

**NORMAL POWER NEW B101 ONE LINE DIAGRAM**  
SCALE: N.T.S.

**GENERAL NOTES:**

- CONTRACTOR SHALL EXERCISE SHORT CIRCUIT, COORDINATION AND ARC FLASH STUDY PER 2014 NEC.
- CONTRACTOR SHALL PREPARE AND SUBMIT FAULT CURRENT CALCULATION FOR NEW PROJECT. THE AVAILABLE FAULT CURRENTS SHALL BE INCLUDED ON THE ONE LINE DIAGRAM AND SHALL SHOW THE AVAILABLE FAULT CURRENT (EXPRESSED IN AMPERES, RMS SYMMETRICAL) AT EACH TRANSFORMER IN THE SYSTEM.
- CONTRACTOR SHALL PREPARE A COORDINATION STUDY TO DETERMINE THE REQUIRED SETTINGS OF PROTECTIVE DEVICES TO ENSURE SELECTIVE COORDINATION. THE CONTRACTOR SHALL PREPARE THE CALCULATION AND RELATED WORK BASED ON THE APPROVED MATERIAL FOR THE PROJECT. MOREOVER THE CALCULATIONS SHALL BE PART OF THE EQUIPMENT SUBMITTALS DURING THE CONSTRUCTION PHASE.
- THE CONTRACTOR SHALL PERFORM AN ARC FLASH ANALYSIS IN ACCORDANCE WITH IEEE STD 1584a. FOR EACH BUS ANALYZED, THE DETERMINE THE FOLLOWING: FLASH HAZARD PROTECTION BOUNDARY, INCIDENT ENERGY LEVEL, REQUIRED PERSONAL PROTECTIVE EQUIPMENT CATEGORY, TYPE OF FIRE RATED CLOTHING, LIMITED APPROACH BOUNDARY, RESTRICTED APPROACH BOUNDARY AND PROHIBITED APPROACH BOUNDARY. PRESENT THE DATA FROM THE ARC FLASH ANALYSIS IN TABULAR FORMAT AND SUBMIT THE PREPARATION OF ARC FLASH WARNING LABELS FOR EACH PIECE OF ELECTRICAL EQUIPMENT LISTED ABOVE, SHOWING THE DATE OF ISSUE FOR EACH, OR SPECIFY TO BE SUBMITTED.
- CONTRACTOR SHALL RETAIN AN ELECTRICAL ENGINEER WHO IS REGISTERED IN CALIFORNIA AND WHO HAS AT LEAST TWO YEARS EXPERIENCE IN PERFORMANCE SHORT CIRCUIT, COORDINATION, ARC FLASH STUDY AND REPORTS.

**SHEET NOTES**

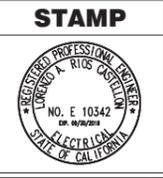
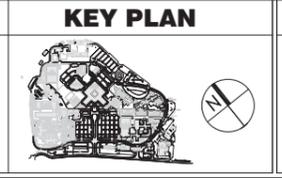
- CONTRACTOR SHALL PROVIDE AND INSTALL TWO NEW SQUARE D ELECTRONIC TRIP CIRCUIT BREAKER 800A, 480V, 3 POLE CAT # MEL 36800LSG SENSOR FRAME IN SPACE OF EXISTING SWITCHGEAR "NHS10112A" TO PROVIDE POWER TO NEW 800A, 480/277V, 3PHASE, 4 WIRE DISTRIBUTION PANEL "DP-1 AND DP-2". NEW CIRCUIT BREAKER TYPE AND INTERRUPTING RATING SHALL MATCH EXISTING RATING.
- CONTRACTOR SHALL PROVIDE AND INSTALL TWO NEW 800A, 480/277V, 3 PHASE, 4 WIRE, 35KA. DISTRIBUTION PANEL WITH 800A/3P MAIN CIRCUIT BREAKER. NEW DISTRIBUTION PANEL SHALL BE SURFACE MOUNTED, ALL BUS BARS SHALL BE COPPER, FRONT COVER PLATE SHALL BE HINGED.
- CONTRACTOR SHALL LABEL ALL DISTRIBUTION PANELBOARDS AND PANELS WITH WARNING "POTENTIAL ELECTRICAL ARC FLASH HAZARDS PRESENT." IN ADDITION TO LABEL REQUIRED BY SPECIFICATION 26 05 73 THE CONTRACTOR SHALL PROVIDE PROTECTIVE DEVICE COORDINATION FAULT CURRENT AND ARC FLASH STUDY PER SPECIFICATION 26 05 73 AND GENERAL NOTES.
- MECHANICAL CONTRACTOR SHALL SUPPLY NEW VFD, SEE DWG. M-701 CHILLED WATER PUMP SCHEDULE REMARKS #1.
- CONTRACTOR SHALL PROVIDE AND INSTALL NEW 400A, 3 POLE, 600VAC NON-FUSED SINGLE THROW DISCONNECT SWITCH HEAVY DUTY IN NEMA 3R ENCLOSURE. DISCONNECT SWITCH SHALL BE STANCHION MOUNTED.
- CONTRACTOR SHALL PROVIDE AND INSTALL NEW TYPE 2 SURGE-PROTECTIVE DEVICE (TYPE 2 SPD) TVSS SYSTEM EATON MODEL "SPD 050480Y2K AND SHALL BE CONNECTED TO THE MAIN CIRCUIT BREAKER.
- CONTRACTOR SHALL PROVIDE AND INSTALL AN ELECTRONIC METERING IQ 250/260 SERIES ELECTRONIC POWER OR APPROVED EQUAL.
- MECHANICAL CONTRACTOR SHALL SUPPLY NEW VARIABLE FREQUENCY DRIVE (VFD) SEE DWG. M-701 AND ELECTRICAL CONTRACTOR SHALL WIRE TO VFD. COORDINATE WITH MECHANICAL CONTRACTOR.
- AC ADJUSTABLE DRIVE IN AN INTEGRATED PACKAGE WITH A BYPASS MOTOR STARTER. UL TYPE 1 (NEMA 3) WALL MOUNTED ENCLOSURE WITH COVER/DOOR -MOUNTED OPERATOR PANEL WHICH INCLUDES THE FOLLOWING FEATURES: (A) MAIN DISCONNECT CIRCUIT BREAKER, (B) BY-PASS CONTACTOR, (C) SERVICE SWITCH, (D) DRIVE INPUT FUSE, (E) DRIVE OUTPUT CONTACTOR, (F) BY-PASS CONTROL WITH A MICRO-CONTROL SYSTEM. THE DRIVE SHALL HAVE MANUAL OR AUTOMATIC TRANSFER CAPABILITIES TO BY-PASS. WHEN AUTOMATIC BY-PASS OPERATION IS SELECTED, THE MOTOR IS AUTOMATICALLY TRANSFERRED TO LINE POWER IF THE DRIVE TRIPS OUT ON A PROTECTIVE TRIP.

SWITCHBOARD NHS10112A [3000A, 480/277V, 3Φ, 4W + (OND)]												
PANEL MONITORED	CB RATING (AMPS)	RATING (KVA)	NEW LOAD (AMPS)	NEW LOAD (KVA)	MAX. DEMAND (KVA)			EXISTING MAX. DEMAND (KVA) @ 0.8 DF IN	MAX. DEMAND (KVA) @ 125%	TOTAL MAX. DEMAND (KVA) (% LOAD)		
					PHASE "A" (AMPS)	PHASE "B" (AMPS)	PHASE "C" (AMPS)					
"NHS10112A"	3000	2494.08			534.00	521.00	522.00	147.92	144.32	144.59	349.46	436.83
NEW LOAD			1508	1253.69								
TOTAL	3000	2494.08										67.78

**ISSUE FOR BID -**

Revisions:	Date
FINAL BID DOCUMENTS (15-388)	03/03/17
100% CONSTRUCTION DOCUMENTS (15-349)	10/04/16
DESIGN DEVELOPMENT (DD) SUBMISSION (65%)	08/05/16
65% DESIGN DEVELOPMENT (15-274)	05/20/16
CONCEPTUAL DESIGN REVIEW (15-218)	03/03/16
CONCEPTUAL DESIGN REVIEW (15-167)	01/18/16

**CONSULTANTS:**



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**Drawing Title:**  
ELECTRICAL  
NEW NORMAL AND EMERGENCY POWER  
ONE-LINE DIAGRAMS

**Approved:** Project Director

**Project Title:**  
VA PALO ALTO  
UPGRADE CHILLED WATER SYSTEM  
FOR BUILDING 100 AND 101

**Location:**  
PALO ALTO, CA

**Date:** 03/03/2017  
**Checked:** L. FIOS  
**Drawn:** R. ROTHWEIN

**Project Number:** 640-15-159  
**Building Number:** B100, B101  
**Drawing Number:** E-601

