

CONSTRUCTION STANDARDS

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THESE DRAWINGS, PROJECT SPECIFICATIONS, WITH ALL CURRENT APPLICABLE CODES, AND, UNLESS OTHERWISE SPECIFIED, WITH THE LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:
- A. CONSTRUCTION STANDARDS AND SPECIFICATIONS OF ROANOKE COUNTY
 - B. WESTERN VIRGINIA WATER AUTHORITY
 - C. VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD & BRIDGE SPECIFICATIONS
 - D. VDOT ROAD AND BRIDGE STANDARDS
 - E. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
 - F. VIRGINIA WORK AREA PROTECTION MANUAL
 - G. EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)
 - H. VIRGINIA DEPARTMENT OF HEALTH (VDH) SPECIFICATIONS

CONSTRUCTION NOTES

1. FIELD CHANGES REQUIRE APPROVAL FROM THE CONSULTING ENGINEER AND ROANOKE COUNTY CHAIRS PRIOR TO IMPLEMENTATION.
2. ANY NEW ALIGNMENTS, CHANGE IN GRADES, ALTERNATIVE PIPE SIZES OR MANHOLES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. COUNTY ENGINEERS WILL REVIEW PLANS WITHIN ONE DAY OF SUBMITTAL. PLAN SHEETS CAN BE 8.5X11 IF THE INFORMATION IS LEGIBLE.
3. ALL CONSTRUCTION SHALL CONFORM WITH APPLICABLE STATE (INCLUDING VDOT) AND LOCAL CONSTRUCTION STANDARDS AS IDENTIFIED IN THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ALL ACCESS ROADS, EASEMENTS AND LICENSES AND MAINTAIN COPIES OF THEM ON-SITE AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A SET OF CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ON-SITE AT ALL TIMES DURING CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATING TO THE SPECIFICATIONS OR THE LOCAL LIVER CODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLY WITH THE SPECIFICATIONS AS DEFINED IN THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
5. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
6. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2003 EDITION OR MOST CURRENT REVISION AS WELL AS TO THE CONSTRUCTION OPERATIONS AND/OR MOBILIZATION. TAKEN FROM THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", ALL NEW SIGNS SHALL BE MOUNTED ON GALVANIZED POSTS AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES ASSOCIATED WITH THE PROJECT WORK SCOPE DURING CONSTRUCTION. AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL SUBMIT A UTILITY LOCATING PLAN TO THE 552-7001 FOR PROPER IDENTIFICATION OF THE EXISTING UTILITIES WITHIN THE PROJECT SITE.
8. ANY DAMAGE OCCURRING TO THE EXISTING SITE INFRASTRUCTURE ON THIS OR THE ADJACENT SITE DURING THE CONSTRUCTION OPERATIONS AND/OR MOBILIZATION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DAMAGED ITEMS INCLUDING CONCRETE AND/OR PAVEMENT SECTIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS PRIOR TO PROJECT COMPLETION AT THE EXPENSE OF THE CONTRACTOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH CUTTING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION INSIDE AND OUTSIDE OF THE LIMITS OF CONSTRUCTION.
10. ANY AND ALL UTILITIES AND/OR OBSTRUCTIONS (POWER POLES, TELEPHONE PEDESTALS, GUY WIRES, WATER METERS, ETC.) THAT ARE REQUIRED TO BE RELOCATED OR ADJUSTED DUE TO CONSTRUCTION SHALL BE DONE SO AT THE OWNERS/DEVELOPERS EXPENSE.
11. SLOPES WITHIN THE LIMITS OF THE HANDICAPPED PARKING AREAS SHALL NOT EXCEED 1.5% IN ANY DIRECTION. CROSSWALKS AND SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1.5% AND A MAXIMUM LONGITUDINAL SLOPE OF 5% IN DIRECTION OF TRAVEL. SLOPED HANDICAPPED RAMPS SHALL BE BUILT IN CONFORMANCE WITH ADA CRITERIA AND LOCAL DESIGN STANDARDS.

12. THE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL THE REMOVED/DEMOLISHED MATERIAL FROM THE PROJECT SITE AND DISPOSE OF SAME IN A LEGAL MANNER.
13. TYING TO EXISTING PAVEMENT: EXISTING PAVEMENT SHALL BE NEATLY SAW CUT TO A STRAIGHT LINE AND ALL PAVING ON THE NEW PAVEMENT SIDE OF THE CUT SHALL BE COMPLETELY REMOVED AND REPLACED WITH SPECIFIED MATERIALS. THE CUT LINE SHALL BE FULL-DEPTH AND COATED WITH A TACK COAT TO FURNISH A BOND BETWEEN THE EXISTING SURFACE COURSE AND THE NEW SURFACE COURSE.
14. TYING TO EXISTING CURB/GUTTER: THE EXISTING PAVEMENT SHALL BE NEATLY SAW CUT AND REMOVED FOR A DISTANCE OF 2'0" FROM FACE OF THE CURB AND 2'0" FROM THE EDGE OF CURB AND GUTTER AND THE SUBGRADE, BASE COURSE, AND PAVING REPLACED WITH NEW PRODUCTS.
15. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO KIMLEY-HORN & ASSOCIATES, INC. AT THE TIME OF THE PRELIMINARY INFORMATION. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY KIMLEY-HORN & ASSOCIATES, INC. IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES.
16. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
17. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL/BUILDING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
18. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED THEREON, WITHOUT FIRST OBTAINING WRITTEN AUTHORIZATION FOR SUCH DEVIATIONS FROM THE OWNER AND ENGINEER, IT SHALL BE RESPONSIBLE FOR THE PAYMENT OF ALL COSTS TO CORRECT ANY WORK DONE BY THE CONTRACTOR. FINES OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM, THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ALL SUCH COSTS TO CORRECT ANY SUCH WORK AND FROM ALL FINES AND PENALTIES, COMPENSATION AND PUNITIVE DAMAGES AND COSTS OF ANY NATURE RESULTING THEREFROM.

DRAINAGE / STORMWATER NOTES

1. ALL STORM SEWER LINES, MANHOLES, AND CURB INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGES OF CONSTRUCTION.
2. STORM DRAIN PIPE AND FLARED END SECTIONS ARE TO BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SECTION 302 OF VDOT ROAD AND BRIDGE SPECIFICATIONS AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-76 FOR REINFORCED CONCRETE C-PIPE. STORM DRAIN PIPE 18" PIPE FOR STORM DRAINS SHALL BE REINFORCED CONCRETE CLASS III UNLESS INDICATED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL USE A PREFORMED FLEXIBLE PLASTIC SEALING COMPOUND OF BUTYL MASTIC ROPE SEALER - 1" SIZE, "EZ STICK" AS MANUFACTURED BY CONCRETE PRODUCTS SUPPLY OR AN EQUAL FOR SEALING WATER-TIGHT JOINTS. VERTICAL CLEARANCE OF 18" BETWEEN STORM AND OTHER UTILITIES IS REQUIRED UNLESS OTHERWISE NOTED.
3. ALL EXISTING STORM SEWER PIPES, DROP INLETS, AND CURB INLETS BEING UTILIZED BY A PART OF THE DRAINAGE SYSTEM SHALL BE CLEANED OF ERODED MATERIAL AT ALL STAGES OF CONSTRUCTION, AS DIRECTED BY THE ENGINEER OR INSPECTOR. THE COST INCIDENTAL TO THIS IS TO BE INCLUDED IN THE CONTRACT PRICE FOR THE OTHER DRAINAGE ITEMS.
4. STORM SEWER PIPES AS SHOWN ON THE PLANS ARE MEASURED FROM THE CENTERLINE OF EACH STRUCTURE, AND INVERT ELEVATIONS ARE ESTABLISHED BASED ON THIS CENTER LINE. DRAIN LENGTH CALL OUTS FOR PIPES WITH FLARED END SECTIONS WILL BE MEASURED TO THE JOINT. CONTRACTOR SHALL LOCATE ALL END SECTIONS TO MATCH THE BANK SLOPE AND THE PIPE SLOPE SHALL BE ADJUSTED AS NECESSARY.
5. ALL DROP INLETS AND CURB INLETS SHALL HAVE VDOT STD. IS-1 SHAPING, WHERE APPLICABLE.
6. BOOT CONNECTIONS SHALL BE PROVIDED FOR ALL PLASTIC PIPES THAT TIE INTO A CONCRETE STRUCTURE.
7. GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN RIGHT-OF-WAY PRIOR TO EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY, AND LOCATE ALL UTILITIES PRIOR TO GRADING START. SEE COVER SHEET FOR UTILITY LOCATION ORIENTATION.
8. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY APPLICABLE AUTHORITY.
9. ALL ELEVATIONS ARE IN REFERENCE TO THE BENCHMARK, AND THIS MUST BE VERIFIED AND LOCATED BY THE GENERAL CONTRACTOR PRIOR TO GROUND BREAKING.
10. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE SO THAT RUNOFF WILL DRAIN BY GRAVITY TO EXISTING NEW PAVEMENT AREAS TO NEW OR EXISTING DRAINAGE INLETS OR SHEET FLOW OVERLAND.
11. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL V.S.M.P. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
12. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY.

13. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

DEMOLITION / LAND DISTURBANCE NOTES

1. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
 - A. ENSURING THAT COPIES OF ALL APPLICABLE PERMITS AND APPROVALS ARE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW.
 - B. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL AND/OR TREE PROTECTION MEASURES PRIOR TO SITE DISTURBANCE.
 - C. LOCATING (VERTICALLY AND HORIZONTALLY) ALL UTILITIES AND SERVICES, INCLUDING, BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL THOROUGHLY COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
 - E. FAMILIARIZING THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH WRITTEN NOTIFICATION OF ANY EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
 - F. COORDINATION WITH UTILITY COMPANIES & ADJACENT LANDOWNERS/BUSINESSES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES.
2. NEITHER KIMLEY-HORN & ASSOCIATES, INC. NOR THE OWNER IS RESPONSIBLE FOR THE UTILITY NOTIFICATION OR COORDINATION TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
3. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES.
4. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH REMOVAL ACTIVITIES AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE WITH DIRECTION BY OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
5. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH: THE "MANUAL ON UNIFORM TRAFFIC CONTROL," AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHTS - OF - WAY.
6. CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
7. USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
8. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
9. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
10. THIS DEMOLITION PLAN IS INTENDED TO ADJ-STATE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION AND FOR THE DEMOLITION, REMOVAL, OR RELOCATION OF ITEMS IN CONFLICT WITH THE PROPOSED CONSTRUCTION.
11. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLUTION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL TOWN, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES.

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES OR UTILITIES BY OTHERS AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND THAT THE CONTRACTOR SHALL TAKE PRECAUTIONS IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATIONS. THE REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY REMOVAL AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN REMOVED AND RELOCATED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXCAV BUILDING UTILITY CONNECTION LOCATIONS, DOOR ACCESS, AND EXTERIOR GRADING. THE UTILITY SERVICE SIZES ARE TO BE DETERMINED BY THE ARCHITECT. THE CONTRACTOR SHALL OBTAIN UTILITY INFORMATION AS IDENTIFIED OR REQUIRED WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND ENSURE PROPER DEPTHS ARE ACHIEVED. THE JURISDICTION UTILITY REQUIREMENTS SHALL ALSO BE MET. THE CONTRACTOR SHALL OBTAIN THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE, WHERE CONFLICTS EXIST WITH THESE SITE PLANS, ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE.
4. THE CONTRACTOR SHALL PERFORM WHATEVER TEST EXCAVATION OR OTHER INVESTIGATION IS NECESSARY TO VERIFY TIE-IN INVERTS, LOCATIONS AND CLEARANCES, AND SHALL REPORT IMMEDIATELY ANY DISCREPANCIES TO KIMLEY-HORN AND ASSOCIATES, INC. AT (804) 673-3882.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
6. MAINTAIN A MINIMUM OF 18" OF VERTICAL CLEARANCE BETWEEN STORM, SANITARY, AND ALL UTILITIES (UNLESS OTHERWISE NOTED).
7. CROSS CONNECTION CONTROL AND BACK FLOW PREVENTION SHALL BE IN ACCORDANCE WITH THE VIRGINIA PLUMBING CODE.
8. CONTRACTOR SHALL COORDINATE WITH THE FIRE MARSHAL BEFORE INSTALLING FIRE LANE SIGNS AND MARKINGS.
9. ALL CLEANSUPS WITHIN VEHICULAR AREAS SHALL BE TRAFFIC BEARING.
10. IF APPLICABLE, CONTRACTOR TO PROVIDE CONDUIT TO DOUBLE DETECTOR CHECK VAULT SO THAT SUMP PUMPS MAY BE INSTALLED. CONTRACTOR TO COORDINATE WITH ARCHITECTURAL PLANS.
11. CONTRACTOR SHALL SAW CUT, REMOVE, AND REPLACE ASPHALT PAVEMENT AS NECESSARY TO INSTALL UNDERGROUND ELECTRIC, TELEPHONE, SANITARY SEWER, WATER, AND COMMUNICATION CONDUITS.
12. UNDERGROUND UTILITIES INSTALLED ON PRIVATE PROPERTY OR IN PRIVATE UTILITY EASEMENTS AND BUILDING RELATED STORM DRAINS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
13. PROPOSED CROSSEINGS WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT TO POINT TO COMMENCEMENT OF CONSTRUCTION.
14. THE RIM ELEVATIONS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUTS SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.


MINIMUM STANDARDS (4VAC50-30-40)

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

- PERMANENT OF TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GRASS COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT FROM A ROAD FACE, A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSION IMMEDIATELY AFTER INSTALLATION.
6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
 - A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. A TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
 - B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPOSED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. DRAINAGE SYSTEMS SHALL MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SOIL COVER STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TRAPPOUR OR PERMANENT CHANNEL, FLOW CUL OR SOIL DRAIN STRUCTURE.
9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE. FOR PROTECTION, NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND STRUCTURES. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
14. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORK IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
 - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
 - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - C. EFFLUENT FROM ANY OTHER OPERATIONS OR ACTIVITIES SHALL NOT PASS THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
 - D. MATERIAL USED FOR FILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
 - E. REESTABLISHMENT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
 - F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. TRACKING ONTO THE PAVED SURFACE SHALL BE PREVENTED BY PAVING OR PLASTERING THE ROAD SURFACE OR BY CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL GRADE IS ACHIEVED. THE APPLICANT SHALL BE RESPONSIBLE TO UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY, TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURE SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASE IN VOLUME, VELOCITY AND PEAK FLOW RATE OF THE STORMWATER DURING A FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

- A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. DEVELOPMENT SITES LOCATED IN THE VICINITY OF DISCHARGE OF STORMWATER INTO A NATURAL CHANNEL SHALL BE SUBJECT TO STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
1. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN EACH CHANNEL OR PIPE SYSTEM IS LESS THAN THE DRAINAGE AREA OF THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION;
 2. OR
NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS OR CAUSE EROSION OF CHANNEL BED OR BANKS; AND
ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TEN-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
PIPES AND PIPE SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
- C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE TO RECEIVE THE STORMWATER, THE APPLICANT SHALL:
1. IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TEN-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS;
 - OR
 2. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR
 3. DEVELOP A SITUATION THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; AND
 4. PROVIDE A COMBINATION OF CHANNEL OR PIPE IMPROVEMENTS AND OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.
- D. THE APPLICANT SHALL OBTAIN EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
- E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.
- F. THE APPLICANT SHALL PROVIDE EVIDENCE THAT THE STORMWATER DETENTION HE HAS OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR MAINTENANCE OF THE FACILITY.
- G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE TO RECEIVE THE FOLLOWING:
1. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OF ADEQUATE SIZE.
- J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENTS. THEREFORE, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT.
- K. THE APPLICANT SHALL PROVIDE EVIDENCE THAT THE HYDROLOGIC PARAMETERS FOR THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- L. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS TO THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

☒ APPROVED

SHEET NUMBER	C02	FIRST CITIZENS BANK ELECTRIC ROAD PREPARED FOR FIRST CITIZENS BANK	ROANOKE VIRGINIA
GENERAL NOTES		KHA PROJECT 01737207	 <p>Kimley-Horn and Associates, Inc.</p> <p>1700 WILLOW LAWN DR, SUITE 200, RICHMOND, VA 23230 PHONE: 804-673-3882 FAX: 804-673-3980 WWW.KIMLEY-HORN.COM</p>
		DATE 10/25/2013	
		SCALE AS SHOWN	
		DESIGNED BY MRE	
		DRAWN BY MRE	
		CHECKED BY PAB	
		2 ADDRESSED COUNTY COMMENTS 3/25/14 MRB	MRB
		1 ADDRESSED COUNTY & VOOT COMMENTS 1/15/14 MRB	MRB
No.	Revisions	By	Date