

SOUTH-WEST LAKE MAXINKUCKEE CONSERVANCY DISTRICT (SWLMCD)

SPECIFICATIONS FOR LATERAL CONNECTION FROM HOUSE TO THE DISTRICT CONNECTION POINT

GENERAL WORK

All work performed must meet all local codes, rules, ordinances and regulations, including, but not limited to 327 IAC 3-6-9. If a conflict exists between any of the above the most stringent requirement will be required. Prior to starting any work a Sewer Connection Permit Application must have been approved by the SWLMCD in writing. It shall be noted that directional drilling shall be acceptable with approval from the SWLMCD and verification of proper depths by instrumentation. All open excavation work shall be left uncovered until such time a SWLMCD Inspector has reviewed the work. The responsibility for safety measures rests solely with the permit holder. All excavations shall be adequately protected by barricades, fences, lights, and other such means as necessary to protect the public, and as required by other regulatory agencies, such as, but not limited, to OSHA.

PIPE

All building sewer laterals from the house or building to the grinder pump station shall be one of the following:

1. PVC, SDR-21 meeting ASTM D2241 with rubber "O-Ring" joints. (4" or 6" diameter)
2. HDPE, DR11, IPS meeting ASTM D3035, ASTM D3350, and AWWA C901 (6" diameter only)

The minimum pipe size allowed is 4-inch diameter (PVC). The maximum pipe size allowed is 6-inch diameter (PVC or HDPE). No lateral pipes or grinder pump station shall be placed within 10 feet of a private drinking water well. All 6" service laterals shall be reduced to 4" compatible with the manufacturer's inlet grommet prior to entry into the grinder pump station by the use of an eccentric reducer.

All pipe from the grinder pump unit to the District connection point shall be 1-1/4" diameter PVC SDR21 or HDPE DR11 pressure pipe in accordance with the above requirements.

All pipe shall meet all water main pressure testing requirements as described in 327 IAC 8-3.2-17(a). All HDPE and PVC piping shall not require pressure testing unless the District suspects the lines are not water tight or meeting the specifications.

CLEAN-OUT

The property owner shall install cleanouts on all laterals as follows:

1. *Location:* Laterals shall have a wye cleanout located between eighteen (18) and sixty (60) inches from the building's exterior. The cleanout shall be extended to grade.
2. *Spacing:* Cleanouts shall be spaced a maximum of every one hundred (100) feet and placed on every turn greater than or equal to 45°.
3. *Size:* Cleanouts shall match the size of the lateral pipe up to a maximum of eight (8) inches.
4. *Type:* Cleanout covers shall be a threaded-type, water tight, and capped at all times. Covers within the paved areas shall be metallic and able to withstand traffic loads. Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes or extended flush with the paving.

PIPE BEDDING

All pipes shall be bedded in granular backfill as shown on the attached detail. The bedding material shall be either clean sand, #8 crushed limestone, Pea gravel or #8 gravel.

Minimum pipe depth for 4" or 6" gravity sanitary sewer shall be 48". Minimum pipe depth for 1-1/4" diameter low pressure force main shall be 60".

PIPE GRADE (SLOPE)

All 4-inch pipe shall be laid at a minimum slope of at least 0.0133 foot per foot (4 inches fall in 25 feet) with a maximum slope of 0.200 (2 ft in fall per 10 feet) towards the connection point. 6-inch pipe shall be laid at a minimum slope of 0.0061 foot per foot (1.83 inches fall in 25 feet) with a maximum slope of 0.200 (2 ft in fall per 10 feet) towards the connection point. Slope greater than maximum shall not be acceptable. If required, slant stacks will be used with a maximum of 45° bends to be used. All 6" service laterals shall be reduced to 4" prior to entry into the grinder pump station by the use of an eccentric reducer.

BACKFILLING

Please refer to Attachment "A" - **(SECTION WM 3) BACKFILL, FILLS AND EMBANKMENTS**

SUMP PUMPS AND DRAINS

There shall be no sump pumps connected to the system that allow surface or ground water to enter the system. Lift pumps pumping **sanitary waste only are allowable**. No property owner shall connect a lateral to a grinder pump or any connection to the District's system when the lateral has any of the following sources of clear water:

1. Foundation/footing drains;
2. Sump pumps with or without foundation drains connected;
3. Roof drains;
4. Heat pump discharge;
5. Cooling water; or
6. Any other sources of clear water, such as, but not limited to, yard and/or driveway drains.

Lift pumps pumping sanitary waste only shall not exceed the maximum pumping rate of the grinder pump station or 15 gpm.

ABANDONED SEPTIC TANKS

This work will be as required and specified by the local County Health Department.

CONNECTION TO DISTRICT VALVE

Contractor shall connect to the valve assembly provided to each property owner. The connection must be made watertight and not damage any of the District's material. If disturbed, the valve box on the shut off valve must be reset in a plumb vertical position to allow full access to the operating nut.

EXISTING LATERAL PIPE

When an existing lateral is intended to be reused, the property owner and contractor are responsible for verifying the lateral does not have any defects by means of a Closed-circuit television (CCTV) inspection. Upon request, the results of the CCTV Inspection shall be submitted to the District for review. If the District determines the existing lateral has deficiencies, the property owner will be required to replace the existing lateral per the requirements of the District. The record of the inspection shall be maintained by the property owner for one (1) year from the date of the inspection. Deficiencies shall consist of pipe openings, visible leaks, roots, unseated joints, cracks, collapsed or severely clogged pipes, etc.

GRINDER PUMP UNIT INSTALLATION

Grinder pumps shall be installed in accordance with the manufacturer's installation instructions. All grinder pumps shall be installed with concrete ballasts in accordance with the Manufacturer's recommendations. Control panels may be installed at the grinder pump unit location or at a remote location on the property with the required electrical service to be provided in accordance with Manufacturer's requirements. The control panel must be completely accessible from the outside.

LOCATING (TRACER) WIRE

For all pressure main and lateral installations, a 10-gauge solid copper insulated locating (tracer) wire shall be installed as follows:

1. Pressure Mains - Wire shall be installed on top of the initial backfill in one continuous length between the grinder pump and the District's connection point. The wire shall be brought up to ground level at the District's valve box and at the grinder pump.
2. Laterals - Wire shall be installed (taped) on the top of the gravity sewer pipe along the entire length of the lateral from the grinder pump to the furthest upstream point of the newly installed gravity line. The wire shall be brought up to ground level at furthest upstream point of the new gravity sewer line and at the grinder pump.
3. The tracer wire shall be capable of, and demonstrated to be, continuous transmission of tracing signal along the full length of pressure sewer and laterals. Any broken tracer wire shall be replaced before found acceptable.

GRAVITY CHECK VALVE

It is recommended but not mandatory that a back-flow prevention valve be installed on the gravity sewer line between the house and grinder pump.

Please Note:

USE OF THE GRINDER PUMP STATIONS OR LOW PRESSURE SEWER SYSTEM PIPING TO DISPOSE OF SEPTIC WASTE IS NOT ALLOWED.

Attachment “A”

(SECTION WM 3) BACKFILL, FILLS AND EMBANKMENTS

PART 1 GENERAL

1.01 Description

- A. All trenches or excavations shall be backfilled to the original surface of the ground or such other grades as shown or directed. In general the backfilling shall be carried along as speedily as possible and as soon as the concrete, mortar, and/or other masonry work and pipe joints have sufficient strength to resist the imposed load without damage.

1.02 Backfill Materials

- A. The following materials shall be used for backfill in accordance with and in the manner indicated by the requirements specified herein.

Class I - Angular, 6 to 40 mm (1/4 to 1 ½ inch), graded stone such as crushed stone.

Class II - Coarse sands and gravel with maximum particle size of 40 mm (1 ½ inch), including various grades of sands and gravel containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.

Class III - Fine sand and clayey gravel including fine sands, sand-clay mixtures and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.

Class IV - Silt, silty clays and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH and CL are included in this class. These materials are not recommended for bedding. This class shall also include any excavated material free from rock (3 inches and larger), concrete, roots, stumps, rubbish, frozen material and other similar articles whose presence in the backfill would cause excessive settlement.

Flowable Fill Controlled low strength material (CLSM).

PART 2 PRODUCTS – (NOT USED)

PART 3 EXECUTION

3.01 Backfill Around Structures

- A. For purposes of this specification, structures shall include but not be limited to footings, foundations, basements, grade beams, vaults, capsules, manholes, ducts, tanks, bridges, inlets, headwalls, anchors, and etc. Items specifically excluded from this definition of "structures" are pipe, conduits and their appurtenances except those listed herein.
- B. The material for backfill around structures shall meet the requirements of Class I, II or III backfill materials, as defined on page WM 3 (1 of 8) under the paragraph entitled "Backfill Materials". Material removed from the project site may be used provided it meets this criteria. Materials classified as Class IV, clay balls, debris, topsoil, frozen or excessively wet or dry materials, weak soils or muck and other similar detrimental materials will not be put in place as backfill around structures.
- C. Prior to backfilling, all formwork and construction debris will be removed. Any frozen or wet subsoil will be thawed or dried and compacted or removed prior to receiving backfill. During cold seasons, grades receiving backfill will be protected from frost during the work progress.
- D. Begin backfill at the lowest elevation in the excavation. Place backfill in even, level layers. The thickness of the layer shall not exceed 75% of the compaction equipment manufacturer's rating for the equipment used when compacting the type of soil being placed for backfill, i.e. Class I, II and/or III.
- E. Where backfill is required on both sides of structure or around the entire structure, backfill and compaction shall be done simultaneously on both sides or around the structure.
- F. The Contractor shall provide, when necessary, equipment and materials to moisten or aerate excessively wet or dry backfill to maintain optimum moisture content (+/- 2%) for the soil type being placed.
- G. Rainfall and/or groundwater trapped in the excavation during backfill operations shall be pumped out by the Contractor. Excessively wet soil or soil which has eroded into the excavation shall be removed or excavated and recompactd prior to placing additional backfill material.
- H. All backfill shall be compacted to at least 95% of maximum density and the top two feet of backfill under areas subject to vehicular traffic shall be compacted to 98% of maximum density.
- I. Openings in structures to receive pipe shall be temporarily plugged or bulkheaded during backfill operations. Backfill shall proceed to an elevation level with the invert of the pipe. The pipe shall then be bedded and backfilled in accordance with the applicable Detailed Specification and Workmanship and Materials Specifications. Backfill of pipe not in areas subject to vehicular traffic shall be with Class I, II or III materials and in areas subject to vehicular traffic with Class I or II materials only.

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