

**SYMBOLS AND LEGEND**

SYMBOLS	ABBR.	DESCRIPTION
— S OR W	S OR W	SOIL OR WASTE PIPE ABOVE FLOOR
- - - S OR W	S OR W	SOIL OR WASTE PIPE BELOW FLOOR OR GRADE
— SD	SD	STORM DRAIN PIPE ABOVE FLOOR
- - - SD	SD	STORM DRAIN PIPE BELOW FLOOR OR GRADE
— V	V	VENT ABOVE FLOOR
- - - V	V	VENT BELOW FLOOR
— CW	CW	COLD WATER
— HW	HW	HOT WATER (120°F)
— HWR	HWR	HOT WATER RETURN
— G	G	NATURAL GAS (8"W.C.)
		AUTOMATIC GAS SHUT OFF VALVE
	CV	COCK VALVE
	BV	BALL VALVE
	HB	HOSE BIBB
	PRV	PRESSURE REDUCING VALVE
	TPRV	PRESSURE AND TEMPERATURE RELIEF VALVE
	WHA	WATER HAMMER
	CAP	CAP
— IW	IW	INDIRECT WASTE
— ID	ID	INDIRECT DRAIN
	FS	FLOOR SINK
— D	D	DRAIN LINE
	FD	FLOOR DRAIN
		EXISTING PIPE/EQUIPMENT TO BE REMOVED
	FCO WCO	FLOOR CLEANOUT OR WALL CLEANOUT
— WH	WH	WATER HEATER
— W/	W/	WITH
— AP	AP	ACCESS PANEL
— CLG	CLG	CEILING DOWN
— DN	DN	DOWN
— GC	GC	GAS COCK
— VTR	VTR	VENT THRU ROOF
(E)	(E)	EXISTING
(N)	(N)	NEW
●	POC	POINT OF CONNECTIONS
○	OD	OVERFLOW DRAIN
⊙	PG	PRESSURE GAUGE

**WATER HAMMER ARRESTER SCHEDULE**

MARK	MAKE	MODEL No.	TYPE	FIXTURE UNIT RANGE	I.P.S.	REMARKS
WHA-1	J.R. SMITH	5050	HYDROTROL	1-11	3/4"	INSTALLED IN UPRIGHT POSITION AT EVERY TOILETS, KITCHEN, ETC. FIXTURE CONNECTION
WHA-2	"	5010	"	12-32	1"	"
WHA-3	"	5020	"	33-60	1"	ON HOT AND COLD WATER PIPES.

**DOMESTIC WATER HEATER, GAS FIRED**

SYMBOL	MANUFACTURER	MODEL	MINIMUM STORAGE GALLONS	MINIMUM RECOVERY GPH 60° RISE	MATERIAL AND WORKING PRESS	TYPE OF GAS	INPUT BTU/H	ELECTRICAL			REMARKS
								VOLT	PHASE	AMP	
WH-1	A.O. SMITH	BTH-250	100	240	GLASS LINED 160 PSI	NATURAL	240,000	120	1	.7	H=74" W=31"

EXTERNAL INSULATION SEE 1 FOR SUPPORT DETAIL

**PUMP SCHEDULE**

SYMBOL	MANUFACTURER	MODEL	TYPE	SERVICE	MINIMUM CAPACITY GPM	TOTAL DYNAMIC HEAD FT WC	MAXIMUM RPM	PUMP CONTROL	MOTOR				REMARKS
									MINIMUM HP	VOLTAGE	PHASE	HERTZ	
P-1	BELL & GOSSETT	SERIES 100	IN LINE	HOT WATER RETURN	10	7	1750	AQUASTAT	1/12	110	1	60	

**NOTES:**

1-

**PLUMBING FIXTURE SCHEDULE AND SPECIFICATION**

MARK	FIXTURE	TYPE	MIN. BRANCH SIZE				FIXTURE UNIT	TRAP SIZE	MAKE	MODEL	P-TRAP	FIXTURE SUPPORTS	FIXTURE SIZE AND MATERIAL	REMARKS
			W	V	HW	CW								
L-1	SHAMPO BOWL	WALL MOUNTED	2"	1 1/2"	1/2"	1/2"	2	1 1/2" X 1 1/2"	BLEVEDERE	8600	CHROME PLATED CAST BRASS	FACTORY SUPPLIED BRACKET	PORCELAIN BLACK	ADJUSTABLE, 522 FIXTURES AND VACUUM BRAKER
L-2	LAVATORY	COUNTER TOP	2"	1 1/2"	1/2"	1/2"	2	1 1/2" X 1 1/2"	AMERICAN STANDARD	AFF1N174	CHROME PLATED CAST BRASS	SELF-RIMMING	20" X 17"	FAUCET/DRAIN = 7502.170 WITH GRID DRAIN
L-3	LAVATORY (HANDICAPPED)	WALL MOUNTED	2"	1 1/2"	1/2"	1/2"	2	1 1/2" X 1 1/2"	AMERICAN STANDARD	LUCERNE WALL-HUNG	CHROME PLATED CAST BRASS	—	20" X 18" VITREOUS CHINA	FAUCET/DRAIN = 5401-142H TRAP INSULATION, CAP HOT WATER CONNECTION ON FAUCET
WC-1	WATER CLOSET (HANDICAPPED)	FLOOR MOUNTED, FLUSH VALVE WASH SINK	4"	2"	—	1 1/2"	5	INTEGRAL	MADERA	3043.104	—	—	30" X 15" X 17"	FLUSH VALVE=SLOAN ROYAL 111 SEAT=OLSONITE #95

**NOTES:**

- 1- SEE ARCHITECTURAL DRAWINGS FOR SANITARY FIXTURES INSTALLATION ELEVATION.
- 2- WATER AND DRAIN STUB OUTS SHALL BE COORDINATED WITH FIXTURES ELEVATION.
- 3- PROVIDE ISOLATION VALVE FOR EACH WATER CONNECTION TO FIXTURES.
- 4- PROVIDE WATER HAMMER ARRESTED FOR EACH COLD AND HOT WATER PIPE TO FIXTURES

**GENERAL NOTES**

- THE MECHANICAL CONTRACTOR SHALL VERIFY ALL SECTIONS AND ELEVATIONS OF EXISTING DRAINS TO INSTALLATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE APPLICABLE CODES.
- ALL ROOF AND EXTERIOR WALL PENETRATIONS SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO SEAL WEATHER TIGHT.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS TO ALL VALVES AND EQUIPMENT.
- MECHANICAL CONTRACTOR MAY USE ONE SIZE LARGER PIPE WHEN PIPE SIZE SHOWN IS NOT AVAILABLE. IF CONTRACTOR CHOOSES TO INCREASE PIPE SIZE, THE VALVES AND FITTING SIZES MUST ALSO BE INCREASED.
- PROVIDE STOP VALVES AND FLEX. TUBE AT ALL THE PIPING CONNECTION TO THE EQUIPMENT AND SANITARY FIXTURES.
- MECHANICAL CONTRACTOR TO REMOVE ALL LEFT OVER SCRAPS, ETC. (IF ANY) AND LEAVE PREMISES CLEAN AND FREE OF ANY TRASH OR DEBRIS DUE TO HIS WORK.
- MECHANICAL CONTRACTOR IS TO REPORT TO THE OWNER ANY OBSERVATIONS OR CONDITIONS WHICH ARE DISCOVERED IN THE BUILDING WHICH WOULD PREVENT THE CORRECT INSTALLATION OF THE SYSTEM.
- A MAINTENANCE LABEL MUST BE AFFIXED TO MECHANICAL EQUIPMENT. TWO COPIES OF A MAINTENANCE MANUAL FOR THE EQUIPMENT ITEMS SUPPLIED BY THE CONTRACTOR SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR.
- VERIFY AND COORDINATE LOCATION OF ALL PLUMBING LINES WITH DUCTWORK, ELECTRICAL SERVICE AND EQUIPMENT.
- DRAIN LINES SIZES SHALL NOT BE LESS THAN 1". CAP THE END OF THE UNUSED DRAIN LINES.
- EXAMINE THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS WHICH MAY AFFECT THE WORK AS COVERED BY THIS SECTION OF THE WORK. FAILURE TO DO SO SHALL NOT LESSEN RESPONSIBILITY OR ENTITLE ADDITIONAL COMPENSATION FOR WORK NOT INCLUDED IN THE ESTIMATE.
- CONDENSATE LINE FROM AC UNIT SHALL BE TYPE "M" COPPER TUBING. IT SHALL BE TRAPPED AND VENTED AT UNIT.
- LAYOUT OF THE EQUIPMENT AND WORK IS GENERALLY DIAGRAMMATIC, UNLESS SPECIFICALLY DIMENSIONED. DRAWINGS AND DETAILS SHALL BE CHECKED FOR INTERFERENCE BEFORE INSTALLING THE WORK. ANY INTERFERENCE NOTED BETWEEN DIFFERENT DRAWINGS, AND BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION FOR A DECISION. THERE SHALL BE NO ADDITIONAL COMPENSATION FOR INTERFERING WORK THAT WAS PERFORMED PRIOR TO CHECKING INTERFERENCE AND FIELD CONDITIONS. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGE IN LOCATION OF EQUIPMENT WITHOUT INVOLVING ADDITIONAL EXPENSE TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO THE BUILDING AND FACILITY CAUSED BY LEAKS IN ANY TEMPORARY OR PERMANENT PIPING SYSTEM CAUSED BY DISCONNECTED PIPES OR FITTINGS, OR BY OVERFLOW OR EQUIPMENT, OR LEAKS CAUSED BY THESE INSTALLATIONS.
- THE INCLUSION AND PROPER LOCATION OF SUPPORTS, PADS, SLEEPERS, OPENINGS, ANCHORAGES, ETC. IS THE RESPONSIBILITY OF THE CONTRACTOR. CUTTING AND/OR BORING SHALL BE PERMITTED UNDER THIS SECTION ONLY WITH THE WRITTEN APPROVAL OF OWNER.
- ALL EQUIPMENT SHALL BE SECURELY ANCHORED TO THE BUILDING STRUCTURE TO PREVENT SHIFTING OR OVERTURNING DURING EARTHQUAKES.
- MANUFACTURER'S DIRECTIONS SHALL BE FOLLOWED IN ALL CASES WHERE THE MANUFACTURERS OF ARTICLES USED IN THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN IN THE DRAWINGS AND SPECIFICATIONS.
- ALL OF THE WORK ARE NEW UNLESS OTHERWISE NOTED.
- DEMOLISH ALL OF THE EXISTING UNUSED PIPING.
- PROVIDE ROOF SINKS FOR AC UNITS CONDENSATE DRAINS.
- INSTALL WATER HAMMER ARRESTOR AT ALL OF THE COLD WATER AND HOT WATER CONNECTION TO THE SANITARY FIXTURES AND EQUIPMENT.
- PIPE INSULATION SHALL BE CONTINUOUS WHEN LINES PASS THROUGH PLATES, BLOCKING AND SLEEVES.
- VERIFY EXACT LOCATIONS AND POINTS OF CONNECTIONS BEFORE ENTERING BID. BID SHALL REFLECT ANY DIFFERENCES ENCOUNTERED IN FIELD. NO EXTRA COSTS WILL BE ACCEPTED SUBSEQUENT TO BID FOR DETERMINING THESE LOCATIONS.
- INTERRUPTION OF SERVICES TO EXISTING BUILDING SHALL NOT BE DONE AT A TIME WHICH WILL INCONVENIENCE THE OWNER. BEFORE MAKING ANY CONNECTIONS OR DOING ANY WORK THAT WILL INTERRUPT THE EXISTING SERVICE, CONSULT WITH THE OWNER AND SCHEDULE THE WORK WITH THEIR REPRESENTATIVE.
- CONNECTIONS TO EXISTING WORK SHALL BE CHECKED BEFORE STARTING THE WORK.
- THIS CONTRACTOR IS RESPONSIBLE FOR KEEPING A LEGIBLE, ACCURATE, UP-TO-DATE AND DIMENSIONAL RECORD OF THE AS-BUILT LOCATION AND ALL CONCEALED PIPE LINES AND ALL WORK WHICH IS INSTALLED DIFFERENTLY FROM THE LOCATION OR MANNER INDICATED BY THESE DRAWINGS.
- UPON COMPLETION OF THE WORK, ALL CHANGES SHALL BE NOTED ON A NET SET OF PRINTS AND DELIVERED TO THE ARCHITECT.
- EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS.
- VERIFY INVERT ELEVATION OF EXISTING SEWER TO WHICH NEW BUILDING WASTE LINE IS TO BE CONNECTED AND NOTIFY OWNER OF ANY DISCREPANCIES BEFORE MAKING UP OR INSTALLATION OF NEW WASTE SYSTEM.
- WATER CLOSER SHALL USE NOT MORE THAN 1.6 GALLONS PER FLUSH.
- THE INSTALLATION OF ALL VALVES, UNIONS, THERMOMETERS, GAUGES, OR OTHER INDICATING OR RECORDING EQUIPMENT, OR SPECIALTIES REQUIRING FREQUENT READING, REPAIR, ADJUSTMENT, INSPECTION, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY AND ACCESSIBLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.
- ALL VENTS THROUGH ROOF SHALL BE 10'-0" REMOVED FROM ALL AIR INTAKES, WINDOWS, ETC.
- TIE VENTS TOGETHER SO THAT A MINIMUM NUMBER TERMINATE THROUGH THE ROOF.
- DO NOT CUT THROUGH STRUCTURAL MEMBERS WITHOUT FIRST SECURING APPROVAL FROM THE ARCHITECT.
- INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
- ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED.
- PIPES SHALL NOT PASS THROUGH FOOTINGS. ALL PIPES SHALL BE RUN ABOVE FOOTING, UNLESS OTHERWISE SHOWN ON PLANS. SEE STRUCTURAL DRAWINGS FOR REQUIREMENTS.
- ALL WATER PIPING BELOW GRADE THAT IS UNDER PRESSURE SHALL HAVE A MINIMUM COVER OF 18".
- PURGE ALL WATER AND GAS LINES BEFORE FINAL INSPECTION.
- EXTEND ALL CONDENSATE AND INDIRECT LINES FROM EQUIPMENT TO FLOOR SINKS AND FIXTURES INDICATED ON PLANS.
- TERMINATE ALL WATER AND GAS ROUGH-INS WITH SHUT-OFF VALVES BEFORE CONNECTING TO EQUIPMENT AND FIXTURES.
- INSULATE ALL HOT WATER PIPING WITH 1" THICK FIBERGLASS INSULATION WITH FACTORY JACKET AND ZESTON FITTINGS.
- PIPE INSULATION SHALL BE CONTINUOUS WHEN LINES PASS THROUGH PLATES, BLOCKING AND SLEEVES.
- VERIFY EXACT LOCATIONS AND POINTS OF CONNECTIONS BEFORE ENTERING BID. BID SHALL REFLECT ANY DIFFERENCES ENCOUNTERED IN FIELD. NO EXTRA COSTS WILL BE ACCEPTED SUBSEQUENT TO BID FOR DETERMINING THESE LOCATIONS.
- GAS PIPE SHALL BE SCHEDULE 40 GALVANIZED STEEL WITH GALVANIZED SCHEDULE 40 FITTINGS.
- CONNECTIONS TO EXISTING WORK SHALL BE CHECKED BEFORE STARTING THE WORK. ALL EXISTING BURIED PIPELINES SHALL BE LOCATED AND EXPOSED AS REQUIRED BEFORE NEW EXCAVATIONS ARE STARTED.
- PROVIDE TRAP PRIMER AND RELATED PIPING & VALVE FOR FLOOR DRAINS AND FLOOR SINKS INCLUDING BACK FLOW PREVENTER.
- SEWER MATERIAL SHALL BE CAST IRON AS PER CODE.
- DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT. OBTAIN CITY APPROVAL FOR PIPE SLOPE LESS THAN 1/4" PER FOOT.
- MINIMUM VENT SIZE SHALL BE AS PER CODE.
- WATER PIPE AND FITTINGS SHALL BE COPPER AS PER CODE.
- POTABLE WATER PIPING OF COPPER MATERIAL SHALL BE OF TYPE "L" WHEN INSTALLED IN THE BUILDING.
- POTABLE WATER PIPING OF COPPER MATERIAL SHALL BE OF TYPE "K" WHEN INSTALLED UNDERGROUND OUTSIDE OF THE BUILDING.
- GAS PIPING INSTALLED UNDERGROUND SHALL HAVE VINYL PROTECTIVE COATING. ALL OF THE FITTINGS FOR UNDER GROUND PIPING SHALL BE RAPPED WITH THREE (3) LAYERS OF PROTECTIVE TAPES WITH 3" EXTENDED TO EACH SIDE ON THE PIPES PROTECTIVE COATING.

*General Plumber Note*  
See Architect Structural Indication #s 1, 2, 3, 3 for the Rises Plumber Seal

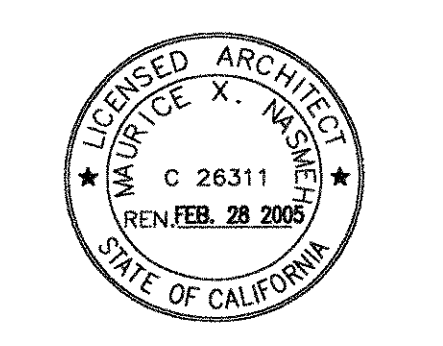
**WATER BRANCH PIPE SIZE SCHEDULE**

HW OR CW PIPE SIZE	WITH FLUSH VALVE		WITHOUT FLUSH VALVE		REMARKS
	MAX. F.U.	GPM	MAX. F.U.	GPM	
1/2"	—	—	2	4	
3/4"	—	—	10	9	
1"	5	15	20	15	
1-1/4"	10	22	30	22	
1-1/2"	15	30	55	30	
2"	60	55	150	55	
2-1/2"	170	85	300	85	

**NOTES:**

- 1. CV & HW BRANCH PIPES SERVING GROUP OF FIXTURES SHALL BE SIZED AS SCHEDULED UNLESS OTHERWISE NOTED ON PLANS.
- 2. SIZE OF BRANCH MAIN SERVING EACH GROUP OF FIXTURES SHALL BE AS NOTED ON PLANS.

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**SYMBOLS, NOTES AND SCHEDULES**  
**PACIFIC HEIGHTS MIDDLE SCHOOL**  
SKYLINE COLLEGE SWING SPACE  
PERMIT PACKAGE #3  
SKYLINE COLLEGE DRIVE  
SAN BRUNO, CA 94066

REVISIONS  
NO. ITEM DATE

CLIENT APPROVAL:  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
JOB NO: 2145.002 DATE: 13 FEB 2004