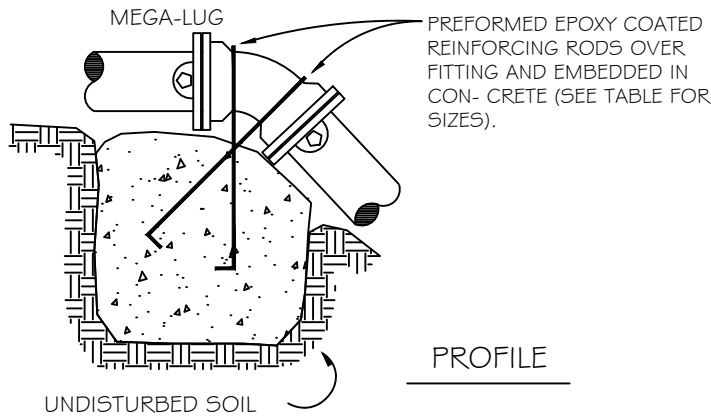
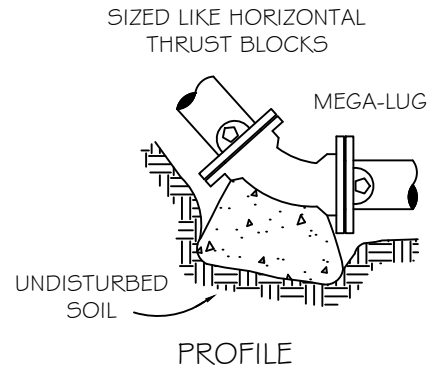


NOTES:

1. GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER.
2. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC (8 MIL. MINIMUM) PRIOR TO PLACEMENT OF CONCRETE.
3. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. CONCRETE MIX SHALL BE COMMERCIAL MIX HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG. AND THE WEIGHT OF CONCRETE = 4050 LBS./CU.YD.
6. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE HEAVY LINE IN TABLE.
7. ALL REBAR SHALL BE PREFORMED EPOXY COATED IN ACCORDANCE WITH AASHTO M-284. REBAR SHALL BE PREFORMED, AND LAST 4" OF BAR SHALL BE BENT 90° WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
8. FOR HORIZONTAL THRUST BLOCK DETAILS SEE DRAWING NO. W-3000.



GRAVITY VERTICAL THRUST BLOCK



NORMAL VERTICAL THRUST BLOCK

| VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS) |            |          |          |
|--|------------|----------|----------|
| FITTING SIZE   | BEND ANGLE |          |          |
|  | 45 °       | 22 1/2 ° | 11 1/4 ° |
| 4  | 1.1        | 0.4      | 0.2      |
| 6  | 2.7        | 1.0      | 0.4      |
| 8  | 4.0        | 1.5      | 0.6      |
| 10   | 6.0        | 2.3      | 0.9      |
| 12   | 8.5        | 3.2      | 1.3      |
| 14   | 11.5       | 4.3      | 1.8      |
| 16   | 14.8       | 5.6      | 2.3      |

| FITTING SIZE  | ROD SIZE | EMBED-MENT |
|---------------|----------|------------|
| 12" AND LESS  | #6       | 30"        |
| 18" OR LARGER | *        | *          |

\* THRUST BLOCKS FOR PIPES 18" OR LARGER WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.



CITY OF MOLALLA  
DEPARTMENT OF PUBLIC WORKS

VERTICAL THRUST BLOCK

|            |     |         |
|------------|-----|---------|
| DRAWN BY   | PDG | 04/2016 |
| CHECKED BY | JC  | 04/2016 |

W-3005