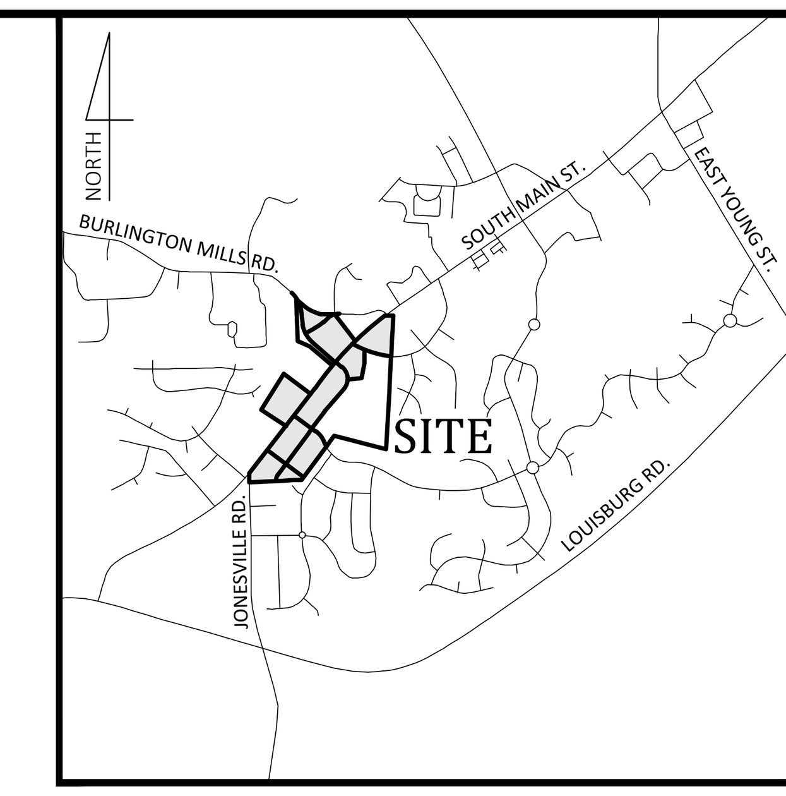
EROSION CONTROL / MASS GRADING / SANITARY SEWER RELOCATION FOR
WALLBROOK

CD 22-02
REVISION - V1

Main St. / US 401 Business, Town of Rolesville, Wake County, North Carolina

Project No.: CD 22-02 ⚠1



Vicinity Map ⚠1
NOT TO SCALE

- Final Drawing -
Issued for Permit
Review Puroposes Only

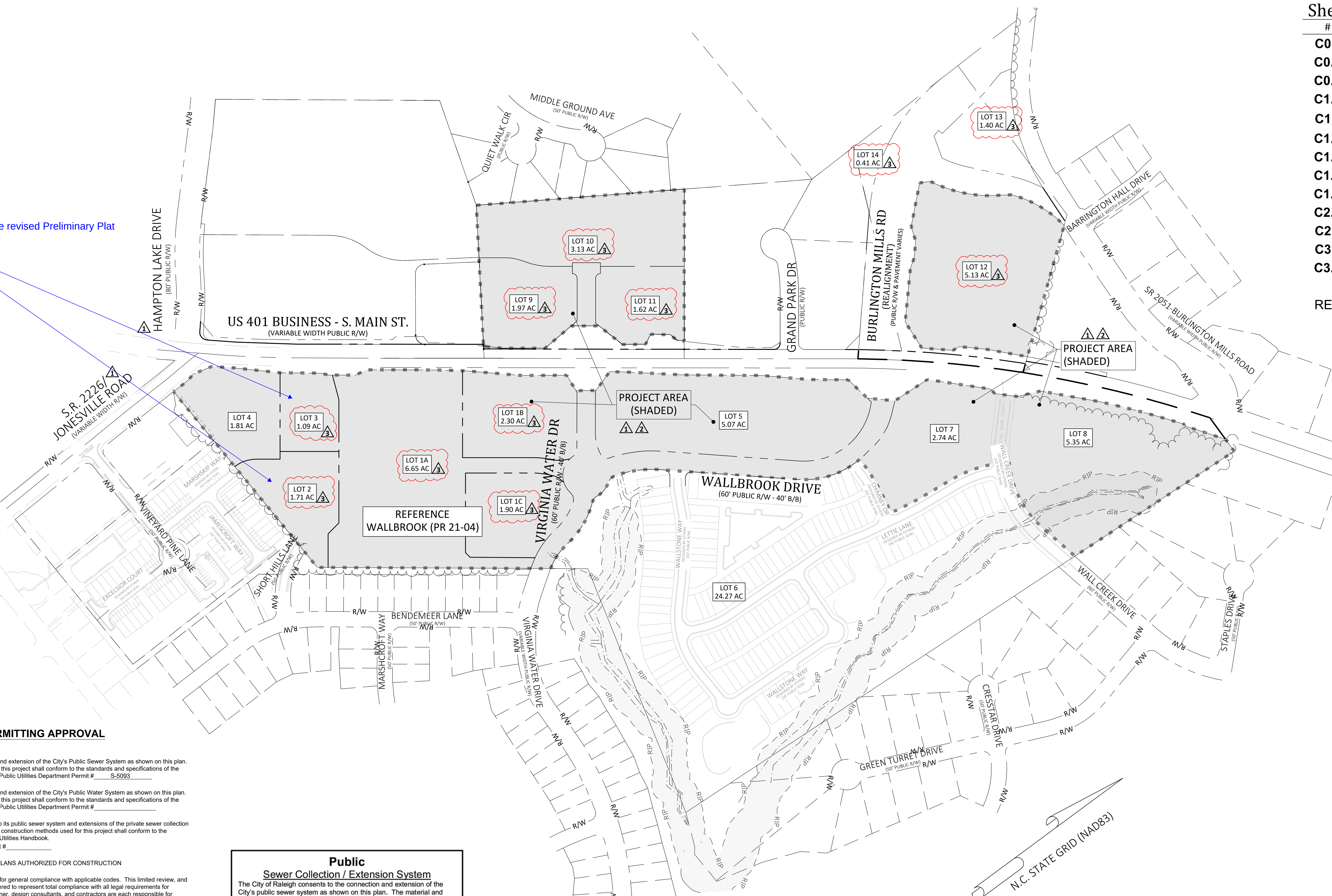
#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	22-JUL-22	REVISED PER TOR & WAKE COUNTY COMMENTS
1	15-JUN-22	REVISED PER TOR & WAKE COUNTY COMMENTS

REVISIONS:

CROSLAND SOUTHEAST

Sheet Index

Lot acreages vary from the revised Preliminary Plat (PR21-04). Please update



KNOW WHAT'S BELOW
CALL BEFORE YOU DIG!
1-800-632-4949
WWW.NC811.ORG

⚠2 SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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 # S-5093

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 #________

The City of Raleigh consents to the connection to its public sewer system and extensions of the private sewer collection 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 #________

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval ________
City of Raleigh Review Officer

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 # S-5093

Authorization to Construct ________

Date ________

Site Data ⚠1 ⚠2

PIN NUMBERS:	1758-45-8905, 1758-56-8976, 1758-46-7822, 1758-58-2090, 1758-48-9229
REAL ESTATE ID:	76667, 76635, 224130, 224145, 92211
CURRENT ZONING:	GC-CZ
ACREAGE IN TOTAL TRACT:	57.35 ACRES
ACREAGE IN PUBLIC R/W:	2.83 ACRES
TOTAL ACREAGE DISTURBED:	41.85 ACRES
WATERSHED:	Lower Neuse
RIVER BASIN:	Neuse
CURRENT USE:	VACANT / WOODED
PROPOSED USE(S):	NON-RESIDENTIAL/COMMERCIAL/RETAIL
LOTS IN DEVELOPMENT:	LOTS 1, 2, 3, 4, 5, 7, 8, A, B, C, D
TREE PRESERVATION AREA:	2.54 ACRES

Update Lot Names accordingly

⚠2
Rolesville
Genuine Community • Capital Connection
Est. 1837

APPROVED FOR COMPLIANCE

Case # ______ Project ______
By: ______ Date ______

These plans have been approved for compliance with the Town Code of Ordinance, LDO, and Standard Specifications and Construction Details, subject to statements & conditions hereby incorporated by reference.

EROSION AND SEDIMENT CONTROL

APPROVED PLAN
DATE______
PERMIT NO. S-______
Wake County Environmental Services
Sedimentation & Erosion Control
919-856-7400

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 08/23/17

ENVIRONMENTAL CONSULTANT SIGNATURE

COVER

WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION
Town of Rolesville Project No. CD 22-02 ⚠2
Rolesville, Wake County, North Carolina

NC License: P-1199
ARK CONSULTING GROUP, PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL SEAL 31070 ENGINEER BRYAN C. FAGUNDUS
NOT FOR CONSTRUCTION
PERMIT REVIEW ONLY
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C0.1

Date: April 1, 2022

D:\ARK DROPBOX\01 - PROJECTS\ACTIVE\CROSLAND SE\21089 - WALLBROOK SHOP CTR\D - DWG\03 - FINAL\D1219_EC - WALLBROOK_MASS_GRADE.DWG, 0.1 Cvr, Lee Christman, Tue, Jan 31, 2023 @ 4:20 PM

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants.*
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

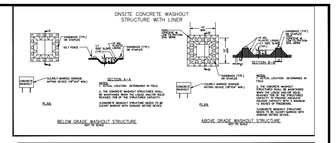
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, use an indirect-day rainfall information is available, record the cumulative rain measurement for those on-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measures, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indications of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indications of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize site and investigate has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office (per Part III, Section C, Item (f)(1)) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site

and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired waters conditions.
(b) Oil spills and release of hazardous substances per Item (1)b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)] • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

Legend

EXISTING	PROPOSED
= FOUND MONUMENT AS NOTED	
= SET IRON PIN	
= NCGS MONUMENT	
= DIMENSION POINT (NOTHING SET)	
= PROPERTY LINE	
R/W = RIGHT OF WAY	
C&G = CURB AND GUTTER	
CATV = CABLE TV PEDESTAL	
DI = DROP INLET	
ELEC = ELECTRIC BOX	
EM = ELECTRIC METER	
F/O = FIBER OPTIC	
FH = FIRE HYDRANT	
GV = GAS VALVE	
HBOX = HAND BOX	
LP = LIGHT POLE	
PP = POWER POLE	
= GUY WIRE	
RCP = REINFORCED CONCRETE PIPE	
S.F. = SQUARE FEET (AREA)	
= SIGN	
SIGNAL = TRAFFIC SIGNAL POLE	
= SANITARY SEWER MANHOLE	S
= SANITARY SEWER FORCE MAIN VALVE	
= STORM DRAIN MANHOLE	D
TEL = TELEPHONE PEDESTAL	
TRAF = TRAFFIC BOX	
WATER = WATER BOX	
WM = WATER METER	
WMH = WATER MANHOLE	
WV = WATER VALVE	
WELL = WELL	
X-WALK = PEDESTRIAN X-WALK POLE	
E = ELECTRIC LINE	
SM = SANITARY SEWER FORCE MAIN	
FO = FIBER OPTIC LINE	
G = GAS LINE	G
OHE = OVERHEAD ELECTRIC LINE	
S = SANITARY SEWER LINE	
T = TELEPHONE LINE	
TV = CABLE TV LINE	
W = WATER LINE	W
= FIRE LINE	F
= 8"ø WATER LINE	8"W
= 12"ø WATER LINE	12"W
RIP = RIPARIAN BUFFER	
= TREELINE	
50 = MAJOR CONTOUR (5')	50
= MINOR CONTOUR (1')	49
= SILT FENCE	SF
= TEMPORARY DIVERSION (TDD)	TDD
= LIMITS OF DISTURBANCE	LOD LOD
= TREE PROTECTION FENCE	TPF
= TDD DRAINAGE AREA	
= SKIMMER BASIN DRAINAGE AREA	
= STORM PIPE	
= SKIMMER OUTLET DEVICE	
= STONE CHECK DAM	
= RIPARIAN BUFFER	RIP
= ACCESS AND UTILITY EASEMENT	
= STORMWATER MAINT. EASEMENT	
= RIGHT-OF-WAY TO BE DEDICATED AS PART OF U-6241	
= PROJECT AREA	

Demolition Notes:

1. 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.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE PERMITS REQUIRED FOR DEMOLITION WORK.
3. 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.
4. 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.
5. 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.
6. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR GETS WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
7. 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.
8. 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.
9. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL, AND OSHA REGULATIONS WHEN OPERATING DEMOLITION EQUIPMENT AROUND UTILITIES.
10. 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.
11. CONTRACTOR SHALL PROTECT AT ALL TIMES ADJACENT STRUCTURES AND ITEMS FROM DAMAGE DUE TO DEMOLITION OR CONSTRUCTION ACTIVITIES.
12. CONTRACTOR SHALL REMOVE EXISTING VEGETATION AND IMPROVEMENTS WITHIN LIMITS OF DISTURBANCE UNLESS NOTED OTHERWISE.
13. TREES OUTSIDE OF CONSTRUCTION LIMITS OR TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED.

Basin Removal Sequence: ⚠

1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT NCDEQ - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE: E&SC JURISDICTION: WAKE COUNTY, WAKE COUNTY PROJECT: NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A) REASON FOR CONVERSION, B) BASIN #, C) DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. KEEP EMAIL FOR YOUR NDPES MONITORING DOCUMENTATION
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER, REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
6. WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

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***.

Erosion Control Provisions:

1. NO PERSON MAY INITIATE A LAND DISTURBING ACTIVITY BEFORE NOTIFYING WAKE COUNTY WATERSHED MANAGEMENT OF THE DATE THAT THE LAND DISTURBING ACTIVITY WILL BEGIN.
2. 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.
3. 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.
4. INSTALL TREE PROTECTION FENCING AROUND ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS SHOWN ON PLANS.
5. PROVIDE 20' X 50' X 6" STONE CONSTRUCTION ENTRANCES AS SHOWN ON PLAN.
6. 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.
7. 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.
8. THE ENGINEER RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES SHOULD THE PLAN OR ITS IMPLEMENTATION PROVE TO BE INADEQUATE.
9. 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.
10. 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.

⚠ 11. ALL AREAS DOWNSTREAM OF TEMPORARY BASINS AND DITCHES ARE TO BE STABILIZED IMMEDIATELY UPON CONSTRUCTION.

Construction Sequence:

1. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR.
2. 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.
3. ANY DEWATERING ON THE SITE SHALL BE DONE THROUGH A SILT BAG THAT IS CONSTANTLY MONITORED.
4. 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.
5. CALL WATERSHED MANAGER, JEEVAN NEUPANE FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.
6. 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.
7. AS ROUGH MASS GRADING CONTINUES, SKIMMER SEDIMENT BASINS SHALL BE MAINTAINED AND CLEANED OF SEDIMENT. GRADING OF THE BASINS CAN CONTINUE WITH TSB-1 BECOMING A FUTURE WET POND. IN THE FUTURE SITE-SPECIFIC EROSION CONTROL PHASE, SEDIMENT BASIN FOR PERMANENT USE AS WET POND (TSB-1) SHALL BE REMOVED AS FOLLOWS: DEWATER (THROUGH SILT BAG), CLEAN SEDIMENT, AND REMOVE BAFFLES. RE-SHAPE THE BASIN AS REQUIRED BY THE DESIGN DRAWINGS, INCLUDING EXCAVATION/SHAPING OF THE FOREBAY. SEED AND STABILIZE BASIN SLOPES. IN THE FUTURE SITE-SPECIFIC EROSION CONTROL PLAN 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.
8. STABILIZE STE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAME.
9. WHEN MASS GRADING IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL WATERSHED MANAGER JEEVAN NEUPANE FOR INSPECTION.
10. 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 DISSIPATERS, SHOULD NOW BE INSTALLED.
11. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE WATERSHED MANAGER, JEEVAN NEUPANE. OBTAIN CERTIFICATE OF COMPLETION.

- Final Drawing -
Issued for Permit
Review Purposes Only

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1	25-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS

REVISIONS:

CROSLAND SOUTHEAST

LEGEND AND NOTES

WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION
Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
ARK CONSULTING GROUP PLLC
ENGINEERS & LANDERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049202 BRENT C. FAGUNDUS
PERMIT REVIEWED FOR CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C0.2

Date: April 1, 2022

D:\ARK PROJECTS\PROJECTS\2021\21089 - WALLBROOK SHOP SITE\D - DWG\D1 - PLNG\D1219.DC - WALLBROOK_MASS_GRADE.DWG, 8.2 EC Notes, Lee Chrisman, Tue, Jan 31, 2023 8:42:29 PM

LEGEND

TREE PRESERVATION AREA
- SURVEY WILL BE COMPLETED FOR TREES (6" DBH MIN.) NOTING SIZE, SPECIES AND LOCATION
- SURVEY TO BE INCLUDED WITH SUBSEQUENT CONSTRUCTION DRAWING SUBMITTALS
- PRESERVATION AREA TO BE RECORDED AS PERMANENT EASEMENT ON FINAL PLAT

TREE PRESERVATION AREA AS BUFFER
- GENERAL HEALTH OF BUFFER TO BE ASSESSED BY ARBORIST WITH REPORT AND PHOTOS PROVIDED AT CONSTRUCTION DRAWING SUBMITTAL

TREE REPLACEMENT CALCULATION AREA (BUFFER AREAS TO BE CLEARED)
- REPLACEMENT RATIO = 1:1

DECIDUOUS TREE
- TO QUALIFY FOR REPLACEMENT, TREE MUST BE HEALTHY AND MEASURE AT LEAST 18" DIAMETER AT BREAST HEIGHT (DBH)
- REPLACEMENT = 2" MIN. CALIPER

EVERGREEN TREE
- TO QUALIFY FOR REPLACEMENT, TREE MUST BE HEALTHY AND MEASURE AT LEAST 20" DBH
- REPLACEMENT = 8' MIN. HEIGHT

TREE PROTECTION FENCE

Update as per new lot layout

OVERALL TREE PRESERVATION AREA ⚠2

Wallbrook + Paris + MBW	Area (SF)	Acres	
GROSS ACREAGE		69.37	
TREE PRESERVATION AREA REQUIRED		6.94	10.00%
TREE PRESERVATION AREA PROVIDED	389,426.9	8.94	12.89%
QUALIFYING REPLACEMENT DECIDUOUS			15
QUALIFYING REPLACEMENT EVERGREEN			8

TREE PRESERVATION AREA ⚠2

Wallbrook	Area (SF)	Acres	
Lot 1A (Publix)	289,488.0	6.65	
Lot 1B	100,018.8	2.30	
Lot 1C	82,590.5	1.90	
Lot 2	74,702.8	1.71	
Lot 3	47,515.5	1.09	
Lot 4	78,725.4	1.81	
Lot 5 (Boat Tract)	220,767.8	5.07	
Lot 6 (Townhomes)	876,206.2	20.11	
Lot 7	119,306.6	2.74	
Lot 8	232,868.9	5.35	
Right-of-Way (Future)	290,799.5	6.68	
WALLBROOK GROSS ACREAGE		55.39	
TREE PRESERVATION AREA	373,027.4	8.56	15.46%
QUALIFYING REPLACEMENT DECIDUOUS			12
QUALIFYING REPLACEMENT EVERGREEN			8

Paris Tract	Area (SF)	Acres	
Lot 9	86,013.5	1.97	
Lot 10	136,382.3	3.13	
Lot 11	70,406.6	1.62	
Right-of-Way (Future)	13,978.4	0.32	
PARIS TRACT GROSS ACREAGE		7.04	
TREE PRESERVATION AREA	16,399.5	0.38	5.35%
QUALIFYING REPLACEMENT DECIDUOUS			2
QUALIFYING REPLACEMENT EVERGREEN			0

MBW Tract	Area (SF)	Acres	
Lot 12	223,658.5	5.13	
Lot 13	60,807.1	1.40	
Lot 14	17,893.2	0.41	
MBW GROSS ACREAGE		6.94	
TREE PRESERVATION AREA	0.0	0.00	0.00%
QUALIFYING REPLACEMENT DECIDUOUS			1
QUALIFYING REPLACEMENT EVERGREEN			0

N.C. STATE GRID (NAD83)

LOT 1 1.40 AC
LOT 2 1.71 AC
LOT 3 1.09 AC
LOT 4 1.81 AC
LOT 1A 6.65 AC
LOT 1B 2.30 AC
LOT 1C 1.90 AC
LOT 5 5.07 AC
LOT 6 24.27 AC
LOT 7 2.74 AC
LOT 8 5.35 AC
LOT 9 1.97 AC
LOT 10 3.13 AC
LOT 11 1.62 AC
LOT 12 5.13 AC
LOT 13 1.40 AC
LOT 14 0.41 AC

TREE PRESERVATION AREA 16,399.5 SF (0.4 AC±)
CLEARED BUFFER AREA (LOTS 9-11 - PARIS TRACT) 35,075.8 SF (0.8 AC±)
CLEARED BUFFER AREA (LOTS 1-4) 69,896.7 SF (1.6 AC±)
TREE PRESERVATION AREA 23,899.2 SF (0.5 AC±)
CLEARED BUFFER AREA (LOT 5) 61,644.3 SF (1.4 AC±)
CLEARED BUFFER AREA 16,032.6 SF (0.4 AC±)
CLEARED BUFFER AREA 1,076.4 SF (0.0 AC±)
CLEARED BUFFER AREA 37,773.2 SF (0.9 AC±)
TREE PRESERVATION AREA 80,507.7 SF (1.8 AC±)
CLEARED BUFFER AREA 1,458.1 SF (0.0 AC±)
TREE PRESERVATION AREA 198,488.5 SF (4.6 AC±)
CLEARED BUFFER AREA 44,715.7 SF (1.0 AC±)
CLEARED BUFFER AREA 18,570.1 SF (0.4 AC±)
TREE PRESERVATION AREA 70,132.0 SF (1.6 AC±)
CLEARED BUFFER AREA 32,577.4 SF (0.7 AC±)

⚠1 REFER TO TOWNHOME PLANS FOR CONTINUATION OF TREE PROTECTION MEASURES
⚠2 REFER TO TOWNHOME PLANS FOR CONTINUATION OF TREE PROTECTION MEASURES

REFERENCE WALLBROOK (PR 21-04) WALLBROOK TOWNHOMES (SP 21-02) (DESIGN BY OTHERS)

REFERENCE WALLBROOK (PR 21-04) & NCDOT MAIN STREET IMPROVEMENTS (U-6241)

150' 0 75' 150'
SCALE 1 inch = 150 ft

KNOW WHAT'S BELOW CALL BEFORE YOU DIG! 1-800-632-4949 WWW.NC811.ORG

- Final Drawing -
Issued for Permit
Review Purposes Only

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	12-JAN-23	REVISED PER TOWN & WAKE COUNTY COMMENTS
1	5-DEC-22	REVISED PER TOWN & WAKE COUNTY COMMENTS

REVISIONS:

CROSLAND SOUTHEAST

TREE PRESERVATION PLAN
WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION
Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049161 — PERMIT REVIEWS ONLY — NOT FOR CONSTRUCTION — 2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C0.3

Date: April 1, 2022

- Final Drawing -
Issued for Permit
Review Purposes Only

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3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS

REVISIONS:

CROSLAND SOUTHEAST

DEMO / CLEARING PLAN

WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

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2755-B Charles Blvd
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047009 BRIAN C. FAGUNDES
PERMIT REVIEW ONLY NOT FOR CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

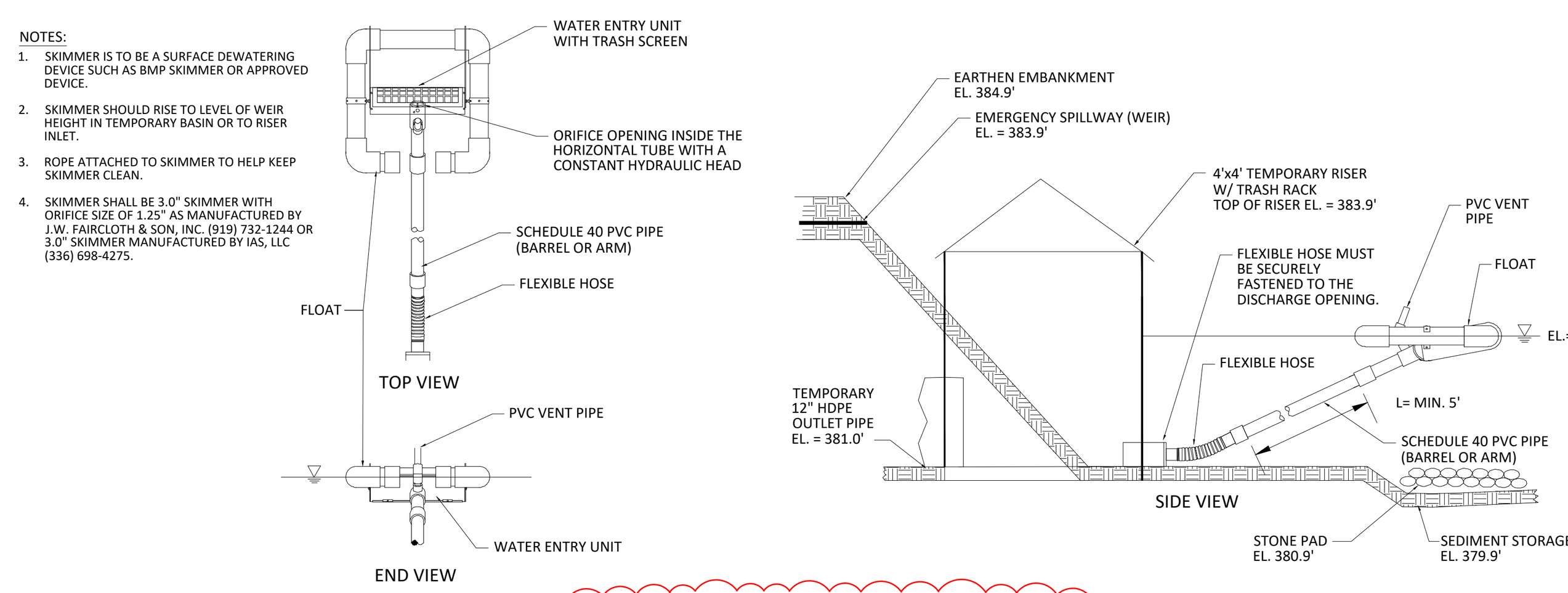
C1.0

Date: April 1, 2022

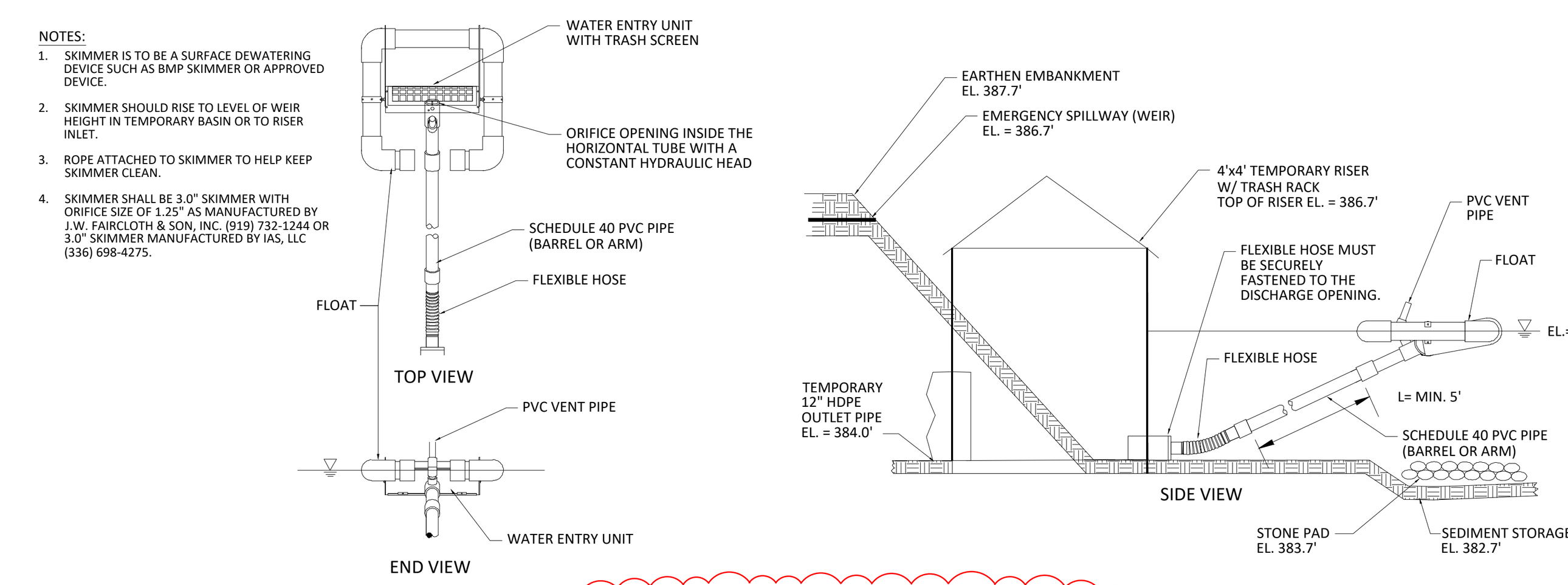
SCALE 1 inch = 100 ft (100' 0 50' 100')

KNOW WHAT'S BELOW
CALL BEFORE YOU DIG!
1-800-632-4949
WWW.NC811.ORG

G:\ARK GROUP\2021\P - PROJECTS\ACTIVE\21089 - WALLBROOK SHOP DWG\D - DWG\03 - CIVIL\D1219-EC - WALLBROOK_MASS_GRADE.DWG, 1:0 Brent_Lee Christman, Dec 20, 2022 4:29 PM



SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-1 (1) (3)
NOT TO SCALE



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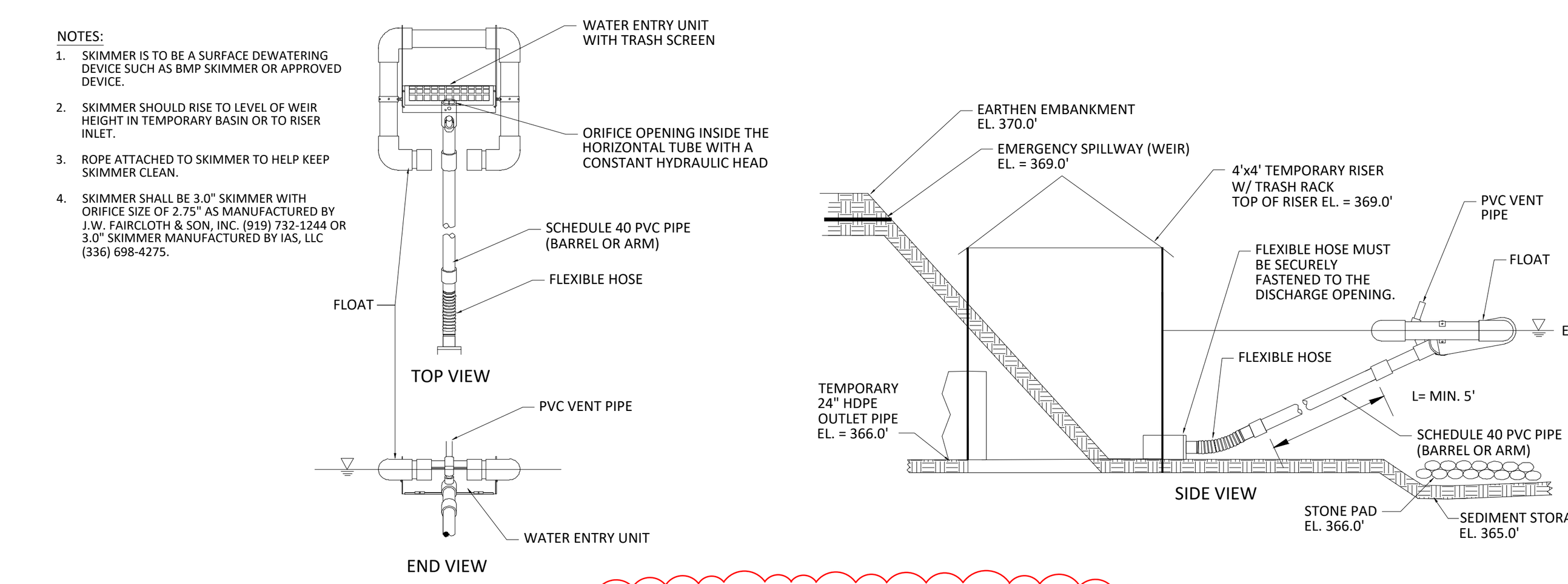
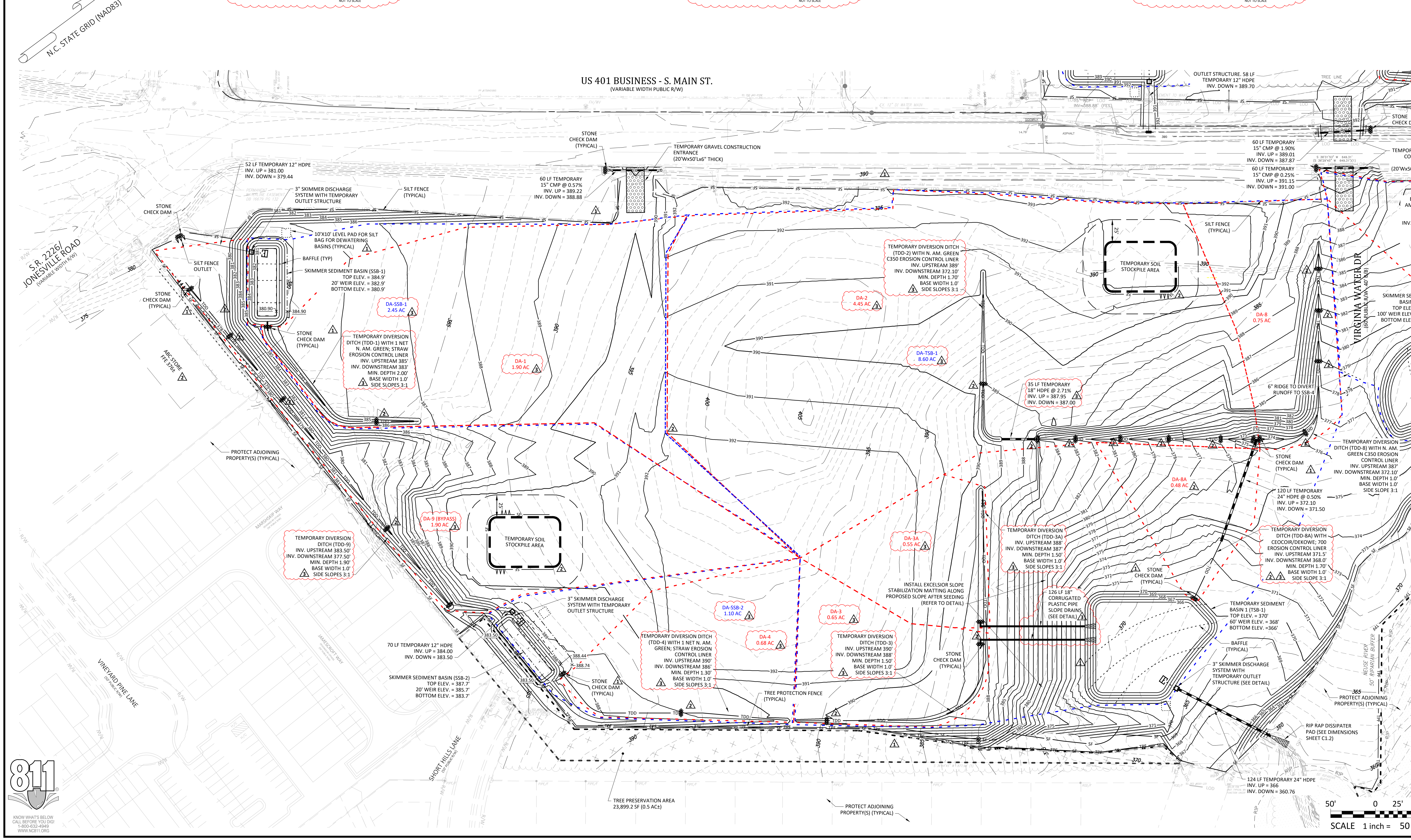
NOT TO SCALE



SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR TSB-1 (1) (3)
NOT TO SCALE



- Final Drawing -
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2	22-JUL-22	REVISED PER TOR & WAKE COUNTY COMMENTS
1	15-JUN-22	REVISED PER TOR & WAKE COUNTY COMMENTS

REVISIONS:

CROSLAND SOUTHEAST

MASS GRADING PLAN - SHOPPING CENTER (LOTS 1-4)

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
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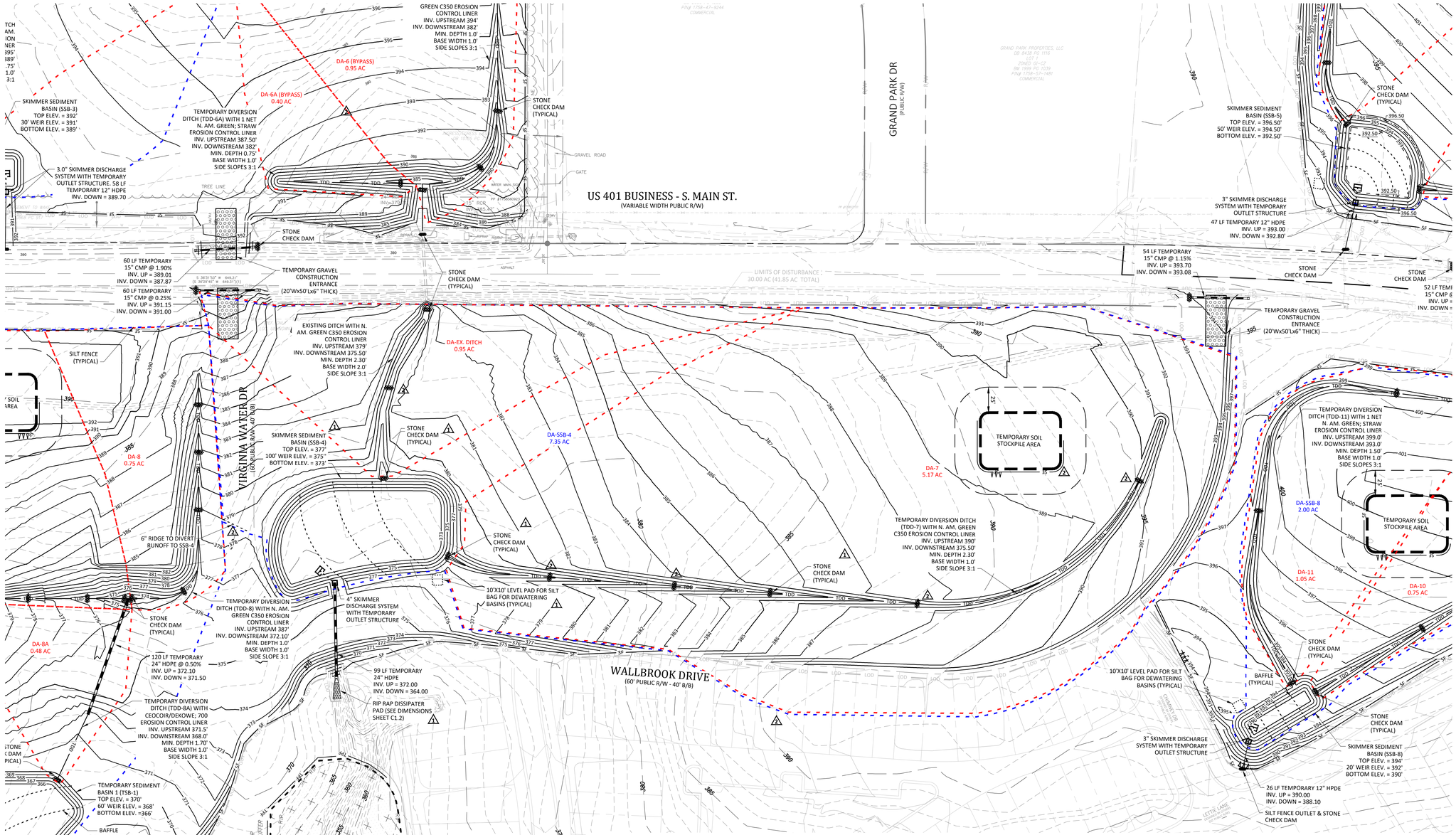
NORTH CAROLINA PROFESSIONAL ENGINEER BRYAN C. FAGUNDUS
PERMIT REVIEW ONLY NOT FOR CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

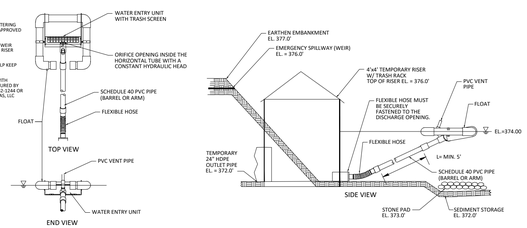
C1.1

Date: April 1, 2022

D:\ARK DROPBOX\01 - PROJECTS\ACTIVE\CROSLAND SE\21089 - WALLBROOK SHOP CTR\D - DWG\03 - FINAL\D1219_EC - WALLBROOK_MASS_GRADE.DWG, 1.1 Site, Lee Christman, Tue, Jan 31, 2023 @ 4:20 PM



NOTES:
1. SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS BMP SKIMMER OR APPROVED EQUAL.
2. SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER INLET.
3. ROPE ATTACHED TO SKIMMER TO HELP KEEP SKIMMER CLEAN.
4. SKIMMER SHALL BE 4.0" SKIMMER WITH ORIFICE SIZE OF 2.75" AS MANUFACTURED BY I.W. FARICUTH & SON, INC. (919) 732-1244 OR 4.0" SKIMMER MANUFACTURED BY IAS, LLC (336) 698-4275.



SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-4 (1)
NOT TO SCALE

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

Device	Type	Weir Width (ft)	Depth (ft)	Depth to Weir (ft)	Depth Below Weir (ft)	Side Slope (x:1)	Top Length (ft)	Top Width (ft)	Skimmer Size (in)	Orifice (in)
SSB-1	Skimmer Sediment Basin	20	0.3	1.5	2.0	3.0	99	47	3.00	1.25 (3)
TSB-1	Temporary Sediment Basin	40	0.4	1.5	2.0	3.0	187	87	3.00	2.75
SSB-2	Skimmer Sediment Basin	20	0.2	1.5	2.0	3.0	97	37	3.00	1.25
SSB-3	Skimmer Sediment Basin	30	0.3	1.5	2.0	3.0	129	49	3.00	1.50
SSB-4	Skimmer Sediment Basin	40	0.4	1.5	2.0	3.0	194	95	4.00	2.75
SSB-5	Skimmer Sediment Basin	50	0.2	1.5	2.0	3.0	134	49	3.00	1.75
SSB-6	Skimmer Sediment Basin	20	0.3	1.5	2.0	3.0	97	44	3.00	1.25
SSB-7	Skimmer Sediment Basin	10	0.2	1.5	2.0	3.0	70	32	3.00	0.75
SSB-8	Skimmer Sediment Basin	20	0.2	1.5	2.0	3.0	92	39	3.00	1.25

Rip Rap Aprons

Outlet	Pad Size (in)	Pad Entry (ft)	Pad Exit (ft)	Pad Length (ft)	Pad Depth (in)	Stone Class
TSB-1	24	4	8	16	56	6
SSB-4	24	4	8	16	86	6
Slope Drain	18	3	6	12	41	6 (3)

N.C. STATE GRID (NAD83)

50' 0 25' 50'
SCALE 1 inch = 50 ft

- Final Drawing -
Issued for Permit
Review Purposes Only

REVISIONS:

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOM & WAKE COUNTY COMMENTS
1	5-MAY-22	REVISED PER TOM & WAKE COUNTY COMMENTS

CROSLAND SOUTHEAST

MASS GRADING - WALLBROOK DRIVE / LOT 5

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

ARK CONSULTING GROUP PLLC
ENGINEERING & PLANNING
NC License: P-1199
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

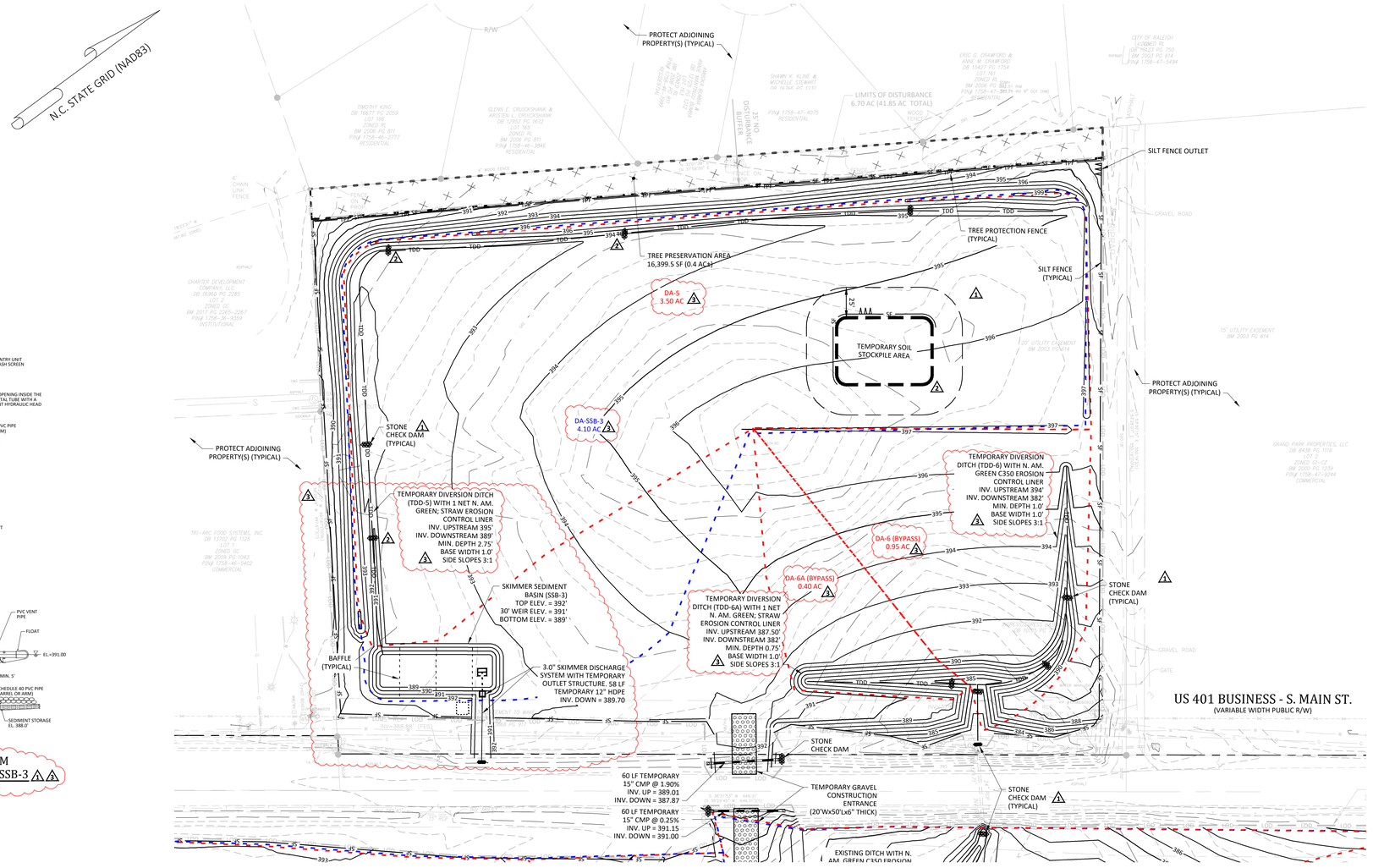
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049289 CHRISTOPHER C. FOUNDS
PERMIT REVIEW COPY NOT FOR CONSTRUCTION
2/1/2023

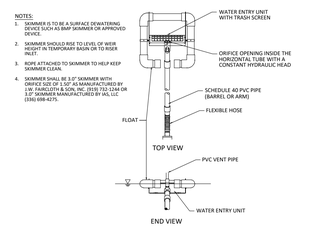
Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C1.2

Date: April 1, 2022

Device ID	Device Type	Add'l Flow (cfs)**	Disturbed Area (AC)	Tc (min)	Intensity (in/hr)*	C	Qreq (cfs)	Up Invert	Down Invert	Length (ft)	Base Width (ft)	Left Slope (x:1)	Right Slope (x:1)	Flow Depth (ft)	Manning's n	Slope (ft/ft)	Wetted Area (sf)	Wetted 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-1	Temporary Diversion	0	1.90	5	7.18	0.5	6.82	385	383	225	1	3	3	2.02	0.020	0.00889	14.28	8.23	1.73	0.48	6.82	Yes	1.12102182	N. Am. Green; Straw; 1 nets	1.55	
TDD-2	Temporary Diversion	0	4.45	5	7.18	0.5	15.98	389	372	480	1	3	3	1.68	0.020	0.03542	10.20	7.88	1.29	1.57	15.98	Yes	3.722902183	North Am. Green C350; Bare soil	3	
TDD-3	Temporary Diversion	0	0.65	5	7.18	0.5	2.33	390	387	330	1	3	3	1.39	0.020	0.00909	7.17	7.61	0.94	0.33	2.33	Yes	0.787559626			
TDD-3A	Temporary Diversion	0	0.55	5	7.18	0.5	1.97	388	387	152	1	3	3	1.46	0.020	0.00658	7.90	7.68	1.03	0.25	1.97	Yes	0.601397066			
TDD-4	Temporary Diversion	0	0.68	5	7.18	0.5	2.44	390	386	260	1	3	3	1.18	0.020	0.01538	5.33	7.44	0.72	0.46	2.44	Yes	1.129058959	N. Am. Green; Straw; 1 nets	1.55	
TDD-5	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	
TDD-6	Temporary Diversion	0	0.95	5	7.18	0.5	3.41	394	382	270	1	3	3	0.91	0.020	0.04444	3.41	7.27	0.47	1.00	3.41	Yes	2.531233515	North Am. Green C350; Bare soil	3	
TDD-6A	Temporary Diversion	0	0.40	5	7.18	0.5	1.44	387.5	382	140	1	3	3	0.70	0.020	0.03929	2.17	7.16	0.30	0.66	1.44	Yes	1.71749551	N. Am. Green; Straw; 1 nets	1.55	1
TDD-7	Temporary Diversion	0	5.17	5	7.18	0.5	18.56	389	375.5	790	1	3	3	2.28	0.020	0.01709	17.84	8.53	2.09	1.04	18.56	Yes	2.428362949	North Am. Green C350; Bare soil	3	
Ex. Ditch	Temporary Diversion	22.5	0.95	5	7.18	0.5	25.91	379	375.5	180	2	3	3	2.34	0.020	0.01944	21.15	9.61	2.20	1.23	25.91	Yes	2.842311197	North Am. Green C350; Bare soil	3	
TDD-8	Temporary Diversion	0.0	0.75	5	7.18	0.5	2.69	387	372	280	1	3	3	0.79	0.020	0.05357	2.64	7.20	0.37	1.02	2.69	Yes	2.625893726	North Am. Green C350; Bare soil	3	
TDD-8A	Temporary Diversion	18.7	0.48	5	7.18	0.5	20.39	371.5	368	72	1	3	3	1.64	0.020	0.04861	9.74	7.84	1.24	2.09	20.39	Yes	4.984271435	Geocoir/Dekowe; 700	4.46	3
TDD-9	Temporary Diversion	0.0	1.90	5	7.18	0.5	6.82	383.5	377.5	510	1	3	3	1.84	0.020	0.01176	11.95	8.03	1.49	0.57	6.82	Yes	1.347752524	N. Am. Green; Straw; 1 nets	1.55	3
TDD-10	Temporary Diversion	0.0	0.75	5	7.18	0.5	2.69	399	393	320	1	3	3	1.14	0.020	0.01875	5.01	7.42	0.68	0.54	2.69	Yes	1.329241862	N. Am. Green; Straw; 1 nets	1.55	
TDD-11	Temporary Diversion	0.0	1.05	5	7.18	0.5	3.77	399	393	475	1	3	3	1.46	0.020	0.01263	7.87	7.67	1.03	0.48	3.77	Yes	1.152416199	N. Am. Green; Straw; 1 nets	1.55	
TDD-12	Temporary Diversion	0.0	0.60	5	7.18	0.5	2.15	398	389	200	1	3	3	0.77	0.020	0.04500	2.56	7.20	0.36	0.84	2.15	Yes	2.167621783	North Am. Green C350; Bare soil	3	
TDD-13	Temporary Diversion	0.0	1.50	5	7.18	0.5	5.39	394	389	300	1	3	3	1.50	0.020	0.01667	8.27	7.71	1.07	0.65	5.39	Yes	1.56258756	N. Am. Green; Straw; 1 nets	1.55	
TDD-14	Temporary Diversion	0.0	0.65	5	7.18	0.5	2.33	393	392	70	1	3	3	1.19	0.020	0.01429	5.42	7.45	0.73	0.43	2.33	Yes	1.058984487	N. Am. Green; Straw; 1 nets	1.55	
TDD-15	Temporary Diversion	0.0	1.40	5	7.18	0.5	5.03	409	394	505	1	3	3	1.20	0.020	0.02970	5.54	7.46	0.74	0.91	5.03	Yes	2.228858608	North Am. Green C350; Bare soil	3	
TDD-16	Temporary Diversion	0.0	2.00	5	7.18	0.5	7.18	408	394	600	1	3	3	1.48	0.020	0.02333	8.03	7.69	1.04	0.89	7.18	Yes	2.151294143	North Am. Green C350; Bare soil	3	





SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-3 1 2
NOT TO SCALE

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- Final Drawing -
Issued for Permit
Review Purposes Only

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1		

REVISIONS:

CROSLAND SOUTHEAST

MASS GRADING - PARIS TRACT (LOTS 9, 10, & 11)

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1399
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

SOUTH CAROLINA PROFESSIONAL ENGINEER
PRELIMINARY PLAN REVIEW ONLY NOT FOR CONSTRUCTION
BRIAN C. FAGNANT
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C1.3

Date: April 1, 2022

N.C. STATE GRID (NAD83)

PARCEL USED FOR STAGING/LAYDOWN AREA FOR NCDOT PROJECT. REFERENCE EROSION CONTROL PLANS FOR NCDOT MAIN STREET IMPROVEMENTS (U-6241)

REFERENCE WALLBROOK (PR 21-04) & NCDOT MAIN STREET IMPROVEMENTS (U-6241)

BROTHERS FORTY-SIX, LLC
DB 13125 PG 2343
TRACT #3
BM 1983, PG. 97
PIN# 1758-48-6155
ZONED: GC-CZ
NON-RESIDENTIAL

GRAND PARK PROPERTIES, LLC
DB 8438 PG 1116
LOT 1
ZONED: GC-CZ
BM 2000 PG 1239
PIN# 1758-47-9681
COMMERCIAL

BURLINGTON MILLS RD
(REALIGNMENT)
(PUBLIC R/W & PAVEMENT VARIES)

BARRINGTON HALL DRIVE
(VARIABLE WIDTH PUBLIC R/W)

DA-16
2.00 AC

DA-SSB-5
3.80 AC

DA-15
1.40 AC

TEMPORARY DIVERSION DITCH (TDD-15) WITH N. AM. GREEN C350 EROSION CONTROL LINER
INV. UPSTREAM 409.0'
INV. DOWNSTREAM 394.0'
MIN. DEPTH 1.25'
BASE WIDTH 1.0'
SIDE SLOPES 3:1

TEMPORARY DIVERSION DITCH (TDD-16) WITH N. AM. GREEN C350 EROSION CONTROL LINER
INV. UPSTREAM 408.0'
INV. DOWNSTREAM 394.0'
MIN. DEPTH 1.50'
BASE WIDTH 1.0'
SIDE SLOPES 3:1

TEMPORARY SOIL STOCKPILE AREA

LIMITS OF DISTURBANCE
5.15 AC (41.25 AC TOTAL)

STONE CHECK DAM (TYPICAL)

PROTECT ADJOINING PROPERTY(S) (TYPICAL)

SKIMMER SEDIMENT BASIN (SSB-5)
TOP ELEV. = 396.50'
50' WEIR ELEV. = 394.50'
BOTTOM ELEV. = 392.50'

3" SKIMMER DISCHARGE SYSTEM WITH TEMPORARY OUTLET STRUCTURE
47 LF TEMPORARY 12" HDPE
INV. UP = 393.00
INV. DOWN = 392.80'

40 LF TEMPORARY 24" HDPE @ 2.50%
INV. UP = 397.00
INV. DOWN = 396.00

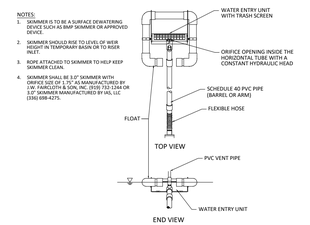
54 LF TEMPORARY 15" CMP @ 1.15%
INV. UP = 393.70
INV. DOWN = 393.08

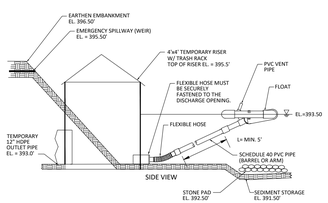
52 LF TEMPORARY 15" CMP @ 0.71%
INV. UP = 396.22
INV. DOWN = 395.85

52 LF TEMPORARY 15" CMP @ 0.21%
INV. UP = 397.05
INV. DOWN = 396.94

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE (20'Wx50'Lx6" THICK)

NOTES:
1. SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS BMP SKIMMER OR APPROVED DEVICE.
2. SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER INLET.
3. ROPE ATTACHED TO SKIMMER TO HELP KEEP SKIMMER CLEAN.
4. SKIMMER SHALL BE 3.0" SKIMMER WITH ORIFICE SIZE OF 1.75" AS MANUFACTURED BY J.W. FARCLOTH & SON, INC. (919) 732-1244 OR 3.0" SKIMMER MANUFACTURED BY WL, LLC (336) 698-4279.





SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-5

NOT TO SCALE

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50' 0 25' 50'

SCALE 1 inch = 50 ft

- Final Drawing -
Issued for Permit
Review Purposes Only

REVISIONS:

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	23-JAN-23	REVISED PER TOWN & WAKE COUNTY COMMENTS
1	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS

CROSLAND SOUTHEAST

MASS GRADING - MBW TRACT (LOTS 12, 13, & 14)

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

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2755-B Charles Blvd
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

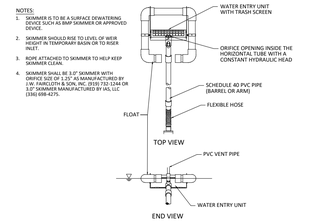
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047010 CHRISTOPHER D. LEWIS FAGUNDES
PERMIT REVIEW/CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C1.4

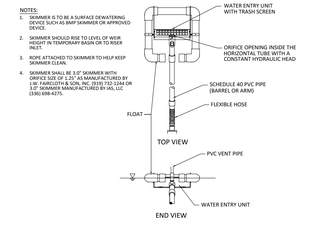
Date: April 1, 2022

G:\ARK GROUP\JOB - PROJECTS\ACTIVE\21089_MBW SFR\21089 - WALLBROOK SHOP DWG - 2022\03 - PHASE 1\21089_C1.4 (or 8-1) Lee Dinsmore, Tue, Jan 31, 2023 @ 4:29 PM



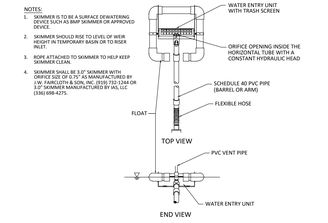
SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-8

NOT TO SCALE



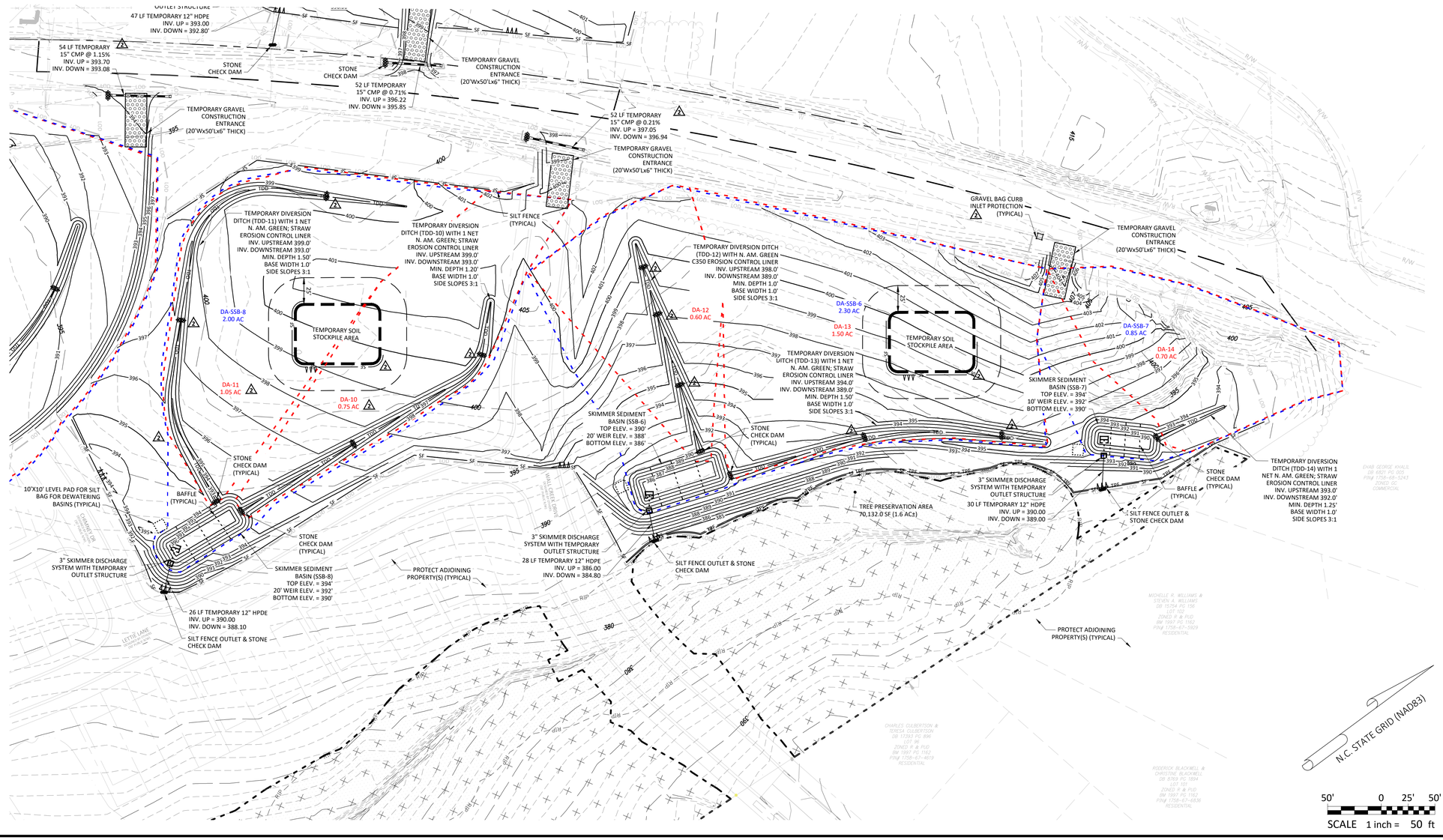
SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-6

NOT TO SCALE



SKIMMER DISCHARGE SYSTEM
WITH OUTLET STRUCTURE FOR SSB-7

NOT TO SCALE



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2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1		

REVISIONS:

CROSLAND SOUTHEAST

MASS GRADING - LOTS 7 & 8
WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
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ENGINEERS & PLANNERS
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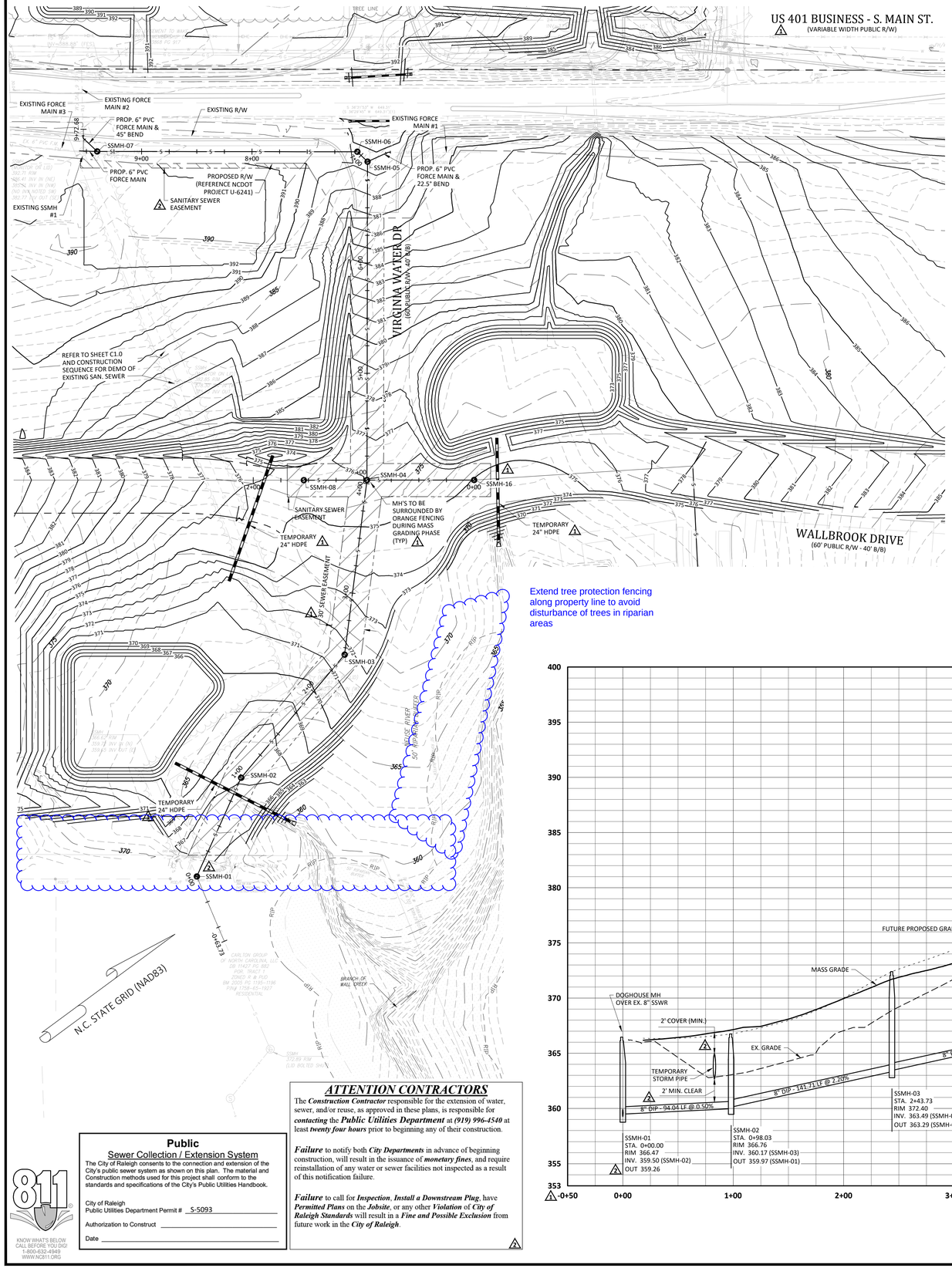
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049760 BRIAN C. FAUNDA
PERMIT REVIEW PURPOSES ONLY NOT FOR CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C1.5

Date: April 1, 2022

G:\DRK ENGROUP\P - PROJECTS\ACTIVE\21089_WALLBROOK SD\21089 - WALLBROOK SHEET SETS\D - 21089 - FINAL\21089_WALLBROOK_MASS_GRADE.DWG, 1:1 on 1" & 1:1 on 2mm/mm, Jan 31, 2023 @ 4:35 PM

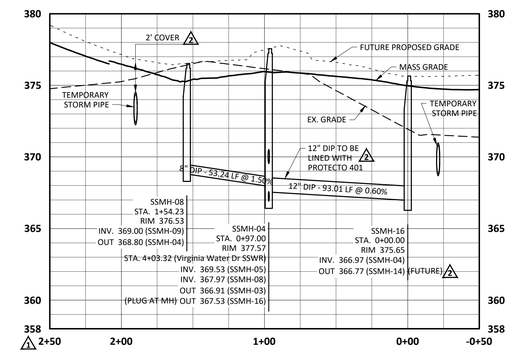


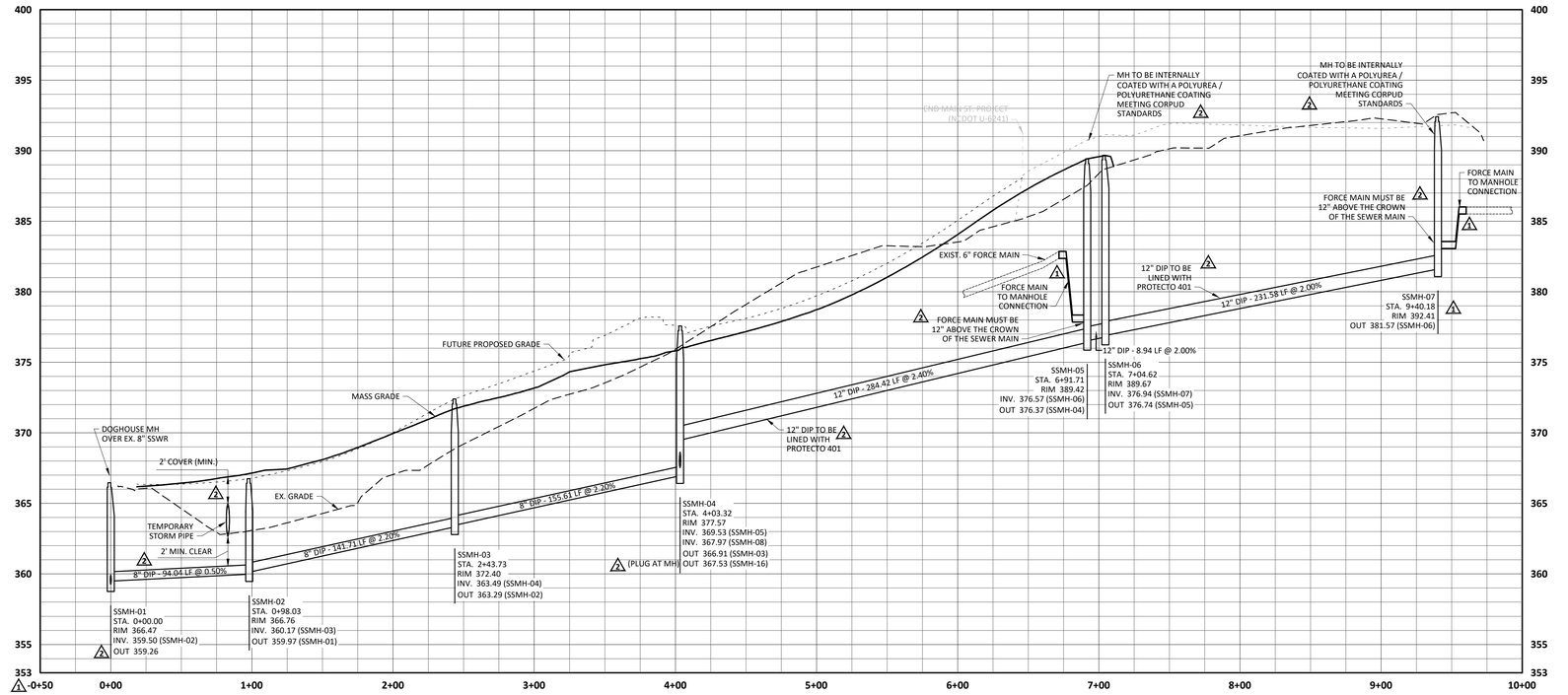
General Notes:

1. CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE-CALL CENTER, INC. (NC ONE-CALL) AT 811 TO HAVE ALL UNDERGROUND UTILITIES LOCATED AT LEAST 72 HOURS PRIOR TO EXCAVATING OR TRENCHING.
2. ALL REQUIRED IMPROVEMENTS SHALL CONFORM TO THE CITY OF RALEIGH PUBLIC UTILITIES HANDBOOK, EFFECTIVE JANUARY 21, 2014.
3. CONTRACTOR SHALL NOTIFY THE TOWN OF ROLESVILLE AND THE NC DEPARTMENT OF TRANSPORTATION, 72 HOURS PRIOR TO CLOSURE OF ROADWAY AND CUTTING PAVEMENT IN ROADWAY RIGHT-OF-WAY.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR MATERIALS TO BE USED IN THE CONSTRUCTION OF UTILITY IMPROVEMENTS. SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ORDERING MATERIALS.
5. LOCATION OF ALL EXISTING AND PROPOSED UTILITIES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH UTILITY OWNERS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO ENGINEER. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UPSTREAM. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. ALL UTILITIES AND SERVICES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
7. 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 RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO COMMENCING CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL AND STATE REGULATIONS AND CODES.
8. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH CITY OF RALEIGH REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY INSTALLATION AS IDENTIFIED OR REQUIRED FOR THE PROJECT.
9. NO SEWER SERVICE SHALL BE PROVIDED WITHIN THIS PROJECT UNTIL ALL MAINS HAVE BEEN INSTALLED AND ACCEPTED FOR MAINTENANCE BY THE CITY OF RALEIGH.

Sanitary Sewer Construction Sequence:

1. CONTRACTOR SHALL VERIFY EXISTING INVERT ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION. NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING SANITARY SEWER INSTALLATION.
2. INSTALL DOGHOUSE SSMH-1, LEAVING THE EXISTING SANITARY SEWER MAIN IN SERVICE. EXISTING MAIN SHALL NOT BE CUT UNTIL ACCEPTANCE OF NEW MAIN IN ITS ENTIRETY.
3. INSTALL NEW SANITARY SEWER MAIN FROM SSMH-1 UP TO SSMH-5. PERFORM SATISFACTORY VACUUM AND AIR TESTING OF NEW SANITARY SYSTEM BETWEEN SSMH-1 AND SSMH-5.
4. INSTALL PIPE STUB WITH CAP OUT OF SSMH-4 TOWARDS SSMH-8 AND SSMH-13. INSTALLATION OF MAIN TOWARDS SSMH-8 AND SSMH-13 SHALL NOT OCCUR UNTIL AFTER THE COMPLETION OF THE TIE-IN OF EXISTING FORCE MAIN #3 TO SSMH-7.
5. UPON COMPLETION OF SATISFACTORY VACUUM AND AIR TESTING OF NEW SANITARY SEWER BETWEEN SSMH-1 AND SSMH-5, COORDINATE WITH THE CITY OF RALEIGH TO CUT EXISTING MAIN THROUGH SSMH-5 TO FACILITATE FLOW FROM NEW SANITARY SEWER SYSTEM THROUGH SSMH-5.
6. COORDINATE WITH THE CITY OF RALEIGH TO ABANDON THE EXISTING FORCE MAIN #1 CONNECTION TO THE EXISTING SSMH-1 AND PERFORM THE TIE-IN OF THE EXISTING FORCE MAIN #1 TO SSMH-5. TIE-IN SHALL BE PERFORMED DURING A LOW-FLOW PERIOD.
7. UPON COMPLETION OF THE TIE-IN OF EXISTING FORCE MAIN #1 TO SSMH-5, REMOVE THE REMAINDER OF EXISTING FORCE MAIN #1 AND INSTALL NEW SANITARY SEWER FROM SSMH-5 UP TO SSMH-7. PERFORM SATISFACTORY VACUUM AND AIR TESTING OF NEW SANITARY SYSTEM BETWEEN SSMH-5 AND SSMH-7.
8. UPON COMPLETION OF SATISFACTORY VACUUM AND AIR TESTING OF NEW SANITARY SEWER BETWEEN SSMH-5 AND SSMH-7, COORDINATE WITH THE CITY OF RALEIGH TO CONNECT THE EXISTING FORCE MAIN #2 TO SSMH-7. TIE-IN SHALL BE PERFORMED DURING A LOW-FLOW PERIOD.
9. UPON COMPLETION OF THE TIE-IN OF EXISTING FORCE MAIN #2 TO SSMH-7, COORDINATE WITH THE CITY OF RALEIGH FOR THE REMOVAL OF THE EXISTING SSMH-1 AND PERFORM THE TIE-IN OF THE EXISTING FORCE MAIN #3 TO SSMH-7.
10. UPON COMPLETION OF THE TIE-IN OF THE EXISTING FORCE MAIN #3 TO SSMH-7, REMOVAL OF THE REMAINDER OF THE EXISTING GRAVITY SANITARY SEWER BETWEEN EXISTING SSMH-1 AND PROPOSED SSMH-5 MAY BE PERFORMED.





50' 0 25' 50'

SCALE 1 inch = 50 ft
VERT. 1 inch = 5 ft

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 # S-5093

Authorization to Construct _____

Date _____

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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.

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- Final Drawing -
Issued for Permit
Review Purposes Only

REVISIONS:

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	12-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1	4-MAY-22	REVISED PER TOWN COMMENTS

CROSLAND SOUTHEAST

PLAN/PROFILE - SANITARY SEWER RELOCATION

WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION
Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

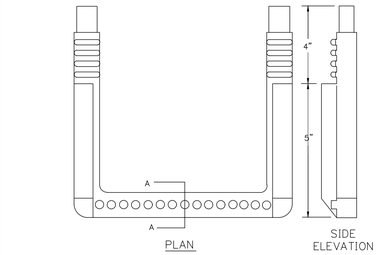
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040220 PERMIT REVIEWS ONLY NOT FOR CONSTRUCTION CODY C. FAGUNDES
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

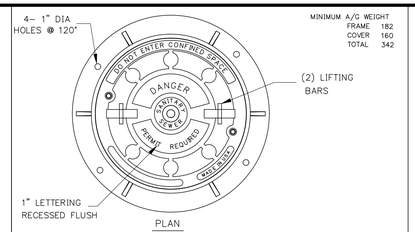
C2.0

Date: April 1, 2022

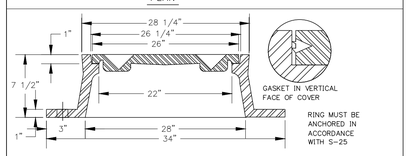
N:\Work Groups\01 - PROJECTS\21089 - 1219 Wallbrook Drive\CAD\Civil\Plan Sheets\21089 - WALLBROOK_MASS_GRADING_2.0 SS Profile_ext Division_Inc_apr 01, 2022 @ 10:27 PM

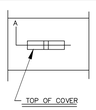


CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD SLIP RESISTANT MANHOLE STEP DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-28	RRH	3-30-00		

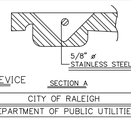


MINIMUM A/G WEIGHT
FRAME 182
COVER 160
TOTAL 342

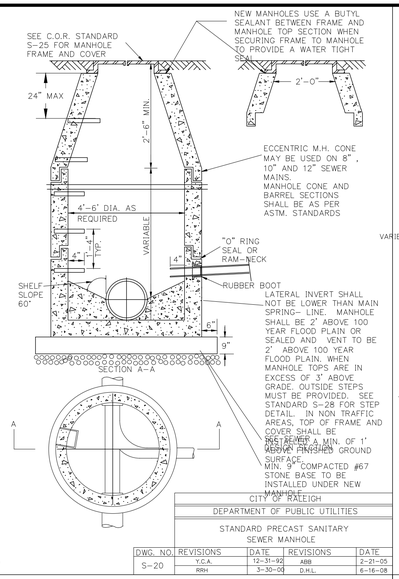




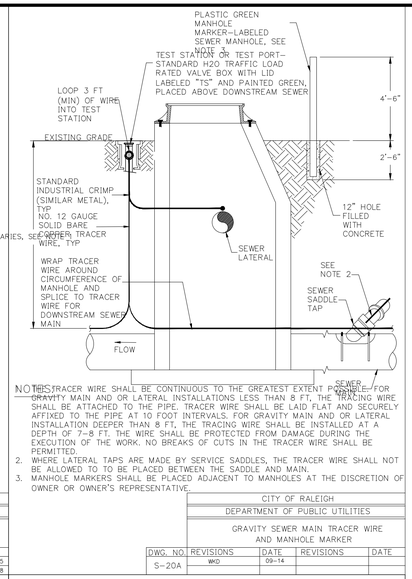
TYPICAL LIFTING DEVICE



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	8-29-05
	RRH	3-30-00	D.H.L.	6/18/08

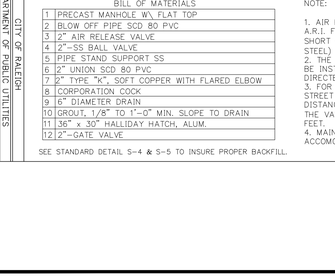


CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD PRECAST SANITARY SEWER MANHOLE				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-20	Y.C.A.	12-31-92	ABB	2-21-05
	RRH	3-30-00	D.H.L.	6-16-08

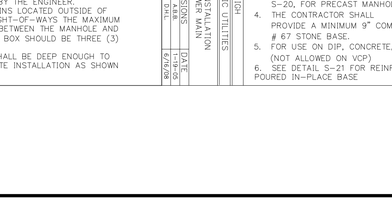


NOTES:
1. TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND OR LATERAL INSTALLATION DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7–8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED.
2. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO TO BE PLACED BETWEEN THE SADDLE AND MAIN.
3. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
GRAVITY SEWER MAIN TRACER WIRE AND MANHOLE MARKER				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-20A	WKD	09–14		

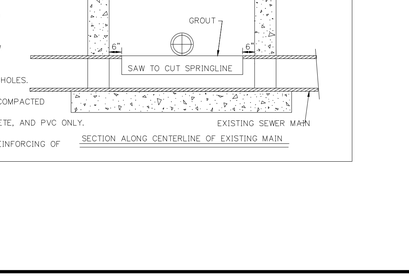


CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-29	Y.C.A.	12-31-91	ABB	9-20-04
	RRH	3-30-00	DHL	11-29-07



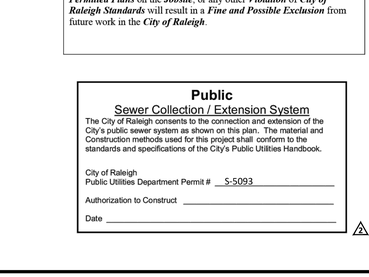
NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
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-80 AS MODIFIED BY NCDOT.
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 HAND PATCHING ALLOWED.
10. PAVEMENT CUTS WITHIN NCDOT 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.	11-1-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10



NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON–TRAFFIC AREAS.
5. ACHIEVE 90% COMPACTION IN NON–TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
6. IF IN EASEMENT 4" TOPSOIL, AND 12" CLEAN SELECT FILL MAY BE REQUIRED.
7. NO BOULDERS 8" IN DIAMETER OR GREATER ALLOWED IN FINAL BACKFILL.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-4	D.W.C.	9-3-99		
	RRH	3-30-00		



CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
CONCRETE CRADLE PROTECTION FOR SEWER LINE CROSSINGS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-49	DHL	2-20-08		

BILL OF MATERIALS

1	PRECAST MANHOLE W\ FLAT TOP
2	BLOW OFF PIPE SCD 80 PVC
3	2" AIR RELEASE VALVE
4	2"–SS BALL VALVE
5	PIPE STAND SUPPORT SS
6	2" UNION SCD 80 PVC
7	2" TYPE "K", SOFT COPPER WITH FLARED ELBOW
8	CORPORATION COCK
9	6" DIAMETER DRAIN
10	GROUT, 1/8" TO 1'–0" MIN. SLOPE TO DRAIN
11	36" x 30" HALLIDAY HATCH, ALUM.
12	2"–GATE VALVE

SEE STANDARD DETAIL S–4 & S–5 TO INSURE PROPER BACKFILL.

NOTE:
1. AIR RELEASE/VACUUM VALVE TO BE A.R.I. FLOW CONTROL MODEL SAAR SHORT VERSION D–025 SS (STAINLESS STEEL)
2. THE AIR RELEASE MANHOLE SHALL BE INSTALLED IN THE SHOULDER OR AS DIRECTED BY THE ENGINEER.
3. FOR MAINS LOCATED OUTSIDE OF STREET RIGHT–OF–WAYS THE MAXIMUM DISTANCE BETWEEN THE MANHOLE AND THE VALVE BOX SHOULD BE THREE (3) FEET.
4. MAIN SHALL BE DEEP ENOUGH TO ACCOMODATE INSTALLATION AS SHOWN

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD SEWER FORCE MAIN AIR RELEASE VALVE				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-9	Y.C.A.	2-14-92		
	RRH	3-30-00		

NOTES:
1. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
2. THIS DETAIL TO BE USED WHEN A 6" OR LARGER LATERAL NECESSITATES CONSTRUCTION OF A NEW MANHOLE.
3. SEE STANDARD DETAIL S–20, FOR PRECAST MANHOLES.
4. THE CONTRACTOR SHALL PROVIDE A MINIMUM 9" COMPACTED # 67 STONE BASE.
5. FOR USE ON DIP, CONCRETE, AND PVC ONLY. (NOT ALLOWED ON VCP)
6. SEE DETAIL S–21 FOR REINFORCING OF POURED IN–PLACE BASE

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD MANHOLE INSTALLATION OVER EXISTING SEWER MAIN				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-22	RRH	3-30-00		
	D.H.L.	6/16/08		

⚠ SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

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 # S-5093

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 #_____

The City of Raleigh consents to the connection to its public sewer system and extensions of the private sewer collection 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 #_____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____
City of Raleigh Review Officer

CORPUD Standard Utility Notes: ⚠

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK)
2. UTILITY SEPARATION REQUIREMENTS:
   a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR 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.
   b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CONNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS 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.
   c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
   d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
   e) 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 & S-49).
   f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY CORPUD PRIOR TO CONSTRUCTION.
4. 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.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. 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 SERVIC FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
7. INSTALL PVC WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
8. INSTALL PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. 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.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS PRIOR TO CONSTRUCTION.
11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. 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.
13. 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.

ATTENTION CONTRACTORS

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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 # S-5093

Authorization to Construct _____

Date _____

⚠2

- Final Drawing -
Issued for Permit
Review Purposes Only

REVISIONS:

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1		

CROSLAND SOUTHEAST

SANITARY SEWER RELOCATION - DETAILS

WALLBROOK
MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION
Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

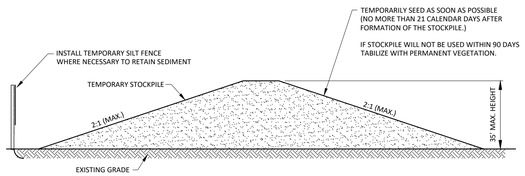
NC License: P-1199
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049010 — PERMIT REVIEWS ONLY — NOT FOR CONSTRUCTION — 2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C2.1

Date: April 1, 2022

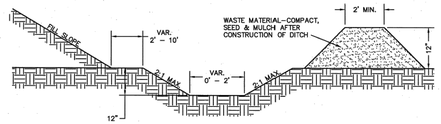


TEMPORARY STOCKPILE

NOT TO SCALE

NOTES:

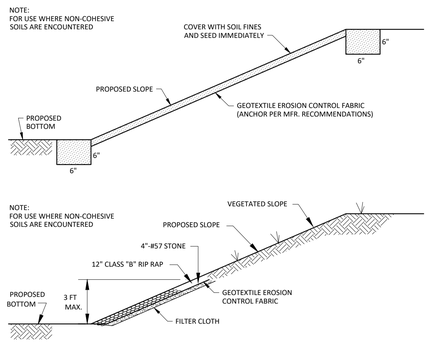
1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.



CROSS SECTIONAL VIEW

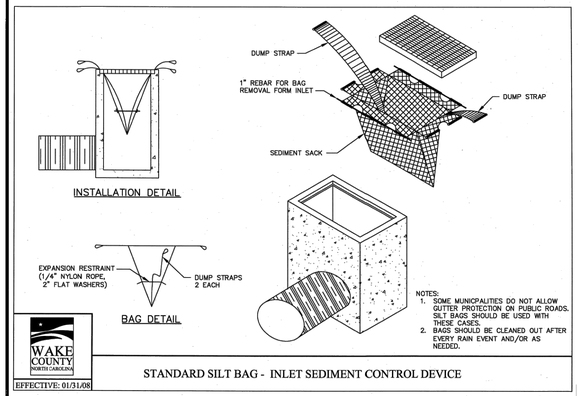
EFFECTIVE: 01/31/08

STANDARD TEMPORARY DIVERSION DITCH



GEOTEXTILE EROSION CONTROL

NOT TO SCALE

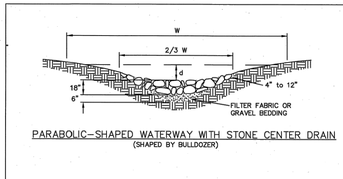


NOTES:

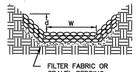
1. SOME MUNICPALITIES DO NOT ALLOW GUTTER PROTECTION ON PUBLIC ROADS. SILT BAGS SHOULD BE USED WITH THESE CASES.
2. BAGS SHOULD BE CLEANED OUT AFTER EVERY RAIN EVENT AND/OR AS NEEDED.

EFFECTIVE: 01/31/08

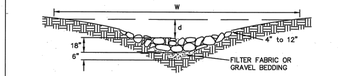
STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



PARABOLIC–SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY BULLDOZER)



TRAPEZOIDAL



V–SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY MOTOR GRADER)

NOTES:

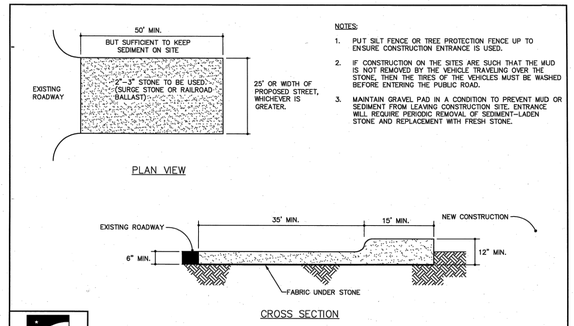
–TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS.

–SIZE OF STONE MUST BE DETERMINED BY APPROPRIATE DESIGN PROCEDURE.

–DIMENSIONS FOR d & W VARIES ACCORDING TO DESIGN.

EFFECTIVE: 01/31/08

STANDARD RIP-RAP LINED CHANNELS



PLAN VIEW

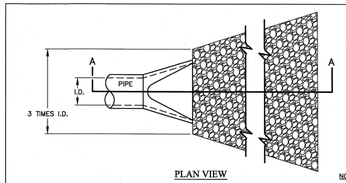
NOTES:

1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT–LADEN STONE AND REPLACEMENT WITH FRESH STONE.

CROSS SECTION

EFFECTIVE: 01/31/08

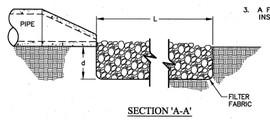
STANDARD CONSTRUCTION ENTRANCE



PLAN VIEW

NOTES:

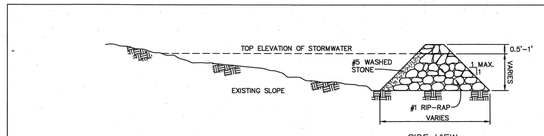
1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.



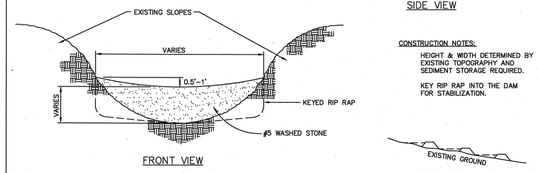
SECTION 'A-A'

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



SIDE VIEW



FRONT VIEW

CONSTRUCTION NOTES:

HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.

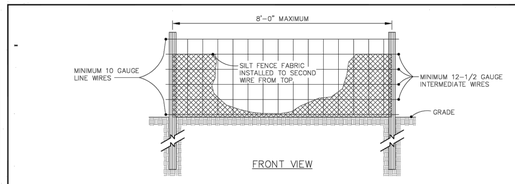
KEY RIP RAP INTO THE DAM FOR STABILIZATION.

STEP SEQUENCE

NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

EFFECTIVE: 01/31/08

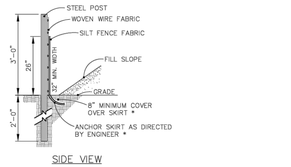
STANDARD CHECK DAM



FRONT VIEW

NOTE:

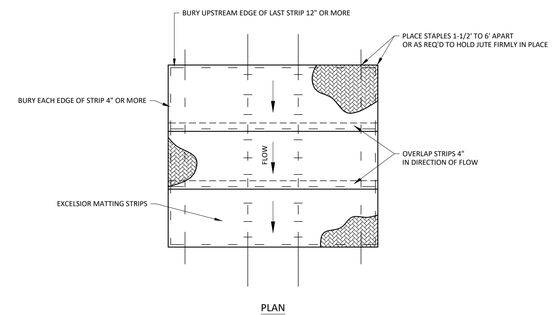
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.



SIDE VIEW

EFFECTIVE: 01/31/08

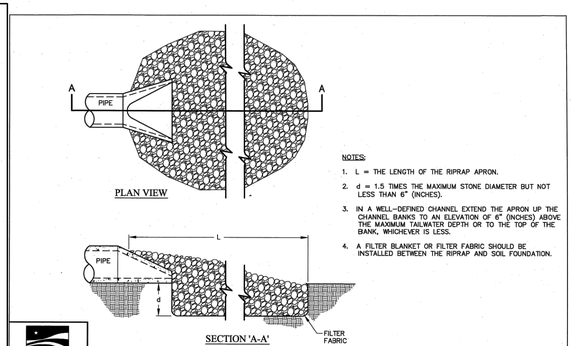
STANDARD TEMPORARY SILT FENCE



PLAN

SLOPE STABILIZATION WITH EXCELSIOR MATTING

NOT TO SCALE



PLAN VIEW

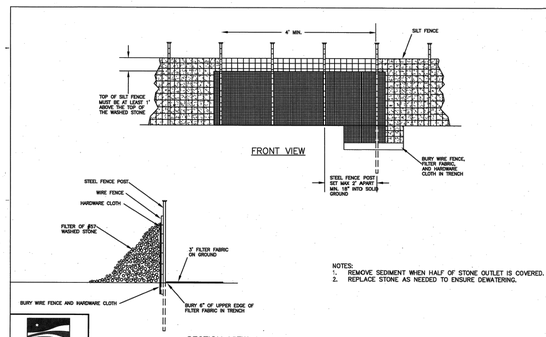
NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL–DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

SECTION 'A-A'

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL



SECTION VIEW

NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET

WAKE COUNTY NORTH CAROLINA
Environmental Services
Sedimentation & Erosion Control
336-Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
ph: 919.856.7300
fax: 919.743.6720

Effective September 1, 2008
Soil stockpiles shall be located on the approved plan and shall adhere to the following requirements:

Design Criteria

a. A 25-foot temporary maintenance and access easement shall be shown around all proposed stockpiles (erosion control measures surrounding the stockpile shall be shown at the outer limit of this easement).
b. Stockpile footprints shall be setback a minimum of 25' from adjacent property lines.
c. A note shall be provided on the approved plan that stockpile height shall not exceed 35 feet.
d. Stockpile slopes shall be 2:1 or flatter.
e. Approved BMPs shall be shown on a plan to control any potential sediment loss from a stockpile.
f. Stockpiling materials adjacent to a ditch, drainageway, watercourse, wetland, stream buffer, or other body of water shall be avoided unless an alternative location is demonstrated to be unavailable.
g. Any concentrated flow likely to affect the stockpile shall be diverted to an approved BMP.
h. Off-site spoil or borrow areas must be in compliance with Wake County UDO and State Regulations. All spoil areas over an acre are required to have an approved sediment control plan. Developer/Contractor shall notify Wake County of any offsite disposal of soil, prior to disposal. Fill of FEMA Floodways and Non-encroachment Areas are prohibited except as otherwise provided by subsection 14-19-2 of the Wake County Unified Development Ordinance (certifications and permits required).

Maintenance Requirements to be Noted on the Plan

i. Seeding or covering stockpiles with tarps or mulch is required and will reduce erosion problems. Tarps should be keyed in at the top of the slope to keep water from running underneath the plastic.
j. If a stockpile is to remain for future use after the project is complete (builders, etc.), the financial responsible party must notify Wake County of a new responsible party for that stockpile.
k. The approved plan shall provide for the use of staged seeding and mulching on a continual basis while the stockpile is in use.
l. Establish and maintain a vegetative buffer at the toe of the slope (where practical).

Seeding Specifications

NPDES Stormwater Discharge Permit for Construction Activities (NCGO1 - 4/1/19)
NCDEQ/Division of Energy, Mineral and Land Resources

SECTION II: GROUND STABILIZATION			
	Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance		Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7		None
(b) High Quality Water (HQW) Zones	7		None
(c) Slopes steeper than 3:1	7		If slopes are 10' or less in length and are not steeper than 2:1, 14 day/Falls Lake Rule
(d) Slopes 3:1 to 4:1	14		7 days for slopes greater than 50' in length and with ditches steeper than 4:1 14 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14		7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones 10 days for Falls Lake Watershed unless there is zero slope

Note: after the permanent cessation of construction activities, areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Provisions shall be made to effectively accomplish stabilization prior to the next planting season if permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION	
Unless the ground sufficiently to limit erosion, the following ground stabilization techniques (if the table below:	
Temporary Stabilization	Permanent Stabilization
• Erosion control blankets and turf reinforcement mats with straw or other mulches and tackifiers • Hydroseeding • Mulches and mulch control products with or without temporary grass seed • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Hydroseeding with grass seed and rolled erosion control matting • Appropriate permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

Seedbed Preparation:

1. Chisel compacted areas and spread topsoil three inches deep over adverse soil conditions, if available.
2. Rip the entire area to six inches deep.
3. Remove all loose rock, roots and other obstructions, leaving surface reasonably smooth and uniform.
4. Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see mixture below).
5. Continue tillage until a well-pulverized, firm, reasonably uniform seedbed is prepared four to six inches deep.
6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
7. Mulch immediately after seeding and anchor mulch.
8. Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be more than 60% damaged, re-establish following the original lime, fertilizer and seeding rates.
9. Consult Wake County Soil & Water or NC State Cooperative Extension on maintenance treatment and fertilization after permanent cover is established.

Mixture

Agricultural Limestone	2 tons/acre (3 tons/acre in clay soils)
Fertilizer	1,000 lbs/acre – 10-10-10
Superphosphate	500 lbs/acre – 20% analysis
Mulch	2 tons/acre – small grain straw
Anchor	Asphalt emulsion at 400 gals/acre

Seeding Schedule

For Shoulders, Side Ditches, Slopes (Max 3:1):

Date	Type	Planting Rate
Aug 15– Nov 1	Tall Fescue	300 lbs/acre
Nov 1– Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
Mar 1– Apr 15	Tall Fescue	300 lbs/acre
Apr 15– Jun 30	Hulled Common Bermudagrass	25 lbs/acre
Jul 1– Aug 15	Tall Fescue AND Browntop Millet or Sorghum-Sudan Hybrids***	125 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum-Sudan Hybrids)

For Shoulders, Side Ditches, Slopes (3:1 to 2:1):

Date	Type	Planting Rate
Mar 1– Jun 1	Sericea Lespedeza (scarified) and use the following combinations:	50 lbs/acre (Sericea Lespedeza);
Mar 1– Apr 15	Add Tall Fescue	120 lbs/acre
Mar 1– Jun 30	Or add Weeping Love grass	10 lbs/acre
Mar 1– Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
Jun 1– Sept 1	Tall Fescue AND Browntop Mullet or Sorghum-Sudan Hybrids***	120 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Mullet); 30 lbs/acre (Sorghum-Sudan Hybrids)
Sept 1– Mar 1	Sericea Lespedeza (unhulled – unscarified) AND Tall Fescue	70 lbs/acre (Sericea Lespedeza); 120 lbs/acre (Tall Fescue)
Nov 1– Mar 1	AND Abruzzi Rye	25 lbs/acre

Consult Wake County Soil & Water Conservation District or NC State Cooperative Extension for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those that do well under local conditions; other seeding rate combinations are possible.

*** **TEMPORARY**: Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow more than 12" in height before mowing; otherwise, fescue may be shaded out.

- Final Drawing -
Issued for Permit
Review Purposes Only

#	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1		

REVISIONS:

CROSLAND SOUTHEAST

EROSION CONTROL DETAILS

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

NC License: P-1199
ARK CONSULTING GROUP PLLC
ENGINEERS & PLANNERS
2755-B Charles Blvd.
Greenville, NC 27858
(252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047090 — PERMIT REVIEWED FOR CONSTRUCTION — NOT FOR CONSTRUCTION — 2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C3.1

Date: April 1, 2022

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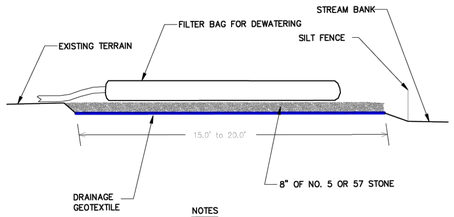


NOTES

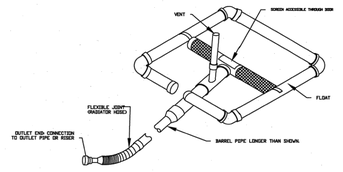
PROVIDE STABILIZED OUTLET TO STREAM BANK. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

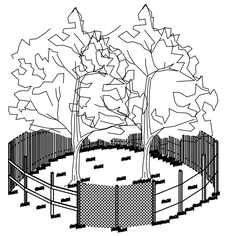
STANDARD FILTER BAG FOR DEWATERING ACTIVITIES



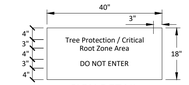
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER DETAIL

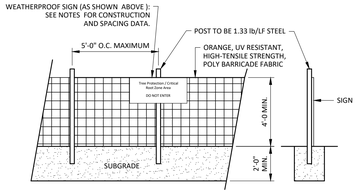


NOTES:
1. SIGNS ARE TO BE PLACED NO GREATER THAN 200' ON CENTER. PLACE SIGN AT EACH END OF LINEAR TREE PROTECTION AREA AND 200' ON CENTER THEREAFTER.
2. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
3. ATTACH SIGNS SECURELY TO FENCE POSTS AND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



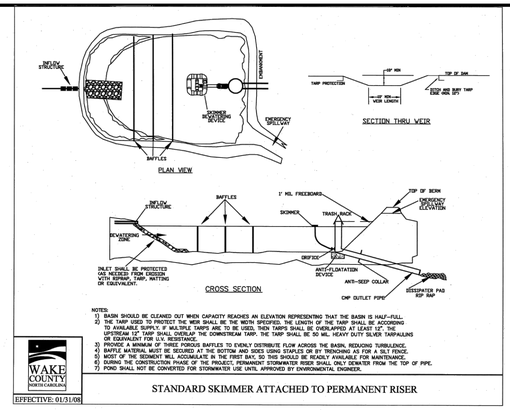
SIGN DETAIL

NTS



⚠ TREE PROTECTION FENCE

NOT TO SCALE

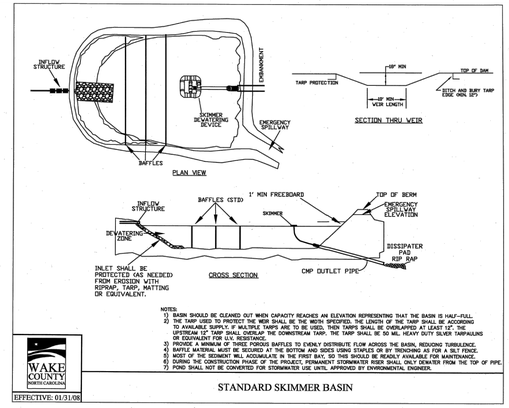


NOTES:
1) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
2) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 60 MIL HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT.
3) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
4) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
5) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
6) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
7) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER ATTACHED TO PERMANENT RISER



NOTES:
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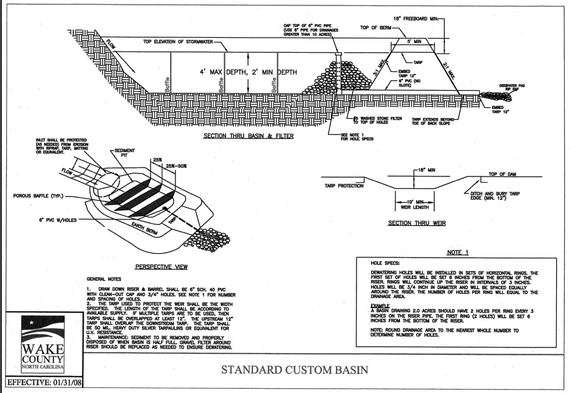
3) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
4) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
5) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
6) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
7) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER BASIN



GENERAL NOTES

1. DRAW DOWN RISER & BARREL SHALL BE 6" SCH. 40 PVC WITH CLEAN-OUT CAP AND 3/4" HOLES. SEE NOTE 1 FOR NUMBER AND SPACING.
2. THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 60 MIL HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
3. MAINTENANCE: SEDIMENT TO BE REMOVED AND PROPERLY DISPOSED OF WHEN BASIN IS HALF FULL. GRAVEL FILTER AROUND RISER SHOULD BE REPLACED AS NEEDED TO ENSURE DEWATERING.

NOTE 1

HOLE SPECS:
DEWATERING HOLES WILL BE INSTALLED IN SETS OF HORIZONTAL RINGS. THE FIRST RING (2 HOLES) WILL BE SET 6 INCHES FROM THE BOTTOM OF THE RISER. RINGS WILL CONTINUE UP THE RISER IN INTERVALS OF 3 INCHES. HOLES WILL BE 3/4 INCH IN DIAMETER AND WILL BE SPACED EQUALLY TO THE RISER CIRCUMFERENCE. THE NUMBER OF HOLES PER RING WILL EQUAL TO THE ORDINAL VALUE.

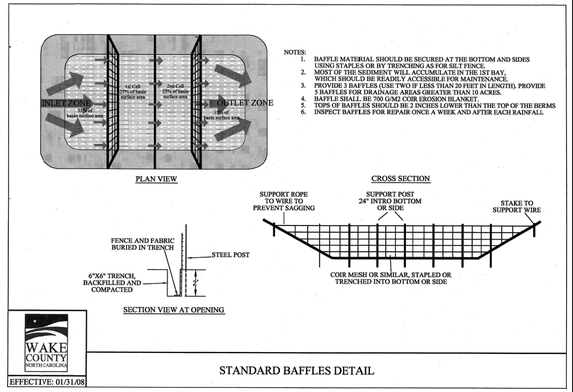
EXAMPLE:
A BASIN DRAINING 2.0 ACRES SHOULD HAVE 2 HOLES PER RING EVERY 3 INCHES ON THE RISER PIPE. THE FIRST RING (2 HOLES) WILL BE SET 6 INCHES FROM THE BOTTOM OF THE RISER.

NOTE: ROUND DRAINAGE AREA TO THE NEAREST WHOLE NUMBER TO DETERMINE NUMBER OF HOLES.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD CUSTOM BASIN



NOTES:
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 GSM3 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS
6. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL

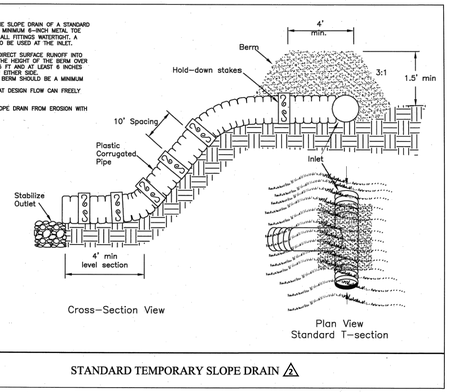
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD BAFFLES DETAIL

NOTES:

1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE. THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
3. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SLOPE DRAIN ⚠

- Final Drawing -
Issued for Permit
Review Purposes Only

NO.	DATE	DESCRIPTION
3	1-FEB-23	REVISED PER OWNER COMMENTS
2	15-JUN-22	REVISED PER TOWN & WAKE COUNTY COMMENTS
1		

REVISIONS:

CROSLAND SOUTHEAST

EROSION CONTROL DETAILS

WALLBROOK

MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION

Town of Rolesville Project No. CD 22-02
Rolesville, Wake County, North Carolina

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047010 BRANDON C. FAGUNDES
PERMIT REVIEW ONLY NOT FOR CONSTRUCTION
2/1/2023

Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

C3.2

Date: April 1, 2022

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