

## LOW STRENGTH MORTAR BACKFILL

**A.** IN SITUATIONS WHERE UTILITIES CROSS HEAVILY TRAVELED STREETS OR IT MAY BE DIFFICULT TO GET ADEQUATE COMPACTION ON GRANULAR MATERIAL, LOW STRENGTH MORTAR BACKFILL WILL BE REQUIRED PER ODOT ITEM 613 TYPE 1 ONLY. THE CITY MAY REQUIRE THIS TYPE OF BACKFILL AT THEIR DISCRETION WITH THE COST BEING BORE BY THE CONTRACTOR.

## BORING/JACKING

### A. MATERIALS.

CASING PIPE SHALL BE WELDED STEEL PIPE CONFORMING TO AWWA C-202. WITH BITUMINOUS OR PETROLEUM COATING.

### B. INSTALLATION (CASING PIPE).

1. FURNISH PROCEDURE METHODS TO THE CITY FOR APPROVAL.
2. ALL METHODS AND PROCEDURES SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
3. ADEQUATELY SUPPORT ALL TRENCHES AND BORING/JACKING PITS.
4. INSTALL TO LINE AND GRADE SHOWN.

### C. INSTALLATION (CARRIER PIPE).

1. PLACE CONDUITS IN CASING PIPE TO SAME RELATIVE POSITIONS AS ADJACENT DUCT BY USE OF SPACERS.
2. FILL THE SPACE BETWEEN CONDUITS INSIDE THE CASING PIPE WITH CLEAN SAND OR OTHER APPROVED MATERIALS AS APPROVED BY THE CITY.

## STEEL CASING PIPE

- A.** STEEL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.
- B.** JOINTS BETWEEN THE SECTIONS OF PIPE SHALL BE FULLY WELDED AROUND THE COMPLETE CIRCUMFERENCE OF THE PIPE.
- C.** SIZE—A MINIMUM OF 4" GREATER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE, EXCLUDING BELL SECTIONS.
- D.** A STEEL CASING PIPE WILL BE REQUIRED FOR STORM SEWER, WATER MAIN, AND SANITARY SEWER. SIZE OF THE CASING PIPE WILL NEED TO BE DESIGNED FOR EACH INDIVIDUAL INCIDENT AND APPROVED BY THE CITY ENGINEER.

WATERMAIN SIZE (INCHES)	DIAMETER NOMINAL (INCHES)	NOMINAL THICKNESS (INCHES)
	10 AND UNDER	0.188
	12 & 14	0.250
8	16	0.281
	18	0.312
12	20 & 22	0.344
16	24	0.375
	26	0.406
	28	0.438
20	30	0.469
	32	0.500
21	34 & 36	0.532
	38	0.562
	40	0.594
	42	0.625
	44 & 46	0.657
	48	0.688
	50	0.719
	52	0.750
	54	0.781
	56 & 58	0.812
	60	0.844
	62	0.875
	64	0.906
	66 & 68	0.938
	70	0.969
	72	1.000