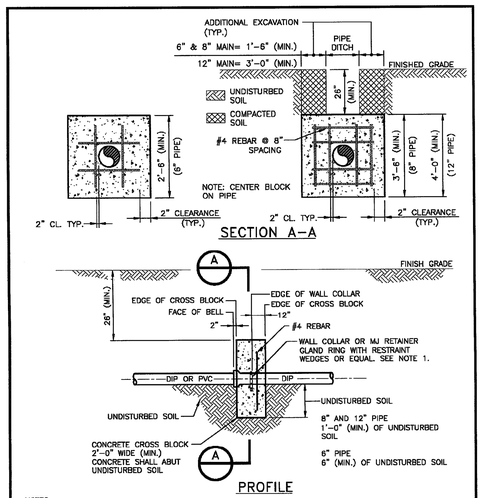

NOTES:

1. SEE DWG. NO. 0201-0601-SD8 FOR ADDITIONAL BLOCKING DETAILS.
2. FOR WATERMAINS 16" AND LARGER CONSULT ENGINEER FOR BLOCKING DETAIL.

REVISIONS

MISSOURI AMERICAN WATER STANDARD CIVIL
CROSS BLOCK SIDE VIEW DETAIL

MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141

MISSOURI AMERICAN WATER ENGINEERING 727 CRAIG ROAD ST. LOUIS, MO. 63141

AMERICAN WATER

DRAWN BY KDH | DATE 01-12-12 | USE DIMENSIONS ONLY
PROJECT ENG'R | PROJECT D' | SCALE N.T.S.
APPROVED

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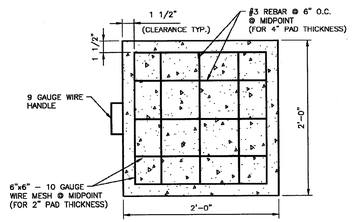
0201-0601-SD14

0201-0601-SD14



NOTES:

1. PAD THICKNESS = 2" OR 4"
2. PROVIDE CERTIFICATION FOR REINFORCING WIRE AS REQUIRED.

REVISIONS

MISSOURI AMERICAN WATER STANDARD CIVIL
PRE-FABRICATED STEEL REINFORCED CONCRETE BLOCKING PAD DETAIL

MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141

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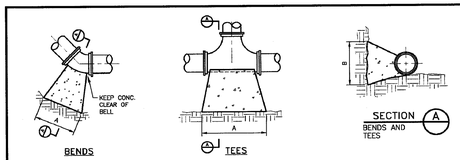
0201-0601-SD12

0201-0601-SD12



NOTES:

1. COVER OVER TOP OF PIPE SHALL BE 42". IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE. THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS. TOP OF FINISH CONCRETE TO BE A MINIMUM OF 26" FROM FINISH GRADE.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES,.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
6. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
7. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
8. ALL BOLTS SHALL BE PTFE POLYMER COATED BOLTS (EX. XYLAN, FLUOROKOTE #1). MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH APPROVED COATING AFTER CONCRETE HAS SET.
9. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
10. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
11. FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
12. FOR MAIN SIZES GREATER THAN 12", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

REQUIRED MINIMUM BEARING AREA ON UNDISTURBED SOIL

PIPE SIZE	90 DEGREE BENDS AREA (SQ. FT.)	45 DEGREE BENDS AREA (SQ. FT.)	22.5 DEGREE BENDS AREA (SQ. FT.)	11.25 DEGREE BENDS AREA (SQ. FT.)	TEES/PLUGS AREA (SQ. FT.)
6	8.0	4.5	2.0	1.0	6.0
8	14.0	7.5	4.0	2.0	10.0
10	20.5	11.0	6.0	3.0	14.5
12	29.0	16.0	8.0	4.0	20.5

NOTES:

1. BEARING TABLE AREA IS BASED ON 200 PSI MAXIMUM WITH SOIL BEARING CAPACITY OF 2000 LBS/SQUARE FOOT WITH A 1.5 SAFETY FACTOR.
2. FOR HIGHER WATER PRESSURES OR LOWER SOIL PRESSURES, CONSULT ENGINEER FOR ADJUSTMENTS.
3. A SAFETY FACTOR AND ADDITIONAL BEARING AREA MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
4. FOR DEVELOPER LAY PROJECTS, THE DEVELOPER SHALL VERIFY SOIL BEARING CAPACITIES.
5. SEE DWG. NO. 0201-0601-SD19 AND DWG. NO. 0201-0601-SD20 FOR ADDITIONAL BLOCKING INFORMATION.

REVISIONS

MISSOURI AMERICAN WATER STANDARD CIVIL
THRUST BLOCK DETAILS

MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141

MISSOURI AMERICAN WATER ENGINEERING 727 CRAIG ROAD ST. LOUIS, MO. 63141

AMERICAN WATER

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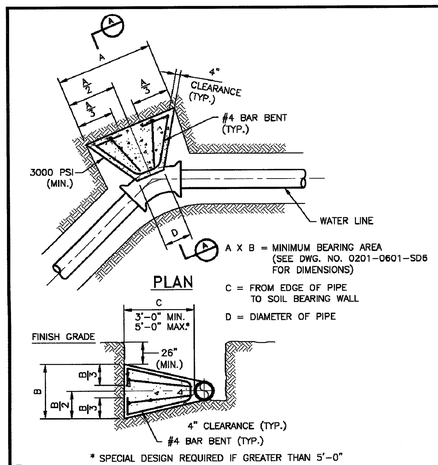
0201-0601-SD6

0201-0601-SD6



GENERAL NOTES:

1. COVER OVER TOP OF PIPE SHALL BE 42" MINIMUM. IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES OR OTHER UTILITY TRENCHES.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
6. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
7. ALL BOLTS SHALL BE PTFE POLYMER COATED BOLTS (EX. XYLAN, FLUOROKOTE #1). MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH APPROVED MATERIAL AFTER CONCRETE HAS SET.
8. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
10. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE 3000 PSI CONCRETE MINIMUM.

* BEARING AREAS ARE BASED ON SOIL HAVING AN ALLOWABLE SAFE LATERAL BEARING OF 2000 POUNDS PER SQUARE FOOT AND 200 PSI TEST PRESSURE AND A 1.5 FACTOR OF SAFETY. AREA MUST BE REVISED FOR SOILS WITH A LOWER BEARING CAPACITY OR HIGHER TEST PRESSURE.

0201-0601-SD20

REVISIONS

MISSOURI AMERICAN WATER STANDARD CIVIL
THRUST BLOCK AT HORIZONTAL BENDS (EXCEEDING 3 FT. IN THICKNESS) - DETAIL

MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141

MISSOURI AMERICAN WATER ENGINEERING 727 CRAIG ROAD ST. LOUIS, MO. 63141

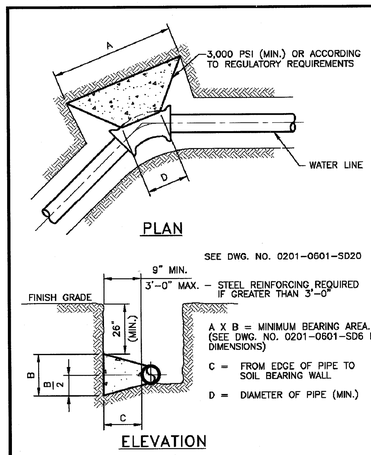
AMERICAN WATER

DRAWN BY KDH | DATE 02-16-11 | USE DIMENSIONS ONLY
PROJECT ENG'R | PROJECT D' | SCALE N.T.S.
APPROVED

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

0201-0601-SD20

0201-0601-SD20



GENERAL NOTES:

1. COVER OVER TOP OF PIPE SHALL BE A MINIMUM OF 42". IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES OR OTHER UTILITY TRENCHES.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
6. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
7. ALL BOLTS SHALL BE PTFE POLYMER COATED BOLTS (EX. XYLAN, FLUOROKOTE #1). MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH APPROVED MATERIAL AFTER CONCRETE HAS SET.
8. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
10. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE 3000 PSI CONCRETE (MIN.).

* BEARING AREAS ARE BASED ON SOIL HAVING AN ALLOWABLE SAFE LATERAL BEARING OF 2000 POUNDS PER SQUARE FOOT AND 200 PSI TEST PRESSURE AND A 1.5 FACTOR OF SAFETY. AREA MUST BE REVISED FOR SOILS WITH A LOWER BEARING CAPACITY OR HIGHER TEST PRESSURE.

0201-0601-SD19

REVISIONS

MISSOURI AMERICAN WATER STANDARD CIVIL
THRUST BLOCK AT HORIZONTAL BENDS (LESS THAN 3 FEET IN THICKNESS)-DETAIL

MISSOURI AMERICAN WATER ST. LOUIS, MO. 63141

MISSOURI AMERICAN WATER ENGINEERING 727 CRAIG ROAD ST. LOUIS, MO. 63141

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APPROVED

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

0201-0601-SD19

0201-0601-SD19

PROJECT TITLE:
THE LANDING OF O'FALLON

Bax Project # 06-0390B | Issue Date: 08/26/2016

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5562
FAX 928-1716

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I hereby specify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

REFERENCE DETAIL SHEET ONLY. CONTRACTOR TO OBTAIN CURRENT DETAILS AND SPECIFICATIONS FROM MISSOURI AMERICAN WATER DISTRICT. CONTRACTOR TO VERIFY WITH MISSOURI AMERICAN WATER ON METER SETTING SIZING AND ORDERING.

REVISIONS

10-14-16	CITY COMMENTS
10-24-16	CITY COMMENTS

Developer / Owner:
LENITY ARCHITECTURE
3150 KETTLE COURT SE
SALEM, OREGON 97301
1-503-399-1090

WATER DETAILS - MISSOURI AMERICAN WATER

P+Z No.
20-16.02

City No.
16-010424

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