

ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619

540.473.1253 FAX: 540.473.1254

FINCASTLE. VIRGINIA 24090

MICHAEL W. LYNCH

No. 027276

1. ALL NEW WATER MAINS SHALL BE TESTED, AFTER BACKFILLING, TO A HYDROSTATIC PRESSURE OF NOT

GREATER. TESTING PROCEDURE AND ALLOWABLE LEAKAGE SHALL BE ACCORDING TO WESTERN VIRGINIA

WATER AUTHORITY WATER STANDARDS.

VIRGINIA WATER AUTHORITY STANDARDS.

LESS THAN 100 PSI ABOVE THE DESIGN WATER PRESSURE FOR THE SYSTEM OR 150 PSI, WHICHEVER IS

2. AFTER PRESSURE TESTING AND BEFORE FINAL INSPECTION OF THE COMPLETED SYSTEMS, WATER MAINS

AND SERVICE LATERALS SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH AWWA SPECIFICATION

C651 LATEST REVISIONS. TESTING PROCEDURE AND REQUIREMENTS SHALL BE IN ACCORDANCE WITH WESTERN

## **GENERAL SITE NOTES:**

- 1. TOPOGRAPHIC INFORMATION FROM FIELD SURVEY BY ENGINEERING CONCEPTS OCTOBER, 2007 WITHIN THE WAY AND ROANOKE COUNTY DATA..
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS TO CONSTRUCT THIS PROJECT.
- 3. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR THE CHARACTER AND ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONTACT THE OWNERS/OPERATORS OF ALL UTILITIES AND ARRANGE FOR THE VERIFICATION AND MARKING OF UTILITY LOCATIONS BY SAID OWNERS/OPERATORS. THE CONTRACTOR SHALL ASSIST THE UTILITY OWNERS/OPERATORS BY EVERY MEANS POSSIBLE TO DETERMINE THE LOCATION OF UTILITIES. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR ALL DISTURBANCE OF ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S FAILURE TO ARRANGE FOR THE LOCATION OF UTILITIES BY THE OWNERS/ OPERATORS OF THE UTILITIES. CONTACT MISS UTILITY (800) 552—7001.
- 4. SITE CONDITIONS MAY NECESSITATE SLIGHT DEVIATIONS IN ALIGNMENT, GRADE, AND/OR LOCATION OF NEW FACILITIES FROM THE PLAN ALIGNMENT, GRADE, AND/OR LOCATION. THE CONTRACTOR SHALL CONSTRUCT THE NEW FACILITIES TO SUCH DEVIATIONS AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST OR FINE TO THE OWNER. SHOULD PLAN DEVIATIONS BE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO UNDERTAKING ANY REVISION.
- 5. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT BOCA AND/OR STATE AND LOCAL BUILDING CODES AS WELL AS THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND ALL APPLICABLE STATE AND FEDERAL OSHA REGULATIONS.
- 6. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA IN A SAFE AND ACCEPTABLE MANNER AND SHALL BE RESPONSIBLE FOR REMEDIATING ANY DAMAGES RESULTING FROM HIS FAILURE TO DO SO.
- 7. THE CONTRACTOR SHALL MAINTAIN LIMITS OF CONSTRUCTION WITHIN THE PROPERTY BOUNDARIES OR EASEMENTS AS
- 8. AN APPROVED SET OF PLANS SHALL BE KEPT ON THE SITE AT ALL TIMES.
- 9. ALL CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN CONFORMANCE WITH THE VIRGINIA LITTER CONTROL ACT AND DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING JURISDICTION. AT LEAST ONE TRASH RECEPTACLE SHALL BE ONSITE DURING CONSTRUCTION.
- 10. TEMPORARY TOILETS SHALL BE PROVIDED ONSITE AT A RATIO OF ONE TOILET PER 30 WORKERS DURING THE CONSTRUCTION PERIOD.
- 11. GRADE STAKES SHALL BE SET FOR WATER LINES.
- 12. THE CONTRACTOR SHALL MAINTAIN A CLEAR FLOW PATH FOR SURFACE WATER TO STORM WATER DRAINAGE FACILITIES
- 13. THE CONTRACTOR SHALL GRADE, SEED, AND/OR SOD, AND MULCH THE ENTIRE AREA(S) DISTURBED BY CONSTRUCTION ACTIVITIES.
- 14. CONSTRUCTION AND START—UP OF ALL WORK SHALL NOT INTERFERE WITH THE OPERATION OF WATER AND SEWERAGE FACILITIES. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK AS REQUIRED.
- 15. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION OR BARREL BEND RADIUS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE OR BEND RADIUS.
- 16. ALL PIPING SHALL BE PROPERLY SUPPORTED. ALL PIPING WHICH WILL BE PRESSURIZED DURING OPERATION SHALL BE PROPERLY RESTRAINED.
- 17. ALL WATERLINE SHALL BE CONSTRUCTED ON A CONSTANTLY RISING GRADE TO THE AIR RELEASE VALVES. IN THE EVENT THE CONTRACTOR FAILS TO MAINTAIN CONSTANTLY RISING GRADE BETWEEN AIR RELEASE VALVES, CONTRACTOR SHALL INSTALL ADDITIONAL AIR RELEASE VALVES AT HIGH POINTS AT NO ADDITIONAL COST TO THE OWNER.

## GENERAL UTILITIES 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
- 3. MINIMUM COVER ON ALL WATERLINES SHALL BE 3.0 FEET, UNLESS OTHERWISE SPECIFICALLY INDICATED ON THESE DRAWINGS. ALL PIPE SHALL BE INSTALLED WITH COATED TRACER WIRE TO FACILITATE FUTURE LOCATION OF

sewage and waterworks regulations and western virginia water authority standards where applicable.

- PIPE AFTER CONSTRUCTION IS COMPLETED.

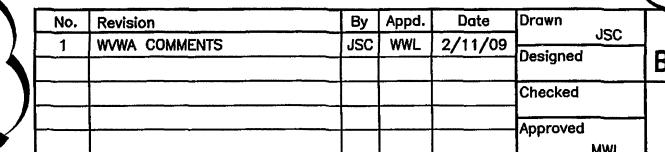
  4. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATERWORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.
- 5. ALL LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
- 6. REFER TO DETAIL SHEETS FOR BEDDING DETAILS. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECT MATERIAL AND THOROUGHLY COMPACTED PER SPECIFICATIONS.
- 7. ALL WATER MAINS SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKING OR APPROVED ALTERNATIVE.
- 8. ALL WATER MAINS SHALL BE TESTED IN ACCORDANCE WITH WESTERN VIRGINIA WATER AUTHORITY. COORDINATE
- INSPECTIONS FOR TESTING WITH WESTERN VIRGINIA WATER AUTHORITY.
- 9. ALL TESTING OF UTILITIES SHALL BE INSPECTED, DOCUMENTED, AND APPROVED BY WESTERN VIRGINIA WATER AUTHORITY.

  10. ALL SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO INSTALLATION / CONSTRUCTION.
- THREE (3) COMPLETE SETS OF SHOP DRAWINGS ARE REQUIRED.

  11. ALL AS-BUILT / RECORD DRAWINGS SHALL SHOW ACTUAL FIELD SURVEYED LOCATIONS (HORIZONTAL AND
- VERTICAL) OF STRUCTURES (FIRE HYDRANTS, VALVE BOXES, METER BOXES, AIR RELEASE VALVES, ETC.)
- 12. USE TRENCH ADAPTERS ON ALL VALVE BOXES AT DEPTHS OF FIVE (5) FEET OR MORE.
- 13. ALL UTILITY CROSSINGS SHALL BE CONCRETE ENCASED WHERE VERTICAL SEPARATION BETWEEN UTILITY LINES IS 18 INCHES OR LESS.

## WATER NOTES

- 1. A MINIMUM COVER OF THREE (3.0) FEET IS REQUIRED OVER PROPOSED LINES.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE AND METER VAULTS AFTER PAVING AND ADJUSTMENT FOR FINAL GRADE IF NECESSARY AT NO ADDITIONAL COST TO OWNER.
- 3. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS
- 4. ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS-OF-WAY SHALL BE COMPACTED ACCORDING TO V.D.O.T.
- 5. LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
- 6. ALL WATER PIPE TO BE MATERIALS AS SPECIFIED IN THE SPECIFICATIONS.
- 7. A CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED IN THE TRENCH FOR ALL PIPE. STONES AND ROCKS FOUND IN THE TRENCH SHALL BE REMOVED FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMPED SELECTED FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECTED MATERIAL, THOROUGHLY COMPACTED TO 95% UNDER PAVEMENT OR CONCRETE SLAB, OF THE STANDARD PROCTOR (ASTM D 69B) USING CARE NOT TO DAMAGE THE PIPE.
- 8. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH WESTERN VIRGINIA WATER AUTHORITY STANDARDS.



ES—1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE <u>VIRGINIA EROSION AND SEDIMENT</u>

CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

KEY SHEET
BRIDLE LANE WATERLINE REPLACEMENT

WESTERN VA. WATER AUTHORITY

3

1" = 200'

FEBRUARY 11, 2009

PROJECT: 07053.00