

A.2 Sanitary Sewer Notes

- A.2.1. General construction notes are required to be included on the construction plans and can be found on the District website or provided upon request. These notes are required and the design professional may include other applicable notes they deem necessary.

SANITARY SEWER:

ALL WORK AND MATERIALS SHALL CONFORM WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF CLACKAMAS COUNTY SERVICE DISTRICT #1 (CCSD#1).

THE CONTRACTOR IS REQUIRED TO ATTEND A PRE-CONSTRUCTION CONFERENCE AT THE DISTRICT'S OFFICES PRIOR TO BEGINNING WORK ON THE SANITARY SEWER. THE OWNER OR CONTRACTOR IS ALSO REQUIRED TO PROVIDE THE DISTRICT A WARRANTY BOND FOR THE NEW SANITARY SEWER MAINS AND SERVICE CONNECTIONS AT THE COMPLETION OF CONSTRUCTION.

THE ENGINEER IS REQUIRED TO HAVE AN INSPECTOR ON SITE AT ALL TIMES DURING CONSTRUCTION OF THE SANITARY SEWER, THE CONTRACTOR, SHALL GIVE THE ENGINEER AT LEAST 24 HOURS NOTICE PRIOR TO BEGINNING WORK AT THE START OF CONSTRUCTION OR AFTER AN INTERVAL OF NOT WORKING ON THE SANITARY SEWER.

MATERIALS:

POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034, SDR 35, AND JOINT TYPE SHALL BE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212.

CONCRETE SEWER PIPE (CSP) TO CONFORM TO THE REQUIREMENTS OF ASTM C-14, CLASS 3 NON-REINFORCED CONCRETE PIPE WITH ELASTOMERIC GASKETS.

MANHOLES TO BE PRECAST CONCRETE SECTIONS WITH MINIMUM INSIDE DIAMETER OF 48-INCHES, CONFORMING TO THE REQUIREMENTS OF ASTM C-478, EXCEPT AS NOTED ON THE PLANS. POURED IN PLACE MANHOLES MAY BE SUBSTITUTED.

INSTALLATION:

POLYVINYL CHLORIDE PIPE (PVC) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PVC SEWER PIPE SHALL BE CONNECTED TO CONCRETE MANHOLES BY MEANS OF AN APPROVED COUPLING WITH AN ELASTOMERIC GASKET, AN APPROVED WATERSTOP OR FLEXIBLE SLEEVE. USE OF PORTLAND CEMENT GROUT FOR CONNECTION OF PVC SEWER PIPE TO MANHOLES WILL NOT BE PERMITTED.

AFTER THE CONTRACTOR HAS BACKFILLED THE PIPE ZONE OF THE TRENCH AS REQUIRED, HE SHALL THEN BACKFILL THE BALANCE OF THE TRENCH, WITH THE TYPE OF BACKFILL SPECIFIED, IN ONE FOOT (1') LAYERS, MECHANICALLY COMPACTING EACH LAYER TO 95% OF MAXIMUM DENSITY IN ROADWAYS AND 85% TO 90% IN ALL OTHER AREAS. MAXIMUM RELATIVE DENSITY SHALL BE DETERMINED PER AASHTO T-180. IN PLACE, DENSITY SHALL BE DETERMINED PER AASHTO T-191, T-205 OR T-238. ANY SUBSEQUENT SETTLEMENT OF THE TRENCH

OR DITCH DURING THE GUARANTEE PERIOD SHALL BE CONSIDERED TO BE THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE DISTRICT OR THE OWNER.

SANITARY SEWER PIPE AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH CCSD#1 STANDARDS. LEAKAGE TESTS INCLUDE AN AIR TEST OF THE SEWER MAINS AND SERVICE CONNECTIONS AND A WATER EXFILTRATION TEST OR VACUUM TEST OF THE MANHOLES. ANY PORTION OF THE SEWER WHICH FAILS TO PASS THESE TESTS SHALL BE EXCAVATED, REPAIRED OR REALIGNED, AND RETESTED. IN ADDITION TO HYDROSTATIC OR AIR TESTING, SANITARY SEWERS CONSTRUCTED OF PVC SEWER PIPE SHALL BE DEFLECTION TESTED NO LESS THAN 30-DAYS AFTER THE TRENCH BACKFILL AND COMPACTION HAS BEEN COMPLETED. THE TEST SHALL BE CONDUCTED BY PULLING AN APPROVED SOLID POINTED MANDREL 95% OF THE INSIDE DIAMETER THROUGH THE PIPELINE ON A MANHOLE TO MANHOLE BASIS.

UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, EACH SERVICE CONNECTION SHALL BE LAID IN A SEPARATE TRENCH ON A STRAIGHT LINE AND GRADIENT FROM THE TEE TO THE END OF THE SERVICE CONNECTION. AT THE PROPERTY LINE THE SERVICE CONNECTION SHALL BE AT LEAST 6 FEET BELOW THE GRADE OF THE STREET CENTER LINE. NO SERVICE CONNECTION SHALL BE LAID ON A SLOPE OF LESS THAN TWO PERCENT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE PLANS. THE ENGINEER WILL PROVIDE A CUT STAKE AT THE TERMINAL POINT OF EACH SERVICE CONNECTION. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL USE A GRADING LINE TO LAY THE PIPE AND THE SERVICE CONNECTION SHALL BE INSTALLED WITH THE SAME ACCURACY AS THE MAIN SEWER. EACH SERVICE CONNECTION SHALL BE PLUGGED WITH A RUBBER RING PLUG. A 2 X 4 MARKER PAINTED GREEN SHALL BE PLACED AT THE END OF EACH SERVICE CONNECTION, AND SHALL EXTEND FROM THE END OF THE PIPE TO A POINT ONE FOOT (1') ABOVE THE SURFACE OF THE GROUND. A DETECTABLE GREEN MAGNETIC TAPE ("THORDURATEC SAFETY GREEN SANITARY SEWER RIBBON OR EQUAL") WITH THE WORD "SEWER" AT REGULAR INTERVALS SHALL BE PLACED ALONG THE SERVICE CONNECTION FROM THE MAINLINE TEE TO THE GROUND SURFACE.

IN EASEMENT AREAS ALL MANHOLES SHALL HAVE TAMPER-PROOF LIDS PER CCSD#1 SPECIFICATIONS, OR APPROVED EQUAL. CAUTION: NOT ALL TAMPER-PROOF LIDS MEET CCSD#1 SPECIFICATIONS. THE FRAME AND COVER SHALL BE SIX INCHES (6") ABOVE FINISH GRADE.

THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION DURING THE PROCESS OF LAYING THE PIPE. WATER AND DEBRIS SHALL NOT ENTER INTO THE DISTRICT'S SEWER SYSTEM. WATER AND DEBRIS SHALL BE DISPOSED OF IN AN APPROVED MANNER.

VERTICAL DATUM: BASED ON CCSD#1 SANITARY MANHOLE ____ STA _____. _____ (NORTH, SOUTH, EAST, WEST) INVERT ELEVATION = _____.