

PLUMBING SYMBOLS, ABBREVIATIONS AND SCHEDULES

PLUMBING SYMBOLS & ABBREVIATIONS

SYMBOL	ABBREV	DESCRIPTION	ABBREV	DESCRIPTION
		TYPICAL PIPELINE WITH PIPE SIZE, FLOW DIRECTION AND NATURAL GAS CALL-OUT SHOWN		
	SS	SANITARY DRAINAGE PIPING BELOW FLOOR OR GRADE	ABV	ABOVE
	SS	SANITARY DRAINAGE PIPING ABOVE FLOOR	A	COMPRESSED AIR
	V	VENT	AP	ACCESS PANEL
	CW	COLD WATER (POTABLE)	AV	ACID VENT
	HW	HOT WATER	AC	ACETYLENE
	HWR	HOT WATER RETURN	ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
	GV	GATE VALVE	ARCH	ARCHITECTURAL
	BV	BUTTERFLY VALVE	AT	AT
	BFP	REDUCED PRESSURE TYPE BACKFLOW PREVENTER	AW	ACID WASTE
	CV	CHECK VALVE	BEL	BELOW
	GLV	GLOBE VALVE	BOP	BOTTOM OF PIPE
	BL V	BALL VALVE	BTUH	BRITISH THERMAL UNITS PER HOUR
	PV OR GC	PLUG VALVE OR GAS COCK	CLG	CEILING
	HB	HOSE BIBB	CONN	CONNECT/CONNECTION
	UN	UNION	CONT	CONTINUE/CONTINUATION
	WHA	WATER HAMMER ARRESTOR	CWV	COMBINATION WASTE AND VENT
	FD	FLOOR DRAIN	CFH	CUBIC FEET PER HOUR
	FS	FLOOR SINK	CFM	CUBIC FEET PER MINUTE
	RD	ROOF DRAIN	DE	DEIONIZED WATER
	ORD	OVERFLOW ROOF DRAIN	DIA	DIAMETER
		REDUCER/INCREASER	DI	DISTILLED WATER
	ESEW	EMERGENCY SHOWER AND EYEWASH	DN	DOWN
	CP	IN-LINE CIRCULATING PUMP	D	DRAIN-INDIRECT DRAWING
	PRV	PRESSURE REGULATING VALVE	DWG	DRAWING
	BLV	BALANCING VALVE (FLOW CONTROL)	ELEC	ELECTRIC/ELECTRICAL
	PG	PRESSURE GAGE W/ GAGE COCK	EL	ELEVATION
	TH	THERMOMETER	EMG	EMERGENCY
	RV	PRESS RELIEF/PRESS & TEMP RELIEF VALVE	FIN	FINISHED
	STR	STRAINER	FF	FINISHED FLOOR
		SLOPE DOWN IN DIRECTION OF ARROW	FL	FLOOR
	FCO OR COTG	FLOOR CLEANOUT OR CLEANOUT TO GRADE	FR	FROM
	CO	CLEANOUT	FT	FOOT/FEET
	WCO	WALL CLEANOUT	FV	FLUSH VALVE
		PIPE UP OR PIPE UP & DOWN	GPM	GALLONS PER MINUTE
		PIPE DOWN OR PIPE FROM BELOW	GPH	GALLONS PER HOUR
		DIRECTION OF FLOW	HCP	HANDICAPPED
	FW	FIRE WATER	HD	HEAD
		OS & Y GATE VALVE (OUTSIDE SCREW AND YOKE WITH TAMPER SWITCH)	HZ	HERTZ
	FHC	FIRE HOSE CABINET	HP	HORSEPOWER
	M	MANUAL FIRE ALARM STATION	HVAC	HEATING, VENTILATING & AIR CONDITIONING
	FACP	FIRE ALARM CONTROL PANEL	HDR	HEADER
	SP	PHOTOELECTRIC SMOKE DETECTOR	ICW	INDUSTRIAL COLD WATER

PLUMBING FIXTURE SCHEDULE

ITEM NO.	DESCRIPTION	DRAIN	TRAP	VENT	HW	CW	REMARKS
WC-1	WATER CLOSET	4"	INT	2"	—	1 1/2"	FL MTD-FV
WC-2	WATER CLOSET	4"	INT	2"	—	1 1/2"	FL MTD-FV-HCP
WC-3	WATER CLOSET	—	—	6"	—	—	PROPANE INCINERATION TYPE (FOR MID & END STATIONS ONLY)
UR-2	URINAL	2"	INT	1 1/2"	—	1"	WALL MTD-FV-HCP
L-1	LAVATORY	2"	1 1/4" X 1 1/2"	1 1/2"	1/2"	1/2"	WALL MTD-HCP
SS-1	SERVICE SINK	3"	3"	2"	1/2"	1/2"	WALL MTD
MS-1	MOP SINK	3"	3"	2"	1/2"	1/2"	FLOOR MTD
SH-1	SHOWER	2"	2"	1 1/2"	1/2"	1/2"	W/PRESSURE-BALANCE MIXING VALVE-HCP
ESEW-1	EMG SH & EYEWASH UNIT	—	—	—	—	1 1/4"	COMBINATION UNIT
EW-1	ELECTRIC WATER COOLER	2"	1 1/4" X 1 1/2"	1 1/2"	—	1/2"	WALL MTD-HCP
KS-1	KITCHEN SINK	2"	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER TOP MTD, TWO COMPARTMENT, W/ WASTE DISPOSER
CS-1	CUP SINK	2"	1 1/2"	1 1/2"	—	1/2"	RI & C
HB-1	HOSE BIBB	—	—	—	—	1/2"	W/VACUUM BREAKER
HB-2	HOSE BIBB	—	—	—	—	3/8"	NON-FREEZE W/VACUUM BREAKER
FD-1	FLOOR DRAIN	2" X 3"	2" X 3"	2" X 1 1/2"	—	—	BRONZE STRAINER W/TRAP PRIMER
FD-2	FLOOR DRAIN	3"	3"	2"	—	—	
FD-3	FLOOR DRAIN	2"	2"	2" X 1 1/2"	—	—	
FS-1	FLOOR SINK	2" X 3"	2" X 3"	2" X 1 1/2"	—	—	ENAMELED CAST IRON W/TRAP PRIMER
S-1	SINK	3"	3"	2"	1/2"	1/2"	SINGLE COMPARTMENT, COUNTER TOP MTD, STAINLESS STEEL
UR-1	URINAL	2"	INT	1 1/2"	—	1"	WALL MTD - FV

ELECTRIC WATER HEATER SCHEDULE

UNIT NO.	LOCATION	KW INPUT	VOLTS/PH/Hz	STORAGE CAP (GAL)	RECOVERY GRH @ 80°F ΔT	INLET TEMP (°F)	OPER WT (LB)	MANUFACTURER/ MODEL NO.	REMARKS
W-CS-149-WH-01	STORAGE ROOM	3	480/3/60	20	20	40		RUUD EGL SP-20	
W-CS-136-WH-02	JANITOR'S ROOM	8	480/3/60	50	41	40		RUUD FLD-52	
W-CS-136-WH-03	LVEA	1.5	208/1/60	10	8	40		RUUD PEP 10-1	
W-CS-136-WH-04	LVEA	1.5	208/1/60	10	8	40		RUUD PEP 10-1	
W-CS-136-WH-05	LVEA	1.5	208/1/60	10	8	40		RUUD PEP 10-1	
W-CS-136-WH-06	LVEA	1.5	208/1/60	10	8	40		RUUD PEP 10-1	

PUMP SCHEDULE

UNIT NO.	LOCATION	SERVICE	TYPE	FLUID PUMPED	MAX FLUID TEMP (°F)	GPM	TOTAL HEAD (FT)	NPSH (FT)	MOTOR			OPER WT (LB)	MANUFACTURER/ MODEL NO.	REMARKS
									HP	VOLTS/ PH/Hz	RPM			
W-CS-195-FP-01	MAINTENANCE BLDG	FIRE WATER	HORIZONTAL	WATER	100	1000	175	60	480/3/60	1800	326TS		PATTERSON PUMP/6XSM	
W-CS-195-FP-02	MAINTENANCE BLDG	FIRE WATER	HORIZONTAL	WATER	100	1000	175	60	480/3/60	1800	326TS		PATTERSON PUMP/6XSM	
W-CS-195-JP-03	MAINTENANCE BLDG	FIRE WATER	CENTRIFUGAL	WATER	100	10	186	1 1/2	480/3/60				PATTERSON PUMP/C92-SOUJ	
W-CS-196-DP-04	MAINTENANCE BLDG	DOMESTIC WATER	CENTRIFUGAL	WATER	100	60	190	5	480/3/60	3500			YACO PUMP FE1208E201E2LOA	
W-CS-196-DP-05	MAINTENANCE BLDG	DOMESTIC WATER	CENTRIFUGAL	WATER	100	60	190	5	480/3/60	3500			YACO PUMP FE1208E201E2LOA	

WATER STORAGE TANK

UNIT NO.	LOCATION	SERVICE	STORAGE CAP (GAL)	CONSTRUCTION PRESSURE (PSIG)	OPERATING PRESSURE (PSIG)	RELIEF VALVE SETTING (PSIG)	CONSTRUCTION	SIZE			MANUFACTURER/ MODEL NO.	REMARKS
								DIA (IN)	H (IN)	OPER. WT. (LB)		
W-MA-203-WT-01	MID STN A	HUMIDIFIERS/ DOMESTIC	1,000	125	30	45	CARBON STEEL GLASS LINED	42	168	11,000		ASME STAMPED
W-MB-203-WT-01	MID STN B											
W-EA-203-WT-01	END STN A											
W-EB-203-WT-01	END STN B											

GENERAL NOTES

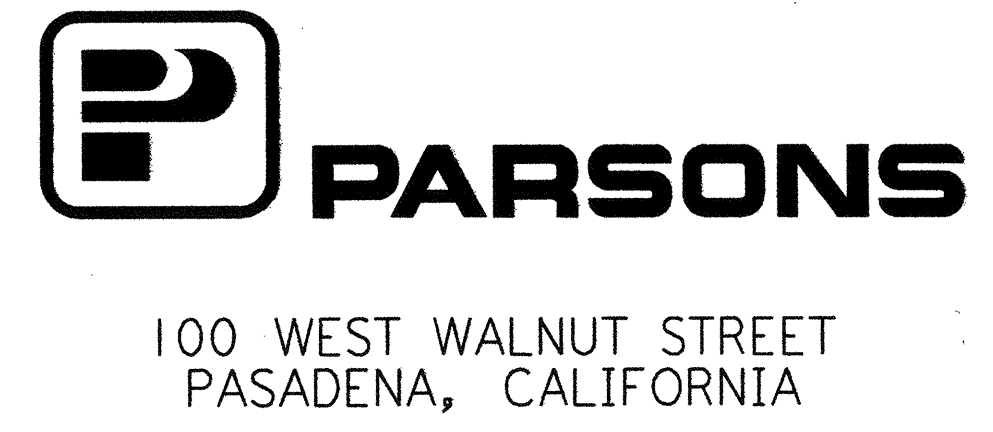
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
- UTILITIES TERMINATE 5'-0" FROM BUILDING, FOR CONTINUATION SEE CIVIL DRAWINGS.
- PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS.
- FURNISH AND INSTALL ALL AUXILIARY STEEL REQUIRED TO PROVIDE FOR THE PROPER SUPPORT OF ALL INTERIOR AND EXTERIOR PIPING.
- ANY PIPE PENETRATING FIRE RATED WALLS OR FLOORS SHALL HAVE THE ANNULAR SPACE BETWEEN PIPE AND SLEEVE OR CORE DRILLED HOLE FILLED WITH AN APPROVED MATERIAL THAT WILL RETURN THE PENETRATION TO THE ORIGINAL RATING.
- ALL FIXTURES AND HOSE BIBBS SHALL BE PROVIDED WITH WATER HAMMER ARRESTORS. AIR CHAMBERS WILL NOT BE PERMITTED.
- FIRE HOSE CABINETS SHALL BE PROVIDED WITH 1/2" NST FIRE DEPARTMENT CONNECTIONS.

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ISSUED FOR CONSTRUCTION	ISSUED FOR AS-BUILT
DRAWN DG 6-24-98	
CHECKED WR 7/19/98	
ENGINEER MN 7/19/98	
PROJ MDW 7/9/98	

NO.	DATE	BY	CHKD	ENGR	PROJ	DESCRIPTION
1	5-15-98	CP	AA	AA	MDW	ISSUED FOR AS-BUILT

AS-BUILT DRAWINGS



LIGO-D960439-01-O

LASER INTERFEROMETER
GRAVITATIONAL-WAVE OBSERVATORY
SITE NO. 1 - HANFORD, WASHINGTON

TITLE	PLUMBING SYMBOLS & ABBREVIATIONS, FIXTURES SCHEDULES & GENERAL NOTES	SCALE	NONE	CONTRACT NUMBER	PP150969	PROJECT NUMBER	8094
SHEET NUMBER	WA-P-001	REVISIONS					