Project Submittal Interim Form

Updated September 4, 2020

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Project Type: *

- ( ) For the Record Only (Courtesy Copy)
- ( ) New Project
- ( ) Modification/New Project with Existing ID
- ( ) More Information Response
- ( ) Other Agency Comments
- ( ) Pre-Application Submittal
- (•) Re-Issuance\Renewal Request
- ( ) Stream or Buffer Appeal

Pre-Filing Meeting Date Request was submitted on:

4/20/2022

Project Contact Information

Name: Jason Dilday

Who is submitting the information?

Email Address: * jldilday1@ncdot.gov

Project Information

Existing ID #: *

20171365

20170001 (no dashes)

Existing Version: *

2

1

Project Name: * US 401 from West of Hampton Oaks Drive to East of Fairway Drive in Fayetteville

Is this a public transportation project? *

- (•) Yes
- ( ) No

Is this a DOT project? *

- (•) Yes
- ( ) No

Is the project located within a NC DCM Area of Environmental Concern (AEC)? *

( ) Yes (•) No ( ) Unknown

TIP#: U-4405B

WBS#: 39049.1.1

(Applies to DOT projects only)

County (ies) *

Cumberland

Please upload all files that need to be submited.

Click the upload button or drag and drop files here to attach document

U-4405 Reissuance Request and Mod December 2022.pdf 69.44MB

Only pdf or kmz files are accepted.

Describe the attachments or add comments:

This application is to request a re-issuance of the current permits for the project and request a modification. NCDOT requests that the project now be permitted under a Regional General Permit 50, instead of the original Nationwide 12, 14 and corresponding Water Quality Certifications (USACE Action ID. SAW-2011-01806, NCDWR Project No. 20171365). The modification concerns a change of impacts at Site 5. Originally impacts to this site were attributed to extensions to the existing pipes. It has now been determined that the pipes need to be completely replaced. This replacement will result in an additional 1 (one) linear foot of permanent impact and 73 linear feet of temporary impact (dewatering). There are no other changes to the impact sites for the project. Communications with USACE determined no additional mitigation is required. Surveys for Michaux's sumac and rough-leaved loosestrife were updated on June 16, 2022. No specimens were observed. There was no habitat for the other listed protected species in the study area. Please see the attached previous permit application, previous modification request, subsequent permit, permit modification and USFWS IPaC query for the project.

* ☑ By checking the box and signing box below, I certify that:

- I, the project proponent, hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.
- I, the project proponent, hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I agree that submission of this online form is a “transaction” subject to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the online form.

Signature: * Michael Turchy

Submittal Date:

Permit Drawings

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Cumberland County, North Carolina



Local office

Raleigh Ecological Services Field Office

(919) 856-4520
(919) 856-4556

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker Picoides borealis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
American Alligator Alligator mississippiensis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/776	SAT

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS

NOT FOR CONSULTATION

American Chaffseed Schwalbea americana — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1286

Michaux's Sumac Rhus michauxii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5217

Pondberry Lindera melissifolia — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1279

Rough-leaved Loosestrife Lysimachia asperulaefolia — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2747

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

Please fill out all yellow cells as completely as possible. Use pick lists where provided. For more information on the NCDOT Stormwater Management Plan form, please refer to the document, NCDOT Stormwater Best Management Practices Toolbox (2014).
If the project drains to multiple water bodies, please drag the print area down such that Water Bodies 2 through 6 print on Page 2

North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

General Project Information

WBS Element:	39049.1.1	**TIP Number:**	U-4405	**Project Type:**	Roadway Improvements	**Date:**	12/5/2022
NCDOT Contact:	Paul Atkinson, PE			**Contractor / Designer:**	VHB/ Reid B. Robol, PE		
Address:	1020 Birch Ridge Road Raleigh, 27610			**Address:**	940 Main Campus Drive Suite 500 Raleigh NC, 27606		
Phone:	(919) 707-6707			**Phone:**	919-754-5005		
Email:	patkinson@ncdot.gov			**Email:**	rrobol@vhb.com		
City/Town:	Fayetteville			**County(ies):**	Cumberland		
River Basin(s):	Cape Fear			**CAMA County?**	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	5.82 Miles	**Surrounding Land Use:**	Commercial, Residential, Urban		
	Proposed Project			**Existing Site**	
Project Built-Upon Area (ac.)	74.6 ac.			72.1 ac.	
Typical Cross Section Description:	Typicals vary throughout the project: 10-12' lanes, 0'-35' raised median, curb and gutter and 5' sidewalks.			Typicals vary throughout the project: 10'-12' lanes, 0'-30' ditched medians, roadside ditches and some curb and gutter sections.	
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 63150	Year: 2018		Existing: 70975	Year: 2038
General Project Narrative: (Description of Minimization of Water Quality Impacts)	State Project U-4405 consists of roadway improvements to 5.82 Miles of Raeford Road in Fayetteville, NC. The surrounding land use consists of a highly developed, urbanized area that contains commercial, residential, and school areas. Roadside and median ditches will be replaced with a curb and gutter system throughout the project. The proposed storm drainage systems will maintain existing drainage patterns and route runoff to natural outfalls. There are four major structures that will be extended and one energy dissipator utilized to minimize water quality impacts. Supplemental pipes will be added to the major crossing extensions to meet FEMA MOA requirements. Stilling basins will be utilized to install the supplemental pipes and major structure extensions. Erosion control devices such as silt fence, rock inlet sediment traps, slope drains, clean water diversions, and silt bags will also be utilized to minimize water quality impacts.				

Waterbody Information

Surface Water Body (1):	Beaver Creek Trib A		**NCDWR Stream Index No.:**	NA		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

Additional Waterbody Information

Surface Water Body (2):	Beaver Creek		**NCDWR Stream Index No.:**	18-31-24-5		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (3):	UT to Beaver Creek		**NCDWR Stream Index No.:**	NA		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (4):	Buckhead Creek		**NCDWR Stream Index No.:**	18-31-24-6		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	mercury (Hg)					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (5):	UT to Little Rockfish Creek		**NCDWR Stream Index No.:**	NA		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class B			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: **TIP No.:** U-4405 **County(ies):** Cumberland

Preformed Scour Holes and Energy Dissipators

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
16	-L- 173+00 LT 35.042756/-78.966389	UT to Beaver Creek	Riprap Energy Dissipator Basin	Class II	35.0	Pipe	60	146.0	2.9	N/A

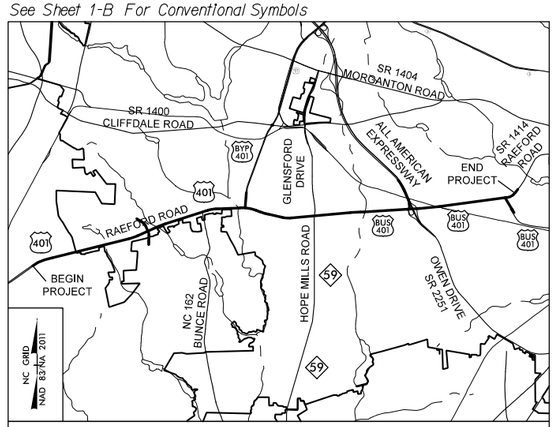
Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

TIP PROJECT: U-4405

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

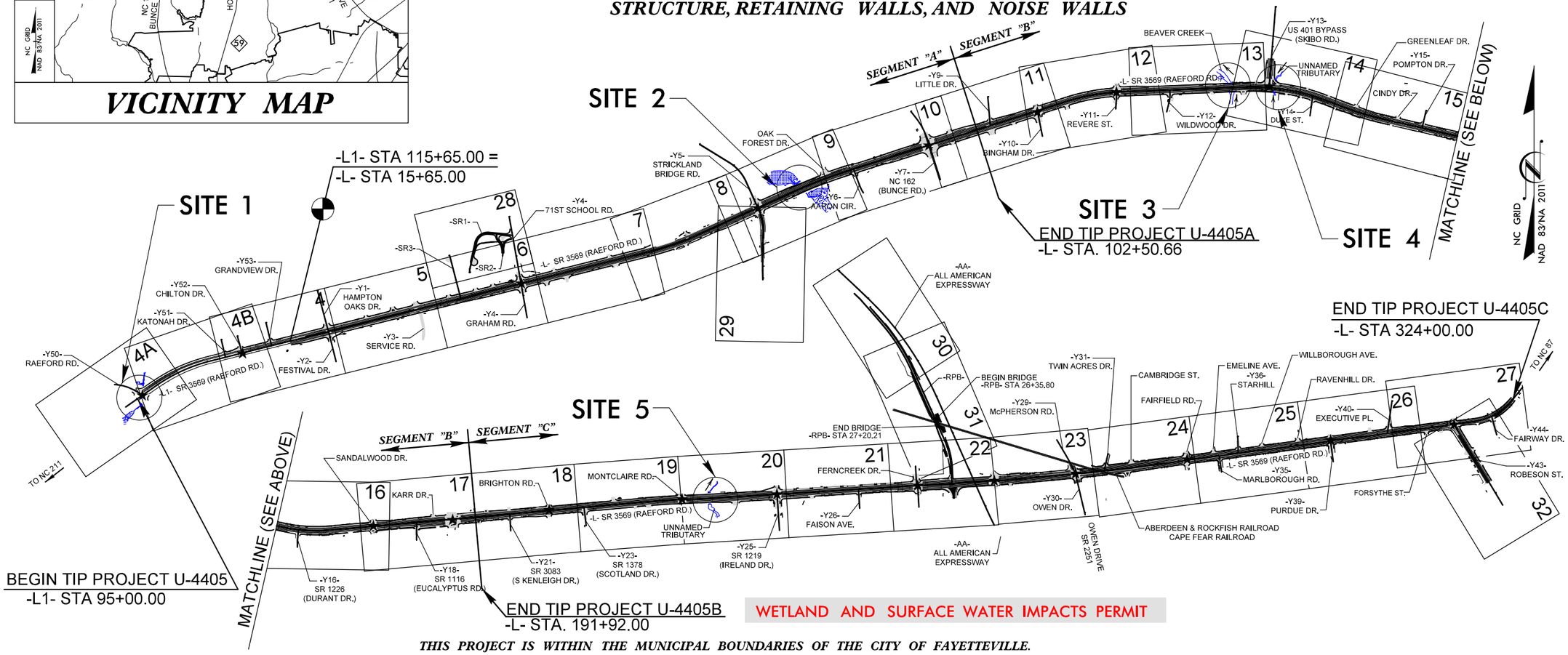
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE

PERMIT DRAWING
SHEET 1 OF 17

LOCATION: *US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS*



END TIP PROJECT U-4405A
-L- STA. 102+50.66

END TIP PROJECT U-4405C
-L- STA 324+00.00

BEGIN TIP PROJECT U-4405
-L1- STA 95+00.00

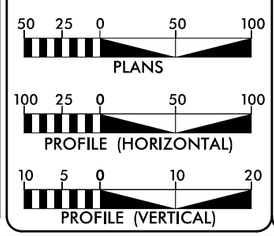
END TIP PROJECT U-4405B
-L- STA. 191+92.00

WETLAND AND SURFACE WATER IMPACTS PERMIT

★ PROPOSED SIGNAL

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II .
***** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED***

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*TTST =1% DUAL=2%
FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

CLINTON J. MORGAN, PE
PROJECT ENGINEER

VIRGINIA SCHAAR, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING
SHEET 2 OF 18

SCALE 50′ 0′ 50′ 100′

INSET SCALE 150′ 0′ 150′ 300′

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)

Ditch Grade, 10' min., 1.0' min., 2, GEOTEXTILE

Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY

FROM STA. 96+67 TO STA. 96+89 -L1-

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, Fill Slope, Geotextile, B

Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT

Type of Liner= CLASS I RIP RAP

FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50-
PI Sta 13+13.27
Δ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
Δ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

-Y50- POT Sta. 10+00.00

N 78° 19' 20.4" E

-Y50- PC Sta. 10+85.41

-Y50- PT Sta. 15+19.30

-L1- POT Sta. 89+00.00

BEGIN ASPHALT OVERLAY
-Y50- Sta.14+99.00

BEGIN ASPHALT OVERLAY
-L- Sta.15+65.00

BEGIN TIP PROJECT U-4405
-L1- STA.95+00.00

-L1- Sta.95+82.50=
-Y50- Sta. 16+13.41

-L1- PC Sta. 97+95.86

N 55° 08' 56.9" E -L1-

S 58° 26' 33.7" E

N 85° 28' 59" E 316.27'

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

Piedmont Natural Gas Company, Inc, 4 " PLASTIC

EXISTING R/W

84" ALUM FENCE

18" RCP

24" RCP

36" RCP

48" RCP

RIPRAP

RETAIN SYSTEM

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP-HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11 C

PROP. 2'-6" C&G

CB

MH

TOP=194.23'

TOP=194.79

TOP=197.38'

WALL

20' SEWER EASEMENT (PB C07 PG 140)

SITE 1
SEE ENLARGEMENT, THIS SHEET

MATCHLINE SEE SHEET 4B
-L1- STA 99+00

NOTE: SEE SHEET 52 FOR -L1- PROFILE

SITE 1

15"

12:45:54 PM
H:\Hydraulics\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_044a.dgn
dbabb1

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 3 OF 18

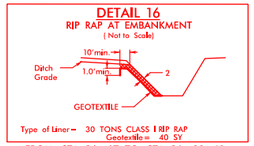
50′ 0′ 50′ 100′
SCALE

150′ 0′ 150′ 300′
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

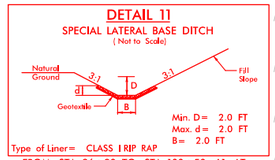
DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1-

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50- POT Sta. 10+00.00

N 78° 19' 20.4" E

-Y50-
PI Sta 13+13.27
Δ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
Δ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

-Y50- PC Sta. 10+85.41

-Y50- PT Sta. 15+19.30

-L1- POT Sta. 89+00.00

BEGIN ASPHALT OVERLAY
-Y50- Sta.14+99.00

BEGIN ASPHALT OVERLAY
-L- Sta.15+65.00

CLASS B RIP RAP
EST 4 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP (HW)

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SITE 1
SEE ENLARGEMENT, THIS SHEET

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11

PROP 2'-6" C&G

RETAIN SYSTEM

N 55° 08' 56.9" E -L1-

S 58° 26' 33.3" E

RETAIN SYSTEM

-L1- PC Sta. 97+95.86

MATCHLINE SEE SHEET 4B
-L1- STA 99+00

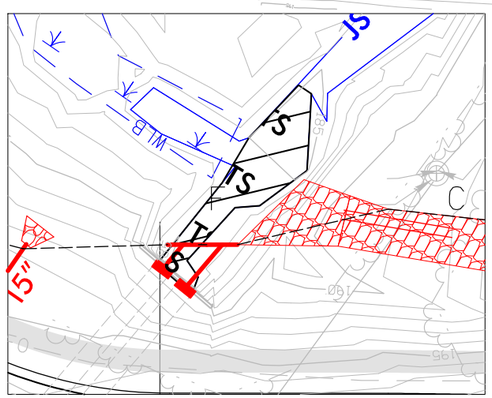
BEGIN TIP PROJECT U-4405
-L1- STA. 95+00.00

-L1- Sta.95+82.50=
-Y50- Sta. 16+13.41

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

Piedmont Natural Gas Company Inc, 4 " PLASTIC



SITE 1

NOTE: SEE SHEET 52 FOR -L1- PROFILE

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abbott

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-160

PERMIT DRAWING
SHEET 4 OF 18

WETLANDS

97+50.00

97+00.00

3:1

195.15

96+50.00

SITE 1

96+00.00

95+50.00

95+00.00

-L1-

$$$$USERNAME$$$$ $$$$SYSTIME$$$$
$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 5 OF 18

NC GRID NAD 83/NA 2011

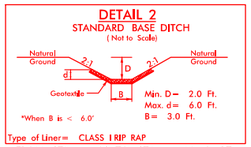
8/17/99

REVISIONS

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

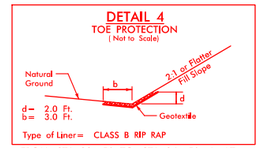
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION -Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta. 76+45.55 = -Y5- Sta. 21+12.54

-Y5- PC Sta. 21+62.48

-L- TS Sta. 80+54.72

-L- CS Sta. 87+88.62

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING,LLC DB 8474 PG 295 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 6539 PG 783

88 JONATHAN H ELLIOT DB 7676 PG 794 DB 4960 PG 348

89 CROSSE DEVELOPMENT CC RAEFORD LLC DB 10004 PG 653

90 STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

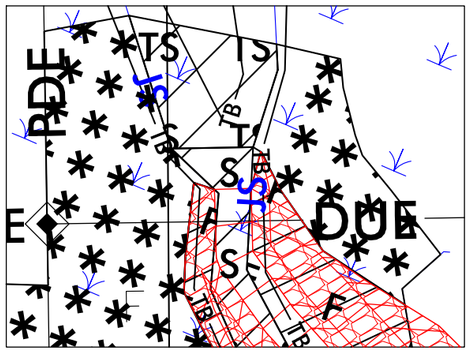
RELOCATED UTILITIES ARE IN CLOSE PROXIMITY TO PROPOSED DRAINAGE STRUCTURES

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

MATCHLINE SEE SHEET 10 -L- STA 88+00

-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02


PDE
TS
TS
TB
TB
DUE
DUE
E
F
F
F

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 6 OF 18

NC GRID NAD 83/NA 2011

8/17/99

REVISIONS

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, Geotextile

Min. D= 2.0 Ft.
Max. d= 6.0 Ft.
B= 3.0 Ft.
*When B is < 6.0'

Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 2:1 or Flatter Fill Slope, d, Geotextile

d= 2.0 Ft.
b= 3.0 Ft.

Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

-Y5- Sta. 19+60.00 BEGIN CONSTRUCTION

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 = -Y5- Sta. 21+12.54

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

-Y5- PC Sta. 21+62.48

-L- N 65° 39' 46.5"E

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING LLC DB 8474 PG 355 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 7516 PG 794 DB 4960 PG 1348

89 CROSS DEVELOPMENT RAEFORD LLC DB 10001 PG 653

90 STEPHEN M CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

CLASS II RIP RAP
EST 52 TONS
EST 50 SY GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY GEOTEXTILE

TOE PROTECTION
SEE DETAIL 4
CLASS B RIP RAP
EST 25 TONS
EST 56 SY GEOTEXTILE
JB w/MH
SEE SPECIAL DETAIL

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.8%
EST 30 TONS
EST 45 SY GEOTEXTILE

CLASS B RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

CLASS II RIP RAP
EST 130 TONS
EST 105 SY GEOTEXTILE

RELOCATED UTILITIES ARE IN CLOSE PROXIMITY TO PROPOSED DRAINAGE STRUCTURES

RETAIN SYSTEM
DO NOT DISTURB SIGN
DO NOT DISTURB SIGN
RETAIN EXISTING SIDEWALK
RETAIN SYSTEM
RETAIN TIE TO EXIST
TIE TO EXIST
TIE TO EXIST
BUS PAD 5'X20'
GRADE TO DRAIN
NOTCH
REMOVE
REMOVE EXIST JB w/MH
RETAIN

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 10 -L- STA 88+00

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

S 24°20'13.5"E

SPECIAL CB

SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)

COLLAR AND EXTEND

5' MONOLITHIC CONC. ISLAND

300' UNIFORM LANE SHIFT

150' LANE TAPER (RT TURN)

150' LANE TAPER (LT TURN)

40' INC

50' INC

25' INC

31' INC

PROP. 2'-6" C&G

PROP. 1'-6" C&G

PROP. CONC. SIDEWALK

42" RCP-IV

48" RCP-IV

30" RCP-IV

18" RCP-IV

15" RCP-IV

DO NOT DISTURB SIGN

-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

SITE 2 INLET

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 82+50 -L-)

DDE=125 CY +/-
1@60" RCP
1@66" RCP
1@72" STEEL W/RCP ENDS BURRIED 1.0'
EXCAVATION
176.75'
NG
CLASS II RIP RAP (TYP) T=2'
WIDTH=5' 1' BENCH HEIGHT ABOVE BED
WIDTH=6' 1' BENCH HEIGHT ABOVE BED
WIDTH=7' 1' BENCH HEIGHT ABOVE BED

OUTLET DETAIL
NTS (STA 82+50 -L-)

DDE=135 CY +/-
1@60" RCP
1@66" RCP
1@72" STEEL W/RCP ENDS BURRIED 1.0'
EXCAVATION
176.00'
NG
CLASS II RIP RAP (TYP) T=2'
WIDTH=6' 1' BENCH HEIGHT ABOVE BED
WIDTH=6' 1' BENCH HEIGHT ABOVE BED
WIDTH=6' 1' BENCH HEIGHT ABOVE BED

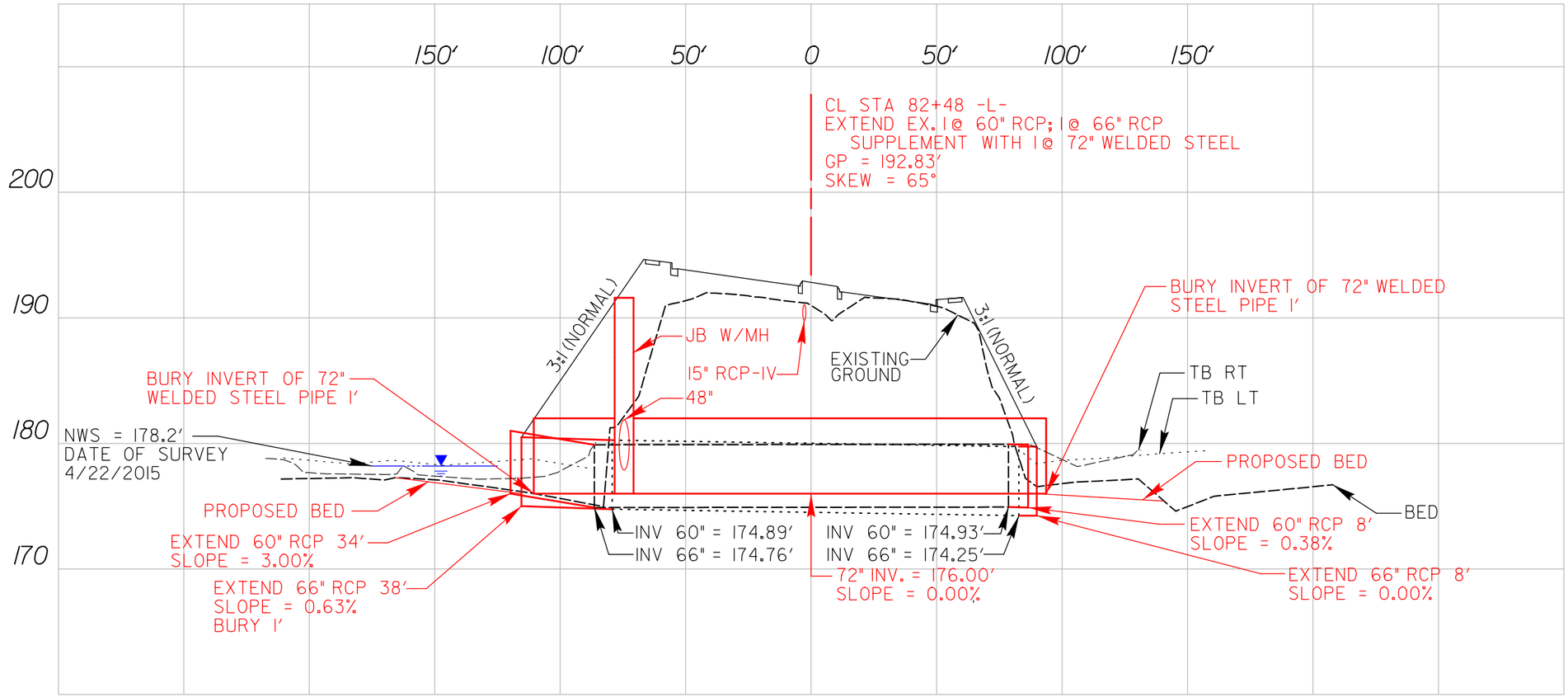
NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 7 OF 18



8/17/99

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dbaker

8/23/99

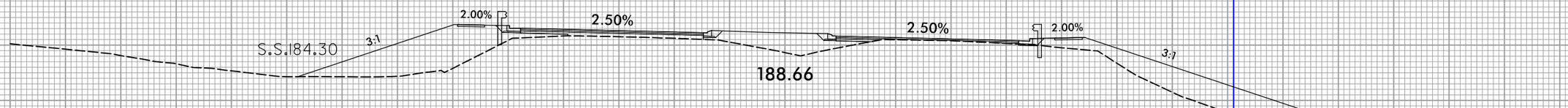
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-24

PERMIT DRAWING
SHEET 8 OF 18

85+00.00

84+50.00

WETLANDS



84+00.00

SITE 2

83+50.00

83+00.00

–L–

$$$$USERNAME$$$$ $$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 9 OF 18

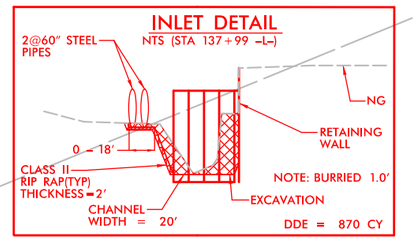
NC GRID
NAD 83/NA 2011

-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

REVISIONS
8/17/99

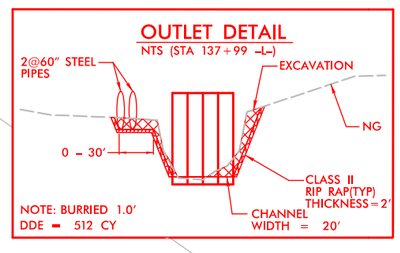
CULVERT INLET

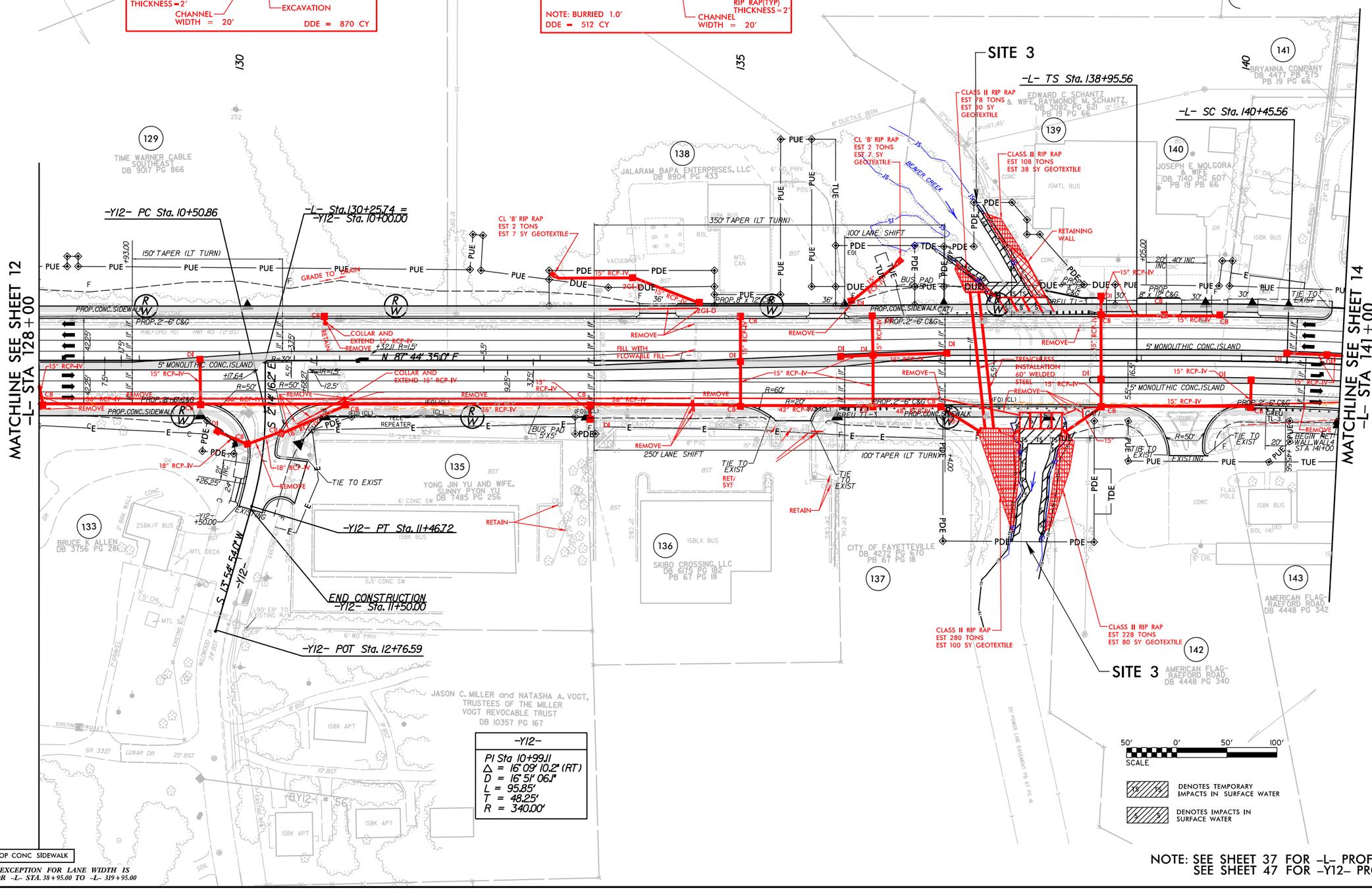
INLET DETAIL
NTS (STA 137+99 -L-)



CULVERT OUTLET

OUTLET DETAIL
NTS (STA 137+99 -L-)





** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

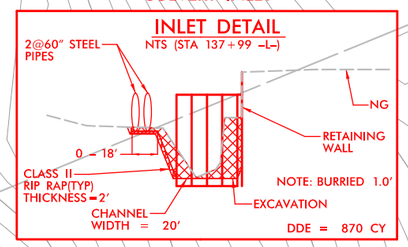
PERMIT DRAWING SHEET 10 OF 18

8/17/99

REVISIONS

CULVERT INLET

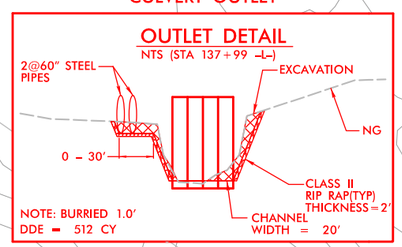
INLET DETAIL
NTS (STA 137+99 -L-)



DDE = 870 CY

CULVERT OUTLET

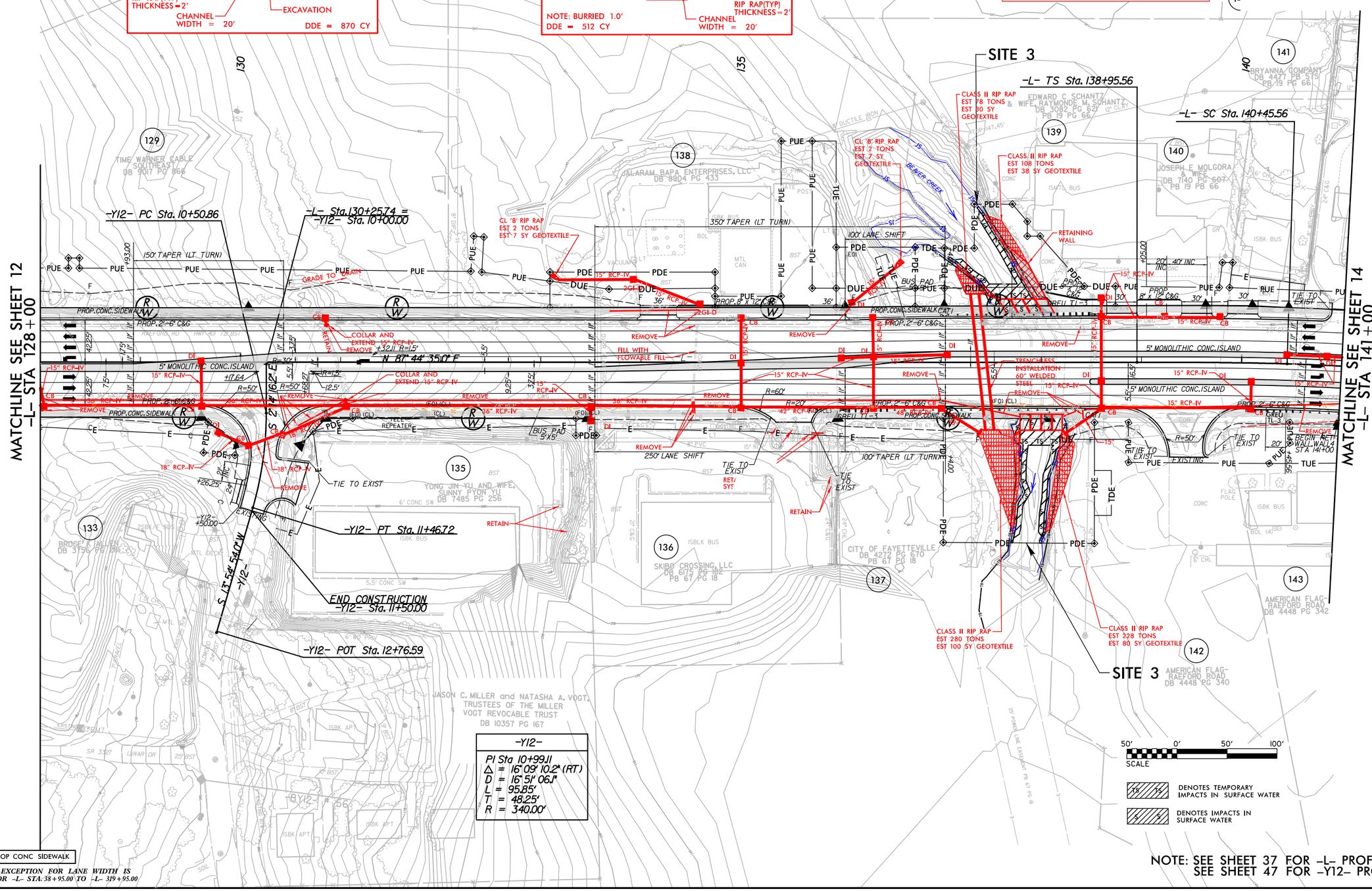
OUTLET DETAIL
NTS (STA 137+99 -L-)



NOTE: BURRIED 1.0'
DDE = 512 CY

NC GRID
NAD 83/NA 2011

-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03



PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- STA. 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

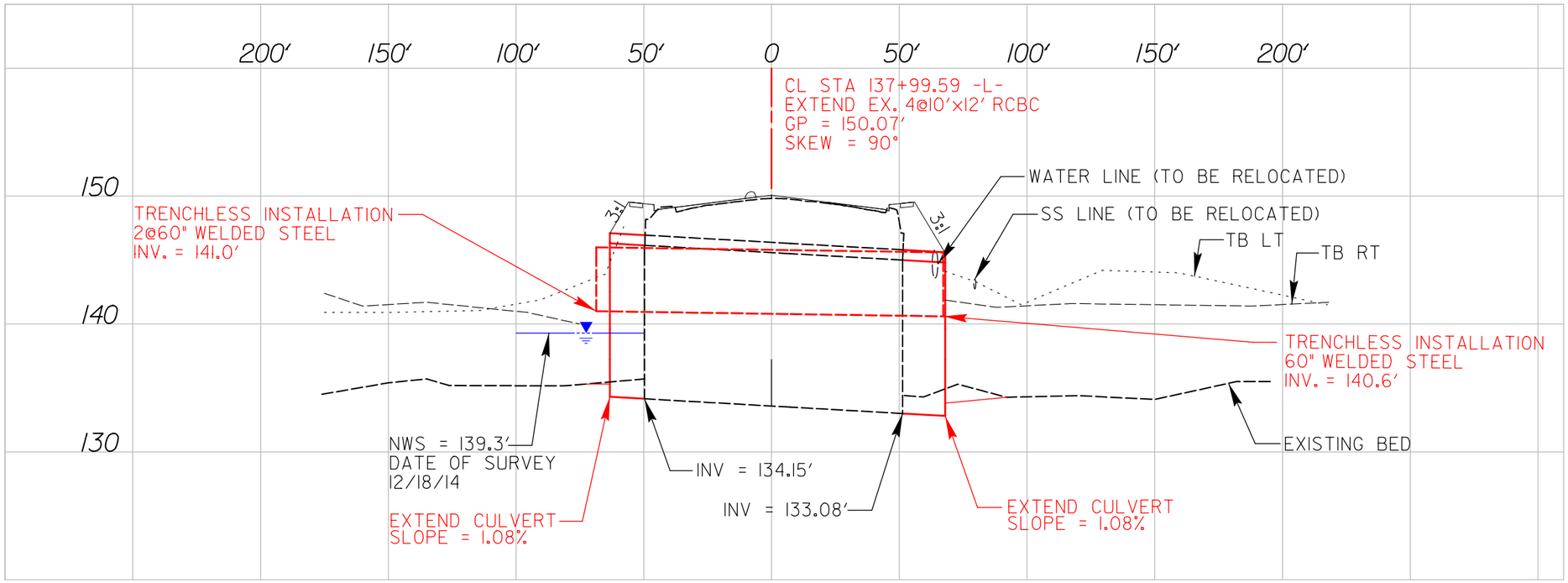
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mbaptist

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 11 OF 18



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PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 12 OF 18

NAD 83/NA 2011
NC GRID

-L-

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Ls = 150.00'	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	LT = 100.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	ST = 50.00'	L = 311.01'
T = 425.45'	ST = 50.00'		T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

-L- CS Sta. 148+88.39

-L- Sta. 148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

END CONSTRUCTION
-Y14- Sta. 12+05.05

-Y14- POT Sta. 11+89.87

-L- Sta. 142+66.31 =
-Y13- Sta. 20+11.93

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

SITE 4

S 43° 34' 14.2" W

S 69° 30' 10.3" E

S 73° 52' 28.0" W

DO NOT DISTURB FENCE

DO NOT DISTURB SIGN

150' UNIFORM TAPER

300' LANE TAPER

INLET DETAIL
NTS (STA 143+37 -L-)

DDE=257 CY

VARIES 9'-26'
1.5' BENCH HEIGHT
ABOVE BED

138.5'

OUTLET DETAIL
NTS (STA 143+37 -L-)

DDE=342 CY

VARIES 3'-23'
1.5' BENCH HEIGHT
ABOVE BED

137.2'

SCALE
50' 0' 50' 100'

INSET SCALE
100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

REVISIONS

8/17/99

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mbland

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/NA 2011
NC GRID

PERMIT DRAWING SHEET 13 OF 18

-L-

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

SITE 4

-L- CS Sta. 148+88.39

-L- Sta.148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

END CONSTRUCTION
-Y14- Sta. 12+05.05

-Y14- POT Sta. 11+89.87

-L- Sta.142+66.31 =
-Y13- Sta. 20+11.93

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

S 43° 34' 14.2" W

S 69° 30' 10.3" E

S 73° 52' 28.0" W

SCALE
50' 0' 50' 100'

INSET SCALE
100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

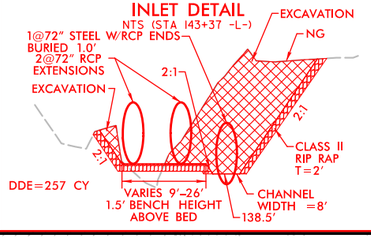
DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

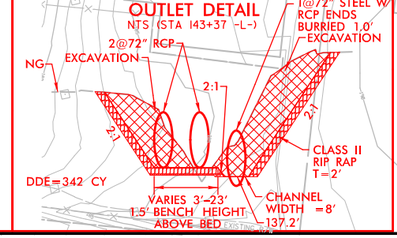
PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

INLET DETAIL
NTS (STA 143+37 -L-)



OUTLET DETAIL
NTS (STA 143+37 -L-)



NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

REVISIONS

8/17/99

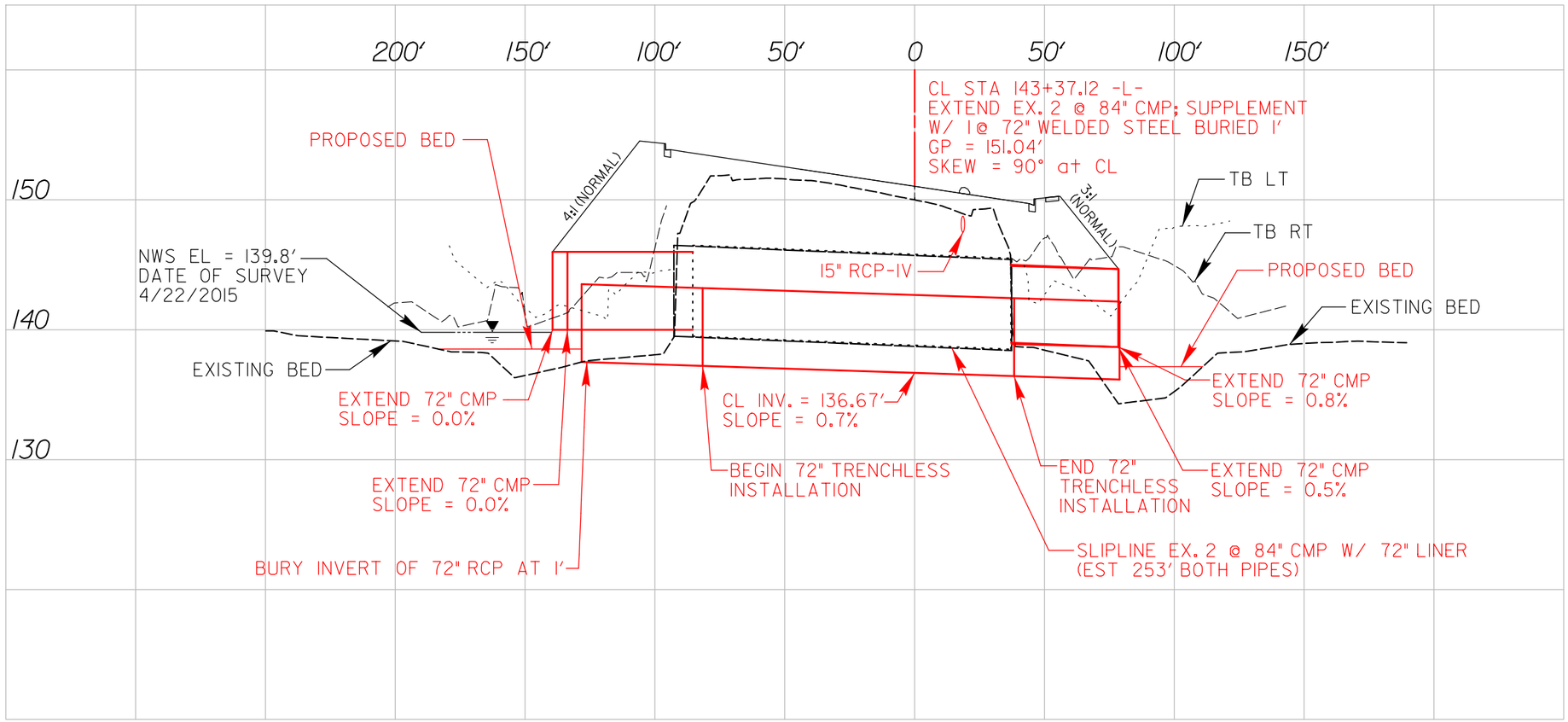
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 14 OF 18



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PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 15 OF 18

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

4104 RAEFORD ROAD, LLC
DB 9484 PG 109

-L- Sta. 229+68.64 =
-Y25- Sta. 10+00.00

-L- +97.45
105.50' LT

-L- +40.45
105.50' LT

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

-Y25-

END CONSTRUCTION
-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

SEE INLET DETAIL
CLASS II RIP RAP
EST 330 TONS
EST 600 SY GEOTEXTILE

FILL IN CHANNEL W/ENGINEER APPROVED MATERIAL AND TOP W/ CLASS II RIP RAP
EST 325 CY FILL
EST 80 TONS
EST 110 SY GEOTEXTILE

SEE OUTLET DETAIL
CLASS II RIP RAP
EST 550 TONS
EST 800 SY GEOTEXTILE

INLET DETAIL
NTS

OUTLET DETAIL
NTS

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

SCALE
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 16 OF 18

NC GRID
NAD 83/NA 2011

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

-L- PT Sta. 221+61.17

-L- PC Sta. 219+73.45

SITE 5
SEE ENLARGEMENT, THIS SHEET

SITE 5 INLET

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

SEE INLET DETAIL
CLASS II RIP RAP
EST 330 TONS
EST 600 SY GEOTEXTILE

RETAIN
REMOVE
TEMP. 18" OUTFALL OVER HW
REMOVE +/-9' OF EXISTING 18" DIP
SPECIAL HW
150' TAPER (LT TURN)
150' TAPER (RT TURN)
FILL W/ FLOWABLE MATERIAL
RETAIN LCB AND TIE TOP TO 18" RCP W/ REMOVE
REMOVE +/-155' OF EXISTING 30" RCP
48" RCP-IV
RETAIN SYSTEM
BUS PAD 5'X5'
EXISTING
TIE TO EXIST
-L- +40.45 105.50' LT
-L- +97.45 105.50' LT
-L- Sta.229+68.64 = -Y25- Sta. 10+00.00
4104 RAEFORD ROAD, LLC DB 9484 PG 109
NCP FAYETTEVILLE, LLC DB 6243 PG 562
IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61
IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110
RREF II DB-NC, LLC DB 9368 PG 66
KENT A VAN BELOIS & WIFE DB 3364 PG 865
DB 2552 PG 574 PB 82 PG 7
FILL IN CHANNEL W/ENGINEER APPROVED MATERIAL AND TOP W/ CLASS II RIP RAP
EST 325 CY FILL
EST 80 TONS
EST 110 SY GEOTEXTILE
SEE OUTLET DETAIL
CLASS II RIP RAP
EST 550 TONS
EST 800 SY GEOTEXTILE
SITE 5
N 87° 34' 14.6" E
N 86° 29' 42.7" E
S 3° 44' 47.0" E
-Y25-
END CONSTRUCTION
-Y25- Sta. 11+75.00
-Y25- POT Sta. 14+51.24
5" MONOLITHIC CONC. ISLAND
PROP. CONC. SIDEWALK
PROP. 2'-6" C&G
PROP. 1'-6" C&G
PROP. 8" x 12" C&G
GREU TL-3
CAT I
CAT II
CAT III
R=50'
R=3.75'
BM2

INLET DETAIL
NTS
3@84" WS MIDDLE BARREL BURIED 1.0'
EXCAVATION (TYP)
CLASS II RIP RAP T=2.0'
CLASS II RIP RAP W/GEOTEXTILE (TYP)
VARIES 0' - 7'
VARIES 7' - 10'
1.5' BENCH HEIGHT ABOVE BED (TYP.)

OUTLET DETAIL
NTS
3@84" WS MIDDLE BARREL BURIED 1.0'
EXCAVATION (TYP)
FILL SCOUR HOLE W/ ENGINEER APPROVED MATERIAL
NG
CLASS II RIP RAP T=2.0'
CLASS II RIP RAP W/GEOTEXTILE (TYP)
VARIES 0' - 7'
VARIES 7' - 14'
1.5' BENCH HEIGHT ABOVE BED (TYP.)

50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

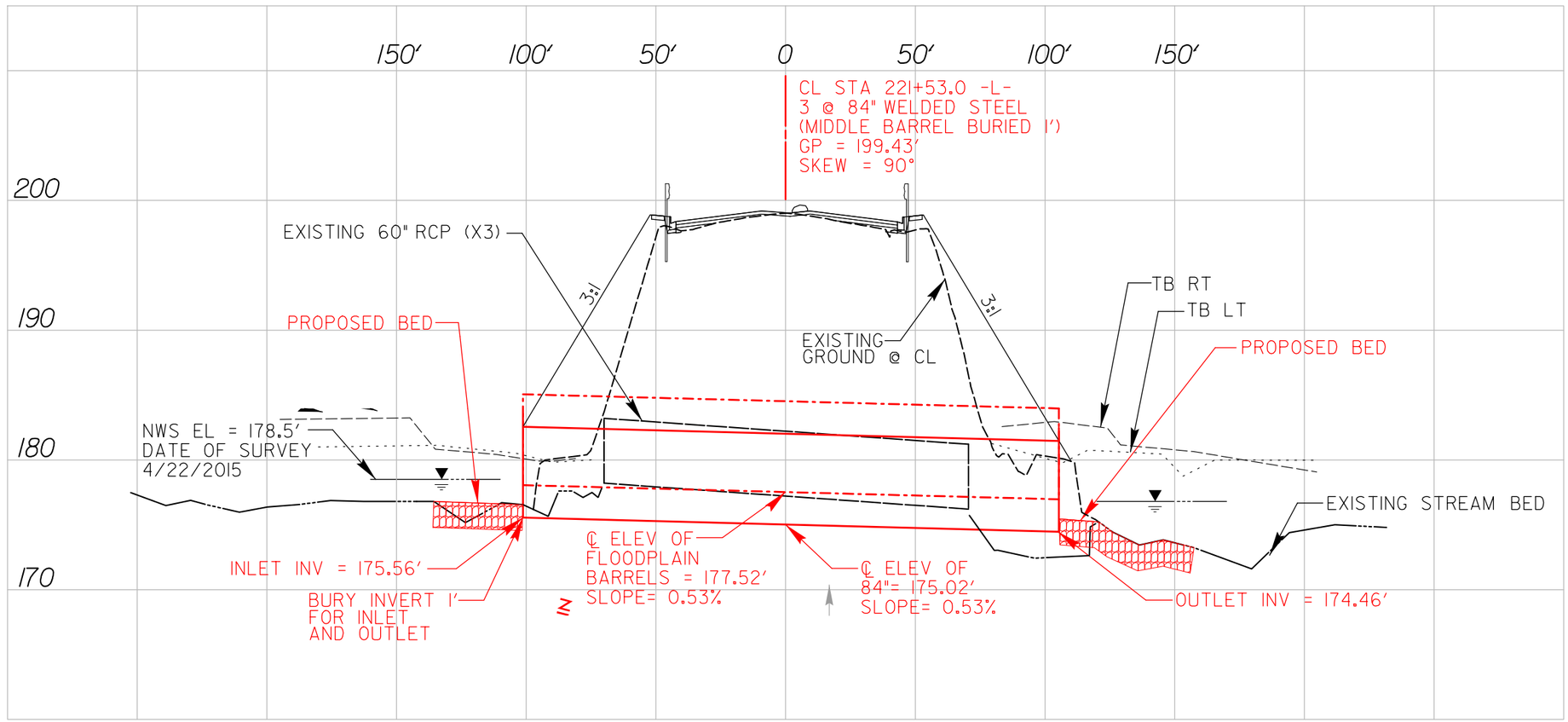
NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 17 OF 18



8/17/99

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L1- 96+44/96+82 LT	EXTENSION OF 2@48" RCP						< 0.01	< 0.01	8	43	
2	-L- 81+47/84+92 RT & LT	EXTENSION OF 1@60", 1@66" RCP & 1@72" TRENCHLESS WELDED STEEL	0.10			0.10		0.03	0.04	201	41	
3	-L- 137+03/138+25 RT & LT	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL						0.03	0.03	33	42	
	BANK STABLIIZATION	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL								176	171	
4	-L- 143+03/144+02 RT &LT	SLIPLINE EX. 2@84" CMP W/ 72" LINER & 1@72" TRENCHLESS WELDED STEEL						0.07	< 0.01	216	51	
5	-L- 221+03/222+23 RT &LT	TRENCHLESS INSTALLATION OF 3@84" WELDED STEEL						0.09	0.03	207	100	
TOTALS*:			0.10			0.10		0.22	0.12	841	448	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
12/08/2022
CUMBERLAND COUNTY
U-4405
39049.1.1
SHEET 18 OF 18

Permit Application Oct 20, 2017

Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

June 28, 2017 Ver 1.8

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Below is a link to the DRAFT online help file.

http://edocs.deq.nc.gov/WaterResources/0/doc/549884/Page1.aspx

A. Processing Information

County (or Counties) where the project is located:*

Cumberland

Is this project a public transportation project?*

(•) Yes ( ) No

Is this a NCDOT Project?*

(•) Yes ( ) No

(NCDOT only) T.I.P. or state project number:

U-4405

WBS #

39049.1.1

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps:*

- [x] Section 404 Permit (wetlands, streams and waters, Clean Water Act)
- [ ] Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

1b. What type(s) of permit(s) do you wish to seek authorization?*

- [x] Nationwide Permit (NWP)
- [ ] Regional General Permit (RGP)

Nationwide Permit (NWP) Number: **12 - Utility Lines**

Nationwide Permit (NWP) Number: **14 - Linear transportation**

NWP Number Other:

List all NW numbers you are applying for not on the drop down list.

1c. Type(s) of approval sought from the DWR:*

check all that apply

- [x] 401 Water Quality Certification - Regular
- [ ] 401 Water Quality Certification - Express
- [ ] Non-404 Jurisdictional General Permit
- [ ] Riparian Buffer Authorization

1d. Is this notification solely for the record because written approval is not required? *

For the record only for DWR 401 Certification: ○ Yes ◉ No

For the record only for Corps Permit: ○ Yes ◉ No

1e. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

◉ Yes ○ No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

U-4405 Revised - STR - RW - CF 04.pdf 64.65KB

FILE TYPE MUST BE PDF

1f. Is the project located in any of NC's twenty coastal counties? *

○ Yes ◉ No

B. Applicant Information

1a. Who is the Primary Contact? *

Chris Rivenbark

1b. Primary Contact Email: *

crivenbark@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6152

1d. Who is applying for the permit?

- [x] Owner
- [ ] Applicant (other than owner)
- [ ] Agent/Consultant

(Check all that apply)

2. Owner Information

2a. Name(s) on recorded deed:

2b. Deed book and page no.:

2c. Responsible party:

(for Corporations)

2d. Address

Street Address

Address Line 2

City State / Province / Region

Postal / Zip Code Country

2e. Telephone Number:

(xxx)xxx-xxxx

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

U-4405 US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Fayetteville

1d. Driving directions *

If it is a new project and can not easily be found in a GPS mapping system. Please provide directions.

US 401 from west of Hampton Oaks Drive to east of Fairway Drive.

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: *

35.042299

ex: 34.208504

Longitude: *

-78.990336

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *

UT to Little Rockfish Creek, Beaver Creek & tributaries, and Buckhead Creek

3b. Water Resources Classification of nearest receiving water: *

C,B

Surface Water Lookup

3c. What river basin(s) is your project located in? *

Cape Fear

River Basin Lookup

4. Project Description

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *

Fayetteville urban area

4b. Attach an 8 1/2 X 11 excerpt from the most recent version of the USGS topographic map indicating the location of the project site. (for DWR)

Click the upload button or drag and drop files here to attach document

File type must be pdf

4c. Attach an 8 1/2 X 11 excerpt from the most recent version of the published County NRCS Soil Survey map depicting the project site. (for DWR)

Click the upload button or drag and drop files here to attach document

File type must be pdf

4d. List the total estimated acreage of all existing wetlands on the property:

0.25

4e. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

982

4f. Explain the purpose of the proposed project:

Widening of existing US 401 to accommodate existing and future traffic.

4g. Describe the overall project in detail, including the type of equipment to be used:

The NCDOT proposes to make improvements to U.S. Highway 401 (Raeford Road) in a length of about six (6) miles from Old Raeford Road to east of Fairway Drive in Cumberland County. Standard roadway construction methods and equipment will be used.

4h. Please upload project drawings for the proposed project.

Click the upload button or drag and drop files here to attach document

U4405 roadway.pdf	26.74MB
U4405_Permit Drawings_20171003.pdf	8.88MB
U4405 utility drawings combined final.pdf	3.79MB

File type must be pdf

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? *

(•) Yes ( ) No ( ) Unknown

Comments:

The Corps issued a Preliminary JD 8/21/12. However, the project limits have been revised since the JD was issued, involving additional impacts.

5b. If the Corps made a jurisdictional determination, what type of determination was made? *

(•) Preliminary ( ) Approved ( ) Unknown

Corps AID Number:

Example: SAW-2017-99999

SAW-2011-01806

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known):

Agency/Consultant Company: **Environmental Services, Inc. and NCDOT Staff**

Other:

5d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.

8/21/12

5d1. Jurisdictional determination upload

Click the upload button or drag and drop files here to attach document

u4405 jd.pdf 3.4MB

File type must be PDF

6. Project History

6a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past? *

○ Yes ◉ No ○ Unknown

7. Future Project Plans

7a. Is this a phased project? *

○ Yes ◉ No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):

☑ Wetlands ☑ Streams-tributaries ☐ Buffers

☑ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Site # - Reason for impact	2b. Impact type *	2c. Type of wetland	2d. Wetland name	2e. Forested	2f. Jurisdiction type	2g. Impact area
2-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Riverine Swamp Forest**	**WA**	**Yes**	**Both** (404, 10) or DWR (401, other)	**0.200** (acres)
U1-water power Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Riverine Swamp Forest**	**WA**	**Yes**	**Both** (404, 10) or DWR (401, other)	**0.007** (acres)
U3-sewer line Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Riverine Swamp Forest**	**WC**	**Yes**	**Both** (404, 10) or DWR (401, other)	**0.020** (acres)
U3-sewer line Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Riverine Swamp Forest**	**WC**	**Yes**	**Both** (404, 10) or DWR (401, other)	**0.003** (acres)

2a. Site # - Reason for impact	2b. Impact type *	2c. Type of wetland	2d. Wetland name	2e. Forested	2f. Jurisdiction type	2g. Impact area
U4-water line Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Riverine Swamp Forest**	**WC**	**Yes**	**Both** (404, 10) or DWR (401, other)	**0.012** (acres)

2g. Temporary Wetland Impact

0.023

2g. Permanent Wetland Impact

0.219

2g. Total Wetland Impact

0.242

2h. Comments:

There will also be 0.02 ac of hand clearing due to utilities

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Site # - Reason for impact	3b.Impact type	3c. Type of impact	3d. Stream name	3e. Stream Type	3f. Jurisdiction type	3g. Stream width	3h. Impact length
1-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Culvert**	**UT Little Rockfish Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**8** (linear feet)
1-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Culvert**	**Ut Little Rockfish Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**43** (linear feet)
2-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Culvert**	**Ut Beaver Creek SA**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**201** (linear feet)
2-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Culvert**	**Ut Beaver Creek SA**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**31** (linear feet)
3-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Culvert**	**Beaver Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**33** (linear feet)
3-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Bank Stabilization**	**Beaver Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**176** (linear feet)
3-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Bank Stabilization**	**Beaver Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**21** (linear feet)
4-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Culvert**	**Ut Beaver Creek SC**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**216** (linear feet)
4-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Culvert**	**Ut Beaver Creek SC**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**20** (linear feet)

3a. Site # - Reason for impact	3b.Impact type	3c. Type of impact	3d. Stream name	3e. Stream Type	3f. Jurisdiction type	3g. Stream width	3h. Impact length
5-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Culvert**	**Buckhead Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**206** (linear feet)
5-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Culvert**	**Buckhead Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**27** (linear feet)
U5 Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Excavation**	**Buckhead Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**45** (linear feet)
U6 Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Excavation**	**Buckhead Creek**	**Perennial** Perennial (PER) or intermittent (INT)	**Both**	Average (feet)	**48** (linear feet)

** All Perennial or Intermittent streams must be verified by DWR or delegated local government.

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

840

3i. Total temporary stream impacts:

235

3i. Total stream and tributary impacts:

1075

3j. Comments:

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Site # - Reason for impact	4b. Impact type	4c. Name of waterbody	4d. Activity type	4e. Waterbody type	4f. Impact area
1-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Ut Little Rockfish Creek** (if applicable)	**Culverts**		**0.01** (acres)
1-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Ut Little Rockfish Creek** (if applicable)	**Culverts**		**0.01** (acres)
2-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Ut Beaver Creek SA** (if applicable)	**Culverts**		**0.03** (acres)
2-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Ut Beaver Creek SA** (if applicable)	**Culverts**		**0.03** (acres)
3-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Beaver Creek** (if applicable)	**Culverts**		**0.03** (acres)
3-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Beaver Creek** (if applicable)	**Culverts**		**0.01** (acres)

4a. Site # - Reason for impact	4b. Impact type	4c. Name of waterbody	4d. Activity type	4e. Waterbody type	4f. Impact area
4-slipline Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Ut Beaver Creek SC** (if applicable)	**Culverts**		**0.07** (acres)
4-slipline Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Ut Beaver Creek SC** (if applicable)	**Culverts**		**0.01** (acres)
5-extension Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Buckhead Creek** (if applicable)	**Culverts**		**0.09** (acres)
5-extension Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Buckhead Creek** (if applicable)	**Culverts**		**0.01** (acres)
U2 Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Ut Beaver Creek SA** (if applicable)	**Excavation**		**0.05** (acres)
U5 Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Buckhead Creek** (if applicable)	**Excavation**		**0.01** (acres)
U6 Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Buckhead Creek** (if applicable)	**Excavation**		**0.02** (acres)

4g. Total temporary open water Impacts:

0.15

4g. Total permanent open water impacts:

0.23

4g. Total open water impacts:

0.38

4h. Comments:

5. Pond or Lake Construction

If pond or lake construction is proposed, then complete the chart below.

6. Buffer Impacts (for DWR)

If project will impact a protected riparian buffer, then complete the chart below. Individually list all buffer impacts below.

E. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project: *

The proposed storm drainage systems will maintain existing drainage patterns and route runoff to natural outfalls. There are four major structures that will be extended and one energy dissipater utilized to minimize water quality impacts. Supplemental pipes will be added to the major crossing extensions to meet FEMA MOA requirements. Stilling basins will be utilized to install the supplemental pipes and major structure extensions. The use of 3:1 slopes in jurisdictional areas when practicable.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques: *

Erosion control devices such as silt fence, rock inlet sediment traps, slope drains, clean water diversions, and silt bags will also be utilized to minimize water quality impacts. BMP's for Construction and Maintenance Activities will be adhered to.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

(•) Yes ( ) No

2c. If yes, mitigation is required by (check all that apply):

[x] DWR [x] Corps

2d. If yes, which mitigation option(s) will be used for this project?

[ ] Mitigation bank [x] Payment to in-lieu fee program [ ] Permittee Responsible Mitigation

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.

[x] Yes

4b. Stream mitigation requested:

(linear feet)

623

4c. If using stream mitigation, stream temperature:

warm

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

0.21

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

4h. Comments

6. Buffer mitigation (State Regulated Riparian Buffer Rules) - required by DWR

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation? If yes, you must fill out this entire form - please contact DWR for more information.

( ) Yes (•) No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation calculate the amount of mitigation required in the table below.

	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1				
Zone 2				

6f. Total buffer mitigation required

6g. If buffer mitigation is required, is payment to a mitigation bank or NC Division of Mitigation Services proposed?

○ Yes ○ No

6h. Attach the acceptance letter from the mitigation bank or NC Division of Mitigation Services.

(PDF only)

6i. If no, then discuss what type of mitigation is proposed.

6j. Comments:

F. Stormwater Management and Diffuse Flow Plan (required by DWR)

1a. Does this project require a Stormwater Management Plan?

◉ Yes ○ No

1b. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan:

1c. What is the overall percent imperviousness of this project?

%

1d. Who will be responsible for the review of the Stormwater Management Plan? *

☐ Certified Local Government
☐ DEMLR Stormwater Review
☐ DWR 401 & Buffer Permitting Branch
☑ DWR Transportation Permitting Branch

2. Diffuse Flow Plan

2a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

○ Yes ○ No

5. DWR 401 Stormwater Review

5a. Is the Stormwater Management Plan (including BMP Supplemental Forms and Operation and Maintenance Agreements) attached?

○ Yes ○ No

Stormwater Management Plan Upload

Click the upload button or drag and drop files here to attach document

file type must be pdf

G. Supplementary Information

1. Environmental Documentation

1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? *

◉ Yes ○ No

1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? *

◉ Yes ○ No

1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) *

◉ Yes ○ No

NEPA or SEPA Final Approval Letter

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

2. Violations (DWR Requirement)

2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? *

- ○ Yes
- ◉ No

2b. Is this an after-the-fact permit application? *

- ○ Yes
- ◉ No

2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):

3. Cumulative Impacts (DWR Requirement)

3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? *

- ○ Yes
- ◉ No

3b. If you answered "no," provide a short narrative description.

While the implementation of a median will alter entrance and exit patterns, this reduction in access will not result in indirect or cumulative effects. The project will not influence nearby land use nor stimulate growth. Therefore, a detailed indirect and cumulative effects study will not be necessary for this project.

4. Sewage Disposal (DWR Requirement)

4a. Describe, in detail, the treatment methods and dispositions (non-discharge or discharge) of wastewater generated from the proposed project. If the wastewater will be treated at a treatment plant, list the capacity available at that plant.

5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? *

- ○ Yes
- ◉ No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? *

- ○ Yes
- ◉ No

5c. If yes, indicate the USFWS Field Office you have contacted.

5d. Is this a DOT project located within Division's 1-8? *

- ◉ Yes
- ○ No

5i. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? *

NHP data, field surveys

6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? *

- ○ Yes
- ◉ No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? *

NMFS

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: http://gis.ncdcr.gov/hpoweb/

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? *

(•) Yes ( ) No

7b. What data sources did you use to determine whether your site would impact historic or archeological resources? *

NEPA document. In September 2013 NCDOT and HPO agreed that the Lindy's (former A & W) Drive In and Lafayette Lanes Bowling Alley are eligible, while the Owen's Florist store and house are not eligible. A July 2014 consultation with HPO and FHWA revealed that the project as designed at the time imposed an adverse effect for both of the properties in question. NCDOT refined the design and in November 2015 obtained concurrence with HPO and FHWA on "no adverse effect" findings for both properties. The Historic Architecture and Landscapes Assessment of Effects Form is included in Appendix C.

7c. Historic or Prehistoric Information Upload

Click the upload button or drag and drop files here to attach document

12-05-0008EffectsForm.pdf 4.52MB

File must be PDF

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: https://msc.fema.gov/portal/search

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

(•) Yes ( ) No

8b. If yes, explain how project meets FEMA requirements:

8c. What source(s) did you use to make the floodplain determination? *

FEMA Maps

Miscellaneous attachments not previously requested.

Click the upload button or drag and drop files here to attach document

File must be PDF

Signature

*

☑ By checking the box and signing below, I certify that:

- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Colin Mellor

Signature

Colin Mellor

Environmental Quality

ROY COOPER
Governor

October 19, 2017

Mr. Philip S. Harris, III, P.E., CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

U-4405, US 401 from West of SR 1409 (Sevenly First School Road) to US 401 Business (Robeson Street), Cumberland County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on October 19, 2017, the impacts are located in CU 03030004 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030004 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	623.0	0	0	0	0	0

*Some of the stream impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2017 impact data. DMS will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
Credit Management Supervisor

cc: Ms. Liz Hair, USACE – Wilmington Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: U-4405

Please fill out all yellow cells as completely as possible. Use pick lists where provided. For more information on the NCDOT Stormwater Management Plan form, please refer to the document, NCDOT Stormwater Best Management Practices Toolbox (2014).
If the project drains to multiple water bodies, please drag the print area down such that Water Bodies 2 through 6 print on Page 2

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 39049.1.1 **TIP No.:** U-4405 **County(ies):** Cumberland

General Project Information

WBS Element:	39049.1.1	**TIP Number:**	U-4405	**Project Type:**	Roadway Improvements	**Date:**	7/14/2017
NCDOT Contact:	Paul Atkinson, PE			**Contractor / Designer:**	Ecological Engineering, LLP/ Reid B. Robol, PE		
	Address: 1020 Birch Ridge Road Raleigh, 27610				**Address:** 1151 SE Cary Parkway Suite 101 Cary NC, 27518		
	Phone: (919) 707-6707				**Phone:** 919-557-0929		
	Email: patkinson@ncdot.gov				**Email:** rrobol@ecologicaleng.com		
City/Town:	Fayetteville			**County(ies):**	Cumberland		
River Basin(s):	Cape Fear			**CAMA County?**	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	5.82 Miles	**Surrounding Land Use:**	Commercial, Residential, Urban

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	74.6 ac.	72.1 ac.
Typical Cross Section Description:	Typicals vary throughout the project: 10-12' lanes, 0'-35' raised median, curb and gutter and 5' sidewalks.	Typicals vary throughout the project: 10'-12' lanes, 0'-30' ditched medians, roadside ditches and some curb and gutter sections.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 63150 Year: 2018	Existing: 70975 Year: 2038

General Project Narrative: (Description of Minimization of Water Quality Impacts)

State Project U-4405 consists of roadway improvements to 5.82 Miles of Raeford Road in Fayetteville, NC. The surrounding land use consists of a highly developed, urbanized area that contains commercial, residential, and school areas. Roadside and median ditches will be replaced with a curb and gutter system throughout the project. The proposed storm drainage systems will maintain existing drainage patterns and route runoff to natural outfalls. There are four major structures that will be extended and one energy dissipator utilized to minimize water quality impacts. Supplemental pipes will be added to the major crossing extensions to meet FEMA MOA requirements. Stilling basins will be utilized to install the supplemental pipes and major structure extensions. Erosion control devices such as silt fence, rock inlet sediment traps, slope drains, clean water diversions, and silt bags will also be utilized to minimize water quality impacts.

Waterbody Information

Surface Water Body (1):	Beaver Creek Trib A		**NCDWR Stream Index No.:**	NA	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C		
		Supplemental Classification:	None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:				**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?**	N/A
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)					

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

Additional Waterbody Information

Surface Water Body (2):	Beaver Creek		**NCDWR Stream Index No.:**	18-31-24-5		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (3):	UT to Beaver Creek		**NCDWR Stream Index No.:**	NA		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (4):	Buckhead Creek		**NCDWR Stream Index No.:**	18-31-24-6		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	mercury (Hg)					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

Surface Water Body (5):	UT to Little Rockfish Creek		**NCDWR Stream Index No.:**	NA		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class B			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				**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?**	N/A	
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)						

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: **TIP No.:** U-4405 **County(ies):** Cumberland

Preformed Scour Holes and Energy Dissipators

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
16	-L- 173+00 LT 35.042756/-78.966389	UT to Beaver Creek	Riprap Energy Dissipator Basin	Class II	35.0	Pipe	60	146.0	2.9	N/A

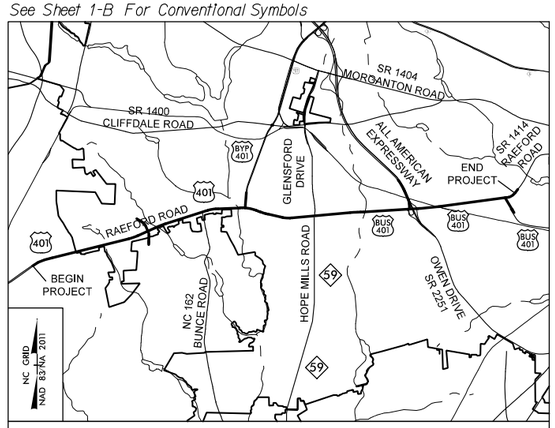
Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

TIP PROJECT: U-4405

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

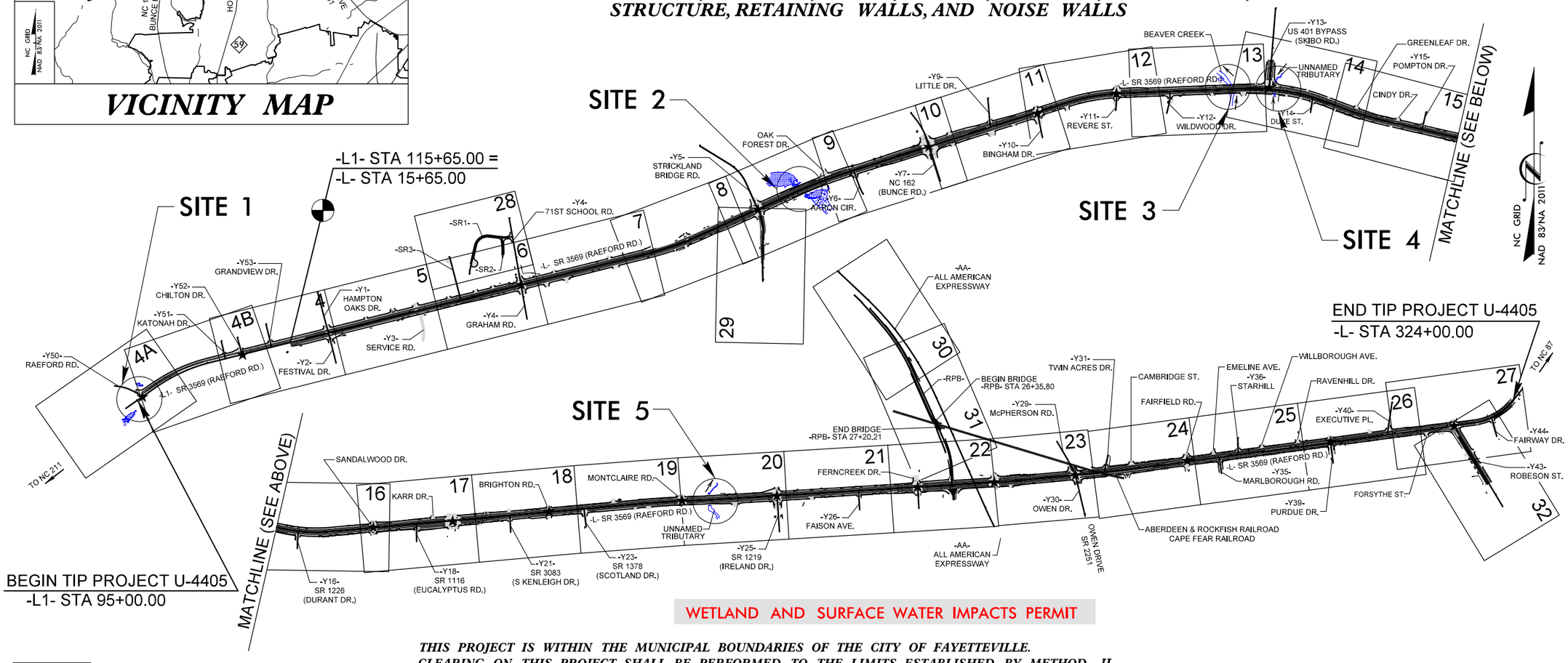
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE

PERMIT DRAWING
SHEET 1 OF 17

LOCATION: *US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS*



★ PROPOSED SIGNAL

WETLAND AND SURFACE WATER IMPACTS PERMIT

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II .
***** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED***

GRAPHIC SCALES

50 25 0 50 100
PLANS

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*TTST = 1% DUAL = 2%
FUNC CLASS = URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 29, 2016

LETTING DATE: JULY 17, 2018

CLINTON J. MORGAN, PE
PROJECT ENGINEER

VIRGINIA SCHAAR, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DEPARTMENT OF TRANSPORTATION • STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 2 OF 18

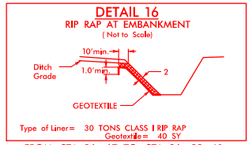
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

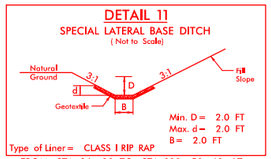
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50-
PI Sta 13+13.27
Δ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
Δ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

-Y50- POT Sta. 10+00.00

N 78° 19' 20.4" E

-Y50- PC Sta. 10+85.41

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50- PRC Sta. 16+13.41

BEGIN ASPHALT OVERLAY

BEGIN ASPHALT OVERLAY

S 58° 26' 33.7" E

N 55° 08' 56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

RETAIN SYSTEM

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

-L1- PC Sta. 97+95.86

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

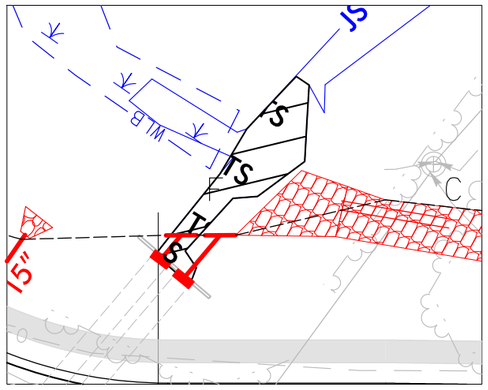
COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11 C

SITE 1
SEE ENLARGEMENT, THIS SHEET

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

GODFRE AND WIFE S DB 8 BM

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

Piedmont Natural Gas Company Inc, 4 " PLASTIC

EXISTING R/W

84" ALUM

18" RCP

24" RCP

30" RCP

36" RCP

15" RCP

RIPRAP

CB

MH

TOP=194.23'

TOP=194.79

TOP=197.38'

PROP. 2'-6" C&G

EXISTING R/W 6' CONC. SW

20' SEWER EASEMENT (PB C07 PG 140)

N 85°28'59" E 316.21'

NOTE: SEE SHEET 52 FOR -L1- PROFILE

11:39:03 AM
K:\Projects\Roadway Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 3 OF 18

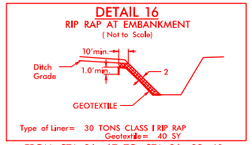
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

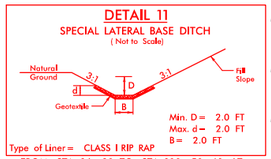
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50- POT Sta. 10+00.00

N 78°19'20.4" E

-Y50-
PI Sta 13+13.27
Δ = 43°14'06.3" (RT)
D = 9°57'52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-Y50- PC Sta. 10+85.41

-L1-
PI Sta 101+73.28
Δ = 20°51'47.4" (RT)
D = 2°47'41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

BEGIN ASPHALT OVERLAY

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50-

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

BEGIN ASPHALT OVERLAY

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SITE 1
SEE ENLARGEMENT, THIS SHEET

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11

CB

S 58°26'33.7" E

RETAIN SYSTEM

N 55°08'56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

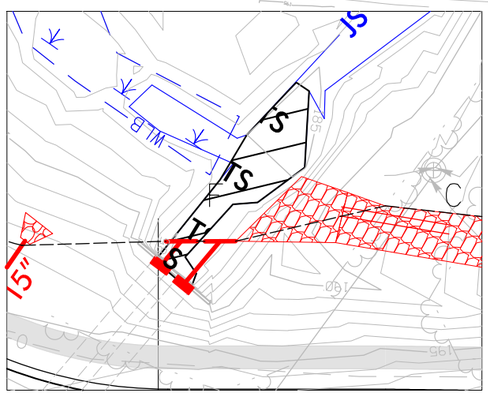
-L1- PC Sta. 97+95.86

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

NOTE: SEE SHEET 52 FOR -L1- PROFILE

I:\4405_Hydraulics\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A_con.dgn
10:43:31 AM
erlberger

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-160

PERMIT DRAWING
SHEET 4 OF 18

WETLANDS

97+50.00

97+00.00

3:1

195.15

96+50.00

SITE 1

96+00.00

95+50.00

95+00.00

-L1-

$$$$$$SYSTIME$$$$$$
$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 5 OF 18

NC GRID
NAD 83/NA 2011

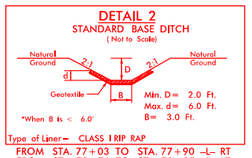
8/17/99

REVISIONS

-L-
PIs Sta 81+21.39 Θs = 0° 27' 17.0" Ls = 100.00' LT = 66.67' ST = 33.33'
PI Sta 84+71.94 Δ = 5° 45' 54.2" (RT) D = 0° 54' 34.0" L = 633.90' T = 317.22' R = 6,300.00' SE = 0.025
PIs Sta 88+21.95 Θs = 0° 27' 17.0" Ls = 100.00' LT = 66.67' ST = 33.33'

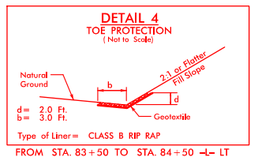
-Y5-
PI Sta 15+94.46 Δ = 34° 10' 44.0" (RT) D = 10° 44' 58.8" L = 317.95' T = 163.86' R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5" E

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT, THIS SHEET

SITE 2

MATCHLINE SEE SHEET 8
-L- STA 74+75

MATCHLINE SEE SHEET 29
-Y5- STA 23+00

MATCHLINE SEE SHEET 10
-L- STA 88+00

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING, LLC DB 8474 PG 295 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 5616 PG 794 DB 4960 PG 348

89 CITY OF RAEFORD REAL ESTATE FOUNDATION DB 8047 PG 212 DB 89 PG 122

90 STEPHEN M. GENTER & WIFE DB 4342 PG 504 PB 89 PG 122

DO NOT DISTURB SIGN

RETAIN EXISTING SIDEWALK

RETAIN SYSTEM

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

CL II RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

TOE PROTECTION
SEE DETAIL 4

JB w/MH
SEE SPECIAL DETAIL

150' LANE TAPER (LT TURN)

300' UNIFORM LANE SHIFT

COLLAR AND EXTEND

SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

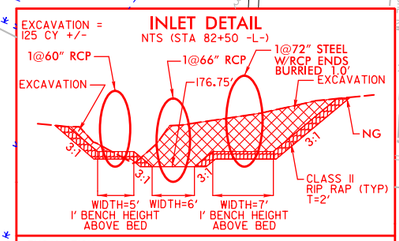
CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

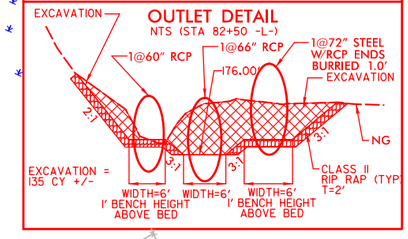
-Y5-

PI Sta 22+82.12 Δ = 25° 18' 13.3" (RT) D = 10° 44' 58.8" L = 235.39' T = 119.65' R = 533.00' SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



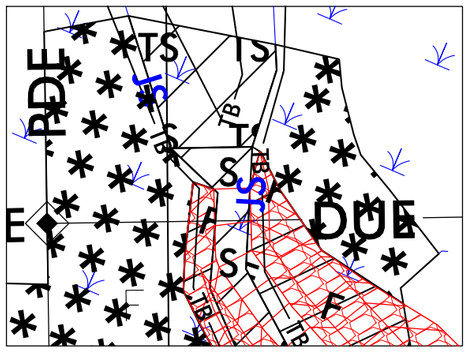
OUTLET DETAIL
NTS (STA 82+50 -L-)



SCALE
50' 0' 50' 100'
INSET SCALE
200' 0' 200' 400'

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



SITE 2 INLET

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

11:42:31 AM
K:\Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_09.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

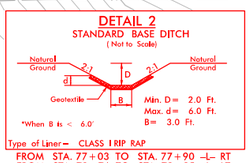
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 6 OF 18

-L-		
Pls Sta 81+21.39	Pl Sta 84+71.94	Pls Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

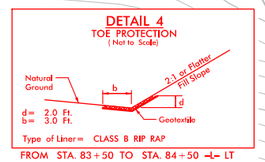
-Y5-
Pl Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner = CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner = CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta. 76+45.55 = -Y5- Sta. 21+12.54

-Y5- PC Sta. 21+62.48

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

-L- N 65° 39' 46.5" E

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

MATCHLINE SEE SHEET 10 -L- STA 88+00

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING, LLC DB 8474 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JOHNATHAN H ELLIOT DB 9616 PG 794 DB 4960 PG 148

89 CITY OF RAEFORD REAL ESTATE FOUNDATION DB 8047 PG 212 DB 89 PG 122

90 STEPHEN M. GENTER & WIFE DB 4342 PG 504 PB 89 PG 122

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

CLASS II RIP RAP
EST 7 TONS
EST 7 SY
GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

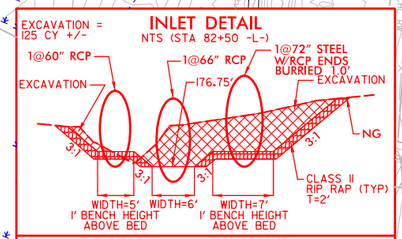
TOE PROTECTION
SEE DETAIL 4

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

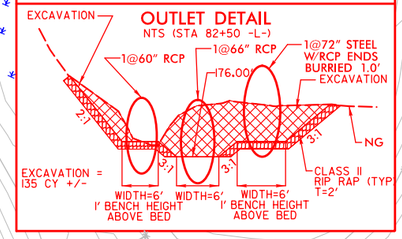
CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

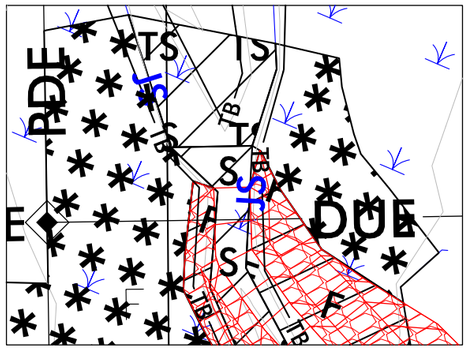
-Y5-
Pl Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)





SITE 2 INLET

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

NC GRID NAD 83/NA 2011

REVISIONS 8/17/99

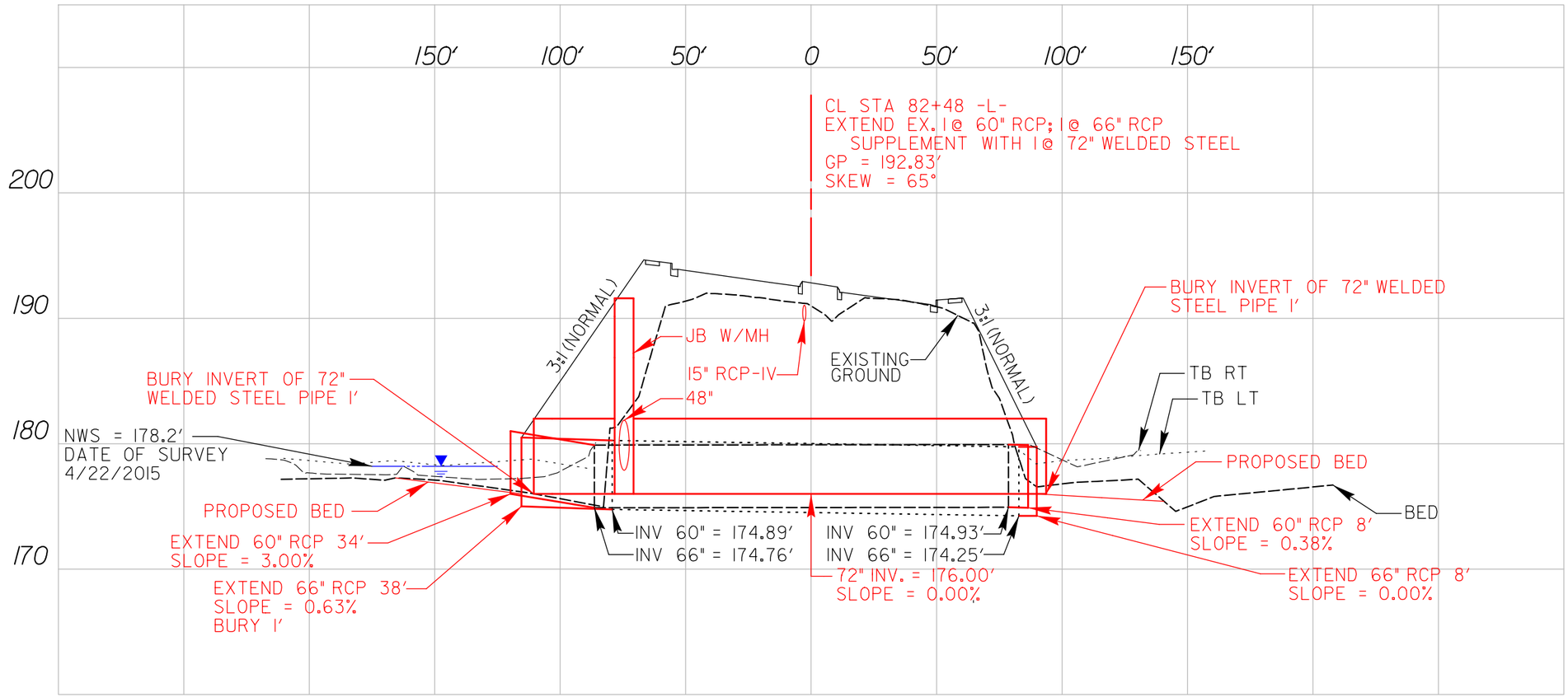
11:43:10 AM
K:\TIP\U-4405\Roadway\Plans\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_09_con.dgn

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 7 OF 18



$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$

8/23/99

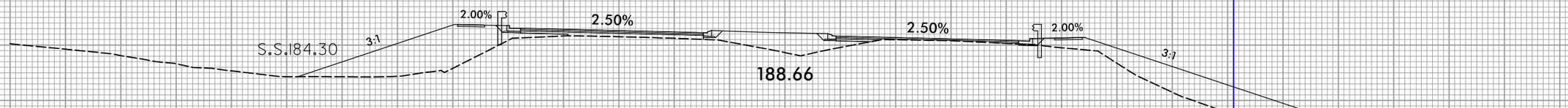
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-24

PERMIT DRAWING
SHEET 8 OF 18

85+00.00

84+50.00

WETLANDS



84+00.00

SITE 2

83+50.00

83+00.00

–L–

$$$$USERNAME$$$$ $$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

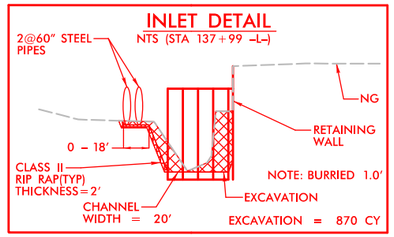
8/17/99

REVISIONS

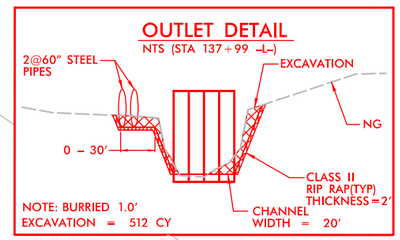
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

INLET DETAIL
NTS (STA 137+99 -L-)



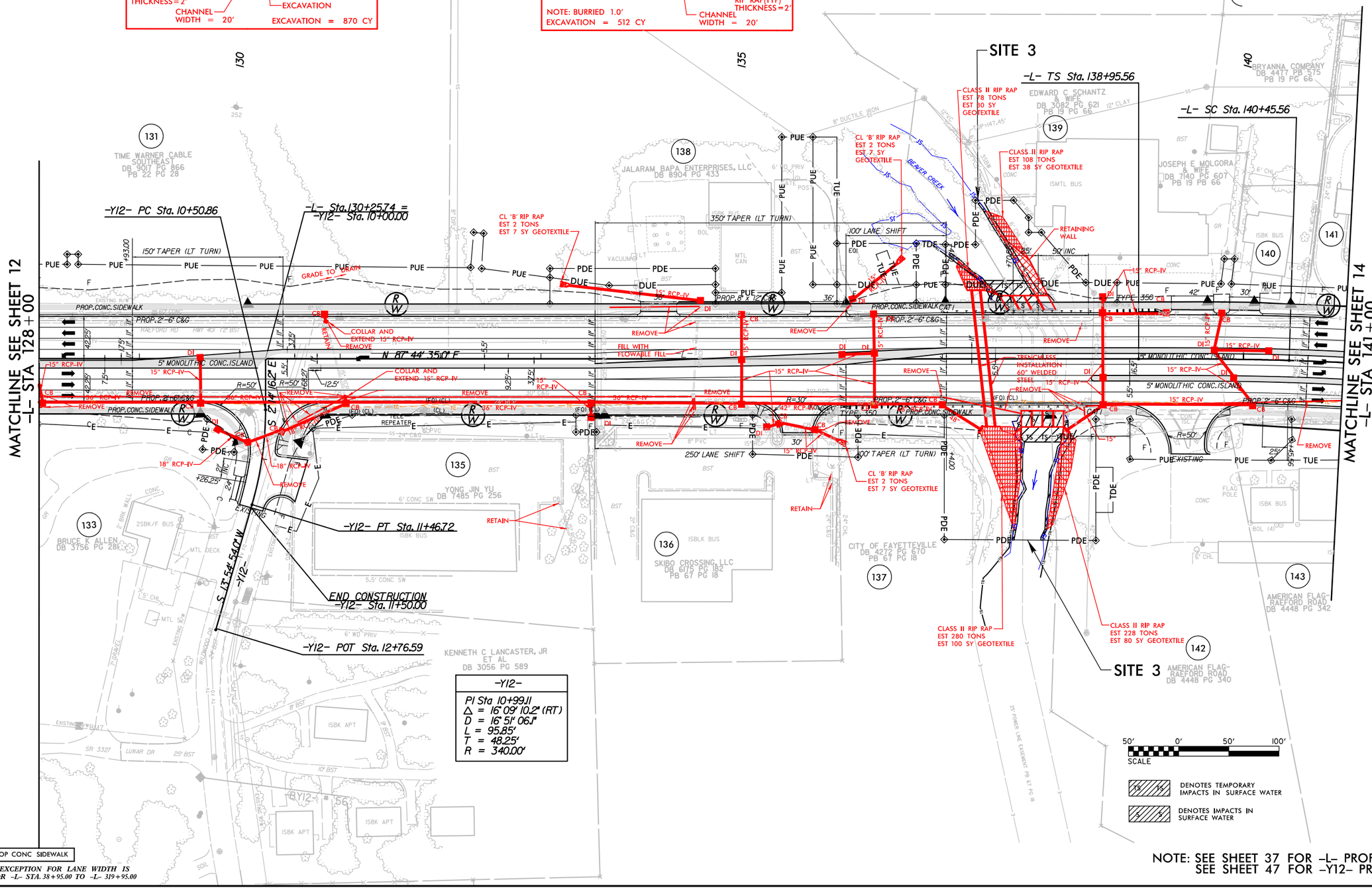
OUTLET DETAIL
NTS (STA 137+99 -L-)



NC GRID
NAD 83/NA 2011

-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

PERMIT DRAWING SHEET 9 OF 18



** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$
$$$$$DGN$$$$$

8/17/99

REVISIONS

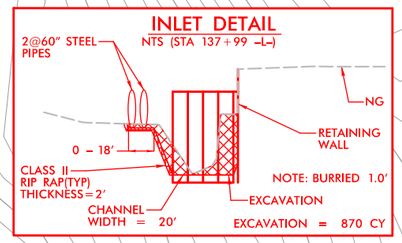
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

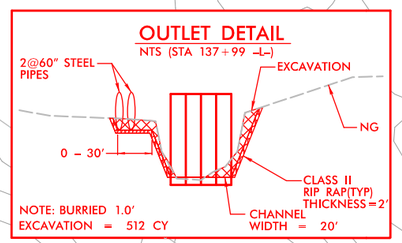
PERMIT DRAWING SHEET 10 OF 18

NC GRID
NAD 83/NA 2011

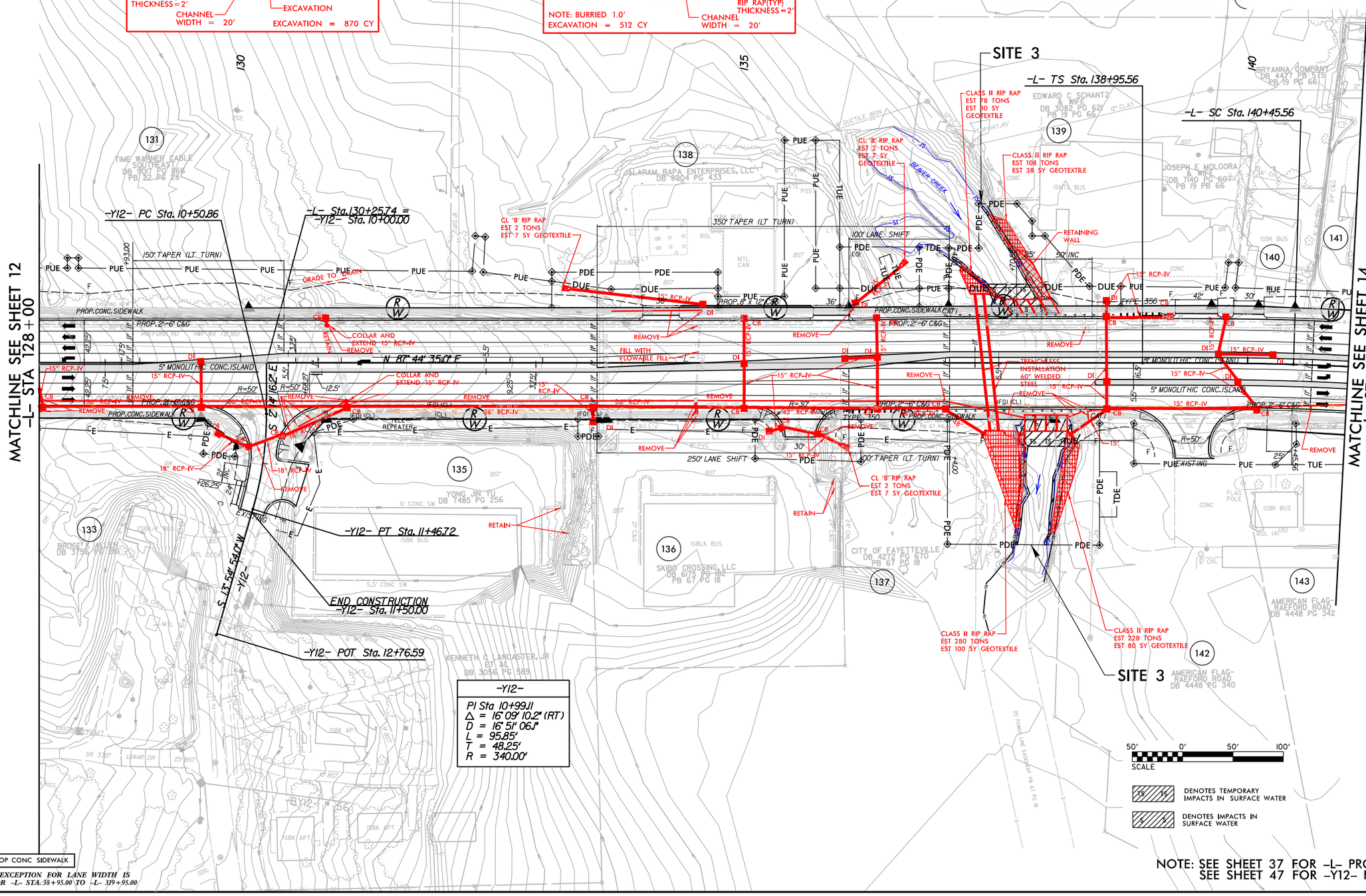
INLET DETAIL
NTS (STA 137+99 -L-)



OUTLET DETAIL
NTS (STA 137+99 -L-)



-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03



** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 39+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

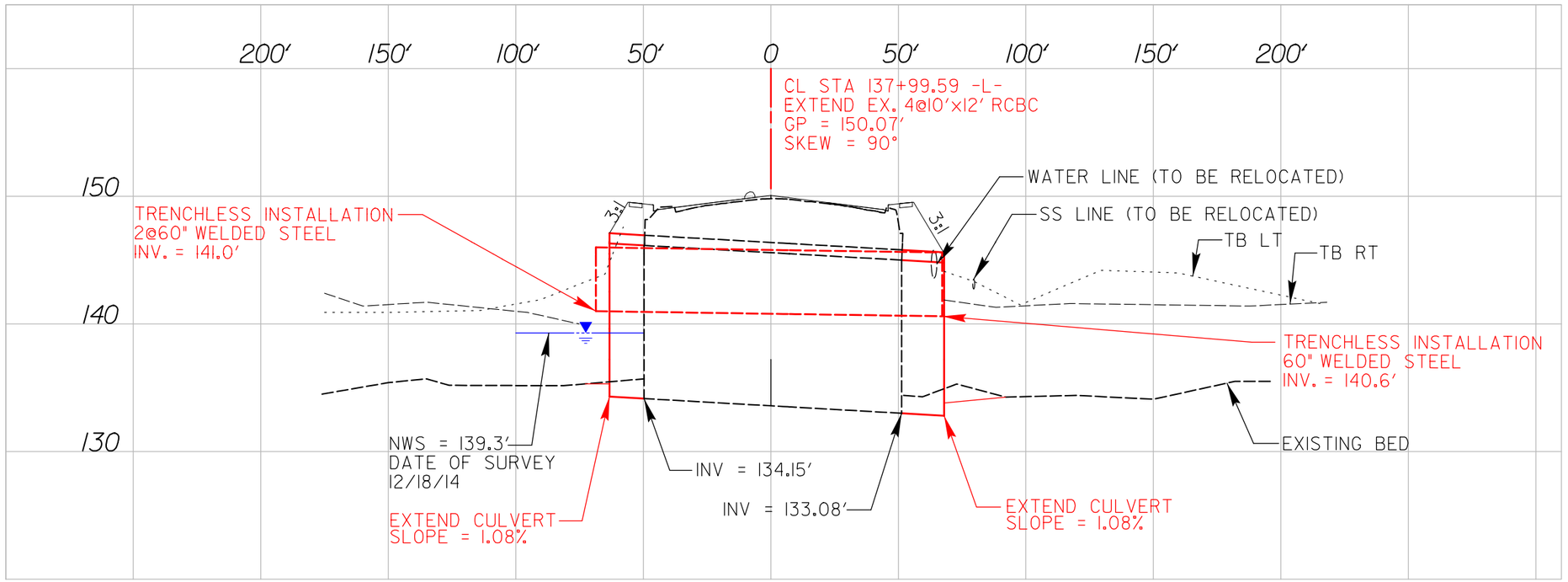
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 11 OF 18



$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/NA 2011
NC GRID

PERMIT DRAWING
SHEET 12 OF 18

8/17/99

REVISIONS

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

-L- CS Sta. 148+88.39

-L- Sta. 148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

END CONSTRUCTION
-Y14- Sta. 11+45.00

-Y14- POT Sta. 11+89.87

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

-L- Sta. 142+66.31 =
-Y13- Sta. 20+11.93

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)

OUTLET DETAIL
NTS (STA 143+37 -L-)

NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

I:\46108_AM\Roadway\Plans\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_14.dgn
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RJ Goodwin

8/17/99

REVISIONS

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/NA 2011
NC GRID

PERMIT DRAWING
SHEET 13 OF 18

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

" RCP-IV

-L- CS Sta. 148+88.39

-L- Sta. 148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

DO NOT DISTURB SIGN

DO NOT DISTURB FENCE

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

END CONSTRUCTION
-Y14- Sta. 11+45.00
-Y14- POT Sta. 11+89.87

-L- Sta. 142+66.31 =
-Y13- Sta. 20+11.93

S 4° 34' 14.2" W

S 69° 30' 10.3" E

S 7° 52' 28.0" W

SCALE
50' 0' 50' 100'

INSET SCALE
100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)

1@72" STEEL W/RCP ENDS BURIED 1.0'
2@72" RCP EXTENSIONS
EXCAVATION
NG
2:1
CLASS II RIP RAP T=2'
EXCAVATION =257 CY
VARIES 9'-26' 1.5' BENCH HEIGHT ABOVE BED
CHANNEL WIDTH =8'
138.5'

OUTLET DETAIL
NTS (STA 143+37 -L-)

1@72" STEEL W/ RCP ENDS BURIED 1.0'
2@72" RCP
EXCAVATION
NG
2:1
CLASS II RIP RAP T=2'
EXCAVATION =342 CY
VARIES 3'-23' 1.5' BENCH HEIGHT ABOVE BED
CHANNEL WIDTH =8'
137.2'

NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

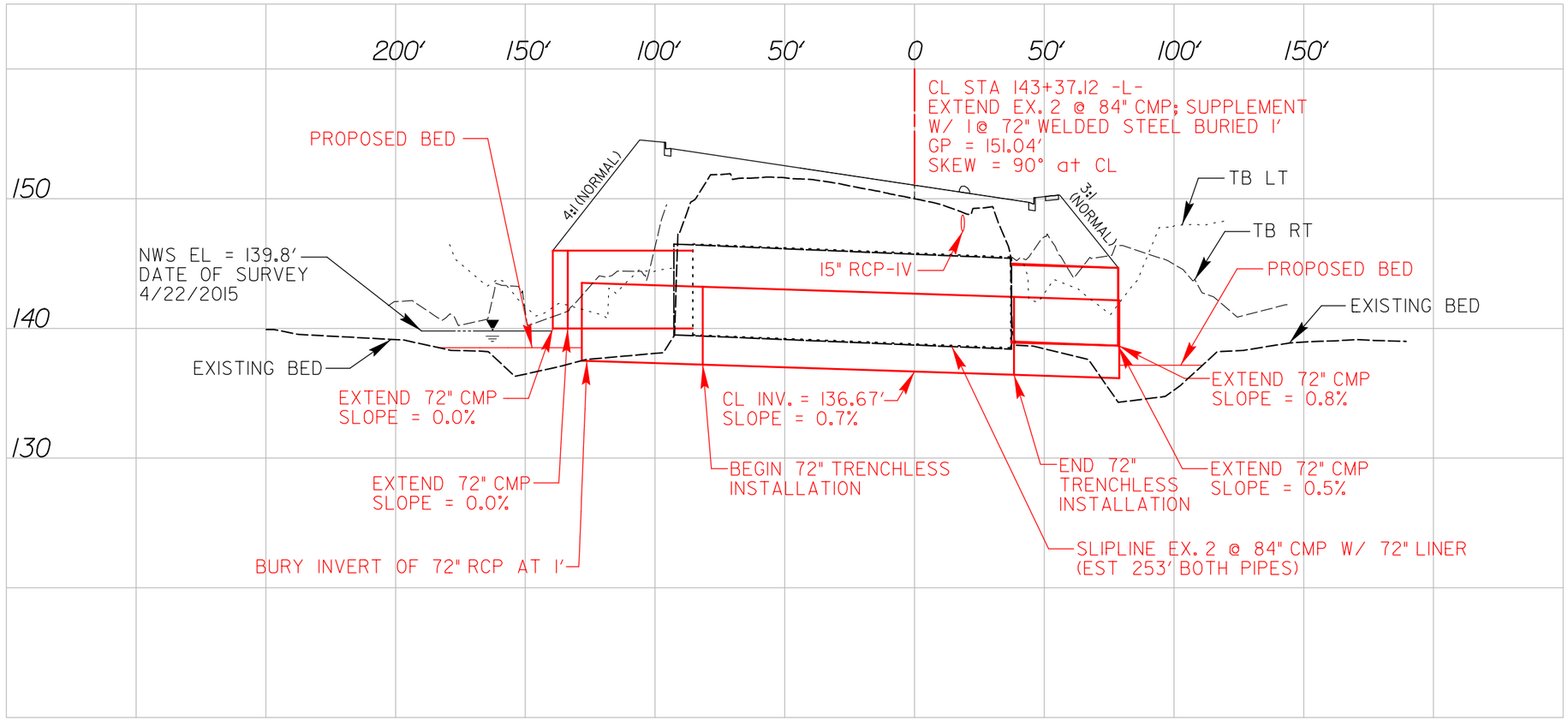
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8/16/2012 AM
RJohnson

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 14 OF 18



$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$DESIGN$$$$
$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 15 OF 18

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/
CLASS II RIP RAP
146 TONS
188 SY GEOTEXTILE

CLASS II RIP RAP
25 TONS
32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- Sta. 229+68.64 =
-Y25- Sta. 10+00.00

NORWOOD E. BRYAN, JR
& DAVID C. BRYAN
DB 2389 PG 719

JOHN M. TEW
& WIFE SHIRLEY
DB 2542 PG 343
PB 23 PG 1

KENT A. VAN BELOIS
& WIFE
DB 3364 PG 865

RREF II BB-NC, LLC
DB 9368 PG 66

NCP FAYETTEVILLE, LLC
DB 6243 PG 563

IRELAND CROSSING, INC
DB 4262 PG 371
PB 73 PG 61

IRELAND CROSSING, INC
DB 4261 PG 210
PB 86 PG 110

SITE 5

FLOODPLAIN BENCH W/
CLASS II RIP RAP
397 TONS
420 SY GEOTEXTILE

CLASS II RIP RAP
178 TONS
188 SY GEOTEXTILE

RETAIN SYSTEM

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

END CONSTRUCTION
-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

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stricklandr

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 16 OF 18

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- Sta. 229+68.64 =
-Y25- Sta. 10+00.00

END CONSTRUCTION
-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

N 87° 34' 14.6" E

N 86° 29' 42.1" E

S 3° 44' 47.0" E

SITE 5

FLOODPLAIN BENCH W/
CLASS II RIP RAP
146 TONS
188 SY GEOTEXTILE

CLASS II RIP RAP
25 TONS
32 SY GEOTEXTILE

FLOODPLAIN BENCH W/
CLASS II RIP RAP
397 TONS
420 SY GEOTEXTILE

CLASS II RIP RAP
178 TONS
188 SY GEOTEXTILE

RETAIN SYSTEM

NORWOOD E BRYAN, JR
& DAVID C BRYAN
DB 2389 PG 719

JOHN M TEW
& WIFE SHIRLEY
DB 5822 PG 545
PB 25 PG 145

KENT A VAN BELOIS
& WIFE
DB 3364 PG 865

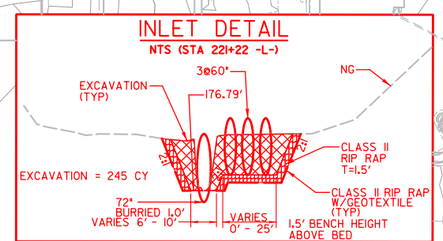
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DB 9368 PG 66

NCP FAYETTEVILLE LLC
DB 6243 PG 567

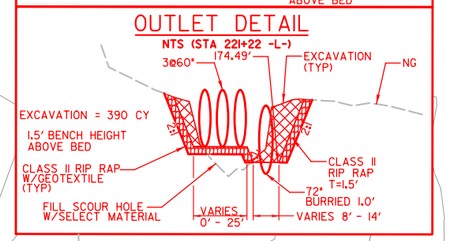
IRELAND CROSSING, INC
DB 4262 PG 371
PB 73 PG 61

IRELAND CROSSING, INC
DB 4261 PG 210
PB 86 PG 110

INLET DETAIL
NTS (STA 221+22 -L-)



OUTLET DETAIL
NTS (STA 221+22 -L-)



50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

REVISIONS
8/17/99

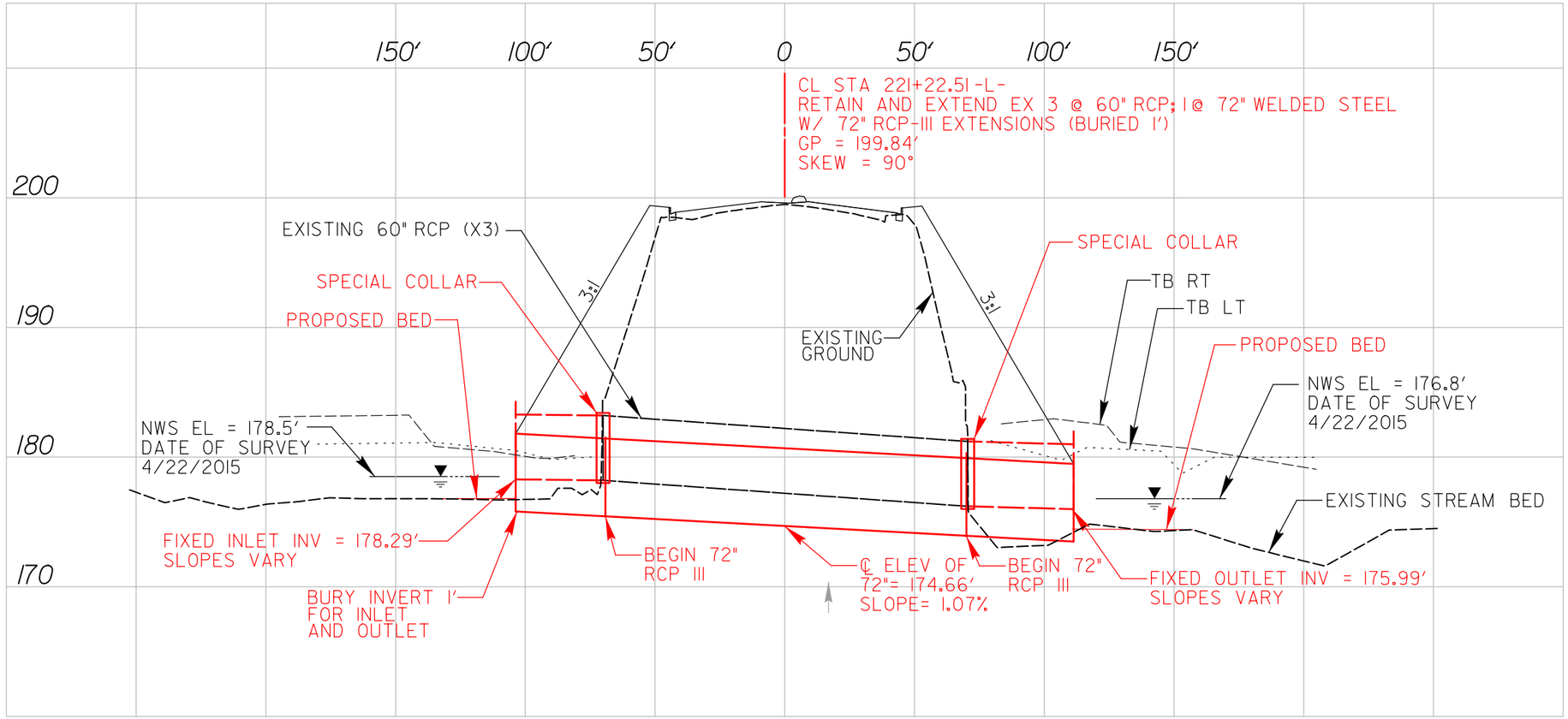
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8/18/2021 7:41:07 AM
stridgeway

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 17 OF 18



$$$$SYSTIME$$$$
$$$$USERNAME$$$$

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L1- 96+44/96+82 LT	EXTENSION OF 2@48" RCP						< 0.01	< 0.01	8	43	
2	-L- 81+47/84+92 RT & LT	EXTENSION OF 1@60", 1@66" RCP & 1@72" TRENCHLESS WELDED STEEL	0.10			0.10		0.03	0.03	201	31	
3	-L- 137+03/138+25 RT & LT	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL						0.03	0.01	33		
	BANK STABLIIZATION	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL								176	21	
4	-L- 143+03/144+02 RT &LT	SLIPLINE EX. 2@84" CMP W/ 72" LINER & 1@72" TRENCHLESS WELDED STEEL						0.07	< 0.01	216	20	
5	-L- 143+03/144+02 RT &LT	EXTENSION OF 3@60" RCP & 1@72" TRENCHLESS WELDED STEEL						0.09	< 0.01	206	27	
TOTALS*:			0.10			0.10		0.23	0.06	840	142	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/3/17
CUMBERLAND COUNTY
U-4405
39049.1.1
SHEET 18 OF 18

Revised 2016 09 09

U-4405 NEU ENVIRONMENTAL PERMIT NARRATIVE

Fayetteville Public Works Commission – 16 inch Gravity Sewer Main: The Fayetteville Public Works Commission, PWC, owns an existing 10" vitrified clay gravity sewer main that runs along the L- line of U-4405 from the west to an existing manhole at L-Sta. 220+74.50 near Buckhead Creek. From there it is a ductile iron main and traverses northeast to an existing manhole at L-Sta. 221+00.85. From there it crosses the L-line and traverses to an existing manhole at L-Sta. 221+02.04. Next it traverses east to an existing manhole at L-Sta. 221+71.92. From there it traverses east across Buckhead Creek to a proposed manhole at L-Sta. 221.98.96 and this connects to a proposed 8" gravity sewer line running east parallel to the L-line.

PWC is proposing to install a proposed 16" gravity sewer main on U-4405 near the creek prior to the transportation improvement project and the installation of other proposed utility lines. The reason that they want to install this proposed sewer main ahead of the road work is that the flooding that occurred due to Hurricane Matthew in 2016 washed out part the existing manhole and sewer mains near the creek. The lengths of the sewer main segments are not of sufficient size to do a trenchless installation. There are inadequate distances between junctions to get under the stream and return close to ground level. The proposed sewer main on the north side of the L-line will connect to the existing manhole at L-Sta. 220+74.50 and traverses north to a proposed manhole at L-Sta. 220+69.78. From there it traverses east to the proposed manhole at L-Sta. 221+60.73. Then it traverses across Buckhead Creek by open cut to L-Sta. 221+92.63. Jute matting will be installed in the creek. From this manhole the proposed sewer main will be open cut to a bore pit at L-Sta. 221+93.21. The sewer main will be installed by a bore and jack under the L-line with a 30" steel encasement that extends to L-Sta. 221.98.96 on the L-line's south side. At this station it connects to a proposed manhole. From there the proposed sewer main runs south to a proposed manhole and existing sewer line at L-Sta. 222+00.07. A 133 ft. sewer main segment will be installed going east along the south side of the L-line from the manhole at L-Sta. 221+98.96 to the proposed manhole at L-Sta. 223+31.55.

Also on the south side, a proposed sewer main runs from a proposed cleanout that connects to an existing small sewer line running from the west at L-Sta. 220+34.44 and runs southeast to a proposed cleanout at L-Sta. 220+90.63. It continues southeast to another proposed cleanout at L-Sta. 220+85.75. From this cleanout it continues southeast to a proposed manhole at L-Sta. 221+31.26. The proposed 16" sewer main then traverses east and crosses the creek by an open cut. Jute matting will be laid across the water in this area. The proposed sewer main connects to a proposed manhole at L-Sta. 222+44.36 and an existing 16" sewer main that runs northwest toward the existing manhole at L-Sta. 220+00+07.

All stations stated in this narrative are approximate. The proposed sewer main installation at Buckhead Creek on the north side of the L-line causes less than 0.01 acres due to temporary surface water

disturbances. The proposed sewer main installation at Buckhead Creek on the south side of the L-line causes environmental impacts of 0.02 acres due to temporary surface water disturbances.

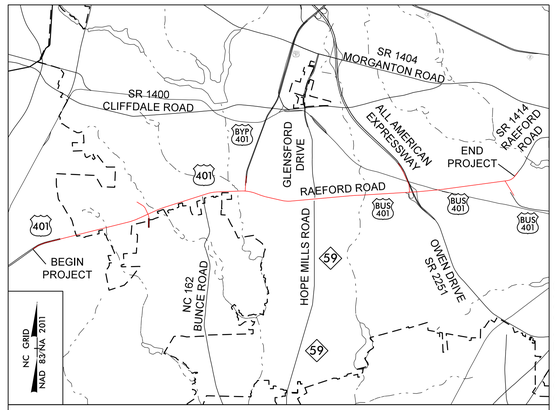
Fill and excavation constitute a part of these temporary surface water impacts. The total environmental impact caused by these proposed sewer main installations is 0.02 acres due to temporary surface water disturbances. PWC will install an 8 inch gravity sewer main on the south side of Raeford Rd. from L-Sta. 82+10.45 to L-Sta. 83+48.12. They will open cut the wetlands from L-Sta. 83+33.79 to L-Sta. 83_48.05. this will produce environmental impacts of less than 0.01 acres due to excavation in the wetland. The contact for Fayetteville Public Works Commission is James Michel. Their address is 955 Old Wilmington Road Fayetteville, N. C. 28301. His phone number is 910 223-4785. His email is james.michel@faypwc.com .

Fayetteville Public Works Commission-24 Inch Water Main - The Fayetteville Public Works Commission, PWC, owns an existing 24" ductile iron water main that runs along the south side of and parallel with Raeford Rd. . It conflicts with the proposed roadway construction on U-4405. Hence PWC plans to install a 24 inch water main along Raeford Rd., the L-line. PWC will open. cut the jurisdictional stream on the south side of the L-line at site 2. This will propose a temporary surface impact of less than 0.01 acres. PWC will open cut the 24 inch proposed water main at L-Sta. 85+58.47 to L-Sta. 85+73.35. at site 4. This will produce environmental impacts due to excavation in the wetland of less than 0.01 acres. It will produce 0.01 acres of environmental impacts due to fill in the wetland. The contact for Fayetteville Public Works Commission is James Michel. Their address is 955 Old Wilmington Road Fayetteville, N. C. 28301. His phone number is 910 223-4785. His email is james.michel@faypwc.com .

Fayettevile Public Works Commission Overhead Power Lines – At site 1 The Fayetteville Public Works Commission, PWC, proposes to install an overhead power line on the north side of the L-line. At L-Sta. 81+08.69 they need to install a power pole. They will guy the power pole to help support it. The guy wires will run north in a guy pocket. Mechanized clearing will be required in that 10 foot wide guy pocket. Hand clearing will be required from L-Sta. 80+36.45 to L-Sta. 81+36.05 to provide an area for clearing to maintain the proposed overhead power lines. A total of less than 0.01 acres of environmental impacts will be produced by the mechanized clearing for this power pole installation. A total of 0.02 acres of environmental impacts will be produced by the hand clearing for the power lines. The contact for Fayetteville Public Works Commission is James Michel. Their address is 955 Old Wilmington Road Fayetteville, N. C. 28301. His phone number is 910 223-4785. His email is james.michel@faypwc.com .

09/08/99

TIP PROJECT: U-4405



VICINITY MAP

90% PLANS

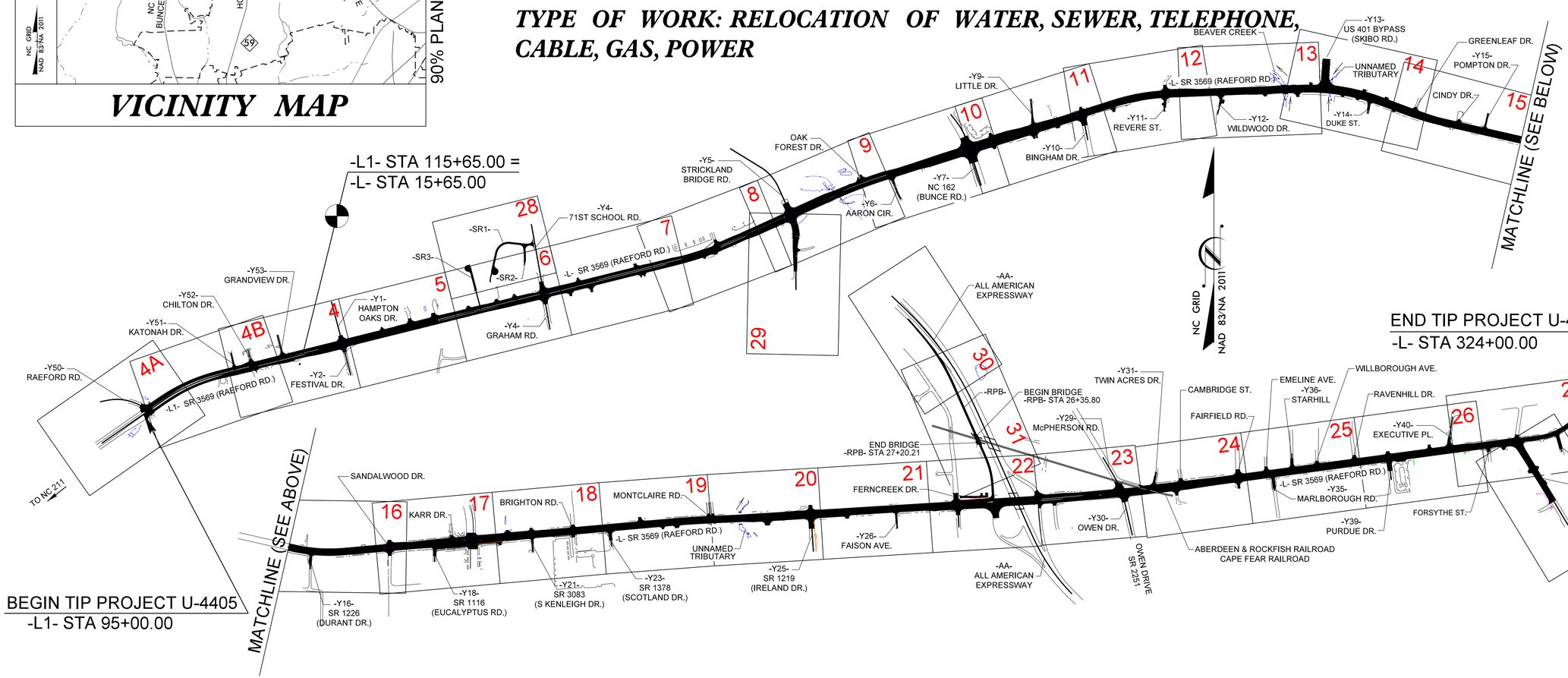
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U–4405	UE–1

NEU PERMIT PLANS
CUMBERLAND COUNTY

LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

TYPE OF WORK: RELOCATION OF WATER, SEWER, TELEPHONE, CABLE, GAS, POWER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UE–1	NEU PERMIT TITLE SHEET
UE–2	UE PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) WATER – PWC WATER AND SEWER
(B) SEWER – PWC WATER AND SEWER
(C) POWER – PWC POWER
(D) TELEPHONE – CENTURYLINK
(E) CABLE – SPECTRUM
(F) POWER – PWC POWER
(G) GAS – PIEDMONT NATURAL GAS
(H) WATER – AQUA INC.

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699–1555
PHONE (919) 707–6690
FAX (919) 250–4151

BO HEMPHILL, P.E.	UTILITIES REGIONAL ENGINEER
KELVIN MARTIN	UTILITIES ENGINEER
KYLE PLEASANT	UTILITIES AREA COORDINATOR
LARRY JAMES JR.	UTILITIES COORDINATOR

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-2

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

UE-2 CORRESPONDS TO RDY 9

F F DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

SITE 1
MECHANIZED CLEARING IN WETLANDS = < 0.01 ACRES
HAND CLEARING IN WETLANDS= 0.02 ACRES

SITE 2
TEMPORARY IMPACTS IN SURFACE WATER = < 0.01 ACRES

SITE 3
EXCAVATION IN WETLANDS = < 0.01 ACRES
TEMPORARY FILL IN WETLANDS = 0.02 ACRES

SITE 4
EXCAVATION IN WETLANDS = < 0.01 ACRES
FILL IN WETLANDS = 0.01 ACRES

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 10 -L- STA 88+00

WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

JONATHAN H ELLIOT DB 3676 PG 794 DB 4960 PG 348

RAEFORD CROSSING, LLC DB 8474 PG 492 PG 127 PG 185

CCF REAL ESTATE FOUNDATION DB 8043 PG 712 DB 89 PG 122

RICHARD WILDER & WIFE ALICE DB 3249 PG 12

STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

US 401 BUS RAEFORD RD

STRICKLAND BRIDGE RD

5/14/99

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...\Plans and Overlays\U4405UtilNEUPermtl70906\U4405_Ut_rdy9_UE30verall.psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-5

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 5
TEMPORARY IMPACTS
IN SURFACE WATER = <.01 ACRES;
= 7.3 LF

SITE 5

ABANDON 146 FT. OF 16" GRAVITY SEWER LINE

45 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

ABANDON 164 FT. OF 16" GRAVITY SEWER LINE

ABANDON 147 FT. OF 16" GRAVITY SEWER LINE

133 FT. OF GRAVITY SEWER TO BE INSTALLED BETWEEN NEW MANHOLES

48 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

SITE 6

SITE 6
TEMPORARY IMPACTS
IN SURFACE WATER = .02 ACRES;
= 22 LF

PROP. 4' DIA. UTILITY MANHOLE MH-13 SL-5- STA. 1+36.13 -L- STA. 224+67.27 OFFSET 84.77 (RT)

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

JOHN M TEW & WIFE SHIRLEY DB 2542 PG 343 PB 23 PG 1

KENT A VAN BELOIS & WIFE DB 3364 PG 865

RREF IIBB-NC, LLC DB 9368 PG 66

IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61

NCP FAYETTEVILLE, LLC DB 6243 PG 563

IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110

-BY27- # 75

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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
U1	80+33 to 81+36 -L-	Water/Power Line				< 0.01	0.02					
U2	82+54 to 82+88 -L-	Water Line							< 0.01			
U3	83+24 to 83+63 -L-	Sewer Line		0.02	< 0.01							
U4	85+57 to 85+74 -L-	Water Line	0.01		< 0.01							
U5	221.52 to 222+01	Sewer Line							< 0.01		45	
U6	221+59 to 222+28	Sewer Line							0.02		48	
TOTALS*:			0.01	0.02	< 0.01	< 0.01	0.02		0.03	0	93	0

*Rounded totals are sum of actual impacts

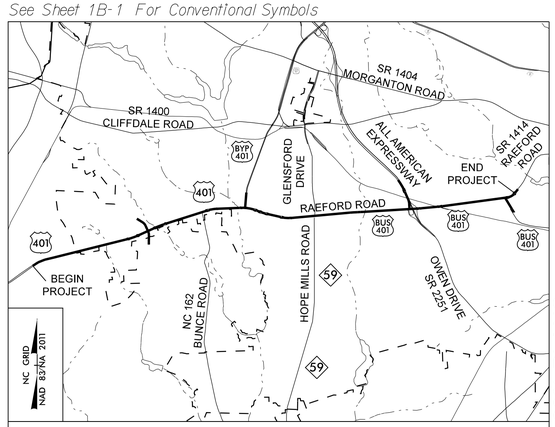
NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/24/17
CUMBERLAND
U-4405
39049.1.1

TIP PROJECT: U-4405

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B-1 For Conventional Symbols



VICINITY MAP

90% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

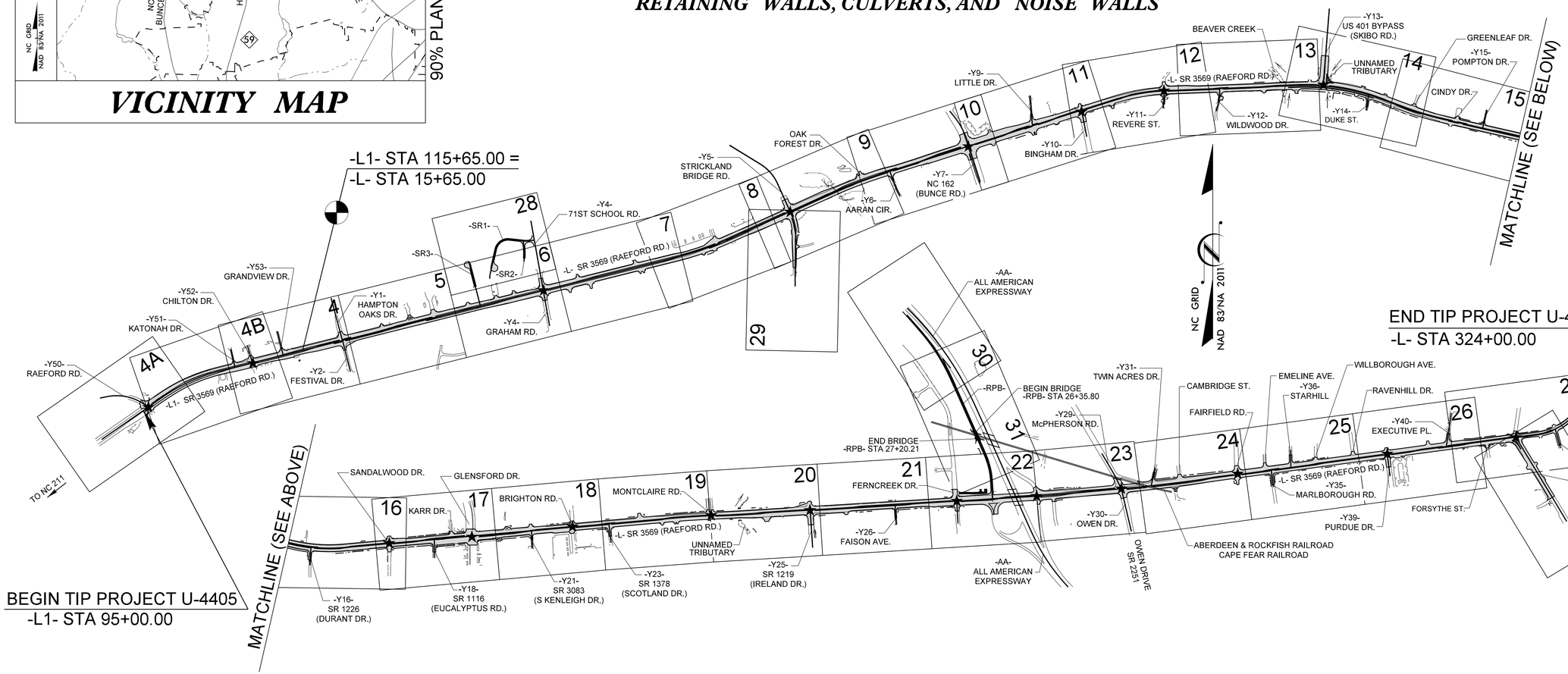
CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE
39049.2.1	STPDA-0401(230)	R/W
39049.2.1	STPDA-0401(230)	UTIL
39049.3.1	STPDA-0401(230)	CONST

LOCATION: ***US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE***

TYPE OF WORK: ***GRADING, DRAINAGE, PAVING, SIGNALS, RESURFACING, STRUCTURE, RETAINING WALLS, CULVERTS, AND NOISE WALLS***



★ PROPOSED SIGNAL

***** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– STA. 319+95.00***

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*(TTST =1% & DUAL=2%)
FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 6.231 MILES

NCDOT CONTACT: LAURA SUTTON, PE CPM

Prepared in the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 29, 2016

LETTING DATE:
JULY 17, 2018

CLINTON J. MORGAN, PE
PROJECT ENGINEER

IAN BERDEAU, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER JANE F. FLEMING

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
U-4405	IB-1

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

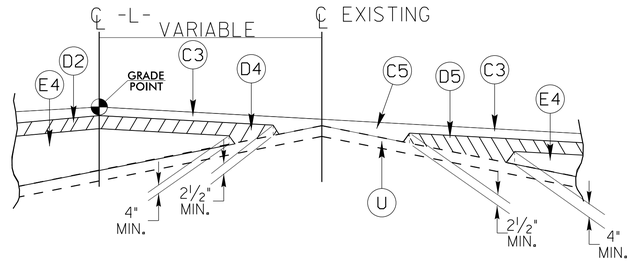
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

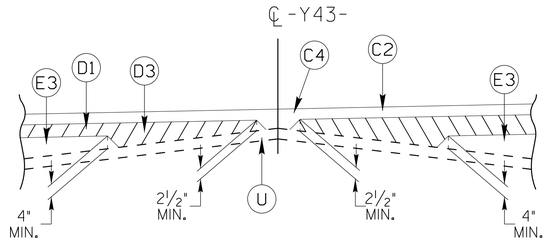
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	1'-6" CONCRETE CURB AND GUTTER
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R3	8" X 12" CONCRETE CURB
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½" OR GREATER THAN 2" IN DEPTH.	R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½" OR GREATER THAN 2" IN DEPTH.	S	4" CONCRETE SIDEWALK
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	V1	1.5" MILLING
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	V2	3" MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" OR GREATER THAN 5½" IN DEPTH.	W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" OR GREATER THAN 5½" IN DEPTH.		

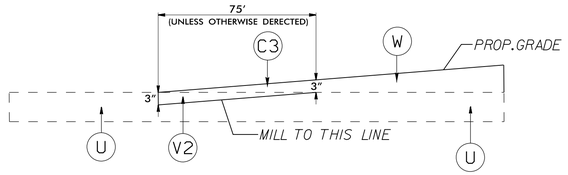
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



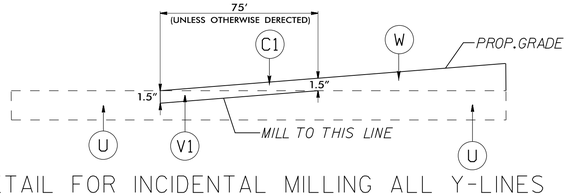
W1 DETAIL #1 SHOWING METHOD OF WEDGING



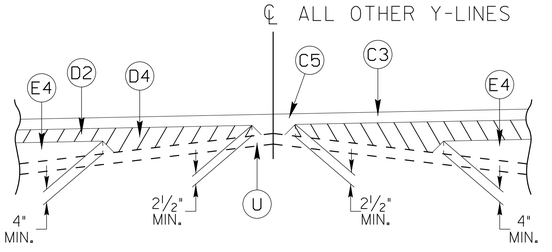
W2 DETAIL #2 SHOWING METHOD OF WEDGING



DETAIL FOR INCIDENTAL MILLING FOR -L-



DETAIL FOR INCIDENTAL MILLING ALL Y-LINES



W3 DETAIL #3 SHOWING METHOD OF WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-2

ROADWAY DESIGN ENGINEER

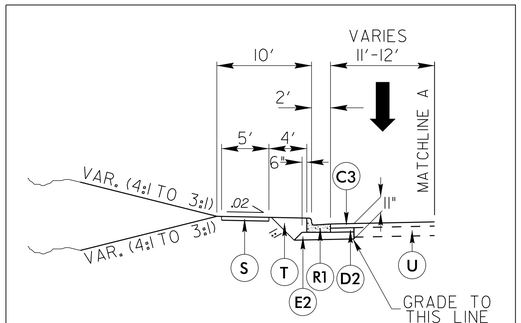
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

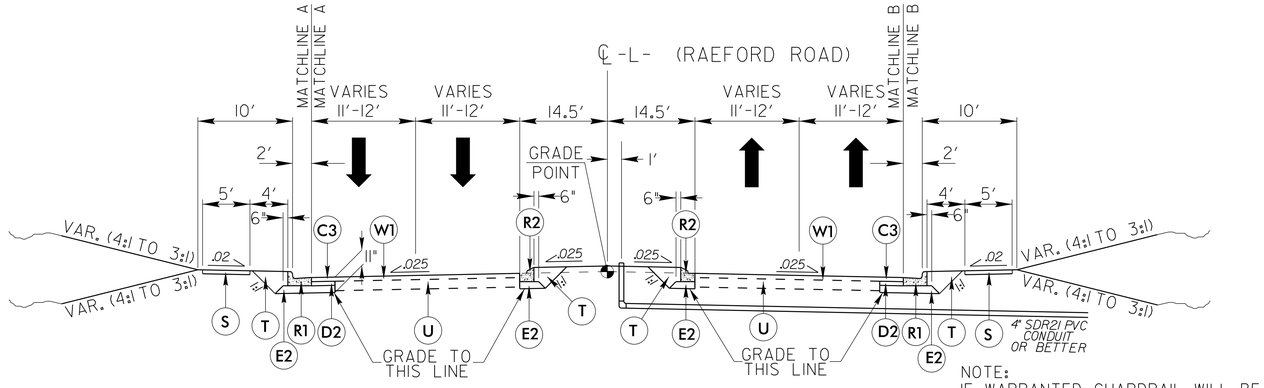
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE	
C3	3" S9.5C
D2	4" II9.0C
E2	4" B25.0C
R1	2'-6" CURB AND GUTTER
R2	1'-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING



INSET 1

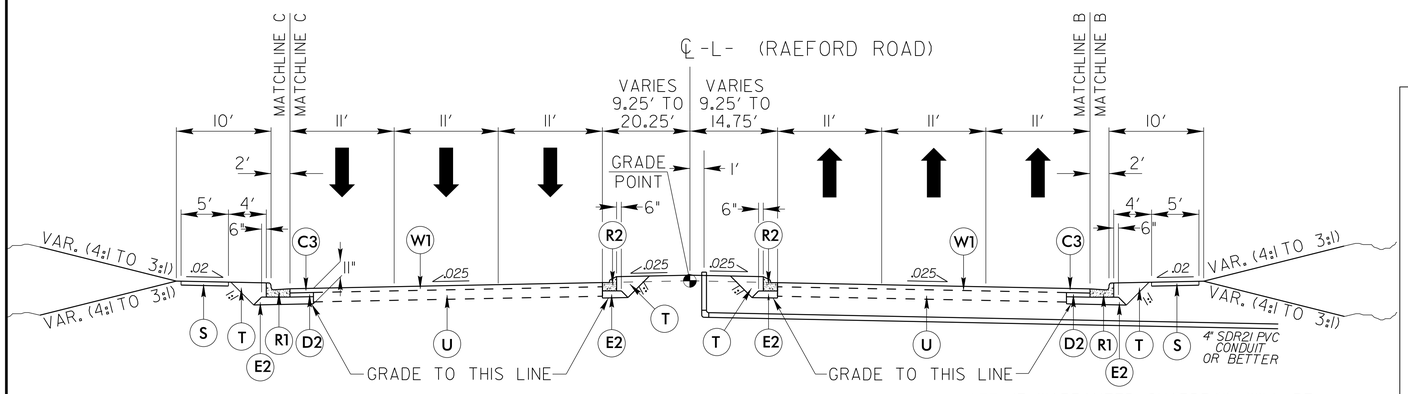
USE WITH TYPICAL SECTION 1
-L- STA. 15+65.00 TO -L- STA. 44+47.18
-L- STA. 46+20.00 TO -L- STA. 62+83.12



TYPICAL SECTION 1

-L- STA. 15+65.00 TO -L- STA. 76+45.00

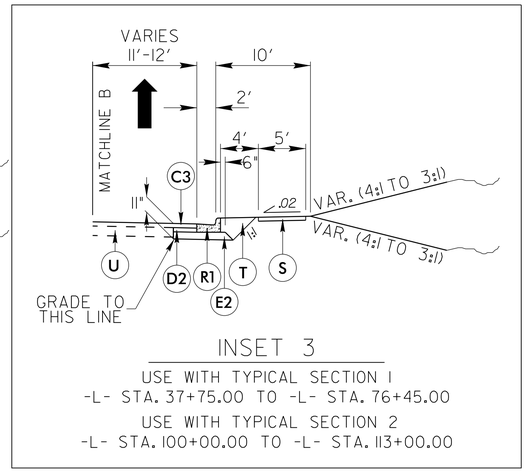
NOTE:
IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



TYPICAL SECTION 2

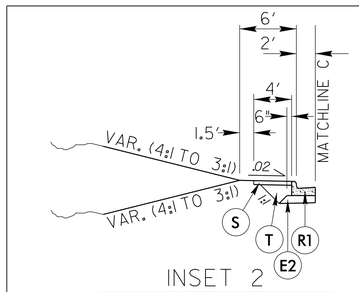
-L- STA. 76+45.00 TO -L- STA. 137+04.00
-L- STA. 148+88.00 TO -L- STA. 251+55.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



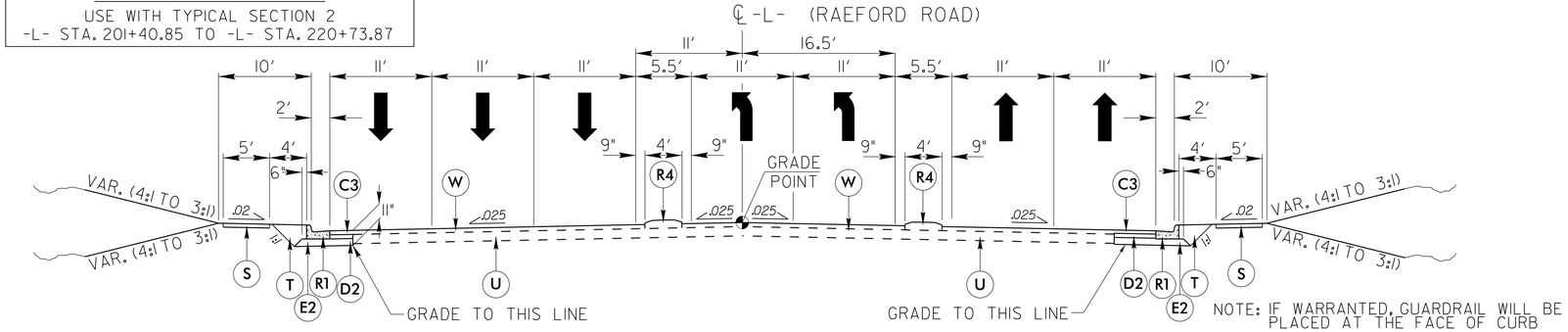
INSET 3

USE WITH TYPICAL SECTION 1
-L- STA. 37+75.00 TO -L- STA. 76+45.00
USE WITH TYPICAL SECTION 2
-L- STA. 100+00.00 TO -L- STA. 113+00.00



INSET 2

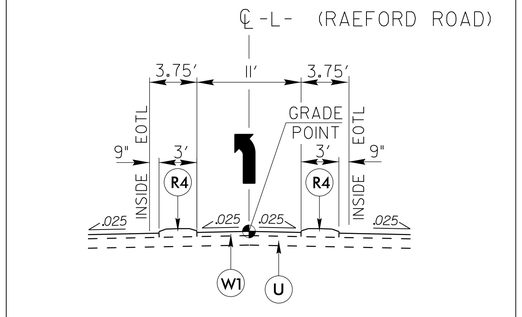
USE WITH TYPICAL SECTION 2
-L- STA. 201+40.85 TO -L- STA. 220+73.87



TYPICAL SECTION 3

-L- STA. 137+04.00 TO -L- STA. 148+88.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



MEDIAN LEFT OVER DETAIL

USE WITH TYPICAL SECTION 2 AND 4
AT MEDIAN LEFT OVER LOCATIONS
WITH 11' TURN LANES AND 3' ISLANDS

12-OCT-2017 09:49
R:\Roadway\Proj\...\u4405_rdy_typ.dgn
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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-3

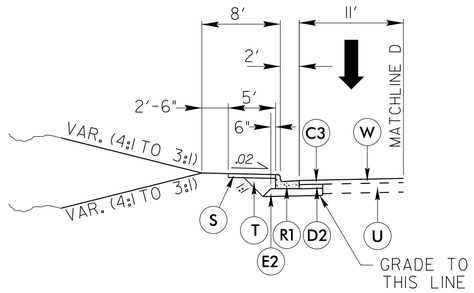
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

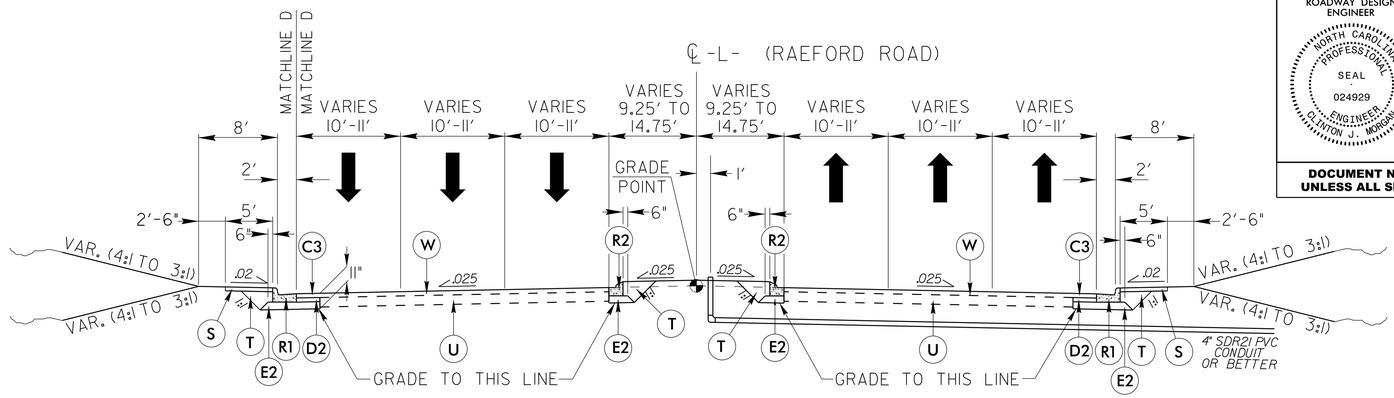
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INSET 4

USE WITH TYPICAL SECTION 4

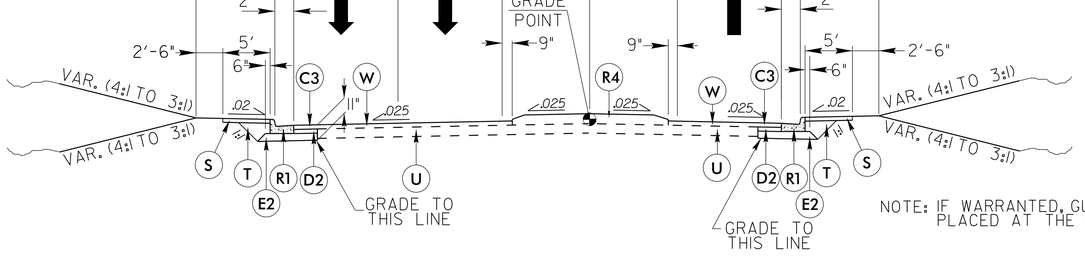
-L- STA. 269+12.00 TO -L- STA. 309+45.00



TYPICAL SECTION 4

-L- STA. 251+55.00 TO -L- STA. 314+50.00

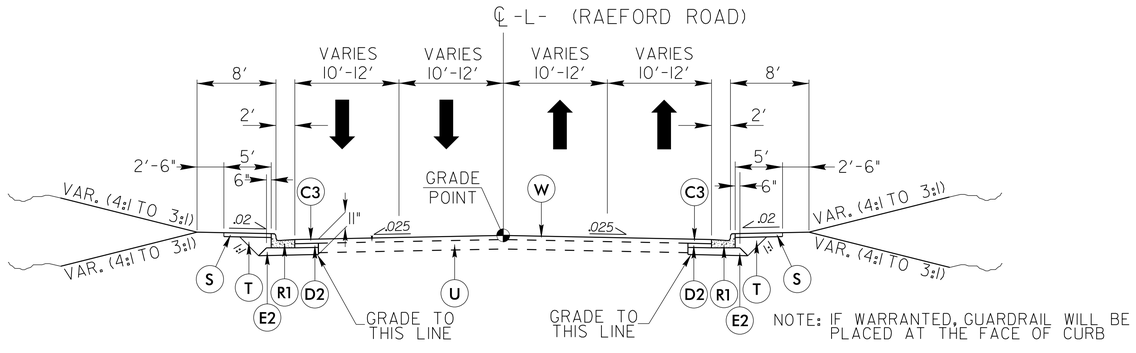
NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



TYPICAL SECTION 5

-L- STA. 314+50.00 TO -L- STA. 319+95.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



TYPICAL SECTION 6

-L- STA. 319+95.00 TO -L- STA. 322+95.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB

PAVEMENT SCHEDULE	
C3	3" S9.5C
D2	4" I19.0C
E2	4" B25.0C
R1	2'-6" CURB AND GUTTER
R2	1'-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
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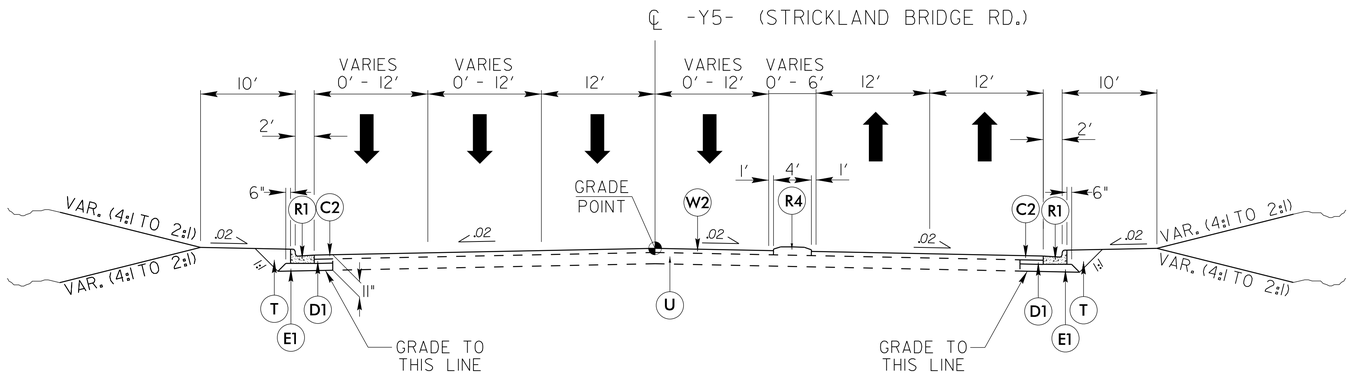
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

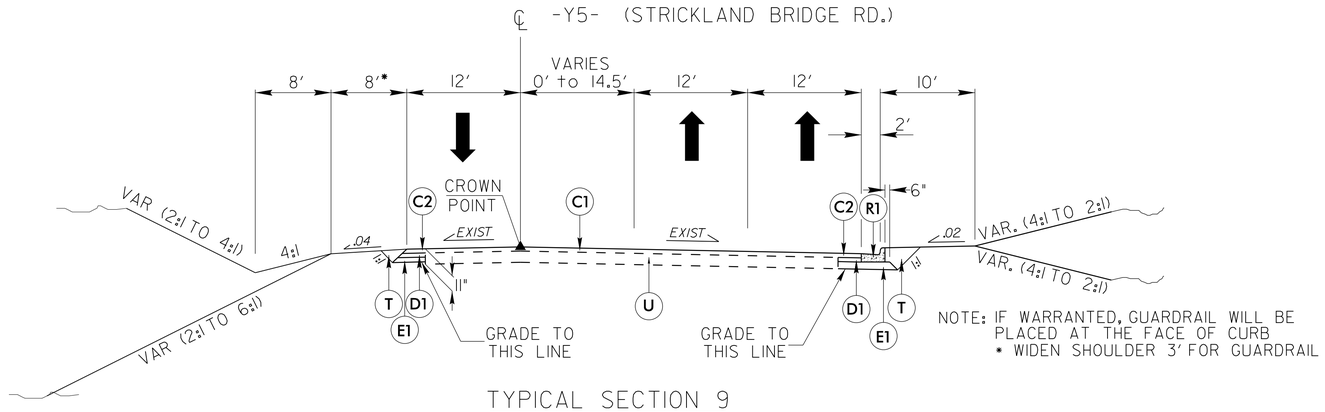
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION 8

-Y5- STA. 19+60.00 TO -Y5- STA. 20+65.04
-Y5- STA. 21+71.04 TO -Y5- STA. 25+55.00



NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB
* WIDEN SHOULDER 3′ FOR GUARDRAIL

TYPICAL SECTION 9

-Y5- STA. 25+55.00 TO -Y5- STA. 28+00.00

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
D1	4" 119.0B
E1	4" B25.0B
R1	2′-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W2	WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-5

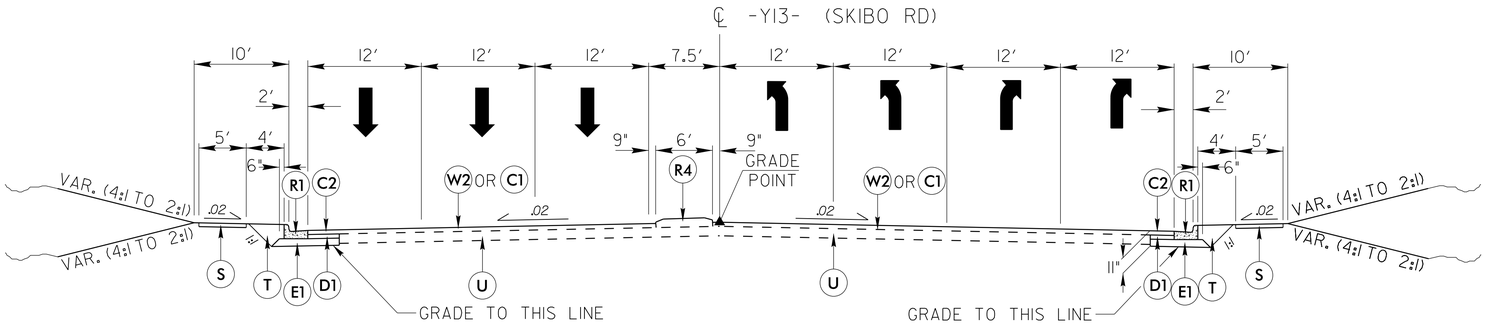
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

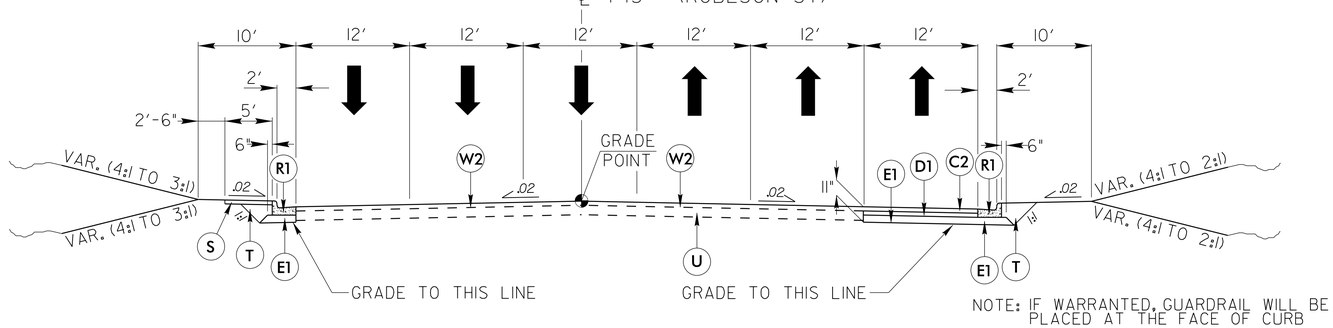


TYPICAL SECTION 10

-Y13- STA. 16+50.00 TO -Y13- STA. 19+67.93

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB

RESURFACE FROM 16+50.00 TO 18+15.00 WITH 1.5" S9.5B



TYPICAL SECTION 11

-Y43- STA. 10+33.01 TO -Y43- STA. 18+43.12

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
D1	4" I19.0B
E1	4" B25.0B
R1	2′-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W2	WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
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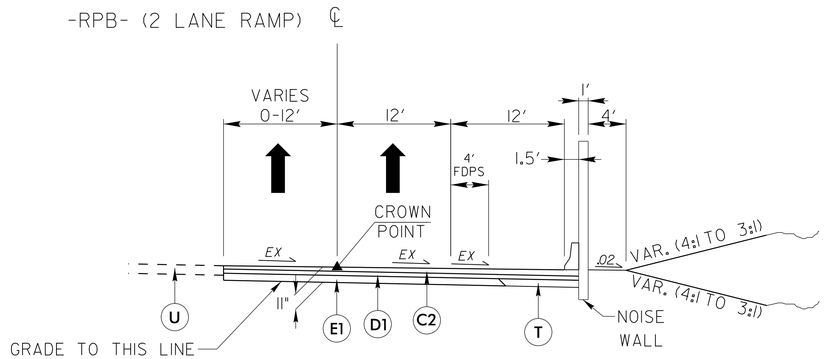
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

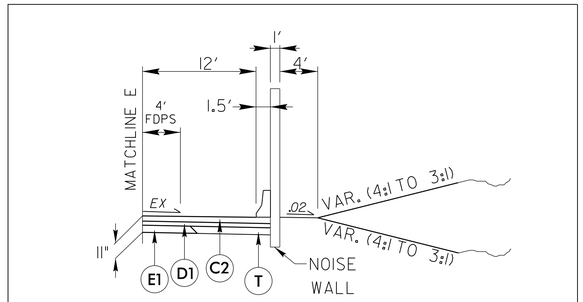
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION 12

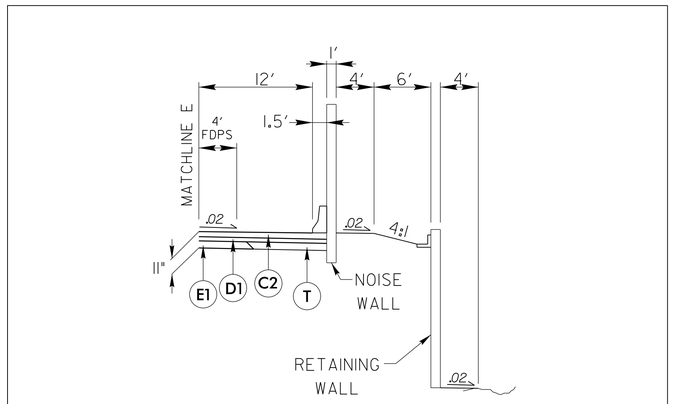
-RPB- STA. 10+00.00 TO -RPB- STA. 17+78.24



INSET 5

USE WITH TYPICAL SECTION 14

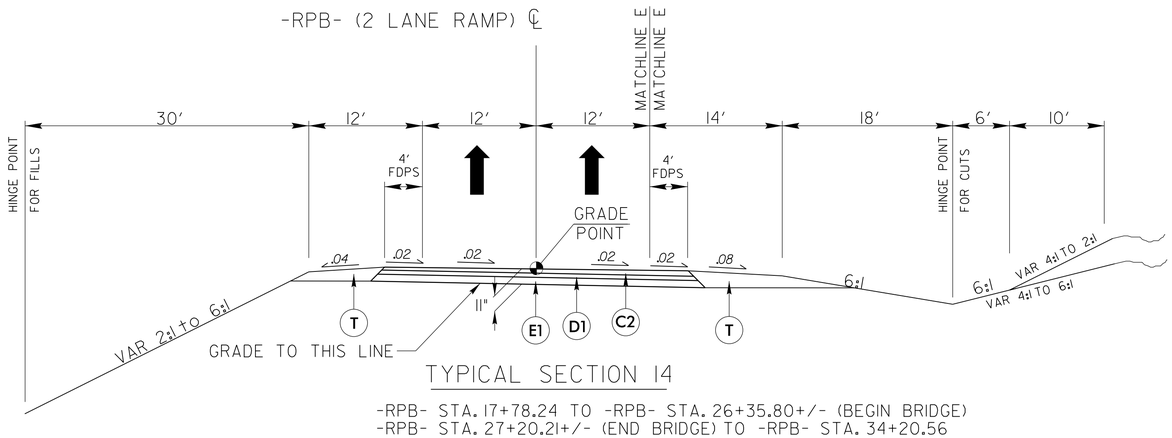
-RPB- STA. 17+78.24 (RT) TO -RPB- STA. 21+12.14 (RT)



INSET 6

USE WITH TYPICAL SECTION 14

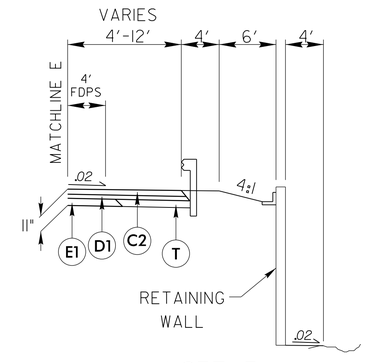
-RPB- STA. 19+71.99 (RT) TO -RPB- STA. 26+35.80+/- (RT) (BEGIN BRIDGE)



TYPICAL SECTION 14

-RPB- STA. 17+78.24 TO -RPB- STA. 26+35.80+/- (BEGIN BRIDGE)

-RPB- STA. 27+20.21+/- (END BRIDGE) TO -RPB- STA. 34+20.56



INSET 7

USE WITH TYPICAL SECTION 14

-RPB- STA. 27+20.21+/- (RT) (END BRIDGE) TO -RPB- STA. 30+50.00 (RT)

PAVEMENT SCHEDULE	
C2	3" S9.5B
D1	4" I19.0B
E1	4" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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PROJECT REFERENCE NO.	SHEET NO.
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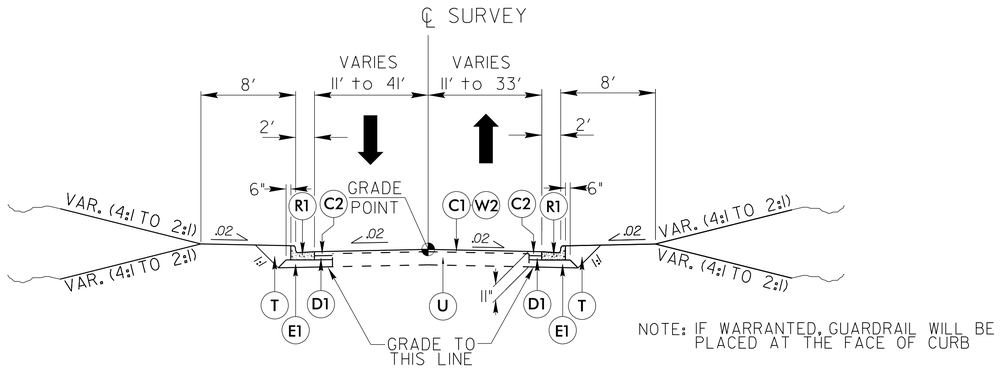
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

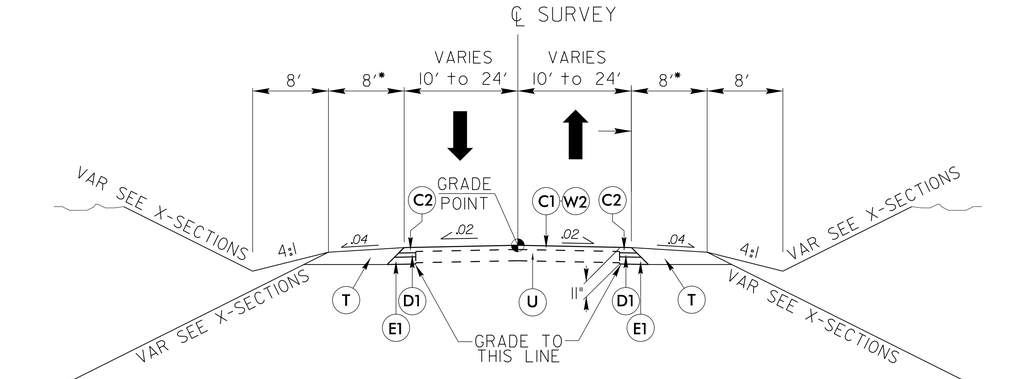
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB

TYPICAL SECTION 15

-Y2- STA. 10+50.50 TO -Y2- STA. 11+20.00
-Y4- STA. 17+00.00 TO -Y4- STA. 18+12.03
-Y4- STA. 18+96.22 TO -Y4- STA. 19+70.00
-Y7- STA. 13+20.00 TO -Y7- STA. 14+18.26
-Y7- STA. 15+35.76 TO -Y7- STA. 16+45.00
-Y10- STA. 10+53.59 TO -Y10- STA. 11+45.00
-Y11- STA. 10+42.52 TO -Y11- STA. 11+60.00
-Y12- STA. 10+42.25 TO -Y12- STA. 11+50.00
-Y21- STA. 10+43.54 TO -Y21- STA. 11+10.00
-Y25- STA. 10+53.08 TO -Y25- STA. 11+75.00
-Y28- STA. 10+53.25 TO -Y28- STA. 11+20.00
-Y29- STA. 13+50.00 TO -Y29- STA. 14+29.17
-Y30- STA. 10+48.20 TO -Y30- STA. 11+15.00
-Y35- STA. 10+39.25 TO -Y35- STA. 11+75.00
-Y36- STA. 10+60.00 TO -Y36- STA. 11+61.86
-Y39- STA. 10+39.25 TO -Y39- STA. 11+50.00
-Y40- STA. 12+50.00 TO -Y40- STA. 13+56.49
-Y44- STA. 10+29.70 TO -Y44- STA. 12+00.00



TYPICAL SECTION 16

NOTE: WIDEN SHOULDER 3' FOR GUARDRAIL

-Y1- STA. 14+20.00 TO -Y1- STA. 14+75.76
-Y6- STA. 10+42.30 TO -Y6- STA. 11+20.00
-Y9- STA. 12+15.00 TO -Y9- STA. 13+04.51
-Y14- STA. 10+44.61 TO -Y14- STA. 11+45.00
-Y15- STA. 11+40.00 TO -Y15- STA. 11+82.96
-Y16- STA. 10+42.27 TO -Y16- STA. 11+70.00
-Y18- STA. 10+47.17 TO -Y18- STA. 11+50.00
-Y23- STA. 10+42.26 TO -Y23- STA. 11+50.00
-Y26- STA. 10+42.25 TO -Y26- STA. 11+60.00

PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
D1	4" I19.0B
E1	4" B25.0B
R1	2'-6" CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W2	WEDGING

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PROJECT REFERENCE NO.	SHEET NO.
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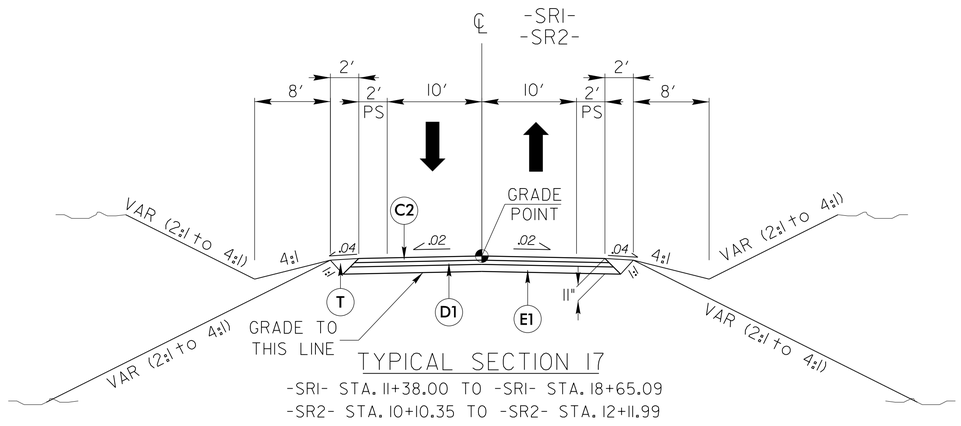
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

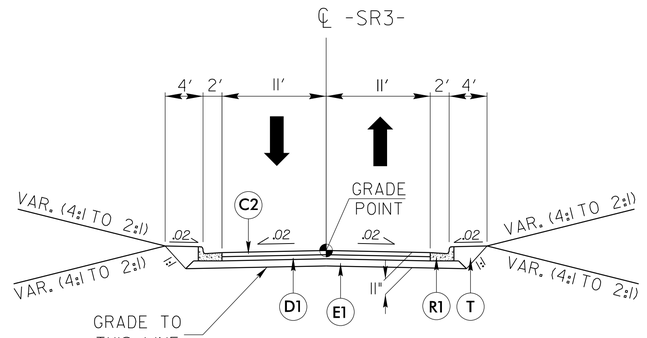
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



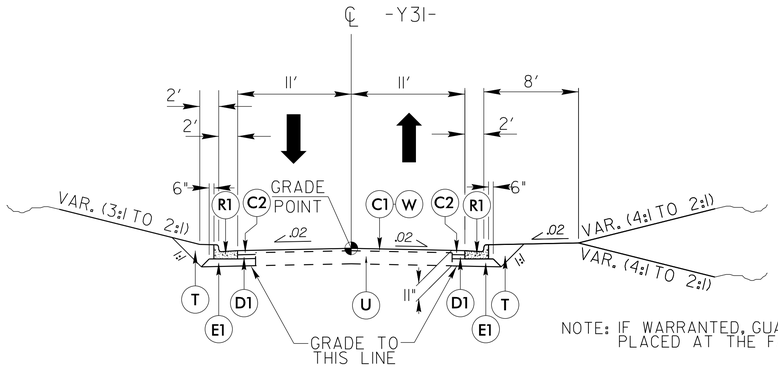
TYPICAL SECTION 17

-SRI- STA. 11+38.00 TO -SRI- STA. 18+65.09
-SR2- STA. 10+10.35 TO -SR2- STA. 12+11.99



TYPICAL SECTION 18

-SR3- STA. 10+39.58 TO -SR3- STA. 13+20.00



NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB

TYPICAL SECTION 19

-Y3I- STA. 10+50.00 TO -Y3I- STA. 11+57.90

PAVEMENT SCHEDULE	
C2	3" S9.5B
D1	4" I19.0B
E1	4" B25.0B
R1	2'-6" CURB AND GUTTER
T	EARTH MATERIAL

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PROJECT REFERENCE NO.	SHEET NO.
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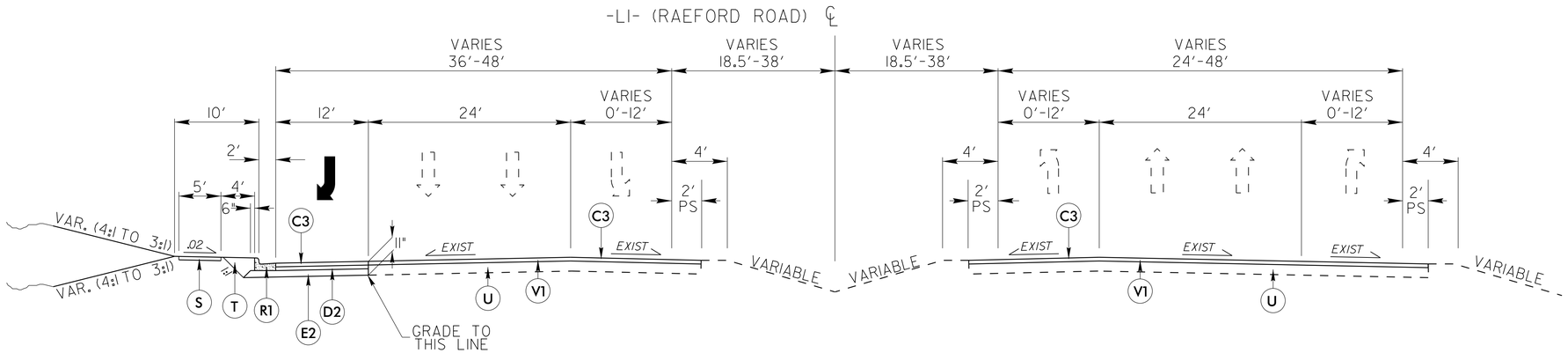
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CARL S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION 20

-LI- STA. 95+00.00 TO -LI- STA. 115+65.00

PAVEMENT SCHEDULE	
C3	3" S9.5C
D2	4" I19.0C
E2	4" B25.0C
R1	2'-6" CURB AND GUTTER
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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8/17/99

RETAINING WALL DETAIL -WALL1- & -WALL2-

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

NBL ALL AMERICAN EXPRESSWAY BST

SBL ALL AMERICAN EXPRESSWAY BST

-AA-

BEGIN RETAINING WALL 1
-WALL1- STA 8+60.00 =
-RPB- STA 19+71.99
OFF 36.63' RT

BEGIN RETAINING WALL 2
-WALL2- PI Sta. 11+70.55 =
-RPB- STA 27+39.19
OFF 28.00' RT

-WALL2- PI Sta. 11+88.12 =
-RPB- STA 27+56.76
OFF 28.00' RT

-WALL2- POT Sta. 12+75.79 =
-RPB- STA 28+44.25
OFF 34.00' RT

-WALL2- STA 14+36.41 =
-RPB- STA 30+07.92
OFF 34.00' RT

GRAU 350

TYPE-III

CAT1

-RPB-

-WALL1-

S 24° 11' 41.2" E

S 23° 59' 00.1" E

S 17° 36' 00.1" E

S 20° 03' 24.0" E

-WALL2- S 22° 08' 12.8" E

END RETAINING WALL 1
-WALL1- PI Sta. 14+62.97 =
-RPB- STA 25+75.10
OFF 36.50' RT

END RETAINING WALL 2
-WALL2- STA 14+76.93 =
-RPB- STA 30+50.00
OFF 34.00' RT

-WALL1- PI Sta. 9+13.93 =
-RPB- STA 20+26.07
OFF 36.50' RT

+36.00
66.61' RT

-45.00
LT

382 DONALD DEITZ BELL DB 3468 PG 244 PB 62 PG 83

383 KYAW KHINE DB 6647 PG 29 PB 62 PG 83

384 CHRISTOPHER COLAVITA DB 7898 PG 841 PB 62 PG 83

385 BETTY M. REEVES DB 6122 PG 3 PB 62 PG 83

386 BENNIE C. BENTON DB 3590 PG 25 PB 62 PG 83

387 BUCKHEAD PLAZA INC. DB 4482 PG 897 PB 96 PG 100

376 CLIFFORD N. BOSTIC M. DB 6750 PG 458

FERNCREEK DR

ABERDEEN & ROCKFISH RAILROAD

50 25 0 50 100
PLANS

PROPOSED WALL DOES NOT ZERO OUT TO EXISTING GROUND. USE 2:1 FILL SLOPE TO WRAP END OF WALL AND TIE TO EXISTING.

-WALL1- ENVELOPE

APPROXIMATE WALL FACE AREA = 12,522 SQFT

THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

-WALL1- STA 8+87.86 =
-RPB- STA 21+00.00
OFF 36.50' RT
EL = 219.85'

-WALL1- STA 9+37.86 =
-RPB- STA 20+50.00
OFF 36.50' RT
EL = 218.31'

-WALL1- STA 8+87.90 =
-RPB- STA 20+00.00
OFF 36.59' RT
EL = 216.94'

-WALL1- STA 10+87.86 =
-RPB- STA 22+00.00
OFF 36.50' RT
EL = 223.44'

-WALL1- STA 10+37.86 =
-RPB- STA 21+50.00
OFF 36.50' RT
EL = 221.51'

-WALL1- STA 11+87.86 =
-RPB- STA 23+00.00
OFF 36.50' RT
EL = 227.13'

-WALL1- STA 11+37.86 =
-RPB- STA 22+50.00
OFF 36.50' RT
EL = 225.28'

-WALL1- STA 12+37.86 =
-RPB- STA 23+50.00
OFF 36.50' RT
EL = 228.93'

-WALL1- STA 12+87.86 =
-RPB- STA 24+00.00
OFF 36.50' RT
EL = 230.45'

-WALL1- STA 13+37.86 =
-RPB- STA 24+50.00
OFF 36.50' RT
EL = 231.68'

-WALL1- STA 13+87.86 =
-RPB- STA 25+00.00
OFF 36.50' RT
EL = 232.61'

-WALL1- STA 14+37.86 =
-RPB- STA 25+50.00
OFF 36.50' RT
EL = 233.26'

END RETAINING WALL 1
-WALL1- STA 14+62.97 =
-RPB- STA 25+75.10
OFF 36.50' RT
EL = 233.14'

BEGIN RETAINING WALL 1
-WALL1- STA 8+60.00 =
-RPB- STA 19+71.99
OFF 36.63' RT
EL = 216.50'

TOP OF WALL

EXISTING GROUND

BOTTOM OF WALL

PI = 8+60.00
EL = 204.20'

PI = 8+87.90
EL = 204.24'

PI = 9+37.86
EL = 204.38'

PI = 9+87.86
EL = 204.28'

PI = 10+37.86
EL = 204.90'

PI = 10+87.86
EL = 204.58'

PI = 11+37.86
EL = 205.90'

PI = 11+87.86
EL = 205.13'

PI = 12+37.86
EL = 205.04'

PI = 12+87.86
EL = 205.16'

PI = 13+37.86
EL = 204.85'

PI = 13+87.86
EL = 205.10'

PI = 14+37.86
EL = 205.87'

PI = 14+62.97
EL = 206.61'

-WALL2- ENVELOPE

APPROXIMATE WALL FACE AREA = 6,723 SQFT

THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

PROPOSED WALL DOES NOT ZERO OUT TO EXISTING GROUND. USE 2:1 FILL SLOPE TO WRAP END OF WALL AND TIE TO EXISTING.

BEGIN RETAINING WALL 2
-WALL2- PI Sta. 11+70.55 =
-RPB- STA 27+39.19
OFF 28.00' RT
EL = 232.90'

-WALL2- STA 11+81.36 =
-RPB- STA 27+50.00
OFF 28.00' RT
EL = 233.04'

-WALL2- STA 12+31.46 =
-RPB- STA 28+00.00
OFF 30.97' RT
EL = 232.18'

-WALL2- STA 12+81.53 =
-RPB- STA 28+50.00
OFF 34.18' RT
EL = 231.06'

-WALL2- STA 13+31.10 =
-RPB- STA 29+00.00
OFF 35.46' RT
EL = 229.10'

-WALL2- STA 13+80.14 =
-RPB- STA 29+50.00
OFF 35.75' RT
EL = 226.86'

-WALL2- STA 14+28.74 =
-RPB- STA 30+00.00
OFF 34.41' RT
EL = 224.54'

END RETAINING WALL 2
-WALL2- STA 14+76.93 =
-RPB- STA 30+50.00
OFF 34.00' RT
EL = 222.97'

TOP OF WALL

BOTTOM OF WALL

EXISTING GROUND

PI = 11+70.55
EL = 205.10'

PI = 11+81.36
EL = 205.29'

PI = 12+31.46
EL = 205.34'

PI = 12+81.53
EL = 206.14'

PI = 13+31.10
EL = 206.30'

PI = 13+80.14
EL = 207.42'

PI = 14+28.74
EL = 208.84'

PI = 14+76.93
EL = 210.19'

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

THE TOP OF WALL IS DEFINED AS THE POINT WHERE THE GRADE INTERSECTS THE BACK OF THE WALL.
THE BOTTOM OF THE WALL IS DEFINED AS THE POINT WHERE THE GRADE INTERSECTS THE FRONT OF THE WALL.
USE A WALL THICKNESS OF 12" FOR ALL RETAINING WALLS WHEN DEVELOPING THE WALL ENEVELOPE.
REFERENCE INFORMATION IS FROM RETAINING WALLS AND SOUND BARRIER WALLS MEMO DATED JULY 29, 2005.

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RETAINING WALL DETAIL -WALL3-

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

376 CLIFFORD N. BOSTIC DB 6750 PG 458

WILLIAM H. OWEN III DB 2905 PG 169

249 THE WIENER KING OF CUMBERLAND COUNTY DB 4099 PG 778

DB 9591 PG 695

NAD 83/2011

BEGIN RETAINING WALL 3
-WALL3- STA 10+00.00 =
-L- STA 257+70.00
OFF 57.85' RT

N 85° 39' 17.5" E
-WALL3-

END RETAINING WALL 3
-WALL3- STA 10+86.70 =
-L- STA 258+55.81
OFF 57.81' RT

379 CURTIS M. DAIL DB 4614 PG 183

MASON RAEFORD, LLC DB 9358 PG 187

254

255 JOSEPH E HALL, SR & WIFE DB 6044 PG 610

258 DAXS DEALS INC DB 8696 PG 84

PUTTE WILLIAMS RD

US 401 BUS RAEFORD RD BST

CENTURYLINK BURIED

PLANS

50 25 0 50 100

-WALL3- ENVELOPE

APPROXIMATE WALL FACE AREA = 313 SQFT

THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

-WALL3- STA 10+30.30 =
-L- STA 258+00.00
OFF 57.69' RT
EL = 221.75'

-WALL3- STA 10+80.83 =
-L- STA 258+50.00
OFF 57.77' RT
EL = 221.52'

BEGIN RETAINING WALL 3
-WALL3- STA 10+00.00 =
-L- STA 257+70.00
OFF 57.85' RT
EL = 221.69'

TOP OF WALL

END RETAINING WALL 3
-WALL3- STA 10+86.70 =
-L- STA 258+55.81
OFF 57.81' RT
EL = 221.54'

PI = 10+00.00
EL = 218.30'

PI = 10+30.30
EL = 218.03'

PI = 10+80.83
EL = 217.91'

PI = 10+86.70
EL = 218.30'

BOTTOM OF WALL

EXISTING GROUND

PROPOSED WALL DOES NOT ZERO OUT TO EXISTING GROUND. USE 2:1 FILL SLOPE TO WRAP END OF WALL AND TIE TO EXISTING.

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

THE TOP OF WALL IS DEFINED AS THE POINT WHERE THE GRADE INTERSECTS THE BACK OF THE WALL.
THE BOTTOM OF THE WALL IS DEFINED AS THE POINT WHERE THE GRADE INTERSECTS THE FRONT OF THE WALL.
USE A WALL THICKNESS OF 12" FOR ALL RETAINING WALLS WHEN DEVELOPING THE WALL ENEVELOPE.
REFERENCE INFORMATION IS FROM RETAINING WALLS AND SOUND BARRIER WALLS MEMO DATED JULY 29, 2005.

270 260 250 240 230 220 210 200 190 180

10 11

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8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-3
R/W SHEET NO.	

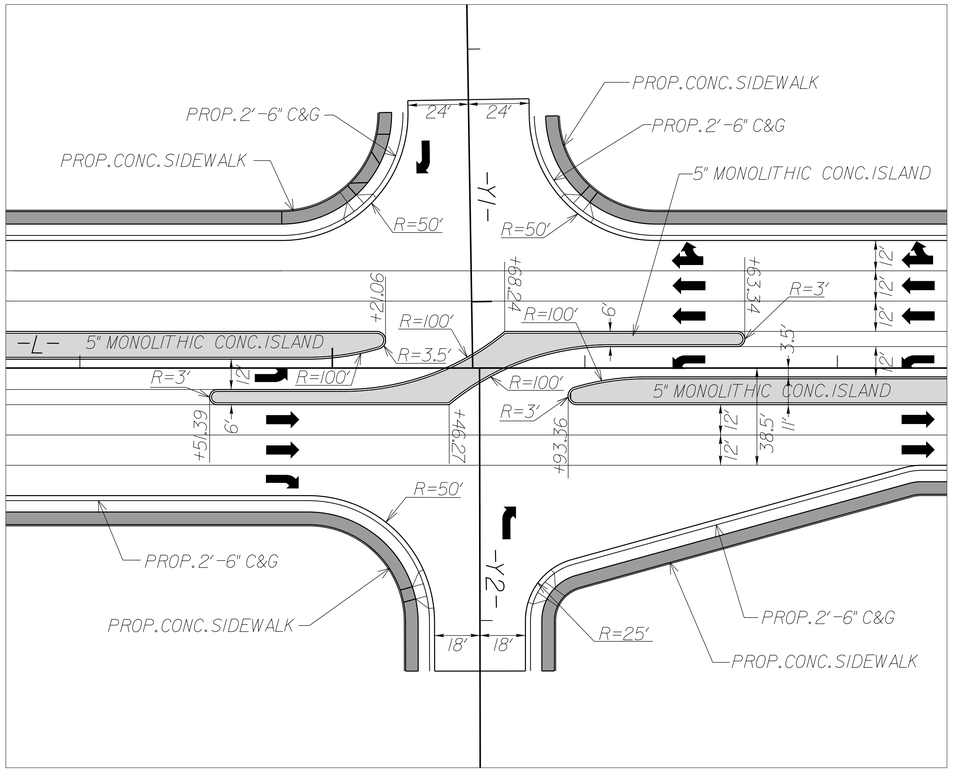
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

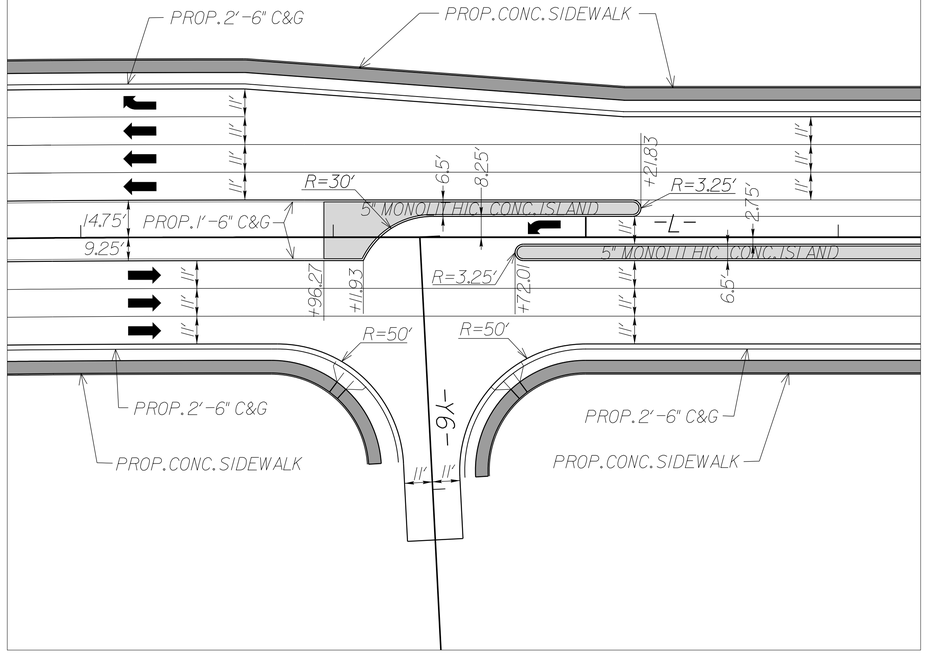
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION OF
RAEFORD ROAD (–L–)
AND FESTIVAL DRIVE (–Y2–)
(SEE PLAN SHEET 4)

INTERSECTION OF
RAEFORD ROAD (–L–)
AND ARRAN CIRCLE (–Y6–)
(SEE PLAN SHEET 10)



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INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

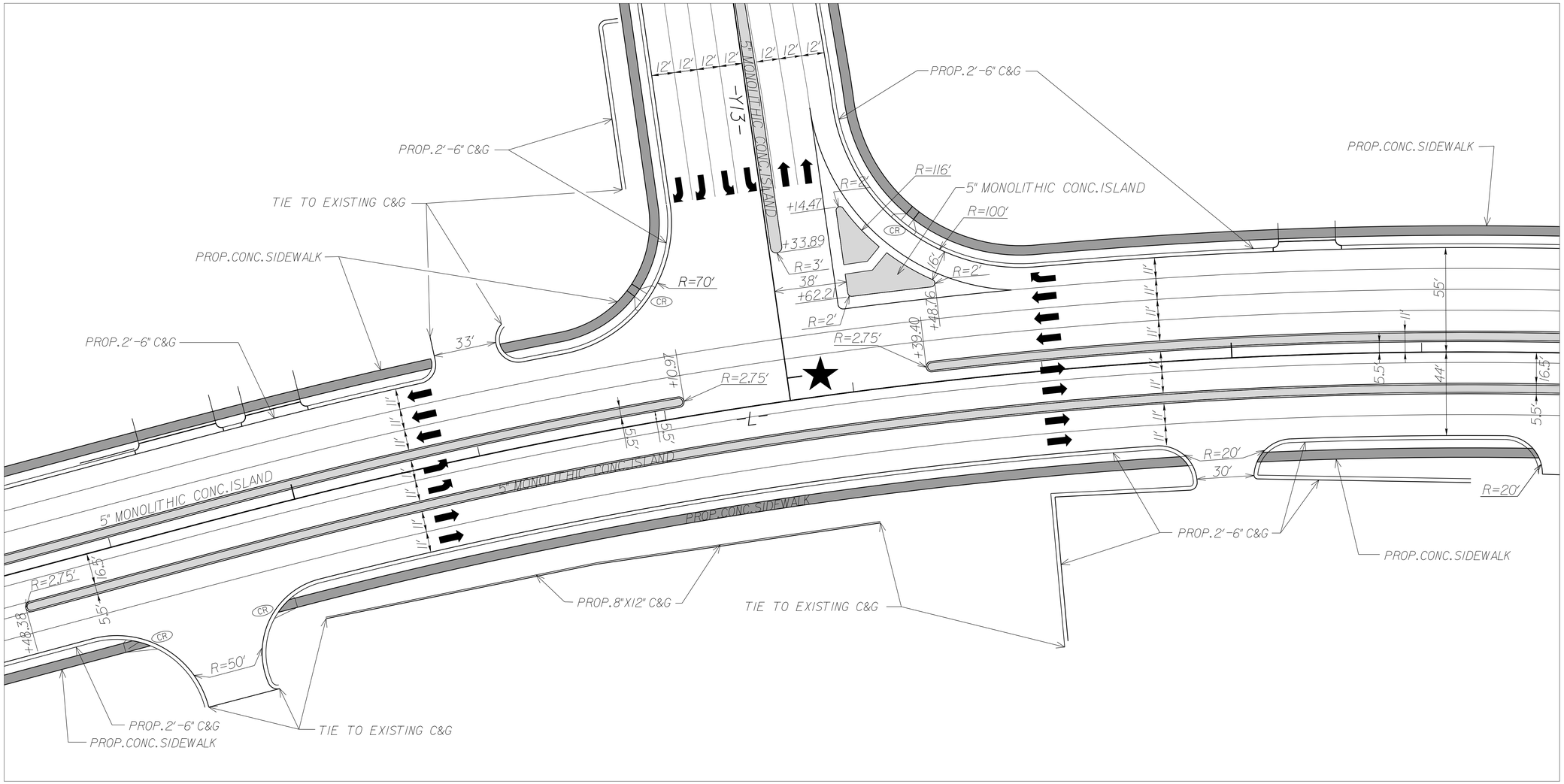
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99



INTERSECTION OF RAEFORD ROAD (-L-) AND SKIBO ROAD (-Y13-) (SEE PLAN SHEET 13 AND 14)

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8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	

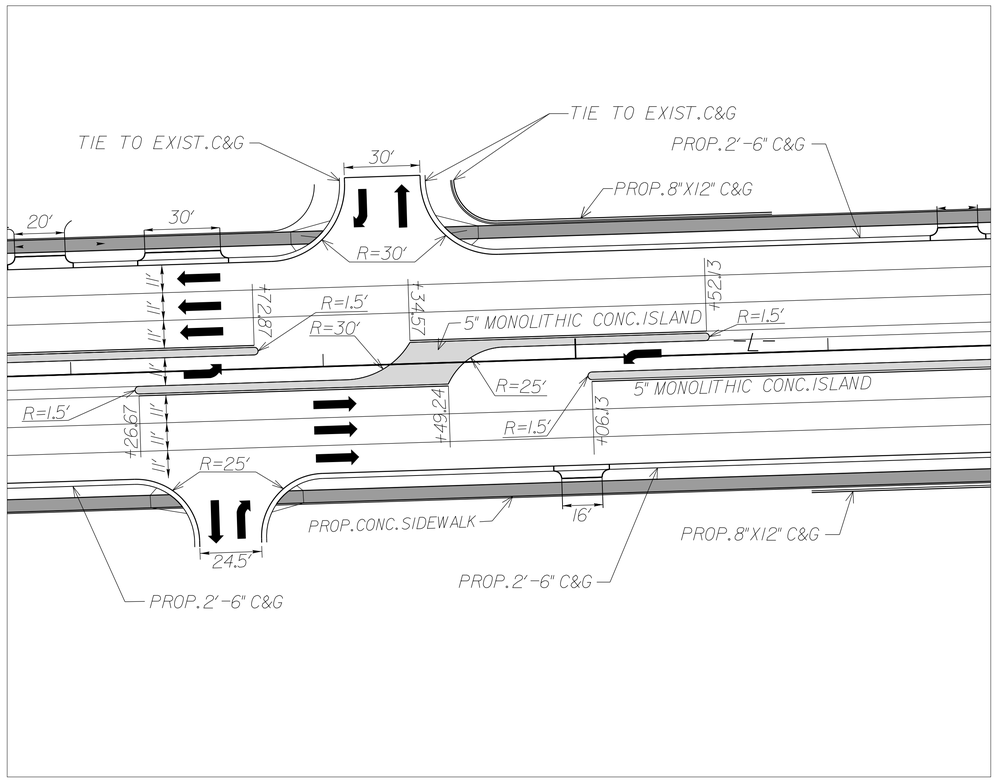
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

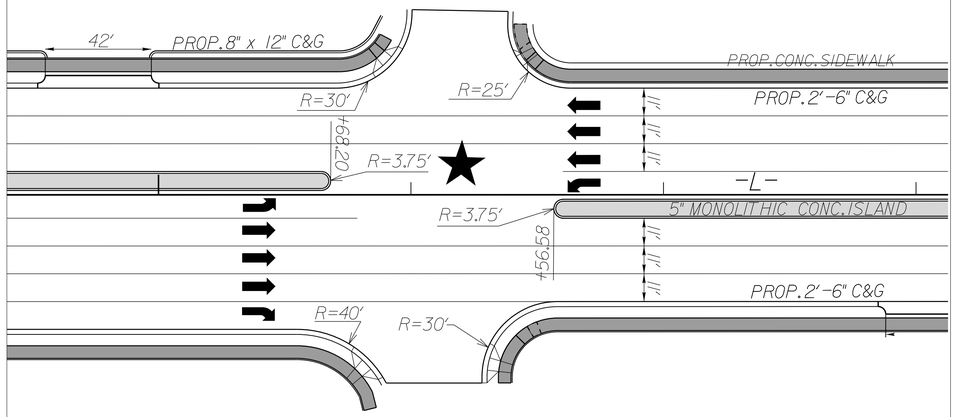
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BETWEEN
DUKE STREET (-Y14-)
AND POMPTON DRIVE (-Y15-)
ON RAEFORD ROAD (-L-)
(SEE PLAN SHEET 15)

BETWEEN
S KENLEIGH DRIVE (-Y21-)
AND SCOTLAND DRIVE (-Y23-)
ON RAEFORD ROAD (-L-)
(SEE PLAN SHEET 18)



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8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-6
R/W SHEET NO.	

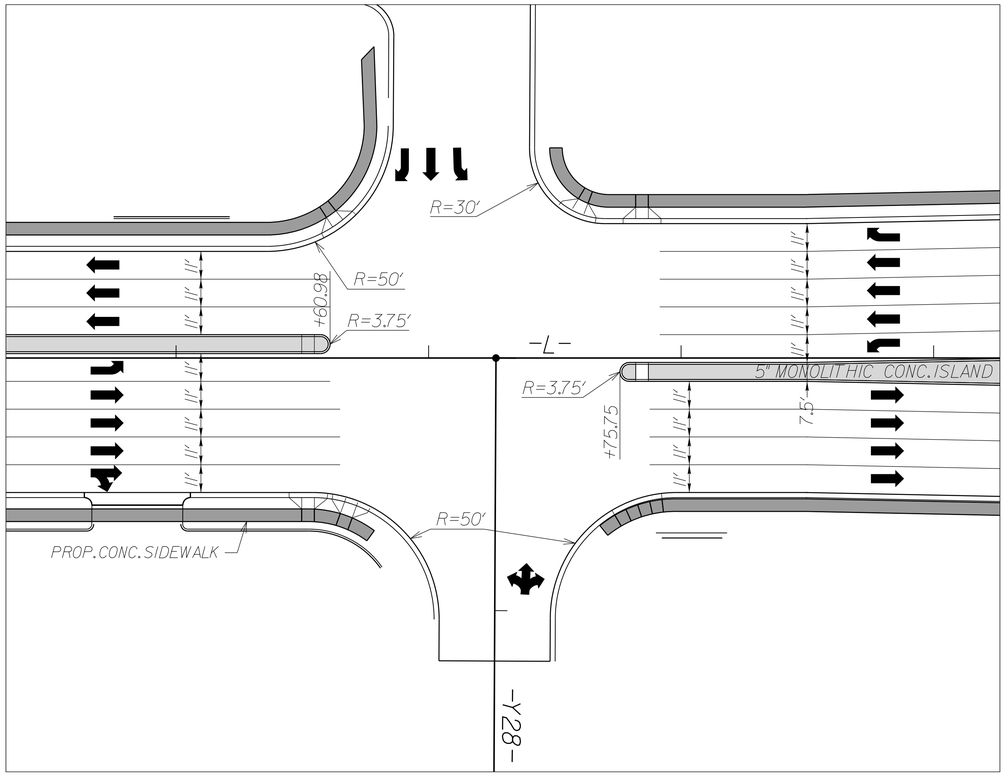
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

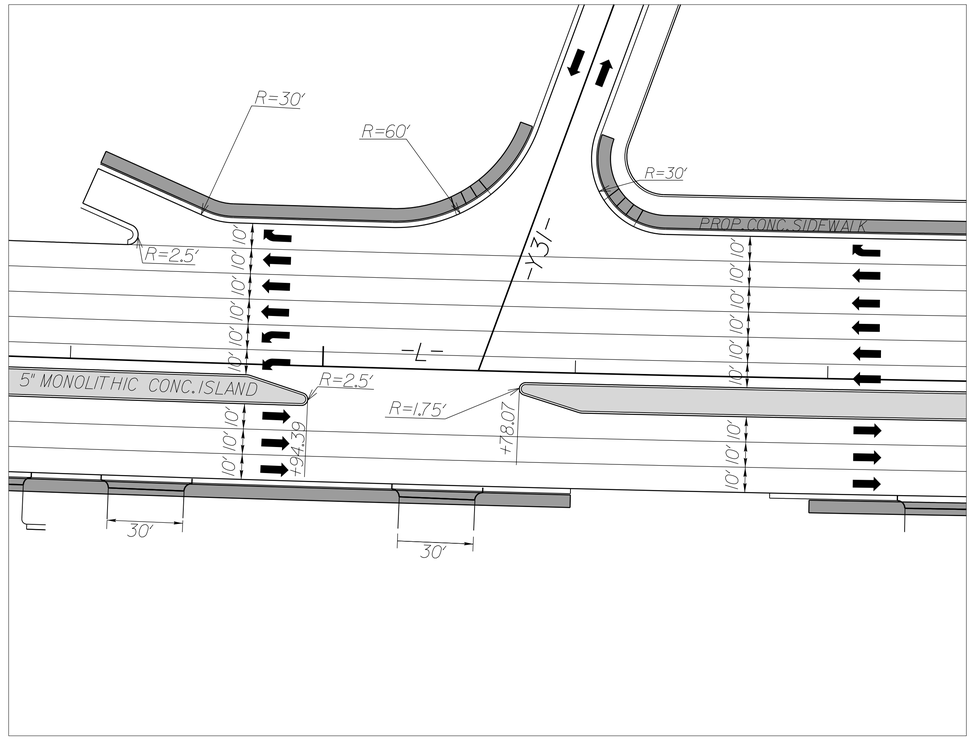
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION OF
RAEFORD ROAD (-L-)
AND ROXIE AVENUE (-Y28-)
(SEE PLAN SHEET 22)

INTERSECTION OF
RAEFORD ROAD (-L-)
AND TWIN ACRES DRIVE (-Y31-)
(SEE PLAN SHEET 24)



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PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

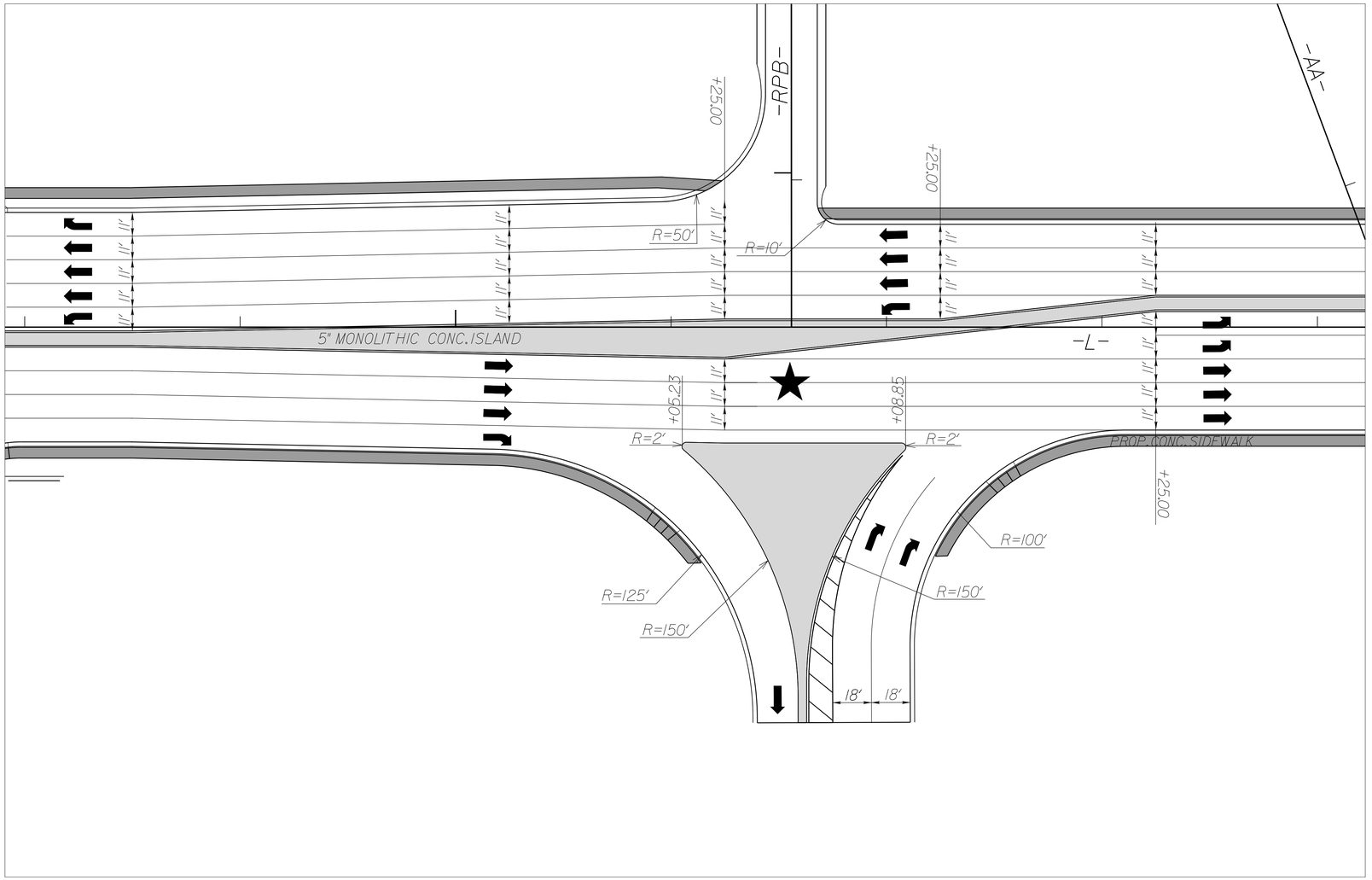
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INTERSECTION DETAILS

NOT TO SCALE



INTERSECTION OF
RAEFORD ROAD (-L-)
AND SOUTH BOUND EXIT RAMP
FROM ALL AMERICAN EXPRESSWAY (-RPB-)
(SEE PLAN SHEET 22)

REVISIONS

8/17/99

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REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-8
R/W SHEET NO.	

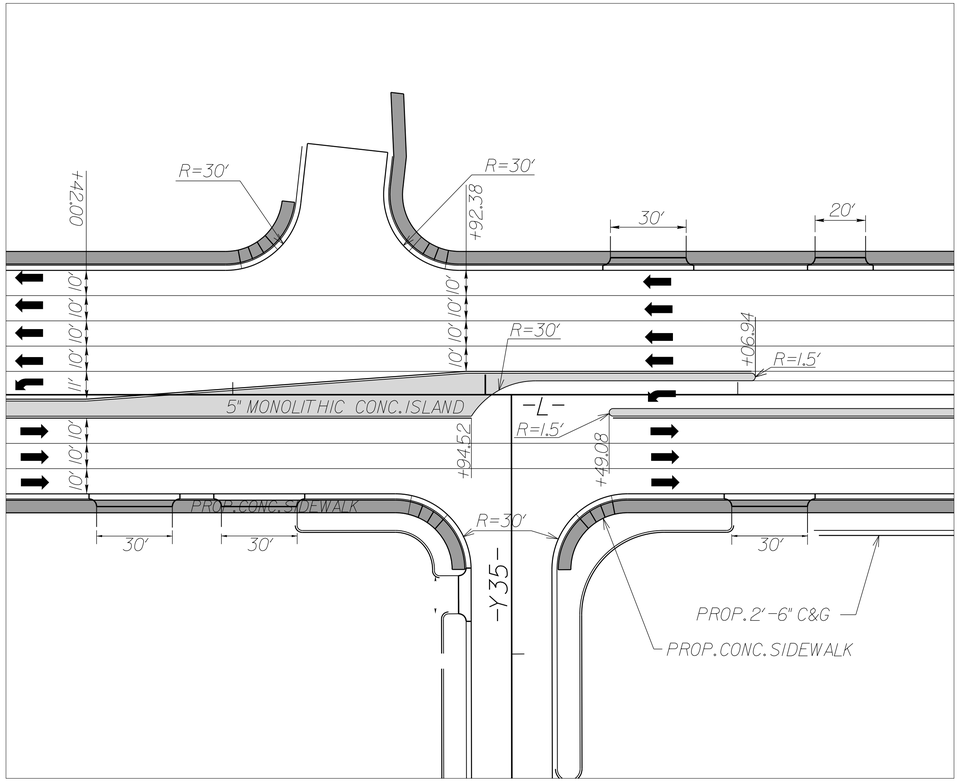
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

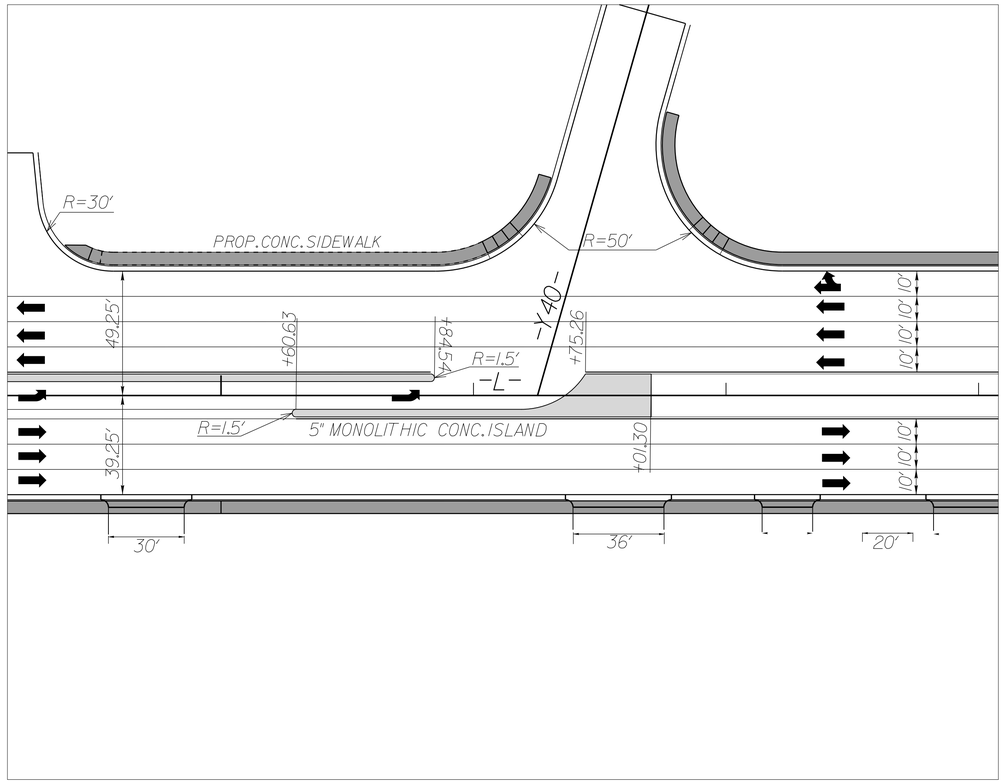
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION OF RAEFORD ROAD (–L–) AND MARLBOROUGH ROAD (–Y35–) (SEE PLAN SHEET 25)

INTERSECTION OF RAEFORD ROAD (–L–) AND EXECUTIVE PLACE (–Y40–) (SEE PLAN SHEET 26)



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REVISIONS

INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-9
R/W SHEET NO.	

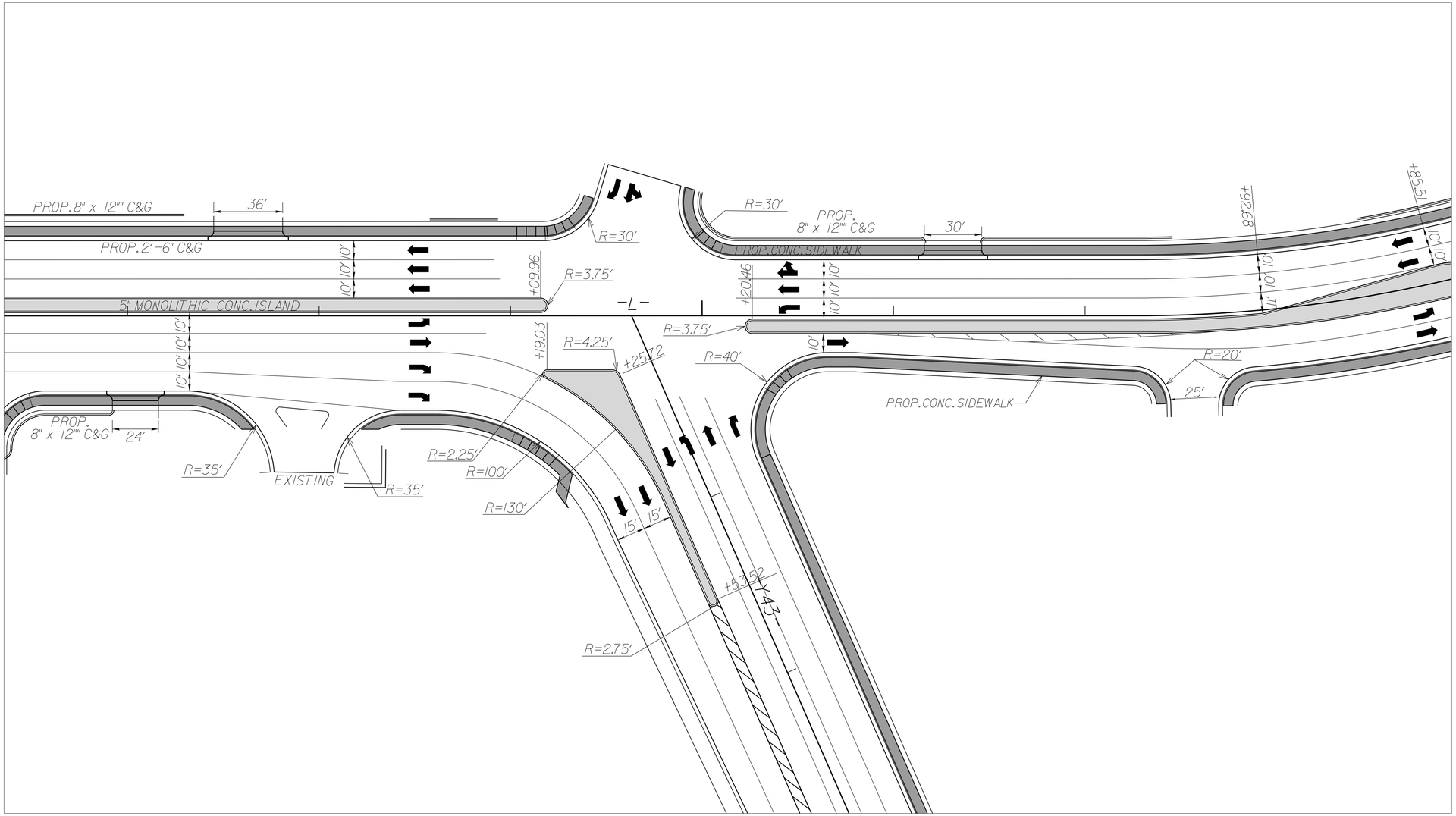
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION OF RAEFORD ROAD (-L-) AND ROBESON STREET (-Y43-) (SEE PLAN SHEET 27)

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8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

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R/W SHEET NO.	

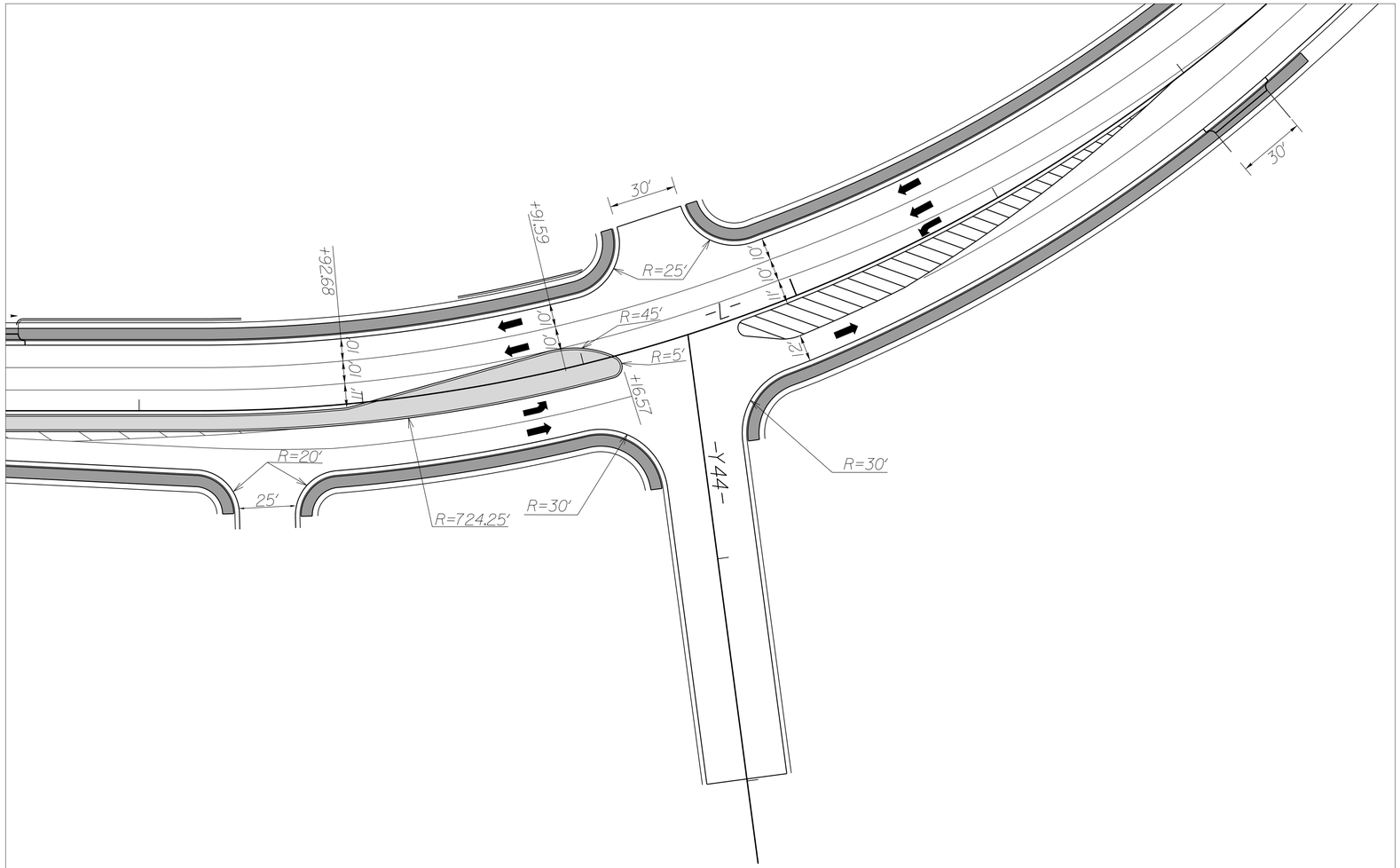
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

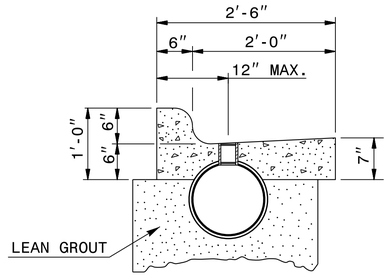
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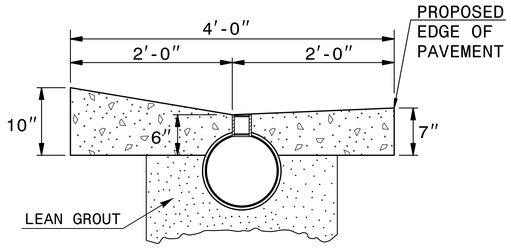
INTERSECTION OF RAEFORD ROAD (–L–) AND FAIRWAY DRIVE (–Y44–) (SEE PLAN SHEET 27)

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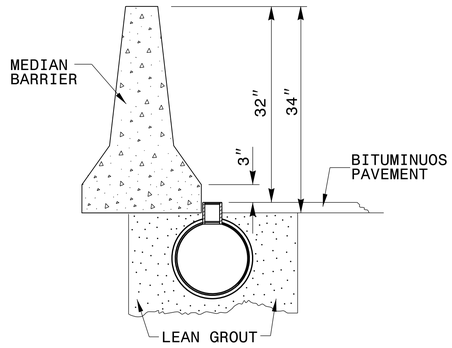
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U-4405	2C-1



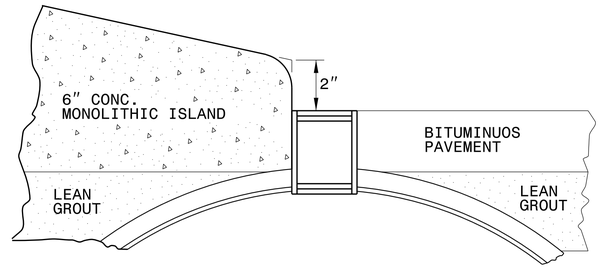
ALTERNATE NO.1



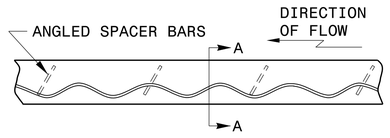
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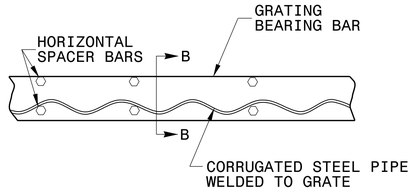


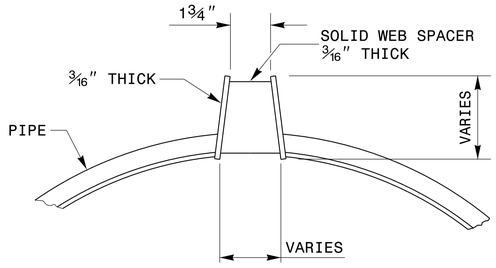
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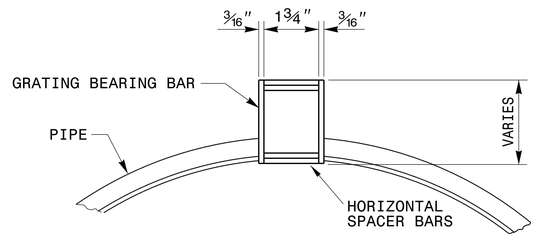
ALTERNATE NO.4







SECTION A-A



SECTION B-B

NOTES:

USE GRATE ASSEMBLIES FABRICATED FROM STRUCTURAL STEEL MEETING THE REQUIREMENTS OF ASTM A 570, GRADE 36 OR ASTM A 36.

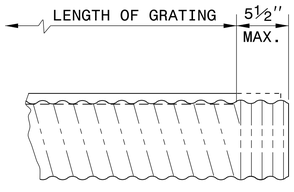
HOT-DIP GALVANIZE GRATES AFTER FABRICATION TO MEET ASTM A123.

USE SLOTTED DRAIN PIPE THAT IS ADEQUATE FOR AASHTO H20 LOADING WHEN INSTALLED AS SHOWN.

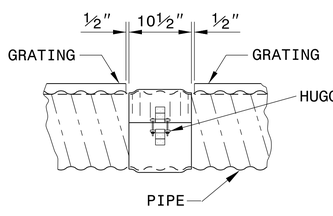
USE SLOTTED DRAIN PIPE FABRICATED FROM ALUMINIZED CORRUGATED STEEL PIPE MEETING THE REQUIREMENTS OF AASHTO M274 TYPE 2.

NCDOT ALLOWS THE USE OF SIMILAR GRATE CONFIGURATIONS MEETING THE REQUIREMENTS OF THIS DETAIL, THE REQUIREMENTS OF THE SPECIAL PROVISIONS, AND THE APPROVAL OF THE ENGINEER.

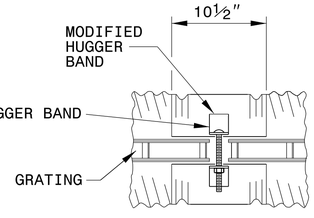
TYPICAL GRATE DETAILS



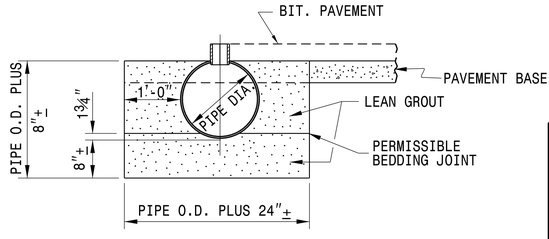
DETAIL AT END OF PIPE



TYPICAL COUPLING BAND



MODIFIED COUPLING BAND



SLOTTED DRAIN PIPE INSTALLATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joey S. Howerton

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CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAILS OF SLOTTED DRAIN 12" THRU 36" DIAMETER PIPE

ORIGINAL BY: T.Spell DATE: 5-21-99
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: s:usr\details\stand\slottdrain.dgn

11-OCT-2017 15:41
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jhowerton AT CSD-212515

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2C-2

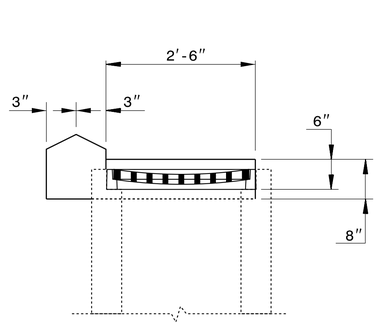
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

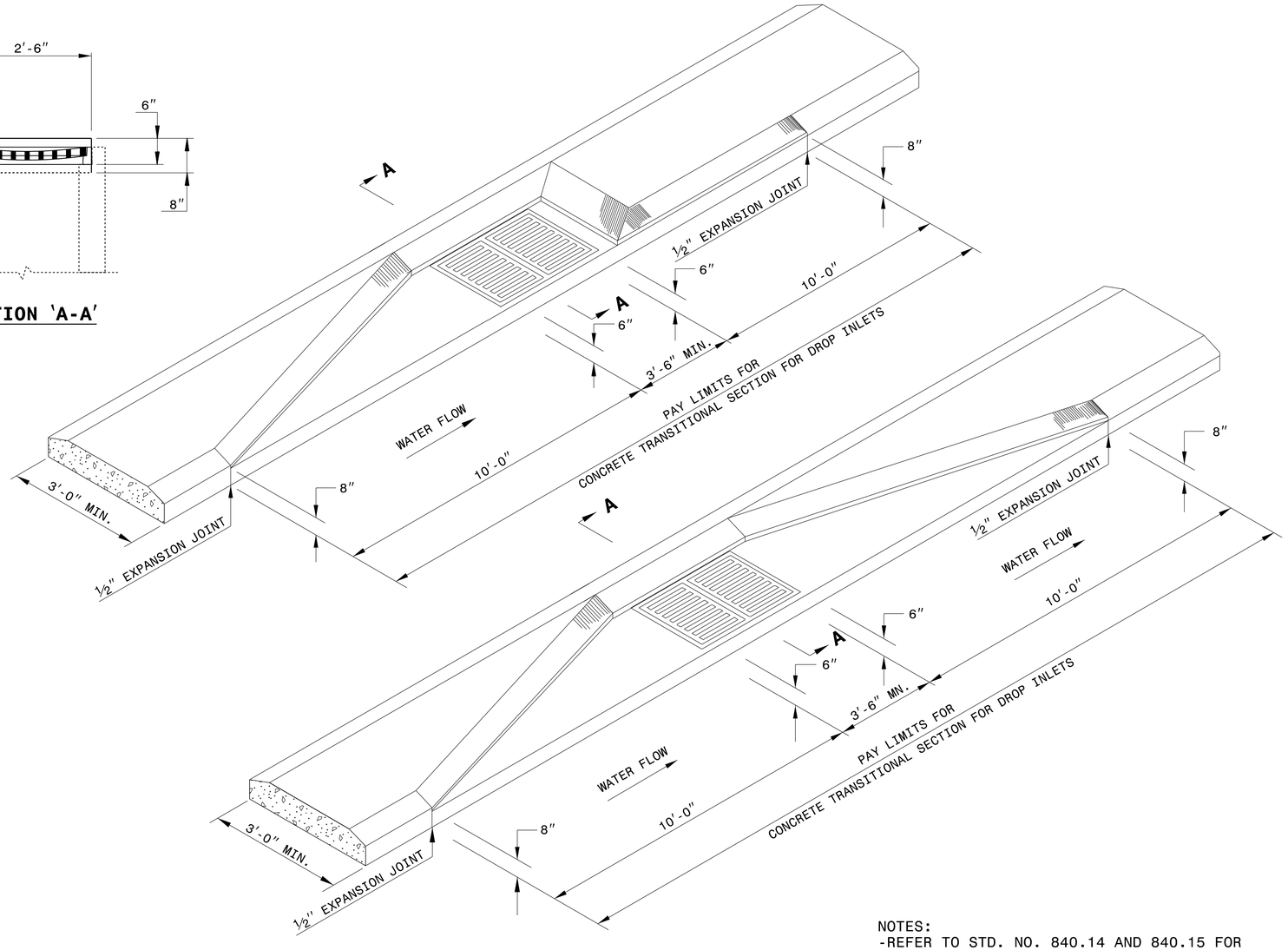
METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1

852D06



SECTION 'A-A'



NOTES:
-REFER TO STD. NO. 840.14 AND 840.15 FOR DRAINAGE STRUCTURE.
-REFER TO STD. NO. 840.16 FOR GRATE AND FRAME.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1

852D06

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE PLATE

ORIGINAL BY: KKEMPF DATE: 8/2/10
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: KKEMPF\ENGLISH\852D0601.DGN

$$$$SYSTIME$$$$
$$$$SESSION$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 17
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 2:1 or Flatter, Fill Slope

Min. D= 1.5 Ft.

FROM STA. 23+50 TO STA. 26+10 –L– LT

NC GRID NAD 83/NA 2011

MATCHLINE SEE SHEET 4 –L– STA 22+00

MATCHLINE SEE SHEET 6 –L– STA 35+50

JOHN W. WILLIAMS & WIFE DB 4041 PG 657 PB 57 PG 33

RONEL VILLANUEVA DB 8802 PG 597 PB 57 PG 33

GERALD T HOLMES & WIFE DB 5874 PG 181 PB 57 PG 33

YAIR AMED HODGE MARTA DB 7324 PG 604 PB 57 PG 33

THOMAS L MANIGO & WIFE DB 5180 PG 418 PB 57 PG 33

TRINITY UNITED METHODIST CHURCH DB 2552 PG 413

NORTH CAROLINA NATURAL GAS DB 2085 PG 279

MURRY EUGENE HODGES, JR & WIFE DB 4712 PG 298 PB 96 PG 3

FAYETTEVILLE STORAGE 17 NC, LLC DB 8993 PG 586 PB 96 PG 3

CUMBERLAND COUNTY DB 8304 PG 55

RAYCONDA PROPERTIES DB 5776 PG 175 PB 117 PG 64

EYE MEDICS OPTOMETRIST, PA DB 6718 PG 465 PB 113 PG 117

PHILLIP R. TAYLOR DB 8715 PG 230 PB 113 PG 117

MCNL ENTERPRISES, LLC DB 6106 PB 294 PB 104 PG 101

M & S PIKE, LLC DB 5493 PG 309 PB 104 PG 101

DELLAR CLAUDINE CAULDER DB 5540 PG 182 PB 19 PG 45

DELLAR C CAULDER DB 3650 PG 498 PB 19 PG 45

BEATRICE GLENN DB 3594 PG 750 PB 19 PG 45

GERALD GOODSPEED, JR. HEIRS DB 212 PG 371 PB 19 PG 45

CYNTHIA HARRIS STEV DB 7425 PG 883 PB 19 PG 45

JOHNNY DEAN CAPPS DB 6337 PG 296 PB 33 PG 34

WALTER E CAULDER & WIFE DB 5016 PG 572 PB 49 PG 67

ROY LESTER & WIFE SUNNY DB 6931 PG 299 PB 49 PG 67

DO NOT DISTURB GAS FACILITY

NO CLAIM

DO NOT DISTURB SIGN AND LIGHT POLE

SPECIAL LATERAL 'V' DITCH SEE DETAIL 17

DO NOT DISTURB SIGN AND GROUND LIGHTS

DO NOT DISTURB SIGN

RETAIN SYSTEM

RETAIN AND TIE TO DI

ADJUST CB

REMOVE

DI SEE SPEC. DET.

FILL WITH FLOWABLE FILL

PROP. 2'-6" C&G

PROP. CONC. SIDEWALK

PROP CONC SIDEWALK

5' MONOLITHIC CONC. ISLAND

US 401 BUS

RAEFORD RD

NOTE: SEE SHEET 33 FOR –L– PROFILE
SEE SHEET 46 FOR –Y3– PROFILE

REVISIONS

RDW REV.: March 2,2017 - Revised PUE along Parcels 21 and 42;Removed PUE along Parcels 20-23,28-33,43,44,and 52-54;Changed DUE to PDE along Parcels 21,22,52,and 53;Combined Parcels 25 and 26;Combined Parcels 28 and 29;Combined Parcels 31 and 32 (IWB)

RDW REV.: March 28,2017 - Added 'Do Not Disturb Sign' label to Parcel 27 (IWB)

RDW REV.: April 20,2017 - Revised Do Not Disturb Gas Facility Note to Parcel 22;Added Do Not Disturb Sign and Light Pole Note to Parcel 23

RDW REV.: May 30,2017 - Added Do Not Disturb Sign and Ground Lights Note to Parcel 22;Added Do Not Disturb Sign and Light Pole Note to Parcel 23 (IWB)

RDW REV.: July 21,2017 - Added Do Not Disturb Sign and Ground Lights Note to Parcel 21;Removed TCE from Parcel 22;Added No Claim Note to Parcel 22 (IWB)

RDW REV.: August 21,2017 - Revised PDE along Parcel 42;Removed TCE along Parcels 34,35,41,and 42;Removed PUE along Parcel 42 (IWB)

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REV. - March 2, 2017 - Revised PUE along Parcels 5 and 12; Removed PUE along Parcels 10, 11, and 20; Combined Parcels 5 and 6 (WB)

ROW REV. - August 21, 2017 - Added TCE to Parcels 1, 2, 8, 9, 0, and 11; Added PDE to Parcels 2, 8, and 9 (WB)

MATCHLINE SEE SHEET 4B -L1- STA 111+00

MATCHLINE SEE SHEET 5 -L- STA 22+00

NC GRID NAD 83/NA 2011

-Y53- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y53- Sta. 12+06.00

BEGIN CONSTRUCTION -Y1- Sta. 14+20.00

-LI- Sta. 113+25.45= -Y53- Sta. 12+96.50

-LI- Sta. 115+65.00= -L- Sta. 15+65.00

-L- Sta. 20+55.59= -Y1- Sta. 15+26.27

-L- Sta. 20+58.31= -Y2- Sta. 10+00.00

END CONSTRUCTION -Y2- Sta. 11+20.00

-Y2- POT Sta. 13+85.69

-BY- # 41

-BY2- # 43

JOHN W. WILLIAMS & WIFE DB 4041 PG 657 PB 57 PG 33

JAMES A BLUE & WIFE ANNETTE L. DB 4348 PG 14 PB 57 PG 33

DAVID F SEAY & WIFE DB 3214 PG 288 PB 57 PG 33

GERALD T HOLMES & WIFE DB 5874 PG 181 PB 57 PG 33

YAIR AMED HODGE MARTA DB 7324 PG 604 PB 57 PG 33

THOMAS L MANIGO & WIFE DB 5180 PG 418 PB 57 PG 33

JAMES E KOHLER, JR & WIFE DB 8951 PG 861 DB 57 PG 33

ZARKO JOHNSON DB 6073 PG 155

SIMPSON & SIMPSON II DB 5321 PG 155

JANICE MARIE TYSON DB 5043 PG 871 PB 57 PG 33

DEBRA NEICE WILLIAMS DB 4962 PG 886 PB 57 PG 33

V C CORRELL & WIFE DB 4269 PG 289 PB 57 PG 333

SHIRLEY A FONTAINE DB 3873 PG 30 PB 57 PG 33

RAYCONDA PROPERTIES DB 5776 PG 175 PB 93 PG 37

RAYCONDA PROPERTIES DB 5776 PG 175 PB 93 PG 37

FORT SILL NATIONAL BANK DB 7750 PG 359 PB 104 PG 101

SPIRIT MASTERS FUNDING III, LLC DB 7384 PG 716 PB 98 PG 72

CLASS B RIP RAP EST 15 TONS EST 30 SY GEOTEXTILE

PLUG AND FILL WITH FLOWABLE FILL RETAIN SYSTEM

RETAIN SYSTEM

TIE TO EXIST

COLLAR AND EXTEND EXISTING 12"

REMOVE

RETAIN

PROP. 2'-6" C&G

PROP. CONC SIDEWALK

EXISTING

PUE

PDE

NOTE: SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 46 FOR -Y1- PROFILE
SEE SHEET 46 FOR -Y2- PROFILE
SEE SHEET 52 FOR -L1- PROFILE
SEE SHEET 2B-3 FOR INTERSECTION DETAILS

PROP CONC SIDEWALK

12-OCT-2017 11:35
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

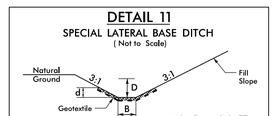
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DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50- POT Sta. 10+00.00

-Y50-
PI Sta 13+13.27
△ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
△ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

N 78° 19' 20.4" E

-Y50- PC Sta. 10+85.41

BEGIN ASPHALT OVERLAY
-Y50- Sta.14+99.00

-L1- POT Sta. 89+00.00

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

-Y50- PT Sta. 15+19.30

BEGIN ASPHALT OVERLAY
-L- Sta.15+65.00

BEGIN TIP PROJECT U-4405
-L1- STA. 95+00.00

-L1- Sta.95+82.50=
-Y51- Sta. 16+13.41

N 55° 08' 56.9" E -L1-

S 58° 26' 33.7" E

R=100'

-Y50- +98.77

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP-III W/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

750' LANE SHIFT

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11

PROP. 2'-6" C&G

RETAIN SYSTEM

RETAIN SYSTEM

-L1- PC Sta. 97+95.86

24" DIP, PVC Water

Piedmont Natural Gas Company, Inc. 4" PLASTIC

20' SEWER EASEMENT (PB C07 PG 140)

EXISTING R/W

6' CONC SW

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

MATCHLINE SEE SHEET 4B
-L1- STA 99+00

NOTE: SEE SHEET 52 FOR -L1- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4B
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

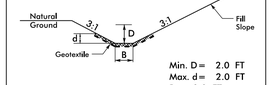
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

REVISIONS

ROW REV. - August 21, 2017 - Added TCE to Parcels 1, 400, 401, and 402; Added PDE to Parcels 1 and 402. (MB)

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0 FT
Max. d = 2.0 FT
B = 2.0 FT

Type of Liner = CLASS I RIP RAP

FROM STA. 96+90 TO STA. 100+50 -L1- LT

-L1-
PI Sta 101+73.28
△ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'
SE = EXIST.

NC GRID
NAD 83/NA 2011

-Y51- POT Sta. 10+00.00

-Y52- POT Sta. 10+00.00

S 15° 43' 34.7" E

BEGIN CONSTRUCTION
-Y52- Sta. 11+28.00

BEGIN CONSTRUCTION
-Y51- Sta. 11+48.00

-L1- Sta. 107+30.49=
-Y51- Sta. 12+25.00

-L1- PT Sta. 105+42.33

-L1- Sta. 109+45.81=
-Y52- Sta. 12+50.01

GODFRED O. MENSAH AND WIFE SHARON S. MENSAH
DB 8416 - PG 628
BM 41 - PG 57

WILLIAM R. WORTMANN
DB 3681 - PG 788
BM 41 - PG 57

BILLY G. THARPE, JR AND WIFE BRENDA J. THARPE
DB 6710 - PG 679
BM 41 - PG 57

RENATA N. DEJESUS AND HUSBAND ELIAZ DEJESUS
DB 8283 - PG 129
BM 41 - PG 57

NORLAN B. BILLER AND WIFE JULIE T. BILLER
DB 6414 - PG 692
BM 41 - PG 57

JOHN T. FRANGAKIS
DB 8384 - PG 430
BM 41 - PG 57

DARIN A. LINDSAY AND WIFE DAPHNE LINDSAY
DB 3964 - PG 545
BM 42 - PG 63

JOSHUA T. WORTH AND WIFE ANNIE G. WORTH
DB 2530 - PG 53
BM 42 - PG 63

RAY JOHNSON
DB 5424 PG 474
PB 42 PG 63

ELMWOOD PARTNERS, LLC
DB 7626 - PG 596
BM C7 - PG 140

ANN B. MCLEOD
DB 5213 - PG 768
BM 100 - PG 158

PATSY JUNE MOCH HARNED
KIMBERYLY DAWN MOCH JARMAN
DB 4545 - PG 347
BM 96 - PG 166

MARGARET SUE WRIGHT GLEATON
DB 4644 - PG 424
BM 96 - PG 166

HOLT REAL ESTATE ENTERPRISES
DB 9222 PG 288
PB 80 PG 18

U4405-2

MATCHLINE SEE SHEET 4A -L1- STA 99+00

MATCHLINE SEE SHEET 4 -L1- STA 111+00

NOTE: SEE SHEET 52 FOR -L1- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

REV:- March 2,2017 - Revised PUE along Parcels 21 and 42;Removed PUE along Parcels 20-23,28-33,43,44,and 52-54;Changed DUE to PDE along Parcels 21,22,52,and 53;Combined Parcels 25 and 26;Combined Parcels 28 and 29;Combined Parcels 31 and 32 (IWB)

ROW REV:- March 28,2017 - Added 'Do Not Disturb Sign' label to Parcel 27 (IWB)

REV:- April 20,2017 - Revised Gas Facility Note to Parcel 22;Added Do Not Disturb Sign and Light Pole Note to Parcel 23;Added No Claim Note to Parcel 22;Revised Prop.ROW along Parcel 52 (IWB)

REV:- May 30,2017 - Added Do Not Disturb Sign and Ground Lights Note to Parcel 22;Added Do Not Disturb Sign and Light Pole Note to Parcel 23;Added No Claim Note to Parcel 22 (IWB)

ROW REV:- July 21,2017 - Added Do Not Disturb Sign and Ground Lights Note to Parcel 31;Removed TCE from Parcel 22;Added No Claim Note along Parcel 41;Removed DUE and ROW along Parcel 42 (IWB)

ROW REV:- August 21,2017 - Revised PDE along Parcel 42;Removed TCE along Parcels 34,35,41,and 42;Removed PUE along Parcel 43 (IWB)

8/17/99

DETAIL 17
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D= 1.5 Ft.

FROM STA. 23+50 TO STA. 26+10 –L– LT

MATCHLINE SEE SHEET 4 –L– STA 22+00

MATCHLINE SEE SHEET 6 –L– STA 35+50

NC GRID NAD 83/NA 2011

JOHN W. WILLIAMS & WIFE DB 4041 PG 657 PB 57 PG 33

RONEL VILLANUEVA DB 8802 PG 597 PB 57 PG 33

GERALD T HOLMES & WIFE DB 5874 PG 181 PB 57 PG 33

YAIR AMED HODGE MARTA DB 7324 PG 604 PB 57 PG 33

THOMAS L MANIGO & WIFE DB 5180 PG 418 PB 57 PG 33

20

21 TRINITY UNITED METHODIST CHURCH DB 2552 PG 413

22

23 MURRY EUGENE HODGES, JR & WIFE DB 4712 PG 298 PB 96 PG 3

NORTH CAROLINA NATURAL GAS DB 2085 PG 279

DO NOT DISTURB GAS FACILITY

NO CLAIM

DO NOT DISTURB SIGN AND LIGHT POLE

SPECIAL LATERAL 'V' DITCH SEE DETAIL 17

DO NOT DISTURB SIGN AND GROUND LIGHTS

FAYETTEVILLE STORAGE 17 NC, LLC DB 8993 PG 586 PB 96 PG 3

52

54 CUMBERLAND COUNTY DB 8304 PG 55

53 CUMBERLAND COUNTY DB 8304 PG 55

RETAIN SYSTEM

ISMTL BUS

ISBLK BUS

2SF BUS

2SBUS

ISBK BUS

ISBKD

2SBKD

ISFD

DUMPSTER PAD

MTL CANOPY

CONC FLUME

POND RISER TOP=36.14 INV=22.82

JB w/MH

DI SEE SPEC. DET.

RETAIN AND TIE TO DI

ADJUST CB

REMOVE

TIE TO EXIST

EXISTING

PROP.2'-6" C&G

PROP.1'-6" C&G

PROP.CONC.SIDEWALK

600 PR (CL)

50 PR (CL)

15" RCP-IV

18" RCP-IV

24" C&G

US 401 BUS

RAEFORD RD

5' MONOLITHIC CONC.ISLAND

N 76°00'41.3" E

200' TAPERS

RIPRAP

DO NOT DISTURB SIGN

25 RAYCONDA PROPERTIES DB 5776 PG 175 PB 117 PG 64

27 EYE MEDICS OPTOMETRIST, PA DB 6718 PG 465 PB 113 PG 117

28 PHILLIP R. TAYLOR DB 8715 PG 230 PB 113 PG 117

30 MCNL ENTERPRISES, LLC DB 6106 PG 294 PB 104 PG 101

31 M & S PIKE, LLC DB 5493 PG 309 PB 104 PG 101

33 DELLAR CLAUDINE CAULDER DB 5540 PG 182 PB 19 PG 45

34 DELLAR C CAULDER DB 3650 PG 498 PB 19 PG 45

35 WALTER E CAULDER & WIFE DB 5016 PG 572 PB 49 PG 67

41 JOHNNY DEAN CAPPS DB 6337 PG 296 PB 33 PG 34

42 BEATRICE GLENN DB 3594 PG 750 PB 19 PG 45

43 GERALD GOODSPEED, JR. HEIRS DB 2121 PG 371 PB 19 PG 45

44 CYNTHIA HARRIS STEV DB 7425 PG 883 PB 19 PG 45

ROY LESTER & WIFE SUNNY DB 6931 PG 299 PB 49 PG 67

PROP CONC SIDEWALK

NOTE: SEE SHEET 33 FOR –L– PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	6
R/W SHEET NO.	

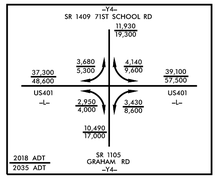
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NC GRID
NAD 83/NA 2011

8/17/99

REVISIONS

RON REV.- March 2,2017 - Revised PUE along Parcels 48,55,and 62;Removed PUE along Parcels 44,45,46,47,and 54;Revised TCE on Parcel 54;Added TUE along Parcel 55 (WB)
RON REV.- June 14,2017 - Revised Final Survey along Parcel 62;Revised DUE along Parcel 62 (WB)

MATCHLINE SEE SHEET 28
-SR3- STA 13+50

MATCHLINE SEE SHEET 28
-Y4- STA 16+50

MATCHLINE SEE SHEET 5
-L- STA 35+50

MATCHLINE SEE SHEET 7
-L- STA 48+00

BEGIN CONSTRUCTION
-Y4- Sta. 17+00.00

-SR3- POT Sta. 15+57.07

-L- Sta. 45+33.70=
-Y4- Sta. 18+48.61

END CONSTRUCTION
-Y4- Sta. 19+70.00

-Y4- POT Sta. 22+80.26

CUMBERLAND COUNTY
DB 8304 PG 55

54 — SEVENTY FIRST CLASSICAL MIDDLE SCHOOL — 2SBK

55 — CUMBERLAND COUNTY BOARD OF EDUCATION
DB 635 PG 160
DB 5430 PG 468
DB 536 PG 404
DB 517 PG 190

62 — CUMBERLAND COUNTY BOARD OF EDUCATION
DB 847 PG 374

47 — JOSEPH R WEST & WIFE LINDA M.
DB 4820 PG 525
PB 19 PG 45

48 — G6 PROPERTIES, LLC
DB 8761PG 382

49 — BILLY C BALDWIN & WIFE
DB 3154 PG 323
PB 55 PG 43

50 — LOU-S HORTON
DB 6279 PG 4
PB 55 PG 43

51 — OAIHA & GIAU TANG
DB 8732 PG 115
PB 55 PG 43

46 — MARLENE ELIZABETH VARGAS
DB 7487 PG 273
PB 19 PG 45

45 — PETER A PORRECO & WIFE
DB 7399 PG 738
PB 19 PG 45

44 — CYNTHIA HARRIS STEVENS
DB 7425 PG 883
PB 19 PG 45

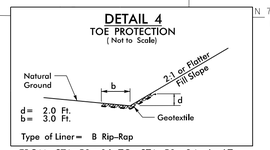
59 — McDONALD'S CORP
DB 4192 PG 555
PB 58 PG 116

60 — AOM INVESTMENTS, L
DB 5032 PG 661
PB 58 PG 116

OLAND BERYL LITTLE & WIFE
DB 3433 PG 726
PB 55 PG 43

R & W PIZZA HUTS OF NORTH CAROLINA
DB 3223 PG 630
PB 98 PG 110

DETAIL 4
TOE PROTECTION
(Not to Scale)

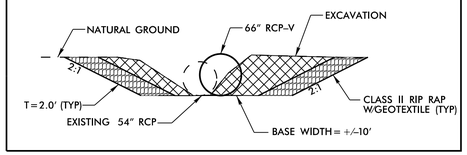


d= 2.0 Ft.
b= 3.0 Ft.
Type of Liner= B Rip-Rap

FROM STA. 50+06 TO STA. 50+34 -L- LT

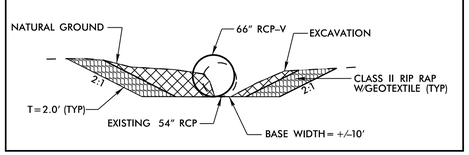
OUTLET DETAIL
NTS (46+71 -L-)

EXCAVATION = 145 CY +/-



INLET DETAIL
NTS (46+71 -L-)

EXCAVATION = 250 CY +/-



★ PROPOSED SIGNAL

PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 33 & 34 FOR -L- PROFILE
SEE SHEET 46 FOR -Y4- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

-L-
PIs Sta 61+82.97
Θs = 0° 45' 14.0"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

REVISIONS
ROW REV. - March 2,2017 - Revised PUE along Parcels 60,61,and 66; Removed PUE along Parcels 61A,63,64,and 65; Changed DUE to PDE on Parcel 66 (WB)
ROW REV. - June 14,2017 - Revised Flod Survey along Parcel 62 (WB)

8/17/99

MATCHLINE SEE SHEET 6 -L- STA 48+00

MATCHLINE SEE SHEET 8 -L- STA 61+50

-L- N 76° 00' 41.3" E

-L- TS Sta. 61+16.30

62 CUMBERLAND COUNTY BOARD OF EDUCATION DB 847 PG 374

66 CUMBERLAND COUNTY BOARD OF EDUCATION DB 2284 PG 479

61 R & W PIZZA HUTS OF NORTH CAROLINA DB 3223 PG 630 PB 98 PG 110

61A LAFAYETTE CEMETERY PARK CORP DB 5051 PG 774 PB 61 PG 9

63 LAFAYETTE CEMETERY PARK CORP DB 2530 PG 215 PB 61 PG 9

64 JERNIGAN-WARREN FUNERAL DB 3143 PG 472

65 LAFAYETTE CEMETERY PARK CORP DB 2530 PG 215 PB 61 PG 9

60 AOM INVESTMENTS, LLC DB 5032 PG 661 PB 58 PG 116

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 34 FOR -L- PROFILE

P:OCT-2017 \35 R:\Projects\U4405_rdy_psh_07.dgn $$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REV. - March 2,2017 - Revised PUE along Parcel 70;Changed DUE to PDE along Parcels 65,67,68,69,and 73;Removed PUE along Parcels 67,68,69,and 73;Revised TCE along Parcel 67 (MB)

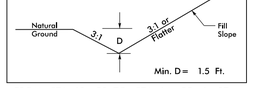
ROW REV. - September 25,2017 - Removed PDE on Parcel 68 (MB)

8/17/99

-L-

PIs Sta 61+82.97	PI Sta 65+10.09	PIs Sta 68+36.04
Θs = 0° 45' 14.0"	△ = 8° 50' 29.8" (LT)	Θs = 0° 45' 14.0"
Ls = 100.00'	D = 1° 30' 28.0"	Ls = 100.00'
LT = 66.67'	L = 586.40'	LT = 66.67'
ST = 33.33'	T = 293.78'	ST = 33.33'
	R = 3,800.00'	
	SE = 0.025	

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 62+50 TO STA. 64+55 -L- RT

NC GRID
NAD 83/NA 2011

-L- SC Sta. 62+16.30

-L- CS Sta. 68+02.70

-L- ST Sta. 69+02.70

MATCHLINE SEE SHEET 7 -L- STA 61+50

MATCHLINE SEE SHEET 9 -L- STA 74+75

65 LAFAYETTE CEMETERY PARK CORP DB 2530 PG 215 PB 61PG 9

67 RAEFORD ROAD PARTNERS, LLC DB 9170 PG 696 PB 132 PG 83

68 SANDRA K CAIN DB 5016 PG 516 PB 16 PG 48

69 GORDON FRANKLIN CRUMPLER DB 5247 PG 636

70 M D GILLIS DB 2690 PG 73 PB 16 PG 48

73 WAL-MART REAL ESTATE BUISINESS TRUST DB 9449 PG 76 PB 134 PG 55

73 WAL-MART REAL ESTATE BUISINESS TRUST DB 9449 PG 76 PB 134 PG 55

72 CIRCLE K STORES INC DB 9852 PG 592 PB 137 PG 124

PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- STA. 319+95.00*

NOTE: SEE SHEET 34 & 35 FOR -L- PROFILE

12-OCT-2017 11:35
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

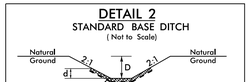
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

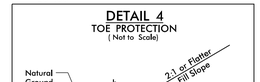
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
Max. d= 6.0 Ft.
B= 3.0 Ft.
*When B is < 6.0'
Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



d= 2.0 Ft.
b= 3.0 Ft.
Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

NC GRID
NAD 83/NA 2011

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- = -Y5- Sta. 21+12.54

-Y5- PC Sta. 21+62.48

-L- TS Sta. 80+54.72

-L- CS Sta. 87+88.62

-L- N 65° 39' 46.5" E

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 10 -L- STA 88+00

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

72 CIRCLE K STORES INC DB 9852 PG 592 PB 137 PG 124

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 5676 PG 794 DB 4960 PG 348

89 CCF REAL ESTATE FOUNDATION DB 8043 PG 712 DB 89 PG 122

90 STEPHEN M. GENTER & WIFE DB 4342 PG 504 PB 89 PG 122

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

86 RAEFORD CROSSING, LLC DB 8474 PG 492 PG 127 PG 185

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

GL B RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

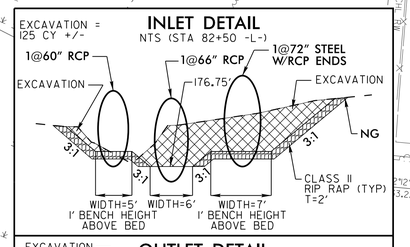
TOE PROTECTION
SEE DETAIL 4

CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

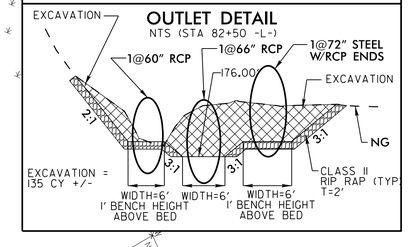
CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

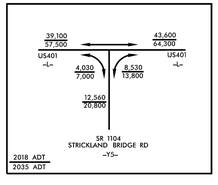
STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)





-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

REVISIONS
R/W REV. - March 2, 2017 - Revised Prop.R/W and DUE along Parcel 72, Removed PUE along Parcels 73, 85, 86, 87, and 88, Revised TCE and TDE along Parcel 85 (WB)
R/W REV. - June 14, 2017 - Removed TDE along Parcel 85 (NB)
R/W REV. - September 25, 2017 - Revised TCE along Parcel 73 (WB)

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99 ROW REV. - March 2,2017 - Revised PUE along Parcel 9x,100,103,104,and 109,Removed PUE along Parcels 101 and 102,Revised TCE along Parcel 109,Combined Parcels 98 and 99,Combined Parcels 101 and 102 (WB)

-Y7-
PI Sta 12+57.36
△ = 20° 39' 00.6" (RT)
D = 6° 30' 00.0"
L = 317.69'
T = 160.59'
R = 881.47'

-L-
PIs Sta 88+21.95
Θs = 0° 27' 17.0"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

-Y6-
PI Sta 12+56.41
△ = 10° 40' 14.2" (LT)
D = 11° 01' 06.3"
L = 96.84'
T = 48.56'
R = 520.00'

DETAIL 3
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, d, Geotextile, B, 2:1, Natural Ground

Min. D= 1.0 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
*When B is < 6.0'

Type of Liner= CLASS I RIP RAP
FROM STA. 92+31 TO STA. 92+64 -L- LT

NC GRID
NAD 83/NA 2011

-Y7- POT Sta. 10+00.00
-Y7- PC Sta. 10+96.77
BEGIN CONSTRUCTION -Y7- Sta. 13+20.00
-L- ST Sta. 88+88.62
-L- Sta. 99+26.68 = -Y7- Sta.14+82.51
-Y7- PT Sta. 14+14.46
END CONSTRUCTION -Y7- Sta. 16+45.00
BEGIN CONSTRUCTION -Y6- Sta. 11+20.00
-L- Sta.89+34.29= -Y6- Sta. 10+00.00
-Y6- PC Sta. 12+07.85
-Y6- PT Sta. 13+04.69
-Y6- POT Sta. 13+18.54
POT Sta. 19+34.91

MATCHLINE -L- STA 88+00 SEE SHEET 9

MATCHLINE -L- STA 101+50 SEE SHEET 11

91 RICHARD WILDER & WIFE ALICE E DB 3249 PG 12

90 STEPHEN M CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

94 VAN METER RENTALS, LLC DB 8781 PG 758

95 96 97 NEW MACEDONIA FREE WILL BAPTIST CHURCH, INC DB 9154 PG 572 DB 162 PG 179 PB 19 PG 9

98 CHRISTINE WALKER HEIRS DB 2150 PG 235 DB 6521 PG 473 PB 94 142

100 BESSIE BLUE LIFE MOORE DB 7485 PG 154

101 PETER STEWART ENTERPRISES, INC DB 8481 PG 664

104 CONNIE L WILSON PRICE DB 5282 PG 507 DB 6724 PG 518

103 NCDOT DB 6625 PG 43

107 PSP OF FAYETTEVILLE, LLC DB 7302 PG 113 DB 117 PG 123

109 ROGERS & BREECE INC DB 9042 PG 860 PB 129 PG 144 PB 63 PG 92

FLORENCE C RANDALL DB 2866 PG 155 EB 18 PG 12 PB 129 PG 144

NCDOT DB 6625 PG 43

PETER B STEWART & WIFE DB 4727 PG 234 DB 2895 PG 396

STEPHEN R PARKER DB 3394 PG 558

STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL 3 EST 65 TONS EST 120 CY GEOTEXTILE EST DDE = 30 CY SLOPE=6.0%

COLLAR AND EXTEND

RETAIN SYSTEM

TIE TO EXIST

REMOVE

PROP. 2'-6" C&G

PROP. CONC. SIDEWALK

5' MONOLITHIC CONC. ISLAND

18" RCP-IV

48" RCP-IV

15" RCP-IV

24" RCP

30" RCP

36"

40" INC

25' INC

50' INC

150' TAPER (RT TURN)

300' LANE SHIFT & TAPER (LT TURN)

300' LANE TAPER (LT TURN)

RAEFORD RD HWY 401 BST

US 401 BUS RAEFORD RD BST

CENTURYLINK DUCTBANK

BUNCE RD

CHURCH

DUMPSTER PAD

CONCRETE HEADWALL

STORAGE

ISBKD

A/G TANK

WD S

2S BRK BUS

EXISTING R/W

EXISTING EASEMENT

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 35 & 36 FOR -L- PROFILE
SEE SHEET 47 FOR -Y6- PROFILE
SEE SHEET 47 FOR -Y7- PROFILE
SEE SHEET 2B-3 FOR INTERSECTION DETAILS

12-OCT-2017 11:36
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$$USERNAME$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

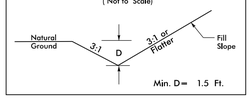
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 12+00 TO STA. 12+50 –Y9– LT

MATCHLINE SEE SHEET 10 –L– STA 101+50

MATCHLINE SEE SHEET 12 –L– STA 115+00

-Y9- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y9- Sta. 12+15.00

-L- Sta. 113+41.87 = -Y10- Sta. 10+00.00

-L- Sta. 107+24.92 = -Y9- Sta. 13+62.38

-Y10- POT Sta. 13+24.44

END CONSTRUCTION -Y10- Sta. 11+45.00

-BY9- # 53

-BY10- # 54

107 PSP OF FAYETTEVILLE, LLC DB 7302 PG 113 DB 117 PG 123

108 DOHERTY HOLDINGS, LLC DB 9119 PG 554 PB 102 PG 114

109 ROGERS & BREECE INC DB 9042 PG 860 PB 129 PG 144 PB 63 PG 92

110 ROGERS & BREECE INC DB 4556 PG 425 PB 129 PG 144

111 DOHERTY HOLDINGS, LLC DB 9119 PG 554 PB 102 PG 114

112 ALLISON HOLDINGS VII, LLC DB 8248 PG 441 PB 96 PG 48

113 ALLISON HOLDINGS VII, LLC DB 8248 PG 441

114 BASIL AGAPION & WIFE SOPHIA S DB 9192 PG 706

115 BASIL AGAPION & WIFE SOPHIA S DB 9192 PG 706

116 ZP #15, LLC DB 4698 PG 1 PB 90 PG 48

118 ROBERT H JORDAN & WIFE DB 6539 PG 341

119 M D GILLIS DB 2890 PG 73

120 DWANE D CLODFELTER DB 7601 PG 648

121 SARA WILLIAMS TOLLISON DB 4300 PG 509 PB 31 PG 18 PB 22 PG 28

124 BILL P PAPPAS & WIFE MARIA G DB 6042 PG 245 PB 108 PG 48

CRAIG SAMPSON DB 1056 PG 491 PB 27 PG 14

MARIA G PAPPAS DB 5163 PG 376 PB 29 PG 53 PB 100 PG 132

DO NOT DISTURB SIGN

RETAIN SYSTEM

RETAIN

REMOVE

550' LANE SHIFT

150' TAPER (RT TURN)

100' UNIFORM TAPER (LT TURN)

250' TAPER (RT TURN)

65' TAPER (LT TURN)

SPECIAL LATERAL 'V' DITCH SEE DETAIL 3

FILL WITH FLOWABLE FILL

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– 319+95.00*

NOTE: SEE SHEET 36 FOR –L– PROFILE
SEE SHEET 47 FOR –Y9– PROFILE
SEE SHEET 47 FOR –Y10– PROFILE

REVISIONS

8/17/99

RDW REV. - March 2, 2017 - PUE Revised PUE along Parcels 110,120,and 121(WB)

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

ROW REV.- March 2,2017 - Revised PUE along Parcels 121 and 129-Revised TCE along Parcel 121 (MB)

-L-		
PIs Sta 117+70.17	PI Sta 120+68.70	PIs Sta 123+65.48
Θs = 1° 47' 25.8"	Δ = 11° 49' 28.7" (RT)	Θs = 1° 47' 25.8"
Ls = 150.00'	D = 2° 23' 14.4"	Ls = 150.00'
LT = 100.01'	L = 495.31'	LT = 100.01'
ST = 50.00'	T = 248.54'	ST = 50.00'
	R = 2,400.00'	
	SE = 0.03	

NC GRID NAD 83/NA 2011

-L- TS Sta. 116+70.16

-L- SC Sta. 118+20.16

-L- CS Sta. 123+15.47

-L- ST Sta. 124+65.47

-L- Sta. 123+63.98 = -Y11- Sta.10+00.00

END CONSTRUCTION -Y11- Sta. 11+60.00

-Y11- POT Sta. 12+10.77

MATCHLINE SEE SHEET 11 -L- STA 115+00

MATCHLINE SEE SHEET 13 -L- STA 128+00

DO NOT DISTURB SIGN

DO NOT DISTURB SIGN

121 SARA WILLIAMS TOLLISON DB 4300 PG 509 PB 31 PG 18 PB 22 PG 28

129 SARA WILLIAMS TOLLISON DB 4300 PG 509

130 TIME WARNER CABLE SOUTHEAST DB 9017 PG 866

131 TIME WARNER CABLE SOUTHEAST DB 9017 PG 866 PB 22 PG 28

124 BILL P PAPPAS & WIFE MARIA Q DB 6042 PG 245 PB 108 PG 48

125 R & T INVESTMENTS DB 7212 PG 445

126 RAYMOND A BASS III & WIFE DB 7032 PG 703 PB 31 PG 72

127 CSI PARTNERS, LLC DB 6415 PG 622 PB 110 PG 174

128 B O C, LLC DB 6662 PG 7 PB 110 PG 174

132 HAMANN INVESTMENTS, LLC DB 8779 PG 648 PB 129 PG 159 PB 27 PG 53

133 BRUCE K ALLEN DB 3756 PG 281

TIME WARNER CABLE DRIVEWAY

58,700 / 67,800	210 / 1,000	1,100 / 900
US401 -L-	800 / 800	2,710 / 2,900
	3,230 / 4,200	
60,800 / 69,900	US401 -L-	

2018 ADT / 2035 ADT — REVERE ST -Y11-

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 36 & 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y11- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

R/W REV. - December 19,2016 - Revised PDE along Parcel 137 and 142 (WB)
R/W REV. - March 2,2017 - Revised PDE along Parcels 133,136,139,140,142,and 143;Removed TUE along Parcel 138 (WB)

8/17/99

2@60" STEEL PIPES
NG
RETAINING WALL
0 – 18'
CLASS II RIP RAP(TYP) THICKNESS = 2'
CHANNEL WIDTH = 20'
EXCAVATION
EXCAVATION = 870 CY

2@60" STEEL PIPES
EXCAVATION
NG
0 – 30'
CLASS II RIP RAP(TYP) THICKNESS = 2'
CHANNEL WIDTH = 20'
EXCAVATION = 512 CY

NC GRID
NAD 83/NA 2011

-L-

PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

MATCHLINE SEE SHEET 12 -L- STA 128+00

MATCHLINE SEE SHEET 14 -L- STA 141+00

-Y12- PC Sta. 10+50.86

-L- Sta.130+25.74 = -Y12- Sta. 10+00.00

-L- TS Sta. 138+95.56

-L- SC Sta. 140+45.56

-Y12- PT Sta. 11+46.72

END CONSTRUCTION -Y12- Sta. 11+50.00

-Y12- POT Sta. 12+76.59

-Y12-

PI Sta 10+99.11
Δ = 16° 09' 10.2" (RT)
D = 16° 51' 06.1"
L = 95.85'
T = 48.25'
R = 340.00'

130 131 TIME WARNER CABLE SOUTHEAST DB 9017 PG 866 PB 22 PG 28

133 BRUCE K ALLEN DB 3756 PG 281

135 YONG JIN YU DB 7485 PG 256

136 SKIBO CROSSING, LLC DB 6175 PG 182 PB 67 PG 18

137 CITY OF FAYETTEVILLE DB 4272 PG 670 PB 67 PG 18

138 JALARAM BAPA ENTERPRISES, LLC DB 8904 PG 433

139 EDWARD C SCHANTZ & WIFE DB 3082 PG 621 PB 19 PG 66

140 BRYANNA COMPANY DB 4477 PB 575 PB 19 PG 66

141 JOSEPH E MOLGORA & WIFE DB 7140 PG 607 PB 19 PG 66

142 AMERICAN FLAG-RAEFORD ROAD DB 4448 PG 340

143 AMERICAN FLAG-RAEFORD ROAD DB 4448 PG 342

KENNETH C LANCASTER, JR ET AL DB 3056 PG 589

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

REVISIONS

ROW REV - December 19, 2016 - Revised DUE along Parcel 141; Revised PUE to PDE along Parcel 142; Revised PUE along Parcels 141, 143, 155, 159-161, 163, 164, 167 and 168; Revised TDE along Parcel 142; Revised PUE and TDE along Parcel 143; Revised PUE and TCE along Parcel 144; Revised PUE and TDE along Parcel 145; Revised TCE and TDE along Parcel 154; Added PUE along Parcel 153; Removed TCE along Parcel 153; Removed TC

-L-		
PI Sta 155+10.17	PIs Sta 157+15.57	PIs Sta 167+90.68
△ = 5° 10' 21.2" (LT)	Θs = 1° 14' 50.5"	Θs = 2° 14' 59.4"
D = 1° 39' 47.4"	Ls = 150.00'	Ls = 150.00'
L = 311.01'	LT = 100.00'	LT = 100.01'
T = 155.61'	ST = 50.00'	ST = 50.01'
R = 3,445.00'		
SE = 0.03		

PROJECT REFERENCE NO.	SHEET NO.
U-4405	15
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011 NC GRID

REVISIONS

RDW REV.- March 2,2017 - Revised PUE along Parcels 167,168,171,172,173,174,175,176,178,179,and 180;Revised TCE along Parcels 167,168,171,172,173,174,175,176,178,179,and 180;Revised Driveways along Parcels 167,168,171,172,173,174,175,176,178,179,and 180 (MB)

RDW REV.- May 30,2017 - Revised Driveways along Parcels 175 and 176 (MB)

RDW REV.- September 25,2017 - Revised Driveways along Parcels 183 and 184 (MB)

MATCHLINE SEE SHEET 14 -L- STA 154+00

MATCHLINE SEE SHEET 16 -L- STA 167+00

-BY15- # 60

-BY16- # 61

-BY16- # 62

-BY17- # 63

-L- CS Sta. 156+65.57

BEGIN CONSTRUCTION -Y15- Sta. 11+40.00

-Y15- POT Sta. 10+00.00

-L- TS Sta. 166+90.67

-L- ST Sta. 158+15.57

-L- Sta.162+45.78 = -Y15- Sta. 12+25.21

S 77°10'12.5" E

S 12°55'17.0" W

N 77°17'45" W 124.38'

N 77°17'45" W 100.01'

N 77°17'45" W 83.77'

N 77°2'14" 215.95'

S 07°39'15" W 194.20'

N 85°39'53" W 61.34'

N 04°54'37" E DIRECTION ONLY

N 06°38'40" E 345.19'

N 04°42'47" E 140.56'

N 04°54'37" E 140.68'

S 69°29'08" E 73.25'

S 69°29'08" E 50.00'

S 69°29'08" E 74.28'

N 05°26'35" E 247.11'

N 01°39'40" E 108.84'

N 03°19'48" E 195.12'

N 21°32'48" E 197.75'

N 26°46'16" E 92.41'

N 16°25'44" E 162.42'

N 05°53'35" E 74.52'

N 05°53'35" E 74.52'

N 13°18'25" E 253.87'

S 18°59'41" W 193.43'

S 71°05'36" E 171.06'

S 18°59'41" W 186.06'

N 13°54'52" E 159.44'

S 12°51'36" W 156.96'

S 12°51'36" W 200.00'

S 13°59'13" W 200.00'

N 13°31'12" E 209.05'

S 12°54'19" W 180.30'

S 13°18'00" W 180.30'

S 14°28'41" W 179.98'

N 13°31'56" E 179.16'

S 77°08'24" E 50.00'

S 77°08'24" E 276.19'

N 77°02'35" W 202.67'

N 76°35'30" W 105.13'

19.87'

61.96'

42.25'

167	WILLIAM D SHERMAN, JR DB 5294 PG 275 PB 16 PG 80
168	RICHARD R ALLEN, JR DB 9077 PG 14 PB 132 PG 111
169	O'REILLY AUTOMOTIVE, INC DB 7889 PG 44 PB 16 PG 80
171	LEWIS CHAPEL MISSIONARY DB 7804 PG 658
172	LEWIS CHAPEL MISSIONARY DB 5415 PG 626 PB 57 PG 9
173	LEWIS CHAPEL MISSIONARY DB 5415 PG 626 PB 57 PG 9
174	LEWIS CHAPEL MISSIONARY DB 7024 PG 484
175	CLYDE A CULBRETH DB 5190 PG 334 DB 2052 PG 625
176	LEWIS CHAPEL MISSIONARY DB 8331 PG 498 PB 39 PG 38
177	CAROL OWN PHILLIPS DB 490 PG 88 PB 22 PG 39
178	MITTIE LEONA OWEN LIFE ESTATE DB 490 PG 88 PB 22 PG 39
179	CARLIS EDGE & WIFE DB 532 PG 246 PB 24 PG 38
180	LAMONIER BRYANT & WIFE DB 5040 PG 508 PB 24 PG 38
181	RICHARD R ALLEN, JR DB 9077 PG 14 PB 132 PG 111
182	WORD OF DELIVERANCE TEMPLE DB 5011 PG 738 PB 738 PG 195
183	HARVEY SCHULTZ DB 3747 PG 332 PB 16 PG 80 PB 11 PG 28
184	ROGER R COMPTON & WIFE DB 3382 PG 320 PB 16 PG 80
186	MARTIN R RASMUSSEN DB 2148 PG 449 PB 24 PG 38
187	MARVIN WILLIAM SMITH, JR DB 5241 PG 53 PB 24 PG 38
188	MARVIN WILLIAM SMITH, JR DB 5241 PG 53 PB 24 PG 38

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 48 FOR -Y15- PROFILE
SEE SHEET 2B-5 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	16
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011
NC GRID

-L-		
PIs Sta 167+90.68	PI Sta 170+65.98	PIs Sta 173+39.22
Θs = 2° 14' 59.4"	△ = 13° 27' 18.9" (LT)	Θs = 2° 14' 59.4"
Ls = 150.00'	D = 2° 59' 59.2"	Ls = 150.00'
LT = 100.01'	L = 448.54'	LT = 100.01'
ST = 50.01'	T = 225.31'	ST = 50.01'
	R = 1,910.00'	
	SE = 0.03	

-Y16-
PI Sta 11+23.85
△ = 3° 32' 29.4" (LT)
D = 5° 43' 46.5"
L = 61.81'
T = 30.92'
R = 1,000.00'

DETAIL 12
RIP-RAPPED ENERGY DISSIPATOR BASIN

*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A-A SUCH THAT Q des/CROSS SECTION AREA AT SEC. A-A = SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

℄ SECTION
HALF PLAN
SEC. A-A
SEC. B-B
SEC. C-C
SEC. D-D

RIP RAP BASIN #								
DW=	1	2	3	4	5	6	7	8
A	1.0							
B	1.0							
C	1.0							
D	1.1							
E	5.8							
F	7.3							
G	16.0							
H	6.0							

BASIN #	LOCATION (AT OUTLET)
1	173+00 -L- LT
2	
3	
4	
5	
6	
7	
8	

*ALL DIMENSIONS APPROXIMATE IN FT

NOTE:
Wo = DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE-ARCH CULVERTS

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00***

NOTE: SEE SHEET 38 & 39 FOR -L- PROFILE
SEE SHEET 48 FOR -Y16- PROFILE

MATCHLINE SEE SHEET 15 -L- STA 167+00

MATCHLINE SEE SHEET 17 -L- STA 180+00

505

REVISIONS
8/17/99
ROW REV. - March 2,2017 - Revised PUE along Parcels 191,193,196,and 198A Revised Prop.R/W along Parcel 193,Revised DUE along Parcel 193 (MB)

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83/NA 2011

REVISIONS

RW REV. - March 2, 2017 - Revised PUE along Parcels 20A,21A,23A,24A,25A,26A,27A and 27B; Revised PDE along Parcel 24A; Revised PUE, along Parcel 23A; Revised PUE and DUE along Parcel 23A; Removed DUE along Parcel 24A; Revised PUE, along Parcel 21A; Added DUE along Parcels 21A and 22A (WB)
RW REV. - August 21, 2017 - Revised PUE and DUE along Parcel 23A; Removed DUE along Parcel 21A; Added DUE along Parcel 22A (WB)
RW REV. - October 9, 2017 - Revised PUE and DUE along Parcel 21A; Removed DUE along Parcel 22A; Added "No Claim" note to Parcel 22A (JJM)

8/17/99

MATCHLINE SEE SHEET 16
–L– STA 180+00

MATCHLINE SEE SHEET 18
–L– STA 193+00

–L– Sta. 184+55.97
–Y18– Sta. 10+00.00

END CONSTRUCTION
–Y18– Sta. 11+50.00

–Y18– POT Sta. 12+21.68

N 84°52'29.8" E

S 01°17'10" W

RETAIN U-4422 SYSTEM

TIE TO PROJECT U-4422

FILL WITH FLOWABLE FILL

REMOVE 6' OF 15" RCP

REMOVE +/- 17' OF 18" RCP

REMOVE JB w/MH AND 11' OF 18" RCP

REMOVE

REMOVED FOR U-4422

NO CLAIM

UNABLE TO LOCATE CONNECTING STRUCTURES

NOTE: SEE SHEET 39 FOR –L– PROFILE
SEE SHEET 48 FOR –Y18– PROFILE

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– STA. 319+95.00*

SR 1596 GLENSFORD RD (PROPOSED)
16,700
51,000 64,700 | 6,700 | 6,100 | 49,150 66,400
BUS401 –L– | 15,610 13,400 | 13,790 15,700 | BUS401 –L–
29,570 33,300
2018 ADT / 2035 ADT
NC59 HOPE MILLS RD

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68:68:USER:NONE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	18
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORROW

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

ROW REV. - March 2,2017 - Revised PUE along Parcels 27B and 201; Revised TCE along Parcel 202; Revised owner name on Parcel 203, 204, 205, 207, and 208; (WB)

8/17/99

NC GRID NAD 83/NA 2011

MATCHLINE SEE SHEET 17 –L– STA 193+00

MATCHLINE SEE SHEET 19 –L– STA 205+00

27B ALDI LLC DB 6753 PG 597

28A CHARLES BILLINGS DB 8747 PG 258 DB 5445 PG 176 DB 3908 PG 541

201 4807 RAEFORD ROAD, LLC DB 9142 PG 355

202 ANDERSON RAEFORD REAL PROPERTY, LLC DB 9285 PG 554 PB 133 PG 43

203 ANDERSON RAEFORD WF, LLC DB 9285 PG 640 PB 133 PG 43

204 GOLDEN OF RAEFORD, LLC DB 9443 PG 586

205 TANDEM INVESTMENTS, LLC DB 5694 PG 251 PB 110 PG 23

206 PATRECE PROPERTIES INC #658 DB 2190 PG 472

207 TRADE LAND COMPANY, LLC DB 9553 PG 519

208 NLP III, LLC DB 9961 PG 102

WILLIAM HAWLEY DB 2921 PG 359

-L- Sta. 196+24.02 = -Y21- Sta. 10+00.00

END CONSTRUCTION -Y21- Sta. 11+10.00

-Y21- POT Sta. 12+10.00

RETAIN SYSTEM

300' LANE SHIFT & TAPER (LT TURN)

150' TAPER (LT TURN)

PROP. 2'-6" C&G

PROP. 8' x 12" C&G

5' MONOLITHIC CONC. ISLAND

N 84°52'29.8" E

S 84°58'01" W 209.78'

S 84°54'11" W 200.11'

N 83°37'34" E 142.93'

S 84°48'45" W 125.00'

N 87°27'20" E 205.45'

N 87°27'20" E 206.08'

S 02°18'56" E 150.00'

S 02°43'06.3" E 192.40'

N 84°36'57" E 224.99'

N 84°59'13" E 45.17'

S 96°28'40" E 260.12'

N 85°00'13" E 224.15'

S 84°34'51" E 107.65'

N 07°07'53" E 282.00'

N 07°06'17" W 214.72'

S 00°04'37" E 306.30'

S 00°02'39" E 182.41'

N 00°48'57" W 90.79'

N 00°48'57" W 68.02'

S 89°47'00" E 110.05'

N 89°47'38" W 105.01'

S 07°46'40" E 207.85'

S 00°56'45" E 175.40'

N 85°02'02" W 145.02'

S 84°48'45" W 125.00'

INGRESS/EGRESS EASEMENT PB 80 PG

BRIGHTON RD 29 BST 60.00'

RAEFORD RD US 401 BUS

KENLEIGH DR

ISBK BUS

MTL WAREHOUSE

2SMAS BLDG

ISBLK BUS

ISBKD

BST

UST's

U/G GAS TANKS

AIR PUMP

MTL CAN

MTL SIGN

BY24- # 70

BY23- # 69

EASEMENT (ABANDONED) PB 126 PG 169

8" BLK WALL

3' CONC

6' CONC

8' CURB

24" HDPE

18" RCP

15" RCP

24" RCP

30" RCP

36" RCP

42" RCP

48" RCP

CONV. CB TO JB w/MH

REMOVE 16' OF 12" RCP

REMOVE +/- 8' OF 15" RCP

REMOVE +/-14' OF 18" RCP

ADJUST JB w/MH

FILL WITH FLOWABLE FILL

TIE TO EXIST

BRIGHTON RD

9,410 / 9,500

49,150 / 66,400 BUS401 –L–

4,330 / 4,900

4,080 / 900

49,210 / 66,000 BUS401 –L–

100 / 100

910 / 1,100

2,020 / 2,300

2018 ADT 2035 ADT

WELLS FARGO BANK DRIVEWAY

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– STA. 319+95.00*

NOTE: SEE SHEET 39 FOR –L– PROFILE
SEE SHEET 48 FOR –Y21– PROFILE
SEE SHEET 2B–5 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	19
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83/NA 2011

-L-
PI Sta 215+19.81
△ = 2° 41' 44.8" (RT)
D = 0° 34' 22.6"
L = 470.50'
T = 235.29'
R = 10,000.00'
SE = NC

REVISIONS
ROW REV.: December 19, 2016 – Revised DUE on Parcel 208 (WB)
ROW REV.: March 2, 2017 – Revised Prop.R/W along Parcel 211, Revised PUE along Parcels 210, 213, 214, 215, 217, 218, 219, and 221; Revised TCE along Parcel 213; Revised owner name on Parcel 214 (WB)
ROW REV.: July 21, 2017 – Revised Prop.R/W along Parcel 213 and 214 (WB)

MATCHLINE SEE SHEET 18 –L– STA 205+00

MATCHLINE SEE SHEET 20 –L– STA 218+50

205
209 DOMINIC MARANGI
212 CLAUDE T HALEY, JR & WIFE
210
213 RAEFORD ROAD LIMITED
214 4400 RAEFORD ROAD, LLC
215 LYNNE B BARRETT
MARGARET L GREER
217 CUMBERLAND COUNTY BOARD OF EDUCATION
218 CUMBERLAND COUNTY MEMORIAL GARDENS
219 CUMBERLAND COUNTY MEMORIAL GARDENS
220 RREF II BB-NC, LLC DB 9368 PG 66

-L- Sta. 205+53.67 = -Y23- Sta. 10+00.00
-L- PC Sta. 212+84.51
-L- PT Sta. 217+55.01
END CONSTRUCTION -Y23- Sta. 11+50.00
-Y23- POT Sta. 12+28.41

ENTIRE CHEVY PARKING LOT TO DI

DO NOT DISTURB LIGHT STRUCTURES

RETAIN CLAUDE T HALEY, JR & WIFE

RETAIN SYSTEM

COLLAR AND EXTEND 15" RCP–IV

ADJUST DI

REMOVE

FILL WITH FLOWABLE FILL

CONNECT TO CB

TIE TO EXIST

ASPHALT CURBING

DO NOT DISTURB LIGHT STRUCTURES

N 84°52'29.8" E

S 84°26'44" W 351.44'

N 84°48'45" E 130.00'

S 84°46'33" W 100.59'

S 84°46'33" W 14.41'

25.00'

N 05°51'45" W 252.81'

N 05°22'07" W 228.71'

S 05°38'05" E 228.70'

S 05°38'05" E 238.35'

N 04°03'59" W 238.35'

S 04°45'25" E 1088.41'

N 05°25'55" E 1084.31'

S 05°22'26" E 1084.31'

N 84°48'45" E 140.00'

S 84°48'45" W 140.00'

S 84°48'45" W 73.49'

N 84°48'45" E 73.49'

N 84°48'45" E 140.00'

S 84°48'45" W 140.00'

S 84°48'45" W 140.00

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83/NA 2011

REVISIONS

8/17/99

ROW REV. - March 2,2017 - Revised PUE along Parcels 220,221,222,225,227,228,and 232;Revised TUE along Parcels 219,220,221,222,227,and 228 (IWB)
ROW REV. - March 23,2017 - Revised TUE along Parcel 228;Revised TLE along Parcel 228;Revised owner name on Parcel 220;Removed PUE along Parcel 227 and 226 (IWB)
ROW REV. - August 21,2017 - Revised TLE;Added TUE along Parcel 228 (IWB)

-L-
PI Sta. 220+67.31
△ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- PC Sta. 219+73.45

-L- PT Sta. 221+61.17

-L- Sta. 229+68.64 = -Y25- Sta. 10+00.00

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

JOHN M TEW & WIFE SHIRLEY DB 2542 PG 343 PB 23 PG 1

KENT A VAN BELOIS & WIFE DB 3364 PG 865

RREF II BB-NC, LLC DB 9368 PG 66

CUMBERLAND COUNTY MEMORIAL GARDENS DB 4598 PG 842 PB 48 PG 35

IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61

NCP FAYETTEVILLE, LLC DB 6243 PG 563

IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110

NORWOOD E BRYAN, JR & DAVID C BRYAN DB 2389 PG 719

FLOODPLAIN BENCH W/ CLASS II RIP RAP 146 TONS 188 SY GEOTEXTILE

CLASS II RIP RAP 25 TONS 32 SY GEOTEXTILE

FLOODPLAIN BENCH W/ CLASS II RIP RAP 397 TONS 420 SY GEOTEXTILE

CLASS II RIP RAP 178 TONS 188 SY GEOTEXTILE

RETAIN SYSTEM

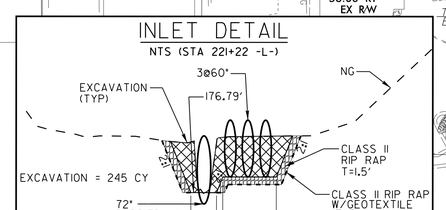
END CONSTRUCTION -Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

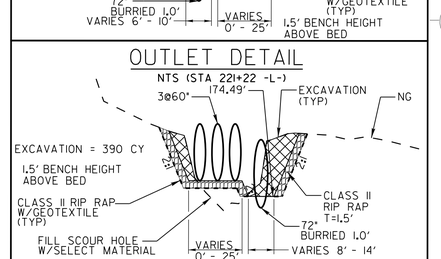
INLET DETAIL

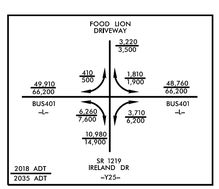
NTS (STA 221+22 -L-)



OUTLET DETAIL

NTS (STA 221+22 -L-)





★ PROPOSED SIGNAL

PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00***

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	21
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

REVISIONS

ROW REV. - March 2, 2017 - Revised DUE along Parcel 243; Revised PDE along Parcel 243; Revised PUE along Parcel 243; Revised DUE along Parcel 230; Owner names revised on parcels 245, 234, and 229; Combined parcels 230 and 231 (IWB)

ROW REV. - May 30, 2017 - Removed DUE along Parcel 238, 239, and 240; Added Driveway to Parcel 238; Revised Driveways on Parcels 237 and 239; Added "Do Not Disturb Building" Note to Parcel 243 (IWB)

ROW REV. - September 25, 2017 - Revised driveway location on Parcel 236 (IWB)

MATCHLINE SEE SHEET 20 –L– STA 231+50

MATCHLINE SEE SHEET 22 –L– STA 245+00

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– 319+95.00*

NOTE: SEE SHEET 40 & 41 FOR –L– PROFILE
SEE SHEET 48 FOR –Y26– PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	22
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID — NAD 83/NA 2011

-L-		-RPB-	-AA-
Pls Sta 257+51.40	Pl Sta 258+20.74	Pl Sta 31+40.19	Pls Sta 37+96.65
Θs = 0° 31' 15.1"	Δ = 0° 45' 00.9" (LT)	Δ = 14° 06' 13.2" (RT)	Θs = 5° 00' 00.0"
Ls = 100.00'	D = 1° 02' 30.3"	D = 6° 21' 58.3"	Ls = 400.00'
LT = 66.67'	L = 72.02'	L = 221.54'	LT = 266.77'
ST = 33.33'	T = 36.01'	T = 111.33'	ST = 133.43'
	R = 5,500.00'	R = 900.00'	
	SE = 0.025	SE=0.08	

REVISIONS

ROW REV.- March 2,2017 - Revised PUE along Parcels 241 and 248; Revised TCE along Parcels 377 and 241; Revised ROW along Parcel 377 (NB)
ROW REV.- August 22,2017 - Revised PDE along Parcel 375 (NB)

8/17/99

MATCHLINE SEE SHEET 21 -L- STA 245+00

MATCHLINE SEE SHEET 31 -RPB- STA 31+00

MATCHLINE SEE SHEET 23 -L- STA 258+00

DETAIL 5
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, Natural Ground, d
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
Type of Liner= PSRM

DETAIL 7
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope, Geotextile, d
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
Type of Liner= CLASS B RIP RAP
FROM STA. 31+00 TO STA. 31+50 -RPB- RT

RETAIN SYSTEM
SPECIAL LAT V DITCH LINED W/CLASS B RIPRAP SEE DETAIL 7
CLASS B RIP RAP EST 3 TONS EST 10 SY GEOTEXTILE
CAT I
GRADE TO DRAIN
TIE TO EXIST
REMOVE SYSTEM
ADJUST MH
REMOVE
FILL WITH FLOWABLE FILL
COLLAR AND EXTEND 15" RCP-IV
REMOVE AND REPLACE DI
RETAIN
EX R/W
PUE
PDE
TB JB w/MH
BEGIN RETAINING WALL 3 -WALL3- STA 10+00.00 = -L- STA 257+70.00 OFF 57.85' RT
END CONSTRUCTION -Y28- Sta. 11+20.00
-Y28- POT Sta. 12+69.02
-L- SC Sta. 257+84.73
-L- TS Sta. 256+84.73
PT -RPB- Sta. 32+50.40
-L- Sta. 247+26.67 = -Y28- Sta. 10+00.00
-L- Sta. 251+55.88 = -RPB- Sta. 34+68.31
-AA- ST Sta. 40+63.22
STARR RAY DB 9162 PG 37
BUCKHEAD PLAZA INC. GCKMB, LLC DB 4715 PG 410
CLIFFORD N. BOSTIC DB 6750 PG 458
LUKE NWOSU, TRUSTEE of the MAXIORIE IRREVOCABLE TRUST DB 7062 PG 577
HOLT REAL ESTATE ENTERPRISES DB 9222 PG 295 PB 9 PG 36
WILLIAMS FAMILY HEIRS, LLC DB 8555 PG 304 PB 112 PG 157
STA. 252+32 -L- RT
ALL AMERICAN EXPRESSWAY
RAEFORD RD 72' BST
ROXIE AVENUE 45' BST
ISBK CHURCH
ISBLK BUS
ISBK BUS
ISF BUS
CAR WASH
MTL CAN
SOIL
CONC
BST
N 23°59'00.00" W
N 86°29'42.7" E
S 3°13'31.0" E
S 87°56'49" W 85.79'
N 2°12'03.0" W 30.00'
S 25°62'98" W 120.02'
S 0°59'19" E 236.42'
S 3°00'45.60" E 100.45'
SR 1007 ALL AMERICAN FREEWAY
SR 3195 FERNCREEK DR
SR 1248 ROXIE AVE
2018 ADT 2035 ADT
STANDARD 'V' DITCH w/PSRM SEE DETAIL 5 EST DDE = +/- 60 CY PSRM = +/- 120 SY

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 49 FOR -Y28- PROFILE
SEE SHEET 45 FOR -RPB- PROFILE
SEE SHEET 2B-7 FOR INTERSECTION DETAILS
SEE SHEET 2B-6 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	23
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

REVISIONS

8/17/99

ROW REV.- March 2,2017 - Revised TCE along Parcels 249,378,379,and 388;Revised PUE along Parcels 249,250,265,273,378,379,and 388;Added Parcel number 388;Combined parcel 255 and 256;Owner names revised on parcels 254,251,and 250 (WB)
ROW REV.- March 2,2017 - Removed TCE from parcel 249 (MB)
ROW REV.- August 21,2017 - Added driveways to Parcels 250 and 251(MB)

-L-
PIs Sta 258+90.08
Θs = 0° 31' 15.1"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

-Y29-
PI Sta 12+84.20
Δ = 4° 24' 27.7" (RT)
D = 3° 57' 05.2"
L = 111.55'
T = 55.80'
R = 1,450.00'

-Y29- POT Sta. 10+00.00
-Y29- PC Sta. 12+28.40
-Y29- PT Sta. 13+39.95
BEGIN CONSTRUCTION -Y29- Sta. 13+50.00
-L- CS Sta. 258+56.75
-L- ST Sta. 259+56.75
-L- Sta. 267+01.67 = -Y29- Sta.14+82.46
-L- PC Sta. 267+59.19
END CONSTRUCTION -Y30- Sta.11+15.00
-L- Sta. 267+02.48 = -Y30- Sta.10+00.00
END RETAINING WALL 3 -WALL3- STA 10+86.70 = -L- STA 258+55.81 OFF 57.81' RT.

MATCHLINE SEE SHEET 22 -L- STA 258+00

MATCHLINE SEE SHEET 24 -L- STA 270+00

WILLARD L. DOCKERY DB 2866 PG 819
SHARON M. FERRELL DB 3868 PG 772
WILLIAM H. OWEN III DB 2905 PG 169
PEDROS MEXICAN FOOD INC DB 2499 PG 683
THE WIENER KING OF CUMBERLAND COUNTY DB 4099 PG 778
TARHEEL TACO, LLC DB 9591PG 689
JS INVESTMENT HOLDINGS, LLC DB 9591PG 695
DIANE DEERING DB 8024 PG 392 PB 61 PG 19
PURDUE COMMONS, INC DB 7414 PG 134
RBC BANK DB 6890 PG 896 PB 72 PG 133
RBC BANK DB 6890 PG 896 DB 2197 PG 157 PB 23 PG 56
ROLAND C LINGLE & WIFE DB 3516 PG 414 PB 72 PG 133
M M FOWLER INC DB 4748 PG 85
CHRIS A KAPRANTZAS & WIFE DB 3370 PG 352
MARIANNE K DAVIS DB 3326 PG 569 PB 15 PG 35
GEORGE A SKENTERIS ET AL DB 2576 PG 613 PB 15 PG 35
DAXS DEALS INC DB 8696 PG 84
JOSEPH E HALL, SR & WIFE DB 6044 PG 610
MASON RAEFORD, LLC DB 9358 PG 187
CURTIS M. DAIL DB 4614 PG 183
OWEN PARK INC. DB 4308 PG 158
BEULAH A WOODYARD DB 3062 PG 425

RETAIN SYSTEM
RETAIN
TIE TO EXIST
REMOVE
FILL WITH FLOWABLE FILL
PROP CONC SIDEWALK
HISTORIC BOUNDARY
5' MONOLITHIC CONC. ISLAND
PROP. 2'-6" C&G
PROP. 1'-6" C&G
15" RCP-IV
18" RCP-IV
24" RCP-IV
30" RCP-IV
EXISTING R/W
ABERDEEN & ROCKFISH RAILROAD R/R TRACKS
RAEFORD RD US 401 BUS
MCPHERSON CHURCH RD
CENTURYLINK DUGTRAIN
ISBK BUS
ISBLK BUS
ISF BUS
ISFD
ISFD ABAND
12" BRK WALL
3' BRK PLANTER
6' WD PRIV
10' CLAY
CONC
BST
PUE
PROPOSED SIGNAL
PROP CONC SIDEWALK

-Y29- SR 1415 S MCPHERSON CHURCH RD
23,520 30,100
6,680 8,400
8,580 12,500
42,820 52,400
47,320 59,400
BUS401
2,030 2,500
4,440 5,400
15,000 17,100
SR 1151 OWEN DR -Y30-
2018 ADT
2035 ADT

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- STA. 319+95.00

NOTE: SEE SHEET 41 & 42 FOR -L- PROFILE
SEE SHEET 49 FOR -Y29- PROFILE
SEE SHEET 49 FOR -Y30- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	24
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

REVISIONS

ROW REV.- December 19,2016 - Revised PUE and TCE along Parcel 275 (IMB)
ROW REV.- March 2,2017 - Revised PUE along Parcels 264,266,273-275,285,286,and 288 (IMB)
ROW REV.- July 21,2017 - Revised PUE&WE O&M on Parcel 274; Revised TCE along Parcel 274 (IMB)

8/17/99

MATCHLINE SEE SHEET 23 -L- STA 270+00

MATCHLINE SEE SHEET 25 -L- STA 283+00

-Y31- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y31- Sta. 10+50.00

-L- PI Sta 271+75.23
△ = 2° 23' 00.3" (LT)
D = 0° 17' 11.3"
L = 831.97'
T = 416.05'
R = 20,000.00'

-L- Sta. 270+61.66 = -Y31- Sta.12+16.81

-L- PT Sta. 275+91.16

FERRELL GAS LP DB 7169 PG 169 PB 23 PG 56

JOHN C. TALLY & ROBERT T. TALLY DB 3074 PG 381

JUAN MACIAS PB 112 PG 16 PB 115 PG 94 03-CVS-8146

KIMBRELL'S INVSTMENT COMPANY, INC DB 5122 PG 125

LACAST COMMERCIAL, LLC DB 8866 PG 491

ROBERT TAYLOR TALLY DB 9076 PG 364

ROBERT TAYLOR DB 9076 PG 364

LASER CLEAN, LLC DB 5841 PG 191 PB 102 PG 9

GRAYLYN PROPERTIES, LLC DB 7687 PG 447 PB 102 PG 9

DAVID HARSANT DB 8877 PG 198 PB 15 PG 35

JOHN C TALLY & ROBERT T TALLY DB 3074 PG 381C PB 24 PG 43

JOHN C TALLY & ROBERT T TALLY DB 3086 PG 220 DB 3756 PG 564

CHRIST UNITED METHODIST CHURCH OF FAYETTEVILLE DB 673 PG 86 PB 8 PG 5

ALEX JOE THOMPSON DB 3702 PG 618 PB 8 PG 5

EDNA HARPER & JAMES SHIELD DB 8073 PG 174 DB 3370 PG 356

CHRIST UNITED METHODIST CHURCH OF FAYETTEVILLE DB 2770 PG 533 PB 8 PG 5

YOUNGSBLOOD STAFFING DRIVEWAY
FAIRFIELD RD
2018 ADT
2035 ADT

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 49 FOR -Y31- PROFILE
SEE SHEET 2B-6 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	25
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

REVISIONS
8/17/99
ROW REV. - March 2,2007 - Revised PUE along Parcels 289-292,297,298,300,and 312;Removed TCE along Parcels 290 and 297;Revised TCE along Parcels 284,292,and 312 (WB)

MATCHLINE SEE SHEET 24 –L– STA 283+00

MATCHLINE SEE SHEET 26 –L– STA 296+00

BEGIN CONSTRUCTION –Y36– Sta. 10+60.00

–Y36– POT Sta. 10+00.00

–L– Sta. 285+0.33 = –Y35– Sta. 10+00.00

END CONSTRUCTION –Y35– Sta. 11+75.00

–Y35– POT Sta. 12+03.63

–L– Sta. 287+47.64 = –Y36– Sta. 12+11.41

289 JOHN C TALLY & ROBERT T TALLY DB 4559 PG 588 PB 24 PG 43

290 KFC OF RAEFORD ROAD, LLC DB 8389 PG 493 PB 34 PG 20

291 RICHARD W WALKER & WIFE DB 4397 PG 336 PB 15 PG 34

297 MAHER M EL HATTO DB 7649 PG 8 PB 15 PG 34

298 BUCKEYE TIRES, LLC DB 6475 PG 234 PB 12 PG 41 PB 111 PG 57

CAROL S LANGDON DB 4273 PG 674 PB 12 PG 41

301 DENA S INGLE DB 6305 PG 302 PB 12 PG 41 03-CVS-8147

302 NEW CENTURY BANK OF FAYETTEVILLE DB 6534 PG 87 PB C006 PG 154

312 JOHN GERAFFO DB 7800 PG 730 PB 44 PG 71

283 MELVIN CURTIS FAULKNER & WIFE DB 8188 PG 697 PB 8 PG 5

282 CHRIST UNITED METHODIST CHURCH OF FAYETTEVILLE DB 2770 PG 533 PB 8 PG 5

EDNA HARPER & JAMES SHIELD DB 8073 PG 174 DB 3370 PG 356

284 ANNA B KARTERIS DB 2821 PG 68 PB 8 PG 5

292 THOMAS J FRANGAKIS & WIFE DB 3064 PG 83 PB 8 PG 5

293 WILLIAM PAUL LEWIS DB 6699 PG 661 PB C005 PG 179

294 OLIVER W ALPHIN & WIFE DB 4831 PG 860 PB 8 PG 5

295 JRJ CAPITAL, LLC DB 8848 PG 96 PB 8 PG 5

296 BRYANT RESTAURANTS, INC DB 6896 PG 335 PB 8 PG 5

303 BULLARD TRAILER SALES, INC DB 8544 PG 90 PB 8 PG 5

304 RAEFORD ROAD INVESTMENTS, LLC DB 8824 PG 744 PB 8 PG 5

305 HAROLD A TOLAR DB 4415 PG 684 PB 52 PG 18

306 TACO PROPERTIES, INC DB 6512 PG 716 PB 111 PG 28

307 LARRY THOMPSON, ET AL DB 4415 PG 684 PB 8 PG 5

308 JAMES H PITTMAN & WIFE DB 8793 PG 488 PB 8 PG 5

MARLBORO RD –Y35– 2018 ADT 2035 ADT

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– 319+95.00*

NOTE: SEE SHEET 42 & 43 FOR –L– PROFILE
SEE SHEET 49 FOR –Y35– PROFILE
SEE SHEET 49 FOR –Y36– PROFILE
SEE SHEET 2B-8 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	26
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99 ROW REV. - March 2, 2017 - Revised DUE along Parcels 313 and 328; Revised PUE along Parcels 313 and 328 (WB)

ROW REV. - May 18, 2017 - Revised PUE and TCE along Parcel 313 (NB)

ROW REV. - September 25, 2017 - Revised driveway location on Parcel 322 (NB)

MATCHLINE SEE SHEET 25 -L- STA 296+00

MATCHLINE SEE SHEET 27 -L- STA 309+50

NC GRID NAD 83/NA 2011

-Y40- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y40- Sta. 12+50.00

-L- Sta. 299+10.74 = -Y39- Sta. 10+00.00

-L- Sta. 306+25.38 = -Y40- Sta. 14+07.70

-Y39- POT Sta. 12+60.28

END CONSTRUCTION -Y39- Sta. 11+50.00

HIGHLAND SHOPPING CENTER DRIVEWAY

2018 ADT / 2035 ADT

PURDUE DR -Y39-

JOHN GERAFFO DB 7800 PG 730 PB 44 PG 71

CHEERS TOO, LLC DB 8970 PG 246 PB 8 PG 5

TIE THREE, LLC DB 3473 PG 481 PB 8 PG 5

SPEREDON C POULOS & WIFE DB 7605 PG 179 PB 8 PG 5

FJW REALTY CORPORATION DB 4711 PG 71

HIGHLAND CENTRE DB 3442 PG 332 PB 93 PG 34

MDO PROPERTIES, INC DB 9024 PG 462 PB 93 PG 34

CUMBERLAND CROSSING, LLC. C/O CHICKFILA INC. DB 9276 PG 652 PB 133 PG 138

BREWSITZ PROPERTIES, LLC DB 4294 PG 417 PB 8 PG 5

BREWSITZ PROPERTIES, LLC DB 6629 PG 687 PB 9 PG 11

J GARY CICCONE & WIFE TERRY G DB 7482 PG 772 PB 9 PG 11

WOOTEN RENTALS, LLC DB 7266 PG 64 PB 8 PG 5

TALLEY INVESTMENTS, LLC DB 7779 PG 868 DB 7779 PG 873

TALLEY INVESTMENTS, LLC DB 7779 PG 868 PB 125 PG 65

DAVID VALENTINE DB 5218 PG 877 PB 8 PG 5

LOUIS FRANGOS & OURANIA FRANGOS DB 6545 PG 755 PB 8 PG 5

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 49 FOR -Y39- PROFILE
SEE SHEET 49 FOR -Y40- PROFILE
SEE SHEET 2B-8 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	27
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

REVISIONS

8/17/99

ROW REV. - March 2,2017 - Revised PUE along Parcels 325,329,330,331,332,334,and 337; Revised TCE along Parcel 332; Revised DUE along Parcels 329 and 330 (MB)

END TIP PROJECT U-4405
-L- Sta. 324+00.00

-L-
PI Sta 320+13.00
△ = 43° 34' 29.9" (LT)
D = 8° 00' 48.2"
L = 543.78'
T = 285.80'
R = 715.00'
SE = 0.04

-L- PT Sta. 322+70.97

MATCHLINE SEE SHEET 26
-L- STA 309+50

MATCHLINE SEE SHEET 32
-Y43- STA 13+00

-L- Sta. 319+48.48 =
-Y44- Sta. 10+00.00

-L- PC Sta. 317+27.20
-L- Sta. 314+63.20 =
-Y43- Sta. 10+00.00

END CONSTRUCTION
-Y44- Sta. 11+90.00

-Y44- POT Sta. 12+38.14

N 82°19'11.2" E

S 15°14'09.0" E

S 37°16'22.9" E

N 38°44'41.3" E

329 TALLEY INVESTMENTS, LLC DB 7779 PG 868 PB 125 PG 65

330 V/D NEAL PROPERTIES, LLC DB 6426 PG 49

331 HIGHLAND COMMERCIAL, LLC DB 8595 PG 54 PB 99 PG 187

332 WATERVILLE EQUITIES I, LLC DB 5187 PG 200 PB 101 PG 100

334 HIGHLAND DAIRIES INC DB 2148 PG 67 PB 15 PG 19

335 PBM OF FAYETTEVILLE, LLC DB 7956 PG 556 PB 124 PG 163

336 RANDY S GREGORY & WIFE ANNE DB 4672 PG 63

337 WEEKS RENTAL PROPERTIES DB 6018 PG 711

338 WEEKS RENTAL PROPERTIES DB 6018 PG 711

339 WEEKS RENTAL PROPERTIES DB 6018 PG 711

340 FAYETTEVILLE ASSOCIATION OF REALTORS DB 2706 PG 741

341 NANCY A CREEDON & HUSBAND DB 8046 PG 181 PB 105 PG 158

346 W A MAXWELL INC DB 3226 PG 710 PB 2 PG 186

347 HIGHLAND COUNTRY CLUB DB 471PG 296

Ⓐ EDWIN J MILLER & WIFE DB 5187 PG 391 PB 8 PG 5

Ⓑ DAVID VALENTINE DB 5218 PG 877 PB 8 PG 5

JIMMY R PEARSON & WIFE DB 7021PG 286 PB 105 PG 158

TRACE HOMES INC DB 9079 PG 715 PB 105 PG 158

GENE S AMMONS & WIFE DELORES DB 1178 PG 359 PB 17 PG 41

MARIE LEWIS PERKINS DB 963 PG 373 PB 14 PG 71

W A MAXWELL INC DB 3226 PG 710 PB 3 PG 9

McPHEE DR

33,780 / 42,400	5,450 / 6,500	1,090 / 1,000
		14,680 / 16,500
BUS401 -L-	17,460 / 23,300	2,710 / 2,900
	22,050 / 27,600	
2018 ADT / 2035 ADT	US 401 BUS ROBESON ST -Y43-	

PROPOSED SIGNAL

PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00***

NOTE: SEE SHEET 43 & 44 FOR –L– PROFILE
SEE SHEET 50 FOR –Y43– PROFILE
SEE SHEET 50 FOR –Y44– PROFILE
SEE SHEET 2B-10 FOR INTERSECTION DETAILS
SEE SHEET 2B-9 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	28
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/NA 2011

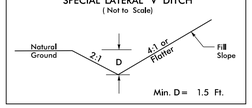
REVISIONS

8/17/99 ROW REV. - June 14,2017 - Revised Final Survey along Parcel 62 (WB)

-SR1-		
PI Sta 10+21.53	PI Sta 14+96.17	PI Sta 17+88.61
△ = 24° 17' 47.3" (RT)	△ = 83° 39' 28.3" (RT)	△ = 15° 46' 37.5" (LT)
D = 57° 17' 44.8"	D = 38° 11' 49.9"	D = 24° 54' 40.4"
L = 42.41'	L = 219.02'	L = 63.33'
T = 21.53'	T = 134.25'	T = 31.87'
R = 100.00'	R = 150.00'	R = 230.00'

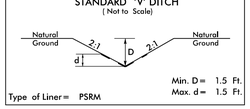
-SR2-
PI Sta 11+26.69
△ = 13° 05' 28.3" (RT)
D = 7° 38' 22.0"
L = 171.36'
T = 86.06'
R = 750.00'

DETAIL 10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



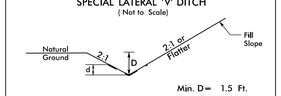
FROM STA. 11+00 TO STA. 12+75 -SR3- RT

DETAIL 15
STANDARD 'V' DITCH
(Not to Scale)



FROM STA. 16+50 -SR1- TO 17+13 -SR1- LT

DETAIL 14
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 15+00 -SR1- TO STA. 16+50 -SR1- RT
FROM STA. 16+50 -SR1- TO STA. 11+00 -SR2- RT

-SRI- PT Sta. 18+20.08

-SRI- PC Sta. 17+56.74

-SR1- +14.00
80.00' LT
STANDARD 'V' DITCH
SEE DETAIL 15
SLOPE = +/- 1.2%
EST DDE = +/- 30 CY

-SRI- Sta. 17+46.94
= -SR2- POT Sta. 10+00.00

POT Sta. 10+00.00

-SRI- PT Sta. 15+80.93

-SR1- +00.00
30.00' LT

-SR1- +50.00
30.00' LT

-SR1- +00.00
30.00' LT

-SR1- +80.93
30.00' LT
CLASS B RIP RAP
EST 5 TONS
EST 14 TONS

-SR1- +56.74
30.00' LT

-Y4- +60.00
EX R/W

-SRI- PC Sta. 13+61.92

-SR1- +61.92
25.00' LT

-SR1- +80.93
30.00' RT

S 83° 39' 10.0" E

-SR1- +75.00
30.00' RT
R=37.50'

-SR1- +50.00
30.00' RT

S 8° 41' 15.3" E

-SR1- +61.92
30.00' RT
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 14

-SR2- +50.00
30.00' RT

-SR2- PC Sta. 10+40.63

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 14

-Y4- Sta. 12+35.73
= -SRI- Sta. 18+81.09

N 8° 41' 15.3" W

GRADE TO DRAIN

JB w/MH

-Y4- +15.00
EX R/W

-SR2- +00.00
30.00' LT

-L- +69.00
582.00' LT

PROP. 2'-6" C&G

-L- +78.00
583.00' LT

-SR3- POT Sta. 10+00.00

-SR3- +00.00
25.00' LT

+39.58

-SR3- +80.00
83.00' RT

-SR3- +00.00
45.00' RT

+45.78

-SR1- +65.00
25.00' LT

-SRI- PT Sta. 10+42.41

-SRI- PC Sta. 10+00.00

-SR1- +15.00
30.00' RT

-SR2- PT Sta. 12+11.99

-SR2- +11.99
30.00' RT

-SR2- +11.99
30.00' LT

-SR2- +25.00
30.00' RT

-SR2- +25.00
30.00' LT

-SR1- +70.00
100.00' RT

-SR2- POT Sta. 12+48.83

-SR1- +88.91
91.74' RT

-SR3- +00.00
35.00' LT

REMOVE 24' OF 12" RCP
PLUG AND ABANDON
+90.00
230.00' LT

RETAIN SYSTEM

+70.40
230.00' LT

+95.00
240.00' LT

+10.00
240.00' LT

S 4° 24' 13" W
S 4° 24' 13" W
S 4° 24' 13" W

PROJECT REFERENCE NO.	SHEET NO.
U-4405	29
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

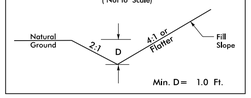
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

DETAIL 13
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 26+10 TO STA. 28+00 -Y5- LT

NC GRID
NAD 83/NA 2011

72
CIRCLE K STORES INC
DB 9852 PG 592
PB 137 PG 124

-Y5- PT Sta. 23+97.87
NO OUTFALL

END CONSTRUCTION
-Y5- Sta. 28+00.00

75
CONFERENCE OF CAROLINA
DB 7738 PG 311
PB 16 PG 48

74
WILDEMAR GUZMAN & WIFE
DB 8419 PG 295
PB 127 PG 75

ANGELA NICHOLS
DB 5046 PG 152
PB 16 PG 48

ROBERT LEE & WIFE THERESA M
DB 3709 PG 111
PB 16 PG 48

FRANCES H ELLIOT
DB 2456 PG 93

WILLARD HAROLD NIXON
DB 5508 PG 861
PB 28 PG 30

81
EX R/W -Y5-
42.00' LT

80
FIRST SPANISH BAPTIST CHURCH
DB 5489 PG 294
PB 28 PG 30

FIRST SPANISH BAPTIST CHURCH
DB 5489 PG 294
PB 28 PG 30

MATCHLINE SEE SHEET 9
-Y5- STA 23+00

-Y5- POT Sta. 30+20.46
-Y5- PT Sta. 29+07.96
-Y5- PC Sta. 28+05.44

-Y5-	
PI Sta 28+56.71	PI Sta 22+82.12
Δ = 1° 28' 06.4" (LT)	Δ = 25° 18' 13.3" (RT)
D = 1° 25' 56.6"	D = 10° 44' 58.8"
L = 102.52'	L = 235.39'
T = 51.26'	T = 119.65'
R = 4,000.00'	R = 533.00'
	SE = 0.02

NOTE: SEE SHEET 46 FOR -Y5- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	30
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

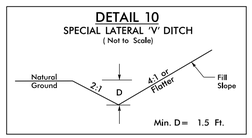
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

DETAIL 10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 16+50 TO STA. 19+00 –RPB– RT

NC GRID
NAD 83/NA 2011

JEAN PHARR LYNCH LIVING TRUST
DB 6205 PG 160
PB 63 PG 93

MOHAMMED W. RAHMAN
DB 5396 PG 563
PB 63 PG 93

TIMOTHY R. GODWIN
DB 5945 PG764
PB 63 PG 93

SUSAN C. SERANO
DB 5210 PG 660
PB 63 PG 93

BEVAN E. GRICE
DB 3575 PG 25
PB 63 PG 93

JEFFREY REITZEL
DB 3983 PG 362
PB 63 PG 93

CRAIG L. JOHNSON
DB 7600 PG 747
PB 86 PG 175

RROBERT B TAYLOR
DB 8409 PG 15
PB 86 PG 175

2SBK CHURCH

VILLAGE DRIVE BAPTIST CHURCH
DB 4107 PG 44
PB 83 PG 177

RROBERT B TAYLOR
DB 8409 PG 15
PB 86 PG 175

EXISTING R/W

30' UTILITY EASEMENT

25' SANITARY SEWER EASEMENT

-AA- ST Sta. 72+37.69

POT -RPB- Sta. 10+00.00 =
-AA- Sta. 69+06.22
OFFSET = 59.64'
Δ = 3° 24' 04.1"

-AA- CS Sta. 68+37.69

TS -RPB- Sta. 11+54.49

SC -RPB- Sta. 13+04.49

N 46° 40' 15.7" W

S 41° 12' 35.1" E

RETAIN SYSTEM

TYPE B-77

GRAU 350

BEGIN NOISE WALL
-NWI- Sta.10+00.00
-AA- Sta.71+66.92
OFF 75.74'

BEGIN CONSTRUCTION
-AA- Sta. 74+23.28

-AA-

-RPB-

RETAIN

REMOVE +/- 42' OF 18" CMP

COLLAR AND EXTEND 2@24" RCP

CLEANOUT EXISTING 2@24" RCP

15" RCP-IV GRAU 350

18" RCP-IV

18" CSP w/ ELBOWS

TB 2GI

CLASS I RIP RAP
EST 3 TONS
EST 7 SY GEOTEXTILE

CLASS I RIP RAP
EST 3 TONS
EST 7 SY GEOTEXTILE

CLASS B RIP RAP
EST 10 TONS
EST 28 SY GEOTEXTILE

CLASS I RIP RAP
EST 4 TONS
EST 10 SY GEOTEXTILE

JOSE A. GONZALEZ
DB 7556 PG 687
PB 62 PG 83

KISHORKUMAR P. KANERIA
DB 8900 PG 303
PB 62 PG 83

STEVEN C. DAVIES
DB 8608 PG 601
PB 62 PG 83

RICKY TORRES
DB 8383 PG 481
PB 62 PG 83

CALVIN NGUYEN
DB 8889 PG 001
PB 62 PG 83

+62.25 EX R/W

LOUIS W. HACKETT
DB 3479 PG 845
PB 62 PG 83

ERNEST L. NELO
DB 6126 PG 207
PB 62 PG 83

BOBBILLY. WILLIAMS
DB 7308 PG 617
PB 66 PG II

JERUBY M LANGDON LIFE ESTATE
DB 8629 PG 292
PB 66 PG II

RETAIN

24" C&G

12" CONC

18" CONC

26" CONC

2SBKD

1SBKD

POOL

380

381

MATCHLINE SEE SHEET 31
-RPB- STA 18+50

-AA-	
PIs Sta 69+71.06	PI Sta 62+85.40
Θs = 3° 00' 00.0"	Δ = 16° 41' 15.7" (LT)
Ls = 400.00'	D = 1° 30' 00.0"
LT = 266.70'	L = 1,112.51'
ST = 133.37'	T = 560.22'
	R = 3,819.72'

-RPB-	
PIs Sta 12+54.50	PI Sta 15+91.64
Θs = 1° 47' 25.8"	Δ = 13° 38' 43.4" (RT)
Ls = 150.00'	D = 2° 23' 14.4"
LT = 100.01'	L = 571.58'
ST = 50.00'	T = 287.15'
	R = 2,400.00'
	SE=.06

NOTE: SEE SHEET 45 FOR –RPB– PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	31
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

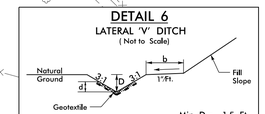
REVISIONS

8/17/99

ROW REV. - March 2,2017 - Revised the PDE along Parcels 375 and 387.(NB)
ROW REV. - May 30,2017 - Removed the PDE along Parcel 387, Revised the PDE along Parcels 375,Added TDE along Parcels 375 and 387.(WB)
ROW REV. - August 22,2017 - Revised PDE and TDE along Parcel 375,Revised ROW along Parcels 382,383,384,385,and 386, Added PDE along Parcels 383,384,385,and 386. (WB)

NC GRID NAD 83/NA 2011

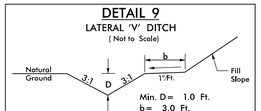
DETAIL 6
LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS B RIP RAP

FROM STA. 30+50 TO STA. 31+00 -RPB- RT

DETAIL 9
LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.0 Ft.
b= 3.0 Ft.

FROM STA. 16+50 TO STA. 24+00 -RPB- RT

MATCHLINE SEE SHEET 30 -RPB- STA 18+50

MATCHLINE SEE SHEET 22 -RPB- STA 31+00

VILLAGE DRIVE BAPTIST CHURCH
DB 4107 PG 44
PB 83 PG 177

2SBK FIELD HOUSE

BK DUGOUTS

MC PHERSON GREEN INC.
DB 4128 PG 612
PB C005 PG 7

2SF APT

BST

LAMEY LN

EXISTING R/W

25' SANITARY SEWER EASEMENT

CS -RPB- Sta. 18+76.07

ST -RPB- Sta. 20+26.07

-AA- SC Sta. 57+25.18

-AA- TS Sta. 53+25.18

TS -RPB- Sta. 28+28.86

SC -RPB- Sta. 30+28.86

-AA-

NBL ALL AMERICAN EXPRESSWAY BST

SBL ALL AMERICAN EXPRESSWAY BST

RETAIN

BEGIN RETAINING WALL 2
-WALL2- STA 11+70.55 =
-RPB- STA 27+39.19
OFF 28.00' RT

REMOVE 29' OF 15" CMP

REMOVE 13' OF 15" CMP

GRAU 350

24" RCP-IV

15" RCP-IV

TB 2GI

TYPE-III

15:1 TAPER

-RPB-

S 23° 59' 00.1" F

PROPOSED NOISE WALL

24" w/ ELBOWS

CLASS I RIP RAP
EST 7 TONS
EST 15 SY GEOTEXTILE
LATERAL V DITCH
SEE DETAIL 9

CHRISTOPHER COLAVITA
DB 7898 PG 841
PB 62 PG 83

KYAW KHINE
DB 6647 PG 29
PB 62 PG 83

DONALD DEITZ BELL
DB 3468 PG 244
PB 62 PG 83

BETTY M. REEVES
DB 6122 PG 3
PB 62 PG 83

BENNIE C. BENTON
DB 3590 PG 25
PB 62 PG 83

BUCKHEAD PLAZA INC.
DB 4482 PG 897
PB 96 PG 100

END NOISE WALL
-NWI- STA 28+30.00 =
-RPB- STA 25+81.07
OFF 26.00' RT

END RETAINING WALL 1
-WALL1- STA 14+62.97 =
-RPB- STA 25+75.10
OFF 36.50' RT

SEE STRUCTURE PLANS

END RETAINING WALL 2
-WALL2- STA 14+76.93 =
-RPB- STA 30+50.00
OFF 34.00' RT

BEGIN RETAINING WALL 1
-WALL1- STA 8+60.00 =
-RPB- STA 19+71.99
OFF 36.63' RT

LATERAL V DITCH LINED W/CLASS B RIPRAP
SEE DETAIL 6

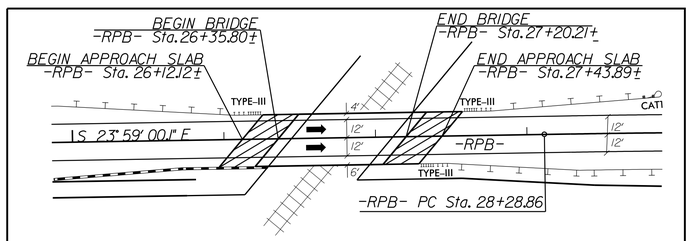
RETAIN SYSTEM

FERNCREEK DR

LARKFIELD CT

-RPB-			
PI Sta 15+91.64	PIs Sta 19+26.07	PIs Sta 29+62.28	PI Sta 31+40.19
△ = 13° 38' 43.4" (RT)	Θs = 1° 47' 25.8"	Θs = 6° 21' 58.3"	△ = 14° 06' 13.2" (RT)
D = 2° 23' 14.4"	Ls = 150.00'	Ls = 200.00'	D = 6° 21' 58.3"
L = 571.58'	LT = 100.01'	LT = 133.42'	L = 221.54'
T = 287.15'	ST = 50.00'	ST = 66.75'	T = 111.33'
R = 2,400.00'			R = 900.00'
SE=.06			SE=.08

-AA-
PIs Sta 55+91.89
Θs = 3° 00' 00.0"
Ls = 400.00'
LT = 266.70'
ST = 133.37'



SKETCH SHOWING THE RELATIONSHIP OF THE BRIDGE TO THE PAVEMENT

NOTE: SEE SHEET 45 FOR -RPB- PROFILE
NOTE: SEE SHEET S- FOR STRUCTURE PLANS

12-OCT-2017 13:37
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	32
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83/NA 2011

-Y43-	
PI Sta 18+97.74	PI Sta 21+17.77
△ = 0° 29' 06.2" (RT)	△ = 0° 28' 56.2" (LT)
D = 1° 25' 56.6"	D = 1° 25' 56.6"
L = 33.86'	L = 33.67'
T = 16.93'	T = 16.83'
R = 4,000.00'	R = 4,000.00'

MATCHLINE SEE SHEET 27
-Y43- STA 13+00

-Y43- PI Sta. 18+84.05

-Y43- PI Sta. 20+73.56

-Y43- POT Sta. 21+78.21

-BY47- # 107

W A MAXWELL INC
DB 3226 PG 710
PB 2 PG 184

HIGHLAND COUNTRY CLUB INC
DB 274 PG 180

FAIRWAY BUILDING
DB 4176 PG 130

JOSEPH D JACKSON
DB 8561 PG 156
PB 56 PG 61

JAMES H SMITH
DB 8567 PG 289
PB 56 PG 61

FREDERICK A BOOTH JR
DB 5940 PG 61
PB 56 PG 61

FREDERICK A BOOTH JR
DB 3184 PG 435

EDWIN J MILLER & WIFE
DB 5187 PG 203
PB 101 PG 100

FREDERICK L GRAHAM
DB 696 PG 716

WJ WIGGS ETALS C/O PAMELA GRIFFIN
DB 2401 PG 724

CATBIRD GROUP LLC
DB 6273 PG 527
PB 72 PG 32

ROBESON BEND OWNERS ASSOC INC
DB 3885 PG 830
PB 81 PG 192

2401 ROBESON BEND LLC
DB 8725 PG 325
PB 72 PG 32

UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE JUNCTION BOX APPROXIMATE DIRECTION OF 36" CPP SHOWN

END CONSTRUCTION
-Y43- Sta. 18+43.12

U4405-6

NOTE: SEE SHEET 50 FOR -Y43- PROFILE

REVISIONS

8/17/99

RDW REV. - March 2,2017 - Incorporated additional land into parcel 350 (WB)

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Permit Modification Dec 1, 2017

PROJECT COMMITMENTS

T.I.P Project No. U-4405
US 401 (Raeford Road) from Old Raeford Road
To East of Fairway Drive in Fayetteville
Cumberland County
Federal Aid Project No. STPDA-0401(230)
WBS Element 39049.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Local Programs Management Unit

At the request of the City of Fayetteville, NCDOT will enter into a municipal agreement with the city to fund construction of five-foot sidewalks on both sides of the US 401 (Raeford Road) Road corridor. Under this municipal cost share agreement, the City of Fayetteville will be responsible for fifty percent of the additional cost and will be responsible for maintenance of the pedestrian facilities upon completion of the project.

Environmental Analysis Unit, Traffic Noise and Air Quality Group

One noise barrier at the All American Expressway proposed off-ramp meets preliminary feasible and reasonable criteria found in the NCDOT Traffic Noise Abatement Policy. A more detailed analysis of this potential noise wall will be completed during project final design.

Environmental Analysis Unit, Historic Architecture Group

NCDOT has shifted the alignment away from the Lindy's (Former A&W) historic property, and only one driveway will be provided to the property from US 401 (Raeford Road). The property sign will be moved towards the side street.

Roadway Design/ Right of Way/ Division 6 Construction

NCDOT has shifted the alignment away from Lafayette Lanes Bowling Alley property. New sidewalk will be outside the historic boundary. A small permanent utility easement (PUE) for an anchoring guywire allowed; temporary construction easement will be acceptable. Removal of parking or impact to the structure is not allowed.

COMMITMENTS FROM PERMITTING

Division 6 Construction/ Utilities Unit/ Roadside Environmental Unit

For the open cut trenching of the utility lines, the mixing of topsoil and the subsoils within the wetlands shall be minimized to the greatest extent practical. During, excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches in wetlands will be piled separately from the subsoils and will be backfilled into the trench only after the subsoils have been placed in the trench and compacted.

Division 6 Construction/ Utilities Unit/ Roadside Environmental Unit

Sediment and Erosion Control 15A NCAC 02H .0506 (b)(3) and (c)(3)

Turbidity curtains shall be used to isolate all work areas from the stream at Beaver Creek, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2011-01806** County: **Cumberland County** U.S.G.S. Quad: **Fayetteville**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **Mr. Phillip S. Harris, III, PE, CPM**
NC DOT-PDEA
Address: **1598 Mail Service Center**
Raleigh, NC 27699

Size (acres) N/A
Nearest Waterway **Beaver Creek**
USGS HUC **03030004**
Nearest Town **Fayetteville**
River Basin **Cape Fear**
Coordinates Latitude: **35.0413189656353**
Longitude: **-78.9624331673919**

Location description: **The project site is located along US 401 from SR 1409 (71st School Road) to US 401 Business (Robeson Street), in Fayetteville, Cumberland County, North Carolina.**

Description of projects area and activity: **This verification authorizes impacts to waters of the U.S. in association with an NC DOT road improvement project along an approximate 6- mile section of US 401 from SR 1409 (71st School Road) to US 401 Business (Robeson Street). The existing facility is a seven lane roadway with a center turn lane. The proposed facility will be a 6 lane roadway with a raised median. Permanent impacts total 0.21 acre wetlands filled, 840 linear feet of stream channel for and 0.23 acre open waters filled for culvert extensions, bank stabilization and utility line relocations.**

Applicable Law: ☒ Section 404 (Clean Water Act, 33 USC 1344)
☐ Sections 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number or Nationwide Permit Number: **NWPs 14 and 12**
SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated October 25, 2017. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Wilmington, NC, at (910) 796-7215.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Sarah Hair at (910) 251-4049 or Sarah.E.Hair@usace.army.mil**.

Corps Regulatory Official: Liz Hair Date: **December 1, 2017**
Expiration Date of Verification: **March 18, 2022**

Determination of Jurisdiction:

A. ☐ There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.

B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

C. ☐ There are waters, including wetlands, within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

D. ☒ The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued August 9, 2012. Action ID: **SAW-2011-01806**.

Basis For Determination: *see previously verified PJD dated August 12, 2012

Remarks:

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information **(This information applies only to approved jurisdiction determinations as indicated in B and C above).**

This correspondence constitutes an approved jurisdiction determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by N/A.
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: Liz Hair
Sarah Hair

Date of JD: **August 9, 2012**
Expiration Date of JD: N/A

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Electronic copies furnished:

Ms. Joanne Steenhuis, NC DWR
Mr. Jim Rerko, NC DOT Division 6 DEO
Mr. Colin Mellor, NC DOT PDEA
Mr. Chris Rivenbark, NC DOT PDEA

SPECIAL CONDITIONS

1) 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 authorization.

Action ID Number: **SAW-2011-01806** **County:** **Cumberland County**

Permittee: **NC DOT/ PDEA, Mr. Phillip S. Harris, III, P.E. CPM**

Project Name: **NCDOT/U-4405/US 401 and US 401 Business/Division 6**

Date Verification Issued: **December 1, 2017**

Project Manager: **Sarah Hair**

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Sarah Hair
69 Darlington Avenue
Wilmington, North Carolina 28403

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee **Date**

NATIONWIDE PERMIT 12
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2017

Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads).

Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 31.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

The following list of General Conditions has been adapted for work in North Carolina for NCDOT projects. Information related to USACE notification requirements has been removed. Therefore, numbering and lettering below may not be consecutive. Please refer to http://saw-reg.usace.army.mil/NWP2017/2017NWP12.pdf for the complete reference.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #12 - Utility Line Activities

4.1.1. Pipeline/utility line construction through jurisdictional waters and wetlands will be accomplished utilizing directional drilling/boring methods to the maximum extent practicable.

4.1.2. Temporary discharge of excavated or fill material into wetlands and waters of the United States will be for the absolute minimum period of time necessary to accomplish the work. Temporary discharges will be fully contained with appropriate erosion control or containment methods or otherwise such fills will consist of non-erodible materials.

4.1.3. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The applicant is required to provide this information to the Corps with the initial notification package.

4.1.9. For the purposes of this NWP, any permanently maintained corridor along the utility ROW within forested wetlands shall be considered a permanent impact and a compensatory mitigation plan will be required for all such impacts associated with the requested activity.

4.1.10. Use of rip-rap or any other engineered structures to stabilize a stream bed should be avoided to the maximum extent practicable. If riprap stabilization is needed, it should be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

4.1.11. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or “fracking.” Any discharge from hydraulic fracturing or “fracking” into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or mitigation may be required as a result from any unintended discharges.

NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. 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, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre- construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be

addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

FINAL REGIONAL CONDITIONS 2017

Final 2017 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from the Corps and either NCDMF or NCWRC.

1.2 Trout Waters Moratorium

Waters of the United States in the designated trout watersheds of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section 2.7 for information on the designated trout watersheds).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of more than 300 total linear feet of stream bed, unless the District Engineer has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and has determined that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

This Regional Condition does not apply to NWP 23 (Approved Categorical Exclusions).
*NOTE: Permittees should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of stream, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses of 150 linear feet or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream, intermittent or ephemeral stream, the permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). This applies to
NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the United States after the concrete is set and cured and when it no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Where bank stabilization is conducted as part of an activity, natural design, bioengineering and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized to the maximum extent practicable.

3.5.2. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in greater adverse impacts to the aquatic environment.

3.5.3. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.4. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

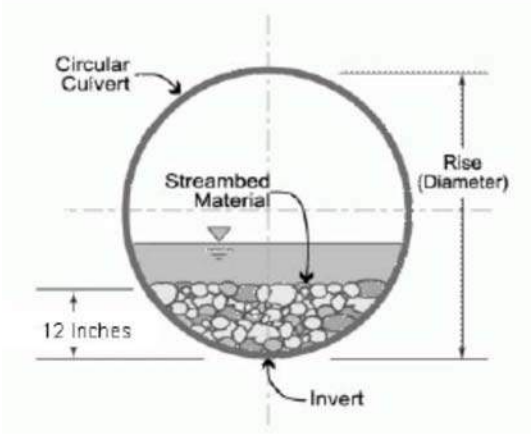
3.5.5. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

3.5.6. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.6 Requirements for Culvert Placement

3.6.1 For all NWPs that involve the construction/installation of culverts, measures will 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 should not be modified by altering the width or depth of the stream profile in connection with the construction activity. The width, height, and gradient of a proposed culvert should be sufficient to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow is the seasonal sustained high flow that typically occurs in the spring. Spring flows should be determined from gage data, if available. In the absence of such data, bank-full flow can be used as a comparable indicator.

In Public Trust Areas of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the culvert at least one foot below normal bed elevation.

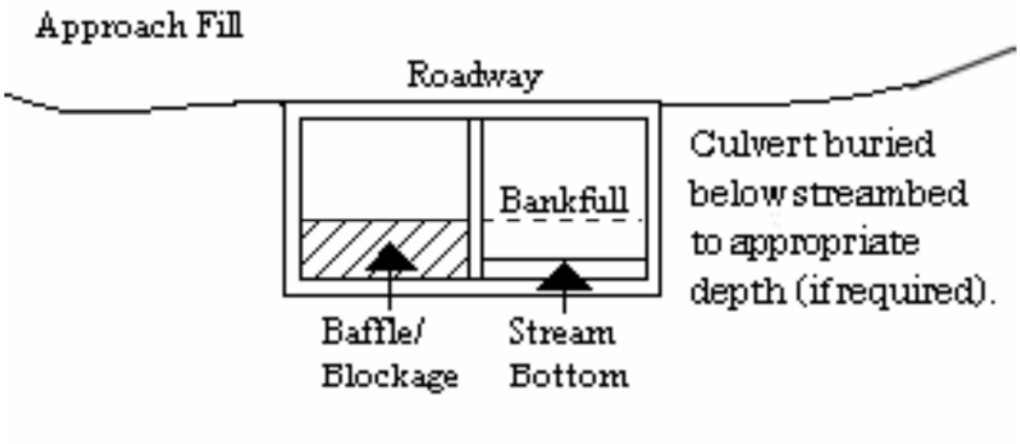


In all other areas: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried to maintain aquatic passage and to maintain passage during drought or low flow conditions, and every effort shall be made to maintain the existing channel slope.

Culverts must be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp; this request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment.
All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States.
Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

3.6.2 Bank-full flows (or less) shall be accommodated through maintenance of the existing bank- full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



3.6.3 Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation. Additional culverts or culvert barrels at such crossings should not be buried, or if buried, must have sills at the inlets to ensure that they only receive flows exceeding bank-full.

3.6.4 Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted stream at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if the proposed design would result in less impacts to the aquatic environment and/or if it can be demonstrated that it is not practicable to restore the final width of the impacted stream at the culvert inlet and outlet to the width of the original stream channel.

3.6.5 The width of the culvert shall be comparable to the width of the stream channel. If the width of the culvert is wider than the stream channel, the culvert shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills and the design would result in less impacts to the aquatic environment.

3.7 Notification to NCDEQ Shellfish Sanitation Section

Permittees shall notify the NCDEQ Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Submerged Aquatic Vegetation

Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, unless EFH Consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is authorized.

3.9 Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the United States. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

3.10 Restoration of Temporary Impacts to Stream Beds

Upon completion of work that involves temporary stream impacts, streambeds are to be restored to pre-project elevations and widths using natural streambed material such that the impacted stream reach mimics the adjacent upstream and downstream reach. The impacted area shall be backfilled with natural streambed material to a depth of at least 12 inches or to the bottom depth of the impacted area if shallower than 12 inches. An engineered in-stream structure or material can be used to provide protection of a buried structure if it provides benefits to the aquatic environment and can be accomplished by a natural streambed design. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.11 Restoration of Temporary Impacts to Stream Banks

Upon completion of work involving temporary stream bank impacts, stream banks are to be restored to pre-project grade and contours or beneficial grade and contours if the original bank slope is steep and unstable. Natural durable materials, native seed mixes, and native plants and shrubs are to be utilized in the restoration. Natural designs which use bioengineered and/or geo- engineered methods are to be applied. An engineered structure or material can be used to provide protection of a buried structure if it provides benefits to the stream bank environment, provided it is not in excess of the minimum amount needed for protection and does not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

NATIONWIDE PERMIT 14
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2017

Linear Transportation Projects. Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10- acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, “District Engineer’s Decision.” The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

The following list of General Conditions has been adapted for work in North Carolina for NCDOT projects. Information related to USACE notification requirements has been removed. Therefore, numbering and lettering below may not be consecutive. Please refer to http://saw-reg.usace.army.mil/NWP2017/2017NWP14.pdf for the complete reference.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #14 - Linear Transportation Projects

4.1.1 If appropriate, permittees shall employ natural channel design (see definition below and NOTE below) to the maximum extent practicable for stream relocations. All stream relocation proposals shall include a Relocation and Monitoring Plan and a functional assessment of baseline conditions (e.g., use of the North Carolina Stream Assessment Methodology). Compensatory mitigation may be required for stream relocations.

Natural Channel Design means a geomorphologic approach to stream restoration based on an understanding of valley type, general watershed conditions, dimension, pattern, profile, hydrology and sediment transport of natural, stable channels (reference condition) and applying this understanding to the reconstruction of a stable channel.

NOTE: For more information on Natural Channel Design, permittees should reference North Carolina Stream Mitigation Guidance on the Corps RIBITS (Regulatory In-lieu Fee and Bank Information Tracking System) website or at the following World Wide Web Page: https://ribits.usace.army.mil/ribits_apex/f?p=107:27:16705499703550::NO:RP:P27_BUTTON_KEY:0.

4.1.2 This NWP authorizes only upland to upland crossings and cannot be used in combination with Nationwide Permit 18 to create an upland within waters of the United States, including wetlands.

4.1.3 This NWP cannot be used for private projects located in tidal waters or tidal wetlands.

4.1.4 In designated trout watersheds, a PCN is not required for impacts to a maximum of 60 linear feet (150 linear feet for temporary dewatering) or 1/10-acre of jurisdictional aquatic resources for proposed structures not adjoining, adjacent to, or connected to existing structures. In designated trout waters, the permittee shall submit a PCN (see Regional Conditions 2.7 and General Condition 32) to the District Engineer prior to commencing the activity if 1) impacts (other than temporary dewatering to work in dry conditions) to jurisdictional aquatic resources exceed 60 linear feet or 1/10-acre; 2) temporary impacts to streams or waterbodies associated with dewatering to work in dry conditions exceed 150 linear feet; 3) the project will involve impacts to wetlands; 4) the primary purpose of the project is for commercial development; 5) the project involves the replacement of a bridge or spanning structure with a culvert or non-spanning structure in waters of the United States; or 6) the activity will be constructed during the trout waters moratorium (October 15 through April 15).

4.1.5 The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 150 linear feet of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, describes how pre-project conditions will be restored, and includes a timetable for all restoration activities.

NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. 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, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre- construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road

crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

FINAL REGIONAL CONDITIONS 2017

Final 2017 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from the Corps and either NCDMF or NCWRC.

1.2 Trout Waters Moratorium

Waters of the United States in the designated trout watersheds of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section 2.7 for information on the designated trout watersheds).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of more than 300 total linear feet of stream bed, unless the District Engineer has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and has determined that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

This Regional Condition does not apply to NWP 23 (Approved Categorical Exclusions).
*NOTE: Permittees should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of stream, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses of 150 linear feet or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream, intermittent or ephemeral stream, the permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). This applies to
NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the United States after the concrete is set and cured and when it no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Where bank stabilization is conducted as part of an activity, natural design, bioengineering and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized to the maximum extent practicable.

3.5.2. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in greater adverse impacts to the aquatic environment.

3.5.3. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.4. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

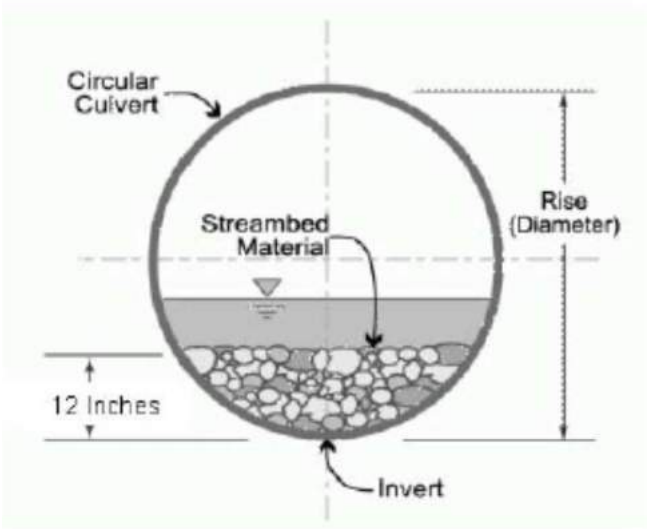
3.5.5. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

3.5.6. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.6 Requirements for Culvert Placement

3.6.1 For all NWPs that involve the construction/installation of culverts, measures will 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 should not be modified by altering the width or depth of the stream profile in connection with the construction activity. The width, height, and gradient of a proposed culvert should be sufficient to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow is the seasonal sustained high flow that typically occurs in the spring. Spring flows should be determined from gage data, if available. In the absence of such data, bank-full flow can be used as a comparable indicator.

In Public Trust Areas of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the culvert at least one foot below normal bed elevation.

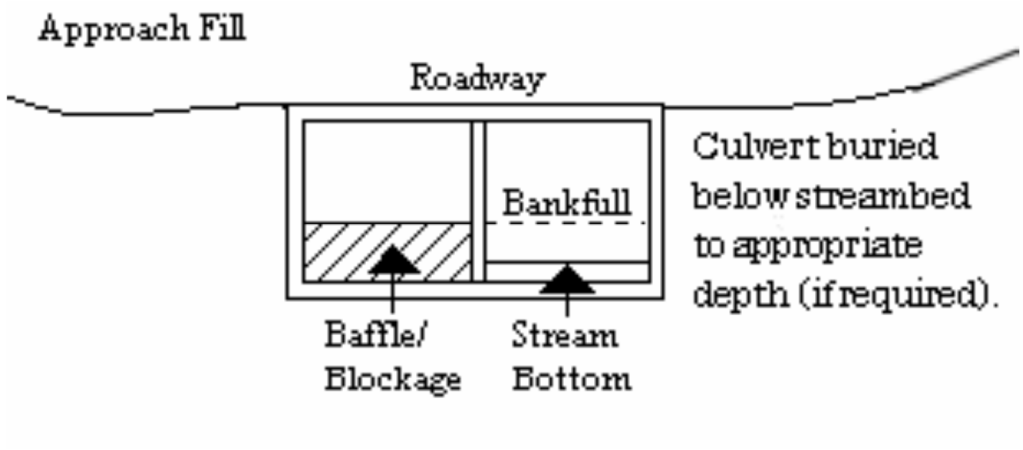


In all other areas: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried to maintain aquatic passage and to maintain passage during drought or low flow conditions, and every effort shall be made to maintain the existing channel slope.

Culverts must be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp; this request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment.
All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States.
Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

3.6.2 Bank-full flows (or less) shall be accommodated through maintenance of the existing bank- full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



3.6.3 Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation. Additional culverts or culvert barrels at such crossings should not be buried, or if buried, must have sills at the inlets to ensure that they only receive flows exceeding bank-full.

3.6.4 Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted stream at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if the proposed design would result in less impacts to the aquatic environment and/or if it can be demonstrated that it is not practicable to restore the final width of the impacted stream at the culvert inlet and outlet to the width of the original stream channel.

3.6.5 The width of the culvert shall be comparable to the width of the stream channel. If the width of the culvert is wider than the stream channel, the culvert shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills and the design would result in less impacts to the aquatic environment.

3.7 Notification to NCDEQ Shellfish Sanitation Section

Permittees shall notify the NCDEQ Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Submerged Aquatic Vegetation

Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, unless EFH Consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is authorized.

3.9 Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the United States. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

3.10 Restoration of Temporary Impacts to Stream Beds

Upon completion of work that involves temporary stream impacts, streambeds are to be restored to pre-project elevations and widths using natural streambed material such that the impacted stream reach mimics the adjacent upstream and downstream reach. The impacted area shall be backfilled with natural streambed material to a depth of at least 12 inches or to the bottom depth of the impacted area if shallower than 12 inches. An engineered in-stream structure or material can be used to provide protection of a buried structure if it provides benefits to the aquatic environment and can be accomplished by a natural streambed design. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.11 Restoration of Temporary Impacts to Stream Banks

Upon completion of work involving temporary stream bank impacts, stream banks are to be restored to pre-project grade and contours or beneficial grade and contours if the original bank slope is steep and unstable. Natural durable materials, native seed mixes, and native plants and shrubs are to be utilized in the restoration. Natural designs which use bioengineered and/or geo- engineered methods are to be applied. An engineered structure or material can be used to provide protection of a buried structure if it provides benefits to the stream bank environment, provided it is not in excess of the minimum amount needed for protection and does not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

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

Permittee: NC DOT, PDEA, MR. Phillip S. Harris, III, PE, CPM **Action ID:** SAW-2011-01806
Project Name: U-4405/Raeford Road **County:** Cumberland

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 to the U.S. Army Corps of Engineers (USACE) 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 must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not 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 bank ledger to the Permittee, the USACE Project Manager, and the Wilmington 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:** Choose the 8-digit HUC

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
664				**0.21**		

*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:** Choose the 8-digit HUC

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1,328				**.42**		

Mitigation Site Debited: NC DMS
(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 USACE, 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: _____

Name of Sponsor's Authorized Representative: _____

_____ _____
Signature of Sponsor's Authorized Representative **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 USACE 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 USACE 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. 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 the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE 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 USACE 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 USACE, the Sponsor must obtain case-by-case approval from the USACE 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 USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

This form is not valid unless signed below by the USACE 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 USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil)***. Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: Liz Hair
USACE Field Office: Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403
Email: sarah.e.hair@usace.army.mil

Liz Hair

USACE Project Manager Signature

December 1, 2017

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.

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

November 15, 2017
Cumberland County
NCDWR Project No.20171365
TIP Project No. U-4405

APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS

Mr. Philip S. Harris, III, P.E. CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Harris:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of improvements to US Highway 401(Raeford Road) from west of Hampton Oaks Drive to east of Fairway Drive (approximately 6 miles) in Cumberland County:

Stream Impacts in the Cape Fear River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total stream Impacts (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1			8	43	51	
2			201	31	232	
3			33		33	
3b (stabilization)			176	21	197	
4			216	20	236	
5			206	27	233	
U5				45	45	
U6				48	48	
TOTAL			840	235	1,075	

Total Stream Impact for Project: 1,075 linear feet.

Wetland Impacts in the Cape Fear River Basin

Site	Fill (ac)	Fill (Temporary)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impacts (ac)	Impacts Requiring Mitigation (ac)
2	0.200					0.200	N/A
U1	0.007					0.007	N/A
U3		0.023				0.023	N/A
U4	0.012					0.012	N/A
U					0.02		N/A
TOTAL	0.219	0.023				0.242	

Total Wetland Impact for Project: 0.242 acres.

Open Water Impacts in the Cape Fear River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
1	0.01	0.01	0.02
2	0.03	0.03	0.06
3	0.03	0.01	0.04
4	0.07	0.01	0.08
5	0.09	0.01	0.1
U2		0.05	0.05
U5		0.01	0.01
U6		0.02	0.02
TOTAL	0.23	0.15	0.38

Total Open Water Impact for Project: 0.38 acres.

The project shall be constructed in accordance with your application dated received October 27, 2017. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Numbers 4088 and 4086. This certification corresponds to the Nationwide Permit 14 and Nationwide Permit 12 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certifications and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)

2. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

3. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]

4. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]

5. **For the open cut trenching of the utility lines, the mixing of topsoil and the subsoils within the wetlands shall be minimized to the greatest extent practical. During, excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches in wetlands will be piled separately from the subsoils and will be backfilled into the trench only after the subsoils have been placed in the trench and compacted.**

6. Sediment and Erosion Control 15A NCAC 02H .0506 (b)(3) and (c)(3)
Turbidity curtains shall be used to isolate all work areas from the stream at Beaver Creek, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.

General Conditions

7. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

8. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]

9. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

10. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]

11. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]

12. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

13. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

14. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

15. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]

16. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]

17. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

18. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]

19. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]

20. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

21. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

22. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

23. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]

24. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]

25. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0231(a)(6)]

26. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.[15A NCAC 02H.0506(b)(3) and (c)(3)]

27. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3]):

    a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual.*
    b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual.* The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
    c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual.*
    d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

28. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

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. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Joanne Steenhuis at (910) 796-7306 or joanne.steenhuis@ncdenr.gov.

Sincerely,

Linda Culpepper, Interim Director
Division of Water Resources

Electronic copy only distribution:
Liz Hair, US Army Corps of Engineers, Wilmington Field Office
Jim Rerko, Division 6 Environmental Officer
Colin Mellor, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Division of Mitigation Services
James Michel, Fayetteville Public Works Commission (james.michel@faypwc.com)
Joanne Steenhuis, NC Division of Water Resources Wilmington Regional Office
File Copy

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

Environmental Quality

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 _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4086

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT 12 (UTILITY LINE ACTIVITIES)**

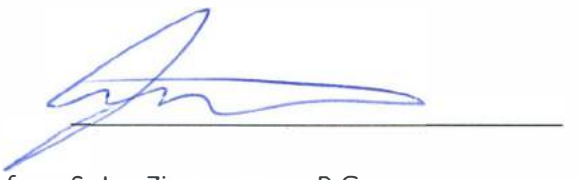
Water Quality Certification Number 4086 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (12) of the US Army Corps of Engineers regulations.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: March 19, 2017

Signed this day March 3, 2017

By



for S. Jay Zimmerman, P.G.
Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the Conditions of this Certification (listed below) cannot be met; or
b) Any permanent fill into or modification of wetlands and/or waters; or
c) Total temporary impacts to streams greater than 500 feet; or
d) Any stream relocation or stream restoration; or
e) Any impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
f) Any impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
g) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
h) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
    i) The activities are listed as "EXEMPT" from these rules; or
    ii) A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii) A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

1. All sewer lines shall be designed, constructed and maintained in accordance with Title 15A NCAC Chapter 02T.

2. Any utility construction corridor that is parallel to a stream or open water shall not be closer than 10 feet to the top of bank or ordinary high water mark. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(4) and (c)(4)]

3. Utility lines shall cross all stream channels at a near-perpendicular direction (i.e., between 75 degrees and 105 degrees to the stream bank). Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

4. Construction corridors in wetlands and across stream channels shall be minimized to the maximum extent practicable and shall not exceed 50 feet wide for gas utility lines and 40 feet wide for all other utility lines. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

   For construction corridors in wetlands and across stream channels, stumps shall be grubbed only as needed to install the utility and remaining stumps shall be cut off at grade level. The general stripping of topsoil within wetlands along the construction corridor is not permitted.

5. Permanent maintained access corridors in wetlands and across stream channels shall be restricted to the minimum width practicable and shall not exceed 30 feet wide for gas utility lines and 20 feet wide for all other utility lines except at manhole locations. 15-foot by 15-foot perpendicular vehicle turnarounds shall be allowed in access corridors but must be spaced at least 500 feet apart. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

6. For all utility lines constructed within wetlands, an anti-seep collar shall be placed at the downstream (utility line gradient) wetland boundary and every 150 feet up the gradient until the utility exits the wetland. Anti-seep collars may be constructed with class B concrete, compacted clay, PVC pipe, or metal collars. Wetland crossings that are directionally drilled, and perpendicular wetland crossings that are open cut and less than 150 feet long do not require anti-seep collars. The compacted clay shall have a specific infiltration of 1×10^{-5} cm/sec or less. A section and plan view diagram is attached for the anti-seep collars. [15A NCAC 02H .0506 (b)(4) and (c)(4)]

   The following specifications shall apply to class B concrete:

   a. Minimum cement content, sacks per cubic yard with rounded course aggregate 5.0
   b. Minimum cement content, sacks per cubic yard with angular course aggregate 5.5
   c. Maximum water-cement ratio gallons per sack 6.8
   d. Slump range 2" to 4"
   e. Minimum strength - 28 day psi 2,500

7. The applicant shall have a specific plan for restoring wetland contours. Any excess material will be removed to a high ground disposal area. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

   The mixing of topsoil and subsoils within the wetlands along utility corridors shall be minimized to the greatest extent practical. During excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches will be piled separately from subsoils and will be backfilled into the trench only after the subsoils have been placed and compacted.

8. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. For all other utility line and associated facilities projects that disturb one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); have permanent wetland, stream, or open water impacts; and are proposing new built-upon area shall comply with the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

   a. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

   b. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs do not satisfy this condition. Projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs do not satisfy this condition.

   c. Projects that require written authorization from DWR shall submit the following with their application for review and approval:

      i. For projects that have a stormwater management plan (SMP) reviewed under a state stormwater program[1] or a state-approved local government stormwater program[2] shall submit plans that show the location and approximate size of all proposed stormwater measures;

      ii. All other low density projects not covered above shall submit a completed low density supplement form with all required items; and

      iii. All other high density projects not covered above shall submit a completed SMP, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high density development requirements of 15A NCAC 02H .1003.

   d. Projects that do not require written approval from DWR shall obtain approval of the SMP, when required, before any impacts authorized by this Certification occur.

   e. SMPs approved by DWR may be phased on a case-by-case basis. SMPs for each future phase must be approved before construction of that phase commences. Approved SMPs may not be modified without prior written authorization from DWR.

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h), compensatory mitigation may be required for losses of greater than 150 linear feet of streams and/or greater than one (1) acre of wetlands. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 150 linear feet per stream.

   Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0200]

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. 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 culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

    Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

    If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

    When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

    When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall not take place within 50 feet of a waterbody or wetlands to prevent contamination by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website: https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

27. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

28. If the property or project is sold or transferred, the new Permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

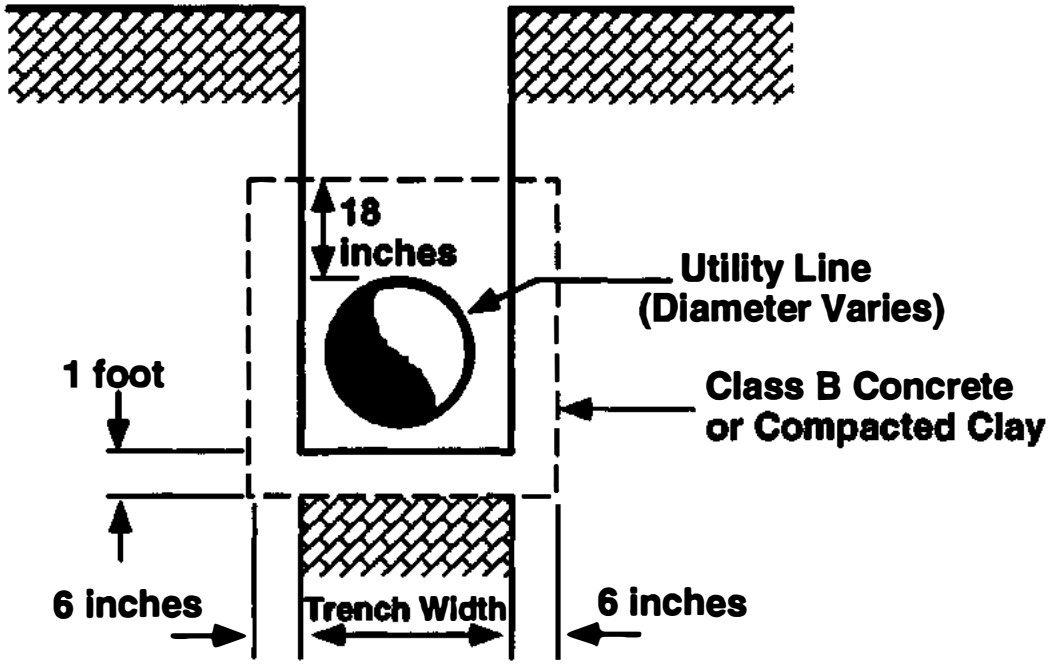
5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

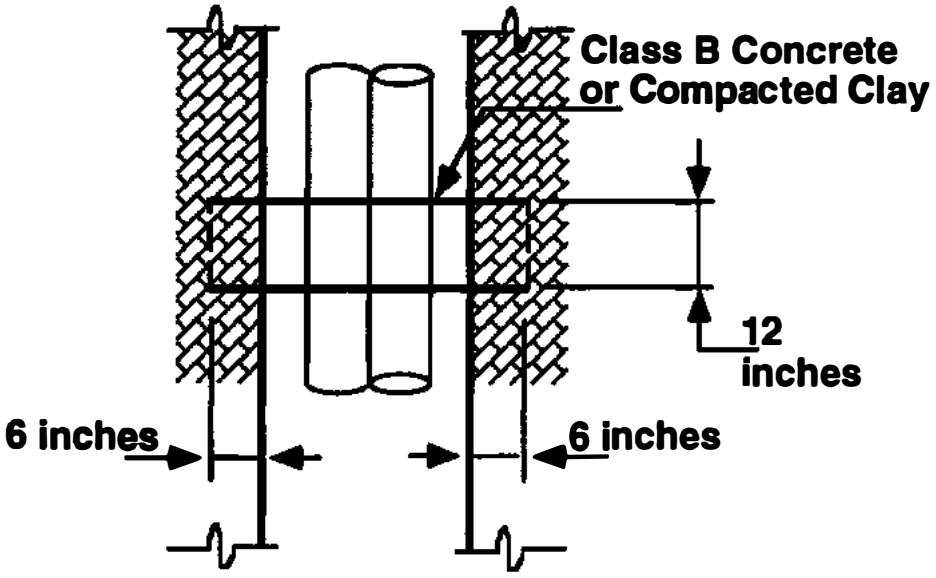
7. Public hearings may be held prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Resources.

History Note: Water Quality Certification (WQC) Number 4806 issued March 3, 2017 replaces WQC 3884 issued March 19, 2012; WQC Number 3819 issued March 19, 2010; WQC Number 3699 issued November 1, 2007; WQC Number 3625 issued March 19, 2007; WQC Number 3374 issued March 18, 2002; WQC Number 3288 issued June 1, 2000; WQC Number 3101 issued February 11, 1997; WQC Number 3022 issued September 6, 1995, WQC Number 2664 issued January 21, 1992.

ANTI -SEEP COLLAR



SECTION



PLAN

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4088

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS), AND**
- **REGIONAL GENERAL PERMIT 198200031 (NCDOT BRIDGES, WIDENING PROJECTS, INTERCHANGE IIMPROVEMENTS)**

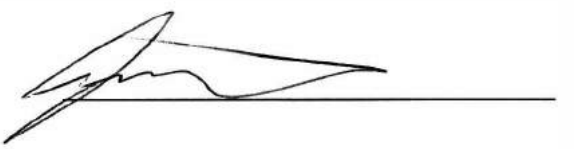
Water Quality Certification Number 4088 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (14) of the US Army Corps of Engineers regulations and Regional General Permit 198200031.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: March 19, 2017

Signed this day March 3, 2017

By



for S. Jay Zimmerman, P.G.
Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the conditions of this Certification (listed below) cannot be met; or
b) Any temporary or permanent impacts to wetlands, open waters and/or streams, except for construction of a driveway to a single family residential lot that are not determined to be part of a larger common plan of development as long as the driveway involves *less than 25 feet* of total stream impacts, including any in-stream stabilization needed for the crossing; or
c) Any stream relocation or stream restoration; or
d) Any high density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which does not have a stormwater management plan reviewed and approved under a state stormwater program[1] or a state-approved local government stormwater program[2]. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or
e) Any impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
f) Any impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
g) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
h) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
    i) The activities are listed as "EXEMPT" from these rules; or
    ii) A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii) A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES
[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

I. ACTIVITY SPECIFIC CONDITIONS:

1. If this Water Quality Certification is used to access residential, commercial or industrial building sites, then all parcels owned by the applicant that are part of the single and complete project authorized by this Certification must be buildable without additional impacts to streams or wetlands. If required in writing by DWR, the applicant shall provide evidence that the parcels are buildable without requiring additional impacts to wetlands, waters, or state regulated riparian buffers. [15A NCAC 02H .0506(b)(4) and (c)(4)]

2. For road and driveway construction purposes, this Certification shall only be utilized from natural high ground to natural high ground. [15A NCAC 02H .0506(b)(2) and (c)(2)]

3. Deed notifications or similar mechanisms shall be placed on all lots with retained jurisdictional wetlands, waters, and state regulated riparian buffers within the project boundaries in order to assure compliance with NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), and/or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200). These mechanisms shall be put in place at the time of recording of the property or individual parcels, whichever is appropriate. [15A NCAC 02H .0506(b)(4) and (c)(4)]

4. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. For all other projects that disturb one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); have permanent wetland, stream, or open water impacts; and are proposing new built-upon area shall comply with the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

    a. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

    b. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs do not satisfy this condition. Projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs do not satisfy this condition.

    c. Projects that require written authorization from DWR shall submit the following with their application for review and approval:

        i. For projects that have a stormwater management plan (SMP) reviewed under a state stormwater program[1] or a state-approved local government stormwater program[2] shall submit plans that show the location and approximate size of all proposed stormwater measures;

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

ii. All other low density projects not covered above shall submit a completed low density supplement form with all required items; and

iii. All other high density projects not covered above shall submit a completed SMP, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high density development requirements of 15A NCAC 02H .1003.

d. Projects that do not require written approval from DWR shall obtain approval of the SMP, when required, before any impacts authorized by this Certification occur.

e. SMPs approved by DWR may be phased on a case-by-case basis. SMPs for each future phase must be approved before construction of that phase commences. Approved SMPs may not be modified without prior written authorization from DWR.

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h), compensatory mitigation may be required for losses of greater than 150 linear feet of streams and/or greater than one (1) acre of wetlands. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 150 linear feet per stream.

   Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0200]

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

   All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

   For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. 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 culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as, a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall not take place within 50 feet of a waterbody or wetlands to prevent contamination by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

27. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

28. If the property or project is sold or transferred, the new Permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

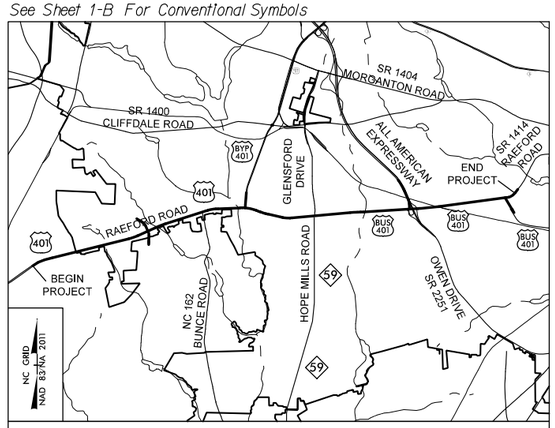
7. Public hearings may be held prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Resources.

History Note: *Water Quality Certification (WQC) Number 4088 issued March 3, 2017 replaces WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987.*

TIP PROJECT: U-4405

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

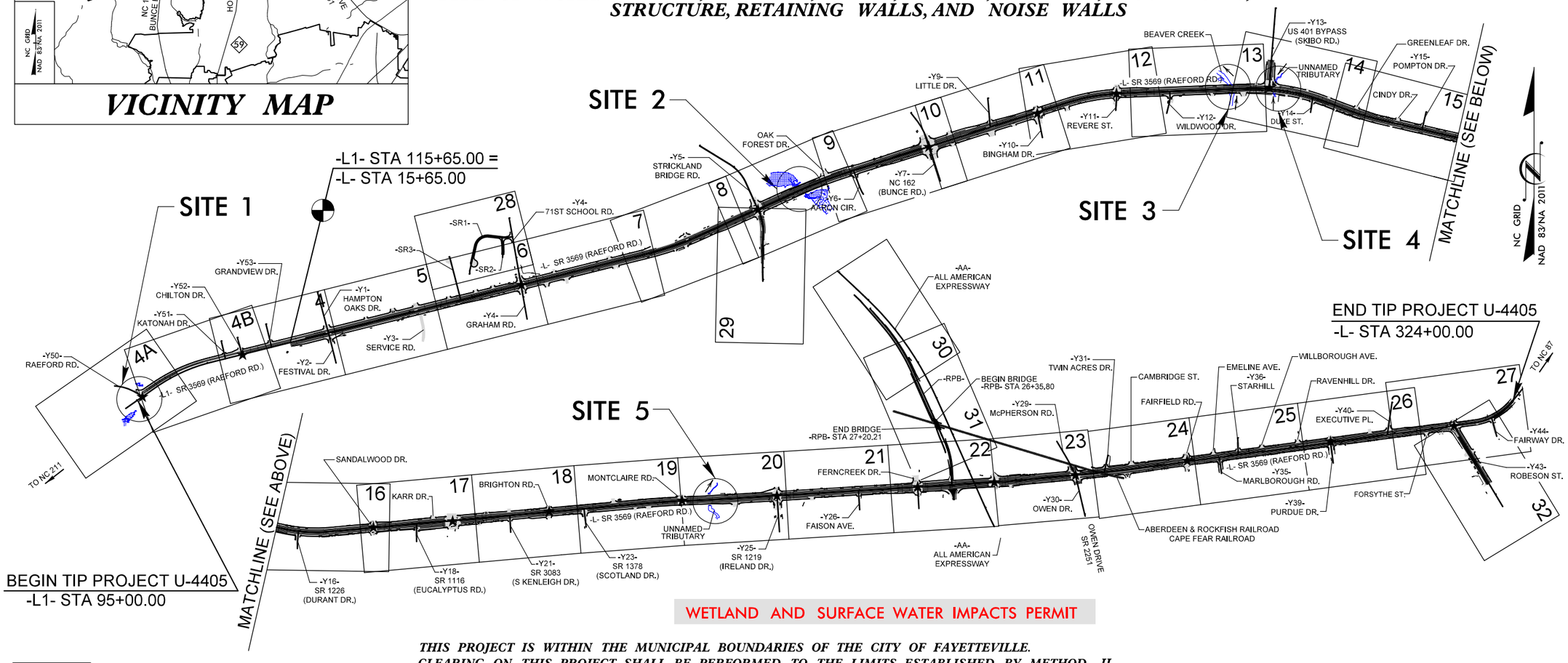
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE

PERMIT DRAWING
SHEET 1 OF 17

LOCATION: *US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS*



★ PROPOSED SIGNAL

WETLAND AND SURFACE WATER IMPACTS PERMIT

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II .
***** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED***

GRAPHIC SCALES

50 25 0 50 100
PLANS

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*TTST = 1% DUAL = 2%
FUNC CLASS = URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 29, 2016

LETTING DATE: JULY 17, 2018

CLINTON J. MORGAN, PE
PROJECT ENGINEER

VIRGINIA SCHAAR, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DEPARTMENT OF TRANSPORTATION • STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 2 OF 18

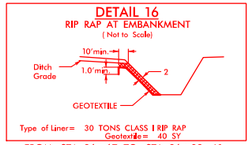
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

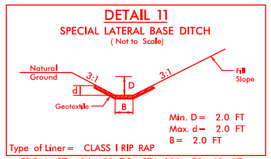
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50-
PI Sta 13+13.27
Δ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
Δ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

-Y50- POT Sta. 10+00.00

N 78° 19' 20.4" E

-Y50- PC Sta. 10+85.41

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50- PRC Sta. 16+13.41

BEGIN ASPHALT OVERLAY

BEGIN ASPHALT OVERLAY

S 58° 26' 33.7" E

N 55° 08' 56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

RETAIN SYSTEM

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

-L1- PC Sta. 97+95.86

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

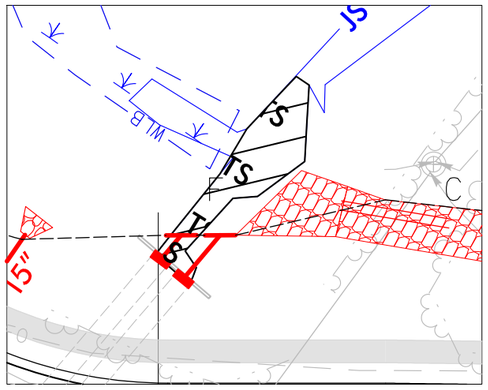
COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11 C

SITE 1
SEE ENLARGEMENT, THIS SHEET

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

GODFRE AND WIFE S DB 8 BM

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

Piedmont Natural Gas Company Inc, 4 " PLASTIC

EXISTING R/W

84" ALUM

18" RCP

24" RCP

30" RCP

36" RCP

15" RCP

RIPRAP

CB

MH

TOP=194.23'

TOP=194.79

TOP=197.38'

PROP. 2'-6" C&G

EXISTING R/W 6' CONC. SW

20' SEWER EASEMENT (PB C07 PG 140)

N 85°28'59" E 316.21'

NOTE: SEE SHEET 52 FOR -L1- PROFILE

11:39:03 AM
K:\Projects\Roadway Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 3 OF 18

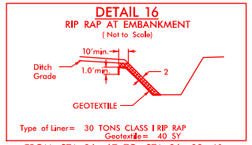
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

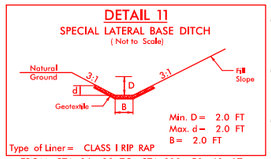
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50- POT Sta. 10+00.00

N 78°19'20.4" E

-Y50-
PI Sta 13+13.27
Δ = 43°14'06.3" (RT)
D = 9°57'52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-Y50- PC Sta. 10+85.41

-L1-
PI Sta 101+73.28
Δ = 20°51'47.4" (RT)
D = 2°47'41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

BEGIN ASPHALT OVERLAY

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50-

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

BEGIN ASPHALT OVERLAY

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SITE 1
SEE ENLARGEMENT, THIS SHEET

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11

CB

S 58°26'33.7" E

RETAIN SYSTEM

N 55°08'56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

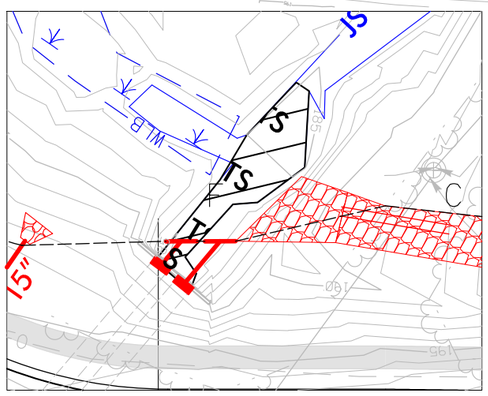
-L1- PC Sta. 97+95.86

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

NOTE: SEE SHEET 52 FOR -L1- PROFILE

I:\4405_Hydraulics\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A_con.dgn
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erlberger

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-160

PERMIT DRAWING
SHEET 4 OF 18

WETLANDS

97+50.00

97+00.00

3:1

195.15

96+50.00

SITE 1

96+00.00

95+50.00

95+00.00

-L1-

$$$$$$SYSTIME$$$$$$
$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 5 OF 18

NC GRID
NAD 83/NA 2011

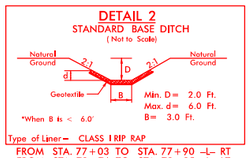
8/17/99

REVISIONS

-L-
PIs Sta 81+21.39 Θs = 0° 27' 17.0" Ls = 100.00' LT = 66.67' ST = 33.33'
PI Sta 84+71.94 Δ = 5° 45' 54.2" (RT) D = 0° 54' 34.0" L = 633.90' T = 317.22' R = 6,300.00' SE = 0.025
PIs Sta 88+21.95 Θs = 0° 27' 17.0" Ls = 100.00' LT = 66.67' ST = 33.33'

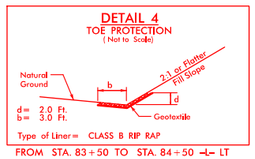
-Y5-
PI Sta 15+94.46 Δ = 34° 10' 44.0" (RT) D = 10° 44' 58.8" L = 317.95' T = 163.86' R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5" E

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT, THIS SHEET

SITE 2

MATCHLINE SEE SHEET 8
-L- STA 74+75

MATCHLINE SEE SHEET 29
-Y5- STA 23+00

MATCHLINE SEE SHEET 10
-L- STA 88+00

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING, LLC DB 8474 PG 295 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 5616 PG 794 DB 4960 PG 348

89 CITY OF RAEFORD REAL ESTATE FOUNDATION DB 8047 PG 212 DB 89 PG 122

90 STEPHEN M. GENTER & WIFE DB 4342 PG 504 PB 89 PG 122

DO NOT DISTURB SIGN

RETAIN EXISTING SIDEWALK

RETAIN SYSTEM

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

CL II RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

TOE PROTECTION
SEE DETAIL 4

JB w/MH
SEE SPECIAL DETAIL

150' LANE TAPER (LT TURN)

300' UNIFORM LANE SHIFT

COLLAR AND EXTEND

SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

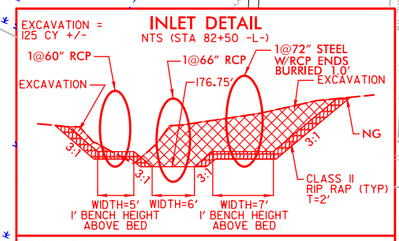
CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

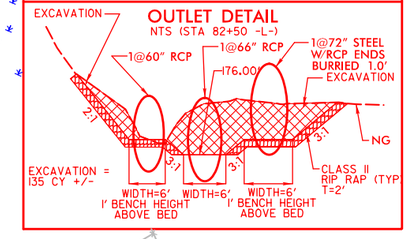
-Y5-

PI Sta 22+82.12 Δ = 25° 18' 13.3" (RT) D = 10° 44' 58.8" L = 235.39' T = 119.65' R = 533.00' SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



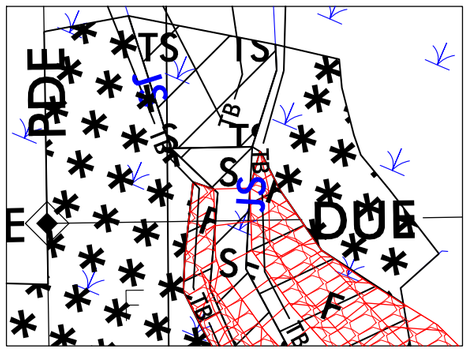
OUTLET DETAIL
NTS (STA 82+50 -L-)



SCALE
50' 0' 50' 100'
INSET SCALE
200' 0' 200' 400'

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



SITE 2 INLET

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

11:42:31 AM
K:\Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_09.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

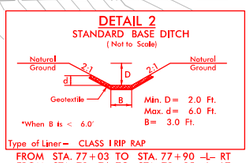
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 6 OF 18

-L-		
Pls Sta 81+21.39	Pl Sta 84+71.94	Pls Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

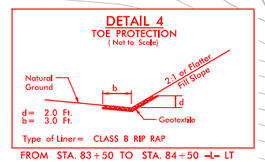
-Y5-
Pl Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner = CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner = CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta. 76+45.55 = -Y5- Sta. 21+12.54

-Y5- PC Sta. 21+62.48

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

-L- N 65° 39' 46.5" E

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

MATCHLINE SEE SHEET 10 -L- STA 88+00

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING, LLC DB 8474 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JOHNATHAN H ELLIOT DB 9616 PG 794 DB 4960 PG 148

89 CITY OF RAEFORD REAL ESTATE FOUNDATION DB 8047 PG 212 DB 89 PG 122

90 STEPHEN M. GENTER & WIFE DB 4342 PG 504 PB 89 PG 122

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

CLASS II RIP RAP
EST 7 TONS
EST 7 SY
GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

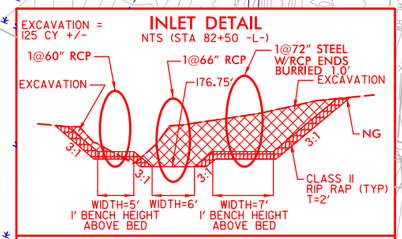
TOE PROTECTION
SEE DETAIL 4

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

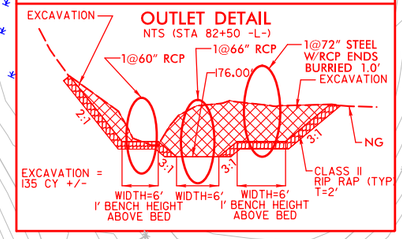
CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

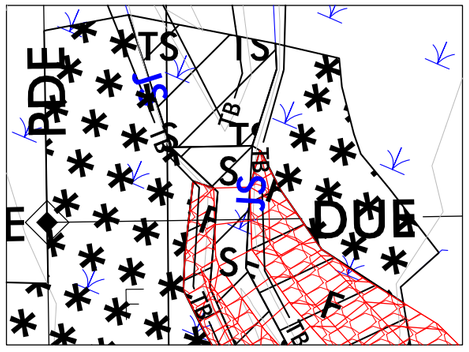
-Y5-
Pl Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)





SITE 2 INLET

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

NC GRID NAD 83/NA 2011

REVISIONS 8/17/99

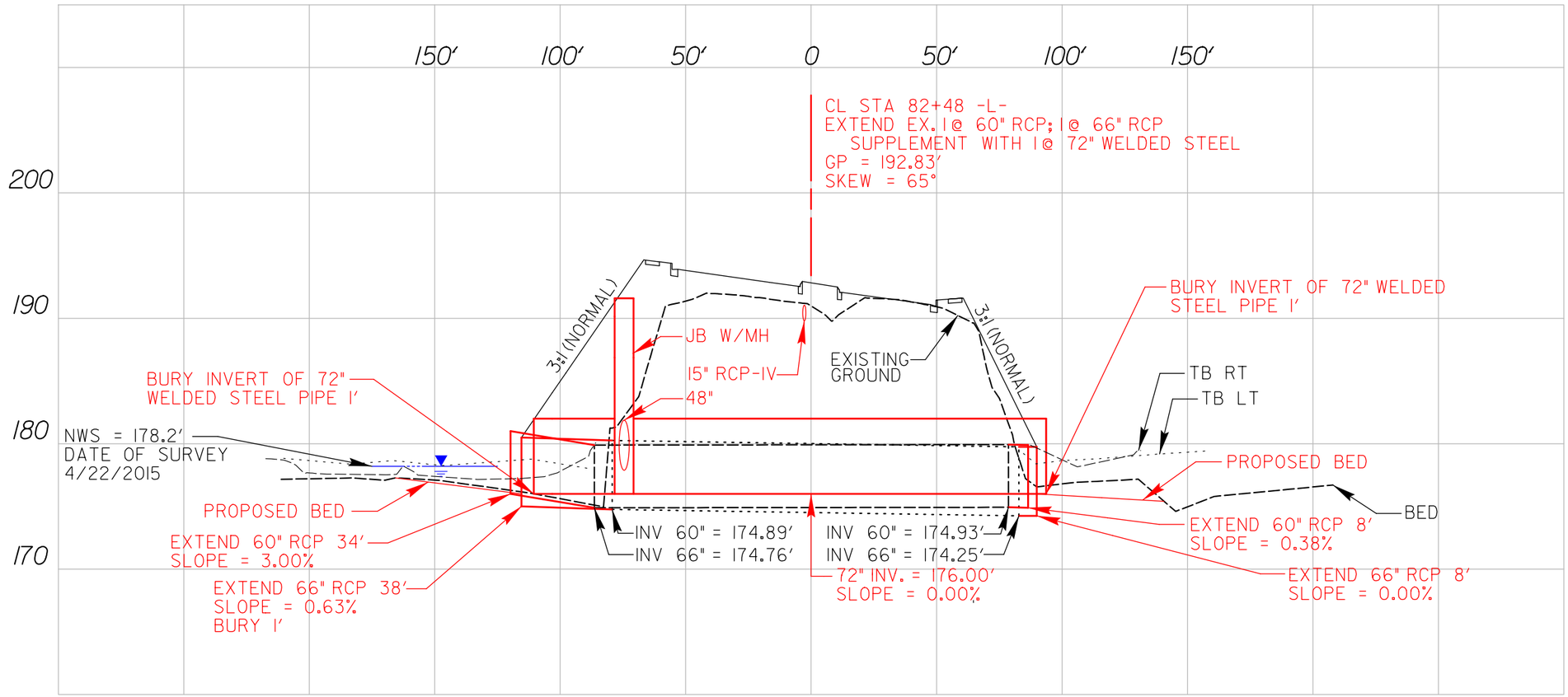
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 7 OF 18



$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$

8/23/99

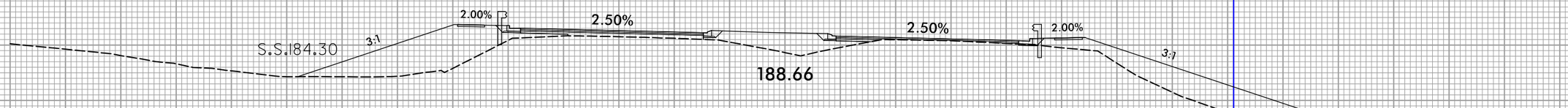
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-24

PERMIT DRAWING
SHEET 8 OF 18

85+00.00

84+50.00

WETLANDS



84+00.00

SITE 2

83+50.00

83+00.00

–L–

$$$$USERNAME$$$$ $$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

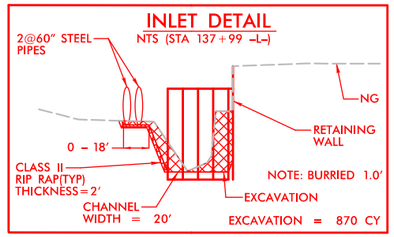
8/17/99

REVISIONS

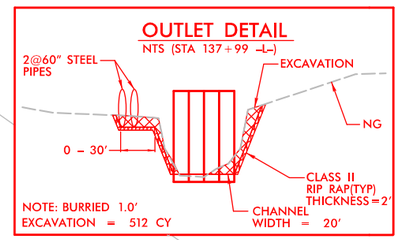
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

INLET DETAIL
NTS (STA 137+99 -L-)



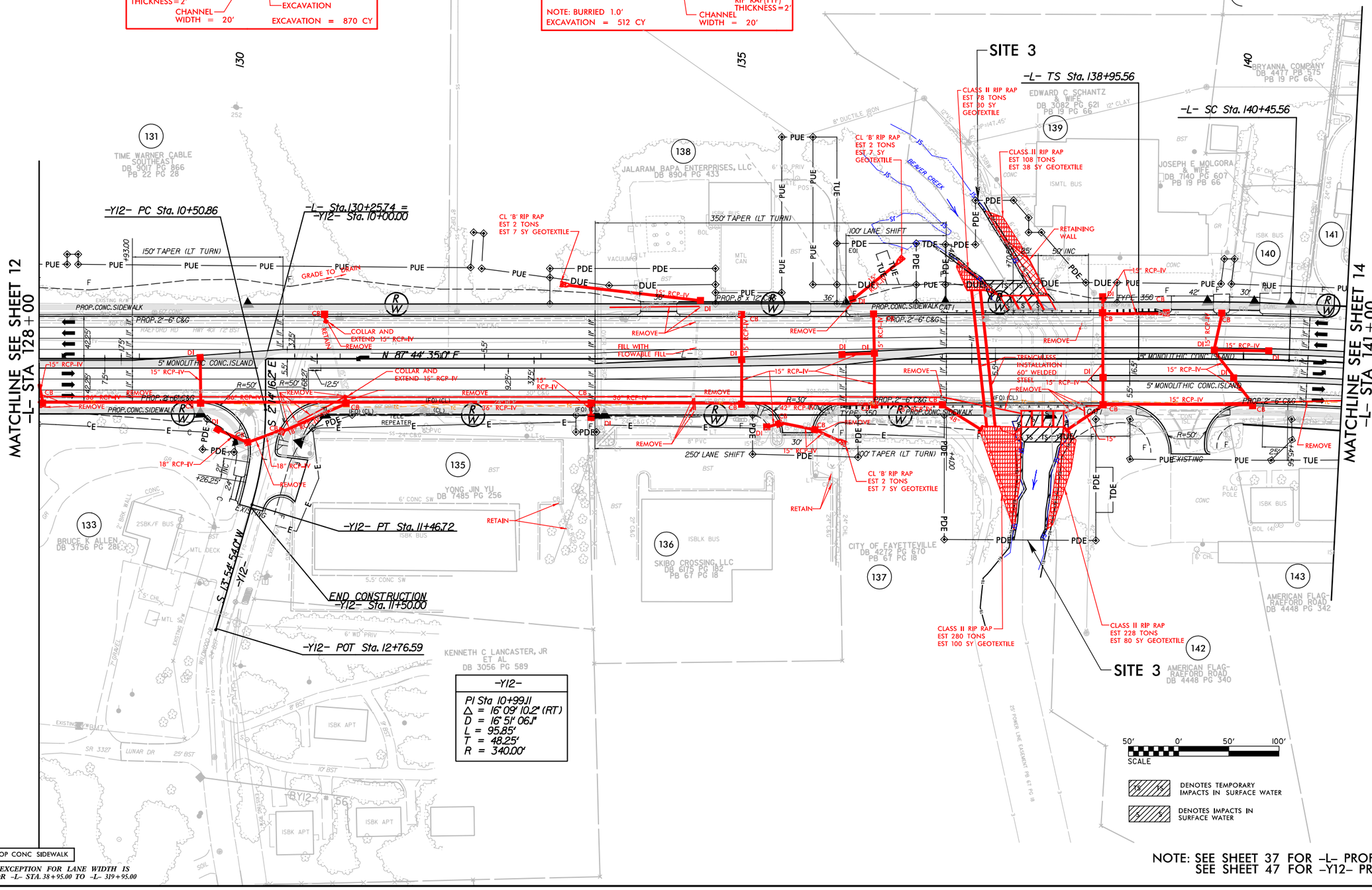
OUTLET DETAIL
NTS (STA 137+99 -L-)



NC GRID
NAD 83/NA 2011

-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

PERMIT DRAWING SHEET 9 OF 18



** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$
$$$$$DGN$$$$$

8/17/99

REVISIONS

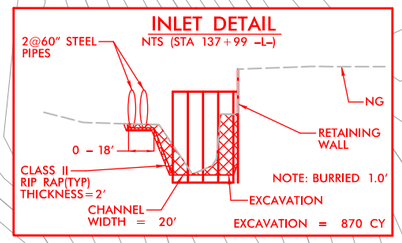
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

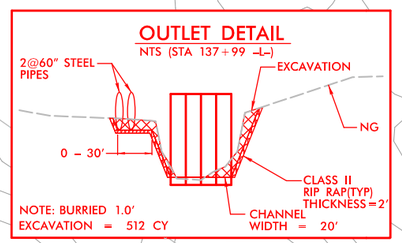
PERMIT DRAWING SHEET 10 OF 18

NC GRID
NAD 83/NA 2011

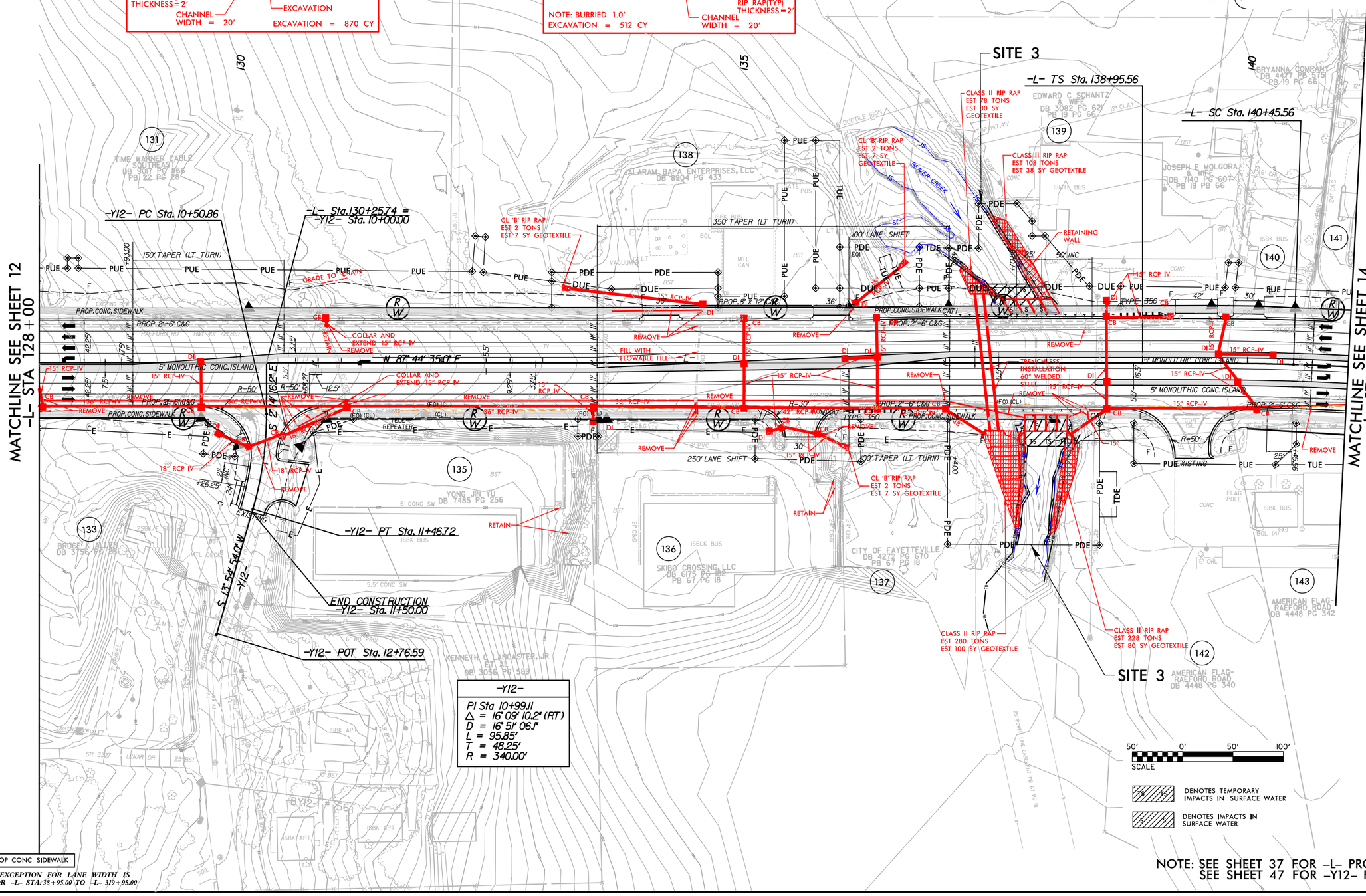
INLET DETAIL
NTS (STA 137+99 -L-)



OUTLET DETAIL
NTS (STA 137+99 -L-)



-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03



** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 39+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

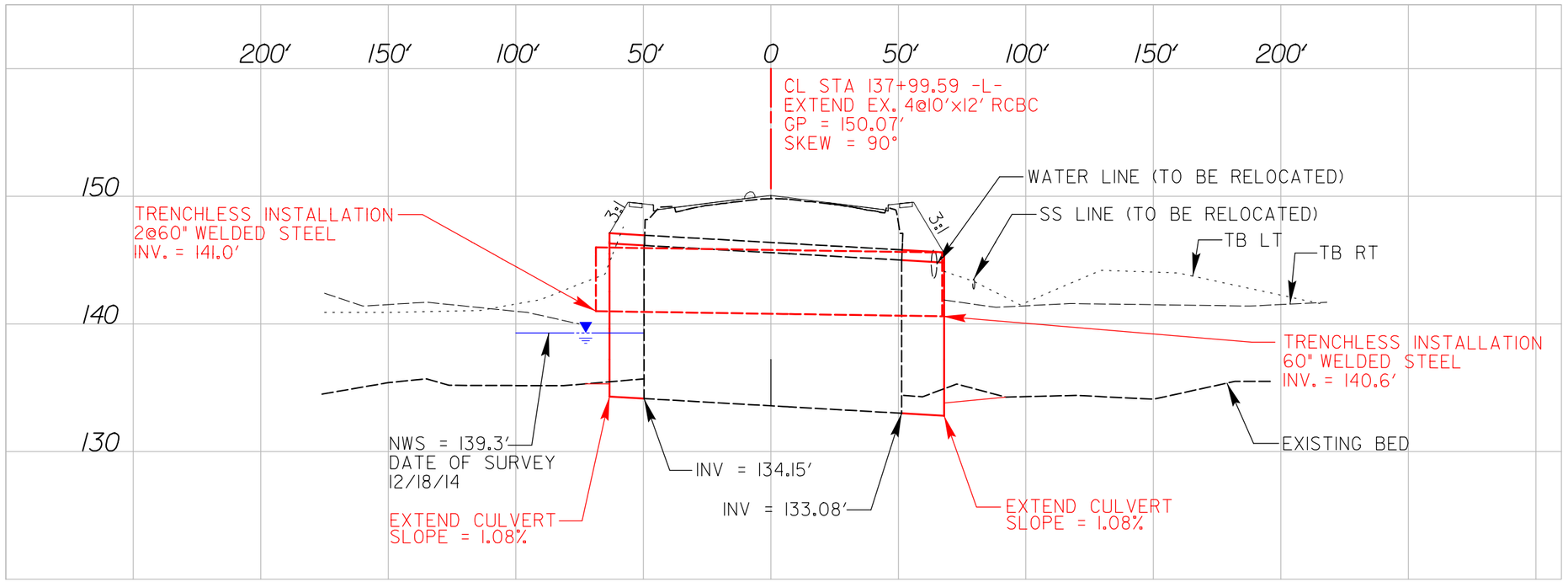
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 11 OF 18



$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/NA 2011
NC GRID

PERMIT DRAWING
SHEET 12 OF 18

8/17/99

REVISIONS

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

-L- CS Sta. 148+88.39

-L- Sta. 148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

END CONSTRUCTION
-Y14- Sta. 11+45.00

-Y14- POT Sta. 11+89.87

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

-L- Sta. 142+66.31 =
-Y13- Sta. 20+11.93

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)

OUTLET DETAIL
NTS (STA 143+37 -L-)

NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

I:\46108_AM\Roadway\Plans\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_14.dgn
10:46:08 AM
RJ Goodwin

8/17/99

REVISIONS

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/NA 2011
NC GRID

PERMIT DRAWING
SHEET 13 OF 18

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

" RCP-IV

-L- CS Sta. 148+88.39

-L- Sta. 148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

DO NOT DISTURB SIGN

DO NOT DISTURB FENCE

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

END CONSTRUCTION
-Y14- Sta. 11+45.00
-Y14- POT Sta. 11+89.87

-L- Sta. 142+66.31 =
-Y13- Sta. 20+11.93

S 4° 34' 14.2" W

S 69° 30' 10.3" E

S 5° 52' 28.0" W

150' UNIFORM TAPER

300' LANE TAPER

SCALE
50' 0' 50' 100'

INSET SCALE
100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)

1@72" STEEL W/RCP ENDS BURIED 1.0'
2@72" RCP EXTENSIONS
EXCAVATION
NG
2:1
CLASS II RIP RAP T=2'
EXCAVATION =257 CY
VARIES 9'-26' 1.5' BENCH HEIGHT ABOVE BED
CHANNEL WIDTH =8'
138.5'

OUTLET DETAIL
NTS (STA 143+37 -L-)

1@72" STEEL W/ RCP ENDS BURIED 1.0'
2@72" RCP
EXCAVATION
NG
2:1
CLASS II RIP RAP T=2'
EXCAVATION =342 CY
VARIES 3'-23' 1.5' BENCH HEIGHT ABOVE BED
CHANNEL WIDTH =8'
137.2'

NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

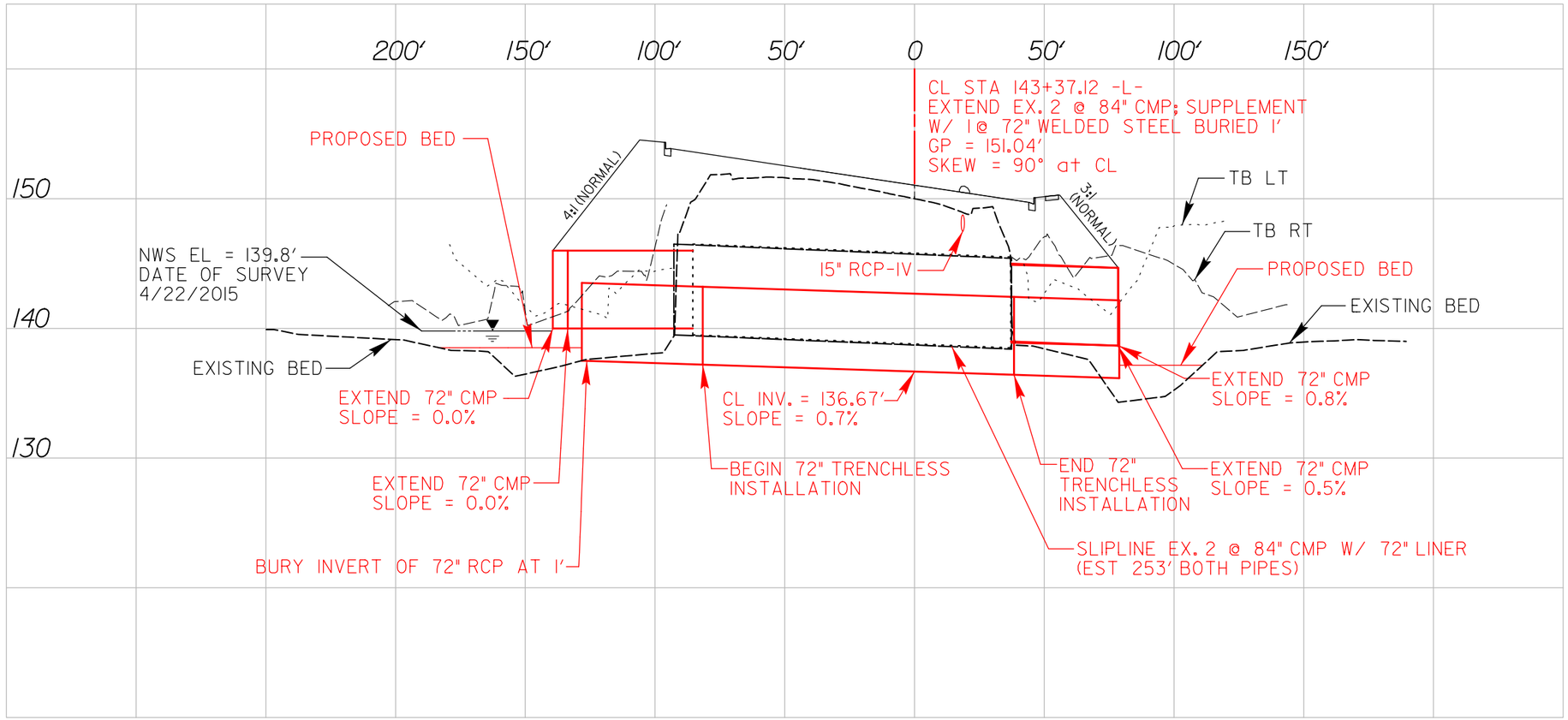
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8/16/2012 AM
RJohnson

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 14 OF 18



$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$DESIGN$$$$
$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 15 OF 18

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/
CLASS II RIP RAP
146 TONS
188 SY GEOTEXTILE

CLASS II RIP RAP
25 TONS
32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- Sta. 229+68.64 =
-Y25- Sta. 10+00.00

NORWOOD E. BRYAN, JR
& DAVID C. BRYAN
DB 2389 PG 719

JOHN M. TEW
& WIFE SHIRLEY
DB 2542 PG 343
PB 23 PG 1

KENT A. VAN BELOIS
& WIFE
DB 3364 PG 865

RREF II BB-NC, LLC
DB 9368 PG 66

NCP FAYETTEVILLE, LLC
DB 6243 PG 563

IRELAND CROSSING, INC
DB 4262 PG 371
PB 73 PG 61

IRELAND CROSSING, INC
DB 4261 PG 210
PB 86 PG 110

SITE 5

FLOODPLAIN BENCH W/
CLASS II RIP RAP
397 TONS
420 SY GEOTEXTILE

CLASS II RIP RAP
178 TONS
188 SY GEOTEXTILE

RETAIN SYSTEM

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

END CONSTRUCTION
-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

8:47:37 AM
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stricklandr

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 16 OF 18

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

MATCHLINE SEE SHEET 19
-L- STA 218+50

MATCHLINE SEE SHEET 21
-L- STA 231+50

-L- Sta. 229+68.64 =
-Y25- Sta. 10+00.00

END CONSTRUCTION
-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

N 87° 34' 14.6" E

N 86° 29' 42.1" E

S 3° 44' 47.0" E

SITE 5

FLOODPLAIN BENCH W/
CLASS II RIP RAP
146 TONS
188 SY GEOTEXTILE

CLASS II RIP RAP
25 TONS
32 SY GEOTEXTILE

FLOODPLAIN BENCH W/
CLASS II RIP RAP
397 TONS
420 SY GEOTEXTILE

CLASS II RIP RAP
178 TONS
188 SY GEOTEXTILE

RETAIN SYSTEM

NORWOOD E BRYAN, JR
& DAVID C BRYAN
DB 2389 PG 719

JOHN M TEW
& WIFE SHIRLEY
DB 5822 PG 545
PB 25 PG 145

KENT A VAN BELOIS
& WIFE
DB 3364 PG 865

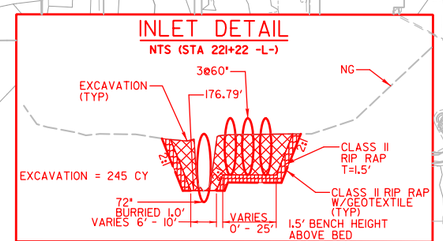
RREF ILBB-NC, LLC
DB 9368 PG 66

NCP FAYETTEVILLE LLC
DB 6243 PG 567

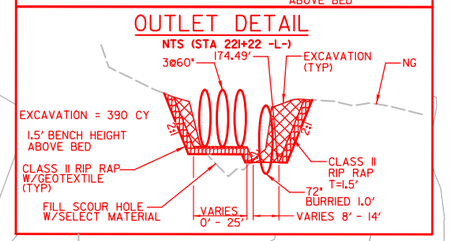
IRELAND CROSSING, INC
DB 4262 PG 371
PB 73 PG 61

IRELAND CROSSING, INC
DB 4261 PG 210
PB 86 PG 110

INLET DETAIL
NTS (STA 221+22 -L-)



OUTLET DETAIL
NTS (STA 221+22 -L-)



50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

REVISIONS
8/17/99

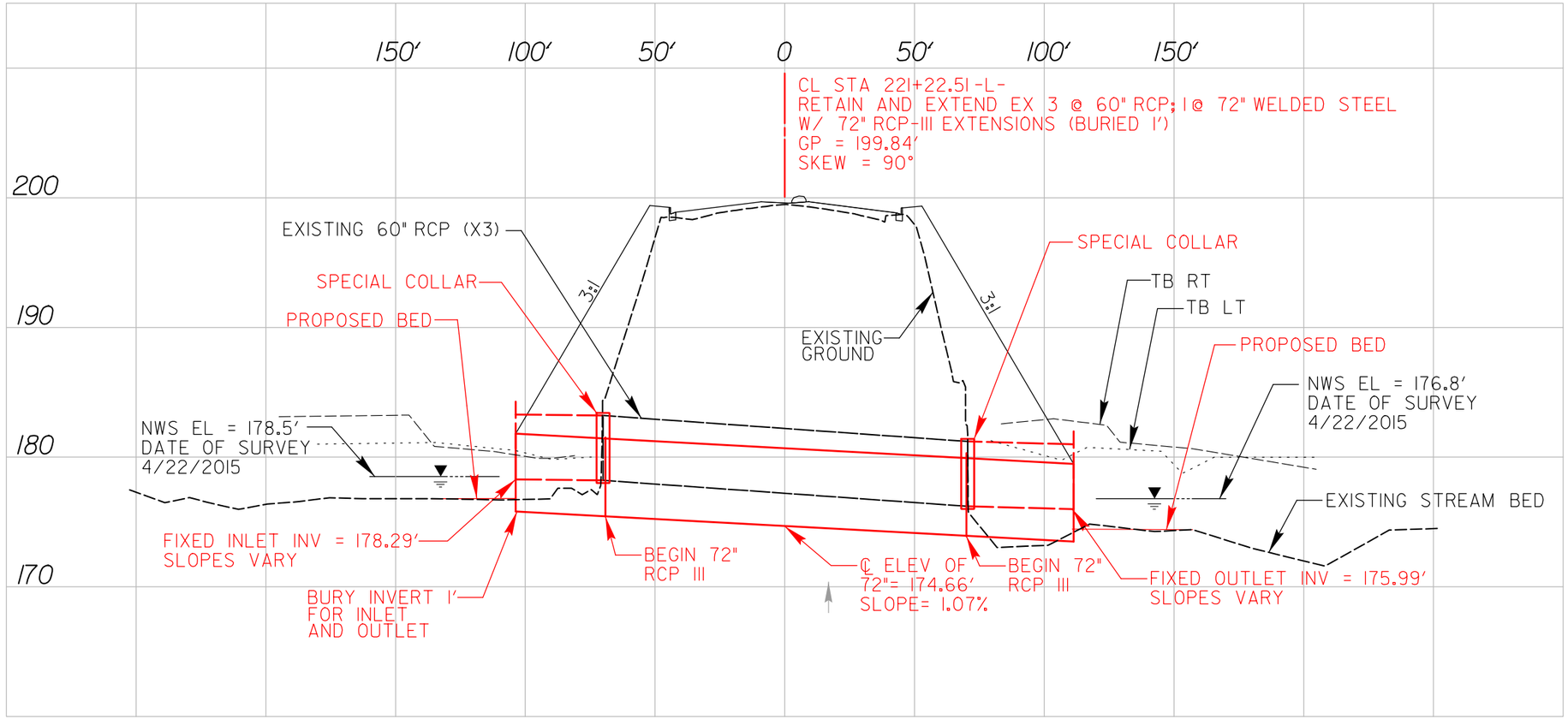
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stridgeway

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 17 OF 18



$$$$SYSTIME$$$$
$$$$USERNAME$$$$

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L1- 96+44/96+82 LT	EXTENSION OF 2@48" RCP						< 0.01	< 0.01	8	43	
2	-L- 81+47/84+92 RT & LT	EXTENSION OF 1@60", 1@66" RCP & 1@72" TRENCHLESS WELDED STEEL	0.10			0.10		0.03	0.03	201	31	
3	-L- 137+03/138+25 RT & LT	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL						0.03	0.01	33		
	BANK STABLIIZATION	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL								176	21	
4	-L- 143+03/144+02 RT &LT	SLIPLINE EX. 2@84" CMP W/ 72" LINER & 1@72" TRENCHLESS WELDED STEEL						0.07	< 0.01	216	20	
5	-L- 143+03/144+02 RT &LT	EXTENSION OF 3@60" RCP & 1@72" TRENCHLESS WELDED STEEL						0.09	< 0.01	206	27	
TOTALS*:			0.10			0.10		0.23	0.06	840	142	0

*Rounded totals are sum of actual impacts

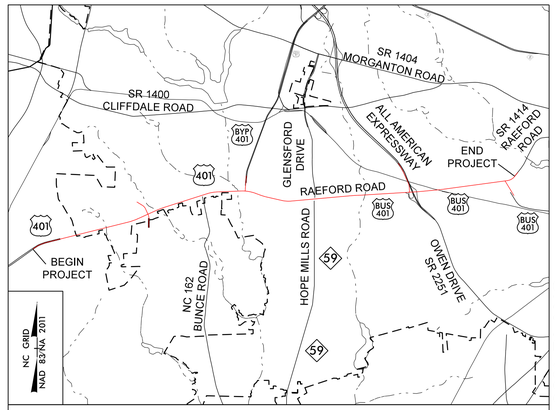
NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/3/17
CUMBERLAND COUNTY
U-4405
39049.1.1
SHEET 18 OF 18

Revised 2016 09 09

09/08/99

TIP PROJECT: U-4405



VICINITY MAP

90% PLANS

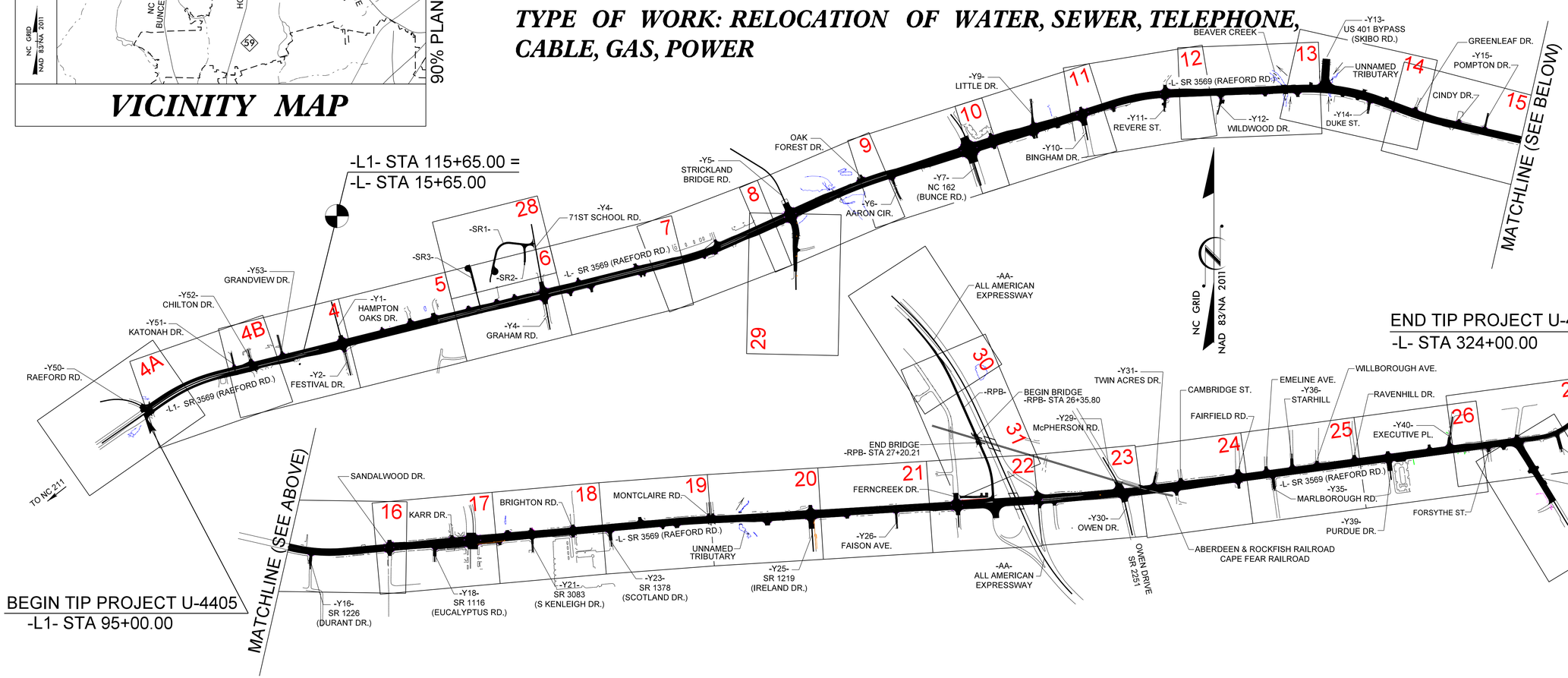
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U–4405	UE–1

NEU PERMIT PLANS
CUMBERLAND COUNTY

LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

TYPE OF WORK: RELOCATION OF WATER, SEWER, TELEPHONE, CABLE, GAS, POWER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UE–1	NEU PERMIT TITLE SHEET
UE–2	UE PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) WATER – PWC WATER AND SEWER
(B) SEWER – PWC WATER AND SEWER
(C) POWER – PWC POWER
(D) TELEPHONE – CENTURYLINK
(E) CABLE – SPECTRUM
(F) POWER – PWC POWER
(G) GAS – PIEDMONT NATURAL GAS
(H) WATER – AQUA INC.

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699–1555
PHONE (919) 707–6690
FAX (919) 250–4151

BO HEMPHILL, P.E.	UTILITIES REGIONAL ENGINEER
KELVIN MARTIN	UTILITIES ENGINEER
KYLE PLEASANT	UTILITIES AREA COORDINATOR
LARRY JAMES JR.	UTILITIES COORDINATOR

13-SEP-2017 16:44
R:\Utilities\Engineering\NEU\Permit Plans and Narrative\U4405OverallNEUPermit170906\U4405_Ut_tsh_UEIOverall_psh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-2

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

UE-2 CORRESPONDS TO RDY 9

F F DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

SITE 1
MECHANIZED CLEARING IN WETLANDS = < 0.01 ACRES
HAND CLEARING IN WETLANDS= 0.02 ACRES

SITE 2
TEMPORARY IMPACTS IN SURFACE WATER = < 0.01 ACRES

SITE 3
EXCAVATION IN WETLANDS = < 0.01 ACRES
TEMPORARY FILL IN WETLANDS = 0.02 ACRES

SITE 4
EXCAVATION IN WETLANDS = < 0.01 ACRES
FILL IN WETLANDS = 0.01 ACRES

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 10 -L- STA 88+00

WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

JONATHAN H ELLIOT DB 3676 PG 794 DB 4960 PG 348

RAEFORD CROSSING, LLC DB 8474 PG 492 PG 127 PG 185

CCF REAL ESTATE FOUNDATION DB 8043 PG 712 DB 89 PG 122

RICHARD WILDER & WIFE ALICE DB 3249 PG 12

STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

US 401 BUS RAEFORD RD

STRICKLAND BRIDGE RD

5/14/99

24-OCT-2017 11:46
...\Plans and Overlays\U4405UtilNEUPermtl70906\U4405_Ut_rdy9_UE30verall.psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-5

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 5
TEMPORARY IMPACTS
IN SURFACE WATER = <.01 ACRES;
= 7.3 LF

SITE 5

ABANDON 146 FT. OF 16" GRAVITY SEWER LINE

45 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

ABANDON 164 FT. OF 16" GRAVITY SEWER LINE

ABANDON 147 FT. OF 16" GRAVITY SEWER LINE

133 FT. OF GRAVITY SEWER TO BE INSTALLED BETWEEN NEW MANHOLES

48 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

SITE 6

SITE 6
TEMPORARY IMPACTS
IN SURFACE WATER = .02 ACRES;
= 22 LF

PROP. 4' DIA. UTILITY MANHOLE MH-13 SL-5- STA. 1+36.13 -L- STA. 224+67.27 OFFSET 84.77 (RT)

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

JOHN M TEW & WIFE SHIRLEY DB 2542 PG 343 PB 23 PG 1

KENT A VAN BELOIS & WIFE DB 3364 PG 865

RREF IIBB-NC, LLC DB 9368 PG 66

IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61

NCP FAYETTEVILLE, LLC DB 6243 PG 563

IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110

-BY27- # 75

5/14/99

09-AUG-2017 11:49
C:\Projects\U4405\Roadway\Design Files and Narrative\U4405_Ut_rdy20_UE5_psh.dgn
$$$$USERNAME$$$$

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
U1	80+33 to 81+36 -L-	Water/Power Line				< 0.01	0.02					
U2	82+54 to 82+88 -L-	Water Line							< 0.01			
U3	83+24 to 83+63 -L-	Sewer Line		0.02	< 0.01							
U4	85+57 to 85+74 -L-	Water Line	0.01		< 0.01							
U5	221.52 to 222+01	Sewer Line							< 0.01		45	
U6	221+59 to 222+28	Sewer Line							0.02		48	
TOTALS*:			0.01	0.02	< 0.01	< 0.01	0.02		0.03	0	93	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/24/17
CUMBERLAND
U-4405
39049.1.1

Permit Modification Feb 16, 2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

February 16, 2018

US Army Corps of Engineers
Regulatory Field Office
69 Darlington Ave.
Wilmington, NC 28403

Attention: Liz Hair
NCDOT Coordinator

Subject: Modification request for Section 404 Nationwide Permits 12 and 14 and Section 401 Water Quality Certification for the construction of the US 401 improvements in Fayetteville, Cumberland County TIP No. U-4405. Debit $570 from WBS 39049.1.1.

Reference: Section 404 USACE Action ID. SAW-2011-01806, issued December 1, 2017
Section 401 NCDWR Project No. 20171365, issued November 15, 2017

Dear Ms. Hair:

As you are aware, the North Carolina Department of Transportation (NCDOT) proposes to improve US 401 in Fayetteville from Old Raeford Road to Robeson Street. It has come to our attention that the permit application did not include all of the impacts due to erosion and sedimentation control measures. Although wetland impacts remain the same, there are additional impacts to surface waters, especially temporary channel impacts. Please replace previously provided permit drawings with those included with this request. These changes are summarized as follows:

Site 2: An additional 10 feet of temporary stream impacts have been added at the downstream end. The temporary channel impacts and surface water impacts have increased in the summary sheet by 10 feet and 0.01 acre.

Site 3: Due to bank stabilization, temporary stream impacts were added on both streambanks up and downstream of the culvert. This increased channel impacts by 150 feet and 0.02 ac.

Site 4: The temporary impacts were lengthened slightly on the upstream and downstream end; the resulting total was still just under 0.01ac.

Site 5: The temporary stream impacts were extended on the upstream end (previously stopped just inside the DUE, now extends between the DUE and TDE) and shortened on the downstream end (previously extended to area between DUE and TDE, now stops inside of DUE area). Temporary surface water impacts increased to 0.02 ac.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENT ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Regulatory Approvals

Section 404: Modification is hereby requested to USACE Nationwide 404 Permit 12 and 14 as required for the above-described activities.

Section 401: We are requesting a modification also to the Section 401 Water Quality Certification from NCDWR. Authorization to debit the $570 Permit Application Fee from WBS Element 39049.1.1 is hereby given.

A copy of this permit modification request and its distribution list will be posted on the NCDOT website at: https://connect.ncdot.gov/resources/Environmental

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Gordon Cashin at or (919) 707-6107.

Sincerely,

for Philip S. Harris, III, P.E. C.P.M., Unit Head
Environmental Analysis Unit

cc: NCDOT Permit Application Standard Distribution List

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 5 OF 18
REVISED: 2/6/2018

NC GRID
NAD 83/NA 2011

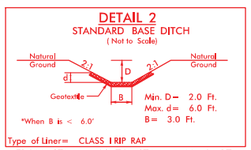
8/17/99

REVISIONS

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

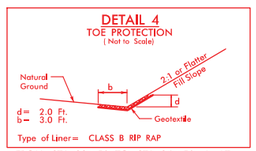
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5"E

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT, THIS SHEET

SITE 2

73
WAL-MART REALESTATE BUSINESS TRUST
DB 9449 PG 76
PB 134 PG 55

85
RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC.
DB 9374 PG 361
PB 132 PG 83

86
RAEFORD CROSSING, LLC
DB 8474 PG 295
PG 127 PG 185

91
RICHARD WILDER & WIFE ALICE
DB 3249 PG 12

83
FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 510 PG 319

84
FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 2495 PG 254

87
SOUTH COAST PROPERTIES, LLC
DB 5539 PG 783

88
JONATHAN H ELLIOT
DB 9676 PG 794
DB 4960 PG 348

89
CROSS DEVELOPMENT
CC RAEFORD LLC
DB 10004 PG 653

90
STEPHEN M. CENTER & WIFE
DB 4342 PG 504
PB 89 PG 122

MATCHLINE SEE SHEET 8
-L- STA 74+75

MATCHLINE SEE SHEET 29
-Y5- STA 23+00

MATCHLINE SEE SHEET 10
-L- STA 88+00

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

CL B RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

TOE PROTECTION
SEE DETAL 4

JB w/MH
SEE SPECIAL DETAIL

COLLAR AND EXTEND

SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)

CLASS II RIP RAP
EST 140 TONS
EST 105 SY GEOTEXTILE

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

300' UNIFORM LANE SHIFT

360° TAPER (LT. TURN)

150' LANE TAPER (RT. TURN)

PROP. CONC. SIDEWALK

PROP. 1'-6" C&G

PROP. 2'-6" C&G

5' MONOLITHIC CONC. ISLAND

DO NOT DISTURB SIGN

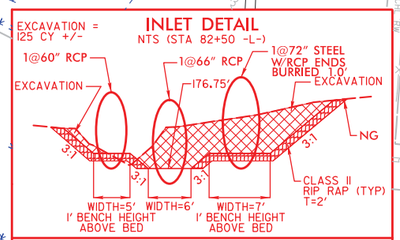
RETAIN EXISTING SIDEWALK

RETAIN SYSTEM

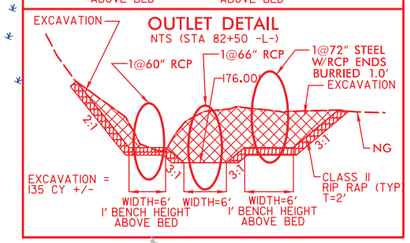
TIE TO EXIST

REMOVE

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)

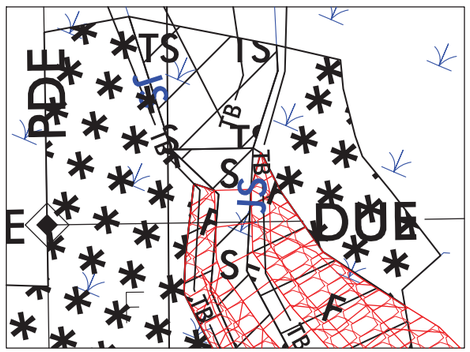


-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00***



SITE 2 INLET

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

5:00:31 PM
R:\Hydraulics\PERMITS_Environmental\Drawings\u4405_Hyd_prm_psh_09.dgn
erobeson

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

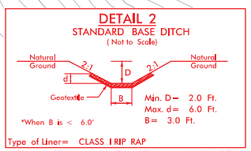
PERMIT DRAWING
SHEET 6 OF 18
REVISED: 2/6/2018

NC GRID
NAD 83/NA 2011

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

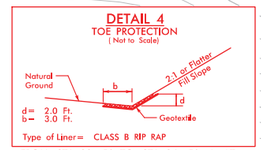
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5"E

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING LLC DB 8474 PG 355 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 7416 PG 794 DB 4960 PG 1348

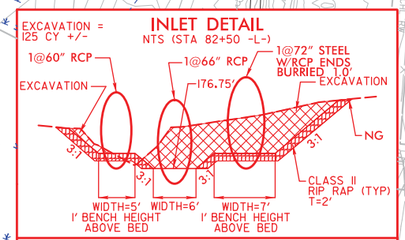
89 CROSS DEVELOPMENT OC RAEFORD LLC DB 10004 PG 653

90 STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

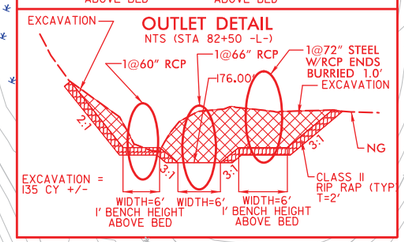
RETAIN SYSTEM
TIE TO EXIST
DO NOT DISTURB SIGN
RETAIN EXISTING SIDEWALK
STANDARD BASE DITCH SEE DETAIL 2 EST DDE=20 CY SLOPE=0.3% EST 30 TONS EST 45 SY GEOTEXTILE
CLASS II RIP RAP EST 52 TONS EST 50 SY GEOTEXTILE
CLASS II RIP RAP EST 95 TONS EST 90 SY GEOTEXTILE
TOE PROTECTION SEE DETAIL 4
JB w/MH SEE SPECIAL DETAIL
CL. B RIP RAP EST 2 TONS EST 7 SY GEOTEXTILE
360' TAPER (LT. TURN)
150' LANE TAPER (RT. TURN)
300' UNIFORM LANE SHIFT
PROP.2'-6" C&G
PROP.1'-6" C&G
PROP.CONC.SIDEWALK
5' MONOLITHIC CONC.ISLAND
SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)
COLLAR AND EXTEND
STANDARD BASE DITCH SEE DETAIL 2 EST DDE=150 CY SLOPE=1.7% EST 165 TONS EST 350 SY GEOTEXTILE
CLASS II RIP RAP EST 210 SY GEOTEXTILE
CLASS II RIP RAP EST 140 TONS EST 105 SY GEOTEXTILE
REMOVE
RETAIN
TYPE 350
TYPE 350 to JB w/MH
RAEFORD RD
MATCHLINE SEE SHEET 8 -L- STA 74+75
MATCHLINE SEE SHEET 10 -L- STA 88+00
MATCHLINE SEE SHEET 29 -Y5- STA 23+00

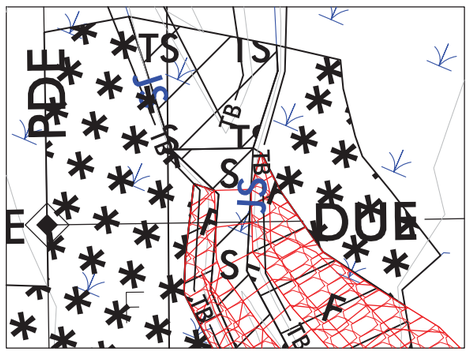
-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)





SITE 2 INLET

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

REVISIONS
8/17/99

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8/17/99

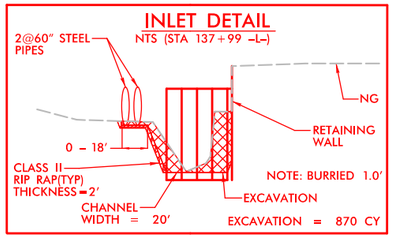
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

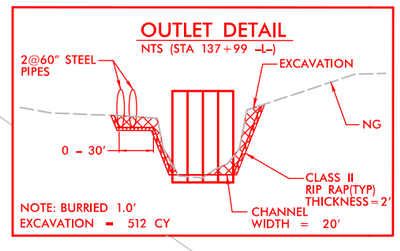
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NC GRID
NAD 83/NA 2011

INLET DETAIL
NTS (STA 137+99 -L-)



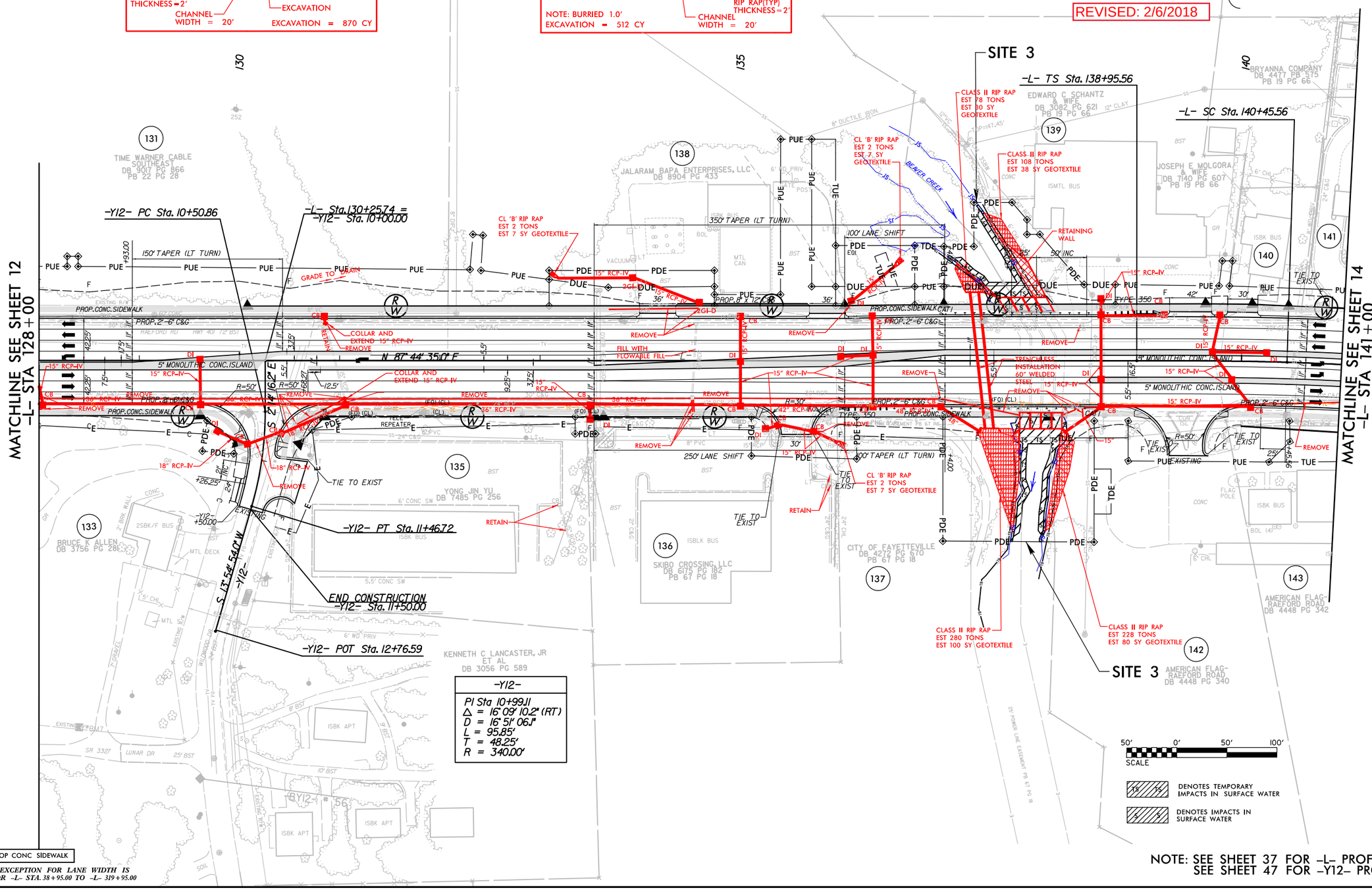
OUTLET DETAIL
NTS (STA 137+99 -L-)



-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

PERMIT DRAWING
SHEET 9 OF 18

REVISED: 2/6/2018



-Y12-	
PI Sta 10+99.11	
Δ = 16° 09' 10.2" (RT)	
D = 16° 51' 06.1"	
L = 95.85'	
T = 48.25'	
R = 340.00'	

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NC GRID
NAD 83/NA 2011

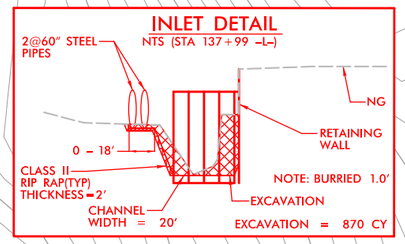
-L-
PIs Sta 139+95.56
Θs = 1° 43' 07.9"
Ls = 150.00'
LT = 100.00'
ST = 50.00'

PI Sta 144+71.01
Δ = 19° 18' 58.8" (RT)
D = 2° 17' 30.6"
L = 842.83'
T = 425.45'
R = 2,500.00'
SE = 0.03

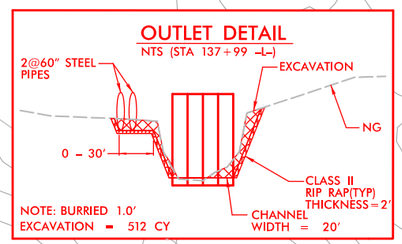
PERMIT DRAWING SHEET 10 OF 18

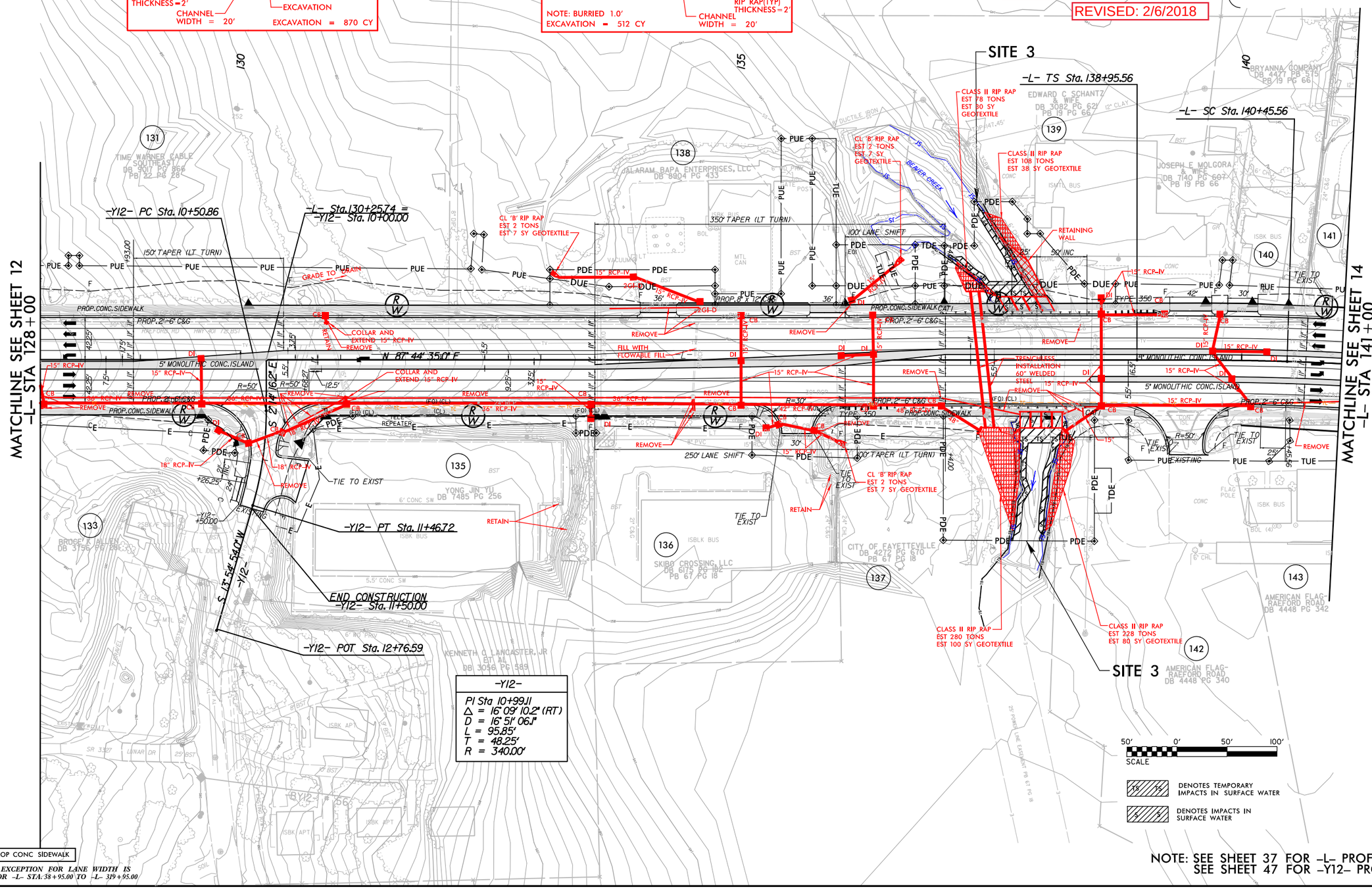
REVISED: 2/6/2018

INLET DETAIL
NTS (STA 137+99 -L-)



OUTLET DETAIL
NTS (STA 137+99 -L-)





** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 12 OF 18

REVISED: 2/6/2018

NAD 83/NA 2011
NC GRID

8/17/99

REVISIONS

–L–

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Ls = 150.00'	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	LT = 100.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	ST = 50.00'	L = 311.01'
T = 425.45'	ST = 50.00'		T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

BEGIN CONSTRUCTION
–Y13– Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

–L– CS Sta. 148+88.39

–L– Sta. 148+21.72 =
–Y14– Sta. 10+00.00

–L– ST Sta. 150+38.39

–L– SC Sta. 153+54.56

–L– TS Sta. 152+04.56

END CONSTRUCTION
–Y14– Sta. 11+45.00

–Y14– POT Sta. 11+89.87

–L– Sta. 142+66.31 =
–Y13– Sta. 20+11.93

MATCHLINE SEE SHEET 13
–L– STA 141+00

MATCHLINE SEE SHEET 15
–L– STA 154+00

SITE 4

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– 319+95.00*

INLET DETAIL
NTS (STA 143+37 –L–)

OUTLET DETAIL
NTS (STA 143+37 –L–)

NOTE: SEE SHEET 37 & 38 FOR –L– PROFILE
SEE SHEET 47 FOR –Y13– PROFILE
SEE SHEET 48 FOR –Y14– PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 13 OF 18

REVISED: 2/6/2018

NAD 83/NA 2011
NC GRID

-L-

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

REVISIONS

8/17/99

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erichberger

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

SITE 4

-L- Sta.142+66.31 =
-Y13- Sta. 20+11.93

-L- CS Sta.148+88.39

-L- Sta.148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta.150+38.39

-L- SC Sta.153+54.56

-L- TS Sta.152+04.56

END CONSTRUCTION
-Y14- Sta. 11+45.00
-Y14- POT Sta. 11+89.87

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

50' 0' 50' 100'
SCALE

100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

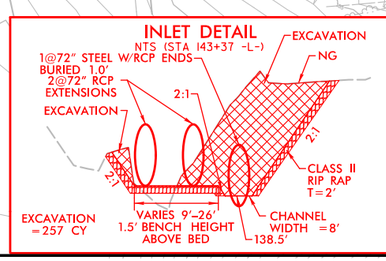
DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

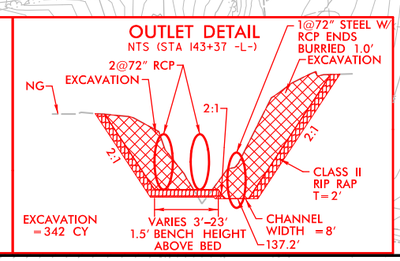
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)



OUTLET DETAIL
NTS (STA 143+37 -L-)



NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 15 OF 18

REVISED: 2/6/2018

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17

-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/ CLASS II RIP RAP 146 TONS 188 SY GEOTEXTILE

CLASS II RIP RAP 25 TONS 32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

-L- Sta.229+68.64 = -Y25- Sta. 10+00.00

-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

-Y25-

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 16 OF 18

REVISED: 2/6/2018

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/ CLASS II RIP RAP 146 TONS 188 SY GEOTEXTILE

CLASS II RIP RAP 25 TONS 32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

-Y25-

-L- Sta. 229+68.64 = -Y25- Sta. 10+00.00

END CONSTRUCTION -Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

SITE 5

FLOODPLAIN BENCH W/ CLASS II RIP RAP 397 TONS 420 SY GEOTEXTILE

CLASS II RIP RAP 178 TONS 188 SY GEOTEXTILE

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

EXCAVATION = 245 CY

EXCAVATION = 390 CY

1.5' BENCH HEIGHT ABOVE BED

FILL SCOUR HOLE W/SELECT MATERIAL

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

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erichberger

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L1- 96+44/96+82 LT	EXTENSION OF 2@48" RCP						< 0.01	< 0.01	8	43	
2	-L- 81+47/84+92 RT & LT	EXTENSION OF 1@60", 1@66" RCP & 1@72" TRENCHLESS WELDED STEEL	0.10			0.10		0.03	0.04	201	41	
3	-L- 137+03/138+25 RT & LT	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL						0.03	0.03	33	42	
	BANK STABLIIZATION	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL								176	171	
4	-L- 143+03/144+02 RT &LT	SLIPLINE EX. 2@84" CMP W/ 72" LINER & 1@72" TRENCHLESS WELDED STEEL						0.07	< 0.01	216	51	
5	-L- 143+03/144+02 RT &LT	EXTENSION OF 3@60" RCP & 1@72" TRENCHLESS WELDED STEEL						0.09	0.02	206	27	
TOTALS*:			0.10			0.10		0.22	0.11	840	375	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REVISED 2/6/2018
CUMBERLAND COUNTY
U-4405
39049.1.1

Revised 2018 02 06

Permit Modification March 22, 2018

PROJECT COMMITMENTS

T.I.P Project No. U-4405
US 401 (Raeford Road) from Old Raeford Road
To East of Fairway Drive in Fayetteville
Cumberland County
Federal Aid Project No. STPDA-0401(230)
WBS Element 39049.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Local Programs Management Unit

At the request of the City of Fayetteville, NCDOT will enter into a municipal agreement with the city to fund construction of five-foot sidewalks on both sides of the US 401 (Raeford Road) Road corridor. Under this municipal cost share agreement, the City of Fayetteville will be responsible for fifty percent of the additional cost and will be responsible for maintenance of the pedestrian facilities upon completion of the project.

Environmental Analysis Unit, Traffic Noise and Air Quality Group

One noise barrier at the All American Expressway proposed off-ramp meets preliminary feasible and reasonable criteria found in the NCDOT Traffic Noise Abatement Policy. A more detailed analysis of this potential noise wall will be completed during project final design.

Environmental Analysis Unit, Historic Architecture Group

NCDOT has shifted the alignment away from the Lindy's (Former A&W) historic property, and only one driveway will be provided to the property from US 401 (Raeford Road). The property sign will be moved towards the side street.

Roadway Design/ Right of Way/ Division 6 Construction

NCDOT has shifted the alignment away from Lafayette Lanes Bowling Alley property. New sidewalk will be outside the historic boundary. A small permanent utility easement (PUE) for an anchoring guywire allowed; temporary construction easement will be acceptable. Removal of parking or impact to the structure is not allowed.

COMMITMENTS FROM PERMITTING

Division 6 Construction/ Utilities Unit/ Roadside Environmental Unit

For the open cut trenching of the utility lines, the mixing of topsoil and the subsoils within the wetlands shall be minimized to the greatest extent practical. During, excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches in wetlands will be piled separately from the subsoils and will be backfilled into the trench only after the subsoils have been placed in the trench and compacted.

Division 6 Construction/ Utilities Unit/ Roadside Environmental Unit

Sediment and Erosion Control 15A NCAC 02H .0506 (b)(3) and (c)(3)

Turbidity curtains shall be used to isolate all work areas from the stream at Beaver Creek, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2011-01806** County: **Cumberland County** U.S.G.S. Quad: **Fayetteville**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **Mr. Phillip S. Harris, III, PE, CPM**
NC DOT-PDEA
Address: **1598 Mail Service Center**
Raleigh, NC 27699

Size (acres) N/A
Nearest Waterway **Beaver Creek**
USGS HUC **03030004**
Nearest Town **Fayetteville**
River Basin **Cape Fear**
Coordinates Latitude: **35.0413189656353**
Longitude: **-78.9624331673919**

Location description: **The project site is located along US 401 from SR 1409 (71st School Road) to US 401 Business (Robeson Street), in Fayetteville, Cumberland County, North Carolina.**

Description of projects area and activity: **This verification authorizes impacts to waters of the U.S. in association with an NC DOT road improvement project along an approximate 6- mile section of US 401 from SR 1409 (71st School Road) to US 401 Business (Robeson Street). The existing facility is a seven lane roadway with a center turn lane. The proposed facility will be a 6 lane roadway with a raised median. Permanent impacts total 0.21 acre wetlands filled, 840 linear feet of stream channel for and 0.23 acre open waters filled for culvert extensions, bank stabilization and utility line relocations.**

Applicable Law: ☒ Section 404 (Clean Water Act, 33 USC 1344)
☐ Sections 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number or Nationwide Permit Number: **NWPs 14 and 12**
SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated October 25, 2017. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Wilmington, NC, at (910) 796-7215.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Sarah Hair at (910) 251-4049 or Sarah.E.Hair@usace.army.mil**.

Corps Regulatory Official: Liz Hair Date: **December 1, 2017**
Expiration Date of Verification: **March 18, 2022**

Determination of Jurisdiction:

A. ☐ There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.

B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

C. ☐ There are waters, including wetlands, within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

D. ☒ The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued August 9, 2012. Action ID: **SAW-2011-01806**.

Basis For Determination: *see previously verified PJD dated August 12, 2012

Remarks:

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information **(This information applies only to approved jurisdiction determinations as indicated in B and C above).**

This correspondence constitutes an approved jurisdiction determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by N/A.
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: Liz Hair
Sarah Hair

Date of JD: **August 9, 2012**
Expiration Date of JD: N/A

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Electronic copies furnished:

Ms. Joanne Steenhuis, NC DWR
Mr. Jim Rerko, NC DOT Division 6 DEO
Mr. Colin Mellor, NC DOT PDEA
Mr. Chris Rivenbark, NC DOT PDEA

SPECIAL CONDITIONS

1) 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 authorization.

Action ID Number: **SAW-2011-01806** **County:** **Cumberland County**

Permittee: **NC DOT/ PDEA, Mr. Phillip S. Harris, III, P.E. CPM**

Project Name: **NCDOT/U-4405/US 401 and US 401 Business/Division 6**

Date Verification Issued: **December 1, 2017**

Project Manager: **Sarah Hair**

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Sarah Hair
69 Darlington Avenue
Wilmington, North Carolina 28403

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee **Date**

Rivenbark, Chris

From: Hair, Sarah E CIV CESAW CESAD (US) <Sarah.E.Hair@usace.army.mil>
Sent: Thursday, March 22, 2018 3:22 PM
To: Rivenbark, Chris; Cashin, Gordon E
Cc: Rerko, James J; Steenhuis, Joanne
Subject: [External] U-4405 additional temporary impacts
Attachments: U-4405 Modification Cumberland February 16 2018.pdf

CAUTION: External email. Do not click links or open attachments unless verified. Send all suspicious email as an attachment to Report Spam.<mailto:report.spam@nc.gov>

Please reference the attached permit modification request dated February 16, 2018 for the following project:

Corps Action ID: SAW-2011-01806
County: Cumberland
Project TIP: U-4405

The applicant proposes additional temporary impacts associated with impacts sites 2, 3, 4, and 5 as a result of sediment/erosion control requirements.

Additional temporary impacts as proposed are hereby authorized. The original December 1, 2017 verification and all conditions remain applicable for permanent impacts.

The plans dated February 2018 will be added to the administrative erecord. Please allow this email to serve as official notification.

Thank you,

Liz Hair
Regulatory Project Manager
Wilmington District
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403
Sarah.e.hair@usace.army.mil
910-251-4049

NATIONWIDE PERMIT 12
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2017

Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads).

Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 31.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

The following list of General Conditions has been adapted for work in North Carolina for NCDOT projects. Information related to USACE notification requirements has been removed. Therefore, numbering and lettering below may not be consecutive. Please refer to http://saw-reg.usace.army.mil/NWP2017/2017NWP12.pdf for the complete reference.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #12 - Utility Line Activities

4.1.1. Pipeline/utility line construction through jurisdictional waters and wetlands will be accomplished utilizing directional drilling/boring methods to the maximum extent practicable.

4.1.2. Temporary discharge of excavated or fill material into wetlands and waters of the United States will be for the absolute minimum period of time necessary to accomplish the work. Temporary discharges will be fully contained with appropriate erosion control or containment methods or otherwise such fills will consist of non-erodible materials.

4.1.3. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The applicant is required to provide this information to the Corps with the initial notification package.

4.1.9. For the purposes of this NWP, any permanently maintained corridor along the utility ROW within forested wetlands shall be considered a permanent impact and a compensatory mitigation plan will be required for all such impacts associated with the requested activity.

4.1.10. Use of rip-rap or any other engineered structures to stabilize a stream bed should be avoided to the maximum extent practicable. If riprap stabilization is needed, it should be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

4.1.11. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or “fracking.” Any discharge from hydraulic fracturing or “fracking” into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or mitigation may be required as a result from any unintended discharges.

NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. 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, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre- construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be

addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

FINAL REGIONAL CONDITIONS 2017

Final 2017 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from the Corps and either NCDMF or NCWRC.

1.2 Trout Waters Moratorium

Waters of the United States in the designated trout watersheds of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section 2.7 for information on the designated trout watersheds).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of more than 300 total linear feet of stream bed, unless the District Engineer has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and has determined that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

This Regional Condition does not apply to NWP 23 (Approved Categorical Exclusions).
*NOTE: Permittees should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of stream, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses of 150 linear feet or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream, intermittent or ephemeral stream, the permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). This applies to
NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the United States after the concrete is set and cured and when it no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Where bank stabilization is conducted as part of an activity, natural design, bioengineering and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized to the maximum extent practicable.

3.5.2. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in greater adverse impacts to the aquatic environment.

3.5.3. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.4. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

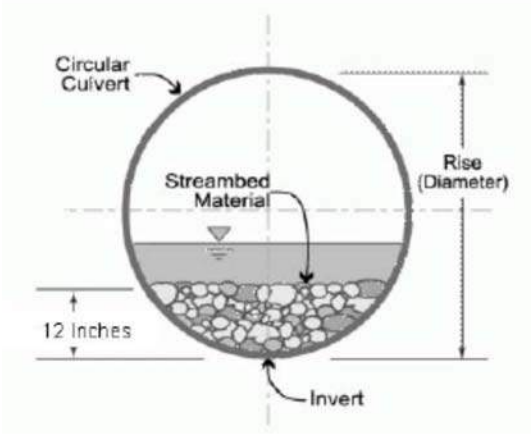
3.5.5. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

3.5.6. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.6 Requirements for Culvert Placement

3.6.1 For all NWPs that involve the construction/installation of culverts, measures will 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 should not be modified by altering the width or depth of the stream profile in connection with the construction activity. The width, height, and gradient of a proposed culvert should be sufficient to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow is the seasonal sustained high flow that typically occurs in the spring. Spring flows should be determined from gage data, if available. In the absence of such data, bank-full flow can be used as a comparable indicator.

In Public Trust Areas of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the culvert at least one foot below normal bed elevation.

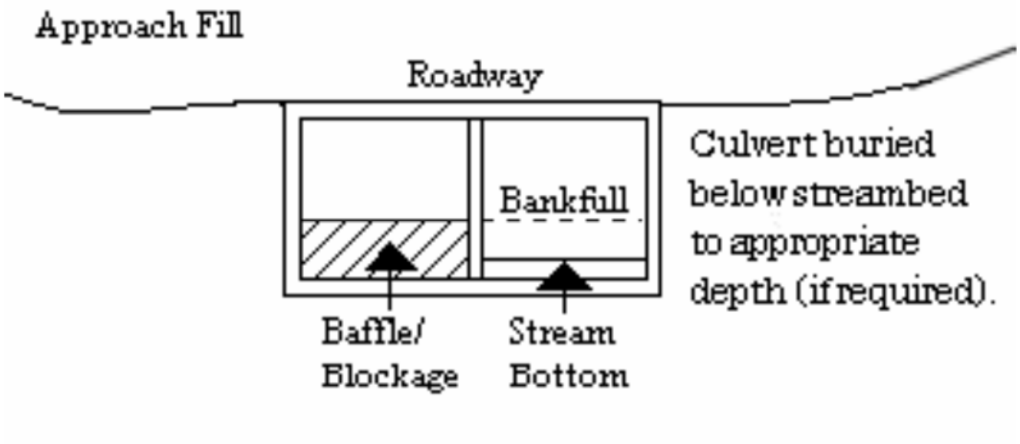


In all other areas: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried to maintain aquatic passage and to maintain passage during drought or low flow conditions, and every effort shall be made to maintain the existing channel slope.

Culverts must be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp; this request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment.
All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States.
Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

3.6.2 Bank-full flows (or less) shall be accommodated through maintenance of the existing bank- full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



3.6.3 Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation. Additional culverts or culvert barrels at such crossings should not be buried, or if buried, must have sills at the inlets to ensure that they only receive flows exceeding bank-full.

3.6.4 Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted stream at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if the proposed design would result in less impacts to the aquatic environment and/or if it can be demonstrated that it is not practicable to restore the final width of the impacted stream at the culvert inlet and outlet to the width of the original stream channel.

3.6.5 The width of the culvert shall be comparable to the width of the stream channel. If the width of the culvert is wider than the stream channel, the culvert shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills and the design would result in less impacts to the aquatic environment.

3.7 Notification to NCDEQ Shellfish Sanitation Section

Permittees shall notify the NCDEQ Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Submerged Aquatic Vegetation

Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, unless EFH Consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is authorized.

3.9 Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the United States. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

3.10 Restoration of Temporary Impacts to Stream Beds

Upon completion of work that involves temporary stream impacts, streambeds are to be restored to pre-project elevations and widths using natural streambed material such that the impacted stream reach mimics the adjacent upstream and downstream reach. The impacted area shall be backfilled with natural streambed material to a depth of at least 12 inches or to the bottom depth of the impacted area if shallower than 12 inches. An engineered in-stream structure or material can be used to provide protection of a buried structure if it provides benefits to the aquatic environment and can be accomplished by a natural streambed design. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.11 Restoration of Temporary Impacts to Stream Banks

Upon completion of work involving temporary stream bank impacts, stream banks are to be restored to pre-project grade and contours or beneficial grade and contours if the original bank slope is steep and unstable. Natural durable materials, native seed mixes, and native plants and shrubs are to be utilized in the restoration. Natural designs which use bioengineered and/or geo- engineered methods are to be applied. An engineered structure or material can be used to provide protection of a buried structure if it provides benefits to the stream bank environment, provided it is not in excess of the minimum amount needed for protection and does not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

NATIONWIDE PERMIT 14
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2017

Linear Transportation Projects. Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10- acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, “District Engineer’s Decision.” The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

The following list of General Conditions has been adapted for work in North Carolina for NCDOT projects. Information related to USACE notification requirements has been removed. Therefore, numbering and lettering below may not be consecutive. Please refer to http://saw-reg.usace.army.mil/NWP2017/2017NWP14.pdf for the complete reference.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #14 - Linear Transportation Projects

4.1.1 If appropriate, permittees shall employ natural channel design (see definition below and NOTE below) to the maximum extent practicable for stream relocations. All stream relocation proposals shall include a Relocation and Monitoring Plan and a functional assessment of baseline conditions (e.g., use of the North Carolina Stream Assessment Methodology). Compensatory mitigation may be required for stream relocations.

Natural Channel Design means a geomorphologic approach to stream restoration based on an understanding of valley type, general watershed conditions, dimension, pattern, profile, hydrology and sediment transport of natural, stable channels (reference condition) and applying this understanding to the reconstruction of a stable channel.

NOTE: For more information on Natural Channel Design, permittees should reference North Carolina Stream Mitigation Guidance on the Corps RIBITS (Regulatory In-lieu Fee and Bank Information Tracking System) website or at the following World Wide Web Page: https://ribits.usace.army.mil/ribits_apex/f?p=107:27:16705499703550::NO:RP:P27_BUTTON_KEY:0.

4.1.2 This NWP authorizes only upland to upland crossings and cannot be used in combination with Nationwide Permit 18 to create an upland within waters of the United States, including wetlands.

4.1.3 This NWP cannot be used for private projects located in tidal waters or tidal wetlands.

4.1.4 In designated trout watersheds, a PCN is not required for impacts to a maximum of 60 linear feet (150 linear feet for temporary dewatering) or 1/10-acre of jurisdictional aquatic resources for proposed structures not adjoining, adjacent to, or connected to existing structures. In designated trout waters, the permittee shall submit a PCN (see Regional Conditions 2.7 and General Condition 32) to the District Engineer prior to commencing the activity if 1) impacts (other than temporary dewatering to work in dry conditions) to jurisdictional aquatic resources exceed 60 linear feet or 1/10-acre; 2) temporary impacts to streams or waterbodies associated with dewatering to work in dry conditions exceed 150 linear feet; 3) the project will involve impacts to wetlands; 4) the primary purpose of the project is for commercial development; 5) the project involves the replacement of a bridge or spanning structure with a culvert or non-spanning structure in waters of the United States; or 6) the activity will be constructed during the trout waters moratorium (October 15 through April 15).

4.1.5 The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 150 linear feet of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, describes how pre-project conditions will be restored, and includes a timetable for all restoration activities.

NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. 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, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre- construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road

crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

FINAL REGIONAL CONDITIONS 2017

Final 2017 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from the Corps and either NCDMF or NCWRC.

1.2 Trout Waters Moratorium

Waters of the United States in the designated trout watersheds of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section 2.7 for information on the designated trout watersheds).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of more than 300 total linear feet of stream bed, unless the District Engineer has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and has determined that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

This Regional Condition does not apply to NWP 23 (Approved Categorical Exclusions).
*NOTE: Permittees should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of stream, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses of 150 linear feet or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream, intermittent or ephemeral stream, the permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). This applies to
NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the United States after the concrete is set and cured and when it no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Where bank stabilization is conducted as part of an activity, natural design, bioengineering and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized to the maximum extent practicable.

3.5.2. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in greater adverse impacts to the aquatic environment.

3.5.3. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.4. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

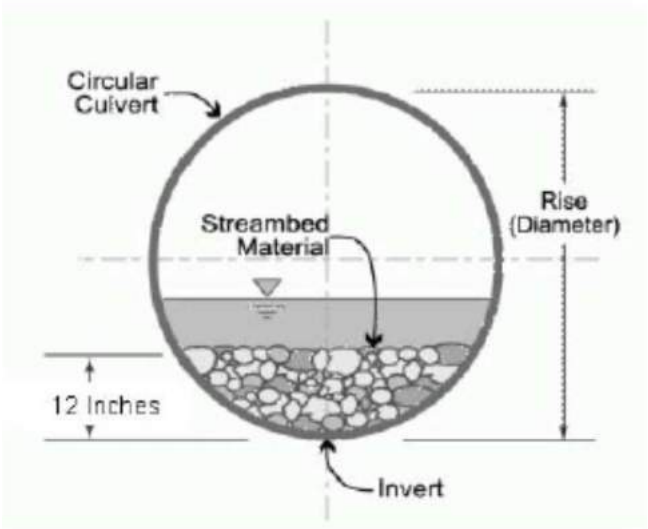
3.5.5. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

3.5.6. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.6 Requirements for Culvert Placement

3.6.1 For all NWPs that involve the construction/installation of culverts, measures will 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 should not be modified by altering the width or depth of the stream profile in connection with the construction activity. The width, height, and gradient of a proposed culvert should be sufficient to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow is the seasonal sustained high flow that typically occurs in the spring. Spring flows should be determined from gage data, if available. In the absence of such data, bank-full flow can be used as a comparable indicator.

In Public Trust Areas of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the culvert at least one foot below normal bed elevation.

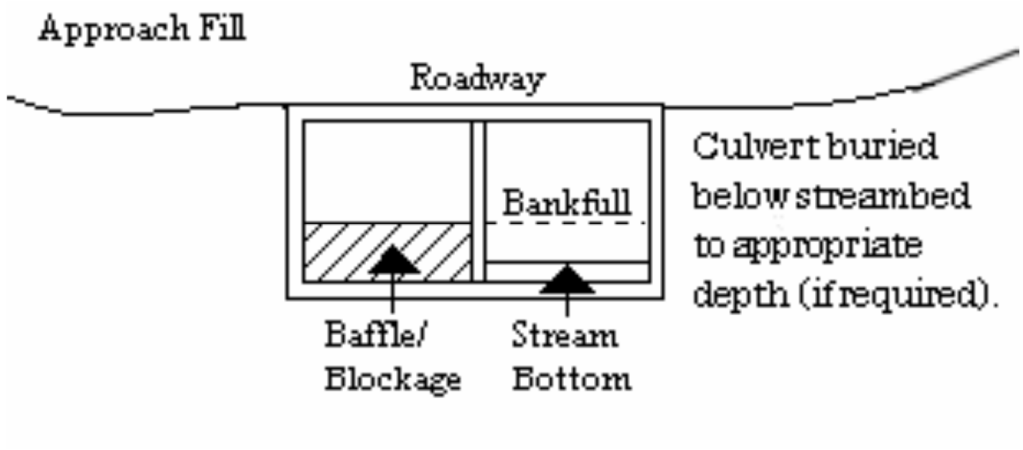


In all other areas: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried to maintain aquatic passage and to maintain passage during drought or low flow conditions, and every effort shall be made to maintain the existing channel slope.

Culverts must be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp; this request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment.
All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States.
Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

3.6.2 Bank-full flows (or less) shall be accommodated through maintenance of the existing bank- full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



3.6.3 Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation. Additional culverts or culvert barrels at such crossings should not be buried, or if buried, must have sills at the inlets to ensure that they only receive flows exceeding bank-full.

3.6.4 Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted stream at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if the proposed design would result in less impacts to the aquatic environment and/or if it can be demonstrated that it is not practicable to restore the final width of the impacted stream at the culvert inlet and outlet to the width of the original stream channel.

3.6.5 The width of the culvert shall be comparable to the width of the stream channel. If the width of the culvert is wider than the stream channel, the culvert shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills and the design would result in less impacts to the aquatic environment.

3.7 Notification to NCDEQ Shellfish Sanitation Section

Permittees shall notify the NCDEQ Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Submerged Aquatic Vegetation

Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, unless EFH Consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is authorized.

3.9 Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the United States. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

3.10 Restoration of Temporary Impacts to Stream Beds

Upon completion of work that involves temporary stream impacts, streambeds are to be restored to pre-project elevations and widths using natural streambed material such that the impacted stream reach mimics the adjacent upstream and downstream reach. The impacted area shall be backfilled with natural streambed material to a depth of at least 12 inches or to the bottom depth of the impacted area if shallower than 12 inches. An engineered in-stream structure or material can be used to provide protection of a buried structure if it provides benefits to the aquatic environment and can be accomplished by a natural streambed design. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.11 Restoration of Temporary Impacts to Stream Banks

Upon completion of work involving temporary stream bank impacts, stream banks are to be restored to pre-project grade and contours or beneficial grade and contours if the original bank slope is steep and unstable. Natural durable materials, native seed mixes, and native plants and shrubs are to be utilized in the restoration. Natural designs which use bioengineered and/or geo- engineered methods are to be applied. An engineered structure or material can be used to provide protection of a buried structure if it provides benefits to the stream bank environment, provided it is not in excess of the minimum amount needed for protection and does not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

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

Permittee: NC DOT, PDEA, MR. Phillip S. Harris, III, PE, CPM **Action ID:** SAW-2011-01806
Project Name: U-4405/Raeford Road **County:** Cumberland

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 to the U.S. Army Corps of Engineers (USACE) 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 must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not 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 bank ledger to the Permittee, the USACE Project Manager, and the Wilmington 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:** Choose the 8-digit HUC

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
664				**0.21**		

*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:** Choose the 8-digit HUC

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1,328				**.42**		

Mitigation Site Debited: NC DMS
(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 USACE, 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: _____

Name of Sponsor's Authorized Representative: _____

_____ _____
Signature of Sponsor's Authorized Representative **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 USACE 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 USACE 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. 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 the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE 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 USACE 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 USACE, the Sponsor must obtain case-by-case approval from the USACE 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 USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

This form is not valid unless signed below by the USACE 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 USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil)***. Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: Liz Hair
USACE Field Office: Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403
Email: sarah.e.hair@usace.army.mil

Liz Hair

USACE Project Manager Signature

December 1, 2017

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.

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

March 15, 2018
Cumberland County
NCDWR Project No.20171365 V2
TIP Project No. U-4405

REVISED APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS

Mr. Philip S. Harris, III, P.E. CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Harris:

This certification rescinds and replaces the certification issued on November 17, 2017. You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of improvements to US Highway 401(Raeford Road) from west of Hampton Oaks Drive to east of Fairway Drive (approximately 6 miles) in Cumberland County:

Stream Impacts in the Cape Fear River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total stream Impacts (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1			8	43	51	
2			201	41	242	
3			33		33	
3b (stabilization)			176	171	347	
4			216	20	236	
5			206	27	233	
U5				45	45	
U6				48	48	
TOTAL			840	395	1,235	

Total Stream Impact for Project: 1,235 linear feet.

Wetland Impacts in the Cape Fear River Basin

Site	Fill (ac)	Fill (Temporary)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impacts (ac)	Impacts Requiring Mitigation (ac)
2	0.200					0.200	N/A
U1	0.007					0.007	N/A
U3		0.023				0.023	N/A
U4	0.012					0.012	N/A
U					0.02	0.02	N/A
TOTAL	0.219	0.023				0.262	

Total Wetland Impact for Project: 0.262 acres.

Open Water Impacts in the Cape Fear River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
1	0.01	0.01	0.02
2	0.03	0.04	0.07
3	0.03	0.01	0.04
4	0.07	0.01	0.08
5	0.09	0.03	0.12
U2		0.05	0.05
U5		0.01	0.01
U6		0.02	0.02
TOTAL	0.23	0.18	0.41

Total Open Water Impact for Project: 0.41 acres.

The project shall be constructed in accordance with your application modification request dated received February 16, 2018. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Numbers 4088 and 4086. This certification corresponds to the Nationwide Permit 14 and Nationwide Permit 12 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certifications and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)

2. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

3. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]

4. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]

5. **For the open cut trenching of the utility lines, the mixing of topsoil and the subsoils within the wetlands shall be minimized to the greatest extent practical. During, excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches in wetlands will be piled separately from the subsoils and will be backfilled into the trench only after the subsoils have been placed in the trench and compacted.**

6. Sediment and Erosion Control 15A NCAC 02H .0506 (b)(3) and (c)(3)
Turbidity curtains shall be used to isolate all work areas from the stream at Beaver Creek, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.

General Conditions

7. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

8. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]

9. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

10. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]

11. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]

12. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

13. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

14. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

15. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]

16. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]

17. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

18. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]

19. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]

20. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

21. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

22. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

23. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]

24. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]

25. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0231(a)(6)]

26. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.[15A NCAC 02H.0506(b)(3) and (c)(3)]

27. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3)]:

    a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual.*
    b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual.* The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
    c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual.*

d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

28. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

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. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Joanne Steenhuis at (910) 796-7306 or joanne.steenhuis@ncdenr.gov.

Sincerely,

Linda Culpepper, Interim Director
Division of Water Resources

Electronic copy only distribution:
Liz Hair, US Army Corps of Engineers, Wilmington Field Office
Jim Rerko, Division 6 Environmental Officer
Colin Mellor, NC Department of Transportation
Gordon Cashin, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Division of Mitigation Services
James Michel, Fayetteville Public Works Commission (james.michel@faypwc.com)
Joanne Steenhuis, NC Division of Water Resources Wilmington Regional Office
File Copy

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

Environmental Quality

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 _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4086

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT 12 (UTILITY LINE ACTIVITIES)**

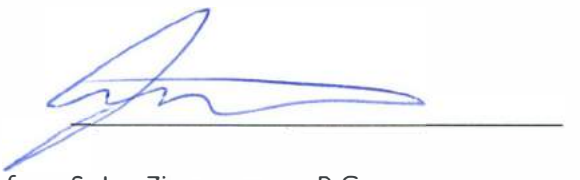
Water Quality Certification Number 4086 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (12) of the US Army Corps of Engineers regulations.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: March 19, 2017

Signed this day March 3, 2017

By



for S. Jay Zimmerman, P.G.
Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the Conditions of this Certification (listed below) cannot be met; or
b) Any permanent fill into or modification of wetlands and/or waters; or
c) Total temporary impacts to streams greater than 500 feet; or
d) Any stream relocation or stream restoration; or
e) Any impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
f) Any impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
g) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
h) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
    i) The activities are listed as "EXEMPT" from these rules; or
    ii) A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii) A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

1. All sewer lines shall be designed, constructed and maintained in accordance with Title 15A NCAC Chapter 02T.

2. Any utility construction corridor that is parallel to a stream or open water shall not be closer than 10 feet to the top of bank or ordinary high water mark. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(4) and (c)(4)]

3. Utility lines shall cross all stream channels at a near-perpendicular direction (i.e., between 75 degrees and 105 degrees to the stream bank). Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

4. Construction corridors in wetlands and across stream channels shall be minimized to the maximum extent practicable and shall not exceed 50 feet wide for gas utility lines and 40 feet wide for all other utility lines. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

   For construction corridors in wetlands and across stream channels, stumps shall be grubbed only as needed to install the utility and remaining stumps shall be cut off at grade level. The general stripping of topsoil within wetlands along the construction corridor is not permitted.

5. Permanent maintained access corridors in wetlands and across stream channels shall be restricted to the minimum width practicable and shall not exceed 30 feet wide for gas utility lines and 20 feet wide for all other utility lines except at manhole locations. 15-foot by 15-foot perpendicular vehicle turnarounds shall be allowed in access corridors but must be spaced at least 500 feet apart. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

6. For all utility lines constructed within wetlands, an anti-seep collar shall be placed at the downstream (utility line gradient) wetland boundary and every 150 feet up the gradient until the utility exits the wetland. Anti-seep collars may be constructed with class B concrete, compacted clay, PVC pipe, or metal collars. Wetland crossings that are directionally drilled, and perpendicular wetland crossings that are open cut and less than 150 feet long do not require anti-seep collars. The compacted clay shall have a specific infiltration of 1×10^{-5} cm/sec or less. A section and plan view diagram is attached for the anti-seep collars. [15A NCAC 02H .0506 (b)(4) and (c)(4)]

   The following specifications shall apply to class B concrete:

   a. Minimum cement content, sacks per cubic yard with rounded course aggregate 5.0
   b. Minimum cement content, sacks per cubic yard with angular course aggregate 5.5
   c. Maximum water-cement ratio gallons per sack 6.8
   d. Slump range 2" to 4"
   e. Minimum strength - 28 day psi 2,500

7. The applicant shall have a specific plan for restoring wetland contours. Any excess material will be removed to a high ground disposal area. [15A NCAC 02H .0506 (b)(2) and (c)(2)]

   The mixing of topsoil and subsoils within the wetlands along utility corridors shall be minimized to the greatest extent practical. During excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches will be piled separately from subsoils and will be backfilled into the trench only after the subsoils have been placed and compacted.

8. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. For all other utility line and associated facilities projects that disturb one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); have permanent wetland, stream, or open water impacts; and are proposing new built-upon area shall comply with the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

   a. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

   b. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs do not satisfy this condition. Projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs do not satisfy this condition.

   c. Projects that require written authorization from DWR shall submit the following with their application for review and approval:

      i. For projects that have a stormwater management plan (SMP) reviewed under a state stormwater program[1] or a state-approved local government stormwater program[2] shall submit plans that show the location and approximate size of all proposed stormwater measures;

      ii. All other low density projects not covered above shall submit a completed low density supplement form with all required items; and

      iii. All other high density projects not covered above shall submit a completed SMP, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high density development requirements of 15A NCAC 02H .1003.

   d. Projects that do not require written approval from DWR shall obtain approval of the SMP, when required, before any impacts authorized by this Certification occur.

   e. SMPs approved by DWR may be phased on a case-by-case basis. SMPs for each future phase must be approved before construction of that phase commences. Approved SMPs may not be modified without prior written authorization from DWR.

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h), compensatory mitigation may be required for losses of greater than 150 linear feet of streams and/or greater than one (1) acre of wetlands. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 150 linear feet per stream.

   Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0200]

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. 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 culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

    Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

    If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

    When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

    When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall not take place within 50 feet of a waterbody or wetlands to prevent contamination by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website: https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

27. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

28. If the property or project is sold or transferred, the new Permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

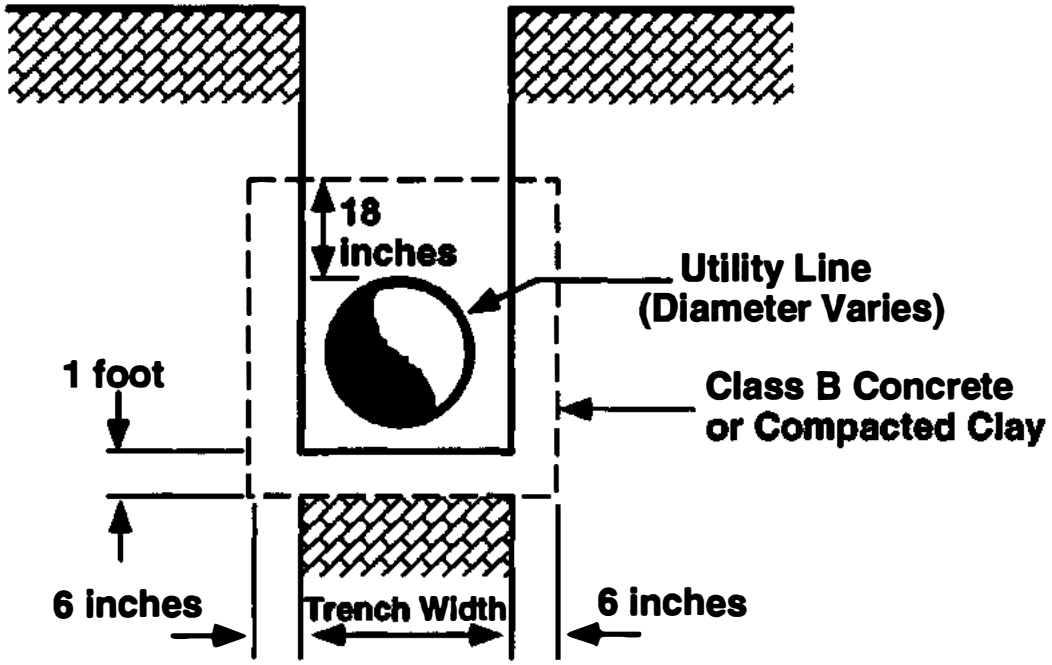
5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

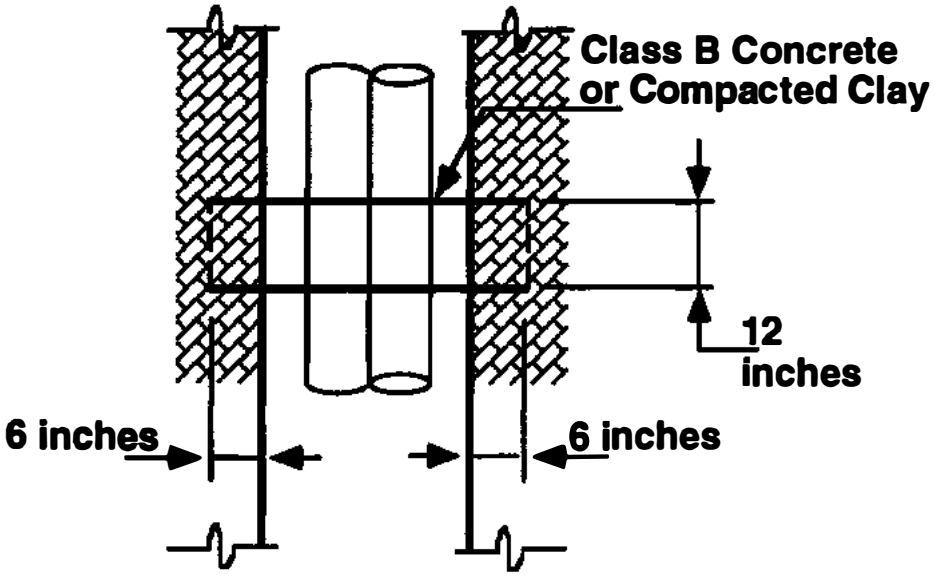
7. Public hearings may be held prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Resources.

History Note: Water Quality Certification (WQC) Number 4806 issued March 3, 2017 replaces WQC 3884 issued March 19, 2012; WQC Number 3819 issued March 19, 2010; WQC Number 3699 issued November 1, 2007; WQC Number 3625 issued March 19, 2007; WQC Number 3374 issued March 18, 2002; WQC Number 3288 issued June 1, 2000; WQC Number 3101 issued February 11, 1997; WQC Number 3022 issued September 6, 1995, WQC Number 2664 issued January 21, 1992.

ANTI -SEEP COLLAR



SECTION



PLAN

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4088

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS), AND**
- **REGIONAL GENERAL PERMIT 198200031 (NCDOT BRIDGES, WIDENING PROJECTS, INTERCHANGE IIMPROVEMENTS)**

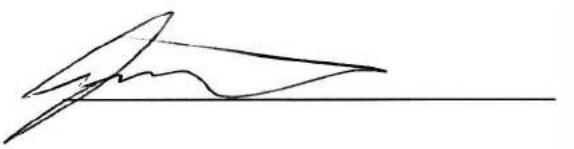
Water Quality Certification Number 4088 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (14) of the US Army Corps of Engineers regulations and Regional General Permit 198200031.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: March 19, 2017

Signed this day March 3, 2017

By



for S. Jay Zimmerman, P.G.
Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the conditions of this Certification (listed below) cannot be met; or
b) Any temporary or permanent impacts to wetlands, open waters and/or streams, except for construction of a driveway to a single family residential lot that are not determined to be part of a larger common plan of development as long as the driveway involves *less than 25 feet* of total stream impacts, including any in-stream stabilization needed for the crossing; or
c) Any stream relocation or stream restoration; or
d) Any high density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which does not have a stormwater management plan reviewed and approved under a state stormwater program[1] or a state-approved local government stormwater program[2]. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or
e) Any impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
f) Any impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
g) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
h) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
    i) The activities are listed as "EXEMPT" from these rules; or
    ii) A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
    iii) A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES
[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

I. ACTIVITY SPECIFIC CONDITIONS:

1. If this Water Quality Certification is used to access residential, commercial or industrial building sites, then all parcels owned by the applicant that are part of the single and complete project authorized by this Certification must be buildable without additional impacts to streams or wetlands. If required in writing by DWR, the applicant shall provide evidence that the parcels are buildable without requiring additional impacts to wetlands, waters, or state regulated riparian buffers. [15A NCAC 02H .0506(b)(4) and (c)(4)]

2. For road and driveway construction purposes, this Certification shall only be utilized from natural high ground to natural high ground. [15A NCAC 02H .0506(b)(2) and (c)(2)]

3. Deed notifications or similar mechanisms shall be placed on all lots with retained jurisdictional wetlands, waters, and state regulated riparian buffers within the project boundaries in order to assure compliance with NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), and/or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200). These mechanisms shall be put in place at the time of recording of the property or individual parcels, whichever is appropriate. [15A NCAC 02H .0506(b)(4) and (c)(4)]

4. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. For all other projects that disturb one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); have permanent wetland, stream, or open water impacts; and are proposing new built-upon area shall comply with the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

    a. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

    b. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs do not satisfy this condition. Projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs do not satisfy this condition.

    c. Projects that require written authorization from DWR shall submit the following with their application for review and approval:

        i. For projects that have a stormwater management plan (SMP) reviewed under a state stormwater program[1] or a state-approved local government stormwater program[2] shall submit plans that show the location and approximate size of all proposed stormwater measures;

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

ii. All other low density projects not covered above shall submit a completed low density supplement form with all required items; and

iii. All other high density projects not covered above shall submit a completed SMP, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high density development requirements of 15A NCAC 02H .1003.

d. Projects that do not require written approval from DWR shall obtain approval of the SMP, when required, before any impacts authorized by this Certification occur.

e. SMPs approved by DWR may be phased on a case-by-case basis. SMPs for each future phase must be approved before construction of that phase commences. Approved SMPs may not be modified without prior written authorization from DWR.

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h), compensatory mitigation may be required for losses of greater than 150 linear feet of streams and/or greater than one (1) acre of wetlands. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 150 linear feet per stream.

   Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0200]

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

   All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

   For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. 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 culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as, a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall not take place within 50 feet of a waterbody or wetlands to prevent contamination by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

27. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

28. If the property or project is sold or transferred, the new Permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

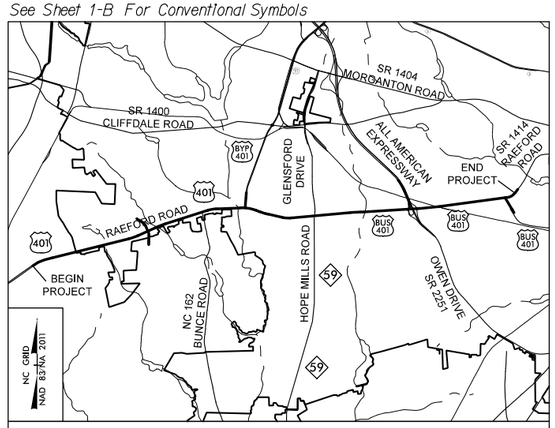
7. Public hearings may be held prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Resources.

History Note: *Water Quality Certification (WQC) Number 4088 issued March 3, 2017 replaces WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987.*

TIP PROJECT: U-4405

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

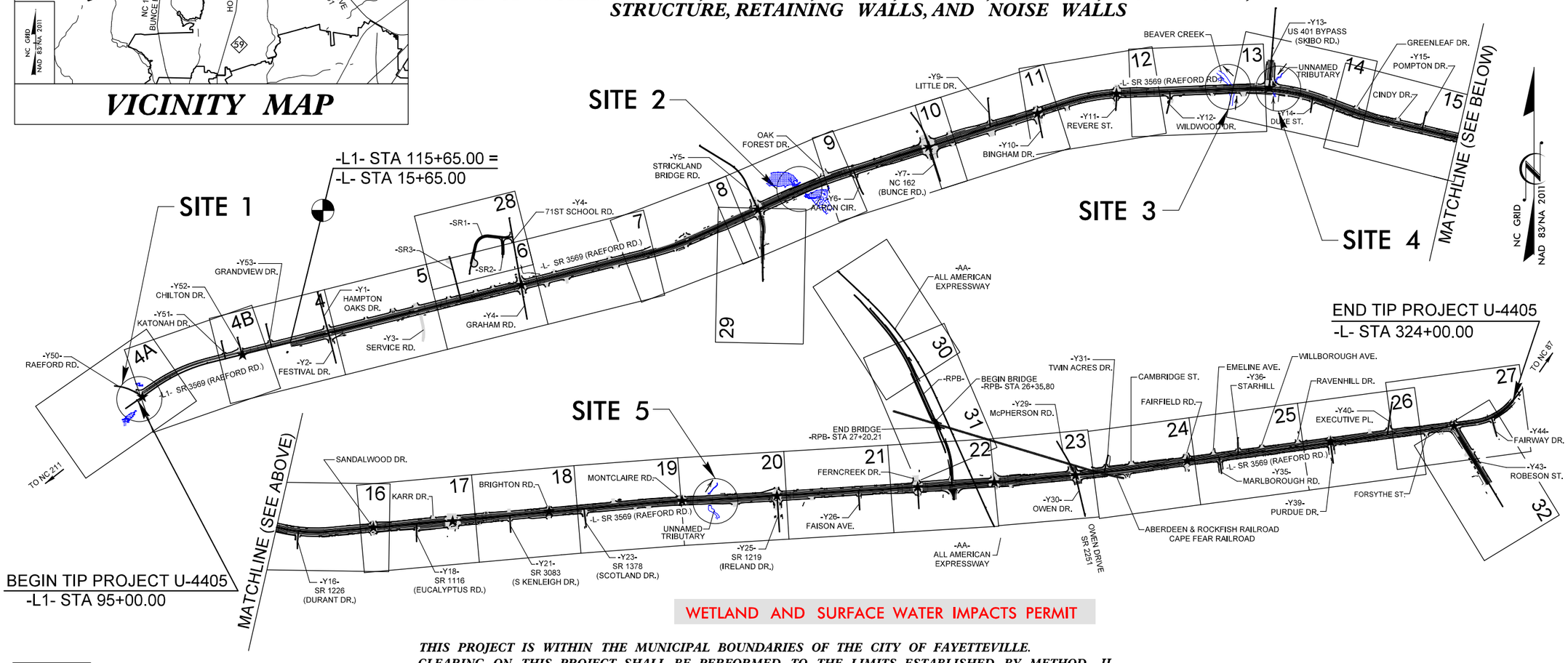
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE

PERMIT DRAWING
SHEET 1 OF 17

LOCATION: *US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS*



★ PROPOSED SIGNAL

WETLAND AND SURFACE WATER IMPACTS PERMIT

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II .
***** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED***

GRAPHIC SCALES

50 25 0 50 100
PLANS

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*TTST = 1% DUAL = 2%
FUNC CLASS = URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 29, 2016

LETTING DATE: JULY 17, 2018

CLINTON J. MORGAN, PE
PROJECT ENGINEER

VIRGINIA SCHAAR, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DEPARTMENT OF TRANSPORTATION • STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 2 OF 18

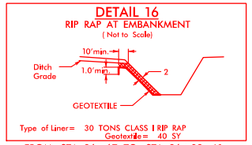
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SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

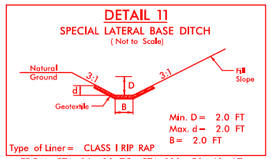
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50-
PI Sta 13+13.27
Δ = 43° 14' 06.3" (RT)
D = 9° 57' 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-L1-
PI Sta 101+73.28
Δ = 20° 51' 47.4" (RT)
D = 2° 47' 41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

-Y50- POT Sta. 10+00.00

N 78° 19' 20.4" E

-Y50- PC Sta. 10+85.41

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50- PRC Sta. 16+13.41

BEGIN ASPHALT OVERLAY

BEGIN ASPHALT OVERLAY

S 58° 26' 33.7" E

N 55° 08' 56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

RETAIN SYSTEM

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

-L1- PC Sta. 97+95.86

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

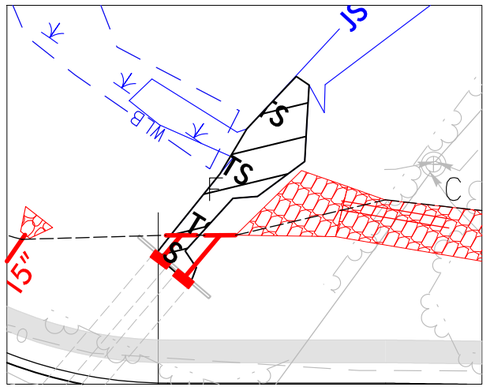
COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11 C

SITE 1
SEE ENLARGEMENT, THIS SHEET

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

GODFRE AND WIFE S DB 8 BM

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

Piedmont Natural Gas Company Inc, 4 " PLASTIC

EXISTING R/W

84" ALUM

18" RCP

24" RCP

30" RCP

36" RCP

15" RCP

RIPRAP

CB

MH

TOP=194.23'

TOP=194.79

TOP=197.38'

PROP. 2'-6" C&G

EXISTING R/W 6' CONC. SW

20' SEWER EASEMENT (PB C07 PG 140)

N 85°28'59" E 316.21'

NOTE: SEE SHEET 52 FOR -L1- PROFILE

11:39:03 AM
K:\Projects\Roadway Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

PERMIT DRAWING SHEET 3 OF 18

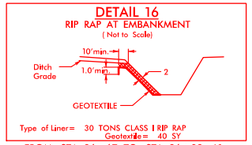
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

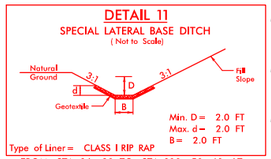
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 30 TONS CLASS I RIP RAP
Geotextile= 40 SY
FROM STA. 96+67 TO STA. 96+89 -L1- LT

DETAIL 11
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 FT
Max. d= 2.0 FT
B= 2.0 FT
Type of Liner= CLASS I RIP RAP
FROM STA. 96+90 TO STA. 100+50 -L1- LT

NC GRID
NAD 83/NA 2011

-Y50- POT Sta. 10+00.00

N 78°19'20.4" E

-Y50-
PI Sta 13+13.27
Δ = 43°14'06.3" (RT)
D = 9°57'52.1"
L = 433.89'
T = 227.86'
R = 575.00'

-Y50- PC Sta. 10+85.41

-L1-
PI Sta 101+73.28
Δ = 20°51'47.4" (RT)
D = 2°47'41.7"
L = 746.47'
T = 377.41'
R = 2,050.00'

BEGIN ASPHALT OVERLAY

-L1- POT Sta. 89+00.00

-Y50- PT Sta. 15+19.30

-Y50-

FAYETTEVILLE VA COMPANY, LLC
DB 9176 - PG 240
BM 132 - PG 121

BEGIN ASPHALT OVERLAY

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

COLLAR AND EXTEND
2@48" RCP, HW/HW

RIP RAP AT EMBANKMENT
SEE DETAIL 16

SITE 1
SEE ENLARGEMENT, THIS SHEET

SPECIAL LATERAL BASE DITCH
SEE DETAIL 11

CB

S 58°26'33.7" E

RETAIN SYSTEM

N 55°08'56.9" E -L1-

RETAIN SYSTEM

RETAIN SYSTEM

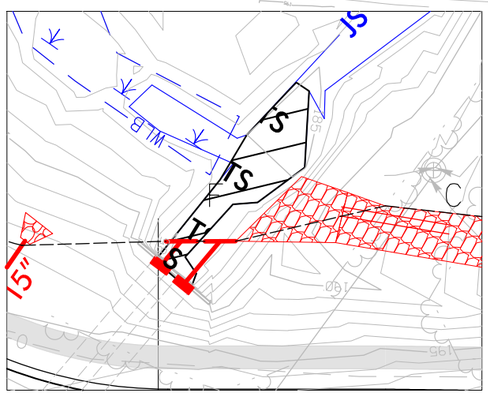
-L1- PC Sta. 97+95.86

BEGIN TIP PROJECT U-4405
-L- STA. 95+00.00

-L1- Sta. 95+82.50=
-Y51- Sta. 16+13.41

BRADFORD INVESTMENTS, LLC
DB 8949 - PG 112
BM C8 - PG 57

MATCHLINE SEE SHEET 4B
-L1- STA 99+00



SITE 1

NOTE: SEE SHEET 52 FOR -L1- PROFILE

I:\4405_Hydraulics\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A_con.dgn
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-160

PERMIT DRAWING
SHEET 4 OF 18

WETLANDS

97+50.00

97+00.00

3:1

195.15

96+50.00

SITE 1

96+00.00

95+50.00

95+00.00

-L1-

$$$$$$SYSTIME$$$$$$
$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 5 OF 18
REVISED: 2/6/2018

NC GRID
NAD 83/NA 2011

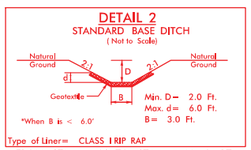
8/17/99

REVISIONS

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

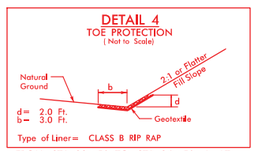
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5"E

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT, THIS SHEET

SITE 2

73
WAL-MART REALESTATE BUSINESS TRUST
DB 9449 PG 76
PB 134 PG 55

85
RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC.
DB 9374 PG 361
PB 132 PG 83

86
RAEFORD CROSSING, LLC
DB 8474 PG 295
PG 127 PG 185

91
RICHARD WILDER & WIFE ALICE
DB 3249 PG 12

83
FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 510 PG 319

84
FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 2495 PG 254

87
SOUTH COAST PROPERTIES, LLC
DB 5539 PG 783

88
JONATHAN H ELLIOT
DB 9676 PG 794
DB 4960 PG 348

89
CROSS DEVELOPMENT
CC RAEFORD LLC
DB 10004 PG 653

90
STEPHEN M. CENTER & WIFE
DB 4342 PG 504
PB 89 PG 122

MATCHLINE SEE SHEET 8
-L- STA 74+75

MATCHLINE SEE SHEET 29
-Y5- STA 23+00

MATCHLINE SEE SHEET 10
-L- STA 88+00

CLASS II RIP RAP
EST 52 TONS
EST 50 SY
GEOTEXTILE

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

CL B RIP RAP
EST 2 TONS
EST 7 SY
GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=20 CY
SLOPE=0.3%
EST 30 TONS
EST 45 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL 2
EST DDE=150 CY
SLOPE=1.7%
EST 165 TONS
EST 350 SY GEOTEXTILE

TOE PROTECTION
SEE DETAL 4

JB w/MH
SEE SPECIAL DETAIL

COLLAR AND EXTEND

SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)

CLASS II RIP RAP
EST 140 TONS
EST 105 SY GEOTEXTILE

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

300' UNIFORM LANE SHIFT

360° TAPER (LT. TURN)

150' LANE TAPER (RT. TURN)

PROP. CONC. SIDEWALK

PROP. 1'-6" C&G

PROP. 2'-6" C&G

5' MONOLITHIC CONC. ISLAND

DO NOT DISTURB SIGN

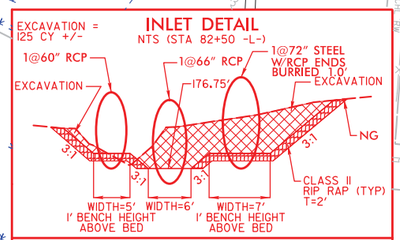
RETAIN EXISTING SIDEWALK

RETAIN SYSTEM

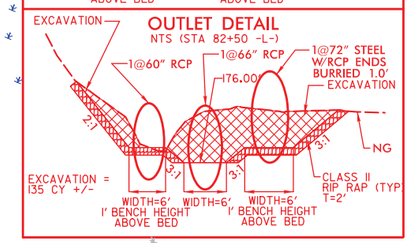
TIE TO EXIST

REMOVE

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)

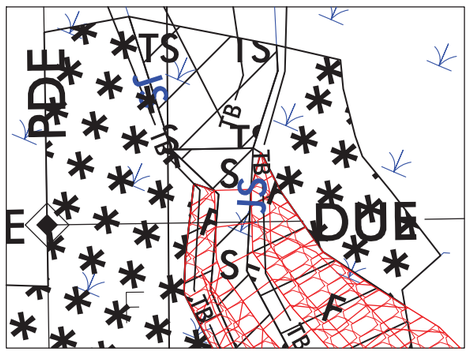


-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

*** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00***



SITE 2 INLET

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

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erobeson

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

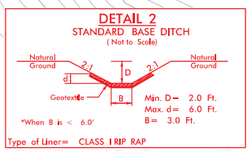
PERMIT DRAWING
SHEET 6 OF 18
REVISED: 2/6/2018

NC GRID
NAD 83/NA 2011

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

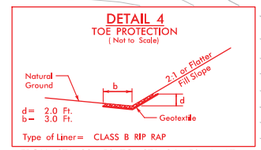
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CLASS I RIP RAP
FROM STA. 77+03 TO STA. 77+90 -L- RT
FROM STA. 78+76 TO STA. 78+95 -L- LT

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP
FROM STA. 83+50 TO STA. 84+50 -L- LT

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- SC Sta. 81+54.72

-L- Sta.76+45.55 =
-Y5- Sta. 21+12.54

-Y5- PC
Sta. 21+62.48

-L- N 65° 39' 46.5"E

-L- CS Sta. 87+88.62

-L- TS Sta. 80+54.72

SITE 2
SEE ENLARGEMENT THIS SHEET

SITE 2

73 WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

85 RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

86 RAEFORD CROSSING LLC DB 8474 PG 355 PG 127 PG 185

91 RICHARD WILDER & WIFE ALICE DB 3249 PG 12

83 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

84 FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

87 SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

88 JONATHAN H ELLIOT DB 7416 PG 794 DB 4960 PG 1348

89 CROSS DEVELOPMENT OC RAEFORD LLC DB 10004 PG 653

90 STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

RETAIN SYSTEM
TIE TO EXIST
DO NOT DISTURB SIGN
RETAIN EXISTING SIDEWALK
REMOVE
TDE
PUE
DUE
PDE
TUE
STANDARD BASE DITCH SEE DETAIL 2 EST DDE=20 CY SLOPE=0.3% EST 30 TONS EST 45 SY GEOTEXTILE
CLASS II RIP RAP EST 52 TONS EST 50 SY GEOTEXTILE
CLASS II RIP RAP EST 95 TONS EST 90 SY GEOTEXTILE
CL. B RIP RAP EST 2 TONS EST 7 SY GEOTEXTILE
TOE PROTECTION SEE DETAIL 4
JB w/MH SEE SPECIAL DETAIL
360° TAPER (LT. TURN)
150' LANE TAPER (RT. TURN)
300' UNIFORM LANE SHIFT
COLLAR AND EXTEND
SPECIAL COLLAR AND EXTEND RCP CULVERTS ON BOTH ENDS (VARYING SLOPES)
STANDARD BASE DITCH SEE DETAIL 2 EST DDE=150 CY SLOPE=1.7% EST 165 TONS EST 350 SY GEOTEXTILE
CLASS II RIP RAP EST 140 TONS EST 105 SY GEOTEXTILE
CLASS II RIP RAP EST 210 SY GEOTEXTILE
PROP. CONC. SIDEWALK
PROP. 1'-6" C&G
PROP. 2'-6" C&G
5' MONOLITHIC CONC. ISLAND
TYPE 350
15" RCP-IV
18" RCP-IV
30" RCP-IV
42" RCP-IV
48" RCP-IV
DI
CB
JB w/MH
R=50'
40' INC
50' INC
25' INC
RAEFORD RD 27' BST
RAEFORD RD 28' BST
US 401 BUS

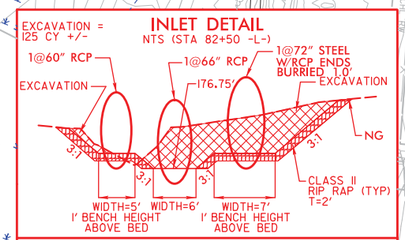
MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 29 -Y5- STA 23+00

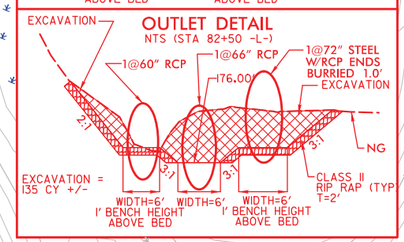
MATCHLINE SEE SHEET 10 -L- STA 88+00

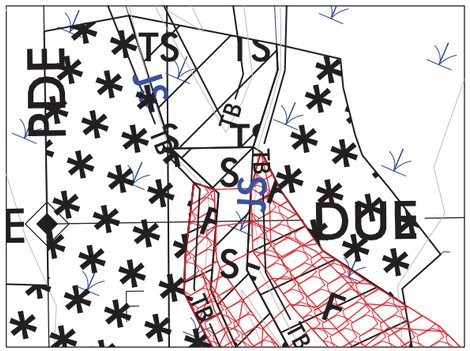
-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

INLET DETAIL
NTS (STA 82+50 -L-)



OUTLET DETAIL
NTS (STA 82+50 -L-)





SITE 2 INLET

50' 0' 50' 100'
SCALE
200' 0' 200' 400'
INSET SCALE

DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 46 FOR -Y5- PROFILE

REVISIONS
8/17/99

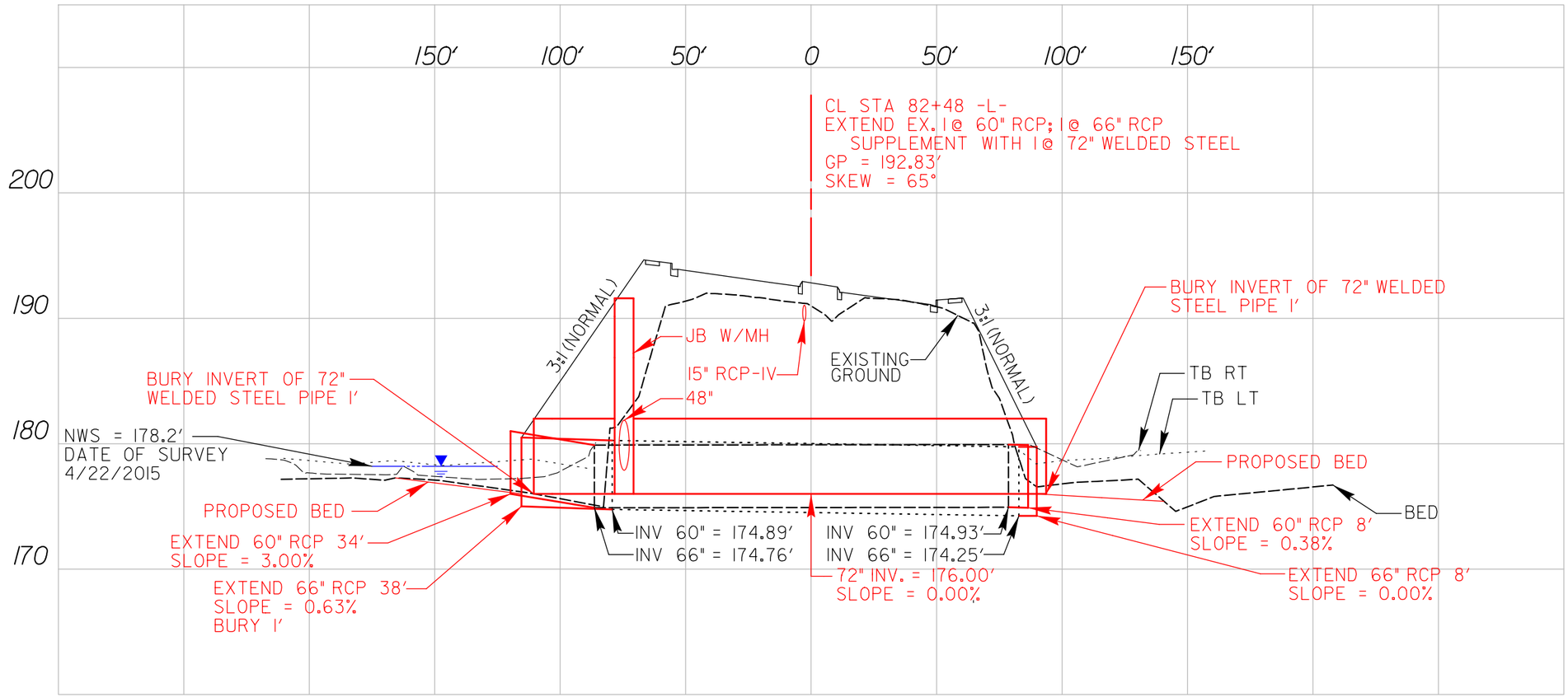
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erobeson

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 7 OF 18



$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$

8/23/99

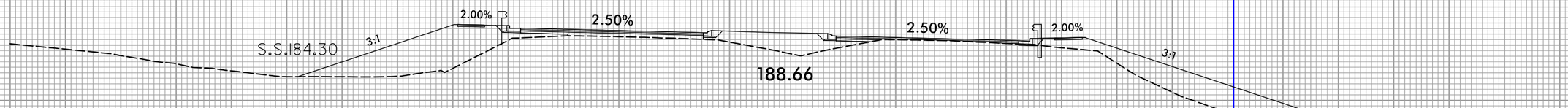
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-24

PERMIT DRAWING
SHEET 8 OF 18

85+00.00

84+50.00

WETLANDS



84+00.00

SITE 2

83+50.00

83+00.00

–L–

$$$$USERNAME$$$$ $$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

8/17/99

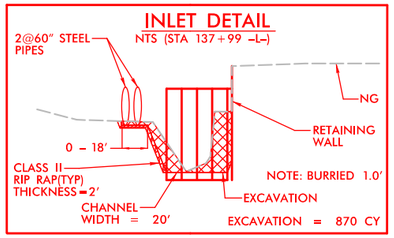
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

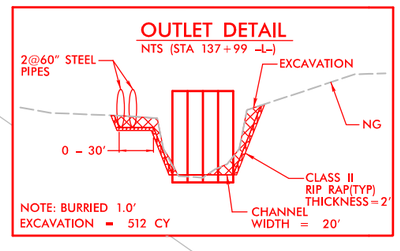
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NC GRID
NAD 83/NA 2011

INLET DETAIL
NTS (STA 137+99 -L-)



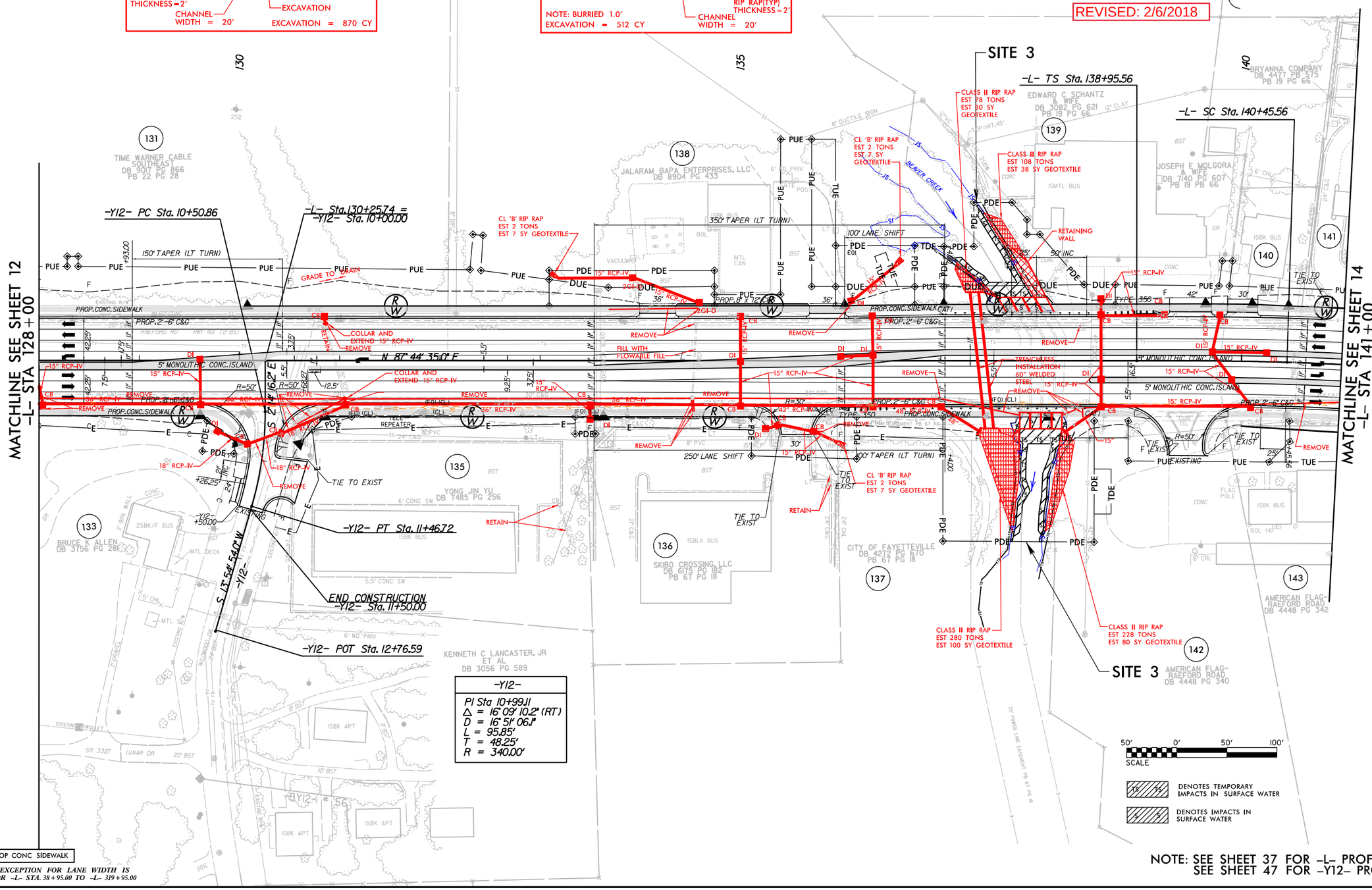
OUTLET DETAIL
NTS (STA 137+99 -L-)



-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

PERMIT DRAWING
SHEET 9 OF 18

REVISED: 2/6/2018



-Y12-	
PI Sta 10+99.11	
Δ = 16° 09' 10.2" (RT)	
D = 16° 51' 06.1"	
L = 95.85'	
T = 48.25'	
R = 340.00'	

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

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erichberger

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NC GRID
NAD 83/NA 2011

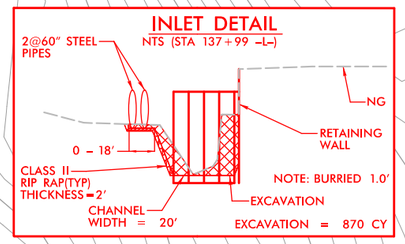
-L-
PIs Sta 139+95.56
Θs = 1° 43' 07.9"
Ls = 150.00'
LT = 100.00'
ST = 50.00'

PI Sta 144+71.01
Δ = 19° 18' 58.8" (RT)
D = 2° 17' 30.6"
L = 842.83'
T = 425.45'
R = 2,500.00'
SE = 0.03

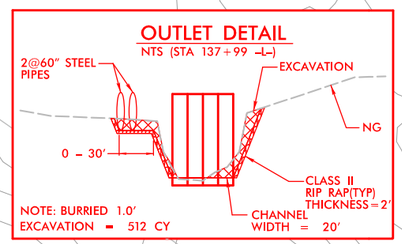
PERMIT DRAWING SHEET 10 OF 18

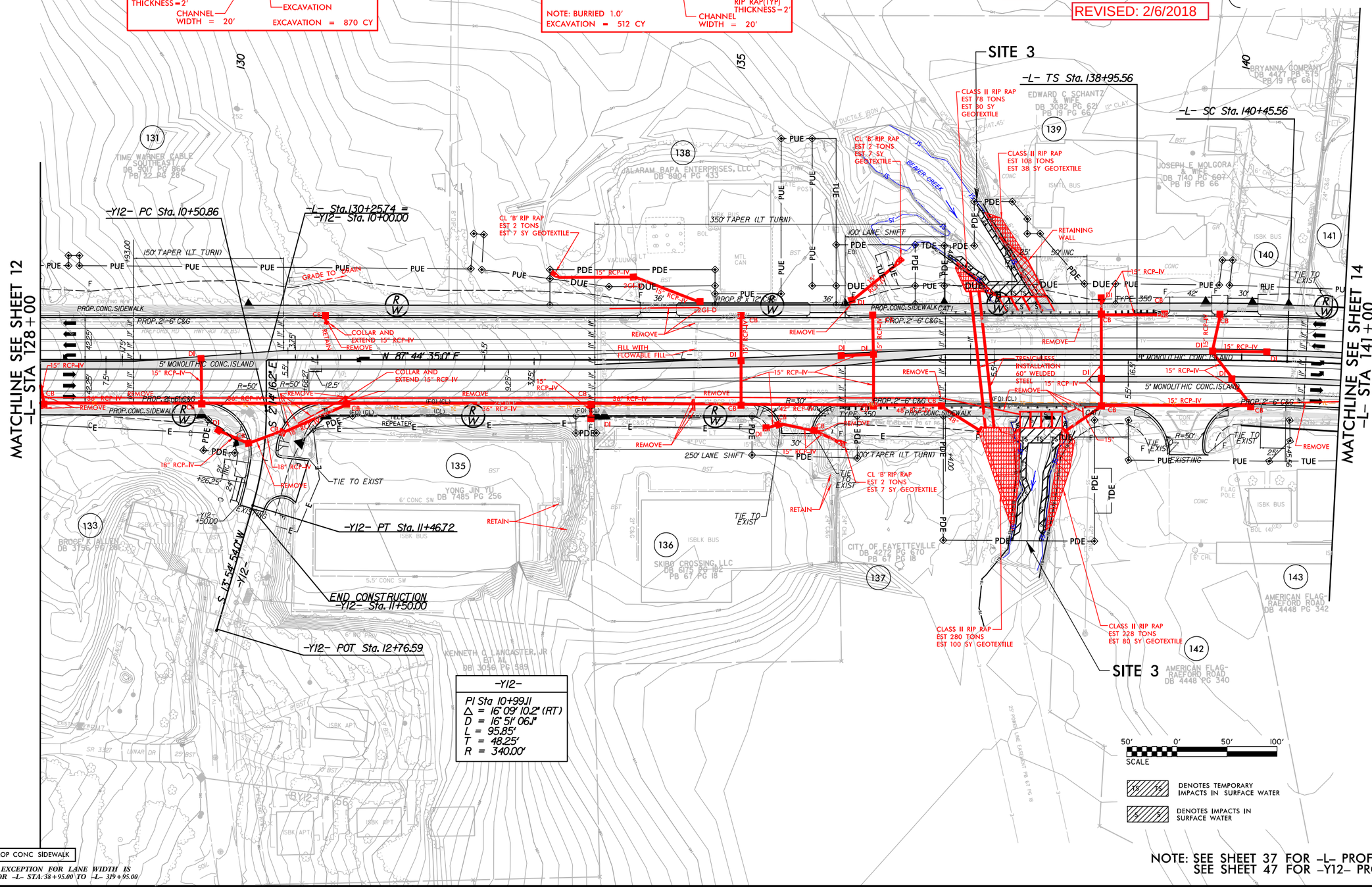
REVISED: 2/6/2018

INLET DETAIL
NTS (STA 137+99 -L-)



OUTLET DETAIL
NTS (STA 137+99 -L-)





** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 47 FOR -Y12- PROFILE

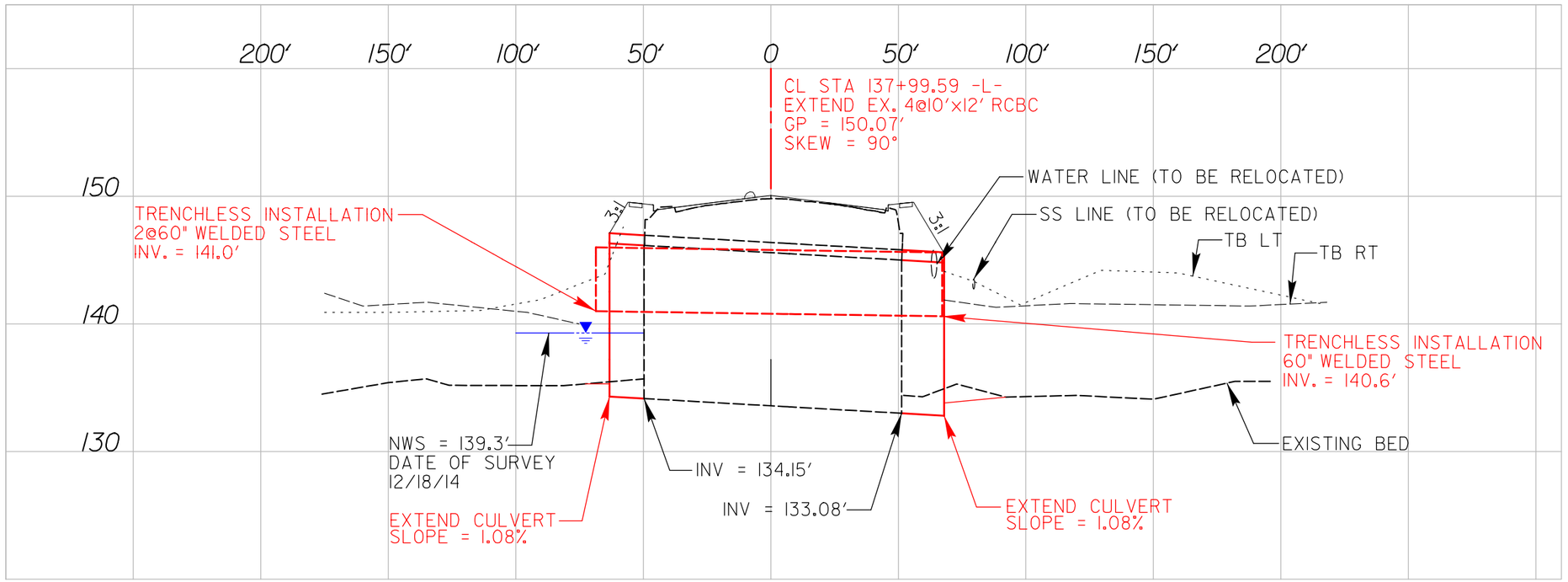
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 11 OF 18



$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 12 OF 18

REVISED: 2/6/2018

NAD 83/NA 2011
NC GRID

8/17/99

REVISIONS

–L–

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Ls = 150.00'	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	LT = 100.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	ST = 50.00'	L = 311.01'
T = 425.45'	ST = 50.00'		T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

BEGIN CONSTRUCTION
–Y13– Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

–L– CS Sta. 148+88.39

–L– Sta. 148+21.72 =
–Y14– Sta. 10+00.00

–L– ST Sta. 150+38.39

–L– SC Sta. 153+54.56

–L– TS Sta. 152+04.56

END CONSTRUCTION
–Y14– Sta. 11+45.00

–Y14– POT Sta. 11+89.87

–L– Sta. 142+66.31 =
–Y13– Sta. 20+11.93

MATCHLINE SEE SHEET 13
–L– STA 141+00

MATCHLINE SEE SHEET 15
–L– STA 154+00

SITE 4

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR –L– STA. 38+95.00 TO –L– 319+95.00*

INLET DETAIL
NTS (STA 143+37 –L–)

OUTLET DETAIL
NTS (STA 143+37 –L–)

NOTE: SEE SHEET 37 & 38 FOR –L– PROFILE
SEE SHEET 47 FOR –Y13– PROFILE
SEE SHEET 48 FOR –Y14– PROFILE

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erichberger

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 13 OF 18

REVISED: 2/6/2018

NAD 83/NA 2011
NC GRID

-L-

PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

REVISIONS

8/17/99

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erichberger

BEGIN CONSTRUCTION
-Y13- Sta. 16+50.00

SITE 4
SEE ENLARGEMENT, THIS SHEET

SITE 4 INLET

SITE 4

-L- Sta.142+66.31 =
-Y13- Sta. 20+11.93

-L- CS Sta.148+88.39

-L- Sta.148+21.72 =
-Y14- Sta. 10+00.00

-L- ST Sta.150+38.39

-L- SC Sta.153+54.56

-L- TS Sta.152+04.56

END CONSTRUCTION
-Y14- Sta. 11+45.00
-Y14- POT Sta. 11+89.87

MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

50' 0' 50' 100'
SCALE

100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

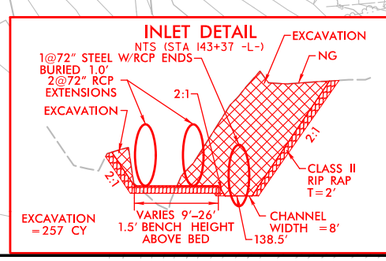
DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

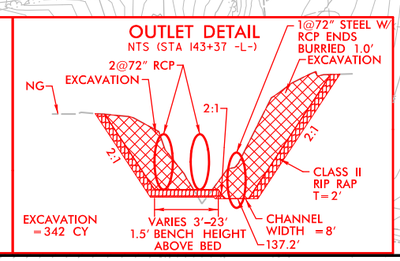
PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

INLET DETAIL
NTS (STA 143+37 -L-)



OUTLET DETAIL
NTS (STA 143+37 -L-)



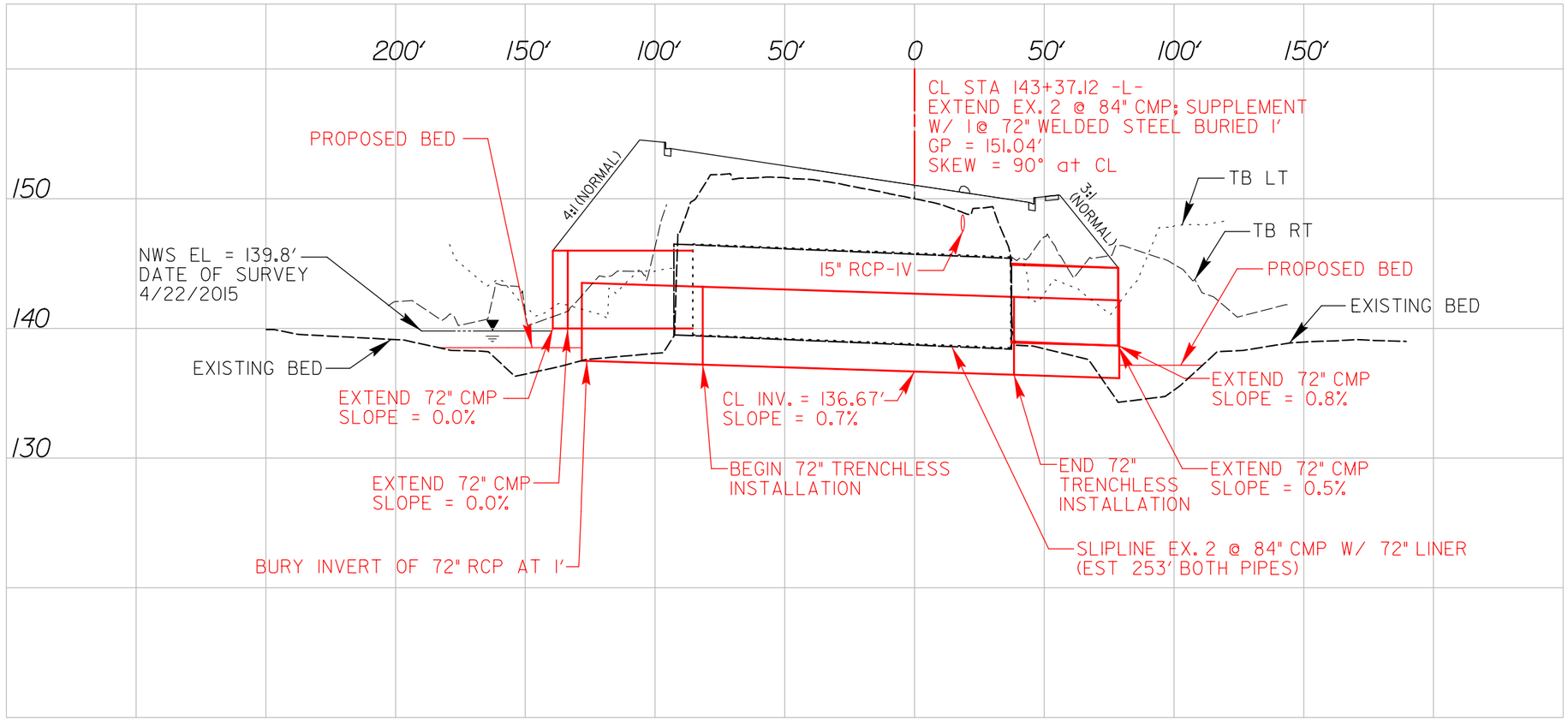
NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE
SEE SHEET 48 FOR -Y14- PROFILE

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 14 OF 18



$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$DESIGN$$$$
$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 15 OF 18

REVISED: 2/6/2018

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17

-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/ CLASS II RIP RAP 146 TONS 188 SY GEOTEXTILE

CLASS II RIP RAP 25 TONS 32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

-L- Sta.229+68.64 = -Y25- Sta. 10+00.00

-Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

-Y25-

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

SCALE 50' 0' 50' 100'

INSET SCALE 100' 0' 100' 200'

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** *A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00*

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

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erichberger

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING SHEET 16 OF 18

REVISED: 2/6/2018

8/17/99

REVISIONS

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

SITE 5 INLET

SITE 5
SEE ENLARGEMENT, THIS SHEET

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

FLOODPLAIN BENCH W/ CLASS II RIP RAP 146 TONS 188 SY GEOTEXTILE

CLASS II RIP RAP 25 TONS 32 SY GEOTEXTILE

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

N 87° 34' 14.6" E

N 86° 29' 42.7" E

S 3° 44' 47.0" E

-Y25-

-L- Sta. 229+68.64 = -Y25- Sta. 10+00.00

END CONSTRUCTION -Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

SITE 5

FLOODPLAIN BENCH W/ CLASS II RIP RAP 397 TONS 420 SY GEOTEXTILE

CLASS II RIP RAP 178 TONS 188 SY GEOTEXTILE

INLET DETAIL
NTS (STA 221+22 -L-)

OUTLET DETAIL
NTS (STA 221+22 -L-)

EXCAVATION = 245 CY

EXCAVATION = 390 CY

1.5' BENCH HEIGHT ABOVE BED

FILL SCOUR HOLE W/SELECT MATERIAL

NOTE: SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 48 FOR -Y25- PROFILE

50' 0' 50' 100'
SCALE
100' 0' 100' 200'
INSET SCALE

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

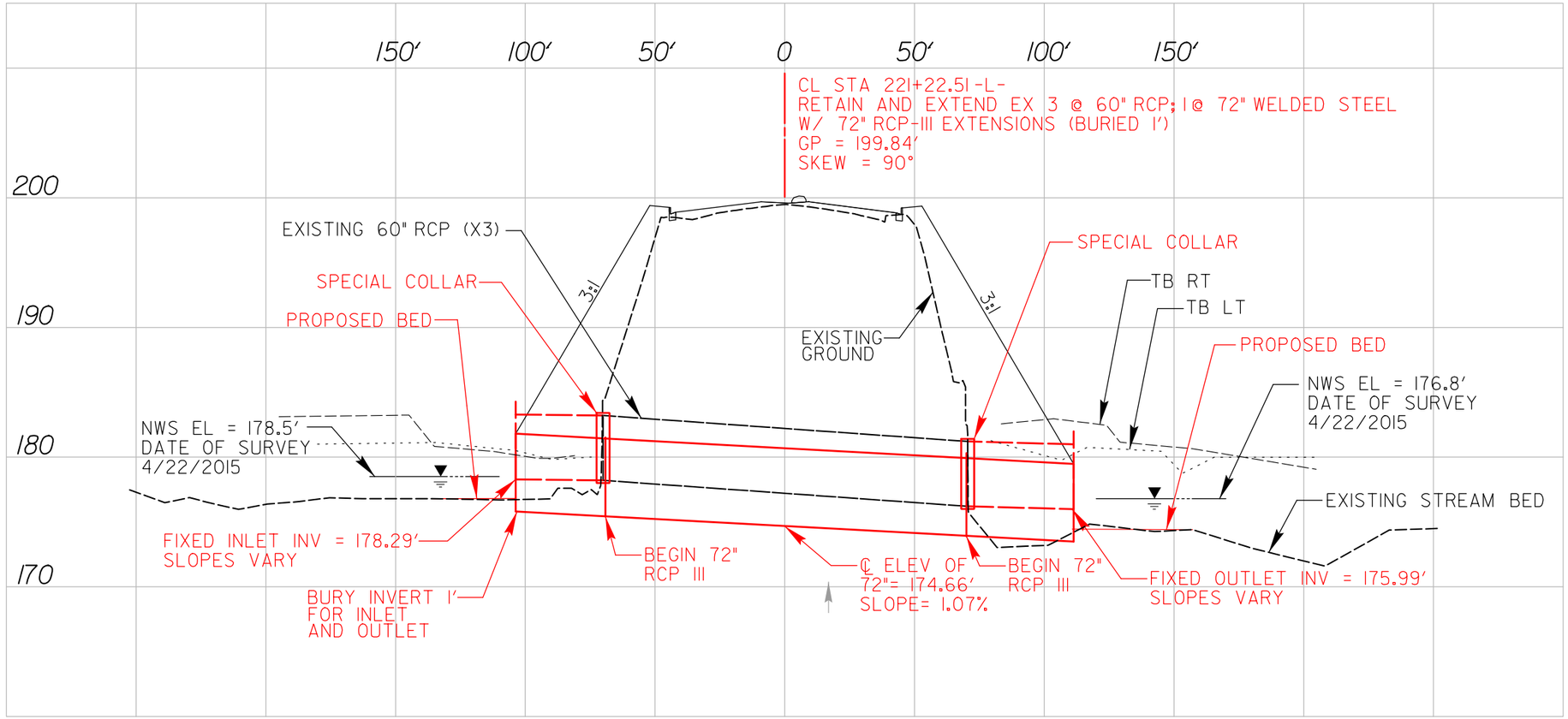
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erichberger

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PERMIT DRAWING
SHEET 17 OF 18



$$$$SYSTIME$$$$
$$$$USERNAME$$$$

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L1- 96+44/96+82 LT	EXTENSION OF 2@48" RCP						< 0.01	< 0.01	8	43	
2	-L- 81+47/84+92 RT & LT	EXTENSION OF 1@60", 1@66" RCP & 1@72" TRENCHLESS WELDED STEEL	0.10			0.10		0.03	0.04	201	41	
3	-L- 137+03/138+25 RT & LT	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL						0.03	0.03	33	42	
	BANK STABLIIZATION	EXTENSION OF 4@10'X12' RCBC & 2@60" TRENCHLESS WELDED STEEL								176	171	
4	-L- 143+03/144+02 RT &LT	SLIPLINE EX. 2@84" CMP W/ 72" LINER & 1@72" TRENCHLESS WELDED STEEL						0.07	< 0.01	216	51	
5	-L- 143+03/144+02 RT &LT	EXTENSION OF 3@60" RCP & 1@72" TRENCHLESS WELDED STEEL						0.09	0.02	206	27	
TOTALS*:			0.10			0.10		0.22	0.11	840	375	0

*Rounded totals are sum of actual impacts

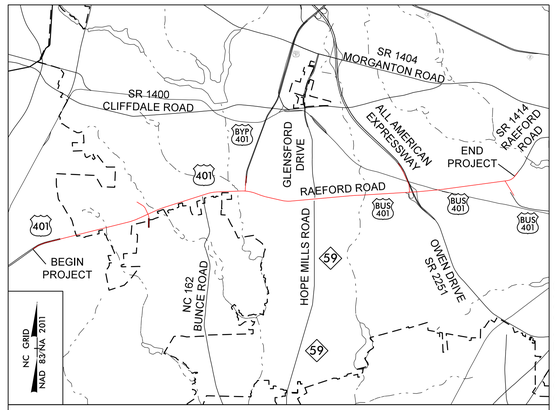
NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REVISED 2/6/2018
CUMBERLAND COUNTY
U-4405
39049.1.1

Revised 2018 02 06

09/08/99

TIP PROJECT: U-4405



VICINITY MAP

90% PLANS

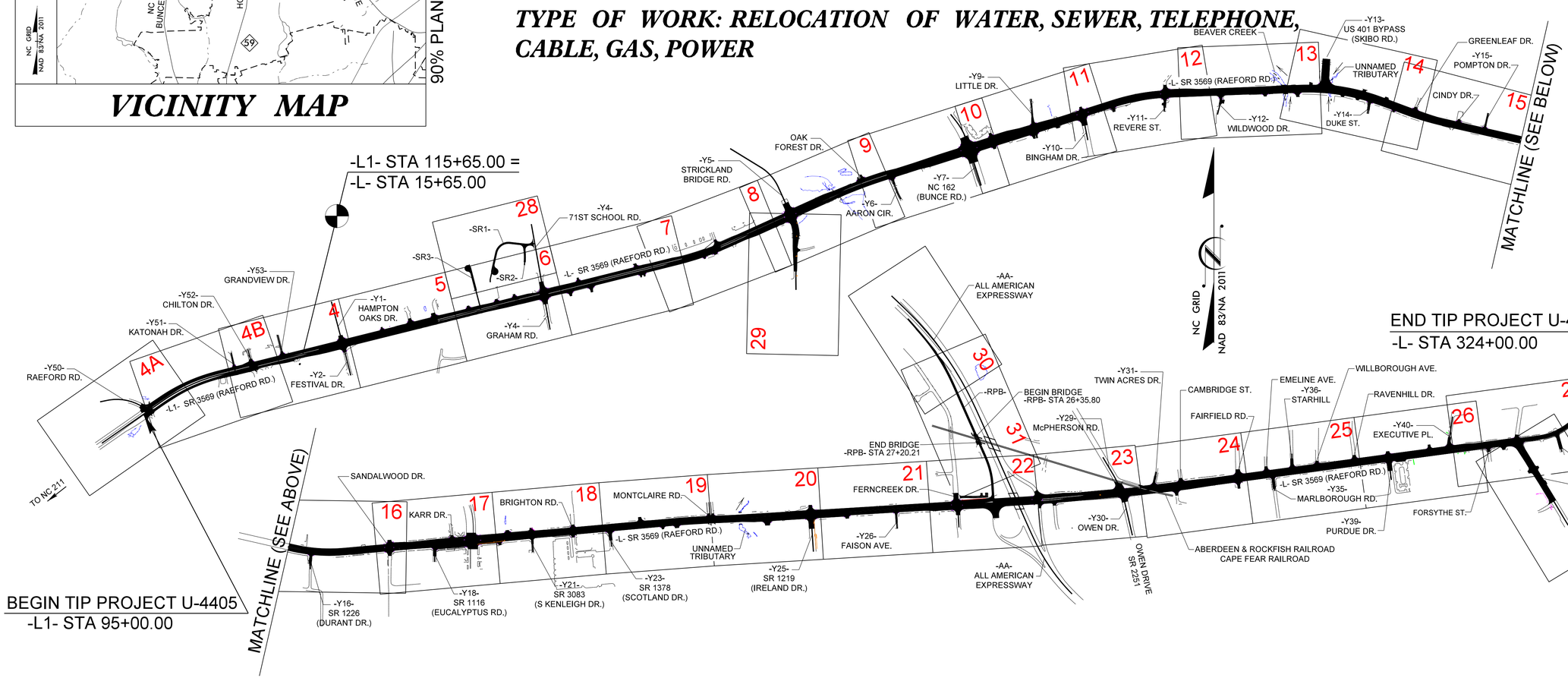
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U–4405	UE–1

NEU PERMIT PLANS
CUMBERLAND COUNTY

LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

TYPE OF WORK: RELOCATION OF WATER, SEWER, TELEPHONE, CABLE, GAS, POWER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UE–1	NEU PERMIT TITLE SHEET
UE–2	UE PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) WATER – PWC WATER AND SEWER
(B) SEWER – PWC WATER AND SEWER
(C) POWER – PWC POWER
(D) TELEPHONE – CENTURYLINK
(E) CABLE – SPECTRUM
(F) POWER – PWC POWER
(G) GAS – PIEDMONT NATURAL GAS
(H) WATER – AQUA INC.

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH NC 27699–1555
PHONE (919) 707–6690
FAX (919) 250–4151

BO HEMPHILL, P.E.	UTILITIES REGIONAL ENGINEER
KELVIN MARTIN	UTILITIES ENGINEER
KYLE PLEASANT	UTILITIES AREA COORDINATOR
LARRY JAMES JR.	UTILITIES COORDINATOR

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-2

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

UE-2 CORRESPONDS TO RDY 9

F F DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

SITE 1
MECHANIZED CLEARING IN WETLANDS = < 0.01 ACRES
HAND CLEARING IN WETLANDS= 0.02 ACRES

SITE 2
TEMPORARY IMPACTS IN SURFACE WATER = < 0.01 ACRES

SITE 3
EXCAVATION IN WETLANDS = < 0.01 ACRES
TEMPORARY FILL IN WETLANDS = 0.02 ACRES

SITE 4
EXCAVATION IN WETLANDS = < 0.01 ACRES
FILL IN WETLANDS = 0.01 ACRES

MATCHLINE SEE SHEET 8 -L- STA 74+75

MATCHLINE SEE SHEET 10 -L- STA 88+00

WAL-MART REALESTATE BUSINESS TRUST DB 9449 PG 76 PB 134 PG 55

RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC. DB 9374 PG 361 PB 132 PG 83

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 510 PG 319

FRANCES H ELLIOT, TRUSTEE DB 7732 PG 470 DB 2495 PG 254

SOUTH COAST PROPERTIES, LLC DB 5539 PG 783

JONATHAN H ELLIOT DB 3676 PG 794 DB 4960 PG 348

RAEFORD CROSSING, LLC DB 8474 PG 492 PG 127 PG 185

CCF REAL ESTATE FOUNDATION DB 8043 PG 712 DB 89 PG 122

RICHARD WILDER & WIFE ALICE DB 3249 PG 12

STEPHEN M. CENTER & WIFE DB 4342 PG 504 PB 89 PG 122

US 401 BUS RAEFORD RD

STRICKLAND BRIDGE RD

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	UE-5

UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 5
TEMPORARY IMPACTS
IN SURFACE WATER = <.01 ACRES;
= 7.3 LF

SITE 5

ABANDON 146 FT. OF 16" GRAVITY SEWER LINE

45 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

ABANDON 164 FT. OF 16" GRAVITY SEWER LINE

ABANDON 147 FT. OF 16" GRAVITY SEWER LINE

133 FT. OF GRAVITY SEWER TO BE INSTALLED BETWEEN NEW MANHOLES

48 LF OF TEMPORARY CREEK IMPACT WITHIN SURFACE WATERS

SITE 6

SITE 6
TEMPORARY IMPACTS
IN SURFACE WATER = .02 ACRES;
= 22 LF

PROP. 4' DIA. UTILITY MANHOLE MH-13 SL-5- STA. 1+36.13 -L- STA. 224+67.27 OFFSET 84.77 (RT)

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

JOHN M TEW & WIFE SHIRLEY DB 2542 PG 343 PB 23 PG 1

KENT A VAN BELOIS & WIFE DB 3364 PG 865

RREF IIBB-NC, LLC DB 9368 PG 66

IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61

NCP FAYETTEVILLE, LLC DB 6243 PG 563

IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110

-BY27- # 75

5/14/99

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$$$$USERNAME$$$$

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
U1	80+33 to 81+36 -L-	Water/Power Line				< 0.01	0.02					
U2	82+54 to 82+88 -L-	Water Line							< 0.01			
U3	83+24 to 83+63 -L-	Sewer Line		0.02	< 0.01							
U4	85+57 to 85+74 -L-	Water Line	0.01		< 0.01							
U5	221.52 to 222+01	Sewer Line							< 0.01		45	
U6	221+59 to 222+28	Sewer Line							0.02		48	
TOTALS*:			0.01	0.02	< 0.01	< 0.01	0.02		0.03	0	93	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/24/17
CUMBERLAND
U-4405
39049.1.1