

# STANDARD ELECTRICAL SYMBOLS

## FOR SCHEMATIC CONTROL DIAGRAMS

ITEMS	SYMBOL	IN WORDS	OPERATION FUNCTIONS
RELAY		RELAY COIL	CLOSES INSTANTANEOUSLY WHEN COIL IS ENERGIZED OPENS INSTANTANEOUSLY WHEN COIL IS ENERGIZED
		NORMALLY OPEN CONTACT	
		NORMALLY CLOSED CONTACT	
TIME DELAY RELAY		RELAY COIL	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>ENERGIZED</p> </div> <div style="text-align: center;"> <p>DE-ENERGIZED</p> </div> </div>
		NORMALLY OPEN TIMED CLOSED	
		NORMALLY CLOSED TIMED OPEN	
		NORMALLY OPEN TIMED OPEN	
		NORMALLY CLOSED TIMED CLOSED	
	LIMIT SWITCH		
FLOW SWITCH		NORMALLY OPEN	CLOSES WHEN WATER STARTS TO FLOW
		NORMALLY CLOSED	OPENS WHEN WATER STARTS TO FLOW
PRESSURE SWITCH		NORMALLY OPEN	CLOSES AS THE PRESSURE INCREASES TO A SPECIFIC RANGE (IN PSI)
		NORMALLY CLOSED	OPENS AS THE PRESSURE INCREASES TO A SPECIFIC RANGE (IN PSI)
FLOAT SWITCH		PUMP UP OPERATOR	CLOSES AS THE WATER LEVEL FALLS TO A SPECIFIC DEPTH
		PUMP DOWN OPERATOR	OPENS AS THE WATER LEVEL FALLS TO A SPECIFIC DEPTH
PUSH BUTTON SWITCH		NORMALLY OPEN	PUSH TO CLOSE, RELEASE TO OPEN
		NORMALLY CLOSED	PUSH TO OPEN, RELEASE TO CLOSE
SOLENOID VALVE CONTROL		<b>FOR FLOOR PLANS</b>	
SELECTOR SWITCH		<ul style="list-style-type: none"> <li>○ LIGHTING FIXTURE, CEILING MOUNTED</li> <li>○-1 LIGHTING FIXTURE, WALL MOUNTED AT HEIGHT SHOWN</li> <li>D FLOODLIGHT FIXTURE, WALL MOUNTED</li> <li>D-○ FLOODLIGHT FIXTURE MOUNTED ON POLE TOP</li> <li>○-○ FLOURESCENT LIGHTING FIXTURE</li> <li> LIGHTING FIXTURE DESIGNATIONS (LOCATED ADJACENT TO FIXTURES). "A" INDICATES FIXTURE TYPE. (SEE FIXTURE SCHEDULE FOR ALL TYPES). "2/40" = TWO 40 WATTS LAMPS</li> <li>⊖ DUPLEX OUTLET, + 16"</li> <li>⊖-1 DUPLEX OUTLET WITH BUILT-IN GROUND FAULT CIRCUIT INTERRUPTER, + 16"</li> </ul>	
TIME METER			
CONNECTED WIRES			
NON-CONNECTED WIRES			
OUT-GOING TERMINAL			
PROBE			
STARTER COIL			

## LOS ANGELES COUNTY WATERWORKS DISTRICTS

### DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

# W-43

APPROVED

*Michael Reel*  
ASSISTANT DEPUTY DIRECTOR

APRIL 2004

DATE

SHEET 1 OF 2

**STANDARD ELECTRICAL SYMBOLS (CONTINUED)**

FOR FLOOR PLANS (CONTINUED)	
	SPECIAL OUTLET AS INDICATED ON PLAN
	JUNCTION BOX, CEILING / WALL MOUNTED
	THERMOSTAT, + 3'-0"
	TELEPHONE CONDUIT SYSTEM, 3/4" CONDUIT UNLESS OTHERWISE NOTED
	TELEPHONE OUTLET, + 4'-6" ON WALL
	DISCONNECT SWITCH, SIZE AND POLE AS REQUIRED
	TOGGLE SWITCH, + 4'-0"
	3-WAY SWITCH, + 4'-0"
	DISTRIBUTION SWITCH BOARD, SEE DETAIL ON PLAN
	ELECTRICAL LIGHTING PANEL, + 6'-6" TO TOP, SEE SCHEDULE
	ELECTRICAL EQUIPMENT ENCLOSURE AS INDICATED, SEE DETAIL
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT IN OR BELOW FLOOR
	CONDUIT EXPOSED
	HOME RUN TO PANEL, LETTER DENOTES PANEL, NUMBER DENOTES CIRCUIT
	CONDUIT BEND UP OR DOWN

FOR HYDRAULIC FLOW SCHEMATIC DIAGRAMS (CONT.)	
	PROBE
	SURFACE TANK
	HYDROPNEUMATIC TANK
	WATER SYSTEM GRID

FOR SINGLE LINE POWER DIAGRAMS	
	WEATHER-HEAD FOR OVERHEAD POWER SERVICE. INDICATE POWER COMPANY AND SYSTEM TYPE (VOLTAGE, PHASE, WIRE AND FREQUENCY)
	KILO-WATT-HOUR METER PER POWER COMPANY'S REQUIREMENT
	CIRCUIT BREAKER. SHOW AMPERE RATING, NUMBER OF POLES, AND FRAME SIZE IF LARGER FRAME IS NEEDED IN THE FUTURE
	MAGNETIC MOTOR STARTER, NEMA SIZE AS INDICATED
	DISCONNECT SWITCH, SHOW SIZE AND POLES
	TRANSFORMER, SHOW KVA RATING, PRIMARY AND SECONDARY VOLTAGE
	SOLID NEUTRAL BLOCK
	PUMP OR MOTOR, SHOW HORSEPOWER AND PULL LOAD AMPERES
	PANEL DESIGNATION, LOAD CENTER OR ELECTRICAL EQUIPMENT AS INDICATED. SHOW CONNECTED LOAD AND PROVIDE SCHEDULE OR DETAIL

FOR HYDRAULIC FLOW SCHEMATIC DIAGRAMS	
	GATE VALVE
	CHECK VALVE
	HYDRAULICALLY OPERATED VALVE (DIAPHRAGM)
	CONTROL WIRES
	BOOSTER PUMP "A"
	WELL PUMP (NO. 15)
	CHLORINATOR
	FLOAT SWITCH
	FLOAT VALVE
	PRESSURE GAGE
	PRESSURE SWITCH

**GENERAL NOTE:**  
SEE STANDARD PLAN W-3 FOR OTHER SYMBOLS

**LOS ANGELES COUNTY WATERWORKS DISTRICTS**

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STANDARD PLAN

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*[Signature]*  
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SHEET 2 OF 2