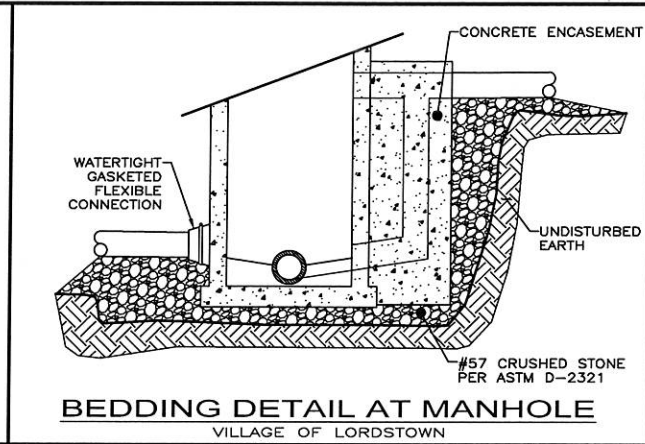
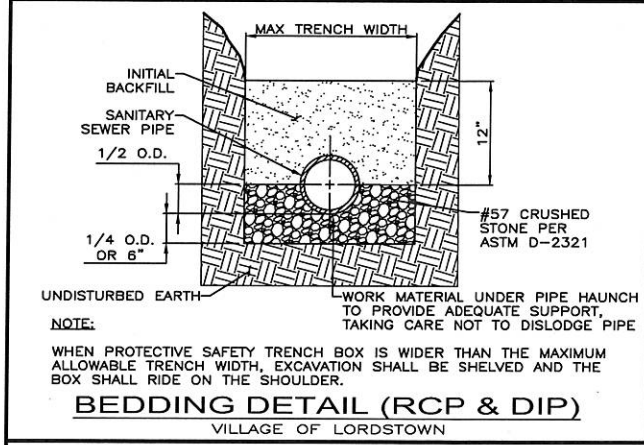


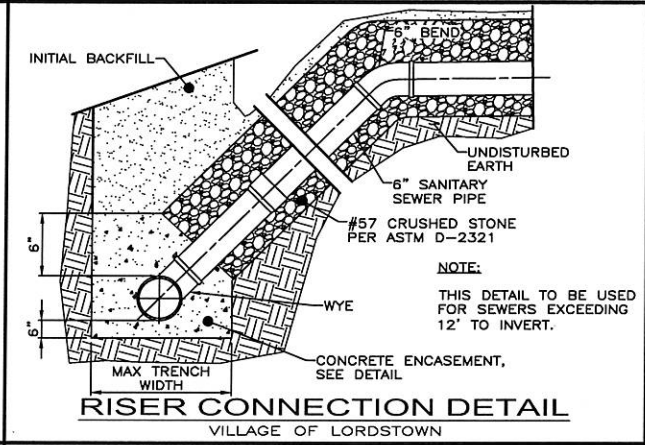
CONCRETE ENCASEMENT
VILLAGE OF LORDSTOWN



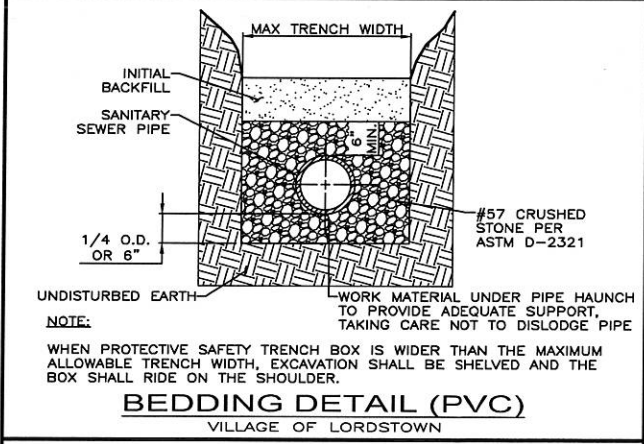
BEDDING DETAIL AT MANHOLE
VILLAGE OF LORDSTOWN



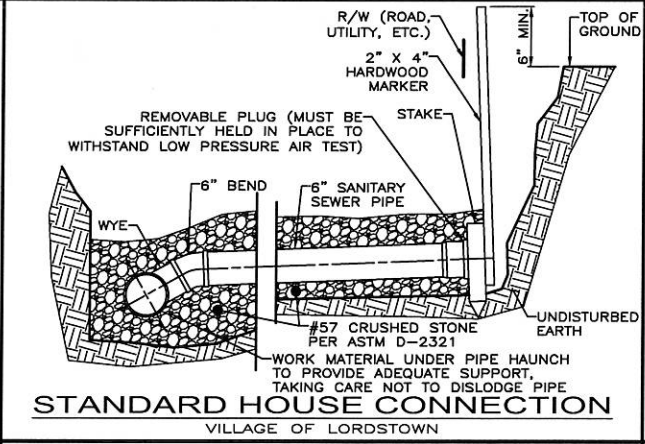
BEDDING DETAIL (RCP & DIP)
VILLAGE OF LORDSTOWN



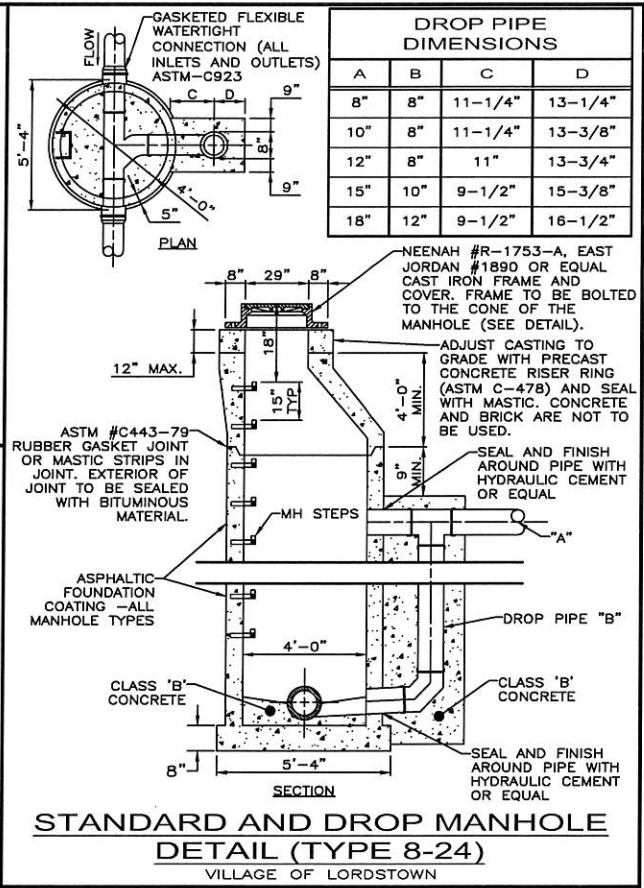
RISER CONNECTION DETAIL
VILLAGE OF LORDSTOWN



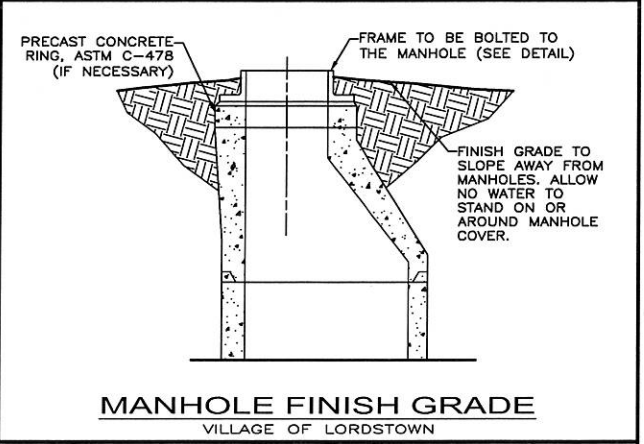
BEDDING DETAIL (PVC)
VILLAGE OF LORDSTOWN



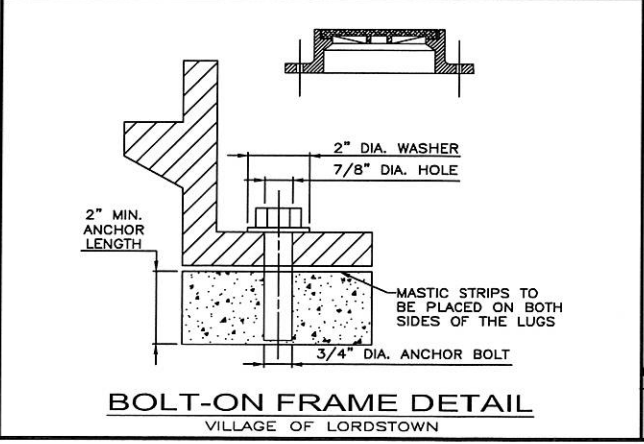
STANDARD HOUSE CONNECTION
VILLAGE OF LORDSTOWN



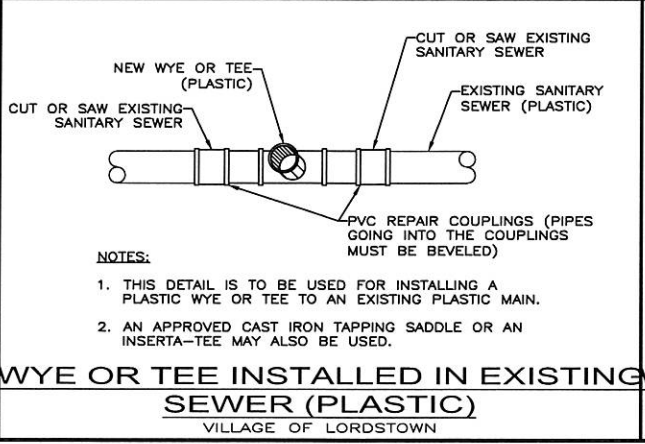
STANDARD AND DROP MANHOLE DETAIL (TYPE 8-24)
VILLAGE OF LORDSTOWN



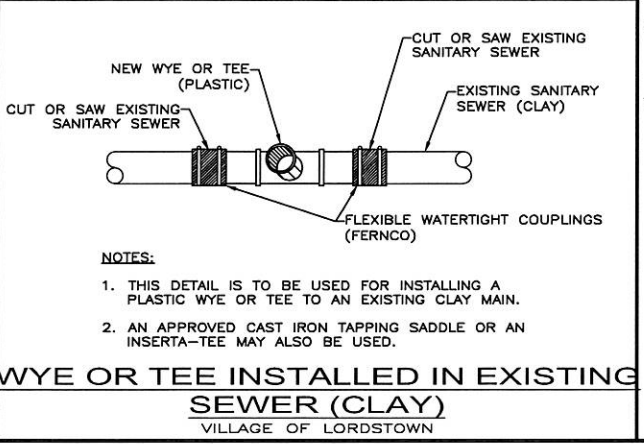
MANHOLE FINISH GRADE
VILLAGE OF LORDSTOWN



BOLT-ON FRAME DETAIL
VILLAGE OF LORDSTOWN



WYE OR TEE INSTALLED IN EXISTING SEWER (PLASTIC)
VILLAGE OF LORDSTOWN



WYE OR TEE INSTALLED IN EXISTING SEWER (CLAY)
VILLAGE OF LORDSTOWN

GENERAL:

1. ALL WORK MUST CONFORM TO THE REQUIREMENTS AND DIRECTIONS OF THE VILLAGE OF LORDSTOWN SEWER DEPARTMENT. THE CONTRACTOR MUST CONFORM TO ALL FEDERAL, STATE AND LOCAL REQUIREMENTS, LAWS, RESOLUTIONS OR ORDINANCES RELATING TO PERMITS, SAFETY INSURANCE, WORK CONDITIONS, HIRING, WORKMAN'S COMPENSATION, TAXES, USE OF HIGHWAY OR STREETS AND SHALL SAVE HARMLESS, THE VILLAGE OF LORDSTOWN SEWER DEPARTMENT FROM DAMAGES, SUITS, LIABILITY OR CLAIMS.

EXCAVATION:

1. THE CONTRACTOR SHALL EXCAVATE TO A WIDTH AND DEPTH SUFFICIENT TO ACCOMMODATE THE PIPE LAYING. THE EXCAVATION SHALL BE ADEQUATELY BRACED AND SUPPORTED TO PROTECT WORKMEN AND ADJACENT STRUCTURES AND PAVEMENTS. BACKFILL SHALL BE MADE AS SHOWN OR DIRECTED. MAXIMUM PERMISSIBLE TRENCH WIDTHS SHALL BE AS FOLLOWS:

6" - 24" = NOMINAL PIPE DIAMETER + 2'-0"
27" - 30" = NOMINAL PIPE DIAMETER + 2'-6"
36" AND OVER = NOMINAL PIPE DIAMETER + 3'-0"

CONCRETE:

1. CONCRETE USED IN THE WORK SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

	CLASS A WITH REINFORCING	CLASS B NON-REINFORCED
SACKS OF CEMENT/CU.YD	6.5	5
MAXIMUM SLUMP	5 INCHES	6 INCHES
28 DAY STRENGTH	4,000 PSI	2,000 PSI

AIR ENTRAINED CEMENT SHALL BE USED.

MANHOLES:

1. MANHOLES SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE MEETING THE REQUIREMENTS FOR PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS, ASTM #C478. ALL MANHOLE SECTIONS SHALL HAVE AN EXTERIOR ASPHALTIC COATING. MANHOLES SHALL BE CONNECTED TO THE BARREL OF THE SEWER BY MEANS OF A FLEXIBLE CONNECTION AND SHALL BE WATER TIGHT. THE BOTTOM OF THE MANHOLES SHALL BE CHANNELLED TO A DEPTH AT LEAST EQUAL TO ONE-HALF THE DIAMETER OF THE LARGEST PIPE ENTERING OR LEAVING THE MANHOLE AND OF A WIDTH EQUAL TO THE DIAMETER OF THE PIPE. MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO GRADE WITH PRECAST ADJUSTING RING (12" MAX). CONCRETE AND BRICK SHALL NOT BE USED. MANHOLE FRAMES ARE TO BE BOLTED TO THE CONE OF THE MANHOLE - SEE DETAIL. MANHOLES MUST BE VACUUM TESTED IN ACCORDANCE WITH ASTM #C-1244. DROP MANHOLES SHALL BE INSTALLED WHERE AND ELEVATION DROP EXCEEDS 24-INCHES ABOVE THE MANHOLE INVERT.

SANITARY SEWER MAINS:

1. SANITARY SEWER MAINS UP TO AND INCLUDING FIFTEEN INCHES (15") IN DIAMETER SHALL BE CONSTRUCTED USING POLY-VINYL CHLORIDE (P.V.C) PIPE AND FITTINGS THAT CONFORM TO ASTM #D3034-81. ALL JOINTS SHALL BE AN APPROVED ELASTOMERIC GASKET JOINT AS DEFINED BY ASTM #D3212 OR UNI-B-1. SANITARY SEWER MAINS EIGHTEEN INCHES (18") AND OVER IN DIAMETER MAY BE CONSTRUCTED OF:

1.1. POLY-VINYL CHLORIDE (PVC) PIPE AND FITTINGS THAT CONFORM TO ASTM #D3034-81, #F794, OR #F794. ALL JOINTS SHALL BE AN APPROVED ELASTOMERIC GASKET AS DEFINED BY ASTM #D3212 OR UNI-B-1. FOR PVC SEWER PIPE OVER FIFTEEN (15') FT. IN DEPTH THE PVC SEWER PIPE AND FITTINGS SHALL HAVE A MINIMUM WALL THICKNESS EQUAL TO S.D.R. 26 WITH A CELL CLASSIFICATION OF #12454-B AS DEFINED IN ASTM #D1784.

1.2. REINFORCED CONCRETE PIPE CONSTRUCTED IN ACCORDANCE WITH ASTM #C76-79. ALL JOINTS SHALL BE AN APPROVED COMPRESSION TYPE O-RING GASKET JOINT EQUAL TO ASTM #C443-79.

1.3. DUCTILE IRON PIPE CONSTRUCTED IN ACCORDANCE WITH ASTM #A346-99. ALL JOINTS SHALL BE AN APPROVED MECHANICAL JOINT OR PUSH ON JOINT AS DEFINED BY ASTM #A746-99.

TESTING:

1. ALL SANITARY SEWER PIPE SHALL BE TESTED AS PER SPECIFICATIONS OF THE VILLAGE OF LORDSTOWN SEWER DEPARTMENT. TESTING SHALL BE DONE IN ACCORDANCE WITH THE APPROPRIATE ASTM STANDARD. PVC SEWER PIPE SHALL ALSO BE TESTED WITH A PROPER "GO-NO GO" MANDREL WITH THE DESIGNED DEFLECTION LIMIT SELECTED AS 5%. THE LEAKAGE TEST LIMIT IS 100 GALLON/INCH/DIAMETER/MILE/DAY. INTERNAL VISUAL INSPECTION WILL BE DONE USING A COLOR AUDIO-VIDEO RECORDING SYSTEM.

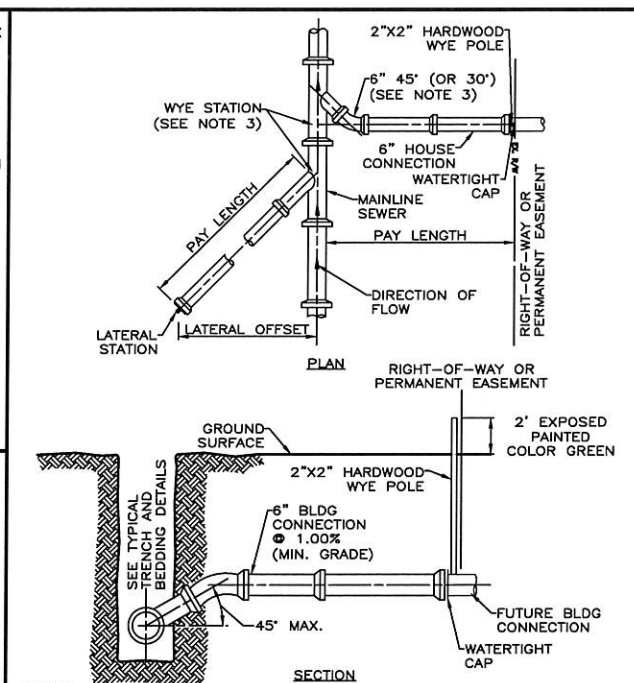
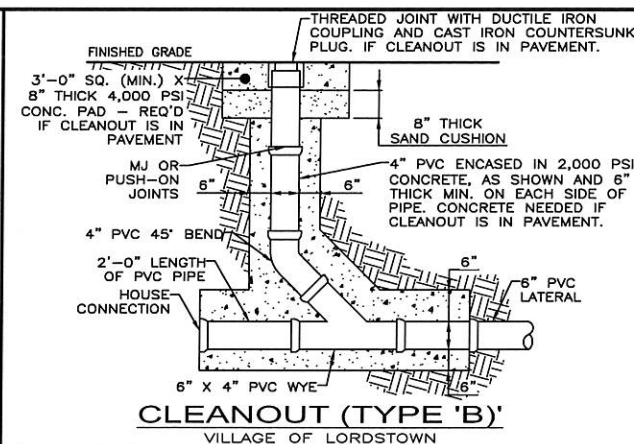
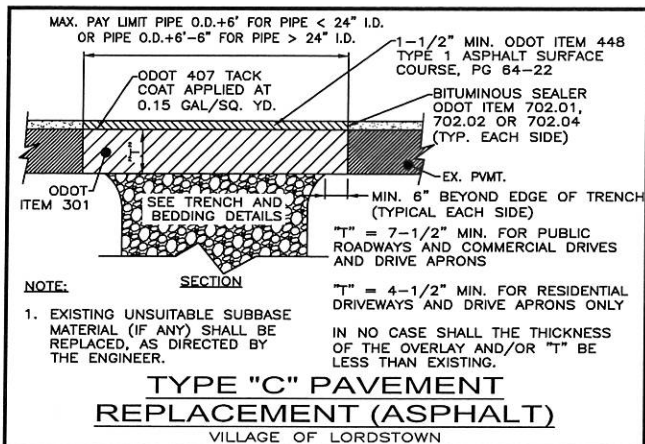
ROOF DRAINS:

1. THE CONNECTION OF ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO SANITARY SEWER ARE PROHIBITED.

SEWER-IN-TUNNEL:

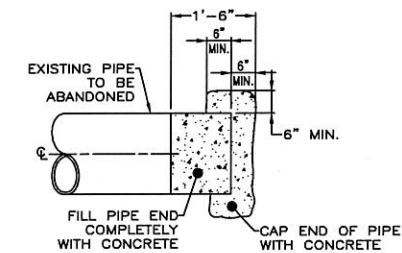
1. SEWER IN TUNNEL MAY REQUIRE AN ENCASEMENT PIPE. THE ENCASEMENT PIPE MAY BE INSTALLED BY BORING AND JACKING OR BY TUNNELING. THE ENCASEMENT PIPE MAY BE CAST IRON, DUCTILE IRON OR C-900 (WATERLINE SPEC) PLASTIC. APPROVED GROUTING SHALL BE APPLIED BETWEEN THE CARRIER PIPE AND THE ENCASEMENT PIPE.

CASING PIPE	ENCASEMENT PIPE (MINIMUM DIAMETER)
6"	8" (LATERAL ONLY)
8"	16"
10"	18"
12"	24"
15"	30"
18"	36"
21"	40"
24"	42"



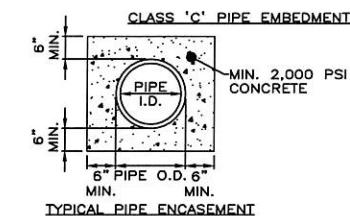
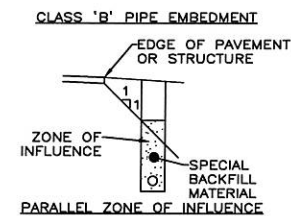
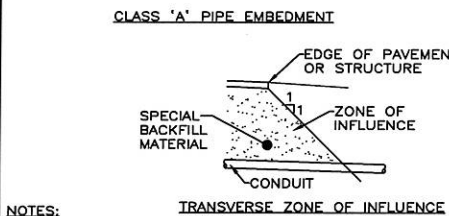
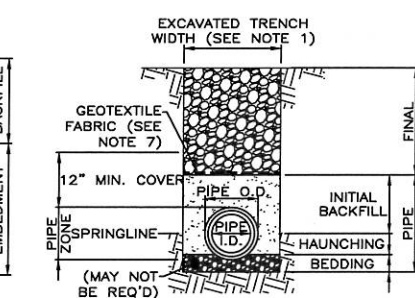
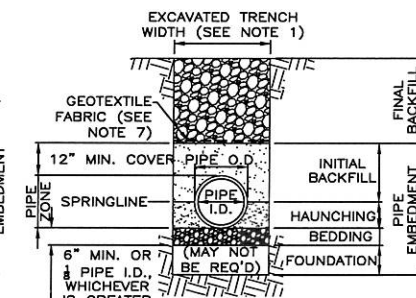
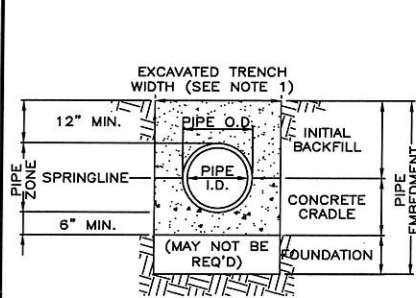
- NOTES:
1. LATERAL TO EXISTING UNSEWERED BUILDINGS OR VACANT LOTS ARE TO BE INSTALLED AT A MINIMUM SLOPE OF 1%.
 2. PROVIDE WATERTIGHT PLASTIC END CAP ON SANITARY LATERALS THAT ARE SPECIFIED TO BE CONNECTED IN THE FUTURE.
 3. FOR ALL GRAVITY SANITARY CONNECTIONS TO THE MAINLINE SEWERS, USE 45° OR 30° ELL AS REQUIRED TO REDIRECT LATERALS PERPENDICULAR TO MAINLINE SEWER. USE ONLY GASKETED PVC WYE FITTINGS.

SANITARY LATERAL DETAIL
VILLAGE OF LORDSTOWN



- NOTE:
ALL ABANDONED IN PLACE PIPING
SHALL HAVE ENDS CAPPED.

PIPE CAP DETAIL
VILLAGE OF LORDSTOWN



- NOTES:
1. MAXIMUM EXCAVATED TRENCH WIDTH: THE MAXIMUM EXCAVATED TRENCH WIDTH FROM THE BOTTOM OF THE TRENCH TO 12" OVER THE TOP OF THE PIPE (WITHIN PIPE EMBEDMENT) SHALL BE O.D. + 24" FOR ALL PIPES UP TO AND INCLUDING 24" I.D. + 30" FOR PIPE FROM 24" I.D. TO 54" I.D. AND O.D. + 48" FOR PIPES SIZES 60" I.D. AND OVER.
 2. FOUNDATION: WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER.
 3. PIPE EMBEDMENT:

CLASS A: CLASS A PIPE EMBEDMENT SHALL BE USED FOR ALL PIPING UNDER PAVEMENT OR STRUCTURES WITH LESS THAN 12 INCHES OF PIPE COVER TO THE SUBGRADE. THE CONCRETE CRADLE SHALL BE IN ACCORDANCE WITH ODOT ITEM 499, CLASS "C". THE INITIAL BACKFILL SHALL BE AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT.

CLASS B: CLASS B PIPE EMBEDMENT SHALL BE USED FOR ALL PIPING UNLESS OTHERWISE NOTED ON THE PLANS OR AUTHORIZED BY THE ENGINEER. THE BEDDING AND HAUNCHING SHALL BE AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT. IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT. IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE SUIABLE ON-SITE MATERIAL APPROVED BY THE ENGINEER FOR ONLY REINFORCED CONCRETE PIPE AND DUCTILE IRON PIPE. THE INITIAL BACKFILL FOR ALL OTHER PIPES SHALL BE AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT.

CLASS C: CLASS C PIPE EMBEDMENT SHALL ONLY BE USED FOR DUCTILE IRON WATER MAIN, DUCTILE IRON FORCE MAINS OR AS AUTHORIZED BY THE ENGINEER. THE PIPE EMBEDMENT SHALL BE AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE. THE PIPE EMBEDMENT SHALL BE SUIABLE ON-SITE MATERIAL APPROVED BY THE ENGINEER IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE. WHERE ROCK OR SHALE IS ENCOUNTERED, A MINIMUM 6-INCHES OF AASHTO NO. 57 OR NO. 67 ODOT 304 GRANULAR PIPE BEDDING OR SAND BEDDING SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

4. FINAL BACKFILL: IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE THE FINAL BACKFILL SHALL BE SPECIAL BACKFILL MATERIAL. IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE, THE FINAL BACKFILL SHALL BE SUIABLE ON-SITE MATERIAL APPROVED BY THE ENGINEER.

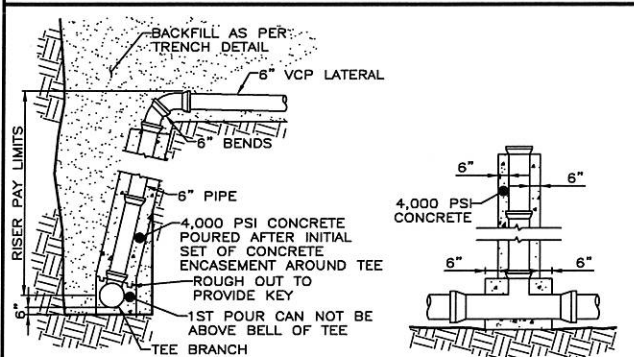
5. SPECIFICATIONS: ALL TRENCHING, PIPE EMBEDMENT AND BACKFILL MATERIALS SHALL BE IN ACCORDANCE WITH SPECIFICATION 02300CT - EARTHWORK.

6. CLAY TRENCH DAMS: CLAY TRENCH DAMS SHALL BE REQUIRED FOR EACH LATERAL, UPSTREAM OF EVERY MANHOLE, AS SHOWN ON THE DRAWINGS, AND AS DIRECTED BY THE ENGINEER.

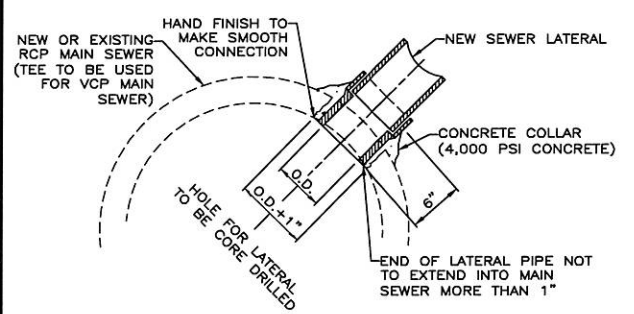
7. GEOTEXTILE FABRIC: INSTALL A GEOTEXTILE FABRIC IN ACCORDANCE WITH ODOT 712.09, TYPE A, AFTER ALL INITIAL BACKFILL CONSISTING OF AASHTO NO. 57 OR NO. 67 ODOT 304 LIMESTONE GRANULAR PIPE EMBEDMENT.

8. TYPICAL PIPE ENCASEMENT, AS PER PLAN OR AS DIRECTED BY THE ENGINEER.

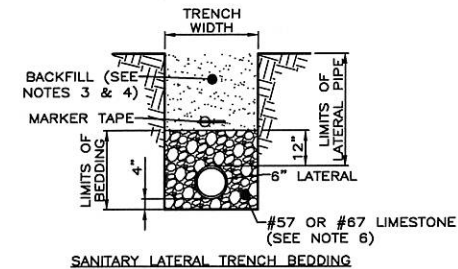
TRENCHING, EMBEDMENT, AND BACKFILL DETAIL
VILLAGE OF LORDSTOWN



SANITARY RISER DETAIL
VILLAGE OF LORDSTOWN



FIELD TEE CONNECTION
VILLAGE OF LORDSTOWN



- NOTES:
1. ALL TRENCH EXCAVATION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE OHIO STATE INDUSTRIAL COMMISSION (OSIC) AND THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
 2. NO FLOODING, JETTING, OR PUDDLING OF BACKFILL WILL BE PERMITTED. BACKFILL SHALL BE TAMPED WITH MACHING-MOUNTED TAMPING APPARATUS IN ACCORDANCE WITH ASTM D698. BACKFILL SHALL BE COMPACTED TO 100% OF MAXIMUM LABORATORY DRY DENSITY PER 02234 (COMPACTED BACKFILL) AND/OR 02235 (COMPACTED GRANULAR BACKFILL).
 3. BACKFILL FOR SANITARY LATERALS THAT CROSS THE ROADWAY SHALL BE BACKFILLED AND COMPACTED WITH ON-SITE SOIL TO WITHIN THIRTY-TWO (32) INCHES OR MORE DEPENDING ON EXISTING PAVEMENT THICKNESS OF FINISH GRADE. THE REMAINING TOP PORTION OF THE TRENCH SHALL BE BACKFILLED AND PAVED AS SHOWN IN THE DETAIL FOR TYPE "C" PAVEMENT REPLACEMENT ON THIS SHEET.
 4. BACKFILL FOR SANITARY LATERALS NOT CROSSING BELOW PAVEMENT SHALL BE BACKFILLED AND COMPACTED WITH ON-SITE SOIL COMPLETELY, AND SHALL BE SEEDED AND MULCHED AS PER ODOT 659 "SEEDING AND MULCHING."
 5. PAVEMENT RESTORATION - THE TRENCH SHALL BE PLANED AS TO PERMIT TRENCH PAVEMENT RESTORATION IN THE FORM OF "TYPE C PAVEMENT REPLACEMENT."
 6. UNDER NO CIRCUMSTANCES SHALL SLAB BEDDING BE USED.
 7. POLYETHYLENE MARKER TAPE SHALL BE 4-INCH, GREEN IN COLOR, AND MARKED "SEWAGE SERVICE LATERAL."

6" LATERAL TRENCH
BEDDING DETAIL
VILLAGE OF LORDSTOWN

<p><u>PROCEDURE AND SPECIFICATIONS FOR SANITARY SEWER CONNECTIONS IN THE VILLAGE OF LORDSTOWN, OHIO</u></p> <p>1. PRIOR TO APPLYING FOR A CONNECTION PERMIT FROM THE VILLAGE OF LORDSTOWN BOARD OF TRUSTEES OF PUBLIC AFFAIRS (BPA) A PLUMBING INSPECTION MUST BE CONDUCTED BY TRUMBULL COUNTY HEALTH DEPARTMENT. CALL (330) 675-2489 TO SCHEDULE AN INSPECTION.</p> <p>2. ANY CONTRACTOR THAT INSTALLS A LATERAL WITHOUT FIRST OBTAINING A PERMIT FROM THE VILLAGE OF LORDSTOWN WILL BE FINED \$150.00 FOR A FIRST OFFENSE. THEREAFTER, THE CONTRACTOR WILL NOT BE PERMITTED TO DO INSTALLATIONS IN THE VILLAGE FOR A PERIOD OF ONE (1) YEAR.</p> <p>3. THE FOLLOWING SHALL BE PROVIDED AT THE TIME OF APPLICATION FOR CONNECTION TO THE SANITARY SEWER:</p> <p>3.1. COMPLETED APPLICATION, INCLUDING FEE</p> <p>3.2. EVIDENCE OF CONTRACTOR/INSTALLER'S LIABILITY INSURANCE AND BONDING</p> <p>3.3. ANY PERMITS OR BONDS REQUIRED BY THE VILLAGE STREETS DEPARTMENT FOR ROAD OPENING SHALL BE OBTAINED</p> <p>3.4. COPY OF THE TRUMBULL COUNTY HEALTH DEPARTMENT'S APPROVAL TO MAKE THE SANITARY SEWER CONNECTION.</p> <p>4. APPLICANT TO CONTACT CINDY SLUSARCZYK AT 330-824-2481 48 HOURS IN ADVANCE OF BEGINNING WORK IN ORDER TO SCHEDULE INSPECTION.</p> <p>4.1. ANY HOME WITH A GRINDER PUMP STATION IS REQUIRED TO HAVE THE PUMP STATION TESTED BY THE CONTRACTOR DURING THIS INITIAL INSPECTION.</p> <p>4.2. NO CONNECTION IS PERMITTED TO THE CITY SEWER UNLESS DISCHARGE IS ONLY SANITARY WASTEWATER. NO SUMP PUMPS THAT COLLECT ANY SOURCE OF CLEAN WATER WILL BE PERMITTED TO DISCHARGE TO THE SANITARY SEWER SYSTEM. OWNER MUST CORRECT ANY IMPROPER CONNECTION OF DOWNSPOUTS, FOOTER DRAIN, STORM WATER OR ANY CLEAN WATER CONNECTION BEFORE WE CAN PERMIT THE TIE-IN.</p> <p>4.3. INSPECTION SHOULD GENERALLY BE SPOT CHECKS FOR PIPE MATERIAL, BEDDING AND TEST TEE. UNUSUAL CIRCUMSTANCES OR DELAY REQUIRING EXCESSIVE INSPECTION TIME SHALL BE ACCURATELY DOCUMENTED FOR OUR RECORDS.</p> <p>4.4. INSPECTOR SHOULD BE ON-SITE FOR PHYSICAL HOOK-UP TO THE LATERAL OR MAINLINE</p> <p>4.5. A COPY OF THE LATERAL INSPECTION RECORD WITH DATE OF CONNECTION SHALL BE PROVIDED TO THE BPA.</p> <p>4.6. IF REINSPECTION IS NEEDED THE HOMEOWNER WILL BE CHARGED AN ADDITIONAL \$100.00 FEE BY BPA. THIS CHARGE WILL APPLY TO EACH REINSPECTION REQUIRED.</p> <p>4.7. NO SEPTIC TANK SHALL BE ABANDONED UNTIL THE LATERAL CONNECTION IS MADE AND APPROVED BY THE INSPECTOR.</p> <p>5. IT SHALL BE THE CONTRACTOR/INSTALLER'S RESPONSIBILITY TO CONTACT THE OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 1-800-362-2764 A MINIMUM OF TWO WORKING DAYS IN ADVANCE OF WORK IN ORDER TO HAVE UNDERGROUND UTILITIES MARKED IN THE FIELD. CONTRACTOR/INSTALLER MUST COMPLY WITH ANY UTILITY COMPANY'S CONDITIONS FOR WORK NEAR THEIR UTILITY.</p> <p>6. CONTRACTOR/INSTALLER SHALL VERIFY THAT THE SEPTIC TANK CONTENTS ARE PROPERLY REMOVED FROM THE SITE BY A LICENSED HAULER AND THAT THE TANK IS ABANDONED IN ACCORDANCE WITH THE TRUMBULL COUNTY HEALTH DEPARTMENT SPECIFICATIONS. ALL ACTIONS WILL BE DOCUMENTED AND PROVIDED TO THE TRUMBULL COUNTY HEALTH DISTRICT ON THE PROPER FORM.</p> <p>7. IF A PROPERTY DOES NOT HAVE AN EXISTING CONNECTION TO THE SEWER MAIN, ADDITIONAL FEES AND PROCEDURES MAY BE NECESSARY. IN THIS SITUATION, CHECK WITH THE BPA CLERK.</p> <p><u>SPECIFICATIONS:</u></p> <p>1. LATERAL PIPE AND FITTINGS SHALL BE 6" MINIMUM PVC FOR GRAVITY FLOW.</p> <p>2. FORCE MAIN CONNECTIONS SHALL BE MINIMUM OF TWO (2) INCH DIAMETER.</p> <p>3. ACCEPTABLE PVC MATERIALS INCLUDE THE FOLLOWING:</p> <table><tr><td></td><td>PIPE SPEC</td><td>JOINT SPEC</td><td>INSTALLATION</td></tr><tr><td>GRAVITY PIPE</td><td>ASTM D-3034</td><td>ASTM D-3212</td><td>ASTM D-2321</td></tr><tr><td>(MINIMUM SDR 35)</td><td>ASTM F-949</td><td></td><td></td></tr><tr><td></td><td>ASTM F-794</td><td></td><td></td></tr><tr><td>FORCE MAIN</td><td>ASTM D-2241</td><td>ASTM D-3139</td><td>ASTM D-2321</td></tr><tr><td>(MINIMUM SDR 26)</td><td></td><td></td><td></td></tr></table> <p>4. ALL PIPE SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET.</p> <p>5. PIPE SHALL BE LAID A MINIMUM GRADE OF 1.00%.</p> <p>6. PIPE SHALL BE BEDDED ON SIX INCHES OF #57 LIMESTONE SURROUNDED BY #57 LIMESTONE AND HAVE SIX INCHES OF #57 LIMESTONE COVER OVER THE PIPE. TRENCH WIDTH SHALL BE A MINIMUM OF EIGHTEEN INCHES.</p> <p>7. A WYE WITH RISER SHALL BE INSTALLED AT THE BUILDING FOUNDATION. THE RISER SHALL BE BROUGHT TO WITHIN SIX INCHES OF THE FINISHED GRADE. THE RISER SHALL HAVE A STEEL BOLT IMBEDDED IN THE CAP IF INSTALLED IN PAVEMENT. BACKFILL OF THE TRENCH WITHIN THE RIGHT-OF-WAY SHALL BE PREMIUM BACKFILL CONSISTING OF ODOT 304 LIMESTONE COMPACTED TO 100% OF MAXIMUM DRY DENSITY PER AASHTO T99.</p> <p>8. REMAINING BACKFILL ON PRIVATE PROPERTY CAN BE EXCAVATED MATERIAL. OWNERS WITH LATERALS THAT WILL EXCEED 250 FEET IN TOTAL LENGTH ARE RECOMMENDED TO INSTALL A SECOND CLEANOUT.</p> <p>9. CONNECTIONS TO THE EXISTING PIPE OR WYE SHALL BE MADE USING FLEXIBLE WATERTIGHT COUPLINGS SUCH AS FERNCO OR MISSION COUPLINGS.</p>			PIPE SPEC	JOINT SPEC	INSTALLATION	GRAVITY PIPE	ASTM D-3034	ASTM D-3212	ASTM D-2321	(MINIMUM SDR 35)	ASTM F-949				ASTM F-794			FORCE MAIN	ASTM D-2241	ASTM D-3139	ASTM D-2321	(MINIMUM SDR 26)				VILLAGE OF LORDSTOWN - SANITARY DETAILS 03	LAST REVISED: 10/16/2018
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FORCE MAIN	ASTM D-2241	ASTM D-3139	ASTM D-2321																								
(MINIMUM SDR 26)																											
10. FOR HOMEOWNERS, THE "PICKUP POINT" FOR THE LATERAL SHALL BE WITHIN FIVE (5) FEET OF THE BUILDING FOUNDATION. ANY HOMEOWNER NOT ABLE TO MEET THIS REQUIREMENT SHALL REQUEST A VARIANCE FROM THE BPA.																											
11. CONNECTIONS INTO SEWER MAIN WHERE NO WYE EXISTS SHALL BE DONE BY CUTTING OUT A SECTION OF THE MAIN AND INSTALLING A NEW WYE CONNECTED TO THE EXISTING MAIN USING SHORT PIECES OF PIPE AND FLEXIBLE WATER TIGHT COUPLINGS. INSERTA TEE FITTINGS MAY BE USED ON SEWER MAIN LARGER THAN 15 INCHES IN DIAMETER. THIS ENTIRE AREA SHALL BE BACKFILLED WITH #57 LIMESTONE TO A POINT UP TO TWELVE INCHES ABOVE THE SEWER MAIN PIPE.																											
12. FOR LATERAL CONNECTIONS TO A PUMP STATION, THE CONTRACTOR SHALL AVOID MAKING CONNECTIONS INTO THE WET WELL AT LOCATIONS WHERE THE INFLOW COULD INTERFERE WITH THE PUMP FLOATS. ALL LATERAL INLETS SHALL BE INSTALLED THROUGH AN "ADAPTA-FLEX" GROMMET TO ENSURE A PROPER SEAL.																											
13. LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY AT A MINIMUM POSITIVE HEAD OF TWO FEET. THIS LIMIT EQUATES TO 3-3/4 INCH DROP IN A 6 INCH DIAMETER RISER FOR 100 FEET OF 6 INCH LATERAL PIPE IN ONE HOUR.																											
14. THE DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED WITH SEEDING OR SODDING WITHIN THIRTY DAYS OF THE CONNECTION INSTALLATION.																											
15. ANY DITCHES WHICH ARE DISTURBED BY THE WORK SHALL BE RESTORED TO THEIR ORIGINAL SHAPE. SODDING SHALL BE PLACED ALONG THE ENTIRE LENGTH OF THE DITCH BOTTOM AND EXTEND TO 12 INCHES ABOVE THE INVERT.																											
16. ALL INSTALLATIONS SHALL BE INSPECTED AND APPROVED PRIOR TO THE PLACEMENT OF THE TRENCH BACKFILL. FINAL APPROVAL SHALL BE CONTINGENT ON TESTING AND INSPECTIONS AFTER PLACEMENT OF THE BACKFILL.																											
17. THE APPLICANT AND/OR PROPERTY OWNER SHALL COMPLY WITH ALL TERMS AND CONDITIONS CONTAINED ON THE APPLICATION FOR THE SANITARY SEWER CONNECTION PERMIT.																											

1. ALL WORK MUST CONFORM TO THE REQUIREMENTS AND DIRECTIONS OF THE VILLAGE OF LORDSTOWN WATER DEPARTMENT. THE CONTRACTOR MUST CONFORM TO ALL FEDERAL, STATE AND LOCAL REQUIREMENTS, LAWS, RESOLUTIONS OR ORDINANCES RELATING TO PERMITS, SAFETY, INSURANCE WORK CONDITIONS, WORKMEN'S COMPENSATION, PATENTS, TAXES, USE OF HIGHWAYS OR STREETS AND SHALL SAVE HARMLESS FROM DAMAGES, LIABILITY OR CLAIMS THE VILLAGE OF LORDSTOWN WATER DEPARTMENT.
2. NO CONSTRUCTION IS PERMITTED UNTIL WRITTEN AUTHORIZATION HAS BEEN RECEIVED BY THE OHIO E.P.A.
3. THE CONTRACTOR IS RESPONSIBLE IN ADHERING TO THE MOST CURRENT A.W.W.A. SPECIFICATIONS AT THE TIME OF CONSTRUCTION.

1. THE CONTRACTOR SHALL EXCAVATE TO A WIDTH AND DEPTH SUFFICIENT TO ACCOMMODATE THE PIPE LAYING. THE EXCAVATION SHALL BE ADEQUATELY BANCED AND SUPPORTED TO PROTECT WORKMEN AND ADJACENT STRUCTURES AND PAVEMENTS. BACKFILL SHALL BE MADE AS SHOWN OR DIRECTED. MAXIMUM PERMISSIBLE TRENCH WIDTHS SHALL BE AS FOLLOWS:

6" - 24"	=	NOMINAL PIPE DIAMETER + 2'-0"
27" - 30"	=	NOMINAL PIPE DIAMETER + 2'-6"
36" AND OVER	=	NOMINAL PIPE DIAMETER + 3'-0"

1. CONCRETE USED IN THE WORK SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

	<u>CLASS A</u>	<u>CLASS B</u>
	<u>WITH REINFORCING</u>	<u>NON-REINFORCED</u>
SACKS OF CEMENT/CU.YD	6.5	5
MAXIMUM SLUMP	5 INCHES	6 INCHES
28 DAY STRENGTH	4,000 PSI	2,000 PSI

AIR ENTRAINED CEMENT SHALL BE USED.

1. ALL DUCTILE IRON PIPE SHALL BE EQUAL TO A.W.W.A. / A.N.S.I. SPECIFICATION #C151 / #A 21.51 THICKNESS CLASS 52. DUCTILE IRON PIPE JOINTS SHALL BE RUBBER-GASKET JOINTS EQUAL TO THE MECHANICAL JOINT OR PUSH ON JOINT AS SPECIFIED BY A.W.W.A. SPECIFICATION #C111 OR A.N.S.I. SPECIFICATION #21.11--00. DUCTILE IRON PIPE SHALL HAVE A SINGLE COAT OF CEMENT LINING IN ACCORDANCE WITH A.W.W.A. / A.N.S.I. SPECIFICATION #C104 / #A21.4-95. CEMENT LINING SHALL BE APPROVED BY THE APPROVED AUTHORITY. ALL INSIDE AND OUTSIDE SURFACES SHALL BE PAINTED WITH 2 COATES OF KOPPERS #50 COAL TAR PITCH PAINT OR AN APPROVED EQUAL. IN SOME SOLT CONDITIONS DUCTILE IRON PIPE AND FITTINGS MAY BE REQUIRED TO BE WRAPPED OR BAGGED IN POLYETHYLENE FILM 8 MIL OR .2MM DETERMINED BY THE VILLAGE OF LORDDSTOWN WATER DEPARTMENT.

1. MECHANICAL JOINT FITTINGS SHALL BE EQUAL TO CLOW BELL TIGHT OF U.S. "TYTON" A.S.A. SPECIFICATION #A21.10 WITH JOINTS EQUAL TO A.S.A. SPECIFICATION #A21.11.
2. DUCTILE IRON FITTINGS SHALL BE EQUAL TO A.W.W.A. / A.N.S.I. SPECIFICATION #C153 / #A21.53--00 FOR MECHANICAL OR PUSH ON JOINTS WHICH SHALL CONFORM TO A.W.W.A. / A.N.S.I. SPECIFICATION #C111 / #A21.11--00.
3. ALL FITTINGS, VALVES, HYDRANTS, ETC... SHALL BE BLOCKED WITH CLASS "B" CONCRETE BLOCKING AS INDICATED ON THE FOLLOWING DETAIL SHEETS AND HAVE MECHANICAL RESTRAINING DEVICES INSTALLED. EBAA #200 PV OR EQUIVALENT FOR P.V.C. PIPE OR EBAA MEGALUG SYSTEM OR EQUIVALENT FOR DUCTILE IRON PIPE, EXAMPLE - AQUAGRIP SYSTEM.
4. SADDLES AND OTHER FITTINGS SHALL BE TORQUED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

1. GATE VALVES SHALL BE PLACED AT VARIOUS LOCATIONS ALONG A WATER MAIN AND ITS INTERSECTIONS TO ALLOW FOR LOGICAL AND EFFICIENT TRANSPORT OF WATER THROUGHOUT THE WATER SYSTEM. GATE VALVES SHALL ALSO BE PLACED TO ALLOW FOR EASY REPAIRS SHOULD A WATER MAIN BE DAMAGED. A WATER MAIN MUST END WITH A GATE VALVE AND AT LEAST TWO LENGTHS OF PIPE AFTER THE VALVE. THE MAIN LINE MUST THEN BE PROPERLY CAPPED AND BLOCKED. THIS IS TO ALLOW FOR EASY EXTENSION OF THE WATER MAIN.
2. ALL VALVES 3" AND OVER SHALL CONFORM TO THE A.W.W.A. SPECIFICATIONS FOR GATE VALVES FOR ORDINARY WATER WORKS SERVICE - STANDARD #C500-02. GATE VALVES SHALL BE MUELLER SERIES #A-2360/#A-2380. ALL VALVES SHALL OPEN BY TURNING COUNTER- CLOCKWISE OR TO THE LEFT.
3. GATE VALVES SHALL BE IRON-BODY WITH FUSION EPOXY COATED INTERIOR AND EXTERIOR SURFACES THAT MEETS OR EXCEEDS ALL APPLICABLE REQUIREMENTS OF ANSI/AWWA C550-01 STANDARD AND IS CERTIFIED TO ANSI/NSF 61, BRONZE MOUNTED DOUBLE DISC WITH BRONZE SEATS, NON-RISING BRONZE STEM CAPABLE OF OPERATING AT A WORKING PRESSURE OF 200 PSI. ALL 2" AND SMALLER GATE VALVES SHALL BE MADE OF THE BEST QUALITY BRASS OR BRONZE, SOLID WEDGE, NON-RISING STEM GATE VALVES WITH SCREWED ENDS AND SHALL OPEN BY TURNING TO THE LEFT.
4. BONNET BOLTS AND NUTS, STUFFING BOX BOLTS AND NUTS AND WRENCH NUT CAP SCREW SHALL BE TYPE 304 STAINLESS STEEL.
5. VALVE BOXES SHALL BE EQUAL IN ALL RESPECTS TO BINGHAM & TAYLOR 5-1/4" SHAFT 3-PIECE SCREW VALVE BOX, FIG.#4908-CATALOG #8. THE COVER SHALL HAVE THE WORD "WATER" MARKED ON THE TOP. WASH GRAVEL SHALL BE USED AROUND THE VALVE BOX SETTING.
6. THE VALVE BOX SHALL BE SO SET THAT IT DOES NOT REST ON THE VALVE, NO SURFACE LEADS SHALL BE TRANSMITTED TO THE VALVE OR TO THE WATER MAIN. THERE SHALL BE AT LEAST TWO INCHES OF EARTH BETWEEN THE VALVE AND THE VALVE BOX. AFTER BACKFILLING, IF BOX IS FOUND TO BE NOT TO GRADE OR NOT PLUMB IT SHALL BE DUG UP AND RESET.
7. IF A VALVE OPERATING NUT IS GREATER THAN 3 FEET DEEP, A ROD EXTENSION WITH SET SCREWS AND BOLTS IS REQUIRED.

1. FIRE HYDRANTS SHALL BE MUELLER CENTURION COMPRESSION TYPE OR EQUIVALENT. HYDRANTS SHALL MEET THE FOLLOWING SPECIFICATIONS:

TEST PRESSURE (HYDRANTS SHALL BE SHOP TESTED @)	300 PSI
MECHANICAL JOINT BASE ELBOW	6 INCHES
DEPTH OF BURY	5.0 FEET
SIZE OF HOSE CONNECTION	2-1/2 INCHES
NUMBER OF HOSE CONNECTIONS	2
THREADS FOR PUMPER AND HOSE CONNECTIONS	NATIONAL STANDARD
SIZE OF PUMPER CONNECTIONS (MIN)	4-1/2 INCHES
NUMBER OF PUMPER CONNECTIONS	1
SIZE OF VALVE OPENING (MIN)	4-1/2 INCHES
	** 5-1/4" **
CHAINED CAPS	33

** 5-1/4" VALVE OPENING MAY BE REQUIRED AT CERTAIN LOCATIONS AS DETERMINED BY THE VILLAGE OF LORDSTOWN WATER DEPARTMENT.

2. HYDRANTS SHALL OPEN TO THE LEFT, COUNTER CLOCKWISE, WITH TOP NUT AND NOZZLE CAPS BEING PENTAGON SHAPED. HYDRANT SHALL BE EQUIPPED WITH A BREAKING RING LOCATED TWO INCHES ABOVE THE GROUND AND SHALL BE SHOP PAINTED YELLOW AS THE STANDARD COLOR.
3. ANY EXTENSIONS SHALL BE OF THE SAME MANUFACTURER AS THE HYDRANT.
4. HYDRANTS TO BE INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS WITH A WASHED GRAVEL DRAINAGE POCKET AND SHALL CONTAIN NO STONES LARGER THAN TWO (2) INCHES IN DIAMETER. #5 SUE NOT TO BE USED. HYDRANT SHALL SET WITH NOZZLES SHALL FACE IN THE DIRECTION ORDERED BY THE VILLAGE OF LORDSTOWN WATER DEPARTMENT.

1. SERVICE LINES SHALL BE TYPE "K" COPPER AS PER A.S.T.M. SPECIFICATION #B-88, UP TO 2" DIA. SHALL BE UTILIZED FROM THE WATERMAIN TO THE CURB BOX. CORPORATION STOPS SHALL BE EQUAL TO MUELLER #P-25008 WITH RUBBER SEALING RINGS AND TIGHTENING CLAMP. CURB STOPS SHALL BE EQUAL TO MUELLER #P-25209 WITH TIGHTENING CLAMPS. CURB BOX SHALL BE EQUAL TO BUFFALO PIPE & FOUNDRY COMPANY #3D. IRON SERVICE SADDLE SHALL BE FORD FC101, FC102, OR EQUAL. THE SADDLE SHALL HAVE A 2" MIN. WIDTH STAINLESS STEEL BAND WITH STAINLESS STEEL BOLTS. AN EPOXY COATED SADDLE BODY. AND A CC THREADED CORPORATION. FITTING.

2. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
3. 200 P.S.I. PLASTIC #3408 SDR9 CTS MAY BE USED FOR 1", 1-1/2" & 2" SERVICES, AND ON THE HOMEOWNERS SIDE OF CURB BOX. PLASTIC SERVICE REQUIRES SAND BACKFILL 3" BELOW & 6" ABOVE, AND 12 GAUGE SOLID (COPPER) COATED (INSULATED) TRACER WIRE. FLARING OF PLASTIC IS NOT RECOMMENDED. TRUMBULL COUNTY WILL NOT BE HELD RESPONSIBLE IF PLASTIC PIPE IS FLARED.

1. WHENEVER THE VILLAGE OF LORDSTOWN WATER DEPARTMENT DEEMS IT NECESSARY, WATER MAINS SHALL BE EXTENDED BEYOND THE LIMITS OF THE PROJECT AND LOOPED TO IMPROVE WATER SERVICE AND/OR ELIMINATE WATER QUALITY ISSUES.

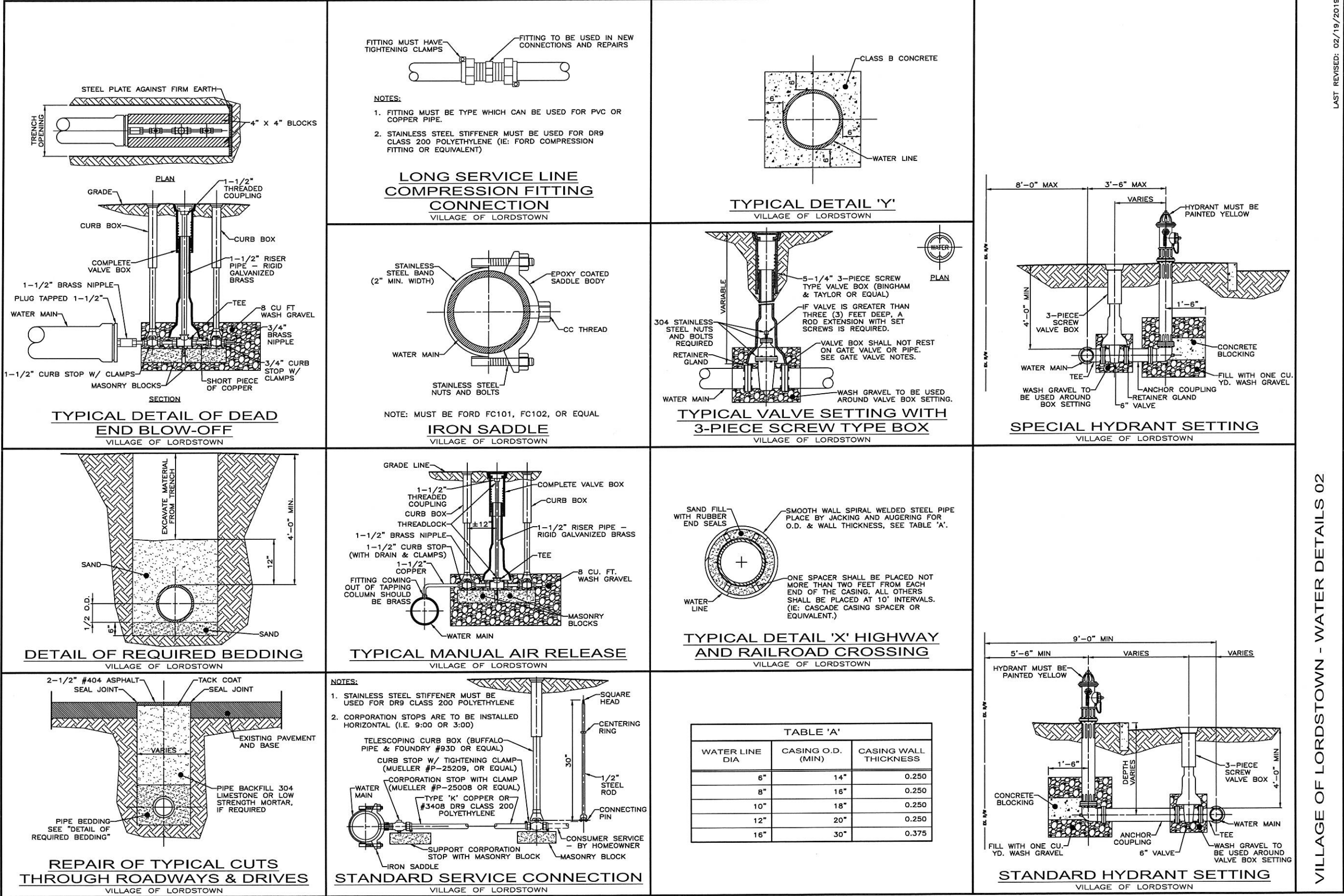
1. STERILIZATION SHALL COMPLY WITH AWWA STANDARD SPECIFICATION #C651-05.

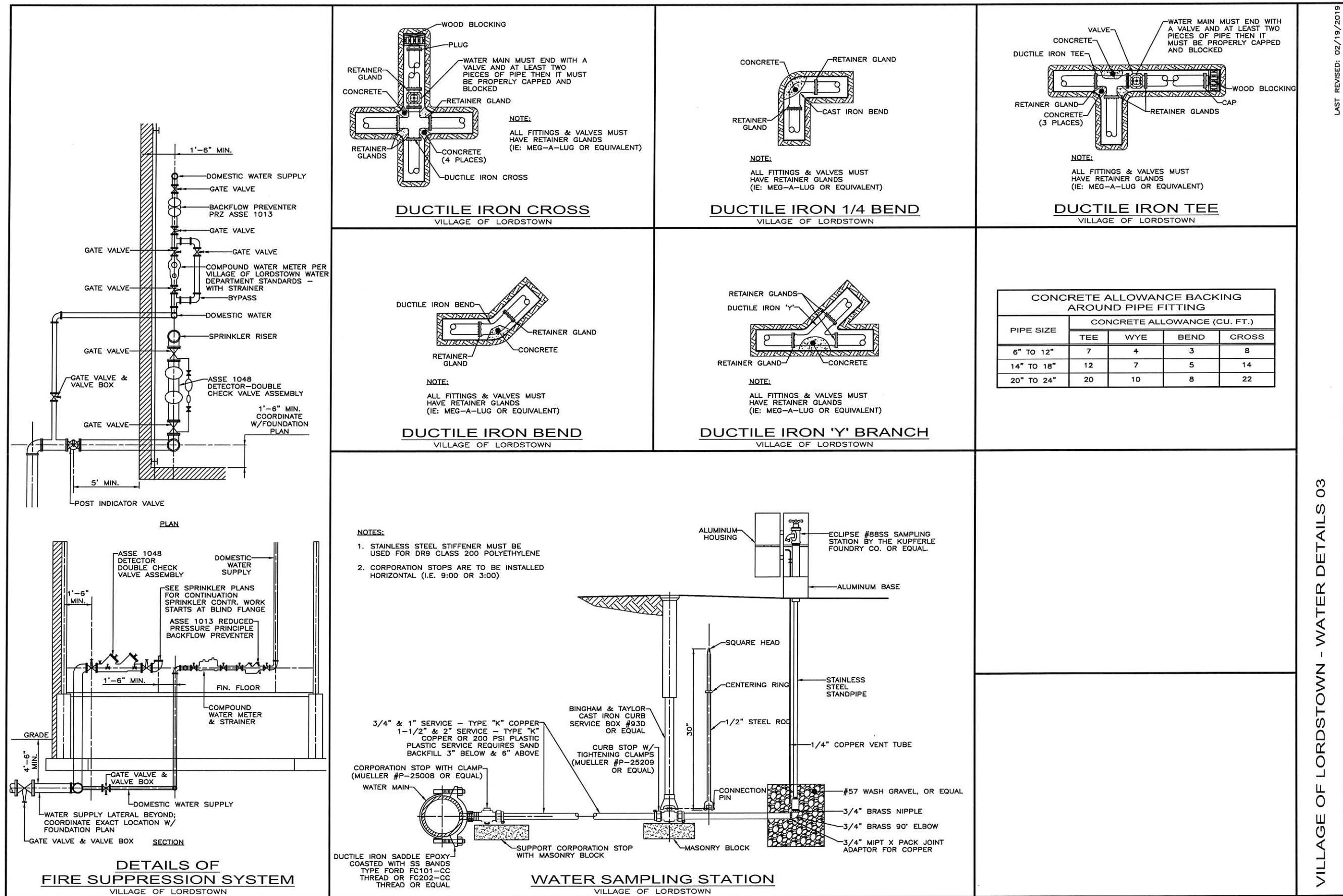
1. A MINIMUM 10'-0" HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN STORM SEWERS AND THE WATERLINE, (OUT TO OUT).
2. A MINIMUM 18" VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN STORM SEWERS AND WATERLINE, (OUT TO OUT).
3. A MINIMUM 10'-0" HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWERS AND THE WATERLINE, (OUT TO OUT).
4. A MINIMUM 18" VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWERS AND THE WATERLINE, (OUT TO OUT).

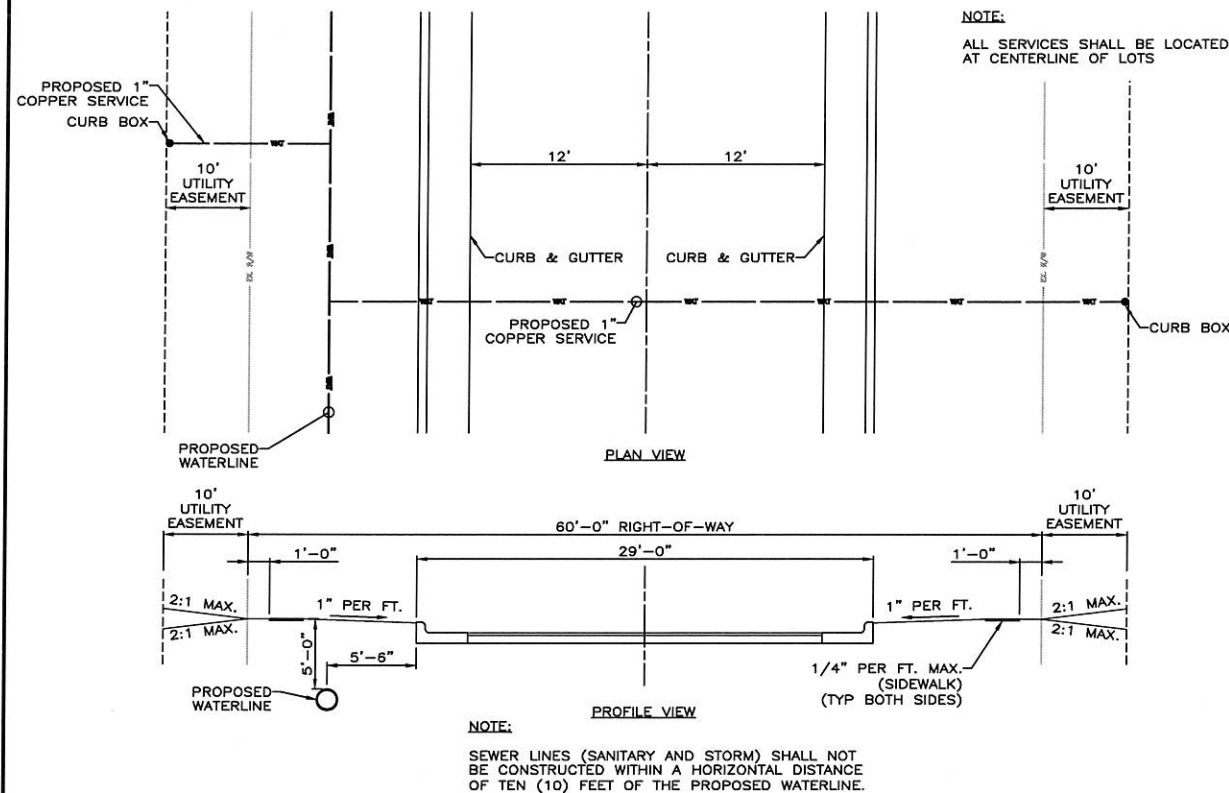
1. WATER MAINS CROSSING SEWERS SHALL BE LAID WITH A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSINGS SHALL BE ARRANGED SO THAT THE WATER MAIN JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER JOINTS. WHERE THE WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
2. IF IT IS IMPOSSIBLE TO MEET PROPER HORIZONTAL SEPARATION, EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS 10 FEET ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE OTHER LINE. THE CARRIER PIPE SHALL BE WATER TIGHT BY THE VILLAGE OF LORDSTOWN WATER DEPARTMENT FOR USE IN WATER MAIN CONSTRUCTION.

1. ALL WATER MAINS SHALL BE SUBJECT TO BOTH A HYDROSTATIC AND A BACTERIOLOGICAL TEST. THE BACTERIA TEST SHALL BE TAKEN BY A REPRESENTATIVE OF THE VILLAGE OF LORSTOWN WATER DEPARTMENT. HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE VILLAGE OF LORSTOWN WATER DEPARTMENT AND SHALL COMPLY WITH A.W.W.A. STANDARD SPECIFICATION #C600-99 (DUCTILE IRON) AND #C605.94 POLYVINYL CHLORIDE (PVC).

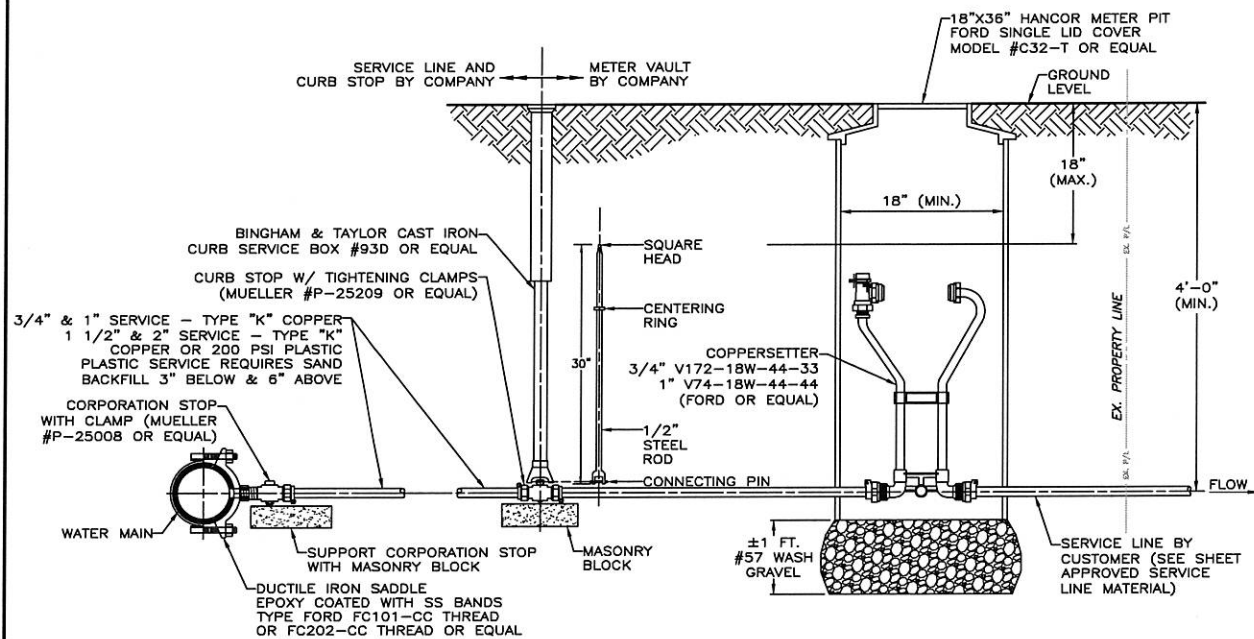
1. THE ENTIRE AREA OF WORK SHALL BE CLEANED UP, RE-SEEDDED AND RESTORED SO THAT UPON COMPLETION OF THE WORK, THE AREA IS IN A CONDITION EQUAL TO OR BETTER THAN IT WAS.



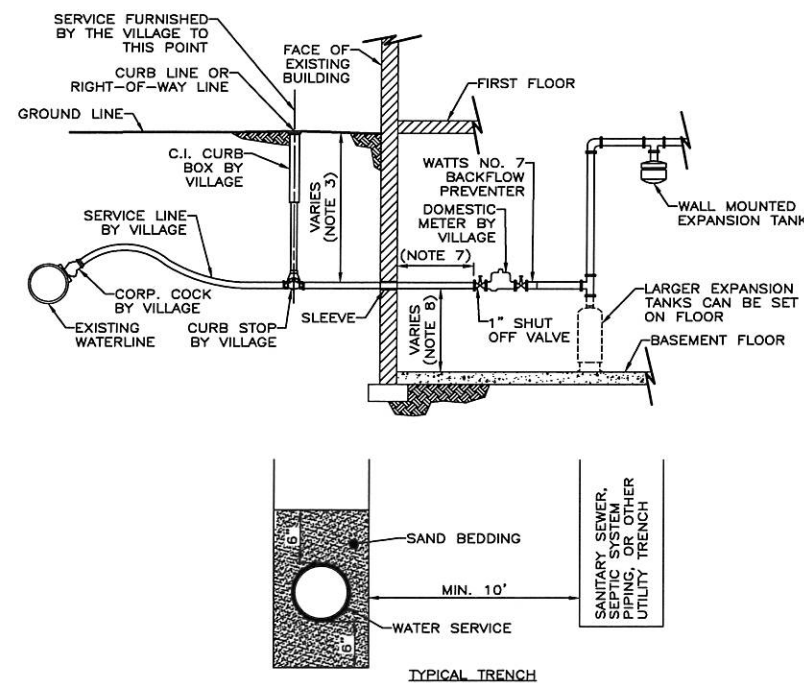




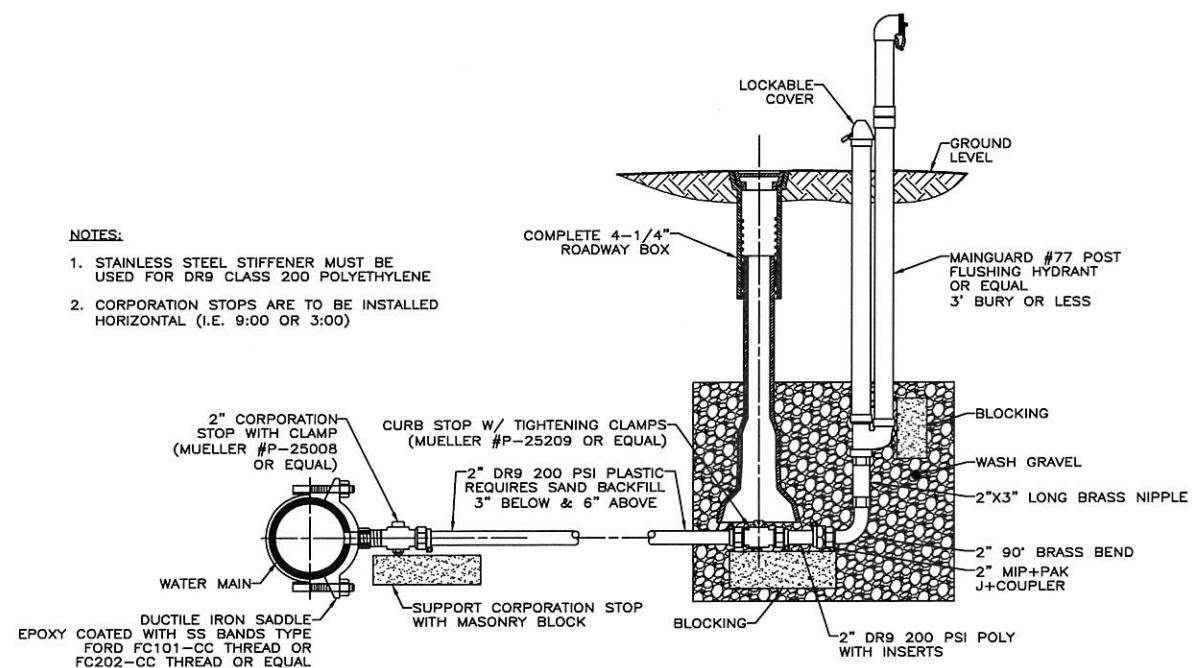
TYPICAL WATER SERVICE LINE INSTALLATION LOCATION
VILLAGE OF LORDSTOWN



DETAIL OF METER PIT
VILLAGE OF LORDSTOWN



WATER SERVICE LINE INSTALLATION
VILLAGE OF LORDSTOWN



FLUSHING HYDRANT
VILLAGE OF LORDSTOWN