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:*

☑ 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?*

☑ 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 **Page** 1 **of** 3

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

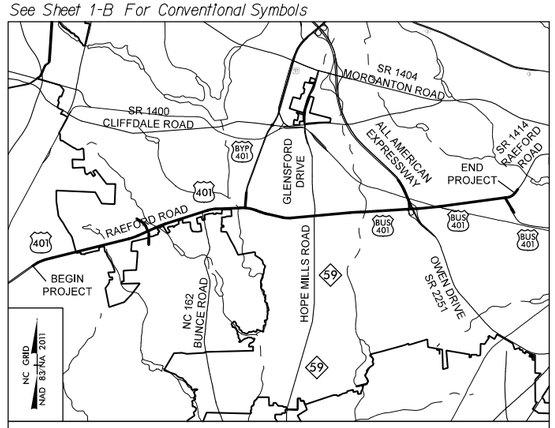
Additional Comments

* 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

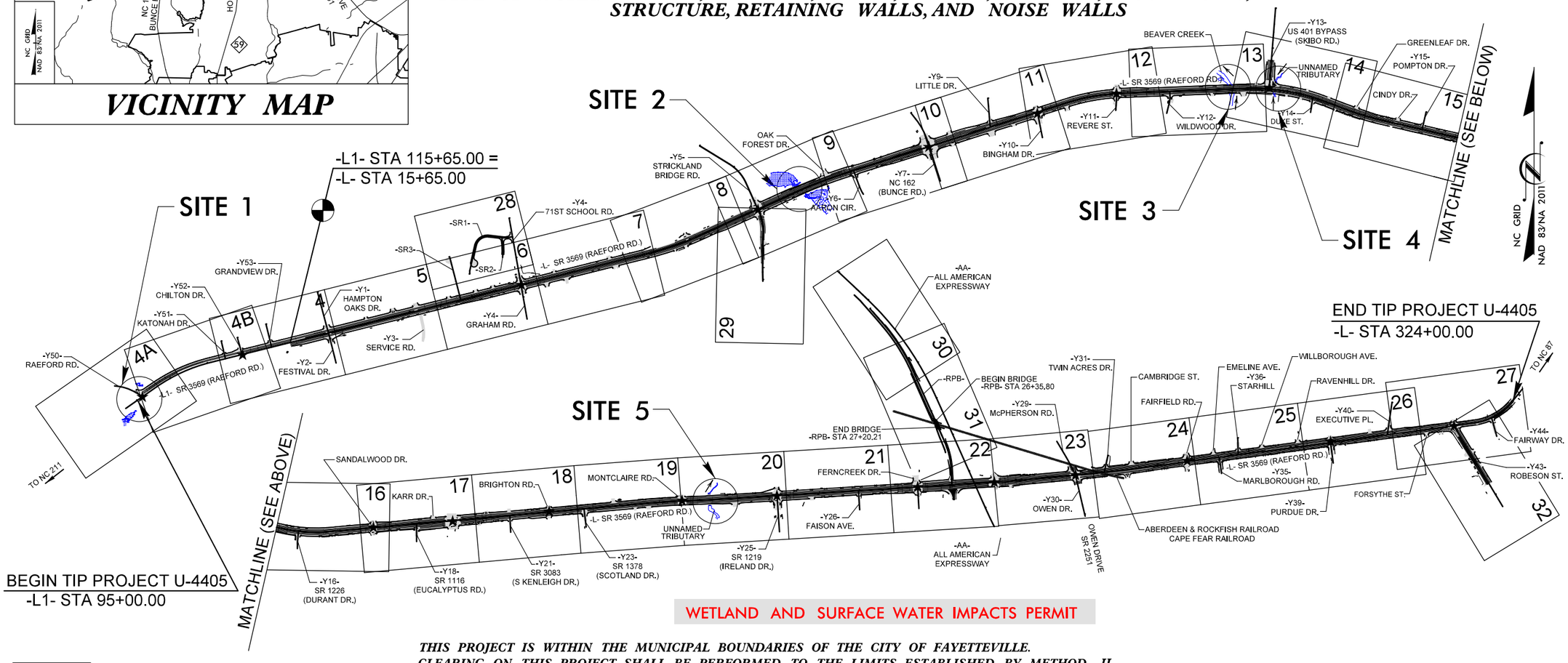
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	

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.*

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

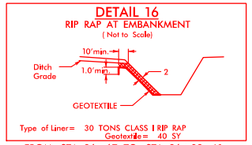
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

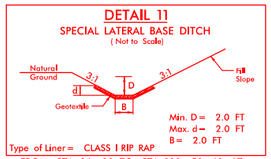
S S DENOTES IMPACTS IN SURFACE WATER

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-

-L1- PC Sta. 97+95.86

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

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

RETAIN SYSTEM

RETAIN SYSTEM

RETAIN SYSTEM

CLASS B RIP RAP
EST 1 TONS
EST 5 SY GEOTEXTILE

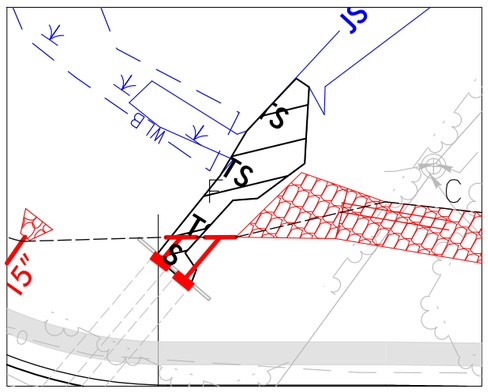
COLLAR AND EXTEND
2@48" RCP IN R/W HW

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

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

Piedmont Natural Gas Company Inc, 4 " PLASTIC

EXISTING R/W

84" ALUM

24" RCP

18" RCP

15" RCP

36" 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)

NOTE: SEE SHEET 52 FOR -L1- PROFILE

1:39:03 AM
R:\Projects\Traffic\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

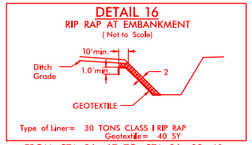
50' 0' 50' 100'
SCALE

150' 0' 150' 300'
INSET SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

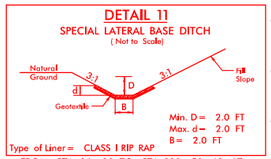
S S DENOTES IMPACTS IN SURFACE WATER

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

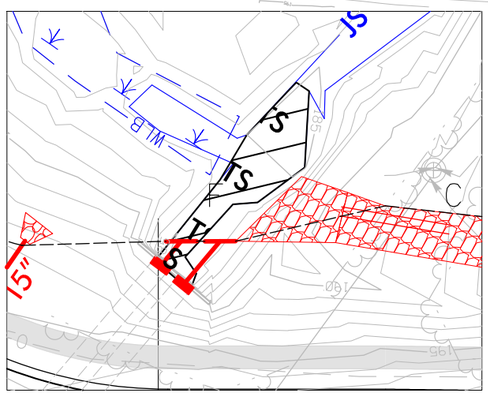
-L1- PC Sta. 97+95.86

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

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

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

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



SITE 1

NOTE: SEE SHEET 52 FOR -L1- PROFILE

10:43:31 AM
R:\U-4405_Wallace\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_04A_con.dgn
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

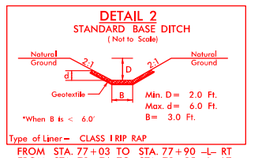
8/17/99

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'

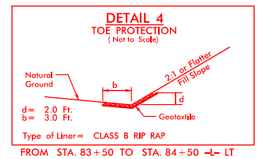
-Y5-
PI Sta 15+94.46 Δ = 34° 10' 44.0" (RT) D = 10° 44' 58.8" L = 317.95' T = 163.86' R = 533.00'

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

-L- N 65° 39' 46.5" E

-Y5- PC
Sta. 21+62.48

-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 DB 8047 PG 712 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 B 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)

CLASS II RIP RAP
EST 210 TONS
EST 210 SY GEOTEXTILE

CLASS II RIP RAP
EST 110 TONS
EST 105 SY GEOTEXTILE

PROP. CONC. SIDEWALK

PROP. 2'-6" C&G

PROP. 1'-6" C&G

SCALE
50' 0' 50' 100'

INSET SCALE
200' 0' 200' 400'

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

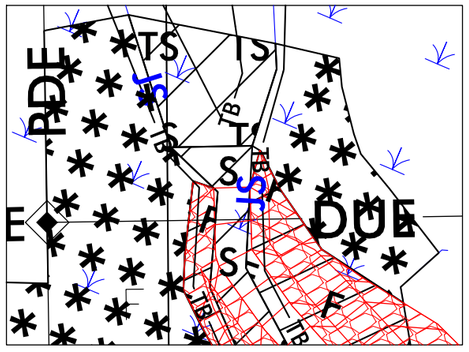
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

PROPOSED SIGNAL

PROP CONC SIDEWALK

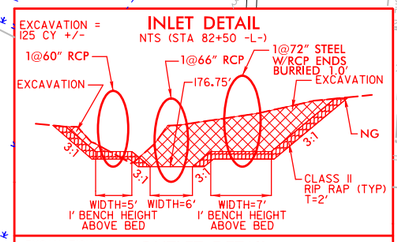
** A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



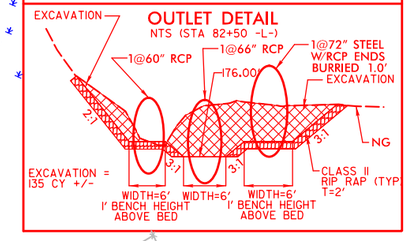
SITE 2 INLET

-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-)



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

I:\421JAM
R:\Civil\Projects\PERMITS_Environmental\Drawings\U-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

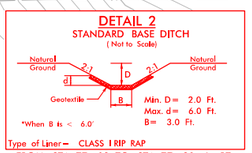
8/17/99

REVISIONS

-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	

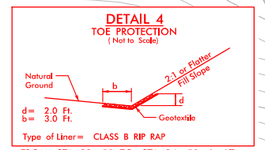
-Y5-
Pl Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

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

-L- CS Sta. 87+88.62

-L- N 65° 39' 46.5" E

-Y5- PC
Sta. 21+62.48

-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

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

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

RAEFORD CROSSING, LLC
DB 8474 PG 305
PG 127 PG 185

RICHARD WILDER & WIFE ALICE
DB 3249 PG 12

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

JOHNATHAN H ELLIOT
DB 9616 PG 794
DB 4960 PG 148

CITY OF REAL ESTATE FOUNDATION
DB 8047 PG 312
DB 89 PG 122

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

CLASS II RIP RAP
EST 7 TONS
EST 7 SY
GEOTEXTILE

CLASS II RIP RAP
EST 218 TONS
EST 210 SY GEOTEXTILE

CLASS II RIP RAP
EST 110 TONS
EST 105 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

JB w/MH
SEE SPECIAL DETAIL

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

COLLAR AND EXTEND

DO NOT DISTURB SIGN

RETAIN EXISTING SIDEWALK

RETAIN SYSTEM

REMOVE

PROP. CONC. SIDEWALK

PROP. 1'-6" C&G

PROP. 2'-6" C&G

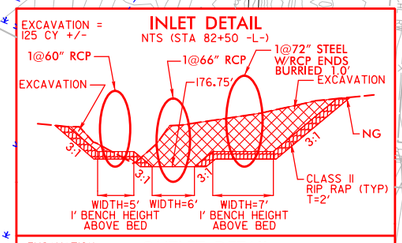
5' MONOLITHIC CONC. ISLAND

300' UNIFORM LANE SHIFT

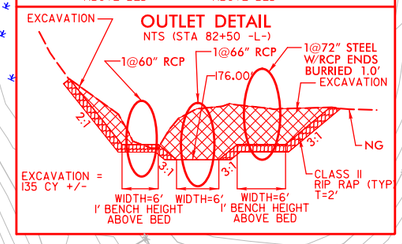
150' LANE TAPER (LT. TURN)

TYPE 350

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



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

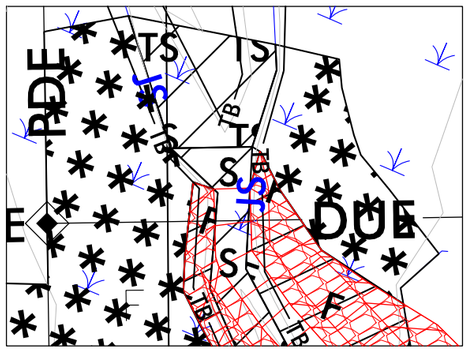


-Y5-
Pl Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

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

NC GRID
NAD 83/NA 2011

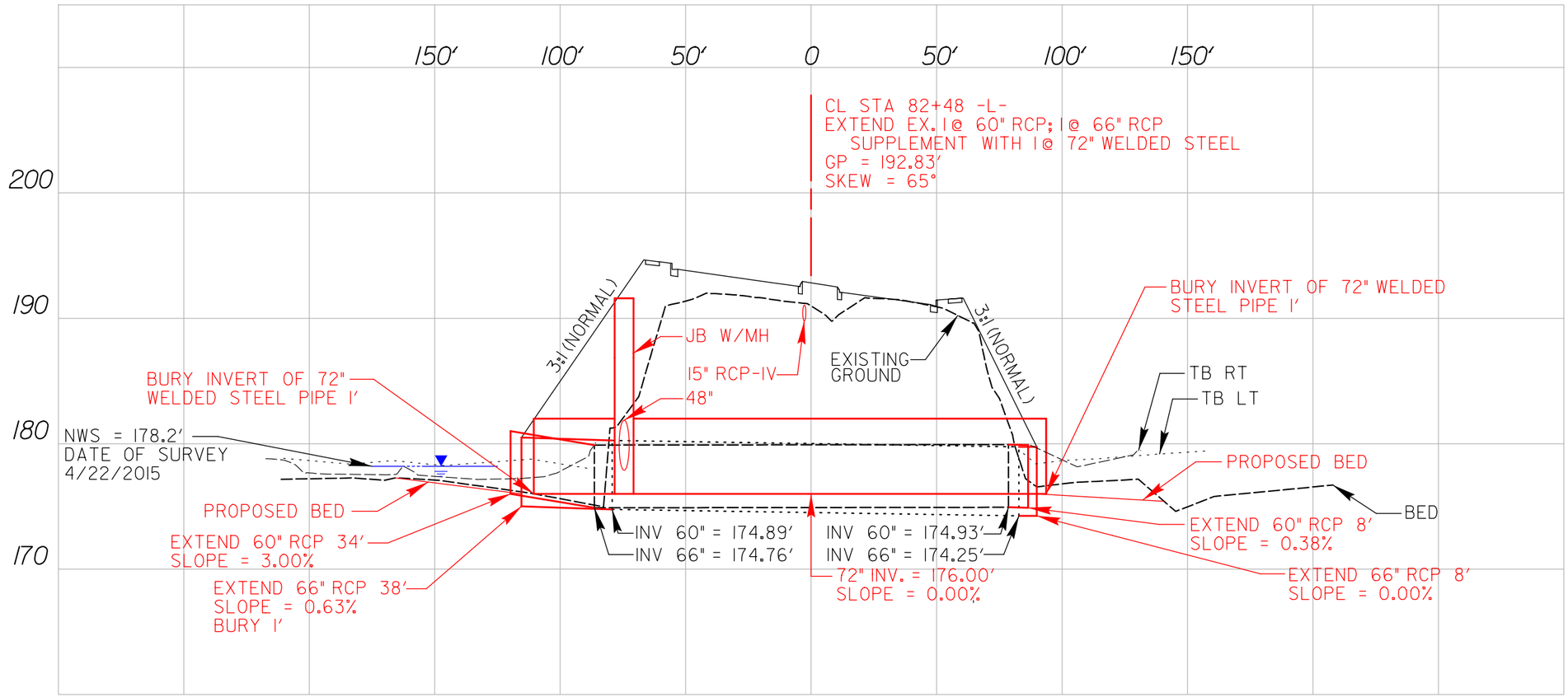
11:43:10 AM
H:\TIP\U-4405\Hydraulics\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_09_con.dgn

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

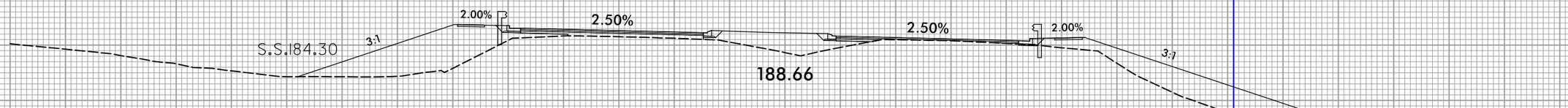
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	X-24

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–

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

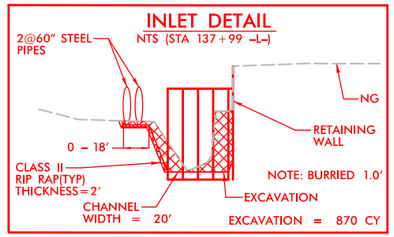
8/17/99

REVISIONS

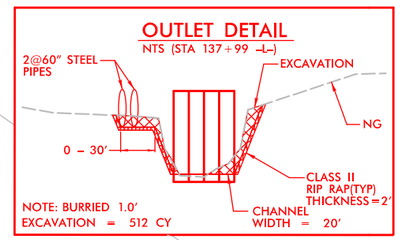
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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



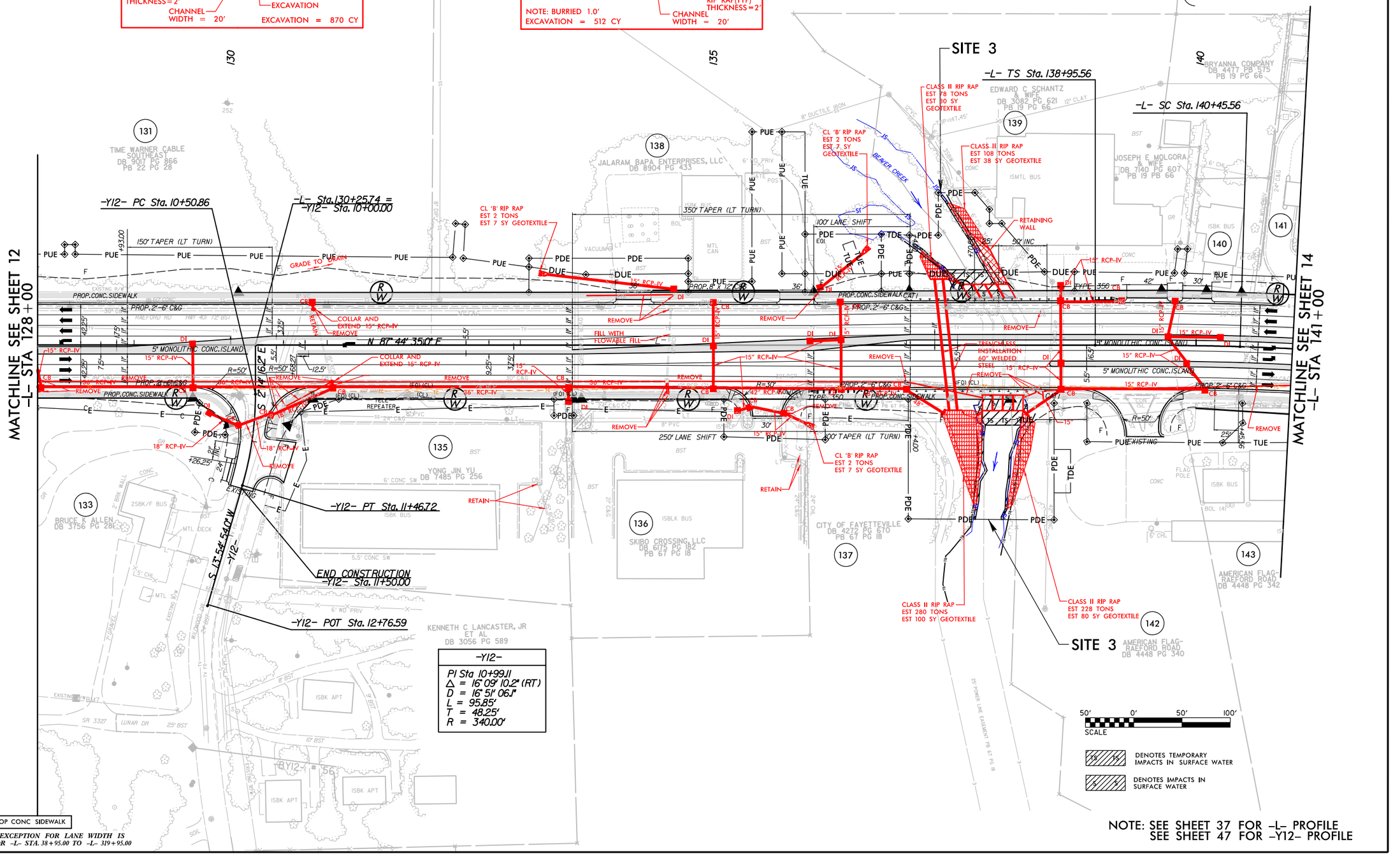
OUTLET DETAIL
NTS (STA 137+99 -L-)



-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

NC GRID
NAD 83/NA 2011

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

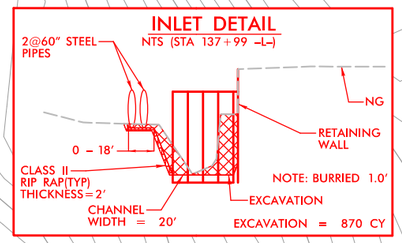
PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

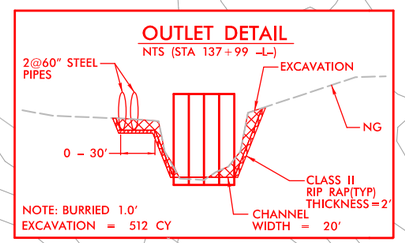
PERMIT DRAWING SHEET 10 OF 18

NC GRID
NAD 83/NA 2011

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

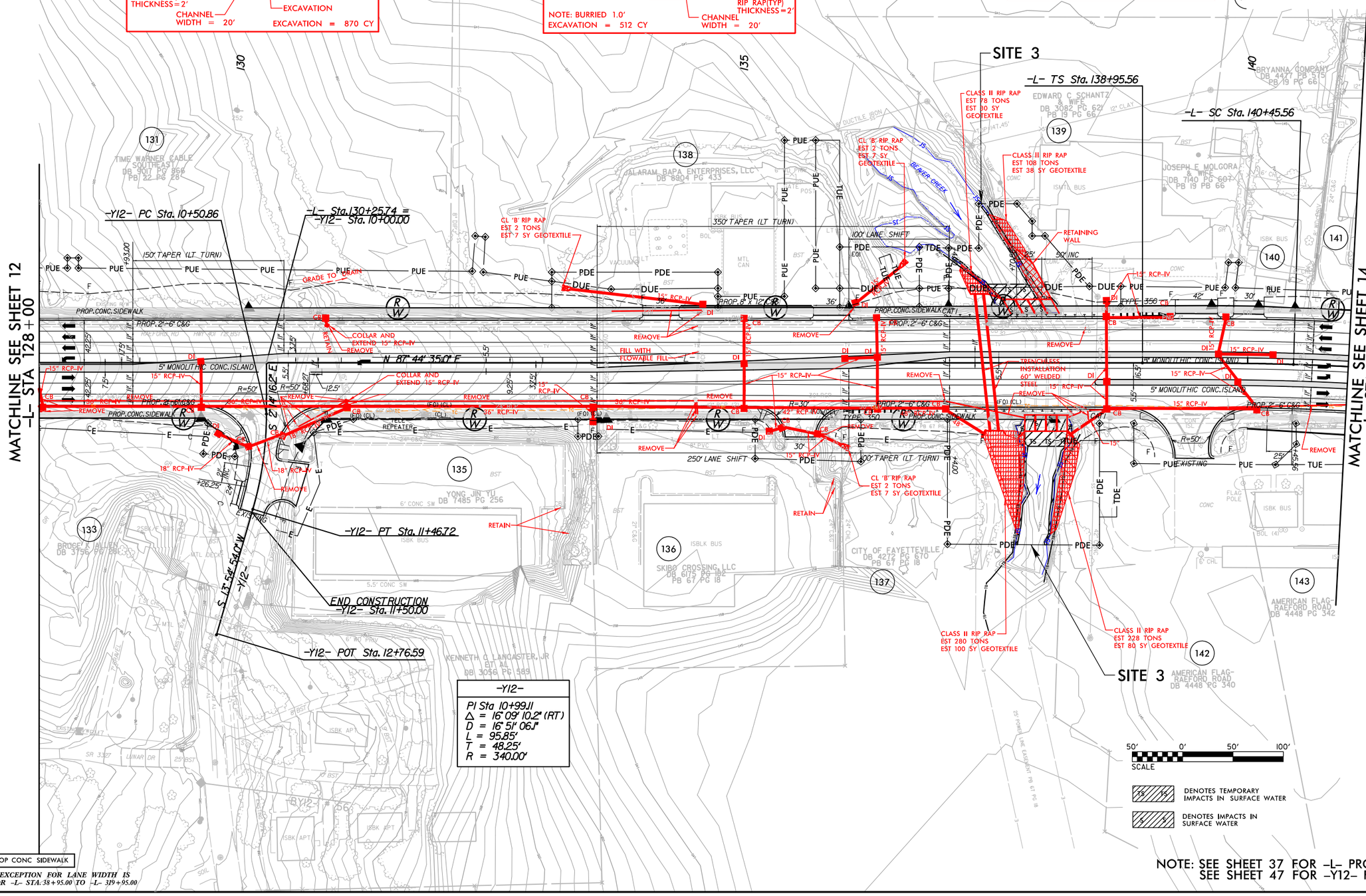


OUTLET DETAIL
NTS (STA 137+99 -L-)



-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



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

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

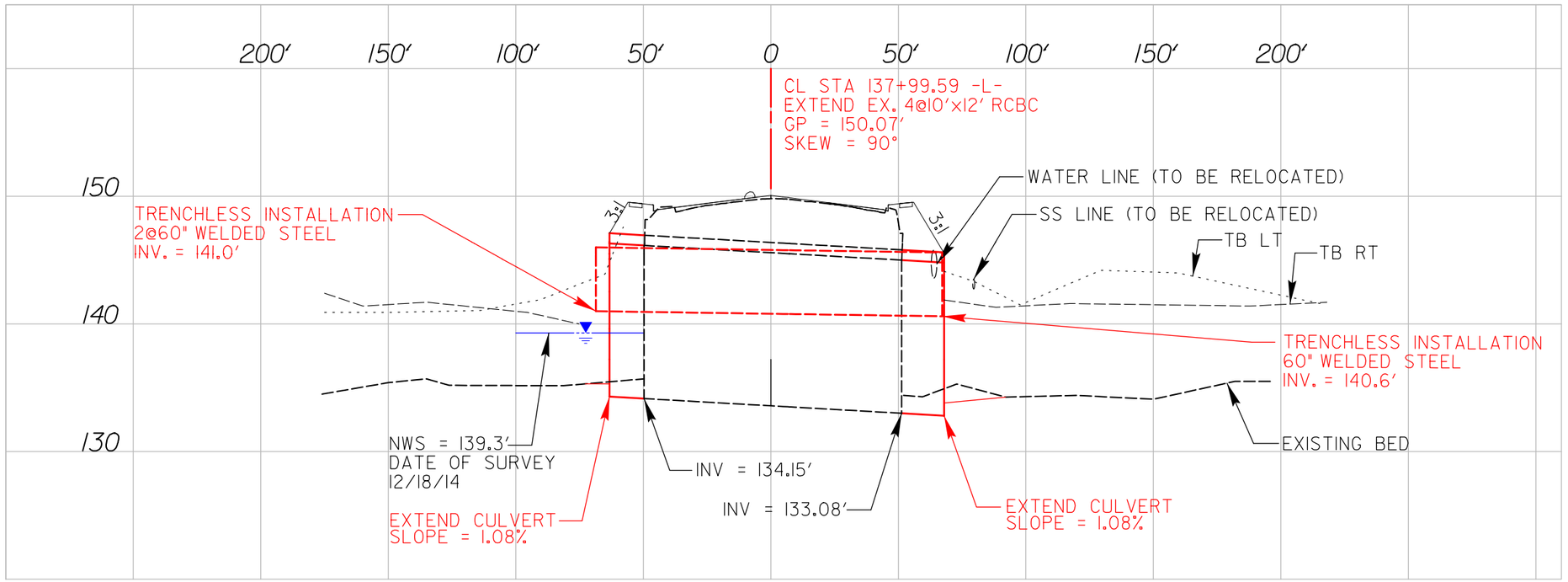
$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

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

-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

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

I:\46108_AM\R-Group\Utilities\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_14.dgn
8/16/08 AM
rlcooper

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

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

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

S 69° 30' 10.3" E

S 4° 34' 14.2" W

S 5° 52' 28.0" W

150' UNIFORM TAPER

300' LANE TAPER

DO NOT DISTURB SIGN

DO NOT DISTURB FENCE

RETAIN SYSTEM

CLASS II RIP RAP
EST 95 TONS
EST 90 SY
GEOTEXTILE

CLASS II RIP RAP
EST 185 TONS
EST 178 SY GEOTEXTILE

CLASS II RIP RAP
EST 175 TONS
EST 170 SY GEOTEXTILE

CLASS II RIP RAP
EST 140 TONS
EST 135 SY GEOTEXTILE

OLAND B LITTLE
DB 3816 PG 595

CLINTON RODNEY JACKSON
DB 8396 PG 758

TARHEEL TACO LLC
DB 8813 PG 161
PB 19 PG 66

OLAND B LITTLE & WIFE BETSY P
DB 2501 PG 620
DB 4627 PG 703
PB 112 PG 26

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
DB 4094 PG 367
DB 4686 PG 25

OLAND B LITTLE
DB 3816 PG 595
DB 4625 PG 636

DAVID A REAVES & WIFE
DB 6097 PG 116

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
DB 2632 PG 417

TREETOP APARTMENTS, LLC
DB 5009 PG 886
DB 2729 PG 507

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
DB 2616 PG 7

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626/
DB 2854 PG 1

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
DB 3093 PG 199

SCHULTZ RENTAL LLC
DB 7092 PG 852
PB 89 PG 54

WAFFLE HOUSE INC
DB 4525 PG 389
PB 92 PG 24

D-J's LEASING CORP
DB 2704 PG 1
PB 89 PG 54

AMERICAN FLAG-RAEFORD ROAD
DB 4448 PG 342

WILLIAM D SHERMAN JR
DB 5294 PG 275
DB 57 PG 29

HEAVERD DOBBS OXENDINE
DB 7320 PG 881
PB 16 PG 80

RAY JOHNSON
DB 7936 PG 308
PB 16 PG 80

BRYANNA COMPANY
DB 4471 PG 515
PB 19 PG 66

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

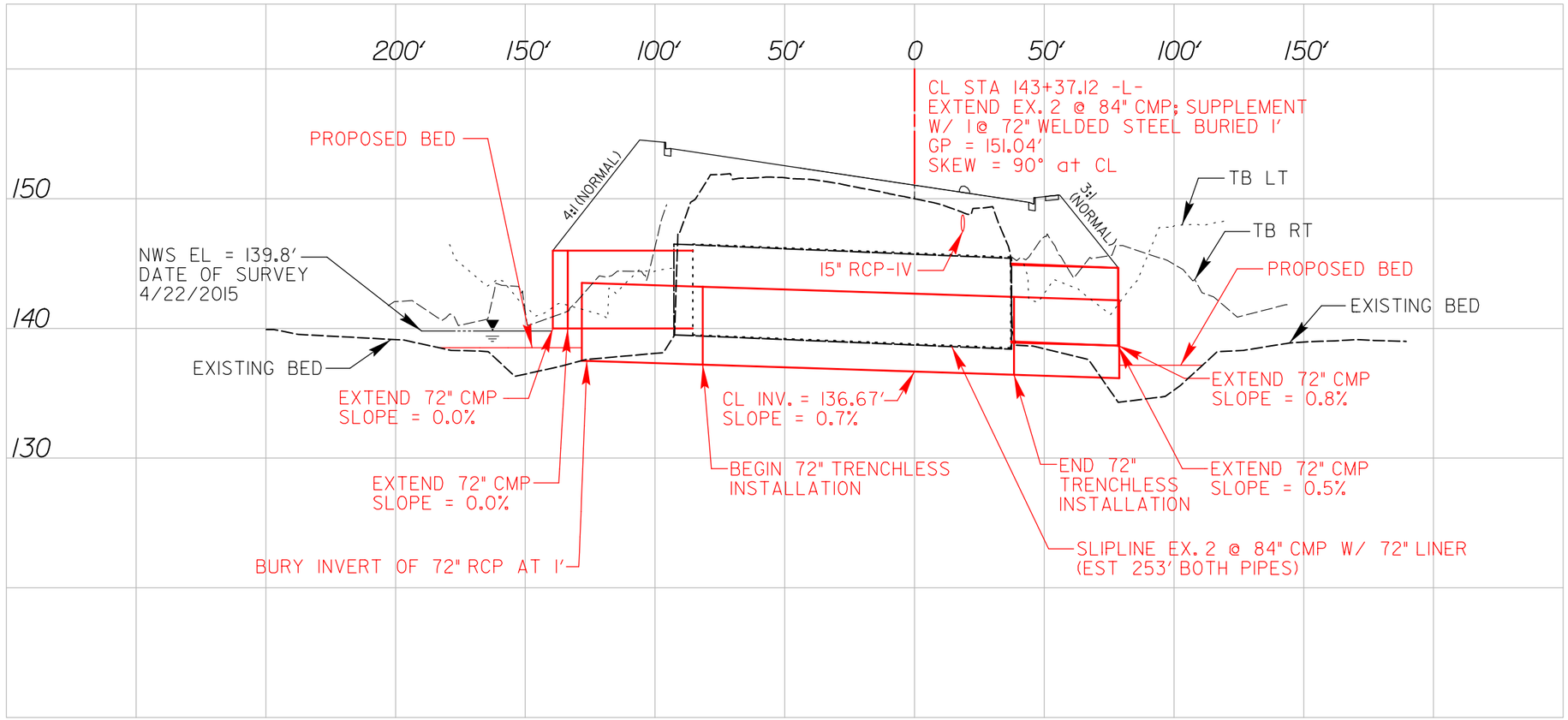
I:\4642.AW\R-Surfaces\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_14_con.dgn
8/16/2012 AM
jrcarter

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

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

VINCENT 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

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

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

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-

150' TAPER (LT TURN)

150' TAPER (RT TURN)

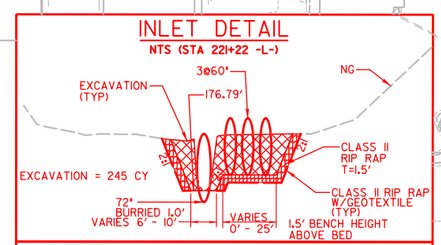
SITE 5

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

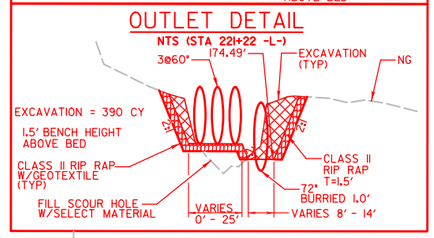
CLASS II RIP RAP
178 TONS
188 SY GEOTEXTILE

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

10:47:37 AM
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stricklandr

8/17/99

REVISIONS

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

-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

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

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' 42.1" E

S 3° 44' 47.0" E

-Y25-

END CONSTRUCTION -Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

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

SITE 5

RETAIN SYSTEM

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

JOHN M TEW & WIFE SARIBEL DB 6621 PG 545 PB 86 PG 110

VINCENT A VAN BELOIS & WIFE DB 3364 PG 865

RREF ILBB-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

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

3@60°
176.79'
EXCAVATION (TYP)
NG
EXCAVATION = 245 CY
CLASS II RIP RAP T=1.5'
CLASS II RIP RAP W/GEOTEXTILE (TYP)
72" BURRIED 1.0'
VARIES 6' - 10'
VARIES 0' - 25'
1.5' BENCH HEIGHT ABOVE BED

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

3@60°
174.49'
EXCAVATION (TYP)
NG
EXCAVATION = 390 CY
1.5' BENCH HEIGHT ABOVE BED
CLASS II RIP RAP W/GEOTEXTILE (TYP)
FILL SCOUR HOLE W/SELECT MATERIAL
CLASS II RIP RAP T=1.5'
72" BURRIED 1.0'
VARIES 0' - 25'
VARIES 8' - 14'

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

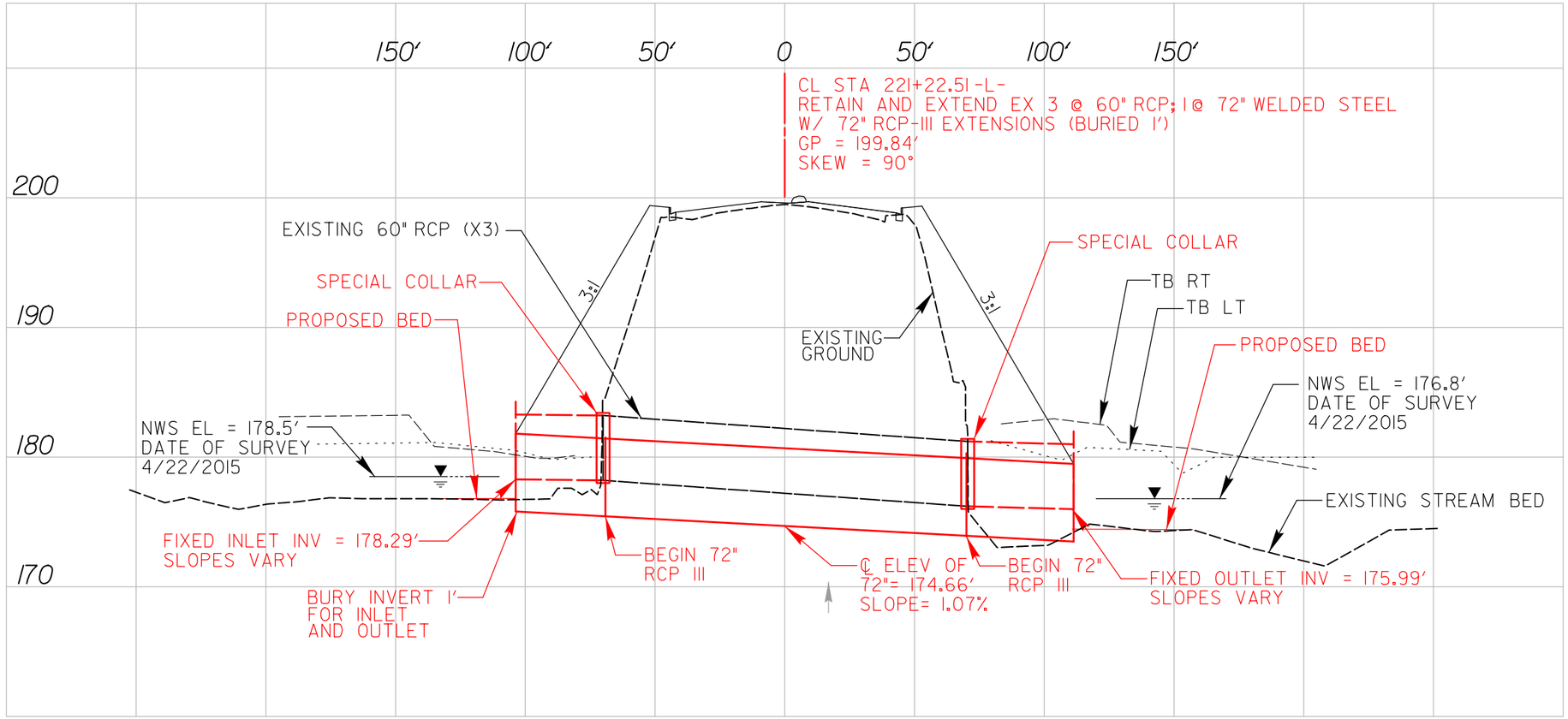
I:\18_07_AM\Projects\PERMITS_Environmental\Drawings\4405_Hyd_prm_psh_20_con.dgn
8/18/2021 7:41:07 AM
kmcdaniel

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.

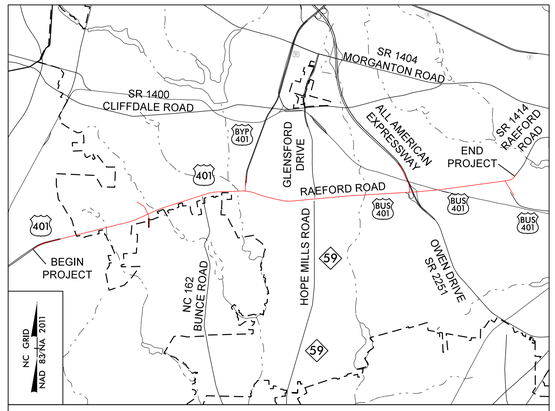
Fill and excavation constitute a part of these temporary surface water impacts. The total environmental impact caused by these proposed sewer main installations is 0.02 acres due to temporary surface water disturbances. PWC will install an 8 inch gravity sewer main on the south side of Raeford Rd. from 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

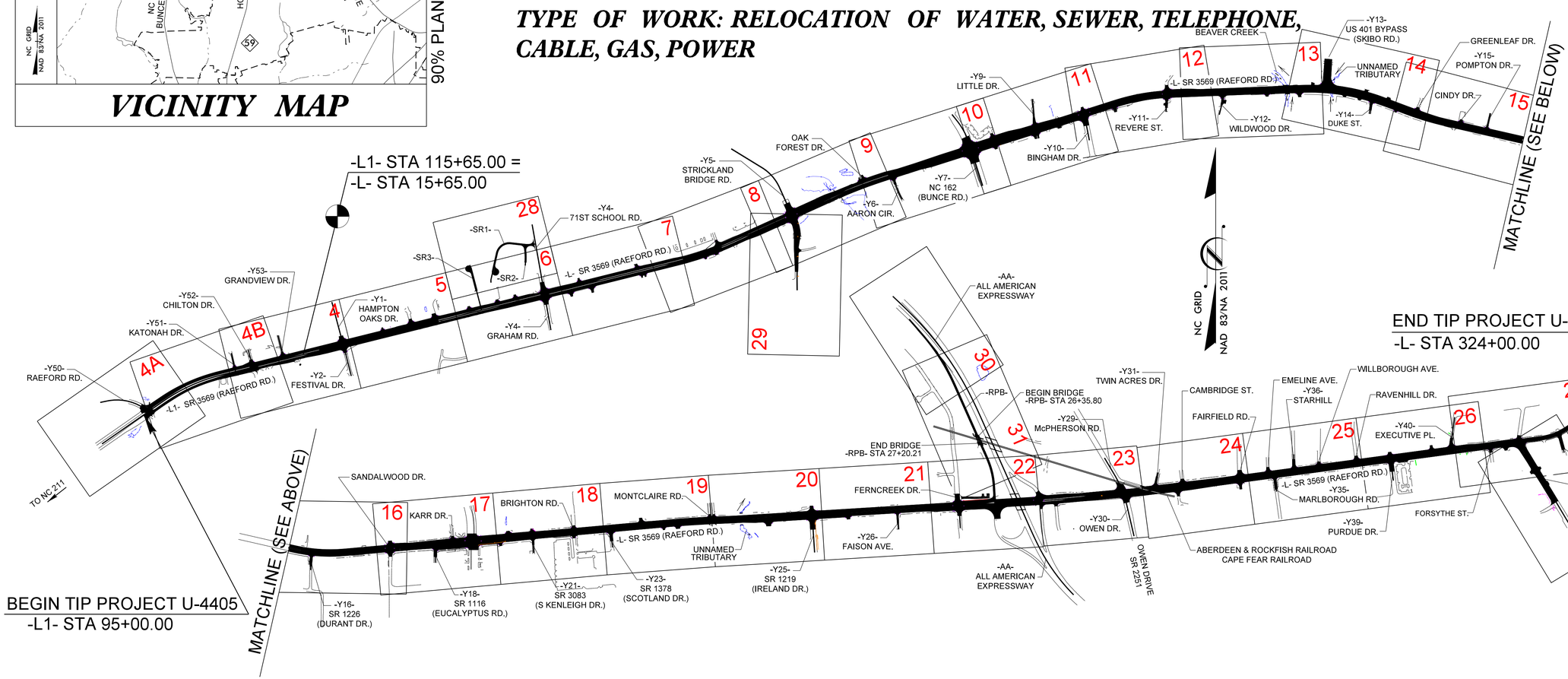
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEU PERMIT PLANS
CUMBERLAND COUNTY

T.I.P. NO.	SHEET NO.
U–4405	UE–1

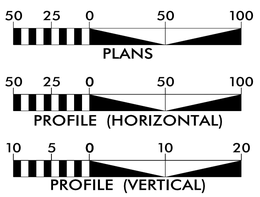
LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

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



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



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
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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

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

JONATHAN H ELLIOT DB 3676 PG 794 DB 4960 PG 348

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

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Preliminary Plans - Not For Construction

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

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

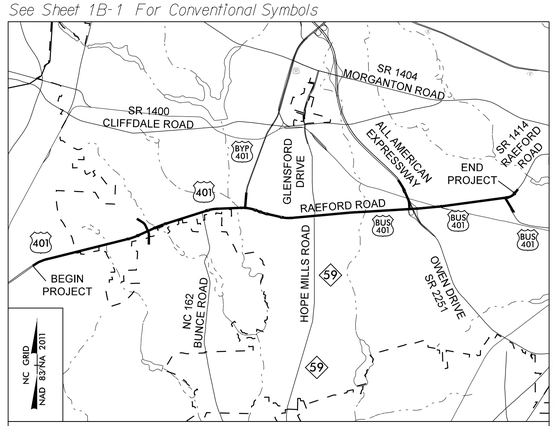
CUMBERLAND COUNTY

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

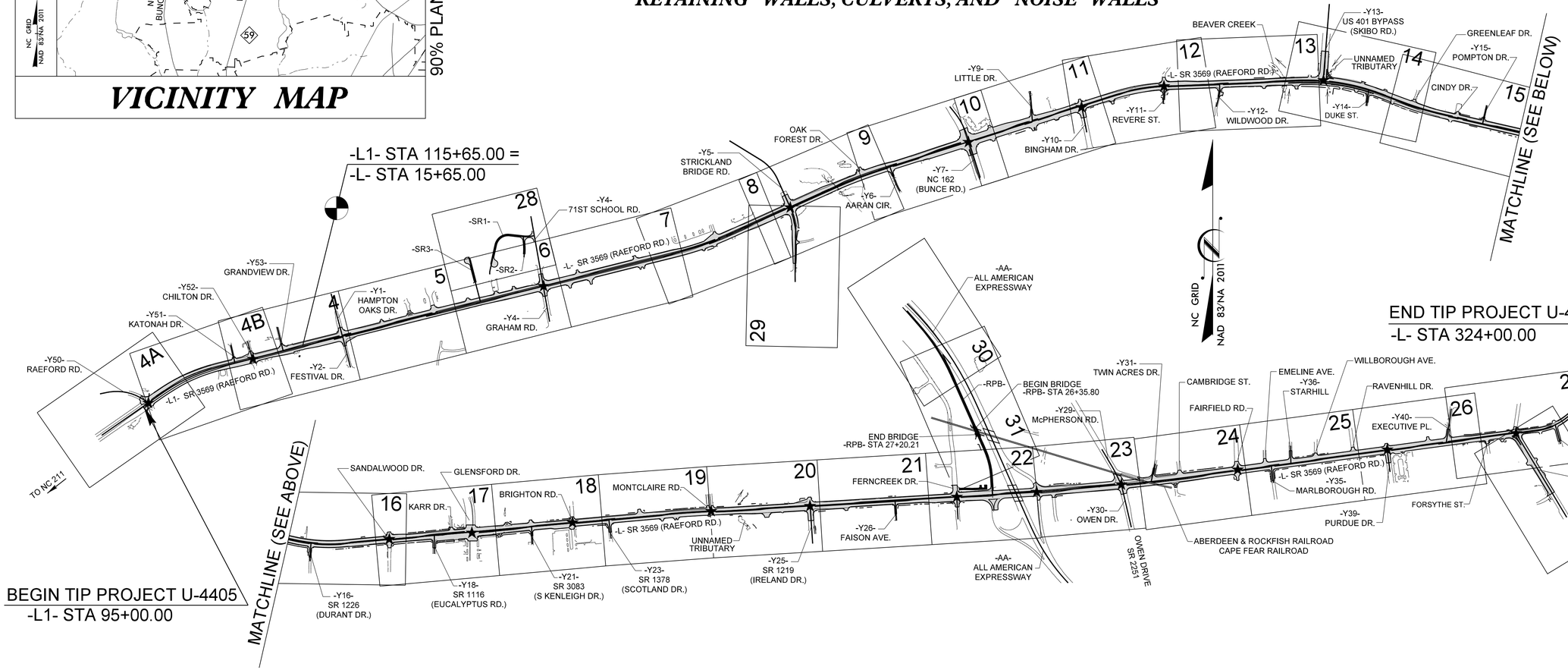
LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

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



VICINITY MAP

90% PLANS



★ 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

TIP PROJECT: U-4405

CONTRACT:

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 JOHN 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

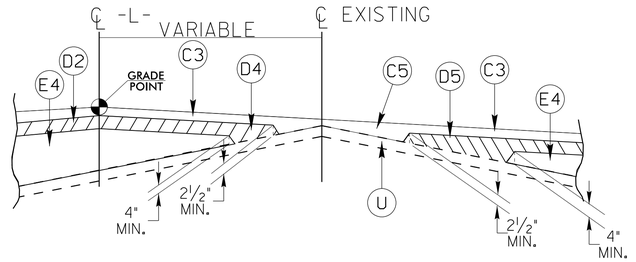
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

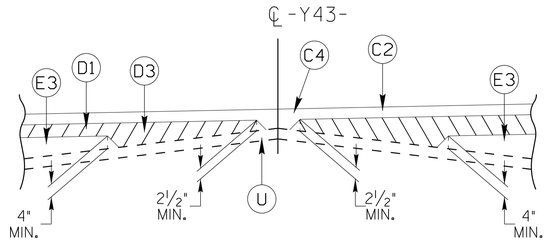
PAVEMENT SCHEDULE

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.		

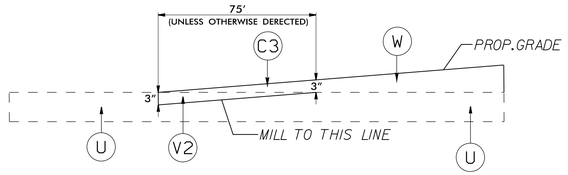
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



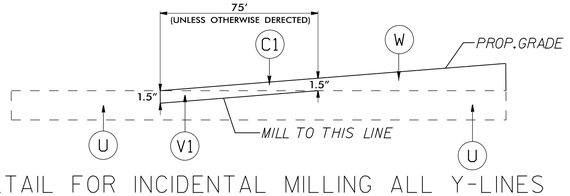
W1 DETAIL #1 SHOWING METHOD OF WEDGING



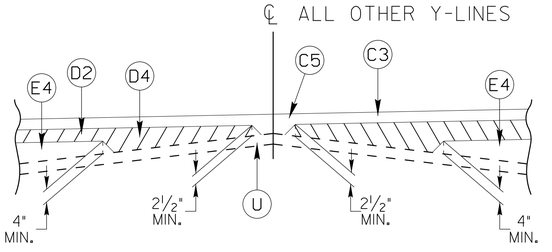
W2 DETAIL #2 SHOWING METHOD OF WEDGING



DETAIL FOR INCIDENTAL MILLING FOR -L-



DETAIL FOR INCIDENTAL MILLING ALL Y-LINES



W3 DETAIL #3 SHOWING METHOD OF WEDGING

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6/2/99

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

ROADWAY DESIGN ENGINEER

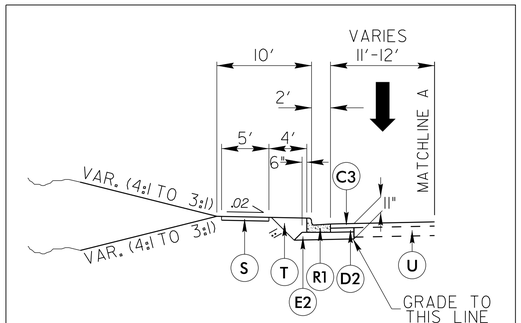
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

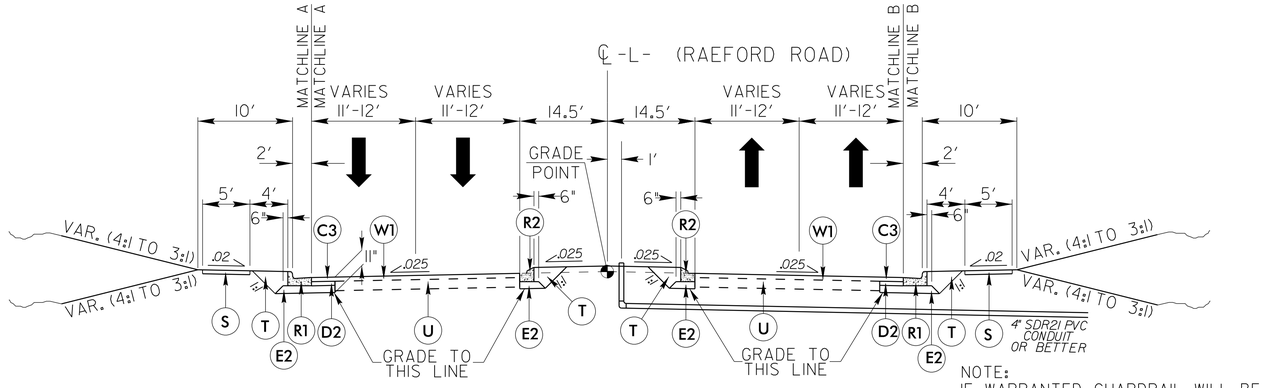
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

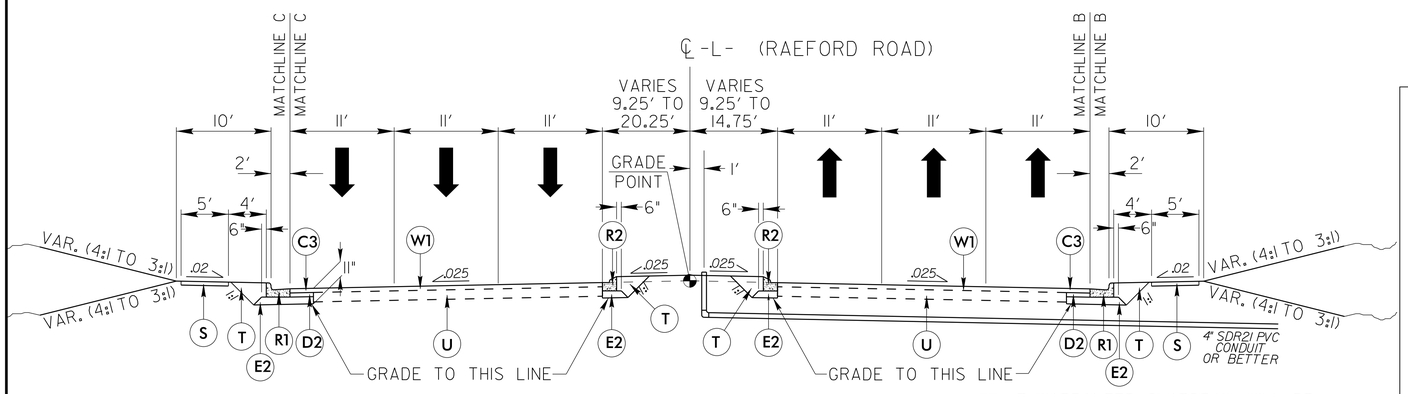
USE WITH TYPICAL SECTION 1
-L- STA. 15+65.00 TO -L- STA. 44+47.18
-L- STA. 46+20.00 TO -L- STA. 62+83.12



TYPICAL SECTION 1

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

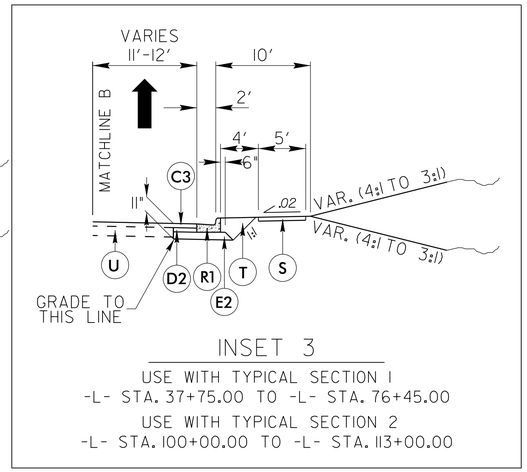
NOTE:
IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



TYPICAL SECTION 2

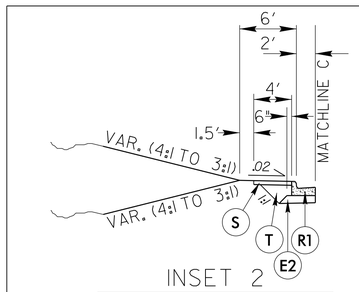
-L- STA. 76+45.00 TO -L- STA. 137+04.00
-L- STA. 148+88.00 TO -L- STA. 251+55.00

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



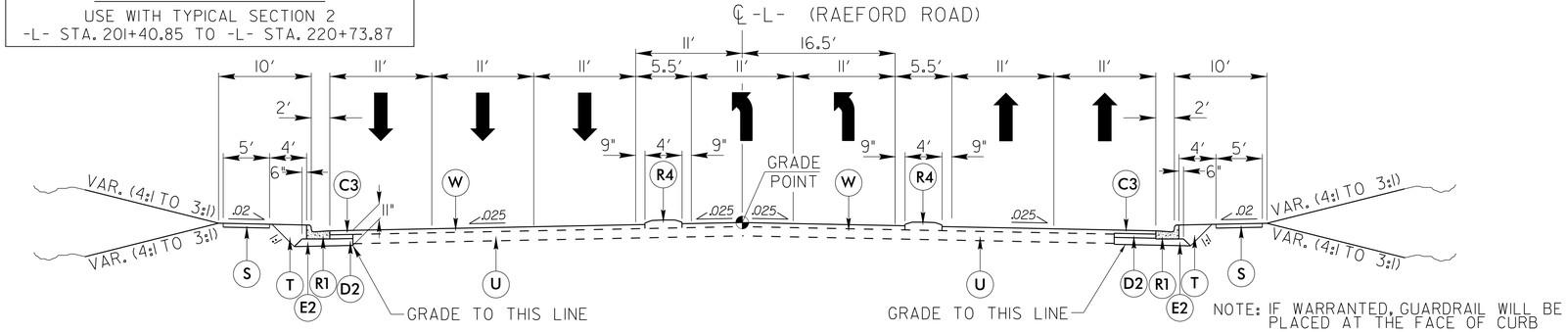
INSET 3

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

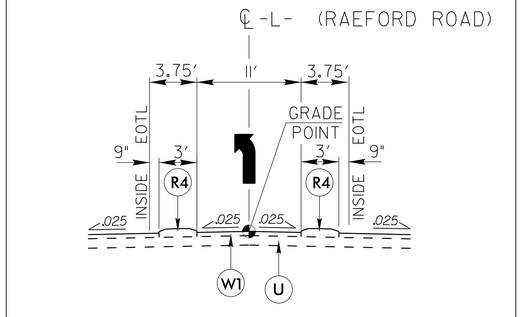
USE WITH TYPICAL SECTION 2
-L- STA. 201+40.85 TO -L- STA. 220+73.87



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

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6/2/99

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

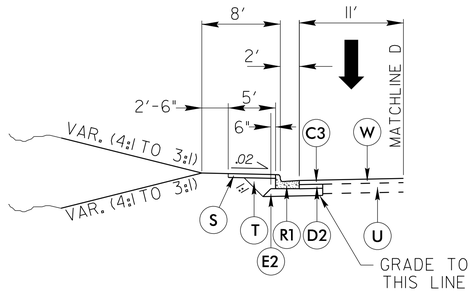
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

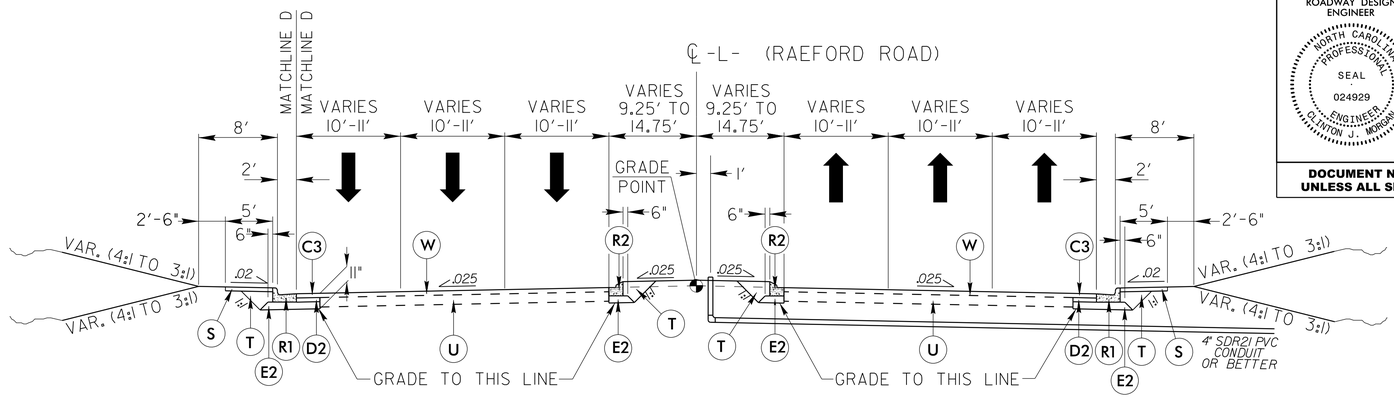
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INSET 4

USE WITH TYPICAL SECTION 4

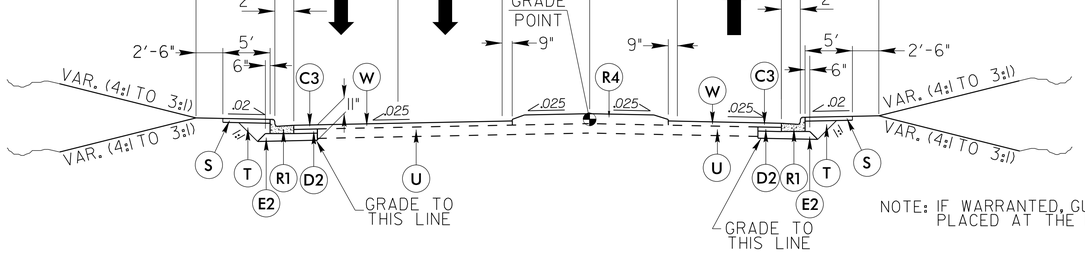
-L- STA. 269+12.00 TO -L- STA. 309+45.00



TYPICAL SECTION 4

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

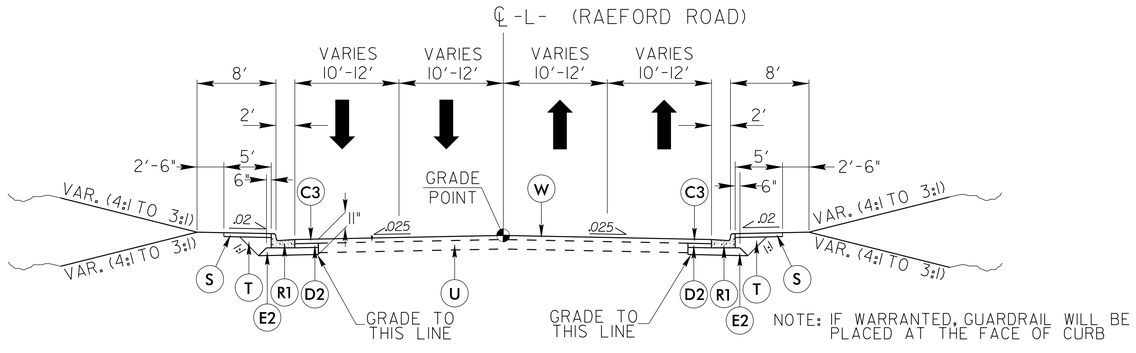
NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



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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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-4

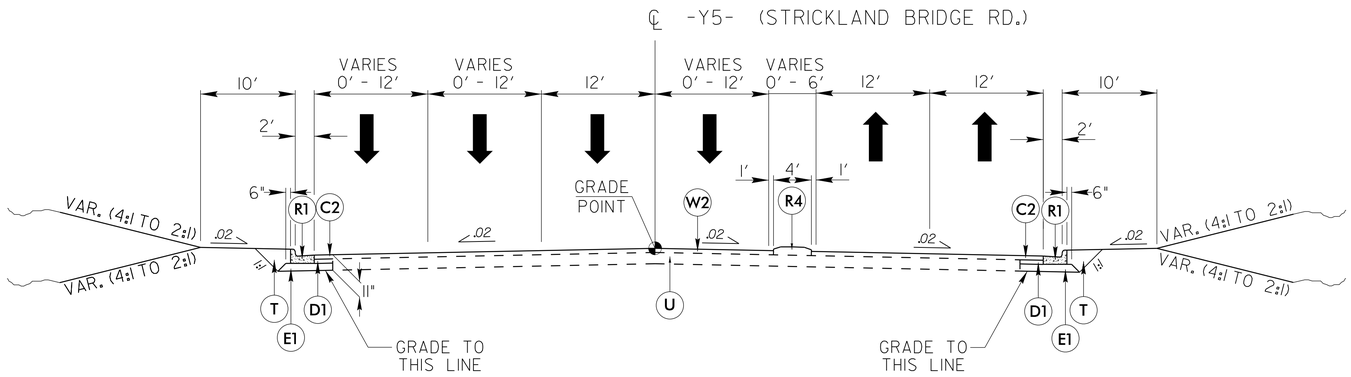
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

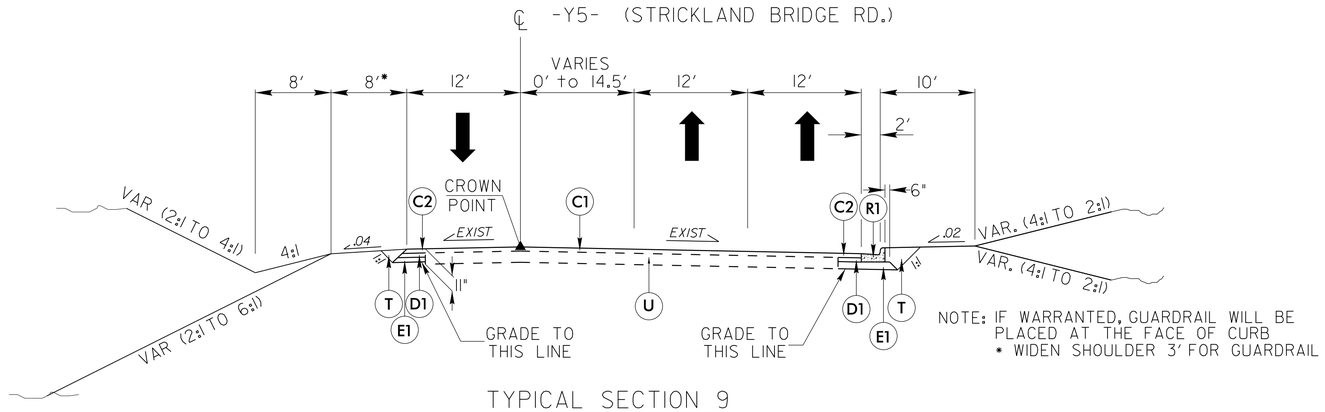
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

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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6/2/99

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

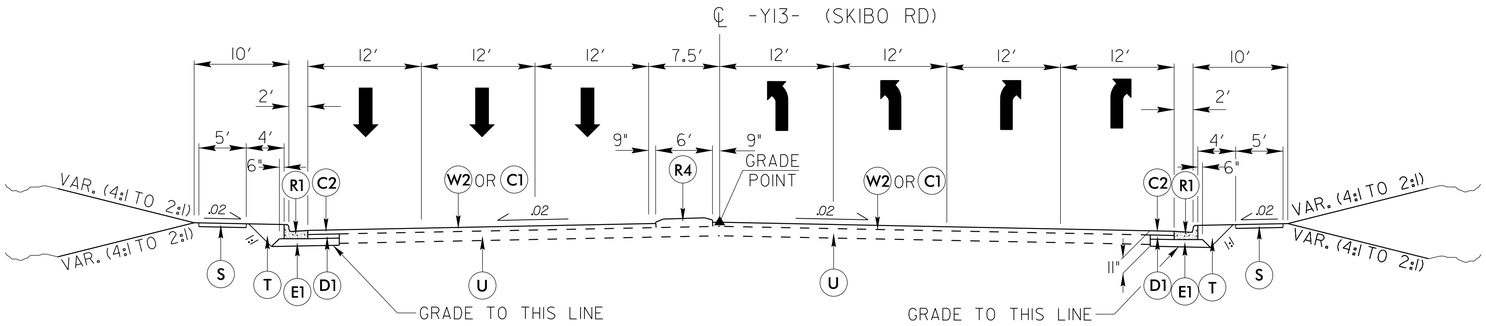
ROADWAY DESIGN ENGINEER

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

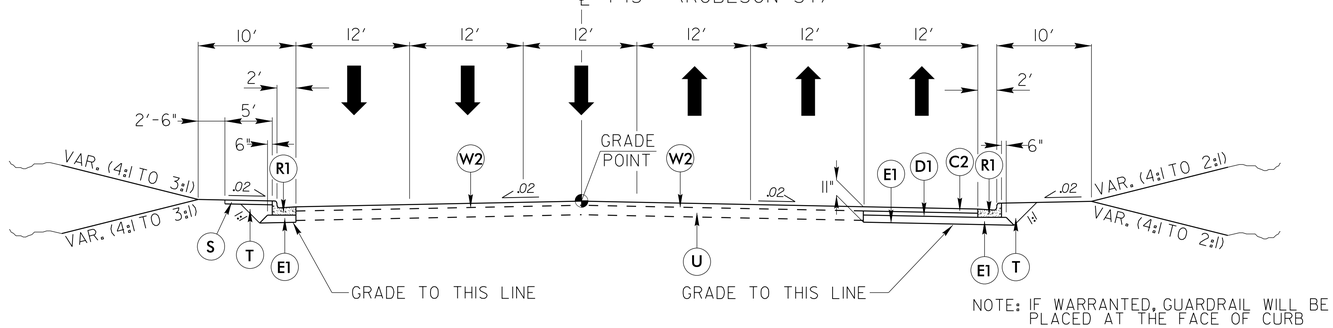


TYPICAL SECTION 10

-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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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-6

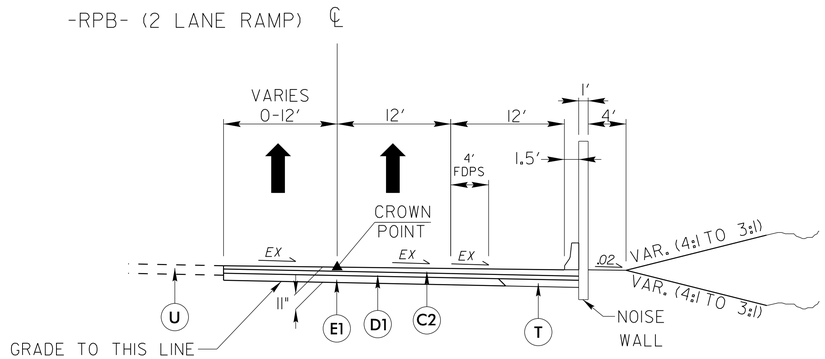
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

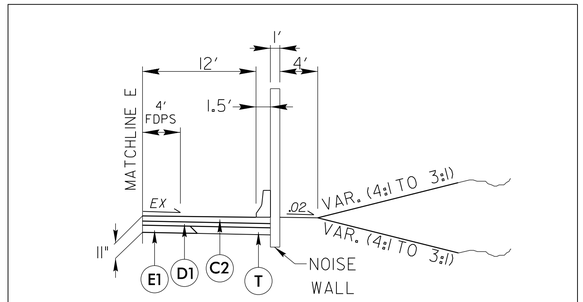
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION 12

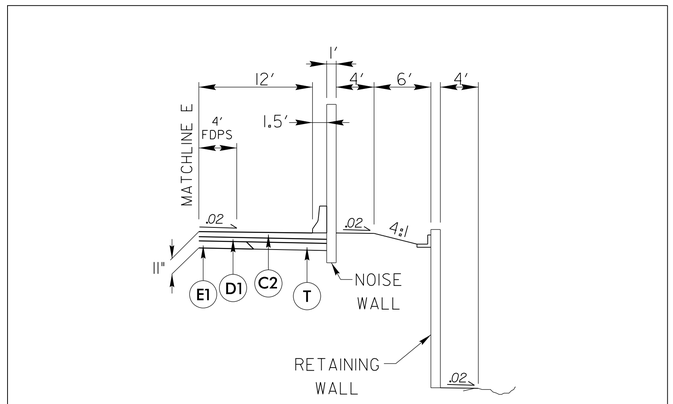
-RPB- STA. 10+00.00 TO -RPB- STA. 17+78.24



INSET 5

USE WITH TYPICAL SECTION 14

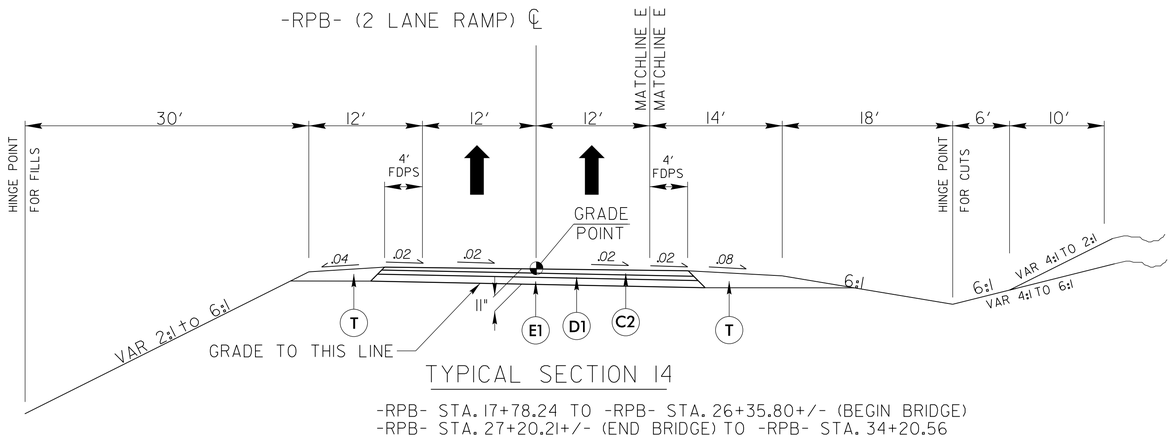
-RPB- STA. 17+78.24 (RT) TO -RPB- STA. 21+12.14 (RT)



INSET 6

USE WITH TYPICAL SECTION 14

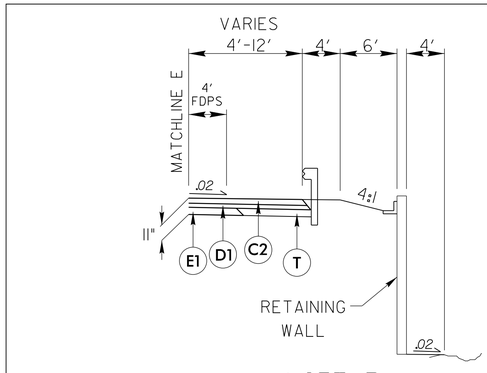
-RPB- STA. 19+71.99 (RT) TO -RPB- STA. 26+35.80+/- (RT) (BEGIN BRIDGE)



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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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2A-7

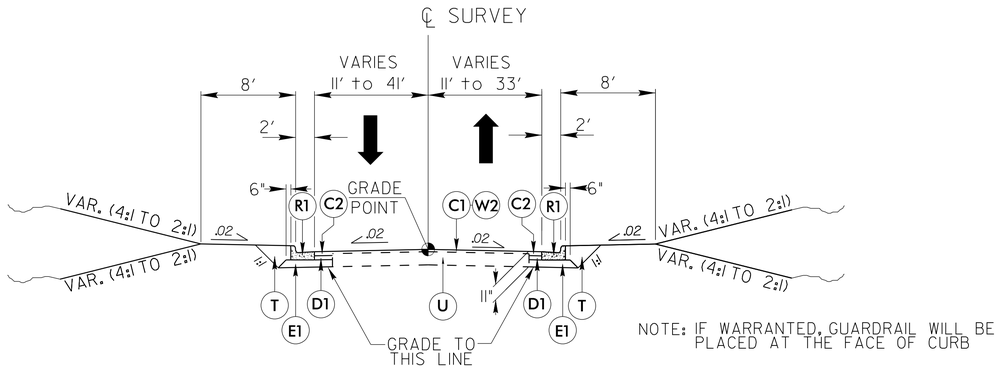
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

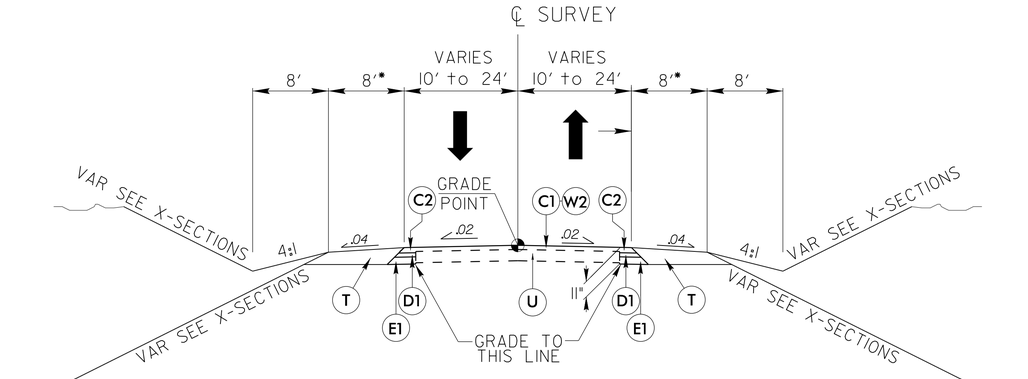
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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.
U-4405	2A-8

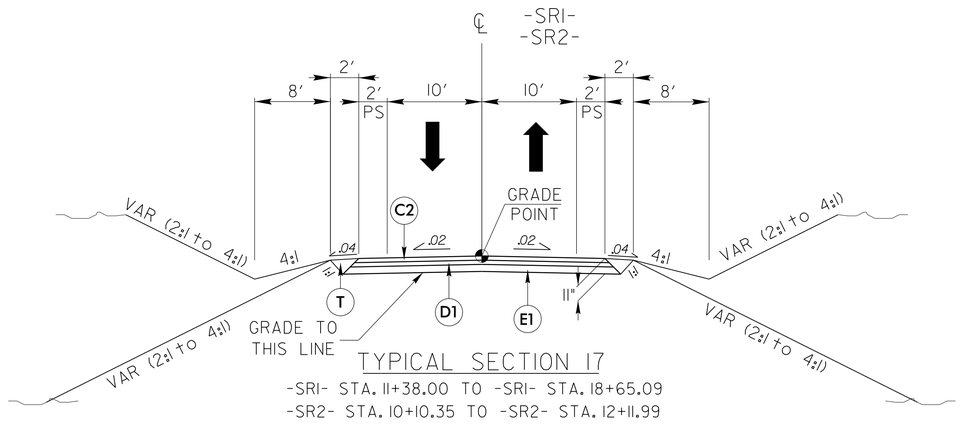
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

PAVEMENT DESIGN ENGINEER

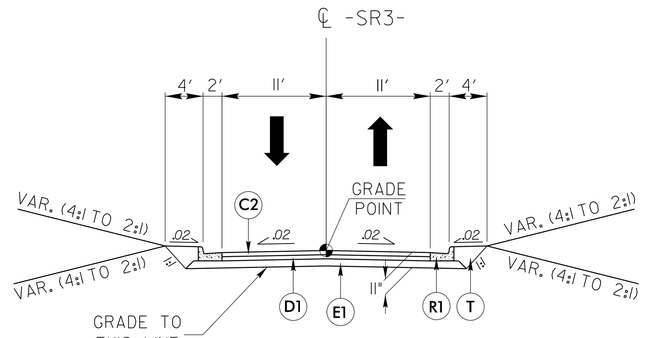
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



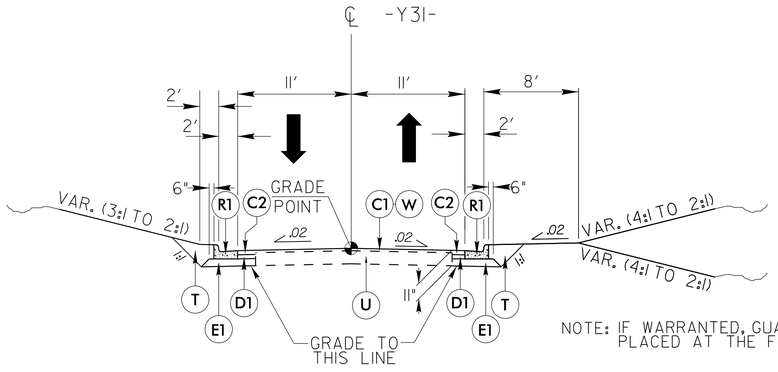
TYPICAL SECTION 17

-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.
U-4405	2A-9

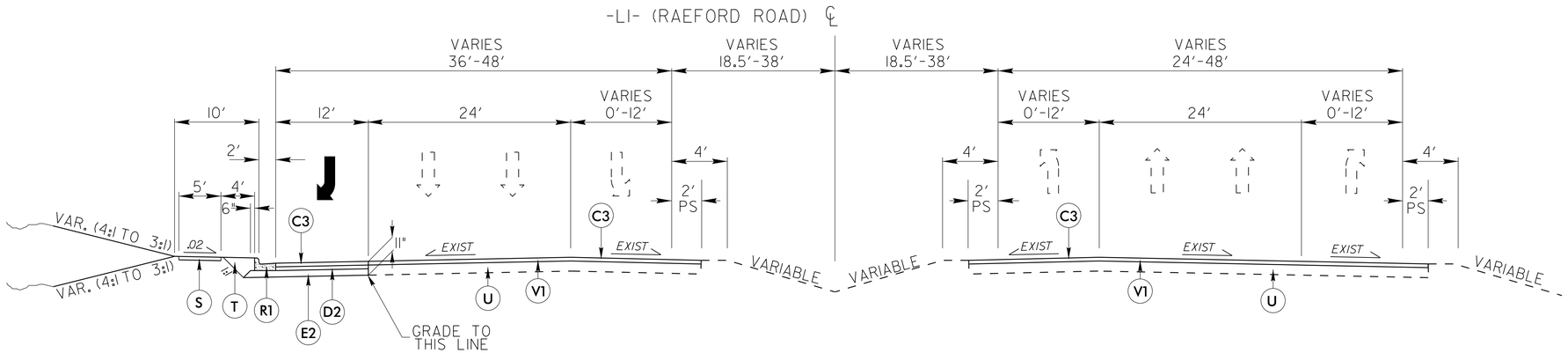
ROADWAY DESIGN ENGINEER

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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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

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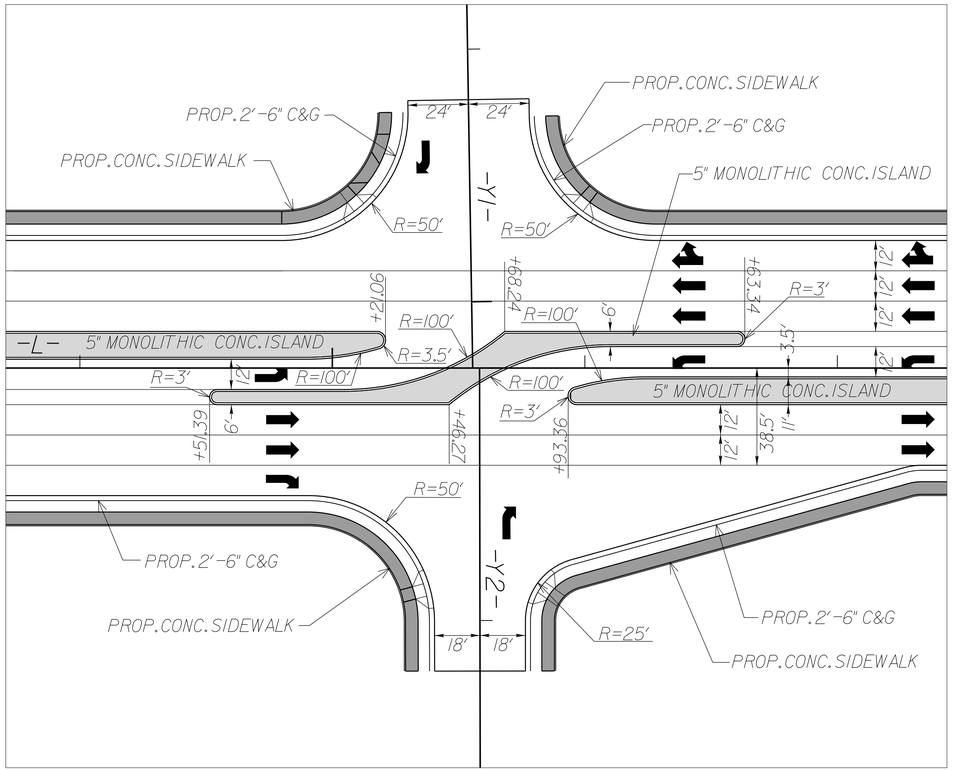
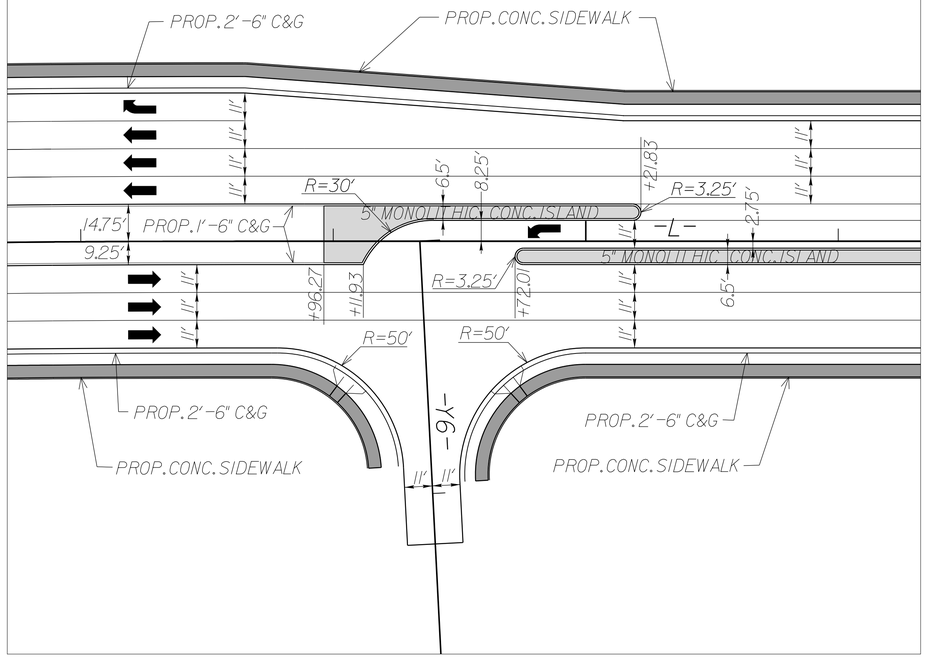


INTERSECTION OF
RAEFORD ROAD (–L–)
AND FESTIVAL DRIVE (–Y2–)
(SEE PLAN SHEET 4)

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

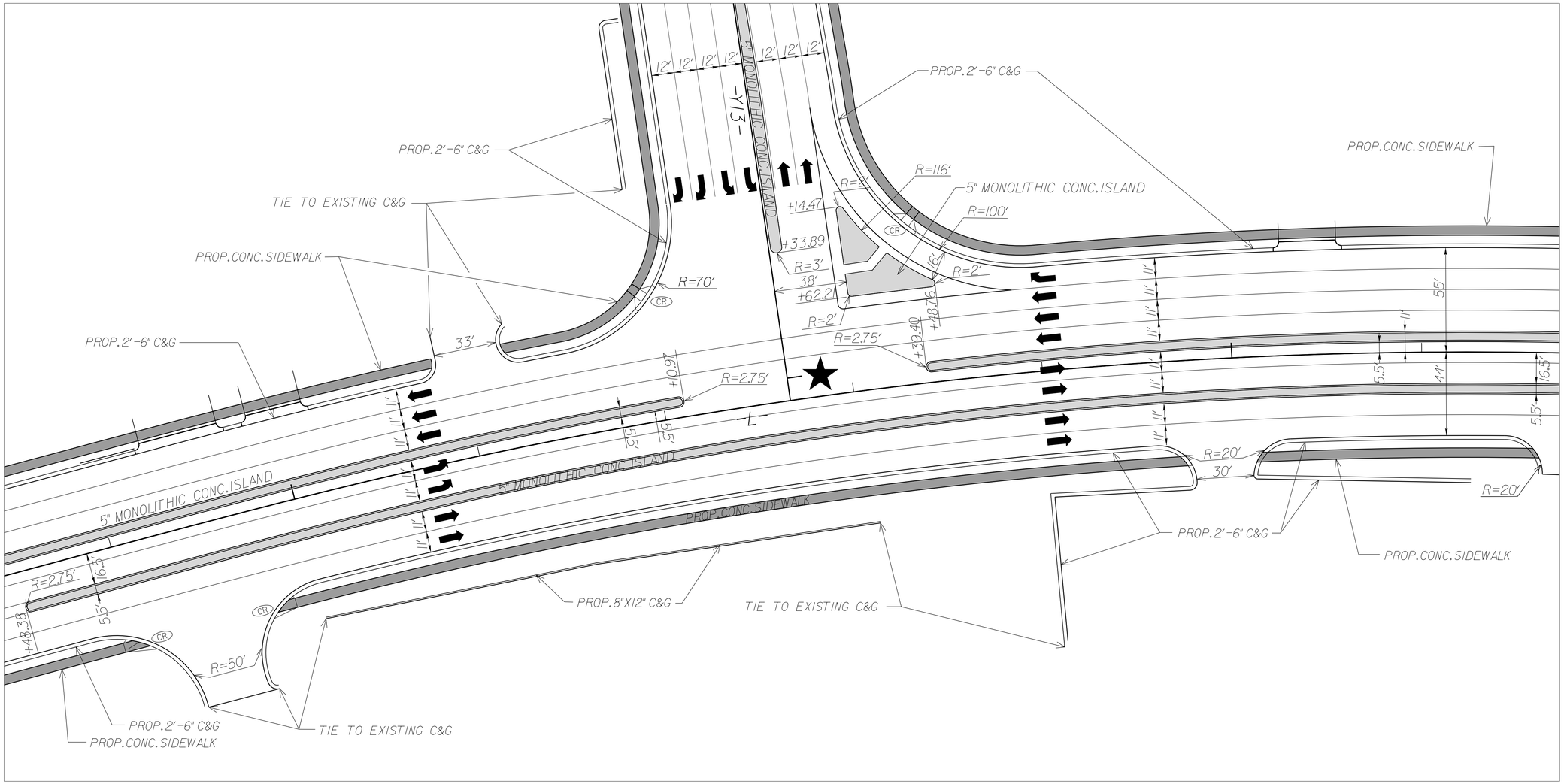
NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

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.
U-4405	2B-5
R/W SHEET NO.	

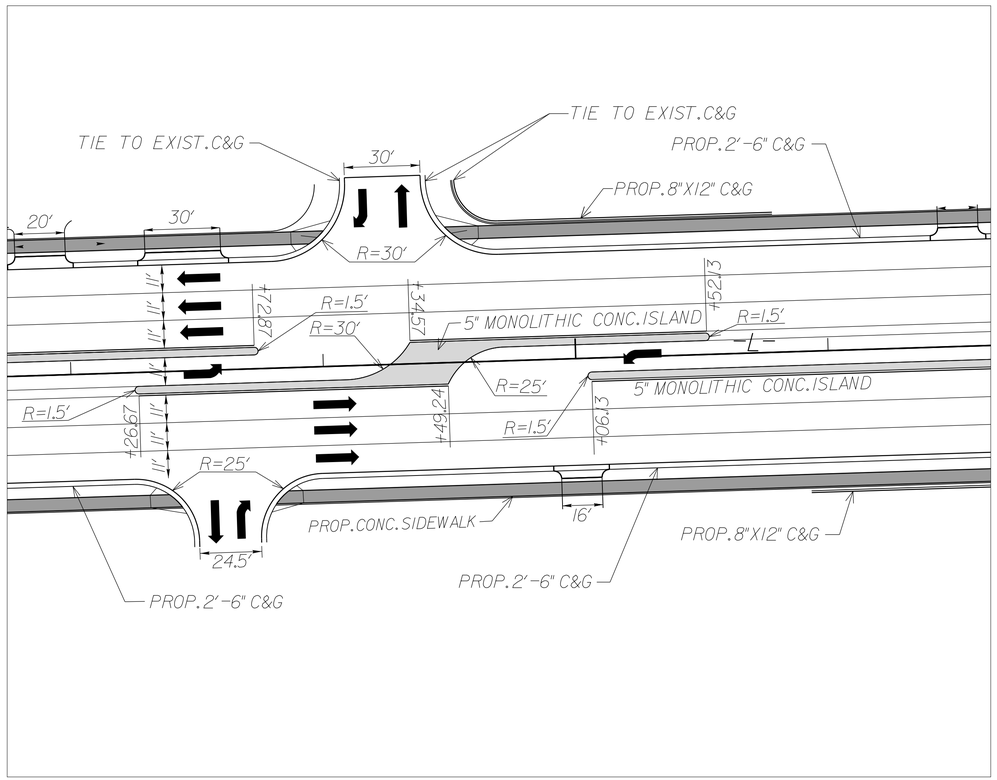
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

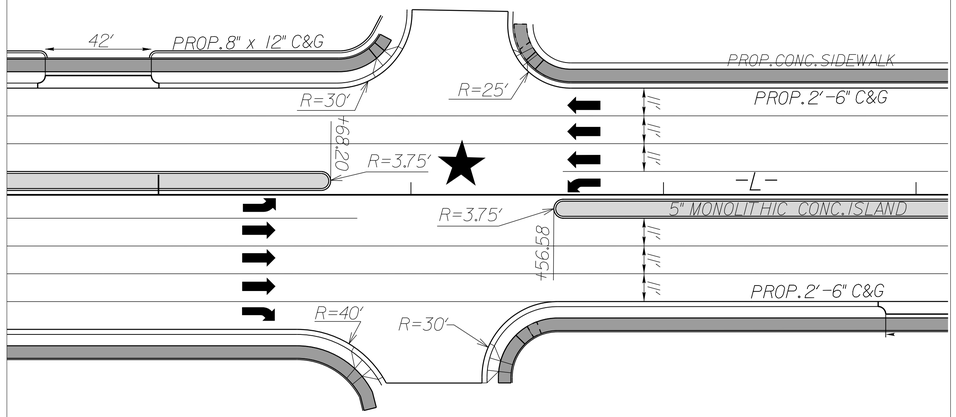
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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.	

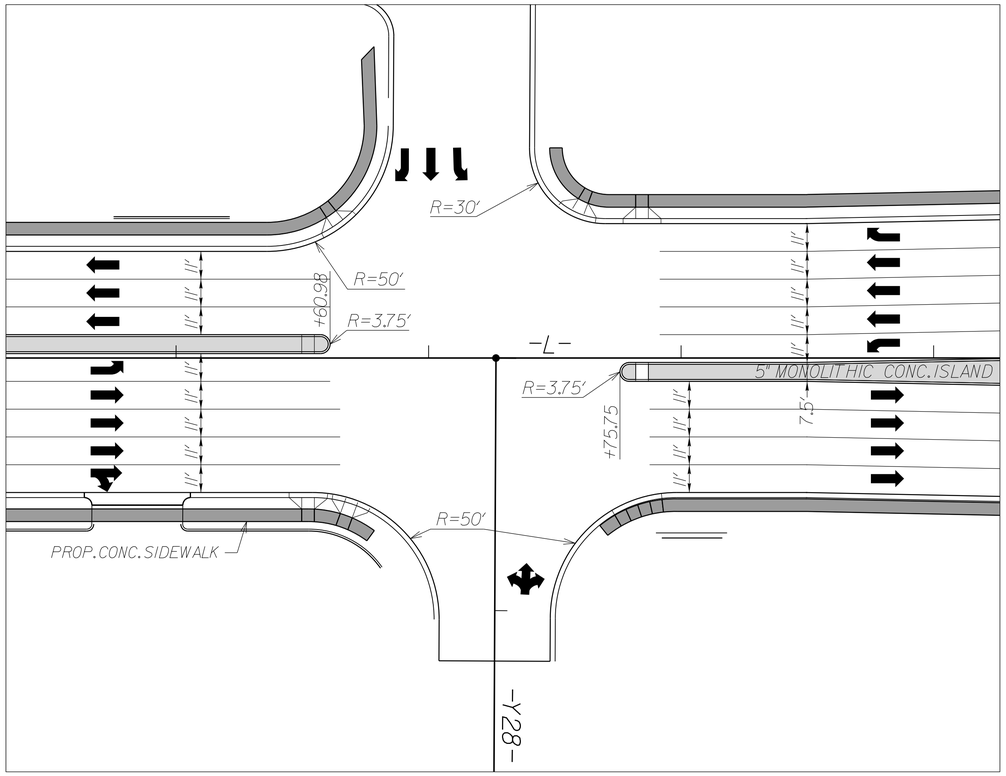
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

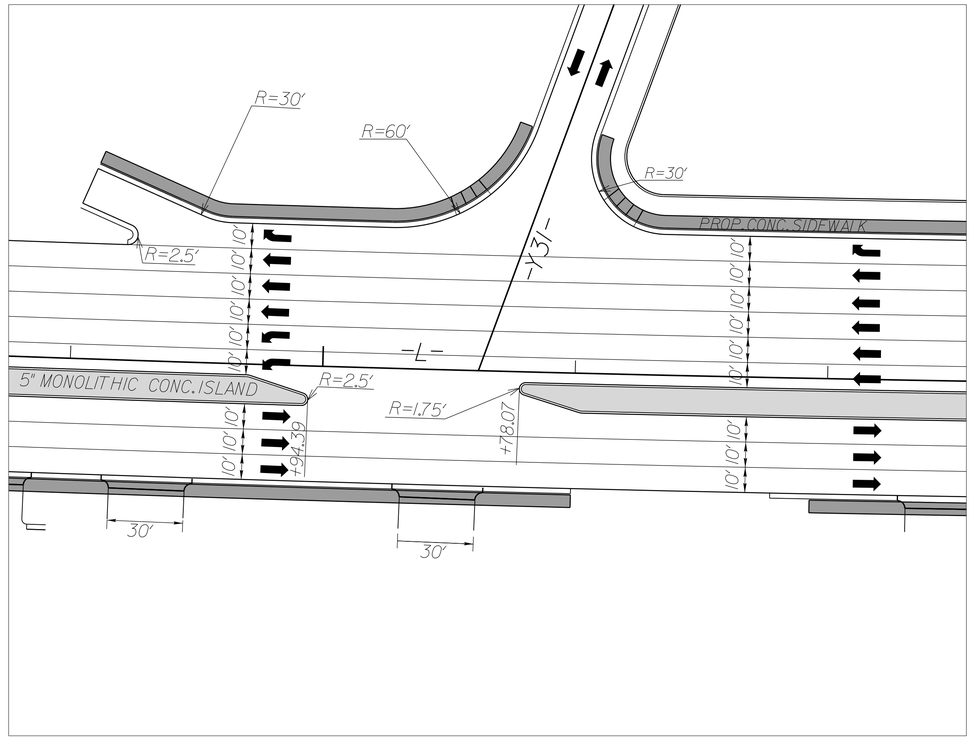
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

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

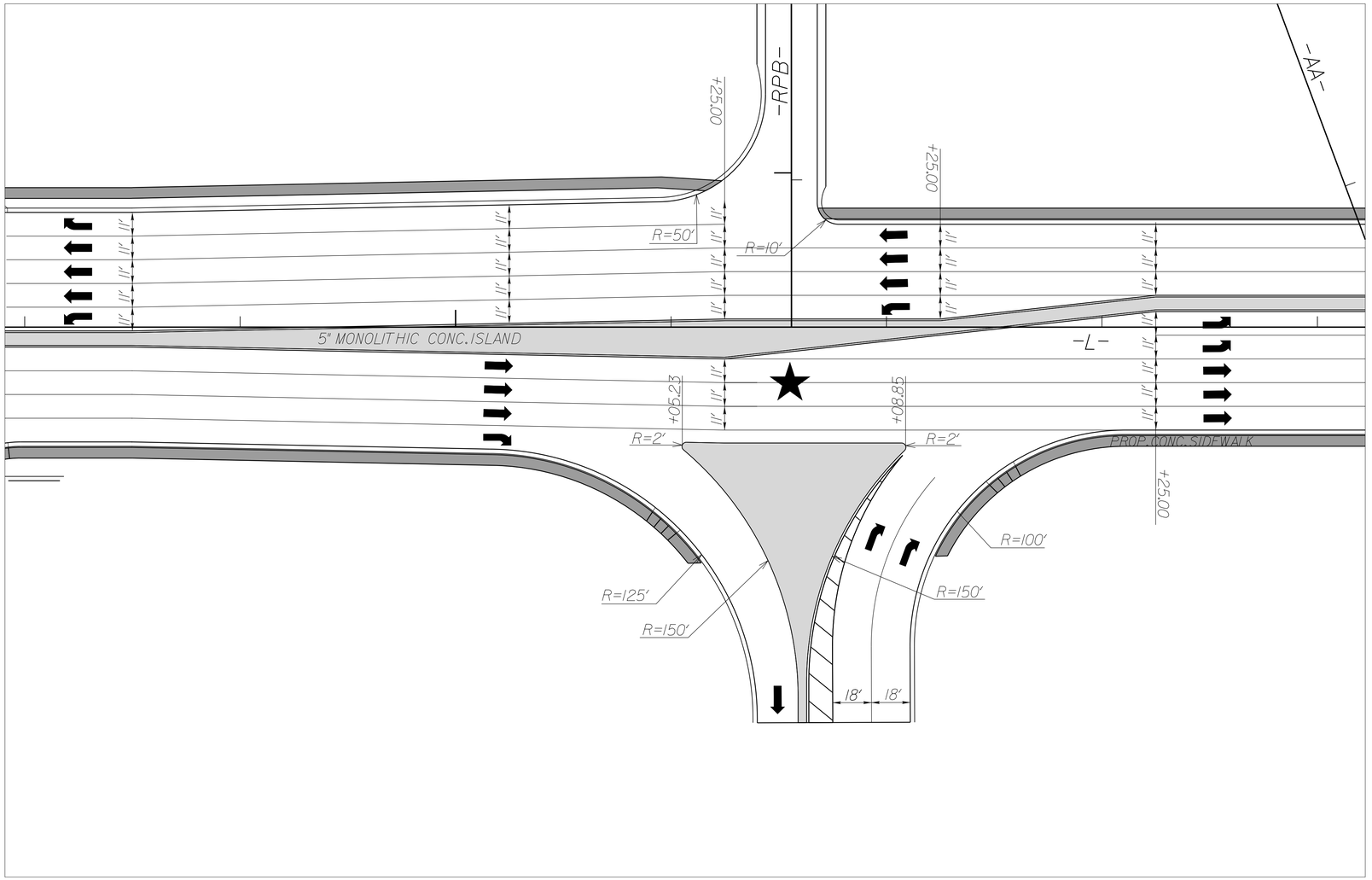
HYDRAULICS ENGINEER

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

12-OCT-2017 09:50
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$$$$USERNAME$$$$

INTERSECTION DETAILS

NOT TO SCALE

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

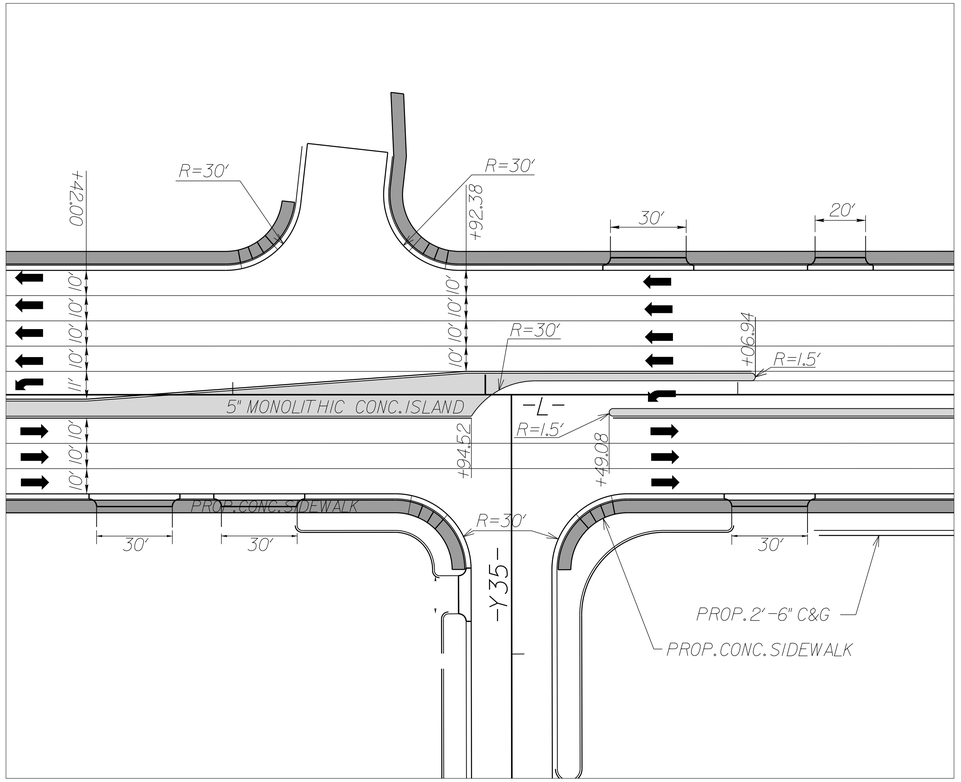
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024929 ENGINEER CLINTON J. MORGAN

HYDRAULICS ENGINEER

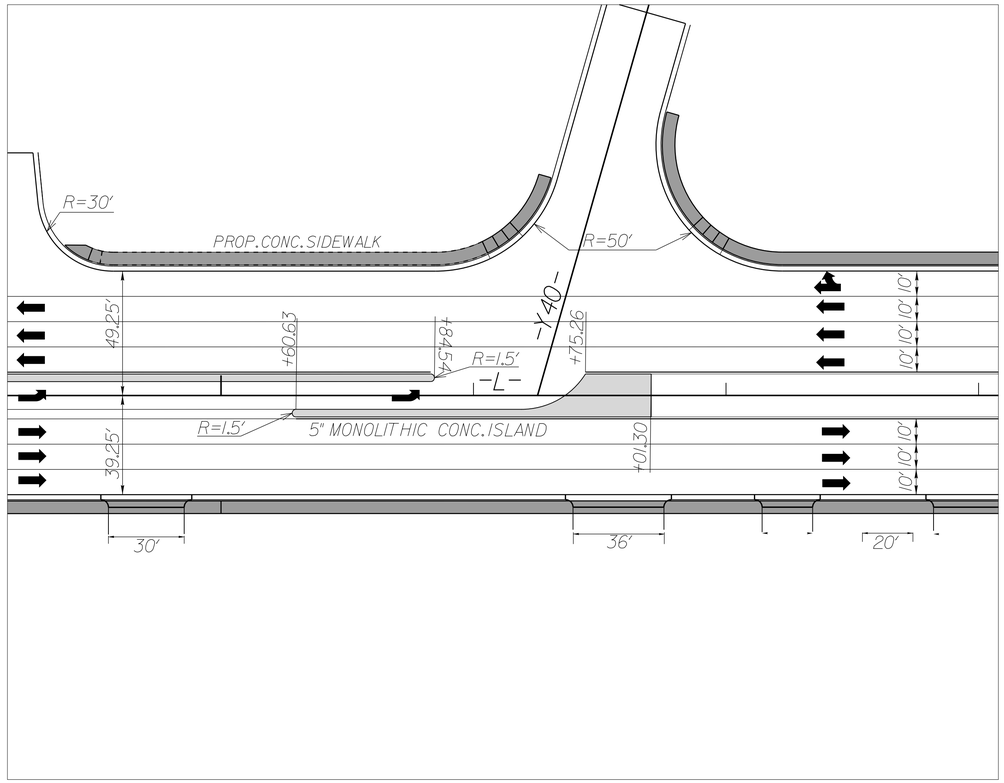
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

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)



REVISIONS

8/17/99

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$$$$USERNAME$$$$

8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

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

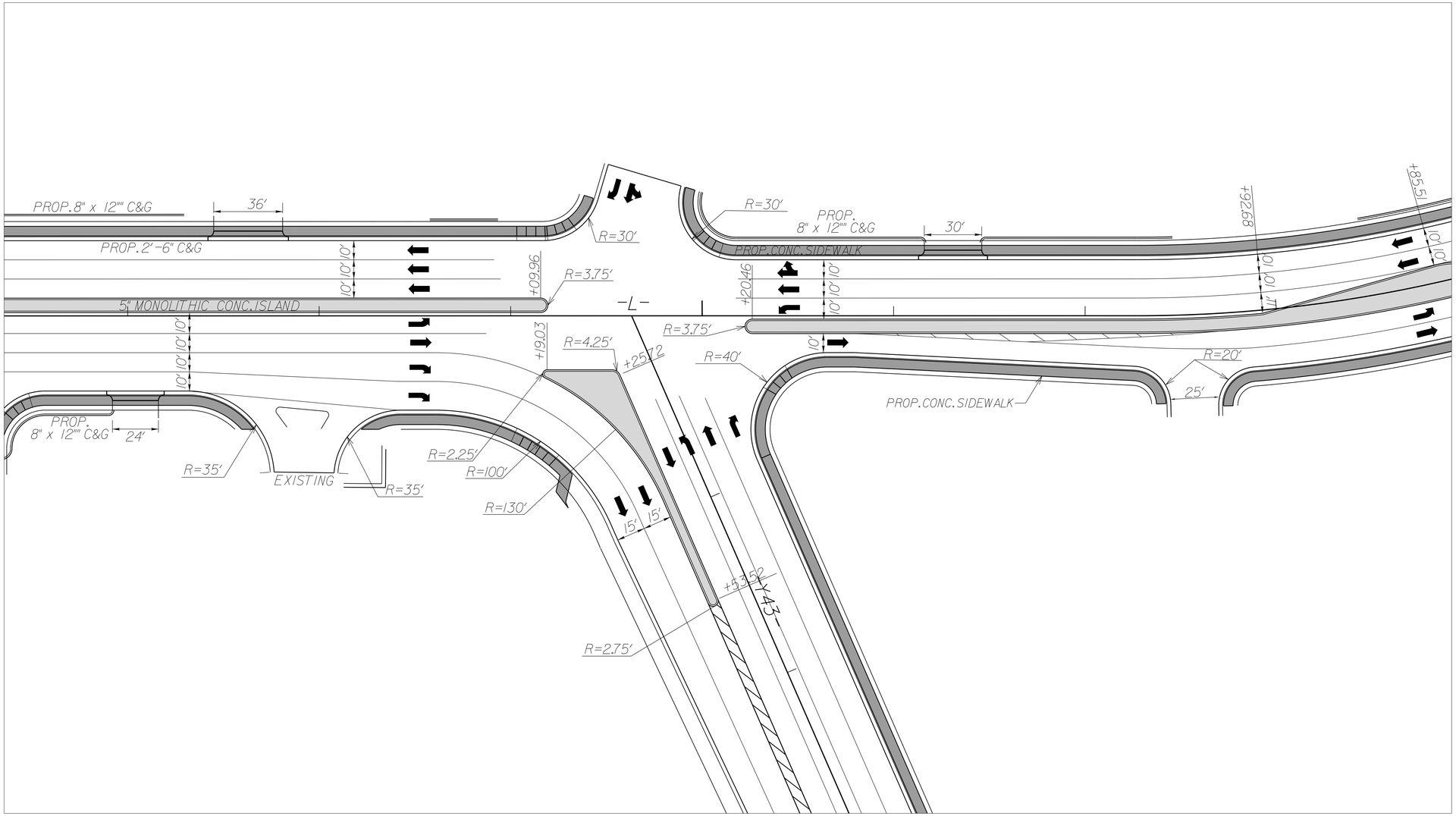
ROADWAY DESIGN ENGINEER

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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$$$$USERNAME$$$$

8/17/99

REVISIONS

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	2B-10
R/W SHEET NO.	

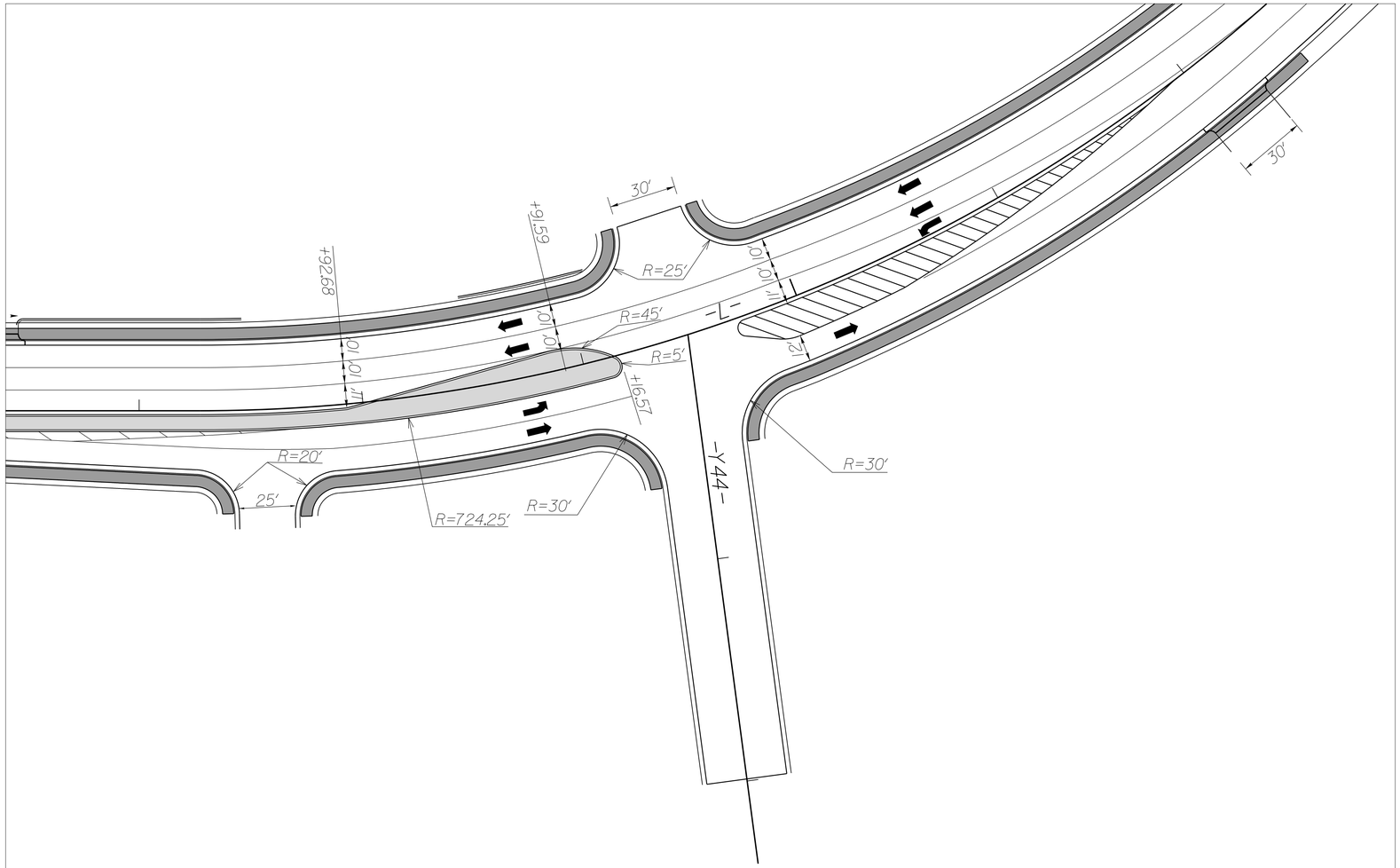
ROADWAY DESIGN ENGINEER

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



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

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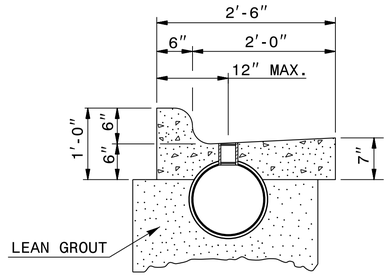
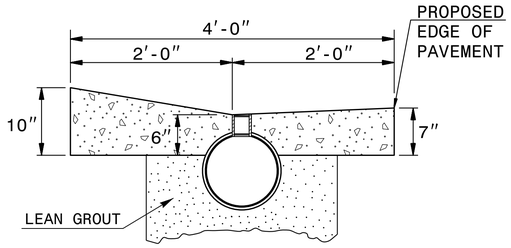
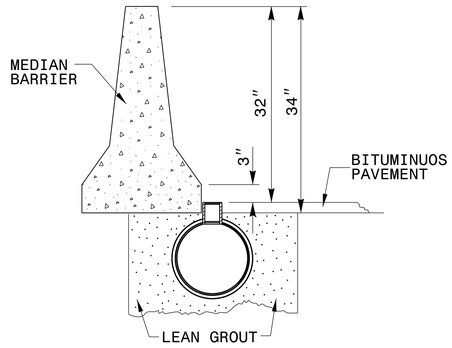
PROJECT REFERENCE NO.	SHEET NO.
U-4405	2C-1



ALTERNATE NO.1



ALTERNATE NO.2



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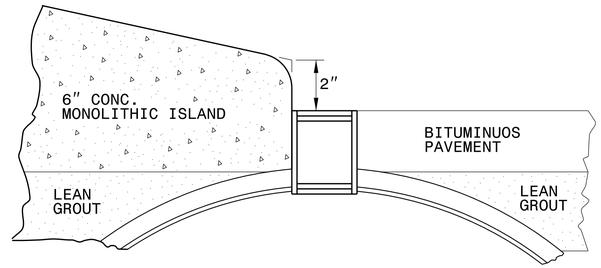

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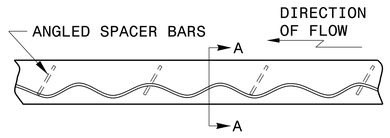
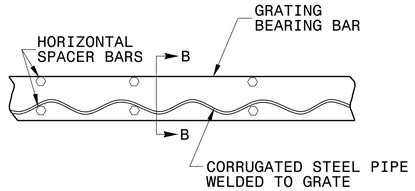
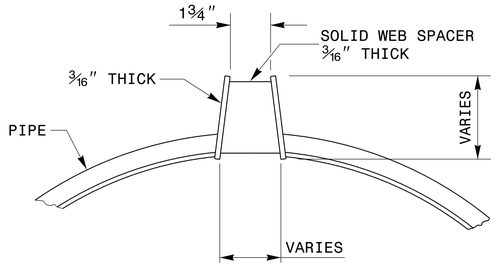
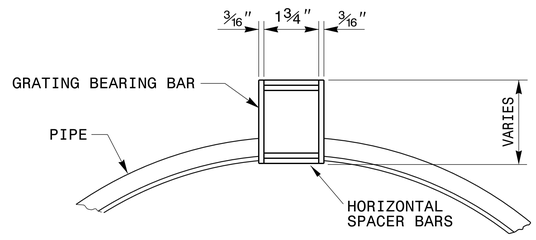






SECTION A-A



SECTION B-B

NOTES:

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

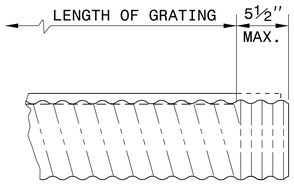
HOT-DIP GALVANIZE GRATES AFTER FABRICATION TO MEET ASTM A123.

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

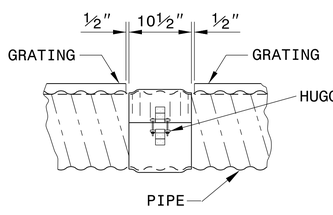
USE SLOTTED DRAIN PIPE FABRICATED FROM ALUMINIZED CORRUGATED STEEL PIPE MEETING THE REQUIREMENTS OF AASHTO M274 TYPE 2.

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.

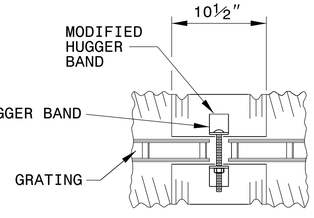
TYPICAL GRATE DETAILS



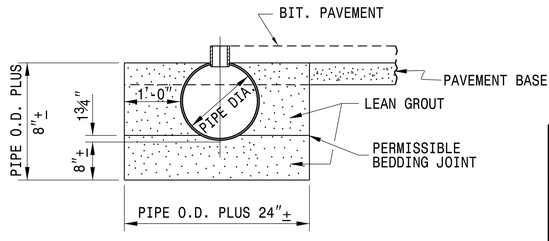
DETAIL AT END OF PIPE



TYPICAL COUPLING BAND



MODIFIED COUPLING BAND



SLOTTED DRAIN PIPE INSTALLATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joey S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-212915

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

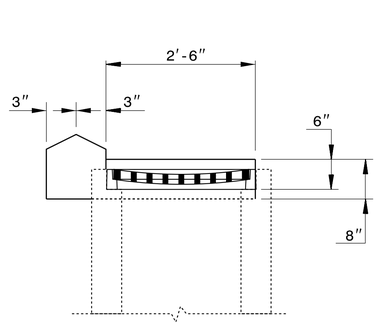
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

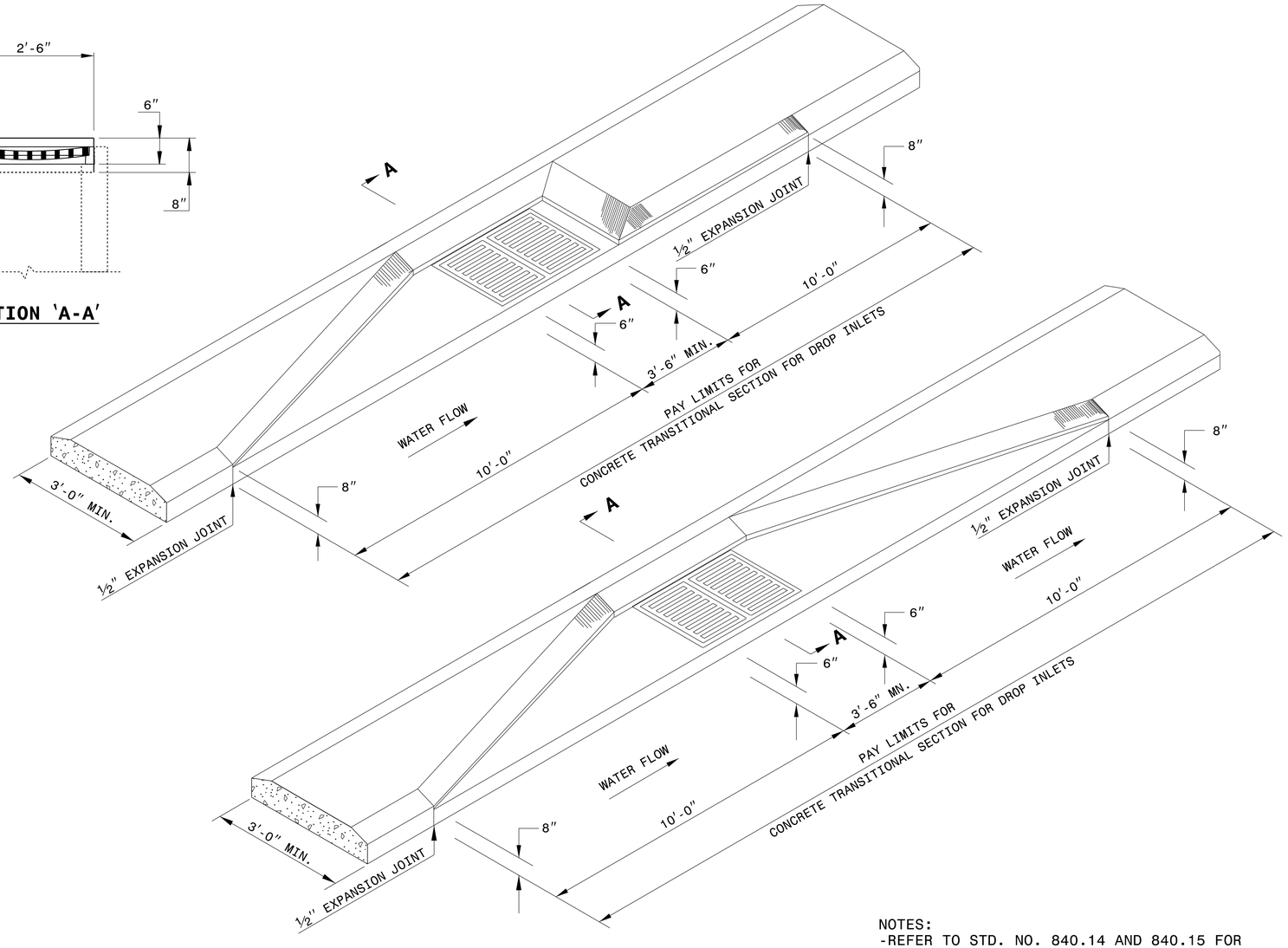
METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

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

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

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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)

21-AUG-2017 16:47
R:\U-4405_rdy.psh 05.dgn
$$USERNAME$$

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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$$$$USERNAME$$$$

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

12-OCT-2017 11:35
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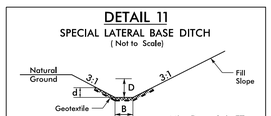
$$$$USERNAME$$$$

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
-Y50- PT Sta. 15+19.30
-L1- POT Sta. 89+00.00
BEGIN ASPHALT OVERLAY -L- Sta.15+65.00
BEGIN ASPHALT OVERLAY -Y50- Sta.14+99.00
-L1- PC Sta. 97+95.86
-L1- Sta.95+82.50= -Y51- Sta. 16+13.41
BEGIN TIP PROJECT U-4405 -L1- STA. 95+00.00
MATCHLINE SEE SHEET 4B -L1- STA 99+00
N 55° 08' 56.9" E -L1-
S 58° 26' 33.7" E
R=100'
-Y50- +98.77

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

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

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 C
RETAIN SYSTEM
24 " DIP, PVC Water
Piedmont Natural Gas Company 4 " PLASTIC
20' SEWER EASEMENT (PB C07 PG 140)
EXISTING R/W
6' CONC SW
PROP. 2'-6" C&G
PROP. LANE MARKING
RIPRAP
WLB
WALL
CB
DI
4A01
4A02
4A03
4A04
4A05
4A06

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

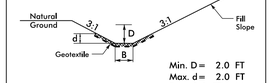
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

105

110

400

401

402

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 DAPHINE 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

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

-L1- PT Sta. 105+42.33

-Y51- POT Sta. 10+00.00

-Y52- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y51- Sta.11+48.00

BEGIN CONSTRUCTION
-Y52- Sta.11+28.00

S 15° 43' 34.7" E

N 76° 00' 44.3" E

S 12° 55' 10.8" E

SPECIAL LATERAL BASE DITCH SEE DETAIL 11

750' LANE SHIFT

36" RCP-IV

PROP. CONC. SIDEWALK

RETAIN SYSTEM

PLUG AND FILL WITH FLOWABLE FILL

RETAIN

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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$$$$USERNAME$$$$

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

12-OCT-2017 11:35
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	6
R/W SHEET NO.	

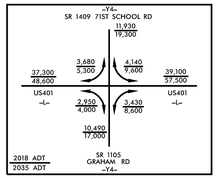
ROADWAY DESIGN ENGINEER

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

55
CUMBERLAND COUNTY BOARD OF EDUCATION
DB 635 PG 160
DB 5430 PG 468
DB 536 PG 404
DB 517 PG 190

45
PETER A PORRECO & WIFE
DB 7399 PG 738
PB 19 PG 45

46
MARLENE ELIZABETH VARGAS
DB 7487 PG 273
PB 19 PG 45

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

59
McDONALD'S CORP
DB 4192 PG 555
PB 58 PG 116

60
AOM INVESTMENTS, L
DB 5032 PG 661
PB 58 PG 116

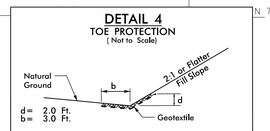
62
CUMBERLAND COUNTY BOARD OF EDUCATION
DB 847 PG 374

44
CYNTHIA HARRIS STEVENS
DB 7425 PG 883
PB 19 PG 45

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)

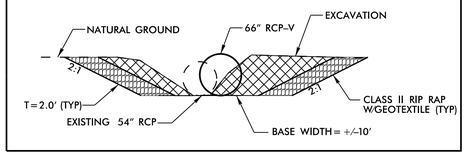


d= 2.0 Ft.
b= 3.0 Ft.
Type of Liner= B Rip-Rap

FROM STA. 50+06 TO STA. 50+34 -L- LT

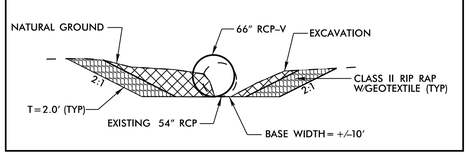
OUTLET DETAIL
NTS (46+71 -L-)

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

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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)

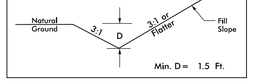
ROW REV. - September 25,2017 - Removed PDE on Parcel 68 (MB)

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 61 PG 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

72 CIRCLE K STORES INC DB 9852 PG 592 PB 137 PG 124

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

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 & 35 FOR -L- PROFILE

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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

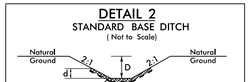
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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	

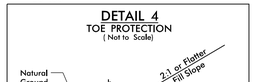
-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)



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

-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

-L- N 65° 39' 46.5" E

S 24°20'13.5" E

N 65°22'29" E 225.60'

N 66°40'23" E 267.66'

N 7°30'29" E 310.69'

N 21°53'56" W 93.43'

N 17°00'00" W 139.48'

N 87°04'16" W 423.26'

S 24°20'20" E 143.24'

N 24°40'20" W 139.91'

N 65°19'40" E 75.00'

S 65°19'40" W 40.00'

100.00' 65°19'40" W

N 65°19'13" E 164.89'

N 24°26'09" W 95.73'

N 41°12'19" W 38.35'

S 86°04' 38.8'

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

72 CIRCLE K STORES INC DB 9852 PG 592 PB 137 PG 124

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

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

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

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

DO NOT DISTURB SIGN

RETAIN SYSTEM

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

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

TOE PROTECTION SEE DETAIL 4

JB w/MH SEE SPECIAL DETAIL

8" PVC 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 110 TONS EST 105 SY GEOTEXTILE

CLASS II RIP RAP EST 218 TONS EST 210 SY GEOTEXTILE

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

COLLAR AND EXTEND

CONVERT to JB w/MH

REMOVE

RETAIN

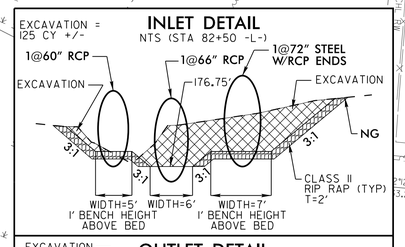
TIE TO EXIST

PROP CONC SIDEWALK

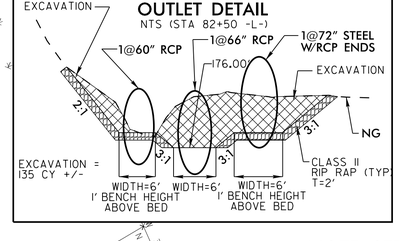
PROP 2'-6" C&G

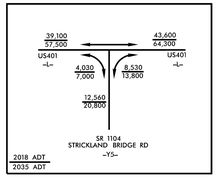
PROP 1'-6" C&G

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- STA. 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

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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

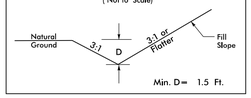
NC GRID NAD 83/NA 2011

8/17/99

REVISIONS

R/W REV. - March 2, 2017 - PUE Revised PUE along Parcels 110,120, and 121(WB)

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

–Y10– POT Sta. 13+24.44

END CONSTRUCTION –Y10– Sta. 11+45.00

–L– Sta. 107+24.92 = –Y9– Sta. 13+62.38

550' LANE SHIFT

250' TAPER (RT TURN)

150' TAPER (RT TURN)

65' TAPER (LT TURN)

200' UNIFORM TAPER (LT TURN)

DO NOT DISTURB SIGN

RETAIN SYSTEM

RETAIN

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

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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

-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

MATCHLINE SEE SHEET 11 -L- STA 115+00

MATCHLINE SEE SHEET 13 -L- STA 128+00

END CONSTRUCTION -Y11- Sta. 11+60.00

-Y11- POT Sta. 12+10.77

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	610 / 1,000	1,100 / 900
US401 -L-	800 / 800	US401 -L-
	3,230 / 4,300	
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

REVISIONS

8/17/99

ROW REV.- March 2,2017 - Revised PUE along Parcels 121 and 129-Revised TCE along Parcel 121 (MB)

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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)	Øs = 1° 43' 07.9"	Øs = 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 TUE along Parcel 164 (IWB)
ROW REV - March 2, 2017 - Revised PUE along Parcels 141, 143, 155, 159-161, 163, 164, 167 and 168; Revised TCE along Parcel 155; Revised TDE and TCE along Parcel 154; Added PUE along Parcel 153; Removed TCE along Parcel 153; Revised TD

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

-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		

NAD 83/NA 2011 NC GRID

MATCHLINE SEE SHEET 14 -L- STA 154+00

MATCHLINE SEE SHEET 16 -L- STA 167+00

-BY15- # 60

-BY16- # 61

-BY17- # 63

-BY16- # 62

-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

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

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

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

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

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

REVISIONS

RDW REV.- March 2,2017 - Revised PUE along Parcels 167,168,171,172,178,179,and 180,Revised TCE along Parcels 167,168,171,172,178,179,and 180

RDW REV.- May 30,2017 - Revised Driveways along Parcels 175 and 176 (WB)

RDW REV.- September 25,2017 - Revised Driveways along Parcels 183 and 184 (WB)

8/17/99

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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'

PROPOSED SIGNAL

PROP CONC SIDEWALK

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

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 #								
DIM	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

NOTE: SEE SHEET 38 & 39 FOR -L- PROFILE
SEE SHEET 48 FOR -Y16- PROFILE

505

REVISIONS
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)

8/17/99

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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

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 221.60'

BRIGHTON RD

49,150 / 66,400	4,330 / 4900	4,080 / 900
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

-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

NC GRID
NAD 83/NA 2011

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 203 and SR 1468 (WB)

MATCHLINE SEE SHEET 18 –L– STA 205+00

MATCHLINE SEE SHEET 20 –L– STA 218+50

–L– Sta. 205+53.67 = –Y23– Sta. 10+00.00

–L– PC Sta. 212+84.51

–L– PT Sta. 217+55.01

–Y23– POT Sta. 12+28.41

END CONSTRUCTION –Y23– Sta. 11+50.00

ENTIRE CHEVY PARKING LOT TO DI

DO NOT DISTURB LIGHT STRUCTURES

205 TAPER (LT TURN)

50' TAPER (LT TURN)

209 DOMINIC MARANGI

212 CLAUDE T HALEY, JR & WIFE ISBKD

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

US 401 BUS RAEFORD RD

SR 1378 SCOTLAND DR

SR 1468 MONTCLAIR RD

WH OWEN ELEMENTARY SCHOOL

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 39 & 40 FOR –L– PROFILE
SEE SHEET 48 FOR –Y23– PROFILE

2018 ADT
2035 ADT

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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

8/17/99

REVISIONS

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 PDE along Parcel 227 and 226 (IWB)
ROW REV. - August 21,2017 - Revised TLE,ROW,and 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

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

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

KENT A VAN BELOIS & WIFE DB 3364 PG 865

CUMBERLAND COUNTY MEMORIAL GARDENS DB 4598 PG 842 PB 48 PG 35

RREF II BB-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

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

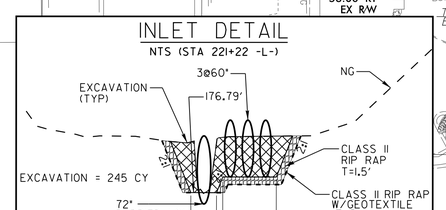
FOOD LION DRIVEWAY

SR 1219 IRELAND DR -Y25-

2018 ADT 3220 / 3500
2035 ADT 3500 / 4200

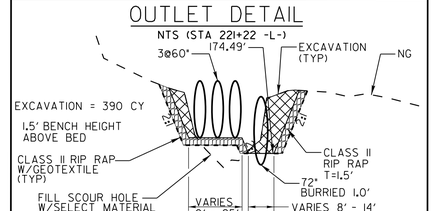
INLET DETAIL

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***

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

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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 (WB)
ROW REV.- August 22,2017 - Revised PDE along Parcel 375 (WB)

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
GRADE TO DRAIN
REMOVE SYSTEM
REMOVE
ADJUST MH
TIE TO EXIST
TIE TO NEW
RETAIN
REMOVE 7' RCP AND CB
EXISTING
PROP.
PUE
CATI
FS
ISBK BUS
ISBK CHURCH
ISF BUS
ISBLK BUS
MTL CAN
CAR WASH
GATE
SOIL
BST
CONC
ROXIE AVENUE
RAEFORD RD 72' BST
ALL AMERICAN EXPRESSWAY
NBL ALL AMERICAN EXPRESSWAY
SBL ALL AMERICAN EXPRESSWAY
STONE WALL
CHAIN LINK FENCE
WOOD FENCE
OLD MCPHERSON CHURCH RD
STARR RAY DB 9162 PG 37
-L- SC Sta. 257+84.73
-L- TS Sta. 256+84.73
-L- Sta. 247+26.67 = -Y28- Sta. 10+00.00
-L- Sta. 251+55.88 = -RPB- Sta. 34+68.31
PT -RPB- Sta. 32+50.40
BEGIN RETAINING WALL 3 -WALL3- STA 10+00.00 = -L- STA 257+70.00 OFF 57.85' RT
-AA- ST Sta. 40+63.22
END CONSTRUCTION -Y28- Sta. 11+20.00
-Y28- POT Sta. 12+69.02
-Y23-
-Y27-
-Y28-
-AA-
-RPB-
-L-
-Y27- +40.00 45.00' RT EX R/W
-Y27- +82.00 63.00' RT EX R/W
-Y27- +08.00 EX R/W
-Y27- +66.63 EX R/W
-Y28- +30.00 EX R/W
-Y28- +25.00 42.00' LT
+83.00 85.00' LT
+50.00 84.53' LT EX R/W 70.00' LT
+36.00 55.00' LT PROP. 8' x 12' C&G
+53.00 66.00' RT
+34.00 79.00' RT
+18.00 95.00' RT
+08.33 97.00' RT
+60.73 79.00' RT
+85.91 83.00' RT
+50.00 64.00' RT 15" RCP-IV
+00.00 64.00' RT 15" RCP-IV
+50.00 64.00' RT
+50.00 75.00' RT
+81.06 90.00' LT
+85.00 85.00' LT
+34.00 135.00' LT 120.00' LT
+24.00 120.00' LT 86.00' LT
+45.00 135.00' LT
+57.67 126.00' LT
+57.94 85.00' LT
+28.00 79.12' RT
EX R/W 67.00' RT
EX R/W 86.00' RT
EX R/W 64.00' RT
BUCKHEAD PLAZA INC. GCKMB, LLC DB 4715 PG 410
CLIFFORD N. BOSTIC DB 6750 PG 458
HOLT REAL ESTATE ENTERPRISES DB 9222 PG 295 PB 9 PG 36
LUKE NWOSU, TRUSTEE of the MAXIORIE IRREVOCABLE TRUST DB 7062 PG 577
WILLIAMS FAMILY HEIRS, LLC DB 8555 PG 304 PB 112 PG 157
STA. 252+32 -L- RT
ISBK CHURCH
241
248
375
376
377
2GI
4OTCB
18" RCP-IV
15" RCP-IV
24" RCP-IV
30" RCP-IV
36" RCP-IV
42" RCP-IV
15" DI RCP-IV
18" DI RCP-IV
TB JB w/MH
JB w/MH
CB
DI
FILL WITH FLOWABLE FILL
100' TAPER (LT TURN)
200' TAPER (LT TURN)
RETAIN SYSTEM
REMOVE AND REPLACE DI
STANDARD 'V' DITCH w/PSRM
SEE DETAIL 5
EST DDE = +/- 60 CY
PSRM = +/- 120 SY

SR 1007 ALL AMERICAN FREEWAY
2018 ADT 2035 ADT
58,170 97,200
9,300 11,600
6,980 8,800
49,700 61,200
40,010 49,400
BUS401 -L-
8,260 9,600
890 600
51,030 77,000

SR 3195 FERNCREEK DR
2018 ADT 2035 ADT
6,210 6,400
1,750 2,800
3,950 3,700
48,760 66,200
49,700 61,200
BUS401 -L-
3,350 2,900
2,130 4,100
6,030 6,600
SR 1248 ROXIE AVE -Y28-

★ 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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15

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

44,500 / 56,000 BUS401 -L-	4,290 / 6,200 7,450 / 8,600	410 / 500 610 / 700
	8,840 / 9,600 PURDUE DR -Y39-	33,780 / 42,400 BUS401 -L-

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 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

END CONSTRUCTION
-Y44- Sta. 11+90.00

-Y44- POT Sta. 12+38.14

-L- Sta. 319+48.48 =
-Y44- Sta. 10+00.00

-L- Sta. 314+63.20 =
-Y43- Sta. 10+00.00

-L- PC Sta. 317+27.20

TIE TO EXIST

RETAIN

RETAIN SYSTEM

FILL WITH FLOWABLE FILL

REMOVE

REMOVE 9' OF 12" RCP

205' LANE SHIFT

100' TAPER (LT TURN)

200' LANE SHIFT

100' TAPER (RT TURN)

150' UNIFORM TAPER

5' MONOLITHIC CONC. ISLAND

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

GENE S AMMONS & WIFE DELORES DB 1178 PG 359 PB 17 PG 41

JIMMY R PEARSON & WIFE DB 7021PG 286 PB 105 PG 158

TRACE HOMES INC DB 9079 PG 715 PB 105 PG 158

MARIE LEWIS PERKINS DB 963 PG 373 PB 14 PG 71

A EDWIN J MILLER & WIFE DB 5187 PG 391 PB 8 PG 5

B DAVID VALENTINE DB 5218 PG 877 PB 8 PG 5

McPHEE DR

33,780 / 42,400 BUS401 -L-	5,450 / 6,500	1,090 / 1,000
	17,460 / 23,300	2,710 / 2,900
	22,050 / 27,600	

14,680 / 16,500 BUS401 -L-

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

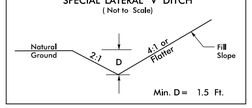
REVISIONS

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'

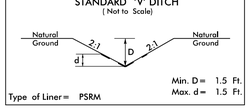
-SR2-
PI Sta 11+26.69
△ = 13° 05' 28.3" (RT)
D = 7° 38' 22.0"
L = 171.36'
T = 86.06'
R = 750.00'

DETAIL 10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



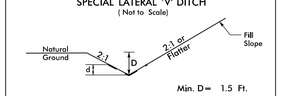
FROM STA. 11+00 TO STA. 12+75 -SR3- RT

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

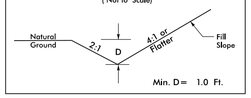
HYDRAULICS ENGINEER

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

ISF BUS

ISBK BUS

ISBK

ISBK APT

2SFD

WD DECK

MTL S

WD RAMP

STEPS

CONC

+70.00 -Y5- 60.00' RT
+69.41 -Y5- EX R/W
+69.49 -Y5- 47.00' RT
+18.00 -Y5- 62.82' RT
+45.00 -Y5- 53.00' RT 47.67' RT
+24.00 -Y5- 60.00' RT
300' TAPER
+90.00 -Y5- 76.00' RT
+00.00 -Y5- 46.00' RT EX R/W
COLLAR
+25.00 -Y5- 74.00' RT
+40.00 -Y5- EX R/W
+99.04 -Y5- EX R/W
50' TAPER
+24.00 -Y5- 47.00' LT
SPECIAL CUT DITCH SEE DETAIL 13
+01.00 -Y5- EX R/W
+60.00 -Y5- 60.00' LT
EX R/W -Y5- 43.00' LT
150' TAPER (RT TURN)
+57.00 -Y5- 48.00' LT

PUE
REMOVE
RETAIN
RETAIN SYSTEM -Y5-
JUNCTION BOX INACCESSIBLE FLUSH WITH GRADE
MANHOLE ROOF UNABLE TO VERIFY SIZE OF SURROUNDING STRUCTURE

15" RCP-IV
18" RCP-IV
24" RCP-IV
CB
DI
BOL (TYP)
2902
2903
2904
2905
2906
2907
2908
2909
2910
2911
2912
(2901)
(2903)

S 0° 30' 06.6" E
S 0° 57' 59.6" W
S 75°49'18" W 201.51'
S 18°45'48" E 210.52'
S 75°43'57" W 125.10'
S 75°49'18" W 248.67'
N 00°58'58" E 96.46'
N 00°08'54" W 134.72'
N 00°20'06" W 100.15'
S 89°21'01" W 200.00'
S 89°27'55" E 200.00'
N 89°27'55" W 200.00'
S 13°57'55" W 149.80'
N 13°57'55" E 149.80'
S 24°36'55" E 155.99'
S 00°38'05" E 125.71'
N 73°57'55" E 7.40'
N 11°33'05" W 153.70'
N 00°38'05" W 150.00'
S 00°38'05" E 150.00'
S 89°21'55" E 200.00'
N 89°21'55" W 200.00'
N 00°58'58" E 100.15'
N 00°20'06" W 100.15'
S 00°30'06" E 99.95'
N 00°08'54" W 134.72'

-Y5- PT Sta. 29+07.96
-Y5- PC Sta. 28+05.44
-Y5- POT Sta. 30+20.46

MATCHLINE SEE SHEET 9 -Y5- STA 23+00

30
25

-Y5-	
PI Sta 28+56.71	PI Sta 22+82.12
△ = 1° 28' 06.4" (LT)	△ = 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

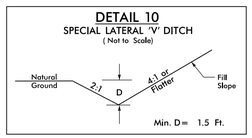
NORTH CAROLINA PROFESSIONAL SEAL 20147 ENGINEER FRANK F. FLEMING

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

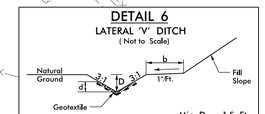
REVISIONS

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

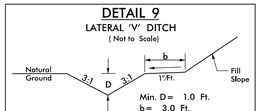
DETAIL 6
LATERAL 'V' DITCH
(Not to Scale)



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

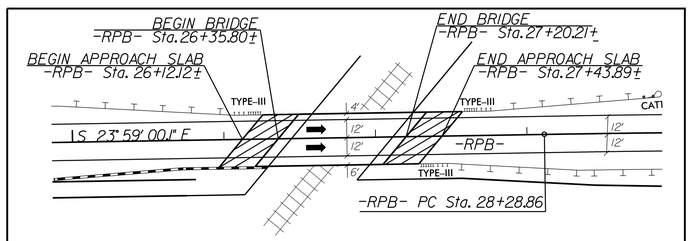
RETAIN SYSTEM

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

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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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