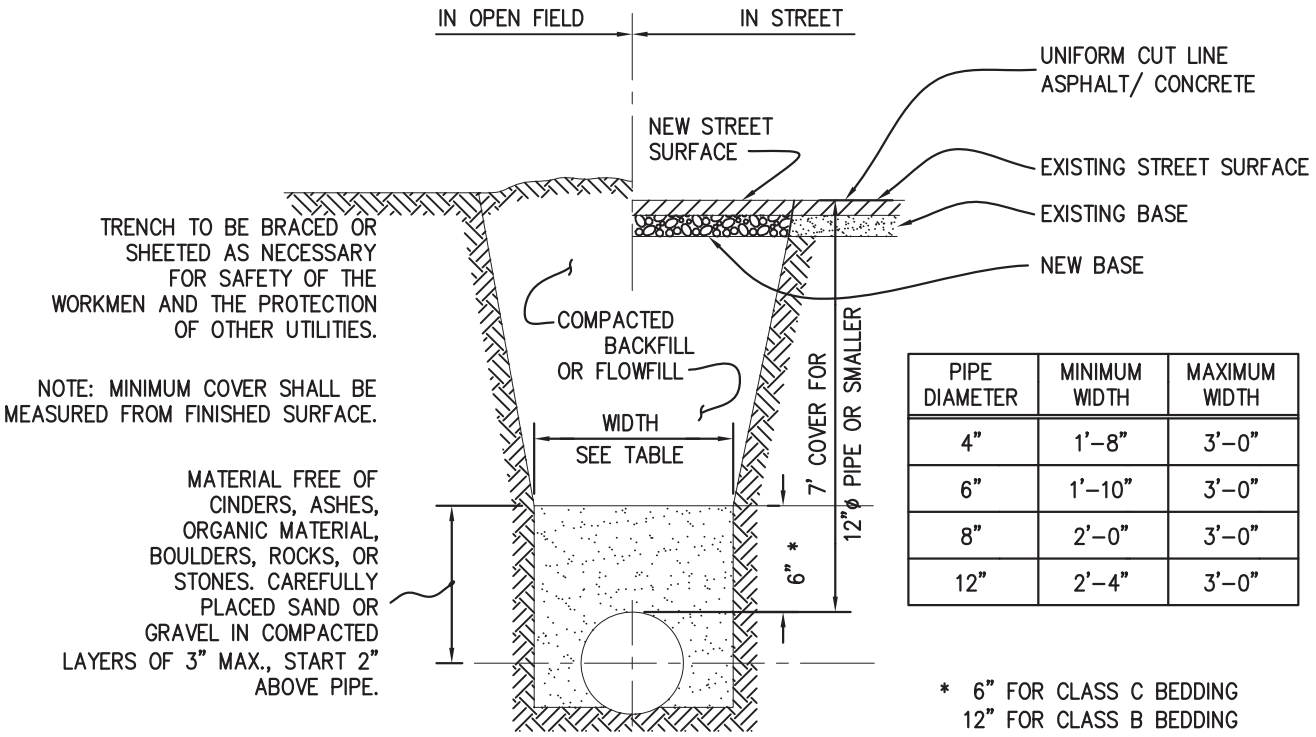
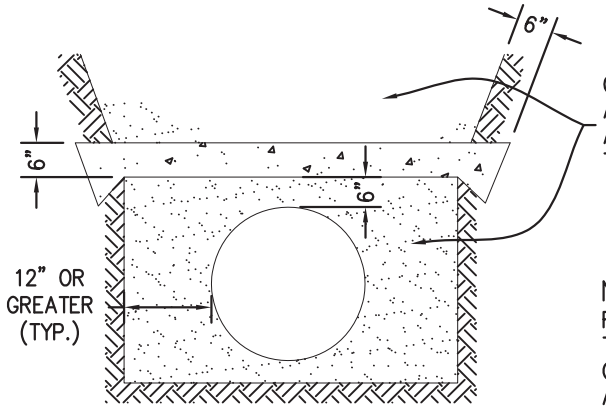


PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'–8"	3'–0"
6"	1'–10"	3'–0"
8"	2'–0"	3'–0"
12"	2'–4"	3'–0"

* 6" FOR CLASS C BEDDING
12" FOR CLASS B BEDDING

TYPICAL TRENCH SECTION



NOTE:
REFER TO TITLE 7– EXCAVATION IN THE PUBLIC RIGHT–OF–WAY FOR A COMPLETE LISTING OF EXCAVATION AND BACKFILLING PROCEDURES.

PIPE PROTECTION

WHEN TRENCH WIDTH IN EXCESS OF O.D. +24"

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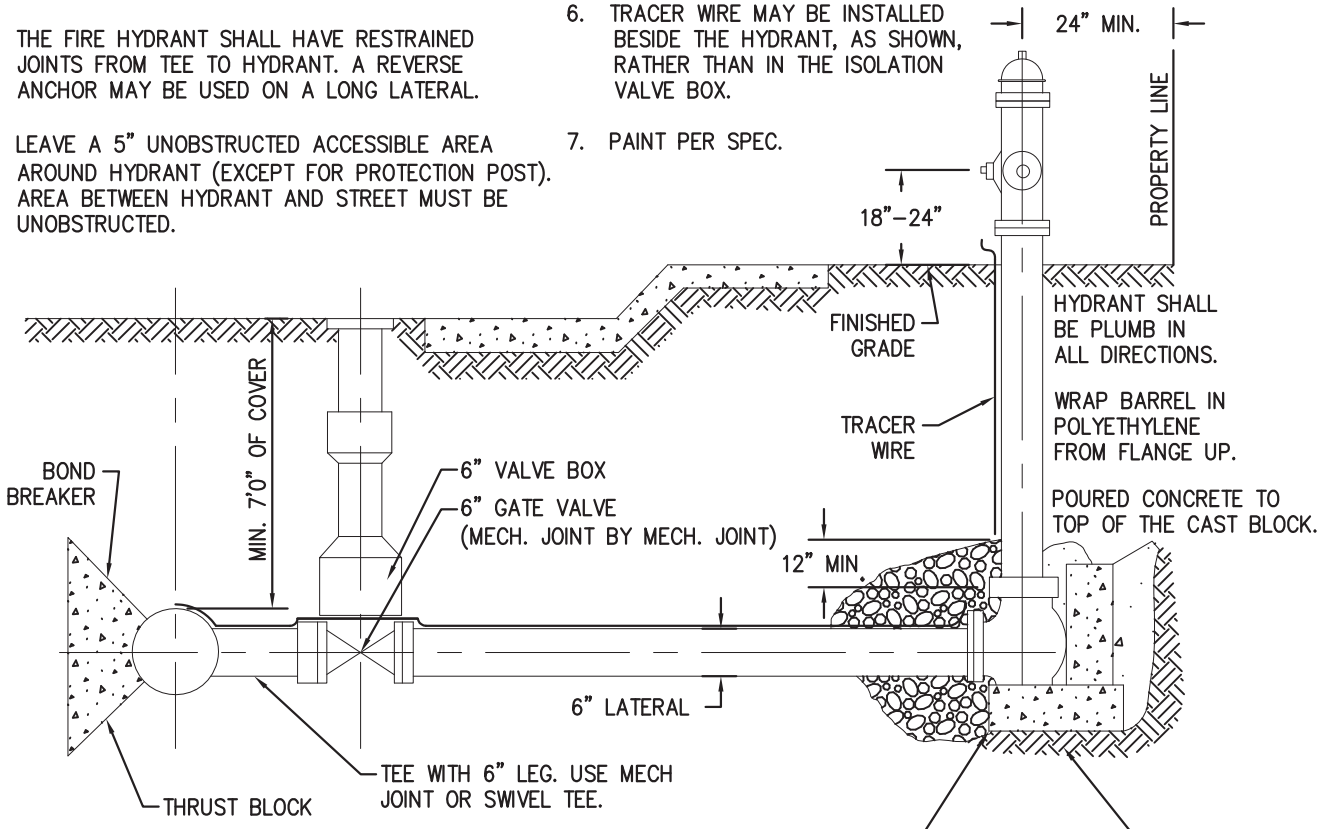
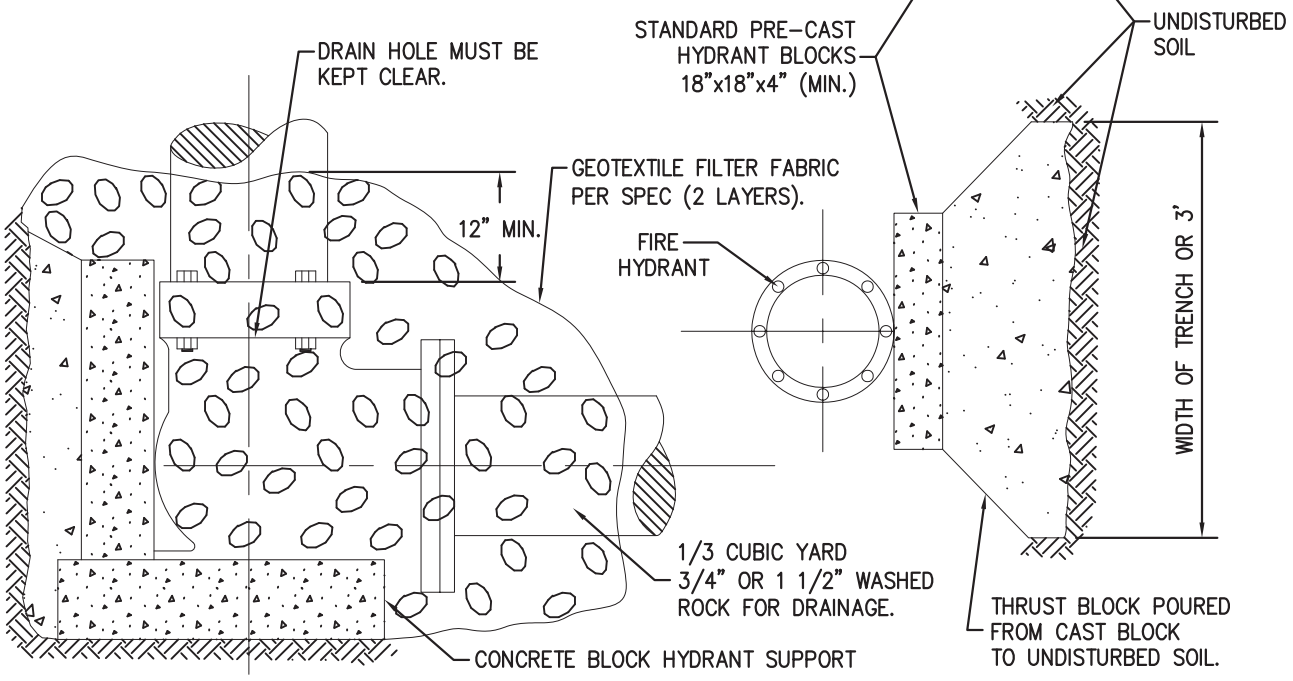
TYPICAL TRENCH SECTION PIPE PROTECTION

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.1

GENERAL NOTES:

1. DRAWING NOT TO SCALE.
2. ALL D.I. PIPE AND FITTINGS TO BE WRAPPED IN POLYETHYLENE.
3. THE FIRE HYDRANT SHALL HAVE RESTRAINED JOINTS FROM TEE TO HYDRANT. A REVERSE ANCHOR MAY BE USED ON A LONG LATERAL.
4. LEAVE A 5" UNOBSTRUCTED ACCESSIBLE AREA AROUND HYDRANT (EXCEPT FOR PROTECTION POST). AREA BETWEEN HYDRANT AND STREET MUST BE UNOBSTRUCTED.
5. ALL REQUIRED COMPONENTS ARE NOT NECESSARILY SHOWN ON EACH VIEW.
6. TRACER WIRE MAY BE INSTALLED BESIDE THE HYDRANT, AS SHOWN, RATHER THAN IN THE ISOLATION VALVE BOX.
7. PAINT PER SPEC.





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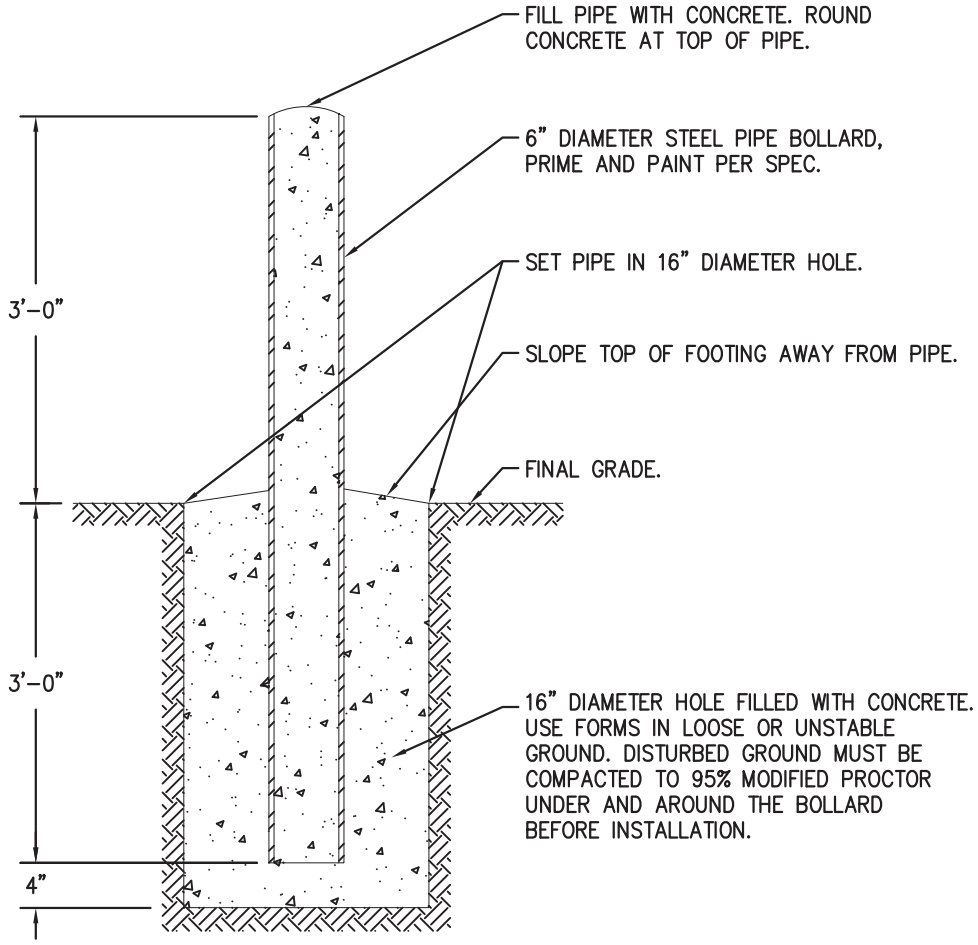
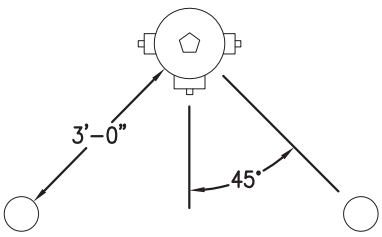
FIRE HYDRANT INSTALLATION DETAIL

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.2



PLAN VIEW:

TYPICAL SPACING



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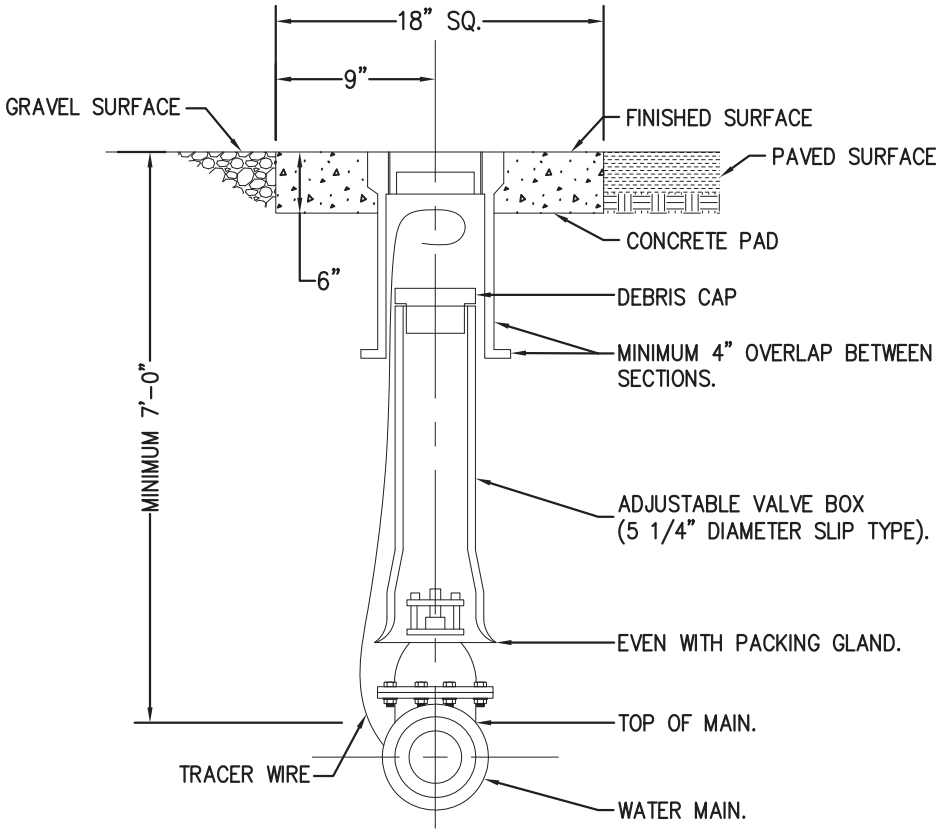
HYDRANT PROTECTION POST (BOLLARD) DETAIL

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.3



TYPICAL VALVE BOX SETTING

NOTE:
1. FOR GRAVEL SURFACE, VALVE BOX COVER AND CONCRETE PAD COLLAR SHALL BE LOCATED FLUSH WITH FINISHED GRADE.
2. FOR PAVED SURFACE, VALVE BOX COVER AND CONCRETE PAD COLLAR SHALL BE LOCATED FLUSH WITH FINISHED PAVED SURFACE.
3. FOR EASEMENTS NOT TRAVELED NOR MAINTAINED FOR VEHICULAR TRAFFIC, VALVE BOX COVER SHALL BE LOCATED EVEN WITH FINISHED GRADE.
4. REFER TO FIGURE 2.5.9 FOR TRACER WIRE DETAIL.
5. CONCRETE SHALL BE PER SPEC.

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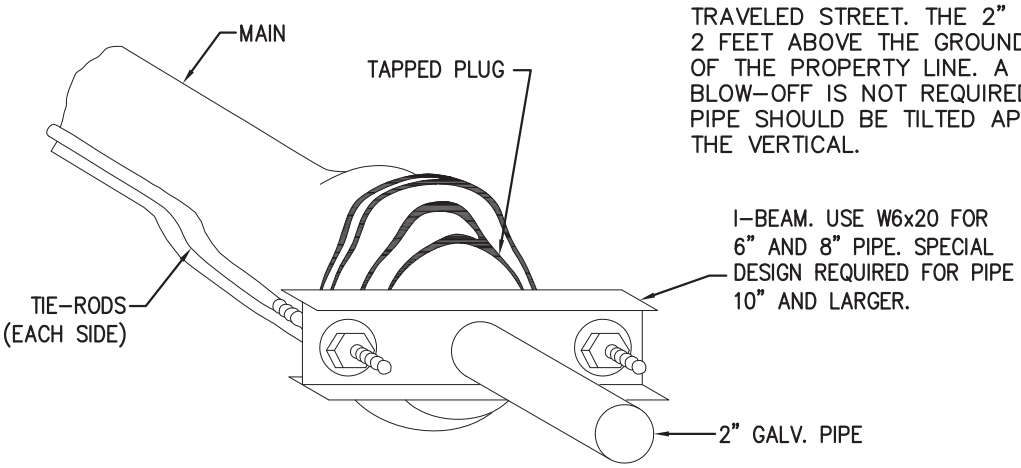
TYPICAL VALVE BOX SETTING

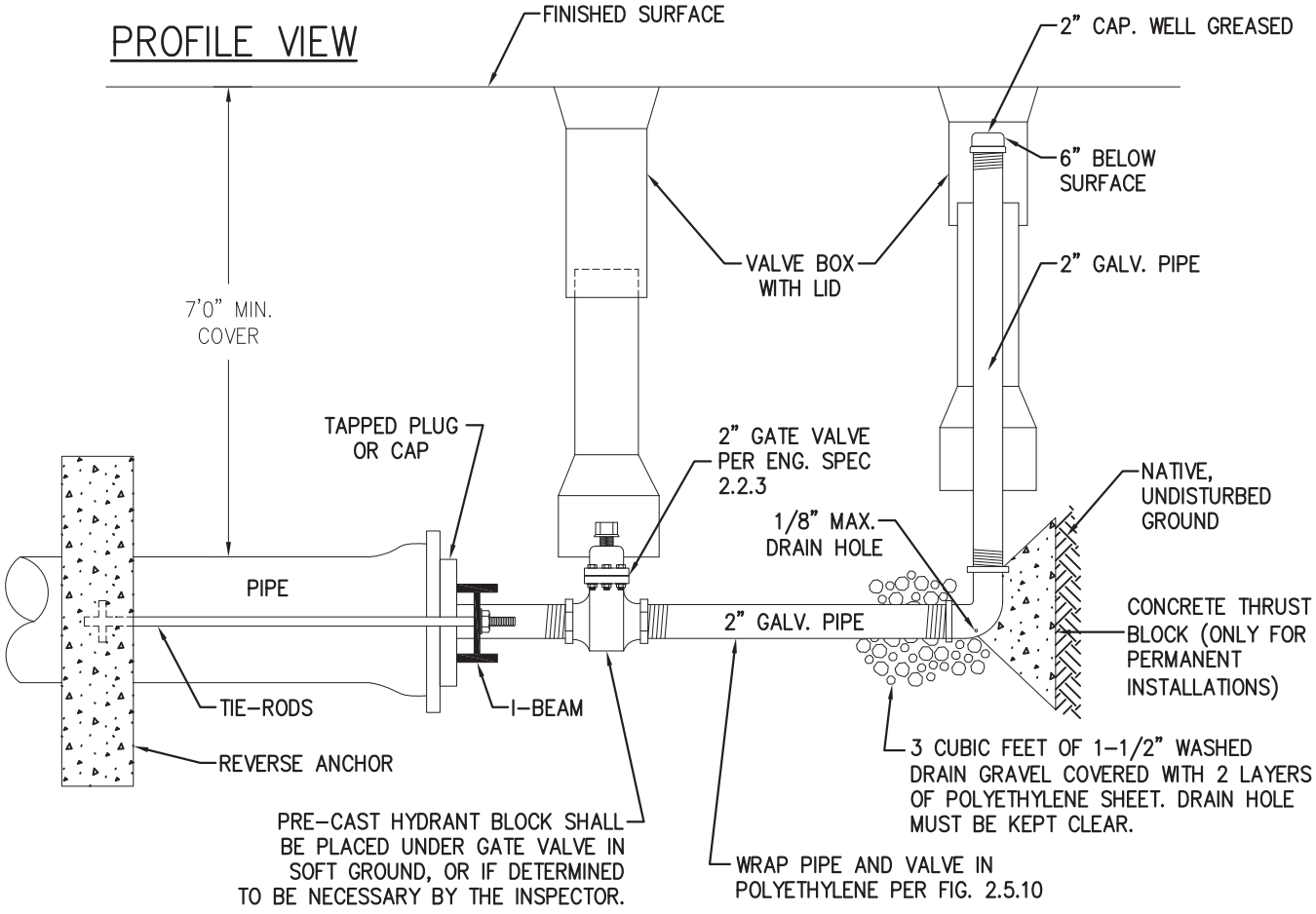
DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.4

IN CASE OF A BLOW-OFF WHICH IS NOT IN A TRAVELED STREET. THE 2" GALV. PIPE MAY PROTRUDE 2 FEET ABOVE THE GROUND SURFACE WITHIN 2 FEET OF THE PROPERTY LINE. A VALVE BOX OVER THE BLOW-OFF IS NOT REQUIRED IN THIS CASE AND THE PIPE SHOULD BE TILTED APPROXIMATELY 10° FROM THE VERTICAL.



ISOMETRIC VIEW, SHOWING PARTIAL DETAIL

PROFILE VIEW



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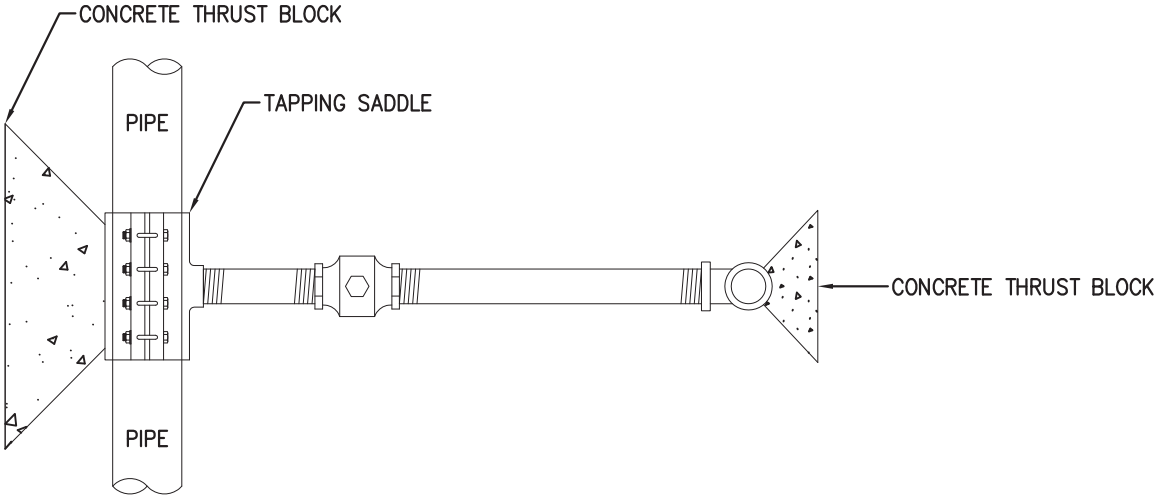
STANDARD BLOW-OFF INSTALLATION (TYPE 1)

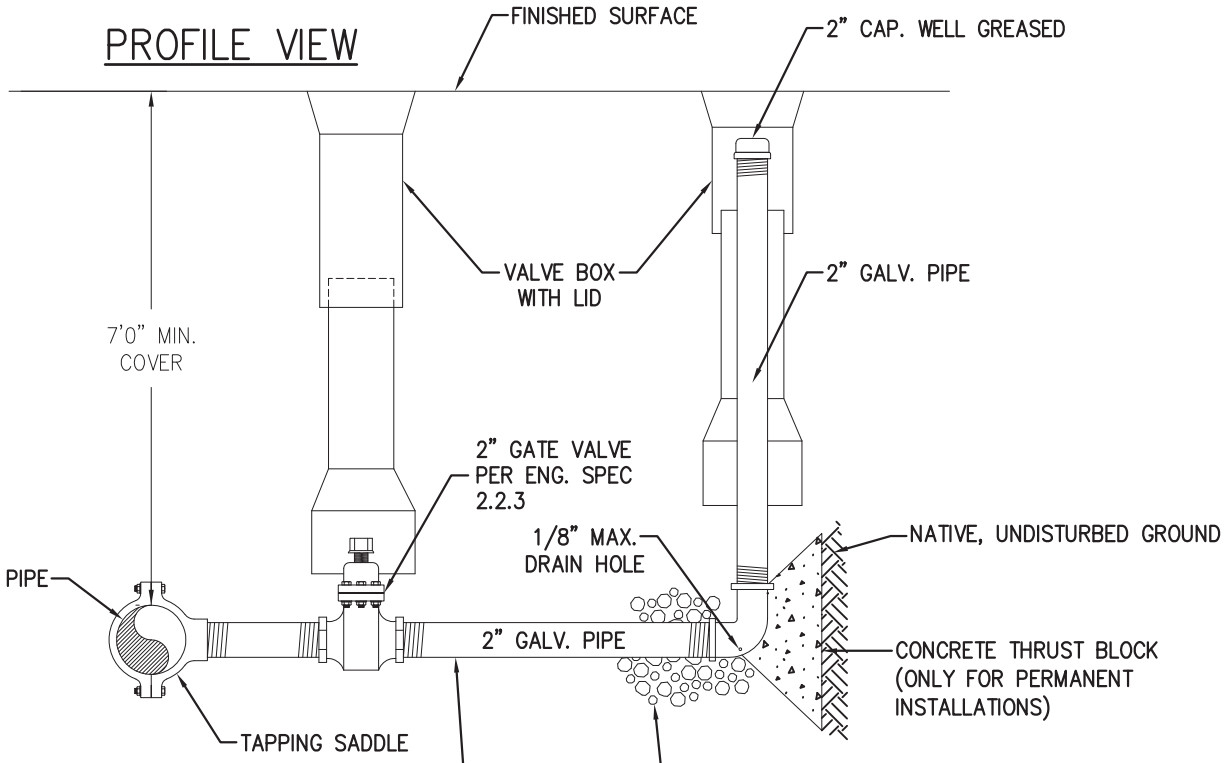
DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.5

IN CASE OF A BLOW-OFF WHICH IS NOT IN A TRAVELED STREET, THE 2" GALV. PIPE MAY PROTRUDE 2 FEET ABOVE THE GROUND SURFACE WITHIN 2 FEET OF THE PROPERTY LINE. A VALVE BOX OVER THE BLOW-OFF IS NOT REQUIRED IN THIS CASE, AND THE PIPE SHOULD BE TILTED APPROXIMATELY 10° FROM THE VERTICAL.

PLAN VIEW



PROFILE VIEW



PRE-CAST HYDRANT BLOCK SHALL BE PLACED UNDER GATE VALVE IN SOFT GROUND, OR IF DETERMINED TO BE NECESSARY BY THE INSPECTOR.

3 CUBIC FEET OF 1-1/2" WASHED DRAIN GRAVEL COVERED WITH 2 LAYERS OF POLYETHYLENE SHEET. DRAIN HOLE MUST BE KEPT CLEAR.

WRAP PIPE AND VALVE IN POLYETHYLENE PER FIG. 2.5.10

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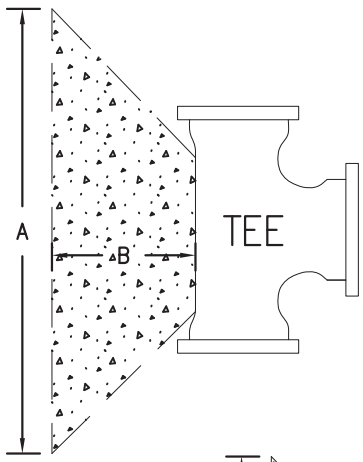
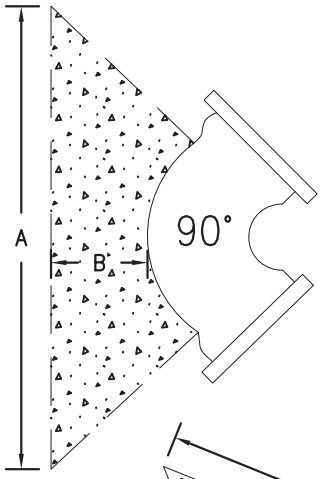
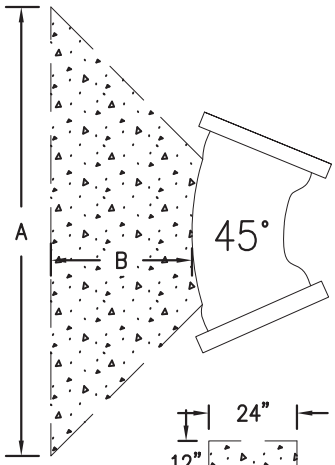
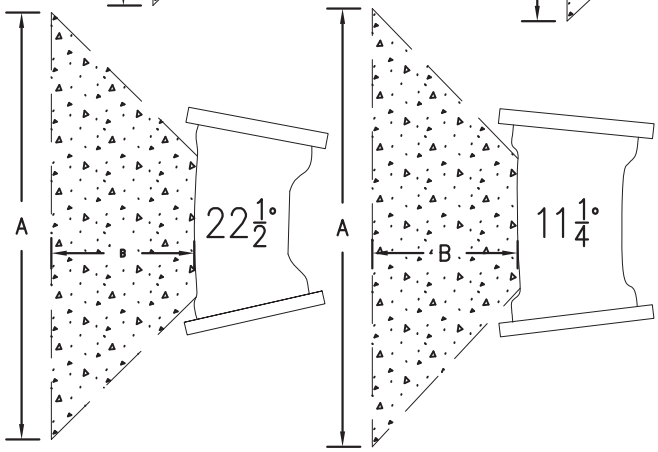
STANDARD BLOW-OFF INSTALLATION (TYPE 2)

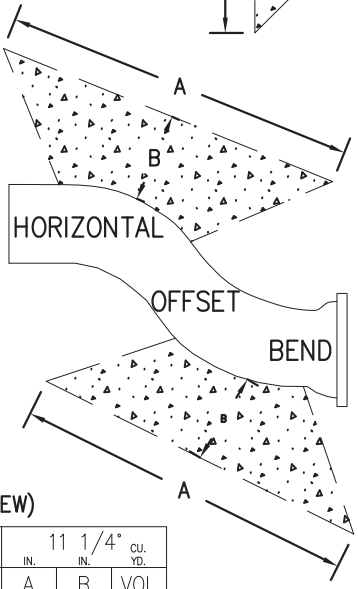
DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.6

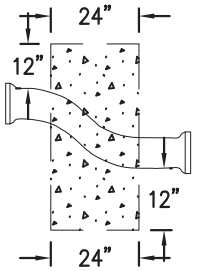








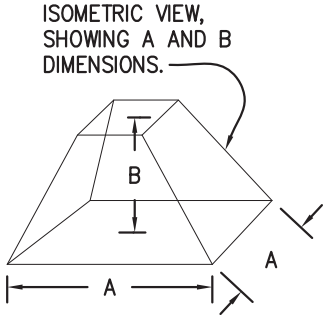




VERTICAL OFFSET DETAIL "B"

DIMENSIONS AND VOLUMES (SEE ISOMETRIC VIEW)

SIZE	TEE			90°			45°			22 1/2°			11 1/4°		
	IN. A	IN. B	CU. YD. VOL	IN. A	IN. B	CU. YD. VOL	IN. A	IN. B	CU. YD. VOL	IN. A	IN. B	CU. YD. VOL	IN. A	IN. B	CU. YD. VOL
4"	1'6"	1'6"	1/8	1'6"	1'6"	1/8	1'6"	1'6"	1/8	1'6"	1'6"	1/8	1'6"	1'6"	1/8
6"	2'0"	2'0"	1/4	2'3"	2'3"	1/4	1'8"	1'8"	1/8	1'6"	1'6"	1/8	1'6"	1'6"	1/8
8"	2'6"	2'6"	1/3	2'10"	2'10"	1/2	2'2"	2'2"	1/4	1'6"	1'6"	1/8	1'6"	1'6"	1/8
10"	3'0"	3'0"	1/2	3'6"	3'0"	3/4	2'8"	2'8"	1/3	1'10"	1'10"	1/8	1'6"	1'6"	1/8
12"	3'6"	3'0"	3/4	4'3"	3'6"	1	3'2"	3'0"	1/2	2'3"	2'3"	1/4	1'8"	1'8"	1/8
14"	4'2"	3'8"	1 1/4	5'0"	4'6"	2 1/4	3'8"	3'6"	1	2'8"	2'8"	1/2	1'10"	1'10"	1/8



NOTES:

1. THE REACTION BLOCKS ON THIS PAGE ARE DESIGNED BASED ON INTERNAL PRESSURE OF 300 PSI AND A SOIL BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT.
2. WHEN INTERNAL PRESSURES ARE LESS THAN 300 PSI AND/OR SOIL BEARING CAPACITIES ARE GREATER THAN 3000 PSF. THRUST BLOCK DIMENSIONS AND VOLUMES MAY BE ADJUSTED ACCORDINGLY. THE DESIGN ENGINEER SHALL PROVIDE THE APPROPRIATE CALCULATIONS, ALONG WITH DIMENSIONS AND VOLUMES, FOR APPROVAL BY THE CITY ENGINEER PRIOR TO ACCEPTANCE OF PLANS.
3. THRUST BLOCK SIZING SHALL BE BASED ON AN INTERNAL PRESSURE EQUAL TO THE REQUIRED TEST PRESSURE FOR THE LINE.
4. IN POOR SOIL CONDITIONS OR FOR INTERNAL PRESSURES OVER 300 PSI DIMENSIONS AND VOLUMES SHALL BE INCREASED ACCORDINGLY.
5. THE MINIMUM A AND B DIMENSIONS FOR ALL BLOCK ARE 1'6"
6. FOR HORIZONTAL OFFSETS, USE TABLE FOR 45° ELBOWS.
7. FOR VERTICAL OFFSETS, USE DETAIL "B" FOR ANCHOR.
8. THRUST BLOCK DIMENSIONS AND VOLUMES FOR DEAD ENDS SHALL BE THE SAME AS FOR TEE'S.
9. THE ABOVE VOLUMES ARE ROUNDED TO THE NEAREST PORTION OF A CUBIC YARD.
10. NUTS AND BOLTS SHALL REMAIN ACCESSIBLE AND FREE OF SPLASHED CONCRETE. A BOND BREAKER IS REQUIRED BETWEEN FITTINGS AND CONCRETE.
11. REFER TO SECTION 2.2.6 AND 2.3.10 OF THESE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
12. WRAP ALL DIP FITTINGS WITH POLYETHYLENE PER FIG. 2.5.10 PRIOR TO POURING THRUST BLOCK.

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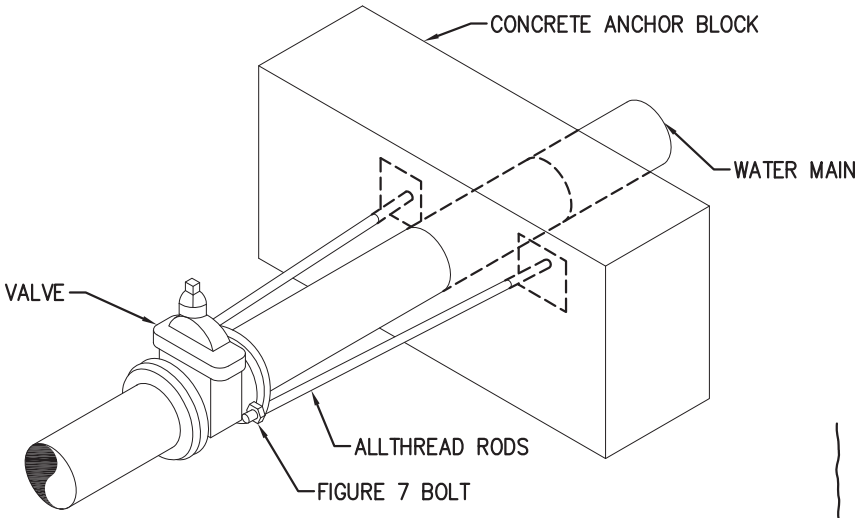
POURED CONCRETE THRUST REACTION BLOCK

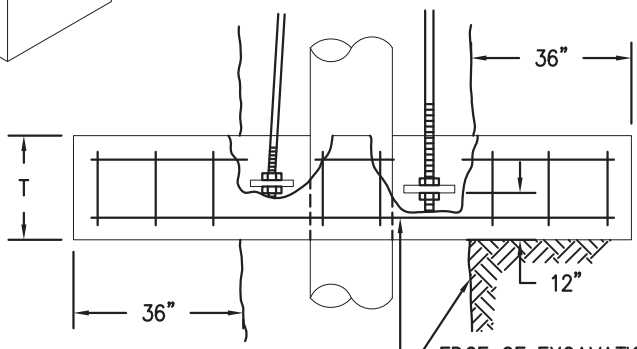
DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.7



VALVE OR TEE ANCHOR

DIMENSIONS:
T=24" FOR PIPE 12" AND UNDER
T=36" FOR PIPE OVER 12"
H=PIPE OD. +24"

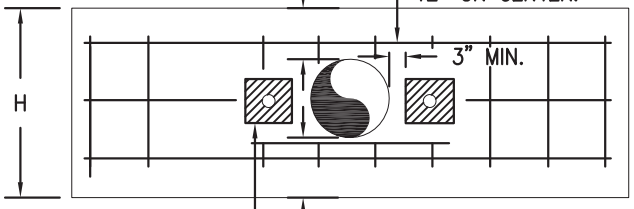
PLAN



POUR A MINIMUM OF 36" BACK INTO NATIVE GROUND.

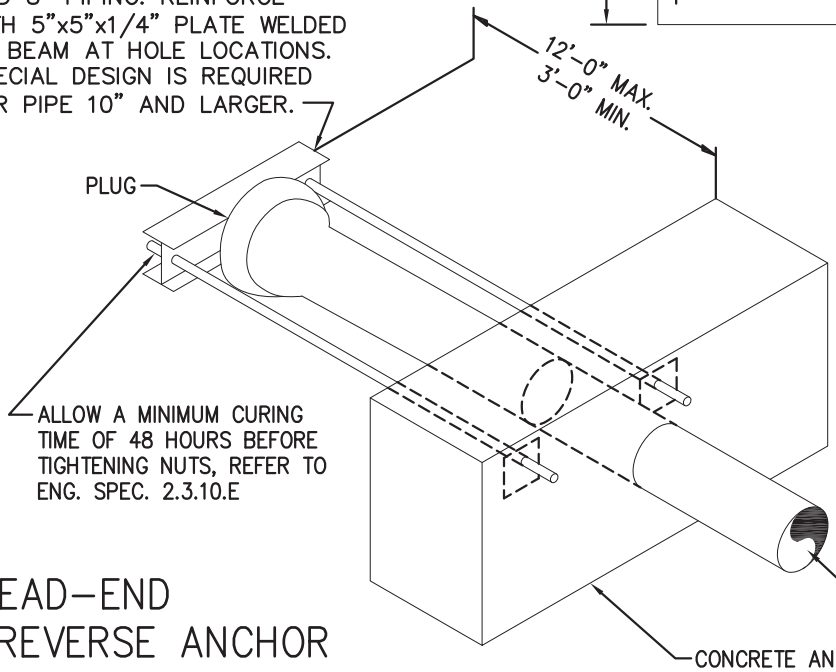
EDGE OF EXCAVATION

END PROFILE



STEEL PLATES: 6"x6"x 1/2"

USE W6x20. BEAM FOR 6" AND 8" PIPING. REINFORCE WITH 5"x5"x1/4" PLATE WELDED TO BEAM AT HOLE LOCATIONS. SPECIAL DESIGN IS REQUIRED FOR PIPE 10" AND LARGER.



REQUIRED NUMBER OF 3/4" TIE-RODS:

DR 18, 10" AND UNDER:	2
DR 18, 12" AND OVER:	4
DR 14, 8" AND UNDER:	2
DR 14, 10" AND OVER:	4

TIE-RODS SHALL BE STAINLESS STEEL OR PLATED. ALLTHREAD IS ACCEPTABLE.

DEAD-END REVERSE ANCHOR

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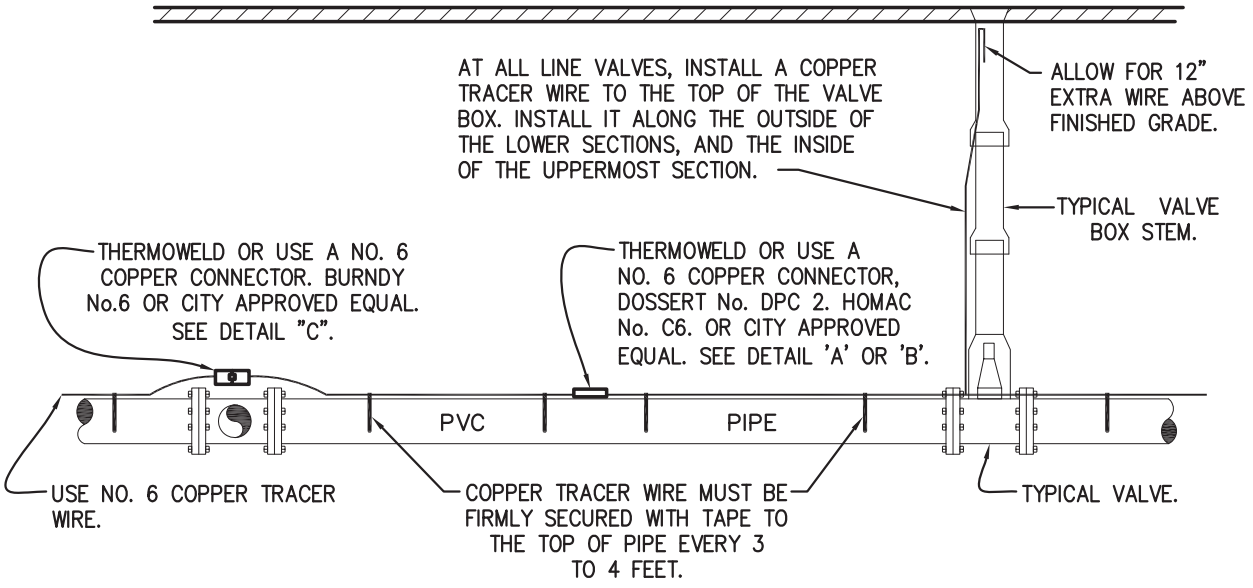
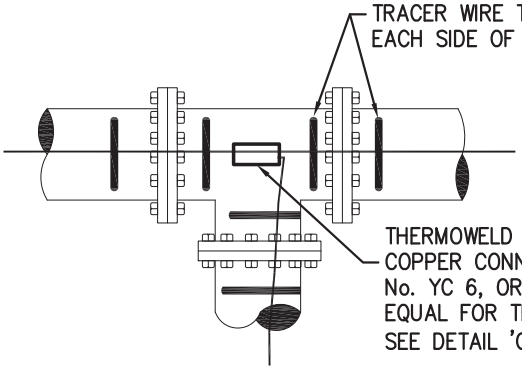
REVERSE ANCHOR DETAIL

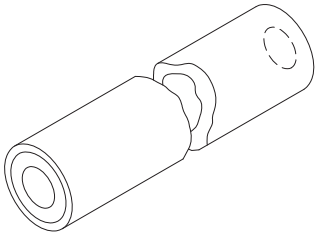
DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.8



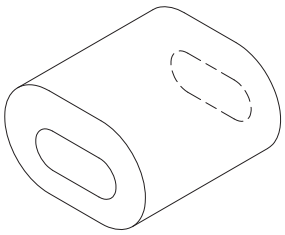


NOTE:
1. ALL CONNECTIONS SHALL BE SECURELY WRAPPED WITH ELECTRICAL TAPE FOR AT LEAST 3 INCHES ON ALL SIDES OF THE CONNECTOR.

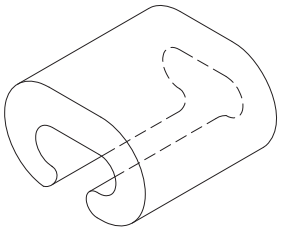
COPPER CONNECTORS



DETAIL "A"



DETAIL "B"



DETAIL "C"

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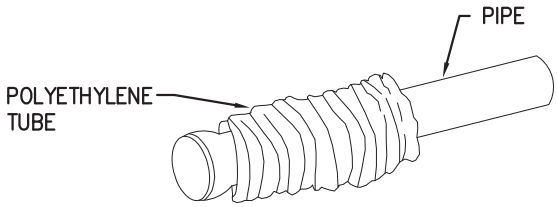
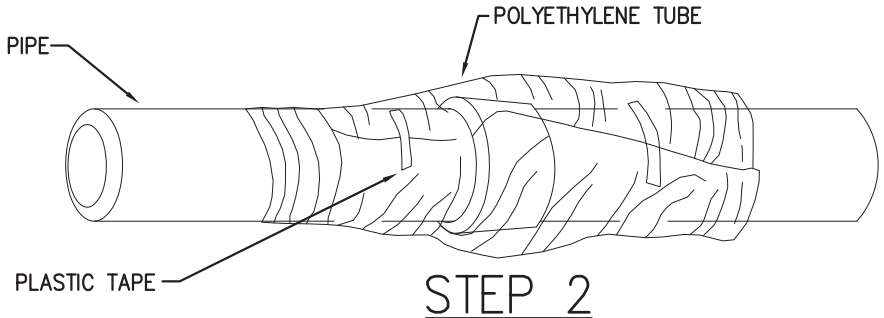
COPPER TRACER WIRE DETAILS

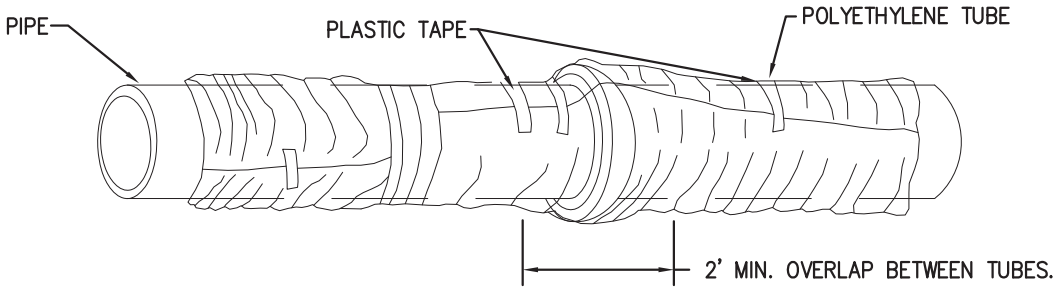
DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.9



STEP 1



STEP 2



STEP 3

STEP 1–PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2–PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.

STEP 3–OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

POLYETHYLENE WRAP SHALL BE IN CONFORMANCE WITH ANSI/AWWA C105/A21.5

ALL OPENINGS SUCH AS OVERLAP, RIPS AND PUNCTURES SHALL BE SEALED WITH POLYETHYLENE COMPATIBLE ADHESIVE TAPE.

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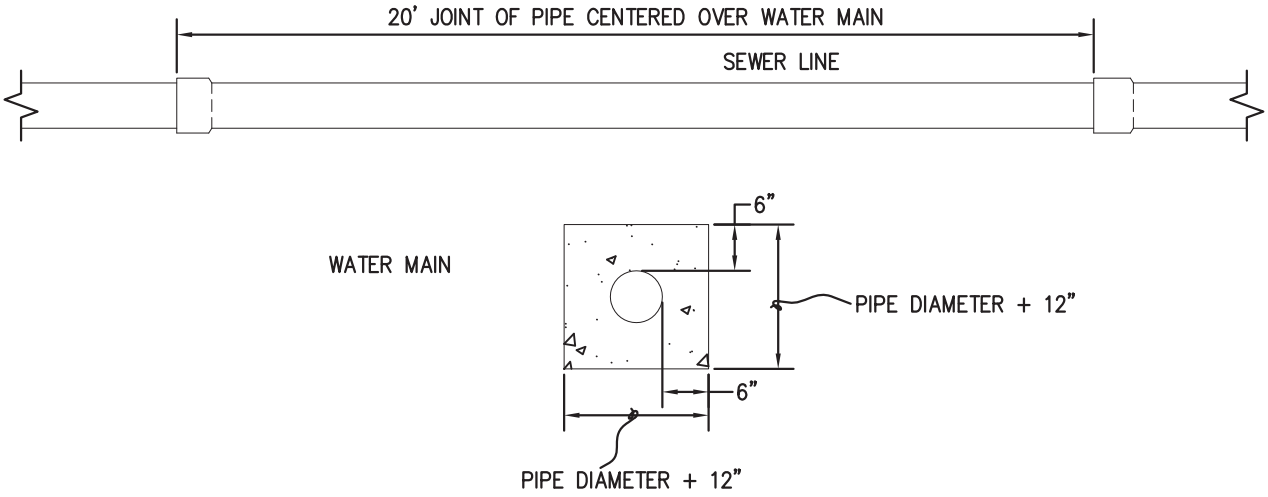
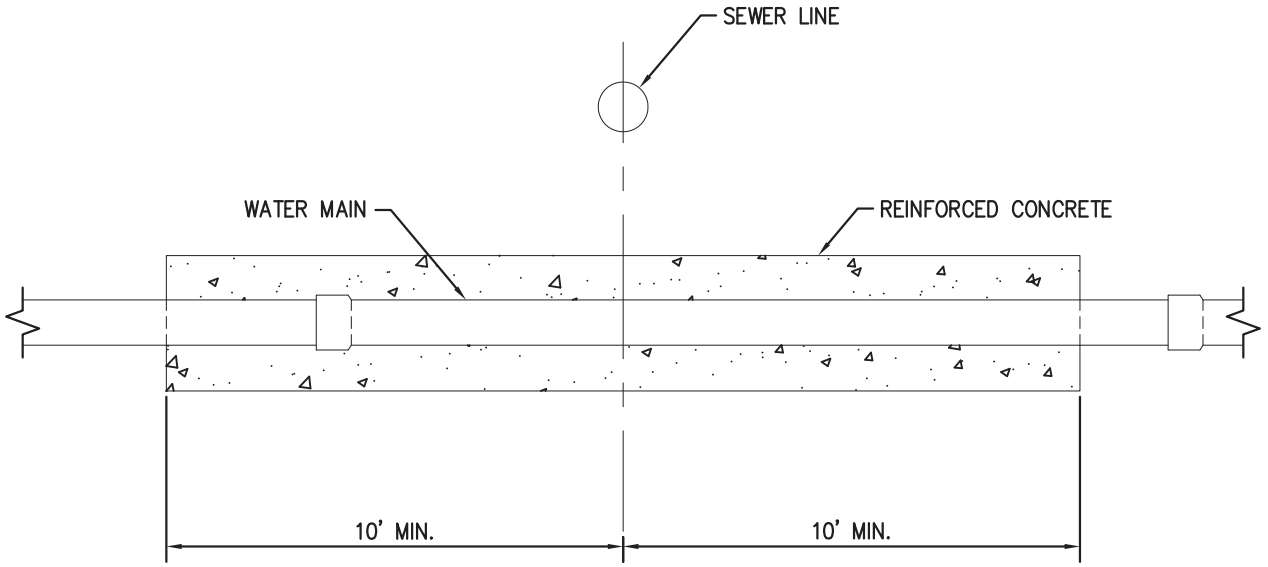
POLYETHYLENE WRAP

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.10



END VIEW

NOTE: A 6" THICK REINFORCED CONCRETE ENCASEMENT MAY BE USED IN PLACE OF THE CENTERED 20' JOINT. SAID ENCASEMENT SHALL EXTEND AT LEAST 10' (FT) ON EACH SIDE OF WATER MAIN.



SIDE VIEW

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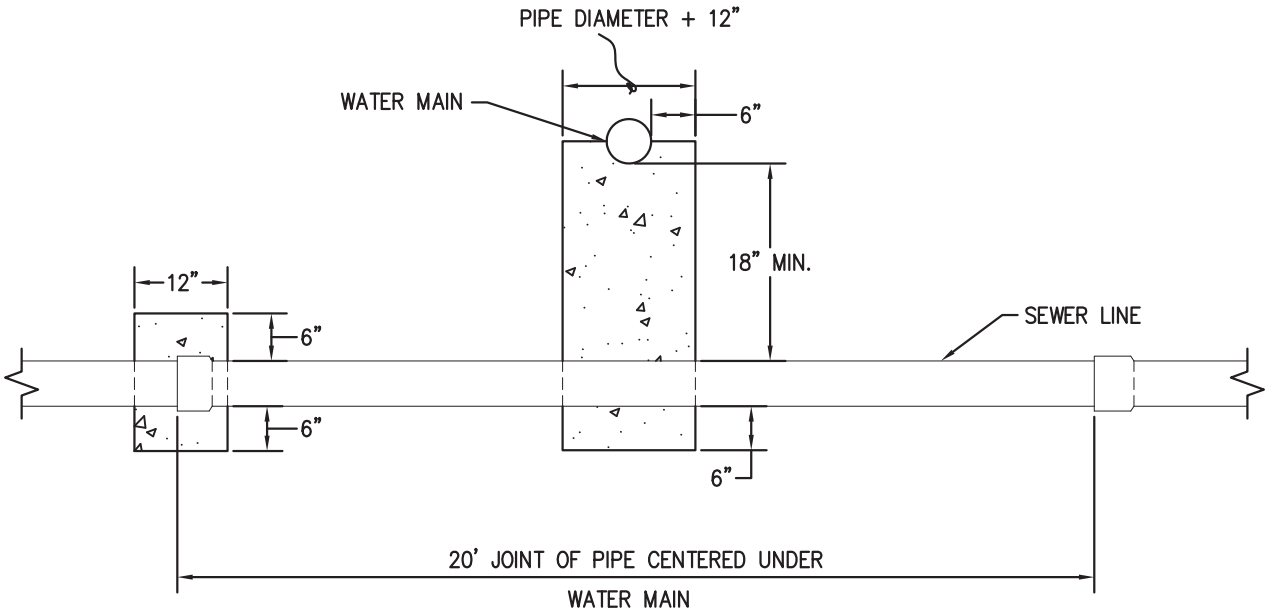
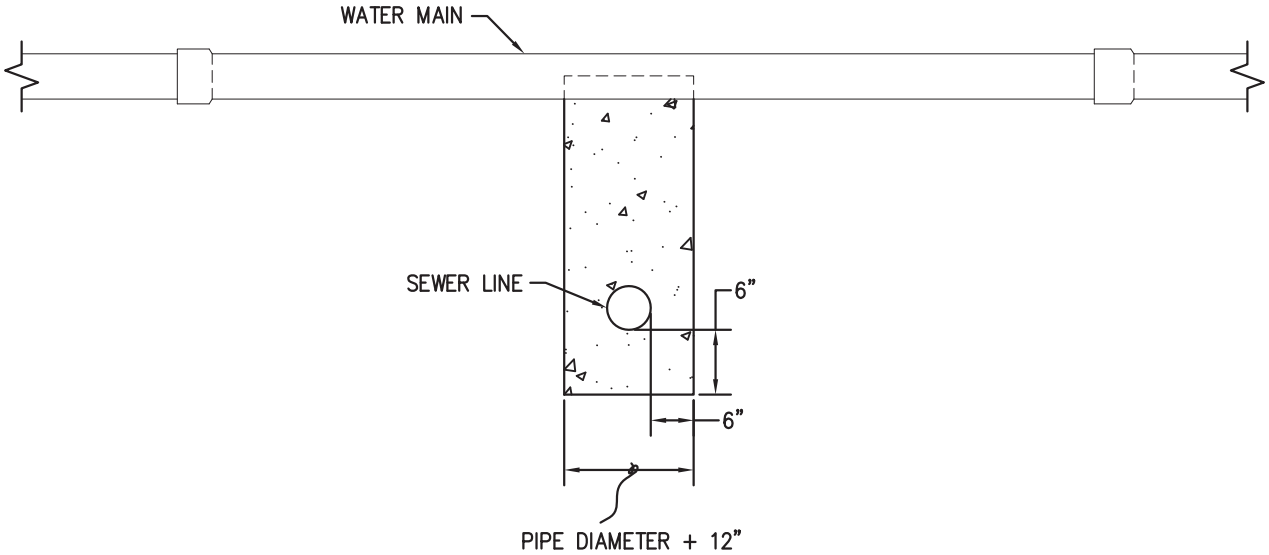
WATER & SEWER CROSSING (TYPE I)

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.11



END VIEW

NOTE: A 6" THICK REINFORCED CONCRETE ENCASEMENT MAY BE USED IN PLACE OF THE CENTERED 20' JOINT OF SEWER PIPE. SAID ENCASEMENT SHALL EXTEND AT LEAST 10' (FT.) ON EACH SIDE OF WATER MAIN.



SIDE VIEW

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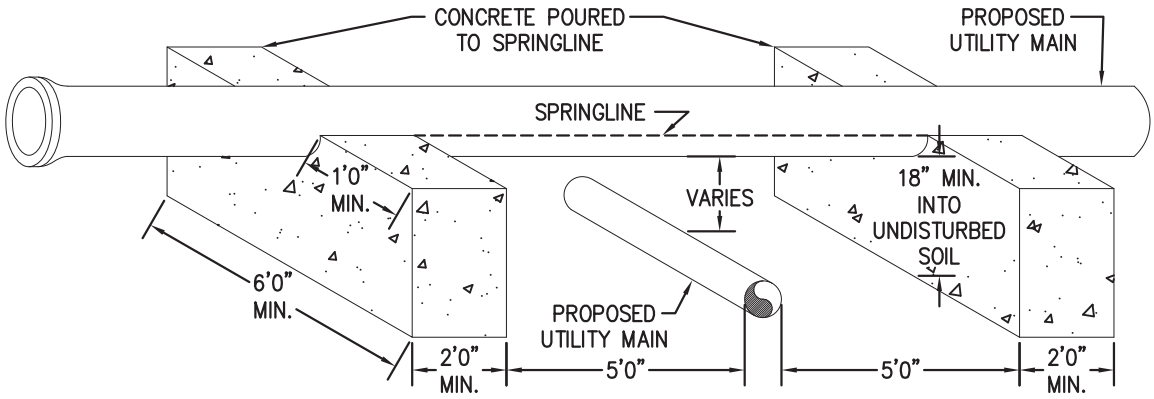
WATER & SEWER CROSSING (TYPE II)

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.12



NOTE: 1. BLOCKS SHALL BE REINFORCED WITH NO. 6 REBAR, SET ON 12" CENTERS.

2. NO JOINTS OF UTILITY MAIN ARE ALLOWED BETWEEN THE CONCRETE BRIDGING BLOCKS.

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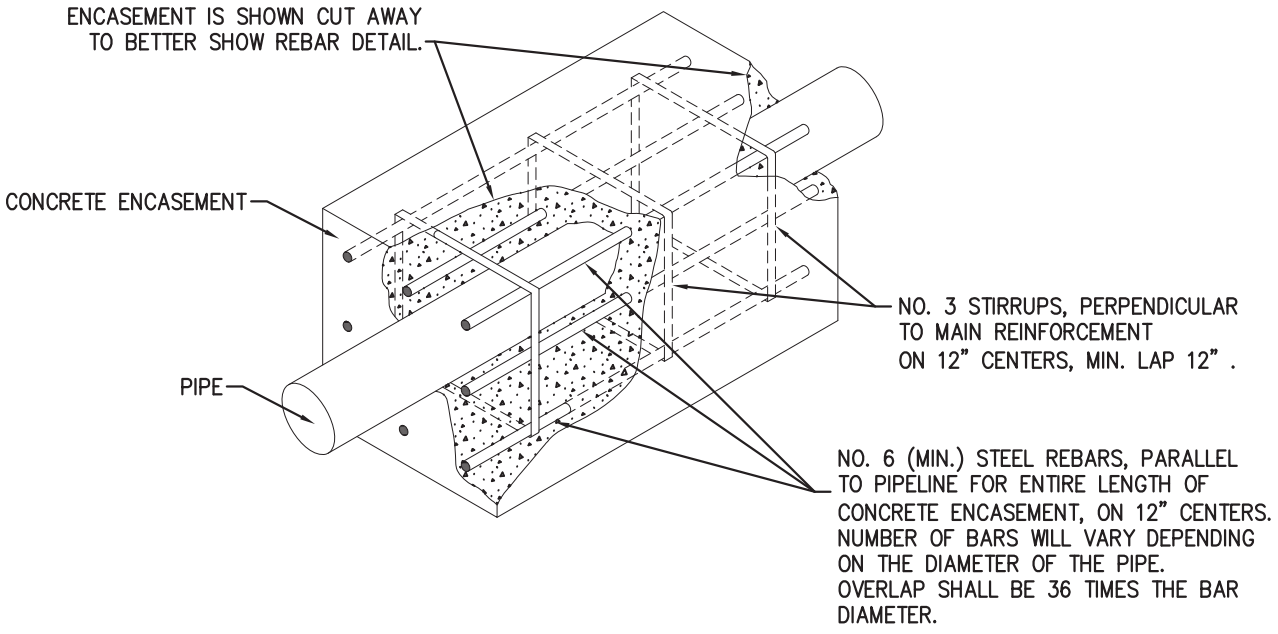
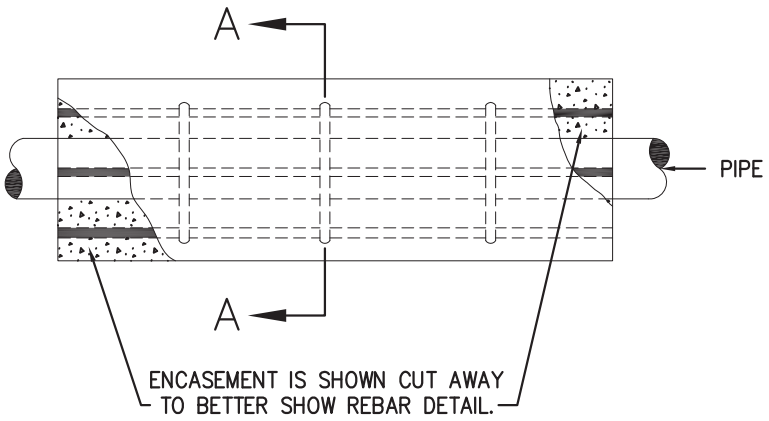
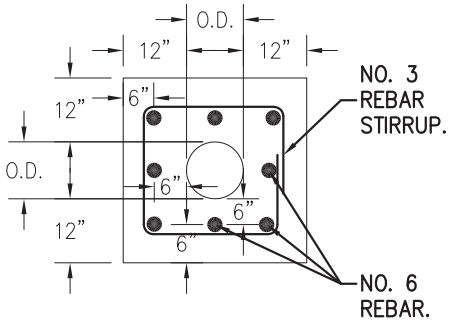
BRIDGING DETAIL

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.13





PROFILE VIEW



CROSS SECTION A–A

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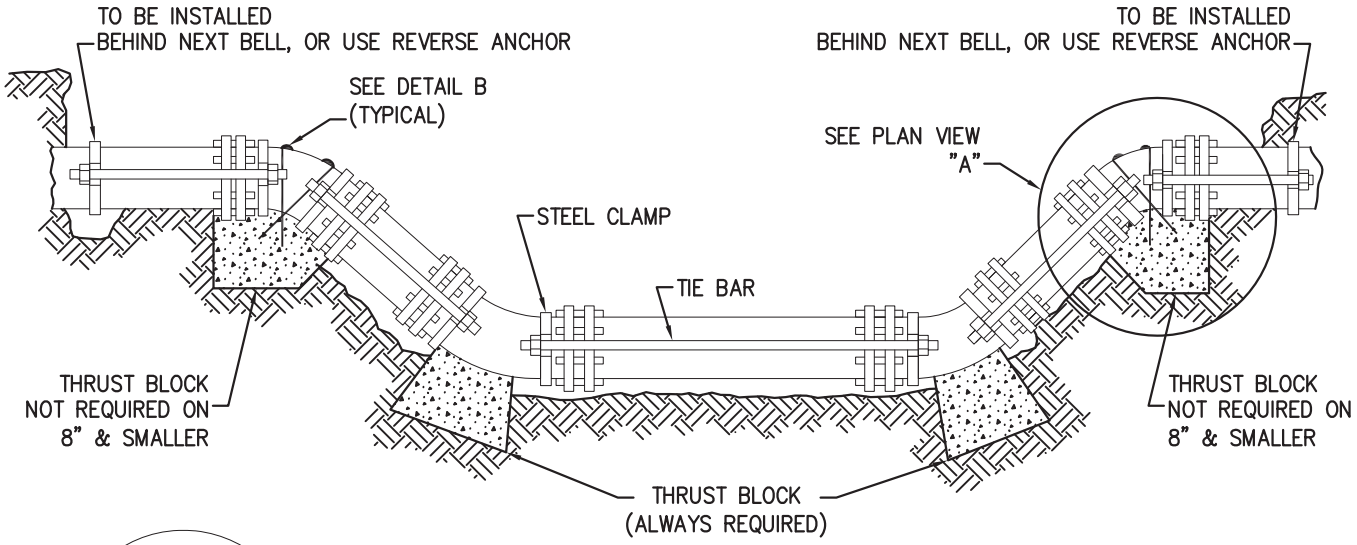
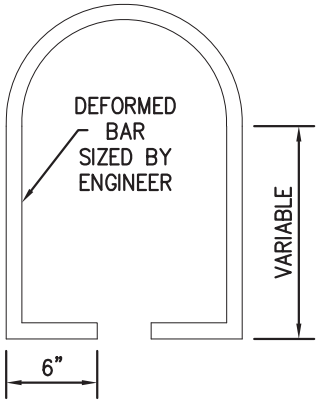
REINFORCED CONCRETE ENCASEMENT DETAIL

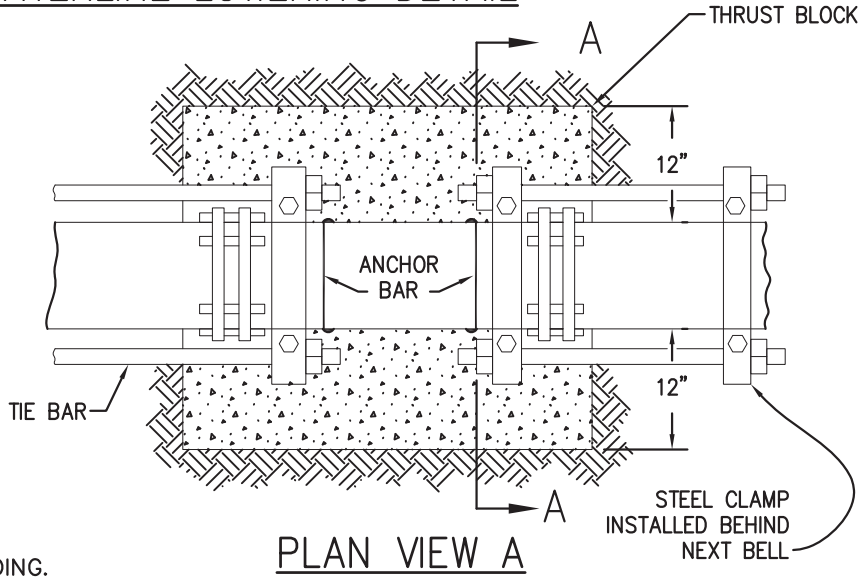
DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.14



WATERLINE LOWERING DETAIL



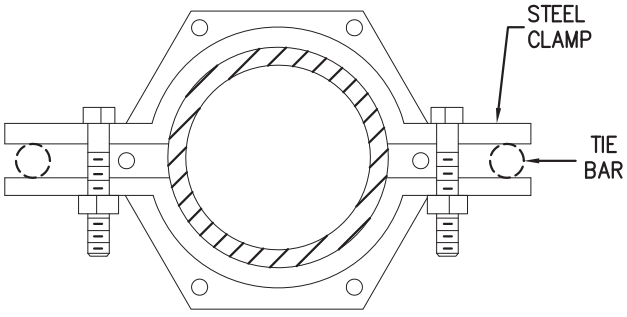
DETAIL B
ANCHOR BAR



PLAN VIEW A

NOTES

1. CLAMPS SHALL BE USED FOR RODDING.
2. ALL PIPES & RODS SHALL BE WRAPPED SEPARATELY IN POLYETHYLENE.
3. 45° FITTINGS SHALL BE USED.
4. ALL MATERIALS & CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WOODLAND PARK ENGINEERING SPECIFICATIONS FOR WATERLINE CONSTRUCTION.
5. THERE SHALL BE A MINIMUM CLEARANCE OF 18" BETWEEN WATERLINE & ANY NEW CONSTRUCTION.
6. FITTINGS SHALL BE RODDED TO THE NEXT BELL.
7. NO JOINTS SHALL BE ALLOWED BETWEEN THE FITTINGS.
8. NUMBER & SIZE OF RODS TO BE DETERMINED BY THE ENGINEER.
9. REFER TO FIG. 2.5.16 FOR PIPE CLAMP AND LUG WASHER DETAIL.



SECTION A–A
STEEL CLAMP

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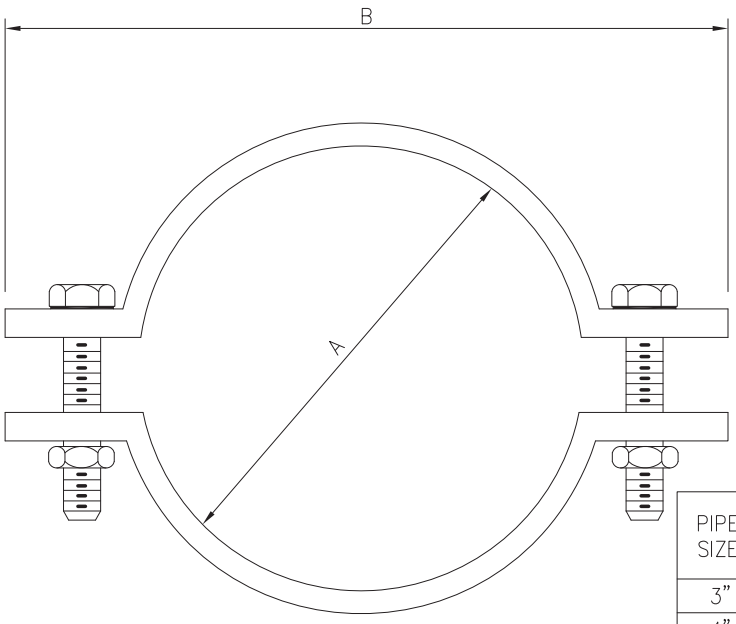
WATERLINE LOWERING DETAIL

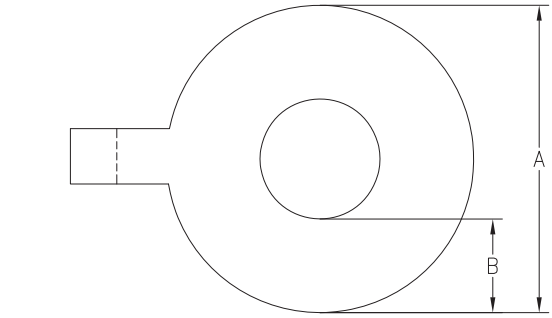
DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.15

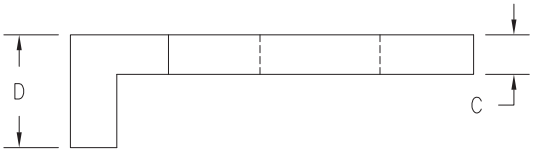


MATERIAL : STEEL
FUNCTION : CLAMP IS USED FOR UNDERGROUND A.W.W.A. CAST IRON WATER PIPE TO PREVENT JOINTS FROM SEPARATING.
COMPONENTS: TWO HALF CLAMPS & TWO BOLTS WITH NUTS–ASSEMBLED.
FINISH: GALVANIZED OR PLAIN (MUST BE WRAPPED IN POLYETHYLENE)

UNDERGROUND CLAMP

PIPE SIZE	A	B	BOLT SIZE	STOCK SIZE	RECOM. TIE–ROD SIZE
3"	3.94	10 7/8	5/8	3/8 x 2	3/4
4"	4.80	12	5/8	1/2 x 2	3/4
6"	6.90	14 5/16	5/8	1/2 x 2	3/4
8"	9.05	15 7/16	5/8	1/2 x 2	3/4
10"	11.10	19 3/16	5/8	1/2 x 2	3/4
12"	13.20	21 7/16	5/8	1/2 x 2	3/4
14"	15.30	26 7/16	7/8	3/4 x 3	1
16"	17.40	28 7/8	1	3/4 x 4	1 1/8
18"	19.50	31 1/4	1 1/4	3/4 x 4	1 1/4
20"	21.60	35 1/4	1 1/4	3/4 x 4 1/2	1 3/8
24"	25.80	39 1/4	1 1/2	3/4 x 5	1 1/2





LUG WASHER

MATERIAL : STEEL
FUNCTION : USE WITH UNDERGROUND CLAMP WHEN THE RODS ARE REQUIRED. THE PROJECTING LUG BEARS AGAINST THE CLAMP BOLT TO PREVENT WASHER AND TIE ROD FROM SLIPPING OFF CLAMP.
FINISH: PLAIN (MUST BE WRAPPED) OR GALVANIZED

ROD SIZE	A	B	C	D
3/4	2 3/4	7/8	9/16	1 5/8
1	3 3/4	1 1/4	11/16	3 1/4
1 1/4	3 3/4	1 3/8	11/16	3 1/4
1 3/8	3 3/4	1 1/2	11/16	3 1/4
1 1/2	3 3/4	1 5/8	11/16	3 1/4

NOTES:

1. CLAMPS SHALL BE USED FOR ALL HARNESS RODDING.
2. STAINLESS STEEL OR GALVANIZED NUTS, BOLTS AND RODS ARE REQUIRED.
3. "ELCAR" OR APPROVED EQUAL SHALL BE USED.
4. TIE ROD SIZE SHALL BE IN ACCORDANCE WITH THE TABLE UNLESS OTHERWISE SPECIFIED.

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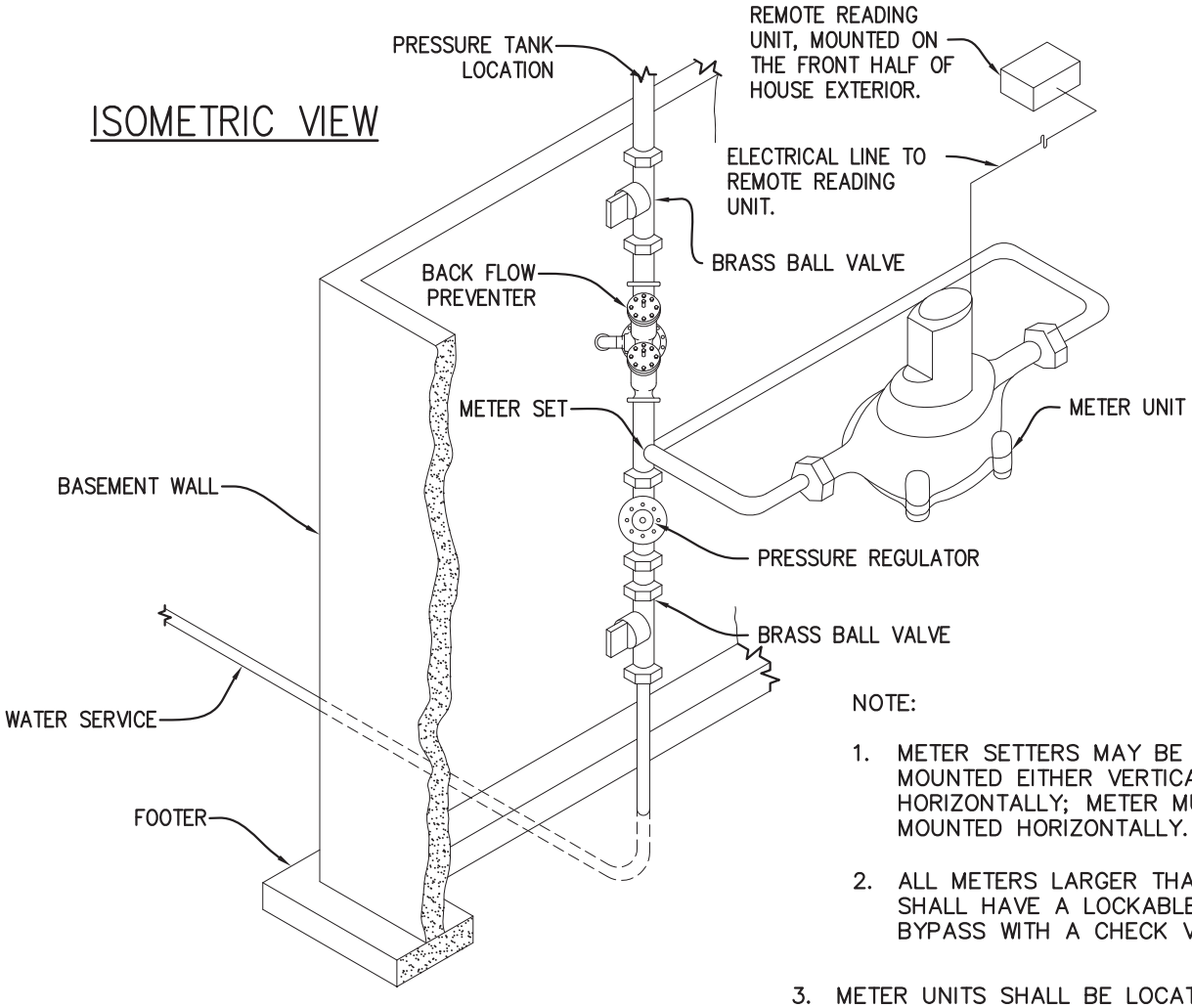
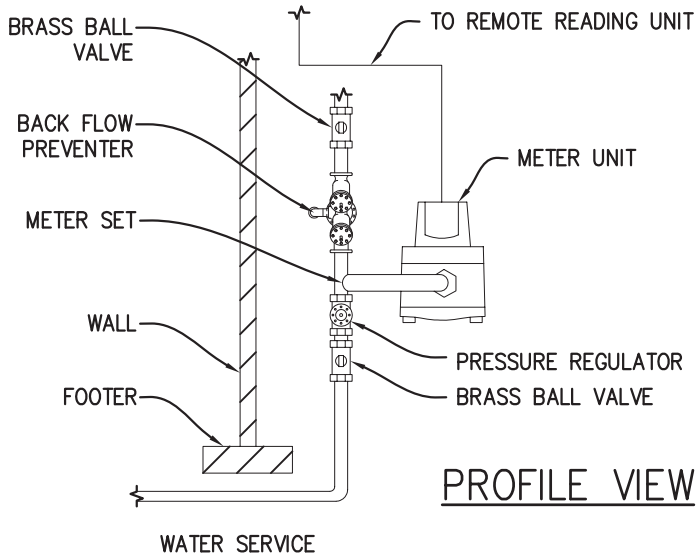
WATERLINE STANDARD DETAIL
PIPE CLAMP

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.16

ISOMETRIC VIEW





PROFILE VIEW

NOTE:

1. METER SETTERS MAY BE MOUNTED EITHER VERTICALLY OR HORIZONTALLY; METER MUST BE MOUNTED HORIZONTALLY.
2. ALL METERS LARGER THAN 1" SHALL HAVE A LOCKABLE BYPASS WITH A CHECK VALVE.
3. METER UNITS SHALL BE LOCATED AS FAR AWAY FROM CRAWL SPACE VENTS AS POSSIBLE TO PREVENT FREEZING.
4. WATER SERVICE LINES MAY COME THRU THE BASEMENT WALL OR UNDER THE FOOTER, AS LONG AS 7 FEET OF COVER IS MAINTAINED OUTSIDE.
5. ALL SERVICE INSTALLATIONS SHALL BE PROVIDED WITH BACKFLOW DEVICE PER STATE DEPARTMENT OF HEALTH CROSS CONNECTION MANUAL. RESIDENTIAL BACKFLOW PROTECTION SHALL BE PROVIDED IN THE METER SETTER.
6. ALL IN-BUILDING WATER PLUMBING SYSTEMS SHALL BE EQUIPPED WITH A PROPERLY SIZED EXPANSION TANK TO PREVENT OVER-PRESSURING DUE TO THERMAL EXPANSION.

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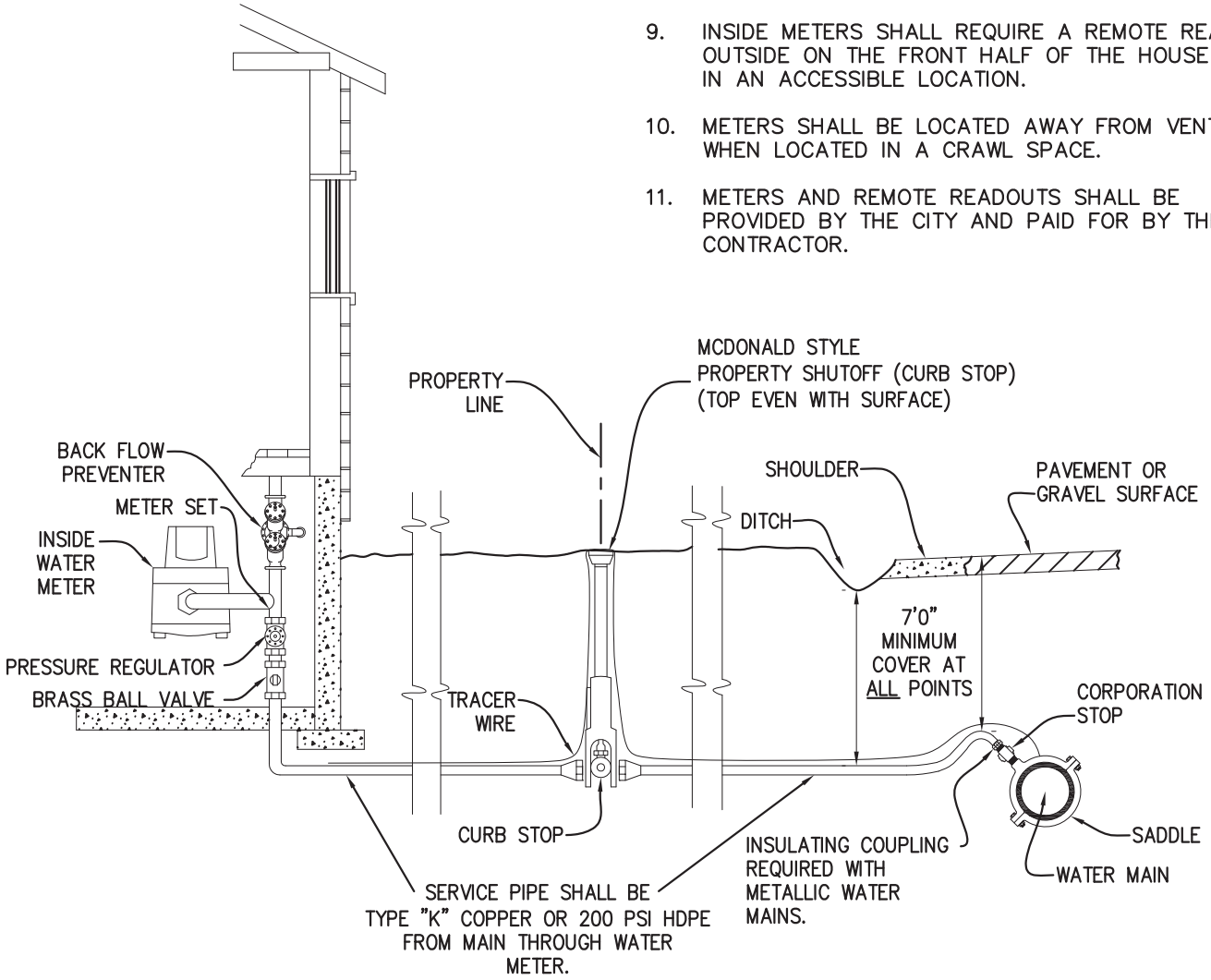
REMOTE READING WATER METER TYPICAL INSIDE SETTING

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.17

NOTE:

1. TAP LOCATION MUST BE RECORDED ON AS-BUILT PLANS, AND SUBMITTED TO THE CITY.
2. SERVICE LINE MUST RUN AT RIGHT ANGLES TO THE PROPERTY LINE FROM THE MAIN TO THE PROPERTY SHUT OFF.
3. ALL TAPS TO WATER MAIN SHALL BE MADE ACCORDING TO THE PIPE MANUFACTURER'S SPECIFICATIONS AND CITY ENGINEERING SPECIFICATIONS. A SADDLE SHALL BE USED. ALL TAPPING PROCEDURES SHALL BE APPROVED BY THE CITY ENGINEER.
4. TAPE END OF CURB STOP TO KEEP DIRT OUT. CONTRACTOR SHALL INSTALL SERVICE LINES UP TO PROPERTY LINE INCLUDING CURB STOP AND RISER. THE CITY SHALL INSPECT AND APPROVE THIS CONSTRUCTION.
5. BACKFILL AND COMPACTION OVER SERVICE LINE SHALL CONFORM TO CITY ENGINEERING SPECIFICATIONS FOR WATER MAIN INSTALLATION.
6. FOR MULTIPLE TAPS ON ONE PIPE, THE TAPS SHALL BE STAGGERED AND NO CLOSER THAN 18 INCHES APART MEASURED LONGITUDINALLY.
7. TAP SHALL BE LOCATED AT 18 INCHES FROM THE SPIGOT END OF THE PIPE; ALSO COMPLETELY WRAP THE TAP AND THREAD OF THE CORPORATION STOP WITH TWO LAYERS OF TEFLON PIPE THREAD TAPE. DO NOT USE PIPE DOPE. TIGHTEN CORPORATION STOP USING A TORQUE WRENCH TO 27 FOOT-POUNDS.
8. ANY METER INSTALLATION LARGER THAN ONE INCH SHALL REQUIRE A BYPASS WITH A LOCKING DEVICE AND A BACKFLOW PREVENTION DEVICE PER STATE DEPARTMENT OF HEALTH CROSS CONNECTION MANUAL.
9. INSIDE METERS SHALL REQUIRE A REMOTE READ OUTSIDE ON THE FRONT HALF OF THE HOUSE IN AN ACCESSIBLE LOCATION.
10. METERS SHALL BE LOCATED AWAY FROM VENTS WHEN LOCATED IN A CRAWL SPACE.
11. METERS AND REMOTE READOUTS SHALL BE PROVIDED BY THE CITY AND PAID FOR BY THE CONTRACTOR.



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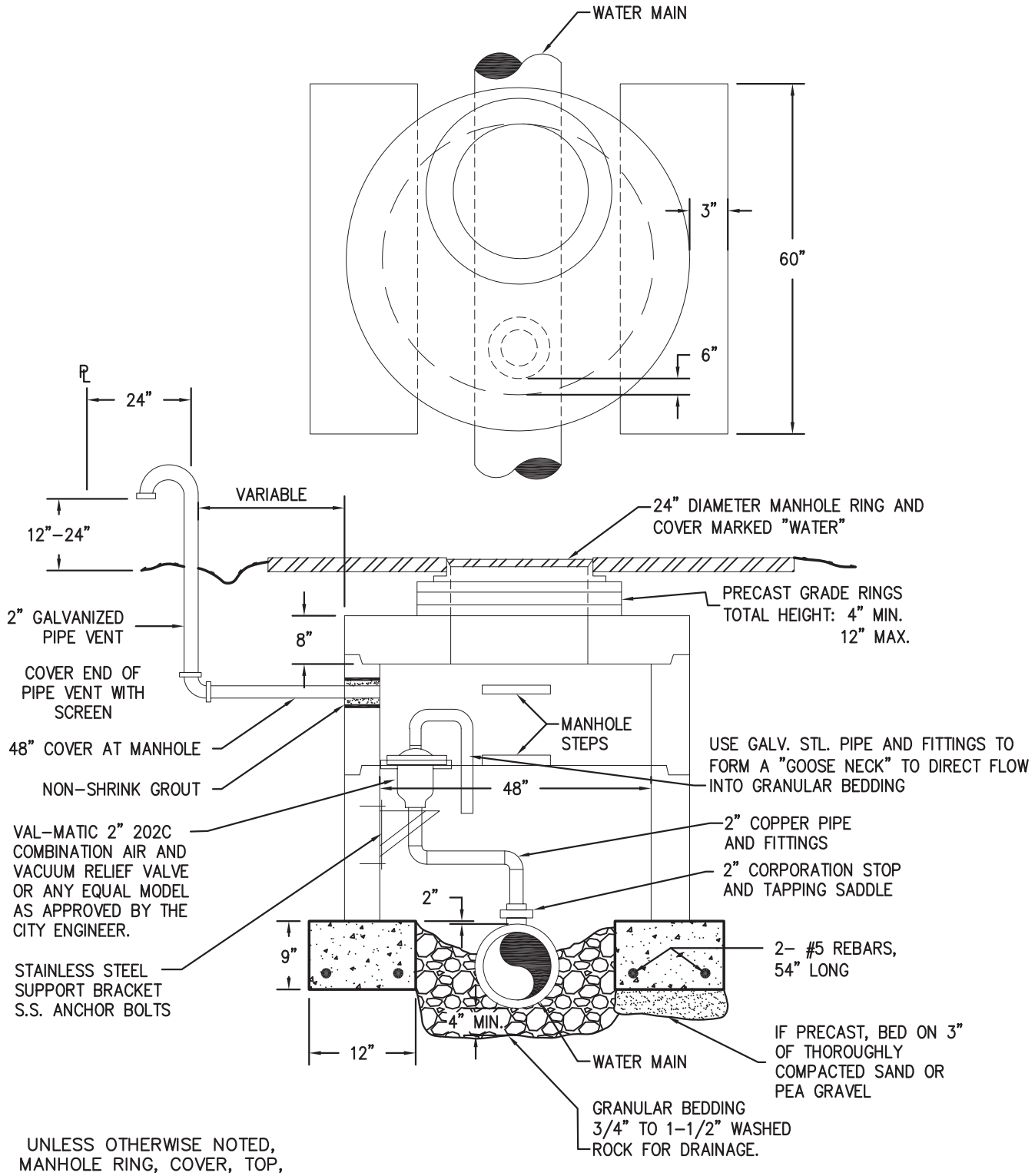
3/4" & 1" SERVICE INLINE DETAIL INSIDE METER SETTING

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.18



UNLESS OTHERWISE NOTED, MANHOLE RING, COVER, TOP, BARREL SECTIONS, AND THE INSTALLATION OF THE ABOVE SHALL CONFORM TO TITLE 3 OF THESE ENGINEERING SPECIFICATIONS.

NOTE: 2" IS THE MINIMUM ACCEPTABLE SIZE. IF CALCULATIONS SHOW THAT A LARGER SIZE VALVE IS NEEDED TO PROPERLY PROTECT THE SYSTEM, THEN THAT LARGER SIZE SHALL BE INSTALLED.

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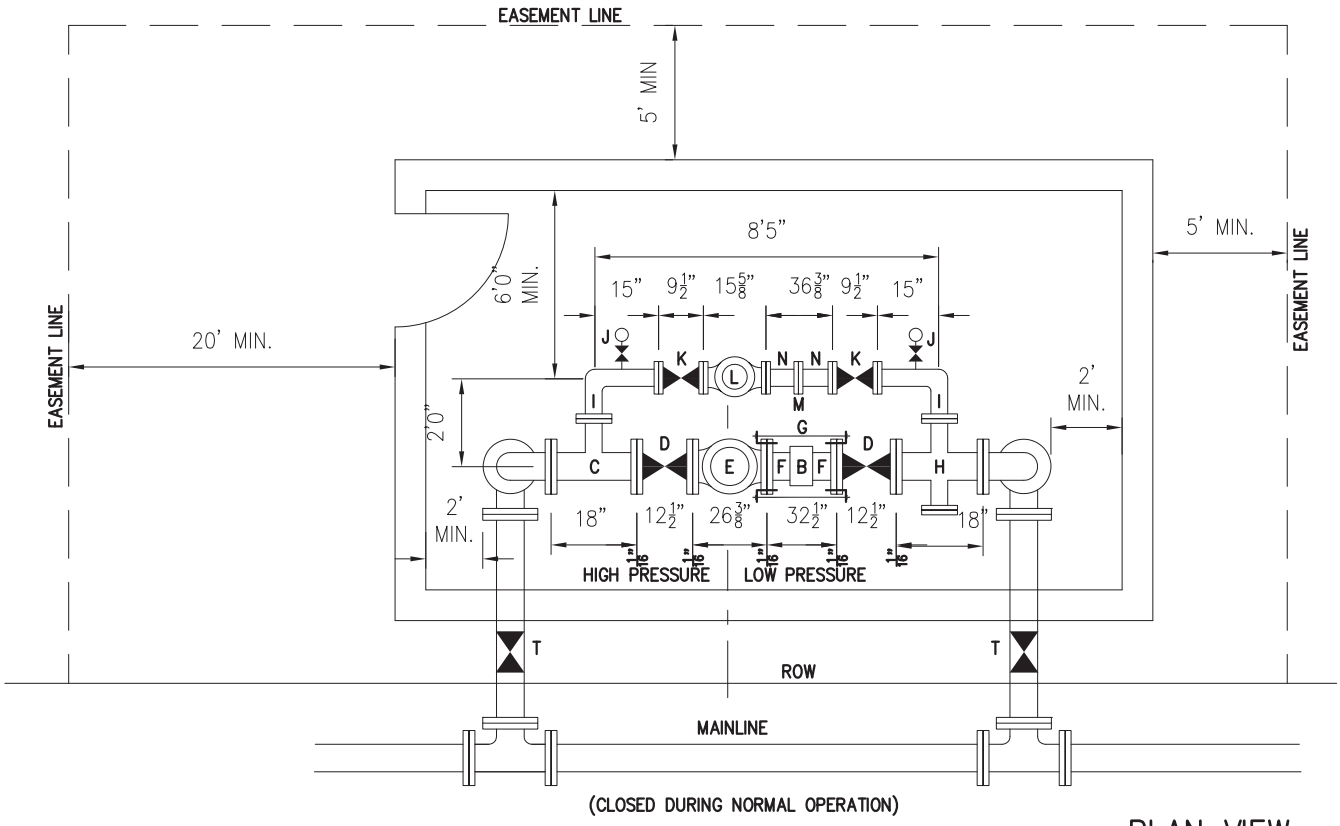
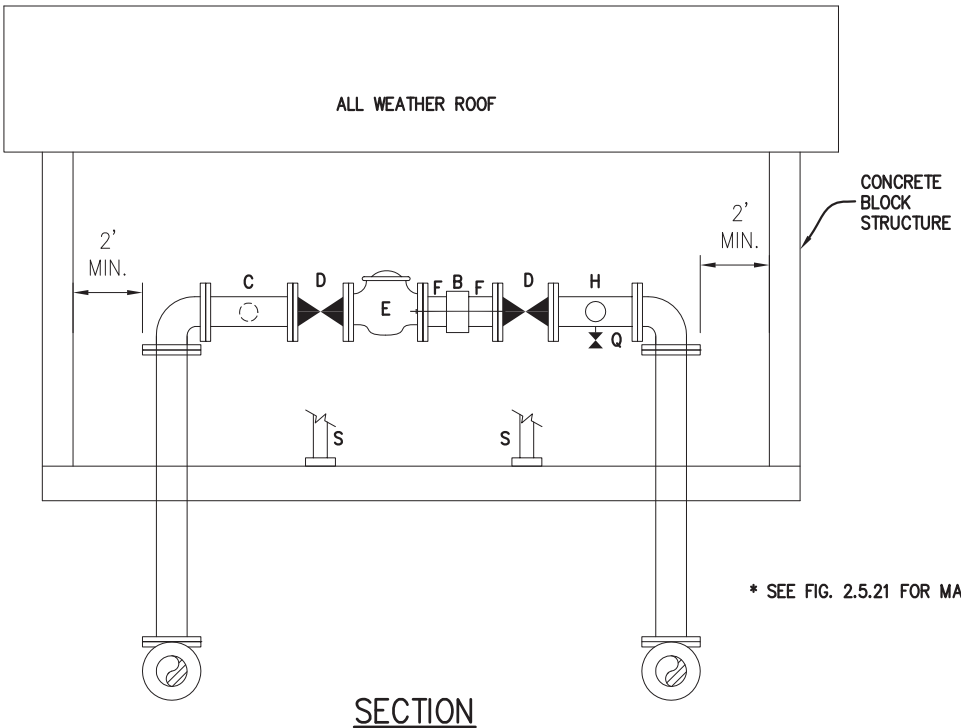
AIR VACUUM RELEASE VALVE INSTALLATION

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.19



PLAN VIEW



* SEE FIG. 2.5.21 FOR MATERIALS LIST

SECTION

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8-INCH PRESSURE REDUCING STATION (PAGE 1)

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.20

LISTING OF PARTS AND SPECIFICATIONS FOR DESIGN AND EQUIPMENT
FOR TYPICAL 6"AND 8" PRESSURE REDUCING STATIONS

MAJOR PARTS LIST, WITH REFERENCE TO APPROPRIATE
CITY OF WOODLAND PARK ENGINEERING SPECIFICATIONS:

B. 8" COUPLING (2.2.9)
C. 8"X8"X4" FLANGED TEE (2.2.4)
D. 8" FLANGED GATE VALVE (2.2.3)
E. 8" CLA-VALVE PRESSURE REDUCING VALVE, CLAYTON 90G-01AB
F. 8" FLANGE X PLAIN-END (APPROX 16-1/4", CUT TO FIT)
G. 3/4" TIE ROD (2.3.10.A)
H. 8"X4" FLANGE REDUCING CROSS (2.2.4)
I. 4" FLANGED ELBOW (2.2.4)
J. PRESSURE INDICATOR GAUGE
K. 4" FLANGED GATE VALVE (2.2.3)
L. 4" CLA-VALVE PRESSURE REDUCING VALVE, CLAYTON 90G-01AB
M. 4" COUPLING, WITH TIE RODS (2.2.9, 2.3.10.A) (UNION MAY BE USED FOR INSTALLATIONS SMALLER THAN 4")
N. 4" FLANGE X PLAIN-END (APPROX. 18". CUT TO FIT)
P. 3" PRESSURE SURGE RELIEF VALVE
Q. STOPCOCK (DRAIN VALVE)
R. 4" DUCTILE IRON PIPE (2.2.1.A.1)
S. ADJUSTABLE PIPE SUPPORT
T. 8" GATE VALVE. MJ X MJ (2.2.3)

NOTES ON DESIGN AND PARTS SPECIFICATIONS:

1. PRESSURE REDUCING STATION TO BE LOCATED IN ABOVE GROUND STRUCTURE IN PUBLIC RIGHT-OF-WAY OR DEDICATED CITY EASEMENT.

2. PROVIDE WATER DEMAND CALCULATIONS AND APPLICABLE MANUFACTURERS DATA TO JUSTIFY SIZING OF PRESSURE REDUCING VALVES.

3. OPERATING CONDITIONS SHALL BE STATED FOR EACH PIECE OF EQUIPMENT. THE FOLLOWING IS A SAMPLE OF APPROPRIATE CALCULATIONS:

A. INLET CONDITION: 185 PSI MAXIMUM STATIC PRESSURE.
B. OUTLET CONDITIONS: 2" PRV: 0 TO 200 GPM AT 93 PSI. 8" PRV: 200 TO 3000 GPM AT 90 PSI.
C. PRESSURE SURGE RELIEF VALVE, 3": OPEN AT 100 PSI.
D. PRESSURE INDICATOR GAUGES: 0 TO 300 PSI.

4. BYPASS SHALL BE OF THE SAME SIZE PIPE AS THE ADJACENT HIGH AND LOW PRESSURE MAIN. PARTS AND THRUST RESTRAINTS SHALL CONFORM TO APPLICABLE ENGINEERING SPECIFICATIONS, TITLE 2.

5. FIGURE 2.5.20 APPLIES TO 8" AND 6" (HIGH DEMAND SIDE) INSTALLATIONS. ALL REGULATOR INSTALLATIONS LARGER THAN 8" SHALL BE SPECIALLY DESIGNED AND APPROVED BY THE CITY ENGINEER.

6. PIPING DIMENSIONS SHOWN ON FIG. 2.5.20 ARE FOR AN 8" HIGH DEMAND AND 4" LOW DEMAND PRESSURE REDUCING STATION. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO CONFIRM THESE DIMENSIONS AND MAKE APPROPRIATE ADJUSTMENT FOR DIFFERENT SIZES OF REGULATORS.

7. FLANGED FITTINGS (300 POUND) SHALL BE USED ON THE HIGH PRESSURE SIDE OF THE PRESSURE REDUCING SYSTEM. FLANGED OR THREADED CONNECTIONS MAY BE USED ON THE LOW PRESSURE SIDE FOR PIPING AND REGULATOR DEVICES 4" OR SMALLER.

8. THREE ADJUSTABLE PIPE SUPPORTS SHALL BE PROVIDED (PART S). ONE SHALL BE INSTALLED UNDER EACH 6" OR 8" GATE VALVE, AND ONE UNDER A VALVE ON THE LOW VOLUME SIDE.

9. STRUCTURE SHALL INCLUDE, AT A MINIMUM, LIGHTS, HEAT, ELECTRICAL OUTLETS, SECURITY DOOR WITH UNAUTHORIZED ENTRY ALARM, AND A WATER SUPPLY HOSE BIBB.

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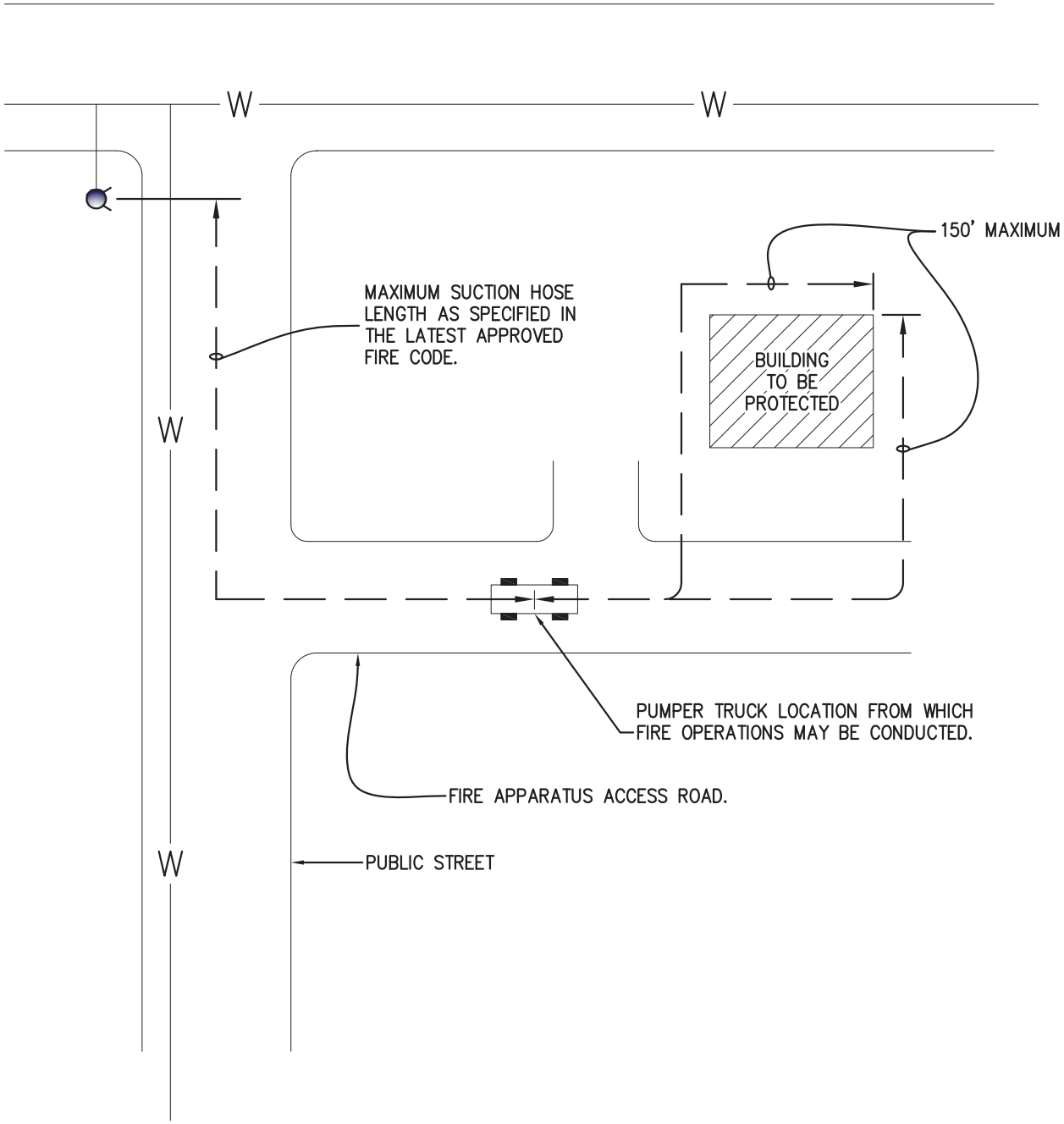
PRESSURE REDUCING STATIONS (PAGE 2)

DATE: FEB, 2011	REV. -/-/-	FIG. 2.5.21



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FIRE HYDRANT SPACING MEASUREMENTS

DATE: FEB, 2011	REV. –/–/–	FIG. 2.5.22