

Type I and II Ground Disturbing Categorical Exclusion Action Classification Form

STIP Project No.	<u>B-5351</u>
WBS Element	<u>46065.1.1</u>
Federal Project No.	<u>BRNHS-0029(55)</u>

A. Project Description:

The project proposes to replace Guilford County Bridge Nos. 237 and 242 on their existing alignment on US 29-70 and I-85 Business over the Deep River in High Point (Figure 1). In the vicinity of the bridges, US 29-70/I-85 Business has a 36-foot pavement width in each direction with 10-foot paved shoulders on the outside travel lane and 2-foot paved shoulders on the inside travel lane. The roadway grade is in a sag vertical curve through the project area. The existing bridges are on a tangent. The roadway is situated approximately 28 feet above the creek bed.

Bridge Nos. 237 and 242 are both five-span structures that consist of reinforced concrete deck girders. The end bents consist of reinforced concrete caps on timber piles. The interior bents consist of reinforced concrete posts and beams. The overall length of both structures is 215 feet. Both structures have a clear roadway width of 28.0 feet. There is no posted weight limit on these bridges.

B. Description of Need and Purpose:

NCDOT Bridge Management Unit records indicate Bridge No. 237 has a sufficiency rating of 44.75 out of a possible 100 for a new structure. Bridge No. 242 has a sufficiency rating of 46.32 out of a possible 100 for a new structure. According to Federal Highway Administration (FHWA) standards, both Bridge No. 237 and Bridge No. 242 are considered structurally deficient due to a deck condition appraisal of 4 out of 9 and a substructure condition appraisal of 4 out of 9.

Bridge Nos. 237 and 242 were built in 1953. Bridge No. 237 and Bridge No. 242 have a sixty-four year old superstructure consisting of reinforced concrete deck girders and a substructure that consists of reinforced concrete columns and beams. Bridge No. 237 has a substandard substructure, including vertical and scattered spalling with rebar exposed along girders, columns, and beams, layered rust, and vertical cracking along columns and beams. Bridge No. 242 is also in poor condition with a substandard substructure, including caps that have areas of surface spalls and cracks and girders with spalling and cracks. Bridge No. 242 has experienced repairs on expansion joints and pier caps. Rehabilitation of both structures is not practical due to their age and deteriorated condition. Components of both the concrete superstructure and substructure of Bridge Nos. 237 and 242 have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The purpose of this project is to replace Bridge Nos. 237 and 242 which are approaching the end of their useful life and are becoming increasingly unacceptable.

C. Categorical Exclusion Action Classification:

TYPE I A

D. Proposed Improvements:

28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e)(1-6).

E. Special Project Information:

Estimated Cost:

	Proposed Structures No Greenway (215 Feet Long)	Proposed Structures With Greenway (218 Feet Long)
Roadway Approaches	\$ 2,393,155	\$ 2,391,540
Structure	\$ 2,549,813	\$ 2,578,333
Structure Removal	\$ 201,600	\$ 201,600
Misc. & Mob.	\$ 1,089,432	\$ 1,093,527
Eng. & Contingencies	\$ 966,000	\$ 975,000
Total Construction Cost	\$ 7,200,000	\$ 7,240,000
Right-of-Way Cost	\$21,100	\$ 21,100
Utility Cost	\$194,900	\$ 194,900
Total Project Cost	\$7,416,000	\$ 7,456,000

Note: Based on 2017 prices

Estimated Traffic: The current traffic volume of 34,500 vehicles per day (vpd) is expected to increase to 42,900 vpd by the year 2038. The projected volume includes three percent truck-tractor semi-trailer and five percent dual-tired vehicles. The posted speed limit is 55 miles per hour in the project area. No school buses cross the bridges.

Accidents: There were six accidents reported in the vicinity of the bridges during a five-year period. None of the accidents were associated with the alignment or geometry of the bridges or their approach roadway. Five of the accidents involved an animal and one accident was a sideswipe between vehicles traveling the same direction.

Design Exceptions: There are no anticipated design exceptions for this project.

Pedestrian, Bicycle, and Greenway Accommodations: This section of US 29-70/I-85 Business is not part of a designated bicycle route nor is it listed in the STIP as needing incidental bicycle accommodations. Sidewalks do not exist on either of the existing bridges and there is no indication of pedestrian usage on or near the bridges. The High Point MPO Comprehensive Transportation Plan (CTP), Bicycle Map, as well as the Jamestown Deep River Trail Plan indicate a recommended multi-use path along the south side of the Deep River through the project area. This greenway, the Deep River Trail, is planned to connect five counties from the

starting point near the Deep River's headwaters in Guilford County, through Randolph County, Moore County, Chatham County, and Lee County, terminating at Harris Lake.

Bridge Demolition: Bridge Nos. 237 & 242 are constructed of reinforced concrete and should be removed with no resulting debris in the water based on standard demolition practices.

Preferred Alternative:

Due to the amount of traffic on US 29-70/I-85 Business, four lanes of traffic will need to be maintained throughout construction; therefore, an offsite detour is not feasible and was not studied.

Bridge Nos. 237 and 242 will both be replaced on their existing alignment while traffic is maintained on a temporary two-lane onsite detour to the north of Bridge No. 242 (Figures 2A thru 2F).

The permanent replacement structures will be bridges. Initially, both bridges were proposed to be approximately 215 feet long providing a minimum 38 feet clear deck width. However, during the hydraulic review, it was determined that to accommodate a multi-use trail along the south side of the Deep River, the proposed bridge structures would need to be extended approximately three feet, providing dual bridges approximately 218 feet long. The proposed bridge replacements would allow adequate vertical clearance to accommodate bicycle and pedestrian activity along the trail. The proposed bridges were designed to accommodate a 12-foot area for the future multi-use trail on the south side of the Deep River, under the bridges.

The bridges will include two 12-foot lanes with 4-foot paved shoulders on the inside travel lanes and 10-foot paved shoulders on the outside travel lanes. The bridge length is based on preliminary design information. The roadway grade of the new structure will be slightly higher than the existing structure.

The approach roadway will extend approximately 600 feet from the southwest end of the new bridge and 400 feet from the northeast end of the new bridge. The approaches will be widened to include a 38-foot pavement width providing two 12-foot lanes. Ten-foot paved shoulders will be provided on the outside travel lane and four-foot paved shoulders will be provided on the inside travel lane. The roadway will be designed as a Major Arterial using Regional Tier Guidelines with a 60 mile per hour design speed.

The total length of the onsite detour alignment is 2,040 feet. The detour alignment will utilize a temporary 200-foot long, 32-foot wide bridge carrying two 12-foot wide lanes of traffic.

The bridges will be phase constructed. While Bridge No. 242 is being replaced, southbound traffic will utilize the onsite detour to the north of Bridge No. 242. Southbound traffic will continue to utilize the detour alignment to the north while Bridge No. 237 is being replaced and northbound traffic will be detoured to utilize the newly replaced Bridge No. 242. Once both bridges are replaced, traffic will be shifted back to the appropriate travel lanes. Due to the time required to construct a temporary bridge and two replacement bridges, construction is anticipated to take approximately two years.

Agency Comments: NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, N.C. Department of Environment & Natural Resources, U.S. Fish & Wildlife Service, N.C. Wildlife Resources Commission (NCWRC), Piedmont Triad Regional Council, Town of Jamestown, City of High Point, Guilford County, Guilford County Parks and Recreation, Guilford County Schools, and Guilford County EMS.

In addition to their standard recommendations, the N.C. Division of Water Resources (DWR) (formerly Division of Water Quality) recommends that the NCDOT strictly adhere to the most recent version of *NCDOT's Design Standards in Sensitive Watersheds* to minimize impacts to surface waters classified as Water Supply Critical Area in the project study area. Additionally, NCDWR indicated that a buffer mitigation plan must be provided to them prior to approval of the Water Quality Certification.

After providing written comments, NCWRC requested that this project be investigated to provide recreational access, specifically small boat access with parking. After an investigation of property ownership and downstream conditions, it was determined the NCWRC will not be pursuing recreational access at this bridge site at this time.

The City of High Point has requested that the proposed bridge accommodate a 12-foot bench under the new bridges for the proposed greenway.

Public Involvement: A letter was sent to all property owners affected directly by this project. Property owners were invited to comment if they had questions about the project. No comments have been received.

A newsletter was sent to all those living along US 29-70/I-85 Business near the River Road intersection. No comments have been received to date. Based on responses to the newsletter, a Public Meeting was determined unnecessary.

There is not substantial controversy on social, economic, or environmental grounds concerning the project.

F. Project Impact Criteria Checklists:

<u>Type I & II - Ground Disturbing Actions</u>			
<u>FHWA APPROVAL ACTIVITIES THRESHOLD CRITERIA</u>			
If any of questions 1-7 are marked "yes" then the CE will require FHWA approval.		Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If any of questions 8 through 31 are marked "yes" then additional information will be required for those questions in Section G.			
<u>Other Considerations</u>		Yes	No
8	Does the project result in a finding of "may affect not likely to adversely affect" for listed species, or designated critical habitat under Section 7 of the Endangered Species Act (ESA)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	Does the project impact waters of the United States in any of the designated mountain trout streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project include a Section 106 of the NHPA effects determination other than a no effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Other Considerations (continued)</u>		Yes	No
15	Does the project involve hazardous materials and/or landfills?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Does the project require work encroaching and adversely affecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP or the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP) (where applicable)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, Tennessee Valley Authority (TVA), or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29	Is the project considered a Type I under the NCDOT's Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

G. Additional Documentation as Required from Section F

Response to Question 8: The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the FHWA, USACE, and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect." The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered

Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Guilford County, where TIP B-5351 is located.

Response to Question 10: Deep River is classified as a Water Supply Critical Area in the project study area. NCDWR recommends strict adherence to North Carolina regulations entitled *Design Standards in Sensitive Watersheds* throughout design and construction of the project. This would apply for any area that drains to streams having WS CA (Water Supply Critical Area) classifications. Additionally, this project is located within the Randleman Lake Water Supply Watershed and is; therefore, subject to buffer rules. A buffer mitigation plan must be provided to NCDWR prior to approval of the Water Quality Certification.

Response to Question 30: The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. All construction will take place along existing alignment. There are soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project may involve the direct conversion of farmland acreage within these classifications. A preliminary screening of farmland conversion impacts in the project area was completed (NRCS Form AD-1006, part VI only) and resulted in a score of 35 points out of 160. Since the total site assessment score does not exceed the 60-point threshold established by NRCS, notable project impacts to eligible soils are not anticipated.

H. Project Commitments

**Guilford County
Bridge Nos. 237 & 242 on US 29-70 and I-85 Business
over Deep River
Federal Project No. BRNHS-0029(55)
WBS No. 46065.1.1
TIP No. B-5351**

Hydraulics Unit - FEMA Coordination

The Hydraulics Unit will coordinate with the N.C. Floodplain Mapping Program to determine the status of the project with regard to applicability of NCDOT'S Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Hydraulics Unit / Division 7 Construction - FEMA

This project involves construction on or adjacent to a FEMA-regulated stream. Therefore, the Division Resident Engineer shall submit sealed as-built construction plans to the Hydraulics Unit upon project completion certifying the project was built as shown on the construction plans.

Division Construction / Natural Environment Section / Roadside Environmental Unit - Water Supply Critical Area

Deep River is classified as a Water Supply Critical Area in the project study area. NCDWR recommends strict adherence to North Carolina regulations entitled Design Standards in Sensitive Watersheds throughout design and construction of the project. This would apply for any area that drains to streams having WS CA (Water Supply Critical Area) classifications.

Hydraulics Unit / Natural Environment Section - Buffer Rules

The Randleman Lake Water Supply Watershed Buffer Rules apply to this project. A buffer mitigation plan must be provided to NCDWR prior to approval of the Water Quality Certification.

Roadway Design / Program Development Branch - Multi-Use Trail

Allowance will be made for a future 12-foot multi-use path under the bridge on the south side of the Deep River. The proposed bridge replacement project would include a 12-foot berm graded under the new bridges for the proposed multi-use trail on the south side of the Deep River.

The proposed bridges were designed to accommodate a 12-foot area for the future multi-use trail on the south side of the Deep River, under the bridges. The City of High Point will be responsible for the maintenance and liability of the future multi-use trail. According to NCDOT's Greenway Accommodation Guidelines, the City of High Point's cost share is estimated to be \$0 to accommodate the future 12-foot multi-use trail.

I. Categorical Exclusion Approval

STIP Project No. B-5351
WBS Element 46065.1.1
Federal Project No. BRNHS-0029(55)

Prepared By:

7-26-17 Aileen S. Mayhew
Date Aileen S. Mayhew, PE - Consultant Project Manager
Mott MacDonald

Prepared For: North Carolina Department of Transportation

Reviewed By:

7/26/17 Dionne C. Brown
Date Dionne C. Brown, PE - Consultant Project Manager
DAVENPORT

Approved

If all of the threshold questions (1 through 7) of Section F are answered "no," NCDOT approves this Categorical Exclusion.

Certified

If any of the threshold questions (1 through 7) of Section F are answered "yes," NCDOT certifies this Categorical Exclusion.

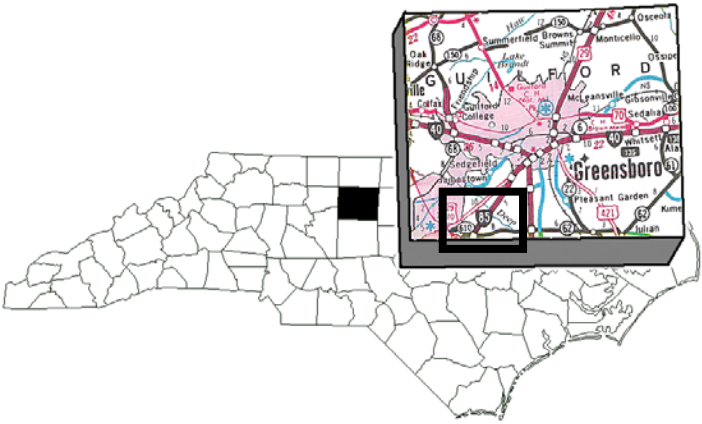
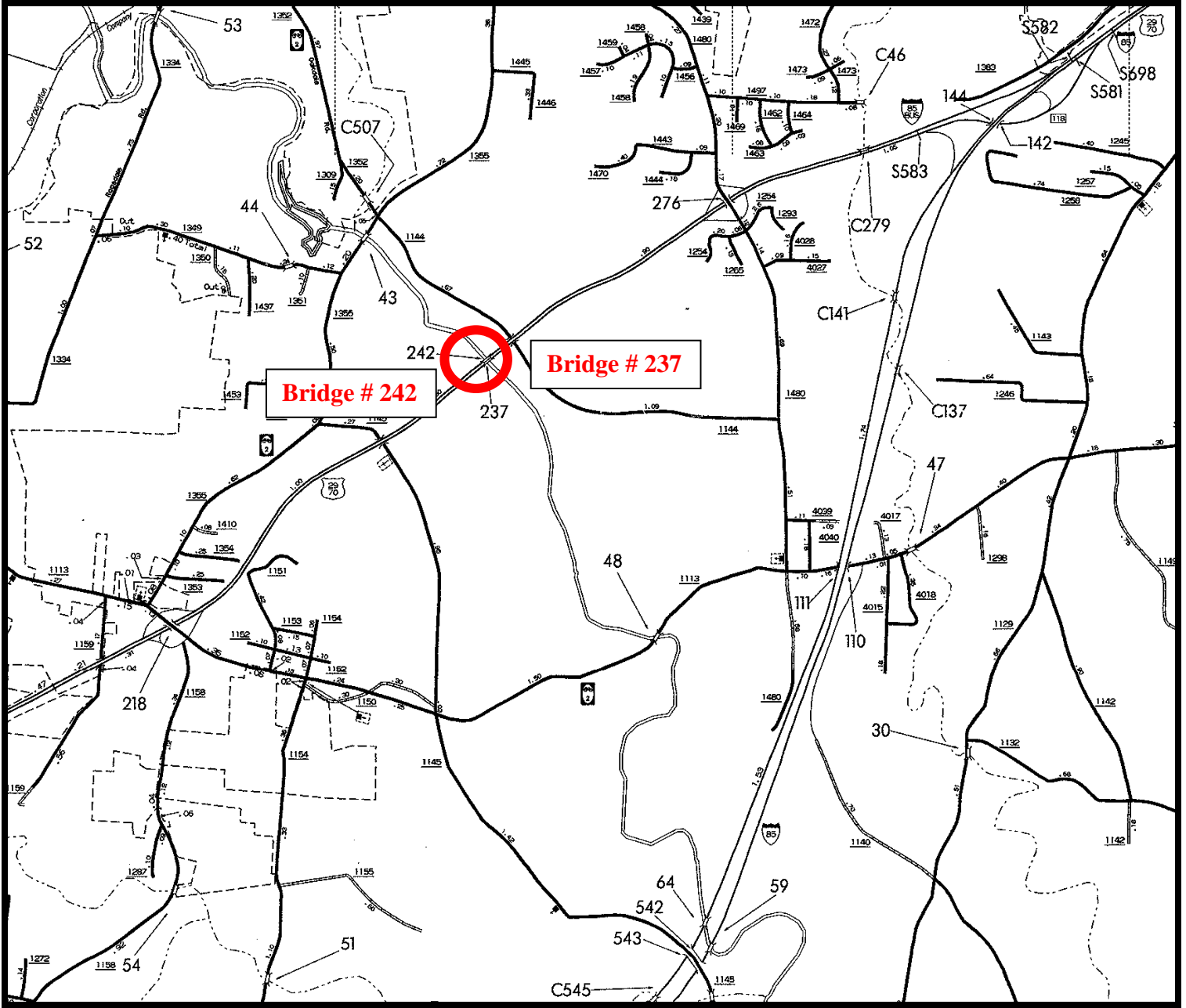
7/26/17 Beverly G. Robinson
Date Beverly G. Robinson, CPM - Group Supervisor
North Carolina Department of Transportation


FHWA Approved: For Projects Certified by NCDOT, FHWA signature required.

N/A N/A
Date John F. Sullivan, III, PE - Division Administrator
Federal Highway Administration

APPENDIX A

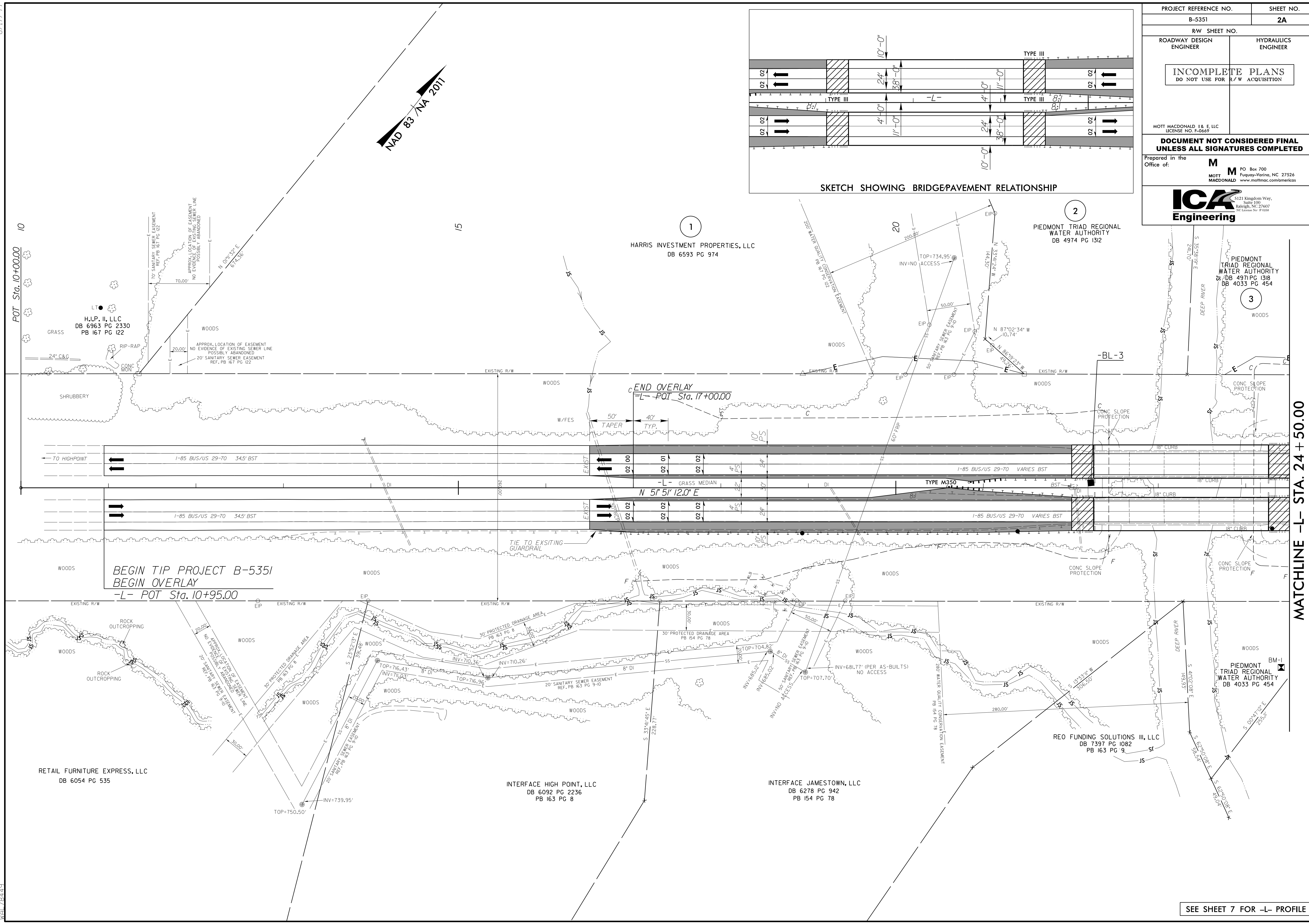
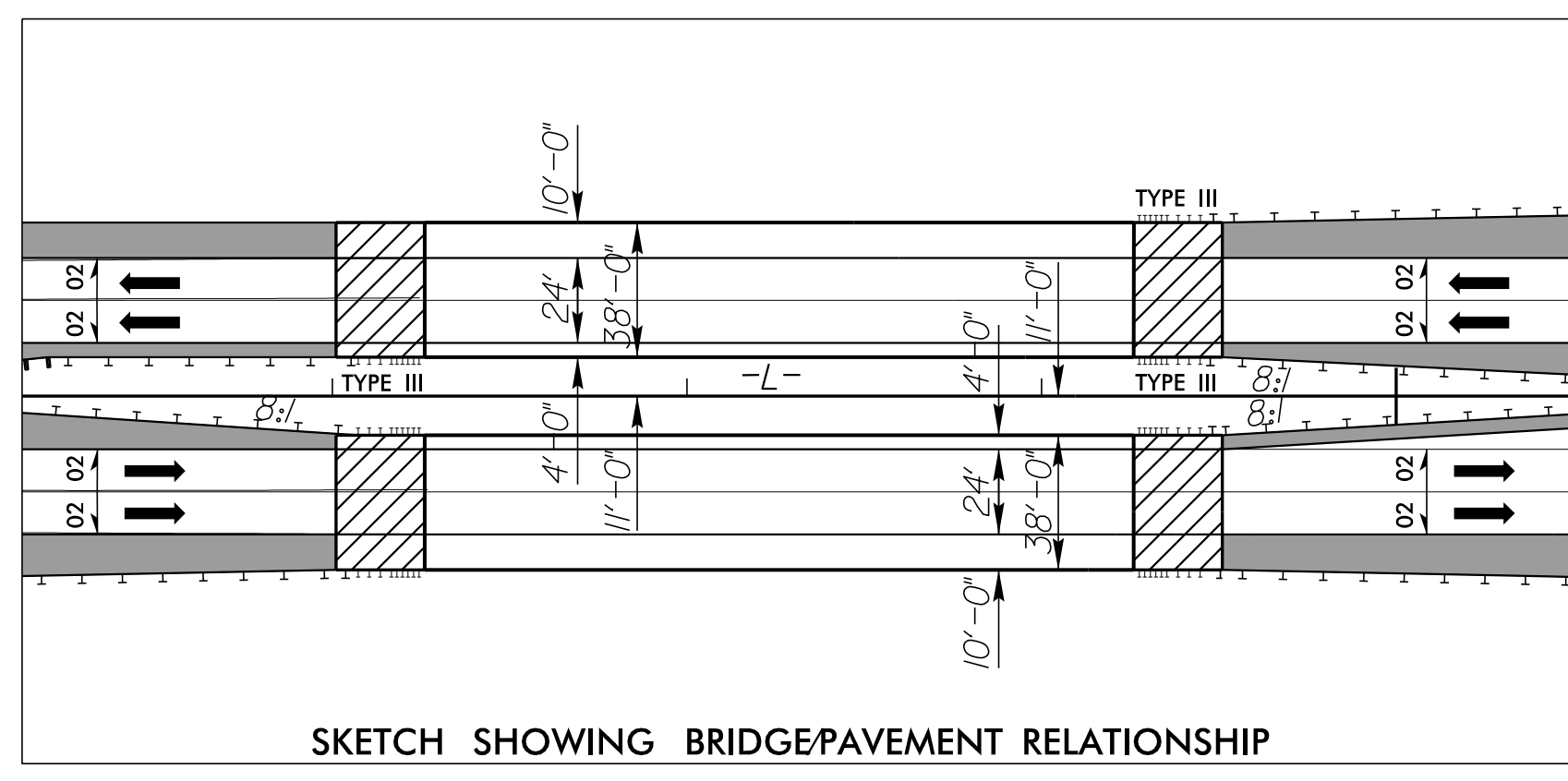
Figures



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT</p>
<p>GUILFORD COUNTY REPLACE BRIDGE NOS. 242 & 237 OVER DEEP RIVER ON US 29-70 AND I-85 BUS B-5351</p>	
<p>Figure 1</p>	

8/17/99
7:48:33 AM
I:\Projects\B5351\Drawings\psh04.dgn
VAN 7/24/19

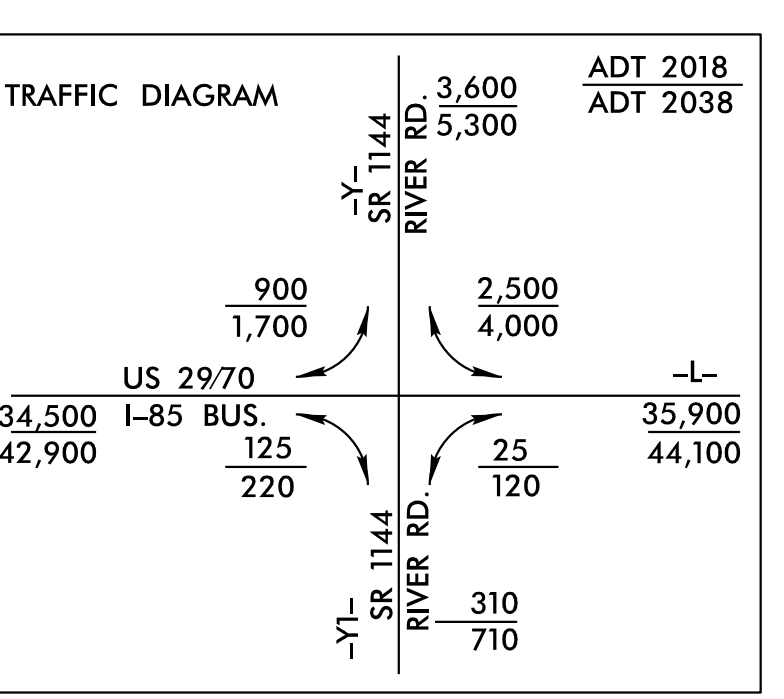
PROJECT REFERENCE NO. B-5351	SHEET NO. 2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD 18 E. LLC LICENSE NO. E-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M MOTT MACDONALD
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas
ICA Engineering	
5121 Kingdom Way, Suite 100 Raleigh, NC 27607 License No. P-1028	



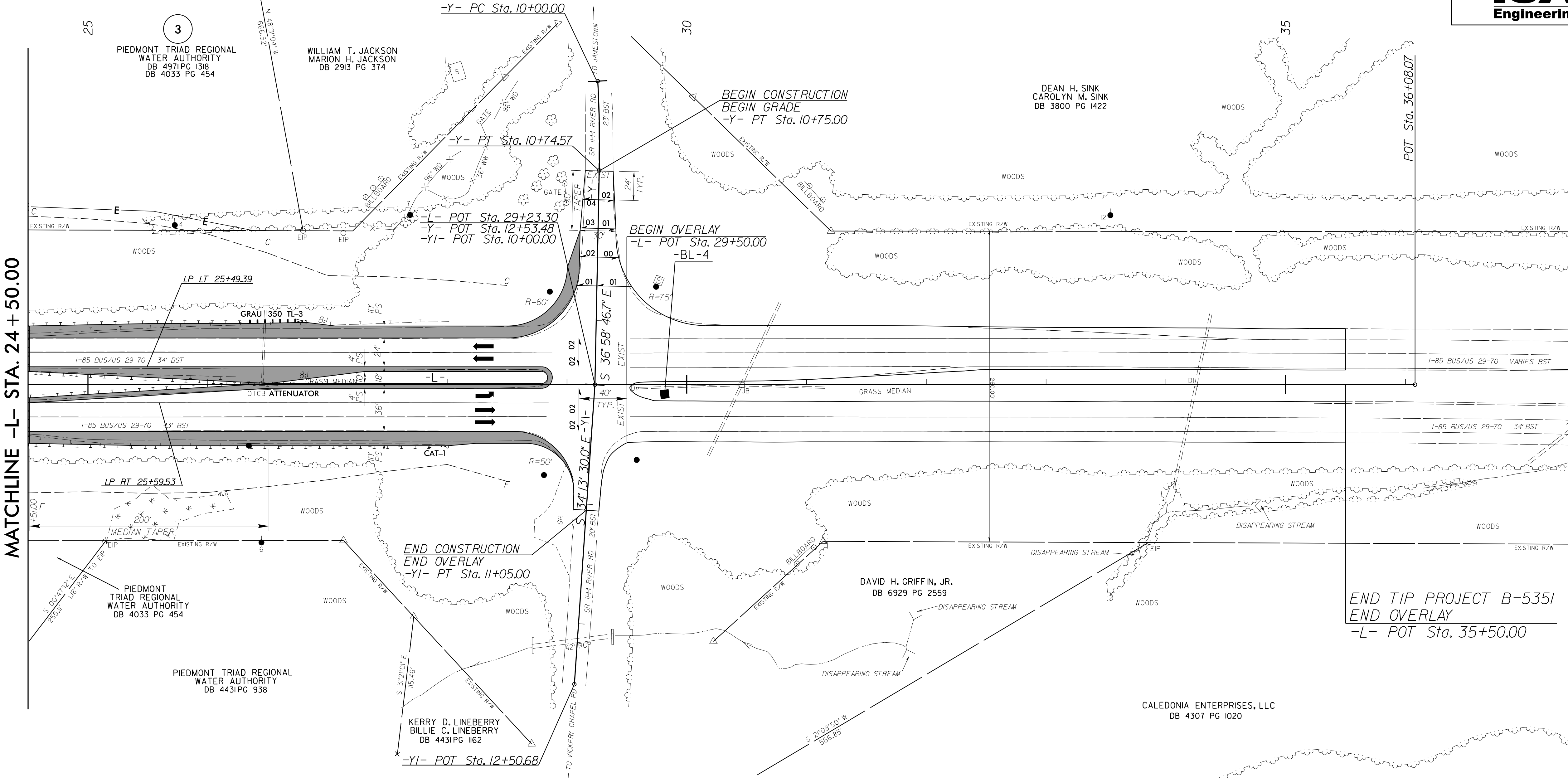
SEE SHEET 7 FOR -L- PROFILE

8/17/99

7:49:19 AM
 I:\Projects\B5351\Proj\B5351_rdy_psh05.dgn
 W:\76429

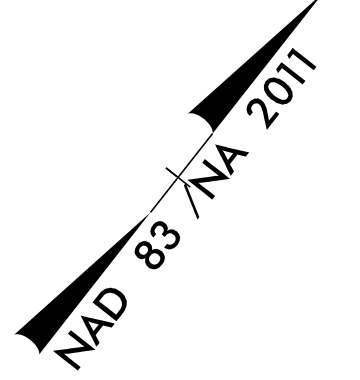


PROJECT REFERENCE NO. B-5351	SHEET NO. 2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD I & E, LLC LICENSE NO. E-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: M MOTT MACDONALD	
PO Box 700 Fuquay-Varina, NC 27526 www.motmac.com/americas	



-Y-

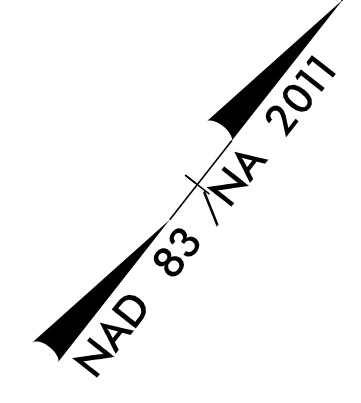
PI Sta 10+37.30
 $\Delta = 4' 16'' 22.0'' (RT)$
 $D = 5' 43'' 46.5''$
 $L = 74.57'$
 $T = 37.30'$
 $R = 1,000.00'$



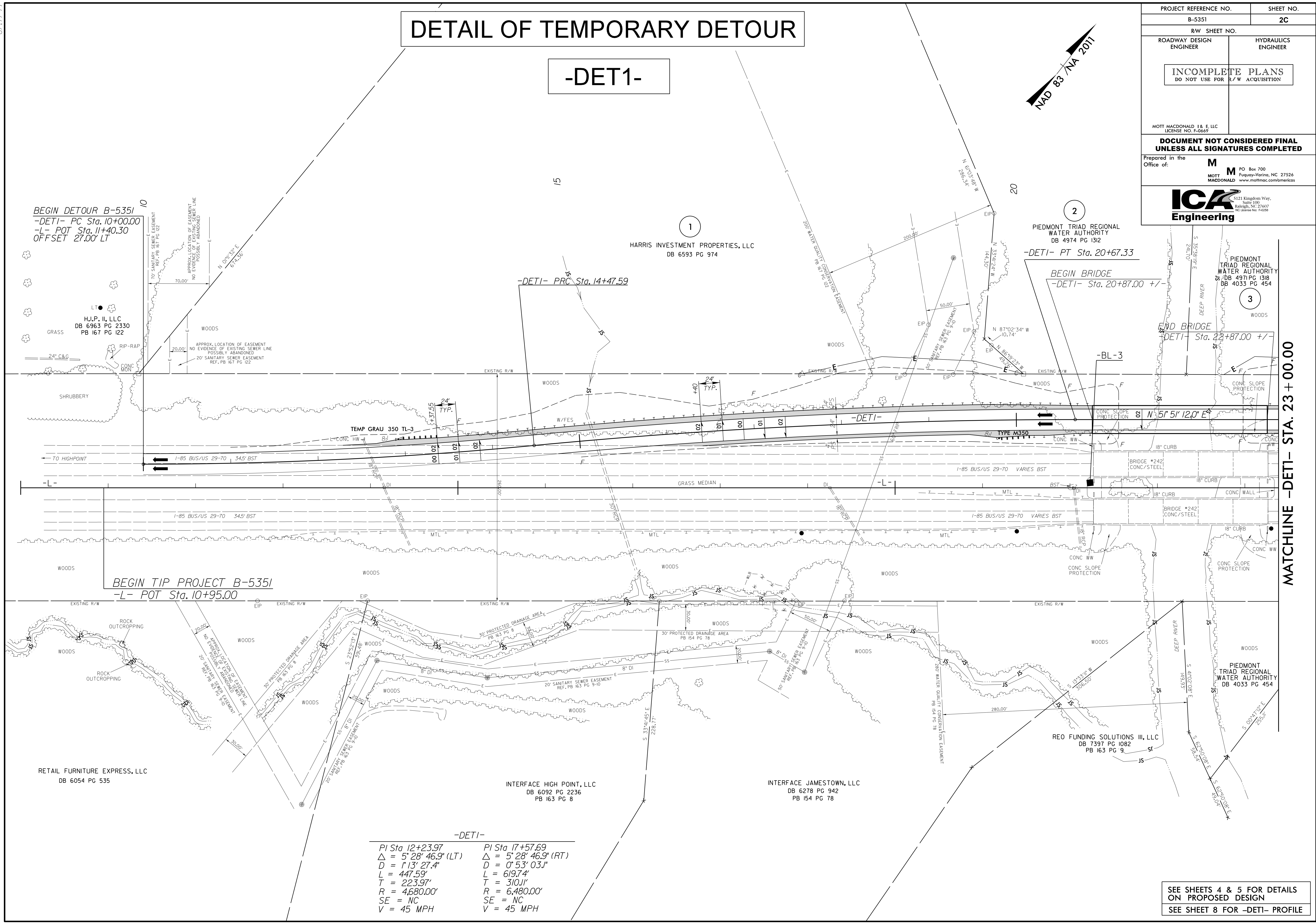
END TIP PROJECT B-5351
 END OVERLAY
 -L- POT Sta. 35+50.00

DETAIL OF TEMPORARY DETOUR

-DET1-



PROJECT REFERENCE NO. B-5351	SHEET NO. 2C
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD 1 & E, LLC LICENSE NO. E-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M MOTT MACDONALD
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/motmac
ICA Engineering	
121 Kingdom Way, Suite 100 Raleigh, NC 27607 License No. F-0258	



-DET1-

PI Sta 12+23.97	PI Sta 17+57.69
$\Delta = 5^{\circ} 28' 46.9''$ (LT)	$\Delta = 5^{\circ} 28' 46.9''$ (RT)
D = 1' 13' 27.4"	D = 0' 53' 03.1"
L = 447.59'	L = 619.74'
T = 223.97'	T = 310.11'
R = 4,680.00'	R = 6,480.00'
SE = NC	SE = NC
V = 45 MPH	V = 45 MPH


SEE SHEETS 4 & 5 FOR DETAILS ON PROPOSED DESIGN
SEE SHEET 8 FOR -DET1- PROFILE

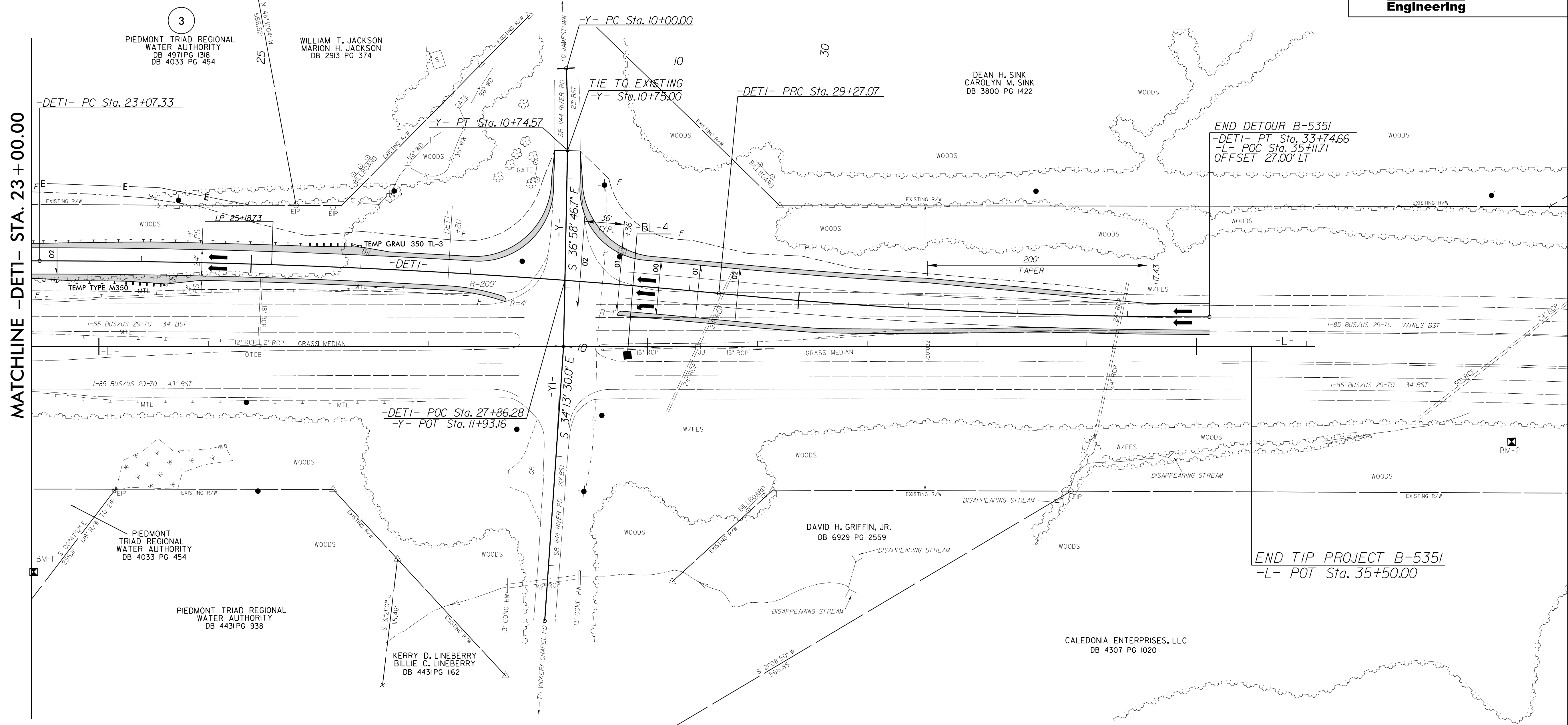
MATCHLINE -DET1- STA. 23 + 00.00

8/17/99
3/1/28 PM
C:\Roadway\Pro\B5351.RDY_det_2B-01.dgn

DETAIL OF TEMPORARY DETOUR

-DET1-

PROJECT REFERENCE NO.	SHEET NO.
B-5351	2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M PO Box 700 Fuquay-Varina, NC 27526 MOTT MACDONALD www.mottmac.com/motmac
	



MATCHLINE -DET1- STA. 23+00.00

END DETOUR B-5351
 -DET1- PT Sta. 33+74.66
 -L- POC Sta. 35+11.71
 OFFSET 27.00' LT

END TIP PROJECT B-5351
 -L- POT Sta. 35+50.00

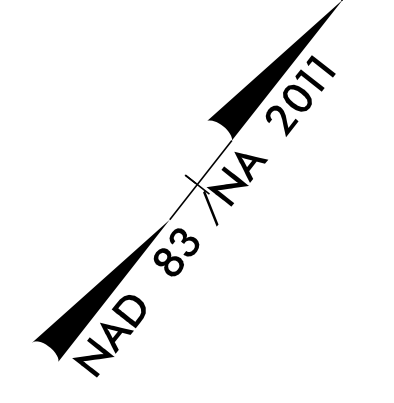
-Y-	-DET1-		
PI Sta 10+37.30 $\Delta = 4' 16' 22.0''$ (RT) $D = 5' 43' 46.5''$ $L = 74.57'$ $T = 37.30'$ $R = 1,000.00'$	<table border="0"> <tr> <td> PI Sta 26+17.43 $\Delta = 5' 28' 46.9''$ (RT) $D = 0' 53' 03.1''$ $L = 619.74'$ $T = 310.11'$ $R = 6,480.00'$ SE = NC V = 45 MPH </td> <td> PI Sta 31+51.03 $\Delta = 5' 28' 46.9''$ (LT) $D = 1' 13' 27.4''$ $L = 447.59'$ $T = 223.97'$ $R = 4,680.00'$ SE = NC V = 45 MPH </td> </tr> </table>	PI Sta 26+17.43 $\Delta = 5' 28' 46.9''$ (RT) $D = 0' 53' 03.1''$ $L = 619.74'$ $T = 310.11'$ $R = 6,480.00'$ SE = NC V = 45 MPH	PI Sta 31+51.03 $\Delta = 5' 28' 46.9''$ (LT) $D = 1' 13' 27.4''$ $L = 447.59'$ $T = 223.97'$ $R = 4,680.00'$ SE = NC V = 45 MPH
PI Sta 26+17.43 $\Delta = 5' 28' 46.9''$ (RT) $D = 0' 53' 03.1''$ $L = 619.74'$ $T = 310.11'$ $R = 6,480.00'$ SE = NC V = 45 MPH	PI Sta 31+51.03 $\Delta = 5' 28' 46.9''$ (LT) $D = 1' 13' 27.4''$ $L = 447.59'$ $T = 223.97'$ $R = 4,680.00'$ SE = NC V = 45 MPH		

SEE SHEETS 4 & 5 FOR DETAILS
 ON PROPOSED DESIGN
 SEE SHEET 8 FOR -DET1- PROFILE

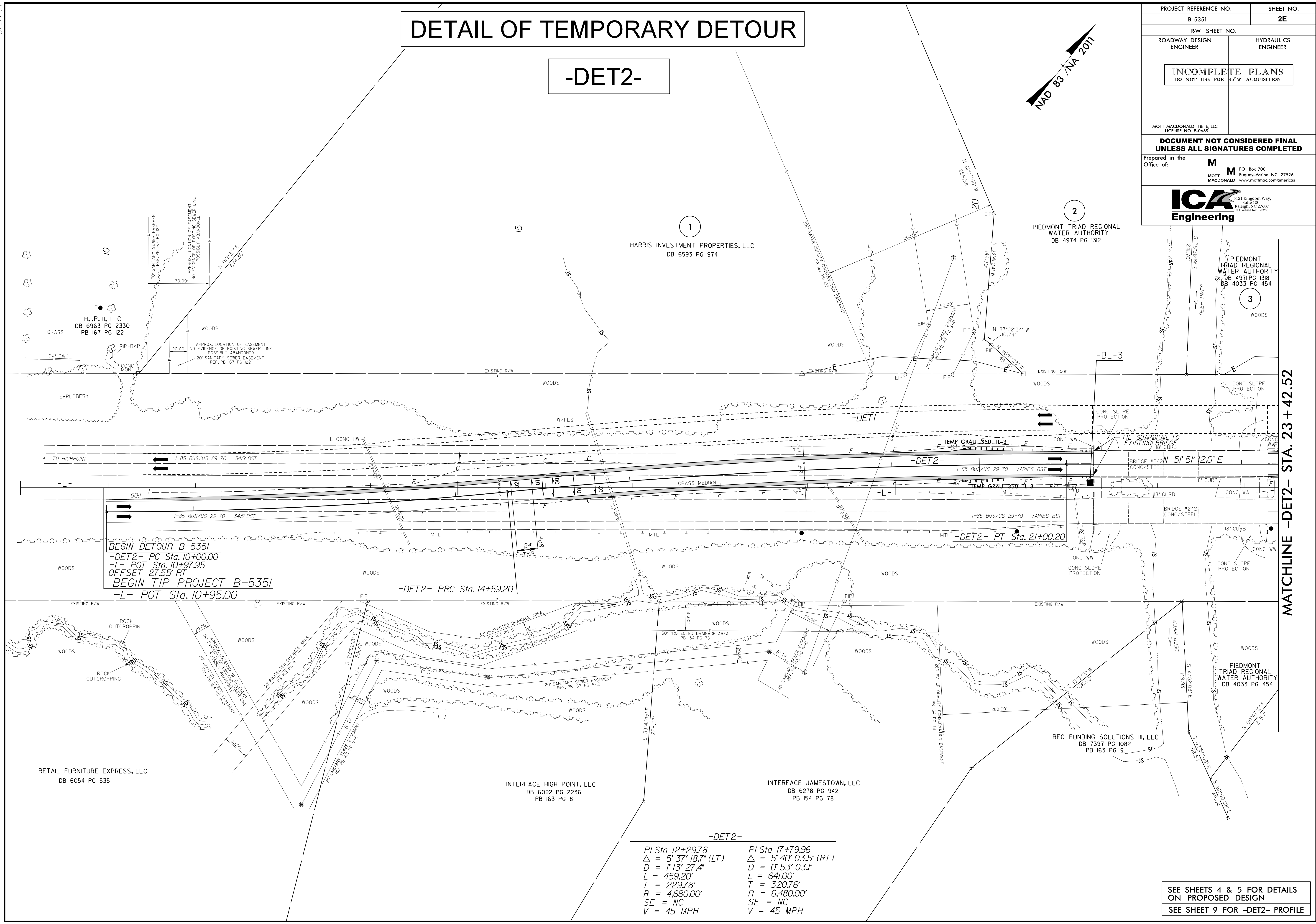
8/17/99
 3/1/09, PM
 R:\Roadway\Proj\B5351\RDY_det_2B-02.dgn

DETAIL OF TEMPORARY DETOUR

-DET2-



PROJECT REFERENCE NO. B-5351	SHEET NO. 2E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD 1 & E, LLC LICENSE NO. E-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M MOTT MACDONALD
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/motmac
ICA Engineering 1121 Kingdom Way, Suite 100 Raleigh, NC 27607 Tel: 919.876.1000 Fax: 919.876.1001	



BEGIN DETOUR B-5351
 -DET2- PC Sta. 10+00.00
 -L- POT Sta. 10+97.95
 OFFSET 27.55' RT
BEGIN TIP PROJECT B-5351
 -L- POT Sta. 10+95.00

-DET2- PRC Sta. 14+59.20

-DET2-

PI Sta 12+29.78	PI Sta 17+79.96
$\Delta = 5' 37' 18.7''$ (LT)	$\Delta = 5' 40' 03.5''$ (RT)
$D = 1' 13' 27.4''$	$D = 0' 53' 03.1''$
$L = 459.20'$	$L = 641.00'$
$T = 229.78'$	$T = 320.76'$
$R = 4,680.00'$	$R = 6,480.00'$
SE = NC	SE = NC
V = 45 MPH	V = 45 MPH

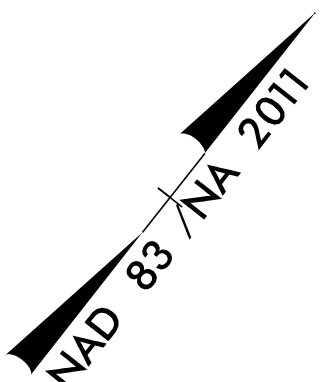
SEE SHEETS 4 & 5 FOR DETAILS ON PROPOSED DESIGN
 SEE SHEET 9 FOR -DET2- PROFILE

MATCHLINE -DET2- STA. 23 + 42.52

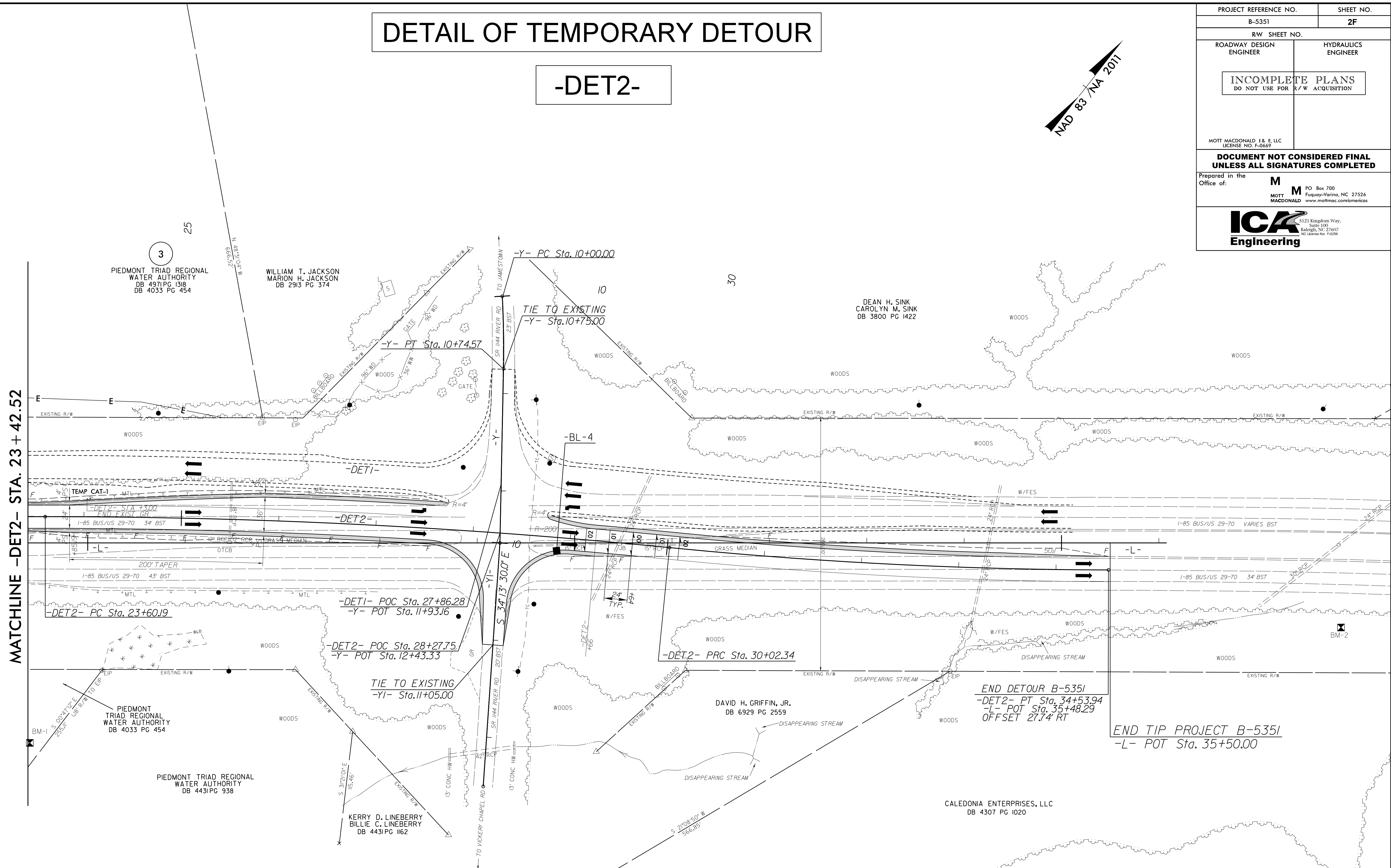
8.17.17.19.99
 3:41:30 PM
 C:\Roadway\Proj\B5351\RDY_det_2B-03.dgn

DETAIL OF TEMPORARY DETOUR

-DET2-



PROJECT REFERENCE NO. B-5351		SHEET NO. 2F
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
MOTT MACDONALD I & E, LLC LICENSE NO. E-0669		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
Prepared in the Office of:	M PO Box 700 Fuquay-Varina, NC 27526 MOTT MACDONALD www.mottmac.com/motmac	
ICA Engineering <small>121 Kingdom Way, Suite 100 Raleigh, NC 27607 License No. F-0258</small>		



MATCHLINE -DET2- STA. 23 + 42.52

END DETOUR B-5351
 -DET2- PT Sta. 34+53.94
 -L- POT Sta. 35+48.29
 OFFSET 27.74' RT

END TIP PROJECT B-5351
 -L- POT Sta. 35+50.00

-Y-
 PI Sta 10+37.30
 $\Delta = 4' 16'' 22.0''$ (RT)
 $D = 5' 43'' 46.5''$
 $L = 74.57'$
 $T = 37.30'$
 $R = 1,000.00'$

-DET2- PI Sta 26+81.53 $\Delta = 5' 40'' 40.4''$ (RT) $D = 0' 53'' 03.1''$ $L = 642.15'$ $T = 321.34'$ $R = 6,480.00'$ SE = NC V = 45 MPH	PI Sta 32+28.32 $\Delta = 5' 31'' 43.8''$ (LT) $D = 1' 13'' 27.4''$ $L = 451.60'$ $T = 225.98'$ $R = 4,680.00'$ SE = NC V = 45 MPH
---	---

SEE SHEETS 4 & 5 FOR DETAILS
 ON PROPOSED DESIGN
 SEE SHEET 9 FOR -DET2- PROFILE



FIGURE 2: JURISDICTIONAL FEATURES

B-5351 GUILFORD COUNTY: Replace Bridge Nos. 242 and 237 on US 29/US 70/I-85 Bus over Deep River



APPENDIX B

Reference Letters



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Charles Wakild, P. E.
Director

Pat McCrory
Governor

John E. Skvarla, III
Secretary

February 11, 2013

MEMORANDUM

To: Gregory M. Blakeney, NCDOT Bridge Project Development Section

From: Amy Euliss, NC Division of Water Quality, Office

Subject: Scoping comments on proposed improvements to Bridge nos 242 (TIP No. B-5351), 147 (TIP No. B-5353), and 360 (TIP No. B5354) in Guilford County.

Reference your correspondence dated December 27, 2013 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to streams and jurisdictional wetlands in the project area.

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area. In the event that any jurisdictional areas are identified, the Division of Water Quality requests that NCDOT consider the following environmental issues for the proposed projects:

B-5351: Bridge No. 242 over Deep River on US 29/SU 70/I-85 Business in Guilford County

*Potential impacts to Deep River (WSIV;CA; 303d Low DO)

1. Review of the project reveals the presence of surface waters classified as Water Supply Critical Area in the project study area. Given the potential for impacts to these resources during the project implementation, NCDWQ requests that NCDOT strictly adhere to North Carolina regulations entitled *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA(Water Supply Critical Area) classifications.
2. This project is within the Randleman Lake Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0250. New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B.0250. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the

NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

B-5353: Bridge No. 147 over US 311 on US 29/SU 70/I-85 Business in Guilford County

*Potential impacts to Richland Creek (WSIV; 303d Fair Bioclassification-Ecological and Biological Integrity)

1. This project is within the Randleman Lake Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0250. New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to “uses” identified within and constructed in accordance with 15A NCAC 2B.0250. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

B-5354: Bridge No. 360 over US 29 on SR 4771 in Guilford County

*Potential impacts to Unnamed Tributary at Camp Herman and Reedy Fork (WSV; NSW; Reedy Fork only-303d Zinc and Fecal Coliform)

1. Based on the aerial map provided, it appears that there is a mitigation site adjacent to the project. Please determine if a mitigation site, and if so, what impacts the project will have on the site.
2. UT at Camp Herman and Reedy Fork are class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to UT at Camp Herman and Reedy Fork. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ’s *Stormwater Best Management Practices*.
3. This project is within the Jordan Lake Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267. New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to “uses” identified within and constructed in accordance with 15A NCAC 2B .0267. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

General Project Comments:

1. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

2. Environmental impact statement alternatives shall consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives shall include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDOT's *Stormwater Best Management Practices Manual*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
4. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
5. Future documentation, including the 401 Water Quality Certification Application, shall continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
6. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
7. An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis shall conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
8. NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, and rip rap to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
9. Where streams must be crossed, NCDWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, NCDOT should not install the bridge bents in the creek, to the maximum extent practicable.
10. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.

11. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDOT's *Stormwater Best Management Practices*.
12. Sediment and erosion control measures should not be placed in wetlands or streams.
13. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
14. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater shall not be permitted to discharge directly into streams or surface waters.
15. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require a Nationwide Permit (NW) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
16. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
17. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
18. Unless otherwise authorized, placement of culverts and other structures in waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

19. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches, and/or sills may be required where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
20. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 388/Nationwide Permit No. 6 for Survey Activities.
21. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
22. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
23. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
24. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
25. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
26. Riparian vegetation (native trees and shrubs) shall be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

Thank you for requesting our input at this time. NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Amy Euliss at (336) 771-4959 or amy.euliss@ncdenr.gov.

cc: Andy Williams, US Army Corps of Engineers, Raleigh Field Office (electronic copy only)
Wetlands/401 Transportation Permitting Unit (electronic copy only)
File Copy



⊠ North Carolina Wildlife Resources Commission ⊠

Gordon Myers, Executive Director

MEMORANDUM

TO: Rachelle Beauregard
NCDOT, PDEA-NES

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: April 10, 2013

SUBJECT: Bridge Replacements

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.
5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary

structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, NCDOT biologist should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.
9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.
10. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
11. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
12. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
13. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.
14. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
15. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be

reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream and downstream ends to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel(s) during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be utilized as mitigation for the subject project or other projects in the watershed.

Project specific comments:

B-4550, Hoke County, replace bridge No. 41 and 42 on SR 1432 over Rockfish Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4729, Chatham County, replace bridge No. 306 on SR 1303 over North Prong Rocky River: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4802, Rockingham County, replace bridge No. 18 on SR 1002 over the Haw River: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4805, Rockingham County, replace bridge No. 9 on SR 2406 over prong of Troublesome Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4624, Rockingham County, replace bridge No. 80 on SR 1929 over Wolf Island Creek: The potential exist for Roanoke logperch (*Percina rex*: state E, federal E) to be found at this site. NCDOT should coordinate with NCWRC and USFWS in conducting a survey to determine the presence or absence of this species. We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4662, Wake County, replace bridge No. 196 on SR 2308 over Moccasin Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4828, Vance County, replace bridge No. 56 on SR 1526 over Sandy Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4831, Wake County, replace bridge No. 371 on SR 1152 over White Oak Creek: Harris Game Land is located within the project study area, DOT should coordinate closely during the design and construction of this project to avoid and minimize impacts to this area. We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-4794, Randolph County, replace bridge No. 18 on SR 1107 over Bettie McGees Creek: This portion of Bettie McGees Creek is designated as Significant Aquatic Habitat by the NC Natural Heritage Program. Our records also indicate the potential for listed species to be present within the project area, including: Carolina creekshell (*Villosa vaughaniana*: state E, FSC), Notched rainbow (*Villosa constricta*: state SC), and Eastern creekshell (*Villosa delumbis*: state SR). We recommend NCDOT follow the Design Standards for Sensitive Watersheds during the design and construction of this project. We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5322, Person County, replace bridge No. 51 on SR 1343 over Richland Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5323, Granville County, replace bridge No. 143 on SR 1442 over Johnston Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5326, Wake County, replace bridge No. 247 on SR 2555 over White Oak Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5328, Franklin County, replace bridge No. 129 on SR 1406 over Sandy Creek: This portion of Sandy Creek is designated as Significant Aquatic Habitat by the NC Natural Heritage Program. Our records also indicate the potential for listed species to be present within the project area, including: Carolina creekshell Notched rainbow (*Villosa constricta*: state SC), Atlantic pigtoe (*Fusconaia masoni*: state E, FSC), and Creeper (*Strophitus undulatus*: state T). We recommend NCDOT follow the Design Standards for Sensitive Watersheds during the design and construction of this project. We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5346, Alamance County, replace bridge No. 3 on SR 1529 UT: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5347, Alamance County, replace bridge No. 170 on SR 1212 over prong of Alamance Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5348, Orange County, replace bridge No. 85 on SR 1005 over Phil's Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5349, Alamance County, replace bridge No. 173 on SR 1149 over Little Alamance Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5350, Alamance County, replace bridge No. 44 on SR 1768 over Jordan's Creek: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5351, Guilford County, replace bridge No. 242 on US29/US70/I-85 Business over the Deep River: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5353, Guilford County, replace bridge No. 147 on US29/US 70/I-85 Business over US 311: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5354, Guilford County, replace bridge No. 360 on SR 4771 over US 29: We recommend replacing this bridge with a bridge. Standard recommendations apply.

B-5362, Montgomery County, replace bridge No. 53 on NC 73 over Drowning Creek: This portion of Drowning Creek is designated as Significant Aquatic Habitat by the NC Natural Heritage Program. We recommend NCDOT follow the Design Standards for Sensitive Watersheds during the design and construction of this project. We recommend replacing this bridge with a bridge. Standard recommendations apply.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 707-0370. Thank you for the opportunity to review and comment on this project.



July 5, 2017

Beverly Robinson, CPM, Group Leader
Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548

SUBJECT: Greenway accommodation for the US 29/US 70/I-85 Business Loop over the
Deep River, STIP Project B-5351

Dear Ms. Robinson,

The City of High Point is agreeable to Alternative 2 that would accommodate a 12ft. bench under the new bridges for the proposed greenway. As detailed in your letter to Greg Venable on June 21, 2017, Alternative 2 would result in no additional cost to the City of High Point.

If you have any additional questions, please contact me at (336) 883-3225.

Sincerely,

A handwritten signature in blue ink that reads "Mark McDonald".

Mark McDonald, P.E.
Transportation Director

c. J.M. Mills, P.E. Division Engineer
Randy McCaslin Deputy City Manager
Greg Venable Transportation Planning Administrator
File