



WARNING

Arc Flash and Shock Hazard Appropriate PPE Required

NOTE:

ARC FLASH HAZARD WARNING- ELECTRICAL EQUIPMENT (IE SWITCHGEAR, PANELS, CONTROL PANELS, METER SOCKED ENCLOSURES) THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ARC FLASH HAZARDS. THE MARKINGS SHALL ADHERE TO NFPA 70E-2009 STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE. IN ADDITION, ANSI Z535.4-1998, PRODUCT SAFETY SIGNS AND LABELS, REFER TO DIVISION 26 SPECIFICATION SECTION 26 05 03, "IDENTIFICATION OF ELECTRICAL SYSTEMS" FOR ADDITIONAL REQUIREMENTS.

WHEN MODIFICATIONS TO THE ELECTRICAL INSTALLATION OCCUR, THAT AFFECT THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SERVICE, AND THE MAXIMUM AVAILABLE FAULT CURRENT SHALL BE VERIFIED OR RECALCULATED AS NECESSARY TO ENSURE THE SERVICE EQUIPMENT INTERRUPTING RATINGS ARE SUFFICIENT FOR THE MAXIMUM AVAILABLE FAULT CURRENT AT THE LINE TERMINALS OF THE EQUIPMENT.



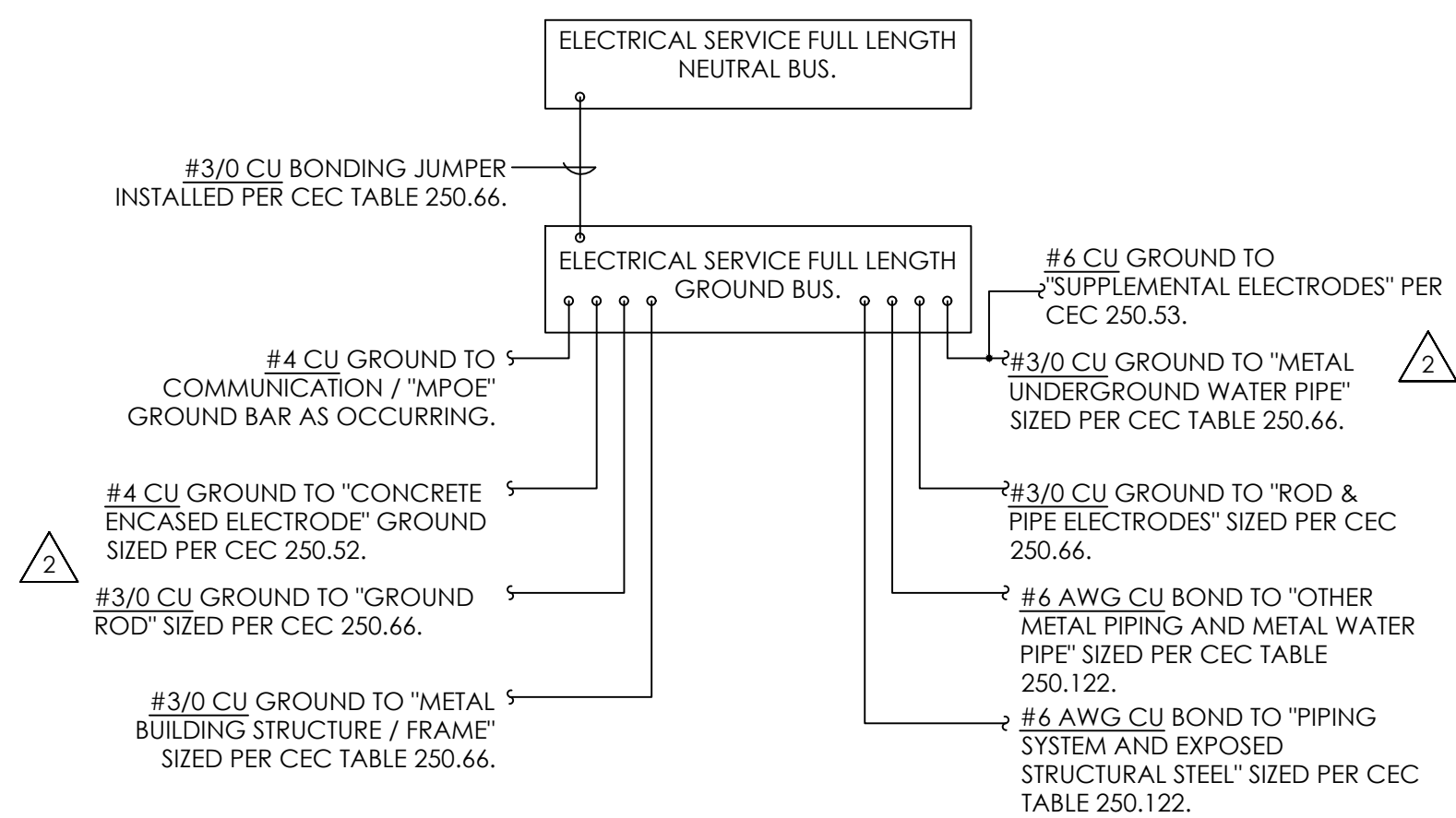
WARNING

Arc Flash and Shock Hazard Appropriate PPE Required

ARC FLASH PROTECTION	SHOCK PROTECTION
FLASH HAZARD CATEGORY _____	VOLTAGE SHOCK HAZARD _____
INCIDENT ENERGY (cal/cm ²) _____	LIMITED APPROACH BOUNDARY _____
WORKING DISTANCE _____	RESTRICTED APPROACH BOUNDARY _____
ARC FLASH BOUNDARY _____	PROHIBITED APPROACH BOUNDARY _____
EQUIPMENT ID: _____	DATE PREPARED: _____ BY: _____

1 TYPICAL ARC FLASH SIGNAGE

NOT TO SCALE

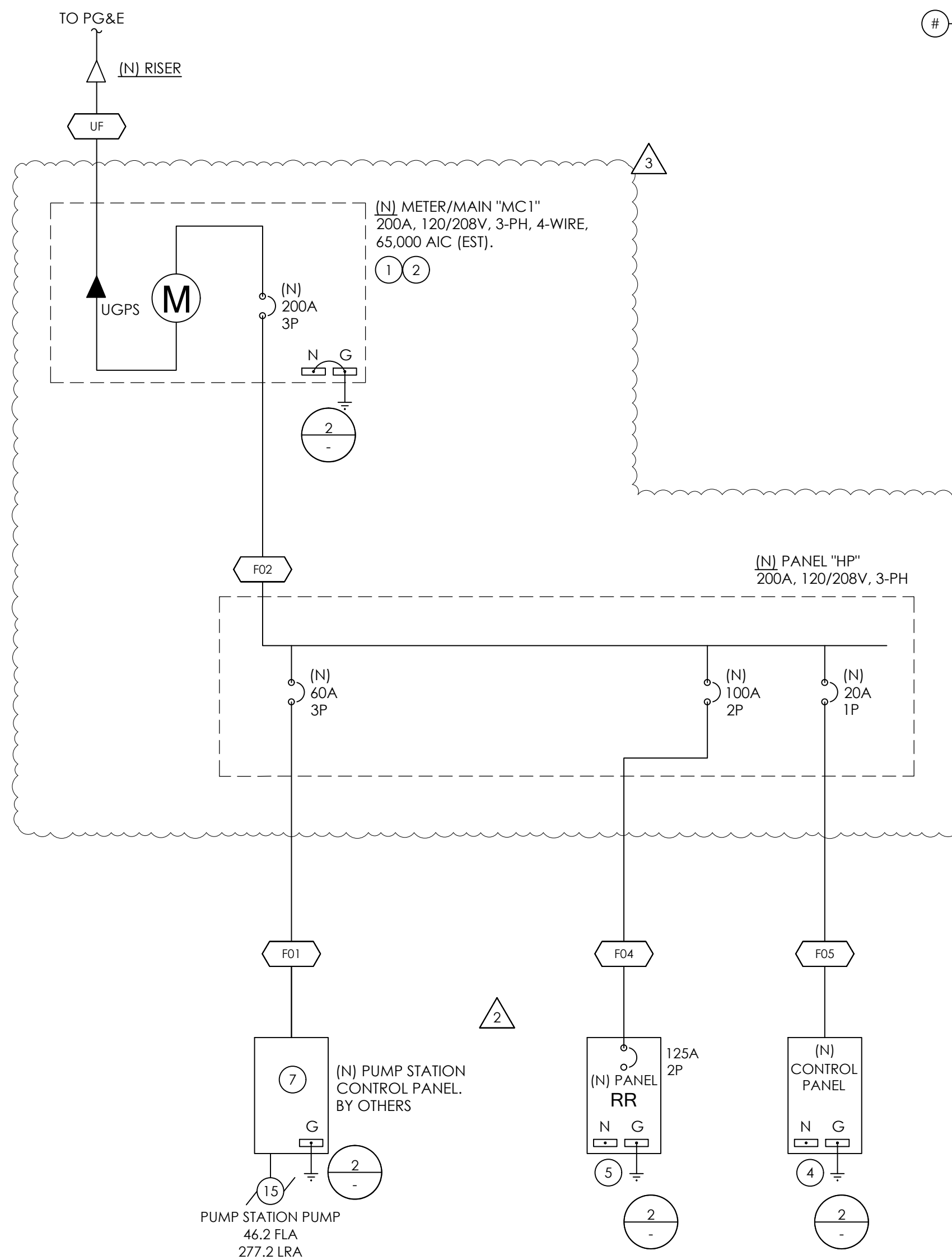


2 GROUND / BOND DETAIL AT NEW SERVICE

NOT TO SCALE

GENERAL NOTES

- GROUNDING SHALL BE IN ACCORDANCE TO THE CEC, ARTICLE 250.
- GROUNDING ELECTRODES PRESENT AND STRUCTURE / BUILDING SHALL BE BONDED TOGETHER TO FORM A COMPLETE GROUNDING ELECTRODE SYSTEM. WHERE GROUNDING ELECTRODES IDENTIFIED IN THIS DETAIL AND CEC 250.52 ARE NOT PRESENT, PROVIDE ONE OR MORE CONNECTIONS TO THE ELECTRODE IDENTIFIED / PRESENT.
- CONSULT CEC ARTICLE 250 FOR GROUND RINGS, OTHER LISTED ELECTRODES, AND PLATE ELECTRODES NOT SHOWN IN THIS DETAIL.
- GROUNDING CONDUCTORS SIZED PER CEC TABLE 250.66 SHALL BE COORDINATED WITH THE UTILITY INSTALLED SECONDARY SERVICE CONDUCTOR SPECIFICATION PRIOR TO INSTALLATION.
- SEPARATELY DERIVED SYSTEMS SHALL BE GROUNDED AS PER CEC 250.30 (A) FOR GROUNDED, AND 250.30 (B) FOR UNGROUNDED SYSTEMS, AND COMPLY WITH 250.20 AND 250.26.
- ALL SERVICE FEEDERS OR BRANCH CIRCUITS SUPPLYING A BUILDING SHALL HAVE A COMMON GROUNDING ELECTRODE SYSTEM.
- ALL GROUNDING ELECTRODES THAT ARE PRESENT AT EACH BUILDING OR STRUCTURE SHALL BE BONDED TOGETHER.
- ALL EQUIPMENT FASTENED IN PLACE OR CONNECTED BY PERMANENT WIRING METHOD SHALL BE GROUNDED.



SINGLE LINE DIAGRAM

SCALE: NTS

HART PARK ADVENTURE PLAYGROUND -- FEEDER SCHEDULE													
FEEDER NO.	LOAD DESIGNATION	AMPACITY	CONDUIT SIZE		FEEDER SPECIFICATION				ESTIMATED CONDUCTOR LENGTH (LF) (SEE NOTE #1)	CALCULATED VOLTAGE DROP		AMPS INTERRUPTING CAPACITY (AIC) (SEE NOTES #1, 2)	
			#	SPECIFICATION	#	SPECIFICATION	+	#		GND. SPECIFICATION	Eq.		CALCULATED PER FEEDER
UF	METER	200A	(1) 3" C.O. WITH FULL ROPE. REFER TO UTILITY HANDOUT PACKAGE										
F01	PUMP 1	70A	1	3/4" C	3	#4 AWG THWN CU.	+	1	#6 AWG CU. GND.	-	95	1.1	10,687
F02	HP	200A	1	2" C	4	#3/0 AWG THWN CU.	+	1	#6 AWG CU. GND.	-	5	0.0	51,830
F03			NOT USED										
F04	PANEL RR	150A	1	2" C	3	#1/0 AWG THWN CU.	+	1	#6 AWG CU. GND.	-	275	2.0	2,754
F05	SC	55A	1	3/4" C	2	#6 AWG THWN CU.	+	1	#6 AWG CU. GND.	-	185	3.0	1,219

NOTES:
 1. CONDUCTOR LENGTH HAS BEEN PROVIDED AS THE BASIS OF DESIGN FOR BOTH VOLTAGE DROP AND AIC CALCULATION. CONDUCTOR LENGTH NOTED SHALL NOT BE USED FOR BIDDING OR PROCUREMENT PURPOSES. SHOULD THE ACTUAL CONDUCTOR LENGTH DIFFER FROM WHAT HAS BEEN SPECIFIED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR REVIEW AND RE-CALCULATION AS MAY BE NECESSARY.
 2. ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE RATED TO WITHSTAND A MIN. OF THE CALCULATED SHORT CIRCUIT CURRENT.

REFERENCE NOTES

1. NEW UTILITY SERVICE. RATING AS INDICATED.
2. NEW METER. ENCLOSURE RATING NEMA 3R.
3. NEW DISTRIBUTION PANEL "HP". INSTALL AT EXISTING BACKBOARD OR NEAR VICINITY. ENCLOSURE RATING NEMA 3R.
4. NEW SPLASHTOP CONTROLLER (BY OTHERS).
5. NEW PANELBOARD FOR PUBLIC RESTROOM (BY OTHERS).
6. NEW PANELBOARD "LP". ENCLOSURE RATING NEMA 3R.
7. NEW PUMP STATION CONTROL PANEL WITH INTEGRAL OVERCURRENT PROTECTION AND MOTOR CONTROLS (BY OTHERS). SEE SHEET E-20 FOR ADDITIONAL INFORMATION.



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612 CLARION COURT
 SAN LUIS OBISPO, CA 93401
 T 805 544-4011 F 805 544-4294
 www.wallacegroup.us

SINGLE LINE DIAGRAM GENERAL NOTES

- FAULT CURRENT CALCULATION NOTE
 THE ELECTRICAL DISTRIBUTION SHALL BE PROVIDED WITH A FAULT RATING CAPABLE TO WITHSTAND THE VALUE INDICATED ON THE SINGLE LINE DIAGRAM AND / OR REFLECTED IN THE FEEDER SCHEDULE PREPARED FOR THIS PROJECT. THE FORMULAS USED IN THIS CALCULATION ARE AS FOLLOWS:
 $C \text{ FACTOR} = 1/2 \text{ PER LF}$
 $F \text{ FACTOR} = [1.73 \times L \times I] / [PC \times C \times E]$
 $M \text{ FACTOR} = 1 / [1 + F \text{ FACTOR}]$
 SHORT CIRCUIT AMPS AT FAULT = $1 \times M$
- DEFINITIONS
 $Z \text{ PER LF} = \text{CONDUCTOR IMPEDANCE PER LINEAR FOOT}$
 $L = \text{CONDUCTOR LENGTH IN LINEAR FEET}$
 $I = \text{FAULT CURRENT RATING AVAILABLE AT THE SOURCE}$
 $PC = \text{QUANTITY OF PARALLEL CONDUCTORS PER PHASE}$
 $C = C \text{ FACTOR (SEE EQUATION)}$
 $E = \text{LINE VOLTAGE}$
- THE CONTRACTOR SHALL MEET ALL SERVING UTILITY REQUIREMENTS WITH RESPECT TO PROCUREMENT AND INSTALLATION OF THE ELECTRICAL SERVICE. REQUIREMENTS INCLUDE, HOWEVER ARE NOT LIMITED TO THE FOLLOWING:
 - CONDUCTORS SHALL BE THHN/THWN COPPER UNLESS OTHERWISE NOTED. AMPACITY SIZES NOTED ON THE CONSTRUCTION DOCUMENTS ARE BASED ON 75 DEG.
 - TERMINALS FOR SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS.
 - FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE-WRENCH TIGHTENED TO THE MANUFACTURER RECOMMENDED SPECIFICATION.
 - EMERGENCY DISTRIBUTION EQUIPMENT (I.E. BOXES, CABINETS, TRANSFER SWITCHES, GENERATORS, POWER PANELS, ETC.) SHALL BE PERMANENTLY MARKED SO THEY WILL BE READILY IDENTIFIED AS A COMPONENT OF AN EMERGENCY CIRCUIT OR SYSTEM IN ACCORDANCE TO NEC 700-9(A).
- SERIES RATED EQUIPMENT
 - SERIES RATED EQUIPMENT SHALL NOT BE PERMITTED.



COUNTY OF KERN
 GENERAL SERVICES
 DIVISION
 OF THE
 COUNTY ADMINISTRATIVE OFFICE
 1115 TRUXTUN AVENUE
 BAKERSFIELD, CALIFORNIA

PROJECT
**HART PARK
 PROP 68
 IMPROVEMENTS**
 LEVEE & LAKE ROAD
 BAKERSFIELD, CA
 93308

APPROVED BY
 COUNTY BOARD OF SUPERVISORS

CHAIRMAN, BOARD OF SUPERVISORS _____ DATE _____

RECOMMENDED FOR APPROVAL
 DEPARTMENT _____

DIRECTOR _____ DATE _____

RECOMMENDED FOR APPROVAL
 GENERAL SERVICES DIVISION _____

CHIEF GENERAL SERVICES OFFICER _____ DATE _____

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CONSULTANT STAMP

EXPIRES: 12.31.2024
 GECE #2219

DATE	REV	DESCRIPTION
05/02/24	1	PERMIT SET
10/04/24	2	PERMIT SET
12/16/24	3	AMENDMENT 1



GRAY ELECTRICAL CONSULTING + ENGINEERING, CORP

2529 PROFESSIONAL PKWY | P. 805-361-0525
 SUITE A - P.O. BOX #368 | EINFO@GECECORP.COM
 SANTA MARIA, CA 93455 | WWW.GECECORP.COM

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 CHECKED BY: HG
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 HART PARK PROP 68 IMPROVEMENTS
 SINGLE LINE DIAGRAM