



US Army Corps
of Engineers
Omaha District

DEPARTMENT OF DEFENSE PRESSURIZED HYDRANT FUELING SYSTEM TYPE III

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US Army Corps
of Engineers
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JULY 2010

EXTERIOR ELECTRICAL LEGEND

EXIST	NEW	
		POLE, NO., LENGTH, AND CLASS AS INDICATED
		DOWN GUY AND ANCHOR. STRENGTH IN LBS. INDICATED (ANCHOR STRENGTH IS BASED ON HOLDING POWER IN CLASS 7 SOIL) "MT" INDICATES TWIN EYE ANCHOR ROD
		POLE MOUNTED ROADWAY OR AREA LIGHTING INSTALLATION, WATTS AS INDICATED, ROMAN NUMERAL INDICATES IES TYPE DISTRIBUTION
		POLE MOUNTED FLOODLIGHTING INSTALLATION. ARROWS INDICATE NO. OF LUMINAIRES AND APPROX. HORIZ. AIMING
		OVERHEAD POWERLINE-SECONDARY OR SERVICE DROP NO., SIZE AND TYPE OF CONDUCTOR AND LINE VOLTAGE AS INDICATED.
		OVERHEAD POWERLINE-PRIMARY DISTRIBUTION. NO., SIZE, AND TYPE OF CONDUCTORS AND LINE VOLTAGE AS INDICATED
		OVERHEAD COMMUNICATIONS LINE
		SERIES STREET LIGHT AND AIRFIELD LIGHTING CIRCUIT RESPECTIVELY. NO., SIZE AND TYPE OF WIRE AS INDICATED.
		DIRECT BURIED LINE. THE LETTER "P" DESIGNATES PRIMARY POWER (#8 MIN. IF SINGLE-CONDUCTOR CABLES ARE USED), "S" SECONDARY POWER (LOW VOLTAGE), "C" A COMMUNICATIONS TYPE LINE.
		NUMBER, SIZE, AND TYPE OF CABLE AS INDICATED
		UNDERGROUND DUCT LINE, CONCRETE ENCASED (SEE SPECS). NUMERAL INDICATES QUANTITY OF DUCTS (4" MIN. IF NOT IDENTIFIED). LETTER "P" INDICATES ELECTRICAL POWER LINE, "C" A COMMUNICATIONS TYPE LINE.
		NO., SIZE AND VOLTAGE OF CABLE AS INDICATED OR PER CROSS SECTION DETAIL
		UNDERGROUND DISTRIBUTION-MISC. CONFIGURATIONS. NO. AND SIZE OF CONDUCTORS AND RACEWAY AS DESCRIBED (*) OR DETAILED
		PULLBOX, HANDHOLE OR MANHOLE. NO., AND TYPE AS INDICATED
		UNDERGROUND ELECTRICAL EQUIPMENT VAULT (POWER OR CONTROLS)
		ELECTRICAL EQUIPMENT IN PAD MOUNTED CABINET OR EQUIPMENT ASSEMBLY
		INDIVIDUAL TRANSFORMER FOR OVERHEAD OR FENCED APPLICATIONS. ANSI VOLTAGE CONFIGURATION AS INDICATED, SINGLE NUMERAL IF PRESENT DESIGNATES KVA RATING
		CONCRETE PAD MOUNTED TRANSFORMER INSTALLATION ANSI (C84.1) VOLTAGE CONFIGURATION AS INDICATED.
		PHOTOELECTRIC CONTROL RELAY
		AERIAL AUTOMATIC RECLOSER.
		AERIAL AUTO SECTIONALIZER
		GROUNDING SYSTEM. ELECTRODE AND CONDUCTOR (COUNTERPOISE) (BARE COPPER) SIZE AS INDICATED
		LIMITS OF CONDUIT CASING OR SLEEVE
		CAPPED CONDUIT

ELECTRICAL POWER DIAGRAM LEGEND

	DRAWOUT TYPE CIRCUIT BREAKER ASSEMBLY ("LVP" INDICATES LOW VOLTAGE POWER CB, "IC" INDICATES INSULATED CASE, "MC" INDICATES MOLDED CASE CB TYPE). SIZE AS INDICATED.
	DRAWOUT FUSE ASSEMBLY
	MOLDED CASE CIRCUIT BREAKER, FIXED TRIP. THREE POLE UNLESS DESIGNATED '1P' OR '2P'.
	MOLDED CASE CIRCUIT BREAKER OF A GIVEN FRAME SIZE WITH ADJUSTABLE TRIP SETTINGS.
	FUSED CUTOUT OR FUSED SWITCH ASSEMBLY. VOLTAGE RATING AND SIZE AS INDICATED
	FUSE-POWER AND CONTROL APPLICATIONS RESPECTIVELY, SIZE AS INDICATED
	SURGE ARRESTOR - VOLTAGE RATING AND CLASS AS INDICATED
	POWER FACTOR CORRECTION CAPACITOR - NUMBER DENOTES KVAR RATING
	GROUND CONNECTION - TO STANDARD ROD TYPE ELECTRODE, TO NEAREST STRUCTURAL STEEL (#6 MIN. CONDUCTOR IF NOT SHOWN)
	CONTROL INTERFACE OR OPERATING RELATIONSHIP BETWEEN 2 OR MORE DEVICES (KEY INTERLOCK BETWEEN BREAKERS, RELAY/CONTACTOR, ETC.)
	BUS NUMBER FOR ANALYSIS AND REFERENCE ONLY

	FEEDER TYPE BUS DUCT (FB) OR METAL-ENCLOSED BUS ASSEMBLIES (HIGH OR MEDIUM VOLTAGE). (CU BUS IF NOT IDENTIFIED). AMPACITY AS INDICATED
	SEPARABLE CONNECTOR IN PRIMARY DISTRIBUTION LINE (ELBOW TERMINATOR AND BUSHING COMBINATION)- LOADBREAK AND NON-LOADBREAK STYLES RESPECTIVELY
	KILOWATT-HOUR METER (WH IS WATT-HOUR METER)
	CURRENT TRANSFORMER (CT). SECOND NUMERAL OF TRANSFORMATION RATIO IDENTIFIES NOMINAL CURRENT OF METERING/ACCESSORY CIRCUIT. NUMERAL IN PARENTHESES INDICATES QUANTITY OF CT'S
	VOLTAGE (POTENTIAL) TRANSFORMER (VT/PT), DRAWOUT AND NON-DRAWOUT. QUANTITY AND VOLTAGE RATING AS INDICATED
	POWER & DISTRIBUTION TRANSFORMER, RATED KVA, VOLTAGE, CONNECTIONS, COOLING CLASS AND TYPE AS INDICATED.
	TRANSFORMER DELTA CONNECTION DESIGNATION WHEN USED BY A TRANSFORMER SYMBOL.
	TRANSFORMER GROUNDED-WYE CONNECTION DESIGNATION WHEN USED BY A TRANSFORMER SYMBOL, DIRECT GROUNDED AND RESISTOR GROUNDED RESPECTIVELY. IF THE GROUND SYMBOL IS MISSING, THEN IT IS AN UNGROUNDED OR FLOATING WYE CONNECTION.
	AMMETER AND VOLTMETER WITH PHASE SELECTOR SWITCH
	GROUND FAULT INTERRUPTING EQUIPMENT (SEE SPECS) WITH TRIP SETTING AT DESIGNATED TIME DELAY INTERLOCKING CONTROL AS INDICATED
	SENSOR, DEVICE OR APPARATUS (ELECTRICAL OR ELECTROMECHANICAL); NUMERAL IDENTIFIES TYPE OR FUNCTION PER ANSI/IEEE C37.2

INTERIOR ELECTRICAL LEGEND

	EXISTING AND NEW, RESPECTIVELY
	INCANDESCENT OR H.I.D. LUMINAIRE LESS THEN 2' X 2' IN SIZE - LETTER IDENTIFIES CORRESPONDING SWITCH
	WALL FIXTURE - MOUNTING HEIGHT INDICATED (TO FIXTURE ϕ)
	FLUORESCENT OR HID LUMINAIRE 2' x 2' OR LARGER IN SIZE (THE OUTLET SYMBOL WILL NORMALLY BE OMITTED IN CONTINUOUS ROW CONFIGURATIONS)
	CEILING EXIT LIGHT. ARROWS IDENTIFY DIRECTION OF EGRESS
	WALL EXIT LIGHT - MOUNTING HEIGHT INDICATED (TO ϕ), ARROWS IDENTIFY DIRECTION OF EGRESS
	LIGHTING CONTACTOR - NO. OF POLES, CURRENT AND VOLTAGE RATINGS AS INDICATED
	EMERGENCY POWER SYSTEM FOR EGRESS LIGHTING - BATTERY INVERTER SET (OR FORWARD TRANSFER UPS), RATINGS AND PHYSICAL SIZE AS INDICATED
	BATTERY OPERATED EMERGENCY LIGHT SET, NO. OF LUMINAIRE HEADS AS INDICATED
	FEEDER, DEVICE OR FIXTURE, AND FLUORESCENT TYPE FIXTURE, RESP. SUPPLIED FROM AN EMERGENCY CIRCUIT. THE SHADED PORTION OF THE FLUORESCENT SYMBOL INDICATES 2 LAMPS OF A 3 OR 4 LAMP FIXTURE ARE SUPPLIED FROM EMERGENCY POWER. A 1-LAMP OR 2-LAMP FIXTURE WILL BE SHOWN SHADED OR UNSHADED WITH THE 'E' ANNOTATION
	JUNCTION BOX, 4" SQUARE UNLESS NOTED OTHERWISE. CEILING AND WALL MOUNT TYPES INDICATED.
	DIMMING CONTROL FOR LIGHTING
	MANUAL STARTER WITH THERMAL OVERLOADS (MOTOR RATED SWITCH) SINGLE POLE SWITCH
	DOUBLE POLE SINGLE THROW SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	SINGLE POLE SWITCH WITH PILOT LIGHT
	TIMER OPERATED SWITCH
	KEY OPERATED SWITCH
	MOMENTARY CONTACT SWITCH
	2P.3W GROUNDING TYPE RECEPTACLE - 125V, CONVENTIONAL DUPLEX & SIMPLEX "SW" INDICATES SPLIT WIRED, CO= CLOCKOUTLET, FO= FAN OUTLET, IG= ISOLATED GROUND TYPE OUTLETS, NEMA 5-XX SERIES. DEFAULT SIZE IS 15A. SEE NOTE 8.
	RECEPTACLE STRIP ASSEMBLY - DUPLEX NEMA 5-15 RECEPTACLES SPACED AT INTERVAL INDICATED (SEE FLOOR PLANS) IN SURFACE MOUNTED RACEWAY. WALL MOUNTED AT 4 FT. AFF. CONSECUTIVE PHASE CONNECTIONS (IN 3Ø APPLICATIONS) UNLESS NOTED OTHERWISE

	ELECTRIC WATER COOLER (DRINKING WATER DISPENSER) SIZE AS NOTED
	INDIVIDUAL FLOOR OUTLET ASSEMBLY. 'SM' DENOTES SURFACE MOUNTED TYPE (ABOVE FLOOR SERVICE FITTING), 'R' DENOTES RECESSED (FLUSH MOUNTED) TYPE, SEE SPECS
	RELOCATABLE SERVICE POST ASSEMBLY - LENGTH AS REQUIRED TO EXTEND ABOVE SUSPENDED CEILING. SEE NOTE 8.
	TELEPHONE OUTLET, SINGLE AND DUPLEX JACK CONFIGURATIONS (8 PIN JACKS). SEE SPECS. SYMBOL WITHOUT LEG(S) REQUIRES DUPLEX JACKS. A SQUARE AROUND THE DEVICE INDICATE IT IS FLOOR MOUNTED. HL=HOTLINE TELEPHONE, P= PUBLIC TELEPHONE, SEE NOTE 8.
	CABLE TRAY FOR COMMUNICATIONS AND DATA PROCESSING, DIMENSIONS AS INDICATED (W X D)
	TELEPHONE TERMINAL BOARD (PLYWOOD BACKBOARD); TELEPHONE TERMINAL CABINET, SIZE AS INDICATED
	MULTIOUTLET CONFIGURATION IN UNDERFLOOR DUCT SYSTEM (SEE SPECS.). OPEN CIRCLE DENOTES BLANK INSERT LOCATION, SOLID DENOTES A DEVICE INSTALLATION; 'P' INDICATES A POWER DUCT WITH DUPLEX RECEPTACLES (NEMA 5-15), 'C' DENOTES COMMUNICATIONS DUCT W/BUSHED FITTING; FIGURES IDENTIFY NOMINAL WIDTH; UFD IDENTIFIES A SECTION OF FEEDER DUCT (NO INSERTS).
	MOTOR - USE AND SIZE AS INDICATED
	MOTOR CONTROLLER - MAGNETIC OR AS INDICATED, UPPER NUMERAL DESIGNATES NEMA SIZE; LOWER LETTER, IF USED, INDICATES: 'R' - REVERSING TYPE, '2S' - TWO SPEED TYPE, 'FV'- FULL VOLTAGE TYPE (DEFAULT IF NOT INDICATED), 'RV' - REDUCED VOLTAGE TYPE, 'AT' - AUTO TRANSFORMER TYPE, 'PW' - PART WINDING TYPE.
	COMBINATION STARTER W/EXTERNALLY OPERATED DISCONNECT DISCONNECT SWITCH, SIZE AND TYPE AS INDICATED (OR 3P, 240V, 30A MIN)
	PUSHBUTTON CONTROL STATION - 1, 2, OR 3 BUTTONS "EPO" = EMERGENCY POWER OFF.
	SELECTOR SWITCH (SEPARATE FROM STARTER)- 2 POSITION OR 3 POSITION AS INDICATED. IF NOT SPECIFIED ELSEWHERE, LEGEND PLATE DESIGNATIONS WILL BE 'ON-OFF' AND 'MAN-OFF-AUTO' (OR 'H.O.A.')
	THERMOSTAT - SEE MECH. SPECS, 5'-0" UP
	MOTOR CONTROL CENTER, FREE STANDING W/NO. OF 20" WIDE (MIN) VERTICAL SECTIONS INDICATED. SEE DIAGRAM AND/OR SCHEDULE FOR SIZES, RATINGS, AND LOADS
	LIGHTING AND APPLIANCE TYPE PANELBOARD - FLUSH MOUNTED AND SURFACE MOUNTED TYPES, SEE CORRESPONDING PANEL SCHEDULE. OPEN SYMBOL INDICATES EXISTING DISTRIBUTION TYPE PANEL
	MAIN SWITCH BOARD OR MAIN SWITCH GEAR (ABBREVIATED OR SPOILED OUT), SEE FLOOR PLANS AND DIAGRAMS FOR DIMENSIONS, CLEARANCES, AND ELECTRICAL RATINGS
	BUS DUCT ASSEMBLY WITH PLUG-IN POWER BOX CAPABILITY AT 2' INTERVALS, CURRENT RATING AS INDICATED. OPEN CIRCLE REPRESENTS A POSITION WITH BLANK COVER ONLY, SOLID CIRCLE A PLUG IN BOX WITH BREAKER OR SWITCH (SEE SPECS), RECEPT. SYMBOL IDENTIFIES A BOX WITH RECEPTACLE ATTACHED (FIGURES INDICATE RATING OF RECEPT AND OVERCURRENT DEVICE).
	BRANCH CIRCUIT AND FEEDER WIRING. LONG, SHORT, SINGLE DOT AND DOUBLE DOT HASH MARKS REPRESENT PHASE CONDUCTOR, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND RESPECTIVELY (AS APPLICABLE). ARROWS AND LETTER/NUMERALS IDENTIFY HOME-RUN CIRCUITS. IF HASH MARKS ARE OMITTED BETWEEN HOME-RUNS, TRANSITION SEGMENTS, AND END-OF-LINE DEVICES, REQUIRED QUANTITY IS UNDERSTOOD TO APPLY TO ALL UNMARKED INTERVENING SEGMENTS. A CIRCUIT WITHOUT ANY DESIGNATION INDICATES THE CIRCUIT IS TWO-WIRE (MIN #12 IN 1/2" C).
	CONDUIT ONLY - NO CONDUCTORS, PULL WIRE IF OVER 50'
	COMM OR POWER FEEDER INSTALLED UNDER FLOOR SLAB IN COATED R.S. CONDUIT UNLESS INDICATED OTHERWISE
	LIGHT LINE - EXISTING, OR BY OTHER TRADES
	HEAVY LINE - NEW ELECTRICAL WORK
	FUTURE WORK OR ELECTRICAL ITEM REPEATED FOR CLARITY (TO LIGHTING SHEET FROM POWER OR COMM DWG., ACROSS MATCH LINES, ETC.)
	EXISTING EQUIPMENT; EXISTING EQUIPMENT AS RELOCATED (NEW LOCATION)
	GENERATOR OR GENERATOR CONNECTION.
	STATIC GROUND ROD

	FIRE ALARM CONTROL PANEL, (SEE SPECS)
	FIRE ALARM ANNUNCIATION PROVISIONS, W/O/W GRAPHIC REPRESENTATION, SEE SPECS
	FIRE ALARM SIGNAL TRANSMITTING (WITH ANTENNA FOR FM RADIO TYPE), SEE SPECS
	MANUAL FIRE ALARM STATION - 4'-0" A.F.F.
	ABORT STATION. "F"= FIRE; "H"=HALON; "CO"=CARBON DIOXIDE
	FIRE ALARM WARNING DEVICE - BELL, CHIME, HORN AND MINIHORN, 6'-8" A.F.F.
	FIRE ALARM WARNING DEVICE, VISIBLE ONLY - FLASHING LIGHT, CEILING MOUNTED AND WALL MOUNTED (6'-8" A.F.F.) RESPECTIVELY
	F.A. WARNING DEVICE, COMBINED AUDIBLE AND VISIBLE - FLASHING LIGHT WITH A MINIHORN, HORN, BELL, OR CHIME - 6'-8" A.F.F.
	HEAT DETECTOR - UNDIFFERENTIATED SYMBOL INDICATES FIXED TEMPERATURE OR COMBINATION F.T. AND RATE OF RISE TYPE, SEE SPECS; 'CR' INDICATES COMPENSATED RATE ("RATE ANTICIPATION") TYPE WITH TUBULAR SENSING ELEMENT REQUIRED
	SMOKE DETECTOR. THE LETTER 'I' OR 'P', IF PRESENT, STIPULATES IONIZATION OR PHOTOELECTRIC TYPE. 'D' STIPULATES A DUCT TYPE SMOKE DETECTOR. WHERE DUCT DETECTORS ARE SHOWN IN PAIRS, LOCATIONS ARE IN SUPPLY AND RETURN DUCTS, A SINGLE DETECTOR WOULD BE INSTALLED IN THE SUPPLY DUCT IF THE LOCATION IS NOT OTHERWISE INDICATED.
	FIRE ALARM CONTACTS AT SOLENOID (OS & Y) VALVE, TAMPER SWITCH, ALARM CHECK VALVES, WATER FLOW INDICATOR AND FLOW SWITCH, SEE MECH. SPECS
	24-INCH LIGHTNING AIR TERMINAL.
	60-INCH LIGHTNING AIR TERMINAL.
	LIGHTNING PROTECTION MAIN CONDUCTOR

NOTES:

- WHERE MORE THAN ONE SYMBOL FORMAT IS SHOWN, THE PREFERRED FORM IS SHOWN FIRST.
- SUPPLEMENTAL ELECTRICAL LEGENDS MAY APPEAR IN THIS SET OF DRAWINGS TO ESTABLISH SYMBOLS FOR ITEMS NOT COVERED BY THIS SHEET OR TO INDICATE SPECIFIC CONDITIONS IN LIEU OF SYMBOLS SHOWN ON THIS SHEET.
- NOT USED.
- EXISTING ITEMS ARE DESIGNATED BY A THIN LINE OR AN OPEN SYMBOL; NEW ITEMS WITH A THICK LINE OR CLOSED (FILLED-IN) SYMBOL.
- ELECTRIC LIGHT FIXTURES ARE IDENTIFIED BY EITHER OR BOTH OF THE FOLLOWING METHODS:
 - (A) INDICATES FIXTURE TYPE, PER FIXTURE SCHEDULE, FOR ENTIRE ROOM OR AREA WHEN ADJACENT TO THE ROOM NAME OR NUMBER DESIGNATION OR FOR SINGLE FIXTURE WHEN ADJACENT TO THE FIXTURE SYMBOL.
 - (B) CAPITAL LETTER OR FIXTURE DESIGNATION INSIDE OR ADJACENT TO SYMBOL INDICATES FIXTURE TYPE FOR EACH FIXTURE PER FIXTURE SCHEDULE.
- SIZES OF WIRE AND CABLE ARE BASED ON COPPER CONDUCTORS UNLESS INDICATED OTHERWISE.
- LETTERS SUCH AS "WP", "EP" ADJACENT TO ANY SYMBOL INDICATE SPECIAL CONSTRUCTION IS REQUIRED. SEE ABBREVIATIONS SHEET FOR DEFINITIONS.
- ALL RECEPTACLE AND COMMUNICATION OUTLETS SHALL BE MOUNTED 15 - INCHES A.F.F. AS MEASURED TO THE BOTTOM OF THE OUTLET BOX, UNLESS INDICATED OTHERWISE.

 US ARMY CORPS OF ENGINEERS OMAHA DISTRICT	
DESIGNED BY: [] DRAWN BY: [] CHECKED BY: [] SUBMITTED BY: [] FILE NAME: [] FILE NUMBER: [] PLOT SCALE: [] PLOT DATE: []	SOLICITATION NO.: [] CONTRACT NO.: [] DATE: [] DESCRIPTION: [] MARK: []
DOD PRESSURIZED FUELING SYSTEM TYPE III	
ELECTRICAL LEGEND	
SHEET IDENTIFICATION NUMBER G-005	

