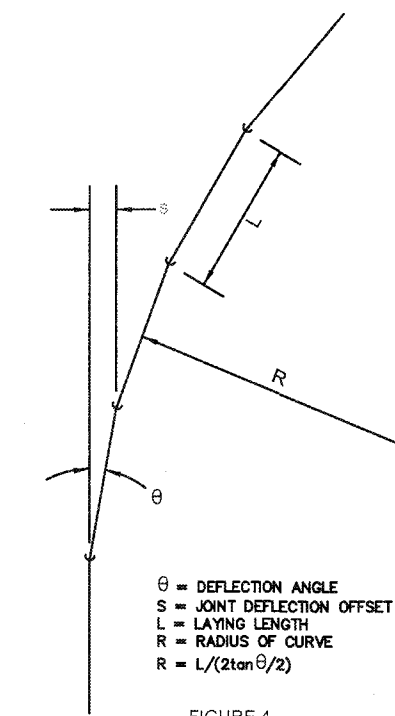


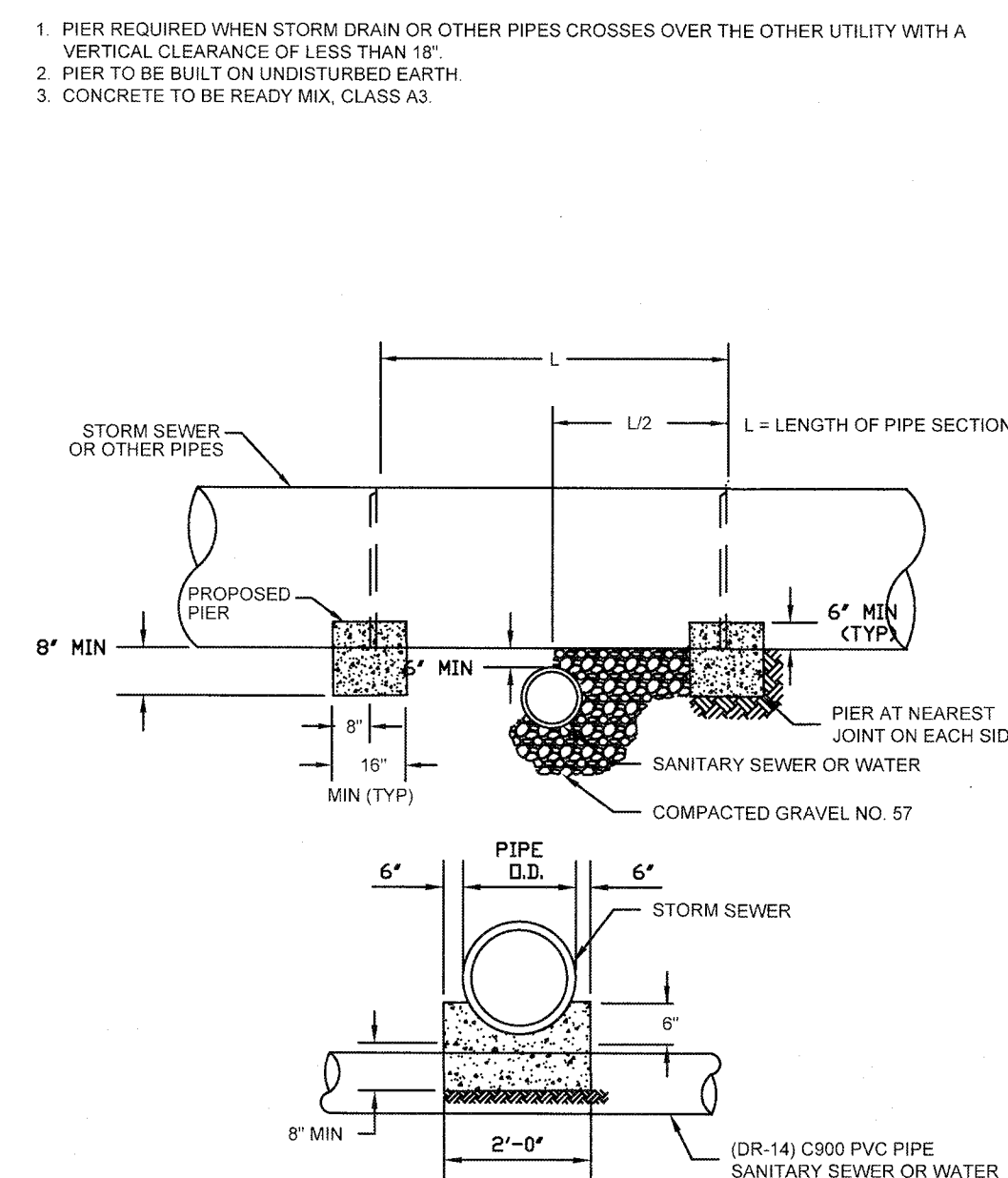
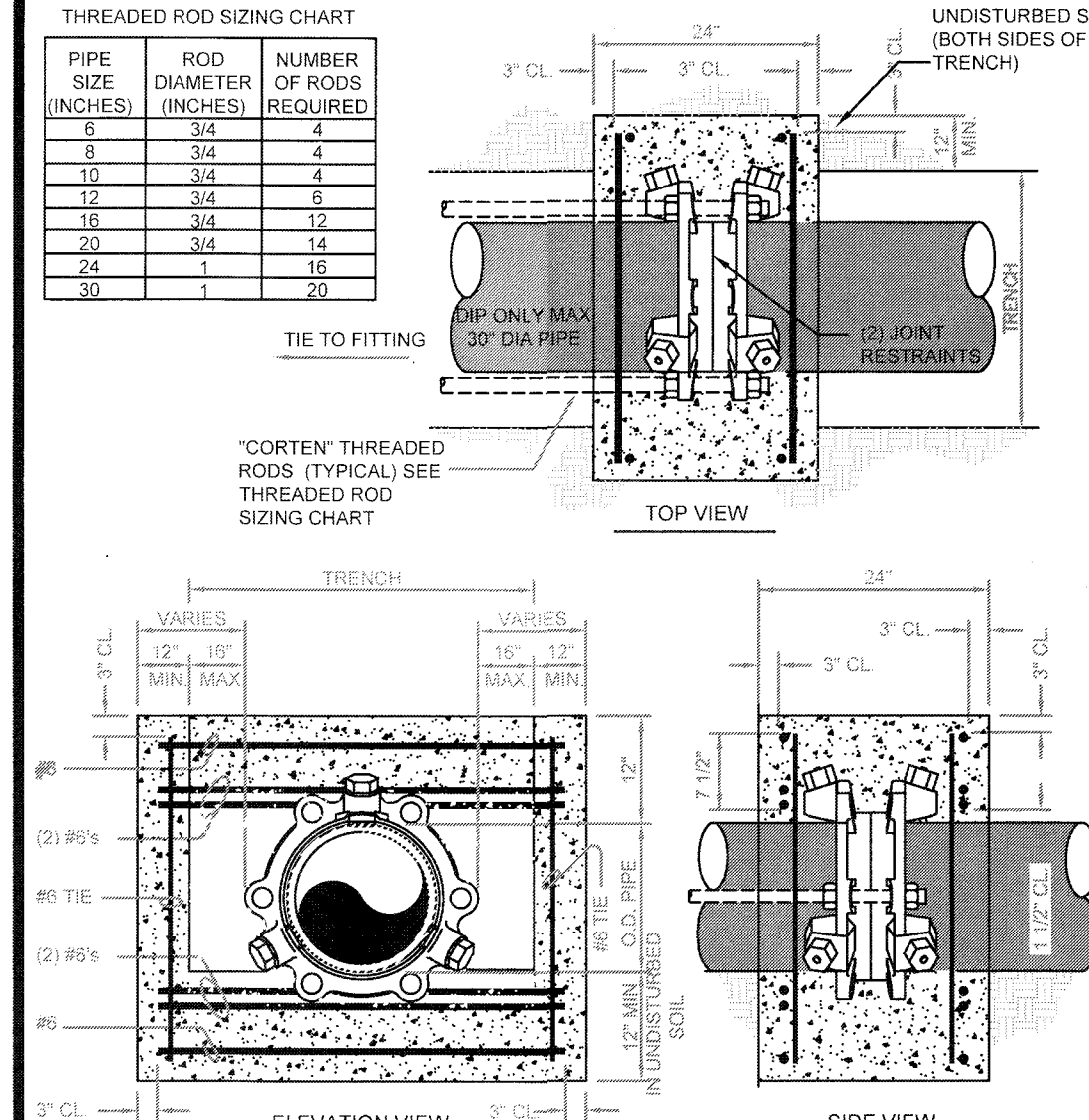
Maximum Joint Deflection Full Length of Pipe - Push on Type Joint						
Nominal Pipe Size (Inches)	Deflection Angle - θ (degree)	Maximum Offset - "S" (Inches)		Approximate Radius of Curve - "R" Produced by Succession of Joints		
		Joint Length 18'-0"	Joint Length 20'-0"	Joint Length 18'-0"	Joint Length 20'-0"	
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	



Nominal Pipe Size (inches)	Deflection Angle - θ (degrees)	Maximum Offset - S" (inches)		Approximate Radius of Curve - R' Produced by Succession of Joints	
		Joint Length 18'-6"	Joint Length 20'-0"	Joint Length 18'-6"	Joint Length 20'-0"
3	8°-18'	31	35	125	140
4	8°-18'	31	35	125	140
5	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

1. CONCRETE SHALL BE 3000 P.S.I. READY MIX CONCRETE.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TIE BARS BOTTOM MAIN IN VICINITY OF THRUST COLLAR INSTALLATION SHALL BE THE MINIMUM WIDTH OF TIE BAR.
4. BACKFILL AND COMPACT IN 4" LAYERS.
5. PLACE THRUST COLLAR ON ONE FULL JOINT OF PIPE.
6. LAST JOINT OF PIPE WITH THRUST COLLAR TO BE MECHANICAL JOINT PIPE.
7. PLACE RESTRAINED JOINT THRUST RING AT FIRST JOINTING END OF PIPE.
8. FORMS SHALL BE USED WHEN PLACING CONCRETE TO PREVENT CONCRETE FROM INFILTRATING JOINTS.
9. ALLOW MINIMUM OF 3 DAYS FOR CONCRETE TO OBTAIN STRENGTH BEFORE WATERLINE BECOMES ACTIVE.
10. PLANT RESTRAINTS SHALL BE USED TO PREVENT CONCRETE TO LIFT AND WRAPPED WITH POLYETHYLENE TO PREVENT CONCRETE INTRUSION INTO WEDGE POCKET.

PIPE SIZE (INCHES)	ROD DIAMETER (INCHES)	NUMBER OF RODS REQUIRED
6	3/4	4
8	3/4	4
10	3/4	4
12	3/4	6
16	2 1/4	12
20	3/4	14
24	1	16
30	1	20



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

TYPICAL WATER
PRESSURE TEST RIG

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WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

TAPPING SLEEVE AND VALVE

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WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

DUCTILE IRON PIPE DEFLECTION ALLOWANCE TABLES

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WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

THRUST COLLAR DETAIL

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WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

CONCRETE PIER

01/01/14

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1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS DETAIL, AND MANUFACTURER'S RECOMMENDATION SHALL BE FOLLOWED.
2. ALL PIPE SHALL BE BEDDED IN COMPACTED BEDDING.
3. IN REAS SURFACE, BEDDING SHALL BE 15" OF #57 OR #66 STONE, OR CRUSHER RUN.
4. IN TRENCH SURFACE, BEDDING SHALL BE 15" OF #57 OR #66 STONE, OR CRUSHER RUN.
5. BEDDING SHALL BE PLACED IN 6" LIFTS FROM BOTTOM OF TRENCH TO 1" ABOVE THE PIPE AND THE REMAINING SHALL BE PLACED IN 10" LIFTS AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
6. BEDDING REQUIREMENTS FOR DUCTILE IRON WATER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
7. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORINGS."
8. THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL BE PLACED IN 6" PITS BUT SHALL NOT BE PLACED IN THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.

