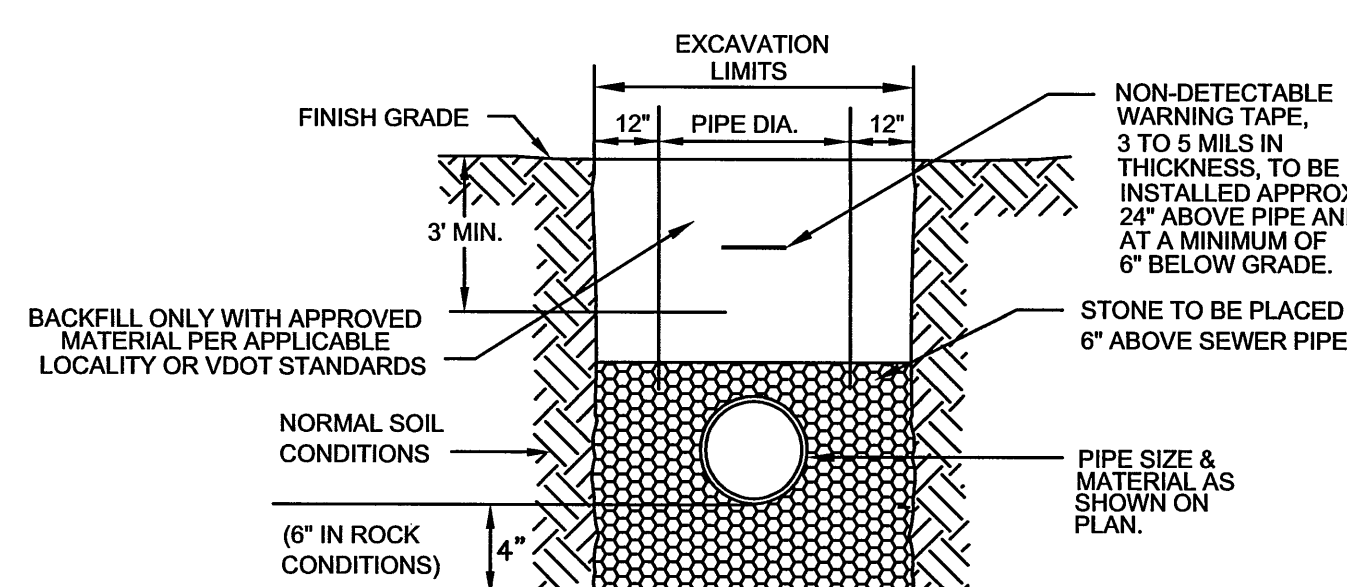


**NOTES:**

1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
2. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
3. IN AREAS NOT SUBJECTED TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS FROM BOTTOM OF TRENCH TO 7' ABOVE THE PIPE AND THE REMAINING SHALL BE PLACED IN 12" LIFTS AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
4. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
5. ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."



EXISTING PAVEMENT SECTION

LIMITS OF OPEN CUT

SM-9.5A SURFACE  
BM-2 BASE  
21B SUBBASE

PIPE DIA. + 12" EACH SIDE

DEPTH VARIES

BACKFILL ONLY WITH APPROVED MATERIAL PER APPLICABLE LOCALITY OR VDOT STANDARDS

PIPE SIZE & MATERIAL AS SHOWN ON PLAN.

NON-DETECTABLE WARNING TAPE, 3 TO 5 MILS IN THICKNESS, TO BE INSTALLED APPROX. 24" ABOVE PIPE AND AT A MINIMUM OF 6" BELOW GRADE.

FOR SEWER LINES, BEDDING SHALL BE 6" ABOVE PIPE.

(6" IN ROCK CONDITIONS) 4"

WIDTH OF TRENCH EXCAVATION

- NOTES:
1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
  2. ALL PVP PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #6# STONE.
  3. IN ROANOKE COUNTY, THE CONTRACTOR SHALL REPLACE THE OPEN CUT WITH A MINIMUM TOP COURSE OF 1.5" (MINIMUM) VDOT SM-9.5A, BASE COURSE OF VDOT BM-25D, AND SUBBASE OF 10" VDOT 21B, OR AS REQUIRED BY VDOT. IN ROANOKE COUNTY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY COUNTY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.
  4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
  5. PRIOR TO CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM VDOT AND APPLICABLE LOCALITY.
  6. WHEREAS SUBJECT TO THE TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS AND SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
  7. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
  8. BENCHMARK ON EACH SIDE OF PAVEMENT: COUNTY OF ROANOKE EASEMENTS 12" VDOT RIGHT-OF-WAY EQUIVALENTS 6" VDOT RIGHT-OF-WAY EQUIVALENTS, COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED EXCAVATIONS; HAZARD IDENTIFICATION IN TRENCHING AND SHORING.

REMOVE MANHOLE FRAME AND COVER AND RETURN TO THE ROANOKE COUNTY UTILITY DEPARTMENT.

REMOVE MANHOLE TO A MINIMUM OF ONE FOOT BELOW FINISH GRADE. (REMOVE ALL GRADE RINGS.)

21A STONE OR SELECT FILL

FILL MANHOLE SOLID WITH FLOWABLE FILL. READY MIX CONCRETE. 3000 PSI IN 28 DAYS.

18" MINIMUM

FOR PIPES 18" AND LARGER PROVIDE A MASONRY BULKHEAD IN LIEU OF MECHANICAL PLUGS.

FOR PIPES 16" IN DIAMETER AND SMALLER SET MECHANICAL PLUGS INTO ALL PIPES ENTERING MANHOLES

EXISTING MANHOLE TO REMAIN

PROVIDE A MASONRY BULKHEAD AT THE DISCONNECTED PIPE PRIOR TO PLACING CONCRETE.

CONCRETE TO EXTEND A MINIMUM OF TWO INCHES BEYOND MANHOLE TO PIPE CONNECTION ALL AROUND.

EXISTING PIPE TO MANHOLE CONNECTION TO REMAIN

20" MINIMUM

PIPE STUB DISCONNECTED PIPE

MECHANICAL PLUG

(REMOVE A MINIMUM OF TWO FEET OF EXISTING PIPE)


READY MIX CONCRETE 3000 PSI IN 28 DAYS

20" MINIMUM

PIPE TO REMAIN

PIPE TO BE ABANDONED

This diagram illustrates the process of extending and abandoning a pipe stub. It shows a cross-section of a masonry manhole. An existing pipe runs vertically through the manhole. A horizontal pipe stub is shown being disconnected from the main vertical line. The stub is to be extended with new concrete, which must extend at least 20 inches beyond the manhole connection. A mechanical plug is placed at the end of the stub. The existing pipe to be abandoned is to be removed for a minimum of two feet. The new concrete must be 3000 PSI and cured for 28 days. The diagram also indicates the location of the existing manhole and the pipe to remain.

A circular professional engineer seal for the Commonwealth of Virginia. The outer ring contains the text "COMMONWEALTH OF VIRGINIA" at the top and "PROFESSIONAL ENGINEER" at the bottom. In the center, the name "Robert H. Wampler, Jr." is written in a cursive script, followed by "Lic. No. 34713" and the date "2/16/11" in a plain font.

CRYSTAL CREEK – PHASE II  
SANITARY SEWER DETAILS

NA
DATE: MARCH, 2011
PROJECT: 09001
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