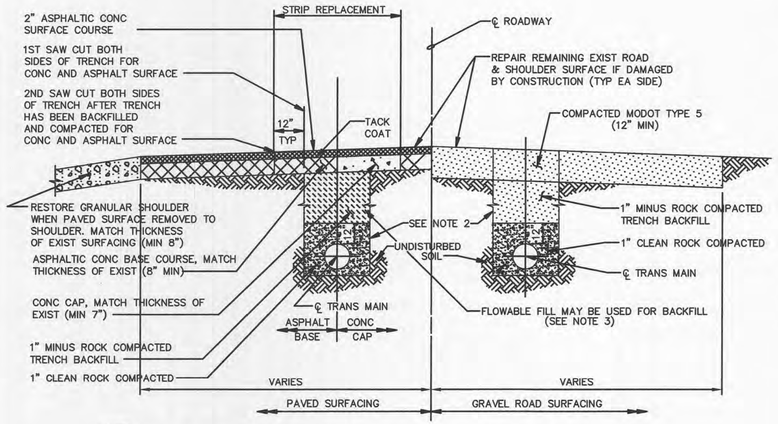
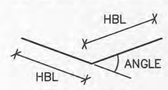


NOTES:
1. CONTRACTOR TO OBTAIN RIGHT-OF-WAY CONSTRUCTION UTILITY PERMIT FROM THE CITY OF OFALLON COMMUNITY DEVELOPMENT DEPARTMENT AND NOTIFY THEM FOR INSPECTION PRIOR TO ANY REPAIRS. SEE APPENDIX C OF THE SPECIFICATIONS FOR COPY OF UTILITY PERMIT FORM.
2. ACTUAL TRENCH SIDESLOPE TO BE DETERMINED BY CONTRACTOR IN ACCORDANCE WITH OSHA STANDARDS.
3. SEE PLAN SHEETS FOR LOCATION OF TRANSMISSION MAIN WITHIN STREET AND ROADWAYS.
4. ASPHALTIC CONC BASE COURSE OR CONC CAP AS REQUIRED BY APPLICABLE CITY OR COUNTY.
5. THE 12" SAWCUT BEYOND THE TRENCH WIDTH MAY BE OMITTED IF FLOWABLE FILL IS USED FOR BACKFILL.

STREET TRENCHING DETAIL AND CROSSING SECTION

NO SCALE

HBL=LENGTH OF RESTRAINT



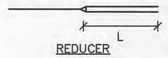
HORZ. BEND

FITTING – PIPE	HBL
11-1/4" – 16"	5'
22-1/2" – 16"	10'
45° – 16"	21'
90° – 16"	50'
45° – 8"	13'

PIPE SIZE

REDUCER	16"–12"	16"–8"
L	59'	95'

L=LENGTH OF RESTRAINT

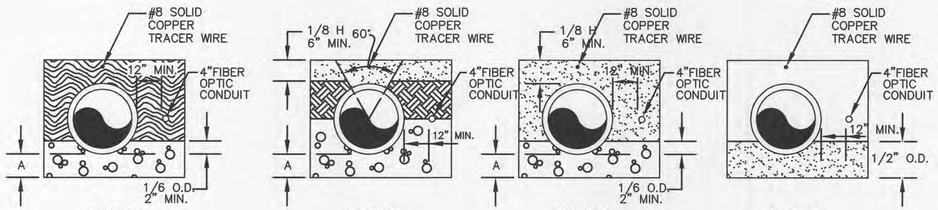


REDUCER

1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. MINIMUM 3.5' GROUND COVER REQUIRED.
3. BASED ON 110 PSI INTERNAL PRESSURE AND 100 PSI SURGE PRESSURE FOR A TOTAL DESIGN PRESSURE OF 210 PSI.
4. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER.
5. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
6. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
7. REDUCER SHALL BE RESTRAINED ON THE LARGER PIPE ONLY.

RESTRAINT LENGTH DETAIL – PVC PIPE

NOT TO SCALE



LEGEND
I.D. – NOMINAL PIPE SIZE
O.D. – OUTSIDE DIAMETER OF PIPE
H – COVER ABOVE TOP OF PIPE
A – EMBEDMENT BELOW PIPE (SEE TABLE)

TAMPED BACKFILL
COMPACTED BACKFILL
GRANULAR BEDDING
FLOWABLE FILL

TABLE OF EMBEDMENT DEPTHS BELOW PIPE

I.D.	A MIN. SOIL	A MIN. ROCK
27" & SMALLER	3"	6"

GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 1/2" (95% PASSING 3/4" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A #4; TO BE PLACED IN NOT MORE THAN 8" LAYERS AND COMPACTED BY MECHANICAL VIBRATING.

COMPACTED BACKFILL JOB EXCAVATED MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK, COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY A.S.T. D698, OR GRADED AGGREGATE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACKFILL, EXCEPT WHERE FLOWABLE FILL IS IDENTIFIED.

TAMPED BACKFILL JOB EXCAVATED MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, HAND PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK AND TAMPED AROUND CONDUIT PIPE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF TAMPED BACKFILL.

TRENCH BACKFILL SHALL BE AS REQUIRED IN THE "LAYING AND BACKFILL" SECTION OF THE DETAILED SPECIFICATIONS.

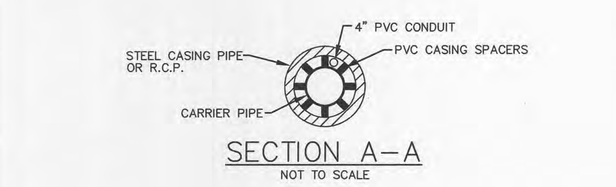
EMBEDMENT THE TYPE OF EMBEDMENT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

FLOWABLE FILL THE TYPE OF FLOWABLE FILL TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

TRACER WIRE REQUIRED ON ALL WATER MAINS

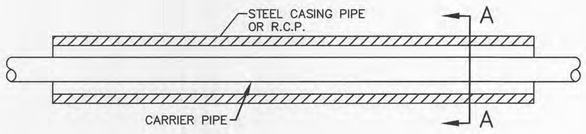
WATER MAIN EMBEDMENT

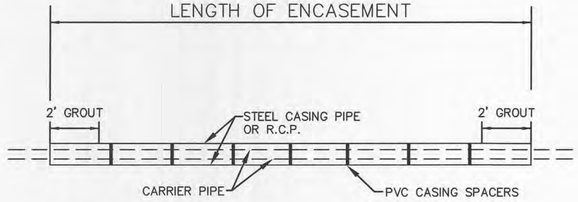
NOT TO SCALE



SECTION A–A

NOT TO SCALE

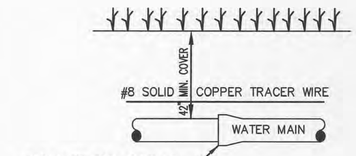




NOTES:
1. INSIDE DIAMETER OF CASING PIPE TO BE A MINIMUM OF 4" GREATER THAN COUPLING DIAMETER OF CARRIER PIPE.
2. SAND GROUT SHALL BE INSTALLED BETWEEN CASING AND PIPE AT EACH END FOR TWO FEET TO CLOSE CASING.
3. CASING SPACERS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.

ENCASEMENT DETAIL

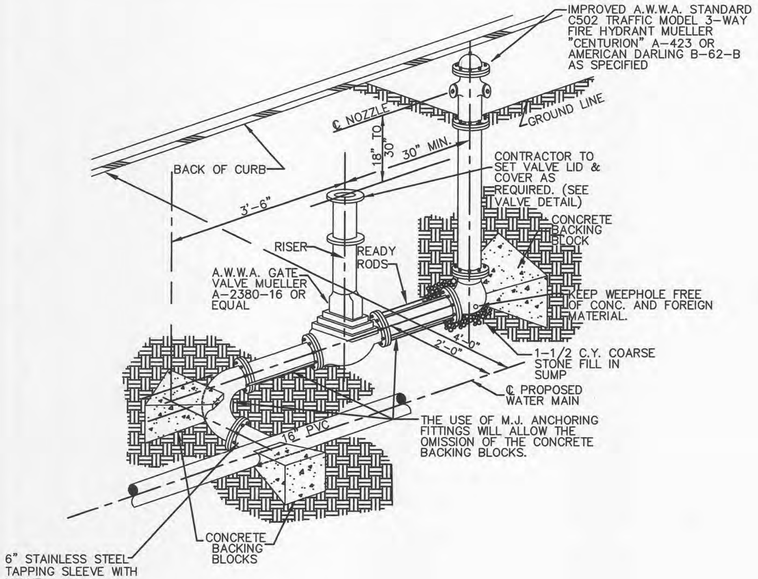
NOT TO SCALE



PROFILE VIEW

TYPICAL WATER MAIN INSTALLATION DETAILS

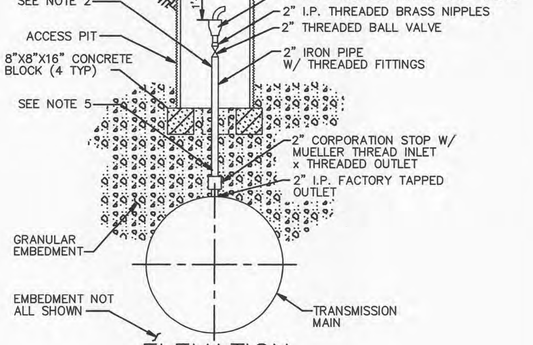
NOT TO SCALE



NOTE: EMBEDMENT NOT SHOWN. INSTALL PER GENERAL NOTES OR PLAN SHEETS.

FIRE HYDRANT DETAIL

NOT TO SCALE



ELEVATION

NOTES:
1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF MANUAL AIR RELEASE VALVE ASSEMBLIES. WHERE THE TRANSMISSION MAIN IS UNDER PAVEMENT, MANUAL AIR RELEASE VALVE ASSEMBLY IS TO BE INSTALLED REMOTE FROM TRANSMISSION MAIN AS DETERMINED IN THE FIELD BY THE ENGINEER BASED UPON THE CONDITIONS ENCOUNTERED.
2. EXPOSED PIPING, FITTINGS, AND VALVES IN ACCESS PIT TO BE WRAPPED WITH 1" THICK INSULATION.
3. SEE EMBEDMENT DETAIL FOR TRENCH CLASS
4. GRANULAR EMBEDMENT SHALL BE INSTALLED TO ALLOW WATER SEEPAGE OUT OF PIT FOR FULL WIDTH OF TRENCH AND A LONGITUDINAL THICKNESS TO MATCH THE WIDTH OF THE ACCESS PIT. GRANULAR SHALL BE USED FROM THE TOP OF PIPE TO THE FINISH GRADE.
5. CONTRACTOR SHALL WORK PIPING AS NEEDED IN ORDER TO ACHIEVE OFFSETS AS SPECIFIED ON THE PLANS. THE USE OF ELBOW FITTINGS SHALL BE USED ONLY WHEN MAKING BENDS. ALL BENDS SHALL TAKE PLACE BEFORE THE PIPE ENTERS INTO THE ACCESS PIT.

MANUAL AIR RELEASE VALVE ASSEMBLY

NOT TO SCALE

NOTE:
WATER DETAILS FROM CITY OF O'FALLON COMMUNITY DEVELOPMENT DESIGN DIVSION, CITY OF O'FALLON, MISSOURI "STANDARD DETAILS WATER LINE"

95% REVIEW SET
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DESIGNED BY: RHH | CHECKED BY: NTM
DRAWN BY: JDE | 213456-C004_S.dwg

CIVIL DETAILS 2

CITY OF O'FALLON, MISSOURI

PEARL DRIVE WATER MAIN EXTENSION

JOB NO.: 213456.00
DATE: JULY, 2010
SCALE: AS NOTED
SHEET: 6 OF 6

C-05

F:\213456 OFallon - Pearl Drive Water Main Extension\Deliverables\2010.07.02 95% Client Review\CAD Drawings\213456.00-C004_S.dwg, Jul 02, 2010 - 3:03pm