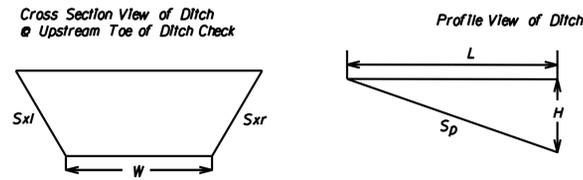


**METHOD OF CHECK DAM SILT RETENTION CALCULATION**



$$V_{YD^3} = \frac{\left(\frac{1}{2} W S_P L^2 + \frac{S_P^2}{6 S_{XR}} L^3 + \frac{S_P^2}{6 S_{XL}} L^3\right)}{27}$$

**SEDIMENT STORAGE**

The site has a total disturbed area of 5.25 acres. The following table summarizes the required and available sediment storage for every outfall on this project. The Contractor shall provide and maintain the storage volumes for the BMP's specified in this table.

Location	Total Drainage Area (acres)	Disturbed Area (acres)	Required Sediment Storage Volume (yd <sup>3</sup> )	Total Storage Volume Provided (yd <sup>3</sup> )	Check Dam (# yd <sup>3</sup> /each)		Inlet sediment Traps (# yd <sup>3</sup> /each)		Silt Fence (0.3 yd <sup>3</sup> /ft)		Silt Control Gate TP 3 (# yd <sup>3</sup> /each)	
					# of Devices	Total Volume (yd <sup>3</sup> )	# of Devices	Total Volume (yd <sup>3</sup> )	Length of Fence (ft)	Total Volume (yd <sup>3</sup> )	# of Devices	Total Volume (yd <sup>3</sup> )
A - 30" Proposed Longitudinal Drain Pipe SR 35/US 319 STA 1328+17 58.9' RT	5.03	2.79	337.0	342.4	16	149.1	13	27.4	549	164.7	2	1.2
B1 - 18" Existing Cross Drain Pipe CASSETA RD. STA 11+15 33.0' RT	1.83	0.46	122.6	137.2	8	77.8	0	0	194	58.2	1	1.2
B2 - EXISTING DRAINAGE STRUC. CASSETA RD. STA 10+98 20.0' RT	0.10	0.02	6.7	2.1	0	0.0	1	2.1	0	0	0	0.0
D1a - 2' Flat Ditch I-75 Entrance Ramp STA 20+25 42.0' LT	1.26	0.52	84.4	125.9	6	25.7	0	0.0	334	100.2	0	0.0
D1b - 2' Flat Ditch I-75 Entrance Ramp STA 20+25 18.0' RT	0.51	0.31	34.2	86.2	7	58.3	0	0.0	93	27.9	0	0.0
D2 - 4' Flat Ditch I-75 Exit Ramp STA 11+50 28.0' RT	1.89	0.41	126.6	44.4	8	44.4	0	0.0	0	0	0	0.0
<b>Total Sheet Flow</b>	<b>1.68</b>	<b>0.76</b>	<b>112.6</b>	<b>404.1</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>1347</b>	<b>404.1</b>	<b>0</b>	<b>0.0</b>

In order to prevent runoff from bypassing inlet sediment traps, a temporary sump shall be installed around all inlet sediment traps that are not located in a low point or an excavated sump. Construct temporary sumps in accordance with Construction Detail D-24C. Temporary sumps shall be installed in a manner that ensures stormwater does not bypass the inlet. The Contractor may submit alternate temporary containment berm designs to the Project Engineer for approval.

Sediment basins were not used on this project. There are no suitable locations for sediment basins on this project due to the surrounding businesses. To include sediment basins would require disturbing additional land which results in more disturbed area than the area being mitigated. This would drastically increase the time of exposure. On this project, the maximum appropriate BMPs are proposed on the bases of existing and proposed conditions. The proposed BMPs for main outfalls A, B1, D1a, and D1b are adequate and meet the required sediment storage volume.

The proposed BMPs for outfalls B2, and D2 do not meet the required sediment storage volume. The drainage area draining to outfall B2 mostly consists of undisturbed pavement overlay section. The small disturbed drainage area is due to widening of the road and shall be stabilized by temporary mulching to prevent erosion. An inlet sediment trap shall be placed at B2 inlet and maintained at all times. The major portion of drainage area draining to outfall D2 is from off-site water draining toward the project over undisturbed stabilized land and into the proposed ditch. The proposed ditch will be lined with turf reinforcing mat. Also, stone check dams shall be spaced appropriately throughout the length of the ditch, and a rock filter dam shall be installed by the outfall. The installed BMPs and sediment control measures taken for outfalls B2 and D2 shall be sufficient to control erosion and prevent sediment from leaving the site.

**DISCHARGES INTO OR WITHIN ONE LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT**

All outfalls are either located further than 1 linear mile upstream or outside of the watershed of an impaired stream segment that has been listed for criteria violated, "Bio F" (Impaired fish Community) and/or "Bio M" (Impaired macro Invertebrate Community), within Category 4a, 4b or 5, and the potential cause is either "NP" (nonpoint source) or "UR" (urban runoff).

**SAMPLING GENERAL NOTES:**

The total site size is 7.84 acre. Representative sampling may be utilized on this project. The individual outfall drainage basins along the project corridor have been carefully evaluated and compared on the basis of four characteristics: the type of construction activity, the disturbed acreage, the average slope about the outfall, and the soil erosion Index 0-10, 10 being the most erodible soil. The construction activity types are new road on fill, new road in cut, road widening, and maintenance/safety. The disturbed area are less than or equal to 1 acre, greater than 1 acre, less than 2 acres, and equal to or greater than 2 acres. The average outfall slope is mild if it is less than or equal to 0.03 and steep if it is greater than 0.03. The soil erosion Index is low if it is less than or equal to 5 and high if it is greater than 5. After evaluation of these characteristics as presented in the project's drainage area map, hydrology and hydraulic studies, construction plans, geotechnical soil survey, and ESPCP, the Department has determined that representative sampling is valid for the duration of the project. The table below shows the groups of similar outfall drainage basins. The increase in turbidity at the specified locations will be representative of the alternate outfall drainage basins when similar outfall drainage basins exist. Approved primary and alternate representative monitored feature are identified in the table below.

Primary Monitored Feature	Location (Station and Offset)	Name of Receiving Water	Applicable Construction Stage for Monitoring	Sampling Type (Outfall or Receiving water)	Drainage Area for receiving water (mi <sup>2</sup> )	Upstream Disturbed Area (acres)	Warm or Cold Water Stream	Appendix B NTU Value (Outfall monitoring only)	Allowable NTU Increase (Receiving water monitoring only)	Location Description	OUTFALL CHARACTERISTICS				
											Construction Activity	Disturbed Area (acres)	Average Outfall Slope (Rise/Run)	Soil Erosion Index 8.40	Represented Outfall Drainage Basins
A	SR 35/US 319 1328+20, 64' LT	Unnamed, Little River Tributary 1	All	Outfall	3.03	N/A	Warm	75	N/A	Upstream Culvert	Road Widening	2.79	0.005	High	B1, B2
D1a	I-75 Entrance Ramp 20+25, 42' LT	Unnamed, Little River Tributary 2	All	Outfall	0.57	N/A	Warm	75	N/A	2' Flat Ditch	Road Widening	0.52	0.022	High	D1b, D2

The primary monitored features specified should be used as the initial sampling locations. An alternate monitored feature may be used if additional sampling is required or to replace a primary monitored feature that is no longer located within an active phase of construction.

**WATER QUALITY INSPECTING AND SAMPLING PROCEDURES**

See Special Provision 167 and other contract documents for the inspecting and sampling procedures.

**READY MIX CHUTE WASHDOWN**

The washing of ready-mix concrete drums and dump truck bodies used in the delivery of Portland cement concrete is prohibited on this site. In accordance with Standard Specification 107, Legal Regulations and Responsibility to the Public, only the discharge chute utilized in the delivery of Portland cement concrete may be rinsed free of fresh concrete remains. The Contractor shall excavate a pit outside of State water buffers, at least 25 feet from any storm drain and outside of the travelled way, including shoulders, for a wash-down pit. The pit shall be large enough to store all wash-down water without overtopping. Immediately after the wash-down operations are completed and after the wash-down water has soaked into the ground, the pit shall be filled in, and the ground above it shall be graded to match the elevation of the surrounding areas. Alternate wash-down plans must be approved by the Project Engineer.

Wash-down plans describe procedures that prevent wash-down water from entering streams and rivers. Never dispose of wash-down water down a storm drain. Establish a wash-down pit that includes the following: (1) a location away from any storm drain, stream, or river, (2) access to the vehicle being used for wash-down, (3) sufficient volume for wash-down water, and (4) permission to use the area for wash-down.

On sites where permission or access to excavate a wash-down pit is unavailable, the Contractor may have to wash-down into a sealable 55-gallon drum or other suitable container and then transport the container to a proper disposal site. For additional information, refer to the Georgia Small Business Environmental Assistance Program's "A Guide for Ready Mix Chute/Hopper Wash-down".

**DITCH LINING DETAILS**

Right-of-Way	Beginning Station	Ending Station	Side	Drainage Area (ac)	Q <sub>25</sub> (cfs)	Ditch Slope %	Bottom Width (ft)	Front Slope Z1	Back Slope Z2	Erosion Index	Manning's n	Velocity (ft/s)	Normal Depth Dn (ft)	Min. Required Lining Height Dp (ft)	Min. Required Median Dia. for Riprap d50	Lining Type
SR 35/US 319	1329+30	1330+00	RT	0.59	2.94	0.4	4	2	8.40	0.011	0.6	0.77	1.5	0	TRMI	
SR 35 CONNECTOR/OMEGA RD.	112+80	114+30	RT	0.76	3.07	4.1	2	4	8.40	0.054	2.4	0.40	1.0	0	TRMI	
SR 35 CONNECTOR/OMEGA RD.	115+70	114+30	RT	0.82	3.93	3.6	4	4	8.40	0.061	2.0	0.38	1.0	0	TRMI	
I-75 S.B. ENTRANCE RAMP	20+25	26+10	LT	1.26	4.89	3.30	2	6	8.40	0.053	2.4	0.5	1.0	0	TRMI	
I-75 S.B. ENTRANCE RAMP	20+25	21+25	RT	0.57	2.23	3.80	2	4	8.40	0.058	2.0	0.36	1.0	0	TRMI	
I-75 S.B. EXIT RAMP	12+70	15+10	RT	1.89	8.06	2.80	4	4	8.40	0.055	2.6	0.56	1.5	0	TRMI	

**STREAM AND OPEN-WATER BUFFER ENCROACHMENTS**

The Contractor is not authorized to enter into stream buffers, except as described in the table below:

Name of Stream or Other Water Body Type (From Ecology Report)	Location of Buffered Streams and State Waters**			Stream Type (Warm/Cold Water)*	Buffer Impacted? (Yes/No)	Buffer Variance Required? (Yes/No)
	Stream Alignment	Begin Station and Offset	End Station and Offset			
Open Water 1 Intermittent	SR 35/US 319	STA 1327+80	STA 1328+95	N/A	Yes	No
Stream 2 Buffer	SR 35/US 319	STA 1328+06	STA 1328+31	N/A	Yes	No

\*Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wreted vegetation without first acquiring the necessary variances and permits.

Unless noted otherwise, utility companies will be submitting the required permits/variances in conjunction with the impacts caused by their activities. If utility impacts are covered by the Department's stream buffer variance, this shall be noted in the buffer-variance-required column. \* Warm water streams have a 25-foot minimum buffer as measured from the wreted vegetation. Cold Water streams have a 50-foot buffer as measured from the wreted vegetation. \*\*Locations are approximate, a detailed location of stream buffers and authorized work areas are shown on the individual BMP sheets

**ALTERNATIVE BMPs**

No alternative or additional BMPs will be used on this project.

EROSION, SEDIMENTATION, AND POLLUTION CONTROL CHECKLIST: SEE SHEET 51-003

**GEORGIA**  
DEPARTMENT OF TRANSPORTATION

**REVISION DATES**

10-3-14	

STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: ROADWAY DESIGN  
**ESPCP GENERAL NOTES**

P. I. NO. 0007273  
TIFT COUNTY

DRAWING No.  
**51-002**