



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
ENVIRONMENTAL FIELD OFFICE**

**3711 Middlebrook Pike
Knoxville, TN 37921**

(865)594-6035 STATEWIDE 1-888-891-8332 (865)594-6105

Receipt: EAC-K-11667

Date of Receipt: 13-Oct-2021 7:03 am

Created By: Petey Roach (BG57034)

County: Knox

EFO/Office: Knoxville Field Office

Received From: Robert Thomason

Company/Affiliation:

Recipient Address: 145 Warrensburg Road
RUSSELLVILLE, TN- 37860

Amount Received: \$50.00

Method of Payment: CHECK

Check Number: 1907

Comments: Thomason Farm Streambank Stabilization

Division	Description	TDEC Code	Quantity	Unit Price	Line Total
WPC	WPC-ARAP \$50 Permit Application	43.340.F02	1	\$50.00	\$50.00

Receipt Total: **\$50.00**



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor,
Nashville, Tennessee, 37243
1-888-891-8332 (TDEC)

OCT 12 2021

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

OFFICIAL STATE USE ONLY		Site #:	Permit #:
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Section 1. Applicant Information (individual responsible for site, signs certification below)			
Applicant Name (company or individual): Robert D. Thomason		SOS #:	Status:
Primary Contact/Signatory: Robert D. Thomason		Signatory's Title or Position: Owner	
Mailing Address: 145 Warrensburg Road		City: Russellville	State: TN Zip: 37860
Phone: (423) 587-5721	Fax:	E-mail:	

Section 2. Alternate Contact/Consultant Information (a consultant is not required)			
Alternate Contact Name: Patty L. McCloud			
Company: USDA/NRCS		Title or Position: District Conservationist	
Mailing Address: 369 Dr. Martin Luther King Jr. Parkway		City: Morristown	State: TN Zip: 37813
Phone: (423) 586-0321 ext. 3	Fax: (855) 591-1280	E-mail: patty.mccloud@usda.gov	

Section 3. Fee (Application will be incomplete until fee is received)		
<input type="checkbox"/> No Fee	<input checked="" type="checkbox"/> Fee Submitted with Application	Amount Submitted: \$ 50.00
Current application fee schedules can be found at the Division of Water Resources webpage at: https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit-arap-.html or by calling (615) 532-0625. Please make checks payable to "Treasurer, State of Tennessee".		
Billing Contact Name (if different from Applicant): Name: Robert Thomason Address: 145 Warrensburg Rd Russellville, TN 37860		Email: robert-thomason@355@att.net Phone: 423 585-7427

Section 4. Project Details (fill in information and check appropriate boxes)		
Site or Project Name: Thomason Farm Streambank Stabilization		Nearest City, Town or Major Landmark: Russellville
Street Address or Location (include Zip): 2019 Fall Creek Road, Russellville, TN 37860		
County(ies): Hamblen	MS4 Jurisdiction:	Latitude (dd.dddd): 36.280559 Longitude (dd.dddd): -83.207594
Resource Proposed for Alteration: <input checked="" type="checkbox"/> Stream / River <input type="checkbox"/> Wetland <input type="checkbox"/> Reservoir		
Name of Water Resource (for more information, access http://tdeconline.tn.gov/dwr): Fall Creek		
Brief Project Description (a more detailed description is required under Section 8): Will stabilize 130 feet of streambank by sloping bank at 1:1 slope and placing rip-rap over geotextile fabric.		
Does the proposed activity require approval from the U.S. Army Corps of Engineers, the Tennessee Valley Authority, or any other federal, state, or local government agency? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If Yes, provide the permit reference numbers:		
Is the proposed activity associated with a larger common plan of development: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If Yes, submit site plans and identify the location and overall scope of the common plan of development.		
Plans attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If applicable, indicate any other federal, state, or local permits that are associated with the overall project site (common plan of development) that have been obtained in the past (e.g., construction general permit and/or other ARAP):		

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Permit

Section 10. Detailed Alternatives Analysis		Attached	
		Yes	No
10.1	Analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10.2	Discuss the social and economic consequences of each alternative	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10.3	Demonstrate that the degradation associated with the preferred alternative will not violate water quality criteria for uses designated in the receiving waters, and is necessary to accommodate important economic and social development in the area	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section 11. Compensatory Mitigation		Attached	
		Yes	No
11.1	A detailed discussion of the proposed compensatory mitigation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.2	Describe how the compensatory mitigation would result in no net loss of resource value	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.3	Provide a detailed monitoring plan for the compensatory mitigation site	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.4	Describe the long-term protection measures for the compensatory mitigation site (e.g., deed restrictions, conservation easement)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Certification and Signature			
<p>An application submitted by a corporation must be signed by a principal executive officer; from a partnership or proprietorship, by the partner or proprietor respectively; from a municipal, state, federal or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.</p> <p><i>I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.</i></p>			
<u>Robert D. Thomas</u>		<u>Robert D. Thomas</u>	<u>10/5/2021</u>
Printed Name	Official Title	Signature	Date

Submitting the form and obtaining more information. Note that this form must be signed by the principal executive officer, partner or proprietor, or a ranking elected official in the case of a municipality; for details see **Certification and Signature** statement above. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed ARAP Application form (keep a copy for your records) to the appropriate EFO for the county(ies) where the ARAP activity is located, addressed to **Attention: ARAP Processing**. You may also electronically submit the complete application and all associated attachments to water.permits@tn.gov.

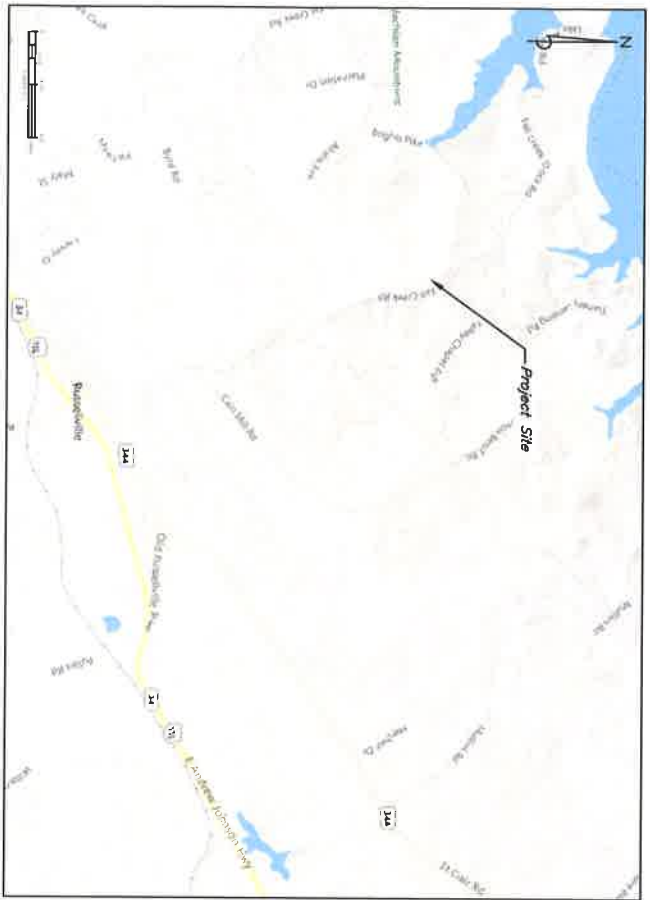
EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Pkwy., Ste. 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601



ROBERT THOMASON STREAMBANK STABILIZATION HAMBLÉN COUNTY, TENNESSEE

Prepared By:
U. S. Department of Agriculture
Natural Resources Conservation Service
Knoxville Area Office
Knoxville, TN

In Cooperation With:
Hamblén County Soil Conservation District



VICINITY MAP

36.2808601W, 83.2043210W

INDEX TO DRAWINGS

1. COVERSHEET
2. PLANVIEW
3. DETAIL



IMPORTANT:
Utility Owners Must Be Notified Of The Date And Time Construction Is Scheduled To Approach The Utilities (Pipelines, Telephone Lines, Electric Lines, etc.). Construction Shall Not Commence Until All Utility Companies Have Been Notified And Have Their Utilities Located On The Ground.

CONSTRUCTION DRAWINGS APPROVED	
JOHN MORROW AREA ENGINEER, NRCS KNOXVILLE, TENNESSEE	DATE 11/19/2020
Digitally signed by JOHN MORROW Date: 2020.03.03 16:02:22 -05'00'	
FILE NAME DRAWING NUMBER	Sheet 1 of 8



ROBERT THOMASON
STREAMBANK STABILIZATION
HAMBLÉN COUNTY
COVERSHEET

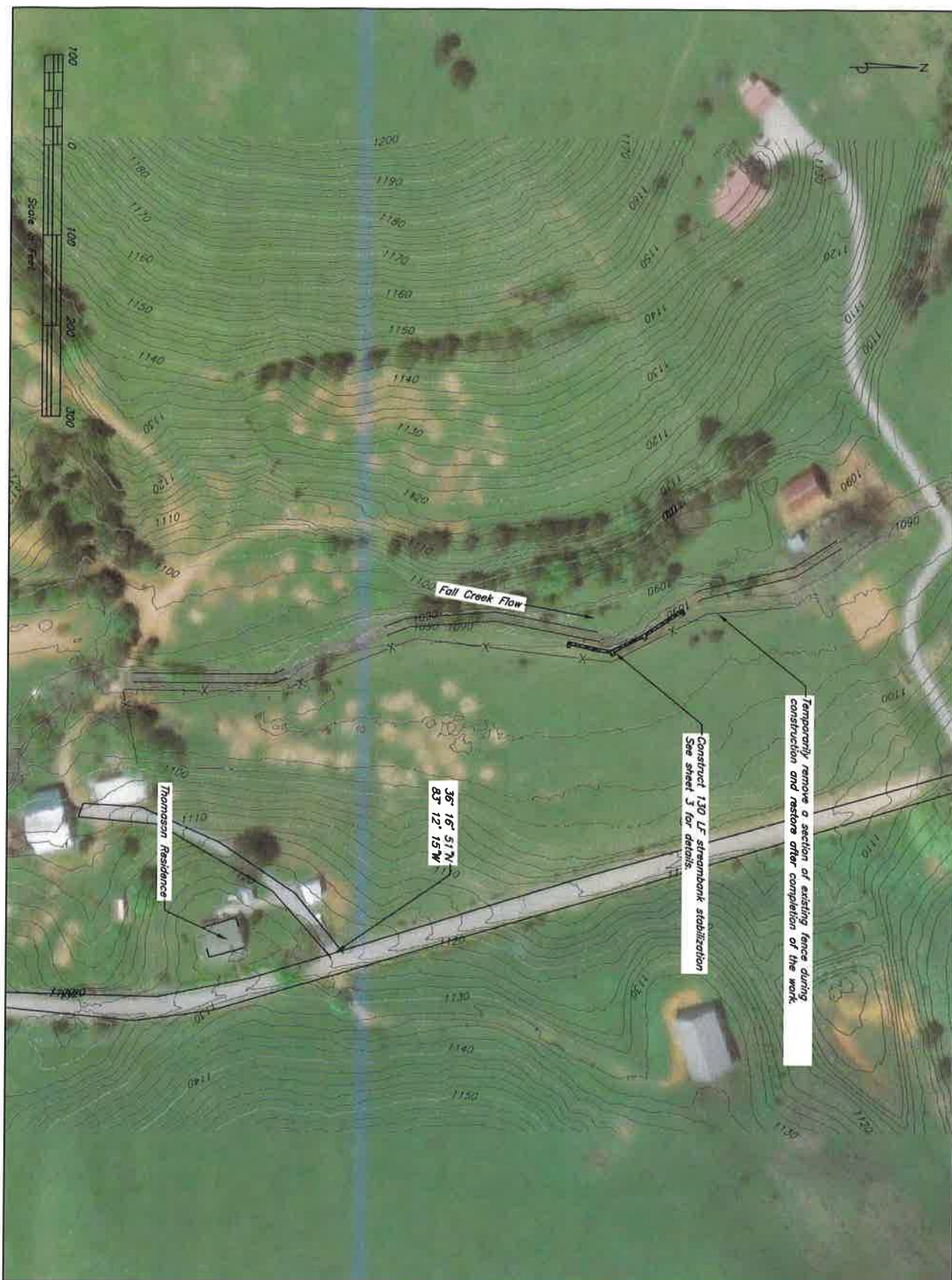
Designed A. MORROW	Date 11/19
Drawn J. ROBINSON	11/19
Checked A. MORROW	
Approved	

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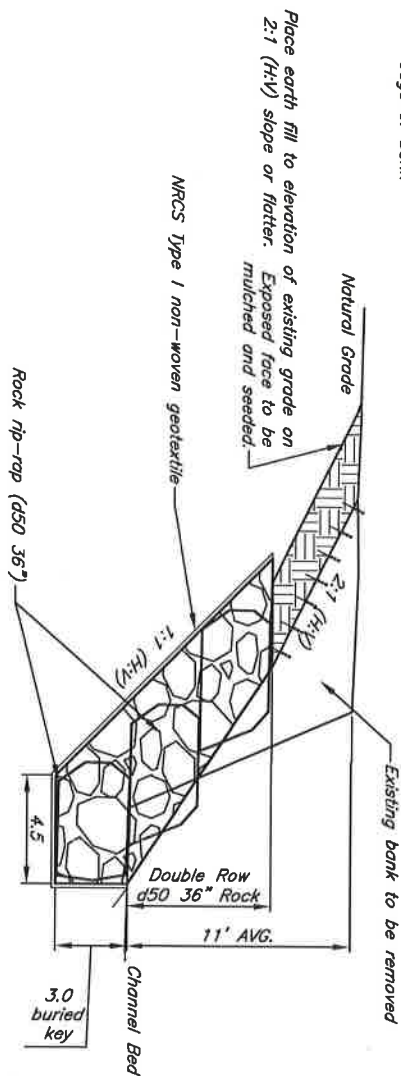
To file a complaint of discrimination, complete, sign, and mail a program discrimination complaint form, available at any USDA office location or online at www.usda.gov, or write to:

USDA
National Office for Civil Rights
1400 Independence Avenue, SW
Washington, DC 20250-9410

Or call toll free at 866-632-9996 (voice) to obtain additional information, the appropriate office or to request documents. Individuals who are deaf or hard of hearing, or have speech disabilities may contact USDA through the Federal Relay Service at 800-877-8339 or 800-845-4525. On the basis of race, color, sex, age, marital status, sexual orientation, gender identity, and disability, USDA will not provide services for conservation of program information (agribusiness, large print, audiocassette, etc.) should contact USDA's National Center at 800-725-4555 (voice and TDD).



Sheet 2 of 2 DRAWING NUMBER FILE NAME	United States Department of Agriculture Natural Resources Conservation Service	ROBERT THOMASON STREAMBANK STABILIZATION HAMLEN COUNTY PLANVIEW		Designer <u>A. MORRIS</u>	Date <u>11/19</u>
				Drawn <u>J. ROBINSON</u>	Date <u>11/19</u>
				Checked <u>A. MORRIS</u>	
				Approved _____	



- Rock size shall be a 300 thirty-six (36") inches – which means that fifty (50%) percent of the rock used shall be thirty-six (36") inches or larger. No rock smaller than twenty-four (24") inches (AMIN) shall be used and no rock larger than forty-eight (48") inches (AMAX) shall be used.
- Excavate a trench from the toe of the slope down approximately three (3') deep continuing back into the bank (unless bedrock is shallower). Excavate the remaining slope on a 2H:1V slope to the top of existing bank. Remove all roots, rocks or other material that may damage geotextile from the prepared slope.
- Line all rock/soil interfaces with NRCS Class 1, 8 oz/sy, non-woven needle punched geotextile. Fabric overlaps shall be a minimum of twenty-four (24") inches, not to exceed thirty-six (36") inches.
- Machine place each rock on the prepared geotextile lined surface, continuing upward to the bankfull elevation. This elevation corresponds to the exposed root line along the eroded bank. When the rock reaches the planned elevation cover the top of the rock with remaining geotextile fabric.
- If directed to leave healthy stable trees, the rock and geotextile shall be carefully placed under the trees exposed roots to help support the tree. At such locations where trees must be removed because of damage or undercutting, the bank above the rip-rap shall be excavated back and shaped on a 2H:1V slope or flatter. All bank areas above the toe protection will be sloped back on a 2:1 ratio along the entire 130' section of the eroded curve in stream. No placement of rock out from existing toe or attempt to reclaim lost stream bank shall occur or will be allowed. Cap the geotextile and rock armor with soil from the bank shaping excavation, then vegetate.
- Tie the rock armoring back into the bank at each end of the rip-rap structure or every fifty (50') feet. The backs shall be three (3') feet wide and shall extend back ten (10') feet from the front armor edge back into the bank. The tie backs shall extend down to the same depth as the adjacent toe key.
- The sloped bank shall be mulched with a biodegradable, non-monofilament netting erosion control blanket (ECB) per Practice Standard 484, mulched and seeded per practice standard 342 – Critical Area Planting. North American Green S150BN or another manufacturer's equivalent material meets the requirement for ECB. Seasonal grass planting for erosion control and long-term riparian plantings shall be as directed by the District Conservationist.
- Remove excess excavated material not required in capping the placed rock rip-rap armoring. Follow permit requirement to remove the spoil material from the flood plane or spread very thinly (3"-5") over a large area away from the top of the stream bank and vegetation.

Material Quantities		
	Left Downstream Bank	Right Downstream Bank
Length	100' ±	130'
Bank Height	100' ±	11' Avg
d50 36" np-top	100' ±	450 tons
Geotextile	100' ±	520 sq

Thomason

EQIP 21

Streambank Stabilization

Section 6.1

Mr. Thomason has approximately 130' of streambank erosion on his property, which is intersected by Fall Creek. Bank will be stabilized by installing practices according to the NRCS engineer design at the locations identified below. The sites will have rock rip-rap revetment in the lengths as identified on the chart below. There will be excavation for rock riprap, then geotextile will be placed before rock. Finally, all bare areas will be seeded and mulched according to the erosion control description.

Site	Lat	Long	Farm Address	Length (feet)
1	36 degrees 16' 51" N	83 degrees 12' 15" W	2019 Fall Creek Road Russellville, TN 37860	130

Sequence of Events:

Excavation for rock riprap, geotextile placement, riprap placement. Seeding and mulching will be done as soon as possible after construction to prevent sediment from entering the stream.

Section 6.2

Topographic map

Attached to email

OCT 12 2021



Section 8.3

Once excavation of the keyways and side slopes are completed, it's required to place, pin, and secure the geotextile as soon as possible to minimize erosion into the stream. On project sites where the excavation may continue for multiple days, or where a site may be dormant for a period, the landowner/contractor shall not wait until the entire slope is excavated before the geotextile is secured in place. In these types of situations, the landowner/contractor shall place, pin, and secure the geotextile in place at the end of each day of excavation construction activities. If a site is dormant for a period, the landowner/contractor is responsible for maintaining, replacing, and/or repairing any damaged geotextile until the geotextile is covered with rock riprap or other streambank stabilization measures. On project sites where the excavation shall be completed in 1 day or less, the landowner/contractor shall place, pin, and secure the geotextile upon completion of the excavation activities.

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATIONS

ROBERT THOMASON FARM
HAMBLEN COUNTY, TENNESSEE
STREAMBANK AND SHORELINE PROTECTION (580)
November 2019

Follow the attached drawing when constructing the project.

SCOPE

This item shall include all specifications required for the installation of streambank and shoreline protection. Construction operations shall be carried out in such a manner that erosion, air, water, and noise pollution will be minimized within legal limits as established by state regulations.

SPECIFICATIONS

Site Preparation and Clearing. Clearing and grubbing shall be kept to the minimum needed in order to install the items. All trees and brush shall be removed from the area before excavation begins. The foundation area for all structures shall be cleared of all stumps, roots, brush, sod, and other debris. All waste materials shall be disposed of in a sightly and workman-like manner in a designated area outside the natural floodway and outside of the flood plain where it could wash back into the stream.

The cross section shall be excavated to the neat lines and grades as shown on the plans. Over-excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material. It may be advantageous to divert the stream flow around the site using a pipe or ditch. The stream may also be temporarily impounded during construction. Note, however, that stream diversion during construction shall be conducted in a manner that minimizes erosion and sedimentation.

Construction operations shall be done in such a manner that erosion and water pollution are minimized and kept within reasonable and legal limits. Local, state, and federal laws shall be followed when working in streams and shorelines. The landowner is required to have all necessary local, state and federal permits before the start of construction.

All affected public utilities shall be marked by Tennessee One-Call (1-800-351-1111) before the start of construction.

Guidelines for Geotextile

- 1) Geotextile shall be an 8 ounce non-woven, needle punched material with the following properties:

Minimum Geotextile Requirements		
Property	Test Method	Minimum
Tensile Strength	Grab Test ASTM D 4632	180 lb.
Mullen Bursting	Diaphragm ASTM D 3786	320 psi.
Puncture Test	ASTM D 4833	80 lb.

- 2) Install geotextile on firm sub-base. When more than one width of geotextile is required, the downstream panel shall be installed first. The next upstream panel shall be installed with a minimum of twenty-four (24") inches overlap over the first section.
- 3) Tears in geotextile shall be repaired immediately upon discovery by removing all surfacing material and soil for a minimum distance of twenty-four (24") inches in all directions of the tear. Spread a new section of geotextile over the area and anchor with anchor pins around all sides.
- 4) Care should be taken not to rip the geotextile while placing rock material. Rocks shall not be dropped onto the geotextile from heights greater than three (3') feet.

Guidelines for Rock Riprap

- 1) Rock Riprap for Riprap Bank Stabilization, Bank Armoring shall be uniformly graded from a dMIN size twenty-four (24") inch to dMAX size forty-eight (48") inches. Approximately fifty (50%) percent d50 shall be equal to or larger than thirty-six (36"). The size is based on the shortest diameter measurement of the rock.
- 2) The individual rock fragments shall be angular, dense, sound, and free from cracks, seams and other defects conducive to accelerated weathering. If the rock quality is questionable, the NRCS representative shall request that the rock be tested for the following properties (any quarry providing rock to TDOT will have these tests):
 - **Bulk Specific Gravity** (saturated surface-dry tested) – not less than 2.5 when tested in accordance with ASTM C127 on samples prepared as described for soundness testing.
 - **Absorption** – not more than two (2%) percent when tested in accordance with ASTM C127 on samples prepared as described for soundness testing.
 - **Soundness** – the weight loss in 5 cycles shall not be more than ten (10%) percent when sodium sulfate is used or more than fifteen (15%) percent when magnesium sulfate is used.

Guidelines for Fill Material

- 1) The material removed from the area that is to be excavated from the placement of structures may be used as fill or cover material above structural anchors if required.

- 2) Any excess material shall be removed from the site and disposed of either by spreading out and seeding the area or disposed of through a method that meets federal, state, and local regulations.

Guidelines for Bioengineering Stabilization

- 1) All disturbed and shaped stream bank areas, to the top of bank/edge of riparian buffer, shall be prepared, fertilized, limed, seeded, and mulched in accordance with a seeding plan prepared by the District Conservationist for the site in question. Mulching of this area shall be with Erosion Control Blanket (ECB). This shall conform to current NRCS Practice 484 – Mulching or other guidelines as appropriate for the site. ECB shall be biodegradable and contain no monofilament netting. North American Green S150BN or another manufacturer's equivalent material meets the requirement for ECB.
- 2) Any riparian vegetation planting for the given site shall be specified by the District Conservationist in the Conservation Plan. This shall conform to current NRCS Practice Standards 342 – Critical Area Planting, Riparian Area.

Guidelines for Erosion Control

- 1) During construction of key trench and placement of key stones, flowing water shall be diverted from the trench by placement of temporary riprap or cobble berm if possible. This does not mean the key trench is dewatered but that strong current flow is directed away from the trench.
- 2) No exposed material shall be left overnight without the placement of temporary erosion control measures or cover. Cover may be the placement of geotextile cloth.
- 3) Site shall be seeded and mulched to NRCS Standards and Specifications upon completion of each separate component or practice. Refer to Guidelines for Bioengineering Stabilization above.
- 4) Riparian buffers and planting will be established as/if required under separate Construction Specification and Practice Standard.
- 5) Excavated material will be removed from the influence of the stream or placed behind armoring and vegetated.

Construction Check

As a minimum, the following data shall be recorded:

- 1) Placement of structure as constructed.
- 2) Length of the Shoreline/Streambank repaired.

- 3) Elevation where the structures enter the bank.
- 4) Type and quality of geotextile used.
- 5) Graduation, quantity, and type of rock riprap used.
- 6) Adequacy of vegetation.
- 7) Other pertinent data.
- 8) Statement to the effect that practice meets plans and specification.
- 9) Signature of person making certification and date.