

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ROY COOPER GOVERNOR

JAMES H. TROGDON, III SECRETARY

May 5, 2017

N.C. Department of Environmental Quality Winston-Salem Regional Office 450 West Hanes Mill Road, Suite 300 Winston Salem, NC 27105

ATTN: Mr. David Wanucha NCDOT Division 7 Project Coordinator

SUBJECT: Application for Jordan Lake Watershed Riparian Buffer Authorization for the replacement of Bridge No. 44 over Jordan Creek on SR 1768 (Hughes Mill Road), Division 7, Alamance County, North Carolina. Federal Aid Project No. BRZ - 1768 (3), TIP Project No. B-5350.

Debit \$240.00 from WBS 46064.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 44 over Jordan Creek on SR 1768 (Hughes Mill Road) in Alamance County. The project will consist of replacing the existing one-span, 35.5-foot structure with a one-span, 67.25-foot bridge on the existing alignment. An off-site detour will be employed.

There are no proposed impacts to jurisdictional streams or wetlands.

Proposed buffer impacts along Jordan Creek (Site 1) include allowable Bridge impacts totaling 2,038 square feet in Zone 1 and allowable Road Crossing impacts totaling 402 square feet in Zone 1 and 1,232 square ft. in Zone 2.

Please find enclosed the Pre-Construction Notification; Stormwater Management Plan; buffer drawings; and roadway plans for the subject project. A Programmatic Categorical Exclusion (PCE) was completed for this project in July 2016.

The proposed let date for this project is February 20, 2018, with a let review date of January 2, 2018. However, the let date may advance as additional funds become available.

A copy of this permit application will be posted on the NCDOT Website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx, under *Quick Links* >

Website: www.ncdot.gov

Permit Applications. A copy of the PCE is also available at the above website address under *Quick Links* > *Environmental Documents.* Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jim Mason at either jsmason@ncdot.gov or (919) 707-6136.

Sincerely,

Philip S. Harris III, P.E., C.P.M.
 Natural Environment Section Head

cc:

NCDOT Permit Application Standard Distribution List

B-5350 Permit Application Page 2 of 2



	Pre-Construction Notification (PCN) Form							
Α.	Applicant Information							
1.	Processing							
1a.	Type(s) of approval sought from Corps:	the	Section 404 Permit Section	ion 10 Permit				
1b.	Specify Nationwide Permit (NWP) number:	or General Permit ((GP) number:				
1c.	Has the NWP or GP number bee	n verified b	y the Corps?	🗌 Yes	🗌 No			
1d.	Type(s) of approval sought from	the DWQ (check all that apply):					
	401 Water Quality Certificatio	n – Regula	r 🗌 Non-404 Jurisdictiona	al General Permi	t			
	401 Water Quality Certificatio	n – Expres	s 🛛 🛛 Riparian Buffer Autho	orization				
1e.	Is this notification solely for the rebecause written approval is not r	ecord equired?	For the record only for DWQ 401 Certification:	For the record of	only for Corps Permit:			
1f.	Is payment into a mitigation bank of impacts? If so, attach the acc fee program.	ee program proposed for mitigation ter from mitigation bank or in-lieu	☐ Yes					
1g.	Is the project located in any of Nebelow.	🗌 Yes	🖾 No					
1h.	Is the project located within a NC	DCM Area	of Environmental Concern (AEC)?	☐ Yes	🛛 No			
2.	Project Information							
2a.	Name of project:	Replacem	nent of Bridge No. 44 over Jordan Cr	eek on SR 1768	(Hughes Mill Road)			
2b.	County:	Alamance	•					
2c.	Nearest municipality / town:	Anderson						
2d.	Subdivision name:	not applic	able					
2e.	NCDOT only, T.I.P. or state project no:	B-5350						
3.	Owner Information							
За.	Name(s) on Recorded Deed:	North Car	olina Department of Transportation					
3b.	Deed Book and Page No.	not applic	able					
3c.	Responsible Party (for LLC if applicable):	not applicable						
3d.	Street address:	1598 Mail	Service Center					
3e.	City, state, zip:	Raleigh, N	NC 27699-1598					
Зf.	Telephone no.:	(919) 707	-6136					
3g.	Fax no.:	(919) 212	-5785					
3h	Email address:	ismason@	ncdot.gov					

4.	Applicant Information (if diffe	rent from owner)
4a.	Applicant is:	Agent Other, specify:
4b.	Name:	not applicable
4c.	Business name (if applicable):	
4d.	Street address:	
4e.	City, state, zip:	
4f.	Telephone no.:	
4g.	Fax no.:	
4h.	Email address:	
5.	Agent/Consultant Information	n (if applicable)
5a.	Name:	not applicable
5b.	Business name (if applicable):	
5c.	Street address:	
5d.	City, state, zip:	
5e.	Telephone no.:	
5f.	Fax no.:	
5g.	Email address:	

В.	Project Information and Prior Project History							
1.	Property Identification							
1a.	Property identification no. (tax PIN or parcel ID):	not applicable	Э					
1b.	Site coordinates (in decimal degrees):	Latitude: 36.2 (DD.DDD	238925 DDD)	Longitude: - 79.344416 (-DD.DDDDDD)				
1c.	Property size:	1.15 acres						
2.	Surface Waters							
2a.	Name of nearest body of water (stream, river, etc.) to proposed project:	Jordan Creek						
2b.	Water Quality Classification of nearest receiving water:	WS-II HQW,	NSW					
2c.	River basin:	Cape Fear						
3.	Project Description							
За.	Describe the existing conditions on the site and the general lar application: Hughes Mill Road is classified as a Local Route in the Statewi	nd use in the vie de Eunctional C	cinity of the pro	ject at the time of this				
	Highway System Route. Land use within the vicinity primarily or residential.	consists of fores	sted land, agric	ulture, and low-density				
3b.	List the total estimated acreage of all existing wetlands on the 0	property:						
3c.	List the total estimated linear feet of all existing streams (interm 95 (Jordan Creek)	nittent and pere	nnial) on the pr	operty:				
3d.	Explain the purpose of the proposed project: To replace a structurally deficient bridge							
3e.	Describe the overall project in detail, including the type of equi	ipment to be us	ed:					
	The project will consist of replacing the existing one-span, 35.5-foot structure with a one-span, 67.25-foot bridge on the existing alignment. An off-site detour will be employed. Standard road building equipment, such as trucks, dozers, and cranes will be used.							
4.	Jurisdictional Determinations							
4a.	Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	🗌 Yes	🛛 No	🗌 Unknown				
4b.	If the Corps made the jurisdictional determination, what type of determination was made?	Preliminar	y 🗌 Final					
4c.	If yes, who delineated the jurisdictional areas? Name (if known): Greg Price	Agency/Cons Other:	ultant Company	y: NCDOT				
4d.	If yes, list the dates of the Corps jurisdictional determinations of No JD request submitted since Jordan Creek is only jurisdiction	or State determ	inations and att	ach documentation.				
5.	Project History							
5a.	Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	🗌 Yes	🛛 No	Unknown				
5b.	If yes, explain in detail according to "help file" instructions.							
6.	Future Project Plans							
6a.	Is this a phased project?	🗌 Yes	🛛 No					
6b.	If yes, explain.							

C. Proposed Imp	oacts Inventory							
1. Impacts Summ	1. Impacts Summary							
1a. Which sections	were completed b	elow for your project (check	all that apply):					
U Wetlands		Streams - tributaries	⊠ Buffers					
Open Water	s 🗌 I	Pond Construction						
2. Wetland Impac If there are wetland	:ts impacts proposed	on the site, then complete th	nis question for	each wetland area impacte	d.			
2a.	2b.	2c.	2d.	2e.	2f.			
Permanent (P) or Temporary (T)	Type of impact	Type of wetland (if known)	Forested	Type of jurisdiction	Area of impact (acres)			
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	Corps				
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	Corps				
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	Corps				
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	Corps				
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	Corps				
Site 🗌 P 🗌 T		Choose One	☐ Yes ☐ No	⊠ Corps □ DWQ				
			2	g. Total wetland impacts	0 ac. Perm. 0 ac. Temp.			
2h. Comments:								

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. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermitte nt (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, othor)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site P T			PER			
Site 🗌 P 🗌 T			PER INT	Corps		
Site 🗌 P 🗌 T			PER INT	Corps		
Site 🗌 P 🗌 T				Corps		
Site 🗌 P 🗌 T			PER INT	Corps		
			3h. Total st	ream and tribu	itary impacts	0 ft. Perm. 0 ft Temp.
3i. Comments:						
4. Open Water In If there are propose the U.S. then indivi	npacts ed impacts to lakes dually list all open v	, ponds, estuaries, tributaries, vater impacts below.	sounds, the <i>i</i>	Atlantic Ocean,	or any other op	pen water of
4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. 4 Type of impact		4d. Waterbody type	4e. Area of impact (acres)	
Ο ΠΡΠΤ						
Ο □ Ρ □ Τ						
	0 ac Pe 0 ac Te	ermanent emporary				
4g. Comments:						

5. Pond	or Lake Construc	tion							
If pond or	lake construction p	roposed, t	then co	mplete the chart	t below.				
5a.	5b.		5c.			5d.			5e.
				Wetland Impact	s (acres)	St	ream Im	pacts (feet)	Upland (acres)
Pond ID number	Proposed use purpose of po	e or ond	Floode d	Filled	Excavated	Flo od ed	Filled	Excavated	Flooded
P1									
P2									
	5	f. Total							
5g. Comm	ents:	·							
5h. Is a da	5h. Is a dam high hazard permit required? Yes If yes, permit ID no:								
5i. Expec	ted pond surface a	rea (acres	s):						
5j. Size o	of pond watershed ((acres):							
5k. Metho	od of construction:								
6. Buffer	mpacts (for DWQ))							
If project v below	vill impact a protect . If any impacts red	ed riparia quire mitig	n buffer jation, t	r, then complete hen you MUST :	the chart below. I fill out Section D c	f yes, of this	then ind form.	ividually list a	II buffer impacts
6a.					☐ Neuse	Пт	ar-Pamli	ico 🖂 Ot	ther: Jordan Lake
Project is	in which protected I	basin?			🔲 Catawba	ĒF	Randlema	an <u> </u>	
6b.		6c.		6d.	6e.	(ôf.		6g.
Buffer in Perm Ten	npact number – anent (P) or nporary (T)	Reason impac	for	Stream name	Buffer mitigatior required?	٦	Zone 1 (squa	impact re feet)	Zone 2 impact (square feet)
Site 1 🖂	Р 🗌 Т	Bridge	е	Jordan Creek	☐ Yes ⊠ No		2,0	038	0
Site 1 🖂	Р 🗌 Т	Roac Crossii	d ng	Jordan Creek	☐ Yes ⊠ No		4	02	1,232
Site 🗌	Р 🗌 Т				Yes No				
Site	Р 🗌 Т				Yes No				
	6h. Total buffer impacts2,4401,232								
6i. Comme	ents:								

D. Impact Justification and Mitigation

1. Avoidance and Minimization

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

The proposed bridge is longer than the existing bridge; An off-site detour will be employed; No deck drains are required as part of this project; Storm water impacts to the stream have been minimized by utilizing grated inlet and pipe to collect bridge storm water and use rip rap outlet protection at 14+83 RT to dissipate energy as the non-erosive velocites flow into the existing ditchline and through the riparian buffer; At NW quadrant, an existing roadside ditch has outlet at ~16+50 LT and becomes diffuse flow in a wooded area for a distance of 75'+/- before entering the stream. This ditch will be retained and lined with toe protection using permanent soil reinforcement matting along the fill slope; At NE quadrant, an existing roadside ditch has outlet at ~16+35 RT and becomes diffuse flow in a wooded area for a distance of 60'+/- before entering the stream. This ditch will be retained and lined with toe protection using permanent and lined with toe protection using permanent soil reinforcement matting along the fill slope; At SE quadrant, an existing roadside ditch has outlet at 16+90 LT and becomes diffuse flow in a wooded area for a distance of 100'+/- before entering the stream. This ditch will be rotection using permanent soil reinforcement matting along the fill slope; At SE quadrant, an existing roadside ditch has outlet at 16+90 LT and becomes diffuse flow in a wooded area for a distance of 100'+/- before entering the stream. This ditch will be rotection using permanent soil reinforcement matting along the fill slope; Due to the nature of low impact bridge replacement, the increases in stormwater discharges (post vs pre condition) are insignificant and the existing ditches do not need to be modified. Therefore, additional stormwater measures are not required.

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

Due to the project's location within the Jordan Lake Watershed, Design Standards in Sensitive Watersheds will be employed; NCDOT Best Management Practices for Construction and Maintenance Activities and Best Management Practices for the Protection of Surface Waters will be employed.

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	☐ Yes	🗆 Yes 🛛 No				
	Waters of the State?	If no, explain: buffer impacts	There are i are Allowa	no wetland or surface water impacts; all ble.			
2b.	If yes, mitigation is required by (check all that apply):		Corps				
		Mitigation	bank				
2c.	If yes, which mitigation option will be used for this project?	B 🗌 Payment to	o in-lieu fee	e program			
	F	Permittee	Responsib	le Mitigation			
3.	3. Complete if Using a Mitigation Bank						
3a.	3a. Name of Mitigation Bank: not applicable						
3b.	Credits Purchased (attach receipt and letter)	Туре		Quantity			
3c.	Comments:						
4.	Complete if Making a Payment to In-lieu Fee F	Program					
4a. atta	Approval letter from in-lieu fee program is iched.	🗌 Yes					
4b.	Stream mitigation requested:	0 linear feet					
4c.	If using stream mitigation, stream temperature:	warm] cool	□cold			
4d.	Buffer mitigation requested (DWQ only):) sq. ft. Zone 1 and 0 sq. ft. Zone 2					
4e.	Riparian wetland mitigation requested:	0 acres					
4f.	Non-riparian wetland mitigation requested:	0 acres					
4g.	Coastal (tidal) wetland mitigation requested:	0 acres) acres				

4h. Comments:									
5. Complete in	. Complete if Using a Permittee Responsible Mitigation Plan								
5a. If using a pe	5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.								
6. Buffer Mitiç	6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ								
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				🗌 Yes 🛛 No					
6b. If yes, then amount of n	identify the square feet on nitigation required.	f impact to eac	ch zone of the riparian buff	er that requires mitigation. Calculate the					
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)					
Zone 1			3 (2 for Catawba)						
Zone 2			1.5						
		6f. Total but	fer mitigation required:						
6g. If buffer miti permittee re6h. Comments:	gation is required, discus sponsible riparian buffer	s what type of restoration, pa	mitigation is proposed (e. ayment into an approved ir	g., payment to private mitigation bank, ı-lieu fee fund).					

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)							
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. If yes, then is a diffuse flow plan included? If not, explain why. Comments: Please see attached permit drawings	⊠ Yes	🗌 No					
2. Stormwater Management Plan							
2a. What is the overall percent imperviousness of this project?	N/A						
2b. Does this project require a Stormwater Management Plan?	🛛 Yes	🗌 No					
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:							
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: Please see attached permit drawings.							
2e. Who will be responsible for the review of the Stormwater Management Plan?	□ Certified Lo □ DWQ Storn ⊠ DWQ 401	ocal Government nwater Program Unit					
3. Certified Local Government Stormwater Review							
3a. In which local government's jurisdiction is this project?	not applicable						
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	Phase II NSW USMP Water Sup Other:	ply Watershed					
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes	🗌 No					
4. DWQ Stormwater Program Review	T						
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	 Coastal co HQW ORW Session L Other: 	ounties aw 2006-246					
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes	No N/A					
5. DWQ 401 Unit Stormwater Review							
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes	No N/A					
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes	No N/A					

F.	Supplementary Information						
1.	Environmental Documentation (DWQ Requirement)						
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.) Comments:	🛛 Yes	🗌 No				
2.	Violations (DWQ Requirement)						
2a.	Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	🖾 No				
2b.	Is this an after-the-fact permit application?	🗌 Yes	🛛 No				
2c.	If you answered "yes" to one or both of the above questions, provide an explanation of	of the violation(s):					
3.	Cumulative Impacts (DWQ Requirement)						
За.	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 "yes" to the above, submit a qualitative or quantitative cumulative imp most recent DWQ policy. If you answered "no," provide a short narrative description.	bact analysis in a	ccordance with the				
	Due to the minimal transportation impact resulting from this bridge-to-bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.						
4.	Sewage Disposal (DWQ Requirement)						
4a.	Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge or dis	arge) of wastewa	ter generated from				

5.	Endangered Species and Designated Critical Habitat (Corps Requirement)								
5a.	Will this project occur in or near an are habitat?	ea with federally protected species or	Yes	🛛 No					
5b.	Have you checked with the USFWS co impacts?	oncerning Endangered Species Act	⊠ Yes] No					
5c.	If yes, indicate the USFWS Field Office you have contacted.								
5d.	What data sources did you use to dete Habitat?	ermine whether your site would impact Er	ndangered Species or Do	esignated Critical					
	NC Natural Heritage Program data, USFWS website; No foraging habitat within 1.13 mi., therefore, no nesting habitat assessment required for bald eagle; the northern long-eared bat (NLEB) is covered by the Programmatic Biological Opinion for Divisions 1 through 8.								
6.	5. Essential Fish Habitat (Corps Requirement)								
6a.	Will this project occur in or near an are	a designated as essential fish habitat?	🗌 Yes	🛛 No					
6b.	What data sources did you use to dete NMFS County Index	ermine whether your site would impact E	ssential Fish Habitat?						
7.	Historic or Prehistoric Cultural Res	ources (Corps Requirement)							
7a.	Will this project occur in or near an are governments have designated as havi status (e.g., National Historic Trust de North Carolina history and archaeolog	ea that the state, federal or tribal ing historic or cultural preservation signation or properties significant in y)?	🗌 Yes 🛛	⊠ No					
7b.	What data sources did you use to dete NEPA Documentation	ermine whether your site would impact hi	storic or archeological re	sources?					
8. F	lood Zone Designation (Corps Requ	irement)							
8a.	Will this project occur in a FEMA-desig	nated 100-year floodplain?	Yes] No					
8b.	If yes, explain how project meets FEM.	A requirements: NCDOT Hydraulics Unit	coordination with FEMA						
8c.	What source(s) did you use to make th	e floodplain determination? FEMA Maps		1					
for P	C. What source(s) did you use to make the floodplain determination? FEMA Maps Philip S. Harris III, P.E., C.P.M. Applicant/Agent's Printed Name Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant								

Kersion 2.06; Released	June 2016)			North C STC	arolina Departme Highway Stormw DRMWATER MAN FOR NCDOT F	ent of Transportatio ater Program IAGEMENT PLAN PROJECTS	on			
WBS Element:	46064.1.1	TIP No.:	B-5350		County(ies):	Alamance				
					General Project I	Information				
WBS Element:		46064.1.1		TIP Number:	B-5350		Project	Туре:	Bridge Repla	cement
NCDOT Contact:		Matthew Lauffer,	PE			Contractor / Desig	ner:	Trenton J.	Cormier	
	Address:	NCDOT Hydrauli	cs Unit				Address:	ICA Engin	eering, Inc.	
		1590 Mail Service	es Unit					5121 King	dom Way, Suite	e 100
		Raleigh, NC 2756	50					Raleigh, N	C 27607	
	Phone:	(919) 707-6703					Phone:	<mark>(919) 900-</mark>	1612	
	Email:	mslauffer@ncdot	.gov				Email:	Trenton.C	ormier@hdrinc.	.com
City/Town:			Anders	son, NC		County(ies):	Alama	ance		
River Basin(s):		Cape	Fear			CAMA County?	N	0		
Wetlands within Pro	oject Limits?	No								
		1		1	Project Desc	cription				
Project Length (lin.	miles or feet):	700 feet (0	.133 miles)	Surrounding	g Land Use:	Woods, Sparse Res	sidential			
				Proposed Proj	ect				Ex	isting Si
Project Built-Upon /	Area (ac.)		0.4		ac.			0.3		ac.
Typical Cross Section	on Description:	Hughes Mill Road (SR 1768): 2 paved lanes (total 20' wide), 4' shoulder on each side (7' Hu with guardrail).					existing shoulder on each side			
Annual Avg Dailv Tr	raffic (veh/hr/dav):	Design/Euture	<u>.</u>	200	Year.	2035	Existing		123	
General Project Nar (Description of Mini Quality Impacts)	rative: mization of Water	The North Carolin The existing struct span (1@65') 24' or temporary surf No deck drains a Storm water impa energy as the no becomes diffuse reinforcement ma before entering th roadside ditch ha toe protection usit vs pre condition)	a Department of ture is a one spa box beam with 4 ace water impact re required as pa acts to the stream n-erosive velocite flow in a wooded atting along the fill be stream. This d s outlet at 16+90 ng permanent so are insignificant a	I ransportation (i an bridge (1@35'- t' deep caps. This is for this project. It of this project. I have been minin es flow into the ex area for a distan- I slope. At NE qu itch will be retained LT and becomes il reinforcement r and the existing d	nized by utilizing g istructure has been isting ditchline and ce of 75'+/- before adrant, an existing ed and lined with t is diffuse flow in a w natting along the f	grated inlet and pipe d through the riparial e entering the stream groadside ditch has oe protection using p wooded area for a di fill slope. Due to the d to be modified. The	to collect bridg ns supported b as little enviro to collect bridg n buffer. At NV this ditch wil outlet at ~16+3 permanent soil stance of 100- nature of low in erefore, additic	ge storm wa V quadrant, I be retaine 35 RT and t I reinforcem +/- before e mpact bridg onal stormw	tter and use rip an existing roa d and lined with becomes diffuse ent matting alo ntering the stre e replacement, ater measures	rap outle impacts impacts adside dif n toe pro e flow in ing the fill am. This , the incre are not r
					Waterbody Inf	ormation				
Surface Water Body	/ (1):		Jordan	s Creek		NCDWR Stream In	dex No.:			16-1
NCDWR Surface Wa	ater Classification fo	r Water Body		Primary Classif Supplemental (fication: Classification:	Water Supply High Quality Wa	II (WS-II) ters (HQW)		None (NSW)	
Other Stream Class	ification:	No	ne							
Impairments:		No	ne							
Aquatic T&E Specie	es?	No	Comments:							
NRTR Stream ID:		N/A						Buffer Ru	les in Effect:	
Project Includes Bri	idge Spanning Wate	r Body?	Yes	Deck Drains Di	scharge Over Bu	ffer?	No	Dissipato	r Pads Provide	ed in But
Deck Drains Discha	rge Over Water Bod	y?	No	(If yes, prov	ide justification in	the General Project	Narrative)	(If yes,	describe in the	General
(If yes, provi	ide justification in the	General Project N	arrative)						Ge	eneral Pr

		AND THE COURSE						
Page	1	of 1						
	Date:	11/8/2016						
	Date.	11/0/2010						
te								
tion, 2 pa	ved lane (t	otal 19' wide); 5'						
	Yea	ar: 2018						
Year: 2018 ad (SR 1768) over Jordans Creek. . The proposed structure is a single as possible. There are no permanent et protection at 14+83 RT to dissipate ch has outlet at ~16+50 LT and ection using permanent soil a wooded area for a distance of 60'+/- I slope. At SE quadrant, an existing ditch will be retained and lined with eases in stormwater discharges (post equired.								
4.0.(0.5)								
4-6-(0.5)								
		and and a late						
far2	Jo	No.						
Project N oject Nar	arrative; if rative)	no, justify in the						















LEGEND

— BZ 1—

— BZ 2—







RIPARIAN BUFFER ZONE 1 (30')

RIPARIAN BUFFER ZONE 2 (20')

ALLOWABLE IMPACTS ZONE 1 (BRIDGE)

ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)

ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)









LEGEND



— BZ 2—







RIPARIAN BUFFER ZONE 1 (30')

RIPARIAN BUFFER ZONE 2 (20')

ALLOWABLE IMPACTS ZONE 1 (BRIDGE)

ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)

ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)

	BUFFER IMPACTS SUMMARY												
						l	MPACT	-				BUF	FER
				TYPE		AL	LOWAB	LE		MITIGAB	LE	REPLAC	EMENT
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)
4	SINGLE SPAN 24" CORED SLAB W/ 4.0' DEEP CAPS,			v		0000		0000					
1	1@65	-L- 14+97 10 16+25	x			402	1232	1633					
TOTAL:						2440	1232	3671					
										N			

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GUILFORD COUNTY PROJECT: B-5350

IVISION OF HIGHWAYS



STATE	STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS			
N.C.	E	3–5350	1				
STAT	E PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION				
46	064.1.1	BRZ–1768(3)	PE				
46	064.2.1		RW				

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED HYDRAULICS ENGINEER AB OF NORTH **P.E**. OF TRANSP **P.E**.

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	· · ·
Property Line	
Existing Iron Pin	
Property Corner	×
Property Monument	ECM
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wotland Boundary	
Proposed Wotland Boundary	WIR
Eviation Enderground Anim ID	
Existing Endangered Animal Boundary	ŁAB
Existing Endangered Plant Boundary	EP8
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	-x $-x$
Known Contamination Area: Water	
Potential Contamination Area: Water ——	-x - x
Contaminated Site: Known or Potential —	— XX XX
BUILDINGS AND OTHER CUI	LTURE:
Gas Pump Vent or U/G Tank Cap	— o
Sign	©
Well	Ŷ
Small Mine	— ×
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	
Stream or Body of Water	
Hydro Pool or Reservoir	
lurisdictional Stream	
Buffer Zone 1	JS
Buffer Zone 2	BZ ?
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral Tail Head Ditch	<u>*</u>
Toposed Edieral, rull, riedd Dilch	- FLOW
Falco Sumo	~

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

RAILROADS:

Standard Gauge	+++++++++++++++++++++++++++++++++++++++
RR Signal Milepost	CSX TRANSPORTATION
Switch	MILEPOST 35
RR Abandoned	SWITCH
RR Dismantled	
RIGHT OF WAV	
Receive Control Deint	
Baseline Control Foint	^
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	- (ii)
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite R/W Marker	
Proposed Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	— — E — —
Proposed Temporary Construction Easement -	E
Proposed Temporary Drainage Easement —	TDE
Proposed Permanent Drainage Easement ——	PDE
Proposed Permanent Drainage / Utility Easement	DUE
Proposed Permanent Utility Easement —	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	۲
ROADS AND RELATED FEATURE	<i>S:</i>
Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	<u>C</u>
Proposed Slope Stakes Fill	<u>F</u>
Proposed Curb Ramp	CR
Existing Metal Guardrail	T T
Proposed Guardrail	<u> </u>
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	•
Pavement Removal	
VEGETATION:	
Single Tree	යි
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	≻
Drainaae Box: Catch Basin, DI or JB	СВ
Paved Ditch Gutter	
Storm Sewer Manhole	S
Storm Sewer	s
UTILITIES:	
POWER:	
Existing Power Pole	•
Proposed Power Pole	9
Existing Joint Use Pole	
Proposed Joint Use Pole	-0-
Power Manhole	P
Power Line Tower	\boxtimes
Power Transformer	\bowtie
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	-0-
Telephone Manhole	\bigcirc
Telephone Pedestal	Ξ
Telephone Cell Tower	, ē ,
U/G Telephone Cable Hand Hole	Нн
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 (SILE*)	— — — — TC— — –
U/G Telephone Conduit LOS C (SULE*)	TC
L/G Telephone Conduit LOS D (SUE *)	тс
	— — — — T FO— —
U/G Eiber Optics Cable LOS D (S.U.E.)	
U/G Fiber Optics Cable LOS C (S.U.E.*)	T F0
	-170

	B-5350
WATED.	
	0
Water Manhole	w
Water Meter	0
Water Valve	&
Water Hydrant	ब ु
U/G Water Line LOS B (S.U.E*) —	
U/G Water Line LOS C (S.U.E*) —	
U/G Water Line LOS D (S.U.E*) —	w
Above Ground Water Line ———	
TV:	
TV Pedestal	
TV Tower	🛞
U/G TV Cable Hand Hole	H _H
U/G TV Cable LOS B (S.U.E.*)	
U/G TV Cable LOS C (S.U.E.*)	
U/G TV Cable LOS D (S.U.E.*)	түтүтү
U/G Fiber Optic Cable LOS B (S.U.	E.*)
U/G Fiber Optic Cable LOS C (S.U	.E.*)
U/G Fiber Optic Cable LOS D (S.U	.E.*) TV F0
GAS:	
Gas Valve	∧
Gas Meter	Å
	→
1/6 Gas Line LOS C (SULE *)	
	G
Above Crewind Creating	A/G Gas
SANITARY SEWER:	-
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	÷
U/G Sanitary Sewer Line	
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	Ū
Utility Located Object	O
Utility Traffic Signal Box	ں ای
Utility Unknown U/G Line LOS B /	□ ↓↓F*) _ ~~
U/G Tank Water Gas Oil	700L 700L 700L
Underground Sterrise Truly Ar	
onderground Storage Tank, Approx.	
AvG Tank; water, Gas, OII	
Geoenvironmental Boring	X
U/G Test Hole LOS A (S.U.E.*)	
A A A A A A A A A A A A A A A A A A A	•
Abandoned According to Utility Rec	ords — AATUR



NORTH	EAST	ELEVATION	BL STATION	OFFSET
905295.3185 906051.9856 906511.0118 906931.4291 907107.1100 907103.1490	1898452.3590 1898410.4200 1898512.0017 1898846.6412 1899252.8670 1900171.2930	632.02 611.85 634.72 664.73 668.30 670.64	5+00.00 12+57.83 17+27.96 22+65.30 27+07.89 36+26.32	0.00 0.00 0.00 0.00 0.00 0.00 0.00



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BUNCT TOTALS: 20 1136 1116 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10 10 5% 10 10 10			
5%, TO REPLACE BORROW 56 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
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GRAND TOTALS: 20 1172 GRAND TOTALS: 20 1172 SAY: 30 1290 NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Asphalt Pavement will be paid for at the contract Lump Sum price for "Grading". Image: Clearing and Grubbing and Removal of Existing Asphalt Pavement will be paid for at the contract Lump Sum price for "Grading". NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit. Image: Clearing and Grubbing and Removal of Existing SAY:			
GRAND TOTALS: 20 1172 SAY: 30 1290 NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Asphalt Pavement will be paid for at the contract Lump Sum price for "Grading". NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.			
SAY: 30 1290 NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Asphalt Pavement will be paid for at the contract Lump Sum price for "Grading". Image: Contract Con			
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Asphait Pavement will be paid for at the contract Lump Sum price for Grading . NOTE: Earthwork quantities are calculated by the Roadway Design Unit. TotAL: 30 These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit. Sav: 30			
NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit. 30			
I hese earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.			
STATION V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V V <t< th=""><th>AME & GRATE STD. 840.16 TYPE "A" STD. 840.17 OR 840.26 TYPE "B" STD. 840.18 OR 840.27</th><th>TYPE "B" STD. 840.18 OR 840.27 тиве "л." стп. 840.19 OR 840.28</th><th>TYPE "D" STD. 840.19 OR 840.28</th></t<>	AME & GRATE STD. 840.16 TYPE "A" STD. 840.17 OR 840.26 TYPE "B" STD. 840.18 OR 840.27	TYPE "B" STD. 840.18 OR 840.27 тиве "л." стп. 840.19 OR 840.28	TYPE "D" STD. 840.19 OR 840.28
Partial Partial <t< th=""><th>D.I. FR G.D.I.</th><th>6.D.I.</th><th>G.D.L</th></t<>	D.I. FR G.D.I.	6.D.I.	G.D.L
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		6																				
G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. FRAME WITH TWO GRATES STD. 840.33	T.B.D.I. STD. 840.35						CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVALLIN ET		C.B. I.D.I. G.D.I. G.D.I. (B. B. I. B. J.B. B. J.B.		ABBRI CATC NARR DROP GRATI GRATI JUNC MANH TRAFF TRAFF	EVIAT H BA OW INLE ED D COW HOLE IC B IC B	ASIN DROP T DROP IN SLOT) BOX EARING	- NLET NLET S DRO S JUN	P INLE	T BOX
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PROJECT REFERENCE NO. SHEET NO.















