

GENERAL NOTES:

- THE ENGINEER WHOSE SEAL APPEARS HEREON IF NOT RETAINED FOR SUPERVISION OF CONSTRUCTION, IS NOT RESPONSIBLE FOR CONSTRUCTION AND THEREFORE ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION PRACTICES, PROCEDURES, AND
- RESULTS THEREFROM. THE ENGINEER SHALL NOT BE HELD RESPONSIBLE OR HELD ACCOUNTABLE FOR THE INTEGRITY OF ANY STRUCTURES
- ALL WORK IS TO BE IN ACCORDANCE WITH THE YORKTOWN TOWN CODE AND NEW YORK STANDARDS AND SPECIIFICATIONS FOR EROSION AND SEDIMENT CONTROL ALL CONDITIONS, LOCATIONS, AND DIMENSIONS SHALL BE FIELD VERIFIED AND THE ENGINEER SHALL BE IMMEDIATELY
- ALL CHANGES MADE TO THE PLANS SHALL BE APPROVED BY THE ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS. ANY
- SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE STORMWATER POLLUTION PREVENTION PLAN.
- ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL IN A "CODE 753" PRIOR TO CONSTRUCTION FOR UNDERGROUND UTILITY
- SUBSTRUCTURES AND THEIR ENCROACHMENTS BELOW GRADE, IF ANY, ARE NOT SHOWN.

CONSTRUCTED OR UNDER CONSTRUCTION PRIOR TO THE APPROVAL OF THE PLANS.

- ANY PROPOSED ELECTRIC AND/OR TELEPHONE SERVICE LINES ARE TO BE PLACED UNDERGROUND
- THE DESIGN ENGINEER DISCLAIMS ANY LIABILITY FOR DAMAGE OR LOSS INCURRED DURING OR AFTER CONSTRUCTION. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF WORK. THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.

CONTRACTOR RESPONSIBILITIES

- ALL WORK ON THE PROJECT SHALL BE PERFORMED IN A WORKMAN LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE INDUSTRY. THE OWNER WILL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF THE WORK. MATERIALS AND WORK DEEMED UNACCEPTABLE WILL BE REMOVED AND REDONE AT THE SOLE COST AND RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT HIS WORK AND WILL BE HELD RESPONSIBLE FOR CONSEQUENTIAL DAMAGES DUE TO HIS ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEE, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A SEPARATE CONTRACT WITH THE CONTRACTOR.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SHORE EXISTING UTILITIES IF REQUIRED BY CONSTRUCTION. 4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE THE TOWN ENGINEER IN ADVANCE OF HIS WORK OR AS THE
- ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER
- NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF WORK. THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.
- ALL CHANGES MADE TO THIS PLAN SHALL BE APPROVED BY THE ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS. ANY UNAUTHORIZED ALTERATION OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A
- CONTRACT WITH THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY ALL SUBSTRUCTURES ENCOUNTERED DURING CONSTRUCTION.
- 10. THE CONTRACTOR SHALL SECURE & PAY FOR A BUILDERS RISK POLICY TO COVER THE PERIOD OF CONSTRUCTION. THE ENGINEER & OWNER SHALL BE NAMED AS ADDITIONAL INSURED. ALL CONTRACTORS EMPLOYED AT THE SITE SHALL BE COVERED BY WORKMAN'S COMPENSATION.

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL REQUEST A BENCH MARK FROM THE SURVEYOR IN THE SAME DATUM AS THE DESIGN PLANS.
- FINISHED GRADES SHALL BE OF SUCH ELEVATION THAT THE GROUND WILL SLOPE AWAY FROM IT IN ALL DIRECTIONS. CONSTRUCTION ACTIVITY SHALL BE LIMITED FROM 8:00 A.M. TO 6 P.M., AND NO CONSTRUCTION ACTIVITY SHALL OCCUR ON SUNDAYS OR LEGAL NEW YORK STATE HOLIDAYS. WHERE BLASTING IS NECESSARY, IT SHALL OCCUR FROM MONDAY THROUGH FRIDAY BETWEEN THE HOURS OF 8:00 A.M. AND 6:00 P.M. NO BLASTING SHALL OCCUR ON HOLIDAYS, SATURDAY OR SUNDAY. ALL BLASTING SHALL ALSO BE COMPLETED IN ACCORDANCE WITH THE TOWN OF YORKTOWN AND NEW YORK STATE BLASTING ORDINANCES
- NO CRUSHING/PROCESSING IS PERMITTED ON THE SITE WITHOUT PRIOR APPROVAL BY THETOWN OF YORKTOWN PLANNING BOARD. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL STANDARDS. IF NECESSARY THE REMOVAL SHALL BE DONE BY A CONTRACTOR LICENSED TO REMOVE AND DISPOSE OF VARIOUS

SANITARY SEWER NOTES (NON-GRAVITY SYSTEM):

- 1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CODE OF THE TOWN OF YORKTOWN AND THE REGULATIONS OF
- THE WESTCHESTER COUNTY DEPARTMENT OF ENVIRONMENTAL FACILITIES. 2. SANITARY MANHOLES/CLEANOUT MANHOLES SHALL BE PRECAST CONCRETE.
- 3. ALL WORK SHALL BE MANUFACTURED IN ACCORDANCE WITH APPROVED STANDARDS. MANHOLE POSITIONING SHALL BE AS TO PREVENT THE ENTRANCE OF SURFACE WATER DURING STORMS. MANHOLE RIMS ARE TO BE WATER TIGHT IN AREAS SUBJECT TO POSSIBLE FLOODING CONDITIONS.
- 4. SANITARY SEWER CONSTRUCTION SHALL MEET ALL SEWER CONSTRUCTION SPECIFICATIONS FOR THE TOWN OF YORKTOWN.
- 5. THE TOWN ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO THE START OF ANY WORK AND THE WCDEF.
- A CODE 753 SHALL BE CALLED BEFORE THE START OF ANY EXCAVATION WORK. 7. ALL SEWERS SHALL BE LAID AT LEAST 10 FT HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
- THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
- 8. MANHOLE STEPS SHALL BE CAST IRON NEENAH NO. R-1981-0 OR CAMPBELL FOUNDRY NO. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL
- 9. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE THE LETTERS "SEWER" CAST ON THE COVER.
- 10. MANHOLE COVERS AND STRUCTURES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS AND MUST BE RATED FOR H-20 LOADING. MANHOLES MUST BE MIN. 48" DIAMETER.
- 11. ALL SANITARY STRUCTURES SHALL RECEIVE 2 MIL COATS OF BITUMINOUS MATERIAL "INERTOL NO. 49" KOPPERS SUPPER SERVICE BLACK OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH MANUFACTURE'S
- SPECIFICATIONS.
- 12.0-RING JOINTS TO CONFORM TO A.S.T.M. DESIGNATION C-443 LATEST REVISION. JOINTS TO BE MORTARED INSIDE AND OUT USING NON-SHRINKING MORTAR.
- 13.PRE-CAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH "PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS" A.S.T.M. DESIGNATION C-478, LATEST REVISION, MINIMUM COMPRESSIVE STRENGTH TO BE 4000 P.S.I. 22. WHERE SEWER MAIN IS TO BE INSTALLED 10' DEEP OR GREATER, PVC SDR-26 SHALL BE USED.
- 14. WATER MAINS CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF A MINIMUM OF 18" BETWEEN THE BOTTOM OF WATER MAIN AND TOP OF SEWER. IN ADDITION, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SEWER SETTLING AND BREAKING THE WATER MAIN. IN ADDITION THE LENGTH OF WATER PIPE IS TO BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER. NO WATER MAIN SHALL PASS THROUGH OR COME IN
- CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE. 15.MANHOLES AND SANITARY SEWER LINES SHALL BE TESTED TO CONFORM WITH WESTCHESTER COUNTY AS PER
- SANITARY SEWER TESTING NOTES BELOW. 16. THE WESTCHESTER COUNTY TOWN ENGINEER SHALL BE PROVIDED A 48 HOUR NOTICE PRIOR TO THE TESTING OF
- THE INSTALLED UTILITIES TO ALLOW WITNESSING OF TESTING BY THE DEPARTMENT 17. ALL INSTALLATIONS AND TESTING SHALL BE IN ACCORDANCE WITH THE TEN STATES STANDARDS, LATEST VERSION.

SANITARY SEWER TESTING

PROCEDURE AND METHOD OF TESTING - THE TEST LENGTH INTERVALS AND TYPE OF LEAKAGE TEST SHALL BE APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND SITE ENGINEER. IN THE CASE OF SEWERS LAID ON STEEP GRADES, THE LENGTH OF LINE TO BE TESTED BY EXFILTRATION AT ANY ONE TIME MAY BE LIMITED BY THE MAXIMUM ALLOWABLE INTERNAL PRESSURE ON THE PIPE AND JOINTS AT THE LOWER END OF THE LINE. DEPENDING ON FIELD CONDITIONS AND/OR DESIRE OF THE CONTRACTOR, THE FOLLOWING TESTS FOR LEAKAGE MAY BE EMPLOYED:

1. LOW-PRESSURE AIR TEST OF PIPE LINES -

PLUG ALL OPENINGS IN THE TEST SECTION. ADD AIR UNTIL THE INTERNAL PRESSURE OF THE LINE IS RAISED TO APPROXIMATELY 4.0 PSI. AFTER THIS PRESSURE IS REACHED, ALLOW THE PRESSURE TO STABILIZE. THE PRESSURE WILL NORMALLY DROP AS THE AIR TEMPERATURE STABILIZES. THIS USUALLY TAKES 2 TO 5 MIN. DEPENDING ON THE PIPE SIZE. THE PRESSURE MAY BE REDUCED TO 3.5 PSI BEFORE STARTING THE TEST.

WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE THE STARTING TEST PRESSURE OF 3.5 PSI, START THE TEST. IF THE PRESSURE DROPS MORE THAN 1.0 PSI DURING THE TEST TIME, THE LINE IS PRESUMED TO HAVE FAILED THE TEST. IF A 1.0-PSI DROP DOES NOT OCCUR WITHIN THE TEST TIME, THE LINE HAS PASSED THE TEST.

TEST TIMES ARE FOR A 1.0 PSI PRESSURE DROP FROM 3.5 TO 2.5 PSI. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION. MINIMUM TEST TIMES FOR VARIOUS PIPE SIZES IN INCHES ARE AS FOLLOWS:

SIZE (INCHES) (MIN./100 FT.) UP TO 8 1.2 10 1.5 1.8

E. LINALITUODIZED ALTEDATIONS OD ADDITIONS TO TUIS DDAWING IS A VIOLATION OF SECTION 7000 (9). OF THE NEW YORK STATE EDLICATION LAW

Sub-Sections A through H are directly quoting sections of the NYS DOT guidance EI 07-017 Title: DESIGN GUIDANCE FOR TRENCHLESS INSTALLATION OF CASING

The intent of the specification is to pay the Contractor for opening a cased hole from one point to another, as indicated in the contract documents. For instances where a utility is to be installed, the item may be used to open a hole/pathway for the placement of the utility carrier

The specification is organized by casing size (XX denotes casing diameter size).

A. <u>Pipe Jacking (PJ)</u>. A technique for installing a prefabricated pipe through the ground from a drive shaft to a reception shaft. The pipe is propelled by jacks located in the drive shaft. The jacking force is transmitted through the pipe to the face of the PJ excavation. The excavation is accomplished, and the spoil is transported out of the jacking pipe and shaft manually or mechanically. Both the excavation and spoil removal processes require workers to be inside the pipe during the jacking operation.

B. Microtunneling (MT). A remotely controlled, guided pipe-jacking process that provides continuous support to the excavation face. The guidance system usually consists of a laser mounted in the drive shaft communicating a reference line to a target mounted inside the MT machine's articulated steering head. The MT process provides ability to control excavation face stability by applying mechanical or fluid pressure to counterbalance the earth and hydrostatic pressures.

C. <u>Horizontal Directional Drilling (HDD)</u>. A 2-stage process that consists of drilling a small diameter pilot directional hole along a predetermined path and then developing the pilot hole into a suitable bore hole that will accommodate the desired utility and then pulling the utility into place. The HDD process provides the ability to track the location of the drill bit and steer it during the drilling process. The vertical profile of the bore hole is typically in the shape of an arc entrapping drilling fluid to form a slurry pathway rather than an open hole. This entrapped slurry provides continuous support to the bore hole.

D. Because trenchless installations are typically specified to minimize/eliminate disturbance to the surrounding area, the specification dictates monitoring tasks for the Contractor to perform. A survey of the existing ground surface along the proposed path of casing installation, prior to the start of work, will establish baseline data. The trenchless installation process will be closely monitored during its operation to minimize/eliminate ground movements. The designer should ensure that the project contains Item 625.01 Survey and Stakeout.

E. If Pipe Jacking or Utility Tunneling is determined to be the method of installation during construction (both the excavation and spoil removal processes require workers to be inside the pipe during the jacking operation), work will proceed in accordancewith §107-05 R. Confined Spaces and a written confined space plan (addresses prevention of unauthorized entry, type of hazard, work practices, monitoring, provision for attendant, duties of employees, rescue and emergency medical services, multi-employer operations, and provisions for review procedures). F. Pipe Jacking (PJ). The pipe jacking method installs a prefabricated pipe through the ground from a drive shaft to a reception shaft by propelling it by jacks located in the drive shaft. The jacking force is transmitted through the pipe to the face of the PJ excavation. Therefore, the type of casing must be capable of transmitting the required jacking forces from the thrust plate to the jacking shield. Steel casing, reinforced concrete pipe (RCP), or glass-fiber reinforced plastic pipe (GFRP) are the most common types of casing used.

• Steel pipe shall be bare steel casing pipe meeting the requirement of ASTM A53, Grade B, Types E or S, or approved equal. The ends shall be prepared for butt welding and beveledat37½degrees.

Reinforced concrete pipe shall meet the requirements of §706-02 Reinforced Concrete Pipe for Class V, except that the exterior barrier shall be smooth.

 G. Microtunneling (MT). The microtunneling method is a remotely controlled, guided pipe-jacking process Since the microtunneling process is cyclic pipe jacking process, the discussion on the pipe jacking method applies. Steel casing, reinforced concrete pipe (RCP), or glass-fiber reinforced plastic pipe (GFRP) are the most common types of casing used.● Steel pipe shall be bare steel casing pipe meeting the requirement of ASTM A53, GradeB, Types E or S, or approved equal. The ends shall be prepared for butt welding andbeveledat37½ degrees. ● Reinforced concrete pipe shall meet the requirements of §706-02 Reinforced ConcretePipe for Class V, except that the exterior barrier shall be smooth.

H. Horizontal Directional Drilling (HDD). The horizontal directional drilling method consists of drilling a small diameter pilot directional hole along a predetermined path and then developing the pilot hole into a suitable bore hole that will accommodate the desired utility and then pulling the utility into place. The type of casing is limited to one which can be joined together continuously, while maintaining sufficient strength to resist the high tensile stresses imposed during the pullback operation. Steel casing or butt-fused, high density polyethylene pipe (HDPE) are the most common types of casing used. ● Steel pipe shall be bare steel casing pipe meeting the requirements of ASTM A53, Grade B, Types E or S, or approved equal. The ends shall be prepared for butt weldingandbeveledat37½ degrees. ● High Density Polyethylene (HDPE) pipe shall be SDR-9 or SDR-11 and shall meet the requirements of AWWA C906, PPI PE 3408 and ASTM D3350 B PE 345444C.

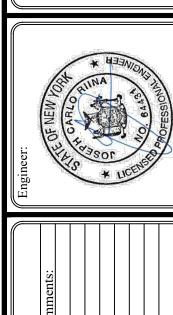
Continuation of Construction Sequence

STREAM CROSSING JACKING PIT CONSTRUCTION SEQUENCE

REFER TO THE PLAN SET FOR ALL PLANS AND DETAILS WHICH RELATE TO CONSTRUCTION SEQUENCE.

- 1. PRIOR TO ANY WORK, A LICENSED SURVEYOR MUST DEFINE INFRASTRUCTURE LOCATIONS, LIMITS OF DISTURBANCE, STORMWATER BASIN LIMITS, AND GRADES IN THE FIELD, LIMITS OF DISTURBANCE SHALL BE MARKED WITH THE INSTALLATION OF CONSTRUCTION FENCE OR
- 2. INSTALL ALL PERIMETER EROSION CONTROL MEASURES. CONSTRUCTION ACCESS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND THE ASSOCIATED DETAILS. INSTALL SILT FENCING AT THE BOTTOM OF SLOPES. DELINEATE CLEARING LIMIT WITH ORANGE CONSTRUCTION FENCE.
- 3. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS. METHODS. TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PARTS OF THE
- WORK UNDER HIS CONTRACT. 4. THE CONTRACTOR WILL ENSURE ALL DEC REGULATIONS AND STANDARDS ARE ADHERED TO
- FOR THE PROTECTION OF LOCAL FAUNA, FLORA, WATERWAYS AND OVERALL ENVIRONMENT. 5. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE CHOSEN METHOD AND MATERIALS FOR THE TRENCHLESS UTILITY OPERATION.
- 6. EXCAVATE JACKING PIT AS PER PLAN TO THE DEPTH REQUIRED TO ACHEIVE ADEQUATE DEPTH FOR BORING UNDER STREAM. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINAL ELEVATIONS FOR CROSSING UNDER THE STREAM. THE PITS SHALL BE EXCAVATED WITH A SAFE SIDE SLOPE 2H:2V OR PROVIDE SHEETING. SHEETING SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER.
- 7. THE CONTRACTOR SHALL INSTALL TEMPORARY THE DEWATERING PIT, SILT BAG, AND PUMP TO REMOVE WATER FROM THE EXCAVATION.
- 8. THE CONTRACTOR SHALL PROCEED WITH THE BORING OPERATION INSTALLING ADEQUATE SLEEVING FOR ENCASING THE PROPOSED SEWER LINES 1 ½" Ø PVC SCH40 SOLID OR FLEXIBLE FORCE MAIN AND 8" Ø SDR 35 PIPE ACROSS THE BROOK.
- 9. ONCE THE PIPES ARE IN PLACE AND ALL CONNECTIONS MADE THE PIT MAY BE BACKFILLED. THE PIPES SHOULD FIRST BE COVERED WITH AT LEAST 12" OF DENSE SAND. THE PIT CAN THEN BE BACKFILLED WITH THE NATIVE SOIL IN TWO FOOT COMPACTED LIFTS. SOIL MUST BE DRY. BACKFILLING WITH WET, MOIST OR DAMP SOIL IS NOT PERMISSIBLE.
- 10. ONCE BACKFILLING IS COMPLETE RESTORE SURFACE CONDITIONS AS SPECIFIED BY THE





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