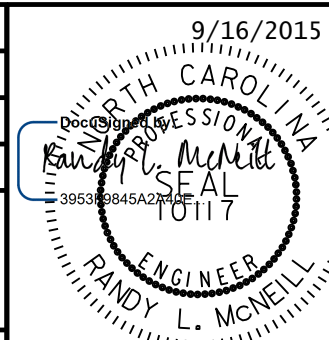


PROJECT REFERENCE NO.	SHEET NO.
W-5519	UC-3A
DESIGNED BY: DMP	
DRAWN BY: DMP	
CHECKED BY: DMP	
APPROVED BY: DMP	
REVISED:	9/16/2015
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

1. CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE FAYPWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH FAYPWC STANDARDS.

2. SEWER MAINS, LATERALS, AND MANHOLES SHALL BE INSTALLED UTILIZING A FAYPWC APPROVED CUT-SHEET, INDICATING INSTALLATION DEPTH.

3. TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:  
 A. INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 18" INSIDE R/W UNLESS OTHERWISE DIRECTED BY FAYPWC.  
 B. CONNECT EXISTING PLUMBING TO NEW LATERAL UTILIZING THE NECESSARY FITTINGS AS DIRECTED BY FAYPWC.  
 C. AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH FAYPWC REQUIREMENTS.

4. WHEN THE EXISTING MAIN IS NOT TO BE ABANDONED, THE CONTRACTOR SHALL UNCOVER THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATION, AND PLUG THE LATERAL TO ABANDON THE OLD SERVICE.

5. SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL DEBRIS, AND THEN REMOVE THE PLUG.

6. SEPARATION REQUIREMENTS:  
 A. **LATERAL SEPARATION OF SEWERS AND WATER MAINS:** WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAIN/LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION - IN WHICH CASE:  
 1. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL, OR  
 2. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER MAIN/LATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL.

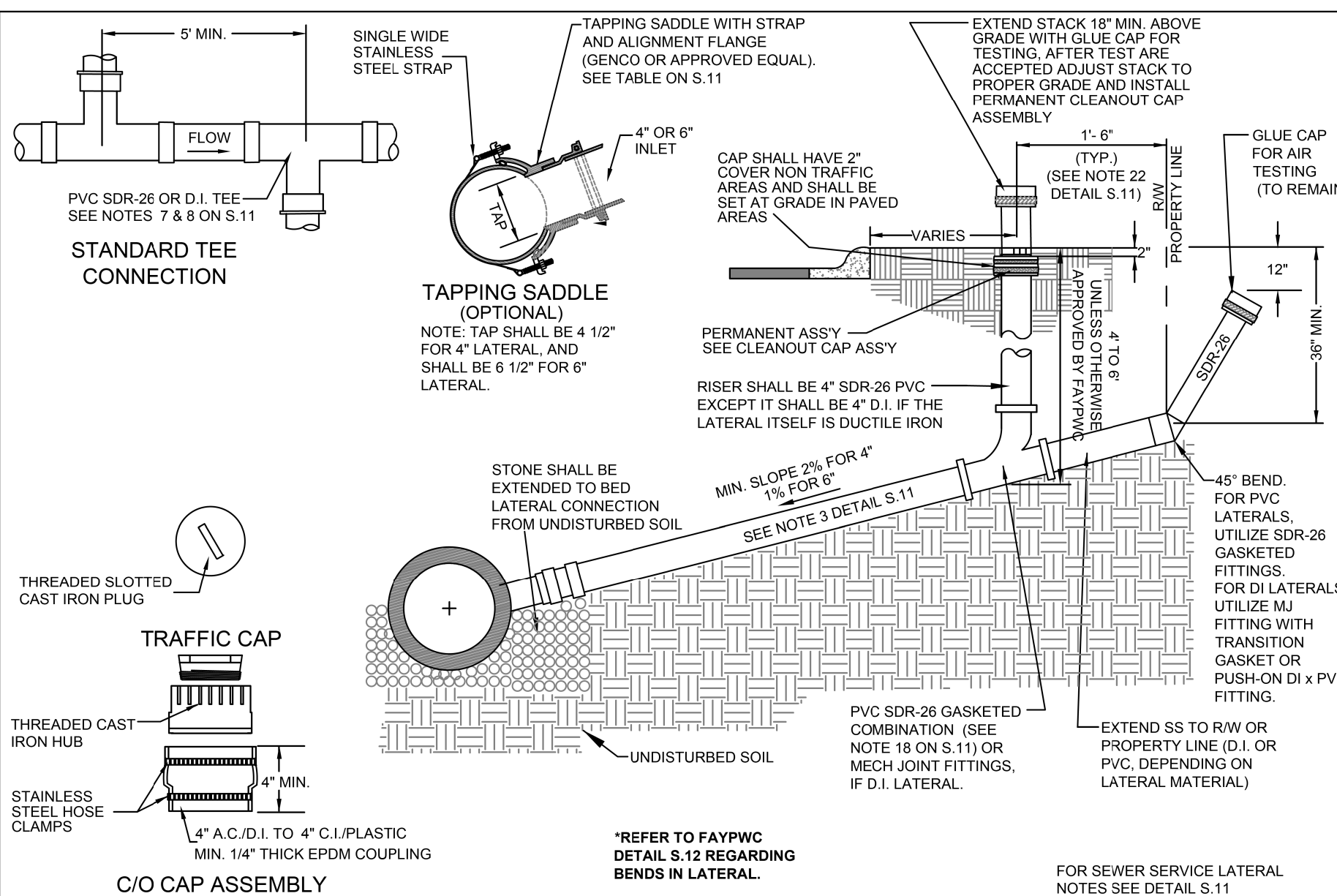
B. **CROSSING A WATER MAIN OVER A SEWER:** WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAIN/LATERAL, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION - IN WHICH CASE BOTH THE WATER MAIN AND SEWER MAIN/LATERAL SHALL BE CONSTRUCTED OF FERROUS MATERIAL AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

C. **CROSSING WATER MAIN UNDER A SEWER:** WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN/LATERAL, BOTH THE WATER MAIN AND THE SEWER MAIN/LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

D. **CROSSING STORM DRAINAGE LINES:** A MINIMUM OF 24-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A SEWER MAIN/LATERAL CROSSING UNDER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IF DUCTILE IRON PIPE IS USED, A MINIMUM OF SIX(6) INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY FWC.

GENERAL NOTES SANITARY SEWER UTILITY		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.1 DATE: JULY 01, 2015	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT			

2015-S1 SEWER NOTES.dwg



**STANDARD TEE CONNECTION**

**C/O CAP ASSEMBLY**

**SEWER SERVICE LATERAL (4-INCH AND 6-INCH) N.T.S.**

**PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.**

**WATER RESOURCES ENGINEERING DEPARTMENT**

SHEET NO. 1 OF 1	DWG. NO. S.10 DATE: JULY 01, 2015	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
				1	JAN. 13	REVISED NOTES
				2	JAN. 14	ADDED TAILPIECE, NOTES
				3	JAN. 15	REVISED NOTES RE: TAILPIECE

2015-S10 resslat.dwg

**SEWER SERVICE LATERAL NOTES**

- HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER NO HAMMER TAPS ALLOWED.
- LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-26 UNLESS OTHERWISE INDICATED AS D.I.
- ALL PIPE & FITTINGS SHALL BE 4" OR 6" UNLESS OTHERWISE SPECIFIED.
- ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY (PROTECTO 401). THE ENTIRE D.I. LATERAL SHALL BE COMPRISED OF D.I. PIPE & MECHANICAL JOINT FITTINGS.
- ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.
- SANITARY SEWER SERVICE C/O STACK SHALL BE LOCATED 18" FROM WATER SERVICE LOCK VALVE WHEN IN THE SAME DITCH.
- INSTALLATION OTHER THAN AS SHOWN MUST BE APPROVED BY THE FAYPWC.
- CONNECTIONS TO THE TOP OF MAIN SHALL NOT BE ALLOWED, UNLESS OTHERWISE APPROVED BY THE FAYPWC PROJECT COORDINATOR.
- SLOPE AND DEPTH OF THE SERVICE LATERAL SHALL BE DETERMINED BY THE TOPOGRAPHY OF THE LOT AS APPROVED BY THE FAYPWC ENGINEER OR AS INDICATED ON THE DRAWINGS.
- LATERAL SHALL CONFORM TO THE 2% MINIMUM SLOPE FOR THE 4" OR THE 1% MINIMUM SLOPE FOR THE 6" MAXIMUM CLEAN OUT SPACING FOR 4" PIPE 75'; 6" PIPE 100'.
- SEE INTERIOR DROP STRUCTURE OR SLIDE, MORTAR SLIDE & SHELF DETAIL FOR VERTICAL DROPS OF MAINS AND LATERALS.
- LATERALS LESS THAN 3' IN DEPTH OR GREATER THAN 20' DEPTH SHALL UTILIZE DUCTILE IRON PIPE AND FITTINGS WITH CERAMIC EPOXY (PROTECTO 401), OR WHEN SEPARATION REQUIREMENTS CANNOT BE MET, ENTIRE SEWER LATERAL ASSEMBLY SHALL BE AIR TESTED CONCURRENTLY WITH SEWER MAIN.
- INDIVIDUAL LATERALS SHALL BE CLEANED AND FLUSHED PRIOR TO FLUSHING SANITARY SEWER MAINS.
- LATERAL SHALL NOT BE BACK-FILLED UNTIL INSPECTED BY THE FAYPWC PROJECT COORDINATOR.
- WYE CONNECTIONS SHALL NOT BE USED TO THE LATERALS INTO A MANHOLE.
- IF BENDS ARE APPROVED BY THE PROJECT COORDINATOR, STONE BEDDING IS REQUIRED TO BE INSTALLED FROM UNDISTURBED (SEE DETAIL S.12) SOIL TO BOTTOM OF BEND.
- PVC COMBINATION SHALL BE A MOLDED WYE AND BEND, GASKETED, SDR-26, AS MANUFACTURED BY HARGROVE OR APPROVED EQUAL.
- NO MORE THAN 4, FOUR INCH LATERALS OR 3, SIX INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4' DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5' DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
- ALL LATERALS (4" AND 6") SHALL UTILIZE A 4" RISER (STACK).
- REFER TO DETAIL S.12 FOR SEPARATION REQUIREMENTS.
- FOR SINGLE FAMILY RESIDENTIAL LOTS, CLEAN-OUT SHALL BE LOCATED 18" FROM R/W OR EASEMENT. FOR ALL NON-SINGLE FAMILY LOTS, CLEAN-OUT SHALL BE NO CLOSER THAN 10' TO FRONT OF BUILDING, UNLESS OTHERWISE APPROVED BY FAYPWC.

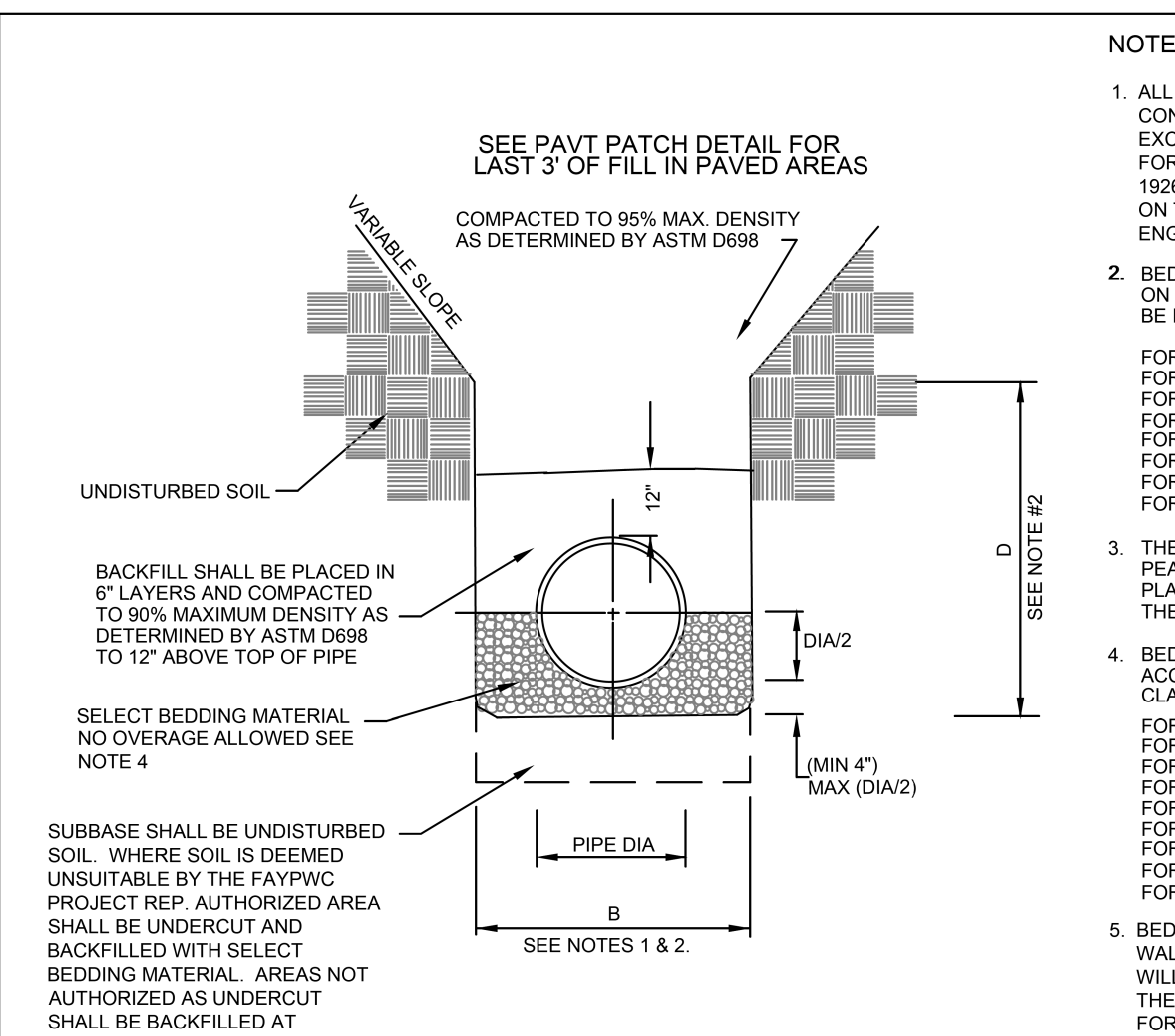
THE FOLLOWING TABLE SUMMARIZES THE MATERIALS TO BE UTILIZED FOR SEWER MAIN TO LATERAL CONNECTIONS:

	PVC Main	D.I. Main
D.I. Lateral	D.I. fitting or approved saddle	MJ fitting or approved saddle
PVC Lateral	PVC fitting or approved saddle	MJ fitting with transition gasket or approved saddle

NOTE: REFER TO FAYPWC TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SEWER SERVICE LATERAL NOTES (4-INCH AND 6-INCH)		PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.11 DATE: JULY 01, 2015	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	2	OCT 11	REVISED NOTES
				3	JAN 13	REVISED NOTES AND ADDED TABLE
				4	JAN 15	REVISED NOTE 22, TABLE

2015-S11 RESSLAT notes.dwg



**SEWER BEDDING N.T.S.**

**PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.**

**WATER RESOURCES ENGINEERING DEPARTMENT**

SHEET NO. 1 OF 1	DWG. NO. S.13 DATE: JULY 01, 2015	DWG. BY: FAYPWC APPROVED BY: J.E.G.	WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
				1	JAN 05	REVISED NOTES

2015-S13 SEWER BEDDING.dwg

**NOTES:**

- ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN OSHA "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", CHAPTER XVII OF TITLE 29, CFR, PART 1926. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON THE JOB AT ALL TIMES AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO ACT UPON ALL PERTINENT MATTERS OF THE WORK.
- BEDDING MATERIAL QUANTITIES ARE CALCULATED BASED ON THE FOLLOWING TRENCH WIDTHS, BEDDING MATERIAL SHALL BE INSTALLED REGARDLESS OF PIPE MATERIAL.  
 FOR 48" RCP/DI B=6', D=5'  
 FOR 42" RCP/DI B=6', D=5'-6"  
 FOR 30" RCP/DI B=4'-6", D=4'-6"  
 FOR 24" RCP/DI B=4', D=4'-0"  
 FOR 18" PVC/DI B=3', D=3'  
 FOR 15" PVC/DI B=3', D=3'  
 FOR 12" PVC/DI B=2', D=3'-0"  
 FOR 8" PVC/DI B=2', D=3'-0"
- THE BEDDING MATERIAL SHALL BE GRANULAR, CLEAN, COARSE PEA GRAVEL, OR WELL GRADED CRUSHED ROCK PLACED IN LAYERS NOT TO EXCEED 6" LOOSE LIFTS FOR THE FULL WIDTH OF THE TRENCH.
- BEDDING MATERIAL SHALL BE INSTALLED AND PAID FOR IN ACCORDANCE WITH THE FOLLOWING CHART TO PRODUCE CLASS B BEDDINGS:  
 FOR 8" PIPE 087x3/8" OF PIPE  
 FOR 12" PIPE 089x3/8" OF PIPE  
 FOR 15" PIPE 11y3/8" OF PIPE  
 FOR 18" PIPE 13y3/8" OF PIPE  
 FOR 24" PIPE 15y3/8" OF PIPE  
 FOR 30" PIPE 19y3/8" OF PIPE  
 FOR 36" PIPE 25y3/8" OF PIPE  
 FOR 42" PIPE 32y3/8" OF PIPE  
 FOR 48" PIPE 36y3/8" OF PIPE
- BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS AND TRENCH BOTTOM. OVERLAP OF BEDDING MATERIAL WILL NOT BE PAID FOR UNLESS SPECIFICALLY APPROVED BY THE PROJECT REPRESENTATIVE AND SHALL ONLY BE PAID FOR IN THE AMOUNT OF THE AUTHORIZED QUANTITY.
- BEDDING MATERIAL SHALL BE PROPERLY RODDED AROUND THE PIPE HAUNCHES.
- CONTRACTOR SHALL USE TRENCH BOX SHORING IN ALL OPEN CUTS IN PAVED AREAS. TRENCH WIDTH SHALL BE MAINTAINED AT THE MINIMUM PRACTICAL WIDTH.