SYMBOL LEGEND

ABBREVIATIONS

A	AMPERE
AC	ABOVE CEILING, ALTERNATING CURRENT
AFF	MOUNTING HEIGHT ABOVE FINISHED FLOOR OR GRADE TO CENTERLINE
CKT	CIRCUIT
CLG	CEILING, CEILING MOUNTED
EM	EMERGENCY
EWC	ELECTRIC WATER COOLER LOCATION
GFI	GROUND FAULT INTERRUPTER
J	JUNCTION
T	TRANSFORMER, THERMOSTAT
V	VOLT
VA	VOLT-AMPS
W	WATT
WP	WEATHERPROOF (NEMA 3R)

LIGHTING CONTROLS

S — FLUSH TYPE, 20A, 120/277V AC ONLY, QUIET TYPE, SINGLE POLE SWITCH

S_T — FLUSH TYPE, 20A, 120V AC ONLY, SPRING-WOUND, 0-60 MINUTE, MANUAL TIMER SWITCH, SPST, WITH WEATHERPROOF COVER.

OS_A — CEILING MOUNT OCCUPANCY SENSOR, ULTRASONIC TYPE, 120/277VAC

CONTROLS & MECHANICAL EQUIPMENT

N3R 30A — DISCONNECT SWITCH, NON-FUSIBLE, SIZE AND NEMA TYPE AS NOTED.

N3R 30A — DISCONNECT SWITCH, FUSIBLE, SIZE AND NEMA TYPE AS NOTED, FUSE AS NOTED OR PER MANUFACTURER'S RECOMMENDATION FOR EQUIPMENT SERVED. NON-FUSED SWITCH MAY BE USED IF UNIT IS UL TESTED WITH BREAKER PROTECTION

S_M — MOTOR SNAP SWITCH WITH THERMAL OVERLOAD PROTECTION - 20A, 1 POLE UNLESS NOTED OTHERWISE.

CIRCUITING AND BRANCH CIRCUITS

ARROW INDICATES CIRCUIT HOMERUNS IN CONDUIT

LPA-2,4 — INDICATES HOMERUN TO CIRCUIT NUMBERS 2 & 4 IN PANEL "LPA"

NOTE:
NUMBER OF HOMERUNS SHOWN ON THE PLANS ARE THE NUMBER OF HOMERUNS REQUIRED. DO NOT RUN MORE THAN THREE HOMERUNS IN ONE CONDUIT. DO NOT RUN 2 CIRCUITS ON THE SAME PHASE IN ONE CONDUIT.

INDICATES CONTINUATION OF RUN SHOWN ON ANOTHER PLAN VIEW

CONDUIT STUBBED OUT ABOVE CEILING - PROVIDE BUSHING ON CONDUIT END.

L2A-3 — INDICATES 1 #12 PHASE CONDUCTOR, 1 #12 NEUTRAL & 1 #12 GND - 3/4" C. TO 1-POLE BREAKER, SIZED AS SHOWN IN PANEL SCHEDULES, ON CIRCUIT No. 3, IN PANEL 'L2A'.

L2A-2,4 — INDICATES 2 #12 PHASE CONDUCTORS & 1 #12 GND - 3/4" C. TO 2-POLE BREAKER, SIZED AS SHOWN IN PANEL SCHEDULES, ON CIRCUIT No.'s 2 & 4 IN PANEL 'L2A'.

L2A-2,4,6 — INDICATES 3 #12 PHASE CONDUCTORS & 1 #12 GND - 3/4" C, TO 3-POLE BREAKER, SIZED AS SHOWN IN PANEL SCHEDULES, ON CIRCUIT No.'S 2,4,6 IN PANEL 'L2A'.

10's — INDICATES ALL CONDUCTORS ARE TO BE MINIMUM #10 GAUGE, CONDUIT PER NEC OR AS INDICATED.

SHORTER TICKMARKS INDICATE 2 OR MORE PHASE CONDUCTORS, OR SWITCH LEGS

LONGER TICKMARKS INDICATE GROUNDED CONDUCTOR(S), QUANTITY AS SHOWN.

NEUTRALS SHALL NOT BE SMALLER SIZE THAN PHASE CONDUCTORS UNLESS SPECIFICALLY INDICATED OTHERWISE. PROVIDE THE APPROPRIATE NUMBER OF NEUTRALS IN ACCORDANCE WITH NEC.

INSULATED GROUNDING CONDUCTORS SHALL BE USED IN ALL CIRCUITS, SIZED IN ACCORDANCE WITH NEC ARTICLE 250.

2-#12, 1-#12 GROUND SHALL BE RUN IN 3/4" CONDUIT. 4 OR MORE #12 CONDUCTORS SHALL BE RUN IN 3/4" C. OR AS REQUIRED BY NEC. LARGER THAN #12 CONDUCTORS SHALL BE RUN IN CONDUIT SIZED IN ACCORDANCE WITH NEC.

CONCEALED OVERHEAD OR IN WALLS.

CONCEALED IN OR BELOW FLOORS OR GRADE.

EXPOSED SURFACE MOUNTED METAL RACEWAY.

FLEXIBLE CONDUIT TO EQUIPMENT

CLASS 2 WIRING

LIGHTING OUTLETS

LIGHTING FIXTURE - MOUNTING AND TYPE AS SHOWN IN FIXTURE SCHEDULE. SEE SCHEDULE FOR SPECIFIC REQUIREMENTS.

LIGHTING FIXTURE - MOUNTING AND TYPE AS SHOWN IN FIXTURE SCHEDULE. SEE SCHEDULE FOR SPECIFIC REQUIREMENTS.

WALL MOUNTED LIGHTING FIXTURE

WALL OUTLETS

DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, MOUNT 1'-6" AFF, NEMA 5-20R.

DOUBLE DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE,MOUNT 1'-6"AFF, NEMA 5-20R.

DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, MOUNT BOTTOM OF RECEPTACLE ABOVE COUNTER 3'-8" AFF, NEMA 5-20R.

DOUBLE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER.

WP — DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, WITH WEATHERPROOF-IN-USE COVER

GFI — DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, WITH GROUND FAULT INTERRUPTER. MOUNT 1'-6" AFF

WC — DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, NEMA 5-20R FOR ELECTRIC WATER COOLER. MOUNT UNDER UNIT OUT OF VIEW. SHALL BE ON DEDICATED CIRCUIT SERVED BY GFCI CIRCUIT BREAKER.

JUNCTION BOXES

J — JUNCTION BOX IN OR ABOVE CEILING

J — JUNCTION BOX IN WALL - MOUNT 1'-6" UNLESS NOTED OTHERWISE.

SITEWORK

T — PADMOUNTED, OIL-FILLED TRANSFORMER - BY UTILITY

OHP — OVERHEAD PRIMARY SUPPLY

UGP — UNDERGROUND PRIMARY SUPPLY

UGS — UNDERGROUND SECONDARY SUPPLY

POWER PANELS & EQUIPMENT

PANELBOARD 208/240 VOLT - SURFACE MOUNTED - SEE PANELBOARD SCHEDULE

SPD — TRANSIENT VOLTAGE AND SURGE PROTECTION DEVICE

GROUNDING

3/4" X 10'-0" GROUND ROD.

CODES AND REQUIREMENTS

THE INSTALLATION SHALL COMPLY WITH THE INDICATED EDITION OF THE FOLLOWING CODES AND ORDINANCES. WHERE SPECIFIC EDITION IS NOT INDICATED, COMPLY WITH THE LATEST PUBLISHED EDITION.

NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
NFPA 70 - 2020; NATIONAL ELECTRICAL CODE

FLORIDA BUILDING CODE
FBC-B 2023; THE FLORIDA BUILDING CODE (8th EDITION)
FPC 2023; THE FLORIDA FIRE PREVENTION CODE (8th EDITION)
INCLUDING NFPA 101 - 2021; THE LIFE SAFETY CODE
FBC-M 2023; THE FLORIDA MECHANICAL CODE (8th EDITION)
FBC-A 2023; THE FLORIDA BUILDING CODE, ACCESSIBILITY (8th EDITION)
FBC-EC 2023; THE FLORIDA BUILDING CODE, ENERGY CONSERVATION (8th EDITION)
FBC-P 2023; THE FLORIDA BUILDING CODE, PLUMBING (8th EDITION)

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

IEEE C2; NATIONAL ELECTRICAL SAFETY CODE

SERVING UTILITY COMPANY POLICIES

STATE AND MUNICIPAL CODES AND REQUIREMENTS

DESCRIPTION OF WORK

1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE ALL ELECTRICAL WORK AS SHOWN ON THE CONTRACT DRAWINGS.
2. THIS SHALL INCLUDE THE INSTALLATION OF A COMPLETE AND PROPERLY OPERATING ELECTRICAL SYSTEM. THIS SYSTEM REQUIRED CONSISTS BASICALLY OF, AND IS NOT LIMITED TO, THE FOLLOWING:
   - EXTEND THE DISTRIBUTION SYSTEM FOR POWER INCLUDING THE NECESSARY FEEDERS, BRANCH CIRCUITS, INSTALLATION OF AND CONNECTION TO DEVICES, PANELBOARDS, TRANSFORMERS, SWITCHES, AND ALL OTHER EQUIPMENT SHOWN.
   - EXTEND THE BUILDING GROUND SYSTEM AND PROVIDE SPECIAL GROUNDS AS INDICATED.
   - PRINT AND APPLY ARC FLASH LABELS FOR NEW PANELS NOTED. LABELS WILL BE PROVIDED TO CONTRACTOR BY ENGINEER IN PDF FORMAT. LABELS ARE SHOWN BELOW FOR REFERENCE.
3. THE BIDDER SHALL INSPECT THE PRESENT JOBSITE CONDITIONS BEFORE PREPARING HIS BID. THE SUBMISSION OF A BID WILL BE CONSIDERED EVIDENCE THAT SUCH A VISIT AND INSPECTION WAS PERFORMED BY THE BIDDER AND THAT HE TAKES FULL RESPONSIBILITY FOR ALL FACTORS GOVERNING HIS WORK.
4. THE ELECTRICAL WORK SHALL BE COMPLETE, FULLY OPERATIONAL, AND SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND DO NOT SHOW ALL DETAILS, DEVICES AND INCIDENTAL MATERIALS NECESSARY TO ACCOMPLISH THEIR INTENT. THEREFORE, IT SHALL BE UNDERSTOOD THAT SUCH DEVICES AND INCIDENTAL MATERIALS REQUIRED SHALL BE FURNISHED AT NO COST TO THE OWNER.

GENERAL NOTES

1. ALL CONDUCTORS SHALL BE INSTALLED IN METAL CONDUIT OR TUBING, UNLESS NOTED OTHERWISE. ALL EXTERIOR EXPOSED CONDUIT AND BOXES SHALL BE ALUMINUM RIGID METAL CONDUIT, UNLESS NOTED OTHERWISE. ALUMINUM RIGID METAL CONDUIT SHALL BE PROVIDED WITH APPROVED SUPPLEMENTARY CORROSION PROTECTION WHERE IN CONTACT WITH EARTH OR CONCRETE. CONDUIT FOR BURIAL IN SOIL OR UNDER CONCRETE SHALL BE PLASTIC PVC. FLEXIBLE CONDUIT INSTALLED OUT-OF-DOORS, IN ANY MECHANICAL EQUIPMENT ROOM, OR IN NORMALLY WET AREAS, SHALL BE LIQUID TIGHT FLEX WITH SUITABLE FITTINGS
2. COORDINATE WITH ALL MECHANICAL TRADES FOR SPACE REQUIREMENTS IN MECHANICAL ROOMS, SHAFTS, ABOVE CEILING, ETC. THIS INCLUDES SPACE ABOVE PANELS WHERE DUCTS AND PIPING ARE PROHIBITED.
3. FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS.
4. THE LOCATION OF LIGHT FIXTURES IN MECHANICAL, ELECTRICAL, ETC. ARE SHOWN FOR BID PURPOSES ONLY. FIXTURES SHALL BE INSTALLED SO AS TO COORDINATE WITH ALL TRADES AND SHALL BE ARRANGED FOR MAXIMUM LIGHTING DISTRIBUTION OF THE AREA.
5. CONDUIT SHALL BE INSTALLED TIGHT TO DECK WHERE INSTALLED ABOVE CEILING. RELOCATE INCIDENTAL HANGERS, BRACKETS, ETC. WHERE IN CONFLICT. MAXIMIZE USE OF SPACE.
6. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED EQUIPMENT.
7. CONTRACTOR SHALL VERIFY & COORDINATE ALL MOUNTING HEIGHTS OF ALL DEVICES MOUNTED IN CASEWORK OR IN OR ABOVE COUNTERS WITH EXISTING EQUIPMENT AND EQUIPMENT FURNISHED.
8. CONDUIT SHALL PASS THROUGH WALLS AT 90 DEGREES AND SHALL BE RUN PARALLEL AND PERPENDICULAR TO WALLS.
9. BRANCH CIRCUITS AND HOMERUNS SHALL BE #12 WIRE AND 3/4" CONDUIT MINIMUM. EVERY CONDUIT SHALL HAVE A GREEN GROUND WIRE (#12 MINIMUM).
10. ALL CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. CONDUCTORS SIZE # 8 AWG AND LARGER SHALL BE STRANDED.
11. NO MORE THAN 3 PHASE CONDUCTORS SHALL BE INSTALLED IN ONE CONDUIT UNLESS NOTED OTHERWISE. SHARED NEUTRALS ARE NOT PERMITTED.
12. COLOR OF ALL NORMAL BRANCH RECEPTACLES, SWITCHES, ETC. TO BE WHITE. COVERPLATES SHALL BE STAINLESS STEEL, UNLESS NOTED OTHERWISE.
13. MOUNTING HEIGHTS OF WALL OUTLETS ABOVE FINISHED FLOOR SHALL BE AS INDICATED IN THE LEGEND AND IN THE FOLLOWING TABLE UNLESS NOTED OTHERWISE ON THE PLANS (MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE):
    SWITCHES (GENERAL): 3'- 10" TO 4'-0"
    RECEPTACLES (GENERAL): 1'- 6"
    ALL OUTLETS IN CABINETS AND ABOVE COUNTERTOPS: COORDINATE HEIGHT WITH CABINET PLANS
14. MAINTAIN NEC MINIMUM CLEARANCE IN FRONT OF ALL SAFETY SWITCHES AND PANELBOARDS.
15. ALL UNDERGROUND CONDUIT RUNS ENTERING THE BUILDING SHALL BE SEALED TO PREVENT THE ENTRANCE OF MOISTURE AND GASES.
16. CONDUIT FOR RECEPTACLE CIRCUITS SHALL BE RAN OVERHEAD UNLESS NOTED OTHERWISE.
17. WHERE RECEPTACLES ARE INDICATED TO BE EQUIPPED WITH GROUND FAULT INTERRUPTING CIRCUITRY, IT SHALL BE INTEGRAL TO THE DEVICE AND HAVE A TEST/RESET MECHANISM INTEGRAL WITH THE DEVICE. REMOTE TEST/RESET OR THE INTERWIRING OF ADDITIONAL RECEPTACLES UTILIZING GF SENSING OF A SINGLE RECEPTACLE IS NOT ACCEPTABLE.
18. ALL WALL AND CEILING DEVICES SHOWN ON THE NEW WORK PLANS REQUIRE CONCEALED RACEWAYS AND RECESSED METAL BOXES UNLESS NOTED OTHERWISE. CONSULT WITH ARCHITECT FOR ALL LOCATIONS WHERE SURFACE RACEWAYS AND BOXES ARE REQUIRED TO COMPLETE THE CIRCUIT AND DEVICE ARRANGEMENTS SHOWN.
19. ALL SINGLE POLE CIRCUITS SHALL TERMINATE ON A SINGLE POLE CIRCUIT BREAKER ASSEMBLY. DO NOT USE MULTI-POLE CIRCUIT BREAKER OVERCURRENT PROVISIONS FOR 120 VOLT OR 277 VOLT CIRCUITS. PROVIDE INDIVIDUAL GROUNDED CONDUCTORS FOR ALL SINGLE POLE CIRCUITS.
20. CALL SUNSHINE 811 OR GO ONLINE TO WWW.SUNSHINE811.COM, AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING TO HAVE UTILITIES LOCATED & MARKED.
21. WHERE CORE DRILLING OCCURS, CONTRACTOR SHALL USE CAUTION TO AVOID DAMAGING SURROUNDING SURFACES. CONTRACTOR RESPONSIBLE FOR CLEANING UP ALL SLURRY AND ENSURING A CLEAN AND PROFESSIONAL FINISH. CONTRACTOR SHALL REPLACE OR REPAIR BUILDING SURFACES OR EQUIPMENT DAMAGED BY SLURRY OR CORE DRILLING MATERIALS.
22. WHERE INSTALLING ELECTRICAL CONDUIT, MAINTAIN CONDUIT STRAPPING AND FASTENING PER NEC.
21. WHERE INSTALLING ELECTRICAL CONDUIT, MAINTAIN PULL POINTS PER NEC AND DO NOT EXCEED 360 DEGREES IN BENDS IN ANY CONDUIT RUN WITHOUT APPROPRIATE PULL POINTS.
22. ALL JUNCTION BOXES, PULLBOXES, AND DEVICES SHALL BE LABELED WITH CIRCUIT NUMBER AND CIRCUIT VOLTAGE.

ARC FLASH STUDY CLARIFICATION

NOTE: Arc flash labels were created using SKM Powertools© as the arc flash analysis program. Overcurrent protective device modeling files for specific device manufacturer and model were provided by SKM library.

The equations used for the calculation of the estimated maximum incident energy and the estimated arc flash boundary distance are based upon measured incident energy under a specific set of test conditions and on theoretical work. Actual arc flash exposures may be more or less severe than calculated by the arc flash analysis program. Calculations are based on the installation and configuration of the electrical distribution system as initially constructed. Any changes to the electrical distribution system may cause these calculations to be invalid. All short circuit and overcurrent protective devices (OCPD) are assumed to operate as originally intended by manufacturer.

It should be noted that the personal protective equipment (PPE) for the arc flash hazard is the last line-of-defense. It is not intended nor will it prevent all injuries. NFPA 70E PPE levels are intended to reduce the impact of an arc flash to 2nd degree burns for the torso and head only. NFPA 70E states that the incident energy exposure shall be based on the working distance of the employee's face and head. Objects closer to the arc flash will be exposed to much greater levels of incident energy. Fire rated (FR) clothing and PPE shall be used based upon the incident energy exposure. This means injuries to hands and arms may be expected if an arc at the level calculated and protected against occurs.

Incident energy levels are directly related to the clearing time of the upstream OCPD. Operation of the OCPD within the manufacturers design specifications is essential for limiting the incident energy due to arc flash hazards. Failure of the OCPD components to operate within the manufacturer's time current curves will compromise the results of this arc flash study and will result in higher levels of incident energy to electrical workers. NFPA 70E standards recommend regularly scheduled maintenance and testing be performed on the electrical distribution system components to assure proper operation of all overcurrent protective devices. Regular testing is required to protect electrical workers from greater arc flash energy hazards than are calculated in this study.

WARNING
Arc Flash and Shock Risks Appropriate PPE Required

ARC FLASH RISK PROTECTION	PPE
Incident Energy: **18.9 cal/cm^2** Arc Flash Boundary **101 in** **240 VAC** Shock Risk When Cover is Removed **Shock Protection Boundaries:** Limited Approach: **42 in** Restricted Approach: **12 in**	• 25 cal/sq cm, Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) plus Arc-rated coverall; plus arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed. • Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts • Arc-rated Gloves • Leather work shoes

Equipment ID: FUSED SWITCH **Date of Analysis:** 07/09/2024

WARNING
Arc Flash and Shock Risks Appropriate PPE Required

ARC FLASH RISK PROTECTION	PPE
Incident Energy: **0.10 cal/cm^2** Arc Flash Boundary **4 in** **240 VAC** Shock Risk When Cover is Removed **Shock Protection Boundaries:** Limited Approach: **42 in** Restricted Approach: **12 in**	• Non-melting or untreated natural fiber (cotton/wool/rayon/silk > 4.5 oz/sq yd), shirt (long-sleeve), pants (long). • Safety Glasses or Goggles + Ear Canal Inserts • Leather Gloves • N/A

Equipment ID: LIFT STATION PANEL **Date of Analysis:** 07/09/2024

WARNING
Arc Flash and Shock Risks Appropriate PPE Required

ARC FLASH RISK PROTECTION	PPE
Incident Energy: **0.23 cal/cm^2** Arc Flash Boundary **6 in** **240 VAC** Shock Risk When Cover is Removed **Shock Protection Boundaries:** Limited Approach: **42 in** Restricted Approach: **12 in**	• Non-melting or untreated natural fiber (cotton/wool/rayon/silk > 4.5 oz/sq yd), shirt (long-sleeve), pants (long). • Safety Glasses or Goggles + Ear Canal Inserts • Leather Gloves • N/A

Equipment ID: PANEL 'P1' **Date of Analysis:** 07/09/2024

SITE WORK NOTES - GENERAL

1. COORDINATE ALL WORK WITH WORK SHOWN ON CIVIL SITE PLAN.
2. UTILITY FOR SITE IS BY FLORIDA POWER & LIGHT (FPL).
3. FURNISH AND INSTALL SERVICE LATERALS, SERVICE ENTRANCES, AND EQUIPMENT WHERE INDICATED ON THE DRAWINGS.
4. COORDINATE ALL ELECTRICAL SERVICE WORK WITH THE ELECTRIC UTILITY. CONTACT UTILITY DEPARTMENT 4 WEEKS PRIOR TO NEED FOR TEMPORARY CONSTRUCTION POWER.
5. THE CONTRACTOR SHALL CONTACT THE UTILITY DEPARTMENT FIVE WORKING DAYS BEFORE REQUIRED TO ARRANGE ALL NECESSARY INSPECTIONS.
6. REFER TO ALL OTHER SITE AND UTILITY PLANS AND RELATED WORK TO COORDINATE WITH OTHER TRADES.
7. ELECTRICAL SERVICE SHALL BE 1 PHASE, 3 WIRE, 120/240 VOLT AND SHALL BE UNDERGROUND TO THE BUILDING. SERVICE SHALL ORIGINATE IN THE SECONDARY COMPARTMENT OF A UTILITY FURNISHED PAD-MOUNTED TRANSFORMER.
8. WORK DONE UNDER THIS SECTION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA 70), THE NATIONAL ELECTRIC SAFETY CODE (ANSI C2) AND THE SERVING UTILITY.
9. CONSTRUCT A CONCRETE TRANSFORMER PAD WHERE LOCATED ON THE DRAWINGS FOR THE UTILITY FURNISHED PAD MOUNTED TRANSFORMER. TRANSFORMER PAD SHALL BE CONSTRUCTED TO UTILITY DEPARTMENT SPECIFICATIONS. COORDINATE WITH FPL FOR REQUIREMENTS. BEFORE POURING CONCRETE THE PAD AREA AND LOCATION SHALL BE INSPECTED.
10. ONE (1) 4" CONDUIT SHALL BE RUN FROM THE PAD MOUNTED TRANSFORMER PRIMARY COMPARTMENT, WITH 42" MINIMUM COVER, TO THE SERVICE POLE AS INDICATED ON THE DRAWINGS.
11. PRIMARY CONDUIT SHALL NOT BE INSTALLED UNTIL SERVICE POLE IS SET.
12. CONDUIT INSTALLATION SHALL BE INSPECTED BY UTILITY PRIOR TO BACKFILLING.
13. UTILITY COMPANY SHALL PROVIDE PRIMARY CONDUCTORS AND MAKE PRIMARY CONNECTIONS.
14. CONTRACTOR SHALL FURNISH ALL SECONDARY RACEWAY AND CONDUCTORS AS INDICATED ON THE DRAWINGS.
15. CONTRACTOR SHALL LEAVE FIVE (5) FEET OF SECONDARY CONDUCTORS STICKING UP ABOVE PAD.
16. SERVING UTILITY SHALL MAKE SECONDARY CONNECTIONS AT TRANSFORMER.
17. SERVICE METERING DEPARTMENT SHALL FURNISH METER CAN AND CONTRACTOR SHALL INSTALL.
18. METER LOCATION SHALL BE APPROVED BY SERVING UTILITY METERING DEPARTMENT. THE DRAWINGS INDICATE A PROPOSED LOCATION.

SYMBOL	DATE	REVISION

ISSUE DATE: 02/24/2025 100% PLANS
COMP. FILE No.: 21-5436
STATE PROJECT No. 61307C - N3803

DESIGNER: BW
DRAWN BY: BW
REVIEWED BY: BW

Consultant:
McGINNISS + FLEMING ENGINEERING
JON BARBER, PE 55427 BRIAN WALLACE, PE 75562
620 EAST SOUTHERN AVENUE TAMPA, FL 33603
WR-34172CoA 8W-8187-6425

PROFESSIONAL REGISTRATION
BRIAN K. WALLACE LICENSE No. 75562 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Brian K. Wallace, PE on **02/24/2025**.
Printed copies of this document are not considered signed and sealed and the signatures must be verified on any electronic copies.

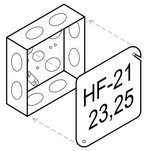
Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

SHEET TITLE: GENERAL NOTES AND LEGEND

PROJECT TITLE: CAMP HELEN STATE PARK — PARK IMPROVEMENT

SHEET NO.
E100

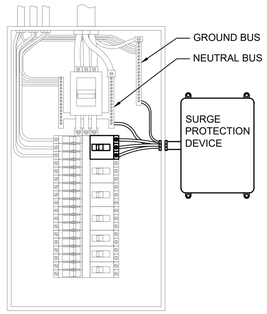
DETAILS



EACH JUNCTION BOX COVER SHALL BE LABELED WITH A PERMANENT "MAGIC" MARKER OR OTHER PERMANENT MEANS TO IDENTIFY THE CIRCUITS OR SYSTEMS CABLES WITHIN. INCLUDE THE PANEL AND CIRCUIT BREAKER NUMBER FOR ALL POWER CIRCUITS WITHIN. FOR EXAMPLE, A JUNCTION BOX CONTAINING LIGHTING CIRCUITS 21, 23, 25 FROM PANEL "HF" WOULD BE LABELED "HF-21,23,25" AS SHOWN.

JUNCTION BOX IDENTIFICATION

NO SCALE

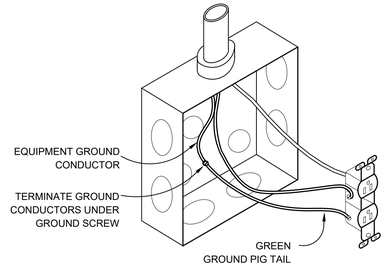


NOTES:

1. THE SPD SHALL BE LOCATED IMMEDIATELY ADJACENT TO THE SWITCHBOARD, PANELBOARD, OR DISCONNECT SWITCH BEING PROTECTED (CLOSE-NIPPLE TO PANELBOARDS).
2. CONDUCTORS SHALL NOT BE MORE THAN 12" IN LENGTH. ALL CONDUCTORS SHALL BE CUT TO PRECISELY THE SAME LENGTH BEFORE INSTALLATION. CONDUCTORS SHALL AVOID UNNECESSARY BENDS.
3. THE INSTALLER MAY REARRANGE BREAKER LOCATIONS TO ENSURE THE SHORTEST AND STRAIGHTEST LEADS TO THE SPD. BREAKER AND SPD SHALL BE INSTALLED CLOSE TO NEUTRAL BUS.
4. THE LAYOUT IN THIS DETAIL WILL NOT MATCH ALL INSTALLATIONS, BUT IS INTENDED TO SHOW PROPER PLACEMENT AND INSTALLATION OF SPD AND CORRESPONDING BREAKER. COORDINATE WITH EQUIPMENT PROVIDED.

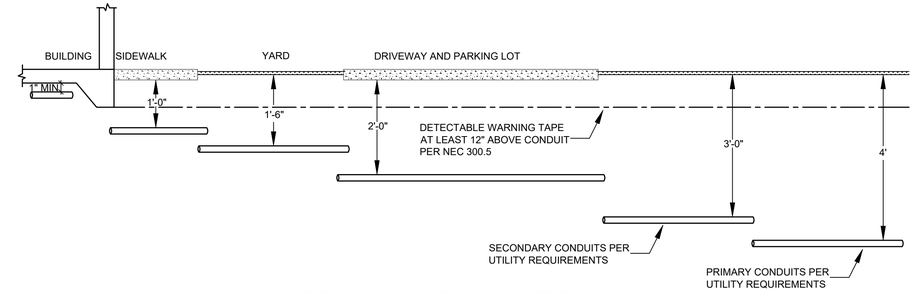
SPD DETAIL

NO SCALE



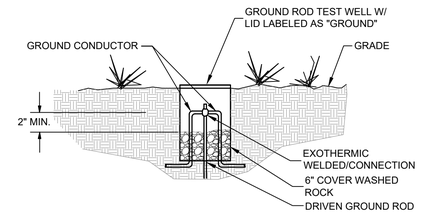
RECEPTACLE WIRING DETAIL

NO SCALE



UNDERGROUND BURIAL DEPTHS

NO SCALE



GROUNDING TEST WELL DETAIL

NOT TO SCALE

DESIGN DEMAND LOAD CALCULATION

DAY USE RESTROOM

LOAD:	DEMAND (VA)
Lighting:	393
Devices:	7560
Lift Station Pump 1 (2HP)	2800
Lift Station Pump 2 (2HP)	2800
Hand Dryers	6720
Electric Water Heater and Unit Heater	10000
Total:	30,273 VA
Total Estimated Load (240 volt, 1 phase)	126 A, 3Ø
Minimum Service Size	200 A, 3Ø
Provided Service Size	200 A, 3Ø

SHORT CIRCUIT CALCULATIONS

SHORT CIRCUIT CALCULATIONS WERE BASED ON A 45KVA TRANSFORMER WITH A 1.0% IMPEDANCE AND AN INSIGNIFICANT MOTOR LOAD. THE MAXIMUM SHORT CIRCUIT AVAILABLE FROM THE PRIMARY WAS CONSIDERED TO BE UNLIMITED.

$$I_{SC_{TRANSFORMER}} = \frac{45{,}000\ VA}{240V * 0.01} = 18{,}750\ A$$

PANELBOARD SCHEDULE

CAMP HELEN PARK
DAY USE RESTROOM
Santa Rosa Beach, Florida

Panel: 'P1'
Location: PLUMBING CHASE
Fed From: FUSED SWITCH
Service: 1 Phase, 3 Wire
☐ 208/120V
■ 240/120V
Main Bkr.: - A - P
Lugs Only: 200 A
22,000 AIC Min.
60 Hz.
■ Surface mounted panel
☐ Flush mounted panel

Remarks
* DESIGNATES GFCI TYPE CIRCUIT BREAKER.

LOAD / REMARKS	CIR. NO.	BREAKERS AMPS	BREAKERS POLES	AMPS PER PHASE L1	AMPS PER PHASE L2	BREAKERS AMPS	BREAKERS POLES	CIR. NO.	LOAD / REMARKS
EXTERIOR LIGHTING	1	20	1	1					REC'S - RESTROOMS
				5		20	1	2	
INTERIOR LIGHTING	3	20	1		3				REC'S - COVERED AREA / CHASE
					5	20	1	4	
LIFT STATION CONTROL PANEL	5	40	2	24					REC - VENDING
				10		20*	1	6	
(2) 2HP PUMPS	7				24				REC - VENDING
					10	20*	1	8	
MEN'S HC HAND DRYER	9	20	1	8					REC - WATER COOLER
				6		20*	1	10	
MEN'S HAND DRYER	11	20	1		8				REC / FAN - NORTH PAVILION
					3	20	1	12	
MEN'S HAND DRYER	13	20	1	8					REC / FAN - SOUTH PAVILION
				3		20	1	14	
WOMEN'S HC HAND DRYER	15	20	1		8				EWH-1 (8KW)
					33	40	2	16	
WOMEN'S HAND DRYER	17	20	1	8					
				33				18	
WOMEN'S HAND DRYER	19	20	1		8				REC - VENDING
					10	20*	1	20	
UNISEX HAND DRYER	21	20	1	8					UH-1 (2KW)
				8		20	2	22	
SPACE	23	-	-		-				
					8			24	
SPACE	25	-	-		-				LIFT GATE - ENTRY
					6	20	1	26	
SPD	27	30	2	-					LIFT GATE - EXIT
				6		20	1	28	
	29				-				SPACE
					-	-	-	30	
TOTAL CONNECTED LOAD (AMPS)				128	126				

FAN SCHEDULE

DESIGNATION		CF-1
AREA/ROOM SERVED & BUILDING		PAVILION
SERVICE		COOLING
MANUFACTURER		HUNTER
MODEL		TRAK WIRED
TYPE		CEILING
FAN CONSTRUCTION		ALUMINUM
DRIVE TYPE		DIRECT
AIR FLOWRATE DESIGN	CFM	19,591
DESIGN STATIC PRESSURE	IN	N/A
DESIGN FAN SPEED	RPM	142
MAX SOUND LEVEL	dBA	54
ELECTRICAL CHARACTERISTICS	V/Ø/HZ	120/1/60
MOTOR POWER	W	70
OPTIONS		1 - 5
CONTROL NOTES		1

OPTIONS
1. FAN TO BE 7" DIAMETER
2. MFR STANDARD FINISH
3. FAN TO BE MOUNTED OUTDOORS, UNDER COVER
4. PROVIDE FIXED MANUAL TIMER SWITCH AS SPECIFIED ON PLAN FOR ON/OFF SINGLE SPEED CONTROL - SET DEFAULT SPEED TO HIGH.
5. UL 507 WET RATED, IP45 RATED

CONTROL NOTES:
1. FAN WILL OPERATE VIA SWITCH.

LIGHTING FIXTURE SCHEDULE

FIXTURE MARK	MOUNTING	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	LAMPS LUMENS	DESCRIPTION
LED1	SURFACE	-	31	LIGHT EMITTING DIODE	3600	4' LED ARCHITECTURAL VANDAL WRAP. MARINE-GRADE ALUMINUM HOUSING, MATTE WHITE POLYESTER POWDER COAT FINISH, WHITE IMPACT-RESISTANT POLYCARBONATE LENS, NON-DIMMING, 120V. (GUIDE: WILLIAMS AVX-4 SERIES)
LED2	SURFACE OR SUSPENDED	-	42	LIGHT EMITTING DIODE	5000	NARROW LED STRIP WITH SHALLOW PROFILE PAINTED STEEL HOUSING AND DIFFUSE ACRYLIC LENS. DIRECT OR SUSPENDED MOUNTING OPTIONS. DIFFUSER SHALL HAVE SQUARE FORM WITH ROUNDED EDGES. 120V. (GUIDE: WILLIAMS 75S SERIES)
LED3	RECESSED	-	23	4000K LIGHT EMITTING DIODE	2500	ARCHITECTURAL RECESSED DOWNLIGHT WITH RECESSED, FLANGED TRIM. SPECIFICATION GRADE CONSTRUCTION. THROUGH THE APERTURE SERVICE. LIGHT ENGINE DIRECT MOUNTED TO DIE-CAST ALUMINUM HEAT SINK. GALVANIZED STEEL FRAME AND HOUSING. 120V. (GUIDE: LIGHTOLIER C6RDL SERIES)

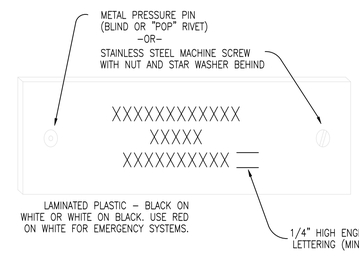
FIXTURE SCHEDULE NOTES

1. ALL LIGHTING FIXTURES SHALL CONFORM TO UL 1598. ALL LED FIXTURES SHALL CONFORM TO UL 8750.
2. EXACT LOCATION OF FIXTURES SHALL BE AS SHOWN ON REFLECTED CEILING PLANS.
3. ALL RECESSED FIXTURES SHALL BE COMPLETE WITH APPROPRIATE FRAME FOR THE CEILING TYPE IN WHICH IT SHALL BE INSTALLED. A PARTICULAR FIXTURE MARK MAY BE SHOWN IN MORE THAN ONE TYPE CEILING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH CEILING TYPES.
4. CLEAN ALL LIGHTING FIXTURES AT THE END OF THE PROJECT. USE SOFT FABRIC AND CLEAR WATER. DO NOT USE CLEANSERS.
5. CONDUCT FUNCTIONAL TESTING OF LIGHTING CONTROLS. CONFIRM THAT OCCUPANCY SENSOR PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS YIELD EXPECTED PERFORMANCE. CONFIRM SENSORS ACTUALLY TURN LIGHTS OFF.

WIRING SCHEDULE FOR VOLTAGE DROP

DISTANCE	CONDUCTOR SIZE
120V - 20A BRANCH CIRCUIT	
UP TO 100'	#12
100' - 150'	#10
150' - 250'	#8
250' - OVER	#6
277V - 20A BRANCH CIRCUIT	
UP TO 200'	#12
200' - 375'	#10
375' - OVER	#8

NOTE: FOR CIRCUITS WITH #6 CONDUCTORS, REDUCE TO #8 CONDUCTORS AT PANEL FOR FINAL CONNECTIONS TO CIRCUIT BREAKER.



EQUIPMENT IDENTIFICATION SHALL BE MADE USING ENGRAVED LAMINATED PLASTIC PLATES (INDENTED TAPE LABELS WILL NOT BE PERMITTED). CHARACTERS SHALL BE WHITE ON A BLACK BACKGROUND AND 1/4" HIGH MINIMUM. PLATES SHALL BE SECURED TO THE PANELS BY MEANS OF SCREWS OR METAL PRESSURE PINS. CEMENT, BY ITSELF, WILL NOT BE ACCEPTABLE. ALL NAMEPLATES SHALL BE MOUNTED ON THE OUTSIDE SURFACE OF THE PIECE OF EQUIPMENT.

CHWP-2
10 HP, 460V, 3Ø
FEEDER: FP1-12

SERVICE ENTRANCE PANEL AND DISTRIBUTION PANELS SHALL HAVE EACH CIRCUIT IDENTIFIED AS TO CIRCUIT NUMBER, LOAD, AND ELECTRICAL CHARACTERISTICS OF LOAD. FOR EXAMPLE, A 5 HP, 208 VOLT, 3 PHASE HOT WATER PUMP NUMBER 6 FEED FROM PANEL MDP, CIRCUIT NO. 4 WOULD BE LABELED AS FOLLOWS WITH THE PLATE ATTACHED ADJACENT TO THE CIRCUIT:

MDP-4
HWP-6
5 HP, 208V, 3Ø

AUTOMATIC TRANSFER SWITCH
208/120 VOLT, 30
FEEDER: 4NM140

DISTRIBUTION PANELS, PANELBOARDS, AND TRANSFORMERS SHALL BE IDENTIFIED INDICATING PANEL DESIGNATION FROM THE DRAWINGS, ELECTRICAL CHARACTERISTICS AND SOURCE OR, EXAMPLE, A 277/480 VOLT 3 PHASE PANEL "LPA" FEED ARROW "MDP" CIRCUIT NO. 3 SHALL BE LABELED AS FOLLOWS:

PANEL LP-A
277/480V, 3ø
(FEEDER: MDP-3)

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WARNING
480 VOLTS
WARNING

ALL ENCLOSURES CONTAINING ENERGIZED COMPONENTS SHALL BE MARKED WITH STANDARDIZED MYLAR LABELS IDENTIFYING HAZARDS. SUCH WARNING MESSAGES AS "WARNING-HAZARDOUS VOLTAGE", "480 VOLTS", "240 VOLTS", ETC. ARE ACCEPTABLE. APPLY AS APPROPRIATE

AT SERVICE DISCONNECT SWITCH

FINAL VALUE TO BE PROVIDED BY ENGINEER AFTER UTILITY TRANSFORMER CHARACTERISTICS ARE KNOWN.

NAMEPLATE DETAILS

NO SCALE

DATE	REVISION	SYMBOL	DATE	REVISION	SYMBOL

ISSUE DATE: 02/24/2025 100% PLANS
COMP. FILE No.: 21-5436
STATE PROJECT No. 61307C - N3803

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

DESIGNER: BW
DRAWN BY: BW
REVIEWED BY: BW
Consultant:

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620 EAST 4th STREET PANAMA CITY, FL 32401
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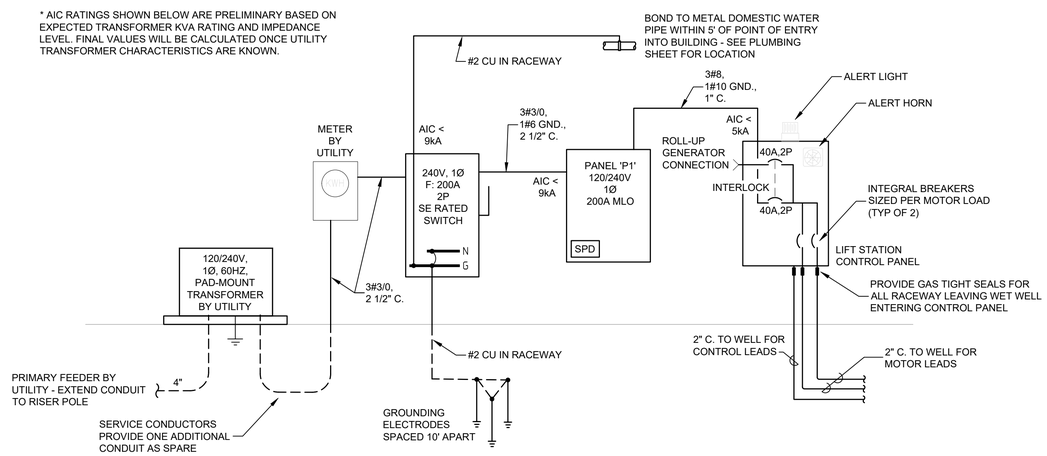
STATE OF FLORIDA
PROFESSIONAL ENGINEER

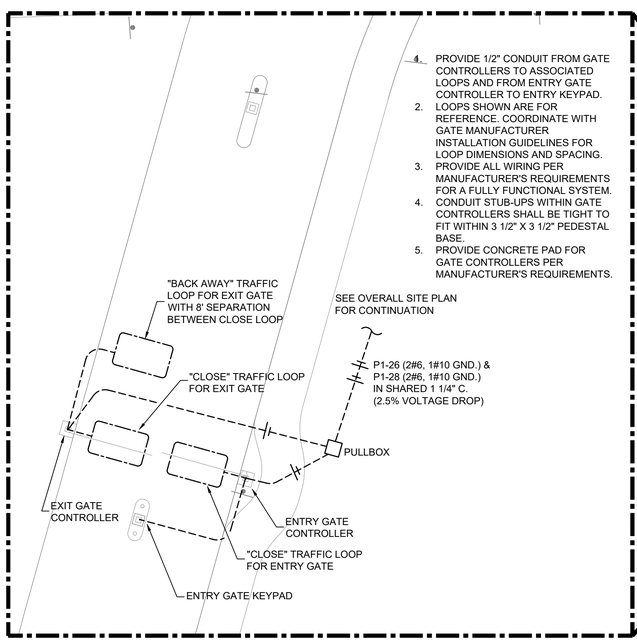
SHEET TITLE: CAMP HELEN STATE PARK — DETAILS AND SCHEDULES
PROJECT TITLE: PARK IMPROVEMENT

SHEET NO.
E101



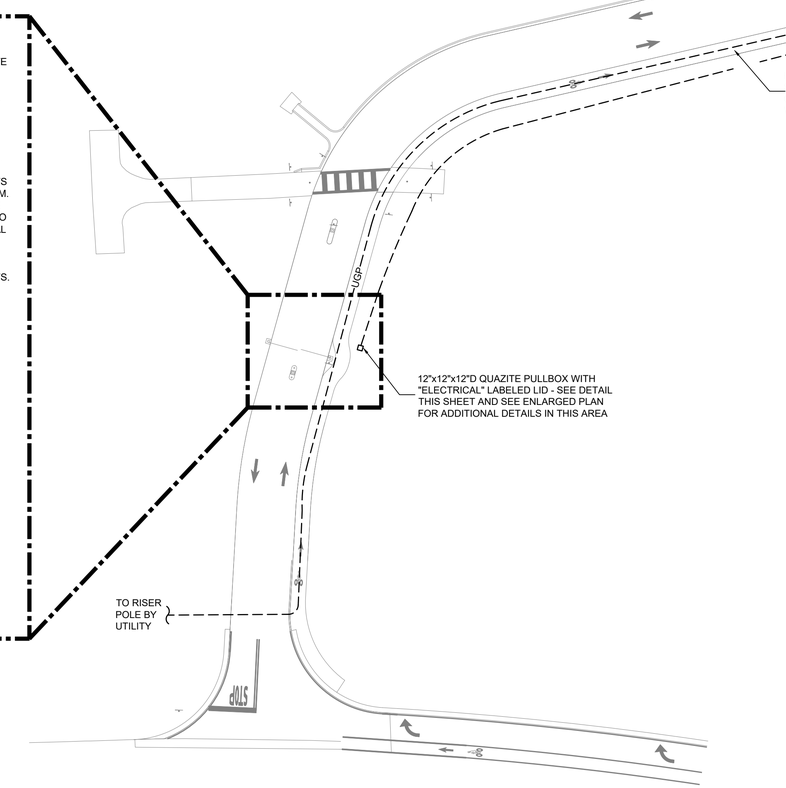
POWER ONE LINE DIAGRAM

NOT TO SCALE



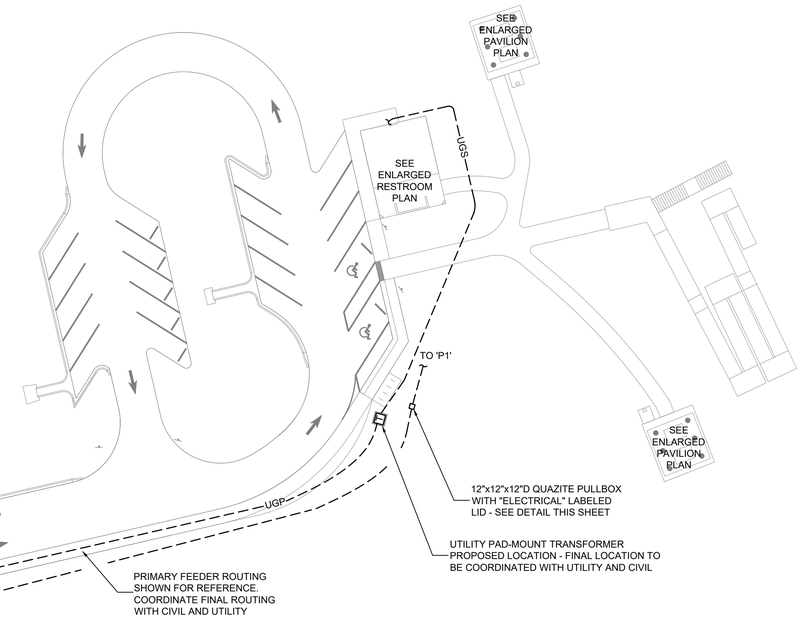
2 ENLARGED GATE PLAN

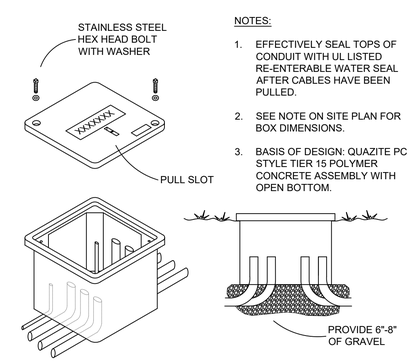
SCALE: 3/32" = 1'-0"



1 SITE PLAN

SCALE: 1" = 30'-0"





NOTES:

1. EFFECTIVELY SEAL TOPS OF CONDUIT WITH UL LISTED RE-ENTERABLE WATER SEAL AFTER CABLES HAVE BEEN PULLED.
2. SEE NOTE ON SITE PLAN FOR BOX DIMENSIONS.
3. BASIS OF DESIGN: QUAZITE PC STYLE TIER 15 POLYMER CONCRETE ASSEMBLY WITH OPEN BOTTOM.

HANDHOLE / PULLBOX DETAIL

NOT TO SCALE

SYMBOL	REVISION	DATE

SYMBOL	REVISION	DATE

ISSUE DATE: 02/24/2025 100% PLANS
COMP. FILE No.: 21-5436
STATE PROJECT No.: 61307C - N3803

DESIGNER: BW
DRAWN BY: BW
REVIEWED BY: BW

Consultant:

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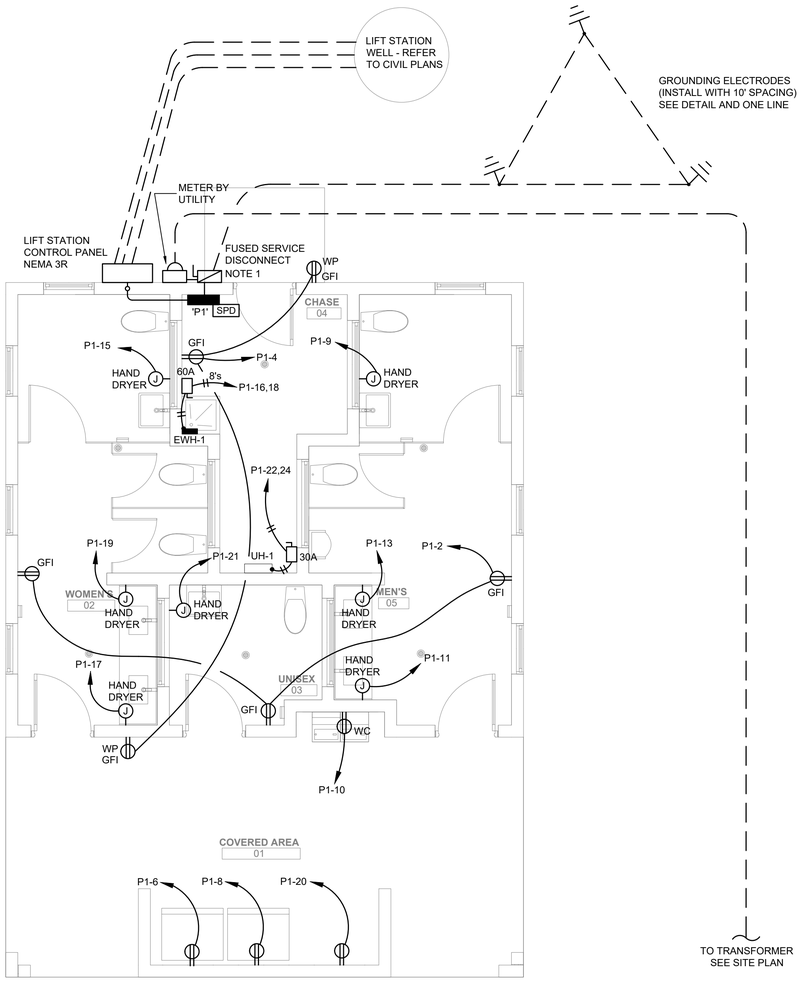
CAMP HELEN STATE PARK

SHEET TITLE: SITE PLAN AND ONE LINE

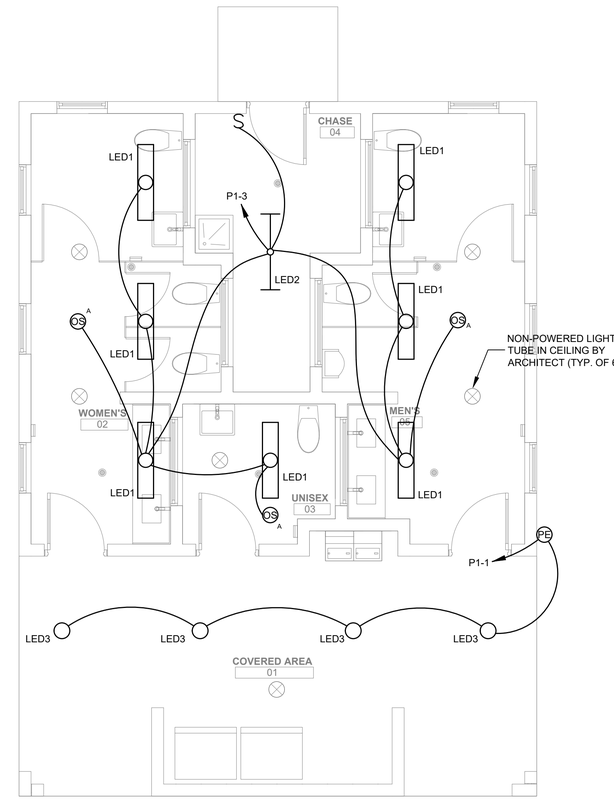
PROJECT TITLE: PARK IMPROVEMENT

SHEET NO.

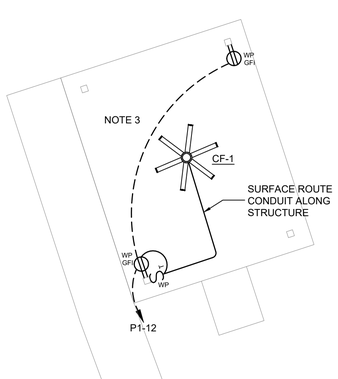
E200



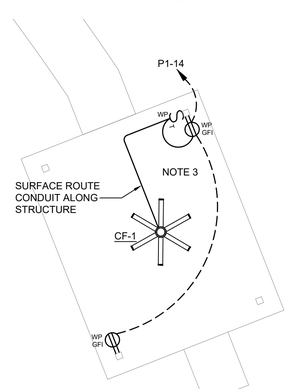
1 POWER PLAN
SCALE: 1/4" = 1'-0"



2 LIGHTING PLAN
SCALE: 1/4" = 1'-0"



3 NORTH PAVILION ENLARGED PLAN
SCALE: 1/8" = 1'-0"



4 SOUTH PAVILION ENLARGED PLAN
SCALE: 1/8" = 1'-0"

NEW WORK PLAN NOTES:

1. INSTALL NEW 240V, NEMA 4X, FUSED, STAINLESS STEEL DISCONNECT SWITCH WHERE SHOWN. PROVIDE NEW FEEDER IN RIGID ALUMINUM CONDUIT BETWEEN NEW SWITCH AND METER CAN. SECONDARY FEEDER EXITS SWITCH OUT THE BACK, THROUGH THE EXTERIOR WALL INTO THE BACK OF PANEL 'P1'. SEAL WALL PENETRATION AROUND CONDUIT.
2. INTERIOR CIRCUITS MAY UTILIZE TYPE AC CABLE WITH APPROPRIATE QUANTITIES, SIZE OF CONDUCTORS, AND FITTINGS. SUPPORT AC CABLE IN ACCORDANCE WITH NEC, AT INTERVALS NOT TO EXCEED 54" AND ALSO WITHIN 12" OF EVERY BOX, CABINET, FITTING, OR OTHER CABLE TERMINATION. AC CABLE NOT PERMITTED FOR OUTDOOR CIRCUITS.
3. COORDINATE FINAL PLACEMENT OF RECEPTACLE AND FAN SWITCH AT PAVILIONS WITH PAVILION STRUCTURAL SUPPORTS. STRUCTURAL SUPPORTS SHOWN ARE SHOWN FOR REFERENCE. EXPOSED BOXES AND CONDUIT EXTENDING FROM BELOW GRADE AND SURFACE MOUNTED AT PAVILION SHALL BE RIGID ALUMINUM.
4. LIFT STATION WET WELL IS CONSIDERED CLASS 1, DIV. 1 LOCATION. PROVIDE EXPLOSION PROOF SEALS ON ALL RACEWAYS ENTERING OR LEAVING THE WET WELL.
5. COORDINATE FINAL LOCATION OF JUNCTION BOX FOR HAND DRYER CIRCUITS WITH ARCHITECTURAL.
6. FOR ELECTRICAL INSTALLED IN RESTROOMS, ALL RACEWAY SHALL BE INSTALLED WITHIN WALLS OR ABOVE CEILING. EXPOSED RACEWAY FOR INTERIOR SPACES IS ONLY ALLOWED IN PLUMBING CHASE.

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DESIGNER:	BW	ISSUE DATE:	02/24/2025 100% PLANS
DRAWN BY:	BW	COMP. FILE No:	21-5436
REVIEWED BY:	BW	STATE PROJECT No.	61307C - N3803

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SHEET TITLE: POWER & LIGHTING ENLARGED PLANS
PROJECT TITLE: CAMP HELEN STATE PARK — PARK IMPROVEMENT

SHEET NO. E300