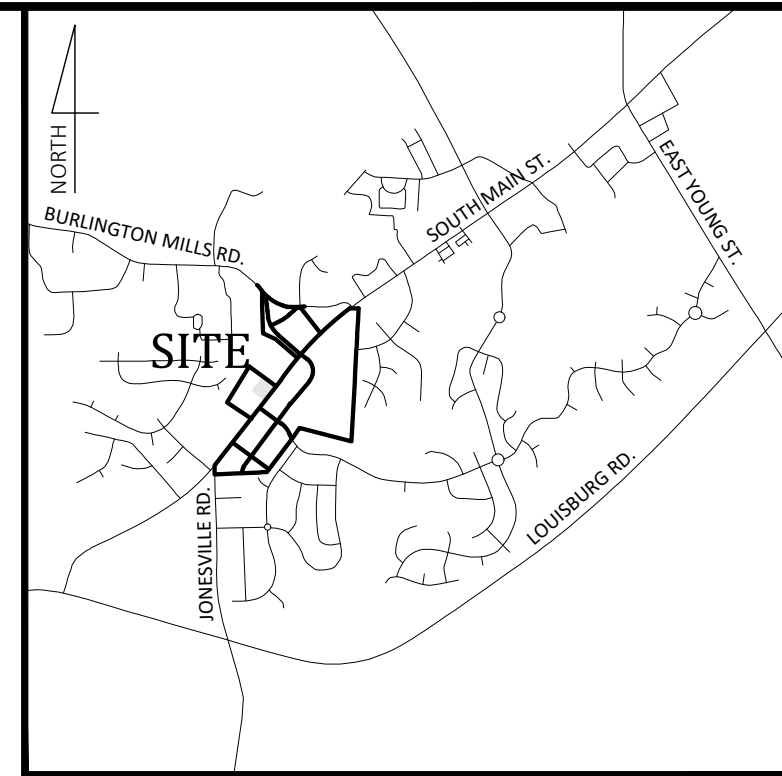


WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

CONSTRUCTION INFRASTRUCTURE DRAWING - CID 23-04

US-401 Business / S. Main Street ~ Town of Rolesville ~ Wake County ~ North Carolina



Vicinity Map

#	DATE	DESCRIPTION
1	1-MAY-23	ISSUED FOR PERMIT REVIEW
2	1-JUNE-23	REVISED PER TOR REVIEW & OWNER COMMENTS
3	1-MAR-24	REVISED PER REVIEW & OWNER COMMENTS
4	2-MAY-24	REVISED PER REVIEW & OWNER COMMENTS
5	13-SEP-24	REVISED PER REVIEW & OWNER COMMENTS
6	22-NOV-24	REVISED PER WAKE CO. REVIEW COMMENTS
7	20-FEB-25	REVISED PER WAKE CO. REVIEW COMMENTS
8	1-APR-25	REVISED PER WAKE CO. REVIEW COMMENTS
9	9-JUN-25	APPROVED - SIGNATURE SET



COVER - OVERALL PLAN

WALLBROOK ROADWAY IMPROVEMENTS
VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Rolesville Project No. CID 23-04
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina


ARK CONSULTING GROUP, PLLC
 ENGINEERS & SURVEYORS
 NC License P-1191
 93.54 Conference Dr.
 Greenville, NC 27858
 (252) 558-0888
www.arkconsultinggroup.com
 6/9/2025

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

C0.1

Date:	May 1, 2023
-------	-------------

Legend

EXISTING	PROPOSED
----------	----------

● = FOUND MONUMENT AS NOTED
 ○ = SET IRON PIN
 △ = NCOS MONUMENT
 * = DIMENSION POINT (NOTHING SET)
 P = PROPERTY LINE
 R/W = RIGHT OF WAY
 C&G = CURB AND GUTTER
 C&W = CABLE TV PEDESTAL
 CATV =
 DI = DROP INLET
 ELEC = ELECTRIC BOX
 EM = ELECTRIC METER
 F/O = FIBER OPTIC
 FH = FIRE HYDRANT
 GV = GAS VALVE
 HAND = HAND BOX
 LP = LIGHT POLE
 PP = POWER POLE
 GUY = GUY WIRE
 RCP = REINFORCED CONCRETE PIPE
 S.F. = SQUARE FEET (AREA)
 SIGN =
 SIGNAL =
 SS =
 ST =
 TEL =
 TRAP =
 WATER =
 WM = WATER METER
 WMH = WATER MANHOLE
 WV = WATER VALVE
 WELL =
 X-WALK =
 E =
 IN =
 FO =
 G =
 ONE =
 S =
 T =
 W =
 RIP =
 50 =
 TFE =
 MAJOR CONTOUR (5')
 MINOR CONTOUR (1')
 TREE PROTECTION FENCE
 SILT FENCE
 CONCRETE SIDEWALK
 ACCESS AND UTILITY EASEMENT
 TREE PRESERVATION AREA
 OPEN SPACE AREA
 TDD DRAINAGE AREA
 SKIMMER BASIN DRAINAGE AREA

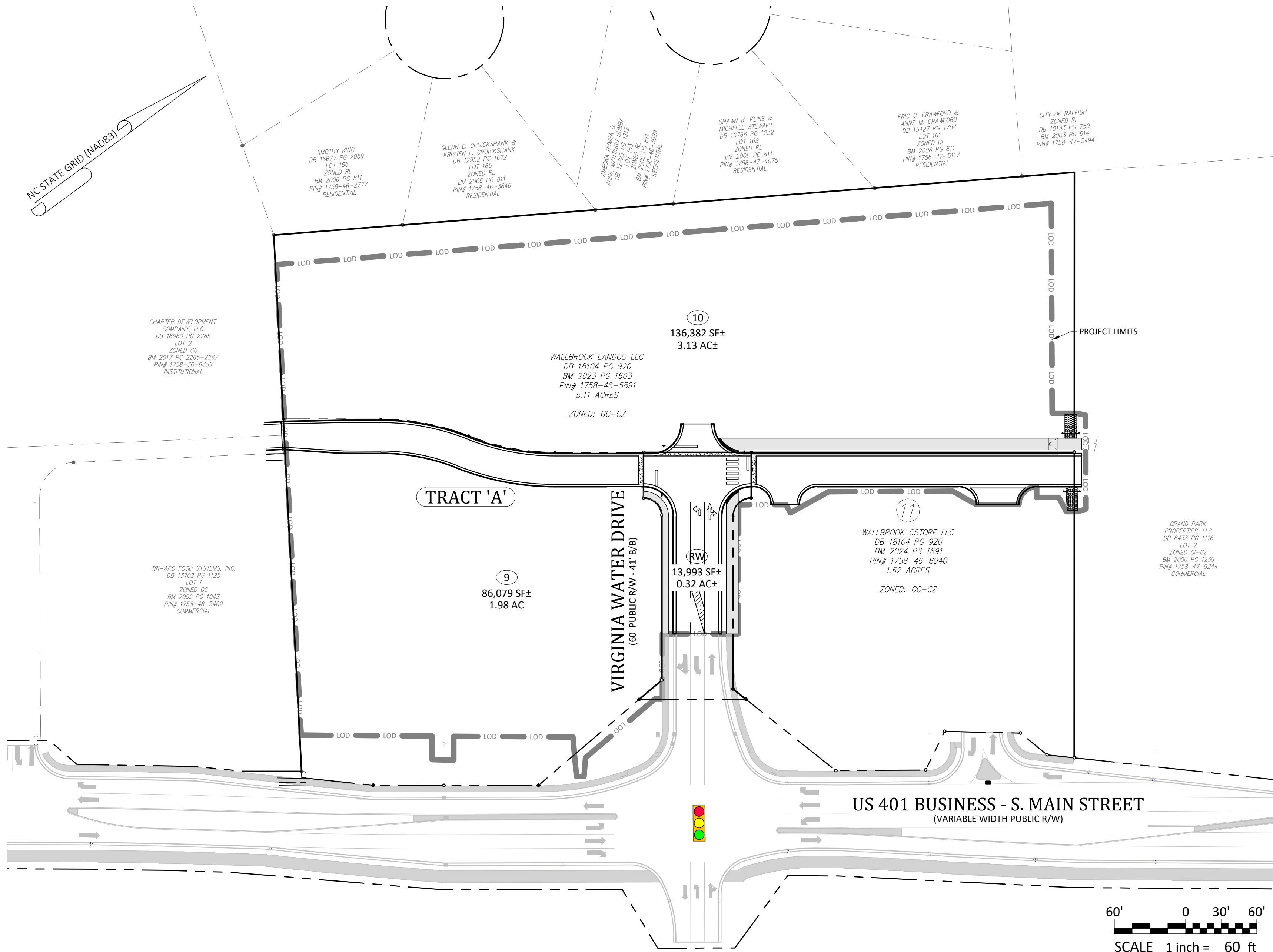
Abbreviations \triangle_5

BC	BACK OF CURB
TC	TOP OF CONCRETE
TA	TOP OF ASPHALT
TW	TOP OF WALL
BW	BOTTOM OF WALL
PG	PROPOSED GRADE/GROUND
FP	FIRST POUR
CB	CATCH BASIN
DI	DROP INLET
INV	INVERT

CB	CATCH BASIN
DI	DROP INLET
INV	INVERT

General Notes:

- | | | | |
|----|---|-----|---|
| 1. | CONTACT NORTH CAROLINA ONE-CALL CENTER, INC. (NC ONE-CALL) AT 811 TO HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO EXCAVATING OR TRENCHING. | 11. | NCDOT DRIVEWAY PERMIT APPROVAL IS COMPLETED FOR THIS PROJECT. REFERENCE NCDOT PERMIT NUMBER D051-0922-00049. |
| 2. | ALL REQUIRED IMPROVEMENTS SHALL CONFORM TO THE TOWN OF ROLESVILLE LAND DEVELOPMENT ORDINANCE AND THE TOWN OF ROLESVILLE DEVELOPMENT STANDARDS. | 12. | REFUSE COLLECTION SHALL BE PROVIDED BY PRIVATE SERVICE FOR COMMERCIAL DEVELOPMENT. |
| 3. | STREET LIGHTING SHALL NOTIFY NCDOT AND THE LOCAL ELECTRIC UTILITY AGENCIES. STREET MAINTENANCE DIVISION 48 HOURS PRIOR TO MAKING CONNECTIONS TO EXISTING STORM DRAINS LOCATED WITHIN PUBLIC STORM DRAINAGE EASEMENTS OR RIGHT-OF-WAY. | 13. | ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED. |
| 4. | THIS PROPERTY IS LOCATED WITHIN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM RATE MAP (FIRM 17201-15800C, EFFECTIVE DATE JULY 1, 2022). | 14. | SITE SHALL MEET ALL RELATED ACCESSIBILITY CODE REQUIREMENTS. |
| 5. | EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE AND MAY NOT INCLUDE ALL 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 WORK FOR THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. | 15. | BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION SHOWN HEREON WAS PREPARED BY JOHNSON, MIRMIRAN & THOMPSON. REFERENCE IS MADE TO THE SURVEY ENTITLED ALTA/NPS LAND TITLE SURVEY PREPARED FOR WALLBROOK LANDCO, LLC DATED 3/28/2002, AND ATTACHED TO THIS DRAWING SET FOR REFERENCE. |
| 6. | ELECTRIC AND TELEPHONE UTILITIES SHALL BE INSTALLED UNDERGROUND. | 16. | UNDERGROUND UTILITIES PLOTTED IN PART FROM ACTUAL FIELD LOCATION OF ABOVE GROUND FEATURES AND IN PART FROM MAPS ON RECORD. ACTUAL LOCATIONS MAY VARY. SURVEYOR AND ENGINEER CANNEED ADJUSTMENTS TO THE INFORMATION ON RECORD. DATA, OTHER UTILITIES MAY EXIST. CONTRACTOR SHOULD CONTACT NORTH CAROLINA ONE-CALL CENTER (NC ONE-CALL) BY DIALING 811 TO HAVE UNDERGROUND UTILITIES LOCATED PRIOR TO EXCAVATING OR TRENCHING. |
| 7. | REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS. | 17. | THE ENGINEER MAKES NO GUARANTEE THAT THE UTILITIES SHOWN ARE COMPRISED OF ALL SUCH UTILITIES IN THE AREA OF SURVEY EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE ENGINEER DOES HEREBY CERTIFY THAT ALL UTILITIES ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE ENGINEER HAS NOT PHYSICALLY UNCOVERED AND LOCATED ANY UNDERGROUND UTILITIES. |
| 8. | THIS PROJECT DISTURBS MORE THAN 1/2 ACRE FOR PURPOSES OF A COMMERCIAL DEVELOPMENT. PROJECT IS SUBJECT TO THE TOWN OF ROLESVILLE STORMWATER MANAGEMENT ORDINANCE. STORMWATER MANAGEMENT PLAN APPROVAL BY THE TOWN OF ROLESVILLE IS REQUIRED. | | |
| 9. | THIS PROJECT DISTURBS MORE THAN 1 ACRE. EROSION & SEDIMENTATION CONTROL PLAN APPROVAL IS REQUIRED. | | |



Site Data

WAKE COUNTY PIN:	1758-46-5891
REAL ESTATE ID:	224130
CURRENT ZONING:	GC-CZ
TOTAL ACREAGE IN SITE:	5.42 AC
ACREAGE IN PROJECT LIMITS:	5.04 AC
ACREAGE IN PUBLIC R/W:	0.32 AC
TOTAL DISTURBED ACREAGE:	5.05 AC
LINEAR FEET IN PUBLIC STREETS:	138 LF
WATERSHED:	Lower Neuse
RIVER BASIN:	Neuse
CURRENT USE:	VACANT / WOODED
PROPOSED USE:	NON-RESIDENTIAL
BUILDING LOT COVERAGE:	0% EXIST., 0% PROPOSED
TOTAL SQ. FEET OF EXIST. IMPERVIOUS AREA:	0 SF
TOTAL SQ. FEET OF PROP. IMPERVIOUS AREA:	9583 SF (R/W), 8276 SF (LOT 9), 3920 SF (LOT 10)
DEVELOPMENT STANDARDS:	LDO
REFERENCES:	DB 18104, PG 920
	BM 2023, PG 1603-1604
	BM 1996, PG 187

Sheet Index \triangle_3

#	Title
C0.1	COVER - OVERALL PLAN
C1.0	EXISTING CONDITIONS & DEMOLITION PLAN
C1.1	EROSION CONTROL - PH. 1
C1.2	EROSION CONTROL PLAN - PH. 2
C1.3	EROSION CONTROL - PH. 3
C1.4	EROSION CONTROL NOTES
C1.5	EROSION CONTROL DETAILS
C2.0	LAYOUT & SIGNAGE-STRIPING PLAN
C3.0	VIRGINIA WATER DRIVE EXT - PLAN-PROFILE
C3.1	ACCESS DRIVE - PLAN-PROFILE
C4.0	DETAILS
C4.1	DETAILS
C4.2	DETAILS

REF	SURVEY - JOHNSON, MIRMIRAN & THOMPSON (1 SHEET)
REF	PR 21-04 REVISED - TREE PRESERVATION PLAN (1 SHEET)

Engineer

Ark Consulting Group, PLLC
2755 Charles Blvd - Suite B
Greenville, NC 27858
(252) 558-0888

Contact: Bryan Fagundus, PE
bryan@arkconsultinggroup.com

Owner/Developer:

Wallbrook Landco, LLC
3 Keel St, Ste 2
Wrightsville Beach, NC 28480
(704) 621-6430
Contact: Austin Williams
awilliams@csero.com

SITE PERMITTING APPROVAL

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-5528

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 # W-4160

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 # S-

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.

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 _____

Town of Rolesville Development Applications

ANX 23-03	ANNEXATION
MA 21-09	REZONING
PR 21-04 REV	PRELIMINARY SUBDIVISION PLAT (REVISED)
FSP 23-10	INTERMEDIATE SUBDIVISION PLAT
CID 23-04	CONSTRUCTION INFRASTRUCTURE DRAWING: (CURRENT APPLICATION)

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☒ S-EC-119903-2024

STORMWATER MGMT. ☒ S-WF-119904-2024

FLOOD STUDY ☐ S-_____

DATE 06/10/2025

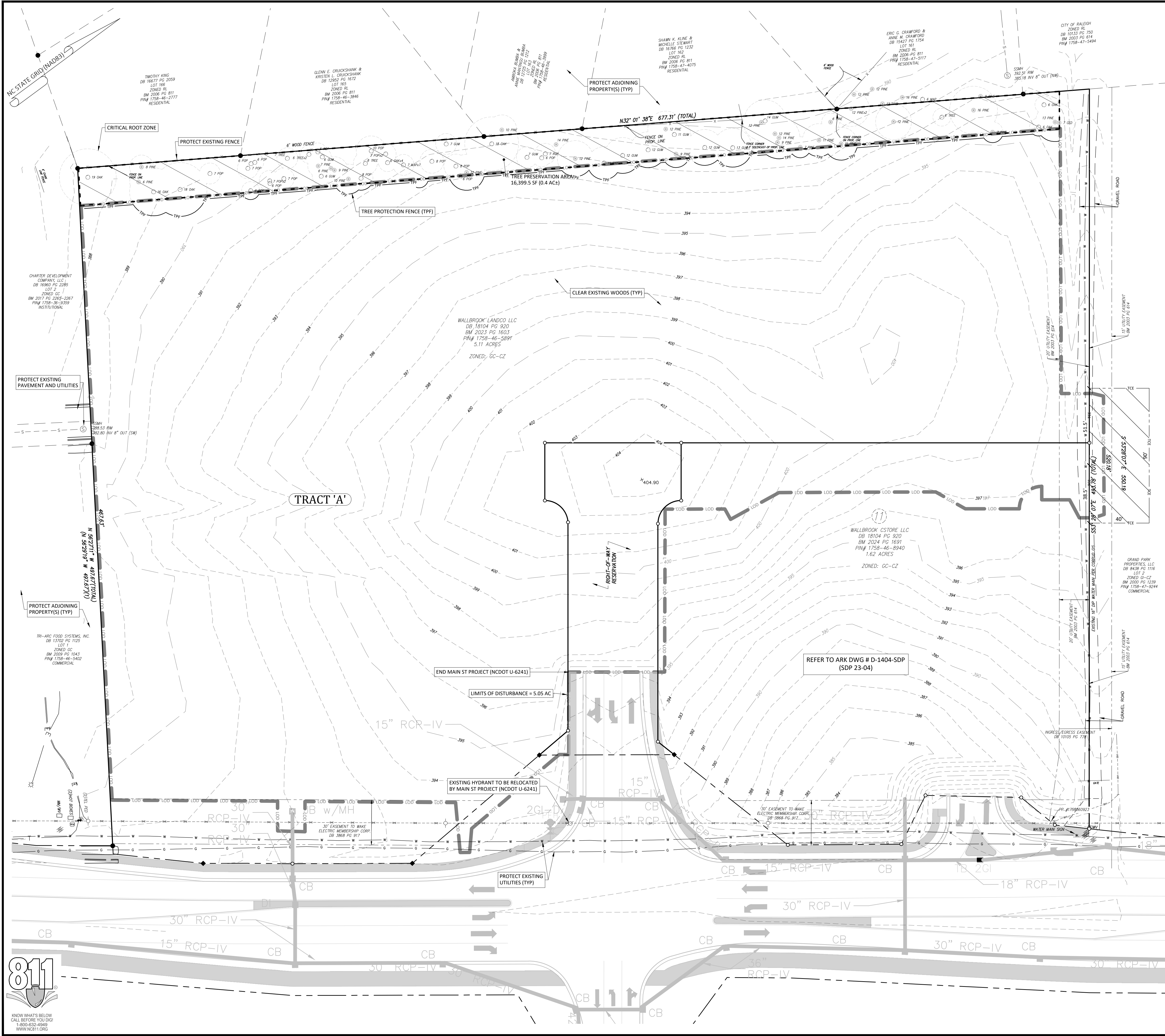
 *Elizabeth Powell*
ENVIRONMENTAL CONSULTANT SIGNATURE



CID 23-04 / Construction Infrastructure Drawings
/ Wallbrook Virginia Water Drive
APPROVED
Date: June 09, 2025

Town of Rolesville Planning Department





- ### 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.

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
DI	CABLE TV PEDESTAL
DI	DROP INLET
ELEC	ELECTRIC BOX
ELEC	ELECTRIC METER
F/O	FIBER OPTIC
FH	FIRE HYDRANT
GV	GAS VALVE
LP	LIGHT POLE
PP	POWER POLE
PP	GUY WIRE
RCP	REINFORCED CONCRETE PIPE
S.F.	SQUARE FEET (AREA)
—	SIGN
—	TRAFFIC SIGNAL POLE
—	SANITARY SEWER MANHOLE
—	SANITARY SEWER FORCE MAIN VALVE
—	STORM DRAIN MANHOLE
—	STORM DRAIN CATCH BASIN
—	TELEPHONE PEDESTAL
—	TRAFFIC BOX
WM	WATER BOX
WMH	WATER METER
WMH	WATER MANHOLE
WMH	WATER VALVE
WMH	WELL
WMH	PEDESTRIAN X-WALK POLE
WMH	ELECTRIC LINE
WMH	SANITARY SEWER FORCE MAIN
WMH	FIBER OPTIC LINE
WMH	GAS LINE
WMH	OVERHEAD ELECTRIC LINE
WMH	SANITARY SEWER LINE
WMH	TELEPHONE LINE
WMH	CABLE TV LINE
WMH	WATER LINE
WMH	FIRE LINE
WMH	8\"/>
WMH	12\"/>
WMH	SPILL CURB
WMH	FENCE
WMH	RIPARIAN BUFFER
WMH	TREELINE
WMH	MAJOR CONTOUR (5')
WMH	MINOR CONTOUR (1')
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WMH	ACCESS AND UTILITY EASEMENT
WMH	TREE PRESERVATION AREA
WMH	OPEN SPACE AREA
WMH	TDD DRAINAGE AREA
WMH	SKIMMER BASIN DRAINAGE AREA

EXISTING CONDITIONS & DEMOLITION PLAN

WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Rolesville Project No. CID 23-04
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina

NC License: P-1199

ARK CONSULTING GROUP PLLC

ENGINEERS & SURVEYORS

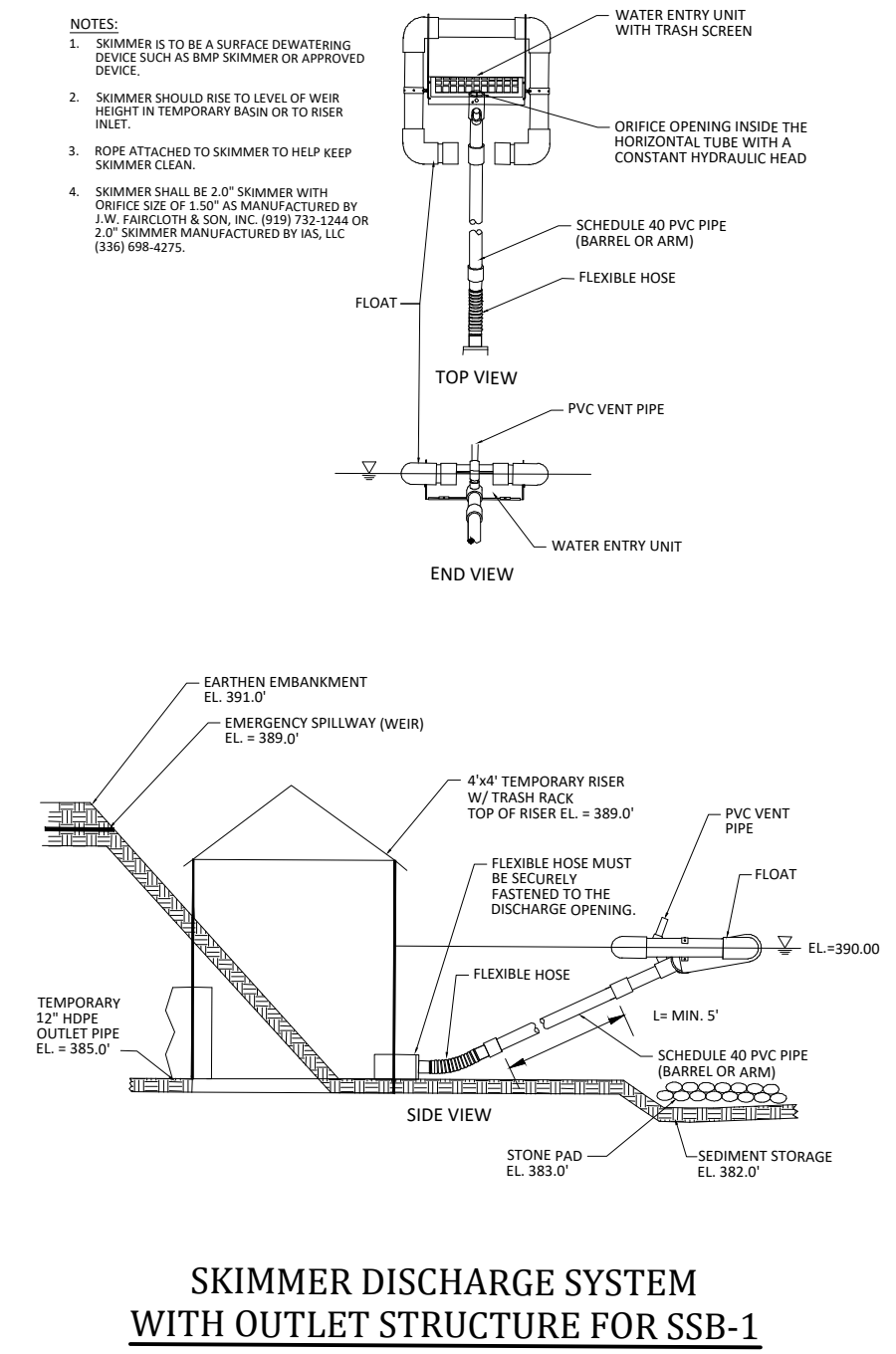
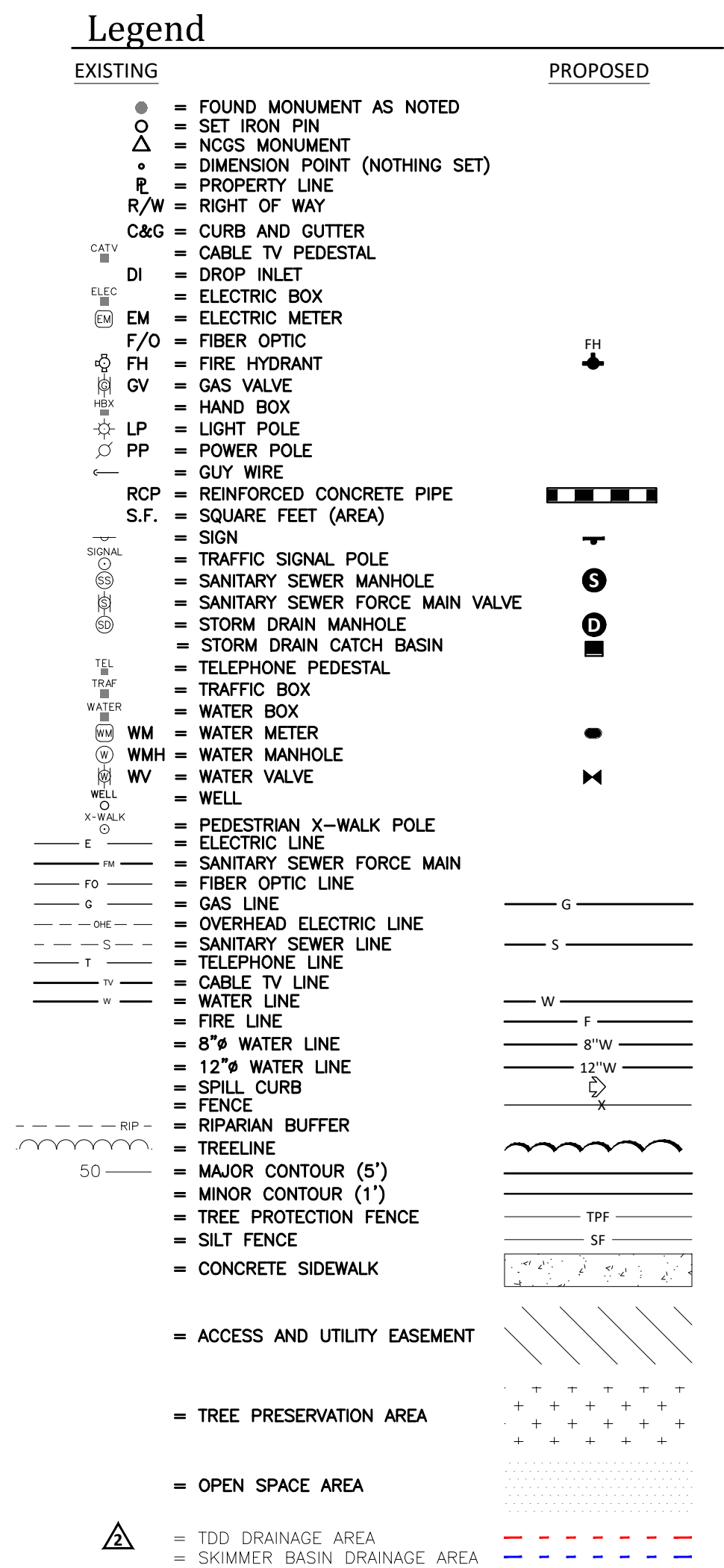
925-A Conference Dr.
Wake Forest, NC 27886
(252) 558-8888
www.arkconsultinggroup.com

6/9/2025

Project Manager: BCF
Drawn By: DLG/TGN
Checked By: TGN
Project Number: 22049
Drawing Number: D-1404-CID

C1.0

Date: May 1, 2023



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EROSION CONTROL - PH. 1

WALLBROOK ROADWAY IMPROVEMENTS
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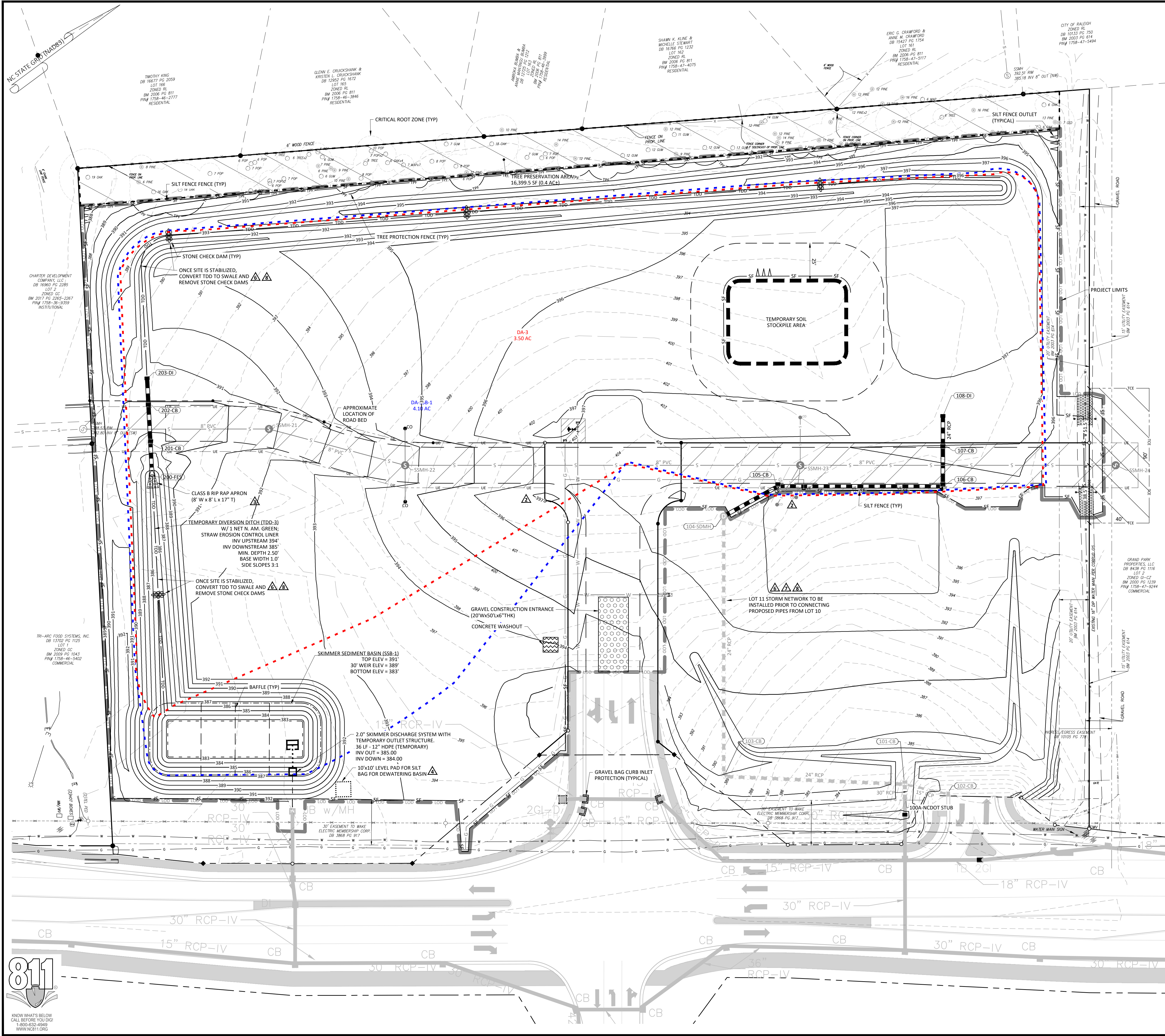
NORTH CAROLINA
 PROFESSIONAL
 SEAL
 31970
 ENGINEER
 BRUCE C. FRAGNARDUS

6/9/2025

Project Manager:	BCF
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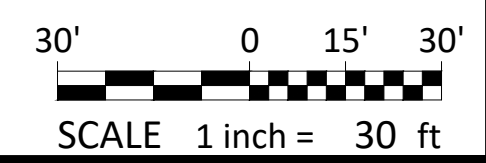


STRUCTURE TABLE				
ID	TOP	IN	OUT	DESC
104-SDMH	397.42	387.21 (105-CB) 389.57 (104A-CO)	387.01 (103-CB)	48 in MH
105-CB	397.54	387.90 (106-CB)	387.70 (104-SDMH)	Catch Basin
106-CB	397.03	389.43 (107-CB) 392.75 (106A-CO)	389.23 (105-CB)	Catch Basin
107-CB	397.03	389.96 (108-DI)	389.76 (106-CB)	Catch Basin
108-DI	396.90		390.19 (107-CB)	Drop Inlet

STRUCTURE TABLE				
ID	TOP	IN	OUT	DESC
200-FES	387.99	385.66 (201-CB)		Flared End Section
201-CB	390.03	385.77 (202-CB)	385.77 (200-FES)	Catch Basin
202-CB	390.16	385.90 (203-DI)	385.90 (201-CB)	Catch Basin
203-DI	390.17		385.99 (202-CB)	Drop Inlet

Rip Rap Aprons						
Outlet	Pad		Pad		Pad	
	Size	Entry	Exit	Length	Depth	Stone
	(in)	(ft)	(ft)	(ft)	(in)	Class
200-FES	24	4	8	8	17	B

- Legend**
- EXISTING PROPOSED
- FOUND MONUMENT AS NOTED
 - SET IRON PIN
 - △ NC&S MONUMENT
 - DIMENSION POINT (NOTHING SET)
 - PROPERTY LINE
 - R/W RIGHT OF WAY
 - C&G CURB AND GUTTER
 - CABLE TV PEDESTAL
 - DI DROP INLET
 - EM ELECTRIC BOX
 - F/O FIBER OPTIC
 - FH FIRE HYDRANT
 - GV GAS VALVE
 - HB HAND BOX
 - LP LIGHT POLE
 - PP POWER POLE
 - GUY WIRE
 - RCP REINFORCED CONCRETE PIPE
 - S.F. SQUARE FEET (AREA)
 - SIGN
 - TRAFFIC SIGNAL POLE
 - SANITARY SEWER MANHOLE
 - SANITARY SEWER FORCE MAIN VALVE
 - STORM DRAIN MANHOLE
 - STORM DRAIN CATCH BASIN
 - TELEPHONE PEDESTAL
 - TRAFFIC BOX
 - WATER BOX
 - WM WATER METER
 - WMH WATER MANHOLE
 - WV WATER VALVE
 - WELL
 - PEDESTRIAN X-WALK POLE
 - ELECTRIC LINE
 - SANITARY SEWER FORCE MAIN
 - FIBER OPTIC LINE
 - GAS LINE
 - OVERHEAD ELECTRIC LINE
 - SANITARY SEWER LINE
 - TELEPHONE LINE
 - CABLE TV LINE
 - WATER LINE
 - FIRE LINE
 - 8" WATER LINE
 - 12" WATER LINE
 - SPILL CURB
 - RIPARIAN BUFFER
 - TREELINE
 - MAJOR CONTOUR (5')
 - MINOR CONTOUR (1')
 - TREE PROTECTION FENCE
 - SILT FENCE
 - CONCRETE SIDEWALK
- ACCESS AND UTILITY EASEMENT
- TREE PRESERVATION AREA
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9 JUN/25 APPROVED - SIGNATURE SET

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1 1-MAY/23 ISSUED FOR PERMIT REVIEW

DATE

#

REVISIONS:

CROSLAND SOUTHEAST

EROSION CONTROL PLAN - PH. 2

WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Roanoke Project No. CID 23-04

US 401 Roanoke / S. Main Street & Virginia Water Drive

Wake Forest Township, Wake County, North Carolina

NC License: PA 1159

CONSULTING

ARK GROUP PLLC

ENGINEERS & SURVEYORS

935-A Conference Dr.

(252) 558-8888

www.arkconsultinggroup.com

6/9/2025

SEAL 31976

ENGINEER

DAVID C. FAGUNDY

Project Manager: BCF

Drawn By: DLG/TGN

Checked By: TGN

Project Number: 22049

Drawing Number: D-1404-CID

C1.2

Date: May 1, 2023



C1.3

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

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 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
<ul style="list-style-type: none">Temporary grass seed covered with straw or other mulches and tackifiersHydroseedingRoller erosion control products with or without temporary grass seedAppropriately applied straw or other mulchplastic sheeting	<ul style="list-style-type: none">Permanent grass seed covered with straw or other mulches and tackifiersGeotextile fabrics such as permanent soil reinforcement mattingHydroseedingShrubs or other permanent plantings covered with mulchUniform and evenlyhig distributed ground cover sufficient to restrain erosionStructural methods such as concrete, asphalt, or retaining wallsRoller erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- 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

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- 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.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

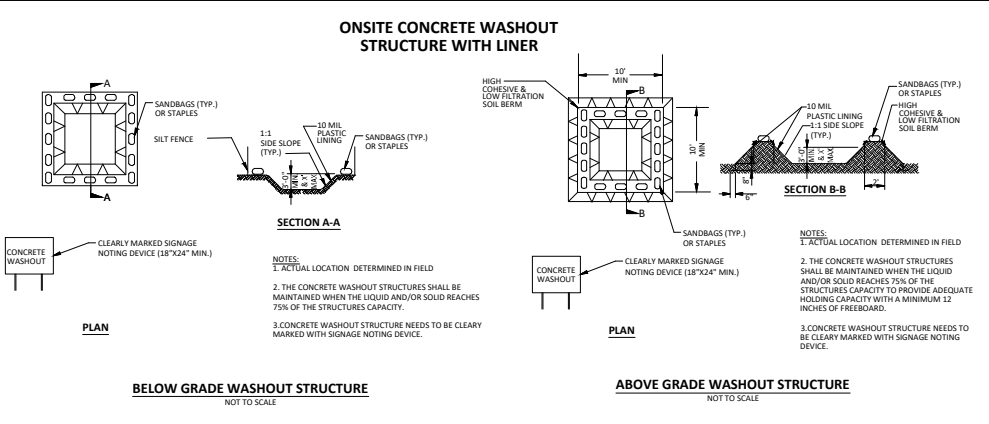
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled,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

PORTABLE TOILETS

- 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.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- 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

- 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.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- 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

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- 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.
- 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.
- Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

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

Wake County Basin Removal Sequence:

- 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.
- 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&S JURISDICTION: 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 NDEP MONITORING DOCUMENTATION
- 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.
- PERFORM SEEDED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
- INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
- WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVISE 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.

Erosion Control Provisions:

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

Construction Sequence:

- PHASE 1**
- EROSION AND SEDIMENT CONTROL (E&S) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR.
 - CALL WAKE COUNTY WATERSHED MANAGER JEEVAN NEUPANE AT (919) 819-8907 A MINIMUM OF 48 HOURS IN ADVANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING AND FOR NOTIFICATION OF PROJECT START UP.
 - ANY DEWATERING ON THE SITE SHALL BE DONE THROUGH A SILT BAG THAT IS CONSTANTLY MONITORED.
 - INSTALL GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, TREE PROTECTION FENCE, 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.
- PHASE 2**
- BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE. INSTALL TEMPORARY SKIMMER SEDIMENT BASINS, ALONG WITH TEMPORARY DIVERSION DITCHES THAT SHALL BE INSTALLED TO ENSURE AS MUCH FLOW AS POSSIBLE IS DIRECTED TO THE BASINS.
 - AS ROUGH GRADING CONTINUES, DEVICES SHALL BE MAINTAINED AND CLEANED OF SEDIMENT. SKIMMER SEDIMENT BASINS TO BE ABANDONED SHALL BE REMOVED AS FOLLOWS: DEWATER THROUGH SILT BAG, CLEAN SEDIMENT, REMOVE BAFFLES, BACKFILL BASIN AND STABILIZE IMMEDIATELY. DEWATERING OPERATIONS THROUGH SILT BAGS SHALL BE MONITORED CONTINUOUSLY.
 - STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAME.
 - INSTALL PERMANENT PIPE AS SHOWN C1.2.
 - WHEN ROUGH GRADING IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL WATERSHED MANAGER JEEVAN NEUPANE FOR INSPECTION.
- PHASE 3**
- IF SITE IS APPROVED, MAINTAIN TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OR STABILIZED ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
 - WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE WATERSHED MANAGER, JEEVAN NEUPANE. OBTAIN CERTIFICATE OF COMPLETION.

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, and no individual day rainfall information is available, record the cumulative rain measurement for those unattended 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&S 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 measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDO)	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 indicators of stormwater pollution such as oil shren, floating or suspended solids or discoloration, 5. Indication 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 the sediment that 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 2(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&S 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&S Plan Documentation The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S plan shall be documented in the manner described:	
Item to Document	Documentation Requirements
(a) Each E&S Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S Plan.	Initial and date each E&S Measure on a copy of the approved E&S Plan or complete, date and sign an inspection report that lists each E&S Measure shown on the approved E&S Plan. This documentation is required upon the initial installation of the E&S Measures or if the E&S Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S 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&S Plan.	Initial and date a copy of the approved E&S 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&S Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S Measures.	Initial and date a copy of the approved E&S 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&S 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 other inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.414]	

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: <ul style="list-style-type: none">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), orThey are within 100 feet of surface waters (regardless of volume). (c) 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. (d) Anticipated bypasses and unanticipated bypasses. (e) 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	<ul style="list-style-type: none">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. Inspectors 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	<ul style="list-style-type: none">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 122.414(i)(3)]	<ul style="list-style-type: none">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 122.414(j)(3)]	<ul style="list-style-type: none">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 122.414(i)(7)]	<ul style="list-style-type: none">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 recurrence of the noncompliance. [40 CFR 122.414(i)(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



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

- Design Criteria**
- 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).
 - Stockpile footprints shall be setback a minimum of 25' from adjacent property lines.
 - A note shall be provided on the approved plan that stockpile height shall not exceed 35 feet.
 - Stockpile slopes shall be 2:1 or flatter.
 - Approved BMPs shall be shown on a plan to control any potential sediment loss from a stockpile.
 - 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 unavoidable.
 - Any concentrated flow likely to affect the stockpile shall be diverted to an approved BMP.
 - 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 off-site 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**
- Seeding or covering stockpiles with turps or mulch is required and will reduce erosion problems. Turps should be keyed in at the top of the slope to keep water from running underneath the plastic.
 - 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.
 - The approved plan shall provide for the use of graded seeding and mulching on a continual basis while the stockpile is in use.
 - Establish and maintain a vegetative buffer at the toe of the slope (where practical).

Seeding Specifications

NPDES Stormwater Discharge Permit for Construction Activities (NCG01 - 4/1/19)
NCDEQ/Division of Energy, Mineral and Land Resources

Seeding Specifications	
Site Area Description	Seeding Specifications
(a) Slopes 3:1 to 4:1	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 cutlappack after seeding. 7. Mulch immediately after seeding and anchor mulch.

Seedbed Preparation:

- Chisel compacted areas and spread topsoil three inches deep over adverse soil conditions, if available.
- Rip the entire area to six inches deep.
- Remove all loose rock, roots and other obstructions, leaving surface reasonably smooth and uniform.
- Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see mixture below).
- Continue tillage until a well-pulverized, firm, reasonably uniform seedbed is prepared four to six inches deep.
- Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cutlappack after seeding.
- Mulch immediately after seeding and anchor mulch.

- Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be more than 65% damaged, re-establish following the original lime, fertilizer and seeding rates.
- Consult Wake County Soil & Water Conservation District 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):

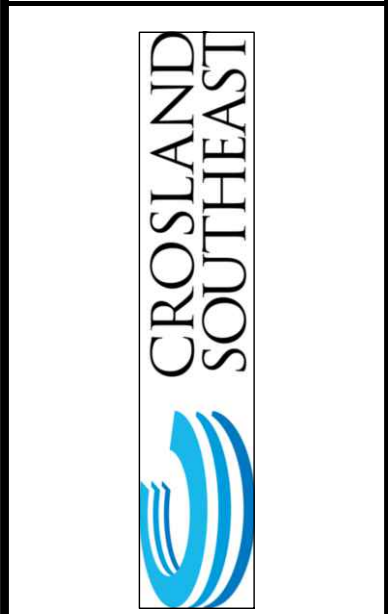
Date	Type	Planting Rate
Mar 1- Jun 1	Sericea Lespedeza (scarified) and use the following combinations:	50 lbs/acre (Sericea Lespedeza);
Mar 1- Apr 15	Add Tall Fescue	120 lbs/acre
Mar 1- Jun 30	Or add Weeping Love grass	10 lbs/acre
Mar 1- Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
Jun 1- Sept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

9	9/JUN/25	APPROVED - SIGNATURE SET	
8	1/APR/25	REVISED PER WAKE CO. REVIEW COMMENTS	
7	20-FEB/25	REVISED PER WAKE CO. REVIEW COMMENTS	
6	22-NOV/24	REVISED PER WAKE CO. REVIEW COMMENTS	
5	13-SEP/24	REVISED PER REVIEW & OWNER COMMENTS	
4	2/MAY/24	REVISED PER REVIEW & OWNER COMMENTS	
3	1/MAR/24	REVISED FOR TOR REVIEW & OWNER COMMENTS	
2	1/JUNE/23	REVISED FOR TOR REVIEW COMMENTS	
1	1/MAY/23	ISSUED FOR PERMIT REVIEW	
#	DATE	DESCRIPTION	

REVISIONS:



EROSION CONTROL NOTES

WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Roanoke Project No. CID 23-04

US 401 Roanoke / S. Main Street & Virginia Water Drive

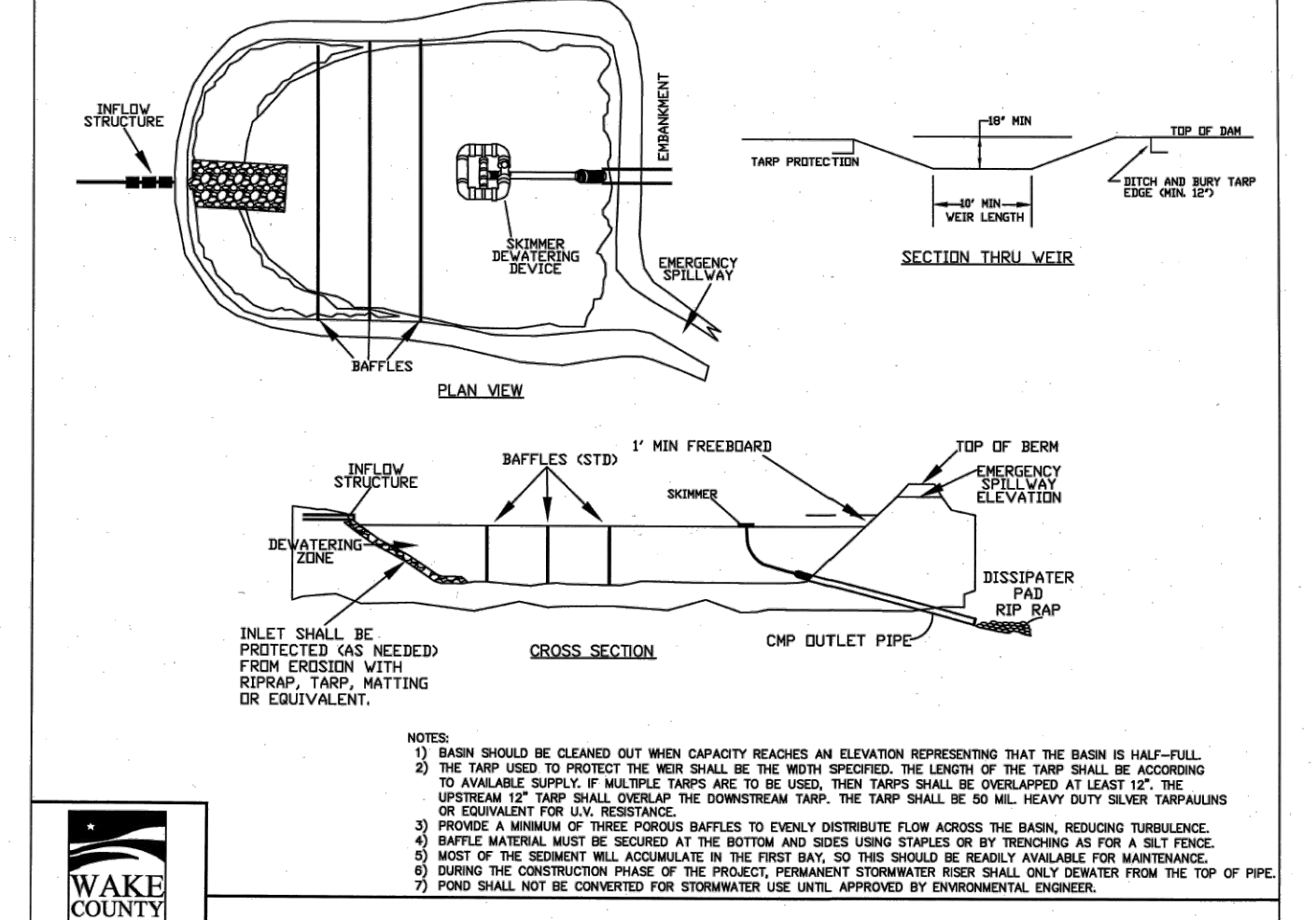
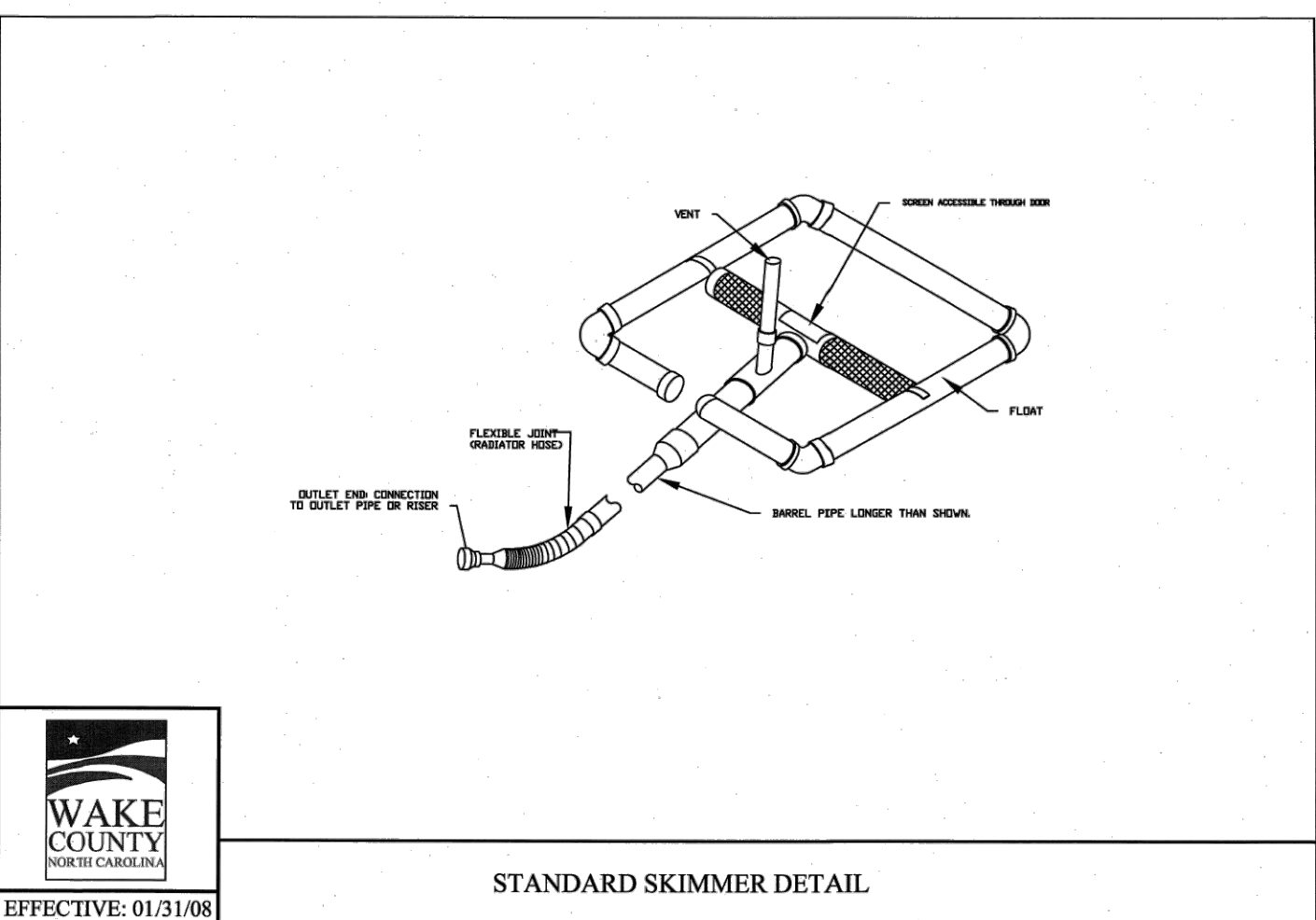
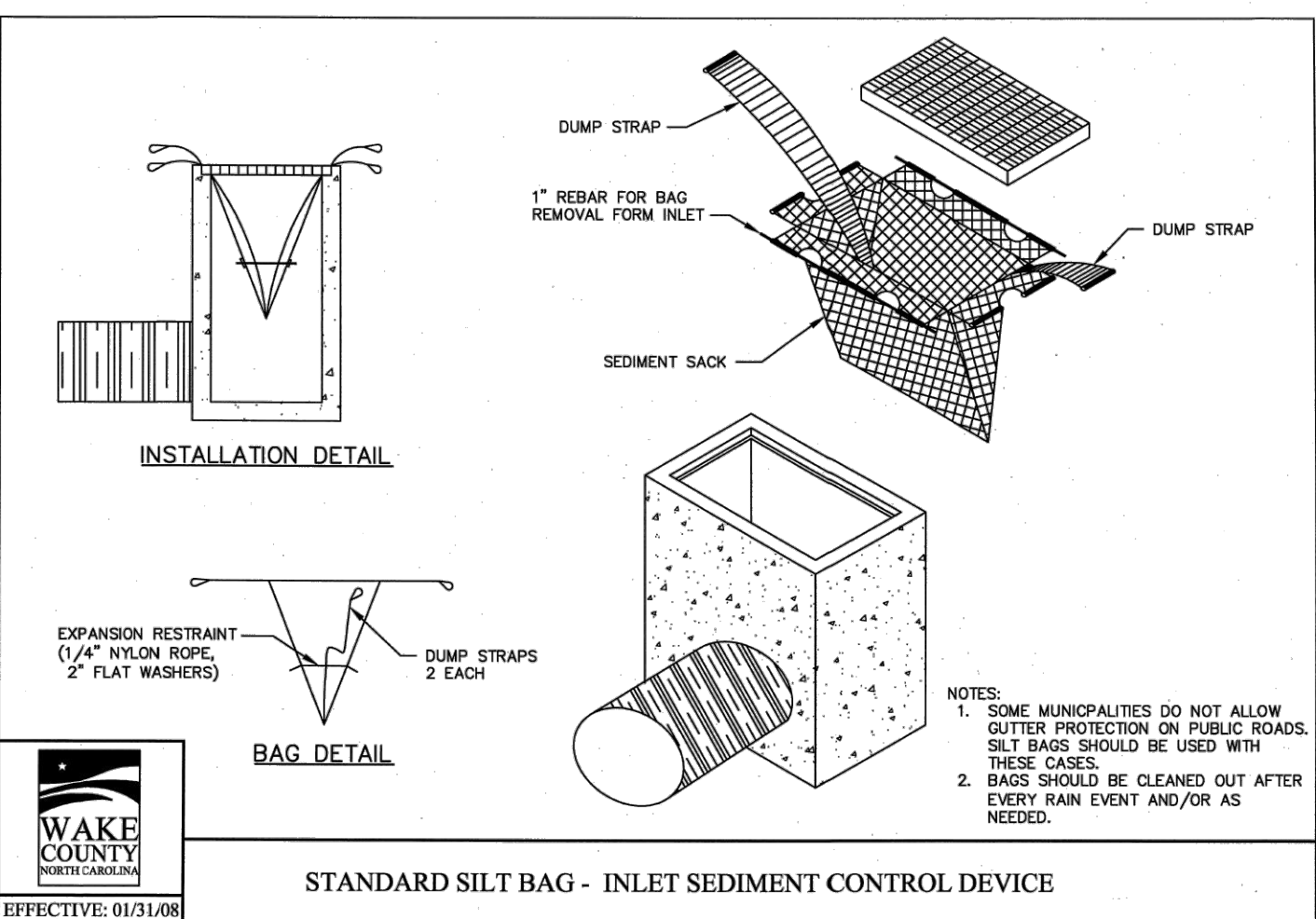
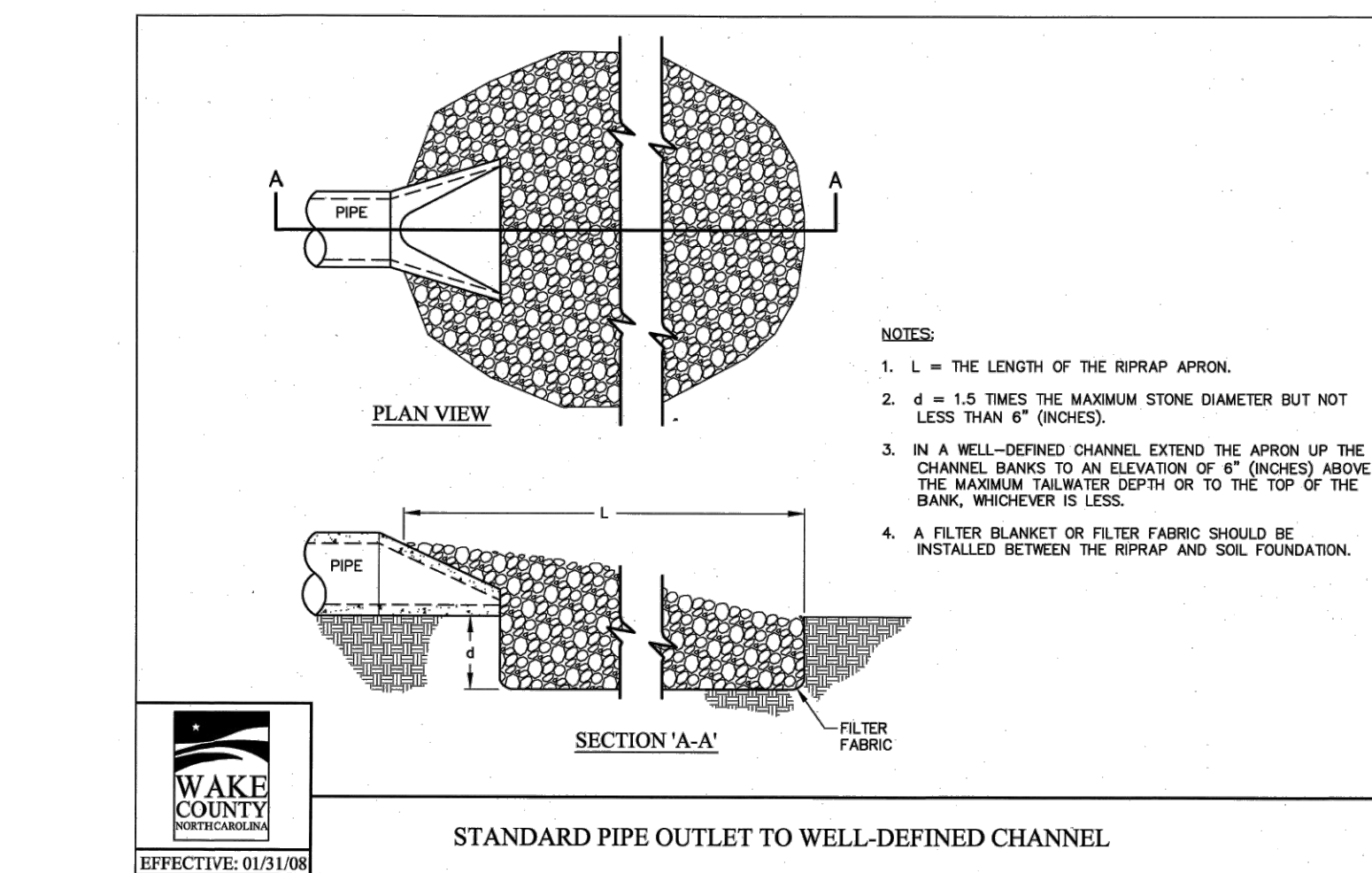
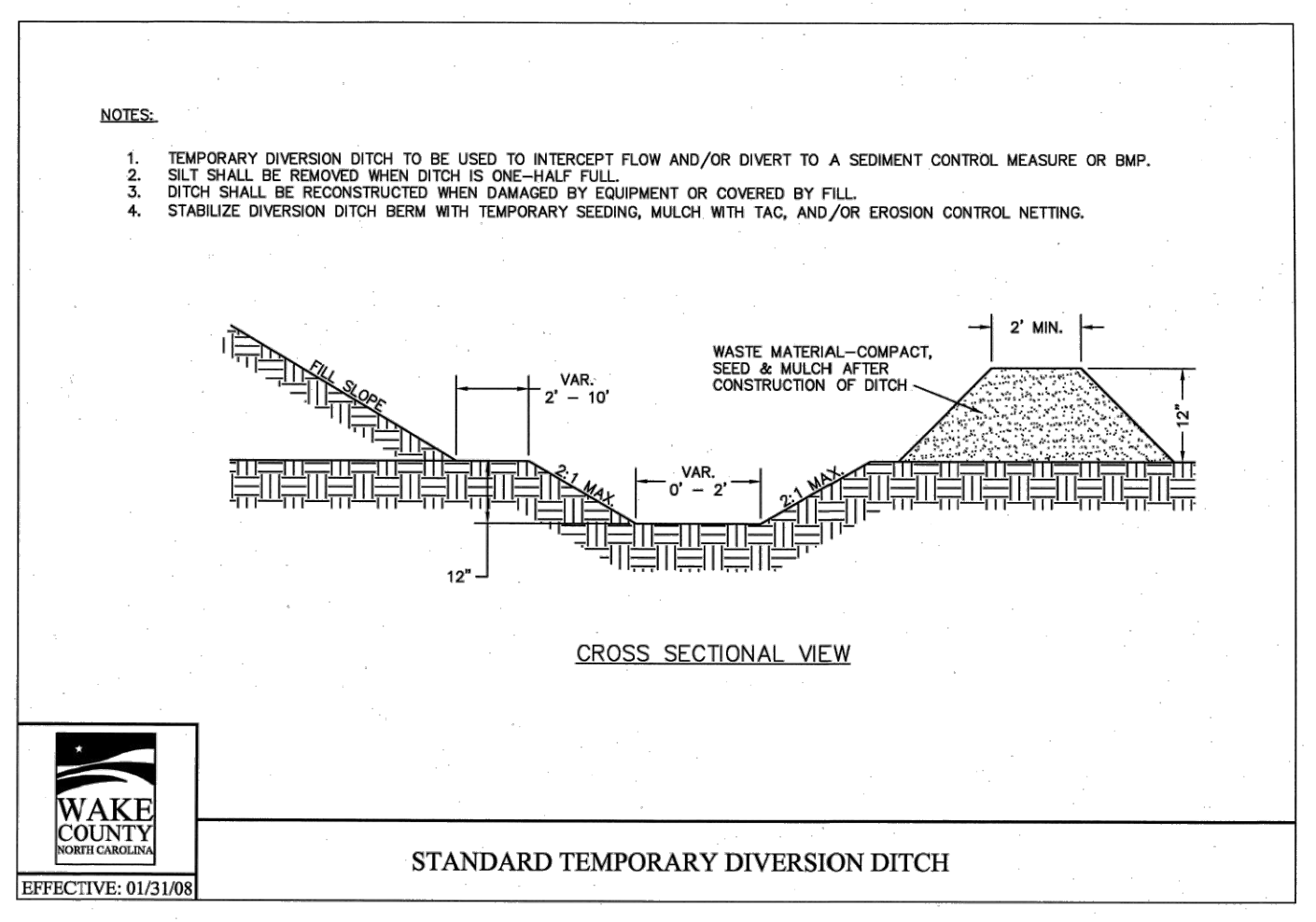
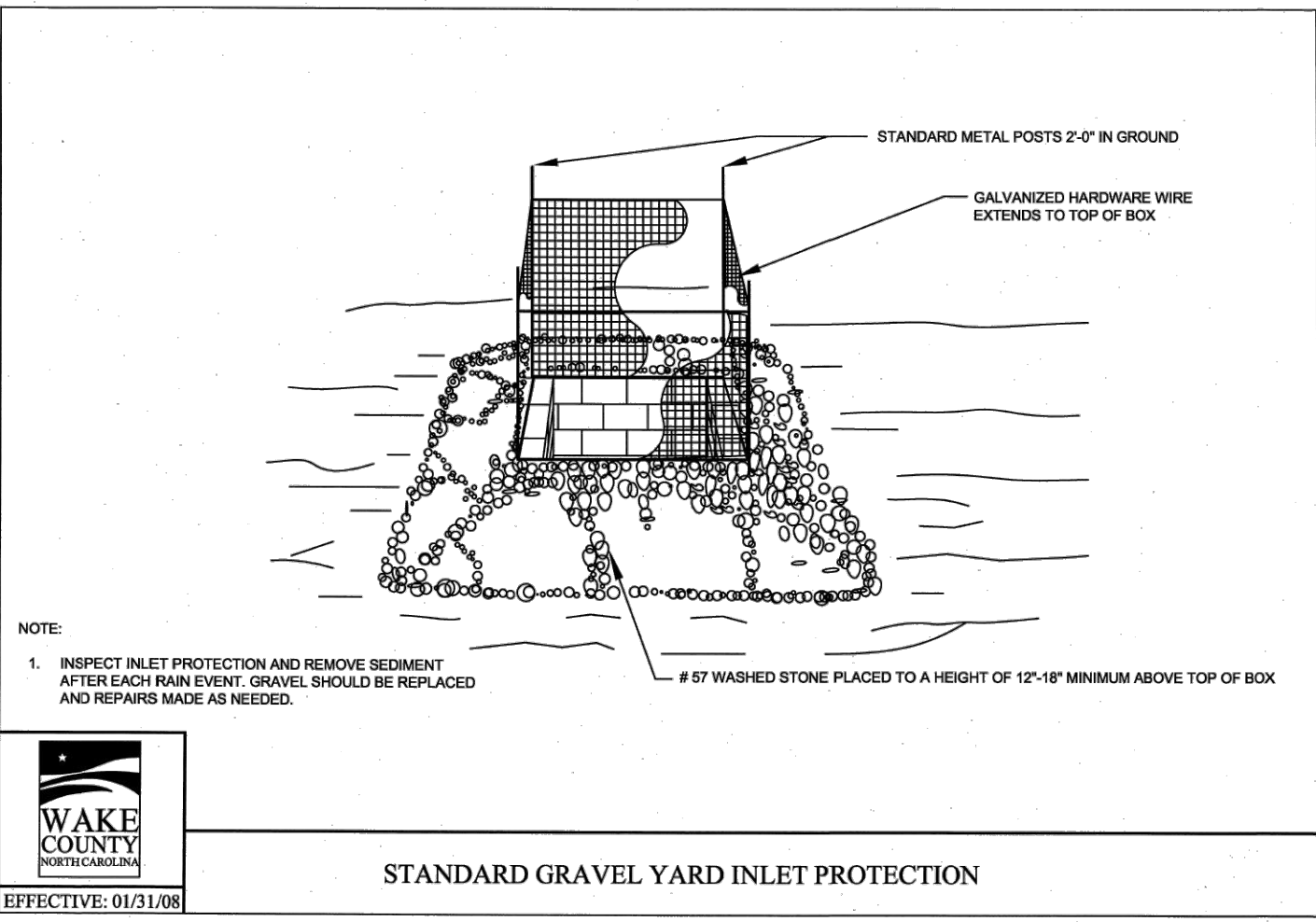
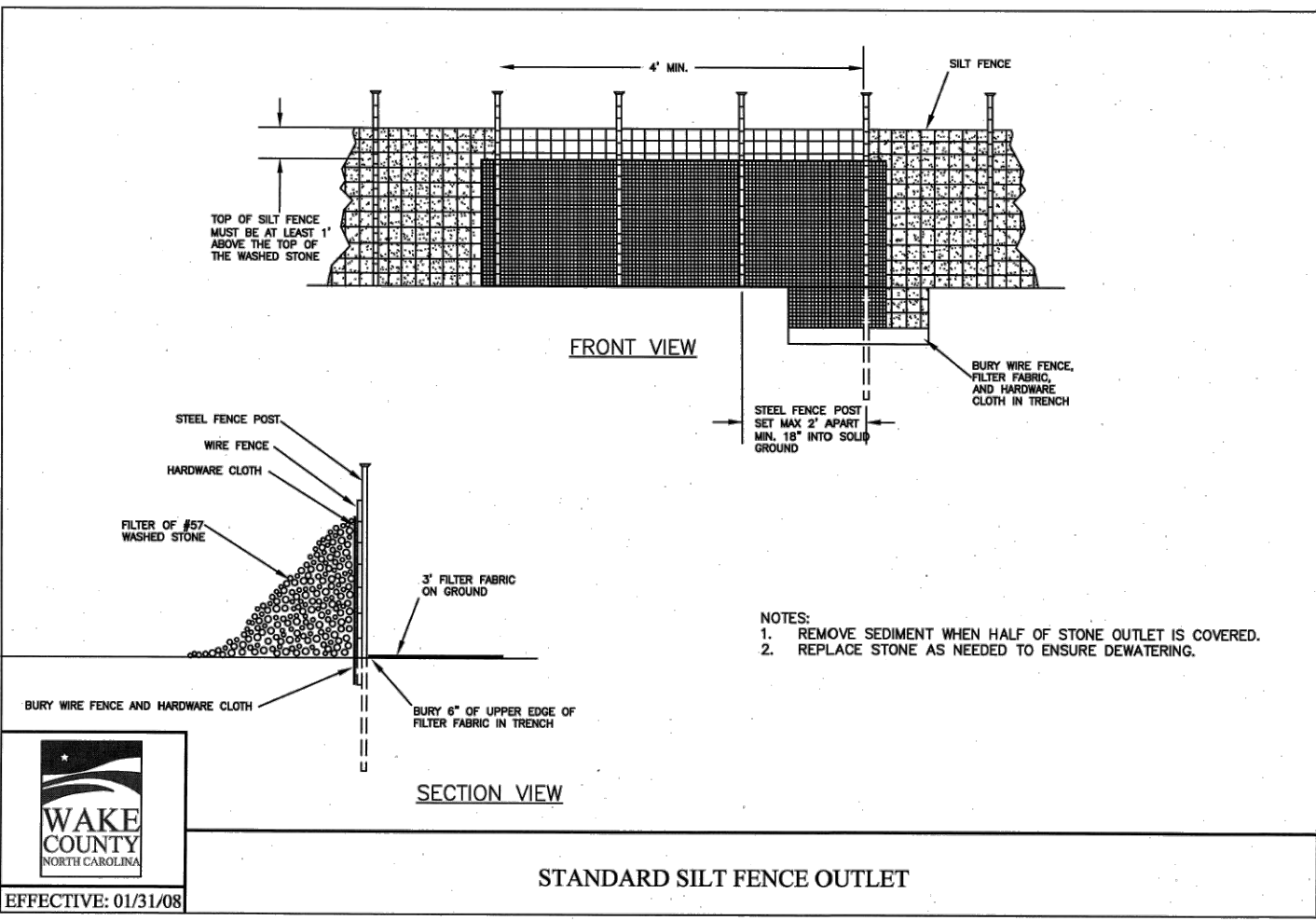
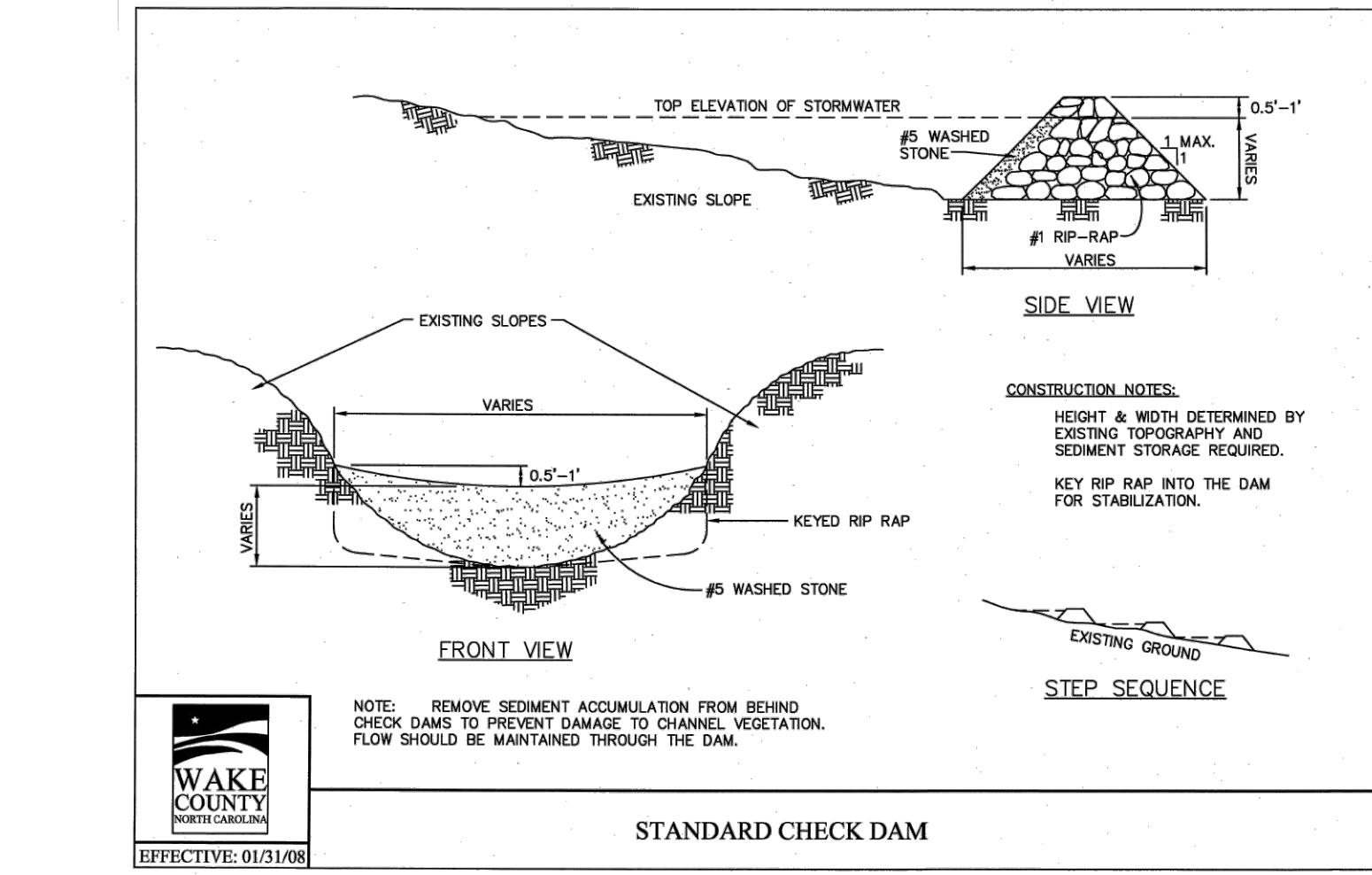
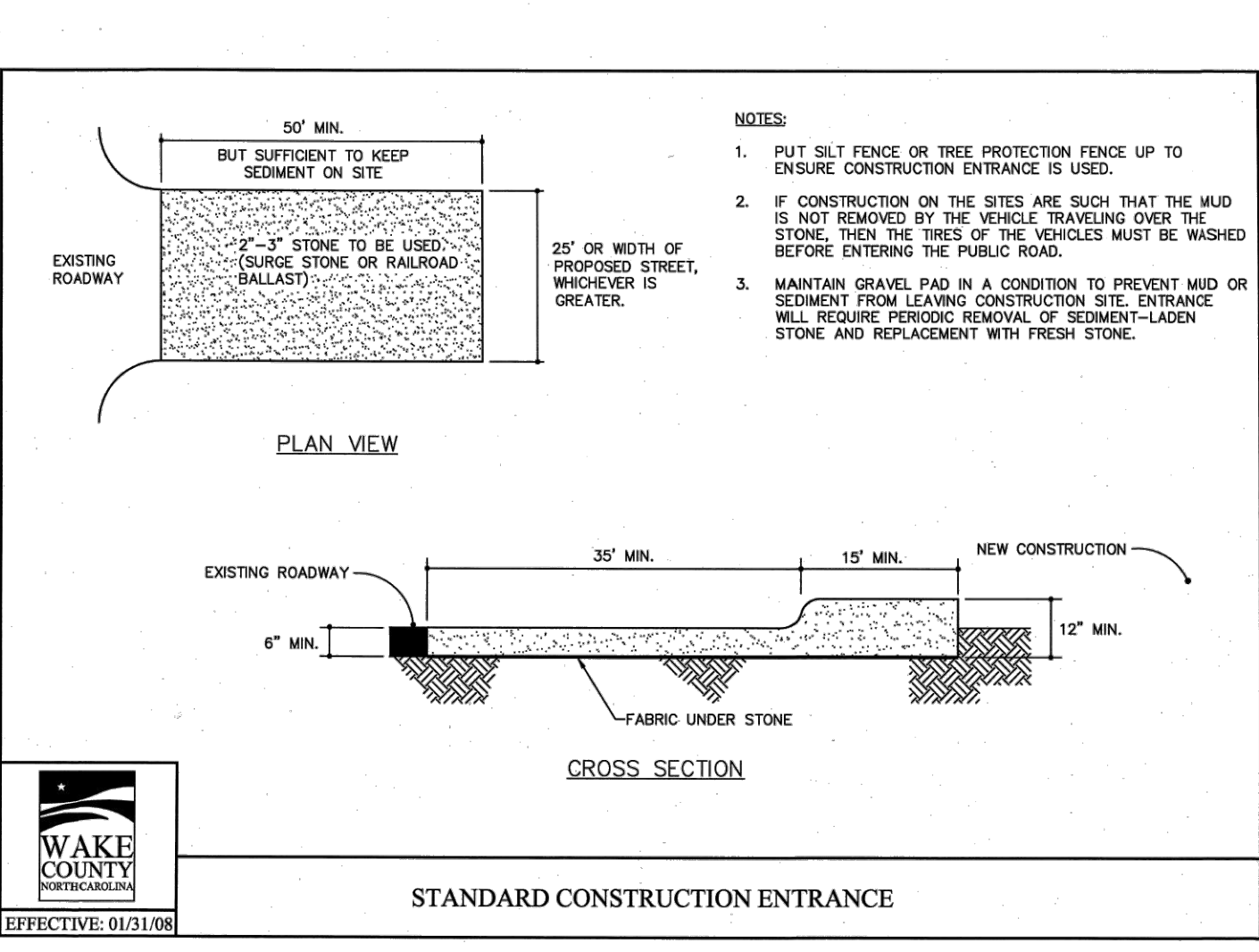
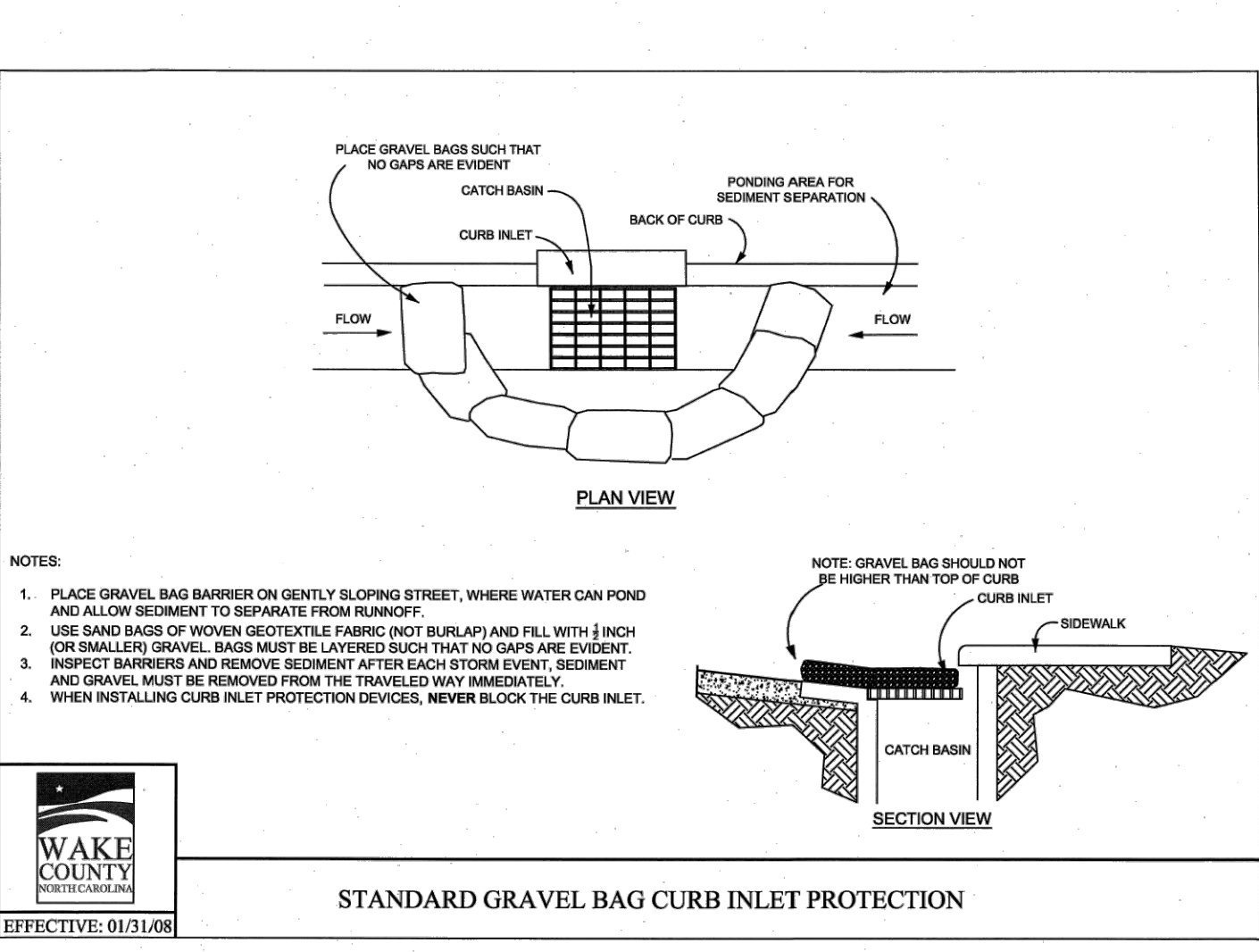
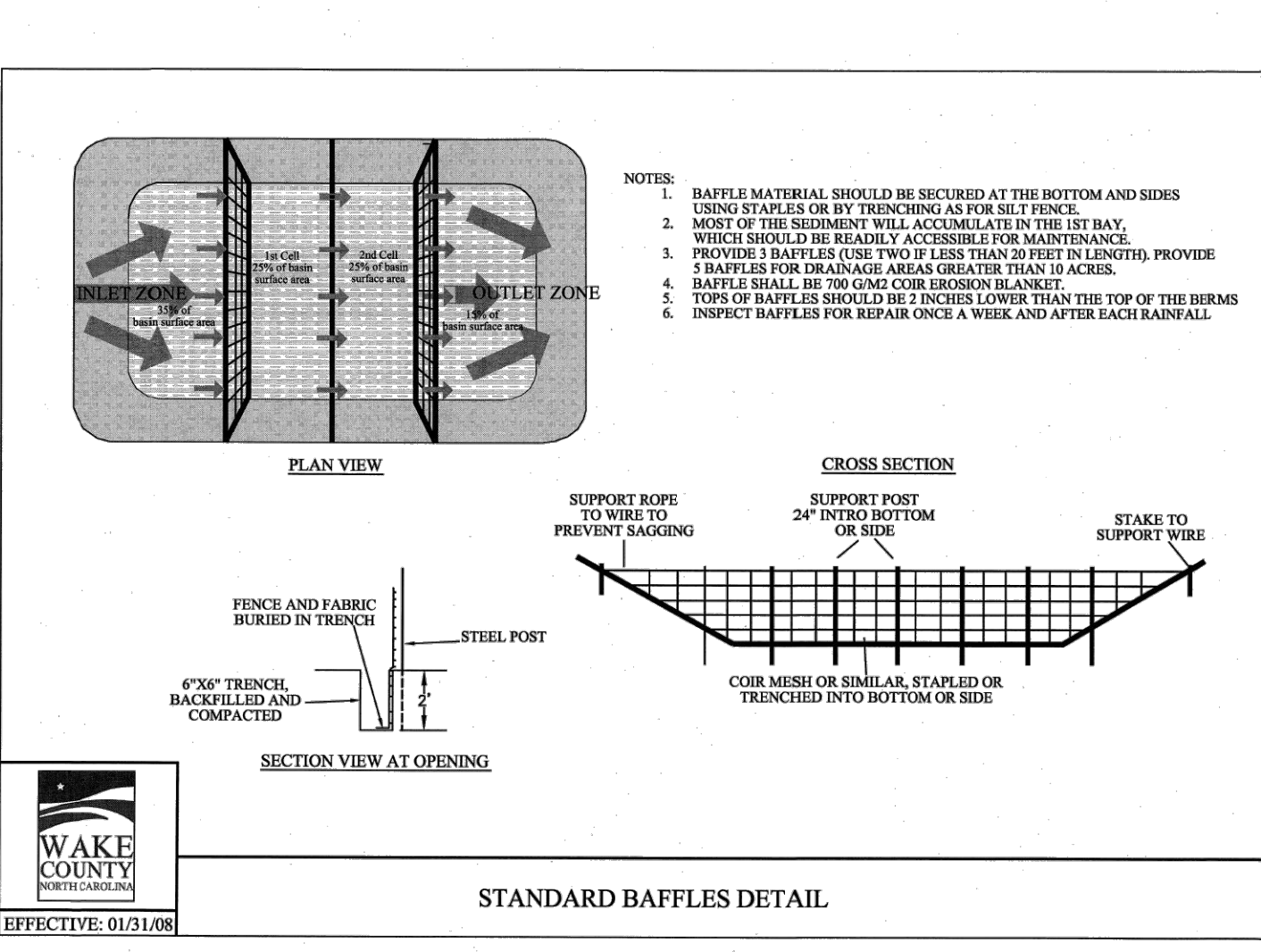
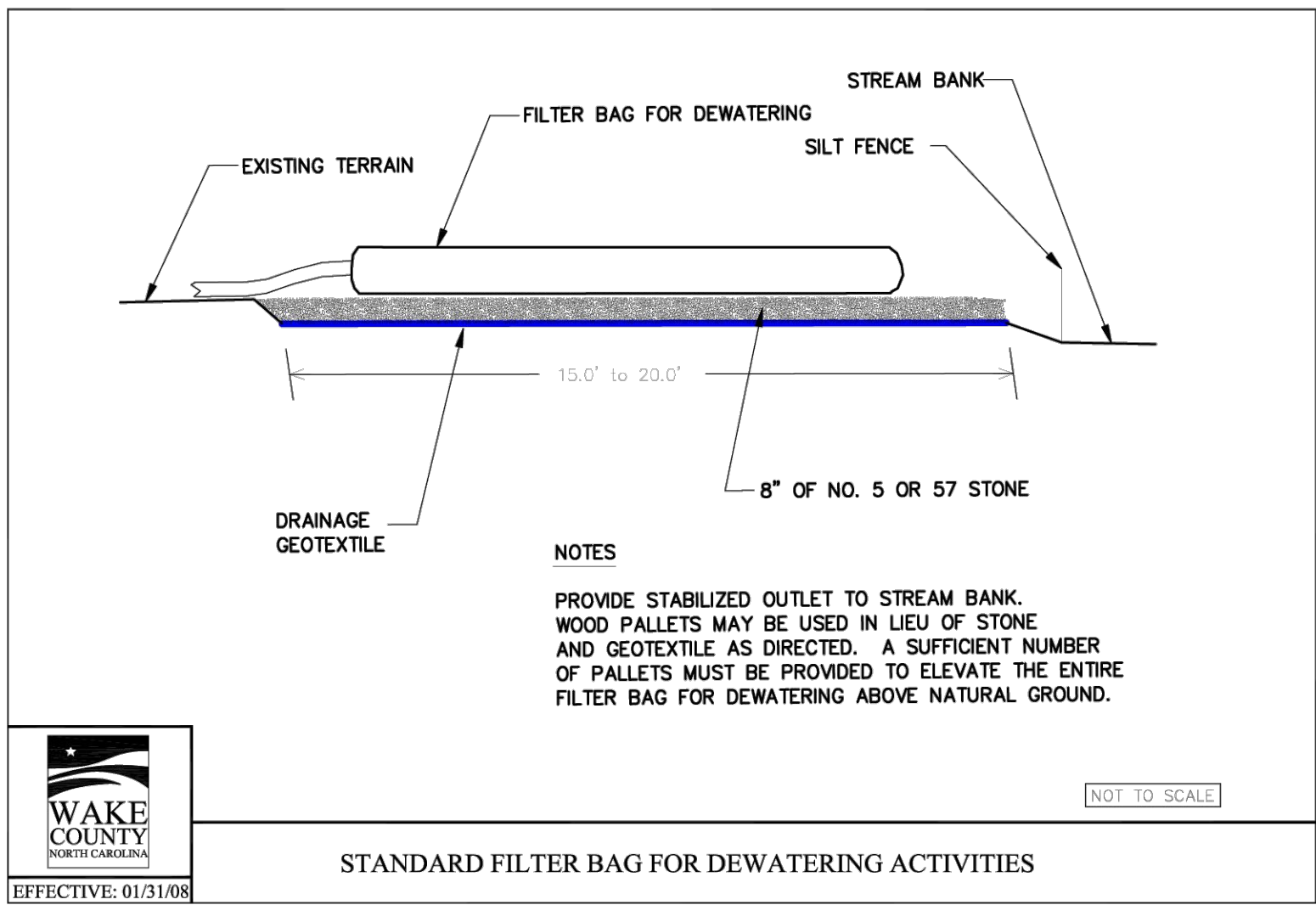
Wake Forest Township, Town of Roanoke, Wake County, North Carolina



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

C1.4

Date: May 1, 2023



Device ID	Device Type	Add'l Flow (cfs)	Drainage 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/ft²)	Liner Type	Allowable Shear Stress, τ (lbs/ft²)
Swale - Lot 10	Swale	0	2.17	5	7.18	0.5	7.77	393.5	390.17	660	1	3	3	2.96	0.030	0.00505	29.19	9.43	3.10	0.27	7.77	Yes	0.931055656	Am. Excelsior Co.; Curlex Net Free	1.00
Swale - Lot 9	Swale	7.77	1.57	5	7.18	0.5	13.41	385.65	383.5	246	1	3	3	2.95	0.030	0.00874	29.12	9.42	3.09	0.46	13.41	Yes	1.610506045	N. Am. Green; Straw; double net	1.75

Temporary Sediment Traps, Skimmer Sediment Basins, and Temporary Sediment Basins											
Device	Type	Weir Width		Depth	Depth Below Weir		Side Slope	Top Length	Top Width	Skimmer Size	
		(ft)	(ft)		Weir (ft)	Weir (ft)					
SSB-1	Skimmer Sediment Basin	30	0.3	1.5	2.0	3.0	131	49	2.0		

Vegetated Swale Design

Project:

Location:

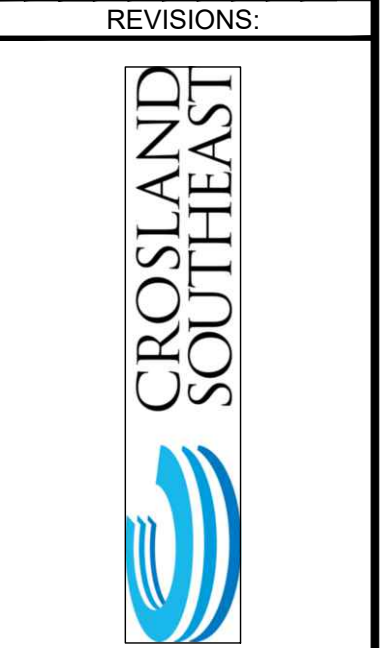
Wallbrook

Rolesville, Wake County, NC

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/ft²)	Liner Type	Allowable Shear Stress, τ
																									(lbs/ft²)
TDD-3	Temporary Diversion	0	3.50	5	7.18	0.5	12.57	394	385	915	1	3	3	2.41	0.020	0.00894	19.81	8.69	2.28	0.63	12.57	Yes	1.478104695	N. Am. Green; Straw; 1 nets	1.55

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

REVISIONS:	DATE	DESCRIPTION
1. JUN-23	ISSUED FOR PERMIT REVIEW	
2. JUN-23	REVISED PER FOR REVIEW COMMENTS	
3. JUN-23	REVISED PER FOR REVIEW COMMENTS	
4. JUN-23	REVISED PER FOR REVIEW COMMENTS	
5. JUN-23	REVISED PER FOR REVIEW COMMENTS	
6. JUN-23	REVISED PER FOR REVIEW COMMENTS	
7. JUN-23	REVISED PER FOR REVIEW COMMENTS	
8. JUN-23	REVISED PER FOR REVIEW COMMENTS	
9. JUN-23	APPROVED - SIGNATURE SET	



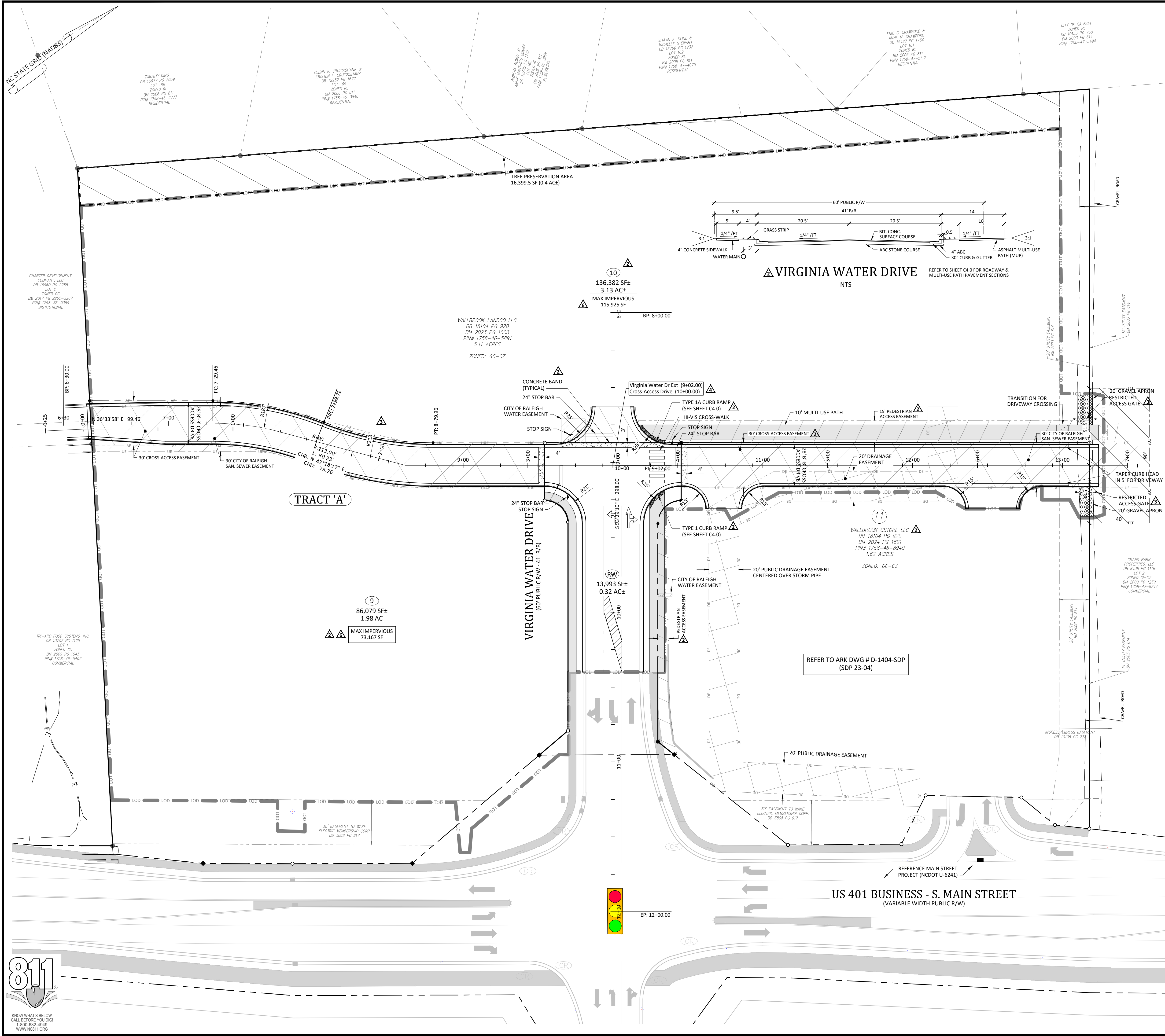
EROSION CONTROL DETAILS **WALLBROOK ROADWAY IMPROVEMENTS** **VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)** Town of Rolesville Project No. CID 23-04 US 401 Rolesville / S. Main Street & Virginia Water Drive Wake Forest Township, Town of Rolesville, Wake County, North Carolina



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

C1.5

Date: May 1, 2023

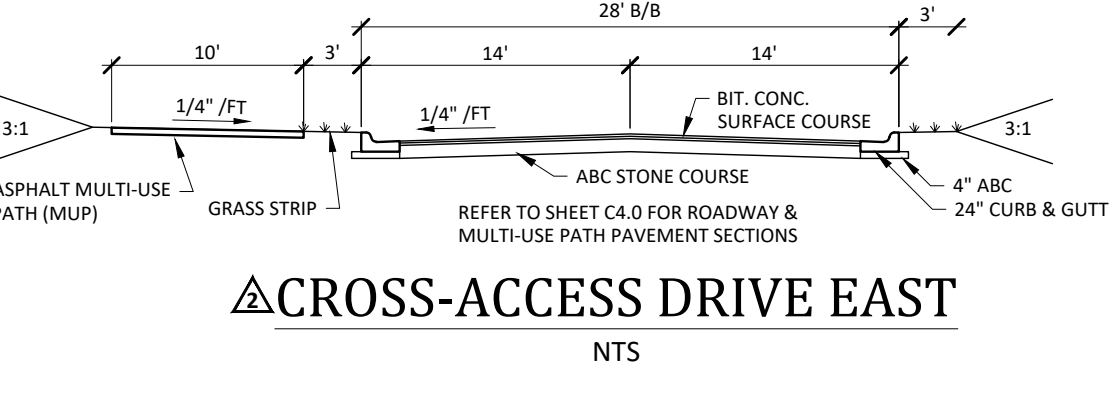
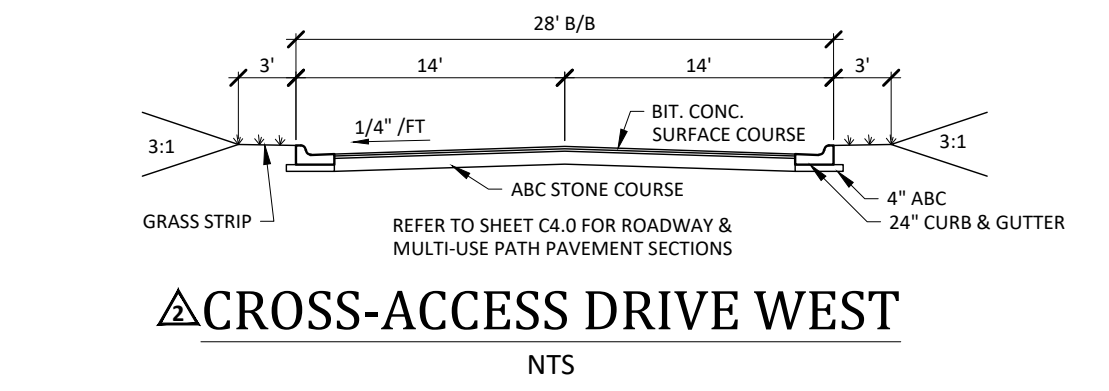


- General Notes:**
- THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THIS SITE PLAN:
 - ALTA/NSPS LAND TITLE SURVEY, PREPARED BY JOHNSON, MIRMIRAN & THOMPSON FOR WALLBROOK LANDCO, LLC, DATED REVISED MARCH 28, 2020
 - "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION - 7 ELEVEN AT WALLBROOK" PREPARED BY NVS ENGINEERS AND CONSULTANTS, INC., DATED JULY 11, 2022
 - "REVISED WALLBROOK DEVELOPMENT TRAFFIC IMPACT ANALYSIS" PREPARED BY STANTEC CONSULTING SERVICES, INC., DATED AUGUST 11, 2020
 - ALL ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE OR THE REQUIREMENTS OF THE JURISDICTION WHERE THIS PROJECT IS TO BE CONSTRUCTED.
 - THIS PROPERTY IS LOCATED IN FLOOD ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON NATIONAL FLOOD INSURANCE RATE MAP (FIRM) 3720175800K, EFFECTIVE DATE: JULY 19, 2022.
 - PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE COMMENTS TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES. CONTRACTOR SHALL HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
 - THE OWNER / CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
 - ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE REQUIREMENTS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES HAVING JURISDICTION OVER THIS PROJECT.
 - THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH HEREIN ARE PART OF THE REQUIRED CONSTRUCTION DOCUMENTS, AND, IN CASE OF CONFLICT, SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY BETWEEN THE GEOTECHNICAL REPORTS AND PLANS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH ANY FURTHER WORK.
 - THESE PLANS ARE BASED ON INFORMATION PROVIDED TO ARK CONSULTING GROUP, PLLC BY THE OWNER AND OTHERS PRIOR TO THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARK CONSULTING GROUP, PLLC IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER ON-SITE FEATURES.
 - ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS AND GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO THE GIVING OF SUCH NOTIFICATION AND THE ENGINEER'S WRITTEN AUTHORIZATION OF SUCH ADDITIONAL WORK.
 - CONTRACTOR SHALL REFER TO THE ARCHITECTURAL / BUILDING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY / EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
 - PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE THE BUILDING LAYOUT BY CAREFUL REVIEW OF THE SITE PLAN AND LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER, ARCHITECT AND SITE ENGINEER OF ANY DISCREPANCIES.
 - THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB & GUTTER. CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY SHALL RESTORE SUCH CONNECTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE EXISTING CONDITIONS, AND IN CONFORMANCE WITH APPLICABLE CODES. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
 - THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, NOR IS THE ENGINEER RESPONSIBLE FOR ANY CONFLICTS OR SCOPE REVISIONS WHICH RESULT FROM THE SAME. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

Impervious Area Calculations

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

PROPOSED TRANSPORTATION IMPERVIOUS AREA:	9,583 SF
PROPOSED TOTAL IMPERVIOUS AREA:	9,583 SF
TOTAL SITE AREA:	13,993 SF
ALLOWABLE IMPERVIOUS AREA (85%):	11,894 SF
PROPOSED IMPERVIOUS PERCENTAGE:	68.48 %



LAYOUT & SIGNAGE STRIPING PLAN

WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Roanoke Project No. CID 23-04

US 401 Business / S. Main Street & Virginia Water Drive

Wake Forest Township, Town of Roanoke, Wake County, North Carolina

NC License: P-1109

ARK CONSULTING GROUP, PLLC

ENGINEERS & SURVEYORS

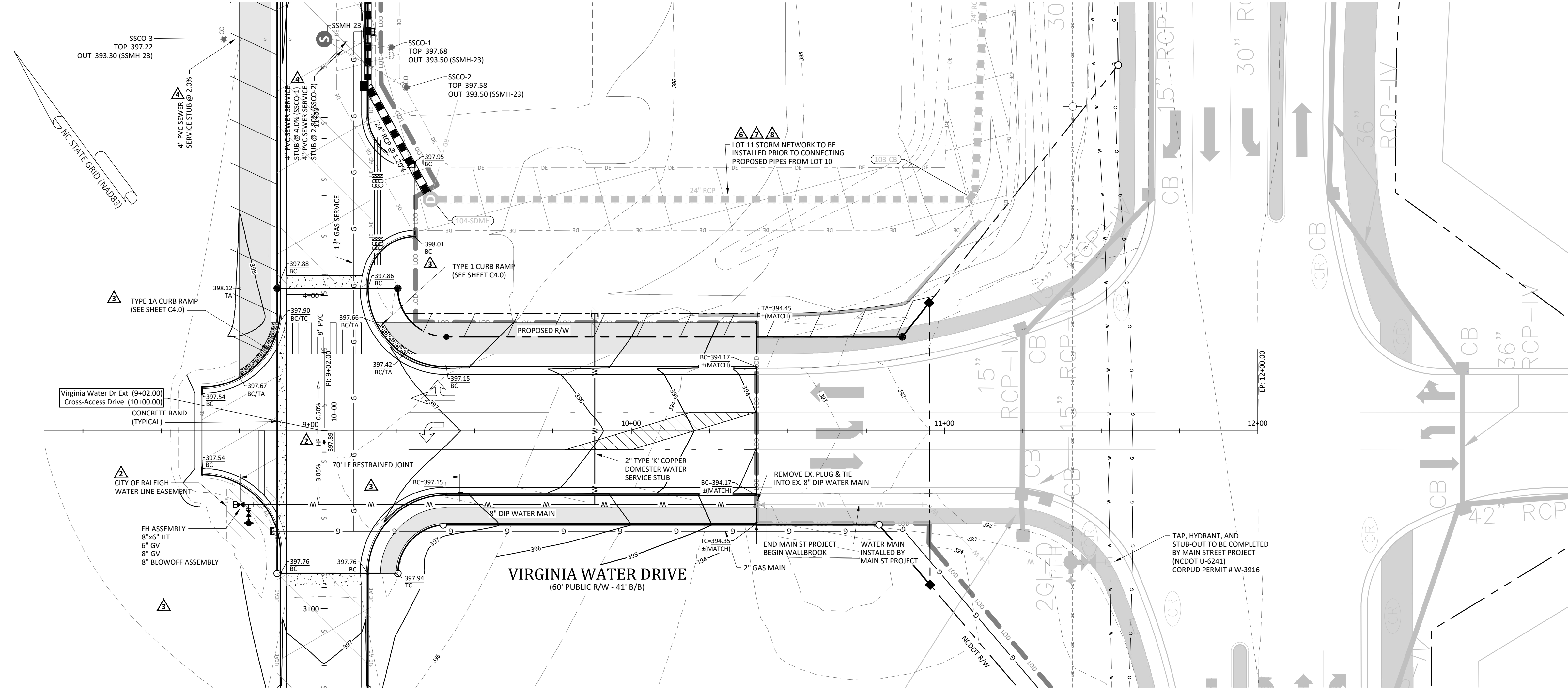
925-A Conference Dr.
Wake Forest, NC 27886
(252) 558-0888
www.arkconsultinggroup.com

6/9/2025

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

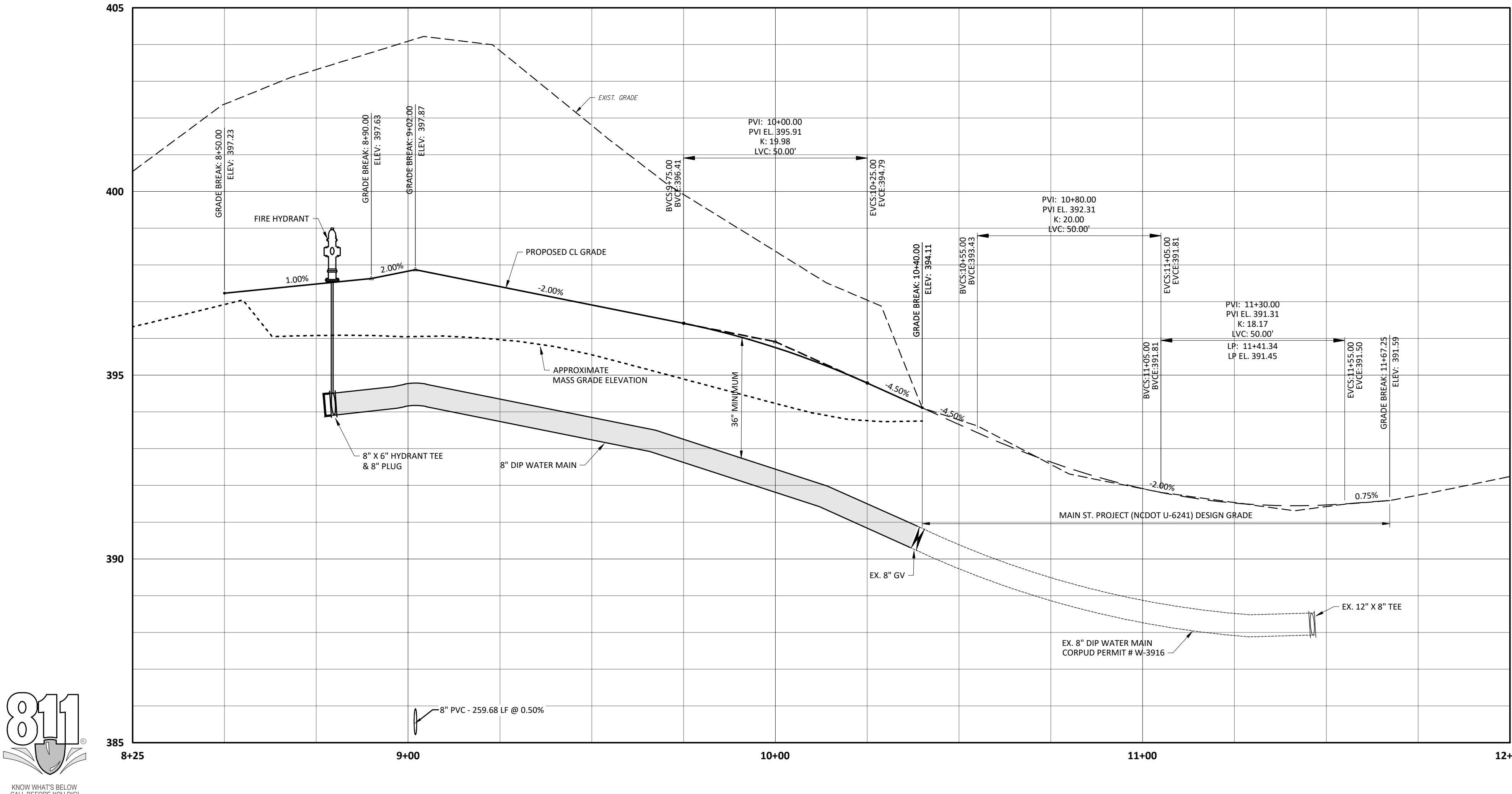
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Date: May 1, 2023



- ### Grading Notes:
1. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET.
 2. SITE CONTRACTOR TO GRADE ALL AREAS WITHIN THE LIMITS OF DISTURBANCE FROM BUILDING TO PROPERTY LINES AND TO EDGE OF PAVEMENT ON STREET SIDES, INCLUDING ROW.
 3. TREES OUTSIDE OF CONSTRUCTION LIMITS OR TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED.
 4. TOP SOIL SHALL BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS. PROVIDE EROSION AND SEDIMENTATION CONTROLS AROUND STOCKPILES DURING CONSTRUCTION.
 5. TILL TOP SOIL TO A DEPTH OF 4" MINIMUM AND REMOVE ALL ROCKS LARGER THAN 1" MEASURED IN LARGEST DIRECTION.
 6. GRADE ALL AREAS TO MAINTAIN POSITIVE SLOPE AWAY FROM BUILDING.
 7. ALL GRADED AREAS TO RECEIVE SEED OR SO, TOP SOIL, STRAW AND WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
 8. INSTALL TEMPORARY TURF REINFORCEMENT MATTING ON ALL SLOPES STEEPER THAN 3:1. MATTING SHALL BE CONTECH LANDLOK C2 OR EQUAL.
 9. REFER TO CIVIL DETAILS FOR PAVEMENT IN PARKING AND DRIVE AREAS.
 10. ALL SIDEWALKS SHALL BE CONSTRUCTED OF 3,500 PSI CONCRETE AND SHALL HAVE TOOLED CONTROL JOINTS PER THE JOINT SPACING REFERENCED ON THE PLAN.
 11. MATERIALS SELECTED FOR USE AS STRUCTURAL FILL SHALL BE FREE OF VEGETABLE MATTER, WASTE CONSTRUCTION DEBRIS, AND OTHER DELETERIOUS MATERIALS. THE MATERIAL SHALL NOT CONTAIN ROCKS HAVING A DIAMETER OVER 3 INCHES.
 12. SOILS REPRESENTED BY THEIR USCS GROUP SYMBOLS WILL TYPICALLY BE SUITABLE FOR USE AS STRUCTURAL FILL (ML), (CL), (SM), AND (SC).
 13. THE FOLLOWING SOILS ARE CONSIDERED SUITABLE IN AREAS WHERE A MINIMUM THICKNESS OF 3' OF LOW PERMEABILITY SOILS CAN BE USED AS COVER: (SW), (SP), (SP-SM), AND (SP-SC).
 14. THE FOLLOWING SOILS ARE CONSIDERED SUITABLE IN AREAS WHERE A MINIMUM THICKNESS OF 3' OF NON-EXPANSIVE SOILS CAN BE USED AS COVER: (MH) AND (CH).
 15. THE FOLLOWING SOIL TYPES ARE CONSIDERED UNSUITABLE: (OL), (OH), AND (PI).
 16. ALL STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). ADDITIONALLY, THE IN-PLACE MAXIMUM DRY DENSITY OF STRUCTURAL FILL SHOULD BE NO LESS THAN 90 PCF.
 17. THE UPPER 12" OF BUILDING FLOOR SLAB SUBGRADES SHALL BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698).
 18. FILL PLACEMENT IN PAVEMENT AREAS SHALL BE PERFORMED IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.
 19. SUITABLE FILL MATERIAL SHALL BE PLACED IN 8" LIFTS AND COMPACTED BY MECHANICAL MEANS. PROOFROLLING WITH RUBBER TIRE, HEAVILY LOADED VEHICLES MAY BE DESIRABLE AT INTERVALS OF APPROXIMATELY 2 VERTICAL FEET TO BIND THE LIFTS TOGETHER AND TO SEAL THE SURFACE OF THE COMPACTED AREAS.
 20. ALL BUILDING, SIDEWALK, AND PAVEMENT SUB-GRADE COMPACTIONS SHALL BE INTERMEDIATELY TESTED THROUGHOUT FILL PLACEMENT OPERATIONS AND APPROVED BY THE GEOTECHNICAL ENGINEER. ALL SUB-GRADES SHALL BE THOROUGHLY PROOF-ROLLED TO IDENTIFY SMALL LOCALIZED AREAS OF UNSUITABLE SOILS. ALL UNSUITABLE SOILS SHALL BE UNDERCUT, REPLACED WITH STRUCTURAL FILL, AND COMPACTED AS DESCRIBED ABOVE.
 21. WHERE REQUIRED, HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
 22. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & 5-49).
 23. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY CORPUD PRIOR TO CONSTRUCTION.
 24. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS MUST BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO CORPUD.
 25. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
 26. 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.
 27. INSTALL PVC WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
 28. INSTALL PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
 29. 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.
 30. 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.
 31. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
 32. 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.
 33. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NC. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

- ### CORPUD Standard Utility Notes:
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 CANNOT 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 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 & 5-49).
 - 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 MUST 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

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**.

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-5528**

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 # **W-4160**

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 # **S-**

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 relied once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____ City of Raleigh Review Officer _____



9 JUN-23 APPROVED - SIGNATURE SET

8 1 APR-23 REVISED PER WARE CO REVIEW COMMENTS

7 20 FEB-23 REVISED PER WARE CO REVIEW COMMENTS

6 12 NOV-24 REVISED PER WARE CO REVIEW COMMENTS

5 12 MAY-24 REVISED PER REVIEW & OWNER COMMENTS

4 1 MAR-24 REVISED PER TOR REVIEW COMMENTS

3 1 JUN-23 REVISED PER TOR REVIEW COMMENTS

2 1 JUN-23 ISSUED FOR PERMIT REVIEW

1 1 JUN-23

REVISIONS:

CROSLAND SOUTHEAST

VIRGINIA WATER DRIVE EXT - PLAN-PROFILE

WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Rolesville Project No. CID 23-04

US 401 Business / S. Main Street & Virginia Water Drive

Wake Forest Township, Town of Rolesville, Wake County, North Carolina

Project Manager: BCF

Drawn By: DLCT/GN

Checked By: TGN

Project Number: 22049

Drawing Number: D-1404-CID

C3.0

Date: May 1, 2023

NC License: PA 1199

CONSULTING

ARK GROUP PLLC

ENGINEERS & SURVEYORS

925-A Conference Dr

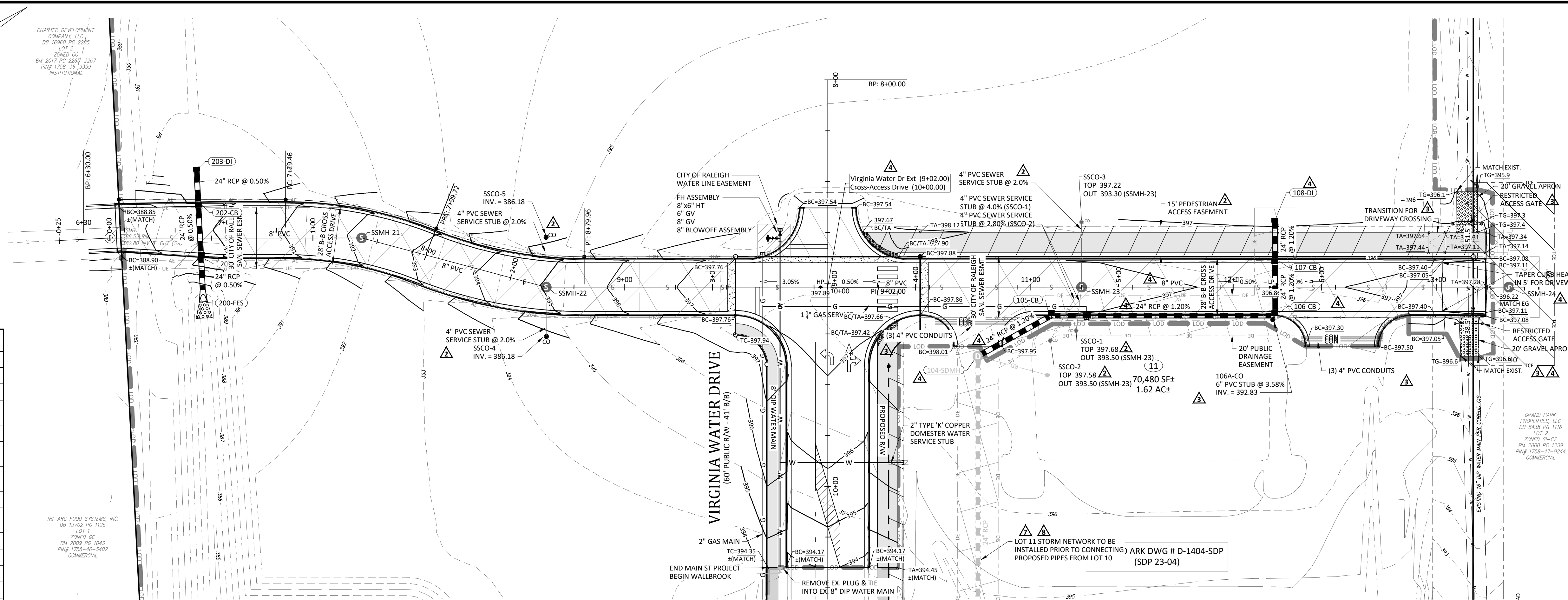
Wake Forest, NC 27886

(757) 558-0888

www.arkconsultinggroup.com

6/9/2025

Professional Engineer Seal: NORTH CAROLINA, EXPIRATION DATE 31970, JERRYIN C. FAGUINDO



ID	TOP	IN	OUT	DESC
100-DI	390.70			Drop Inlet
100A-NCDDOT STUB	385.95	383.00 (101-CB)		U-6241 Project Tie-In
101-CB	394.11	383.27 (103-CB) 390.32 (102-CB)	383.07 (100A-NCDDOT STUB)	Catch Basin
102-CB	393.73		390.90 (101-CB)	Catch Basin
103-CB	395.26	384.93 (104-SDMH) 386.27 (8" PVC)	384.73 (101-CB)	Catch Basin
104-SDMH	397.42	387.21 (105-CB) 389.57 (104A-CO)	387.01 (103-CB)	48 in MH
105-CB	397.54	387.90 (106-CB)	387.70 (104-SDMH)	Catch Basin
106-CB	397.03	389.43 (107-CB) 392.75 (106A-CO)	389.23 (105-CB)	Catch Basin
106A-CO	397.17		392.83 (106-CB)	CO
107-CB	397.03	389.96 (108-DI)	389.76 (106-CB)	Catch Basin
108-DI	396.90		390.19 (107-CB)	Drop Inlet
200-FES	387.99	385.66 (201-CB)		Flared End Section
201-CB	390.03	385.77 (202-CB)	385.77 (200-FES)	Catch Basin
202-CB	390.16	385.90 (203-DI)	385.90 (201-CB)	Catch Basin
203-DI	390.17		385.99 (202-CB)	Drop Inlet

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-5528

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 # W-4160

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 # S-

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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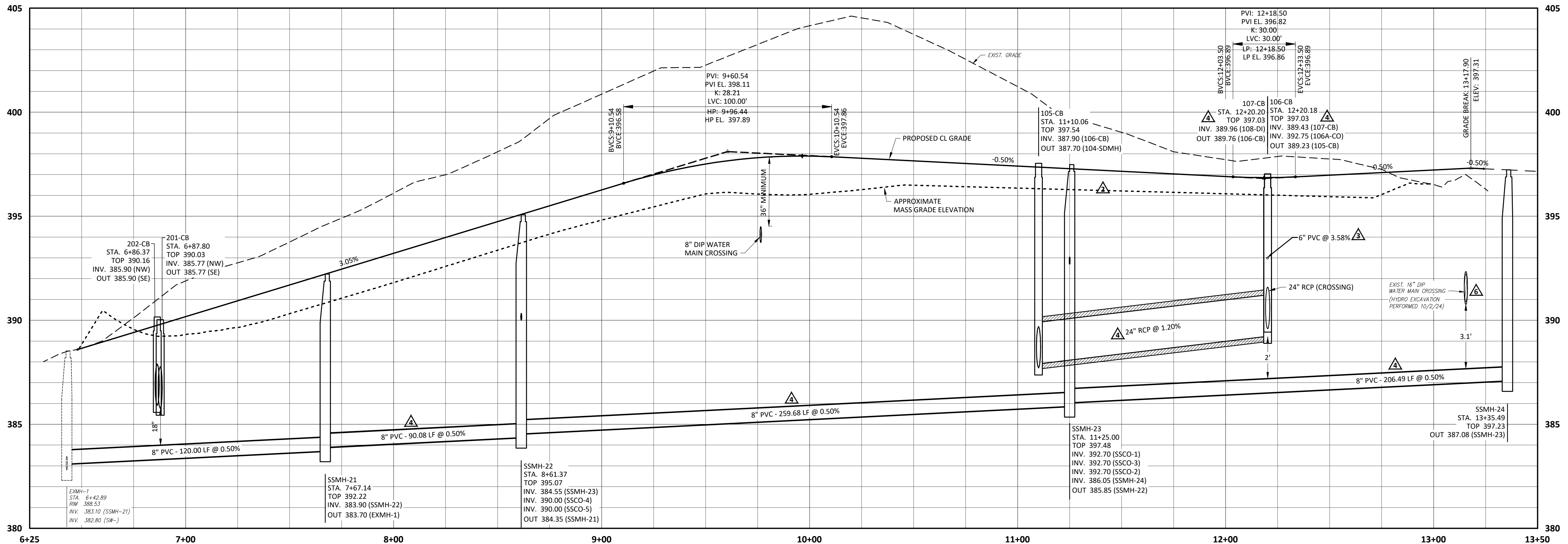
City of Raleigh Development Approval _____
City of Raleigh Review Office _____

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.



CRITICAL WATER TRANSMISSION MAIN NOTES

1. RALEIGH WATER STAFF MUST BE ON-SITE WHEN ANY CONSTRUCTION OCCURS IN THE VICINITY OF THE CRITICAL WATER TRANSMISSION MAIN. PLEASE EMAIL WDSERVICE-REQUESTDL@RALEIGHNC.GOV A MINIMUM OF 72-HOURS IN ADVANCE OF ANY WORK IN THE VICINITY OF THIS CRITICAL WATER TRANSMISSION MAIN.
2. HYDRO EXCAVATION PERFORMED BY CARDINAL CIVIL, LLC AND SURVEY PERFORMED BY DIGIACOMO LAND SURVEYING, PLLC ON OCTOBER 2, 2024 AND PROVIDED TO ARK CONSULTING GROUP, PLLC.



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

#	DATE	DESCRIPTION
1	1-MAY-23	ISSUED FOR PERMIT REVIEW
2	1-JUNE-23	REVISED FOR TOR REVIEW COMMENTS
3	1-MAR-24	REVISED FOR TOR REVIEW & OWNER COMMENTS
4	2-MAY-24	REVISED PER REVIEW & OWNER COMMENTS
5	13-SEP-24	REVISED PER REVIEW & OWNER COMMENTS
6	22-NOV-24	REVISED PER WAKE CO. REVIEW COMMENTS
7	20-FEB-25	REVISED PER WAKE CO. REVIEW COMMENTS
8	1-APR-25	REVISED PER WAKE CO. REVIEW COMMENTS
9	9-JUN-25	APPROVED - SIGNATURE SET



CROSLAND
SOUTHEAST

ACCESS DRIVE - PLAN-PROFILE

WALLBROOK ROADWAY IMPROVEMENTS

Town of Rolesville Project No. CID 23-04
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina

NC License # P-1109
ARK CONSULTING GROUP PLLC
 ENGINEERS & SURVEYORS
 9375-A Conference Dr.
 Greenville, NC 27858
 (252) 558-0888
www.arkconsultinggroup.com

NORTH CAROLINA
 PROFESSIONAL
 SEAL
 31970
 ENGINEER
 BRYAN C. FAGUNDIS

6/9/2025

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

C3.1

Date: May 1, 2023



Water and Sewer Permits (if applicable)
The City of Raleigh consents to the construction shown on this plan. The material and construction standards and specifications of the City's Department Permit # S-5528

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 # W-4160

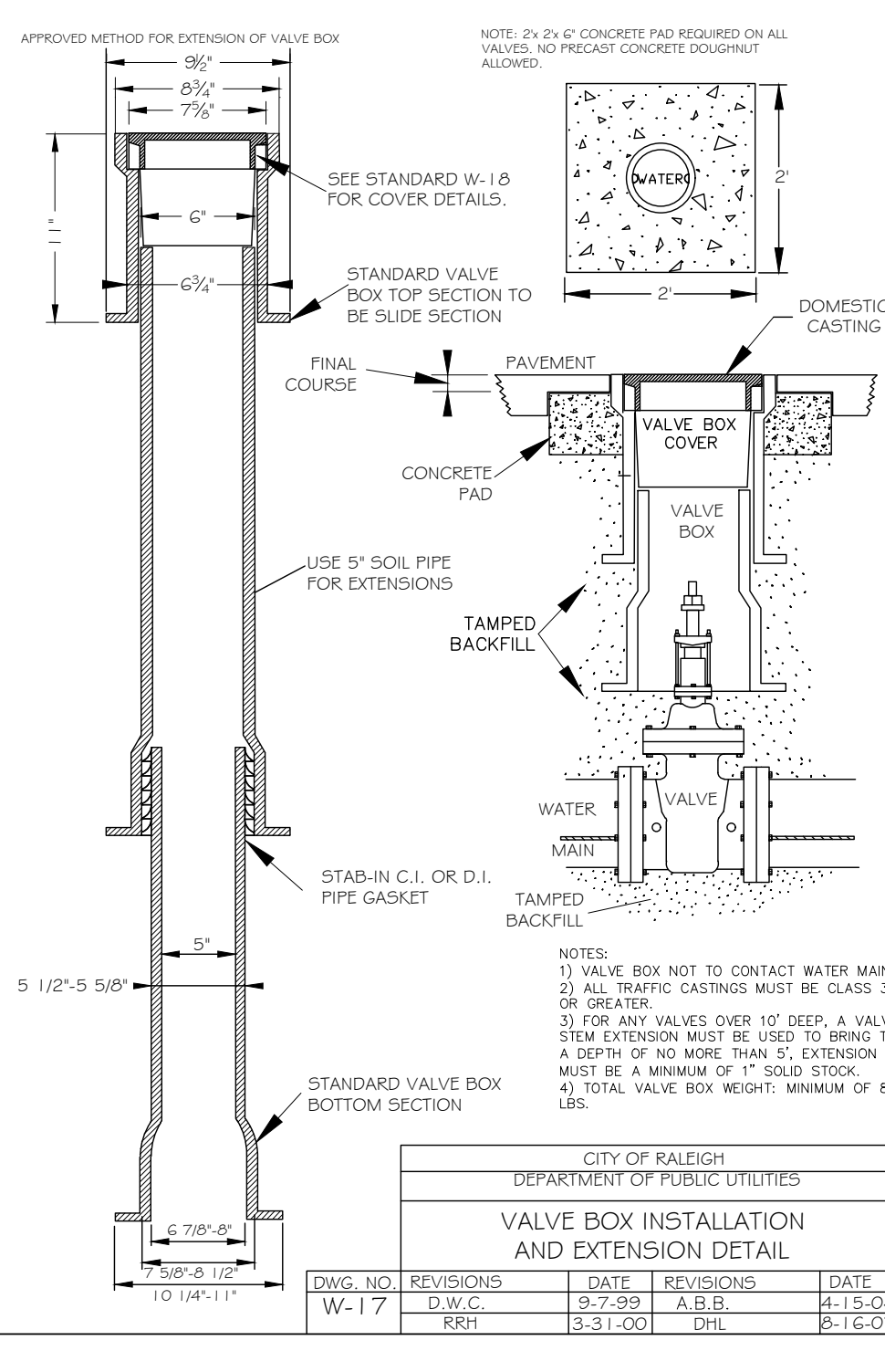
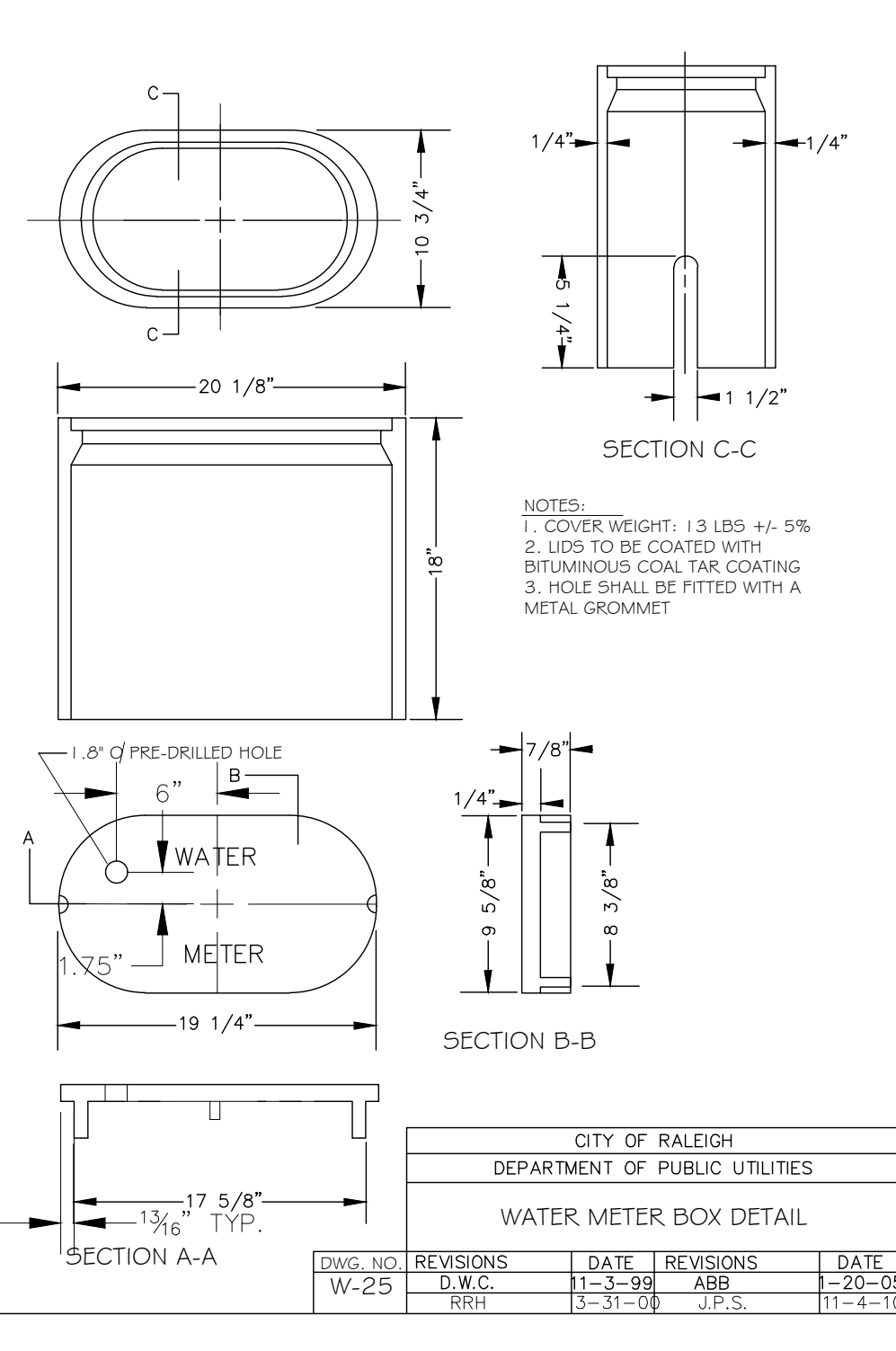
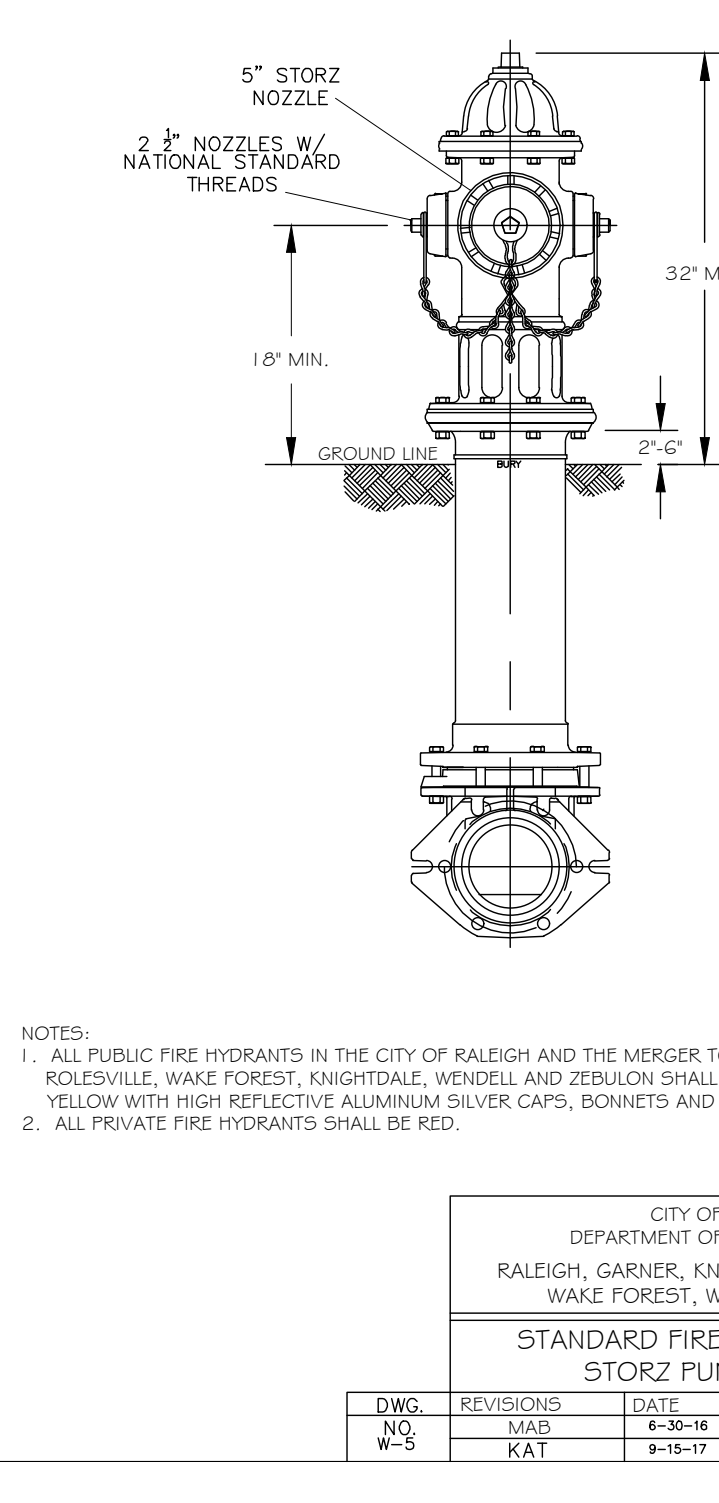
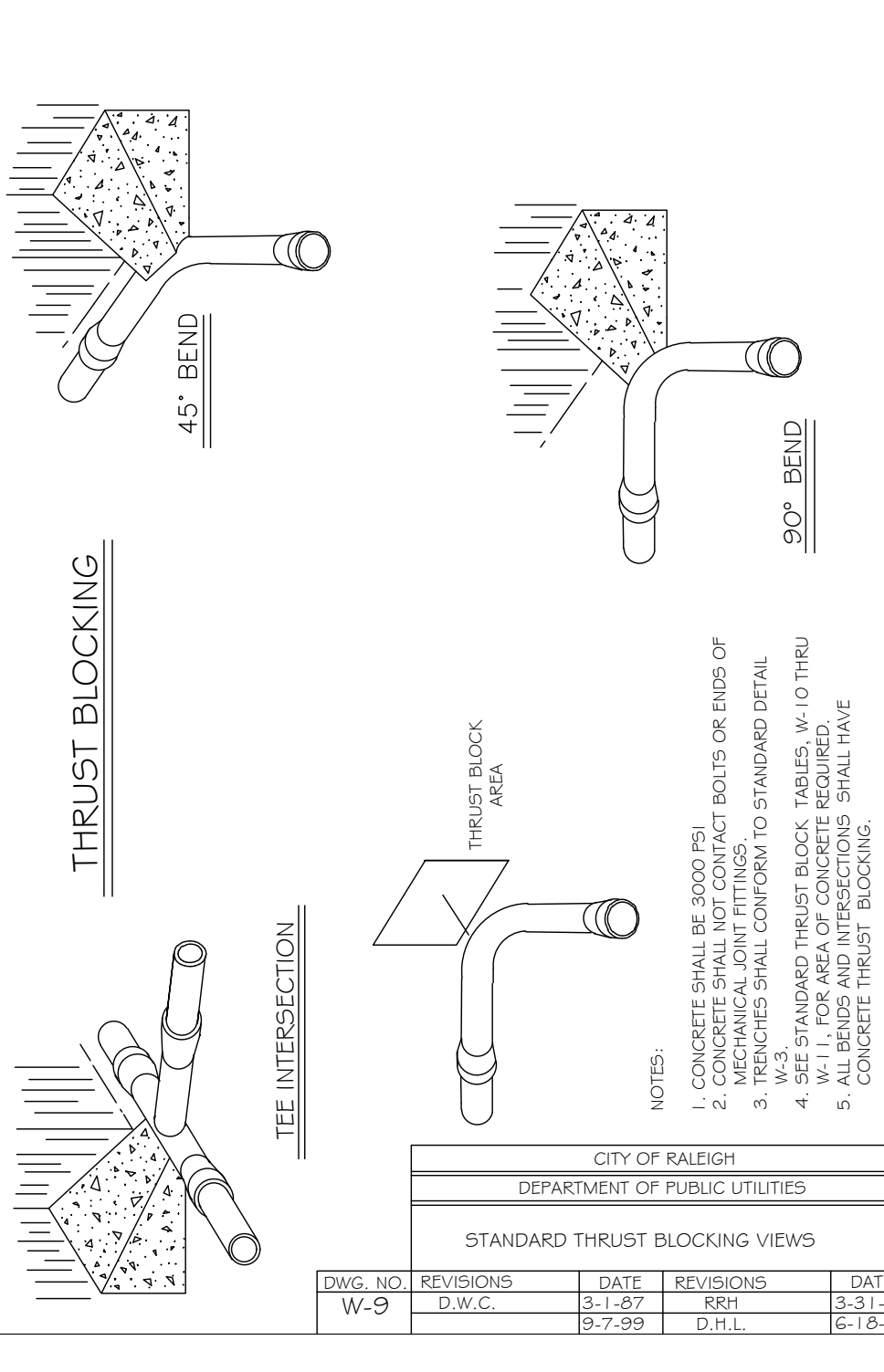
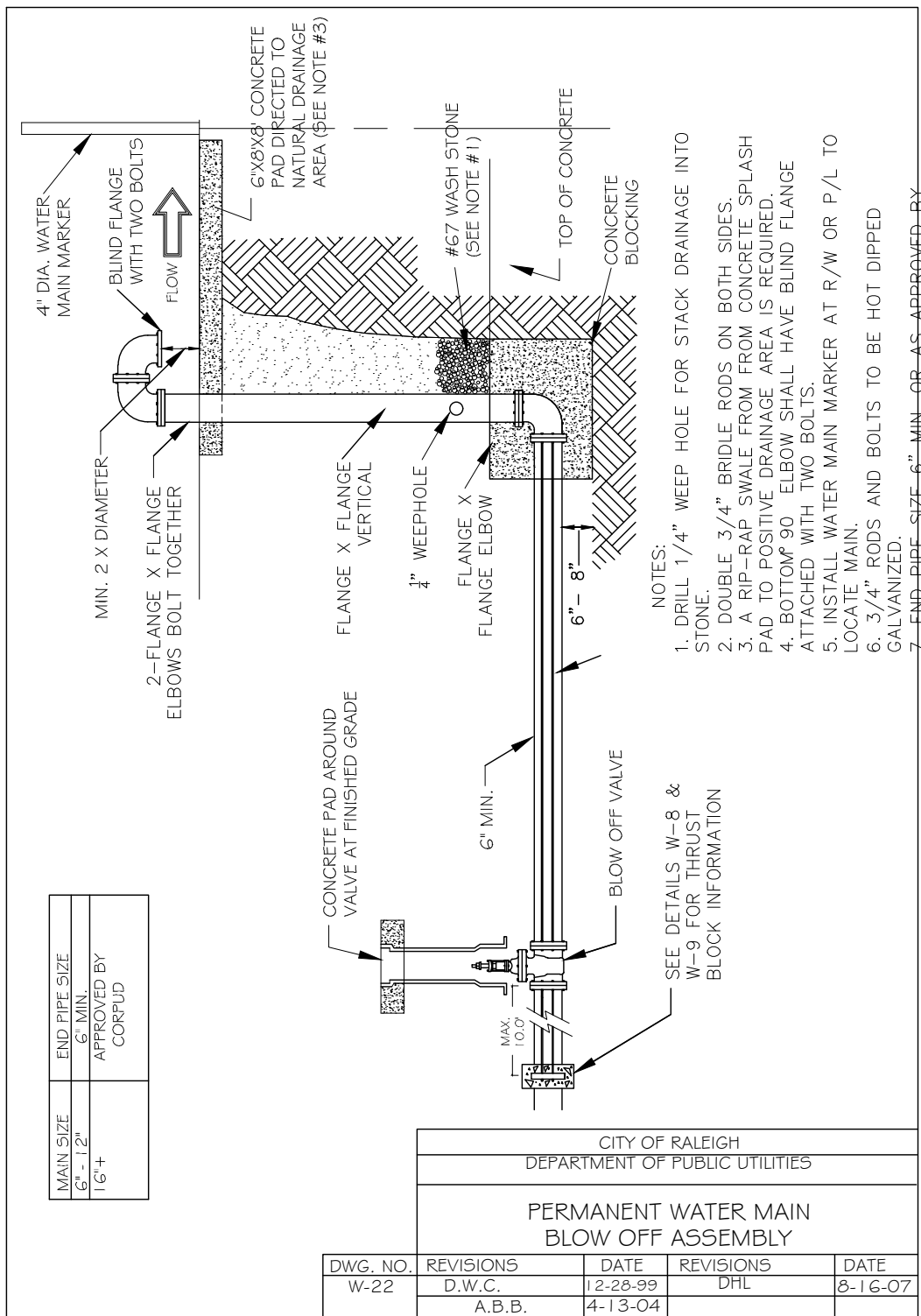
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City of Raleigh Development Approv

City of Raleigh Review Office



#	DATE	DESCRIPTION
9	9-JUN-25	APPROVED - SIGNATURE SET
8	1-APR-25	REVISED PER WAKE CO. REVIEW COMMENTS
7	20-FEB-25	REVISED PER WAKE CO. REVIEW COMMENTS
6	22-NOV-24	REVISED PER WAKE CO. REVIEW COMMENTS
5	13-SEP-24	REVISED PER REVIEW & OWNER COMMENTS
4	2-MAY-24	REVISED PER REVIEW & OWNER COMMENTS
3	1-MAR-24	REVISED FOR REVIEW & OWNER COMMENTS
2	1-JUNE-23	REVISED PER TOR REVIEW COMMENTS
1	1-MAY-23	ISSUED FOR PERMIT REVIEW



WALLBROOK ROADWAY IMPROVEMENTS
VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

DETAILS

Town of Rolesville Project No. CID 23-04
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina

NC License # 11399

ARK CONSULTING GROUP PLLC
ENGINEERS & SURVEYORS

ARK

935-A Conference Dr.
Durham, NC 27638
(252) 558-0888
www.arkconsultinggroup.com

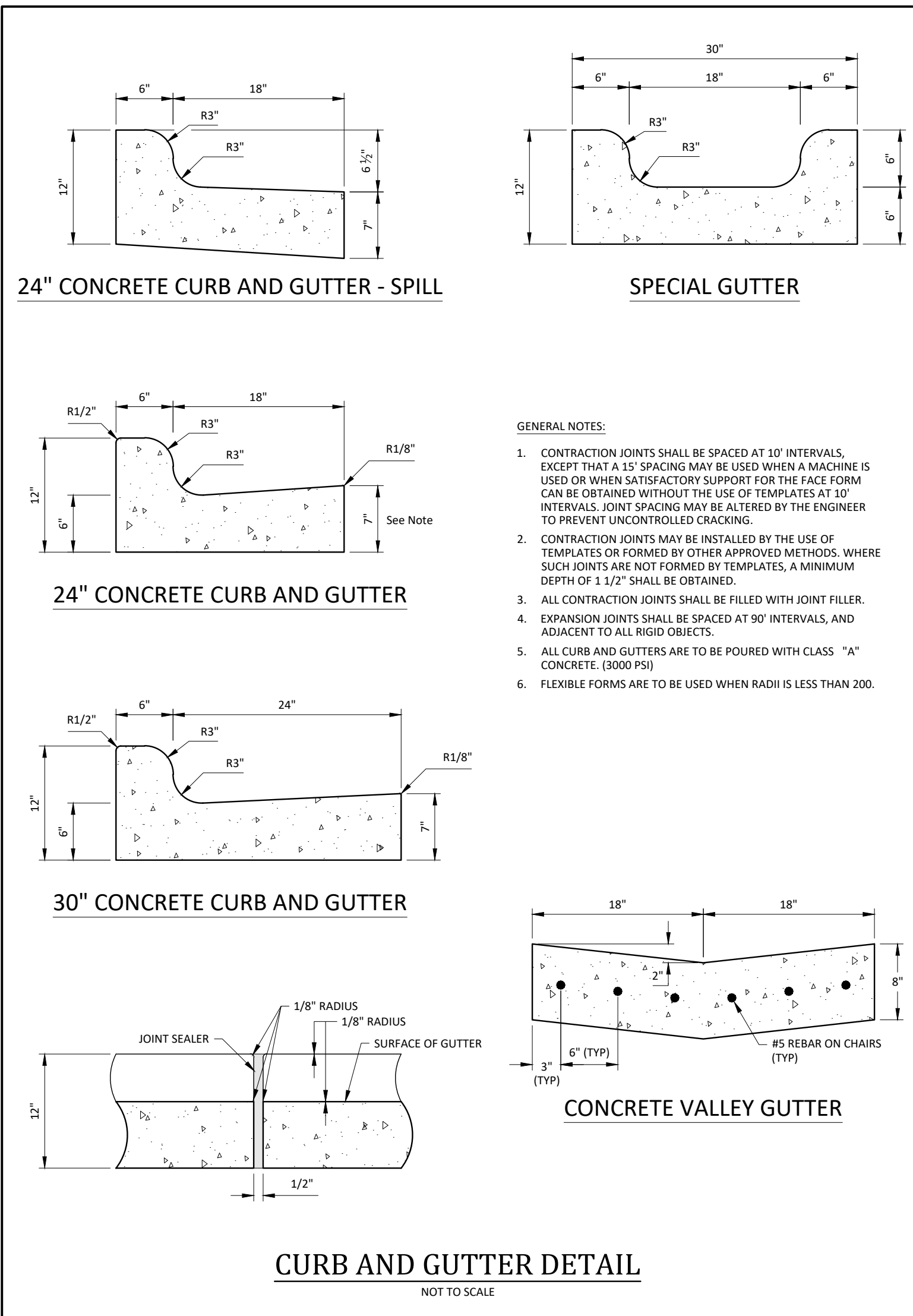
NORTH CAROLINA PROFESSIONAL ENGINEERING SEAL 31970
BRYAN C. FACING

629/2925

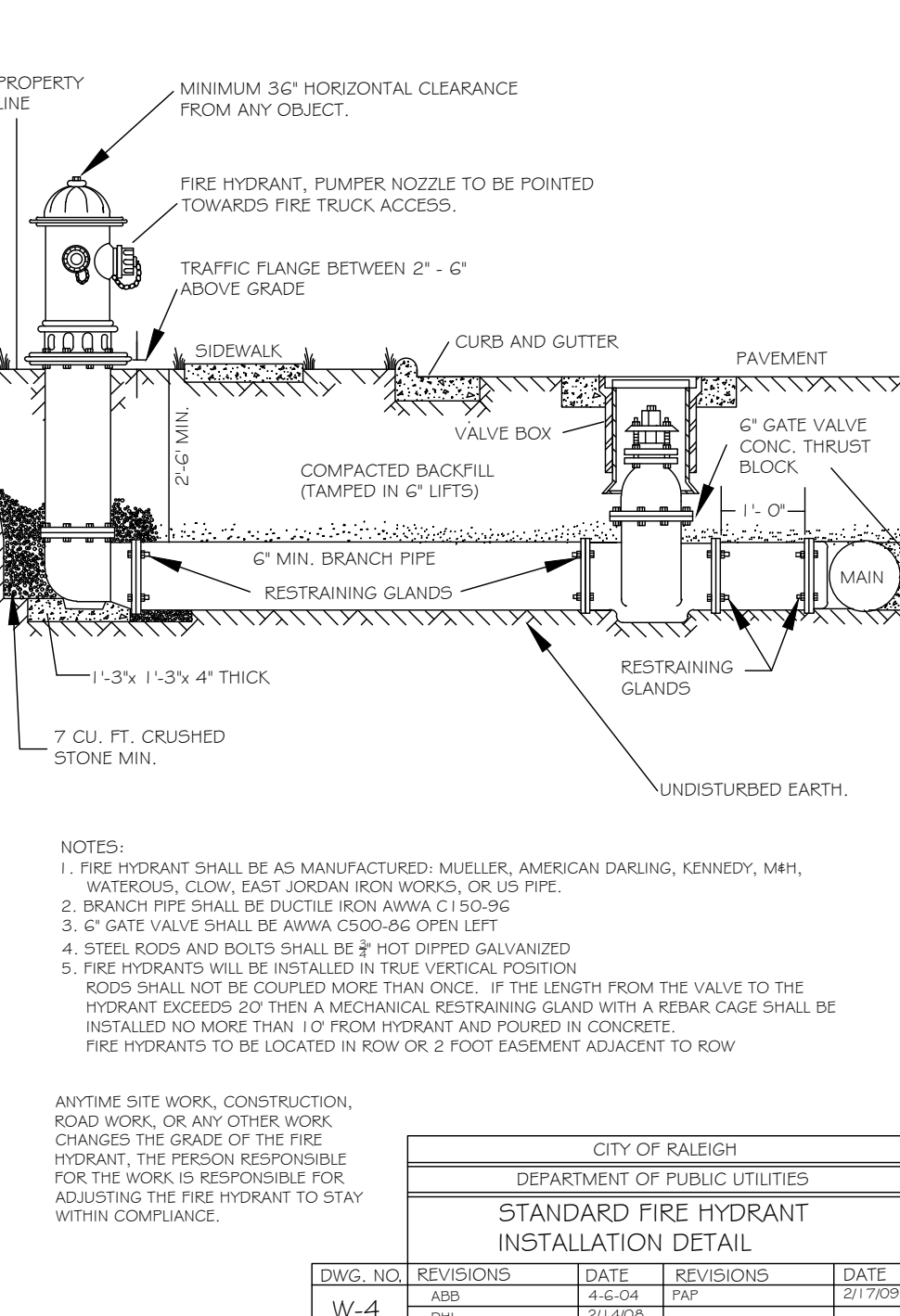
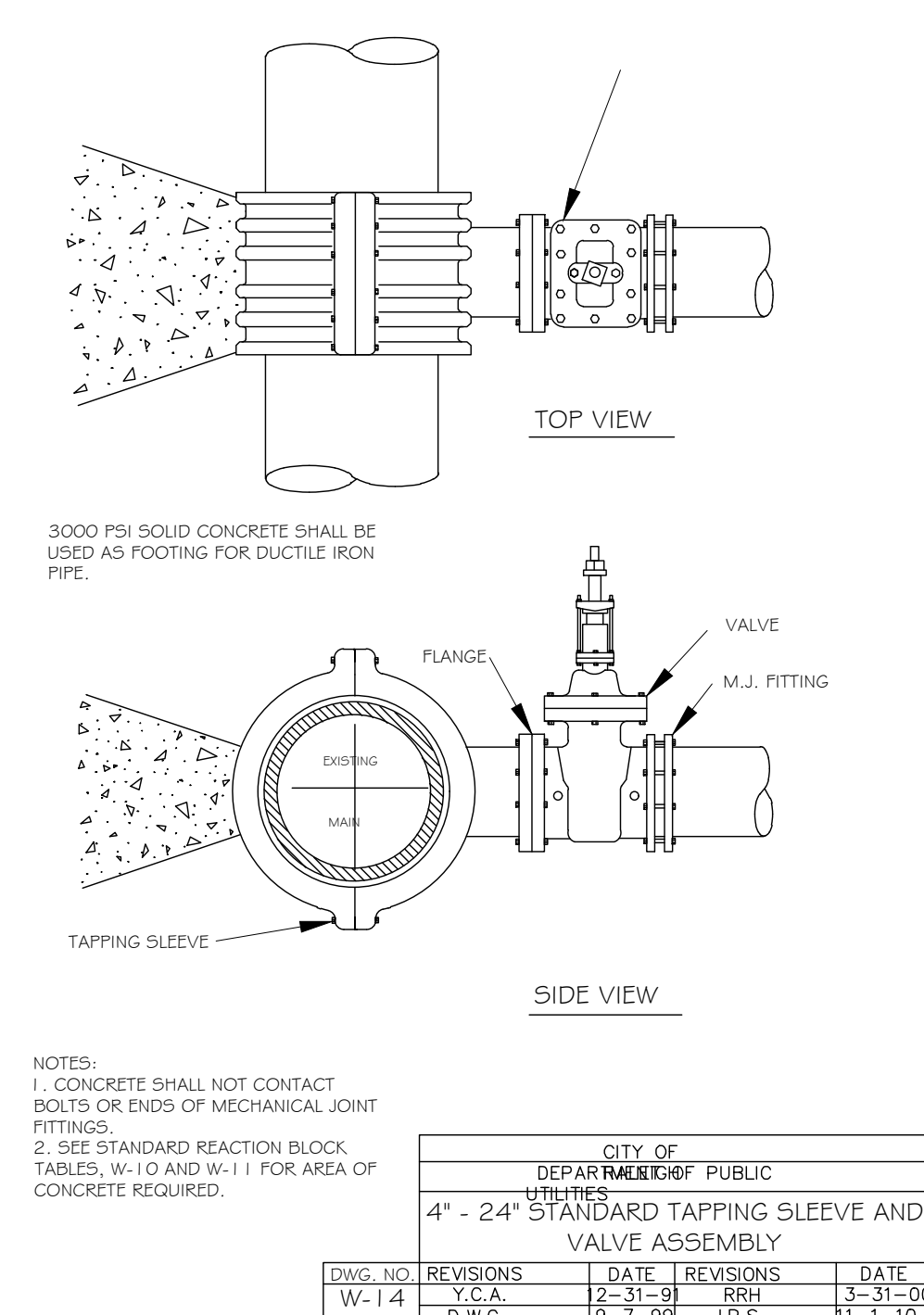
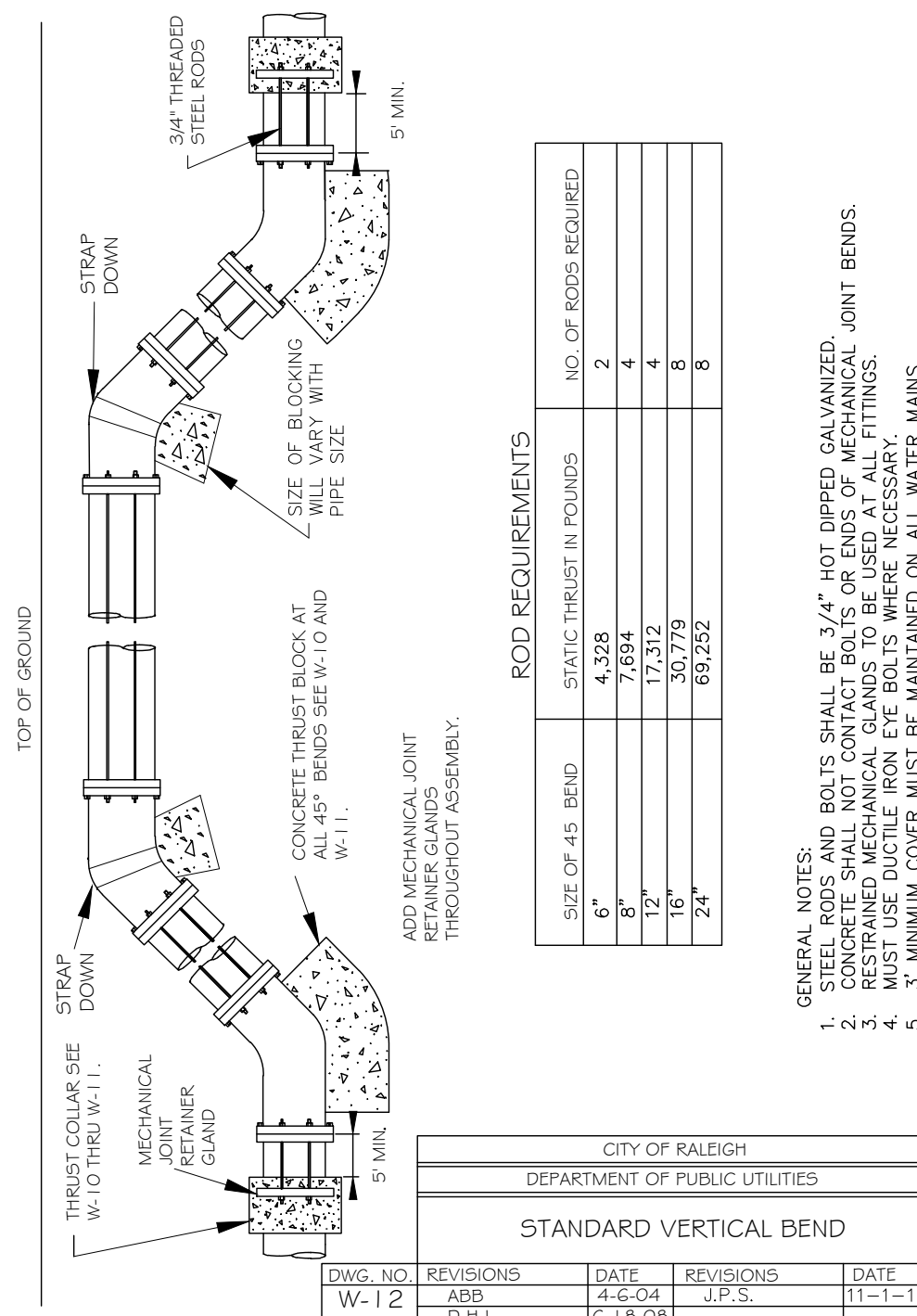
Project Manager:	BCF
Drawn By:	DLC/TGN
Checked By:	TGN
Project Number:	22049
Drawing Number:	D-1404-CID

C4.1

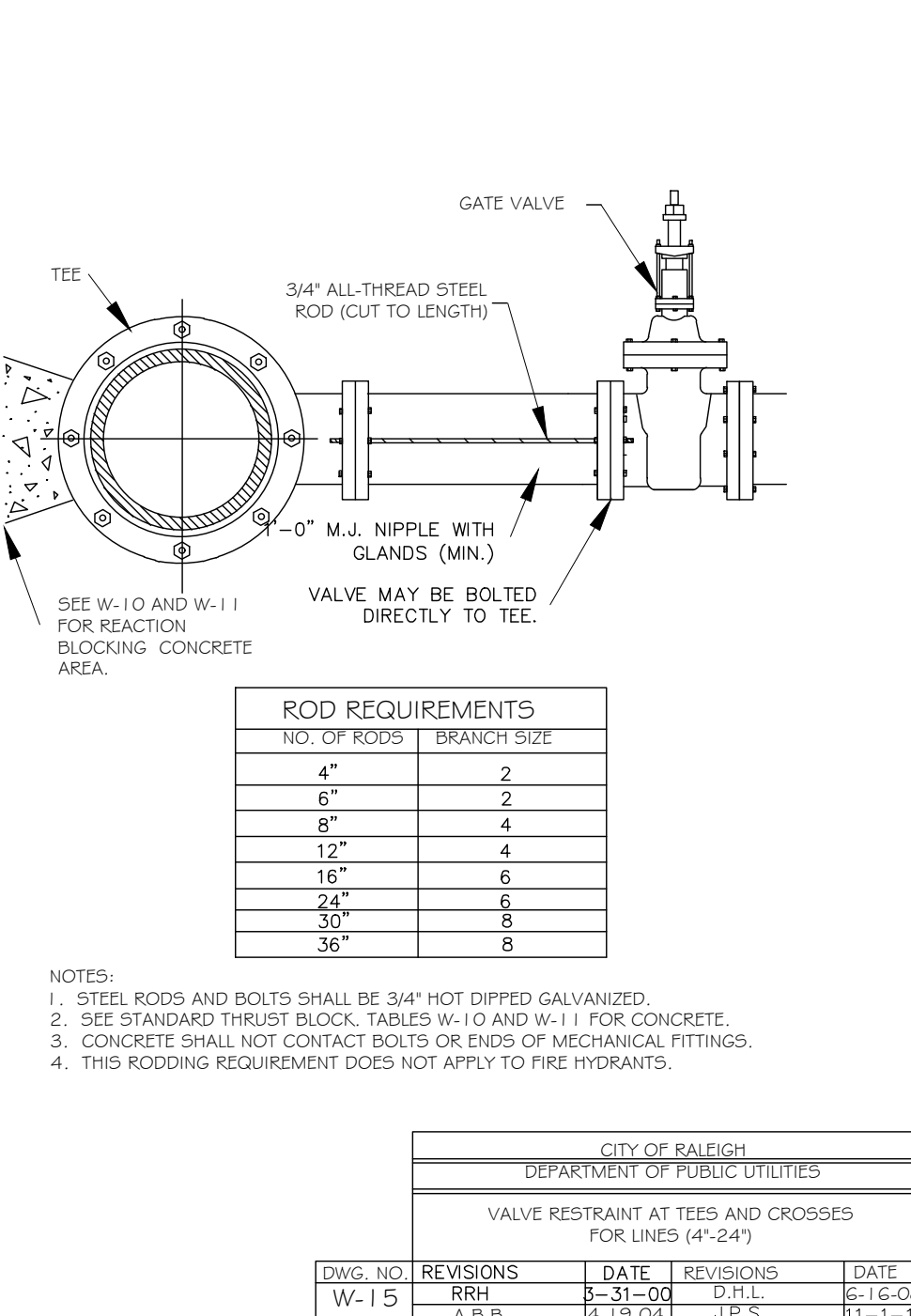
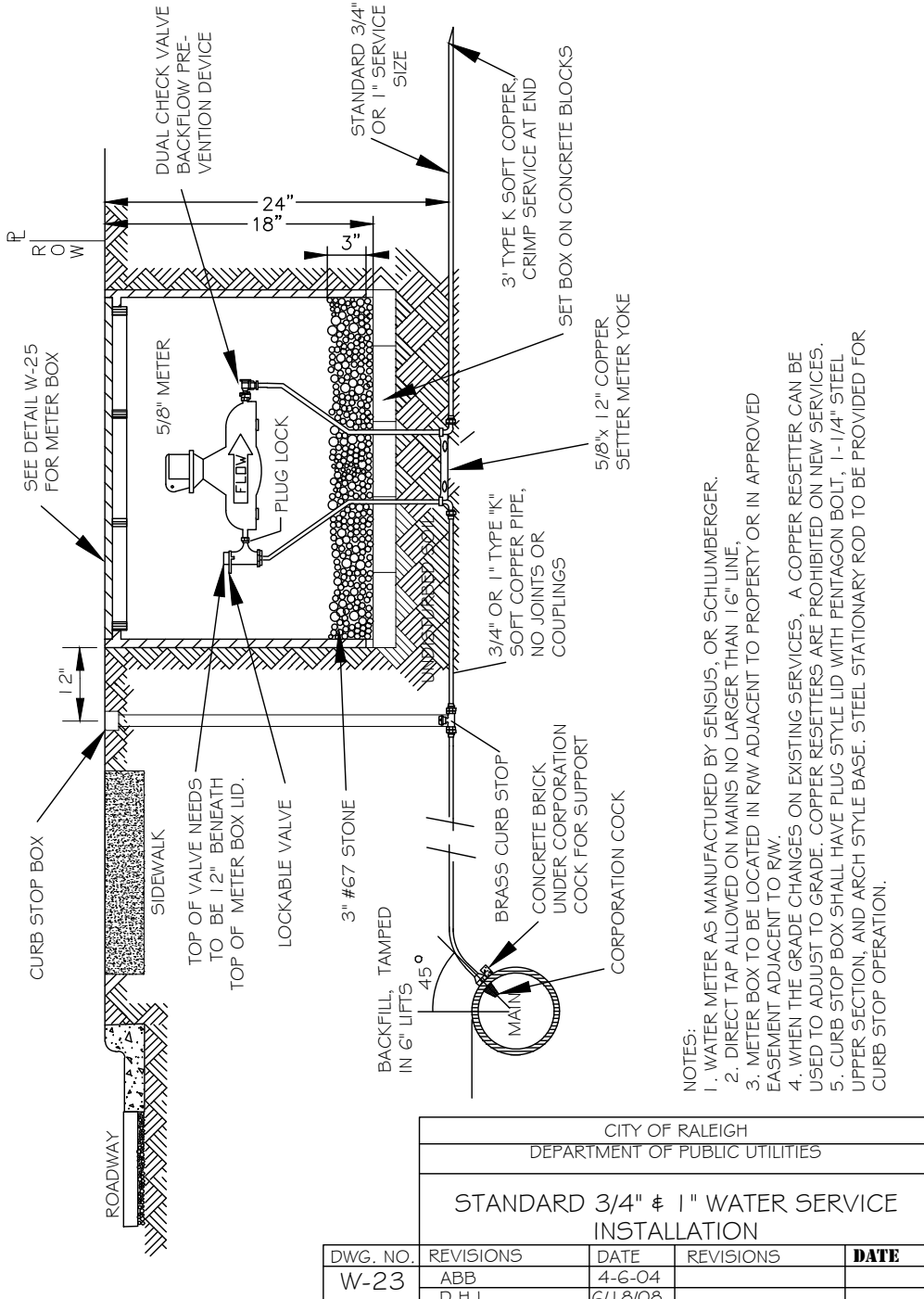
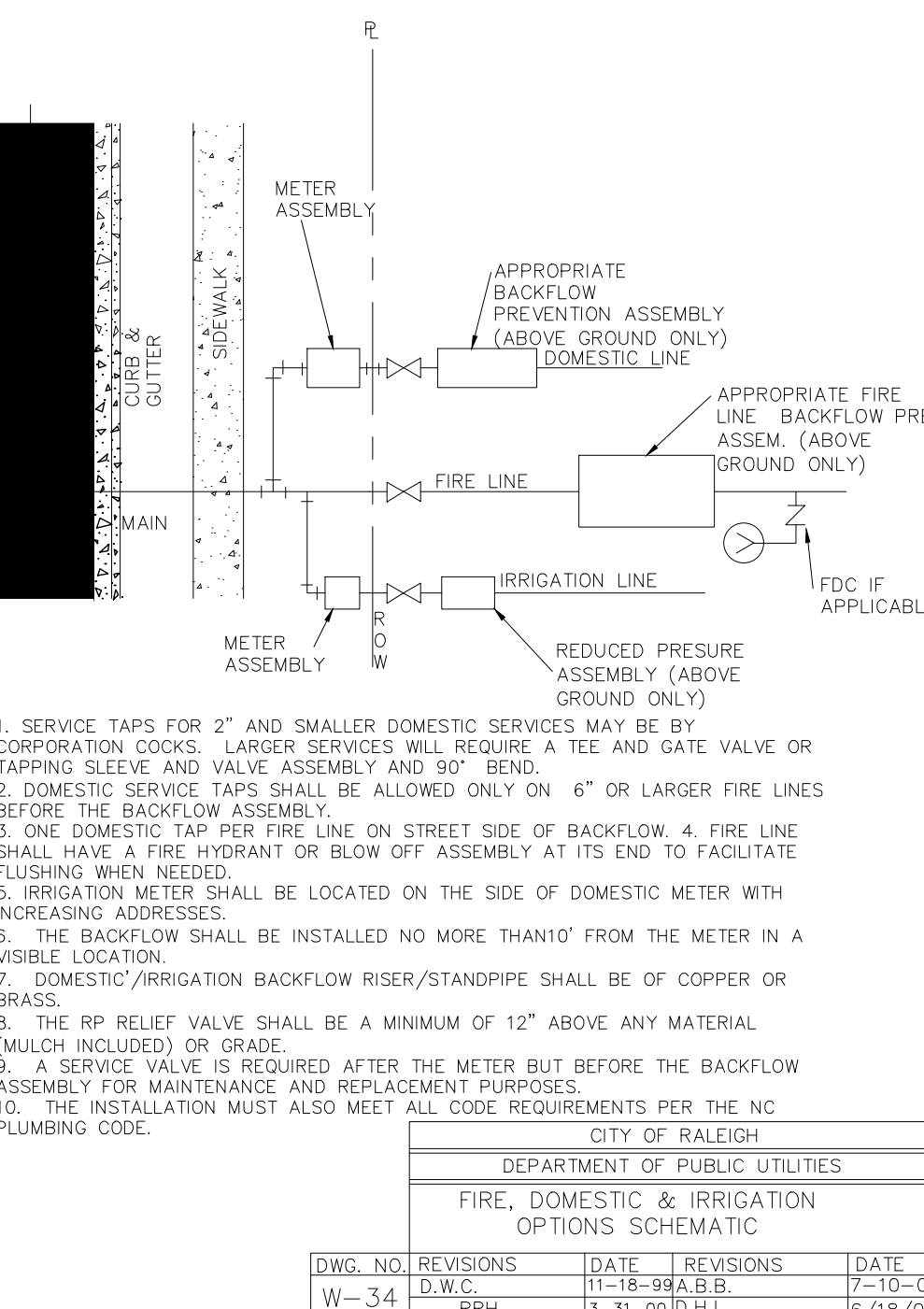
Date: May 1, 2023



REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS BASED ON TEST PRESSURE OF 200 P.S.I.												
ALL AREAS GIVEN IN SQUARE FEET												
SIZE AND DEGREE OF BEND	STATIC DRY	WATER DRY	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET	WATER WET
	15°	30°	45°	60°	75°	90°	105°	120°	135°	150°	165°	180°
11 1/4"	1,108	1	1	1	1	1	1	1	2	1		
12 1/2"	2,207	1	2	2	1	1	1	1	3	1		
45°	4,328	2	3	3	1	1	2	5	1			
90°	7,996	2	4	5	1	1	2	8	1			
PLUG	5,655	2	3	4	1	1	2	6	1			
11 1/4"	1,970	1	1	2	1	1	1	2	1			
12 1/2"	3,922	1	2	3	1	1	1	4	1			
45°	7,694	2	4	5	1	1	2	8	1			
90°	14,215	4	8	9	2	2	4	15	2			
PLUG	10,053	3	5	6	2	2	3	10	1			
11 1/4"	4,433	2	3	3	1	1	2	5	1			
12 1/2"	8,826	3	5	6	2	2	3	9	1			
45°	17,312	5	9	11	3	3	5	18	2			
90°	31,983	8	16	19	4	4	8	32	4			
PLUG	22,619	6	12	14	3	3	6	23	3			
6"												
11 1/4"	7,881	2	4	5	1	1	2	8	1			
12 1/2"	15,691	4	8	10	2	2	4	16	2			
45°	30,779	8	16	19	4	4	8	31	4			
90°	56,861	15	29	35	8	8	15	57	6			
PLUG	40,213	10	21	25	5	5	10	41	5			



REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE HORIZONTAL POSITION AND AT ANGLE OF 90° TO THE THRUST VECTOR. USE G' - 90 BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.	CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES THRUST BLOCKING DESIGN QUANTITY TABLE				
	DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
	W-10	D.W.C.	6-23-99		



4\" DIA. WATER MAIN MARKER

MIN. 2\" DIAMETER

2-FLANGE X FLANGE WITH TWO BOLTS

ELBOWS BOLT TOGETHER

FLOW

EXPANSION CONCRETE PAD DIRECTED TO DOWNSTREAM (SEE NOTE #3)

6\"7 WASH STONE

FLANGE X FLANGE VERTICAL

3\" WEEPHOLE

FLANGE X FLANGE

FLANGE ELBOW

6\"- 8\"

TOP OF CONCRETE BLOCKING

CONCRETE PAD AROUND VALVE AT FINISHED GRADE

6\" MIN.

BLOW OFF VALVE

SEE DETAILS W-3 & BLOCK INFORMATION

NOTES:

1. DRILL 1/4\" WEEP HOLE FOR STACK DRAINAGE INTO CONCRETE PAD.
2. INSTALL 3/4\" BRIGLIE RODS ON BOTH SIDES.
3. 4\" RP-SPRINKLER W/ WALE FROM CONCRETE SPLASH PAD TO TOP OF CONCRETE BLOCKING.
4. BOTTOM JOINT ELBOW SHALL HAVE BIND FLANGE.
5. INSTALL WATER MAIN MARKER AT F/W OR P/A TO LOCATE MAIN.
6. 1/4\" WASH STONE SHALL BE 6\" DEEP.
7. END PIPE SIZE 6\" MIN. OR AS APPROVED BY PUBLIC.

MAIN SIZE	END MAIN SIZE
12\"	12\"
10\"	10\"
8\"	8\"


AT 10' INTERVALS BY 10' MIN. BY 10' MIN.

W.D. NO.	REVISIONS	DATE	REVISIONS	DATE
W-22	D.W.C.	12-26-99	DHL	8-1-00

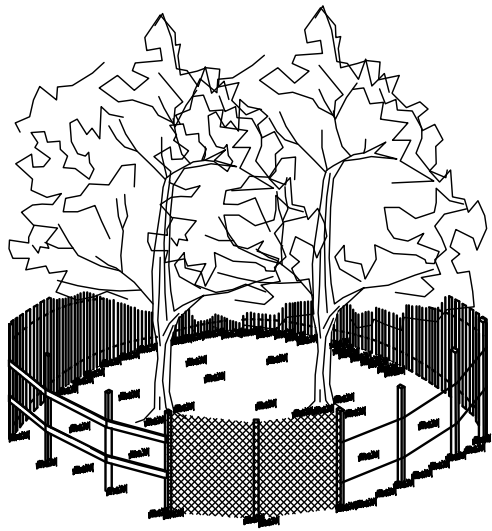
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES

PERMANENT WATER MAIN
BLOW OFF ASSEMBLY

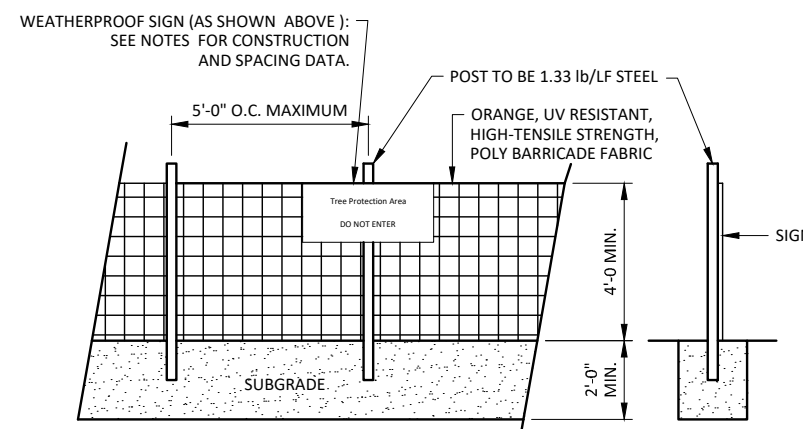
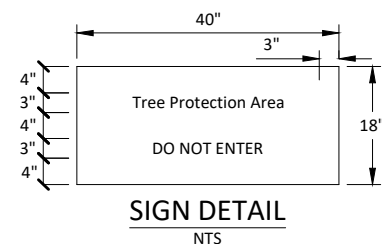
PLUMBING CODE.	CITY OF RALEIGH			
	DEPARTMENT OF PUBLIC UTILITIES			
	FIRE, DOMESTIC & IRRIGATION			
	OPTIONS SCHEMATIC			
	DWG. NO.	REVISIONS	DATE	REVISIONS
W-34	D.W.C.	11-18-99	A.B.	7-10-00
		1-11-00	A.H.	6-18-00

 ROADWAY	CITY OF RALEIGH			
	DEPARTMENT OF PUBLIC UTILITIES			
	STANDARD 3/4" & 1" WATER SERVICE			
	INSTALLATION			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-23	ABB	4-6-04		
		6/18/08		

		CITY OF SALEM			
		DEPARTMENT OF PUBLIC UTILITIES			
		VALVE RESTRAINT AT TEES AND CROSSSES FOR LINES (4'-24")			
DWG. NO.	REVISIONS	DATE	DESCRIPTION	DATE	
W-15	RRH	8-31-00	D.T.L.	8-16-00	



- NOTES:
1. SIGNS ARE TO BE PLACED NO GREATER THAN 300' 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 LICENSED INSPECTOR. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT. ADDITIONAL SIGNS MAY BE REQUIRED BY NOTICE BASED ON ACTUAL FIELD CONDITIONS.



TREE PROTECTION FENCE

NOT TO SCALE

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-5528**

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 # **W-4160**

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 # **S-**

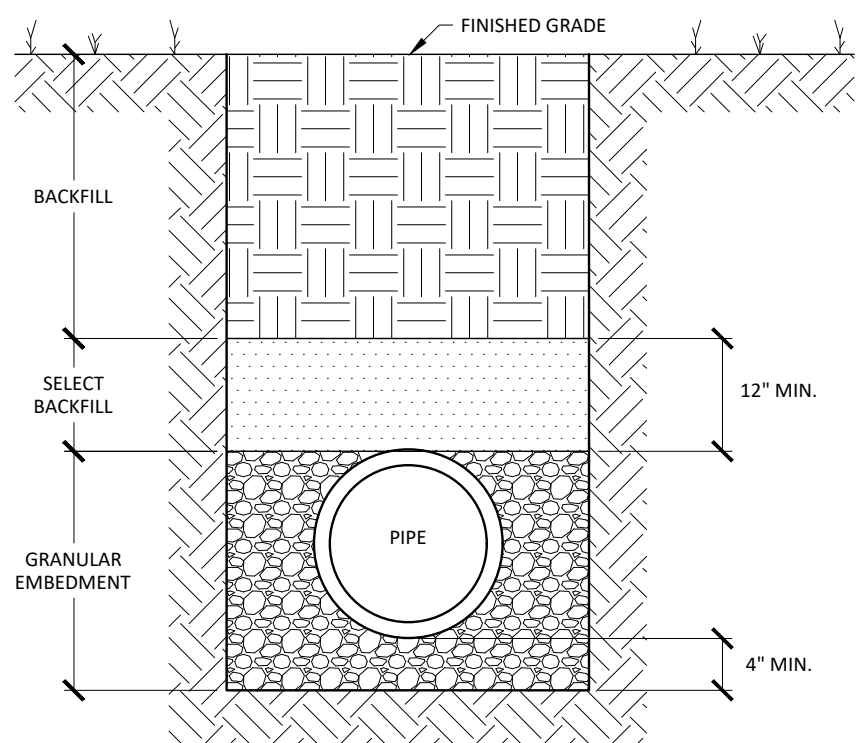
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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.

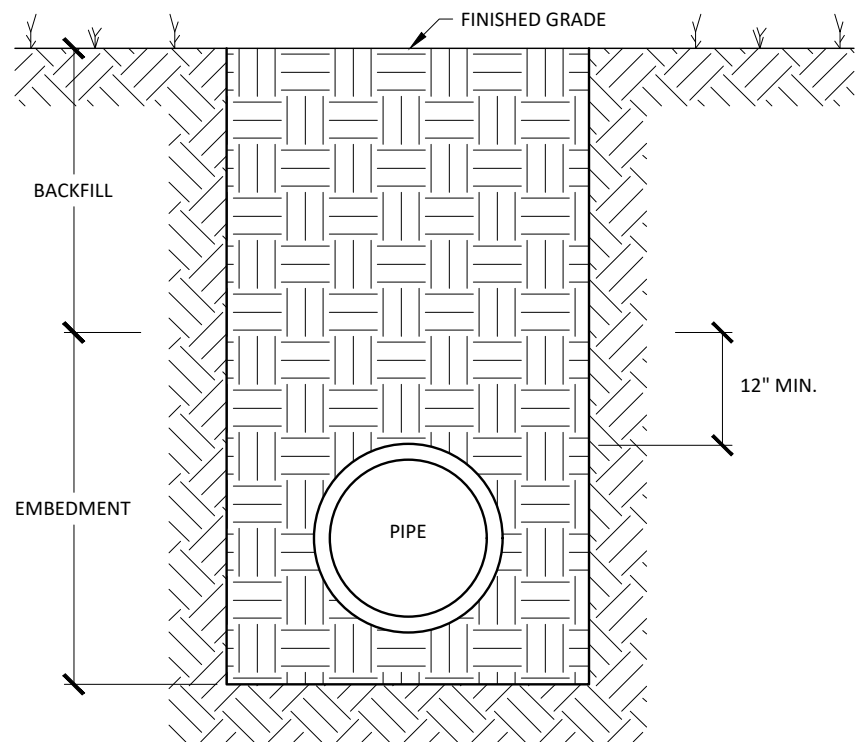
City of Raleigh Development Approval

City of Raleigh Review Officer



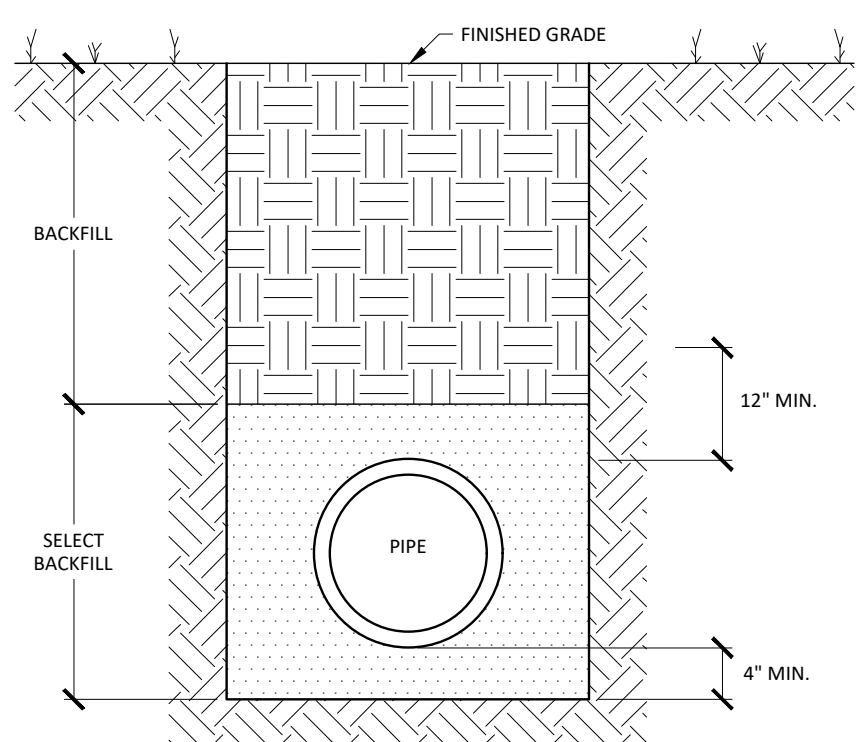
TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC GRAVITY STORM DRAIN & SANITARY SEWER PIPING

NOT TO SCALE



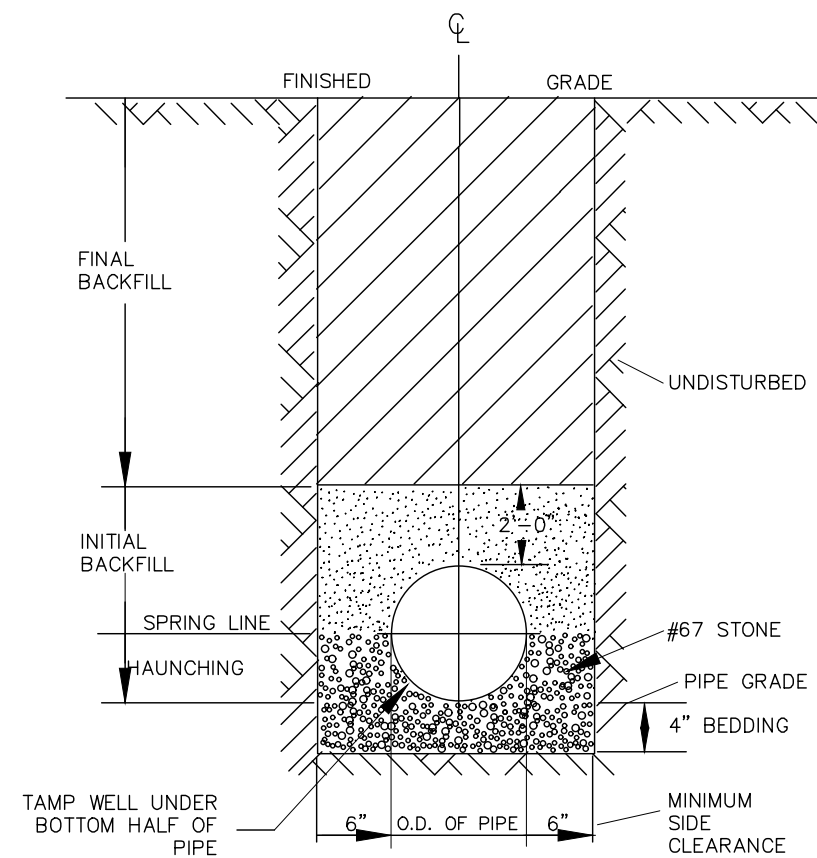
TRENCH SECTION FOR THE INSTALLATION OF REINFORCED CONCRETE PIPE

NOT TO SCALE



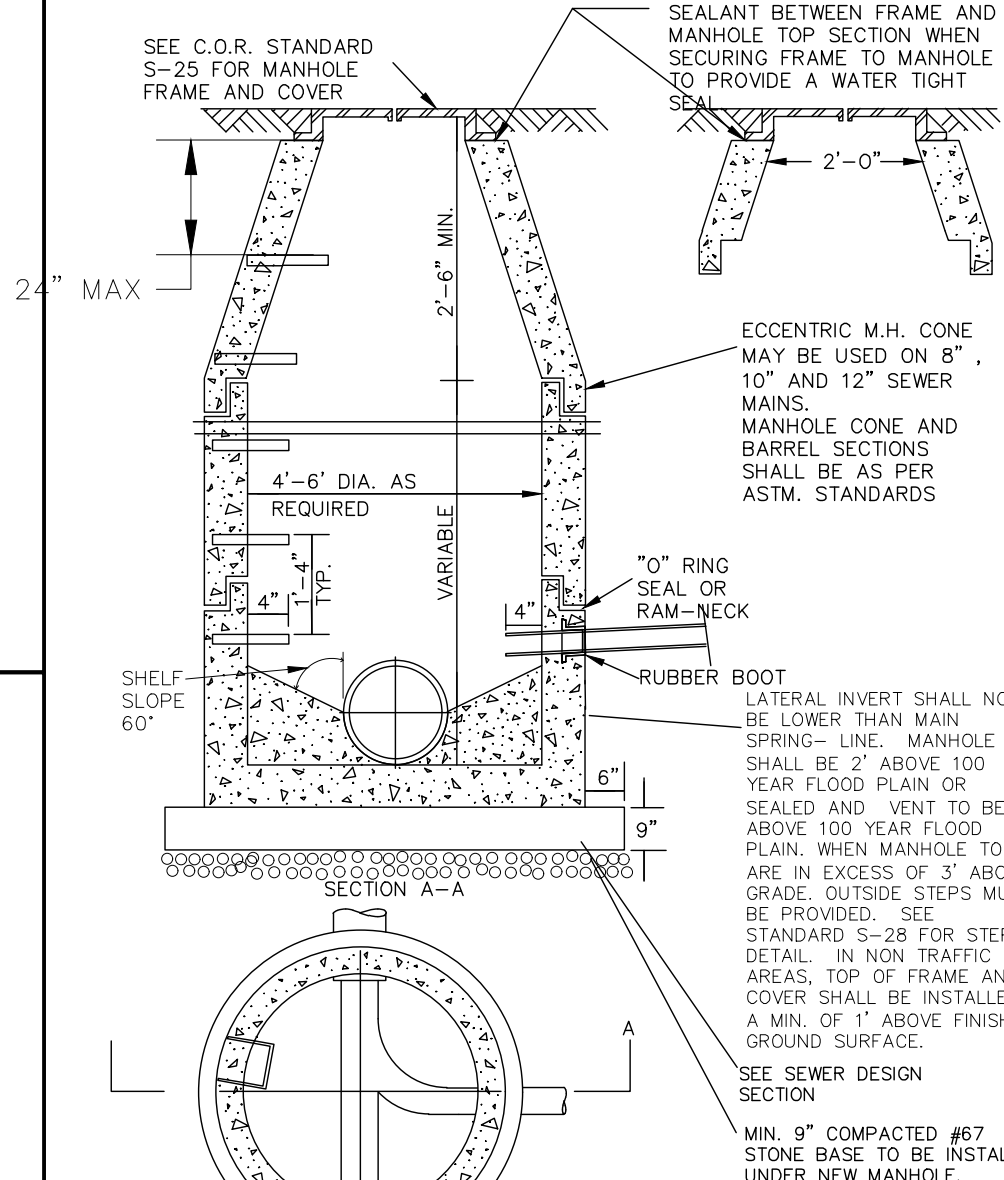
TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC PRESSURE PIPE

NOT TO SCALE

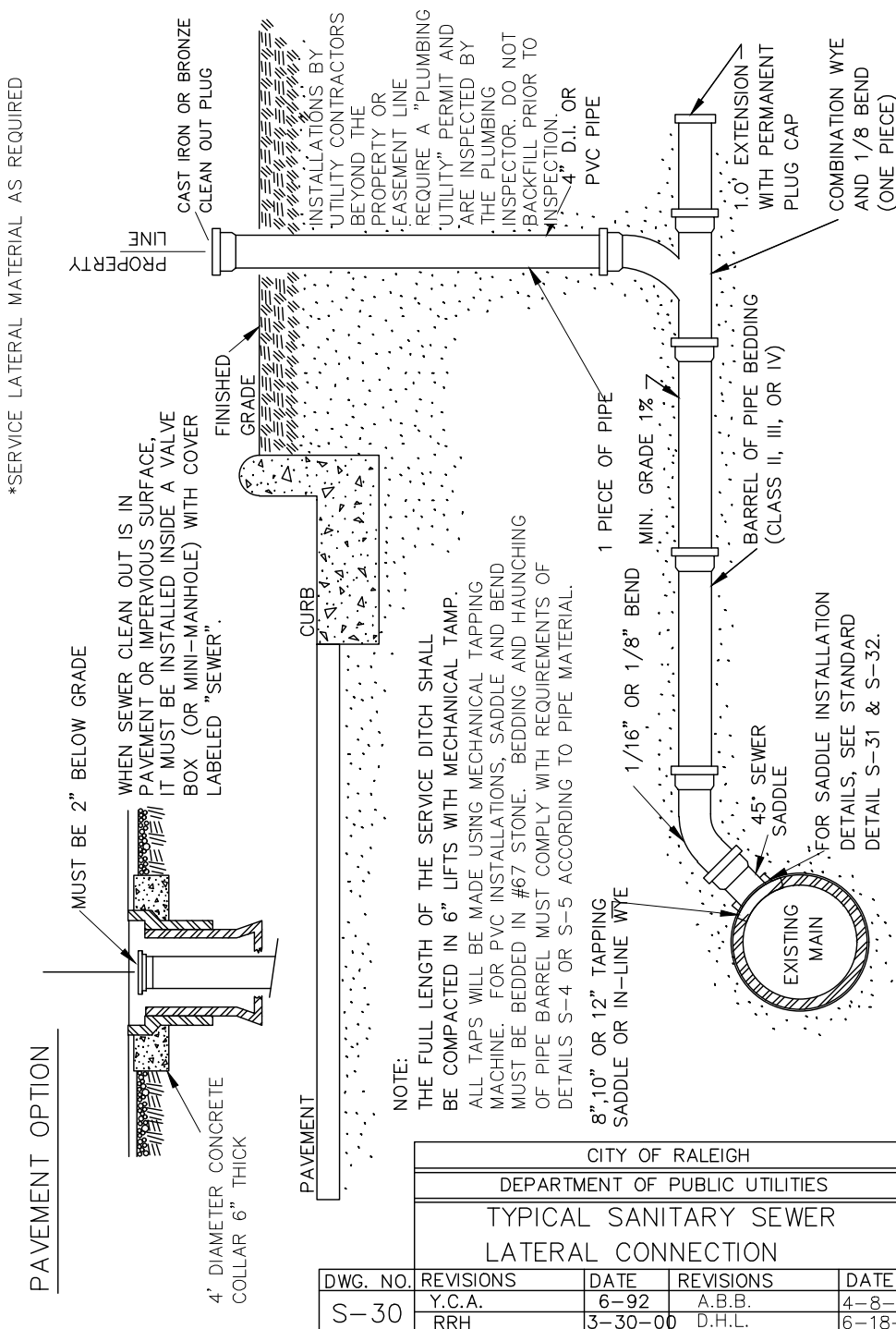


- NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

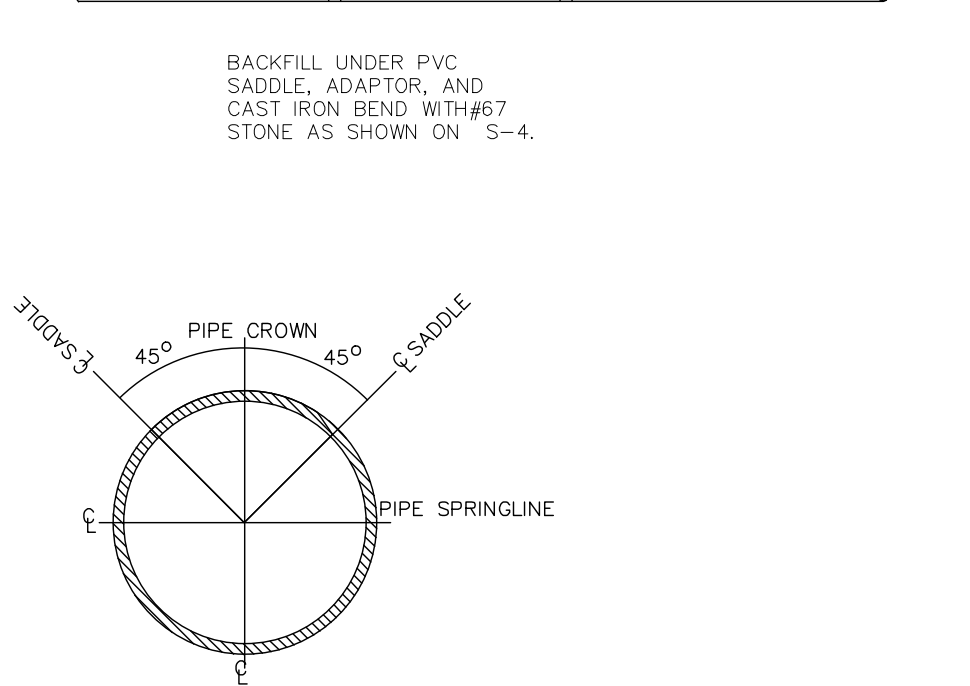
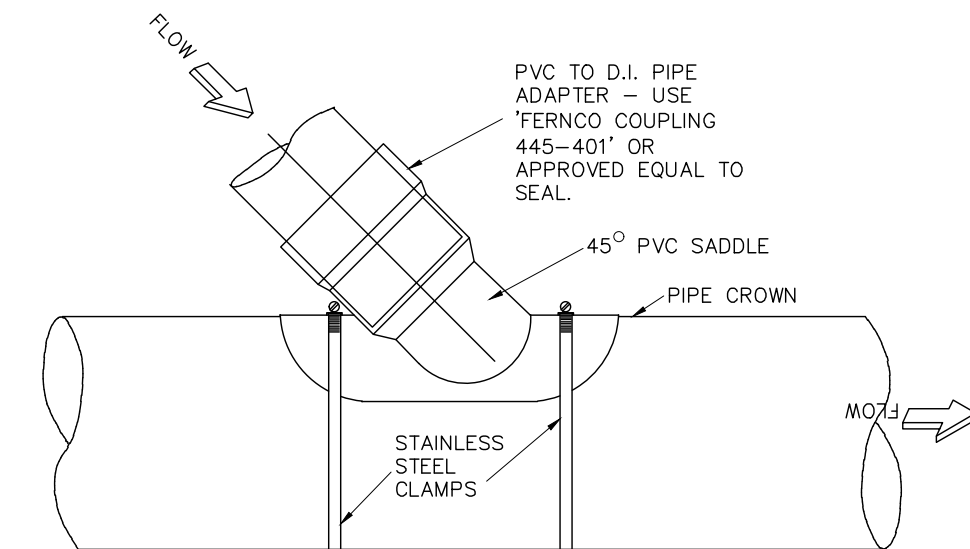
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-5	TO NOTES	3-1-87	D.W.C.	B-3-99	
		7-2-82	RRH	3-30-00	



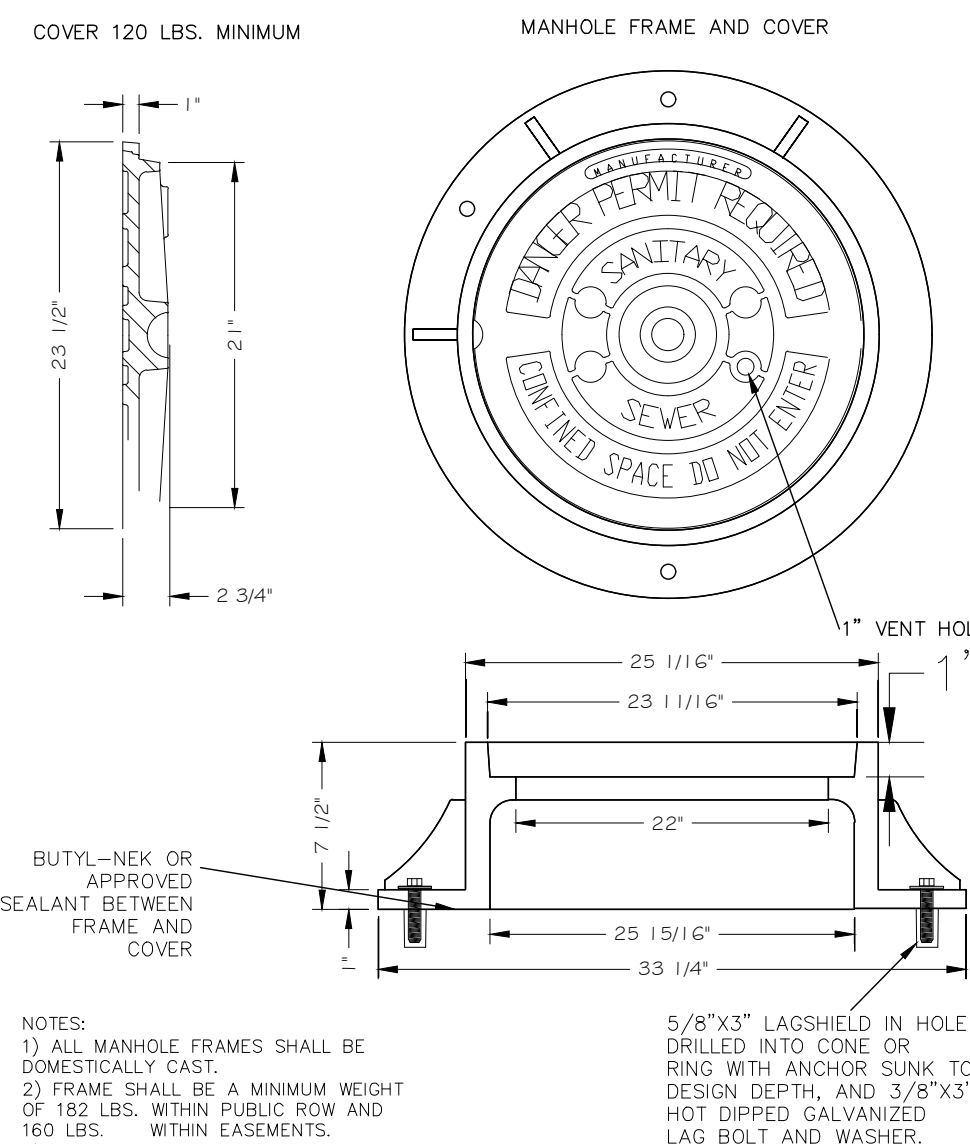
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD PRECAST SANITARY SEWER MANHOLE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20		12-31-92	ABB	2-21-99	
		3-30-00	D.H.L.	6-16-08	



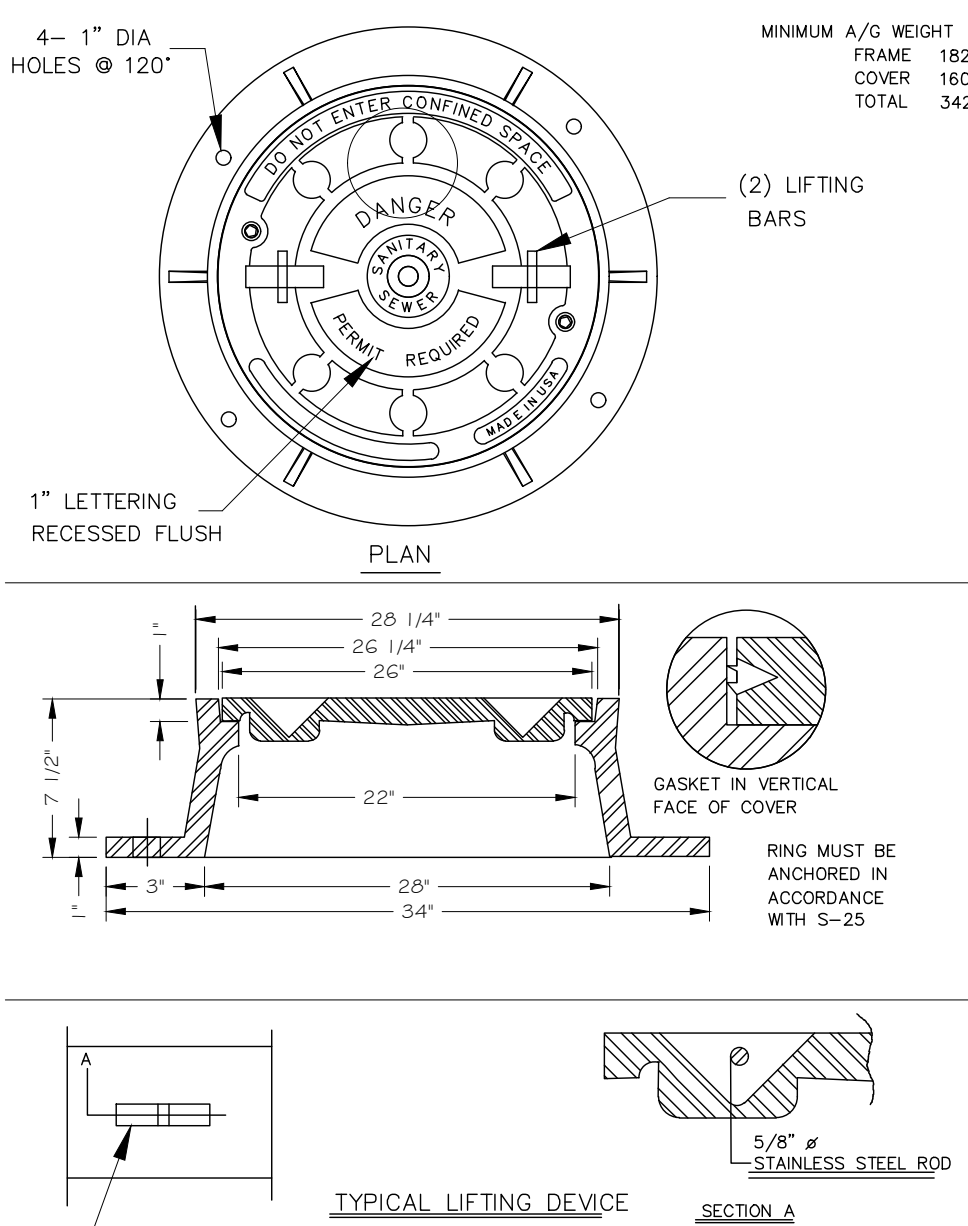
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
TYPICAL SANITARY SEWER LATERAL CONNECTION					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-30		6-92	A.B.B.	4-8-04	
		3-30-00	D.H.L.	6-16-08	



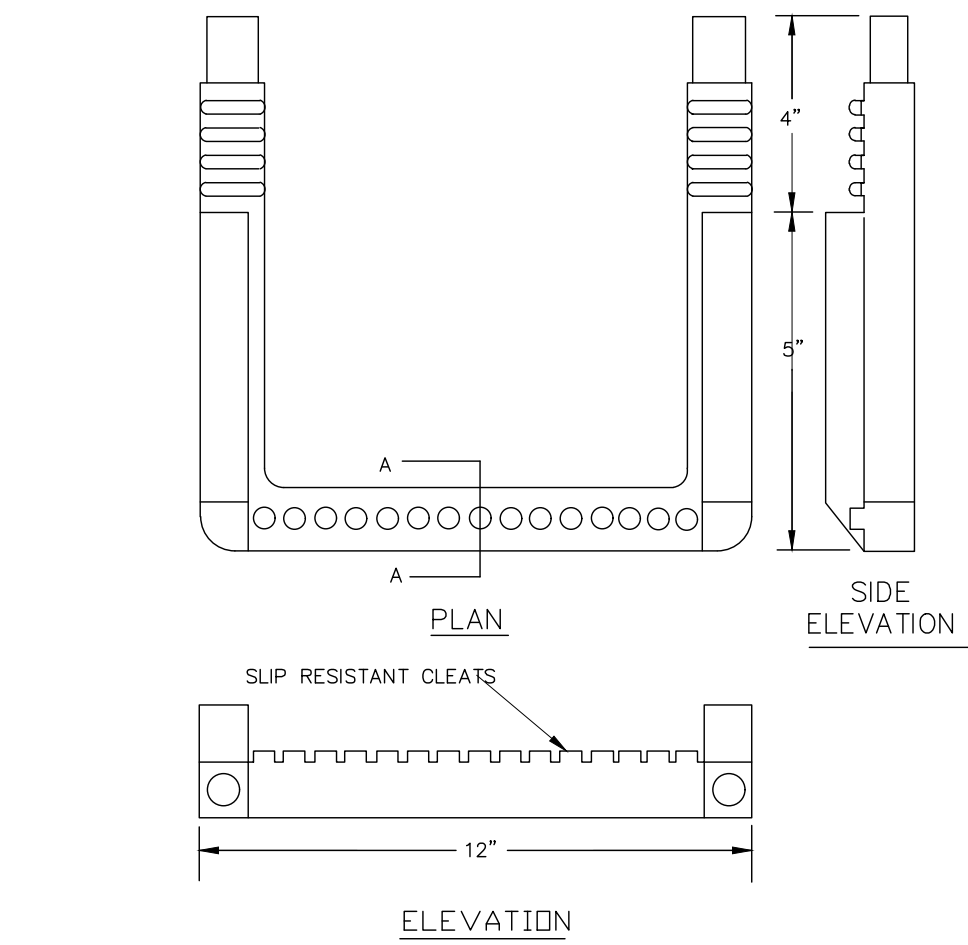
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-31		3-1-87			
		3-30-00			



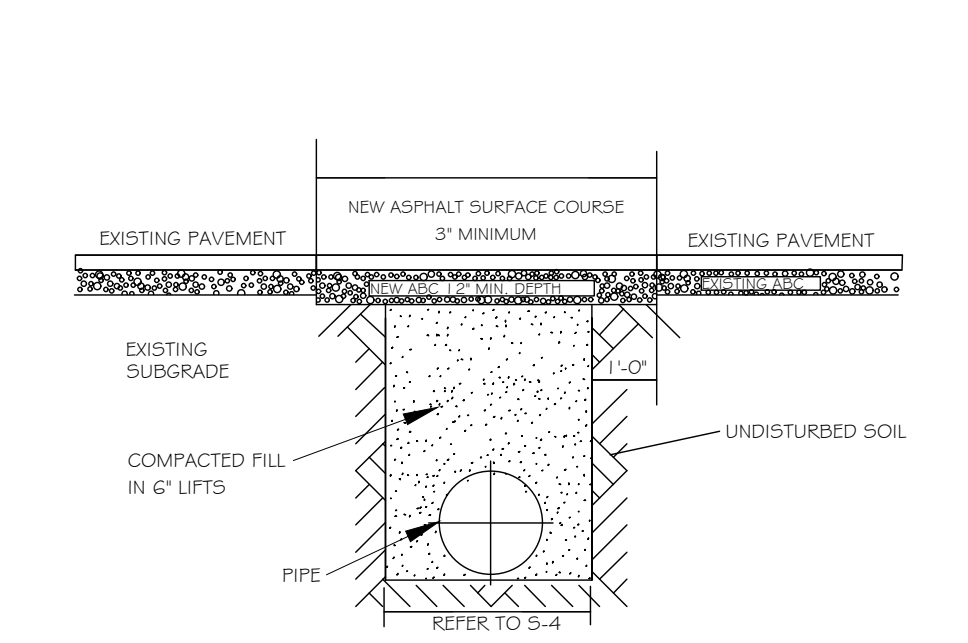
CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-25		3-1-87	A.B.B.	2-9-05	
		3-30-00	D.H.L.	6-16-08	



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



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



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

CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD ASPHALT PAVEMENT PATCH DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-3		11-1-99	A.B.B.	4-19-04	
		3-30-00	J.P.S.	10-6-10	

APPROVED - SIGNATURE SET		REVISIONS:	
8	1-MAY-25	REVISED PER WARE CO. REVIEW COMMENTS	
7	7-20-25	REVISED PER WARE CO. REVIEW COMMENTS	
6	12-15-24	REVISED PER WARE CO. REVIEW COMMENTS	
5	12-15-24	REVISED PER WARE CO. REVIEW COMMENTS	
4	12-15-24	REVISED PER REVIEW & OWNER COMMENTS	
3	1-MAY-24	REVISED PER REVIEW & OWNER COMMENTS	
2	1-JUNE-23	REVISED PER REVIEW & OWNER COMMENTS	
1	1-MAY-23	ISSUED FOR PERMIT REVIEW	
DATE		#	



WALLBROOK ROADWAY IMPROVEMENTS

VIRGINIA WATER DRIVE EXTENSION (SERVING LOTS 9-11)

Town of Rolesville Project No. CID 23-04
US 401 Business / S. Main Street & Virginia Water Drive
Wake Forest Township, Town of Rolesville, Wake County, North Carolina



Project Manager: BCF
Drawn By: DLCTGN
Checked By: TGN
Project Number: 22049
Drawing Number: D-1404-CID

C4.2

Date: May 1, 2023