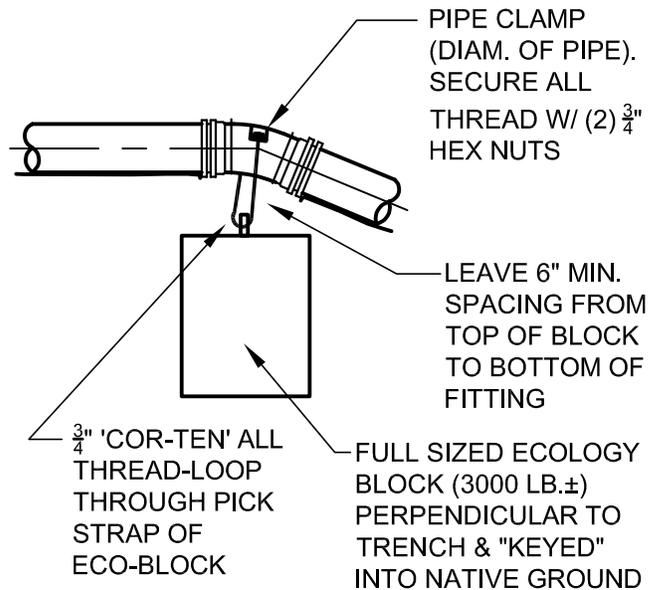


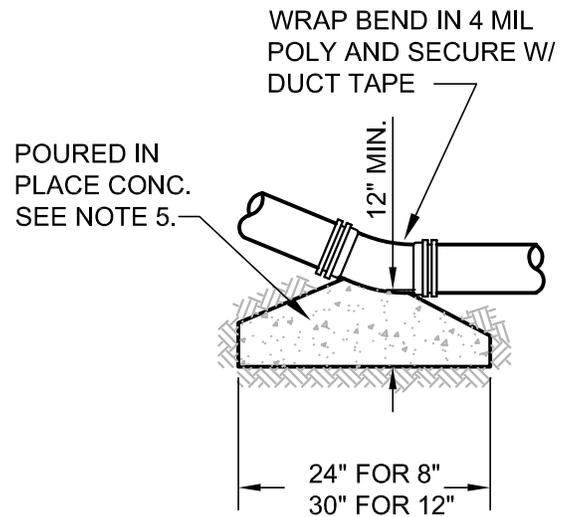
CAST IN PLACE OPTION



ECOLOGY BLOCK OPTION

RESTRAINED JOINT REQUIREMENTS

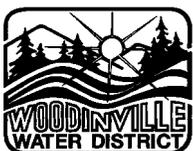
BEND SIZE	MIN. REQUIRED DISTANCE (LF) PIPE RESTRAINT EA. SIDE W/O VERTICAL BLOCKING		MIN. REQUIRED DISTANCE (LF) PIPE RESTRAINT EA. SIDE WITH VERTICAL BLOCKING	
	4" TO 8"	12"	4" TO 8"	10" TO 12"
11 1/4°	30	30	0	0
22 1/2°	40	40	10	20
45°	NA	NA	20	30



REVERSE VERTICAL BENDS

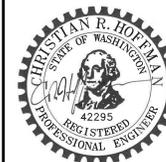
NOTES:

1. DRAWING SUBMITTAL REQUIRED FOR APPROVAL BY THE DISTRICT WHEN PIPE DIAMETER EXCEEDS 12" OR VERTICAL DEFLECTION MORE THAN 45 DEGREES.
2. EBAA IRON MEG-A-LUGS OR EQUAL REQUIRED ON ALL MECHANICAL JOINTS.
3. POOR GROUND CONDITIONS WILL REQUIRE ADDITIONAL RESTRAINT AS DIRECTED BY THE DISTRICT.
4. ALL REVERSE VERTICAL BENDS SHALL BE BLOCKED AS SHOWN.
5. CONCRETE TO BE MIN. 3000 PSI COMPRESSIVE STRENGTH.



**Woodinville
Water District**

**VERTICAL BLOCKING
RESTRAINT REQUIREMENTS**



**WATER STD.
PLAN NO. 4**

REVISION DATE
04/25