

## EXHIBIT "A"

### Technical Specifications for Water and Sewer Service Lines

#### Water and Sewer Line Bedding and Backfill:

Drawings show cross-section of trench, pipe laid on top of 6" min. bedding material, bedding material around pipe, and 12" bedding material on top (from top of pipe). Compact bedding material in district lifts with t-bars and mechanical equipment to 95% std. proctor density. After trench is backfilled and compacted to 95% dry density, replace gravel surface with 12" of pit run, plus 4" road base.

Bedding material is imported crushed rock or angular surface gravel that meets the following gradation per ASTM D488 No. 67: Sieve size, Total percent passing Weight: 3/4 in = 100%; 3/8 in = 20-55%; No. 4 = 0-10%; No. 8 = 0-5%; (sand, pea gravel or screened rock no larger than 3/4 inch).

Connections and service lines shall be buried at a minimum depth of 7', with one foot compacted cover of sand or pea gravel bedding. Additional compaction of backfill material is required every two feet thereafter, as trench is filled to surface. Maintain 10-foot separation between water and sewer service lines.

A negative grade shall be maintained on all water service lines, from the house to the main. The owner shall make provisions for draining the service line on the customer's side of the curb stop valve. If the grade is reversed, the owner must make provisions for draining the line at the house. Draining the service lines is not the responsibility of the SLWSD.

#### Water Service Lines:

The water service lines shall be Type K, soft copper, 3/4 inch diameter; larger sizes may be used with prior approval by the SLWSD. The service line shall be one continuous line without joints if possible. Fittings shall be brass or copper alloy, AWWA approved. Connections shall be by flared joint; no soldered joints shall be permitted underground.

Corporation stops shall be used for the connections of service line to the main line. Corporation stops shall be brass and conform to AWWA C800, such as Mueller H-15000, Ford F-600 or approved equal. The inlet shall be standard AWWA corporation stop, threaded inlet, and the outlet shall be for flared Type K copper service pipe.

A curb stop shall be installed at the lot/property line. Curb stops shall be brass and conform to AWWA C800, such as Mueller H-15204, Ford B-22 or approved equal. Connections shall be flared Type K copper service pipe. Top of curb stops shall extend to at least two inches (2") above the ground surface.

Service saddles shall be used for all water taps on all pipe materials and sizes. Service saddles shall be double strap bronze saddle, Rockwell No. 323 or approved equal. All taps shall be placed at 45° from the vertical to minimize the effects of settling, repairs, and ground movement.

The water service line shall be pressure tested at normal operating pressure from the water main to the building before backfilling. Testing shall be observed by a representative of the District.

### Sewer Service Lines:

Sewer service lines shall be 4 inch, PVC, S.D.R. 35 thickness, with preformed watertight joints with rubber gaskets. The sewer service lines shall be water tight. The sanitary sewer service line shall be used for the conveyance of sanitary wastes only. Connections to roof, building foundation, or any other drain system are strictly prohibited.

Minimum grade for sewer service lines is 1/4 inch per foot (2%).

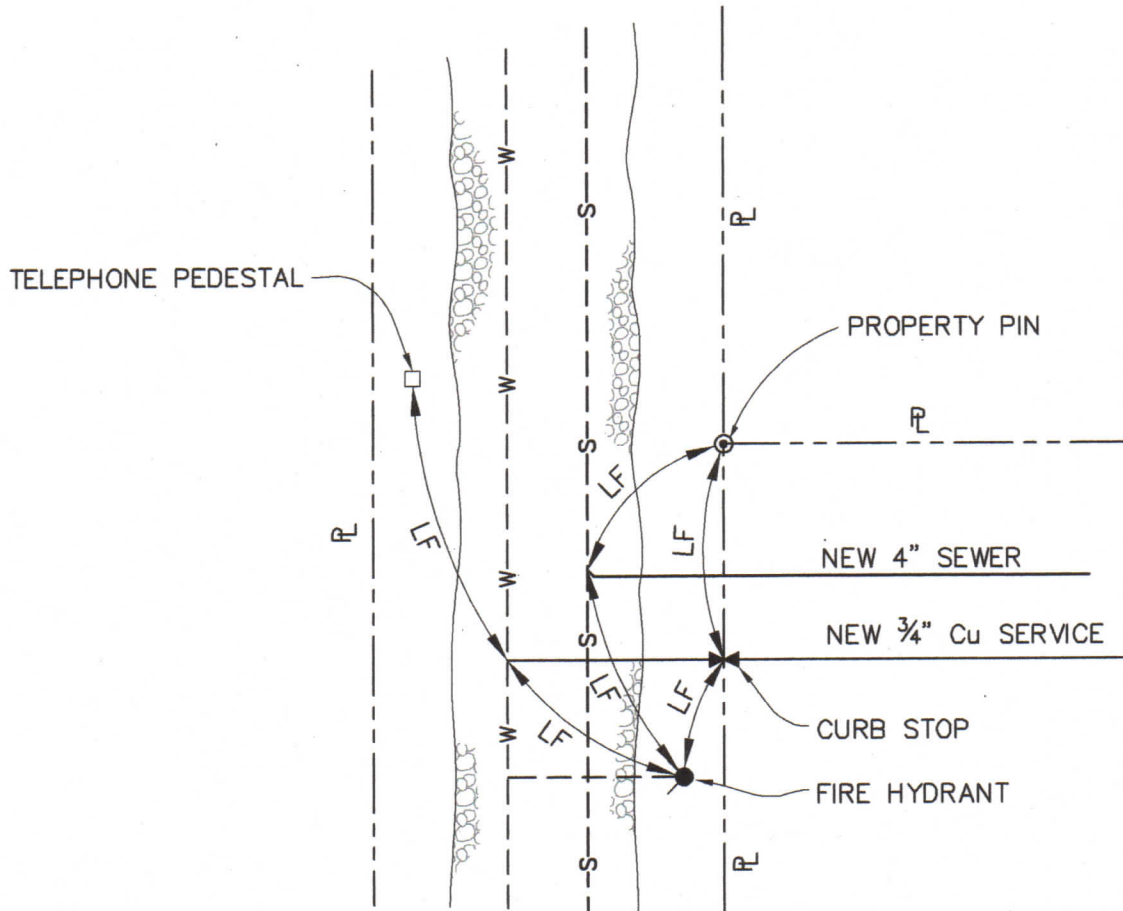
The sewer service will be tapped with 45° wye, tee or approval saddle with stainless steel bands. Taps shall be installed at 45° to main pipe to provide for a 2% minimum grade for service line, unless otherwise approved. Adaptor couplings may be used to bend service line to appropriate grade as required.

The sewer service line must be connected to the house sewer pipe, immediately, or install a watertight cap on house end with a 4x4 marker post.

### Road Excavation and Restoration/Repair:

Road excavation and subsequent backfill to restore to original conditions shall conform to WCPVA and SLWSD specifications as identified here in.

Backfill in the road at tap location, in public right-of-way,s, utility easements, over new service lines shall be bedded with sand, pea gravel or screened rock no larger than 3/4 inch, around pipe, and over the top of the pipe for a depth of at least 1 foot over the pipe. Backfill shall be properly compacted every two feet, to meet std. specification. The last two feet of fill will be pit run, compacted, and topped by 4 inches of road base.



**TYPICAL AS-BUILT INFORMATION**

1. PROVIDE AT LEAST TWO SWING TIES FROM PHYSICAL MONUMENTS (TELEPHONE PEDESTALS, FIRE HYDRANTS, POWER POLES, BUILDING CORNERS, PROPERTY PINS) TO WATER TAP ON MAIN LINE, CURB STOP VALVE AND SEWER TAP ON MAIN LINE.
2. AS-BUILT INFORMATION TO INCLUDE DEPTH OF WATER MAIN AND SEWER MAIN AT TAP LOCATIONS.
3. PROVIDE PHOTOGRAPHS OF TAP ON MAIN AND SERVICE LINE IN TRENCH.
4. DISTRICT WILL NOT ACTIVATE SERVICE UNTIL AS-BUILT INFORMATION HAS BEEN SUBMITTED AND CONTRACTOR SUBMITS EVIDENCE OF PAYMENT FOR WORK TO DISTRICT.

SEWER SERVICE

ADAPTOR COUPLINGS  
BEND AS REQUIRED.

SEWER MAIN

REFER TO SPECIFICATIONS  
FOR BEDDING AND  
BACKFILL REQUIREMENTS.

45°

CORE NEAT HOLE  
IN SEWER MAIN.

SERVICE LINE TO BE INSTALLED  
AT 2% (MIN.) GRADE, UNLESS  
OTHERWISE APPROVED.

SEWER MAIN

INSTALL WATERTIGHT CAP w/  
4 x 4 MARKER POST OR  
CONNECT TO BUILDING SEWER.

45° WYE OR APPROVED  
SADDLE w/ S.S. BANDS -  
ROTATE 45° AS SHOWN  
ABOVE.

