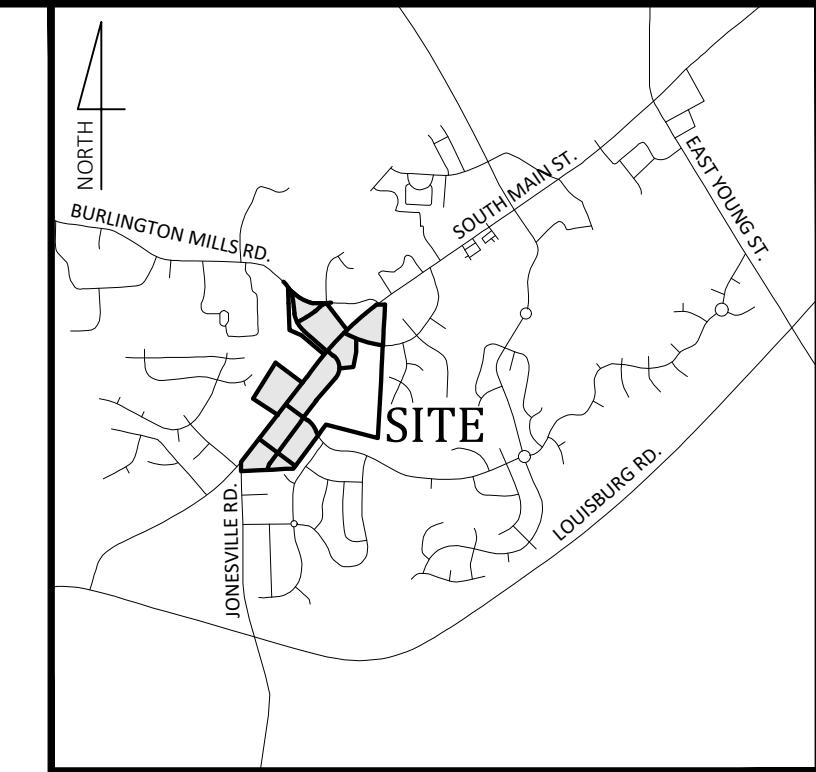


# EROSION CONTROL / MASS GRADING / SANITARY SEWER RELOCATION FOR WALLBROOK

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

Project No.: CD 22-02



Vicinity Map  
NOT TO SCALE

REVISIONS:



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

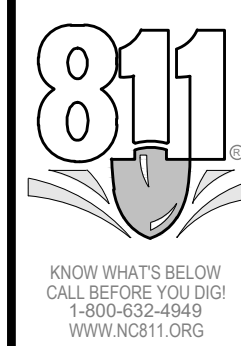
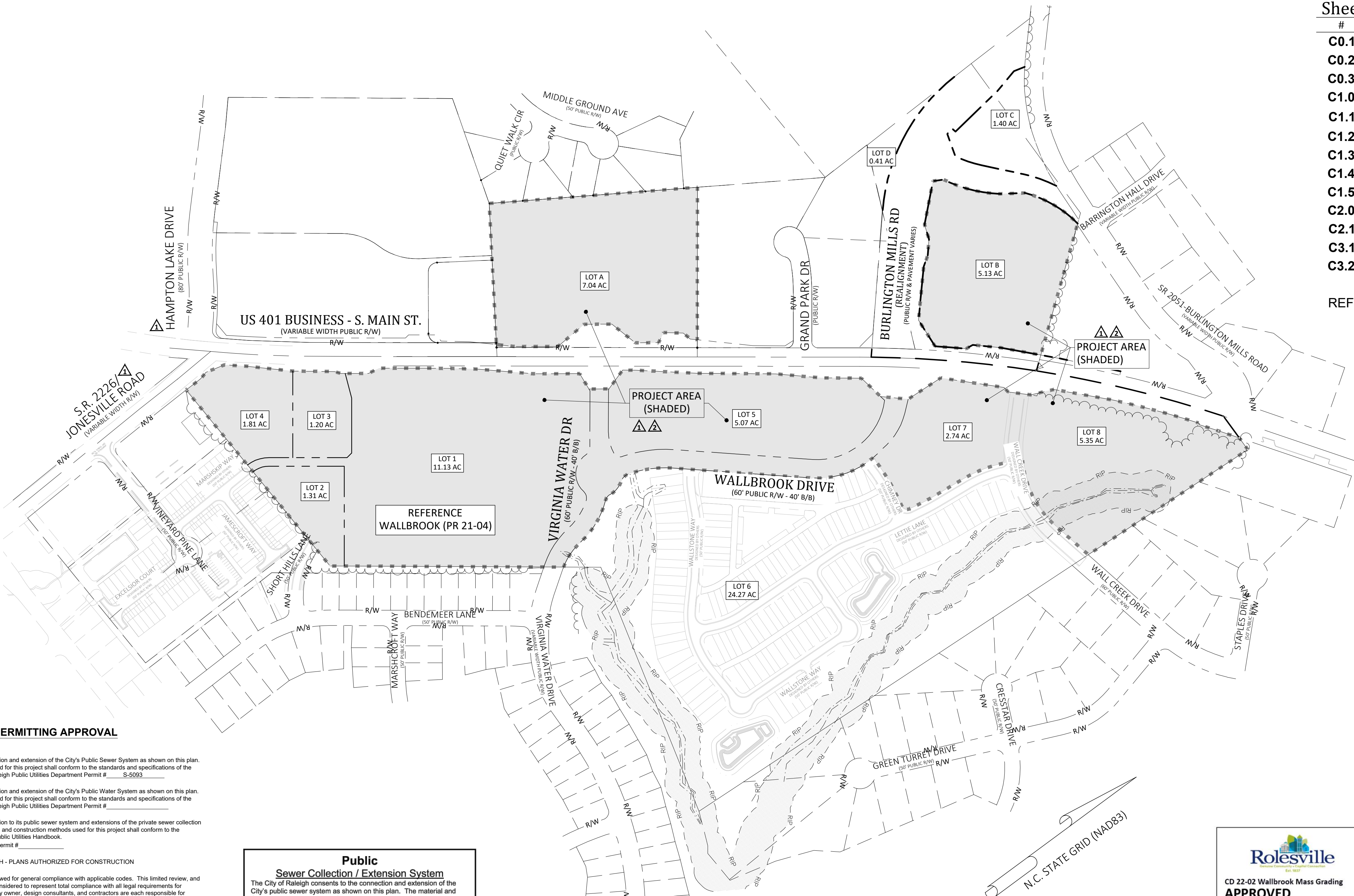
NC License: P-1199  
**ARK CONSULTING GROUP PLLC**  
ENGINEERS & PLANNERS  
2755-B Charles Blvd  
Charlotte, NC 27658  
(704) 558-0888  
www.arkconsultinggroup.com

### Sheet Index

#	Title
C0.1	Cover
C0.2	Legend & Notes
C0.3	Tree Preservation Plan
C1.0	Demo / Clearing Plan
C1.1	Erosion Control / Mass Grading Plan - Shopping Center (Lots 1 - 4)
C1.2	Erosion Control / Mass Grading Plan - Wallbrook Drive & Lot 5
C1.3	Erosion Control / Mass Grading Plan - Paris Tract (Lot A)
C1.4	Erosion Control / Mass Grading Plan - MBW Tract (Lots B, C, & D)
C1.5	Erosion Control / Mass Grading Plan - Lots 7 & 8
C2.0	Sanitary Sewer Relocation - Plan/Profile
C2.1	Sanitary Sewer Details
C3.1	Details - Erosion Control
C3.2	Details - Erosion Control
REF	Survey - Johnson, Mirmiran & Thompson (4 Sheets)

### Site Data

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



### SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)  
The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # S-5093

The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit #

The City of Raleigh consents to the connection to its public sewer system and extensions of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit #

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

City of Raleigh  
Public Utilities Department Permit # S-5093

Authorization to Construct \_\_\_\_\_  
Date \_\_\_\_\_

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

City of Raleigh Development Approval \_\_\_\_\_  
City of Raleigh Review Officer \_\_\_\_\_

**Rolesville**  
CD 22-02 Wallbrook Mass Grading  
**APPROVED**  
Date: September 2, 2022  
*Meredith Rymer*  
Town of Rolesville Planning Department

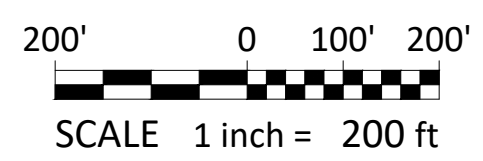
**Rolesville**  
**APPROVED FOR COMPLIANCE**  
Case # \_\_\_\_\_ Project \_\_\_\_\_  
By: \_\_\_\_\_ Date \_\_\_\_\_  
These plans have been approved for compliance with the Town Code of Ordinance, LDO, and Standard Specifications and Construction Details, subject to statements & conditions hereby incorporated by reference.

**EROSION AND SEDIMENT CONTROL**  
**APPROVED PLAN**  
DATE \_\_\_\_\_  
PERMIT NO. S-\_\_\_\_\_  
Wake County Environmental Services  
Sedimentation & Erosion Control  
919-856-7400

ENVIRONMENTAL CONSULTANT SIGNATURE \_\_\_\_\_  
Date: April 1, 2022

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

**C0.1**



GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCGO1 CONSTRUCTION GENERAL PERMIT

Table with 3 columns: Site Area Description, Stabilize within this many calendar days after ceasing land disturbance, and Timelime variations.

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...

GROUND STABILIZATION SPECIFICATION

Table with 2 columns: Temporary Stabilization and Permanent Stabilization, detailing materials and methods.

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

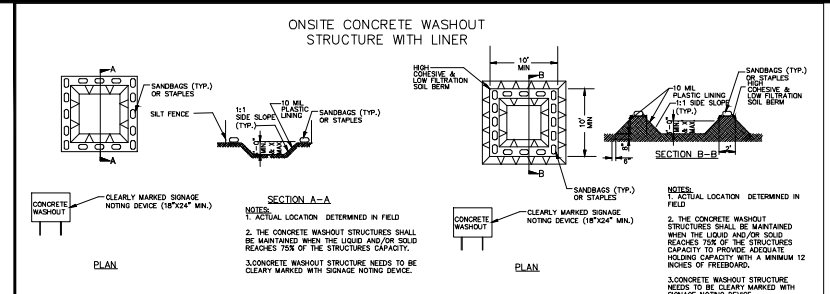
EQUIPMENT AND VEHICLE MAINTENANCE

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

PAINT AND OTHER LIQUID WASTE

PORTABLE TOILETS

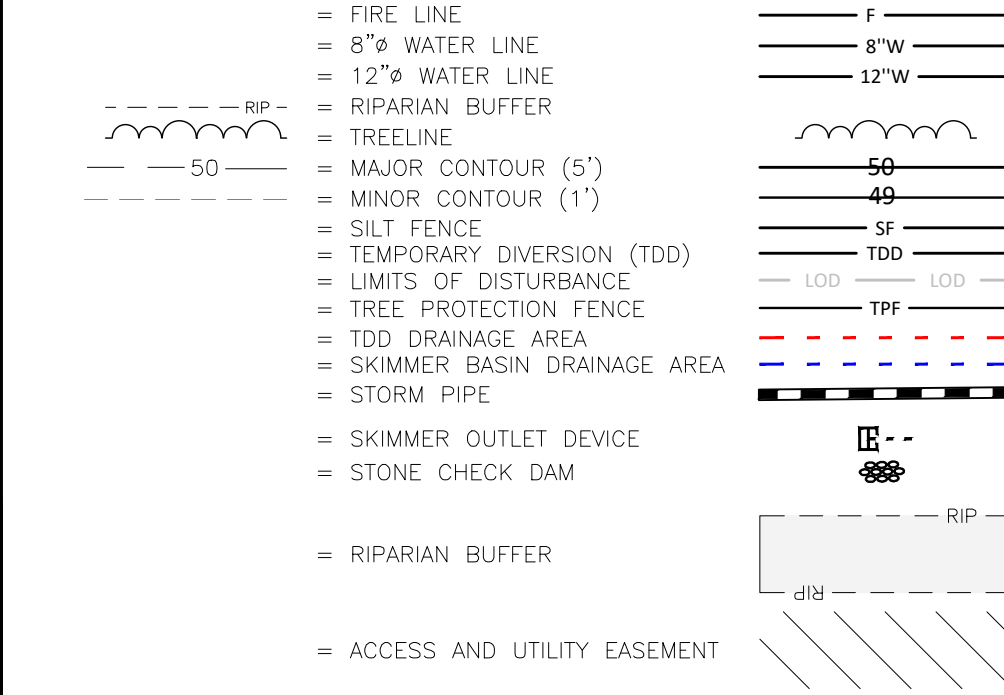
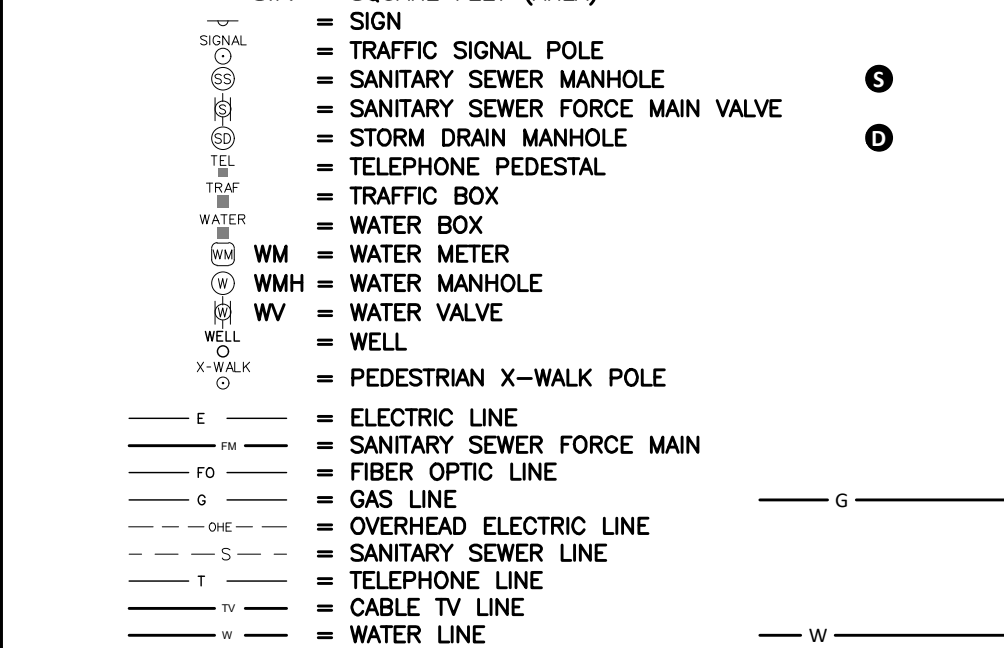
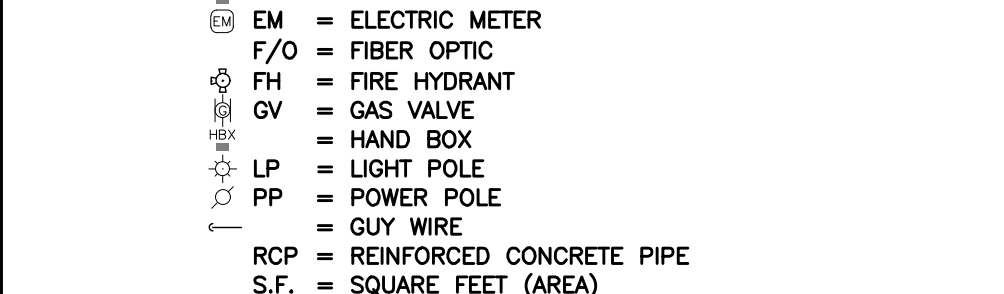
EARTHEN STOCKPILE MANAGEMENT



CONCRETE WASHOUTS

HERBICIDES, PESTICIDES AND RODENTICIDES

HAZARDOUS AND TOXIC WASTE



Legend

Legend

Legend

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...

Basin Removal Sequence:

- 1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.

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...

NCGO1 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION
Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy...

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.

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.

NCGO1 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 04/01/19

Erosion Control Provisions:

- 1. NO PERSON MAY INITIATE A LAND DISTURBING ACTIVITY BEFORE NOTIFYING WAKE COUNTY WATERSHED MANAGEMENT OF THE DATE THAT THE LAND DISTURBING ACTIVITY WILL BEGIN.

Construction Sequence:

- 1. EROSION AND SEDIMENT CONTROL (E&S) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR.

LEGEND AND NOTES WALLBROOK CROSSLAND SOUTHEAST

Mass grading / erosion control / sanitary sewer relocation project details including legend, notes, and ARK CONSULTING logo.

Project title block: MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION. Includes client information, date, and drawing details.

**LEGEND**

**TREE PRESERVATION AREA**

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

**TREE PRESERVATION AREA AS BUFFER**

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

**TREE REPLACEMENT CALCULATION AREA (BUFFER AREAS TO BE CLEARED)**

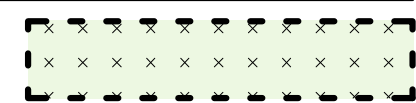
- REPLACEMENT RATIO = 1:1

**DECIDUOUS TREE**

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

**EVERGREEN TREE**

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



**OVERALL TREE PRESERVATION AREA**

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

**TREE PRESERVATION AREA**

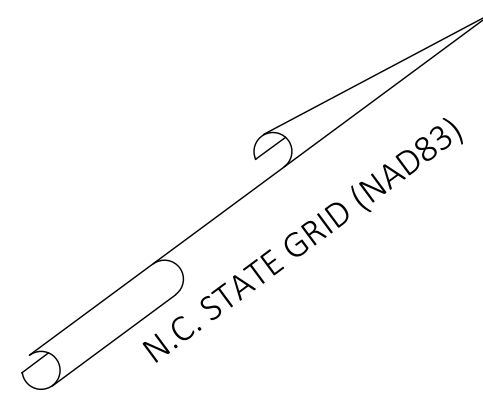
Wallbrook	Area (SF)	Acres	
Lot 1 (Publix)	484,860.9	11.13	
Lot 2	57,276.4	1.31	
Lot 3	78,721.7	1.81	
Lot 4	52,181.8	1.20	
Lot 5 (Boat Tract)	220,767.8	5.07	
Lot 6 (Townhomes)	876,206.2	20.11	
Lot 7	119,306.6	2.74	
Lot 8	232,855.7	5.35	
Right-of-Way (Future)	290,799.5	6.68	
WALLBROOK GROSS ACREAGE		55.39	15.46%
TREE PRESERVATION AREA	373,027.4	8.56	
QUALIFYING REPLACEMENT DECIDUOUS			12
QUALIFYING REPLACEMENT EVERGREEN			8

Paris Tract	Area (SF)	Acres	
Lot A	306,780.8	7.04	
PARIS TRACT GROSS ACREAGE		7.04	
TREE PRESERVATION AREA	16,399.5	0.38	5.35%
QUALIFYING REPLACEMENT DECIDUOUS			2
QUALIFYING REPLACEMENT EVERGREEN			0

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

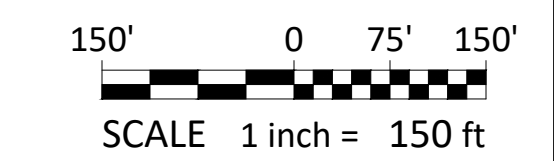
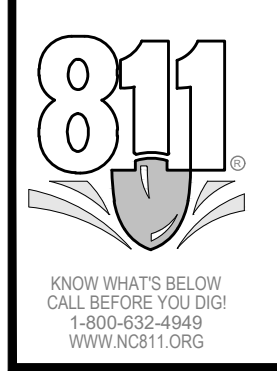


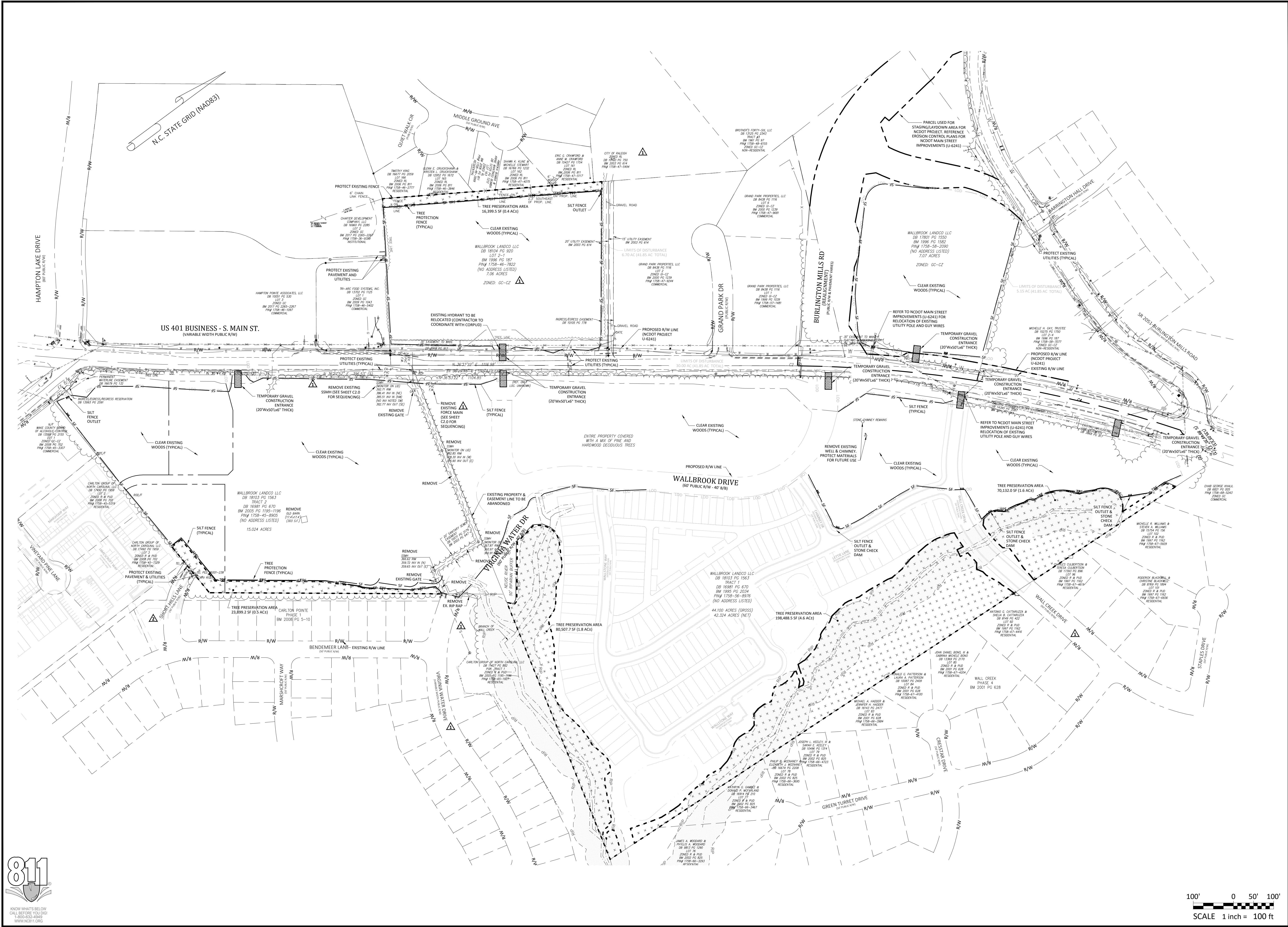
**TREE PRESERVATION PLAN**  
**WALLBROOK**  
 MASS GRADING / EROSION CONTROL /  
 SANITARY SEWER RELOCATION  
 Town of Rolesville Project No. CD 22-02  
 Rolesville, Wake County, North Carolina

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 Raleigh, NC 27608  
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 www.arkconsultinggroup.com

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

**C0.3**  
 Date: April 1, 2022





NO.	DATE	DESCRIPTION
2	12-JUL-23	REVISED PER TOR & WAKE COUNTY COMMENTS
1	15-JUN-23	REVISED PER TOR & WAKE COUNTY COMMENTS

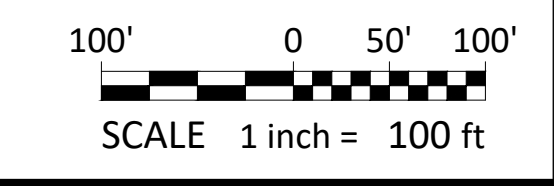


**DEMO / CLEARING PLAN**  
**WALLBROOK**  
**MASS GRADING / EROSION CONTROL /**  
**SANITARY SEWER RELOCATION**  
 Town of Rolesville Project No. CD 22-02  
 Rolesville, Wake County, North Carolina

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 2755-B Church Rd.  
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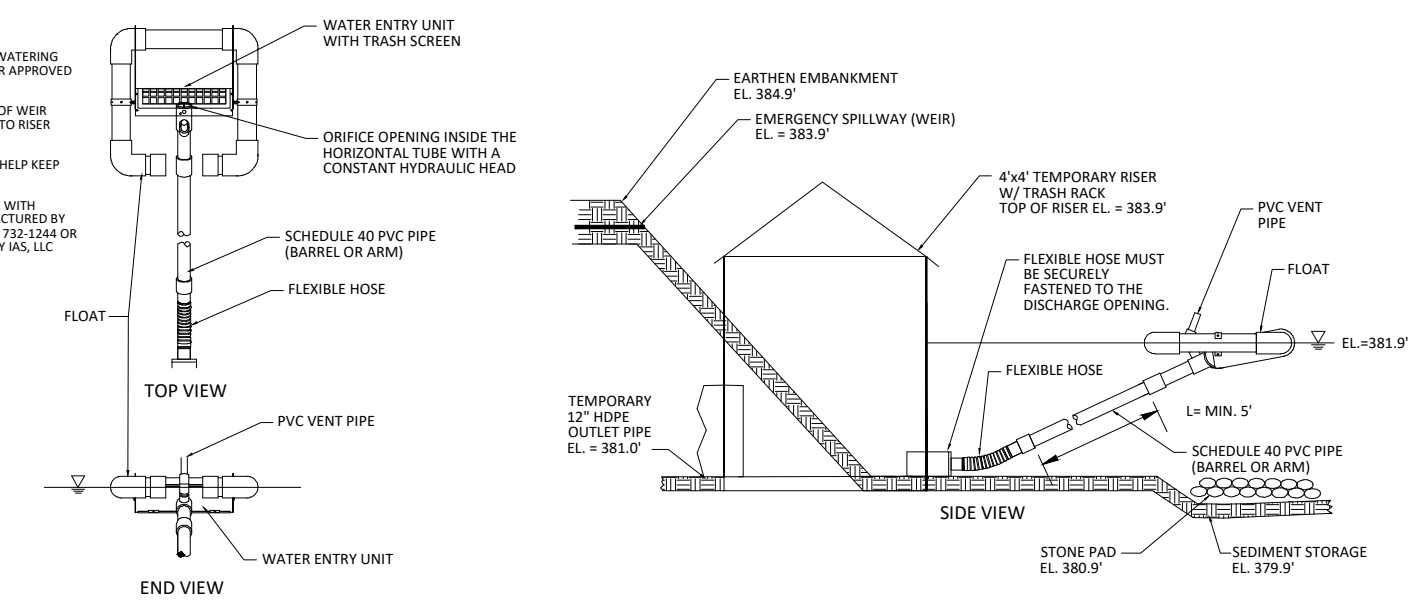
Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

**C1.0**  
Date: April 1, 2022



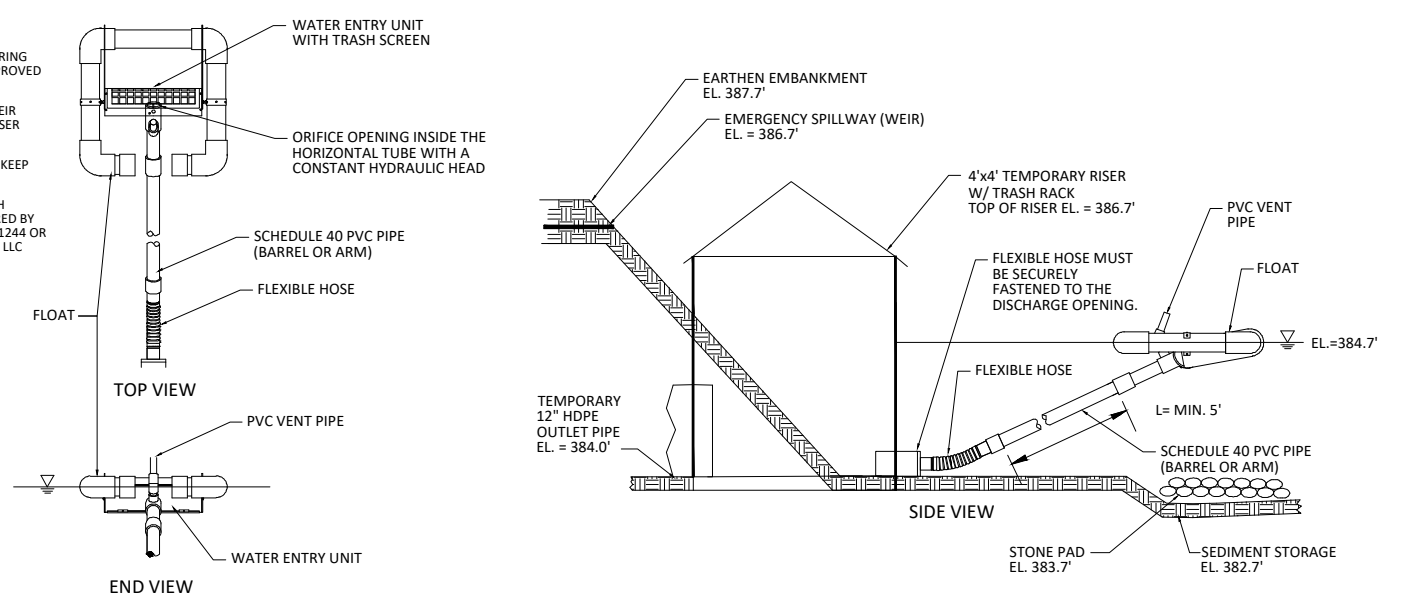
N.C. STATE GRID (NAD83)

- NOTES:
- SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS SHIP SWANER OR APPROVED SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER HEIGHT IN TEMPORARY BASIN OR TO RISER HEIGHT
  - SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER HEIGHT
  - HOSE ATTACHED TO SKIMMER TO HELP KEEP SKIMMER CLEAN
  - SKIMMER SHALL BE 3" SKIMMER WITH ORIFICE 3/8" DIA. AS MANUFACTURED BY W. HANCOCK & SON, INC. 4001 TRIDEMAR DR. W. HANCOCK & SON, INC. 4001 TRIDEMAR DR. W. HANCOCK & SON, INC. 4001 TRIDEMAR DR. W. HANCOCK & SON, INC. 4001 TRIDEMAR DR.



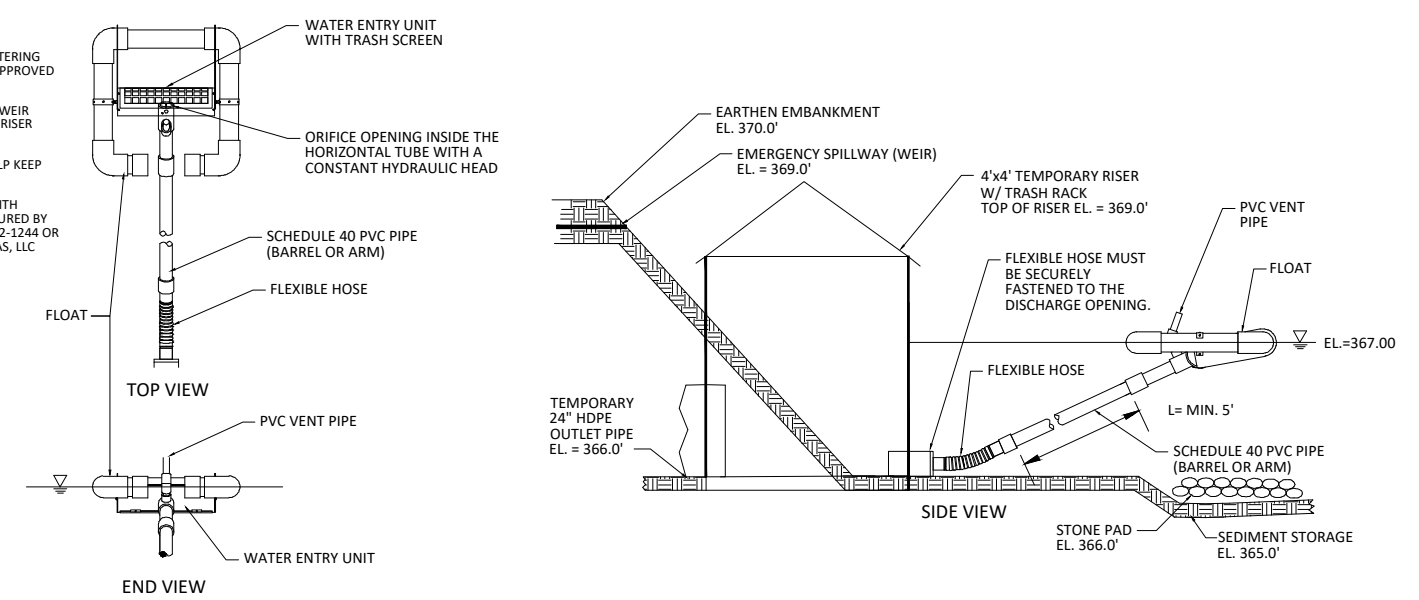
SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-1

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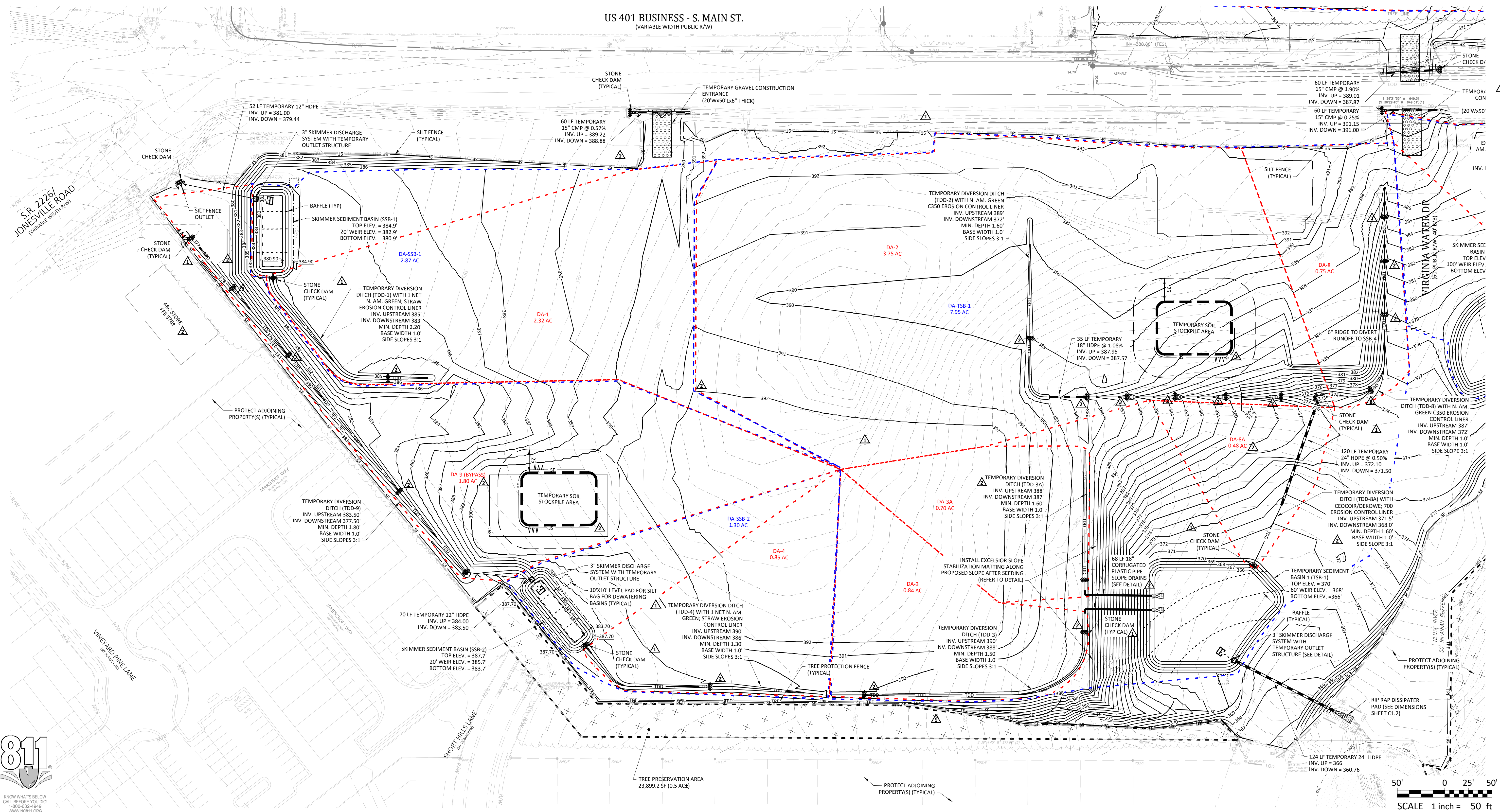


SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-2

- NOTES:
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  - SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER HEIGHT
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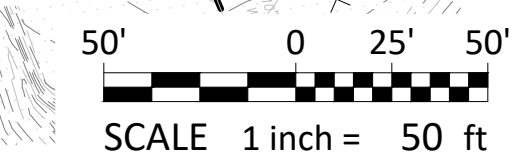
SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR TSB-1



S.R. 2226 / JONESVILLE ROAD

VINEYARD PINE LANE

SHOOT HILLS LANE



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

**WALLBROOK**  
 MASS GRADING / EROSION CONTROL /  
 SANITARY SEWER RELOCATION

ARK CONSULTING GROUP PLLC  
 ENGINEERS & PLANNERS  
 2755-B Church Rd  
 Cary, NC 27588  
 (919) 488-0888  
 www.arkconsultinggroup.com

Professional Engineer Seal: JOHN C. FABO, No. 31970, State of North Carolina, expires 1/22/2022

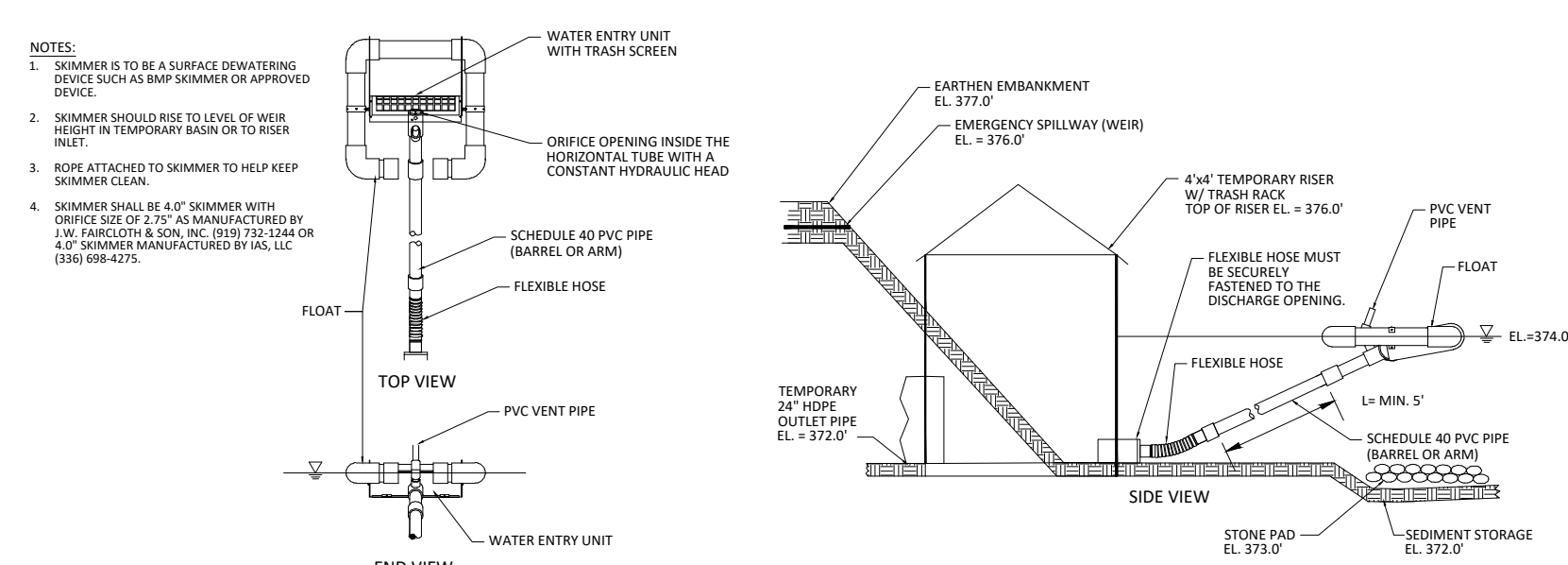
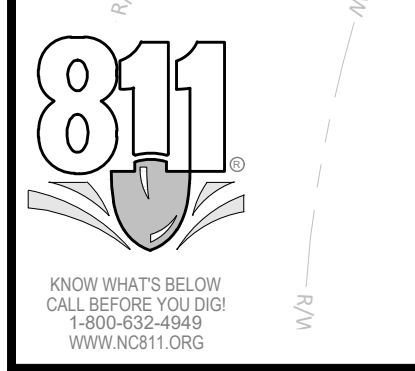
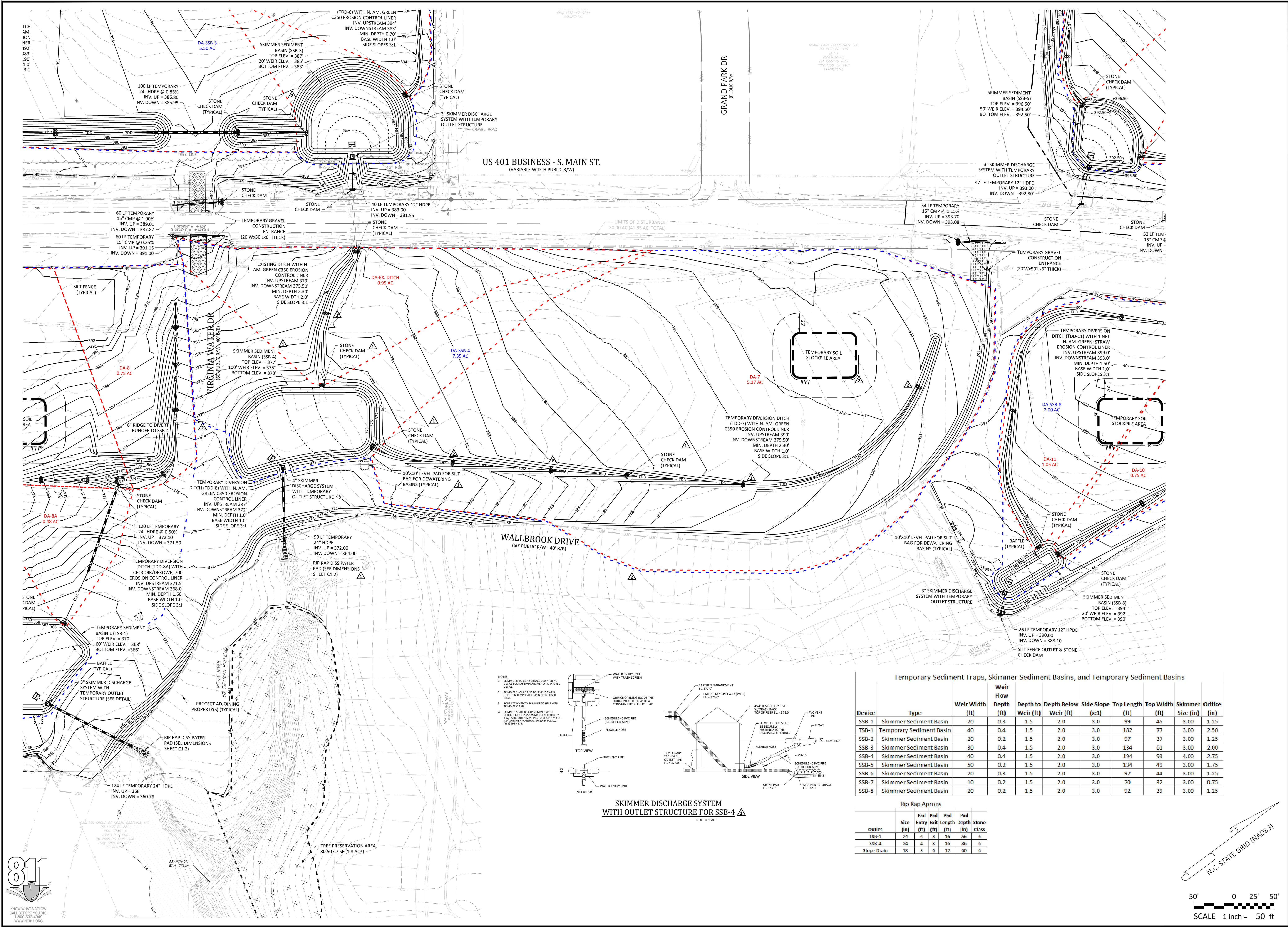
Project Manager:	BCF
Drawn By:	DLC
Checked By:	STA
Project Number:	21089
Drawing Number:	D-1219-EC

**C1.1**  
 Date: April 1, 2022



REVISIONS:

#	DATE	DESCRIPTION
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1	15-JUN-22	REVISED PER TOR & WAKE COUNTY COMMENTS



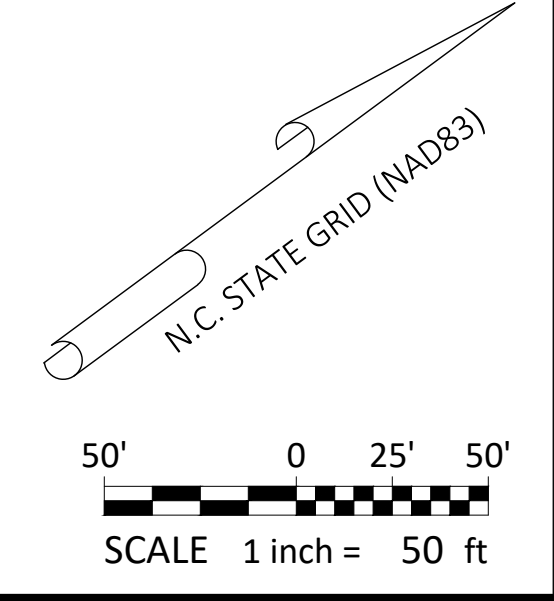
SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-4

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

Device	Type	Weir Width (ft)	Weir Flow Depth (ft)	Depth to Weir (ft)	Depth Below Weir (ft)	Side Slope (x:1)	Top Length (ft)	Top Width (ft)	Skimmer Size (in)	Orifice Size (in)
SSB-1	Skimmer Sediment Basin	20	0.3	1.5	2.0	3.0	99	45	3.00	1.25
TSB-1	Temporary Sediment Basin	40	0.4	1.5	2.0	3.0	182	77	3.00	2.50
SSB-2	Skimmer Sediment Basin	20	0.2	1.5	2.0	3.0	97	37	3.00	1.25
SSB-3	Skimmer Sediment Basin	30	0.4	1.5	2.0	3.0	134	61	3.00	2.00
SSB-4	Skimmer Sediment Basin	40	0.4	1.5	2.0	3.0	194	93	4.00	2.75
SSB-5	Skimmer Sediment Basin	50	0.2	1.5	2.0	3.0	134	49	3.00	1.75
SSB-6	Skimmer Sediment Basin	20	0.3	1.5	2.0	3.0	97	44	3.00	1.25
SSB-7	Skimmer Sediment Basin	10	0.2	1.5	2.0	3.0	70	32	3.00	0.75
SSB-8	Skimmer Sediment Basin	20	0.2	1.5	2.0	3.0	92	39	3.00	1.25

Rip Rap Aprons

Outlet	Size (in)	Pad Entry (ft)	Pad Exit (ft)	Pad Length (ft)	Pad Depth (ft)	Stone Class
TSB-1	24	4	8	16	56	6
SSB-4	24	4	8	16	86	6
Slope Drain	18	3	6	12	00	6



2 | 12-JUL-23 | REVISED PER TOR & WAKE COUNTY COMMENTS

1 | 15-JUN-23 | REVISED PER TOR & WAKE COUNTY COMMENTS

# | DATE | DESCRIPTION

REVISIONS:

**CROSLAND SOUTHEAST**

**MASS GRADING - WALLBROOK DRIVE / LOT 5**

**WALLBROOK**

**MASS GRADING / EROSION CONTROL /**

**SANITARY SEWER RELOCATION**

Town of Rolesville Project No. CD 22-02

Rolesville, Wake County, North Carolina

NC License: P-1109

**ARK CONSULTING GROUP PLLC**

ENGINEERS & PLANNERS

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Wake, NC 27688

(252) 558-0888

www.arkconsultinggroup.com

1/22/2022

Project Manager: BCF

Drawn By: DLC

Checked By: STA

Project Number: 21089

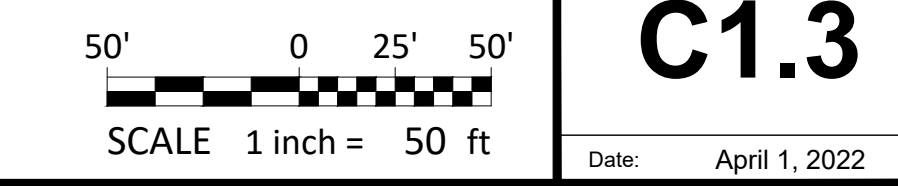
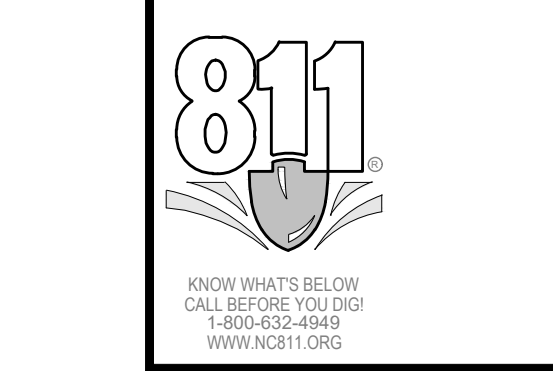
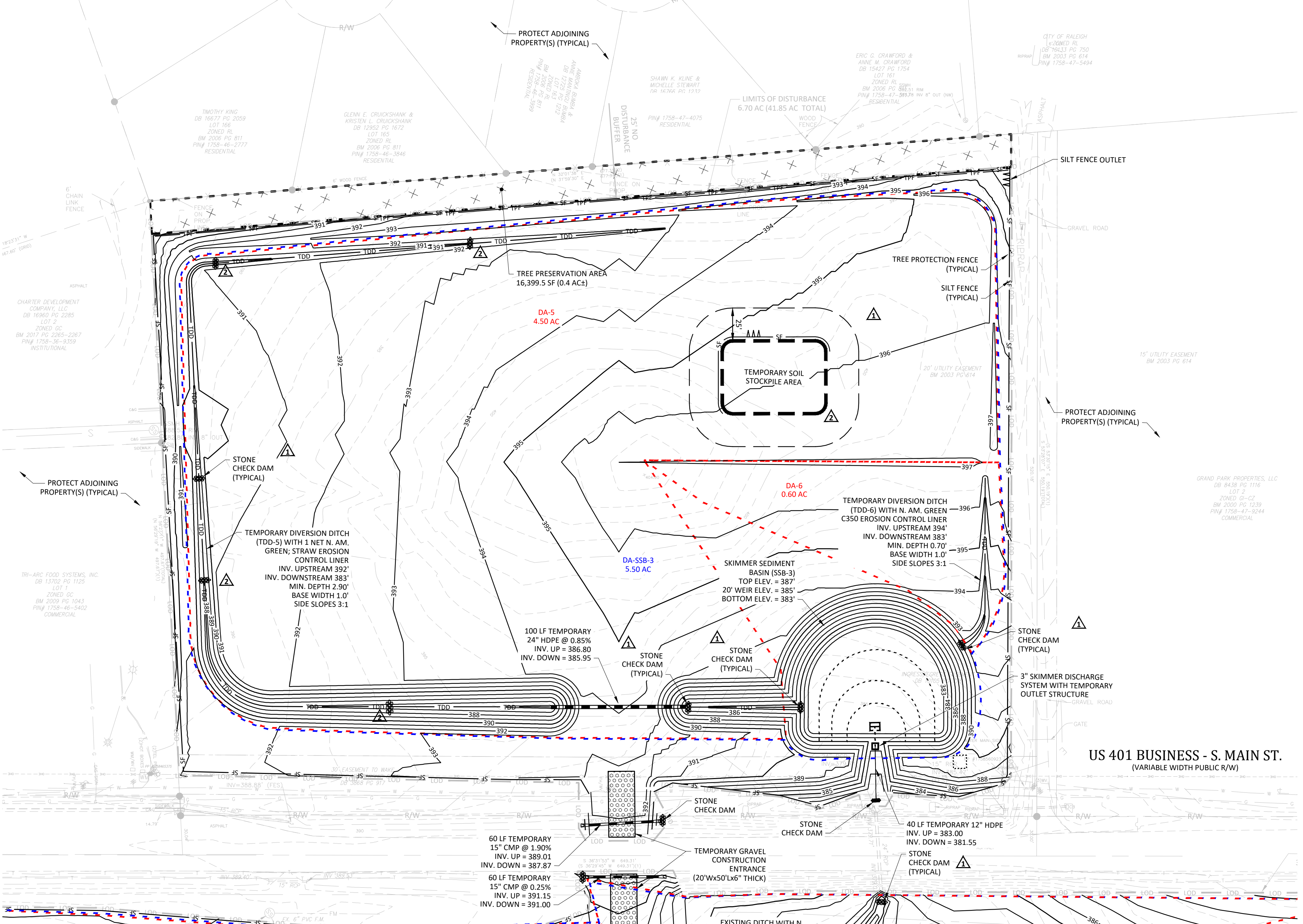
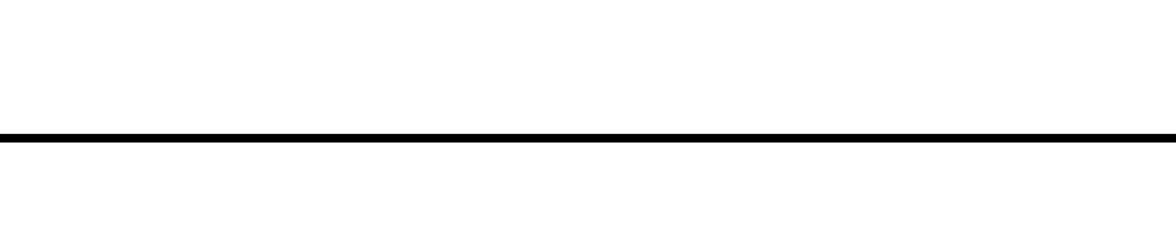
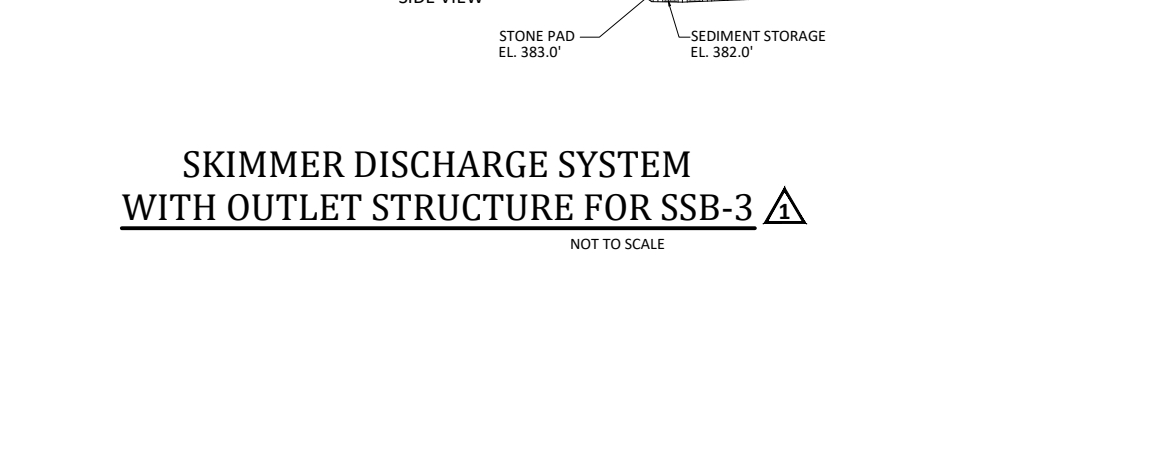
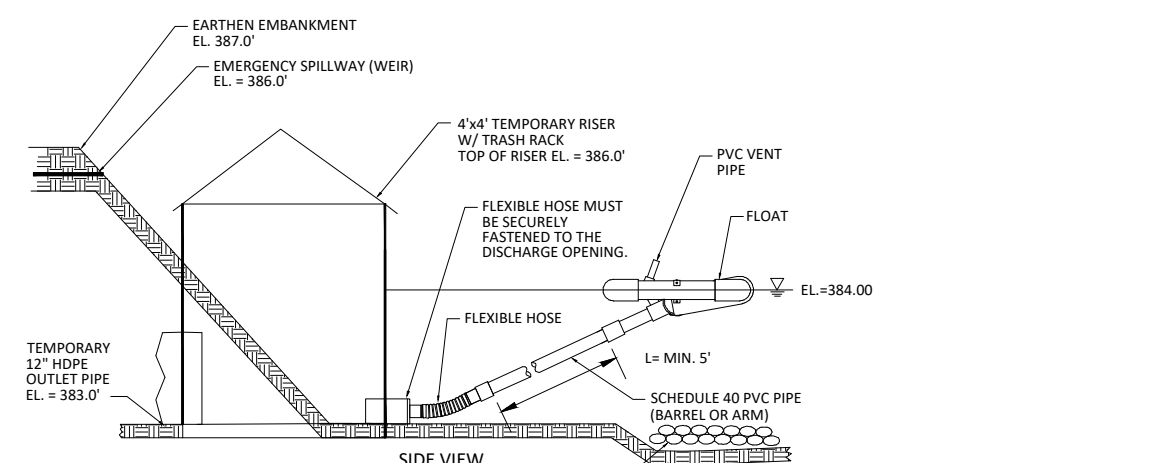
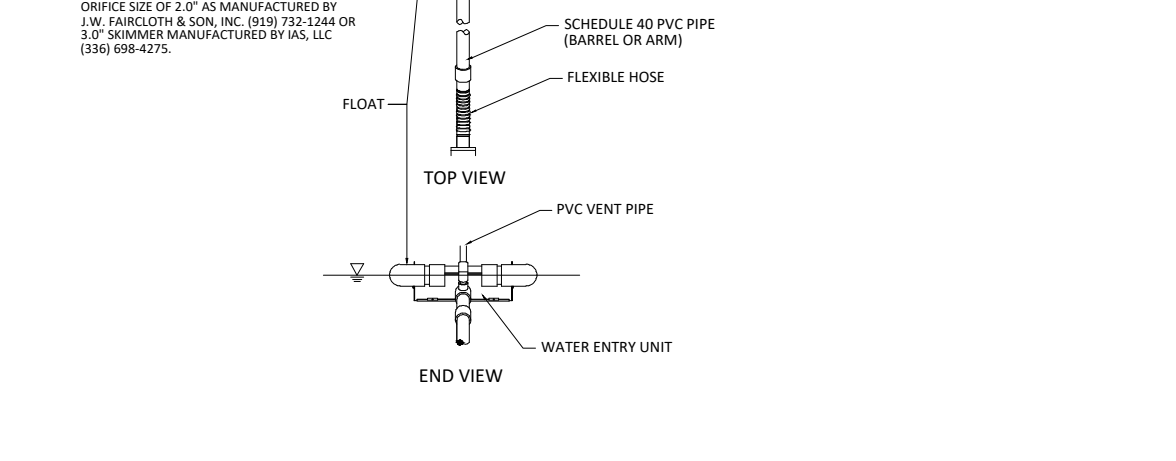
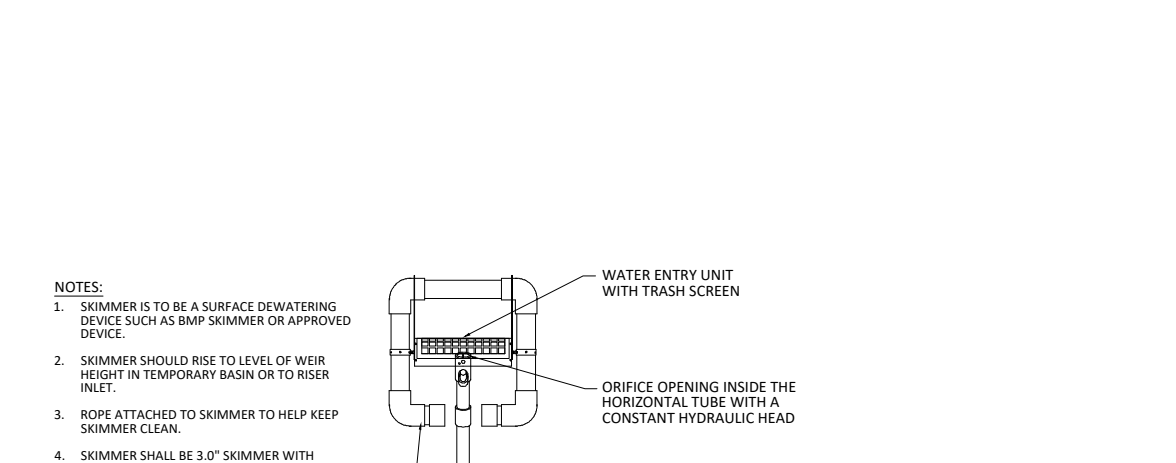
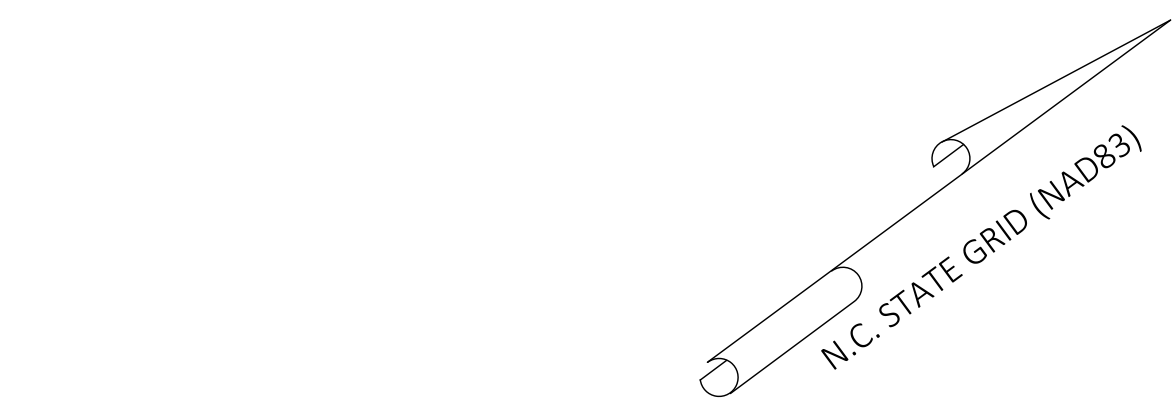
Drawing Number: D-1219-EC

C1.2

Date: April 1, 2022

DATE: APRIL 1, 2022

Device ID	Device Type	Add'l Flow (cfs)**	Disturbed Area (AC)	Tc (min)	Intensity (in/hr)**	C	Qreq (cfs)	Up Invert	Down Invert	Length (ft)	Base Width (ft)	Left Slope (x:1)	Right Slope (x:1)	Flow Depth (ft)	Manning's n	Slope (ft/ft)	Wetted Area (sf)	Wetted Perimeter (ft)	Hydraulic Radius (ft)	Velocity (ft/s)	Qa (cfs)	Qa>Qreq?	↑ (lbs/ft')	Liner Type
TDD-1	Temporary Diversion	0	2.82	5	7.18	0.5	8.33	385	383	225	1	3	3	2.16	0.020	0.00889	16.22	8.40	1.93	0.51	8.33	Yes	1.20059203	N. Am. Green; Straw; 1 nets
TDD-2	Temporary Diversion	0	3.75	5	7.18	0.5	13.46	389	372	480	1	3	3	1.59	0.020	0.03542	9.16	7.79	1.18	1.47	13.46	Yes	3.51081629	North Am. Green C350; Bare soil
TDD-3	Temporary Diversion	0	0.84	5	7.18	0.5	3.02	390	387	350	1	3	3	1.52	0.020	0.00909	8.41	7.72	1.09	0.36	3.02	Yes	0.86005555	North Am. Green C350; Bare soil
TDD-3A	Temporary Diversion	0	0.70	5	7.18	0.5	2.51	388	387	152	1	3	3	1.59	0.020	0.00658	9.39	7.79	1.18	0.27	2.51	Yes	0.65326254	North Am. Green C350; Bare soil
TDD-4	Temporary Diversion	0	0.85	5	7.18	0.5	3.05	390	386	260	1	3	3	1.27	0.020	0.01538	6.11	7.52	0.81	0.50	3.05	Yes	1.2195997	N. Am. Green; Straw; 1 nets
TDD-5	Temporary Diversion	0	4.50	5	7.18	0.5	16.16	392	383	1150	1	3	3	2.84	0.020	0.00783	27.10	9.27	2.92	0.60	16.16	Yes	1.38859569	N. Am. Green; Straw; 1 nets
TDD-6	Temporary Diversion	0	0.60	5	7.18	0.5	2.15	395	383	160	1	3	3	0.64	0.020	0.07500	1.88	7.14	0.26	1.15	2.15	Yes	3.00378482	North Am. Green C350; Bare soil
TDD-7	Temporary Diversion	0	5.17	5	7.18	0.5	18.56	389	375.5	790	1	3	3	2.28	0.020	0.01709	17.84	8.53	2.09	1.04	18.56	Yes	2.42856295	North Am. Green C350; Bare soil
Ex. Ditch	Temporary Diversion	22.5	0.95	5	7.18	0.5	25.91	379	375.5	180	2	3	3	2.34	0.020	0.01944	21.15	9.61	2.20	1.23	25.91	Yes	2.842312	North Am. Green C350; Bare soil
TDD-8	Temporary Diversion	0.0	0.75	5	7.18	0.5	2.69	387	372	280	1	3	3	0.79	0.020	0.05357	2.64	7.20	0.37	1.02	2.69	Yes	2.62589373	North Am. Green C350; Bare soil
TDD-8A	Temporary Diversion	16.2	0.48	5	7.18	0.5	17.88	371.5	368	72	1	3	3	1.57	0.020	0.04881	8.97	7.77	1.15	1.99	17.88	Yes	4.76456058	Geocoi/DeKowe; 700
TDD-9	Temporary Diversion	0.0	1.80	5	7.18	0.5	6.46	383.5	377.5	510	1	3	3	1.80	0.020	0.01176	11.55	8.00	1.44	0.56	6.46	Yes	1.32301348	N. Am. Green; Straw; 1 nets
TDD-10	Temporary Diversion	0.0	0.75	5	7.18	0.5	2.69	399	393	320	1	3	3	1.14	0.020	0.01875	5.01	7.42	0.68	0.54	2.69	Yes	1.32924186	N. Am. Green; Straw; 1 nets
TDD-11	Temporary Diversion	0.0	1.05	5	7.18	0.5	3.77	399	393	475	1	3	3	1.46	0.020	0.01263	7.87	7.67	1.03	0.48	3.77	Yes	1.1524162	N. Am. Green; Straw; 1 nets
TDD-12	Temporary Diversion	0.0	0.60	5	7.18	0.5	2.15	398	389	200	1	3	3	0.77	0.020	0.04500	2.56	7.20	0.36	0.84	2.15	Yes	2.16762178	North Am. Green C350; Bare soil
TDD-13	Temporary Diversion	0.0	1.50	5	7.18	0.5	5.39	394	389	300	1	3	3	1.50	0.020	0.01667	8.27	7.71	1.07	0.65	5.39	Yes	1.56258756	N. Am. Green; Straw; 1 nets
TDD-14	Temporary Diversion	0.0	0.65	5	7.18	0.5	2.33	393	392	70	1	3	3	1.19	0.020	0.01429	5.42	7.45	0.73	0.43	2.33	Yes	1.05898449	N. Am. Green; Straw; 1 nets
TDD-15	Temporary Diversion	0.0	1.40	5	7.18	0.5	5.03	409	394	505	1	3	3	1.20	0.020	0.02970	5.54	7.46	0.74	0.91	5.03	Yes	2.22855851	North Am. Green C350; Bare soil
TDD-16	Temporary Diversion	0.0	2.00	5	7.18	0.5	7.18	408	394	600	1	3	3	1.48	0.020	0.02333	8.03	7.69	1.04	0.89	7.18	Yes	2.15129414	North Am. Green C350; Bare soil



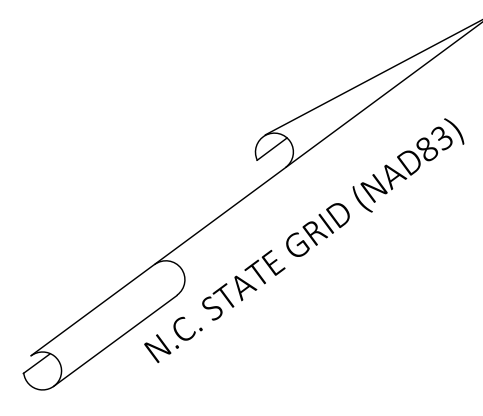
#	DATE	DESCRIPTION
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2	12-JUL-22	REVISED PER TOR & WAKE COUNTY COMMENTS



**MASS GRADING - PARIS TRACT (LOT A)**  
**WALLBROOK**  
**MASS GRADING / EROSION CONTROL /**  
**SANITARY SEWER RELOCATION**  
 Town of Rolesville Project No. CD 22-02  
 Rolesville, Wake County, North Carolina



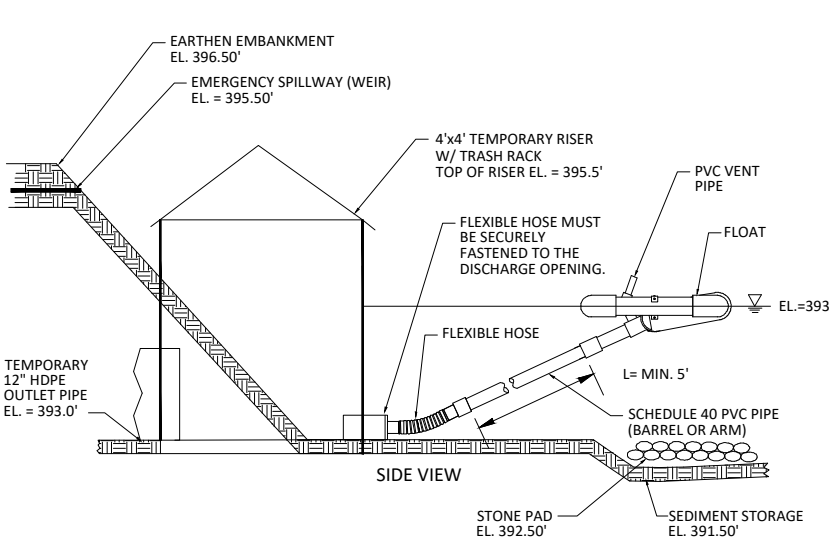
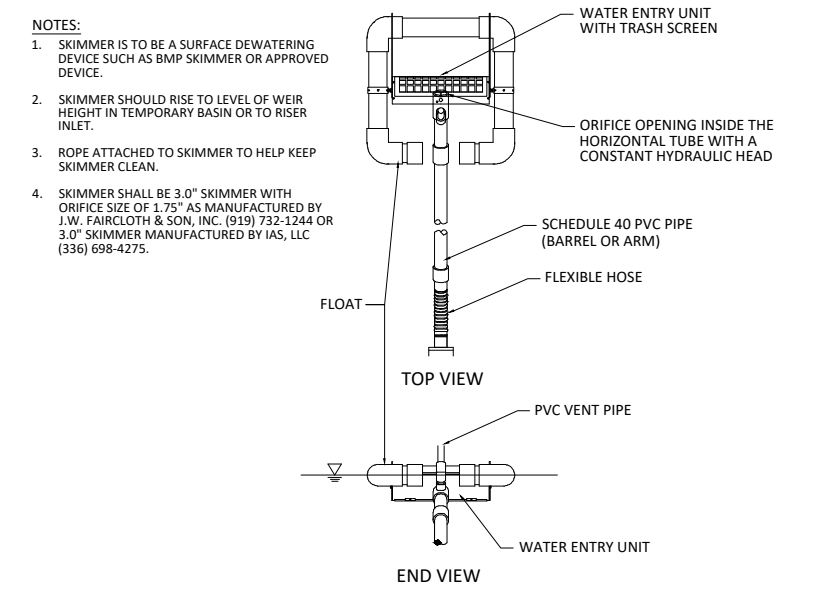
Project Manager: BCF  
 Drawn By: DLC  
 Checked By: STA  
 Project Number: 21089  
 Drawing Number: D-1219-EC  
**C1.3**  
 Date: April 1, 2022



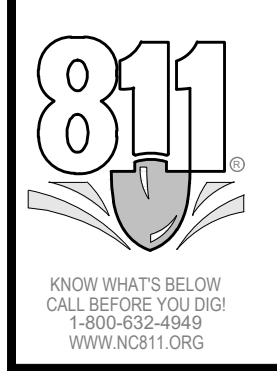
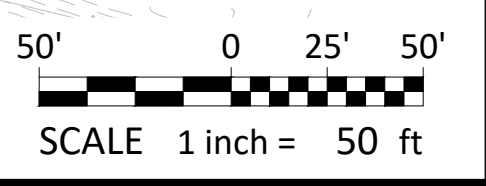
BROTHERS FORTY-ONE, LLC  
 2017-03-02 FC 2424  
 TRACT #1  
 100' X 100' AC 97'  
 1758-48-8155  
 ZONED GC-02  
 NON-RESIDENTIAL

GRAND PARK PROPERTIES, LLC  
 2018-03-14 FC 1114  
 LOT 1  
 270' X 120' AC 1219  
 1758-41-2681  
 COMMERCIAL

GRAND PARK PROPERTIES, LLC  
 2018-03-14 FC 1116  
 LOT 1  
 270' X 120' AC 1219  
 1758-41-2681  
 COMMERCIAL



**SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-5**  
 NOT TO SCALE



#	DATE	DESCRIPTION
2	12-20-21	REVISED PER TOR & WAKE COUNTY COMMENTS
1	11-15-21	REVISED PER TOR & WAKE COUNTY COMMENTS



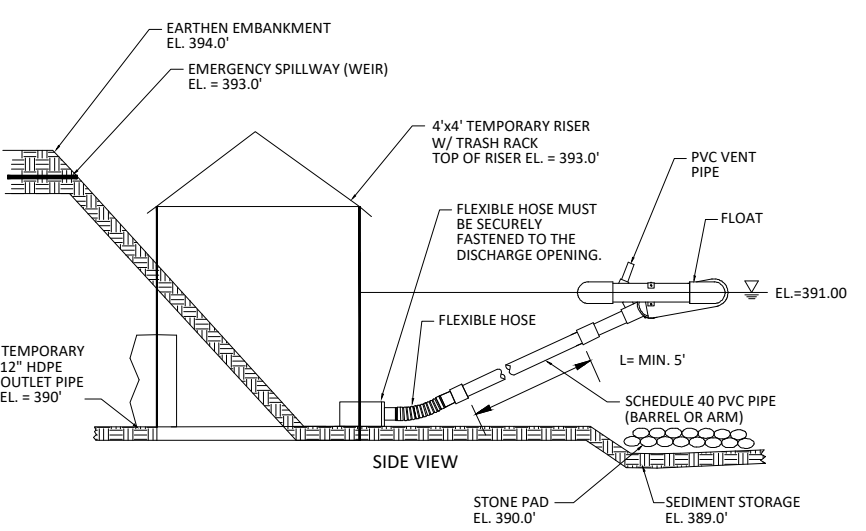
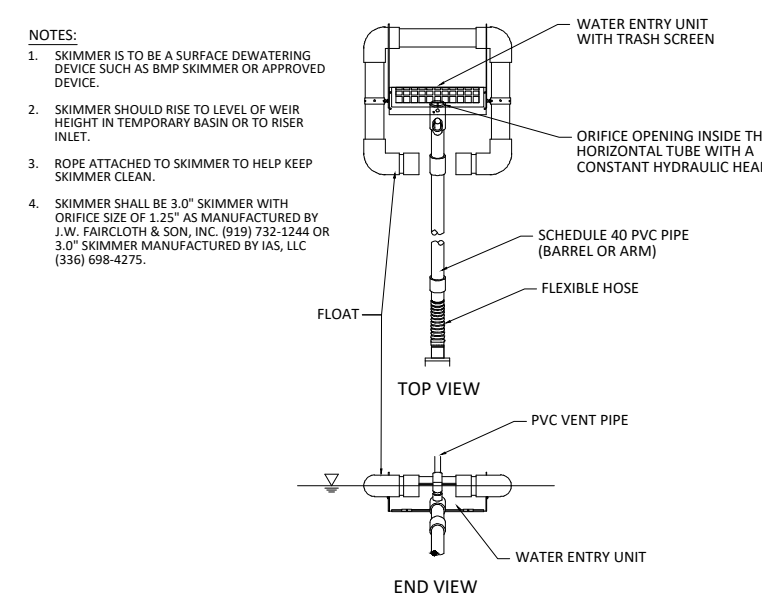
**MASS GRADING - MBW TRACT (LOTS B, C, D)**  
**WALLBROOK**  
**MASS GRADING / EROSION CONTROL /**  
**SANITARY SEWER RELOCATION**  
 Town of Rolesville Project No. CD 22-02  
 Rolesville, Wake County, North Carolina

NC License: P-1109  
**ARK CONSULTING GROUP PLLC**  
 ENGINEERS & PLANNERS  
 2755 B Churchs Blvd  
 Cary, NC 27588  
 (919) 558-0888  
 www.arkconsultinggroup.com

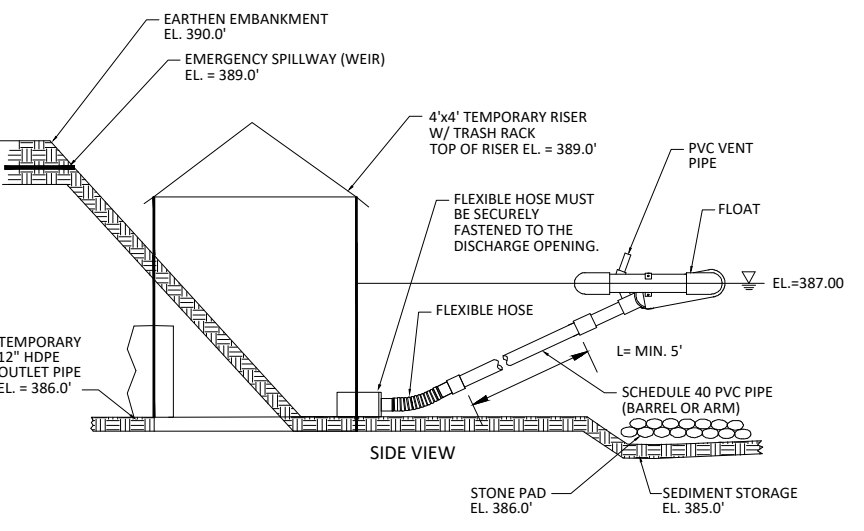
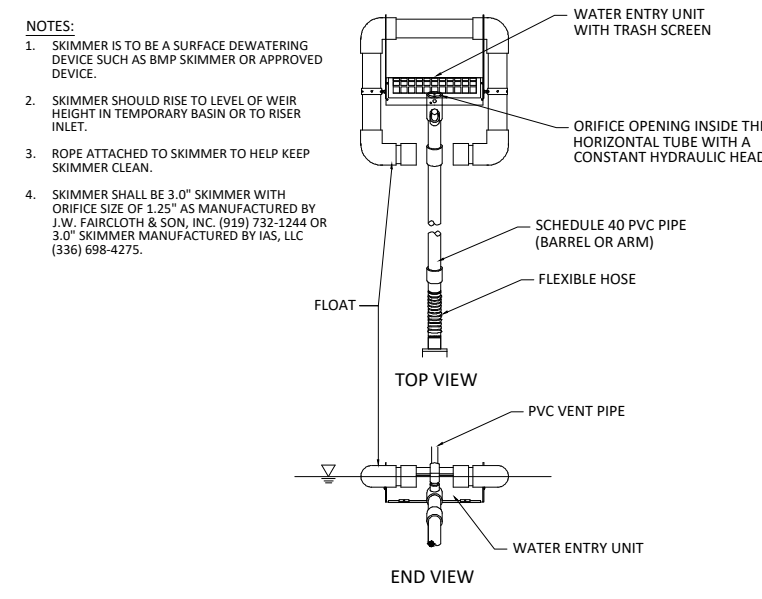
Project Manager: BCF  
 Drawn By: DLC  
 Checked By: STA  
 Project Number: 21089  
 Drawing Number: D-1219-EC

**C1.4**  
 Date: April 1, 2022

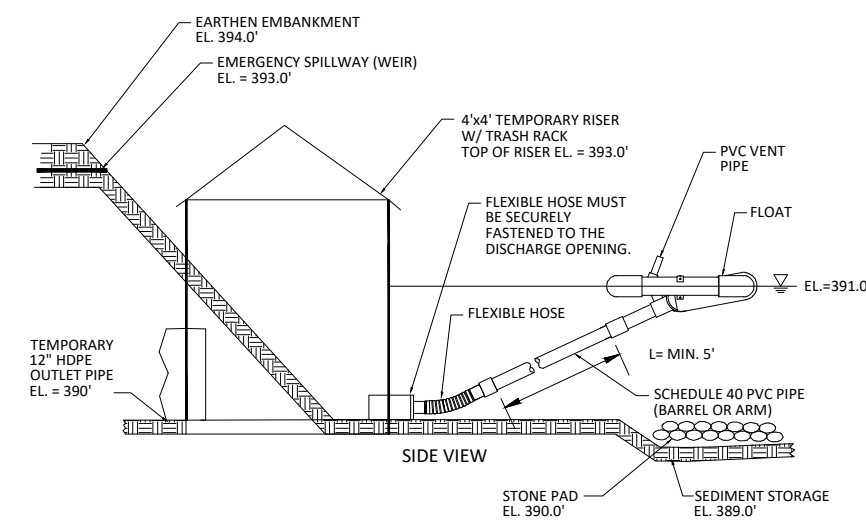
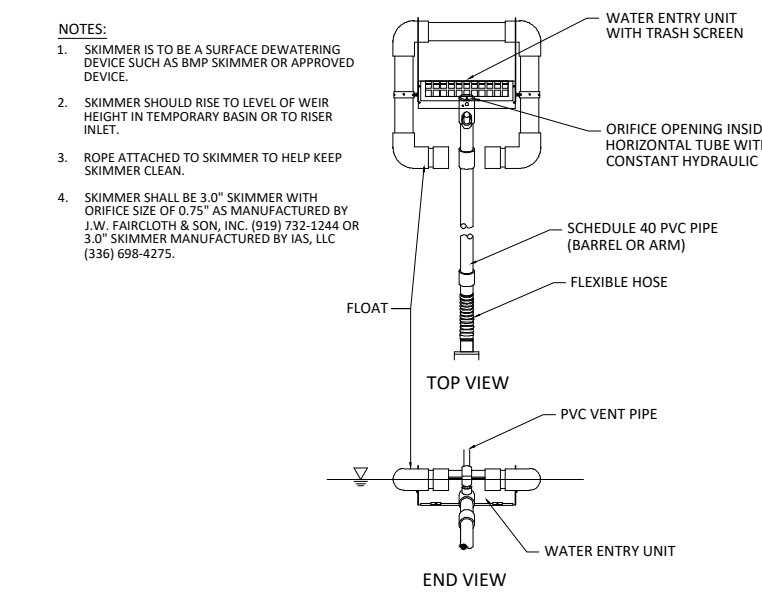




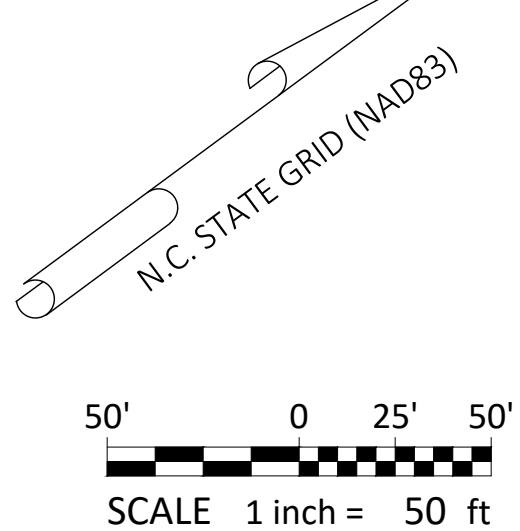
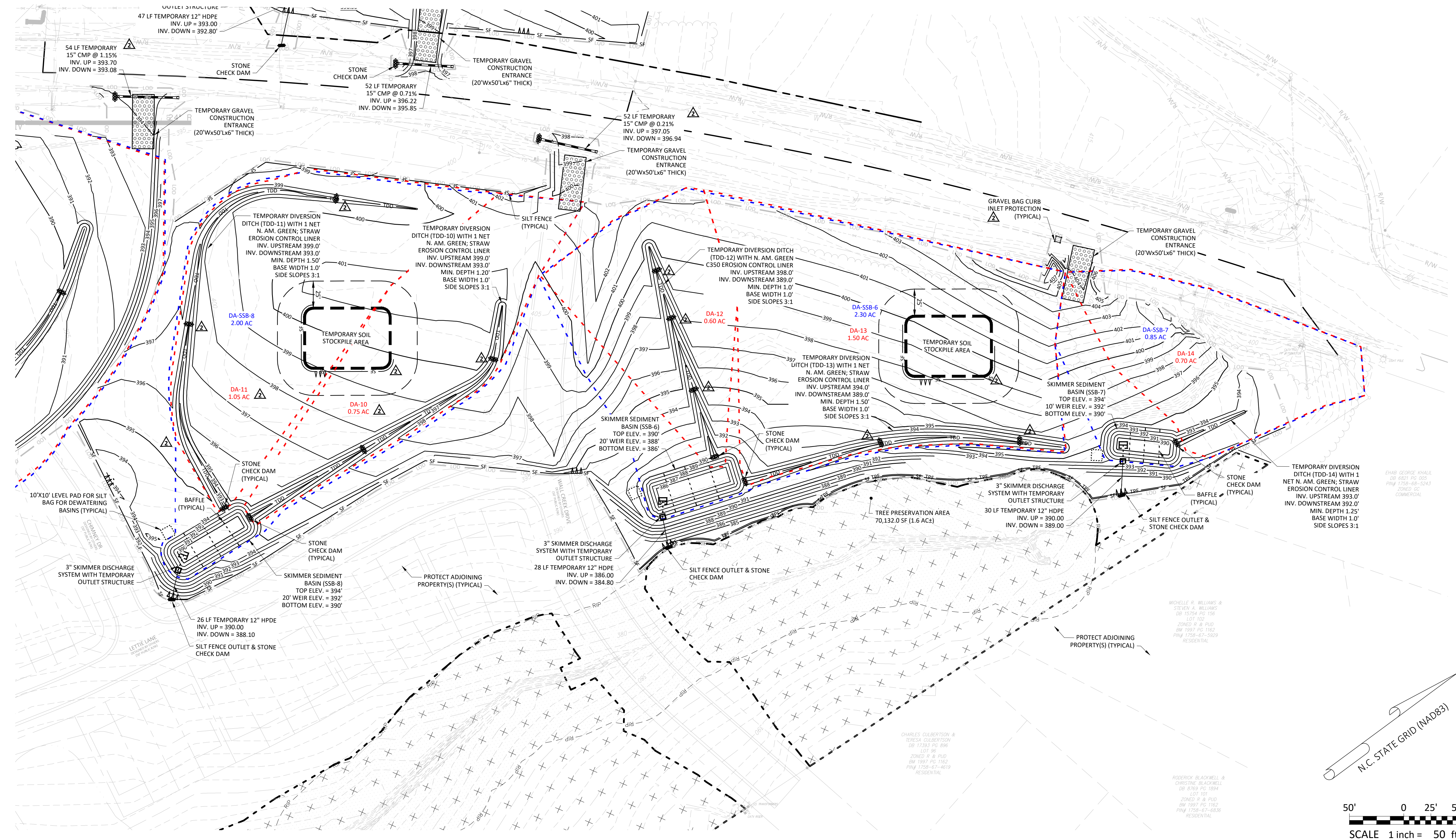
**SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-8**  
NOT TO SCALE



**SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-6**  
NOT TO SCALE



**SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE FOR SSB-7**  
NOT TO SCALE



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

**REVISIONS:**

**CROSLAND SOUTHEAST**

**MASS GRADING - LOTS 7 & 8**

**WALLBROOK**

**MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION**

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

NC License: P-1109

**ARK CONSULTING GROUP PLLC**  
ENGINEERS & PLANNERS

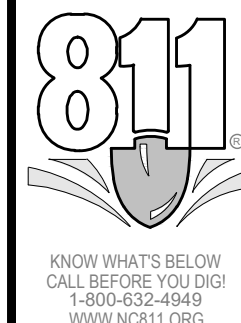
2755-B Charles Blvd.  
Cape Fear, NC 27688  
(252) 558-0888  
www.arkconsultinggroup.com

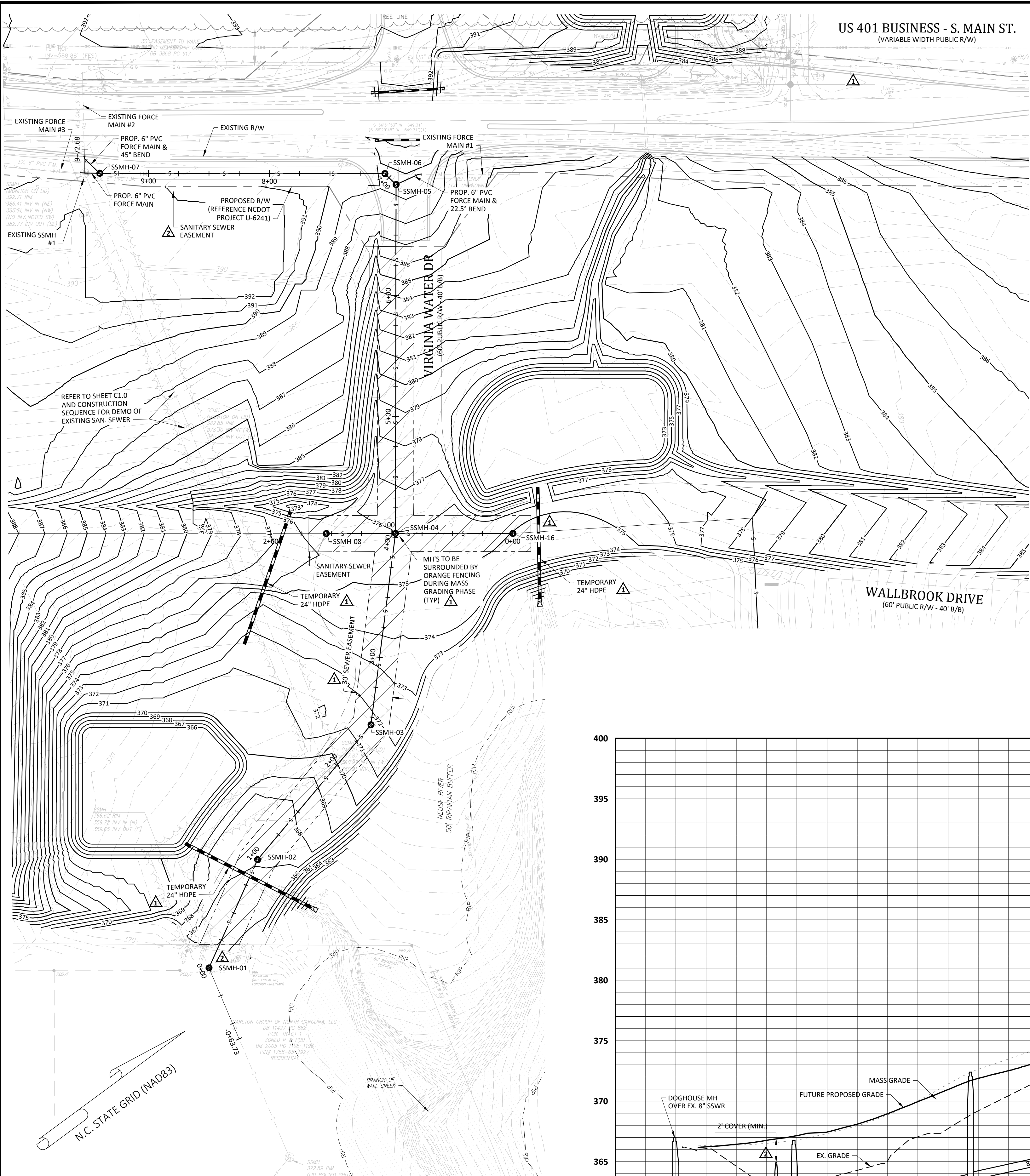
1/22/2022

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

**C1.5**

Date: April 1, 2022





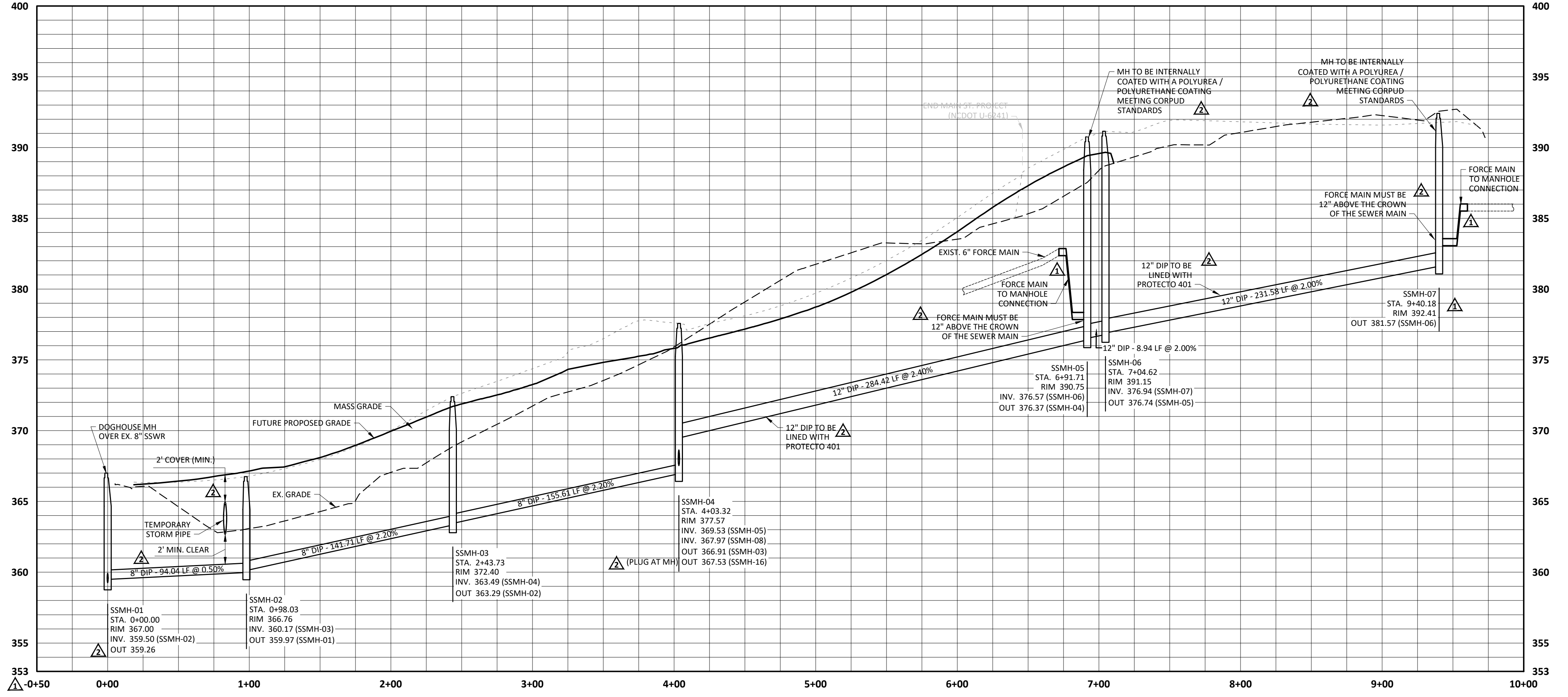
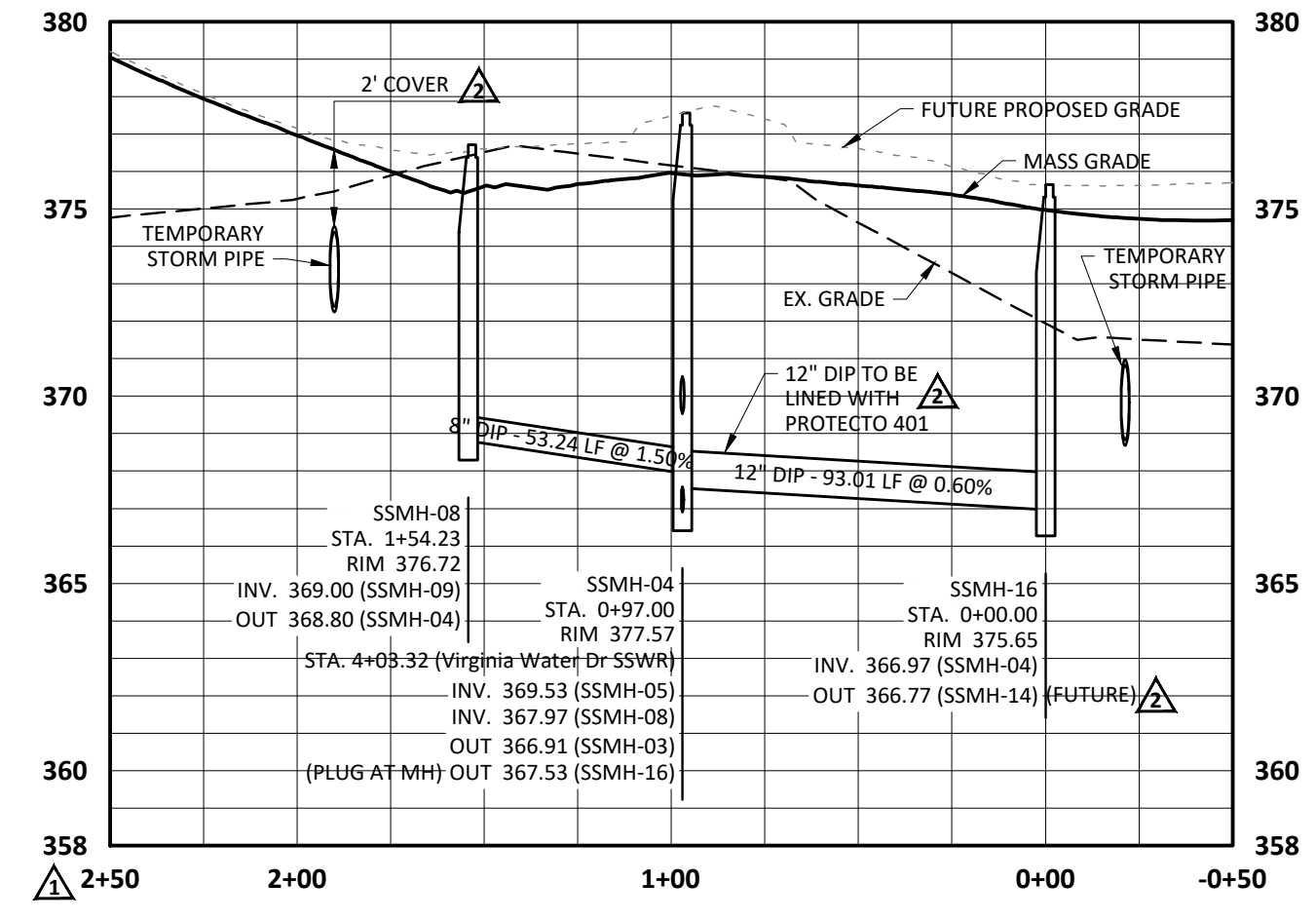
US 401 BUSINESS - S. MAIN ST.  
(VARIABLE WIDTH PUBLIC R/W)

**General Notes:**

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

**Sanitary Sewer Construction Sequence:**

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



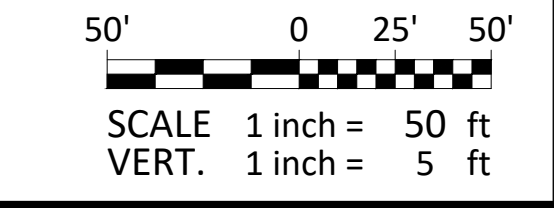
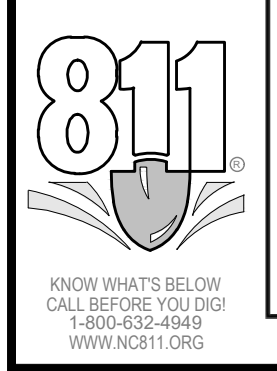
**ATTENTION CONTRACTORS**  
The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Utilities Department at (919) 996-4540 at least twenty four hours prior to beginning any of their construction.

Failure to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

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

City of Raleigh  
Public Utilities Department Permit # S-5093  
Authorization to Construct \_\_\_\_\_  
Date \_\_\_\_\_



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

NC License: P-1109  
**ARK CONSULTING GROUP PLLC**  
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 2755-B Chapel Hill Rd.  
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1/22/2022

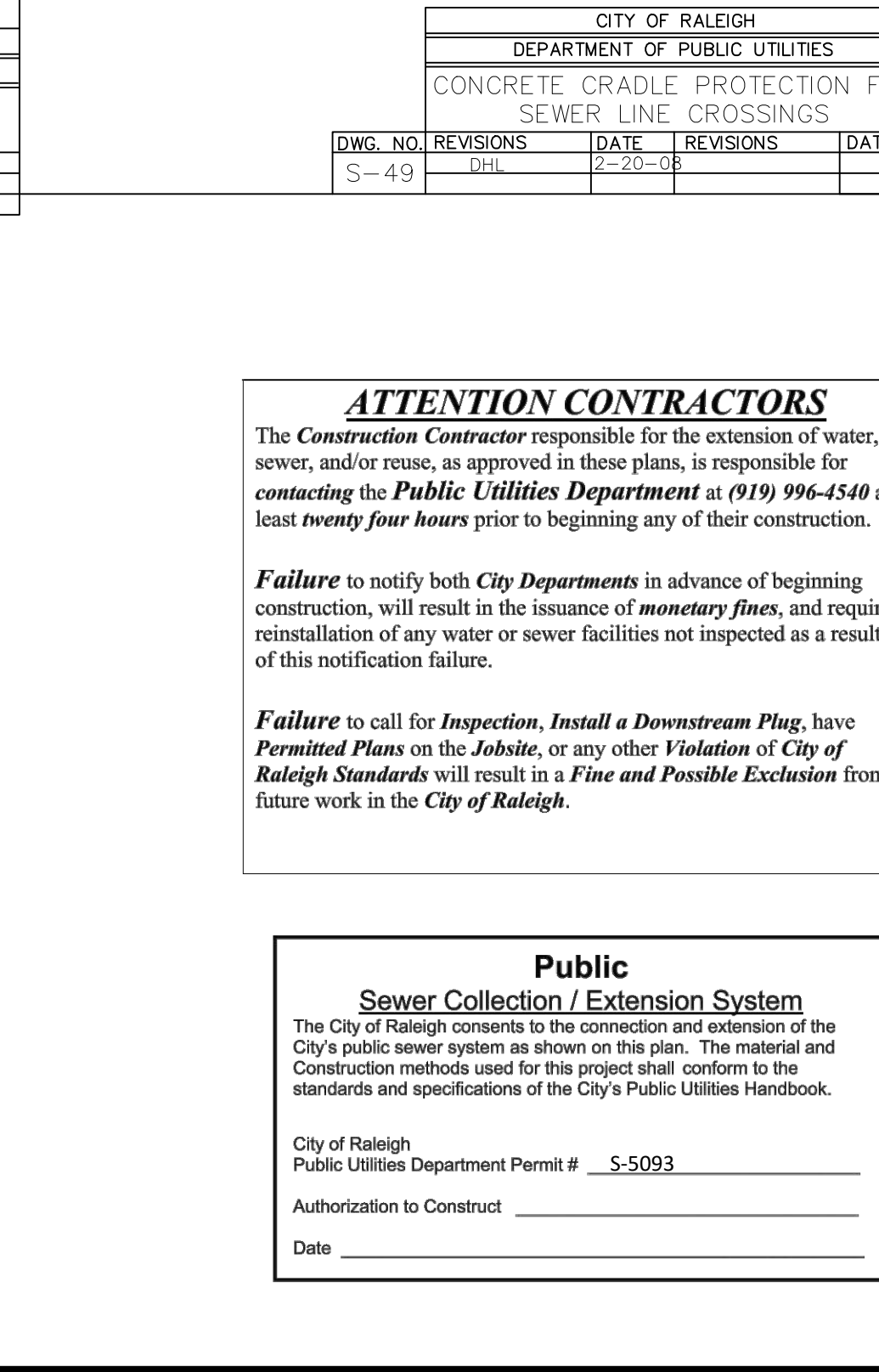
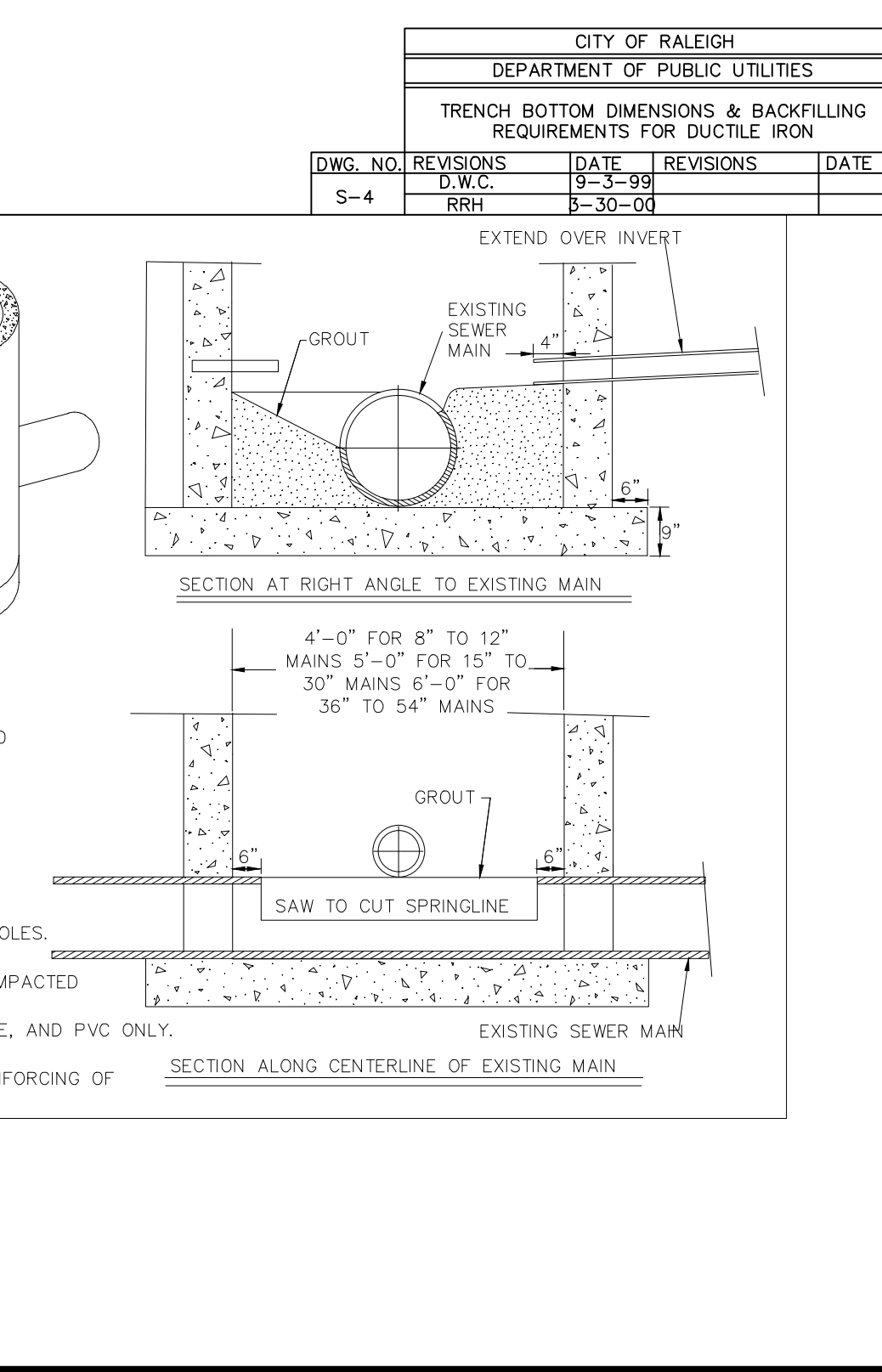
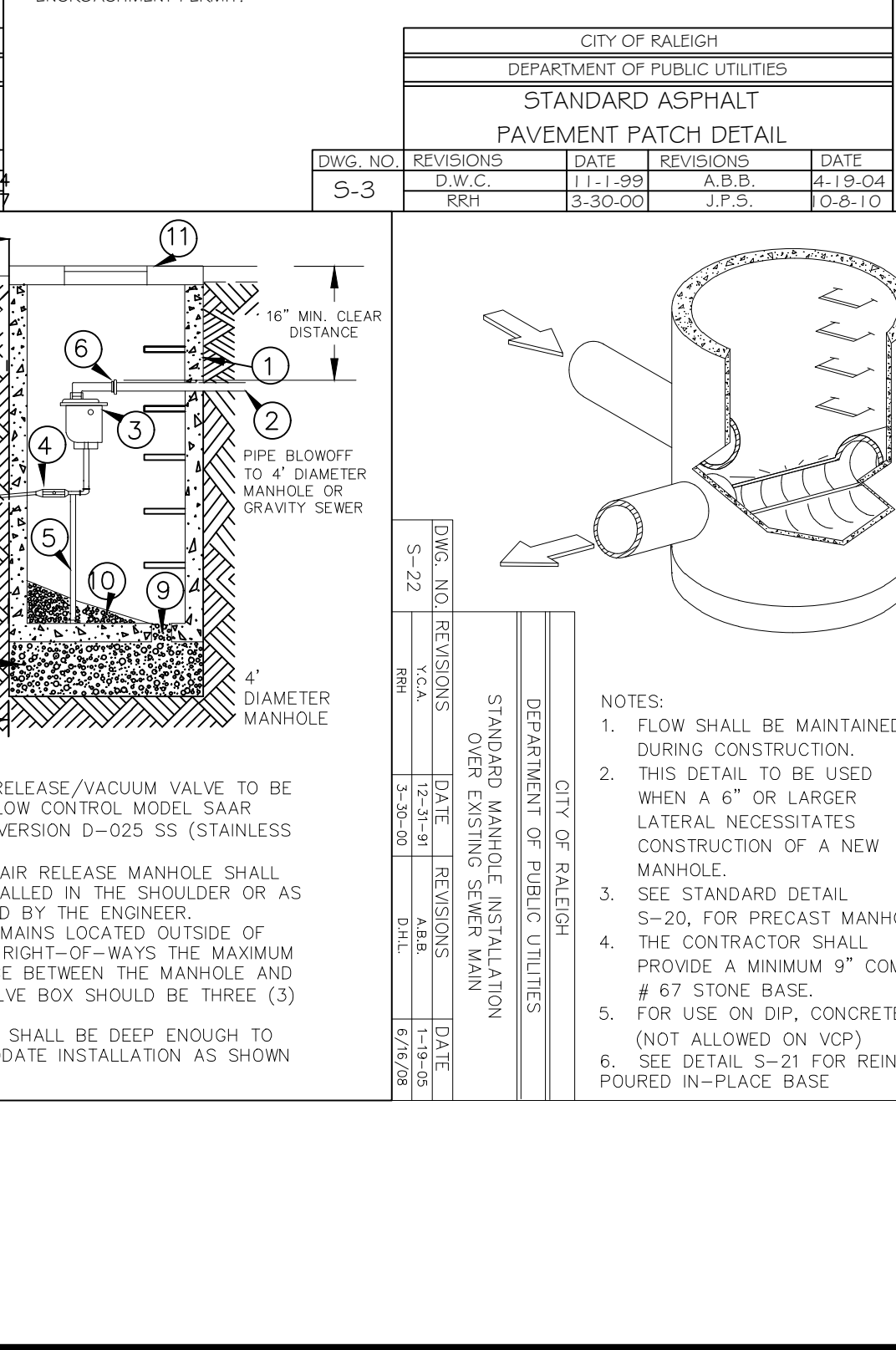
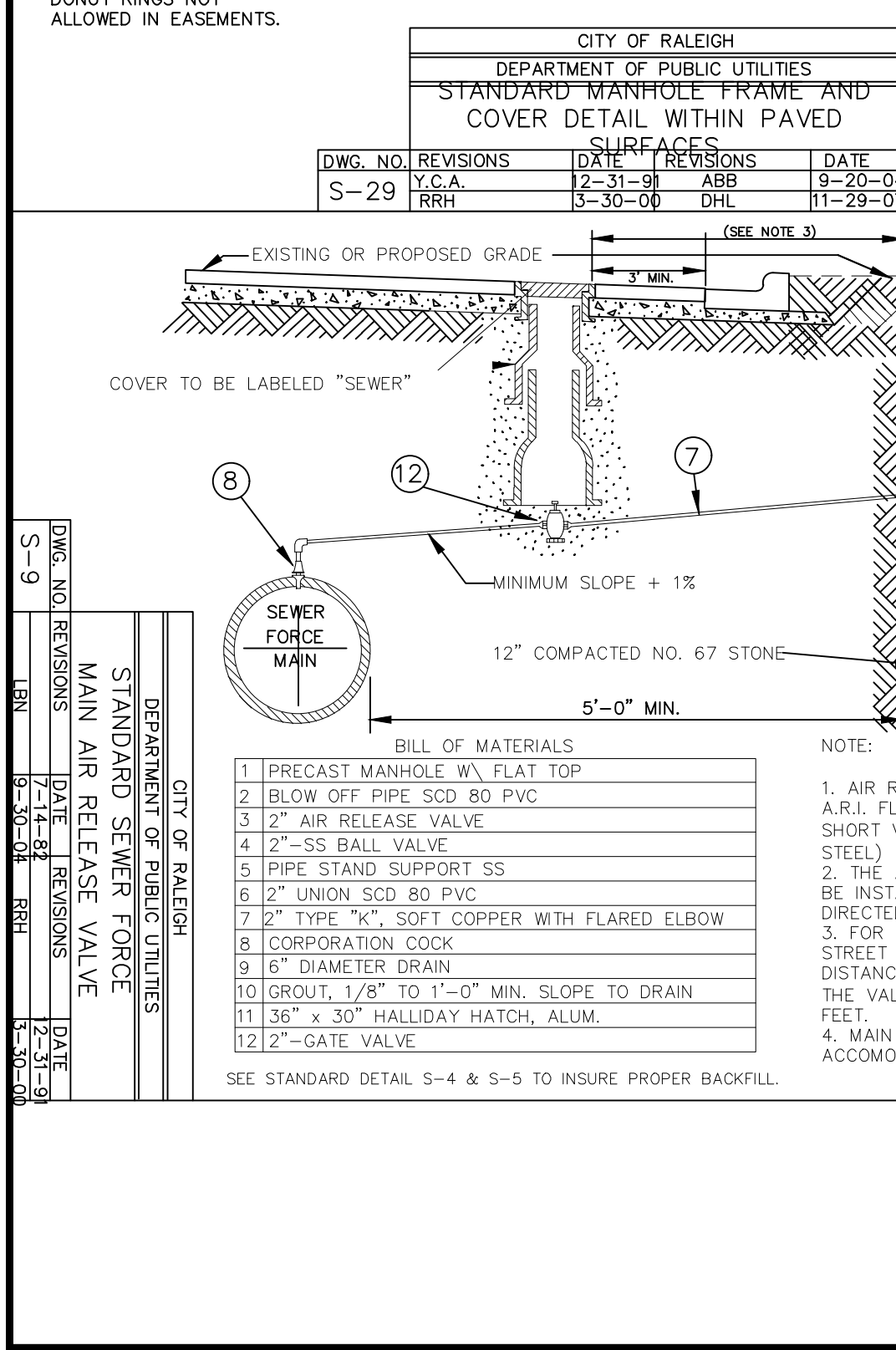
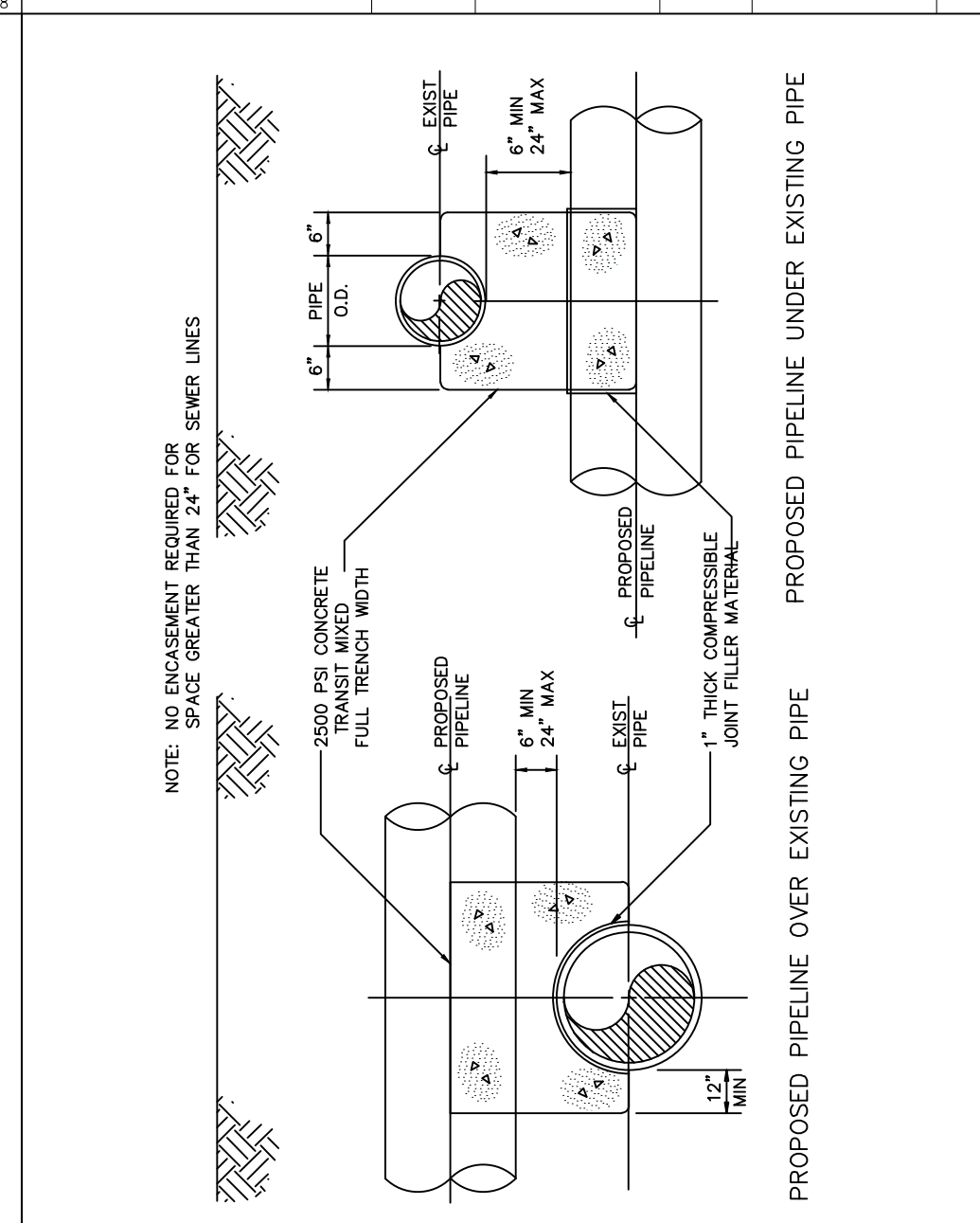
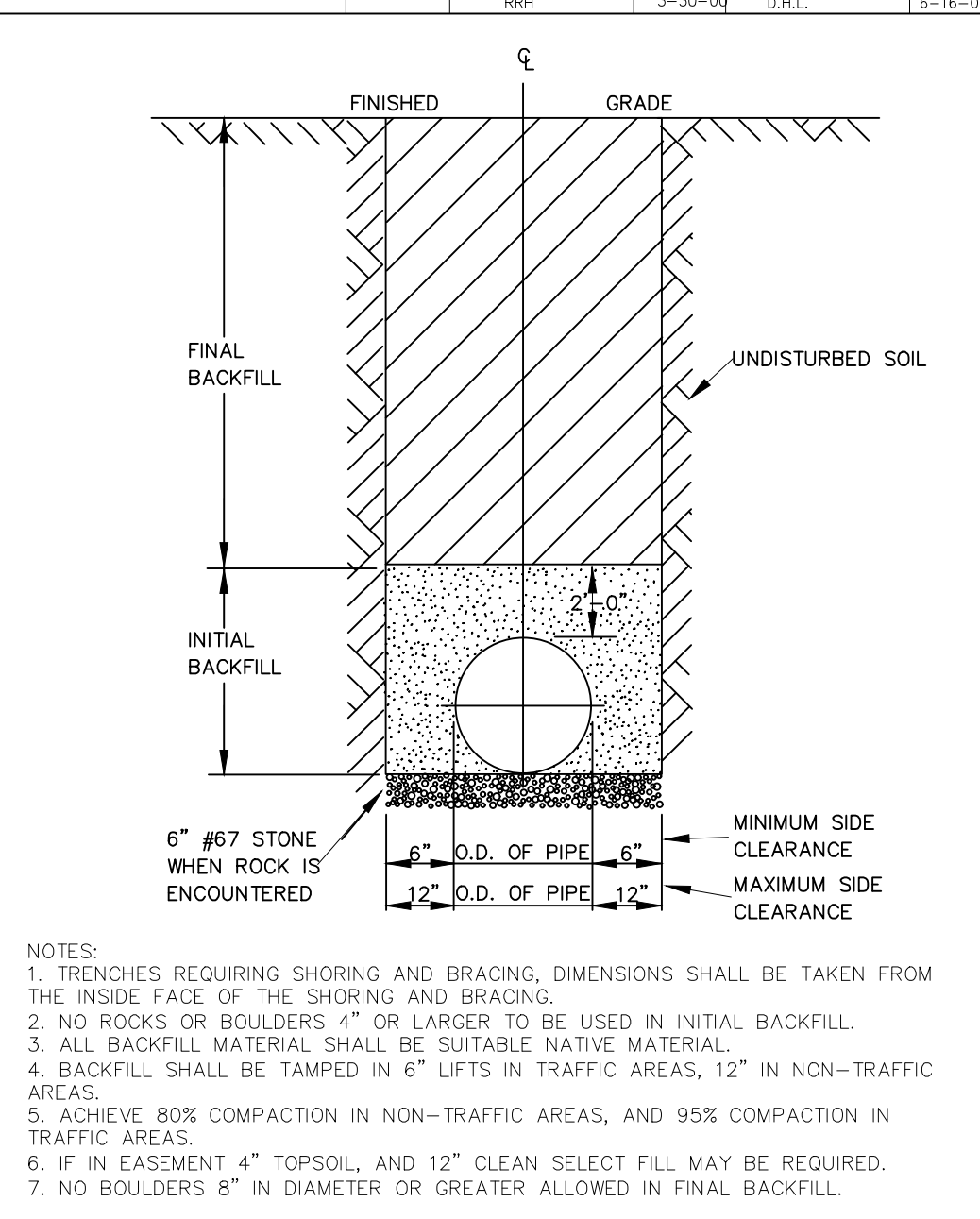
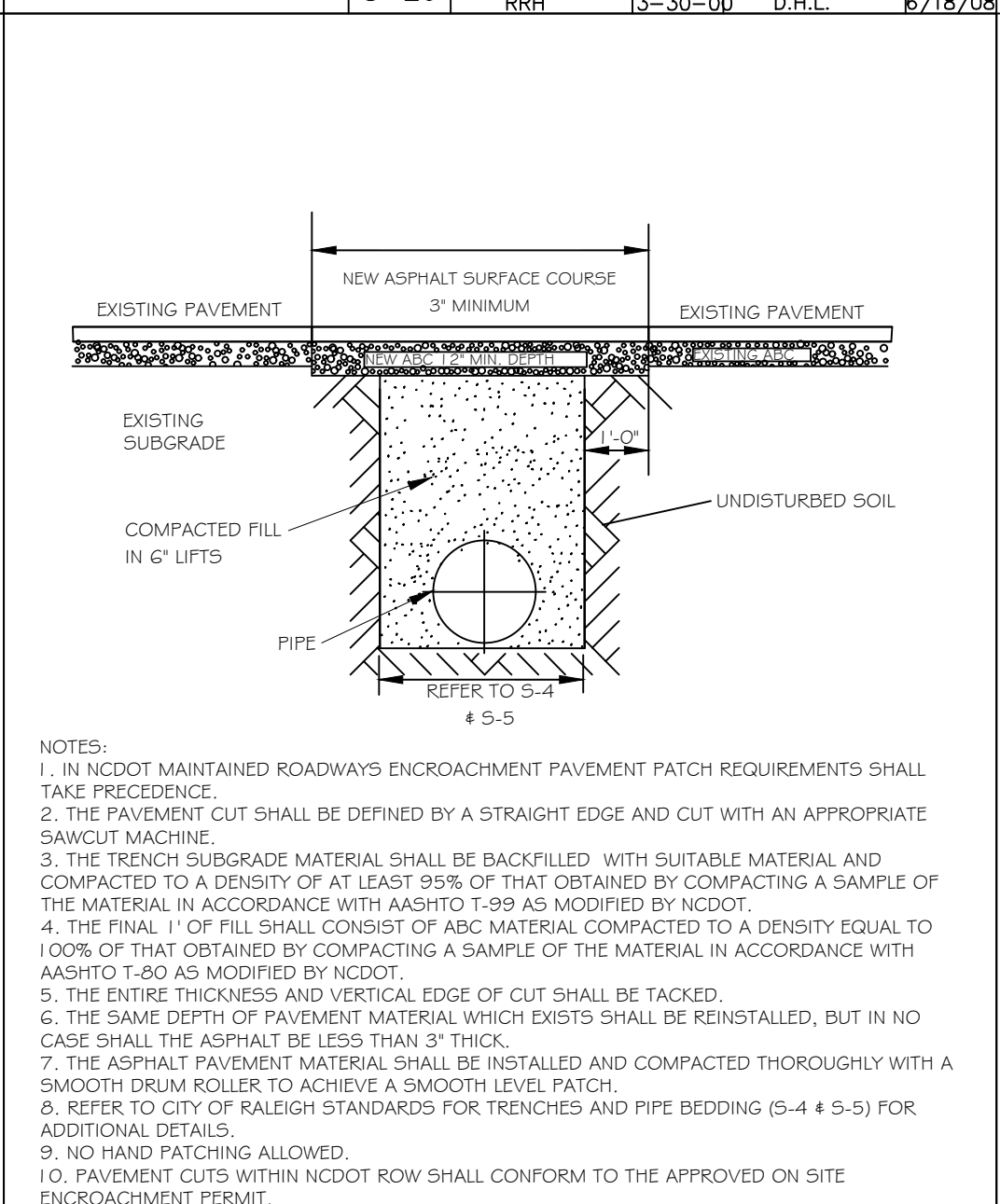
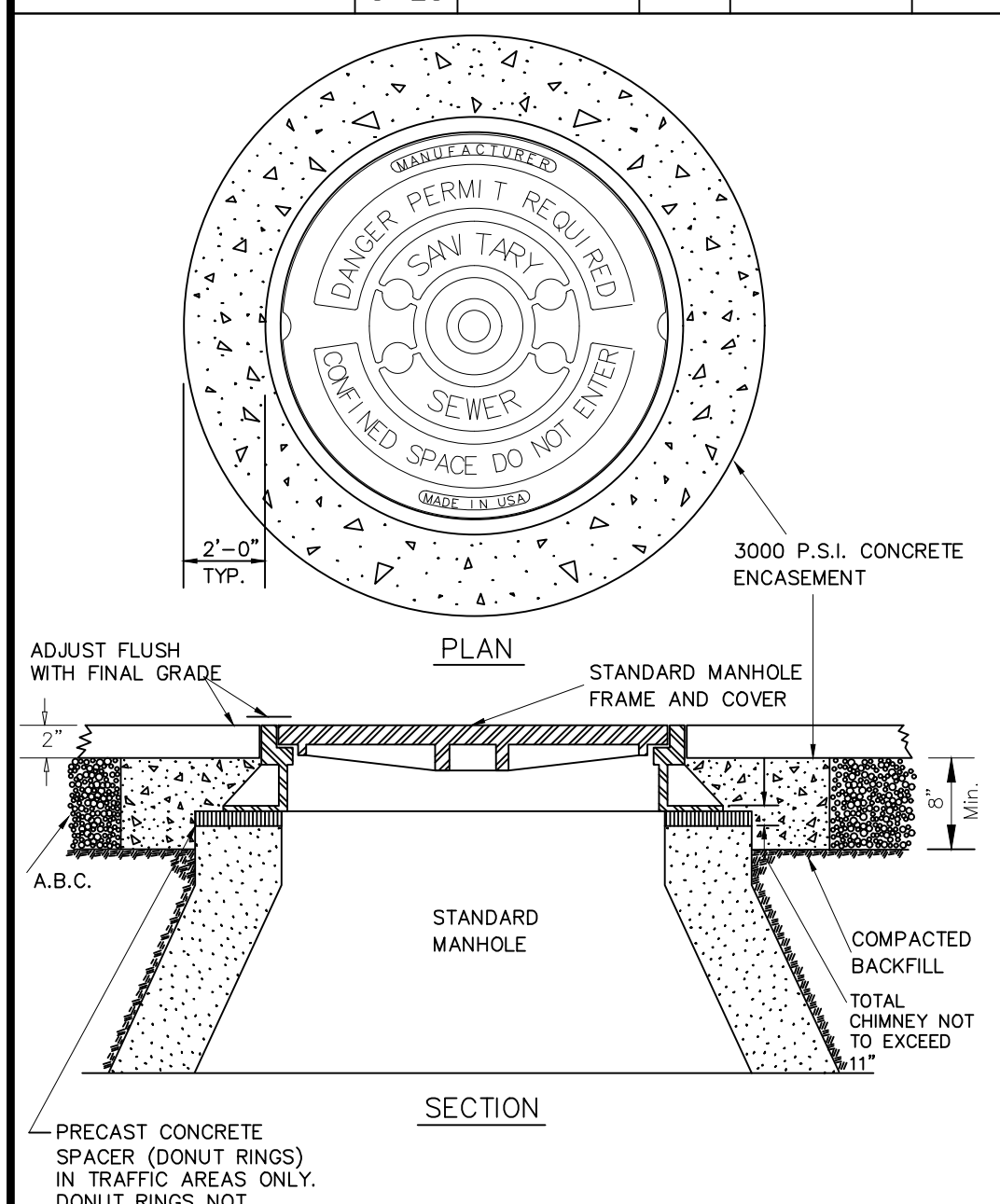
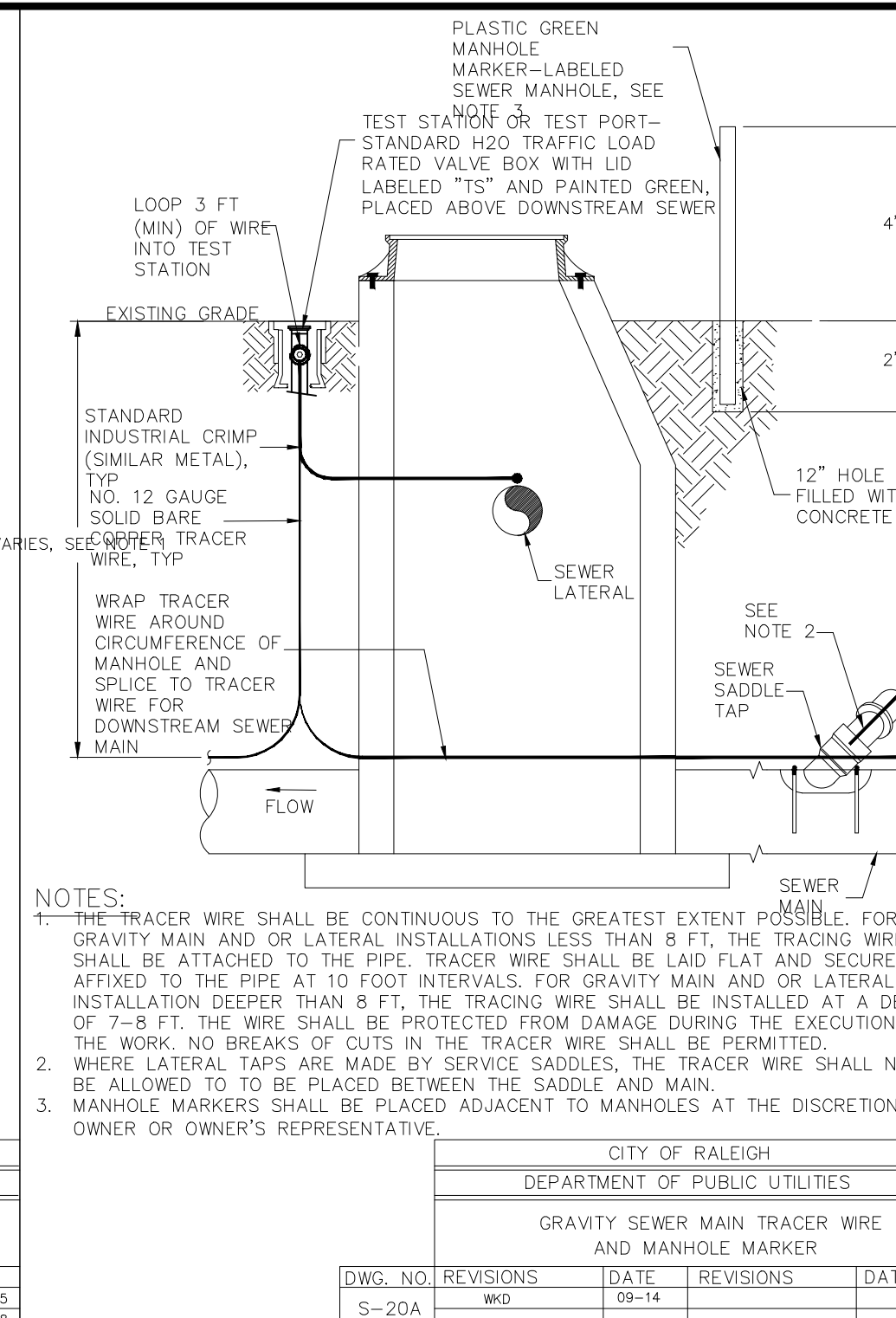
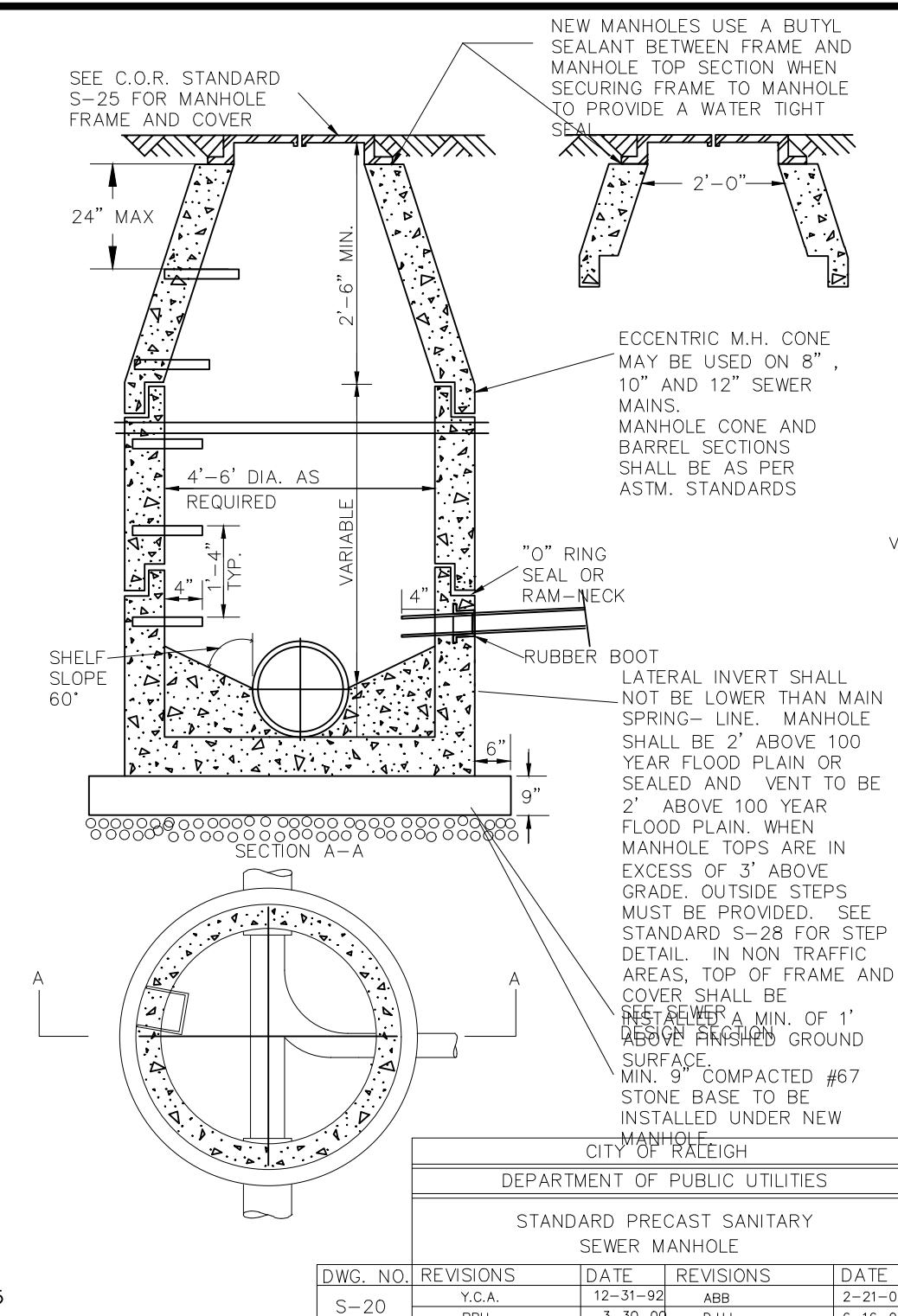
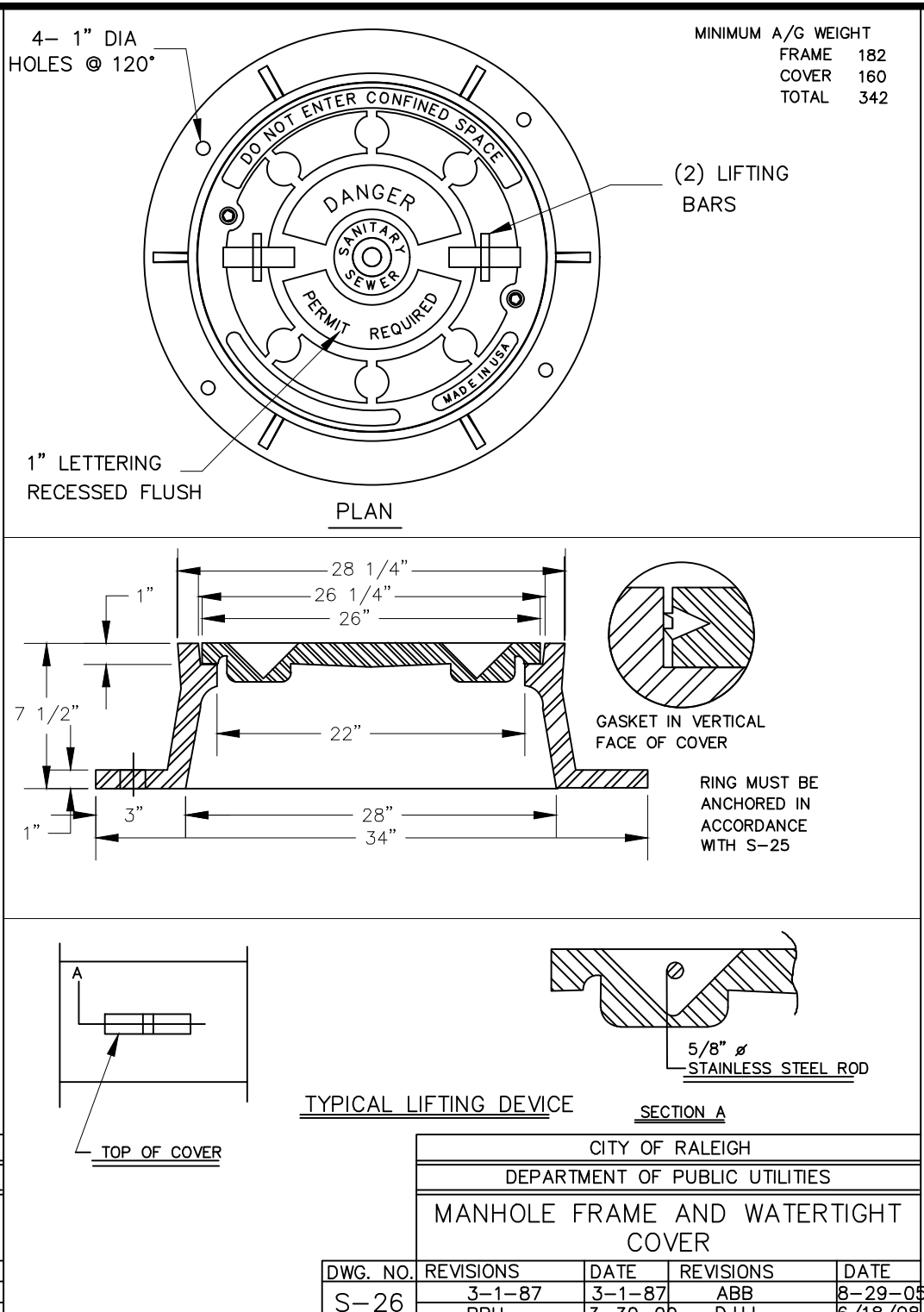
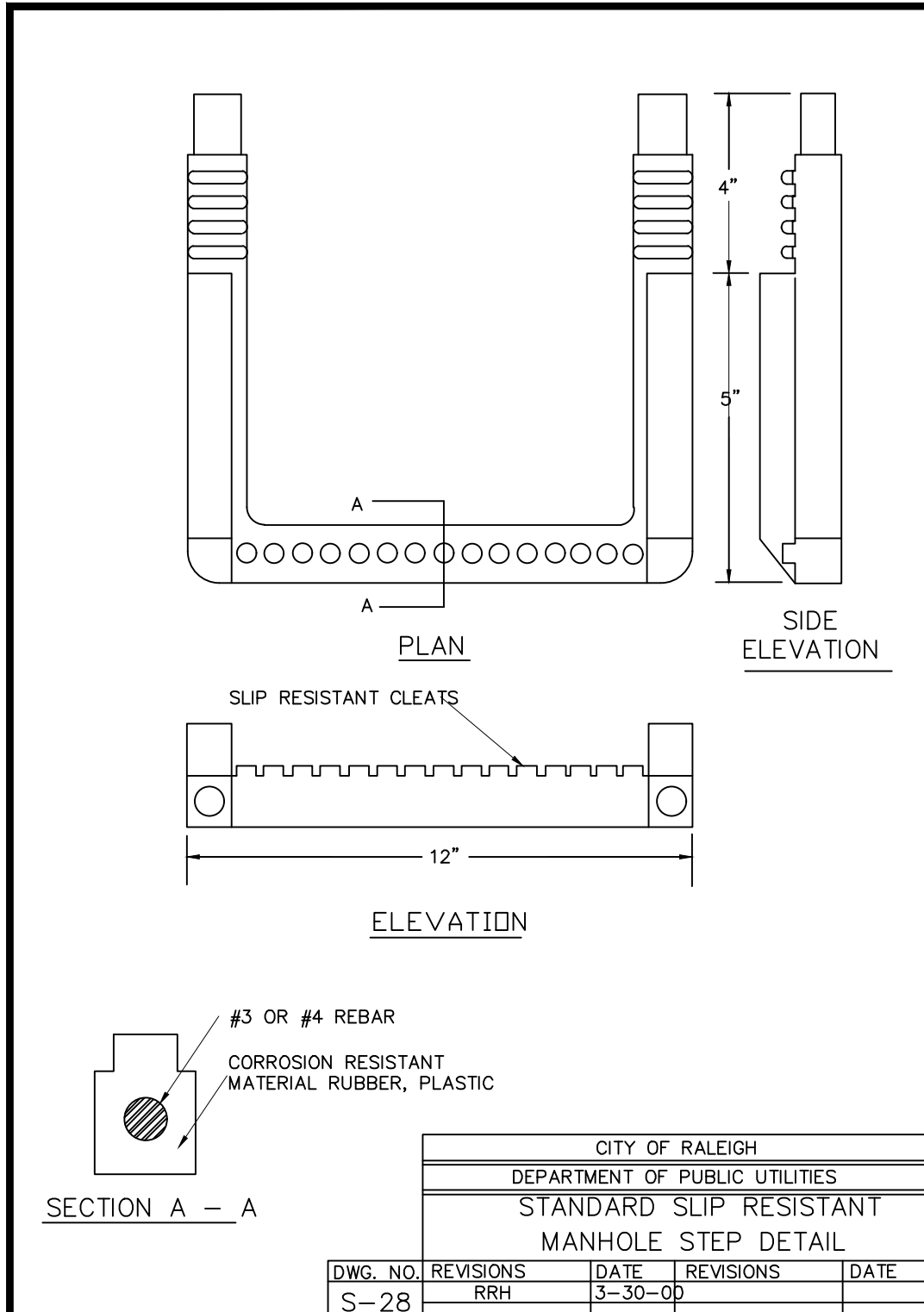
Project Manager: BCF  
 Drawn By: DLC  
 Checked By: STA  
 Project Number: 21089  
 Drawing Number: D-1219-EC

**C2.0**  
 Date: April 1, 2022

**CROSLAND SOUTHEAST**

REVISIONS:

#	DATE	DESCRIPTION
2	12-JUL-22	REVISED PER TOR & WAKE COUNTY COMMENTS
1	15-JUN-22	REVISED PER TOR & WAKE COUNTY COMMENTS



**REVISIONS:**

#	DATE	DESCRIPTION
2	12-20-22	REVISED PER TOR & WAKE COUNTY COMMENTS
1	11-15-22	REVISED PER TOR & WAKE COUNTY COMMENTS

**△ 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-0293

The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # \_\_\_\_\_

The City of Raleigh consents to the connection to its public sewer system and extensions of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh - PLANS AUTHORIZED FOR CONSTRUCTION

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

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

City of Raleigh Development Approval \_\_\_\_\_  
City of Raleigh Review Officer \_\_\_\_\_

**CORPUD Standard Utility Notes:**

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK)
- UTILITY SEPARATION REQUIREMENTS:
  - A DISTANCE OF 100" SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN 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.
  - 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 DIVISION.
  - 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.
  - 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
  - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY CORPUD PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO CORPUD.
- 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- IT IS THE DEVELOPER'S 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.
- INSTALL PVC WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
- INSTALL PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS PRIOR TO CONSTRUCTION.
- NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
- CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NC. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

**ATTENTION CONTRACTORS**

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

**Failure** to notify both **City Departments** in advance of beginning construction, will result in the issuance of **monetary fines**, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

**Failure** to call for **Inspection**, **Install a Downstream Plug**, have **Permitted Plans on the Jobsite**, or any other **Violation of City of Raleigh Standards** will result in a **Fine and Possible Exclusion** from future work in the **City of Raleigh**.

**Public Sewer Collection / Extension System**

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

City of Raleigh  
Public Utilities Department Permit # S-5093

Authorization to Construct \_\_\_\_\_  
Date \_\_\_\_\_

**CROSLAND SOUTHEAST**

**SANITARY SEWER RELOCATION - DETAILS**

**WALLBROOK MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION**

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

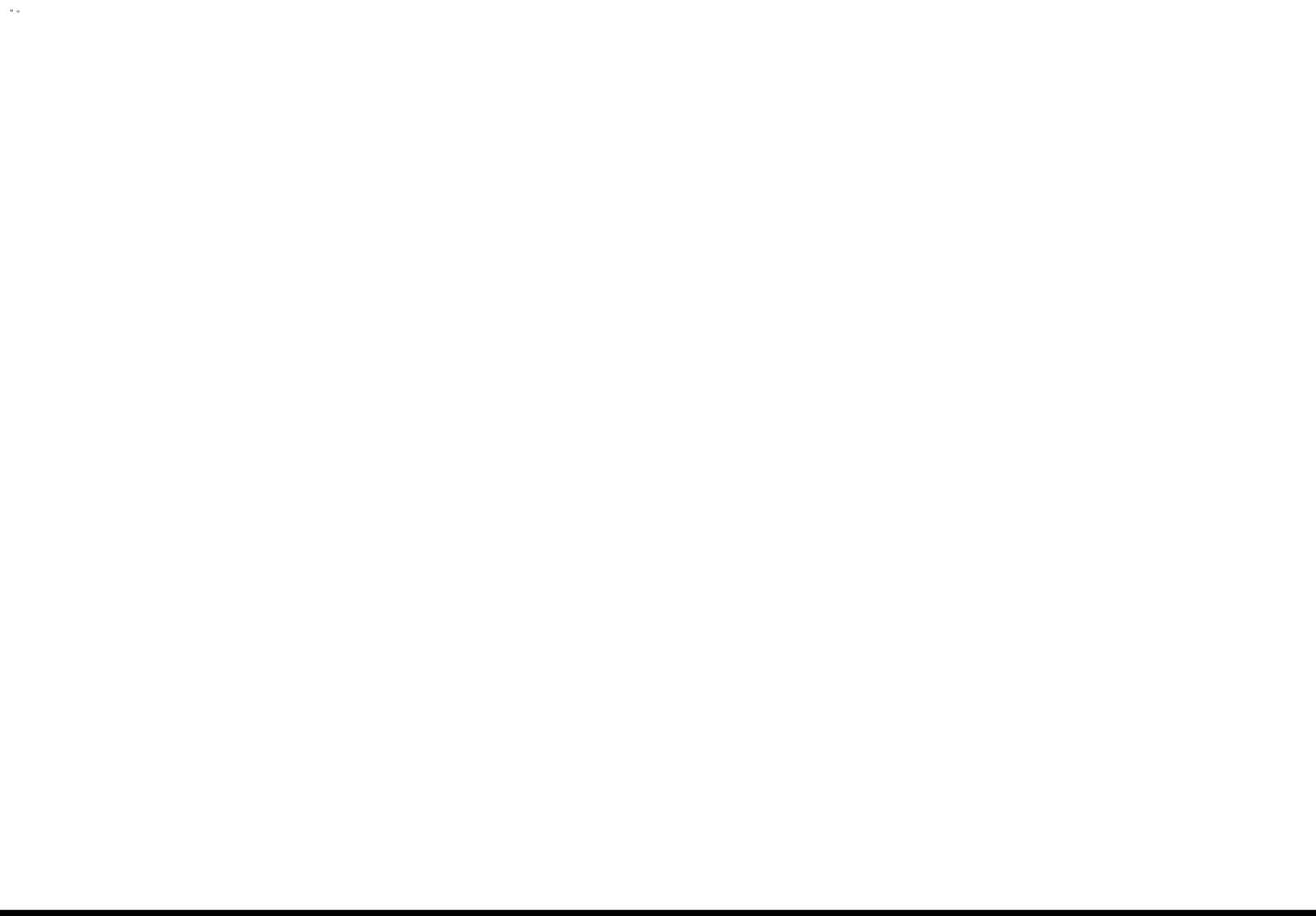
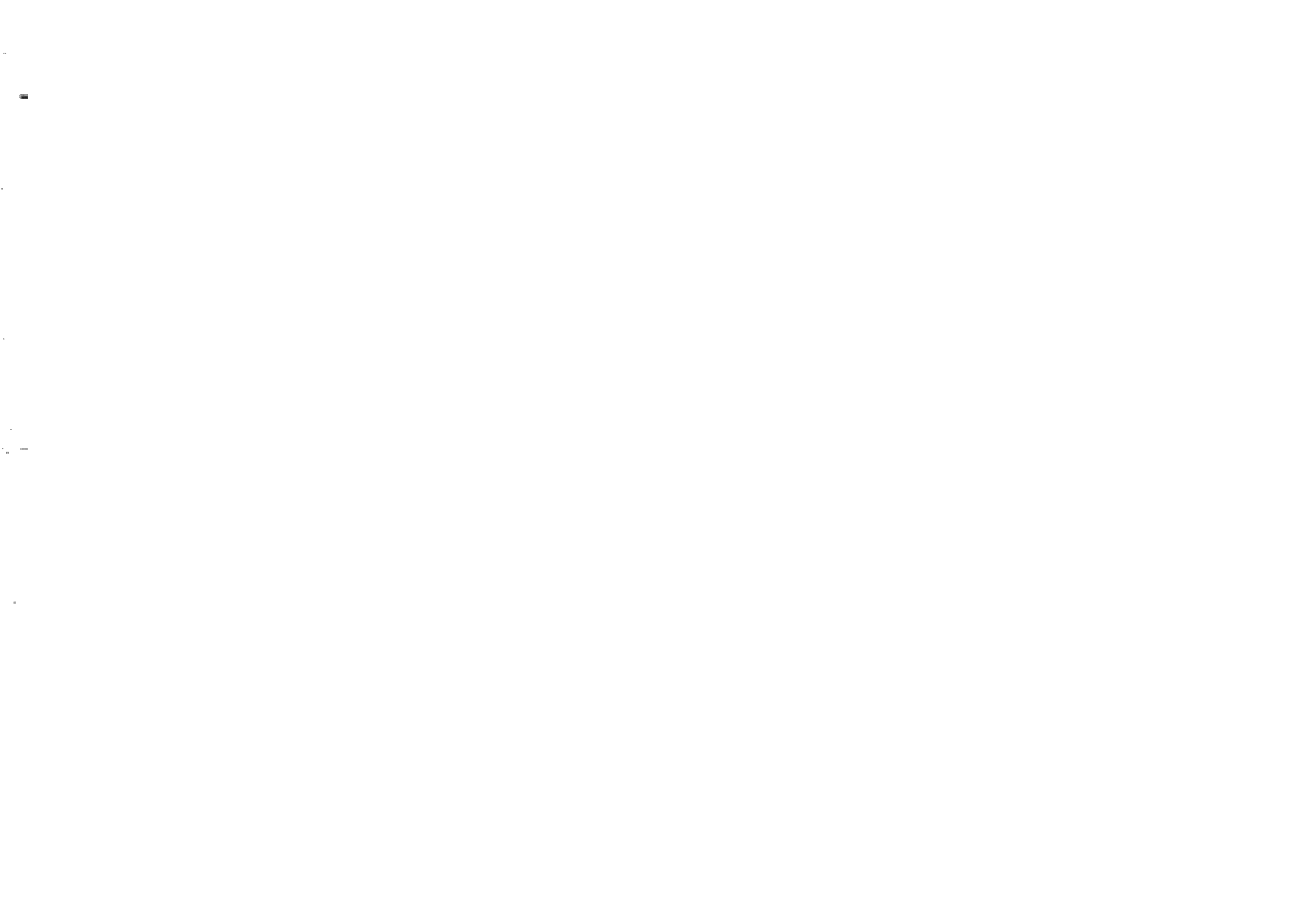
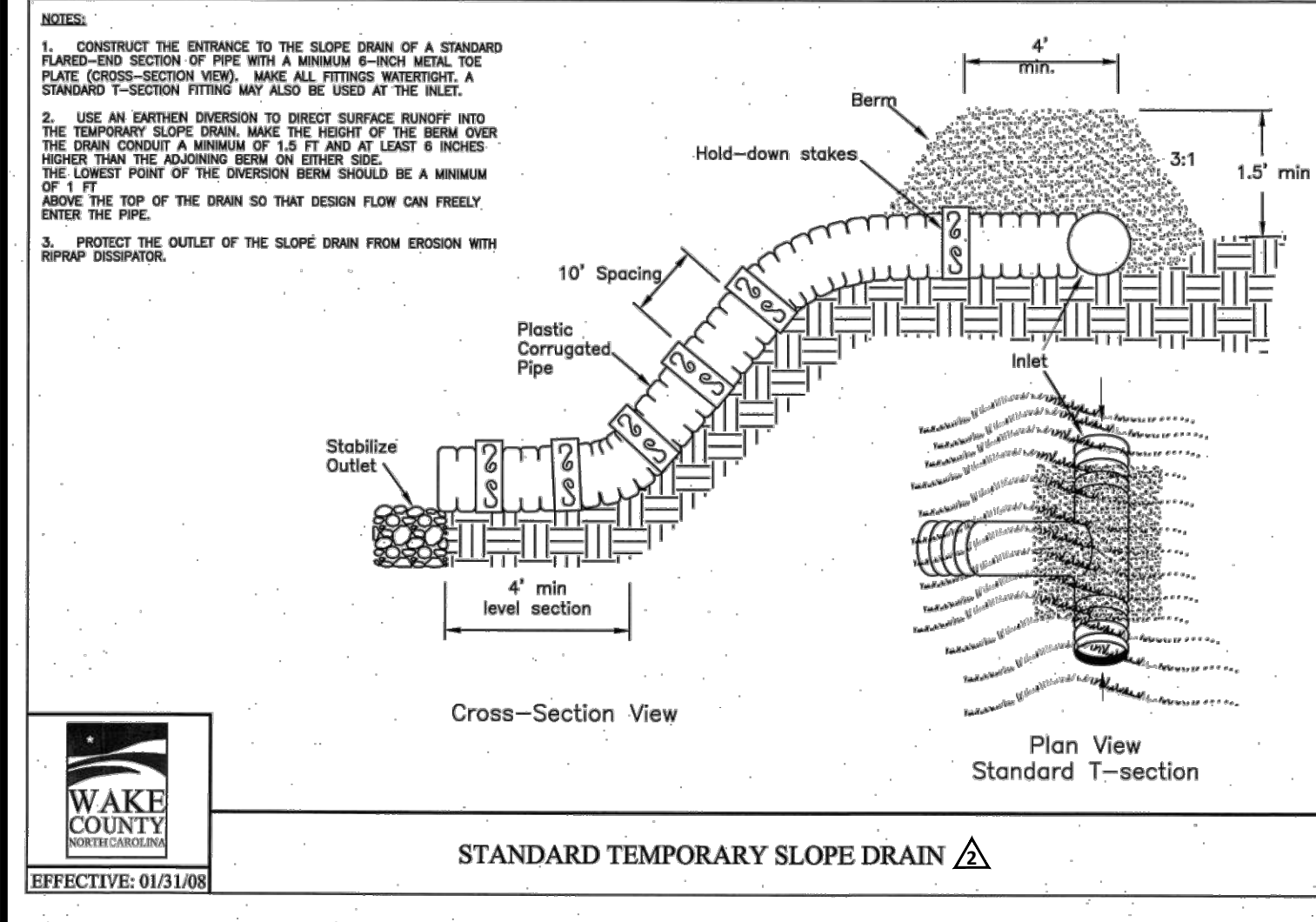
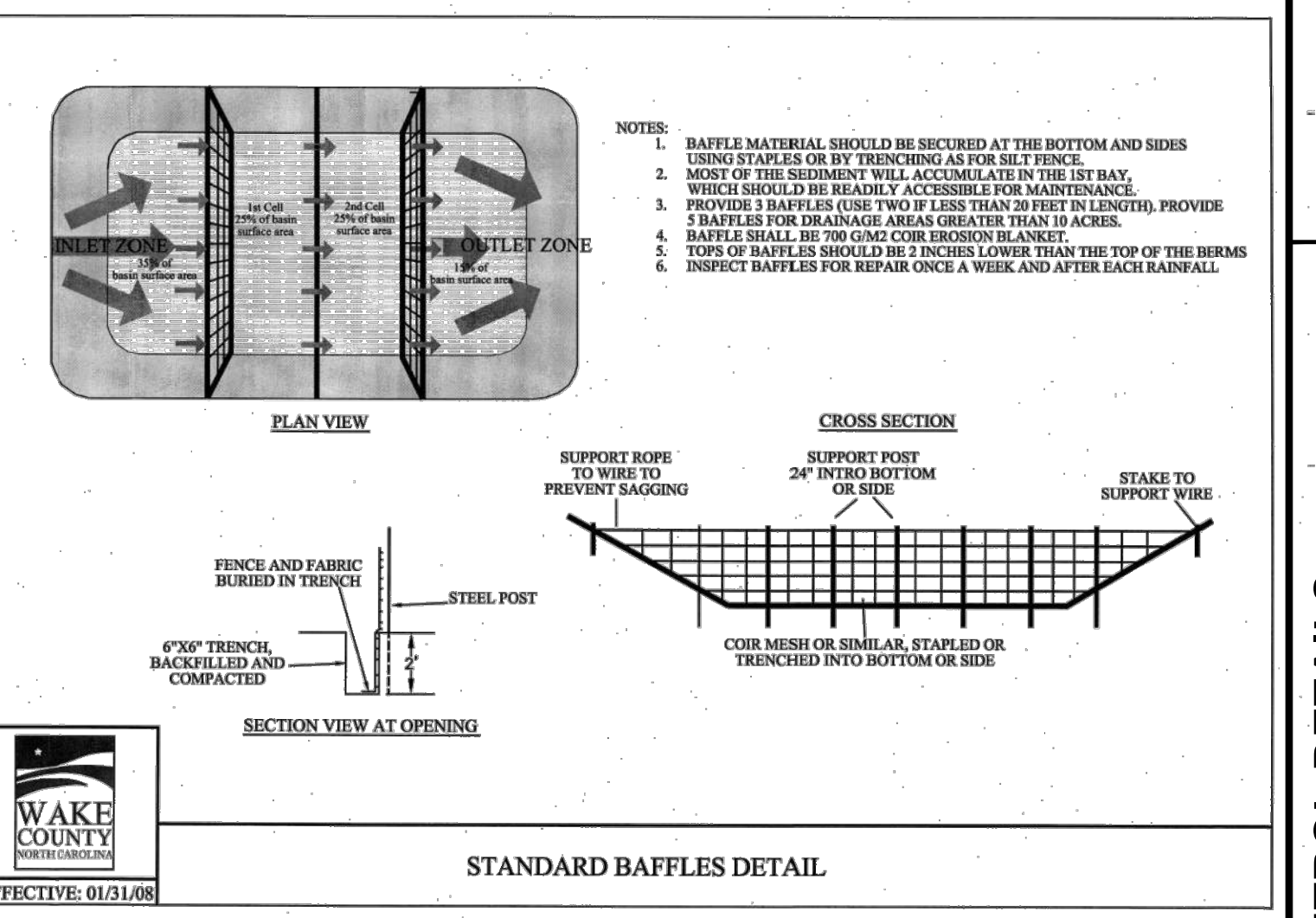
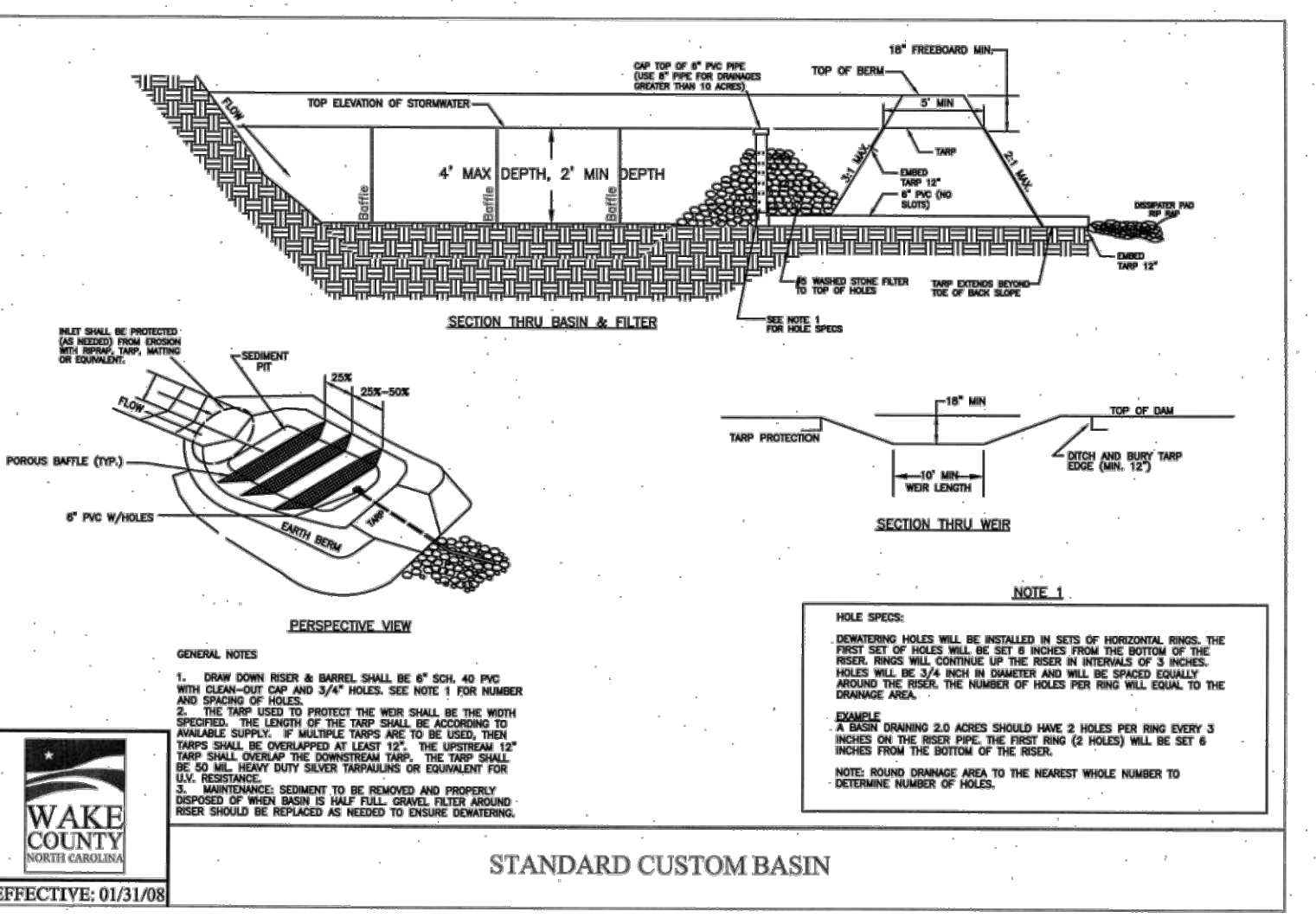
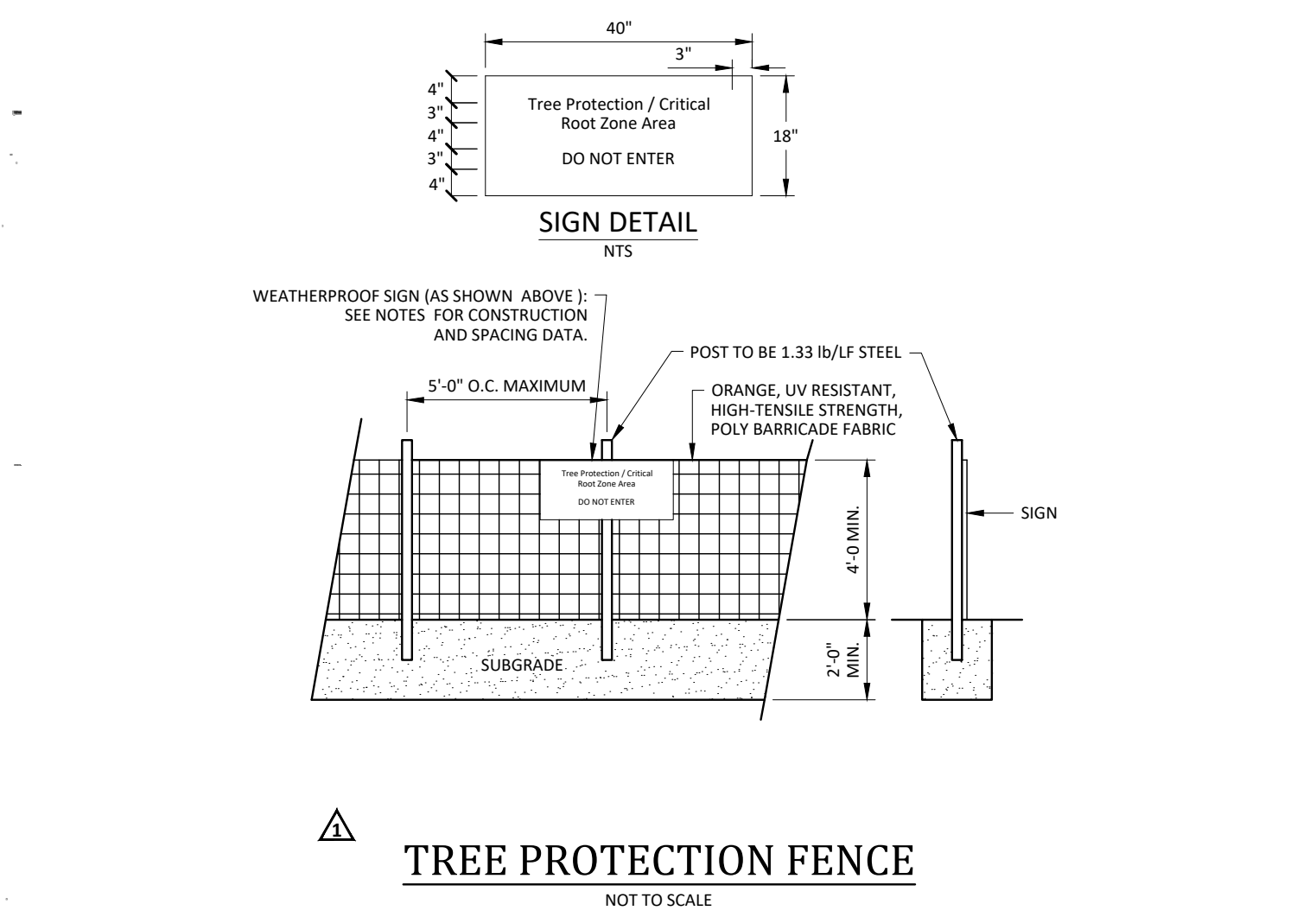
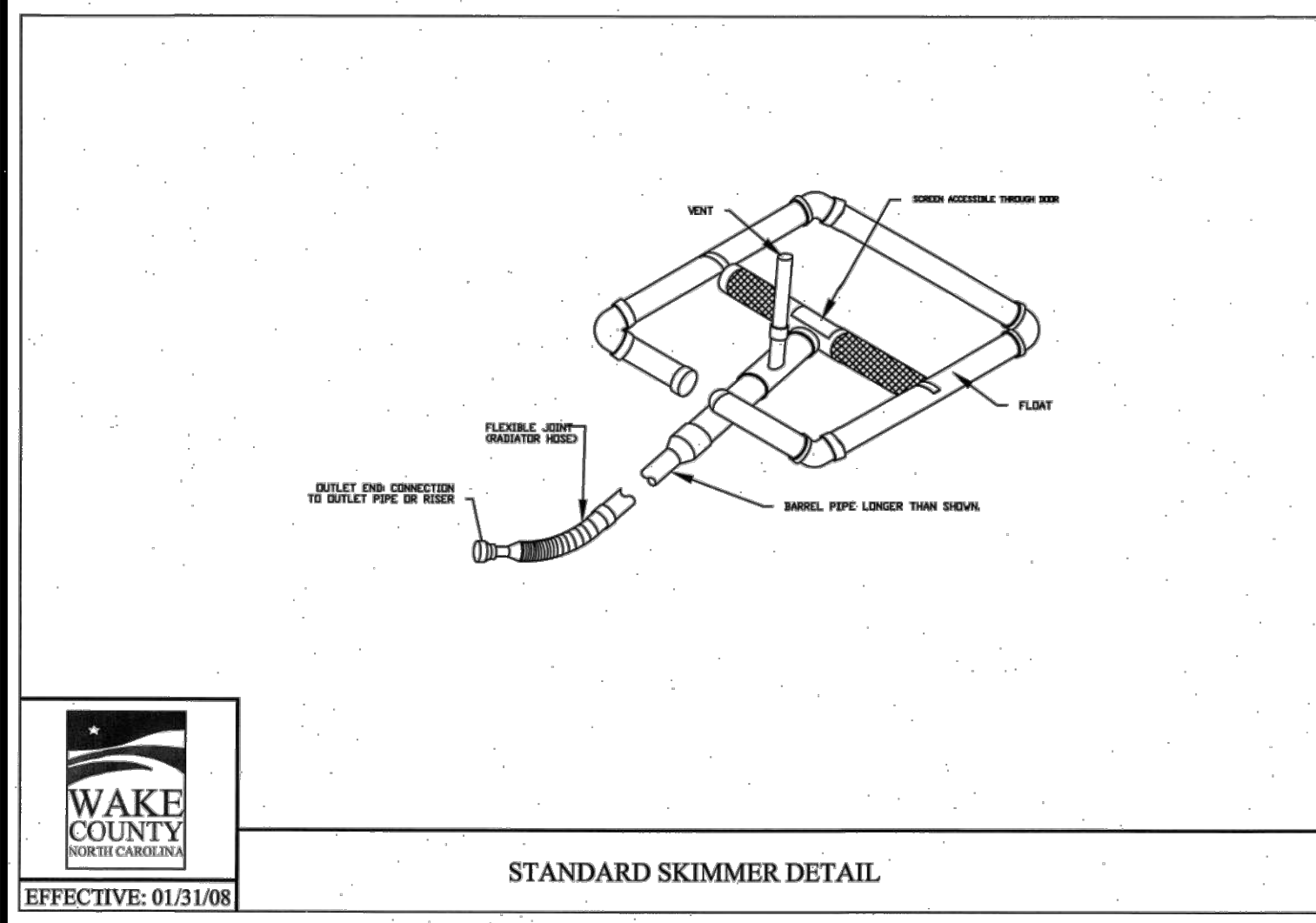
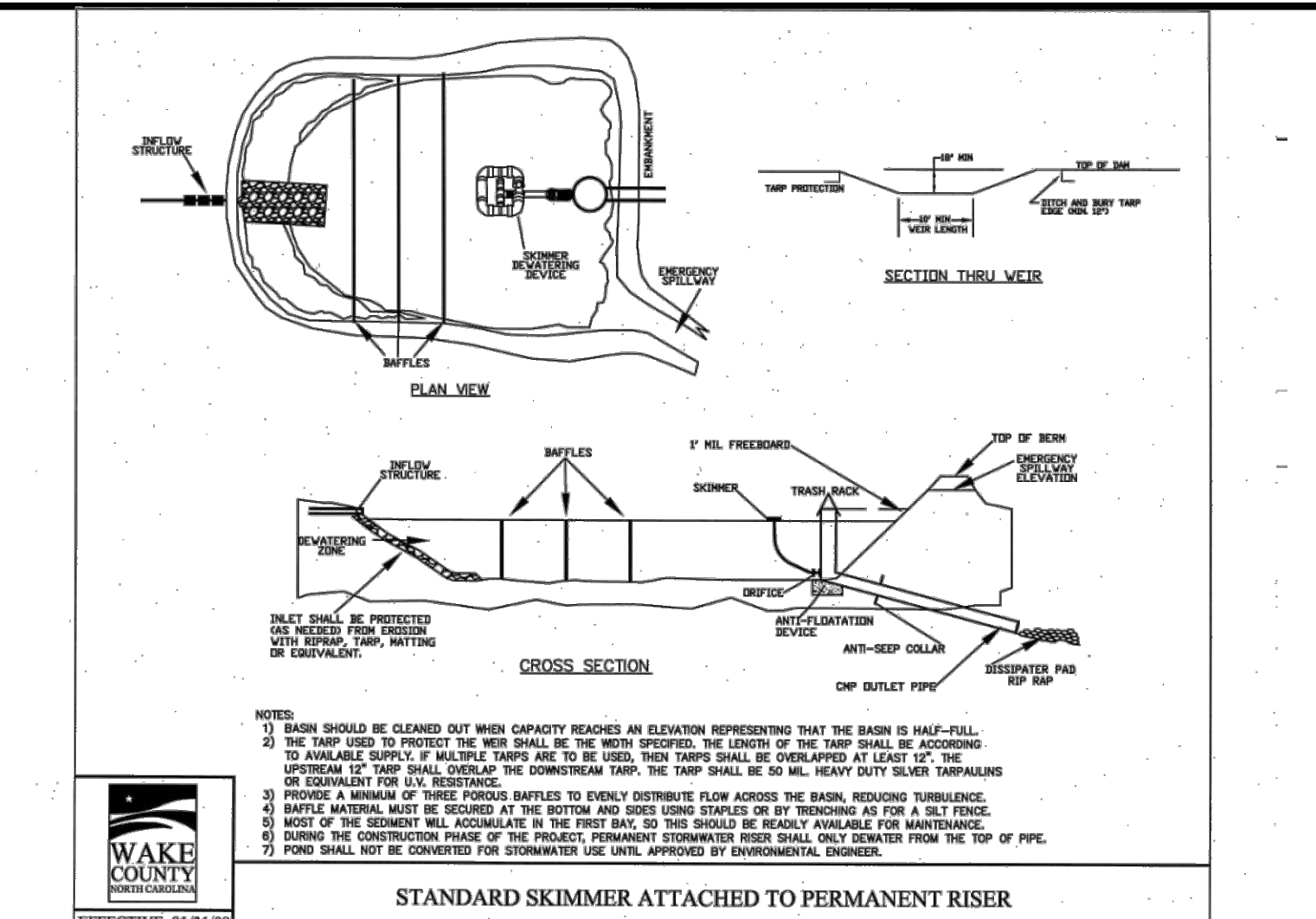
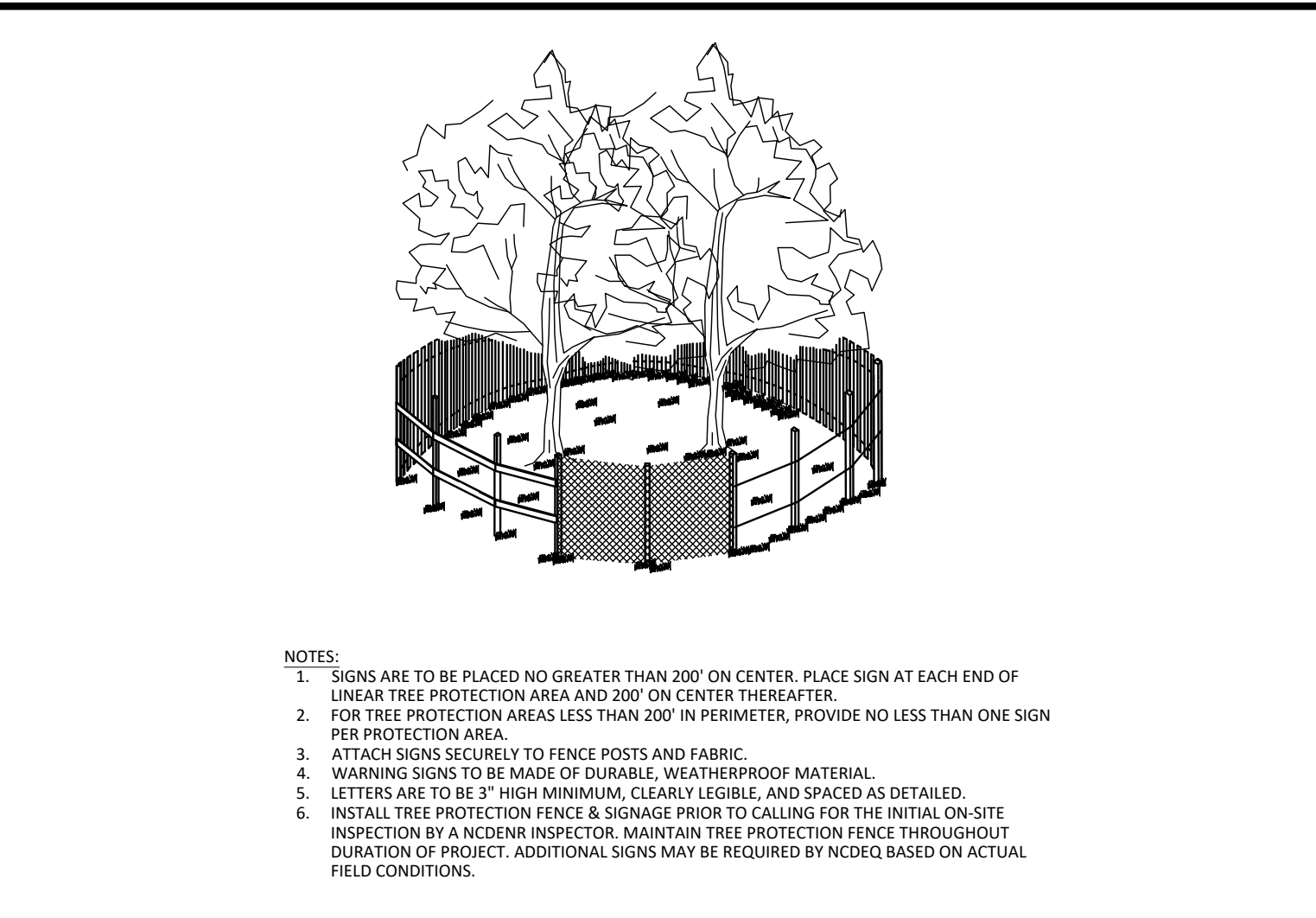
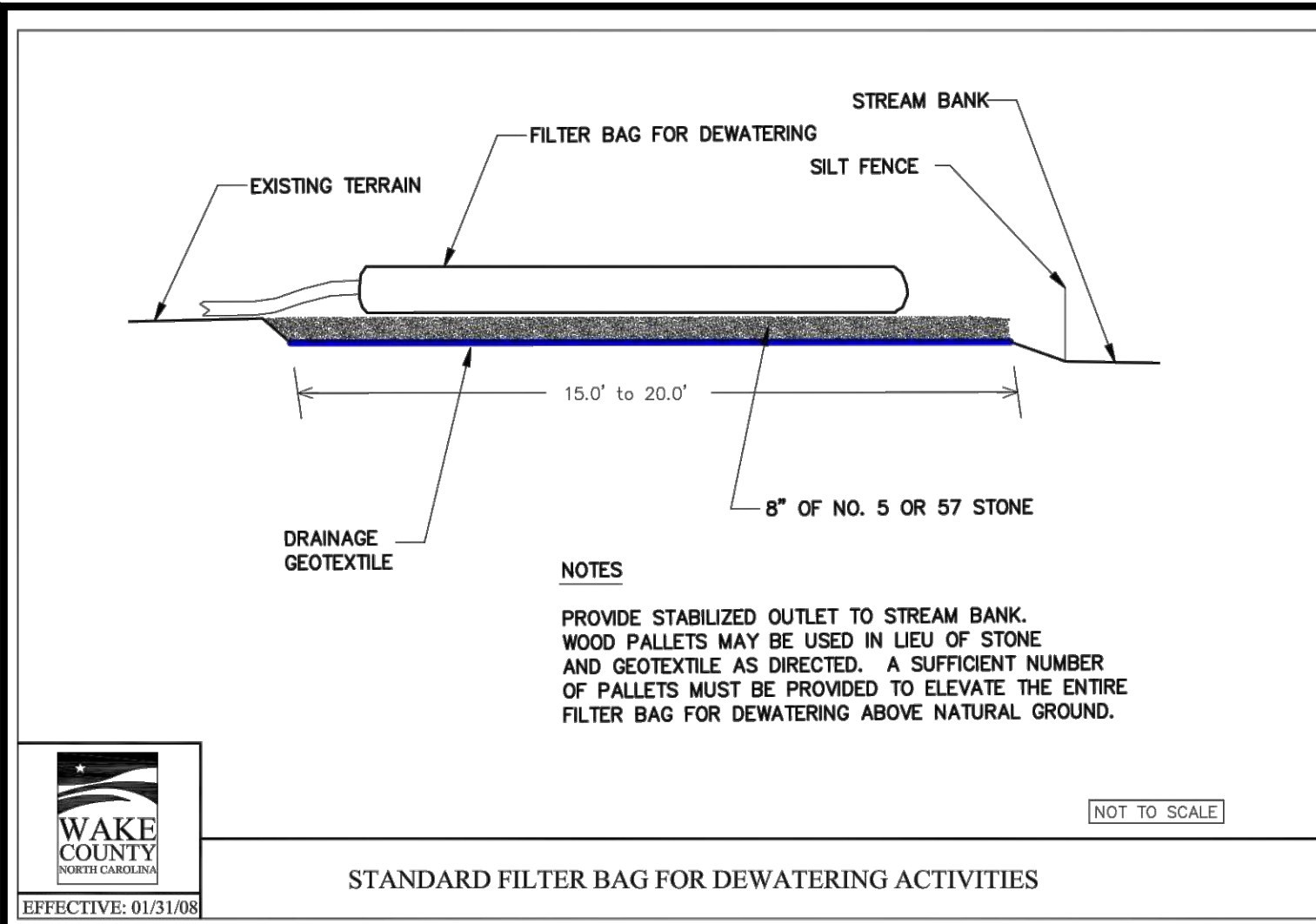
Project Manager: BCF  
Drawn By: DLC  
Checked By: STA  
Project Number: 21089  
Drawing Number: D-1219-EC

**ARK CONSULTING GROUP PLLC**  
ENGINEERS & PLANNERS  
7755-B Chatham Blvd.  
Raleigh, NC 27688  
(919) 558-0888  
www.arkconsultinggroup.com

Professional Engineer Seal: JOHN C. FAUGNOLI, No. 1122, 10/2022

Date: April 1, 2022





WAKE COUNTY NORTH CAROLINA

REVISIONS:

#	DATE	DESCRIPTION
2	12-22-22	REVISED PER TOR & WAKE COUNTY COMMENTS
1	11-15-22	REVISED PER TOR & WAKE COUNTY COMMENTS

CROSLAND SOUTHEAST

EROSION CONTROL DETAILS

**WALLBROOK MASS GRADING / EROSION CONTROL / SANITARY SEWER RELOCATION**

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

NC License: P-1199  
**ARK CONSULTING GROUP PLLC**  
 ENGINEERS & PLANNERS

2755 B Charles Blvd.  
 Cary, NC 27588  
 (919) 558-0888  
 www.arkconsultinggroup.com

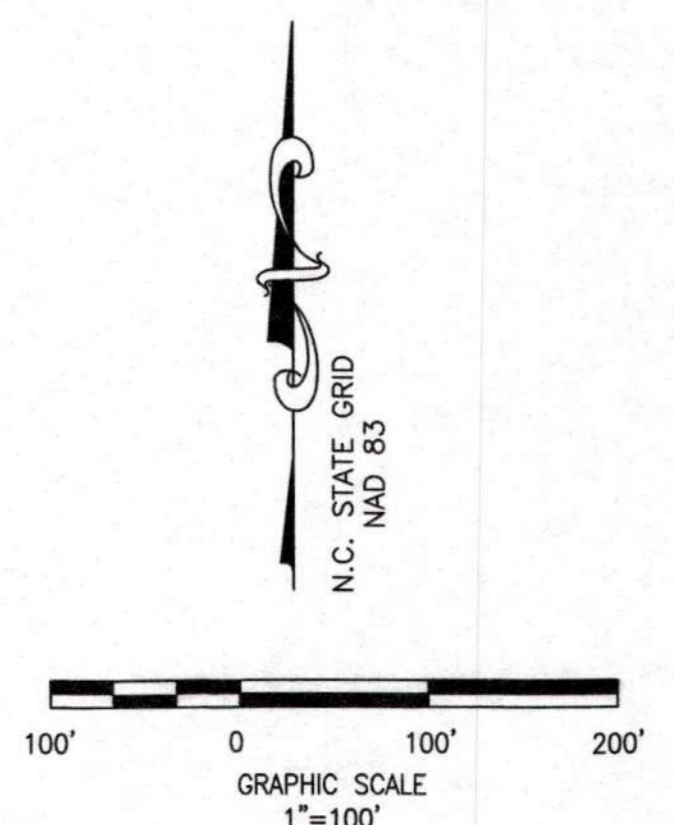
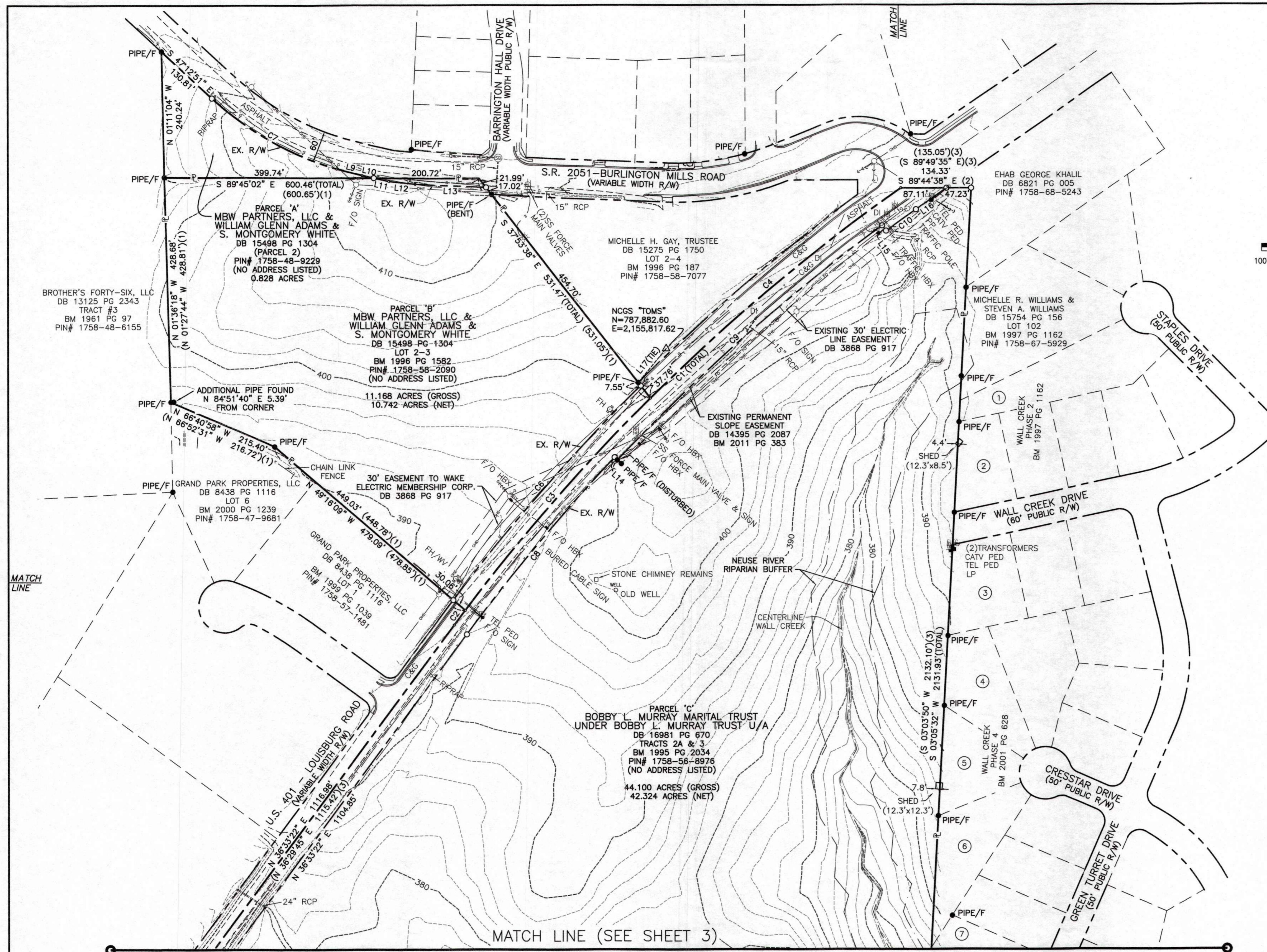
1/22/2022

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

**C3.2**

Date: April 1, 2022





**ADJOINING PROPERTY OWNERS**

- ① RODERICK BLACKWELL & CHRISTINE BLACKWELL  
DB 8769 PG 1894  
LOT 101  
BM 1997 PG 1162  
PIN# 1758-67-6836
- ② CHARLES CULBERTSON & TERESA CULBERTSON  
DB 17393 PG 896  
LOT 96  
BM 1997 PG 1162  
PIN# 1758-67-4619
- ③ ANTONIO G. CATTARUZZA & SHEILA B. CATTARUZZA  
DB 8149 PG 422  
LOT 92  
BM 1997 PG 1162  
PIN# 1758-67-4416
- ④ JOHN DANIEL BONO, III & SABRINA MICHELE BONO  
DB 13369 PG 2170  
LOT 85  
BM 2001 PG 628  
PIN# 1758-67-4204
- ⑤ RONALD G. PATTERSON & LAURA A. PATTERSON  
DB 10087 PG 2409  
LOT 84  
BM 2001 PG 628  
PIN# 1758-67-4100
- ⑥ MICHAEL A. HADDER & JENNIFER H. HADDER  
DB 16143 PG 2477  
LOT 83  
BM 2001 PG 628  
PIN# 1758-66-3984
- ⑦ JOSEPH L. KEELEY, III & SARAH E. KEELEY  
DB 10496 PG 1314  
LOT 79  
BM 2002 PG 825  
PIN# 1758-66-4723

- LEGEND**
- (1) = RECORD DATA PER BM 1996 PG 1582
  - (2) = RECORD DATA PER BM 2011 PG 383
  - (3) = RECORD DATA PER BM 1995 PG 2034
  - (4) = RECORD DATA PER BM 2002 PG 825
  - (5) = RECORD DATA PER BM 2005 PG 1195-1196
  - (6) = RECORD DATA PER DB 13993 PG 2591
  - = FOUND MONUMENT AS NOTED
  - = SET IRON PIN
  - △ = NCGS MONUMENT
  - = DIMENSION POINT (NOTHING SET)
  - ℙ = PROPERTY LINE
  - R/W = RIGHT OF WAY

- C&G = CURB AND GUTTER
- CAV = CABLE TV PEDESTAL
- DI = DROP INLET
- ELEC = ELECTRIC BOX
- EM = ELECTRIC METER
- F/O = FIBER OPTIC
- FH = FIRE HYDRANT
- GV = GAS VALVE
- HBX = HAND BOX
- LP = LIGHT POLE
- PP = POWER POLE
- GW = GUY WIRE
- RCP = REINFORCED CONCRETE PIPE
- S.F. = SQUARE FEET (AREA)
- SIGN = SIGN
- TRAF = TRAFFIC SIGNAL POLE
- SSM = SANITARY SEWER MANHOLE
- SSFMV = SANITARY SEWER FORCE MAIN VALVE
- SDM = STORM DRAIN MANHOLE
- TEP = TELEPHONE PEDESTAL
- TBOX = TRAFFIC BOX
- WB = WATER BOX
- WM = WATER METER
- WMH = WATER MANHOLE
- WV = WATER VALVE
- WELL = WELL
- PEW = PEDESTRIAN X-WALK POLE
- ELEC LINE = ELECTRIC LINE
- SSFM = SANITARY SEWER FORCE MAIN
- FO = FIBER OPTIC LINE
- GAS = GAS LINE
- OEL = OVERHEAD ELECTRIC LINE
- SSL = SANITARY SEWER LINE
- TEL = TELEPHONE LINE
- CTL = CABLE TV LINE
- WL = WATER LINE

LINE	BEARING	DISTANCE
L1	N 02°07'15" W	48.32'
L2	N 03°10'03" W	17.67'
L3	N 41°10'16" E	41.30'
L4	N 40°37'47" E	49.15'
L5	N 39°31'43" E	50.83'
L6	N 38°52'58" E	49.80'
L7	N 38°22'04" E	50.40'
L8	N 37°17'31" E	50.37'
L9	S 75°02'10" E	50.12'
L10	S 77°31'31" E	22.85'
L11	S 77°31'31" E	29.16'
L12	S 84°03'28" E	50.67'
L13	S 87°10'20" E	135.52'
L14	S 46°39'44" E	7.50'
L15	S 36°12'58" E	12.50'
L16	S 55°13'38" E	70.99'
L17	N 39°21'58" E	83.92'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	1197.82'	3750.00'	18°18'05"	S 45°42'25" W	1192.73'
C2	35.15'	3750.00'	0°32'13"	S 36°49'29" W	35.15'
C3	537.89'	3750.00'	8°13'06"	S 41°12'09" W	537.43'
C4	624.78'	3750.00'	9°32'45"	S 50°05'04" W	624.06'
C5	65.86'	123.92'	30°27'05"	S 17°21'49" E	65.09'
C6	543.86'	3780.00'	8°14'37"	S 41°14'38" W	543.40'
C7	276.12'	600.00'	26°22'04"	N 60°23'53" W	273.69'
C8	440.32'	3720.00'	6°46'55"	S 39°56'50" W	440.07'
C9	675.88'	3712.50'	10°25'52"	S 48°33'13" W	674.95'
C10	70.31'	3700.00'	1°05'20"	S 54°18'48" W	70.31'

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

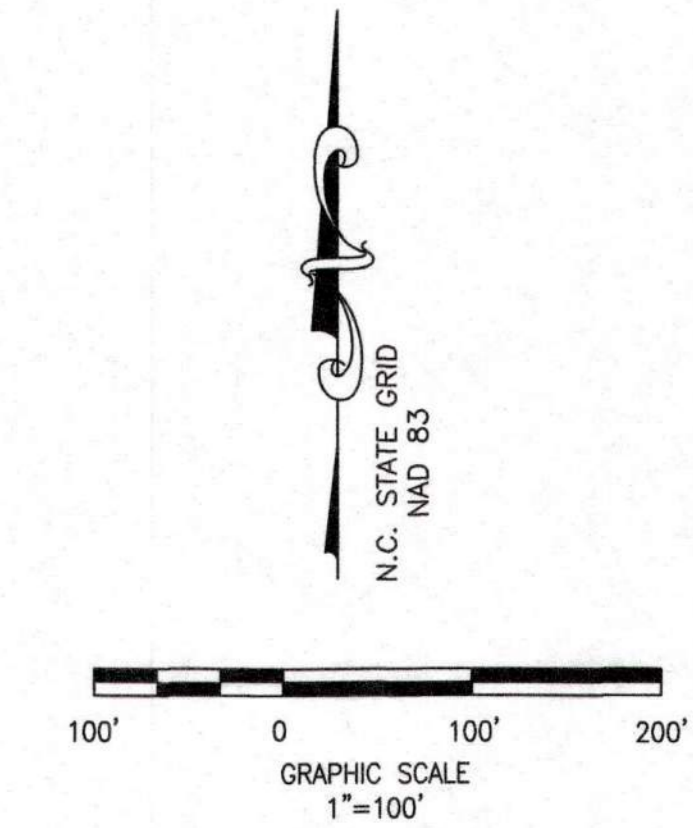
REVISION #	DATE	REASON FOR REVISION
1	10/01/2020	ADDED RIPARIAN BUFFER ALONG WALL CREEK

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

DRAWN BY: JSZ PROJECT#: JMT# 17-10946-001  
 CHECKED BY: WTR CONTRACT#: SHEET 2 OF 3  
 DATE: 03/25/2020 SCALE: 1"=100'



MATCH LINE (SEE SHEET 2)



ADJOINING PROPERTY OWNERS

- 7 JOSEPH L. KEELEY, III & SARAH E. KEELEY  
DB 10496 PG 1314  
LOT 79  
BM 2002 PG 825  
PIN# 1758-66-4723
- 8 PHILIP B. MCENANEY & ELIZABETH J. MCENANEY  
DB 16674 PG 2208  
LOT 78  
BM 2002 PG 825  
PIN# 1758-66-3695
- 9 KATHRYN G. GAMBLE & DONALD P. MCFARLAND  
DB 16914 PG 210  
LOT 77  
BM 2002 PG 825  
PIN# 1758-66-3467
- 10 JAMES A. WOODARD & PHYLLIS A. WOODARD  
DB 9813 PG 1290  
LOT 76  
BM 2002 PG 825  
PIN# 1758-66-3293
- 11 CARLTON GROUP OF NORTH CAROLINA, LLC  
DB 11427 PG 882  
POR. TRACT 1  
BM 2005 PG 1195-1196  
PIN# 1758-55-1729
- 12 CARLTON GROUP OF NORTH CAROLINA, LLC  
DB 11427 PG 882  
POR. TRACT 1  
BM 2005 PG 1195-1196  
PIN# 1758-44-5944
- 13 CARLTON GROUP OF NORTH CAROLINA, LLC  
DB 13993 PG 2591  
PIN# 1758-45-1587

LEGEND

- (1) = RECORD DATA PER BM 1996 PG 1582
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- R/W = RIGHT OF WAY

- C&G = CURB AND GUTTER
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- SSFMV = SANITARY SEWER FORCE MAIN VALVE
- SDM = STORM DRAIN MANHOLE
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- TB = TRAFFIC BOX
- WB = WATER BOX
- WM = WATER METER
- WMH = WATER MANHOLE
- WV = WATER VALVE
- WELL = WELL
- X-WALK = PEDESTRIAN X-WALK POLE
- E = ELECTRIC LINE
- FM = FIBER OPTIC LINE
- FO = FIBER OPTIC LINE
- G = GAS LINE
- OHE = OVERHEAD ELECTRIC LINE
- SSL = SANITARY SEWER LINE
- T = TELEPHONE LINE
- TV = CABLE TV LINE
- W = WATER LINE

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CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
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C3	537.89'	3750.00'	8°13'06"	S 41°12'09" W	537.43'
C4	624.78'	3750.00'	9°32'45"	S 50°05'04" W	624.06'
C5	65.86'	123.92'	30°27'05"	S 17°21'49" E	65.09'
C6	543.86'	3780.00'	8°14'37"	S 41°14'38" W	543.40'
C7	276.12'	600.00'	26°22'04"	N 60°23'53" W	273.89'
C8	440.32'	3720.00'	6°46'55"	S 39°56'50" W	440.07'
C9	675.88'	3712.50'	10°25'52"	S 48°33'13" W	674.95'
C10	70.31'	3700.00'	1°05'20"	S 54°18'48" W	70.31'

(R=3750.00', L=1199.06')(3)

(2)

**JMT JOHNSON, MIRMIRAN & THOMPSON**  
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REVISION #	DATE	REASON FOR REVISION
1	10/01/2020	ADDED RIPARIAN BUFFER ALONG WALL CREEK

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

DRAWN BY: JSZ	PROJECT#:	JMT#: 17-10946-001
CHECKED BY: WTR	CONTRACT#:	
DATE: 03/25/2020	SCALE: 1"=100'	SHEET 3 OF 3

