



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

June 12, 2023

Regulatory Division

Action ID. SAW-2016-01337, NCDOT U-5760 Kernersville Southern Loop, Big Mill Farm Road Widening and Extension, Forsyth County, Modification #1, Revision 1

Ms. Amy Euliss, Division 9 Environmental Officer  
North Carolina Department of Transportation  
375 Silas Creek Parkway  
Winston-Salem, North Carolina 27127  
[aeuliss@ncdot.gov](mailto:aeuliss@ncdot.gov)

Dear Ms. Euliss:

Reference the Department of the Army (DA) permit issued on August 10, 2020 for the discharge fill material with 0.11 acre permanent wetland impacts, 1,372 linear feet of permanent stream impacts, and 266 linear feet of temporary stream impacts. These impacts are associated with the construction of TIP U-5760, widening and extension of Big Mill Farm Road, and widening of Hopkins Road, from the north end of Harmon Creek Road, to north of West Mountain Street, west of downtown Kernersville, in Forsyth County, North Carolina.

On March 17, 2023, NCDOT requested a modification (Modification #1) for the authorization of an additional 123 linear feet (lf) of permanent stream impacts at Sites #1B & # 4A. Specifically, an increase to proposed enclosure length via extension (88 lf) at Site #1B, additional stream channel improvements (13 lf) at Site #1B and additional stream channel improvements at Site #4A (22 lf). Also, this modification includes an extension of time to the existing Department of the Army (DA) permit issued for the above referenced permit to include five additional years. On June 2, 2023, the Corps issued you an authorization for this modification with modified permit special conditions. Since that time, it was determined that the Corps needed to revise the language of those special conditions. **Please be advised that this letter of modification authorization and special conditions will supersede the modification authorization letter issued to you on June 2, 2023.**

The Corps has determined that the proposed project modifications described above are not contrary to the public interest and are consistent with the 404 (B) (1) Guidelines and therefore, the DA permit is hereby modified. The authorized work shall be completed in accordance with the enclosed revised drawings. Please be aware that all other conditions of the original permit remain applicable, with the following General/Special conditions from the original authorization which have been revised;

**General Condition**

The time limit for completing the work authorized ends on **December 31, 2030**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

**Modified Special Conditions:** See enclosed Special Conditions Modification #1 dated June 12, 2023, as part of the Department of Army Authorization for this project. This includes all special conditions from the existing permit dated August 10, 2020, and revisions as required as part of Modification #1. In addition to the original Special Condition language, the project's revised special conditions include original language that has been either crossed out and/or the includes additional language which is highlighted.

Please note that all other terms and conditions of your Department of the Army permit dated August 10, 2020, shall remain in effect.

This approved modification should be attached to the original permit and will be utilized for future compliance reviews of the project. If you have questions, please contact Stephen Brumagin of the Charlotte Regulatory Field Office, at telephone (704) 798-6471 or via e-mail at [Stephen.A.Brumagin@usace.army.mil](mailto:Stephen.A.Brumagin@usace.army.mil).

FOR THE DISTRICT ENGINEER

 2023.06.12  
15:13:21 -04'00'

Monte K. Matthews  
Chief, WRDA/Transportation Branch  
Wilmington District

Enclosures:

Special Conditions for Modification #1 revised June 2, 2023  
401 WQC for modification #1 dated April 20, 2023  
Modified Plans dated February 20, 2023  
Mitigation Transfer Form

Copies Furnished with enclosures (electronic):

Matthew W. Jones, P.E NCDOT  
[mwjones2@ncdot.gov](mailto:mwjones2@ncdot.gov)

Amy Chapman, NC DEQ

[amy.chapman@ncdenr.gov](mailto:amy.chapman@ncdenr.gov)

Ms. Lauren Wilson, USFWS  
[Lauren\\_wilson@fws.gov](mailto:Lauren_wilson@fws.gov)

Mr. David McHenry, NC WRC  
[david.mchenry@ncwildlife.org](mailto:david.mchenry@ncwildlife.org)

**WILMINGTON DISTRICT REGULATORY DIVISION**

**PERMIT SPECIAL CONDITIONS**

**DA# SAW-2016-01337**

**U-5760 Big Mill Farm Road Widening/Extension,**

**Modification #1, Dated June 12, 2023**

1. **Work Limits:** All work authorized by this permit shall be performed in strict compliance with the ~~attached~~ permit plans (WETLAND AND STREAM DRAFT PERMIT PACKAGE, dated MAY 4, 2020) and attached Modified Plans dated February 20, 2023, which are a part of this permit. The Permittee shall ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any modification to the attached permit plans must be approved by the US Army Corps of Engineers prior to any active construction in waters or wetlands.

2. **Unauthorized Dredge or Fill:** Except as authorized by this permit or any U.S. Army Corps of Engineers approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and waste activities connected with this project. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

3. **Permit Distribution:** The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, drawings and attachments shall be available at the project site during the construction and maintenance of this project.

4. **Pre-Construction Meeting:** The Permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the U.S. Army Corps of Engineers, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all the terms and conditions contained with this Department of Army Permit. The Permittee shall provide the Corps, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The Permittee shall schedule the preconstruction meeting for a time frame when the Corps and NCDWR Project Managers can attend. The Permittee shall invite the Corps and NCDWR Project

Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting. The thirty (30) day requirement can be waived with the concurrence of the Corps.

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**5. Notification of Construction Commencement and Completion:** The Permittee shall notify the U.S. Army Corps of Engineers in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

**6. Reporting Address:** All reports, documentation, and correspondence required by the conditions of this permit shall be submitted to the following: U.S. Army Corps of Engineers, Wilmington District Raleigh Regulatory Field Office, Attn: Eric Alsmeyer, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 or [eric.c.alsmeyer@usace.army.mil](mailto:eric.c.alsmeyer@usace.army.mil). The Permittee shall reference the following permit number, SAW-2016-01337, on all submittals.

**7. Permit Revocation:** The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

**8. Reporting Violations:** Violation of these permit conditions or violation of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act shall be reported to the Corps in writing and by telephone at: 919-554-4844, ext. 23, within 24 hours of the Permittee's discovery of the violation.

**9. Clean Fill:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, construction debris, metal and plastic products, and concrete block with exposed reinforcement bars. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act. Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source.

**10. Culverts:**

1) Unless otherwise requested in the application and depicted on the approved permit plans, culverts greater than 48 inches in diameter shall be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter and less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain existing channel slope. The bottom of the culvert shall be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Culverts shall be designed and constructed in a manner that minimizes destabilization and head cutting.

2) Measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely

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altering flow velocity. Spring flow should be determined from gauge data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

3) The Permittee shall implement all reasonable and practicable measures to ensure that equipment, structures, fill pads, work, and operations associated with this project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, flooding, and/or stream bank erosion. The Permittee shall routinely monitor for these effects, cease all work when detected, take initial corrective measures to correct actively eroding areas, and notify this office immediately. Permanent corrective measures may require additional authorization by the U.S. Army Corps of Engineers.

4) Culverts placed within wetlands must be installed in a manner that does not restrict the flows and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water shall not be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

**11. Sediment and Erosion Control:**

1) During the clearing phase of the project, heavy equipment shall not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

2) No fill or excavation impacts for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless the impacts are included on the plan drawings and specifically authorized by this permit. This includes, but is not limited to, sediment control fences and other barriers intended to catch sediment losses.

3) The Permittee shall remove all sediment and erosion control measures placed in waters and/or wetlands, and shall restore natural grades on those areas, prior to project completion.

4) The Permittee shall use appropriate sediment and erosion control practices which

equal or exceed those outlined in the most recent version of the "North Carolina Sediment and

Erosion Control Planning and Design Manual" to ensure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to ensure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar

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appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project shall remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A, Article 4).

Adequate sedimentation and erosion control measures shall be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures shall be inspected and maintained regularly, especially following rainfall events. All fill material shall be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

**12. Borrow and Waste:** To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the Permittee shall require its contractors and/or agents to identify all areas to be used as borrow and/or waste sites associated with this project. The Permittee shall provide the U.S. Army Corps of Engineers with appropriate maps indicating the locations of proposed borrow and/or waste sites as soon as such information is available. The Permittee shall submit to the Corps site-specific information needed to ensure that borrow and/or waste sites comply with all applicable Federal requirements, to include compliance with the Endangered Species Act and the National Historic Preservation Act, such as surveys or correspondence with agencies (e.g., the USFWS, the NC-HPO, etc.). The required information shall also include the location of all aquatic features, if any, out to a distance of 400 feet beyond the nearest boundary of the site. The Permittee shall not approve any borrow and/or waste sites before receiving written confirmation from the Corps that the proposed site meets all Federal requirements, whether or not waters of the U.S., including wetlands, are located in the proposed borrow and/or waste site. All delineations of aquatic sites on borrow and/or waste sites shall be verified by the U.S. Army Corps of Engineers and shown on the approved reclamation plans. The Permittee shall ensure that all borrow and/or waste sites comply with Special Condition 2. of this permit. Additionally, the Permittee shall produce and maintain documentation of all borrow and waste sites associated with this project. This documentation will include data regarding soils, vegetation, hydrology, any delineation(s) of aquatic sites, and any jurisdictional determinations made by the Corps to clearly demonstrate compliance with Special Condition 2. All information will be available to the U.S. Army Corps of Engineers upon request. The Permittee shall require its contractors to complete and execute reclamation plans for each borrow and/or waste site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the U.S. Army Corps of Engineers within 30 days of the completion of the reclamation work.

**13. Compensatory Mitigation:** In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit.

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14. **Endangered Species Act:** The Permittees shall implement all necessary measures to ensure the authorized activity does not kill, injure, capture, harass, or otherwise harm any federally-listed threatened or endangered species. While accomplishing the authorized work, if the Permittees discover or observe an injured or dead threatened or endangered species, the U.S. Army Corps of Engineers, Wilmington District Raleigh Field Office, Attn: [Stephen Brumagin at \(704\) 798-6471 or Stephen.A.Brumagin@usace.army.mil](mailto:Stephen.Brumagin@usace.army.mil) will be immediately notified to initiate the required Federal coordination.

The permittee will implement the following conservation measures to ensure the authorized activity does not kill, injure, capture, harass or otherwise harm the proposed for listing Tricolored bat (*Perimyotis sublavas*):

- 1) Tree clearing will occur between October 16 and March 31.
- 2) Tree clearing will be minimized to the maximum extent practicable.
- 3) Clearing limits will be clearly marked for the contractors.
- 4) Project culverts equal to and greater than three feet in diameter and greater than 60 linear feet in length will be re-surveyed to confirm absence of bats and signs of bat use in 2024.
- 5) Lighting for night work will be downward facing and contained to the work area [with the exception of the Salem Parkway/US 421/NC150/Business 40 section of the action area].
- 6) The replacement of existing streetlighting will be downcast.
- 7) Blast mats will be utilized for any blasting. No mass blasting will occur.
- 8) Blasting and pile driving will occur after tree clearing has occurred in the work areas immediately around and adjacent to these activities.

15. **Maintain Flows and Circulation Patterns of Waters:** Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters and/or wetlands.

16. **Temporary Fills:** Within thirty (30) days of the date of completing the authorized work, the Permittee shall remove all temporary fills in waters of the United States and restore the affected areas to pre-construction contours and elevations. The affected areas shall be re-vegetated with native, non-invasive vegetation as necessary to minimize erosion and ensure site stability.

17. **Water Contamination:** All mechanized equipment shall be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the Permittees shall immediately report it to the N.C. Division of Water Resources at (919) 733-3300 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act shall be followed.

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**18. Aquatic Life Movement:** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. All discharges of dredged or fill material within waters of the United States shall be designed and constructed, except as authorized as indirect impacts, to maintain low flows to sustain the movement of aquatic species.

**19. Prohibitions on Concrete:** The Permittees shall take measures necessary to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with any water in or entering waters of the United States. Water inside coffer dams or casings that has been in contact with concrete shall only be returned to waters of the United States when it no longer poses a threat to aquatic organisms (concrete is set and cured).

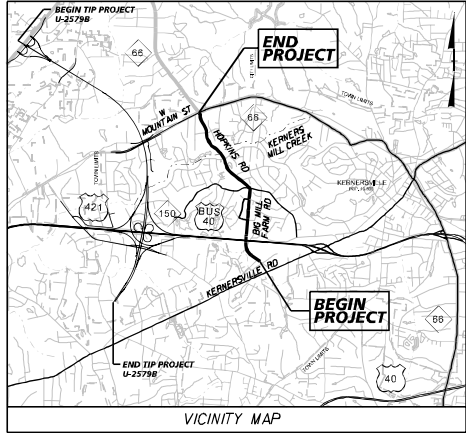
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TIP PROJECT: U-5760

CONTRACT:

See Sheet 1B For Conventional Plan Sheet Symbols



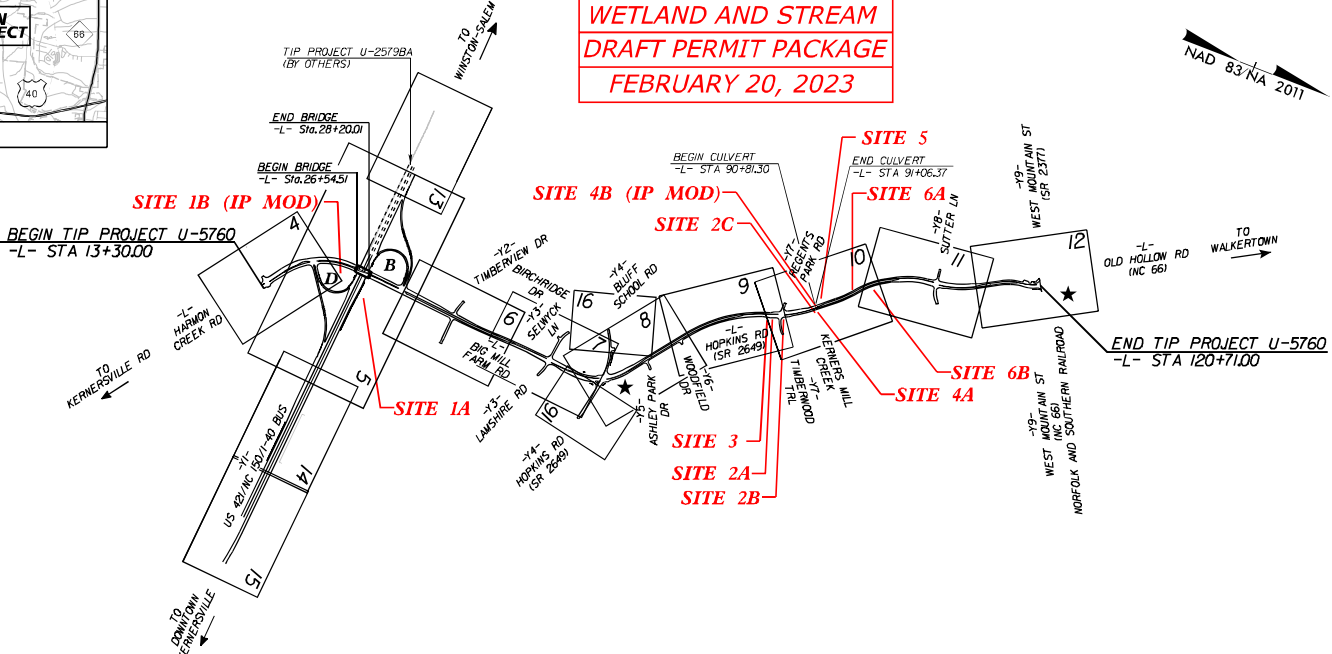
PERMIT DRAWING  
SHEET 1 OF 28

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS FORSYTH COUNTY

**LOCATION:** HOPKINS ROAD/BIG MILL FARM ROAD IN KERNERSVILLE FROM SOUTH OF US 421/150 BUS/NC 150 TO NC 66 (W MOUNTAIN ST)  
**TYPE OF WORK:** GRADING, DRAINAGE, PAVING, SIGNALS, CULVERTS, RETAINING WALLS, AND STRUCTURES

**WETLAND AND STREAM  
DRAFT PERMIT PACKAGE  
FEBRUARY 20, 2023**

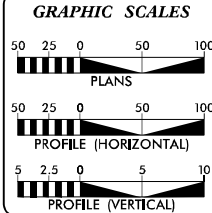
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N.C.	U-5760	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46381.1.1		P.E.	
46381.2.1		R/W	
46381.2.1		UTL	
46381.3.1		CONST.	



★ TRAFFIC SIGNAL

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF KERNERSVILLE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



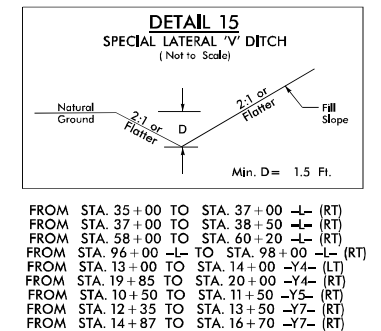
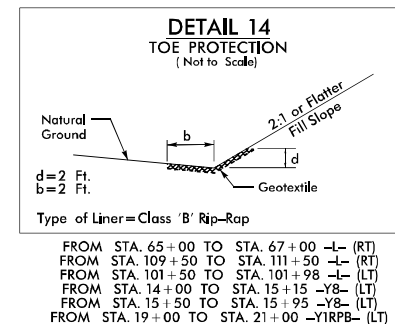
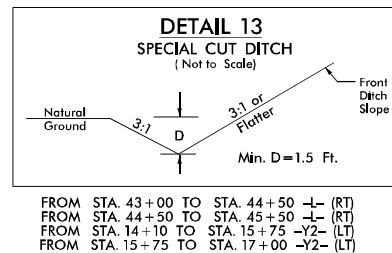
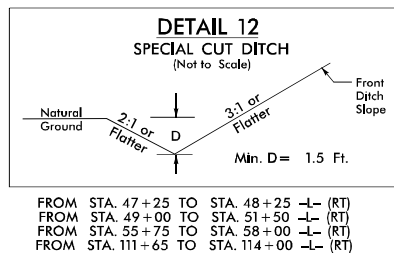
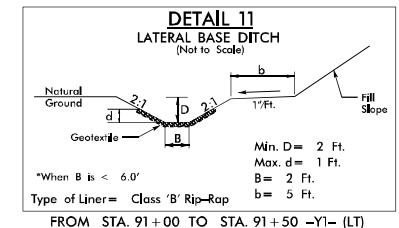
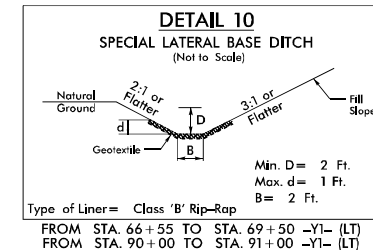
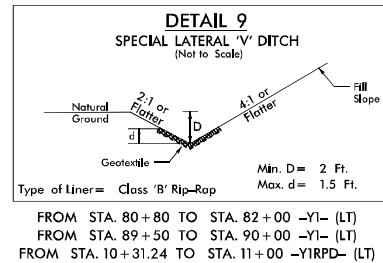
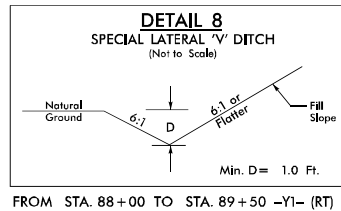
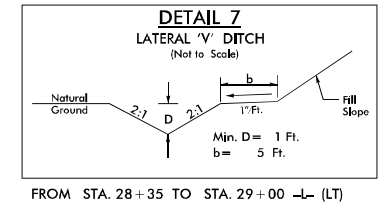
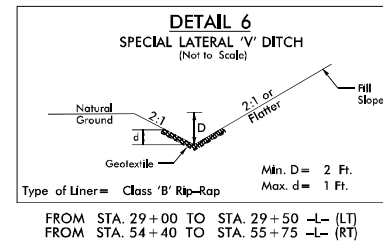
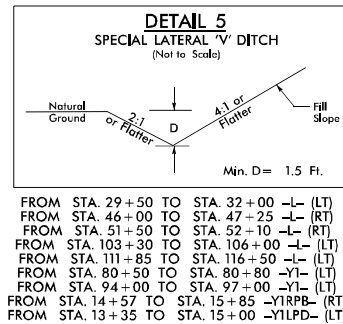
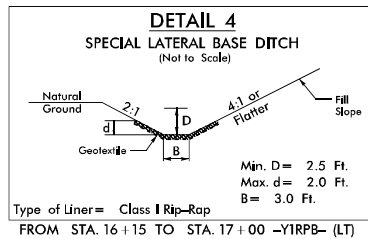
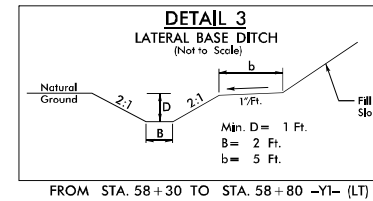
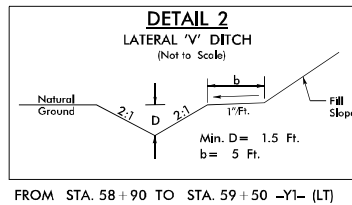
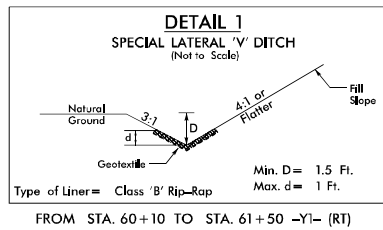
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AADT 2040 =	14,900
K =	10%
D =	60%
T =	3%*
V =	50 MPH
* (TTST 1% + DUAL 2%)	
FUNCTIONAL CLASSIFICATION:	
URBAN COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT U-5760	= 1.998 MILES
LENGTH STRUCTURES TIP PROJECT U-5760	= 0.036 MILES
TOTAL LENGTH TIP PROJECT U-5760	= 2.034 MILES

PLANS PREPARED FOR THE NCDOT BY:	
2018 STANDARD SPECIFICATIONS	<b>Kimley Horn</b>
RIGHT OF WAY DATE:	PROJECT ENGINEER
APRIL 15, 2022	JEFFREY W. MOORE, P.E.
LETTING DATE:	PROJECT DESIGN ENGINEER
APRIL 15, 2025	EVERETT J. LOVING, P.E.
	PROJECT TEAM LEAD
	W. AL BLANTON, P.E., P.L.S.
	NCDOT DIVISION 9

HYDRAULICS ENGINEER	
SIGNATURE	P.E.
ROADWAY DESIGN ENGINEER	
SIGNATURE	P.E.





**Kimley Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

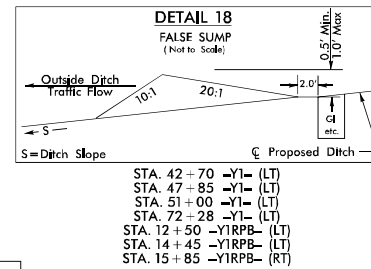
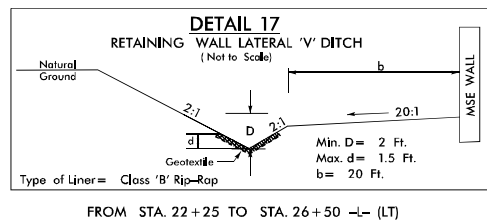
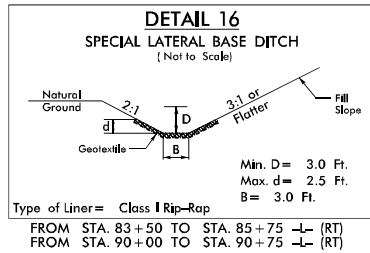
PROJECT REFERENCE NO. U-5760  
ROADWAY DESIGN ENGINEER

PERMIT DRAWING SHEET 2 OF 28

PROJECT REFERENCE NO.	SHEET NO.
U-5760	20-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

5/14/24

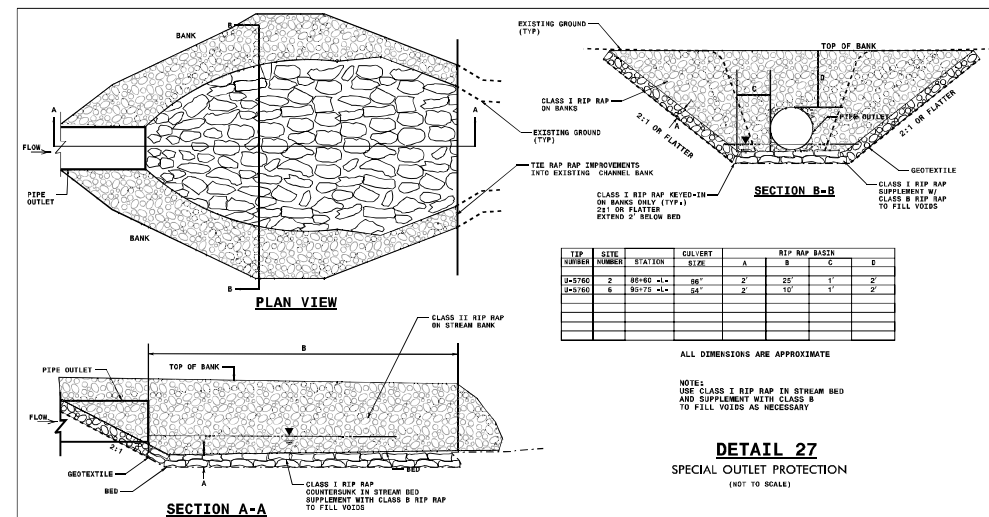
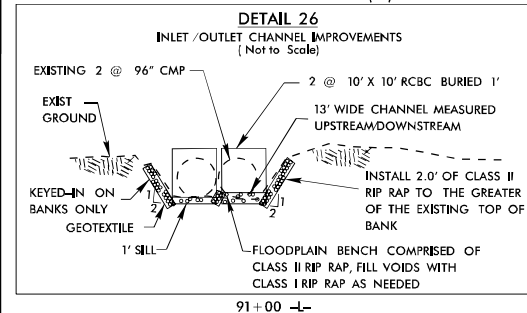
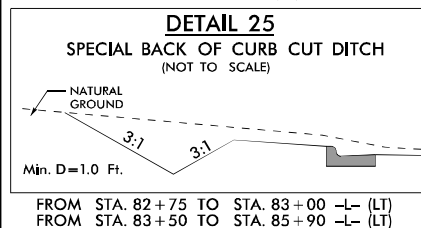
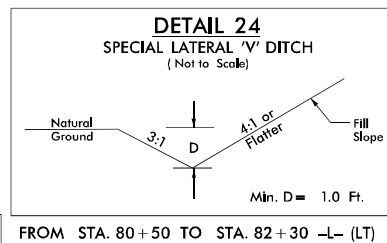
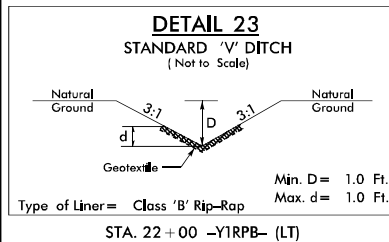
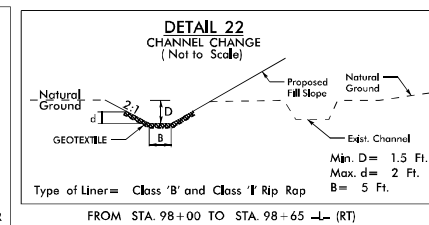
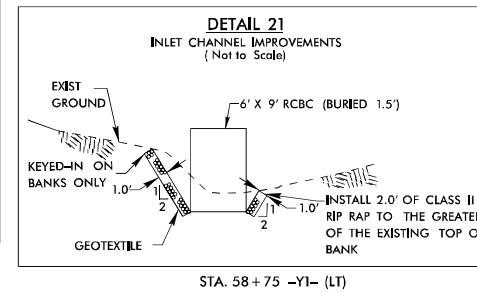
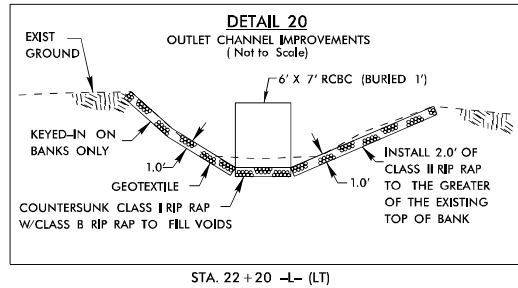
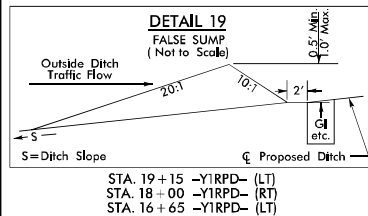
SDATES



**Kimley Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PERMIT DRAWING  
SHEET 3 OF 28

PROJECT REFERENCE NO. U-5760	SHEET NO. 20-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/20

REVISION

8/24/20

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO.  
U-5760

DATE: 05/14/20

PERMIT DRAWING  
SHEET 4 OF 28

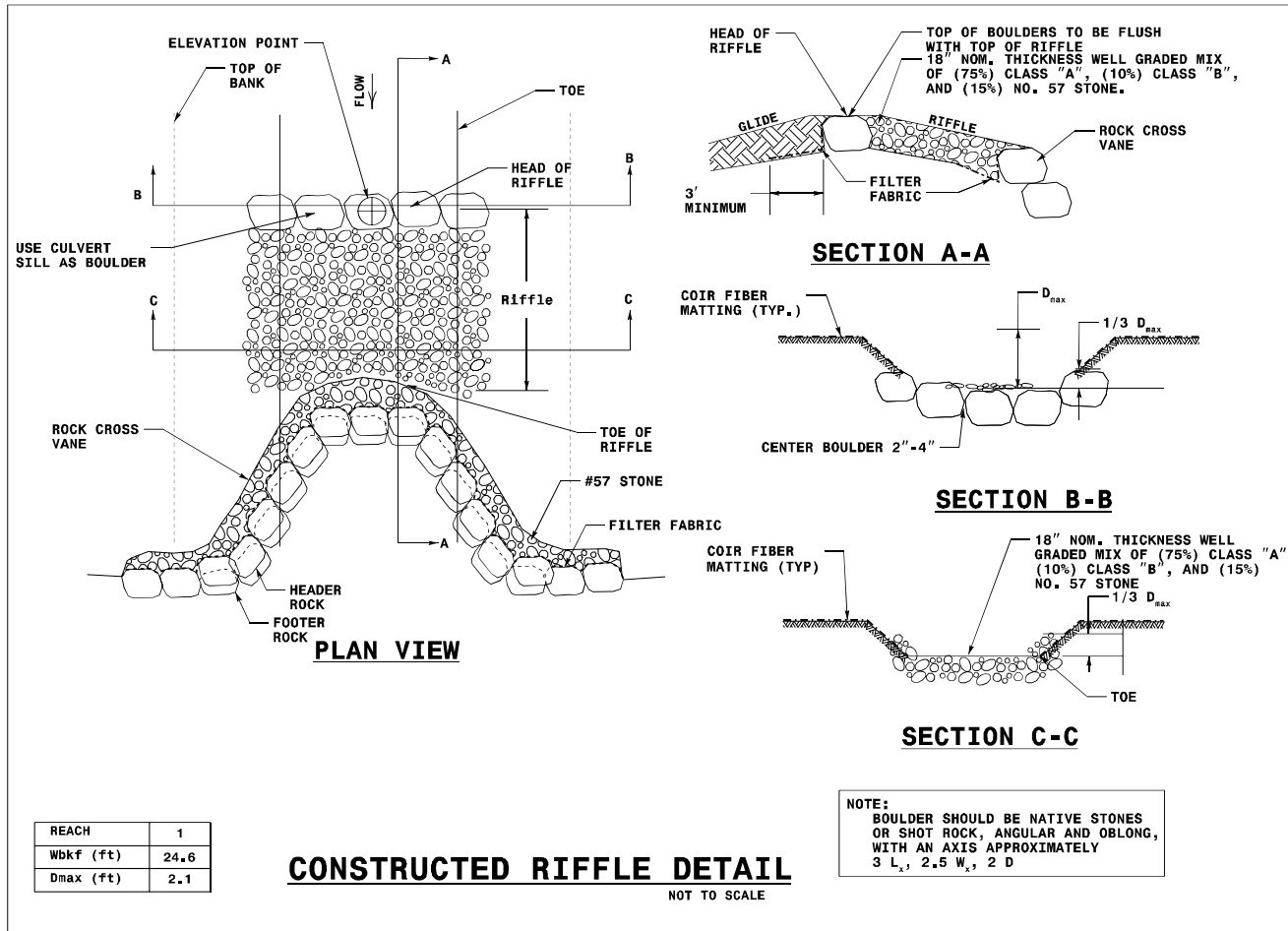
PROJECT REFERENCE NO.

U-5760

ROADWAY DESIGN ENGINEER

PAYMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**LEGEND**

- |   |   |
|---|---|
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER          |  DENOTES IMPACTS IN SURFACE WATER          |
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD) |  DENOTES IMPACTS IN SURFACE WATER (IP MOD) |

**Kimley-Horn**

PERMIT DRAWING  
SHEET 4 OF 25

PROJECT NO.	10-0000
DATE	10/1/10
PROJECT NAME	US ROUTE 40 BAYVIEW RD
LOCATION	SECTION 11, TOWNSHIP 10N, RANGE 10E, S10
SCALE	AS SHOWN

ROAD 10' MAX. 100'

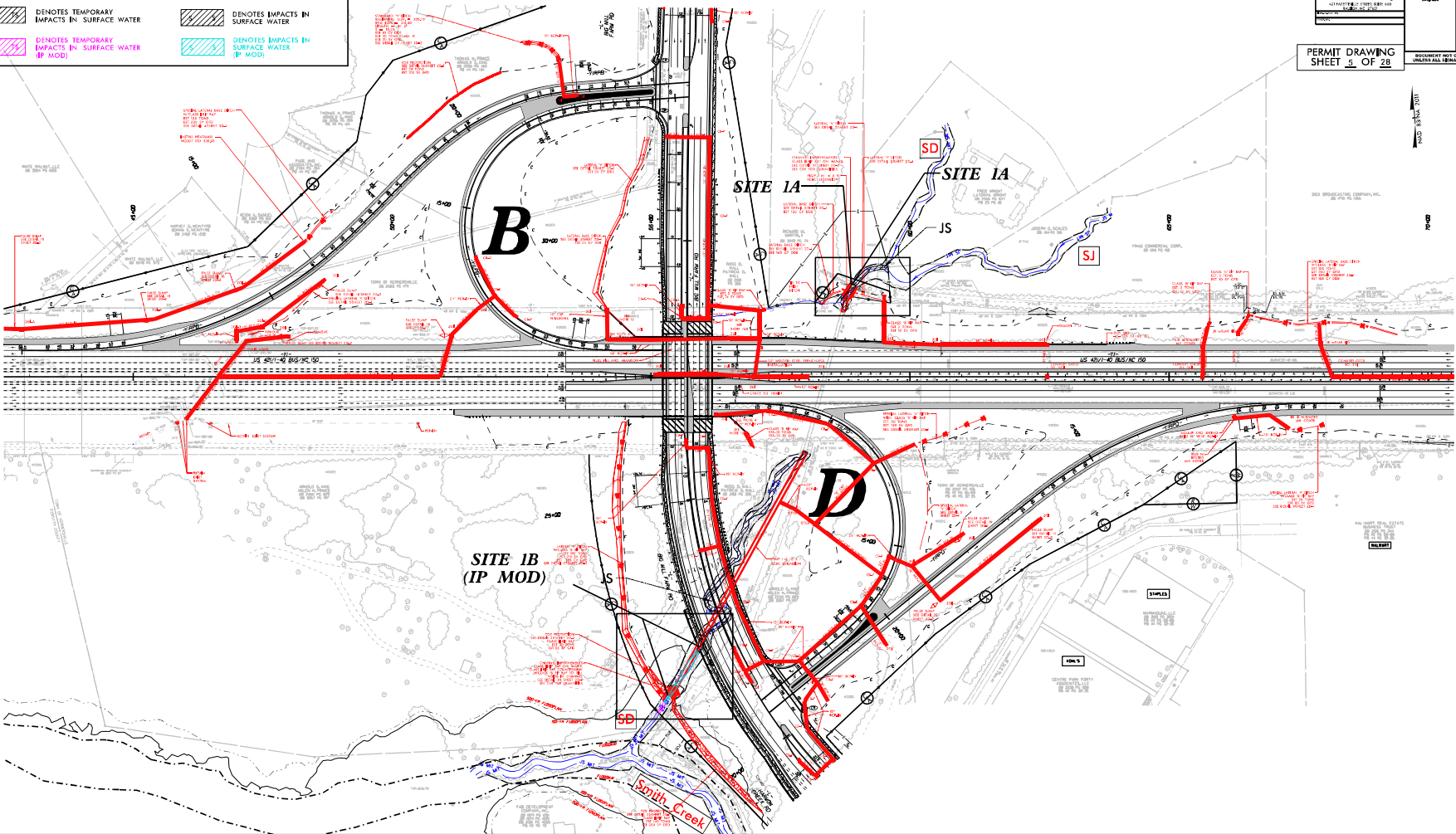
10'00'

10'00'

10'00'

10'00'

10'00'



DATE: 10/1/10



S/14/49

**LEGEND**

- |  |  |
|--|--|
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER |  DENOTES IMPACTS IN SURFACE WATER |
|--|--|

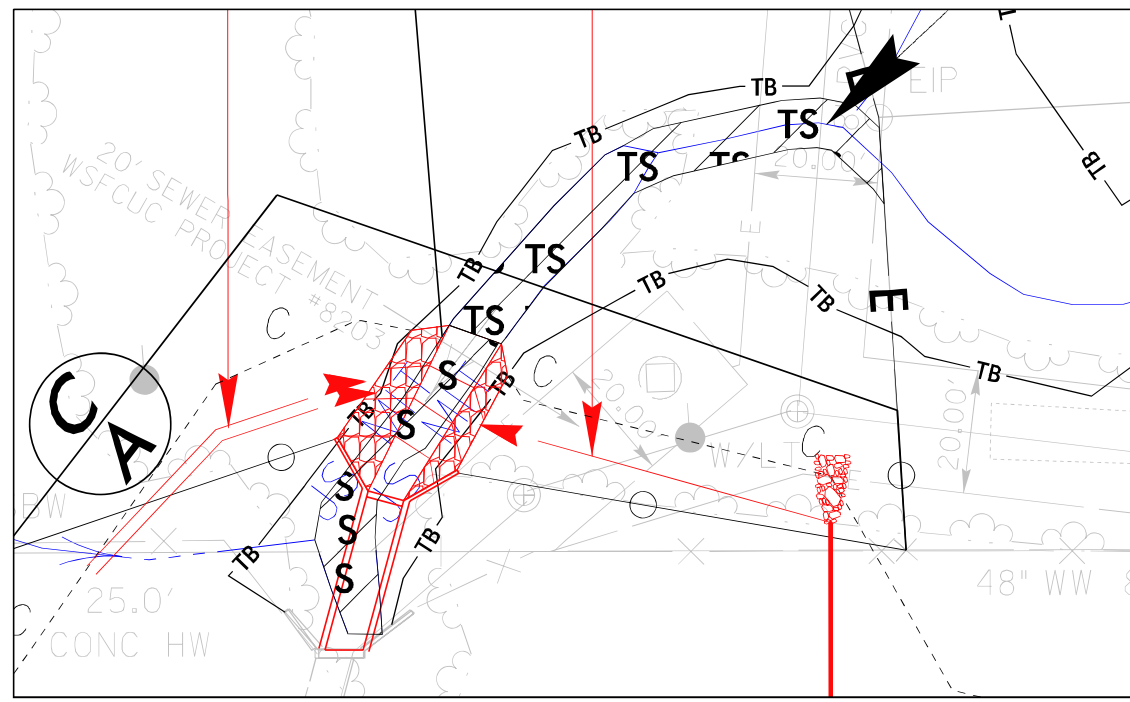
**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT REFERENCE NO. U-5760	SHEET NO. 5A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING  
SHEET 7 OF 28

NAD 83/NA 2011

# SITE IMPACT ZOOM: 1"=20'



## DETAIL SHEET FOR SITE 1A

REVISIONS

SDATES

S/14/49

**LEGEND**

- |  |  |
|--|--|
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER |  DENOTES IMPACTS IN SURFACE WATER |
|--|--|

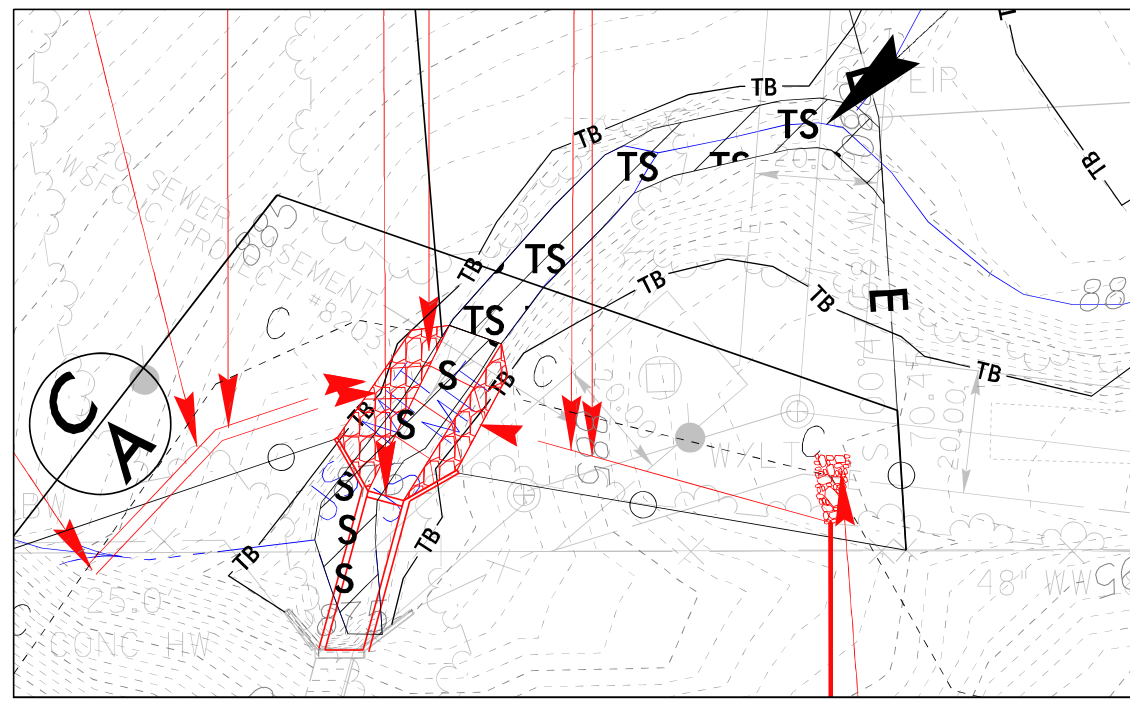
**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT REFERENCE NO. U-5760	SHEET NO. 5A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING  
SHEET 8 OF 28

NAD 83 NA 2011

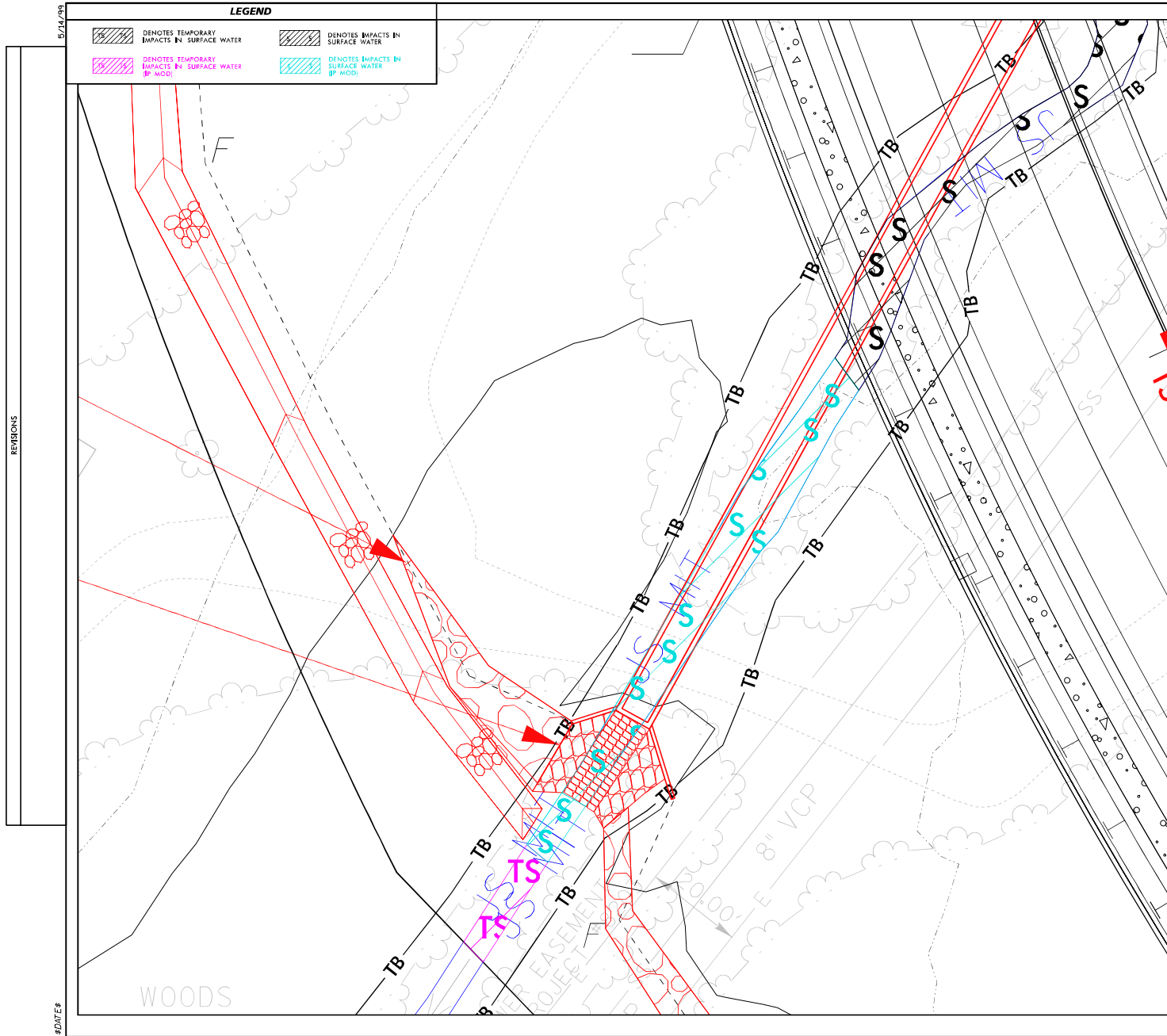
***SITE IMPACT ZOOM: 1"=20'***



***DETAIL SHEET FOR SITE 1A***

REVISIONS

SDATES



**Kimley»Horn**  
 421 FAYETTEVILLE STREET, SUITE 600  
 RALEIGH, NC 27601

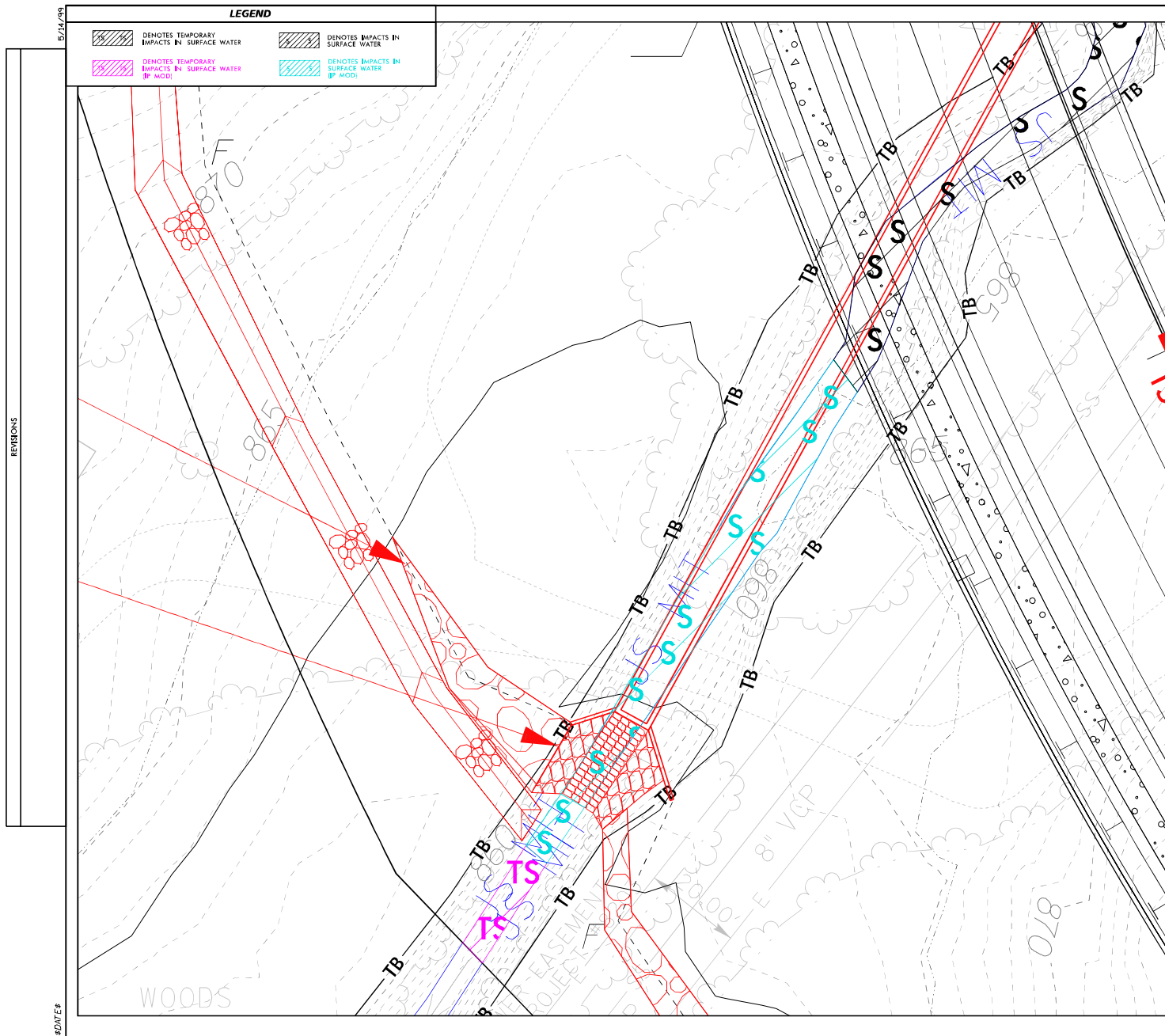
PERMIT DRAWING  
 SHEET 9 OF 28

PROJECT REFERENCE NO. U-5760	SHEET NO. 5B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83 NA 2011

**SITE IMPACT**  
**ZOOM: 1"=20'**

**DETAIL SHEET**  
**FOR SITE 1B**  
**(IP MOD)**



**Kimley»Horn**  
 421 FAYETTEVILLE STREET, SUITE 600  
 RALEIGH, NC 27601

PERMIT DRAWING  
 SHEET 10 OF 28

PROJECT REFERENCE NO. U-5760	SHEET NO. 5B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83 NA 2011

**SITE IMPACT**  
**ZOOM: 1"=20'**

**DETAIL SHEET**  
**FOR SITE 1B**  
**(IP MOD)**

5/14/24

REVISIONS

8/20/24

**Kimley Horn**  
 421 FAYETTEVILLE STREET, SUITE 600  
 RALEIGH, NC 27601

PROJECT NO.  
 U-5760

PERMIT DRAWING  
 SHEET 11 OF 28

PROJECT REFERENCE NO.

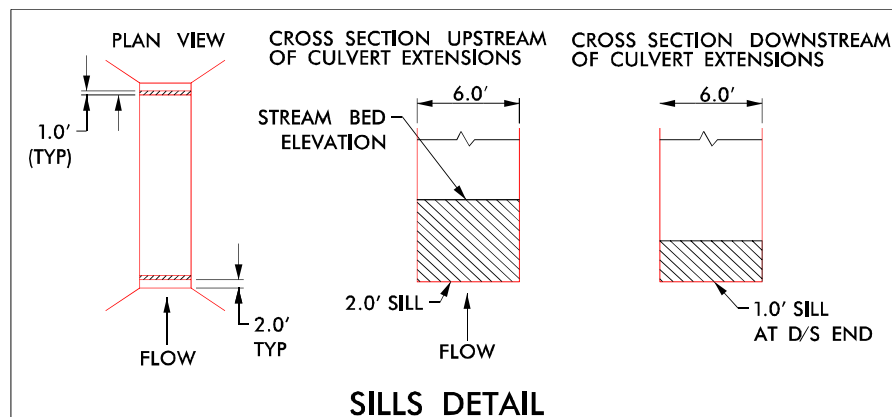
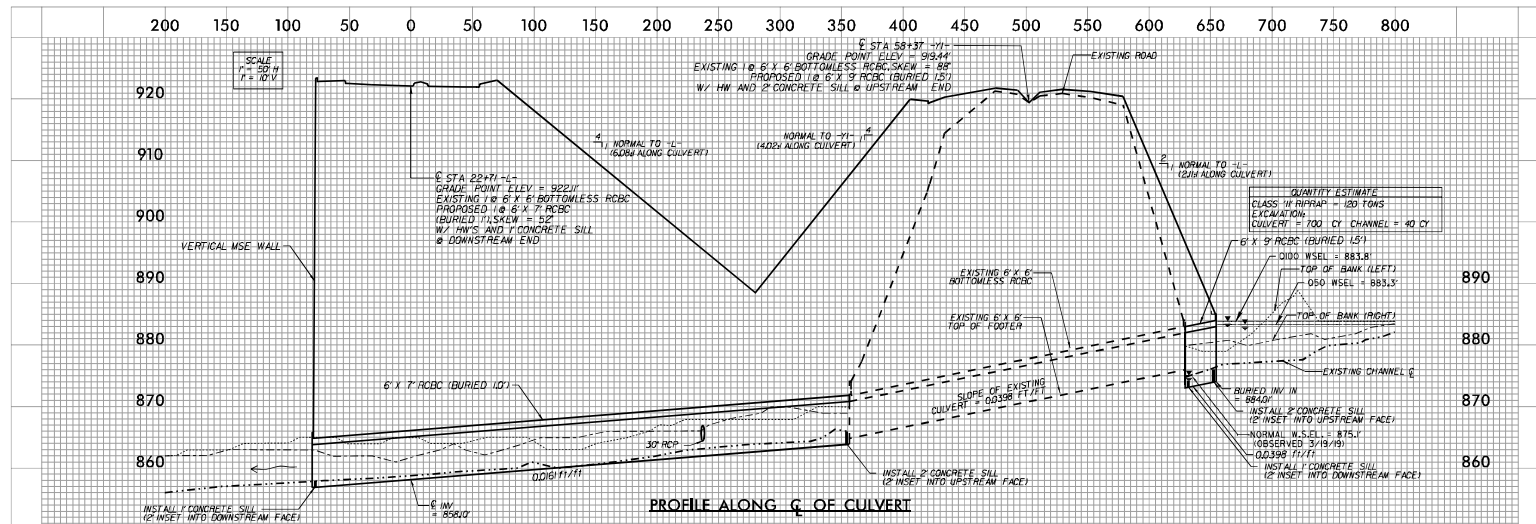
SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

# SITE 1A /1B – CULVERT EXTENSION



NOTE: NATIVE BED MATERIAL SHALL BE PLACED IN THE PROPOSED CULVERT EXTENSIONS BETWEEN SILLS. NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, THE NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FACILITATE ANIMAL PASSAGE. THE TOP SURFACE OF THE NATURAL STREAM BED MATERIAL SHALL BE PLACED AND LEVELED TO A FLAT SURFACE TO ALLOW FOR ANIMAL PASSAGE. NATIVE MATERIAL AND RIP RAP ARE SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

5/14/24

REVISIONS

ROW REV - 5/10/22 - ADJUSTED PUE ON PARCELS 40, 42, 43, 44, 46, 48 AND 50 - RWA  
ROW REV - 5/10/22 - ENLARGED TCE ON PARCELS 43, 46, 48, 50 - RWA

SDATES

**LEGEND**

	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING		DENOTES EXCAVATION IN WETLAND

ANDREW CONEY  
BECKY CONEY  
DB 2603 PG 857  
DB 833 PG 2636  
PB 37 PG 90

EDMOND D. GARMON  
LESLIE GARMON  
DB 3435 PG 3582

STEPHEN M. PEDDYCORN  
MELODY M. PEDDYCORN  
DB 3294 PG 1795

DANIEL GOLDNER  
DB 2813 PG 2414

JOSE V. PAREDES  
DB 3444 PG 2703

JAMES K. DEAN  
MARY LOU DEAN  
DB 1774 PG 2465

W. AVALON POTTS  
DB 869 PG 849  
DB 836 PG 2636  
PB 37 PG 90

NICHOLAS J. CARLUCCI  
DB 3085 PG 4294  
PB 24 PG 149

TYLER W. RUNYON  
DB 339 PG 999

DOMINIA J. MCKOY  
DB 308 PG 3027  
PB 24 PG 149

CYNTHIA COULOMBE  
ROBERT COULOMBE  
DB 3343 PG 2309  
PB 24 PG 149

WOODCROSS  
DEVELOPMENT, LLP  
DB 3416 PG 3509

**DETAIL 16**  
SPECIAL LATERAL BASE DITCH  
(Not to Scale)

Min. D = 3.0 Ft.  
Max. d = 2.5 Ft.  
B = 3.0 Ft.

Type of Liner = Class I Rip-Rap

FROM STA. 83+50 TO STA. 85+75 -L- (RT)  
FROM STA. 90+00 TO STA. 90+75 -L- (RT)

**DETAIL 24**  
SPECIAL LATERAL 'V' DITCH  
(Not to Scale)

Min. D = 1.0 Ft.

FROM STA. 80+50 TO STA. 82+30 -L- (LT)

**DETAIL 25**  
SPECIAL BACK OF CURB CUT DITCH  
(NOT TO SCALE)

Min. D = 1.0 Ft.

FROM STA. 82+30 TO STA. 85+90 -L- (LT)

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PERMIT DRAWING  
SHEET 12 OF 28

PROJECT REFERENCE NO.		SHEET NO.	
U-5760		9	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

NAD 83/NA 2011

44 HUNTER P. COPER  
DB 3333 PG 2638

SEE SHEET 19 FOR -L- PROFILE  
SEE SHEET 29 FOR -RW2- AND -RW3-  
AND -RW4- PROFILES

5/14/24

REVISIONS

ROW REV - 5/10/22 - ADJUSTED PUE ON PARCELS 40, 42, 43, 44, 46, 48 AND 50 - RWA  
ROW REV - 5/10/22 - ENLARGED TCE ON PARCELS 42, 43 - RWA

SDATES

LEGEND			
	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING		DENOTES EXCAVATION IN WETLAND

ANDREW CONEY  
BECKY CONEY  
DB 2603 PG 857  
DB 838 PG 843  
PB 31 PG 50

EDMON D. GARMON  
LESLIE GARMON  
DB 3435 PG 3582

STEPHEN M. PEDDYCORD  
MELODY M. PEDDYCORD  
DB 3294 PG 1795

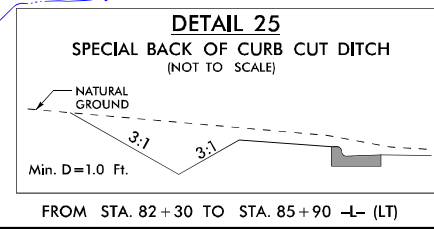
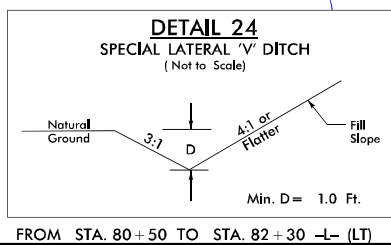
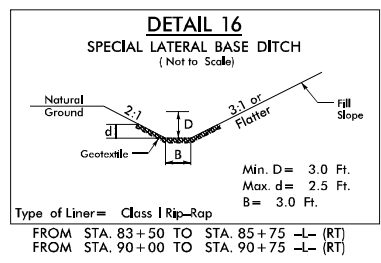
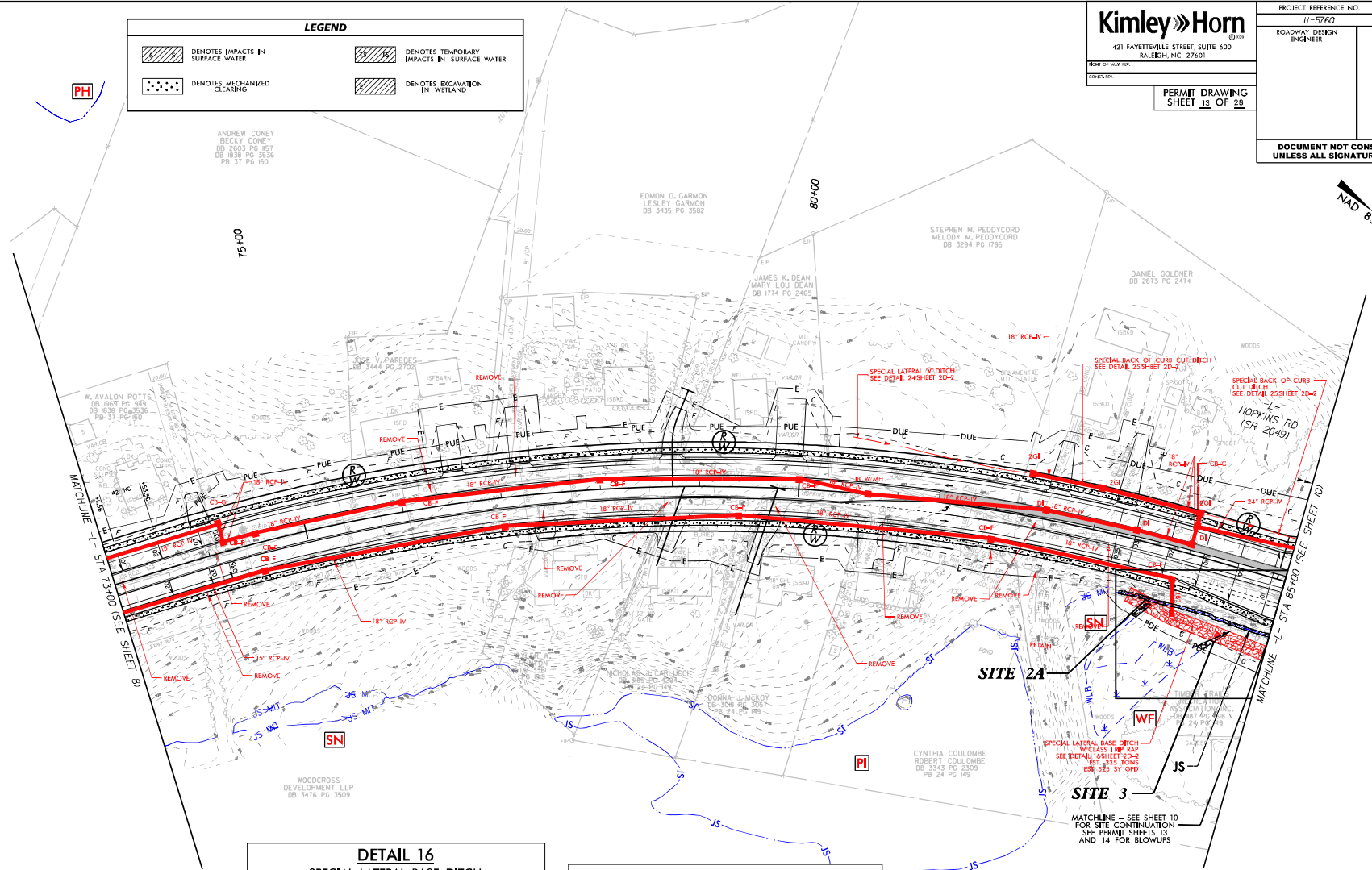
**Kimley Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PERMIT DRAWING  
SHEET 13 OF 28

PROJECT REFERENCE NO.		SHEET NO.	
U-5760		9	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011



44 HUNTER P. COPER  
DB 3333 PG 2638

SEE SHEET 19 FOR -L- PROFILE  
SEE SHEET 29 FOR -RW2--DRW3-  
AND -RW4- PROFILES

S/14/49

**LEGEND**

- |  |  |
|--|--|
|  DENOTES IMPACTS IN SURFACE WATER |  DENOTES TEMPORARY IMPACTS IN SURFACE WATER |
|  DENOTES MECHANIZED CLEARING      |  DENOTES EXCAVATION IN WETLAND              |

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO. U-5760

DATE: 05/14/2011

PERMIT DRAWING  
SHEET 14 OF 28

PROJECT REFERENCE NO. U-5760

SHEET NO. 9A

ROADWAY DESIGN  
ENGINEER

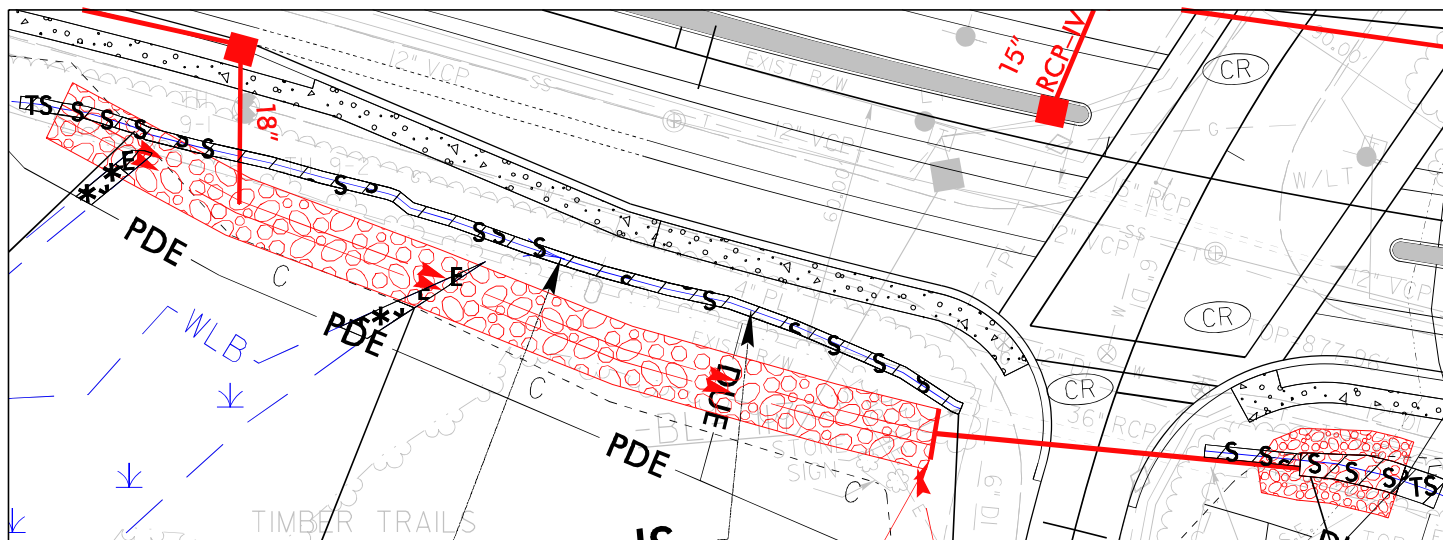
HYDRAULICS  
ENGINEER

**INCOMPLETE PLANS**

DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

***SITE IMPACT ZOOM: 1"=30'***



***DETAIL SHEET FOR SITES 2A, 2B, 3***

REVISIONS

S/DATES

S/14/49

**LEGEND**

- |  |  |
|--|--|
|  DENOTES IMPACTS IN SURFACE WATER |  DENOTES TEMPORARY IMPACTS IN SURFACE WATER |
|  DENOTES MECHANIZED CLEARING      |  DENOTES EXCAVATION IN WETLAND              |

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

DATE: 05/14/2011

PERMIT DRAWING  
SHEET 15 OF 28

PROJECT REFERENCE NO. U-5760 SHEET NO. 9A

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

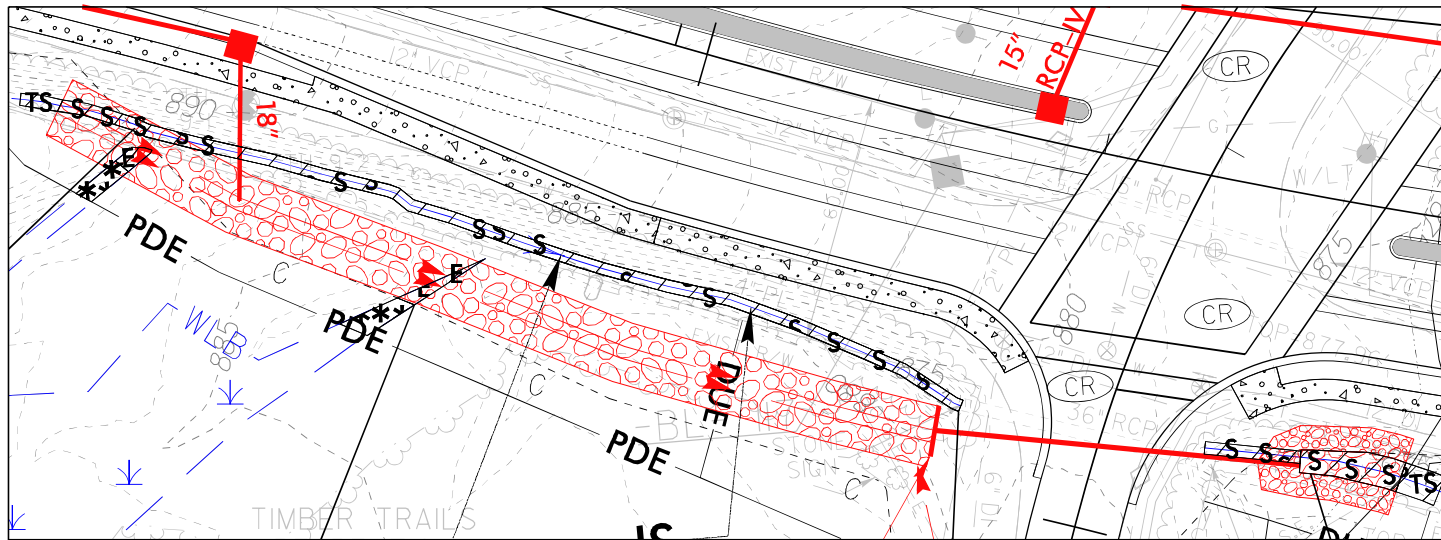
**INCOMPLETE PLANS**

DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



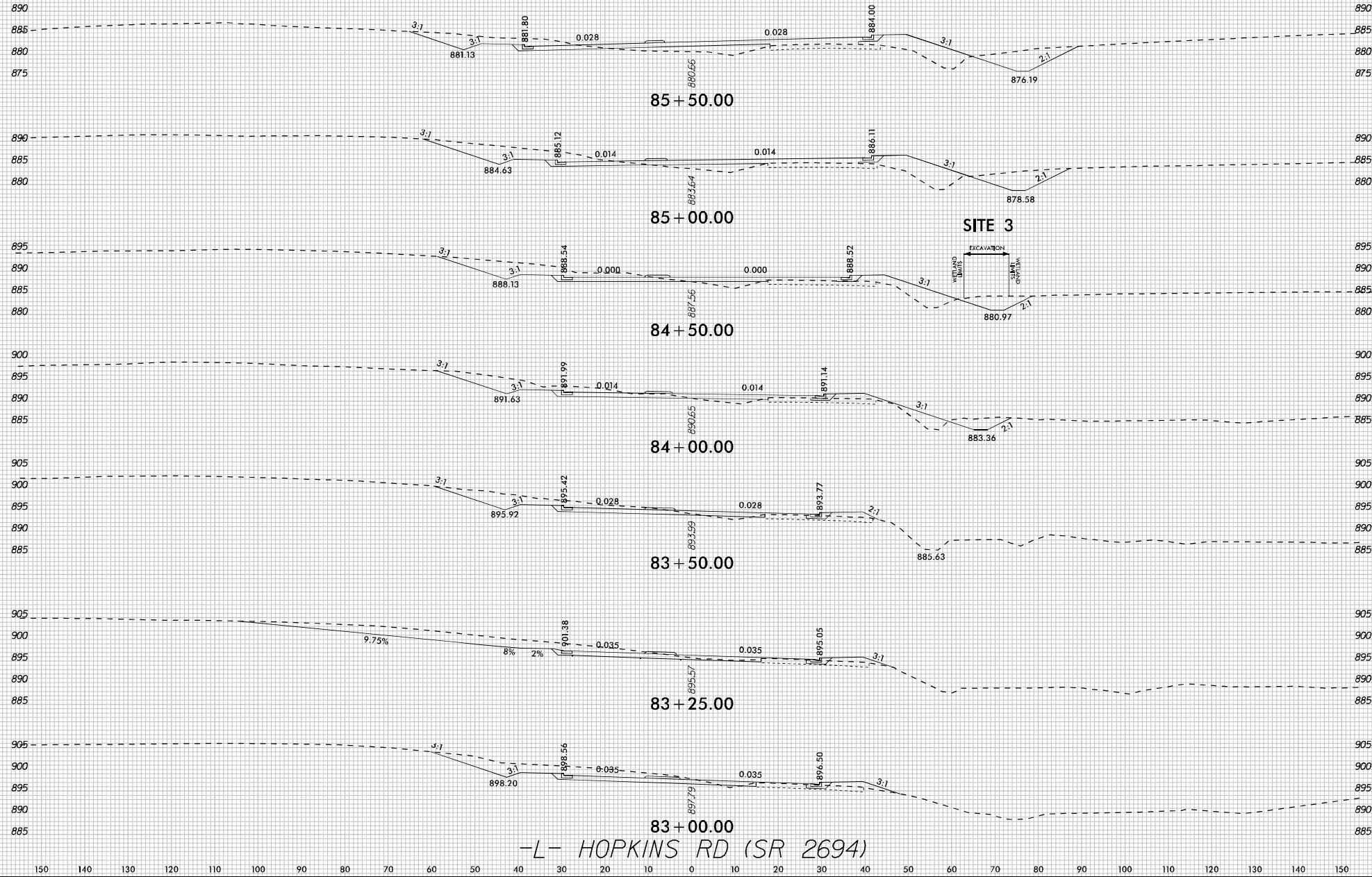
***SITE IMPACT ZOOM: 1"=30'***



***DETAIL SHEET FOR SITES 2A, 2B, 3***

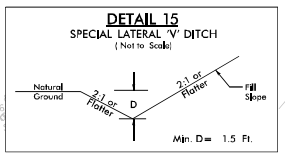
REVISIONS

SDATES



**LEGEND**

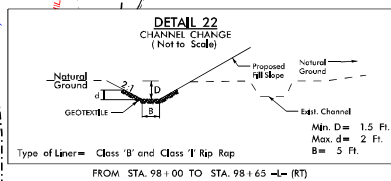
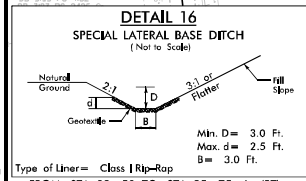
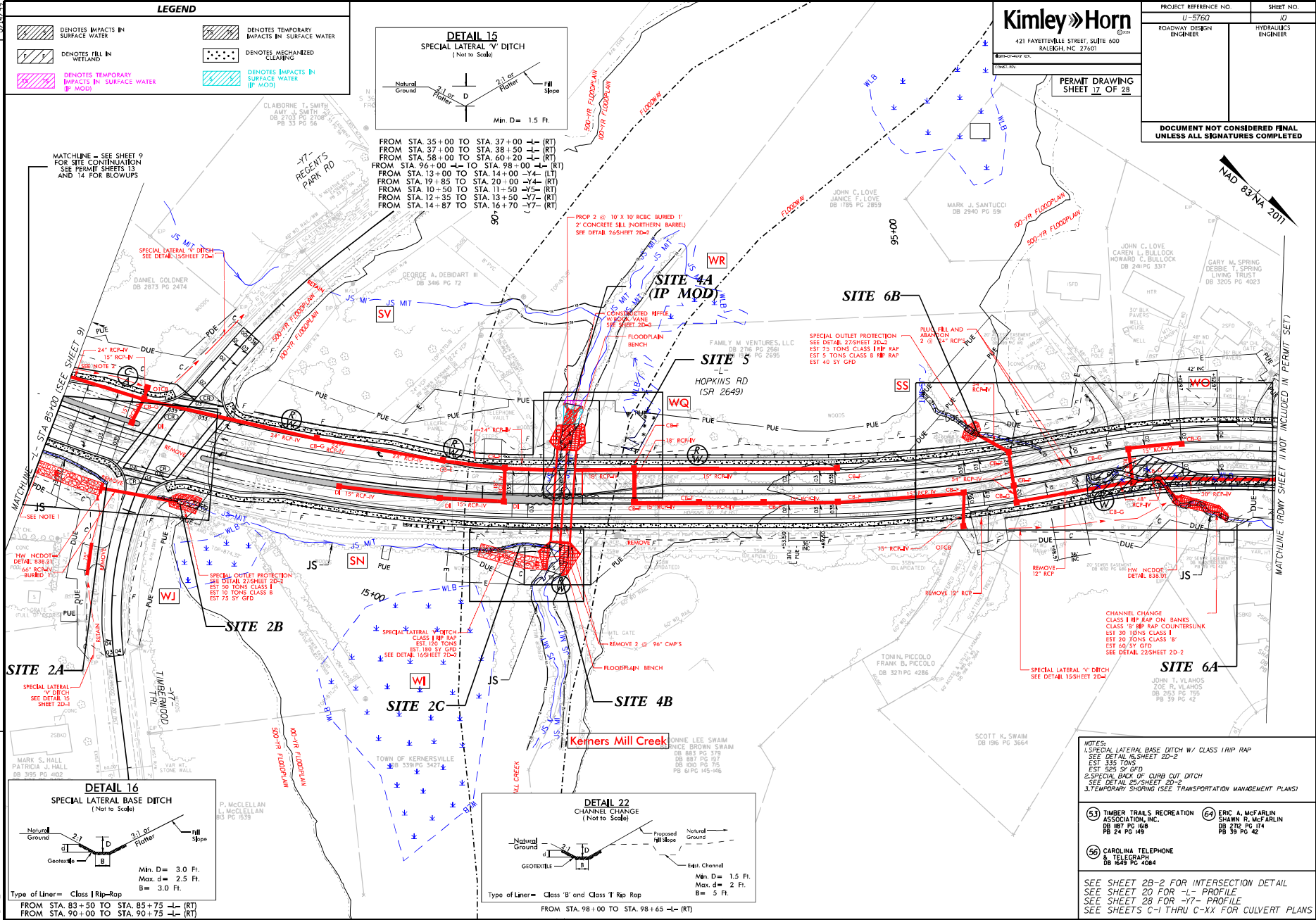
	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND		DENOTES MECHANIZED CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER (W/ MOD)		DENOTES IMPACTS IN SURFACE WATER (W/ MOD)



FROM STA. 35+00 TO STA. 37+00 (RT)  
FROM STA. 37+00 TO STA. 38+50 (RT)  
FROM STA. 38+50 TO STA. 60+20 (RT)  
FROM STA. 96+00 TO STA. 98+00 (RT)  
FROM STA. 13+00 TO STA. 14+00 (LT)  
FROM STA. 19+85 TO STA. 20+00 (RT)  
FROM STA. 10+50 TO STA. 11+50 (RT)  
FROM STA. 12+35 TO STA. 13+50 (RT)  
FROM STA. 14+87 TO STA. 16+70 (RT)

**Kimley Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT REFERENCE NO. U-5760	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 17 OF 28	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



- NOTES:**
- SPECIAL LATERAL BASE DITCH W/ CLASS I RIP RAP  
SEE DETAIL 16, SHEET 20-2  
EST. 335 TONS  
EST. 525 SY GFD
  - SPECIAL BACK OF CURB CUT DITCH  
SEE DETAIL 25, SHEET 20-3
  - TEMPORARY SHORING (SEE TRANSPORTATION PERMIT PLANS)
- 53** TIMBER TRAILS RECREATION ASSOCIATION, INC.  
DB 187 PG 168  
DB 270 PG 174  
DB 24 PG 149
- 64** ERIC A. MCFARLIN SHAWN B. MCFARLIN  
DB 270 PG 174  
DB 39 PG 42
- 56** CAROLINA TELEPHONE & TELEGRAPH  
DB 164 PG 4084

SEE SHEET 2B-2 FOR INTERSECTION DETAIL  
SEE SHEET 20 FOR -L- PROFILE  
SEE SHEET 28 FOR -I- PROFILE  
SEE SHEETS C-1 THRU C-XX FOR CULVERT PLANS

SEE SHEET 2B-2 FOR INTERSECTION DETAIL  
SEE SHEET 20 FOR -L- PROFILE  
SEE SHEET 28 FOR -Y7- PROFILE  
SEE SHEETS C-1 THRU C-XX FOR CULVERT PLANS

S/14/4B

**LEGEND**

DENOTES IMPACTS IN  
SURFACE WATER

DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER

DENOTES FILL IN  
WETLAND

DENOTES MECHANIZED  
CLEARING

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO. U-5760

PROJECT REFERENCE NO.

SHEET NO.

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

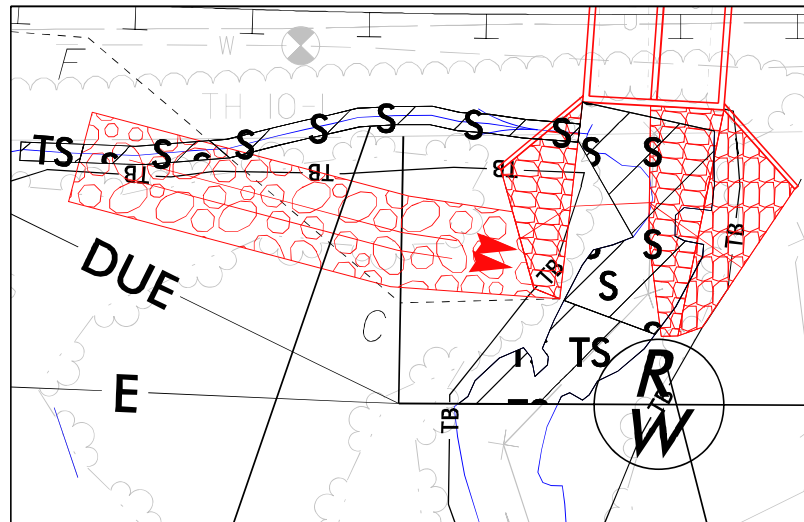
**INCOMPLETE PLANS**

DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING  
SHEET 19 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

***SITE IMPACT ZOOM: 1"=20'***



***DETAIL SHEET FOR SITES 2C, 4B***

NAD 83/NA 2011

REVISIONS

\$DATES

S/14/4B

**LEGEND**

DENOTES IMPACTS IN  
SURFACE WATER

DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER

DENOTES FILL IN  
WETLAND

DENOTES MECHANIZED  
CLEARING

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO.  
U-5760

PROJECT REFERENCE NO.

SHEET NO.

ROADWAY DESIGN  
ENGINEER

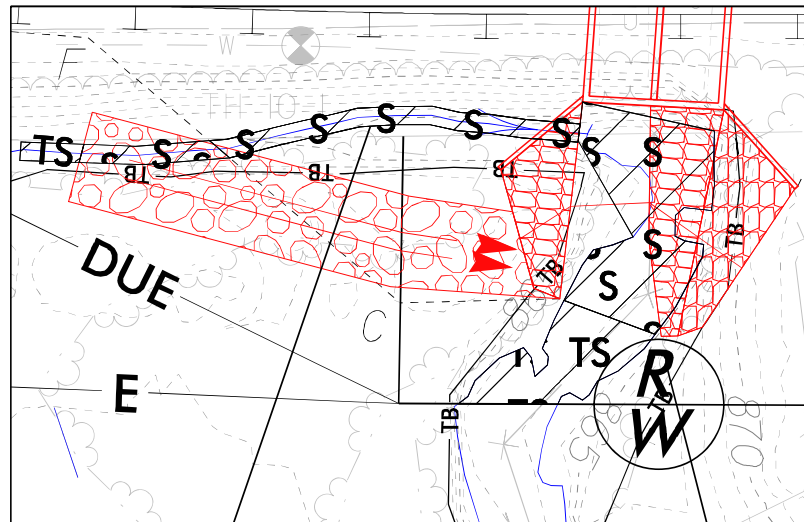
HYDRAULICS  
ENGINEER

**INCOMPLETE PLANS**

PERMIT DRAWING  
SHEET 20 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

***SITE IMPACT ZOOM: 1"=20'***



***DETAIL SHEET FOR SITES 2C, 4B***





NAD 83/NA 2011

REVISIONS

\$DATES

S/14/49

**LEGEND**

	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND		DENOTES MECHANIZED CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD)		DENOTES IMPACTS IN SURFACE WATER (IP MOD)

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT REFERENCE NO. SHEET NO.

U-5760 IOB

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

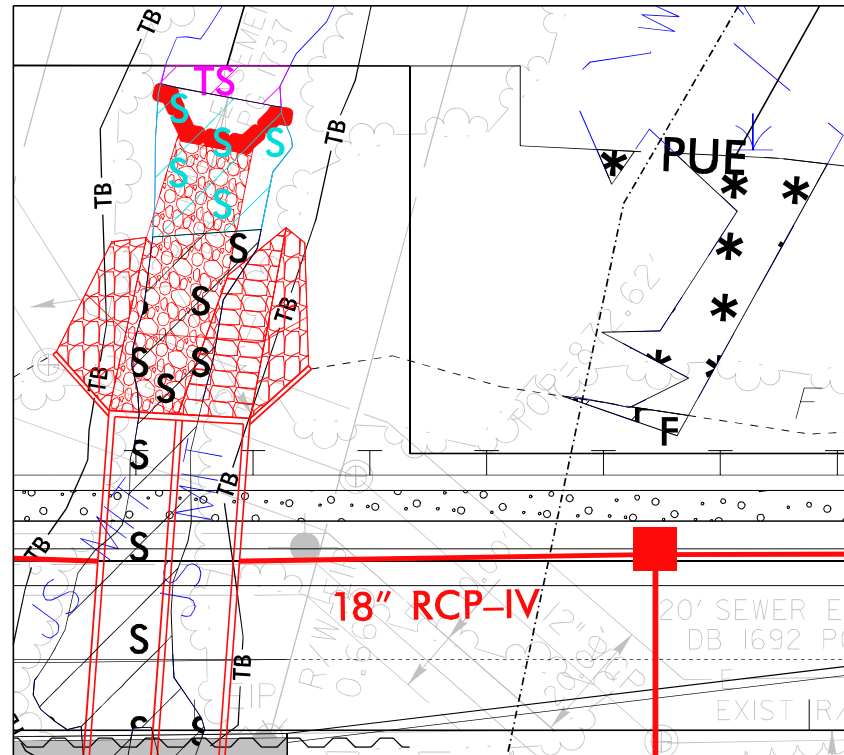
**INCOMPLETE PLANS**

DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING  
SHEET 21 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

***SITE IMPACT ZOOM: 1"=20'***



***DETAIL SHEET FOR SITES 4A, 5  
(IP MOD)***







NAD 83 NA 2011

REVISIONS

SDATES

S/14/49

**LEGEND**

 DENOTES IMPACTS IN SURFACE WATER	 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES FILL IN WETLAND	 DENOTES MECHANIZED CLEARING
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD)	 DENOTES IMPACTS IN SURFACE WATER (IP MOD)

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO. U-5760

PERMIT DRAWING  
SHEET 22 OF 28

PROJECT REFERENCE NO. U-5760

SHEET NO. 10B

ROADWAY DESIGN  
ENGINEER

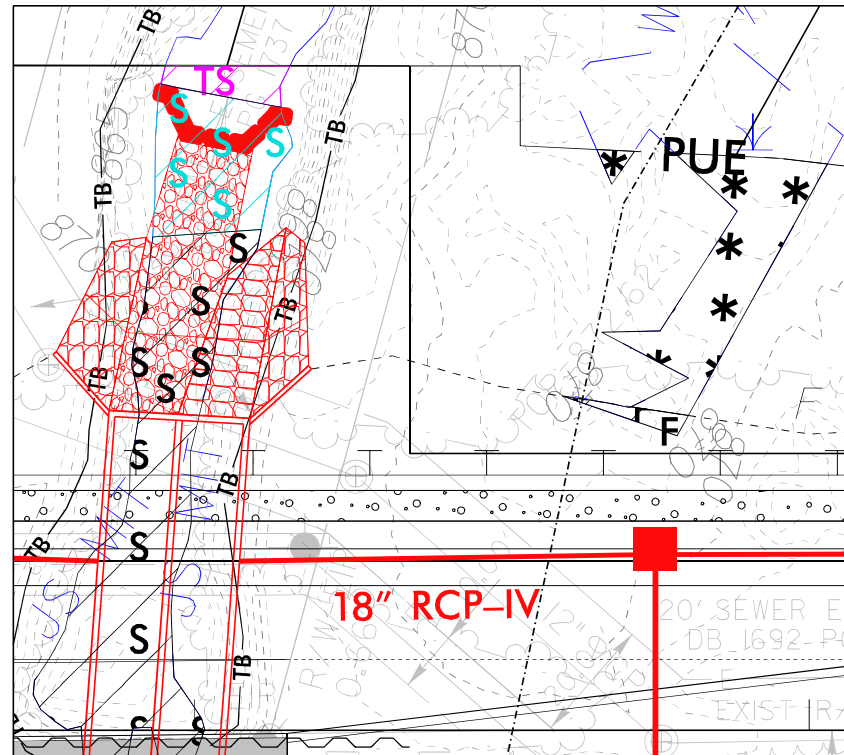
HYDRAULICS  
ENGINEER

**INCOMPLETE PLANS**

DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

***SITE IMPACT ZOOM: 1"=20'***



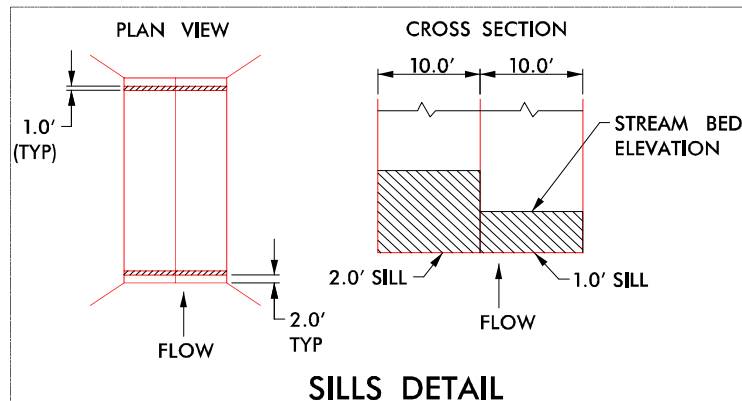
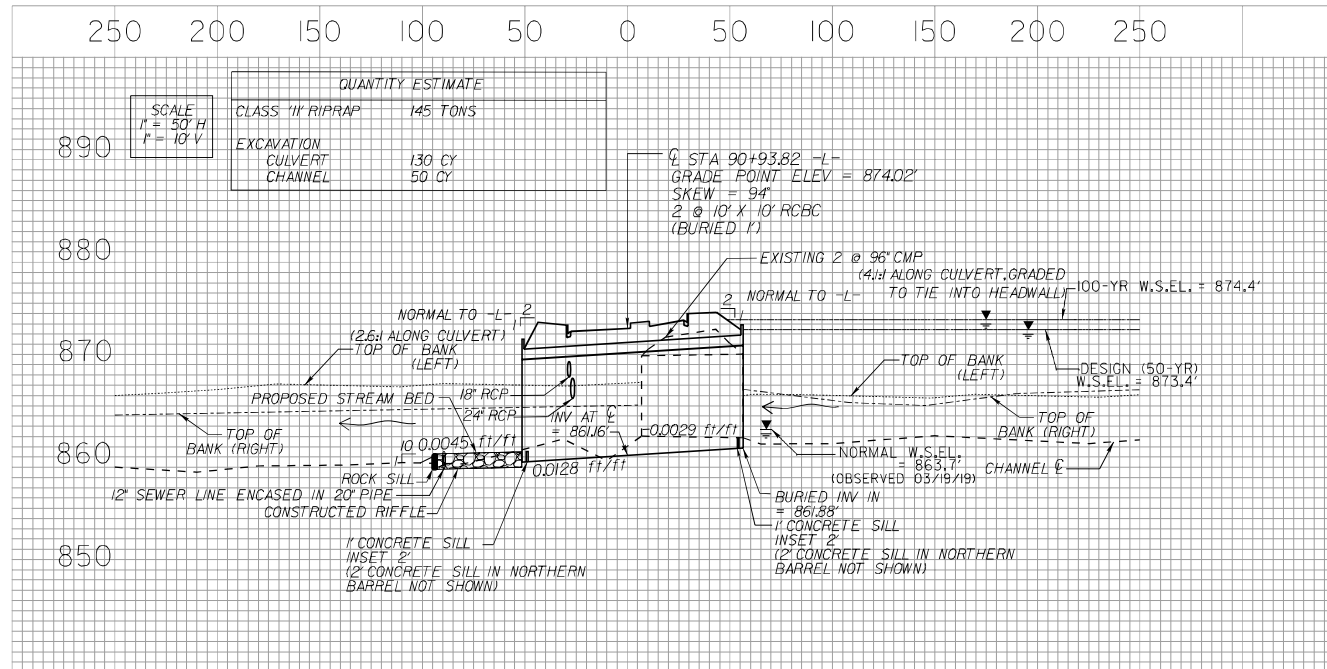
***DETAIL SHEET FOR SITES 4A, 5  
(IP MOD)***

NAD 83 NA 2011

REVISIONS

\$DATES

# SITE 4A /4B – CULVERT REPLACEMENT



NOTE: FOR CUT CONDITION, USE CLASS II RIP RAP FLOODPLAIN BENCH BORDER WITH NATURAL GROUND COVERED WITH COIR FIBER MAT INSIDE BORDER. IN FILL CONDITION, USE CLASS II RIP RAP FILL THROUGHOUT WITH NATIVE BED MATERIAL FILLING THE VOIDS ON TOP.

NOTE: NATIVE BED MATERIAL SHALL BE PLACED BETWEEN THE SILLS IN THE LOW FLOW CULVERT. NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, THE NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FACILITATE ANIMAL PASSAGE. THE TOP SURFACE OF THE NATURAL STREAM BED MATERIAL SHALL BE PLACED AND LEVELED TO A FLAT SURFACE TO ALLOW FOR ANIMAL PASSAGE. THE HIGH FLOW BARRELS SHALL BE BACK FILLED WITH NATIVE MATERIAL AND/OR RIP RAP. NATIVE MATERIAL AND RIP RAP ARE SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

## REVISIONS


DATE\$

<h1 style="margin: 0;">Kimley»Horn</h1> <p style="text-align: center; margin: 0;">421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601</p> <p style="font-size: small; margin: 5px 0;"> <input type="checkbox"/> NORTH CAROLINA  <input type="checkbox"/> CONNECTICUT       </p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 10px;"> <b>PERMIT DRAWING</b>          SHEET <u>24</u> OF <u>28</u> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">           PROJECT REFERENCE NO:  <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 2px 0;">U-5760</div> </td> <td style="width: 50%; padding: 5px;">           SHEET NO:  <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 2px 0;">10C</div> </td> </tr> <tr> <td style="width: 50%; padding: 5px;">           ROADWAY DESIGN ENGINEER         </td> <td style="width: 50%; padding: 5px;">           HYDRAULICS ENGINEER         </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 20px;"> <div style="border: 2px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <b>INCOMPLETE PLANS</b>            DO NOT USE FOR <u>W/W</u> ACQUISITION         </div> </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;"> <b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b> </td> </tr> </table>	PROJECT REFERENCE NO: <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 2px 0;">U-5760</div>	SHEET NO: <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 2px 0;">10C</div>	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	<div style="border: 2px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <b>INCOMPLETE PLANS</b>            DO NOT USE FOR <u>W/W</u> ACQUISITION         </div>		<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
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<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>									

***DETAIL SHEET FOR SITES 6A, 6B***

S/14/49

**LEGEND**

 DENOTES IMPACTS IN SURFACE WATER	 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES FILL IN WETLAND	 DENOTES MECHANIZED CLEARING

**Kimley Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT NO. U-5760  
ROADWAY DESIGN ENGINEER

SHEET NO. 100

HYDRAULICS ENGINEER

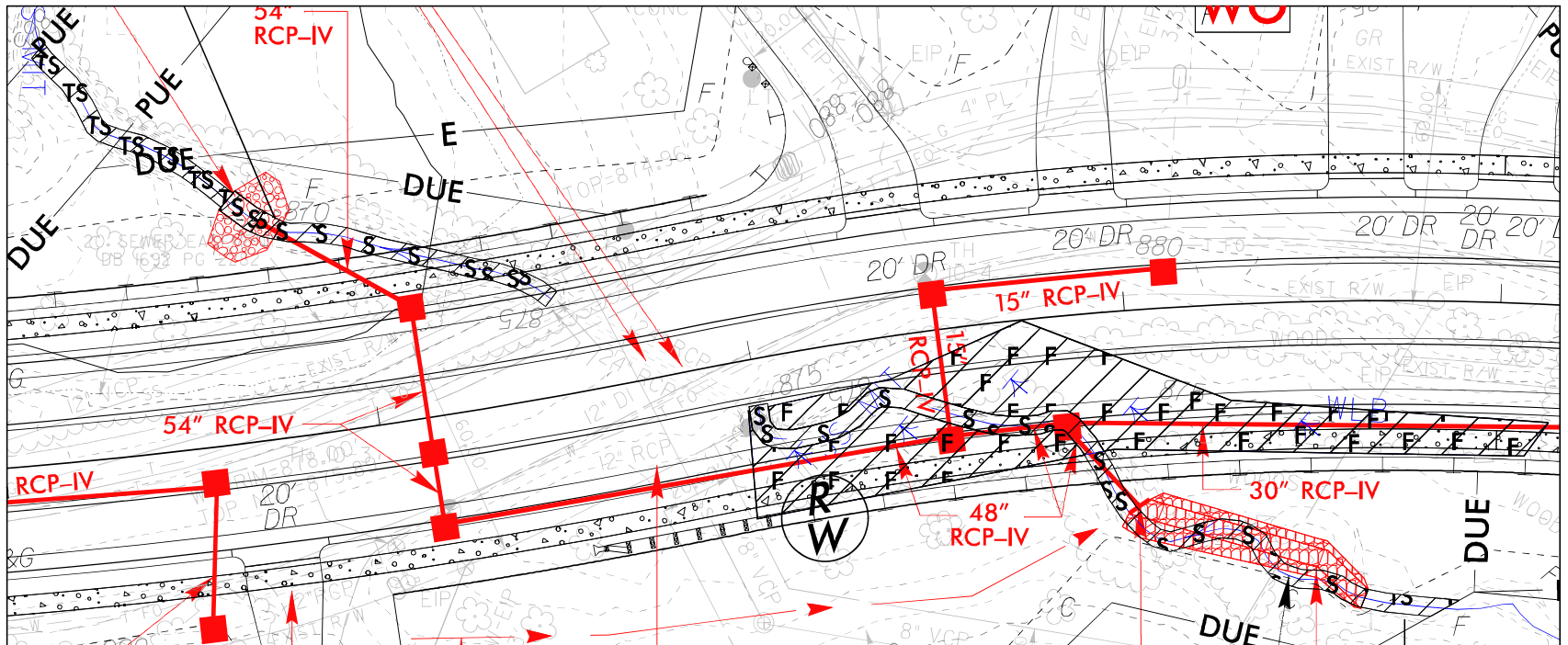
**INCOMPLETE PLANS**

PERMIT DRAWING  
SHEET 25 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



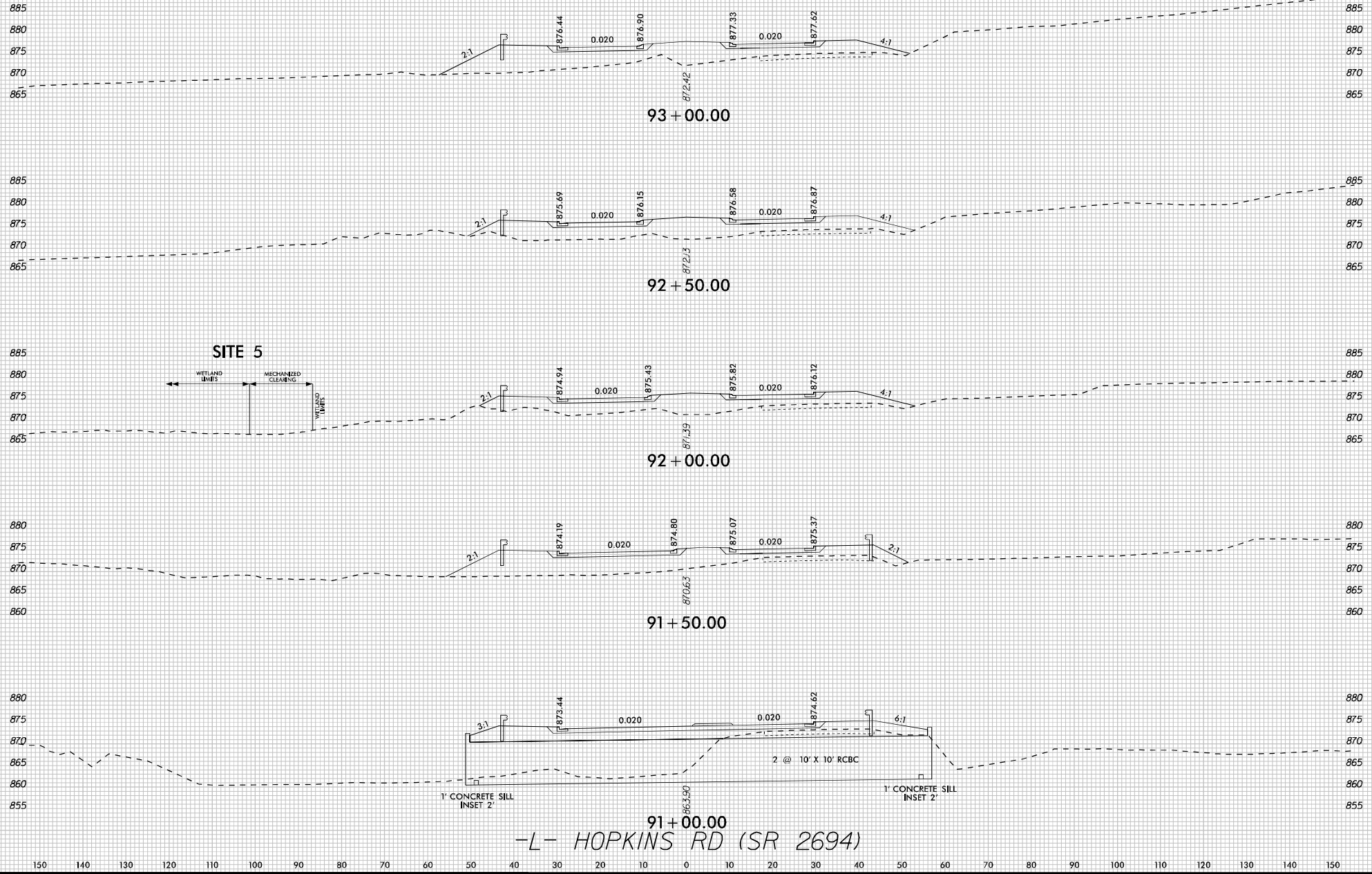
## ***SITE IMPACT ZOOM: 1"=30'***



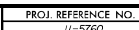
## ***DETAIL SHEET FOR SITES 6A, 6B***

REVISIONS

S/07/09



-L- HOPKINS RD (SR 2694)



1



WETLAND AND SURFACE WATER IMPACTS SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	58+66/59+59 -Y1- (LT)	1 @ 6' x 9' RCBC Extension						< 0.01		25		
	58+66/59+59 -Y1- (LT)	Channel Improvements						< 0.01	0.02	31	82	
1B	21+97/25+90 -L- (RT)	1 @ 6' x 7' RCBC Extension						0.11		610		
	21+97/25+90 -L- (RT)	Channel Improvements						< 0.01	< 0.01	33	24	
2A	83+40/85+80 -L- (RT)	Roadway Fill			< 0.01	< 0.01		0.02	< 0.01	233	10	
2B	86+38/86+80 -L- (RT)	66" RCP						< 0.01		24		
		Channel Improvements						< 0.01	< 0.01	25	10	
2C	89+96/90+79 -L- (RT)	Roadway Fill						< 0.01	< 0.01	82	10	
3	83+60/84+62 -L- (RT)	Roadway Fill			< 0.01	< 0.01						
4A	90+74/91+16 -L- (LT)	2 @ 10' x 10' RCBC						0.02		61		
		Channel Improvements						0.02	< 0.01	52	5	
4B	90+59/91+00 -L- (RT)	Channel Improvements						0.01	< 0.01	35	19	
5	91+60/92+06 -L- (LT)	Roadway Fill	< 0.01			0.01						
6A	96+98/98+87 -L- (RT)	48" RCP						0.01		122		
		Channel Change						< 0.01	< 0.01	70	22	
		Roadway Fill	0.09									
6B	95+22/96+53 -L- (LT)	54" RCP						< 0.01		82		
		Channel Improvements						< 0.01	< 0.01	10	65	
TOTALS*			0.09		< 0.01	0.01		0.24	0.04	1495	247	0

\*Rounded totals are sum of actual impacts

NOTES:  
     = Impacts affected by IP Mod

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 02/20/2023  
 FORSYTH  
 U-5760  
 46381.1.1  
 SHEET 28 OF 28

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



April 20, 2023

Ms. Amy Euliss  
NCDOT, Division 9 PDEA Engineer  
375 Silas Creek Parkway  
Winston Salem, NC 27127

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed widening and extension of Big Mill Farm Road and widening of Hopkins Road from I-40 Business/US 421 to West Mountain Street with a new partial cloverleaf interchange at I-40 Business/US 421 in Forsyth County; STIP No U-5760; WBS Element No. 46381.1.1. NCDWR Project No. 20200628v2; WQ Certification No. 0044231.

Dear Ms. Euliss:

Attached hereto is a modification of Certification No. 0044231 issued to The North Carolina Department of Transportation (NCDOT) originally issued on July 13, 2020.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

DocuSigned by:

Amy Chapman

Richard E. Rogers Jr., Director  
Division of Water Resources

Electronic copy only distribution:

Matt Jones, NCDOT Division 9 ([mwjones2@ncdot.gov](mailto:mwjones2@ncdot.gov))  
Steve Brumagin, US Army Corps of Engineers, Charlotte Field Office  
Amanetta Somerville, US Environmental Protection Agency  
Rebekah Reid, US Fish and Wildlife Service  
David McHenry, NC Wildlife Resources Commission  
Beth Harmon, NC DMS

File Copy



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000

## Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to permanently impact an additional 123 linear feet of jurisdictional streams and reduce temporary impacts by 19 linear feet (for the two Sites) in Forsyth County. The project shall be constructed pursuant to the modification received March 17, 2023. The authorized impacts are as described below:

### Stream Impacts in the Yadkin Pee Dee River Basin

Site	Permanent Fill in Perennial Stream (linear ft)		Temporary Fill in Perennial Stream (linear ft)	Stream Impacts Requiring Additional Mitigation (linear ft)
	Culvert	Channel Improvements	Fill	
Current impacts at 1B	522	20	20	-
New additional impacts at 1B	88	13	4	101
Current impacts at 4A	61	30	28	
New additional impacts at 4A	No change	22	Reduction of 23	22
<b>Relevant Totals (for this modification)</b>	<b>88</b>	<b>35</b>	<b>4</b>	<b>123</b>

**Total Stream Impact (for this modification): 127 linear feet** (total includes new temporary impacts)

The application provides adequate assurance that the discharge of fill material into the waters of the Yadkin Pee Dee River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modification application dated March 17, 2023. All the authorized activities and conditions associated with the original Water Quality Certification originally dated July 13, 2020, still apply except where superseded by this Certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

### Condition(s) of Certification:

1. This modification is applicable only to the additional proposed activities and design that you submitted in your request for modification received March 17, 2023. [15A NCAC 02H.0506(b) (1, 2)]



2. All the authorized activities and conditions associated with the original Water Quality Certification dated July 13, 2020, still apply except where superseded by this certification. [15A NCAC 02H.0506(b) (1, 2)]
3. Compensatory mitigation for 123 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated February 23, 2023, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative Hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

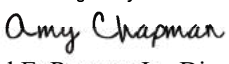
Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center

This the 20th day of April 2023

DIVISION OF WATER RESOURCES

DocuSigned by:  
  
Richard E. Rogers, Jr., Director

WQC No. 004231



ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NCDWR Project No.: \_\_\_\_\_ County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

***Applicant's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Agent's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Engineer's Certification***

\_\_\_\_\_ Partial \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_

Date \_\_\_\_\_



**U.S. ARMY CORPS OF ENGINEERS**  
**Wilmington District**  
**Compensatory Mitigation Responsibility Transfer Form**

**Permittee:** North Carolina Department of Transportation, Division 9

**Action ID:** SAW-2016-01337

**Project Name:** U-5760 Kernersville Southern Loop, Big Mill Farm Road, Modification #1 **County:** Forsyth

**Instructions to Permittee:** The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that Wilmington District Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one Mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate Mitigation Sponsors.

**Instructions to Sponsor:** The Sponsor verifies that the mitigation requirements (credits) shown below have been released and are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated ledger to the Permittee, the Project Manager who issued the permit, the Bank Project Manager, and the District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

**Permitted Impacts and Compensatory Mitigation Requirements**

**Permitted Impacts Requiring Mitigation\*:**

**8-digit HUC and Basin:** 03040101, Yadkin River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
123						

\*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

**Compensatory Mitigation Requirements:**

**8-digit HUC and Basin:** 03040101, Yadkin River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
246						

**Mitigation Site Debited:** \_\_\_\_\_

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

***Section to be completed by the Mitigation Sponsor***

**Statement of Mitigation Liability Acceptance:** I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the Wilmington District, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

**Mitigation Sponsor Name:** NCDEQ - DMS

**Name of Sponsor's Authorized Representative:** Beth Harmon

*Elizabeth Harmon*

Signature of Sponsor's Authorized Representative

06/07/2023

Date of Signature

**USACE Wilmington District  
Compensatory Mitigation Responsibility Transfer Form, Page 2**

**Conditions for Transfer of Compensatory Mitigation Credit:**

- Once this document has been signed by the Mitigation Sponsor and the District is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the District is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. When NCDMS provides mitigation for authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by NCDMS must be provided to the District within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the District has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the District Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the District, the Sponsor must obtain case-by-case approval from the District Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the District administrative records for both the permit and the Bank/ILF Instrument.

**Comments/Additional Conditions:** The permittee shall provide mitigation for the authorized Modification #1 to this Project's Sites #1B and #4A. Specifically, to provide compensatory mitigation for the additional 123 lf of permanent stream impacts authorized by this modification. NCDMS confirmed in a February 23, 2023, letter to provide the additional compensatory mitigation for this project. For the previous issued permit that authorized 1,372 lf of warm stream impacts and 0.11 acres of riparian non-riverine wetland impacts. NCDOT provided a total of 2,744 warm stream mitigation credits and 0.22 riparian non-riverine wetland mitigation credits as signed by the mitigation sponsor (NCDMS) on August 20, 2020, for the U-5760 Kernersville Southern Loop, Big Mill Farm Road Widening and Extension, Forsyth County.

This form is not valid unless signed below by the District Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the District Project Manager at the address below, 3) the Bank Manager listed in RIBITS, and 4) the Wilmington District Mitigation Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (or by email to [SAWMIT@usace.army.mil](mailto:SAWMIT@usace.army.mil)).*** Questions regarding this form or any of the permit conditions may be directed to the District Mitigation Office.

**USACE Project Manager:** Stephen A. Brumagin  
**USACE Field Office:** Charlotte Regulatory Field Office  
US Army Corps of Engineers  
8430 University Executive Park Drive, Suite 615  
Charlotte, North Carolina 28262

**Email:** [Stephen.A.Brumagin@usace.army.mil](mailto:Stephen.A.Brumagin@usace.army.mil)



Digitally signed by  
BRUMAGIN.STEPHEN.A.12835207  
37  
Date: 2023.06.02 14:13:07 -04'00'

**Wilmington District Project Manager Signature**

June 2, 2023

**Date of Signature**

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NORTH CAROLINA  
Environmental Quality

April 20, 2023

Ms. Amy Euliss  
NCDOT, Division 9 PDEA Engineer  
375 Silas Creek Parkway  
Winston Salem, NC 27127

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed widening and extension of Big Mill Farm Road and widening of Hopkins Road from I-40 Business/US 421 to West Mountain Street with a new partial cloverleaf interchange at I-40 Business/US 421 in Forsyth County; STIP No U-5760; WBS Element No. 46381.1.1. NCDWR Project No. 20200628v2; WQ Certification No. 0044231.

Dear Ms. Euliss:

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If we can be of further assistance, do not hesitate to contact us.

Sincerely,

DocuSigned by:

Amy Chapman

Richard E. Rogers Jr., Director  
Division of Water Resources

Electronic copy only distribution:

Matt Jones, NCDOT Division 9 ([mwjones2@ncdot.gov](mailto:mwjones2@ncdot.gov))  
Steve Brumagin, US Army Corps of Engineers, Charlotte Field Office  
Amanetta Somerville, US Environmental Protection Agency  
Rebekah Reid, US Fish and Wildlife Service  
David McHenry, NC Wildlife Resources Commission  
Beth Harmon, NC DMS

File Copy



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000

## Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

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New additional impacts at 1B	88	13	4	101
Current impacts at 4A	61	30	28	
New additional impacts at 4A	No change	22	Reduction of 23	22
<b>Relevant Totals (for this modification)</b>	<b>88</b>	<b>35</b>	<b>4</b>	<b>123</b>

**Total Stream Impact (for this modification): 127 linear feet** (total includes new temporary impacts)

The application provides adequate assurance that the discharge of fill material into the waters of the Yadkin Pee Dee River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modification application dated March 17, 2023. All the authorized activities and conditions associated with the original Water Quality Certification originally dated July 13, 2020, still apply except where superseded by this Certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

### Condition(s) of Certification:

1. This modification is applicable only to the additional proposed activities and design that you submitted in your request for modification received March 17, 2023. [15A NCAC 02H.0506(b) (1, 2)]



2. All the authorized activities and conditions associated with the original Water Quality Certification dated July 13, 2020, still apply except where superseded by this certification. [15A NCAC 02H.0506(b) (1, 2)]
3. Compensatory mitigation for 123 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated February 23, 2023, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative Hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center

This the 20th day of April 2023

DIVISION OF WATER RESOURCES

DocuSigned by:  
*Amy Chapman*  
Richard E. Rogers, Jr., Director

WQC No. 004231



ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NCDWR Project No.: \_\_\_\_\_ County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

***Applicant's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Agent's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.



Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Engineer's Certification***

\_\_\_\_\_ Partial \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_  
Date \_\_\_\_\_

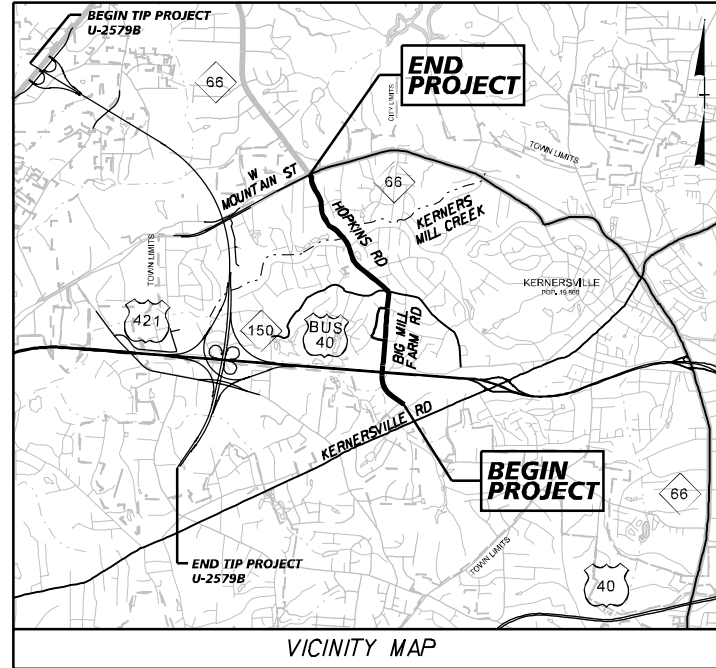
<div>  <div> North Carolina Department of Transportation  Highway Stormwater Program  <b>STORMWATER MANAGEMENT PLAN</b>  FOR NCDOT PROJECTS </div>  </div>									
<div> <div> WBS Element: TIP No.: U-5760 County(ies): Forsyth Page 1 of 2 </div> </div>									
General Project Information									
WBS Element:		TIP Number: U-5760		Project Type:		Date: 2/20/2023			
NCDOT Contact:		Galen Cail, P.E.		Contractor / Designer:		Bryan Vickery, P.E.			
	Address:	1000 Birch Ridge Drive Raleigh, NC 27610			Address:	Kimley-Horn 421 Fayetteville Street Suite 600 Raleigh, NC, 27601			
	Phone:	(919)-707-6700			Phone:	(919)-653-2905			
	Email:	gcail@ncdot.gov			Email:	bryan.vickery@kimley-horn.com			
City/Town:		Kernersville		County(ies):		Forsyth			
River Basin(s):		Yadkin-Pee Dee		CAMA County?		No			
Wetlands within Project Limits?		Yes							
Project Description									
Project Length (lin. miles or feet):		2.034 miles		Surrounding Land Use:		Commercial/Residential			
		Proposed Project				Existing Site			
Project Built-Up Area (ac.)		45.9 ac.				28.9 ac.			
Typical Cross Section Description:		Big Mill Farm Rd. and Hopkins Rd. will have single 12' Lanes with turn lanes at intersections. Grade Separation over Bus-40. Bus-40 is 3 12' lanes in each direction with a 30' grass median.				Bus-40 is 3 12' lanes in each direction. Hopkins Rd. has one 12' lane in each direction with Big Mill Farm Rd. has one 10' lane in each direction and transitions into a gravel road with 9' lanes the is a dead end before it would meet BUS-40.			
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 14,900		Year:		Existing: 10,700		Year:	
General Project Narrative:		This is a Division 9 managed project. Existing drainage patterns to be maintained to the best extent practical. The only noteworthy drainage pattern change is the diversion of							
Waterbody Information									
Surface Water Body (1):		Kerners Mill Creek		NCDWR Stream Index No.:		12-94-12-2-(0.3)			
NCDWR Surface Water Classification for Water Body		Primary Classification:		Water Supply III (WS-III)					
		Supplemental Classification:		None					
Other Stream Classification:		None				None			
Impairments:		None				None			
Aquatic T&E Species?		No		Comments:					
NRTR Stream ID:		Kerners Mill Creek, SV, SS, SN				Buffer Rules in Effect:		N/A	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		No		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
		(If yes, provide justification in the General Project Narrative)							
Additional Waterbody Information									
Surface Water Body (2):		Smith Creek		NCDWR Stream Index No.:		12-94-12-2-1			
NCDWR Surface Water Classification for Water Body		Primary Classification:		Water Supply III (WS-III)					
		Supplemental Classification:		None					
Other Stream Classification:		None							
Impairments:		None							
Aquatic T&E Species?				Comments:					
NRTR Stream ID:		Smith Creek, SH, SI, SM, SG, SD, SJ, ESE-S38				Buffer Rules in Effect:		N/A	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		N/A		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
		(If yes, provide justification in the General Project Narrative)							

[illegible]

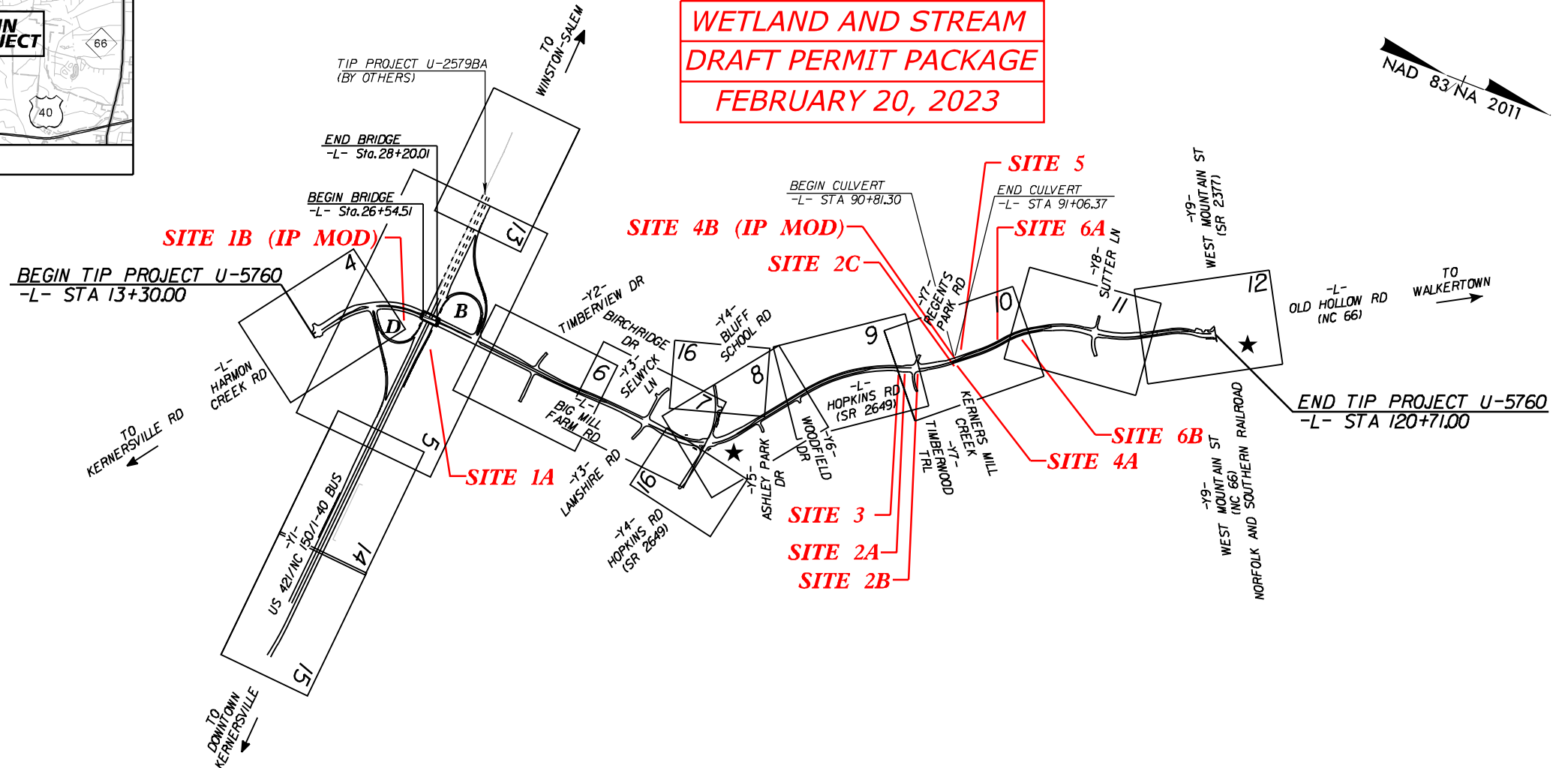
TIP PROJECT: U-5760

CONTRACT:

See Sheet IB For Conventional Plan Sheet Symbols



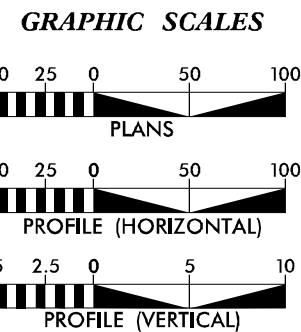
PERMIT DRAWING  
SHEET 1 OF 28



★ TRAFFIC SIGNAL

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF KERNERSVILLE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

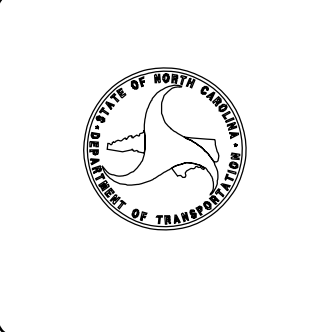


DESIGN DATA	
AADT 2023 =	10,700
AADT 2040 =	14,900
K =	10%
D =	60%
T =	3%*
V =	50 MPH
* (TTST 1% + DUAL 2%)	
FUNCTIONAL CLASSIFICATION:	
URBAN COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT U-5760	= 1.998 MILES
LENGTH STRUCTURES TIP PROJECT U-5760	= 0.036 MILES
TOTAL LENGTH TIP PROJECT U-5760	= 2.034 MILES

PLANS PREPARED FOR THE NCDOT BY:	
2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: APRIL 15, 2022	
LETTING DATE: APRIL 15, 2025	
Kimley»Horn	
JEFFREY W. MOORE, P.E. PROJECT ENGINEER	
EVERETT J. LOVING, P.E. PROJECT DESIGN ENGINEER	
W. AL BLANTON, P.E., P.L.S. PROJECT TEAM LEAD NCDOT DIVISION 9	

HYDRAULICS ENGINEER	
SIGNATURE: _____	
ROADWAY DESIGN ENGINEER	
SIGNATURE: _____	

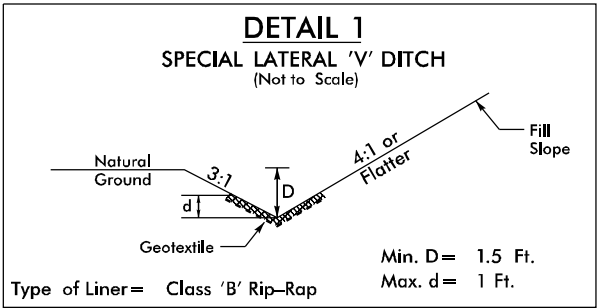


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**FORSYTH COUNTY**

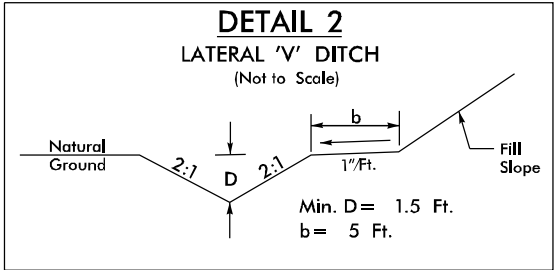
LOCATION: HOPKINS ROAD/BIG MILL FARM ROAD IN KERNERSVILLE FROM SOUTH OF US 421/NC 150 TO NC 66 (W MOUNTAIN ST)  
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, CULVERTS, RETAINING WALLS, AND STRUCTURES

WETLAND AND STREAM  
DRAFT PERMIT PACKAGE  
FEBRUARY 20, 2023

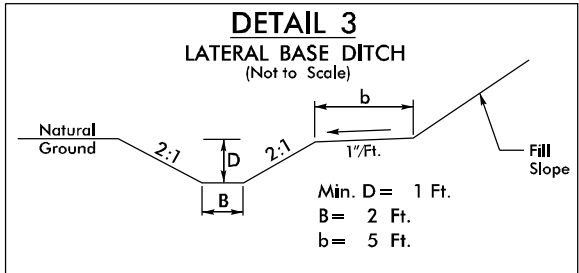
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5760	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
46381.1.1		P.E.	
46381.2.1		R/W	
46381.2.1		UTL	
46381.3.1		CONST.	



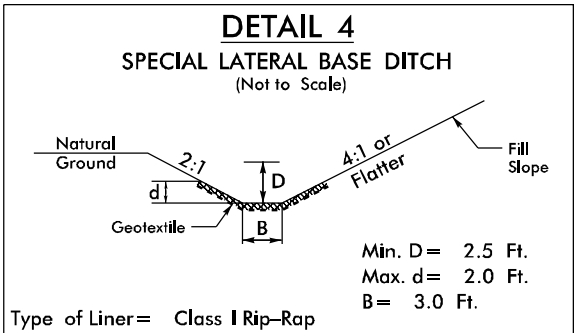
FROM STA. 60+10 TO STA. 61+50 -Y1- (RT)



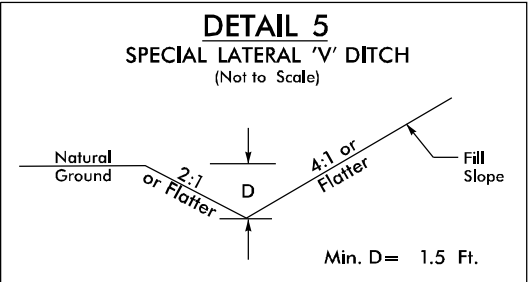
FROM STA. 58+90 TO STA. 59+50 -Y1- (LT)



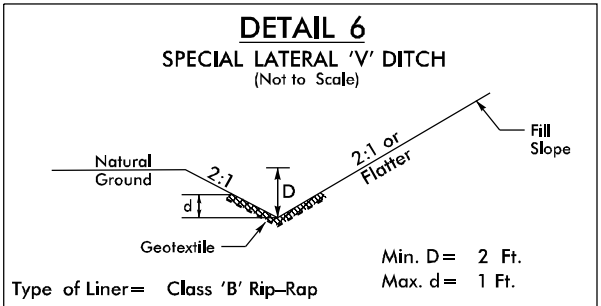
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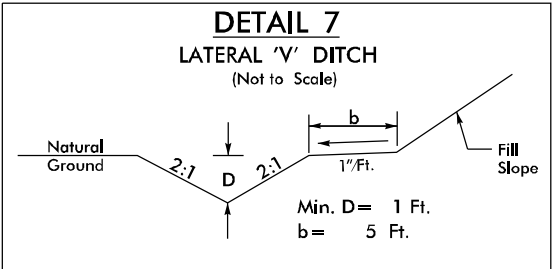
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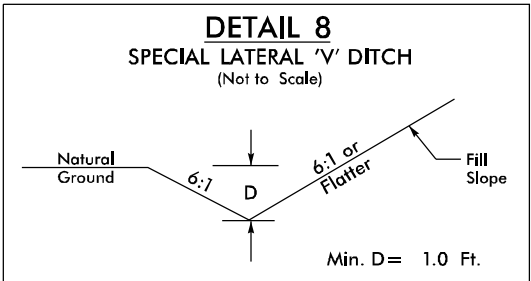
FROM STA. 29+50 TO STA. 32+00 -L- (LT)  
FROM STA. 46+00 TO STA. 47+25 -L- (RT)  
FROM STA. 51+50 TO STA. 52+10 -L- (RT)  
FROM STA. 103+30 TO STA. 106+00 -L- (LT)  
FROM STA. 111+85 TO STA. 116+50 -L- (LT)  
FROM STA. 80+50 TO STA. 80+80 -Y1- (LT)  
FROM STA. 94+00 TO STA. 97+00 -Y1- (LT)  
FROM STA. 14+57 TO STA. 15+85 -Y1RPB- (RT)  
FROM STA. 13+35 TO STA. 15+00 -Y1LPD- (LT)



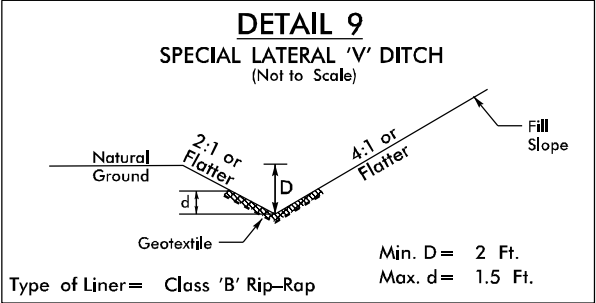
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FROM STA. 54+40 TO STA. 55+75 -L- (RT)



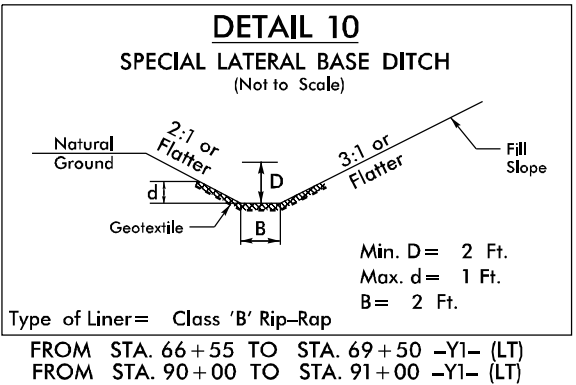
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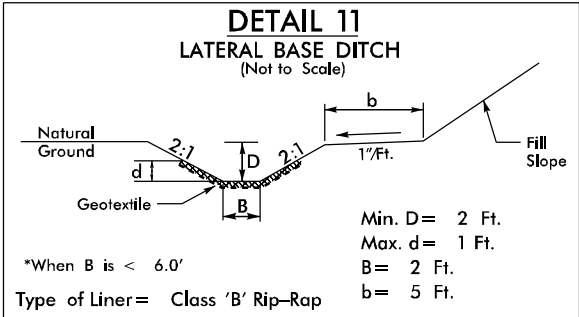
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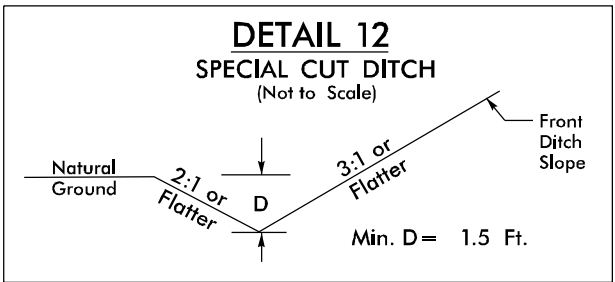
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FROM STA. 10+31.24 TO STA. 11+00 -Y1RPD- (LT)



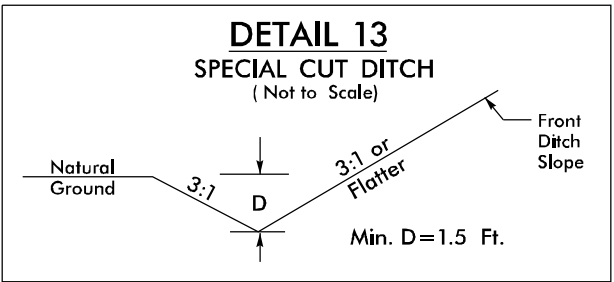
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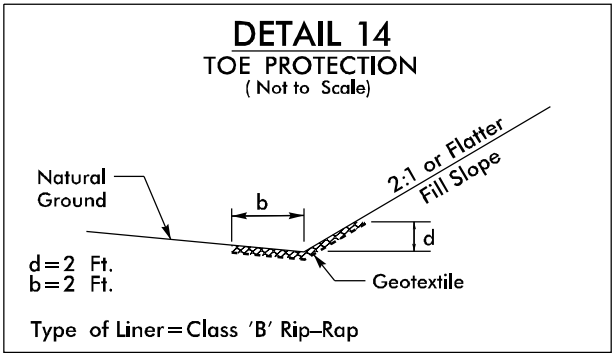
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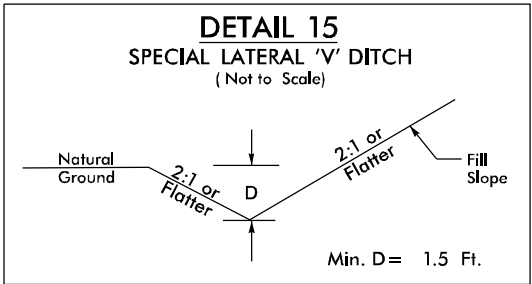
FROM STA. 47+25 TO STA. 48+25 -L- (RT)  
FROM STA. 49+00 TO STA. 51+50 -L- (RT)  
FROM STA. 55+75 TO STA. 58+00 -L- (RT)  
FROM STA. 111+65 TO STA. 114+00 -L- (RT)



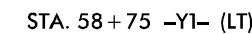
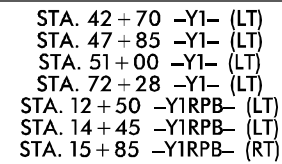
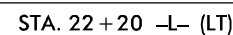
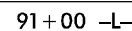
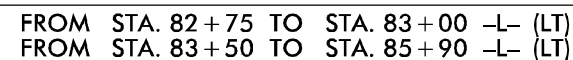
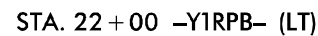
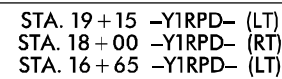
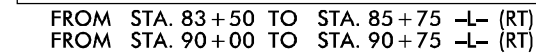
FROM STA. 43+00 TO STA. 44+50 -L- (RT)  
FROM STA. 44+50 TO STA. 45+50 -L- (RT)  
FROM STA. 14+10 TO STA. 15+75 -Y2- (LT)  
FROM STA. 15+75 TO STA. 17+00 -Y2- (LT)



FROM STA. 65+00 TO STA. 67+00 -L- (RT)  
FROM STA. 109+50 TO STA. 111+50 -L- (RT)  
FROM STA. 101+50 TO STA. 101+98 -L- (LT)  
FROM STA. 14+00 TO STA. 15+15 -Y8- (LT)  
FROM STA. 15+50 TO STA. 15+95 -Y8- (LT)  
FROM STA. 19+00 TO STA. 21+00 -Y1RPB- (LT)

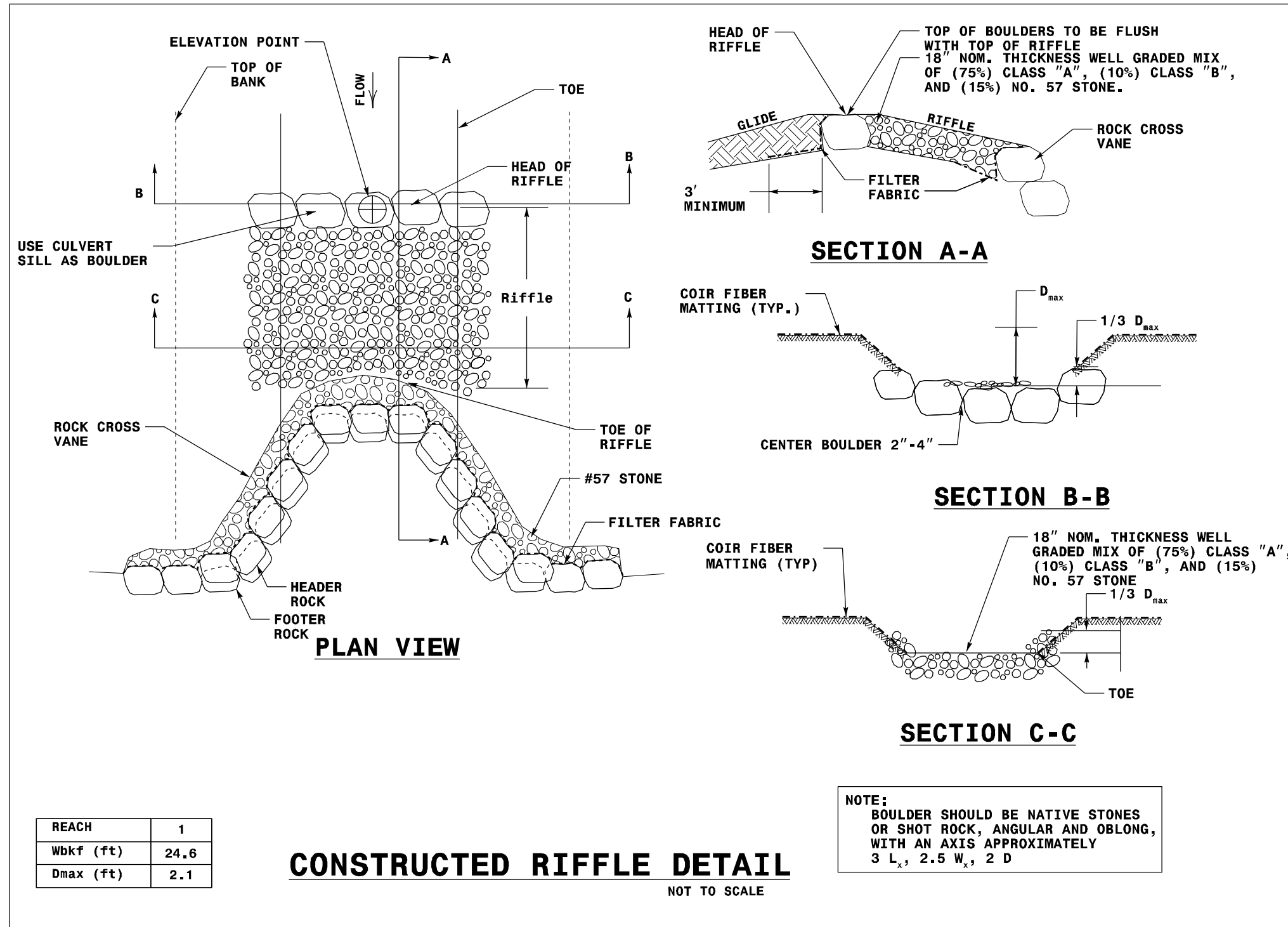


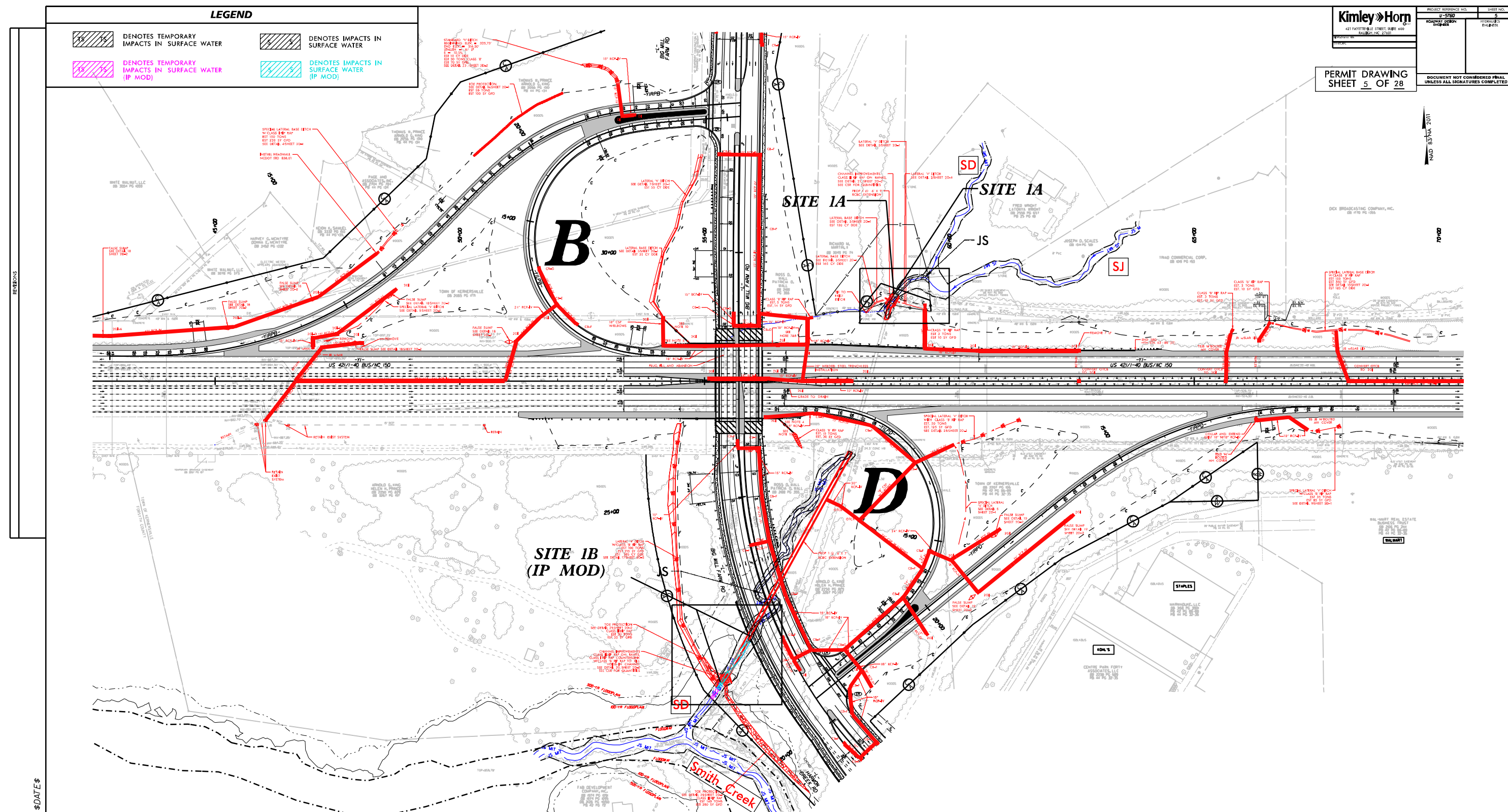
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FROM STA. 58+00 TO STA. 60+20 -L- (RT)  
FROM STA. 96+00 -L- TO STA. 98+00 -L- (RT)  
FROM STA. 13+00 TO STA. 14+00 -Y4- (LT)  
FROM STA. 19+85 TO STA. 20+00 -Y4- (RT)  
FROM STA. 10+50 TO STA. 11+50 -Y5- (RT)  
FROM STA. 12+35 TO STA. 13+50 -Y7- (RT)  
FROM STA. 14+87 TO STA. 16+70 -Y7- (RT)



NOTE:  
USE CLASS I RIP RAP IN STREAM BED  
AND SUPPLEMENT WITH CLASS B  
TO FILL VOIDS AS NECESSARY

**DETAIL 27**  
SPECIAL OUTLET PROTECTION  
(NOT TO SCALE)





LEGEND

- |   |   |
|---|---|
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER          |  DENOTES IMPACTS IN SURFACE WATER          |
|  DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD) |  DENOTES IMPACTS IN SURFACE WATER (IP MOD) |

Kimley-Horn  
421 PATTERDALE STREET, SUITE 400  
DALLAS, TEXAS 75201  
PHONE: (214) 443-1234  
FAX: (214) 443-1235  
WWW.KIMLEY-HORN.COM

PERMIT DRAWING  
SHEET 6 OF 28

PROJECT REFERENCE NO.	SHEET NO.
U-5760	6
ROADWAY DESIGN	HYDRAULICS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83 N 201°

70+00

DCX BROADCASTING COMPANY, INC.  
600 W. 10TH ST.

WALMART  
WAL-MART REAL ESTATE  
BUSINESS TRUST  
10000 W. 10TH ST.  
DALLAS, TEXAS 75227

STAPLES  
STAPLES, INC.  
10000 W. 10TH ST.  
DALLAS, TEXAS 75227

WOL'S  
CENTRE PARK FORTY  
ASSOCIATES, L.L.C.  
10000 W. 10TH ST.  
DALLAS, TEXAS 75227

Smith Creek

SITE 1B  
(IP MOD)

SITE 1A

SITE 1A

B

D

REVISIONS

\$DATE\$

5/14/99

LEGEND



DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN  
SURFACE WATER

**Kimley»Horn**

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PERMIT DRAWING  
SHEET 7 OF 28

PROJECT REFERENCE NO.

U-5760

SHEET NO.

5A

ROADWAY DESIGN  
ENGINEER

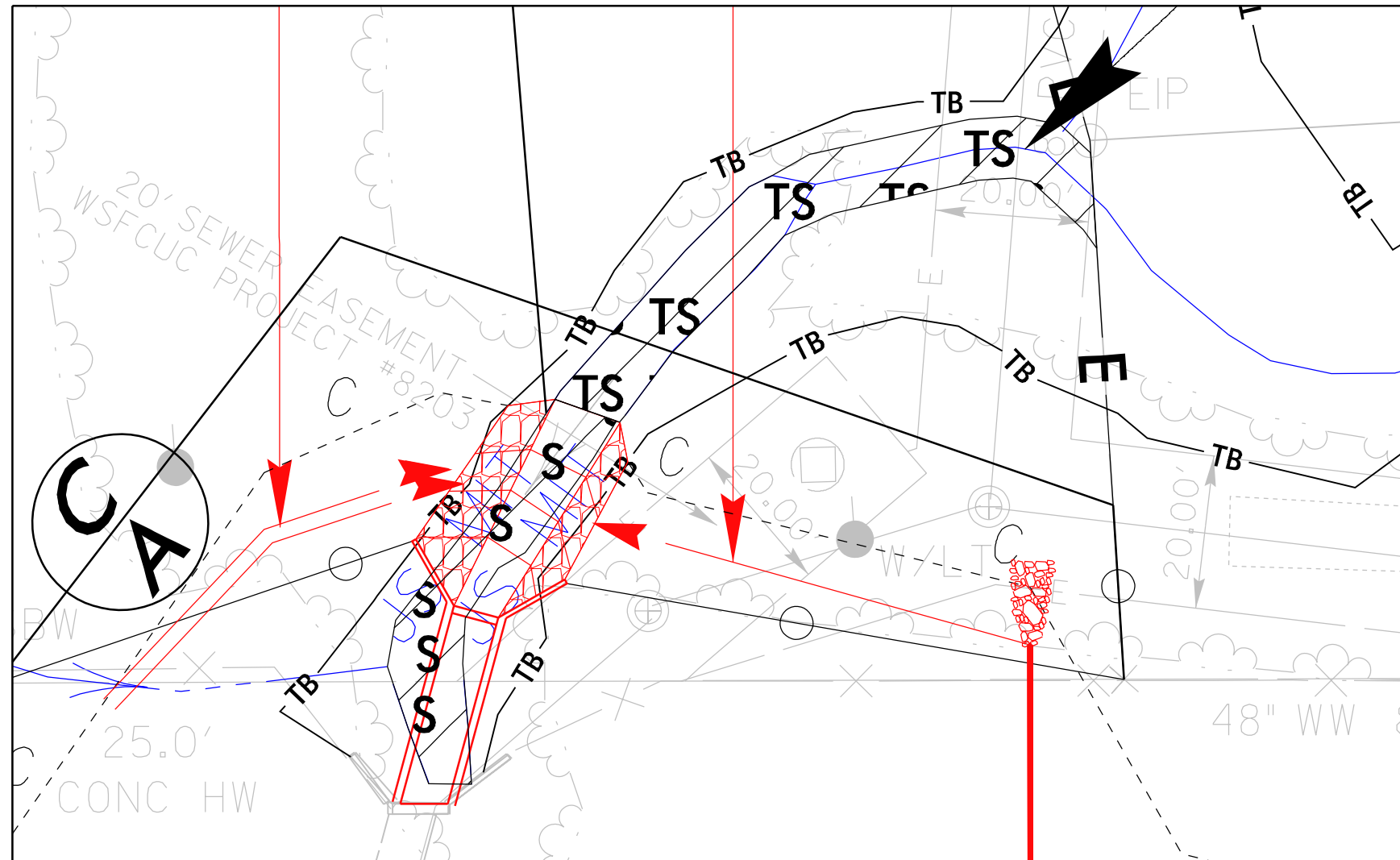
HYDRAULICS  
ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

REVISIONS

# SITE IMPACT ZOOM: 1"=20'




## DETAIL SHEET FOR SITE 1A

NAD 83/NA 2011

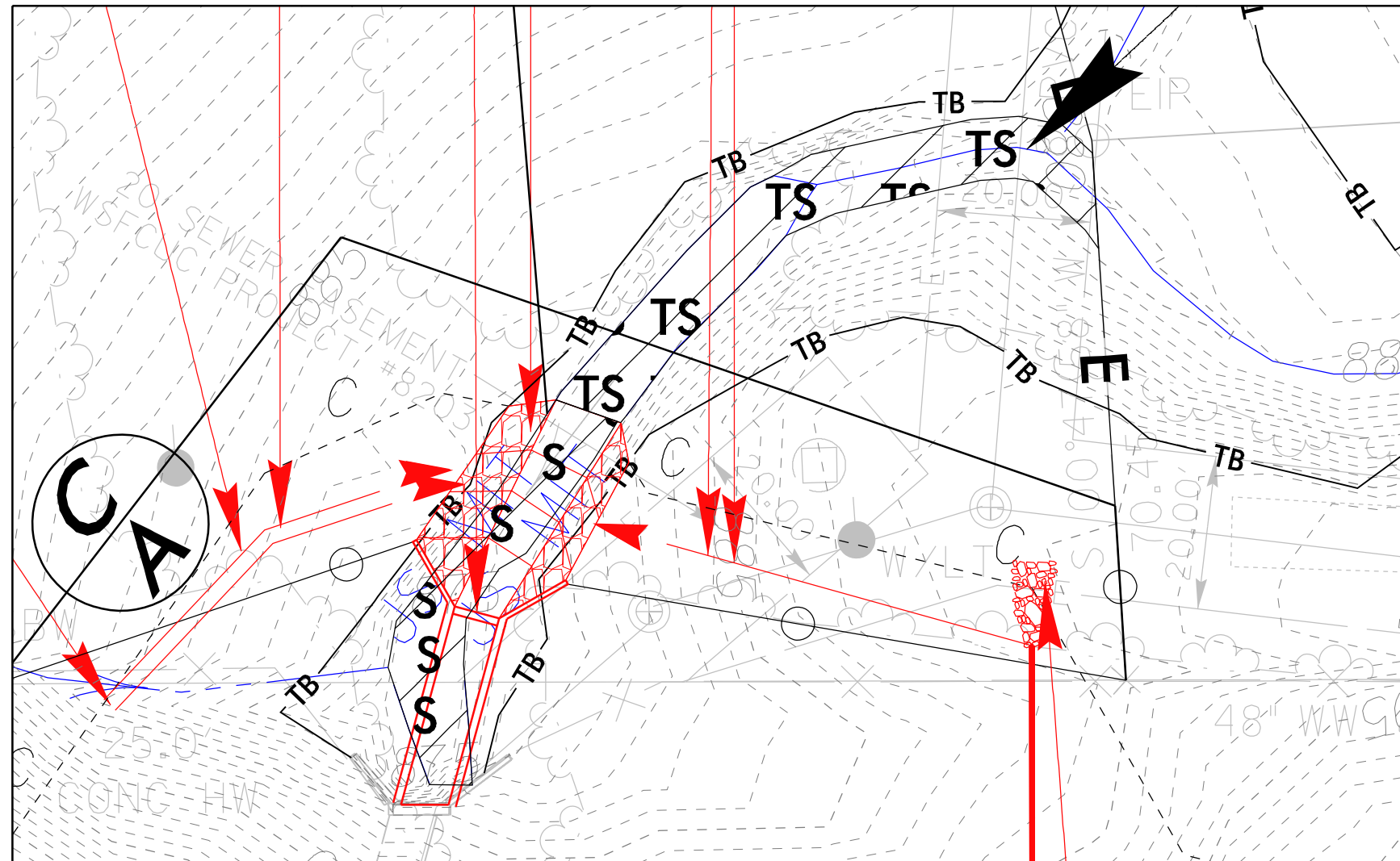
\$DATE\$

## REVISIONS

\$DATE\$

 421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC. 27601	PROJECT REFERENCE NO.		SHEET NO.
	U-5760		5A
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>INCOMPLETE PLANS</b>            DO NOT USE FOR A/W ACQUISITION         </div>		
NIGHT-TO-WAY REV. CONST. REV.			
<div style="border: 1px solid black; padding: 10px; text-align: center;">           PERMIT DRAWING            SHEET <u>8</u> OF <u>28</u> </div>			
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			

NAD 83/NA 2011

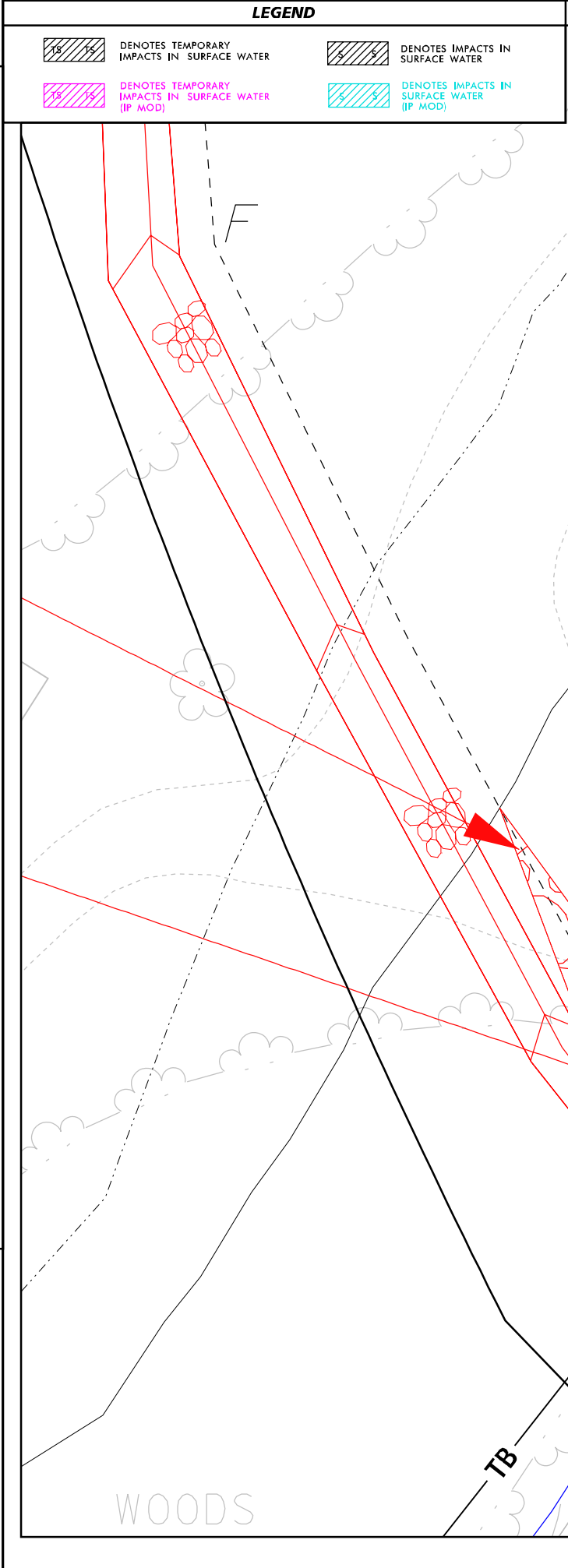


# ***DETAIL SHEET FOR SITE 1A***

5/14/99

REVISIONS

\$DATE\$



**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

ROADWAY DESIGN ENGINEER

PERMIT DRAWING  
SHEET 9 OF 28

PROJECT REFERENCE NO. U-5760	SHEET NO. 5B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR E/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011

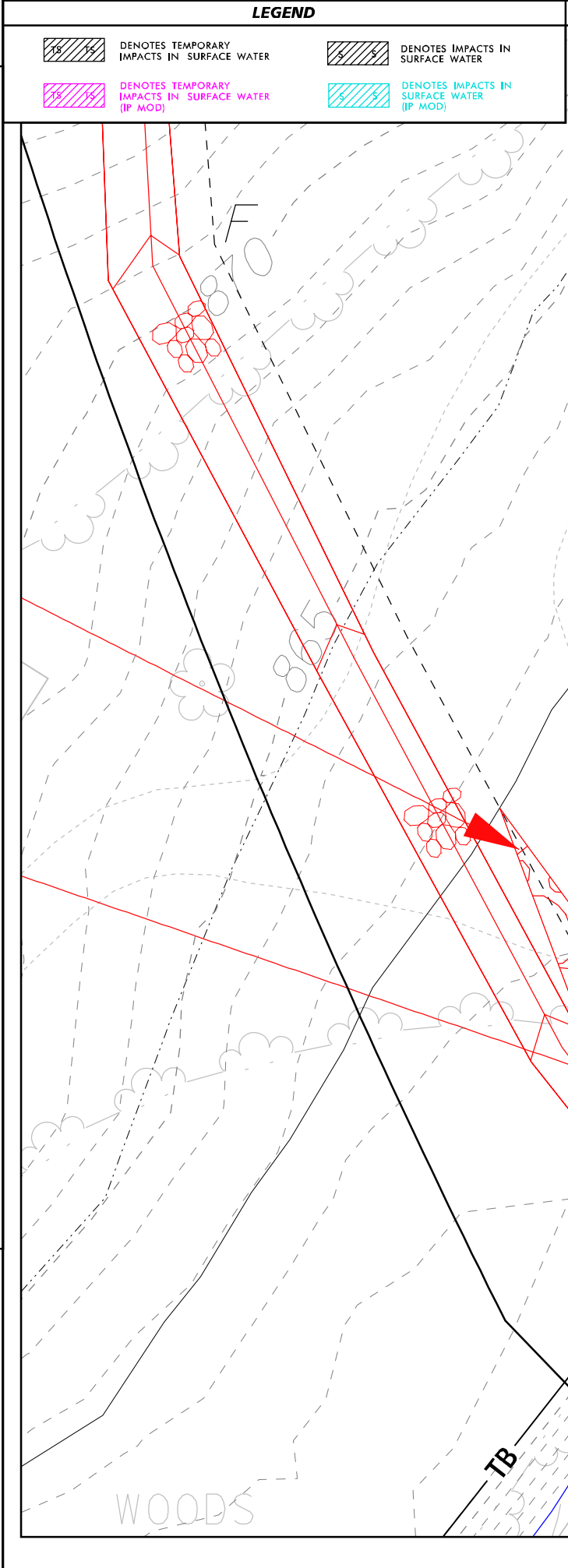
***SITE IMPACT***  
***ZOOM: 1"=20'***

***DETAIL SHEET***  
***FOR SITE 1B***  
***(IP MOD)***

5/14/99

REVISIONS

\$DATE\$



**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

ROADWAY DESIGN ENGINEER

PROJECT REFERENCE NO.  
U-5760

SHEET NO.  
5B

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

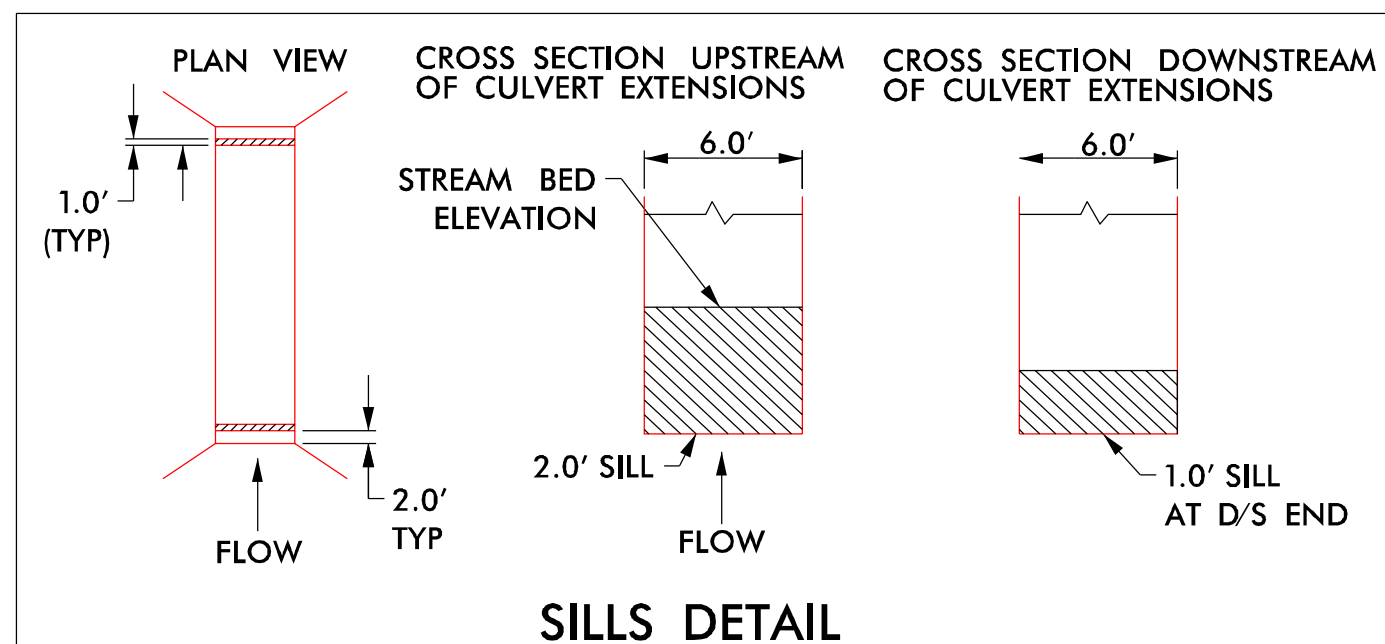
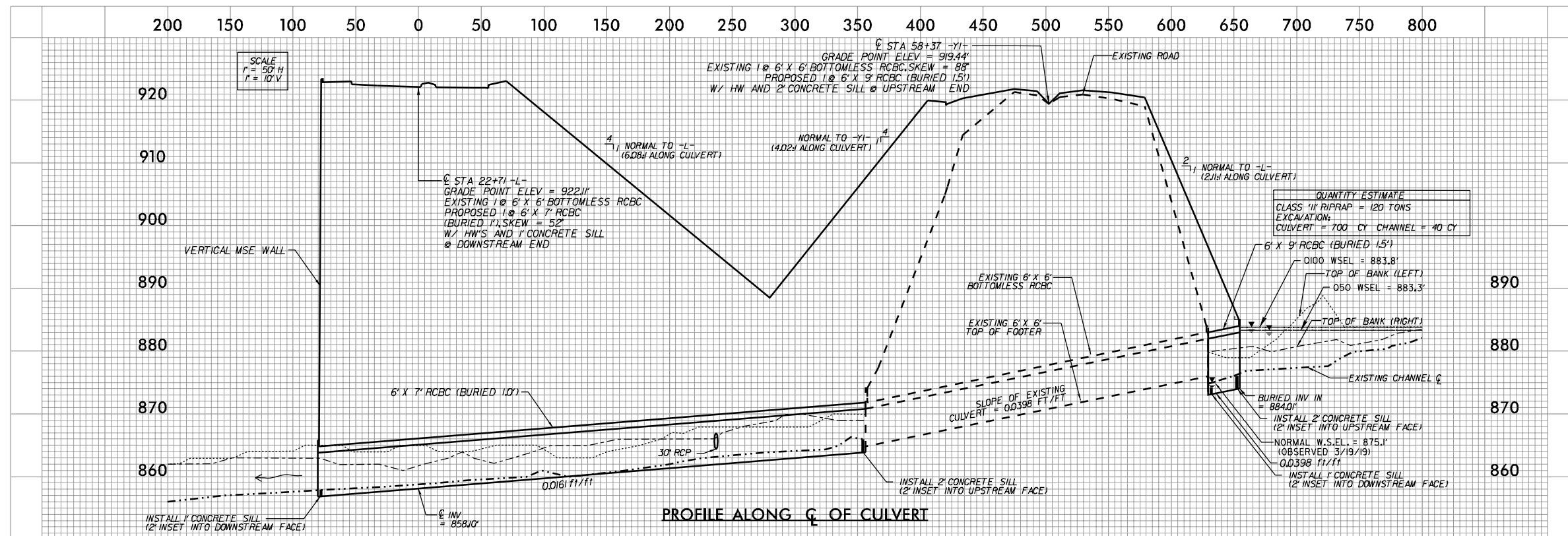
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

**SITE IMPACT**  
**ZOOM: 1"=20'**

**DETAIL SHEET**  
**FOR SITE 1B**  
**(IP MOD)**

# SITE 1A /1B – CULVERT EXTENSION







NOTE: NATIVE BED MATERIAL SHALL BE PLACED IN THE PROPOSED CULVERT EXTENSIONS BETWEEN SILLS. NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, THE NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FACILITATE ANIMAL PASSAGE. THE TOP SURFACE OF THE NATURAL STREAM BED MATERIAL SHALL BE PLACED AND LEVELED TO A FLAT SURFACE TO ALLOW FOR ANIMAL PASSAGE. NATIVE MATERIAL AND RIP RAP ARE SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

5/14/99

REVISIONS

ROW REV - 5/12/22 - ADJUSTED PUE ON PARCELS 40, 42, 43, 44, 46, 48 AND 50 - JWM  
ROW REV - 8/11/22 - EXPANDED TCE ON PARCEL 43 - JWM

\$DATE\$

LEGEND			
	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING		DENOTES EXCAVATION IN WETLAND

ANDREW CONEY  
BECKY CONEY  
DB 2603 PG 1157  
DB 1838 PG 3536  
PB 37 PG 150

EDMON D. GARMON  
LESLEY GARMON  
DB 3435 PG 3582

JAMES K. DEAN  
MARY LOU DEAN  
DB 1774 PG 2465

STEPHEN M. PEDDYCORD  
MELODY M. PEDDYCORD  
DB 3294 PG 1795

DANIEL GOLDNER  
DB 2873 PG 2474

W. AVALON POTTS  
DB 1969 PG 949  
DB 1838 PG 3536  
PB 37 PG 150

JOSE V. PAREDES  
DB 3444 PG 2702

ISFBARN

VAR. GR

ORNA MTL STATUE

ISBKD

WOODS

CONC STEPS

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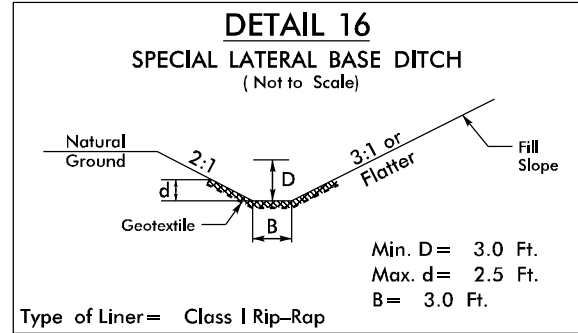
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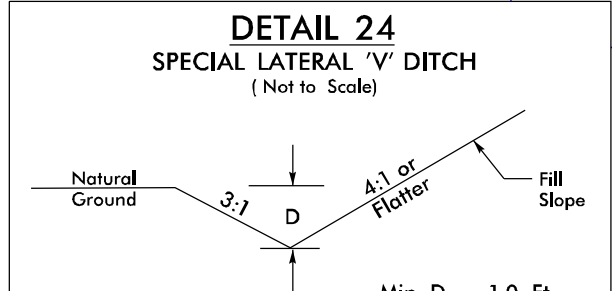
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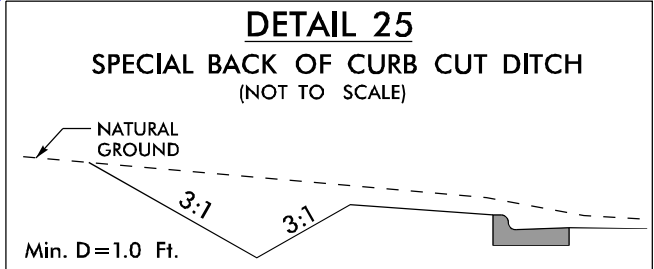
REMOVE



FROM STA. 83+50 TO STA. 85+75 -L- (RT)  
FROM STA. 90+00 TO STA. 90+75 -L- (RT)



FROM STA. 80+50 TO STA. 82+30 -L- (LT)



FROM STA. 82+30 TO STA. 85+90 -L- (LT)

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

ROADWAY DESIGN ENGINEER

PERMIT DRAWING  
SHEET 12 OF 28

PROJECT REFERENCE NO.		SHEET NO.	
U-5760		9	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

44 HUNTER P. COFER  
DB 3333 PG 2638

SEE SHEET 19 FOR -L- PROFILE  
SEE SHEET 29 FOR -DRW2-, -DRW3-  
AND -DRW4- PROFILES

5/14/99

REVISIONS

ROW REV - 5/12/22 - ADJUSTED PUE ON PARCELS 40, 42, 43, 44, 46, 48 AND 50 - JWM  
ROW REV - 8/11/22 - EXPANDED TCE ON PARCEL 43 - JWM

\$DATE\$

DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

ANDREW CONEY  
BECKY CONEY  
DB 2603 PG 1157  
DB 1838 PG 3536  
PB 37 PG 150

EDMON D. GARMON  
LESLIE GARMON  
DB 3435 PG 3582

JAMES K. DEAN  
MARY LOU DEAN  
DB 1774 PG 2465

STEPHEN M. PEDDYCORD  
MELODY M. PEDDYCORD  
DB 3294 PG 1795

DANIEL GOLDNER  
DB 2873 PG 2474

W. AVALON POTT  
DB 1969 PG 919  
DB 1838 PG 3536  
PB 37 PG 150

JOSE V. PAREDES  
DB 3444 PG 2702

ISFBARN

VARLOS

ORNAMENTAL MTL STATUE

ISBKO

HOPKINS RD  
(SR 2649)

MATCHLINE - L- STA 73+00 (SEE SHEET 8)

MATCHLINE - L- STA 85+00 (SEE SHEET 10)

2:1

d1

Geotextile

B

D

3:1 or Flatter

Fill Slope

Min. D = 3.0 Ft.

Max. d = 2.5 Ft.

B = 3.0 Ft.

Type of Liner = Class I Rip-Rap

FROM STA. 83+50 TO STA. 85+75 -L- (RT)

FROM STA. 90+00 TO STA. 90+75 -L- (RT)

3:1

D

4:1 or Flatter

Fill Slope

Min. D = 1.0 Ft.

FROM STA. 80+50 TO STA. 82+30 -L- (LT)

3:1

3:1

NATURAL GROUND

Min. D = 1.0 Ft.

FROM STA. 82+30 TO STA. 85+90 -L- (LT)

**Kimley»Horn**

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 13 OF 28

PROJECT REFERENCE NO.	SHEET NO.
U-5760	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011

SITE 2A

SITE 3

MATCHLINE - SEE SHEET 10  
FOR SITE CONTINUATION  
SEE PERMIT SHEETS 13  
AND 14 FOR BLOWUPS

44 HUNTER P. COFER  
DB 3333 PG 2638

SEE SHEET 19 FOR -L- PROFILE  
SEE SHEET 29 FOR -DRW2-, -DRW3-  
AND -DRW4- PROFILES

5/14/99

LEGEND



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES MECHANIZED CLEARING



DENOTES EXCAVATION IN WETLAND

**Kimley»Horn**

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

9A

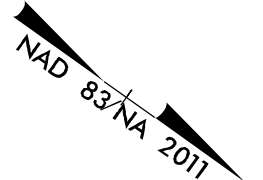
ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

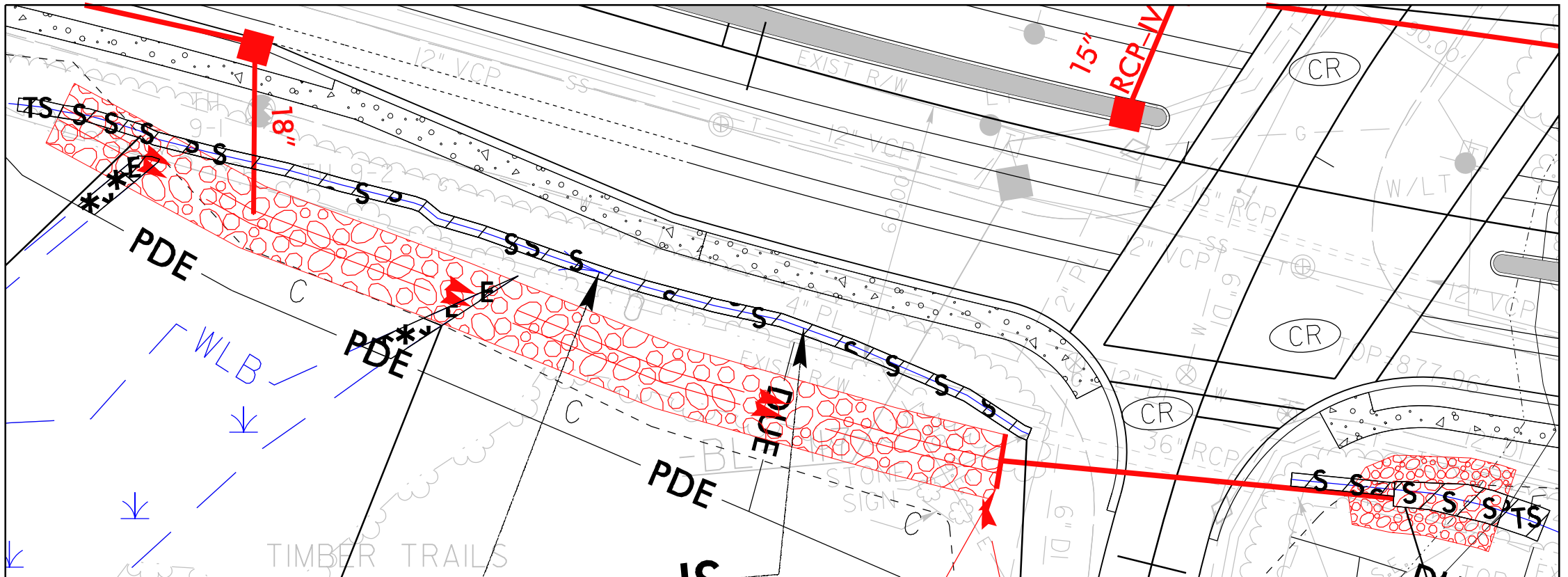
**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING  
SHEET 14 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



# SITE IMPACT ZOOM: 1"=30'



## DETAIL SHEET FOR SITES 2A, 2B, 3

REVISIONS

\$DATE\$

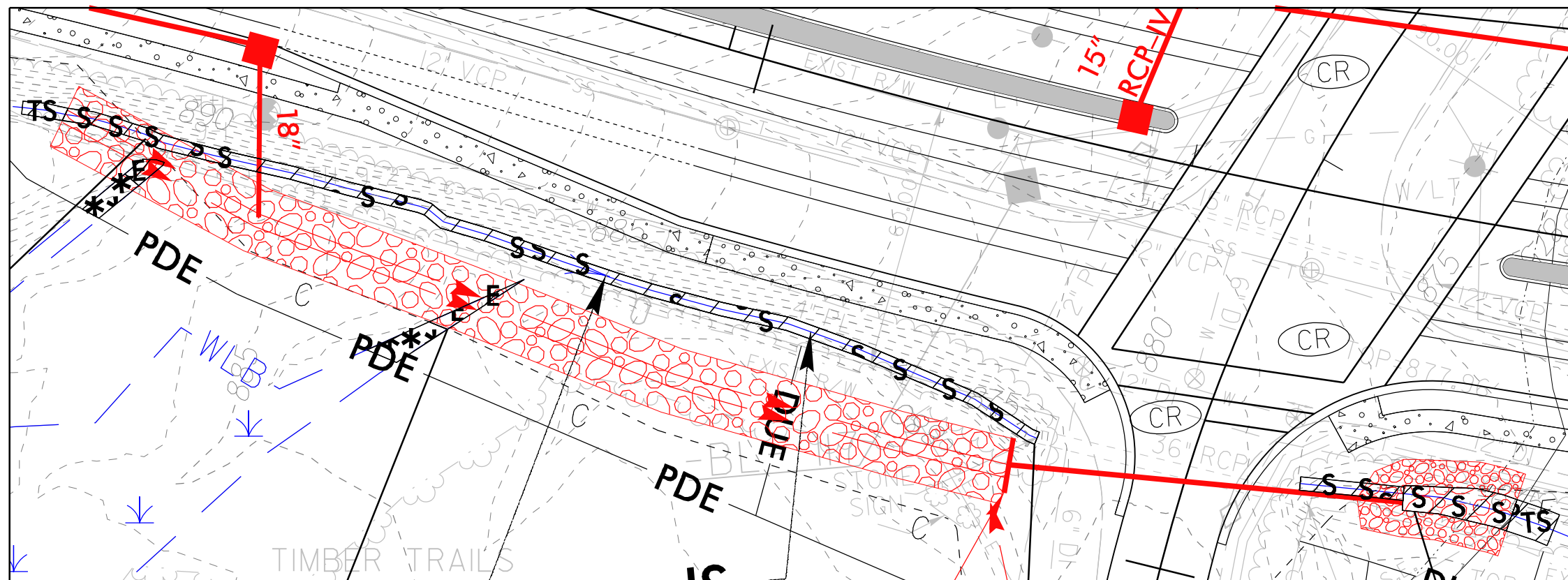
## REVISIONS

\$DATE\$

<h1>Kimley»Horn</h1> <p>421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601</p> <p>©2018</p>	PROJECT REFERENCE NO.		SHEET NO.	
	U-5760		9A	
	ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
	<div style="border: 2px solid black; padding: 10px; text-align: center;"> <b>INCOMPLETE PLANS</b>              DO NOT USE FOR U/W ACQUISITION           </div>			
<div style="display: flex; justify-content: space-between;"> <div>             BENCH-MARK REVISION               CONST. REV.           </div> <div>             PERMIT DRAWING              SHEET <u>15</u> OF <u>28</u> </div> </div>				
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>				

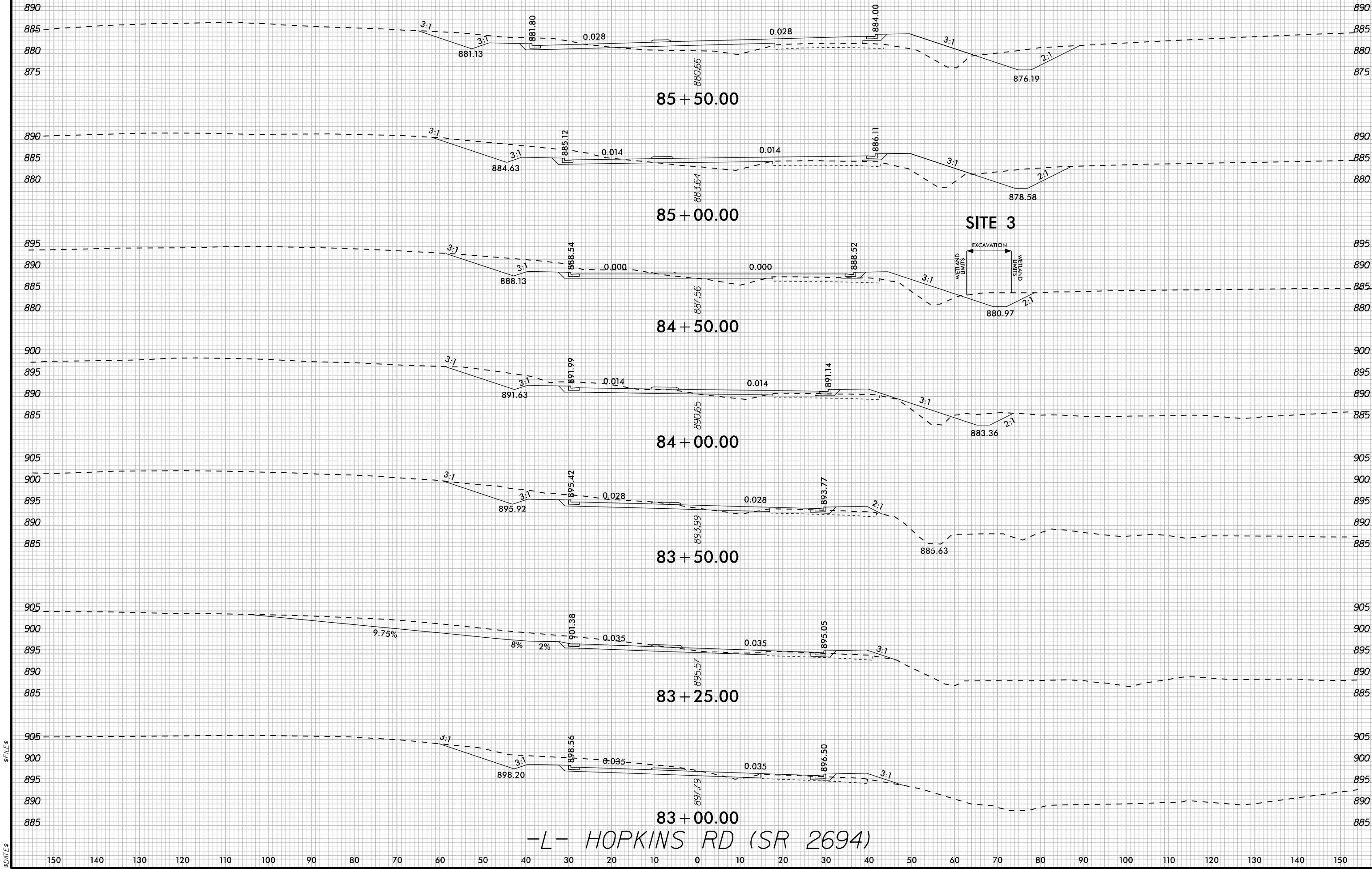
NAD 83/NA 2011

***SITE IMPACT ZOOM: 1"=30'***



# ***DETAIL SHEET FOR SITES 2A, 2B, 3***

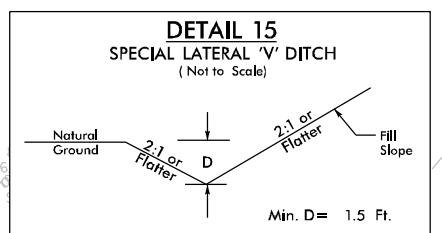
8/23/99



\$DATE\$  
\$FILE\$

**LEGEND**

	DENOTES IMPACTS IN SURFACE WATER		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND		DENOTES MECHANIZED CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD)		DENOTES IMPACTS IN SURFACE WATER (IP MOD)



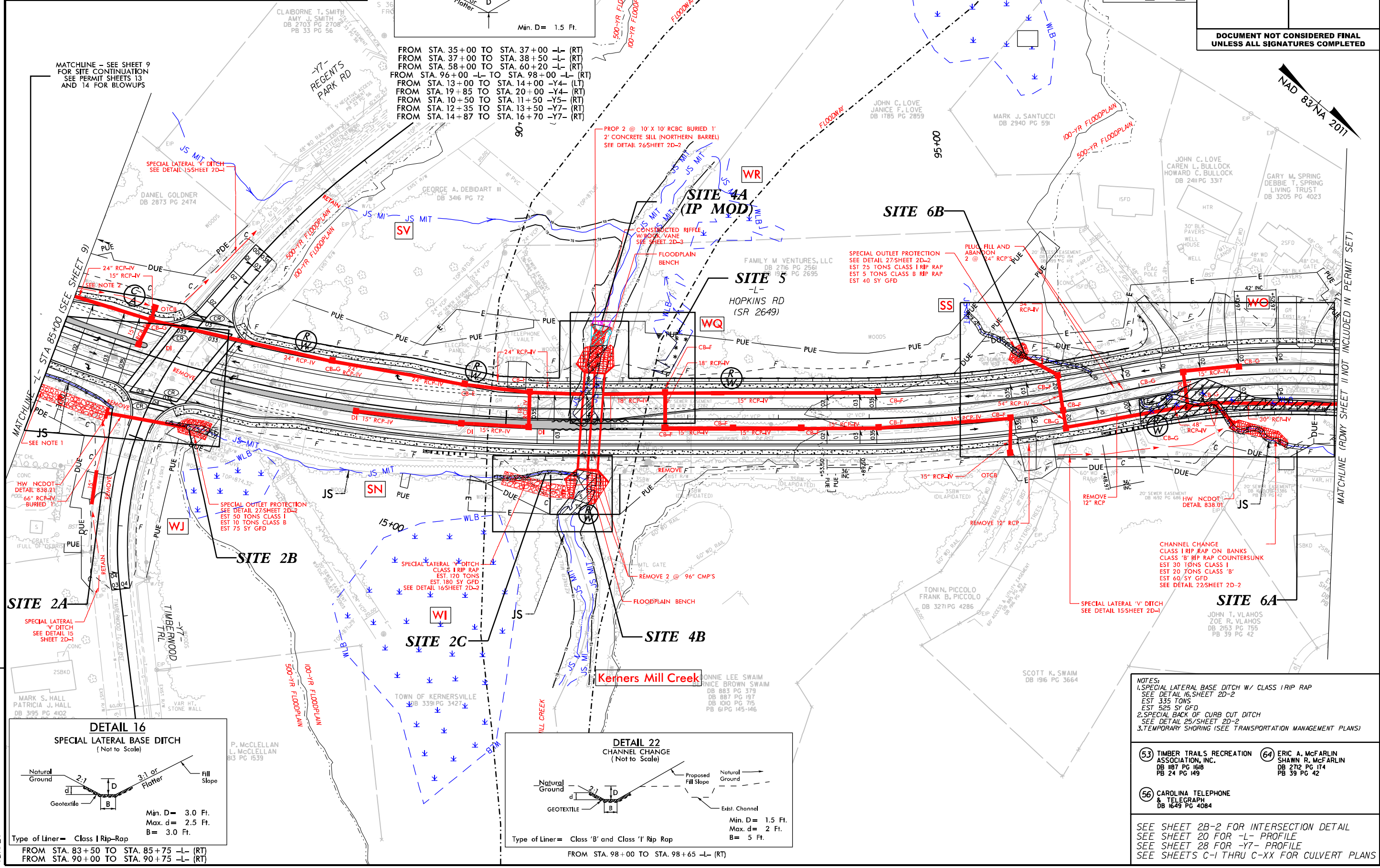
**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PROJECT REFERENCE NO. **U-5760**  
ROADWAY DESIGN ENGINEER

SHEET NO. **10**  
HYDRAULICS ENGINEER

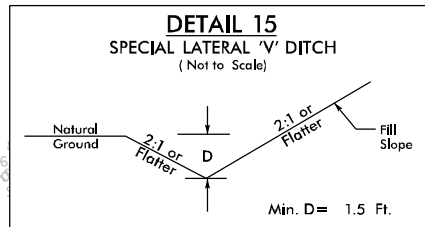
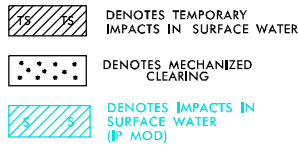
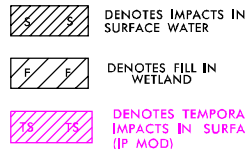
PERMIT DRAWING  
SHEET 17 OF 28

PROJECT REFERENCE NO.	SHEET NO.
U-5760	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/99

LEGEND



**Kimley»Horn**

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

PERMIT DRAWING  
SHEET 18 OF 28

PROJECT REFERENCE NO.	SHEET NO.
U-5760	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE - SEE SHEET 9  
FOR SITE CONTINUATION  
SEE PERMIT SHEETS 13  
AND 14 FOR BLOWUPS

FROM STA. 35+00 TO STA. 37+00 -L- (RT)  
FROM STA. 37+00 TO STA. 38+50 -L- (RT)  
FROM STA. 58+00 TO STA. 60+20 -L- (RT)  
FROM STA. 96+00 -L- TO STA. 98+00 -L- (RT)  
FROM STA. 13+00 TO STA. 14+00 -Y4- (LT)  
FROM STA. 19+85 TO STA. 20+00 -Y4- (RT)  
FROM STA. 10+50 TO STA. 11+50 -Y5- (RT)  
FROM STA. 12+35 TO STA. 13+50 -Y7- (RT)  
FROM STA. 14+87 TO STA. 16+70 -Y7- (RT)

PROP 2 @ 10' X 10' RCBS BURIED 1'  
2" CONCRETE SILL (NORTHERN BARREL)  
SEE DETAIL 26/SHEET 2D-2

**SITE 4A**  
(IP MOD)

**SITE 5**  
-L-  
HOPKINS RD  
(SR. 2649)

**SITE 6B**

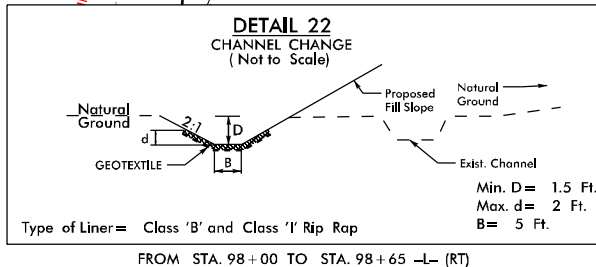
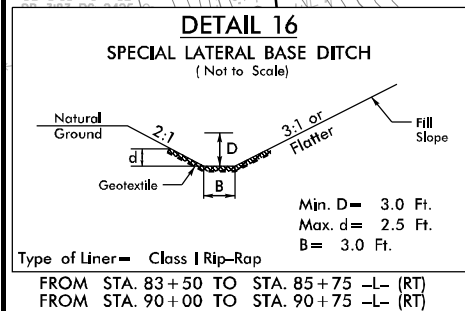
**SITE 2B**

**SITE 2A**

**SITE 2C**

**SITE 4B**

**SITE 6A**



NOTES:  
1. SPECIAL LATERAL BASE DITCH W/ CLASS I RIP RAP  
SEE DETAIL 16, SHEET 2D-2  
EST. 335 TONS  
EST. 525 SY GFD  
2. SPECIAL BACK OF CURB CUT DITCH  
SEE DETAIL 25/SHEET 2D-2  
3. TEMPORARY SHORING (SEE TRANSPORTATION MANAGEMENT PLANS)

(53) TIMBER TRAILS RECREATION ASSOCIATION, INC.  
DB 807 PG 160  
PB 24 PG 149  
(64) ERIC A. McFARLIN  
SHAWN R. McFARLIN  
DB 2712 PG 174  
PB 39 PG 42  
(56) CAROLINA TELEPHONE & TELEGRAPH  
DB 1649 PG 4084

SEE SHEET 2B-2 FOR INTERSECTION DETAIL  
SEE SHEET 20 FOR -L- PROFILE  
SEE SHEET 28 FOR -Y7- PROFILE  
SEE SHEETS C-1 THRU C-XX FOR CULVERT PLANS

5/14/99

LEGEND



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

10A

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

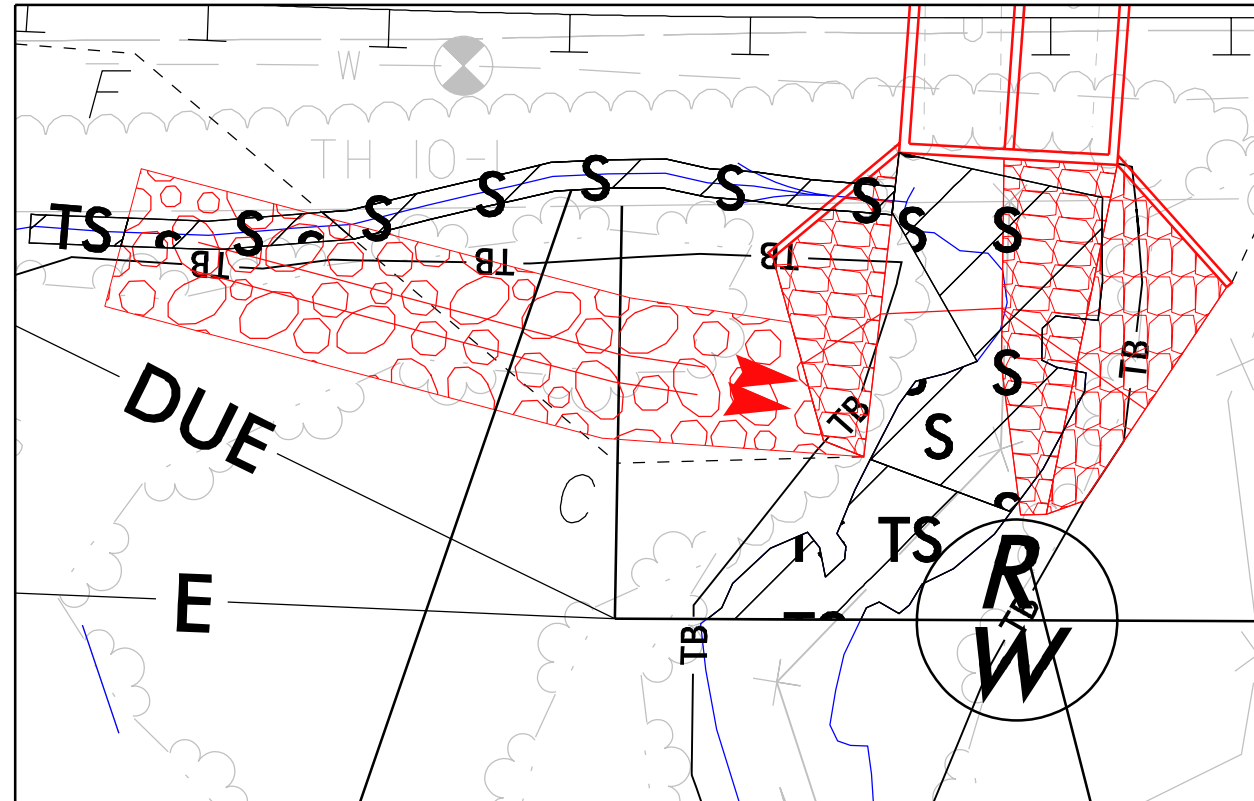
INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
SHEET 19 OF 28

NAD 83/NA 2011

**SITE IMPACT ZOOM: 1"=20'**



**DETAIL SHEET FOR SITES 2C, 4B**

REVISIONS

\$DATE\$

5/14/99

LEGEND



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

10A

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

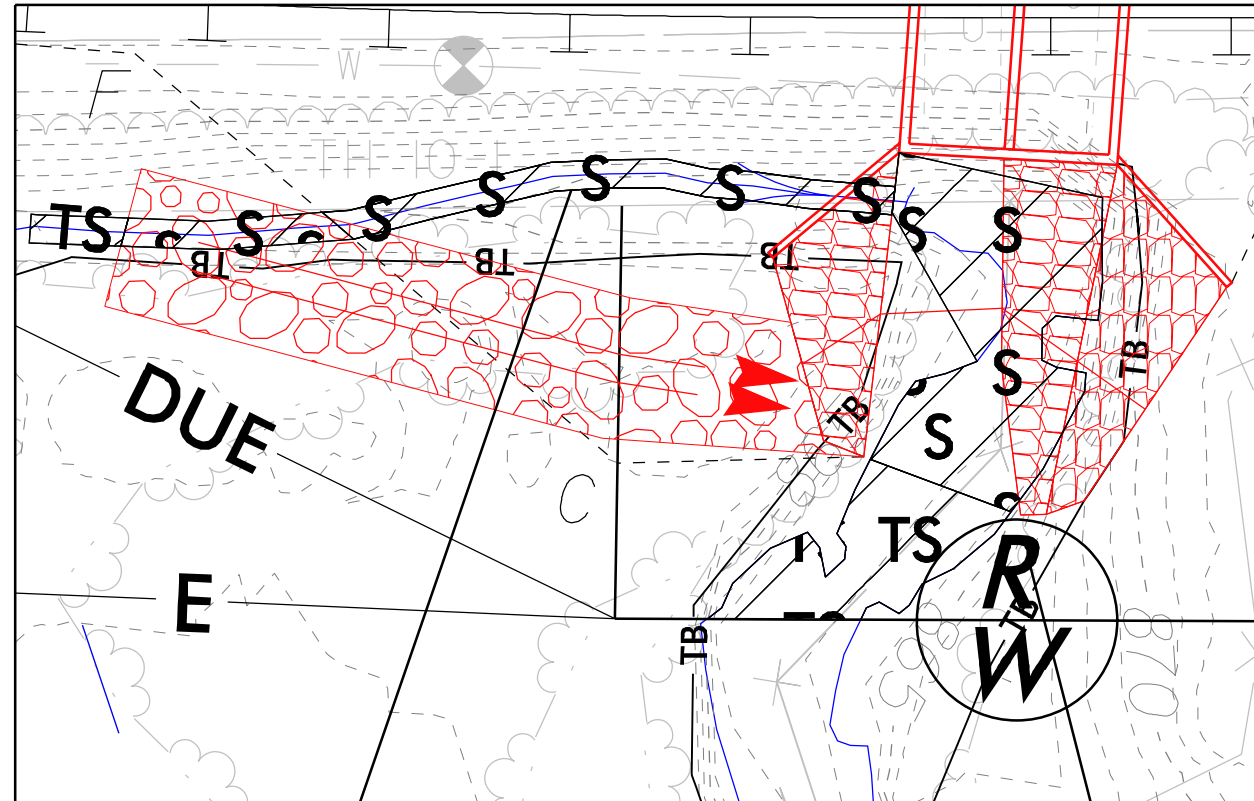
INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING  
SHEET 20 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

**SITE IMPACT ZOOM: 1"=20'**



**DETAIL SHEET FOR SITES 2C, 4B**

REVISIONS

\$DATE\$

5/14/99

LEGEND



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD)



DENOTES IMPACTS IN SURFACE WATER (IP MOD)

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

10B

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

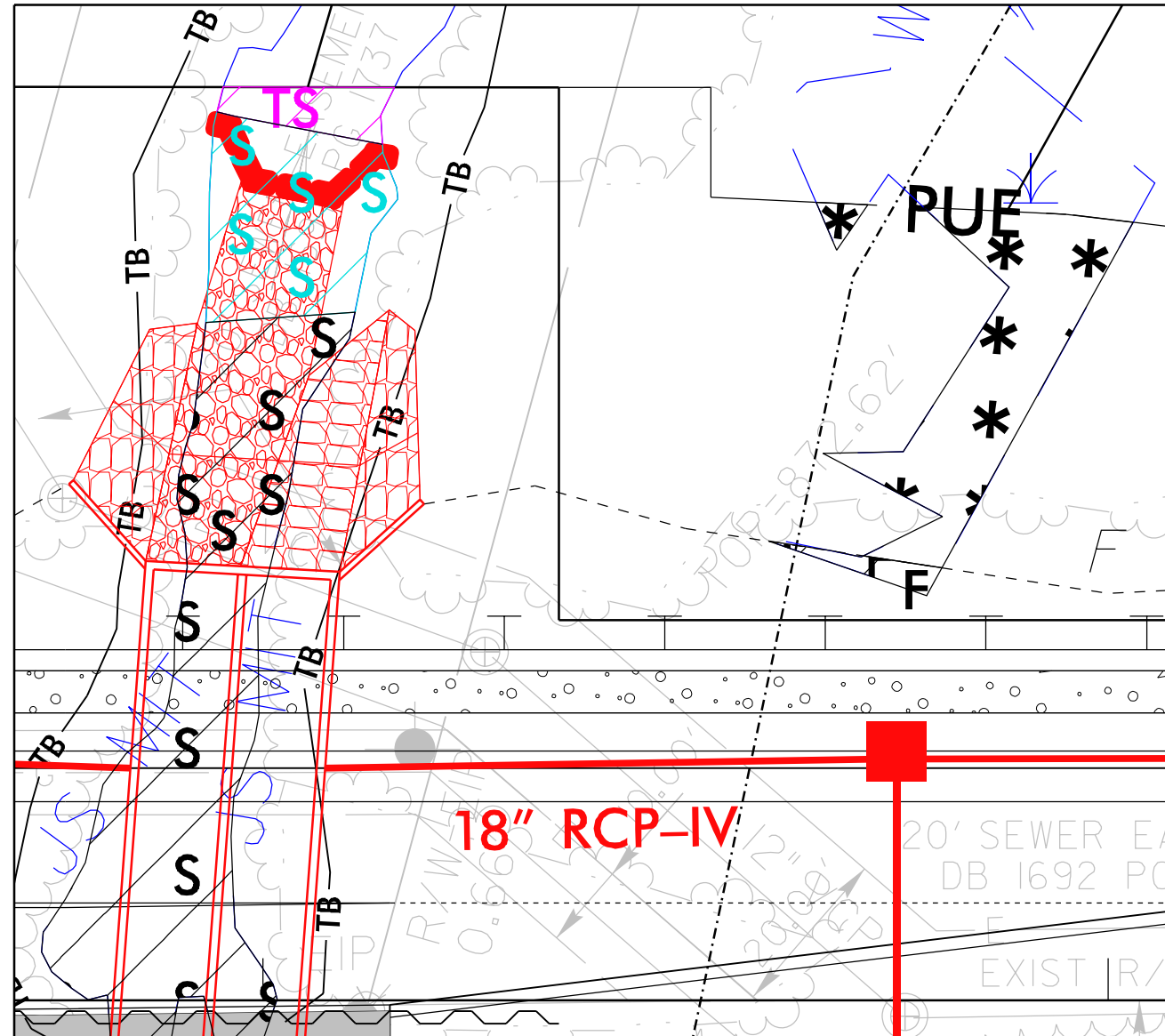
INCOMPLETE PLANS  
DO NOT USE FOR E/W ACQUISITION

PERMIT DRAWING  
SHEET 21 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

**SITE IMPACT ZOOM: 1"=20'**



**DETAIL SHEET FOR SITES 4A, 5  
(IP MOD)**

REVISIONS

\$DATE\$

5/14/99

LEGEND



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES TEMPORARY IMPACTS IN SURFACE WATER (IP MOD)



DENOTES IMPACTS IN SURFACE WATER (IP MOD)

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

U-5760

SHEET NO.

10B

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

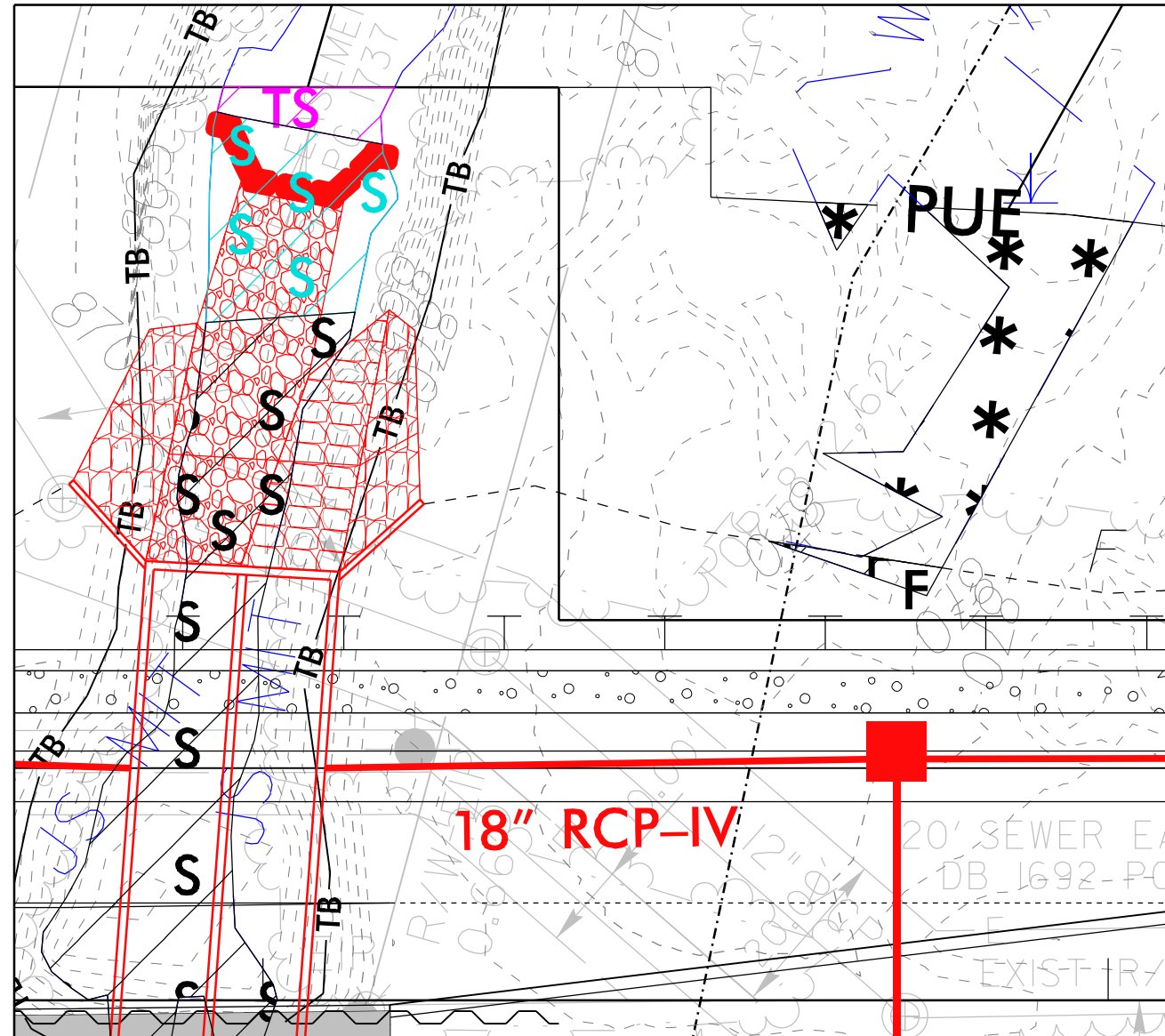
INCOMPLETE PLANS  
DO NOT USE FOR E/W ACQUISITION

PERMIT DRAWING  
SHEET 22 OF 28

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

**SITE IMPACT ZOOM: 1"=20'**



**DETAIL SHEET FOR SITES 4A, 5  
(IP MOD)**

REVISIONS

\$DATE\$

5/14/99

REVISIONS

\$DATE\$

**Kimley»Horn**  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

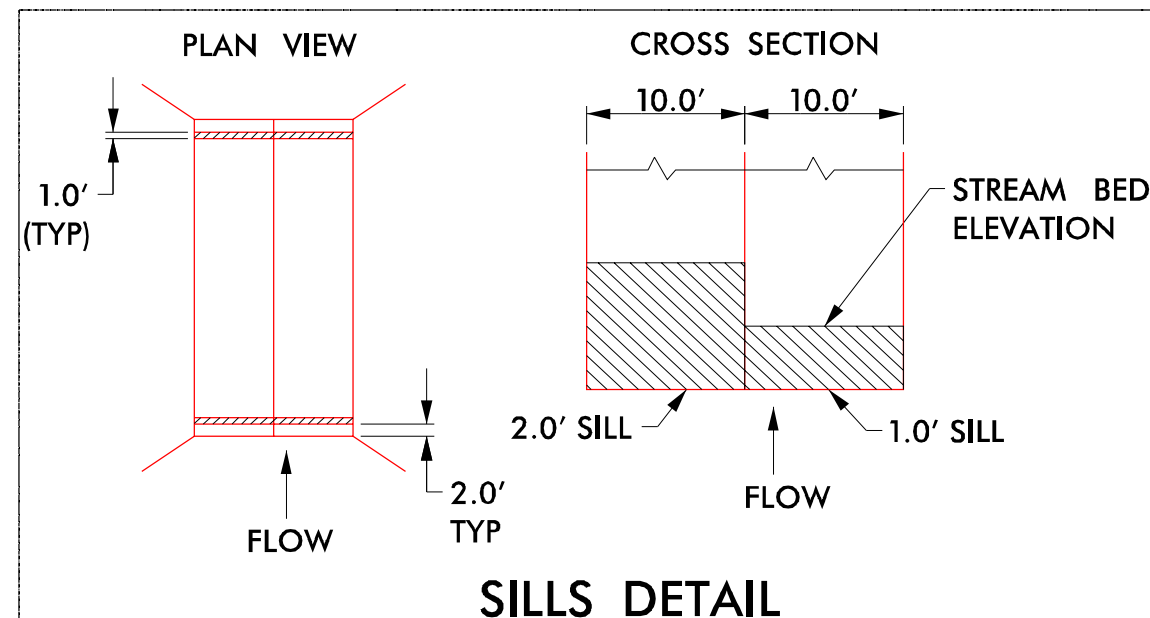
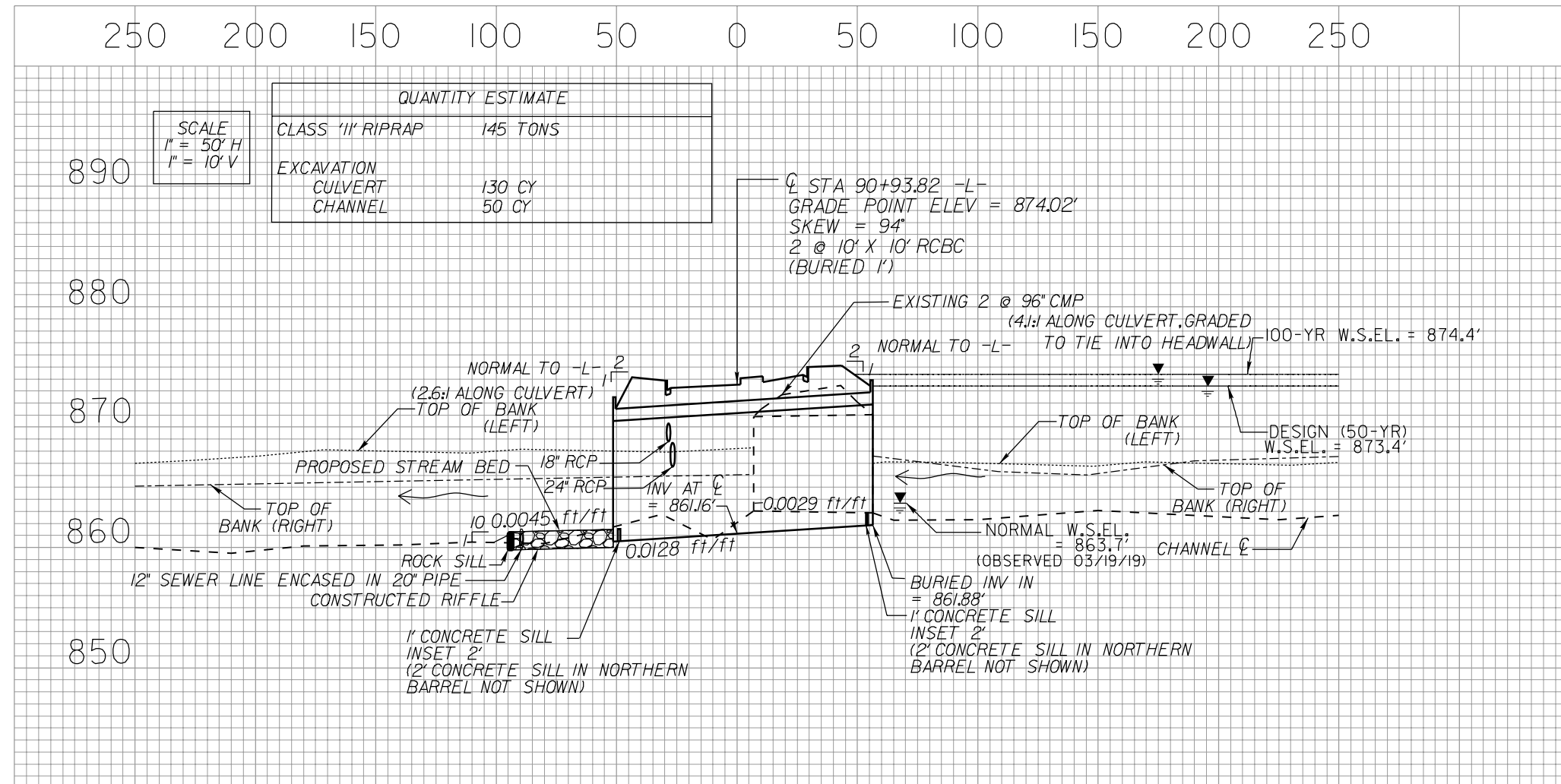
PROJECT REFERENCE NO.  
U-5760

ROADWAY DESIGN  
ENGINEER

SHEET NO.  
HYDRAULICS  
ENGINEER

PERMIT DRAWING  
SHEET 23 OF 28

# SITE 4A /4B – CULVERT REPLACEMENT



NOTE: FOR CUT CONDITION, USE CLASS II RIP RAP FLOODPLAIN BENCH BORDER WITH NATURAL GROUND COVERED WITH COIR FIBER MAT INSIDE BORDER. IN FILL CONDITION, USE CLASS II RIP RAP FILL THROUGHOUT WITH NATIVE BED MATERIAL FILLING THE VOIDS ON TOP.

NOTE: NATIVE BED MATERIAL SHALL BE PLACED BETWEEN THE SILLS IN THE LOW FLOW CULVERT. NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, THE NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FACILITATE ANIMAL PASSAGE. THE TOP SURFACE OF THE NATURAL STREAM BED MATERIAL SHALL BE PLACED AND LEVELED TO A FLAT SURFACE TO ALLOW FOR ANIMAL PASSAGE. THE HIGH FLOW BARRELS SHALL BE BACK FILLED WITH NATIVE MATERIAL AND/OR RIP RAP. NATIVE MATERIAL AND RIP RAP ARE SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

5/14/99

LEGEND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601

ROADWAY DESIGN  
ENGINEER

SHEET NO.

10C

U-5760

ROADWAY DESIGN  
ENGINEER

HYDRAULICS  
ENGINEER

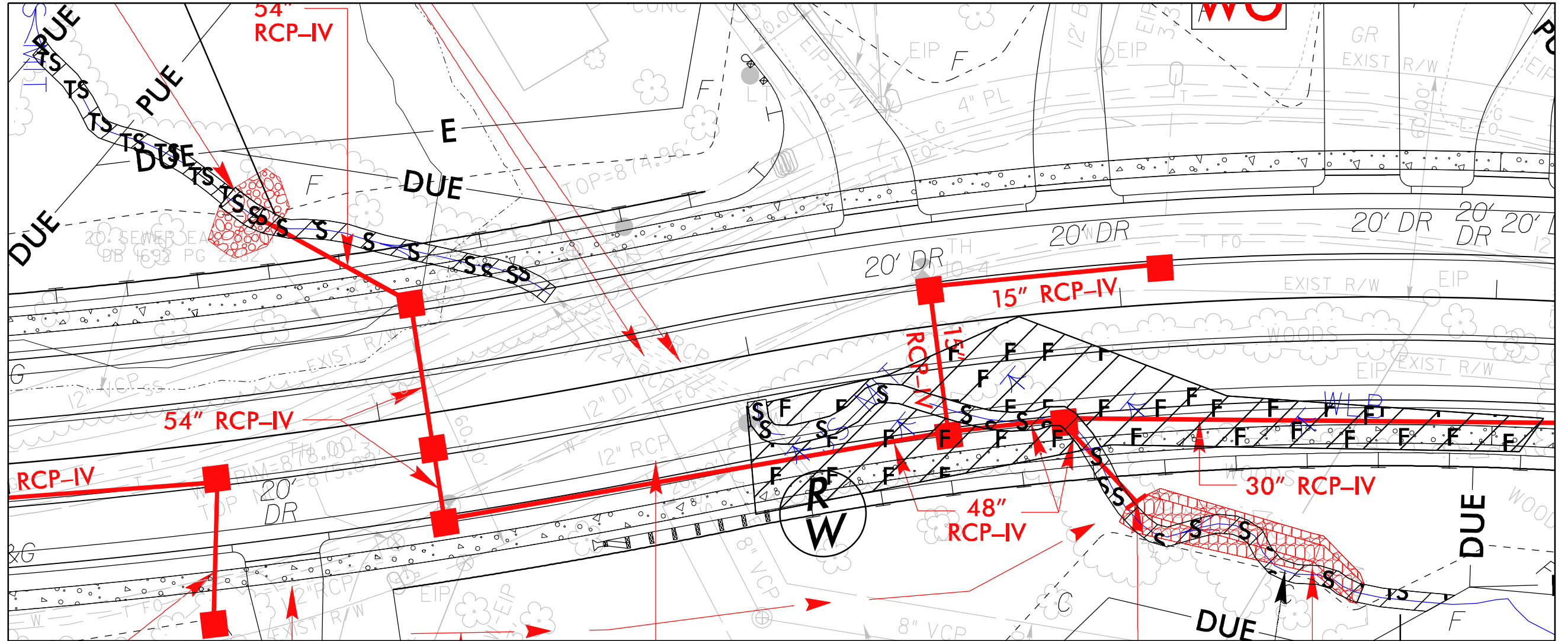
INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
SHEET 24 OF 28

NAD 83/NA 2011


# SITE IMPACT ZOOM: 1"=30'



## DETAIL SHEET FOR SITES 6A, 6B

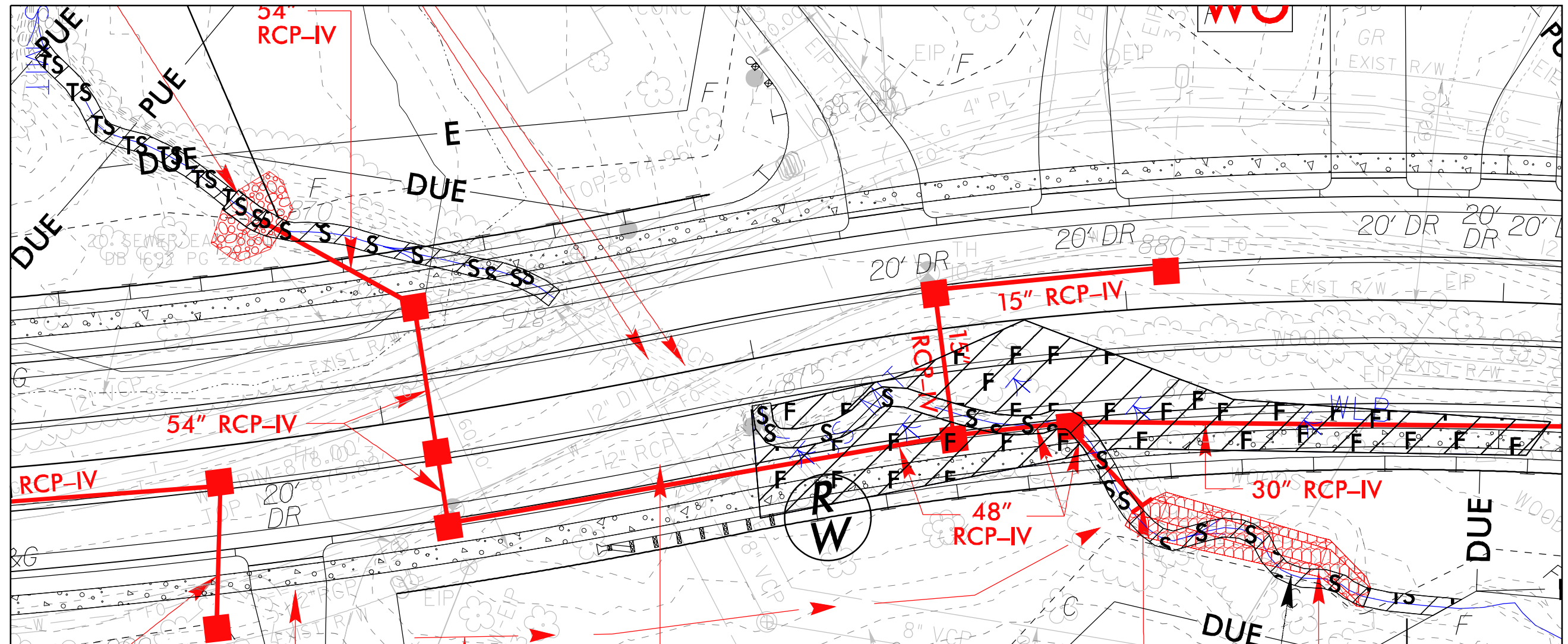
REVISIONS

\$DATE\$

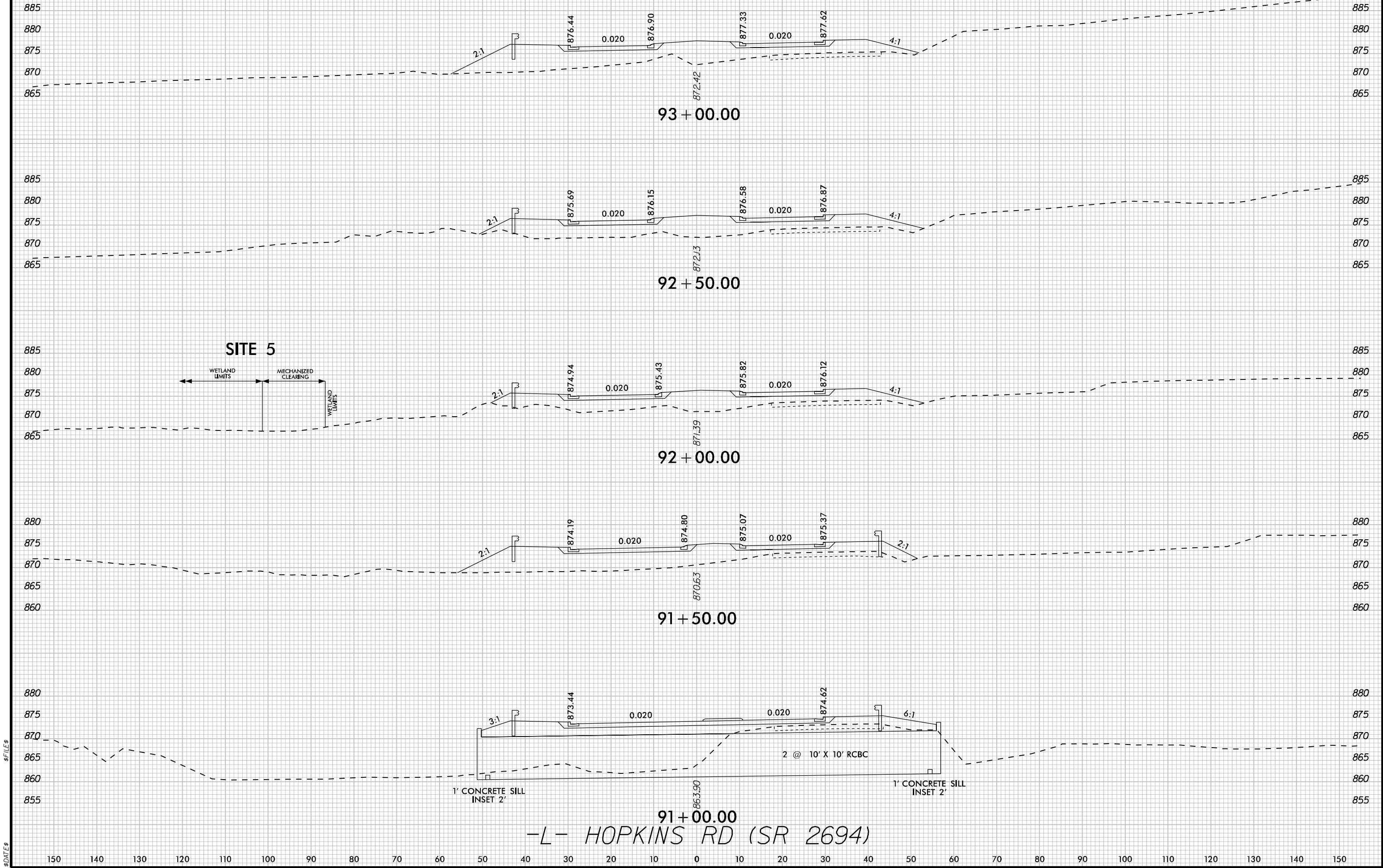
 <p>©2019</p> <p>421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601</p> <p>RIGHT-OF-WAY REV.</p> <p>CONST. REV.</p>	PROJECT REFERENCE NO.		SHEET NO.
	U-5760		10C
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>INCOMPLETE PLANS</b>              DO NOT USE FOR R/W ACQUISITION           </div>		
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>PERMIT DRAWING</b>  <b>SHEET <u>25</u> OF <u>28</u></b> </div>			
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b> </div>			

NAD 83/NA 2011

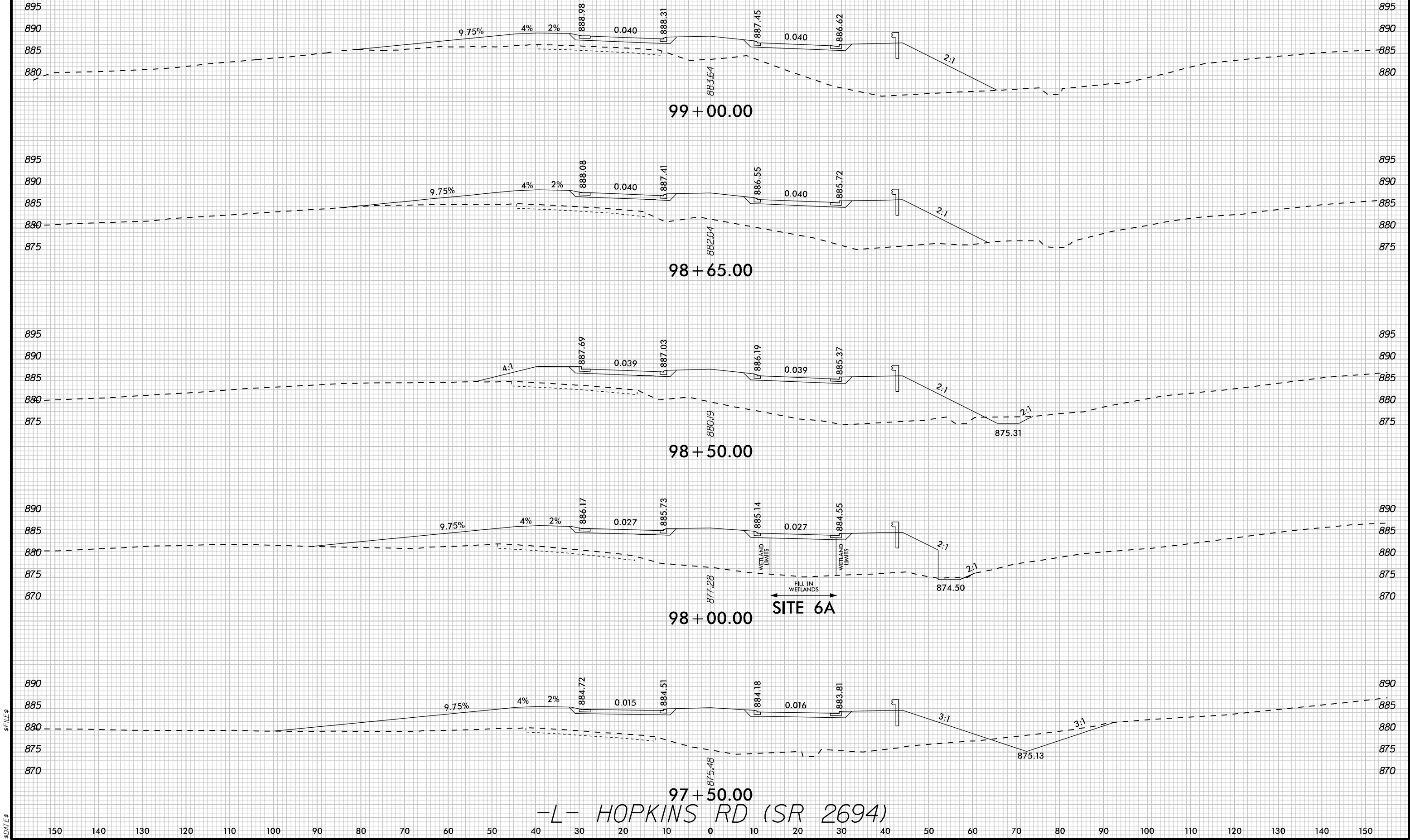
# ***DETAIL SHEET FOR SITES 6A, 6B***



8/23/99



8/23/99



WETLAND AND SURFACE WATER IMPACTS SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	58+66/59+59 -Y1- (LT)	1 @ 6' x 9' RCBC Extension						< 0.01		25		
	58+66/59+59 -Y1- (LT)	Channel Improvements						< 0.01	0.02	31	82	
1B	21+97/25+90 -L- (RT)	1 @ 6' x 7' RCBC Extension						0.11		610		
	21+97/25+90 -L- (RT)	Channel Improvements						< 0.01	< 0.01	33	24	
2A	83+40/85+80 -L- (RT)	Roadway Fill			< 0.01	< 0.01		0.02	< 0.01	233	10	
2B	86+38/86+80 -L- (RT)	66" RCP						< 0.01		24		
		Channel Improvements						< 0.01	< 0.01	25	10	
2C	89+96/90+79 -L- (RT)	Roadway Fill						< 0.01	< 0.01	82	10	
3	83+60/84+62 -L- (RT)	Roadway Fill			< 0.01	< 0.01						
4A	90+74/91+16 -L- (LT)	2 @ 10' x 10' RCBC						0.02		61		
		Channel Improvements						0.02	< 0.01	52	5	
4B	90+59/91+00 -L- (RT)	Channel Improvements						0.01	< 0.01	35	19	
5	91+60/92+06 -L- (LT)	Roadway Fill	< 0.01			0.01						
6A	96+98/98+87 -L- (RT)	48" RCP						0.01		122		
		Channel Change						< 0.01	< 0.01	70	22	
		Roadway Fill	0.09									
6B	95+22/96+53 -L- (LT)	54" RCP						< 0.01		82		
		Channel Improvements						< 0.01	< 0.01	10	65	
TOTALS*:			0.09		< 0.01	0.01		0.24	0.04	1495	247	0

\*Rounded totals are sum of actual impacts

NOTES:

= Impacts affected by IP Mod

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
02/20/2023  
FORSYTH  
U-5760  
46381.1.1  
SHEET 28 OF 28