ONE LINE SYMBOLS

LOW VOLTAGE FIXED CIRCUIT BREAKER

LOW AND MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER

DRAWOUT FUSED VOLTAGE TRANSFORMER (PT, VT)

DISCONNECT SWITCH

LOW VOLTAGE FUSED SWITCH

MEDIUM VOLTAGE FUSED SWITCH

FUSE

REACTOR

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT

MULTI-CELL BATTERY

THERMAL OVERLOAD

GROUND CONNECTION

RESISTANCE GROUND

STAB

DELTA

WYE

DELTA-Y CONNECTION

Y-DELTA CONNECTION

BROKEN DELTA CONNECTION

GROUNDED NEUTRAL Y CONNECTION

GROUNDED OPEN DELTA CONNECTION

MEDIUM VOLTAGE CABLE TERMINATION

RTD — RESISTANCE TEMPERATURE DEVICE

TC — THERMOCOUPLE

HP — MOTOR (HP OR kW)

RES — RESISTOR

** — EQUIP LOAD (kW OR kVA)

GENERATOR

GENERATOR

GENERATOR NEUTRAL

M — MOTOR OPERATED DISCONNECT SWITCH

SURGE ARRESTER (SA)

SURGE ARRESTER (SA)

MEDIUM VOLTAGE VACUUM STARTER OR CONTACTOR

TERMINAL POINT FOR FIELD CONNECTIONS

7A — FVNR-1 — 7A MCP

OVERLOAD RELAY W/HEATER ELEMENT

TYPICAL 480V MCC FVNR STARTER WITH MAGNETIC ONLY MOTOR CIRCUIT PROTECTOR (MCP)

NEMA SIZE 1 STARTER

70A

TYPICAL 480V MCC THERMAL MAGNETIC (TM) FEEDER BREAKER 70A THERMAL MAGNETIC BREAKER TRIP SETTING

15A — FVC-1

TYPICAL 480V MCC CONTACTOR (FVC) WITH THERMAL MAGNETIC FEEDER BREAKER

NEMA SIZE 1 CONTACTOR

15A THERMAL MAGNETIC BREAKER TRIP SETTING

HIGH VOLTAGE CIRCUIT BREAKER

DP — DISTRIBUTION PANEL

CP — CONTROL PANEL

SST — SOLID STATE TRIP DEVICE (480V SWGR BKR OR MV MOTOR PROTECTOR)

Ω — OHM

Ø — PHASE SYMBOL

CONNECTION DOT

480V WELDING OR CORD CONNECTED RECEPTACLE

DC/DC CONVERTER

RECTIFIER

INVERTER

K — KIRK KEY INTERLOCK

BUS DUCT

AUTO TRANSFORMER

RES — TRANSFORMER RESISTANCE GROUND CONNECTION

DUAL SECONDARY VOLTAGE TRANSFORMER (PT, VT)

VOLTAGE TRANSFORMER (PT, VT)

COMBINED METERING UNIT (CMU)

TWO WINDING TRANSFORMER WITH LTC

3 WINDING TRANSFORMER

LOCAL STARTER

500/5 — RATIO; 3 — NUMBER REQUIRED — CURRENT TRANSFORMER

ZERO SEQUENCE CURRENT TRANSFORMER

ZERO SEQUENCE WITH POLARITY MARKS

XX / YY — INSTR. TYPE; INSTR. ID NO. — PANEL MOUNTED INSTRUMENT BUBBLE

* — DEVICE SYMBOL

*= A	AMMETER
AH	AMMETER-HOUR METER
AS	AMMETER SELECTOR SWITCH
BF	BREAKER FAILURE
F	FREQUENCY METER
GF	GROUND FAULT TRIP SETTING
GSU	GENERATOR STEP-UP TRANSFORMER
I	INDICATING
LOR	LOCK OUT RELAY
N	NEUTRAL
TT	TOTAL TIME
V	VOLT METER
VA	VOLTAMMETER
VAR	VARMETER
VH	VARHOUR METER
W	WATT METER
WH	WATTHOUR METER
LT	LONG TIME TRIP SETTING
ST	SHORT TIME TRIP SETTING
*= 21	DISTANCE RELAY
24	VOLTS/HERTZ OVEREXCITATION RELAY
25	SYNCH CHECK RELAY
27	UNDERVOLTAGE RELAY
32	DIRECTIONAL POWER RELAY
40	LOSS OF FIELD RELAY
41	FIELD CIRCUIT BREAKER
46	REVERSE-PHASE, PHASE-BALANCE, CURRENT RELAY
47	PHASE REVERSAL
49	MACHINE, TRANSFORMER, THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT
50G	INSTANTANEOUS GROUND OVERCURRENT
51	TIME OVERCURRENT RELAY
52	CIRCUIT BREAKER
52H	HEATER BREAKER
52G	HEATER GENERATOR
59	OVERVOLTAGE RELAY
63	SUDDEN PRESSURE RELAY
64	GROUND PROTECTIVE RELAY
71	OIL LEVEL LOW
86	LOCK-OUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
89	DISCONNECT SWITCH

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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	REFERENCE DRAWINGS	
B	ISSUED FOR REVIEW	02-24-06	HJP	LAT	DEJ	DCT	E1-2	ELECTRICAL ONE LINE DIAGRAM SHT 2
A	ISSUED FOR REVIEW	11-22-05	BS	BS	LAT	*	E1-1	ELECTRICAL ONE LINE DIAGRAM

DSGN	BS	11-11-05
DRN	BS	11-11-05
CKD	LAT	11-11-05

SCALE: NONE

FOR 22x34 DWG ONLY

POWER ENGINEERS

IMPERIAL IRRIGATION DISTRICT

EL CENTRO UNIT 3 REPOWERING

ELECTRICAL ONE LINE DIAGRAM
LEGEND AND SYMBOLS

JOB NUMBER 108745

REV B

DRAWING NUMBER E1-0