CT 1
CT 2
CT 3
CT-T1X2
CT-T1X1
CT-T2X2
CT-T2X1
CT-T3X2
CT-T3X1
F453-CT4
F448-CT1
F450-CT2
F452-CT3
L-C3
L-C20
EMCP 3
CURRENT COMMON (In)
CURRENT A (Ia)
CURRENT B (Ib)
CURRENT C (Ic)
VOLTAGE SENSING A (Va)
VOLTAGE SENSING B (Vb)
VOLTAGE SENSING C (Vc)
VOLTAGE SENSING NEUTRAL (Vn)
EXAMPLE OF 4160V TRANSFORMER
HV-T1 9E5347
DETAIL A
E486
E487
E488
F4
F5
F6
1/2 AMP
200
GND
(6 PIN/12 PIN) NOTE AG
L-C36
F453
F448
F450
F452
F409
DROOP CT
CM-T2X1
CM-T2X2
F454-CM2
F455-CM1
MA-C2
MG-C3
CDVR
P12
GEN VOLTAGE SENSING A (Va)
GEN VOLTAGE SENSING B (Vb)
GEN VOLTAGE SENSING C (Vc)
PHASE B CURRENT SENSING 1
PHASE B CURRENT SENSING 2
P6
EXCITER (-)
EXCITER (+)
CHASSIS GND
PMG PHASE A
PMG PHASE B
PMG PHASE C
AC-C3
AC-C1
AC-C2
F2 AC_F2
F1 AC_F1
N706
N705
N702
N703
N704
EXC
GEN
PHASE ROTATION 1-2-3
PMG
PM GENERATOR
TO CENTER TAPS FOR OPTIONAL SE GENERATOR
AC_PMG_A
AC_PMG_B
AC_PMG_C
TRANSFORMER WIRING
4160V
3300V
2400V
PT#
BUS BAR TERMINATION
WIRE COLOR
DETAIL A
MED VOLTAGE AC SCHEMATIC
FOR NOTES SEE SHEET 1
CATERPILLAR CONFIDENTIAL YELLOW
CATERPILLAR INC.
DIAGRAM-WIRING
GLOBAL DESIGN, EMCP3, LUD
290-9671


METRIC 290-9671
EMCP 3.1
L-C20
L-C32
E-C5
E-C7
AC-C32
ES-C29
(NOTE F)
BATT-
BATT+
START/RUN /STOP
KEYSWITCH
ETHER
ESTOP 2
ESTOP 1
DI RTN
PWM
MPU+
MPU-
MPU SH
DI 1
DI 2
DI 3
DI 4
DI 5
DI 6
RO2-NO
RO2-C
RO1-NO
RO1-C
RO3-NO
RO3-C
RO4-NO
RO4-C
RO5-NO
RO5-C
RO6-NO
RO6-C
ESP8
R31
R32
R21
R22
R33
R34
R11
R12
L22
L21
L12
L11
OPTIONAL ETHER SWITCH MAN/AUTO
SMMS
PRELUBE
NOTE AF
NOTE AC
EMCP3 I/O DEFAULT CONFIGURATION
DESCRIPTION | EMCP3.1
RELAY 01 (R01) | ENGINE STARTER
RELAY 02 (R02) | RUN/START/STOP
RELAY 03 (R03) | START AID OPTION
RELAY 04 (R04) | COMMON SHUTDOWN
RELAY 05 (R05) | SPARE
RELAY 06 (R06) | DISABLE AUX AC SUPPLY
RELAY 07 (R07) | NOT AVAILABLE
RELAY 08 (R08) | NOT AVAILABLE
DIGITAL OUTPUT #1 (D01) | NOT AVAILABLE
DIGITAL OUTPUT #2 (D02) | NOT AVAILABLE
DIGITAL INPUT #1 (DI1) | E-STOP
DIGITAL INPUT #2 (DI2) | REMOTE START
DIGITAL INPUT #3 (DI3) | SPARE
DIGITAL INPUT #4 (DI4) | SPARE
DIGITAL INPUT #5 (DI5) | SPARE
DIGITAL INPUT #6 (DI6) | SPARE
DIGITAL INPUT #7 (DI7) | NOT AVAILABLE
DIGITAL INPUT #8 (DI8) | NOT AVAILABLE
ANALOG INPUT #1 (AI1) | SPARE
ANALOG INPUT #2 (AI2) | SPARE
ANALOG INPUT #3 (AI3) | NOT AVAILABLE
EMCP 3.1 DC SCHEMATIC
FOR NOTES SEE SHEET 1
CATERPILLAR CONFIDENTIAL YELLOW
CATERPILLAR INC.
DIAGRAM-WIRING
GLOBAL DESIGN, EMCP3, EU(I)
290-9671
W983

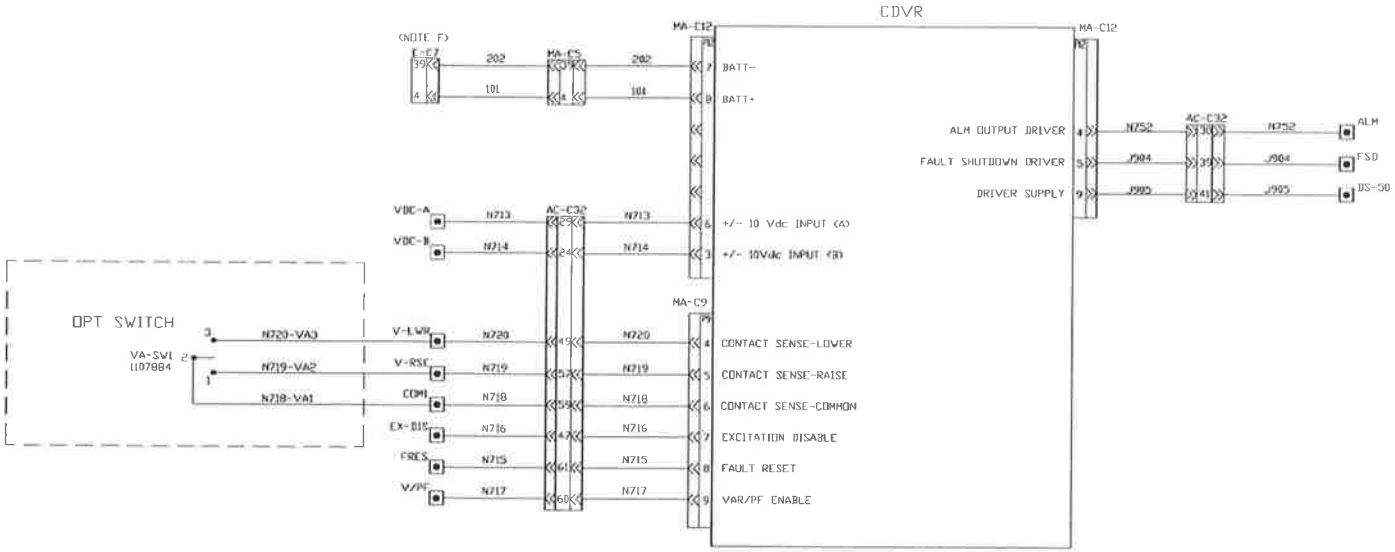


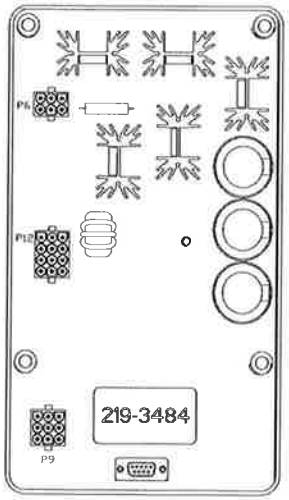
EMCP3 I/O DEFAULT CONFIGURATION

DESCRIPTION	EMCP32	EMCP33
RELAY 01 (R01)	ENGINE STARTER	ENGINE STARTER
RELAY 02 (R02)	RUN/START/STOP	RUN/START/STOP
RELAY 03 (R03)	START AID OPTION	START AID OPTION
RELAY 04 (R04)	COMMON SHUTDOWN	COMMON SHUTDOWN
RELAY 05 (R05)	SPARE	SPARE
RELAY 06 (R06)	SPARE	SPARE
RELAY 07 (R07)	SPARE	SPARE
RELAY 08 (R08)	SPARE	SPARE
DIGITAL OUTPUT #1 (D01)	DISABLE AUX POWER SUPPLY	DISABLE AUX POWER SUPPLY
DIGITAL OUTPUT #2 (D02)	NOT AVAILABLE	SPARE
DIGITAL INPUT #1 (DI1)	E-STOP	E-STOP
DIGITAL INPUT #2 (DI2)	REMOTE START	REMOTE START
DIGITAL INPUT #3 (DI3)	SPARE	SPARE
DIGITAL INPUT #4 (DI4)	SPARE	SPARE
DIGITAL INPUT #5 (DI5)	SPARE	SPARE
DIGITAL INPUT #6 (DI6)	SPARE	SPARE
DIGITAL INPUT #7 (DI7)	SPARE	SPARE
DIGITAL INPUT #8 (DI8)	SPARE	SPARE
ANALOG INPUT #1 (AI1)	SPARE	SPARE
ANALOG INPUT #2 (AI2)	SPARE	SPARE
ANALOG INPUT #3 (AI3)	SPARE	SPARE

NOTE AC

ALL ANALOG AND DIGITAL INPUTS ARE DEFAULT "SPARE".





CDVR

CONNECTOR "P6"

CONNECTOR "P12"

CONNECTOR "P9"

CDVR DC SCHEMATIC

FOR NOTES SEE SHEET1

CATERPILLAR CONFIDENTIAL YELLOW

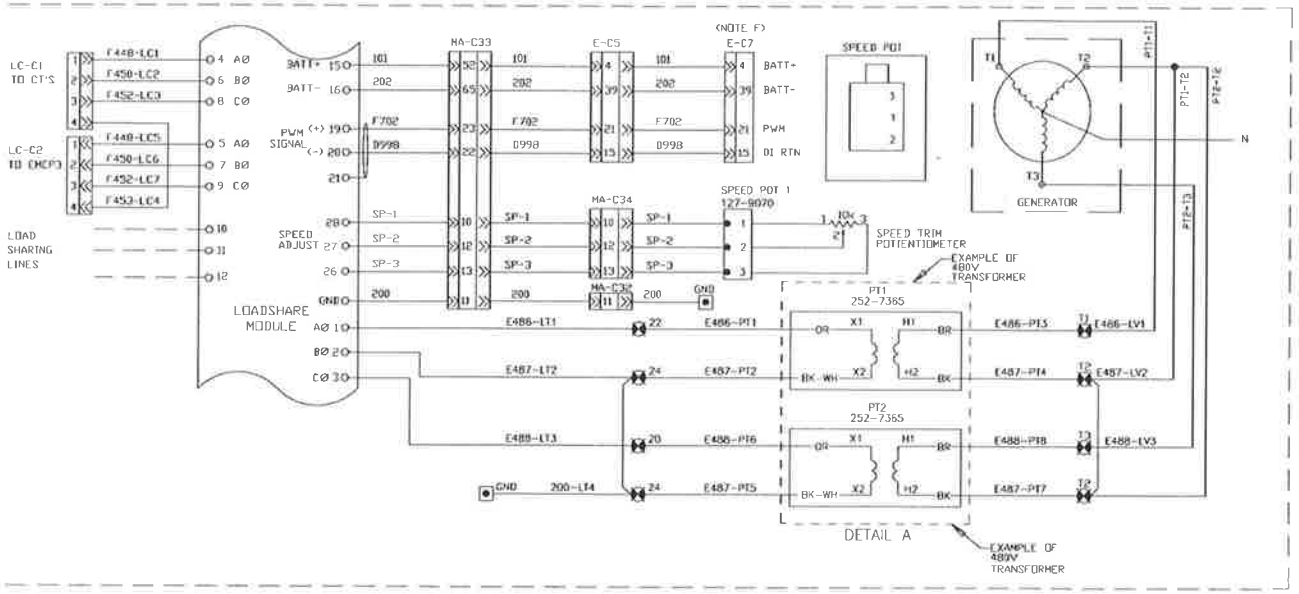
CATERPILLAR INC.

290-9671

FOR LOW VOLTAGE OPTION

TRANSFORMER WIRING				
PRIMARY			SECONDARY	
480V			240V	
PT#	TERMINAL LANDING	WIRE COLOR	TERMINAL LANDING	WIRE COLOR
1	T8-11	RED	T8-22	ORANGE
1	T8-12	BLACK	T8-24	BLK/WHT
2	T8-12	BLACK	T8-24	BLK/WHT
2	T8-13	RED	T8-20	ORANGE
480V			240V	
PT#	TERMINAL LANDING	WIRE COLOR	TERMINAL LANDING	WIRE COLOR
1	T8-11	BROWN	T8-22	ORANGE
1	T8-12	BLACK	T8-24	BLK/WHT
2	T8-12	BLACK	T8-24	BLK/WHT
2	T8-13	BROWN	T8-20	ORANGE
380V			240V	
PT#	TERMINAL LANDING	WIRE COLOR	TERMINAL LANDING	WIRE COLOR
1	T8-11	GREEN	T8-22	ORANGE
1	T8-12	BLACK	T8-24	BLK/WHT
2	T8-12	BLACK	T8-24	BLK/WHT
2	T8-13	GREEN	T8-20	ORANGE
240V			240V	
PT#	TERMINAL LANDING	WIRE COLOR	TERMINAL LANDING	WIRE COLOR
1	T8-11	WHITE	T8-22	ORANGE
1	T8-12	BLACK	T8-24	BLK/WHT
2	T8-12	BLACK	T8-24	BLK/WHT
2	T8-13	WHITE	T8-20	ORANGE

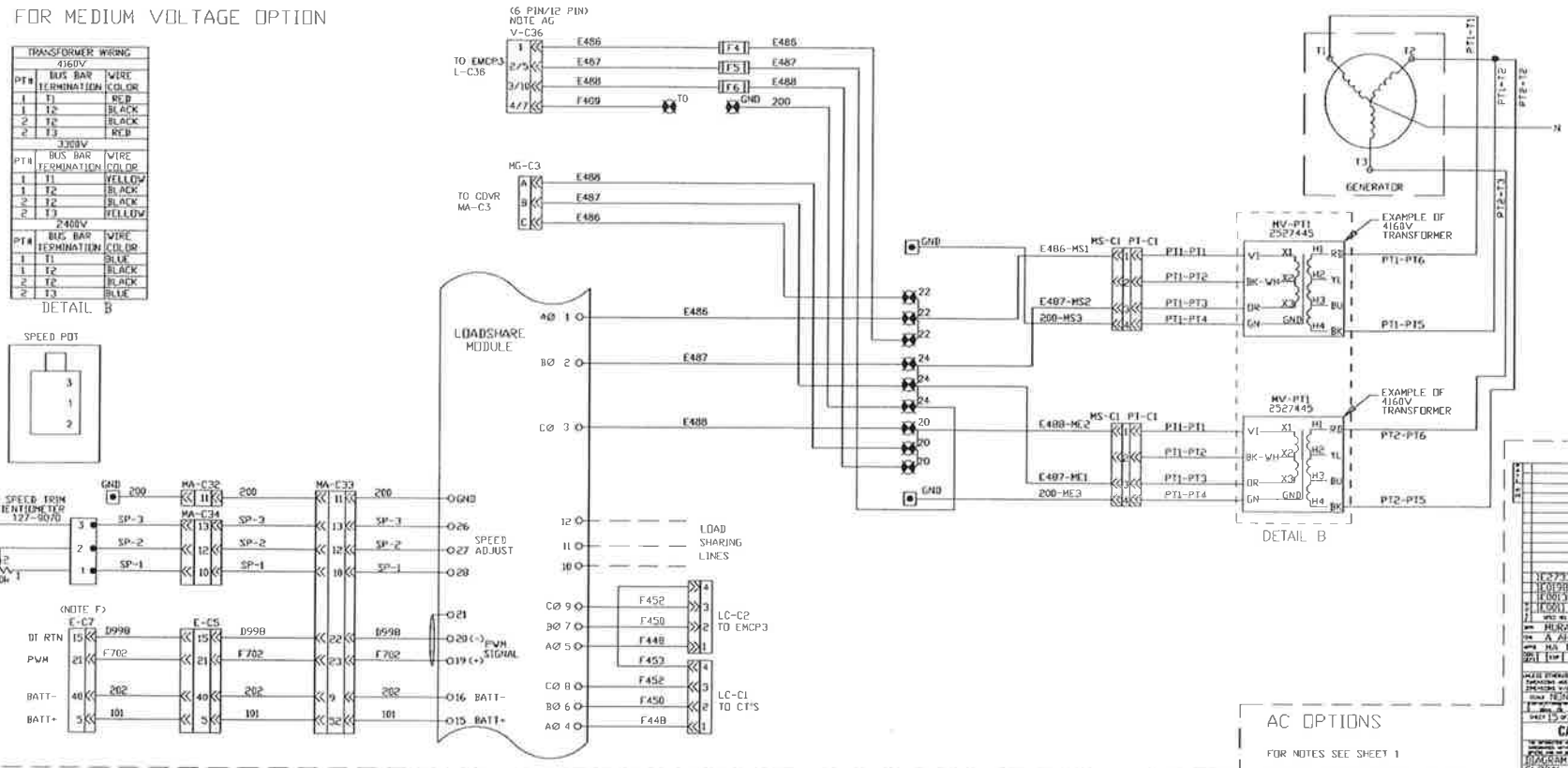
DETAIL A



FOR MEDIUM VOLTAGE OPTION

TRANSFORMER WIRING		
4160V		
PT#	BUS BAR TERMINATION	WIRE COLOR
1	T1	RED
1	T2	BLACK
2	T2	BLACK
2	T3	RED
3300V		
PT#	BUS BAR TERMINATION	WIRE COLOR
1	T1	YELLOW
1	T2	BLACK
2	T2	BLACK
2	T3	YELLOW
2400V		
PT#	BUS BAR TERMINATION	WIRE COLOR
1	T1	BLUE
1	T2	BLACK
2	T2	BLACK
2	T3	BLUE

DETAIL B



AC OPTIONS

FOR NOTES SEE SHEET 1

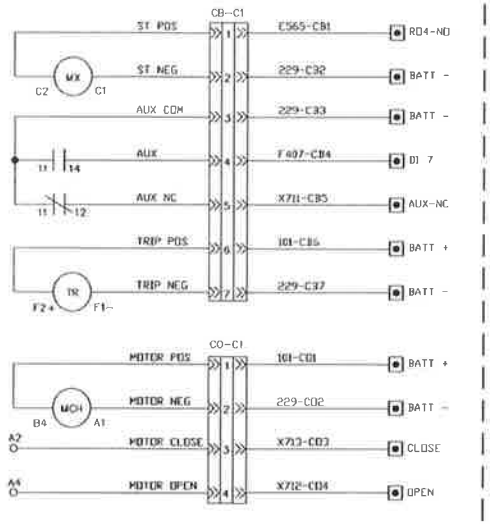
CATERPILLAR CONFIDENTIAL YELLOW

SCALE	DRAWING-AUTOCAD
DO NOT SCALE	UNITS
SECURITY	CONFIDENTIALITY
TOOL	INTER. & TOL
DRN	MURAL/ACT
CH	A AHMED
APP	MA TROSKY
DATE	06JAN09
DATE	05JAN09

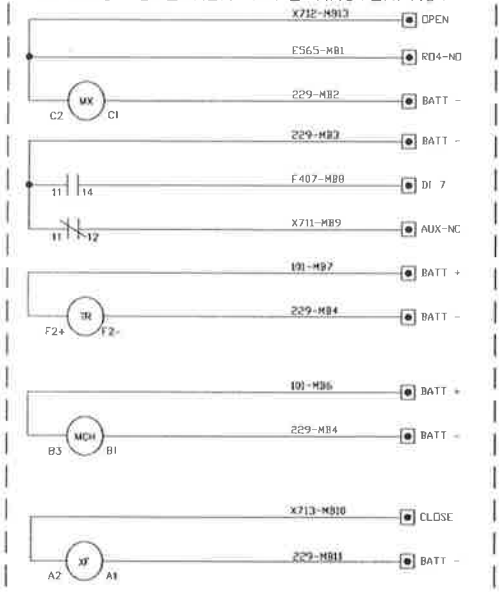
CATERPILLAR INC.

DIAGRAM-WIRING
GLOBAL INCISION EMCP3 LHD
290-9671 - REV V983

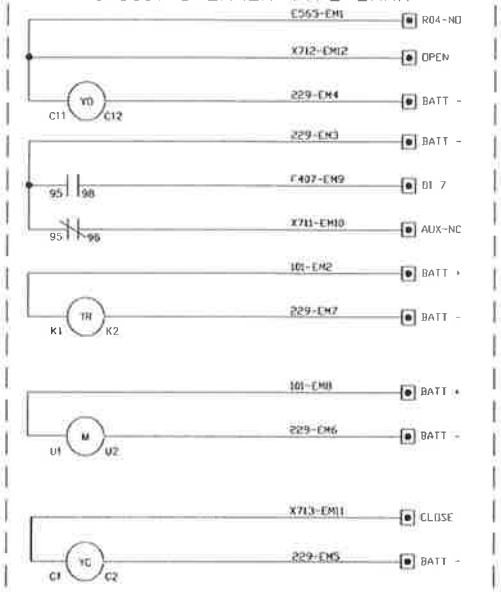
CIRCUIT BREAKER TYPE NSJ, P, AND R



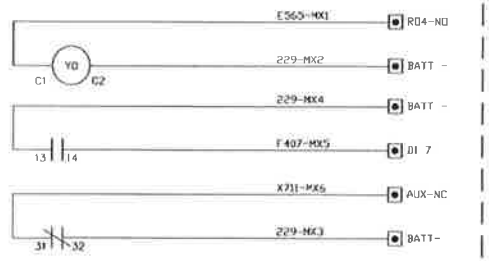
CIRCUIT BREAKER TYPE MASTERPACT



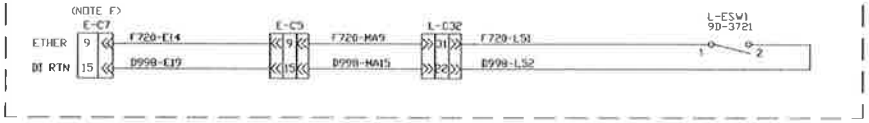
CIRCUIT BREAKER TYPE EMAX



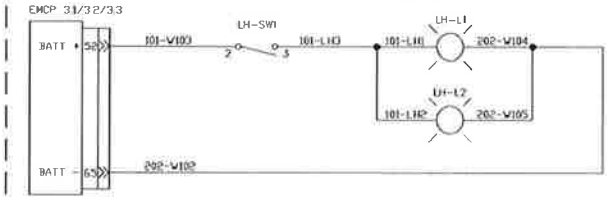
CIRCUIT BREAKER TYPE S8 ISOMAX



ETHER SWITCH



LIGHTING GP



DC OPTIONS

FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

IE2733 DRAWING-AUTOCAD
E01980 LETTERS
E09011 CAT DYNAMIC
E3901 UNITS & TOL

MURAL/ERIC
A. AHMED
MS TROSKY

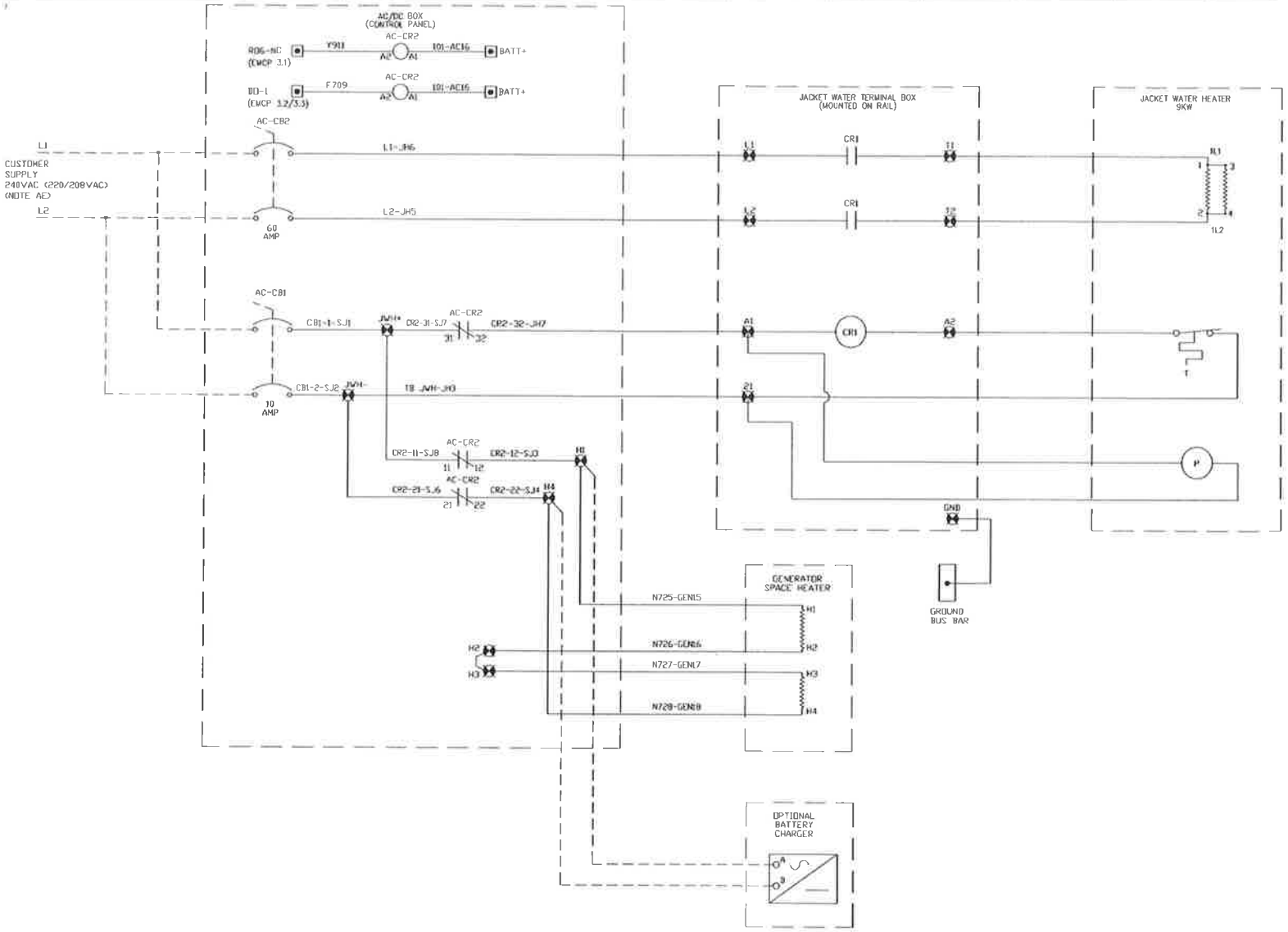
NONE
SHEET 15 OF 23

06JAN09
05JUN98

CATERPILLAR INC.

DIAGRAM-WIRING
GLOBAL DESIGN, ENCPS, EUD
290-9671 - V983

METRIC 290-9671



AC OPTIONS - SHORE POWER 240VAC (208/220VAC) JACKET WATER HEATER & SPACE HEATER

(5 WIRE JWH HARNESS)

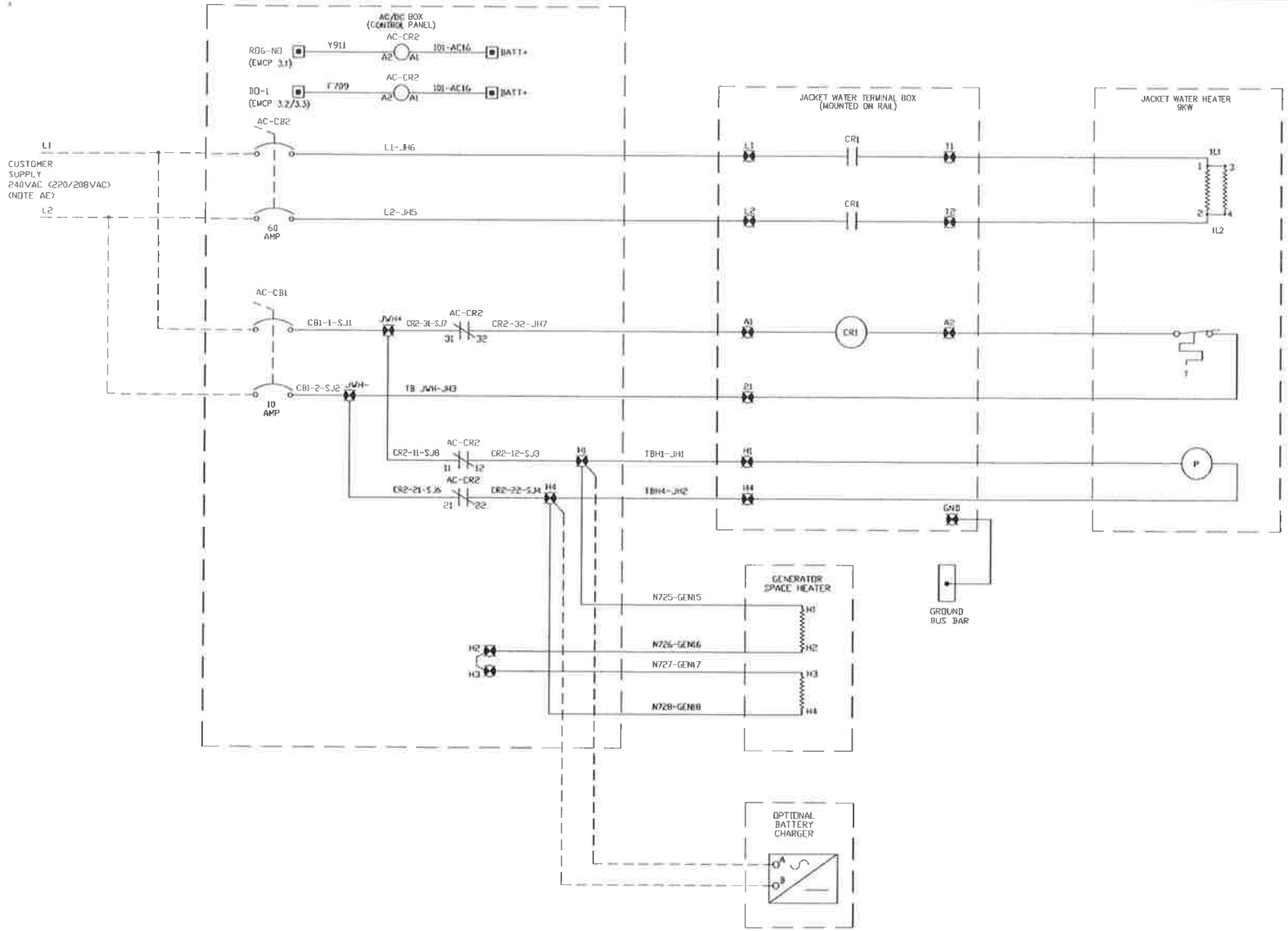
FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

CATERPILLAR INC.

DIAGRAM-WIRING

290-9671



AC OPTIONS - SHORE POWER 240VAC (208/220VAC) JACKET WATER HEATER & SPACE HEATER

(7 WIRE JWH HARNESS)

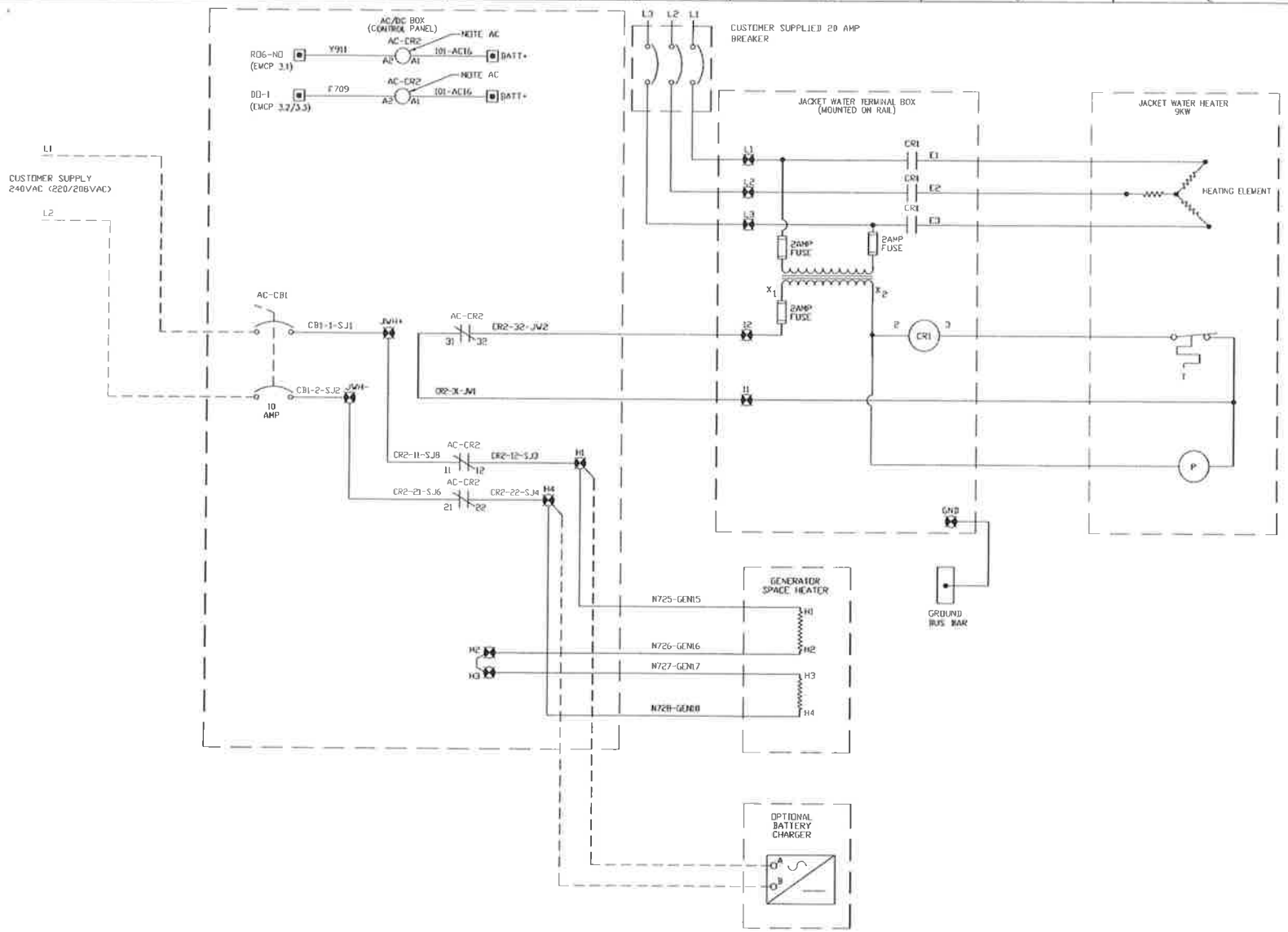
FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

HE2733	DRAWING-AUTOCAD
E01982	LETTERS
E00137	CONFIDENTIALITY
E0001	TAITPE & TIE

CATERPILLAR INC.

290-9671



AC OPTIONS - SHORE POWER (480V JACKET WATER HEATER & SPACE HEATER)

FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

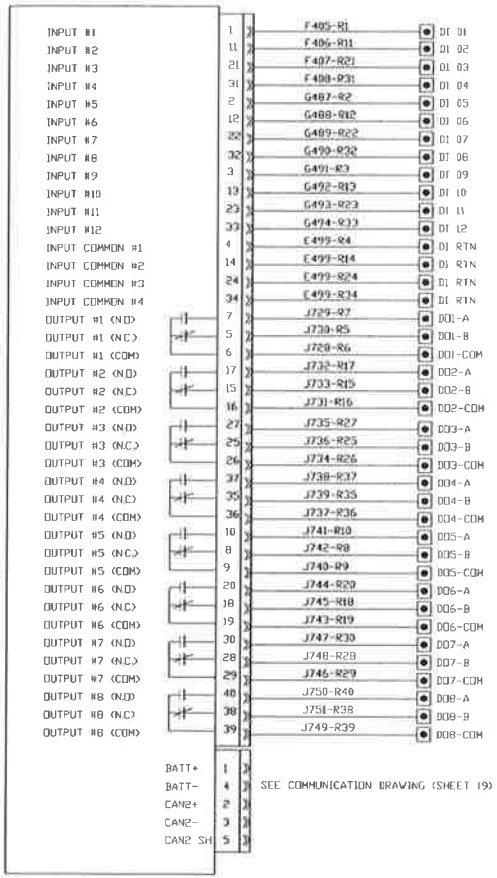
IE2733	DRAWING-AUTOCAD
IE0198	LETTERS
IE0039	CONFIDENTIALITY
IE001	INTRO & TOL

CATERPILLAR INC.

290-9671

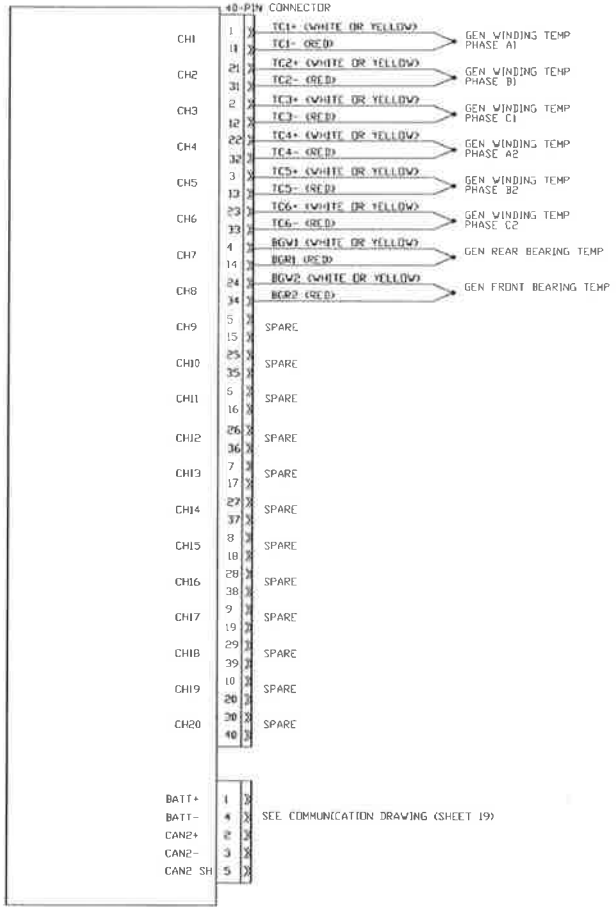
DIGITAL I/O MODULE (FOR USE WITH EMCP3.3)

(P#234-0275)



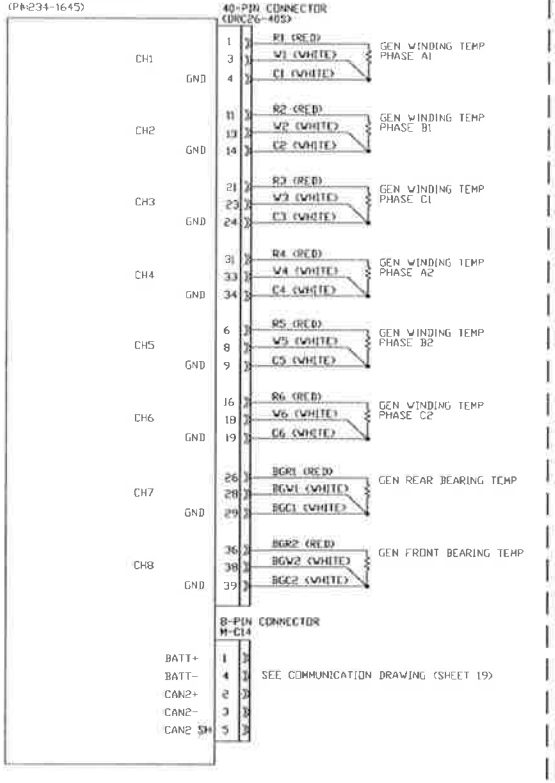
THERMOCOUPLE MODULE

(P#234-1644)



RTD MODULE

(P#234-1645)



DC OPTIONS
EXPANSION I/O MODULES

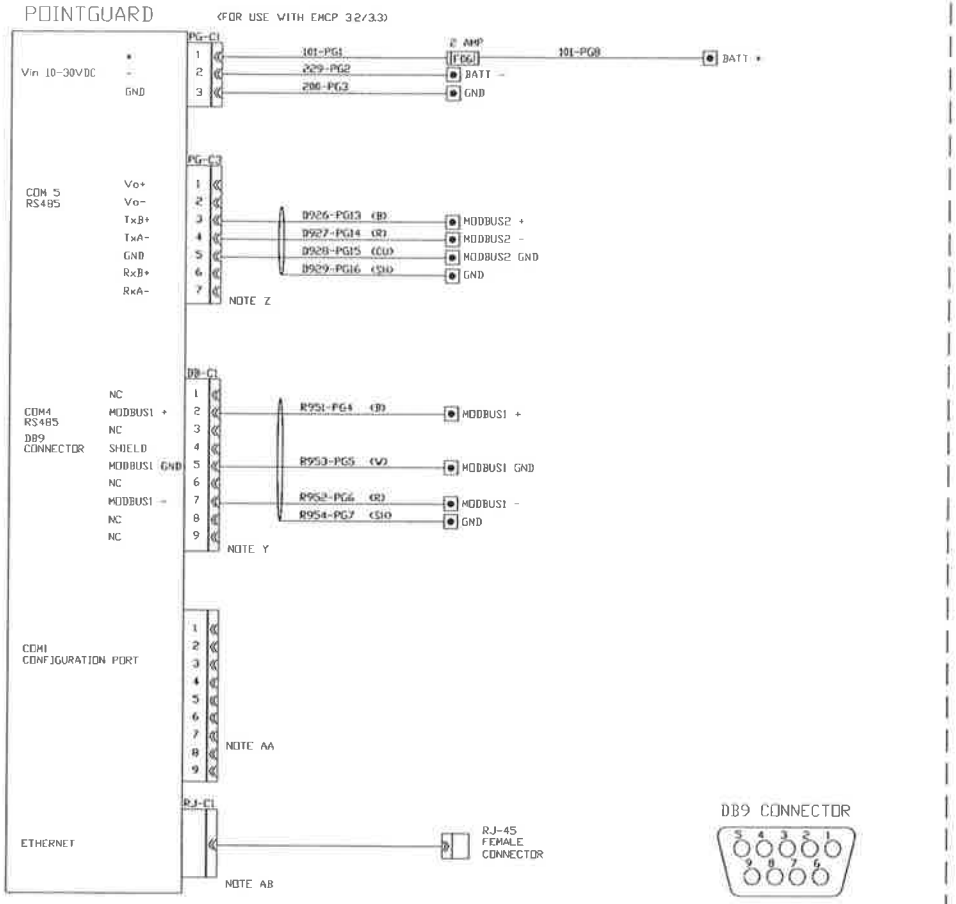
FOR NOTES SEE SHEET 1

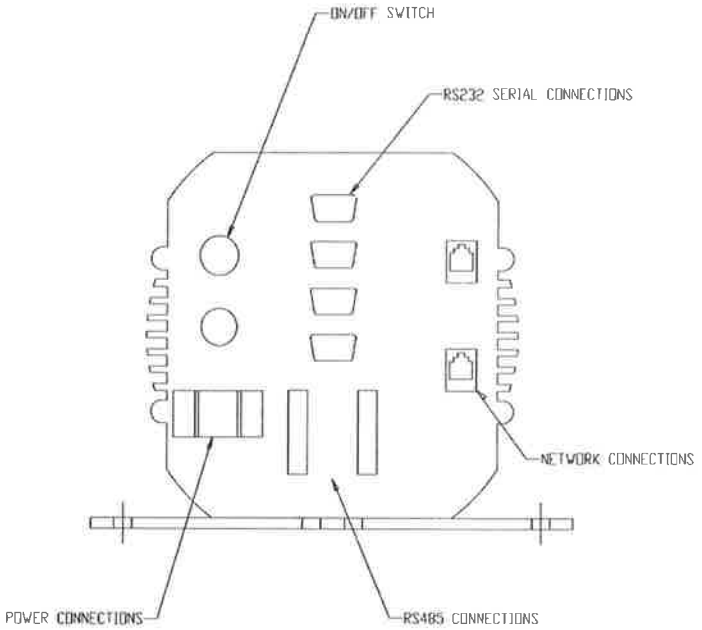
CATERPILLAR: CONFIDENTIAL YELLOW

CATERPILLAR INC.

DIAGRAM-WIRING

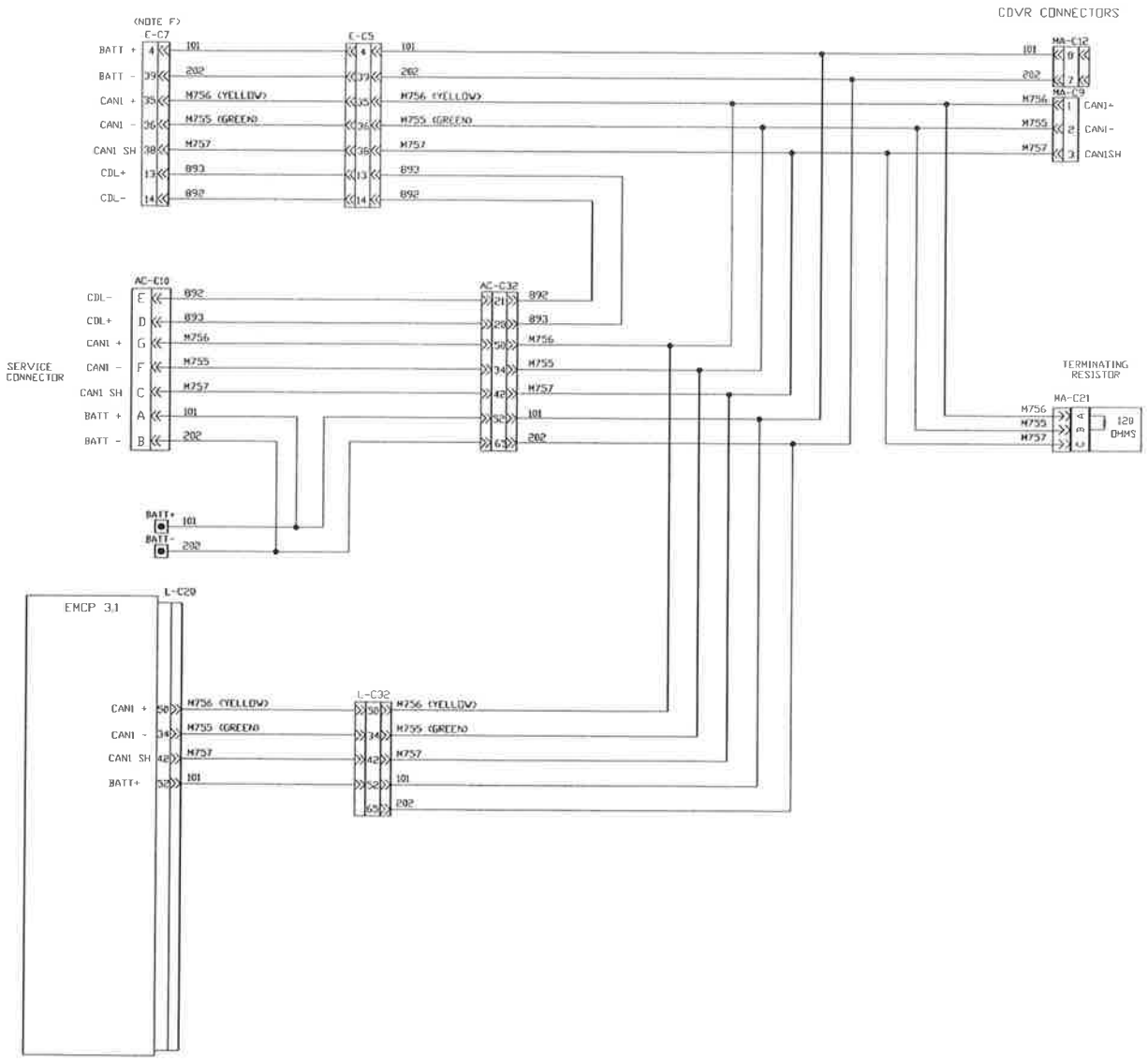
290-9671





DC OPTIONS
POINTGUARD
FOR NOTES SEE SHEET 1
CATERPILLAR CONFIDENTIAL YELLOW

CATERPILLAR INC.
290-9671



EMCP 3.1 COMMUNICATIONS

FOR NOTES SEE SHEET 1

CATERPILLAR CONFIDENTIAL YELLOW

IE2733	DRAWING-AUTOCAD
E01702	LETTERS
E0031T	CONFIDENTIALITY
E0001	INTPK & TOL

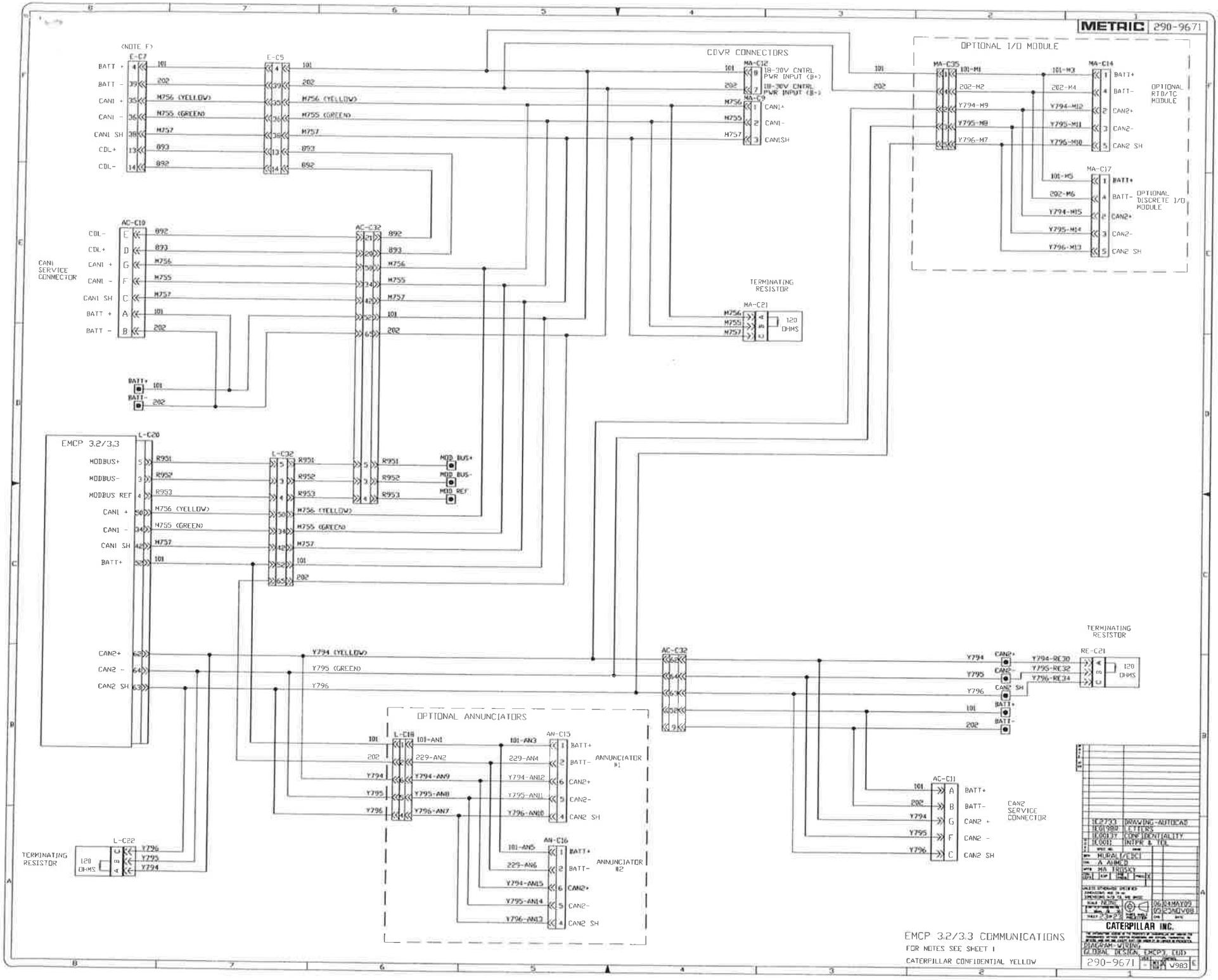
MURAL/ESC
A AHMED
MA TRUSKY

06JAN07
05SEP06

CATERPILLAR INC.

DIAGRAM-WIRING
GLOBAL DESIGN, EMCP3, EUI

290-9671 — SHEET — SERIAL NUMBER V983 — E


METRIC 290-9671
(NOTE F)
E-C7
E-C5
BATT +
BATT -
CANI +
CANI -
CANI SH
CDL+
CDL-
M756 (YELLOW)
M755 (GREEN)
M757
893
892
101
202
CDVR CONNECTORS
MA-C12
18-30V CNTRL PWR INPUT (B+)
18-30V CNTRL PWR INPUT (B-)
MA-C9
CAN1+
CAN1-
CAN1SH
OPTIONAL I/O MODULE
MA-C35
MA-C14
MA-C17
OPTIONAL RTB/TC MODULE
OPTIONAL DISCRETE I/O MODULE
CANI SERVICE CONNECTOR
AC-C10
AC-C32
TERMINATING RESISTOR
MA-C21
120 OHMS
EMCP 3.2/3.3
L-C20
L-C32
MODBUS+
MODBUS-
MODBUS REF
R951
R952
R953
MOD BUS+
MOD BUS-
MOD REF
Y794 (YELLOW)
Y795 (GREEN)
Y796
CAN2+
CAN2 -
CAN2 SH
OPTIONAL ANNUNCIATORS
L-C18
AN-C15
AN-C16
ANNUNCIATOR #1
ANNUNCIATOR #2
TERMINATING RESISTOR
L-C22
RE-C21
AC-C11
CAN2 SERVICE CONNECTOR
CATERPILLAR INC.
EMCP 3.2/3.3 COMMUNICATIONS
FOR NOTES SEE SHEET 1
CATERPILLAR CONFIDENTIAL YELLOW
290-9671