SITE LOCATION MAP



LAKE COUNTY EAST LAKE SPORTS & COMMUNITY COMPLEX PHASE 1 LIGHTING IMPROVEMENTS FOR LAKE COUNTY FLORIDA 24809 Wallick Road Sorrento, FL 32776 PROJECT

CLIENT PROJECT No. : 2008030007

7/24/2023





LAKE COUNTY FLORIDA

315 West Main Street Tavares, FL 32778 352-343-9850

LAKE COUNTY BOARD OF COUNTY COMMISSIONERS

District 1 - Douglas B. Shields District 2 - Sean M. Parks District 3 - Kirby Smith (Chairman) District 4 - Leslie Campione District 5 - Josh Blake

PROJECT ALTERNA

> COMMENTS: ENVIRON COMMENTS: LANDSCA COMMENTS PUBLIC SA COMMENTS HEALTH [COMMENTS BUILDING COMMENTS FIRE ____ COMMENTS CONCUR COMMENT PUBLIC W COMMENTS:

APPROVAL DATED



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DEVELOPMENT REVIEW					
PROJECT # APPLICATION REQUEST # PROJECT NAME: East Lake Sports & Community Complex - Phase #1 Lighting Improvements					
ALTERNATE KEY #1802709 ORDINANCE #2020-10					
REVIEWER PLEASE SIGN AND DATE BELOW					
PLANNING & ZONING					
COMMENTS:					
ENVIRONMENTAL					
COMMENTS:					
LANDSCAPE					
COMMENTS:					
PUBLIC SAFETY / EMERGENCY 911					
COMMENTS:					
HEALTH DEPARTMENT					
COMMENTS:					
BUILDING					
COMMENTS:					
FIRE					
COMMENTS:					
CONCURRENCY					
COMMENTS:					
PUBLIC WORKS					
COMMENTS:					
PRELIMINARY/FINAL DEVELOPMENT REVIEW					
APPROVAL					
DATED DIRECTOR, OFFICE OF PLANNING & ZONING (OR DESIGNEE)					

7370 Cabot Court, Suite 103 Melbourne, FL 32940 P 321.636.0274 www.tlc-engineers.com

COA 15

Drawing Title: COVER SHEET

Drawing No.:

C0.1

THIS DRAWING IS BEING RELEASED FOR THE PURPOSE OF PERMIT SET

	ELECTRICAL SYMBOL LEGEND							
	BASIC M	ATERIALS			ABBREVIATIONS		ABBREVIATIONS (CONT.)	
SYMBOL DEVICE ABBREV 60 C C C C C C C C C C C C C C C C C C C	DESCRIPTION LTON TAGE PAGE-THEW WITH F CORE BUIL POLICAGE ON DO NOT SUGARY FLOOR ROX SUGARY FLOOR ROX SUGARY FLOOR ROX SUGARY FLOOR ROX DOUBLE DUPLEX RECEPTAGLE WITH DEDICATED CRUIT FOR AF RACK OR CART REFERRACE BOUNT TO BE CONTINUED THROUGH LOOX ROXM COURANCY EXISTING TO REMAN HOSTALE BOOMED REVIES WITH BUILE DO TO RUINVERSAL POWER ROACE FOR REFERRACE BOUNTED ADARAGE DEWICE) RELOCATED CULATED BOLANDER DUPLEX REVENTION CULATED BOLANDER DUPLEX REVENTION RECEPTAGLE BOUNTED ADARAGE DEWICE) RELOCATED SINGLE FOLS WITCH (SUBSCRIPT INDICATES ITEM CONTRICLED) THREE-MAY SUNTCH FOUR-WAY SUNTCH FOUR-WAY SUNTCH FOUR-WAY SUNTCH DIGTAT THES BOUNTED ADARAGE DEWICE) SINGLE FOLS WITCH (SUBSCRIPT INDICATES ITEM CONTRICLED) THREE MAY SUNTCH FOUR-WAY SUNTCH FOUR-WAY SUNTCH FOUR-WAY SUNTCH COMMONTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH, DUAL RELAY WAL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR CELING MOUNTED DUAL TECHNOLOGY OCCUPANC	SYMBOL MH PB HH T ATS JOAR 3R A JOAR 3R A A A A A A A A A A A A A	DESCRIPTION MUNICLE PLUSOX HANDROLE PLUSOX HANDROLE PLUSOX HANDROLE PLUSOX HANDROLE TRANSFORMER AUTOMATIC FRANSFER SWITCH INTERNATING, RENA LUNLESS OTHERMISE NOTED NOT MISSIONE TRANSFER SWITCH INTERNATING, RENA LUNLESS OTHERMISE NOTED AR : AMPREME TATING OF SUTCH AR : AMPREME TATING OF SUTCH AR : AMPREME TATING OF SUTCH INTERNATING, RENA LUNLESS OTHERMISE NOTED PLUSED DSCOMET AR : AMPREME TATING OF SUTCH AR : AMPREME TATING OF SUTCH AR : AMPREME TATING OF SUTCH INTERNATING, RENA LUNLESS OTHERMISE NOTED CORDUMT TOWN MONETC MOTOR STARTER, SIZE AS NOTED OCOMENT TOWNEDOARD, UNDER 240 VOLTS, SURFACE MOUNTED BRANCH CRCUT PARELBOARD, UNDER 240 VOLTS, SURFACE MOUNTED BRANCH CRCUT PARELBOARD, UNDER 240 VOLTS, FLUSH MOUNTED BRANCH CRCUT PARELBOARD, UNDER 240 VOLTS, FLUSH MOUNTED BRANCH CRCUT PARELBOARD, UNDER 240 VOLTS, FLUSH MOUNTED OCOMUIT TOWNEDARD CONDUIT TOWNEDARD DARD AND AS MOTED CONDUIT TOWNEDARD CONDU	A/C AC ABV CLG ADA AF AFF AFG AHU AIC AL AMP ANSI ASA AT ATS AUX AWG BC BIL BAS BMS BRKR OR BKF C CAB CKT CB CB CB CATV CCTV CLEC CLG CO COAX COND CONN CPU CRT CT CU CW DC DDC DEG DF DISC SW DO DN DPST EDH EMT EO EOL EOR ETR EWC FA FAAP FATC FBC FCU FLA FM FPU FT GFA GFCI GFCI GRD, G HP HOA HORIZ ICC ICU IECC	AR CONDITIONING ALTERNATING CURRENT ACTION AND ALTONIAL STATUS AMPERCE FINAL APPERE INSEED FLOOR ARPERE IN	IEEE IES IMC IN IPCEA IT JB OR J-BOX KCMIL KV KVA KW KWH LBS LED LP LT LTG LSIG LSIA LSI MAX MCA MCA MCA MCA MCA MCA MCA MCA MCA MCA	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS LLUMINATING ENGINEERIS SOCIETY INCRES INSULATEO POWER CABLE ENGINEERIS ASSOCIATION INSTANTAMEOUS TRIP JUNCTION BOO INSTANTAMEOUS TRIP JUNCTON BOO INSTANTAMEOUS INSTANTAME	

	ELECTRICAL DRAWING INDEX					
SHEET	DESCRIPTION					
C0.1	COVER SHEET					
E0.1	ELECTRICAL SYMBOLS, LEGEND, AND INDEX					
E0.2	ELECTRICAL NOTES					
E0.3	ELECTRICAL SPECIFICATIONS					
E1.0	SITE LIGHTING PLAN					
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E2.0	ELECTRICAL ONE-LINE DIAGRAM AND SCHEDULES					
E2.1	ELECTRICAL DETAILS					
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E2.3	ELECTRICAL DETAILS					
E2.4	ELECTRICAL CUT-SHEETS					





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GENERAL REQUIREMENTS	COORDINATION
1. THE DRAWINGS AND APPLICABLE SPECIFICATIONS SHALL BE CONSIDERED SUPPLEMENTARY, ONE TO THE OTHER AND ARE CONSIDERED THE "CONTRACT DOCUMENTS". ALL WORKMANSHIP, METHODS AND/OR MATERIALS DESCRIBED OR IMPLIED BY ONE AND NOT DESCRIBED OR IMPLIED BY THE OTHER SHALL BE PROVIDED, FURNISHED OR PERFORMED AS IF IT HAD APPEARED IN BOTH SECTIONS. THE TERM "CONTRACT DOCUMENTS" DESCRIBED HEREIN IS NOT LIMITED SOLELY TO THE ELECTRICAL PORTION	1. ALL WORK ON THE ELECTRICAL SYSTEM REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE COORI OF ALL OTHER DIVISIONS/TRADES PRIOR TO COMMENCEMENT OF WORK. AVOID INTERFERENCES WIT OTHER DIVISIONS/TRADES.
OF THE DRAWINGS AND SPECIFICATIONS, BUT ENCOMPASSES THE DRAWINGS AND SPECIFICATIONS OF ALL DIVISIONS AS A WHOLE. 2. THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY DETAIL OF CONSTRUCTION, METHODS,	2. WHERE A DISCREPANCY OR CONFLICT IS FOUND BETWEEN ONE DRAWING AND ANOTHER, OR BETWEE APPLICABLE SPECIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY IN WRITTEN FORM. IN GENERAL, REQUIREMENT SHALL GOVERN UNLESS THE DISCREPANCY CONFLICTS WITH APPLICABLE CODES OR STANDARDS, WHEREIN THE CODE OR OWNER'S DESIGN STANDARDS SHALL GOVERN.
MATERIALS AND EQUIPMENT, OR EXACT LOCATIONS, ROUTING, ETC. THEY INDICATE THE RESULT TO BE ACHIEVED BY THE ASSEMBLAGE OF SEVERAL SYSTEMS FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. DO NOT SCALE THE CONTRACT DOCUMENTS. COORDINATE EXACT EQUIPMENT LOCATIONS WITH THE ARCHITECTURAL, CIVIL AND STRUCTURAL CONTRACT DOCUMENTS, AS WELL AS FIELD CONDITIONS, APPROVED SHOP DRAWINGS AND WORK OF ALL OTHER DIVISIONS/TRADES.	3. CAREFULLY EXAMINE THOSE PORTIONS OF THE BUILDING AND/OR SITE AFFECTED BY THIS WORK PRI PRICE, SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT MAY AFFEC WORK. SUBMISSION OF A BID PRICE SHALL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION H CLAIMS FOR LABOR, EQUIPMENT AND/OR MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTER
3. THE TERM "PROVIDE" USED IN THE CONTRACT DOCUMENTS INDICATES TO FURNISH AND INSTALL MATERIALS REQUIRED FOR CORRECT INSTALLATION OF A COMPLETE SYSTEM, UNLESS SPECIFICALLY NOTED OTHERWISE	BEEN REASONABLY OBSERVED WILL NOT BE RECOGNIZED. 4. COORDINATE ALL PROJECT SCHEDULING AND PHASING REQUIREMENTS WITH ARCHITECT/ENGINEER
4. UNLESS NOTED AS EXISTING, ALL ELECTRICAL INDICATED ON THE CONTRACT DOCUMENTS SHALL BE NEW, SHALL BE U.L. LISTED, AND SHALL BEAR A U.L. LABEL. WHERE NO U.L. LABEL OR LISTING IS AVAILABLE, THE MATERIAL SHALL BE LISTED WITH AN APPROVED, NATIONALLY RECOGNIZED ELECTRICAL TESTING AGENCY. 5. DECLUDE EXTERNATE, OUR DECREMENT OF A DECREMENT.	SUBMITTING BID PRICE. THIS PROJECT MAY REQUIRE PHASING SEQUENCES AND POTENTIAL PREMIUN COSTS FOR SUCH SHALL BE INCLUDED IN THE BID PRICE. PROVIDE ADEQUATE WORK FORCE AND EQU PREMIUM TIME AS MAY BE REQUIRED IN ORDER TO ADHERE TO THE PROJECT SCHEDULE. ADDITIONA LEAD ITEMS DO NOT IMPACT THE PROJECT'S SCHEDULE OR PHASING.
 PROVIDE EXPERIENCED, QUALIFIED AND RESPONSIBLE SUPERVISION FOR ALL WORK REQUIRED BY THE CONTRACT DOCUMENTS. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, TO THE SATISFACTION OF THE ARCHITECT/ENGINEER AND OWNER. 	5. ANY TEMPORARY INTERRUPTION OF POWER REQUIRED FOR THE SYSTEM TIE-IN OR SWITCHOVER FO ELECTRICAL SYSTEM SHALL BE PRE-APPROVED IN WRITING BY THE OWNER AND SCHEDULED IN ADVA
 CARRY ALL INSURANCE REQUIRED TO PROTECT AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FORTHE DURATION OF THIS PROJECT. 	6. CONDUCT WORK OPERATIONS AND DEBRIS REMOVAL IN A MANNER THAT ENSURES MINIMUM INTERF BUSINESS OPERATIONS, TRAFFIC, PARKING, ETC. ONGOING IN ADJACENT OCCUPIED SPACES OR FAC IS DECLIDED TO EFFECTIVELY PROTECT SUPPORTING OCCUPIENTS FOR IDMENT. FINISHES, FURNIT
7. GUARANTEE ALL MATERIALS AND WORKMANSHIP ARE FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE ARCHITECT/ENGINEER AND OWNER, UNLESS NOTED OTHERWISE IN DIVISION 1. AT NO ADDITIONAL COSTS, PROVIDE THE CORRECTION OF ANY DEFECTS INCLUDING REPAIR OR REPLACEMENT.	OR EXCESSIVE NOISE THROUGHOUT THE DURATION OF THIS PROJECT. CONTRACTOR IS RESPONSIBL ANY DAMAGE RESULTING FROM THE FAILURE TO ADHERE TO THIS REQUIREMENT. RESTORE DAMAGE CONDITION TO THE SATISFACTION OF THE ARCHITECT/ENGINEER AND OWNER, AT NO ADDITIONAL CO SUCH OCCURRENCE TO THE ARCHITECT/ENGINEER AND OWNER IMMEDIATELY AND AWAIT WRITTEN D
 INCLUDE ALL COSTS ASSOCIATED WITH PERMITS, LICENSES, FEES, INSPECTIONS, TESTING AND TEMPORARY POWER IN THE BID PRICE, UNLESS NOTED OTHERWISE. 	PROCEEDING WITH REPAIRS.
9. IF HAZARDOUS MATERIALS ARE ENCOUNTERED, COMPLY WITH ALL APPLICABLE RULES, REGULATIONS AND GUIDELINES CONCERNING REMOVAL, HANDLING, DISPOSAL AND PROTECTION AGAINST ENVIRONMENTAL EXPOSURE OR POLLUTION. PROVIDE DOCUMENTATION OF SAID COMPLIANCE.	1. ALL WIRE SHALL BE SIZED AS SHOWN ON THE DRAWINGS. IF NO WIRE SIZE IS SHOWN, THEN WIRE SH
 PROVIDE ELECTRONIC SUBMITTALS (PRODUCT DATA & SHOP DRAWINGS) FOR EACH MAJOR COMPONENT OF THE ELECTRICAL SYSTEM FOR REVIEW BY THE ARCHITECT/ENGINEER AND OWNER. MAJOR COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO, RACEWAYS, BOXES, WIRE AND CABLE, EQUIPMENT, DEVICES, LIGHT FIXTURES, SWITCHGEAR, PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, FIRE ALARM SYSTEM, ETC. ALL SUBMITTALLS ARE TO BE REVIEWED AND APPROVED BY THE CONTRACTOR FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS PRIOR TO SUBMITTING TO THE ARCHITECT/ENGINEER. ALLOW A MINIMUM OF TEN (10) BUSINESS DAYS FOR REVIEW BY ARCHITECT/ENGINEER, UNLESS NOTED OTHERWISE IN DIVISION. THE ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS ARE COORDINATED WITH THE DESIGN BASIS FOUIPMENT SPECIFIED 	 2. BRANCH CIRCUITS SHALL BE INCREASED IN SIZE AS REQUIRED TO COMPENSATE FOR VOLTAGE DROF CIRCUIT DUE TO FIELD ROUTING. FINAL INSTALLATION SHALL NOT EXCEED A MAXIMUM OF 3% VOLTAGE CIRCUITS. REFER TO VOLTAGE DROP TABLE BELOW FOR CONDUCTOR SIZES FOR BRANCH CIRCUITS. A. 120V, 20A CIRCUITS SHALL BE: #12 FROM 0-70 FT #10 FROM 71-115FT #8 FROM 116-180FT B. 277V, 20A CIRCUITS SHALL BE:
BY DIVISION 26 AND OTHER DIVISIONS. WHERE THE CONTRACTOR ELECTS TO SUBSTITUTE A PRODUCT IN LIEU OF PROVIDING THE DESIGN BASIS, AND SAID SUBSTITUTION IS ACCEPTED BY THE ARCHITECT/ENGINEER AND OWNER, THE CONTRACTOR SHALL MAKE ALL CORRECTIONS TO THE ELECTRICAL SYSTEM NECESSARY IN ORDER TO ENSURE A COMPLETE AND OPERATIONAL INSTALLATION OF THE EQUIPMENT AT NO ADDITIONAL COSTS. WHERE THE CONTRACTOR'S DESIGN SUBSTITUTION RESULTS IN THE NEED FOR THE ENGINEER TO REVISE THE CONTRACT DOCUMENTS. THE ENGINEER RESERVES THE RIGHT TO REQUEST	1. # 12 FROM 0-140F1 1. # 10 FROM 141-220FT 10. # 8 FROM 221-350FT 10. # 8 FROM 221-350FT ANYTHING LONGER THAN THE ABOVE SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS F
COMPENSATION FROM THE CONTRACTOR FOR SAID SERVICES. 12. MAINTAIN A CURRENT AND ACCURATE SET OF PROJECT RECORD DOCUMENTS (AS-BUILTS) AT THE SITE THROUGHOUT THE	J. ALL CONDUCTORS IN CABINETS MUST BE CAREFULLT FORMED AND HARNESSED SO THAT EACH COND DIRECTLY OPPOSITE TO TERMINAL.
DURATION OF THE PROJECT. RECORD DRAWINGS SHALL BE UPDATED EACH DAY TO REFLECT THE ACTUAL LOCATIONS, SIZES, ROUTING, ETC. OF EACH PORTION OF THE ELECTRICAL SYSTEM AFFECTED BY THIS WORK. A FINAL SET OF RECORD DOCUMENTS SHALL BE ISSUED TO THE ARCHITECT/ ENGINEER FOR REVIEW AND THEN SUBMITTED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF FINAL ACCEPTANCE. PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING SINGLE LINE DIAGRAM,	 5. ALL CONDUCTORS SHALL BE COPPER, THHN/THWN; SOLID FOR #10 AWG AND SMALLER; STRANDED FOR
POWER RISER DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM, SITE PLANS AND ALL ELECTRICAL FLOOR PLANS, DETAILS, PANEL SCHEDULES, ETC.	6. CONDUCTORS USED IN WET LOCATIONS, INCLUDING BUT NOT LIMITED TO UNDERGROUND CONDUITS/ EXTERIOR CONDUITS SHALL COMPLY WITH NEC 310.10 AND BE LISTED FOR USE IN WET LOCATIONS.
13. PROVIDE AN OPERATING AND MAINTENANCE MANUAL TO OWNER PRIOR TO THE FINAL ACCEPTANCE. THE MANUAL SHALL INCLUDE, AS A MINIMUM, (1) SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. ALSO PROVIDE TWO OPERATIONS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS AND METHOD OF OPERATION FOR EQUIPMENT SHALL BE CLEARLY IDENTIFIED, AND THE NAME, PHONE NUMBER AND ADDRESS OF AT LEAST ONE QUALIFIED SEDVICE ACENCY.	7. ALL POWER CIRCUITS HAVE BEEN DESIGNED TO MEET 2% OR LESS VOLTAGE DROP FOR FEEDERS, A DROP FOR BRANCH CIRCUITS.
14. INCLUDE ALL COSTS FOR EXCAVATION, SAW CUTTING, DIRECTIONAL BORING, CORE DRILLING, BACKFILLING, SURFACE RESTORATION, REPAIR OF EINISHES, ETC. THAT IS REQUIRED IN ORDER TO MEET THE PROJECT REQUIREMENTS	
 INCLUDE IN BID ALL COSTS ASSOCIATED WITH TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR USE BY ALL TRADES DURING CONSTRUCTION. REMOVE TEMPORARY POWER AT THE COMPLETION OF THE PROJECT. OBTAIN AND PAY FOR ALL REQUIRED PERMITS FOR TEMPORARY POWER. ENGINEER OF RECORD SHALL BE PROVIDED WITH ADDITIONAL COMPENSATION EROM THE CONTRACTOR WHERE SIGNED & SEALED DRAWINGS ARE REQUESTED BY THE CONTRACTOR TO THE ENGINEER OF 	
RECORD IF REQUIRED BY THE AHJ FOR THE TEMPORARY POWER. 16. LOCATE, IDENTIFY, PROTECT AND DOCUMENT ALL UTILITY LINES LOCATED WITHIN THE PROJECT BOUNDARY. FOR LOCATING	
SITE UTILITIES, CONTACT ALL LOCAL MUNICIPALITIES AND UTILITIES AT LEAST 48 HOURS PRIOR TO DIGGING. 17. INCLUDE IN BID THE TRANSPORT AND DISPOSAL OR RECYLING OF ALL WASTE MATERIALS GENERATED BY THIS PROJECT IN	
ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL RULES, REGULATIONS AND GUIDELINES APPLICABLE. COMPLY FULLY WITH ALL APPLICABLE STATUTES REGARDING MERCURY-CONTAINING DEVICES, AND WITH ALL LOCAL, STATE AND FEDERAL APPLICABLE GUIDELINES AT THE TIME OF DISPOSAL. PROVIDE OWNER WITH WRITTEN CERTIFICATION OF ACCEPTED DISPOSAL.	

LECTRICAL GENERAL NOTES

	GROUNDING	IDENTIFICATION
RDINATED WITH THE WORK	1. FIRE PROTECTION PIPING SHALL NOT BE USED FOR GROUNDING.	1. PROVIDE TYPED PANEL DIRECTORIES FOR ALL NEW PANELBOARDS, AND EXISTING PANELBOARDS AFFECTED BY THIS PROJECT DIRECTORIES SHALL REFLECT PROJECT AS, BUILT CONDITIONS FOR ALL BRANCH CIRCUITS, DIRECTORIES SHALL INCLUDE WE
	2. ALL FEEDERS AND BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR. METAL RACEWAYS SHALL NOT BE USED AS THE SOLE EQUIPMENT GROUND.	EACH PANEL IS FED FROM. ADDITIONALLY, EACH BRANCH CIRCUIT LOAD DESCRIPTION SHALL INCLUDE THE ROOM NUMBER(S) FOR EACH LOAD (I.E., RECEPTACLES-RMS 501,503). ROOM NUMBERS SHALL BE BASED ON ACTUAL ROOM SIGNAGE INSTALLED FIELD. COORDINATE EXACT ROOM NUMBERS WITH ARCHITECT/ENGINEER AND OWNER PRIOR TO COMPLETION OF PANEL
THE MOST STRINGENT	WHERE A PHASE CONDUCTOR IS INCREASED IN SIZE DUE TO VOLTAGE DROP, THE EQUIPMENT GROUND CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONATELY.	DIRECTORIES.
	ELECTRICAL EQUIPMENT	2. PROVIDE ENGRAVED PLASTIC LAMINATE NAME TAGS ON EACH SWITCHBOARD, SWITCHGEAR, DISTRIBUTION PANEL, PANELBO/ MOTOR CONTROL CENTER, SAFETY SWITCH, ENCLOSED CIRCUIT BREAKER, CABINET, STEP-DOWN TRANSFORMER, TRANSFER SWITCH, ETC, AND ANY OTHER MAJOR. COMPONIENT OF THE ELECTRICAL SYSTEM
CT EXECUTION OF THE HAS BEEN MADE. LATER RED THAT COULD HAVE	1. EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED. ALL COMPONENTS OF THE ELECTRICAL SYSTEM LOCATED OUTDOORS OR INDOORS WHERE EXPOSED TO SIGNIFICANT MOISTURE SHALL BE WEATHERPROOF, NEMA 3R, AS A MINIMUM, WHETHER INDICATED ON THE CONTRACT DRAWINGS OR NOT.	 PROVIDE ENGRAVED PLASTIC LAMINATE NAME TAGS FOR EACH DISTRIBUTION BREAKER OR BRANCH CIRCUIT BREAKER IN SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND OTHER DISTRIBUTION EQUIPMENT. NAME TAG SHALL INCLUE LOAD DESCRIPTION AND ROOM NUMBER FOR EACH LOAD.
r and owner prior to Im time work and all Quipment, and include	2. TERMINATION PROVISIONS FOR ALL ELECTRICAL EQUIPMENT (PANELBOARDS, SWITCHBOARD, TRANSFORMERS, DISCONNECT SWITCHES, MOTOR CONTROLLERS, AUTOMATIC TRANSFER SWITCHES, ENCLOSED CIRCUIT BREAKERS, BUSWAYS, ETC.) SHALL BE LISTED AND IDENTIFIED FOR USE WITH MINIMUM 75 DEG. F CONDUCTORS IN ACCORDANCE WITH NEC.	4. ARC FLASH DANGER/WARNING LABELS SHALL BE APPLIED TO SWITCHBOARD, PANELBOARDS, AND EQUIPMENT CONTROLLERS NEC.
ALLY, ENSURE THAT LONG	3. WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC.	5. PROVIDE LABELS ON THE INSIDE OF EACH DEVICE COVERPLATE, IDENTIFYING THE PANEL(S)/ CIRCUIT NUMBER(S) DEVICE IS CONNECTED TO.
DR ANY PORTION OF THE ANCE.	4. THE ELECTRICAL DEDICATED EQUIPMENT SPACE EXTENDING FROM FLOOR TO 6' ABOVE ELECTRICAL EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER DISTANCE IS LOWER, WITH A WIDTH AND DEPTH OF THE PANELBOARD OR SWITCHBOARD MUST BE CLEAR OF ALL PIPING, DUCTS, ARCHITECTURAL APPURTENANCES AND OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL DEPINED AND EXCERNMENT OF THE DEPTN OF THE PANELBOARD OR SWITCHBOARD OF THE PANELBOARD OF THE PANELB	6. PROVIDE NEATLY, HANDWRITTEN IDENTIFICATION ON THE EXTERIOR COVER OF ALL JUNCTION BOXES, PULLBOXES AND WIREWAYS, IDENTIFYING THE PANEL(S)/ CIRCUIT NUMBER(S) CONTAINED WITHIN.
FERENCE WITH NORMAL CILITIES. PROVIDE ALL THAT TURE, ETC. FROM DAMAGE	5. PROVIDE A REINFORCED CONCRETE PAD, SIZED 4" LARGER IN ALL DIRECTIONS THAN THE FOOTPRINT OF THE EQUIPMENT, AND 4" HIGH, FOR ALL FREESTANDING, FLOOR-MOUNTED ELECTRICAL EQUIPMENT. PROVIDE VIBRATION ISOLATORS AND/OR ANCHORS	 PROVIDE A PERMANENT SIGN ON THE MAIN ELECTRICAL ROOM DOOR TO THE BUILDING STATING THAT THE MAIN SERVICE DISCONNECTING MEANS IS LOCATED INSIDE. 8 PROVIDE A PERMANENT LABEL ON ALL PANEL BOARDS. SWITCHBOARDS. SWITCHGEAR, MOTOR CONTROL CENTERS AND
ED ELEMENTS TO ORIGINAL OSTS. REPORT OF ANY		DISTRIBUTION PANELS STATING "DO NOT WORK ON EQUIPMENT WHILE ENERGIZED. LOCK- OUT TAG-OUT REQUIRED".
DIRECTION PRIOR TO	 PROVIDE HACK RATED CIRCUIT BREAKER FOR ALL HVAC EQUIPMENT. PROVIDE ARC ENERGY REDUCING MAINTENANCE SWITCH FOR ANY BREAKER RATED (OR ABLE TO BE ADJUSTED TO) 1200A OR 	 PROVIDE REQUIRED IDENTIFICATION PER ANSI STANDARDS, NEC REQUIREMENTS, AND OWNER'S PUBLISHED DESIGN STANDAF WHERE APPLICABLE. PROVIDE ENGRAVED PHENOLIC LABEL ON ALL NEW SERVICE EQUIPMENT TO INDICATE THE MAXIMUM AVAILABLE FAULT CURF
	HIGHER UNLESS OTHER ARC ENERGY REDUCTION MEANS MEETING NEC 240.87 IS INDICATED ON DRAWINGS/SPECIFICATIONS OR OTHERWISE PROVIDED.	AND THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED. PROVIDE LABEL ON ALL EXISTING SERVICE EQUIPMENT WHEN MODIFICATIONS OCCUR THAT AFFECT THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SERVICE.
HALL BE #12 AWG.	RACEWAYS	LIGHTING
GE DROP FOR BRANCH AS FOLLOWS:	1. FLEXIBLE METAL CONDUIT AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT (FMC & LFMC) SHALL NOT BE USED IN LENGTHS THAT EXCEED 6'-0" UNLESS SPECIFICALLY NOTED OTHERWISE, OR UNLESS THE ARCHITECT/ENGINEER GRANTS WRITTEN PERMISSION.	1. MODIFY ALL LIGHT FIXTURE CATALOG NUMBERS AS REQUIRED TO COORDINATE WITH THE LIGHTING BRANCH CIRCUIT VOLTAGES INDICATED. COORDINATE THE CATALOG NUMBERS WITH THE EXACT FIXTURE MOUNTING AND TRIM REQUIRED BY THE CEILING IN WHICH EACH FIXTURE IS BEING INSTALLED.
	2. ALL FEEDER AND BRANCH CIRCUIT CONDUCTORS, INCLUDING LOW VOLTAGE SYSTEMS, SHALL BE INSTALLED IN A COMPLETE	2. ALL LIGHT FIXTURES SHALL BE PROVIDED COMPLETE WITH LAMPS, UNLESS OTHERWISE NOTED.
	3. THE USE OF ELECTRICAL NON-METALLIC TUBING (ENT) AND LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT (LFNC) ARE	3. PROVIDE UL WET LABEL OR IP67 RATED LIGHT FIXTURES FOR ALL FIXTURES LOCATED OUTSIDE OR IN PARKING GARAGES, IN SHOWERS, OR OPEN STRUCTURES.
FOR APPROVAL.	PROHIBITED UNLESS SPECIFICALLY NOTED OTHERWISE, OR UNLESS THE ARCHITECT/ENGINEER OR OWNER GRANTS WRITTEN PERMISSION.	4. EXTERIOR LIGHTING BALLASTS/DRIVERS SHALL HAVE A MINMUM STARTING TEMPERATURE OF -40 DEGREE C, AND A NORMAL AMBIENT OPERATING TEMPERATURE OF 40 DEGREE C.
IDUCTOR DROPS OFF	4. CONNECTIONS TO TRANSFORMERS, AHU'S, AND PUMPS SHALL BE WITH LIGUIDTIGHT, FLEXIBLE METAL CONDUIT.	5. PROVIDE FUSING FOR ALL EXTERIOR LIGHT FIXTURES, OR FIXTURES IN PARKING GARAGES OR OPEN STRUCTURES.
75 DEG. F TEMPERATURE	5. NO PVC CONDUIT MAY BE USED INSIDE OF BUILDING UNLESS ROUTED UNDERGROUND, AND UNLESS NOTED OTHERWISE.	6. COORDINATE EXACT FOUNDATION AND/OR COMPACTING REQUIREMENTS FOR ALL POLE MOUNTED LIGHT FIXTURES WITH MANUFACTURER'S AND/OR INSTALLER'S STRUCTURAL ENGINEER POLE BASES SHALL MEET OR EXCEED ALL WIND LOAD
OR #8 AWG AND LARGER.	7. ALL CONDUITS ARE TO BE CONCEALED UNLESS IMPOSSIBLE DUE TO EXISTING CONDITIONS (I.E., EXPOSED CEILINGS,	RATINGS, GUST FACTORS, IMPORTANCE FACTORS, ETC. REQUIRED BY NATIONAL AND/OR LOCAL CODES. SHOP DRAWINGS SHALL INCLUDE STRUCTURAL DRAWINGS FOR ALL POLE BASES, POLE, ASSEMBLY AND OVERTURN CALCULATIONS REQUIRED
S/DUCTBANKS AND	BUILDING EXTERIOR WALL RUNS). CONCEAL ALL CONDUITS ABOVE CEILINGS OR IN WALLS AND MILLWORK. WHERE EXISTING CONDITIONS DICTATE THAT CONDUITS CANNOT BE CONCEALED, NOTIFY ARCHITECT/ENGINEER PRIOR TO INSTALLING CONDUIT FOR RESOLUTION TO ROUTING.	IN THIS PROJECT, SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE PROJECT STATE. 7. REFER TO LIGHT FIXTURE SCHEDULE FOR LIGHT FIXTURE TYPES, DESCRIPTIONS, CATALOG NUMBERS AND ADDITIONAL INFORMATION DEPTIMENT TO THE LIGHT FIXTURE OP INSTALLATION THEREOF
AND 3% OR LESS VOLTAGE	8. SEAL ALL PENETRATIONS AND OPENINGS MADE DURING EXECUTION OF WORK IN FIRE-RATED AND SMOKE-RATED WALLS. WALLS SHALL BE SEALED WITH UL-APPROVED PRODUCT WITH THE SAME OR GREATER RATING OF WALL PENETRATED.	8. COORDINATE LIGHT FIXTURE TRIM TYPE AND FINISH COLOR WITH ARCHITECT PRIOR TO ORDERING.
	9. PROVIDE ALL PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE REQUIRED. COORDINATE LOCATIONS	9. EACH LIGHTING CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL.
	AND SIZES WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS, FIELD CONDITIONS AND WORK OF ALL OTHER DIVISIONS/TRADES. ALL OPENINGS ARE TO BE SEALED WATERTIGHT.	10. PROVIDE LIGHTING CONTROLS TO AUTOMATICALLY REDUCE THE CONNECTED LIGHTING POWER OF EXTERIOR SITE/AREA LIGHTING BY NOT LESS THAN 30 PERCENT FROM NOT LATER THAN MIDNIGHT TO 6AM, FROM ONE HOUR AFTER BUSINESS CLOSING TO ONE HOUR BEFORE BUSINESS OPENING OR DURING ANY PERIOD WHEN ACTIVITY HAS BEEN DETECTED FOR A
	RIGID GALVANIZED STEEL (RGS) WITH BITUMASTIC COATING FOR AT LEAST THE FINAL 18" LENGTH. THE USE OF NON- METALLIC CONDUIT ABOVE GRADE IS PROHIBITED.	TIME OF LONGER THAN 15 MINUTES. PROVIDE DIMMING CAPACITY TO ALL FIXTURES WITH OCCUPANCY SENSORS. 11. ALL LIGHTING HAS BEEN DESIGNED IN COMPLIANCE WITH SECTION 405 OF THE FLORIDA ENERGY CONSERVATION CODE AND
	11. PANEL SCHEDULES AND FLOOR PLANS MAY INDICATE DEDICATED HOMERUNS FOR EACH BRANCH CIRCUIT. BRANCH CIRCUITS MAY BE GROUPED IN A COMMON HOMERUN WHERE THE HOMERUN DOES NOT EXCEED 3 PHASE CONDUCTORS, 3 NEUTRAL CONDUCTORS, AND 1 EQUIPMENT GROUND. THE HOMERUN RACEWAY SIZE AND CONDUCTOR SIZE SHALL BE INCREASED AS NECESSARY TO COMPLY WITH THE NEC FOR 40% MAXIMUM FILL AND DERATING REQUIREMENTS.	LAKE COUNTY CODE OF ORDINANCES FOR LIGHTING POWER DENSITY, AUTOMATIC LIGHTING CONTROLS AND ALL ADDITIONAL REQUIREMENTS. 12. PROVIDE AS PART OF BID PRICE FOR THE SERVICES OF AN INDEPENDENT COMMISSIONING AGENT FOR THE LIGHTING
	12. PROVIDE SEAL OFF FITTINGS, APPROVED FOR SUCH USE, WHERE RACEWAYS PENETRATE BETWEEN A DRY, CONDITIONED ENVIRONMENT AND THE EXTERIOR OR OTHER WET ENVIRONMENTS AND ADDITIONAL AREAS WHERE CONDUITS PASS FROM WARM TO COLD LOCATIONS SUCH AS WALK-IN COOLERS OR FREEZERS, BOILER ROOMS, ETC.	SYSTEM FUNCTIONAL TESTING REQUIRED BY THE ENERGY CONSERVATION CODE, INCLUDING ALL REQUIRED REPORTS. WHERE OCCUPANCY SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULED LIGHTING CONTROLS, PHOTOSENSORS AND DAYLIGHTING CONTROLS ARE INSTALLED, THE SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION TO ACCORDANCE WITH THE
	13. PROVIDE POLYOLEFIN JET-LINE #232 (NYLON PULL STRING) IN EACH EMPTY CONDUIT WITH ENGRAVED METAL TAG INDICATING CONDUIT DESIGNATION.	CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. CONDUCT THE FUNCTIONAL TESTS IN ACCORDANCE WITH THE ENERGY CONSERVATION CODE. PROVIDE COMISSIONING REPORT TO ENGINEER NOT LATER THAN 60 DAYS FROM THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY. DOCUMENTS CERTIFYING THAT THE INSTALLED LIGHTING
	14. ALL HOMERUNS SHALL BE IN 3/4" RACEWAY MINIMUM. 1/2" RACEWAY IS ACCEPTABLE FOR A SINGLE CIRCUIT FROM THE HOMERUN TO REMAINING DEVICES.	CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF THE ENERGY CONSERVATION CODE ARE TO BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY.
	15. CONTRACTOR SHALL USE COMPRESSION FITTINGS ONLY FOR EMT CONDUIT.	

TWEEN ABOVE GENERAL NOTES AND SPECIFICATIONS, WHERE APPLICABLE, SPECIFICATIONS SHALL BE FOLLOWED



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COA 15

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Consultants:

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APPLICABLE CODES APPLICABLE CODES: ED BY THIS PROJECT. ALL WORK UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE AND IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SHALL INCLUDE WHERE THE FOLLOWING CODES AND STANDARDS INCLUDING THE REGULATIONS OF GOVERNING LOCAL, STATE, COUNTY AND OTHER APPLICABLE CODES. REFER TO SPECIFICATIONS FOR ADDITIONAL CODE REQUIREMENTS: E ROOM NUMBER(S) SIGNAGE INSTALLED IN BUILDING CODES: • FLORIDA BUILDING CODE, 7TH EDITION (2020) FLORIDA ENERGY CONSERVATION CODE, 7TH EDITION (2020) N PANEL, PANELBOARD, • FLORIDA FIRE PREVENTION CODE, 7TH EDITION (2020) FORMER, TRANSFER ADDITIONAL CODES, STANDARDS, AND REQUIREMENTS 1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI). 2. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE). TAG SHALL INCLUDE 3. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA). 4. REQUIREMENTS OF LOCAL POWER COMPANY. 5. THE AMERICANS WITH DISABILITIES ACT (ADA). ENT CONTROLLERS PER 6. OWNER'S PUBLISHED DESIGN STANDARDS. ALL MATERIALS SHALL BE NEW AND FREE OF DEFECTS, AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LAB, AS DEFINED BY OSHA. WHERE NO LABELING OR LISTING SERVICE IS AVAILABLE FOR CERTAIN TYPES OF EQUIPMENT, TEST DATA SHALL BE SUBMITTED TO VALIDATE THAT EQUIPMENT MEETS OF EXCEEDS AVAILABLE STANDARDS. NATIONAL FIRE PROTECTION (NFPA) STANDARDS: NFPA 70, 2017 EDITION, NATIONAL ELECTRICAL CODE®. • NFPA 101, 2018 EDITION, LIFE SAFETY CODE®. D DESIGN STANDARDS **OWNER REQUIREMENTS** ILABLE FAULT CURRENT ERVICE EQUIPMENT 1. CONTRACTOR SHALL REFERENCE ALL RELATED CONTRACT DOCUMENTS, SITE SURVEY, AND OTHER RESOURCES FOR POSSIBLE CONFLICTS WITH UNDERGROUND UTILITIES. AT UTILITY CROSSINGS, CONTRACTOR SHALL VERIFY UTILITY DEPTHS AND COORDINATE CONDUIT ROUTING AS NECESSARY. 2. CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID. 3. LIGHTING SHALL BE CONTROLLED BY PHOTOCELL WITH MANUAL OVERRIDE SWITCH. PROVIDE PHOTOCELL WITHOUT ASTRONOMICAL TIMECLOCK. PARKING LOT LIGHTING SHALL BE CONTROLLED SEPARATELY FROM PATHWAY LIGHTING. 4. BASKETBALL COURT LIGHTING AND FIRE STATION LIGHTING IS EXISTING TO REMAIN AND IS NOT IN CONTRACT.

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 B. WORKING SPACES SHALL NOT BE LESS THAN SPECIFIED IN THE NATIONAL ENERGY CODE FOR ALL VOLTAGES SPECIFIED. C. INACCESSIBLE EQUIPMENT: WHERE THE ENGINEER DETERMINES THAT THE CONTRACTOR HAS INSTALLED EQUIPMENT NOT CONVENIENTLY ACCESSIBLE FOR OPEF AND MAINTENANCE, EQUIPMENT SHALL BE REMOVED AND REINSTALLED AS DIRECTED AT NO ADDITIONAL COST TO THE OWNE "CONVENIENTLY ACCESSIBLE" AS DEFINED IS BEING CAPABLE OF BEING REACHED WITHOUT THE USE OF LADDERS, OR WITHOUT CLIMBING OR CRAWLING UNDER OR OVER OBSTACLES SUCH AS MOTORS, PUMPS, BELT GUARDS, TRANSFORMERS, PIPING, AND DUCTWORK. D. DISTRIBUTION EQUIPMENT ALL ITEMS OF ELECTRICAL DISTRIBUTION EQUIPMENT (PANEL-BOAR DISCONNECT SWITCHES AND TRANSFORMERS) SHALL BE OF ONE MANUFACTURER, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS THE SPECIFICATIONS, OR APPROVED BY THE ENGINEER, INTERMIXIN OF DISTRIBUTION EQUIPMENT BY DIFFERENT MANUFACTURERS WIL BE PERMITTED. PROVIDE A SURGE ARRESTER FOR LIGHTNING PROTECTION ON EAC PANELBOARD (EXTERNALLY MOUNTED), REFER TO DRAWINGS FOR VOLTAGE AND PHASING. SURGE ARRESTER: SHALL BE INJECTION M FROM HIGH TEMPERATURE THERMOPLASTIC UTILIZING METAL OXID VARISTORS WITH A FUSIBLE LINK AND ON LED INDICATING LIGHT. 2. 777/480V: VOLTAGE RATING LINE TO GROUND SHALL BE 650V. RMS MIN. RESPONSE TIME SHALL BE INSTANTANEOUS. MAX. CLAMPING VOLTAGES SHALL BE 100 VOLT AT 5,000 AMPS LINE TO GROUND. MINIMUM LIFE AT 1.5 KA IS 2,500 OPERATIONS. 36,000 AMP PEAK SINGLE PULSE TRANSIENT. SQUARE 'D' #SDSA3650. 	 B. WORKING SPACES SHALL NOT BE LESS THAN SPECIFIED. C. INACCESSIBLE EQUIPMENT: WHERE THE ENGINEER DETERNINES THAT THE CONTRACTOR HAS INSTALLED COUPMENT NOT CONVENIENTLY ACCESSIBLE FOR OPERATIK AND MAINTENANCE, EQUIPMENT SHALL BE REMOVED AND REINSTALLED AS DIRECTED AT NO ADDITIONAL COST TO THE OWNER. "CONVENIENTLY ACCESSIBLE" AS DEFINED IS BEING CAPABLE OF BEING REACHED WITHOUT THE USE OF LADDERS, OR WITHOUT CLIMBING OR CRAWLING UNDER OR OVER OBSTACLES SUCH AS MOTORS, PUMPS, BELT GUARDS, TRANSFORMERS, PIPING, AND DUCTWORK. DISTRIBUTION EQUIPMENT ALL ITEMS OF ELECTRICAL DISTRIBUTION EQUIPMENT (PANEL-BOARDS, DISCONNECT SWITCHES AND TRANSFORMERS) SHALL BE OF ONE MANUFACTURER, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS, IN THE SPECIFICATIONS, OR APPROVED BY THE ENGINEER, INTERMIXING OF DISTRIBUTION EQUIPMENT BY DIFFERENT MANUFACTURERS WILL NO BE PERMITTED. PROVIDE A SURGE ARRESTER FOR LIGHTNING PROTECTION ON EACH PANELBOARD (EXTERNALLY MOUNTED), REFER TO DRAWINGS FOR VOLTAGE AND PHASING. SURGE ARRESTER: SHALL BE INJECTION MOLD FROM HIGH TEMPERATURE THERMOPLASTIC UTILIZING METAL OXIDE VARISTORS WITH A FUSIBLE LINK AND ON LED INDICATING LIGHT.	1.10	A.	EQUIPMENT INSTALLATION AND REQUIREMENTS: EQUIPMENT LOCATION SHALL BE AS CLOSE AS PRACTICAL TO LOCATIONS SHOWN ON THE DRAWINGS.
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AMP PEAK SINGLE PULSE TRANSIENT. SQUARE 'D' #SDSA3650. 3. EQUIPMENT LAYOUTS ON THE DRAWINGS ARE BASED ON ONE	 AMP PEAK SINGLE PULSE TRANSIENT. SQUARE 'D' #SDSA3650. EQUIPMENT LAYOUTS ON THE DRAWINGS ARE BASED ON ONE MANUFACTURER. VERIFY ALL ACTUAL EQUIPMENT SIZES WITH EQUIPMENT MANUFACTURER PRIOR TO BIDDING. IF LAYOUT CHANGES ARE REQUIRED DUE TO OTHER ELECTRICAL MANUFACTURERS EQUIPMENT SIZE, THEY MUST BE SUBMITTED TO AND APPROVED BY THE ENGINEER. NATIONAL ELECTRIC CODE WORKING CLEARANCES MUST BE MAINTAINED AT ALL TIMES. IN NO CASE WILL EXTRA REMUNERATION BE ALLOWED FOR LAYOUT CHANGES THAT DIFFER FROM THOSE SHOWN. PROVIDE AND INSTALL ALL STEEL SUPPORTS AS REQUIRED FOR MOUNTING OF ELECTRICAL EQUIPMENT. 			PANELBOARD (EXTERNALLY MOUNTED). REFER TO DRAWINGS FOR VOLTAGE AND PHASING. SURGE ARRESTER: SHALL BE INJECTION MOLDE FROM HIGH TEMPERATURE THERMOPLASTIC UTILIZING METAL OXIDE VARISTORS WITH A FUSIBLE LINK AND ON LED INDICATING LIGHT. a. 277/480V: VOLTAGE RATING LINE TO GROUND SHALL BE 650V. RMS MIN. RESPONSE TIME SHALL BE INSTANTANEOUS. MAX. CLAMPING VOLTAGES SHALL BE 1800 VOLT AT 1500 AMPS LINE TO GROUND. 2500 VOLT AT 5,000 AMPS LINE TO GROUND, 2500 VOLT AT 5,000 AMPS LINE TO GROUND. MINIMUM LIFE AT 1.5 KA IS 2.500 OPERATIONS. 36.000
 MANUFACTURER. VERIFY ALL ACTUAL EQUIPMENT SIZES WITH EQUIPMENT MANUFACTURER PRIOR TO BIDDING. 4. IF LAYOUT CHANGES ARE REQUIRED DUE TO OTHER ELECTRICAL MANUFACTURERS EQUIPMENT SIZE, THEY MUST BE SUBMITTED TO AND ADDROV(ED BY THE FAICHMENT FOR MAIL FOR FOR CODE 	 AND APPROVED BY THE ENGINEER. NATIONAL LECTRIC CODE WORKING CLEARANCES MUST BE MAINTAINED AT ALL TIMES. IN NO CASE WILL EXTRA REMUNERATION BE ALLOWED FOR LAYOUT CHANGES THAT DIFFER FROM THOSE SHOWN. 5. PROVIDE AND INSTALL ALL STEEL SUPPORTS AS REQUIRED FOR MOUNTING OF ELECTRICAL EQUIPMENT. 			 AMP PEAK SINGLE PULSE TRANSIENT. SQUARE 'D' #SDSA3650. EQUIPMENT LAYOUTS ON THE DRAWINGS ARE BASED ON ONE MANUFACTURER. VERIFY ALL ACTUAL EQUIPMENT SIZES WITH EQUIPMENT MANUFACTURER PRIOR TO BIDDING. IF LAYOUT CHANGES ARE REQUIRED DUE TO OTHER ELECTRICAL MANUFACTURERS EQUIPMENT SIZE, THEY MUST BE SUBMITTED TO ADD ADDROV(FED BY THE ENCINEEE) MATTER STORY OF TO ADDROV(FED BY THE ENCINEE) MATTER STORY OF TO ADDROV(FED BY THE STORY OF THE THE STO
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		CONNECTIONS FOR ALL EQUIPMENT REQUIRING ELECTRICAL TION WORK PROVIDED BY OTHERS.
THE	ELEC	TRICAL CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL CONDUIT, BOXES FOR ALL EQUIPMENT REQUIRING ELECTRICAL
POV AND	VER T)/OR T	HAT IS EITHER FURNISHED OR SPECIFIED BY OTHER CONTRACTORS HE OWNER, SHOWN ON DRAWINGS OR LISTED BELOW. IN GENERAL,
	MAJO	VICE AND INTERCONNECTING REQUIRED AT THE SITE BY THE
SHA BE F	LL BE	REVIEWED TO VERIFY WHETHER THE EQUIPMENT IS SPECIFIED TO RY PREWIRED AND IF NOT, THEN IT SHALL BE THE RESPONSIBILITY
OF 1 THE	THE EL	ECTRICAL CONTRACTOR TO PROVIDE THE COMPLETE WIRING OF PMENT IN ACCORDANCE WITH WIRING DIAGRAMS PROVIDED BY
OTH ALL	IER CO	ONTRACTORS AND/OR OWNER TO THE ELECTRICAL CONTRACTOR. CONNECTING OF EQUIPMENT SHALL BE BY THE ELECTRICAL
		TOR. (OLTAGE WIRING AND CONNECTIONS REQUIRED TO CONTROL THE 17 APE A DAPT OF THIS SECTION, ALL WIRING SHALL BE IN
	NDUIT,	VI ARE A PART OF THIS SECTION. ALL WIRING SHALL BE IN LOW VOLTAGE CONTROL WIRING SHALL BE IN CONDUIT, SYSTEM WIRING AND TERMINATIONS OF LOW VOLTAGE CONTROL
WIR	ING S	HALL BE THE RESPONSIBILITY OF THE TEMPERATURE CONTROLS TOR.
THE FUR	CONT	RACTOR SHALL BE FAMILIAR WITH THE EQUIPMENT TO BE D BY THE OTHER CONTRACTORS AND/OR THE OWNER IN
		ION WITH THIS WORK AND PROVISIONS FOR SUCH CONNECTIONS K SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE, IN NO
CON) AN THE DRAWINGS OR IN THE SPECIFICATIONS, IN THE EVENT
EQL RES	JIPMEI PONS	IT DIFFERS ON APPROVED SHOP DRAWINGS IT SHALL BE THE IBILITY OF THE SUPPLYING CONTRACTOR TO COORDINATE ELECTRICA
CON ANY	INECT	IONS TO THE UNITS AND REIMBURSE ELECTRICAL CONTRACTOR FOR IGES IN SYSTEM DESIGN. THESE CHANGES SHALL NOT INVOLVE
REV	IEW A	LL PLANS AND SPECIFICATIONS TO VERIFY ALL EQUIPMENT IONS THAT ARE REQUIRED BY OTHER CONTRACTORS, ALTHOUGH
THE		TRICAL DRAWINGS WILL SHOW EQUIPMENT CONNECTION MENTS, IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO
CON	INECT	ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS AT NO EXTRA THE OWNER EVEN IF THIS EQUIPMENT CONNECTION IS NOT SHOWN
ON NOT	SHO	LECTRICAL DRAWINGS. COORDINATE ALL REQUIRED CONNECTIONS VN ON THE ELECTRICAL DRAWINGS WITH THE ENGINEER.
NAN GEN	IEPLA	TES
1.	DISC SEP	CONNECT SWITCHES (FUSED OR NONFUSED), PANEL-BOARDS, ARATELY MOUNTED CIRCUIT BREAKERS, CONTACTORS AND RELAYS.
2.	SPE	CIAL ELECTRICAL SYSTEMS (JCI CONTROLS, ETC.) SHALL BE SO ITIFIED AT JUNCTION AND PULL BOXES, TERMINAL CABINET AND
INS(EQU CRIPTI USE 0	IFMENT RACKS. ON: NAMEPLATES SHALL ADEQUATELY DESCRIBE THE FUNCTION F THE PARTICULAR FOLIDMENT INVOLVED NAMEDIATES FOR
PAN	IELBO	ARDS AND SWITCHBOARDS SHALL INCLUDE THE PANEL DESIGNATION, PHASE, AND AIC. RATING OF THE SUPPLY (SEE SCHEDII FS)
FOR AIC	EXAN	IPLE, "PANEL A" 120/208 V, 3-PHASE, 4-WIRE, 10,000 NAME USED FOR A MACHINE NAMEPLATE SHALL BE THE
SON	IE AS	THE ONE USED ON THE MACHINE'S MOTOR STARTER, COT AND P.B. STATION NAMEPLATES, NAMEPLATES FOR FUSED
SWI CON BI A	ICHES	5 AND PANELS SHALL ALSO INDICATE FUSE TYPE AND SIZE. CTION: NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC ONT AND BACK WITH WHITE CODE NAMED ATES FOR
EME	UNATE	CY SYSTEM PANEL-BOARDS AND TRANSFER SWITCH SHALL BE D PHENOLIC PLASTIC RED FRONT AND BOCK WITH WHITE CORF
LET 1/4-I	TERIN NCH V	G SHALL BE ENGRAVED THROUGH FRONT LAYER TO FORM VHITE CHARACTERS (1/2" WHITE LETTERS FOR DISTRIBUTION
PAN 1/4-I	IEL AN	D SWITCHBOARD NAMES), BRANCH SWITCH LABELS SHALL BE ETTERS, NAMEPLATES SHALL BE SECURELY FASTENED TO THE
		NT TO BE IDENTIFIED, WITH NO. 4 PHILLIPS, ROUND HEAD, PLATED, STEEL SELF TAPPING SCREWS OR NICKEL PLATED BRASS
0.03		ES THICK, DIE STAMPED. IN LIEU OF SEPARATE PLASTIC TES ENGRAVING DIRECTI Y ON DEVICE PLATES IS ACCEPTABLE
LET	TERS	ENGRAVED THUS, SHALL BE FILLED WITH CONTRASTING ENAMEL. PLATES AND THEIR INSTALLATION ARE PART OF THIS WORK, FREE
HAN	ID LET	TERING OR DYMO LABEL MARKER WILL NOT BE ACCEPTABLE.
MAT	ERIAL	S AND EQUIPMENT SHALL BE NEW, OF BEST QUALITY AND DESIGN
	ONSPI ONSPI	CUOUS PLACE WILL BE REQUIRED ON EACH MAJOR COMPONENT
NUM	IBER, E MAT	ALL ITEMS USED ON THIS PROJECT SHALL BE OF ASBESTOS ERIAL.
WHI IDEN	ERE IT	EMS OF EQUIPMENT AND/OR MATERIALS ARE SPECIFICALLY D HEREIN BY O MANUFACTURER'S NAME, MODEL OR CATALOG
NUN	/BER, EPT A	ONLY SUCH SPECIFIC ITEMS MAY BE USED IN THE BASE BID, S HEREINAFTER PROVIDED.
REC		AND APPROVED AND NOTED BY WRITTEN ADDENDUM PRIOR TO
FUR	NISH SER CC	NTE OF DID TE THE SECOND OF ON THE DEFINED TO SPECIFICATION SHALL BE THE SECOND OF THE
Mae All	DE ONI MATE	Y AS DEFINED UNDER "SUBSTITUTION OF EQUIPMENT". RIAL AND EQUIPMENT SHALL BE LISTED, LABELED OR CERTIFIED BY
ISSL STA	JED, E	QUIPMENT AND MATERIAL WHICH ARE NOT COVERED BY UL
LIST	ED, LA	ABELED, CERTIFIED OR OTHERWISE DETERMINED TO MEET SAFETY MENTS OF A NATIONALLY RECOGNIZED TESTING LABORATORY.
SUB	STITU	
AFT	ER EX	ECUTION OF THE CONTRACT, SUBSTITUTION OF EQUIPMENT OF THER THAN THOSE SPECIFICALLY NAMED IN THE CONTRACT
EQU		ITS MAT BE AFFROVED BY THE ENGINEER ONLY IF THE INT NAMED IN THE SPECIFICATIONS CANNOT BE DELIVERED TO N TIME TO COMPLETE THE WORK IN PROPER SEQUENCE TO
WO	RK OF	OTHER CONTRACTORS, DUE TO CONDITIONS BEYOND CONTROL OF RACTOR.
REC PRC	UEST	S FOR SUBSTITUTIONS MUST BE ACCOMPANIED BY DOCUMENTARY EQUALITY OR DIFFERENCE IN PRICE AND DELIVERY, IF ANY, IN
PRC	M OF	CERTIFIED QUOTATIONS FROM SUPPLIERS OF BOTH SPECIFIED AND D EQUIPMENT. ED SHALL DECEMENT OF THE DIFFERENCE IN 2007
		IN ANY SUBSTITUTION, AND THE CONTRACT ALTERED BY CHANGE
SUB		
		TOR SHALL, WITHIN FIFTEEN (15) DAYS AFTER AWARD OF TS BEGIN SENDING TO THE GENERAL CONTRACTOR FOR APPROVAL
		SETS OF SUBMITTALS, QUANTITY AS LISTED IN THE GENERAL NS, CONTAINING THE FOLLOWING: D DRAWING
1.	SHO a.	F URAWINGS SUBMIT "SHOP DRAWINGS" IN THE FORM OF BOND PAPER 8 1/2 X 14" OR 11" X 17" SIZE (OP ELECTRONICALLY JE
		ALLOWED IN ARCHITECT'S SPECIFICATIONS), DATA SHALL BE REDUCED ON DRAWINGS AS REGUIRED TO LEAVE 5" X 2" CLEAP
	b.	ON EACH DRAWING FOR ENGINEER'S STAMP. ENGINEERS WILL KEEP COPIES FOR THEIR RECORDS AND RETURN
	с.	APPROVED OR DISAPPROVED SETS TO CONTRACTOR. CONTRACTOR(S) SHALL, UPON APPROVAL, OBTAIN AND DISTRIBUTE
		COPIES OF APPROVED SETS AS NECESSARY TO COORDINATE WORK, (CONTRACTOR'S FILE, JOB SITE FILE, RECORD DOCUMENT
	4	FILE, UTHER PRIME CONTRACTORS, SUBCONTRACTORS AND SUPPLIERS).
	a.	SHOW AND IDENTIFY ITEM(S) TO BE FURNISHED AND SHALL SHOW AND IDENTIFY ITEM(S) TO BE FURNISHED AND GIVE LOCATION, ARRANGEMENT SCAIF DETAILS SIZES DIMENSIONS
		PERFORMANCE CHARACTERISTICS, CAPACITIES, WIRING DIAGRAMS, FINISH AND OTHER PERTINENT INFORMATION. EACH INDIVIDUAL
		ITEM SHALL HAVE ITS OWN SEPARATE SHEET PROVIDED FOR APPROVAL. (EXAMPLE: SEPARATE SHEETS FOR EACH
	e.	PANEL-BOARD.) ALL SHOP DRAWINGS SHALL BE CHECKED AND SIGNED BY THIS
	,	CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE ENGINEER.
	f. g.	EACH SHOP DRAWING SHEET SHALL INDICATE JOB NAME. SHOP DRAWINGS SUBMITTED WITHOUT CONTRACTORS SIGNATURES OR ADDROVAL AND VEDICATION WITH NOT DE ADDROV
	h.	SHOP DRAWINGS SHALL BE SUBMITTED ON WIRE, SITE LIGHT FIXTURES (INCI I DING DISTRIBUTION OF RECORDED ON STREED OF A DESCENSE FIXTURES (INCI I DING DISTRIBUTION OF RECORDED OF A DESCENSE)
2.	PRO	CONDUIT, ETC. DUCT DATA: PRODUCT DATA INCLUDES MANUFACTURER'S PRINTED
	SPE CAT	CIFICATIONS, INSTRUCTIONS, RECOMMENDATIONS, PERTINENT ALOG PAGES AND SIMILAR INFORMATION. SUCH DATA SHALL BE
	MAR SUB	KED TO IDENTIFY THE DATA APPLICABLE TO THE PROJECT. MIT ONLY ONE COPY, ENGINEER WILL REVIEW, NOTE AND
	KEC SUB	ACTION AND MAKE COPIES FOR THEIR FILES, THE MITTED COPY THEN WILL BE RETURNED TO THE CONTRACTOR WHO IL REPRODUCE AND DISTRIBUTE CODIES NEEDED FOR PROJECT
	WOF	REAL ROUGE AND DISTRIBUTE COPIES NEEDED FOR PROJECT RK. NTITIES OF MATERIALS WILL NOT BE VERIFIED BY THE ENGINEER
3.	QUΔ	
3.	qua App App	ROVAL STAMP ON SHOP DRAWINGS DOES NOT CONSTITUTE ROVAL OF QUANTITIES FISTED ON SHOP DRAWINGS.
3. ENG CON	QUA APP APP SINEEF NTRAC	ROVAL STAMP ON SHOP DRAWINGS DOES NOT CONSTITUTE ROVAL OF QUANTITIES FISTED ON SHOP DRAWINGS. RVS ACCEPTANCE OF COMPLIANCE SUBMITTALS WILL NOT RELIEVE TOR FROM HIS RESPONSIBILITY FOR ANY DEVIATIONS FROM THE

1.11

1.12

1.13

1.14

1.15

- MANUFACTURER'S INSTRUCTIONS 1.16 APPLY, INSTALL, CONNECT, ERECT, USE, CLEAN, AND CONDITION ARTICLES, MATERIALS AND EQUIPMENT AS DIRECTED BY THE MANUFACTURER.
- 1.17 CUTTING AND PATCHING NOTIFY THE GENERAL CONTRACTOR IN AMPLE TIME. OF THE LOCATION OF ALL CHASES, SLEEVES, AND ANY OTHER OPENINGS REQUIRED IN CONNECTION WITH THE WORK OF THIS CONTRACT B. CUTTING AND PATCHING MADE NECESSARY BECAUSE OF FAILURE TO
- COMPLY WITH THE ABOVE SHALL BE DONE BY THE GENERA! CONTRACTOR AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR. WHEN IT IS NECESSARY FOR THE ELECTRICAL CONTRACTOR TO CUT SITE MATERIALS TO INSTALL HIS WORK, IT SHELL BE DONE IN A NEAT AND VORKMANLIKE MANNER MEETING WITH THE APPROVAL OF THE ENGINEER

HOLES THROUGH CONCRETE SHALL BE CAREFULLY DONE WITH A "CONCRETE ERMITE" DRILL, A STAR DRILL OR AIR HAMMER WILL NOT BE PERMITTE STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT APPROVAL FROM THE MUTILATION 1.18

ANY MUTILATION OF FINISHING INITIATED BY ELECTRICAL CONSTRUCTION SHALL BE PROPERLY CORRECTED BY THE RESPECTIVE FINISHING CONTRACTOR AND PAID FOR BY THE ELECTRICAL CONTRACTOR. TESTING AND ADJUSTMENT

1.19

- UPON COMPLETION OF THE PROJECT, RECORD LOADS FOR A 48 HOUR PERIOD ON EACH PHASE OF ALL EXISTING PANELBOARDS, DISTRIBUTION PANELS AND SWITCHBOARDS. IN WHICH NEW LOADS ARE BEING ADDED TO AND SUBMIT FINAL READINGS TO THE ENGINEER FOR RECORDS, THIS CONTRACTOR SHALL ADJUST EQUIPMENT, INSTRUMENTS, GAGES, METERS ETC, AS REQUIRED TO TEST AND ADJUST THESE SYSTEMS. CHECK TEST AND ADJUST THE MECHANISMS OF ALL ELECTRICAL EQUIPMEN AS REQUIRED FOR OPTIMUM PERFORMANCE. PERFORM TESTS FOR INSULATION RESISTANCE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND INSURE THAT ALL CIRCUITS ARE FREE FROM SHORT CIRCUITS KEEP A CALIBRATED VOLTMETER AND AMMETER AVAILABLE AT ALL TIMES ND PROVIDE SERVICE FOR TEST READINGS WHEN AND AS REQUIRED UF UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.
- 1.20 ELECTRICAL WORK COMPLETION BEFORE REQUESTING FINAL INSPECTION THE FOLLOWING WORK MUST BE COMPLETED. B. OPERATING INSTRUCTIONS:
 - THE CONTRACTOR SHALL SUBMIT ALONG WITH THE SHOP DRAWINGS OF THE EQUIPMENT, THREE (3) COPIES OF OPERATING INSTRUCTIONS FOR ALL ITEMS, INSTRUCTIONS SHALL BE PREPARED BY THE MANUFACTURER OF THE EQUIPMENT (MAY SUBMIT ELECTRONICALLY). AFTER THE OPERATING INSTRUCTIONS HAVE BEEN APPROVED BY THE ARCHITECT, THE CONTRACTOR SHALL INCLUDE THE THREE (3) COPIES IN
 - MAINTENANCE INSTRUCTIONS BROCHURES. 3. THE CONTRACTOR SHALL ALSO OBTAIN ALL MANUFACTURER'S NSTRUCTIONS, MANUALS, AND ONE COMPLETE SET OF DRAWINGS AND TURN THESE OVER TO THE ARCHITECT AT THE COMPLETION OF THE
 - 4. THE CONTRACTOR SHALL KEEP IN A SAFE PLACE, ALL KEYS AND SPECIAL WRENCHES FURNISHED WITH EQUIPMENT UNDER THIS CONTRACT AND SHALL GIVE SAME TO THE ENGINEER AT THE
 - COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL PREPARE A COMPLETE BROCHURE, IN TRIPLICATE, COVERING ALL SYSTEMS AND EQUIPMENT FURNISHED AND INSTALLED UNDER THIS CONTRACT, BROCHURES SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL AND DELIVERY TO THE OWNER THE COST OF THIS BROCHURE SHALL BE INCLUDED IN THE CONTRACT
 - COST. BROCHURES SHALL CONTAIN THE FOLLOWING: a. CERTIFIED EQUIPMENT DRAWINGS AND/OR CATALOG DATA CLEARLY MARKED FOR EQUIPMENT FURNISHED AS REQUIRED FOR APPROVAL SUBMISSION UNDER DETAILED SECTION OF THE SPECIFICATIONS. b. COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS FOR
 - EACH ITEM OF EQUIPMENT. COMPLETE PART LIST FOR EACH EQUIPMENT ITEM. ANY SPECIAL EMERGENCY OPERATING INSTRUCTIONS OR A LIST OF SERVICE ORGANIZATIONS (INCLUDING ADDRESSES AND TELEPHONE NUMBERS) CAPABLE OF RENDERING EMERGENCY SERVICE TO THE
 - VARIOUS PARTS OF THE SYSTEM, BROCHURES SHALL BE BOUND IN HARD BACKED THREE RING BINDERS WITH AN INDEX, SUBDIVIDERS AND REINFORCED SHEETS. PROJECT NAME AND ADDRESS. SECTION OF WORK COVERED BY BROCHURE, I.E. "ELECTRICAL
 - NAME AND ADDRESS OF ARCHITECT. NAME AND ADDRESS OF ENGINEER
 - NAME AND ADDRESS OF CONTRACTOR TELEPHONE NUMBER OF CONTRACTOR, INCLUDING NIGHT OR
 - EMERGENCY NUMBER. 7. IN ADDITION TO THESE WRITTEN INSTRUCTIONS, EACH RESPECTIVE ONTRACTOR SHALL FULLY AND CAREFULLY INSTRUCT THE OWNER, OR THE OWNER'S REPRESENTATIVES, AS TO THE PROPER OPERATION, CARE AND IAINTENANCE OF EACH SYSTEM AND ITS EQUIPMENT.
- FINAL INSPECTION FINAL INSPECTION WILL BE MADE UPON WRITTEN REQUEST FROM THE GENERAL CONTRACTOR AFTER THE PROJECT IS COMPLETED; IN ACCORDANCE WITH THE SUPPLEMENTARY GENERAL CONDITIONS. FURNISH A WORKMAN FAMILIAR WITH THIS PROJECT TO ACCOMPANY THE
- ENGINEER ON FINAL INSPECTION AND HAVE AVAILABLE LADDERS. DROP CORDS, AND OTHER EQUIPMENT AS REQUIRED TO GAIN ACCESS TO ANY PORTION OF THIS SYSTEM. THIS CONTRACTOR AND PRINCIPAL SUBCONTRACTORS SHALL BE REPRESENTED
- AT THE INSPECTION BY A PERSON OF AUTHORITY RESPONSIBLE TO DEMONSTRATE TO THE ENGINEER THAT THE WORK CONFORMS TO THE INTENT OF THE PLANS AND SPECIFICATIONS EXTRA INSPECTIONS MADE NECESSARY BY THE ELECTRICAL CONTRACTOR'S FAILURE TO COMPLY WITH THE CONDITIONS AS SET FORTH ABOVE SHALL BE CHARGED TO THE CONTRACTOR FOR THE INSPECTOR'S TIME BOTH ON THE
- JOB AND SPENT IN TRAVEL BETWEEN THE OFFICE AND THE PROJECT SITE. GUARANTEE GUARANTEE ALL WORK, MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE 1.22 YEAR AFTER DATE OF SUBSTANTIAL COMPLETION. DURING THE YEAR GUARANTEE PERIOD THE ELECTRICAL CONTRACTOR SHALL RESPONSIBLE FOR ANY DEFECTS WHICH DEVELOP IN THE ELECTRICAL SYSTEMS. UPON NOTIFICATION OF A DEFECT BY THE GENERAL
- CONTRACTOR THE ELECTRICAL CONTRACTOR SHALT MAKE IMMEDIATE EFFORT O CORRECT IT AND SHALL NOTIFY THE ARCHITECT WHEN THIS WORK IS COMPLETED. THIS GUARANTEE DOES NOT INCLUDE ORDINARY LAMP FAILURE. REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITH NO COST TO PROVIDE AS PART OF THE WORK OF THIS CONTRACT, IN ADDITION TO THE
- FIRST YEAR'S GUARANTEE ON EQUIPMENT AND MATERIALS, THE FOLLOWING ROUTINE MAINTENANCE AND INSPECTION. (THE ONE YEAR LIME PERIOD WILL NOT START UNTIL EACH ITEM IS COMPLETED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND ACCEPTED BY THE OWNER).

END OF SECTION SECTION 26100 - BASIC MATERIALS

- 1.1 MATERIALS:
 - RIGID CONDUIT SHALL BE STANDARD SIZE, HOT DIP GALVANIZED CONDUIT AS MANUFACTURED BY THE REPUBLIC ALLIED TUBE I TV OR EQUAL. RIGID STEEL CONDUITS AND INTERMEDIATE METAL CONDUITS SHALL BE PROVIDED WITH THREADED FITTINGS AND COUPLINGS. A GROUND WIRE, SIZED PER N.E.C. ART. 250.122 SHALL BE PULLED IN ALL CONDUITS CONTAINING PHASE CONDUCTOR(S) EMT TUBING SHALL BE ALLIED, REPUBLIC, LTV, OR EQUAL WITH UL APPROVED NATIONAL ELECTRIC CODE TYPE FITTINGS. INDENTER TYPE
 - FITTINGS SHALL NOT BE USED. A GROUND WIRE SIZED PER NEC, ART. 250.122 SHALL BE PULLED IN EACH CONDUIT CONTAINING PHASE CONDUCTOR(3. ALL CONDUIT EXPOSED TO PHYSICAL ABUSE (I.E. INDUSTRIAL
 - OCATIONS), INSTALLED IN WET LOCATIONS, IN SLABS, BELOW GRADE OR EXPOSED EXTERIOR TO THE BUILDING, SHALL BE RIGID STEEL OR INTERMEDIATE METAL CONDUIT (IMC).
 - 4. EMT CONDUIT MAY BE USED WHERE CODE PERMITS EXCEPT AS OUTLINED ABOVE. 5. SHORT RUNS OF GALVANIZED FLEXIBLE CONDUIT MAY BE USED WHEN APPROVED BY THE ENGINEER. SEPARATE GROUND CONDUCTOR SIZED
 - PER NEC. ART, 250.122 SHALL BE INSTALLED IN ALL FLEXIBLE 6. LIQUID-TIGHT FLEXIBLE METAL CONDUIT: FLEXIBLE GALVANIZED STEEL TUBING COVERED WITH EXTRUDED LIQUID-TIGHT JACKET OF POLYVINYL CHLORIDE (PVC), PROVIDE CONDUIT WITH A CONTINUOUS COPPER SONDING CONDUCTOR SPIRAL BETWEEN THE CONVOLUTIONS. PROVIDE STEEL OR MALLEABLE IRON FITTINGS. CONNECTORS SHALL HAVE
 - INSULATED THROATS. U.L. APPROVED SCHEDULE 40 P.V.C. CONDUIT MAY BE USED HERE FEEDERS OR BRANCH CIRCUITS ARE TO BE RUN IN EARTH OR SLABS (3/4" MINIMUM), USE ALL STEEL ELLS AND RISERS WITH PVC COATING APPROVED FOR UNDERGROUND USE. USE CONDUIT ADAPTERS WHEN CONVERTING FROM P.V.C. TO STEEL CONDUIT. USE PLASTIC SPACERS WHEN MORE THAN ONE CONDUIT IS INSTALLED TOGETHER. SEE DRAWINGS FOR AREAS REQUIRING CONCRETE ENCASEMENT, ALL P.V.C. CONDUITS SHALL BE PROVIDED WITH
- SEPARATE GROUND CONDUCTOR SIZED PER N.E.C. ART. 250.122, BUSHINGS AND LOCKNUTS:
 1. BUSHINGS FOR TERMINATING CONDUITS SMALLER THAN 1-1/4-INCHES ARE TO HAVE FLARED BOTTOM AND RIBBED SIDES, WITH SMOOTH UPPER EDGES TO PREVENT INJURY TO CABLE INSULATION. INSTALL INSULATED TYPE BUSHINGS FOR TERMINATING CONDUITS 1-1/4-INCHES AND LARGER, BUSHINGS ARE TO HAVE FLARED
- BOTTOM AND RIBBED SIDES. UPPER EDGE TO HAVE PHENOLIC INSULATING RING MOLDED INTO BUSHING. 3. WHERE REQUIRED, BUSHINGS OF STANDARD OR INSULATED TYPE SHALL HAVE SCREW TYPE GROUNDING TERMINAL. C. CONDUIT INSTALLATION: ALL EXPOSED CONDUITS (WHERE APPROVED BY THE ENGINEER) SHALL
- BE ROUTED PARALLEL OR PERPENDICULAR TO SITE ELEMENTS. CONDUIT SHALL BE INSTALLED TO THE REQUIREMENTS OF THE STRUCTURE AND TO REQUIREMENTS OF ALL THE OTHER WORK ON THE PROJECT. CONDUIT SHALL BE INSTALLED TO CLEAR ALL OPENINGS. DEPRESSIONS, PIPES, REINFORCING STEEL, ETC. CONDUIT SET IN FORMS FOR CONCRETE STRUCTURE SHALL BE INSTALLED IN A MANNER THAT INSTALLATION WILL NOT AFFECT THE STRENGTH OF THE STRUCTURE AS DETERMINED BY THE STRUCTURAL ENGINEER
- MAXIMUM SIZE OF CONDUIT IN CONCRETE SLAB IS 1-1/4"-INCHES TRADE SIZE. 3. CONDUIT SHALL BE INSTALLED CONTINUOUS BETWEEN CONNECTIONS TO OUTLETS, BOXES AND CABINETS WITH A MINIMUM POSSIBLE NUMBER OF BENDS AND NOT MORE THAN THE EQUIVALENT OF 4-90 DEGREE BENDS BETWEEN CONNECTIONS. BENDS SHALL BE SMOOTH AND EVEN AND SHALL BE MADE WITHOUT FLATTENING CONDUIT OR FLAKING ENAMEL. RADIUS OF BENDS SHALL BE AS LONG AS POSSIBLE AND
- NEVER SHORTER THAN THE CORRESPONDING TRADE ELBOW. LONG RADIUS ELBOWS SHALL BE USED WHERE NECESSARY. CONDUITS SHALL BE SECURELY FASTENED IN PLACE WITH APPROVED SUPPORTS AS REQUIRED. CONDUIT SHALL BE REAMED BEFORE INSTALLATION AND ALL CONDUIT SHALL BE THOROUGHLY CLEANED BEFORE INSTALLATION AND KEPT CLEAN
- AFTER INSTALLATION, OPENINGS AND BOXES SHALL BE PLUGGED OR COVERED AS REQUIRED TO KEEP CONDUIT CLEAN DURING CONSTRUCTION AND ALL CONDUIT SHALL BE FISHED CLEAR OF OBSTRUCTIONS BEFORE THE PULLING OF WIRES. ALL CONDUIT SHALL BE AS SIZED ABOVE AND SHALL NOT BE SMALLER THAN CODE REQUIREMENTS.

- 7. ALL WORK SHALL BE PROTECTED AGAINST DAMAGE DURING ONSTRUCTION AND ANY WORK DAMAGED OR MOVED OUT OF LINE AFTER ROUGHING IN SHALL BE REPAIRED AND RESET TO THE APPROVAL OF THE ENGINEER WITHOUT ADDITIONAL COST TO THE
- CONDUIT TERMINATIONS AT PANELBOARDS, SWITCHBOARDS, MOTOR ONTROL EQUIPMENT, JUNCTION BOXES, ETC, SHALL BE ALIGNED AND INSTALLED TRUE AND PLUMB, WOOD OR STEEL BUCKS OR EMPLATES SHALL BE USED WHERE REQUIRED.
- WIRES AND CABLES HARBIRSHOW, CRESCENT, SOUTHWIRE, GENERAL CABLE, AMERICAN, U.S. RUBBER COMPANY OR EQUAL CODE GAUGE WIRE, FINISHED WITH FADELESS COLOR SOLUTION FOR NATIONAL ELECTRIC CODE SYSTEM OF COLOR CODING AND BEARING UNDERWRITER'S LABEL. WIRES SHALL BE SOFT ANNEALED STRANDED COPPER WITH PROPERTIES CONFORMING TO THE NATIONAL ELECTRIC CODE REQUIREMENTS. NO. 8 GAUGE AND LARGER
- SHALL BE STRANDED. NO. 10 GAUGE AND SMALLER SHALL BE SOLID. WIRE SMALLER THAN NO. 12 GAUGE SHALL NOT BE USED UNLESS SPECIFICALLY CALLED FOR. ALL FEEDER CONDUCTORS SHALL BE THE SAME SIZE AND TYPE AND BE
- CONTINUOUS FROM OVERCURRENT DEVICE TO PANEL. WIRES FOR GENERAL USE WITHIN THE BUILDING SHALL BE TYPE THWN, XHHW, OR COMBINATION THHN/THWN EXCEPT WHERE CALLED FOR ON THE DRAWINGS. TYPE THW MAY BE USED FOR 6 AWG AND LARGER SIZES ALL CONDUCTOR SIZES MUST BE AS SPECIFIED ON DRAWINGS REGARDLESS OF INSULATION TYPE. WIRES FOR OTHER THAN GENERAL USE
- SHALL BE AS HEREINAFTER SPECIFIED FOR SPECIFIC SERVICES. A GROUND WIRE SIZED PER NEC. ART. 250.122 SHALL BE INSTALLED IN EACH CONDUIT CONTAINING PHASE CONDUCTORS. ALL CONTROL WIRING SHALL BE COPPER, SOLID OR STRANDED, #14 GA. OR
- LARGER DEPENDING UPON CURRENT REQUIREMENTS. INSULATION TYPE FOR 90 DEGREE C. WHERE STRANDED CONDUCTORS ARE USED PROVIDE WITH SPADE TYPE INSULATED COPPER TERMINALS. ALL CONDUCTORS SHALL BE IDENTIFIED AT ALL TERMINATION POINTS AND IN ALL PULL AND JUNCTION BOXES BY THE FOLLOWING METHOD OF COLOR CODING. MEANS OF IDENTIFICATION SHALL BE PERMANENTLY POSTED EACH BRANCH CIRCUIT PANEL WITH A NAMEPLATE IDENTIFYING COLOF ING WHERE MARE THAN ONE NOMINAL VOLTAGE SYSTEM IS IN THE
- SAME BUILDING. 208Y/120 VOLT SYSTEM: PHASE A - BLACK <u>488Y/277 VOLT SYSTEM:</u> PHASE A - BROWN PHASE A - RED PHASE A - ORANGE PHASE A - BLUE PHASE A - YELLOW NEUTRAL - WHITE NEUTRAL - GRAY GROUND - GREEN **GROUND - GREEN** ALL CONDUCTORS SIZE #8 AWG AND SMALLER SHALL HAVE COLORED
- INSULATION. WHERE CONDUCTORS WITH BLACK INSULATION ARE USED FOR THE LARGER WIRE SIZES (6 AWG AND LARGER) COLOR CODING SHALL BE PROVIDED WITH TWO LAYERS-ONE HALF LAPPED OF NO. 35 COLORED SCOTCH VINYL ELECTRICAL TAPE. WIRE CONNECTIONS
- ALL WIRES SHALL BE RUN IN CONDUIT, SHALL BE CONTINUOUS BETWEEN OUTLETS AND BOXES (WITH NO SPLICES OR TAPS IN CONDUITS), SPLICES AND TAPS FOR #6 AND LARGER CONDUCTORS SHALL BE WITH BLOCK TYPE WITH INSULATING JACKET OR SPLIT BOLT CONNECTORS, COVERED AND COMPLETELY INSULATED WITH A MINIMUM OF THREE HALF-LOPPED LAYERS OF SCOTCH NO. 33+ (105°C) PLASTIC ELECTRICAL TAPE OR BY APPROVED INSULATED FASTENER ALL SPLICES AND TAPS HAVING IRREGULAR SURFACES SHALL BE PROPERLY PADDED WITH SCOTCHFIL PUTTY BEFORE APPLICATION OF INSULATING PLASTIC TAPE, SCOTCHLOK ELECTRICAL PRE-INSULATED SPRING PRESSURE CONNECTORS OR EQUAL MAY BE USED FOR UP TO #8 CONDUCTORS. CONNECTORS SHALL BE INSTALLED SO THAT

END OF SECTION

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SECTION 26400 - SERVICE AND DISTRIBUTION

ALL WIRES ARE PROPERLY INSULATED.

- GROUNDING ALL CONDUCTORS, MOTOR FRAMES, ETC., THAT REQUIRE GROUNDING SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, LOCAL POWER COMPANY AND LOCAL ELECTRICAL CODES. ALL GROUND CONNECTIONS TO GROUND RODS SHALL BE WITH CADWELD CONNECTIONS. PROVIDE ADDITIONAL GROUND RODS AS REQUIRED TO ACHIEVE A RESISTANCE OF 25 OHMS OR LESS PER N.E.C. 250.84. AT THE REQUEST OF THE ENGINEER PROVIDE A COPY OF THE TEST RESULTS. MULTIPLE GROUND RODS (WHEN REQUIRED) SHALL NOT BE LESS THAN 6 FEET APART.
- DISCONNECT SWITCHES THE CONTRACTOR SHALL FURNISH AND INSTALL SQUARE 'D' EXTERNALLY OPERATED, HEAVY DUTY, HORSEPOWER RATED DISCONNECT SWITCHES AT LL POINTS INDICATED ON THE DRAWINGS OR REQUIRED BY CODE. ALL DISCONNECT SWITCHES SHALL BE FUSED EXCEPT FOR DISCONNECT SWITCHES THAT HAVE INDIVIDUAL FUSE PROTECTION OF THE POINT WHERE THE CIRCUIT RECEIVES ITS SUPPLY. PROVIDE DISCONNECT SWITCHES WITH FUSE CLIPS, CLASS "J" OR CLASS "L". PROVIDE DEAD FRONT TYPE ON ALL EXTERIOR DISCONNECTS ON GRADE WHEN REQUIRED BY LOCAL CODE. THE ENCLOSURE SHALL HAVE THE PROPER NEMA RATING FOR THE **ENVIRONMENT**
- 1.3 FUSES CARTRIDGE TYPE FUSES OF PROPER SIZE AND TYPE AS REQUIRED SHALL BE FURNISHED AND INSTALLED FOR ALL SWITCHES THROUGHOUT AND AN ADDITIONAL SUPPLY OF THREE SPARE FUSES OF EACH SIZE AND TYPE SHALL BE FURNISHED IN ORIGINAL PACKAGES TO THE OWNER. APPROVED MANUFACTURERS: BUSSMANN, GOULD, SHAWMUT, LITTELFUSE,
- EDISON FUSE CLASSIFICATIONS: 1. 601 AMPS AND LARGER 600 VOLTS AND LESS: CLASS L 600 AMPS AND LESS 600 VOLTS AND LESS: CLASS J CLASS R FUSES WILL NOT BE ACCEPTED
- USES INSTALLED ON PROJECT SHALL BE BY ONE MANUFACTURER ONLY. (DO NOT INTERMIX MANUFACTURERS). BRANCH CIRCUIT PANELBOARDS 1.4
- ALL PANELS SHALL BE PROVIDED WITH KEY LOCKING DOOR. PANELS SHALL HAVE CONCEALED TRIM CLOMPS, DOORS WITH CONCEALE HINGES, AND FLUSH LOCK, MASTER KEYED. WHERE MULTI-SECTION PANELBOARDS ARE INDICATED ON DRAWINGS. PANEL CANS AND COVERS HALL BE OF THE SAME SIZE FOR EACH SECTION. KEY ALL DOORS ALIKE AND FURNISH TWO KEYS FOR EACH LOCK.
- OVER 48 INCHES HIGH AND DOUBLE DOORS TO HAVE TWO LOCKS CONSULT DRAWINGS FOR FLUSH OR SURFACE MOUNTING. AFTER WIRING, LABEL EACH CIRCUIT AND PROVIDE UNDER PLASTIC IN DOOR OF PANEL A TYPE WRITTEN SCHEDULE INDICATING LOAD DESCRIPTION FOR
- ALL CIRCUITS IN PANEL. MARK SPARE BREAKERS AND PROVISIONS FOR FUTURE BREAKERS IN PENCIL ON SCHEDULE FOR FUTURE CIRCUIT MARKING. BREAKERS SHALL HAVE INDIVIDUAL PLASTIC CASES SIZED AS SCHEDULED ON THE PLANS. TWO AND THREE POLE BREAKERS SHALL HAVE COMMON RIP (SINGLE POLE UNITS WITH TIE BARS ARE NOT ACCEPTABLE)
- BACK-FED MAIN CIRCUIT BREAKERS ABOVE 100 AMPS WILL NOT BE CCEPTABLE ALL PANELBOARDS SHALL HAVE GROUND BUSES INSTALLED AND GROUNDED ACCORDING TO N.E.C. ALL PANELBOARDS SERVING DEVICES HAVING ISOLATED GROUND CIRCUITS SHALL BE PROVIDED WITH AN ADDITIONAL
- ISULATED GROUND BUS FOR CONNECTION OF ISOLATED GROUND CONDUCTORS. BRANCH CIRCUIT PANELBOARDS RATED UP TO 240V (400A. MAX) SHALL HAVE A SHORT CIRCUIT CURRENT RATING TESTED TO U.L. STANDARDS FOR A MINIMUM RATING OF 22,000 AIC, UNLESS NOTED OTHERWISE. BREAKER RATING WITH-IN PANEL SHALL BE EQUAL TO OR GREATER THAN INIMUM INTEGRATED EQUIPMENT RATING. ALL BREAKERS SHALL BE OF
- THE PLUG-ON OR BOLT-ON TYPE. MINIMUM PANELBOARD WIDTH 20 INCHES. APPROVED MANUFACTURERS: 240 VOLT 480 VOLT CIRCUIT BREAKER
 MANUFACTURER:
 (400A MAX)
 (400A MAX)
 DISTRIBUTION PANEL

 SQUARE D
 NQ
 NF
 I-LINE
 MINIMUM CIRCUIT BREAKER SHORT CIRCUIT RATING OPTIONS: SEE THE DRAWINGS FOR PANEL A.I.C. RATINGS.
- FULLY RATED BREAKERS. U.L. SERIES RATED WITH CLASS 'J' OR 'L' FUSES, .. SERIES RATED WITH A LINE SIDE BREAKER, PANELBOARDS AND SHOP DRAWINGS SHALL HAVE A U.L. LABEL INDICATING THE INTEGRATED EQUIPMENT RATING. IF U.L. SERIES RATINGS ARE USED THE SHOP DRAWINGS SHALL CLEARLY INDICATE THE RATING USED AND THAT IT IS U.L. LISTED. PANELBOARD NAMEPLATES SHALL CLEARLY INDICATE THE A.I.C. RATING OF THE
- PANEL AND THE METHOD USED TO RATE THE PANEL (EXAMPLE "50.000 A.I.C. WITH 22 KA BREAKERS AND CLASS 'J' FUSES".) SURGE PROTECTIVE DEVICES (SPD/TVSS) SURGE PROTECTIVE DEVICES (SPD) SHALL BE EXTERNALLY INSTALLED ON THE PANELBOARD OR SWITCHBOARD UNLESS NOTED OTHERWISE ON THE
- B. MAXIMUM CLAMPING VOLTAGE SHALL BE: LINE TO NEUTRAL: 400 VOLTS FOR 208Y/120 VOLT AND 240/120 VOLT SYSTEMS; 800 VOLTS FOR 480Y/277 VOLT SYSTEMS.
- LINE TO GROUND: 400 VOLTS FOR 208Y/12C VOLT AND 240/120 VOLT SYSTEMS: 800 VOLTS FOR 480Y/277 VOLT SYSTEMS: 2000
- /OLTS FOR 480 VOLT DELTA SYSTEMS; 1000 VOLTS FOR 240 VOLT DELTA SYSTEMS. NEUTRAL TO GROUND: 400 VOLTS FOR 208Y/120 VOLT AND
- 240/120 VOLT SYSTEMS; 800 VOLTS FOR 4BOY/277 VOLT LINE TO LINE: 2000 VOLTS FOR 480 VOLT DELTA SYSTEMS 1000
- VOLTS FOR 240 VOLT DELTA SYSTEMS. UNITS SHALL HAVE INDIVIDUALLY FUSED MOV'S WITH A 200KA MINIMUM NTERRUPTING CAPACITY. INCLUDE RED AND GREEN LED INDICATOR LIGHTS FOR POWER AND PROTECTION STATUS. A SURGE EVENT OPERATION COUNTER SHALL BE PROVIDED. CONNECT SPD TO BUSSING WITH BOLTED CONNECTIONS TO EACH PHASE,
- EUTRAL AND GROUND BUS. ADD ON DEVICES, ACCEPTABLE ONLY WHEN INDICATED ON DRAWINGS. SHALL BE CONNECTED WITH LOW IMPEDANCE SHIELDED CABLE EQUAL TO LIEBERT ACCUGUIDE (18" MAXIMUM LENGTH). UNIT SHALL BE WARRANTED FOR ONE YEAR.

MANUFACTURER SHALL BE SQUARE D. END OF SECTION

1.5

SECTION 26500 - LIGHTING 1.1 GENERAL

1.2

1.3

1.4

1.5

END OF SECTION

- THIS WORK SHALL INCLUDE ALL LIGHTING FIXTURES AS SPECIFIED IN THE SCHEDULE AND LAMPS FOR ALL FIXTURES AS SPECIFIED. FIXTURES SHALL BE COMPLETELY FREE OF DEFECTS, DENTS, RUST OR CHIPPED SURFACES. NO CRACKED, BROKEN, OR CHIPPED LENSES WILL BE ACCEPTABLE. FIXTURES SHALL BE FURNISHED COMPLETE INCLUDING HICKEYS, SUSPENSION NIPPLES, AND ALL OTHER MATERIAL AND EQUIPMENT AS REQUIRED FOR MOUNTING FIXTURES IN ACCORDANCE WITH U.L. AND NEC REQUIREMENTS. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL FIXTURES AND SHALL WIPE FIXTURES BEFORE AND AFTER INSTALLATION, FIXTURES THAT ARE CRACKED, BROKEN, CHIPPED, RUSTED, DENTED OR OTHERWISE DAMAGED, SHALL BE REPLACED AT NO EXTRA COST TO THE LED DRIVERS HIGH-FREQUENCY ELECTRONIC LED DRIVERS: DRIVERS SHALL OPERATE THE LAMPS AT A FREQUENCY BETWEEN 20 AND 40 KHZ FROM INPUT FREQUENCY OF 60 HZ. DRIVERS SHALL BE COMPATIBLE WITH AND PROVIDED WITH EACH LIGHT FIXTURE. H EACH LIGHT FIXTURE. STARTING: THE DRIVER SHALL BE CAPABLE OF STARTING THE SPECIFIED FIXTURES AT AN AMBIENT TEMPERATURE OF 50 DEGREE F OR MORE FOR AN INPUT VOLTAGE OF PLUS OR MINUS 10 PERCENT ABOUT THE CENTER DESIGN VOLTAGE. PROVIDE 0 DEGREE DRIVERS WHERE INDICATED ON THE DRAWINGS. OPERATION: THE DRIVER SHALL SAFELY AND RELIABLY OPERATE IN AN AMBIENT TEMPERATURE FROM 0 DEGREE F TO 125 DEGREE F THE LIGHT OUTPUT SHALL NOT VARY BY MORE THAN PLUS OR MINUS 15 PERCENT FOR A PLUS OR MINUS 10 PERCENT VARIATION OF THE INPUT VOLTAGE ABOUT THE CENTER DESIGN VOLTAGE. THE DRIVER SHALL OPERATE THE LAMPS IN A MANNER THAT WILL NOT ADVERSELY CURTAIL THE DAMPS IN A MAINNER THAT WILL NOT ADVERSELY CURTAIL THE NORMAL LIFE OF THE LEDS, SURGE WITHSTAND CAPABILITY: THE DRIVER SHALL BE ABLE TO WITHSTAND A SINGLE INPUT SURGE OF 6,000 VOLTS FROM A 50 OHM 50 KHZ DAMPED SINEWAVE SOURCE. FLICKER: THE FLICKER SHALL BE LESS THAN 5 PERCENT. ELECTROMAGNETIC INTERFERENCE (EMI): THE EMI CONDUCTED AND RADIATED, SHALL MEET THE FEDERAL COMMUNICATION COMMISSION'S PART 18 SUBSECTION H. RATED LIFE: THE DRIVER SHALL HAVE A RATED LIFE OF 10 YEARS OR 30,000 HOURS (BASED ON A 10 HOUR DAY) POWER FACTOR: NOT LESS THAN 80 PERCEN LABELS: DRIVERS MUST BE LABELED OR LISTED BY U.L. OR E.T.L. ACCESSORIES EXTERIOR FIXTURES SHALL BE CONSTRUCTED WITH GASKETED SHIELD AND BUG TIGHT LED FIXTURES ALL LED FIXTURE LENSES SHALL BE 100 PERCENT VIRGIN ACRYLIC AND A AND A MINIMUM OF 0.125 INCH THICK. STYRENE LENSES SHALL NOT BE PROVIDED FOR ANY FIXTURE LENSES. ALL LED FIXTURES (HOUSING, DOOR, ETC.) SHALL BE PROVIDED WITH FACTORY APPLIED BAKED ENAMEL FINISH APPLIED AFTER FINAL FABRICATION UNLESS SPECIFICALLY NOTED OTHERWISE ON THE LIGHTING FIXTURE SCHEDULE. LIGHTING CONTROL EQUIPMENT TIME SWITCHES 1. TIME SWITCHES BY TORK, INTERMATIC, AND PARAGON EQUAL TO THOSE INDICATED BELOW AND APPROVED BY THE ENGINEER WILL BE ACCEPTABLE. EXTERIOR LIGHTING TIME SWITCHES SHALL BE PARAGON EC7000, SERIES 7 DAY, 20A, SPDT. ALL TIME SWITCHES SHALL BE PROVIDED WITH MOMENTARY CONTACTS IF REQUIRED. ALL TIME SWITCHES SHALL BE PROVIDED WITH MANUAL BYPASS SWITCHES AND SPRING WOUND CARRY OVER MECHANISMS
- PHOTO ELECTRIC CONTROLS 1. PHOTO ELECTRIC CONTROLS BY TORK, INTERMOTIC AND PARAGON EQUAL TO THOSE INDICATED BELOW, INTERNIO AND APPROVED BY TH ENGINEER WILL BE ACCEPTABLE. PHOTO ELECTRIC CONTROLS (PHOTO SWITCHES; PHOTO CELLS) SHALL BE INTERMATIC #K4133 RATED AT 3000W, 277 VOLTS, OR MK4121 RATED AT 1800W, 120 VOLTS, WEATHERPROOF. MOUNT ON PANELBOARD SUPPORT STRUCTURE AND ORIENT PHOTO ELECTRIC CONTROLS TO THE NORTH, PHOTO-ELECTRIC CONTROLS SUPPLIED AS A PART OF A FIXTURE ASSEMBLY SHALL BE AS PROVIDED BY FIXTURE
- MANUFACTURER. CONTACTORS AND RELAYS SHALL BE AS MANUFACTURED BY SQUARE 'D'. THEY SHALL BE AS SIZED ON THE DRAWINGS. ALL CONTACTORS AND RELAYS SHALL BE TUNGSTEN RATED.



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COA 15

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PLAN NOTES:

- A. UNLESS OTHERWISE NOTED, ALL CONDUIT ROUTED ON SITE SHALL BE 1" MINIMUM.
- B. ALL RISERS SHALL BE PVC COATED RIGID GALVANIZED STEEL (RGS). ALL ELLS BELOW GRADE SHALL BE PVC COATED RIGID GALVANIZED STEEL (RGS). PROVIDE WITH PVC TO STEEL ADAPTORS AS NECESSARY (THIS SHALL NOT APPLY TO LIGHT FIXTURE POLE BASES).
- C. ALL ELECTRICAL WORK AND FEES ASSOCIATED WITH UTILITIES SHALL BE VERIFIED AND COORDINATED WITH LOCAL SERVICE PROVIDER PRIOR TO BID.
- D. CONTRACTOR SHALL REFERENCE ALL RELATED CONTRACT DOCUMENTS, SITE SURVEY, AND OTHER RESOURCES FOR POSSIBLE CONFLICTS WITH UNDERGROUND UTILITIES. AT UTILITY CROSSINGS, CONTRACTOR SHALL VERIFY UTILITY DEPTHS AND COORDINATE CONDUIT ROUTING AS NECESSARY.
- E. CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID.
- F. REPAIR SIDEWALK TO MATCH EXISTING WHERE AFFECTED BY CONSTRUCTION.
- G. PROVIDE PULL BOXES EVERY 200 FEET.
- H. BASKETBALL COURT SPORTS & PARKING LOT LIGHTING, BASEBALL DIAMOND SPORTS LIGHTING, AND FIRE STATION LIGHTING IS EXISTING TO REMAIN AND IS NOT IN CONTRACT.
- PARKING LOT LIGHTING AND PATHWAY LIGHTING SHALL BE CONTROLLED SEPARATELY.

KEYED NOTES:

- 1. EXISTING WOOD POLES IN THIS AREA TO BE REMOVED BY OWNER.
- CONTRACTOR SHALL TAKE SPECIAL NOTICE OF LARGE VOLUME OF EXISTING UTILITY LINES IN THIS AREA TO AVOID ROUTING CONFLICTS OR DAMAGE TO EXISTING UTILITIES.
- PROVIDE MANUAL SWITCH FOR PARK LIGHTING IN ELECTRICAL ROOM INSIDE EXISTING RESTROOM BUILDING IF SPARE 3/4" CONDUIT IS AVAILABLE BETWEEN BUILDING AND ELECTRICAL YARD. IF SPARE CONDUIT IS NOT AVAILABLE, LOCATE SWITCH IN ELECTRICAL YARD AND PROVIDE WEATHERPROOF ENCLOSURE.
- 4. EXISTING LIGHT POLE TO REMAIN.



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rawing No.:	
	E1.0





1 SITE PHOTOMETRIC PLAN E1.1 1" = 80'-0"

Statistics		
Description	Symbol	Avg
Parking Areas	+	2.2 fc
Walk Ways	+	4.5 fc
Walk Ways	+	4.1 fc
Walk Ways	+	4.0 fc
Walk Ways	+	4.7 fc
Walk Ways	+	5.1 fc
Walk Ways	+	3.9 fc
Walk Ways	+	4.3 fc
Existing Sidewalk/Wekiva Trail	+	6.2 fc
Roadway	+	0.8 fc
Stands Area	+	2.9 fc



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E1.1	awing No.:		
		E1	.1





	LIGHTING FIXTURE SCHEDULE									
TYPE	DESCRIPTION	FIXTURE QUANTITY	MANUFACTURER / MODEL	LAMP SOURCE	WATTAGE	COMMENTS				
A	SINGLE HEAD SITE LIGHT, 15,000 LUMENS, 4000K, TYPE 4 DISTRIBUTION, DARK SKY COMPLIANT, WET LOCATION LISTED, BLACK FINISH.	8	INDUSTRIAL LIGHTING PRODUCTS / SAS-15L-U-40-T4-UMB/R-BLK	LED	110.50 W	POLE-MOUNTED AT HEIGHT INDICATED ON PHOTOMETRIC PLAN. PROVIDE POLE BY TRADITIONAL CONCRETE INC. FINISH SHALL BE MIDNIGHT SKY BLACK. REFER TO DETAIL 3/E2.1 FOR COMPLETE PART NUMBER.				
В	SINGLE HEAD SITE LIGHT, 6,000 LUMENS, 4000K, TYPE 2 DISTRIBUTION, DARK SKY COMPLIANT, WET LOCATION LISTED, BLACK FINISH.	61	INDUSTRIAL LIGHTING PRODUCTS / SAS-6L-U-40-T2-UMB/R-BLK	LED	44.20 W	POLE-MOUNTED AT HEIGHT INDICATED ON PHOTOMETRIC PLAN. PROVIDE POLE BY TRADITIONAL CONCRETE INC. FINISH SHALL BE MIDNIGHT SKY BLACK. REFER TO DETAIL 3/22.1 FOR COMPLETE PART NUMBER.				
BH	SINGLE HEAD SITE LIGHT, 6,000 LUMENS, 4000K, TYPE 2 DISTRIBUTION, DARK SKY COMPLIANT, WET LOCATION LISTED, BLACK FINISH, HOUSE SIDE SHIELD.	26	INDUSTRIAL LIGHTING PRODUCTS / SAS-6L-U-40-T2-UMB/R-BLK-HSS	LED	44.20 W	POLE-MOUNTED AT HEIGHT INDICATED ON PHOTOMETRIC PLAN. PROVIDE POLE BY TRADITIONAL CONCRETE INC. FINISH SHALL BE MIDNIGHT SKY BLACK. REFER TO DETAIL 3/22.1 FOR COMPLETE PART NUMBER.				
С	DOUBLE HEAD SITE LIGHT, 15,000 LUMENS, 4000K, TYPE 5 SQUARE DISTRIBUTION, DARK SKY COMPLIANT, WET LOCATION LISTED, BLACK FINISH.	9	INDUSTRIAL LIGHTING PRODUCTS / SAS-15L-U-40-T5S-UMB/R-BLK	LED	221.00 W	POLE-MOUNTED AT HEIGHT INDICATED ON PHOTOMETRIC PLAN. PROVIDE POLE BY TRADITIONAL CONCRETE INC. FINISH SHALL BE MIDNIGHT SKY BLACK. REFER TO DETAIL 3/E2.1 FOR COMPLETE PART NUMBER.				

NOTES:

1. ALL LED FIXTURES SHALL BE MINIMUM 50,000 HOURS L70, CRI 80+.

2. IF THERE IS A DISCREPANCY BETWEEN THE FIXTURE DESCRIPTION, THE LIGHTING GENERAL NOTES, THE LIGHTING SPECIFICATIONS, AND THE CATALOG NUMBER LISTED, THE FIXTURE DESCRIPTION SHALL TAKE PRECEDENCE.

3. WHERE A SINGLE MANUFACTURER IS LISTED WITH A CORRESPONDING CATALOG NUMBER, THIS MANUFACTURER SHALL BE CONSIDERED THE BASIS OF DESIGN SELECTION. OTHER MANUFACTURERS WILL BE CONSIDERED AS "APPROVED EQUAL" ONLY IF THEIR LIGHTING FIXTURE MEETS OR EXCEEDS THE BASIS OF DESIGN SELECTION IN TYPE AND QUALITY OF CONSTRUCTION, LOUVER FINISHES, LENSES, HOUSING FINISHES, PHOTOMETRICS, SELECTED OPTIONS AND ACCESSORIES. APPROVED EQUAL MANUFACTURERS MUST ALSO MATCH OVERALL APPEARANCE AND DIMENSIONS OF BASIS OF DESIGN SELECTION. WHERE ONLY A MANUFACTURER'S NAME IS LISTED, THE FIXTURE SHALL COMPLY WITH THE DESCRIPTION, VOLTAGE, LAMP TYPE AND WATTAGE, AND ANY NOTED REMARKS, THE LIGHTING FIXTURE SCHEDULE NOTES, AND THE LIGHTING SPECIFICATIONS.

4. WHERE A MANUFACTURER IS SELECTED BY THE CONTRACTOR, OTHER THAN THAT LISTED AS THE BASIS OF DESIGN, PHOTOMETRIC CALCULATIONS SHALL BE SUBMITTED FOR THE FOLLOWING AREAS PRIOR TO APPROVAL: OPERATING ROOM, CONTROL ROOM, SURGICAL CORRIDORS, AND SCRUB AREAS.

5. EQUAL FIXTURES THAT FOLLOW THE BASIS OF DESIGN CAN BE PROVIDED BY COOPER LIGHTING, SESCO LIGHTING, AND HUBBELL LIGHTING.

6. ALL LIGHTING HAS BEEN DESIGNED IN COMPLIANCE WITH SECTION 405 OF THE FLORIDA ENERGY CONSERVATION CODE AND LAKE COUNTY CODE OF ORDINANCES FOR LIGHTING POWER DENSITY, AUTOMATIC LIGHTING CONTROLS AND ALL ADDITIONAL REQUIREMENTS.

7. POLE QUANTITIES SHALL BE AS FOLLOWS: (87) SINGLE-FIXTURE POLES @ +12'-0"; (8) SINGLE-FIXTURE POLES @ +20'-0"; (9) DOUBLE-FIXTURE POLES @ +20'-0".







3 ENLARGED ELECTRICAL YARD E2.0 1/4" = 1'-0"

LUC	ation: Exterior			Mou	nting: S	URFACE	Dist. /	Phase / W	'ires: 480/	277	' Wye / 3	4 K.A.I.C. Rating: 18K BUS Ratir	ıg: 125 A
Supply	From: MDP			Encl	osure: N	IEMA 3R	Max	Height Bus	sing: Yes			Mains Type: MCB MCB Ratir	ıg: 100 A
і СКТ	Circuit Description	Trip(A)	Ρ	A (ł	(VA)	В (М	(VA)	C (ł	(VA)	Р	Trip(A)	Circuit Description	СКТ
1	PEDESTRIAN LIGHTING	20	1	0.884	0.707					1	20	PEDESTRIAN LIGHTING	2
3	PEDESTRIAN LIGHTING	20	1			0.884	0.619			1	20	PEDESTRIAN LIGHTING	4
5	PARKING LOT LIGHTING	20	1					0.221	1.348	1	20	PARKING LOT LIGHTING	6
7	PARKING LOT & PEDESTRIAN LIGHTING	20	1	2.055	0.000					1	20	SPARE	8
9	SPARE	20	1			0.000	0.000			1	20	SPARE	10
11	SPARE	20	1					0.000	0.000	1	20	SPARE	12
13	SPARE	20	1	0.000	0.000					1	20	SPARE	14
15	SPARE	20	1			0.000	0.000			1	20	SPARE	16
17	SPARE	20	1					0.000	0.000	1	20	SPARE	18
19	SPARE	20	1	0.000	0.000					1	20	SPARE	20
21	SPARE	20	1			0.000	0.000			1	20	SPARE	22
23	SPARE	20	1					0.000	0.000	1	20	SPARE	24
25	SPARE	20	1	0.000	0.000					1	20	SPARE	26
27	SPARE	20	1			0.000	0.000			1	20	SPARE	28
29	SPARE	20	1					0.000	0.000	1	20	SPARE	30
31	SPACE		1							1		SPACE	32
33	SPACE		1							1		SPACE	34
35	SPACE		1							1		SPACE	36
37	SPACE		1		0.000								38
39	SPACE		1			-	0.000			3	30	SPD	40
41	SPACE		1						0.000	1			42
	Connected Ph	ase Load (K	/A)	3.6	647	1.5	503	1.5	569				
	Connected I	Phase Amps	(A)	13.	201	5.4	125	5.7	702				
oad C	assification	Con	nec	ted Loa	d D	emand Fa	actor	Dema	nd Load			Panel Totals	
GHTING			67	18 VA		125.00%		83	98 VA				
											Total	Connected Load (KVA): 6.718	
											То	tal Demand Load (KVA): 8.398	
											Т	otal Demand Current (A): 10	
											1		
											-		
					_						1		
											-		

KEYED NOTES:

1. PROVIDE NEW 480/277V, 3-PHASE, 4-WIRE, 100A PANEL FED FROM NEW 100A BREAKER INSTALLED IN EXISTING DISTRIBUTION BOARD 'MDP.' PANEL SHALL HAVE NEMA 3R ENCLOSURE.



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E2.1



- ALL BENDS IN CONDUCTORS #10 AND SMALLER SHALL BE 90 DEGREES AND STRAIGHT AND TRUE. BENDS IN LARGER SIZE CONDUCTORS SHALL HAVE A UNIFORM RADIUS.
- 2. BEND CONDUCTORS TOWARD THE BACK CORNER OF THE PANEL CAN AND THEN FORWARD TO CONNECT TO CIRCUIT BREAKERS.
- TIE WRAP CONDUCTORS AT REGULAR INTERVALS TO FORM NEAT AND ORDERLY WIRE BUNDLES. MINIMIZE THE USE OF TIE WRAPS.
- 4. NO CONDUCTORS SHALL TOUCH PANEL CAN.
- 5. FINISHED PANEL SHALL PRESENT CLEAN, NEAT AND ORDERLY APPEARANCE.

4

TYPICAL PANELBOARD WIRING No Scale



	DISTANCES	(FT)			
#12	#10	#8	#6	#4	
·	159	242	379	584	
	166	251	384	610	
	170	262	412	637	
	182 191	276	432 453	702	
	200	304	476	738	
	212	322	504	777	
<u>.</u>	223	340	534	828	
143	237	361	566	876	
152	248	386	605 640	932	
103	271	414	697	1079	
191	317	483	757	1168	
209	345 380	527 580	826 011	1274	
255	414	644	1007	1403	
288	472	725	1134	1753	
329	530 633	828 966	1297 1513	2003	
460	759	1162	1817	2806	
575	955	1451	2270	3508	
1152	1265 1909	1934 2903	3027 4543	4676	
2307	3818	5808	9085	14032	
	6" "RED" WARNING	TAPE READING;			
	6" "RED" WARNING "CAUTION CAUTIOI ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW"			
	6" "RED" WARNING "CAUTION CAUTIOI ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW"			
	6" "RED" WARNING "CAUTION CAUTION ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW"			
	6" "RED" WARNING "CAUTION CAUTION ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW" 24" MIN.			
	6" "RED" WARNING "CAUTION CAUTION ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW" 24" MIN.			
	6" "RED" WARNING "CAUTION CAUTIOI ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW" 24" MIN.			
	6" "RED" WARNING "CAUTION CAUTIOI ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW" 24" MIN.			
	6" "RED" WARNING "CAUTION CAUTIOI ELECTRICAL CABL	TAPE READING; N CAUTION ES BELOW" 24" MIN.			
	#12 : 143 152 163 177 191 209 230 255 288 329 384 460 575 768 1152 2307	#12 #10 :: 159 166 170 182 191 200 212 223 223 : 223 143 237 152 248 163 271 177 292 191 317 209 345 230 380 255 414 288 472 329 530 384 633 460 759 575 955 768 1265 1152 1909 2307 3818	#12 #10 #8 :: 159 242 166 251 170 262 182 276 191 290 200 304 212 322 223 340 : 1 143 237 361 152 248 386 163 271 414 177 292 446 191 317 483 209 345 527 230 380 580 255 414 644 288 472 725 329 530 828 384 633 966 460 759 1162 575 955 1451 768 1265 1934 1152 1909 2903 2307 3818 5808	#12#10#8#6::159242 379 166251384170262412182276432191290453200304476212322504223340534:1432373615661522483861522483866051632714146491772924466971913174837572093455278262303805809112554146441007288472725113432953082812973846339661513460759116218175759551451227076812651934302711521909290345432307381858089085	#12#10#8#6#4::159242 379 584166251384610170262412637182276432667191290453702200304476738212322504777223340534828::::1432373615668761522483866059321632714146491001177292446697107919131748375711682093455278261274230380580911140325541464410071557288472725113417533295308281297200338463396615132337460759116218172806575955145122703508768126519343027467611521909290345437015230738185808908514032

2



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E2.2







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TO PROTECTED CIRCUIT OR LOAD REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR DETAILED WIRING CONNECTION DIAGRAM WIRING SHOWN IS TYPICAL FOR ONE CIRCUIT: MULTIPLE CIRCUITS MAY BE INCLUDED IN ONE ENCLOSURE. WIRE EACH CIRCUIT INDIVIDUALLY AS SHOWN IN WIRING DIAGRAM. PDQ ENCLOSURE 1 5. APPROVED MANUFACTURERS: HIGHLINE #CHA101512S0731; CDR #PA10-1015-12; -ASPHALT/ CONCRETE LINE 10-5/16"_____ -1/2" 🛏 🛏 MAX UTILITY WARNING TAPE ╺┰ᠽ┥┟┤┟╾ └┰ᠽ┥┟┤┟╴ \sim STEEL ELLS (TYP.) 2" SCH 40 PVC CONDUIT (TYP.) SECTION A - A

2



Pole No.	[A] Above Ground Height	[B] Burial Depth	[C] Tip Diameter	[D] Base Diameter	Est. Pole Weight (lbs)*	
D512	12'	4′	5″	6.2″	550	
D514	14'	4'	5″	6.4″	575	
D515	15′	4'	5″	6.5″	600	
D520	20'	5′	5″	7″	875	
D523	23'	5′	5″	7.3″	1,000	
D524	24'	5′	5″	7.4″	1,050	
D525	25'	5'	5″	7.5"	1,100	
D528	28'	6′	5″	7.8″	1,200	
D530	30'	6′	5″	8″	1,500	
*Dele weight may yany based on color of aggregate						



ANCHOR BASE

Bolt Slots

Handhole

-- Centered on 14" B.C.

Ideal Pole Outline



Base Detail

DIRECT BURIAL

*Backfill type based

on soil of location and

recommendation of

qualified civil engineer.

PO Box 157

TRADITIONAL W142 N9110 Fountain Blvd Concrete, Inc. (888) 719-7599 (262) 250-7598 fax

Street Light Poles (202) 230-7330 10.

-Handhole

Aenomonee Falls, WI 53052-0157

www.concretepoles.com

Power Cable

mpactible



500 Series Spun square 1/10" taper per foot • Available in heights up to 30'

Pole Dim	Pole Dimensions									
Pole No.	[A] Above Ground Height	[B] Burial Depth	[C] Tip Diameter	[D] Base Diameter	Est. Pole Weight (lbs)*					
D512	(12')	4'	5″	6.2″	550					
D514	14'	4'	5″	6.4″	575					
D515	15′	4′	5″	6.5″	600					
D520	20'	5′	5″	7″	875					
D523	23'	5′	5″	7.3″	1,000					
D524	24'	5′	5″	7.4″	1,050					
D525	25'	5′	5″	7.5″	1,100					
D528	28'	6′	5″	7.8″	1,200					
D530	30'	6′	5″	8″	1,500					







www.concretepoles.com



Project Name: Lake County East Lake Corr
SKYLINE
AREA LIGHT SERIES
 FEATURES Specification Grade die-cast aluminum h Bronze polyester powder coat finish (sta Custom and factory select colors availab 5 Optical Distributions with Highest Uni Factory Rotatable Type 2, 3, 4, 5 Square, Optional Spill Light Control Integral Shie Universal Quick Pole Mount Allows for 1 with no drilling required 9 Different Optional Mounting Methods Single Fastener hinged door driver acces 120–277V Universal Voltage or 347–480 O-10V Dimmable Driver (std.) PIR Occupancy, Photocell, & Bi-Level Din 3-Pin & 7-Pin ANSI C136.41 Control Rec Wireless control integrated luminaire 3000K, 4000K & 5000K CCT >70 Color Rendering Index (CRI) Calculated L80 >100,000 hrs @ 25°C pei IP66 Rated Luminaire Dark Sky Compliant^{1.2} 5 Year Warranty; 10 Year Optional Warr ETL Listed for Wet Locations
¹ 3000K is IDA Listed ² Must select UMB, WFM, or H ³ TRN & SLPF 1.5G Rated ⁴ Requires additional Surge Pro For additional details see Ger
• Parking Lots • Parking Structure •
ORDERING GUIDE
SERIES LUMENS VOLTAGE ✓ SAS Small 6L 6,000 lm ✓ U 120-27
9L 9,000 lmHV 347-48 12L 12,000 lm 15L 15,000 lm 18L 18,000 lm 30L 30,000 lm 36L 36,000 lm 42L 42,000 lm 50L 50,000 lm
BASIC CO
✔ (Blank) None FAO ^{1.8} Field Adjustable Output CR3P ⁸ 3-Pin NEMA Control recepta CR7P ^{6.8} 7-Pin NEMA Control recepta FSP-311/LX ^{1.3.8} Legrand FSP-311 120-2777 FSP-321/LX ^{3.8} Legrand FSP-321 347-480N 7=20-40') Legrand FSP-321 347-480N 7=20-40') Universal 3-Pin control recepta CR3P/FAO ⁸ Universal 3-Pin control recepta Universal 3-Pin control recepta Universal 7-Pin control recepta Universal 7-Pin control recepta Universal 7-Pin control recepta Height, 3=20', 7=40') (Control recepta) Control recepta
IDENTIFY INDIFE SP11 10kA Surge Protection Device SP21 20kA Surge Protection Device SP1HV 10kA Max 480V Surge Protector SP480V2 20kA Max 480V Surge Protector HSS2 Rotatable House Side Shield FUSE/SXXX FUSE 120V, 277V, 347V (x= volt FUSE/DXXX FUSE 208V, 240V, 480V (x= volt 'Not available with HV option ² Option Not DLC qualified 'Requires Bluetoth Enabled device for programming (provided by ott 'Only Compatible with CR3P and CR7P

500 Series

SKYLINE-SPEC-0223

Pole No.	[A] Above Ground Height	[B] Burial Depth	[C] Tip Diameter	[D] Base Diameter	Est. Pole Weight (lbs)*
D512	12′	4'	5″	6.2″	550
D514	14'	4'	5″	6.4″	575
D515	15′	4'	5″	6.5″	600
D520	20'	5'	5″	7"	875
D523	23'	5′	5″	7.3″	1,000
D524	24'	5′	5″	7.4″	1,050
D525	25'	5'	5″	7.5"	1,100
D528	28'	6'	5″	7.8″	1,200
D530	30'	6'	5″	8″	1,500

Pole Code	e	
Mounting Type	Series + Above Ground Height	
(D) Direct Burial) (A) Anchor Base	512 514 515 520 523 524 525 528 530	(SG) S (PG) P (SP) Si (CN) C (BZ) B (CB) C (MS) N (EB) Ed (DB) C (SR) Si (AR) A (RG) R (TC) T (KG) K (AW) /
Exampl	le Code: D53	0 -





Spun square • 1/10" taper per foot • Available in heights up to 30'





Page 1



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E2.4