Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

January 31, 2018 Ver 2.3

*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.*

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf

A. Processing Information

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

Johnston

Is this project a public transportation project?*

(•) Yes ( ) No

This is any publicly funded by municipal,state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project?*

(•) Yes ( ) No

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

R-3825B (Widening of NC 42 from SR 1902 to SR 1003) Central

WBS #

34552.1.FR3

(for NCDOT use only)

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

- [x] Section 404 Permit (wetlands, streams and waters, Clean Water Act)
- [x] 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)
- [x] Regional General Permit (RGP)
- [ ] Standard (IP)

This form may be Corps to initiate the standard/individual permit process. Please contact your Corps representative for submittal of standard permits.

All required items that are not provided in the E-PCN and be added to the miscellaneous upload located at the bottom of this form.

Regional General Permit (RGP) Number: **198200031 - NCDOT Bridges, Widening Projects 2015**

RGP Number Other:

List all RGP 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
- [x] Riparian Buffer Authorization
- [ ] Individual Permit

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

R-3825B Revised - STR - RW - Buffer - NS 01.pdf 106.1KB

FILE TYPE MUST BE PDF

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

○ Yes ◉ No

1h. Is the project located in a designated trout watershed? *

○ Yes ◉ No

Link to trout information: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx

B. Applicant Information

1a. Who is the Primary Contact? *

NCDOT

1b. Primary Contact Email: *

jldilday@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6111

1d. Who is applying for the permit?

☐ 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: *

Widening of NC42, SR 1902 to SR 1003 Johnston County R-3825B (Central)

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Clayton

1d. Driving directions *

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

35.648037, -78.393237

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: *

35.648037

ex: 34.208504

Longitude: *

-78.393237

-77.796371

3. Surface Waters

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

Neuse River

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

WS-IV, NSW

Surface Water Lookup

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

Neuse

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: *

NC 42 is a Rural Major Collector characterized by residential and commercial properties, interspersed with forested communities.

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:

1.9 ac.

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

(intermittent and perennial)

2,800 linear feet

4f. Explain the purpose of the proposed project: *

To improve the safety and traffic carrying capacity of NC 42 within the project limits.

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

The project involves the Widening of NC 42 from a two lane shoulder section to a four lane shoulder section with a raised median divider. Standard road building equipment, such as trucks, dozers, and cranes 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

R3825B Permit Package 20180525.pdf	15.47MB
R3825B utilities.pdf	2.12MB
R3825B roadway2.pdf	17.45MB

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:

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

○ Preliminary ◉ Approved ○ Unknown ○ N/A

Corps AID Number:

Example: SAW-2017-99999

SAW-2011-01695

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

Name (if known): **Sara Easterly**

Agency/Consultant Company: **HDR**

Other:

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

JD dated 5/11/2015, field visit 1/27/2015.

5d1. Jurisdictional determination upload

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

B-3825-B JD_Tearsheet.pdf 126.6KB

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

6b. If yes, please give the DWR Certification number or the Corps Action ID (exp. SAW-0000-00000).

Section A was applied for as a phased IP. A Nationwide 14 was issued for Section A. NCDWR# 20110774, USACE # 2011-01695.

Project History Upload

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

File type must be PDF

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. Type of Jurisdicition *	2g. Impact area *

1-excavation, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WL**	**No**	**Corps** (404, 10) or DWR (401, other)	**0.140** (acres)
3-(isolated) fill, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Small-Basin Wetland**	**WK**	**No**	**DWR** (404, 10) or DWR (401, other)	**0.110** (acres)
5-fill, excavation, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WI/WJ**	**Yes**	**Corps** (404, 10) or DWR (401, other)	**0.050** (acres)
8-fill, excavation, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WH**	**Yes**	**Corps** (404, 10) or DWR (401, other)	**0.130** (acres)
11-fill, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WF/WG**	**No**	**Corps** (404, 10) or DWR (401, other)	**0.040** (acres)
12-fill, excavation, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WD/WE**	**No**	**Corps** (404, 10) or DWR (401, other)	**0.430** (acres)
13-fill, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WC**	**Yes**	**Corps** (404, 10) or DWR (401, other)	**0.010** (acres)
14-fill, mech. clearing Map label (e.g. Road Crossing 1 - Culvert, dewatering, etc)	**P** Permanent (P) or Temporary (T)	**Headwater Forest**	**WA/WB**	**No**	**Corps** (404, 10) or DWR (401, other)	**0.120** (acres)

2g. Total Temporary Wetland Impact

0.000

2g. Total Permanent Wetland Impact

1.030

2g. Total Wetland Impact

1.030

2h. Comments:

Wetland WK at Site 3 was considered isolated. Utility site 1- <0.01ac of fill due to power pole installation. Utility site 2-0.12 ac of hand clearing for easement

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. Reason for impact *	3b.Impact type *	3c. Type of impact *	3d. Stream name *	3e. Stream Type *	3f. Type of Jurisdiction *	3g. Stream width *	3h. Impact length *
S1	**1-pipe replace/extension** Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Fill**	**SL**	**Intermittent** Perennial (PER) or intermittent (INT)	**Both**	**4** Average (feet)	**213** (linear feet)
S2	**1-pipe replace/extension** Map label (e.g. Road Crossing 1)	**T** Permanent (P) or Temporary (T)	**Dewatering**	**SL**	**Intermittent** Perennial (PER) or intermittent (INT)	**Both**	**4** Average (feet)	**87** (linear feet)
S3	**2-pipe replace/extension** Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**Fill**	**SJ**	**Intermittent** Perennial (PER) or intermittent (INT)	**Both**	**4** Average (feet)	**108** (linear feet)

S4	2-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SJ	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	4 (linear feet)
S5	4-bridge replacement Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Workpad/Causeway	SK/Neuse River	Perennial Perennial (PER) or intermittent (INT)	Both	200 Average (feet)	209 (linear feet)
S6	5-stream relocate/pipe extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SI	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	523 (linear feet)
S7	5-stream relocate/pipe extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SI	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	14 (linear feet)
S8	5-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	SI	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	20 (linear feet)
S9	5-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Bank Stabilization	SI	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	6 (linear feet)
S10	6-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SH	Intermittent Perennial (PER) or intermittent (INT)	Both	5 Average (feet)	187 (linear feet)
S11	6-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SH	Intermittent Perennial (PER) or intermittent (INT)	Both	5 Average (feet)	31 (linear feet)
S12	7-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SG	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	117 (linear feet)
S13	7-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SG	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	54 (linear feet)
S14	7-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	SG	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	25 (linear feet)
S15	7-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Bank Stabilization	SG	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	3 (linear feet)
S16	8-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SF	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	320 (linear feet)
S17	8-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SF	Intermittent Perennial (PER) or intermittent (INT)	Both	4 Average (feet)	66 (linear feet)
S18	9-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SE	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	257 (linear feet)

S19	9-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SE	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	30 (linear feet)
S20	10A-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SD/Mill Creek	Perennial Perennial (PER) or intermittent (INT)	Both	20 Average (feet)	193 (linear feet)
S21	10A-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SD/Mill Creek	Perennial Perennial (PER) or intermittent (INT)	Both	20 Average (feet)	70 (linear feet)
S22	10B-stream relocation Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SC	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	498 (linear feet)
S23	10B-stream relocation Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SC	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	11 (linear feet)
S24	10B-stream relocation Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	SC	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	11 (linear feet)
S25	10B-stream relocation Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SC	Intermittent Perennial (PER) or intermittent (INT)	Both	3 Average (feet)	20 (linear feet)
S26	14-pipe replace/extension Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	SA	Intermittent Perennial (PER) or intermittent (INT)	Both	2 Average (feet)	72 (linear feet)
S27	14-pipe replace/extension Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Dewatering	SA	Intermittent Perennial (PER) or intermittent (INT)	Both	2 Average (feet)	20 (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:

2,544

3i. Total temporary stream impacts:

625

3i. Total stream and tributary impacts:

3169

3j. Comments:

56 linear feet of permanent impact was due to bank stabilization and does not require mitigation.

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*

15-install pipes Map label (e.g. Road Crossing 1)	**P** Permanent (P) or Temporary (T)	**PA** (if applicable)	**Culverts**	**Pond**	**0.01** (acres)

4g. Total temporary open water Impacts:

0.00

4g. Total permanent open water impacts:

0.01

4g. Total open water impacts:

0.01

4h. Comments:

6. Buffer Impacts (for DWR)

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

6a. Project is in which protect basin(s)? *

Check all that apply.

- [x] Neuse
- [ ] Catawba
- [ ] Goose Creek
- [ ] Other
- [ ] Tar-Pamlico
- [ ] Randleman
- [ ] Jordan Lake

6b. Impact Type *	6c. Per or Temp *	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact *	6g. Zone 2 impact *
1-road crossing-allowable/w mit Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SL**	**Yes**	**12,849** (square feet)	**7,731** (square feet)
4-road crossing-allowable/w mit Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SK**	**Yes**	**0** (square feet)	**361** (square feet)
4-bridge-allowable Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SK**	**No**	**15,609** (square feet)	**9,399** (square feet)
7-road crossing/parallel-allowable w/mit Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SG**	**Yes**	**24,293** (square feet)	**16,515** (square feet)
8-road crossing/parallel-allowable w/mit Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SF**	**Yes**	**18,071** (square feet)	**9,040** (square feet)
10-road crossing/parallel-allowable w/mit Location and Exempt, Allowable, allowable w/ mitigation	**P** Permanent (P) or Temporary (T)	**SC/SD**	**Yes**	**34,053** (square feet)	**18,207** (square feet)

6h. Total buffer impacts:

	Zone 1	Zone 2
Temporary impacts:	**0.00**	**0.00**

	Zone 1	Zone 2

Permanent impacts:	**104,875.00**	**61,253.00**

	Zone 1	Zone 2
Total buffer impacts:	**104,875.00**	**61,253.00**

6i. Comments:

Wetlands in buffers equal: Zone 1=1,106 sqft Zone 2=820 sqft.

Supporting Documentation - i.e. Impact Maps, Plan Sheet, etc.

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

File must be PDF

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: *

NCDOT Design Standards in Sensitive Watersheds will be employed. See Stormwater Management Plan for additional measures. The new bridge will have less in-water bents than the existing bridge.

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

Stormwater from travel lanes on Neuse River bridge will not directly discharge to the river or buffer. Grass swales were used where ground slope allows criteria to be met. In cases where slopes were too steep, pipes were used to convey water down slope. Riprap dissipators used at pipe outlets to reduce discharge velocity. At the request of NCWRC, an 2/15-6/15 in-water construction moratorium for anadromous fish 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)

2,488

4c. If using stream mitigation, what is the stream temperature:

warm

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's RIBITS website.

4d. Buffer mitigation requested (DWR only):

(square feet)

Zone 1=88,160 sq ft., Zone 2=51,034

4e. Riparian wetland mitigation requested:

(acres)

0.92

4f. Non-riparian wetland mitigation requested:

(acres)

0

4g. Coastal (tidal) wetland mitigation requested:

(acres)

0

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	**Road widening**	**88,160**	**3**	**264,480**
Zone 2	**Road widening**	**51,034**	**1.5**	**76,551**

6f. Total buffer mitigation required

341031

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)

6j. Comments:

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

*** Recent changes to the stormwater rules have required updates to this section .***

1. Diffuse Flow Plan

1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

◉ Yes ○ No

1b. All buffer impacts and high ground impacts require diffuse flow or other form of stormwater treatment. If the project is subject to a state implemented riparian buffer protection program, include a plan that fully documents how diffuse flow will be maintained.

All Stormwater Control Measures (SCM)s must be designed in accordance with the NC Stormwater Design Manual. Associated supplement forms and other documentation shall be provided.

What type of SCM are you providing?

- [ ] Level Spreader
- [x] Vegetated Conveyance (lower SHWT)
- [ ] Wetland Swale (higher SHWT)
- [x] Other SCM that removes minimum 30% nitrogen

(check all that apply)

For a list of options to meet the diffuse flow requirements, click here.

Diffus Flow Documentation

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

File type must be PDF

2. Stormwater Management Plan

2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? *

(•) Yes ( ) No

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

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.

Implementation of the proposed Build Alternative would not contribute, in conjunction with past, present, or future projects, to substantial adverse cumulative effects on resources in the study areas.

4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? *

○ Yes ○ No ◉ N/A

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.

Raleigh

5d. Is another Federal agency involved? *

◉ Yes ○ No ○ Unknown

What Federal Agency is involved?

National Marine Fisheries Service (NMFS)

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

◉ Yes ○ No

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

N.C. Natural Heritage Program database; USFWS-Raleigh Field Office website;biological surveys for protected species listed for Johnston County, which include red-cockaded woodpecker (RCW), dwarf wedgemussel, Tar spinymussel, yellow lance and Michaux's sumac. All species, except dwarf wedgemussel received biological conclusions of "No Effect", due to no habitat being present. Dwarf wedgemussel received a biological conclusion of "May Affect, Not Likely to Adversely Affect". Concurrence was received from USFWS on 6/26/2006. Recent communications with USFWS confirmed that conditions for the concurrence received in 2006 remained valid. There were no bald eagles or nest observed within 660 feet of the project area on 8/9/2017. NMFS has listed the Neuse River as critical habitat for the Atlantic sturgeon. Concurrence from NMFS is included with this submittal for Atlantic sturgeon and critical habitat.

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 County Index

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 Documentation

7c. Historic or Prehistoric Information Upload

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

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:

NCDOT Hydraulics Unit coordination with FEMA

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

FEMA Maps

Miscellaneous

Miscellaneous attachments not previously requested.

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

NOAA Section 7.pdf	683.8KB
R-3825B_4B Meeting Minutes_final.pdf	96.46KB
R-3825B_4C Meeting Minutes Final 20170720.pdf	142.74KB
R3825 USFWS Section 7.pdf	132.03KB

File must be PDF or KMZ

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: *

Mack Christopher Rivenbark III

Signature



Date

6/27/2018

TO: Paul Atkinson, PE

FROM: William T. Stephens, Jr., PE

DATE: March 23, 2016

SUBJECT: **Final Minutes of the 4B Meeting for R-3825B**

A meeting was held in the Structure Design Conference Room on Thursday, February 18, 2016 to discuss the 4B hydraulic design review of R-3825B (NC 42 Widening Project in Johnston County). In attendance were the following:

Name:	Company/Dept.	Email
TEAM MEMBERS		
Ron Lucas	FHWA	absent
Tom Steffens	USACE	absent
Gary Jordan	USFWS	absent
Travis Wilson	NCWRC	Travis.wilson@ncwildlife.org
Dr. Cynthia Van Der Wiele	USEPA	absent
Rob Ridings	NC-DWR	robridings@ncdenr.gov
PARTICIPANTS		
Wendi Johnson	NCDOT-Div. 4	wojohnson@ncdot.gov
Gary Lovering	NCDOT-Roadway	glovering@ncdot.gov
Paul Atkinson	NCDOT-Hydraulics	patkinson@ncdot.gov
Brook Anderson	NCDOT-Hydraulics	beanderson@ncdot.gov
Rick DeCola	NCDOT-Roadway	rjdecola@ncdot.gov
Jay McInnis	NCDOT-PDEA	jmcinnis@ncdot.gov
John Merritt	NCDOT-NES	jsmerritt@ncdot.gov
Chris Rivenbark	NCDOT-NES	crivenbark@ncdot.gov
Mack Bailey	NCDOT-SMU	mbailey2@ncdot.gov
Mark Staley	NCDOT-REU	mstaley@ncdot.gov
James Grimes	NCDOT-Roadway	jdgrimesncdot.gov
Claudia Lee	AECOM	claudia.lee@aecom.com
Charles Smith	AECOM	charles.smith2@aecom.com
William Stephens	AECOM	william.stephens@aecom.com

General:

- Show buffer lines arcs around end of pipes.
- AECOM noted that inverts of cross pipes in jurisdictional streams will be buried the appropriate depth below the stream bed.
- Rob Ridings suggested that Tom Steffens with the USACOE be contacted about the project.

R-3825B 4B Meeting Minutes
03/23/16

Sheet 4:

- No jurisdictional areas or wetlands.

Sheet 5:

- Jurisdictional stream and wetlands on south side of project. Jurisdictional stream on north side.
- A 54-inch pipe buried 1.0 ft. is proposed for the crossing.
- The stream buffers shown on one side of the project but not the other was questioned. AECOM indicated that the stream was only on the north side on the USGS Quad map and/or the Soil Survey Maps.
- Rob Ridings asked if the rip rap lined ditch through the buffer on the north side of the project could be eliminated and the flow from the pipe be released onto natural ground. AECOM indicated that the flow rate out of the pipe was high and erosion would occur without the ditch. Additionally, there is currently an existing rip rap lined ditch in this area. Rob indicated to keep the ditch as shown.
- The use of a proposed pipe through the buffer on the north side of the project was questioned instead of proposing a ditch or swale. AECOM indicated that the ground slope was steep in that area and a ditch would be at a slope greater than 8%. A pipe is proposed to eliminate potential erosion problems due to a steep ditch.

Sheet 6:

- No jurisdictional stream or wetlands

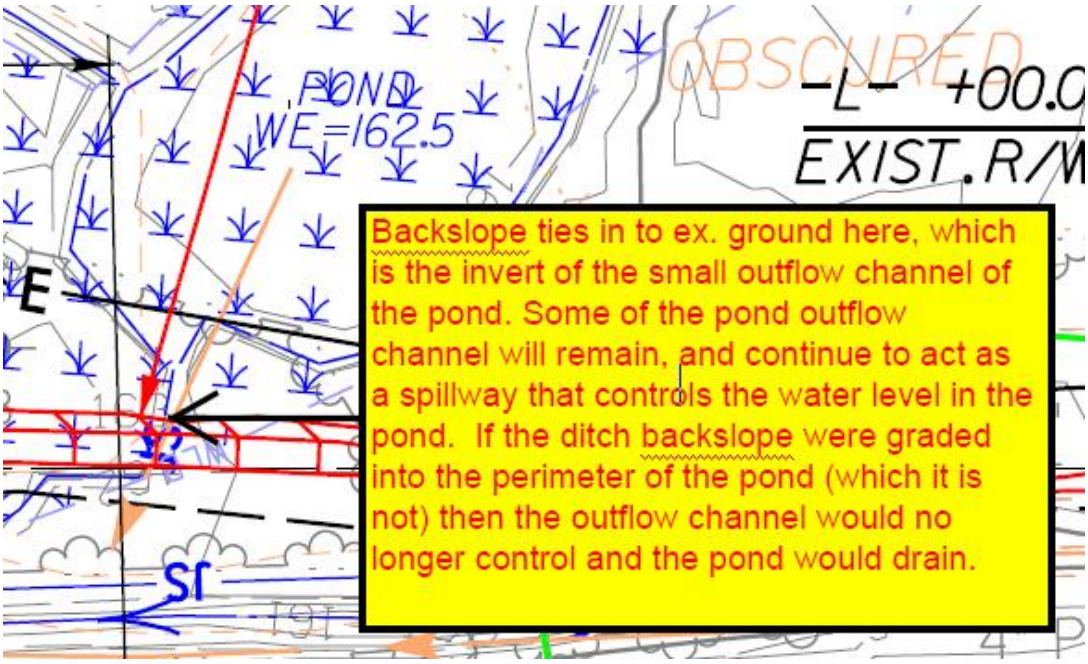
Sheet 7:

- Jurisdictional stream on north side of project at beginning of sheet and wetlands at the end of the sheet. No comments.

Sheet 8/9:

- Proposed Neuse River bridge replacement and jurisdictional stream crossing at approximately –L- 73+50.
- A jurisdictional stream running laterally along the north side of the project on sheets 8 and 9 from approximately –L- 73+28 to 76+59 LT is being covered by the proposed fill slope of the westbound lanes and will require relocating. The wetland area identified as a pond will not drain due to the reason stated below and in the screen shot on the following page.
  The wetland area *surrounding* the pond should continue to maintain the existing condition because the proposed ditch is not removing any berm, flat area, or other apparent ground feature that would retain water. The existing ground slopes toward the existing stream as shown in the contours, and will continue to do so after construction.

R-3825B 4B Meeting Minutes
03/23/16



- Rob Ridings asked if the proposed bridge crossing the Neuse River would have interior bents within the stream channel. AECOM indicated that 2 bents would be located within the channel but 4 existing bents would be removed. Rob indicated bent location was acceptable.
- A 42" pipe buried 0.7 feet below stream bed is proposed for stream crossing at approximately –L- 73+08. Pipe is indicated to be buried 20% of diameter.
- AECOM indicated that the stream/ditch relocation would not drain the wetland area along the north side of the project on sheet 9.
- Paul Atkinson asked about the hydraulic adequacy of the stream/ditch relocation. AECOM indicated that most of the drainage area currently flowing to this ditch will be piped across the road upstream of the ditch relocation.

Sheet 10:

- No jurisdictional areas.

Sheet 11:

- Jurisdictional stream crossing with proposed 66-inch pipe buried 1.0 ft. below stream bed. No comments.

Sheet 12:

- AECOM discussed the existing conditions of the stream/culvert crossing at the beginning of the sheet and presented a preliminary culvert survey report and photos. Rob Riding was concerned with the proposed 10% slope on the proposed culvert replacement and the potential outlet velocities. Rob recommended investigating a drop structure on the inlet end of the proposed culvert to reduce the slope.

- Rob Ridings expressed concern about new impervious discharge and the proposed system drainage through the buffers on the south side of the project at the culvert outlet. Rob would like swale criterial information shown for this area.

Sheet 13:

- Jurisdictional stream crossing with proposed 72-inch pipe buried 1 ft. below stream bed.
- Rob Ridings expressed concern about the system drainage through the buffers with possible untreated roadway drainage. Rob indicated that since this is widening project, we need to demonstrate that increases in impervious areas are being treated.
- Rob doesn't want rip rap placed directly in the wetlands, it would be preferred to have drainage discharged just prior to the wetland boundaries.
- Wendi Johnson questioned the rip rap outlet protection in the stream and indicated that this Division normally doesn't place rip rap outlet protection in streams at pipe culvert outlets. It was discussed that this project was in an area with steeper terrain than most of the Division and that outlet protection would be needed.

Sheet 14:

- No jurisdictional areas.

Sheet 15:

- Jurisdictional stream crossing and culvert replacement with a 54-inch pipe buried 1.0 ft. below stream bed. The length of the culvert replacement is due to the high fill over the pipe culvert. This stream is not a buffered stream.

Sheet 16:

- Jurisdictional stream crossing (Mill Creek) with a proposed 2@ 11 ft. x 12 ft. RCBC and a lateral stream relocation. A preliminary culvert survey report was presented.
- Wendi Johnson asked about providing sills in the culvert and backfill material. AECOM indicated that sills and native backfill material were being proposed in the culvert.
- Chris Rivenbark requested that the channel change label be revised to channel relocation.
- Rob Ridings questioned if natural stream design was considered for the channel change. AECOM indicated that there was a hill side adjacent to the north of the channel change which would require a large cut if the stream was meandered. It was suggested to consider replicating the meander of the existing stream along the western portion of the channel change where the hill side is not present. Chris Rivenbark of NES said that they would investigate the possibility of natural stream design.
- Wendi Johnson was agreeable to designing the relocation with some sinuosity but didn't feel a full natural stream design was warranted. Rob Ridings agreed and said it would help to cancel mitigable impacts

Sheet 17:

- No jurisdictional areas.

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Sheet 18:

- AECOM pointed out the proposed rock fill in the pond due to the fill slopes. Wendi asked if the pond was considered jurisdictional surface waters and NES indicated it was not.
- Wendi asked where flow was coming from to feed the pond. AECOM indicated that there is apparently a buried pipe under NC 42 that feeds the pond from the drainage area on the south side of the roadway. The existing pipe was not located by Location and Surveys and AECOM was also unable to locate it and verify the size. Wendi asked about the estimated proposed pipe size, AECOM indicated it would be at least a 24-inch pipe.
- Paul and Wendi asked that the hidden pipe be noted on the plans.
- AECOM indicated that trenchless installation was being proposed for the cross pipe on this sheet and others along the project with high fill. Wendi agreed.
- Gary Lovering expressed concern about encroaching upon existing retention ponds along the project.

Sheet 19:

- No jurisdictional areas.

Sheet 20:

- No jurisdictional areas.

Sheet 21/22:

- AECOM pointed out the existing ponds on both sides of the roadway and that the red rip rap symbology on the 4B plans indicated that 2:1 fill slopes were being proposed with rock plating. However, the slope stake lines currently shown on the 4B plans are for 3:1 slopes. The 2:1 slopes are being proposed to reduce the impacts on the ponds and wetlands.
- AECOM mentioned that during their field visit water was flowing along the north side of the project between the roadway and the pond dam that could be seepage from the pond. This information had been forwarded to the Geotechnical Unit for investigation.
- AECOM discussed the existing 60-inch pipe crossing shown at the beginning of Sheet 22 and the outlet end being buried approximately 4 ft. below the existing channel. AECOM indicated that the existing channel would need to be tail ditched/cleaned out to provide positive drainage for the crossing.
- NCDOT NES Unit will verify the jurisdictional status of the stream at the outlet end of the existing 60-inch pipe. NES indicated that the channel was not jurisdictional on the north side of the project.
- AECOM indicated that an easement would be required to clean out the channel. Wendi and Gary requested that any required drainage easement be shown on the plans for the upcoming public meeting and that we show whatever easements (worst case) we think will be needed.
- An easement will be required to clean out the tail ditch/stream at –L- 242+00 RT.

Sheet 22:

- Ponds located on the north and south side of the project.

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- Wendi suggested rock plating or some other design to insure there was no proposed fill in the pond on the south side of the road.
- Wendi questioned the two new cross pipes shown at approximately –L- 251+00. AECOM indicated that the new pipes are proposed due to the large upstream drainage area and overflow from the pond on the north side of the road. Currently the 15-inch drive pipe at –L- 250+00 left accepts all the overflow from the pond and the upstream drainage area. The drive pipe cannot be replaced with a structure large enough to handle the design discharge so new cross pipes to intercept the flow are being proposed.

End of Minutes.

TO: Paul Atkinson, PE

FROM: Charles Smith, PE

DATE: July 20, 2017

SUBJECT: **Final Minutes of the 2017 06 14, 4C Meeting for R-3825B**

A meeting was held in the Hydraulics Conference Room on Wednesday, June 14, 2017, for the 4C review of R-3825B (NC 42 Widening Project in Johnston County). In attendance were the following:

Name:	Company/Dept.	Email
TEAM MEMBERS		
Ron Lucas	FHWA	absent
Monte Matthews for Tom Steffens	USACE	Monte.k.matthews@usace.army.mil
Gary Jordan	USFWS	absent
Travis Wilson	NCWRC	absent
Dr. Cynthia Van Der Wiele	USEPA	absent
Rob Ridings	NC-DWR	Rob.ridings@ncdenr.gov
PARTICIPANTS		
Wendi Johnson	NCDOT-Div. 4	wojohnson@ncdot.gov
Brandon Herring	NCDOT-Div. 4	blherring@ncdot.gov
Paul Atkinson	NCDOT-Hydraulics	patkinson@ncdot.gov
Brook Anderson	NCDOT-Hydraulics	beanderson@ncdot.gov
Ashley Cox	NCDOT-Utilities	abcox@ncdot.gov
Jay McInnis	NCDOT-PDEA	jmcinnis@ncdot.gov
John Merritt	NCDOT-NES	jsmerritt@ncdot.gov
Chris Rivenbark	NCDOT-NES	crivenbark@ncdot.gov
Kevin Fischer	NCDOT-SMU	wkfischer@ncdot.gov
Jason Dilday	NCDOT-EAU	jldilday@ncdot.gov
Hoang Dieu	NCDOT-SMU	htdieu@ncdot.gov
Mark Staley	NCDOT-REU	mstaley@ncdot.gov
Charles Smith	AECOM	charles.smith2@aecom.com
William Stephens	AECOM	william.stephens@aecom.com

Wetland and Surface Water Permit Drawings
Sites 1, 2, 3:

- No discussion or comments.

Site 4:

- Wendi Johnson asked that the source of causeway / work pad footprint and configuration be provided to her. It needs to be verified that it was passed through Corey McLamb of

Division 4. (Charles Smith verified the source was Corey McLamb, and forwarded the original email to Brook Anderson and Wendi Johnson on 2017 06 14.)

- Most likely, a temporary bridge will be used instead of work pads due to the difficulty of removing fill in the relatively deep river. However Kevin Fischer noted that sometimes the contractor prefers to lay the removed piers on the rock work pads instead of using a temporary bridge.
- Wendi Johnson will follow up to give direction on whether to show work pads or temporary bridge.
- Monte Matthews asked that we consider including permanent impacts in case fill is unable to be removed from the river.
- Permit drawings will remain as-is until further direction is received from NCDOT.

Site 5:

- Rob Ridings asked that we consider placing riprap at the 90 degree bend just upstream of the 42" pipe crossing NC 42 at Station 73+00. Permit drawings and redlines will be changed to include this.
- Discussion was held about the wetland pond at 76+00 LT. Monte Matthews and others were concerned that the proposed ditch which replaces the existing JS stream will discontinue the wetland hydrology. Charles Smith explained that a small section of existing channel leaving the pond would remain to continue to control the pond WSE, and maintain hydrology.
    - There was concern about whether the proposed ditch would cause seepage from the wetland area and eliminate wetland hydrology. AECOM will verify that the proposed ditch is close in invert elevation to the existing ditch.
        - (Charles Smith confirmed that at Station 75+50 LT, the existing ditch is approximately elevation 161, and the proposed ditch is approximately 161.5. Thus, the proposed ditch invert elevation will not be a factor in draining the wetland.)
    - A note will be added to the plans indicating that the ditch grading will not encroach into the ponded area of the wetlands, per Paul Atkinson's request.

Site 6:

- No discussion or comments.

Site 7:

- Wendi Johnson indicated that consultation between Hydraulics and Traffic Management was needed to verify whether temporary pavement width was needed to construct this culvert.
- Brook Anderson indicated she will speak with Traffic Management.
- Permit drawings will remain as-is until further direction is received from NCDOT.

Site 8:

- Monte Matthews enquired about whether hydrology would be maintained to the wetland at Station 136+00 RT. Charles Smith showed using lidar contours from the Redlines that the wetland was in a bowl, and not likely fed from the stream that was being impacted.
- NCDOT indicated that sometimes if less than 0.25 acres of wetland remain after a partial

take, then it will preemptively considered a total take on the permit drawings. However, NCDOT staff will verify whether to do so in this case. Permit drawings will remain as-is until further direction is received from NCDOT.

- Wendi Johnson requested that sufficient temporary surface water impacts be shown at the downstream end of the 72" pipe to ensure adequate room for water diversion during construction. After discussion among staff, Charles Smith indicated the temporary impacts would be extended to the DUE line.

Site 9:

- No discussion or comments.

Site 10:

- Discussion was held about the fact that because the relocated stream between Stations 167+00 LT and 172+00 LT was riprapped, no reduction of impacts would be granted for meandering the proposed ditch.
    - The proposed ditch will be revised to remove meanders, and be shown as a conventional straight ditch on the Redlines and Permit drawings.
- Rob Ridings enquired about the extensive storm sewer network discharging near Station 172+00 LT, and whether treatment was being provided.
    - Charles Smith indicated that Grass Swales were used tributary to the inlets, and showed the locations on the Buffer drawings.

Sites 11, 12, 13:

- No discussion or comments.

Site 14:

- Wendi Johnson requested that Site 14 be presented so as to not span drawing sheets. Charles Smith indicated that the Enlargement permit drawing sheet will be revised to show the entire site on one sheet.
- Impact Summary Table, Site 14, will be revised to round linear footage impacts to whole numbers.

Buffer Permit Drawings:

- No discussion or comments on individual sites.
- Discussion was held about whether to match site numbering between Wetland and Buffer drawings.

(Follow-up after meeting: Buffer sites will be renumbered to match the corresponding wetland site numbers. The following note will be added to the Buffer summary sheet: *Buffer sites are not numbered sequentially however they correspond with the respective wetland/stream site number*.)

End of Minutes.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

April 6, 2005

Manley
RECEIVED
APR 13 2005
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of March 23, 2005 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the proposed widening of NC 42 in Johnston County (TIP No. R-3825) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and red-cockaded woodpecker (*Picoides borealis*). In addition, NCDOT has determined that the project will have no effect on the federally endangered Tar spinymussel (*Elliptio steinstansana*) and Michaux's sumac (*Rhus michauxii*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information provided, mussel surveys were conducted at the project site on the Neuse River in 2001 and 2002. Although neither of the federally endangered mussel species were found, the surveys are now more than two years old. In addition, your submitted information does not indicate that Mill Creek was surveyed. As a perennial tributary to the Neuse River, the presence of dwarf wedgemussel should not be ruled out if potential habitat exists in the stream. The Service cannot concur with your determination that the project may affect, but is not likely to adversely affect the dwarf wedgemussel. The Service recommends that new surveys be conducted at the Neuse River and Mill Creek crossings. All surveys must extend 100 meters upstream and 400 meters downstream of the project limits where suitable habitat is present. Upon receiving new survey results, the Service will reconsider concurrence for the dwarf wedgemussel.

The Service concurs that the project will have no effect on the Tar spinymussel and Michaux's sumac. Also, due to the lack of cavity trees within ½ mile of the project limits, the Service would also concur with a "no effect" determination for the red-cockaded woodpecker (as per revised 2003 Recovery Plan).

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Pete Benjamin
Ecological Services Supervisor

cc: Eric Alsmeyer, USACE, Raleigh, NC
Nicole Thomson, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

JUN 22 2018

F/SER31:KBD

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

Dear Mr. Harris:

This letter responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following action.

SER Number	Project Type
SER-2017-18974	North Carolina Highway 42 (NC 42) Neuse River Bridge replacement

Consultation History
We received your letter requesting consultation and a completed ESA Section 7 checklist on November 3, 2017. We requested additional information from NCDOT on March 8, 2018. On March 9, 2018, we also consulted with a NMFS sturgeon specialist concerning the distribution of Atlantic sturgeon in this part of the Neuse River. We were told there has been no occurrence of Atlantic sturgeon this far up the Neuse River; however, we are unsure of the presence of sturgeon in this portion of the river so we are still consulting to err on the side of protecting the species. After receiving NCDOT's final response to our inquiries about the project on May 2, 2018, we initiated consultation that same day. On May 25, 2018, NCDOT informed us that it had been determined that the proposed construction of temporary work platforms using metal piles for support would not be feasible due to the presence of shallow bedrock in the project site. Instead of using elevated work platforms on piles, NCDOT has now proposed the construction of temporary rock rip rap workpads.

Project Location

Address	Latitude/Longitude	Water body
Highway 42 Bridge over Neuse River, Johnston County, North Carolina	35.647270°N, 78.405656°W (North American Datum 1983)	Neuse River



Image of the project location and surrounding area (©2018 Google)

Existing Site Conditions
The existing 2-lane NC 42 Bridge, built in 1939, spans the Neuse River in Johnston County and is located approximately 195 miles upstream from the Pamlico Sound. The bottom substrate is comprised of sand, cobble, and boulders. The width of the river at the project area is approximately 190 feet (ft) and the water depths range from 4 to 6 ft deep.

Project Description
The NCDOT proposes to replace the existing 7-span bridge with a 3-span structure. Existing bents will be removed. The new bridge will be 73.5 ft wide and 380 ft in length. It will be 22.7 ft above mean high water and the area over water will be 36,378 square ft (ft^2). Traffic will be maintained on the existing bridge during construction. Upon completion of the new bridge, traffic will be routed onto the new bridge and the old bridge will be demolished.

In-water and over-water construction and demolition work will be accomplished from temporary workpad causeways comprised of rock rip rap. As with similar bridge projects, construction equipment such as trucks, bulldozers, and cranes will be used to accomplish demolition and construction activities. It is estimated that demolition of the old bridge and construction of the new bridge will take 507 days to complete. The demolition of the old bridge is expected to involve sawing the superstructure into manageable pieces that would be removed by crane for appropriate upland disposal. The use of jack hammers and/or hoe rams may be required to demolish the other portions of the bridge. The substructure elements (e.g., piles) are typically removed using a crane possibly in association with a vibratory device. Some parts of the substructure demolition may use sawing or shattering equipment as well. The use of explosives is not anticipated as part of the demolition process.

Two workpads will be temporarily constructed under the existing bridge. They will be constructed so that there is only one in the river at a time. The west workpad will temporarily cover up to 9,920 ft^2 of river bottom and river bank and the east workpad will cover up to 6,930 ft^2. NCDOT estimated that the west workpad will extend approximately 90 ft into the river and the east workpad will extend approximately 65 ft. Since the river width at the project site is approximately 190 ft, neither workpad will extend more than 50% across the river channel. After the bridge construction is complete, all rip rap rock associated with the workpad causeways will be removed to the maximum extent practicable. Turbidity curtains will be used during construction and removal of the rip rap workpads. The new bridge will be supported by ten 54-in diameter concrete piles that will be formed inside auger-drilled shafts with metal casings. The metal casings have "teeth" and will be auger drilled into the bedrock and then left in place after the concrete pile is formed. Slurry from the augering process will be pumped out of the casings and removed from the site. The 10 concrete piles will permanently displace about 202.5 ft^2 of river bottom.

Construction Conditions

The contractor will comply with NCDOT's Best Management Practices (BMPs). NCDOT's BMPs for the Protection of Surface Waters will be strictly enforced during the entire life of the project to minimize impacts to water resources in the entire impact area. Since the existing bridge is being removed also, NCDOT's BMPs for Bridge Demolition and Removal will be used as well. These BMPs require the use of turbidity curtains. The NCDOT has agreed to provide an additional measure of protection by requiring in-water construction activities to stop if a sturgeon is spotted within 50 ft of operations. No in-water work will be allowed in the Neuse River between February 15 and June 15. Construction will not block more than 50% of the river.

Effects Determination(s) for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Action

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
Fish			
Atlantic sturgeon (Carolina DPS)	E	NLAA	NLAA
E = endangered; NLAA = may affect, not likely to adversely affect			

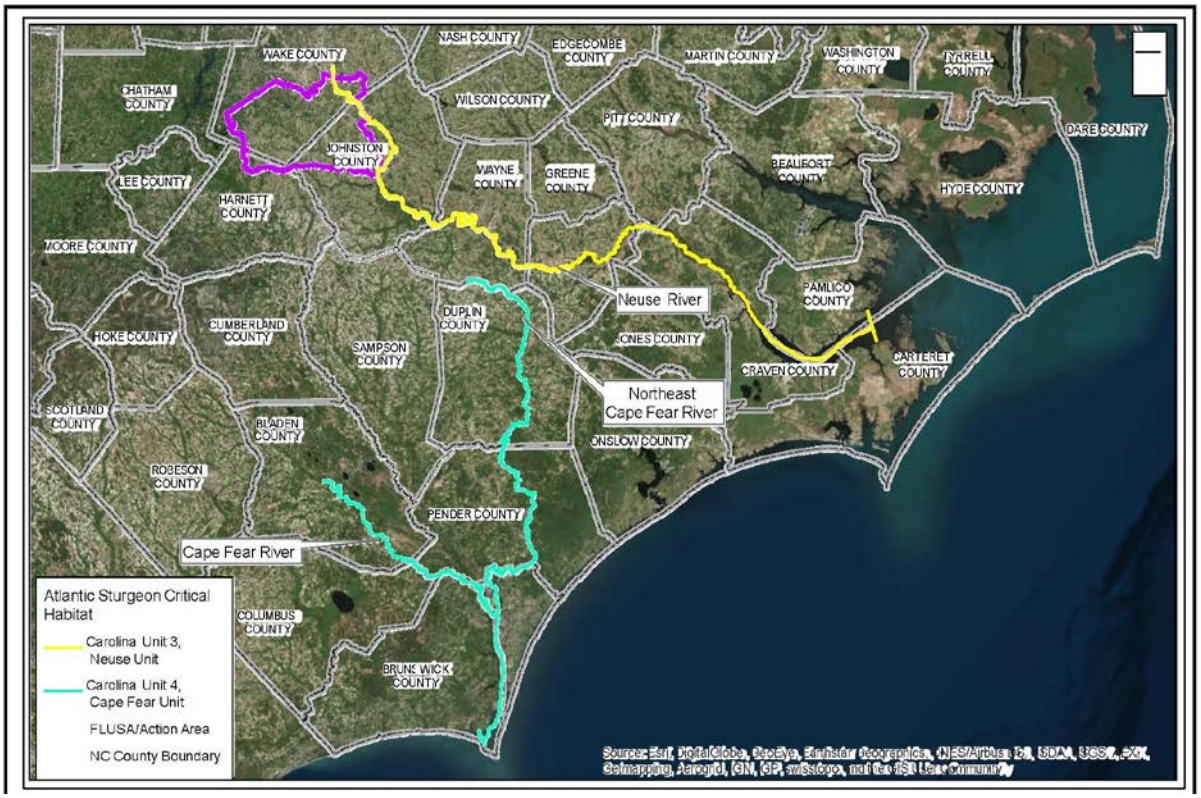


Image of the project location and Atlantic Sturgeon Critical Habitat in the Neuse River (Provided by NCDOT)

Critical Habitat

The project is located in Atlantic sturgeon critical habitat Carolina Unit 3 (Neuse Unit). The physical and biological features (PBFs) of the critical habitat are described in the table below. We believe the proposed action may affect the salinity gradient and soft substrate and unobstructed water of appropriate depth PBFs.

Atlantic Sturgeon Critical Habitat PBFs and their Purpose/Function		
PBF		**Purpose/Role of PBF**
Hard Substrate (PBF 1)	Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand range)	Necessary for settlement of fertilized eggs, refuge, growth, and development of early life stages
Salinity Gradient and Soft Substrate (PBF 2)	Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 parts per thousand and soft substrate (e.g., sand, mud) between the river mouth and spawning sites	Necessary for juvenile foraging and physiological development
Unobstructed Water of Appropriate Depth (PBF 3)	Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites	Necessary to support: • Unimpeded movement of adults to and from spawning sites; • Seasonal and physiologically-dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and • Staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river
Water Quality (PBF 4)	Water quality conditions, especially in the bottom meter of the water column, with the appropriate combination of temperature and oxygen values	Necessary to support: • Spawning; • Annual and inter-annual adult, subadult, larval, and juvenile survival; and • Larval, juvenile, and subadult growth, development, and recruitment. Appropriate temperature and oxygen values will vary interdependently, and depending on salinity in a particular habitat.

Analysis of Potential Routes of Effects to Species

Atlantic sturgeon may be affected by the potential risk of injury from direct impact by construction machinery and associated in-water activities (e.g., crane use and rip rap workpad construction). We believe these effects are discountable due to the complete moratorium on in-water work from February 15-June 15. Because of the moratorium, Atlantic sturgeon (adult, larval, and small juvenile sturgeon) are extremely unlikely to be exposed to the risk of injury because they are not expected to be in the action area during the moratorium time period.

Atlantic sturgeon may also be affected by the inability to use the project area for foraging and refuge habitat due to temporarily avoiding the area because of exposure to noise from demolition and construction activities (most equipment used for this work will be staged from the upland, the bridge, or workpads) and the effects of temporarily avoiding the project site due to the use of turbidity curtains. We believe these effects are insignificant since Atlantic sturgeon are not expected to be in the action area during the moratorium time period.

The permanent installation of 10 concrete piles (54-in diameter) will result in the loss of 202.5 ft^2 of unvegetated river bottom (i.e., course sand, cobble and boulders) where sturgeon might forage for invertebrate prey. In addition, up to 16,850 ft^2 of river bottom will be temporarily displaced

by the construction of the rip rap workpads. We believe the effects on sturgeon caused by the loss of river bottom due to this project will be insignificant. Because sturgeon are opportunistic feeders and forage over large areas, they would be able to locate prey beyond the immediate area of the piles and rip rap. The temporary workpads will be removed once the new bridge is built and demolition of the old bridge is completed. Additionally, the new bridge will have less supports in the river therefore potentially increasing the available amount of substrate, so river bottom may once again made available for use by sturgeon when the old bridge's substructure (i.e., piles) are removed during the demolition process. Invertebrates, which are prey for Atlantic sturgeon, will quickly recolonize this river bottom upon removal of these substructures.

Analysis of Potential Routes of Effect to Critical Habitat

The project may affect aquatic habitat with a gradual salinity gradient and soft substrate (PBF 2) by covering soft substrate with new concrete bridge piles and temporary rip rap workpads. However, we believe this effect to PBF 2 will be insignificant. The soft substrate in the river bottom surrounding the bridge piles will continue to support juvenile foraging and development. Similarly, once the temporary workpads are removed those areas of soft substrate will become accessible again as foraging or developmental habitat. Also, additional soft substrate may become available when the old bridge's substructure is removed from the river bottom during demolition.

Unobstructed water of appropriate depth (PBF 3) that supports staging, resting, holding, or movement of various life stages of Atlantic sturgeon may be affected by the installation of piles and the temporary workpads. We believe the obstructions created by the installation of new bridge piles, temporary workpads, and the use of turbidity curtains at each new bridge pile and workpad location will have an insignificant effect on PBF 3. The temporary workpads, new bridge piles, and the use of turbidity curtains will only affect limited portions of the main channel. Significant portions of the channel will remain unobstructed. Also, the temporary workpads will be removed at the completion of the project. Obstructions created by the turbidity barriers deployed around new bridge pile and temporary workpad locations will also only affect limited portions of the main channel and will be removed after installation is completed.

Conclusion

Because all potential project effects to listed species and critical habitat were found to be discountable, insignificant, or beneficial, we conclude that the proposed action is not likely to adversely affect listed species and critical habitat under NMFS's purview. This concludes your consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. NMFS's findings on the project's potential effects are based on the project description in this response. Any changes to the proposed action may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any

questions on this consultation, please contact Kay Davy, Consultation Biologist, at (727) 415-9271 or by email at kay.davy@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

File: 1514-22.F.1

Environmental Quality

ROY COOPER
Governor

June 18, 2018

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

Dear Mr. Harris:

Subject: EEP Mitigation Acceptance Letter:

R-3825B, NC 42 from East of SR 1902 (Rocky Branch Road) to SR 1003 (Buffaloe Road), Johnston County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the stream, wetland and buffer mitigation for the subject project. Based on the information supplied by you on June 18, 2018, the stream, wetland and buffer impacts are located in CU 03020201 of the Neuse River basin in the Northern Inner Coastal Plain (NICP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Neuse	03020201	NICP	0	0	2,488.0	0.92	0	0

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

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWR's Buffer Authorization Certification, DMS will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP Number R-3825B. Subsequently, DMS will conduct a review of current NCDOT ILF Program mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from NCDOT ILF Program.

Buffer	River Basin	CU	Eco-Region	Buffer Impacts		
				Zone 1	Zone 2	TOTAL
Impacts	Neuse	03020201	NICP	88,160.0	51,034.0	139,194.0

This mitigation acceptance letter replaces the mitigation acceptance letter issued on January 23, 2018. The impacts and associated mitigation needs were under projected by the NCDOT in the 2017 impact data. DMS commits to implement sufficient compensatory stream, wetland and buffer 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 Ms. Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
DMS Asset Management Supervisor

Cc: Mr. Tom Steffens, USACE – Washington Regulatory Field Office
Ms. Amy Chapman, NC Division of Water Resources
File: R-3825B Revised

North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 34552.1.FR3 **TIP No.:** R-3825B **County(ies):** Johnston

General Project Information

WBS Element:	34552.1.FR3	**TIP Number:**	R-3825B	**Project Type:**	Roadway Widening
NCDOT Contact:	Paul Atkinson	**Contractor / Designer:**	AECOM / William Stephens	**Date:**	2017 05 16
Address:	1000 Birch Ridge Drive Raleigh, NC 27610	**Address:**	701 Corporate Center Drive Suite 475 Raleigh, NC 27607		
Phone:	919-707-6707	**Phone:**	919-854-6200		
Email:	patkinson@ncdot.gov	**Email:**	william.stephens@aecom.com		
City/Town:	Clayton, NC	**County(ies):**	Johnston		
River Basin(s):	Neuse	**CAMA County?**	No		
Wetlands within Project Limits?	Yes				

Project Description

Project Length (lin. miles or feet):	24150 LF	**Surrounding Land Use:**	Residential, Light Commercial, Institutional

	Proposed Project	Existing Site
Project Built-Upon Area (ac.)	51 ac.	27 ac.
Typical Cross Section Description:	4-lane, raised median, divided. Primarily shoulder section with areas of shoulder berm gutter and curb and gutter. Ditches and storm sewer. 12-foot lanes.	2-lane shoulder section with roadside ditches and 12-foot lanes. Limited storm sewer.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 37400 Year: 2040	Existing: 19000 Year: 2015

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

R-3825B involves the widening NC 42 from two lane shoulder section to four lane shoulder section, raised median divided. The Neuse River bridge, Mill Creek Culvert, and a culvert carrying and unnamed tributary to the Neuse are the major hydraulic structures being replaced. Water from the travel lanes of the Neuse River bridge will not directly discharge to the river or buffers below. However, deck drains that drain the pedestrian walkway on the bridge will discharge to dissipator pads within the buffers. Travel lane runoff will be kept separate from pedestrian walkway water with a solid concrete barrier.

Stormwater management is accomplished in grass ditches where possible. Lined ditches and storm sewer are also used on the project where needed. Grass swales are incorporated where ground slope allows criteria to be met. Ground slope was too steep in most locations to implement grass swale criteria.

In cases where existing ground was too steep for roadside ditches, pipes were used to convey water down slope. Use of this method was limited to those areas where stable ditches could not be established.

Riprap energy dissipators are used at pipe outlets to reduce discharge velocity in most cases to non erosive levels.

Waterbody Information

Surface Water Body (1):	Neuse River	**NCDWR Stream Index No.:**	27-(38.5)
NCDWR Surface Water Classification for Water Body	**Primary Classification:**	Water Supply IV (WS-IV)	
	Supplemental Classification:	Nutrient Sensitive Waters (NSW)	
Other Stream Classification:	None		
Impairments:	copper (Cu)	mercury (Hg)	
Aquatic T&E Species?	Yes	Comments:	Dwarf Wedgemussel, Tar Spinymussel, Yellow Lance, Atlantic Pigtoe, Yellow Lampmussel, Green Floater, Tar River Crayfish
NRTR Stream ID:	Neuse River	**Buffer Rules in Effect:**	Neuse
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?** Yes	**Dissipator Pads Provided in Buffer?** Yes
Deck Drains Discharge Over Water Body?	No	(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):	Mill Creek		**NCDWR Stream Index No.:**	27-39		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)			
		Supplemental Classification:	Nutrient Sensitive Waters (NSW)			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	Yes	Comments:	Dwarf Wedgemussel, Tar Spinymussel, Yellow Lance, Atlantic Pigtoe, Yellow Lampmussel, Green Floater, Tar River Crayfish			
NRTR Stream ID:	Mill Creek			**Buffer Rules in Effect:**	Neuse	
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? (If yes, provide justification in the General Project Narrative)	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)		

Surface Water Body (3):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**		
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body? (If yes, provide justification in the General Project Narrative)		(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)		

Surface Water Body (4):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**		
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body? (If yes, provide justification in the General Project Narrative)		(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)		

Surface Water Body (5):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**		
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body? (If yes, provide justification in the General Project Narrative)		(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)		

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 34552.1.FR3 **TIP No.:** R-3825B **County(ies):** Johnston

Swales

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
11	111+50 RT 35.648171, -78.389953	(1)Neuse River	0.0	6.0	4.0	0.6	55	200	1.40%	1.4	1.7	1.8	1.8	No	Yes
11 *	112+25 RT 35.648173, -78.389706	(1)Neuse River	0.0	4.0	2.0	0.2	23	75	0.50%	0.3	0.9	0.4	1.0	No	Yes
11	113+50 LT 35.648551, -78.389103	(1)Neuse River	0.0	6.0	3.0	0.6	57	200	0.50%	1.5	1.2	1.9	1.3	No	Yes
12	119+00 RT 35.648454, -78.386959	(1)Neuse River	5.0	6.0	4.0	1.0	97	300	3.70%	2.9	2.0	3.8	2.2	No	Yes
13	133+00 RT 35.648787, -78.382523	(1)Neuse River	0.0	6.0	4.0	0.7	66	200	2.10%	2.2	2.0	2.8	2.1	No	Yes
13	134+50 LT 35.649028, -78.382074	(1)Neuse River	4.0	6.0	4.0	1.5	150	280	2.00%	4.5	1.9	5.8	2.0	No	Yes
13**	136+80 RT 35.648923, -78.381046	(1)Neuse River	3.0	3.0	3.0	7.3	727	80	1.40%	17.8	2.9	22.9	3.1	No	Yes
13	138+50 RT 35.649004, -78.380226	(1)Neuse River	0.0	6.0	4.0	0.8	80	100	1.80%	2.4	1.9	3.0	2.1	No	Yes
16	169+50 RT 35.649893, -78.370374	(2)Mill Creek	0.0	6.0	6.0	0.4	44	100	1.60%	1.1	1.7	1.5	1.8	No	Yes
16	175+80 RT 35.650365, -78.367638	(2)Mill Creek	0.0	4.0	3.0	0.2	19	150	3.90%	0.4	1.5	0.5	1.6	No	Yes
16***	177+70 RT 35.650533, -78.366661	(2)Mill Creek	2.0	4.0	4.0	0.6	57	330	4.00%	1.6	2.1	2.0	2.3	No	Yes

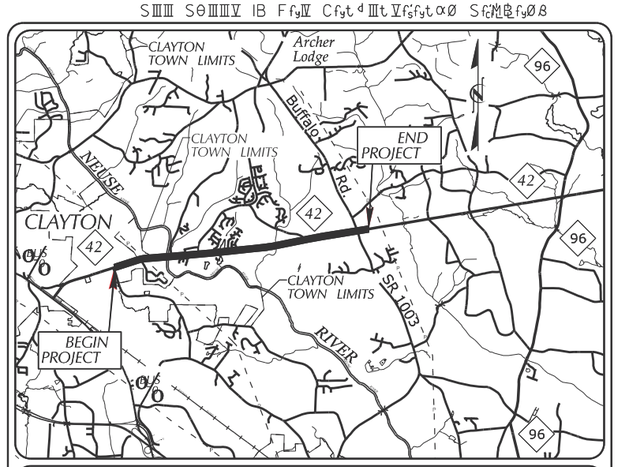
Additional Comments

* Back slope of 2:1 used to minimize impact to property owner.
**Unable to obtain V2<2 FPS with a base width of 6'. Length and V2 do not meet swale criteria.
***Unable to obtain V2<2 FPS due to a longitudinal slope of 4%.

9/09/99

TIP PROJECT: R–3825B

S III SΘIIIV IA FfV It∀III% f∆ SΘIIIV8
S III SΘIIIV IB FfV Cft^d IIIt VfSft∝Ø SfMBf∅8



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

TYPE OF WORK: GRADING, PAVING, STRUCTURES, DRAINAGE AND SIGNALS

PERMIT DRAWING
SHEET 1 OF 53

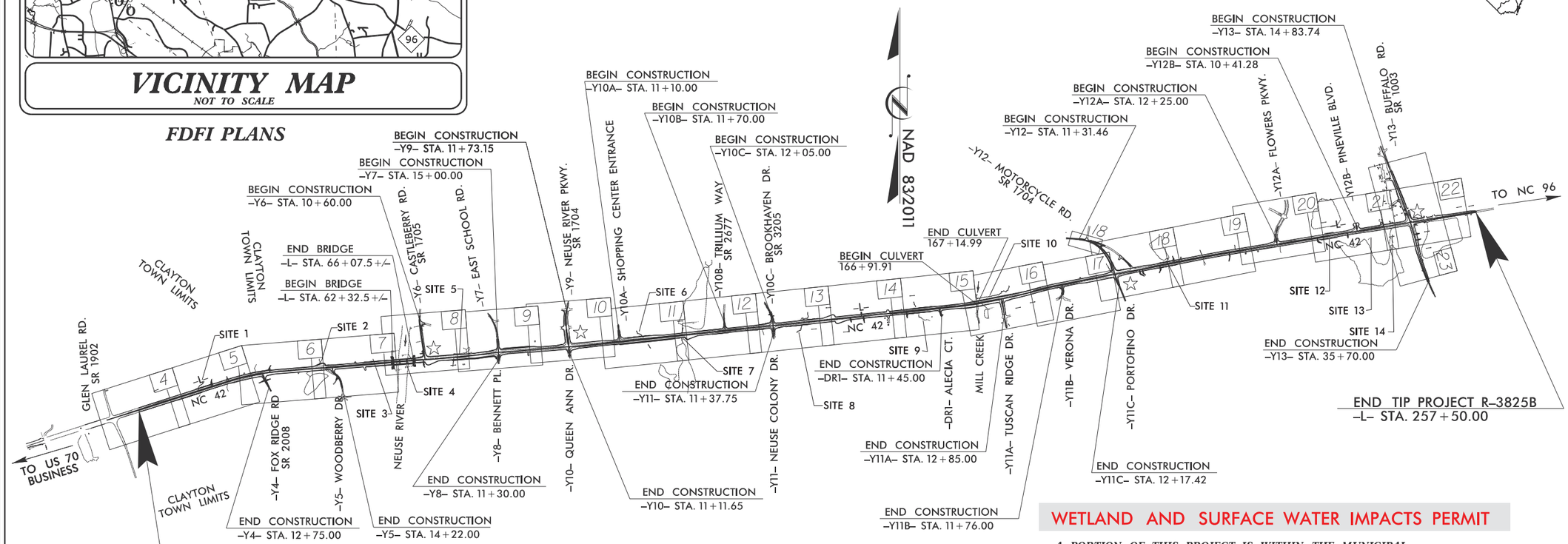
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–3825B	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34552.1.FR3	STP–0042(58)	P.E.
34552.2.4	STP–0042(58)	RW & UTL.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FDFI PLANS



WETLAND AND SURFACE WATER IMPACTS PERMIT

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL
REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R–3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R–3825B = 4.574 MILES

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-0243

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

ED EDENS, P.E.
PROJECT ENGINEER

KEVIN VAN METRE, P.E.
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:
ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

1/4/2008
R:\Hydraulics\PERMITS_Environmental\Drawings\R3825b_hyd_wet_tsh.dgn
mwhite

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0293

PERMIT DRAWING SHEET 2 OF 53

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

NAD 83/2011

3 ROBERT B HUNT AND WIFE MARGARET H HUNT

3 ROBERT B HUNT AND WIFE MARGARET H HUNT

5 FALCON HAMLET LLC

25.00

30.00

35.00

SEE ENLARGMENT SHEET 4 OF 53

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

50' ACCESS ESMT PB 76 PG 150

2' SPECIAL LATERAL BASE DITCH w/PSRM SEE DETAIL 1

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 7

TOE PROTECTION SEE DETAIL 4

PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

SITE 1

WOODS

EXISTING R/W

PROPOSED 60' R/W

PDE

DUE

PUE

30" RCP

54" RCP

30" WELDED STEEL TRANSITION

JB w/SLAB

REMOVE

FL GR 2GI

15" w/2 ELBOWS

30" RCP w/FES

JB w/MH

12" DIP

8" PL

30" CMP

RETAIN

EXISTING R/W MON

NC 42 248' BST

NC 42 260' BST

-EL-

-L- 27+58.71 104.09

-L- 27+50.17 74.01

-L- 25+22.17 43.40

MATCH DITCH INVERT TO STREAM INVERT

6' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 3

TOE PROTECTION SEE DETAIL 8

TOE PROTECTION SEE DETAIL 8

-L- STA. 27+58 -L- RT
Q10 = 2.3 cfs
V10 Pipe = 9.3 fps
V10 Riprap = 12 fps

TEMPORARY IMPACTS IN SURFACE WATER

SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 6

6' STANDARD BASE DITCH w/CLASS I RIPRAP SEE DETAIL 5

BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19

BM#2
N: 690,566
E: 2,173,786
ELEV=262.50'

2 THE SHOPPES AT GLEN LAUREL

4 PINES AT GLEN LAUREL, LLC

DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, Fill Slope, d, D, B

Min. D=1.5. Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= PSRM

FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT
EST. 1935 SY

DETAIL 8
TOE PROTECTION
(Not to Scale)

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

d=2 Ft.
b=5 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 24+15 RT TO -L- STA. 25+00 RT
EST. 55 TONS CLASS B RIP RAP
EST. 120 SY. GEOTEXTILE

FROM -L- STA. 27+15 RT TO -L- STA. 29+00 RT
EST. 90 TONS CLASS B RIP RAP
EST. 204 SY GEOTEXTILE

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

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

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 27+50 LT TO -L- STA. 28+35 LT
EST. 110 TONS CLASS I RIP RAP
EST. 190 SY GEOTEXTILE

DETAIL 9
FALSE SUMP
(Not to Scale)

0.5', Outside Ditch Traffic Flow, 10:1, 20:1, 2.0', Gt etc., S

S=Ditch Slope

℄ Proposed Ditch

-L- STA. 32+49 RT

DETAIL 3
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 3:1, D, d, B, GEOTEXTILE, b, 1'-6", Fill Slope

EST. DDE=615 CY
Type of Liner= Class I Rip-Rap

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.
b=5 Ft.

FROM -L- STA. 24+10 RT TO -L- STA. 27+05 RT
EST. 350 TONS CLASS I RIP RAP
EST. 600 SY GEOTEXTILE

DETAIL 4
TOE PROTECTION
(Not to Scale)

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

d= 1 Ft.
b = 6 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 25+50 LT TO -L- STA. 27+50 LT
EST. 65 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 4:1, 4:1, Natural Ground, d, D, Geotextile, B

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=6 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 32+16 RT TO -L- STA. 32+28 RT
EST. 80 TONS CLASS I RIP RAP, EST. DDE 101 CY,
EST. 134 SY GEOTEXTILE

DETAIL 6
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, Front Ditch Slope, d, D

Min. D=1 Ft.
Max d=1 Ft.

Type of Liner= PSRM

FROM -L- STA. 31+90 RT TO -L- STA. 32+28 RT
EST. 40 SY PSRM

DETAIL 19
BERM DITCH
(Not to Scale)

SLOPE STAKE, 5.0', 13.5', 9.0', 5.0', CLEARING LIMITS, 10.0' V.C., 3:1, D, 1:4.8, d, Geotextile

Min. D=1.5 Ft.
Max. d=1.0 Ft.

Type of Liner= CLASS B RIP RAP

FROM -L- STA. 34+50 RT TO -L- STA. 38+00 RT
EST. 110 TONS CLASS B RIP RAP
EST. 250 SY GEOTEXTILE

50 25 0 50 100

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smithcg

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 3 OF 53

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REVISIONS 8/17/99

S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

NAD 83/2011

(3) ROBERT B HUNT AND WIFE MARGARET H HUNT

(3) ROBERT B HUNT AND WIFE MARGARET H HUNT

(5) FALCON HAMLET LLC

25.00

30.00

35.00

SEE ENLARGMENT SHEET 4 OF 53

2' SPECIAL LATERAL BASE DITCH w/PSRM SEE DETAIL 1

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 7

TOE PROTECTION SEE DETAIL 4

50' ACCESS ESMT PB 76 PG 150

PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

SITE 1

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

MATCH DITCH INVERT TO STREAM INVERT

6' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 3

TOE PROTECTION SEE DETAIL 8

TEMPORARY IMPACTS IN SURFACE WATER

TOE PROTECTION SEE DETAIL 4

SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 6

6' STANDARD BASE DITCH w/CLASS I RIPRAP SEE DETAIL 5

BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19

BM#2
N: 690,566
E: 2,173,786
ELEV=262.50'

(2) THE SHOPPES AT GLEN LAUREL

(4) PINES AT GLEN LAUREL, LLC

DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2 Ft.

Type of Liner = PSRM

FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT
EST. 1935 SY

DETAIL 8
TOE PROTECTION
(Not to Scale)

d = 2 Ft.
b = 5 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 24+15 RT TO -L- STA. 25+00 RT
EST. 55 TONS CLASS B RIP RAP
EST. 120 SY GEOTEXTILE

FROM -L- STA. 27+15 RT TO -L- STA. 29+00 RT
EST. 90 TONS CLASS B RIP RAP
EST. 204 SY GEOTEXTILE

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D = 2 Ft.
Max. d = 2 Ft.
B = 4 Ft.

Type of Liner = Class I Rip-Rap

FROM -L- STA. 27+50 LT TO -L- STA. 28+35 LT
EST. 110 TONS CLASS I RIP RAP
EST. 190 SY GEOTEXTILE

DETAIL 9
FALSE SUMP
(Not to Scale)

S = Ditch Slope

-L- STA. 32+49 RT

DETAIL 3
LATERAL BASE DITCH
(Not to Scale)

Min. D = 2 Ft.
Max. d = 2 Ft.
B = 6 Ft.
b = 5 Ft.

EST. DDE = 615 CY
Type of Liner = Class I Rip-Rap

FROM -L- STA. 24+10 RT TO -L- STA. 27+05 RT
EST. 350 TONS CLASS I RIP RAP
EST. 600 SY GEOTEXTILE

DETAIL 4
TOE PROTECTION
(Not to Scale)

d = 1 Ft.
b = 6 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 25+50 LT TO -L- STA. 27+50 LT
EST. 65 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 6 Ft.

Type of Liner = Class I Rip-Rap

FROM -L- STA. 32+16 RT TO -L- STA. 32+28 RT
EST. 80 TONS CLASS I RIP RAP, EST. DDE 101 CY,
EST. 134 SY GEOTEXTILE

DETAIL 6
SPECIAL CUT DITCH
(Not to Scale)

Min. D = 1 Ft.
Max d = 1 Ft.

Type of Liner = PSRM

FROM -L- STA. 31+90 RT TO -L- STA. 32+28 RT
EST. 40 SY PSRM

DETAIL 19
BERM DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.0 Ft.

Type of Liner = CLASS B RIP RAP
FROM -L- STA. 34+50 RT TO -L- STA. 38+00 RT
EST. 110 TONS CLASS B RIP RAP
EST. 250 SY GEOTEXTILE

50 25 0 50 100

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smitley

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ENLARGEMENT

REVISIONS 8/17/99

2' SPECIAL LATERAL BASE DITCH w/PSRM SEE DETAIL 1

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 7

TOE PROTECTION SEE DETAIL 4

PERMANENT IMPACTS IN SURFACE WATER

SITE 1

TEMPORARY IMPACTS IN SURFACE WATER

3' ESMT PB 76 PG 150

25:00

30:00

WOODS

30"

54" RCP-W

54" WELDED STEEL TRENCHLESS

+5+65
27+64.4'

JB w/SLAB

REMOVE

15" w/2-ELBOWS

15"

FL GR 2GI

FL GR 2GI

R/W MON

EXISTING R/W

PROPOSED 100' R/W

NC 42 24.8' BST

PERMANENT IMPACTS IN SURFACE WATER

CONC HW TOP=246.57

MATCH DITCH INVERT TO STREAM INVERT

HW

FL GR 2GI 15"

54" WELDED STEEL TRENCHLESS

EXISTING R/W

AERIAL UTILITY EASEMENT DB 4180 PG 424

R/W MON

25+23.17
103.93'

EXISTING R/W

DUE

DUE

DUE

DUE

DUE

PUE

PUE

6' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 3

-L-
27+51.47
74.07'

-L-
27+50.71
104.09'

TEMPORARY IMPACTS IN SURFACE WATER

WOODS

JS

TOE PROTECTION SEE DETAIL 8

SITE 1

TOE PROTECTION SEE DETAIL 4

Sta = 27+58-L-RT
Q10 = 2.3 cfs
V10 Pipe = 9.3 fps
V10 Riprap = 1.2 fps

4

PINES AT GLEN LAUREL, LLC

WOODS

SPECIA
w/PSRA
SEE DI

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

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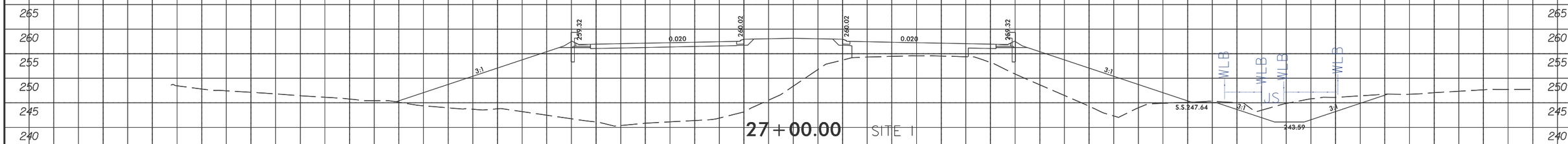
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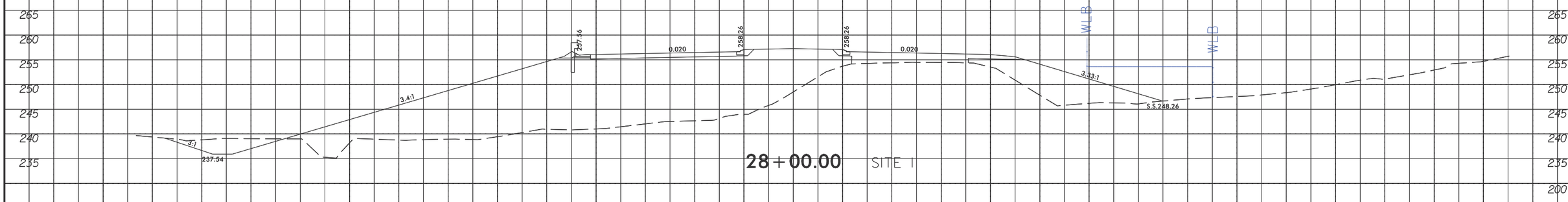
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27+00.00 SITE 1



28+00.00 SITE 1

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SHEET 5 OF 53

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REVISIONS

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

5 FALCON HAMLET LLC

6 RIVER MEWS ESTATE LLC

6 RIVER MEWS ESTATE LLC

50+00 55+00 60+00

SEE ENLARGMENT SHEET 8 OF 53

SEE ENLARGMENT SHEET 12 OF 53

SITE 2

SITE 3

TEMPORARY IMPACT IN SURFACE WATER

TOE PROTECTION SEE DETAIL 12

2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21

TOE PROTECTION SEE DETAIL 69

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6

MATCHLINE -L- STA. 62+00.00 SEE SHEET 8

11 TODD NARRON

13 KLAUS J KALLAS AND WIFE MARY H KALLAS

14 WALTER S DAVIS AND WIFE SYLVIA DAVIS

15 REBECCA D FLOWERS

DAVID H. TURLINGTON AND WIFE, NANCY T. TURLINGTON

CUT DITCH w/PSRM SEE DETAIL 20

BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19

2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

DETAIL 69
TOE PROTECTION
(Not to Scale)

Type of Liner = Class B Rip-Rap

FROM -L- STA. 59+74 LT TO -L- STA. 61+24 RT
EST. 95 TONS CLASS B RIP RAP
EST. 218 SY GEOTEXTILE

DETAIL 19
BERM DITCH
(Not to Scale)

Type of Liner = CLASS B RIP RAP

FROM -Y5- STA. 10+70 RT TO -Y5- STA. 12+05 RT
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE

DETAIL 20
CUT DITCH
(Not to Scale)

Type of Liner = PSRM

FROM -Y5- STA. 10+50 RT TO -Y5- STA. 13+50 RT
EST. 370 SY PSRM
FROM -L- STA. 52+50 RT TO -Y5- STA. 12+00 LT
EST. 220 SY PSRM

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)

*When B is < 6.0'

Type of Liner = Class B Rip-Rap

FROM -L- STA. 56+60 LT TO -L- STA. 58+60 LT
EST. 61 CY DDE
EST. 89 TONS CLASS B RIP RAP
EST. 198 SY GEOTEXTILE
FROM -L- STA. 58+33 RT TO -L- STA. 59+90 RT
EST. 45 CY DDE
EST. 68 TONS CLASS B RIP RAP
EST. 152 SY GEOTEXTILE

DETAIL 12
TOE PROTECTION
(Not to Scale)

Type of Liner = PSRM

FROM -L- STA. 56+00 LT TO -L- STA. 56+60 LT
EST. 42 SY PSRM

50 25 0 50 100

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smith69

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SHEET 7 OF 53

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8/17/99

F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/2011

5 FALCON HAMLET LLC
6 RIVER MEWS ESTATE LLC
6 RIVER MEWS ESTATE LLC

50+00 55+00 60+00

SEE ENLARGMENT SHEET 8 OF 53

SITE 2
SITE 3

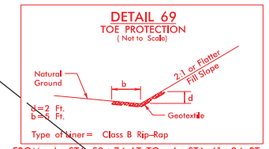
SEE ENLARGMENT SHEET 12 OF 53

TEMPORARY IMPACT IN SURFACE WATER
TOE PROTECTION SEE DETAIL 12
2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21
TOE PROTECTION SEE DETAIL 69
CUT DITCH w/PSRM SEE DETAIL 20
BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19
2:1 LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6
MATCHLINE -L- STA. 62+00.00 SEE SHEET 8

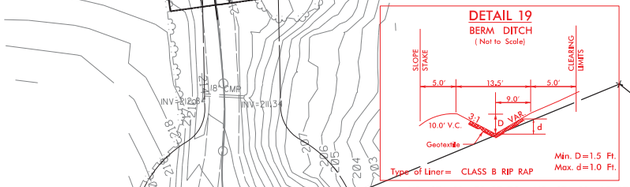
11 TODD NARRON
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15 REBECCA D FLOWERS
DAVID H. TURLINGTON AND WIFE, NANCY T. TURLINGTON

DETAIL 69
TOE PROTECTION
(Not to Scale)



Type of Liner = Class B Rip-Rap
FROM -L- STA. 59+74 LT TO -L- STA. 61+24 RT
EST. 95 TONS CLASS B RIP RAP
EST. 218 SY GEOTEXTILE

DETAIL 19
BERM DITCH
(Not to Scale)



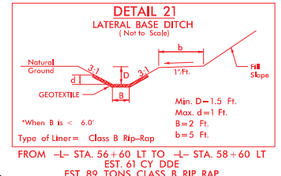
Type of Liner = CLASS B RIP RAP
FROM -Y5- STA. 10+70 RT TO -Y5- STA. 12+05 RT
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE

DETAIL 20
CUT DITCH
(Not to Scale)



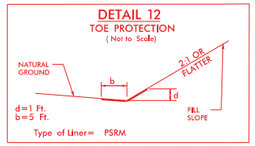
Type of Liner = PSRM
FROM -Y5- STA. 10+50 RT TO -Y5- STA. 13+50 RT
EST. 370 SY PSRM
FROM -L- STA. 52+50 RT TO -Y5- STA. 12+00 LT
EST. 220 SY PSRM

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)



Type of Liner = Class B Rip-Rap
FROM -L- STA. 56+60 LT TO -L- STA. 58+60 LT
EST. 61 CY DDE
EST. 89 TONS CLASS B RIP RAP
EST. 198 SY GEOTEXTILE
FROM -L- STA. 58+33 RT TO -L- STA. 59+90 RT
EST. 45 CY DDE
EST. 68 TONS CLASS B RIP RAP
EST. 152 SY GEOTEXTILE

DETAIL 12
TOE PROTECTION
(Not to Scale)



Type of Liner = PSRM
FROM -L- STA. 56+00 LT TO -L- STA. 56+60 LT
EST. 42 SY PSRM

50 25 0 50 100

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SHEET 8 OF 53

ENLARGEMENT

:K

TEMPORARY IMPACT IN SURFACE WATER

SITE 2

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50+00

52+00

TS PDE
w/2-ELBOWS
15"
54"
JB w/MH
REMOVE
54" WELDED STEEL TRENCHLESS
FL GR 2GI
15" RCP-IV
FL GR 2GI
15"
FL GR 2GI
PDE
E
E
F
F
CONC MON
BM#3
N: 690,995
E: 2,175,160
ELEV=17.87'
PUE
PUE
RCW
CA
CA
CA
S
JS
TS

REVISIONS
8/17/99

1/4/2018
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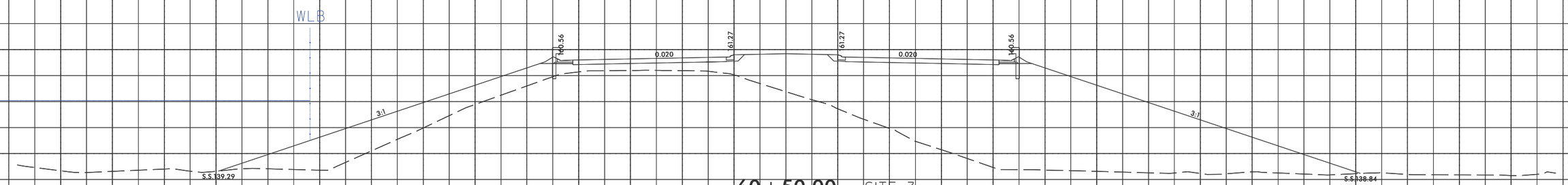
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SHEET NO.

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



60+50.00 SITE 3

PERMIT DRAWING
SHEET 9 OF 53

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50 25 0 50 100

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NAD 83/2011

DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, Geotextile, 3:2:1 or Flatter (See Cross Sections), Front Slope Ditch

Min. D = 2 Ft.
Max. d = 1.5 Ft.
B = 2 Ft.

Type of Liner = Class B Rip-Rap

FROM –Y6– STA. 11+78 LT TO –Y6– STA. 12+50 LT

DETAIL 23
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:2:1, d, D, B, b, 1'/Ft., Fill Slope, GEOTEXTILE

Min. D = 2.5 Ft.
Max. d = 2.5 Ft.
B = 4 Ft.
b = 3–5 Ft.

EST. DDE = 444 CY
Type of Liner = Class I Rip-Rap

FROM –L– STA. 73+03 RT TO –L– STA. 75+91 RT
EST. 368 TONS CLASS I RIP RAP
EST. 620 SY GEOTEXTILE

DETAIL 22
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, B, Geotextile, Min. D = 1.0 Ft., Max. d = 1 Ft., B = 2 Ft.

*When B is < 6.0'

Type of Liner = Class B Rip-Rap

FROM –L– STA. 68+54 RT TO –L– STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE

DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)

5 FT, DISSIPATOR PAD, PLAN VIEW

*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS

GROUND, L, GEOTEXTILE, 1.0', PROFILE VIEW

L = 40 FT
Type of Liner = 10 TONS CL B Rip-Rap
Geotextile = 33sy

FROM –L– STA. 65+20RT TO STA. 65+60RT

DETAIL 29
FALSE SUMP
(Not to Scale)

1.75', 2.0', Outside Ditch Traffic Flow, 10:1, 20:1, Gl etc., S

S = Ditch Slope
℄ Proposed Ditch

–Y6– STA. 14+25 LT

DETAIL 24
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 3:1, b, 1'/Ft., Fill Slope, B

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 4 Ft.
b = 5 Ft.

EST. DDE = 585 CY
Type of Liner = PSRM

FROM –L– STA. 73+10 LT TO –L– STA. 75+00 LT
EST. 325 SY PSRM

DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)

Natural Ground, CHANNEL BED (Variable), d

Length = 15 Ft.
d = To Top of Bank
Est. = 15 Tons of Class B Rip-Rap

FROM STA. 73+00 LT TO STA. 73+20 LT

DETAIL 12
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, 2:1 OR FLATTER, b, d, FILL SLOPE

d = 1 Ft.
b = 5 Ft.

Type of Liner = PSRM

FROM –Y6– STA. 11+00 RT TO –Y6– STA. 14+00 RT

DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 3:2:1 or Flatter (See Cross Sections), Front Ditch Slope

Min. D = 1.5 Ft.
Max d = 1.5 Ft.

Type of Liner = PSRM

FROM –Y6– STA. 14+56 LT TO –Y6– STA. 15+00 LT

DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)

5' min., 2 Ft., Match to top of slope (See Detail 23), Ditch Grade, 1.0' min., GEOTEXTILE

Type of Liner = EST. 9 TONS, CL I Rip-Rap
Geotextile = 21 sy

FROM –L– STA. 73+45 RT TO –L– STA. 73+60 RT

DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 3:2:1 or Flatter (See Cross Sections), Front Ditch Slope

Min. D = 1.5 Ft.

FROM –Y6– STA. 14+00 LT TO –Y6– STA. 14+56 LT

10 — 15 — 16 — 17 — 18

COUNTY OF JOHNSTON

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REBECCA FLOWERS FINCH

MICHELLE STRICKLAND

AQUA NORTH CAROLINA INC.

SEE ENLARGMENT SHEET 12 OF 53

SEE ENLARGMENT SHEET 17 OF 53

65+00 — 70+00 — 75+00

EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE

TOE PROTECTION SEE DETAIL 12 FOR INCIDENTAL LOW AREAS AGAINST FILL SLOPE

2' SPECIAL CUT BASE DITCH w/CLASS B RIP RAP SEE DETAIL 28

93 SY PSRM

EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE

SPECIAL CUT 'V' DITCH w/GRASS SEE DETAIL 27

SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 26

71 SY PSRM

2' STANDARD BASE DITCH w/CLASS B RIP RAP SEE DETAIL 22

4' LATERAL BASE DITCH w/PSRM SEE DETAIL 24

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 1

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 2

EST. 329 TONS CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE

PERMANENT IMPACT IN SURFACE WATER

TEMPORARY IMPACT IN SURFACE WATER

FILL IN WETLAND

EXCAVATION IN WETLAND

BANK STABILIZATION PERM. SURFACE WATER IMPACT

RIP RAP RAP AT EMBANKMENT SEE DETAIL 25

MATCH DITCH INVERT TO STREAM INVERT

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

NOTE:
ACCESS GRANTED FOR –DRW3–
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)

SITE 4

SITE 5

MATCHLINE -L- STA. 62+00.00 SEE SHEET 7

MATCHLINE -L- STA. 75+00.00 SEE SHEET 9

I:\4\2018 R:\Hydraulics\PERMITS_Environmental\Drawings\Wet ps\R3825b_wet_psh08.dgn smitchig

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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2011

DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, 3:2:1 or Flatter (See Cross Sections), Front Slope Ditch, Geotextile

Min. D=2 Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= Class B Rip-Rap
FROM –Y6– STA. 11+78 LT TO –Y6– STA. 12+50 LT

DETAIL 23
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, 3:2:1, d, D, B, b, 1'-0"ft., Fill Slope, GEOTEXTILE

Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=4 Ft.
b=3–5 Ft.

EST. DDE=444 CY
Type of Liner= Class I Rip-Rap
FROM –L– STA. 73+03 RT TO –L– STA. 75+91 RT
EST. 368 TONS CLASS I RIP RAP
EST. 620 SY GEOTEXTILE

DETAIL 22
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, 3:2:1, d, D, B, Geotextile

Min. D=1.0 Ft.
Max. d=1 Ft.
B=2 Ft.
*When B is < 6.0'

Type of Liner= Class B Rip-Rap
FROM –L– STA. 68+54 RT TO –L– STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE

DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)

5 FT, DISSIPATOR PAD, PLAN VIEW
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
GROUND, L, GEOTEXTILE, 1.0', PROFILE VIEW

L= 40 FT
Type of Liner= 10 TONS CL B Rip-Rap
Geotextile = 33sy
FROM –L– STA. 65+20RT TO STA. 65+60RT

DETAIL 29
FALSE SUMP
(Not to Scale)

1.75', 2.0', Outside Ditch Traffic Flow, 10:1, 20:1, S, Gt etc., S=Ditch Slope, ℄ Proposed Ditch

–Y6– STA. 14+25 LT

DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)

Natural Ground, Downslope RIP RAP 24" W, Upstream RIP RAP 24" W, d, CHANNEL BED (Variable)

Length=15 Ft.
d= To Top of Bank
Est.= 15 Tons of Class B Rip-Rap
FROM STA. 73+00 LT TO STA. 73+20 LT

DETAIL 24
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, 3:2:1, d, D, B, b, 1'-0"ft., Fill Slope

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=5 Ft.

EST. DDE=585 CY
Type of Liner= PSRM
FROM –L– STA. 73+10 LT TO –L– STA. 75+00 LT
EST. 325 SY PSRM

DETAIL 12
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, 2:1 OR FLATTER, b, d, FILL SLOPE

d=1 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM –Y6– STA. 11+00 RT TO –Y6– STA. 14+00 RT

DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 3:2:1 or Flatter (See Cross Sections), Front Ditch Slope

Type of Liner= PSRM
Min. D=1.5 Ft.
Max d=1.5 Ft.
FROM –Y6– STA. 14+56 LT TO –Y6– STA. 15+00 LT

DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)

5'min., 2 Ft., Match to top of slope (See Detail 23), Ditch Grade, 1.0'min., GEOTEXTILE

Type of Liner= EST. 9 TONS, CL I Rip-Rap
Geotextile= 21 sy
FROM –L– STA. 73+45 RT TO –L– STA. 73+60 RT

DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 3:2:1 or Flatter (See Cross Sections), Front Ditch Slope

Min. D=1.5 Ft.
FROM –Y6– STA. 14+00 LT TO –Y6– STA. 14+56 LT

EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE

TOE PROTECTION SEE DETAIL 12 FOR INCIDENTAL LOW AREAS AGAINST FILL SLOPE

2' SPECIAL CUT BASE DITCH w/CLASS B RIP RAP SEE DETAIL 28

93 SY PSRM

SPECIAL CUT 'V' DITCH w/GRASS SEE DETAIL 27

EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE

SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 26

71 SY PSRM

SEE ENLARGMENT SHEET 12 OF 53

SEE ENLARGMENT SHEET 17 OF 53

COUNTY OF JOHNSTON

JOHNSTON COUNTY BOARD OF EDUCATION

RIVER MEWS ESTATE LLC

REBECCA D FLOWERS

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

4' LATERAL BASE DITCH w/PSRM SEE DETAIL 24

PERMANENT IMPACT IN SURFACE WATER

SITE 5

RETAIN

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 1

SITE 4

EST. 329 TONS CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 2

REMOVE

PERMANENT IMPACT IN SURFACE WATER

FILL IN WETLAND

EXCAVATION IN WETLAND

BANK STABILIZATION PERM. SURFACE WATER IMPACT

MATCH DITCH INVERT TO STREAM INVERT

RIP RAP RAP AT EMBANKMENT SEE DETAIL 25

2' STANDARD BASE DITCH w/CLASS B RIP RAP SEE DETAIL 22

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23

TEMPORARY IMPACT IN SURFACE WATER

AQUA NORTH CAROLINA INC.

REBECCA FLOWERS FINCH

MICHELLE STRICKLAND

NOTE:
ACCESS GRANTED FOR –DRW3–.
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)

BRIDGE SEAT ELEVATIONS
BS1 = 154.33'
BS2 = 154.32'
BS3 = PIER
BS4 = 154.01'

NEUSE RIVER

MATCHLINE -L- STA. 62+00.00 SEE SHEET 7

MATCHLINE -L- STA. 75+00.00 SEE SHEET 9

PERMIT DRAWING SHEET 11 OF 53

1/4/2018
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smith69

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NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 12 OF 53

ENLARGEMENT

25 12.5 0 25 50

6 63+00

65+00

RIVER MEWS ESTATE LLC

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

BRIDGE SEAT ELEVATIONS
BS1 = 154.33
BS2 = 154.32
BS3 = 154.41
BS4 = 154.38

NEUSE RIVER

TOE PROTECTION SEE DETAIL 69

PUE

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 1

SITE 4

PROPOSED 130' R/W

DATUR

6" STL DATUR

EXISTING R/W

6" PVC GR

EX 20' UTILITY EASEMENT PB 42 PG 207

EX LIFT STATION PB 42 PG 207

BM# 4
N: 69,147
E: 2,176,708
ELEV=140.97

WOODS

TOP=154.91'
INV IN=136.26'
INV OUT=136.19'

15" ELBOWS

FL GR 2GI

15"

CONC RAIL

CONC HDWN (6 TOTAL)

CONC R/W

BS1

BS2

BS3

BS4

F F

E

TS

TB

JS

BZ 1

BZ 2

Z 2

Z

G

F

GR

T

I

S

C

W

R

A

W

REBECCA D FLOWERS

EX 50' RIVER TRAIL EASEMENT

EX 30' PERMANENT UTILITY EASEMENT PB 72 PG 209

50'

30'

16" PVC

15" w2 ELBOWS

TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 2

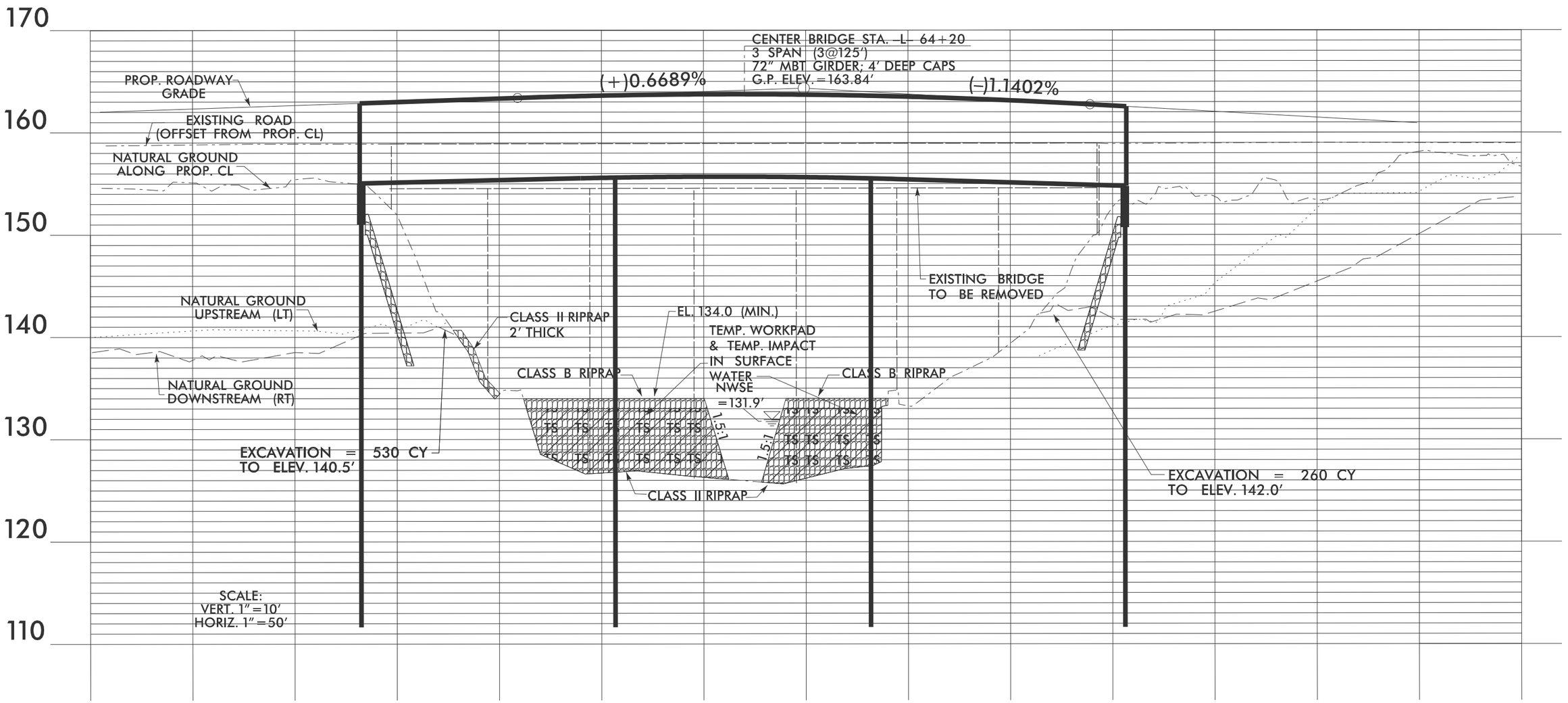
339 SY CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE

NOTE:
ACCESS GRANTED FOR –DRW3–.
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
CONTROL OF ACCESS IS NOT FENCED

REVISIONS 8/17/99

1/4/2018
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smithcg

SITE 4 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 4

PERMIT DRAWING
SHEET 13 OF 53

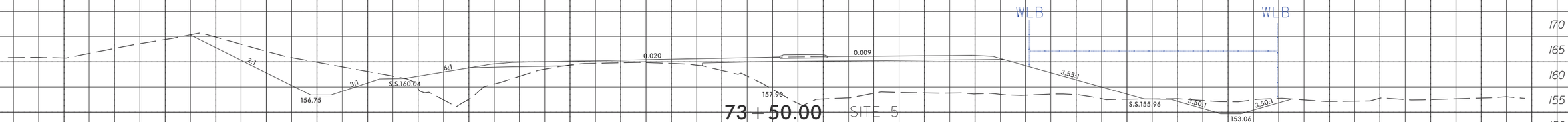
8/23/99

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PROJ. REFERENCE NO.	SHEET NO.

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

170
165
160
155
150



73+50.00 SITE 5

175
170
165
160
155



76+00.00 SITE 5

PERMIT DRAWING
SHEET 14 OF 53

1/4/2018
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smithcl9

8/17/99

REVISIONS

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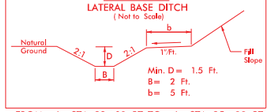
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 15 OF 53

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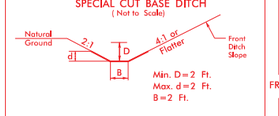
DETAIL 30
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

FROM –L– STA. 82+10 RT TO –L– STA. 85+00 RT (EST. DDE = 173 CY)
FROM –L– STA. 86+00 RT TO –L– STA. 90+50 RT (EST. DDE = 378 CY)
FROM –L– STA. 92+00 RT TO –L– STA. 93+24 RT (EST. DDE = 36 CY)

DETAIL 31
SPECIAL CUT BASE DITCH
(Not to Scale)

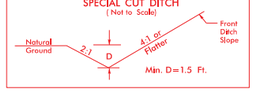


Min. D=2 Ft.
Max. d=2 Ft.
B=2 Ft.

Type of Liner= PSRM

FROM –L– STA. 81+80 LT TO –L– STA. 83+00 LT EST. 154 SY PSRM
FROM –Y7– STA. 15+67 LT TO –L– STA. 16+54 LT EST. 110 SY PSRM

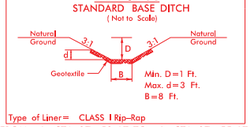
DETAIL 32
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM –Y7– STA. 15+67 RT TO –L– STA. 80+28 LT

DETAIL 33
STANDARD BASE DITCH
(Not to Scale)

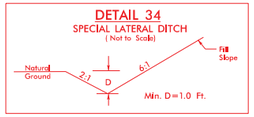


Min. D=1 Ft.
Max. d=3 Ft.
B=8 Ft.

Type of Liner= CLASS I Rip-Rap

FROM –L– STA. 87+50 LT TO –L– STA. 87+55 LT EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY, EST. 78 SY GEOTEXTILE

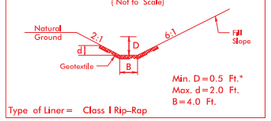
DETAIL 34
SPECIAL LATERAL DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM –L– STA. 76+10 LT TO –L– STA. 79+00 LT

DETAIL 35
SPECIAL LATERAL BASE DITCH
(Not to Scale)

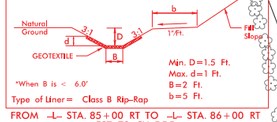


Min. D=0.5 Ft.*
Max. d=2.0 Ft.
B=4.0 Ft.

Type of Liner= Class I Rip-Rap

FROM –L– STA. 75+00 LT TO –L– STA. 76+10 LT
*DITCH ELEVATION AND DEPTH SET TO INTERCEPT STREAM FROM POND

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)



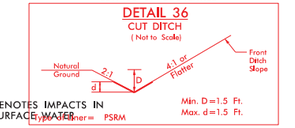
Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.

*When B is < 6.0'

Type of Liner= Class B Rip-Rap

FROM –L– STA. 85+00 RT TO –L– STA. 86+00 RT EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM –L– STA. 90+50 RT TO –L– STA. 92+00 RT EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

DETAIL 36
CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.

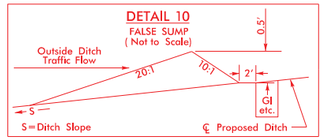
Type of Liner= PSRM

FROM –L– STA. 83+00 LT TO –L– STA. 85+00 LT EST. 280 SY PSRM

S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

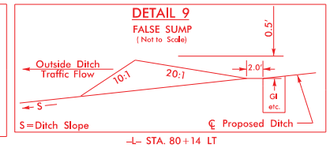
SEE ENLARGMENT SHEET 17 OF 53

DETAIL 10
FALSE SUMP
(Not to Scale)



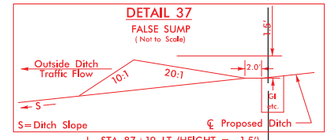
–L– STA. 87+41 RT
–L– STA. 84+91 RT
–L– STA. 78+41 RT

DETAIL 9
FALSE SUMP
(Not to Scale)



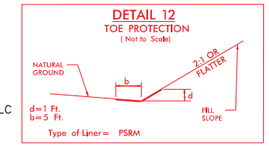
–L– STA. 80+14 LT

DETAIL 37
FALSE SUMP
(Not to Scale)



–L– STA. 87+19 LT (HEIGHT = 1.5')

DETAIL 12
TOE PROTECTION
(Not to Scale)



Type of Liner= PSRM

FROM –L– STA. 84+80 LT TO –L– STA. 87+30 LT EST. 260 SY PSRM

1/4/2018
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smiller

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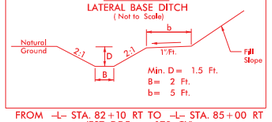
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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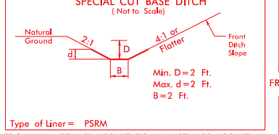
DETAIL 30
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2 Ft.
b= .5 Ft.

FROM –L– STA. 82+10 RT TO –L– STA. 85+00 RT (EST. DDE = 173 CY)
FROM –L– STA. 86+00 RT TO –L– STA. 90+50 RT (EST. DDE = 378 CY)
FROM –L– STA. 92+00 RT TO –L– STA. 93+24 RT (EST. DDE = 36 CY)

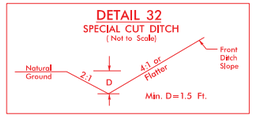
DETAIL 31
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=2 Ft.

Type of Liner= PSRM
FROM –L– STA. 81+80 LT TO –L– STA. 83+00 LT EST. 154 SY PSRM
FROM –Y7– STA. 15+67 LT TO –L– STA. 16+54 LT EST. 110 SY PSRM

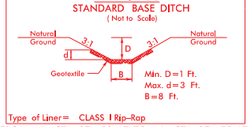
DETAIL 32
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.

FROM –Y7– STA. 15+67 RT TO –L– STA. 80+28 LT

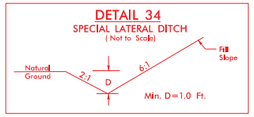
DETAIL 33
STANDARD BASE DITCH
(Not to Scale)



Min. D=1 Ft.
Max. d=3 Ft.
B=8 Ft.

Type of Liner= CLASS I Rip-Rap
FROM –L– STA. 87+50 LT TO –L– STA. 87+55 LT EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY, EST. 78 SY GEOTEXTILE

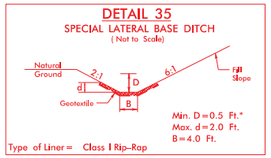
DETAIL 34
SPECIAL LATERAL DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM –L– STA. 76+10 LT TO –L– STA. 79+00 LT

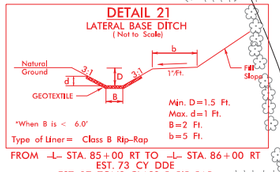
DETAIL 35
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=0.5 Ft.*
Max. d=2.0 Ft.
B=4.0 Ft.

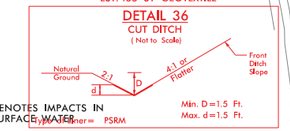
Type of Liner= Class I Rip-Rap
FROM –L– STA. 75+00 LT TO –L– STA. 76+10 LT
*DITCH ELEVATION AND DEPTH SET TO INTERCEPT STREAM FROM POND

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)



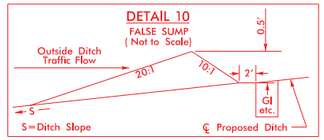
Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.
*When B is < 6.0'
Type of Liner= Class B Rip-Rap
FROM –L– STA. 85+00 RT TO –L– STA. 86+00 RT EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM –L– STA. 90+50 RT TO –L– STA. 92+00 RT EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

DETAIL 36
CUT DITCH
(Not to Scale)



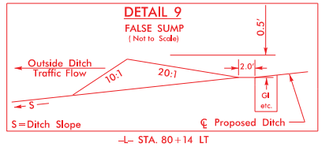
Min. D=1.5 Ft.
Max. d=1.5 Ft.
Type of Liner= PSRM
FROM –L– STA. 83+00 LT TO –L– STA. 85+00 LT EST. 280 SY PSRM

DETAIL 10
FALSE SUMP
(Not to Scale)



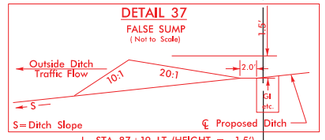
–L– STA. 87+41 RT
–L– STA. 84+91 RT
–L– STA. 78+41 RT

DETAIL 9
FALSE SUMP
(Not to Scale)



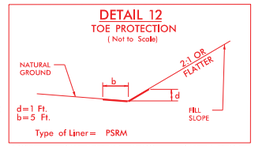
–L– STA. 80+14 LT

DETAIL 37
FALSE SUMP
(Not to Scale)



–L– STA. 87+19 LT (HEIGHT = 1.5')

DETAIL 12
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM –L– STA. 84+80 LT TO –L– STA. 87+30 LT EST. 260 SY PSRM

S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

SEE ENLARGMENT SHEET 17 OF 53

MATCHLINE -L- STA. 75+00.00 SEE SHEET 8
MATCHLINE -L- STA. 88+00.00 SEE SHEET 10

75·00 80·00 85·00

(21) CARE OF CLAYTON, LLC
(25) BHH, LLC
(22) WOODARD INSURANCE, INC
(17) COUNTY OF JOHNSTON
(18) REBECCA FLOWERS FINCH
(24) GEORGE EDWARD NICHOALDS
(23) JORDAN W. FINCH
(62) NEUSE COLONY ASSOCIATION INC.

PERMANENT IMPACT IN SURFACE WATER
4' SPECIAL LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS
SPECIAL LATERAL DITCH SEE DETAIL 34
SITE 5
PERMANENT IMPACT IN SURFACE WATER
RETAIN
EXCAVATION IN WETLAND
SPECIAL CUT DITCH SEE DETAIL 32
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
CUT DITCH wPSRM SEE DETAIL 36
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
8' STANDARD BASE DITCH wCLASS I RIP RAP SEE DETAIL 33
2' LATERAL BASE DITCH SEE DETAIL 30
2' LATERAL BASE DITCH wCLASS B RIP RAP SEE DETAIL 21
4' LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 23

JOHN DAVID MCBRYDE II AND LORI L. MCBRYDE
ANTHONY V FISCELLA AND WIFE WENDY K FISCELLA
JEFFREY ROBINSON AND WIFE TAMEKA ROBINSON
STEVEN MICHAEL DAVENPORT AND WIFE ALISHA C. DAVENPORT
BRENTT S. WALKER AND WIFE LINDSEY WALKER
JUAN JIMENEZ AND WIFE CHELSEY JIMENEZ
CLIFTON P. BEAN AND WIFE DIANE M. BEAN
JONATHAN RANDOLPH JONES AND WIFE NANDA LANGDON JONES
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

50 25 0 50 100

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 17 OF 53

ENLARGEMENT

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

17

COUNTY OF JOHNSTON

75+00 75+00

4' LATERAL BASE DITCH w/PSRM SEE DETAIL 24

PERMANENT IMPACT IN SURFACE WATER

SITE 5

PERMANENT IMPACT IN SURFACE WATER

4' SPECIAL LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS

SPECIAL LATERAL DITCH SEE DETAIL 34

SITE 5

RETAIN

6" DIP

PERMANENT IMPACT IN SURFACE WATER

PUE

DATUR

PDE

GRADE TO DRAIN

12" DIP

EXCAVATION IN WETLAND

42" WELDED STEEL TRENCHLESS

REMOVE

JB w/MH

DI

15"-RCP-IV

FL GR 2GI

12" 8" PVC DATUR

PROPOSED 160' R/W

PROPOSED 80' R/W

15" RCP-IV

PERMANENT IMPACT IN SURFACE WATER

FILL IN WETLAND

66"

REBECCA FLOWERS FINCH

18

BANK STABILIZATION PERM. SURFACE WATER IMPACT

OUTFALL ANALYSIS D

MATCH DITCH INVERT TO STREAM INVERT

RAP RAP AT EMBANKMENT SEE DETAIL 25

TEMPORARY IMPACT IN SURFACE WATER

19

SITE 5

18

REBECCA FLOWERS FINCH

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23

MICHELLE STRICKLAND

4' LATERAL BASE DITCH

JEFFREY ROBINSON AND WIFE

25 12.5 0 25 50

REVISIONS 8/17/99

8/4/2018
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smithg

8/17/99

REVISIONS

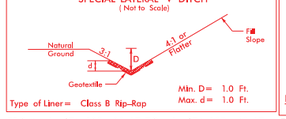
Prepared by
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URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83 2011

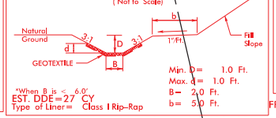
DETAIL 38
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= Class B Rip-Rap

FROM –L– STA. 100+00 LT TO –L– STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 115 SY GEOTEXTILE

DETAIL 42
LATERAL BASE DITCH
(Not to Scale)

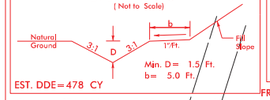


*When B is < 6.0'
EST. DDE=27 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 106+00 LT TO –L– STA. 106+25 LT
EST. 12 TONS CLASS I RIP RAP
EST. 32 SY GEOTEXTILE

DETAIL 43
LATERAL 'V' DITCH
(Not to Scale)

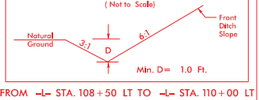


Min. D= 1.5 Ft.
b= 5.0 Ft.

EST. DDE=478 CY

FROM –L– STA. 106+28 LT TO –L– STA. 108+50 LT

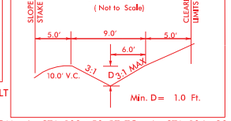
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 108+50 LT TO –L– STA. 110+00 LT

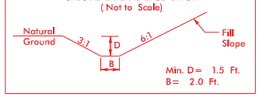
DETAIL 45
BERM DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 103+50 RT TO –L– STA. 104+20 RT

DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2.0 Ft.

FROM –L– STA. 113+50 LT TO –L– STA. 114+30 LT

DETAIL 46
BERM DITCH
(Not to Scale)



Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip Rap

FROM –L– STA. 104+20 RT TO –L– STA. 104+50 RT
EST. 10 TONS CLASS B RIP RAP
EST. 30 SY GEOTEXTILE
FROM –L– STA. 105+50 RT TO –L– STA. 106+00 RT

DETAIL 48
SPECIAL CUT V-DITCH
(Not to Scale)



Min. D= 1.5 Ft.

FROM –L– STA. 111+50 LT TO –L– STA. 113+50 LT

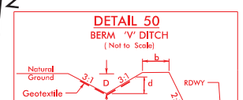
DETAIL 49
BERM BASE DITCH
(NOT TO SCALE)



Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 110+00 LT TO –L– STA. 114+00 LT

DETAIL 50
BERM 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip Rap
Max. d=1.0 Ft.

FROM –L– STA. 104+50 RT TO –L– STA. 105+50 RT
EST. 35 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
BERM DITCH GRADE

DETAIL 51
SPECIAL CUT V-DITCH
(Not to Scale)



Min. D= 1 Ft.

FROM –L– STA. 111+50 RT TO –L– STA. 112+25 RT

PERMIT DRAWING
SHEET 18 OF 53

SEE ENLARGMENT
SHEET 20 OF 53

MATCHLINE -L- STA. 101+00.00 SEE SHEET 10

MATCHLINE -L- STA. 114+00.00 SEE SHEET 12

105+00

110+00

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

29 SUSO 4 FLOWERS LP

35 CLAYTON 99, LLC

36 CLAYTON 99, LLC

37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

40 CHARLES RAY WILLIAMS

41 INSPIRED, LLC

42 IRENA V. DAVYDOVA-FORQUER

43 AQUA NORTH CAROLINA, INC

44 BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS

45 RICHARD TODD STUTTS

46 PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

39 AQUA NORTH CAROLINA, INC FORMALLY (HEATER UTILITIES, INC)

62 NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

SITE 6

REMOVE EXIST. CB

RETAIN

INSTALL DI ON EXISTING 30" RCP

INSTALL CB ON EXISTING 30" RCP

REMOVE 47 LF

REMOVE EXIST. CB

SPECIAL LATERAL V DITCH W/CL B RIP RAP SEE DETAIL 38

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42

LATERAL V-DITCH SEE DETAIL 43

SPECIAL CUT DITCH SEE DETAIL 44

2' BASE BERM DITCH SEE DETAIL 49

SPECIAL CUT V-DITCH SEE DETAIL 48

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

THE BERM DITCH TO SPECIAL LATERAL DITCH

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 52

BERM DITCH SEE DETAIL 45

BERM DITCH W/CL B RIP RAP SEE DETAIL 46

BERM DITCH W/CL B RIP RAP SEE DETAIL 50

CL B RIP RAP TOE PROTECTION SEE DETAIL 53

STANDARD 3' BASE DITCH W/CL I RIP RAP SEE DETAIL 54

2' STANDARD BASE DITCH W/CL I RIP RAP SEE DETAIL 39

SPECIAL CUT V-DITCH SEE DETAIL 51

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

EX 20' PUBLIC UTILITY EASEMENT

EX 40' DRAINAGE & UTILITY EASEMENT

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 20' UTILITY & SEWER EASEMENT

EX DRAINAGE EASEMENT STORM WATER POND

EXISTING R/W

PROPOSED 160' R/W

POSSIBLE ABANDONED FM

JB W/SLAB

PLUG

PLUG AND FILL

TOP=173.98'
INV OUT=162.00'

TOP=173.17'
INV IN(NW)=159.67
INV IN(E)=160.05
INV OUT(S)=159.62'

TOP=176.45'
INV OUT=166.15'

TOP=171.95'
INV IN(E)=165.05'
INV OUT(W)=164.95'

DETAIL 52
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
EST. DDE=50' CY
Type of Liner= Class I Rip-Rap

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 101+08 RT TO –L– STA. 101+50 RT
EST. 27 TONS CLASS I RIP RAP
EST. 69 SY GEOTEXTILE

DETAIL 39
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner= Class I Rip-Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.

FROM –L– STA. 100+95 RT TO –L– STA. 101+30 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
EST. DDE= 140 CY
Type of Liner= CL B Rip-Rap

Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 98+70 RT TO –L– STA. 101+08 RT

DETAIL 55
FALSE SUMP
(Not to Scale)



STA. –L– 103+74 RT
STA. –L– 106+24 RT
STA. –L– 112+48 RT
STA. –L– 107+24 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)



d= 1.0 Ft.

Type of Liner= Class B Rip-Rap

FROM –L– STA. 106+00 RT TO –L– STA. 109+50 RT
EST. 125 TONS CLASS B RIP RAP
EST. 295 SY GEOTEXTILE

DETAIL 54
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner= Class I Rip -Rap
Est. 25 Tons Class I Rip Rap
Est. 45 SY Geotextile. Est. DDE 20 CY

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.

FROM –L– STA. 107+70 RT TO –L– STA. 108+00 RT

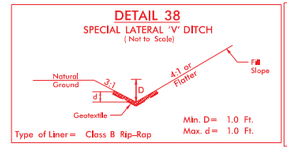
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1/4/2018
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8/17/99

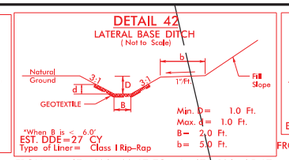
REVISIONS

PERMIT DRAWING
SHEET 19 OF 53



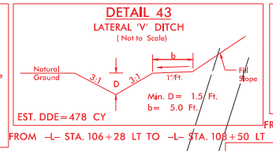
Type of Liner= Class B Rip-Rap

FROM –L– STA. 100+00 LT TO –L– STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 115 SY GEOTEXTILE



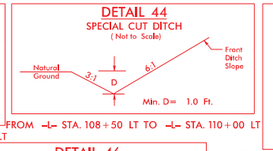
*When B is < 6.0'
EST. DDE=27 CY
Type of Liner= Class I Rip-Rap

FROM –L– STA. 106+00 LT TO –L– STA. 106+25 LT
EST. 12 TONS CLASS I RIP RAP
EST. 32 SY GEOTEXTILE

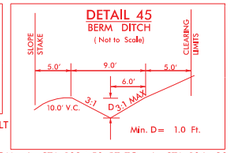


EST. DDE=478 CY

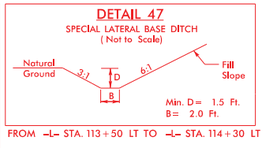
FROM –L– STA. 106+28 LT TO –L– STA. 108+50 LT



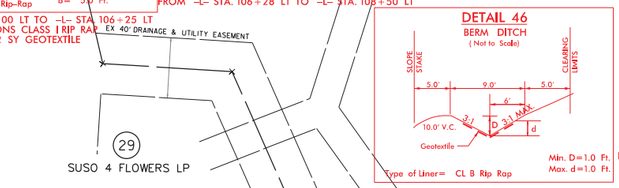
FROM –L– STA. 108+50 LT TO –L– STA. 110+00 LT



FROM –L– STA. 103+50 RT TO –L– STA. 104+20 RT

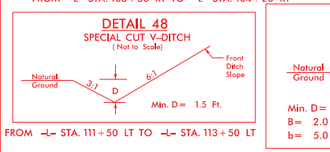


FROM –L– STA. 113+50 LT TO –L– STA. 114+30 LT

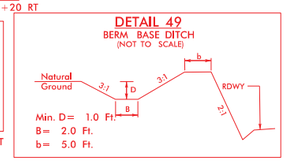


Type of Liner= CL B Rip Rap

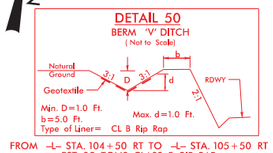
FROM –L– STA. 104+20 RT TO –L– STA. 104+50 RT
EST. 10 TONS CLASS B RIP RAP
EST. 30 SY GEOTEXTILE
FROM –L– STA. 105+50 RT TO –L– STA. 106+00 RT



FROM –L– STA. 111+50 LT TO –L– STA. 113+50 LT

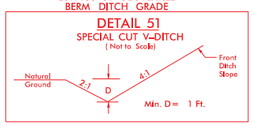


FROM –L– STA. 110+00 LT TO –L– STA. 114+00 LT



Type of Liner= CL B Rip Rap

FROM –L– STA. 104+50 RT TO –L– STA. 105+50 RT
EST. 35 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
BERM DITCH GRADE



FROM –L– STA. 111+50 RT TO –L– STA. 112+25 RT

NAD 83/2011

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NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEE ENLARGMENT
SHEET 20 OF 53

105+00

110+00

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

29 SUSO 4 FLOWERS LP

35 CLAYTON 99, LLC

CLAYTON 99, LLC

36

37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

REMOVE EXIST. CB

RETAIN

INSTALL DI ON EXISTING 30" RCP

INSTALL CB ON EXISTING 30" RCP

REMOVE 47 LF

REMOVE EXIST CB

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42

EX DRAINAGE EASEMENT STORM WATER POND

LATERAL V-DITCH SEE DETAIL 43

SPECIAL CUT DITCH SEE DETAIL 44

2' BASE BERM DITCH SEE DETAIL 49

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

SPECIAL CUT V-DITCH SEE DETAIL 48

THE BERM DITCH TO SPECIAL LATERAL DITCH

SPECIAL LATERAL V DITCH W/CL B RIP RAP SEE DETAIL 38

REMOVE

SITE 6

PLUG LAND FILL

POSSIBLE ABANDONED CUT

EX 40' DRAINAGE & UTILITY EASEMENT

EX 20' PUBLIC UTILITY EASEMENT

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 20' UTILITY & SEWER EASEMENT

EXISTING R/W

PROPOSED R/W

MATCHLINE -L- STA. 101+00.00 SEE SHEET 10

MATCHLINE -L- STA. 114+00.00 SEE SHEET 12

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 52

BERM DITCH SEE DETAIL 45

BERM DITCH W/CL B RIP RAP SEE DETAIL 50

BERM DITCH W/CL B RIP RAP SEE DETAIL 46

CL B RIP RAP TOE PROTECTION SEE DETAIL 53

STANDARD 3' BASE DITCH W/CL I RIP RAP SEE DETAIL 54

2' STANDARD BASE DITCH W/CL I RIP RAP SEE DETAIL 39

SPECIAL CUT V-DITCH SEE DETAIL 51

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

40 CHARLES RAY WILLIAMS

41 INSPIRED, LLC

42 IRENA V. DAVYDOVA-FORQUER

43 AQUA NORTH CAROLINA, INC

44 BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS

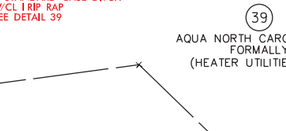
45 RICHARD TODD STUTTS

46 PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

39 AQUA NORTH CAROLINA, INC FORMALLY (HEATER UTILITIES, INC)

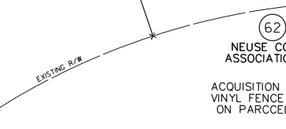
62 NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60



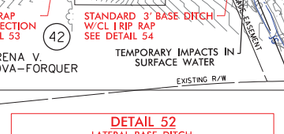
*When B is < 6.0'
Type of Liner= Class I Rip-Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY

FROM –L– STA. 100+95 RT TO –L– STA. 101+30 RT



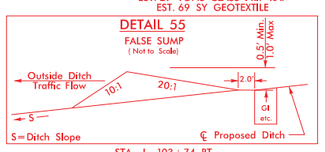
*When B is < 6.0'
EST. DDE= 140 CY
Type of Liner= CL B Rip-Rap

FROM –L– STA. 98+70 RT TO –L– STA. 101+08 RT

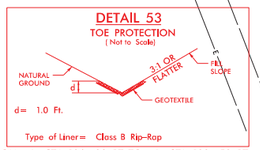


*When B is < 6.0'
EST. DDE=50 CY
Type of Liner= Class I Rip-Rap

FROM –L– STA. 101+08 RT TO –L– STA. 101+50 RT
EST. 27 TONS CLASS I RIP RAP
EST. 69 SY GEOTEXTILE

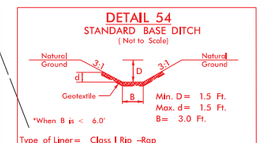


STA. –L– 103+74 RT
STA. –L– 106+24 RT
STA. –L– 112+48 RT
STA. –L– 107+24 RT



Type of Liner= Class B Rip-Rap

FROM –L– STA. 106+00 RT TO –L– STA. 109+50 RT
EST. 125 TONS CLASS B RIP RAP
EST. 295 SY GEOTEXTILE



*When B is < 6.0'
Type of Liner= Class I Rip -Rap
Est. 25 Tons Class I Rip Rap
Est. 45 SY Geotextile. Est. DDE 20 CY

FROM –L– STA. 107+70 RT TO –L– STA. 108+00 RT

50 25 0 50 100

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R:\Hydraulics\PERMITS_Environmental\Drawings\Wet contour ps\R3825b_wet_pshll_contour.dgn
sm1b19

105+00

110+00

25 12.5 0 25 50

Prepared by
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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 20 OF 53

ENLARGEMENT

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42

LATERAL V-DITCH SEE DETAIL 43

SPECIAL CUT DITCH SEE DETAIL 44

2' BASE BERM DITCH SEE DETAIL 49

EX 40' DRAINAGE & UTILITY EASEMENT

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 20' UTILITY & SEWER EASEMENT

EX DRAINAGE EASEMENT
STORM WATER POND

TOP=173.98'
INV OUT=162.00'

TOP=173.17'
INV IN(NW)=159.67'
INV IN(E)=161.05'
INV OUT(S)=159.02'

INV IN=161.06'
INV OUT=160.69'

66" RCP-W

66" RCP-W TRENCHLESS INSTALLATION BURIED 1.0' 66" WELDED STEEL

30" CSP

18" CSP

15" W/ELBOW

18" RCP

15" CSP

12" PVC

8" PVC

EXISTING R/W

FL. GR. 2GI

FL. GR. 2GI-A

FL. GR. 2GI-D

JB W/SLAB

PLUG

PLUG AND FILL

REMOVE

ELBOW

BDO

SEWER VALVE

SITE 6

SITE 6

BERM DITCH W/CL B RIP RAP SEE DETAIL 46

BERM DITCH W/CL B RIP RAP SEE DETAIL 50

BERM DITCH W/CL B RIP RAP SEE DETAIL 46

CL B RIP RAP TOE PROTECTION SEE DETAIL 53

STANDARD 3' BASE DITCH W/CL I RIP RAP SEE DETAIL 54

EST. 2 TONS CLASS
EST. 7 SY GEOTEXTI

-L- +38.00
98.00' RT
96.00' RT

-L- +53.00
98.00' RT
96.00' RT

37 THE GARDENS AT FLOWERS F

42 IRENA V. DAVYDOVA-FORQUER

44 BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS

45 RICHARD TODD STUTTS

INSPIRED, LLC

WOODS

DUE

PUE

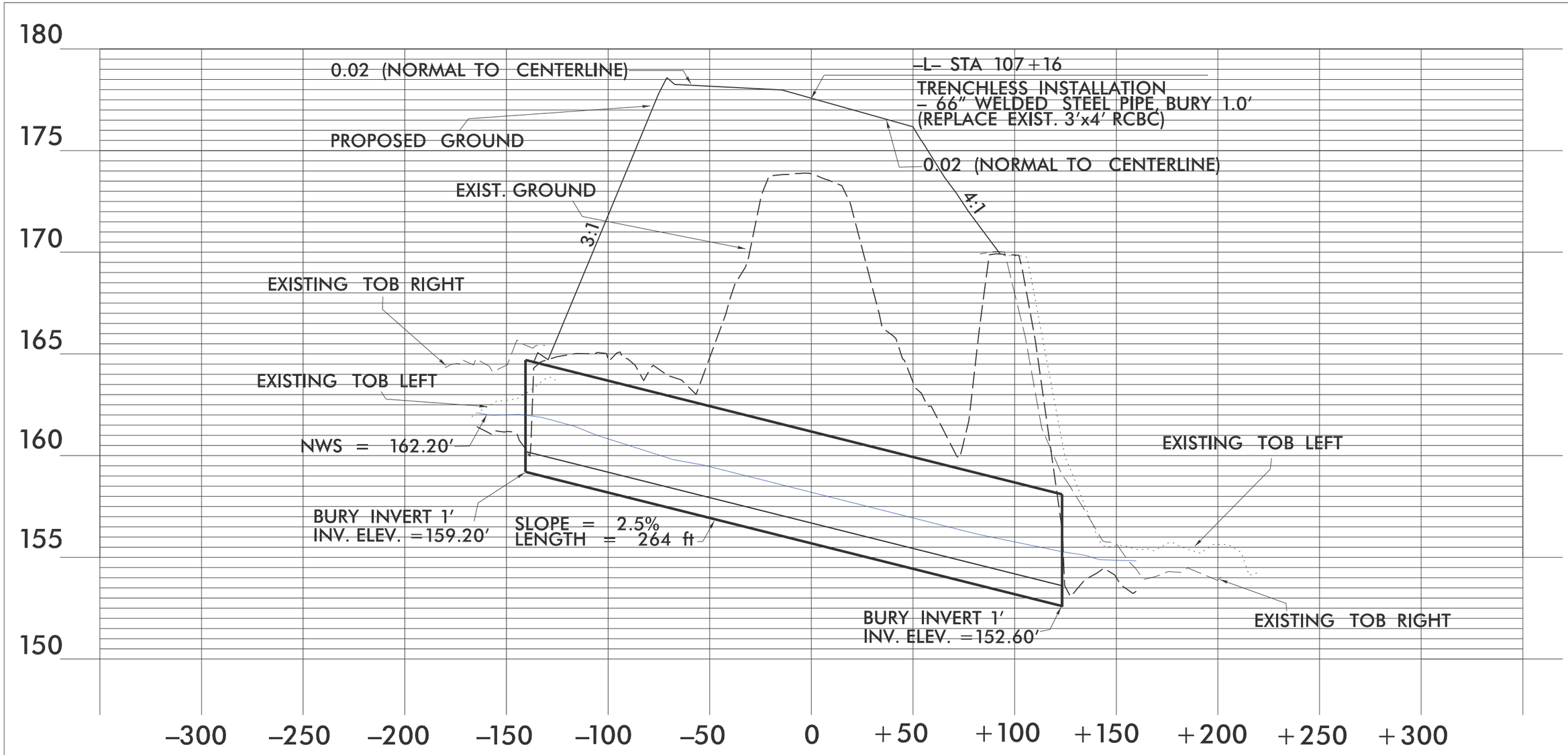
CONC

-FL-

-L-

1/4/2008
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smith6g

SITE 6 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 6

PERMIT DRAWING
SHEET 21 OF 53

8/17/99

REVISIONS

PERMIT DRAWING
SHEET 22 OF 53

NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)

Ditch Grade, 10' min., 1', 1.0' min., GEOTEXTILE, L

Type of Liner = 7 TON, CL B Rip-Rap
Geotextile = 22 sy

FROM -L- STA. 113+95 RT TO -L- STA. 114+08 RT
FROM -L- STA. 114+28 LT TO -L- STA. 114+21 LT
FROM -L- STA. 114+10 LT TO -L- STA. 114+30 LT

DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 6:1, Front Ditch Slope, B

Min. D=1.0 Ft.
B=2.0 Ft.

FROM -L- STA. 114+40 LT TO -L- STA. 116+00 LT

DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 3:1, D, 6:1, Front Ditch Slope

Min. D= 1.0 Ft.

FROM -L- STA. 123+20 LT TO -L- STA. 124+00 LT

DETAIL 61
FALSE SUMP
(Not to Scale)

1.0', OPEN END PIPE, 2.0', Outside Ditch Traffic Flow, 10:1, 20:1, S

S=Ditch Slope ℄ Proposed Ditch

STA. -L- 123+00 LT

DETAIL 58
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)

Natural Ground, 2:1, 6.0', 4:1, 6:1, D, Front Ditch Slope

Min. D=1.5 Ft.
B=5.0 Ft.

FROM -L- STA. 116+00 RT TO -L- STA. 119+00 RT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, d, 3:1, D, 3:1, b, 1'Ff., Fill Slope, Geotextile

EST. DDE=110 CY
Type of Liner= CL B Rip-Rap

Min. D=1.0 Ft.
Max. d=1.0 Ft.
b=5.0 Ft.

FROM -L- STA. 122+55 RT TO -L- STA. 124+50 RT

SEE ENLARGMENT SHEET 24 OF 53

115.00

120.00

125.00

(37) THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

DENNIS R. BAKAYSA AND WIFE, DEBORAH A. BAKAYSA

TIMOTHY DWANE MARTIN AND WIFE, WENDY NELSON NARTIN

JENNA A. EGGLESTON AND SPOUSE, JOHNATHAN D. EGGLESTON

GEORGE W. BROCK AND WIFE, SHIRLEY BROCK

GUSTAVO A. MENJIVAR-RODRIGUEZ AND WIFE, AILEEN MENJIVAR

JOSEPH MARK AND SPOUSE, MARKETA MARK

BRIAN M. HENDERSON AND WIFE, STACEY S. HENDERSON

(38)

(47) NEUSE PARK DEVELOPMENT CO., LLC (48) CENTEX HOMES

(46) PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

(49) M. ANDREW JONES, JR. AND WIFE NANCY S. JONES

(50) MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS

(51) CHRISTOPHER V. CIPRIANI AND WIFE PATRICIA S. CIPRIANI

(52) RODNEY GEOHAGAN, JR.

(62) NEUSE COLONY ASSOCIATION INC.

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.

HW W/ TRASH RACK RETAIN

SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END

BANK STABILIZATION SEE DETAIL 56

TEMPORARY SHORING -L- 114+05 TO 114+30 39.0' LT SEE TMP

TEMPORARY IMPACTS IN SURFACE WATER

2' BASE SPECIAL CUT DITCH SEE DETAIL 57

POND WE = 1700

36" RCP IN 2 GI A

PLUG & FILL

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

SITE 7

FL. GR. 2GI

FS 2GI

15" RCP IV

18" RCP IV

12" PVC

8" PVC

DATUR

PPES

SPECIAL CUT BASE DITCH SEE DETAIL 58

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

2' STANDARD BASE DITCH w/CLASS I RIP RAP SEE DETAIL 60

25LF OF OUTLET CHANNEL IMPROVEMENT APPROX 9 TON CLASS I RIP RAP APPROX 6 SY GEOTEXTILE SEE DETAIL 107

BANK STABILIZATION SEE DETAIL 56

RETAIN

REMOVE

GRADE TO DRAIN

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 25' UTILITY EASEMENT

EX 20' UTILITY & SEWER EASEMENT

24" RCP

15" RCP

EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE

SPECIAL LATERAL V-DITCH W/CL B RIP RAP
EST. 70 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE
SEE DETAIL 59

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 60
STANDARD BASE DITCH
(Not to Scale)

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

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

*When B is < 6.0'

Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY

FROM -L- STA. 114+17 RT TO STA. 114+35 RT

DETAIL 62
FALSE SUMP
(Not to Scale)

0.5' Min., 1.0' Max., Outside Ditch Traffic Flow, 20:1, 10:1, 2', GI etc., S

S=Ditch Slope ℄ Proposed Ditch

STA. -L- 115+86 RT

DETAIL 107
CULVERT 114+23 OUTLET CHANNEL FACING DOWNSTREAM (NTS)

EX. GROUND, 84"OD WELDED STEEL PIPE, 2:1 MAX SLOPE, CHANNEL EXCAVATION: =10 CY DOWNSTREAM, CLASS I RIP RAP 2' THICK w/ GEOTEXTILE UNDERNEATH KEY-IN 2' (TYP.), 1' SILL INSET 1' FROM END, BACKFILL WITH NATIVE MATERIAL PER SPEC.

MATCHLINE -L- STA. 114+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 13

50 25 0 50 100

1/4/2018
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smiller

8/17/99

REVISIONS

PERMIT DRAWING SHEET 23 OF 53

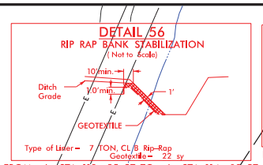
NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

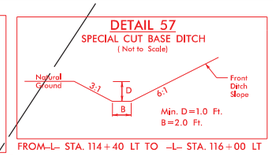
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)



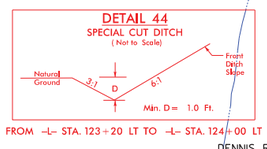
Type of Liner = 7 TON, CL B Rip-Rap
Geotextile = 22 sy
FROM –L– STA. 113+95 RT TO –L– STA. 114+08 RT
FROM –L– STA. 114+28 LT TO –L– STA. 114+01 LT
FROM –L– STA. 114+10 LT TO –L– STA. 114+30 LT

DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)



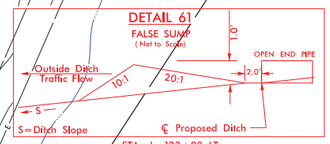
FROM –L– STA. 114+40 LT TO –L– STA. 116+00 LT

DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



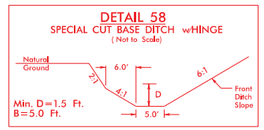
FROM –L– STA. 123+20 LT TO –L– STA. 124+00 LT

DETAIL 61
FALSE SUMP
(Not to Scale)



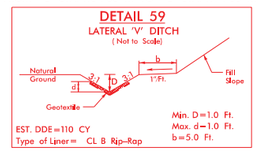
STA. –L– 123+00 LT

DETAIL 58
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)



FROM –L– STA. 116+00 RT TO –L– STA. 119+00 RT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



EST. DDE=110 CY
Type of Liner = CL B Rip-Rap
FROM –L– STA. 122+55 RT TO –L– STA. 124+50 RT

DENNIS R. BAKAYSA AND WIFE,
DEBORAH A. BAKAYSA

TIMOTHY DWANE MARTIN AND WIFE,
WENDY NELSON NARTIN

JENNA A. EGGLESTON AND SPOUSE,
JOHNATHAN D. EGGLESTON

GUSTAVO A. MENJIVAR-RODRIGUEZ
AND WIFE,
AILEEN MENJIVAR

JOSEPH MARK AND SPOUSE,
MARKETA MARK

BRIAN M. HENDERSON AND WIFE,
STACEY S. HENDERSON

GEORGE W. BROCK
AND WIFE,
SHIRLEY BROCK

115+00 120+00 125+00

(37) THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

SEE ENLARGMENT SHEET 24 OF 53

TEMPORARY SHORING WALL
114+05 TO 114+30
39.0' LT
SEE TMP

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.

HW W/ TRASH RACK RETAIN

SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END

BANK STABILIZATION SEE DETAIL 56

TEMPORARY IMPACTS IN SURFACE WATER

2' BASE SPECIAL CUT DITCH SEE DETAIL 57

POND WE-1POD

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

SITE 7

PLUG & FILL

36" RCP IN 2GI-A

15" RCP IV

FL GR 2GI

FS 2GI

PPES

SPECIAL CUT BASE DITCH SEE DETAIL 58

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 20' UTILITY & SEWER EASEMENT

EX 25' UTILITY EASEMENT

RETAIN

GRADE TO DRAIN

REMOVE

SPECIAL CUT DITCH SEE DETAIL 44

SPECIAL LATERAL V-DITCH W/CL B RIP RAP
EST. 70 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE
SEE DETAIL 59

EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE

(38) (47) NEUSE PARK DEVELOPMENT CO., LLC (48) CENTEX HOMES

(46) PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

(49) M. ANDREW JONES, JR. AND WIFE NANCY S. JONES

(50) MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS

(51) CHRISTOPHER V. CIPRIANI AND WIFE PATRICIA S. CIPRIANI

(52) RODNEY GEOHAGAN, JR.

(62) NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

25LF OF OUTLET CHANNEL IMPROVEMENT
APPROX 9 TON CLASS I RIP RAP
APPROX 6 SY GEOTEXTILE
SEE DETAIL 107

BANK STABILIZATION SEE DETAIL 56

S S DENOTES IMPACTS IN SURFACE WATER

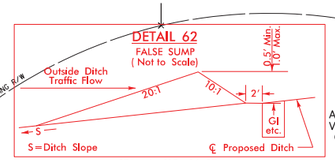
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 60
STANDARD BASE DITCH
(Not to Scale)



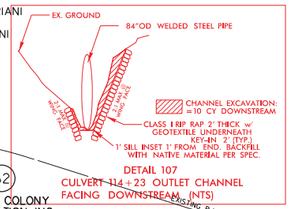
*When B is < 6.0'
Type of Liner = Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY
FROM –L– STA. 114+17 RT TO STA. 114+35 RT

DETAIL 62
FALSE SUMP
(Not to Scale)



STA. –L– 115+86 RT

DETAIL 107
CULVERT 114+23 OUTLET CHANNEL FACING DOWNSTREAM (NTS)



2' STANDARD BASE DITCH w/CLASS I RIP RAP SEE DETAIL 60

MATCHLINE -L- STA. 114+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 13

50 25 0 50 100

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Wet contour ps\R3825b_wet_psh12_contour.dgn
smitchg

8/17/99
REVISIONS

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 24 OF 53

ENLARGEMENT

TRASH RACK SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END.
RETAIN
BANK STABILIZATION SEE DETAIL 56
39.0' LT SEE TMP
INV=170.16'
TEMPORARY IMPACTS IN SURFACE WATER
2' BASE SPECIAL CUT DITCH SEE DETAIL 57
POND WE = 170.0
INV=170.33'
24" CMP
115+00
PUE
PDE
BZ 1
BZ 2
TOP=162.38'
INV=160.82' (CONC PIPE TIES INTO CULVERT)
CL INV=145.82'
TOP=173.24'
INV IN=168.78'
INV OUT=168.74'
HWS
36" RCP III 2GI-A
BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER
PLUG & FILL
PERMANENT IMPACTS IN SURFACE WATER
EX 20' UTILITY & SEWER EASEMENT
18"
8" DIP
15" RCP IV
FL. GR. 2GI
12" PVC
PROPOSED 160' R/W
TOP=184.54'
INV IN=176.36'
INV OUT=176.36'
EX 20' SEWER EASEMENT
8" PVC
EX 20'
20'
38
120+00
TOP=185.12'
INV IN=173.87'
INV OUT=171.12'
WOODS
UPSTREAM END INACCESSIBLE
SITE 7
8" PVC
DATUR
PPES
15"
FL. GR. 2GI
8" WELDED STEEL
INSTALLATION SEE DETAIL 107
TRENCHLESS
15" 2-ELBOWS
FS 2GI
JB w/MH
DUE
SPECIAL CUT BASE DITCH SEE DETAIL 58
TEMPORARY IMPACTS IN SURFACE WATER
2' STANDARD BASE DITCH w/CLASS I RIP RAP SEE DETAIL 60
25LF OF OUTLET CHANNEL IMPROVEMENT
APPROX 9 TON CLASS I RIP RAP
APPROX 6 SY GEOTEXTILE
SEE DETAIL 107

46
PETER JOSEPH BIGNESS
AND
CINDY JOHNSON BIGNESS

49
M. ANDREW JONES, JR.
AND WIFE
NANCY S. JONES

50
MARSHALL H. MALPASS
AND WIFE
ROBIN M. MALPASS

S S DENOTES IMPACTS IN SURFACE WATER

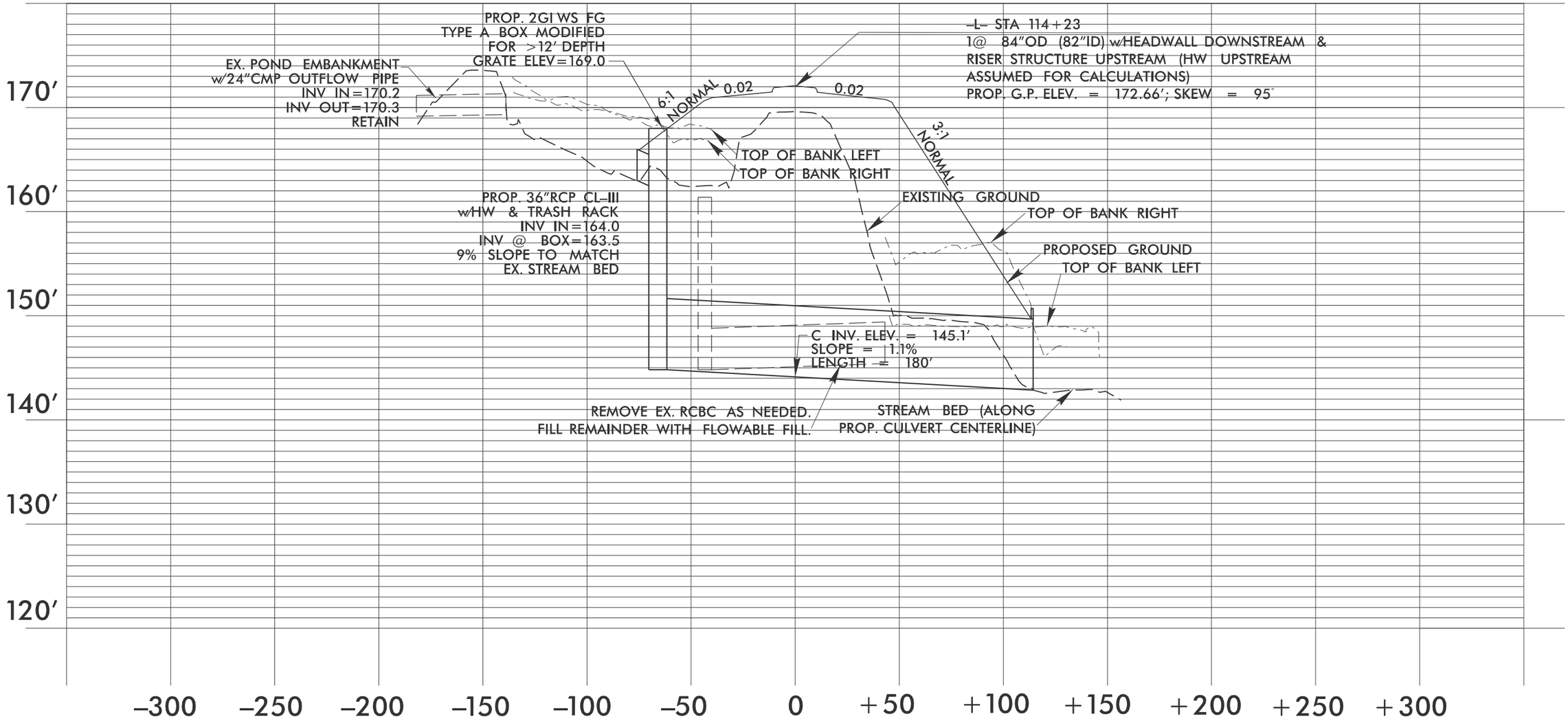
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 60
STANDARD BASE DITCH
(Not to Scale)

25 12.5 0 25 50

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Wet ps\R3825b_wet_psh12 - Copy.dgn
smith19

SITE 7 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 7
PERMIT DRAWING
SHEET 25 OF 53

PERMIT DRAWING
SHEET 26 OF 53

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

8/17/99

REVISIONS

MATCHLINE -L- STA. 127+00.00 SEE SHEET 12

MATCHLINE -L- STA. 140+00.00 SEE SHEET 14

130+00 135+00 140+00

PAUL CALOTES AND WIFE CLAUDINA CALOTES

EDGAR MAZARIEGO AND WIFE DARY M. MAZARIEGOS

FREO NC, LLC

AMERICAN RESIDENTIAL LEASING COMPANY, LLC

MAIZE & BLUE, LLC

LARRY WILLIAM SCHWEER, TRUSTEE OF LARRY WILLIAM SCHWEER REVOCABLE TRUST

DIANE WHOLEY BUGGE

HARRISON N. MWAURA AND BEATRICE W. CHEGE (55)

CREESHA D. HOGAN (56)

ERICA L. SETH (57)

CENTEX HOMES (48)

(53) EUGENE V. BERTOCCHI AND SPOUSE ROBERTA T. BERTOCCHI

(54) ANDREW J. BOND

(58) 42 EAST, LLC

SOARD FAMILY LLC. (60)

(52) RODNEY GEOHAGAN, JR.

(62) NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

SITE 8

EX 80' DRAINAGE UTILITY AND ROAD MAINTENANCE EASEMENT (80TH SIDE) OF R/W

EX 20' UTILITY EASEMENT RESERVED

EX 25' D.E.

PROPOSED L.O.C. R/W

EXISTING R/W

DATUR

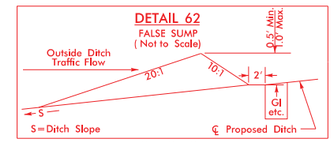
MEUSE COLONY DR

BM=7
N: 691,484
E: 2,182,854
ELEV=196.61'

TOP=212.31
INV IN=194.64'

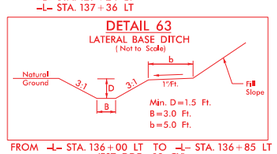
TOP=202.75
INV OUT=196.

DETAIL 62
FALSE SUMP
(Not to Scale)



-L- STA. 127+24 LT
-L- STA. 137+36 LT

DETAIL 63
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM -L- STA. 136+00 LT TO -L- STA. 136+85 LT
(EST. DDE=92 CY)
FROM -L- STA. 135+35 RT TO -L- STA. 136+80 RT
(EST. DDE=69)

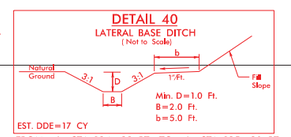
DETAIL 64
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
When B is < 6.0'
Type of Liner= Class B Rip-Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile. Est. DDE 65 CY

FROM -L- STA. 136+86 LT TO -L- STA. 137+80 LT

DETAIL 40
LATERAL BASE DITCH
(Not to Scale)

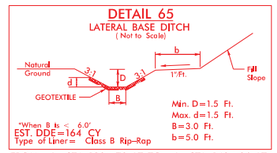


Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

EST. DDE=17 CY

FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT

DETAIL 65
LATERAL BASE DITCH
(Not to Scale)

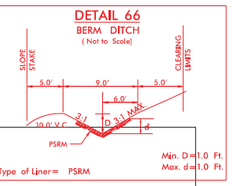


*When B is < 6.0'
EST. DDE=164 CY
Type of Liner= Class B Rip-Rap

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM -L- STA. 138+70 LT TO -L- STA. 140+06 LT

DETAIL 66
BERM DITCH
(Not to Scale)



Type of Liner= PSRM

Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM -L- STA. 137+50 RT TO -L- STA. 140+50 RT

TOE PROTECTION
EST. 30 SY GEOTEXTILE
SEE DETAIL 69

TOE PROTECTION
EST. 23 TONS CLASS B RIP RAP
SEE DETAIL 69

TOE PROTECTION
EST. 65 TONS
CLASS B RIP RAP
EST. 103 SY GEOTEXTILE
SEE DETAIL 69

4' SPECIAL CUT BASE DITCH
SEE DETAIL 68

3' LATERAL BASE DITCH
SEE DETAIL 63

3' BASE DITCH W/
EST. 70 TONS CL B RIP RAP
SEE DETAIL 64

3' LATERAL BASE DITCH W/
EST. 130 TONS CLASS B RIP RAP
EST. 200 SY GEOTEXTILE
SEE DETAIL 65

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

SPECIAL LATERAL V DITCH
SEE DETAIL 67

LATERAL V-DITCH
SEE DETAIL 67

LATERAL V DITCH
SEE DETAIL 67

TOE PROTECTION
EST. 32 TONS CLASS B RIP RAP
EST. 72 SY GEOTEXTILE
SEE DETAIL 69

REMOVE 225 LF

REMOVE

PLUG AND FILL

RETAIN

CB

DI

JB w/SLAB

JB w/MH

FL GR 2GI

2GI

FS

HW

WOODS

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

TEMPORARY IMPACT IN SURFACE WATER

2' LATERAL BASE DITCH
SEE DETAIL 40

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

PERMANENT IMPACT IN SURFACE WATER

3' LATERAL BASE DITCH
SEE DETAIL 68

TOE PROTECTION
EST. 50 TONS
CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 69

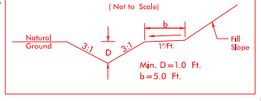
BERM DITCH
W/EST. 310 SY PSRM
SEE DETAIL 66

SITE 8

42 EAST, LLC

42 EAST LLC

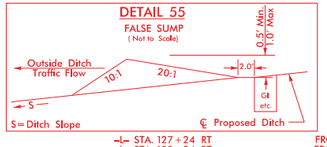
DETAIL 67
LATERAL V DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.

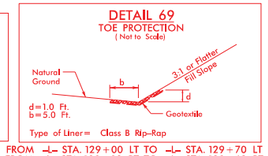
FROM -L- STA. 128+00 LT TO -L- STA. 128+50 LT
(EST. DDE=17 CY)
FROM -L- STA. 128+50 LT TO -L- STA. 129+00 LT
(EST. DDE=18 CY)
FROM -L- STA. 128+25 RT TO -L- STA. 128+57 RT
(EST. DDE=4 CY)
FROM -L- STA. 128+60 RT TO -L- STA. 128+93 RT
(EST. DDE=4 CY)

DETAIL 55
FALSE SUMP
(Not to Scale)



-L- STA. 127+24 RT
-L- STA. 133+24 RT

DETAIL 69
TOE PROTECTION
(Not to Scale)

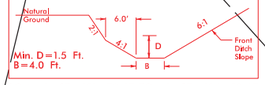


d=1.0 Ft.
b=5.0 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 129+00 LT TO -L- STA. 129+70 LT
FROM -L- STA. 128+93 RT TO -L- STA. 129+63 RT
FROM -L- STA. 135+00 LT TO -L- STA. 136+00 LT
FROM -L- STA. 136+80 RT TO -L- STA. 137+50 RT

DETAIL 68
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)



Min. D=1.5 Ft.
B=4.0 Ft.

FROM -L- STA. 131+70 LT TO -L- STA. 134+50 LT
(NO SPECIAL DITCH GRADE)

SEE ENLARGMENT
SHEET 28 OF 53

50 25 0 50 100

1/4/2018
H:\Hydraulics\PERMITS_Environmental\Drawings\Wet ps\R3825b_wet_psh13.dgn
smithcg

PERMIT DRAWING
SHEET 27 OF 53

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

8/17/99 REVISIONS

MATCHLINE -L- STA. 127+00.00 SEE SHEET 12

MATCHLINE -L- STA. 140+00.00 SEE SHEET 14

PAUL CALOTES AND WIFE CLAUDINA CALOTES

EDGAR MAZARIEGO AND WIFE DARY M. MAZARIEGOS

FREO NC, LLC

(53) EUGENE V. BERTOCCHI AND SPOUSE ROBERTA T. BERTOCCHI

(54) ANDREW J. BOND

CENTEX HOMES (48)

MAIZE & BLUE, LLC

LARRY WILLIAM SCHWEER, TRUSTEE OF LARRY WILLIAM SCHWEER REVOCABLE TRUST

DIANE WHOLEY BUGGE

HARRISON N. MWAURA AND BEATRICE W. CHEGE (55)

CREESHA D. HOGAN (56)

ERICA L. SETH (57)

AMERICAN RESIDENTIAL LEASING COMPANY, LLC

(58) 42 EAST, LLC

(52) RODNEY GEOHAGAN, JR.

(62) NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

SOARD FAMILY LLC.

SITE 8

130+00 135+00 140+00

EX 80' DRAINAGE UTILITY AND ROAD MAINTENANCE EASEMENT (BOTH SIDES OF R/W)

EX 20' UTILITY EASEMENT RESERVED

EXISTING R/W

PROPOSED R/W

TOP=212.31 INV IN=194.64

TOP=202.75 INV OUT=196.

BM=7 N=691,484 E=2,182,854 ELEV=196.61

RETAIN

REMOVE 25 LF

REMOVE

TOE PROTECTION EST. 23 TONS CLASS B RIP RAP EST. 30 SY GEOTEXTILE SEE DETAIL 69

SPECIAL LATERAL V DITCH SEE DETAIL 67

LATERAL V DITCH SEE DETAIL 67

TOE PROTECTION EST. 32 TONS CLASS B RIP RAP EST. 72 SY GEOTEXTILE SEE DETAIL 69

4' SPECIAL CUT BASE DITCH SEE DETAIL 68

TOE PROTECTION EST. 65 TONS CLASS B RIP RAP EST. 103 SY GEOTEXTILE SEE DETAIL 69

3' LATERAL BASE DITCH SEE DETAIL 63

3' BASE DITCH W/ EST. 70 TONS CL B RIP RAP SEE DETAIL 64

3' LATERAL BASE DITCH W/ EST. 130 TONS CLASS B RIP RAP EST. 200 SY GEOTEXTILE SEE DETAIL 65

2' LATERAL BASE DITCH SEE DETAIL 40

TOE PROTECTION EST. 50 TONS CLASS B RIP RAP EST. 80 SY GEOTEXTILE SEE DETAIL 69

BERM DITCH W/EST. 310 SY PSRM SEE DETAIL 66

PERMANENT IMPACT IN SURFACE WATER

TEMPORARY IMPACT IN SURFACE WATER

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER (60)

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

SEE ENLARGMENT SHEET 28 OF 53

DETAIL 62
FALSE SUMP (Not to Scale)

Outside Ditch Traffic Flow; 20:1; 10:1; 2'; 0.5' Min. 1.0' Max.; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-L- STA. 127+24 LT
-L- STA. 137+36 LT

DETAIL 63
LATERAL BASE DITCH (Not to Scale)

Natural Ground; 3:1; D; B; b; 1':Ft.; Fill Slope

Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM -L- STA. 136+00 LT TO -L- STA. 136+85 LT (EST. DDE=92 CY)
FROM -L- STA. 135+35 RT TO -L- STA. 136+80 RT (EST. DDE=69)

DETAIL 64
STANDARD BASE DITCH (Not to Scale)

Natural Ground; d; Geotextile; B; Min. D=1.5 Ft. Max. d=1.5 Ft. B=3.0 Ft.

When B is < 6.0'
Type of Liner= Class B Rip-Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile. Est. DDE 65 CY

FROM -L- STA. 136+86 LT TO -L- STA. 137+80 LT

DETAIL 40
LATERAL BASE DITCH (Not to Scale)

Natural Ground; Min. D=1.0 Ft. B=2.0 Ft. b=5.0 Ft.

EST. DDE=17 CY

FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT

DETAIL 65
LATERAL BASE DITCH (Not to Scale)

Natural Ground; GEOTEXTILE; Min. D=1.5 Ft. Max. d=1.5 Ft. B=3.0 Ft. b=5.0 Ft.

*When B is < 6.0'
EST. DDE=164 CY
Type of Liner= Class B Rip-Rap

FROM -L- STA. 138+70 LT TO -L- STA. 140+06 LT

DETAIL 66
BERM DITCH (Not to Scale)

SLOPE STAKE; CLEARING LIMITS; 5.0'; 9.0'; 5.0'; 6.0'; 10.0' V.C.; PSRM

Min. D=1.0 Ft.
Max. d=1.0 Ft.

Type of Liner= PSRM

FROM -L- STA. 137+50 RT TO -L- STA. 140+50 RT

DETAIL 67
LATERAL "V" DITCH (Not to Scale)

Natural Ground; Fill Slope; Min. D=1.0 Ft. b=5.0 Ft.

FROM -L- STA. 128+00 LT TO -L- STA. 128+50 LT (EST. DDE=17 CY)
FROM -L- STA. 128+50 LT TO -L- STA. 129+00 LT (EST. DDE=18 CY)
FROM -L- STA. 128+25 RT TO -L- STA. 128+57 RT (EST. DDE=4 CY)
FROM -L- STA. 128+60 RT TO -L- STA. 128+93 RT (EST. DDE=4 CY)

DETAIL 55
FALSE SUMP (Not to Scale)

Outside Ditch Traffic Flow; 10:1; 20:1; 2.0'; 0.5' Min. 1.0' Max.; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-L- STA. 127+24 RT
-L- STA. 133+24 RT

DETAIL 69
TOE PROTECTION (Not to Scale)

Natural Ground; 3:1 or Flatter Fill Slope; b; d; Geotextile

d=1.0 Ft.
b=5.0 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 129+00 LT TO -L- STA. 129+70 LT
FROM -L- STA. 128+93 RT TO -L- STA. 129+63 RT
FROM -L- STA. 135+00 LT TO -L- STA. 136+00 LT
FROM -L- STA. 136+80 RT TO -L- STA. 137+50 RT

DETAIL 68
SPECIAL CUT BASE DITCH wHINGE (Not to Scale)

Natural Ground; 6.0'; 3:1; 4:1; D; B; 6:1; Front Ditch Slope

Min. D=1.5 Ft.
B=4.0 Ft.

FROM -L- STA. 131+70 LT TO -L- STA. 134+50 LT (NO SPECIAL DITCH GRADE)

50 25 0 50 100

1/4/2018
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smith6g

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NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 28 OF 53

ENLARGEMENT

Natural Ground 3:1 D 3:1 1'/Ft. Fill Slope
B
Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.
EST. DDE=17 CY
FROM –L– STA. 134+88 RT TO –L– STA. 135+30 RT

Typ
FROM –L– STA. 137+50 RT

CREESHA D. HOGAN 56
133+00
ERICA L. SETH 57
135+00
CENTEX HOMES 48

4' SPECIAL CUT BASE DITCH SEE DETAIL 68
TOE PROTECTION EST. 65 TONS CLASS B RIP RAP EST. 103 SY GEOTEXTILE SEE DETAIL 69
3' LATERAL BASE DITCH SEE DETAIL 63
3' BASE DITCH W/ EST. 70 TONS CL. B RIP RAP SEE DETAIL 64
TEMPORARY IMPACT IN SURFACE WATER
PERMANENT IMPACT IN SURFACE WATER
SITE 8
WOODS
EX 20' UTILITY EASEMENT RESERVED
JB w/MH 15"
HW
72" RCP-IV
72" WELDED STEEL
72" TRENCHLESS INSTALLATION
FL. GR. 2GI
JB W/SLAB
PLUG
PLUG AND FILL
PPES
2GI FS
18" RCP
12" PVC
12"
8" PVC DATUR
15" CSP
15" RCP
JB w/MH
2GI FS
PERMANENT IMPACT IN SURFACE WATER
2GI–A
15" W/ELBOW
24" CSP
BDO
TEMPORARY IMPACT IN SURFACE WATER
2' LATERAL BASE DITCH SEE DETAIL 40
3' LATERAL BASE DITCH SEE DETAIL 63
PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY
TOE PROTECTION EST. 50 TONS CLASS B RIP RAP EST. 80 SY GEOTEXTILE SEE DETAIL 69
SITE 8
58 W/E S
42 EAST, LL
60
SOARD FAMILY LLC.
-L- 137+67.77 50.01'
R/W MON
DUE
PUE
JS
TS
TB
BZ
BZ 1
BZ 2
S
F
E
C
-L-
-Y1-
-Y2-
-Y3-
-Y4-
-BL-

S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F DENOTES FILL IN WETLAND
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

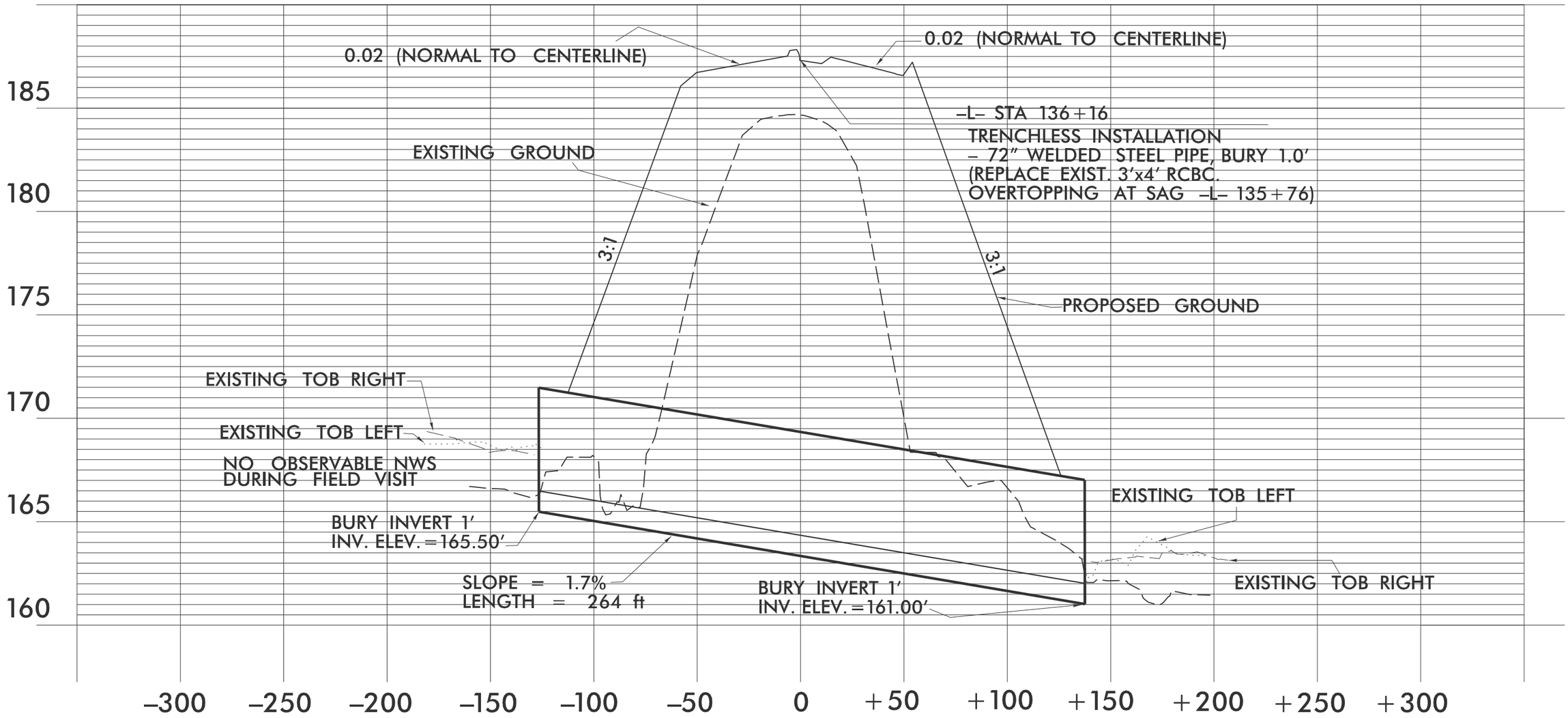
AIL 67

25 12.5 0 25 50

REVISIONS 8/17/99

1/4/2018
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smithcg

SITE 8 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 8

PERMIT DRAWING
SHEET 29 OF 53

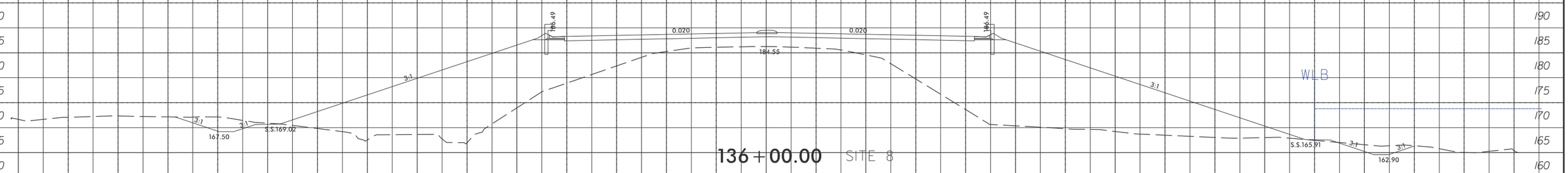
8/23/99

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PROJ. REFERENCE NO.	SHEET NO.

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

190 185 180 175 170 165 160



136+00.00 SITE 8

PERMIT DRAWING
SHEET 30 OF 53

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Xsc ps\R38258_rdy_xpl_hyd_site8.dgn
smithcj

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NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

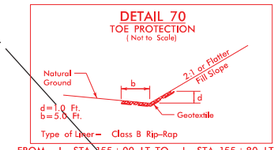
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8/17/99

REVISIONS

NAD 83/2011

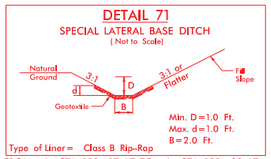
DETAIL 70
TOE PROTECTION
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 155+00 LT TO –L– STA. 155+80 LT
FROM –L– STA. 156+60 RT TO –L– STA. 157+24 RT
FROM –L– STA. 153+90 LT TO –L– STA. 158+18 LT

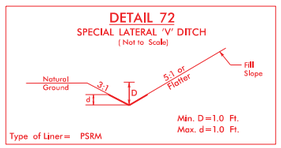
DETAIL 71
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 158+17 LT TO –L– STA. 159+00 LT

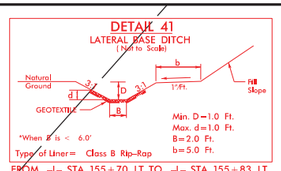
DETAIL 72
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= PSRM

FROM –L– STA. 153+50 RT TO –L– STA. 154+15 RT

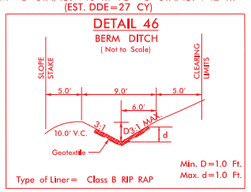
DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 155+70 LT TO –L– STA. 155+83 LT (EST. DDE=4 CY)
FROM –L– STA. 155+88 LT TO –L– STA. 156+00 LT (EST. DDE=4 CY)
FROM –L– STA. 157+10 RT TO –L– STA. 157+42 RT (EST. DDE=27 CY)

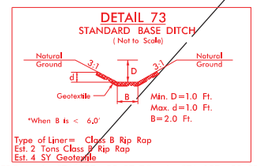
DETAIL 46
BERM DITCH
(Not to Scale)



Type of Liner= Class B RIP RAP
Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM –L– STA. 159+00 LT TO –L– STA. 161+80 LT

DETAIL 73
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip Rap
Est. 2 Tons Class B Rip Rap
Est. 4 SY Geotextile

FROM –L– STA. 157+55 RT TO –L– STA. 157+58 RT

PERMIT DRAWING
SHEET 31 OF 53

SEE ENLARGMENT
SHEET 33 OF 53

155+00

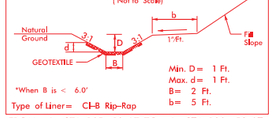
160+00

165+00

58
42 EAST, LLC

67
GERRY LYNCH

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CI-B Rip-Rap

FROM –L– STA. 165+18 LT TO –L– STA. 166+50 LT

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41

TEMPORARY IMPACTS IN SURFACE WATER

TOE PROTECTION
CLASS B RIP RAP
EST. 45 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
SEE DETAIL 70

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46

BERM V-DITCH
W/EST. 175 SY PSRM
SEE DETAL 74

SITE 9

REMOVE HW

PLUG

JB W/SLAB

PERMANENT IMPACTS IN SURFACE WATER

PLUG AND FILL

REMOVE

SPECIAL LATERAL V-DITCH W/PSRM
SEE DETAIL 72

TOE PROTECTION
CLASS B RIP RAP
EST. 119 TONS CLASS B RIP RAP
EST. 265 SY GETOTEXTILE
SEE DETAIL 70

68
CHRISTIE TRIPP MINGA

66
42 EAST, LLC

69
42 EAST, LLC

70
JOYCE I. ARMSTRONG

71
GREG R. DUNSTON AND WIFE, TAKICEY M. DUNSTON

72
GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

S DENOTES IMPACTS IN SURFACE WATER — RETAIN

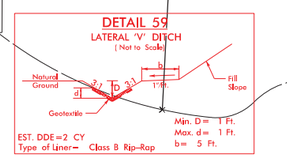
TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER
2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 73

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 15 TONS CLASS B RIP RAP
EST. 35 SY GEOTEXTILE
SEE DETAIL 41

LATERAL V-DITCH W/CLASS B RIP RAP
EST. 19 TONS CLASS B RIP RAP
EST. 42 SY GEOTEXTILE
SEE DETAIL 59

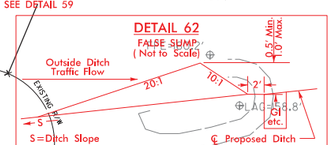
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



EST. DDE=2 CY
Type of Liner= Class B Rip-Rap

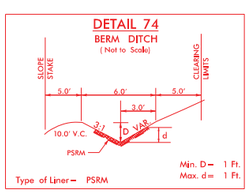
FROM –L– STA. 165+25 RT TO –L– STA. 165+93 RT

DETAIL 62
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 LT

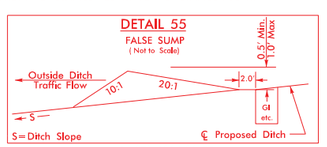
DETAIL 74
BERM DITCH
(Not to Scale)



Type of Liner= PSRM

FROM –L– STA. 161+80 LT TO –L– STA. 164+00 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 RT

MATCHLINE -L- STA. 153+00.00 SEE SHEET 14

MATCHLINE -L- STA. 166+00.00 SEE SHEET 16

EX. 20' DRAINAGE EASEMENT PB 6/PG 49

50 25 0 50 100

1/4/2018
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8/17/99

REVISIONS

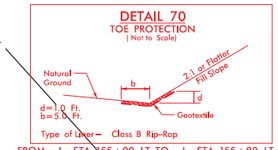
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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

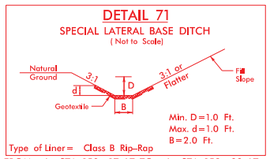
DETAIL 70
TOE PROTECTION
(Not to Scale)



Type of Liner = Class B Rip-Rap

FROM –L– STA. 155+00 LT TO –L– STA. 155+80 LT
FROM –L– STA. 156+60 RT TO –L– STA. 157+24 RT
FROM –L– STA. 153+90 LT TO –L– STA. 158+18 LT

DETAIL 71
SPECIAL LATERAL BASE DITCH
(Not to Scale)

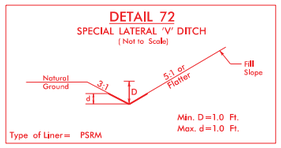


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.

Type of Liner = Class B Rip-Rap

FROM –L– STA. 158+17 LT TO –L– STA. 159+00 LT

DETAIL 72
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

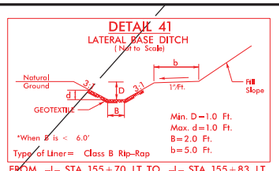


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

Type of Liner = PSRM

FROM –L– STA. 153+50 RT TO –L– STA. 154+15 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

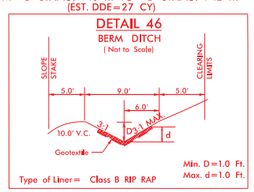


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

Type of Liner = Class B Rip-Rap

FROM –L– STA. 155+70 LT TO –L– STA. 155+83 LT (EST. DDE = 4 CY)
FROM –L– STA. 155+88 LT TO –L– STA. 156+00 LT (EST. DDE = 4 CY)
FROM –L– STA. 157+10 RT TO –L– STA. 157+42 RT (EST. DDE = 27 CY)

DETAIL 46
BERM DITCH
(Not to Scale)

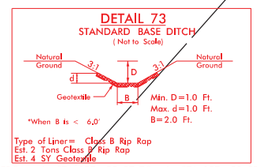


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

Type of Liner = Class B RIP RAP

FROM –L– STA. 159+00 LT TO –L– STA. 161+80 LT

DETAIL 73
STANDARD BASE DITCH
(Not to Scale)

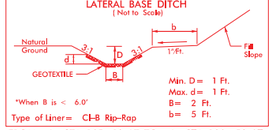


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.

Type of Liner = Class B Rip Rap
Est. 2 Tons Class B Rip Rap
Est. 4 SY Geotextile

FROM –L– STA. 157+55 RT TO –L– STA. 157+58 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
B = 2 Ft.
b = 5 Ft.

Type of Liner = CI-B Rip-Rap

FROM –L– STA. 165+18 LT TO –L– STA. 166+50 LT

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

PERMIT DRAWING SHEET 32 OF 53

SEE ENLARGMENT SHEET 33 OF 53

155+00 160+00 165+00

58 42 EAST, LLC

67 GERRY LYNCH

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41

TEMPORARY IMPACTS IN SURFACE WATER

TOE PROTECTION
CLASS B RIP RAP
EST. 45 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
SEE DETAIL 70

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46

BERM V-DITCH
W/EST. 175 SY PSRM
SEE DETAIL 74

SITE 9

PERMANENT IMPACTS IN SURFACE WATER

PLUG AND FILL

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

SPECIAL LATERAL V-DITCH W/PSRM
SEE DETAIL 72

TOE PROTECTION
CLASS B RIP RAP
EST. 119 TONS CLASS B RIP RAP
EST. 265 SY GETOTEXTILE
SEE DETAIL 70

68 CHRISTIE TRIPP MINGA

66 42 EAST, LLC

69 42 EAST, LLC

TEMPORARY IMPACTS IN SURFACE WATER
2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 73

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 15 TONS CLASS B RIP RAP
EST. 35 SY GEOTEXTILE
SEE DETAIL 41

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

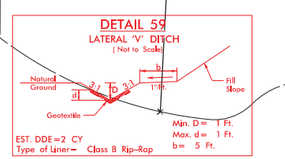
70 JOYCE I. ARMSTRONG

71 GREG R. DUNSTON AND WIFE, TAKICEY M. DUNSTON

72 GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

LATERAL V-DITCH W/CLASS B RIP RAP
EST. 19 TONS CLASS B RIP RAP
EST. 42 SY GEOTEXTILE
SEE DETAIL 59

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)

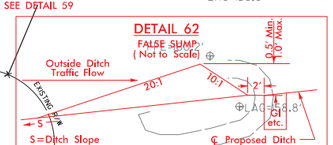


Min. D = 1 Ft.
Max. d = 1 Ft.
b = 5 Ft.

EST. DDE = 2 CY
Type of Liner = Class B Rip-Rap

FROM –L– STA. 165+25 RT TO –L– STA. 165+93 RT

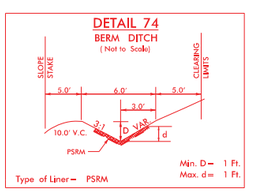
DETAIL 62
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

–L– STA. 164+64 LT

DETAIL 74
BERM DITCH
(Not to Scale)

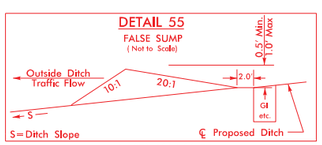


Min. D = 1 Ft.
Max. d = 1 Ft.

Type of Liner = PSRM

FROM –L– STA. 161+80 LT TO –L– STA. 164+00 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

–L– STA. 164+64 RT

EX. 20' DRAINAGE EASEMENT PB 6/PG 49

MATCHLINE -L- STA. 153+00.00 SEE SHEET 14

MATCHLINE -L- STA. 166+00.00 SEE SHEET 16

50 25 0 50 100

1/4/2018
R:\Highways\PERMITS_Environmental\Drawings\Wet contour ps\R3825b_wet_psh15_contour.dgn
smith619

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
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TELEPHONE AND FAX: (919) 461-1100
NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 33 OF 53

ENLARGEMENT

8/17/99
REVISIONS

160+00

58
42 EAST, LLC

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41

TEMPORARY IMPACTS IN SURFACE WATER

RFACE WATER
TO TEMP.
CE WATER
BOUNDARY

CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46

DUE
15" CSP
54" RCP-IV
24" CSP
JB w/MH
24"
REMOVE HW
SITE 9
CONC HW & WW
PLUG
JB W/SLAB
PERMANENT IMPACTS IN SURFACE WATER
TRENCHLESS INSTALLATION 54" WELDED STEEL BURIED 1.0'
PLUG AND FILL
3'X3' RCBC
NC 42 30' BST
FL. GR. 2GI
15"
12" PVC
WOODS
TOP=193.96'
INV OUT=174.28'
PDE
EXISTING R/W
-EL-
100.00'
12" DIP
6" DIP
ALECIA CT
20' BST
18" RCP
15" RCP
CONC
REMOVE
RETAIN
50.00'
PUE
C
F
E
JS
TS
SS
PERM. SURFACE WATER IMPACT TO TEMP. SUFACE WATER IMPACT BOUNDARY
69
42 EAST, LLC
S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
2' LATERAL BASE DITCH W/ CLASS B RIP RAP
IPP MINGA
25 12.5 0 25 50

1/4/2018
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smith6g

PERMIT DRAWING
SHEET 34 OF 53

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NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

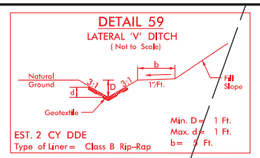
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

8/17/99

REVISIONS

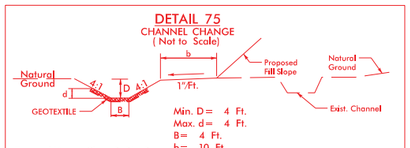
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
b = 6 Ft.

EST. 2 CY DDE
Type of Liner = Class B Rip-Rap
FROM -L- STA. 165+25 RT TO -L- STA. 165+93 RT

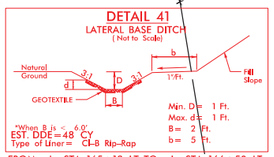
DETAIL 75
CHANNEL CHANGE
(Not to Scale)



Min. D = 4 Ft.
Max. d = 4 Ft.
B = 4 Ft.
b = 10 Ft.

Type of Liner = Class B Rip-Rap
FROM -L- STA. 167+20 LT TO -L- STA. 171+75 LT

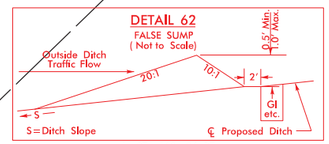
DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
B = 2 Ft.
b = 5 Ft.

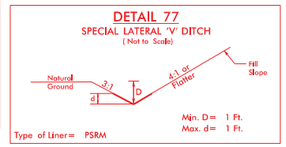
*When B is < 6.0'
EST. DDE = 48 CY
Type of Liner = CL-B Rip-Rap
FROM -L- STA. 165+18 LT TO -L- STA. 166+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)



-L- STA. 169+36 RT
-L- STA. 175+66 RT
-L- STA. 177+55 RT

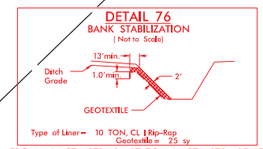
DETAIL 77
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.

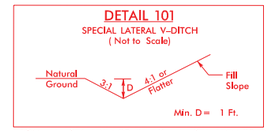
Type of Liner = PSRM
FROM -L- STA. 176+74 LT TO -L- STA. 178+00 LT

DETAIL 76
BANK STABILIZATION
(Not to Scale)



Type of Liner = 10 TON, CL I Rip-Rap
Geotextile = 25 sy
FROM -L- STA. 171+94 LT TO -L- STA. 172+05 LT

DETAIL 101
SPECIAL LATERAL V-DITCH
(Not to Scale)



Min. D = 1 Ft.
FROM -L- STA. 175+80 RT TO -L- STA. 177+30 RT

(74) GREG C. JONES AND WIFE, ANGELA V. JONES

(73) JOHN T. SHULER AND WIFE, CATHIE G. SHUKER

(67) GERRY LYNCH

(75) PEGGY ANNE FLOWERS

170+00

175+00

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE
2' LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

20LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH

SITE 10A

SITE 10B

CHANNEL RELOCATION W/CLASS B RIP RAP
EST. 890 TONS CLASS B RIP RAP
EST. 1980 SY GEOTEXTILE
SEE DETAIL 75

BANK STABILIZATION PERMANENT IMPACT IN SURFACE WATER

BANK STABILIZATION SEE DETAIL 76

TEMPORARY IMPACTS IN SURFACE WATER

SPECIAL LATERAL V-DITCH W/ CLASS B RIP RAP
SEE DETAIL 77

TIE TO EXISTING SWALE

DUE

2@12x12 RCBC

PERMANENT IMPACTS IN SURFACE WATER

FILL EXISTING CHANNEL

REMOVE 24" RCP

REMOVE

RETAIN

TEMPORARY SHORING NO.6
166+25 TO 167+75
4.5' RT
SEE TMP

SITE 10A

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE

30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH
APPROX 40 TON CLASS I RIP RAP
APPROX 43 SY GEOTEXTILE

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE ENLARGMENT
SHEET 36 OF 53

SPECIAL LATERAL GRASS DITCH
SEE DETAIL 101

EXISTING 10' UTILITY AND PERMANENT DRAINAGE EASEMENT PB 77 PG 338

20' DRAINAGE EASEMENT PB 74 PG 61

(72) GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

(76) 42 EAST LLC

(77) 42 EAST LLC

42 EAST LLC

WOODS

WILL CREEK

POND WE-WOD

BM=9
N 691,776
E 2,186,776
ELEV=[illegible]

INLET CHANNEL FACING DOWNSTREAM (NTS)

OUTLET CHANNEL FACING DOWNSTREAM (NTS)

50 25 0 50 100

MATCHLINE -L- STA. 166+00.00 SEE SHEET 15

MATCHLINE -L- STA. 178+00.00 SEE SHEET 17

1/4/2008
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sm1b19

PERMIT DRAWING
SHEET 35 OF 53

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE AND FACSIMILE FOR SITE REVIEWS
NC LICENSE # C-0910

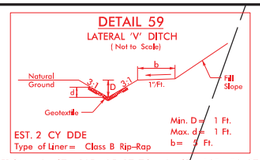
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

REVISIONS 8/17/99

DETAIL 59
LATERAL "V" DITCH
(Not to Scale)

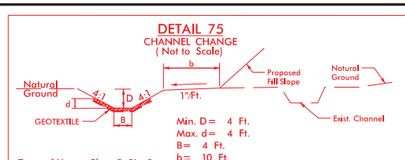


Min. D= 1 Ft.
Max. d= 1 Ft.
b= 6 Ft.

EST. 2 CY DDE
Type of Liner= Class B Rip-Rap

FROM -L- STA. 165+25 RT TO -L- STA. 165+93 RT

DETAIL 75
CHANNEL CHANGE
(Not to Scale)

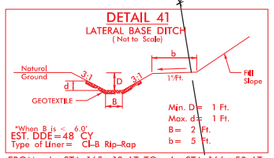


Min. D= 4 Ft.
Max. d= 4 Ft.
B= 4 Ft.
b= 10 Ft.

Type of Liner=Class B Rip-Rap

FROM -L- STA. 167+20 LT TO -L- STA. 171+75 LT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

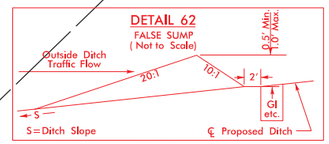


Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
b= 5 Ft.

*When B is < 6.0'
EST. DDE=48 CY
Type of Liner= CL-B Rip-Rap

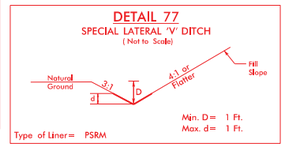
FROM -L- STA. 165+18 LT TO -L- STA. 166+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)



-L- STA. 169+36 RT
-L- STA. 175+66 RT
-L- STA. 177+55 RT

DETAIL 77
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

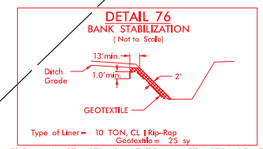


Min. D= 1 Ft.
Max. d= 1 Ft.

Type of Liner= PSRM

FROM -L- STA. 176+74 LT TO -L- STA. 178+00 LT

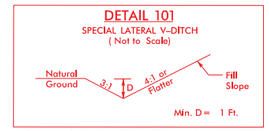
DETAIL 76
BANK STABILIZATION
(Not to Scale)



Type of Liner= 10 TON, CL I Rip-Rap
Geotextile= 25 sy

FROM -L- STA. 171+94 LT TO -L- STA. 172+05 LT

DETAIL 101
SPECIAL LATERAL V-DITCH
(Not to Scale)



Min. D= 1 Ft.

FROM -L- STA. 175+80 RT TO -L- STA. 177+30 RT

(74) GREG C. JONES AND WIFE, ANGELA V. JONES

(73) JOHN T. SHULER AND WIFE, CATHIE G. SHUKER

(67) GERRY LYNCH

(75) PEGGY ANNE FLOWERS

(72) GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

(76) 42 EAST LLC

(77) 42 EAST LLC

170+00

175+00

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE
2' LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

20LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH

SITE 10A

SITE 10B

CHANNEL RELOCATION
W/CLASS B RIP RAP
EST. 890 TONS CLASS B RIP RAP
EST. 1980 SY GEOTEXTILE
SEE DETAIL 75

BANK STABILIZATION PERMANENT IMPACT IN SURFACE WATER

BANK STABILIZATION SEE DETAIL 76

TEMPORARY IMPACTS IN SURFACE WATER

SPECIAL LATERAL V-DITCH W/ CLASS B RIP RAP SEE DETAIL 77

TIE TO EXISTING SWALE

DUE

PERMANENT IMPACTS IN SURFACE WATER

FILL EXISTING CHANNEL

2@12x12 RCBC

TYPE A

FL GR 2GI

15" RCP-IV

24" RCP-IV

18" RCP-IV

REMOVE

PUE

RETAIN

TEMPORARY SHORING NO.6
166+25 TO 167+75
4.5' RT
SEE TMP

SITE 10A

POND
WS=1100

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE

30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH
APPROX 40 TON CLASS I RIP RAP
APPROX 43 SY GEOTEXTILE

ADJUST CB

18" RCP

24" RCP

30" RCP

30" C&G

8" DIP

20' DRAINAGE EASEMENT PB 74 PG 61

EXISTING 10' UTILITY AND PERMANENT DRAINAGE EASEMENT PB 77 PG 338

EXISTING R/W

50.00'

100.00'

60.00'

SPECIAL LATERAL GRASS DITCH SEE DETAIL 101

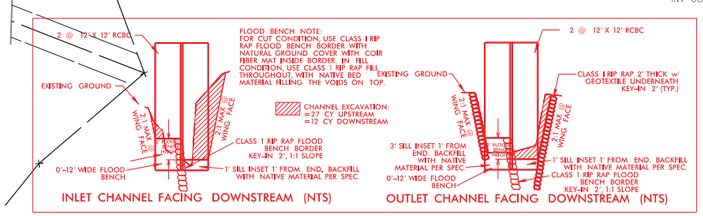
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE ENLARGMENT
SHEET 36 OF 53

MATCHLINE -L- STA. 166+00.00 SEE SHEET 15

MATCHLINE -L- STA. 178+00.00 SEE SHEET 17



INLET CHANNEL FACING DOWNSTREAM (NTS)

OUTLET CHANNEL FACING DOWNSTREAM (NTS)

50 25 0 50 100

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\wet contour ps\R3825b_wet_psh16_contour.dgn
smithcg

Prepared by
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NC LICENSE # C-0045

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

SITE 10A

SITE 10B

PERMIT DRAWING SHEET 36 OF 53

ENLARGEMENT

76
42 EAST LLC

2@12x12 RCBC

PERMANENT IMPACTS IN SURFACE WATER

FILL EXISTING CHANNEL

TYPE A FL. GR. 2GI

FL. GR. 2GI

24"

18"

15" RCP–IV

2' RCBC

12'

JB w/MH

REMOVE

24" CSP

24" RCP–IV

DI

15" RCP–IV

24" RCP–IV

24" RCP–

REMOVE 41' PL 24" RCP

PUE

RETAIN

TOP=156.58'

INV OUT=153.78 (24" OPENING)

RISER

POND WE = 170.0

30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH
APPROX 40 TON CLASS I RIP RAP
APPROX 43 SY GEOTEXTILE

2GI

2GI–D

TYPE D

ADJUST CB

18" RCP

60" CONC

30" C&G

18" C&G

100.00'

EXISTING R/W

20' DRAINAGE EASEMENT PB 74 PG 61

INV=164.63'

INV OUT(W)=166.48'

36" RCP

8" DIP

24" RCP

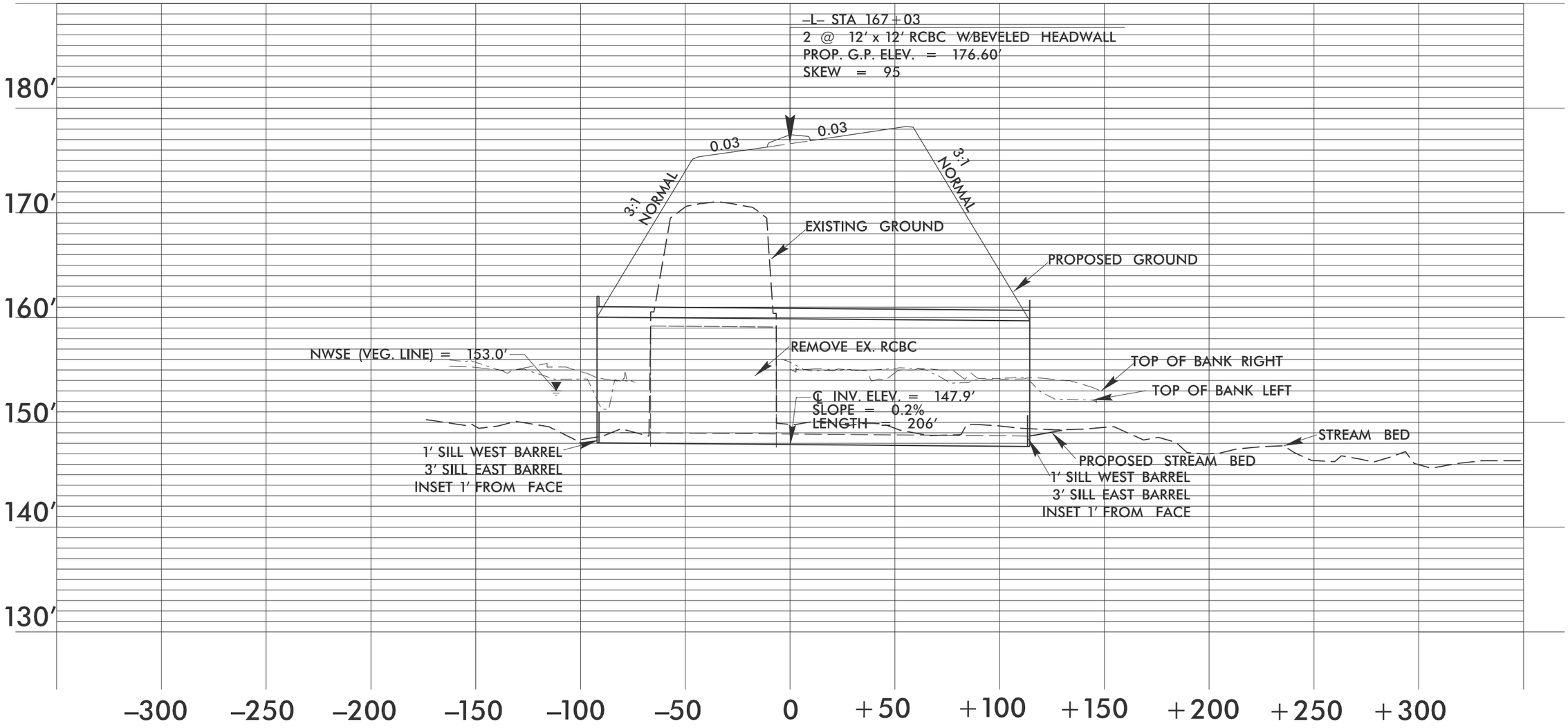
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Wet ps\R3825b_wet_psh16 - Copy.dgn
smithcg

SITE 10 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 10

PERMIT DRAWING
SHEET 37 OF 53

8/17/99

REVISIONS

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Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 38 OF 53

NAD 83/2011

MATCHLINE -Y12- STA. 14+60.00 SEE THIS SHEET

MATCHLINE -L- STA. 190+00.00 SEE SHEET 17

MATCHLINE -L- STA. 203+00.00 SEE SHEET 19

SEE ENLARGMENT SHEET 40 OF 53

DRAKE ROBERTSON AND WIFE SONIA ROBERTSON

RUSSELL B. RAGLAND AND WIFE RHONDA G RAGLAND

PEGGY ANNE FLOWERS (75)

PEGGY FLOWERS BENSON (82)

JANA GUERTLER (83)

ALLIE TEW- DECEASED EST. 05EI387-WAKE CO. (85)

PAMELA DENISE FLOWERS (84)

REBECCA D FLOWERS (87)

JIMMY ROGERS FLOWERS (86)

SITE 11

SR 2004 MOTORSIDE RD (SR 2325)

EXISTING R/W

PROPOSED 60' R/W

-EY16-

-EY15-

-EL-

DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 4:1, Fill Slope, B

Min. D= 1 Ft.
B= 2 Ft.

FROM -Y12- STA. 11+11 RT TO -Y12- STA. 16+00 RT

DETAIL 81
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, D, 3:1, Natural Ground

EST. DDE=16 CY
Min. D= 1 Ft.

FROM -L- STA. 194+60 LT TO -L- STA. 196+00 LT

DETAIL 49
BERM BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 2:1 or Flatter, RDWY, B

Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

FROM -L- STA. 196+50 RT TO -L- STA. 194+65 RT

DETAIL 82
BERM 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, RDWY, 2:1

Min. D= 1 Ft.
b= 3 Ft.

FROM -L- STA. 197+50 RT TO -L- STA. 200+00 RT

DETAIL 88
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

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

Min. D= 1 Ft.

FROM -Y12- STA. 16+00 LT TO -Y12- STA. 17+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20:1, 10:1, 2', 0.5' Min. 1.0 Max., GI etc., S

S= Ditch Slope
℄ Proposed Ditch

-L- STA. 194+51 RT

DETAIL 89
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, b, 1':Ft., Fill Slope, GEOTEXTILE, B

*When B ≥ 6.0'
EST. DDE=170 CY
Type of Liner= Class I Rip-Rap

Min. D= 1 Ft.
Max. d= 1 Ft.
B= 6 Ft.
b= 5 Ft.

FROM -Y12- STA. 17+75 RT TO -Y12- STA. 20+00 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, d, 3:1 OR FLATTER, FILL SLOPE, GEOTEXTILE

d= 1 Ft.

Type of Liner= Class B Rip-Rap

FROM -Y12- STA. 18+00 LT TO -Y12- STA. 20+25 LT

DETAIL 83
TOE PROTECTION
(Not to Scale)

Natural Ground, d, 3:1 or Flatter Fill Slope, PSRM

d= 1 Ft.

Type of Liner= PSRM

FROM -L- STA. 201+00 RT TO -L- STA. 202+00 RT

DETAIL 84
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, b, 1':Ft., Fill Slope, Geotextile

EST. DDE=2 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5 Ft.

FROM -L- STA. 202+00 RT TO -L- STA. 202+22 RT

DETAIL 86
ROCK FILL IN POND
(Not to Scale)

Proposed, Existing Earth Fill, 2:1, 2', Elev.= 258, CLASS I RIP-RAP, 1.5', 1.0', N.W.S. Elev.= 257

FROM -L- STA. 200+60 LT TO -L- STA. 202+26 LT

DETAIL 85
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, b, 1':Ft., Fill Slope, GEOTEXTILE, B

*When B ≥ 6.0'
EST. DDE=309 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.

FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT

2' SPECIAL LATERAL BASE DITCH SEE DETAIL 87

SPECIAL LATERAL V-DITCH SEE DETAIL 88

6' LATERAL BASE DITCH W/CLASS I RIP RAP
EST. 174 TONS CLASS I RIP RAP
EST. 295 SY GEOTEXTILE
SEE DETAIL 89

TOE PROTECTION W/CLASS B RIP RAP
EST. 84 TONS CLASS B RIP RAP
EST. 188 SY GEOTEXTILE
SEE DETAIL 53

STANDARD V-DITCH SEE DETAIL 81

2' BERM BASE DITCH SEE DETAIL 49

BERM V-DITCH SEE DETAIL 82

ROCK FILL IN POND
EST. 143 TONS CLASS I RIP RAP
SEE DETAIL 86

LATERAL V-DITCH W/CLASS I RIP RAP SEE DETAIL 84

4' LATERAL BASE DITCH W/CLASS I RIP RAP SEE DETAIL 85

F 86 DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50 25 0 50 100

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smith64

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NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 39 OF 53

NAD 83/2011

REVISIONS

8/17/99

MATCHLINE -Y12 STA. 14+60.00 SEE THIS SHEET

MATCHLINE -L- STA. 190+00.00 SEE SHEET 17

MATCHLINE -L- STA. 203+00.00 SEE SHEET 19

SEE ENLARGMENT SHEET 40 OF 53

DRAKE ROBERTSON AND WIFE SONIA ROBERTSON

RUSSELL B. RAGLAND AND WIFE RHONDA G RAGLAND

PEGGY ANNE FLOWERS (75)

PEGGY FLOWERS BENSON (82)

ALLIE TEW- DECEASED EST. 05EI387-WAKE CO. (85)

JANA GUERTLER (83)

PAMELA DENISE FLOWERS (84)

JIMMY ROGERS FLOWERS (86)

REBECCA D FLOWERS (87)

SITE 11

PROPOSED 150' R/W

EXISTING R/W

PROPOSED R/W

DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 4:1, Fill Slope, B
Min. D= 1 Ft.
B= 2 Ft.

FROM -Y12- STA. 11+11 RT TO -Y12- STA. 16+00 RT

DETAIL 81
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, Natural Ground
EST. DDE=16 CY
Min. D= 1 Ft.

FROM -L- STA. 194+60 LT TO -L- STA. 196+00 LT

DETAIL 49
BERM BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, RDWY, 2:1 or Flatter, B
Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

FROM -L- STA. 196+50 RT TO -L- STA. 194+65 RT

DETAIL 82
BERM 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, RDWY, 2:1
Min. D= 1 Ft.
b= 5 Ft.

FROM -L- STA. 197+50 RT TO -L- STA. 200+00 RT

DETAIL 89
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1':1Ft., Fill Slope, d, GEOTEXTILE, B
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 6 Ft.
b= 5 Ft.
*When B is 6.0'
EST. DDE=170 CY
Type of Liner= Class I Rip-Rap

FROM -Y12- STA. 17+75 RT TO -Y12- STA. 20+00 RT

DETAIL 88
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1 or Flatter, D, 3:1 or Flatter, Fill Slope
Min. D= 1 Ft.

FROM -Y12- STA. 16+00 LT TO -Y12- STA. 17+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20:1, 10:1, 0.5' Min. 1.0' Max., 2', GI etc., S=Ditch Slope, ℄ Proposed Ditch

-L- STA. 194+51 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, d, 3:1 OR FLATTER, FILL SLOPE, GEOTEXTILE
d= 1 Ft.
Type of Liner= Class B Rip-Rap

FROM -Y12- STA. 18+00 LT TO -Y12- STA. 20+25 LT

DETAIL 83
TOE PROTECTION
(Not to Scale)

Natural Ground, d, 3:1 or Flatter Fill Slope, PSRM
d= 1 Ft.
Type of Liner= PSRM

FROM -L- STA. 201+00 RT TO -L- STA. 202+00 RT

DETAIL 84
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, d, 3:1, b, 1':1Ft., Fill Slope, d, Geotextile
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5 Ft.
EST. DDE=2 CY
Type of Liner= Class I Rip-Rap

FROM -L- STA. 202+00 RT TO -L- STA. 202+22 RT

DETAIL 86
ROCK FILL IN POND
(Not to Scale)

Proposed, Existing Earth Fill, 2:1, 2', Elev.= 258, CLASS I RIP-RAP, 1.5', 1.0', N.W.S. Elev.=257

FROM -L- STA. 200+60 LT TO -L- STA. 202+26 LT

DETAIL 85
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1':1Ft., Fill Slope, d, GEOTEXTILE, B
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.
*When B is 6.0'
EST. DDE=309 CY
Type of Liner= Class I Rip-Rap

FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT

50 25 0 50 100

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Prepared by
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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 40 OF 53

ENLARGEMENT

197+00

200+00

200+00

83
JANA GUERTLER

PAMELA DENISE FLOWERS

STANDARD V-DITCH
SEE DETAIL 81

ROCK FILL IN POND
EST. 143 TONS CLASS I RIP RAP
SEE DETAIL 86

MECHANIZED CLEARING

POND
WE=257.0

PDE

PDE

PDE

PDE

E E E

R/W

C F

EXISTING R/W

15" CSP

WOOD

FL. GR. 2GI

F F F F F

100.00'

-EL-

60' R/W

PROPOSED 160' R/W

30" WELDED STEEL
TRENCHLESS INSTALLATION

15" RCP

REMOVE

2GI

ELBOW

15"

BDO

EXISTING R/W

BERM V-DITCH
SEE DETAIL 82

C C

DUE DUE DUE DUE DUE DUE PUE

E E

REMOVE

15" RCP

FL. GR. 2GI

15"

FL. GR. 2GI

JB W

FILL IN WETLAND

PLUG

15" CSP

30" RCP-W

F

C

PUE

DUE F

DUE

SITE 11

LATERAL V-DITCH
W/CLASS I RIP RAP
SEE DETAIL 84

4' LATERA
W/CLASS
SEE DETA

F 86 F DENOTES FILL IN WETLAND

JIMMY ROGERS FLOWERS

DENOTES MECHANIZED CLEARING

25 12.5 0 25 50

DETAIL 83

REVISIONS

8/17/99

1/4/2018
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smith19

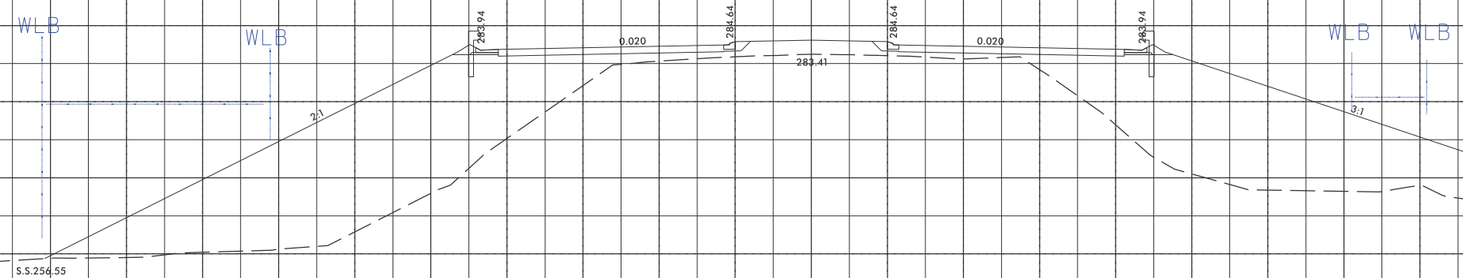
8/23/99

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PROJ. REFERENCE NO.	SHEET NO.

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290 285 280 275 270 265 260 255 250



202+00.00 SITE II

PERMIT DRAWING
SHEET 41 OF 53

1/4/2018
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REVISIONS

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NC LICENSE # C-0343

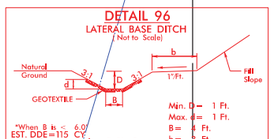
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 42 OF 53

NAD 83/2011

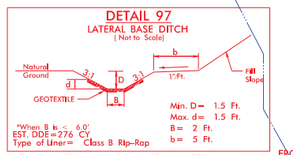
DETAIL 96
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 3 Ft.

*When B is < 6.0'
EST. DDE=115 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+00 LT TO -L- STA. 229+72 LT

DETAIL 97
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

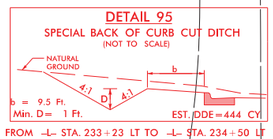
*When B is < 6.0'
EST. DDE=276 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+60 RT TO -L- STA. 231+10 RT

DETAIL 99
TOE PROTECTION
(Not to Scale)



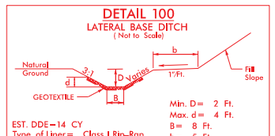
d= 2 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 229+69 LT TO -L- STA. 231+09 LT
FROM -L- STA. 231+16 LT TO -L- STA. 233+03 LT

DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



b = 9.5 Ft.
Min. D= 1 Ft.
EST. DDE=444 CY
FROM -L- STA. 233+23 LT TO -L- STA. 234+50 LT

DETAIL 100
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2 Ft.
Max. d= 4 Ft.
B= 8 Ft.
b= 5 Ft.

EST. DDE=14 CY
Type of Liner= Class I Rip-Rap
Min. 1.5' Thick Layer
FROM -L- STA. 231+10 RT TO -L- STA. 231+63 RT

F F DENOTES FILL IN WETLAND

F F DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

230+00

235+00

240+00

SEE ENLARGMENT SHEET 44 OF 53

SEE ENLARGMENT SHEET 49 OF 53

MATCHLINE -L- STA. 229+00.00 SEE SHEET 20

MATCHLINE -L- STA. 242+00.00 SEE SHEET 22

99 REBECCA D FLOWERS

102 REBECCA D FLOWERS

103 FLOWERS PLANTATION COMMERCIAL, LLC

100 REBECCA D FLOWERS

Sta.=229+72 -L- LT
DA=4.01 Acres
C=0.43
I=6.20 INHR
s= 0.005 FT/FT
n=0.063
SS=3:1
SS=3:1
BASE=4 ft
Q=2= 10.7 cfs
V=2= 1.35 fps
d= 0.50 ft.
Liner=Class B Rip Rap

4' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 86 TONS CLASS B RIP RAP
EST. 190 SY GEOTEXTILE
SEE DETAIL 96

TOE PROTECTION
CLASS B RIP RAP
EST. 62 TONS CLASS B RIP RAP
EST. 128 SY GEOTEXTILE
SEE DETAIL 99

TOE PROTECTION
CLASS B RIP RAP
EST. 83 TONS CLASS B RIP RAP
EST. 183 SY GEOTEXTILE
SEE DETAIL 99

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 95

2' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 123 TONS CLASS B RIP RAP
EST. 273 SY GEOTEXTILE
SEE DETAIL 97

8' LATERAL BASE DITCH
W/CLASS I RIP RAP
SEE DETAIL 100

EXCAVATION IN WETLANDS

PERMANENT IMPACT IN SURFACE WATER

MECH. CLEARING

FILL IN WETLANDS

TEMPORARY IMPACT IN SURFACE WATER

SITE 12

SITE 13

SITE 14

PROPOSED 60' R/W

PINEVILLE BLVD
VARIABLE WIDTH PRIVATE R/W

EXISTING R/W

50 25 0 50 100

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smithcg

8/17/99

REVISIONS

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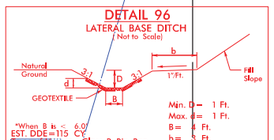
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 43 OF 53

NAD 83/2011

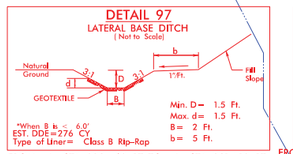
DETAIL 96
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 3 Ft.

*When B is < 6.0'
EST. DDE=115 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+00 LT TO -L- STA. 229+72 LT

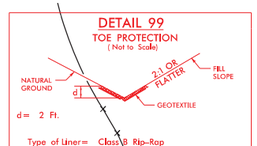
DETAIL 97
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

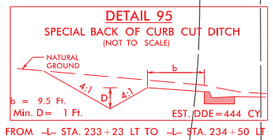
*When B is < 6.0'
EST. DDE=276 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+60 RT TO -L- STA. 231+10 RT

DETAIL 99
TOE PROTECTION
(Not to Scale)



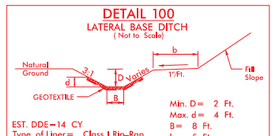
d= 2 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 229+69 LT TO -L- STA. 231+09 LT
FROM -L- STA. 231+16 LT TO -L- STA. 233+03 LT

DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



b = 9.5 Ft.
Min. D= 1 Ft.
EST. DDE=444 CY
FROM -L- STA. 233+23 LT TO -L- STA. 234+50 LT

DETAIL 100
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2 Ft.
Max. d= 4 Ft.
B= 8 Ft.
b= 5 Ft.

EST. DDE=14 CY
Type of Liner= Class I Rip-Rap
Min. 1.5' Thick Layer
FROM -L- STA. 231+10 RT TO -L- STA. 231+63 RT

DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

POND

230+00

235+00

240+00

SEE ENLARGMENT SHEET 44 OF 53

SEE ENLARGMENT SHEET 49 OF 53

99 REBECCA D FLOWERS

99 REBECCA D FLOWERS

102 REBECCA D FLOWERS

103 FLOWERS PLANTATION COMMERCIAL, LLC

100 REBECCA D FLOWERS

100 REBECCA D FLOWERS

100 REBECCA D FLOWERS

Sta.=229+72 -L- LT
DA=4.01 Acres
C=0.43
I=6.20 IN/HR
s= 0.005 FT/FT
n=0.063
SS=3:1
SS=3:1
BASE=4 ft
Q=≥ 10.7 cfs
V=≥ 1.35 fps
d= 0.50 ft.
Liner=Class B Rip Rap

4' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 86 TONS CLASS B RIP RAP
EST. 190 SY GEOTEXTILE
SEE DETAIL 96

TOE PROTECTION
CLASS B RIP RAP
EST. 62 TONS CLASS B RIP RAP
EST. 138 SY GEOTEXTILE
SEE DETAIL 99

TOE PROTECTION
CLASS B RIP RAP
EST. 83 TONS CLASS B RIP RAP
EST. 183 SY GEOTEXTILE
SEE DETAIL 99

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 95

2' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 123 TONS CLASS B RIP RAP
EST. 273 SY GEOTEXTILE
SEE DETAIL 97

8' LATERAL BASE DITCH
W/CLASS I RIP RAP
SEE DETAIL 100

EXCAVATION IN WETLANDS

SITE 12

SITE 13

SITE 14

PINEVILLE BLVD
VARIABLE WIDTH PRIVATE R/W

PROPOSED I60 R/W

EXISTING R/W

RETAIN

REMOVE

ADJUST CB

REMOVE & RESET CB

REMOVE & RESET DI

REMOVE & RESET MH

REMOVE & RESET FCMH

REMOVE & RESET FCDI

REMOVE & RESET FCCB

REMOVE & RESET CB

REMOVE & RESET DI

REMOVE & RESET MH

REMOVE & RESET FCMH

REMOVE & RESET FCDI

REMOVE & RESET FCCB

REMOVE 5' LF

REMOVE & RESET 5' LF

15" COLLAR

REMOVE HW

PLUG & FILL

48" WELDED STEEL TRENCHLESS INSTALLATION

JB w/SEAL MD

15" RCP-III

15" RCP-IV

18" RCP-IV

24" RCP-IV

18" RCP

24" RCP

15" RCP

18" HDPE

24" HDPE

8" PVC

12" DIP

30" RCP

36" RCP

24" C&G

30" C&G

CB

DI

FCMH

FCDI

FCCB

PDE

DUE

PUE

F

E

SS

GR

WOODS

CONC

DRAIN

EX 42' ACCESS ESMT

PERMANENT IMPACT IN SURFACE WATER

MECH. CLEARING

FILL IN WETLANDS

TEMPORARY IMPACT IN SURFACE WATER

POSSIBLE MH PAVED OVER

TOP=293.16'
12" INV IN=290.12'

TOP=295.89'
INV OUT=283.54

TOP=287.27'
INV IN=279.47'
INV OUT=275.47'

TOP=278.59'
INV IN=270.67'

INV OUT=285.82'

12" DIP OUT=286.02'

12" DIP IN=285.61'

INV IN=281.72'
INV OUT=281.20'

INV IN=283.26'

INV OUT=284.79'

INV OUT=284.11'

MATCHLINE -L- STA. 229+00.00 SEE SHEET 20

MATCHLINE -L- STA. 242+00.00 SEE SHEET 22

50 25 0 50 100

12/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Wet contour ps\R3825b_wet_psh21_contour.dgn
smithcg

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NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 44 OF 53

ENLARGEMENT

REVISIONS 8/17/99

LOWERS

236+00

PINEVILLE BLVD.
VARIABLE WIDTH PRIVATE

103

240+00

FLOWERS PLANTATION COMMERCIAL, LLC

12" DIP OUT

RETAIN
REMOVE
15" RCP
24" C&G
18" C&G
30" C&G
CB
RETAIN
REMOVE
5 LF
15" COLLAR
ADJUST CB
15" RCP-IV
12" HDPE
DRAIN
TOP=287.27'
INV IN=27
INV OUT=275.47'
PDE
18" RCP
24"
2GI-A
INV IN=283.26'
8" PVC
FOM
CONC
INV OUT=284.75'
INV OUT=284.11'
GR
WOODS
PUE
DUE
SITE 13
FILL IN WETLANDS
MECH. CLEARING
JS
FLOWERS

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50

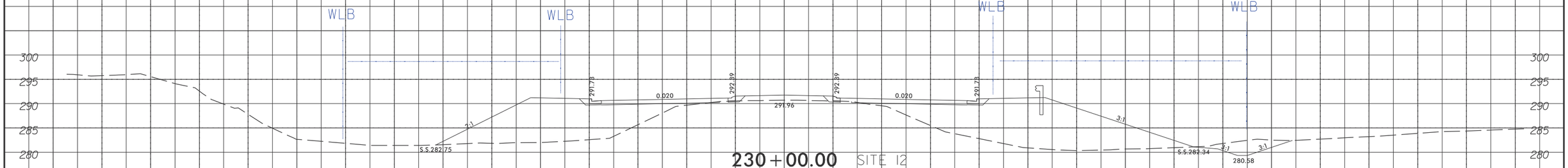
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smitchell

8/23/99

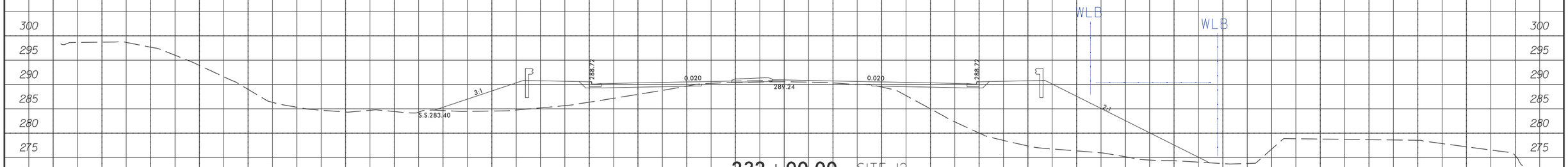
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SHEET NO.

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230+00.00 SITE 12



232+00.00 SITE 12

PERMIT DRAWING
SHEET 45 OF 53

1/4/2018
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smithcl9

8/23/99

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PROJ. REFERENCE NO.	SHEET NO.

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238+50.00 SITE 13

PERMIT DRAWING
SHEET 46 OF 53

1/4/2018
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smithcj

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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 47 OF 53

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 23

NAD 83/2011

MATCHLINE -L- STA. 242+00.00 SEE SHEET 21

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 23

SEE ENLARGMENT SHEET 49 OF 53

SEE ENLARGMENT SHEET 50 OF 53

245+00

250+00

255+00

20

(117) FPC MENAGERIE OUTLOT, LLC

(103) FLOWERS PLANTATION COMMERCIAL, LLC

(105) FPC DRUGSTORE OUTPARCEL LLC

(106) PERCY FLOWERS STORE LLC

(107) REBECCA D FLOWERS

(108) REBECCA FLOWERS FINCH

(100) REBECCA D FLOWERS

(112) REBECCA D FLOWERS

(114) REBECCA FLOWERS FINCH

SITE 14

SITE 15

POND WE=286.0

RETAIN

REMOVE

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 105

SPECIAL LATERAL V-DITCH SEE DETAIL 101

2' SPECIAL CUT BASE DITCH SEE DETAIL 102

SPECIAL CUT DITCH SEE DETAIL 103

SPECIAL CUT DITCH SEE DETAIL 104

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

CLASS B RIP RAP TOE PROTECTION EST. 10 TONS CLASS B RIP RAP EST. 21 SY GEOTEXTILE SEE DETAIL 53

CLASS B RIP RAP TOE PROTECTION EST. 33 TONS CLASS B RIP RAP EST. 74 SY GEOTEXTILE SEE DETAIL 69

Sta.=242+63 -L- RT
Rip-Rap Pad Outlet
Q10= 7.3 cfs
V10= 1.68 fps
d= 0.26 ft
s= 6.3%
n=0.079

PERMANENT IMPACT IN SURFACE WATER (POND)

TEMPORARY IMPACT IN SURFACE WATER

PLUG & FILL

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 69
TOE PROTECTION
(Not to Scale)

Natural Ground; 3:1 or Flatter Fill Slope; b; d; Geotextile

d= 1 Ft.
b= 5 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 241+86 RT TO -L- STA. 242+63 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

NATURAL GROUND; 3:1 OR FLATTER FILL SLOPE; d; GEOTEXTILE

d= 1 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT

DETAIL 101
SPECIAL LATERAL "V" DITCH
(Not to Scale)

Natural Ground; 3:1; D; 4:1 or Flatter; Fill Slope

Min. D= 1 Ft.

FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT

DETAIL 102
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground; 3:1; D; 6:1; Front Ditch Slope; B

Min. D= 2.5 Ft.
B= 2 Ft.

FROM -L- STA. 251+07 LT TO -L- STA. 252+50 LT

DETAIL 103
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 3:1; D; 6:1; Front Ditch Slope

Min. D= 2 Ft.

FROM -L- STA. 252+50 LT TO -L- STA. 257+50 LT

DETAIL 104
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 3:1; D; 4:1 or Flatter; Front Ditch Slope

Min. D= 1 Ft.

FROM -L- STA. 254+25 RT TO -L- STA. 255+50 RT

DETAIL 105
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

NATURAL GROUND; 3:1; D; 6:1

Min. D= 1 Ft.

EST. DDE=52 CY

FROM -Y13- STA. 21+00 LT TO -Y13- STA. 21+50 LT

DETAIL 55
FALSE SUMP
(Not to Scale)

0.5' Min. 1.0' Max; Outside Ditch Traffic Flow; 10:1; 20:1; 2.0'; S; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-Y13- STA. 21+72 LT

50 25 0 50 100

1/4/2008
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smith6g

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URS
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Morrisville, North Carolina 27560
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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 48 OF 53

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 23

MATCHLINE -L- STA. 242+00.00 SEE SHEET 21

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 23

NAD 83/2011

SEE ENLARGMENT SHEET 49 OF 53

SEE ENLARGMENT SHEET 50 OF 53

245+00

250+00

255+00

20

25

117 FPC MENAGERIE OUTLOT, LLC

103 FLOWERS PLANTATION COMMERCIAL, LLC

105 FPC DRUGSTORE OUTPARCEL LLC

106 PERCY FLOWERS STORE LLC

107 REBECCA D FLOWERS

108 REBECCA FLOWERS FINCH

100 REBECCA D FLOWERS

112 REBECCA D FLOWERS

114 REBECCA FLOWERS FINCH

SITE 14

SITE 15

POND WE=286.0

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 105

SPECIAL LATERAL V-DITCH SEE DETAIL 101

2' SPECIAL CUT BASE DITCH SEE DETAIL 102

SPECIAL CUT DITCH SEE DETAIL 103

SPECIAL CUT DITCH SEE DETAIL 104

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

CLASS B RIP RAP TOE PROTECTION EST. 10 TONS CLASS B RIP RAP EST. 21 SY GEOTEXTILE SEE DETAIL 53

PLUG & FILL

CLASS B RIP RAP TOE PROTECTION EST. 33 TONS CLASS B RIP RAP EST. 74 SY GEOTEXTILE SEE DETAIL 69

Sta.=242+63 -L- RT
Rip-Rap Pad Outlet
Q10= 7.3 cfs
V10= 1.68 fps
d= 0.26 ft
s= 6.3%
n=0.079

PERMANENT IMPACT IN SURFACE WATER (POND)

TEMPORARY IMPACT IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

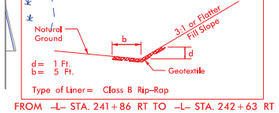
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

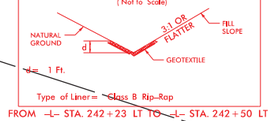
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 69
TOE PROTECTION
(Not to Scale)



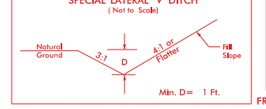
d= 1 Ft.
b= 5 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 241+86 RT TO -L- STA. 242+63 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)



d= 1 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT

DETAIL 101
SPECIAL LATERAL "V" DITCH
(Not to Scale)



Min. D= 1 Ft.
FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT

DETAIL 102
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D= 2.5 Ft.
B= 2 Ft.
FROM -L- STA. 251+07 LT TO -L- STA. 252+50 LT

DETAIL 103
SPECIAL CUT DITCH
(Not to Scale)



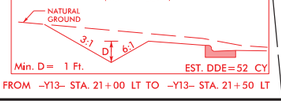
Min. D= 2 Ft.
FROM -L- STA. 252+50 LT TO -L- STA. 257+50 LT

DETAIL 104
SPECIAL CUT DITCH
(Not to Scale)



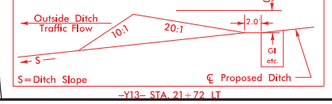
Min. D= 1 Ft.
FROM -L- STA. 254+25 RT TO -L- STA. 255+50 RT

DETAIL 105
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



Min. D= 1 Ft.
EST. DDE=52 CY
FROM -Y13- STA. 21+00 LT TO -Y13- STA. 21+50 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



-Y13- STA. 21+72 LT

50 25 0 50 100

8/4/2008
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smith6g

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URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE AND FAX NUMBERS
NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 49 OF 53

ENLARGEMENT

8/17/99

REVISIONS

1/4/2018
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smithcg

243+00

EX 42' ACCESS ESMT

105
FPC DRUGSTORE OUTPARCEL LLC

SITE 14

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

CLASS B RIP RAP TOE PROTECTION
EST. 10 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 53

20' LANDSCAPE BUFFER

EX SIGN EASEMENT AND LANDSCAPE BUFFER PB 79 PG 235
TOP=290.79'
INV IN=284.89'
INV OUT=283.57'

TOP=289.50'
INV IN=282.07'
INV OUT=282.04'

CONC HW/WW
TOP=281.76'
INV=273.93'

12" DIP IN=285.61'
INV IN(N)=281.72'
INV OUT(E)=281.20'

INV=287.82'
(8" DIP)

RETAIN
REMOVE
PLUG & FILL
TRENCHLESS INSTALLATION 66" WELDED STEEL
PROPOSED 160' R/W
EXISTING R/W

24" RCP-IV
18" RCP-IV
15" RCP-IV
CB
TB JB w/MH
2GI
PDE

60.00'

7' CONC CURB
6" CONC

PERMANENT IMPACT IN SURFACE WATER
TEMPORARY IMPACT IN SURFACE WATER
FILL IN WETLANDS
MECH. CLEARING
WOODS

CLASS B RIP RAP
TOE PROTECTION
EST. 33 TONS CLASS B RIP RAP
EST. 74 SY GEOTEXTILE
SEE DETAIL 69

Sta. = 242 + 63 –L– RT
Rip Rap Pad Outlet
Q10 = 7.3 cfs
V10 = 1.68 ft/s
d = 0.26 ft
s = 6.3%
n = 0.079

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

100
REBECCA D FLOWERS

25 12.5 0 25 50

8/17/99

REVISIONS

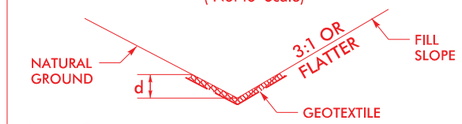
1/4/2018
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NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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TOE PROTECTION
(Not to Scale)

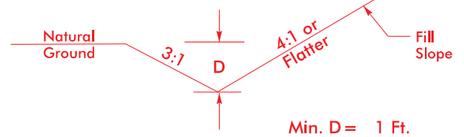


d = 1 Ft.

Type of Liner = Class B Rip-Rap

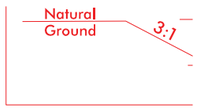
FROM –L– STA. 242+23 LT TO –L– STA. 242+50 LT

SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.

FROM –L– STA. 250+40 LT TO –L– STA. 251+00 LT



FROM –L– STA. 254+

PERMIT DRAWING SHEET 50 OF 53

ENLARGEMENT

243+00

247+00

106
PERCY FLOWERS STORE LLC

107
REBECCA D FLOWERS

108
REBECCA FLOWERS FINCH

SPECIAL LATERAL V-DITCH SEE DETAIL 101

2' SPECIAL CUT BASE DITCH SEE DETAIL 102

SPECIAL CUT DITCH SEE DETAIL 103

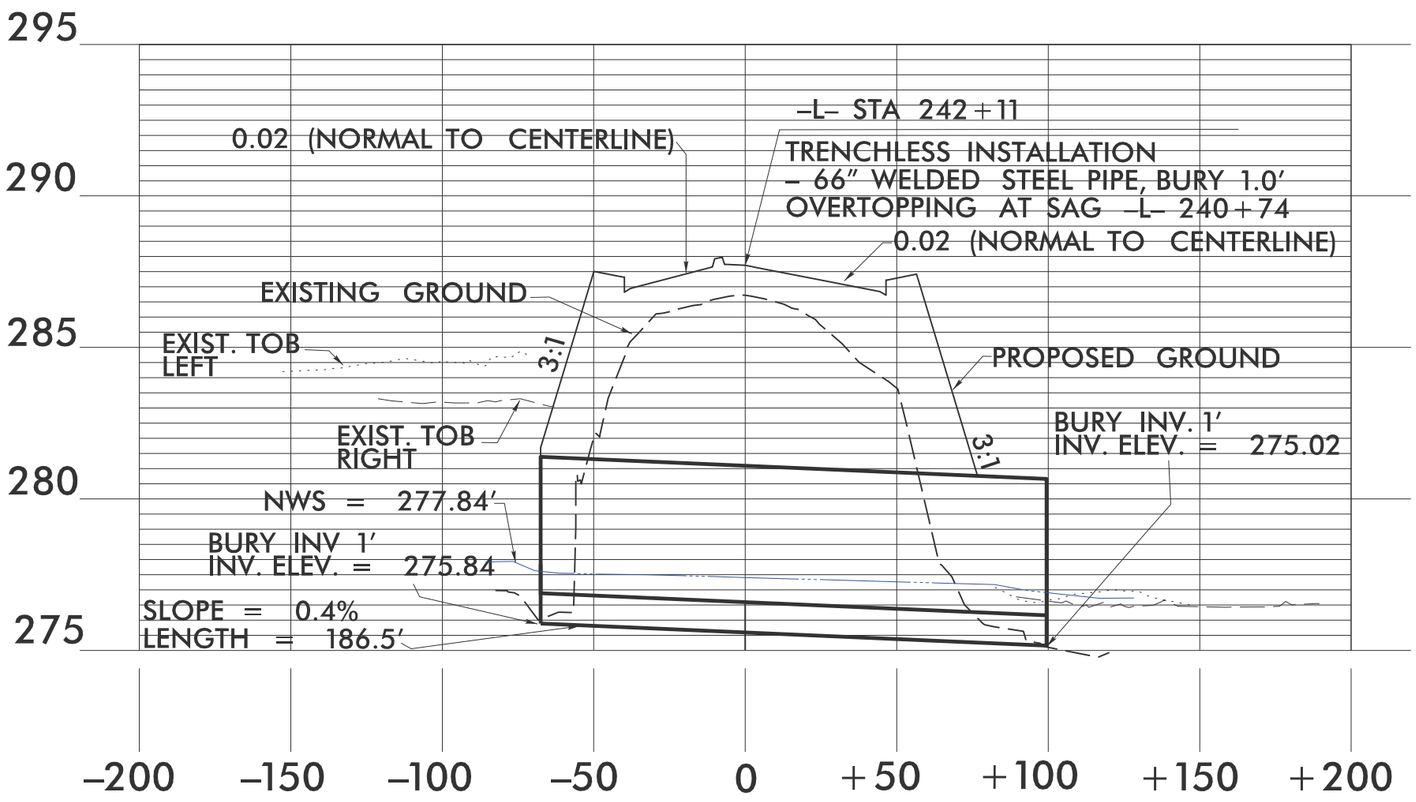
MON WELL
MON WELL(2)
CONC
CAN
GAS FILLS
BST
RETAIN
PDE
REMOVE
15" RCP
DI
E
F
C
HW
R/W
EXISTING R/W
6' CONC CURB
EM
12" INV IN=287.16'
2GI
15" RCP-IV
18" RCP-IV
24" RCP-IV
36" RCP-IV
CB
12" RCP
INV=288.19'
12 STR FO
12" PVC
FL 25
NC 42 36' BW
THIS 289.00' 12" DUCTILE IRON WATER
TS
BK
SITE 15
PERMANENT IMPACT IN SURFACE WATER (POND)
TEMPORARY IMPACT IN SURFACE WATER
112
REBECCA D FLOWERS
POND WE=286.0
114
REBECCA FLOWERS FINCH
RETAIN
SPECIAL CUT D
SEE DETAIL 10

P P DENOTES IMPACTS IN SURFACE WATER (POND)

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50

SITE 14 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

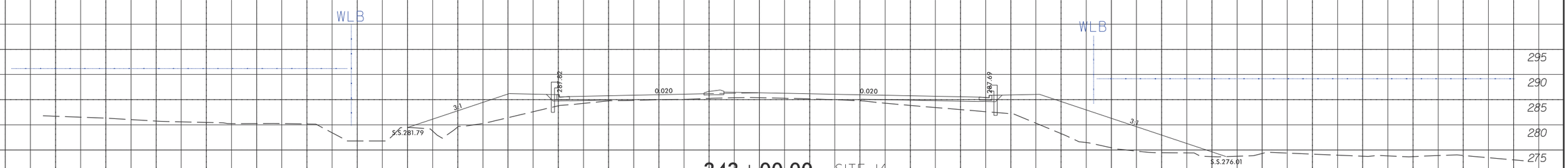
PROJECT: 34552.1.FR.3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 14

PERMIT DRAWING
SHEET 51 OF 53

8/23/99

0	PROJ. REFERENCE NO.	SHEET NO.

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



242+00.00 SITE 14

PERMIT DRAWING
SHEET 52 OF 53

1/4/2018
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smitchel

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	-L- 25+86 - 28+54	54" Welded Steel Trenchless	0.06		0.05	0.03		0.01	< 0.01	213	87	
2	-L- 49+17 - 49+52	54" Welded Steel Trenchless						0.02	< 0.01	108	4	
3**	-L- 59+70 - 61+36	Proposed Roadway Fill	0.07			0.04						
4	-L- 63+47 - 64+93	Proposed Bridge							0.37		209	
5	-L- 73+01 - 76+59	42" Welded Steel Trenchless/ Proposed Roadway Cut & Fill	0.02		0.02	0.01		0.04	< 0.01	523	14	
5	-L- 73+01 - 76+59	Bank Stabilization Impact						< 0.01	< 0.01	20	6	
6	-L- 106+21 - 108+13	66" Welded Steel Trenchless						0.02	< 0.01	187	31	
7	-L- 114+00 - 114+37	84" Welded Steel Trenchless						0.01	< 0.01	117	54	
7	-L- 114+00 - 114+37	Bank Stabilization Impact						< 0.01	< 0.01	25	3	
8	-L- 134+89 - 136+96	72" Welded Steel Trenchless	0.03		0.06	0.04		0.03	< 0.01	320	66	
9	-L- 156+48 - 157+51	54" Welded Steel Trenchless						< 0.01	< 0.01	257	30	
10A	-L- 166+72 - 167+20	2@12'x12' RCBC						0.08	0.02	193	70	
10B	-L- 167+20 - 172+25	Channel Relocation						0.03	< 0.01	498	11	
10B	-L- 171+75 - 172+25	Bank Stabilization Impact						< 0.01	< 0.01	11	20	
11	-L- 201+66 - 202+26	Propsed Roadway Cut/Fill	0.04			< 0.01						
12	-L- 229+74- 232+19	Propsed Roadway Cut/Fill	0.35		0.02	0.06						
13	-L- 238+26- 238+45	24" RCP-IV	< 0.01			< 0.01						
14	-L- 241+84 - 243+18	66" Welded Steel Trenchless / Proposed Roadway Cut & Fill	0.11			0.01		< 0.01	< 0.01	72	20	
15	-L- 248+70 - 252+00	18", 24", 3 x 36" RCP-IV, 15" Pipes to Pond						< 0.01	0.03			
TOTALS*:			0.68		0.16	0.19		0.27	0.45	2544	624	0

*Rounded totals are sum of actual impacts

NOTES:
** - Isolated Wetland
Bridge Pier Permanent Impact Area (Not included in above quanitites) = 159 Sq. ft (Ten 4.5 ft. diameter piers)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
2018 05 25
JOHNSTON COUNTY
R-3825B (NC-42)
34552.1.FR3
SHEET 53 OF 53

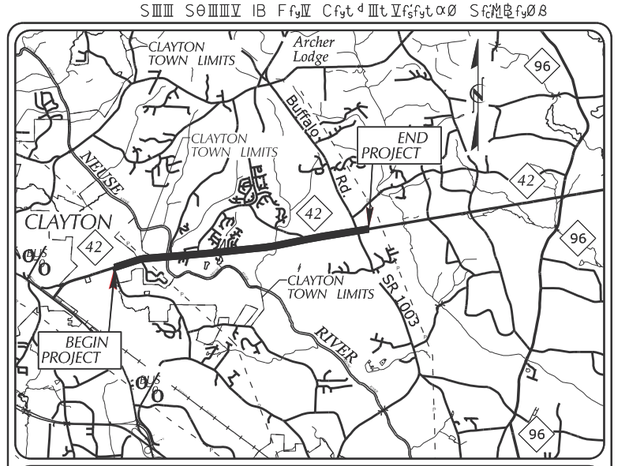
Revised 2016 09 09

9/09/99

TIP PROJECT: R–3825B

CONTRACT:

S III SeIIIIV IA FfyV ItxIII% fyΔ SeIIIIVx
S III SeIIIIV IB FfyV CfytdIIItVfsfytαØ SfcMBfyØx



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUFFER DRAWING SHEET 1 OF 9

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–3825B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.FR3	STP–0042(58)	P.E.	
34552.2.4	STP–0042(58)	RW & UTL.	

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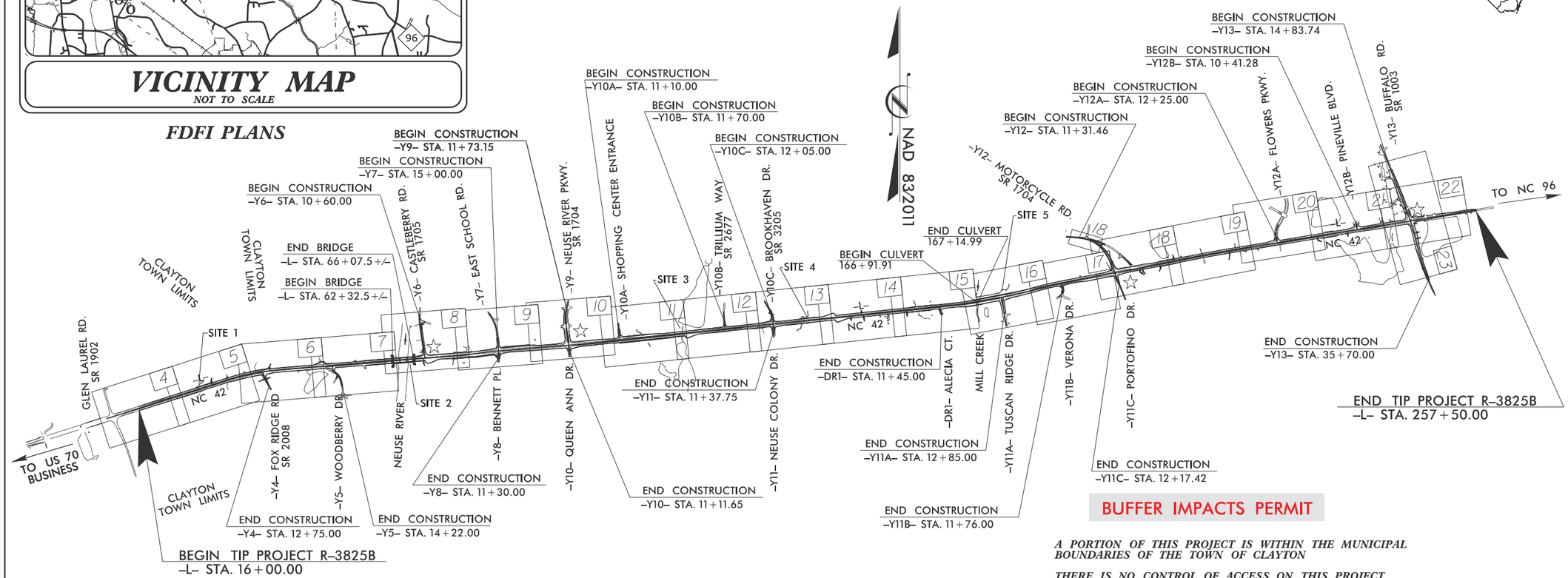
JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

TYPE OF WORK: GRADING, PAVING, STRUCTURES, DRAINAGE AND SIGNALS



FDFI PLANS



BUFFER IMPACTS PERMIT

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL
REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R–3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R–3825B = 4.574 MILES

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-4415
NC LICENSE # C-0293

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: *SEPTEMBER 8, 2016*

LETTING DATE: *AUGUST 21, 2018*

ED EDENS, P.E.
PROJECT ENGINEER

KEVIN VAN METRE, P.E.
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

8/3/2017
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mwood

Prepared by
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NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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BUFFER DRAWING SHEET 2 OF 9

REVISIONS

8/17/99

NAD 83/2011

MITIGABLE IMPACTS ZONE 2

MITIGABLE IMPACTS ZONE 1

25+00 30+00 35+00

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

SITE 1 SITE 1

WOODS

EXISTING R/W

BL-103 BL-104

PDE DUE PUE

30" CMP

+82 BEGIN SBG

+78 BEGIN SBG CAT-1

+46 END SBG

+70.26 BEGIN 50' CURB TRANS.

AT-1 SCGR 23:R

FL GR 2GI

JB w/SLAB

REMOVE

30" RCP w/ ELBOW

30" RCP

30" WELDED STEEL PIPE

JB wMH

2'-9" C&G

1'-6" C&G

PROPOSED 60' R/W

MATCH DITCH INVERT TO STREAM INVERT

EST. 2 TONS CL B RIP RAP

EST. 7 SY GEOTEXTILE

12" DIP

8" PL

GRAU 350

NC 42 248' BST

NC 42 260' BST

WOODS

BM#2
N: 690,566
E: 2,173,786
ELEV=262.50'

DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, d, D, B

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= PSRM

FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT

DETAIL 8
TOE PROTECTION
(Not to Scale)

2:1 or Flatter Fill Slope, b, d

d=2 Ft.
b=5 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 24+15 RT TO -L- STA. 25+00 RT
FROM -L- STA. 27+15 RT TO -L- STA. 29+00 RT

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 3:1, d, D, B

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 27+50 LT TO -L- STA. 28+35 LT

DETAIL 9
FALSE SUMP
(Not to Scale)

0.5', Outside Ditch Traffic Flow, 10:1, 20:1, 2.0, Gt etc., S, L

S=Ditch Slope

-L- STA. 32+49 RT

DETAIL 3
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 3:1, b, 1'-0" Ft., d, D, B

Min. D=2 Ft.
Max. d=2 Ft.
B=6 Ft.
b=5 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 24+10 RT TO -L- STA. 27+05 RT

DETAIL 4
TOE PROTECTION
(Not to Scale)

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

d= 1 Ft.
b = 6 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 25+50 LT TO -L- STA. 27+50 LT

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 4:1, 4:1, Natural Ground, d, D, B

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=6 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 32+16 RT TO -L- STA. 32+28 RT
EST. 80 TONS CLASS I RIP RAP, EST. DDE 101 CY,
EST. 134 SY GEOTEXTILE

DETAIL 6
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, d, D

Min. D=1 Ft.
Max d=1 Ft.

Type of Liner= PSRM

FROM -L- STA. 31+90 RT TO -L- STA. 32+28 RT

DETAIL 19
BERM DITCH
(Not to Scale)

SLOPE SWALE, CLEARING LIMITS
5.0', 13.5', 9.0', 5.0'
10.0' V.C., 3:1, D, V.A.B., d

Min. D=1.5 Ft.
Max. d=1.0 Ft.

Type of Liner= CLASS B RIP RAP

FROM -L- STA. 34+50 RT TO -L- STA. 38+00 RT

50 25 0 50 100

8/3/2017
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smiddy

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REVISIONS

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NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MITIGABLE IMPACTS ZONE 2
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2

DETAIL 12
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, 2:1 OR FLATTER, b, d, FILL SLOPE
d=1 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM –Y6– STA. 11+00 RT TO –Y6– STA. 14+00 RT

DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 3:1 or Flatter (See Cross Sections), Front Ditch Slope
Min. D=1.5 Ft.
Max d=1.5 Ft.
Type of Liner= PSRM
FROM –Y6– STA. 14+56 LT TO –Y6– STA. 15+00 LT

DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)

5' min., 2 Ft., Match to top of slope (See Detail 23), Ditch Grade, 1.0' min., GEOTEXTILE
Type of Liner= EST. 9 TONS, CL I Rip-Rap
Geotextile= 21 sy
FROM –L– STA. 73+45 RT TO –L– STA. 73+60 RT

DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 3:1 or Flatter (See Cross Sections), Front Ditch Slope
Min. D=1.5 Ft.
FROM –Y6– STA. 14+00 LT TO –Y6– STA. 14+56 LT

DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 3:1 or Flatter (See Cross Sections), Front Slope Ditch, Geotextile, B
Min. D=2 Ft.
Max. d=1.5 Ft.
B=2 Ft.
Type of Liner= Class B Rip-Rap
FROM –Y6– STA. 11+78 LT TO –Y6– STA. 12+50 LT

DETAIL 23
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, b, 1'-Ft., Fill Slope, GEOTEXTILE, B
Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=4 Ft.
b=3–5 Ft.
Type of Liner= Class I Rip-Rap
FROM –L– STA. 73+03 RT TO –L– STA. 75+91 RT

DETAIL 22
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, Natural Ground, Geotextile, B
Min. D=1.0 Ft.
Max. d=1 Ft.
B=2 Ft.
*When B is < 6.0'
Type of Liner= Class B Rip-Rap
FROM –L– STA. 68+54 RT TO –L– STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE

DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)

5 FT
PLAN VIEW
DISSIPATOR PAD
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
GROUND, L, GEOTEXTILE, 1.0'
PROFILE VIEW
L= 40 FT.
Type of Liner= 10 TONS CL B Rip-Rap
Geotextile= 33sy
FROM –L– STA. 65+20RT TO STA. 65+60RT

DETAIL 29
FALSE SUMP
(Not to Scale)

1.75', Outside Ditch Traffic Flow, 10:1, 20:1, 2.0', GL ±, S
S=Ditch Slope
℄ Proposed Ditch
–Y6– STA. 14+25 LT

DETAIL 24
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 3:1, b, 1'-Ft., Fill Slope, B
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM –L– STA. 73+10 LT TO –L– STA. 75+00 LT

DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)

Natural Ground, Reinforced RCP, CLASS III, Reinforced RCP, CLASS III, Natural Ground, d, CHANNEL BED (Variable)
Length=15 Ft.
d= To Top of Bank
Est.= 15 Tons of Class B Rip-Rap
FROM STA. 73+00 LT TO STA. 73+20 LT

BUFFER DRAWING SHEET 3 OF 9

EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE

TOE PROTECTION SEE DETAIL 12 FOR INCIDENTAL LOW AREAS AGAINST FILL SLOPE

36" RCP-IV
REMOVE
2' SPECIAL CUT BASE DITCH w/CLASS B RIP RAP SEE DETAIL 28
93 SY PSRM

EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE

SPECIAL CUT 'V' DITCH w/GRASS SEE DETAIL 27

24" RCP-IV
REMOVE
SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 26
71 SY PSRM

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

4' LATERAL BASE DITCH w/PSRM SEE DETAIL 24

EST. 15 TONS CLASS B RIP RAP SEE DETAIL 109

+07.83 END SBG
BEGIN APPROACH SLAB
BRIDGE SEAT ELEVATIONS
BS1 = 154.33±
BS2 = 154.32±
BS3 = 154.31±
BS4 = 154.30±
BEGIN BRIDGE
SITE 4
6" PVC DATUR
6" STL DATUR
CONC RAIL
CONC BRIDGE SURFACE
CONC RAIL
CONC COLUMN (6 TOTAL)
5" MONOLITHIC ISLAND
1'-2" PEDESTRIAN BARRIER RAIL
6' SIDEWALK
+07.83 END SBG
BEGIN PED BARRIER RAIL
EST. 323 TONS CLASS II RIP RAP, 2FT THICK
PROPOSED 130' R/W
NEUSE RIVER
DECK DRAIN DISSIPATOR PAD SEE DETAIL 108
SITE 4
NOTE:
ACCESS GRANTED FOR –DRW3–
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)

+07.83 END SBG
END APPROACH SLAB
+32.17 BEGIN SBG
END BRIDGE
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
FL GR 2GI
+42 END SBG
+32.17 BEGIN SBG
FL GR 2GI
15" END PED BARRIER RAIL
+38.75 END SBG
CAT-1
EXISTING R/W
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
N 85°22'25" E 818.15'
UTILITY OWNER TO PROVIDE GATE
2' STANDARD BASE DITCH w/CLASS B RIP RAP SEE DETAIL 22
EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE

REMOVE
5" MONOLITHIC ISLAND
GRAU 350 TYPE B-77
BEGIN NOISE WALL STA. 72+90 48.8RT
+64.22 BEGIN 50' CURB TRANS.
EST. 20 TONS CL I RIP RAP
EST. 39 SY GEOTEXTILE
MATCH DITCH INVERT TO STREAM INVERT
OUTFALL ANALYSIS D
RIP RAP RAP AT EMBANKMENT SEE DETAIL 25
JB w/MH
DI
15" RCP-IV
2'-9" C&G
FL GR 2GI
1'-6" C&G
15" RCP-IV
4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23
N 03°51'07" E 65.00'
S 86°08'54" W 55.20'
CONC POOL

65+00
70+00
75+00
10
15
BY3-139
BY3-140
BK-109
EY3-1
POSSIBLE FM
SCHOOL ENTRANCE ROAD
23' BST
WOODS
DATUR
GPOST
EM
12" PVC
8" PVC
6" DIP
4" PE
12" DIP
8" DIP
6P
SS
JS
PUE
PDE
EXISTING R/W
NC 42 25.3' BST
18" RCP
SCGR 42"R
CONC GUARD 350
CAT-1
N 10°28'07" E 254.49'
N 04°47'34" E 380.75'
N 03°50'34" E 149.60'
N 03°50'34" E 165.00'
N 03°51'07" E 165.00'
N 03°51'54" W
N 32°10'00" N
MATCHLINE -L- STA. 62+00.00 SEE SHEET 7
MATCHLINE -L- STA. 75+00.00 SEE SHEET 9
50 0 25 0 50 100

8/9/2017
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8/17/99

REVISIONS

BUFFER DRAWING SHEET 4 OF 9

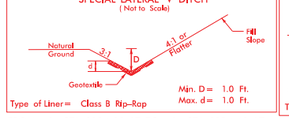
NAD 83/2011

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

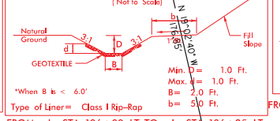
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DETAIL 38
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



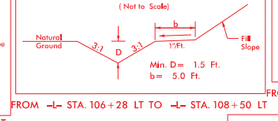
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 100+00 LT TO -L- STA. 102+40 LT

DETAIL 42
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 106+00 LT TO -L- STA. 106+25 LT

DETAIL 43
LATERAL 'V' DITCH
(Not to Scale)



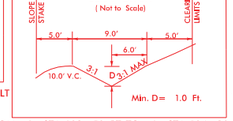
Min. D= 1.5 Ft.
b= 5.0 Ft.
FROM -L- STA. 106+28 LT TO -L- STA. 108+50 LT

DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



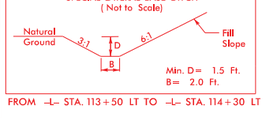
Min. D= 1.0 Ft.
FROM -L- STA. 108+50 LT TO -L- STA. 110+00 LT

DETAIL 45
BERM DITCH
(Not to Scale)



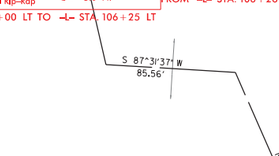
Min. D= 1.0 Ft.
FROM -L- STA. 103+50 RT TO -L- STA. 104+20 RT

DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)



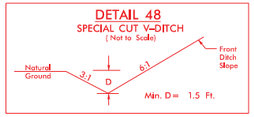
Min. D= 1.5 Ft.
B= 2.0 Ft.
FROM -L- STA. 113+50 LT TO -L- STA. 114+30 LT

DETAIL 46
BERM DITCH
(Not to Scale)



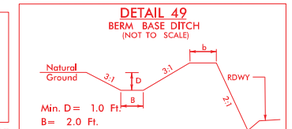
Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip Rap
FROM -L- STA. 104+20 RT TO -L- STA. 104+50 RT
FROM -L- STA. 105+50 RT TO -L- STA. 106+00 RT

DETAIL 48
SPECIAL CUT V-DITCH
(Not to Scale)



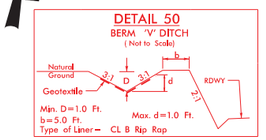
Min. D= 1.5 Ft.
FROM -L- STA. 111+50 LT TO -L- STA. 113+50 LT

DETAIL 49
BERM BASE DITCH
(NOT TO SCALE)



Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
FROM -L- STA. 110+00 LT TO -L- STA. 114+00 LT

DETAIL 50
BERM 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip Rap
FROM -L- STA. 104+50 RT TO -L- STA. 105+50 RT
BERM DITCH GRADE

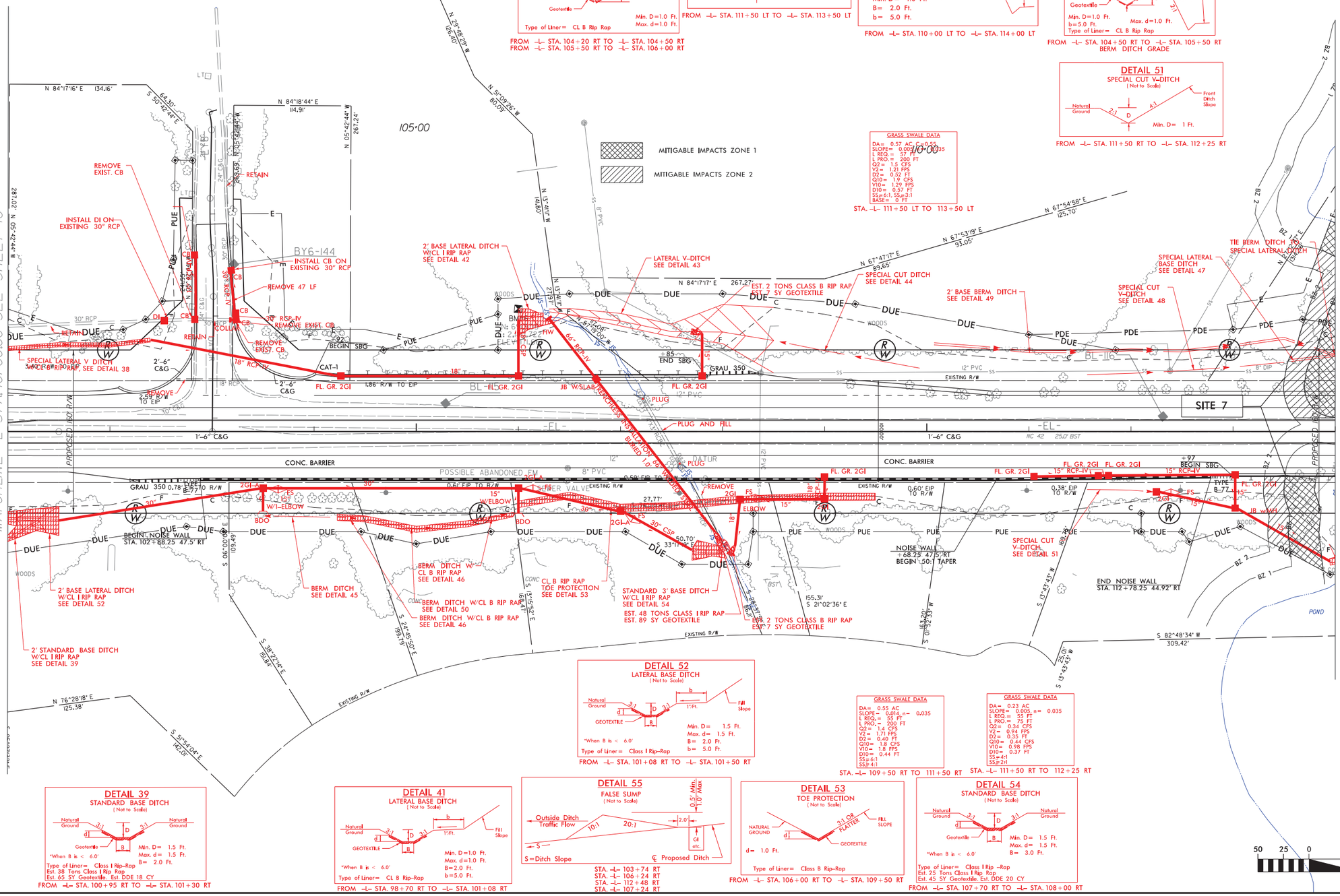
DETAIL 51
SPECIAL CUT V-DITCH
(Not to Scale)

Min. D= 1 Ft.
FROM -L- STA. 111+50 RT TO -L- STA. 112+25 RT

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

GRASS SWALE DATA
DA= 0.57 AC
SLOPE= 0.002 ft/ft n= 0.035
L REQ.= 57 FT
L PRO.= 200 FT
Q2= 1.5 CFS
V2= 1.21 FPS
D2= 0.52 FT
Q10= 1.9 CFS
V10= 1.29 FPS
D10= 0.57 FT
SS=6:1, SS=2:1
BASE= 0 FT
STA. -L- 111+50 LT TO 113+50 LT



GRASS SWALE DATA
DA= 0.55 AC
SLOPE= 0.014, n= 0.035
L REQ.= 55 FT
L PRO.= 200 FT
Q2= 1.4 CFS
V2= 1.71 FPS
D2= 0.40 FT
Q10= 1.8 CFS
V10= 1.8 FPS
D10= 0.44 FT
SS=6:1
SS=4:1
STA. -L- 109+50 RT TO 111+50 RT

GRASS SWALE DATA
DA= 0.23 AC
SLOPE= 0.005, n= 0.035
L REQ.= 55 FT
L PRO.= 75 FT
Q2= 0.34 CFS
V2= 0.94 FPS
D2= 0.35 FT
Q10= 0.44 CFS
V10= 0.98 FPS
D10= 0.37 FT
SS=4:1
SS=2:1
STA. -L- 111+50 RT TO 112+25 RT

DETAIL 52
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 101+08 RT TO -L- STA. 101+50 RT

DETAIL 39
STANDARD BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= Class I Rip-Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY
FROM -L- STA. 100+95 RT TO -L- STA. 101+30 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip-Rap
FROM -L- STA. 98+70 RT TO -L- STA. 101+08 RT

DETAIL 55
FALSE SUMP
(Not to Scale)

S=Ditch Slope
STA. -L- 103+74 RT
STA. -L- 106+24 RT
STA. -L- 112+48 RT
STA. -L- 107+24 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

d= 1.0 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 106+00 RT TO -L- STA. 109+50 RT

DETAIL 54
STANDARD BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
Type of Liner= Class I Rip -Rap
Est. 25 Tons Class I Rip Rap
Est. 45 SY Geotextile. Est. DDE 20 CY
FROM -L- STA. 107+70 RT TO -L- STA. 108+00 RT

50 25 0 50 100

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8/17/99
REVISIONS
8/3/2017
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smithcl

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BUFFER DRAWING SHEET 5 OF 9

NAD 83/2011

DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)

10' min.
1.0' min.
Type of Liner= 7 TON, CL B Rip-Rap
Geotextile= 22 sy

FROM –L– STA. 113+95 RT TO –L– STA. 114+08 RT
FROM –L– STA. 114+28 LT TO –L– STA. 114+21 LT
FROM –L– STA. 114+10 LT TO –L– STA. 114+30 LT

DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 6:1, B
Min. D=1.0 Ft.
B=2.0 Ft.

FROM –L– STA. 114+40 LT TO –L– STA. 116+00 LT

DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 3:1, D, 6:1
Min. D= 1.0 Ft.

FROM –L– STA. 123+20 LT TO –L– STA. 124+00 LT

DETAIL 61
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 10:1, 20:1, 1.0', 2.0', OPEN END PIPE
S = Ditch Slope, L

STA. –L– 123+00 LT

DETAIL 58
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)

Natural Ground, 4:1, D, 6:1
Min. D=1.5 Ft.
B=5.0 Ft.

FROM –L– STA. 116+00 RT TO –L– STA. 119+00 RT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, b, 1'Flt.
Min. D=1.0 Ft.
Max. d=1.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip-Rap

FROM –L– STA. 122+55 RT TO –L– STA. 124+50 RT

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.

BANK STABILIZATION SEE DETAIL 56

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

POND WE • POD

+45 BEGIN EXPRESSWAY GUTTER

+20.13 END EXPRESSWAY GUTTER

+50 BEGIN EXPRESSWAY F GUTTER

+50 END EXPRESSWAY GUTTER

5' MONOLITHIC ISLAND

SITE 7

GRASS SWALE DATA
DA= 0.97 AC, C= 0.63
SLOPE= 0.037, n= 0.05
L REQ.= 97 FT
L PRO.= 390 FT
Q2= 2.9 CFS
V2= 1.95 FPS
D2= 0.24 FT
Q10= 3.8 CFS
V10= 2.16 FPS
D10= 0.28 FT
SS=6:1, SS=4:1
BASE= 5.0 FT

STA. –L– 116+00 RT TO 119+00 RT

DETAIL 60
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, d, D, 3:1, Natural Ground, B
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
*When B is < 6.0'

Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY

FROM –L– STA. 114+17 RT TO STA. 114+35 RT

DETAIL 62
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 10:1, 20:1, 0.5' Min. 1.0' Max., 2', GI etc.
S = Ditch Slope, L

STA. –L– 115+86 RT

DETAIL 107
CULVERT 114+18 OUTLET CHANNEL FACING DOWNSTREAM (NTS)

EX. GROUND, 6' X 7' RCBC, CHANNEL EXCAVATION: =10 CY DOWNSTREAM, CLASS I RIP RAP 2' THICK w/ GEOTEXTILE UNDERNEATH, KEY-IN 2' (TYP.), 1' SILL INSET 1' FROM END, BACKFILL WITH NATIVE MATERIAL PER SPEC.

50 25 0 50 100

MATCHLINE -L- STA. 114+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 13

BUFFER DRAWING
SHEET 6 OF 9

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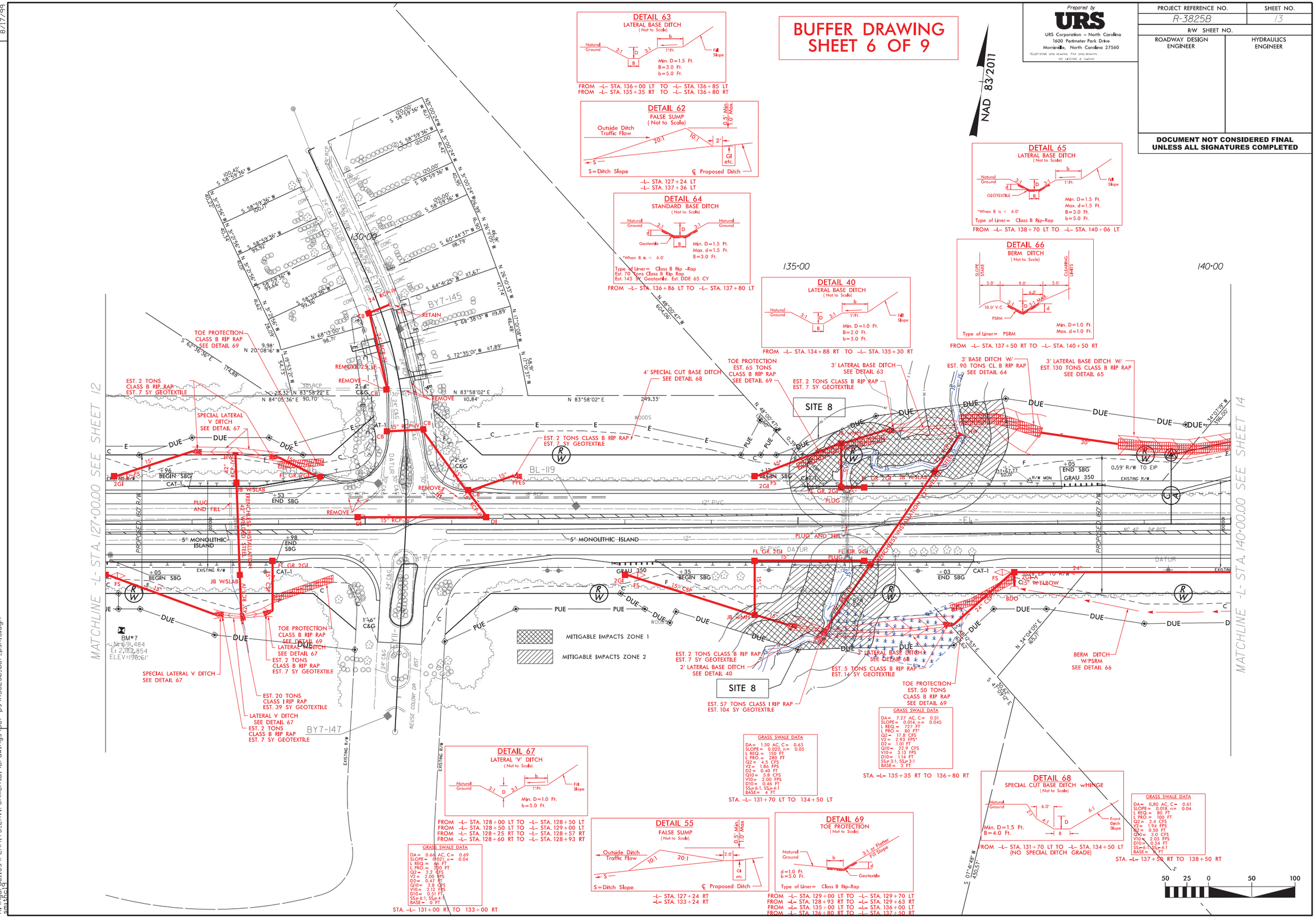
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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8/3/2007
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DETAIL 63
LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 136+00 LT TO -L- STA. 136+85 LT
FROM -L- STA. 135+35 RT TO -L- STA. 136+80 RT

DETAIL 62
FALSE SUMP
(Not to Scale)

S=Ditch Slope ℄ Proposed Ditch

-L- STA. 127+24 LT
-L- STA. 137+36 LT

DETAIL 64
STANDARD BASE DITCH
(Not to Scale)

Type of Liner= Class B Rip-Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile. Est. DDE 65 CY

FROM -L- STA. 136+86 LT TO -L- STA. 137+80 LT

DETAIL 40
LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT

DETAIL 65
LATERAL BASE DITCH
(Not to Scale)

Type of Liner= Class B Rip-Rap

FROM -L- STA. 138+70 LT TO -L- STA. 140+06 LT

DETAIL 66
BERM DITCH
(Not to Scale)

Type of Liner= PSRM

FROM -L- STA. 137+50 RT TO -L- STA. 140+50 RT

DETAIL 67
LATERAL 'V' DITCH
(Not to Scale)

FROM -L- STA. 128+00 LT TO -L- STA. 128+50 LT
FROM -L- STA. 128+50 LT TO -L- STA. 129+00 LT
FROM -L- STA. 128+25 RT TO -L- STA. 128+57 RT
FROM -L- STA. 128+60 RT TO -L- STA. 128+93 RT

GRASS SWALE DATA
DA= 0.66 AC, C= 0.69
SLOPE= 0.021, n= 0.04
L REQ= 86 FT
L PRO.= 200 FT
Q2= 2.2 CFS
V2= 2.00 FPS
D2= 0.47 FT
Q10= 2.8 CFS
V10= 2.12 FPS
D10= 0.51 FT
SS=6:1, SS=4:1
BASE= 0 FT

STA. -L- 131+00 RT TO 133+00 RT

DETAIL 55
FALSE SUMP
(Not to Scale)

S=Ditch Slope ℄ Proposed Ditch

-L- STA. 127+24 RT
-L- STA. 133+24 RT

DETAIL 69
TOE PROTECTION
(Not to Scale)

Type of Liner= Class B Rip-Rap

FROM -L- STA. 129+00 LT TO -L- STA. 129+70 LT
FROM -L- STA. 128+93 RT TO -L- STA. 129+63 RT
FROM -L- STA. 135+00 LT TO -L- STA. 136+00 LT
FROM -L- STA. 136+80 RT TO -L- STA. 137+50 RT

GRASS SWALE DATA
DA= 1.50 AC, C= 0.63
SLOPE= 0.020, n= 0.05
L REQ= 150 FT
L PRO.= 280 FT
Q2= 4.5 CFS
V2= 1.86 FPS
D2= 0.40 FT
Q10= 5.8 CFS
V10= 2.00 FPS
D10= 0.46 FT
SS=6:1, SS=4:1
BASE= 4 FT

STA. -L- 131+70 LT TO 134+50 LT

GRASS SWALE DATA
DA= 7.27 AC, C= 0.51
SLOPE= 0.014, n= 0.045
L REQ= 727 FT
L PRO.= 80 FT*
Q2= 17.8 CFS
V2= 2.93 FPS*
D2= 1.01 FT
Q10= 22.9 CFS
V10= 3.13 FPS
D10= 1.14 FT
SS=3:1, SS=3:1
BASE= 3 FT

STA. -L- 135+35 RT TO 136+80 RT

DETAIL 68
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)

FROM -L- STA. 131+70 LT TO -L- STA. 134+50 LT
(NO SPECIAL DITCH GRADE)

GRASS SWALE DATA
DA= 0.80 AC, C= 0.61
SLOPE= 0.018, n= 0.04
L REQ= 80 FT
L PRO.= 100 FT
Q2= 2.4 CFS
V2= 1.94 FPS
D2= 0.50 FT
Q10= 3.0 CFS
V10= 2.05 FPS
D10= 0.54 FT
SS=6:1, SS=4:1
BASE= 0 FT

STA. -L- 137+50 RT TO 138+50 RT

50 25 0 50 100

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SHEET 7 OF 9

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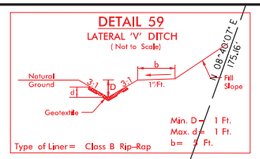
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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REVISIONS

DETAIL 59
LATERAL "V" DITCH
(Not to Scale)

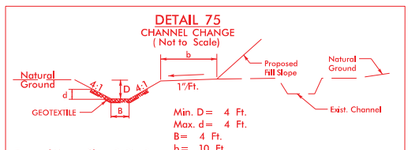


Min. D = 1 Ft.
Max. d = 1 Ft.
b = 4 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 165+26 RT TO -L- STA. 165+93 RT

DETAIL 75
CHANNEL CHANGE
(Not to Scale)

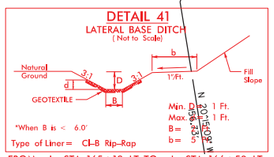


Min. D = 4 Ft.
Max. d = 4 Ft.
B = 4 Ft.
b = 10 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 167+20 LT TO -L- STA. 171+75 LT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



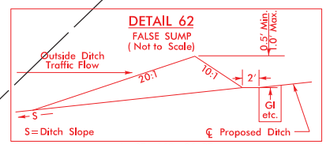
Min. d = 1 Ft.
Max. d = 1 Ft.
B = *
b = 5'

*When B is < 6.0'

Type of Liner = CL-B Rip-Rap

FROM -L- STA. 165+18 LT TO -L- STA. 166+50 LT

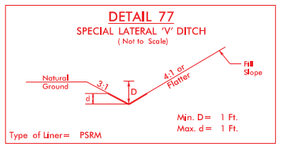
DETAIL 62
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

-L- STA. 169+36 RT
-L- STA. 175+66 RT
-L- STA. 177+55 RT

DETAIL 77
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

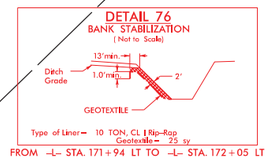


Min. D = 1 Ft.
Max. d = 1 Ft.

Type of Liner = PSRM

FROM -L- STA. 176+74 LT TO -L- STA. 178+00 LT

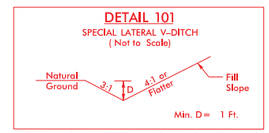
DETAIL 76
BANK STABILIZATION
(Not to Scale)



Type of Liner = 10 TON, CL I Rip-Rap
Geotextile = 25 sy

FROM -L- STA. 171+94 LT TO -L- STA. 172+05 LT

DETAIL 101
SPECIAL LATERAL V-DITCH
(Not to Scale)



Min. D = 1 Ft.

FROM -L- STA. 175+80 RT TO -L- STA. 177+30 RT

170+00

175+00

NWS=0.2'+/- FOR EXISTING STREAM BASED ON VEGETATION LINE. (STREAM WAS DRY DURING FIELD VISITS.)

SITE 10

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE

2' LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL 41
EST 5 TONS CLASS B RIP RAP
EST 14 SY GEOTEXTILE

20LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH

CHANNEL RELOCATION W/CLASS B RIP RAP SEE DETAIL 75

BANK STABILIZATION SEE DETAIL 76
EST 3 TONS CLASS B RIP RAP
EST 11 SY GEOTEXTILE

SPECIAL LATERAL V-DITCH W/ CLASS B RIP RAP SEE DETAIL 77

TIE TO EXISTING SWALE

MATCHLINE -L- STA. 166+00.00 SEE SHEET 15

MATCHLINE -L- STA. 178+00.00 SEE SHEET 17

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE

30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD / BENCH APPROX 10 TON CLASS I RIP RAP APPROX 13 SY GEOTEXTILE

SITE 10

FILL EXISTING CHANNEL

REMOVE

ADJUST CB

5' MONOLITHIC ISLAND

SPECIAL LATERAL GRASS DITCH SEE DETAIL 101

GRASS SWALE DATA
DA = 0.44 acres
SLOPE = 0.016 ft/ft
L REQ = 44 ft
L PRO. = 100 ft
Q2 = 1.1 cfs
V2 = 1.70 fps
D2 = 0.37 ft
Q10 = 1.5 cfs
V10 = 1.82 fps
D10 = 0.41 ft
-L- STA. 169+50 RT (TYP)

GRASS SWALE DATA
DA = 0.19 acres
SLOPE = 0.039 ft/ft
L REQ = 19 ft
L PRO. = 150 ft
Q2 = 0.4 cfs
V2 = 1.53 fps
D2 = 0.23 ft
Q10 = 0.5 cfs
V10 = 1.61 fps
D10 = 0.25 ft
-L- STA. 175+80 RT

GRASS SWALE DATA
DA = 0.57 acres
SLOPE = 0.040 ft/ft
L REQ = 57 ft
L PRO. = 330 ft
Q2 = 1.6 cfs
V2 = 2.13 fps
D2 = 0.24 ft
Q10 = 2.0 cfs
V10 = 2.29 fps
D10 = 0.28 ft
-L- STA. 177+70 RT

INLET CHANNEL FACING DOWNSTREAM (NTS)

OUTLET CHANNEL FACING DOWNSTREAM (NTS)

FLOOD BENCH NOTE:
FOR CUT CONDITION, USE CLASS I RIP RAP FLOOD BENCH BORDER WITH NATURAL GROUND COVER WITH COIR FIBER MAT INSIDE BORDER. IN FILL CONDITION, USE CLASS 1 RIP RAP FILL THROUGHOUT WITH NATIVE BED MATERIAL FILLING THE VOIDS ON TOP.

CHANNEL EXCAVATION:
=27 CY UPSTREAM
=12 CY DOWNSTREAM

50 25 0 50 100

8/3/2017
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BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
*SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	54" Welded Steel Trenchless	-L- 26+62 - 29+24	X						12849	7731	20580		
4	Bridge Construction	-L- 62+24 - 65+82	X	X		15609	9399	25008		361	361		
7	84" Welded Steel Trenchless	-L- 113+29 - 114+99	X		X				24293	16515	40807		
8	72" Welded Steel Trenchless	-L- 134+18 - 137+36	X		X				18071	9040	27110		
10	2@12'x12' RCBC	-L- 166+20- 172+25	X		X				34053	18207	52260		
TOTAL:						15609	9399	25008	89266	51852	141118		

*Buffer sites are not numbered sequentially. However, they correspond to the respective wetland / stream site number.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 34552.1.FR3
R-3825B NC-42

2/27/2017
SHEET 8 OF 9

Rev. May 2006

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS	
			ZONE 1 (ft^2)	ZONE 2 (ft^2)
8	134+18 - 137+36		1106	820
TOTAL:			1106	820

*Buffer sites are not numbered sequentially. However, they correspond to the respective wetland / stream site number.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 34552.1.FR3
R-3825B NC-42

2/27/2017
SHEET 9 OF 9

Rev. Jan 2009

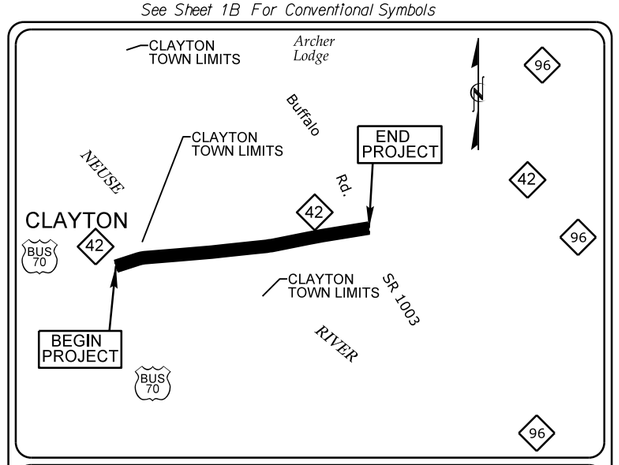
9/09/99

REVISIONS

TIP PROJECT: R-3825B

CONTRACT:

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

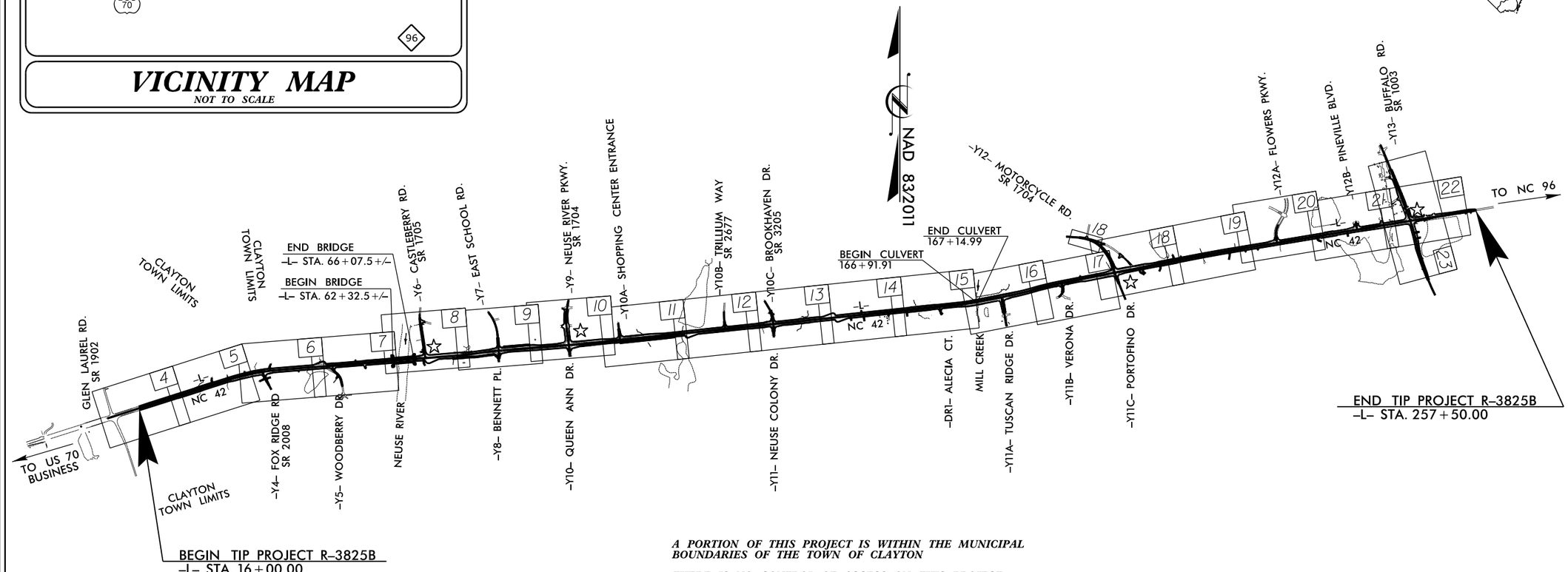
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	3
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34552.1.FR3	STP-0042(58)	P.E.	
34552.2.4	STP-0042(58)	R/W & UTL.	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

ENVIRONMENTAL PERMIT PLANS





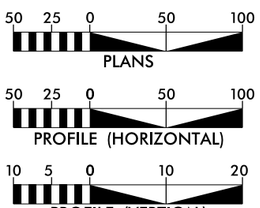
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL
REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R-3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R-3825B = 4.574 MILES

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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WETLAND AND SURFACE WATER IMPACTS
SHEET 2 OF 3

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

NAD 83/2011

ROBERT B HUNT AND WIFE MARGARET H HUNT
DB 4180 PG 418
DB 848 PG 330
PB 76 PG 150

FALCON HAMLET LLC
DB 4484 PG 872
PB 68 PG 242

25+00 30+00 35+00

S 28°51'35" E 222.53'

50' ACCESS ESMT PB 76 PG 150

S 4° 01' 04.8" W

WOODS

EXISTING R/W

RIP RAP

MTL

NC 42 24.8' BST

-EL-

30" CMP

8" PL

PROP U/G GAS LINE

PROP U/G TEL CABLES

EX AERIAL UTILITY EASEMENT DB 480 PG 424

N 72° 17' 35.0" E

L=132.18'
R=69.88'

54' TYP

RWM

100 PR

48 STR FO

12" DIP

72 STR FO

8" PL

24" W

PROP U/G TEL & FO CABLES

PROP O/H POW & CATV LINES

PROP U/G TEL & FO CABLES

Utility Site 1

Sta 27+14.59
Off 88.17 RT
Proposed Power Pole
located in Wetland

PINES AT GLEN LAUREL, LLC
DB 4835 PG 313
DB 4180 PG 424
PB 83 PG 369

THE SHOPPES AT GLEN LAUREL
DB 4835 PG 316
PB 83 PG 369

L=368.57'
R=35.09'

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

REVISIONS

1 - PARCEL INFORMATION UPDATED ON PARCELS 3, 4, AND 5 (10/02/2017) TLH
2 - NEW PARCEL 2 ADDED ON SOUTHSIDE OF ROAD ALONG WITH NEW PROPERTY LINE (10/02/2017) TLH

8/17/99

17-OCT-2017 08:59
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8/17/99

WETLAND AND SURFACE WATER IMPACTS
SHEET 3 OF 4

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- F F — DENOTES FILL IN WETLAND
- S S — DENOTES IMPACTS IN SURFACE WATER
- TS FS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- HC HC — DENOTES HAND CLEARING

NAD 83/2011

UTILITY SITE 2

Sta 61+35.64
Off 130.18 LT

Sta 59+52.27
Off 160.20 LT

50+00 55+00 60+00

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6

MATCHLINE -L- STA. 62+00.00 SEE SHEET 8

RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128

TODD NARRON
DB 3949 PG 977
PB 76 PG 52

KLAUS J KALLAS AND
WIFE MARY H KALLAS
DB 4397 PG 137
PB 76 PG 52

WALTER S DAVIS AND
WIFE SYLVIA DAVIS
DB 948 PG 190
PB 83 PG 50
PB 34 PG 93

REBECCA D FLOWERS
DB 870 PG 126
PB 25 PG 145

DAVID H. TURLINGTON
AND WIFE,
NANCY T. TURLINGTON

TOP=161.28'
INV IN=151.13'
INV OUT=150.98'

TOP=161.20'
INV IN=149.98'
INV OUT=149.79'

TOP=158.08'
INV IN=148.98'
INV OUT=148.87'

S 56°18'25" E
1347.67'

N 62°51'29" E
192.28'

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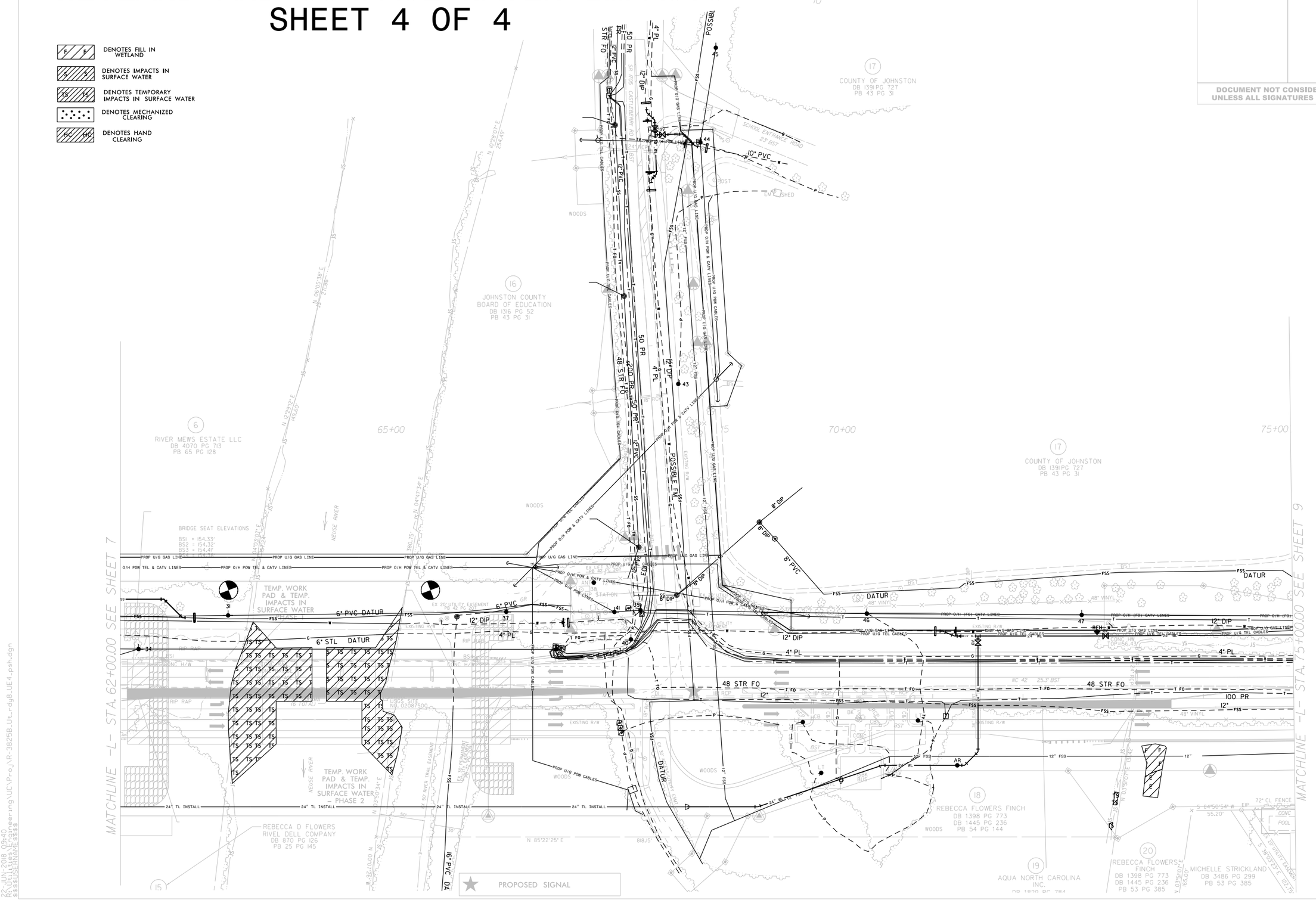
8/17/99

WETLAND AND SURFACE WATER IMPACTS
SHEET 4 OF 4

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- F / F — DENOTES FILL IN WETLAND
- S / S — DENOTES IMPACTS IN SURFACE WATER
- TS / TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- HC / HC — DENOTES HAND CLEARING


MATCHLINE -L- STA. 62+00.00 SEE SHEET 7
MATCHLINE -L- STA. 75+00.00 SEE SHEET 9
65+00
70+00
75+00
SR 1705 CASTLEBERRY RD
SR 1241
EXISTING R/W
WOODS
BRIDGE SEAT ELEVATIONS
BS1 = 154.33'
BS2 = 154.32'
BS3 = 154.41'
BS4 = 154.38'
NEUSE RIVER
RIP RAP
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER — PHASE 2
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER
PROPOSED SIGNAL
POSSIBLE F.M.
6" PVC DATUR
6" STL DATUR
12" DIP
4" PL
48 STR FO
100 PR
8" DIP
8" PVC
10" PVC
16" PVC DA
24" TL INSTALL
PROP U/G GAS LINE
PROP O/H POW & CATV LINES
PROP U/G POW CABLES
PROP U/G TEL CABLES
PROP U/G TEL CABLE BS
PROP U/G POW & CATV LINES
PROP U/G TEL CABLES
PROP U/G GAS LINE
PROP O/H (FO) CATV LINES
PROP U/G GAS LINE
PROP U/G TEL CABLES
PROP O/H (FO) CATV LINES
PROP U/G GAS LINE
PROP U/G TEL CABLES
PROP U/G POW CABLES
PROP U/G TEL LINES
PROP U/G POW & CATV LINES
PROP U/G POW CABLES
PROP U/G TEL CABLES
PROP U/G POW & CATV LINES
PROP U/G POW CABLES
PROP U/G GAS LINE
PROP U/G TEL CABLES
PROP U/G POW CABLES
PROP U/G TEL LIN

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	Sta 27+14.59 RT	Utility Pole	<0.01									
2	Sta 59+52.27 - Sta 61+35.64	Maintained Utility Easement					0.12					
TOTALS*:			<0.01 ac				0.12					

*Rounded totals are sum of actual impacts

NOTES:
1 Power Pole = 4sqft of fill.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
August 29, 2017
Johnston County
R-3825B
46047.1.1
SHEET 1 OF 1

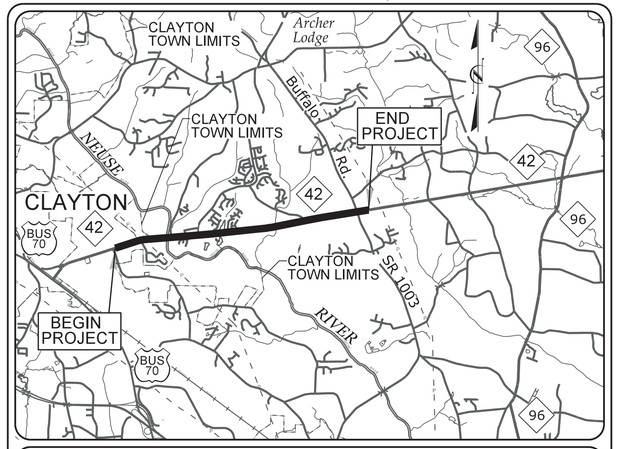
Revised 2013 10 24

9/09/99

TIP PROJECT: R–3825B

CONTRACT: C204108

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–3825B	1	

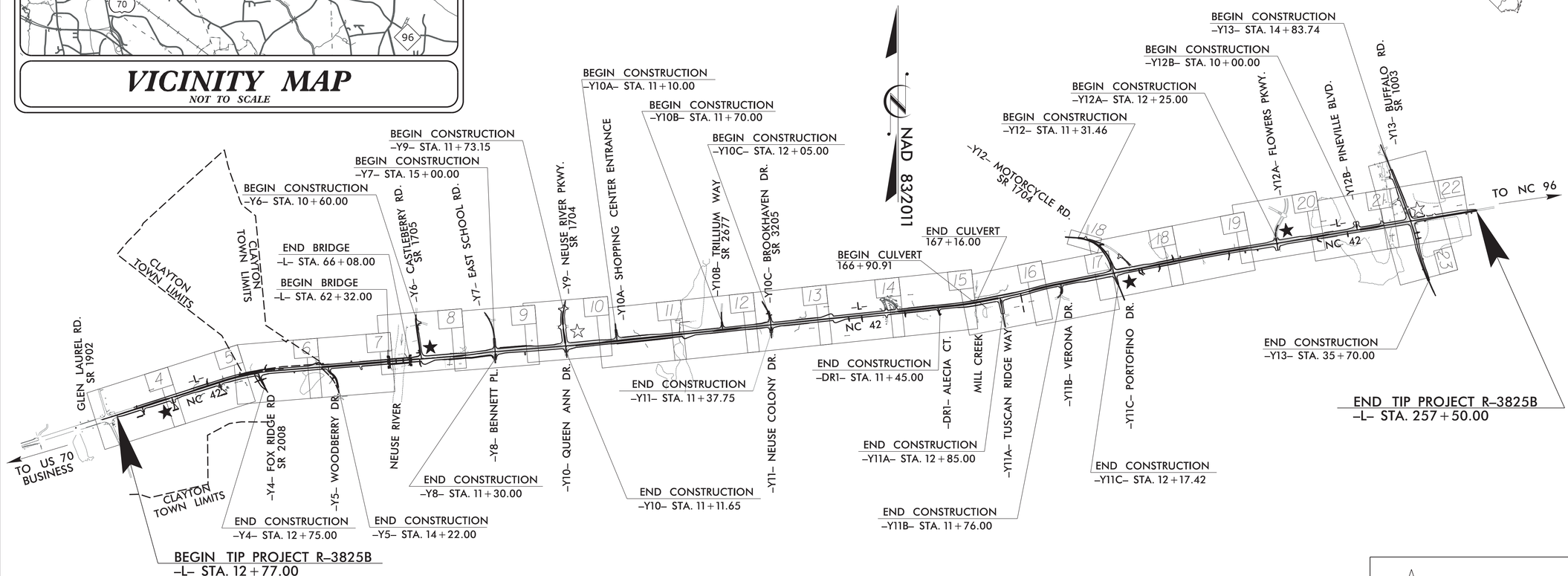
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34552.1.FR3	STP–0042(58)	P.E.
34552.2.4		R/W
34552.2.5		UTL.
34552.3.5		CONST.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: NC 42 FROM EAST OF SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD). WIDEN TO MULTI–LANES

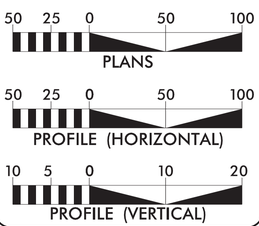
TYPE OF WORK: DRAINAGE, PAVING, GRADING, STRUCTURES & SIGNALS





THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 21,200
ADT 2040 = 37,400
K = 10%
D = 55%
T = 5% *
V = 60 MPH
* (TTST 1% + DUAL 4%)
FUNC. CLASS = RURAL MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–3825B = 4.564 MILES
LENGTH STRUCTURE TIP PROJECT R–3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R–3825B = 4.635 MILES

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE • C-2243

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

ED EDENS, P.E.
PROJECT ENGINEER

KEVIN VAN METRE, P.E.
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:
ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/21/2018
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jvanmetre

8/17/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
R–3825B	1A–1

ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

1	TITLE SHEET
1A–1	INDEX OF SHEETS
1A–2	GENERAL NOTES AND LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
1C–1 THROUGH 1C–2	SURVEY CONTROL SHEETS
2A–1 THROUGH 2A–8	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B–1 THROUGH 2B–4	TEMPORARY PAVEMENT DETAIL
2B–5 THROUGH 2B–7	CONCRETE ISLAND DETAILS
2C–1	2′–9″ CONCRETE CURB AND GUTTER
2C–2	1′–6″ TO 2′–9″ CURB AND GUTTER TRANSITION SECTION
2C–3	GUARDRAIL STRUCTURE ANCHOR UNITS
2C–4	GUARDRAIL INSTALLATION
2C–5	STRUCTURE 723: CONCRETE MEDIAN DROP INLET TYPE 'A'
2C–6	STRUCTURE 908: TRAFFIC BEARING GRATED INLET
2C–7	STRUCTURE 1339 & 1340: SPECIAL JUNCTION BOX WITH SLAB LID
2C–8	TEMPORARY 1″ STEEL COVER OVER DRAINAGE STRUCTURE
2C–9	CONCRETE ENDWALL FOR TRIPLE AND QUADRUPLE PIPE CULVERTS
2C–10	PIPE COLLAR DETAIL
2C–11	2GI IN CONCRETE ISLAND PLACEMENT DETAIL
2C–12	COAL COMBUSTION PRODUCT PLACEMENT
2C–13	EXTRA DEPTH 2 GI
2C–14	SPECIAL JUNCTION BOX W/SLAB LID
2G–1	ROCK EMBANKMENTS DETAILS
2G–2	GEOTEXTILE FOR EMBANKMENT STABILIZATION DETAILS
2N–1 THROUGH 2N–3	NOISE WALL ENVELOPES
3B–1 THROUGH 3B–2	ROADWAY SUMMARIES (EARTHWORK, GUARDRAIL, ETC.)
3D–1 THROUGH 3D–19	DRAINAGE SUMMARIES
3G–1	GEOTECHNICAL SUMMARIES
3P–1	PARCEL INDEX SHEETS
4 THROUGH 23	PLAN SHEETS
24 THROUGH 41	PROFILE SHEETS
TMP–1 THROUGH TMP–82	TRANSPORTATION MANAGMENT PLANS
PMP–1 THROUGH PMP–21	PAVEMENT MARKING PLANS
EC–1 THROUGH EC–43	EROSION CONTROL PLANS
RF–1	REFORESTATION PLANS
SIGN–1 THROUGH SIGN–13	SIGNING PLANS
SIG–1 THROUGH SIG–18.4	SIGNAL PLANS
SIG–M1 THROUGH SIG–M8	METAL POLE STANDARD DRAWINGS
SIG–SP1 THROUGH SIG–SP2	STANDARD NOTES FOR METAL STRAIN POLES
SIG–SP5	STANDARD DRAWINGS FOR ALL METAL POLES ZONE 3
SIG–SP10	WIND ZONE 3 LOAD CASE AND DESIGN DETAILS
SCP–1	ITS LEGEND
SCP–2 THROUGH SCP–20	COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS
SCP–21 THROUGH SPC–26	SPLICE DETAILS
X–1A THROUGH X–1D	UTILITY CONSTRUCTION PLANS
UO–X THROUGH UO–X	UTILITY BY OTHERS PLANS
X–0	CROSS–SECTION INDEX
X–1A THROUGH X–1D	CROSS–SECTION SUMMARY
X–2 THROUGH X–131	CROSS–SECTIONS

6/20/2018
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R–3825B	1A–2

ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01–16–2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE–IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND
SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS–SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY

AT&T TRANSMISSION, CONTERRA, CENTURYLINK, CHARTER,

PIEDMONT NATURAL GAS, AQUA OF NC, JOHNSTON COUNTY,

AND TOWN OF CLAYTON

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT–OF–WAY MARKERS:

ALL RIGHT–OF–WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.
CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 AND/OR 848.06.
AND/OR DETAILS IN THE PLANS

2018 ROADWAY ENGLISH STANDARD DRAWINGS
EFF. 01–16–2018
REV.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE

DIVISION 2 – EARTHWORK
200.03 Method of Clearing – Method III
225.02 Guide for Grading Subgrade – Secondary and Local
225.04 Method of Obtaining Superelevation – Two Lane Pavement
225.05 Method of Obtaining Superelevation – Divided Highways
225.06 Method of Grading Sight Distance at Intersections
240.01 Guide for Berm Ditch Construction
275.01 Rock Plating

DIVISION 3 – PIPE CULVERTS
300.01 Method of Pipe Installation
310.02 Parallel Pipe End Section – Precast Concrete Section for 15" to 24" Pipe
310.03 Cross Pipe End Section – Precast Concrete Section for 18" to 30" Pipe
310.10 Driveway Pipe Construction

DIVISION 4 – MAJOR STRUCTURES
422.03 Reinforced Bridge Approach Fills – Type A Alternate Approach Fill for Integral Abutment

DIVISION 5 – SUBGRADE, BASES AND SHOULDERS
560.01 Method of Shoulder Construction – High Side of Superelevated Curve – Method I

DIVISION 6 – ASPHALT BASES AND PAVEMENTS
654.01 Pavement Repairs

DIVISION 8 – INCIDENTALS
806.01 Concrete Right–of–Way Marker
806.02 Granite Right–of–Way Marker
806.03 Concrete Contol of Access Marker
815.02 Subsurface Drain
838.01 Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.11 Brick Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.21 Reinforced Concrete Endwall – for Single 54" Pipe 90 Skew
838.33 Reinforced Concrete Endwall – for Single 66" Pipe 90 Skew
838.39 Reinforced Concrete Endwall – for Single 72" Pipe 90 Skew
838.45 Notes for Reinforced Concrete Endwall – Std. Dwg 838.21 thru 838.40
838.51 Reinforced Brick Endwall – for Single 54" Pipe 90 Skew
838.63 Reinforced Brick Endwall – for Single 66" Pipe 90 Skew
838.69 Reinforced Brick Endwall – for Single 72" Pipe 90 Skew
838.75 Notes for Reinforced Brick Endwall – Std. Dwg 838.51 thru 838.70
838.80 Precast Endwalls – 12" thru 72" Pipe 90 Skew
840.00 Concrete Base Pad for Drainage Structures
840.01 Brick Catch Basin – 12" thru 54" Pipe
840.02 Concrete Catch Basin – 12" thru 54" Pipe
840.03 Frame, Grates and Hood – for Use on Standard Catch Basin
840.14 Concrete Drop Inlet – 12" thru 30" Pipe
840.15 Brick Drop Inlet – 12" thru 30" Pipe
840.16 Drop Inlet Frame and Grates – for use with Std. Dwg 840.14 and 840.15
840.17 Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.18 Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.19 Concrete Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.24 Frames and Narrow Slot Sag Grates
840.25 Anchorage for Frames – Brick or Concrete or Precast
840.26 Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.27 Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.28 Brick Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.29 Frames and Narrow Slot Flat Grates
840.31 Concrete Junction Box – 12" thru 66" Pipe
840.32 Brick Junction Box – 12" thru 66" Pipe
840.34 Traffic Bearing Junction Box – for Use with Pipes 42" and Under
840.45 Precast Drainage Structure
840.46 Traffic Bearing Precast Drainage Structure
840.54 Manhole Frame and Cover
840.66 Drainage Structure Steps
840.72 Pipe Collar
846.01 Concrete Curb, Gutter and Curb & Gutter
846.02 Drop Inlet Installation in Expressway Gutter
846.04 Drop Inlet Installation in Shoulder Berm Gutter
848.01 Concrete Sidewalk
848.02 Driveway Turnout – Radius Type
848.04 Street Turnout
848.05 Curb Ramp – Proposed Curb & Gutter
850.10 Guide for Berm Drainage Outlet – 15" and 18" Pipe
850.11 Guide for Berm Drainage Outlet – 24" and 30" Pipe
852.01 Concrete Islands
852.04 Method for Placement of Drop Inlets in Grassed Median – Using 1'–6" Curb and Gutter
852.06 Method for Placement of Drop Inlets in Concrete Islands
852.10 Median Construction – with Curb and Gutter
857.01 Precast Reinforced Concrete Barrier – 41" Single Faced
862.01 Guardrail Placement
862.02 Guardrail Installation (Special Detail for Sheet 6 of 8)
862.04 Anchoring End of Guardrail – B–77 and B–83 Anchor Units
876.01 Rip Rap in Channels
876.02 Guide for Rip Rap at Pipe Outlets
876.04 Drainage Ditches with Class 'B' Rip Rap

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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	1B

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 Easment 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:

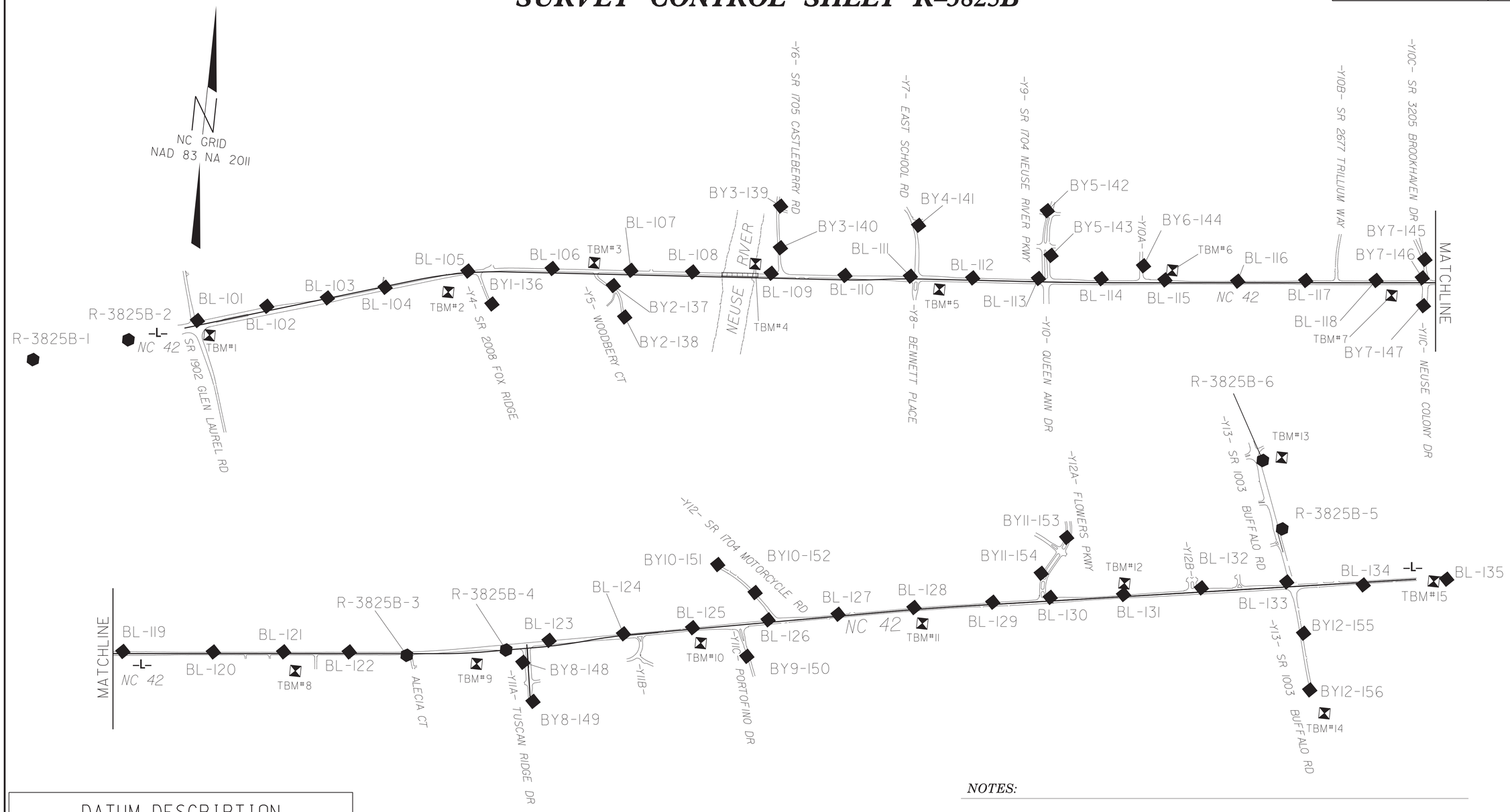
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

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.

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	1C-1
Location and Surveys	

SURVEY CONTROL SHEET R-3825B



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R3825B-3"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 691930.052(ft) EASTING: 2186093.940(ft)
ELEVATION: 327.29(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999889085
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R3825B-3" TO -L- STATION 10+00 IS
S82°24'03.79"W 14938.3489
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   R3825B_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⬢ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	1C-2
Location and Surveys	

SURVEY CONTROL SHEET R-3825B

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	GPS1	689500.1000	2169863.0260	327.29	OUTSIDE PROJECT LIMITS	
2	GPS2	689785.7150	2170759.3560	320.81	OUTSIDE PROJECT LIMITS	
101	BL-101	690040.7260	2171403.1750	314.64	11+37.07	46.61 LT
102	BL-102	690247.1860	2172055.5410	297.78	18+21.32	44.88 LT
103	BL-103	690388.5300	2172629.5460	264.70	24+11.12	4.94 LT
104	BL-104	690548.7860	2173173.8700	254.35	29+78.40	7.95 RT
105	BL-105	690788.0110	2173953.0260	243.45	37+92.67	16.78 LT
106	BL-106	690897.5860	2174760.6640	206.18	46+05.47	43.42 LT
107	BL-107	690959.0570	2175518.2760	172.48	53+65.57	43.62 LT
108	BL-108	691005.6880	2176113.1710	158.32	59+62.29	42.15 LT
109	BL-109	691072.1490	2176869.5910	157.47	67+21.60	47.42 LT
110	BL-110	691125.6290	2177580.7140	163.86	74+34.93	43.34 LT
111	BL-111	691183.8610	2178210.5960	177.30	80+68.37	25.37 LT
112	BL-112	691230.4470	2178810.8910	193.25	86+69.94	22.41 LT
113	BL-113	691291.4100	2179443.5340	216.41	93+05.52	32.33 LT
114	BL-114	691351.9720	2180046.7440	210.82	99+12.28	38.05 LT
115	BL-115	691405.0350	2180660.7050	179.19	105+28.66	27.56 LT
116	BL-116	691465.5830	2181360.7540	169.33	112+31.21	14.83 LT
117	BL-117	691540.8520	2182013.5020	183.18	118+88.25	21.66 LT
118	BL-118	691612.2170	2182689.9280	202.45	125+68.43	22.15 LT
119	BL-119	691681.4400	2183361.4830	189.10	132+43.54	21.01 LT
120	BL-120	691767.6600	2184231.1810	196.96	141+17.49	16.13 LT
121	BL-121	691839.4430	2184906.3580	216.09	147+96.47	17.17 LT
122	BL-122	691904.8720	2185537.0560	207.68	154+30.55	16.51 LT
3	GPS3	691930.0520	2186093.9400	191.25	159+87.03	16.48 RT
4	GPS4	692081.3550	2187042.9240	171.75	169+47.88	0.80 LT
123	BL-123	692216.3980	2187445.7390	190.31	173+70.29	56.22 LT
124	BL-124	692354.8260	2188154.4770	228.88	180+92.86	15.50 LT
125	BL-125	692482.8800	2188811.9210	258.01	187+62.37	14.03 LT
126	BL-126	692634.8780	2189530.1940	271.77	194+96.46	25.31 LT
127	BL-127	692758.6470	2190197.2180	281.93	201+74.84	18.72 LT
128	BL-128	692899.8770	2190919.6870	297.21	209+10.78	19.90 LT
129	BL-129	693030.1340	2191671.5260	309.07	216+73.45	21.56 LT
130	BL-130	693134.5270	2192218.7280	304.02	222+30.35	35.29 LT
131	BL-131	693235.7000	2192920.4030	291.73	229+39.13	20.64 LT
132	BL-132	693377.7450	2193661.9170	286.08	236+93.88	39.82 LT
133	BL-133	693520.8150	2194476.2410	288.98	245+20.64	48.13 LT
134	BL-134	693569.2280	2195214.2440	290.23	252+56.65	24.50 RT
135	BL-135	693708.4770	2196010.6040	291.07	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
105	BL-105	690788.0110	2173953.0260	243.45	OUTSIDE PROJECT LIMITS	
136	BY1-136	690495.9560	2174217.0920	251.19	13+33.33	14.12 LT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
106	BL-106	690897.5860	2174760.6640	206.18	OUTSIDE PROJECT LIMITS	
137	BY2-137	690795.0410	2175364.9530	199.17	11+28.37	18.57 LT
138	BY2-138	690504.5480	2175505.8200	213.09	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
139	BY3-139	691727.1820	2176892.9890	144.91	10+92.03	27.81 LT
140	BY3-140	691326.4570	2176932.5150	151.19	14+95.87	13.85 LT
109	BL-109	691072.1490	2176869.5910	157.47	17+37.93	86.35 RT

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
141	BY4-141	691681.3470	2178237.5670	187.54	12+27.01	44.86 LT
111	BL-111	691183.8610	2178210.5960	177.30	17+11.61	58.53 RT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
142	BY5-142	691951.2520	2179460.0410	237.45	11+28.00	36.57 RT
143	BY5-143	691525.5570	2179541.2330	225.93	15+56.95	50.62 LT
113	BL-113	691291.4100	2179443.5340	216.41	17+76.88	75.88 RT

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y10A STATION	OFFSET
144	BY6-144	691519.1820	2180440.3070	194.72	11+50.35	20.78 LT
115	BL-115	691405.0350	2180660.7050	179.19	12+83.94	228.19 LT

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y10C STATION	OFFSET
145	BY7-145	691863.4210	2183137.7240	205.39	12+29.82	14.58 LT
146	BY7-146	691683.5610	2183131.4560	195.99	14+06.11	32.21 RT
147	BY7-147	691417.5210	2183170.3770	201.26	OUTSIDE PROJECT LIMITS	

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	Y11A STATION	OFFSET
123	BL-123	692216.3980	2187445.7390	190.31	OUTSIDE PROJECT LIMITS	
148	BY8-148	691979.9040	2187216.2740	181.31	11+32.56	49.31 RT
149	BY8-149	691613.9350	2187352.9560	170.48	15+17.88	21.84 LT

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	Y11C STATION	OFFSET
126	BL-126	692634.8780	2189530.1940	271.77	10+29.06	281.80 LT
150	BY9-150	692262.3680	2189362.9910	281.47	13+11.39	13.18 RT

BY10

POINT	DESC.	NORTH	EAST	ELEVATION	Y12 STATION	OFFSET
151	BY10-151	693115.2170	2188990.4540	258.57	14+88.02	58.54 LT
152	BY10-152	692883.5810	2189377.7500	269.87	18+50.07	207.51 LT
126	BL-126	692634.8780	2189530.1940	271.77	20+74.15	282.16 LT

BY11

POINT	DESC.	NORTH	EAST	ELEVATION	Y12A STATION	OFFSET
153	BY11-153	693726.7240	2192316.7880	313.07	OUTSIDE PROJECT LIMITS	
154	BY11-154	693356.6020	2192108.1060	312.34	10+73.53	44.28 RT
130	BL-130	693134.5270	2192218.7280	304.02	12+96.60	69.38 LT

BY12

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
6	GPS6	694664.0620	2194124.0370	309.03	12+11.68	47.29 LT
5	GPS5	694025.7130	2194379.2830	301.81	18+98.07	51.09 LT
133	BL-133	693520.8150	2194476.2410	288.98	24+04.79	40.70 RT
155	BY12-155	693044.7010	2194689.7820	289.09	29+22.64	36.88 LT
156	BY12-156	692506.6980	2194805.8470	283.83	34+72.98	15.68 RT

BENCHMARK DATA

TBM•1 ELEVATION = 320.03
N 689911 E 2171535
L STATION 12+23.00 117 RIGHT
RR SPIKE IN 24" PINE

TBM•2 ELEVATION = 262.50
N 690566 E 2173786
L STATION 35+80.00 167 RIGHT
RR SPIKE IN 14" GUM

TBM•3 ELEVATION = 177.87
N 690995 E 2175162
L STATION 50+11.00 109 LEFT
RR SPIKE IN 18" OAK

TBM•4 ELEVATION = 140.97
N 691147 E 2176708
L STATION 65+67.00 135 LEFT
RR SPIKE IN 16" OAK

TBM•5 ELEVATION = 180.56
N 691086 E 2178502
L STATION 83+50.00 97 RIGHT
RR SPIKE IN 12" OAK

TBM•6 ELEVATION = 171.66
N 691505 E 2180722
L STATION 106+00.00 120 LEFT
RR SPIKE IN 20" OAK

TBM•7 ELEVATION = 196.61
N 691484 E 2182854
L STATION 127+18.00 123 RIGHT
RR SPIKE IN 15" OAK

TBM•8 ELEVATION = 214.96
N 691667 E 2185039
L STATION 149+10.00 168 RIGHT
RR SPIKE IN 18" PINE

TBM•9 ELEVATION = 175.60
N 691919 E 2186774
L STATION 166+56.00 109 RIGHT
RR SPIKE IN 15" PINE

TBM•10 ELEVATION = 258.12
N 692343 E 2188907
L STATION 188+29.00 141 RIGHT
RR SPIKE IN 15" PINE

TBM•11 ELEVATION = 316.27
N 692755 E 2191016
L STATION 209+80.00 140 RIGHT
RR SPIKE IN 12" OAK

TBM•12 ELEVATION = 296.28
N 693343 E 2192918
L STATION 229+54.00 127 LEFT
RR SPIKE IN 14" GUM

TBM•13 ELEVATION = 304.50
N 694712 E 2194304
L STATION 245+45.00 1252 LEFT
RR SPIKE IN 24" PINE

TBM•14 ELEVATION = 280.98
N 692297 E 2194971
L STATION 248+09.00 1240 RIGHT
RR SPIKE IN 14" PINE

TBM•15 ELEVATION = 293.19
N 693674 E 2195888
OUTSIDE PROJECT LIMITS
L STATION 10+00.00
N 81°24'6.78" E DIST 24881.33
RR SPIKE IN 22" PINE

DATUM DESCRIPTION

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NOTES:

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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

6/2/2018
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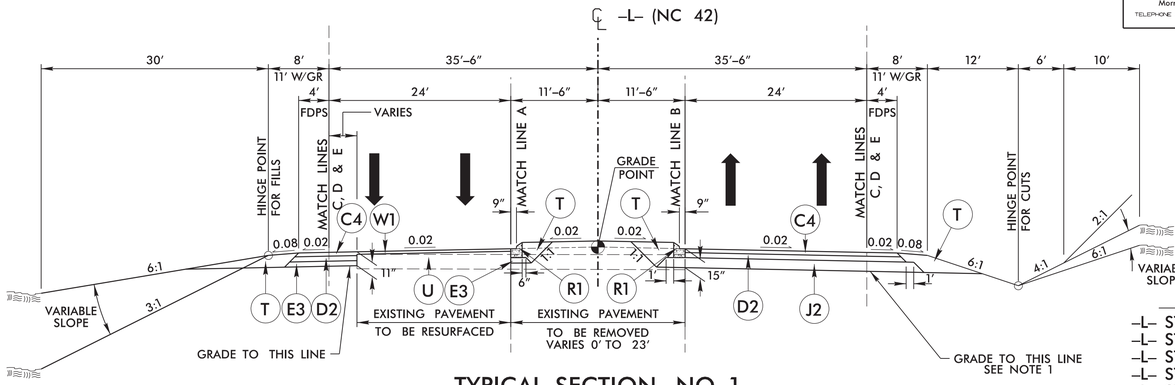
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REVISIONS

PAVEMENT SCHEDULE
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	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.
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 TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E4	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E5	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 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE.
J2	PROP. 8" AGGREGATE BASE COURSE.
K	BASE TO BE TREATED WITH LIME (METHOD-SLURRY) TO A DEPTH OF 8", AT A RATE OF 20 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER.
N	GEOTEXTILE FOR PAVEMENT STABILIZATION
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-6" CONCRETE CURB AND GUTTER.
R3	2'-9" CONCRETE CURB AND GUTTER. SEE DETAIL, THIS SHEET.
R4	EXPRESSWAY GUTTER.
R5	SHOULDER BERM GUTTER.
R6	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO.1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 2)

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



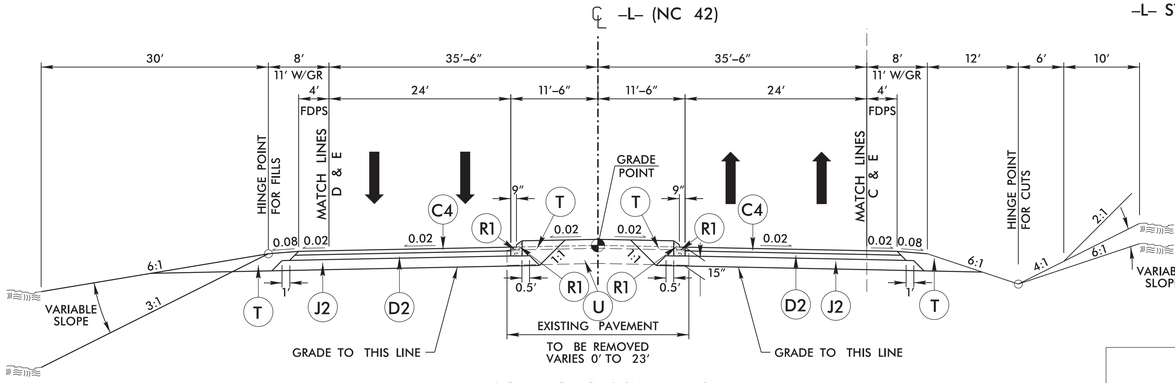
TYPICAL SECTION NO. 1

NOTE: PAVE TO FACE OF GUARDRAIL

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATION:

–L– STA. 12+77.00 TO STA. 16+50.00 MILL & RESURFACE
–L– STA. 16+50.00 TO STA. 23+50.50 RESURF. LT & RT
–L– STA. 26+00.50 TO STA. 38+87.76 RESURF. LT & RT
–L– STA. 50+30.17 TO STA. 62+07.50 RESURF. LT
–L– STA. 73+64.22 TO STA. 76.32.36 RESURF. LT
–L– STA. 95+55.70 TO STA. 107+83.69 RESURF. LT & RT
–L– STA. 120+10.11 TO STA. 125+25.01 RESURF. LT & RT
–L– STA. 153+22.00 TO STA. 171+16.31 RESURF. LT & RT
–L– STA. 176+62.24 TO STA. 189+58.30 RESURF. LT & RT
–L– STA. 194+80.16 TO STA. 199+60.16 RESURF. LT & RT
–L– STA. 214+42.08 TO STA. 216+29.03 RESURF. LT & RT

NOTE 1: SEE TYPICAL SECTION NO. 3A & 3B FOR PAVEMENT STABILIZATION LOCATIONS.

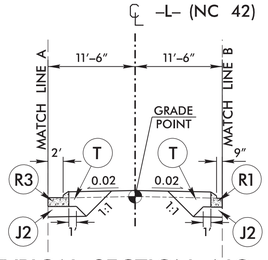


TYPICAL SECTION NO. 2

NOTE: PAVE TO FACE OF GUARDRAIL.

USE TYPICAL SECTION NO. 2
AT THE FOLLOWING LOCATION:

–L– STA. 107+87.06 TO STA. 114+65.11
–L– STA. 199+60.16 TO STA. 214+42.08



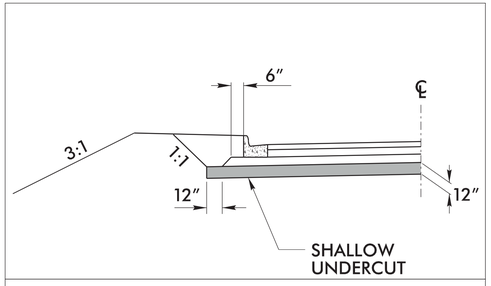
TYPICAL SECTION NO. 2A

USE TYPICAL SECTION NO. 2A IN
CONJUNCTION WITH TYPICAL SECTION
NO. 1 AT THE FOLLOWING LOCATIONS:

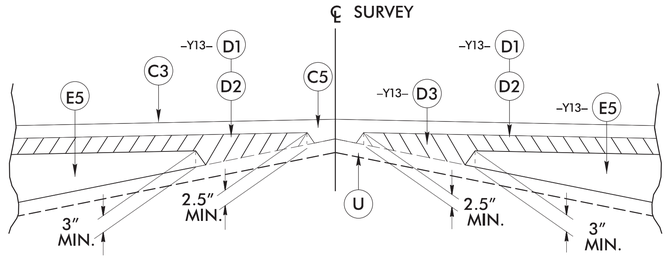
–L– STA. 32+20.26 TO STA. 38+37.76 LT*
–L– STA. 74+14.22 TO STA. 75+63.04 RT*
–L– STA. 162+90.63 TO STA. 167+94.19 RT*
–L– STA. 177+60.00 TO STA. 182+97.18 LT*

*50′ TRANSITION BETWEEN 1′–6″ CURB AND 2′–9″ CURB & GUTTER

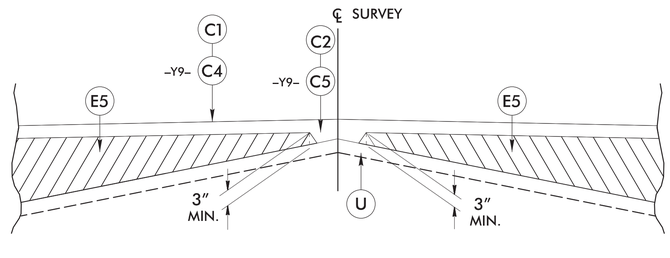
–L– STA. 31+70.26 LT
–L– STA. 38+37.76 LT
–L– STA. 73+64.22 RT
–L– STA. 75+63.04 RT
–L– STA. 162+40.63 RT
–L– STA. 167+94.19 RT
–L– STA. 177+10.00 LT
–L– STA. 182+97.18 LT



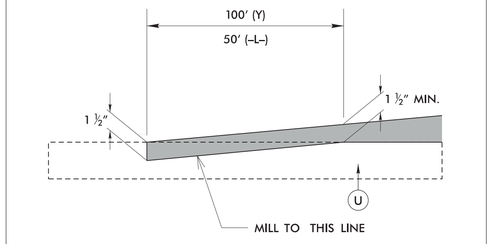
DETAIL SHOWING SHALLOW UNDERCUT



DETAIL SHOWING METHOD OF WEDGING NO. 1



DETAIL SHOWING METHOD OF WEDGING NO. 2



DETAIL SHOWING MILLED PAVEMENT TIE–IN

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

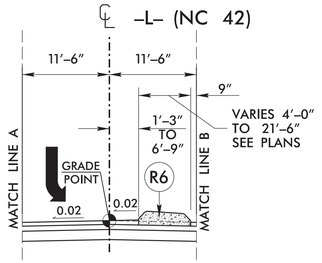
6/20/2018
R:\Roadway\Proj\R3825b_rdy_typ.dgn
kaysheppar

8/17/99

REVISIONS

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5C
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4½" B25.0C
E2	5" B25.0C
E3	4" B25.0C
E4	5½" B25.0C
E5	VAR. B25.0C
J1	6" ABC
J2	8" ABC
K	8" SUB. STABILIZATION
N	GEOTEXTILE
R1	1'-6" C & G
R2	2'-6" C & G
R3	2'-9" C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
R6	5" CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2

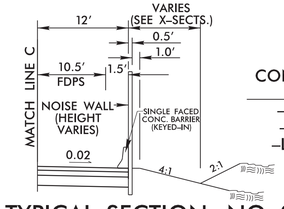
NOTE: PAVEMENT EDGE SLOPES ARE
1:1 UNLESS SHOWN OTHERWISE
TRENCH SLOPES ARE
1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 2B

USE TYPICAL SECTION NO. 2B IN CONJUNCTION WITH TYPICAL SECTION NO. 1, & 2 AT THE FOLLOWING LOCATIONS:

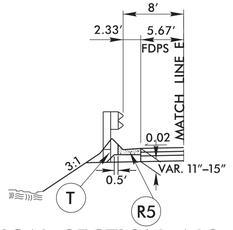
–L– STA. 23+50.50 TO STA. 26+00.50
–L– STA. 38+87.76 TO STA. 50+30.17
–L– STA. 62+07.50 TO STA. 62+32.00
–L– STA. 66+08.00 TO STA. 73+64.22
–L– STA. 76+32.36 TO STA. 95+55.70
–L– STA. 114+65.11 TO STA. 120+10.11
–L– STA. 125+25.01 TO STA. 153+22.00
–L– STA. 171+16.31 TO STA. 176+62.24
–L– STA. 189+58.30 TO STA. 194+80.16



TYPICAL SECTION NO. 2C

USE TYPICAL SECTION NO. 2C IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 2 AT THE FOLLOWING LOCATIONS:

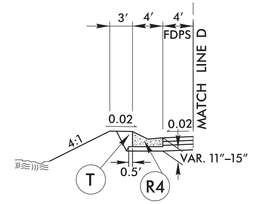
–L– STA. 72+90.00 TO STA. 80+77.96 RT.
–L– STA. 82+15.00 TO STA. 86+95.00 LT.
–L– STA. 102+88.25 TO STA. 112+78.23 RT.



TYPICAL SECTION NO. 2E

USE TYPICAL SECTION NO. 2E IN CONJUNCTION WITH TYPICAL SECTION NO. 1, 2 & 8 AT THE FOLLOWING LOCATIONS:

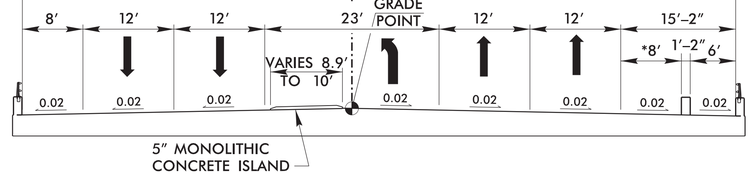
–L– STA. 26+78.00 TO STA. 29+46.00 LT.
–L– STA. 48+77.00 TO STA. 50+98.00 LT.
–L– STA. 57+26.25 TO STA. 62+07.50 LT.
–L– STA. 57+08.25 TO STA. 62+07.50 RT.
–L– STA. 66+32.50 TO STA. 67+38.75 RT.
–L– STA. 66+32.50 TO STA. 67+42.00 LT.
–L– STA. 104+01.91 TO STA. 107+85.00 LT.
–L– STA. 112+97.00 TO STA. 115+10.00 RT.
–L– STA. 127+05.00 TO STA. 129+98.00 RT.
–L– STA. 127+96.00 TO STA. 129+53.00 LT.
–L– STA. 133+35.00 TO STA. 137+03.00 RT.
–L– STA. 135+12.00 TO STA. 138+05.00 LT.
–L– STA. 154+75.00 TO STA. 158+68.00 RT.
–L– STA. 155+12.00 TO STA. 159+05.00 LT.
–L– STA. 166+30.00 TO STA. 173+34.00 LT.
–L– STA. 193+01.04 TO STA. 194+00.00 LT.
–L– STA. 200+70.00 TO STA. 203+38.00 RT.
–L– STA. 200+22.00 TO STA. 202+65.00 LT.
–Y12– STA. 17+02.23 TO STA. 20+46.28 RT.



TYPICAL SECTION NO. 2D

USE TYPICAL SECTION NO. 2D IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 2 AT THE FOLLOWING LOCATIONS:

–L– STA. 116+45.00 TO STA. 121+20.13 LT.
–L– STA. 119+50.00 TO STA. 122+50.00 RT.

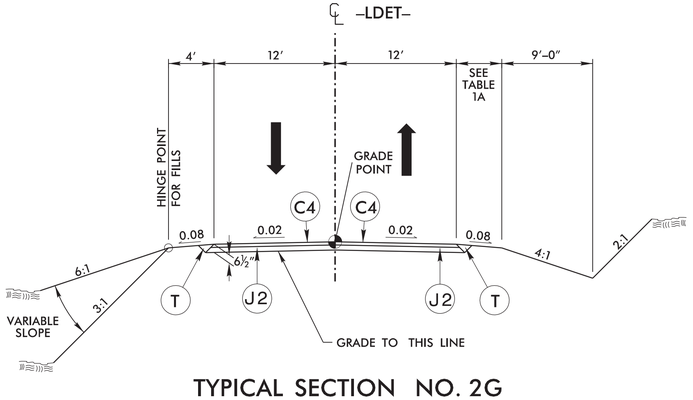


USE TYPICAL SECTION NO. 2F AT THE FOLLOWING LOCATION:

FROM (BEGIN BRIDGE) –L STA. 62+32.00 TO
(END BRIDGE) –L– STA 66+08.00

*MINIMUM 8' OFFSET TO BARRIER RAIL PER NCDOT BRIDGE POLICY

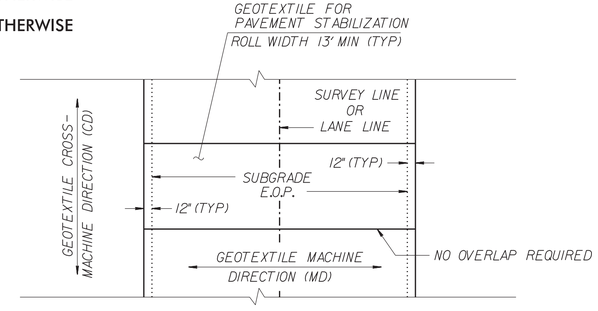
TYPICAL SECTION NO. 2F



USE TYPICAL SECTION NO. 2G AT THE FOLLOWING LOCATION:

–LDET– STA. 35+50.00 TO STA. 43+57.41

TYPICAL SECTION NO. 2G



GEOTEXTILE FOR PAVEMENT STABILIZATION PLACEMENT
(PLAN VIEW)
(100% COVERAGE REQUIRED)

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

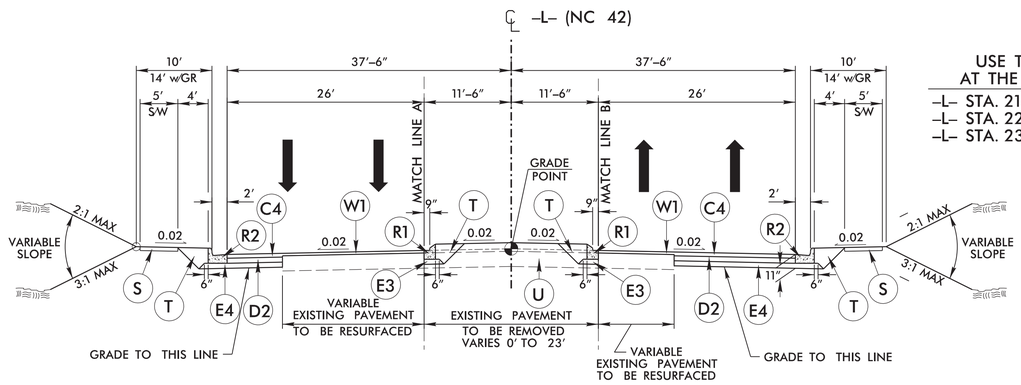
6/20/2018
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rdavis

8/17/99

REVISIONS

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5C
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4½" B25.0C
E2	5" B25.0C
E3	4" B25.0C
E4	5½" B25.0C
E5	VAR. B25.0C
J1	6" ABC
J2	8" ABC
K	8" SUB. STABILIZATION
N	GEOTEXTILE
R1	1'-6" C & G
R2	2'-6" C & G
R3	2'-9" C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
R6	5" CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2

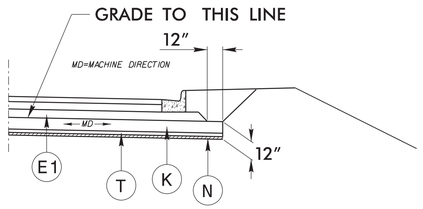
NOTE: PAVEMENT EDGE SLOPES ARE
1:1 UNLESS SHOWN OTHERWISE
TRENCH SLOPES ARE
1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
AT THE FOLLOWING LOCATION:

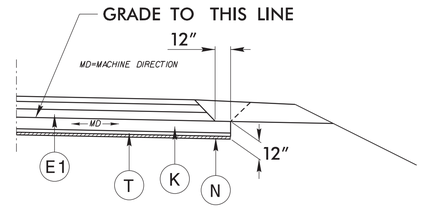
–L– STA. 216+29.03 TO STA. 216+44.00
–L– STA. 226+78.00 TO STA. 231+07.28
–L– STA. 236+59.28 TO STA. 240+84.98



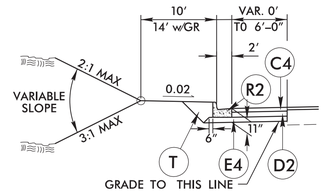
TYPICAL SECTION NO. 3A

USE TYPICAL SECTION NO'S. 3A & 3B IN CONUNCTION WITH TYPICAL SECTION NO. 1, 7, & 17 AT THE FOLLOWING LOCATIONS:

–L– STA. 24+00 TO STA. 29+50 LT
–L– STA. 37+00 TO STA. 39+00 LT
–L– STA. 48+75 TO STA. 50+25 LT
–L– STA. 48+75 TO STA. 49+75 RT
–L– STA. 57+75 TO STA. 62+50 RT
–L– STA. 66+25 TO STA. 67+25 RT
–L– STA. 105+00 TO STA. 108+50 LT
–L– STA. 107+00 TO STA. 109+00 RT
–L– STA. 112+75 TO STA. 115+25 RT
–L– STA. 127+25 TO STA. 129+00 LT, RT
–L– STA. 134+75 TO STA. 137+50 LT, RT
–L– STA. 155+00 TO STA. 158+00 LT, RT
–L– STA. 165+25 TO STA. 169+00 RT
–L– STA. 200+25 TO STA. 203+00 LT
–L– STA. 201+25 TO STA. 204+00 RT
–L– STA. 230+00 TO STA. 232+25 LT
–L– STA. 230+00 TO STA. 232+50 RT

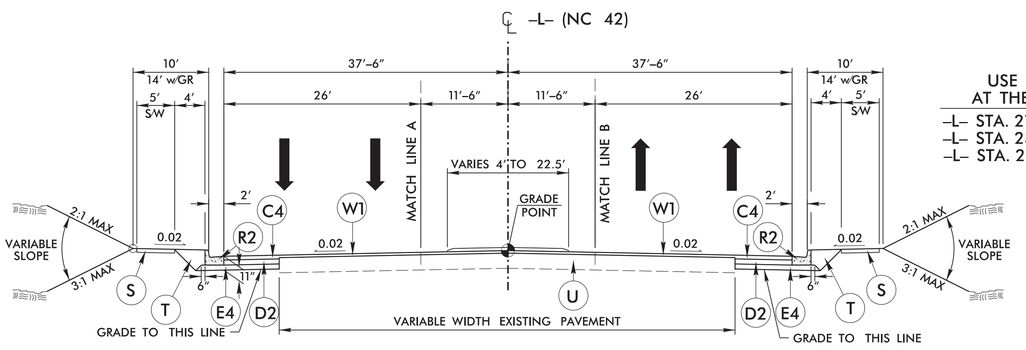


TYPICAL SECTION NO. 3B



NARROW WIDENING DETAIL

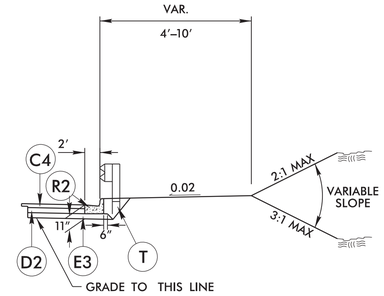
–L– STA. 16+50.00 TO STA. 18+50.00 LT
–L– STA. 22+50.00 TO STA. 23+00.00 RT
–L– STA. 164+00.00 TO STA. 164+50.00 LT
–L– STA. 174+50.00 TO STA. 176+50.00 LT
–L– STA. 248+00.00 TO STA. 260+00.00 RT
–Y6– STA. 11+00.00 TO STA. 16+50.00 RT
–Y8– STA. 10+50.00 TO STA. 11+00.00 RT
–Y13– STA. 14+83.74 TO STA. 15+00.00 LT
–Y13– STA. 18+50.00 TO STA. 19+00.00 RT



USE TYPICAL SECTION NO. 4
AT THE FOLLOWING LOCATION:

–L– STA. 216+44.00 TO STA. 226+78.00
–L– STA. 231+07.28 TO STA. 236+59.28
–L– STA. 240+84.98 TO STA. 249+75.21

TYPICAL SECTION NO. 4



TYPICAL SECTION NO. 4B

TRANSITION BERM FROM 4' TO 10'
IN TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 4B IN CONJUNCTION WITH TYPICAL SECTION NO. 4 & 5 AT THE FOLLOWING LOCATIONS:

–L– STA. 248+40.06 TO STA. 254+33 +/– RT.

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

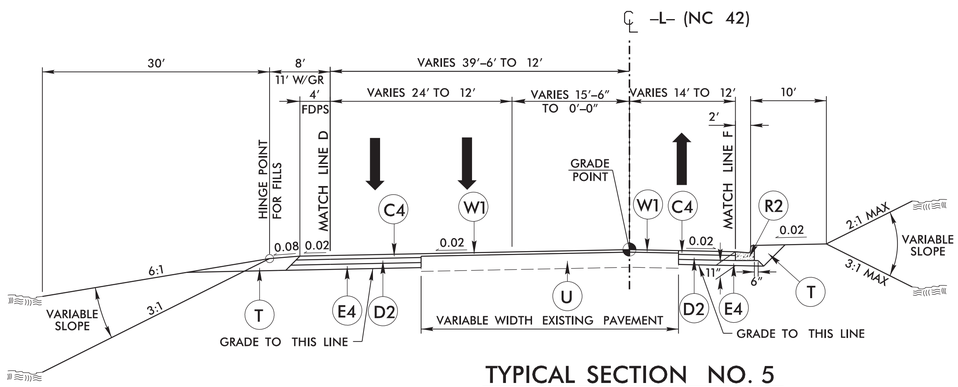
6/20/2018
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mpatterson

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5C
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4½" B25.0C
E2	5" B25.0C
E3	4" B25.0C
E4	5½" B25.0C
E5	VAR. B25.0C
J1	6" ABC
J2	8" ABC
K	8" SUB. STABILIZATION
N	GEOTEXTILE
R1	1'-6" C & G
R2	2'-6" C & G
R3	2'-9" C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
R6	5" CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2

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

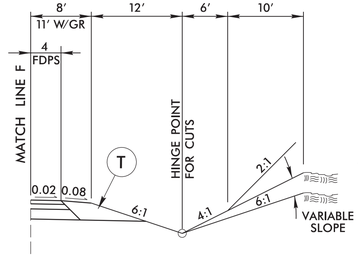
REVISIONS

8/17/99



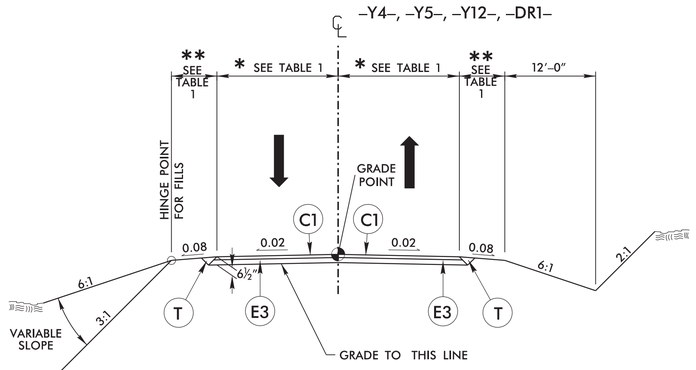
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
AT THE FOLLOWING LOCATION:
–L– STA. 249+75.21 TO STA. 254+65.92



TYPICAL SECTION NO. 5A

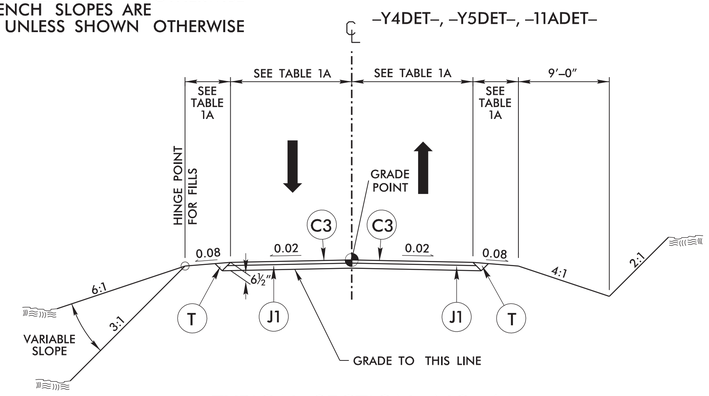
USE TYPICAL SECTION NO. 5A IN
CONJUNCTION WITH TYPICAL SECTION NO. 5
AT THE FOLLOWING LOCATIONS:
–L– STA. 254+67.06 TO STA. 257+50 RT.



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
AT THE FOLLOWING LOCATION:
–Y4– STA. 10+35.91 TO STA. 12+75.00
–Y5– STA. 10+35.51 TO STA. 14+22.00
–Y12– STA. 13+59.32 TO STA. 20+51.95
–DR1– STA. 10+35.53 TO STA. 11+45.00

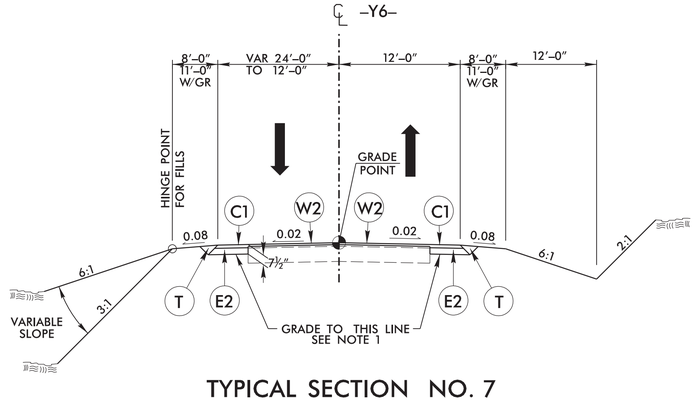
TABLE 1		
LINE	*	**
–Y4–	RT VAR 12'–0" TO 16'–0" LT VAR 12'–0" TO 16'–0"	6'–0", 9'–0" W/GR
–Y5–	12'–0"	2'–0', 7'–0' W/GR
–Y12–	RT VAR 12–0" TO 26'–0" LT VAR 12'–0" TO 22'–0"	8'–0", 11'–0" W/GR
–DR1–	12'–0"	2'–0", 7'–0" W/GR



TYPICAL SECTION NO. 6A

USE TYPICAL SECTION NO. 6A
AT THE FOLLOWING LOCATION:
–Y4DET– STA. 0+19.29 TO STA. 3+62.00
–Y5DET– STA. 0+84.67 TO STA. 5+05.83
–Y11ADET– STA. 0+39.55 TO STA. 2+86.99

TABLE 1A		
LINE	LANE WIDTH	SHLDR WIDTH
–Y4DET–	RT 10'–0" LT 10'–0"	RT 2'–0" LT 2'–0"
–Y5DET–	RT 10'–0" LT 10'–0"	RT 2'–0" LT 2'–0"
–Y11ADET–	RT 12'–0" LT 12'–0"	RT 4'–0" LT 4'–0"



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
AT THE FOLLOWING LOCATION:
–Y6– STA. 10+60.00 TO STA. 17+43.84

NOTE 1: SEE TYPICAL SECTION NO. 3A & 3B
FOR PAVEMENT STABILIZATION LOCATIONS.

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URS Corporation – North Carolina
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Morrisville, North Carolina 27560
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NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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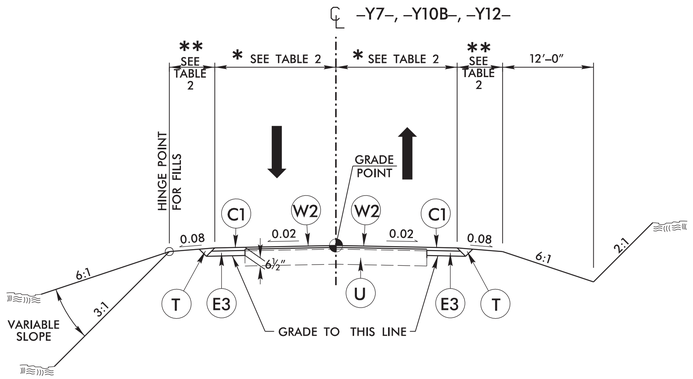
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kaylsheg

8/17/99

REVISIONS

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½″ S9.5B
C2	VAR. S9.5B
C3	1½″ S9.5C
C4	3″ S9.5C
C5	VAR. S9.5C
D1	2½″ I19.0C
D2	4″ I19.0C
D3	VAR. I19.0C
E1	4½″ B25.0C
E2	5″ B25.0C
E3	4″ B25.0C
E4	5½″ B25.0C
E5	VAR. B25.0C
J1	6″ ABC
J2	8″ ABC
K	8″ SUB. STABILIZATION
N	GEOTEXTILE
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	2′-9″ C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
R6	5″ CONC. ISLAND
S	4″ CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2

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

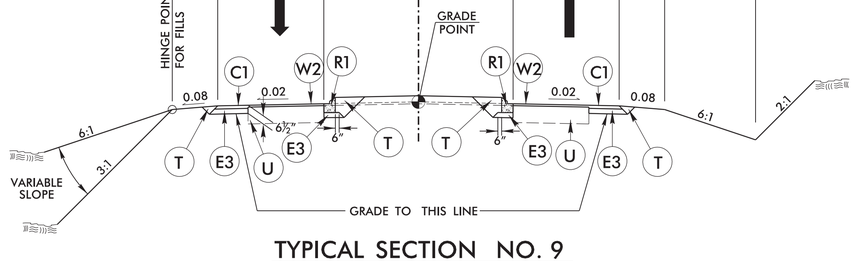


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
AT THE FOLLOWING LOCATION:

–Y7– STA. 15+00.00 TO STA. 16+87.82
–Y10B– STA. 11+70.00 TO STA. 12+16.46
–Y12– STA. 11+31.46 TO STA. 13+59.32

TABLE 2		
LINE	*	**
–Y7–	18′–0″	6′–0″, 9′–0″ W/GR
–Y10B–	VAR 11′–4″ TO 12′–0″	2′–0″, 7′–0″ W/GR
–Y12–	12′–0″	8′–0″, 11′–0″ W/GR

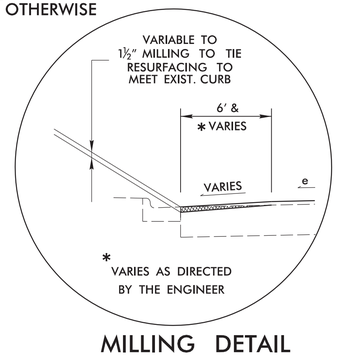


TYPICAL SECTION NO. 9

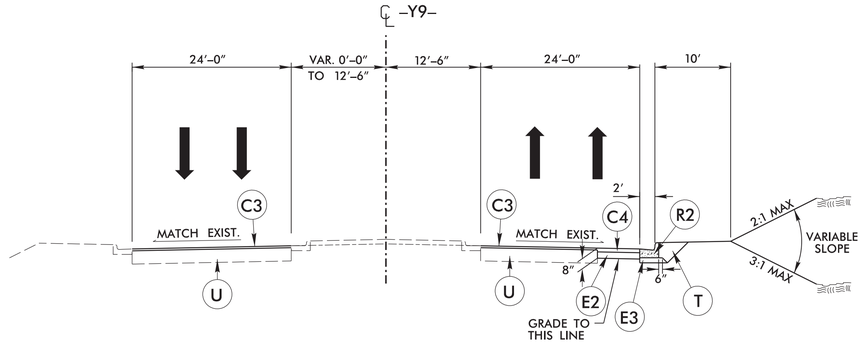
USE TYPICAL SECTION NO. 9
AT THE FOLLOWING LOCATION:

–Y8– STA. 10+47.74 TO STA. 11+30.00
–Y10– STA. 10+60.02 TO STA. 11+11.65
–Y11– STA. 10+47.56 TO STA. 11+37.75

TABLE 3			
LINE	*	**	***
–Y8–	RT 16′–0″ LT 14′–0″	6′–0″, 9′–0″ w/GR	RT 10′–6″ LT 12′–6″
–Y10–	14′–0″	2′–0″, 7′–0′ w/GR	RT 10′–0″ LT 10′–0″
–Y11–	12′–0″	2′–0″, 7′–0′ w/GR	RT 13′–6″ LT 13′–6″



MILLING DETAIL ADJACENT TO CURB & GUTTER



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
AT THE FOLLOWING LOCATION:

–Y9– STA. 11+73.15 TO 14+37.69

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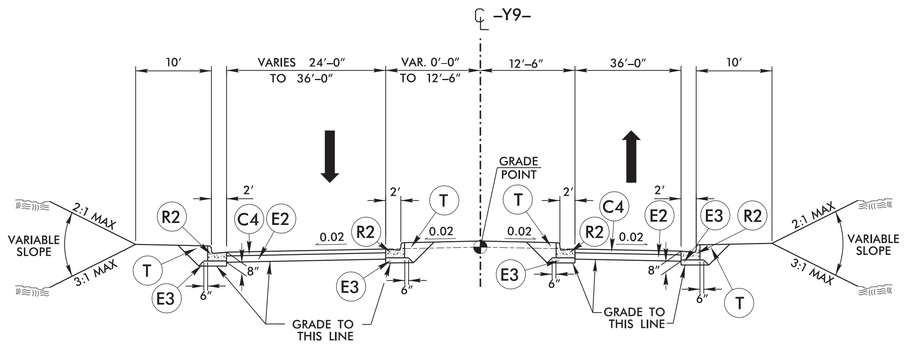
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/20/2018
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kevinfisher

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5C
C4	3" S9.5C
C5	VAR. S9.5C
D1	2½" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4½" B25.0C
E2	5" B25.0C
E3	4" B25.0C
E4	5½" B25.0C
E5	VAR. B25.0C
J1	6" ABC
J2	8" ABC
K	8" SUB. STABILIZATION
N	GEOTEXTILE
R1	1'-6" C & G
R2	2'-6" C & G
R3	2'-9" C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
R6	5" CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2

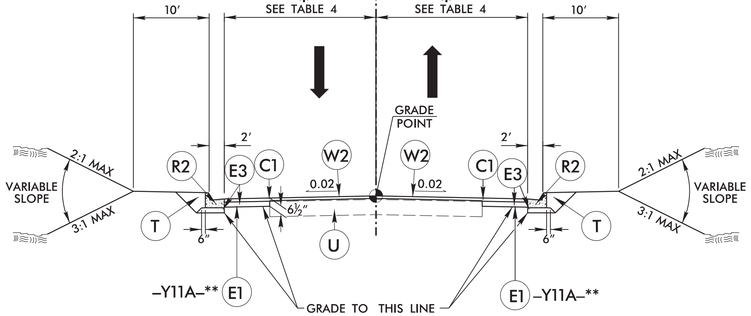
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
AT THE FOLLOWING LOCATION:

–Y9– STA. 14+37.69 TO STA. 17+62.94



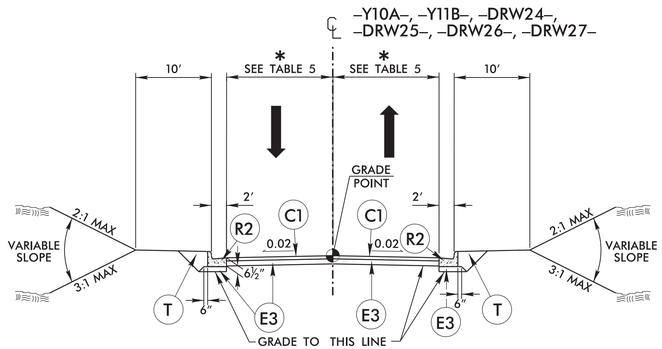
TYPICAL SECTION NO. 12

NOTE: Y11A REQUIRES THE REPLACEMENT OF EXISTING SIDEWALK

USE TYPICAL SECTION NO. 12
AT THE FOLLOWING LOCATION:

–Y10A– STA. 11+10.00 TO STA. 11+77.50
–Y10B– STA. 12+16.46 TO STA. 12+77.97
–Y10C– STA. 12+05.00 TO STA. 14+05.57
** –Y11A– STA. 11+67.96 TO STA. 12+85.00
–Y11B– STA. 10+84.79 TO STA. 11+76.00
–Y11C– STA. 11+56.79 TO STA. 12+17.42

TABLE 4	
LINE	*
–Y10A–	RT VAR 14'–11" TO 16'–0" LT VAR 14'–11" TO 16'–0"
–Y10B–	RT 12'–0" LT 12'–0"
–Y10C–	RT VAR 12'–0" TO 21'–10" LT VAR 12'–0"" TO 20'–6"
–Y11A–	LT VAR 28'–10" TO 27'–7" RT VAR 32'–3" TO 27'–6"
–Y11B–	RT 16'–0" LT 16'–0"
–Y11C–	RT VAR 11'–0" TO 14'–0" LT VAR 11'–0" TO 14'–0"



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
AT THE FOLLOWING LOCATION:

–Y10A– STA. 11+77.50 TO STA. 12+61.81
–Y11B– STA. 28+46.41 TO STA. 10+84.79
–DRW24– STA. 10+46.18 TO STA. 10+98.17
–DRW25– STA. 10+45.50 TO STA. 11+00.21
–DRW26– STA. 10+45.50 TO STA. 10+98.66
–DRW27– STA. 10+22.85 TO STA. 10+76.44

TABLE 5	
LINE	*
–Y10A–	RT 16'–0" LT 20'–0"
–Y11B–	RT 16'–0" LT 16'–0"
–DRW24–	RT VAR 15'–0" TO 23'–6" LT VAR 15'–0" TO 23'–6"
–DRW25–	RT VAR 22'–0" TO 35'–6" LT VAR 35'–0" TO 38'–0"
–DRW26–	RT 17'–0" LT VAR 17'–0" TO 19'–0"
–DRW27–	RT VAR 27'–0" TO 39'–0" LT VAR 19'–6" TO 36'–0"

Prepared by
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Morrisville, North Carolina 27560
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NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

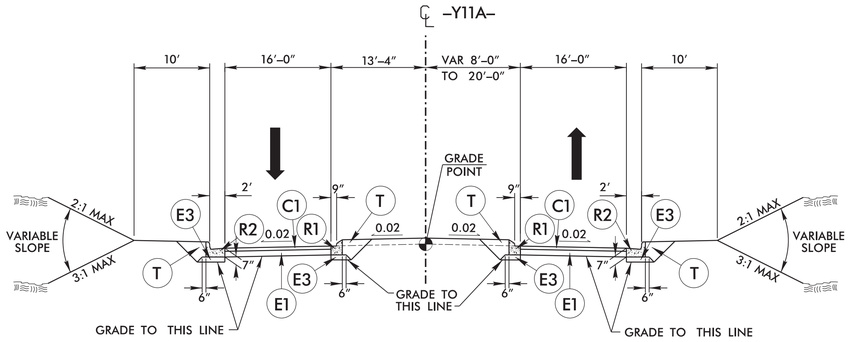
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8/17/99

REVISIONS

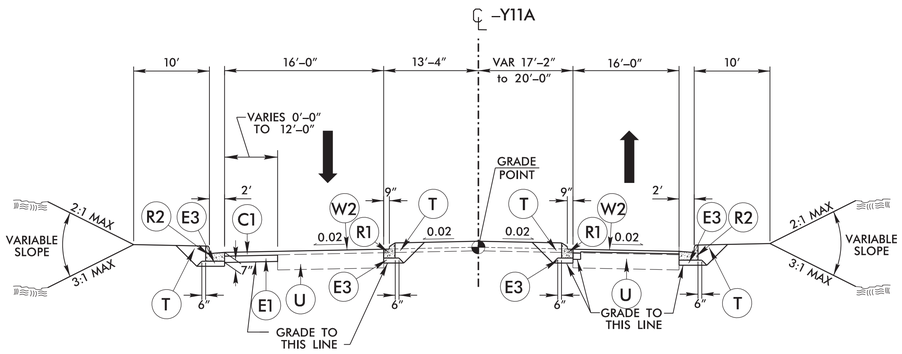
PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5C
C4	3" S9.5C
C5	VAR. S9.5C
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NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



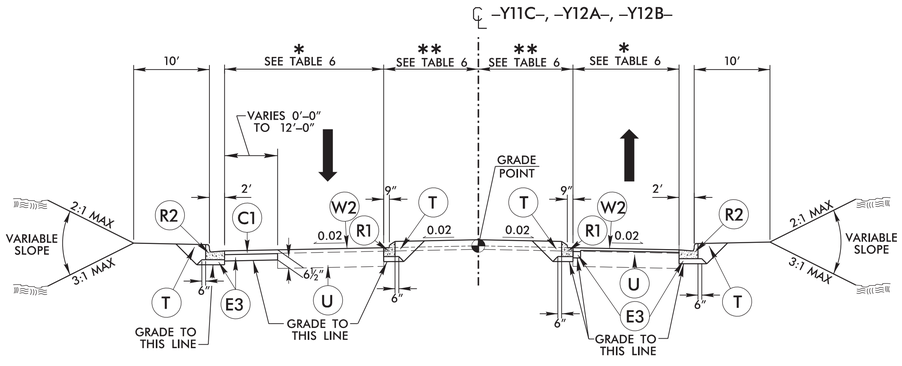
TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
AT THE FOLLOWING LOCATION:
–Y11A– STA. 10+49.51 TO STA. 10+91.41



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15
AT THE FOLLOWING LOCATION:
–Y11A– STA. 10+91.41 TO STA. 11+67.96



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16
AT THE FOLLOWING LOCATION:
–Y11C– STA. 10+48.39 TO STA. 11+56.79
–Y12A– STA. 12+25.00 TO STA. 12+82.39
–Y12B– STA. 10+41.28 TO STA. 10+99.57

	TABLE 6	
LINE	*	**
–Y11C–	RT VAR 16′–0″ TO 14′–0″ LT VAR 16′–0″ TO 14′–0″	RT 6′–0″ LT 6′–0″
–Y12A–	RT 16′–5″ LT 17′–0″	RT 14′–6″ LT 12′–0″
–Y12B–	RT 25′–11″ LT 24′–0″	RT 13′–0″ LT 13′–0″

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NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

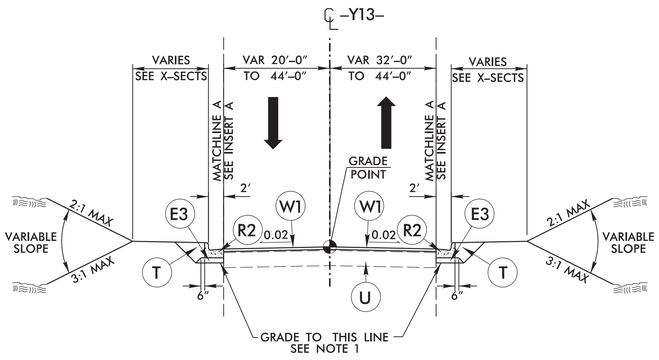
6/20/2018
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FDavisReplot

8/17/99

REVISIONS

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	2½″ S9.5B
C2	VAR. S9.5B
C3	1½″ S9.5C
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D3	VAR. I19.0C
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E2	5″ B25.0C
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E4	5½″ B25.0C
E5	VAR. B25.0C
J1	6″ ABC
J2	8″ ABC
K	8″ SUB. STABILIZATION
N	GEOTEXTILE
R1	1′-6″ C & G
R2	2′-6″ C & G
R3	2′-9″ C & G
R4	EXPRESSWAY GUTTER
R5	SHOULDER BERM GUTTER
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S	4″ CONC. SIDEWALK
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NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
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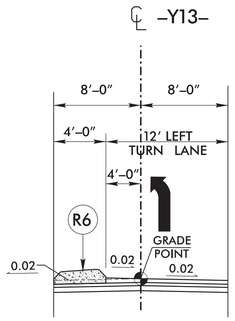


TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17
AT THE FOLLOWING LOCATION:

–Y13– STA. 14+83.74 TO STA. 24+21.09
–Y13– STA. 25+05.65 TO STA. 31+48.30

NOTE 1: SEE TYPICAL SECTION NO. 3A & 3B FOR PAVEMENT STABILIZATION LOCATIONS.

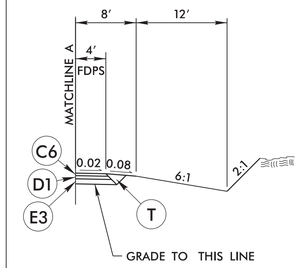


TYPICAL SECTION NO. 17A

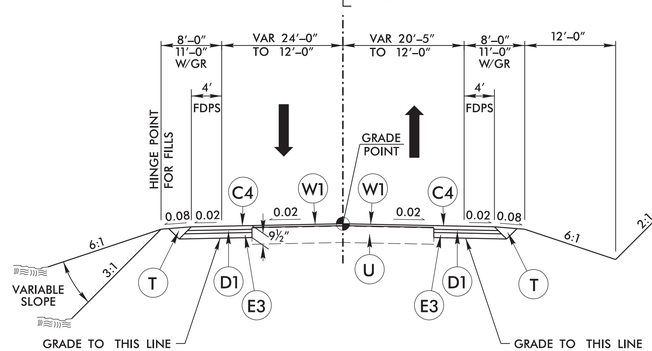
USE TYPICAL SECTION NO. 17A IN CONJUNCTION WITH TYPICAL SECTION NO. 17, AT THE FOLLOWING LOCATIONS:

–Y13– STA. 16+58.24 TO STA. 23+86.23
–Y13– STA. 25+27.28 TO STA. 29+30.81

INSET A



USE INSET A IN CONJUCTION WITH TYPICAL SECTION NO. 17 AT THE FOLLOWING LOCATIONS:
–Y13– STA. 14+83.74 TO 21+15.09 LT.
–Y13– STA. 14+83.74 TO 16+26.90 RT.
–Y13– STA. 29+46.55 TO 31+48.30 RT.

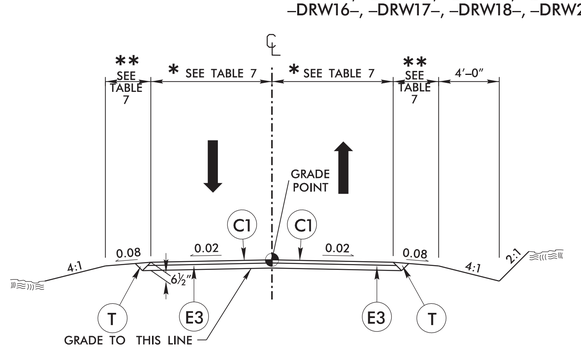


TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18
AT THE FOLLOWING LOCATION:

–Y13– STA. 31+48.30 TO STA. 35+70.00

–DRW1–, –DRW2–, –DRW3–, –DRW7–, –DRW8–, –DRW9–, –DRW10–, –DRW11–, –DRW12–, –DRW15–, –DRW16–, –DRW17–, –DRW18–, –DRW23–



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19
AT THE FOLLOWING LOCATION:

–DRW1–	10+34.00	TO	10+94.57
–DRW2–	10+45.00	TO	10+94.50
–DRW3–	10+35.50	TO	10+97.00
–DRW7–	10+35.50	TO	10+93.00
–DRW8–	10+35.50	TO	11+29.03
–DRW9–	10+35.50	TO	10+94.00
–DRW10–	10+35.50	TO	10+94.00
–DRW11–	10+36.00	TO	10+84.50
–DRW12–	10+35.50	TO	10+74.09
–DRW15–	10+56.45	TO	11+04.80
–DRW16–	10+14.53	TO	10+55.00
–DRW17–	10+37.38	TO	10+88.00
–DRW18–	10+38.35	TO	10+63.00
–DRW23–	10+12.00	TO	10+95.63

TABLE 7

LINE	*	**
–DRW1–	8′	1′
–DRW2–	8′	1′
–DRW3–	8′	1′
–DRW7–	8′	1′
–DRW8–	8′	1′
–DRW9–	8′	1′
–DRW10–	8′	1′
–DRW11–	8′	1′
–DRW12–	8′	1′
–DRW15–	8′	1′
–DRW16–	8′	1′
–DRW17–	8′	1′
–DRW18–	10′	2′
–DRW23–	12′	2′

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1600 Perimeter Park Drive
Morrisville, North Carolina 27560
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NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2A-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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6/20/2018
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tmyrick

8/17/99

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2011

PC Sta. 0+15.99

-Y4DET-
POT Sta. 0+00.00=
-L- POT Sta. 38+35.20

PT Sta. 0+92.52

PC Sta. 2+24.21

POT Sta. 0+60.00

PRC Sta. 3+19.50

-Y4DET- Sta. 3+61.72
TIE TO EXISTING EP

POT Sta. 4+45.26

S 28°19'05.4" E

-Y4DET-
Sta. 0+19.29
TIE TO
EX. EP

PC Sta. 10+14.74

PT Sta. 4+25.56

-DRWI7T- POT Sta. 0+00.00 =
-Y4DET- POC Sta. 3+12.32

POT Sta. 0+46.09

POT Sta. 0+71.89

-DRWI6T- POT Sta. 0+00.00 =
-DRWI6T- POT Sta. 0+00.00 =
-Y4DET- POT Sta. 1+49.26

POT Sta. 0+60.00

JASON A WILLIAMS AND JOSEPH T LORENZO DB 3603 PG 722 PB 26 PG 45

CHARITY L HOBBY DB 4255 PG 45 PB 26 PG 45

STEVENSON E WILSON AND WIFE MARJORIE WILSON DB 1092 PG 524 PB 26 PG 45

KEVIN T HAMILTON DB 6224 PG 86 PB 26 PG 45

JAMES B HUNT AND ROBERT B HUNT DB 509 PG 311

-DRWT17-

PI Sta 10+32.02	
△ = 59° 53' 00.7" (RT)	
D = 190° 59' 09.4"	
L = 31.35'	
T = 17.28'	
R = 30.00'	

-Y4DET-

PI Sta 0+54.73	PI Sta 2+72.78	PI Sta 3+73.81
△ = 21° 55' 29.9" (LT)	△ = 27° 17' 54.9" (LT)	△ = 30° 23' 01.7" (RT)
D = 28° 38' 52.4"	D = 28° 38' 52.4"	D = 28° 38' 52.4"
L = 76.53'	L = 95.29'	L = 106.06'
T = 38.74'	T = 48.57'	T = 54.31'
R = 200.00'	R = 200.00'	R = 200.00'
e = 4.1%	e = 3.70%	e = N/A
RUNOFF = 50'	RUNOFF = 50'	

NAD 83/2011

-Y5DET- Sta. 0+84.64
TIE TO EXISTING EP

PT Sta. 0+27.27

-DRWI8T- POT Sta. 0+00.00 =
-Y5DET- POT Sta. 3+01.34

POT Sta. 5+55.22

PC Sta. 0+23.52

PT Sta. 0+48.13

PT Sta. 3+94.69

PC Sta. 2+07.31

PC Sta. 4+93.75

POT Sta. 0+72.24

-L- POC Sta. 50+31.27.9.98' RT
-Y5DET- POC Sta. 0+00.00

-Y5DET- Sta. 5+05.74
TIE TO EXISTING EP

PT Sta. 5+50.13

WALTER S DAVIS AND WIFE SYLVIA DAVIS DEED NOT FOUND PB 34 PG 93

KLAUS J KALLAS AND WIFE MARY H KALLAS DB 4591 PG 52 PB 16 PG 52

TODD NARRON DB 5949 PG 977 PB 76 PG 52

DARRELL E WEBER AND WIFE NANCY L WEBER DB 1310 PG 857

-Y5DET-

PI Sta 0+13.95	PI Sta 3+02.11	PI Sta 5+22.11
△ = 29° 40' 52.7" (LT)	△ = 21° 28' 22.1" (RT)	△ = 15° 22' 58.8" (RT)
D = 108° 50' 11.1"	D = 11° 27' 33.0"	D = 27° 17' 01.3"
L = 27.27'	L = 187.39'	L = 56.38'
T = 13.95'	T = 94.81'	T = 28.36'
R = 52.64'	R = 500.00'	R = 210.00'
e = N/A	e = 2.6%	e = N/A
	RUNOFF = 35'	

-DRWT18-

PI Sta 0+35.89
△ = 14° 06' 20.1" (LT)
D = 57° 17' 44.8"
L = 24.62'
T = 12.37'
R = 100.00'

FOR -L- PROFILE SEE SHEET 25
FOR -Y4DET- PROFILE SEE SHEET 2B-4
FOR -Y5DET- PROFILE SEE SHEET 2B-4

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kaylabeler

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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REVISIONS

8/17/99

NAD 83/2011

-L- 176+62+/-
SEE SHT 16

BEGIN CONSTRUCTION
-YIIADET- POT Sta. 0+35.55 =
-L- 175+18.19.39.50 RT

END CONSTRUCTION
-YIIADET- POT Sta. 2+86.99
TIE TO EXISTING PVT

-YIIADET- POT Sta. 3+39.20

-L- POC Sta.175+20.03.0.00' RT =
-YIIADET- POT Sta. 0+00.00

175+00

-YIIADET- Sta.1+21+/-
LIMITS OF SURVEY

-L- 174+00+/-
SEE SHT 16

PEGGY ANNE FLOWERS
DB 2836 PG 5
PB 57 PG 310

42 EAST LLC
DB 3018 PG 255
PB 77 PG 338

BL-123

BY8-148

BY8-149

-L- NC 42

PI Sta 165+42.54	PI Sta 174+88.36
△ = 4° 51' 12.9" (LT)	△ = 5° 31' 16.7" (LT)
D = 1° 08' 45.3"	D = 1° 08' 53.6"
L = 423.56'	L = 480.86'
T = 211.90'	T = 240.62'
R = 5,000.00'	R = 4,990.00'
e = 3%	e = 3%
Runoff = 162'	Runoff = 162'

FOR -L- PROFILE SEE SHEET 30
FOR -YIIADET- PROFILE SEE SHEET 2B-4

6/12/2018
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krawshaw1er

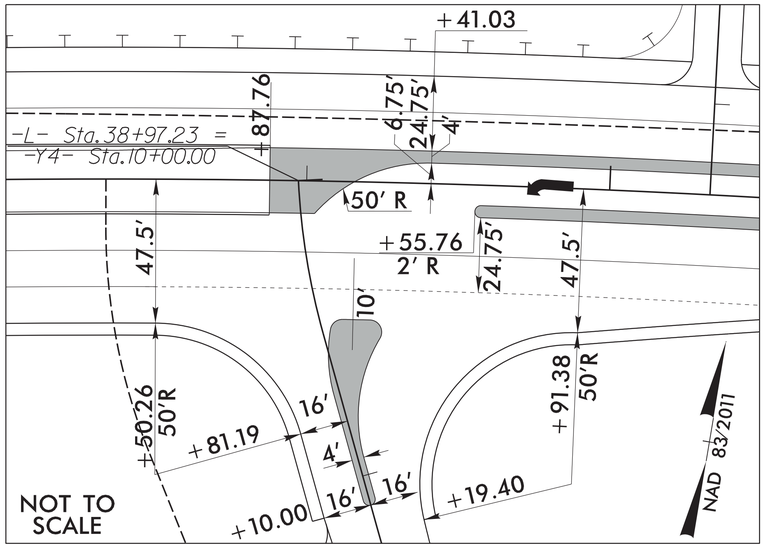
8/17/99

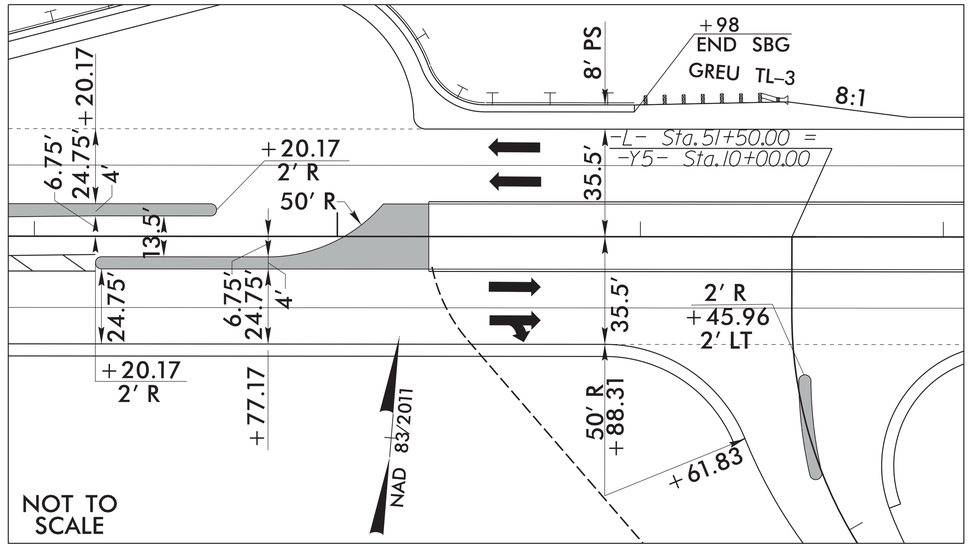
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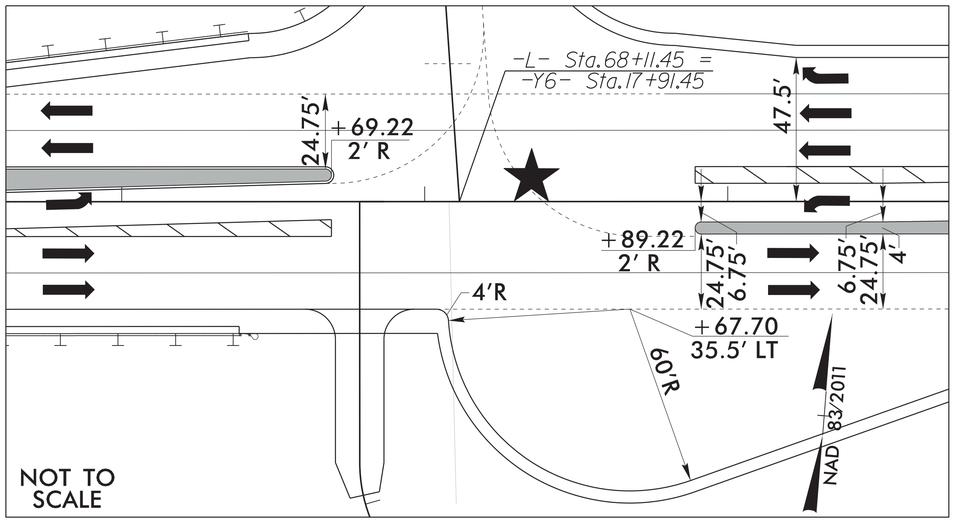
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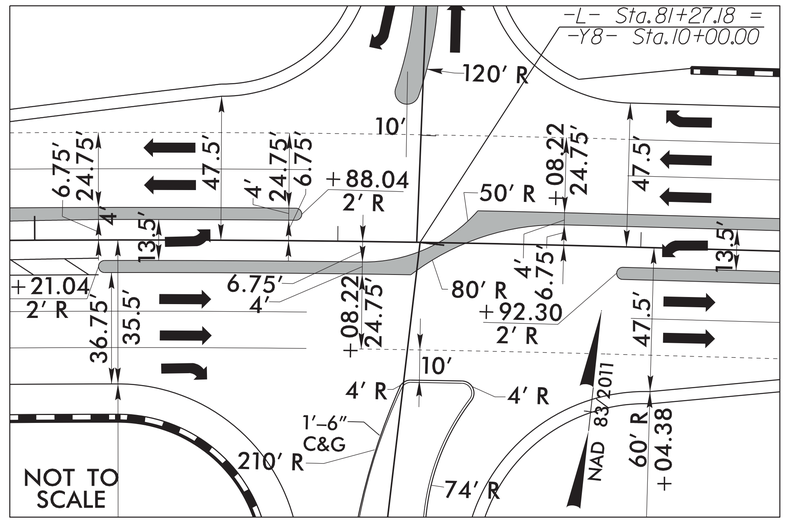
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R-3825B	2B-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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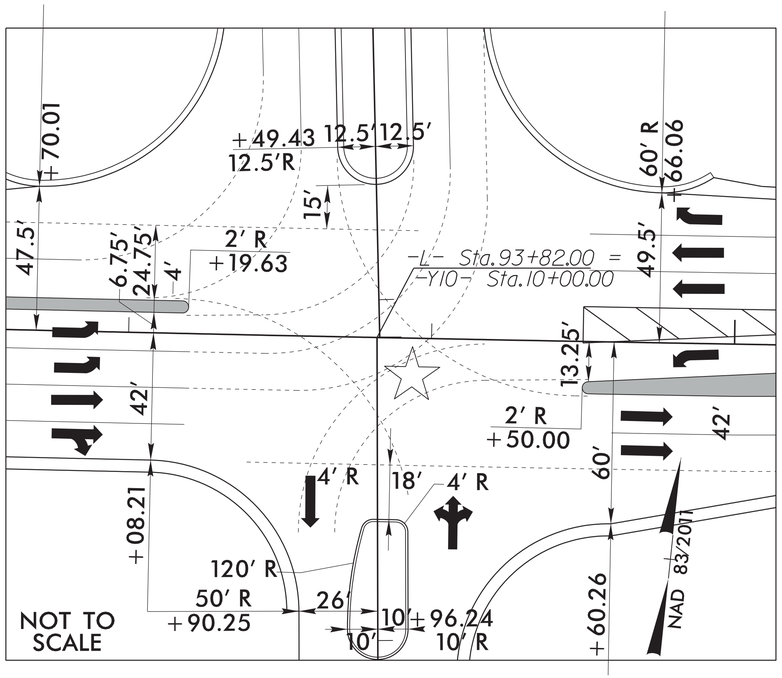
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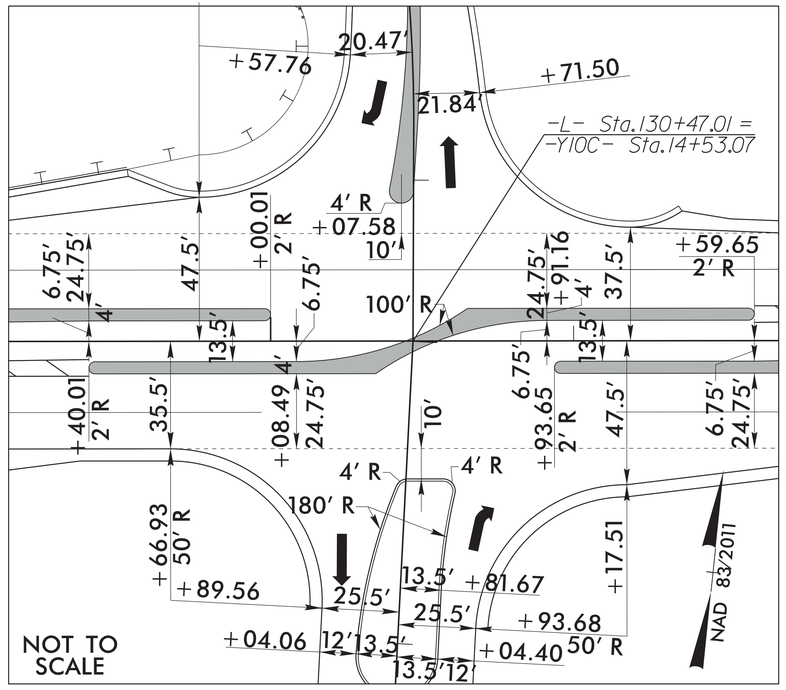
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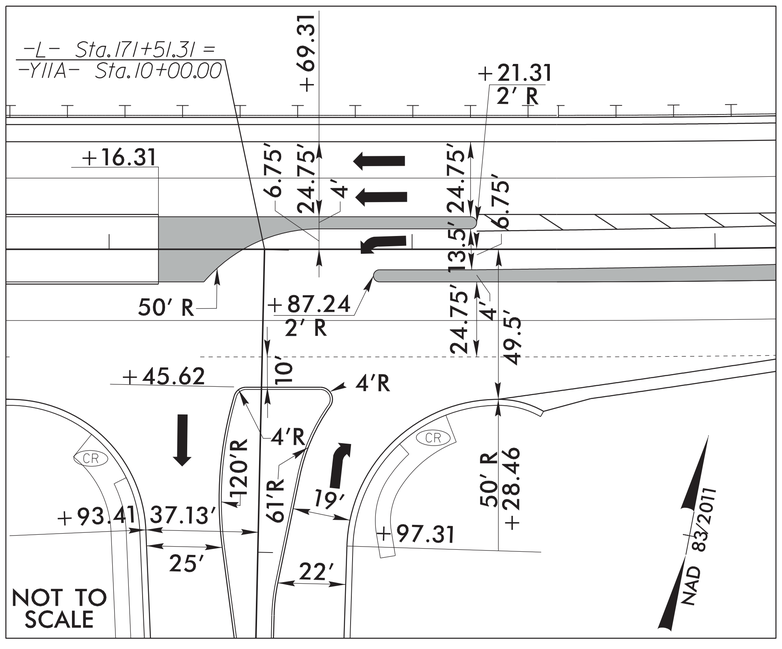
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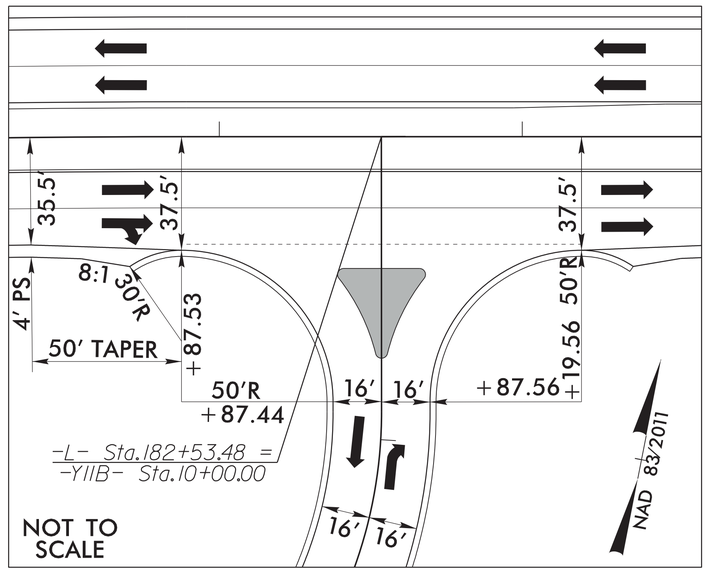
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R-3825B	2B-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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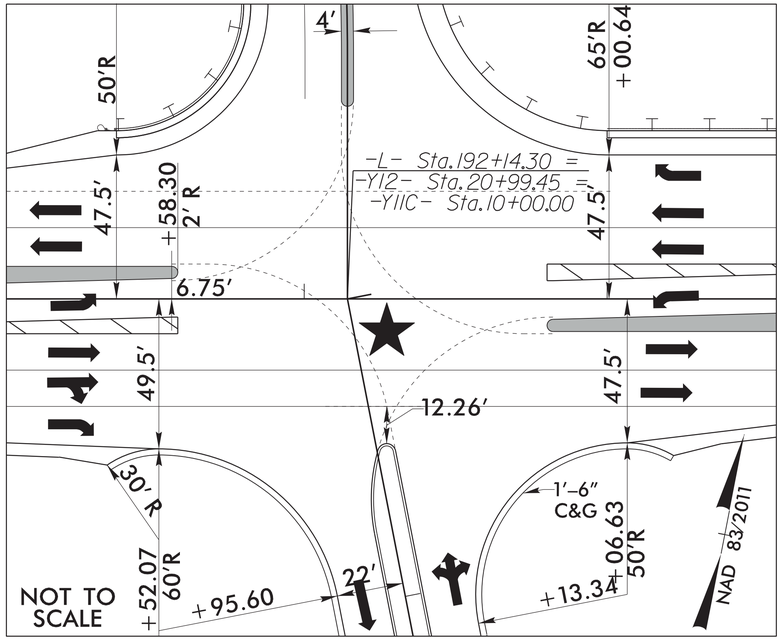
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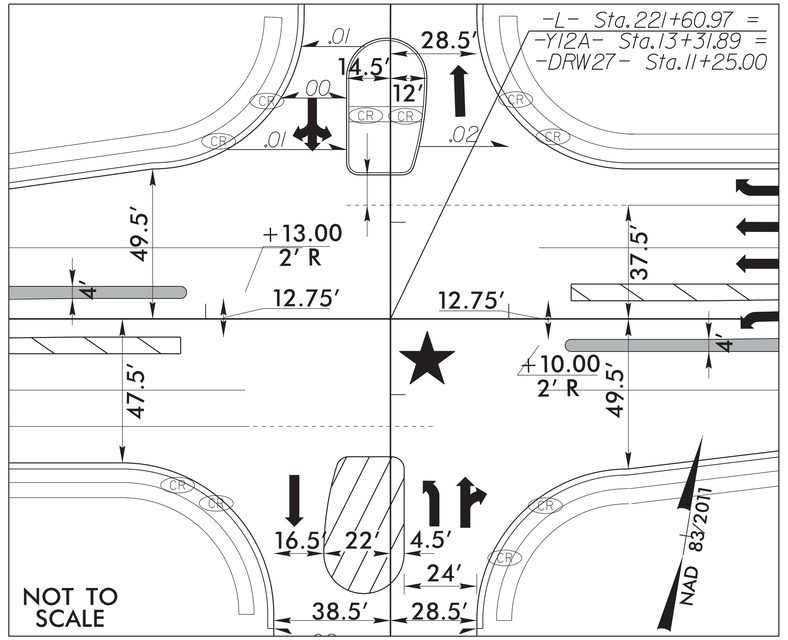
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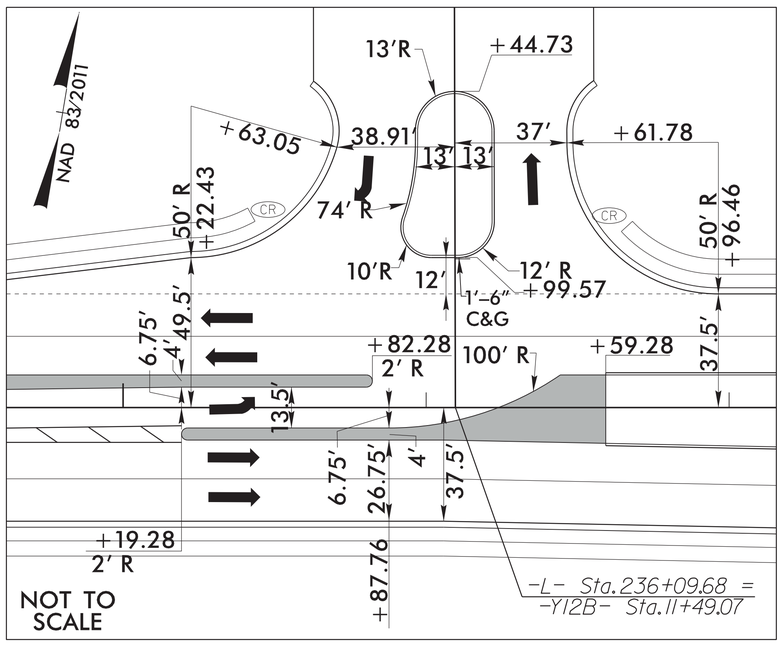
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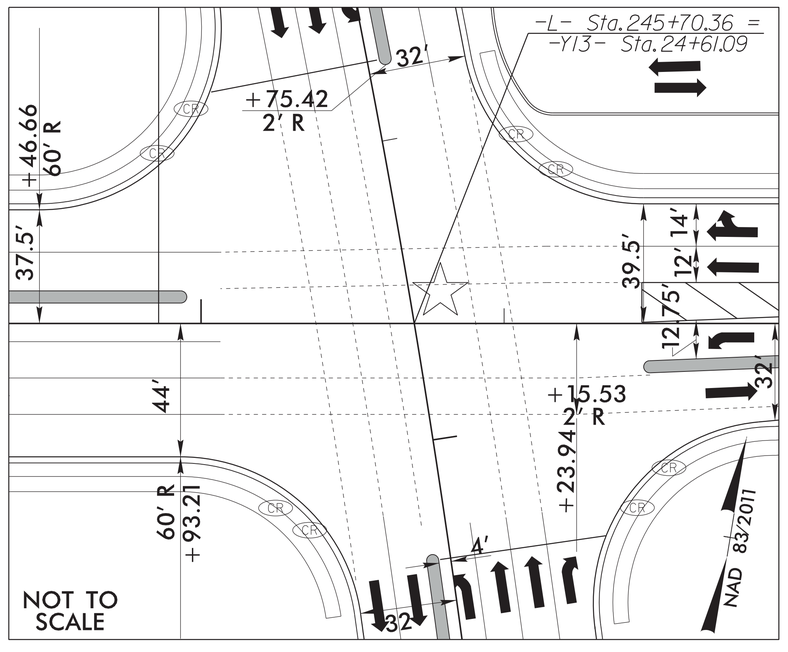
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R-3825B	2B-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.

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

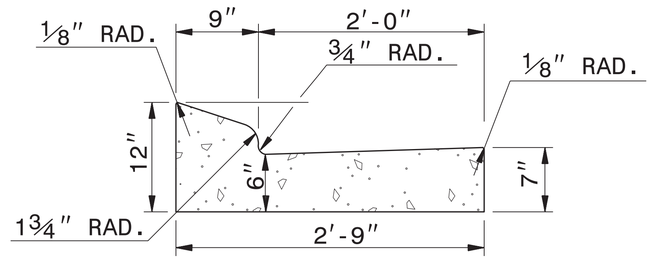
ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

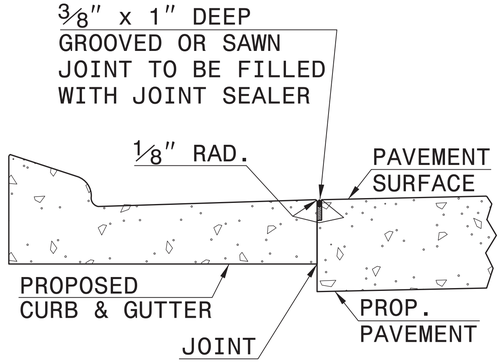
846D01

GENERAL NOTES:
- -PLACE CONTRACTION JOINTS AT 10′ INTERVALS, EXCEPT THAT A 15′ SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10′ INTERVALS.
- -JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- -CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½″ DEEP.
- -FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
- -SPACE EXPANSION JOINTS AT 90′ INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
- -SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2′-6″ CURB AND GUTTER RATES)

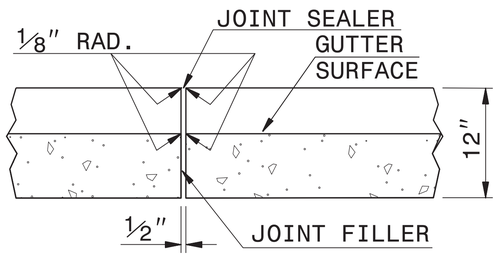


2′-9″ CURB AND GUTTER

SECTION VIEW OF CURB AND GUTTER



LONGITUDINAL JOINT



TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

SECTION VIEW OF JOINTS

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

846D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Israel S. Howerton

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

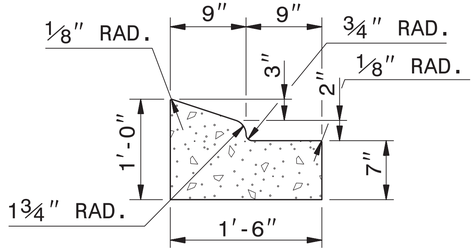
SEE PLATE FOR TITLE

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MODIFIED BY: E.E. WARD DATE: 8-15-00
CHECKED BY: DATE:
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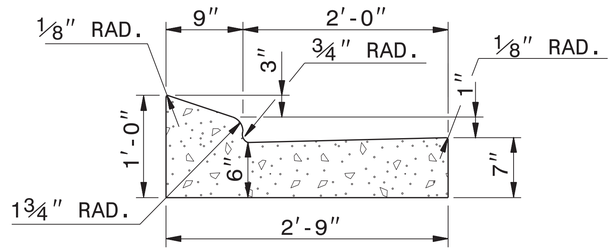
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jhowerton AT CSD-242595

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
	25



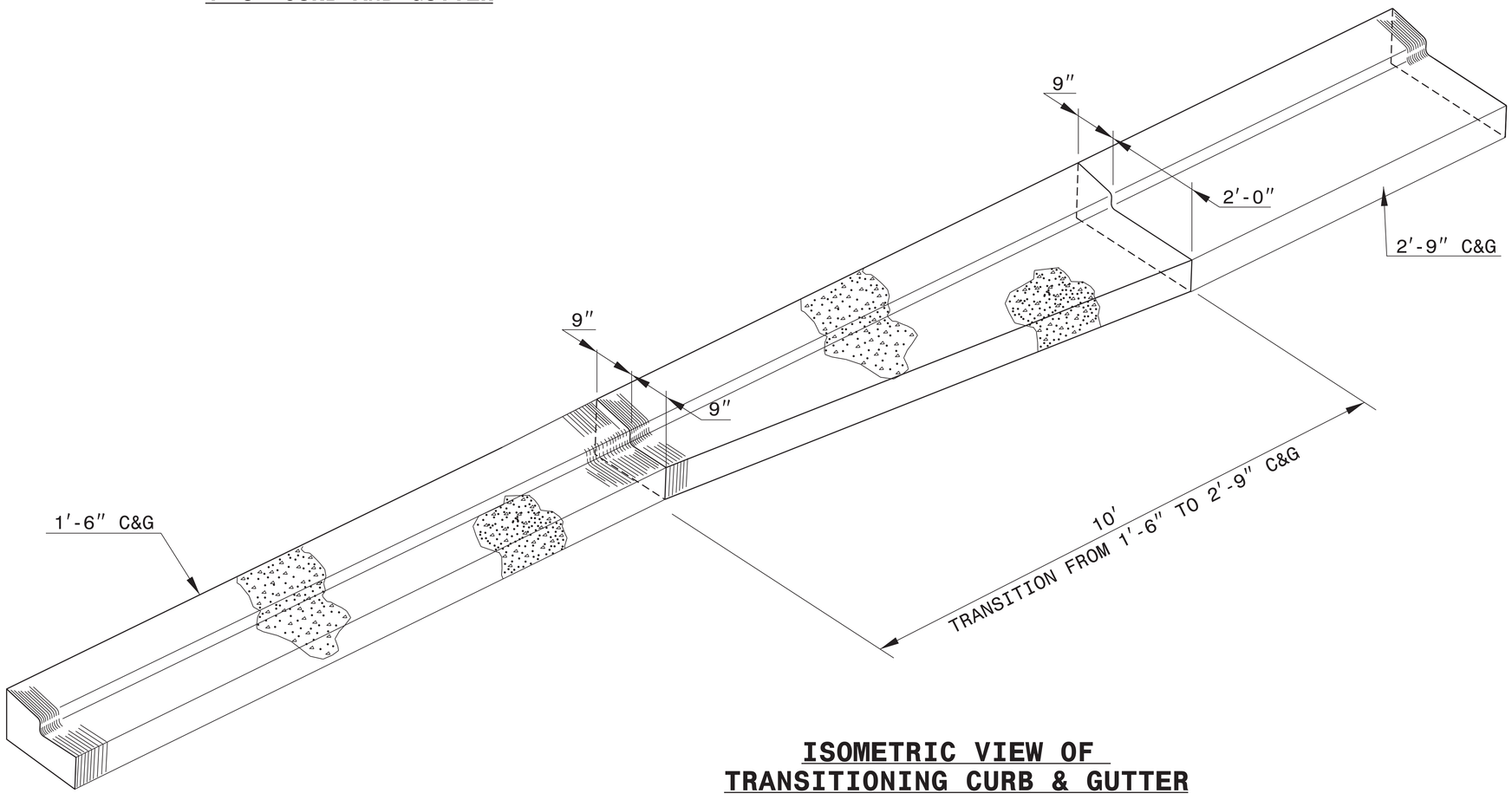
1′-6″ CURB AND GUTTER



2′-9″ CURB AND GUTTER

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joel S. Howerton

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DETAIL OF 1′-6″ TO 2′-9″ CURB & GUTTER TRANSITION SECTION

ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001
MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007
CHECKED BY: DATE:
FILE SPEC.: DS174:/usr/details/stand/cgtransit.dgn

PROJECT REFERENCE NO.	SHEET NO.

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03

ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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jhowerton AT CSD-2425965

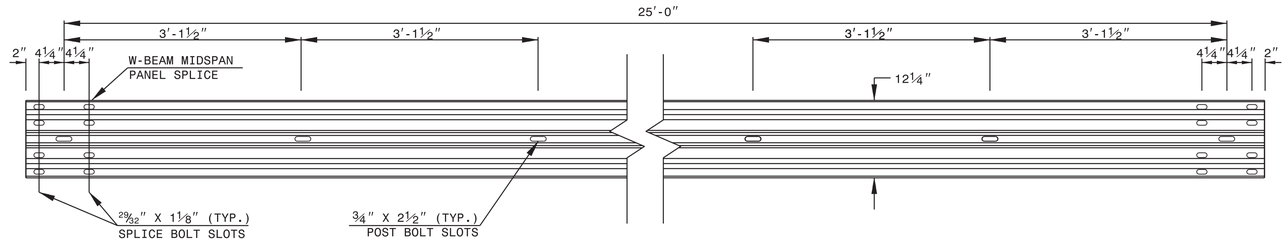
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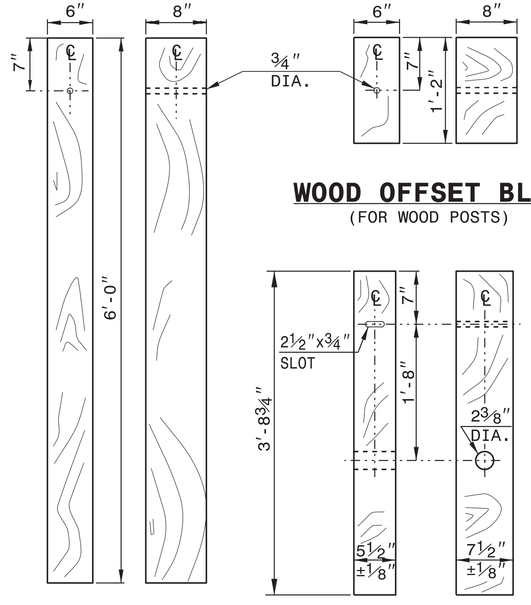
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



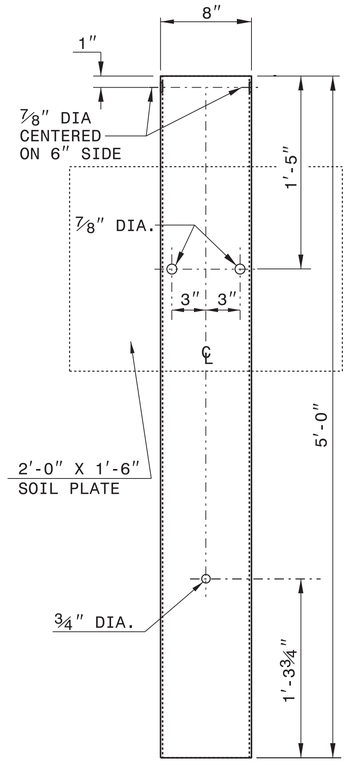
STANDARD W-BEAM GUARDRAIL



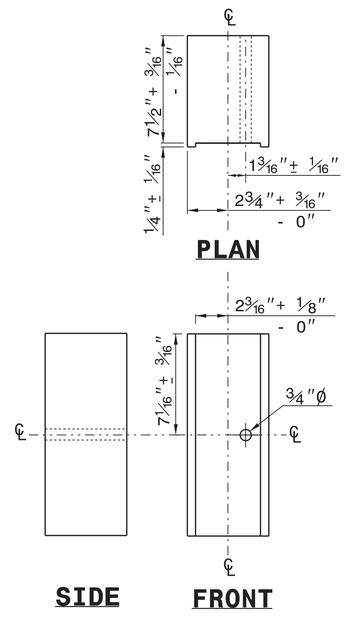
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



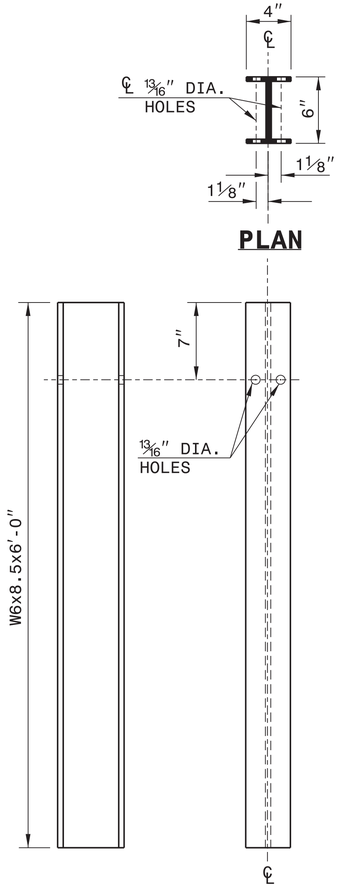
STEEL TUBE
TS 6"x8"x0.1875"



PLAN

SIDE **FRONT**

ROUTED OFFSET BLOCK



PLAN

SIDE **FRONT**

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. HOWERTON

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

SEE TITLE BLOCK

ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE DROP INLETS WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

WHEN PAYMENT FOR THE DROP INLET IS MADE ON A PER EACH BASIS, THE CONCRETE APRON WILL BE CONSIDERED PART OF THE DROP INLET.

CONSTRUCT WITH PIPE CROWNS MATCHING.

USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20, 840.29, AND 840.33.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.

DETAIL

(APRON SUPPORT NOTCH)

DOWEL-A

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ENGLISH DETAIL DRAWING FOR **CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'** 12" THRU 72" PIPE	SHEET 1 OF 2 **840D17**

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

ENGLISH DETAIL DRAWING FOR **CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'** 12" THRU 72" PIPE

SHEET 1 OF 2 **840D17**

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING				
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX AND PIPE					REINFORCING STEEL - NO. 4 BARS								CU YDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT		BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL	
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	WEIGTH	LBS.						C.S.	R.C.
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247		1.807	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	—	—	—	—	0.444	1.362	0.278		2.201	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	—	—	—	—	0.502	1.644	0.288		2.541	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321		2.920	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"	3	1'-5"	3	5'-7"	67	0.704	2.500	0.370		3.677	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"	4	1'-11"	4	6'-1"	87	0.823	3.013	0.407		4.315	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"	5	2'-5"	5	6'-7"	107	0.951	3.589	0.444		5.072	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"	6	3'-1"	6	7'-3"	135	1.311	4.539	0.494		6.170	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"	7	3'-7"	7	7'-10"	168	1.136	5.061	0.537		6.901	0.444	0.599
72"	3'-8"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	0.395	7.868	0.528	0.713		

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

ENGLISH DETAIL DRAWING FOR **CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'** 12" THRU 72" PIPE

SHEET 2 OF 2 **840D17**

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

ENGLISH DETAIL DRAWING FOR **CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'** 12" THRU 72" PIPE

SHEET 1 OF 2 **840D17**

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

ENGLISH DETAIL DRAWING FOR **CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'** 12" THRU 72" PIPE

SHEET 2 OF 2 **840D17**

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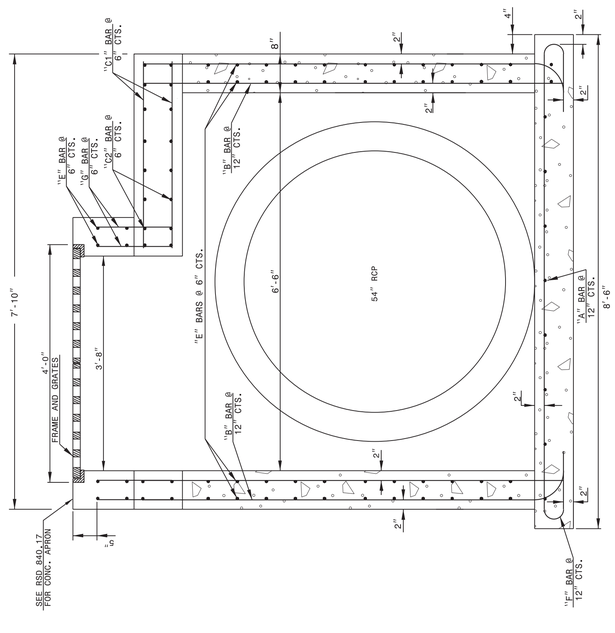
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

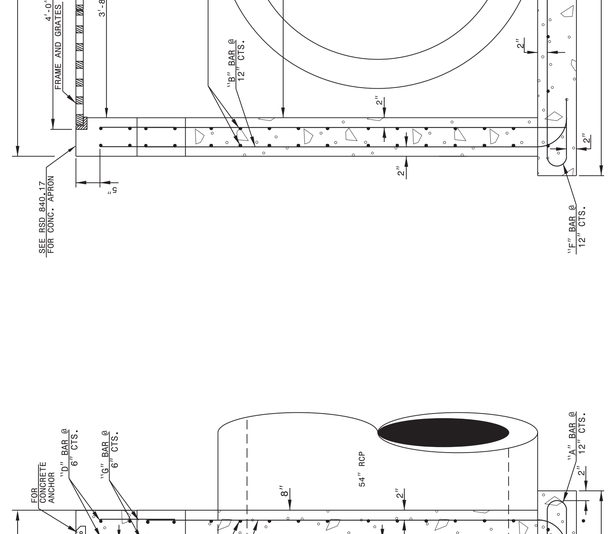
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jhowerton AT CSD-292995

PROJECT REFERENCE NO.	SHEET NO.



SECTION X-X

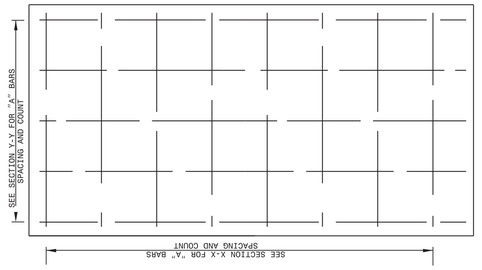


SECTION Y-Y

GENERAL NOTES:
-BEDDING WITH CLASS 'AA' CONCRETE
-CHAMFER ALL EXPOSED CONCRETE CORNERS 3".
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE, FOLLOW CONSTRUCTION
-PROCEDURES SHOWN ON STD. DWG. 840.00.
-PRECAST UNITS CONCRETE MAY BE
USED IN LIEU CAST IN PLACE CONCRETE.
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE
-PROVIDES 2 INLETS OVER 48" RCP, 4 INLETS OVER 54" RCP
DIRECTED BY STD. DWG. 840.66
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEM.

NOTES:
-HORIZONTAL (UP TO 10' MAX.) AND VERTICAL (UP TO 20' MAX.) DIMENSIONS MAY BE
ADJUSTED AS THE FIELD CONDITIONS AND/OR ALIGNMENT REQUIRE.
-ALL ADJUSTMENTS ARE TO BE MADE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ENGLISH DETAIL DRAWING FOR **TRAFFIC BEARING GRATED INLET** FOR PIPES UP TO 54″	SHEET 1 OF 2 **840D35**

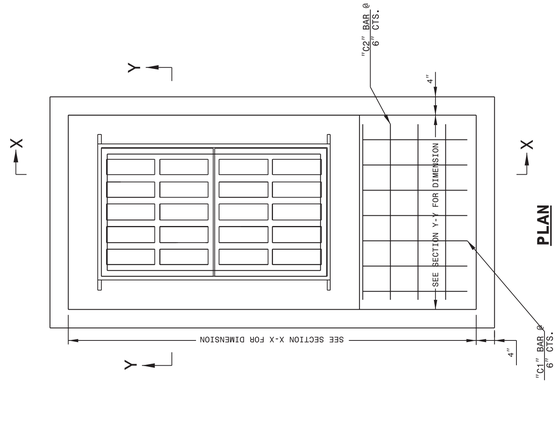


PLAN OF BASE

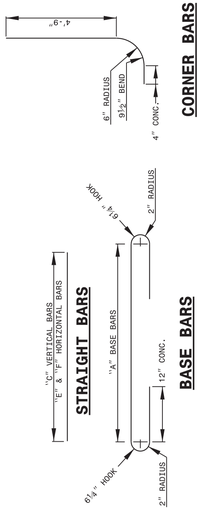
BILL OF MATERIALS

BAR	SIZE	LENGTH	QUANTITY	WEIGHT
A	#5	5'-0"	42	47
B	#5	7'-6"	104	780
C1	#5	3'-4"	9	32
C2	#5	3'-0"	6	19
D	#5	7'-6"	48	376
E	#5	3'-0"	48	151
F	#5	10'-0"	4	42
G	#5	1'-8"	104	181
REINF. STEEL (TOTAL WEIGHT LBS.)				1628
CONCRETE TOTAL (CU.YDS.) CLASS 'AA'				5.1

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES
FOR EVERY 1 FOOT OF RISER USE 0.41 CU.YDS CONCRETE AND 390 LBS STEEL.



PLAN



CORNER BARS

STRAIGHT BARS

BASE BARS

DOWEL-H

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joan S. Howerton

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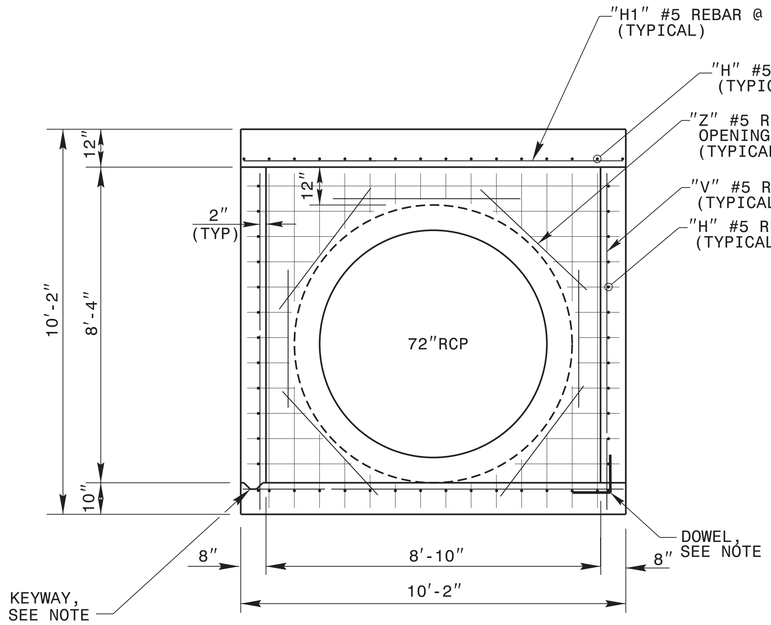
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MODIFIED BY: DATE:
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ENGLISH DETAIL DRAWING FOR **TRAFFIC BEARING GRATED INLET** FOR PIPES UP TO 54″	SHEET 2 OF 2 **840D35**

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jhowerton AT CSD-29295

PROJECT REFERENCE NO.	SHEET NO.



SECTION A-A

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS OR BRICK/BLOCK WALLS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

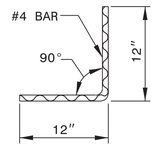
BOX DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

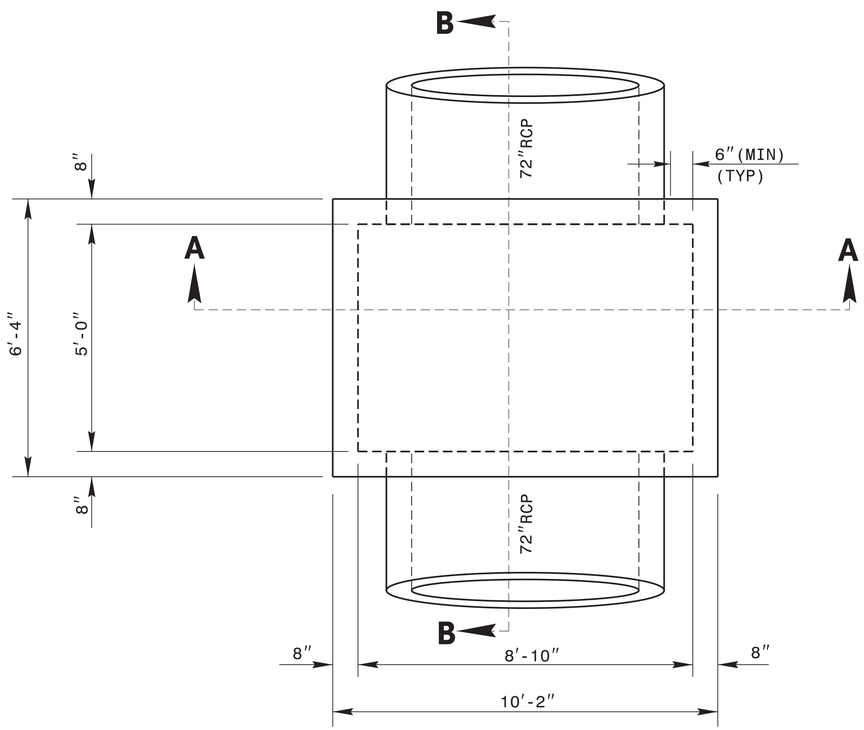
BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	42	#5	8'-10"	387
H1	48	#5	8'-6"	426
V	54	#5	7'-6"	423
Z	14	#5	5'-0"	74
TOTAL REINF. STEEL (LBS.)				1310
TOTAL CONC. (CU. YDS.)				* 11.8

* NO DEDUCTION HAS BEEN MADE FOR PIPES

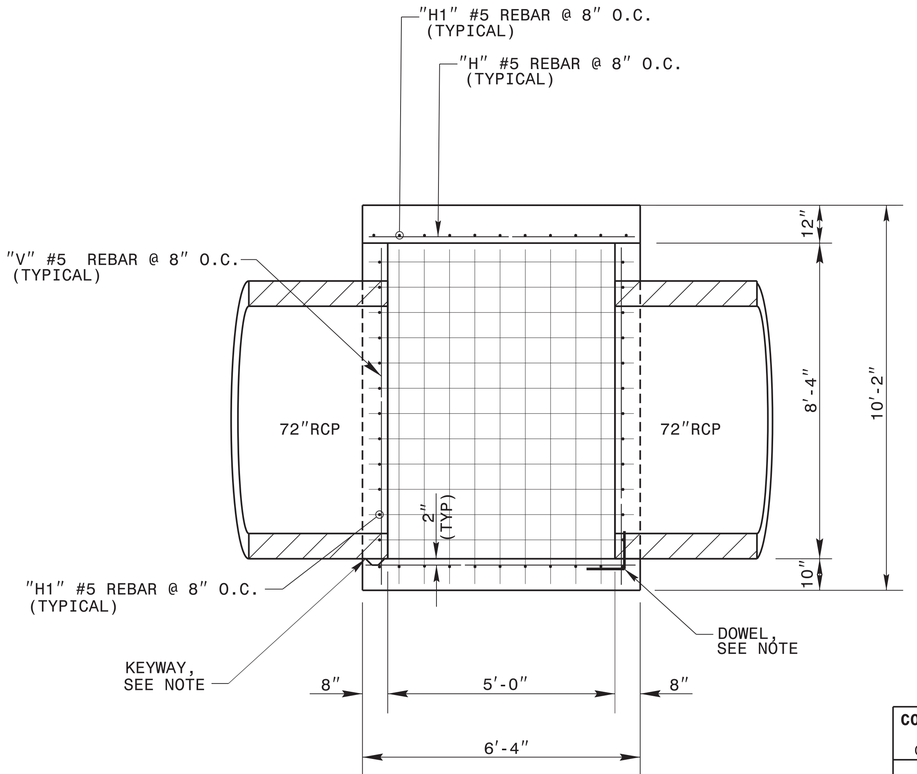
* 2.00 CU. YD. DEDUCTION FOR 2-72" RC PIPE



DOWEL



PLAN VIEW



SECTION B-B

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STANDARDS AND SPECIAL DESIGN
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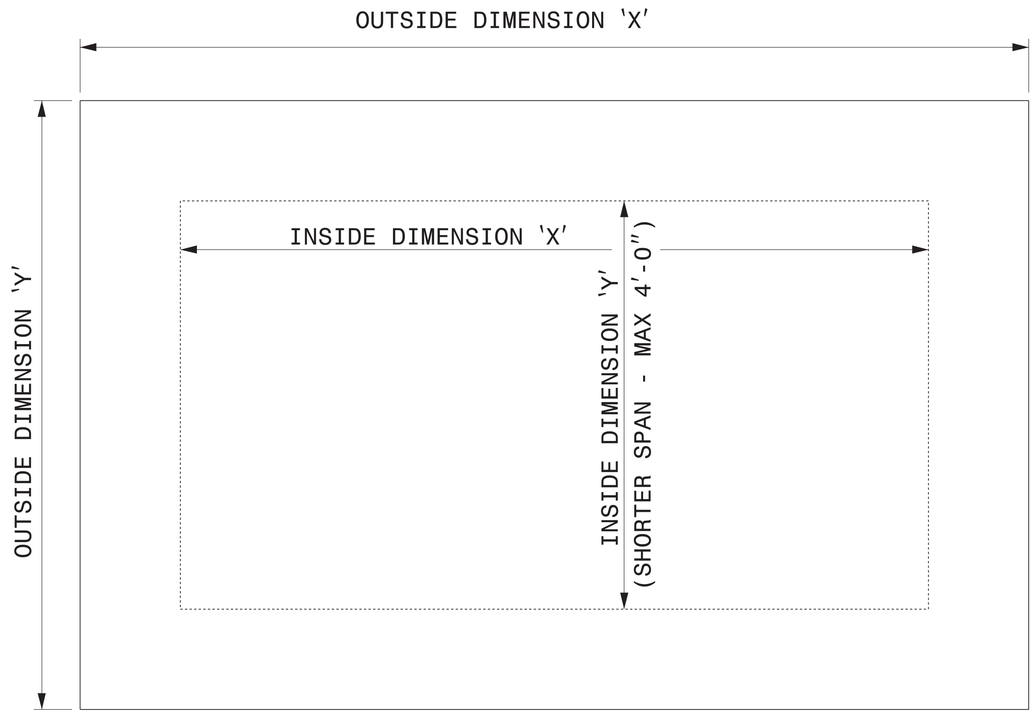
SPECIAL JUNCTION BOX WITH SLAB LID

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: nbritt DATE: 04/17/09
CHECKED BY: _____ DATE: _____
FILE SPEC.: detail/nbritt/english/rural/r2417c72jb.dgn

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 S. Howard

26-JAN-2018 10:05
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jhowerton AT CSD-292595

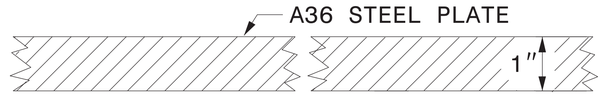
PROJECT REFERENCE NO.	SHEET NO.



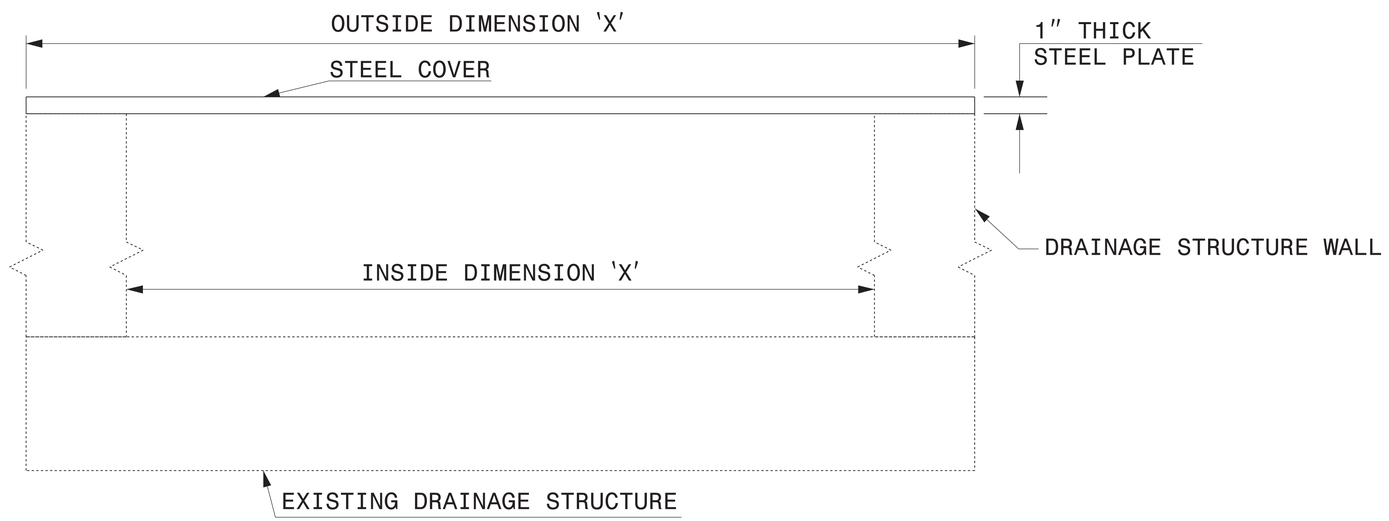
PLAN VIEWS

GENERAL NOTES:

-USE GRADE A36 STEEL
-STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
-FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
-SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
-QUANTITES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.



SECTION VIEW OF STEEL TOP PLATE



ELEVATION VIEWS

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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

DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE

ORIGINAL BY: E.E. WARD DATE: 2-2-98
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: eric:/usr/details/metric/stand/stlcvr2.dgn

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$$$$SYSDATE$$$$
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PROJECT REFERENCE NO.	SHEET NO.

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

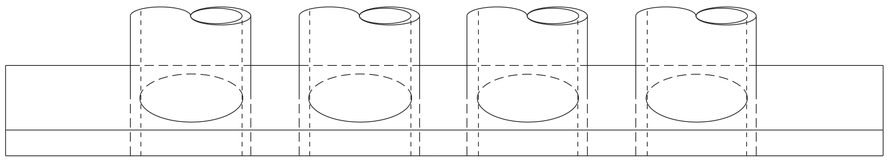
ENGLISH DETAIL DRAWING FOR

CONCRETE ENDWALL FOR TRIPLE AND QUADRUPLE PIPE CULVERTS

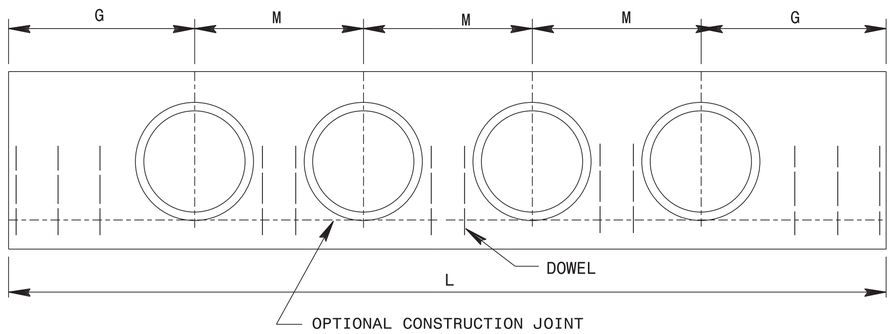
15″ THRU 48″ PIPE - 90° SKEW

SHEET 1 OF 3

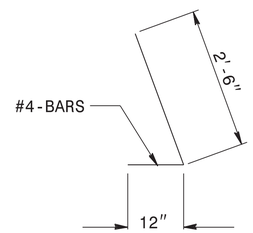
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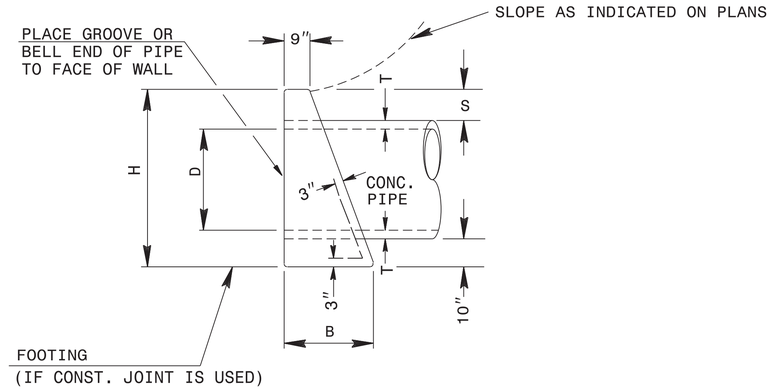
PLAN



ELEVATION



DOWEL
BAR-"X"



END ELEVATION

DIMENSIONS AND CONCRETE QUANTITIES USING CONCRETE PIPE										
	COMMON DIMENSIONS					TRIPLE PIPE		QUADRUPLE PIPE		
D	H	B	G	T	S	L	YD^3	L	YD^3	M
15″	3′-3″	1′-8″	2′-9″	2¼″	9½″	9′-10″	1.3	12′-0″	1.6	2′-2″
18″	3′-7″	1′-10″	3′-2″	2½″	10″	11′-6″	1.6	14′-1″	1.9	2′-7″
24″	4′-2″	2′-1″	4′-0″	3″	10″	14′-10″	2.5	18′-3″	3.0	3′-5″
30″	5′-0″	2′-6″	4′-7″	4¼″	11½″	17′-8″	3.9	21′-11″	4.7	4′-3″
36″	5′-8″	2′-8″	5′-6″	4¾″	12½″	21′-0″	5.6	26′-0″	6.7	5′-0″
42″	6′-2″	3′-1″	6′-4″	5¼″	11½″	24′-4″	7.5	30′-2″	9.0	5′-10″
48″	6′-9″	3′-5″	7′-2″	5¾″	11½″	27′-8″	10.0	34′-4″	12.0	6′-8″

* NOTE: SEE ROADWAY STANDARD DRAWING 838.01 SHEET 3 OF 3 FOR GENERAL NOTES

DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE																	
	PIPE	TRIPLE PIPE									QUADRUPLE PIPE								
LOC.	DIA.	15″	18″	24″	30″	36″	42″		48″		15″	18″	24″	30″	36″	42″		48″	
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
M(s)	QTY.	2	2	4	4	4	4	2	6	2	3	3	6	6	6	6	2	9	2
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5	
TOTAL LBS.		14	14	23	23	28	100		119		17	17	28	28	33	122		147	

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

ENGLISH DETAIL DRAWING FOR

CONCRETE ENDWALL FOR TRIPLE AND QUADRUPLE PIPE CULVERTS

15″ THRU 48″ PIPE - 90° SKEW

SHEET 1 OF 3

838D01

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER John S. Howerton

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE:
MODIFIED BY: K.A. Kempf DATE:
CHECKED BY: DATE:
FILE SPEC.: details/kkempf/english/838d0101.dgn

03-MAY-2018 11:22
S:\Contracts\Contracts\Special Details\kkempf\english\838d0101 triple and quad pipes.dgn
jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
	J

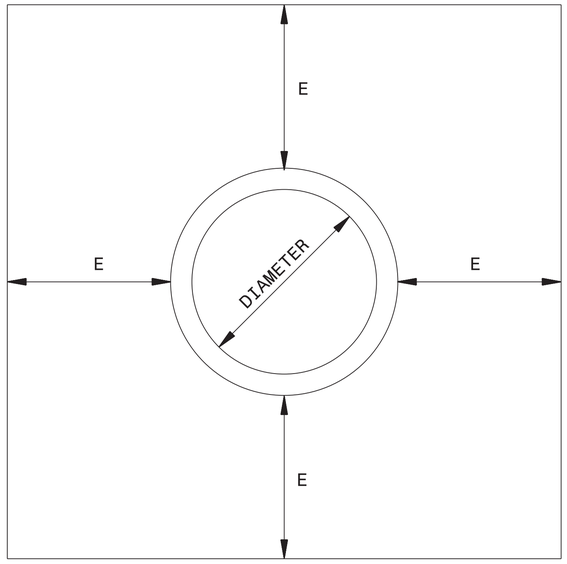
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

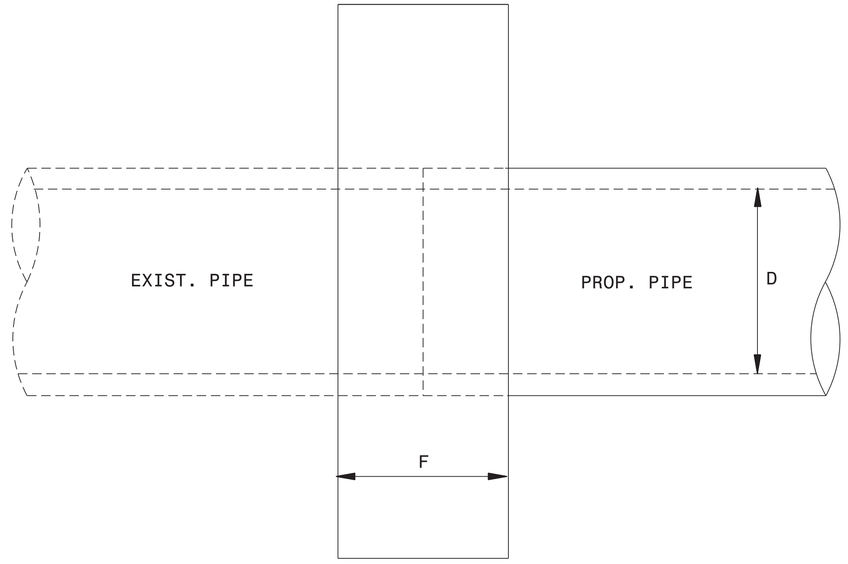
PIPE COLLAR

SHEET 1 OF 1

840D72



ELEVATION



SIDE ELEVATION

GENERAL NOTES:

USE PIPE COLLAR FOR EXTENDING EXISTING CONCRETE PIPE CULVERTS AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. THIS INCLUDES EXTENDING EXISTING PIPES WITH PIPES OF DIFFERENT MATERIALS.

CONSTRUCT THE PIPE COLLAR WITH CLASS "B" OR BETTER CONCRETE.

OBSERVE ALL REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

* USE 12 INCH DIAMETER VALUES FOR PIPE DIAMETERS LESS THAN 12 INCH.

D	E	F	CU. YD.
12″	12″	24″	0.7056
15″	12″	24″	0.7980
18″	12″	24″	0.8930
24″	12″	24″	0.5526
30″	12″	24″	1.1052
36″	12″	24″	1.5280
42″	12″	24″	1.7712
48″	12″	24″	2.0252
54″	18″	30″	4.2988
60″	18″	30″	4.7520
66″	18″	30″	5.2189
72″	18″	30″	5.6971

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

ROADWAY DETAIL DRAWING FOR

PIPE COLLAR

SHEET 1 OF 1

840D72

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON

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

SEE TITLE PLATE

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: K.KEMPF DATE: 4/23/2018
CHECKED BY: _____ DATE: _____
FILE SPEC.: kkempf\english\840D72.dgn

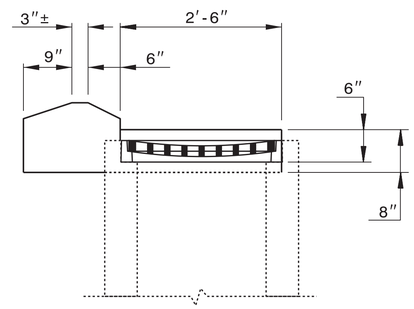
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

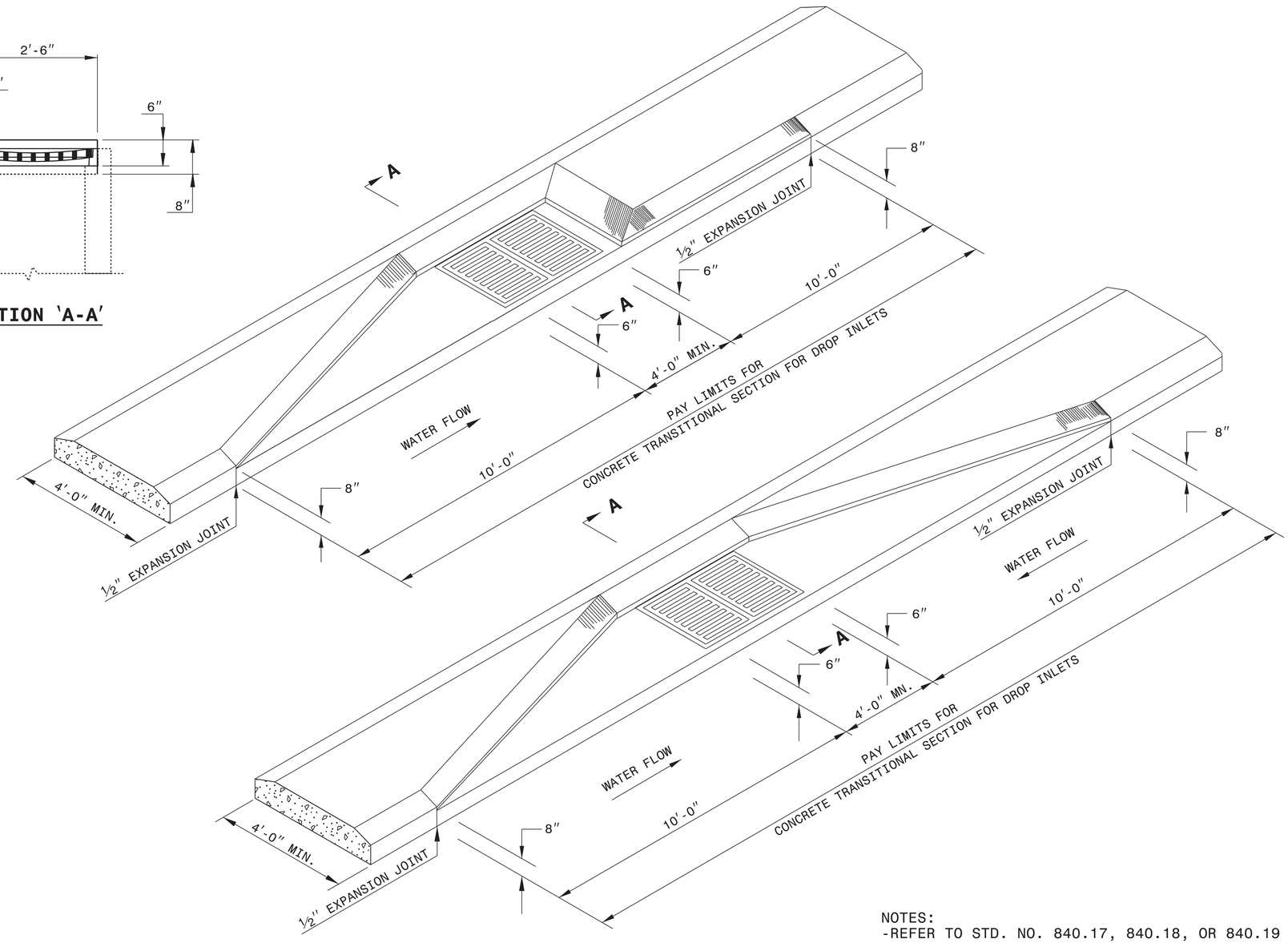
METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1

852D06



SECTION 'A-A'



NOTES:
-REFER TO STD. NO. 840.17, 840.18, OR 840.19 FOR DRAINAGE STRUCTURE.
-REFER TO STD. NO. 840.20 OR 840.29 FOR GRATE AND FRAME.

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

ENGLISH DETAIL DRAWING FOR

METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1

852D06

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
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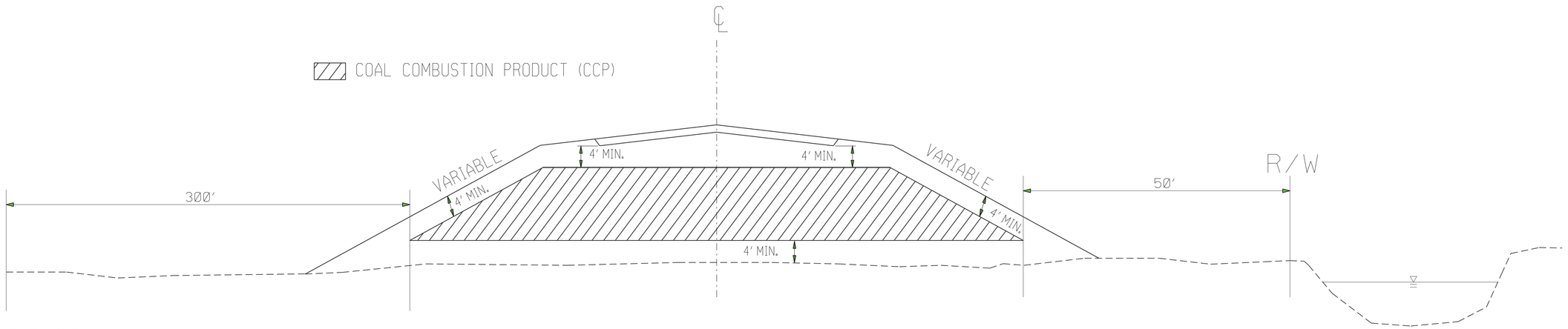
SEE TITLE PLATE

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

06-MAR-2018 10:58
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jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2C-12

COAL COMBUSTION PRODUCT PLACEMENT



PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

07-SEP-2017 08:21
S:\Contracts\Contracts\Special Details\jhowerton\Coal Combustion Product Detail.dgn
jhowerton AT CSD-292595

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

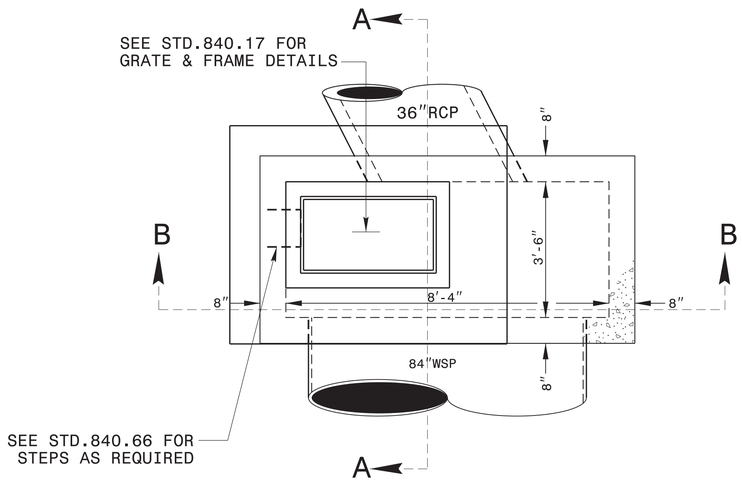
NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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

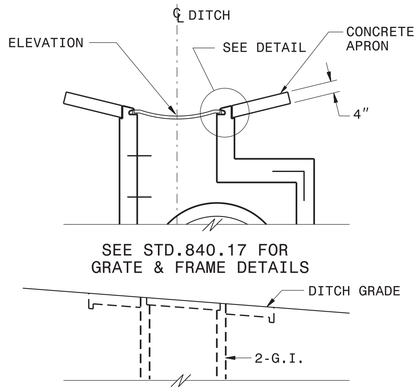
COAL COMBUSTION PRODUCT PLACEMENT DETAIL

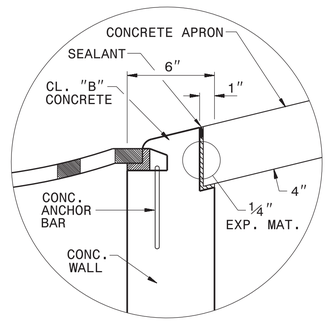
ORIGINAL BY: J.S.H. DATE: 3/16/15
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: joel/coal combustion material detail.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2C-13



PLAN VIEW





DETAIL

(APRON SUPPORT NOTCH)

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

NO DEDUCTIONS HAVE BEEN MADE FOR PIPES.

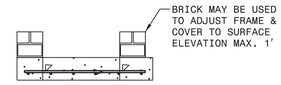
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

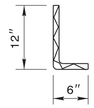
BILL OF MATERIAL FOR CATCH BASIN

REINF. STEEL			1 PIPE	
BAR	SIZE	LENGTH	NO.	WEIGHT
A	#5	4'-6"	31	146
B	#5	6'-2"	7	45
C	#5	3'-6"	7	26
D	#5	9'-4"	7	68
E	#4	7'-8"	8	41
F	#4	14'-0"	8	75
G	#4	12'-10"	16	137
H	#4	4'-0"	88	235
I	#4	5'-8"	58	220
J	#4	8'-10"	32	189
REINF. STEEL LBS.				1182
CLASS "B" CONCRETE		CU. YDS.		13.0

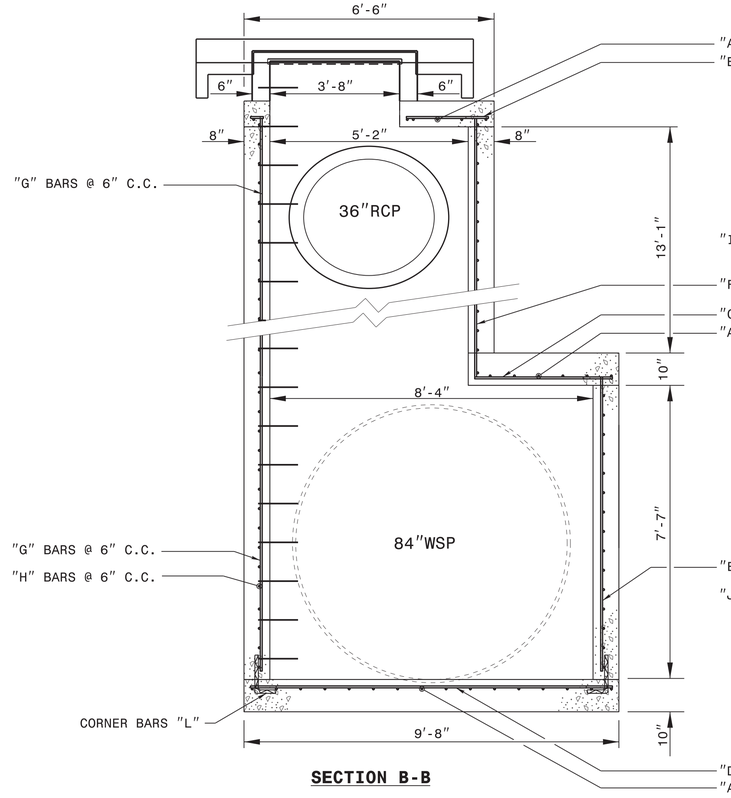
* RISER HAS 0.321 CUBIC YARDS OF BRICK MASONRY PER FOOT HEIGHT



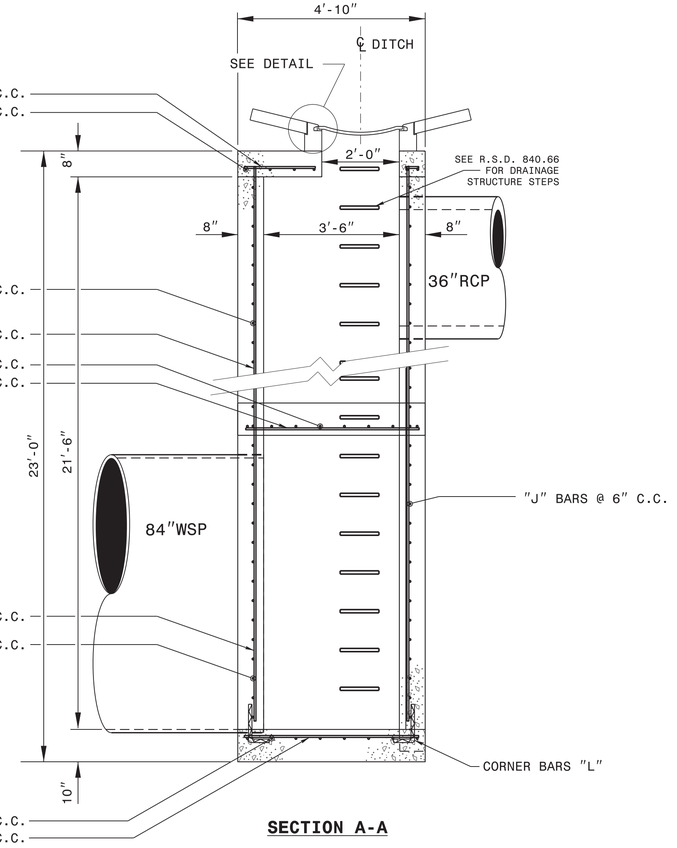
BRICK RISER



DOWEL



SECTION B-B



SECTION A-A

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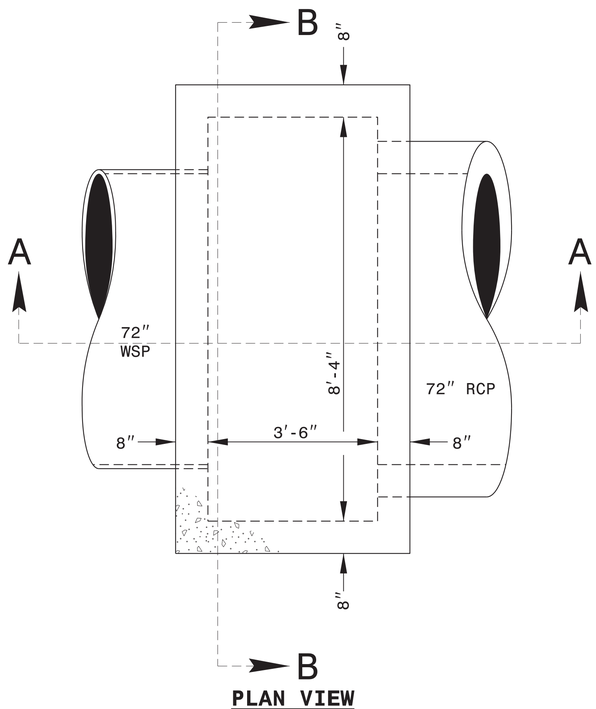
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

EXTRA DEPTH 2 GRATED INLET

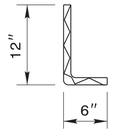
NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON

ORIGINAL BY: K. KEMPF DATE: 6-08-18
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: kkempf\english\R5825B_84 2gi 23ft deep.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2C-14



PLAN VIEW



DOWEL

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

NO DEDUCTIONS HAVE BEEN MADE FOR PIPES.

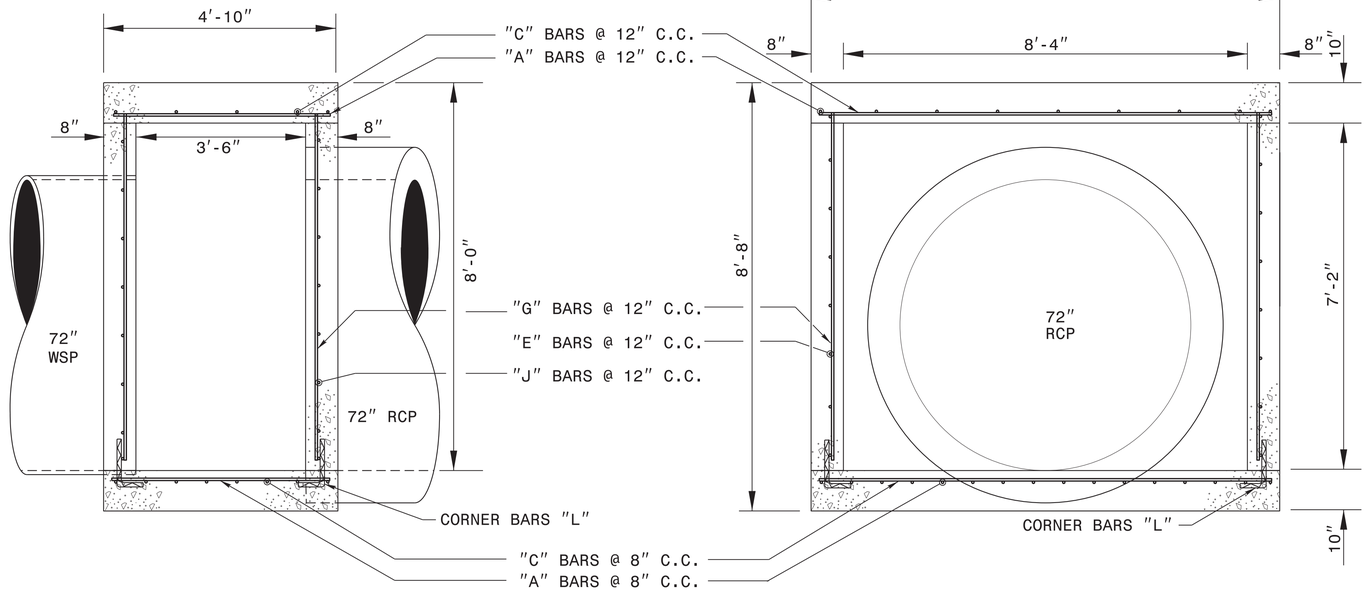
CHAMFER ALL EXPOSED CORNERS 1".

BOX DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.

DRAWING NOT TO SCALE.

BILL OF MATERIAL FOR CATCH BASIN

REINF. STEEL			1 PIPE	
BAR	SIZE	LENGTH	NO.	WEIGHT
A	#5	4′-6″	24	113
C	#5	9′-4″	13	127
E	#4	4′-0″	16	43
G	#4	7′-2″	26	124
J	#4	8′-8″	16	93
REINF. STEEL LBS.				500
CLASS "B" CONCRETE		CU. YDS.		7.5



SECTION A-A

SECTION B-B

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

SPECIAL JUNCTION BOX W/ SLAB LID

ORIGINAL BY: K. KEMPF DATE: 5-22-18
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: Kkempf\english\R5825B_84_2gi_23ft_deep.dgn

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN S. HOWERTON

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2G-1

GEOTECHNICAL ENGINEER

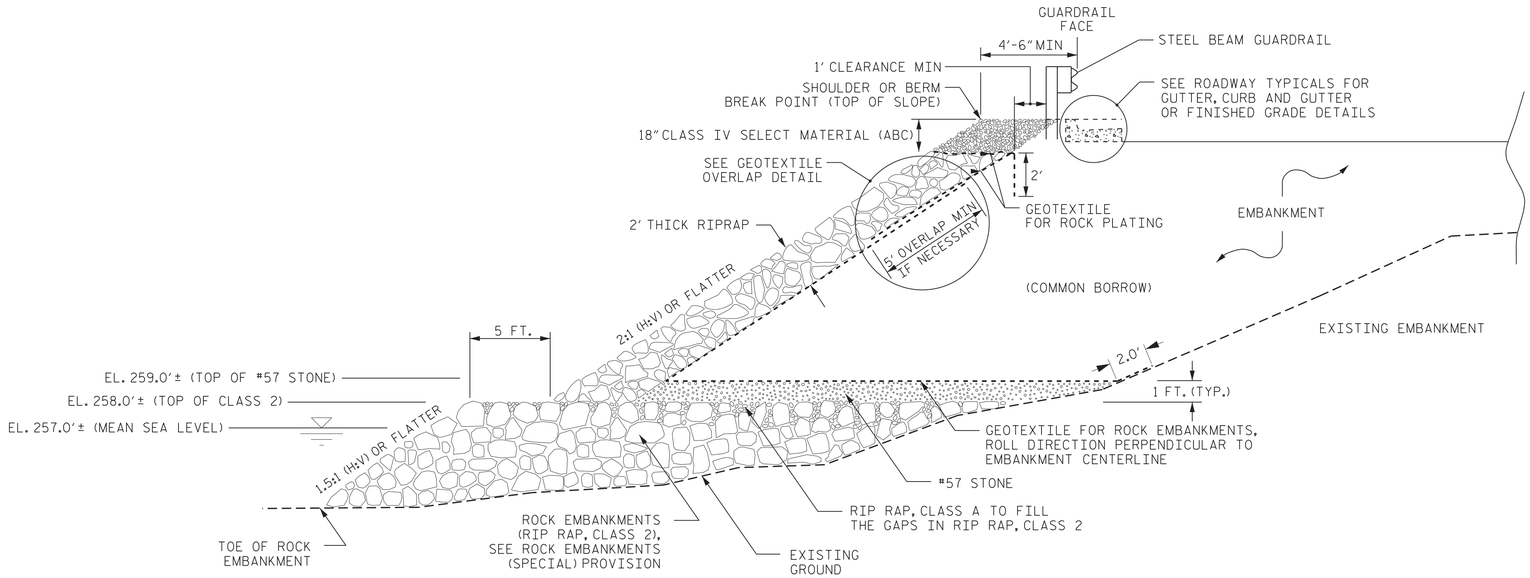
NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

DocuSigned by: A713DB5C... SIGNATURE 3/27/2018 DATE

ENGINEER

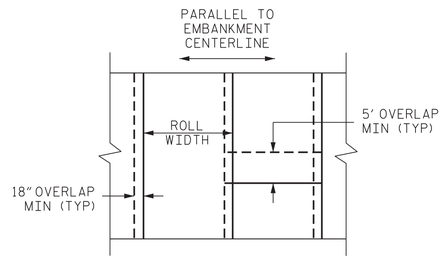
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ROCK EMBANKMENT TYPICAL SECTION

NOT TO SCALE



GEOTEXTILE OVERLAP DETAIL

(PLAN VIEW)

ESTIMATED QUANTITIES	
RIP RAP, CLASS 2	570 TONS
RIP RAP, CLASS A	230 TONS
#57 STONE (SELECT MATERIAL, CLASS VI)	200 TONS
GEOTEXTILE FOR ROCK EMBANKMENTS	440 SY

NOTES

1. FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS (SPECIAL) PROVISIONS.
2. INSTALL ROCK EMBANKMENTS USING CLASS 2 RIP RAP AS SHOWN IN THE PLAN AND TO 1.0 FT ABOVE THE MEAN SEA LEVEL.
3. FILL VOIDS IN THE TOP OF ROCK EMBANKMENTS WITH RIP RAP, CLASS A.
4. PLACE #57 STONE (SELECT MATERIAL, CLASS VI) 1 FT. (TYP.) ABOVE RIP RAP, CLASS 2 AS SHOWN IN THE PLAN.
5. INSTALL GEOTEXTILE FOR ROCK EMBANKMENT ON TOP OF #57 STONE.
6. CONSTRUCT ROCK PLATING ABOVE ROCK EMBANKMENTS. FOR ROCK PLATING, SEE SECTION 275 OF STANDARD SPECIFICATIONS AND STANDARD ROADWAY DRAWING NO. 275.01.

PREPARED BY: J. PARK	DATE: 03 / 2018
REVIEWED BY: J. BATTS	DATE: 03 / 2018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

ROCK EMBANKMENTS DETAILS

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	J. PARK	03 / 2018	3		
2			4		

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	2G-2

GEOTECHNICAL ENGINEER

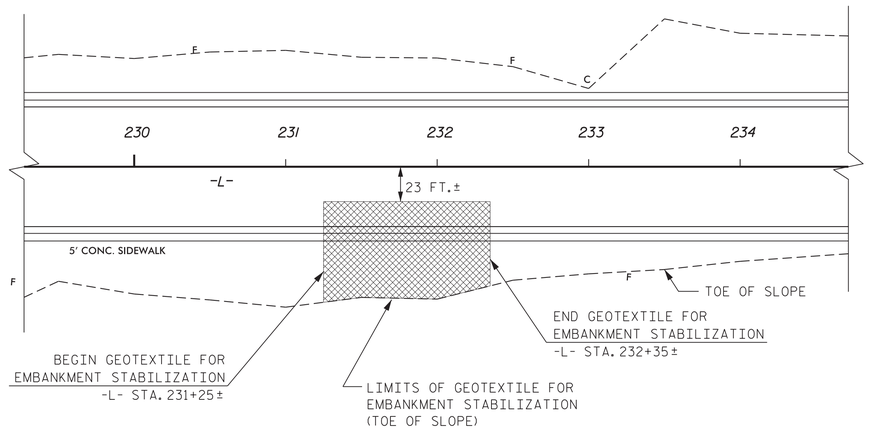
NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

DocuSigned by: JJP 3/27/2018
A713D8C84B4... SIGNATURE DATE

ENGINEER

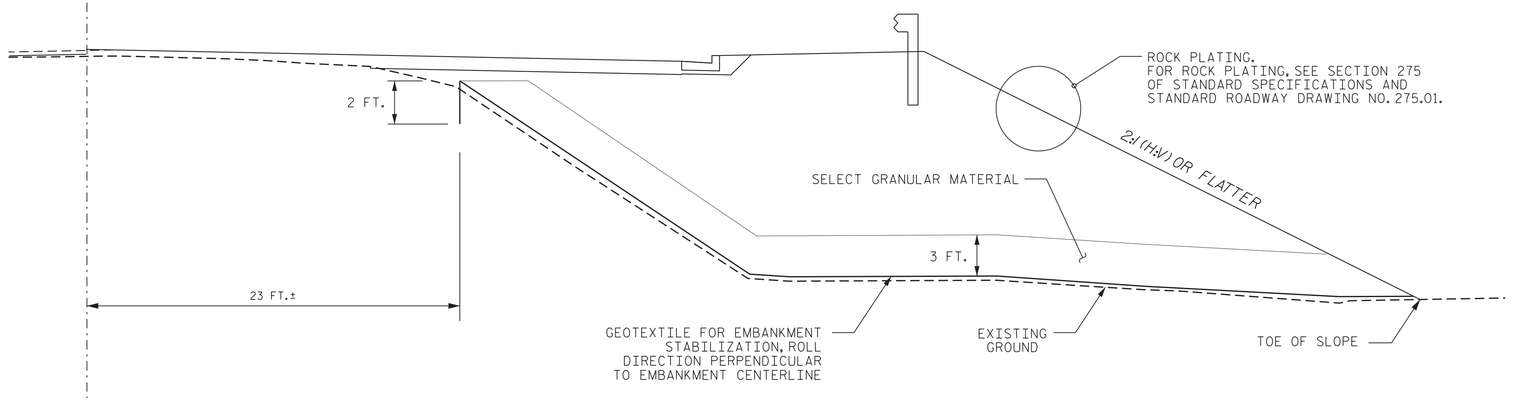
SIGNATURE DATE

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NAD 83/2011

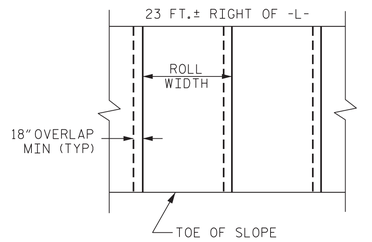
PLAN VIEW
N.T.S.



TYPICAL CROSS SECTION
N.T.S.

NOTES

1. FOR GEOTEXTILE FOR EMBANKMENT STABILIZATION, SEE GEOTEXTILE FOR EMBANKMENT STABILIZATION (SPECIAL) PROVISION.
2. CLEAR THE AREA WITHIN LIMITS FOR GEOTEXTILE FOR EMBANKMENT STABILIZATION.
3. PLACE GEOTEXTILE FOR EMBANKMENT STABILIZATION ROLL DIRECTION PERPENDICULAR TO EMBANKMENT CENTERLINE ON THE EXISTING GROUND.
4. PLACE 3 FT. OF SELECT GRANULAR MATERIAL ON THE GEOTEXTILE FOR EMBANKMENT STABILIZATION.
5. PLACE THE GEOTEXTILE FOR EMBANKMENT STABILIZATION WITHOUT ANY WRINKLES OR CREASES.
6. NO SEAMS OR JOINTS ARE ALLOWED IN THE MACHINE DIRECTION OF GEOTEXTILE FOR EMBANKMENT STABILIZATION.
7. THE TERMS ROLL AND MACHINE DIRECTION ARE USED INTERCHANGEABLY.
8. ALL JOINTS IN THE CROSS MACHINE DIRECTION MUST BE OVERLAPPED A MINMUM OF 18 INCHES.



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW, N.T.S.)

ESTIMATED QUANTITIES	
GEOTEXTILE FOR EMBANKMENT STABILIZATION	900 SY*
SELECT GRANULAR MATERIAL	850 CY

* GEOTEXTILE FOR EMBANKMENT STABILIZATION ESTIMATED QUANTITY DOES NOT INCLUDE OVERLAPS OR WASTE.

PREPARED BY: J. PARK	DATE: 03 / 2018
REVIEWED BY: J. BATTS	DATE: 03 / 2018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

GEOTEXTILE FOR EMBANKMENT STABILIZATION DETAILS

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	J. PARK	03 / 2018	3	-	-
2	-	-	4	-	-

8/17/99

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

JAMES B HUNT AND ROBERT B HUNT DB 3955 PG 971 PB 76 PG 94

JAMES B HUNT AND ROBERT B HUNT DB 509 PG 31 PB 76 PG 94

KEVIN M AMIGH AND WIFE ELIZABETH B AMIGH DB 4180 PG 432 DB 1996 482 PB 73 PG 276 PB 53 PG 250

ROBERT B HUNT AND WIFE MARGARET H HUNT DB 4180 PG 418 DB 848 PG 330 PB 76 PG 150

THE SHOPPES AT GLEN LAUREL DB 4835 PG 316 PB 83 PG 369

10+00 15+00 20+00

POT Sta. 10+00.00

159.81'

15" RCP 12" BST

VARIABLE WIDTH BST

SR 1902 GLEN LAUREL RD

WOODS GRAVEL

BEGIN TIP PROJECT R-3825B
-L- Sta. 12+77.00

N 20°42'51" W 2123.67'

165' MEDIAN TAPER TIE TO EXISTING (R-3825A)

BEGIN GRADE -L- STA. 16+50.00

-DRW24- POT Sta. 10+00.00= -L- POT Sta. 17+47.29

DO NOT DISTURB PINE TREES (PLACE TREE PROTECTION FENCING AROUND TREES)

2' SPECIAL LATERAL BASE DITCH w/PSRM SEE DETAIL 1

DO NOT DISTURB EXISTING TRAFFIC SIGNAL LOOP

-L- +00.00 99.00' LT

-L- +99.00 110.00' LT

-L- +55.00 110.00' LT

-L- +26.00 EX.R/W

-DRW25- POT Sta. 10+00.00= -L- POT Sta. 23+00.51

S 29°08'02" E 654.35'

S 29°09'03" E 635.14'

13/16" CORNER TO EXISTING R/W

BL-101 BL-102

EXISTING R/W

R/W MON

4' PS

5" MONOLITHIC ISLAND

+52.50 6.75'RT

+80.16

R 250'

R 6' +52.59

R 2'

R 1.5'

1'-6" C&G

24" RCP-IV

R 30' +39.67

+37.59

29.5

41.5'

8' PL

N 72°17'35.0" E -L-

BEGIN C&G +37.40

100' TAPER REMOVE

330' RT TURN STORAGE

REMOVE EX. GR

SPECIAL LATERAL V-DITCH SEE DETAIL 112

N 16°47'44.6" W

-DRW25- PT Sta. 11+29.49

-DRW25- PC Sta. 12+16.04

END CONSTRUCTION -DRW25- STA. 11+00.21

-DRW25- PI Sta. 10+43.58 Δ = 16° 31' 46.3" (LT) D = 19° 05' 54.9" L = 86.55' T = 43.58' R = 300.00'

BEGIN C&G +56.71

100' TAPER

330' RT TURN STORAGE

SPECIAL LATERAL V-DITCH SEE DETAIL 112

END C&G +30.29

END CONSTRUCTION -DRW24- STA. 10+98.17

-DRW24- POT Sta. 11+50.00

-L- +45.00 EX.R/W

-L- +20.00 118.00' RT

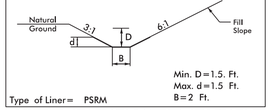
END C&G +64.29

-L- +79.00 EX.R/W

(UNDER CONSTRUCTION) GRADING

EX AERIAL UTILITY EASEMENT DB 4180 PG 424

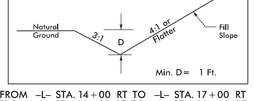
DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5. Ft.
Max. d=1.5 Ft.
B=2 Ft.
Type of Liner= PSRM

FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT
EST. 1935 SY PSRM

DETAIL 112
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1 Ft.

FROM -L- STA. 14+00 RT TO -L- STA. 17+00 RT
FROM -L- STA. 18+00 RT TO -L- STA. 22+00 RT

NOTE:
CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)

FOR -L- PROFILE SEE SHEET 24

MATCHLINE -L- STA. 23+00.00 SEE SHEET 5

6/12/2018
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kevinkepler

8/17/99

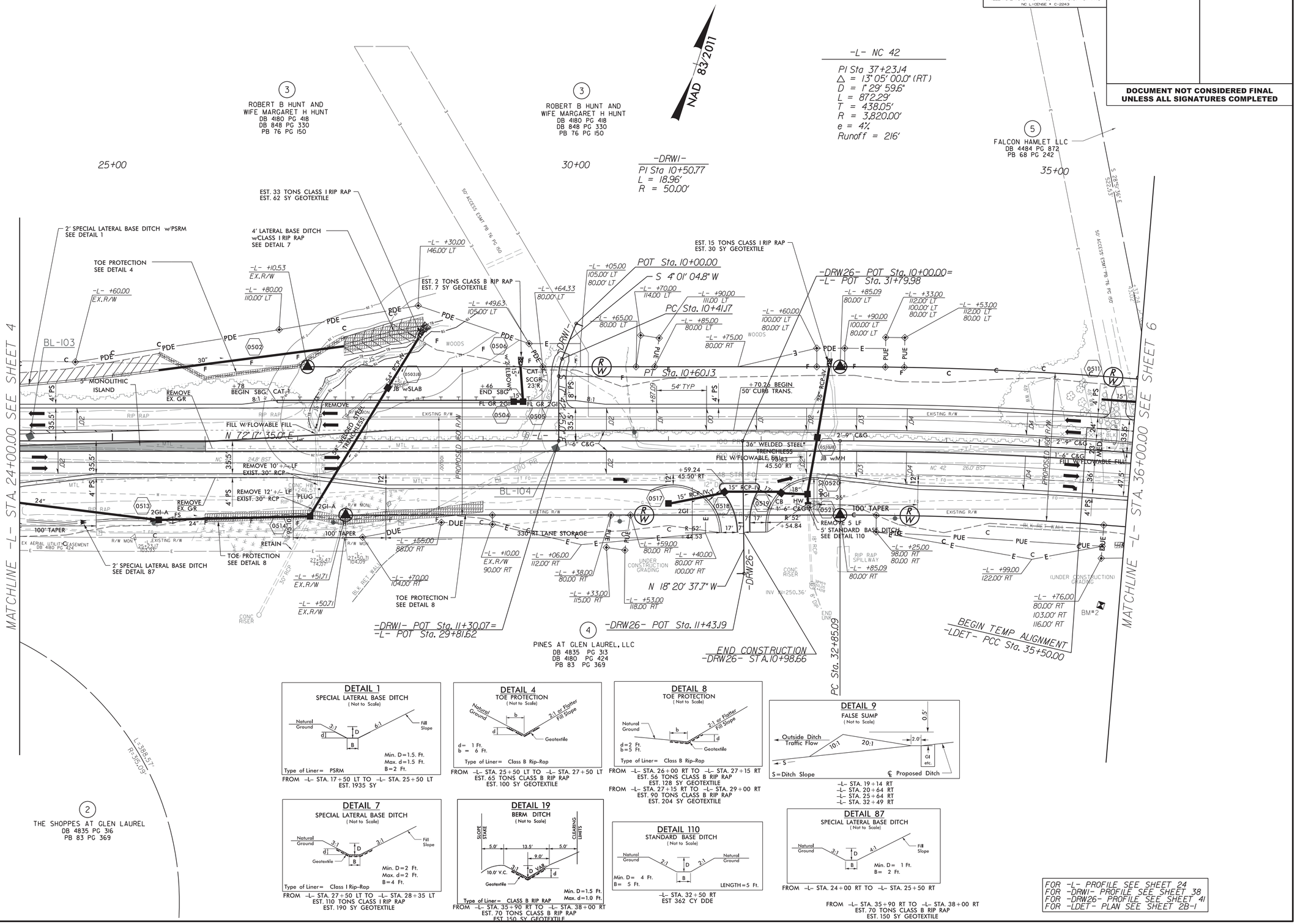
Prepared by
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NC LICENSE • C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.
Type of Liner= PSRM
FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT
EST. 1935 SY

DETAIL 4
TOE PROTECTION
(Not to Scale)

d= 1 Ft.
b = 6 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 25+50 LT TO -L- STA. 27+50 LT
EST. 65 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE

DETAIL 8
TOE PROTECTION
(Not to Scale)

d=2 Ft.
b=5 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 26+00 RT TO -L- STA. 27+15 RT
EST. 56 TONS CLASS B RIP RAP
EST. 128 SY GEOTEXTILE
FROM -L- STA. 27+15 RT TO -L- STA. 29+00 RT
EST. 90 TONS CLASS B RIP RAP
EST. 204 SY GEOTEXTILE

DETAIL 9
FALSE SUMP
(Not to Scale)

-L- STA. 19+14 RT
-L- STA. 20+64 RT
-L- STA. 25+64 RT
-L- STA. 32+49 RT

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 27+50 LT TO -L- STA. 28+35 LT
EST. 110 TONS CLASS I RIP RAP
EST. 190 SY GEOTEXTILE

DETAIL 19
BERM DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.0 Ft.
Type of Liner= CLASS B RIP RAP
FROM -L- STA. 35+90 RT TO -L- STA. 38+00 RT
EST. 70 TONS CLASS B RIP RAP
EST. 150 SY GEOTEXTILE

DETAIL 110
STANDARD BASE DITCH
(Not to Scale)

-L- STA. 32+50 RT
EST 362 CY DDE

DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM -L- STA. 24+00 RT TO -L- STA. 25+50 RT

FROM -L- STA. 35+90 RT TO -L- STA. 38+00 RT
EST. 70 TONS CLASS B RIP RAP
EST. 150 SY GEOTEXTILE

FOR -L- PROFILE SEE SHEET 24
FOR -DRW1- PROFILE SEE SHEET 38
FOR -DRW26- PROFILE SEE SHEET 41
FOR -LDET- PLAN SEE SHEET 2B-1

6/12/2018
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kevinhester

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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

-L- NC 42

PI Sta 37+23.14
△ = 13° 05' 00.0" (RT)
D = 1° 29' 59.6"
L = 872.29'
T = 438.05'
R = 3,820.00'
e = 4%
Runoff = 2.16'

-DRW2-
PI Sta 10+49.85
L = 31.97'
R = 50.00'

-Y4- FOX RIDGE RD

PI Sta 10+25.69
△ = 12° 41' 31.1" (LT)
D = 24° 48' 12.1"
L = 51.17'
T = 25.69'
R = 231.00'

PI Sta 11+42.18
△ = 3° 18' 13.3" (LT)
D = 5° 43' 46.5"
L = 57.66'
T = 28.84'
R = 1,000.00'

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

NC 42 — 212 / 374 — 2/3
NC 42 — 210 / 371 — <1 / <1
SR 2008 — 2/3
FOX RIDGE RD.

DETAIL 18
TOE PROTECTION
(Not to Scale)

4.5:1 OR FLATTER Fill Slope
1.7:1 OR FLATTER Pond Embankment Slope
d
PSRM
d=1 Ft.
Type of Liner= PSRM

FROM -L- STA. 48+30 RT TO -L- STA. 50+00 RT
EST. 1.67 SY PSRM

DETAIL 17
TOE PROTECTION
(Not to Scale)

4.5:1 or Flatter Fill Slope
1.7:1 or Flatter Pond Embankment Slope
d
Geotextile
d=1 Ft.
Type of Liner= Class B Rip-Rap

FROM -L- STA. 47+36 RT TO -L- STA. 48+30 RT
EST. 28 TONS CLASS B RIP RAP
EST. 63 SY GEOTEXTILE

(6) RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128

(5) FALCON HAMLET LLC
DB 4484 PG 872
PB 68 PG 242

-L- POC Sta. 38+97.23 =
-Y4- POC Sta. 10+00.00

-Y4DET- POT Sta. 0+00.00=
-L- POT Sta. 38+35.20

PC Sta. 10+33.29
POT Sta. 10+00.00
PT Sta. 10+65.26
-DRW2- POT Sta. 11+30.00 =
-L- POC Sta. 40+33.15

EST. 11 TONS CLASS I RIP RAP
EST. 22 SY GEOTEXTILE
EST. 1 TONS CLASS I RIP RAP
EST. 5 SY GEOTEXTILE
TOE PROTECTION SEE DETAIL 13
5" MONOLITHIC ISLAND
100' MEDIAN TRANSITION
54" TYP.
180' TRANSITION
TOE PROTECTION SEE DETAIL 12
TOE PROTECTION SEE DETAIL 13
78 SY PSRM
+37.76 BEGIN 50' CURB TRANS.
+82.00 2' R
+55.76 2' R
+91.38 50' R
+72.00 2' R
+77 BEGIN SBG CAT-1
+93.17 77.44' LT BEGIN C/A (EX.R/W)
+65.00 104.00' LT EX.R/W
+08.00 111.00' LT
+42.00 90.00' LT EX R/W
+75.00 120.00' LT
BL-105
BL-106
EXISTING R/W
PROPOSED R/W
WOODS
FILL W/FLOWABLE FILL FL GR 2GI
30" WELDED STEEL TRENCHLESS INSTALLATION
54" WELDED STEEL TRENCHLESS INSTALLATION
18" WELDED STEEL TRENCHLESS INSTALLATION
15" RCP
18" RCP IV
24" DIP
12" DIP
54" RCP-IV
REMOVE
SEAL ABANDONED WELL
RIP RAP RAP AT EMBANKMENT SEE DETAIL 16
GRADE TO DRAIN
JB w/MH
100' TAPER
PT Sta. 10+51.17
PT Sta. 10+99.46
PT Sta. 41+57.38
PI Sta. 10+52.88
N 74° 38' 57.9" E
S 25° 00' 52.2" E
N 63° 04' 05.3" E
S 85° 48' 07" W
S 81° 48' 07" W
N 85° 22' 35.0" E
S 37° 23' 22" E
135.45'
S 46° 41' 03" E
462.54'
N 28° 36' 32" W
109.33'
S 60° 51' 07" W
199.15'
N 28° 36' 32" W
229.47'
N 60° 51' 54" E
200.00'
S 28° 19' 05" E
-Y4- POT Sta. 12+75.00
POT Sta. 13+59.32
END CONSTRUCTION
-Y4- POT Sta. 12+75.00
BY1-136
-DRW15- POT Sta. 11+20.00 =
-Y4- POC Sta. 11+30.02
-DRW16- POT Sta. 10+00.00 =
-Y4- POC Sta. 11+46.81
PC Sta. 11+13.35
POT Sta. 10+00.00
PT Sta. 11+71.01
12+85.00 -Y4- EX.R/W
POT Sta. 10+99.46
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
CUT DITCH wPSRM SEE DETAIL 11
BERM DITCH wCLASS B RIP RAP SEE DETAIL 19
6' STANDARD BASE DITCH wCLASS II RIP RAP SEE DETAIL 14
8' STANDARD BASE DITCH wCLASS II RIP RAP SEE DETAIL 15
TOE PROTECTION SEE DETAIL 18
TOE PROTECTION SEE DETAIL 17
DO NOT DISTURB FENCE
6" DIP RISER INV. INACCESSABLE DUE TO BLOCKAGE IN PIPE
POND WE = 196.6
SEE SHEET 5
SEE SHEET 7
MATCHLINE -L- STA. 36+00.00
MATCHLINE -L- STA. 49+00.00

(4) PINES AT GLEN LAUREL, LLC
DB 4835 PG 313
DB 4180 PG 424
PB 83 PG 369

(7) STEVENSON E WILSON AND WIFE MAJORIE WILSON
DB 1002 PG 134
PB 26 PG 45
CUT DITCH wPSRM SEE DETAIL 11

(8) KEVIN T HAMILTON
DB 1221PG 98
PB 26 PG 45

(9) CHRISTY L HOBBY
DB 1255 PG 547
PB 26 PG 45

(10) JASON A WILLIAMS AND JOSEPH T LORENZO
DB 3603 PG 722
PB 26 PG 45

(12) ALVIN BROUGHTON JR AND WIFE CAROL BROUGHTON
DB 721PG 127
PB 76 PG 52

(11) TODD NARRON
DB 3949 PG 977
PB 76 PG 52

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)

Natural Ground
2:1
D
d
Geotextile
B
Min. D=1 Ft.
Max. d=1 Ft.
B=6 Ft.
Type of Liner= Class B Rip-Rap

FROM -L- STA. 46+45 RT TO -L- STA. 46+85 RT
EST. 20 TONS CL B RIP RAP, EST. DDE 26 CY,
EST. 44 SY GEOTEXTILE

DETAIL 13
TOE PROTECTION
(Not to Scale)

Natural Ground
b
2:1 or Flatter Fill Slope
d
Geotextile
d=1 Ft.
b=5 Ft.
Type of Liner= Class B Rip-Rap

FROM -L- STA. 36+65 LT TO -L- STA. 37+75 LT
EST. 40 TONS CLASS B RIP RAP
EST. 90 SY GEOTEXTILE

FROM -L- STA. 48+65 LT TO -L- STA. 49+25 LT
EST. 27 TONS CLASS B RIP RAP
EST. 60 SY GEOTEXTILE

DETAIL 19
BERM DITCH
(Not to Scale)

SLOPE STAKE
5.0'
13.5'
9.0'
5.0'
CLEARING LIMITS
10.0' V.C.
3:1
D
V
d
Geotextile
Min. D=1.5 Ft.
Max. d=1.0 Ft.
Type of Liner= CLASS B RIP RAP

FROM -L- STA. 35+90 RT TO -L- STA. 38+00 RT
EST. 110 TONS CLASS B RIP RAP
EST. 250 SY GEOTEXTILE

DETAIL 10
FALSE SUMP
(Not to Scale)

0.5'
Outside Ditch Traffic Flow
10:1
20:1
2'
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch

-L- STA. 46+92LT

DETAIL 16
RIP RAP AT EMBANKMENT
(Not to Scale)

5' min.
Ditch Grade
1.0' min.
2'
GEOTEXTILE
Type of Liner= 18 TONS,CL II Rip-Rap
Geotextile= 18sy

FROM -L- STA. 46+75 RT TO -L- STA. 47+00 RT

DETAIL 15
STANDARD BASE DITCH
(Not to Scale)

Natural Ground
2:1
D
d
Geotextile
B
Min. D=1.5 Ft.
Max. d=2 Ft.
B=8 Ft.
Type of Liner= CLASS II Rip-Rap

FROM -L- STA. 46+90 RT TO -L- STA. 47+20 RT
EST. 76 TONS CLASS II RIP RAP, EST. DDE 113 CY,
EST. 76 SY GEOTEXTILE

DETAIL 9
FALSE SUMP
(Not to Scale)

0.5'
Outside Ditch Traffic Flow
10:1
20:1
2.0'
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch

-L- STA. 36+64RT
-L- STA. 38+14RT
-L- STA. 40+23RT
-L- STA. 42+64RT
-L- STA. 47+36RT

DETAIL 11
TYPICAL CUT DITCH
(Not to Scale)

Natural Ground
2:1
D
d
5:1 or Flatter
Front Ditch Slope
Min. D=1 Ft.
Max. d=1 Ft.
Type of Liner= PSRM

FROM -Y4- STA. 10+55 RT TO -Y4- STA. 12+45 RT
EST. 220 SY PSRM
FROM -Y4- STA. 11+25 LT TO -L- STA. 40+10 RT
EST. 140 SY PSRM

DETAIL 12
TOE PROTECTION
(Not to Scale)

NATURAL GROUND
b
2:1 OR FLATTER
d
FILL SLOPE
d=1 Ft.
b=5 Ft.
Type of Liner= PSRM

FROM -L- STA. 47+50 LT TO -L- STA. 48+65 LT
EST. 135 SY PSRM

FOR -L- PROFILE SEE SHEET 25
FOR -Y4- PROFILE SEE SHEET 33
FOR -DRW2- PROFILE SEE SHEET 38
FOR -DRW15- PROFILE SEE SHEET 39
FOR -DRW16- PROFILE SEE SHEET 40
FOR CONC.ISLAND DETAILS SEE SHEET 2B-5

8/17/2018
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rtaylor

8/17/99

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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y5- WOODBERRY CT

PI Sta 10+91.31
△ = 49° 26' 53.2" (LT)
D = 39° 47' 19.4"
L = 124.28'
T = 66.31'
R = 144.00'

PI Sta 12+40.57
△ = 41° 39' 06.4" (RT)
D = 23° 52' 23.7"
L = 174.47'
T = 91.29'
R = 240.00'

-DRW17-
PI Sta 10+48.30
L = 20.95'
R = 30.00'

NAD 83/2011

5 FALCON HAMLET LLC
DB 4484 PG 872
PB 68 PG 242

6 RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128

6 RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128

50+00 55+00 60+00

-L- +14.00 162.00' LT
-L- +52.63 115.00' LT
EST. 60 TONS CLASS II RIP RAP 2' THICK
EST. 62 SY GEOTEXTILE
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
-L- +65.00 180.00' LT
-L- +68.46 165.00' LT
-L- +80.00 115.00' LT
-L- +10.00 145.00' LT
-L- +29.16 115.00' LT
-L- POC Sta.50+31.27, 9.98' RT
-Y5DET- POC Sta. 0+00.00
-L- +49.16 77.60' LT END C'A (EXIST.RW)
-L- +84.36 84.13' LT
-L- +09.00 121.00' LT
-L- +27.00 109.00' LT
-L- +21.00 100.00' LT
-L- POT Sta.51+50.00 =
-Y5- POT Sta. 10+00.00
-L- +13.00 118.00' LT
-L- +13.00 108.00' LT
-L- +59.00 138.00' LT 124.00' LT
-L- +61.00 121.00' LT
-L- +85.00 115.00' LT
TOE PROTECTION SEE DETAIL 12
-L- +20.00 139.00' LT
-L- +69.00 160.00' LT 145.00' LT
2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21
-L- +00.00 130.00' LT
TOE PROTECTION SEE DETAIL 69

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6

0704 0708 0707 0724 0723 0703 0702 0701 0705 0706 0709 0710 0711 0712 0713 0714 0715 0716 0717 0720 0722 0718

PDE 15" RCP 18" RCP 24" RCP 30" RCP 36" RCP 48" RCP 48" WW 24" EIPO 5" MONOLITHIC ISLAND GRADE TO DRAIN 20.17 w/MH 24" EIPO

90° ELBOWS 18" TRANSITION FL GR 2GI 15" RCP FILL

+83.17 38.75' LT 42' R +20.17 4' R 2' R 50' R FL GR 2GI

+20.17 2' R +45.96 2' LT

RETAIN PUE BDO DUE DO NOT DISTURB FENCE CUT DITCH w/PSRM SEE DETAIL 20 BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19 5" MONO. ISL. 2' R +80.56 2' RT

-L- +56.00 98.00' RT
-L- +80.00 113.00' RT
-L- +95.00 91.00' RT
-L- +73.73 80.00' RT
-L- +68.00 100.00' RT
-Y5- +92.00 68.00' RT
-Y5- +60.00 95.00' RT
-Y5- +20.00 30.00' LT
-Y5- +49.28 30.00' LT
-Y5- +60.00 95.00' RT

BY2-137 REMOVE EST. 2 TONS CLASS B RIP RAP EST. 7 SY GEOTEXTILE

PT Sta. 10+58.33
PC Sta. 10+37.38
PI Sta. 10+26.34
N 14° 25' 08.2" E
N 54° 25' 29.2" E
S 12° 25' 16.8" E

-Y5- +95.00 46.00' RT
-Y5- +23.75 30.00' RT
-Y5- +78.00 120.00' RT
-Y5- +50.00 85.00' RT
-Y5- +81.00 43.00' RT 30.00' RT
-Y5- +94.00 42.00' LT 30.00' LT
-Y5- +23.75 30.00' LT
-Y5- +22.00 30.00' LT
-Y5- +22.00 30.00' RT

-Y5DET- +40.00 EX.ROW

END CONSTRUCTION
-Y5- POT Sta. 14+22.00
POT Sta. 14+31.79

PC Sta. 10+25.00
PRC Sta. 11+49.28
-L- +40.00 80.00' RT
-Y5- +49.28 30.00' LT
-Y5- +95.12 60.00' LT
CUT DITCH w/PSRM SEE DETAIL 20
-DRW17- POT Sta. 11+20.00 =
-Y5- POC Sta. 12+26.75
PT Sta. 13+23.75

BL-107 BL-108

+98 END SBG GREU TL-3 8:1 REMOVE RIP RAP
+26.25 BEGIN SBG CAT-1 8:1 REMOVE EX. G/R
+56.82 BEGIN SBG CAT-1 REMOVE

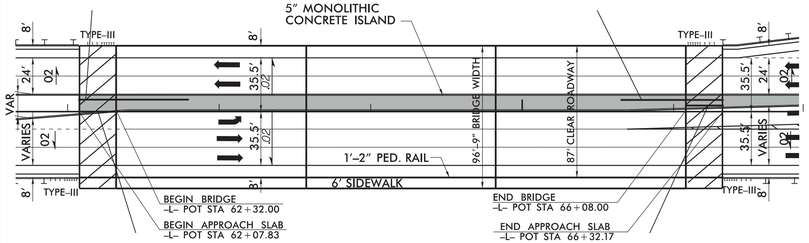
N 85° 22' 35.0" E
S 4° 37' 25.0" E
S 56°18'25" E 1347.67'

PC Sta. 10+25.00 40' R 00.34 +19.69 +42.02 36.08 +72.00 PROPOSED 80' R/W 4' PS 8' PS 24' MED 23' MED 35.5' 30.17 6.75' 24.75' 4' 2' 1'-6" C&G 12" DIP 15" RCP 18" RCP 24" RCP 30" RCP 36" RCP 48" RCP 48" WW 24" EIPO 18" PVC 8" PVC 8" CMP 8" DIP 8" PL 8" PS 2-20' R 2-24' R 2 w/2 ELBOWS 18" 15" 150' MEDIAN TAPER

WOODS EXISTING R/W PROPOSED 80' R/W PROPOSED 150' R/W DATUM NC 42 24.6% BST TV FO W W W

8/17/99

FOR DETAILS ON BRIDGE SEE STRUCTURES PLANS



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

SCALE: 1"=50'

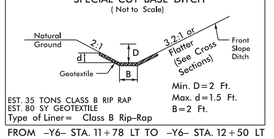
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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)

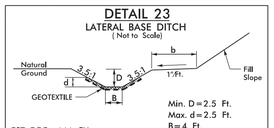


EST. 35 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
Type of Liner= Class B Rip-Rap
Min. D=2 Ft.
Max. d=1.5 Ft.
B=2 Ft.

FROM -Y6- STA. 11+78 LT TO -Y6- STA. 12+50 LT

(17) COUNTY OF JOHNSTON
DB 1391 PG 727
PB 43 PG 31

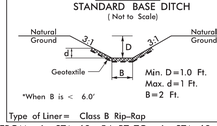
DETAIL 23
LATERAL BASE DITCH
(Not to Scale)



EST. DDE=444 CY
Type of Liner= Class I Rip-Rap
Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=4 Ft.
b=3-5 Ft.

FROM -L- STA. 73+03 RT TO -L- STA. 75+91 RT
EST. 368 TONS CLASS I RIP RAP
EST. 620 SY GEOTEXTILE

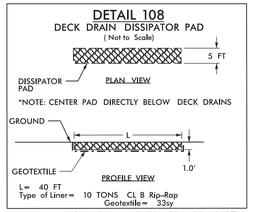
DETAIL 22
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
Max. d=1 Ft.
B=2 Ft.
*When B is < 6.0'
Type of Liner= Class B Rip-Rap

FROM -L- STA. 68+54 RT TO -L- STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE

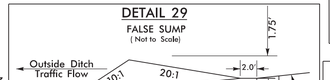
DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)



L= 40 FT
Type of Liner= 10 TONS CL B Rip-Rap
Geotextile= 33sy

FROM -L- STA. 65+20RT TO STA. 65+60RT

DETAIL 29
FALSE SUMP
(Not to Scale)



S=Ditch Slope
℄ Proposed Ditch

-Y6- STA. 14+25 LT

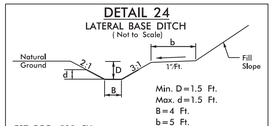
DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)



Length=15 Ft.
d= To Top of Bank
Est.= 15 Tons of Class B Rip-Rap

FROM STA. 73+00 LT TO STA. 73+20 LT

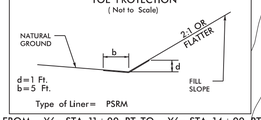
DETAIL 24
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=5 Ft.
EST. DDE=585 CY
Type of Liner= PSRM

FROM -L- STA. 73+10 LT TO -L- STA. 75+00 LT
EST. 325 SY PSRM

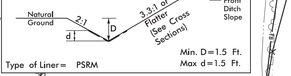
DETAIL 12
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=5 Ft.
Type of Liner= PSRM

FROM -Y6- STA. 11+00 RT TO -Y6- STA. 14+00 RT

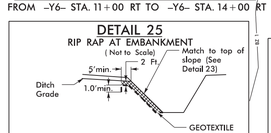
DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
Type of Liner= PSRM

FROM -Y6- STA. 14+56 LT TO -Y6- STA. 15+00 LT

DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= EST. 9 TONS, CL I Rip-Rap
Geotextile= 21 sy

FROM -L- STA. 73+45 RT TO -L- STA. 73+60 RT

DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)



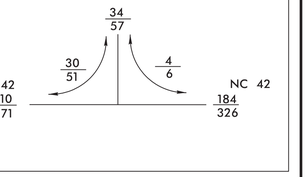
Min. D=1.5 Ft.

FROM -Y6- STA. 14+00 LT TO -Y6- STA. 14+56 LT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

CASTLEBERRY RD.
SR 1705



EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE

TOE PROTECTION
SEE DETAIL 12
FOR INCIDENTAL
LOW AREAS AGAINST
FILL SLOPE

(16) JOHNSTON COUNTY
BOARD OF EDUCATION
DB 1316 PG 52
PB 43 PG 31

EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE

(6) RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128

-DRW18- POT Sta. 10+75.00 =
-Y6- POT Sta. 16+71.62

POT Sta. 10+00.00

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
END APPROACH SLAB

BEGIN APPROACH SLAB

TEMPORARY SHORING NO.1
62+07 TO 62+80
7.9' LT BRIDGE SEAT ELEVATIONS
SEE TMP
BS1 = 154.33'
BS2 = 154.32'
BS3 = 154.32'
BS4 = 154.31'

375' PROPOSED BRIDGE

BEGIN BRIDGE

CL II RIP RAP (STRUCTURE PAY ITEM)

TEMPORARY SHORING NO.2
65+65 TO 66+33
7.7' LT
SEE TMP

CL II RIP RAP (STRUCTURE PAY ITEM)
EX DB UTILITY EASEMENT PB M2 PG 207

5" MONOLITHIC ISLAND
1'-2" PEDESTRIAN BARRIER RAIL
6' SIDEWALK

EST. 323 TONS CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 108

TEMPORARY SHORING NO.4
66+08 TO 66+33
4.0' LT
SEE TMP

TEMPORARY SHORING NO.3
62+07 TO 62+33
0.0' LT
SEE TMP

(15) REBECCA D FLOWERS
DB 870 PG 126
PB 25 PG 145

NOTE:
ACCESS GRANTED FOR -DRW3-.
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)

★ PROPOSED SIGNAL

PC Sta. 10+00.00
BEGIN CONSTRUCTION
-Y6- POC Sta. 10+60.00
PCC Sta. 10+86.31
PT Sta. 13+34.37
PC Sta. 10+86.15
PT Sta. 11+09.46
POT Sta. 11+41.10

-DRW3- POT Sta. 10+00.00 =
-L- POT Sta. 67+78.51

-DRW3-
PI Sta 10+98.02
L = 23.31'
R = 50.00'

-L- POT Sta.68+11.45 =
-Y6- POT Sta. 17+91.45

-L- POT Sta.75+00.00 =
-Y6- POT Sta. 18+81.22

-Y6- CASTLEBERRY RD

PI Sta 10+43.21
△ = 7° 10' 46.1" (LT)
D = 8° 19' 04.8"
L = 86.31'
T = 43.21'
R = 688.82'

PI Sta 12+10.38
△ = 3° 19' 36.0" (LT)
D = 1° 20' 27.8"
L = 248.06'
T = 124.07'
R = 4,272.42'

-L- NC 42

PI Sta 76+02.21
△ = 3° 53' 59.4" (LT)
D = 1° 00' 00.4"
L = 389.95'
T = 195.05'
R = 5,729.00'
e = 3%
Runoff = 162'

(17) COUNTY OF JOHNSTON
DB 1391 PG 727
PB 43 PG 31

(18) REBECCA FLOWERS FINCH
DB 1398 PG 773
DB 1445 PG 236
PB 54 PG 144

(19) AQUA NORTH CAROLINA INC.
DB 1829 PG 784

MICHELLE STRICKLAND
DB 3486 PG 299
PB 53 PG 385

4' LATERAL BASE DITCH wPSRM
SEE DETAIL 24

EST. 15 TONS CLASS B RIP RAP
SEE DETAIL 109

150' TRANSITION
100' MEDIAN TRANSITION
10' PS
+64.22 BEGIN 50' CURB TRANS.

180' TRANSITION

2' SPECIAL CUT BASE DITCH wCLASS B RIP RAP
SEE DETAIL 28

93 SY PSRM

SPECIAL CUT 'V' DITCH wGRASS
SEE DETAIL 27

SPECIAL CUT 'V' DITCH wPSRM
SEE DETAIL 26

2' STANDARD BASE DITCH wCLASS B RIP RAP
SEE DETAIL 22

EST. 3 TONS CLASS B RIP RAP
EST. 11 SY GEOTEXTILE

EST. 20 TONS CL I RIP RAP
EST. 39 SY GEOTEXTILE

4' LATERAL BASE DITCH wCLASS I RIP RAP
SEE DETAIL 23

UTILITY OWNER TO PROVIDE GATE

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

MATCH DITCH INVERT TO STREAM INVERT
OUTFALL ANALYSIS D
RIP RAP RAP AT EMBANKMENT
SEE DETAIL 25

FOR -L- PROFILE	SEE SHEET 26
FOR -Y6- PROFILE	SEE SHEET 34
FOR -DRW3- PROFILE	SEE SHEET 38
FOR -DRW18- PROFILE	SEE SHEET 40
FOR BRIDGE DETAILS	SEE S-1 THROUGH S-59
FOR CONC. ISLAND DETAILS	SEE SHEET 2B-5

MATCHLINE -L- STA. 62+00.00 SEE SHEET 7

MATCHLINE -L- STA. 75+00.00 SEE SHEET 9

6/20/2018
R3825B_SheetPlan_roJ\R3825b_rdy_psh08.dgn
tfowler

8/17/99

DETAIL 30
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

FROM –L– STA. 82+10 RT TO –L– STA. 85+00 RT (EST. DDE = 173 CY)
FROM –L– STA. 86+00 RT TO –L– STA. 90+50 RT (EST. DDE = 378 CY)
FROM –L– STA. 92+00 RT TO –L– STA. 93+24 RT (EST. DDE = 36 CY)

DETAIL 33
STANDARD BASE DITCH
(Not to Scale)

Min. D=1 Ft.
Max. d=3 Ft.
B=8 Ft.

Type of Liner= CLASS I Rip-Rap

FROM –L– STA. 87+50 LT TO –L– STA. 87+55 LT
EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY,
EST. 78 SY GEOTEXTILE

DETAIL 31
SPECIAL CUT BASE DITCH
(Not to Scale)

Min. D=2 Ft.
Max. d=2 Ft.
B=2 Ft.

Type of Liner= PSRM

FROM –L– STA. 81+80 LT TO –L– STA. 83+00 LT
EST. 154 SY PSRM
FROM –Y7– STA. 15+67 LT TO –L– STA. 16+54 LT
EST. 110 SY PSRM

DETAIL 34
SPECIAL LATERAL DITCH
(Not to Scale)

Min. D=1.0 Ft.

FROM –L– STA. 76+10 LT TO –L– STA. 79+00 LT

DETAIL 35
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D=0.5 Ft.*
Max. d=2.0 Ft.
B=4.0 Ft.

Type of Liner= Class I Rip-Rap

FROM –L– STA. 75+00 LT TO –L– STA. 76+10 LT
*DITCH ELEVATION AND DEPTH SET TO INTERCEPT STREAM FROM POND

DETAIL 32
SPECIAL CUT DITCH
(Not to Scale)

Min. D=1.5 Ft.

FROM –Y7– STA. 15+67 RT TO –L– STA. 80+28 LT

DETAIL 36
CUT DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= PSRM

FROM –L– STA. 83+00 LT TO –L– STA. 85+00 LT
EST. 280 SY PSRM

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.
*When B is < 6.0'

Type of Liner= Class B Rip-Rap

FROM –L– STA. 85+00 RT TO –L– STA. 86+00 RT
EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM –L– STA. 90+50 RT TO –L– STA. 92+00 RT
EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

DETAIL 10
FALSE SUMP
(Not to Scale)

–L– STA. 87+41 RT
–L– STA. 84+91 RT
–L– STA. 78+41 RT

DETAIL 9
FALSE SUMP
(Not to Scale)

–L– STA. 80+14 LT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

DETAIL 37
FALSE SUMP
(Not to Scale)

–L– STA. 87+19 LT (HEIGHT = 1.5')

DETAIL 12
TOE PROTECTION
(Not to Scale)

d=1 Ft.
b=5 Ft.

Type of Liner= PSRM

FROM –L– STA. 84+80 LT TO –L– STA. 87+30 LT
EST. 260 SY PSRM

NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L– NC 42

PI Sta 76+02.21
△ = 3° 53' 59.4" (LT)
D = 1° 00' 00.4"
L = 389.95'
T = 195.05'
R = 5,729.00'
e = 3%
Runoff = 162'

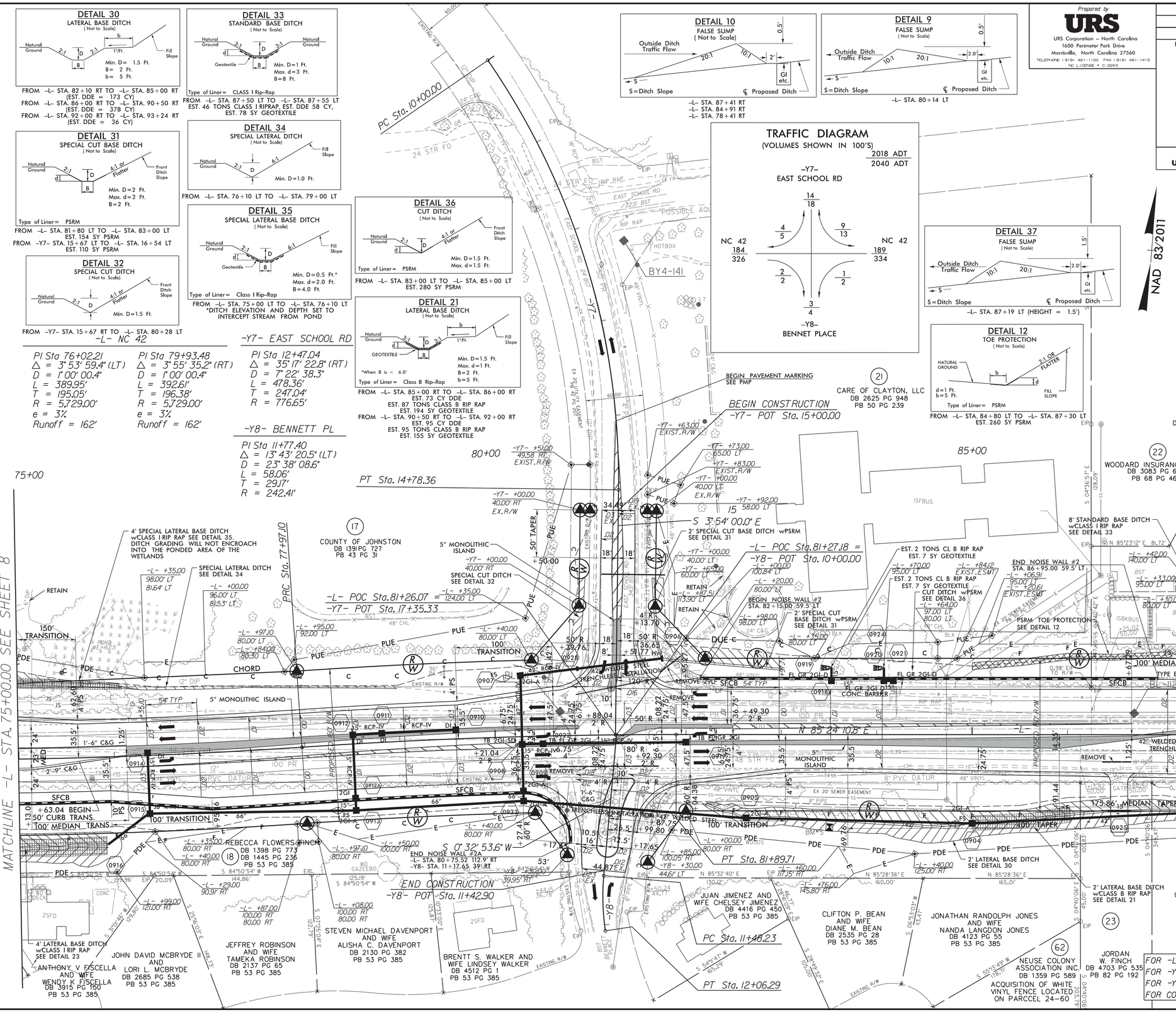
PI Sta 79+93.48
△ = 3° 55' 35.2" (RT)
D = 1° 00' 00.4"
L = 392.61'
T = 196.38'
R = 5,729.00'
e = 3%
Runoff = 162'

–Y7– EAST SCHOOL RD

PI Sta 12+47.04
△ = 35° 17' 22.8" (RT)
D = 7° 22' 38.3"
L = 478.36'
T = 247.04'
R = 776.65'

–Y8– BENNETT PL

PI Sta 11+77.40
△ = 13° 43' 20.5" (LT)
D = 23° 38' 08.6"
L = 58.06'
T = 29.17'
R = 242.41'


MATCHLINE –L– STA. 75+00.00 SEE SHEET 8
MATCHLINE –L– STA. 88+00.00 SEE SHEET 10
75+00
80+00
85+00
PC Sta. 10+00.00
PT Sta. 14+78.36
PC Sta. 77+97.10
–L– POC Sta. 81+26.07 = –Y7– POT Sta. 17+35.33
–L– POC Sta. 81+27.18 = –Y8– POT Sta. 10+00.00
PT Sta. 81+89.71
END CONSTRUCTION –Y8– POT Sta. 11+42.90
PC Sta. 11+48.23
PT Sta. 12+06.29
BEGIN CONSTRUCTION –Y7– POT Sta. 15+00.00
BEGIN PAVEMENT MARKING SEE PMP
S 3° 54' 00.0" E
N 85° 24' 10.8" E
S 0° 32' 53.6" W
–L– STA. 87+50 RT
–L– STA. 87+55 LT
EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY,
EST. 78 SY GEOTEXTILE
4' SPECIAL LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS
SPECIAL LATERAL DITCH SEE DETAIL 34
SPECIAL CUT DITCH SEE DETAIL 32
5" MONOLITHIC ISLAND
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
2' LATERAL BASE DITCH SEE DETAIL 30
8' STANDARD BASE DITCH wCLASS I RIP RAP SEE DETAIL 33
4' LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 23
2' LATERAL BASE DITCH wCLASS B RIP RAP SEE DETAIL 21
PSRM TOE PROTECTION SEE DETAIL 12
EST. 2 TONS CL B RIP RAP
EST. 7 SY GEOTEXTILE
CUT DITCH wPSRM SEE DETAIL 36
EST. 2 TONS CL B RIP RAP
EST. 7 SY GEOTEXTILE
END NOISE WALL #2
STA. 82+15.00 59.5' LT
BEGIN NOISE WALL #2
STA. 86+95.00 59.5' LT
END NOISE WALL #2A
–L– STA. 80+75.52 112.9' RT
–Y8– STA. 11+17.65 39' RT
RETAIN
150' TRANSITION
100' TRANSITION
CHORD
SFCB
+63.04 BEGIN 50' CURB TRANS. + 100' MEDIAN TRANS.
100' MEDIAN TAPER
400' TAPER
175.86' MEDIAN TAPER
REMOVE 29LF SFCB 54" TYP
REMOVE
42" WELDED STEEL TRENCHLESS COLLAR
STEEL INSTALLATION
TRENCHLESS INSTALLATION
FL GR 2GI-D
FL GR 2GI-D CONC. BARRIER
TB FLGR 2GI
TB 2GI-SD
TB wMH
JB wMH
DI
EIP
EIP w/ CAP
EIP w/ DISK
CM
CMP
PP
PPP
BST
EST
ISFBUS
ISBKBUS
EX 20' SEWER EASEMENT
EX 10' DRAINAGE EASEMENT
PROPOSED 60' R/W
EXISTING R/W
PUE
12" DIP
18" RCP
24" CMP
24" STR FO
36" RCP-IV
42" RCP-IV
48" CHL
48" VINYL
48" STR FO
8" PVC DATUR
100 PR
RIP RAP
EAST SCHOOL RD
POSSIBLE AQU
HOTBOX
BY4-141
BM #5
BM #6
–L– LT
–Y7– +63.00 EXIST.R/W
–Y7– +73.00 65.00 LT
–Y7– +83.00 EXIST.R/W
–Y7– +00.00 40.00' LT EX.R/W
–Y7– +92.00 58.00 LT
–Y7– +50.00 49.58 RT EXIST.R/W
–Y7– +00.00 40.00' RT EX.R/W
–Y7– +00.00 40.00' RT
–Y7– +65.00 60.00' LT
–L– +00.00 100.84' LT
–L– +20.00 80.00' LT
–L– +87.51 113.50' LT
–L– +98.00 98.00' LT
–L– +35.00 98.00' LT 81.64' LT
–L– +00.00 96.00' LT 81.53' LT
–L– +95.00 92.00' LT
–L– +97.10 80.00' LT
–L– +84.00 80.30' LT
–L– +40.00 80.00' LT
–L– +40.00 80.00' RT
–L– +50.00 100.00' RT
–L– +97.10 80.00' RT
–L– +35.00 80.00' RT
–L– +40.00 80.00' RT
–L– +29.00 90.91' RT
–L– +93.00 121.00' RT
–L– +87.00 100.00' RT 80.00' RT
–L– +08.00 100.00' RT 80.00' RT
–L– +85.00 100.05' RT
–Y8– +30.00
–L– +00.00 80.00' RT
–L– +60.00 117.51' RT
–L– +76.00 145.80' RT
–L– +40.00 125.00' RT
–L– +70.00 105.00' RT
–L– +84.12 EXIST.ESMT
–L– +06.91 95.00' LT
–L– +20.61 EXIST.ESMT
–L– +64.00 97.00' LT
–L– +42.00 140.00' LT
–L– +33.00 95.00' LT
–L– +30.00 80.00' LT
–L– +80.75 80.00' LT 90.00' LT 140.00' LT
+50.00
+39.76
+50.77
+88.04
+92.30
+21.04
+17.65
+17.42
+44.15
+50.24
+00.00
+69.76
+91.44
+25.27
+67.62
+62.68
+35.00
+47.75
+36.63
+36.75
+24.75
+49.30
+34.35
+11.45
+48.75
+00.83
+45.00
+03.79
+06.00
+04.06
+04.47
+03.47
+03.71
+03.79
+06.09
+04

8/17/99

Prepared by

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	10
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2011

FOR -L- PROFILE SEE SHEET 27
FOR -Y9- PROFILE SEE SHEET 34
FOR -Y10- PROFILE SEE SHEET 35
FOR CONC. ISLAND DETAILS SEE SHEET 2B-6

★ PROPOSED SIGNAL

☆ EXISTING SIGNAL

DETAIL 9
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow — 10:1 — 20:1 — 0.5' — 2.0' — GI etc. — S

S = Ditch Slope ℄ Proposed Ditch

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

NEUSE RIVER PARKWAY
SR 1704

NC 42 189/334 — 66/121 — 55/102 — 9/18 — 3/3 — 1/2 — 5/6 — NC 42 141/249

QUEEN ANNE DR.

DETAIL 30
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2:1 — D — 2:1 — 1'-Ft. — Fill Slope — B

Min. D = 1.5 Ft.
B = 2 Ft.
b = 5 Ft.

FROM -L- STA. 82+10 RT TO -L- STA. 85+00 RT (EST. DDE = 173 CY)
FROM -L- STA. 86+00 RT TO -L- STA. 90+50 RT (EST. DDE = 378 CY)
FROM -L- STA. 92+00 RT TO -L- STA. 93+24 RT (EST. DDE = 36 CY)

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — d — D — 2:1 — b — 1'-Ft. — Fill Slope — GEOTEXTILE — B

*When B is < 6.0'

Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.
b = 5 Ft.

Type of Liner = Class B Rip-Rap

(29) SUSO 4 FLOWERS LP
DB 4776 PG 473
PB 58 PG 218

FROM -L- STA. 85+00 RT TO -L- STA. 86+00 RT
EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM -L- STA. 90+50 RT TO -L- STA. 92+00 RT
EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

DETAIL 38
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 4:1 or Flatter — Fill Slope — d — Geotextile

Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 100+00 LT TO -L- STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 175 SY GEOTEXTILE

DETAIL 39
STANDARD BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — d — D — 3:1 — Natural Ground — Geotextile — B

*When B is < 6.0'

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2.0 Ft.

Type of Liner = Class I Rip-Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY

FROM -L- STA. 100+95 RT TO -L- STA. 101+30 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 3:1 — b — 1'-Ft. — Fill Slope — d — GEOTEXTILE — B

*When B is < 6.0'

Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

Est. DDE = 140 CY
Type of Liner = CL B Rip-Rap

FROM -L- STA. 98+70 RT TO -L- STA. 101+08 RT
EST. 110 TONS CLASS B RIP RAP
EST. 300 SY GEOTEXTILE

DETAIL 40
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 3:1 — b — 1'-Ft. — Fill Slope — B

Min. D = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

EST. DDE = 81 CY

FROM -L- STA. 98+00 RT TO -L- STA. 98+70 RT

-Y9- NEUSE RIVER PKWY
PI Sta 13+32.23
△ = 16° 45' 29.9" (LT)
D = 7° 00' 00.3"
L = 239.40'
T = 120.56'
R = 818.50'

-L- NC 42
PI Sta 96+75.15
△ = 1° 23' 04.6" (LT)
D = 0° 08' 44.9"
L = 949.63'
T = 474.84'
R = 39,296.24'
e = NC

NEUSE RIVER PARKWAY RECREATION CENTER, LLC
DB 2342 PG 625
PB 61 PG 253
DB 2106 PG 62
PB 58 PG 430

HHH, LLC
DB 2891 PG 105
PB 60 PG 201

POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y9- POT Sta. 11+73.15

PC Sta. 12+11.66

PT Sta. 14+51.07

-L- POC Sta. 93+82.88 = -Y9- POT Sta. 18+12.48

-L- POC Sta. 93+82.00 = -Y10- POT Sta. 10+00.00

END CONSTRUCTION

POT Sta. 12+12.08

(25) BHH, LLC
DB 2179 PG 728
PB 68 PG 46

(26) PRAZE PROPERTIES, LLC
DB 3146 PG 401
PB 67 PG 425

(27) JERAULD G. THELIN AND WIFE SANDRA M. THELIN
DB 3019 PG 858
PB 62 PG 243

CLAYTON 99, LLC
DB 1859 PG 846
PB 60 PG 217 OUT PARCEL 1
SEE DB 3166 PG 542

(28) CLAYTON 99, LLC
DB 1859 PG 846
PB 60 PG 217 OUT PARCEL 2
SEE DB 3166 PG 542

(24) GEORGE EDWARD NICHOALDS
DB 1662 PG 343
PB 31 PG 55

(30) RICHARD ALLEN LEE AND WIFE LISA JEANINE BOYKIN
DB 1308 PG 483
PB 31 PG 85

(31) JAMES A. JOY II AND WIFE CHRISTINE C. JOY
DB 2135 PG 486
PB 44 PG 367
PB 31 PG 85

(62) NEUSE COLONY ASSOCIATION INC.
DB 1359 PG 589
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

(32) AQUA NORTH CAROLINA, INC FORMALLY (HEATER UTILITIES, INC)
DB 1829 PG 500
PB 31 PG 85

(33) CAROLINA TELEPHONE AND TELEGRAPH CO.
DB 1174 PG 378
PB 31 PG 85

(34) ALBERT HARVEY WALSTON AND JEAN TURNER MURRAY
DB 3055 PG 618
PB 31 PG 85

MATCHLINE -L- STA. 88+00.00 SEE SHEET 9

MATCHLINE -L- STA. 101+00.00 SEE SHEET 11

8/2/2018
R:\R-3825B\Roadway\Plans\R3825b_rdy_psh10.dgn
tmurray

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

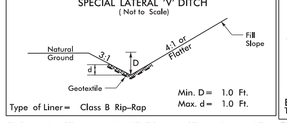
Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

DETAIL 38
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

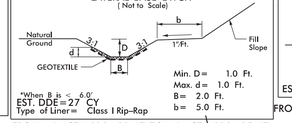


Min. D= 1.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= Class B Rip-Rap

FROM –L– STA. 100+00 LT TO –L– STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 115 SY GEOTEXTILE

DETAIL 42
LATERAL BASE DITCH
(Not to Scale)

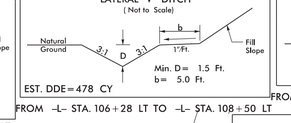


*When B is < 6.0'
EST. DDE=27 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 106+00 LT TO –L– STA. 106+25 LT
EST. 12 TONS CLASS I RIP RAP
EST. 32 SY GEOTEXTILE

DETAIL 43
LATERAL 'V' DITCH
(Not to Scale)

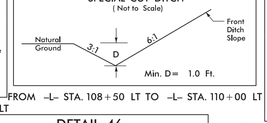


Min. D= 1.5 Ft.
b= 5.0 Ft.

EST. DDE=478 CY

FROM –L– STA. 106+28 LT TO –L– STA. 108+50 LT

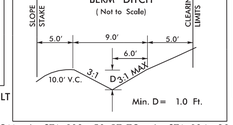
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 108+50 LT TO –L– STA. 110+00 LT

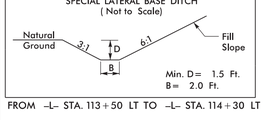
DETAIL 45
BERM DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 103+50 RT TO –L– STA. 104+20 RT

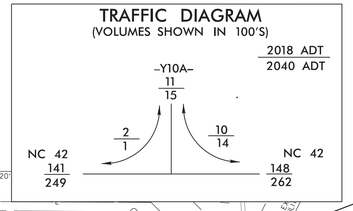
DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)



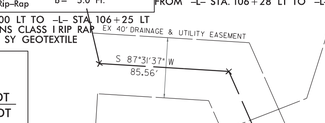
Min. D= 1.5 Ft.
B= 2.0 Ft.

FROM –L– STA. 113+50 LT TO –L– STA. 114+30 LT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)



DETAIL 46
BERM DITCH
(Not to Scale)

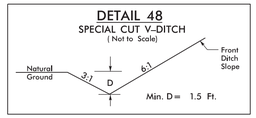


Type of Liner= CL B Rip Rap

Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM –L– STA. 104+20 RT TO –L– STA. 104+50 RT
EST. 10 TONS CLASS B RIP RAP
EST. 30 SY GEOTEXTILE
FROM –L– STA. 105+50 RT TO –L– STA. 106+00 RT

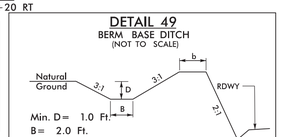
DETAIL 48
SPECIAL CUT V–DITCH
(Not to Scale)



Min. D= 1.5 Ft.

FROM –L– STA. 111+50 LT TO –L– STA. 113+50 LT

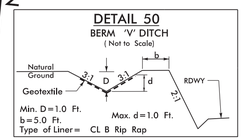
DETAIL 49
BERM BASE DITCH
(NOT TO SCALE)



Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 110+00 LT TO –L– STA. 114+00 LT

DETAIL 50
BERM 'V' DITCH
(Not to Scale)

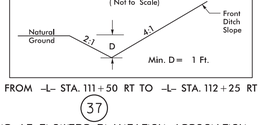


Min. D=1.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip Rap

Max. d=1.0 Ft.

FROM –L– STA. 104+50 RT TO –L– STA. 105+50 RT
EST. 35 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
BERM DITCH GRADE

DETAIL 51
SPECIAL CUT V–DITCH
(Not to Scale)



Min. D= 1 Ft.

FROM –L– STA. 111+50 RT TO –L– STA. 112+25 RT

TIE BERM DITCH TO SPECIAL LATERAL DITCH

PC Sta. 10+00.00
PT Sta. 10+17.55

PC Sta. 10+84.58
–Y10A– +85.00
30.00' LT
EX.R/W
BEGIN CONSTRUCTION
–Y10A– POC Sta. 11+10.00
PT Sta. 11+32.94

PT Sta. 11+80.92
2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42

PI Sta 10+08.85
Δ = 17° 53' 06J" (RT)
D = 101° 53' 40.5"
L = 17.55'
T = 8.85'
R = 56.23'

PI Sta 11+08.78
Δ = 5° 32' 30.4" (LT)
D = 11° 27' 33.0"
L = 48.36'
T = 24.20'
R = 500.00'

PI Sta 11+60.04
Δ = 4° 47' 16.6" (RT)
D = 11° 27' 33.0"
L = 41.78'
T = 20.90'
R = 500.00'

–Y10A– SHOPPING CENTER ENTRANCE

105+00

110+00

–L– NC 42

PI Sta 96+75.15
Δ = 1° 23' 04.6" (LT)
D = 0° 08' 44.9"
L = 949.63'
T = 474.84'
R = 39,296.24'
e = NC

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

–L– POT Sta. 103+00.25 =
–Y10A– POT Sta. 13+13.31

PT Sta. 10+49.95

MATCHLINE –L– STA. 10+00.00 SEE SHEET 10

MATCHLINE –L– STA. 114+00.00 SEE SHEET 12

29 SUSO 4 FLOWERS LP
DB 4776 PG 473
PB 58 PG 218

35 CLAYTON 99, LLC
DB 1859 PG 846
PB 60 PG 217 OUT PARCEL 3
SEE DB 3166 PG 542

36 CLAYTON 99, LLC
DB 1859 PG 846
PB 60 PG 217
OUT PARCEL 4
SEE DB 3166 PG 542

37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION
DB 3369 PG 477 (SEE PG 479 – TRACT 2)
PB 55 PG 88

37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION
DB 3369 PG 477 (SEE PG 479 – TRACT 2)
PB 55 PG 88

40 CHARLES RAY WILLIAMS
DB 3007 PG 135
PB 49 PG 382

41 INSPIRED, LLC
DB 3928 PG 274
PB 49 PG 382

42 IRENA V. DAVYDOVA–FORQUER
DB 3012 PG 820
PB 49 PG 382

43 AQUA NORTH CAROLINA, INC
DB 1857 PG 123
PB 49 PG 382

44 BRADLEY SCOTT SIMMONS AND WIFE
JILL DAVIS SIMMONS
DB 2150 PG 567
PB 49 PG 382

45 RICHARD TODD STUTTS
DB 3791 PG 792
PB 49 PG 382

46 PETER JOSEPH BIGNESS AND
CINDY JOHNSON BIGNESS
DB 3701 PG 532
PB 49 PG 382

39 AQUA NORTH CAROLINA, INC
FORMALLY
(HEATER UTILITIES, INC)
DB 1829 PG 500 TRACT TWO
PB 48 PG 175

62 NEUSE COLONY ASSOCIATION INC.
DB 1359 PG 589
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24–60

DETAIL 52
LATERAL BASE DITCH
(Not to Scale)

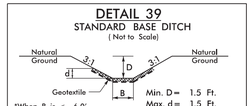


*When B is < 6.0'
EST. DDE=50 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 101+08 RT TO –L– STA. 101+50 RT
EST. 27 TONS CLASS I RIP RAP
EST. 69 SY GEOTEXTILE

DETAIL 39
STANDARD BASE DITCH
(Not to Scale)

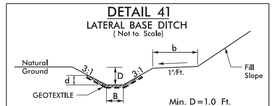


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.

*When B is < 6.0'
Type of Liner= Class I Rip–Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY

FROM –L– STA. 100+95 RT TO –L– STA. 101+30 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

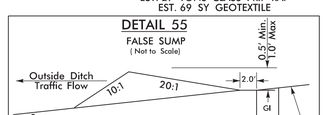


Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

*When B is < 6.0'
EST. DDE= 140 CY
Type of Liner= CL B Rip–Rap

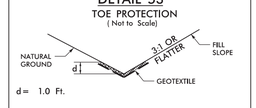
FROM –L– STA. 98+70 RT TO –L– STA. 101+08 RT

DETAIL 55
FALSE SUMP
(Not to Scale)



STA. –L– 103+74 RT
STA. –L– 106+24 RT
STA. –L– 112+48 RT
STA. –L– 107+24 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

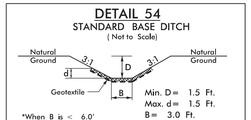


d= 1.0 Ft.

Type of Liner= Class B Rip–Rap

FROM –L– STA. 106+00 RT TO –L– STA. 109+50 RT
EST. 125 TONS CLASS B RIP RAP
EST. 295 SY GEOTEXTILE

DETAIL 54
STANDARD BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.

*When B is < 6.0'
Type of Liner= Class I Rip –Rap
Est. 25 Tons Class I Rip Rap
Est. 45 SY Geotextile. Est. DDE 20 CY

FROM –L– STA. 107+70 RT TO –L– STA. 108+00 RT

FOR –L– PROFILE SEE SHEET 27
FOR –Y10A – PROFILE SEE SHEET 35

8/17/2018
G:\R\2018\R-3825B\Proj\R3825b_rdy_pshl1.dgn
tmoseley

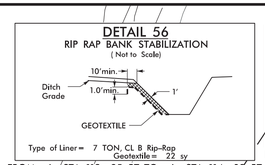
8/17/99

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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

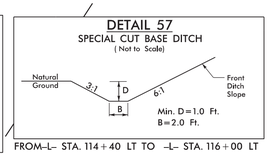
DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner = 7 TON, CL B Rip-Rap
Geotextile = 22 sy

FROM –L– STA. 113+95 RT TO –L– STA. 114+08 RT
FROM –L– STA. 114+28 LT TO –L– STA. 114+51 LT
FROM –L– STA. 114+10 LT TO –L– STA. 114+30 LT

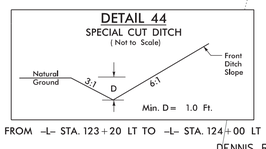
DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
B=2.0 Ft.

FROM –L– STA. 114+40 LT TO –L– STA. 116+00 LT

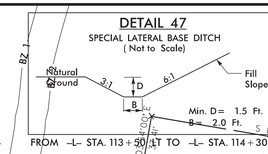
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 123+20 LT TO –L– STA. 124+00 LT

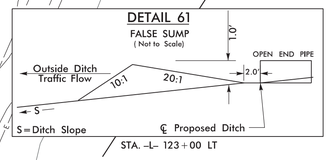
DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2.0 Ft.

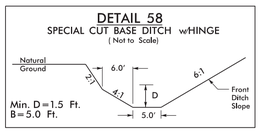
FROM –L– STA. 113+50 LT TO –L– STA. 114+30 LT

DETAIL 61
FALSE SUMP
(Not to Scale)



STA. –L– 123+00 LT

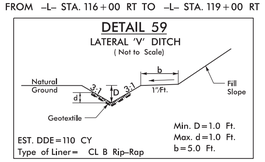
DETAIL 58
SPECIAL CUT BASE DITCH w/HINGE
(Not to Scale)



Min. D=1.5 Ft.
B=5.0 Ft.

FROM –L– STA. 116+00 RT TO –L– STA. 119+00 RT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



EST. DDE=110 CY
Type of Liner= CL B Rip-Rap

Min. D=1.0 Ft.
Max. d=1.0 Ft.
b=5.0 Ft.

FROM –L– STA. 122+55 RT TO –L– STA. 124+50 RT

NOTE: SEE STRUCTURE PLANS FOR STRUCTURES 1218 AND 1219

-Y10B- TRILLIUM WAY
PI Sta 10+90.16
△ = 7° 10' 11.1" (LT)
D = 3° 58' 52.9"
L = 180.08'
T = 90.16'
R = 1,439.10'

NAD 83/2011

MATCHLINE -L- STA. 114+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 13

115+00 120+00 125+00

PC Sta. 10+00.00

BEGIN CONSTRUCTION
-Y10B- POC Sta. 11+70.00

PT Sta. 11+80.08

-L- +00.00
218.00' LT

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.

HW W/TRASH RACK (SEE STRUCTURE PLANS)
SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END.

BANK STABILIZATION SEE DETAIL 56

-L- +75.00
147.00' LT

-L- +58.00
108.00' LT
80.00' LT

-L- +75.00
80.00' LT
95.00' LT

-L- +98.00
108.00' LT
80.00' LT

-L- +60.00
95.00' LT

-L- +15.00
80.00' LT

2' BASE SPECIAL CUT DITCH SEE DETAIL 57

EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE
+45 BEGIN EXPRESSWAY GUTTER

TEMPORARY SHORING NO.5
114+05 TO 114+30
39.0' LT
SEE TMP

THE GARDENS AT FLOWERS PLANTATION ASSOCIATION
DB 3369 PG 477 (SEE PG 480 – TRACT 2)
PB 60 PG 441

DENNIS R. BAKAYSA AND WIFE, DEBORAH A. BAKAYSA
DB 3724 PG 408
PB 60 PG 441

TIMOTHY DWANE MARTIN AND WIFE, WENDY NELSON NARTIN
DB 3080 PG 264
PB 60 PG 441

JENNA A. EGGLESTON AND SPOUSE, JOHNATHAN D. EGGLESTON
DB 4485 PG 397
PB 60 PG 441

GEORGE W. BROCK AND WIFE, SHIRLEY BROCK
DB 2987 PG 525
PB 60 PG 441

GUSTAVO A. MENJIVAR-RODRIGUEZ AND WIFE, AILEEN MENJIVAR
DB 4543 PG 235
PB 60 PG 441

JOSEPH MARK AND SPOUSE, MARKETA MARK
DB 2836 PG 884
PB 60 PG 441

BRIAN M. HENDERSON AND WIFE, STACEY S. HENDERSON
DB 3585 PG 548
PB 60 PG 441

-L- +64.00
113.00 LT

-Y10B- +85.00
EX.R/W

-L- +43.00
113.00 LT

-L- +57.00
99.00 LT

-L- +10.00
80.00' LT

-L- +11.00
80.00 LT

-Y10B- +85.00
EX.R/W

-L- +39.00
80.00 LT

100' MEDIAN TAPER

+20.00

50' R

+29.94

+20.13 END EXPRESSWAY GUTTER

-L- +51.02
93.00 LT

-L- +46.00
88.00 LT

-L- +65.00
80.00' LT

-L- +72.36
90.00' LT

-L- +66.00
80.00 LT

-L- +80.00
90.00 LT

-L- +00.00
105.00' LT

-L- +50.00
105.00' LT

-L- +00.00
90.00' LT

S 6° 00' 07.9" E
GRADE TO DRAIN

NEUSE PARK DEVELOPMENT CO., LLC
DB 1659 PG 531
PB 60 PG 441

CENTEX HOMES
DB 2947 PG 185
PB 66 PG 446

PB 51 PG 152

N 84° 01' 06.2" E

-L- POT Sta. 121+86.16=
-Y10B- POT Sta. 13+15.47

SPECIAL CUT BASE DITCH SEE DETAIL 44

SPECIAL CUT BASE DITCH SEE DETAIL 58

-L- +02.11
80.00' RT
END C/A

-L- +38.00
80.00' RT
86.00' RT
95.00' RT

-L- +54.00
111.00' RT

-L- +42.64
115.00' RT

-L- +10.00
115.00' RT

-L- +30.00
140.00' RT

-L- +66.12
115.00' RT

-L- +46.12
80.00' RT
BEGIN C/A

-L- +40.00
140.00' RT

-L- +94.00
98.00' RT

-L- +86.00
108.00' RT

-L- +13.00
98.00' RT

-L- +36.00
113.00' RT

-L- +46.00
98.00' RT
80.00' RT

-L- +20.00
110.00' RT

-L- +60.00
110.00' RT

SPECIAL LATERAL V-DITCH W/CL B RIP RAP
EST. 70 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE
SEE DETAIL 59

EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE

2' STANDARD BASE DITCH w/CLASS I RIP RAP
SEE DETAIL 60

25LF OF OUTLET CHANNEL IMPROVEMENT
APPROX 9 TON CLASS I RIP RAP
APPROX 6 SY GEOTEXTILE
SEE DETAIL 107

BANK STABILIZATION SEE DETAIL 56

PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS
DB 3701 PG 332
PB 49 PG 382

M. ANDREW JONES, JR. AND WIFE NANCY S. JONES
DB 1409 PG 893
PB 29 PG 297
PB 41 PG 465

MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS
DB 3761 PG 492
PB 29 PG 297

CHRISTOPHER V. CIPRIANI AND WIFE PATRICIA S. CIPRIANI
DB 1213 PG 696
PB 29 PG 297

RODNEY GEOHAGAN, JR.
DB 1213 PG 696
PB 29 PG 297

NEUSE COLONY ASSOCIATION INC.
DB 1359 PG 589
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

DETAIL 60
STANDARD BASE DITCH
(Not to Scale)



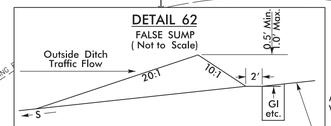
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

*When B is < 6.0'

Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY

FROM –L– STA. 114+17 RT TO STA. 114+35 RT

DETAIL 62
FALSE SUMP
(Not to Scale)

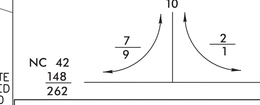


STA. –L– 115+86 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

TRILLIUM WAY
SR 2677



FOR -L- PROFILE SEE SHEET 28
FOR -Y10B- PROFILE SEE SHEET 35

R:\R-2018\Trillium\Proj\R3825b_rdy_psh12.dgn
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8/17/99

-Y10C- BROOKHAVEN DR

PI Sta 12+68.33
Δ = 25° 15' 36.6" (RT)
D = 10° 54' 48.5"
L = 231.46'
T = 117.64'
R = 525.00'

POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y10C- POC Sta. 12+05.00

-DRW19- POT Sta. 10+45.00 =
-Y10C- POC Sta. 12+40.27

POT Sta. 10+50.00

-DRW20- POT Sta. 10+00.00 =
-Y10C- POC Sta. 12+84.99

POT Sta. 13+82.15

POT Sta. 12+40.48

-L- POT Sta. 130+47.01=
-Y10C- POT Sta. 14+53.07 =
-Y11- POT Sta. 10+00.00

END CONSTRUCTION
-Y11- POT Sta. 11+37.75

PC Sta. 111+50.69

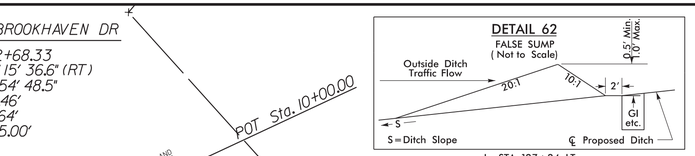
-L- STA. 127+24 LT
-L- STA. 137+36 LT

MATCHLINE -L- STA. 127+00.00 SEE SHEET 12

MATCHLINE -L- STA. 140+00.00 SEE SHEET 14

NAD 83/2011

DETAIL 62
FALSE SUMP
(Not to Scale)



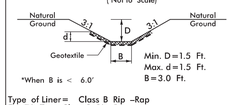
DETAIL 63
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM -L- STA. 136+00 LT TO -L- STA. 136+85 LT
(EST. DDE=92 CY)
FROM -L- STA. 135+35 RT TO -L- STA. 136+80 RT
(EST. DDE=69)

DETAIL 64
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.

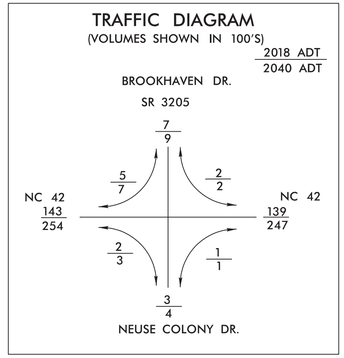
*When B is < 6.0'

Type of Liner= Class B Rip -Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile, Est. DDE 65 CY

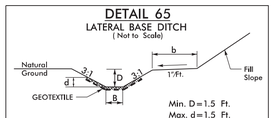
FROM -L- STA. 136+86 LT TO -L- STA. 137+80 LT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT



DETAIL 65
LATERAL BASE DITCH
(Not to Scale)

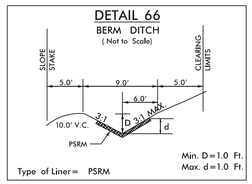


Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

*When B is < 6.0'
EST. DDE=164 CY
Type of Liner= Class B Rip-Rap

FROM -L- STA. 138+70 LT TO -L- STA. 140+06 LT

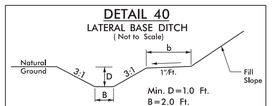
DETAIL 66
BERM DITCH
(Not to Scale)



Type of Liner= PSRM

FROM -L- STA. 137+50 RT TO -L- STA. 140+50 RT

DETAIL 40
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

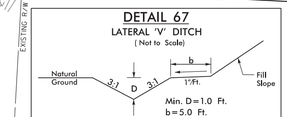
EST. DDE=17 CY

FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT

135+00

140+00

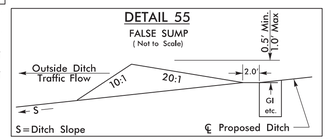
DETAIL 67
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.

FROM -L- STA. 128+00 LT TO -L- STA. 128+50 LT
(EST. DDE=17 CY)
FROM -L- STA. 128+50 LT TO -L- STA. 129+00 LT
(EST. DDE=18 CY)
FROM -L- STA. 128+25 RT TO -L- STA. 128+57 RT
(EST. DDE=4 CY)
FROM -L- STA. 128+60 RT TO -L- STA. 128+93 RT
(EST. DDE=4 CY)

DETAIL 55
FALSE SUMP
(Not to Scale)



-L- STA. 127+24 RT
-L- STA. 133+24 RT

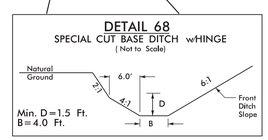
DETAIL 69
TOE PROTECTION
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM -L- STA. 129+00 LT TO -L- STA. 129+70 LT
FROM -L- STA. 128+93 RT TO -L- STA. 129+63 RT
FROM -L- STA. 135+00 LT TO -L- STA. 136+00 LT
FROM -L- STA. 136+80 RT TO -L- STA. 137+50 RT

DETAIL 68
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)



Min. D=1.5 Ft.
B=4.0 Ft.

FROM -L- STA. 131+70 LT TO -L- STA. 134+50 LT
(NO SPECIAL DITCH GRADE)

FOR -L- PROFILE SEE SHEET 28
FOR -Y10C- PROFILE SEE SHEET 35
FOR -Y11- PROFILE SEE SHEET 35
FOR -DRW19- PROFILE SEE SHEET 40
FOR -DRW20- PROFILE SEE SHEET 40
FOR CONC.ISLAND DETAILS SEE SHEET 2B-6

Prepared by
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URS Corporation – North Carolina
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Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

(53) EUGENE V. BERTOCCHI AND SPOUSE ROBERTA T. BERTOCCHI
DB 4330 PG 118
PB 67 PG 314

(54) ANDREW L BOND
DB 3871 PG 394
PB 67 PG 314

(48) CENTEX HOMES
DB 2947 PG 185
PB 66 PG 446

(57) ERICA L. SETH
DB 3513 PG 579
PB 67 PG 314

(48) CENTEX HOMES
DB 2947 PG 185
PB 66 PG 446

(56) CREESHA D. HOGAN
DB 3505 PG 418
PB 67 PG 314

(55) HARRISON N. MWAURA AND BEATRICE W. CHEGE
DB 3896 PG 634
PB 67 PG 314

(58) 42 EAST, LLC
DB 2800 PG 163
PB 63 PG 234

(61) 42 EAST, LLC
DB 2800 PG 163
PB 63 PG 234

(61) 42 EAST LLC
DB 3018 PG 261
PB 67 PG 256

(60) SOARD FAMILY LLC.
DB 4749 PG 395
PB 29 PG 297

(52) RODNEY GEOHAGAN, JR.
DB 1213 PG 696
PB 29 PG 297

(62) NEUSE COLONY ASSOCIATION INC.
DB 1359 PG 589
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

PAUL CALOTES AND WIFE CLAUDINA CALOTES
DB 3204 PG 47
PB 67 PG 314

EDGAR MAZARIEGO AND WIFE DARY M. MAZARIEGOS
DB 3429 PG 706
PB 67 PG 314

FREO NC, LLC
DB 4465 PG 716
PB 67 PG 314

AMERICAN RESIDENTIAL LEASING COMPANY, LLC
DB 4528 PG 316
PB 67 PG 314

MAIZE & BLUE, LLC
DB 3508 PG 276
PB 66 PG 445

LARRY WILLIAM SCHWEER, TRUSTEE OF LARRY WILNAM SCHWEER REVOCABLE TRUST
DB 4486 PG 796
PB 66 PG 445

DIANE WHOLEY BUGGE
DB 3498 PG 972
PB 67 PG 314

SPECIAL LATERAL V DITCH SEE DETAIL 67

LATERAL V-DITCH SEE DETAIL 67
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

LATERAL V DITCH SEE DETAIL 67
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

EST. 20 TONS CLASS I RIP RAP
EST. 39 SY GEOTEXTILE

TOE PROTECTION
EST. 32 TONS CLASS B RIP RAP
EST. 72 SY GEOTEXTILE
SEE DETAIL 69

TOE PROTECTION
EST. 23 TONS CLASS B RIP RAP
EST. 50 SY GEOTEXTILE
SEE DETAIL 69

TOE PROTECTION
EST. 65 TONS CLASS B RIP RAP
EST. 103 SY GEOTEXTILE
SEE DETAIL 69

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE

TOE PROTECTION
EST. 50 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 69

EST. 57 TONS CLASS I RIP RAP
EST. 104 SY GEOTEXTILE

4' SPECIAL CUT BASE DITCH SEE DETAIL 68

3' LATERAL BASE DITCH SEE DETAIL 63

3' LATERAL BASE DITCH SEE DETAIL 63

3' BASE DITCH W/ EST. 70 TONS CL B RIP RAP SEE DETAIL 64

3' LATERAL BASE DITCH W/ EST. 130 TONS CLASS B RIP RAP EST. 200 SY GEOTEXTILE SEE DETAIL 65

BERM DITCH W/EST. 310 SY PSRM SEE DETAIL 66

100' TAPER

50' TAPER

100' MEDIAN TRANSITION

180' TRANSITION

BEGIN SBG

END SBG

JB W/SLAB

JB w/MH

JB w/SLAB LID

FILL W/ FLOWABLE FILL

5" MONOLITHIC ISLAND

BM#7

WD SHED

BY7-147

EXISTING R/W

PROPOSED R/W

EX 20' UTILITY EASEMENT RESERVED

48" VINYL

12" PVC

15" RCP IV

100 PR

RIP RAP DITCH

NEUSE COLONY SEPTIC SYSTEM

S 2° 59' 11.1" E

N 84° 01' 06.2" E

S 5° 44' 35.9" E

N 68° 46' 22.5" E

S 58° 59' 36" W

N 37° 20' 24" W

N 83° 58' 22" E

N 84° 05' 36" E

N 68° 13' 00" E

S 60° 44' 37" W

N 26° 00' 23" W

N 48° 00' 47" W

S 47° 00' 12" E

N 37° 01' 19" W

S 47° 00' 12" E

D 17° 41' 48" W
430.57'

S 48° 00' 05" E
230.00'

R:\R-2018 Projects\R-3825b_rdy_psh13.dgn
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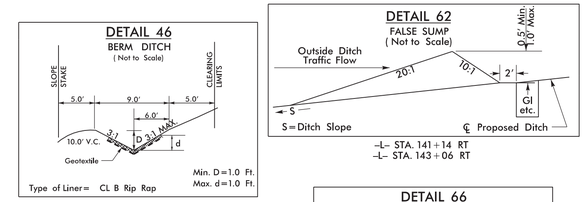
8/17/99

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Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

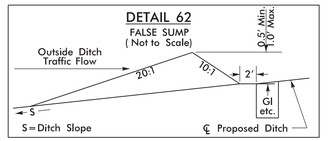
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

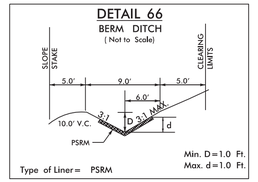
NAD 83/2011



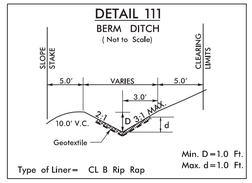
FROM –L– STA. 141+60 LT TO –L– STA. 141+85 LT
FROM –L– STA. 142+00 RT TO –L– STA. 143+25 RT
FROM –L– STA. 143+25 RT TO –L– STA. 144+20 RT
FROM –L– STA. 144+70 RT TO –L– STA. 146+00 RT



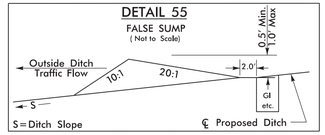
–L– STA. 141+14 RT
–L– STA. 143+06 RT



FROM –L– STA. 140+50 RT TO –L– STA. 142+00 RT



FROM –L– STA. 141+85 LT TO –L– STA. 144+30 LT



STA. –L– 140+76 LT
STA. –L– 141+62 LT
STA. –L– 144+06 LT
STA. –L– 144+46 LT

140+00
145+00
150+00

MATCHLINE –L– STA. 140+00.00 SEE SHEET 13

MATCHLINE –L– STA. 153+00.00 SEE SHEET 15

58
42 EAST, LLC
DB 2800 PG 163
PB 63 PG 234

58
42 EAST, LLC
DB 2800 PG 163
PB 31PG 297

–L– +01.00
115.00' LT

S 14°07'19" W
316.00'

180' TRANSITION

–L– +90.52
115.00' LT

–L– +60.00
130.00' LT

–L– +70.00
130.00' LT

–L– +67.06
115.00' LT

BERM DITCH
W/CL B RIP RAP
EST. 14 TONS CLASS B RIP RAP
EST. 33 SY GEOTEXTILE
SEE DETAIL 46

–L– +87.06
80.00' LT
END C/A

–L– +02.00
90.00' LT

–L– +02.00
80.00' LT

BERM DITCH
W/CL B RIP RAP
EST. 80 TONS CLASS B RIP RAP
EST. 175 SY GEOTEXTILE
SEE DETAIL 111

–L– +47.00
100.00' LT
80.00' LT

–DRW4– POT Sta. 10+00.00 =
–L– POT Sta. 144+37.22

–L– +60.00
80.00' LT

+98.05

100' MEDIAN TAPER

–L– +00.00
105.00' LT

–L– +70.00
95.00' LT

–L– +31.00
86.00' LT
80.00' LT

–L– +20.00
80.00' LT

BL-120

BL-121

+21.05
38.75' LT

+63.05

+98.05

+23.05

+00.05
38.75' LT

42' R

50' R

4' R

2' R

5" MONOLITHIC ISLAND

15" W/ ELBOW

18" W/T ELBOW

18" RCP-IV

24" RCP-IV

15" RCP-IV

30" RCP-IV

2GI-A

2GI

2GI-D

REMOVE

RETAIN

COLLAR

0.33' EIP TO R/W

0.49' R/W TO EIP

PC Sta. 10+61.96

PI Sta. 10+83.52

POT Sta. 11+21.95

-DRW6- POT Sta. 10+00.00 =
-L- POT Sta. 146+68.24

PT Sta. 10+76.69

S 22° 51' 25.6" E

POT Sta. 10+91.15

-DRW4-
PI Sta 10+69.38
L = 14.73'
R = 50.00'

N 84° 01' 06.2" E

S 13° 36' 36.2" E

S 22° 25' 38" W
107.23'

N 36° 31' 39" W
108.81'

N 40° 28' 05" W
220.75'

N 40° 32' 08" W
118.75'

S 49° 27' 52" W
40.00'

N 40° 32' 08" W
192.71'

N 05° 52' 01" W
178.51'

N 10° 25' 50" W
178.00'

N 15° 08' 07" W
84.56'

S 76° 30' 51" W
44.04'

–L– +25.00
112.00' RT

–L– +34.06
80.00' RT
BEGIN C/A

–L– +54.06
115.00' RT

–L– +65.00
160.00' RT

–L– +30.59
115.00' RT

–L– +05.00
160.00' RT

–L– +30.00
110.00' RT

–L– +90.05
80.00' RT
END C/A

–L– +05.00
98.00' RT

–L– +10.00
80.00' RT
98.00' RT

–L– +83.57
EX.R/W

–L– +83.53
EX.R/W

–L– +33.56
EX.R/W

–L– +33.53
EX.R/W

–L– +40.00
98.00' RT

–L– +48.00
115.00' RT

–L– +67.00
104.00' RT

–L– +64.00
98.00' RT

BERM DITCH
W/EST. 310 SY PSRM
SEE DETAIL 66

BERM DITCH
W/EST. 83 SY PSRM
SEE DETAIL 66

BERM DITCH
W/PSRM
SEE DETAIL 66

BERM DITCH
EST. 75 TONS CLASS B RIP RAP
EST. 165 SY GEOTEXTILE
W/CL B RIP RAP
SEE DETAIL 46

BERM DITCH W/
CL B RIP RAP
EST. 42 TONS CLASS B RIP RAP
EST. 95 SY GEOTEXTILE
SEE DETAIL 46

FLAG POLE

61
42 EAST LLC
DB 3018 PG 261
PB 67 PG 256

61
42 EAST LLC
DB 3018 PG 257
PB 67 PG 256

63
WILLIAM R. JAMESON
DB 3514 PG 417
PB 56 PG 469

64
SHANNON L. HILL AND
WIFE REGINA HILL
DB 4455 PG 21
PB 54 PG 419

65
42 EAST, LLC
DB 3418 PG 969
PB 71PG 24

65A
42 EAST, LLC
DB 3418 PG 969
PB 71PG 24

BM#8

WOODS

EXISTING R/W

PROPOSED R/W

FOR -L- PROFILE SEE SHEET 29
FOR -DRW4- PROFILE SEE SHEET 38
FOR -DRW6- PROFILE SEE SHEET 38

6/18/2018
R-3825b_rdy_psh14.dgn
Roadway Engineer

8/17/99

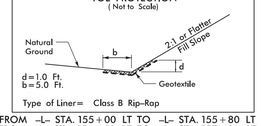
Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

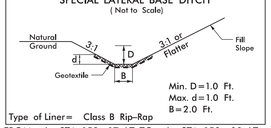
DETAIL 70
TOE PROTECTION
(Not to Scale)



Type of Liner= Class B Rip–Rap

FROM –L– STA. 155+00 LT TO –L– STA. 155+80 LT
FROM –L– STA. 154+60 RT TO –L– STA. 157+24 RT
FROM –L– STA. 155+90 LT TO –L– STA. 158+18 LT

DETAIL 71
SPECIAL LATERAL BASE DITCH
(Not to Scale)

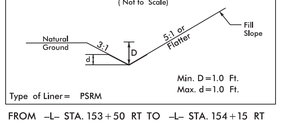


Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.

Type of Liner= Class B Rip–Rap

FROM –L– STA. 158+17 LT TO –L– STA. 159+00 LT

DETAIL 72
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

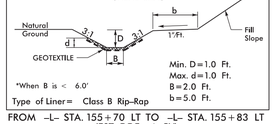


Min. D=1.0 Ft.
Max. d=1.0 Ft.

Type of Liner= PSRM

FROM –L– STA. 153+50 RT TO –L– STA. 154+15 RT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

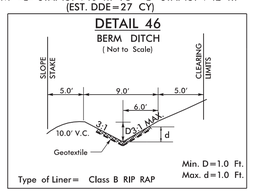


*When B is < 6.0'
Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

Type of Liner= Class B Rip–Rap

FROM –L– STA. 155+70 LT TO –L– STA. 155+83 LT
(EST. DDE=4 CY)
FROM –L– STA. 155+88 LT TO –L– STA. 156+00 LT
(EST. DDE=4 CY)
FROM –L– STA. 157+10 RT TO –L– STA. 157+42 RT
(EST. DDE=27 CY)

DETAIL 46
BERM DITCH
(Not to Scale)

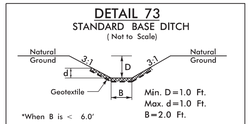


Min. D=1.0 Ft.
Max. d=1.0 Ft.

Type of Liner= Class B RIP RAP

FROM –L– STA. 159+00 LT TO –L– STA. 161+80 LT

DETAIL 73
STANDARD BASE DITCH
(Not to Scale)

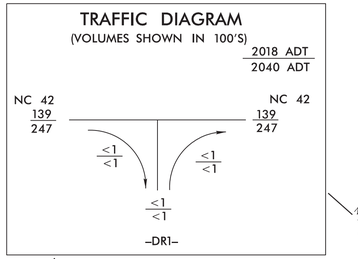


Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
*When B is < 6.0'

Type of Liner= Class B Rip Rap
Est. 2 Tons Class B Rip Rap
Est. 4 SY Geotextile

FROM –L– STA. 157+55 RT TO –L– STA. 157+58 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)



58
42 EAST, LLC
DB 2800 PG 163
PB 31PG 297

58
42 EAST, LLC
DB 2800 PG 163
PB 71PG 121

67
SMITABEN PATEL AND SUNITA GALATI
DB 4813 PG 573
PB 71PG 201

68
CHRISTIE TRIPP MINGA
DB 2810 PG 121
PB 61PG 162

65A
42 EAST, LLC
DB 3418 PG 969
PB 71PG 24

69
42 EAST, LLC
DB 3442 PG 17
PB 61PG 49

70
JOYCE I. ARMSTRONG
DB 3001PG 811
PB 61PG 49

71
GREG R. DUNSTON AND WIFE, TAKICEY M. DUNSTON
DB 3019 PG 140
PB 61PG 49

72
GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER
DB 3297 PG 447
PB 61PG 49

155+00

160+00

165+00

–L– NC 42
PI Sta 165+42.54
△ = 4° 51' 12.9" (LT)
D = 1° 08' 45.3"
L = 423.56'
T = 211.90'
R = 5,000.00'
e = 3%
Runoff = 162'

–DRI– ALECIA CT
PI Sta 10+88.76
△ = 16° 21' 02.1" (LT)
D = 12° 03' 58.8"
L = 135.51'
T = 68.22'
R = 474.84'

–DRW7– POT Sta. 10+00.00 = –L– POT Sta. 154+39.44

–L– POT Sta. 160+31.76= –DRI– POT Sta. 10+00.00

PC Sta. 163+30.63

PC Sta. 10+20.54

PI Sta. 10+83.60
POT Sta. 11+18.21

END CONSTRUCTION –DRI– POC Sta. 11+45.00
PT Sta. 11+56.05

TOE PROTECTION CLASS B RIP RAP EST. 45 TONS CLASS B RIP RAP EST. 100 SY GEOTEXTILE SEE DETAIL 70

2' LATERAL BASE DITCH W/ CLASS B RIP RAP EST. 5 TONS CLASS B RIP RAP (EA) EST. 11 SY GEOTEXTILE (EA) SEE DETAIL 41

EST. 5 TONS CLASS B RIP RAP EST. 14 SY GEOTEXTILE TOE PROTECTION CLASS B RIP RAP EST. 108 TONS CLASS B RIP RAP EST. 240 SY GEOTEXTILE SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP EST. 36 TONS CLASS B RIP RAP EST. 80 SY GEOTEXTILE SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V–DITCH W/CLASS B RIP RAP EST. 104 TONS CLASS B RIP RAP EST. 230 SY GEOTEXTILE SEE DETAIL 46

BERM V–DITCH W/EST. 175 SY PSRM SEE DETAL 74

2' LATERAL BASE DITCH W/CLASS B RIP RAP EST. 67 TONS CLASS B RIP RAP EST. 148 SY GEOTEXTILE SEE DETAIL 41

SPECIAL LATERAL V–DITCH W/PSRM SEE DETAIL 72

TOE PROTECTION CLASS B RIP RAP EST. 119 TONS CLASS B RIP RAP EST. 265 SY GETOTEXTILE SEE DETAIL 70

2' BASE DITCH W/ CLASS B RIP RAP EST. 9 TONS CLASS B RIP RAP EST. 21 SY GEOTEXTILE SEE DETAIL 73

2' LATERAL BASE DITCH W/ CLASS B RIP RAP EST. 15 TONS CLASS B RIP RAP EST. 35 SY GEOTEXTILE SEE DETAIL 41

EST. 33 TONS CLASS I RIP RAP EST. 62 SY GEOTEXTILE

EST. 2 TONS CLASS B RIP RAP EST. 7 SY GEOTEXTILE

EST. 2 TONS CLASS B RIP RAP EST 7 SY GEOTEXTILE

SEAL ABANDONED WELL

SEAL ABANDONED WELL

REMOVE 95.81 RT

REMOVE HW

REMOVE EX. G.R.

REMOVE

PLUG

JB W/SLAB

JB w/MH

ELBOW

BDO

GREU TL–3

CAT–1 BEGIN SBG

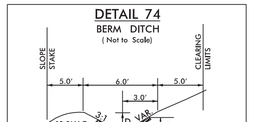
CAT–1 END SBG

FILL W/FLOWABLE FILL

MATCHLINE –L– STA. 153+00.00 SEE SHEET 14

MATCHLINE –L– STA. 166+00.00 SEE SHEET 16

DETAIL 74
BERM DITCH
(Not to Scale)

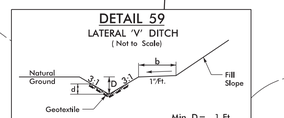


Min. D= 1 Ft.
Max. d= 1 Ft.

Type of Liner= PSRM

FROM –L– STA. 161+80 LT TO –L– STA. 164+00 LT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)

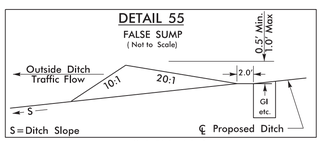


EST. DDE=2 CY
Type of Liner= Class B Rip–Rap

Min. D= 1 Ft.
Max. d= 1 Ft.
b= 5 Ft.

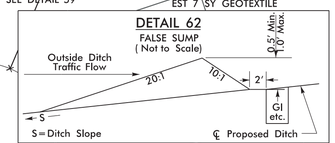
FROM –L– STA. 165+25 RT TO –L– STA. 165+93 RT

DETAIL 55
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 RT

DETAIL 62
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 LT

FOR –L– PROFILE SEE SHEET 29
FOR –DRI– PROFILE SEE SHEET 37
FOR –DRW7– PROFILE SEE SHEET 38

8/6/2018
R:\R-3825B\Roadway\Proj\R3825b_rdy_psh15.dgn
tmaynor

8/17/99

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

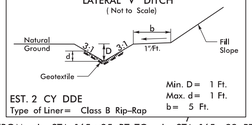
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCHLINE -L- STA. 166+00.00 SEE SHEET 15

MATCHLINE -L- STA. 178+00.00 SEE SHEET 17

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)

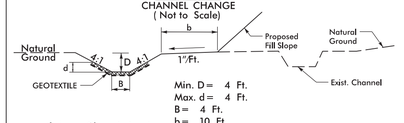


EST. 2 CY DDE
Type of Liner= Class B Rip-Rap

Min. D= 1 Ft.
Max. d= 1 Ft.
b= 5 Ft.

FROM -L- STA. 165+25 RT TO -L- STA. 165+93 RT

DETAIL 75
CHANNEL CHANGE
(Not to Scale)

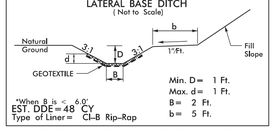


Min. D= 4 Ft.
Max. d= 4 Ft.
B= 4 Ft.
b= 10 Ft.

Type of Liner=Class B Rip-Rap

FROM -L- STA. 167+20 LT TO -L- STA. 171+75 LT

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

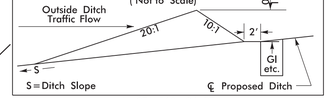


*When B is < 6.0'
EST. DDE=48 CY
Type of Liner= CL-B Rip-Rap

Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
b= 5 Ft.

FROM -L- STA. 165+18 LT TO -L- STA. 166+50 LT

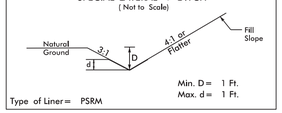
DETAIL 62
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

-L- STA. 169+36 RT
-L- STA. 175+66 RT
-L- STA. 177+55 RT

DETAIL 77
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

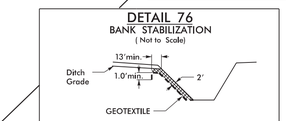


Min. D= 1 Ft.
Max. d= 1 Ft.

Type of Liner= PSRM

FROM -L- STA. 176+74 LT TO -L- STA. 178+00 LT

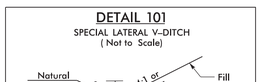
DETAIL 76
BANK STABILIZATION
(Not to Scale)



Type of Liner= 10 TON, CL I Rip-Rap
Geotextile= 25 sy

FROM -L- STA. 171+94 LT TO -L- STA. 172+05 LT

DETAIL 101
SPECIAL LATERAL V-DITCH
(Not to Scale)



Min. D= 1 Ft.

FROM -L- STA. 175+80 RT TO -L- STA. 177+30 RT

-L- NC 42
PI Sta 165+42.54
Δ = 4° 51' 12.9" (LT)
D = 1° 08' 45.3"
L = 423.56'
T = 211.90'
R = 5,000.00'
e = 3%
Runoff = 162'

PI Sta 174+88.36
Δ = 5° 31' 16.7" (LT)
D = 1° 08' 53.6"
L = 480.86'
T = 240.62'
R = 4,990.00'
e = 3%
Runoff = 162'

-YIIA- TUSCAN RIDGE DR
PI Sta 14+87.31
Δ = 5° 12' 15.1" (LT)
D = 5° 42' 49.2"
L = 91.08'
T = 45.57'
R = 1,002.78'

(74) GREG C. JONES AND WIFE, ANGELA V. JONES
DB 3948 PG 257
PB 66 PG 9

(73) JOHN T. SHULER AND WIFE, CATHIE G. SHUKER
DB 4061 PG 191
PB 71 PG 201

(67) SMITABEN PATEL AND SUNITA GALADA
DB 4813 PG 573
PB 71 PG 201

(75) PEGGY ANNE FLOWERS
DB 2836 PG 5
PB 57 PG 310

(76) 42 EAST LLC
DB 3018 PG 255
PB 64 PG 294

(77) 42 EAST LLC
DB 3018 PG 255
PB 77 PG 338

(72) GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER
DB 3297 PG 447
PB 61 PG 49

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE
2' LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

EST 5 TONS CLASS B RIP RAP
EST 14 SY GEOTEXTILE

20LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH

PT Sta. 167+54.19

170+00

-L- POT Sta. 171+51.31=
-YIIA- POT Sta. 10+00.00

CHANNEL RELOCATION W/CLASS B RIP RAP
EST. 890 TONS CLASS B RIP RAP
EST. 1980 SY GEOTEXTILE
SEE DETAIL 75

BANK STABILIZATION SEE DETAIL 76
EST 5 TONS CLASS B RIP RAP
EST 14 SY GEOTEXTILE

PC Sta. 172+47.75

175+00

-L- POC Sta.175+20.03.0.00' RT =
-YIIADET- POT Sta. 0+00.00

PRC Sta. 177+28.61

SPECIAL LATERAL V-DITCH W/ CLASS B RIP RAP
SEE DETAIL 77

TIE TO EXISTING SWALE

100' MEDIAN TRANSITION

2@2x12 RCBC

END CULVERT +16.00

REMOVE EX. GR

FILL EXISTING CHANNEL

FILL W/FLOWABLE FILL

REMOVE 66 LF

BEGIN CULVERT +90.91

TEMPORARY SHORING NO.6
166+25 TO 167+75
4.5' RT
SEE TMP

RETAIN

30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH
APPROX 40 TON CLASS I RIP RAP
APPROX 43 SY GEOTEXTILE

3' SILL IN EAST BARREL
1' SILL IN WEST BARREL
INSET 1' FROM CULV FACE

BEGIN SBG

END SBG

BEGIN -94.19 50' CURB TRANS 1'-6" C&G

END 10.00 50' CURB TRANS

5" MONOLITHIC ISLAND

100' TAPER

SPECIAL LATERAL GRASS DITCH SEE DETAIL 101

-YIIADET- 0+95.01 45.00 LT

-YIIADET- 2+50.00 45.00 LT

-YIIADET- EX.ESMT 30.00 LT

-YIIADET- 2+50.00 60.00 RT

-YIIADET- EX.ESMT 30.00 RT

-YIIADET- 0+99.19 60.00 RT

EXISTING 10' UTILITY AND PERMANENT DRAINAGE EASEMENT PB 77 PG 338

END CONSTRUCTION
-YIIA- POT Sta. 12+85.00

PC Sta. 14+41.74

PT Sta. 15+32.82

-YIIA- TUSCAN RIDGE DR

-EL-

-EY13-

-EY14-

-YIIA-

N 79°09'53.3" E

S 78°09'11" W

S 78°51'03" W 110.88'

N 11°44'20" W 59.14'

N 12°01'35" W 82.51'

N 11°44'49" W 172.74'

S 36°07'28" E 36.05'

S 07°52'45" E 80.11'

N 82°13'35" W 208.87'

S 37°43'59" W 125.00'

S 52°08'43" W 125.90'

N 90°02'47" W 15'

S 44°48'56" W 170.23'

N 89°55'27" W 126.69'

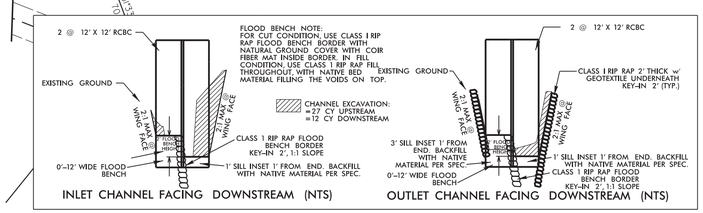
BM#9

R-3825B-4 54" TYP

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

NC 42: 139 / 247
NC 42: 133 / 236
14 / 27
8 / 16
22 / 43
-Y11A- TUSCAN RIDGE DRIVE



FOR -L- PROFILE SEE SHEET 30
FOR -YIIA- PROFILE SEE SHEET 35
FOR CULVERT DETAILS SEE C-1 THROUGH C-10
FOR CONC. ISLAND DETAILS SEE SHEET 2B-6

8/20/2018
I:\Projects\Proj\R3825b_rdy.psh16.dgn
tlyons

8/17/99

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

-L- NC 42
PI Sta 179+59.06
△ = 5° 17' 17.9" (RT)
D = 1° 08' 53.6"
L = 460.57'
T = 230.45'
R = 4,990.00'
e = 3%
Runoff = 162'

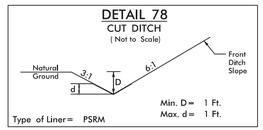
-YIIB- VERONA DR
PI Sta 12+01.17
△ = 72° 15' 26.8" (RT)
D = 37° 53' 05.4"
L = 190.73'
T = 110.40'
R = 151.24'

180+00 185+00 190+00

MATCHLINE -L- STA. 178+00.00 SEE SHEET 16

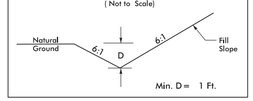
MATCHLINE -L- STA. 190+00.00 SEE SHEET 18

DETAIL 78
CUT DITCH
(Not to Scale)



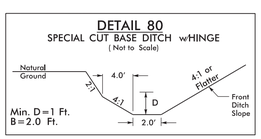
FROM -L- STA. 178+00 LT TO -L- STA. 180+50 LT

DETAIL 79
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



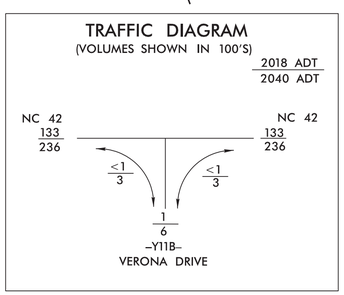
FROM -L- STA. 180+50 LT TO -L- STA. 184+00 LT

DETAIL 80
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)



FROM -L- STA. 177+70 RT TO -L- STA. 181+00 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)



FOR -L- PROFILE SEE SHEET 30
FOR -YIIB- PROFILE SEE SHEET 35
FOR CONC. ISLAND DETAILS SEE SHEET 2B-6

75 PEGGY ANNE FLOWERS DB 2836 PG 5 PB 57 PG 310

77 42 EAST LLC DB 3018 PG 255 PB 77 PG 338

80 42 EAST LLC DB 3018 PG 255 PB 77 PG 338

81 42 EAST LLC DB 3018 PG 255 PB 84 PG 2 PB 77 PG 339

82 PEGGY FLOWERS BENSON DB 1564 PG 901 PB 70 PG 289 PB 31 PG 297

42 EAST LLC DB 3018 PG 255 PB 77 PG 338

42 EAST LLC DB 3018 PG 255 PB 77 PG 339

BUILDING TO BE REMOVED

-L- POT Sta. 182+53.48=
-YIIB- POT Sta. 10+00.00

PT Sta. 181+89.18

PT Sta. 12+81.50

END CONSTRUCTION
-YIIB- POC Sta. 11+76.00

PC Sta. 10+90.77

CUT DITCH W/EST. 305 SY PSRM SEE DETAIL 78

SPECIAL LATERAL V-DITCH SEE DETAIL 79

+97.18 BEGIN 50' CURB TRANS.

2' SPECIAL CUT BASE DITCH wHINGE SEE DETAIL 80

SEAL ABANDONED WELL

5" MONOLITHIC ISLAND

150' MEDIAN TRANSITION

100' TRANSITION

RETAIN

REMOVE

BM#10

N 78° 55' 54.5" E

S 74°22'12" W 200.85'

S 24°14'17" W 162.68'

S 17°22'40" W 100.39'

S 73°06'14" W 313.49'

N 22°26'12" W 337.26'

N 22°26'12" W 22.59'

8/17/99

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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCHLINE -Y12- STA.14+60.00 SEE THIS SHEET

MATCHLINE -L- STA.190+00.00 SEE SHEET 17

MATCHLINE -L- STA.203+00.00 SEE SHEET 19

-Y12- MOTORCYCLE RD
PI Sta 16+51.11
△ = 74° 46' 27.6" (RT)
D = 8° 25' 33.1"
L = 887.44'
T = 519.66'
R = 680.00'

N 38° 35' 05.3" E
PC Sta. 10+20.16

PT Sta. 10+85.63
S 66° 23' 29.2" E
POT Sta. 11+05.97

-DRW23- POT Sta.10+00.00
-Y12- POC Sta.15+40.05

-DRW23-
PI Sta 10+58.54
L = 65.47'
R = 50.00'

POT Sta. 9+00.00

S 85° 50' 33.1" E

BEGIN CONSTRUCTION
-Y12- PC Sta. 11+31.46

POT Sta. 10+66.75
PT Sta. 10+94.03
S 63° 09' 13.2" E
PI Sta. 11+29.03
S 58° 17' 31.8" E
POT Sta. 11+65.39

PC Sta. 10+69.13
POT Sta. 11+36.11
S 52° 33' 06.5" E
PT Sta. 10+90.85

PC Sta. 10+70.20
POT Sta. 10+87.95
POT Sta. 11+41.09

-DRW8- POT Sta. 10+00.00 = -L- POT Sta. 196+65.68
PI Sta 10+81.41
L = 27.27'
R = 30.00'

-DRW9- POT Sta. 10+00.00 = -L- POT Sta. 198+18.31
PI Sta 10+80.49
L = 21.72'
R = 30.00'

-DRW10- POT Sta. 10+00.00 = -L- POT Sta. 200+34.67
PI Sta. 10+46.99
PI Sta 10+79.34
L = 17.75'
R = 30.00'

-DRW11- POT Sta. 11+20.00 = -L- POT Sta. 203+00.00

-Y11C- POT Sta. 12+17.42

-Y11C- POT Sta. 10+00.00

-Y12- POT Sta. 20+99.45

-L- POT Sta. 192+14.30

PT Sta. 20+18.90

-Y12- +00.00 60.00' RT 30.00' RT

-Y12- +25.00 60.00' RT

-Y12- +74.70 90.00' RT

-Y12- +30.00 158.00' RT

-Y12- +50.00 125.00' LT

-Y12- +75.00 71.71' LT (EX.R/W)

-Y12- +50.00 40.00' LT

-Y12- +339.18 153.79' LT (EX.R/W)

+43.14 155.09' LT

-Y12- +50.00 40.00' LT

-Y12- +48.40 128.40' LT

-Y12- +50.00 124.97' LT

-Y12- +70.00 112.57' LT

-Y12- +75.00 39.00' RT

-Y12- +60.00 60.00' RT

-Y12- +50.00 100.00' RT

-L- +20.00 80.00' LT

-L- +95.00 80.00' LT

-Y12- +60.00 40.00' LT 75.00' LT

-L- +93.00 95.00' LT

-Y12- +07.87 194.04' LT (EX.R/W)

-Y12- +27.17 147.85' LT

-L- +66.90 80.00' LT

-L- +82.44 95.00' LT

-L- +95.00 80.00' LT

-L- +41.37 EX.R/W

-L- +92.70 80.00' LT EX.R/W

-L- +30.00 80.00' LT 120.00' LT

-L- +70.00 95.00' LT

-Y11C- +40.00 EX.R/W 48.00' LT

-Y11C- +26.00 61.00' RT

-Y11C- +40.00 EX.R/W

-Y11C- +80.00 55.00' RT

-Y11C- +67.00 EXIST.R/W

-Y12- +03.21 30.00' RT

-Y12- +95.00 49.00' RT 64.00' RT

-Y12- +19.00 46.00' RT 61.00' RT

-Y12- +00.00 50.00' RT

-Y12- +11.00 EX.R/W 44.00' RT

-Y12- +75.57 EX.R/W

-Y11C- +57.00 98.00' RT

-L- +00.00 80.00' RT 98.00' RT

-L- +10.00 116.00' RT

-L- +30.00 104.00' RT

-L- +34.00 98.00' RT

-L- +53.00 200.00' RT

-L- +18.00 80.00' LT

-L- +10.00 80.00' LT 95.00' LT

-L- +45.00 80.00' RT 98.00' RT

-L- +43.00 98.00' RT

-L- +33.00 98.00' RT

193+15.00 -L- 98.00' RT

-L- +92.70 80.00' LT EX.R/W

-L- +30.00 80.00' LT 120.00' LT

-L- +70.00 95.00' LT

-L- +48.52 114.00' RT

-L- +34.08 50.00' RT

-L- +65 END SBG

-L- +22 BEGIN SBG

+00 BEGIN SBG

+00 END SBG

+35.92 2' R

+99.82 SCGR 42' R

+90.32 SCGR 57' R

+49.29 3' R

+56.79 4' R

+73.54 2' R

+38.06

12.26'

13.34'

22.74'

PEGGY ANNE FLOWERS (75) DB 2836 PG 5 PB 57 PG 310

PEGGY FLOWERS BENSON (82) DB 1564 PG 901 PB 70 PG 289 PB 31PG 297

ALLIE TEW- DECEASED EST. 05EI387-WAKE CO. (85) DB 1564 PG 904 PB 31PG 297

JANA GUERTLER (83) DB 4508 PG 535 PB 65 PG 473

PAMELA DENISE FLOWERS (84) DB 4142 PG 606 PB 65 PG 473

JIMMY ROGERS FLOWERS (86) DB 1507 PG 275 PB 61PG 305

REBECCA D FLOWERS (87) DB 1789 PG 784

DRAKE ROBERTSON AND WIFE SONIA ROBERTSON DB 4248 PG 440 PB 66 PG 253

RUSSELL B. RAGLAND AND WIFE RHONDA G RAGLAND DB 3375 PG 834 PB 66 PG 253

N 70°59'19" E 595.17'

S 71°00'35" W 571.75'

S 71°03'15" W 154.47'

S 18°15'48" E 285.65'

S 60°03'40" E 690.59'

S 00°29'48" W 466.85'

S 22°04'52" E

N 78° 55' 54.5" E

S 11°04'05.5" E

S 10°10'09" E 30.58'

S 11°04'05.5" E

S 22°04'52" E

DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, B, 4:1, Fill Slope
Min. D= 1 Ft.
B= 2 Ft.
FROM -Y12- STA. 11+11 RT TO -Y12- STA. 16+00 RT

DETAIL 81
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, Natural Ground
EST. DDE=16 CY
Min. D= 1 Ft.
FROM -L- STA. 194+60 LT TO -L- STA. 196+00 LT

DETAIL 49
BERM BASE DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, B, RDWY, 2:1 or Flatter
Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
FROM -L- STA. 196+50 RT TO -L- STA. 194+65 RT

DETAIL 82
BERM 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, RDWY, 2:1
Min. D= 1 Ft.
b= 5 Ft.
FROM -L- STA. 197+50 RT TO -L- STA. 200+00 RT

DETAIL 88
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1 or Flatter, D, 4:1 or Flatter, Fill Slope
Min. D= 1 Ft.
FROM -Y12- STA. 16+00 LT TO -Y12- STA. 17+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow, 20:1, 10:1, 2', 0.5' Min. 1.0' Max., GI etc.
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 194+51 RT

DETAIL 89
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, d, D, 3:1, b, 1':Ft., Fill Slope, GEOTEXTILE, B
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 6 Ft.
b= 5 Ft.
*When B is < 6.0'
EST. DDE=170 CY
Type of Liner= Class I Rip-Rap
FROM -Y12- STA. 17+75 RT TO -Y12- STA. 20+00 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)
NATURAL GROUND, d, 3:1 OR FLATTER, FILL SLOPE, GEOTEXTILE
d= 1 Ft.
Type of Liner= Class B Rip-Rap
FROM -Y12- STA. 18+00 LT TO -Y12- STA. 20+25 LT

DETAIL 83
TOE PROTECTION
(Not to Scale)
Natural Ground, d, 3:1 or Flatter, Fill Slope, PSRM
d= 1 Ft.
EST. 78 SY PSRM
Type of Liner= PSRM
FROM -L- STA. 201+00 RT TO -L- STA. 202+00 RT

DETAIL 84
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 3:1, b, 1':Ft., Fill Slope, d, Geotextile
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5 Ft.
EST. DDE=2 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 202+00 RT TO -L- STA. 202+22 RT

DETAIL 85
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 3:1, d, D, 3:1, b, 1':Ft., Fill Slope, GEOTEXTILE, B
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.
*When B is < 6.0'
EST. DDE=300 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)
MOTORCYCLE RD SR 1704
12/20 2018 ADT
2040 ADT
NC 42
5/9 7/11
133/236 134/238
7/13 7/13
14/26
-Y11C- PORTOFINO DR.

FOR -L- PROFILE SEE SHEET 31
FOR -Y11C- PROFILE SEE SHEET 36
FOR -Y12- PROFILE SEE SHEET 36
FOR -DRW8- PROFILE SEE SHEET 38
FOR -DRW9- PROFILE SEE SHEET 39
FOR -DRW10- PROFILE SEE SHEET 39
FOR -DRW11- PROFILE SEE SHEET 39
FOR -DRW23- PROFILE SEE SHEET 40
FOR CONC.ISLAND DETAILS SEE SHEET 2B-7

PROPOSED SIGNAL
PAVEMENT REMOVAL

6/20/2018
R:\Roadway\Proj\R3825b_rdy_psh18.dgn
tmaddox

SHEET 17

SHEET 19

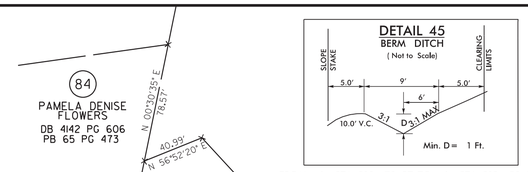
8/17/99

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NC LICENSE # C-2243

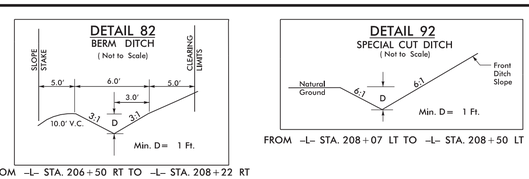
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2011

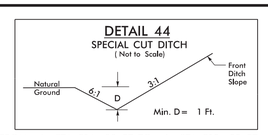


FROM -L- STA. 210+70 RT TO -L- STA. 212+50 RT

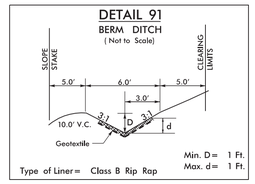


FROM -L- STA. 206+50 RT TO -L- STA. 208+22 RT

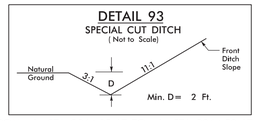
FROM -L- STA. 208+07 LT TO -L- STA. 208+50 LT



FROM -L- STA. 214+00 RT TO -L- STA. 215+50 RT



FROM -L- STA. 208+22 RT TO -L- STA. 210+70 RT



FROM -L- STA. 204+05 LT TO -L- STA. 204+50 LT

-L- NC 42

PI Sta 210+10.60
△ = 1° 40' 46.0" (RT)
D = 0° 14' 38.4"
L = 688.32'
T = 344.18'
R = 23,482.50'
e = NC

MATCHLINE -L- STA. 203+00.00 SEE SHEET 18

MATCHLINE -L- STA. 216+00.00 SEE SHEET 20

(84) PAMELA DENISE FLOWERS
DB 4142 PG 606
PB 65 PG 473

(88) LARRY B SWANEY AND WIFE LYNN R SWANEY
DB 4273 PG 520
PB 77 PG 402

(89) COUNTY OF JOHNSTON
DB 3961 PG 875
PB 69 PG 302

(90) CHRISTOPHER M FORD AND WIFE MELANIE P FORD
DB 4048 PG 246
PB 69 PG 222

THOMAS M PROPPS AND WIFE CYNTHIA J PROPPS
DB 4456 PG 675
PB 69 PG 222

(91) JAMES M WILCOX AND WIFE ELAINE B WILCOX
DB 3662 PG 406
PB 69 PG 222

(92) RAYMOND B WORTHINGTON AND WIFE PEBBLES L WORTHINGTON
DB 4150 PG 945
PB 69 PG 222

WILLIAM B GATEWOOD, JR
DB 4548 PG 827
PB 69 PG 222

(93) RICHARD M PREUSS AND WIFE LOUISE F MAISENHALDER
DB 3862 PG 861
PB 69 PG 221

(94) DWF DEVELOPMENT INC
DB 3166 PG 692
PB 79 PG 472

(87) REBECCA D. FLOWERS
DB 1789 PG 784
PB 68 PG 398

(87A) REBECCA D. FLOWERS
DB 1789 PG 784
PB 69 PG 220 PB 68 PG 54

(95) PEGGY ANN FLOWERS
DB 3081 PG 221
PB 65 PG 346

EXISTING R/W

EX 70' BUFFER EASEMENT PB 69 PG 220

-DRWI2- POT Sta. 10+00.00 = -L- POC Sta. 212+94.21

EST 5 TONS CLASS B RIP RAP
EST 14 SY GEOTEXTILE

SPECIAL CUT DITCH SEE DETAIL 92

BL-128

FILL W/FLOWABLE FILL

REMOVE HW

24" WELDED STEEL TRENCHLESS INSTALLATION

1'-6" C&G

-DRWI1- POT Sta. 11+63.35

PI Sta. 10+74.48

PC Sta. 206+66.42

PT Sta. 213+54.14

4' LATERAL BASE DITCH
W/CLASS I RIP RAP
EST. 175 TONS CLASS I RIP RAP
EST. 297 SY GEOTEXTILE
SEE DETAIL 85

BERM V-DITCH SEE DETAIL 82

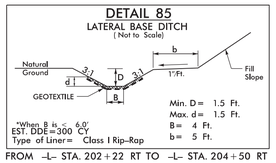
BERM V-DITCH W/CLASS B RIP RAP
EST. 81 TONS CLASS B RIP RAP
EST. 180 SY GEOTEXTILE
SEE DETAIL 91

BERM V-DITCH SEE DETAIL 45

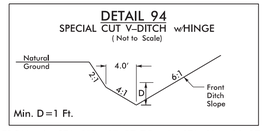
SPECIAL CUT DITCH W/HINGE SEE DETAIL 94

SPECIAL CUT DITCH SEE DETAIL 44

100' MEDIAN LANE TRANSITION



FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT



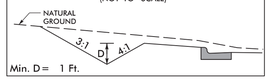
FROM -L- STA. 213+07 RT TO -L- STA. 214+00 RT

FOR -L- PROFILE SEE SHEET 31
FOR -DRWII- PROFILE SEE SHEET 39
FOR -DRWI2- PROFILE SEE SHEET 39

6/12/2018
H:\Roadway\Proj\R3825b_rdy_psh19.dgn
thuggins

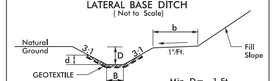
8/17/99

DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



FROM -L- STA. 222+27 LT TO -L- STA. 228+00 LT

DETAIL 96
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 228+00 LT TO -L- STA. 229+72 LT

DETAIL 97
LATERAL BASE DITCH
(Not to Scale)

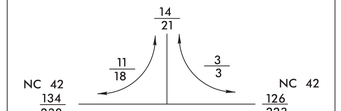


FROM -L- STA. 228+60 RT TO -L- STA. 231+10 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT

-Y12A-
FLOWERS PKWY



-Y12A- FLOWERS PKWY
PI Sta 11+21.34
△ = 38° 28' 14.5" (LT)
D = 16° 28' 36.2"
L = 233.49'
T = 121.34'
R = 347.74'

NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE: (919) 461-1100 FAX: (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GREGORY D THURMOND AND WIFE TERRI DAWN MCCORD
DB 3859 PG 572
PB 69 PG 220

REBECCA D FLOWERS
DB 1789 PG 784
PB 81PG 35

KIRKWOOD BUILDERS INC
DB 5847 PG 657
PB 81PG 132

SHAUN AMATA AND WIFE JILL AMATO
DB 4144 PG 492
PB 69 PG 220

KEVIS S O'HARE AND WIFE GIULIANA M O'HARE
DB 4498 PG 684
PB 69 PG 220

DWF DEVELOPMENT INC
DB 5561 PG 162
PB 81PG 132

DWF DEVELOPMENT INC
DB 3166 PG 692
PB 79 PG 472

MARK DAVEY AND WIFE MITZI DAVEY
DB 3882 PG 689
PB 69 PG 220

MICHAEL A FORD
DB 4376 PG 567
PB 69 PG 220

REBECCA D. FLOWERS
DB 4558 PG 869
PB 81PG 34

SWEETGRASS AT FLOWERS PLANTATION
DB 4558 PG 867 DB 4911PG 452
PB 81PG 132

PEGGY ANN FLOWERS
DB 3081PG 221
PB 65 PG 346

DWF DEVELOPMENT INC
DB 5561 PG 162
PB 81PG 132

REBECCA D FLOWERS
DB 1001PG 389

BEGIN CONSTRUCTION
-Y12A- POC Sta. 12+25.00

-L- POT Sta. 221+60.97=
-Y12A- POT Sta. 13+31.89
-DRW27- POT Sta.11+25.00

PT Sta. 12+33.49

POT Sta. 10+00.00

-DRW13- POT Sta. 10+00.00 =
-L- POT Sta. 228+86.87

PC Sta. 10+52.82

-DRW13-
PI Sta 10+70.41
L = 31.82'
R = 30.00'

220+00

225+00

BY11-153

BY11-154

MATCHLINE -L- STA. 216+00.00 SEE SHEET 19

MATCHLINE -L- STA. 229+00.00 SEE SHEET 21

★ PROPOSED SIGNAL

FOR -L- PROFILE SEE SHEET 32
FOR -Y12A- PROFILE SEE SHEET 35
FOR -DRW13- PROFILE SEE SHEET 39
FOR CONC.ISLAND DETAILS SEE SHEET 2B-7

R:\R2018\Roadway\P-roj\R3825b_rdy_psh20.dgn
tmanager

8/17/99

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Morrisville, North Carolina 27560
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NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

DETAIL 96
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 3 Ft.

*When B is < 6.0'
EST. DDE=115 CY
Type of Liner= Class B Rip-Rap

FROM –L– STA. 228+00 LT TO –L– STA. 229+72 LT

DETAIL 97
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

*When B is < 6.0'
EST. DDE=276 CY
Type of Liner= Class B Rip-Rap

FROM –L– STA. 228+60 RT TO –L– STA. 231+10 RT

DETAIL 99
TOE PROTECTION
(Not to Scale)

d= 2 Ft.

Type of Liner= Class B Rip-Rap

FROM –L– STA. 229+69 LT TO –L– STA. 231+09 LT
FROM –L– STA. 231+16 LT TO –L– STA. 233+03 LT

DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

b = 9.5 Ft.
Min. D= 1 Ft.

FROM –L– STA. 233+23 LT TO –L– STA. 234+50 LT

DETAIL 100
LATERAL BASE DITCH
(Not to Scale)

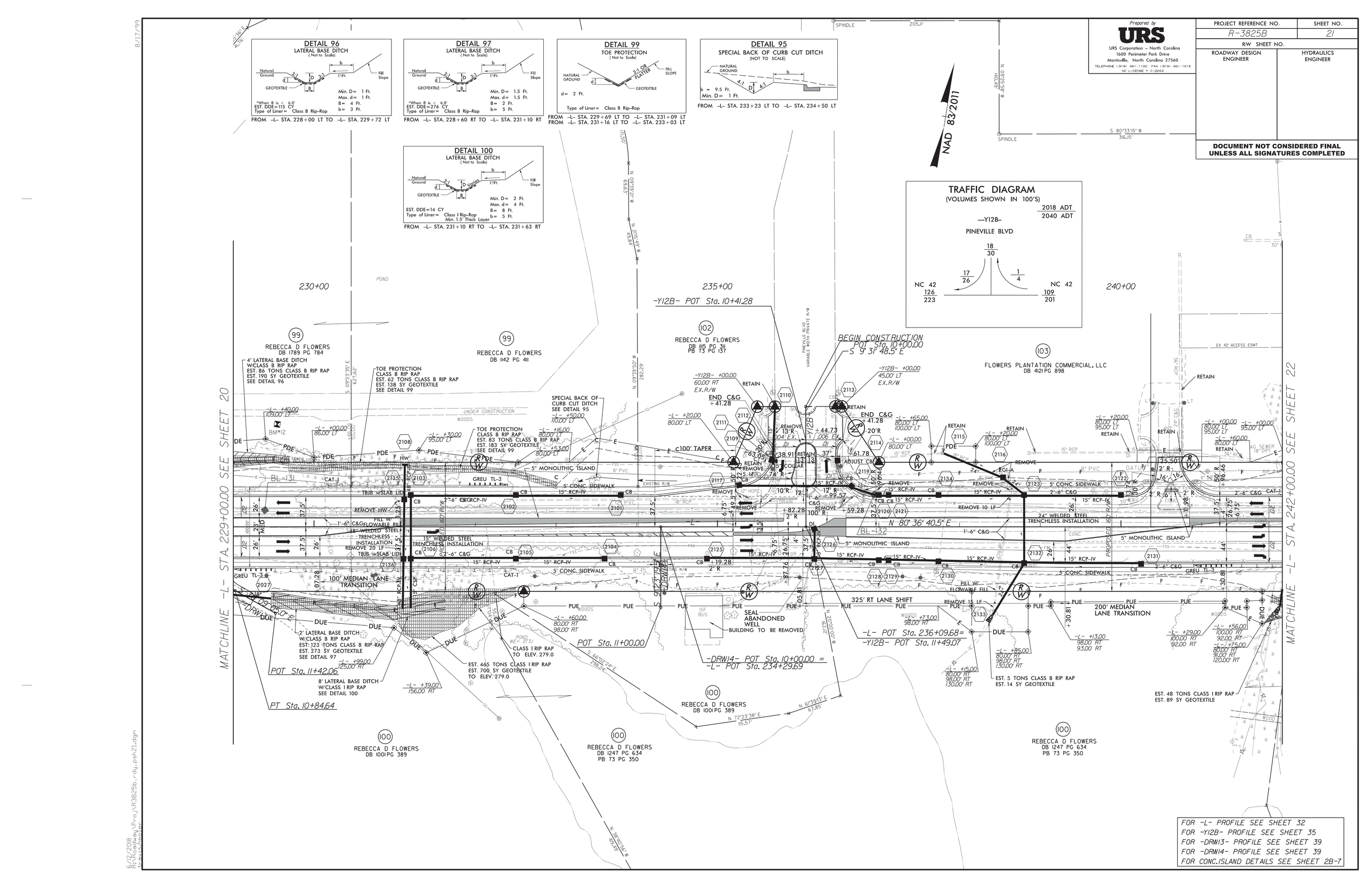
Min. D= 2 Ft.
Max. d= 4 Ft.
B= 8 Ft.
b= 5 Ft.

EST. DDE=14 CY
Type of Liner= Class I Rip-Rap
Min. 1.5' Thick Layer

FROM –L– STA. 231+10 RT TO –L– STA. 231+63 RT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

2018 ADT
2040 ADT


230+00
235+00
240+00
POND
–Y12B– POT Sta. 10+41.28
BEGIN CONSTRUCTION
POT Sta. 10+00.00
S 9° 31' 48.5" E
PINEVILLE BLVD
VARIABLE WIDTH PRIVATE R/W
99
REBECCA D FLOWERS
DB 1789 PG 784
4' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 86 TONS CLASS B RIP RAP
EST. 190 SY GEOTEXTILE
SEE DETAIL 96
99
REBECCA D FLOWERS
DB 1142 PG 411
102
REBECCA D FLOWERS
DB 1115 PG 311
PB 73 PG 137
103
FLOWERS PLANTATION COMMERCIAL, LLC
DB 4121PG 898
EX 42' ACCESS ESMT
S 09°23'35" E
627.42'
N 09°23'50" W
282.29'
TOE PROTECTION
CLASS B RIP RAP
EST. 62 TONS CLASS B RIP RAP
EST. 138 SY GEOTEXTILE
SEE DETAIL 99
SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 95
TOE PROTECTION
CLASS B RIP RAP
EST. 83 TONS CLASS B RIP RAP
EST. 183 SY GEOTEXTILE
SEE DETAIL 99
UNDER CONSTRUCTION
WOODS
BM#12
BL-I3I
BL-I32
MATCHLINE –L– STA. 229+00.00 SEE SHEET 20
MATCHLINE –L– STA. 242+00.00 SEE SHEET 22
SHEET 20
SHEET 22
–L– +40.00 109.00' LT
–L– +00.00 86.00' LT
–L– +30.00 95.00' LT
–L– +16.00 80.00' LT
–L– +53.00 80.00' LT
–L– +50.00 110.00' LT
–L– +20.00 80.00' LT
–L– +65.00 80.00' LT
–L– +00.00 80.00' LT
–L– +20.00 80.00' LT
–L– +20.00 80.00' LT
–L– +00.00 80.00' LT
–L– +00.00 95.00' LT
–L– +60.00 80.00' LT
–L– +99.00 125.00' RT
–L– +39.00 156.00' RT
–L– +60.00 80.00' RT 98.00' RT
–L– +73.00 98.00' RT
–L– +13.00 98.00' RT 93.00' RT
–L– +29.00 100.00' RT 92.00' RT
–L– +56.00 100.00' RT 92.00' RT
–L– +75.00 80.00' RT 91.00' RT 120.00' RT
–L– +15.00 80.00' RT 98.00' RT 130.00' RT
–L– +35.00 80.00' RT 98.00' RT 130.00' RT
–L– POT Sta. 236+09.68= –Y12B– POT Sta. 11+49.07
–DRWI4– POT Sta. 10+00.00 = –L– POT Sta. 234+29.69
POT Sta. 11+00.00
POT Sta. 11+42.06
PT Sta. 10+84.64
2' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 123 TONS CLASS B RIP RAP
EST. 273 SY GEOTEXTILE
SEE DETAIL 97
8' LATERAL BASE DITCH
W/CLASS I RIP RAP
SEE DETAIL 100
CLASS I RIP RAP
TO ELEV. 279.0
EST. 465 TONS CLASS I RIP RAP
EST. 700 SY GEOTEXTILE
TO ELEV. 279.0
EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE
EST. 48 TONS CLASS I RIP RAP
EST. 89 SY GEOTEXTILE
SEAL ABANDONED WELL
BUILDING TO BE REMOVED
ISF BUS
S 66°02'24" E
298.34'
N 38°40'56" W
405.59'
N 72°23'38" E
115.57'
N 61°39'47" E
67.85'
N 20°00'00" W
162.12'
S 80°33'15" W
316.15'
N 09°29'27" W
69.53'
N 21°55'49" W
49.84'
S 09°23'35" E
109.0' DRWI3
S 9°23'35" E
41.16'
205.11'
N 09°55'58" W
140.49'
SPINDLE
SPINDLE
325' RT LANE SHIFT
100' MEDIAN LANE TRANSITION
200' MEDIAN LANE TRANSITION
N 80° 36' 40.5" E
24" WELDED STEEL TRENCHLESS INSTALLATION
15" WELDED STEEL TRENCHLESS INSTALLATION
REMOVE 20 LF TBJB w/SLAB LID
REMOVE 10 LF
REMOVE 15 LF
REMOVE HW
FILL W/ FLOWABLE FILL
TBJB w/SLAB LID
GREU TL-3
CAT-1
5' CONC. SIDEWALK
5" MONOLITHIC ISLAND
1'-6" C&G
2'-6" C&G
2'-6" C&G CAT-1
15" RCP-IV
18" RCP-IV
24" RCP-IV
30" RCP
36" RCP
42" RCP
48" RCP
54" RCP
60" RCP
24" C&G
30" C&G
36" C&G
42" C&G
48" C&G
54" C&G
60" C&G
72" C&G
84" C&G
96" C&G
108" C&G
120" C&G
144" C&G
168" C&G
192" C&G
216" C&G
240" C&G
RETAIN
REMOVE
ADJUST CB
RIP RAP
CONC
WOODS
POND
DRAIN
DI
CB
RCB
PDE
DUE
PUE
F
E
C
SS
FSS
W
G
T
TEL
TRANSITION
–Y12B– +00.00 60.00' RT EX.R/W
–Y12B– +00.00 45.00' LT EX.R/W
END C&G +41.28
+44.73 .006 EX.
+63.05 .01
+38.91 .01
+61.78 .01
+82.28 2' R
+59.28 100' R
+19.28 2' R
+99.57
+87.76
+105.81
+30.81
+18.98
+25.50
+26.75
+44.46
+50.46
+37.76
+30.88
+37.28
+07.28
+00.28
+00.00
+46.00
+53.00
+60.00
+69.00
+74.00
+79.00
+84.00
+89.00
+94.00
+99.00
+104.00
+109.00
+114.00
+119.00
+124.00
+129.00
+134.00
+139.00
+144.00
+149.00
+154.00
+159.00
+164.00
+169.00
+174.00
+179.00
+184.00
+189.00
+194.00
+199.00
+204.00
+209.00
+214.00
+219.00
+224.00
+229.00
+234.00
+239.00
+244.00
+249.00
+254.00
+259.00
+264.00

8/17/99

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 23

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -L- STA. 242+00.00 SEE SHEET 21

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 23

NAD 83/2011

107 REBECCA D FLOWERS DB 1247 PG 634

108 REBECCA FLOWERS FINCH DB 1368 PG 792

108 REBECCA FLOWERS FINCH DB 1306 PG 428

REBECCA D. FLOWERS DB 1789 PG 784

113 REBECCA FLOWERS FINCH DB 1235 PG 444

REBECCA FLOWERS FINCH DB 1158 PG 421

103 FLOWERS PLANTATION COMMERCIAL, LLC DB 4121 PG 898 PB 79 PG 130

105 FPC DRUGSTORE OUTPARCEL LLC DB 4476 PG 245 PB 79 PG 130

106 PERCY FLOWERS STORE LLC DB 3486 PG 39 PB 71 PG 452

117 FPC MENAGERIE OUTLOT, LLC DB 4607 PG 349 PB 81 PG 36

100 REBECCA D FLOWERS DB 1247 PG 634 PB 73 PG 350

112 REBECCA D FLOWERS DB 1789 PG 784

END CONSTRUCTION -L- POT Sta. 257+50.00

POT Sta. 257+70.28

BM#15

END TIP PROJECT R-3825B -L- Sta. 257+50.00

SPECIAL CUT DITCH SEE DETAIL 103

SPECIAL CUT DITCH SEE DETAIL 104

100' TAPER

REMOVE 15" RCP

N 80° 36' 40.5" E

N 53°33'20" E 563.04'

BEGIN C&G +15.09

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 105

END C&G +80.56

BEGIN C&G +11.59

BEGIN C&G +65.83

END C&G +67.06

170' MEDIAN TRANSITION

300' TRANSITION LANE SHIFT LT

450' TAPER LANE SHIFT RT

50' MEDIAN TRANSITION

50' TAPER

150' TAPER LT TURN LANE

-L- POT Sta. 245+70.36=
-Y13- POC Sta. 24+61.09

-DRW21- POT Sta. 11+02.51

-DRW21- POT Sta. 10+00.00 =
-Y13- POC Sta. 26+89.48

-DRW22- POT Sta. 10+00.00 =
-Y13- POC Sta. 27+92.31

-DRW22- POT Sta. 11+00.00

PCC Sta. 23+13.33

PI Sta. 10+46.97

N 74° 55' 00.4" E

N 78° 45' 13.7" E

N 76° 36' 35.1" E

245+00

250+00

255+00

5" MONOLITHIC ISLAND

600' LANE DROP

2'-6" C&G

2'-0" C&G

4' PS

2' R

40' R

60' R

-Y13- BUFFALO RD

POND WF=286.0

PI Sta 18+39.59
Δ = 0° 04' 19.2" (RT)
D = 0° 00' 27.4"
L = 947.47'
T = 473.74'
R = 753,976.63'
e = NC

PI Sta 25+88.52
Δ = 9° 02' 35.1" (RT)
D = 1° 38' 47.1"
L = 549.25'
T = 275.20'
R = 3,480.00'
e = 3%
Runoff = 138'

PI Sta 31+24.97
Δ = 8° 37' 25.4" (LT)
D = 1° 38' 47.1"
L = 523.78'
T = 262.39'
R = 3,480.00'
e = 3%
Runoff = PC 138'
Runoff = PT 108'

DETAIL 104
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Front Ditch Slope, Min. D= 1 Ft.
FROM -L- STA. 254+25 RT TO -L- STA. 255+50 RT

DETAIL 108
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Fill Slope, B, Min. D= 2.5 Ft., B= 2 Ft.
FROM -L- STA. 251+13 LT TO -L- STA. 252+50 LT

DETAIL 103
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 3:1, D, 6:1, Front Ditch Slope, Min. D= 2 Ft.
FROM -L- STA. 254+70 LT TO -L- STA. 257+50 LT

DETAIL 109
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1, Fill Slope, Min. D= 2 Ft.
FROM -L- STA. 252+50 LT TO -L- STA. 254+70 LT

DETAIL 53
TOE PROTECTION
(Not to Scale)
NATURAL GROUND, d, 3:1 OR FLATTER, FILL SLOPE, GEOTEXTILE
d= 1 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT

DETAIL 101
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope, Min. D= 1 Ft.
FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT

DETAIL 69
TOE PROTECTION
(Not to Scale)
Natural Ground, b, 3:1 or Flatter, Fill Slope, d, Geotextile
d= 1 Ft.
b= 5 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 241+86 RT TO -L- STA. 242+63 RT

DETAIL 105
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)
NATURAL GROUND, 3:1, D, 6:1, Min. D= 1 Ft., EST. DDE=52 CY
FROM -Y13- STA. 21+00 LT TO -Y13- STA. 21+50 LT

DETAIL 55
FALSE SUMP
(Not to Scale)
0.5' Min. 1.0' Max, Outside Ditch Traffic Flow, 10:1, 20:1, 2.0', GI etc., S=Ditch Slope, ℄ Proposed Ditch
-Y13- STA. 21+72 LT

TRAFFIC DIAGRAM
(VOLUMES SHOWN IN 100'S)

	SR 1003	2018 ADT / 2040 ADT
	101 / 206	
NC 42	109 / 201	79 / 152
	24 / 31	9 / 15
	86 / 153	
	SR 1003	

32 / 66 (NB) 16 / 33 (EB)

FOR -L- PROFILE SEE SHEET 33
FOR -Y13- PROFILE SEE SHEET 36
FOR -DRW21- PROFILE SEE SHEET 40
FOR -DRW22- PROFILE SEE SHEET 40
FOR CONC.ISLAND DETAILS SEE SHEET 2B-7

☆ EXISTING SIGNAL (SIGNAL MOD. REQUIRED)

Prepared by
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1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/2018
R:\R-3825B\Roadway\Prod\R3825b_rdy_psh22.dgn
tmaybery

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y13- BUFFALO RD

PI Sta 11+82.97	PI Sta 18+39.59
Δ = 3° 02' 15.7" (RT)	Δ = 0° 04' 19.2" (RT)
D = 0° 49' 49.1"	D = 0° 00' 27.4"
L = 365.85'	L = 947.47'
T = 182.97'	T = 473.74'
R = 6,900.57'	R = 753,976.63'
	e = NC

NAD 83/2011

-Y13- BUFFALO RD

PI Sta 31+24.97	PI Sta 36+48.41
Δ = 8° 37' 25.4" (LT)	Δ = 4° 54' 58.8" (LT)
D = 1° 38' 47.1"	D = 1° 43' 03.0"
L = 523.78'	L = 286.25'
T = 262.39'	T = 143.21'
R = 3,480.00'	R = 3,336.00'
e = 3%	e = 3% / MATCH EXIST.
Runoff = PC 138'	Runoff = 108'
Runoff = PT 108'	

BEGIN CONSTRUCTION
-Y13- POC Sta. 14+83.74

END CONSTRUCTION
-Y13- POC Sta. 35+70.00

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 22

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 22

POND
WE=286.0

107 REBECCA D FLOWERS
DB 1247 PG 634

113 REBECCA D FLOWERS
DB 1235 PG 444

112 REBECCA D FLOWERS
DB 1789 PG 784

113 REBECCA D FLOWERS
DB 1789 PG 784

116 FPC PHASE 1 LLC
DB 4377 PG 511
PB 79 PG 21

103 FLOWERS PLANTATION COMMERCIAL, LLC
DB 4121PG 898
PB 79 PG 130

117 FPC MENAGERIE OUTLOT, LLC
DB 4607 PG 449
PB 81PG 36

100 REBECCA D FLOWERS
DB 1247 PG 634

600' LANE DROP

RETAIN EX. ISLAND IN DRIVE

100' MEDIAN LANE TRANSITION

150' RT EOP TAPER

5" MONOLITHIC ISLAND

100' RIGHT LANE TRANSITION

150' TRANSITION LT TURN LANE

200' TRANSITION LANE SHIFT RT & LT

SPECIAL ROADWAY DITCH SEE DETAIL 106

SPECIAL LATERAL V-DITCH SEE DETAIL 101

SPECIAL ROADWAY DITCH SEE DETAIL 107

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

40 SY PSRM

150' TRANSITION

600' LANE DROP

TIE BACK TO EXISTING DITCH

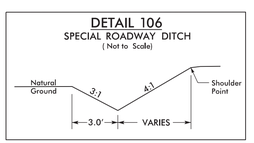
PRC Sta. 13+65.85

PRC Sta. 28+62.58

PT Sta. 33+86.36

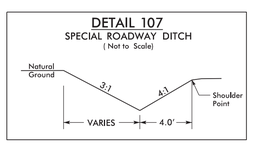
POC Sta. 35+05.20

DETAIL 106
SPECIAL ROADWAY DITCH
(Not to Scale)



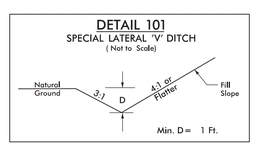
FROM -Y13- STA. 29+00 RT TO -Y13- STA. 29+50 RT
FROM -Y13- STA. 30+50 RT TO -Y13- STA. 34+00 RT
FROM -Y13- STA. 28+15 LT TO -Y13- STA. 29+00 LT

DETAIL 107
SPECIAL ROADWAY DITCH
(Not to Scale)



FROM -Y13- STA. 31+50 LT TO -Y13- STA. 32+00 LT

DETAIL 101
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -Y13- STA. 29+50 RT TO -Y13- STA. 30+50 RT
FROM -Y13- STA. 34+00 RT TO -Y13- STA. 36+96 RT
FROM -Y13- STA. 29+00 LT TO -Y13- STA. 29+25 LT
FROM -Y13- STA. 32+00 LT TO -Y13- STA. 33+16 LT

FOR -Y13- PROFILE SEE SHEET 37

8/17/2018
R:\R-Projects\R3825b_rdy.psh23.dgn
tr.wheeler