

LEGEND			
	ROUND LIGHT FIXTURE – PENDANT OR SURFACE MTD CLG		UTILITY TRANSFORMER
	LIGHT FIXTURE – SURFACE MTD ON WALL		IN GRADE EXTERIOR JUNCTION BOX
	LIGHT FIXTURE – RECESSED DOWNLIGHT		COMBINATION TELEPHONE AND TELEVISION OUTLET
	EMERGENCY LIGHT		120V FIRE ALARM HORN
	EMERGENCY LIGHT REMOTE HEADS		120V HEAT ALARM
	STRIPLIGHT – PENDANT OR SURFACE MTD CLG		120V PHOTOELECTRIC SMOKE ALARM
	BOLLARD LIGHT – OUTDOORS, WEATHERPROOF		SPRINKLER DIGITAL ALARM COMMUNICATOR
	POLE MOUNTED AREA LIGHT – OUTDOORS, WEATHERPROOF		NOTE TAG (No. INDICATES NOTE)
	FIXTURE TAG (LETTER INDICATES TYPE)	ACS	ALASKA COMMUNICATIONS
	SINGLE POLE SWITCH	AFF	ABOVE FINISHED FLOOR
	SINGLE POLE SWITCH (LOWERCASE LETTER INDICATES SWITCHING)	AFC	AVAILABLE FAULT CURRENT
	DIMMER SWITCH	AFG	ABOVE FINISHED GRADE
	OCCUPANCY SENSOR WALL SWITCH (DUALTECH)	C	CONDUIT
	OCCUPANCY SENSOR – CEILING MOUNTED (DUALTECH)	CO	CONDUIT ONLY
	PHOTOCELL	GCI	GENERAL COMMUNICATION, INC.
	CONDUIT, CONCEALED	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	NUMBER AND SIZE OF WIRES (NO MARKS = 1#12/2 W/GND)	GRSC	GALVANIZED RIGID STEEL CONDUIT
	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	LED	LIGHT EMITTING DIODE
	PANEL	MCB	MAIN CIRCUIT BREAKER
	DUPLEX RECEPTACLE, SWITCHED DUPLEX RECEPTACLE	MLO	MAIN LUGS ONLY
	TAMPER–RESISTANT DUPLEX RECEPTACLE	NEC	NATIONAL ELECTRICAL CODE
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER	NTS	NOT TO SCALE
	QUADRAPLEX RECEPTACLE	TTB	TELEPHONE TERMINAL BACKBOARD
	SPECIAL PURPOSE OUTLET	TYP	TYPICAL
	JUNCTION BOX	UON	UNLESS OTHERWISE NOTED
	MOTOR (SIZED AS NOTED)	WP	WEATHERPROOF
	FRACTIONAL HORSEPOWER MOTOR STARTER	O/H E	OVERHEAD, ELECTRICAL
	NON–FUSED DISCONNECT SWITCH	O/H T	OVERHEAD, TELECOM
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER	XFMR	TRANSFORMER

<div><div><div>2</div><div>1</div></div>LUMINAIRE SCHEDULE</div>								
TYPE	LOCATION	MANUFACTURER AND CATALOG NUMBER (OR APPROVED EQUAL)	LUMINAIRE DESCRIPTION	MOUNTING		LAMPS	BALLAST/DRIVER	TOTAL INPUT WATTS
				TYPE	HEIGHT			
A	BEDROOM, LIVING ROOM, HALLWAY	JUNO #JSF 13IN 18LM 30K 90CRI 120 FRPC WH	13" DIAMETER SURFACE–MOUNTED ROUND LED LUMINAIRE, LOW PROFILE, LISTED FOR WET LOCATIONS.	SURFACE	CEILING	3000K LED 1,800 LM	120V 0–10V DIMMING DRIVER	20
B	DINING	LITHONIA #FMABFL 16 208 30 F21	NOMINAL 15" DIAMETER SURFACE–MOUNTED ROUND LED LUMINAIRE, APPROXIMATELY 5" DEEP, TAN FABRIC FINISH.	SURFACE	CEILING	3000K LED 1,637 LM	120V 0–10V DIMMING DRIVER	20
C	KITCHEN	LITHONIA #EPANL 2X4 400LHE 80CRI 35K 2X4SMK	24"Wx48"L FLAT PANEL LED LUMINAIRE WITH ALUMINUM FRAME, DAMP LOCATION LISTED, SURFACE MOUNT TROFFER KIT.	SURFACE	CEILING	3,500K LED 4,039 LM	120V LED DRIVER	38.8
D	BATHROOM VANITY	LITHONIA #FMVTSL 36IN MVOLT 30K 90CRI BN	WALL–MOUNTED LED VANITY LUMINAIRE.	WALL	ABOVE MIRROR	3,000K LED 2,009 LM	120V LED DRIVER	25.3
E	STORAGE, WALK–IN CLOSET, PANTRY	LITHONIA #FMMCL 24 840 S1	WALL–MOUNTED LED VANITY LUMINAIRE.	SURFACE	STAIR CEILING	4000K LED 1,225 LM	120V LED DRIVER	17
F	EXTERIOR STAIRS	LITHONIA #OLCFM 15 WH	SURFACE–MOUNTED LED LUMINAIRE, WHITE FINISH, WET LISTED.	SURFACE	STAIR CEILING	4000K LED 1,077 LM	120V LED DRIVER	16.6
G	MAIN ENTRANCE STORAGE	LITHONIA #LBL4 4000LM 80 CRI 35K NO DIM	SURFACE–MOUNTED LED LUMINAIRE.	SURFACE	CEILING	3500K LED XXXX LM	120V LED DRIVER	X
H	UNIT EXTERIOR ENTRANCE, DECK	LITHONIA #OLCS–8–DDB	WALL–MOUNTED EXTERIOR LED SCONCE LUMINAIRE, WET LISTED, –22°F RATED.	WALL	+7'–6"	4000K LED 461 LM	120V LED DRIVER	8.9
I	BUILDING EXTERIOR	TO BE DETERMINED #	WALL–MOUNTED LED LUMINAIRE, WET LISTED.	WALL	SEE ARCH.	4000K LED XXXX LM	120V LED DRIVER	X
J	CRAWLSPACE	LITHONIA #ZL1N–L48–5000LM–FST– MVOLT–40K–80CRI–WH–WGZ48	48"L SURFACE–MOUNTED LED STRIP, DAMP LISTED, –4°F RATED.	SURFACE	CEILING	4000K LED 5000 LM	120–277V LED DRIVER	34
K1	SITE	LITHONIA #DSX1 LED–P2–40K–T4M– MVOLT–SPA–DDBXD	13"Wx33"Lx7.5"H POLE–MOUNTED LED AREA LUMINAIRE, TYPE 4 MEDIUM DISTRIBUTION, SQUARE POLE MOUNTING, DARK BRONZE FINISH, WET–LISTED, –40° F LISTED.	POLE	+30'–0" AFG	4000K LED 8,708 LM	120–277V LED DRIVER	70
K2	SITE	LITHONIA #DSX1 LED–P2–40K–T1S– MVOLT–SPA–DDBXD	SAME AS TYPE 'K1' EXCEPT DRIVE CURRENT, LIGHT DISTRIBUTION AND WATTAGE.	POLE	+30'–0" AFG	4000K LED 6,956 LM	120–277V LED DRIVER	54

SHEET NOTES:

1. PROVIDE DRIVER RATED FOR OUTDOORS FOR EXTERIOR FIXTURES.
2. ALL DIMMING DRIVERS IN LED LUMINAIRES SHALL BE COMPATIBLE WITH DIMMERS PROVIDED. COORDINATE WITH CIVIL FOR LOCATION OF POLE–MOUNTED LUMINAIRES

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CRAIG, ALASKA

SHEET TITLE:  
ELECTRICAL LEGEND  
AND SCHEDULE

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L8030

SCALE:  
AS SHOWN

SHEET NUMBER

DESIGN DEVELOPMENT- NOT FOR CONSTRUCTION

E0.1

## ELECTRICAL SPECIFICATIONS

### 26 00 50 – COMMON WORK RESULTS FOR ELECTRICAL

- A. SCOPE OF WORK: FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT FOR A COMPLETE AND WORKABLE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.
- B. STANDARDS, CODES AND REGULATIONS: COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, INTERNATIONAL BUILDING CODE, AND INTERNATIONAL FIRE CODE INCLUDING ALL STATE AND LOCAL AMENDMENTS. COMPLY WITH THE LATEST PUBLISHED VERSION OF THE NECA STANDARD OF INSTALLATION.
- C. DRAWINGS: THE DRAWINGS ARE DIAGRAMMATIC, NOT NECESSARILY SHOWING ALL OFFSETS OR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. UNLESS SPECIFICALLY DIMENSIONED. REVIEW THE DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT FURNISHED BY OTHER CRAFTS BUT INSTALLED IN ACCORDANCE WITH THIS SECTION. BRING QUESTIONABLE OR OBSCURE ITEMS, APPARENT CONFLICTS BETWEEN PLANS AND SPECIFICATIONS, GOVERNING CODES OR UTILITIES REGULATIONS TO THE ATTENTION OF THE OWNER. CODES, ORDINANCES, REGULATIONS, MANUFACTURER'S INSTRUCTIONS OR STANDARDS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS.
- D. RECORD DRAWINGS: MARK UP A CLEAN SET OF DRAWINGS AS THE WORK PROGRESSES TO SHOW THE DIMENSIONED LOCATION AND ROUTING OF ALL ELECTRICAL WORK WHICH WILL BECOME PERMANENTLY CONCEALED. SHOW ROUTING OF WORK IN PERMANENTLY CONCEALED BLIND SPACES WITHIN THE BUILDING. SHOW COMPLETE ROUTING AND SIZING OF ANY SIGNIFICANT REVISIONS TO THE SYSTEMS SHOWN.
- E. WORKMANSHIP: INSTALLATION OF ALL WORK SHALL BE MADE SO THAT ITS SEVERAL COMPONENT PARTS SHALL FUNCTION AS A WORKABLE SYSTEM COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND/OR INSTALLATION DRAWINGS AND IN ACCORDANCE WITH NECA STANDARDS. MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM WITH APPLICABLE INDUSTRY STANDARDS, NEMA STANDARDS AND UNDERWRITERS LABORATORIES STANDARDS WHERE APPLICABLE.
- F. SUBMITTALS: PROVIDE MATERIAL AND EQUIPMENT SUBMITTALS CONTAINING A COMPLETE LISTING OF MATERIAL AND EQUIPMENT SHOWN ON THE DRAWINGS. INCLUDE CATALOG NUMBERS, WIRING DIAGRAMS, ROUGH-IN DIMENSIONS AND PERFORMANCE DATA FOR ALL MATERIAL AND EQUIPMENT. SUBMITTALS SHALL BE IN ELECTRONIC PDF FORMAT, SEPARATE FROM WORK FURNISHED UNDER OTHER DIVISIONS. INDEX AND CLEARLY IDENTIFY ALL MATERIAL AND EQUIPMENT BY ITEM, NAME OR DESIGNATION USED ON THE DRAWINGS. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE SUBMITTALS ARE NOT CHECKED FOR QUANTITY, DIMENSION, OR FOR PROPER OPERATION. WHERE DEVIATIONS OF A SUBSTITUTE PRODUCT OR SYSTEM PERFORMANCE HAVE NOT BEEN SPECIFICALLY NOTED IN THE SUBMITTAL BY THE CONTRACTOR, PROVISIONS OF A COMPLETE AND SATISFACTORY WORKING INSTALLATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- G. WARRANTY: THE CONTRACTOR SHALL GUARANTEE ALL WORK EXECUTED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM BENEFICIAL OCCUPANCY. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE GUARANTEE PERIOD.
- H. PERMITS: SECURE AND PAY FOR ALL FEES, PERMITS, ETC. REQUIRED BY LOCAL AND STATE AGENCIES AND ALL LOCAL UTILITY COMPANIES.
- I. REFERENCE SYMBOLS: THE ELECTRICAL "LEGEND" ON THE DRAWINGS IS A STANDARDIZED VERSION, AND ALL SYMBOLS SHOWN MAY NOT BE USED. USE THE "LEGEND" AS A REFERENCE FOR THE SYMBOLS USED ON THE DRAWINGS.
- J. PENETRATION OF FIRE BARRIERS: ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED BARRIERS SHALL BE SEALED IN ACCORDANCE WITH NEC ARTICLE 300.21 AND THE FOLLOWING:

- ALL HOLES OR VOIDS CREATED TO EXTEND ELECTRICAL SYSTEMS THROUGH FIRE RATED FLOORS, WALLS OR CEILING SHALL BE SEALED WITH AN ASBESTOS-FREE INTUMESCENT FIRE STOPPING MATERIAL CAPABLE OF EXPANDING 8 TO 10 TIMES WHEN EXPOSED TO TEMPERATURES 250 DEGREES F OR HIGHER.
- MATERIALS SHALL BE SUITABLE FOR THE FIRE STOPPING OF PENETRATIONS MADE BY STEEL, GLASS, PLASTIC AND SHALL BE CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH THE REQUIREMENTS OF ASTM E814, UL 1479 AND THE UL FIRE RESISTANCE DIRECTORY REQUIREMENTS FOR THROUGH-PENETRATION FIRESTOP DEVICES (XHCR).
- THE RATING OF THE FIRE STOPS SHALL BE THE SAME AS THE TIME-RATED FLOOR, WALL OR CEILING ASSEMBLY.
- INSTALL FIRE STOPPING MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

### 26 05 19 – WIRE AND CABLE

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS:
- ALL BUILDING WIRE SHALL BE COPPER WITH TYPE XHHW, THWN, THW OR THHN INSULATION. MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE SHALL BE #12 AWG.
  - TYPE NM CABLE: SOLID COPPER CONDUCTOR, 600 VOLT INSULATION, RATED 90 DEGREES C, TYPE NM OR NMC NON-METALLIC SHEATHED CABLE.
  - TYPE SER CABLE: STRANDED COPPER CONDUCTOR, 600 VOLT, TYPE XHHW2 INSULATION, RATED 90 DEG C, TYPE SER CABLE.
- C. INSTALLATION:
- DO NOT SHARE NEUTRAL CONDUCTORS. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT THAT REQUIRES A NEUTRAL.
  - USE PROPERLY SIZED INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR ALL CONDUCTORS #8 AWG AND SMALLER. TERMINATE #6 AWG

- AND LARGER CONDUCTORS WITH CRIMP OR COMPRESSION TYPE CONNECTORS INSTALLED WITH TOOL RECOMMENDED BY CONNECTION MANUFACTURER AND INSULATE WITH PROPERLY SIZED 600 VOLT RATED HEAT SHRINK TUBING.
- BRANCH CIRCUIT WIRING FROM A LIGHT SWITCH OR LIGHTING CONTROL STATION TO THE LIGHT FIXTURE SHALL INCLUDE A NEUTRAL CONDUCTOR.
  - INSTALLATION SCHEDULE:
    - FEEDERS: BUILDING WIRE IN RACEWAYS. SER CABLE MAY BE USED IN DRY, CONCEALED LOCATIONS.
    - DRY, CONCEALED, BRANCH CIRCUIT WIRING: TYPE NM CABLE.
    - DRY, EXPOSED, BRANCH CIRCUIT WIRING: BUILDING WIRE IN RACEWAY.
    - WET LOCATIONS: BUILDING WIRE IN RACEWAYS.

### 26 05 26 – GROUNDING AND BONDING

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR GROUND RODS.
- B. MATERIAL: SOLID GROUND RODS: COPPER-ENCASED STEEL, 3/4 INCH DIAMETER, MINIMUM LENGTH 10 FEET.
- C. INSTALLATION:
- PROVIDE A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR FOR ALL BRANCH CIRCUITS AND FEEDERS. TERMINATE EACH END ON A GROUNDING LUG, BUS, OR BUSHING.
  - MECHANICAL CONNECTORS: NON-REVERSIBLE CRIMP TYPE LUGS ONLY. USE FACTORY MADE COMPRESSION LUG FOR ALL TERMINATIONS. FOR TELECOMMUNICATION SYSTEMS USE COPPER, COPPER ALLOY, OR TIN-PLATED COPPER, NON-REVERSIBLE LONG BARREL CRIMP TYPE BOLT LUGS WITH TWO BOLT TONGUES FOR 6 AWG OR LARGER CONDUCTORS. CRIMP TYPE ONE HOLE FOR CONDUCTORS SMALLER THAN 6 AWG.
  - BOND TOGETHER SYSTEM NEUTRALS, SERVICE EQUIPMENT ENCLOSURES, EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND PLUMBING AND FUEL SYSTEMS.

### 26 05 33 – RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS
- INTERMEDIATE METAL CONDUIT (IMC): GALVANIZED STEEL. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; USE FITTINGS AND CONDUIT BODIES SPECIFIED ABOVE FOR RIGID STEEL CONDUIT.
  - ELECTRICAL METALLIC TUBING CONDUIT (EMT): ANSI C80.3. GALVANIZED TUBING. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON, COMPRESSION TYPE OR SET SCREW FITTINGS WITH INSULATED THROAT BUSHINGS. DIE-CAST FITTINGS ARE NOT ACCEPTABLE. MAXIMUM SIZE SHALL BE 2". PROVIDE FACTORY ELBOWS ON SIZES 1-1/2" AND LARGER.
  - FLEXIBLE METAL CONDUIT: FS WW-C-566; STEEL, REDUCATED WALL THICKNESS. REDUCED WALL FLEXIBLE METAL CONDUIT IS NOT ACCEPTABLE. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON WITH INSULATED THROAT BUSHINGS. DIE CAST FITTINGS ARE NOT ACCEPTABLE.
  - LIQUIDTIGHT FLEXIBLE CONDUIT: FLEXIBLE METAL CONDUIT WITH PVC JACKET. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON WITH INSULATED THROAT BUSHINGS. DIE CAST FITTINGS ARE NOT ACCEPTABLE.
  - EXPOSED LOCATIONS: PROVIDE GALVANIZED OR CADMIUM PLATED, ONE PIECE PRESSED STEEL OUTLET BOXES 4 INCH SQUARE OR OCTAGONAL, 1 1/2 INCHES DEEP MINIMUM SIZE FOR USE IN INTERIOR AREAS.
  - CONCEALED LOCATIONS: OUTLET BOXES SHALL BE NON-METALLIC, PHENOLIC TYPE RATED FOR 150 DEGREES C. MINIMUM BOX SIZE SHALL BE 3 1/2" X 2 1/4" X 3 1/8" (18 CUBIC INCHES). PROVIDE FIXTURE OUTLETS WITH 1/2 INCH MALE FIXTURE STUDS AS REQUIRED.
  - PROVIDE CAST ALUMINUM OR FERALLOY TYPE BOXES WITH GASKETED COVER, THREADED HUBS AND NEMA 3R RATING FOR USE IN EXTERIOR OR WET LOCATIONS.
- C. INSTALLATION:
- CONDUIT SHALL BE 1/2 INCH MINIMUM SIZE.
  - CONDUIT INSTALLED IN EXPOSED OUTDOOR LOCATIONS AND FEEDERS SHALL BE INTERMEDIATE METAL CONDUIT.
  - CONDUIT INSTALLED IN EXPOSED DRY INTERIOR LOCATIONS SHALL BE ELECTRICAL METALLIC TUBING.
  - MOTOR AND EQUIPMENT CONNECTIONS SHALL BE SHORT EXTENSIONS OF FLEXIBLE METAL CONDUIT OR MC CABLE TO ALLOW FOR VIBRATION.
  - PROVIDE OUTLET BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, DEVICE INSTALLATION AND CODE COMPLIANCE.
  - DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS. PROVIDE A MINIMUM 6 INCH SEPARATION FOR MINIMUM SOUND TRANSMISSION.
  - USE MULTIPLE-GANG BOXES WHERE MORE THAN ONE DEVICE ARE MOUNTED TOGETHER; DO NOT USE SECTIONAL BOXES.
  - SUPPORT BOXES INDEPENDENTLY OF CONDUIT.
  - COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS MOUNTED ABOVE COUNTERS BENCHES AND BACKSPLASHES.

### 26 24 16 – LOADCENTERS

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIAL:
- MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL.
  - PROVIDE DEAD-FRONT CIRCUIT BREAKER LOADCENTERS WITH BUS SIZE, SHORT CIRCUIT RATING, NUMBER AND SIZE OF BRANCH CIRCUITS AS SHOWN ON THE DRAWINGS. BUSSING SHALL BE COPPER. CABINETS SHALL BE 3 1/2 INCHES BY 14 INCHES WIDE MINIMUM. PROVIDE WITH FLUSH OR SURFACE FRONTS WITH DOOR, PULLING AND LATCH. FINISH IN

MANUFACTURER'S STANDARD GRAY ENAMEL. MOLDED CASE CIRCUIT BREAKERS SHALL BE PLUG-IN THERMAL MAGNETIC TRIP TYPE WITH COMMON TRIP HANDLE FOR ALL POLES. PROVIDE AFCI CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12 REQUIREMENTS. PROVIDE UL CLASS A GROUND FAULT INTERRUPTER CIRCUIT BREAKERS FOR GFCI CIRCUITS AS INDICATED ON THE DRAWINGS.

- C. INSTALLATION:
- INSTALL LOAD CENTERS PLUMB WITH TOP OF CABINET 6'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON THE DRAWINGS.
  - PROVIDE TYPED CIRCUIT DIRECTORIES FOR EACH LOAD CENTER.
  - ALL LOAD CENTERS SHALL HAVE SIGNAGE FOR ARC HAZARD INSTALLED. THE MARKING SHALL BE LOCATED TO BE CLEARLY VISIBLE TO QUALIFIED PERSONNEL BEFORE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE OF THE EQUIPMENT. AT A MINIMUM THE 3-LINE SIGNAGE SHALL STATE THE FOLLOWING: WARNING – ARC FLASH AND SHOCK HAZARD – APPROPRIATE PPE REQUIRED.

### 26 27 26 – WIRING DEVICES

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
- WALL SWITCHES: SWITCHES FOR LIGHTING CIRCUITS SHALL BE NEMA WD1, COMMERCIAL GRADE AC GENERAL USE SNAP SWITCH WITH TOGGLE HANDLE, RATED 20 AMPERES AND 120-277 VOLTS AC. HANDLE: WHITE NYLON.
  - RECEPTACLES: CONVENIENCE AND STRAIGHT BLADE RECEPTACLES SHALL BE NEMA WD1, COMMERCIAL GRADE, TYPE 5-20R, WHITE NYLON FACE. SPECIFIC USE RECEPTACLES SHALL BE NEMA WD1 OR WD5; AS REQUIRED TO MATCH LOAD SERVED, BLACK PHENOLIC FACE. GFCI RECEPTACLES SHALL BE 20A, DUPLEX CONVENIENCE RECEPTACLE WITH INTEGRAL CLASS 'A' GROUND FAULT CURRENT INTERRUPTER AND LOCKOUT FEATURE. TAMPERPROOF RECEPTACLES SHALL BE UL 489.
  - WALL DIMMERS: NEMA SSL 7A-2013; UL LISTED LINEAR SLIDE PHASE CUT WALL DIMMER, RATED A MINIMUM OF 600 WATTS AND 120 VOLTS AC, PROVIDE HIGHER RATINGS AS REQUIRED TO SERVE THE LOADS SHOWN ON THE PLANS. COLOR: WHITE. DIMMER SHALL BE FULLY COMPATIBLE WITH ALL LED FIXTURES CONNECTED FOR SMOOTH, FLICKER-FREE DIMMING OPERATION.
  - WALL PLATES: DECORATIVE COVER PLATES IN FINISHED AREAS SHALL BE WHITE NYLON. PROVIDE 1/2 INCH RAISED, SQUARE, GALVANIZED OR CADMIUM PLATED, PRESSED STEEL COVER PLATE SUPPORTING DEVICES INDEPENDENT OF THE OUTLET BOX FOR ALL EXPOSED WORK.
- C. INSTALLATION:
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, INSTALL RECEPTACLES 18 INCHES ABOVE FINISH FLOOR, 4 INCHES ABOVE COUNTERS AND BACKSPLASHES WITH GROUNDING POLE ON BOTTOM. UNLESS OTHERWISE NOTED DIMENSIONS ARE TO CENTERLINE OF OUTLET.
  - INSTALL WALL SWITCHES 48 INCHES ABOVE FLOOR, OFF POSITION DOWN.
  - INSTALL GALVANIZED STEEL PLATES ON OUTLET BOXES AND JUNCTION BOXES IN UNFINISHED AREAS AND ON SURFACE-MOUNTED OUTLETS.
  - [INSTALL TRANSFORMER FOR DOORBELL IN CONCEALED, ACCESSIBLE LOCATION SUCH AS HIGH ON THE WALL INSIDE A STORAGE CLOSET.]

### 26 29 13 – MOTOR STARTERS

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
- MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL
  - MANUAL AND FRACTIONAL MOTOR STARTERS: NEMA ICS 2, AC GENERAL PURPOSE CLASS A, MANUALLY OPERATED UNIT WITH NUMBER OF POLES AS REQUIRED BY THE LOAD SERVED, FULL-VOLTAGE CONTROLLER FOR FRACTIONAL HORSEPOWER INDUCTION MOTORS, WITH THERMAL OVERLOAD UNIT, RED PILOT LIGHT, AND TOGGLE OPERATOR.
- C. INSTALLATION
- SELECT AND INSTALL HEATER ELEMENTS IN MOTOR STARTERS TO MATCH INSTALLED MOTOR CHARACTERISTICS.
  - MOTOR STARTING EQUIPMENT SHALL BE LISTED FOR USE AND PROPERLY SIZED FOR OPERATION WITH THE MOTORS SPECIFIED BY MECHANICAL.

### 26 28 19 – ENCLOSED SWITCHES

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
- MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL
  - NONFUSIBLE SWITCH ASSEMBLIES: nEMA KS 1; TYPE HD; QUICK-MAKE, QUICK-BREAK, HEAVY-DUTY LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. ENCLOSURE SHALL BE NEMA KS 1; TYPE 1, 3R OR 4 AS INDICATED ON DRAWINGS.
- C. INSTALLATION
- INSTALL DISCONNECT SWITCHES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FIELD LOCATE FINAL LOCATION OF DISCONNECTS TO ALLOW READY ACCESS AND NEC 110.26 WORKING CLEARANCES WHERE APPLICABLE.

### 26 50 00 – LIGHTING FIXTURES

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
- LUMINAIRES: PROVIDE AND INSTALL ALL LIGHTING EQUIPMENT OR APPROVED EQUAL AS SHOWN ON THE DRAWINGS AND DESCRIBED IN THE "FIXTURE SCHEDULE". LUMINAIRE SHALL BE COMPLETE WITH LAMPS AND DRIVERS. PROVIDE LIGHTING EQUIPMENT COMPLETE, WIRED, ASSEMBLED, WITH PROPER FLANGES, MOUNTING SUPPORTS, HARDWARE, ETC.
  - SCREW-IN OR PLUG-IN LED LAMPS: UNLESS OTHERWISE SCHEDULED ON THE PLANS, PROVIDE UL LISTED, DIMMABLE, NOMINAL 3000K, 50 LPW MINIMUM, 22,000HR MINIMUM L70 LAMP LIFE LED SCREW-IN OR PLUG-IN LAMP WITH LAMP BASE/SHAPE AND EQUIVALENT WATTAGE TO MATCH THE

INCANDESCENT OR HALOGEN LUMINAIRE THAT IT IS INSTALLED INSIDE. ACCEPTABLE MANUFACTURERS: CREE, SORAA, GE OR APPROVED EQUAL.

- LED TUBE LAMPS: 1,600 LUMEN, 12W, 3000K T8 REPLACEMENT LED LAMP, 50,000 L70 LAMP LIFE, 80 CRI. GREEN CREATIVE TITANIUM LED SERIES OR EQUAL.

### 27 00 00 – COMMUNICATIONS

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
- UTP TELECOMMUNICATION CABLE: PLENUM-RATED CL2P, CATEGORY 6, 4 PAIR, 24 AWG, SOLID COPPER CONDUCTOR TELECOMMUNICATIONS CABLE. SUPERIOR ESSEX "DATAGAIN" CMP OR APPROVED EQUAL.
  - UTP TELECOMMUNICATIONS JACK: RJ-45, CATEGORY 6, T568A/B, 8P8C, SINGLE, WHITE FINISH, TELECOMMUNICATIONS JACK WITH FLUSH EXIT WITH SINGLE-GANG FACEPLATES WITH FINISH TO MATCH JACK. ORTRONICS "TRACJACK CLARITY 6" #OR-TJ600 OR APPROVED EQUAL.
  - TELEVISION CABLE: RG-6, 75 OHM, COAXIAL, 100 PERCENT SHIELDED. STRUCTURAL RETURN LOSS TO BE 26 DB OR GREATER IN INSTALLED POSITION.
  - TELEVISION JACK: FCC PART 68; F-TYPE CONNECTOR TYPE WITH WALL PLATE SIZE AND COLOR TO MATCH RECEPTACLES. LEVITON OR EQUAL.
- D. INSTALLATION:
- COORDINATE WITH LOCAL TELEPHONE AND CABLE UTILITY FOR PERMANENT TELEPHONE/INTERNET AND CABLE TV SERVICE TO THE BUILDING.
  - ALL TELEPHONE/DATA CABLES SHALL BE INSTALLED UNSPLICED FROM THE TELECOMMUNICATIONS JACK TO THE TELEPHONE UTILITY NETWORK INTERFACE DEVICE (NID). LEAVE A MINIMUM OF 6FT SLACK AT THE UTILITY LOCATION AND 12" AT THE JACK.
  - ALL TELEVISION CABLES SHALL BE INSTALLED UNSPLICED FROM THE TELEVISION JACK TO THE CABLE TV HEADEND LOCATION. LEAVE A MINIMUM OF 6FT SLACK AT THE UTILITY LOCATION AND 12" AT THE JACK.
  - CABLES NOT ROUTED THROUGH HOLES IN FRAMING MEMBERS SHALL BE SUPPORTED WITH LISTED SUPPORTS DESIGNED FOR THE CABLES ON A MAXIMUM OF 4FT CENTERS.
  - TELECOM/DATA CABLES SHALL BE ROUTED A MINIMUM OF 5 INCHES FROM POWER LINES 2 KVA OR LESS, 36 INCHES FROM POWER LINES 5 KVA OR GREATER, 40 INCHES FROM MOTORS. CABLE JACKET SHALL BE MAINTAINED TO WITHIN .5 INCH OF JACK AND TWISTS SHALL BE MAINTAINED TO WITHIN .25 INCH OF TERMINATION POINT. COMPLY WITH CABLE MANUFACTURERS MAXIMUM PULLING TENSION AND MINIMUM BEND RADIUS REQUIREMENTS. DO NOT STRETCH, STRESS, TIGHTLY COIL, BEND OR CRIMP CABLES. CABLES SHALL BE ROUTED SO THAT CABLE LENGTHS DO NOT EXCEED 90 METERS PER ANSI/TIA/EIA REQUIREMENTS.

### 33 71 13 – ELECTRICAL UTILITY SERVICES

- A. SUMMARY: THIS SECTION INCLUDES EQUIPMENT AND COORDINATION WITH LOCAL UTILITY TO OBTAIN PERMANENT ELECTRICAL SERVICE FOR THE FACILITY. THIS WILL INVOLVE COORDINATING WITH THE UTILITY TO INSTALL A NEW UNDERGROUND OR OVERHEAD LINE TO FEED THE FACILITY. SEE POWER ONE-LINE DIAGRAM FOR SERVICE SIZE AND CONFIGURATION.
- B. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- C. MATERIALS:
- METER/MAIN: COMBINATION NEMA 3R METERBASE/MAIN DISCONNECT WITH RATINGS AS INDICATED ON THE PLANS.
  - METER: FURNISHED AND INSTALLED BY THE UTILITY COMPANY.
- D. INSTALLATION
- SPRAY ALL EXPOSED CONDUCTOR SECTIONS AND TERMINATION LUGS WITH SCOTCH #1602 VI-SPRAY OR APPROVED EQUAL RED ELECTRICAL SEALER. ALL SERVICE ENTRANCE EQUIPMENT SHALL HAVE SIGNAGE FOR ARC HAZARD INSTALLED. THE MARKING SHALL BE LOCATED TO BE CLEARLY VISIBLE TO QUALIFIED PERSONNEL BEFORE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE OF THE EQUIPMENT. AT A MINIMUM THE 3-LINE SIGNAGE SHALL STATE THE FOLLOWING: WARNING – ARC FLASH AND SHOCK HAZARD – APPROPRIATE PPE REQUIRED.

STAMP:

REVISIONS:



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**Craig Tract 18 4-plex**  
**TLINGIT-HAIDA REGIONAL HOUSING AUTHORITY**  
**CRAIG, ALASKA**

SHEET TITLE:

ELECTRICAL  
SPECIFICATIONS

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AUTOMATED PLOT DATE:

DRAWING DATE:

May 21, 2018

JOB NO.

L8030

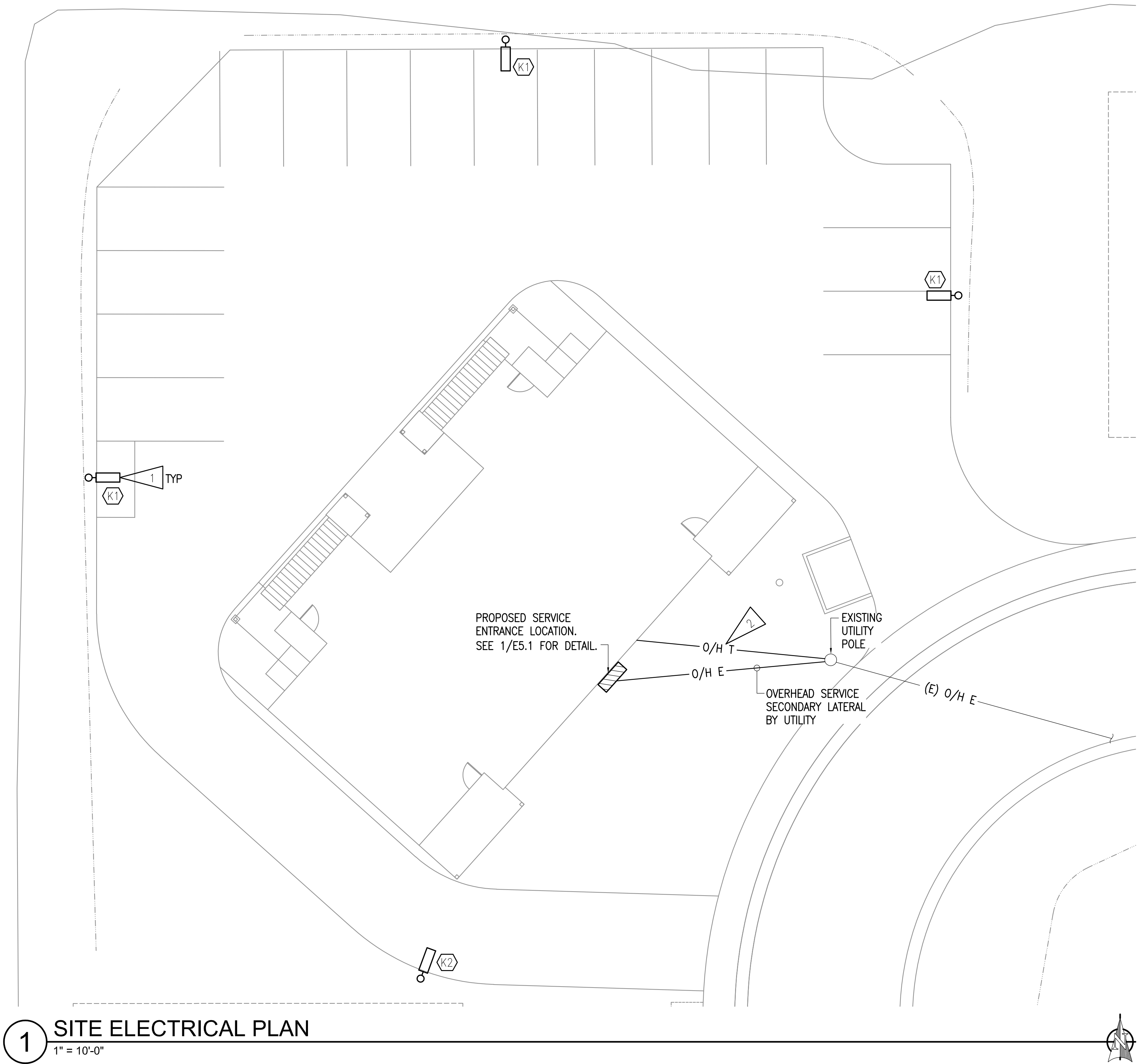
SCALE:

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SHEET NUMBER

DESIGN DEVELOPMENT-NOT FOR CONSTRUCTION

**E0.2**



**1 SITE ELECTRICAL PLAN**  
1" = 10'-0"

**GENERAL NOTES:**

- ROUTE POLE-MOUNTED LUMINAIRE VIA BUILDING EXTERIOR PHOTOCELL. SEE E2.3 FOR LOCATION.
- PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT THAT REQUIRES A NEUTRAL CONDUCTOR.
- COORDINATE WITH ALASKA POWER AND TELEPHONE COMPANY (AP&T) FOR EXACT ROUTE OF ELECTRICAL SERVICE LATERAL FROM UTILITY TRANSFORMER PRIOR TO WORK.

**SHEET NOTES:**

- PROVIDE 20A, 1-POLE CIRCUIT 'H-3' AND CONNECT TO POLE-MOUNTED LUMINAIRE. ROUTE CIRCUIT THROUGH BUILDING EXTERIOR PHOTOCELL. SEE E2.2 FOR LOCATION.
- APPROXIMATE OVERHEAD ROUTE OF TELEPHONE SERVICE BY UTILITY. COORDINATE WITH AP&T FOR TELEPHONE AND INTERNET SERVICE TO BUILDING PRIOR TO WORK.

DESIGN DEVELOPMENT- NOT FOR CONSTRUCTION

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SHEET TITLE:  
SITE ELECTRICAL

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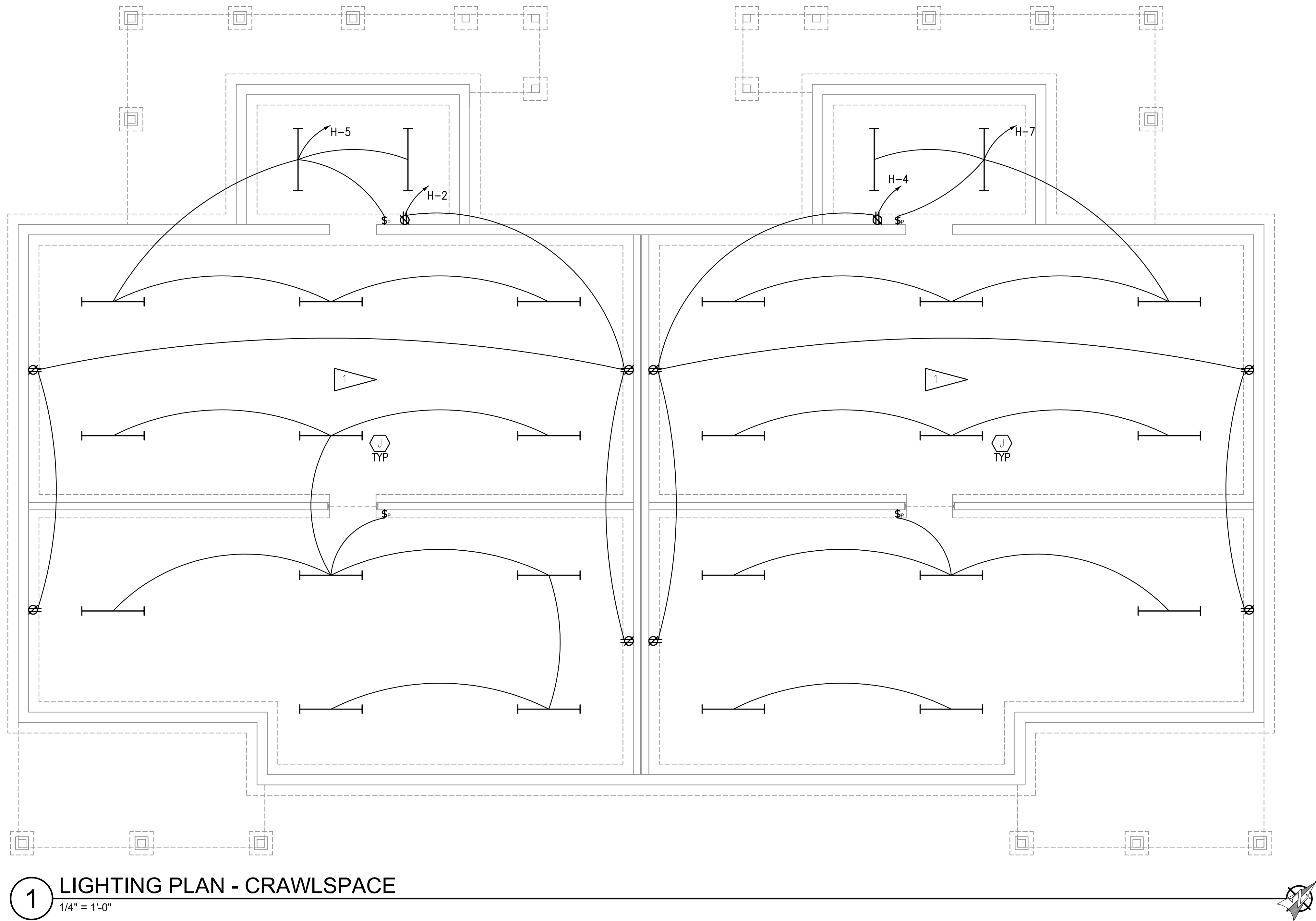
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SCALE:  
**AS SHOWN**

SHEET NUMBER

**E1.1**





1 LIGHTING PLAN - CRAWLSPACE  
1/4" = 1'-0"

GENERAL NOTES:

- COORDINATE WITH OTHER DISCIPLINES PRIOR TO ROUGH-IN TO AVOID CONFLICT.
- PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT THAT REQUIRES A NEUTRAL CONDUCTOR.

SHEET NOTES:

- FIELD-COORDINATE MOUNTING OF LUMINAIRES IN CRAWLSPACES AND MAKE ADJUSTMENTS AS REQUIRED TO AVOID CONFLICT WITH MECHANICAL EQUIPMENT AND PIPING.

DESIGN DEVELOPMENT- NOT FOR CONSTRUCTION

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SHEET TITLE:  
LIGHTING  
CRAWLSPACE

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E2.1