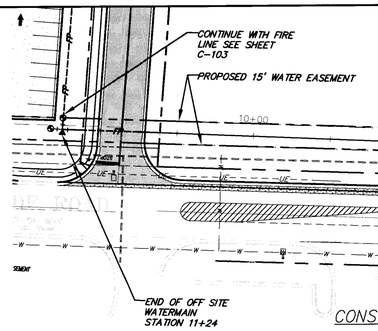
## WATERLINE EXTENSION NOTES:

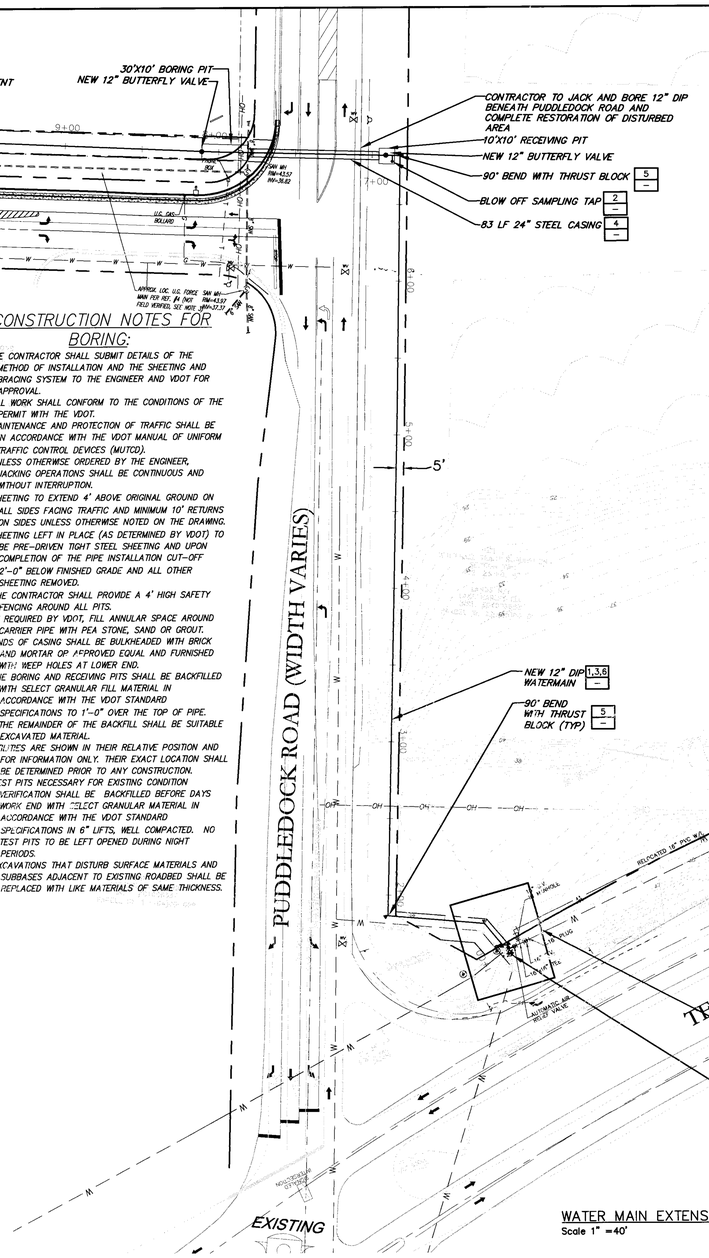
1. CONTRACTOR TO LOCATE THE EXISTING 16" DIP WATERMAIN ALONG TEMPLE AVENUE THROUGH THE USE OF TEST PITS.
2. THE CONTRACTOR SHALL:
   - A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
   - B. NOTIFY U.F.P.O. FOR UTILITY MARK-OUT AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.
   - C. EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
   - D. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
3. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
4. BEFORE CONSTRUCTING LINES REQUIRING CONNECTION TO EXISTING UTILITIES, VERIFY EXISTING UTILITY INVERTS AND NOTIFY ENGINEER IF ANY VARIATION FROM THE PLANS IS REQUIRED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONDUCT EXPLORATORY TEST PITS AS REQUIRED TO DETERMINE UNDERGROUND CONDITIONS. THE CONTRACTOR SHALL CONDUCT TEST PITS AS REQUIRED FOR THE PERFORMANCE OF WORK INCLUDING ALL UTILITY CROSSINGS AT HIS/HER EXPENSE. THE COST OF TEST PITS SHALL BE INCLUDED IN THE BIDDERS TOTAL BID.
6. ALL NEW OR RELOCATED WATERMAIN SHALL BE PRESSURE TESTED IN ACCORDANCE WITH LOWE'S SPECIFICATION SECTION "BURIED PIPE INSTALLATION."
7. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEM SHALL BE COORDINATED WITH THE ENGINEER AND PRINCE GEORGE COUNTY UTILITY DEPARTMENT. NOTIFY THE ENGINEER AND THE UTILITY DEPARTMENT 72 HOURS BEFORE EVERY CONNECTION TO EXISTING SYSTEMS ARE MADE.
8. MAINTAIN FLOW FOR ALL UTILITIES, CULVERTS, AND DITCHES.
9. CONTRACTOR SHALL INSTALL WATERMAIN PIPING VIA OPEN-CUT TRENCHING METHODS AND JACK BORE AS SHOWN ON PLANS.
10. ALL WATERMAIN TO BE INSTALLED AND TESTED WITHIN THE VIRGINIA WATERWORKS REGULATIONS AND IN ACCORDANCE WITH PRINCE GEORGE COUNTY STANDARDS.
11. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

### PIPE CROSSING - DATA SHEET

| | CARRIER PIPE | CASING PIPE |
|---|---|---|
| CONTENTS TO BE HANDLED | water | 0 |
| NORMAL OPERATING PRESSURE | 60 PSIG | 24" |
| NOMINAL SIZE OF PIPE | 12" | 24" |
| O. S. DIAMETER | 13.20" | " |
| I. S. DIAMETER | 12.52" | " |
| WALL THICKNESS | 0.34" | |
| WEIGHT PER FOOT | 43.9 | |
| MATERIAL | Ductile Iron | Steel |
| PROCESS OF MANUFACTURE | | Arc-Weld |
| SPECIFICATION | | |
| GRADE OR CLASS | 51 | B |
| TEST PRESSURE | 150 psi (air) | 4 psi (air) |
| TYPE OF JOINT | Push on | Welded |
| TYPE OF COATING | None | None |
| DETAILS OF CATHODIC PROTECTION | None | None |
| DETAILS OF SEAL OR PROTECTION AT ENDS OF CASING | --- | Brick/Mortar |
| METHOD OF INSTALLATION | Jacking and Boring | |
| CHARACTER OF SUBSURFACE MATERIAL AT THE CROSSING LOCATION | | |
| APPROXIMATE GROUND WATER LEVEL | | |
| SOURCE OF INFORMATION ON SUBSURFACE CONDITIONS (BORINGS, TEST PITS OR OTHER) | | |

NOTE: Any soil investigation made on state property or adjacent to pavements shall be carried out under the supervision of V.D.O.T. Regional Traffic Engineer.



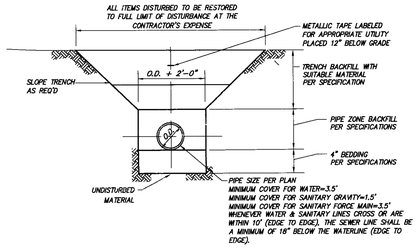




WATER MAIN EXTENSION PLAN
Scale 1" =40'

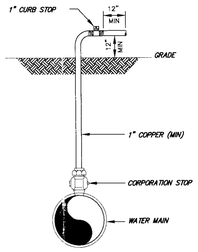
FOR MORE INFORMATION CONTACT THE STATE CORPORATION COMMISSION DIVISION OF UTILITY AND RAILROAD SAFETY CALL: 1-800-552-7001

## CONSTRUCTION NOTES FOR BORING:

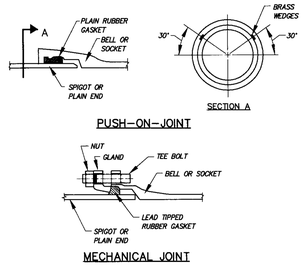
1. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE METHOD OF INSTALLATION AND THE SHEETING AND BRACING SYSTEM TO THE ENGINEER AND VDOT FOR APPROVAL.
2. ALL WORK SHALL CONFORM TO THE CONDITIONS OF THE PERMIT WITH THE VDOT.
3. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE VDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. UNLESS OTHERWISE ORDERED BY THE ENGINEER, JACKING OPERATIONS SHALL BE CONTINUOUS AND WITHOUT INTERRUPTION.
5. SHEETING TO EXTEND 4' ABOVE ORIGINAL GROUND ON ALL SIDES FACING TRAFFIC AND MINIMUM 10' RETURNS ON SIDES UNLESS OTHERWISE NOTED ON THE DRAWING.
6. SHEETING LEFT IN PLACE (AS DETERMINED BY VDOT) TO BE PRE-DRIVEN TIGHT STEEL SHEETING AND UPON COMPLETION OF THE PIPE INSTALLATION CUT-OFF 2'-0" BELOW FINISHED GRADE AND ALL OTHER SHEETING REMOVED.
7. THE CONTRACTOR SHALL PROVIDE A 4' HIGH SAFETY FENCING AROUND ALL PITS.
8. IF REQUIRED BY VDOT, FILL ANNULAR SPACE AROUND CARRIER PIPE WITH PEA STONE, SAND OR GROUT.
9. ENDS OF CASING SHALL BE BULKHEADED WITH BRICK AND MORTAR OR APPROVED EQUAL AND FURNISHED WITH WEEP HOLES AT LOWER END.
10. THE BORING AND RECEIVING PITS SHALL BE BACKFILLED WITH SELECT GRANULAR FILL MATERIAL IN ACCORDANCE WITH THE VDOT STANDARD SPECIFICATIONS TO 1'-0" OVER THE TOP OF PIPE. THE REMAINDER OF THE BACKFILL SHALL BE SUITABLE EXCAVATED MATERIAL.
11. UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND FOR INFORMATION ONLY. THEIR EXACT LOCATION SHALL BE DETERMINED PRIOR TO ANY CONSTRUCTION.
12. TEST PITS NECESSARY FOR EXISTING CONDITION VERIFICATION SHALL BE BACKFILLED BEFORE DAYS WORK END WITH SELECT GRANULAR MATERIAL IN ACCORDANCE WITH THE VDOT STANDARD SPECIFICATIONS IN 6" LIFTS, WELL COMPACTED. NO TEST PITS TO BE LEFT OPENED DURING NIGHT PERIODS.
13. EXCAVATIONS THAT DISTURB SURFACE MATERIALS AND SUBBASES ADJACENT TO EXISTING ROADBED SHALL BE REPLACED WITH LIKE MATERIALS OF SAME THICKNESS.



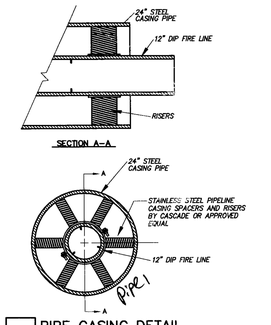

1 UTILITY TRENCH DETAIL
SCALE: N.T.S.




2 BLOWOFF SAMPLING TAP
SCALE: N.T.S.




3 TYPICAL JOINT DETAIL
SCALE: N.T.S.

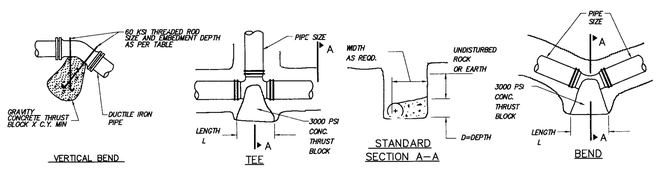



4 PIPE CASING DETAIL
SCALE: N.T.S.

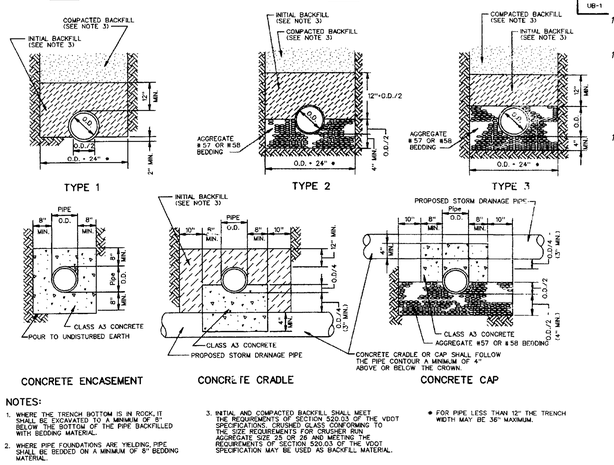
| TYPE B BLOCKING FOR 45° VERTICAL BENDS | | | | |
|---|---|---|---|---|
| PIPE SIZE NOM DIA. (INCHES) | NO. OF CUBIC CONC BLOCKING | SIDE OF CUBE (FEET) | DIA. OF SHACKLE RODS(2) * (INCHES) | DEPTH OF RODS IN CONC (FEET) |
| 8" | 102 | 4.7 | 3/4" | 1.6 |
| 10" | 154 | 5.4 | 7/8" | 1.6 |
| 12" | 218 | 6.0 | 3/4" | 1.6 |
| 14" | 292 | 6.6 | 7/8" | 2.2 |
| 16" | 378 | 7.2 | 1 1/8" | 3.7 |

REQUIRED BEARING AREAS & DIMENSIONS
FOR CONCRETE THRUST BLOCKS

| PIPE SIZE (IN.) | TEE(See Note 5) | | 90°(1/4)BEND | | 45°(1/8)BEND | | 22-1/2°(1/16)BEND | | 11-1/4°(1/32)BEND | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AREA Sq.Ft. | Dimen. D x L | AREA Sq.Ft. | Dimen. D x L | AREA Sq.Ft. | Dimen. D x L | AREA Sq.Ft. | Dimen. D x L | AREA Sq.Ft. | Dimen. D x L |
| 8 | 5.7 | 2.0 x 3.0 | 8.0 | 2.0 x 4.0 | 4.3 | 2.0 x 2.5 | 2.2 | 1.5 x 1.5 | 1.1 | 1.0 x 1.5 |
| 12 | 12.7 | 3.5 x 3.5 | 18.0 | 4.0 x 4.5 | 9.7 | 2.5 x 4.0 | 5.0 | 2.0 x 2.5 | 2.5 | 1.5 x 2.0 |
| 14 | 24.6 | 6.0 x 4.5 | 24.6 | 6.0 x 4.5 | 13.3 | 3.5 x 4.0 | 6.8 | 2.0 x 3.5 | 3.4 | 1.5 x 2.5 |
| 16 | 50.0 | 6.0 x 8.5 | 50.0 | 6.0 x 8.5 | 27.0 | 5.0 x 5.5 | 13.8 | 3.5 x 4.0 | 6.9 | 2.5 x 3.0 |




5 THRUST BLOCK DETAILS
SCALE: N.T.S.

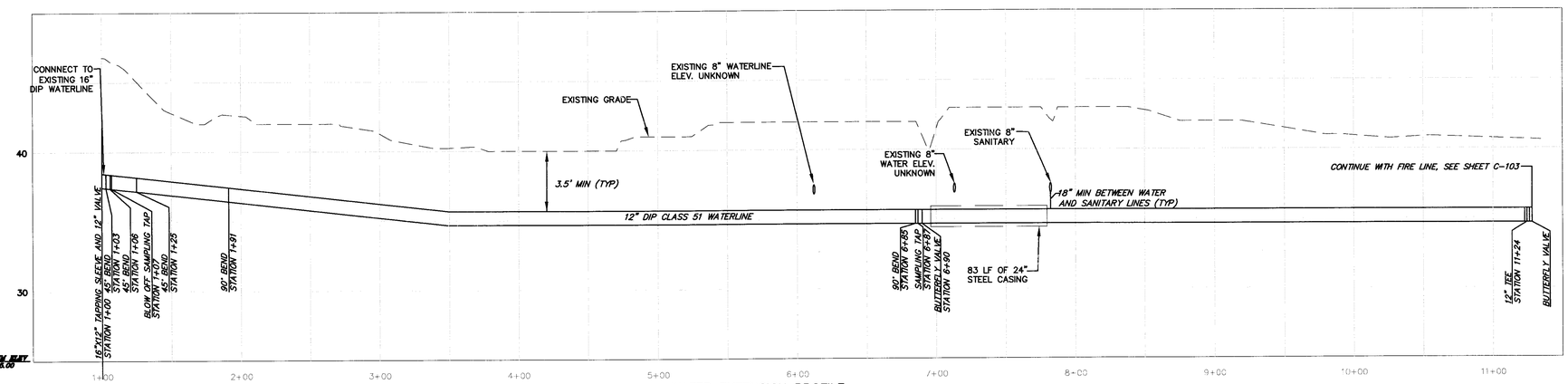



NOTES:

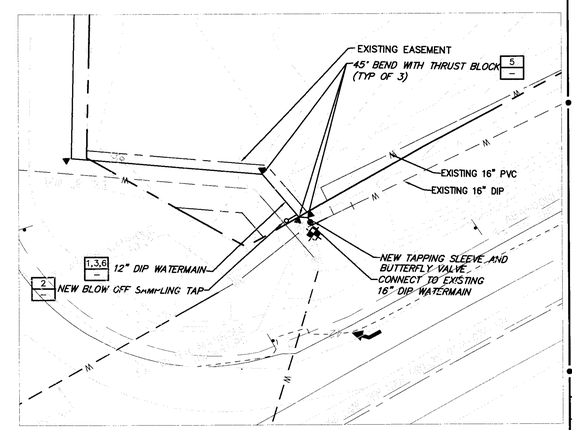
1. WHERE THE TRENCH BOTTOM IS IN ROCK IT SHALL BE SUCH AS TO PROVIDE A MINIMUM OF 6" BELOW THE BOTTOM OF THE PIPE BACKFILLED WITH BEDDING MATERIAL.
2. WHERE PIPE FOUNDATIONS ARE YIELDING, PIPE SHALL BE BEDDED ON A MINIMUM OF 8" BEDDING MATERIAL.
3. INITIAL AND COMPACTED BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 520.03 OF THE VDOT SPECIFICATIONS. CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 23, OR 26 AND MEETING THE REQUIREMENTS OF SECTION 520.03 OF THE VDOT SPECIFICATION MAY BE USED AS BACKFILL MATERIAL.

* FOR PIPE LESS THAN 12" THE TRENCH WIDTH MAY BE 36" MAXIMUM.

6 UTILITY BEDDING AND PROTECTION
WATER AND SANITARY SEWER FACILITIES
VIRGINIA DEPARTMENT OF TRANSPORTATION
REV. 8/07
1401.01




WATER EXTENSION PROFILE
HORIZONTAL SCALE 1"=40'
VERTICAL SCALE 1"=4'




CONNECTION ENLARGEMENT DETAIL
Scale 1" = 20'

REVISIONS
◇ PRE-BID SET ISSUE DATE △ POST BID SET ISSUE DATE

| DATE | DESCRIPTION |
|---|---|
| 2/08 | VDOT COMMENTS |
| 02-27-08 | Lowe's Comments |

COMMONWEALTH OF VIRGINIA
DAVID J. CHAPMAN
LIC. NO. 31636
PROFESSIONAL ENGINEER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OFF SITE WATER EXTENSION PLAN
LOWE'S OFF PRINCE GEORGE, VA
117 K SUPER WIDE
PRINCE GEORGE, VA
PROJECT NO: 16984 | DRAWN BY: KGW | CHECKED BY: WTE

ORIGINAL ISSUE DATE: 11-05-07
PERMIT SET ISSUE DATE: 12-14-07
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER:
C-801