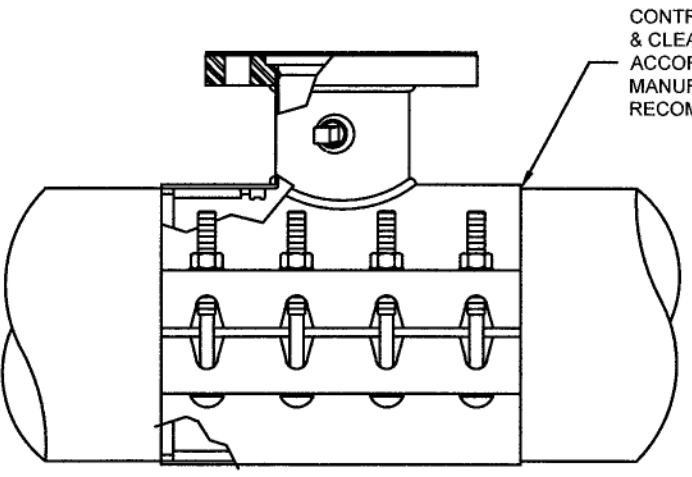
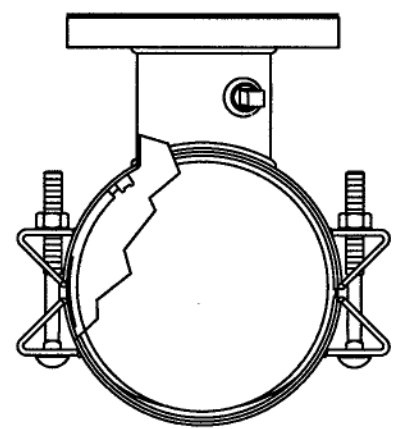


TYPICAL WATER PRESSURE TEST RIG

- TAPPING SLEEVE SHALL BE POWERLESS MODEL 3490 TYPE 304 STAINLESS STEEL WITH CARBON STEEL FLANGE. ROMAC'S MODEL SST III, FORD MODEL FTSS WITH CARBON STEEL FLANGE OR APPROVED EQUIVALENT. SLEEVE SHALL BE RATED AT 100 PSI OVER WORKING PRESSURE AND MUST HAVE A TEST FLAG.
- TAPPING VALVE SHALL BE AVK RESILIENT SEATED GATE VALVE SERIES 25 MJFL, MUELLER T-2360 RESILIENT WEDGE TAPPING VALVE WITH MJFL OR AFC SERIES 2500 RESILIENT WEDGE TAPPING VALVE WITH MJFL. VALVE SHALL BE RATED AT 200 PSI.
- TAPPING SLEEVE AND VALVE SHALL BE FULL PORT TO ACCEPT FULL SIZE SHELL CUTTER.
- STEEL FLANGE SHALL MEET AWWA C207.
- SIZE-ON-SIZE TAPPING NOT ALLOWED UNLESS APPROVED BY PARTICIPATING UTILITY.



CONTRACTOR TO EXPOSE & CLEAN PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS



INSTALLATION OF DUCTILE IRON WATER MAINS
TABLE 3 AWWA C600-05
Maximum Joint Deflection Full Length of Pipe - Push on Type Joint

Nominal Pipe Size (inches)	Deflection Angle - θ (degrees)	Maximum Offset - S* (inches)			
		Joint Length 18'-Feet	Joint Length 20'-Feet	Joint Length 18'-Feet	Joint Length 20'-Feet
3	5"	19	21	205	230
4	5"	19	21	205	230
6	5"	19	21	205	230
8	5"	19	21	205	230
10	5"	19	21	205	230
12	5"	19	21	205	230
14	3"	11	12	340	380
16	3"	11	12	340	380
18	3"	11	12	340	380
20	3"	11	12	340	380
24	3"	11	12	340	380
30	3"	11	12	340	380

* SEE FIGURE 4.
For 14-inch and larger push-on joints, maximum deflection angle may be larger than shown above. Consult the manufacturer.

INSTALLATION OF DUCTILE IRON WATER MAINS
TABLE 4 AWWA C600-05
Maximum Joint Deflection Full Length of Pipe - Mechanical Joint Pipe

Nominal Pipe Size (inches)	Deflection Angle - θ (degrees)	Maximum Offset - S* (inches)			
		Joint Length 18'-Feet	Joint Length 20'-Feet	Joint Length 18'-Feet	Joint Length 20'-Feet
3	5"-18"	31	35	125	140
4	5"-18"	31	35	125	140
6	7"-07"	27	30	145	160
8	5"-21"	20	22	195	220
10	5"-21"	20	22	195	220
12	5"-21"	20	22	195	220
14	3"-35"	13.5	15	285	320
16	3"-35"	13.5	15	285	320
18	3"-00"	11	12	340	380
20	3"-00"	11	12	340	380
24	2"-23"	9	10	450	500

* SEE FIGURE 4.

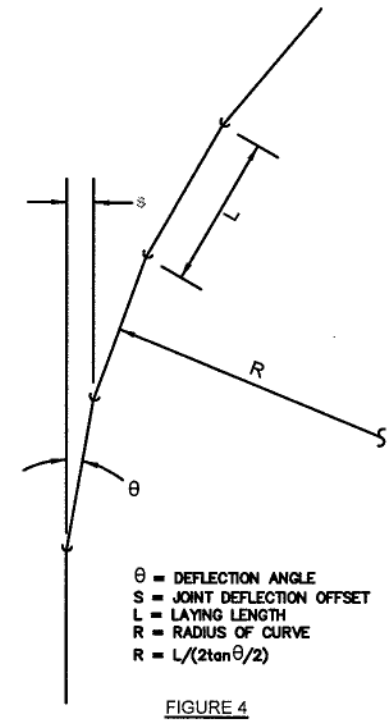
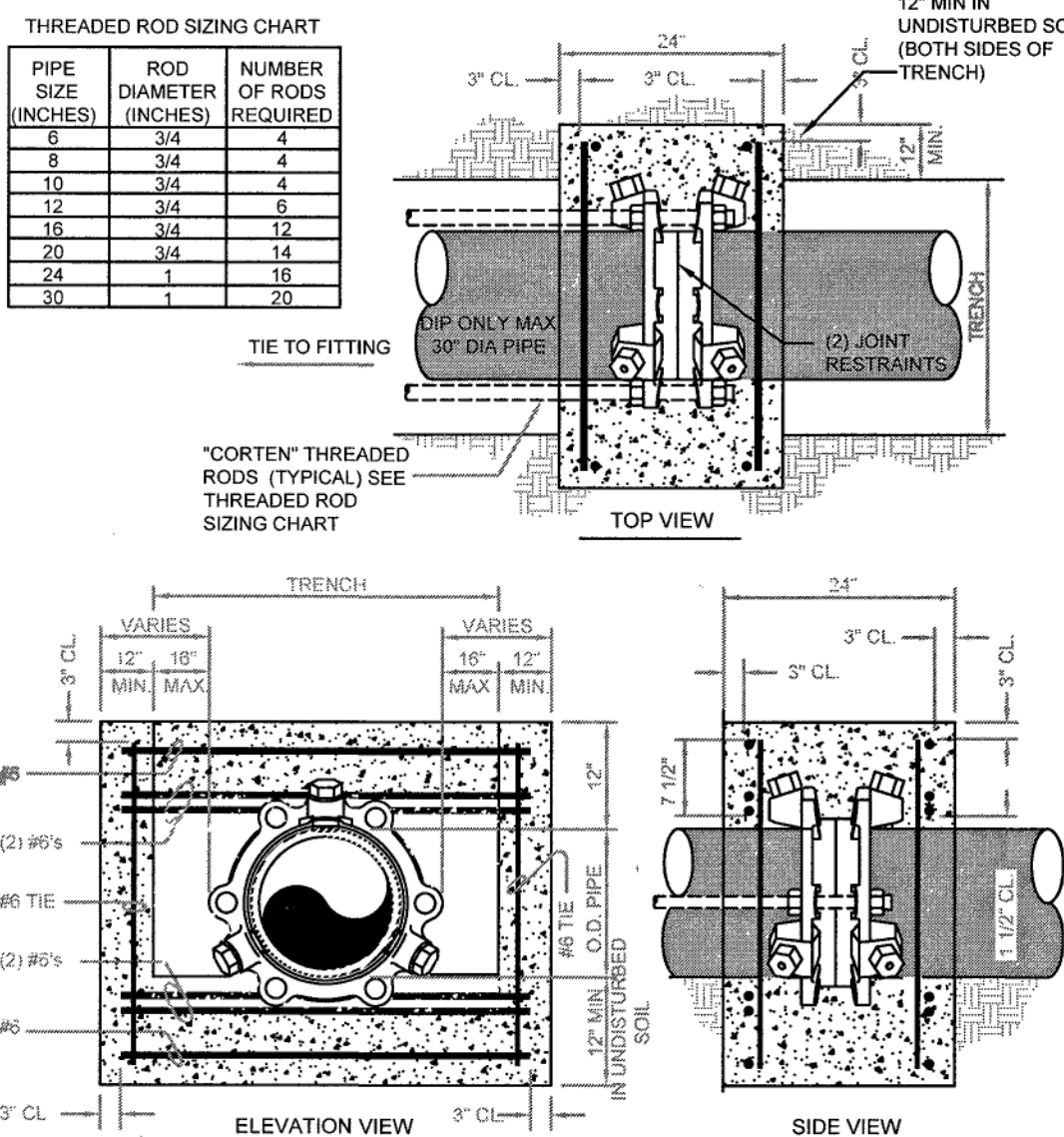


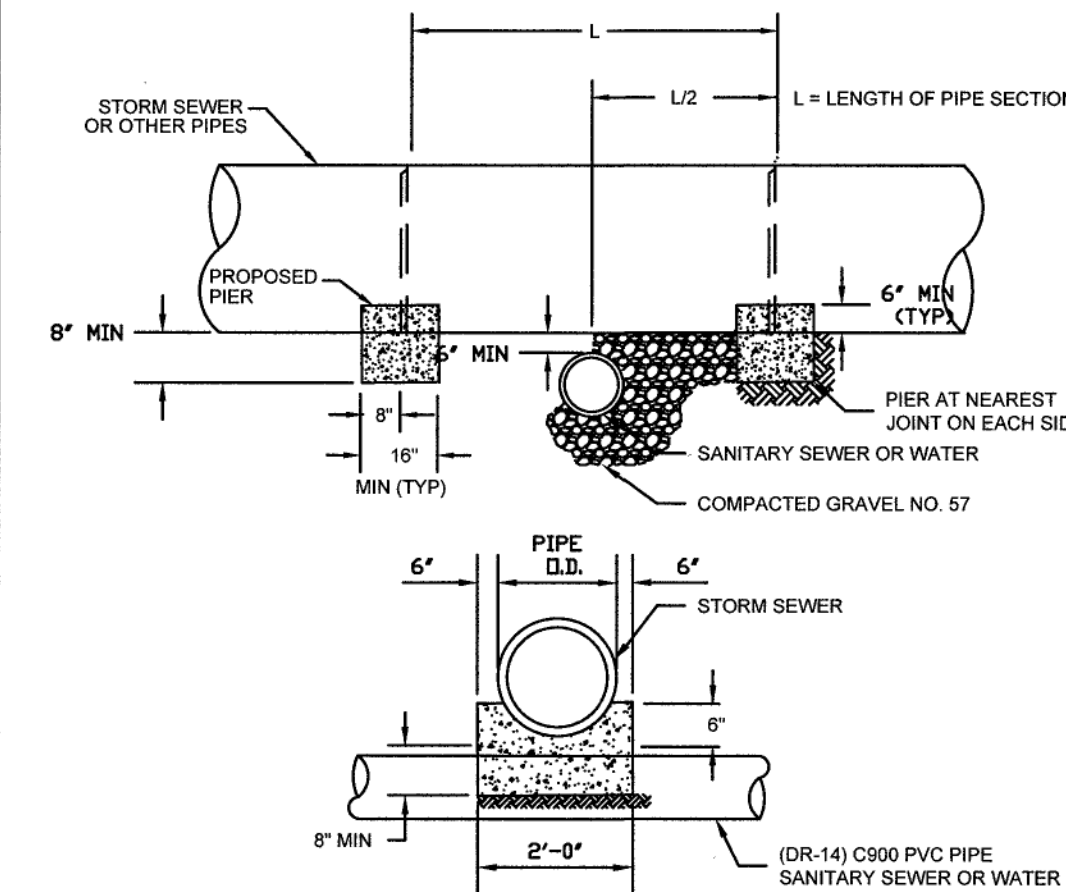
FIGURE 4

- CONCRETE SHALL BE 3000 P.S.I. READY MIX CONCRETE.
- REINFORCING BARS SHALL BE DEFORMED, AND TIED TOGETHER.
- TRENCH BOTTOM WIDTH IN VICINITY OF THRUST COLLAR INSTALLATION SHALL BE THE MINIMUM WIDTH.
- BACKFILL AND COMPACT IN 6" LAYERS.
- PLACE THRUST COLLAR ON ONE FULL JOINT OF PIPE.
- LAST JOINT OF PIPE WITH THRUST COLLAR TO BE MECHANICAL JOINT PIPE.
- PLACE RESTRAINED JOINT THRUST RING 4' FROM FITTING END OF PIPE.
- FORMS SHALL BE USED WHEN PLACING CONCRETE TO PREVENT CONCRETE FROM INFILTRATING JOINTS.
- ALLOW MINIMUM OF 3 DAYS FOR CONCRETE TO OBTAIN STRENGTH BEFORE WATERLINE BECOMES ACTIVE.
- JOINT RESTRAINTS SHALL BE INSTALLED LIP TO LIP AND WRAPPED WITH POLYETHYLENE TO PREVENT CONCRETE INTRUSION INTO WEDGE POCKET.

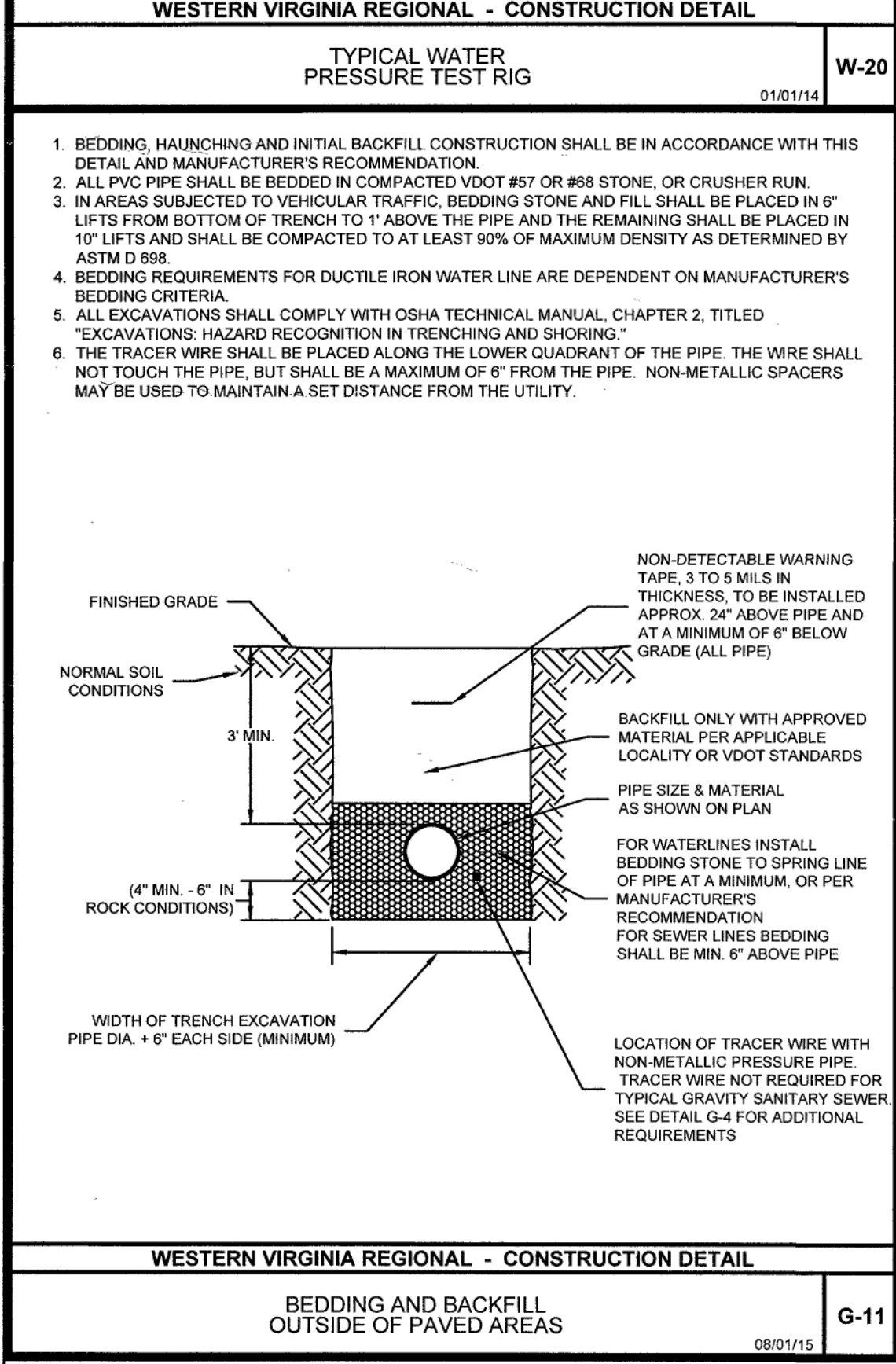


THRUST COLLAR DETAIL

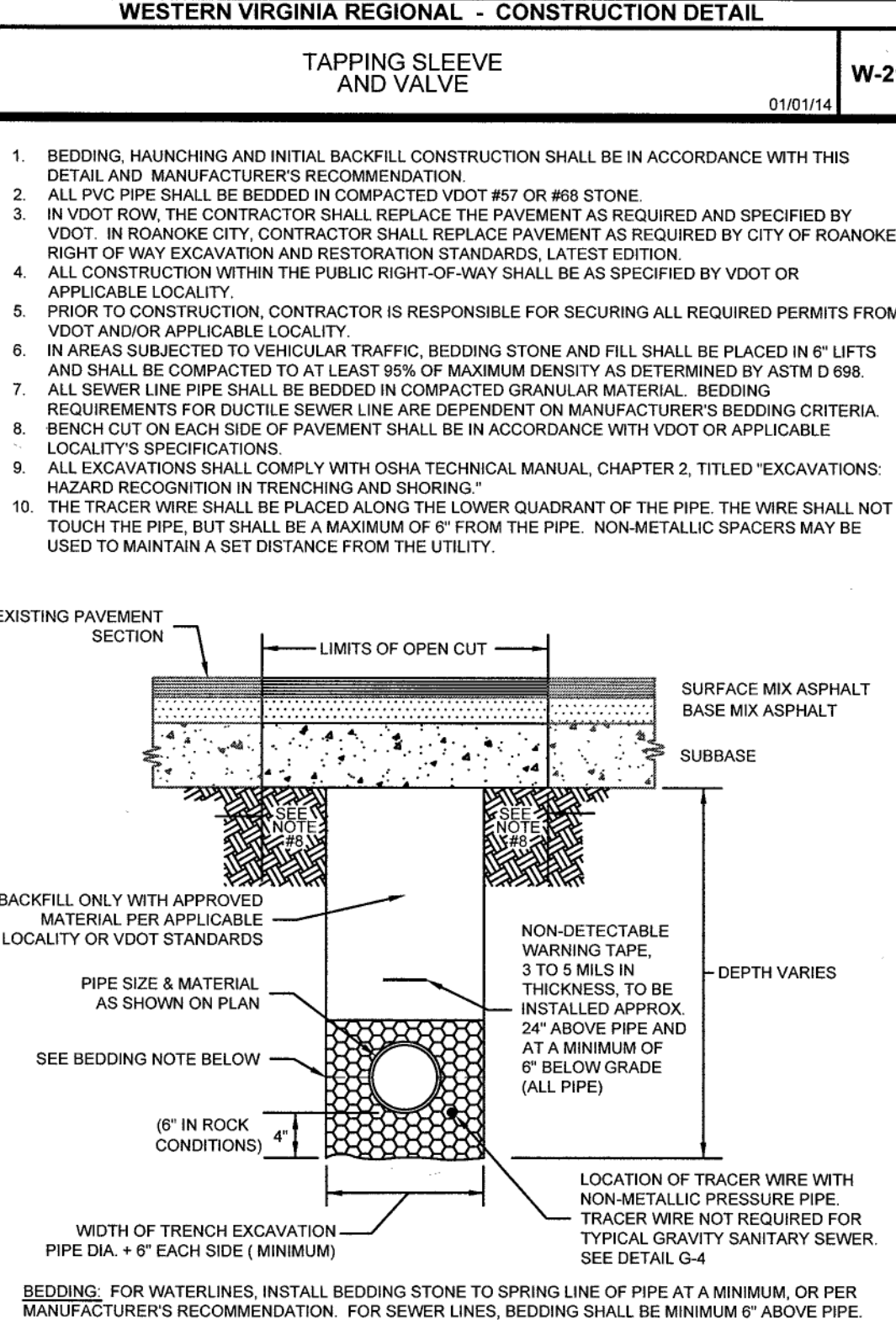
- PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES CROSSES OVER THE OTHER UTILITY WITH A VERTICAL CLEARANCE OF LESS THAN 18".
- PIER TO BE BUILT ON UNDISTURBED EARTH.
- CONCRETE TO BE READY MIX, CLASS A3.



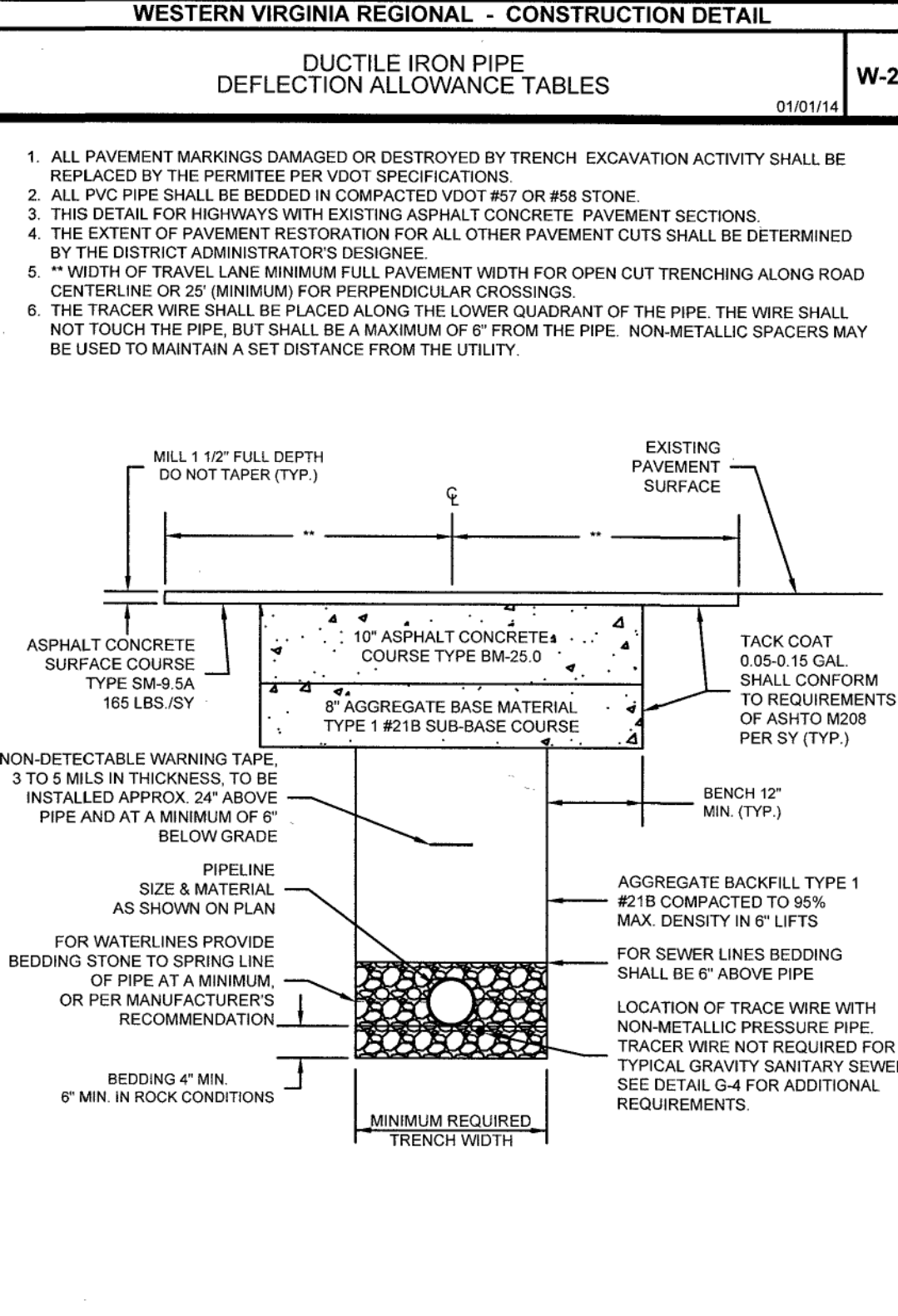
CONCRETE PIER



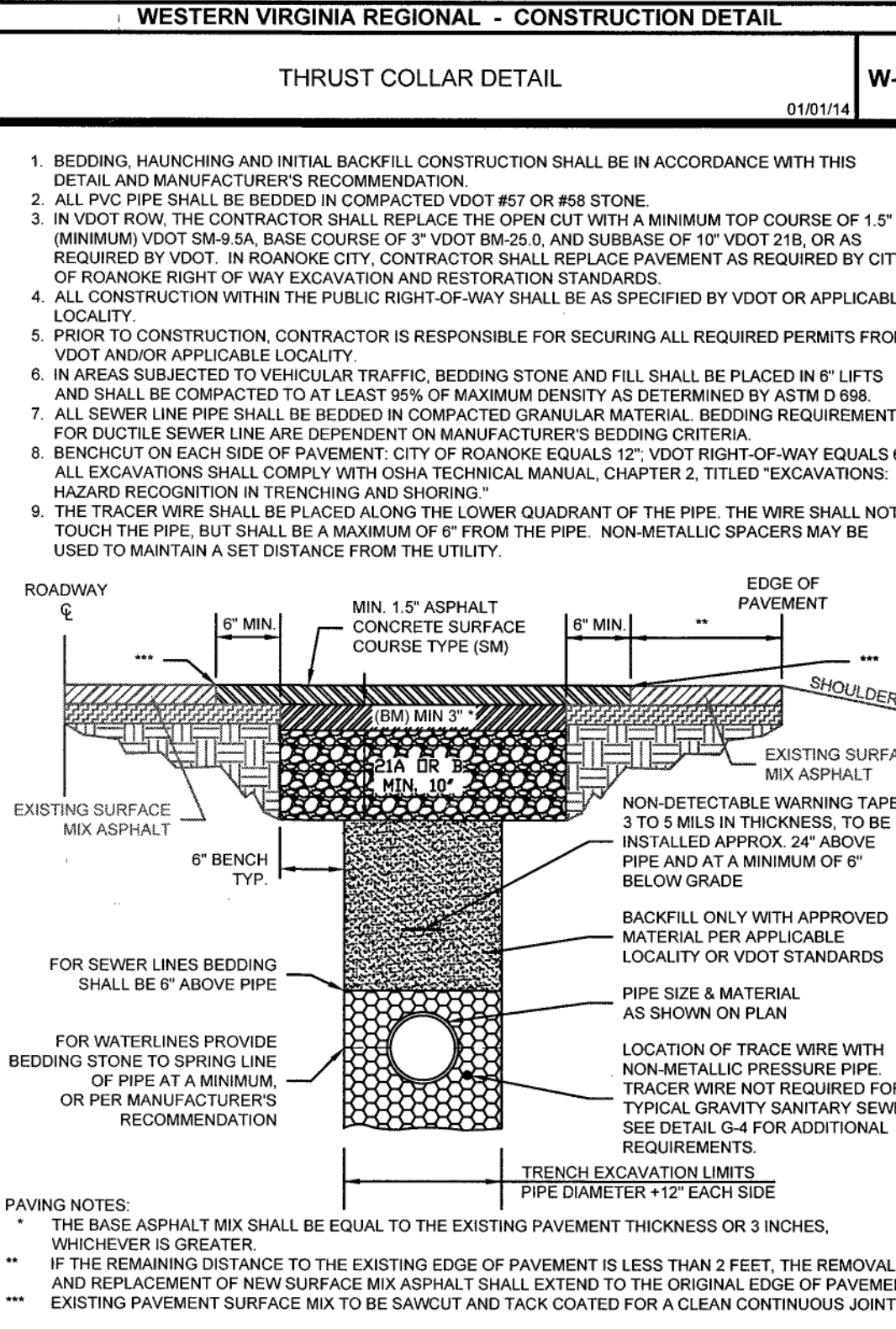
BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS



BEDDING AND BACKFILL UNDER PAVEMENT AND IN RIGHT-OF-WAY

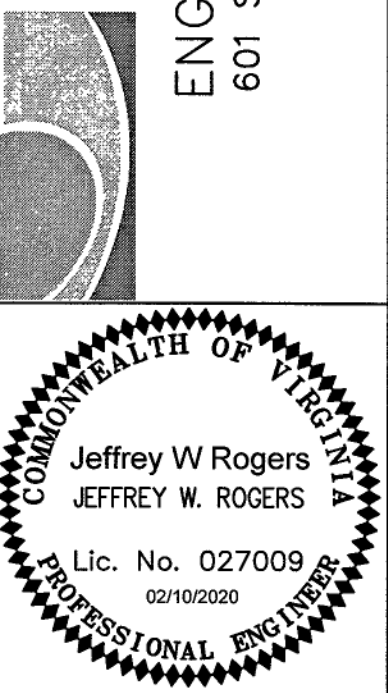


VDOT LAND USE PERMIT OPEN CUT PAVEMENT RESTORATION



PAVEMENT RESTORATION FOR LONGITUDINAL TRENCHING PARALLEL TO THE VDOT ROADWAY CENTERLINE

WESTERN VIRGINIA
WATER AUTHORITY
ENGINEERING SERVICES
601 S JEFFERSON ST, SUITE 300
ROANOKE, VA 24011
540-853-5700



WHITESIDE STREET WATERLINE REPLACEMENT DETAILS

Rev	Description	Date	By

Designed:
Drawn:
Checked: DRJ, AJC
Approved: JWR
Date: FEB 2020
Project: WCIP-038