MANAGER						ELECTRICAL SYMBOLS
ANAGE	ONE LINE OR ELEMENTARY DIA	A. PLAN	DESCRIPTION	ONE LINE OR ELEMENTARY DIA	. PLAN	DESCRIPTION
PROJECT MA			LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS NOTED OTHERWISE	A B * (X0)	- LR	TWO POSITION SELECTOR SWITCH, MAINTAINED CONTACT POSITION I-CONTACT 2-CONTACT X-CLOSED A X O O-OPEN
		*	COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS NOTED OTHERWISE: * FVR - FULL VOLTAGE REVERSING		-	* NAMEPLATE (A/B) LR - LOCAL/REMOTE
ENGINEER	2 +*	*	RVNR - REDUCED VOLTAGE NON-REVERSING 2SIW - TWO SPEED, ONE WINDING 2S2W - TWO SPEED, TWO WINDING NUMERAL INDICATES STARTER SIZE IF OTHER THAN SIZE I	A B c * (X00)	· HOA	THREE POSITION SELECTOR SWITCH, MAINTAINED CONTACT POSITION I-CONTACT 2-CONTACT 3-CONTACT A X O O X-CLOSED
PROJECT EN	*	*	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE ** AMPERE RATING NOTED IF OTHER THAN 30A	-0 0 (00X)		B O O O O-OPEN C O X ** NAMEPLATE (A/B/C) HOA - HAND/OFF/AUTO
PA	SWITCH FUSE	F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE AMPERE RATING AND FUSE SIZE AS NOTED		T	TEMPERATURE ACTUATED SWITCH (THERMOSTAT)
	->-x-		MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER		SV	SOLENOID OPERATED VALVE
PLUMBING	why m	T	TRANSFORMER, RATING AND CONNECTIONS AS NOTED	~	HTR	STRIP HEATER OR HEATING ELEMENT
Pl	*		CURRENT TRANSFORMER * QUANTITY AND CURRENT RATIO AS NOTED	— * —		PILOT LIGHT, COLOR AS NOTED * R - RED G - GREEN A - AMBER
AD	-0 0- I·		LIGHTNING ARRESTER			B - BLUE W - WHITE
Dates		•	GROUND OR GROUND ROD			RELAY COIL, NUMBER AS INDICATED
HVAC			FUSE, AMPERE RATING AS NOTED	—(M #)—		MOTOR STARTER COIL, NUMBER AS INDICATED
Approved by:	5	(M)	MOTOR, NUMERAL INDICATES HORSEPOWER			CONTACT, NORMALLY OPEN (NO)
	<u></u>	Œ	TACHOMETER GENERATOR	°—————		CONTACT, NORMALLY CLOSED (NC)
ENTATION Date:	#		PROTECTIVE RELAY, NO. AS INDICATED: 27 - UNDERVOLTAGE 40 - LOSS OF EXCITATION 42 - RUNNING CIRCUIT BREAKER OR CONTACTOR	-x-		OVERLOAD RELAY HEATER (OL)
INSTRUMENTATI			46 - REVERSE PHASE, OR PHASE BALANCE CURRENT 49 - MACHINE OR TRANSFORMER THERMAL 50 - INSTANTANEOUS OVERCURRENT, OR RATE-OF-RISE 51 - AC TIME OVERCURRENT 5IN - AC TIME OVERCURRENT RELAY, NEUTRAL GROUND		RTD	RESISTANCE TEMPERATURE DETECTOR
INS Approved by:	•		5IV - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 86 - LOCKING-OUT 87 - DIFFERENTIAL PROTECTIVE GF - INSTANTANEOUS GROUND FAULT, ZERO SEQUENCE ST - SHUNT TRIP		VE VE	VIBRATION DETECTOR FIELD INSTRUMENT, TAG NO. AS INDICATED
AL pate		E	UNIT HEATER - ELECTRIC HEATING COIL AND FAN			## - INDICATES LOOP NO. * - INDICATES INSTRUMENT TYPE
ELECTRICAL			MECHANICAL CONNECTION OR INTERLOCK			AE - ANALYZING ELEMENT (PH, ORP, DO, ETC.) AT - ANALYZING TRANSMITTER DT - DENSITY TRANSMITTER FE - FLOW ELEMENT
ed bys		/_	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED			FE - FLOW ELEMENT FS - FLOW SWITCH FT - FLOW TRANSMITTER FY - FLOW TRANSDUCER
Approv			CONDUCTORS ELECTRICALLY CONNECTED			LE - LEVEL ELEMENT LS - LEVEL SWITCH LT - LEVEL TRANSMITTER PDS - PRESSURE DIFFERENTIAL SWITCH
TURAL Dates			INDICATES LIMITS OF EQUIPMENT OR WIRING ENCLOSURE			PI - PRESSURE TRANSMITTER SI - SPEED INDICATOR TE - TEMPERATURE ELEMENT TS - TEMPERATURE SWITCH
STRUCTUF:	-010-		PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED			TT - TEMPERATURE TRANSMITTER ZS - POSITION SWITCH HS - HAND SWITCH
ST oved by:			PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN NORMALLY OPEN		DM	DAMPER MOTOR
Appro	<u>-010</u>	ES	EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR, MAINTAINED CONTACT, PUSH-TO-STOP/PULL TO RESET.			
JRAL Dates	-01000	PB	START-STOP PUSHBUTTON CONTROL STATION			
ARCHITECTURAL by: Date	STOP/L.O	PBL	START-STOP PUSHBUTTON CONTROL STATION WITH LOCKOUT DEVICE ON STOP			THE NTH OF MASS
ARC pproved by:	<u>-0</u>	РВМ	START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP		,	KERRIGAN SET STORM STATE OF THE
	• • •					12-21-68

* LIGHTING PANEL "LP" TO BE LOCATED AT COMBINED STATION. CHEMICAL FEED FACILITY SHALL BE SIMILAR EXCEPT TO BE FOR 120/240V, I PHASE, 3 WIRE SERVICE AND TO HAVE A 20/2 SPARE CIRCUIT BREAKER IN LIEU OF 20/3 AND TO HAVE A 100A MAIN CIRCUIT BREAKER IN LIEU OF 50A.

SERVICE: 208Y/I20 VOLT, 3 PH., 4 WIRE

EQUIPMENT

MOUNTING: SURFACE

2 RECEPTACLES

3 FEED PUMP NO. I

4 FEED PUMP NO. I

5 FEED PUMP NO.2

6 FEED PUMP NO.2

7 INSTRUMENT PANEL "IP"

8 INTRUSION ALARM PANEL

II LIGHTING - EXTERIOR

I LIGHTING

9 HEATER

12 SPARE

14 SPARE

I5 SPACE

16 SPACE

13 HEATER

10 EXHAUST FAN

Date Ch'k'd. Revision Camp Dresser & Mckee Inc. Designed by: CPK

Scale: NONE

Date: FEBRUARY, 1989

100A MAINS

50A MAIN CIRC. BRKR.

REMARKS

1/4 | 1 | 20 | POTASSIUM HYDROXIDE

1/4 | 1 | 20 | POTASSIUM HYDROXIDE

1 20 LOCKING HARDWARE

1 20 LOCKING HARDWARE

Drawn by: DWH

Checked by: JK

Approved by: JK

1/4 1 20 SODIUM SILICATE

1/4 | 1 | 20 | SODIUM SILICATE

CHEMICAL FEED FACILITIES ELECTRICAL SYMBOL LIST & PANEL SCHEDULE

SHEET NO.

environmental engineers, scientists, planners & management consultants 357 - 42458

EMENTS

One Center Plaza Boston, Massachusetts 02108

·
TOWN OF MARION , MASSACHUSETTS
WATER WORKS IMPROVEMENTS
71/74/044 FEED F. 00 17:70

NOTE:
THIS IS A STANDARD SYMBOL LIST. SYMBOLS MAY BE LISTED WHICH DO NOT APPEAR ON THE DRAWINGS.

SYMBOL	DESCRIPTION
A 💢 b	CEILING OUTLET & INCANDESCENT, FLUORESCENT, OR H.I.D. LIGHTING FIXT., "A" INDICATES FIXTURE TYPE, "b" INDICATES CONTROLLED BY SWITCH "b"
	CEILING OUTLET AND FLUORESCENT LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE, "EM" DENOTES FIXTURE WITH EMERGENCY BALLAST
HX	WALL OUTLET AND INCANDESCENT OR H.I.D. LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	DASH FOR EACH #12 A.W.G. CONDUCTOR, 3/4"C. UNLESS OTHERWISE NOTED. EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN. REFER TO SPECIFICATIONS FOR GROUNDING REQUIREMENTS (NOTE: DASH MARKS ARE OMITTED FOR CIRCUITS CONSISTING OF 2#12,1#12G,3/4"C).
	CONDUIT TURNING UP. NOTATIONS SAME AS ABOVE
***************************************	CONDUIT TURNING DOWN . NOTATIONS SAME AS ABOVE
	CONDUIT RUN EXPOSED. NOTATIONS SAME AS ABOVE
	CONDUIT RUN CONCEALED. NOTATIONS SAME AS ABOVE. UNDERGROUND RACEWAY ON SITE PLANS
/// > LPI,I,3	HOMERUN, CIRCUITS LAND 3 RUN TO PANEL LPI
—— ▶ TM	HOMERUN TO TELEPHONE CABINET "TM"
	LIGHTING PANEL - MOUNT UP 6'-6" TO TOP
J	JUNCTION BOX
	PULL BOX, TERMINAL CABINET, OR CONTROL PANEL AS NOTED ON DRAWING
3/4"C.	CONDUIT; SIZE AND FILL AS NOTED
3#12, I#12G.	THREE (3) NO.12 AWG CONDUCTORS AND ONE (1) NO.12 EQUIPMENT GROUNDING CONDUCTOR
I-2/C#16TS	INSTRUMENT CABLE, TWISTED PAIR OR TRIPLEX AS NOTED, WITH OVERALL SHIELD AND JACKET. CONDUCTOR SIZE AND CABLE QUANTITY AS NOTED
Sap	SINGLE POLE SWITCH, "a" INDICATES CONTROL OF LIGHTS "a" "WP"= WEATHERPROOF, MOUNT UP 4'-0".
* 👉	DUPLEX RECEPTACLE, 120V, 3W, SINGLE PHASE ** C - MOUNTED ABOVE COUNTER TOP OR 4'-6" A.F.F. CR - CORROSION RESISTANT GF - GROUND FAULT INTERRUPTER TYPE WP - WEATHERPROOF
F	MANUAL FIRE ALARM STATION - MOUNT UP 4'-0"
F	FIRE ALARM HORN AND LIGHT COMBINATION - MOUNT UP 7'-6" OR AS NOTED

LIGHTING PANEL "LP" *

.54

.30

.12

LOAD CKT. BKR.

| 20

1 20

1 20

1 20

3 20

1 20

| | 20

/3 | 20

KW HP POLES TRIP