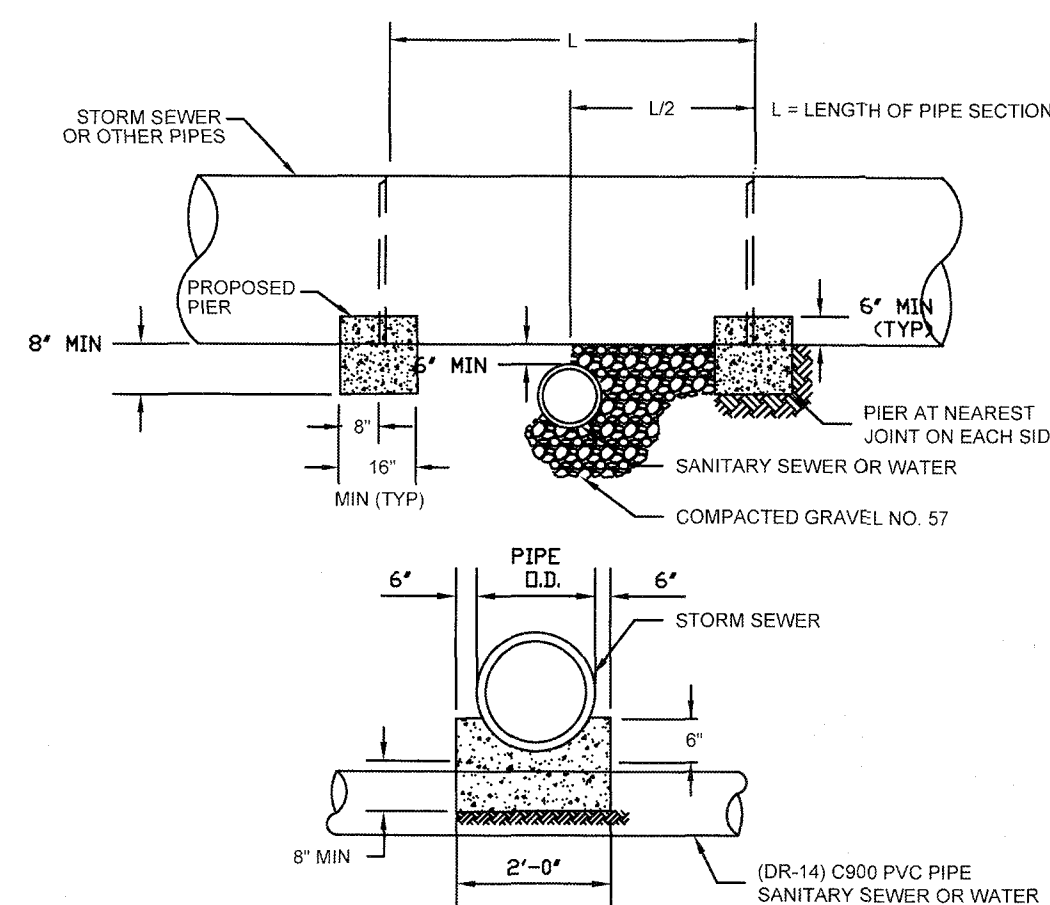
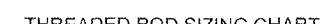


θ = DEFLECTION ANGLE
 S = JOINT DEFLECTION OFFSET
 L = LAYING LENGTH
 R = RADIUS OF CURVE
 $R = L^2/(2\pi\theta^2/2)$

FIGURE 4

* SEE FIGURE 4.



TYPICAL WATER
PRESSURE TEST RIG

W-20

TAPPING SLEEVE AND VALVE

W-2

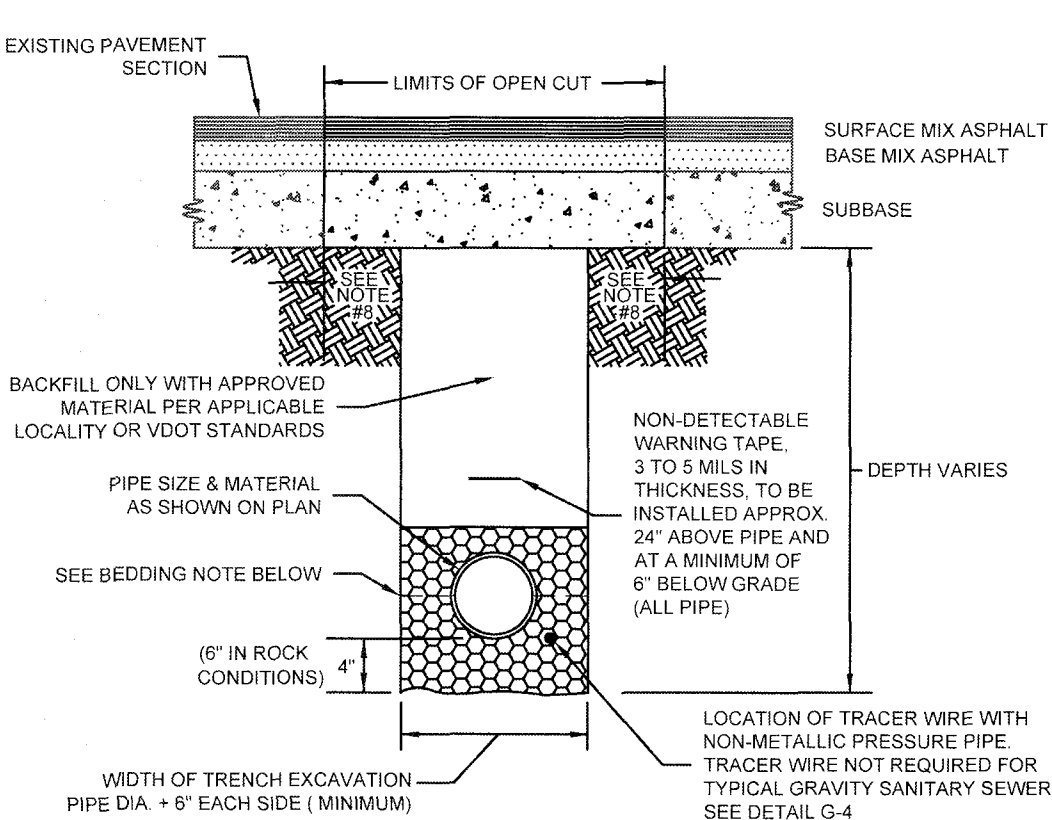
DUCTILE IRON PIPE
DEFLECTION ALLOWANCE TABLES

THRUST COLLAR DETAIL

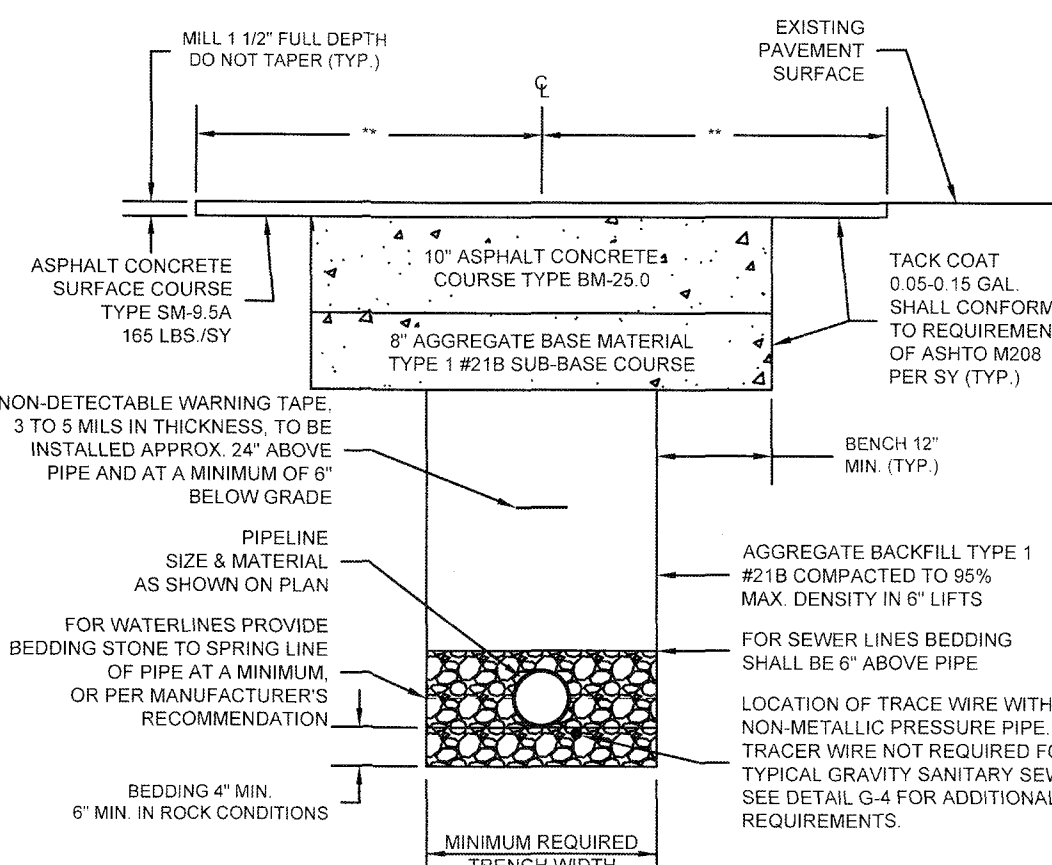
CONCRETE PIER

-

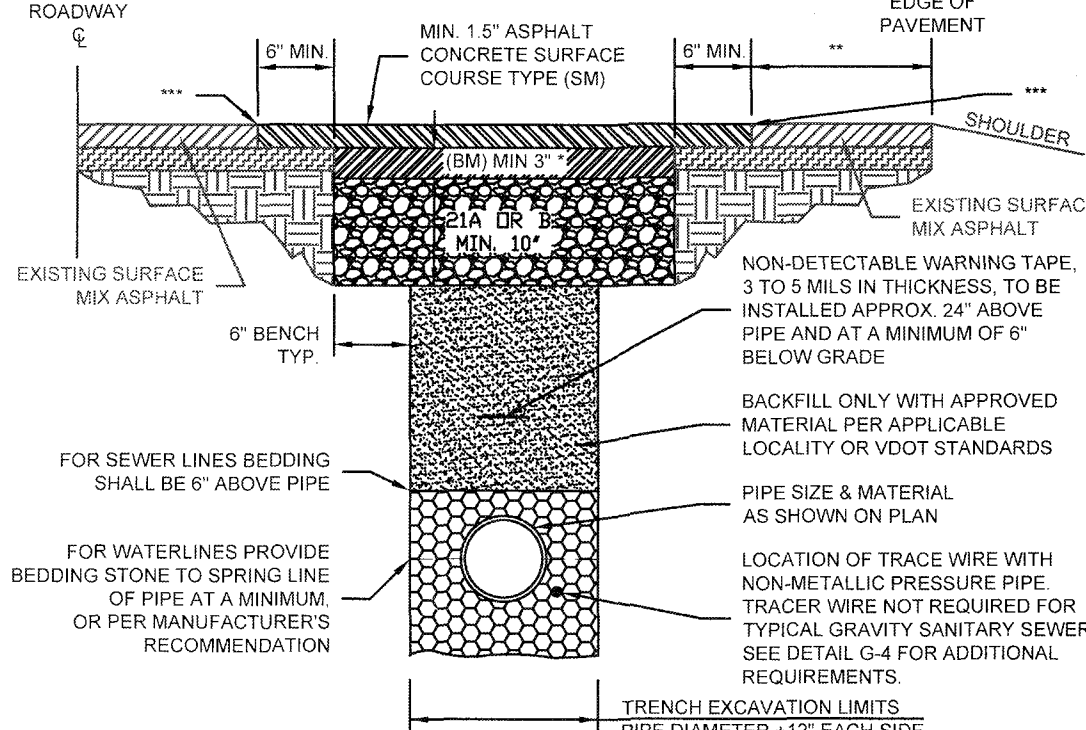
- 1 BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS
2 DETAIL AND MANUFACTURER'S RECOMMENDATION.
- 3 ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #88 STONE
4 IN VDOT ROAD. THE CONTRACTOR SHALL PROVIDE THE PAVEMENT AS REQUIRED AND SPECIFIED BY
5 VDOT. IN ROANOKE CITY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY CITY OF ROANOKE
6 RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS, LATEST EDITION
7 IN ACCORDANCE WITH THE CITY OF ROANOKE. ALL PIPE SHALL BE SPECIFIED BY VDOT OR
8 APPLICABLE LOCALITY.
- 9 ALL CONSTRUCTION CONTRACTOR RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM
10 VDOT AND/OR APPLICABLE LOCALITY.
- 11 IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS
12 AND COMPACTED TO A MINIMUM OF 98% OF STANDARD PRODDEN SPECIFICATION ASTM D 698.
13 ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING
14 REQUIREMENTS FOR RIGID SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRI
15 REQUIREMENTS. EACH SEWER LINE SHALL BE BEDDED IN ACCORDANCE WITH VDOT OR APPLICABLE
16 LOCALITY'S SPECIFICATIONS.
- 17 ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS
18 AND SHIELDING IN TRENCHING AND SHIELDING".
- 19 THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL NOT
20 TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE
21 USED TO MAINTAIN A MINIMUM 6" CLEARANCE.



1. ALL PAVEMENT MARKINGS DAMAGED OR DESTROYED BY TRENCH EXCAVATION ACTIVITY SHALL BE REPLACED BY THE PERMITEE PER VDOT SPECIFICATIONS.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #88 STONE.
3. THE SLOPE FOR HANDLING OF THE TRENCH SHALL BE EXAMINED AND REPAIRED IN ALL SECTIONS.
4. THE EXTENT OF PAVEMENT RESTORATION FOR ALL OTHER PAVEMENT CUTS SHALL BE DETERMINED BY THE DISTRICT ADMINISTRATOR'S DESIGNEE.
5. ALL CULVERT TRAVEL LANE SPACING SHALL BE A MINIMUM OF 10 FEET FOR OPEN CUT TRENCHES ALONG ROAD CENTERLINE OR 25' (MINIMUM) FOR PERPENDICULAR CROSSINGS.
6. THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL BE PLACED AT THE END OF THE TRENCH AND THE OTHER END OF THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.



1. BEDDING: HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS DETAIL AND MANUFACTURER'S RECOMMENDATION.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #58 STONE.
3. VDOT ROUTE THE CONTRACTOR SHALL PROVIDE AN OPEN CUT WITH A MINIMUM TOP COURSE OF 1" (MINIMUM) VDOT SW-5A BASE COURSE OF 3" VDOT BM-25.0 AND SUBBASE OF 10" VDOT 21B, OR AS REQUIRED BY VDOT. IN ROCKANE CITY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY CITY.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
5. FOR CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM CITY AND/OR APPLICABLE LOCALITY.
6. IN AREAS SUBJECTED TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS.
7. ALL SEVERED SIDEWALK SHALL BE REPLACED AT LEAST 65% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
8. ALL SEVERED LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS SHALL BE AS SPECIFIED BY VDOT.
9. BENCHMARK ON EACH SIDE OF PAVEMENT: CITY OF ROCKANE EQUALS 12' VDOT RIGHT-OF-WAY EQUALS 6'. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS AND SHIELDING CONTROLS".
10. THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUANDRY OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPLICERS MAY BE USED.



PAVING NOTES:

* THE BASE ASPHALT MIX SHALL BE EQUAL TO THE EXISTING PAVEMENT THICKNESS OR 3 INCHES, WHICHEVER IS GREATER.

** IF THE REMAINING DISTANCE TO THE EXISTING EDGE OF PAVEMENT IS LESS THAN 2 FEET, THE REMOVAL AND REPLACEMENT OF NEW SURFACE MIX ASPHALT SHALL EXTEND TO THE ORIGINAL EDGE OF PAVEMENT.

*** EXISTING PAVEMENT SURFACE MIX TO BE SAWCUT AND TACK COATED FOR A CLEAN CONTINUOUS JOINT.

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

COMMONWEALTH OF VIRGINIA
W. C. Bulloss
 WILLIAM C. BULLOSS
 Lic. No. 053694
 04/04/2019
 PROFESSIONAL ENGINEER

MAPLELAWN & FRONTIER
WATERLINE REPLACEMENT

DETAILS

[illegible]

Designed:	
Drawn:	DRJ
Checked:	
Approved:	WCB
Date:	APRIL 2019
Project:	WCIP-324