

# U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT 4751 BEST ROAD, SUITE 140 COLLEGE PARK, GEORGIA 30337

August 10, 2022

Regulatory Division SAS-2020-00393

Mr. Don Sherrill City of Brookhaven 4362 Peachtree Road, NE Brookhaven, Georgia 30319

Dear Mr. Sherrill:

I refer to the Pre-Construction Notification, submitted on your behalf by Edwards-Pitman Environmental, Inc., requesting verification for use of Nationwide Permit 27 (NWP 27) for proposed stream restoration activities along an approximately 2,000 linear foot reach of North Fork Nancy Creek (NFNC). The project corridor is located immediately south of Interstate 285 (I-285), and north of Murphey Candler Lake, within Murphy Candler Park, east of Long Branch Court, NE, and west of the terminus of Brawley Drive, NE, and East Nancy Creek Drive, NE, in the City of Brookhaven, DeKalb County, Georgia (centered at approximately: latitude: 33.9190, longitude: -84.3278). This project has retained the previously assigned number SAS-2020-00393, and it is important to reference this number in all communication concerning this matter.

The purpose of the proposed project is to restore approximately 2,000 linear feet of NFNC, as funded by an EPA 319(h) grant with the objective to remedy the ongoing erosion that has resulted in downstream sedimentation within Nancy Creek and to prevent future such degradation/aggradation. The project would utilize natural channel design and streambank bioengineering methods. The proposed improvements are intended to meet watershed-scale sediment reduction load goals in relation to the biota impairment listing and improve water quality within the project reach of NFNC. The 2,000-foot reach of NFNC was identified due to existing channel degradation and streambank entrenchment within the reach. The activities would include installation of in-stream structures, associated grading, and planting of native vegetation. The structural measures would include: log sills, construction of riffles and pools, toe wood, grading the banks to stable slopes, soil layer lifts, reestablishment of floodplain benches, stabilization of existing sanitary sewer crossings, and enhancement of aquatic habitat for benthic macro-invertebrates. The project would result in permanent impacts to 2,015 linear feet (1.59-acres) of NFNC, with temporary impacts to 26 linear feet (0.001-acre) of NFNC, 71 linear feet (0.012-acre) of intermittent streams, and 0.491acre of wetlands, as detailed in the impact summary table, below. The project proposes three post-construction monitoring events of the restored area including preventative maintenance checks and inspection of all post-construction features, hydrology and

sediment supply, and biological assessments including benthic surveys. The post-construction monitoring would be conducted annually following project completion and results would be reported to the Corps. The details of the proposed project are depicted on the thirty-three (33) enclosed exhibits, collectively entitled, "City of Brookhaven, North Fork Nancy Creek Stream Restoration, From I-285 to Murphey Candler Lake, Draft – 100% Design Drawings", as prepared by Freese and Nichols, Inc., dated February 2022. The enclosed drawings are consecutively numbered 1-33.

North Fork Nancy Creek Stream Restoration USACE Impact Summary Table					
Permanent Impacts Temporary Impacts					
Resource	Linear Feet	Acreage	Linear Feet	Acreage	
Perennial Stream (PS) 1	2,000	1.59	overlap w	overlap with permanent	
Wetland (WL) 2	N/A	0.001	N/A	0.41	
WL 3	N/A	0	N/A	0.04	
PS 4	15	0.002	13	0.005	
Intermittent Stream (IS) 5	32	0.005	0	0	
IS 6	39	0.007	0	0	
PS 7	0	0	13	0.005	
WL 8	N/A	0	N/A	0.04	
Total Perennial Stream Impacts	2,015	1.592	26	0.01	
Total Intermittent Stream Impacts	71	0.012	0	0	
Total Wetland Impacts	N/A	0.001	N/A	0.49	

The enclosed exhibit entitled, "Figure 4: Waters and Soils Map (Aerial), Murphey Candler Streambank Restoration Project, City of Brookhaven, DeKalb County", as prepared by Edwards-Pitman Environmental, Inc., received June 10, 2022, identifies the delineation limits of all aquatic resources within the project area. The wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual. Please note, should this delineation require re-verification, it is subject to change based on site conditions at the time of re-evaluation.

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or

anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

We have completed coordination with other federal and state agencies as described in Part C (32)(d) of our NWP Program, published in the January 13, 2021, Federal Register, Vol. 86, No. 8, Pages 2744-2877 (86 FR) and/or the December 27, 2021, Federal Register, Vol. 86, No. 245, Pages 73522-73583 (86 FR). The NWPs and Savannah District's Regional Conditions for NWPs can be found on our website at <a href="http://www.sas.usace.army.mil/Missions/Regulatory/Permitting/GeneralPermits/NationwidePermits.aspx">http://www.sas.usace.army.mil/Missions/Regulatory/Permitting/GeneralPermits/NationwidePermits.aspx</a>. During our coordination procedure, no adverse comments regarding the proposed work were received.

As a result of our evaluation of your project, we have determined that the proposed activity is authorized as described in Part B of the NWP Program. Your use of this NWP is valid only if:

- a. The activity is conducted in accordance with the information submitted and meets the conditions applicable to the NWP, as described at Part C of the NWP Program and the Savannah District's Regional Conditions for NWPs.
- b. You shall notify the Corps, in writing, at least 10 days in advance of commencement of work authorized by this permit.
- c. You fill out and sign the enclosed certification and return it to our office in conjunction with the project as-built survey. Post-construction photographs must be attached and returned with the compliance certification form.
- d. Should the attached plans be modified, a final design and grading plan for the stream restoration project shall be submitted to this office for review and approval. The final design plan should include a point of contact, their contact information for maintaining compliance with the terms and conditions of this NWP verification, and a narrative of the maintenance. If modifications to the attached plans are necessary, any failure to submit the modified final design and grading plan prior to construction of the stream restoration project will invalidate this verification.
- e. Within 90-days of completion of construction activities, a complete as-built survey of the stream restoration shall be submitted to this office for review and approval. The as-built survey report shall include longitudinal profiles for the entire length of the constructed reach. The as-built report shall include a minimum of two riffle and two pool cross- sections, that are representative of this restoration reach. The survey of the longitudinal profiles and cross-sections shall follow the methodologies outlined in the

- U.S. Forest Service's: "Stream Channel Reference Sites: An Illustrated Guide to Field Technique" (Haralson et al., 1994). The as-built survey report shall also include the following information:
  - 1. Locations of all in-stream structures;
  - 2. Final grading elevations within the flood prone area of this reach;
  - 3. Locations of all riparian and streamside vegetation planted (to include caliper of woody stems, broadcast rates (in lbs./acre) for herbaceous seeding, and the name of the species associated with each planting/planting zone); and
  - Any areas of stockpiled soil onsite.

The as-built survey should include a completed Table 1 (attached) for the restored reach, and a discussion of any deviations from the final design that occurred during construction.

- f. To ensure that a functional lift is achieved, the constructed reach shall be monitored annually for three (3) consecutive years following the submittal of the as-built survey. The data, for the first year of monitoring, shall not be collected any earlier than eleven (11) months from the submittal of the as-built survey, and data collected for the subsequent monitoring years shall not occur earlier than eleven (11) months from the previous annual monitoring data collection. Annual monitoring reports shall be submitted on an annual basis and must be submitted within two (2) months of the completion of data collection. Failure to provide monitoring reports on an annual basis may result in additional annual monitoring of the project. Project monitoring shall include the collection of cross-sections, at the same locations that were collected as part of the as-built survey report.
- g. The annual analysis of geomorphic performance shall be based on a percent deviation from the mean values for each of the geomorphic variables (dimension, pattern, and profile variables) for this project reach, as outlined in the enclosed Table 1, entitled, "North Fork Nancy Creek Geomorphic Parameters for Annual Geomorphic Monitoring with Comparison to Regional Values", (Edwards-Pittman Environmental, Inc., 2022). The restoration reach will be determined to have achieved a functional lift if it has achieved values within ten-percent of the mean design value for each of the geomorphic variables. If a value of a geomorphic variable is outside the performance threshold established above for a given annual monitoring year, the Corps will evaluate whether the restoration reach requires adaptive management to achieve the required functional lift, or if the documented variance is acceptable.
- h. If any of the monitoring locations are determined by the Corps not to be representative of the restoration reach, additional monitoring stations and/or monitoring events may be required to determine project performance.

i. If adaptive management cannot be performed to confirm a functional lift is achieved for each of the restoration reach, alternative measures will be required to compensate for any functional losses that are determined by the Corps. Alternative measures may include the purchase of stream credits from a mitigation bank or in-lieu fee program for any functional losses, as calculated by the Savannah District's 2021 Mitigation Standard Operating Procedure, or superseding guidance.

This proposal was reviewed in accordance with Section 7 of the Endangered Species Act. Based on the information we have available; we have determined that the project would have no effect on any threatened or endangered species nor any critical habitat for such species. Authorization of an activity by a NWP does not authorize the "take" of threatened or endangered species. In the absence of separate authorization, both lethal and non-lethal "takes" of protected species are in violation of the Endangered Species Act. See Part (C) of 86 FR for more information.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to expire on March 14, 2026. It is incumbent upon you to remain informed of changes to the NWPs. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

This authorization should not be construed to mean that any future projects requiring Department of the Army authorization would necessarily be authorized. Any new proposal, whether associated with this project or not, would be evaluated on a case-by-case basis. Any prior approvals would not be a determining factor in deciding on any future request.

Revisions to your proposal may invalidate this authorization. In the event changes to this project are contemplated, I recommend that you coordinate with us prior to proceeding with the work.

This communication does not relieve you of any obligation or responsibility for complying with the provisions of any other laws or regulations of other federal, state, or local authorities. It does not affect your liability for any damages or claims that may arise as a result of the work. It does not convey any property rights, either in real estate or material, or any exclusive privileges. It also does not affect your liability for any interference with existing or proposed federal projects. If the information you have submitted and on which the Corps bases its determination/decision of authorization under the NWP is later found to be in error, this determination may be subject to modification, suspension, or revocation.

An electronic copy of this letter is being provided to the following party: Edards-Pitman Envionrmental, Inc., Mr. Collin Lane, via email at: <a href="mailto:clane@edwards-pitman.com">clane@edwards-pitman.com</a>; and Freese and Nichols, Inc.; Mr. John Schneider, via email at: <a href="mailto:John.Schneider@freese.com">John.Schneider@freese.com</a>; and City of Brookhaven, Mr. Tom Roberts, via email at: <a href="mailto:tom.roberts@brookhavenga.gov">tom.roberts@brookhavenga.gov</a>.

Thank you in advance for completing our on-line Customer Survey Form located at <a href="https://regulatory.ops.usace.army.mil/customer-service-survey/">https://regulatory.ops.usace.army.mil/customer-service-survey/</a>. We value your comments and appreciate you taking the time to complete a survey each time you interact with our office.

If you have any questions, please contact me at (678) 422-6572 or jade.r.bilyeu@usace.army.mil.

Sincerely,

Jade R. Bilyeu Regulatory Specialist, Piedmont Branch

**Enclosures** 

#### CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY NATIONWIDE PERMIT (27)

PERMIT FILE NUMBER: SAS-2020-00393

PERMITTEE/ADDRESS: City of Brookhaven, Mr. Don Sherrill, 4362 Peachtree Road, NE, Brookhaven, Georgia 30319.

LOCATION OF WORK: The project corridor is located immediately south of Interstate 285 (I-285), and north of Murphey Candler Lake, within Murphy Candler Park, east of Long Branch Court, NE, and west of the terminus of Brawley Drive, NE, and East Nancy Creek Drive, NE, in the City of Brookhaven, DeKalb County, Georgia (centered at approximately: latitude: 33.9190, longitude: -84.3278).

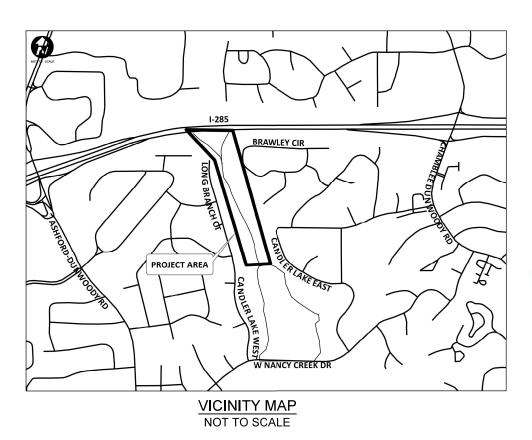
PROJECT DESCRIPTION: The purpose of the proposed project is to restore approximately 2,000 linear feet of NFNC, as funded by an EPA 319(h) grant with the objective to remedy the ongoing erosion that has resulted in downstream sedimentation within Nancy Creek and to prevent future such degradation/aggradation. The project would utilize natural channel design and streambank bioengineering methods. The proposed improvements are intended to meet watershed-scale sediment reduction load goals in relation to the biota impairment listing and improve water quality within the project reach of NFNC. The 2,000-foot reach of NFNC was identified due to existing channel degradation and streambank entrenchment within the reach. The activities would include installation of in-stream structures, associated grading, and planting of native vegetation. The structural measures would include: log sills, construction of riffles and pools, toe wood, grading the banks to stable slopes, soil layer lifts, reestablishment of floodplain benches, stabilization of existing sanitary sewer crossings, and enhancement of aquatic habitat for benthic macro-invertebrates. The project would result in permanent impacts to 2,015 linear feet (1.59-acres) of NFNC, with temporary impacts to 26 linear feet (0.001-acre) of NFNC, 71 linear feet (0.012-acre) of intermittent streams, and 0.491-acre of wetlands, as detailed in the impact summary table, below. The project proposes three post-construction monitoring events of the restored area including preventative maintenance checks and inspection of all post-construction features, hydrology and sediment supply, and biological assessments including benthic surveys. The postconstruction monitoring would be conducted annually following project completion and results would be reported to the Corps.

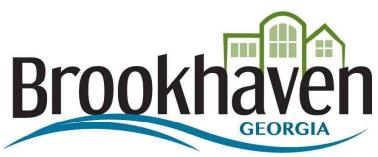
WATERS OF THE UNITED STATES IMPACTED: 2,000 linear feet (1.59-acres), with temporary impacts to 26 linear feet (0.001-acre) of NFNC, 71 linear feet (0.012-acre) of impacts to intermittent streams, and 0.491-acre of temporary impacts to wetlands

DATE WORK IN WATERS OF UNITED STATES COMPLETED:
COMPENSATORY MITIGATION REQUIRED: N/A
I understand that the permitted activity is subject to a U.S. Army Corps of Engineers' Compliance Inspection. If I fail to comply with the permit conditions at Part C of the Nationwide Permit Program, published in the January 13, 2021, Federal Register, Vol. 86, No. 8, Pages 2744-2877 (86 FR) and/or the December 27, 2021, Federal Register, Vol. 86, No. 245, Pages 73522-73583 (86 FR), it may be subject to suspension, modification or revocation.
I hereby certify that the work authorized by the above referenced permit as well as any required mitigation (if applicable) has been completed in accordance with the terms and conditions of the said permit.

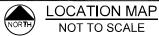
Signature of Permittee	Date

# CITY OF BROOKHAVEN NORTH FORK NANCY CREEK STREAM RESTORATION FROM I-285 TO MURPHEY CANDLER LAKE DRAFT - 100% DESIGN DRAWINGS









THIS PROJECT WAS PREPARED USING THE HORIZONTAL COORDINATE SYSTEM ON GEORGIA WEST ZONE (NAD83), AND NORTH AMERICAN VERTICAL DATUM (NAVD 1988).

DISTURBED AREA: 4.3 ACRES



4251 LONG BRANCH CT BROOKHAVEN, DEKALB COUNTY GA LOT(S) 0331, 0346

PRIMARY PERMITTEE CITY OF BROOKHAVEN 4362 PEACHTREE ROAD BROOKHAVEN, GA 30019 (404)637-0500

SECONDARY PERMITTEE N/A

# **FEBRUARY 2022**



Georgia Registered Engineering Firm PED-004433 Expires 06/30/2022

360 Interstate North Parkway, Suite 250 Atlanta, GA 30339 Phone - (404) 334-4310 Web - www.freese.com



24 HOUR CONTACT:
CITY OF BROOKHAVEN
PUBLIC WORKS DEPARTMENT
TOM ROBERTS
TOM.ROBERTS@BROOKHAVENGA.GOV
404-637-0500

100% SUBMITTAL
NOT FOR CONSTRUCTION

#### **GENERAL NOTES**

- 1. THE PROJECT BEGINS ADJACENT TO I-285 AT 4251 LONG BRANCH CT, AND EXTENDS DOWNSTREAM TO MURPHEY CANDLER LAKE WITHIN THE CITY OF BROOKHAVEN IN LAND LOT(S) 0331 & 0346 IN THE 18TH DISTRICT, DEKALB COUNTY, GEORGIA.
- 2. THE PROJECT IS FOR THE RESTORATION/STABILIZATION OF NORTH FORK NANCY CREEK. CONSTRUCTION ACTIVITY WILL INCLUDE INSTALLATION OF IN-STREAM STRUCTURES, ACCOMPANYING SITE GRADING, BANK STABILIZATION, AND PLANTING OF NATIVE VEGETATION.
- HORIZONTAL CONTROL IS BASED UPON GEORGIA STATE PLANE COORDINATE SYSTEM, (GA WEST ZONE, NAD83). VERTICAL DATUM IS NAVD88.
- 4. THIS PROPERTY LIES WITHIN SPECIAL FLOOD HAZARD ZONE 'AE', FIRM MAP NUMBER 13089C0012K OF THE DEKALB COUNTY FLOOD INSURANCE STUDY, EFFECTIVE DATE: AUGUST 15, 2019.
- 5. THE STORMWATER RUNOFF FLOWS DIRECTLY INTO NORTH FORK NANCY CREEK. NORTH FORK NANCY CREEK IS A PART OF THE NANCY CREEK WATERSHED IN DEKALB COUNTY.
- 6. EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL ALSO NOTIFY UTILITIES OF PROPOSED CONSTRUCTION AT LEAST (2), BUT NOT MORE THAN TEN (10) WORKING DAYS IN ADVANCE. FOR UTILITY LOCATES/NOTIFICATIONS CONTACT:

DEKALB COUNTY PUBLIC WORKS: 404-371-2000

UTILITY PROTECTION CENTER: 811 OR 1-800-282-7411

- 7. ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY OF BROOKHAVEN, DEKALB COUNTY, AND STATE OF GEORGIA STANDARDS AND SPECIFICATIONS.
- 8. TO REPORT PUBLIC WORKS EMERGENCIES, CONTACT THE CITY OF BROOKHAVEN PUBLIC WORKS DEPARTMENT 24 HOURS-A-DAY NUMBER: 404-637-0540.
- 9. PLACE MATERIAL FROM EXCAVATION AWAY FROM DRAINAGE FEATURES TO PREVENT OBSTRUCTION OF STORM DRAINAGE FLOW.
- 10. THE SITE GRADE WILL BE RETURNED TO NATURALIZED CONTOURS TYPICAL OF A RIPARIAN ENVIRONMENT. ALL DISTURBED PAVEMENT, CURB, SIDEWALK, AND LANDSCAPING WILL BE REPLACED IN KIND.
- 11. CONTRACTOR TO COORDINATE WITH PROJECT ENGINEER NECESSARY BYPASS PUMPING AND/OR TEMPORARY PIPING TO MAINTAIN CREEK FLOWS WITHOUT IMPACT TO THE ENVIRONMENT.
- 12. CONSTRUCTION LAYOUT AND STAKING SHALL BE PROVIDED BY THE CONTRACTOR.
- 13. CONTRACTOR TO ESTABLISH TEMPORARY SUPPORT FOR EXISTING UTILITIES AND MAINTAIN IT THROUGHOUT CONSTRUCTION, IF REQUIRED.
- 14. DURING NON-WORKING HOURS OR DAYS, ALL EXCAVATED AREAS ARE TO BE BACKFILLED OR SECURED AND PROTECTED USING APPROVED SAFETY DEVICES AND MATERIALS.
- 15. IF ANY CONFLICTS OR DISCREPANCIES ARE DISCOVERED, EITHER IN THE CONSTRUCTION DOCUMENTS OR THE FIELD CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT COMMENCE OPERATION UNTIL THE CONFLICTS OR DISCREPANCIES ARE RESOLVED.
- 16. THE CONTRACTOR SHALL VERIFY ALL INFORMATION BEFORE PROCEEDING AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 17. THE CONTRACTOR SHALL NOT MOVE OR DRIVE CONSTRUCTION MACHINERY OR HEAVY EQUIPMENT OVER THE PEDESTRIAN BRIDGE. SEE SHEET C-3
- 18. SHOULD PARK TRAILS BE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR OR REPLACE TO MATCH PRE-PROJECT CONDITIONS.
- 19. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED TO BE EFFECTIVE AND IN COMPLIANCE WITH STATE AND LOCAL REQUIREMENTS.
- 20. THE SANITARY SEWER AERIAL CROSSING AT APPROXIMATE LOCATION OF STA 14+08 TO BE STABILIZED, AS NECESSARY DURING CONSTRUCTION TO ELIMINATE/MINIMIZE ADVERSE EFFECTS. SEE SHEET C-2 FOR LOCATION.
- 21. THE PREPARATION OF THESE DRAWINGS WAS FINANCED IN PART THROUGH A GRANT FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY UNDER THE PROVISIONS OF SECTION 319(h) OF THE FEDERAL WATER POLLUTION CONTROL ACT, AS AMENDED, IN PARTNERSHIP WITH THE ENVIRONMENTAL PROTECTION DIVISION OF THE GEORGIA DEPARTMENT OF NATURAL RESOURCES.

STRUCTURE DATA TABLE			
PNT	ELEVATION	DESCRIPTION	STATION
1	892.61	START ROCK N ROLLER	10+30
2	892.61	END ROCK N ROLLER	10+41
3	AT GRADE	2 - BOULDER CLUSTER	10+79
4	AT GRADE	2- BOULDER CLUSTER	11+00
5	AT GRADE	2- BOULDER CLUSTER	11+29
6	890.73	LOG VANE	11+49
7	890.43	LOG VANE	12+29
8	AT GRADE	3 - BOULDER CLUSTER	13+32
9	AT GRADE	3 - BOULDER CLUSTER	13+88
10	886.13	LOG VANE	15+57
11	AT GRADE	2 - BOULDER CLUSTER	16+31
12	AT GRADE	2 - BOULDER CLUSTER	16+71
13	AT GRADE	2 - BOULDER CLUSTER	17+10
14	AT GRADE	3 - BOULDER CLUSTER	17+79
15	886.05	LOG VANE	18+67
16	886.20	LOG VANE	19+45
17	AT GRADE	3 - BOULDER CLUSTER	20+05
18	AT GRADE	3 - BOULDER CLUSTER	20+44
19	886.14	LOG VANE	21+01
20	885.99	LOG VANE	21+70
21	AT GRADE	2 - BOULDER CLUSTER	22+29
22	AT GRADE	2 - BOULDER CLUSTER	22+56

STRUCTURE DATA TABLE			
PNT	ELEVATION	DESCRIPTION	STATION
23	885.98	LOG VANE	22+79
24	AT GRADE	2 - BOULDER CLUSTER	23+32
25	AT GRADE	2 - BOULDER CLUSTER	23+61
26	AT GRADE	2 - BOULDER CLUSTER	23+82
27	AT GRADE	3 - BOULDER CLUSTER	24+50
28	887.34	START ROCK N ROLLER	24+93
29	887.34	SECOND ARM ROCK N ROLLER	25+05
30	887.32	END ROCK N ROLLER	25+23
31	AT GRADE	3 - BOULDER CLUSTER	25+59
32	AT GRADE	3 - BOULDER CLUSTER	26+14
33	AT GRADE	3 - BOULDER CLUSTER	26+64
34	AT GRADE	3 - BOULDER CLUSTER	27+09
35	AT GRADE	2 - BOULDER CLUSTER	27+77
36	AT GRADE	2 - BOULDER CLUSTER	28+18
37	885.34	LOG VANE	28+39
38	AT GRADE	3 - BOULDER CLUSTER	28+88
39	AT GRADE	3 - BOULDER CLUSTER	29+65

33

	SHEET	LIST TABLE
SEQUENCE NO.	SHEET NUMBER	SHEET DESCRIPTION
1	T-1	TITLE COVER
2	G-1	GENERAL NOTES
3	G-2	OVERVIEW MAP
4	C-1	START TO STA 14+00
5	C-2	STA 14+00 TO STA 18+00
6	C-3	STA 18+00 TO STA 22+00
7	C-4	STA 22+00 TO STA 26+00
8	C-5	STA 26+00 TO END
9	CS-1	CROSS SECTION VIEWS
10	CS-2	CROSS SECTION VIEWS
11	CS-3	CROSS SECTION VIEWS
12	CS-4	CROSS SECTION VIEWS
13	CS-5	CROSS SECTION VIEWS
14	CS-6	CROSS SECTION VIEWS
15	DT-1	DETAILS
16	DT-2	DETAILS
17	DT-3	DETAILS
18	DT-4	DETAILS
19	DT-5	DETAILS
20	DT-6	DETAILS
21	ES-1	EROSION CONTROL NOTES I
22	ES-2	EROSION CONTROL NOTES II
23	ES-3	START TO STA 14+00 - PHASE I & II
24	ES-4	STA 14+00 TO STA 22+00 - PHASE I & II
25	ES-5	STA 22+00 TO END - PHASE I & II
26	ES-6	DS STAGE & STOCK PILE AREA - PHASE I & II
27	ES-7	START TO STA 14+00 - PHASE III
28	ES-8	STA 14+00 TO STA 22+00 - PHASE III
29	ES-9	STA 22+00 TO END - PHASE III
30	ES-10	DS STAGE & STOCKPILE AREA - PHASE III
31	ES-11	ESC DETAILS
32	ES-12	ESC DETAILS
	FC 43	ECC DETAIL C

**ESC DETAILS** 

ES-13

SHEET LIST TABLE



Freese and Nichols, Inc. Georgia Registered Engineering Firm PEF 0044.	## M. PROFESSIONAL   1/3 1/2022
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ED TREES - SEE	ES-3 THRU ES-5	7	Шん
(IN) (FIELD)	COMMON NAME	1	
14	BLACKGUM	1	
24	RED MAPLE	1	
20	SYCAMORE	1	
10	DOGWOOD		
13	N RED OAK		
28	RED MAPLE	1	
26	RIVER BIRCH	1	
48	SYCAMORE	1	1.0
12	BLACK CHERRY		
12	BOXELDER		
15	BOXELDER		
11	MAGNOLIA		7
10	SOURWOOD		1 =
36	SYCAMORE		
11	BOXELDER		
17	BOXELDER		
13	BOXELDER		
30	N RED OAK		1 些 乡
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49	SYCAMORE		ı ⊏ –ı
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14	BOXELDER		ı≂⊐ı
11	RED MAPLE		$L \subset d$
14	N RED OAK		
11	RIVER BIRCH		1 Z 4
19	BOXELDER		ı⊼∢∣
34	TULIP POPLAR	_	кнаven :AMBANK RESTORATION HEY CANDLER LAKE
15	RED MAPLE		
29	TULIP POPLAR		I≩> ≿I
26	TULIP POPLAR		[로구 말]
34	TULIP POPLAR		1×:: I

TULIP POPLAR

BOXELDER BOXELDER

TULIP POPLAR

SYCAMORE

RIVER BIRCH

BOXELDER BOXELDER BOXELDER TULIP POPLAR BOXELDER TULIP POPLAR BOXELDER

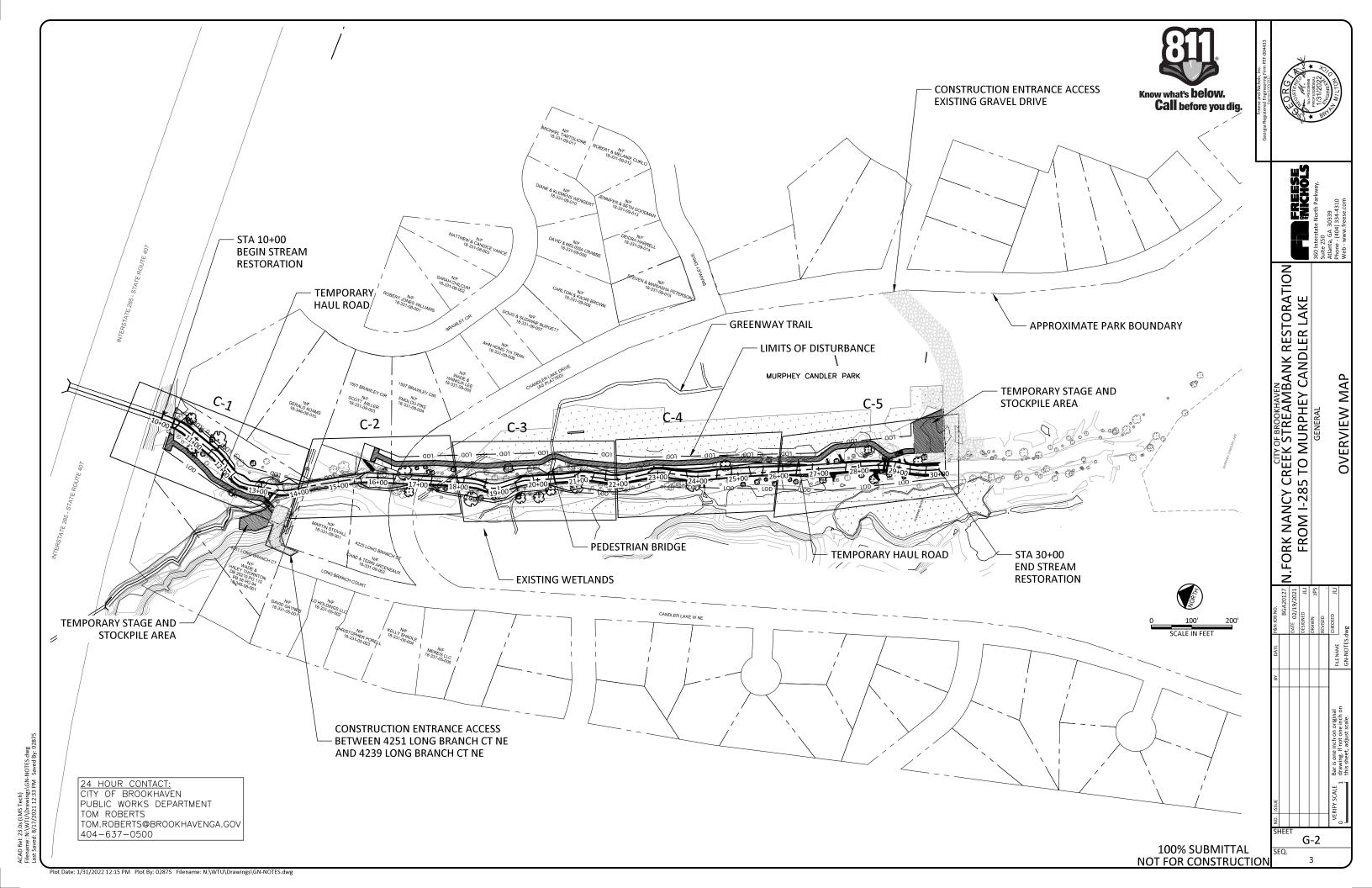
CITY OF BROOKHAVEN	BGAZO127 N FORK NANCY CRFFK STRFAMBANK RF		FROM 1-285 TO MURPHEY CANDLE
	й Z	<u>:</u>	_
F&N JOB NO.	BGA20127 N F	DATE 02/19/2021	DESIGNED JLJ
DATE F&N JOB NO.	BGA20127 N E	DATE 02/19/2021	DESIGNED JLJ

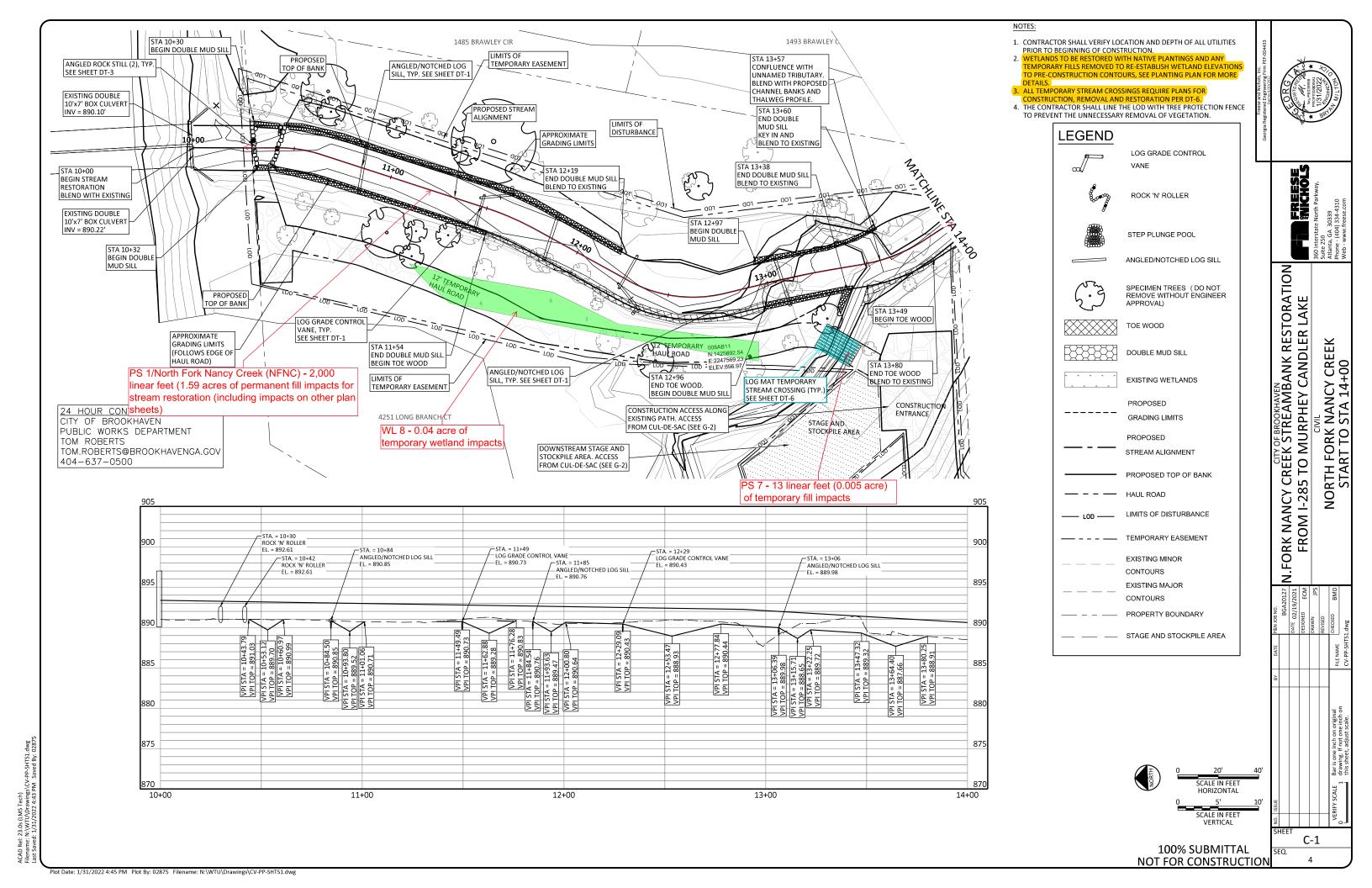
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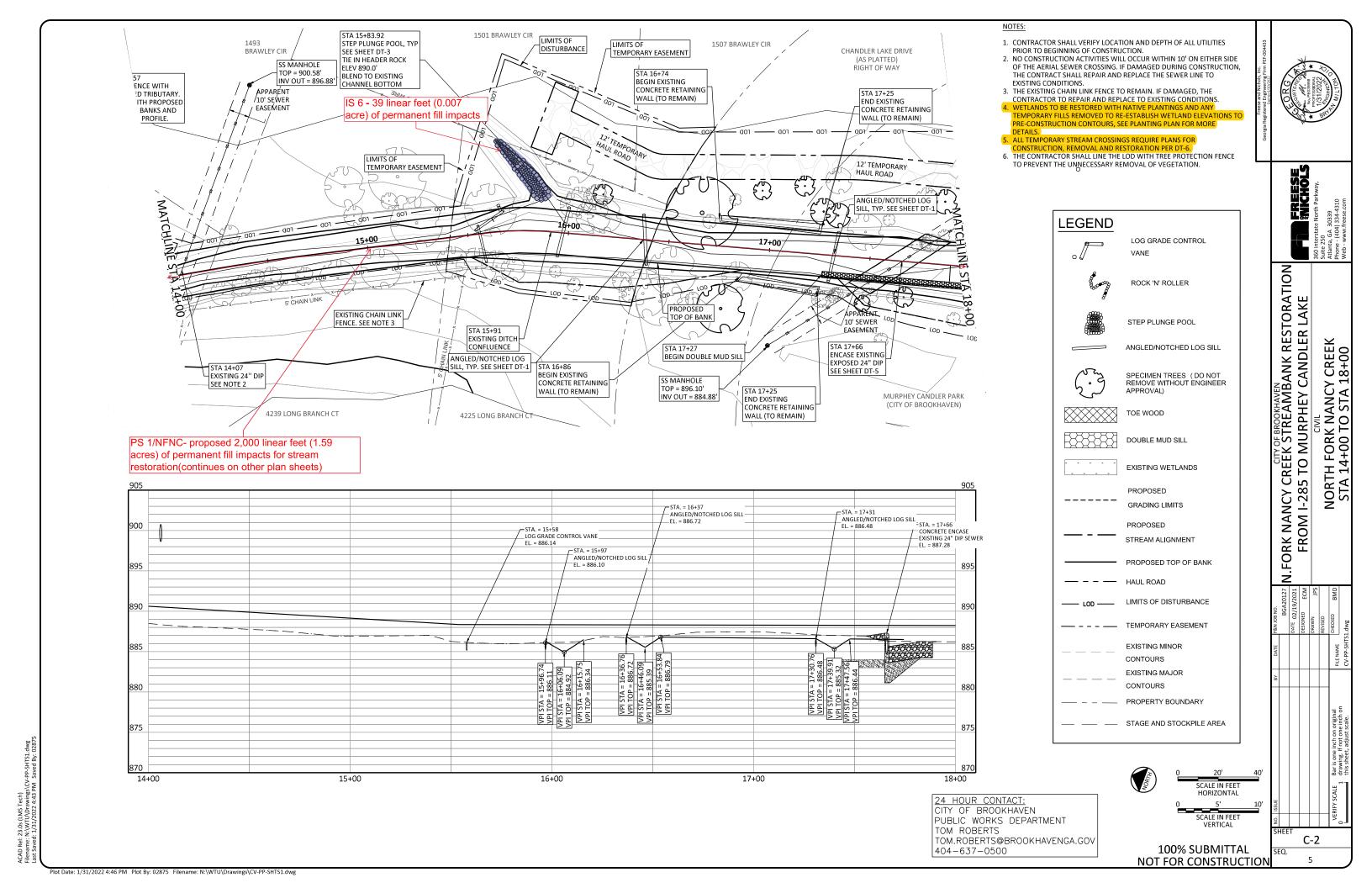
24 HOUR CONTACT

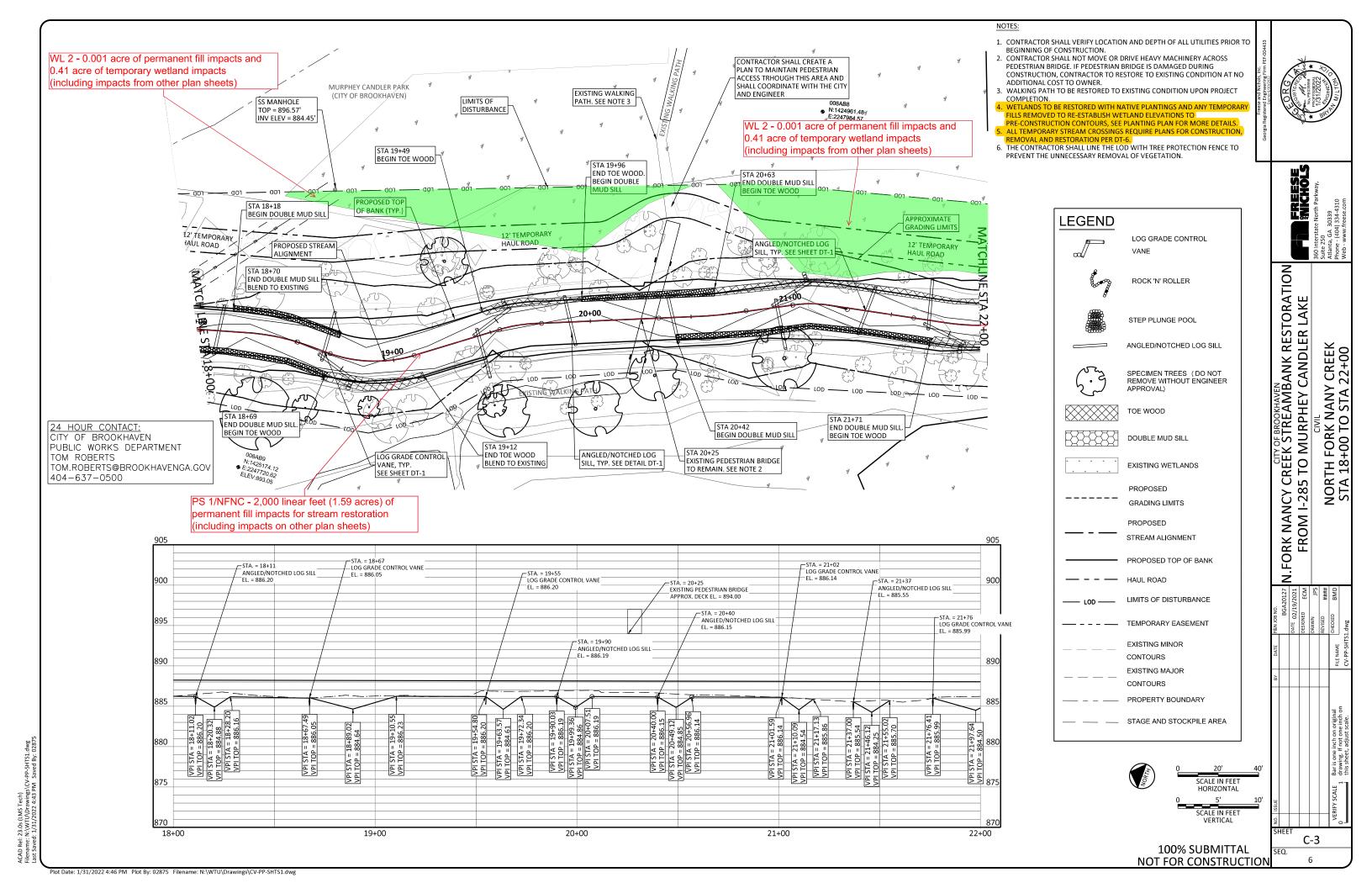
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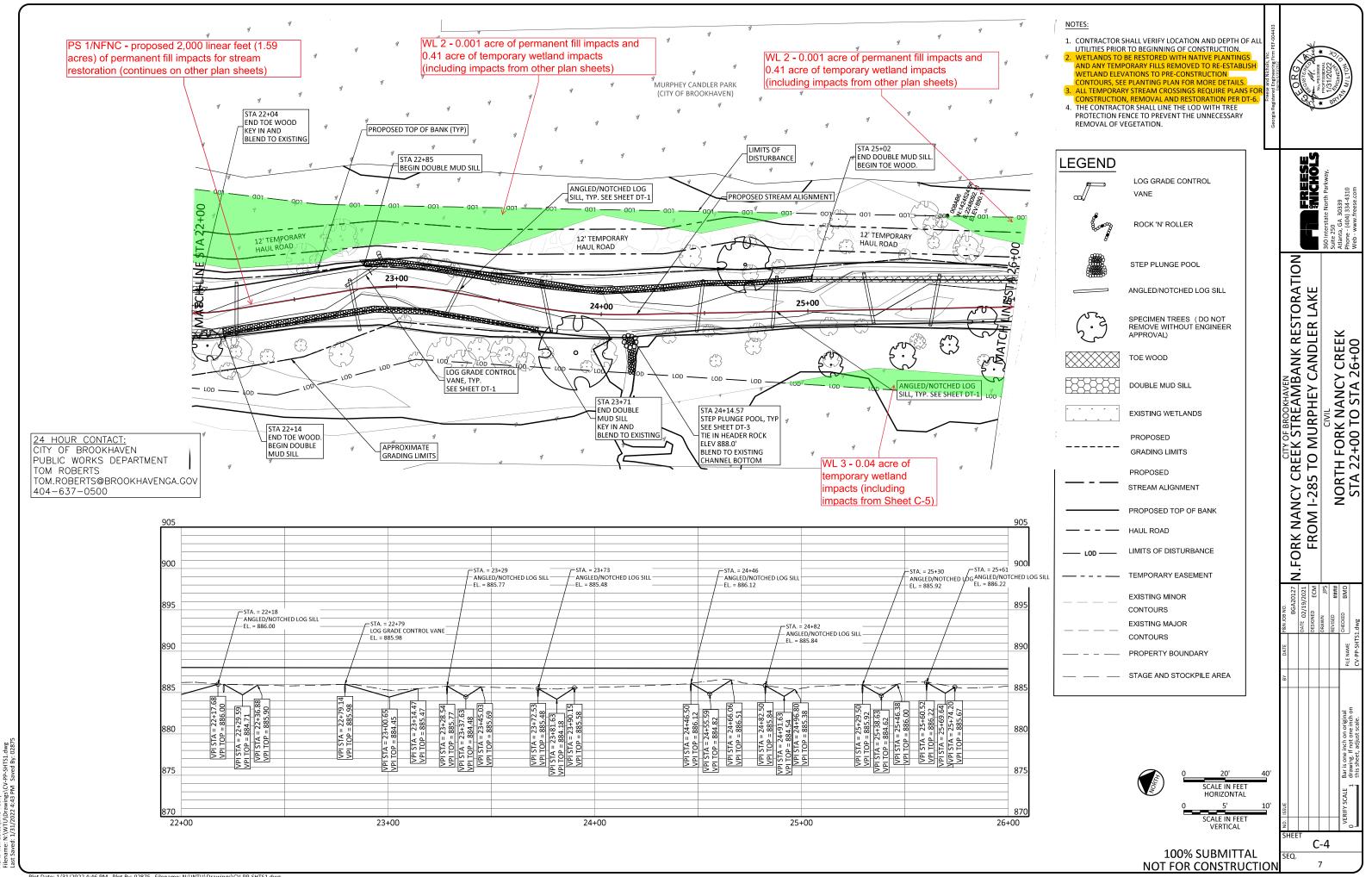
CITY OF BROOKHAVEN PUBLIC WORKS DEPARTMENT TOM ROBERTS TOM.ROBERTS@BROOKHAVENGA.GOV 404-637-0500

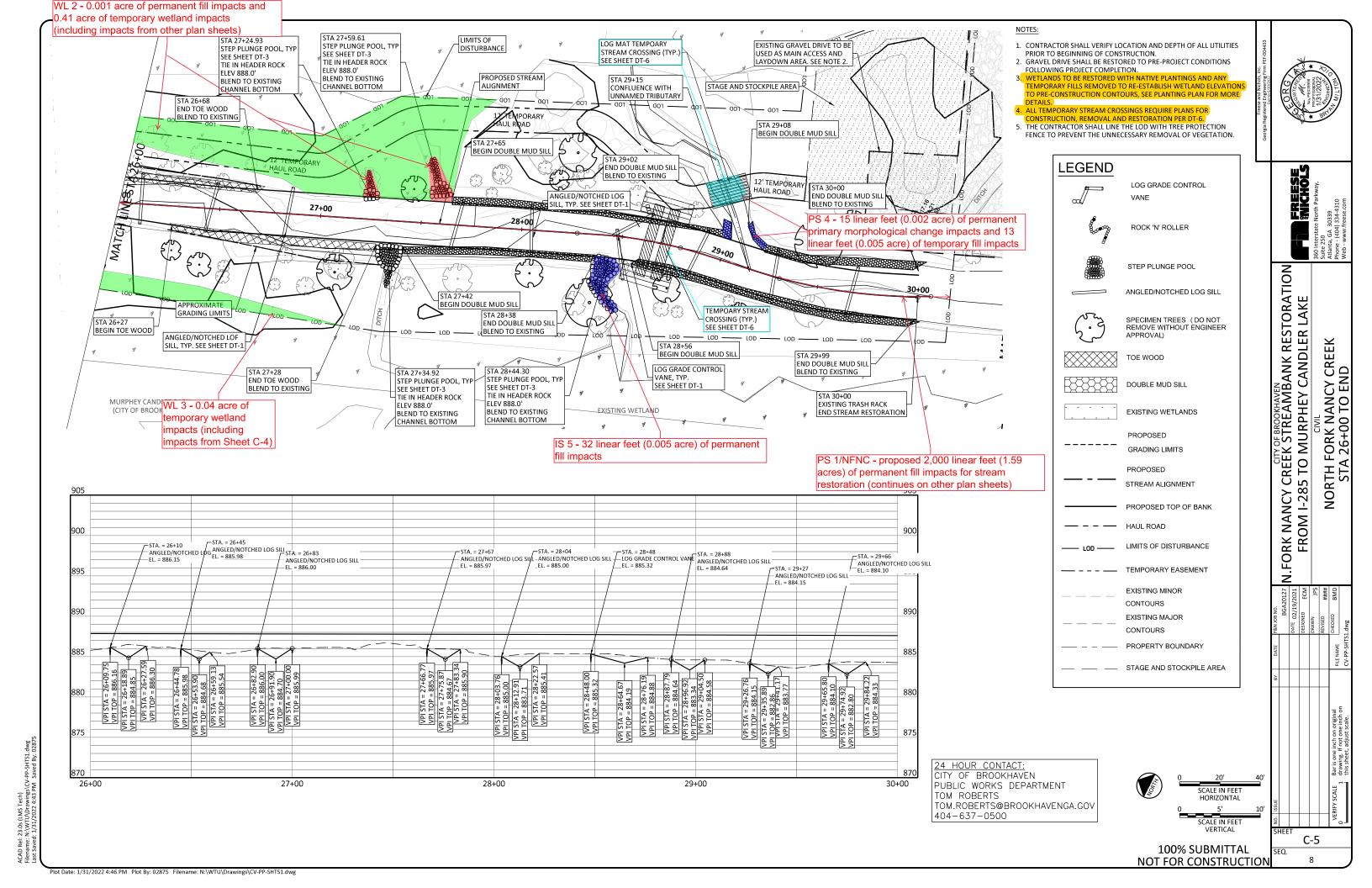


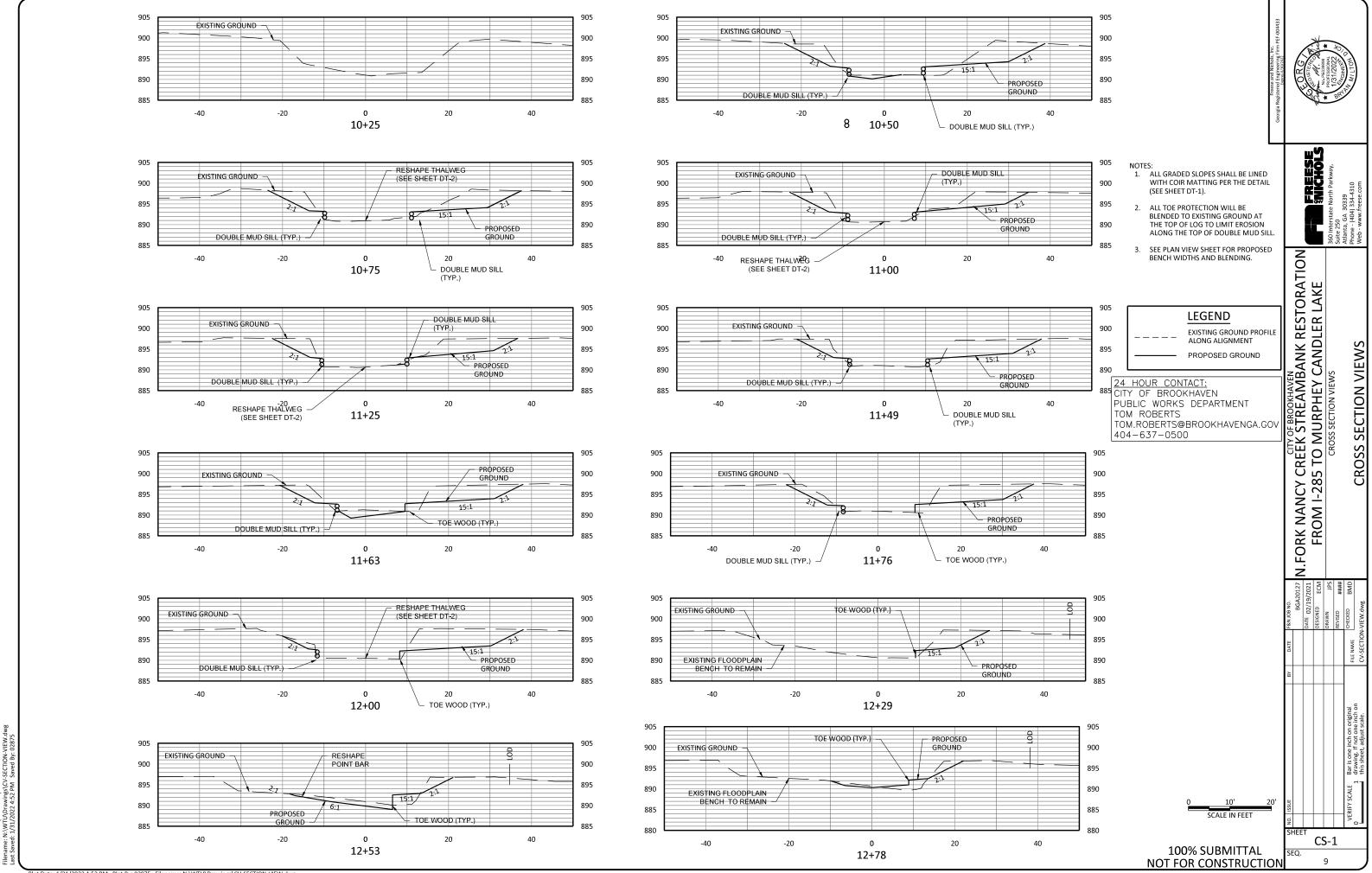




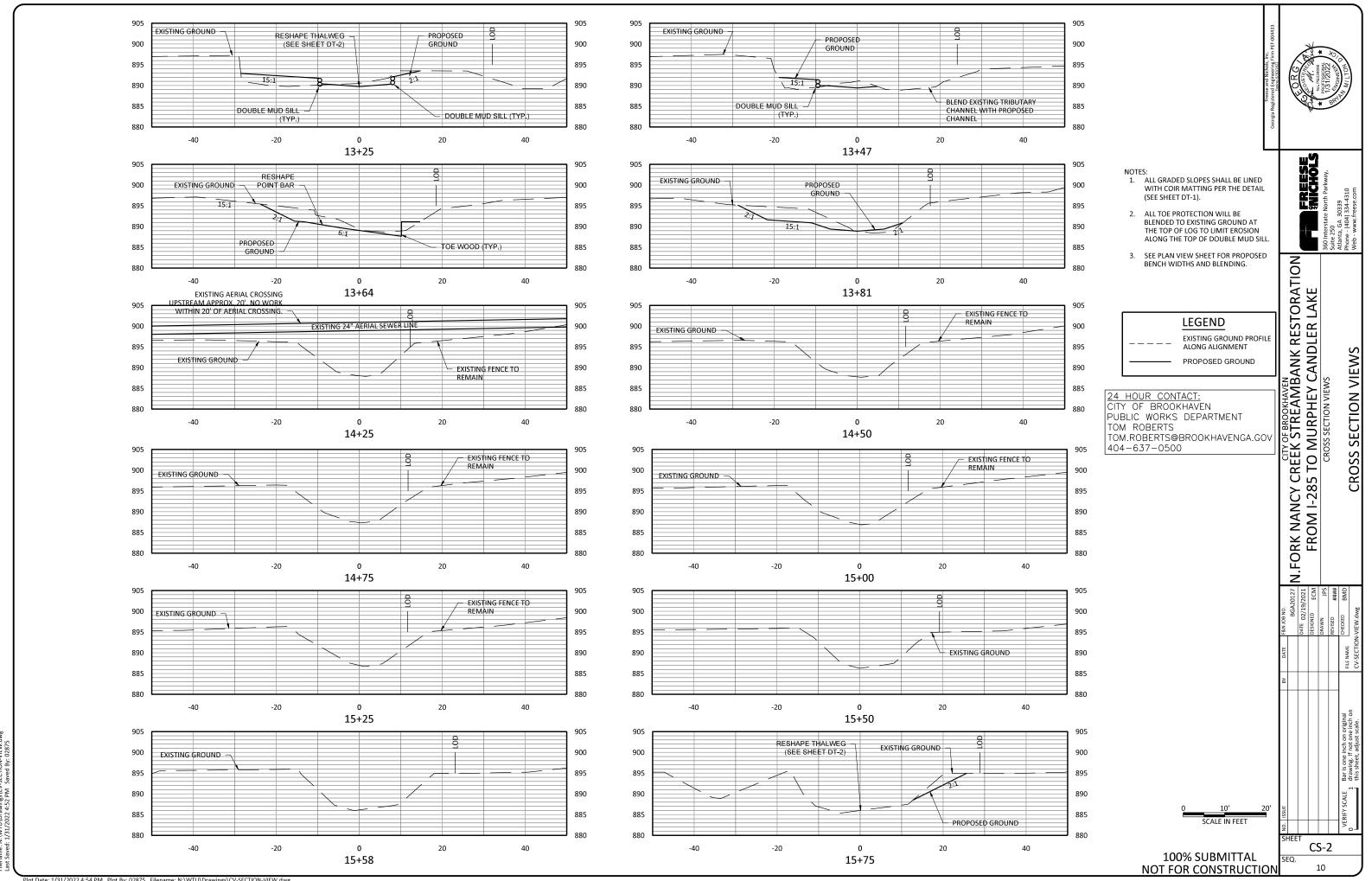




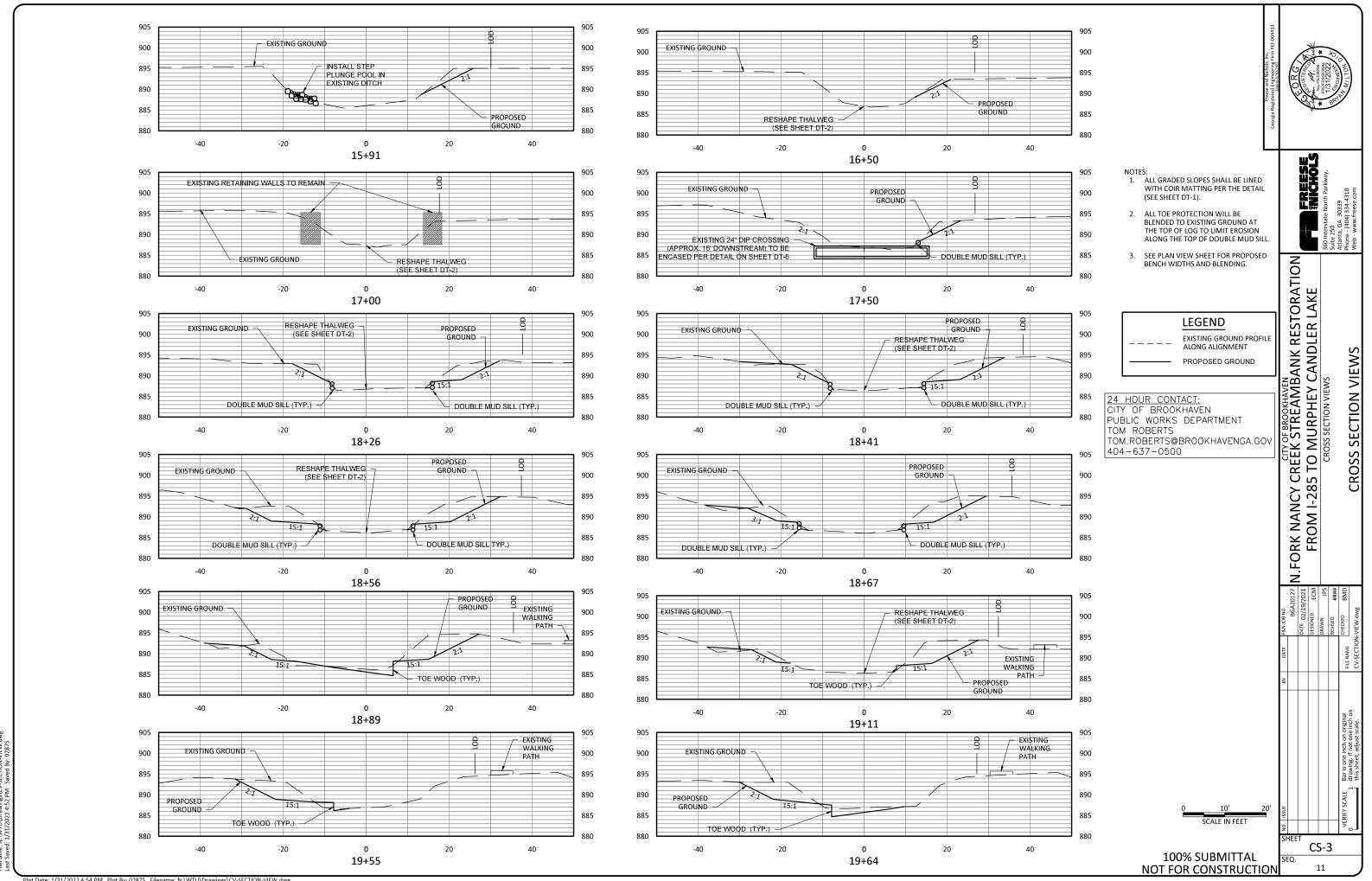




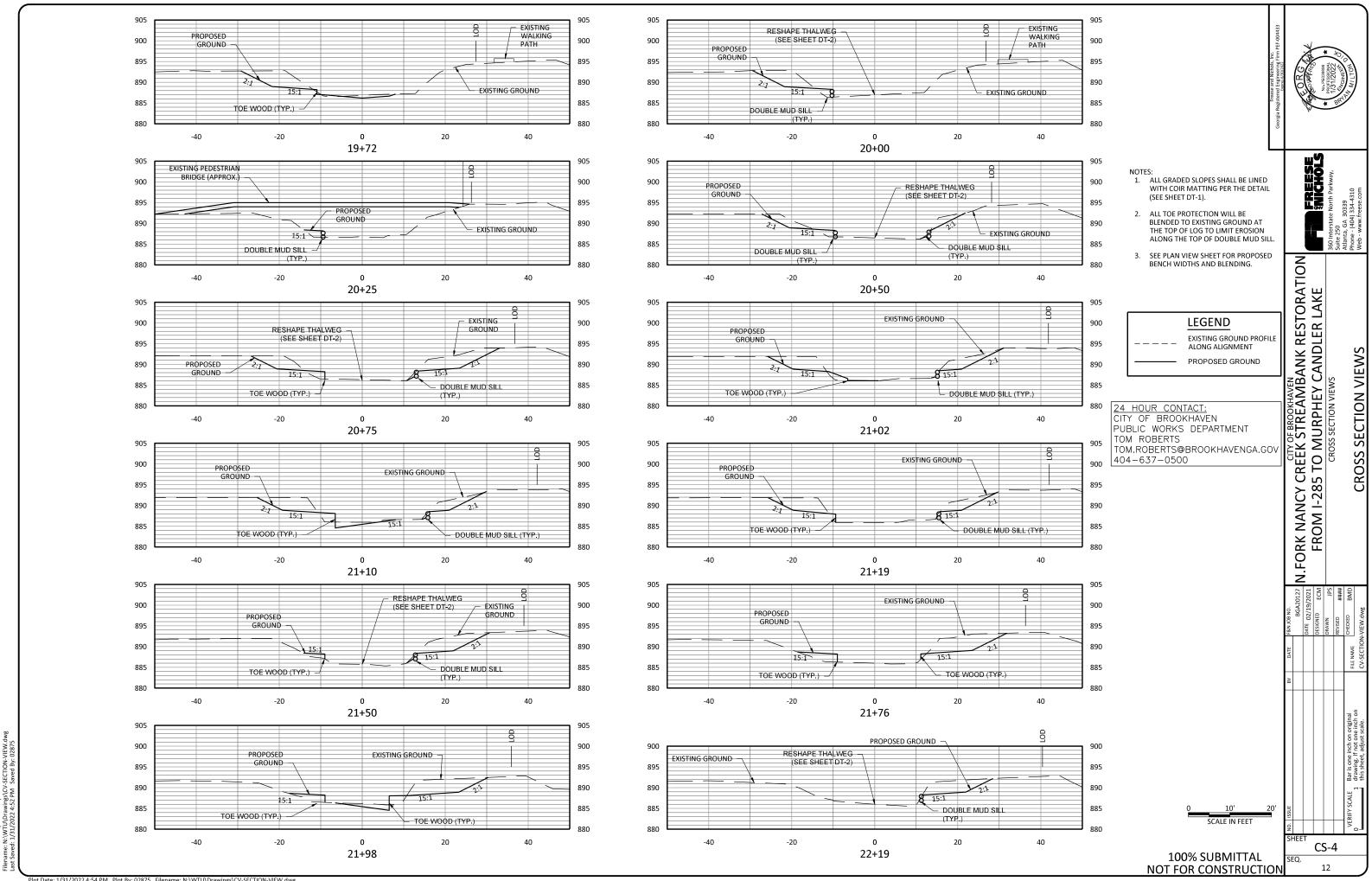
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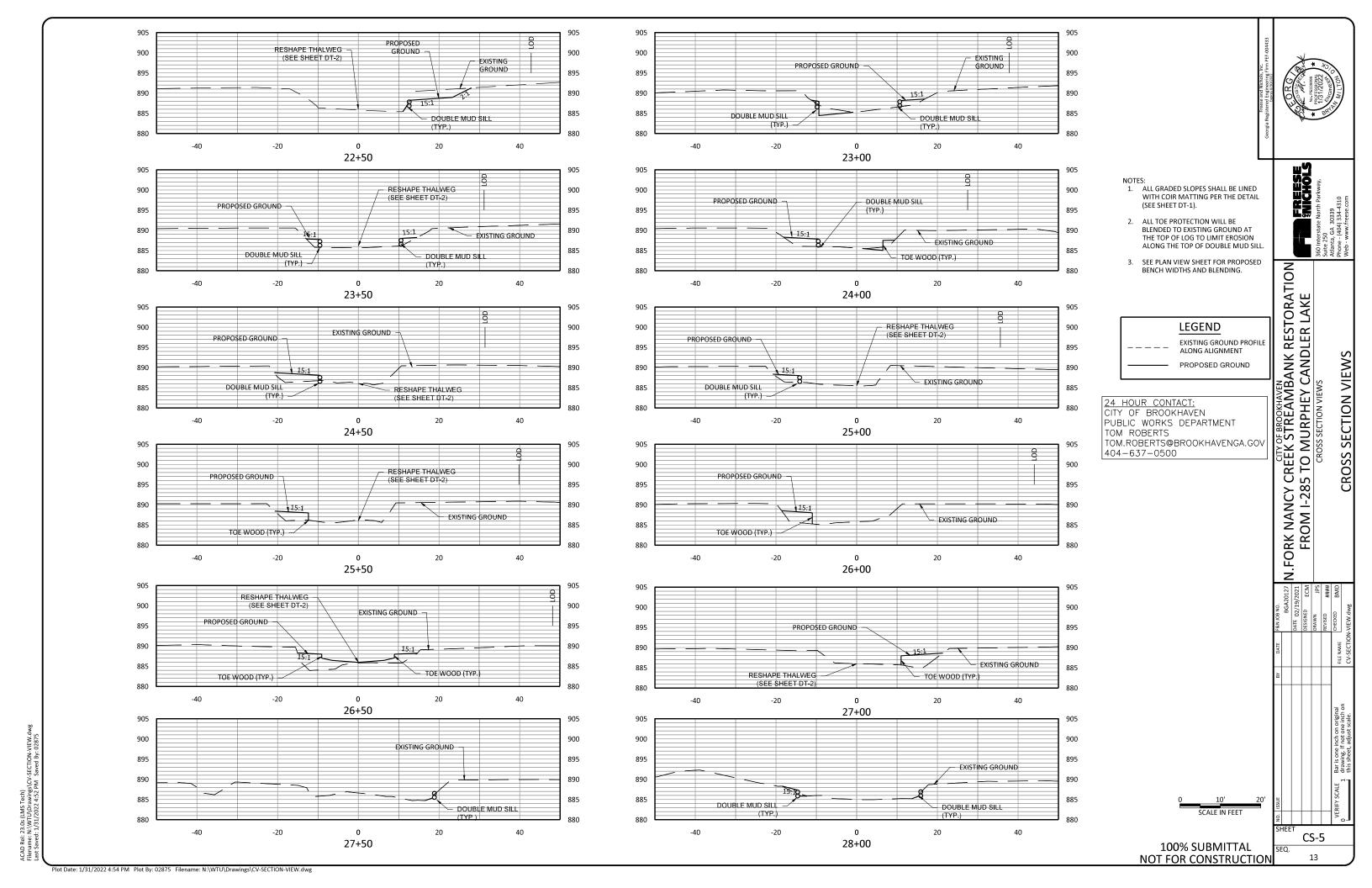
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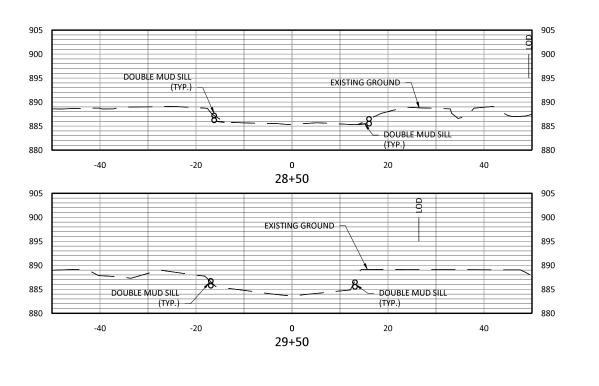


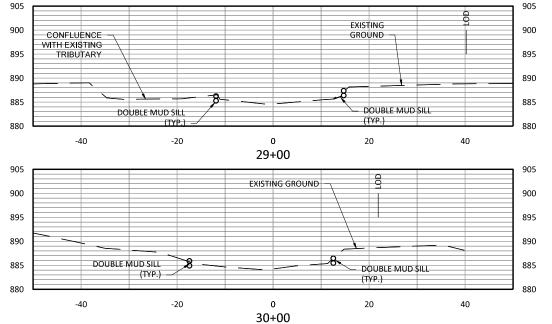
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ALL GRADED SLOPES SHALL BE LINED
 WITH COIR MATTING PER THE DETAIL

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FREESE

**SECTION VIEWS** 

CROSS

CS-6

14

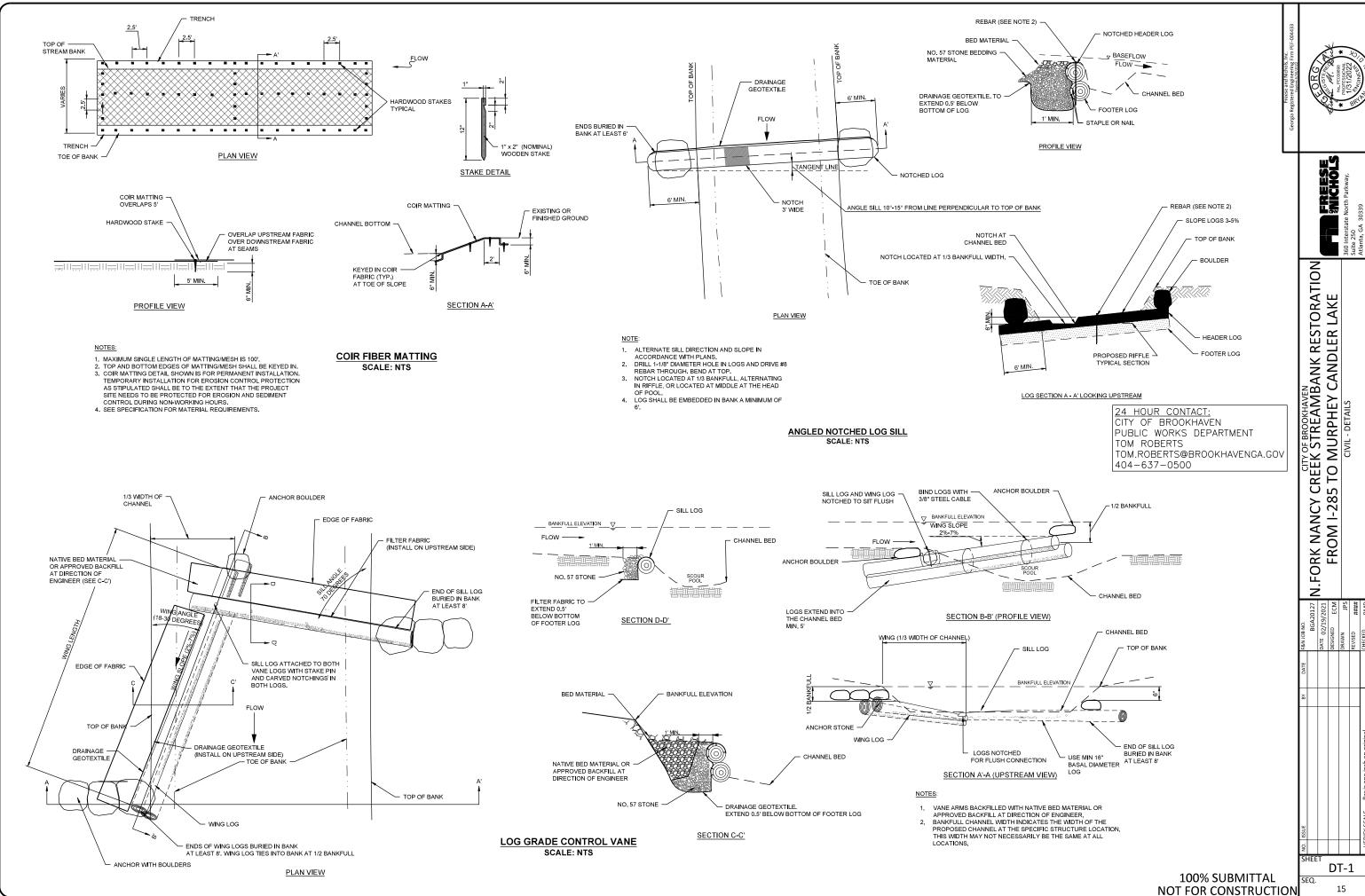
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(SEE SHEET DT-1). ALL TOE PROTECTION WILL BE BLENDED TO EXISTING GROUND AT THE TOP OF LOG TO LIMIT EROSION ALONG THE TOP OF DOUBLE MUD SILL 3. SEE PLAN VIEW SHEET FOR PROPOSED BENCH WIDTHS AND BLENDING. N.FORK NANCY CREEK STREAMBANK RESTORATION FROM I-285 TO MURPHEY CANDLER LAKE LEGEND EXISTING GROUND PROFILE ALONG ALIGNMENT PROPOSED GROUND 24 HOUR CONTACT: CITY OF BROOKHAVEN PUBLIC WORKS DEPARTMENT TOM.ROBERTS@BROOKHAVENGA.GOV 404-637-0500



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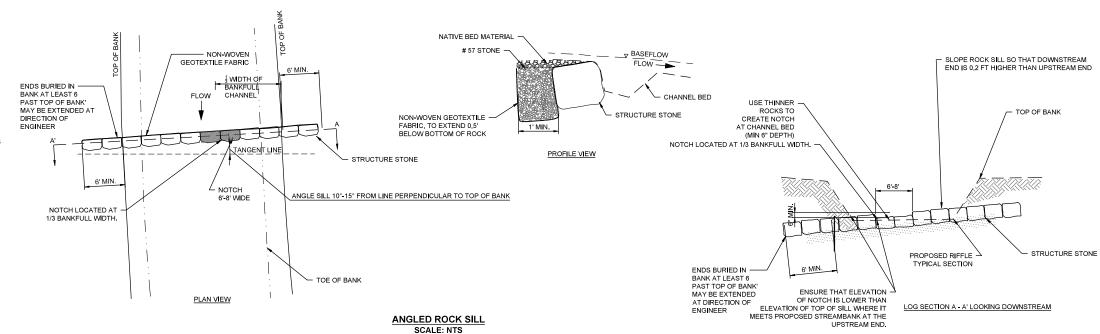
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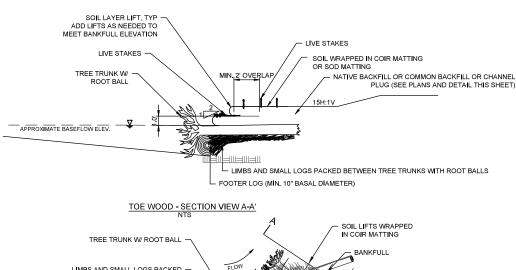
DT-2

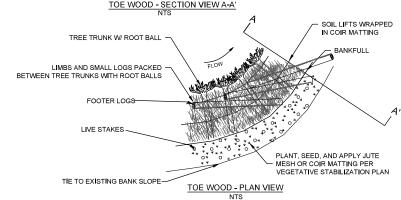
- ALTERNATE SILL DIRECTION AND SLOPE IN
- ACCORDANCE WITH PLANS.
  SILL ROCKS TO BE STRUCTURE STONE.
  CREATE LOW-FLOW NOTCH OF AT LEAST 6" DEPTH
  USING THINNER ROCK, LOCATE AT 1/3 BANKFULL, ALTERNATING IN RIFFLE, OR LOCATED AT MIDDLE AT THE HEAD OF POOL.
- AT THE HEAD OF POOL.

  ENDS OF SILL SHALL BE EMBEDDED INTO BANK AT LEAST 6' PAST TOP OF BANK, MAY BE EXTENDED AT DIRECTION OF ENGINEER. IN STEP-POOL AREAS, ANGLED ROCKS SILLS TO BE ALTERNATED IN DIRECTION IN SAME MANNER SHOWN IN THE ANGLED LOG STEP POOL DETAIL (SEE DETAIL THIS SHEET).

  ENSURE THAT ELEVATION OF BOTTOM OF NOTCH IS LOWER THAN ELEVATION OF TOP OF SILL WHERE IT MEETS THE PROPOSED BANK AT THE UPSTREAM END.

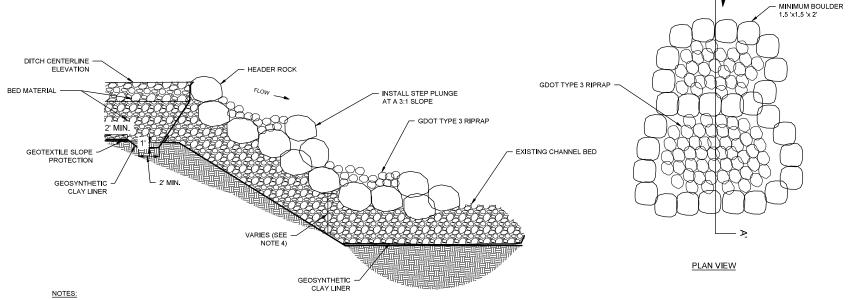






- THE CONTRACTOR SHALL USE LOGS, TRUNKS WITH ROOTS, AND BRANCHES TO FORM THE "TOE WOOD" STREAMBANK TOE PROTECTION.
   THE STREAMBANKS ABOVE THE TOE WOOD SHALL BE FORMED FROM SOIL LIFTS WRAPPED IN COIR MATTING.
- 3. TOP OF LOG FOR ROOT WAD SET AT NORMAL BASE FLOW ELEVATION OF

**TOE WOOD** SCALE: NTS



- HEADER AND FOOTER ROCKS SHALL BE ABLE TO BE STACKED.
   SEE PROFILE FOR THALWEG SLOPES.
   STEP PLUNGE POOL SHALL EXTEND ALONG THE BANK AND KEY.
- INTO TOE OF SLOPE.

  BASE OF FOOTER ROCKS SHALL BE ATOP BED MATERIAL.

  REFER TO TYPICAL SECTION FOR CHANNEL WIDTH AND DEPTH
- ROCKS SHALL BE INSTALLED TIGHTLY AGAINST EACH OTHER; GAPS ARE NOT ACCEPTABLE.

TYPICAL SECTION - A TO A' (PROFILE VIEW - ALONG CENTERLINE)

STEP PLUNGE POOL SCALE: NTS

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N.FORK NANCY CREEK STREAMBANK RESTORATION
FROM I-285 TO MURPHEY CANDLER LAKE
CIVIL- DETAILS

DT-3 17

FREESE

N.FORK NANCY CREEK STREAMBANK RESTORATION FROM I-285 TO MURPHEY CANDLER LAKE

DT-4 18

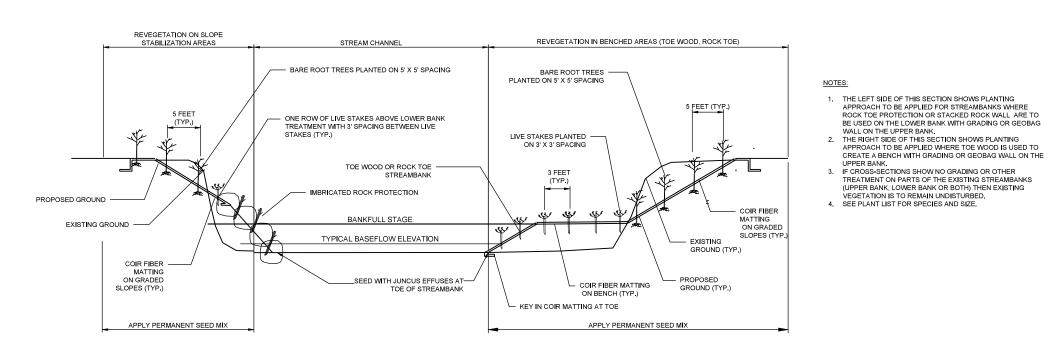
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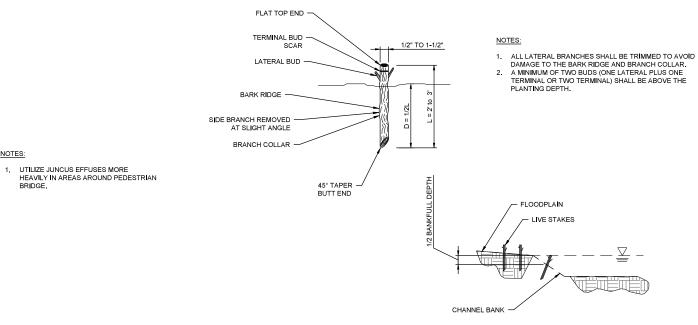
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#### REVEGETATION TYPICAL SECTION SCALE: NTS

	Scientific Name	Common Name	Quantity	Remarks	
	Acer rubrum	Red maple	109		
BARE ROOT TREES	Platanus occidentalis	American sycamore	218		
	Quercus pagoda	Cherry Bark oak	109	Bare root 1/0 seedlings	
	Liriodendron tulipifera	Yellow poplar	109	placed on 5-ft centers, alternating plants between	
	Fagus grandifolia	American beech	109	rows and species randomly	
	Betula nigra	River birch	73	distributed.	
BARE ROOT	Hamamelis virginiana	Witch hazel	363		
SHRUBS	Lindera benzoin	Spice bush	363		
	Alnus serrulata	Tag alder	242	Stakes placed on 3' centers, alternating stakes between	
LIVE STAKES	Salix sericea	Silky willow	242	rows and with species randomly distributed. One row of live stakes planted	
	Comus amomum	Silky dogwood	242	above staked rock wall and rock toe protection, with stakes spaced 3' apart,	
PERMANENT	Mellow Marsh Farms Piedmont Sha	ade Mix or Equivalent		A I	
SEEDING	Manually apply seed of Juncus effuses at toe of streambed in areas of bank treatment			Apply at 25 lbs/acre	
TEMPORARY	Summer: Brown-top millet			Apply at 50 lbs/acre to all	
SEEDING	Winter: Wrens-abruzzi winter rye or Winte	r Wheat		disturbed areas	

PLANT LIST



UPPER BANK

UPPER BANK.

IF CROSS-SECTIONS SHOW NO GRADING OR OTHER

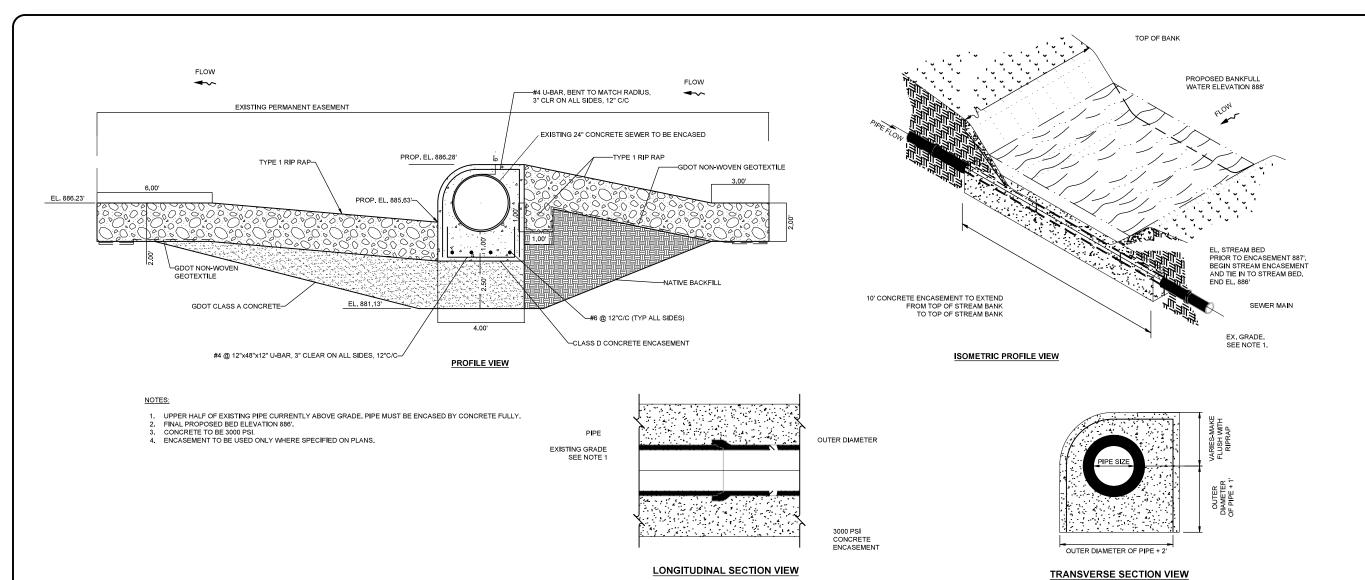
TREATMENT ON PARTS OF THE EXISTING STREAMBANKS

(UPPER BANK, LOWER BANK OR BOTH) THEN EXISTING

LIVE STAKE SCALE: NTS

NOTES:

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CONCRETE SEWER ENCASEMENT
SCALE: NTS

# ROCK PLACEMENT NOTES:

- PLACE ROCK MATERIAL IN SUCH MANNER AS TO PRODUCE A REASONABLY WELL-GRADED MASS OF ROCK WITH THE MINIMUM PRACTICABLE PERCENTAGE OF VOIDS.
- A TOLERANCE OF PLUS 6 OR MINUS 0 INCHES FROM THE SLOPE LINES AND GRADES SHOWN ON THE PLANS SHALL BE ALLOWED IN THE FINISHED SURFACE OF THE ROCK.
- PLACE ROCK MATERIAL TO ITS FULL COURSE THICKNESS AT ONE OPERATION.
- 4. DISTRIBUTE THE LARGER STONES EVENLY AND CONFORM THE ENTIRE MASS OF STONES IN THEIR FINAL POSITION TO THE SPECIFIED CRADATION
- FINISHED ROCK MATERIAL SHALL BE FREE FROM OBJECTIONABLE POCKETS OF SMALL STONES AND CLUSTERS OF LARGER STONES.
- 6. PLACING ROCK MATERIAL IN LAYERS SHALL NOT BE PERMITTED.
- PLACING MATERIAL BY DUMPING FROM TOP OF SLOPE, DUMPING INTO CHUTES, OR BY SIMILAR METHODS LIKELY TO CAUSE SEGREGATION OF THE VARIOUS SIZES SHALL NOT BE PERMITTED.
- 8. THE DESIRED DISTRIBUTION OF THE VARIOUS SIZES OF STONES THROUGHOUT THE MASS SHALL BE OBTAINED BY METHODS OF PLACEMENT WHICH PRODUCES THE SPECIFIED RESULTS.
- 9. REARRANGE INDIVIDUAL STONES BY MECHANICAL EQUIPMENT OR BY HAND TO THE EXTENT NECESSARY TO OBTAIN A REASONABLY WELL GRADED DISTRIBUTION OF STONE SIZES
- O. MAINTAIN THE MATERIAL PROTECTION UNTIL ACCEPTED AND REPLACE ANY MATERIAL DISPLACED DURING CONSTRUCTION.
- 11. NON-WOVEN GEOTEXTILE AND CONCRETE ITEMS SHALL MEET GDOT SPECIFICATIONS

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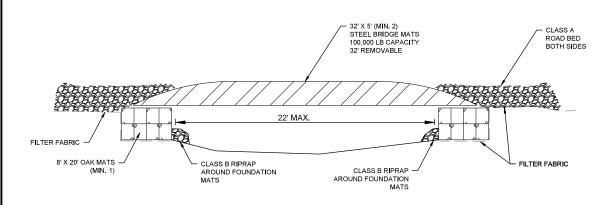
24 HOUR CONTACT:
CITY OF BROOKHAVEN
PUBLIC WORKS DEPARTMENT
TOM ROBERTS
TOM.ROBERTS@BROOKHAVENGA.GOV
404-637-0500

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- EXACT LOCATION TO BE DETERMINED BY ENGINEER IN FIELD. ONLY ONE CROSSING LOCATION TO BE INSTALLED AT A TIME.
   SPANS TO BE REMOVED PRIOR TO HIGH WATER FLOWS OR INCLEMENT WEATHER.

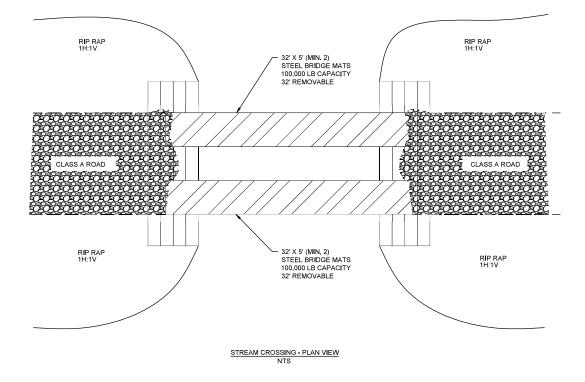


STREAM CROSSING - PROFILE VIEW NTS

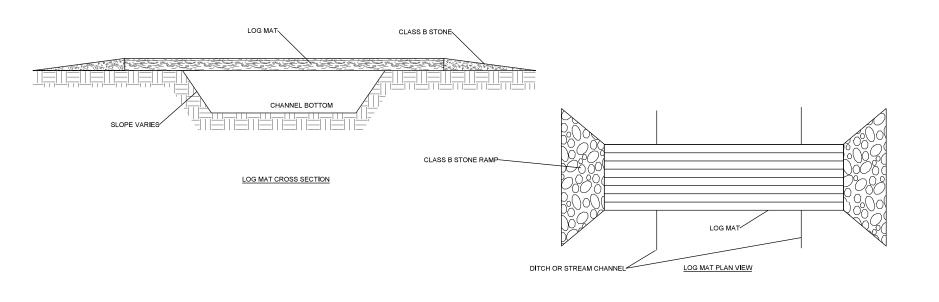
NOTES:

- 1. CONSTRUCT STREAM CROSSING WHEN FLOW IS LOW.
- 2. HAVE ALL NECESSARY MATERIALS AND EQUIPMENT ON-SITE BEFORE WORK BEGINS.
- 3. MINIMIZE CLEARING AND EXCAVATION OF STREAMBANKS. DO NOT EXCAVATE CHANNEL BOTTOM.
- 4. LINE STREAMBANK AND ACCESS RAMP AREA WITH NON-WOVEN FILTER FABRIC
- INSTALL STREAM CROSSING AT RIGHT ANGLE TO THE FLOW. THE CROSSING SHALL ALLOW FLOW TO ENTER THE CHANNEL UNIMPEDED.
- MAINTAIN CROSSING SO THAT RUNOFF IN THE CONSTRUCTION ROAD DOES NOT ENTER EXISTING CHANNEL BY INSTALLING SILT FENCE ON ALL FOUR CORNERS ADJACENT TO THE STREAM. SEE SILT FENCE DETAIL.
- 7. STABILIZE AN ACCESS RAMP OF CLASS B STONE TO THE EDGE OF THE MUD MAT.
- 8. THE LOG MAT SHALL BE OF SUFFICIENT SIZE AND WIDTH TO SUPPORT THE LARGEST VEHICLE CROSSING THE CHANNEL.
- CONTRACTOR SHALL DETERMINE AN APPROPRIATE RAMP ANGLE ACCORDING TO EQUIPMENT UTILIZED, RECOMMENDED AT A 5:1 SLOPE.

- 10. FOR REMOVAL OF TEMPORARY IMPACTS, THE FOLLOWING SEQUENCING SHOULD BE OBSERVED:
  11. NALL FORESTED WETLANDS, CLEARING WILL BE DONE BY HAND & GRUBBING WILL OCCUR AS NEEDED TO INSTALL TEMPORARY HAUL ROADS.
  12. IMPACTS AT STREAM CROSSING LOCATIONS WILL BE MINIMIZED BY USE OF APPROPRIATE EROSION CONTROL & FLOW DIVERSION MEASURES DURING CONSTRUCTION.
  13. DIRECT IMPACTS FROM CONSTRUCTION TO THESE FEATURES WILL BE TEMPORARY, & ANY IMPACTED AREAS WILL BE RESTORED TO ORIGINAL GRADE & STABILIZED FOLLOWING CONSTRUCTION. THE CONTRACTOR SHALL LINE THE LOD WITH TREE PROTECTION FENCE TO PEPEVENT THE LININGERSSARY PERMOVAL OF VEGETATION.
- PREVENT THE UNNECESSARY REMOVAL OF VEGETATION.
  PRIOR TO EXCAVATING IN JURISDICTIONAL STREAMS, RIP-RAP COFFERDAMS WILL BE
  INSTALLED UPSTREAM & DOWNSTREAM OF THE EXCAVATION AREA TO ISOLATE THE
  DISTURBED AREA AND CONTAIN SEDIMENT. STREAM FLOW ON THE UPSTREAM SIDE OF THE DISTORBED AREA AND CONTAIN SEDIMENT. STREAM FLOW ON THE DYSTREAM SIDE OF THE EXCAVATION WILL BE POOLED ABOVE THE COFFERDAM AND PUMPED AROUND THE EXCAVATION AREA, THE PUMPED WATER WILL BE DISCHARGED ON THE DOWNSTREAM SIDE OF THE EXCAVATION BELOW THE LOWER COFFERDAM THROUGH SEDIMENT BAGS TO FILTER THE DISCHARGE WATER OF SEDIMENT BEFORE ALLOWING THE WATER TO BE RETURNED TO THE STREAM CHANNEL. A COFFERDAM (I.E. IMPERVIOUS DIKE) AND BYPASS PUMP DETAIL IS ATTACHED IN THE DESIGN PLANS ON SHEET ES-13.
- ALL MATERIAL TEMPORARILY SIDE CAST INTO WETLAND AREAS WILL BE PLACED ON FILTER FABRIC.
  HAUL ROADS AND OTHER TEMPORARY WORK AREAS WILL BE BACKFILLED AND PROPERLY
- COMPACTED TO THE ORIGINAL (PRE-CONSTRUCTION) GROUND ELEVATION, AND THE RE-ESTABLISHED GRADE WILL BE STABILIZED WITH A SEED MIX MADE UP OF NATIVE SPECIES APPROPRIATE FOR RESTORATION & STABILIZATION OF WETLAND & UPLAND SOILS.
- TEMPORARY EROSION SEED MIXES WILL ALSO BE USED TO STABILIZE DISTURBED AREAS WITHIN THE REQUIRED STABILIZATION TIME FRAMES, SPECIFICS ABOUT THIS SEED MIX IS INCLUDED IN SPECIFICATION SECTION 6.01 "PERMANENT AND TEMPORARY SEEDING".



#### TEMPORARY STREAM CROSSING SCALE: NTS



LOG MAT- TEMPORARY STREAM CROSSING SCALE: NTS

TOM ROBERTS TOM.ROBERTS@BROOKHAVENGA.GOV 404-637-0500

PUBLIC WORKS DEPARTMENT

24 HOUR CONTACT: CITY OF BROOKHAVEN

> 100% SUBMITTAL NOT FOR CONSTRUCTION

FREESE

N.FORK NANCY CREEK STREAMBANK RESTORATION
FROM I-285 TO MURPHEY CANDLER LAKE
CIVIL - DETAILS

DT-6

20

SWCD: DEKALB COUNTY SWCD Project Name: from Hwy I-285 to Murphey Candler Lake Address: 4251 Long Branch Ct Brookhaven, GA City/County: Brookhaven/Dekalb County, GA Date on Plans: February 2022 Name & email of person filling out checklist: Ryan Ellena (ryan.ellena@freese.com) TO BE SHOWN ON ES&PC PLAN ES-1 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) ES-1 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

N/A N/A 3 Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the GAEPD District Office. If GAEPD 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 and the GAEPD approval letter. (A copy of the written approval by GAEPD must be attached to the plan for the Plan to be reviewed.

ES-1 Y 4. The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls, Provide the name, address, email address, and phone number of primary permittee

6 Note total and disturbed acreages of the project or phase under construction ES-5 Y 7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.

ALL Y 8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions ES-1 Y 9 Description of the nature of construction activity and existing site conditions.

COVER Y 10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary. 1 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, ES-1 Y

ES-1 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.

residential areas, wetlands, marshlands, etc. which may be affected.

ES-1 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 ES-1 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. \* ES-1 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

ES-1 Y 16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required. ES-1 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."

variances and permits."

ES-1 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." \*

ES-1 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 ES-1 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.

ES-1 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."

ES-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 a 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. \*

ES-1 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.

FS-1 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. \*

FS-1 Y 25 Provide BMPs for the remediation of all petroleum spills and leaks FS-1 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.

27 Description of practices to provide cover for building materials and building products on site. 1 28 Description of the practices that will be used to reduce the pollutants in storm water discharges. ES-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). ES-1 Y 30 Provide complete requirements of Inspections and record keeping by the primary permittee. \*

ES-2 Y 31 Provide complete requirements of Sampling Frequency and Reporting of sampling results. \* ES 2 Y 32 Provide complete details for Retention of Records as per Part IV.F. of the permit \* ES-2 Y 33 Description of analytical methods to be used to collect and analyze the samples from each location. \*

ES-2 Y 34 Appendix B rationale for NTU values at all outfall sampling points where applicable. ES-2 Y 35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which

storm water is discharged. ES-1 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. 37 Graphic scale and North arrow.

ALL 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	Flat 0 - 2%	0.5 or 1
larger scale	Rolling 2 - 8%	1 or 2
	Steep 8% +	2,5 or 10

N/A N/A 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 GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.

N/A N/A 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. \*

ALL Y 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 ALL Y 42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.

ES-2 Y 43 Delineation and acreage of contributing drainage basins on the project site. FS-2 N/Δ 44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. \* ES-2 Y 45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are

ES-2 N/A 46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.

ES-2 Y 47 Soil series for the project site and their delineation ALL Y 48 The limits of disturbance for each phase of construction.

ES-2 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

legend.

Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with 1 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set

ALL Y 50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for

ALL 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.

#### EROSION CONTROL 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

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 FROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE GEORGIA 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.

SIGNATURE.

RYAN C. ELLENA, P.E. LEVEL II CERTIFIED DESIGN PROFESSIONAL NO. 0000081592



#### ES&PC PLAN GENERAL NOTES

- THE TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 4.3 ACRES. THIS SITE IS LOCATED AT 33.9190, -84.3281
- THE CONSTRUCTION ENTRANCES/EXITS FOR THE SITE, AS WELL AS LATITUDE AND LONGITUDE COORDINATES, ARE SHOWN ON THE PLAN SHEETS.
- THIS CONSTRUCTION ACTIVITY INVOLVES RESTORATION OF THE STREAM BETWEEN I-285 AND MURPHEY CANDLER LAKE. THIS WORK INCLUDES INSTALLATION OF TOE PROTECTION AND VARIOUS IN-CHANNEL STRUCTURES THAT WILL HELP IMPROVE AQUATIC HABITAT, REDUCE IN-CHANNEL EROSION, AND IMPROVE WATER QUALITY. THE PROJECT IS LOCATED UPSTREAM OF MURPHEY CANDLER LAKE. THE PROJECT'S RECEIVING WATERS ARE NORTH FORK NANCY CREEK. THE CONFLUENCE WITH MURPHEY CANDLER LAKE IS LOCATED IMMEDIATELY DOWNSTREAM OF THE PROJECT AREA. NO ADDITIONAL SENSITIVE ADJACENT AREAS ARE KNOWN TO EXIST.
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE PERIMETER BMPS WITHIN 7-DAYS AFTER INSTALLATION
- NON-EXEMPT ACTIVITES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT LINDISTLIBBED STREAM BLIFFERS 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.
- 6. A BUFFER VARIANCE IS REQUIRED DUE TO THE NATURE OF THE PROJECT BEING STREAM RESTORATION. THIS PROJECT IMPACTS THE 25' STATE BUFFER THEREFORE A STATE STREAM BUFFER VARIANCE IS REQUIRED FROM EPD. HOWEVER, A STREAM BUFFER VARIANCE IS NOT REQUIRED FROM THE CITY DUE TO THE NATURE OF THE PROJECT BEING STREAM RESTORATION
- WASTE MATERIALS, INCLUDING SOLID AND BUILDING MATERIALS, SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404
- 8. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO ANY DISTURBING

- 9. 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
- 10. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABLIZED WITH MULCH OR TEMPORARY SEEDING.
- 11. PERMANENT VEGETATION SHALL BE PLANTED IF THE AREA IS TO BE LEFT UNDISTURBED FOR GREATER THAN 6 MONTHS
- 12. MEASURES TO BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED INCLUDE STREAM BUFFER PRESERVATION AND PLANTING AND STABILIZATION OF STEEP SLOPES AS NEEDED.
- 13 FIVE (5) TYPES OF EROSION CONTROL MEASURES WILL BE LITILIZED IN THE CONSTRUCTION OF THE PROJECT TO REDUCE THE POLLUTANTS IN STORMWATER DISCHARGES.
- SILT FENCE TYPE NON-SENSITIVE (SD1-NS) SHALL BE INSTALLED AT APPROPRIATE LOCATIONS TO PREVENT SEDIMENT FROM ESCAPING THE SITE
- MULCHING, TEMPORARY AND PERMANENT GRASSING (DS1, DS2 & DS3) SHALL BE USED TO RE-ESTABLISH VEGETATION ON THE DISTURBED AREAS AS CONSTRUCTION PROCEEDS.
- CONSTRUCTION EXITS (CO) WILL BE USED TO PREVENT SEDIMENT FROM LEAVING THE SITE VIA THE TIRES OF TRUCKS AND CONSTRUCTION EQUIPMENT.
- TREE PROTECTION (TR) WILL BE INSTALLED TO PRESERVE EXISTING TREES TO THE
- A SEDIMENT BAG WILL BE USED TO FILTER WATER THAT IS REMOVED FROM THE CHANNEL DURING CONSTRUCTION
- TURBIDITY CURTAIN (Tc) WILL BE USED TO MINIMIZE SILT MIGRATION FROM WORK
- CONSTRUCTION ROAD STABILIZATION (Cr) WILL BE USED AS A HAUL ROAD TO PROVIDE A FIXED ROUTE OF TRAVEL FOR CONSTRUCTION TRAFFIC BETWEEN TIME OF INITIAL GRADING AND FINAL STABILIZATION.
- 14 THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A CONSTRUCTION SCHEDULE A COPY OF THE CONSTRUCTION SCHEDULE SHALL BE MAINTAINED AT THE PROJECT SITE. THE MAJOR SEQUENCE OF ACTIVITIES AS THEY RELATED TO THE ES&CP ARE
- PHASE 1 DEMOLITION AND CLEARING, THE CONTRACTOR SHALL INSTALL SILT FENCING AND TREE PROTECTION AS REQUIRED BEFORE THE START OF ANY LAND DISTURBING
- PHASE 2 GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN BMPS AS NEEDED. IF A BMP IS REMOVED DUE TO CHANGING SITE CONDITIONS. IT SHALL BE REPLACED WITH ANOTHER MEASURE TO CONTROL AND PREVENT SEDIMENT FROM LEAVING THE SITE.
- PHASE 3 FINISH GRADING AND LANDSCAPING. ALL FACILITIES FROM PHASE 1 AND PHASE 2 WILL BE MAINTAINED AS APPROPRIATE AND REMOVED WHEN THE NEED NO LONGER EXISTS, ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED, REMOVE ALL ACCUMULATED SILT. REFER TO DETAIL SHEETS FOR LANDSCAPING AND PLANTING INSTALLATION REQUIREMENTS.

CONSTRUCTION SCHEDULE									
ACTIVITY	MONTH								
	1	2	3	4					
INSTALLATION OF EROSION CONTROL									
MAINTENANCE OF EROSION CONTROL									
INSTALLATION OF IN STREAM STRUCTURES									
TEMPORARY AND PERMANENT PLANTING									
CLEAN-UP									
CONSTRUCTION ACTIVITIES ARE EXPECTED T	O BEGIN IN	APRIL 2021							

#### IMPAIRED STREAM SEGMENT CONSIDERATIONS

OCCURRING WITHIN THE WATER.

- NANCY CREEK (HEADWATERS TO PEACHTREE CREEK) IN DEKALB AND FULTON COUNTIES HAS BEEN IDENTIFIED AS AN IMPAIRED STREAM NOT SUPPORTING ITS DESIGNATED USE IN THE GEORGIA 2020 305(b)/303(d) LIST DOCUMENTS (FINAL) AND HAS BEEN LISTED FOR THE CRITERIA VIOLATED, FECAL COLIFORM AND IMPAIRED FISH COMMUNITY (BIO F). THE PROPOSED PROJECT WILL HAVE NO ADVERSE IMPACTS RELATIVE TO THE POLLUTANTS OF
- TMDL IMPLEMENTATION PLANS FOR FECAL COLIFORM AND SEDIMENT (BIOTA IMPACTED) WERE FINALIZED IN NOVEMBER 2008 AND JANUARY 2008, RESPECTIVELY. COMPLIANCE WITH THE GEORGIA EROSION AND SEDIMENTATION ACT (GESA) WILL ENSURE THAT POLLUTANT LOADINGS FROM THE CONSTRUCTION SITE WILL BE AT OR BELOW APPLICABLE TARGETS FOR THE POLLUTANTS OF CONCERN.
- 3. 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, THE PROJECT SITE IS LOCATED ON A STREAM SEGMENT THAT IS IMPAIRED, AS LISTED ON THE 2020 303(d) LIST PROVIDED BY THE GA ENVIRONMENTAL PROTECTION DIVISION. THE BMPS THAT WILL BE USED FOR THE SITE WHICH DISCHARGES TO THE IMPAIRED STREAM SEGMENT, AS LISTED IN APPENDIX 1 (APPENDED TO THE PLANS) OF THE CHECKLIST, ARE AS FOLLOWS:
- d A LARGE SIGN (MINIMUM 4 FFFT X 8 FFFT) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY THE SIGN MUST IDENTIFY THE FOLLOWING: (1) THE CONSTRUCTION SITE, (2) THE PERMITTEE(S), (3) THE CONTACT PERSON(S) ALONG WITH THEIR TELEPHONE NUMBER(S), AND (4) THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN E VIEWED. THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED NOI. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE VAILABLE ON THE PROVIDED WEBSITE UNTIL A NOT HAS BEEN SUBMITTED.
- e. USE FLOCCULANTS OR COAGULANTS AND/OR MULCH TO STABILIZE AREAS LEFT DISTURBED FOR MORE THAN SEVEN (7) CALENDAR DAYS IN ACCORDANCE WITH PART III.D.1 OF THE CURRENT NPDES PERMIT.
- i. LIMIT THE AMOUNT OF DISTURBED AREA AT ANY ONE TIME TO NO GREATER THAN 25 ACRES OR 50% OF THE TOTAL PLANNED SITE. WHICHEVER IS LESS. ALL CALCULATIONS MUST BE INCLUDED IN THE PLAN.
- p. CONDUCT SOIL TESTS TO IDENTIFY & TO IMPLEMENT SITE-SPECIFIC FERTILIZER NEEDS.

CONTROLS FOR POTENTIAL CONSTRUCTION RELATED POLLUTANTS

- WHEN WASHING VEHICLES BEFORE THEY LEAVE THE SITE, ANY HAZARDOUS SUBSTANCES THAT HAVE BEEN IN CONTACT WITH THE CONSTRUCTION VEHICLES WILL NOT BE WASHED INTO ANY STREAMS, LAKES, WELLS, ETC.
- 2. PERMANENT VEGETATION AND SLOPE STABILIZATION SHALL WORK IN CONJUNCTION WITH THE TEMPORARY SEDIMENT PONDS TO PERMANENTLY STABILIZE THE CONSTRUCTION SITE AND LIMIT POLLUTANTS ENTERING ADJACENT STATE WATERS AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED.
- 3. ALL OTHER BUILDING MATERIALS AND/OR PRODUCTS THAT ARE STORED ON SITE MUST BE STORED AND/OR COVERED PER MANUFACTURER'S INSTRUCTIONS AND/OR SUCH THAT LEAKING, SPILLS, CONTAMINATION OF STORMWATER RUNOFF, OR OTHER TYPES OF CONTAMINATION ARE PREVENTED.
- ADEQUATE WASTE CONTAINERS WILL BE PROVIDED AT APPROPRIATE LOCATIONS ON THE PROJECT SITE AWAY FROM STREETS, GUTTERS, WATER COURSES AND STORM DRAINS, AND WILL HAVE PROPER DISPOSAL, WORKERS WILL BE REQUIRED TO UTILIZE WASTE
- LIQUID WASTE COLLECTION AREAS SHALL BE LOCATED WITHIN SECONDARY CONTAINMENT STRUCTURES TO MINIMIZE THE RISK OF CONTAMINATED DISCHARGES.
- 6. ALL SANITARY SEWER OR SEPTIC SYSTEM WASTE SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH THE STATE AND/OR LOCAL REGULATIONS.
- CONSTRUCTION MATERIALS STORED AT THE SITE WILL BE MONITORED AND KEPT IN A LOCATION WHERE CONTACT WITH STORM WATER, WELLS, AND ANY OTHER BODIES OF WATER CAN BE PREVENTED.
- STORAGE CONTAINERS FOR OIL, FUEL AND OTHER HAZARDOUS SUBSTANCES WILL BE LOCATED IN DESIGNATED AREAS PROTECTED WITH IMPERVIOUS CONTAINMENT BERMS.
- THE CONTRACTOR WILL NOTIFY GEORGIA EPD (404-656-4863) AND THE NATIONAL RESPONSE CENTER (NRC) (800-424-8802) UPON AWARENESS OF A RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL IN AN AMOUNT EQUAL TO OR GREATER THAN A REPORTING QUANTITY ESTABLISHED UNDER THE GEORGIA OIL OR HAZARDOUS MATERIAL SPILL OR RELEASE ACT (O.C.G.A. 12-14-2, ET SEQ.), 40 CFR 117 AND 40 CFR 302, AS SOON AS THE CONTRACTOR HAS KNOWLEDGE OF THE DISCHARGE.
- 10. DISCHARGE OF CONSTRUCTION MATERIALS INTO ANY BODY OF WATER WILL BE PREVENTED.
- 11. ANY SPILL WILL BE CLEANED UP IMMEDIATELY.
- 12. WASHOUT OF CONCRETE DRUMS AT THE CONSTRUCTION SITE(S) IS NOT PERMITTED. WASH DOWN OF TOOLS CONCRETE MIXER. OR THE REAR OF VEHICLES MAY BE WASHED OUT ONSITE IF THE WASHWATER IS PASSED THROUGH A THREE CHAMBER WASHOUT FILTER AND FILTER SOCK, PER EPA GUIDANCE, ALTERNATIVELY, WASHWATER MAY BE TREATED OFF SITE TO REMOVE METALS AND REDUCE ITS PH, THEN DELIVERED TO A PUBLIC WASTEWATER TREATMENT FACILITY. UNTREATED WASHWATER MUST NOT BE WASHED INTO STREAMS, LAKES, WELLS, ETC
- 13. PETROLEUM BASED PRODUCTS CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULATIVE PREVENTATIVE MAINTENANCE OF SUCH FOLIPMENT FOLIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FLIFLS AND LUBRICANTS IS PROHIBITED PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE
- 14. SOLVENTS- ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- 15. FERTILIZER/HERBICIDES- THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

#### INSPECTIONS

EACH EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT DEVICE WILL BE INSPECTED IN ACCORDANCE WITH THIS ESPCP, CONTRACT DOCUMENTS AND CONSTRUCTION PLANS. ALL INSPECTIONS REQUIRED BY THIS ESPCP SHALL BE CONDUCTED BY QUALIFIED PERSONNEL, AS DEFINED BY THE PERMIT, FOR THIS PROJECT THE CONTRACTOR IS OBLIGATED. BY AGREEMENT WITH THE OWNER, TO PROVIDE QUALIFIED PERSONNEL FOR ALL INSPECTIONS.REQUIREMENTS FOR INSPECTION AND MAINTENANCE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- 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 NOTICE OF TERMINATION IS SUBMITTED.
- MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY. NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE LINDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

24 HOUR CONTACT:

NAME : TOM ROBERTS PHONE: 404-637-0500

EMAIL: TOM.ROBERTS@BROOKHAVENGA.GOV



Know what's **below. Call** before you dig. 100% SUBMITTAL

ON

STREAMBANK RESTORATI IURPHEY CANDLER LAKE NOT CONTROL CREEK S 5 TO MU EROSION VCY I-28! NANC OM I-

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NOT FOR CONSTRUCTION

- 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 HAS BEEN SUBMITTED) 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, POLITIANTS 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).
- 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.
- A REPORT OF EACH INSPECTION THAT INCLUDES 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. 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 SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY 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 THIS

#### SAMPLING REQUIREMENTS

THE PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THE PERMIT. RECEIVING WATER SAMPLES AND STORM WATER DISCHARGE SAMPLES WILL BE COLLECTED BY GRAB SAMPLES AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES SPECIFIED BY THE PERMIT. THE FREQUENCY OF SAMPLING WILL BE AS DESCRIBED IN THE FOLLOWING SECTION, SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED BELOW WILL BE REPORTED TO THE EPD. 1. SAMPLE CONTAINERS WILL BE LABELED BEFORE COLLECTING SAMPLES.

- 2. SAMPLES WILL BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER
- CLEAN GLASS OR PLASTIC JARS WITH LARGE MOUTHS WILL BE USED TO COLLECT SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
- 4. MANUAL, AUTOMATIC OR RINSING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THE PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
- 5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALL BEYOND THE MINIMUM FREQUENCY STATED IN THE PERMIT MUST BE REPORTED TO EPD.

#### SAMPLING POINTS

THE CONTRACTOR WILL SAMPLE AT THE LOCATIONS LISTED BELOW. THE PLAN SHEETS WITHIN THESE CONSTRUCTION PLANS SHOW THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED.

	Note: The Total Site Area it 6.21 acres.															
Е	SAMPLING INFORMATION										OUTFAIL CHARACTERISTICS					
	Primary Sampled Feature	Location	Name of Receiving Water	Applicable Construction Stage for Sampling	Sampling Type (Outfall or Receiving water)	Drainage Area for Receiving Water (rei2)	Upstream Disturbed Area (ocres)	Warre or Cold Water Stream	Appendix B NTU Value (Outfull Sampling only)	Allowable NTU increase (Receiving neater sampling only)	Location Description	Construction Activity	Disturbed Area (acres)	Average Outfell Slope (rise/run)	Sol Erosion Index	Represented Outfall Drainage Besins
ſ	1	Lat: 33.9199 Long: 84.3279	North Fork Nancy Creek	All	Receiving Water	1.39	0	Warm	N/A	75	Upstream	Stream Restoration	N/A	N/A	N/A	N/A
[	2	Lat: 33.9146 Long -84.3280	North Fork Nancy Creek	М	Receiving Water	1.86	6.21	Warm	N/A	75	Downstream	Stream Restoration	N/A	N/A	N/A	N/A

IT SHOULD BE NOTED THAT ALL OF THE ABOVE SAMPLING LOCATIONS MAY NOT BE ACTIVE AT ALL TIMES DURING CONSTRUCTION A SAMPLING LOCATION WILL BE ACTIVE FROM THE TIME CONSTRUCTION ACTIVITY STARTS IN THE WATERSHED THAT FEEDS THE SAMPLING LOCATION UNTIL FINAL STABILIZATION IS ACHIEVED IN THAT WATERSHED. THE TIMING OF THE CONSTRUCTION ACTIVITY WITHIN A WATERSHED DEPENDS ON CONSTRUCTION STAGING. HOWEVER, CONSTRUCTION STAGING HAS NOT YET BEEN DETERMINED. THE CONTRACTOR MAY STAGE THE CONSTRUCTION SO THAT 1) CONSTRUCTION BEGINS AT ONE END OF THE PROJECT AND PROGRESSES SYSTEMATICALLY TO THE OTHER END; 2) CONSTRUCTION BEGINS AT BOTH ENDS OF THE PROJECT AND PROGRESSES TO A COMMON MEETING POINT; OR 3) MULTIPLE CREWS BEGIN CONSTRUCTION AT DIFFERENT SECTIONS OF THE PROJECT AND EVENTUALLY LINK

#### NTU LIMIT RATIONAL

THE CONTRACTOR SHALL SAMPLE THE RECEIVING STREAM ALL UPSTREAM SAMPLE LOCATIONS OF THE PROJECT AREA AND ALL DOWNSTREAM SAMPLE LOCATIONS OF THE PROJECT AREA. RECEIVING WATERS OF THE PROJECT ARE DEFINED AS WARM WATER FISHERIES AND THEREFORE

THE TOTAL INCREASE IN TURBIDITY FROM SAMPLE LOCATIONS UPSTREAM AND DOWNSTREAM OF THE CONSTRUCTION SITE SHALL NOT EXCEED 75 NTU

#### MANUAL SAMPLING

- SAMPLING WILL BEGIN AT THE DESIGNATED REPRESENTATIVE RECEIVING WATER(S) AT THE DOWNSTREAM LOCATION. THIS SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PROJECT. FOR LARGE STREAMS WHERE VARIATIONS IN COLOR ARE VISIBLE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE DOWNSTREAM VALUE.
- UPSTREAM SAMPLES WILL BE TAKEN AFTER DOWNSTREAM SAMPLES HAVE BEEN ACQUIRED. THE UPSTREAM SAMPLE WILL BE TAKEN AT THE DISCHARGE FARTHEST UPSTREAM AT THE SITE BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PROJECT. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES MAY BE USED FOR THE UPSTREAM VALUE.
- THE SAMPLES WILL BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).CARE WILL BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL
- THE SAMPLING CONTAINER WILL BE HELD SO THAT THE OPENING FACES UPSTREAM.
- THE SAMPLES WILL BE KEPT FREE OF FLOATING DEBRIS
- ONCE THE SAMPLE JAR OR BOTTLE IS FULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY, BUT NO LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

#### SAMPLING FREQUENCY (PER PART IV.D)

THE CONTRACTOR MUST SAMPLE IN ACCORDANCE WITH THIS ES&PCP AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW:

- a. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS\* (MONDAY THROUGH FRIDAY, 8:00 AM TO 5:00 PM AND SATURDAY 8:00 AM TO 5:00 PM, EXCLUDING ALL NONWORKING FEDERAL HOLIDAYS, WHEN CONSTRUCTION ACTIVITY IS BEING CONDUCTED BY THE PRIMARY PERMITTEE) THAT OCCURS AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION:
- IN ADDITION TO ITEM (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS\* THAT OCCURS FITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST:
- AT THE TIME OF SAMPLING PERFORMED PURSUANT TO ITEMS A) AND B) ABOVE, IF BMPS ARE FOUND TO BE PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, NO FURTHER ACTION IS REQUIRED. IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM ARE NOT PROPERLY DESIGNED, INSTALLED, AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO 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. 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.
- 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 CONTRACTOR MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING AT ANY TIME OF THE DAY OR WEEK.

MEASUREMENT OF RAINFALL DATA WILL BE RECORDED DAILY (ONCE DURING EACH 24-HOUR PERIOD) AT THE DOWNSTREAM MONITORING POINT FOR EACH ACTIVE CONSTRUCTION STAGE IN WHICH STREAM MONITORING IS UTILIZED AND NEAR THE CENTER OF EACH ACTIVE CONSTRUCTION STAGE IN WHICH OUTFALL MONITORING IS UTILIZED. THE CONTRACTOR WILL ESTABLISH A RAIN GAUGE ON EACH ACTIVE CONSTRUCTION STAGE FOR THIS PURPOSE. FURTHERMORE, THE CONTRACTOR WILL COLLECT AND RECORD THE RAINFALL DATA ON THE DAILY RAINFALL MONITORING DATA FORM.

THE CONTRACTOR WILL EMPLOY QUALIFIED PERSONNEL WHO SHALL GATHER SAMPLES OF STORM WATER AS OUTLINED IN THE PERMIT PART IV, D.5 AND AS FURTHER DEFINED IN THIS ESPCP. THE CONTRACTOR WILL HAVE THE TURBIDITY OF EACH SAMPLE TESTED BY A QUALIFIED. TESTING LABORATORY. ALL TURBIDITY TESTS WILL BE CONDUCTED IN ACCORDANCE WITH 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.

- 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 STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST B 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 USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART
- 2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
- THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS:

- THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS
- THE DATE(S) ANALYSES WERE PERFORMED:
- THE TIME(S) ANALYSES WERE INITIATED:
- THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
- REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
  - THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
  - RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
  - CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED PER THE PLAN.
- 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.

#### RETENTION OF RECORDS

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 NOTICE OF TERMINATION (NOT) IS SUBMITTED IN ACCORDANCE WITH:

- a. A COPY OF ALL NOTICES OF INTENT (NOI) SUBMITTED TO EPD:
- A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
- THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT:
- A COPY OF ALL MONITORING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS
- A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT:
- A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2. OF THIS PERMIT; AND
- DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(1)(C) OF THIS PERMIT.

COPIES OF ALL NOI, NOT, REPORTS, PLANS, MONITORING REPORTS, MONITORING INFORMATION, INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION, EROSION SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOI TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMI SHALL BE RETAINED BY THE PERMITTEE WHO FITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VLOE 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.

#### REPORT SUBMITTAL

ALL WRITTEN CORRESPONDENCE REQUIRED BY THE PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE FPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THE PERMIT, COPIES OF THE DATA SENT TO GEORGIA EPD, INCLUDING THE RETURN RECEIPTS, WILL BE PROVIDED TO THE OWNER AND THE ENGINEER ON A MONTHLY BASIS.

#### OTHER NOTES

1. THE ESTIMATED DRAINAGE AREA TO THE PROJECT SITE IS 1.86 SQ MI, THE DELINEATION IS SHOWN BELOW.



- THE ESTIMATED RUNOFF COEFFICIENT OF THE SITE IS 70, WHICH CORRESPONDS TO TR-55 "WOODS GOOD" FOR TYPE C SOILS. NO CHANGE IN RUNOFF COEFFICIENT WILL RESULT FROM THE PROJECT, AS NO ADDITIONAL IMPERVIOUS AREA IS PROPOSED
- 3. STORM-DRAIN PIPE AND WEIR VELOCITIES ARE NOT PROVIDED BECAUSE THERE ARE NO STORMWATER DISCHARGE POINTS.
- SOIL SERIES DATA ARE AVAILABLE HTTP://WEBSOILSURVEY.NRCS.USDA.GOV. SOIL MAP AND INFORMATION ARE PROVIDED AS EXHIBIT Z AND TABLE Z ON PAGE ES-10.
- NO SEDIMENT BASINS ARE NEEDED FOR THIS PROJECT LAND DISTURBING ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION AND REMOVAL OF A SEDIMENT BASIN WOULD CAUSE ADDITIONAL ADVERSE IMPACTS TO THE EXISTING STREAM
- THE SYMBOLS REFERED TO IN THE PLAN REFERENCE THE GEORGIA UNIFORM CODING SYSTEM PER THE LATEST EDITION MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA (CURRENTLY 2016 EDITION).
- THE SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS TO ENSURE THEIR INTENDED PURPOSES ARE ACCOMPLISHED. MAJOR MODIFICATION OF THE PLAN OR DELETION OF SPECIFIED BMPS WILL REQUIRE A FORMAL REVISION OF THE ES&PC PLAN AND THE SIGNATURE OF A GSWCC LEVEL II DESIGN PROFESSIONAL ADDITIONAL BMPS MAY BE ADDED AS DIRECTED BY THE ENGINEER.
- SILT FENCE SHOULD NEVER RUN CONTINOUSLY WITHOUT J-HOOKS OR SPURS. THE SILT FENCE SHOULD TURN BACK INTO THE FILL OR SLOPE TO CREATE SMALL POCKETS THAT TRAP SILT AND FORCE STORMWATER TO FLOW THROUGH THE SILT FENCE. THE J-HOOKS OR

SPURS SHALL BE SPACED IN ACCORDANCE WITH THE TYPICAL LOCATION DETAILS FOR SILT FENCE/BALED STRAW. SPACING FOR J-HOOKS OR SPURS SHALL NOT BE LESS THAN 50 FEET EXCEPT AS NOTED. SILT FENCES THAT ARE NEAR THE OUTLET OF CULVERTS OR STORM DRAINS SHALL HAVE A MINIMUM OF 3 I-HOOKS OR SPLIRS ON BOTH SIDES OF THE STRUCTURE AT A SPACING THAT SHALL NOT EXCEED 30 FEET. J-HOOKS OR SPURS SHALL BE PAID FOR AS SILT FENCE ITEMS PER FOOT, ALL COSTS AND OTHER INCIDENTAL ITEMS ARE INCLUDED IN THE COST OF INSTALLING AND MAINTAINING THE SILT FENCE. THE SILT FENCING SHOULD BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER. REFER TO GDOT DETAIL D-51.

- 9. WHEREVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED, AND SUPPLEMENTED. DISTURBED SOILS SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE.
- 10. LOCATE WASTE COLLECTION AREAS, DUMPSTERS, TRASH CANS, AND PORTABLE TOILETS SHALL BE AT LEAST 50 FEET AWAY FROM STREETS, GUTTERS, WATERCOURSES, AND STORM DRAINS.THE CONTRACTOR SHALL COMPLY WITH STATE AND/OR LOCAL REGULATIONS RELATED TO WASTE DISPOSAL AND/OR ACTIVITIES RELATED TO SANITARY SEWERS.
- 11. THE CONSTRUCTION ENTRANCES/EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ON TO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE, AS CONDITIONS DEMANDS, AND REPAIR AND/OR CLEAN-OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY. THE CONTRACTOR SHALL INSPECT CONTROL MEASURES AT THE END OF EACH WORK DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- 12. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION CONTROL DEVICES AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
- 13. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED, FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED CONSISTENT WITH THE CITY OF BROOKHAVEN EROSION CONTROL ORDINANCE.
- 14. WHENEVER THE DEPARTMENT FINDS THAT A BMP HAS FAILED OR IS DEFICIENT BEYOND ROUTINE MAINTENANCE AND HAS RESULTED IN SEDIMENT DEPOSITION INTO WATERS OF THE STATE, THE CONTRACTOR SHALL TAKE REASONABLE STEPS TO ADDRESS THE CONDITION, INCLUDING CLEANING UP ANY CONTAMINATED SURFACES SO THE MATERIAL WILL NOT DISCHARGE IN SUBSEQUENT STORM EVENTS. WHEN THE REPAIR DOES NOT REQUIRE A NEW OR REPLACEMENT BMP OR SIGNIFICANT REPAIR, THE BMP FAILURE OR DEFICIENCY MUST BE CORRECTED BY THE CLOSE OF THE NEXT BUSINESS DAY FROM THE TIME OF DISCOVERY. A REPAIR REQUIRING A NEW OR REPLACEMENT BMP OR SIGNIFICANT REPAIR MUST BE OPERATIONAL BY NO LATER THAN 7 DAYS FROM THE TIME OF DISCOVERY IF THE REPAIR TIME WITHIN 7 DAYS IS INFEASIBLE. THE CONTRACTOR AND THE CITY SHALL SCHEDULE THE BMP REPAIR TO BE OPERATIONAL AS SOON AS PRACTICAL AFTER THE 7 DAY
- 15. ALL MULCHES AND SOIL COVERINGS SHALL BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAIN EVENTS) BY THE CONTRACTOR. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH SHALL BE APPLIED INSPECTIONS SHALL TAKE PLACE LINTU GRASSES ARE FIRMLY ESTABLISHED. A TWO-INCH LAYER OF MULCH AND MYCORRHIZAE FUNGI SHALL BE APPLIED OVER THE CRITICAL ROOT ZONE OF TREES THAT ARE IMPACTED BETWEEN 1 AND 20 PERCENT PRIOR TO CONSTRUCTION.
- 16. SLOPES 3:1 OR STEEPER THAN 3:1 SHALL REQUIRE MATTING TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. THEY SHALL BE INSPECTED PERIODICALLY, ESPECIALLY AFTER RAIN EVENTS, FOR EROSION AND UNDERMINING. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING THE DAMAGE TO THE SLOPE OR DITCH CONTINUE TO MONITOR THESE AREAS UNTIL WHICH TIME THEY BECOME PERMANENTLY STABILIZED
- 17. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
- 18. A CHECK DAM SHALL BE USED WITHIN THE CREEK TO PROVIDE A DRY WORK AREA FOR TEMPORARY CONSTRUCTION ACTIVITIES AND TO CONTAIN DISTURBED SOIL AND/OR SUSPENDED SEDIMENTS, PER GDOT DETAIL D-56.
- 19. ALL TREES ON SITE GREATER THAN 6" SHALL BE PROTECTED FROM DAMAGE USING A TREE PROTECTION FENCE. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY. THE CONTRACTOR CAN UTILIZE CLEARED TREES AS BARRIER BRUSH SEDIMENT CONTROL WHERE INITIAL GRADING ACTIVITIES WILL NOT OCCUR
- 20. NO PARKING, STORAGE, EQUIPMENT TRACKING, OR OTHER SOIL COMPACTION ACTIVITIES ARE TO OCCUR UNDER THE DRIPLINE OF TREES IN THE PROJECT AREA. UNLESS OTHERWISE NOTED. ALL TREE PROTECTION FENCE TO BE INSPECTED DAILY. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD
- 21. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY. THE LIMITS OF LAND DISTURBANCE SHALL BE STAKED. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE SHALL OCCUR WITHIN THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
- 22. THE PRIMARY PERMITEE SHALL AMEND THEIR PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT FFFECT 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 PREVENTING THE ESCAPE OF SEDIMENT FROM THE SITE. REVISIONS TO THE PLAN MUST BE CERTIFIED BY A DESIGN PROFESSIONAL AS PROVIDED IN THIS PERMIT. ALL REVISIONS SHALL BE REVIEWED BY THE LOCAL ISSUING AUTHORITY. 24 HOUR CONTACT:

NAME : TOM ROBERTS

PHONE: 404-637-0500 EMAIL: TOM.ROBERTS@BROOKHAVENGA.GOV

GSWCC RYAN C. ELLENA Level II Certified Design Professiona 0000081592 ISSUED: 10/01/2020 EXPIRES: 10/01/2023



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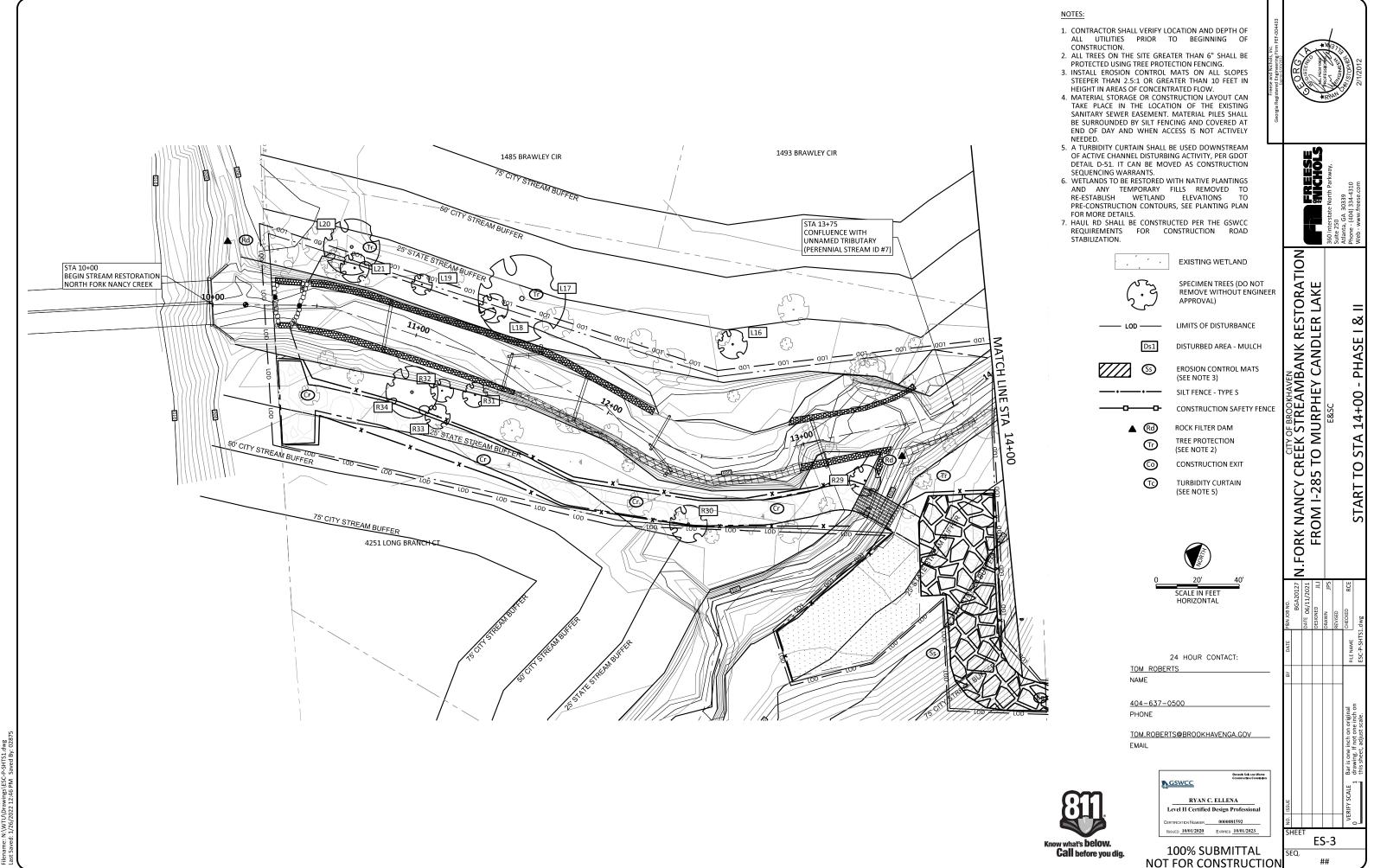
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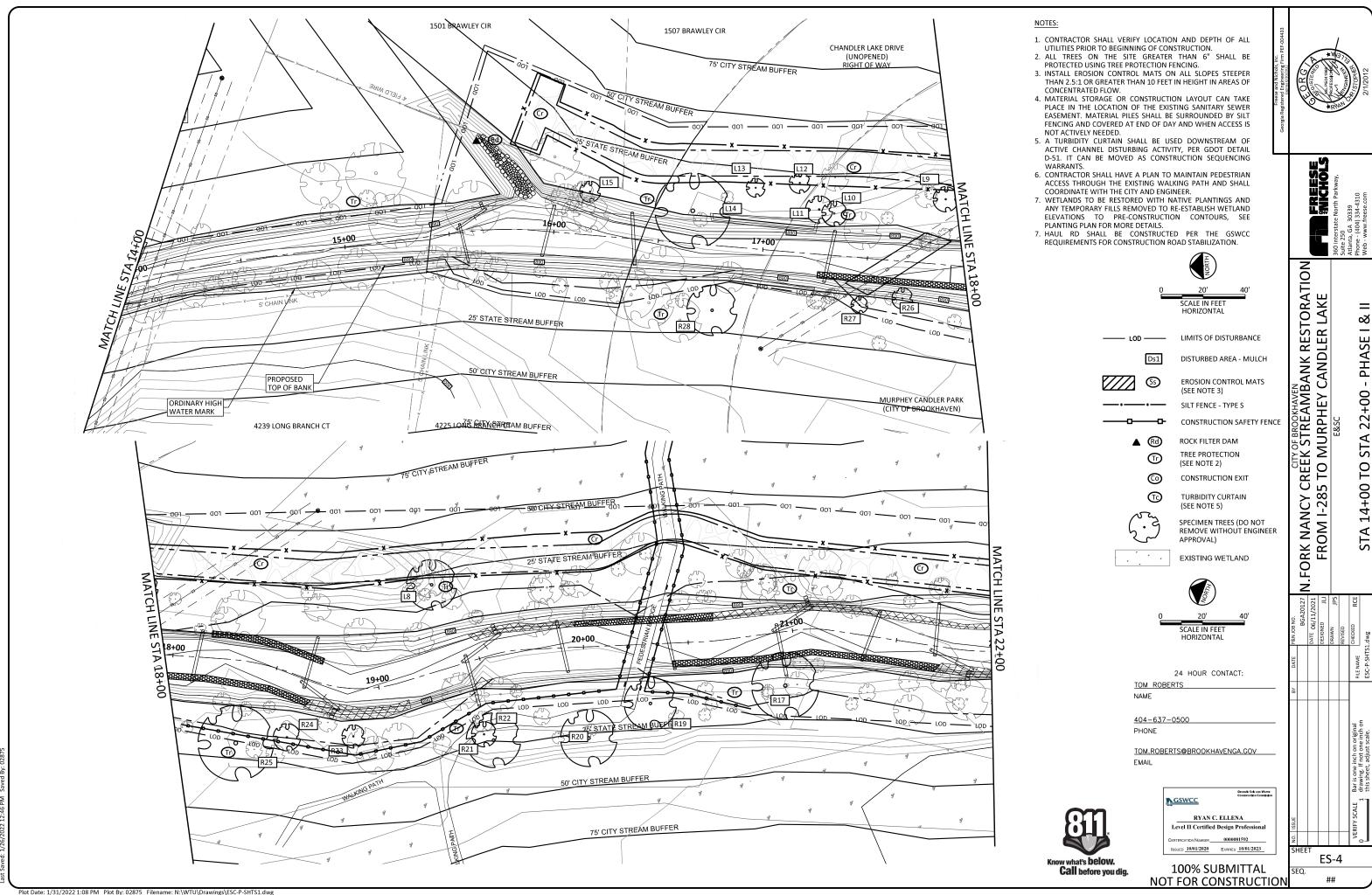
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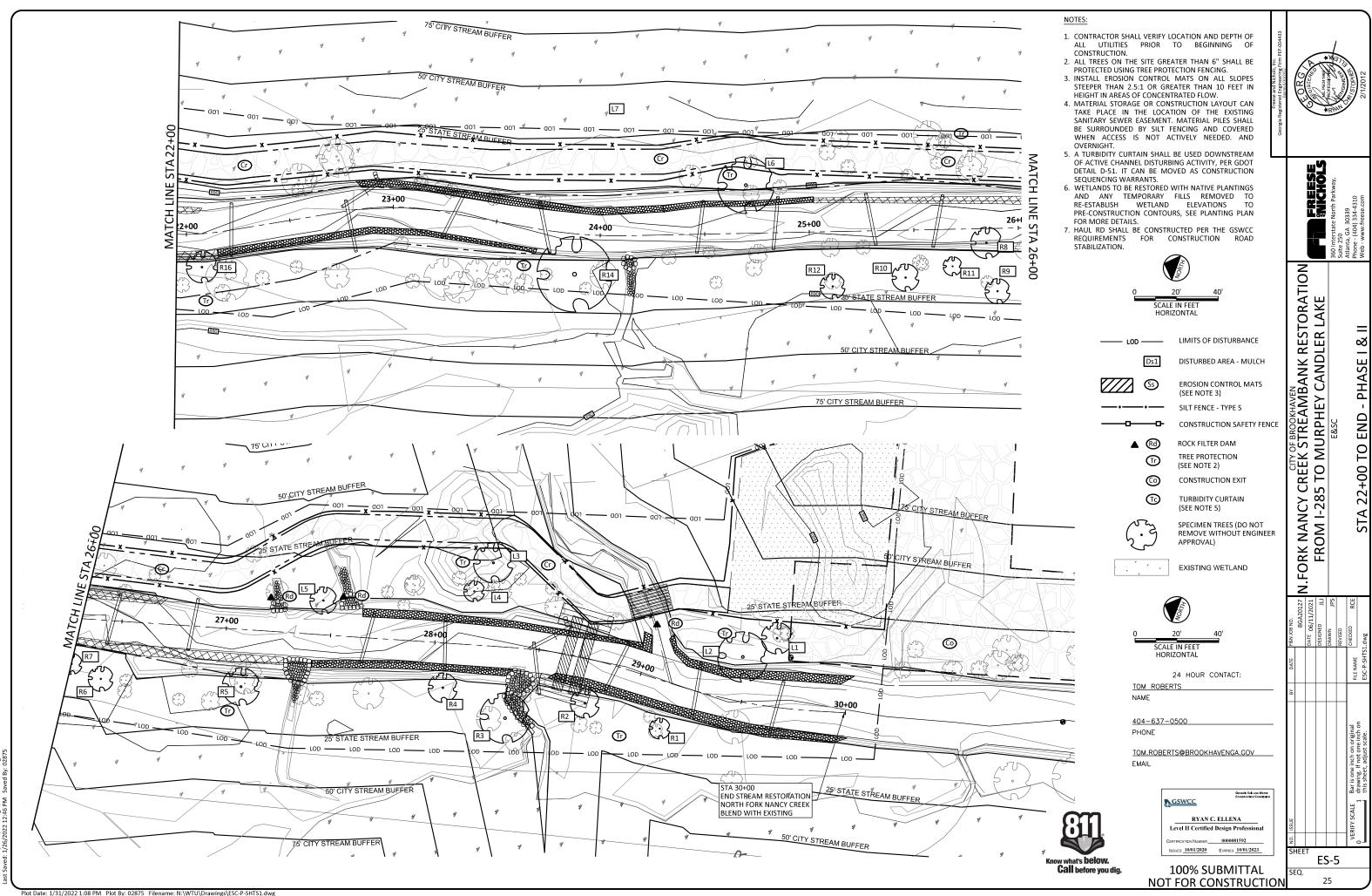
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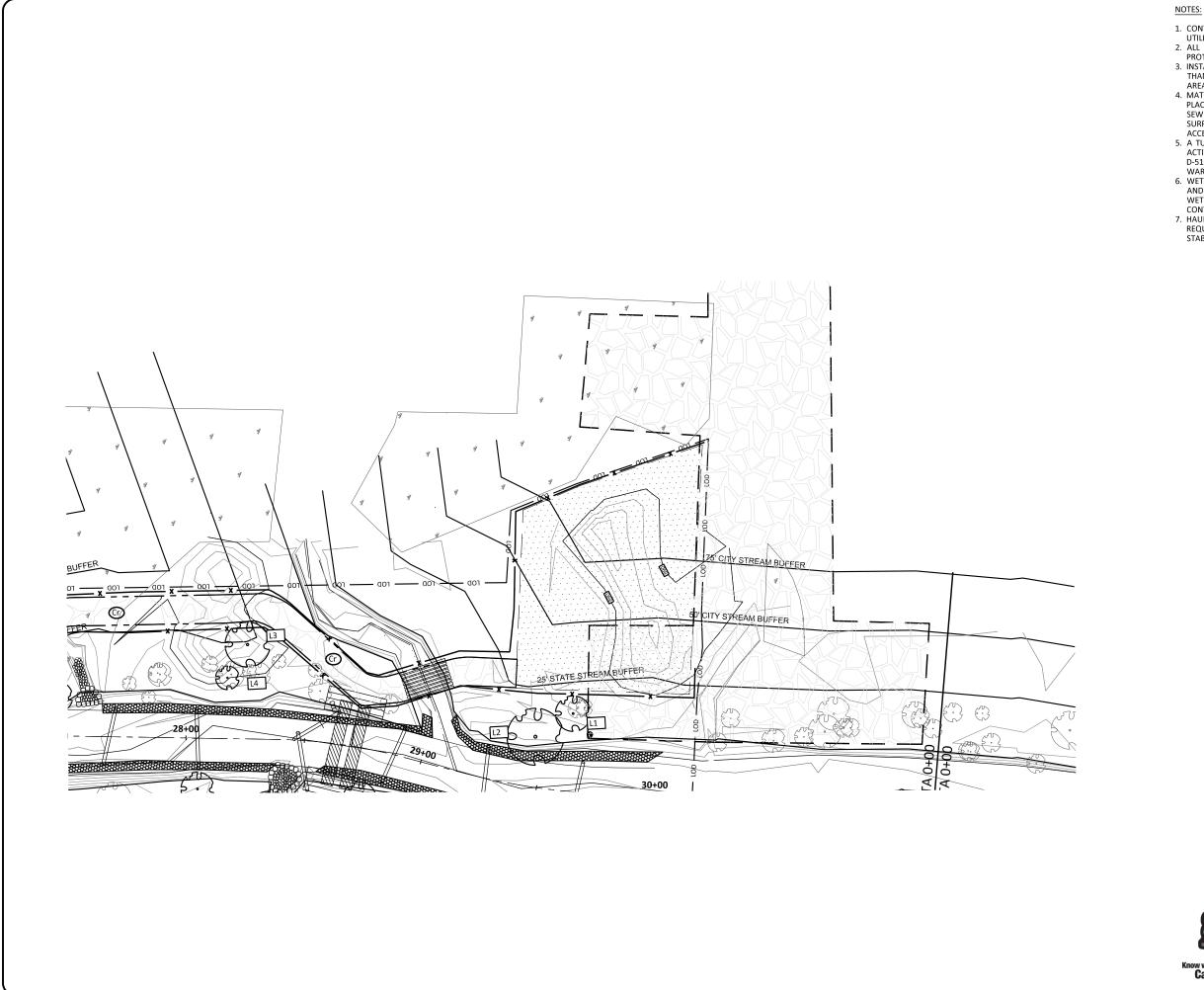
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- 1. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
- ALL TREES ON THE SITE GREATER THAN 6" SHALL BE PROTECTED USING TREE PROTECTION FENCING.
- 3. INSTALL EROSION CONTROL MATS ON ALL SLOPES STEEPER THAN 2.5:1 OR GREATER THAN 10 FEET IN HEIGHT IN
- AREAS OF CONCENTRATED FLOW.
  4. MATERIAL STORAGE OR CONSTRUCTION LAYOUT CAN TAKE MAIERIAL STORAGE OR CONSTRUCTION LAYOUT CAN TAKE
  PLACE IN THE LOCATION OF THE EXISTING SANITARY
  SEWER EASEMENT. MATERIAL PILES SHALL BE
  SURROUNDED BY SILT FENCING AND COVERED WHEN
  ACCESS IS NOT ACTIVELY NEEDED. AND OVERNIGHT.
- 5. A TURBIDITY CURTAIN SHALL BE USED DOWNSTREAM OF ACTIVE CHANNEL DISTURBING ACTIVITY, PER GDOT DETAIL D-51. IT CAN BE MOVED AS CONSTRUCTION SEQUENCING WARRANTS.
- 6. WETLANDS TO BE RESTORED WITH NATIVE PLANTINGS AND ANY TEMPORARY FILLS REMOVED TO RE-ESTABLISH WETLAND ELEVATIONS TO PRE-CONSTRUCTION CONTOURS, SEE PLANTING PLAN FOR MORE DETAILS.
- 7. HAUL RD SHALL BE CONSTRUCTED PER THE GSWCC REQUIREMENTS CONSTRUCTION ROAD STABILIZATION.



LIMITS OF DISTURBANCE

DISTURBED AREA - MULCH

(SEE NOTE 3) SILT FENCE - TYPE S CONSTRUCTION SAFETY FENCE

ROCK FILTER DAM

EROSION CONTROL MATS

N.FORK NANCY CREEK STREAMBANK RESTORATION FROM I-285 TO MURPHEY CANDLER LAKE

PHASE

Ø

TREE PROTECTION T (SEE NOTE 2) **©** CONSTRUCTION EXIT

Tc TURBIDITY CURTAIN (SEE NOTE 5)

▲ Rd

SPECIMEN TREES (DO NOT REMOVE WITHOUT ENGINEER APPROVAL)

EXISTING WETLAND

24 HOUR CONTACT:

TOM ROBERTS NAME

404-637-0500 PHONE

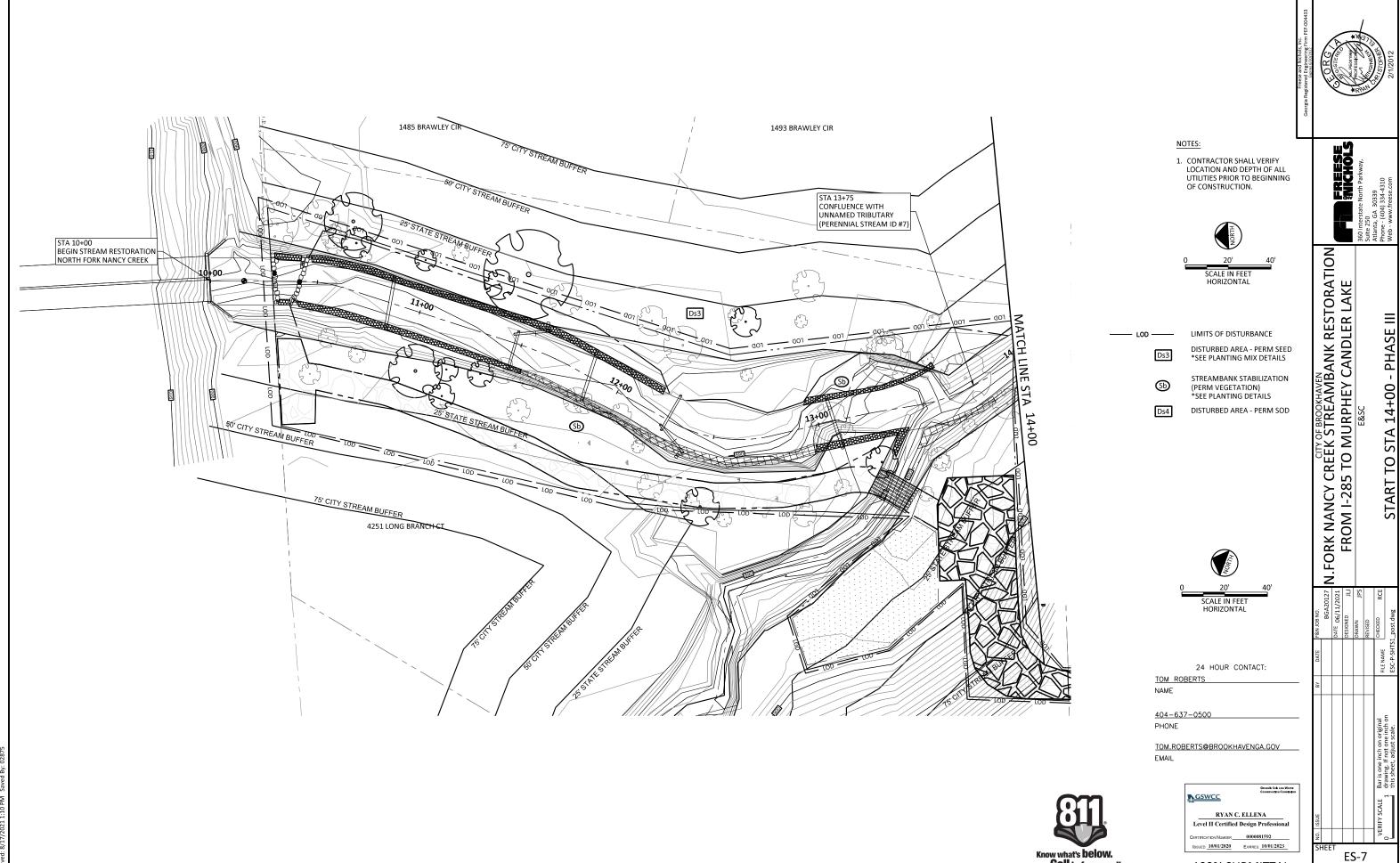
> TOM.ROBERTS@BROOKHAVENGA.GOV EMAIL





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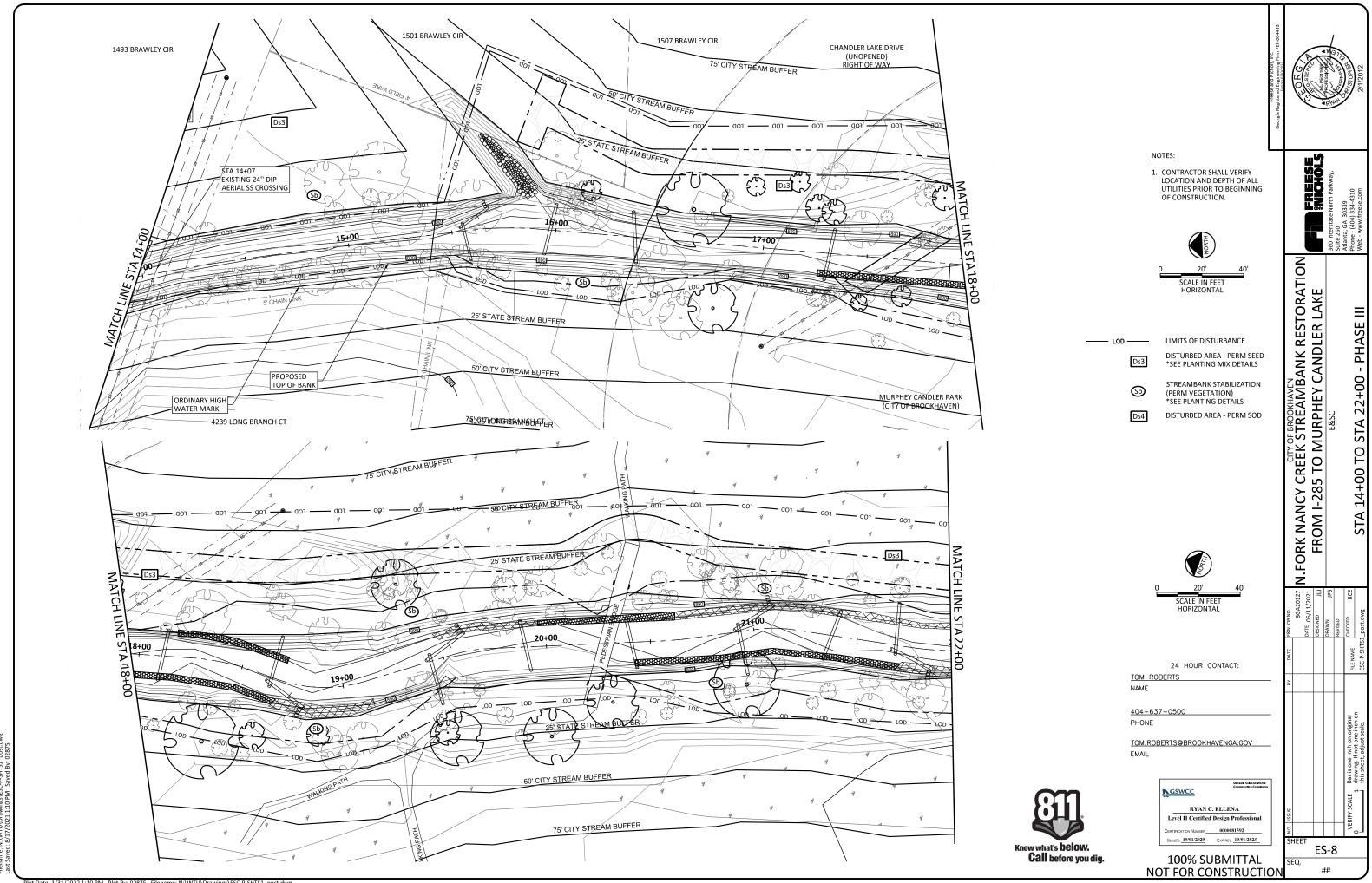
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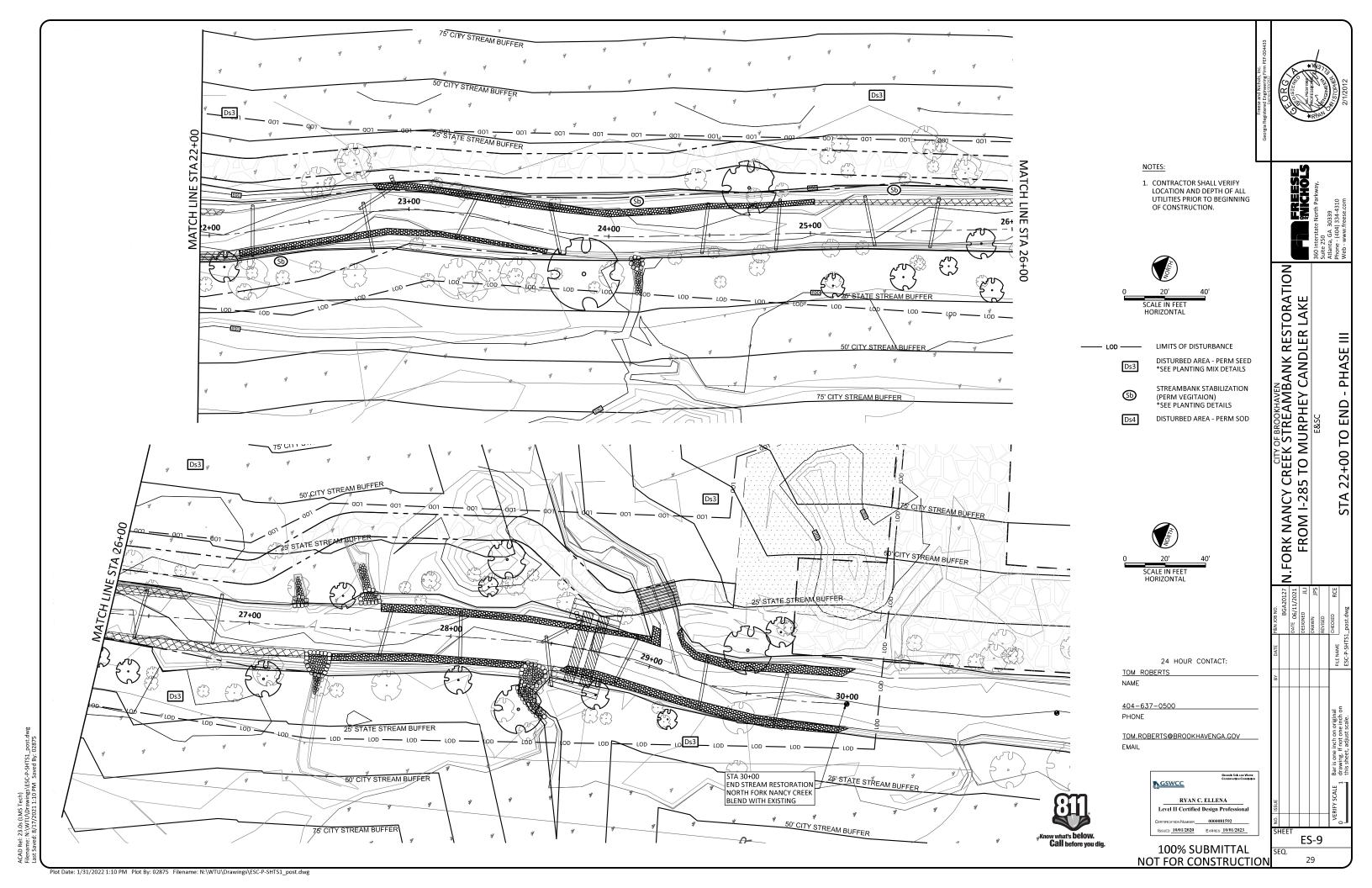
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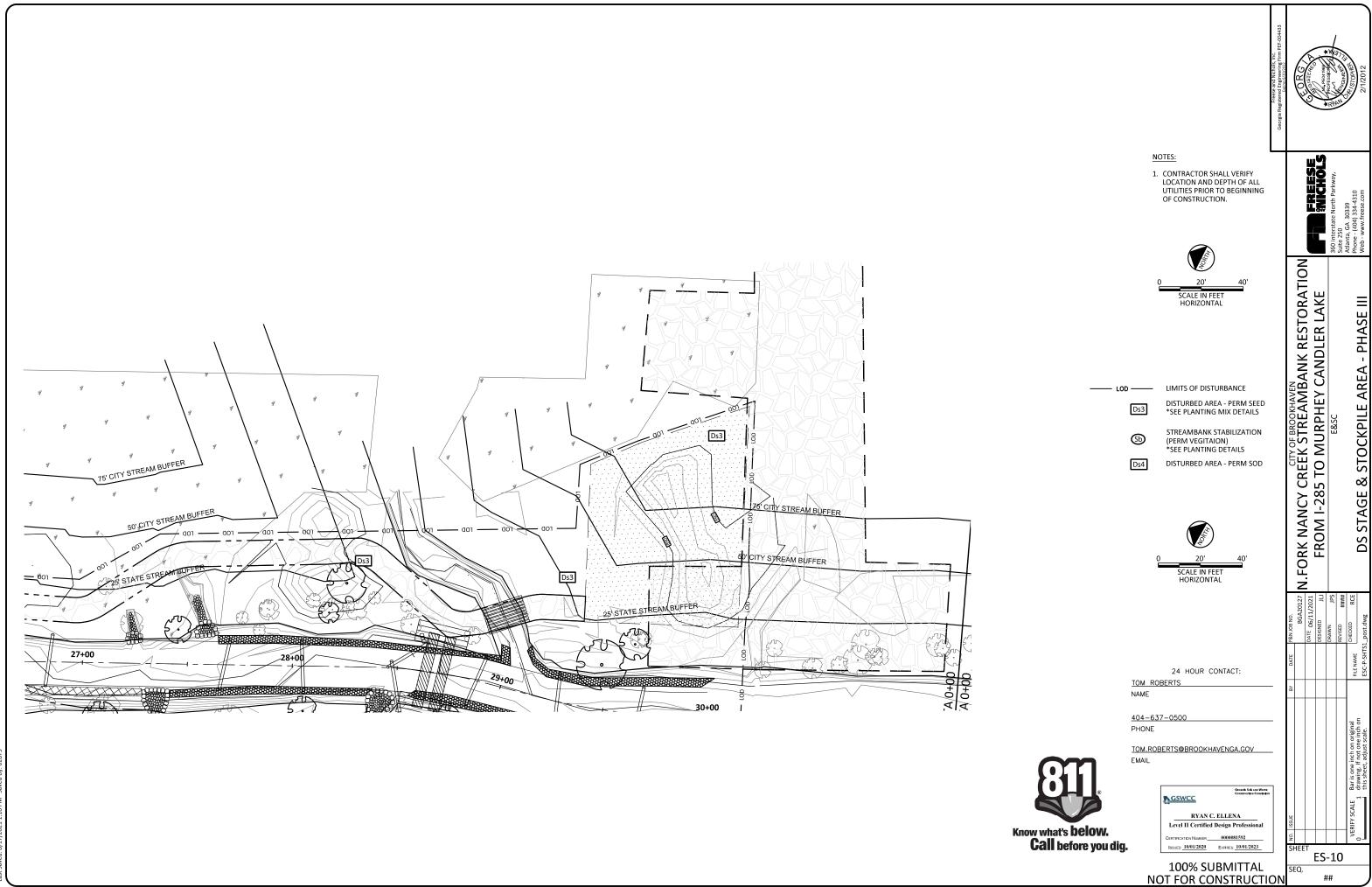
Call before you dig.

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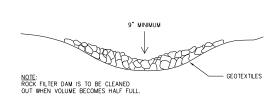
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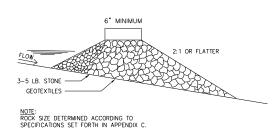




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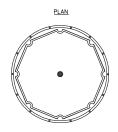
#### "Rd" ROCK FILTER DAM



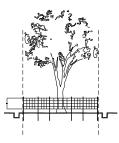


#### "Tr" TREE PROTECTION

#### "SNOW" FENCE



CROSS-SECTION



- NOTES:

  1. USE TRENCHER (I.E. DITCH WHICH) TO CUIT A 4"-5" W X 18" D TRENCH ALONG DRIP LINE (LIMIT OF CLEARING) AND BACKFILL WITH SAND AND LICHTLY COMPACT.

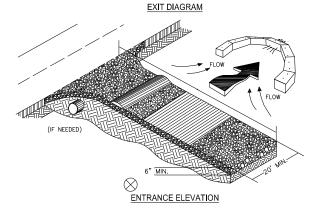
  2. SPACE STAKES AT INTERVALS SUFFICIENT TO MAINTAIN ALL FENCING OUT OF DRIP LINE OR AS SHOWL BY ENGINEER (SET STAKES NO GREATER THAN 6 FEET ON CENTER-REBAR IS NOT TO BE USED FOR STAKES).

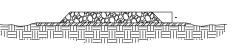
  3. MAINTAIN FENCE BY REPAIRING AND/OR REPLACING DAMAGED FENCE. DO NOT REMOVE FENCING PRIOR TO LANDSCAPING OPERATIONS.

  4. DO NOT STORE OR STACK MATERIALS, EQUIPMENT, OR VEHICLES WITHIN FENCED AFFA.

- 5. FENCE SHALL BE ORANGE VINYL "SNOW FENCE" 4' HIGH MINIMUM.

#### CRUSHED STONE CONSTRUCTION EXIT





- NOTES:

  1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.

  2. REMOVE ALL VECETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.

  3. ACGRECATE 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 PAYED AREA IS GREATER THAN 2%.

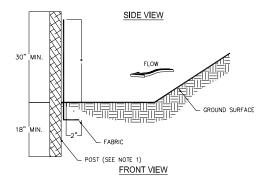
  7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.

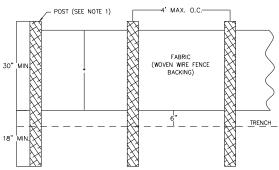
  8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONG ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE OF A SEDIMENT CONTROL DEVICE).

  9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSTST 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.

#### SILT FENCE - TYPE S





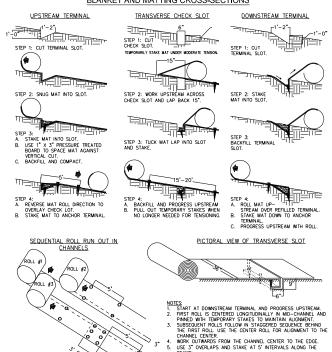
NOTES:

1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

2. HEIGHT (\*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

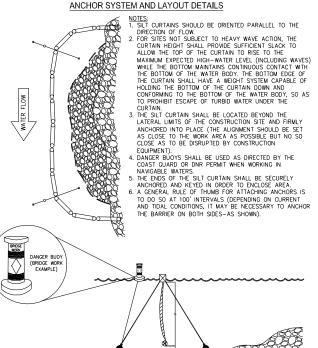
# "Ss" TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

#### BLANKET AND MATTING CROSS-SECTIONS



#### "Tc" TURBIDITY CURTAIN SYSTEM

#### ANCHOR SYSTEM AND LAYOUT DETAILS





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**ES-11** 

THE SECTION OF THE SE

CREEK STREAMBANK RESTORATION 5 TO MURPHEY CANDLER LAKE

N.FORK NANCY C FROM I-285

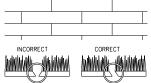
DETAIL

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WURK OVERLAPS AND STAKE AT 5' INTERVALS ALUME INC. SEAMS.
SEAMS.
USE 3' OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT THE LINING AT THE ROLL ENDS.

### "Ds4" SOD MAINTENANCE AND INSTALLATION

#### SOD LAYOUT AND PREPARATION



LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

<u>BUTTING</u>: ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

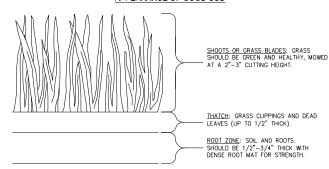
#### DIRECTIONS FOR INITIAL MAINTENANCE

Step 1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL

Step 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD

Step 3. MOW WHEN THE SOD IS ESTABLISHED -- IN 2-3 WEEKS. SET THE MOWER

#### APPEARANCE OF GOOD SOD



## "Ds3" - DISTURBED AREA STABILIZAITON (WITH PERMANENT SEEDING)

- 1. SCARIFY, PIT OR RENCH SEALED OR CRUSTED SOIL.
- 2. APPLY TALL FESCUE SEED AT A RATE OF 1.1 LBS PER 1000 SQ.FT WHEN PLANTED ON ITS OWN, APPLY AT A RATE OF 30 LBS PER 1000 SQ. FT. WHEN PLANTED WITH OTHER PERENNIALS
- 3. FIRST PLANTING YEAR FERTILIZER APPLICATION FOR TALL FESCUE SHOULD BE USING 6-12-12 (N-P-K) AT A RATE OF 1500 LBS/ACRE, N TOP DRESSING RATE SHOULD BE 50-100 LBS/ACRE. CONTRACTOR MAY ALTERNATIVELY FERTILIZE BASED ON SOIL TEST RESULTS.
- 4. APPLY AGRICULTURAL LIME AS PRESCRIBED BY SOIL TESTS OR AT A RATE OF 1 TO 2 TONS PER ACRE. APPLY SEED BY HAND, CYCLONE SEEDER, DRILL OR HYDRO-SEEDER. SEED PLANTED WITH A DRILL SHOULD BE PLANTED 1/4" - 1/2" DEEP.
- 5. STRAW OR HAY MULCH SHALL BE APPLIED AT A RATE OF 2 OR 2.5 TONS PER ACRE
- 6. IRRIGATION SHOULD BE USED TO SUPPLEMENT RAINFALL, BUT NOT TO THE EXTENT TO CAUSE EROSION.

#### FERTILIZER REQUIREMENTS FOR SOD

YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
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
FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500 LBS/AC 1000 LBS/AC 400 LBS/AC	0-50 LBS/AC 1/ -
FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300 LBS/AC 1300 LBS/AC 1100 LBS/AC	- - -
FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
FIRST MAINTENANCE	0-10-10 0-10-10	700 LBS/AC 700 LBS/AC	_
FIRST	10-10-10	500 LBS/AC	30 LBS/AC 5/
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
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/
	FIRST SECOND MAINTENANCE FIRST MAINTENANCE FIRST FIRST SECOND MAINTENANCE FIRST FIRST SECOND MAINTENANCE FIRST FIRST SECOND MAINTENANCE FIRST SECOND MAINTENANCE FIRST SECOND MAINTENANCE	YEAR    COUVALENT   N-P-K	YEAR EOUIVALENT RATE  FIRST 6—12—12 1500 LBS/AC SECOND 6—12—12 1000 LBS/AC 6—12—12 1000 LBS/AC FIRST 6—12—12 1500 LBS/AC FIRST 6—12—12 1500 LBS/AC FIRST 0—10—10 1000 LBS/AC MAINTENANCE 0—10—10 1300 LBS/AC FIRST 10—10—10 1300 LBS/AC SECOND 10—10—10 1300 LBS/AC FIRST 10—10—10 1300 LBS/AC FIRST 20—10—10 1300 LBS/AC FIRST 20—10—10 1000 LBS/AC FIRST 20—10—5 SEEDLING PLACED IN THE CLOSING HOLE FIRST 0—10—10 700 LBS/AC FIRST 10—10—10 500 LBS/AC FIRST 10—10—10 500 LBS/AC FIRST 6—12—12 1500 LBS/AC FIRST 6—12—12 800 LBS/AC FIRST 6—12—12 800 LBS/AC FIRST 6—12—12 800 LBS/AC FIRST 6—12—12 1500 LBS/AC

# 1-285 PROJECT VICINITY Legend Flood Hazard Area Zone AF Floodway 0.2% Annual Chance Event

FLOOD HAZARD MAP

FIRM PANEL 13089C0012K **EFFECTIVE DATE AUGUST 15, 2019** 

GALLONS PER ACRE (OR  $\frac{1}{4}$  GALLON PER SQ. YD.). 4. POLYETHYLENE FILM SHALL BE SECURED OVER BANKS OR STOCKPILED SOIL MATERIAL FOR TEMPORARY PROTECTION. THIS MATERIAL CAN BE SALVAGED AND REUSED.

#### APPLYING MULCH

WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA

- UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT
- 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.
- BE TAKEN IN AREAS OF PEDESTRIAN TRAFFIC DUE TO PROBLEMS OF 'TRACKING IN" OR DAMAGE TO SHOES, CLOSING, ETC.

#### 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 WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1). THE ASPHALT EMULSION SHALL BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH. TACKIFERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION TB -TACKIFERS AND BINDERS. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

- 1. DRY STRAW OR HAY SHALL BE APPLIED AT A DEPTH OF 2 TO 4 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.
- 2. WOOD WASTE (CHIPS, SAWDUST OR BARK) SHALL BE APPLIED AT 3. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY

# SOILS MAP EXHIBIT "Z"



# SOILS TABLE "Z"

Map Unit Symbol	Map Unit Name	Rating
Ca	Cartecay silt loam, frequently flooded	A/D
CuC	Cecil-Urban land complex, 2 to 10 percent slopes	В
PfD	Pacolet sandy loam, 10 to 15 percent slopes	В
PfE	Pacolet sandy loam, 15 to 30 percent slopes	В
PuE	Pacolet - Urban Land complex, 15 to 25 percent slopes	В
Wf	Wehadkee silt loam, frequently flooded	B/D
W	Water	-
Ud	Urban Land	-

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Know what's **below**. **Call** before you dig.

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RYAN C. ELLENA Level II Certified Design Professiona SSUED; 10/01/2020 EXPIRES; 10/01/2023

100% SUBMITTAL NOT FOR CONSTRUCTION CREEK STREAMBANK RESTORATION 5 TO MURPHEY CANDLER LAKE NANCY ( FORK I ż

**ES-12** 

32

# "DS1" - DISTURBED AREA STABILIZATION 3. CUTBACK ASPHALT (SLOW CURING) SHALL BE APPLIED AT 1200 (WITH MULCH ONLY)

#### DEFINITION

APPLYING PLANT RESIDUES OR OTHER SUITABLE MATERIALS PRODUCED ON THE SITE IF POSSIBLE, TO THE SOIL SURFACE.

#### CONDITIONS

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL 1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX 2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL 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 3. CUTBACK ASPHALT SHALL BE APPLIED UNIFORMLY. CARE SHOULD EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT 4, APPLY POLYETHYLENE FILM ON EXPOSED AREAS. VEGETATIVE TECHNIQUES SHALL BE EMPLOYED.

#### **SPECIFICATIONS**

#### MULCHING WITHOUT SEEDING

THIS STANDARD APPLIES TO GRADES OR CLEARED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODICE 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
- 3. LOOSEN COMPACT SOIL TO A MINIMUM DEPTH OF 3 INCHES.

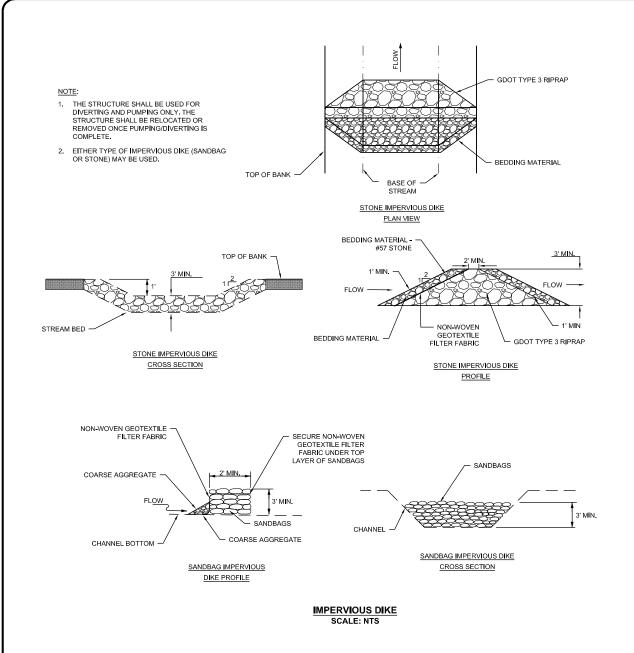
#### MULCHING MATERIALS

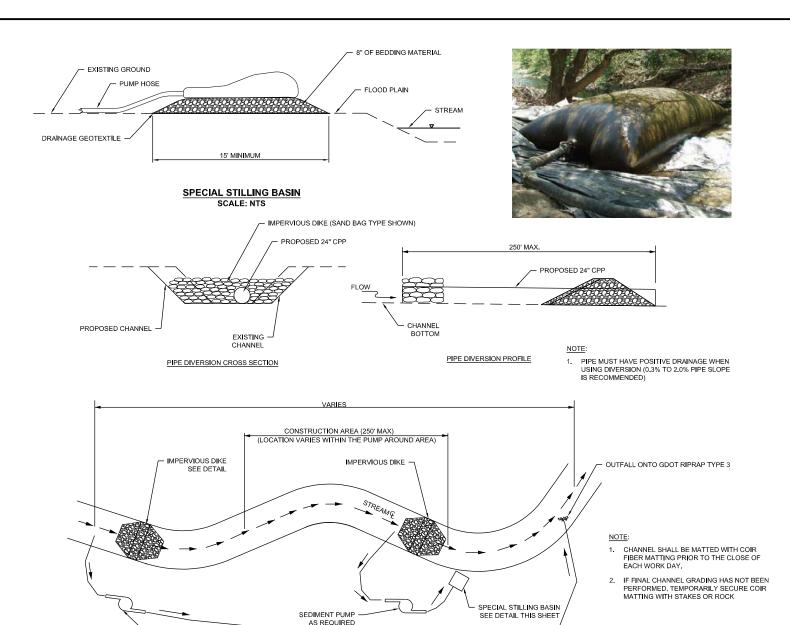
SELECT ONE OF THE FOLLOWING MATERIALS AND APPLY AT THE DEPTH INDICATED

- INCHES PROVIDING COMPLETE SOIL COVERAGE. ONE ADVANTAGE OF THIS MATERIAL IS EASY APPLICATION.
- 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.

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PUMP-AROUND/PIPE DIVERSION SCALE: NTS

PUMP-AROUND DIVERSION PLANVIEW

— MAIN PUMP (BASEFLOW)

24 HOUR CONTACT:	DATE				
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N.FORK NANCY CREEK STREAMBANK RESTORATION FROM I-285 TO MURPHEY CANDLER LAKE E&SC

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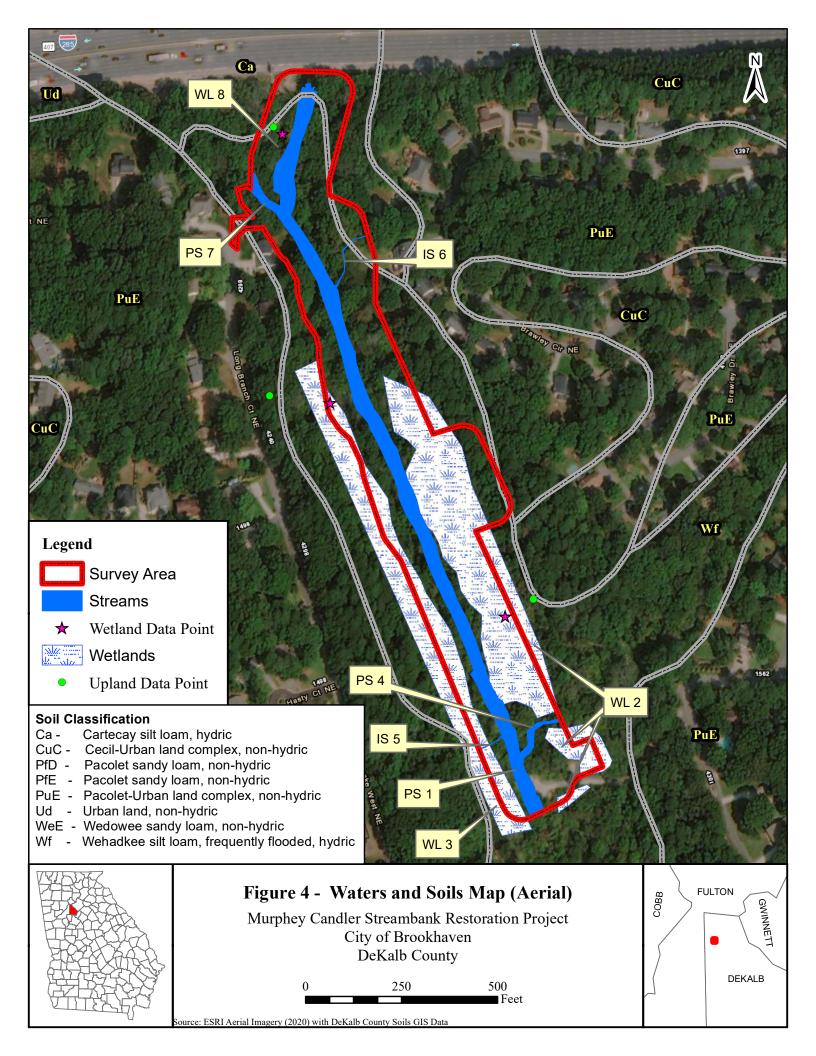


Table 1. North Fork Nancy Creek Geomorphic Parameters for Annual Geomorphic Monitoring with Comparison to Regional Values.

Parameter	Existing	Designed <sup>1</sup>	Rosgen Classification (B Stream Type)	Piedmont Physiographic Region <sup>2</sup>	South Carolina Piedmont, Ecoregion 45 <sup>3</sup> Big Dutchman Creek (B5c)	North Carolina Piedmont Urban Streams <sup>4</sup>	North Carolina Piedmont Kentwood Park Stream (Bc) <sup>4</sup>	As-Built
A <sub>bkf</sub> (ft <sup>2</sup> )	50 - 60	29.5	N/A	18.6 - 21.7	116.40	25.66	58.00	
d <sub>bkf</sub> (ft)	1.8-2.2	1.34	N/A	0.2 - 2.4	3.30	3.26	2.10	
W <sub>bkf</sub> (ft)	20 - 30	22	N/A	14.8 - 16.9	35.70	32.74	27.00	
Width/Depth Ratio	11.7 - 16.1	16.4	>12	7.0 - 66.2	11.0	10.0	12.9	
Entrenchment Ratio	1.1 - 1.2	1.15 - 1.84	1.4 - 2.2	N/A	1.4	N/A	N/A	

- Design values for these parameters are based upon sediment transport analysis to ensure movement of sediment over time without channel aggradation or degradation, resulting in site specific values that may vary from reference curve values.
- Bieger, K., Rathjens, H., Allen, P.M. and Arnold, J.G., 2015. Development and evaluation of bankfull hydraulic geometry relationships for the physiographic regions of the United States. JAWRA Journal of the American Water Resources Association, 51(3), pp.842-858.
- 3 <a href="https://www.dnr.sc.gov/environmental/docs/piedmontsummarymay2020.pdf">https://www.dnr.sc.gov/environmental/docs/piedmontsummarymay2020.pdf</a>