

## PLUMBING LEGEND

| SYMBOL | DESCRIPTION                         | ABBR.   | SYMBOL | DESCRIPTION                              | ABBR.     |
|--------|-------------------------------------|---------|--------|--|-----------|
|        | SOIL, WASTE, or SEWER BELOW GRADE   | S or W  |        | EXIST. SOIL, WASTE, or SEWER BELOW GRADE | S or W(E) |
|        | SOIL, WASTE, or SEWER ABOVE GRADE   | S or W  |        | EXIST. SOIL, WASTE, or SEWER ABOVE GRADE | S or W(E) |
|        | VENT                                | V       |        | EXIST. VENT                              | VE        |
|        | STORM DRAIN BELOW GRADE             | SD      |        | EXIST. STORM DRAIN BELOW GRADE           | SD(E)     |
|        | STORM DRAIN ABOVE GRADE             | SD      |        | EXIST. STORM DRAIN ABOVE GRADE           | SD(E)     |
|        | OVERFLOW STORM DRAIN BELOW GRADE    | OSD     |        | EXIST. OVERFLOW STORM DRAIN BELOW GRADE  | OSD(E)    |
|        | OVERFLOW STORM DRAIN ABOVE GRADE    | OSD     |        | EXIST. OVERFLOW STORM DRAIN ABOVE GRADE  | OSD(E)    |
|        | COLD WATER                          | CW      |        | EXIST. COLD WATER                        | CW(E)     |
|        | HOT WATER                           | HW      |        | EXIST. HOT WATER                         | HW(E)     |
|        | HOT WATER RETURN                    | HWR     |        | EXIST. HOT WATER RETURN                  | HWR(E)    |
|        | GAS-LOW PRESSURE                    | G       |        | EXIST. GAS-LOW PRESSURE                  | G(E)      |
|        | GAS-MEDIUM PRESSURE                 | MG      |        | EXIST. GAS-MEDIUM PRESSURE               | MG(E)     |
|        | DRAIN                               | D       |        | EXIST. DRAIN                             | D(E)      |
|        | GATE VALVE                          | GV      |        | PIPE ANCHOR                              | PA        |
|        | BALL VALVE                          | BV      |        | PIPE GUIDE                               | PG        |
|        | GAS COCK                            | GC      |        | BACKFLOW PREVENTER                       | BFP       |
|        | GAS PRESSURE REGULATOR              | GPR     |        | FIRE PROTECTION WATER SUPPLY             | F         |
|        | PRESSURE REDUCING VALVE             | PRV     |        | SOLENOID VALVE                           | SV        |
|        | CHECK VALVE                         | CH      |        | VALVE ON RISER                           | SV        |
|        | TEMPERATURE & PRESSURE RELIEF VALVE | T & PRV |        | RISER DOWN                               |           |
|        | STRAINER                            | STR     |        | RISER UP                                 |           |
|        | CONCENTRIC REDUCER                  | CR      |        | BRANCH TOP CONNECTION                    |           |
|        | ECCENTRIC REDUCER                   | ER      |        | BRANCH BOTTOM CONNECTION                 |           |
|        | UNION                               | UN      |        | CAP ON END OF PIPE                       |           |
|        | WATER HAMMER ARRESTOR               | WHA     |        | PITCH DOWN IN DIRECTION OF ARROW         |           |
|        | FLOOR DRAIN                         | FD      |        | FLOW IN DIRECTION OF ARROW               |           |
|        | FLOOR SINK                          | FS      |        | ABOVE FINISHED FLOOR                     | AFF       |
|        | FLOOR CLEANOUT                      | FCO     |        | FAHRENHEIT                               | F         |
|        | GRADE CLEANOUT                      | GCO     |        | GALLONS                                  | GAL       |
|        | WALL CLEANOUT                       | WCO     |        | HORSEPOWER                               | HP        |
|        | HOSE BIBB                           | HB      |        | KILOWATT                                 | KW        |
|        | VENT THRU ROOF                      | VTR     |        | MAXIMUM                                  | MAX.      |
|        | ROOF DRAIN                          | RD      |        | MINIMUM                                  | MIN.      |
|        | OVERFLOW ROOF DRAIN                 | ORD     |        | BELOW                                    | BEL.      |
|        | DECK DRAIN                          | DD      |        | ABOVE                                    | ABV.      |
|        | POINT OF CONNECTION                 | POC     |        | TRENCH DRAIN                             | TD        |
|        | ACCESS DOOR                         | AD      |        | WET STANDPIPE                            | WSP       |
|        | COMPRESSED AIR                      | A       |        | DRY STANDPIPE                            | DSP       |
|        | VACUUM                              | VAC     |        | FIRE DEPARTMENT CONNECTION               | FDC       |
|        | MEDICAL COMPRESSED AIR              | MA      |        | CONDENSATE DRAIN                         | CD        |
|        | MEDICAL VACUUM                      | MV      |        | ACID WASTE BELOW GRADE                   | AW        |
|        | FINISHED FLOOR                      | FF      |        | ACID WASTE ABOVE GRADE                   | AW        |
|        | INVERT ELEVATION                    | IE      |        | ACID VENT                                | AV        |
|        | CUBIC FEET PER HOUR                 | CFH     |        | TEMPERED WATER                           | TW        |
|        | GALLONS PER MINUTE                  | GPM     |        | POUNDS PER SQUARE INCH                   | PSI       |
|        | GALLONS PER HOUR                    | GPH     |        | WATER COLUMN                             | W.C.      |
|        | BRITISH THERMAL UNIT                | BTU     |        | TOTAL DEVELOPED HEAD                     | TDH       |
|        | EXISTING                            | EXIST.  |        |  |           |

NOTE:  
SYMBOLS AND ABBREVIATIONS SHOWN MAY INCLUDE ITEMS  
NOT USED FOR THIS PROJECT.

## PLUMBING FIXTURE SPECIFICATION

|       |  |
|-------|--|
| WC-1  | WATER CLOSET<br>AMERICAN STANDARD "AFWALL" MODEL NO. 2257.103, WALL HUNG, VITREOUS CHINA, FURNISHED IN WHITE, ELONGATED BOWL, SIPHON JET FLUSHING (1.6 GPF), 1-1/2" TOP SPUD, SLOAN MODEL NO. 111, CHROME PLATED BRASS WATER SAVER FLUSH VALVE, (SET REGULATING SCREW ONE FULL TURN DOWN FROM FACTORY PRESET POSITION FOR MAXIMUM WATER SAVING). OLSONITE MODEL NO. 95, OPEN FRONT SEAT, LESS COVER, ZURN ADJUSTABLE CARRIERS, Z-1203 SERIES.  |
| WC-2  | WATER CLOSET (HANDICAP)<br>SAME AS ABOVE EXCEPT RIM MOUNTING HEIGHT CONFORMING TO ADA REQUIREMENTS. SEE ARCHITECTURALS FOR MOUNTING ELEVATIONS.  |
| WC-3  | WATER CLOSET (HANDICAP)<br>KOHLER "HIGHCREST" 16-1/2" HIGH MODEL K-4302, FLOOR MOUNTED, VITREOUS CHINA, FURNISHED IN WHITE, ELONGATED BOWL, SIPHON JET FLUSHING (1.6 GPF), 1-1/2" TOP SPUD, SLOAN ROYAL MODEL NO. 111, CHROME PLATED BRASS WATER SAVER FLUSH VALVE, OLSONITE MODEL NO. 95, OPEN FRONT SEAT, LESS COVER.  |
| U-1   | URINAL<br>AMERICAN STANDARD "WATERBROOK" MODEL NO. 6581.015, WALL MOUNTED, VITREOUS CHINA, FURNISHED IN WHITE, WASH DOWN FLUSH, 3/4" TOP SPUD, 1.0 GPF. SLOAN MODEL NO. 186-1 FLUSH VALVE (SET REGULATING SCREW UP IN TURN FROM FACTORY PRESET TO 1.0 GPF). J.R. SMITH FLOOR MOUNTED SUPPORT. HEIGHT CONFORMING TO ADA REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING ELEVATIONS.   |
| L-1   | LAVATORY<br>AMERICAN STANDARD "AQUALYN" MODEL NO. 0476.028, DROP-IN COUNTER TOP, 20"x17" OVAL VITREOUS CHINA BOWL, FURNISHED IN WHITE. CHICAGO FAUCETS MODEL NO. 802A-336 SLOW CLOSING METERING FAUCET TO DELIVER 0.5 GPM FOR 30 SECONDS (TOTAL .25 GPM), SUPPLIED WITH HINGED HANDLES, AERATOR OUTLET AND MCGUIRE NO. 155A GRID STRAINER ASSEMBLY, MCGUIRE MODEL NO. PW2125 PREWRAPPED 1-1/4" CAST BRASS J-BEND, WALL BEND, P-TRAP, TAIL PIECE COVER, AND 2 SUPPLY COVERS WITH CHROME PLATED FLANGE. CHROME PLATED BRASSCRAFT SUPPLIES. |
| SH-1  | SHOWER<br>SYMMONS "HYDAPIPE" THRU WALL SUPPLY PIPING SHOWER UNIT MODEL NO. 1-9035-60, PRESSURE-BALANCING MIXING VALVE WITH ADJUSTABLE STOP SCREW DRIVER STOP TO LIMIT HANDLE TURN. INTEGRAL SERVICE STOPS. SHOWER HEAD AND SOAP DISH. WALL/HAND SHOWER WITH FLEXIBLE 60" METAL HOSE, IN-LINE VACUUM BREAKER, 30" BAR AND SOAP DISH.  |
| SH-2  | SHOWER<br>SYMMONS "HYDAPIPE" EXPOSED SHOWER UNIT MODEL NO. 1-8015-FSB, PRESSURE-BALANCING MIXING VALVE WITH ADJUSTABLE STOP SCREW DRIVER STOP TO LIMIT HANDLE TURN. INTEGRAL SERVICE STOPS. SHOWER HEAD AND SOAP DISH. WALL/HAND SHOWER WITH FLEXIBLE 60" METAL HOSE, IN-LINE VACUUM BREAKER, 30" BAR AND SOAP DISH.   |
| SS-1  | SERVICE SINK<br>FLORESTONE MODEL NO. 30, 24"x24"x12" MOLDED MOP RECEPTOR, MODEL NO. 90 WITH ONE (1) TILING FLANGE. FAUCET: CHICAGO FAUCETS 897, VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE. HOSE AND HOSE BRACKET #MR-370, DRAIN, STAINLESS STEEL STRAINER, TRAP, 2" CAST IRON P-TRAP.   |
| EWC-1 | ELECTRIC WATER COOLER<br>SUNROC DUAL HEIGHT REFRIGERATED DRINKING FOUNTAIN, MODEL NO. SF-3700, WALL MOUNTED, NO LEAD, STAINLESS STEEL SATIN FINISH. WITH REMOTE CHILLER RC-1 MODEL NO. RWC-10, 1/4 HP, 5.5 AMPS, 115V/1PH/60HZ, 17 GAUGE CHROME PLATED P-TRAP (1-1/4"x1-1/2"), CHROME PLATED SOLID BRASSCRAFT SUPPLY.  |
| HB-1  | HOSE BIBB<br>WOODFORD MODEL B65 WALL HYDRANT, AUTOMATIC DRAINING, FREZZELESS, VACUUM BREAKER WITH RECESSED LOCKING BOX.  |
| HB-2  | HOSE BIBB<br>WOODFORD MODEL Y95 FLOOR HYDRANT, AUTOMATIC DRAINING, FREZZELESS, VACUUM BREAKER WITH RECESSED LOCKING BOX. MOUNT FLUSH WITH FINISH FLOOR.  |
| RD-1  | ROOF DRAIN<br>ZURN MODEL NO. Z-100-WZ, CAST IRON BODY, UNDERDECK CLAMP, SUMP RELIEVER, GALVANIZED CAST IRON DOME MODEL NO. Z-199 DOWNSPOUT NOZZLE.   |
| ORD-1 | OVERFLOW ROOF DRAIN<br>ZURN MODEL NO. Z-100-WZ, CAST IRON BODY, UNDERDECK CLAMP, SUMP RELIEVER, GALVANIZED CAST IRON DOME MODEL NO. Z-199 DOWNSPOUT NOZZLE.  |
| FD-1  | FLOOR DRAIN<br>J.R. SMITH NO. 2005, CAST IRON BODY, NICKEL BRONZE TOP, 5" DIAMETER STRAINER, TRAP PRIMER CONNECTION, FLANGED, FLASHING ON UPPER FLOORS, SEAL FLOOR PENETRATIONS WATERTIGHT. SIZE AS INDICATED ON DRAWINGS.   |
| FD-2  | FLOOR DRAIN<br>J.R. SMITH NO. 2005, CAST IRON BODY, NICKEL BRONZE TOP, 5" DIAMETER STRAINER, LESS TRAP PRIMER CONNECTION, FLANGED, FLASHING ON UPPER FLOORS, SEAL FLOOR PENETRATIONS WATERTIGHT. SIZE AS INDICATED ON DRAWINGS.  |
| TP-1  | TRAP PRIMER<br>PRECISION PLUMBING PRODUCTS, INC. TRAP PRIMER VALVE MODEL PRIME RITE WITH TWO (2) OPENING DISTRIBUTION UNIT. INSTALL PER MANUFACTURERS INSTRUCTIONS.  |
| EEW-1 | EMERGENCY EYEWASH<br>WALL MOUNTED WITH 1-1/2" P-TRAP AND 1/2" CW SUPPLY CONNECTION. GREEN ABS PLASTIC RECEPTOR, OMNI-FLO WRAP AROUND SPRAY HEAD. STAINLESS STEEL PUSH FLAG ACTIVATION LEVER. HAWS MODEL NO. 7000 BT.   |
| BD-1  | FLOOR DRAIN<br>ZURN MODEL NO. 415-9N, CAST IRON BODY, NICKEL BRONZE TOP, 9" DIAMETER STRAINER, LESS TRAP PRIMER CONNECTION, FLANGED, FLASHING, SEAL FLOOR PENETRATIONS WATERTIGHT. SIZE AS INDICATED ON DRAWINGS.  |

## PLUMBING FIXTURE SCHEDULE

| ABBR. | FIXTURE               | ROUGH-IN SIZES (inches) |     |       |      |       | REMARKS                 |
|-------|-----------------------|-------------------------|-----|-------|------|-------|-------------------------|
|       |                       | HW                      | CW  | V     | TRAP | SoW   |                         |
| WC-1  | WATER CLOSET          | -                       | 1   | 2     | *    | 4     |                         |
| WC-2  | WATER CLOSET          | -                       | 1   | 2     | *    | 4     |                         |
| WC-3  | WATER CLOSET          | -                       | 1   | 2     | *    | 4     | HANDICAP, FLOOR MOUNTED |
| L-1   | LAVATORY              | 1/2                     | 1/2 | 1 1/2 | **   | 1 1/2 |                         |
| S-1   | SINK                  | 1/2                     | 1/2 | 1 1/2 | 2    | 2     |                         |
| SS-1  | SERVICE SINK          | 1/2                     | 1/2 | 1 1/2 | 2    | 2     |                         |
| EWC-1 | ELECTRIC WATER COOLER | -                       | 1/2 | 1 1/2 | **   | 2     |                         |
| HB-1  | HOSE BIBB             | -                       | 3/4 | -     | -    | -     |                         |
| SH-1  | SHOWER                | 1/2                     | -   | 1 1/2 | 2    | 2     |                         |
| SH-2  | SHOWER                | 1/2                     | -   | 1 1/2 | 2    | 2     |                         |
| U-1   | URINAL                | -                       | 3/4 | 2     | *    | 2     |                         |
| EEW-1 | EYE WASH              | 1/2                     | -   | -     | -    | -     |                         |

NOTE:

\* INTEGRAL TRAP

\*\* 1 1/4" x 1 1/2" TRAP

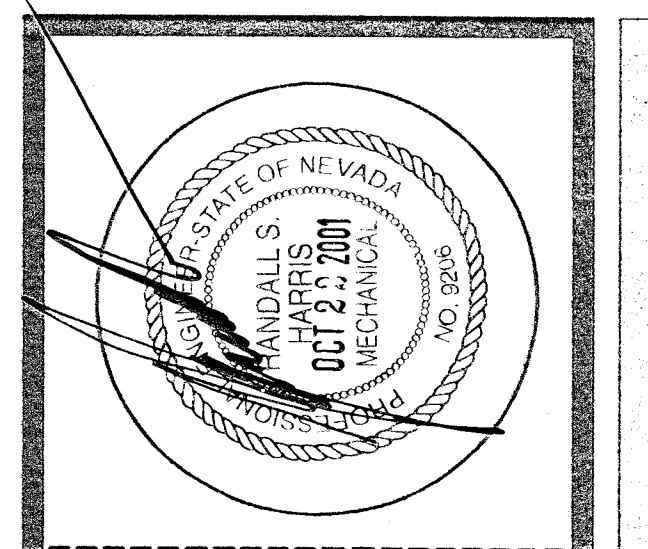
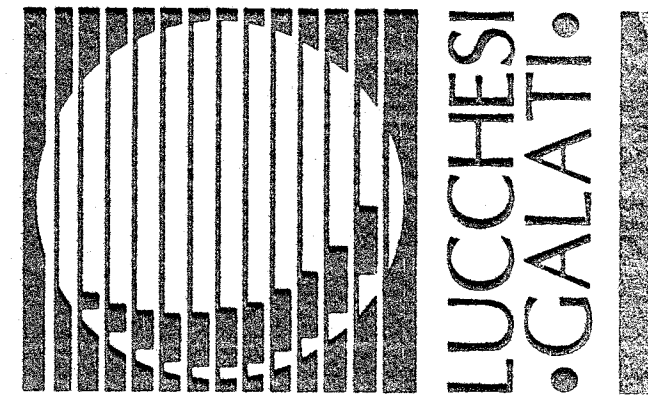
## PLUMBING EQUIPMENT SPECIFICATION

|       |  |
|-------|--|
| WH-1  | WATER HEATER<br>A.O. SMITH CYCLONE MODEL NO. BTH-150, 100 GALLON CAPACITY SEAMLESS GLASS LINED STEEL STORAGE. 150,000 BTUH INPUT, 271 GPH RECOVERY AT 100° F RISE. 115V/1PH/60 HZ, 8 AMPS. PROVIDE SEAL COMBUSTION DIRECT VENTING SYSTEM WITH 3" DIAMETER PVC AIR INTAKE AND EXHAUST PIPE. PROVIDE INTAKE AND EXHAUST FLUE CAPS. INSTALL PER MANUFACTURER RECOMMENDATIONS. |
| WHA-1 | WATER HAMMER ARRESTER<br>PRECISION PLUMBING PRODUCTS, INC. PART NO. SC-1000 (1" - PDI-C)   |
| CP-1  | CIRCULATION PUMP<br>BELL & GOSSET MODEL NO. 1R-15B BRONZE BOOSTER PUMP 1/12 HP, 115 V / 1 PH / 60 HZ, TO PUMP 5 GPM AT 10 FEET TDH.  |
| TV-1  | TEMPERING VALVE<br>SYMMONS TEMPCONTROL MODEL NO. 5-900-B, THERMOSTATIC CONTROLLER WITH CHECK STOPS, REMOVABLE CARTRIDGE WITH STRAINER, SHUT-OFF VALVE, DIAL THERMOMETER, SURFACE MOUNTED CABINET, TOP SUPPLIES, SET FOR 105° F DEGREES LEAVING WATER TEMPERATURE.  |
| TV-2  | TEMPERING VALVE<br>SYMMONS TEMPCONTROL MODEL NO. 5-200-B, THERMOSTATIC CONTROLLER WITH CHECK STOPS, REMOVABLE CARTRIDGE WITH STRAINER, SHUT-OFF VALVE, DIAL THERMOMETER, SURFACE MOUNTED CABINET, TOP SUPPLIES, SET FOR 75° F DEGREES LEAVING WATER TEMPERATURE.   |

## WATER CALCULATIONS

CW F.U. (100%) : 83 = 64 GPM

| A. STREET PRESSURE:                        | 78 PSI              | FRICTION LOSS PER 100 FEET: 10 LBS. |     |       |       |     |
|--|---------------------|-------------------------------------|-----|-------|-------|-----|
|  |                     | PIPE SIZE                           | GPM | FT FU | FV FU | VEL |
| B. PRV SET AT:                             |                     | 1/2                                 | 3.5 | 3     | -     | -   |
| C. PRESSURE LOSSES                         | 7 PSI               | 3/4                                 | 9.5 | 12    | -     | -   |
| 1. LOSS THRU 1-1/2" METER:                 |                     | 1"                                  | 20  | 30    | -     | -   |
| 12 FT X 0.434=                             | 5.2 PSI             | 1-1/4                               | 35  | 66    | 20    | -   |
| 3. PRESSURE REQ AT MOST REMOTE OUTLET:     | 25 PSI              | 1-1/2                               | 55  | 151   | 60    | -   |
| 4. LOSS THRU 1-1/2" RPPA:                  | 12 PSI              | 2                                   | 95  | 348   | 214   | -   |
| 5. PRESSURE LOSS AT PRV:                   | 49.2 PSI            | 2-1/2                               | 145 | 611   | 521   | -   |
| 6. TOTAL PRESSURE LOSSES:                  | 78 PSI = 49.2 PSI = | 3                                   | 210 | 1018  | 1009  | -   |
| D. PRESSURE LEFT TO OVERCOME FRICTION      | 255 FT              | -                                   | -   | -     | -     | -   |
| 78 PSI - 49.2 PSI =                        | 11.29 PSI           | -                                   | -   | -     | -     | -   |
| E. 210 FT X 1.2 FITTINGS=                  |                     | -                                   | -   | -     | -     | -   |
| F. AVAILABLE FRICTION HEAD LOSS PER 100 FT |                     | -                                   | -   | -     | -     | -   |
| 28.8 PSI X 100 FT=                         |                     | -                                   | -   | -     | -     | -   |
| 255 FT                                     |                     | -                                   | -   | -     | -     | -   |
| * NOT REQUIRED                             |                     | -                                   | -   | -     | -     | -   |



**HARRIS**  
CONSULTING ENGINEERS  
1000 S. LAS VEGAS BLVD., SUITE 1000  
LAS VEGAS, NV 89101  
PROJECT NO. 9894-01  
DESIGNED BY: R. HARRIS  
CHECKED BY: R. HARRIS  
DRAWN BY: J. ROWLES

**PLUMBING LEGEND, FIXTURE  
AND EQUIPMENT SPECIFICATIONS**

**SUMMERLIN ARBORS PARK  
POOL AND POOL BUILDING**

500 PILOT ROAD • SUITE A • LAS VEGAS, NEVADA 89119 • PHONE (702) 263-7111 FAX: (702) 263-6111

APPROVAL IS FOR CLOUDED  
AREAS OR LATEST REVISIONS  
ONLY. GET ORIGINALS  
FOR OTHER REQUIREMENTS

PLANS APPROVED  
PLUMBING MECHANICAL  
HARRIS & SONS, INC.  
City of Las Vegas, Nevada

BW OCT 24 2001

Does Not Include Arrangement, Direction  
Structural or Civil  
Improvements Make An Owner's  
Written Approval Form  
Not A Part of These Plans

520176

RECEIVED  
OCT 23 2001  
CITY OF LAS VEGAS  
CONSTRUCTION

THESE PLANS WERE CHECKED  
UNDER THE 1997 UBC,  
UPC AND UMC, AND  
THE 1999 NEC

C-18-98-  
elw

Revisions:  
A 1/1/00 BUILDING COMMENTS  
A 1/1/00 PLAN CHECK COMMENTS  
A 07/27/01 PLUMBING REVISION

Project No. 9894-01  
Scale NO SCALE  
Drawn By: L.A.

Date: 10-22-99

Sheet Number: **P001**