REGIONAL REVIEW NOTIFICATION

ATLANTA REGIONAL COMMISSION

Atlanta Regional Commission ● 229 Peachtree Street NE | Suite 100 | Atlanta, Georgia 30303 ● ph: 404.463.3100 fax: 404.463.3205 ● atlantaregional.org

DATE: DECEMBER 4, 2019 **ARC REVIEW CODE**: V1912041

TO: Mayor Lori Henry, City of Roswell
ATTN TO: Jackie Deibel, City of Roswell, City of Roswell
FROM: Douglas R. Hooker, Executive Director, ARC

Digital signature
Original on file

The Atlanta Regional Commission (ARC) has received the following proposal and is initiating a regional review to seek comments from potentially impacted jurisdictions and agencies. The ARC requests your comments related to the proposal not addressed by the Commission's regional plans and policies.

Name of Proposal: **RC-19-01R Chattahoochee Nature Center Expansion**
Review Type: Metro River
MRPA Code: RC-19-01R

Description: The proposed project seeks to add another driveway, build a new pedestrian bridge, extend a new boardwalk, and replace a segment of existing boardwalk at the existing Chattahoochee Nature Center, located at 9135 Willeo Road in the City of Roswell. The total acreage of the site is 78.3 acres, with 72.1 acres falling within the Chattahoochee River Corridor. The size of the proposed disturbed area is 3.9 acres.

Preliminary Finding: ARC staff has begun the review of the application for a MRPA Certificate for this proposed project in the Chattahoochee River Corridor. ARC's preliminary finding is that the proposed project is consistent with the Chattahoochee River Corridor Plan.

Submitting Local Government: City of Roswell
Land Lot: LL271, LL295 **District:** 1 **Section:** 2
Date Opened: December 4, 2019
Deadline for Comments: December 14, 2019
Earliest the Regional Review can be Completed: December 16, 2019 (next business day after deadline for comments)

THE FOLLOWING LOCAL GOVERNMENTS AND AGENCIES ARE RECEIVING NOTICE OF THIS REVIEW:

ARC COMMUNITY DEVELOPMENT	ARC NATURAL RESOURCES	GEORGIA DEPARTMENT OF NATURAL RESOURCES
NATIONAL PARK SERVICE/CRNRA	CHATTAHOOCHEE RIVERKEEPER	GEORGIA CONSERVANCY
FULTON COUNTY	CITY OF SANDY SPRINGS	COBB COUNTY

If you have any questions regarding this review, please contact Greg Giuffrida at ggiuffrida@atlantaregional.org or (470) 378-1531. If ARC staff does not receive comments from you on or before **Saturday, Dec. 14, 2019**, we will assume that your agency has no additional comments and will close the review. Comments by email are strongly encouraged. **The ARC review website is located at:** http://www.atlantaregional.org/land-use/planreviews**.**

Attached is information concerning this review.

ARC STAFF NOTICE OF REGIONAL REVIEW AND COMMENT FORM

DATE: DECEMBER 4, 2019 **ARC REVIEW CODE**: V1912041

TO: ARC Community Development and Natural Resources Managers
FROM: Greg Giuffrida, 470-378-1531

Reviewing staff by Jurisdiction:

Community Development: Smith, Andrew	**Natural Resources:** Santo, Jim

Name of Proposal: RC-19-01R Chattahoochee Nature Center Expansion
Review Type: Metro River
Description: The proposed project seeks to add another driveway, build a new pedestrian bridge, extend a new boardwalk, and replace a segment of existing boardwalk at the existing Chattahoochee Nature Center, located at 9135 Willeo Road in the City of Roswell. The total acreage of the site is 78.3 acres, with 72.1 acres falling within the Chattahoochee River Corridor. The size of the proposed disturbed area is 3.9 acres.
Submitting Local Government: City of Roswell
Date Opened: December 4, 2019
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Response:

1) Proposal is CONSISTENT with the following regional development guide listed in the comment section.
2) While neither specifically consistent nor inconsistent, the proposal relates to the following regional development guide listed in the comment section.
3) The proposal is INCONSISTENT with the following regional development guide listed in the comment section.
4) The proposal does NOT relate to any development guide for which this division is responsible.
5) Staff wishes to confer with the applicant for the reasons listed in the comment section.

COMMENTS:

Roswell
georgia

November 14, 2019

Attn: Mr. Jim Santo
Atlanta Regional Commission
229 Peachtree St. NE
Suite 100
Atlanta, GA 30303

Subject: RC20195150 - Metropolitan River Protection Act Certificate
9135 Willeo Road, Land Lots 271 and 295, 1st District, 2nd Section, Fulton County, Roswell, Georgia
Chattahoochee Nature Center

Dear Mr. Santo:

Please initiate a single-step review for the above referenced project.

Enclosed with this package is the application, site plan with MRPA information and the approved Erosion Control Plans signed by the City Engineer. If there is any insufficient or inaccurate information provided by the applicant, please contact me and I will obtain the correct information.

Thank you.

Sincerely,

City of Roswell

Jackie Deibel

Jackie Deibel
Planning and Zoning Director

20195150

APPLICATION FOR METROPOLITAN RIVER PROTECTION ACT CERTIFICATE

1. **Name of Local Government:** City of Roswell

2. **Owner(s) of Record of Property to be Reviewed:**
   Name(s): Fulton County (see below), Chattahoochee Nature Center, Inc. (see attached sheet)
   Mailing Address: 141 Pryor Street
   City: Atlanta **State:** GA **Zip:** 30303
   Contact Phone Numbers (w/Area Code):
   Daytime Phone: 404.612.5919 **Fax:** 404.612.1690
   Other Numbers:

3. **Applicant(s) or Applicant's Agent(s):**
   Name(s): Fulton County
   Mailing Address: 141 Pryor Street
   City: Atlanta **State:** GA **Zip:** 30303
   Contact Phone Numbers (w/Area Code):
   Daytime Phone: **Fax:**
   Other Numbers:

4. **Proposed Land or Water Use:**
   Name of Development: Chattahoochee Nature Center
   Description of Proposed Use: Existing nature center, an additional driveway and boardwalk replacement is proposed

5. **Property Description (Attach Legal Description and Vicinity Map):**
   Land Lot(s), District, Section, County: LL271 and 295, First District, Second Section, Fulton County
   Subdivision, Lot, Block, Street and Address, Distance to Nearest Intersection:
   9135 Willeo Road (property south and north of Willeo Road
   Size of Development (Use as Applicable):
   Acres: **Inside Corridor:** 72.1 Ac (North of Willeo Rd.), 5.2 Ac (South of Willeo Rd.)
   Outside Corridor:
   Total: 78.3 Ac
   Lots: **Inside Corridor:**
   Outside Corridor:
   Total:
   Units: **Inside Corridor:**
   Outside Corridor:
   Total:
   Other Size Descriptor (i.e., Length and Width of Easement):
   Inside Corridor:
   Outside Corridor:
   Total:

6. **Related Chattahoochee Corridor Development:**
   A. **Does the total development include additional land in the Chattahoochee Corridor that is not part of this application?** No
   If "yes", describe the additional land and any development plans: ________

   B. **Has any part of the property in this application, or any right-of-way or easement bordering this land, previously received a certificate or any other Chattahoochee Corridor review approval?** Yes
   If "yes", please identify the use(s), the review identification number(s), and the date(s) of the review(s): 1997, buildings and parking area, Review Number RC-97-06
   2006, Boardwalk replacement, RC-06-01R

7. **How Will Sewage from this Development be Treated?**
   A. **Septic tank** N/A
   Note: For proposals with septic tanks, the application must include the appropriate local government health department approval for the selected site.
   B. **Public sewer system** N/A

8. **Summary of Vulnerability Analysis of Proposed Land or Water Use:**

Vulnerability Category	Total Acreage (or Sq. Footage)	Total Acreage (or Sq. Footage) Land Disturbance	Total Acreage (or Sq. Footage) Imperv. Surface	Percent Land Disturb. (Maximums Shown In Parentheses)	Percent Imperv. Surf. (Maximums Shown In Parentheses)
A	0 SF	0 SF	0 SF	(90) 0	(75) 0
B	0 SF	0 SF	0 SF	(80) 0	(60) 0
C	128,750 SF	80,386 SF Exist. * 6,570 SF Prop.	30,505 SF Exist. 6,280 SF Prop.	(70) ~~68~~ 70*	(45) 29
D	1,403,900 SF	413,400 SF Exist.* 33150 SF Prop.	167,681 SF Exist. 11,712 SF Prop.	(50) ~~32~~ 50*	(30) 13
E	1,328,900 SF	183,728 SF Exist.* 50,900 SF Prop.	44,927 SF Exist. 23,950 SF Prop.	(30) ~~18~~ 30*	(15) 5
F	268,000 SF	0 SF	0 SF Exist.	(10) 0	(2) 0
Total:	3,411,600 SF (78.3 Ac)			N/A	N/A

Water Area: (incl. in Total) 282,050 SF (6.47 Ac)

* Maximum requested in C, D & E:
C – 90,125 SF. 70%
D – 701,950 SF – 50%
E – ~~1,328,900 SF – 398,670~~ 398,670 SF – 30%
ACC – SMS

9. **Is any of this Land within the 100-Year Floodplain of the Chattahoochee River?** Yes
   If "yes", indicate the 100-year floodplain elevation: 863
   NOTE: For this review, river floodplain is determined from the U.S. Army Corps of Engineers' "Floodplain Information - Chattahoochee River, Buford Dam to Whitesburg, Georgia", November, 1973 and its Supplement of March, 1982.
   NOTE: All river 100-year floodplain is assigned to the "E" Category; its allowable allocations can be combined with those of other "E" land in the review. Also, 100-year floodplain cannot be reanalyzed and cannot accept transfers.

10. **Is any of this land within the 500-year floodplain of the Chattahoochee River?** Yes
    If "yes", indicate the 500-year flood plain elevation: Not Available
    NOTE: Plan Standards include a 35-foot height limit above the pre-construction grade within the 500-year floodplain (includes the 100-year floodplain). Adherence to this standard must be noted on the submitted plans (see Part 2.B.(4) of the Chattahoochee Corridor Plan).

11. **The following is a checklist of information required to be attached as part of the application. Individual items may be combined.**

FOR ALL APPLICATIONS:

X **Description of land in the application and any additional land in the project (attach legal description or surveyed boundaries).**

X **Name, address, and phone number(s) of owner(s) of record of the land in the application. (Space provided on this form)**

X **Written consent of all owners to this application. (Space provided on this form)**

X **Name, address, and phone number(s) of applicant or applicant's agent. (Space provided on this form)**

X **Description of proposed use(s). (Space provided on this form)**

X **Existing vegetation plan.**

X **Proposed grading plan.**

X **Certified as-builts of all existing land disturbance and impervious surfaces.**

X **Approved erosion control plan.**

X **Detailed table of land-disturbing activities. (Both on this form and on the plans)**

X **Plat-level plan showing (as applicable): lot boundaries; any other sub-areas; all easements and rights-of -way; 100- and 500-year river floodplains; vulnerability category boundaries; topography; any other information that will clarify the review.**

N/A **Documentation on adjustments, if any.**

N/A **Cashier's check or money order (for application fee).**

FOR SINGLE-STEP APPLICATIONS (NON-SUBDIVISION):

____ **Site plan.**

____ **Land-disturbance plan.**

FOR TWO-STEP SINGLE-FAMILY SUBDIVISION APPLICATIONS ONLY:

____ **Concept plan.**

____ **Lot-by-lot and non-lot allocation tables.**

12. **I (we), the undersigned, authorize and request review of this application for a certificate under the provisions of the Metropolitan River Protection Act: (use additional sheets as necessary)**

Chattahoochee Nature Center, Inc. ~~(see attached)~~ 9/23/19

Fulton County ~~(see below)~~ (see attached page)

Signature(s) of Owner(s) of Record **Date**

13. **I (we), the undersigned, authorize and request review of this application for a certificate under the provisions of the Metropolitan River Protection Act:**

~~Chattahoochee Nature Center, Inc. (see attached)~~ 9/23/19

Fulton County ~~(see below)~~ (see attached page)

Signature(s) of Applicant(s) or Agent(s) **Date**

14. **The governing authority of** City of Roswell **requests review by the Atlanta Regional Commission of the above-described use under the Provisions of the Metropolitan River Protection Act.**

11/13/19

Signature of Chief Elected Official or Official's Designee **Date**

Signature of Chief Elected Official or Official's Designee Date

Tonya Grier, Date

Chief Deputy Clerk to the Commission

Robert L. Pitts, Chairman, Date

Fulton County Board of Commissioners

APPROVED AS TO FORM:

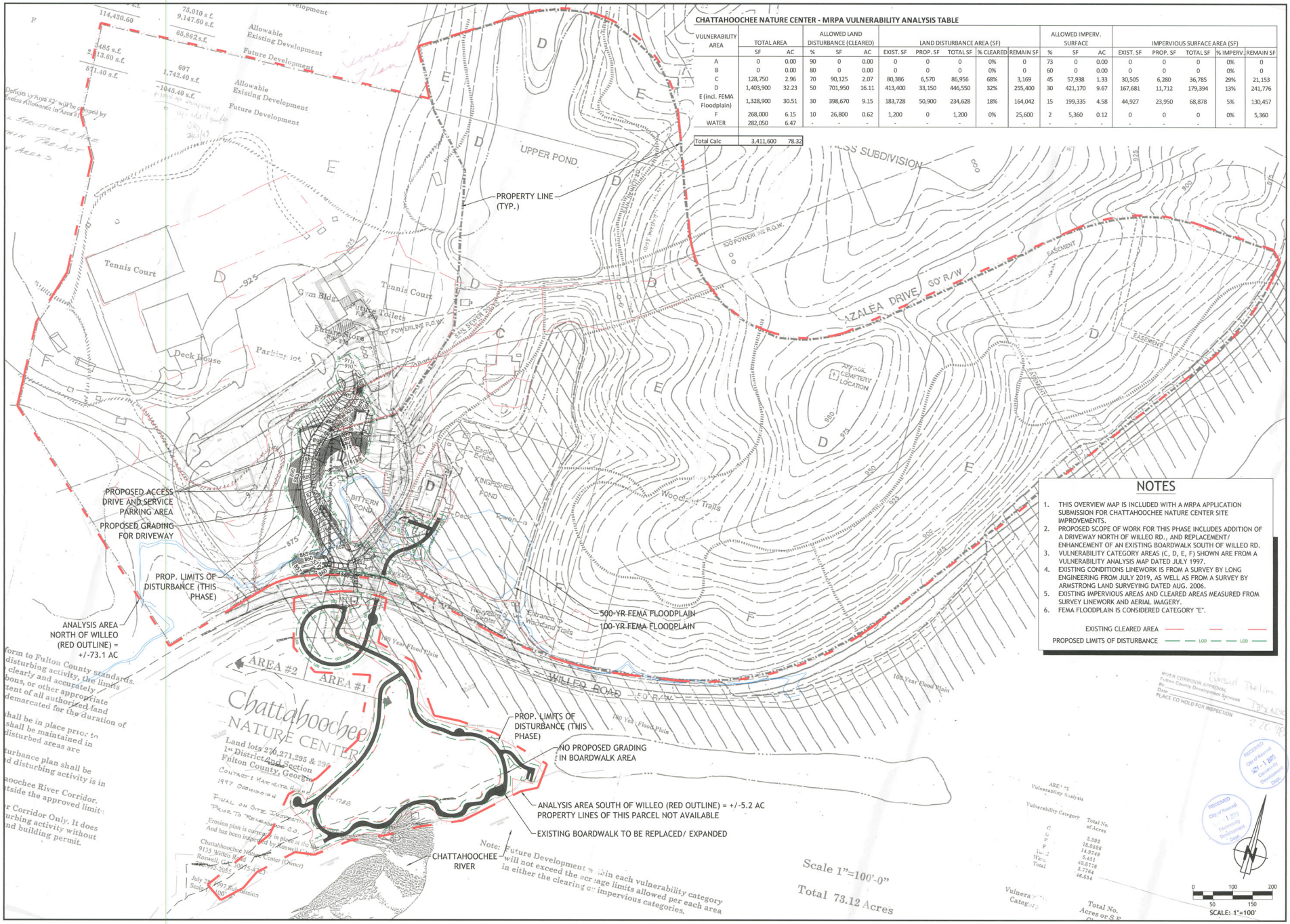
Office of the County Attorney

ITEM # 19-0763 RM 10-2-19
REGULAR MEETING

APPLICATION FOR
METROPOLITAN RIVER PROTECTION ACT CERTIFICATE

1. **Name of Local Government:** City of Roswell

2. **Owner(s) of Record of Property to be Reviewed:**
   Name(s): Chattahoochee Nature Center, Inc. (see below), Fulton County (see main application)
   Mailing Address: P.O. Box 769769
   City: Roswell **State:** GA **Zip:** 30076
   Contact Phone Numbers (w/Area Code):
   Daytime Phone: 770-992-2055x230 **Fax:** 770-552-0926
   Other Numbers:



CHATTAHOOCHEE NATURE CENTER - MRPA VULNERABILITY ANALYSIS TABLE

VULNERABILITY AREA	TOTAL AREA		ALLOWED LAND DISTURBANCE (CLEARED)			LAND DISTURBANCE AREA (SF)					ALLOWED IMPERV. SURFACE			IMPERVIOUS SURFACE AREA (SF)				
	SF	AC	%	SF	AC	EXIST. SF	PROP. SF	TOTAL SF	% CLEARED	REMAIN SF	%	SF	AC	EXIST. SF	PROP. SF	TOTAL SF	% IMPERV	REMAIN SF
A	0	0.00	90	0	0.00	0	0	0	0%	0	73	0	0.00	0	0	0	0%	0
B	0	0.00	80	0	0.00	0	0	0	0%	0	60	0	0.00	0	0	0	0%	0
C	128,750	2.96	70	90,125	2.07	80,386	6,570	86,956	68%	3,169	45	57,938	1.33	30,505	6,280	36,785	29%	21,153
D	1,403,900	32.23	50	701,950	16.11	413,400	33,150	446,550	32%	255,400	30	421,170	9.67	167,681	11,712	179,394	13%	241,776
E (incl. FEMA Floodplain)	1,328,900	30.51	30	398,670	9.15	183,728	50,900	234,628	18%	164,042	15	199,335	4.58	44,927	23,950	68,878	5%	130,457
F	268,000	6.15	10	26,800	0.62	1,200	0	1,200	0%	25,600	2	5,360	0.12	0	0	0	0%	5,360
WATER	282,050	6.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Calc	3,411,600	78.32																

NOTES

1. THIS OVERVIEW MAP IS INCLUDED WITH A MRPA APPLICATION SUBMISSION FOR CHATTAHOOCHEE NATURE CENTER SITE IMPROVEMENTS.
2. PROPOSED SCOPE OF WORK FOR THIS PHASE INCLUDES ADDITION OF A DRIVEWAY NORTH OF WILLEO RD., AND REPLACEMENT/ ENHANCEMENT OF AN EXISTING BOARDWALK SOUTH OF WILLEO RD.
3. VULNERABILITY CATEGORY AREAS (C, D, E, F) SHOWN ARE FROM A VULNERABILITY ANALYSIS MAP DATED JULY 1997.
4. EXISTING CONDITIONS LINEWORK IS FROM A SURVEY BY LONG ENGINEERING FROM JULY 2019, AS WELL AS FROM A SURVEY BY ARMSTRONG LAND SURVEYING DATED AUG. 2006.
5. EXISTING IMPERVIOUS AREAS AND CLEARED AREAS MEASURED FROM SURVEY LINEWORK AND AERIAL IMAGERY.
6. FEMA FLOODPLAIN IS CONSIDERED CATEGORY "E".

EXISTING CLEARED AREA
PROPOSED LIMITS OF DISTURBANCE — LOD — LOD

Note: Future Development within each vulnerability category will not exceed the acreage limits allowed per each area in either the clearing or impervious categories.

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

LONG ENGINEERING
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL. 770.951.2495, FAX 770.951.2496
www.longeng.com

CHATTAHOOCHEE NATURE CENTER

SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY GEORGIA

LL 81, 270, 271, 295 &
296, 1ST DIST., 2ND SECT.

MRPA VULNERABILITY ANALYSIS MAP

GSWCC LEVEL II CERT. #54321, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET
MRPA

NOT ISSUED FOR CONSTRUCTION

(2) CERTIFIED DESIGN PROFESSIONAL:
NAME: JOE SEVERIN
LEVEL II CERTIFICATION NUMBER: 53533
(SEE TITLEBLOCK FOR SIGNATURE AND SEAL)

(3) DISTURBED AREA: 3.9 ACRES

Date 11/13/2019
Milanello Murray
City Engineer
Approval For ARC only

(4) 24-HOUR LOCAL EMERGENCY CONTACT
NAME: HENNING VON SCHMELING
PHONE NUMBER: 770-992-2055

(5) PRIMARY PERMITTEE
NAME: CHATTAHOOCHEE NATURE CENTER
ADDRESS: 9135 WILLEO ROAD, ROSWELL, GA 30075
EMAIL ADDRESS:
PHONE NUMBER: 770-992-2055

(6) SITE INFORMATION (ACREAGE)
TOTAL SITE AREA: 78.3
DISTURBED AREA: 3.9

(7) GPS LOCATION OF CONSTRUCTION EXIT (IN DECIMAL DEGREES):
LATITUDE: 34.0025
LONGITUDE: 84.3821

(8) INITIAL DATE OF THE PLANS:
SEE COVER SHEET AND/OR TITLE BLOCK FOR INFORMATION (TO MATCH NOI)

(9) DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY:
EXISTING SITE: EXISTING SITE IS NATURE CENTER AND BOARDWALK ALONG RIVER
PROPOSED SITE: ADDITIONAL ACCESS DRIVE ADDED, NEW PEDESTRIAN BRIDGE AND REBUILD/ EXTENSION OF EXISTINGBOARDWALK REBUILT

(10) VICINITY MAP:

VICINITY MAP
N.T.S.

(11) RECEIVING WATERS (WARM WATER & FISHERIES STREAM)
NAME OF WATER(S) OR IF UNNAMED, NAME OF FIRST BLUE LINE STREAM: CHATTAHOOCHEE RIVER
IF DISCHARGING TO A SEPARATE
DESCRIPTION OF ADJACENT WETLAND AREAS THAT MAY BE AFFECTED: PROPOSED REPLACED/ IMPROVED BOARDWALK IS LOCATED IN WETLAND AND BULL SLUICE LAKE AS IDENTIFIED BY CONTOUR ENGINEERING.

(12)
SITE VISIT CERTIFICATION
"I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

JOE SEVERIN, PE (CERT.# 53533) — 09-23-2019 DATE

(13)
NPDES PROFESSIONAL CERTIFICATION
"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

JOE SEVERIN, PE (CERT.# 53533) — 09-23-2019 DATE

(4)
24-HOUR EMERGENCY CONTACT:
HENNING VON SCHMELING 770-992-2055

EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES

(14) *THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WITHIN 7 DAYS AFTER INSTALLATION.*

(15) *NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.*

(16) BUFFER ENCROACHMENTS
DESCRIPTION: ENCROACHING INTO STATE WATER BUFFERS TO INSTALLE/ REPLACE BOARDWALKS

BUFFER VARIANCE REQUIRED? __X__ YES, ____ NO

(17) *AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.*

(18) *WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.*

(19) *THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.*

(20) *EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.*

(21) *ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.*

EROSION AND SILTATION CONTROL DEVICES MUST BE INSTALLED PRIOR TO START OF OTHER CONSTRUCTION AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

ANY FAILURE OF ANY EROSION CONTROL DEVICE TO FUNCTION AS INTENDED FOR ANY REASON SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

ALL DISTURBED AREAS ARE TO BE GRASSED AS SOON AS CONSTRUCTION PHASE PERMITS. TEMPORARY MULCHING SHALL BE UTILIZED DURING THE PERIOD OF GERMINATION OF GRASS SEEDINGS USING STRAW OR HAY MULCH, JUTE MATTING OR SYNTHETIC FIBERS.

ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL CONFORM TO THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA AND ANY APPLICABLE LOCAL REGULATIONS.

EROSION CONTROL DEVICES WILL BE PROPERLY INSTALLED PRIOR TO SITE DISTURBANCE, MAINTAINED IN GOOD WORKING CONDITION UNTIL COMPLETION OF PROJECT, AND REPLACED WHEN EFFECTIVENESS IS REDUCED TO 50%.

ALL DISTURBED AREAS ARE TO BE STABILIZED WITH SUITABLE PERENNIAL VEGETATION, ACCORDING TO SOIL CONSERVATION SERVICE OR GEORGIA EXTENSION SERVICE SPECIFICATIONS, IMMEDIATELY FOLLOWING THE COMPLETION OF GRADING.

STRIPPING OF VEGETATION, GRADING OR OTHER DEVELOPMENT ACTIVITIES SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION.

WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.

ALL SEDIMENT COLLECTED DURING MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED FROM THE SITE OR SPREAD IN LANDSCAPED OR NATURALLY VEGETATED AREAS, SEEDED AND COVERED WITH STRAW.

DETENTION FACILITIES AND EROSION AND SILTATION CONTROL DEVICES MUST BE INSTALLED PRIOR TO START OF OTHER CONSTRUCTION AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. THE DEVICES SHALL BE MOVED AND ADJUSTED AS NEEDED TO KEEP A FUNCTIONING SYSTEM THROUGHOUT CONSTRUCTION. EROSION CONTROL MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO CONSTRUCTION EXITS, SILT FENCE, STORM INLET/OUTLET PROTECTION, DIVERSION DIKE OR DOWNDRAINS ON LONG STEEP SLOPES AND TEMPORARY GRASSING.

SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE $\frac{1}{3}$ FULL VOLUME.

MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR.

MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR.

SILT BARRIERS TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES.

SILT FENCE SHALL MEET THE REQUIREMENTS OF SECTION 171 TEMPORARY SILT FENCE, OF THE GEORGIA STANDARD SPECIFICATIONS, 1993 EDITION AND BE WIRE REINFORCED.

THE PROPERTY OWNER AND CONTRACTOR ARE EQUALLY RESPONSIBLE FOR ALL EROSION CONTROL ACTIVITIES.

ALL TEMPORARY AND PERMANENT SEEDING MUST BE PREFORMED AT THE APPROPRIATE SEASON. IN SUCH INSTANCES WHERE THE ESTABLISHMENT OF VEGETATION IS INOPPORTUNE DUE TO SEASON OR DROUGHT, DISTURBED AREAS SHALL BE TEMPORARY STABILIZED USING 2"-4" OF MULCH (Ds1). ADDITIONAL PLANTINGS WILL BE NECESSARY IF A SUFFICIENT STAND OF GRASS FAILS TO GROW.

THE CITY'S DESIGNEE WILL VERIFY ADEQUATE COVER (100% COVER, 70% DENSITY) OF PERMANENT STABILIZATION (Ds3, Ds4).

SEDIMENT STORAGE VOLUME @ 67 CY/ACRE MUST BE INSTALLED PRIOR TO ANY OTHER LAND DISTURBANCE ACTIVITY AND IN PLACE UNTIL FINAL STABILIZATION OCCURS.

ANY CONSTRUCTION ACTIVITY WHICH DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT MUST COMPLY WITH PART III. C. OF THE PERMIT. INCLUDE THE COMPLETED APPENDIX 1 LISTING ALL THE BMP'S THAT WILL BE USED FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT.

(1)
EROSION, SEDIMENTATION & POLLUTION CONTROL CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS
SWCD: FULTON COUNTY

Project Name: CHATTAHOOCHEE NATURE CENTER **Address:** 9135 Willeo Rd, Roswell, GA 30075
City/County: ROSWELL/FULTON **Date on Plans:** 09-23-2019
Name & email of person filling out checklist: JOEY GOODALL jgoodall@longeng.com

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	
C-7.0	Y	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
C-7.0	Y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)
N/A	N	3 Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the EPD District Office. If EPD approves the request to disturb 50 acres or more at any one time, the Plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist.* (A copy of the written approval by EPD must be attached to the plan for the Plan to be reviewed.)
C-7.0	Y	4 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.
C-7.0	Y	5 Provide the name, address, **email address**, and phone number of primary permittee.
C-7.0	Y	6 Note total and disturbed acreage of the project or phase under construction.
C-7.0	Y	7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
C-7.0	Y	8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
C-7.0	Y	9 Description of the nature of construction activity.
C-7.0	Y	10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
C-7.0	Y	11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
C-7.0	Y	12 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 19** of the permit.
C-7.0	Y	13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 19** of the permit.*
C-7.0	Y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation." in accordance with **Part IV.A.5 page 25** of the permit.*
C-7.0	Y	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
C-7.0	Y	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
C-7.0	Y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."*
C-7.0	Y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit."*
C-7.0	Y	19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
C-7.0	Y	20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
C-7.0	Y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
C-7.1	Y	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.*
C-7.0	Y	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.*
C-7.0	Y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.*
C-7.0	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
C-7.0	Y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.*
C-7.0	Y	27 Description of practices to provide cover for building materials and building products on site.*
C-7.0	Y	28 Description of the practices that will be used to reduce the pollutants in storm water discharges.*
C-7.1	Y	29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
C-7.0-1	Y	30 Provide complete requirements of inspections and record keeping by the primary permittee.*
C-7.1	Y	31 Provide complete requirements of sampling frequency and reporting of sampling results.*
C-7.0	Y	32 Provide complete details for retention of records as per Part IV.F. of the permit.*
C-7.1	Y	33 Description of analytical methods to be used to collect and analyze the samples from each location.*
C-7.1	Y	34 Appendix B rationale for NTU values at all outfall sampling points where applicable.*
C-7.0	Y	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged.*
C-7.0	Y	36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase.*
C7.2-4	Y	37 Graphic scale and North arrow.
C7.2-4	Y	38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

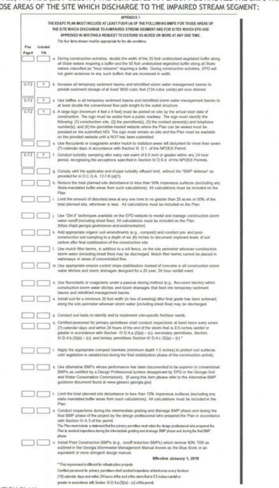
Map Scale	Ground Slope	Contour Intervals, ft
1 inch = 100ft or larger scale	Flat 0 - 2%	0.5 or 1
	Rolling 2 - 8%	1 or 2
	Steep 8% +	2,5 or 10

Plan Page #	Included Y/N	
N/A	N	39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org.
N/A	N	40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.*
N/A	N	41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
C-7.0	Y	42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
C7.2	Y	43 Delineation and acreage of contributing drainage basins on the project site.
HYDRO	Y	44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions.*
C-7.1	Y	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
C-6.0	Y	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
C7.2	Y	47 Soil series for the project site and their delineation.
C7.2-4	Y	48 The limits of disturbance for each phase of construction.
C7.2-3	Y	49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
C7.2-4	Y	50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
C8.0	Y	51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
L0.01	Y	52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

*If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A.

Effective January 1, 2019

(22) STORMWATER DISCHARGE:
DOES ANY CONSTRUCTION ACTIVITY WHICH DISCHARGES STORMWATER INTO AN *IMPAIRED STREAM SEGMENT*, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS ANY PORTION OF AN *BIOTA IMPAIRED STREAM SEGMENT*, COMPLY WITH PART III. C. OF THE *PERMIT*? __X__ YES, ____ NO
IF ANSWERED *YES*, PROVIDE (*LIST BELOW*) THE COMPLETED APPENDIX 1 LISTING ALL THE BMPs THAT WILL BE USED FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT:



(23) TMDL IMPLEMENTATION PLAN:
FINAL? __X__ YES, ____ NO
SITE SPECIFIC CONDITIONS OR REQUREMENTS: SUSTAINED COMPLIANCE WITH STORM WATER NPDES PERMIT REQUIREMENTS AS SAID IN JANUARY 2008 TMDL EVALUATION FOR CHATTAHOOCHEE RIVER BASIN FOR FECAL COLIFORM

PRODUCT SPECIFIC PRACTICES

(24) CONCRETE TRUCKS: CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASHOUT OR DISCHARGE SURPLUS CONCRETE DRUM WASH ON SITE. WASH AREAS, IF CONSTRUCTED, WILL CONSIST OF AN ENCLOSED WASTE COLLECTION AREA THAT WILL CONTAIN THE CONCRETE WASH UNTIL IT HARDENS. SEE ES&PC PLANS FOR LOCATION AND ES&PC DETAILS.
PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM OR SURFACE WATERS BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTIONS AND FEDERAL, STATE AND LOCAL REGULATIONS.

(25) PETROLEUM PRODUCTS: ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY PETROLEUM TO BE STORED IN TANKS WILL BE SURROUNDED BY AN EARTHEN BERM AS A SECONDARY PROTECTIVE MEASURE ALL CONTAINERS/TANKS WILL BE REGULARLY INSPECTED FOR CRACKS OR LEAKAGE. IF POSSIBLE, PETROLEUM PRODUCTS WILL BE STORED IN A COVERED AREA. ANY ASPHALT SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.

(26) DESCRIPTION OF THE MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED:
SEE SHEET XXX FOR DETAILS
MULCH: MULCH STORAGE MUST COMPLY WITH THE FOLLOWING SECTION OF THE STANDARD FIRE PREVENTION CODE: SECTION 502.3.1 - NO PERSON SHALL STORE IN ANY BUILDING OR UPON ANY PREMISES IN EXCESS OF 2,500 CU.FT. GROSS VOLUME OF COMBUSTIBLE EMPTY PACKING CASES, BOXES, BARRELS OR SIMILAR CONTAINERS, OR RUBBER TIRES, OR RUBBER OR OTHER SIMILARLY COMBUSTIBLE MATERIALS WITHOUT A PERMIT.

POLLUTION AND SPILL PREVENTION MEASURES

1. GOOD HOUSEKEEPING PRACTICES: AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT TO DO THE JOB. ALL MATERIALS ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER ONE ROOF OR ENCLOSURE. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINER WITH ORIGINAL MANUFACTURE'S LABEL. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURE. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
   THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.
   A. PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
   B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT INFORMATION.
   C. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.
3. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
4. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
5. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
6. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
7. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER) THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
8. FOR SPILLS OF UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.
9. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE GEORGIA E.P.D. WILL BE CONTACTED WITHIN 24 HOURS.
10. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THE THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURERS PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

(27) DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE:
SEE SHEET XXX FOR DETAILS
GENERAL NOTE: WHERE APPLICABLE, CONTRACTOR SHALL USE BEST JUDGMENT TO PROVIDE MEASURES SUCH AS: PLASTIC SHEETING, TEMPORARY ROOFS OR OTHER COMPARABLE MEASURES TO COVER BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTES, AND OTHER POLLUTANTS IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND STORMWATER RUN-OFF.
FERTILIZERS: FERTILIZER USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED (WHENEVER POSSIBLE). THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO SEALABLE PLASTIC BINS TO AVOID SPILLS (WHENEVER POSSIBLE).
SANITARY/SEPTIC WASTES: ALL SANITARY WASTE FACILITIES WILL BE SERVICED BY A QUALIFIED DOMESTIC WASTE HAULER. FACILITIES WILL BE PLACED OUT OF HIGH FLOW AREAS, AND WILL BE KEPT AWAY FROM, AND NOT RINSED INTO, STORM DRAIN INLETS AND RECEIVING BODIES OF WATER.
SANDBLASTING GRITS: NO SANDBLASTING GRIT WILL BE DISPOSED OF ON SITE. ITS DISPOSAL WILL BE COORDINATED WITH A LICENSED WASTE MANAGEMENT OR TRANSPORT AND DISPOSAL FIRM.
CONSTRUCTION WASTES: ALL CONSTRUCTION WASTE, FOR EXAMPLE: RUBBLE, PACKAGING MATERIALS, SCRAP BUILDING SUPPLIES, AND TREES AND SHRUBS REMOVED DURING GRUBBING, WILL BE COLLECTED AT A DESIGNATED ON-SITE LOCATION. IF POSSIBLE THE WASTE ACCUMULATION AREA WILL BE LOCATED IN A COVERED AREA. ALL CONSTRUCTION WASTES WILL BE REMOVED REGULARLY ON A CONSISTENT SCHEDULE AND DISPOSED OF AT AUTHORIZED DISPOSAL SITES.
DETERGENTS: THE USE OF DETERGENTS WILL BE LIMITED ON SITE, AND NO WASH WATER CONTAINING DETERGENTS WILL BE DISCHARGED TO STORM DRAIN INLETS OR RECEIVING BODIES OF WATER.

(8)

REVISIONS
REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

(30)

LONG ENGINEERING
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

CHATTAHOOCHEE NATURE CENTER
SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY, GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.
EROSION CONTROL NOTES

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 033671 JOSEPH M. SEVERIN 11-1-19

(2) TYP. GSWCC LEVEL II CERT. #53533, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET
C-7.0

NOT ISSUED FOR CONSTRUCTION

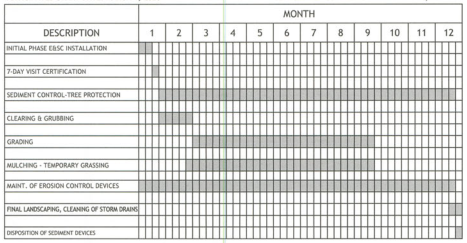
(28) DESCRIPTION OF THE PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORMWATER DISCHARGES:

1. SEDIMENT FROM DISTURBED AREAS - PROVIDE PERIMETER SEDIMENT BARRIERS AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE. PHASE CONSTRUCTION TO MINIMIZE THE DURATION DISTURBED SOILS ARE EXPOSED. IMPLEMENT THE ES&PC PLAN, PROVIDE INSPECTIONS AND MODIFY THE PLAN AS REQUIRED TO KEEP IT EFFECTIVE AT REDUCING EROSION AND CONTAINING SEDIMENT.
2. EROSION OF SLOPES AND CHANNELS - UTILIZE SLOPE DRAINS, MATTING BLANKETS AND DIVERT STORMWATER AWAY FROM STEEP SLOPES. AVOID DISTURBING NATURAL CHANNELS AND MAINTAIN A VEGETATIVE BUFFER BETWEEN THE CHANNEL AND THE DISTURBED AREA. USE A DOUBLE ROW OF SILT FENCE AND, IF NECESSARY, UTILIZE MULCH OR HAY BALES BETWEEN THE TWO ROWS.
3. EXCESSIVE RUNOFF - REDUCE IMPERVIOUS SURFACES AND DIVERT STORMWATER FROM THEM TO VEGETATED AREAS, INFILTRATION TRENCHES, BIORETENTION AREAS AND RAIN GARDENS TO PROMOTE INFILTRATION.
4. CONSTRUCTION POLLUTANTS - PROVIDE PROPER CONTAINERS FOR FERTILIZERS, CHEMICALS, PETROLEUM PRODUCTS, PAINT AND OTHER POTENTIAL POLLUTANTS AND DO NOT EXPOSE THEM TO RAINFALL OR STORMWATER.
5. TRASH AND DEBRIS - PROVIDE DUMPSTERS AND GARBAGE RECEPTACLES ON SITE, REMOVE ALL GARBAGE FROM SITE PERIODICALLY AND DISPOSE OF LEGALLY.
6. POLLUTANTS/SEDIMENT IN STORM DRAINS - PROVIDE INLET PROTECTION AT ALL POINTS WHERE POLLUTANTS/SEDIMENT CAN ENTER THE STORM DRAIN SYSTEM AND IMMEDIATELY CLEAN OUT ANY POLLUTANTS/SEDIMENT THAT ENTERS THE SYSTEM.

(29) APPROXIMATE ACTIVITY SCHEDULE

ANTICIPATED START DATE: MARCH 1, 2020

ANTICIPATED COMPLETION DATE: APRIL 1, 2021



(30) INSPECTIONS (PERMITTEE REQUIREMENTS)

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

2. MEASURE RAINFALL ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY UNTIL A NOTICE OF TERMINATION IS SUBMITTED. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

3. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASSE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

4. CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS RECEIVED BY EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).

5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

6. A REPORT OF EACH INSPECTION AND THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5) OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY THE END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

(31) SAMPLING FREQUENCY (GAR 100001 IV.D.6.d)

1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

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 QUALIFYING EVENTS:

   A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, 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 WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, 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 IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (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 THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

   D. WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND

   E. 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 SAMPLING AT ANY TIME OF THE DAY OR WEEK .

4. NON-STORM WATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORM WATER LISTED IN PART 111.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.

(31) REPORTING (GAR 100001 IV.E.)

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING 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 MONTHS 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 IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V .G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
   A. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
   B. THE NAME(S) OF THE CERTIFIED PERSONNEL 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 CERTIFIED PERSONNEL 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;
   H. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
   I. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. IF AN ELECTRONIC SUBMITTAL IS PROVIDED BY EPD THEN THE WRITTEN CORRESPONDENCE MAY BE SUBMITTED ELECTRONICALLY; IF REQUIRED, A PAPER COPY MUST ALSO BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL OR SIMILAR SERVICE.

(32) RECORDING AND RECORDS

1. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:

   A. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
   B. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
   C. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
   D. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
   E. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT;
   F. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
   G. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2). OF THIS PERMIT.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION), OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

3. OWNERS OR OPERATORS OR BOTH WHO INTEND TO OBTAIN COVERAGE UNDER THIS GENERAL PERMIT FOR STORM WATER DISCHARGES FROM A CONSTRUCTION SITE, SHALL SUBMIT A NOTICE OF INTENT (NOI) IN ACCORDANCE WITH THE REQUIREMENTS OF THIS PART AT LEAST FOURTEEN (14) DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

4. NOI'S ARE TO BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO BOTH THE DISTRICT OFFICE OF THE EPD AND TO THE LOCAL ISSUING AUTHORITY.

5. WHERE AN OWNER OR AN OPERATOR OR BOTH CHANGES AFTER AN NOI HAS BEEN FILED, THE SUBSEQUENT OWNER OR OPERATOR OR BOTH MUST FILE A NEW NOI AT LEAST SEVEN (7) DAYS BEFORE BEGINNING OF WORK AT THE FACILITY/SITE.

(33) SAMPLING REQUIREMENTS

1. GENERAL NPDES PERMIT #GAR 100001 REQUIRES THE SAMPLING OF STORMWATER RUNOFF AND MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS.

SAMPLE TYPE

2. 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.

3. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES. LABELING SHOULD INCLUDE: PROJECT NAME, SAMPLE LOCATION. SAMPLE NO., DATE COLLECTED, TIME COLLECTED

4. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

5. LARGE MOUTH, WELL CLEANED AND REUSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

6. 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. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

7. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD.

SAMPLING POINTS

8. 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 RECEIVINGWATER(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 OUTFALL STORM WATER CHANNEL.
   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 SHEETFLOW THAT FLOWS ONTO 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 AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPE AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).
   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 CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

Date 11/13/2019
[signature]
City Engineer
Approval For ARC only

(34) STORMWATER MONITORING RATIONALE

THE FOLLOWING FACTORS WERE CONSIDERED WHEN DETERMINING THE STORMWATER MONITORING POINT LOCATIONS:

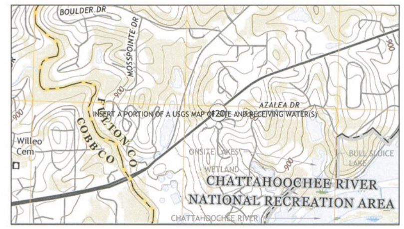
- MONITORING POINTS CHOSEN WHERE MAJORITY OF SITE RUNOFF ENTERS CONVEYANCE LEAVING SITE AND AT LOCATION WITHIN RECEIVING CONVEYANCE JUST UPSTREAM OF WHERE THE MAJORITY OF SITE RUNOFF ENTERS THE CONVEYANCE. MONITORING POINT LOCATION ADJUSTED AS SHOWN ON PLAN AS CHANGES ARE MADE TO WHERE SITE RUNOFF ENTERS RECEIVING CONVEYANCE.

SAMPLING OF (OUTFALL/RECEIVING WATER)
NUMBER OF OUTFALLS: 1
APPENDIX B NTU VALUE: 50
SURFACE WATER DRAINAGE AREA (SQ MILES): 0.13

WATERS SUPPORTING WARM WATER FISHERIES

SITE SIZE (Ac)	SURFACE WATER DRAINAGE AREA, (SQ. MILES) 0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	50	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

(35) DELINEATION OF ALL SAMPLING LOCATIONS, PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORMWATER IS DISCHARGED:



(36) DESCRIPTION OF EROSION CONTROL BMP'S BY PHASE:

INITIAL PHASE - INSTALL PERIMETER SILT FENCE, TEMPORARY SEDIMENT BASIN TO ACCOMMODATE 67 CUBIC YARDS SEDIMENT PER ACRE OF DISTURBANCE, TREE SAVE FENCE IF APPLICABLE, CONSTRUCTION EXIT, AND ANY OTHER BMPs NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE PRIOR TO REMOVING EXISTING PAVEMENT THROUGHOUT SITE AND PRIOR TO STRIPPING TOPSOIL. UPON REMOVAL OF PAVEMENT, ESTABLISH DIVERSIONS TO TEMPORARY SEDIMENT BASIN. LIMITS OF DISTURBANCE ARE TO ONLY BE THE AREAS NEEDED TO INSTALL THE INITIAL BMPs.

INTERMEDIATE PHASE - ROUGH GRADING, UTILITIES INSTALLATION, INSTALLATION OF MAIN STORM SEWER LINE AND INSTALLATION OF INLET SEDIMENT TRAPS, OUTLET PROTECTION RETROFIT IF APPLICABLE, MATTING WITH TEMPORARY OR PERMANENT VEGETATION, TEMPORARY DOWN DRAINS, FILTER RINGS, ETC. MONITOR PREVIOUSLY INSTALLED PERIMETER SILT FENCE AND SEDIMENT BASIN. AFTER INTERMEDIATE PHASE BMPs ARE INSTALLED AND FUNCTIONING, REMOVE SEDIMENT BASIN AND BEGIN BUILDING CONSTRUCTION.

FINAL PHASE - BUILDING CONSTRUCTION, INSTALLATION OF HARDSCAPES AND FINAL GRADING AND STABILIZATION, FINAL DISPOSITION OF ALL TEMPORARY SEDIMENT BMPS.

(37) GRAPHIC SCALE AND NORTH ARROW:
SEE PLAN SHEET(S)

(38) EXISTING AND PROPOSED CONTOUR LINES:
SEE PLAN SHEET(S)

(39) ALTERNATE BMPs:
USE OF ALTERNATIVE BMPS WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMPs AS CERTIFIED BY A DESIGN PROFESSIONAL (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION). PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT WWW.GASWCC.ORG.:
NO ALTERNATE BMPs HAVE BEEN UTILIZED UNLESS NOTED BELOW

(40) USE OF ALTERNATIVE BMP FOR APPLICATION TO THE EQUIVALENT BMP LIST:
NO ALTERNATE BMPS HAVE BEEN UTILIZED UNLESS NOTED ABOVE

(41) DELINEATION OF THE APPLICABLE 25-FOOT OR 50-FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS AND ANY ADDITIONAL BUFFERS REQUIRED BY THE LOCAL ISSUING AUTHORITY:
SEE PLAN SHEET(S)

(42) DELINEATION OF ONSITE WETLANDS AND ALL STATE WATERS LOCATIONS OR WITHIN 200 FEET OF THE PROJECT SITE:
WETLANDS ARE PRESENT WITHIN THE SITE.
STATE WATERS ARE PRESENT WITHIN THE SITE.
STATE WATERS DO EXIST WITHIN 200 FEET OF THE SITE AS DEPICTED ON THE PLAN SHEET(S).

(43) DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE:
SEE HYDROLOGY STUDY FOR DRAINAGE BASIN DELINEATIONS.

(44) HYDROLOGY STUDY AND MAPS OF DRAINAGE BASINS FOR BOTH PRE- AND POST- DEVELOPED CONDITIONS:
SEE SEPARATE HYDROLOGY STUDY.

(45) CURVE NUMBERS:
EXISTING CONDITIONS CN = 87
PROPOSED CONDITIONS CN = 91

(46) STORM-DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION:
SEE PLAN SHEET(S)

IDENTIFICATION AND DELINEATION OF ALL STORM WATER DISCHARGE POINTS:
SEE PLAN SHEET(S)

(47) SOIL SERIES FOR PROJECT SITE:
CaA - CARTECAY-TOCCOA COMPLEX, CeB2 ABD CeC2 - CECIL SANDY LOAM, CpA - CONGAREE SANDY LOAM, GaF - GROVER-MOUNTAIN PARK COMPLEX, PgC2 - PACOLET-SAW COMPLEX, ReD AND ReE - RION SANDY LOAM, W - WATER
SEE SHEET C-7.2 FOR DELINEATIONS.

(48) LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION:
SEE PLAN SHEET(S) FOR DELINEATION(S).

(49) PROVIDE A MINIMUM OF 134 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED USING A TEMPORARY SEDIMENT BASIN, RETROFITTED DETENTION POND, AND/OR EXCAVATED INLET SEDIMENT TRAPS FOR EACH COMMON DRAINAGE LOCATION:

SEDIMENT STORAGE VOLUME IS TO BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.

A WRITTEN JUSTIFICATION EXPLAINING THE DECISION TO USE EQUIVALENT CONTROLS (WHEN A SEDIMENT BASIN IS NOT ATTAINABLE) MUST BE INCLUDED IN THE PLAN FOR EACH COMMON DRAINAGE LOCATION IN WHICH A SEDIMENT BASIN IS NOT PROVIDED. A WRITTEN JUSTIFICATION AS TO WHY 67 CUBIC YARDS OF STORAGE ALSO NOT ATTAINABLE MUST ALSO BE GIVEN. WORKSHEETS FROM THE MANUAL MUST BE INCLUDED FOR STRUCTURAL BMPS AND ALL CALCULATIONS USED BY THE DESIGN PROFESSIONAL TO OBTAIN THE REQUIRED SEDIMENT STORAGE WHEN USING EQUIVALENT CONTROLS.

WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, PERMITTEES ARE REQUIRED TO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, UNLESS INFEASIBLE. IF OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE NOT FEASIBLE, A WRITTEN JUSTIFICATION EXPLAINING THIS DECISION MUST BE INCLUDED BELOW:
(PROVIDE JUSTIFICATION HERE, IF APPLICABLE)

(50) BEST MANAGEMENT PRACTICES:
SEE ES&PC PLAN SHEET(S) AND ES&PC SHEET CE501 FOR UNIFORM CODING SYMBOLS.

(51) DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES:
SEE ES&PC PLAN SHEET(S) AND ES&PC DETAIL SHEET(S) FOR DETAILS.

(52) VEGETATIVE PLAN FOR ALL STRUCTURAL PRACTICES (TEMPORARY AND PERMANENT):
SEE ES&PC PLAN SHEET(S) AND ES&PC DETAIL SHEET(S) FOR DETAILS.

GENERAL NOTES

1. THE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL BE SIGNED IN ACCORDANCE WITH PART IV., AND BE RETAINED ON THE SITE (OR, IF NOT POSSIBLE, AT A READILY ACCESSIBLE LOCATION) WHICH GENERATES THE STORM WATER DISCHARGE IN ACCORDANCE WITH PART IV.F. OF THIS PERMIT.
2. THE PRIMARY PERMITTEE SHALL MAKE PLANS AVAILABLE UPON REQUEST TO THE EPD; TO DESIGNATED OFFICIALS OF THE LOCAL GOVERNMENT REVIEWING SOIL EROSION AND SEDIMENT CONTROL PLANS, GRADING PLANS, OR STORM WATER MANAGEMENT PLANS; OR IN THE CASE OF A STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY WHICH DISCHARGES THROUGH A MUNICIPAL SEPARATE STORM SEWER SYSTEM WITH AN NPDES PERMIT, TO THE LOCAL GOVERNMENT OPERATING THE MUNICIPAL SEPARATE STORM SEWER SYSTEM.
3. EPD MAY NOTIFY THE PRIMARY PERMITTEE AT ANY TIME THAT THE PLAN DOES NOT MEET ONE OR MORE OF THE MINIMUM REQUIREMENTS OF THIS PART. WITHIN SEVEN (7) DAYS OF SUCH NOTIFICATION (OR AS OTHERWISE PROVIDED BY EPD), THE PRIMARY PERMITTEE SHALL MAKE THE REQUIRED CHANGES TO THE PLAN AND SHALL SUBMIT TO EPD EITHER THE AMENDED PLAN OR A WRITTEN CERTIFICATION THAT THE REQUESTED CHANGES HAVE BEEN MADE.
4. THE PRIMARY PERMITTEE(S), AS APPLICABLE, SHALL AMEND THEIR PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT, I.E., THOSE BMPS WHERE THE DESIGN IS BASED UPON RAINFALL INTENSITY, DURATION AND RETURN FREQUENCY OF STORMS OR IF THE PLAN PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM SOURCES IDENTIFIED UNDER PART IV.D.3. AMENDMENTS TO THE PLAN MUST BE CERTIFIED BY A DESIGN PROFESSIONAL AS PROVIDED IN THIS PERMIT.
5. THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL INCLUDE, AS A MINIMUM, BEST MANAGEMENT PRACTICES, INCLUDING SOUND CONSERVATION AND ENGINEERING PRACTICES TO PREVENT AND MINIMIZE EROSION AND RESULTANT SEDIMENTATION, WHICH ARE CONSISTENT WITH, AND NO LESS STRINGENT THAN, THOSE PRACTICES CONTAINED IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED.
6. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD. THE PERMITEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A N.O.T. IS SUBMITTED IN ACCORDANCE WITH PART IV. IF AN ELECTRONIC SUBMITTAL IS PROVIDED BY EPD, THEN THE WRITTEN CORRESPONDENCE MAY BE SUBMITTED ELECTRONICALLY; IF REQUIRED, A PAPER COPY MUST ALSO BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL OR SIMILAR SERVICE.
7. EACH PERMITTEE MUST COMPLY WITH ALL APPLICABLE CONDITIONS OF THIS PERMIT. ANY PERMIT NONCOMPLIANCE CONSTITUTES A VIOLATION OF THE GEORGIA WATER QUALITY CONTROL ACT AND IS GROUNDS FOR ENFORCEMENT ACTION; FOR PERMIT TERMINATION; OR FOR DENIAL OF A PERMIT RENEWAL APPLICATION. FAILURE OF A PRIMARY PERMITTEE TO COMPLY WITH ANY APPLICABLE TERM OR CONDITION OF THIS PERMIT SHALL NOT RELIEVE ANY OTHER PRIMARY PERMITTEE FROM COMPLIANCE WITH THEIR APPLICABLE TERMS AND CONDITIONS OF THIS PERMIT.
8. EACH PERMITTEE MUST DOCUMENT IN THEIR RECORDS ANY AND ALL KNOWN VIOLATIONS OF THIS PERMIT AT HIS/HER SITE WITHIN SEVEN (7) DAYS OF HIS/HER KNOWLEDGE OF THE VIOLATION. A SUMMARY OF THESE VIOLATIONS MUST BE SUBMITTED TO EPD BY THE PERMITTEE WITHIN FOURTEEN (14) DAYS OF HIS/HER DISCOVERY OF THE VIOLATION.
9. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS. THE FEDERAL CLEAN WATER ACT AND THE GEORGIA WATER QUALITY CONTROL ACT (O.C.G.A. 12-5-20, ET SEQ.) PROVIDE THAT ANY PERSON WHO FALSIFIES, TAMPERS WITH, OR KNOWINGLY RENDERS INACCURATE ANY MONITORING DEVICE OR METHOD REQUIRED TO BE MAINTAINED UNDER THIS PERMIT, MAKES ANY FALSE STATEMENT , REPRESENTATION, OR CERTIFICATION IN ANY RECORD OR OTHER DOCUMENT SUBMITTED OR REQUIRED TO BE MAINTAINED UNDER THIS PERMIT, INCLUDING MONITORING REPORTS OR REPORTS OF COMPLIANCE OR NONCOMPLIANCE SHALL, UPON CONVICTION BE PUNISHED BY A FINE OR BY IMPRISONMENT, OR BY BOTH. THE FEDERAL CLEAN WATER ACT AND THE GEORGIA WATER QUALITY CONTROL ACT ALSO PROVIDE PROCEDURES FOR IMPOSING CIVIL PENALTIES WHICH MAY BE LEVIED FOR VIOLATIONS OF THE ACTS, ANY PERMIT CONDITION OR LIMITATION ESTABLISHED PURSUANT TO THE ACTS, OR NEGLIGENTLY OR INTENTIONALLY FAILING OR REFUSING TO COMPLY WITH ANY FINAL OR EMERGENCY ORDER OF THE DIRECTOR.
10. THE NOTES PRESENTED HEREIN SUMMARIZE THE PERTINENT POINTS IN GENERAL PERMIT #GAR 100001. THE PRIMARY PERMITTEE IS RESPONSIBLE FOR COMPLYING WITH ALL PROVISIONS OF THE PERMIT.

BEST MANAGEMENT PRACTICES

1. BEST MANAGEMENT PRACTICES, AS SET FORTH IN THIS PERMIT, ARE REQUIRED FOR ALL CONSTRUCTION ACTIVITIES, AND MUST BE IMPLEMENTED IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS CONTAINED IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED TO PREVENT OR REDUCE THE POLLUTION OF WATERS OF GEORGIA. PROPER DESIGN, INSTALLATION, AND MAINTENANCE OF BEST MANAGEMENT PRACTICES SHALL CONSTITUTE A COMPLETE DEFENSE TO ANY ACTION BY THE DIRECTOR OR TO ANY OTHER ALLEGATION OF NONCOMPLIANCE WITH PART 111.D.3 AND PART 111.D.4 OF PERMIT #GAR 100001.
2. EXCEPT AS REQUIRED TO INSTALL THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS AS DESCRIBED IN PART IV.D.3., THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS MUST BE INSTALLED AND IMPLEMENTED PRIOR TO CONDUCTING ANY OTHER CONSTRUCTION ACTIVITIES (E.G., CLEARING, GRUBBING AND GRADING) WITHIN THE CONSTRUCTION SITE OR WHEN APPLICABLE, WITHIN PHASED SUB-PARTS OR SEGMENTS OF THE CONSTRUCTION SITE. FAILURE TO COMPLY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT FOR EACH DAY ON WHICH CONSTRUCTION ACTIVITIES OCCUR. THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN MUST INSPECT THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS IN ACCORDANCE WITH PART IV.A.5. WITHIN SEVEN (7) DAYS AFTER INSTALLATION.
3. FAILURE TO PROPERLY DESIGN, INSTALL, OR MAINTAIN BEST MANAGEMENT PRACTICES SHALL CONSTITUTE A VIOLATION OF THIS PERMIT FOR EACH DAY ON WHICH SUCH FAILURE OCCURS. BMP MAINTENANCE AS A RESULT OF THE PERMITTEE'S ROUTINE INSPECTIONS SHALL NOT BE CONSIDERED A VIOLATION FOR THE PURPOSES OF THIS PARAGRAPH. IF DURING THE COURSE OF THE PERMITTEES ROUTINE INSPECTION BMP FAILURES ARE OBSERVED WHICH HAVE RESULTED IN SEDIMENT DEPOSITION INTO WATERS OF THE STATE, THE PERMITTEE SHALL CORRECT THE BMP FAILURES AND SHALL SUBMIT A SUMMARY OF THE VIOLATIONS TO EPD, IN ACCORDANCE WITH PART V.A.2 OF PERMIT #GAR100001.
4. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH DISCHARGE RESULTS IN THE TURBIDITY OF RECEIVING WATER(S) BEING INCREASED BY MORE THAN TEN (10) NEPHELOMETRIC TURBIDITY UNITS FOR WATERS CLASSIFIED AS TROUT STREAMS OR MORE THAN TWENTY-FIVE (25) NEPHELOMETRIC TURBIDITY UNITS FOR WATERS SUPPORTING WARM WATER FISHERIES, REGARDLESS OF A PERMITTEE'S CERTIFICATION, UNDER PART II.B.1.i OF PERMIT #GAR10001,
5. WHEN THE PERMITTEE HAS ELECTED TO MONITOR OUTFALL(S), THE DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING THE VALUE SELECTED FROM APPENDIX B APPLICABLE TO THE CONSTRUCTION SITE. AS SET FORTH THEREIN, THE NEPHELOMETRIC TURBIDITY UNIT (NTU) VALUE SHALL BE SELECTED FROM APPENDIX B BASED UPON THE SIZE OF THE CONSTRUCTION SITE, THE SURFACE WATER DRAINAGE AREA AND WHETHER THE RECEIVING WATER(S) SUPPORTS WARM WATER FISHERIES OR IS A TROUT STREAM AS INDICATED IN THE RULES AND REGULATIONS FOR WATER QUALITY CONTROL, CHAPTER 391-3-6 AT WWW.GAEPD.ORG (8)

24-HOUR EMERGENCY CONTACT:
HENNING VON SCHMELING 770-992-2055

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

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2550 HERITAGE COURT, STE 250
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www.longeng.com

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SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY
GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

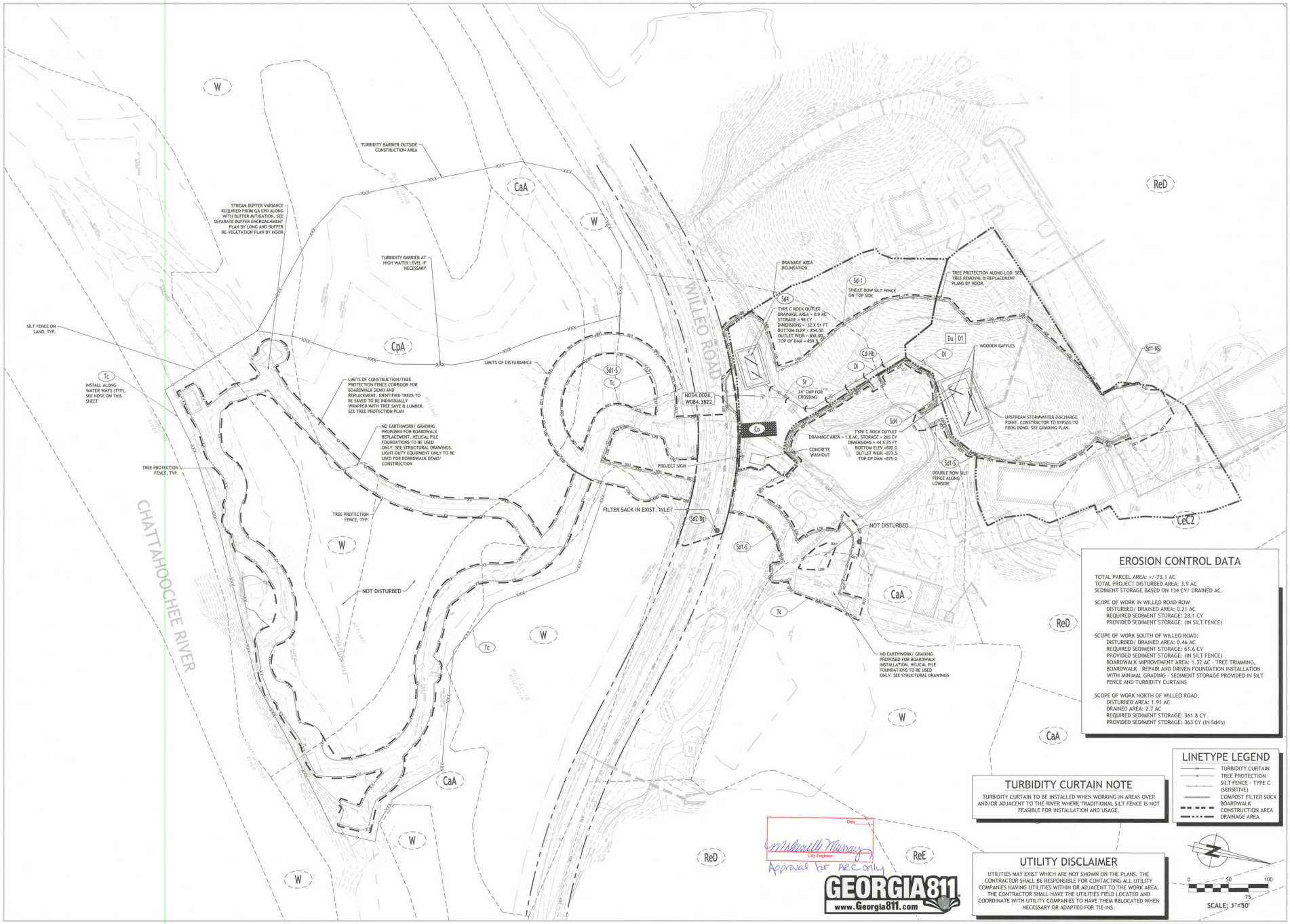
EROSION CONTROL NOTES

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 033671 JOSEPH M. SEVERIN 11-1-19

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET C-7.1

NOT ISSUED FOR CONSTRUCTION



EROSION CONTROL DATA

TOTAL PARCEL AREA: +/-73.1 AC
TOTAL PROJECT DISTURBED AREA: 3.9 AC
SEDIMENT STORAGE BASED ON 134 CY/ DRAINED AC.

SCOPE OF WORK IN WILLEO ROAD ROW
- DISTURBED/ DRAINED AREA: 0.21 AC
- REQUIRED SEDIMENT STORAGE: 28.1 CY
- PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)

SCOPE OF WORK SOUTH OF WILLEO ROAD:
- DISTURBED/ DRAINED AREA: 0.46 AC
- REQUIRED SEDIMENT STORAGE: 61.6 CY
- PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)
- BOARDWALK IMPROVEMENT AREA: 1.32 AC - TREE TRIMMING, BOARDWALK REPAIR AND DRIVEN FOUNDATION INSTALLATION WITH MINIMAL GRADING - SEDIMENT STORAGE PROVIDED IN SILT FENCE AND TURBIDITY CURTAINS

SCOPE OF WORK NORTH OF WILLEO ROAD:
- DISTURBED AREA: 1.91 AC
- DRAINED AREA: 2.7 AC
- REQUIRED SEDIMENT STORAGE: 361.8 CY
- PROVIDED SEDIMENT STORAGE: 363 CY (IN Sd4's)

TURBIDITY CURTAIN NOTE

TURBIDITY CURTAIN TO BE INSTALLED WHEN WORKING IN AREAS OVER AND/OR ADJACENT TO THE RIVER WHERE TRADITIONAL SILT FENCE IS NOT FEASIBLE FOR INSTALLATION AND USAGE.

LINETYPE LEGEND

- TURBIDITY CURTAIN
- TREE PROTECTION
- SILT FENCE - TYPE C (SENSITIVE)
- COMPOST FILTER SOCK
- BOARDWALK
- CONSTRUCTION AREA
- DRAINAGE AREA

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEM RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.

Date
Mikeville Murray
City Engineer
Approval for ARC only

GEORGIA811 www.Georgia811.com

0 50 100
75
SCALE: 1"=50'

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

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ATLANTA, GA 30339
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www.longeng.com

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CITY OF ROSWELL, FULTON COUNTY, GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

EROSION CONTROL PLAN - INITIAL PHASE

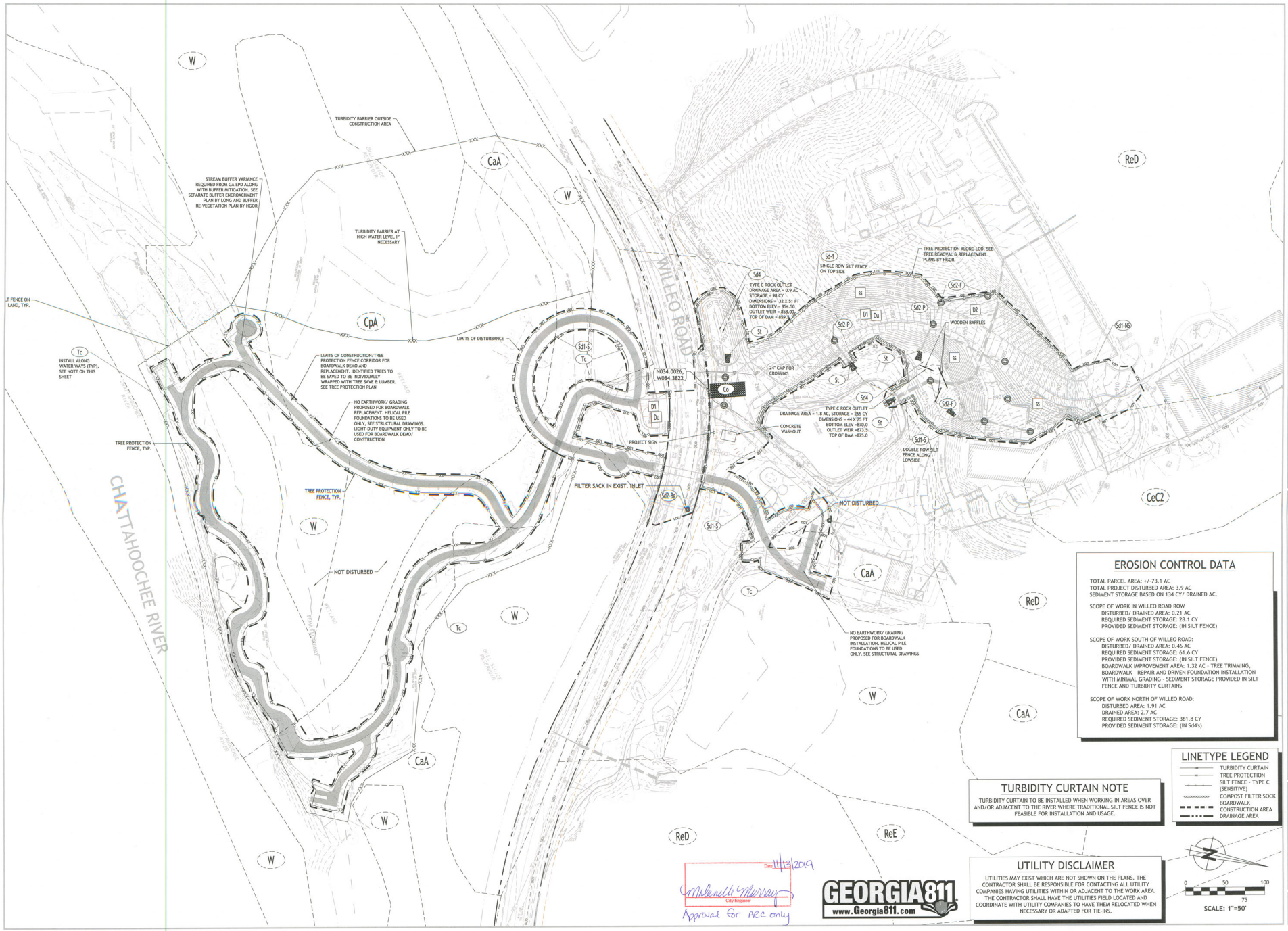
GEORGIA REGISTERED 033671 PROFESSIONAL ENGINEER JOSEPH M. SEVERIN

GSMCC LEVEL II CERT. #54321, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JAC

SHEET C-7.2

NOT ISSUED FOR CONSTRUCTION



EROSION CONTROL DATA

TOTAL PARCEL AREA: +/-73.1 AC
TOTAL PROJECT DISTURBED AREA: 3.9 AC
SEDIMENT STORAGE BASED ON 134 CY/ DRAINED AC.

SCOPE OF WORK IN WILLEO ROAD ROW
DISTURBED/ DRAINED AREA: 0.21 AC
REQUIRED SEDIMENT STORAGE: 28.1 CY
PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)

SCOPE OF WORK SOUTH OF WILLEO ROAD:
DISTURBED/ DRAINED AREA: 0.46 AC
REQUIRED SEDIMENT STORAGE: 61.6 CY
PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)
BOARDWALK IMPROVEMENT AREA: 1.32 AC - TREE TRIMMING, BOARDWALK REPAIR AND DRIVEN FOUNDATION INSTALLATION WITH MINIMAL GRADING - SEDIMENT STORAGE PROVIDED IN SILT FENCE AND TURBIDITY CURTAINS

SCOPE OF WORK NORTH OF WILLEO ROAD:
DISTURBED AREA: 1.91 AC
DRAINED AREA: 2.7 AC
REQUIRED SEDIMENT STORAGE: 361.8 CY
PROVIDED SEDIMENT STORAGE: (IN Sd4's)

LINETYPE LEGEND

- TURBIDITY CURTAIN
- TREE PROTECTION
- SILT FENCE - TYPE C (SENSITIVE)
- COMPOST FILTER SOCK
- BOARDWALK
- CONSTRUCTION AREA
- DRAINAGE AREA

TURBIDITY CURTAIN NOTE

TURBIDITY CURTAIN TO BE INSTALLED WHEN WORKING IN AREAS OVER AND/OR ADJACENT TO THE RIVER WHERE TRADITIONAL SILT FENCE IS NOT FEASIBLE FOR INSTALLATION AND USAGE.

UTILITY DISCLAIMER

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Date 11/13/2019
Millicent Murray
City Engineer
Approval for AEC only

GEORGIA811
www.Georgia811.com

0 50 100
75
SCALE: 1"=50'

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

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CITY OF ROSWELL, FULTON COUNTY
GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

EROSION CONTROL PLAN - INTERMEDIATE PHASE

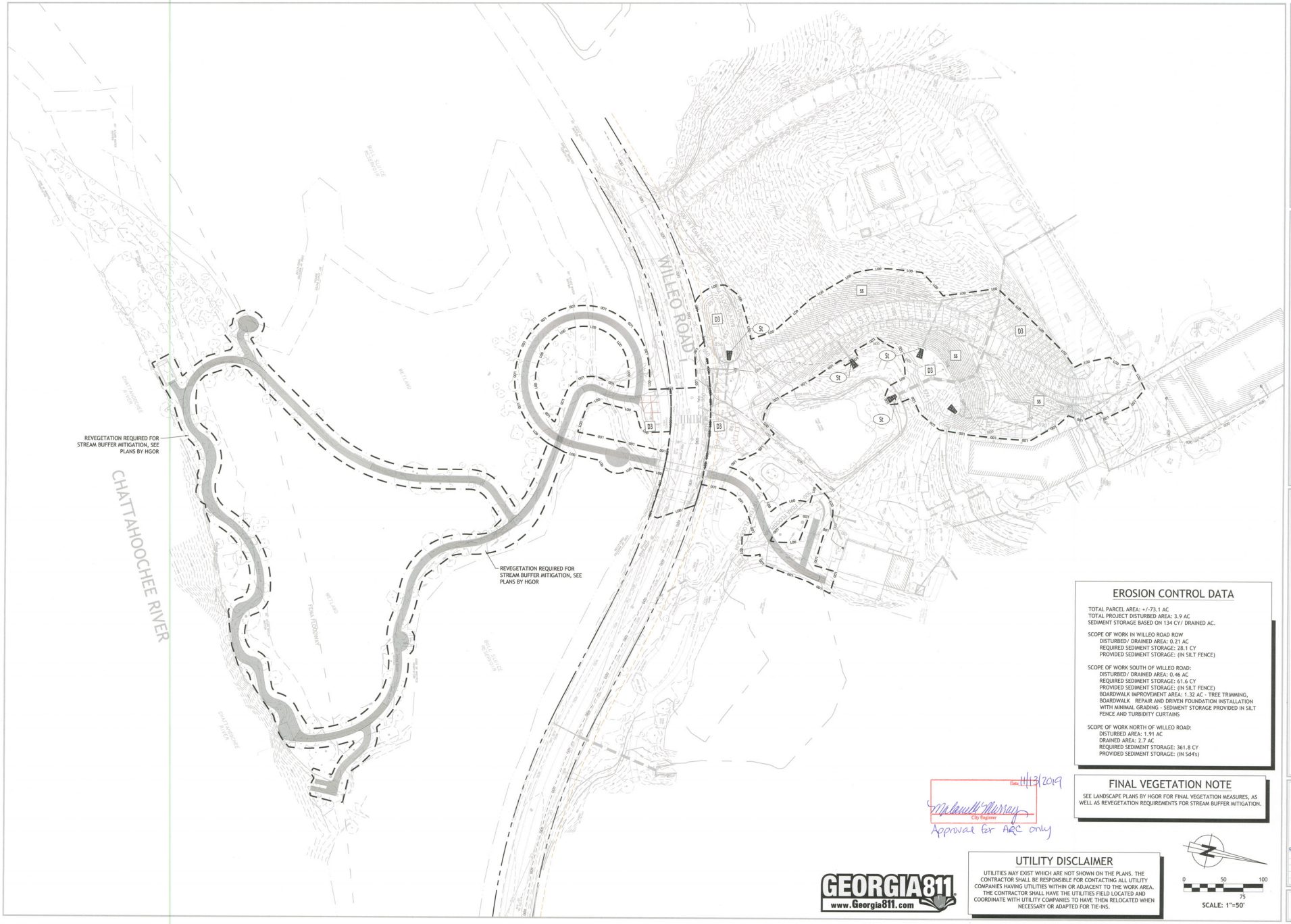
GEORGIA REGISTERED 033671 PROFESSIONAL ENGINEER JOSEPH M. SEVERN

GSWCC LEVEL II CERT. #54321, EXPIRES 03-14-2020

DATE:	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	DC

SHEET
C-7.3

NOT ISSUED FOR CONSTRUCTION



EROSION CONTROL DATA

TOTAL PARCEL AREA: +/-73.1 AC
TOTAL PROJECT DISTURBED AREA: 3.9 AC
SEDIMENT STORAGE BASED ON 134 CY/ DRAINED AC.

SCOPE OF WORK IN WILLEO ROAD ROW
- DISTURBED/ DRAINED AREA: 0.21 AC
- REQUIRED SEDIMENT STORAGE: 28.1 CY
- PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)

SCOPE OF WORK SOUTH OF WILLEO ROAD:
- DISTURBED/ DRAINED AREA: 0.46 AC
- REQUIRED SEDIMENT STORAGE: 61.6 CY
- PROVIDED SEDIMENT STORAGE: (IN SILT FENCE)
- BOARDWALK IMPROVEMENT AREA: 1.32 AC - TREE TRIMMING, BOARDWALK REPAIR AND DRIVEN FOUNDATION INSTALLATION WITH MINIMAL GRADING - SEDIMENT STORAGE PROVIDED IN SILT FENCE AND TURBIDITY CURTAINS

SCOPE OF WORK NORTH OF WILLEO ROAD:
- DISTURBED AREA: 1.91 AC
- DRAINED AREA: 2.7 AC
- REQUIRED SEDIMENT STORAGE: 361.8 CY
- PROVIDED SEDIMENT STORAGE: (IN Sd's)

FINAL VEGETATION NOTE

SEE LANDSCAPE PLANS BY HGOR FOR FINAL VEGETATION MEASURES, AS WELL AS REVEGETATION REQUIREMENTS FOR STREAM BUFFER MITIGATION.

Date 11/13/2019
City Engineer
Approval for ARC only

UTILITY DISCLAIMER

UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEM RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.

GEORGIA811 www.Georgia811.com

0 50 100
75
SCALE: 1"=50'

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

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CITY OF ROSWELL, FULTON COUNTY GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

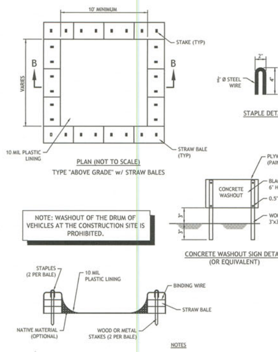
EROSION CONTROL PLAN - FINAL PHASE

GEORGIA REGISTERED No. 033671 PROFESSIONAL ENGINEER JOSEPH M. SEVERIN
GSMCC LEVEL II CERT. #5421, EXPIRES 03-14-2020

DATE:	10.01.2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRB

SHEET
C-7.4

NOT ISSUED FOR CONSTRUCTION

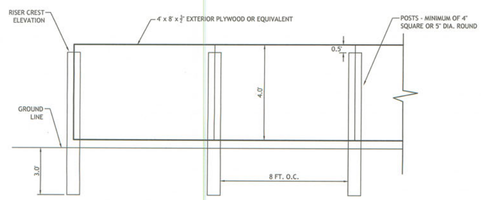


NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CONCRETE WASHOUT

N.T.S.



PLYWOOD BAFFLE WALL DETAIL

N.T.S.

Disturbed Area Stabilization (With Mulching Only) Ds1

DEFINITION

Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE

- To reduce runoff and erosion
- To conserve moisture
- To prevent surface compaction or crusting
- To control undesirable vegetation
- To modify soil temperature
- To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.

Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months.

If any area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. Refer to **Ds2 -Disturbed Area Stabilization (With Temporary Seeding), Ds3 - Disturbed Area Stabilization (With Permanent Seeding), and Ds4 - Disturbed Area Stabilization (With Sodding)**.

SPECIFICATIONS

Mulching Without Seeding

This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation

1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials

Select one of the following materials and apply at the depth indicated:

1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

Applying Mulch

When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.

1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Apply polyethylene film on exposed areas.

Anchoring Mulch

1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.

   Straw or hay mulch spread with special blower-type equipment may be anchored. Tackifers, binders and hydraulic mulch with tackifier specifically desgined for tacking straw can be substituted for emulsified asphalt. Please refer to specification **Tac-Tackifers**. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.

2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.
3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary.

PG 1 PG 2

FOR TEMPORARY PROTECTION OF CRITICAL AREAS WITHOUT SEEDING. THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHICH MAY BE SUBJECTED TO EROSION FOR 6 MONTHS OR LESS, WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT WHICH CAN BE STABILIZED WITH A MULCH COVER.

MATERIALS	RATE	APPLICATION
DRY STRAW OR HAY	2"-4" DEEP	APPLY UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT. ANCHOR HAY DISK HARROW OR PACKER DISK OR WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1)AT A RATE OF 100 GAL. PER 100 GAL. OF WATER FOR EACH TON OF MULCH
WOOD WASTE, CHIPS, SAWDUST OR BARK	2" TO 3" THICK	ANCHOR WITH NETTING OF THE APPROPRIATE SIZE. OPENINGS IN THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS
EROSION CONTROL MATTING OR NETTING	APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS	APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
CUTBACK ASPHALT (SLOW CURING)	1200 GALLONS PER ACRE, OR 1/4 GALLON PER SQUARE YARD	APPLY UNIFORMLY
POLYETHYLENE FILM	SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL	ANCHOR TRENCH AT THE TOP OF SLOPE AS WELL AS INCREMENTALLY AS NECESSARY

MAINTENANCE REQUIREMENTS:
INSPECT ALL MULCHED AREAS ON A DAILY BASIS AND AFTER EACH RAINFALL EVENT, REGRADE ERODED AREAS AND REMULCH AREAS IN WHICH THE COVER IS NO LONGER GREATER THAN 90% CONTINUOUS.

Ds1 TEMPORARY MULCHING (49)

REFER TO THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR FURTHER DETAILS AND SPECIFICATIONS.

GEORGIA UNIFORM CODING SYSTEM FOR SOIL EROSION AND SEDIMENT CONTROL 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		(label)	A crushed stone pad located at the construction exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, sub- division 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 stucture 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		(label)	A flexible conduit of heavy-duty fabric or other ma- terial designed to safely conduct surface runoff down a slope. Temporary. and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE		(label)	A paved chute, sectional conduit, pipe or similar material designed to designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			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		(label)	Permanent structures installed to protect natural or artificial channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of waters into 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		(label)	A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETROFITTING		(label)	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		type (indicate type)	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, gravel or a sediment fence.
Sd2	SEDIMENT TRAP, TEMPORARY			An impounding area created by excavating around a storm drain inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	SEDIMENT BASIN, TEMPORARY			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarly stored allowing the bulk of the sediment to drop out.
Sd4	SEDIMENT TRAP, TEMPORARY			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		(label)	A buoyant device that releases/ drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	STEP BERM		(label)	A linear control device constructed as a diversion perpendicular to the direction of the runoff to enhance dissipation and infiltration of runoff, while creating multiple sedimentation chambers with the employment of intermediate dikes.
Sr	TEMPORARY STREAM CROSSING		(label)	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN INLET/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 ROUGHING			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		(show stripping & storage areas)	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		(denote tree centers)	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 MEASURES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE		Bf	An undisturbed natural "green belt" separating the land-disturbing site from surrounding property and bordering streams. It serves to reduce water velocity and remove some sediment. It is also at times a noise or 'vision pollution' barrier.
Cs	COASTAL DUNE STABILIZATION		Cs	Planting vegetation on dunes that are denuded, artificially constructed, or re-nourished. retarding cover.
Ds1	DISTURBED AREA STABILIZATION (w/MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedings may not have a suitable growing season to produce an erosion.
Ds2	DISTURBED AREA STABILIZATION (w/TEMPORARY SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (w/PERMANENT SEEDING)		Ds3	Establishing permanent vegetative cover such as trees, shrubs, vines, sod, grasses or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (WITH SODDING)		Ds4	A permanent vegetative cover using sods on highly erodible 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	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (WITH PERMANENT 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 causing the organic material to bind together.

Dust Control on Disturbed Areas Du

DEFINITION

Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE

- To prevent surface and air movement of dust from exposed soil surfaces.
- To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

CONDITIONS

This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS

A. Temporary Methods

Mulches. See standard **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification **Tac - Tackifiers**. Resins such as Curasol or Terratack should be used according to manufacturer's recommendations.

Vegetative Cover. See specification **Ds2 - Disturbed Area Stabilization (With Temporary Seeding)**.

Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification **Tac - Tackifiers**.

Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure which should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.

Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

Calcium Chloride. Apply at rate that will keep surface moist. May need retreatment.

B. Permanent Methods

Permanent Vegetation. See specification **Ds3 -Disturbed Area Stabilization (With Permanent Vegetation)**. Existing trees and large shrubs may afford valuable protection if left in place.

Topsoiling. This entails covering the surface with less erosive soil material. See specification **Tp - Topsoiling**.

Stone. Cover surface with crushed stone or coarse gravel. See specification **Cr-Construction Road Stabilization**.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CROPS 1/

SPECIES	BROADCAST RATES 2/ - PLS 3/ PER ACRE	PER 1000 S.F.	RESOURCE AREA 4/	REMARKS
BARLEY (Hordeum vulgare) ALONE / IN MIXTURES	144 LBS. / 24 LBS.	3.3 LBS. / 0.6 LBS.	M-L, P, C	14,000 SEED PER POUND WINTERHARDY. USE ON PRODUCTIVE SOILS.
LESPEDEZA, ANNUAL (Lespedeza striata) ALONE / IN MIXTURES	40 LBS. / 10 LBS.	0.9 LBS. / 0.2 LBS.	M-L, P, C	200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULANT EL.
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE / IN MIXTURES	4 LBS. / 2 LBS.	0.1 LBS. / 0.05 LBS.	M-L, P, C	1,500,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA
MILLET, BROWNTOP (Panicum fasciculatum) ALONE / IN MIXTURES	40 LBS. / 10 LBS.	0.9 LBS. / 0.2 LBS.	M-L, P, C	137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.
MILLET, PEARL (Pennesetum glaucum) ALONE	50 LBS.	1.1 LBS.	M-L, P, C	88,000 SEED PER POUND. QUICK, DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
OATS (Avena sativa) ALONE / IN MIXTURES	128 LBS. / 32 LBS.	2.9 LBS. / 0.7 LBS.	M-L, P, C	13,000 SEED PER POUND. USE ON PRODUCTIVE SOILS. NOT AS WINTERHARDY AS RYE OR BARLEY.
RYE (Secale cereale) ALONE / IN MIXTURES	168 LBS. / 28 LBS.	3.9 LBS. / 0.6 LBS.	M-L, P, C	18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTERHARDY.
RYEGRASS, ANNUAL (Lolium temulentum) ALONE	40 LBS.	0.9 LBS.	M-L, P, C	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.
SUDANGRASS (Sorghum sudanese) ALONE	60 LBS.	1.4 LBS.	M-L, P, C	55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMENDED FOR MIXTURES.
TRITICALE (X-Triticosecale) ALONE / IN MIXTURES	144 LBS. / 24 LBS.	3.3 LBS. / 0.6 LBS.	C	USE ON LOWER PART OF SOUTHERN COASTAL PLAIN AND IN ATLANTIC COASTAL FLATWOODS ONLY.
WHEAT (Triticum aestivum) ALONE / IN MIXTURES	180 LBS. / 30 LBS.	4.1 LBS. / 0.7 LBS.	M-L, P, C	15,000 SEED PER POUND. WINTERHARDY.

PLANTING DATES: J F M A M J J A S O N D

1/ TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWN OUT PERENNIALS IF SEEDED TOO HEAVILY.
2/ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3/ PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
4/ M-L REPRESENTS THE MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS MLRA'S
P REPRESENTS THE SOUTHERN PIEDMONT MLRA
C REPRESENTS THE SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs

NOTES:

1. APPLY TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE.
2. IF DISTURBED AREAS ARE TO BE LEFT UNDISTURBED FOR LESS THAN 6 MONTHS USE TEMPORARY GRASSING, OTHERWISE USE PERMANENT GRASSING.
3. SOIL TO RECEIVE GRASSING IS TO BE SCARIFIED TO PROVIDE A PLACE FOR THE SEED TO LODGE AND GERMINATE.
4. APPLY AGRICULTURAL LIME AT A RATE OF ONE TON PER ACRE.
5. FOR LOW FERTILITY SOILS, APPLY 500-700 LBS. OF 10-10-10 FERTILIZER PER ACRE. APPLY BEFORE LAND PREPARATION AND INCORPORATE WITH A DISK, RIPPER OR CHISEL.
6. APPLY SEED BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER-SEEDER OR HYDRAULIC SEEDER. RAKE SOIL LIGHTLY TO COVER SEED WHEN APPLIED BY HAND.
7. PROVIDE WATER AS REQUIRED TO GERMINATE AND MAINTAIN A HEALTHY, THICK COVER OF GRASS.

MAINTENANCE REQUIREMENTS:

INSPECT ALL AREAS WHERE TEMPORARY GRASSING HAS BEEN APPLIED. WHERE COVER IS SPARSE, SCARIFY THE AREA, TEST SOIL FERTILITY, APPLY FERTILIZER AS NECESSARY AND RESEED. WHERE EROSION HAS OCCURRED, REGRADE PRIOR TO ABOVE STEPS.

Ds2 TEMPORARY GRASSING (49)

REFER TO THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR FURTHER DETAILS AND SPECIFICATIONS.

Disturbed Area Stabilization (With Temporary Seeding) Ds2

DEFINITION

The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

PURPOSE

- To reduce runoff and sediment damage of down stream resources
- To protect the soil surface from erosion
- To improve wildlife habitat
- To improve aesthetics
- To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to six months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding).**

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping

Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation

When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer

Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to determine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

Seeding

Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See Table 6-4.1

Mulching

Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only)**.

Irrigation

During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

PG 1 PG 2

Date 11/13/2019
City Engineer
Approval for ARC only

REVISIONS			
REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

LONG ENGINEERING
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

CHATTAHOOCHEE NATURE CENTER
SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

EROSION & SEDIMENT CONTROL DETAILS

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 033671 JOSEPH M. SEVERIN 11-1-19

GSWCC LEVEL II CERT. #54321, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET C-8.0

NOT ISSUED FOR CONSTRUCTION

Disturbed Area Stabilization (With Permanent Vegetation) Ds3

DEFINITION

The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization. Permanent perennial vegetation shall be used to achieve final stabilization.

PURPOSE

- To protect the soil surface from erosion
- To reduce damage from sediment and runoff to down-stream areas
- To improve wildlife habitat and visual resources
- To improve aesthetics

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. **Final Stabilization** means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformlycovered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures. Permanent vegetation shall consist of, planted trees, shrubs, perennial vines; or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

1. Use conventional planting methods where possible.
2. When mixed plantings are done during marginal planting periods, companion crops shall be used.
3. No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.
4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification **Ds4-Disturbed Area Stabilization (With Sodding)**.
5. Irrigation should be used when the soil is dry or when summer plantings are done.
6. Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
7. Mowing should not be performed during the quail nesting season (May to September).
8. Wildlife plantings should be included in critical area plantings.

Wildlife Plantings

Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees

Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.

All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees

Bayberry, Bicolor Lespedeza, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.

Plant in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for lespedeza which produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover

Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.

Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping

Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment.

When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation.

Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.

Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve.

Fast-acting lime spread by hydraulic seeding equipment should be "finely ground limestone" spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95 percent of the material will pass through a 100-mesh sieve.

It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1)

Agricultural lime is generally not required where only trees are planted.

Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application

When *hydraulic seeding* equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder.

Finely ground limestone can be applied in the mulch slurry or in combination with the top dressing.

When *conventional planting* is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:

1. Apply before land preparation so that it will be mixed with the soil during seedbed preparation.
2. Mix with the soil used to fill the holes, distribute in furrows.
3. Broadcast after steep surfaces are scarified, pitted or trenched.
4. A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling.

Plant Selection

Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used.

Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user.

Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass.

Other perennials, such as Bahia Grass and Sericea Lespedeza, are slow to become established and should be planted with another perennial species. The additional species will provide quick cover and ample soil protection until the target perennial species become established. For example, Common seeding combinations are 1) Weeping Lovegrass with Sericea Lespedeza (scarified) and 2) Tall Fescue with Sericea Lespedeza (unscarified).

Plant selection may also include annual companion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species.

Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.

Seed Quality

The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percentage of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is determined by multiplying the percent of pure seed with the percent of germination; i.e.,

(PLS = % germination x % purity)

EXAMPLE:

Common Bermuda seed
70% germination, 80% purity

PLS = 70% germination x 80% purity

PLS = 56%

The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:

$\frac{10 \text{ lbs. PLS/acre}}{56\% \text{ PLS}} = 17.9 \text{ lbs/acre}$

You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation

Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings

1. Tillage, at a minimum, shall adequately

loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.

2. Tillage may be done with any suitable equipment.
3. Tillage should be done on the contour where feasible.
4. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
3. Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Innoculants

All legume seed shall be inoculated with appropriate nitrogen-fixing bacteria. The innoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container.

A mixing medium recommended by the manufacturer shall be used to bond the innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant recommended by the manufacturer shall be used.

All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting

Hydraulic Seeding

Mix the seed (innoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding

Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding

No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants

Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots.

Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface.

Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

Mulching

Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% to 100% soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:

1. *Dry straw* or *dry hay* of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
2. *Wood cellulose mulch* or *wood pulp fiber* shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
3. One thousand pounds of *wood cellulose* or *wood pulp fiber*, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
4. *Sericea Lespedeza* hay containing mature seed shall be applied at a rate of three tons per acre.
5. *Pine straw* or *pine bark* shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
6. When using temporary erosion control blankets or block sod, mulch is not required.
7. *Bituminous treated roving* may be applied on planted areas, slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications.

Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch

Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface.

Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch

Anchor straw or hay mulch immediately after application by one of the following methods:

1. *Hay and straw* mulch shall be pressed into the soil immediately after the mulch is spread. A special "packer disk" or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
2. *Synthetic tackifiers, binders or hydraulic mulch specifically designed to tack straw*, shall be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers shall be mixed and applied according to manufacturer's specifications. All tackifiers, binders or hydraulic mulch specifically designed to tack straw should be verified nontoxic through EPA 2021.0 testing. Refer to **Tackifiers-Tac**
3. *Rye or wheat* can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one-half bushel per acre.
4. *Plastic mesh or netting* with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material

Mulch is used as a bedding material to conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material	Depth
Grain straw	4" to 6"
Grass Hay	4" to 6"
Pine needles	3" to 5"
Wood waste	4" to 6"

Irrigation

Irrigation will be applied at a rate that will not cause runoff..

Topdressing

Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization

Second year fertilizer rates and maintenance fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application

Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements. if desired.

Use and Management

Mow Sericea Lespedeza only after frost to ensure that the seeds are mature. Mow between November and March.

Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6 inches of top growth under any use and management. Moderate use of top growth is beneficial after establishment.

Exclude traffic until the plants are well established. Because of the quail nesting season, mowing should not take place between May and September.

PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 S.F.	RESOURCE AREA 3/	PLANTING DATES (J F M A M J J A S O N D)	REMARKS
BAHIA, PENSACOLA (Paspalum notatum) ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	 60 LBS. 30 LBS.	 1.4 LBS. 0.7 LBS.	P C		166,000 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLANT WITH A COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERICEA LESPEDEZA OR WEEPING LOVEGRASS.
BAHIA, WILMINGTON (Paspalum notatum) ALONE OR W/ TEMPORARY COVER WITH OTHER PERENNIALS	 60 LBS. 30 LBS.	 1.4 LBS. 0.7 LBS.	M-L P		166,000 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLANT WITH A COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERICEA LESPEDEZA OR WEEPING LOVEGRASS.
BERMUDA, COMMON (Cynodon dactylon) HULLED SEED ALONE WITH OTHER PERENNIALS	 10 LBS. 6 LBS.	 0.2 LBS. 0.1 LBS.	P C		1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON (Cynodon dactylon) UNHULLED SEED W/ TEMP COVER WITH OTHER PERENNIALS	 10 LBS. 6 LBS.	 0.2 LBS. 0.1 LBS.	P C		PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA SPRIGS (Cynodon dactylon) COASTAL, COMMON, MIDLAND, OR TIFT 44 COASTAL, COMMON, OR TIFT 44 TIFT 78	40 C.F. OR SOD PLUGS 3' x 3'	0.9 C.F.	M-L P C C		A CUBIC FOOT CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 CUBIC FEET OR APPROXIMATELY 800 SPRIGS. SAME AS ABOVE. SOUTHERN COASTAL PLAIN ONLY.
CENTIPEDE (Eremochloa ophiuroides)	BLOCK SOD ONLY		P C		DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENT TO CONC. AND IN CONCENTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTERHARDY AS FAR NORTH AS ATHENS AND ATLANTA.
CROWNVETECH (Coronilla varia) WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LBS.	M-L P		100,000 SEED PER POUND. DENSE GROWTH. ATTRACTIVE ROSE, PINK, AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX W/ 30 LBS. OF TALL FESCUE OR 15 LBS. OF RYE. INOCULATE SEED WITH M INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD.
FESCUE, TALL (Festuca arundinacea) ALONE W/ OTHER PERENNIALS	 50 LBS. 30 LBS.	 1.1 LBS. 0.7 LBS.	M-L P		227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOPDRESSING IN SPRING FOLLOWING FALL PLANTING NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumont] G. Don) SCARIFIED UNSCARIFIED	 60 LBS. 75 LBS.	 1.4 LBS. 1.7 LBS.	M-L P C M-L P C		300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18 TO 24 INCHES. ADVANTAGES IN URBAN AREAS. SPREADING-TYPE GROWTH. NEW GROWTH HAS BRONZE COLORATION. MIX W/ WEEPING LOVEGRASS, COMMON BERMUDA BAHIA, TALL FESCUE, OR WINTER ANNUALS. DO NOT MIX W. SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS. INOCULATE SEED W/ EL INOCULANT.

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 S.F.	RESOURCE AREA 3/	PLANTING DATES (J F M A M J J A S O N D)	REMARKS
LESPEDEZA, SERICEA (Lespedeza cuneata) SCARIFIED	60 LBS.	1.4 LBS.	M-L P C		350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROADBANKS. INOCULATE SEED W/ EL INOCULANT.
UNSCARIFIED	75 LBS.	1.7 LBS.	M-L P C		MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED-BEARING HAY	3 TONS	138 LBS.	M-L P C		CUT WHEN SEED IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA, SHRUB (Lespedeza bicolor) (Lespedeza thunbergii) PLANTS	3' x 3'		M-L P C		PROVIDE WILDLIFE FOOD AND COVER.
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE W/ OTHER PERENNIALS	 4 LBS. 2 LBS.	 0.1 LBS. 0.05 LBS.	M-L P C		1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROADBANKS.
MAIDENCANE (Panicum hemitomon) SPRIGS WITH OTHER PERENNIALS	2' x 3' SPACING		ALL		FOR VERY WET SITES. MAY CLOG CHANNELS. DIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVER BANKS AND SHORELINES.
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 LBS.	0.5 LBS.	P C		GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS, AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.
REED CANARY GRASS (Phalaris arundinancea) ALONE WITH OTHER PERENNIALS	 50 LBS. 30 LBS.	 1.1 LBS. 0.7 LBS.	M-L P		GROWS SIMILAR TO TALL FESCUE.
SUNFLOWER, 'AZTEC' MAXIMILLIAN (Helianthus maximiliani)	10 LBS.	0.2 LBS.	M-L P C		227,000 SEED PER POUND. MIX WITH WEEPING LOVEGRASS OR OTHER LOW-GROWING GRASSES OR LEGUMES.

SOLID LINES INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.

1/ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
2/ PLS IS AN ABBREVIATION FOR PURE LIVE SEED. REFER TO SECTION V.E. OF THESE SPECIFICATIONS.
3/ M-L REPRESENTS THE MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS MLRA'S
P REPRESENTS THE SOUTHERN PIEDMONT MLRA
C REPRESENTS THE SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs

SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ - 30
COOL SEASON GRASSES AND LEGUMES		6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ - -
GROUND COVERS		10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	- - -
PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	-
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

NOTES:

1. PERMANENT GRASSING SHALL BE APPLIED TO GRADED AREAS THAT WILL BE UNDISTURBED FOR MORE THAN 6 MONTHS.
2. APPLY TO ALL AREAS IMMEDIATELY AFTER THEY HAVE REACHED FINAL GRADE.
3. APPLY AGRICULTURAL LIME AT A RATE OF 1-2 TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE.
4. RYE GRASS SHALL NOT BE USED IN ANY SEEDING MIXTURE CONTAINING PERENNIAL SPECIES DUE TO ITS ABILITY TO OUT-COMPETE DESIRED SPECIES CHOSEN FOR PERMANENT PERENNIAL COVER.
5. FOR HYDRAULIC SEEDING, MIX SEED, FERTILIZER AND WOOD CELLULOSE OR WOOD PULP FIBER WITH WATER AND APPLY IN SLURRY UNIFORMLY OVER THE TREATED AREA. APPLY WITHIN 1 HOUR OF MIXING. MULCH IS TO BE APPLIED AT A RATE OF 400 LBS. PER ACRE.
6. FOR CONVENTIONAL SEEDING USE A CULTIPACKER-SEEDER, DRILL, ROTARY SEEDER, OTHER MECHANICAL SEEDER OR HAND SEED UNIFORMLY OVER THE TREATED AREA. LIGHTLY COVER THE SEED WITH 1/8" TO 1/4" OF SOIL. PROVIDE TEMPORARY MULCHING WITHIN 24 HOURS OF SPREADING SEED. MULCH SHALL COVER 75% OF THE SOIL SURFACE.

MAINTENANCE REQUIREMENTS:

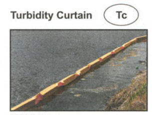
PROVIDE PERIODIC INSPECTIONS AND AFTER EACH RAINFALL EVENT AND REGRASS AREAS THAT ARE BARE OR HAVE ERODED. EXCLUDE TRAFFIC ON GRASSED AREAS UNTIL GRASS IS ESTABLISHED. MOW AS REQUIRED.

Ds3 PERMANENT GRASSING (49)

REFER TO THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" FOR FURTHER DETAILS AND SPECIFICATIONS.

Date 11/13/2019
Melanie Murray
City Engineer
Approval for ARC only

Turbidity Curtain (Tc)



DEFINITION

A floating or staked barrier installed within the water. (It may also be referred to as a floating boom, silt barrier or silt curtain).

PURPOSE

Turbidity curtains are installed to minimize turbidity and silt migration from work occurring within the water or as a supplement to perimeter control BMPs at the water's edge. Silt or turbidity is confined to the area within the boundary created by the installation, such that suspended particles drop out of the water column over time.

CONDITIONS

By its nature, a turbidity curtain encourages a controlled deposition of silt or sediment. A turbidity curtain is only allowed as a primary device when required permitting has been obtained for the site that approves the filling of State or U.S. waters. The unauthorized storing of sediment in waters of the State is strictly prohibited.

The installation of a Tc as a supplemental BMP that in no way represents perimeter control, is allowed provided the stream, river or "water" substrate or bottom will not be altered in any manner by the installation.

The owner, operator and design professional are cautioned that State or LIA water buffer and variance requirements may apply to bank and shoreline installations.

PLANNING CONSIDERATIONS

Careful assessment of the depth, flow or current of water and nature of construction is needed in order to determine if floating or staked installations are warranted.

DESIGN CRITERIA

Formal design is not required but the following guidelines have been established:

Depending upon the installation conditions (see Construction Specifications), curtain material may be comprised of suitable impermeable materials such as heavy polyethylene film, or suitable permeable materials such as canvas duck.

Floating Turbidity Curtains Tc-F (Tc-F)

Typical installations include large bodies of water such as rivers and lakes.

Staked Turbidity Curtains Tc-S (Tc-S)

Typical installations include shallow inundations where construction is required. It may be used to protect a small stream while it is being realigned or restored. In this case the barrier should extend to the bottom of the streambed. The height should be limited to 5 feet whenever possible and extend 2 feet above the normal water elevation.

CONSTRUCTION SPECIFICATIONS

Whenever possible, place barrier approximately 25 feet outside of the affected construction area for large water bodies. Installations less than 25 feet from the work are allowed, however narrower confinements promote proportionate sedimentation. Curtain depth should reach a depth within 5 feet of the bottom for floating installations. If the body of water has significant velocity or current, place the barrier parallel to the flow and ensure the curtain is permeable.

In smaller streams the barrier should be placed close to the construction area.

Installation dimensions and methods shall be fitted to the conditions, permitted activity and construction methods. **In no instance shall the silt dispersion exceed the allowances the filling permit has authorized.** The permittee is reminded to be a good steward of our resources by minimizing the migration and sedimentation regardless of permits obtained.

GSWCC (Amended - 2013)

Barriers shall be either staked or floating depending upon current, tides, water depth and other variables. When staked barriers are used in stream relocations or widening, the curtain shall be permeable, weighted at the bottom and not be trenched in.

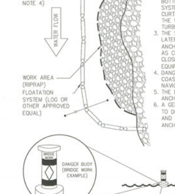
MAINTENANCE

For installations that permit the placement of fill within the water body, maintenance consists of removing the Turbidity Curtain when it is no longer required. If the deposition exceeds the allowances of the filling permit, careful removal of the sediment is required and shall be performed in a manner that is consistent with all other applicable permits.

If the installation is made as a supplemental BMP, the Tc should be removed after final stabilization of the contributing drainage area and perimeter control removal has occurred.

TURBIDITY CURTAIN SYSTEM

ANCHOR SYSTEM AND LAYOUT DETAILS



NOTES:

1. SILT CURTAINS SHOULD BE ORIENTED PARALLEL TO THE DIRECTION OF FLOW.
2. FOR SITES NOT SUBJECT TO HEAVY WAVE ACTION, THE CURTAIN HEIGHT SHALL PROVIDE SUFFICIENT SLACK TO ALLOW THE TOP OF THE CURTAIN TO RISE TO THE MAXIMUM EXPECTED HIGH-WATER LEVEL (INCLUDING WAVES) WHILE THE BOTTOM MAINTAINS CONTINUOUS CONTACT WITH THE BOTTOM OF THE WATER BODY. THE BOTTOM EDGE OF THE CURTAIN SHALL HAVE A WEIGHT SYSTEM CAPABLE OF HOLDING THE BOTTOM OF THE CURTAIN DOWN AND CONFORMING TO THE BOTTOM OF THE WATER BODY, SO AS TO PROHIBIT ESCAPE OF TURBID WATER UNDER THE CURTAIN.
3. THE SILT CURTAIN SHALL BE LOCATED BEYOND THE LATERAL LIMITS OF THE CONSTRUCTION SITE AND FIRMLY ANCHORED INTO PLACE (THE ALIGNMENT SHOULD BE SET AS CLOSE TO THE WORK AREA AS POSSIBLE BUT NO SO CLOSE AS TO BE DISRUPTED BY CONSTRUCTION EQUIPMENT).
4. DANGER BUOYS SHALL BE USED AS DIRECTED BY THE COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERS.
5. THE ENDS OF THE SILT CURTAIN SHALL BE SECURELY ANCHORED AND KEYED IN ORDER TO ENCLOSE AREA.
6. A GENERAL RULE OF THUMB FOR ATTACHING ANCHORS IS TO DO SO AT 100' INTERVALS (DEPENDING ON CURRENT AND TIDAL CONDITIONS, IT MAY BE NECESSARY TO ANCHOR THE BARRIER ON BOTH SIDES-AS SHOWN).

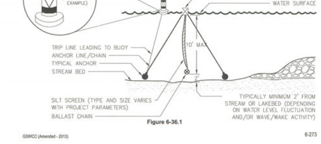


Figure 6-36.1

GSWCC (Amended - 2013)

REVISIONS

REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

LONG ENGINEERING
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

CHATTAHOOCHEE NATURE CENTER

SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

EROSION & SEDIMENT CONTROL DETAILS

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 033671 JOSEPH M. SEVERIN 11-1-19

GSWCC LEVEL II CERT. #54321, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET **C-8.1**

NOT ISSUED FOR CONSTRUCTION

Inlet Sediment Trap (Sd2)

DEFINITION
A temporary protective device formed at or around an inlet to a storm drain to trap sediment.

PURPOSE
To prevent sediment from entering a storm drainage systems prior to permanent stabilization of the disturbed area draining to the inlet.

CONDITIONS
All storm drain drop inlets that receive runoff from disturbed areas.

DESIGN CRITERIA
Through testing there are two different categories (high retention and high flow) supported. In areas where BMPs are being used on paved surfaces, or safety is a concern, the potentially negative effects of ponding should be taken into account. In such cases, a high flow BMP is preferred.

On unpaved areas where ponding will not cause a safety hazard, high retention shall be taken into account. If high retention is not used in this situation a rationale shall be given on the plan and an unpaved application should apply.

Sediment traps must be self-draining unless they are otherwise protected in an approved fashion that will not present a safety hazard. The drainage area entering the inlet sediment trap shall be no greater than one acre.

If runoff may bypass the protected inlet, a temporary dike should be constructed on the down slope side of the structure. Also, a stone filter ring may be used on the up slope side of the inlet to slow runoff and filter larger soil particles. Refer to **Fr-Stone Filter Ring**.

CONSTRUCTION SPECIFICATIONS
Excavated Inlet Sediment Trap
An excavation may be created around the inlet sediment trap to provide additional sediment storage. The trap shall be sized to provide a minimum storage capacity calculated at the rate of 67 cubic yards per acre of drainage area. A minimum depth of 1.5 feet for sediment storage should be provided. Side slopes shall not be steeper than 2:1.

Sediment traps may be constructed on natural ground surface, on an excavated surface, or on machine compacted fill, provided they have a non-erodible outlet.

Filter Fabric with Supporting Frame (Sd2-F)

This method of inlet protection is applicable where the inlet drains a relatively flat area (slope no greater than 5%) and shall not apply to inlets receiving concentrated flows, such as in street or highway medians. As shown in Figure 6-28.1, Type S silt fence supported by steel posts should be used. The stakes shall be spaced evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be 36 inches tall and entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely fastened to the posts, and fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric barrier around the inlet.

Baffle Box (Sd2-B)

For inlets receiving runoff with a higher volume or velocity, a baffle box inlet sediment trap should be used. As shown in Figure 6-28.2, the baffle box shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter. The weep holes shall be placed approximately 6 inches on center vertically and horizontally. Gravel shall be placed outside the box, all around the inlet, to a depth of 2 to 4 inches. The entire box is wrapped

in Type C filter fabric that shall be entrenched 12 inches and backfilled.

Block and Gravel Drop Inlet Protection (Sd2-Bg)

This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure. As shown in Figure 6-28.3, one block is placed on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. The bottom row of blocks is placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings. Hardware cloth or comparable wire mesh with 1/2 inch openings shall be fitted over all block openings to hold gravel in place. Clean gravel should be placed 2 inches below the top of the block on a 2:1 slope or flatter and smoothed to an even grade. DOT #57 washed stone is recommended.

Gravel drop Inlet Protection (Sd2-G)

This method of inlet protection is applicable where heavy concentrated flows are expected. As shown in Figure 6-28.4, stone and gravel are used to trap sediment. The slope toward the inlet shall be no steeper than 3:1. A minimum 1 foot wide level stone area shall be left between the structure and around the inlet to prevent gravel from entering the inlet. On the slope toward the inlet, stone 3 inches in diameter and larger should be used. On the slope away from the inlet, 1/2 to 3/4 inch gravel (#57 washed stone) should be used at a minimum thickness of 1 foot.

Sod Inlet Protection (Sd2-S)

This method of inlet protection is applicable only at the time of permanent seeding, to protect the inlet from sediment and mulch material until permanent vegetation has become established. As shown in Figure 6-28.5, the sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.

Curb Inlet Protection (Sd2-P)

Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. This method of inlet protection shall be removed if a safety hazard is created.

One method of curb inlet protection uses "pigs-in-a-blanket"- 8-inch concrete blocks wrapped in filter fabric. See Figure 6-28.6. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.

A gap of approximately 4 inches shall be left between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition. Several other methods are available to prevent the entry of sediment into storm drain inlets.

Figure 6-28.7 shows one of these alternative methods.

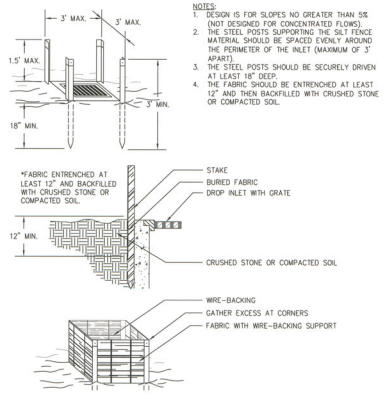
MAINTENANCE
The trap shall be inspected daily and after each rain, and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap. Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod Inlet protection shall be maintained as specified in **Ds4 - Disturbed Area Stabilization (With Sodding).**

Sediment shall not be washed into the inlet. It shall be removed from the sediment trap, disposed of and stabilized so that it will not enter the inlet again.

When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION (Sd2-F)

STEEL FRAME AND TYPE C SILT FENCE INSTALLATION



NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

Figure 6-28.1 - Fabric and Supporting Frame For Inlet Projection

Temporary Sediment Trap (Sd4)

DEFINITION
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.

PURPOSE
To collect and store sediment from uphill sites cleared and or graded during construction. Intended for use on small tributary areas with no unusual drainage features. Effective against coarse sediment, but not against silt or clay particles that remain suspended.

CONDITIONS
Temporary sediment traps are constructed early in the construction process at locations that will require minimal clearing and grading. Natural draws or swells are favorable locations to build the traps. They should be easily accessible for frequent maintenance and inspections. Temporary sediment traps shall never be placed in live streams.

DESIGN CRITERIA
Design and construction shall comply with laws, ordinances, rules and regulations on the local, state and federal level.

The total drainage area of a temporary sediment trap is up to 5 acres, depending on type of construction.

The height of a temporary sediment trap embankment shall not exceed 5.5 feet as measured from the downstream toe of slope to the top of the berm. Top width of an embankment shall be at least as wide as the height of the sediment trap embankment, with a minimum width of 3 feet.

Maximum pond depth of a sediment trap is 4 feet as measured from the bottom of the trap to the invert of the emergency spillway. Slopes shall not exceed 2:1 (H:V) for excavated areas and for compacted embankments. Side slopes should be (3:1) or flatter allowing people and equipment to safely negotiate slopes or to enter the sediment trap.

The length to width ratio must be greater than (2:1) (L:W) for the principal flowpaths in order to maximize residence time of stormwater within the sediment trap. Baffles may be required to prevent short-circuiting of the flow.

A typical baffle design uses 4'x8' sheets of exterior grade plywood 1/2 inch thick, mounted on 4"x4" hardwood posts.

Volume
Minimum volume of a temporary sediment trap shall be 67 cubic yards per acre for the total drainage area. The volume shall be measured at an elevation equivalent to the spillway invert.

Volume of a temporary sediment trap in heavily disturbed areas should be 134 cubic yards per acre for the total drainage area. This includes an upper area with a minimum of 67 cubic yards per acre drained, which is dewatered using one of the outlet design methods provided, and a lower wet zone for sediment storage and settling.

The volume should be calculated from existing and proposed contours, or by measured cross sections. An approximate method for calculating the volume of traps using a natural draw is:

V = 0.4 x A x D
V = Sediment storage volume (below invert of emergency spillway)
A = Surface area (at level of emerency spillway)
D = Maximum depth (from emergency spillway invert)

The cleanout volume for a temporary sediment trap is 1/3 of the total storage volume. Cleanout volume shall be calculated and marked with a stake at the outlet of the trap.

Rock Outlet (Sd4-C)
The rock outlet relies on filtering through layers of aggregate, rock or riprap material to dewater the sediment trap. It is the sturdiest of the sediment trap designs and generally requires less maintenance. It can be used for drainage area up to 5 acres and has a life span of 1 year. See Figure 6-30.3

Temporary Sediment Trap (Sd4)

DEFINITION
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.

PURPOSE
To collect and store sediment from uphill sites cleared and or graded during construction. Intended for use on small tributary areas with no unusual drainage features. Effective against coarse sediment, but not against silt or clay particles that remain suspended.

CONDITIONS
Temporary sediment traps are constructed early in the construction process at locations that will require minimal clearing and grading. Natural draws or swells are favorable locations to build the traps. They should be easily accessible for frequent maintenance and inspections. Temporary sediment traps shall never be placed in live streams.

DESIGN CRITERIA
Design and construction shall comply with laws, ordinances, rules and regulations on the local, state and federal level.

The total drainage area of a temporary sediment trap is up to 5 acres, depending on type of construction.

The height of a temporary sediment trap embankment shall not exceed 5.5 feet as measured from the downstream toe of slope to the top of the berm. Top width of an embankment shall be at least as wide as the height of the sediment trap embankment, with a minimum width of 3 feet.

Maximum pond depth of a sediment trap is 4 feet as measured from the bottom of the trap to the invert of the emergency spillway. Slopes shall not exceed 2:1 (H:V) for excavated areas and for compacted embankments. Side slopes should be (3:1) or flatter allowing people and equipment to safely negotiate slopes or to enter the sediment trap.

The length to width ratio must be greater than (2:1) (L:W) for the principal flowpaths in order to maximize residence time of stormwater within the sediment trap. Baffles may be required to prevent short-circuiting of the flow.

A typical baffle design uses 4'x8' sheets of exterior grade plywood 1/2 inch thick, mounted on 4"x4" hardwood posts.

Volume
Minimum volume of a temporary sediment trap shall be 67 cubic yards per acre for the total drainage area. The volume shall be measured at an elevation equivalent to the spillway invert.

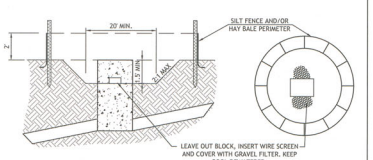
Volume of a temporary sediment trap in heavily disturbed areas should be 134 cubic yards per acre for the total drainage area. This includes an upper area with a minimum of 67 cubic yards per acre drained, which is dewatered using one of the outlet design methods provided, and a lower wet zone for sediment storage and settling.

The volume should be calculated from existing and proposed contours, or by measured cross sections. An approximate method for calculating the volume of traps using a natural draw is:

V = 0.4 x A x D
V = Sediment storage volume (below invert of emergency spillway)
A = Surface area (at level of emerency spillway)
D = Maximum depth (from emergency spillway invert)

The cleanout volume for a temporary sediment trap is 1/3 of the total storage volume. Cleanout volume shall be calculated and marked with a stake at the outlet of the trap.

GSWCC 2016 Edition 6-185



NOTES:
1. PROTECT INLETS DURING CONSTRUCTION.
2. KEEP SEDIMENT OUT OF STORM DRAINAGE SYSTEM
3. USE HALF CIRCLE BEHIND CURB INLETS DURING STREET CONSTRUCTION. CIRCULAR SHAPE IS NOT ESSENTIAL - VARY SHAPE TO FIT DRAINAGE AREA AND TERRAIN.
4. OBSERVE TO CHECK TRAP EFFICIENCY AND MODIFY AS NECESSARY TO TRAP SEDIMENT.
5. CLEAN WHEN SEDIMENT IS 6" BELOW INVERT.

(Sd2-F) EXCAVATED INLET SEDIMENT TRAP
TEMPORARY SEDIMENT BASIN
N.T.S.

Construction Exit (Co)

DEFINITION
A stone stabilized pad located at any point where traffic will be leaving a construction site to a public right-of-way, street, alley, sidewalk or parking area or any other area where there is a transition from bare soil to a paved area.

PURPOSE
To reduce or eliminate the transport of mud from the construction area onto public rights-of-way by motor vehicles or by runoff.

CONDITIONS
This practice is applied at appropriate points of construction egress. Geotextile underliners are required to stabilize and support the pad aggregates.

DESIGN CRITERIA
Formal design is not required. The following standards shall be used:

Aggregate Size
Stone will be in accordance with National Stone Association R-2 (1.5 to 3.5 inch stone).

Pad Thickness
The gravel pad shall have a minimum thickness of 6 inches.

Pad Width
At a minimum, the width should equal full width of all points of vehicular egress, but not less than 20 feet wide.

Pad Length
The gravel pad shall have a minimum length of 50 feet. When the construction is less than 50' from the paved access, the length shall be from the edge of existing pavement to the permitted building being constructed.

Washing
If the action of the vehicle traveling over the gravel pad does not sufficiently remove the mud, the tires should be washed prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with crushed stone and provisions that intercept the sediment-laden runoff and direct it into an approved sediment trap or sediment basin.

Location
The exit shall be located or protected to prevent sediment from leaving the site.

CONSTRUCTION SPECIFICATIONS
It is recommended that the egress area be excavated to a depth of 3 inches and be cleared of all vegetation and roots.

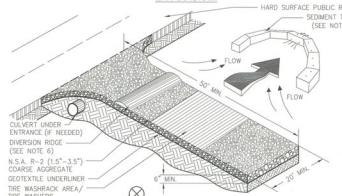
Diversion Ridge
On sites where the grade toward the paved area is greater than 2%, a diversion ridge 6 to 8 inches high with 3:1 side slopes shall be constructed across the foundation approximately 15 feet above the road.

Geotextile
The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-96 specification:

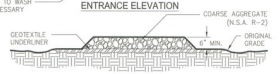
1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.3, *Separation Requirements*.
2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.4, *Stabilization Requirements*.

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Figure 6-14.1

Date 11/12/2019
City Engineer
Approval for ACC only

REVISIONS			
REV #	DATE	DESCRIPTION	REQUESTED BY

LONG #0392-0120

LONG ENGINEERING
2550 HERITAGE COURT, STE 250
ATLANTA, GA 30339
TEL 770.951.2495, FAX 770.951.2496
www.longeng.com

CHATTAHOOCHEE NATURE CENTER
SITE CONSTRUCTION PLANS
9135 WILLEO ROAD
CITY OF ROSWELL, FULTON COUNTY GEORGIA
LL 81, 270, 271, 295 & 296, 1ST DIST., 2ND SECT.

EROSION & SEDIMENT CONTROL DETAILS

GEORGIA REGISTERED PROFESSIONAL ENGINEER JOSEPH M. SEVERN
033671
GSWCC LEVEL II CERT. #54331, EXPIRES 03-14-2020

DATE	11/01/2019
DESIGN QC:	
CADD QC:	
DESIGNED BY:	JS
DRAWN BY:	JRG

SHEET C-8.2

NOT ISSUED FOR CONSTRUCTION