SAMPLING REQUIREMENTS
Department of Natural Resources Permit No. GAR100001
Environmental Protection Division

5. Sampling Requirements. This permit requires the monitoring of nephelometric turbidity in receiving water(s) or outfalls in accordance with this permit. This sub-section is not applicable to secondary permittees. The following procedures constitute EPD's guidelines for sampling turbidity.
a. Sampling Requirements shall include the following:
(1). A USGS topographic map, a topographic map or a drawing (referred to as a topographic map) that is a scale equal to or more detailed than a 1:24000 map showing the location of the site or the common development; (a) the location of all perennial and intermittent streams and other water bodies as shown on a USGS topographic map, and all other perennial and intermittent streams and other water bodies located during mandatory field verification, into which the storm water is discharged and (b) the receiving water and/or outfall sampling locations. When the permittee has chosen to use a USGS topographic map and the receiving water(s) is not shown on the USGS topographic map, the location of the receiving water(s) must be hand-drawn on the USGS topographic map from where the storm water(s) enters the receiving water(s) to the point where the receiving water(s) combines with the first blue line stream shown on the USGS topographic map;
(2). The analytical method used to collect and analyze the samples including quality control/quality assurance procedures. This narrative must include precise sampling methodology for each sampling location;
(3). When the permittee has determined that some or all outfalls will be monitored, a rationale must be included for the NTU limit(s) selected from Appendix B. This rationale must include the size of the facility or common development, the calculation of the size of the surface water drainage area, and the type of receiving water(s) (i.e. trout stream or supporting warm water fisheries); and
(4). Any additional information EPD determines necessary to be part of the Plan. EPD will provide written notice to the permittee of the information necessary and the time line for submittal.
b. Sample Type. All sampling shall be collected by "grab samples" and the analysis of these samples must be conducted in accordance with methodology and test procedures established by 40 CFR Part 136 (unless other test procedures have been approved), the guidance document titled "NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001" and guidance documents that may be prepared by the EPD.
c. Sample containers should be labeled prior to collecting the samples.
(1). Samples should be well mixed before transferring to a laboratory container.
(2). Large mouth, clean and rinsed glass or plastic jars should be used for collecting samples. The jars should be cleaned thoroughly to avoid contamination.
(4). Manual, automatic or rising stage sampling may be utilized. Samples required by this permit should be analyzed immediately, but in no
case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analysis is utilized. Dilution of samples is not required. Samples may be analyzed using a direct reading, properly calibrated turbidimeter. Samples are not required to be cooled.
(5). Sampling and analysis of the receiving water(s) or outfalls beyond the minimum frequency stated in this permit must be reported to EPD as specified in Part IV.B.
d. Sampling Points.
(1). For construction activities the primary permittee must sample all receiving water(s), or all outfall(s), or a combination of receiving water(s) and outfall(s). Samples taken for the purpose of compliance with this permit shall be representative of the monitored activity and representative of the water quality of the receiving water(s) and/or the storm water outfalls using the following minimum guidelines:
(a). The upstream sample for each receiving water(s) must be taken immediately upstream of the confluence of the first storm water discharge from the permitted activity (i.e., the discharge farthest upstream at the site) but downstream of any other storm water discharges not associated with the permitted activity. Where appropriate, several upstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the upstream turbidity value.
(b). The downstream sample for each receiving water(s) must be taken downstream of the confluence of the last storm water discharge from the permitted activity (i.e., the discharge farthest downstream at the site) but upstream of any other storm water discharge not associated with the permitted activity. Where appropriate, several downstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the downstream turbidity value.
(c). Ideally the samples should be taken from the horizontal and vertical center of the receiving water(s) or the storm water outfall channel(s).
(d). Care should be taken to avoid stirring the bottom sediments in the receiving water(s) or in the storm water outfall channel(s).
(e). The sampling container should be held so that the opening faces upstream.
(f). The samples should be kept free from floating debris.
(g). Permittees do not have to sample shallow flow areas over undisturbed natural areas or areas stabilized by the project. For purposes of this section, stabilized shall mean, for unpaved areas and areas not covered by permanent structures, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches or geotextiles) have been used. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; a crop of perennial vegetation appropriate for the time of year and region; or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region. Final stabilization applies to each phase of construction.
(h). All sampling pursuant to this permit must be done in such a way (including generally accepted sampling methods, locations, timing, and frequency) as to accurately reflect whether storm water runoff from the facility/site is in compliance with the standard set forth in Parts III.C.3. or III.C.4., whichever is applicable.
d. Sampling Frequency.
(1). The primary permittee must sample in accordance with the Plan at least once for each rainfall event described below. For a qualifying event, samples must be taken within forty-five (45) minutes of:
(a) The accumulation of the minimum amount of rainfall for the qualifying event, if the storm water discharge to a monitored receiving water or from a monitored outfall has begun at or prior to the accumulation, or
(b) the beginning of any storm water discharge to a monitored receiving water or from a monitored outfall, if the discharge begins after the accumulation of the minimum amount of rainfall for the qualifying event.
(2). However, where manual and automatic sampling are impossible (as defined in this permit), or are beyond the permittee's control, the permittee shall take samples as soon as possible, but in no case more than twelve (12) hours after the beginning of the storm water discharge.
(3). Sampling by the permittee shall occur for the following events:
(a). For each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* (Monday thru Friday, 8:00 AM to 5:00 PM and Saturday 8:00 AM to 5:00 PM when construction activity is being conducted on the Primary permittee) that occurs after all clearing and grubbing operations have been completed in the drainage area of the location selected as the sampling location;
(b.). In addition to (a) above, for each area of the site that discharges to a receiving stream, the first rain event that reaches or exceeds 0.5 inch and allows for monitoring during normal business hours* that occurs either 90 days after the first sampling event or after all mass grading operations have been completed in the drainage area of the location selected as the sampling location, whichever comes first;
(c). At the time of sampling performed pursuant to (a) and (b) above, if BMPs are found to be improperly designed, installed and maintained, no further action is required. If BMPs in any area of the site that discharges to a receiving stream are not properly designed, installed and maintained, corrective action shall be defined and implemented within 2 business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch during normal business hours* until such time as inspections determine that BMPs are properly designed, installed and maintained; and
(d). Existing construction activities (i.e., those that are occurring on or before the effective date of this permit), that have met the sampling required by (a) above shall sample in accordance with (b.). Those existing construction activities that have met the sampling required by (b.) above shall not be required to conduct additional sampling other than as required by (c.) above.
*Note that the Permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samples from any rain event that reaches or exceeds 0.5 inch and allows for monitoring at any time of the day or week.
6. Non-storm water discharges. Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2. of this permit that are combined with storm water discharges associated with construction activity must be identified in the Plan. The Plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
E. Reporting.
1. The applicable permittees are required to submit a summary of the monitoring results to the EPD at the address shown in Part II.C. by the fifteenth day of the month following the reporting period. Reporting periods are monthly during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. Sampling and analysis of any storm water discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported on a separate DMR as specified in Part IV. The sampling reports must be signed in accordance with Part V.G. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.
2. Each permittee must retain copies of all monitoring results reported by that permittee in accordance with this Part. In addition to other record keeping requirements, the monitoring information shall include:
a. The date, exact place, and time of sampling or measurements;
b. The name(s) of the individual(s) who performed the sampling and measurements;
c. The date(s) analyses were performed;
d. The time(s) analyses were initiated;
e. The name(s) of the individual(s) who performed the analyses;
f. References and written procedures, when available, for the analytical techniques or methods used;
g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results; and
h. Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU."

SEDIMENT STORAGE SUMMARY

REQUIRED STORAGE = 39.35ac x 67cy/ac = 2,636cy

PROVIDED STORAGE:

Sd3 (WQ POND 1)	=	542cy
Sd4–C #1	=	304cy
Sd4–C #2	=	635cy
Sd4–C #3	=	481cy
Sd3 (WQ POND 2)	=	1,649cy
TOTAL	=	3,611cy

STORAGE PROVIDED (3,611cy) > STORAGE REQUIRED (2,636cy)

REQUIRED SEDIMENT STORAGE:

DRAINAGE AREA 1
AREA = 25.16ac
SEDIMENT STORAGE (67 cy/ac) = 1,686cy

DRAINAGE AREA 2
AREA = 14.19ac
SEDIMENT STORAGE (67 cy/ac) = 951cy

PROVIDED SEDIMENT STORAGE:

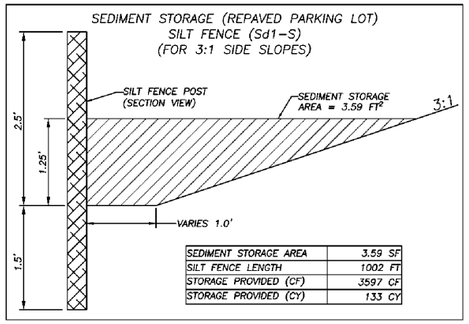
DRAINAGE AREA 1
Sd3 (WQ POND 1)
PRIMARY SPILLWAY ELEV: 1098.2'
VOLUME* AT SPILLWAY: 14,637cf = 542cy
CLEANOUT AT ELEV: 1078.36'
CLEANOUT VOLUME: 2733cf
Sd4–C #1
PRIMARY SPILLWAY ELEV:
VOLUME* AT SPILLWAY ELEV: 8,198cf = 304cy
CLEANOUT AT ELEV: 1078.36'
CLEANOUT VOLUME: 2,733cf
Sd4–C #2
PRIMARY SPILLWAY ELEV: 1091.0'
VOLUME* AT SPILLWAY ELEV: 17,155cf = 635cy
CLEANOUT AT ELEV: 1088.69'
CLEANOUT VOLUME: 5,718cf
Sd4–C #3
PRIMARY SPILLWAY ELEV: 1091.0'
VOLUME* AT SPILLWAY ELEV: 12,979cf = 481cy
CLEANOUT AT ELEV: 1088.70'
CLEANOUT VOLUME: 4,326cf

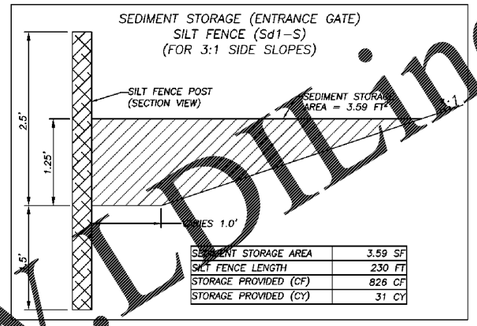
DRAINAGE AREA 2
Sd3 (WQ POND 2)
PRIMARY SPILLWAY ELEV: 1076.0'
VOLUME* AT SPILLWAY ELEV: 44,526cf = 1,649cy
CLEANOUT AT ELEV: XX'
CLEANOUT VOLUME: YYcf

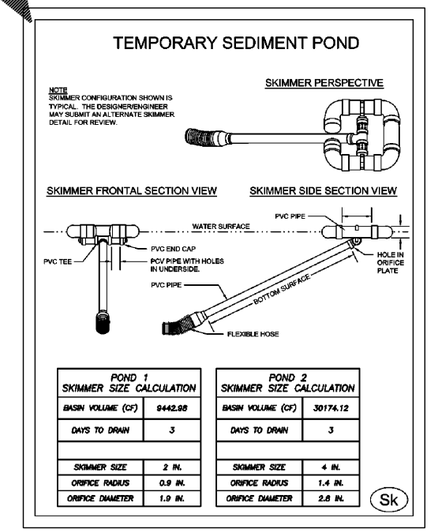
*VOLUME NOTE: VOLUMES CALCULATED FROM CONTOURS SHOWN ON EROSION CONTROL PLAN–INITIAL PHASE I DESIGN, SHEETS C34–C39.

St Rip-Rap Apron Summary

St #	Structure ID	Pipe Dia.	25yr Flow	25yr Velocity		Rip-Rap Sizes		Depth	Length	Apron Width	Apron Width
		D_0 (in)	Q (cfs)	V (ft/s)	Tailwater Condition	D_{50}(In)	Dmax (in)	D (ft)	La (ft)	W1 (ft)	W2 (ft)
1	B1	18	13.99	7.92	Min	6	9	1.125	12	4.5	13.5
2	C1	24	31.72	18.07	Min	9	13.5	1.688	19	6	21
3	N1	18	14.08	11.97	Min	7	10.5	1.313	13	4.5	14.5
4	Q1	18	9.09	16.95	Min	9	13.5	1.688	10	4.5	11.5
5	Z1	30	42.21	19.05	Max	11	16.5	2.063	21	7.5	10.9
6	EX. HW	24	11.48	14.86	Min	8	12	1.5	10	6	12







STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A roadway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on–site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy–duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dp1	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fl	FILTER			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand–placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where available the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water to less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEDP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert–type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

Bf	BUFFER ZONE		Bf	Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded, artificially constructed, or re–nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP. SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM. SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS		Fl-Co	Substances formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM. VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by assisting the organic material to bind together.

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EROSION AND SEDIMENT CONTROL NOTES II
FOR:
LANIER ISLANDS CONFERENCE CENTER
LAND LOT 380
7TH DISTRICT
CITY OF BUFORD, HALL COUNTY, GEORGIA

REVISIONS

REV	DATE	DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE WRITTEN CONSENT OF ROCHESTER & ASSOCIATES INC. VOIDS THE SEAL SHOWN HEREON AND ANY LIABILITY ASSOCIATED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GEORGIA REGISTERED
PE000074
PROFESSIONAL
12–11–20
GSWCC #13400
ENGINEER
JEFFREY N. COLLINS

SHEET C55 OF C66
DATE: 12–11–20
SCALE:
JOB NO.: G206124.ICC.01
REVD BY: JWC
DRAWN BY: JRS

GSWCC EROSION CONTROL CERTIFICATION No.13400 – JEFF COLLINS, PE

PLOT DATE: 12/11/20 2:37 PM
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