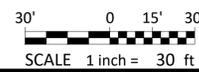


- ### Demolition Notes:
- CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE-CALL CENTER (NC 811) BY DIALING 811 OR 1-800-632-4949 AT LEAST 72 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY OR DIGGING AND HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO EXCAVATING OR TRENCHING.
 - THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE PERMITS REQUIRED FOR DEMOLITION WORK.
 - THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND/OR ENGINEER FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES IN THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
 - EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE AND DO NOT INCLUDE MECHANICAL, ELECTRICAL AND MISCELLANEOUS STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THE DEMOLITION WORK FOR THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
 - ALL DEMOLITION WASTE AND DEBRIS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
 - THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR GETS WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
 - ASBESTOS OR HAZARDOUS MATERIALS, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
 - CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS, AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
 - CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL, AND OSHA REGULATIONS WHEN OPERATING DEMOLITION EQUIPMENT AROUND UTILITIES.
 - CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH THE NCDOT STANDARDS, AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH THE LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT, AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
 - CONTRACTOR SHALL PROTECT AT ALL TIMES ADJACENT STRUCTURES AND ITEMS FROM DAMAGE DUE TO DEMOLITION OR CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL REMOVE EXISTING VEGETATION AND IMPROVEMENTS WITHIN LIMITS OF DISTURBANCE UNLESS NOTED OTHERWISE.
 - TREES OUTSIDE OF CONSTRUCTION LIMITS OR TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED.

- ### Erosion Control Provisions:
- NO PERSON MAY INITIATE A LAND DISTURBING ACTIVITY BEFORE NOTIFYING WAKE COUNTY WATERSHED MANAGEMENT OF THE DATE THAT THE LAND DISTURBING ACTIVITY WILL BEGIN.
 - LAND DISTURBING ACTIVITY BEYOND THAT REQUIRED TO INSTALL APPROPRIATE EROSION CONTROL MAY NOT PROCEED UNTIL EROSION CONTROL MEASURES ARE INSPECTED AND APPROVED BY THE ENGINEER.
 - SCHEDULING OF A PRE-CONSTRUCTION CONFERENCE WITH THE WAKE COUNTY WATERSHED MANAGER, JEEVAN NEUPANE, PE (919-819-8907) PRIOR TO INITIATING LAND DISTURBING ACTIVITIES IS REQUIRED. FOR INSPECTION CALL 919-819-8907. 48 HOUR NOTICE IS REQUIRED.
 - INSTALL TREE PROTECTION FENCING AROUND ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS SHOWN ON PLANS.
 - PROVIDE 20' X 50' X 6" STONE CONSTRUCTION ENTRANCES AS SHOWN ON PLAN.
 - SEED OR OTHERWISE PROVIDE GROUND COVER DEVICES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION FOR ALL EXPOSED SLOPES WITHIN 7 DAYS OF COMPLETION OF ANY PHASE OF GRADING ON PERIMETER AREAS AND SLOPES STEEPER THAN 3:1. ALL OTHER AREAS SHALL BE STABILIZED WITHIN 14 DAYS.
 - CONTRACTOR SHALL INSPECT AND MAINTAIN AS NEEDED ALL EROSION CONTROL DEVICES ON A WEEKLY BASIS AND AFTER EACH MAJOR STORM EVENT. FAILURE TO KEEP ALL EROSION CONTROL DEVICES IN PROPER WORKING ORDER MAY RESULT IN A STOP WORK ORDER OR CIVIL PENALTIES UP TO \$5000.00 PER DAY OF VIOLATION.
 - THE ENGINEER RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES SHOULD THE PLAN OR ITS IMPLEMENTATION PROVE TO BE INADEQUATE.
 - ACCEPTANCE AND APPROVAL OF THIS PLAN IS CONDITIONED UPON YOUR COMPLIANCE WITH FEDERAL AND STATE WATER QUALITY LAWS, REGULATION AND RULES. IN ADDITION LOCAL CITY AND COUNTY ORDINANCES OR RULES MAY ALSO APPLY TO THIS LAND DISTURBING ACTIVITY. APPROVAL BY THE COUNTY DOES NOT SUPERSEDE ANY OTHER PERMIT OR APPROVAL.
 - PLEASE BE ADVISED OF THE RULES TO PROTECT AND MAINTAIN EXISTING BUFFERS ALONG WATERCOURSES IN THE NEUSE AND TAR RIVER BASINS. THESE RULES ARE ENFORCED BY THE DIVISION OF WATER RESOURCES (DWR). DIRECT ANY QUESTIONS ABOUT THE APPLICABILITY OF THESE RULES TO YOUR PROJECT TO THE REGIONAL WATER QUALITY SUPERVISOR, RALEIGH REGIONAL OFFICE AT (919) 791-4200.

- ### Construction Sequence:
- EROSION AND SEDIMENT CONTROL (E&S) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR.
 - CALL WAKE COUNTY WATERSHED MANAGER JEEVAN NEUPANE AT (919) 819-8907 A MINIMUM OF 48 HOURS IN ADVANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING AND FOR NOTIFICATION OF PROJECT START UP.
 - ANY DEWATERING ON THE SITE SHALL BE DONE THROUGH A SILT BAG THAT IS CONSTANTLY MONITORED.
 - INSTALL GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS OR OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
 - CALL WATERSHED MANAGER, JEEVAN NEUPANE FOR AN ON-SITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.
 - BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE. INSTALL TEMPORARY SKIMMER SEDIMENT BASINS, ALONG WITH TEMPORARY DIVERSION DITCHES THAT SHALL BE INSTALLED TO ENSURE AS MUCH FLOW AS POSSIBLE IS DIRECTED TO THE BASINS.
 - AS ROUGH GRADING CONTINUES, DEVICES SHALL BE MAINTAINED AND CLEANED OF SEDIMENT. SKIMMER SEDIMENT BASINS TO BE ABANDONED SHALL BE REMOVED AS FOLLOWS: DEWATER THROUGH SILT BAG, CLEAN SEDIMENT, REMOVE BAFFLES, BACKFILL BASIN AND STABILIZE IMMEDIATELY. DEWATERING OPERATIONS THROUGH SILT BAGS SHALL BE MONITORED CONTINUOUSLY.
 - STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, DITCH LININGS, ETC. SEED AND MULCH DENUDATED AREAS PER GROUND STABILIZATION TIME FRAME.
 - WHEN ROUGH GRADING IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL WATERSHED MANAGER JEEVAN NEUPANE FOR INSPECTION.
 - IF SITE IS APPROVED, MAINTAIN TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OR STABILIZED ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
 - WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE WATERSHED MANAGER, JEEVAN NEUPANE. OBTAIN CERTIFICATE OF COMPLETION.



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REVISIONS:

#	DATE	DESCRIPTION
1	11-MAY-23	ISSUED FOR PERMIT REVIEW

EROSION CONTROL PLAN - PH. 1

WALLBROOK ROADWAY DRIVE IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Roanoke Project No. CID 23-
 US 401 Business / S. Main Street & Virginia Water Drive
 Wake Forest Township, Town of Roanoke, Wake County, North Carolina

NC License: PA 129

ARK CONSULTING GROUP PLLC
 ENGINEERS & PLANNERS

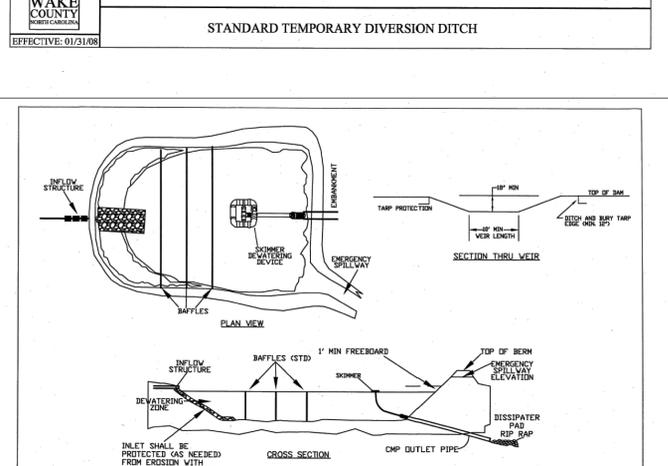
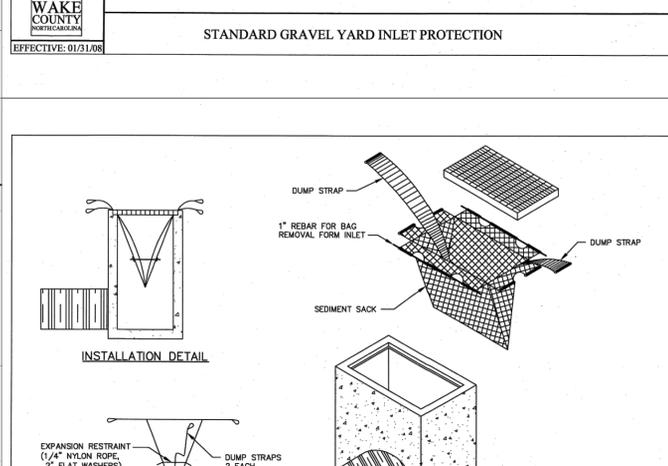
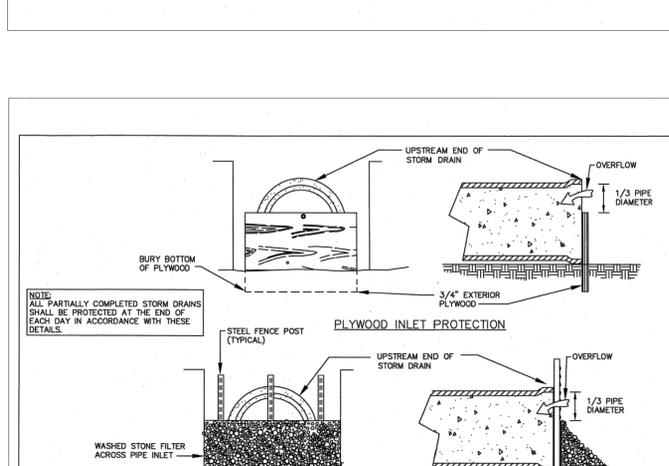
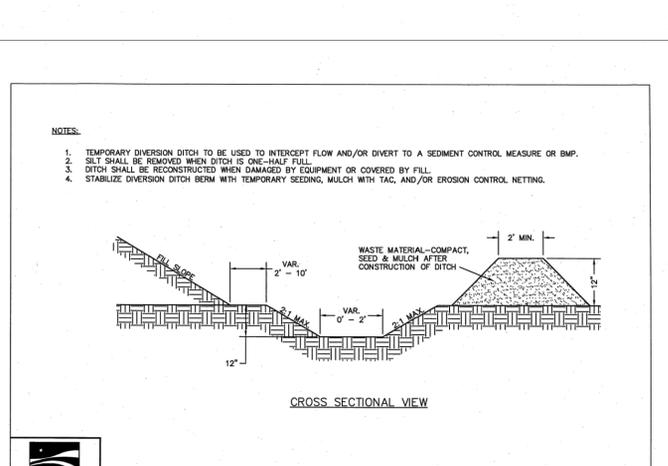
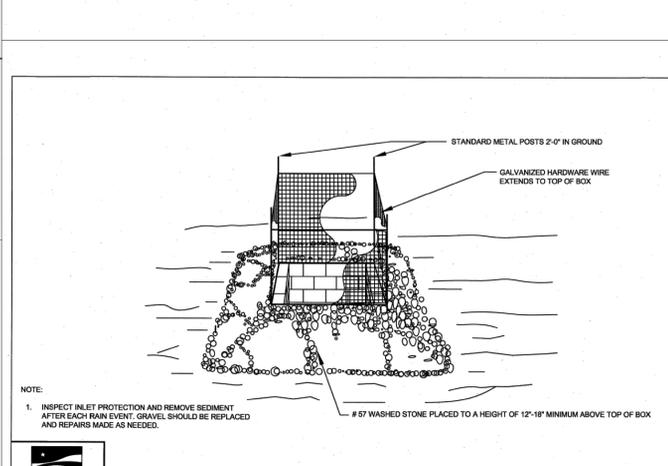
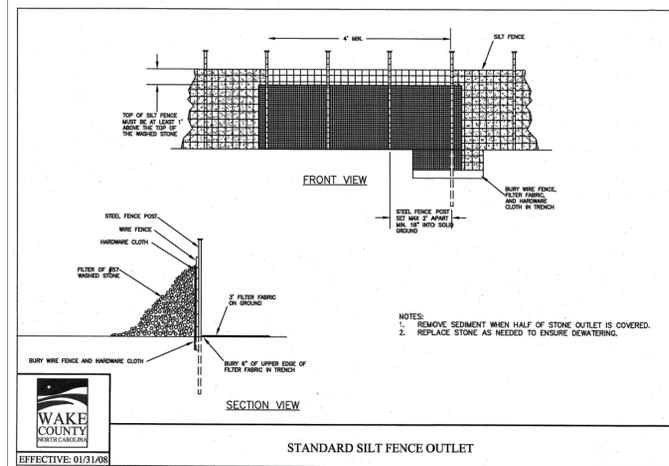
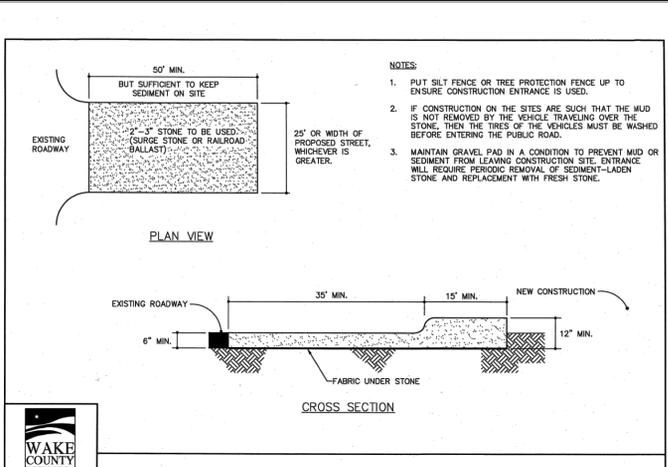
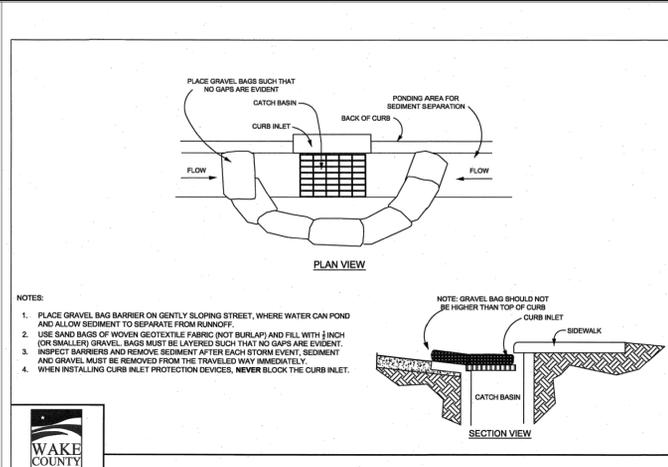
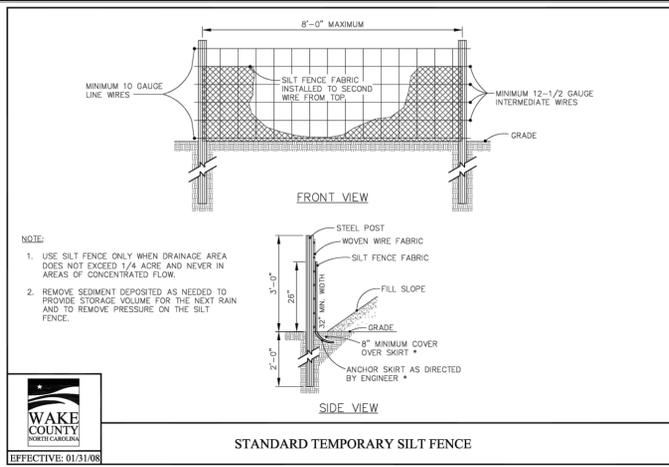
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Project Manager: BCF
 Drawn By: DLT/TN
 Checked By: TN
 Project Number: 22049
 Drawing Number: D-1404-CID

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Date: May 2023





Temporary Sediment Traps, Skimmer Sediment Basins, and Temporary Sediment Basins

Device	Type	Weir Flow		Depth to Weir (ft)	Depth Below Side Slope (ft)	Top Length (ft)	Top Width (ft)	Skimmer Orifice Size (in)	Skimmer Orifice (in)	
		Weir Width (ft)	Depth (ft)							
SSB-1	Skimmer Sediment Basin	30	0.3	1.5	2.0	3.0	129	49	3.00	1.50

Vegetated Swale Design
 Project: Wallbrook
 Location: Rolesville, Wake County, NC

Device ID	Device Type	Add'l Flow (cfs)	Disturbed Area (AC)	Tc (min)	Intensity (in/hr)*	Qreq c (cfs)	Up Invert (ft)	Down Invert (ft)	Length (ft)	Width (ft)	Base Slope (x:1)	Left Slope (x:1)	Right Slope (x:1)	Flow Depth (ft)	Manning's n	Slope (ft/ft)	Wetted Area (sf)	Perimeter (ft)	Hydraulic Radius (ft)	Velocity (ft/s)	Qa (cfs)	Qa>Qreq?	τ (lbs/ft ²)	Liner Type	Allowable Shear Stress, τ (lbs/ft ²)
TDD-3	Temporary Diversion	0	3.50	5	7.18	0.5	12.57	395	389	915	1	3	3	2.77	0.020	0.00656	25.80	9.17	2.81	0.49	12.57	Yes	1.133788189	N. Am. Green; Straw; 1 nets	1.55

*NOAA Atlas 14, NEUSE 2 NE Station, 10-yr 5-min duration intensity

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REVISIONS:
 CROSLAND SOUTHEAST

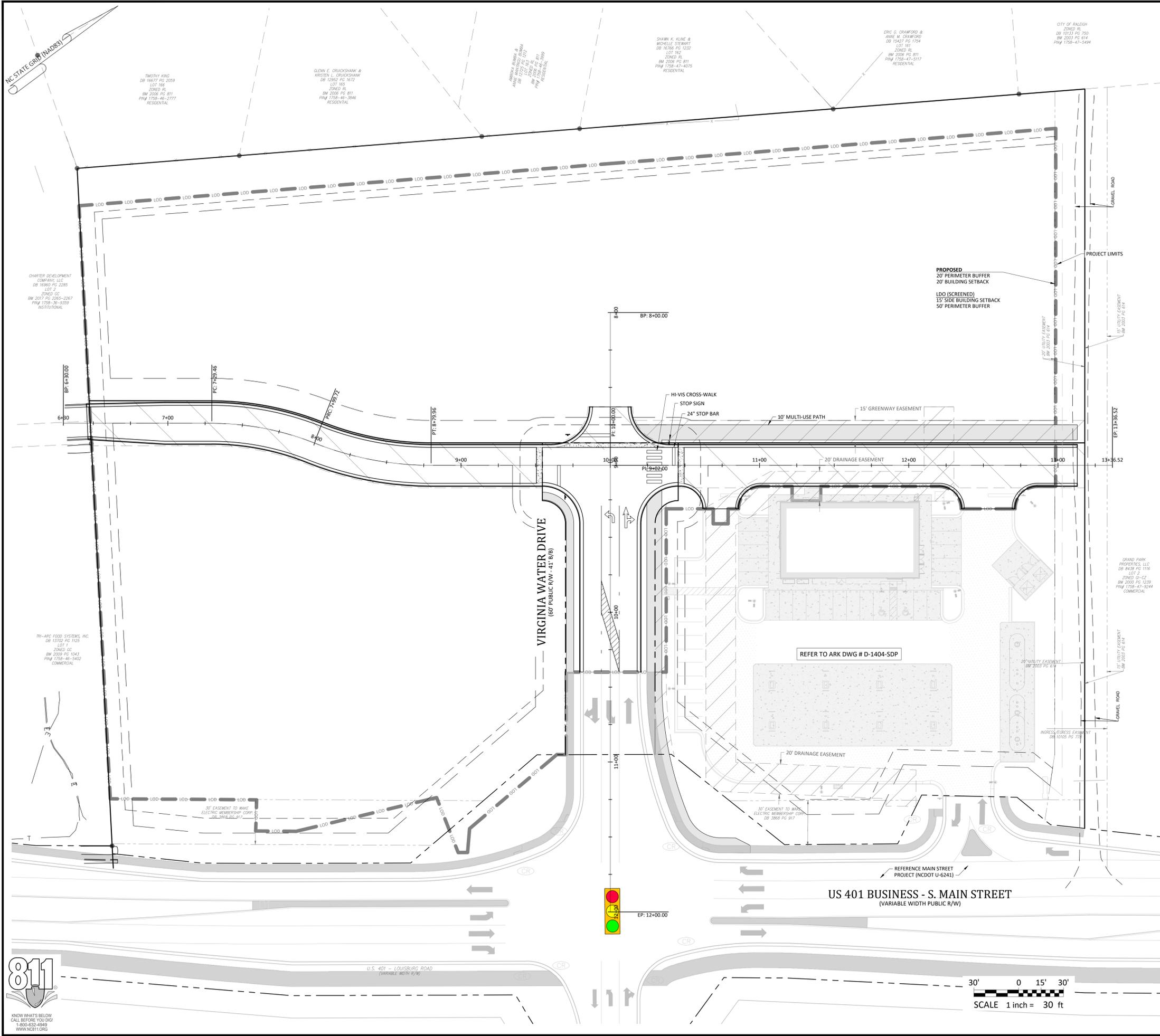
EROSION CONTROL DETAILS
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Date: May 2023



General Notes:

- THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THIS SITE PLAN:
 - ALTA/NSPS LAND TITLE SURVEY, PREPARED BY JOHNSON, MIRMIRAN & THOMPSON FOR WALLBROOK LANDCO, LLC, DATED REVISED MARCH 28, 2020
 - "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION - 7 ELEVEN AT WALLBROOK" PREPARED BY NVS ENGINEERS AND CONSULTANTS, INC., DATED JULY 11, 2022
 - "REVISED WALLBROOK DEVELOPMENT TRAFFIC IMPACT ANALYSIS" PREPARED BY STANTEC CONSULTING SERVICES, INC., DATED AUGUST 11, 2020
- ALL ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE OR THE REQUIREMENTS OF THE JURISDICTION WHERE THIS PROJECT IS TO BE CONSTRUCTED.
- THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE X, AREA OF MINIMAL FLOODING, AS SHOWN ON NATIONAL FLOOD INSURANCE RATE MAP (FIRM), WAKE COUNTY, NORTH CAROLINA, PANEL 1758, MAP NO. 3720175800, EFFECTIVE DATE: MAY 2, 2006.
- PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE COMMENTS TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES. CONTRACTOR SHALL HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
- THE OWNER / CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE REQUIREMENTS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES HAVING JURISDICTION OVER THIS PROJECT.
- THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH HEREIN ARE PART OF THE REQUIRED CONSTRUCTION DOCUMENTS, AND, IN CASE OF CONFLICT, SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY BETWEEN THE GEOTECHNICAL REPORTS AND PLANS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH ANY FURTHER WORK.
- THESE PLANS ARE BASED ON INFORMATION PROVIDED TO ARK CONSULTING GROUP, PLLC BY THE OWNER AND OTHERS PRIOR TO THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARK CONSULTING GROUP, PLLC IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER ON-SITE FEATURES.
- ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER 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 AND GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO THE GIVING OF SUCH NOTIFICATION AND THE ENGINEER'S WRITTEN AUTHORIZATION OF SUCH ADDITIONAL WORK.
- 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.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE THE BUILDING LAYOUT BY CAREFUL REVIEW OF THE SITE PLAN AND LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER, ARCHITECT AND SITE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB & GUTTER. CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY SHALL RESTORE SUCH CONNECTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE EXISTING CONDITIONS, AND IN CONFORMANCE WITH APPLICABLE CODES. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
- THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, NOR IS THE ENGINEER RESPONSIBLE FOR ANY CONFLICTS OR SCOPE REVISIONS WHICH RESULT FROM THE SAME. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

Impervious Area Calculations

SITE LIMITED TO 85% IMPERVIOUS AREA AS ACCOUNTED FOR IN THE WALLBROOK STORMWATER MASTER PLAN

PROPOSED TRANSPORTATION IMPERVIOUS AREA:	9583 SF
PROPOSED TOTAL IMPERVIOUS AREA:	9583 SF
TOTAL SITE AREA:	13939 SF
ALLOWABLE IMPERVIOUS AREA (85%):	11848 SF
PROPOSED IMPERVIOUS PERCENTAGE:	68.75 %

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LAYOUT & SIGNAGE-STRIPING PLAN
WALLBROOK ROADWAY IMPROVEMENTS
 VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
 Town of Rolesville Project No. CID 23-
 US 401 Business / S. Main Street & Virginia Water Drive
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NC License: PI 139
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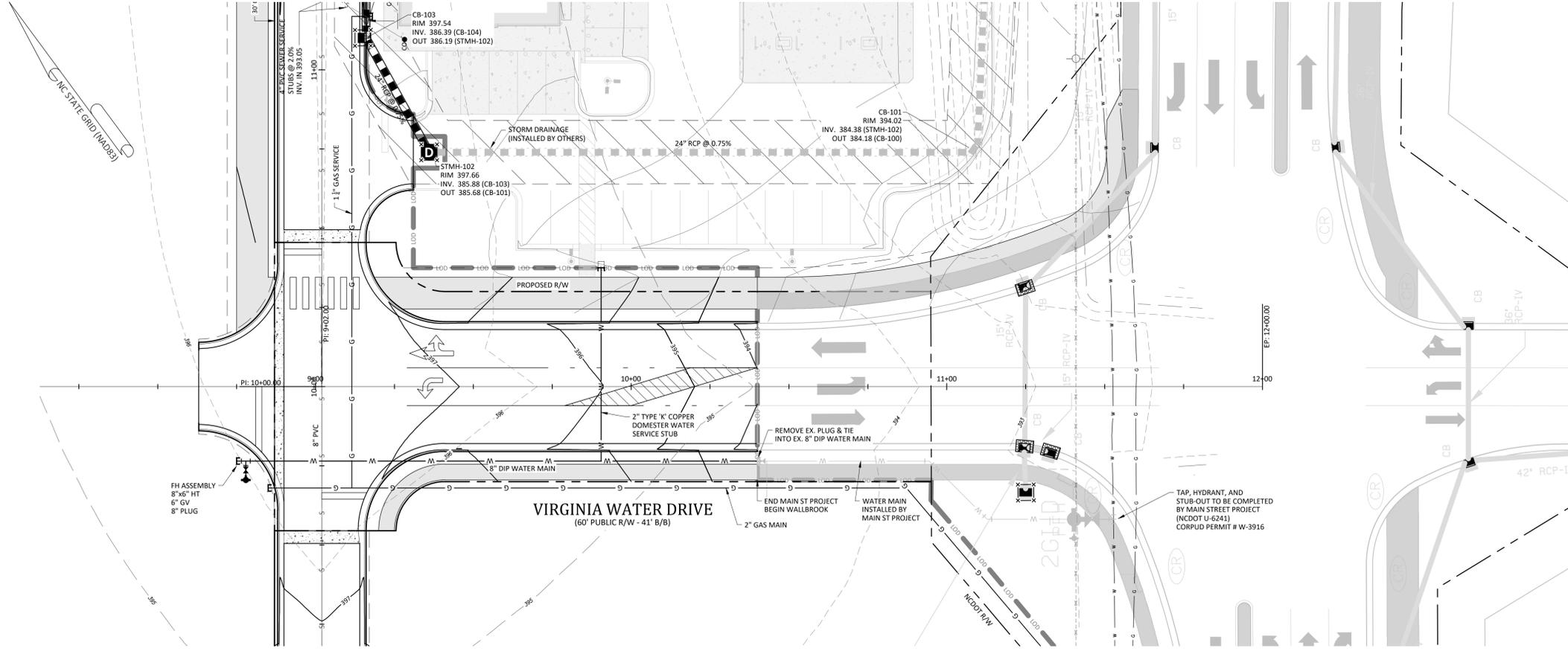
Final Drawing
 5/11/2023

Project Manager: BCF
 Drawn By: DLC/TN
 Checked By: TN
 Project Number: 22049
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Date: May 2023



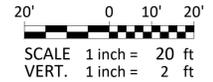
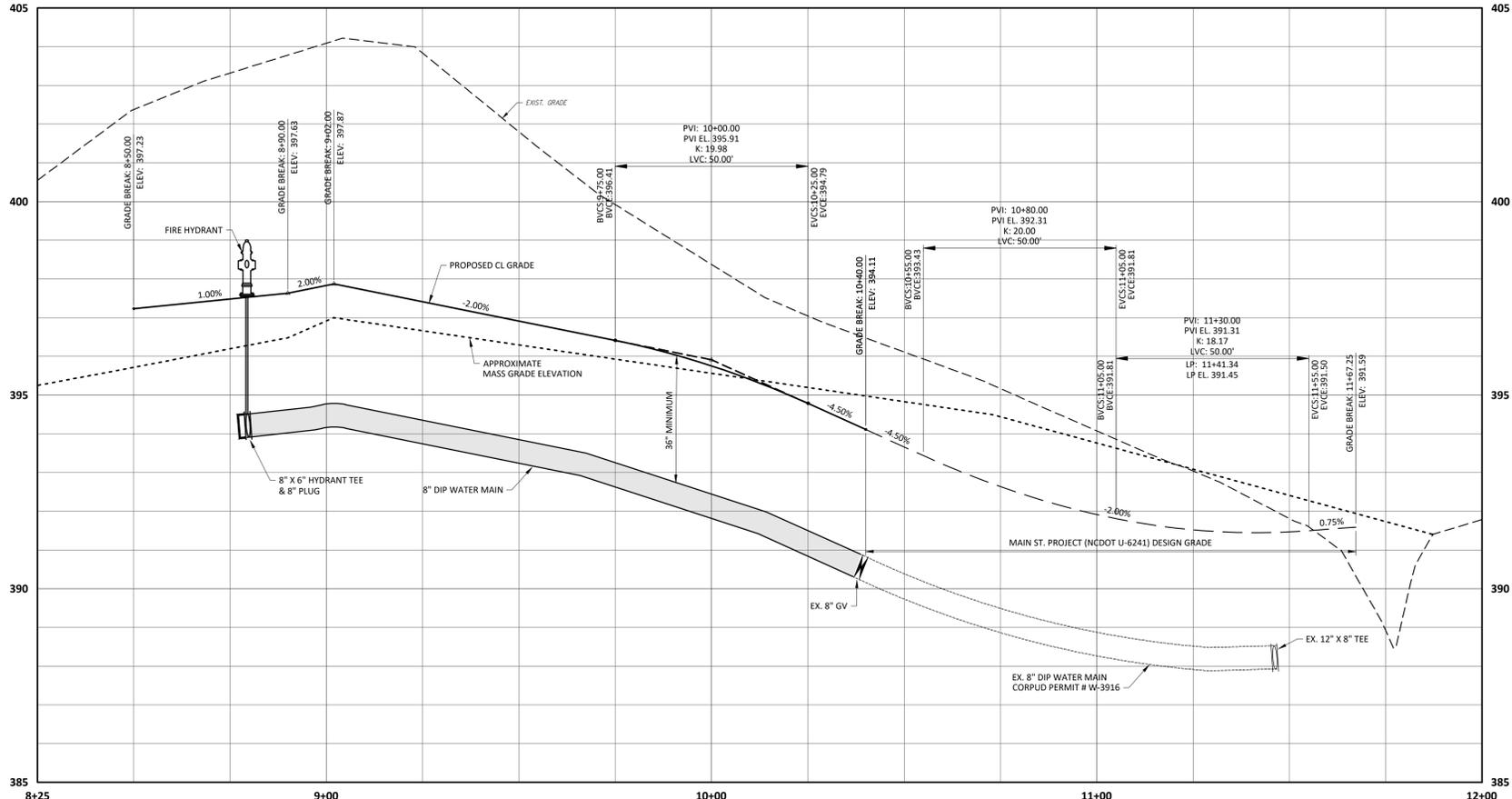


Grading Notes:

- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET.
- SITE CONTRACTOR TO GRADE ALL AREAS WITHIN THE LIMITS OF DISTURBANCE FROM BUILDING TO PROPERTY LINES AND TO EDGE OF PAVEMENT ON STREET SIDES, INCLUDING ROW.
- TREES OUTSIDE OF CONSTRUCTION LIMITS OR TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED.
- TOP SOIL SHALL BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS. PROVIDE EROSION AND SEDIMENTATION CONTROLS AROUND STOCKPILES DURING CONSTRUCTION.
- TILL TOP SOIL TO A DEPTH OF 4" MINIMUM AND REMOVE ALL ROCKS LARGER THAN 1" MEASURED IN LARGEST DIRECTION.
- GRADE ALL AREAS TO MAINTAIN POSITIVE SLOPE AWAY FROM BUILDING.
- ALL GRADED AREAS TO RECEIVE SEED OR SOIL, TOP SOIL, STRAW AND WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- INSTALL TEMPORARY TURF REINFORCEMENT MATTING ON ALL SLOPES STEEPER THAN 3:1. MATTING SHALL BE CONTECH LANDLOK C2 OR EQUAL.
- REFER TO CIVIL DETAILS FOR PAVEMENT IN PARKING AND DRIVE AREAS.
- ALL SIDEWALKS SHALL BE CONSTRUCTED OF 3,500 PSI CONCRETE AND SHALL HAVE TOOLED CONTROL JOINTS PER THE JOINT SPACING REFERENCED ON THE PLAN.
- MATERIALS SELECTED FOR USE AS STRUCTURAL FILL SHALL BE FREE OF VEGETABLE MATTER, WASTE CONSTRUCTION DEBRIS, AND OTHER DELETERIOUS MATERIALS. THE MATERIAL SHALL NOT CONTAIN ROCKS HAVING A DIAMETER OVER 3 INCHES.
- SOILS REPRESENTED BY THEIR USCS GROUP SYMBOLS WILL TYPICALLY BE SUITABLE FOR USE AS STRUCTURAL FILL (ML), (CL), (SM), AND (SC).
- THE FOLLOWING SOILS ARE CONSIDERED SUITABLE IN AREAS WHERE A MINIMUM THICKNESS OF 3' OF LOW PERMEABILITY SOILS CAN BE USED AS COVER: (SW), (SP), (SP-SM), AND (SP-SC).
- THE FOLLOWING SOILS ARE CONSIDERED SUITABLE IN AREAS WHERE A MINIMUM THICKNESS OF 3' OF NON-EXPANSIVE SOILS CAN BE USED AS COVER: (MH) AND (CH).
- THE FOLLOWING SOIL TYPES ARE CONSIDERED UNSUITABLE: (OL), (OH), AND (PI).
- ALL STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). ADDITIONALLY, THE IN-PLACE MAXIMUM DRY DENSITY OF STRUCTURAL FILL SHOULD BE NO LESS THAN 90 PCF.
- THE UPPER 12" OF BUILDING FLOOR SLAB SUBGRADES SHALL BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698).
- FILL PLACEMENT IN PAVEMENT AREAS SHALL BE PERFORMED IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.
- SUITABLE FILL MATERIAL SHALL BE PLACED IN 8" LIFTS AND COMPACTED BY MECHANICAL MEANS. PROOFROLLING WITH RUBBER TIRE, HEAVILY LOADED VEHICLES MAY BE DESIRABLE AT INTERVALS OF APPROXIMATELY 2 VERTICAL FEET TO BIND THE LIFTS TOGETHER AND TO SEAL THE SURFACE OF EACH COMPACTED AREA.
- ALL BUILDING, SIDEWALK, AND PAVEMENT SUB-GRADE COMPACTIONS SHALL BE INTERMEDIATELY TESTED THROUGHOUT FILL PLACEMENT OPERATIONS AND APPROVED BY THE GEOTECHNICAL ENGINEER. ALL SUB-GRADES SHALL BE THOROUGHLY PROOF-ROLLED TO IDENTIFY SMALL LOCALIZED AREAS OF UNSUITABLE SOILS. ALL UNSUITABLE SOILS SHALL BE UNDERCUT, REPLACED WITH STRUCTURAL FILL, AND COMPACTED AS DESCRIBED ABOVE.
- WHERE A HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER, MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS. MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & 5-49).
- ANY OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY CORPUD PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO CORPUD.
- 3.0" MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0" MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- IT IS THE DEVELOPERS RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY CORPUD. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
- INSTALL PVC WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
- INSTALL PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWR, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS PRIOR TO CONSTRUCTION.
- NC DOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
- CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NC. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

CORPUD Standard Utility Notes:

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK)
- UTILITY SEPARATION REQUIREMENTS:
 - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPROVED RESERVOIR OR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATER SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
 - WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IN THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR.
 - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
 - 5.0' MINIMUM SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
 - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & 5-49).
 - ANY OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY CORPUD PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO CORPUD.
- 3.0" MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0" MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- IT IS THE DEVELOPERS RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY CORPUD. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
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-Final Drawing - Issued for Permit Review Purposes Only

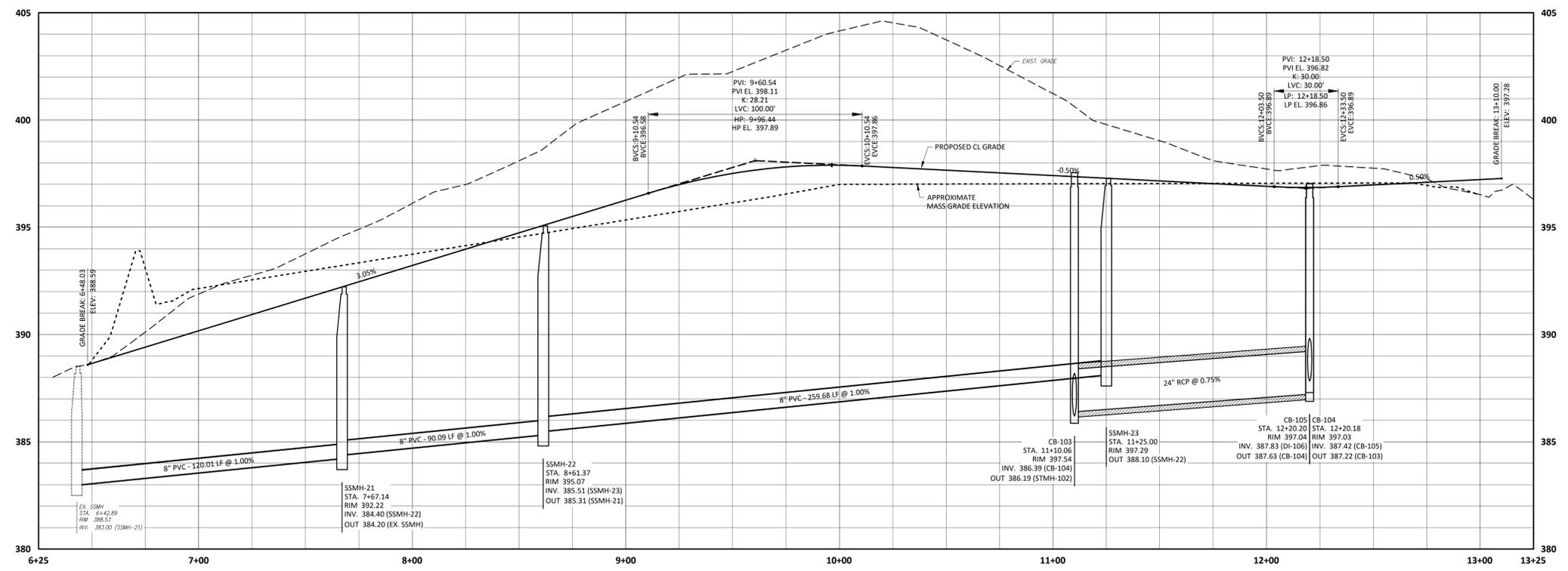
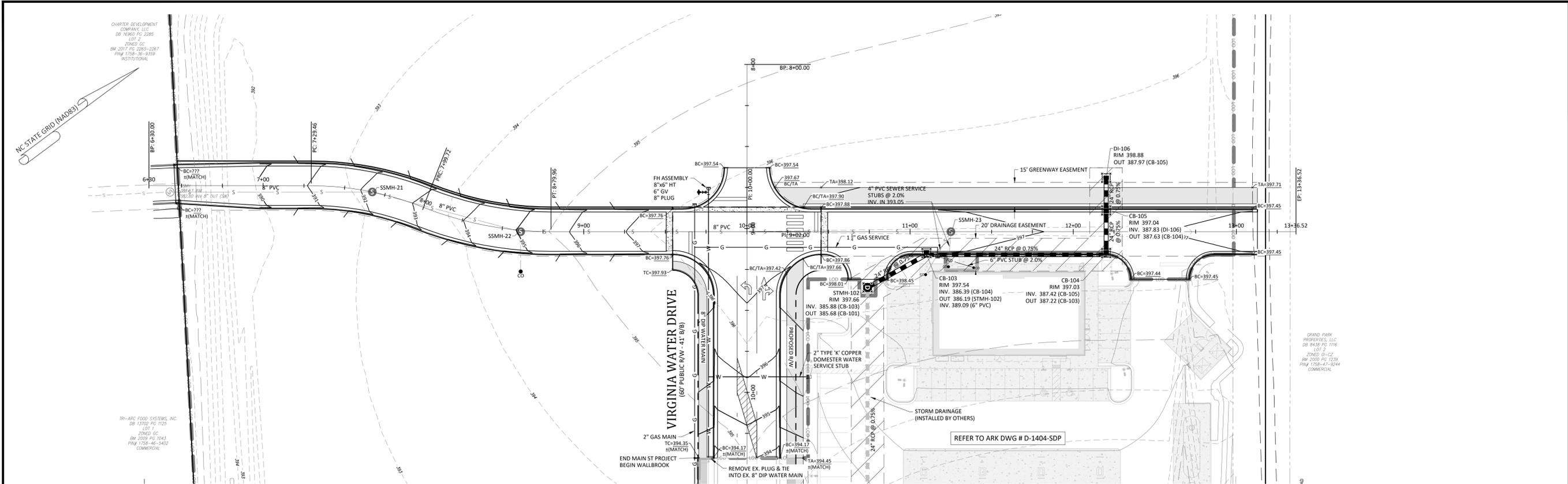


VIRGINIA WATER DRIVE EXT - PLAN-PROFILE
WALLBROOK ROADWAY IMPROVEMENTS
 VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
 Town of Rolesville Project No. CID 23-
 US 401 Business / S. Main Street & Virginia Water Drive
 Wake Forest Township, Town of Rolesville, Wake County, North Carolina



Project Manager: BCF
 Drawn By: DLT/NT
 Checked By: TN
 Project Number: 22049
 Drawing Number: D-1404-CID

C3.0
 Date: May 2023



ATTENTION CONTRACTORS
 The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Utilities Department at (919) 996-4540 at least twenty four hours prior to beginning any of their construction.

Failure to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.
Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

Public Water Distribution / Extension System
 The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
 Public Utilities Department Permit # _____
 Authorization to Construct _____
 Date _____

Public Sewer Collection / Extension System
 The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
 Public Utilities Department Permit # _____
 Authorization to Construct _____
 Date _____



- Final Drawing -
 Issued for Permit Review Purposes Only

REVISIONS:

#	DATE	DESCRIPTION
1	11-MAY-23	ISSUED FOR PERMIT REVIEW



ACCESS DRIVE - PLAN-PROFILE

WALLBROOK ROADWAY IMPROVEMENTS
 VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
 Town of Rolesville Project No. CID 23-
 US 401 Business / S. Main Street & Virginia Water Drive
 Wake Forest Township, Town of Rolesville, Wake County, North Carolina

NC License: PA 129

ARK CONSULTING GROUP PLLC
 ENGINEERS & PLANNERS

2755-B Charles Blvd
 Raleigh, NC 27608
 (757) 558-8888
 www.arkconsultinggroup.com

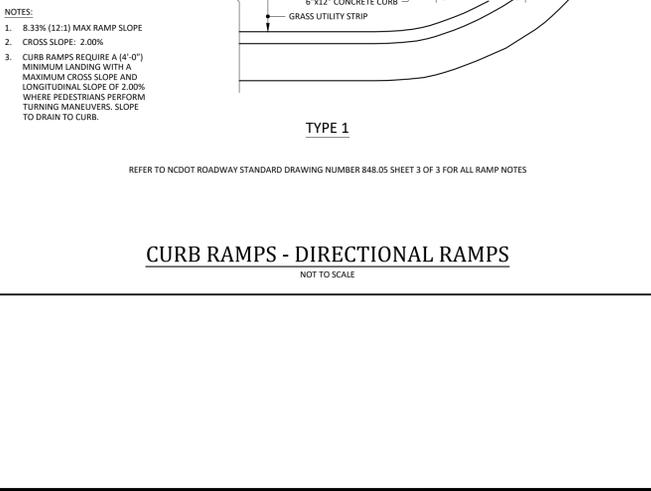
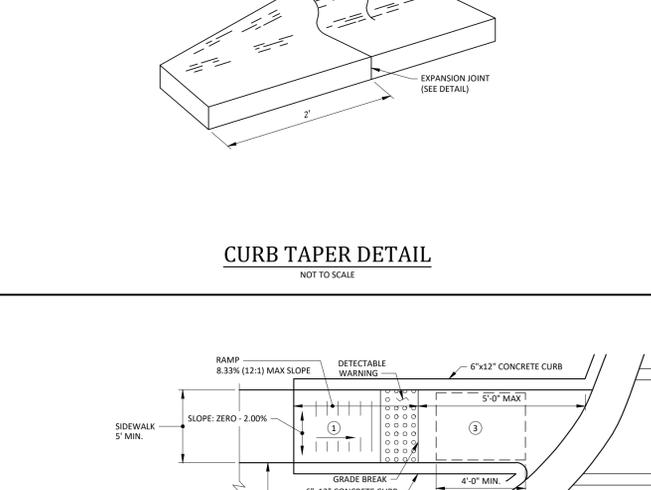
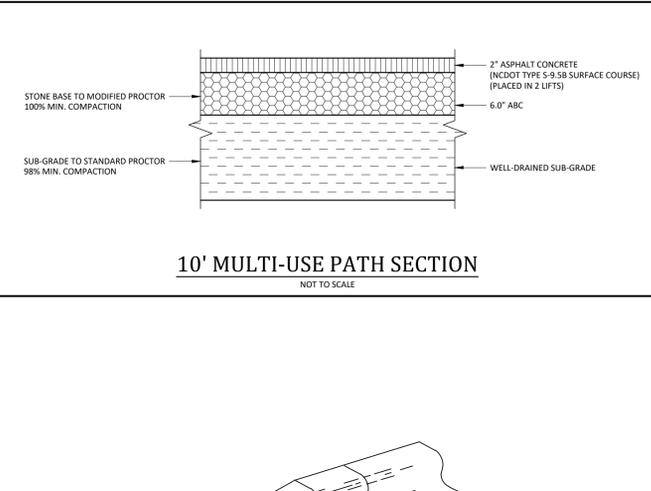
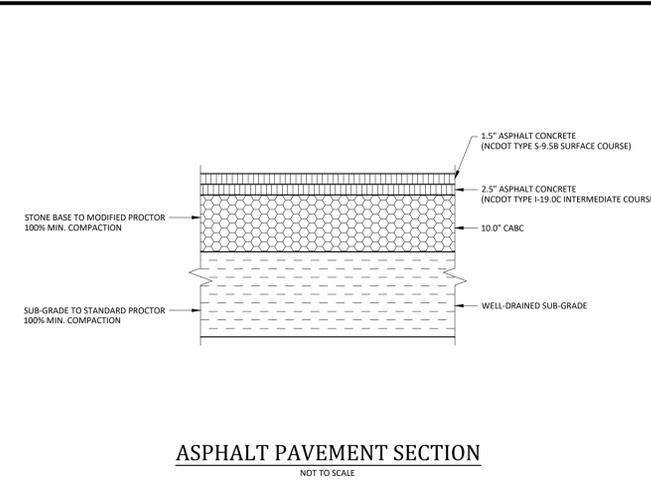
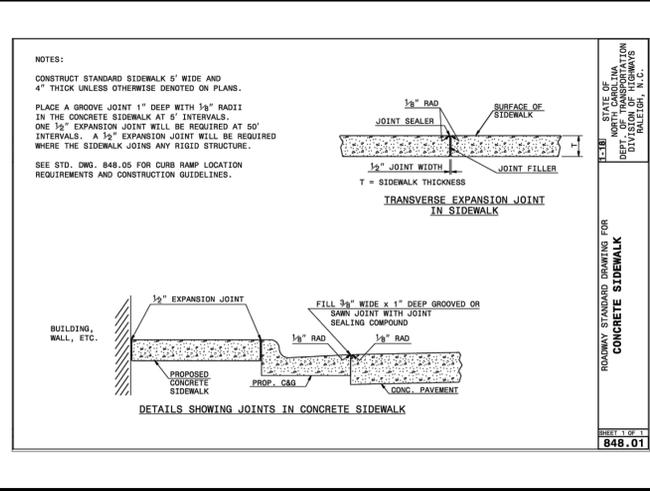
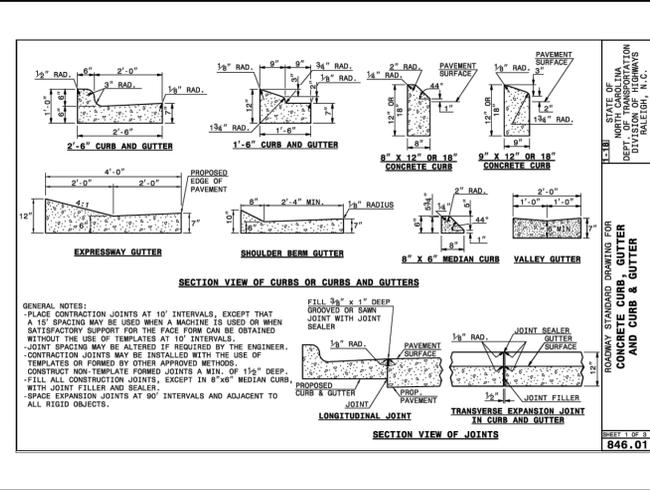
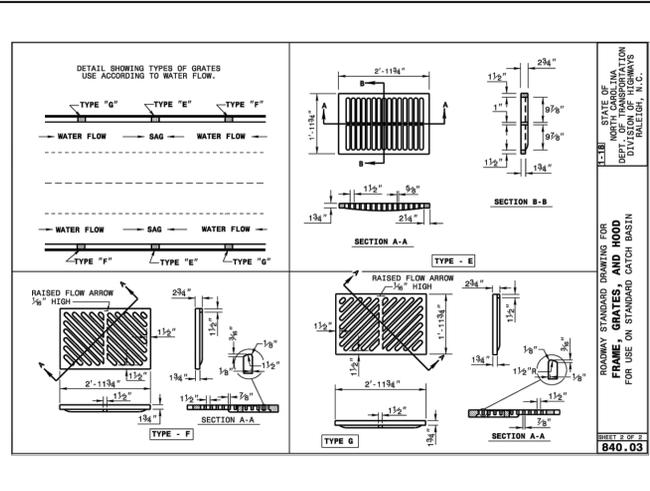
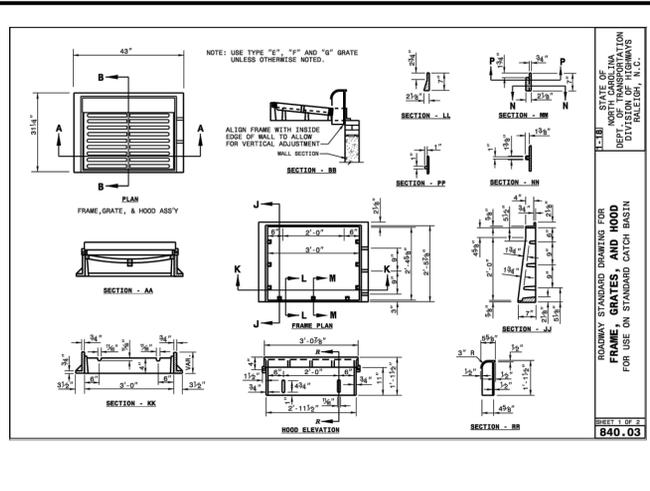
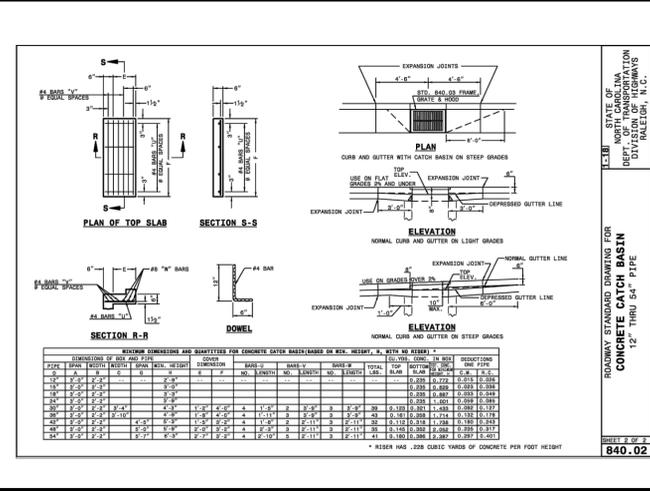
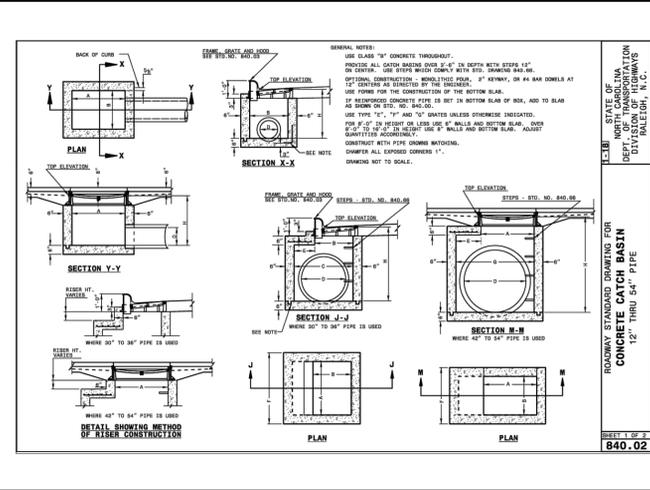
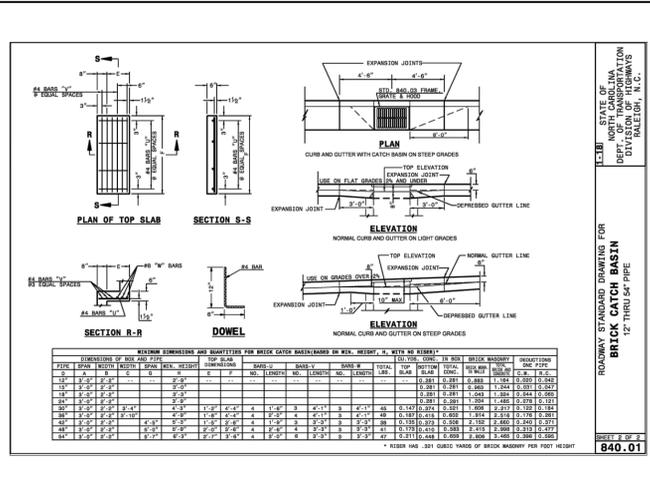
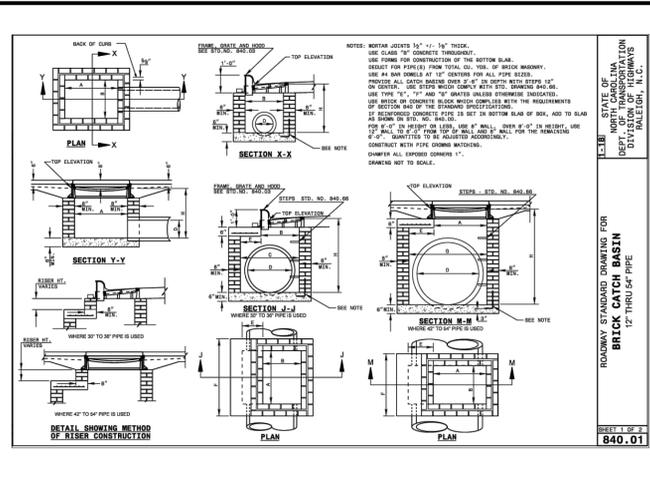
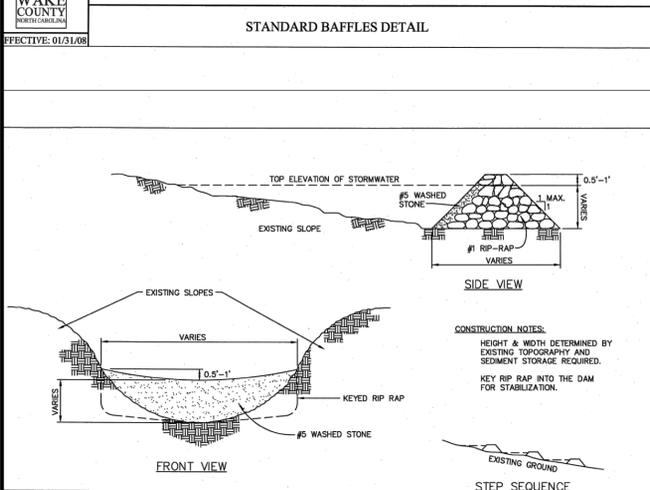
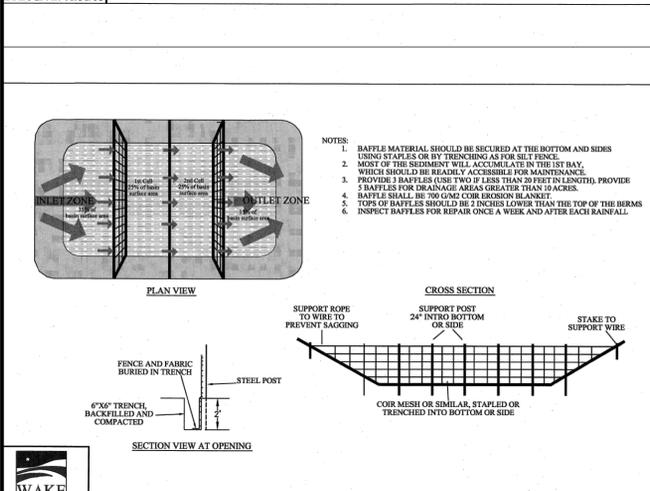
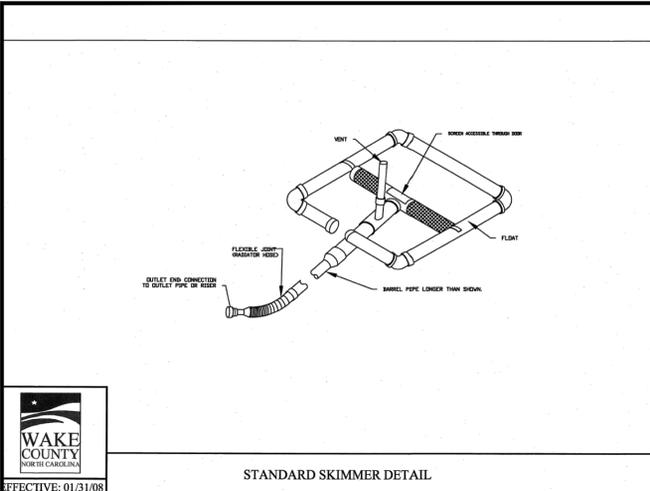
5/11/2023

Project Manager: BCF
 Drawn By: DLC/TN
 Checked By: TN
 Project Number: 22049
 Drawing Number: D-1404-CID

C3.1

Date: May 2023





- Final Drawing -
Issued for Permit
Review Purposes Only

REVISIONS:

DATE: 11/13/2023

DESCRIPTION: 1. 11/13/23 ISSUED FOR PERMIT REVIEW

CROSLAND SOUTHEAST

DETAILS

WALLBROOK ROADWAY IMPROVEMENTS
VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
Town of Rolesville Project No. CID 23-
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina

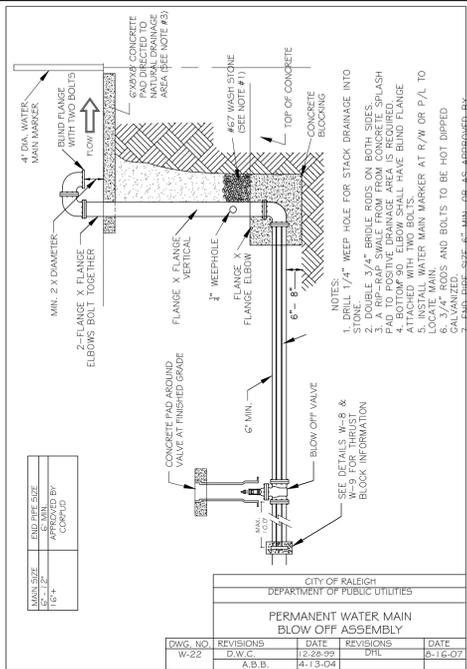
NC License: P-1129
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
CUC NC 27658
(252) 558-0888
www.arkconsultinggroup.com

Final Drawing
11/13/2023

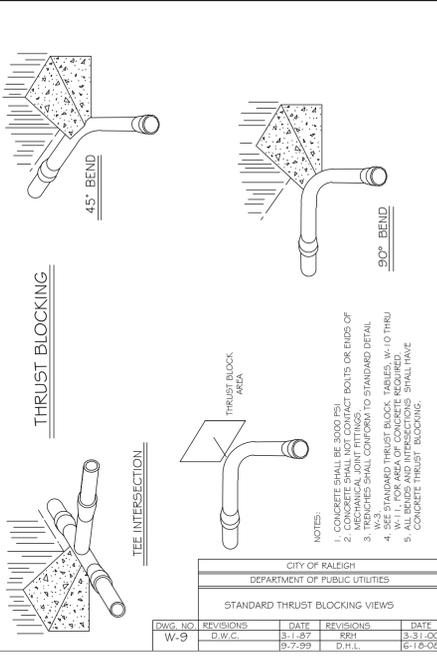
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Drawn By: DLT/TN
Checked By: TN
Project Number: 22049
Drawing Number: D-1404-CID

C4.0

Date: May 2023



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-22	D.W.C.	12-22-99	DHL	6-16-07
	A.B.B.	4-13-04		



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-9	D.W.C.	3-1-87	RRH	3-31-00
	D.H.L.	9-7-99	D.H.L.	6-18-08

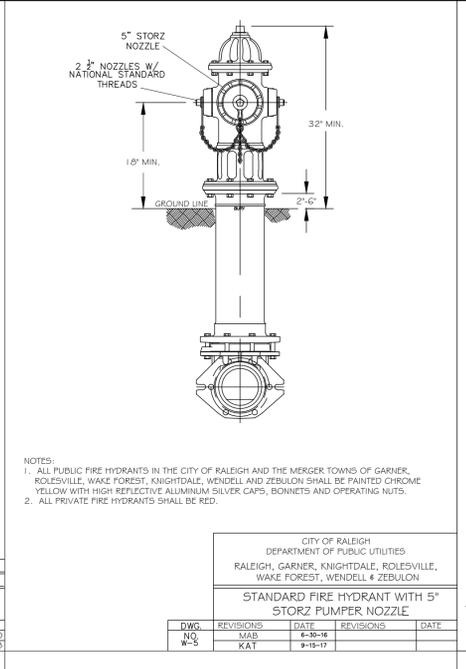
REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200 P.S.I.

ALL MEAS. GIVEN IN SQUARE FEET

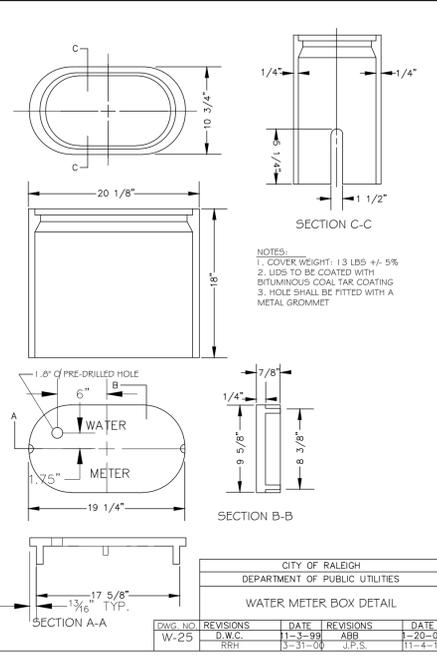
SIZE AND DEGREE OF BEND	STATE THRUST IN POUNDS	DEPTH OF REACTION BLOCK	SKET. CLAY 2000 LB/FT ²	1600 CONG. SAND 1200 LB/FT ²	3000 PSI CONC. 1500 LB/FT ²	STEEL COMPACT FIRM SAND 150 LB/FT ²	STEEL DRY SAND 150 LB/FT ²	SOIL 2000 LB/FT ²	CONC. 2000 LB/FT ²	CONC. 1500 LB/FT ²	STEEL 150 LB/FT ²	STEEL 100 LB/FT ²
6"												
11 1/4"	1,108	1	1	1	1	1	1	2	1	2	1	1
22 1/2"	2,207	1	2	2	1	1	1	1	1	3	1	1
45°	4,328	2	3	3	1	1	1	2	5	1	1	1
90°	7,996	2	4	5	1	1	2	8	1	1	1	1
PLUG	5,655	2	3	4	1	1	2	6	1	1	1	1
8"												
11 1/4"	1,970	1	1	2	1	1	1	2	1	2	1	1
22 1/2"	3,922	1	2	3	1	1	1	4	1	1	1	1
45°	7,694	2	4	5	1	1	2	8	1	1	1	1
90°	14,215	4	8	9	2	2	4	15	2	1	1	1
PLUG	10,053	3	5	6	2	2	3	10	1	1	1	1
12"												
11 1/4"	4,433	2	3	3	1	1	1	2	5	1	1	1
22 1/2"	8,826	3	5	6	2	2	3	9	1	1	1	1
45°	17,312	5	9	11	3	3	5	18	2	1	1	1
90°	31,983	8	16	19	4	4	8	32	4	1	1	1
PLUG	22,619	6	12	14	3	3	6	23	3	1	1	1
16"												
11 1/4"	7,881	2	4	5	1	1	1	2	8	1	1	1
22 1/2"	15,691	4	8	10	2	2	4	16	2	1	1	1
45°	30,779	8	16	19	4	4	8	31	4	1	1	1
90°	56,861	15	29	35	8	8	15	57	6	1	1	1
PLUG	40,213	10	21	25	5	5	10	41	5	1	1	1

THRUST BLOCKING DESIGN QUANTITY TABLE

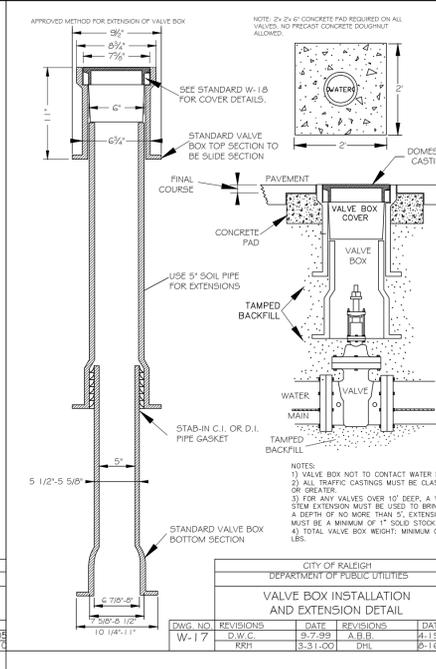
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W-10	D.W.C.	6-23-99		



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W-5	M.A.B.	6-16-16		
	K.A.T.	9-18-17		



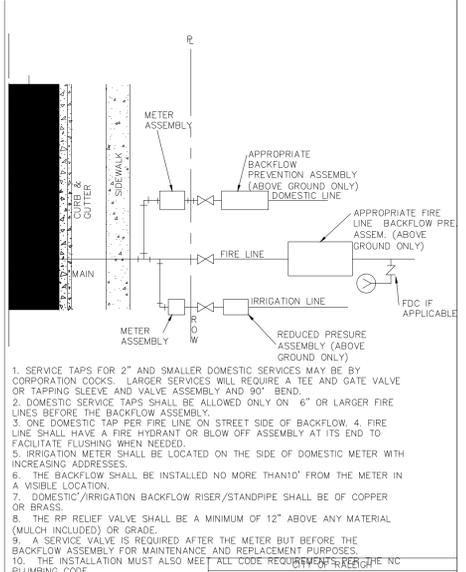
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W-25	D.W.C.	11-3-99	ABB	1-20-05
	RRH	3-31-00	J.P.S.	11-4-10



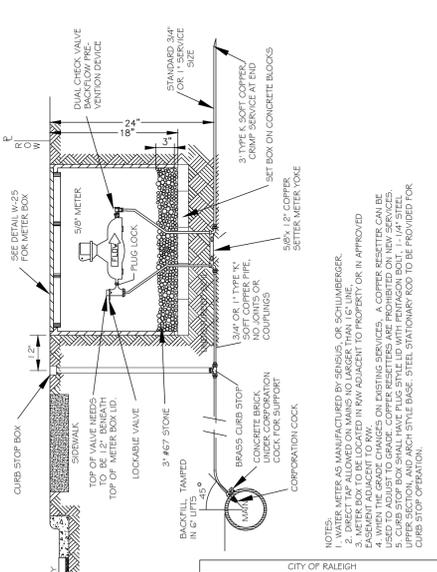
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-17	D.W.C.	9-7-99	A.B.B.	4-15-04
	RRH	3-31-00	DHL	6-18-07



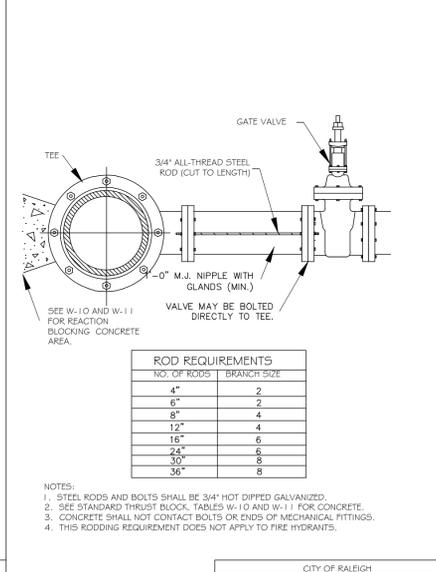
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W-12	D.H.L.	6-18-08	J.P.S.	11-1-10



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	2-31-99	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-23	ABB	4-6-04		
	D.H.L.	6-18-08		



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	RRH	6-24-04	P.F.P.	2/7/09
	DHL	2/14/08		

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	1-31-00	D.H.L.	6-18-08

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-3	D.H.L.	4-6-04		
	D.H.L.	6-18-08		

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-15	RRH	8-31-00	D.H.L.	6-18-08
	A.B.B.	4-13-04	J.P.S.	11-1-10

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-15	RRH	8-31-00	D.H.L.	6-18-08
	A.B.B.	4-13-04	J.P.S.	11-1-10

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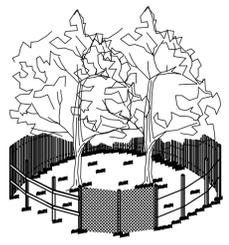
WALLBROOK ROADWAY IMPROVEMENTS
VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
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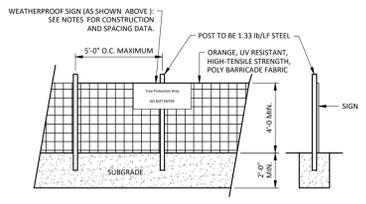
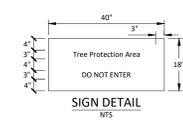
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Drawn By: DLT/TN
Checked By: TN
Project Number: 22049
Drawing Number: D-1404-CID

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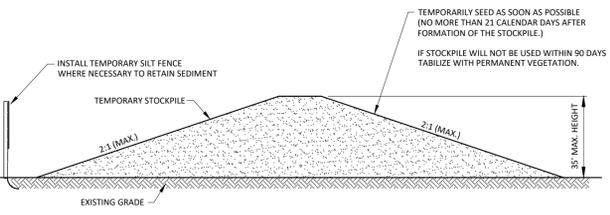
Date: May 2023



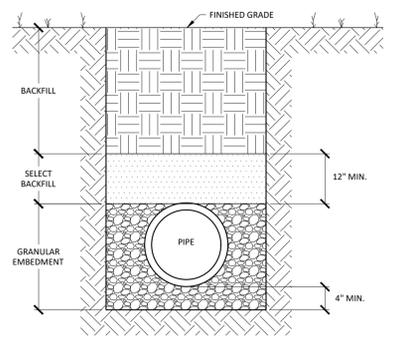
- NOTES:
1. SIGNS ARE TO BE PLACED NO GREATER THAN 200' ON CENTER, PLACE SIGN AT EACH END OF LINEAR TREE PROTECTION AREA AND 200' ON CENTER THEREAFTER.
 2. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
 3. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
 4. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
 5. LETTERS ARE TO BE 3" HIGH MINIMUM, CLEAR LEGIBLE, AND SPACED AS DETAILED.
 6. INSTALL TREE PROTECTION FENCE & SIGNAGE PRIOR TO CALLING FOR THE INITIAL ON-SITE INSPECTION BY AN ACCIDENT INSPECTOR. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT. ADDITIONAL SIGNS MAY BE REQUIRED BY NOTICES BASED ON ACTUAL FIELD CONDITIONS.



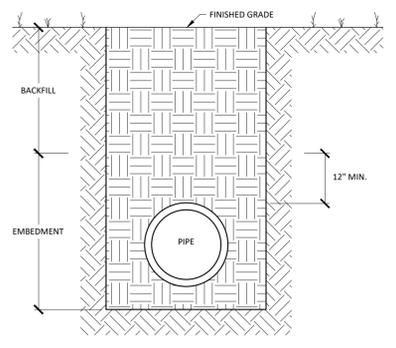
TREE PROTECTION FENCE
NOT TO SCALE



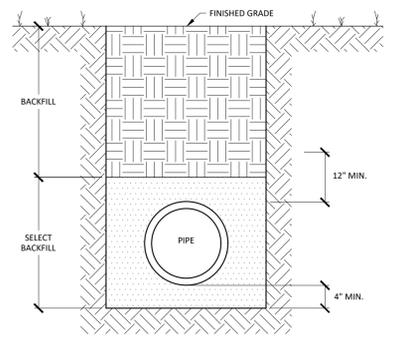
TEMPORARY STOCKPILE
NOT TO SCALE



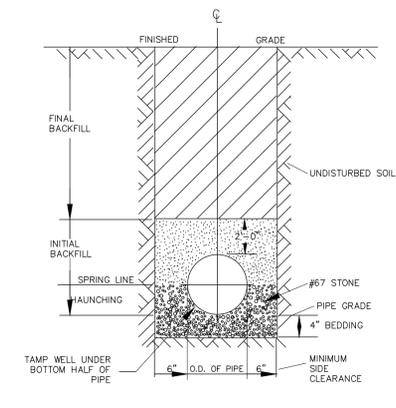
TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC GRAVITY STORM DRAIN & SANITARY SEWER PIPING
CLASS 'D'
NOT TO SCALE



TRENCH SECTION FOR THE INSTALLATION OF REINFORCED CONCRETE PIPE
CLASS 'F'
NOT TO SCALE

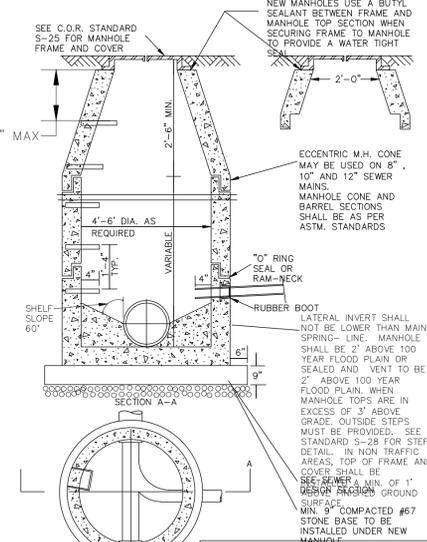


TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC PRESSURE PIPE
CLASS 'E'
NOT TO SCALE

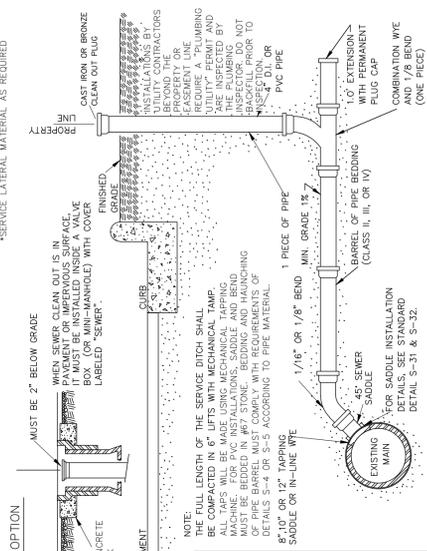


TYPICAL TRENCH BOTTOM DIMENSIONS FOR SDR 35 PVC GRAVITY PIPE

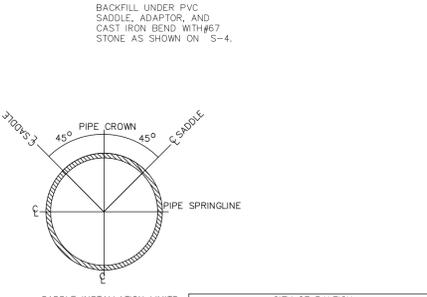
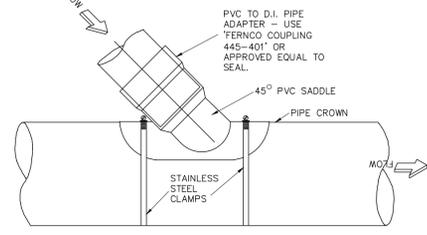
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-5	TO NOTES	3-1-87	D.W.C.	9-3-99	
		7-2-82	RRH	3-30-00	



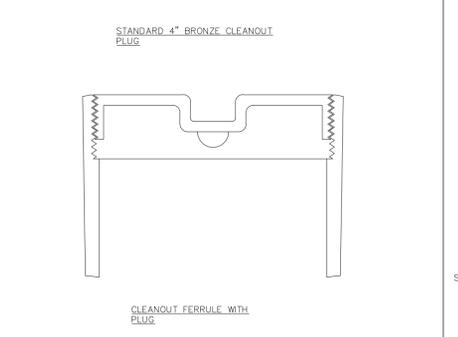
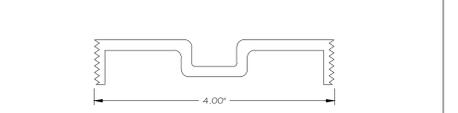
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD PRECAST SANITARY SEWER MANHOLE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20		12-31-92	ABB	2-21-95	
		3-30-99	D.H.L.	6-18-08	



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL CONNECTION					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30	Y.C.A.	6-9-92	A.B.B.	4-8-04	
		RRH	3-30-00	D.H.L.	6-18-08

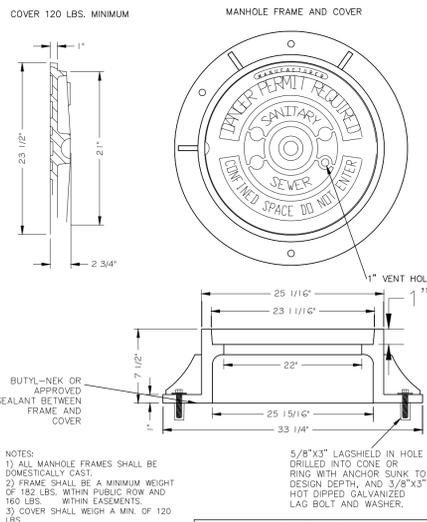


CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-31	RRH	3-1-87			
		3-30-00			

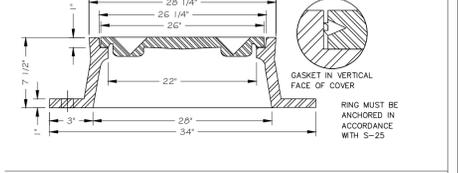
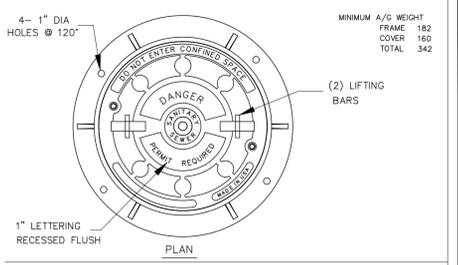


- NOTES:
- 1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
 - 2) FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
 - 3) COVER SHALL WEIGH A MIN. OF 120 LBS.
 - 4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

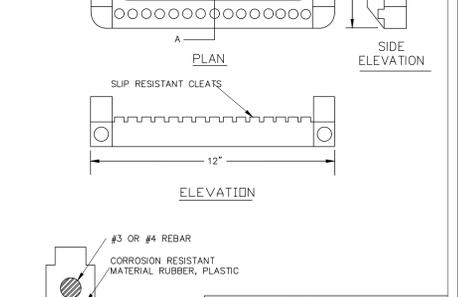
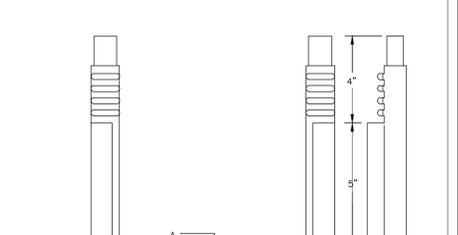
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
4" CLEANOUT PLUG					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-34	D.W.C.	3-1-87	RRH	3-30-00	



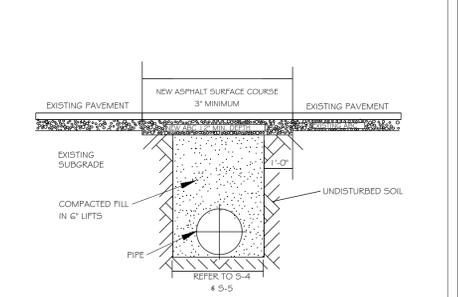
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-25	3-1-87	3-1-87	A.B.B.	2-9-05	
	RRH	3-30-00	D.H.L.	6-18-08	



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
MANHOLE FRAME AND WATERTIGHT COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-26	3-1-87	3-1-87	ABB	8-29-03	
		RRH	3-30-00	D.H.L.	6/18/08



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD SLIP RESISTANT MANHOLE STEP DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-28	RRH	3-30-00			



- NOTES:
1. IN NC DOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
 2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
 3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NC DOT.
 4. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NC DOT.
 5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
 6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
 7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
 8. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING (S-4 & S-5) FOR ADDITIONAL DETAILS.
 9. NO HAIR PATCHING ALLOWED.
 10. PAVEMENT CUTS WITHIN NC DOT ROW SHALL CONFORM TO THE APPROVED ON-SITE ENCROACHMENT PERMIT.

CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD ASPHALT PAVEMENT PATCH DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-3	D.W.C.	1-1-99	A.B.B.	4-19-04	
		RRH	3-30-00	J.F.S.	1-26-10

- Final Drawing -
Issued for Permit
Review Purposes Only

CROSLAND SOUTHEAST

WALLBROOK ROADWAY IMPROVEMENTS
VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)
Town of Rolesville Project No. CID 23-
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina

ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Chatham Blvd
Raleigh, NC 27608
(252) 558-8888
www.arkconsultinggroup.com

C4.2
Date: May 2023

GENERAL NOTES:

1. THIS ALTA/NSPS LAND TITLE SURVEY WAS PREPARED FOR THE BENEFIT OF WALLBROOK LANDCO, LLC, ITS SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR, AND INVESTORS TITLE INSURANCE COMPANY.
2. THE PROPERTY AS SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY WITH A RAW CLOSURE OF 1:35,900.
3. THE IMPROVEMENTS SHOWN HEREON ARE BASED ON A FIELD-RUN PLANIMETRIC SURVEY PERFORMED BY JOHNSON, MIRMIRAN & THOMPSON FROM MARCH 16 THROUGH MARCH 19, 2020 AND REFLECTS SITE CONDITIONS AS OF THAT DATE.
4. ELEVATIONS ARE BASED ON NAVD88 DATUM.
5. THE SURVEY IS REFERENCED TO THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM (NCSPCS), NORTH AMERICAN DATUM, 1983, 2001 ADJUSTMENT, NAD83(2001).
6. THE USE OF THE WORD CERTIFY OR CERTIFICATION CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OR FINDINGS WHICH ARE THE SUBJECT OF THE UNDERSIGNED PROFESSIONAL'S KNOWLEDGE, INFORMATION AND BELIEF, AND IN ACCORDANCE WITH THE COMMONLY ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE EITHER EXPRESSED OR IMPLIED.
7. THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE X, AREA OF MINIMAL FLOODING, AS SHOWN ON NATIONAL FLOOD INSURANCE RATE MAP (FIRM), WAKE COUNTY, NORTH CAROLINA, PANEL 1758, MAP NO. 3720175800J, EFFECTIVE DATE: MAY 2, 2006.
8. AT THE TIME OF THE SURVEY, THERE WERE NO PARKING SPACES.
9. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP OR LANDFILL.
10. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF A CEMETERY.
11. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
12. CURRENT ZONING: I-SUD (INDUSTRIAL SPECIAL USE DISTRICT)

SETBACK REQUIREMENTS:

- FRONT: 30'
- SIDE: 15'
- CORNER: 25'
- REAR: 35'

(ZONING INFORMATION BASED ON INFORMATION AS SUPPLIED BY CURRENT COUNTY ZONING DEPARTMENT, NO ZONING REPORT OR LETTER WAS PROVIDED TO SURVEYOR AT TIME OF SURVEY.)

RECORD LEGAL DESCRIPTION

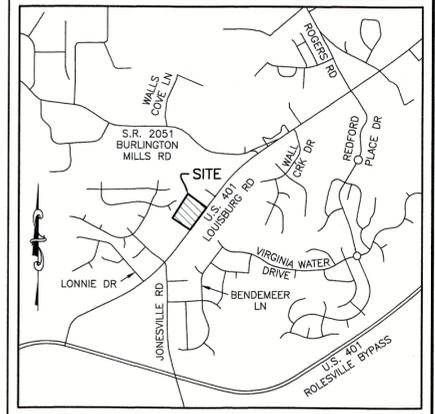
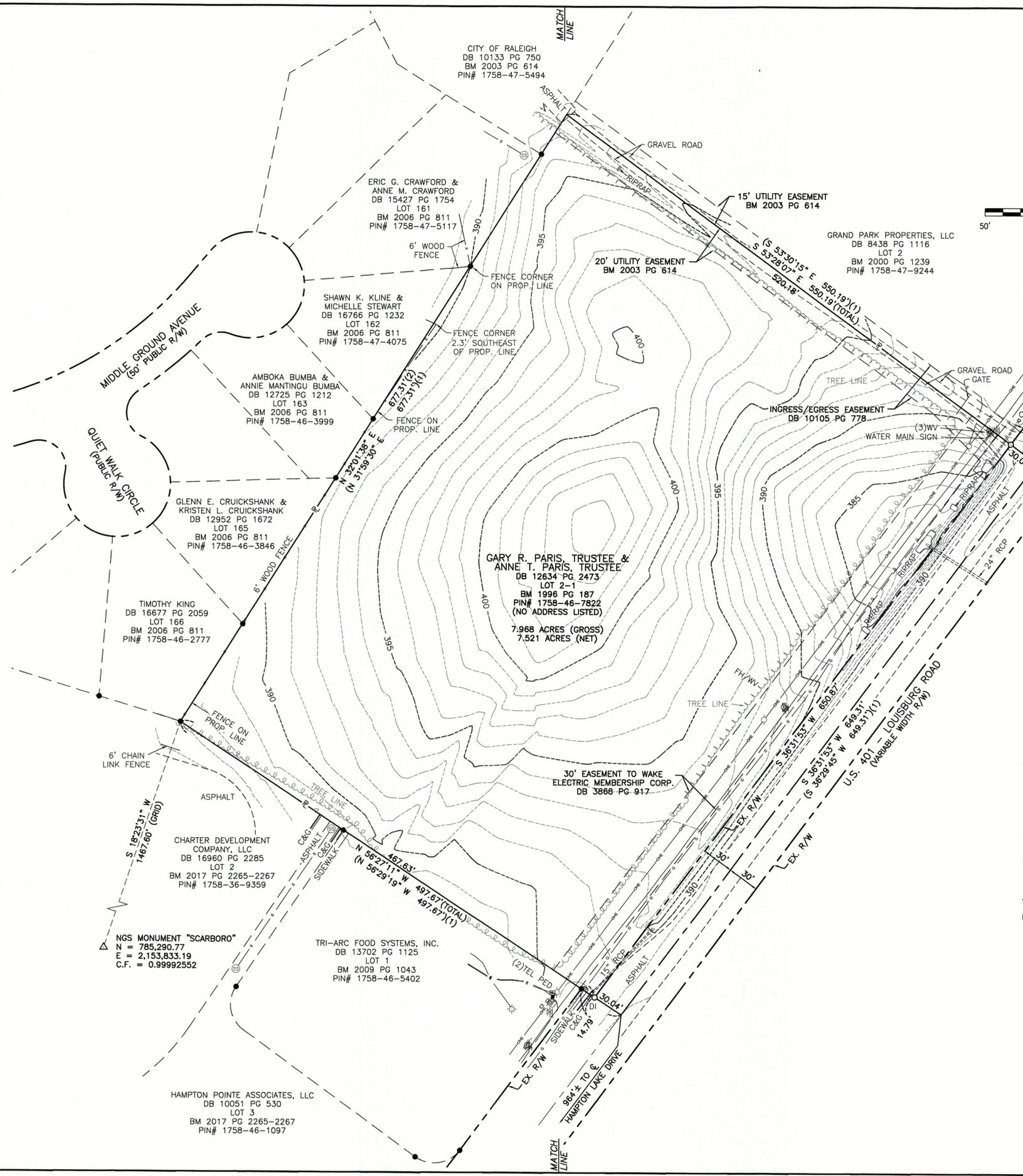
PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 202000244CA2, WITH AN EFFECTIVE DATE OF MARCH 6, 2020 AT 5:00 P.M.:

IN THE STATE OF NC, COUNTY OF WAKE,
BEING ALL OF LOT 2-1 OF THAT PLAT ENTITLED "PRELIMINARY SUBDIVISION PLAT AND RECOMBINATION SURVEY FOR TOMMY TWITY," A COPY OF WHICH IS RECORDED IN BOOK OF MAPS 1996, PAGE 187, WAKE COUNTY REGISTRY.

SCHEDULE B, PART II EXCEPTIONS:

PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 202000244CA2, WITH AN EFFECTIVE DATE OF MARCH 6, 2020 AT 5:00 P.M.:

1. (ITEM 3) EASEMENT(S) AND/OR RIGHT(S) OF WAY TO CITY OF RALEIGH RECORDED IN BOOK 10105 AT PAGE 778. [PLOTTED HEREON]
2. (ITEM 4) EASEMENT(S) AND/OR RIGHT(S) OF WAY TO WAKE ELECTRIC MEMBERSHIP CORPORATION RECORDED IN BOOK 3868 AT PAGE 917. [PLOTTED HEREON]
3. (ITEM 5) TITLE TO THAT PORTION OF THE LAND WITHIN THE RIGHT-OF-WAY OF U.S. HIGHWAY 401 (LOUISBURG ROAD). [PLOTTED HEREON]
4. (ITEM 6) MATTERS SHOWN ON RECORDED BOOK OF MAPS 1996 AT PAGE 187 SHOWS THE FOLLOWING LOCATED ON THE LAND:
 - (a) OVERHEAD LINE [PLOTTED HEREON]
 - (b) POWER POLE [PLOTTED HEREON]
 - (c) RIGHT OF WAY FOR U.S. HIGHWAY 401 (LOUISBURG ROAD) [PLOTTED HEREON]



LEGEND

- (1) = RECORD DATA PER BM 1996 PG 187
- (2) = RECORD DATA PER BM 2006 PG 811
- = FOUND IRON PIPE
- = SET IRON PIN
- △ = NGS MONUMENT
- R = PROPERTY LINE
- R/W = RIGHT OF WAY
- CB = CATCH BASIN
- C&G = CURB AND GUTTER
- C = CENTERLINE
- DI = DROP INLET
- FH = FIRE HYDRANT
- LP = LIGHT POLE
- PP = POWER POLE
- RCP = REINFORCED CONCRETE PIPE
- = SIGN
- = SANITARY SEWER MANHOLE
- = TELEPHONE PEDESTAL
- WM = WATER METER
- WV = WATER VALVE
- = ELECTRIC LINE
- = GAS LINE
- = OVERHEAD ELECTRIC LINE
- = SANITARY SEWER LINE
- = TELEPHONE LINE
- = WATER LINE

SURVEYOR'S CERTIFICATION:

TO WALLBROOK LANDCO, LLC, ITS SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR, AND INVESTORS TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6A, 7A, 7B1, 8, 9, 11, 13, 16 AND 17 OF TABLE "A" THEREOF. THE FIELDWORK WAS COMPLETED ON MARCH 19, 2020.

William T. Robbins, II
 WILLIAM T. ROBBINS, II
 P.L.S. #L-4192
 DATE: 3/28/2020

JMT JOHNSON, MIRMIRAN & THOMPSON
 Engineering A Brighter Future®
 9201 Arboretum Parkway Suite 310 Richmond, Virginia 23236
 PHONE: (804)-323-9900 FAX: (804)-323-0596
 EMAIL: jmtva@jmt-engineering.com

REVISION #	DATE	REASON FOR REVISION



ALTA/NSPS LAND TITLE SURVEY
 PREPARED FOR
 WALLBROOK LANDCO, LLC
 WAKE FOREST TOWNSHIP
 TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

DRAWN BY: JSZ PROJECT#: JMT# 20-00915-001
 CHECKED BY: WTR CONTRACT#: JMT# 20-00915-001
 DATE: 03/28/2020 SCALE: 1"=50' SHEET 1 OF 1