GENERAL NOTES:

- 1. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND WAYS, MEANS AND METHODS OF CONSTRUCTION.
- 2. THE CONTRACTOR SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES AND OBTAIN ALL NECESSARY LICENSES AND PERMITS.
- 3. THE GENERAL SPECIFICATION WHICH APPLY TO THE CONSTRUCTION WORK AS SHOWN ON THE ENGINEERING PLANS, ARE CONTAINED IN STANDARD SPECIFICATIONS, CONSTRUCTION DETAILS, AND/OR THE COUNTY'S ENGINEERING DEPARTMENT.

4. GENERAL GRADING

- THE GRADING CONTRACTOR SHALL:
- A. MAINTAIN PROPER SITE DRAINAGE AT ALL TIMES DURING THE COURSE OF CONSTRUCTION, AND PREVENT STORM WATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS.
- B. SPREAD AND COMPACT UNIFORMLY TO THE DEGREE SPECIFIED ALL EXCESS TRENCH SPOIL AFTER COMPLETION OF THE UNDERGROUND IMPROVEMENTS (EARTHWORK CONTRACTOR SHALL MAKE APPROPRIATE ADJUSTMENTS IN ROUGH GRADING TO ACCOMMODATE TRENCH SPOIL).
- C. PROVIDE WATER TO ADD TO DRY MATERIAL IN ORDER TO ADJUST THE MOISTURE CONTENT FOR THE PURPOSE OF ACHIEVING THE SPECIFIED COMPACTION.
- D. BACKFILL THE CURB AND GUTTER AFTER ITS CONSTRUCTION AND PRIOR TO THE PLACEMENT OF BASE COURSE MATERIAL.
- E. UNSUITABLE MATERIAL SHALL BE CONSIDERED AS MATERIAL WHICH IS NOT SUITABLE FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS ENCOUNTERED BELOW NORMAL TOPSOIL DEPTHS AND THE PROPOSED SUB-GRADE ELEVATION. THE DECISION TO REMOVE SAID MATERIAL, AND TO WHAT EXTENT, SHALL BE MADE BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER.
- 5. GENERAL PAVING
- THE PAVING CONTRACTOR SHALL:
- A. REPAIR ANY BASE COURSE AND BINDER COURSE FAILURES PRIOR TO THE INSTALLATION OF THE FINAL BITUMINOUS CONCRETE SURFACE COURSE.
- B. SWEEP CLEAN THE BINDER COURSE PRIOR TO THE INSTALLATION OF THE FINAL BITUMINOUS CONCRETE SURFACE COURSE. EXCESSIVE CLEANING OF THE BINDER COURSE THAT MAY BE REQUIRED, AND IS NOT THE FAULT OF THE PAVING CONTRACTOR, SHALL BE PAID FOR ON A TIME AND MATERIAL BASIS BY PRIOR AGREEMENT WITH THE GENERAL CONTRACTOR.
- 6. INCIDENTAL TO CONSTRUCTION
- THE CONTRACTOR SHALL:
- A. ADHERE TO THE CRITERIA FOR THE SEPARATION BETWEEN WATER MAINS AND THE STORM AND SANITARY SEWER LINES AS DESCRIBE: WHEREVER A SANITARY/COMBINED SEWER CROSSES UNDER A WATER MAIN, THE MINIMUM VERTICAL DISTANCE FROM THE TOP OF THE SEWER TO THE BOTTOM OF THE WATER MAIN SHALL BE 18 INCHES. FURTHERMORE, A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN SANITARY/COMBINED SEWERS AND WATER MAIN SHALL BE MAINTAINED UNLESS: THE SEWER IS LAID IN A SEPARATE TRENCH, KEEPING A MINIMUM 18 INCH VERTICAL SEPARATION; OR THE SEWER IS LAID IN THE SAME TRENCH WITH THE WATER MAIN LOCATED AT THE OPPOSITE SIDE ON A BENCH OF UNDISTURBED EARTH, KEEPING A MINIMUM 18 INCH VERTICAL SEPARATION. IF EITHER THE VERTICAL OR HORIZONTAL DISTANCES DESCRIBED ABOVE CANNOT BE MAINTAINED, OR THE SEWER CROSSES ABOVE THE WATER MAIN, THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN STANDARDS.
- B. BE RESPONSIBLE TO PLACE GRADE AND COORDINATE WITH OTHER CONTRACTORS, ALL UNDERGROUND UTILITY STRUCTURE FRAMES SUCH AS MANHOLES, CATCH BASINS, AND INLETS.
- C. BE AWARE OF POTENTIAL CONFLICTS WITH EXISTING UTILITIES. THE CONTRACTOR SHALL EXCAVATE AROUND THE EXISTING UTILITIES TO DETERMINE THEIR EXACT LOCATIONS AND ELEVATIONS PRIOR TO THE CONSTRUCTION OF THE PROPOSED UTILITY IMPROVEMENTS.
- D. PROVE POURED CONCRETE FILLETS CONFORMING TO THE SHAPE OF THE PIPE IN ALL SANITARY AND STORM MANHOLES, AND INLETS.
- E. BE RESPONSIBLE FOR MAINTAINING THE TOP OF ANY UTILITY TRENCH AT LEAST TWO (2) FEET AWAY FROM ANY EXISTING OR PROPOSED CURB OR PAVEMENT, IN THOSE INSTANCES WHERE THE TRENCH RUNS PARALLEL TO THE SAID CURB OR PAVEMENT.
- F. BE RESPONSIBLE FOR THE DE-WATERING OF UTILITY TRENCHES DURING CONSTRUCTION AND PROVIDING THE NECESSARY TRENCH BRACING THAT MAY BE REQUIRED IN ORDER TO ADHERE TO CURRENT SAFETY STANDARDS.
- G. REMOVE SOFT MATERIAL THAT MAY BE ENCOUNTERED AT THE PIPE INVERT ELEVATION TO A DEPTH OF AT LEAST ONE (1) FOOT BELOW THE BOTTOM OF THE PIPE, AND BACKFILL WITH COMPACTED BEDDING MATERIAL.
- H. REMOVE ALL EXCESS MATERIAL OFF THE SITE OR TO AN APPROVED LOCATIONS DESIGNATED BY THE
- I. COMPLETE ANY REQUIRING ADJUSTMENTS OR RECONSTRUCTION TO ANY EXISTING UTILITY STRUCTURES TO THE SATISFACTION OF THE UTILITY OWNER. ADJUSTMENTS AND/OR RECONSTRUCTION NOT CALLED FOR ON THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. NO MORE THAN A TOTAL OF EIGHT (8) INCHES OF ADJUSTING RINGS SHALL BE ALLOWED.
- 7. TESTING AND FINAL ACCEPTANCE
- A. THE CONTRACTOR SHALL PROVIDE AS A MINIMUM, A FULLY LOADED SIX-WHEEL TRUCK FOR PROOF ROLLING THE PAVEMENT SUB-GRADE PRIOR TO THE PLACEMENT OF THE CURB AND GUTTER AND THE BASE MATERIAL.
- B. SPECIFIC COMPACTING TESTING MAY BE REQUIRED BY THE OWNER IN SELECTED FILL AREAS. THE CONTRACTOR SHALL BEAR THE COST OF COMPACTION TESTING AS WELL AS THE RESPONSIBILITY FOR THE NECESSARY CORRECTIONS.
- C. APPROVAL OF THE PAVEMENT SUB-GRADE BY THE OWNER'S GEOTECHNICAL ENGINEER SHALL BE REQUIRED PRIOR TO THE PLACEMENT OF THE PAVEMENT MATERIAL

- D. SANITARY SEWER MAINS AND SERVICES SHALL BE TESTED FOR LEAKAGE AND DEFLECTION IN ACCORDANCE WITH THE WESTERN VIRGINIA WATER AUTHORITY REGIONAL DESIGN AND CONSTRUCTION STANDARDS (LATEST EDITION). SEE DOCUMENT ALSO FOR ALLOWABLE TESTING LIMITS. SERVICE STUBS MUST BE PROPERLY PLUGGED AND SEALED AND CLEARLY LOCATED AT THEIR TERMINATION POINTS PRIOR TO TESTING. ALL SEWER MAINS, SERVICE LINES, AND MANHOLES SHALL BE CLEAN AND FREE OF DEBRIS PRIOR TO THEIR FINAL ACCEPTANCE.
- E. WATER MAINS SHALL BE TESTED IN ACCORDANCE WITH THE WESTERN VIRGINIA WATER AUTHORITY REGIONAL DESIGN AND CONSTRUCTION STANDARDS (LATEST EDITION). SEE DOCUMENT ALSO FOR PRESSURE AND LEAKAGE TESTS AND DISINFECTION OF THE MAINS. ALL VALVE VAULTS SHALL BE CLEAN AND FREE OF DEBRIS AND WATER PRIOR TO THEIR FINAL ACCEPTANCE. THE INDIVIDUAL SERVICE BOXES SHALL BE VISIBLE AND CLEARLY LOCATED PRIOR TO THEIR FINAL ACCEPTANCE.
- F. SPECIAL CONDITIONS ALTERNATE SOLUTIONS SHALL BE PRESENTED TO THE EPA WHEN EXTREME TOPOGRAPHICAL, GEOLOGICAL OR EXISTING STRUCTURAL CONDITIONS MAKE STRICT COMPLIANCE WITH THE ABOVE (D) OR (E) TECHNICALLY AND ECONOMICALLY IMPRACTICAL. ALTERNATE SOLUTIONS WILL BE APPROVED PROVIDED WATERTIGHT CONSTRUCTION STRUCTURALLY EQUIVALENT TO APPROVED WATER MAIN MATERIAL IS PROPOSED.
- G. WATER MAINS AND WATER SERVICE LINES SHALL BE PROTECTED AGAINST ENTRANCE OF HYDROCARBONS THROUGH DIFFUSION AND THROUGH ANY MATERIAL USED IN CONSTRUCTION OF THE LINE.
- 8. MINIMUM REQUIREMENT FOR MANHOLE STRUCTURES
- A. THE FRAME LIP SHALL BE CLEANED OF ALL MUD AND DEBRIS TO PROVIDE WATERTIGHT SEAL BETWEEN THE FRAME AND THE MANHOLE COVER GASKET.
- B. MORTAR SHALL BE USED BETWEEN THE FRAME AND ADJUSTING RINGS AND BETWEEN ADJUSTING

RINGS AND THE CONE SECTION IN ALL PAVED AREAS. E-Z STICK MAY BE USED IN LANDSCAPE AREAS.

- C. ALL STEPS MUST BE INSTALLED, ALIGNED AND CLEANED.
- D. ALL PINHOLES MUST BE MORTARED WITH BRUSH FINISH TO PROVIDE A WATERTIGHT SEAL.
- E. THE UPSTREAM AND DOWNSTREAM PIPE CAVITIES MUST BE FILLED WITH MORTAR AND SMOOTHED WITH A BRUSH FINISH.
- F. THE UPSTREAM AND DOWNSTREAM FLOW LINES (INVERTS) SHALL HAVE A SMOOTH TRANSITION FROM THE PIPE TO THE MANHOLE INVERT.
- G. ALL MANHOLE STRUCTURES SHALL BE FREE OF ANY TYPE OF INFILTRATION (WATER LEAKING INTO THE STRUCTURE).
- H. IF THERE IS AN INTERNAL DROP IN THE STRUCTURE THERE MUST BE A SMOOTH TRANSITION FROM THE PIPE TO THE INVERT (I.E. CHANNEL THE FLOW FROM THE PIPE TO THE MANHOLE INVERT).
- I. ALL MANHOLES SHALL BE CLEANED OF ANY ACCUMULATION OF SILT, DEBRIS, OR FOREIGN MATTER OF

ANY KIND, AND SHALL BE FREE FROM SUCH ACCUMULATIONS AT THE TIME OF FINAL INSPECTION.

- 9. THE CONTRACTOR SHALL PRESERVE BENCHMARKS, REFERENCE POINTS AND STAKES.
- 10. IF THE CONTRACTOR IN THE COURSE OF WORK FINDS ANY DISCREPANCIES BETWEEN THE PLANS AND THE PHYSICAL CONDITIONS OF THE LOCALITY, OR ANY ERRORS OR OMISSIONS IN THE PLANS OR IN THE LAYOUT AS GIVEN BY THE ENGINEER, IT SHALL BE HIS DUTY TO IMMEDIATELY INFORM THE ENGINEER, IN WRITING AND THE ENGINEER WILL PROMPTLY VERIFY THE SAME. ANY WORK DONE AFTER SUCH A DISCOVERY, UNTIL AUTHORIZED, WILL BE AT THE CONTRACTOR'S RISK.
- 11. ASSURANCES OF COMPLIANCE WITH AMERICAN WITH DISABILITIES ACT (ADA) IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
- 12. THE TRAFFIC CONTROL DEVICES MUST COMPLY WITH STATE DOT REQUIREMENTS AND BE APPROVED PRIOR TO CONSTRUCTION.
- 13. CONTRACTOR SHALL REFERENCE THE GEOTECHNICAL REPORT PREPARED BY TERRACON, DATED: APRIL 13, 2015, PROJECT NO: 70155053, IN REGARDS TO EXISTING SOIL CONDITIONS (IE. FOUNDATION SUPPORT SOIL, VARIABLE PLASTICOUNTY, ETC) AND ALL PROPOSED EARTHWORK.

GENERAL GRADING/DRAINAGE NOTES:

- 1. ALL GRADING AND SITE PREPARATION SHALL CONFORM WITH SPECIFICATIONS CONTAINED IN THE CURRENT GEOTECHNICAL REPORT PREPARED BY TERRACON, DATED FEBRUARY 9,
- 2. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE TO THE COUNTY'S LATEST CONSTRUCTION SPECIFICATIONS AND DETAILS.
- 3. PRIOR TO ANY EXCAVATION OF THE PROJECT SITE, THE CONTRACTOR SHALL NOTIFY THE COUNTY 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
- 4. THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS AND
- 5. ALL INDICATED ELEVATIONS ARE FINISHED ELEVATIONS.
- 6. FIELD VERIFY LOCATIONS, SIZES AND IF APPLICABLE INVERTS OF EXISTING UTILITIES FOR PROPOSED CONNECTIONS PRIOR TO CONSTRUCTION.
- 7. LOCATE AND PROTECT ALL UTILITIES ASSOCIATED WITH THE PROJECT PRIOR TO
- 8. INSTALL SILT CONTROL MEASURES BEFORE BEGINNING SITE WORK. THESE MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- 9. MAINTAIN PROPER SITE DRAINAGE AT ALL TIMES DURING CONSTRUCTION. PREVENT STORM WATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS.
- 10. INSTALL ALL APPROPRIATE TREE PROTECTION MEASURES PRIOR TO GRADING.
- 11. CUT AND FILL SLOPES SHALL HAVE A MAXIMUM SLOPE OF 3:1. (2:1 WITH GEOTEXTILE MATTING.)
- 12. ALL EXCAVATION SHALL INCLUDE CLEARING, STRIPPING AND STOCKPILING TOPSOIL, REMOVING UNSUITABLE MATERIALS, THE CONSTRUCTION OF EMBANKMENTS, CONSTRUCTION FILLS, AND THE FINAL SHAPING AND TRIMMING TO THE THE LINES AND GRADES SHOWN ON THE PLANS.
- 13. ALL TREES, BRUSH, AND ORGANIC TOPSOIL AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED, UNLESS OTHERWISE SPECIFIED, AND DISPOSED OF AT AN OFF-SITE LOCATION, WITH THE EXCEPTION THAT ENOUGH TOPSOIL SHALL BE RETAINED FOR RESPREAD AND GENERAL LANDSCAPING. AREAS WHICH ARE TO BE FILLED SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE STANDARD AASHTO COMPACTION TEST IN THE PAVED AREAS AND 85% IN THE OTHER AREAS.
- 14. STRIP AND STOCKPILE TOPSOIL. SPREAD FOUR (4) INCHES MINIMUM OF TOPSOIL ON LANDSCAPE AREAS AND REMOVE EXCESS TOPSOIL FROM SITE. PREPARE SUB-GRADE FOR PAVEMENT AND CURBS AND BACKFILL CURBS AFTER CURB CONSTRUCTION.
- 15. PROVIDE SUPPLY OF TOPSOIL FOR LANDSCAPE CONTRACTOR FOR INSTALLATION IN ALL LANDSCAPE ISLANDS.
- 16. PROVIDE AND INSTALL TOPSOIL IN DISTURBED AREAS TO BE GRASSED, TO INCLUDE PAVEMENT SHOULDERS AND DETENTION AREAS.
- 17. ALL EARTHWORK AND BASE COURSE FOR THE PARKING AREA SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD LABORATORY DENSITY. CERTIFICATION SAID COMPACTION SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER, OR HIS/HER REPRESENTATIVE, PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL. BOTH PROOF ROLLING AND COMPACTION TESTING MUST BE APPROVED AND WITNESSED BY THE ENGINEER OR OWNER REPRESENTATIVE.
- 18. THE PAVEMENT SUBGRADE AND BASE COURSE MATERIAL SHALL BE INSPECTED AND APPROVED BY THE ENGINEER OR OWNER REPRESENTATIVE PRIOR TO CONSTRUCTING THE BASE AND SURFACE COURSES THEREON.
- 19. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE TO ALL INLETS AND CATCH BASINS. AREAS OF SURFACE PONDING SHALL BE CORRECTED BY CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 20. IF AREAS ARE DISTURBED BEYOND PROPOSED GRADES BY NEGLIGENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY REGRADING OR REPAIR TO MATCH ORIGINAL EXISTING CONDITIONS.
- 21. SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. SHORING SHALL BE IN ACCORDANCE WITH ALL O.S.H.A AND LOCAL REGULATIONS.
- 22. STRUCTURES FOR STORM SEWERS SHALL BE IN ACCORDANCE WITH THESE IMPROVEMENT PLANS AND THE APPLICABLE STANDARD SPECIFICATIONS. WHERE GRANULAR TRENCH BACKFILL IS REQUIRED AROUND THESE STRUCTURES, THE COST SHALL BE CONSIDERED AS INCIDENTAL AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURE.
- 23. CONFIRM INVERTS OF ALL EXISTING STORM INLETS AND SANITARY SEWER MANHOLES BEFORE COMMENCING CONSTRUCTION.
- 24. ALL STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 TYPE III, UNLESS OTHERWISE SPECIFIED ON PLANS.
- 25. A GEOTEXTILE MATTING (LANDLOCK TRM 450 OR EQUIVALENT) SHALL BE USED FOR EROSION CONTROL AN ALL SLOPES GREATER THAN 3H:1V.
 26. DRAINAGE STRUCTURES AND UNDERGROUND INFILTRATION FACILITIES SHALL BE
- INSPECTED SEMIANNUALLY TO ENSURE PROPER WORKING ORDER.

 27. CONTRACTOR SHALL ADJUST GRADES BY VARYING THE PAVEMENT SECTIONS
 ACCORDINGLY. EXISTING COMPACTED SUBGRADE TO BE DISTURBED AS LITTLE AS POSSIBLE. AT
- THE VERY LEAST MINIMUM PAVEMENT SECTION REQUIREMENTS AS SPECIFIED BY THE GEOTECHNICAL ENGINEER SHALL BE USED.
- 28. ALL PROPOSED SPOT ELEVATIONS SHOWN INDICATE FINISHED GRADED ELEVATIONS AT EDGE OF PAVEMENT AND/OR GRADE BREAKS, UNLESS OTHERWISE NOTED.
- 29. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
- 30. CONTRACTOR TO ADJUST EXISTING TRESS/LANDSCAPING PER FINAL GRADES. SEE LANDSCAPE PLANS FOR DETAILS.

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ISSUE/REVISION RECORD

DATE DESCRIPTION

06/05/15 CONCEPTUAL LAYOUT

07/01/15 CONCEPTUAL SUBMITTAL

07/14/15 COORDINATION SET

08/05/15 COUNTY RESPONSE #1

10/14/15 COUNTY RESPONSE #3 11/02/15 BID SET 12/03/15 COUNTY RESPONSE #4 12/23/15 CONSTRUCTION SET

09/08/15 COUNTY RESPONSE #2

JOHN H. NOURZAD
Lig No. 99570

PROFESSIONAL IN CHARGE JOHN NOURZAD, P.E. PROJECT MANAGER

ANDRE PIMENTEL

QUALITY CONTROL

STEPHEN POWERS, P.E.

DRAWN BY

PROJECT NAME

RYAN SCHNEPPER E.I.T.

TEXAS ROADHOUSE

ROANOKE VIRGINIA

SOUTH PEAK BLVD.



PROJECT NUMBER 20140788.0

SHEET TITLE

GENERAL NOTES

C1.0