63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
A0	B0	00	B0	A0	B0	B0	B0	00	A0	A0	A0	B0	A0	B0	B0	00	0C	B0	A0	B0	B0	A0	B0	A0	B0	B0	B0	B0	B0	00	00	B0	00	00	B0	A0	00	B0	00	00	A0	B0	B0	A0	A0	B0	A0	B0	00	00	B0	B0	00	00	B0	B0	B0	A0	B0	B0	B0	10

SHEET

REV

THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO SOLAR TURBINES INCORPORATED.

REVISIONS

REV	DESCRIPTION		DATE	APPROVED
00	SOURCE COMPOSITE = 149480_33			
A0	INITIAL SUBMITTAL	ERLC	07-07 1999	U.B.
B0	AS SHIPPED	ERLC	12-10 1999	U.B.

LEGEND (REFERENCE DESIGNATOR SYMBOLS)

CABLE (W)

CAPACITOR (C)

CIRCUIT BREAKER (CB)

CIRCUIT CONTINUATION

SHOWS ALL SHEETS/ZONES WHICH CONTAIN CIRCUIT NUMBER 24V1 (TOP NUMBER) — 24V1 / 24V1 — 9/C5, 27/B6 + DC POWER (SHEET 9/ZONE C5, SHEET 27/ZONE B6)

CIRCUIT CONTINUED ON SAME SHEET — 0V4 — - DC POWER

CONTACTS — NORMALLY CLOSED; NORMALLY OPEN

CONTROL DEVICES (Z, G, ETC...) — TERMINAL 4; CONNECTOR PIN 4

DIODES (CR)

SUPPRESSOR, OR BLOCKING

BLOCKING DIODES CONTAINED IN TERMINAL STRIP (TS)

ZENER

FUSE (F)

DIN RAIL MOUNTED

GROUNDING

PHYSICAL EARTH (PE) GROUND, OR INSTRUMENT EARTH (IE) GROUND — PEXXX-X OR IEXXX-X

FRAME GROUND (FG) (CHASSIS OR PANEL) — FGXXX-X

INTRINSICALLY SAFE (IS) GROUND — 16 ISXXX-X

DIN RAIL GROUND (RG) — RGXXX-X GRN/YEL

HEATER (H)

INTRINSIC SAFETY BARRIER — 3 S/PA; 1 PA/4; 4; 2

LIGHT (DS)
A = AMBER
G = GREEN
R = RED
W = WHITE

PLC MODULE (ZZ)
I XX/XX = INPUT ADDRESS
O XX/XX = OUTPUT ADDRESS
NXX XX — 4 I XX/XX

RESISTANCE TEMPERATURE DETECTOR (RT)

RESISTOR (R)

VARIABLE RESISTOR (R)

SHIELDS

SINGLE CONDUCTOR SHIELDED

TWO CONDUCTOR TWISTED PAIR SHIELDED

THREE CONDUCTOR TWISTED TRIAD SHIELDED

SOLENOID (L)

SWITCHES (S)

PUSH BUTTON (MOMENTARY) — (NC); (NO)

PUSH BUTTON (MAINTAINED) — (NC); (NO)

SELECTOR SWITCH CONTINUITY IN (ON) POSITION — OFF, ON, X

MOMENTARY SPRING RETURN TO CENTER — OFF SR, OFF, ON SR, X

FLOW — (NO); (NC)

LIMIT — (NO); (NC)

LIQUID LEVEL — (NO); (NC)

PRESSURE — (NO); (NC)

TEMPERATURE — (NO); (NC)

PLC DISPLAY — (NO); (NC)

TERMINAL STRIP (TS)
TERMINAL STRIP, TS322 POSITION 5 — TS322-5

THERMOCOUPLE (TC) — YEL CR; RED AL

TRANSFORMER, CURRENT (CT)
PRIMARY POLARITY MARK
SECONDARY POLARITY MARK

RELAYS (K)

COIL, OPERATING — K

COIL, OPERATING DIODE SUPPRESSED — K

COILS, OPERATING MECHANICAL LATCH — KL; LATCH B A; UNLATCH 8 5

COIL, OPERATING, TIMER

TIME DELAY ON DROPOUT — POWER SIGNAL 8 A KD B

TIME DELAY ON PICKUP — POWER AND SIGNAL A KP B

NOTES:

1. AC AND DC ELECTRICAL COMPONENTS ARE SHOWN IN THE DE-ENERGIZED POSITIONS, ALL POWER OFF (SHELF STATUS).

2. SOLAR BRANDED WIRE NUMBERS ARE IN DEDICATED GROUPS. PRIMARY REFERENCE IS THE CONTROL CONSOLE TERMINAL STRIP, EXAMPLE: TS213-12 = CIRCUIT NUMBER 21312 WHICH IS BRANDED ON THE WIRE TERMINATED AT THAT LOCATION AND CONTINUES TO AN END FUNCTIONAL DEVICE. WIRES CONNECTED BETWEEN FUNCTIONAL DEVICES SUCH AS RELAY TO RELAY, OR RELAY TO MOTOR, ARE GIVEN 3 OR 4 DIGIT NUMBERS WHICH ARE ARBITRARY AND ARE NOT RELATED TO TERMINATION POINTS.

3. NOTE NOT USED.

4. WIRE SHIELDING GROUNDS ARE PER SOLAR SPEC. 9-83 & 9-88. SHIELD CONTINUITY MUST BE MAINTAINED FOR TOTAL LENGTH OF SHIELD AND GROUNDED AT ONE POINT ONLY.

5. INPUT VOLTAGES SHOWN REPRESENT NOMINAL VALUES. PLUS OR MINUS TEN PERCENT VARIATION FROM THE VALUES SHOWN IS ACCEPTABLE.

6. RELAY SUPPRESSION DIODES AND TERMINAL STRIPS ARE NOT LISTED IN THE REFERENCE DESIGNATOR INDEX.

7. SEE SHEET: 17,18,19,31,37,38,39,41,42,50,53,54,56
CUSTOMER FURNISHED.

8. SEE SHEET: 11,12,20,42,51
SOLAR FURNISHED, LOOSE SHIPPED, FOR SITE INSTALLATION BY OTHERS, UNLESS OTHERWISE NOTED.

9. NOTE NOT USED.

10. NOTE NOT USED.

11. SEE SHEET: 38,39
YARD VALVE POSITION LIMIT SWITCHES ARE SHOWN IN THE NON-OPERATED POSITION (VALVES IN TRANSIT). SWITCHES CLOSE WHEN LIMIT IS REACHED.

12. NOTE NOT USED.

13. SEE SHEET: 31,54
CONTACTS TRANSFER UPON APPLICATION OF POWER/LOCAL RESET SIGNAL.

14. NOTE NOT USED.

15. SEE SHEET: 31,33,34,35
INTRINSICALLY SAFE (IS) CIRCUITS MUST BE ISOLATED FROM NON-IS CIRCUITS. INTRINSICALLY SAFE CIRCUITS ARE LIGHT BLUE WIRES, LIGHT BLUE SLEEVED WIRES, OR LOCATED INSIDE LIGHT BLUE WIRE DUCT.

16. SEE SHEET: 11
THE INTRINSICALLY SAFE (IS) GROUND CIRCUIT MUST BE DEDICATED AND NOT EXCEED 1 OHM IN RESISTANCE.

17. SEE SHEET: 18,19
REMOVE PURPLE JUMPER WHEN INSTALLING DEVICE. 16 GAGE PURPLE JUMPERS LABELED 'Jnn' ARE USED TO CONNECT TWO DIFFERENT CIRCUIT NUMBERS. PURPLE JUMPERS ARE INSTALLED IN PLACE OF COMPONENTS WHICH ARE TO BE FIELD INSTALLED. INPUT CONTACTS TO THE MALFUNCTION ANNUNCIATOR ARE CLOSED FOR NORMAL OPERATION, AND OPEN ON FAULT. UNUSED CONTACTS ARE JUMPERED TO A +24V DC. REMOVE JUMPER WHEN ANNUNCIATION IS USED.

18. NOTE NOT USED.

19. NOTE NOT USED.

20. NOTE NOT USED.

21. SEE SHEET: 33
BN2201 VIBRATION SYSTEM MONITOR - REMOVE JUMPER W1 (ONE SLOT PC ADDRESSING - DOUBLE DENSITY).

22. NOTE NOT USED.

23. NOTE NOT USED.

24. SEE SHEET: 11
INSTALL 150 OHM, 1/4 WATT, 5% CARBON RESISTOR, AT BOTH ENDS OF EACH CHANNEL NETWORK.

25. SEE SHEET: 50,53,54,56
TYPICAL CONNECTIONS SHOWN.
SEE MOTOR CONTROL CENTER (MCC) DRAWING FOR SPECIFIC STARTER CONNECTION INFORMATION.

26. NOTE NOT USED.

27. SEE SHEET: 50,54,56
SEE MOTOR NAMEPLATE FOR CONNECTION INFORMATION.

28. NOTE NOT USED.

29. SEE SHEET: 31
THE ENGINE SPEED MAY BE REMOTELY (EXTERNALLY) CONTROLLED BY MEANS OF A 4-20 MA ANALOG SIGNAL.

30. NOTE NOT USED.

31. NOTE NOT USED.

32. NOTE NOT USED.

33. NOTE NOT USED.

34. SEE SHEET: 51
MAY BE FIELD MOUNTED IN BC501.

35. SEE SHEET: 12
SOLAR FURNISHED CHARGERS ARE NORMALLY PRE-ADJUSTED TO THESE VALUES. FOR NICAD OR VRLA (SEALED) CELLS, ADJUST CHARGER TO SET POINTS NOTED.

36. SEE SHEET: 12
IF BATTERY EXCEEDS 16/25 FEET FROM CHARGER, REMOVE JUMPERS AT TB511/TB521 TERMINALS 2-3 AND 5-6. INSTALL ADDITIONAL CABLE FROM BATTERY (+) TO TB5XX-3 AND FROM BATTERY (-) TO TB5XX-5. THIS WILL ISOLATE CONTROL CIRCUITS FROM MOTOR LOADS.

37. SEE SHEET: 45
CONTACTS 4 AND 5 TRANSFER TO CLOSED ON POWER UP AND TRANSFER BACK TO OPEN ON TRIP.
CONTACTS 5 AND 6 TRANSFER TO OPEN ON POWER UP AND TRANSFER BACK TO CLOSED ON TRIP.
INSTALL JUMPER J13 ON MONITOR CIRCUIT BOARD.

45. SEE SHEET: 20,21,25,27,28,31,37,41,42,43,44,45,52,55,59
CONNECT FLEX ANALOG INPUT SHIELDS TO SHIELD BUS BAR. ADD 14 AWG GRN/YEL WIRE TO CONNECT SHIELD BUS BAR TO TE200.

46. NOTE NOT USED.

REFERENCE DRAWINGS

PROJECT NUMBER: 57011

SOFTWARE LADDER LOGIC	-149742
ELECTRICAL SCHEMATIC	-149480
WIRING DIAGRAM	-149481
INTERFACE/INTERCONNECT DIAGRAM	-149482
LOGIC DIAGRAM	-149971
MECHANICAL INSTALLATION	-149605

REFERENCE DESIGNATOR LOCATIONS

100 SERIES	FRONT OF CONTROL CONSOLE
200 SERIES	INSIDE CONTROL CONSOLE
300 SERIES	TURBINE PACKAGE SKID
400 SERIES	MOTOR STARTERS IN MOTOR CONTROL CENTER
500 SERIES	OTHER REMOTE LOCATIONS
600 SERIES	SWITCHGEAR
700 SERIES	INLET AIR SYSTEM
800 SERIES	
900 SERIES	RESERVED FOR HYDRO-MECHANICAL DEVICES

CONTROL CONSOLE - EXTERNAL POWER REQUIREMENTS

24	VOLTS DC			35	AMPS
	VOLTS DC				AMPS
	VOLTS AC	HZ	PH		AMPS
	VOLTS AC	HZ	PH		AMPS

TRANSPORTADORA DE GAS DEL NORTE S.A.

TGN
LA CARLOTA COMPRESSOR STATION

☒ SUBMITTED FOR REVIEW — DATE 07-07-99
☐ CERTIFIED AS NOTED WITH — DATE
☒ CERTIFIED FOR CONSTRUCTION — DATE 12-10-99

SYMBOLS
2 INDICATES REFERENCE TO NOTE
A DENOTES REVISION

FSCM NO. 66195

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APPROVED	DATE
PROJECT J. MISIOWIEC	07-07-99
DESIGN U. BALESTRINI	07-07-99
CHECK S. SHELDON	07-07-99
DRAFT D. JORDE	07-07-99

SOLAR PROJECT ITEM NO. 2-57011

CUSTOMER IDENT. NO.

CUSTOMER SEE ABOVE

DRAWING TITLE
TAURUS 70 COMPRESSOR ELECTRICAL SCHEMATIC

Solar Turbines
A Caterpillar Company

DRAWING NO. 57011-149480

REV B0

SHEET 1 OF 63