

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	ABV	ABOVE
	SS	SANITARY DRAINAGE PIPING BELOW FLOOR OR GRADE	A	COMPRESSED AIR
	SS	SANITARY DRAINAGE PIPING ABOVE FLOOR	AP	ACCESS PANEL
	V	VENT	AV	ACID VENT
	CW	COLD WATER (POTABLE)	AC	ACETYLENE
	HW	HOT WATER	ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
	HWR	HOT WATER RETURN	ARCH	ARCHITECTURAL
	GV	GATE VALVE	AT	AT
	BV	BUTTERFLY VALVE	AR	ARGON
	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
	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
	FCO OR COTG	FLOOR CLEANOUT OR CLEANOUT TO GRADE	FL	FLOOR
	CO	CLEANOUT	FR	FROM
		PIPE UP OR PIPE UP & DOWN	FT	FOOT/FEET
		PIPE DOWN OR PIPE FROM BELOW	FOS	FUEL OIL SUPPLY
		DIRECTION OF FLOW	FOR	FUEL OIL RETURN
	FW	FIRE WATER	FOV	FUEL OIL VENT
		OS & Y GATE VALVE (OUTSIDE SCREW AND YOKE WITH TAMPER SWITCH)	FV	FLUSH VALVE
	FHC	FIRE HOSE CABINET	GP	GALLONS PER MINUTE
	M	MANUAL FIRE ALARM STATION	GPH	GALLONS PER HOUR
	FACP	FIRE ALARM CONTROL PANEL	G	NATURAL GAS (LOW PRESSURE)
	P	PHOTOELECTRIC SMOKE DETECTOR	HCP	HANDICAPPED
			HE	HELIUM
			HD	HEAD
			HZ	HERTZ
			HP	HORSEPOWER
			HVAC	HEATING, VENTILATING & AIR CONDITIONING
			HDR	HEADER
			ICW	INDUSTRIAL COLD WATER
			IN	INCH/INCHES
			IE	INVERT ELEVATION
			INT	INTEGRAL
			KW	KILOWATT
			MH	MANHOLE
			MAX	MAXIMUM
			MA	MEDICAL AIR
			MG	MEDIUM PRESSURE GAS
			MV	MEDICAL VACUUM
			MIN	MINIMUM
			MTD	MOUNTED
			N	NITROGEN
			N2O	NITROUS OXIDE
			NTS	NOT TO SCALE
			NO	NORMALLY OPEN
			NC	NORMALLY CLOSED
			OFD	OVERFLOW STORM DRAIN
			O	OXYGEN
			OW	OILY WATER
			PSI	POUNDS PER SQUARE INCH
			PR	PROPANE
			PD	PUMP DISCHARGE
			POC	POINT OF CONNECTION
			PH	PHASE
			RO	REVERSE OSMOSIS WATER
			RPM	REVOLUTION PER MINUTE
			RI & C	ROUGH-IN AND CONNECT
			RM	ROOM
			SHT	SHEET
			SCW	SOFT COLD WATER
			SCFM	STANDARD CUBIC FEET PER MINUTE
			ST 15	STEAM (15 PSI)
			SD	STORM DRAIN
			SSD	SUB-SURFACE DRAINAGE
			TEMP	TEMPERATURE
			TW	TEMPERED WATER
			TPV	TRAP PRIMER VALVE
			TYP	TYPICAL
			TPL	TRAP PRIMER LINE
			UO	USED OIL
			UG	USED GLYCOL
			VAC	VACUUM
			VC	VACUUM CLEANING
			VTR	VENT THROUGH ROOF
			V	VENT
			W	WITH
			WC	WATER COLUMN

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	---	---	---	---	---	ELECTRIC 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 1/2" 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 1/2"	COMBINATION UNIT
EW-1	ELECTRIC WATER COOLER	2"	1 1/2" 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"	RI & C
LS-1	LAB SINK	2"	1 1/2"	1 1/2"	1/2"	1/2"	RI & C
HB-1	HOSE BIBB	---	---	---	---	3/4"	W/VACUUM BREAKER
HB-2	HOSE BIBB	---	---	---	---	3/4"	NON-FREEZE W/VACUUM BREAKER
FD-1	FLOOR DRAIN	2"	2"	1 1/2"	---	---	BRONZE STRAINER W/TRAP PRIMER
FS-1	FLOOR SINK	2"	2"	1 1/2"	---	---	ENAMELED CAST IRON W/TRAP PRIMER
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 GPH @ 80°F ΔT	INLET TEMP (°F)	OPER WT (LB)	MANUFACTURER/ MODEL NO.	REMARKS
L-CS-149-WH-01	MENS TOILET ROOM	3	480/3/60	X	X	40	X		X
L-CS-136-WH-02	JANITOR'S ROOM	6	480/3/60	40		40			

PUMP SCHEDULE

UNIT NO.	LOCATION	SERVICE	TYPE	FLUID PUMPED	MAX FLUID TEMP (°F)	GPM	TOTAL HEAD (FT)	NPSH (FT)	BHP	MOTOR				OPER WT (LB)	MANUFACTURER/ MODEL NO.	REMARKS
										HP	VOLTS/ PH/Hz	RPM	TYPE			
L-CS-195-FP-01	MAINTENANCE BLDG	FIRE WATER	X	X	X	1000	175	X	X	60	480/3/60	1800	X	X	PATTERSON PUMP	X
L-CS-195-FP-02	MAINTENANCE BLDG	FIRE WATER				1000	175			60	480/3/60	1800	X	X	PATTERSON PUMP	
L-CS-195-JP-03	MAINTENANCE BLDG	FIRE WATER				10	186			1 1/2	480/3/60	X			PATTERSON PUMP	
L-CS-196-DP-04	MAINTENANCE BLDG	DOMESTIC WATER				60	130			5	480/3/60	3500			PACO PUMP	
L-CS-196-DP-05	MAINTENANCE BLDG	DOMESTIC WATER				60	130			5	480/3/60	3500			PACO PUMP	

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 SUSPENDED 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.

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NO.	DATE	APRD BY	DESCRIPTION OF REVISION
9			
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NO.	DATE	APRD BY	DESCRIPTION OF REVISION
A	10/31/95	TDM	PRELIMINARY DESIGN REVIEW

DATE	10/31/95
DRAWN	CLP
CHECKED	
ENGINEER	
PROJ MGR	

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DRAWN	CLP
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ENGINEER	
PROJ MGR	

100 WEST WALNUT STREET
PASADENA, CALIFORNIA

CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

LASER INTERFEROMETER
GRAVITATIONAL-WAVE OBSERVATORY
SITE NO.2 - LIVINGSTON, LOUISIANA

TITLE	SCALE	CONTRACT NUMBER	PROJECT NUMBER
	NONE	PP150969	8094
SHEET NUMBER	L A - P - 001		

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