



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP/Proj No: R-2829A      County(ies): Wake      Page 1 of 15

General Project Information

WBS Element:	35517.3.TA1	TIP Number:	R-2829A	Project Type:	New Location	Date:	6/6/2024
NCDOT Contact:	Ron McCollum, PE		Contractor / Designer:		JV; Branch Civil & ST Wooten/ RK&K; Alexis Burke, PE		
Address:	NC Turnpike Authority 1578 Mail Service Center Raleigh, NC 27699		Address:	8601 Six Fork Rd Forum 1, Suite 700 Raleigh, NC 27615			
	Phone: 919-707-2708			Phone: 919-878-9560			
	Email: <a href="mailto:remccollum@ncdot.gov">remccollum@ncdot.gov</a>			Email: <a href="mailto:aburke@rkk.com">aburke@rkk.com</a>			
City/Town:	Raleigh		County(ies):	Wake			
River Basin(s):	Neuse		CAMA County?	No			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	4.16	Surrounding Land Use:	Commercial / Industrial / Residential					
Proposed Project			Existing Site					
Project Built-Upon Area (ac.)	73.1	ac.	15.1	ac.				
Typical Cross Section Description:	A typical cross-section includes (3) 12-foot lanes in either direction with a 70-foot grassed median designed to accommodate a future through-lane in either direction. Outside shoulders are 12-14 feet.			White Oak Road: (2) 10' lanes with open shoulder & curb/gutter. US 70: 4-lane divided. E. Garner Rd: (2) 10' lanes with open shoulder				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	22,040	Year:	2043	Existing:	15,440	Year:	2023

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

The design-build project, R-2829A, is the extension of the Triangle Expressway from I-40 to south of SR 2542 (Rock Quarry Road) in Wake County. The project will construct a 70 mph six-lane facility with two new interchanges and completion of the Toll NC 540/I-40/I-42 interchange. The beginning of the project ties into the R-2828 project inside the turbine interchange and consists of primarily new location with interchanges at White Oak Rd & US 70. Additionally there are intersections at the railroad and E Garner Rd with the project ending at the R-2829B project tie before Rock Quarry Road.

Design Minimizations for wetlands and streams include:

1. Steepening of roadway fill slopes within jurisdictional areas.
2. Stormwater was designed to avoid direct discharge into jurisdictional features to the maximum extent practicable.
3. Stormwater design velocities entering jurisdictional features have been reduced to be non-erosive (less than 2 fps).
4. Open shoulder sections were maximized to promote sheet flow from the roadway.
5. Diffuse flow provided at outlets that do not have a well defined outfall.
6. RCBCs built offline. This provides faster construction in the dry, less time in / around the jurisdictional features, and a safer work area for the traveling public and construction crews.
7. Buffer swales have been designed where practicable to provide filtration prior to water entering jurisdictional streams.
8. Energy dissipator basin provided to reduce the risk of erosion where outfall analyses dictated.

R-2829A has (12) major crossings consisting of bridges over Bushy Branch & White Oak Creek, (8) new RCBCs, and (2) RCBC extensions with supplemental pipes. Drainage outfalls along the project have been analyzed to verify stability and countersunk Class I & Class II riprap pads have been incorporated at the inlet and outlet of all jurisdictional crossings. The project is located in the Neuse river basin so this area adheres to buffer rules. Buffer swales have been designed throughout the entire project providing filtration before water enters jurisdictional streams. Due to steep topography, existing features, and difficulty with reaching swale design requirements, additional swales have been added along the project corridor in locations where buffered streams are not present in order to show a good faith effort to achieve additional filtration. (4) Stormwater detention basins are anticipated at this time along the project corridor to offset increases to critical outfalls as well as (2) energy dissipator basins.



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP/Proj No.: R-2829A      County(ies): Wake      Page 2 of 15

General Project Information

Waterbody Information

Surface Water Body (1):	White Oak Creek		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SFV		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (2):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SEW		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (3):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SEY		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 3 of 15

Additional Waterbody Information

Surface Water Body (4):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFH		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (5):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFF		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (6):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFE		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (7):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFG		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 4 of 15

Additional Waterbody Information

Surface Water Body (8):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFB		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (9):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFA		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (10):	UT To Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFK		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (11):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFC		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 5 of 15

Additional Waterbody Information

Surface Water Body (12):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFD		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (13):	White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFV		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (14):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFR		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (15):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFN		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 6 of 15

Additional Waterbody Information

Surface Water Body (16):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFQ		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (17):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFS		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (18):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGA		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (19):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFT		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 7 of 15

Additional Waterbody Information

Surface Water Body (20):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGC		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (21):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGD		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (22):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGE		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (23):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGG		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 8 of 15

Additional Waterbody Information

Surface Water Body (24):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGF		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (25):	UT to Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SKR		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (26):	UT to Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFJ		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (27):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SHT		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					





North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 9 of 15

Additional Waterbody Information

Surface Water Body (28):	UT to Swift Creek		NCDWR Stream Index No.:	27-43-(8)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SDT		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (29):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFY		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (30):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SFZ(1)		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (31):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SGI		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1      TIP No.: R-2829A      County(ies): Wake      Page 10 of 15

Additional Waterbody Information

Surface Water Body (32):	UT To White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SGD		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (33):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SAAK		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (34):	UT to White Oak Creek (Austin Pond)		NCDWR Stream Index No.:	27-43-11	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SFX		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (35):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	SAAL		Buffer Rules in Effect:	Neuse	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



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



(Version 3.00; Released August 2021)

**WBS Element:** 35517.3.TA1      **TIP No.:** R-2829A      **County(ies):** Wake      **Page** 11 **of** 15

**Additional Waterbody Information**

<b>Surface Water Body (36):</b>				<b>NCDWR Stream Index No.:</b>			
<b>NCDWR Surface Water Classification for Water Body</b>			<b>Primary Classification:</b>				
			<b>Supplemental Classification:</b>				
<b>Other Stream Classification:</b>							
<b>Impairments:</b>							
<b>Aquatic T&amp;E Species?</b>				<b>Comments:</b>			
<b>NRTR Stream ID:</b>		PAD		<b>Buffer Rules in Effect:</b>		Neuse	
<b>Project Includes Bridge Spanning Water Body?</b>		No		<b>Deck Drains Discharge Over Buffer?</b>		N/A	
<b>Deck Drains Discharge Over Water Body?</b>		N/A		(If yes, provide justification in the General Project Narrative)		<b>Dissipator Pads Provided in Buffer?</b>	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
<b>Surface Water Body (37):</b>				<b>NCDWR Stream Index No.:</b>			
<b>NCDWR Surface Water Classification for Water Body</b>			<b>Primary Classification:</b>				
			<b>Supplemental Classification:</b>				
<b>Other Stream Classification:</b>							
<b>Impairments:</b>							
<b>Aquatic T&amp;E Species?</b>				<b>Comments:</b>			
<b>NRTR Stream ID:</b>		PAF		<b>Buffer Rules in Effect:</b>		Neuse	
<b>Project Includes Bridge Spanning Water Body?</b>		No		<b>Deck Drains Discharge Over Buffer?</b>		N/A	
<b>Deck Drains Discharge Over Water Body?</b>		N/A		(If yes, provide justification in the General Project Narrative)		<b>Dissipator Pads Provided in Buffer?</b>	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
<b>Surface Water Body (38):</b>				<b>NCDWR Stream Index No.:</b>			
<b>NCDWR Surface Water Classification for Water Body</b>			<b>Primary Classification:</b>				
			<b>Supplemental Classification:</b>				
<b>Other Stream Classification:</b>							
<b>Impairments:</b>							
<b>Aquatic T&amp;E Species?</b>				<b>Comments:</b>			
<b>NRTR Stream ID:</b>		PAO		<b>Buffer Rules in Effect:</b>		Neuse	
<b>Project Includes Bridge Spanning Water Body?</b>		No		<b>Deck Drains Discharge Over Buffer?</b>		N/A	
<b>Deck Drains Discharge Over Water Body?</b>		N/A		(If yes, provide justification in the General Project Narrative)		<b>Dissipator Pads Provided in Buffer?</b>	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	



Swale

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
9	L1	1013+77	LT	35.6499071	-78.5476612	(6)UT To Swift Creek	4.0	4.0	3.0	4.7	470	185	0.58%	12.9	1.9	16.5	2.1		
11	L1	1058+50	LT	35.6618531	-78.5440995	(11)UT To White Oak Creek (Austin Pond)	4.0	6.0	3.0	2.3	225	200	0.48%	7.7	1.9	9.9	2.0		
12	L1	1060+50	LT	35.6623849	-78.5439286	(11)UT To White Oak Creek (Austin Pond)	4.0	6.0	3.0	5.2	517	50	0.30%	14.2	1.9	18.2	2.0		
12	Y23DR	44+43	RT	35.6625762	-78.5426941	(11)UT To White Oak Creek (Austin Pond)	4.0	4.0	3.0	0.7	67	100	1.34%	2.1	1.8	2.7	1.9		
13	L1	1085+06	LT	35.6689521	-78.5421225	(13)White Oak Creek (Austin Pond)	4.0	3.0	3.0	6.6	661	99	0.35%	23.6	1.9	18.4	1.8		
13	L1	1084+71	RT	19.9307687	-21.3314573	(13)White Oak Creek (Austin Pond)	4.0	3.0	3.0	8.3	828	229	0.35%	22.7	1.9	29.1	2.0		
14	L1	1089+50	RT	35.6700506	-78.5410785	(13)White Oak Creek (Austin Pond)	4.0	3.0	3.0	4.4	441	68	0.50%	14.1	1.9	18.1	2.0		
13	L1	1086+70	LT	35.6695049	-78.5423782	(13)White Oak Creek (Austin Pond)	8.0	3.0	3.0	10.0	1003	330	0.30%	34.4	1.9	41.1	2.0		
14	L1	1090+00	LT	35.6703076	-78.5420096	(13)White Oak Creek (Austin Pond)	4.0	3.0	3.0	3.4	337	200	0.35%	13.1	1.6	16.8	1.7		
14	L1	1094+00	LT	35.6713084	-78.5418021	(13)White Oak Creek (Austin Pond)	4.0	4.0	3.0	0.6	60	216	1.39%	2.3	1.6	3.0	1.7		
14	L1	1097+00	RT	35.6720953	-78.5407270	(14)UT To White Oak Creek (Austin Pond)	4.0	4.0	3.0	0.8	83	150	1.17%	2.7	1.8	3.4	2.0		
14	L1	1098+50	RT	35.6724301	-78.5406640	(14)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	0.9	91	30	1.67%	3.3	1.9	3.7	1.9		
14	L1	1098+83	RT	35.6725928	-78.5406578	(14)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	2.2	217	34	0.59%	7.9	1.7	10.2	1.8		
14	L1	1099+17	RT	35.6728397	-78.5405920	(14)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	2.0	202	83	0.78%	7.4	1.8	9.5	2.0		
16	L1	1118+85	RT	35.6778594	-78.5391516	(16)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	1.0	98	15	1.47%	3.6	1.8	4.6	2.0		
16	L1	1119+00	RT	35.6779282	-78.5392012	(16)UT To White Oak Creek (Austin Pond)	4.0	6.0	3.0	0.9	92	275	1.48%	3.4	1.8	4.3	1.9		
16	L1	1121+75	RT	35.6786983	-78.5388845	(17)UT To White Oak Creek (Austin Pond)	4.0	6.1	3.0	2.1	210	275	0.55%	7.7	1.6	9.8	1.7		
17	Y24RPC	21+50	RT	35.6808085	-78.5373557	(17)UT To White Oak Creek (Austin Pond)	4.0	6.0	3.0	0.7	70	300	1.47%	2.6	1.6	3.3	1.8		
19	L1	1179+10	RT	35.6931701	-78.5314707	(23)UT To White Oak Creek (Austin Pond)	4.0	6.0	3.0	2.0	200	240	1.30%	5.5	2.0	7.0	2.2		
34	Y24R	19+17	LT	35.6861283	-78.5445784	(30)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	3.1	307	117	0.64%	9.8	1.8	12.6	2.0		
34	Y24R	20+11	RT	35.6854669	-78.5446550	(29)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	6.2	621	111	0.36%	19.9	1.8	25.4	1.9		
35	Y24A	20+50	LT	35.6847572	-78.5399187	(18)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	1.0	104	99	2.02%	3.3	2.0	4.3	2.2		
35	Y24R	34+68	RT	35.6839879	-78.5401182	(18)UT To White Oak Creek (Austin Pond)	4.0	3.0	3.0	3.2	320	218	0.68%	10.2	1.9	13.1	2.0		
9	L1	1007+00	RT	35.6479122	-78.5472059	(4)UT To Swift Creek	4.0	6.0	3.0	0.4	43	150	0.49%	1.4	1.0	1.8	1.1		
9	L1	1009+03	LT	35.6486306	-78.5479394	(4)UT To Swift Creek	4.0	3.0	3.0	3.2	315	247	0.73%	10.1	1.9	12.9	2.1		
9	L1	1012+50	RT	35.6494834	-78.5467708	(5)UT To Swift Creek	4.0	5.0	3.0	0.9	88	200	0.79%	2.8	1.0	3.6	1.1		
9	L1	1013+77	LT	35.6499095	-78.5476673	(6)UT To Swift Creek	4.0	3.0	3.0	4.7	470	173	0.58%	12.9	1.9	16.5	2.1		
10	L1	1018+00	LT	35.6510065	-78.5471406	(6)UT To Swift Creek	4.0	6.0	3.0	2.1	211	100	0.60%	6.8	1.9	8.6	2.1		
10	L1	1019+00	LT	35.6512781	-78.5470935	(6)UT To Swift Creek	4.0	6.0	3.0	0.5	54	250	2.16%	2.0	2.0	2.5	2.1		
10	L1	1019+00	RT	35.651116	-78.5462213	(6)UT To Swift Creek	4.0	6.0	3.0	0.8	75	100	1.50%	2.4	1.9	3.1	2.0		

10	L1	1023+00	LT	35.6523544	-78.5468779	(8)UT To Swift Creek	4.0	3.0	3.0	1.0	98	84	0.95%	3.1	1.5	4.0	1.6		
10	L1	1024+18	RT	35.652514	-78.5458684	(8)UT To Swift Creek	4.0	6.0	3.0	0.6	56	168	0.48%	1.8	1.2	2.3	1.2		
10	L1	1024+18	RT	35.652514	-78.5458684	(8)UT To Swift Creek	4.0	3.0	3.0	5.3	525	82	0.55%	14.4	1.9	18.4	2.1		
10	L1	1026+00	RT	35.6530013	-78.5457501	(8)UT To Swift Creek	4.0	6.0	3.0	2.7	267	350	0.57%	8.5	1.9	10.9	2.0		
28	Y23J	14+00	LT	35.6592167	-78.5408343	(34)UT to White Oak Creek (Austin Pond)	4.0	4.0	3.0	0.4	35	85	3.53%	1.0	1.8	1.2	2.0		
29	Y23DR	29+85	LT	35.6595	-78.5408728	(34)UT to White Oak Creek (Austin Pond)	4.0	4.0	3.0	1.0	100	265	1.13%	2.7	1.8	3.5	1.9		
29	Y23DR	36+00	LT	35.6604656	-78.5422755	(34)UT to White Oak Creek (Austin Pond)	4.0	4.0	3.0	0.6	60	100	3.00%	1.4	2.0	1.8	2.1		
26	Y23R	59+00	RT	35.6618133	-78.5481363	(26)UT to Swift Creek	4.0	4.0	3.0	3.4	340	100	0.40%	12.4	1.9	15.9	2.0		

**Additional Comments**

Additional locations of buffer swales have been provided along the project corridor to provide extra filtration to offset the lengths unachievable, however the ranges shown above are only the swales outletting water into the buffered jurisdictional streams.



Highway Stormwater Program  
**STORMWATER MANAGEMENT PLAN**  
 FOR NCDOT PROJECTS

**Swales**

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?	
26	Y23R	60+00	RT	35.6618945	-78.5484195	(26)UT to Swift Creek	4.0	3.0	3.0	3.6	355	95	0.47%	13.5	1.8	17.2	1.9			
26	Y23R	60+95	RT	35.6619879	-78.5486925	(26)UT to Swift Creek	4.0	3.0	3.0	1.8	180	105	0.95%	5.4	1.8	6.8	1.9			
31	Y23FR	10+25	LT	35.660225	-78.5490648	(26)UT to Swift Creek	4.0	3.0	3.0	1.8	182	90	1.00%	5.4	1.8	6.9	2.0			
31	Y23AR	13+30	RT	35.6604239	-78.5492040	(26)UT to Swift Creek	4.0	4.0	3.0	1.7	170	120	0.50%	5.1	1.6	5.5	1.7			
31	Y23FR	11+69	RT	35.6601621	-78.5482648	(26)UT to Swift Creek	4.0	3.0	3.0	0.4	35	71	3.90%	0.8	2.0	1.0	2.2			
31	Y23FR	11+94	LT	35.6599418	-78.5486143	(26)UT to Swift Creek	4.0	3.0	3.0	0.5	50	156	4.50%	1.3	1.8	1.6	2.0			

**Additional Comments**

Additional locations of buffer swales have been provided along the project corridor to provide extra filtration to offset the lengths unachievable, however the ranges shown above are only the swales outletting water into the buffered jurisdictional streams.



Performed Scour Holes and Energy Dissipators

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe (in) / Structure Dimensions (ft)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
11	Y23RPB	23+64	LT	35.658732	-78.546198	(10)UT To Swift Creek	Riprap Energy Dissipator Basin	Class I	9.4	Pipe	42"	30.4	0.8	N/A
15	L1	1105+37	LT	35.674927	-78.541210	(15)UT To White Oak Creek (Austin Pond)	Riprap Energy Dissipator Basin	Class I	6.5	Pipe	36"	30.0	1.0	N/A

Additional Comments

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



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



(Version 3.00; Released August 2021)

WBS Element: 35517.3.TA1

TIP/Proj No.: R-2829A

County(ies): Wake

Page 15 of 15

**Other Toolbox Best Management Practices**

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	BMP Type	Drainage Area (ac)	New Built-Up Area (ac)	Volume Treated (ac-ft)	Precipitation Depth Treated over NBUA (in)	BMP Associated w/ Buffer Rules?
11	L1	1036+35	LT			(36) PAD	Dry Detention Basin					
11	Z3KP	23+50	RT			(10)UT To Swift Creek	Dry Detention Basin					
11	Y23LPB	19+00	RT			(26)UT to Swift Creek	Dry Detention Basin					
20	L1	1190+00	LT			(24)UT To White Oak Creek (Austin Pond)	Dry Detention Basin					

**Additional Comments**

Stormwater Detention Ponds have not been designed at this time.