

1. TOPOGRAPHIC INFORMATION SHOWN FROM FIELD SURVEY DATED SEPTEMBER, 2020 PREPARED BY ENGINEERING CONCEPTS, INC. AND RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ALL CRITICAL DESIGN ELEVATIONS PRIOR TO PROCEEDING WITH ANY CONSTRUCTION AND MAKE NECESSARY ADJUSTMENTS OR CONTACT ENGINEER IF ELEVATIONS DIFFER.

- GRADING NOTES:**

A FILL SHALL BE PLACED ONLY ON FIRM SUBGRADE APPROVED BY THE GEOTECHNICAL ENGINEER. ALL SUBGRADES SHALL BE COMPACTED TO THE REQUIRED DENSITY PRIOR TO FILL PLACEMENT. NON-ENGINEER SUBGRADES SHALL BE SPECIFIED IN TWO SOILS. ALL FILLERS SHALL BE PROTECTED TO ASSURE BONDING BETWEEN THE TWO SOILS. ALL FILLERS SHALL BE USED TO A MINIMUM OF 98% RELATIVE COMPACTION. THE COMPACTION SHALL BE AT LEAST 98% DRY DENSITY (ASTM D698) TO 8 INCH LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO THE REQUIRED DENSITY. THE GEOTECHNICAL ENGINEER SHALL PERFORM FIELD DENSITY TESTS ON EACH LIFT OR AS NECESSARY TO ASCERTAIN THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED. CALIBRATION BEARING AND TESTS SHALL BE PERFORMED IN MATERIAL PROPOSED FOR USE BEYOND NATURE WHETHER CUT OR FILL. THE BOTTOM 2 FEET OF MATERIAL BELOW STRUCTURES SHALL BE COMPACTED TO 98% DRY DENSITY.

(ASIN D069)

- D. PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF 0.10 METER TOLERANCE.
- E. PROVIDE THE FOLLOWING MINIMUM REQUIREMENTS FOR THE EXCAVATION:
 - 1. WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
 - 2. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
 - 3. PROVIDE A MINIMUM OF 2'-0" FROM THE FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.
- F. FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS.
- G. IF HORIZONTAL DISTANCES BETWEEN STEPS IS NOT LESS THAN TWO FEET, THE RESULTING OVER-EXCAVATION WITHIN THE FOOTING SHALL BE REPAIRED TO THE BOTTOM OF THE FOOTING AND FILL THE RESULTING OVER-EXCAVATION WITH CONTROLLED FILL.

- GENERAL UTILITY NOTES:**

1. VERIFY LOCATION, SIZE, AND ELEVATION FOR ALL UTILITIES IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION, SIZE, OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN.
2. PROVIDE CONSTRUCTION METHODS AND MATERIALS IN ACCORDANCE WITH THE COMMONWEALTH OF VIRGINIA, SEWER AND WATERWORKS REGULATIONS AND WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS.
3. A MINIMUM OF THREE (3.0) FEET OF COVER IS REQUIRED OVER PROPOSED WATER MAINS, SEWER LINES.
4. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATERWORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.
5. ALL LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
6. REFER TO DETAIL SHEETS FOR BIDDING DETAILS. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECT MATERIAL AND THOROUGHLY COMPACTED PER SPECIFICATIONS.
7. ALL WATER MAINS SHALL BE PROPERLY RESTRAINED WITH MECHANICALLY RESTRAINED JOINTS (FOR APPROVED ALTERNATE).
8. ALL WATER MAINS SHALL BE TESTED IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS. COORDINATE INSPECTIONS FOR TESTING WITH ADJACENT UTILITY COUNTY.
9. ALL WATER PIPE TO BE DUCTILE IRON PIPE, PRESSURE CLASS 350, MINIMUM IN ACCORDANCE WITH ANWWA C151.
10. PROPOSED STORM DRAINS TO BE FLUSHED PRIOR TO REMOVING SEDIMENT TRAPPING ASSURES.

A. QUALIFICATIONS OF MANUFACTURERS - PRODUCTS USED IN THIS WORK SHALL BE PRODUCED BY MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SIMILAR ITEMS AND WITH A HISTORY OF QUALITY PRODUCTION ACCEPTABLE TO THE PARTICIPATING UTILITY.

- B. QUALIFICATIONS OF INSTALLERS. - USE EXPERIENCED WORKERS TO ENSURE PROPER INSTALLATION OF THE PRODUCTS SPECIFIED HEREIN. IN THE ACCEPTANCE OR REJECTION OF INSTALLED WORK, NO ALLOWANCE SHALL BE MADE FOR THE LACK OF EXPERIENCE ON THE PART OF THE WORKERS.
- C. MAIN LINE CONSTRUCTION CAN ONLY BE PERFORMED BY CLASS A CONTRACTORS LICENSED BY THE COMMONWEALTH OF VIRGINIA.
- D. A RECONSTRUCTION CONFERENCE SHALL BE HELD ON ALL WATER AND SEWER PROJECTS BY THE AT LEAST TWO DAYS PRIOR TO ANY CONSTRUCTION OF ANY TYPE PERFORMED BY THE CONTRACTOR. SHALL HAVE A REPRESENTATIVE OF AUTHORITY AT THIS MEETING, PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR MUST HAVE AN APPROVED SET OF CONSTRUCTION DOCUMENTS ON-SITE.

A. PRESS SHALL BE Laid TRIE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS EXCEPT AS AUTHORIZED BY THE PARTICIPATING UTILITY. THE GRADE SHOWN ON THE PROFILE IS THE INTENT TO WHICH THE WORK MUST CONFORM. WORK NOT CONFORMING TO THE GRADE SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE IN A MANNER ACCEPTABLE TO THE PARTICIPATING UTILITY.

B.

C. LOCATIONS OF WATER AND SEWER LINES

1. THE LOCATIONS OF THE PROPOSED LINES ARE SHOWN ON THE DRAININGS.
2. THE PARTICIPATING UTILITY RESERVES THE RIGHT TO MAKE CHANGES IN LINES AND GRADES OF PIPE LINES, AND IN LOCATIONS OF PIPES AND/OR APPURTENANCES WHEN SUCH CHANGES MAY BE NECESSARY OR ADVANTAGEOUS.
3. ANY DEVIATION IN LOCATION OR LINE GRADE OF SEWER, OR THE LOCATION OR ELEVATION OF A WATER LINE, STRUCTURE OR APPURTENANCE AS SHOWN ON THE CONTRACT DRAININGS, WILL REQUIRE A REVISION OF THE DRAININGS CLEARLY SHOWING THE PROPOSED DEVIATION, AND SHALL BE SUBMITTED TO THE PARTICIPATING UTILITY FOR REVIEW AND APPROVAL BEFORE ANY CHANGES ARE CONSTRUCTED. DESIGN ENGINEER OF RECORD MUST CONCUR IN ANY REVISION OF DRAININGS. MINOR FIELD CHANGES MAY BE MADE WITH APPROVAL OF THE PARTICIPATING UTILITY'S CONSTRUCTION INSPECTOR.

A. GENERAL. ALL SUBMITTALS SHALL BE MADE IN ACCORDANCE WITH SECTION 6.17 (SHOP DRAWINGS AND SAMPLES) OF THE STANDARD GENERAL CONDITIONS OF THE ENGINEERS' JOINT CONTRACT DOCUMENT COMMITTEE (EJCOC), 2002 EDITION. CONTRACTOR SHALL FURNISH ENGINEERING DATA COVERING DESIGN AND INSTALLATION. SUBMITTAL SHALL BE MADE IN A TIMELY MANNER SO THAT THE PROJECT SCHEDULED DATE OF CONSTRUCTION SHALL NOT BE AFFECTED.

B. SHOP DRAWINGS. AS A MINIMUM, THE FOLLOWING SHOP DRAWING INFORMATION SHALL BE SUBMITTED TO THE PARTICIPATING UTILITY FOR REVIEW AND APPROVAL:

1. COMPLETE BILL OF MATERIALS TO BE PROVIDED FOR THE WORK DESCRIBED UNDER THIS SECTION.

A. MATERIAL FURNISHED BY CONTRACTOR - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL FURNISHED BY HIM, AND SHALL REPLACE AT HIS OWN EXPENSE ALL SUCH MATERIAL FOUND DEFECTIVE IN MANUFACTURE OR DAMAGED IN HANDLING AFTER DELIVERY BY THE MANUFACTURER. THIS SHALL INCLUDE THE FURNISHING OF ALL MATERIALS AND LABOR REQUIRED FOR THE REPLACEMENT OF INSTALLED MATERIAL DISCOVERED DEFECTIVE PRIOR TO THE FINAL ACCEPTANCE OF THE WORK.

8. MATERIAL FURNISHED BY PARTICIPATING UTILITY - THE CONTRACTOR'S RESPONSIBILITY FOR MATERIAL FURNISHED BY THE PARTICIPATING UTILITY SHALL BE AS FOLLOWS: THE CONTRACTOR'S RESPONSIBILITY ON THE DATE OF THE AWARD OF THE CONTRACT, THE CONTRACTOR SHALL EXAMINE ALL MATERIAL FURNISHED BY THE PARTICIPATING UTILITY AT THE TIME AND PLACE OF DELIVERY TO Haul AND SHALL REJECT ALL DEFECTIVE MATERIAL. ANY MATERIAL FURNISHED BY THE PARTICIPATING UTILITY AND INSTALLED BY THE CONTRACTOR WITHOUT DISCOVERY OF SUCH DEFECTS WILL, IF FOUND DEFECTIVE PRIOR TO THE COMPLETION OF THE PROJECT, BE REJECTED WITH SOUND MATERIAL BY THE PARTICIPATING UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, FURNISH ALL SUPPLIES, LABOR AND FACILITIES NECESSARY TO REMOVE SAID DEFECTIVE MATERIAL AND INSTALL THE SOUND MATERIAL IN A MANNER SATISFACTORY TO THE PARTICIPATING UTILITY.