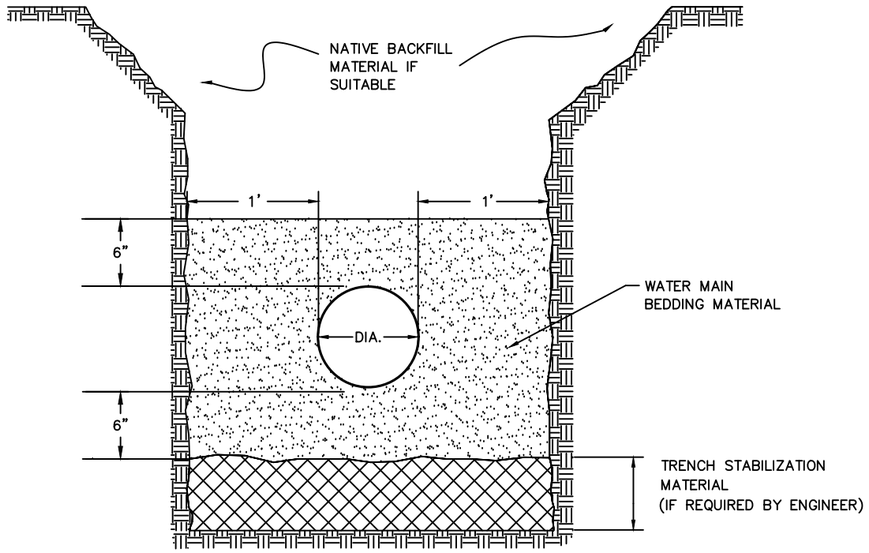
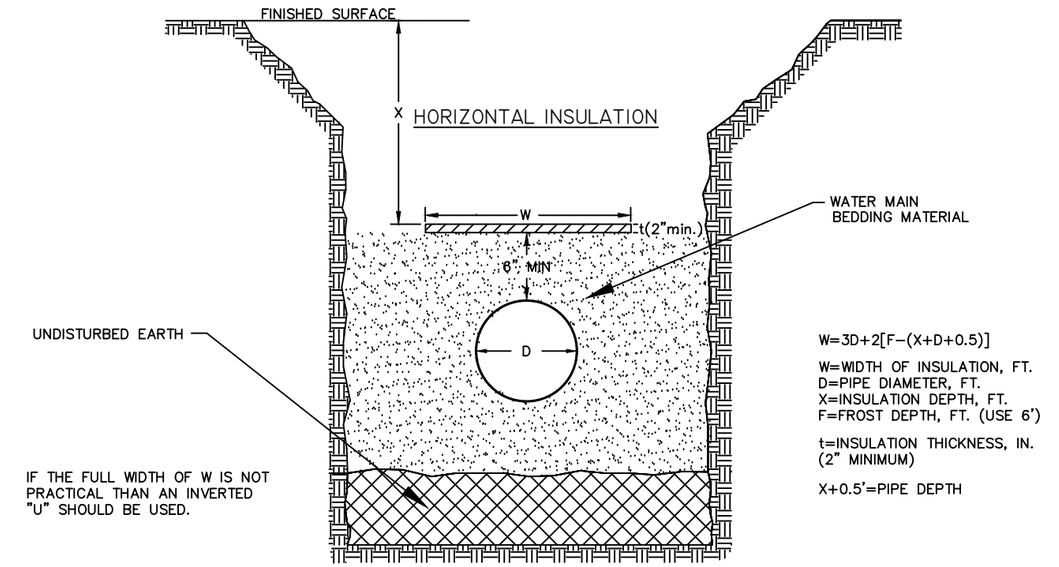
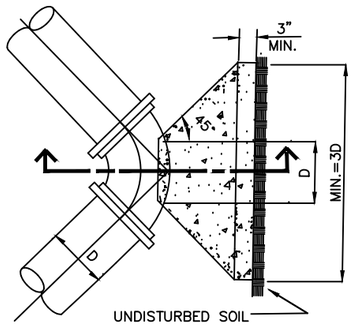


CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES WATER MAIN BEDDING		REVISION DATE 8/31/2015	PLATE NUMBER WM-01

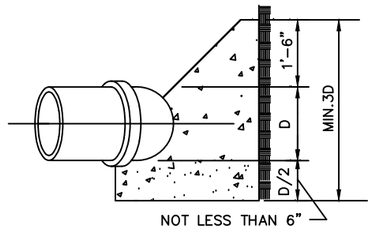


NOTE:
THIS DETAIL IS A GENERAL GUIDELINE. INSULATION OF SANITARY SEWER PIPE WILL BE DETERMINED ON A CASE BY CASE SITUATION DEPENDING ON THE FOLLOWING FACTORS: DEPTH, PIPE DIAMETER, FLOW, AND LOCATION.

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES WATER MAIN INSULATION		REVISION DATE 8/31/2015	PLATE NUMBER WM-02

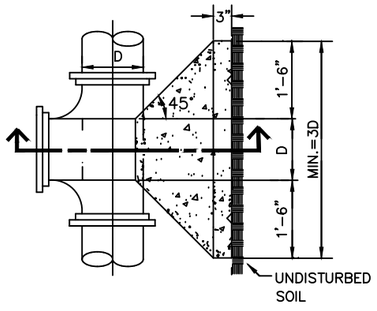


PLAN VIEW

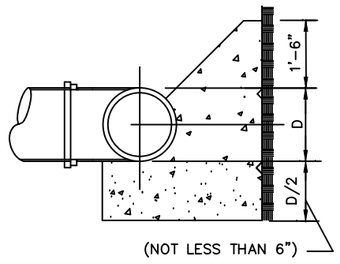


SECTION VIEW

90 - DEGREE BEND



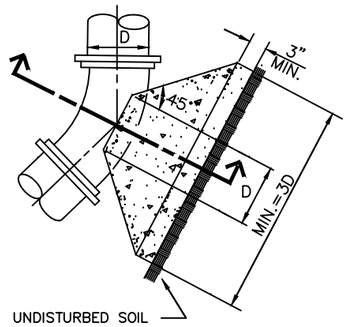
PLAN VIEW



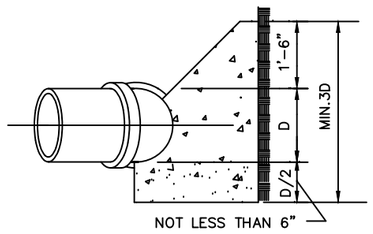
SECTION VIEW

TEE

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES CONCRETE THRUST BLOCK		REVISION DATE 8/31/2015	PLATE NUMBER WM-03

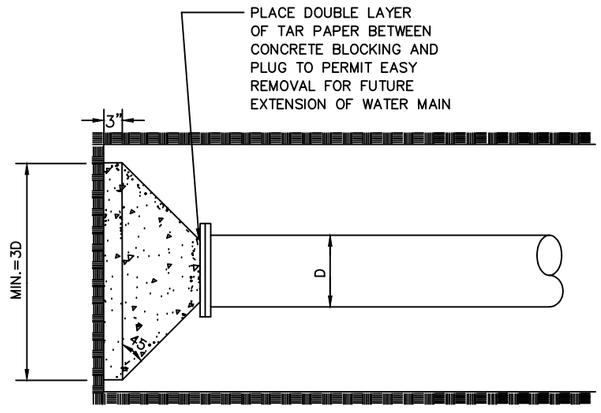


PLAN VIEW



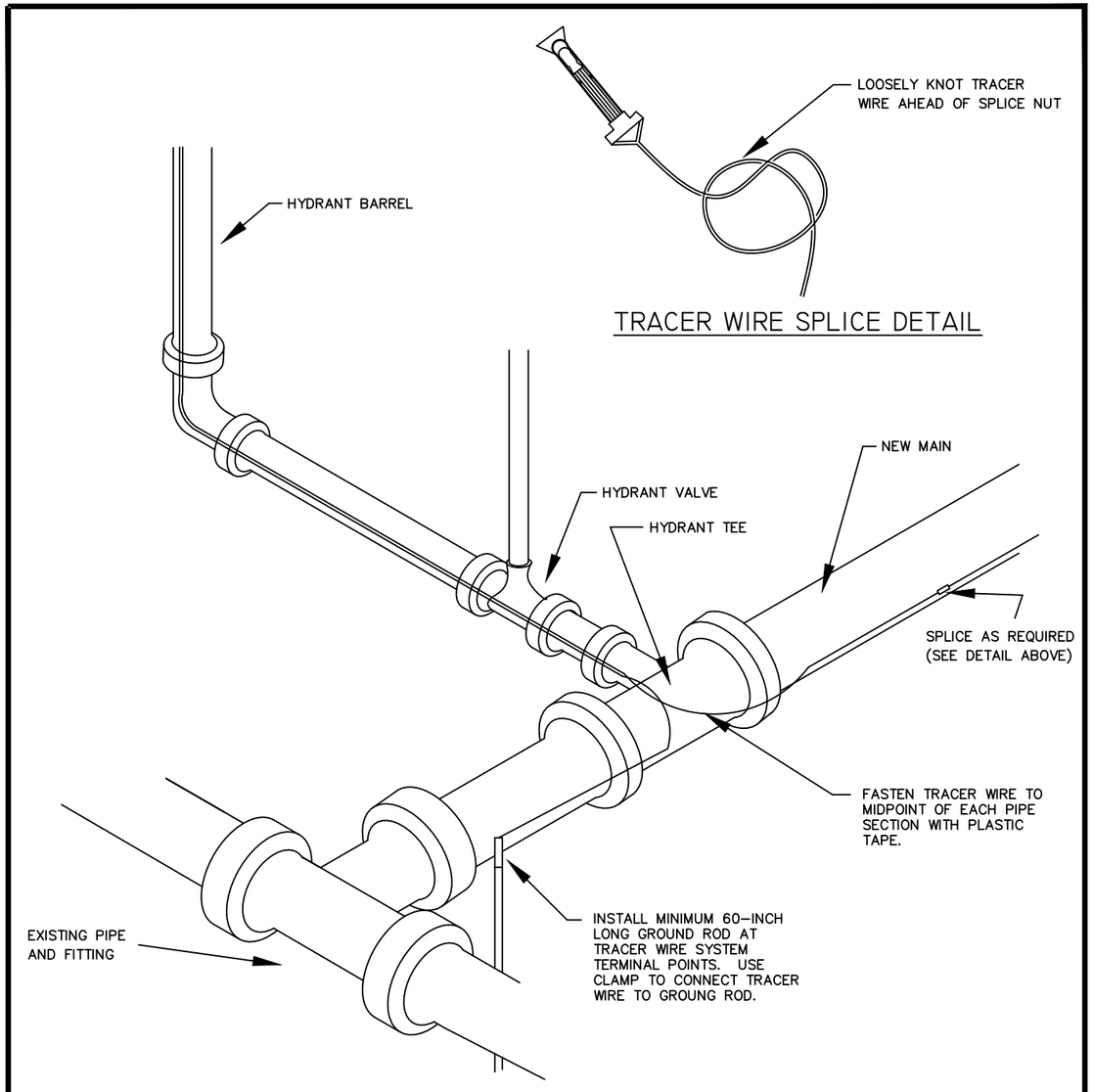
SECTION VIEW

11 1/4 - DEGREE, 22 1/2 - DEGREE AND 45 - DEGREE BENDS



S.J. PLUG

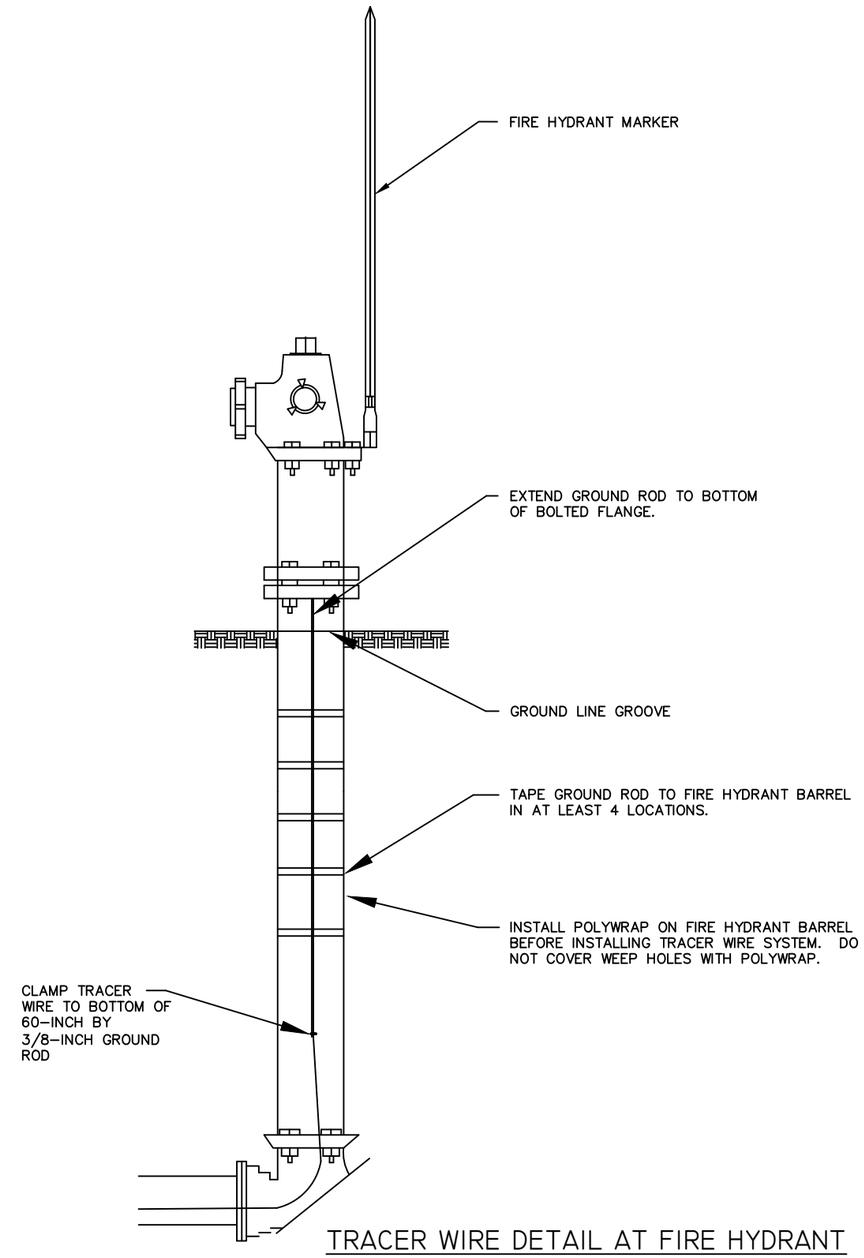
CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES CONCRETE THRUST BLOCK		REVISION DATE 8/31/2015	PLATE NUMBER WM-04



TRACER WIRE SPLICE DETAIL

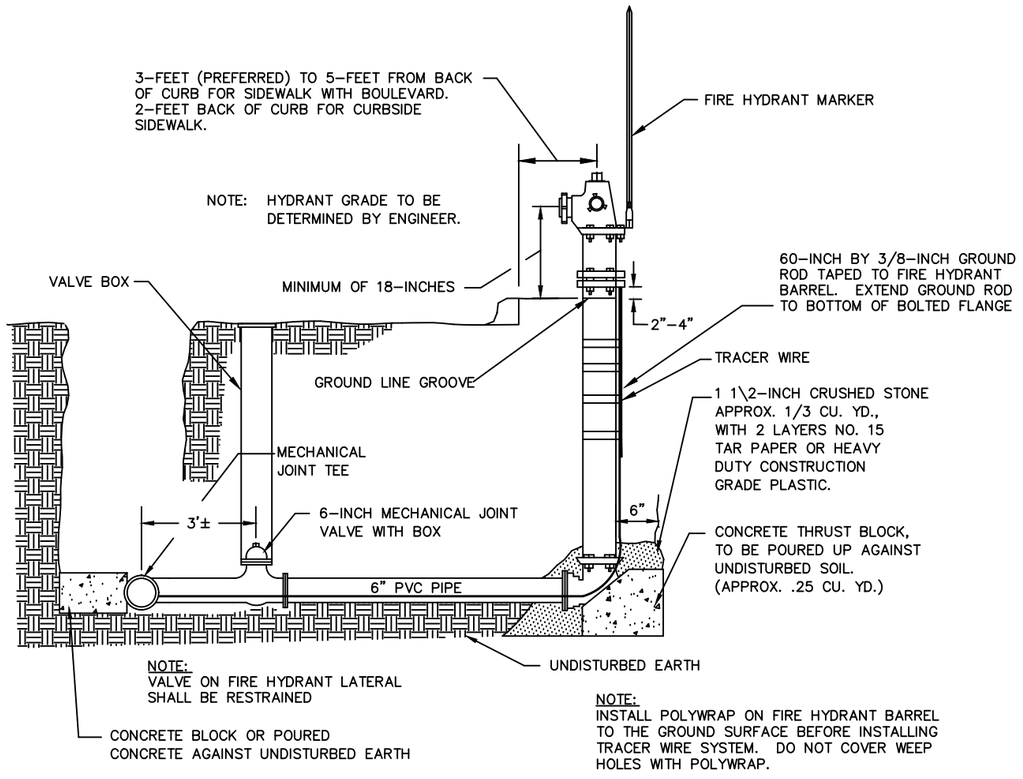
TRACER WIRE DETAIL

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES TRACER WIRE SYSTEM		REVISION DATE 8/31/2015	PLATE NUMBER WM-05

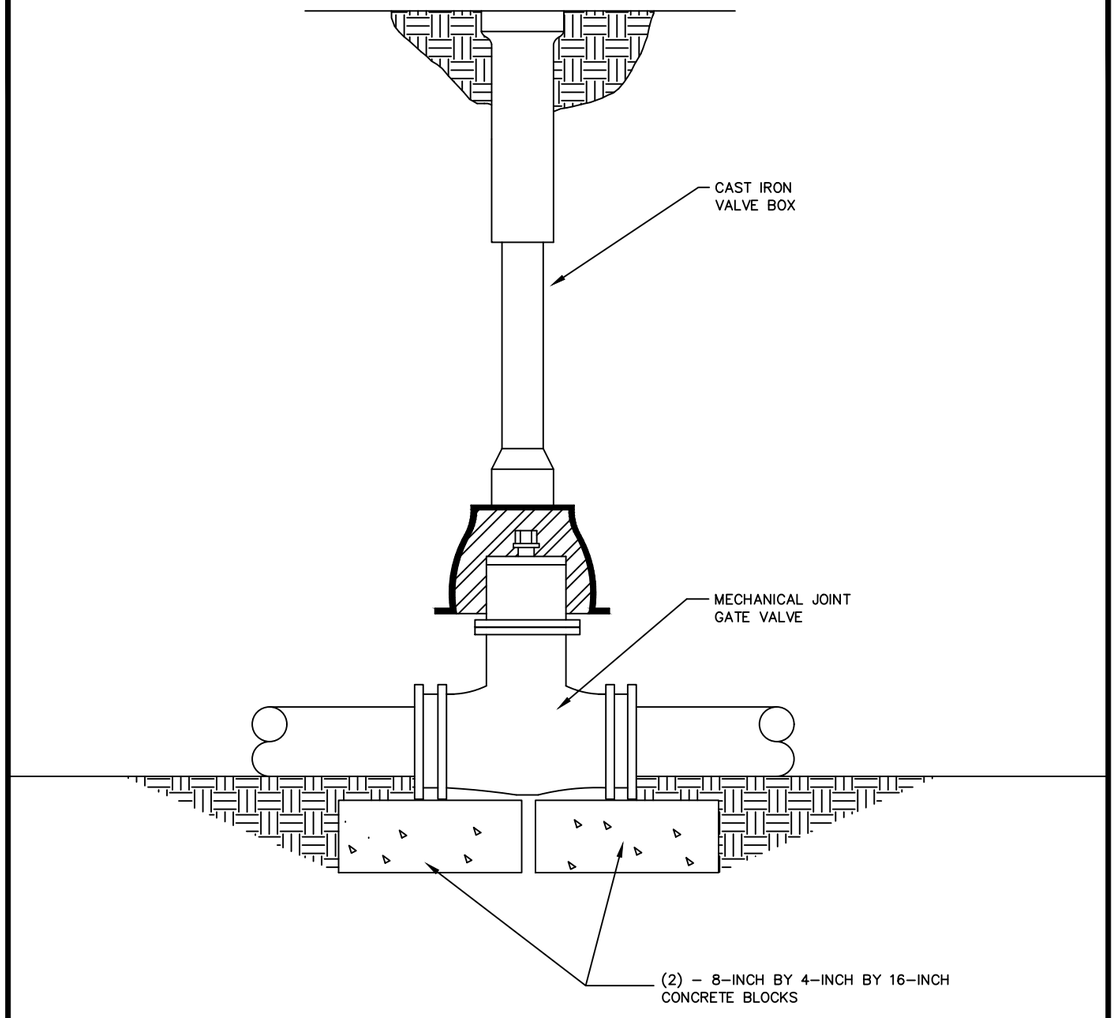


TRACER WIRE DETAIL AT FIRE HYDRANT

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES TRACER WIRE SYSTEM		REVISION DATE 8/31/2015	PLATE NUMBER WM-06

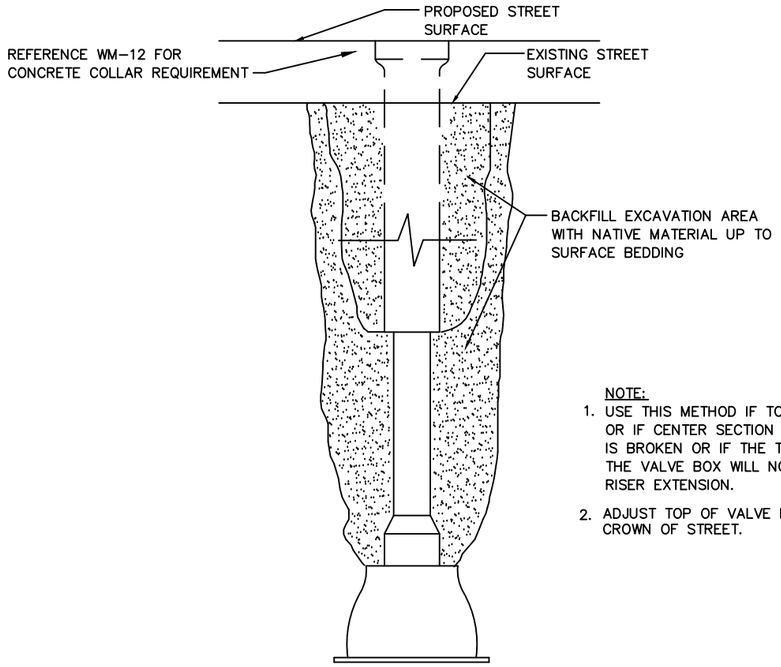


CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES HYDRANT CONNECTION		REVISION DATE 8/31/2015	PLATE NUMBER WM-07



GATE VALVE INSTALLATION

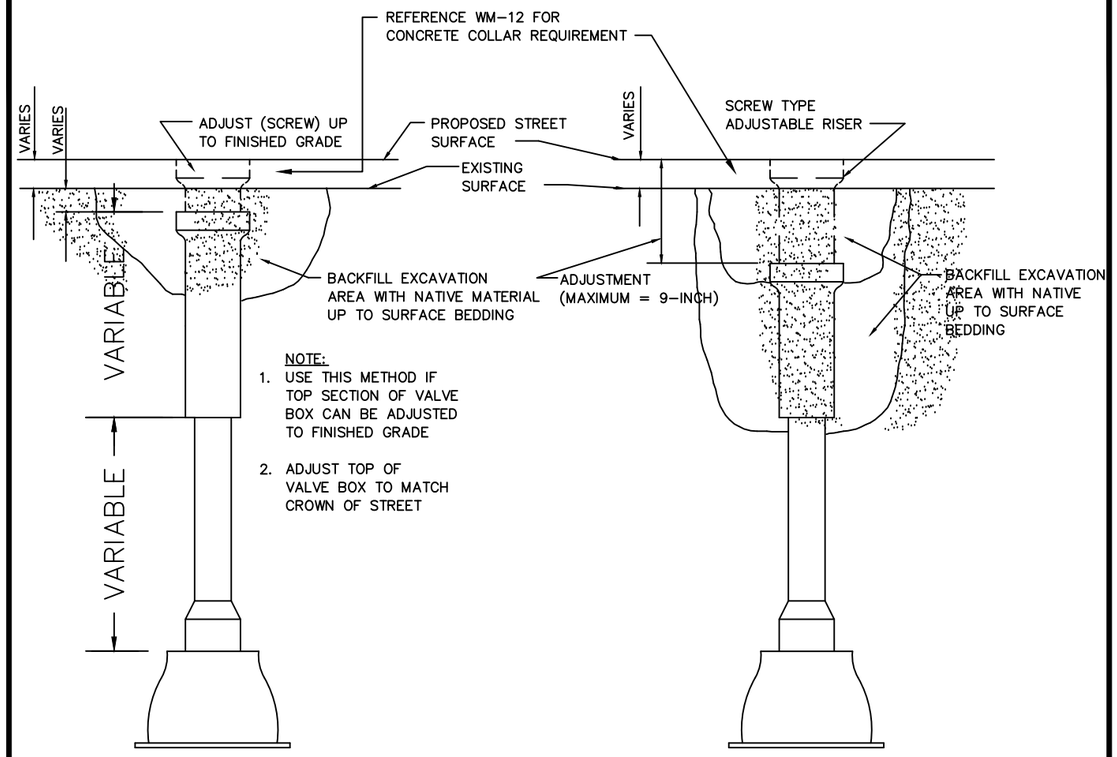
CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES GATE VALVE INSTALLATION		REVISION DATE 8/31/2015	PLATE NUMBER WM-08



NOTE:
1. USE THIS METHOD IF TOP & CENTER, OR IF CENTER SECTION OF VALVE BOX IS BROKEN OR IF THE TOP SECTION OF THE VALVE BOX WILL NOT ACCEPT THE RISER EXTENSION.
2. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET.

VALVE BOX INSTALLATION

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES VALVE BOX INSTALLATION		REVISION DATE 8/31/2015	PLATE NUMBER WM-09



NOTE:
1. USE THIS METHOD IF TOP SECTION OF VALVE BOX CAN BE ADJUSTED TO FINISHED GRADE
2. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET

VALVE BOX ADJUSTMENT

NOTE:
1. USE THIS METHOD IF TOP SECTION OF VALVE BOX CANNOT BE EXTENDED TO MEET PROPOSED GRADE.
2. IF MAXIMUM EXTENSION OF VALVE BOX IS LOWER THAN 9" BELOW PROPOSED STREET SURFACE, REMOVE TOP SECTION & ADD A SCREW–TYPE CENTER SECTION. RE–USE TOP SECTION.
3. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET.
4. IF THE TOP SECTION OF VALVE BOX WILL NOT ACCEPT THE RISER, REPLACE THE TOP & CENTER SECTION AS SHOWN IN DETAIL FOR VALVE BOX REPLACEMENT.

VALVE BOX EXTENSION
(OR REPLACEMENT OF TOP SECTION)

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES VALVE BOX ADJUSTMENT		REVISION DATE 8/31/2015	PLATE NUMBER WM-10

NOTE:

1. ADJUST TOP OF VALVE BOX TO MATCH STREET SURFACE.

2. VALVE BOX SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF THE PAVEMENT SURFACING.

3. ALL VALVE BOXES SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT SURFACE. THE ALLOWABLE VERTICAL TOLERANCE BETWEEN THE PAVEMENT SURFACE AND ANY PART OF THE VALVE BOX SHALL BE 0-INCHES TO 1/2-INCH LOW. IN NO CASE SHALL THE VALVE BOX BE ABOVE THE SURFACE OF THE PAVEMENT.

4. NON-THREADED ADJUSTMENTS WILL NOT BE ALLOWED.

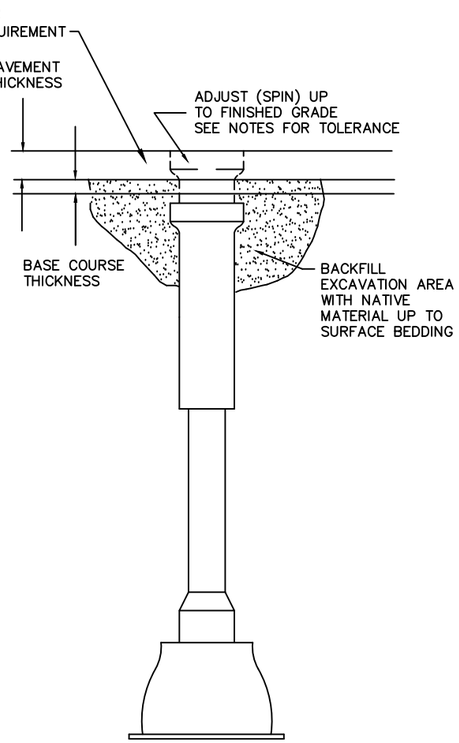
5. IF THE 0-INCHES TO 1/2-INCH TOLERANCE CANNOT BE MET BY THE "SPIN UP" METHOD ON ASPHALT STREETS, THEN THE CONTRACTOR SHALL BE REQUIRED TO ADJUST THE VALVE BOX BY THE CIRCULAR CUTOUT METHOD. THIS ADDITIONAL WORK, IF REQUIRED, SHALL BE INCIDENTAL TO THE "VALVE BOX ADJUSTMENT" BID ITEM.

6. IF THE 0-INCHES TO 1/2-INCH TOLERANCE CAN NOT BE MET BY THE "SPIN UP" METHOD ON CONCRETE STREETS, THE REPAIR METHOD WILL BE DETERMINED BY THE ENGINEER. THIS ADDITIONAL WORK SHALL BE INCIDENTAL TO THE "VALVE BOX ADJUSTMENT" BID ITEM.

7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE VALVE BOX DURING THE WORK.

8. ALL ADJUSTMENTS SHALL BE COMPLETED PRIOR TO OPENING UP THE STREET TO TRAFFIC.

9. IF THE VALVE BOX NEEDS MINOR ADJUSTMENT, A MINIMAL AMOUNT OF HEAT CAN BE APPLIED TO BREAK THE BOND BETWEEN THE VALVE BOX AND THE ASPHALT. FULL DEPTH HEATING OF THE ASPHALT WILL NOT BE ALLOWED. IF THE ASPHALT APPEARS TO SHOW SIGNS OF DETERIORATION, IT WILL BE AT THE DISCRETION OF THE ENGINEER TO REQUIRE THE CUT OUT METHOD.



SPIN UP METHOD

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES VALVE BOX ADJUSTMENT		REVISION DATE 8/31/2015	PLATE NUMBER WM-11

NOTE:

1. IF VALVE BOX IS ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF ASPHALT SURFACING, CIRCULAR CONCRET COLLAR WILL NOT BE REQUIRED.

2. THE CIRCULAR CONCRETE CUTOUT SHALL BE CENTERED ON THE VALVE BOX FRAME.

3. THE CIRCULAR CONCRETE COLLAR SHALL BE CONSTRUCTED AFTER THE INSTALLATION OF THE TOP LIFT OF ASPHALT. THE PAVEMENT SHALL BE SAWED FULL DEPTH WITH A VERTICAL FACE. THE CONTRACTOR SHALL ENSURE THAT THE ADJACENT ASPHALT SURFACE IS LEFT INTACT AND UNDAMAGED WHEN REMOVING THE CIRCULAR CUTOUT.

4. ALL VALVE BOXES SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT SURFACE. THE ALLOWABLE VERTICAL TOLERANCE BETWEEN THE ASPHALT SURFACE AND ANY PART OF THE VALVE BOX SHALL BE 0-INCHES TO 1/2-INCH LOW. IN NO CASE SHALL THE VALVE BOX BE ABOVE THE SURFACE OF THE ASPHALT.

5. NON-THREADED ADJUSTMENTS WILL NOT BE ALLOWED.

6. THE CIRCULAR CONCRETE CUTOUT DIAMETER SHALL BE 24-INCHES.

7. APPLY TACK COAT TO THE VERTICAL ASPHALT SURFACES PRIOR TO PLACEMENT OF CONCRETE CUTOUT.

8. CLASS M6 CONCRETE SHALL BE USED FOR THE CUTOUT. FAST TRACK CONCRETE MAY BE USED AT THE DISCRETION OF THE ENGINEER.

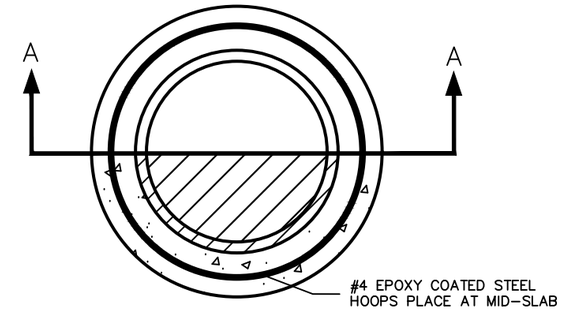
9. STEEL REINFORCING SHALL BE EPOXY COATED GRADE 40.

10. STEEL REINFORCING SHALL CONSISTS OF #4 HOOPS (VARIABLE LENGTHS) SUPPORTED BY APPROVED CHAIRS.

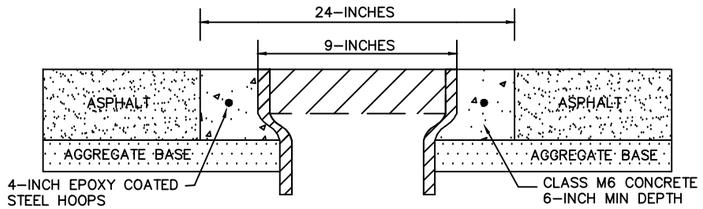
11. MAINTAIN A MINIMUM OF 2-INCH CLEARANCE ON ALL STEEL REINFORCING.

12. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE VALVE BOX DURING THE WORK.

13. ALL ADJUSTMENTS WILL BE COMPLETED PRIOR TO OPENING UP THE STREET TO TRAFFIC.



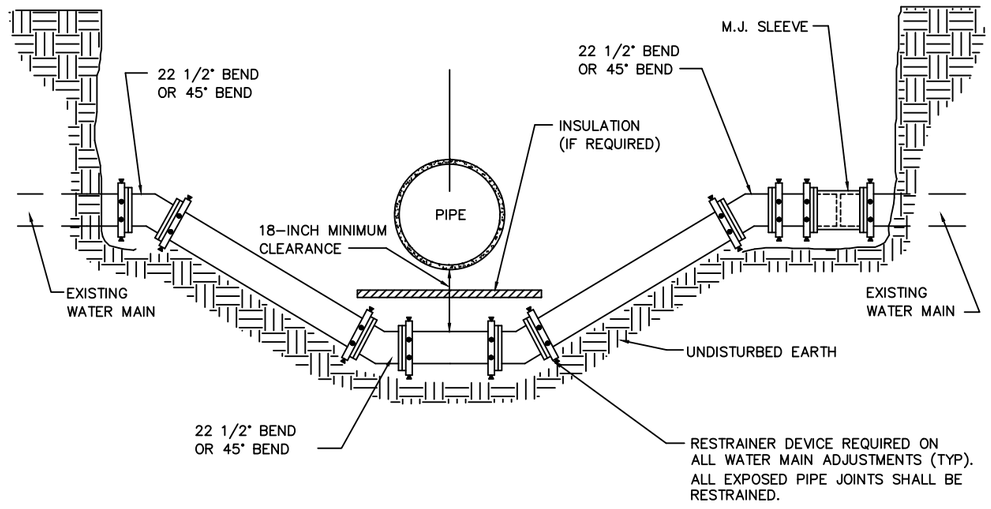
CIRCULAR VALVE BOX CUTOUT



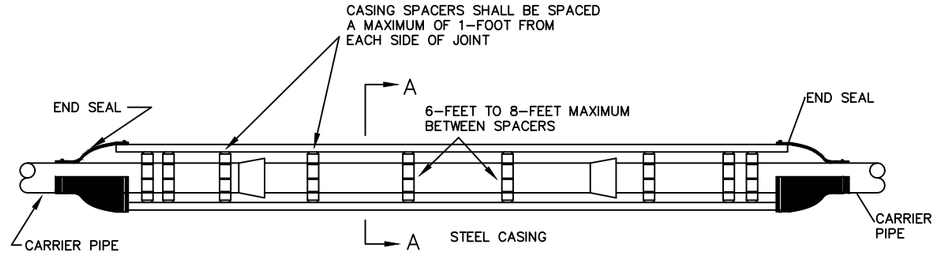
SECTION A-A

CUTOUT METHOD

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES VALVE BOX CONCRETE COLLAR		REVISION DATE 8/31/2015	PLATE NUMBER WM-12



CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES WATER MAIN ADJUSTMENT		REVISION DATE 8/31/2015	PLATE NUMBER WM-13



ELEVATION

CASING SPACERS AND END SEALS SHALL BE MANUFACTURED BY ADVANCED PRODUCTS AND SYSTEMS, INC. P.O. BOX 60399 LAFAYETTE, LA. 70596-0399 OR EQUAL AND MEET THESE REQUIREMENTS

CASING SPACERS – MODEL SSI-8 (PIPE SIZES 24-INCHES IN DIAMETER AND SMALLER) OR MODEL SSI-12-2 (PIPE SIZES 30-INCHES IN DIAMETER AND GREATER) WITH T-304 STAINLESS STEEL SPACER.
BAND – 10 GAUGE T-304 STAINLESS STEEL.
RISER – 10 GAUGE T-304 STAINLESS STEEL.

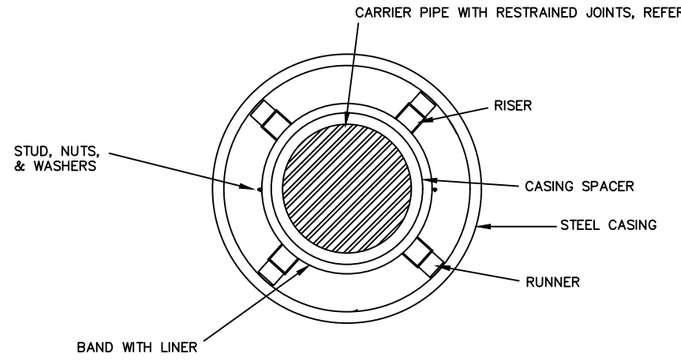
RUNNERS – TWO-INCH WIDE MINIMUM GLASS REINFORCED PLASTIC. THE NUMBER OF RISERS SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT FOUR IS THE MINIMUM

STUDS, NUTS AND WASHERS – T-304 STAINLESS STEEL

HEIGHTS – AS REQUIRED FOR CENTER RESTRAINING

END SEALS – CONICAL SHAPED WRAP-AROUND 1/8-INCH SYNTHETIC RUBBER WITH T-304 STAINLESS STEEL STRAPS

CASING PIPE MUST CONFORM TO AWWA C-200 WITH ASTM GRADE A36 PLATE STEEL MINIMUM YIELD STRENGTH OF 35,000 POUNDS PER SQUARE INCH



SECTION A-A

PIPE SIZE	CASING SIZE
4"	10"
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"
20"	30"
24"	36"
30"	42"
>36"	*

* AS RECOMMENDED BY MANUFACTURER

CITY OF BROOKINGS BROOKINGS MUNICIPAL UTILITIES STANDARD CASING/CARRIER FOR WATER PIPE		REVISION DATE 9/6/2016	PLATE NUMBER WM-14