STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900, J. K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TN 37243-0334
TELEPHONE: (615) 253-2477 FAX: (615) 741-1098

July 17, 2008

Mr. Jim McAdoo, Permit Section
TN Department of Environment and Conservation
Division of Water Pollution Control
6th Floor L&C Annex, 401 Church Street
Nashville, TN 37243-1534

RE: NOI and SWPPP Submittals for TDOT Construction Activities

Dear Mr. McAdoo:

We request coverage under the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities for the subject project. Enclosed is the Notice of Intent (NOI) for Construction Activity – Storm Water Discharges and one hard copy and one electronic copy on CD of the site-specific Storm Water Pollution Prevention Plan (SWPPP). The *"finding of the EPSC plan"*, known as Exhibit "A" in the consent order, is located within the SWPPP appendix.

Project #13951-1516-04, PIN 107611.00
Coffee Road, SIA Serving Homesteader Trailers in the town of New Tazewell
Claiborne County

By copy of this letter, we are sending three hard copies and one CD of this SWPPP to the Region Construction Office (one copy of the contractor) and one CD to the Design Division.

Please forward our office the Notice of Coverage (NOC) for this project as soon as it becomes available. Please contact me at (615)253-2441 if I can be of any assistance.

Sincerely,

Carma H. Smith

Carma H. Smith
Roadway Specialist 3, Environmental Permits Office

Enclosures

JLH: CHS: ADM

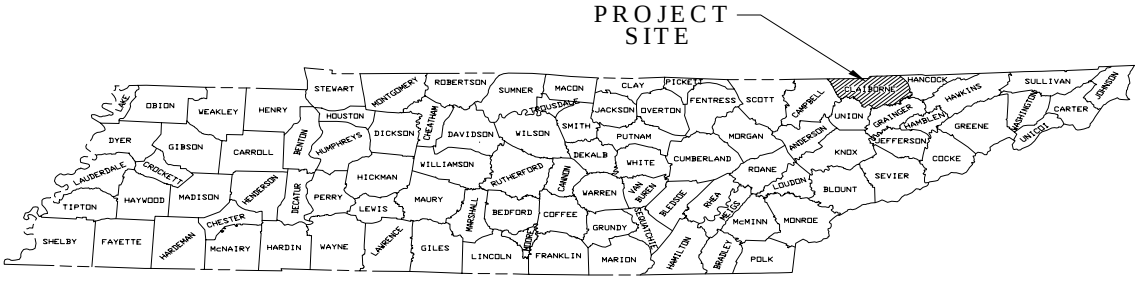
Enclosures for:
Mr. Jeff Jones, Design Division Director (CD)
Mr. Clint Bane, Region 1 Construction (CD)

cc: Ms. Patty Peyton, HQ Const. (NOI, CD)
Reading File, NPDES File
Mr. Rick Noseworthy, Region 1 Env. Coord.

Storm Water Pollution Prevention Plan

Tennessee Department of Environment and Conservation
General NPDES Permit for Discharges of Storm Water Associated with Construction Activities
Permit No. TNR100000
Part 3.5. Storm Water Pollution Prevention Plan (SWPPP)

Project No.: 13951-1516-04
PIN: 107611.00
Project Name: Coffee Road Relocation, SIA Serving Homesteader Trailers
In the Town of New Tazewell
Claiborne County, Tennessee



Prepared for:
Tennessee Department of Transportation – TDOT

Prepared by:
MACTEC Engineering and Consulting, Inc.

Consultant Reference No.: 3079-07-0050-01

TABLE OF CONTENTS

Preamble 1

General Purpose 1

1.0 INTRODUCTION 3

2.0 SITE DESCRIPTION 3

3.0 EROSION PREVENTION AND SEDIMENT CONTROL 8

3.1 Preconstruction and During Construction 9

3.2 Stabilization, Structural, and Non-Structural Controls 9

3.2.1 Clearing and Grubbing 9

3.2.2 Culvert Construction 10

3.2.3 Grading and Excavation 10

3.2.4 Final Stabilization 11

3.3 Post-Construction 11

3.3.1 Pollutant Controls 12

3.3.2 Velocity Controls 12

4.0 STORM WATER MANAGEMENT 12

4.1 Required Records 12

4.2 Rainfall Monitoring Plan 12

4.2.1 Equipment 12

4.2.2 Location 13

4.2.3 Methods 13

4.3 Maintenance 13

4.4 Inspection 14

4.4.1 Schedule 14

4.4.2 Documentation Requirements 14

4.4.3 Areas to be Inspected 15

TABLE OF CONTENTS

4.4.4 Repair, Modifications, and Revision 15

5.0 OTHER ITEMS REQUIREING CONTROL 15

5.1 Construction Materials 15

5.2 Waste Materials 16

5.3 Other Materials 16

5.4 Non-Storm Water Discharges 17

6.0 REQUIREMENTS FOR PLANS AND REPORTS 17

6.1 Keeping SWPPP Current 17

6.2 Making Plans Accessible 17

6.3 Notice of Termination 18

6.4 Retention of Records 18

7.0 CERTIFICATION 19

Tables

1. Runoff Curve Number for Existing Conditions
2. Runoff Curve Number for Post-Construction Conditions
3. Outfall Information
4. Wetland Location

Figures

1. USGS Map
2. Site Vicinity Map

TABLE OF CONTENTS

Appendices

A Finding of the EPSC Plan

B Erosion Prevention and Sediment Control (EPSC) Plans

C Soils Information

D Runoff Curve Number Calculations (TR-55 Worksheets)

E Drainage Map

F Ecology Report

G Water Quality Permit Application

H Inspection and Quarterly Report Forms

I Notice of Termination Form

Preamble

The Tennessee Department of Transportation (Department) as the owner and the general contractor (Operator) are proposing to perform the construction activities described in this Storm Water Pollution Prevention Plan (SWPPP) under the authority of a Tennessee Department of Environment and Conservation (TDEC) General NPDES Permit TNR100000 for Discharges of Storm Water Associated with Construction Activities. The Department will ensure that both Operator and Department personnel are qualified to perform this work as defined by the regulations. The Department is aware of the importance of compliance with all conditions of the permit and that any non-compliance constitutes a violation of the Tennessee Water Quality Control Act and the Clean Water Act and is grounds for an enforcement action, termination of permit coverage, or denial of a permit renewal application.

General Purpose

This SWPPP has been developed and prepared in accordance with good engineering practices. See Appendix A for Finding of the EPSC Plan. This SWPPP identifies potential sources of pollution that one would reasonably expect to affect the quality of storm water discharges from this construction site. The SWPPP describes the implementation practices that will be used to ensure a reduction of pollutants in storm water associated with construction activities at this site. It has been designed to comply with the terms and conditions of the Tennessee General Permit No. TNR100000 (Discharges of Storm Water Associated with Construction Activities).

Site / Owner Information

Project Name:	**Coffee Road Relocation: SIA Serving Homesteader Trailers in New Tazewell**
Project No.:	**13951-1516-04**
PIN:	**107611.00**
Site Location (County):	Claiborne
Owner/Primary Permittee:	Tennessee Department of Transportation
Owner/Primary Address and Phone:	Mr. John Hewitt Suite 900, James K. Polk Building Nashville, TN 37243-0334 Phone: 615-253-2477
General Contractor (Operator):	To be Determined at Letting
General Contractor (Address/Phone):	Not Currently Available
Description of Proposed Project:	This project will involve construction, grade, drainage, base, and paving activities associated with the two-lane relocating and widening of Coffee Road, SIA serving Homesteader Trailers approximately 0.253 mile in length.
Seasonal or Acreage Limitations:	There are no known special environmental factors present on this project that indicate a need for seasonal or acreage limitations for grading, cutting, or filling operations.
Date Right-of-Way Plans Finalized:	Does not meet the Exemption Requirements of Section 4.4.3 of the CGP.
Standard that EPSC Measures Meet:	2-year/24-hour Storm Event
Discharges to Waters Impaired by Siltation or Habitat Alteration: **No**	Discharges to High Quality Waters: **No**
Discharges to Waters with an approved TMDL: **No**	TDOT has and maintains its own MS4, TNS077585.

1.0 INTRODUCTION

In accordance with Part 3.5 of the Tennessee Department of Environment and Conservation's (TDEC) General National Pollutant Discharge Elimination System (NPDES) Permit TNR100000 (Permit), the components of the Storm Water Pollution Prevention Plan (SWPPP) for this site have been included herein.

2.0 SITE DESCRIPTION

a) A description of all the construction activities at the site (not just grading and street construction).

The project begins on Coffee Road at the intersection of Old SR-33 and ends at Coffee Road at the existing curve south of Homesteader Trailers. The site contains open grass fields and small paved areas at each end of the proposed construction. See Exhibits 1 and 2 for site topographic and vicinity location maps.

This project will involve widening and relocating existing Coffee Road to provide access to Homesteader Trailers. Associated roadway drainage to serve existing and future industries/businesses will also be addressed. The roadway will consist of two 12-foot paved lanes with 4-foot paved shoulders that will continue 0.253 miles.

The construction activities proposed for coverage by this SWPPP include clearing, grubbing, road grading/excavation, installation of pipe drainage, spreading topsoil, paving with bituminous materials, and traffic striping for a roadway.

Current design plans do not include utilization of an off-site borrow or stockpile area, thus descriptions of those areas are not included in this SWPPP.

b) A description of the general sequence of major activities that disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities, and infrastructure installation, etc.).

1) Installation of initial sedimentation and erosion control devices, including silt fence, inlet protection (rock silt screens), and rock check dams
2) Clearing, grubbing, and topsoil stripping
3) Drainage pipe, ditch installation, and associated drainage structure installation
4) Installation of outlet protection (riprap), and additional rock check dams, inlet protection (rock silt screens), and silt fence
5) Construction of Coffee Road and associated residential/business entrances
6) Installation of base stone and paving
7) Final stabilization (topsoil, seeding, mulch, sod, erosion control blanket, etc.)
8) Traffic striping

Note: Utility installations/relocations that may be required with this project will be performed by others and are separate from this project.

The general sequence of major activities above will be replaced by the "Plan of Operation" provided by the operator at the pre-construction meeting. This Plan of Operation will indicate the operator's intended sequence of construction activities at the site. It shall be attached (after the pre-construction meeting) and included as part of the SWPPP.

c) Estimate of the total area of the site, and total area that is expected to be disturbed by excavation, grading, filling, or other construction activities.

Total Project Area: Approximately 4.32 acres
Total Disturbed Area: Approximately 4.32 acres

d) A description of the topography of the site including an estimation of the percent slope and the variation in percent slope found on site (such estimation should be on a basis of a drainage area serving each outfall).

The site consists of old pasture and rolling hills on each side of the new alignment.

See Table 3 for estimated percent slope by outfall.

e) Any data describing the soil (data may be referenced or summarized) and how the soil type will dictate the needed control measures and the expected quality of any discharge from the site.

INFORMATION TAKEN FROM THE LOCAL SOIL SURVEY: The project is located in Claiborne County, Tennessee. According to maps provided by Claiborne County Soil Conservation District, the project site consists of various types of silt loam soils. See Appendix C for additional soils information. Silt loam soils will require check dams to slow water so that heavier particles can settle out. Retention or ponding of water will be the preferred method to remove suspended sediment. Filter barriers will be used mainly as a final polishing measure prior to outfall at the discharge point.

The quality of discharge from properly implemented and maintained EPSC measures is expected to be sufficient to comply with the terms and conditions of this permit.

f) An estimate of the runoff curve number of the site after construction activities are completed and how the runoff will be handled to prevent erosion at the permanent outfall and receiving stream.

The pre-developed curve number was calculated using the 4.32-acre project size. The pre-developed project area is depicted in Table 1.

TABLE 1 Existing Conditions			
Area Type	**Area (Acres)**	**Runoff Curve Number**	**Weighted Curve Number**
Impervious (pavement)	0	0.95	0.000
Pervious (grass)	4.32	0.42	1.814
Pervious (forests)	0	0.35	0.000

A pre-developed weighted curve number value was calculated from the above information and was determined to be 0.42.

The project will involve the construction of a two-lane highway with paved shoulders. Therefore, the runoff curve number will change from pre-developed conditions due to an increase in impervious areas. The post-developed runoff curve number, was calculated using the 4.32-acre project size. The post-developed project area is depicted in Table 2.

TABLE 2 Post-Construction Conditions			
Area Type	**Area (Acres)**	**Runoff Curve Number**	**Weighted Curve Number**
Impervious (pavement)	0.63	0.95	0.599
Pervious (grass)	3.69	0.42	1.550
Pervious (forests)	0	0.35	0.000

A post-developed weighted curve number was calculated from the above information and was determined to be 0.50.

Calculations for the curve numbers depicted in the pre and post-developed conditions are located in Appendix D.

g) An erosion prevention and sediment control map of the site with the proposed construction area clearly outlined. The map should indicate the boundaries of the permitted area; drainage patterns and approximate slopes anticipated after major grading activities; areas of soil disturbance; an outline of areas which are not to be disturbed; the location of major structural and nonstructural controls identified in the SWPPP; the location of areas where stabilization practices are expected to occur;, surface waters, including wetlands, sinkholes; designation of runoff receiving waters or MS4; and careful identification on the site map of outfall points intended for coverage under the general permit for storm water discharges form the site.

1) Please see the attached EPSC Plan (Appendix B), Drainage Map (Appendix E) and USGS map (Figure 1) for the EPSC plan, construction boundaries, and drainage patterns.

2) According to the construction plans, the typical sections on Coffee Road will be four horizontal to one vertical (4H: 1V) side slopes with ditches in cut areas. The typical sections on Private Drives will be two horizontal to one vertical (2H: 1V) side slopes with ditches in cut areas.

3) The majority of the areas that will have soil disturbance are designated on the erosion and sediment control plans as slope lines and easement areas. Silt fence, check dams, and riprap outlet protection have been located along these lines/boundaries to protect receiving waters.

4) No areas of significant size within the proposed construction limits are to be left undisturbed.

5) The location of major structural and non-structural erosion controls are located on the erosion and sediment control plans in Appendix B. For details not provided on the erosion and sediment control plans, refer to the TDOT standard roadway drawings.

6) Stabilization with erosion control measures will occur in selected areas. Seeding, mulch, sod, erosion control blankets, and silt fence will be used to stabilize slopes. Temporary check dams will be used in ditches and swales along the roadway to reduce the storm water velocities so that sediments will be removed prior to traveling off-site. Inlet protection will be installed at designated inlets of drainage structures so that sediments will be removed prior to traveling off-site.

7) Site runoff will either flow overland or be collected into drainage ditches/swales that parallel the roadway. The site runoff will ultimately discharge to sinkholes off-site, north of the project. No streams are located adjacent to or near the project.

8) No wetland areas or other environmental features (i.e., sinkholes) are expected to be disturbed by the construction activities. See Appendix F for the complete ecology information and Appendix G for the permit information.

9) This project **does not** discharge into waters impaired by siltation and habitat alteration, high quality waters, or approved TMDL.

10) This project has 2 outfall points. The outfall points are depicted on Figure 1 and the erosion control plan in Appendix B. Table 3 lists the location, impacted drainage feature that could transport pollutants off-site and its associated outfall point number.

TABLE 3
Outfall Information

Outfall Point No.	Road Station	Drainage Location		Impacted Drainage Feature	Estimated Percent Slope Within ROW
		LT or RT	Description		
1	10+20	LT	18-in. CMP	Ditch	34
2	20+90	LT	36-in. RCP	Ditch	34

h) A description of any discharge associated with industrial activity other than construction storm water that originates on site and the location of that activity and its permit number.

There are no discharges associated with industrial activities affecting the project site.

i) Identification of any stream or wetland on or adjacent to the project, a description of any anticipated Alteration of these waters and the permit number or tracking number of the Aquatic Resources Alteration Permit or Section 401 Certification issued for the alteration.

The TDOT Environmental Division has applied for the necessary permits (Appendix G) to disturb the wetland area(s) and streams. The project shall be constructed in accordance with the permit conditions. Any disagreement between the project plans, the SWPPP, the project as constructed, and the permit or permits issued shall be brought to the attention of the engineer prior to finalization of the project. In general, permit conditions will prevail.

j) The name of the receiving water(s) and approximate size and location of affected wetland acreage at the site.

The receiving waters are as follows:

- No receiving waters, only sinkholes in the general vicinity

TABLE 4 Wetland Location			
From Road Station	**To Road Station**	**Lt. or Rt.**	**Affected Wetland Area (acres)**
NA	NA	NA	0
		Total Area Affected (acres)	0

This project will not affect any wetland areas. See Appendix F for the ecology information.

k) Identify and outline buffer zones established to protect waters of the state located within boundaries of the project.

This project does not discharge to waters impaired by siltation or habitat alteration or to high quality waters. Therefore, no buffer zones are required.

For projects which will be subdivided, the developer/owner must describe how he will prevent erosion and/or control any sediment from portions of the property that will be sold prior to the completion of construction.

This does not apply to TDOT projects.

l) Projects of more than 50 acres, the construction phases must be described.

This project does not require more than 50 acres of disturbed area.

m) If only a portion of the total acreage of the construction site is to be disturbed, then the protections employed to limit the disturbance must be discussed (e.g. caution fence, stream side buffer zones, etc.).

There are no portions of the site that are to be left undisturbed. Therefore, no protections are needed.

o) The name and number of the previously permitted Municipal Separate Storm Sewer (MS4) the project discharges into.

TDOT has and maintains its own MS4, TNS077585.

3.0 EROSION PREVENTION AND SEDIMENT CONTROL

The goal of this SWPPP is to maintain and protect the natural, physical, and biological characteristics and functions (e.g., no significant changes in the hydrological regime or pollutant

input) of the receiving water by minimizing the dislodging and suspension of soil in runoff and by retaining mobilized sediment on-site.

3.1 Preconstruction and During Construction

Preconstruction planning should be used to sequence major grading activities to minimize the exposure time of graded or denuded areas. The erosion prevention and sediment control measures and/or plans shall be modified as necessary so that they are effective at all times throughout the course of the project. The Operator will be responsible for the implementation and execution of all storm water runoff controls. Preconstruction ground cover will not be destroyed, removed, or disturbed more than 10 days prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed. Temporary erosion control measures may be removed at the beginning of the workday, but will be replaced at the end of the day. The structural controls to be used on this project and their placement are identified on the erosion prevention and sediment control plans in Appendix E.

3.2 Stabilization, Structural, and Non-Structural Controls

Storm water runoff controls for the proposed project will consist of the structural control measures themselves and the maintenance and inspection practices discussed later in this SWPPP. They have been designed to retain sediment on the project site. The following paragraphs describe the sequence of major construction activities that are planned for the site and the general stabilization and structural practices that will be associated with each activity. They also identify the party responsible for implementing the SWPPP.

3.2.1 Clearing and Grubbing

General Requirements: Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Erosion prevention and sediment control structures must be in place and functional before clearing, grubbing, excavation, grading, cutting or filling occurs, except as such work may be necessary to install erosion prevention and sediment control measures. Project plans, proposal contract, and TDOT standard drawings referenced in the project plans provide additional information regarding requirements for erosion prevention and sediment control and protection of waters of the State and the United States.

Stabilization: Interim and permanent stabilization practices at site-specific locations are detailed on the erosion prevention and sediment control plans in Appendix E. Only the areas where grading and earth-moving activities are planned within 10 days will be cleared unless they are to be subsequently seeded and/or mulched or other temporary cover is installed. Stabilization practices rely primarily on seeding (with mulch) of cleared and grubbed areas prior to other construction activities. Temporary seeding will be accomplished by using seed groups adapted for germination and growth during the subject season. Section 918.14 of the TDOT Standard Specifications for Road and Bridge Construction establishes seeding groups and seeding dates that will be followed. Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible.

Structural Practices: Structural practices include rock check dams, silt fence, inlet protection (rock silt screens), and riprap. These items will be installed prior to and during clearing operations.

Responsible Party: The site Operator will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity.

3.2.2 Culvert Construction

General Requirements: Project plans, proposal contract, and TDOT standard drawings referenced in the project plans provide additional information regarding requirements for erosion prevention and sediment control and protection of waters of the State and the United States.

Stabilization Practices: Stabilization practices for culvert construction rely primarily on installation of inlet protection (rock silt screens) and outlet protection (riprap), rock check dams, erosion control blanket, sod, and permanent seeding (with mulch) of cleared and grubbed areas prior to other construction activities. Stabilization will be completed within 15 days of final grading or earth-moving activities. Additionally, diversion channels will be stabilized with rock and seeding while culvert structures are constructed. Culvert construction and bank grading shall be complete and stabilized prior to flow being diverted back to its original course.

Structural Practices: Construct stream diversion, if required, for culvert construction. Divert flow into diversion and construct culverts. Divert flow through new structures. Backfill structures as required and construct final contours. Stabilize with final erosion control measures (riprap, sod, or erosion control blankets).

Responsible Party: The site Operator will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity. The Department will also be responsible for inspection of SWPPP structural practices and required reporting to TDEC.

3.2.3 Grading and Excavation

General Requirements: Project plans, proposal contract, and TDOT Standard Drawings referenced in the project plans provide additional information regarding requirements for erosion prevention and sediment control and protection of waters of the State and the United States.

Stabilization Practices: Stabilization practices for this sequence include bringing cut and fill slopes to final grade and stabilizing during the embankment construction with erosion control blankets, sod, and/or seeding and mulching as construction allows. Stabilization measures shall be initiated as soon as practicable on portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fifteen (15) days after the construction activity on that portion of the site has temporarily or permanently ceased. Except in the following two situations: 1) where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy conditions, stabilization measures shall be initiated as soon as practicable; or 2) where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 15 working days, temporary stabilization measures do not have to be initiated on that portion of the site. Temporary or permanent stabilization will be completed within 15 days of final grading or earth-moving activities. Permanent or Temporary seeding will be accomplished by using seed groups adapted for germination and growth during the subject season. Section 918.14 of the TDOT Standard Specifications for Road and Bridge

Construction establishes seeding groups and seeding dates that will be followed. Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible.

Structural Practices: Structural practices for grading and excavation will include the following: installation of silt fence, mulch, and sod as required, construction of rock check dams in drainage ditches, and rock silt screens at pipe inlets. This will include the final dressing of slopes, placement of topsoil, sod, seed, and mulch. Machined riprap will be placed at outflows of pipes to reduce energy.

Responsible Party: The site Operator will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity. The Department will also be responsible for inspection of SWPPP structural practices and required reporting to TDEC.

3.2.4 Final Stabilization

General Requirements: Project plans, proposal contract, and TDOT Standard Drawings referenced in the project plans provide additional information regarding requirements for erosion and siltation control and protection of waters of the State and the United States.

Stabilization Practices: Place aggregate base to protect earth roadway subgrade from erosion until paving is completed. Unpacked gravel containing fines or crusher runs will not be considered a non-eroding surface. Permanent or Temporary seeding will be accomplished by using seed groups adapted for germination and growth during the subject season. Section 918.14 of the TDOT Standard Specifications for Road and Bridge Construction establishes seeding groups and seeding dates that will be followed. Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible. Stabilization will be completed within 15 days after final grading or earth-moving activities have ceased.

Structural Practices: All permanent structural practices have been completed at this point of the project. After final stabilization has been achieved, all silt fencing, inlet protection (rock silt screens), and rock check dams will be removed to prevent them from becoming pollutants.

Responsible Party: The site operator will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity. The Department will also be responsible for inspection of SWPPP structural practices and required reporting to TDEC.

3.3 Post-Construction

The Department does not anticipate any project-derived pollutants will occur after construction operations have been completed. The stabilized site and grassed waterways should not present a significant increase in runoff or pollutants into the receiving waterway. Although maintenance and operation of the storm water management measures is not required by the permit, after discharges associated with construction activities have been eliminated from the site, the Department will provide for routine maintenance of highway facilities.

3.3.1 Pollutant Controls

Such procedures will include debris removal from drainage structures and trash removal and disposal from right-of-way. Additionally, the Department has a continuous maintenance program to mow and maintain the turf grasses at these type projects. Grassed slopes and waterways provide for water quality improvements through pollutant removal (sediment) and nutrient uptake. Typically, solid or liquid from over-the-road vehicles are kept from entering waters of the State by cooperative efforts of the Department, Tennessee Department of Safety, Tennessee Emergency Management Agency, and others. However, no special structures are included in this project to address these types of pollutants.

3.3.2 Velocity Controls

The project includes the installation of riprap, temporary rock check dams, sod, and mulch to reduce flow velocities on-site. If warranted, the check dams will be left in place to reduce flow velocities after construction is complete. Additionally, the large grassed swales and the moderate cut and fill slopes (4H:1V) incorporated into this design will minimize the velocities generated from this project after completion.

4.0 STORM WATER MANAGEMENT

4.1 Required Records

The operator will maintain at the site the following records of construction activities:

i. The dates when major grading activities occur;

ii. The dates when construction activities temporarily or permanently cease on a portion of the site;

iii. The dates when stabilization measures are initiated;

iv. Records of inspections and corrective measures, including photographs of representative items requiring correction and the corrective action taken for it; and

v. Detailed records of rainfall events including dates, amounts of rainfall, and the approximate duration or starting and ending times (see Appendix H for sample form).

4.2 Rainfall Monitoring Plan

Erosion prevention and sediment control measures and devices are utilized to minimize the dislodging and suspension of soil in runoff and to retain mobilized sediment on-site Strom water runoff is directly proportional to the intensity and duration of a given rainfall event. Rainfall monitoring is necessary in order to estimate the effectiveness of erosion prevention and sediment control measures and devices at the construction site. The intent of the plan is to provide a means to record the volume of rainfall and the time period in which it fell in order to estimate the intensity of the rainfall event.

4.2.1 Equipment

At a minimum, a fence post type rain gauge will be used to measure rainfall. The standard fence post rain gauge shall be a wedge-shaped gauge that measures up to six (6) inches (150mm) of

rainfall (e.g. Tru-Chek® Direct-Reading Rain Gauge). An English scale should be provided on one face, with a metric scale on the other face. Graduation shall be permanently molded in durable weather-resistant plastic. The minimum graduations shall be 0.01 inch (or 0.1mm). An aluminum bracket with screws may be used for mounting the gauge on a wooden support.

4.2.2 Location

The rain gauge will be located at or along the project site, as defined in the NOI of the NPDES Permit, in an open area such that the measurement will not be influenced by outside factors (i.e., overhangs, gutters, trees, etc.). At least one rain gauge will be located within each linear mile (as measured along the centerline of the primary alignment) of the project where clearing, grubbing, excavation, grading, cutting or filling is being actively performed, or exposed soil has not yet been permanently stabilized.

4.2.3 Methods

The rain gauge shall be checked after every rainfall event occurring on the project site. Detailed records of the rainfall event(s) including dates, amounts of rainfall, and the approximate duration or starting and ending times shall be maintained.

4.3 Maintenance

Maintenance activities will be undertaken to ensure that vegetation, erosion and sediment control measures, and other protective measures identified in the site Erosion and Sediment Control Plans are kept in good and effective operating condition. Maintenance needs identified in inspections or by other means shall be accomplished within twenty-four (24) hours after the inspection, unless conditions make a particular activity impracticable. In a case where the activity is deemed impracticable, any such conditions shall be documented. The need for maintenance will be determined through the inspection procedures listed below and will include, but not be limited to, the following practices:

a. Observation of control measures to determine compliance with the manufacturer's specifications and good engineering practices for installation and use of the control;

b. Removal of off-site sediment accumulations from the project site that have not reached a sinkhole and/or stream such that off-site impacts are minimized (Note: Sediment accumulations from the project site that have reached sinkholes and/or streams must not be removed until after consultation with TDEC);

c. Removal of sediment from check dams, silt fence, and other sediment controls when the design capacity has been reduced by 50 percent; and

d. Pickup or otherwise prevention of litter, construction debris, and construction chemicals from becoming a pollutant source prior to anticipated storm events.

In addition to the practices listed above, the project will be inspected as required by this SWPPP and TDOT Department Standards and Guidelines to ensure the maintenance and effectiveness of the erosion prevention and sediment control measures. In case of failure of the operator to control project related erosion or siltation, either on or off the rights-of-way, the Department may withhold

payment of future progress estimates until the operator has satisfactorily performed the necessary corrective measures. If deemed necessary, the Department may employ outside assistance or use in-house forces to provide the needed protective measures with all incurred direct costs plus project engineering costs being charged to the operator by appropriate deductions from the operator's monthly progress estimate.

4.4 Inspection

The inspection schedule and documentation procedures have been designed to ensure that vegetation, erosion, sediment control measures, and other protective measures identified in the SWPPP are kept in good and effective operating condition. If the site description and pollution prevention measures in the SWPPP need to be revised based on the results of the inspection, those revisions will be completed as appropriate, but no later than seven (7) calendar days following the inspection identifying the need.

4.4.1 Schedule

Our review of the Tennessee Department of Environment and Conservation's Final 2006 303(d) List indicates that the project **will not** discharge to streams listed for siltation or habitat alteration, **will not** discharge into high quality waters, and **will not** discharge to waters with an approved TMDL. Per the Amended Consent Order and agreement dated March 10, 2004, the schedule for inspections will be as follows:

a. Before anticipated storm events or series of events such as intermittent showers over 1 or more days (when a 50% or higher chance of rainfall is predicted from a recognized weather source). The weather source should be consistent and checked at the same time each day for the following day. The weather source should be checked a minimum of 24 hours and maximum of 48 hours in advance of the work day in question. Inspections and associated necessary repairs done 60 hours before a rain event constitute compliance with "before anticipated storm events".

b. During or within 24-hours after the completion of any storm event of 0.5 inch or greater; and

c. At least twice per calendar week, at least 72 hours apart, during any construction and thereafter until the site is fully constructed and all disturbed areas not paved, concreted, or cover by stone are permanently stabilized with a uniform (e.g. evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent.

4.4.2 Documentation Requirements

Inspections will be documented in writing and include the following;

a. Scope of the inspection (i.e. pre-rainfall, post-rainfall, during rainfall, weekly/bi-weekly);

b. Name(s) and title or qualifications of personnel making the inspection;

c. The date(s) of the inspection;

d. Major observations relating to the implementation of the SWPPP, including the location(s) of discharges of sediment or other pollutants from the site and of any control devices that failed to operate as designated or proved inadequate for a particular location; and

e. Actions taken to replace, modify, or repair any control measures identified as inadequate or in disrepair during inspections.

A sample inspection form for this project is included as Appendix H. Per an agreement between TDEC and TDOT, the Department must certify on a weekly basis (on the form provided in Appendix H, "Inspection and Quarterly Report Forms") that the weekly inspections of erosion and sediment controls and outfall points were performed and whether or not all planned and designed erosion and sediment controls are installed and in working order. Inspection reports must be signed by an eligible person or his or her duly authorized representative.

4.4.3 Areas to be Inspected

Qualified personnel will inspect disturbed areas of the construction site that have not been finally stabilized for evidence of, or the potential for, pollutants to enter the drainage system. These areas include, but are not limited to, the following:

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation;

b. Erosion prevention and sediment control measures identified in the SWPPP;

c. Outfall points (where discharges leave the site or enter waters of the State). Where outfall locations are inaccessible, the nearest possible downstream locations shall be inspected;

d. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking; and

e. Fueling station(s) on-site (if applicable – See Section 5.3).

These inspection requirements do not apply to definable areas of the site that have met the final stabilization requirement and have been noted in the SWPPP.

4.4.4 Repair, Modifications, and Revision

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, within twenty-four (24) hours after the inspection, unless conditions make a particular activity impracticable. In a case where the activity is deemed impracticable, any such conditions shall be documented.

5.0 OTHER ITEMS REQUIRING CONTROL

5.1 Construction Materials

Construction materials that are anticipated to be present at this construction site include:

- Lumber
- Concrete
- Traffic Control Devices
- Concrete and Corrugated Metal Pipe

- Mineral Aggregates
- Earth
- Asphalt
- Traffic Striping Materials
- Rock
- Guardrail
- Curing Compound
- Paint

Stockpiled erodible construction materials will be secured by control measures down gradient of the stockpiles. Non-erodible materials will be picked up to prevent them from polluting storm water.

The operator may keep several portable storage units on the project site to store construction equipment.

5.2 Waste Materials

Waste material (earth, rock, asphalt, concrete, etc.) not required for the construction of the project shall be disposed of by the operator. The operator will be required to obtain any and all necessary permits including, but not limited to, NPDES, Aquatic Resources Alternation Permit(s), Corps of Engineers Section 404 permits, and TVA Section 26A permits to dispose of waste material.

5.3 Other Materials

Other materials not used for construction, but needed for construction at the proposed site must also be controlled to prevent pollution of the receiving waters. These items include, but are not limited to, the storage and dispensing of the following:

- Fertilizers and Lime
- Diesel and Gas
- Machinery Lubricants (oil and grease)

Soils at fueling stations should be checked daily for signs of spillage or staining of the soil. Any fixed fueling station/tank storage shall have a containment system to prevent runoff by potential spills or tank rupture. Machinery should be serviced or repaired to prevent leaks of fluids.

The operator will be responsible for compliance with all applicable Environmental Protection Agency (EPA) and USDOT guidelines regarding equipment-related fluids as well as all National Fire Protection Association regulations regarding flammable liquids. No construction materials are expected to produce pollutant runoff.

5.4 Non-Storm Water Discharges

The following non-storm water discharges have potential for occurring from the site during the construction period:

a. Groundwater may be intercepted during the construction of this project. While these locations are yet unknown, the SWPPP will be modified to incorporate these areas should they arise.

b. Pavement wash waters (where there have been no spills or leaks of toxic or hazardous materials).

c. Dust suppression water.

d. Water used to wash vehicles (where detergents are not used and detention and/or filtering are provided before the water leaves the site).

All non-storm water discharges will be directed to stable discharge reduction structures prior to leaving the site outfall. Wash down or waste discharge of concrete trucks will not be permitted on-site unless a proper settlement area has been constructed in accordance with both state and federal regulations as required by Department contractual provisions.

6.0 REQUIREMENTS FOR PLANS AND REPORTS

6.1 Keeping SWPPP Current

The Department will amend the SWPPP when any of the following conditions apply:

a. Whenever there is a change in the scope of the project that would be expected to have a significant effect on the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the SWPPP;

b. Whenever inspections or investigations by site operators, local, state, or federal officials indicate the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from construction activity sources, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity;

c. When any new operator and/or sub-operator is assigned or relieved of their responsibility to implement a portion of the SWPPP; and

d. When the SWPPP must be modified to prevent a negative impact to legally protected state or federally listed or proposed threatened or endangered aquatic fauna.

6.2 Making Plans Accessible

The operator will retain a copy of this SWPPP (including a copy of the permit language and all reports) at the construction site (or other local location accessible to TDEC and the public) from the

date construction commences to the date of final stabilization. The operator (who will have operations control over daily pollution prevention plan implementation) will have a copy of the SWPPP available at the location where work is occurring on-site for the use of operators and those identified as having responsibilities under the SWPPP whenever they are on the construction site.

Prior to the initiation of land disturbing activities and until the site has met the final stabilization criteria, the operator will post a notice near the main entrance of the construction site with the following information:

a. A copy of the Notice of Coverage (NOC) with the NPDES permit number for the project;

b. The name and telephone number of a local contact person;

c. A brief description of the project; and

d. The location of the SWPPP (Especially important if the site is inactive or does not have an on-site location at which to store the SWPPP).

If posting this information near a main entrance is infeasible due to safety concerns, the notice shall be posted in a local building. The notice must be placed in a publicly accessible location where construction is actively are underway and moved as necessary. The Department understands that this permit does not provide the public with any right to trespass or require that the Department allow members of the public to access a construction site for any reason, including inspection of a site.

6.3 Notice of Termination

When all storm water discharges from construction activities that are authorized by the permit are eliminated by final stabilization, the Department will submit a Notice of Termination (NOT) that is signed in accordance with the permit. For the purposes of the certification required by the NOT, the elimination of storm water discharges associated with the construction activity is understood to mean the following:

a. That all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized;

b. Temporary erosion and sediment control measures have been or will be removed at an appropriate time to ensure final stabilization is maintained; or

c. That all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

The NOT will be submitted on the Division’s NOT form provided in Appendix I of this SWPPP.

6.4 Retention of Records

The Department will retain copies of the SWPPP, all reports required by the permit, and records of all data used to complete the Notice of Intent for the project for a period of at least three (3) years from the date the NOT was filed. The Department is aware the period may be extended by written request of the Director.

7.0 CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations.

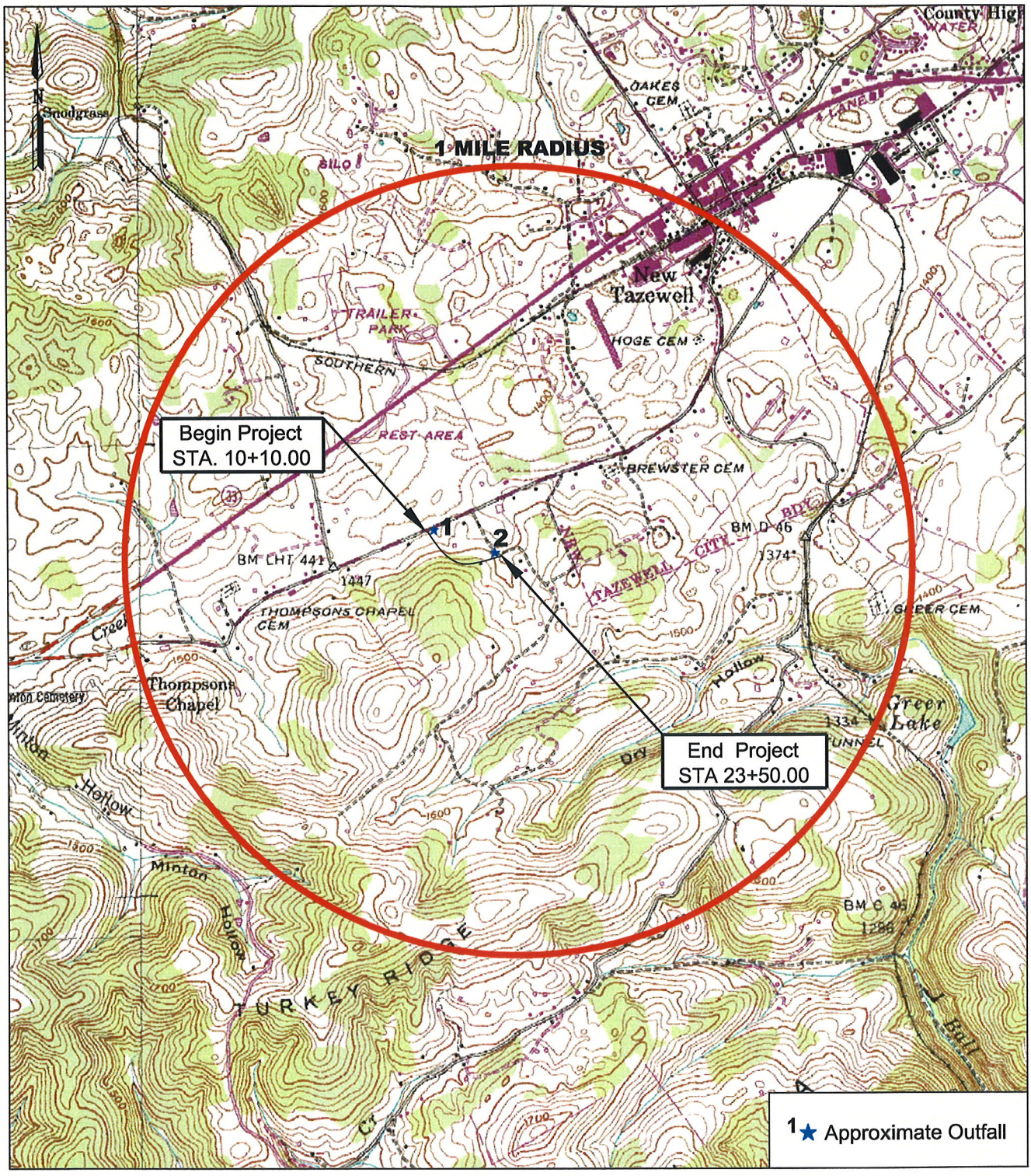
Suzanne B. Herron, PE, CPESC
Printed Name

Signature

Director – Environmental Division
Title

7/17/08
Date

Figures



GENERAL LOCATION MAP

N

0 2000 4000

SCALE FEET

SOURCE: Delorme 3-DTopoQuad of the Clouds and Tzewell, Tennessee, Quadrangles

TDOT

Tennessee Department of Transportation
Nashville, Tennessee

Storm Water Pollution Prevention Plan

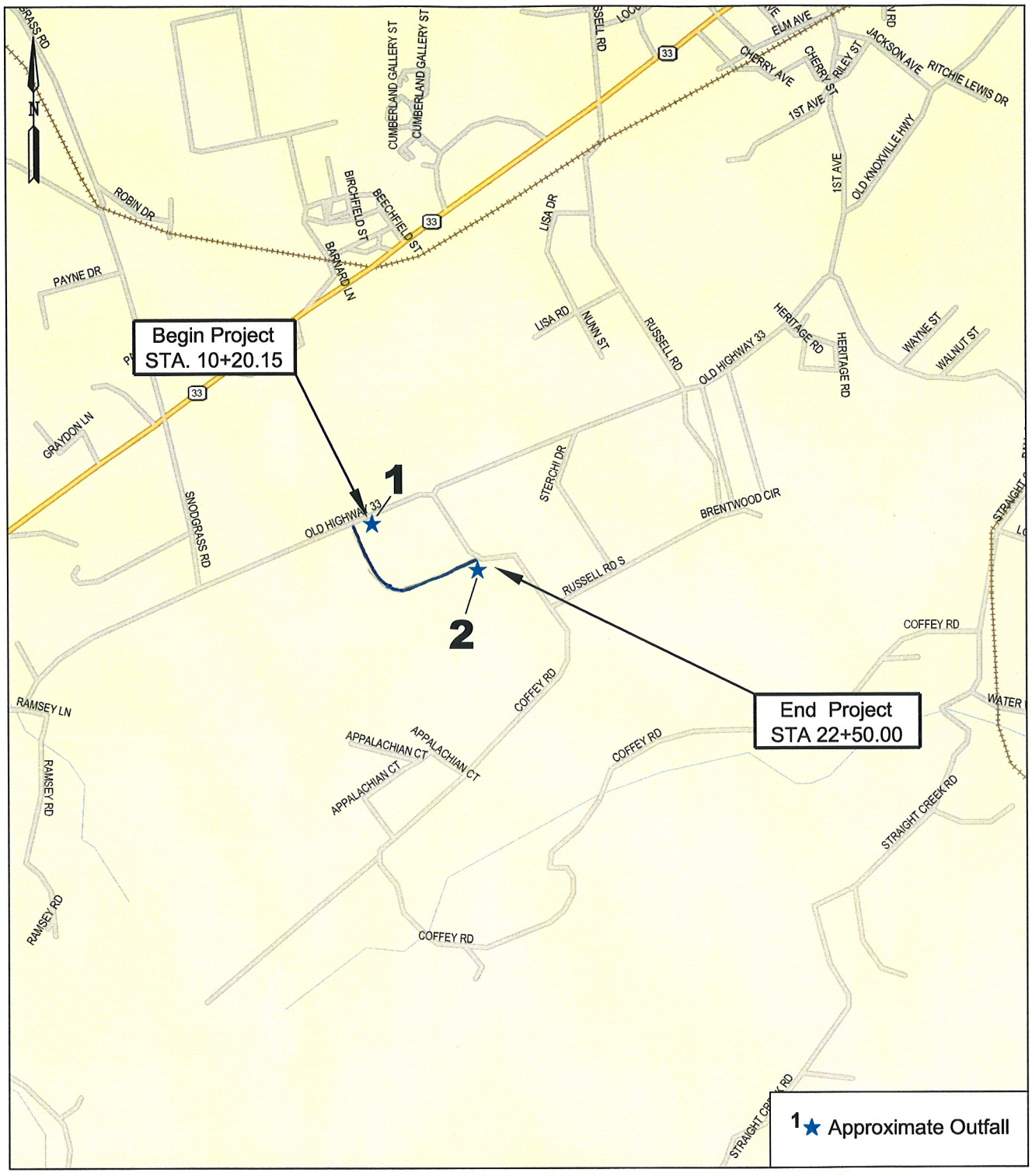
S.I.A. serving Homesteader Trailers
Relocation of Coffee Road
town of New Tazewell

Claiborne County, Tennessee

Drawn By:	Checked By:
7/10/08	7-16-08

TDOT P.E. No.
13951-1516-04

Figure
1



SITE VICINITY MAP

SOURCE: Delorme Street Atlas 2004.

TDOT

Tennessee Department of Transportation
Nashville, Tennessee

Storm Water Pollution Prevention Plan

S.I.A. serving Homesteader Trailers
Relocation of Coffee Road
town of New Tazewell

Claiborne County, Tennessee

Drawn By:	Checked By:
5/22/07	5/28/08

TDOT P.E. No.
13951-1516-04

Figure
2

Appendix A

Finding of the EPSC Plan

I, W. James Goddard, Jr., am currently CPESC certified (or have substantial professional experience in soil erosion and sediment control and have been approved in writing by TDEC to review EPSC plans) I have reviewed the EPSC plan for the TDOT project known as Coffee Road Relocation: SIA Serving Homesteader Trailers in the Town of New Tazewell; PIN NO. 107611.00; Claiborne County, Tennessee; Dated: July 9, 2008 and I find that the BMPs therein are designed so that if properly implemented, installed and maintained, they will manage erosion and prevent sediment accumulation in the waters of the state and comply with the terms of the General Permit.

Date: July 15, 2008

W. James Goddard, Jr.
Signature

CPESC No. 3003

Appendix B

Erosion Prevention and Sediment Control (EPSC) Plans

RECEIVED 07-15-08

TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

Index Of Sheets
SEE SHEET IA FOR INDEX

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

TENN.	YEAR	SHEET NO.
	2008	1
FED. AID PROJ. NO.		
STATE PROJ. NO.	13951-3516-04	

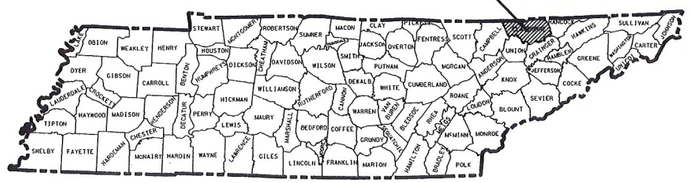
CLAIBORNE COUNTY

S.I.A SERVING HOMESTEADER TRAILERS
RELOCATION OF COFFEE ROAD
TOWN OF NEW TAZEWELL

CONSTRUCTION
GRADE, DRAIN, BASE AND PAVING

STATE HIGHWAY NO. NA F.A.H.S. NO. NA

CLAIBORNE COUNTY

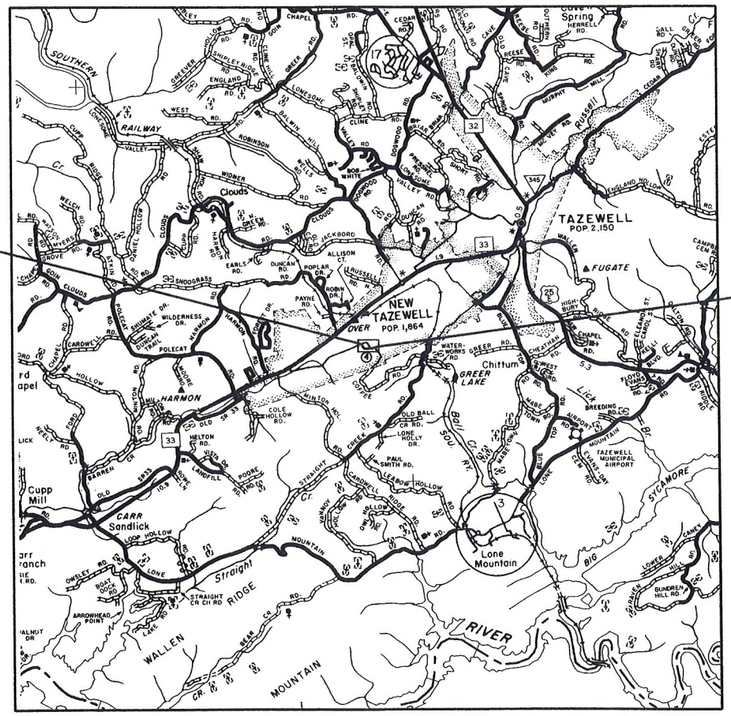


NO EXCLUSIONS
NO EQUATIONS

R.O.W TO BE ACQUIRED AND UTILITY ADJUSTMENTS ARE TO BE MADE BY THE TOWN OF NEW TAZEWELL

BEGIN PROJ.13951-3516-04
STA. 10+10.00 (CONST.)

END PROJ.13951-3516-04
STA. 23+50.00 (CONST.)



SCALE: 1"= 1 MILE

N

ROADWAY LENGTH	0.253 MILES
BOX BRIDGE LENGTH	0.000 MILES
BRIDGE LENGTH	0.000 MILES
PROJECT LENGTH	0.253 MILES

TRAFFIC DATA	
ADT (2008)	707
ADT (2028)	1414
DHV (2028)	184
D	70 - 30
T (ADT)	5 %
T (DHV)	3 %
V	30 MPH

GREGORY A. GREEN
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 102001
STATE OF TENNESSEE

7/9/08

APPROVED: Paul D. Degges
CHIEF ENGINEER

DATE:

APPROVED: Gerald F. Nicely
COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT ROAD SP. SV. 1 JEFF TURNER
DESIGNED BY ROBERT G. CAMPBELL & ASSOC.,
DESIGNER R.L. TUGWELL.JR, P.E CHECKED BY: JEFF TURNER

P.E. NO. 13951-1516-04

PIN NO. 107611.00

7/9/2008 3:04:16 PM
L:\TDOT\06904\00\CONST.SHT

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
ROW	2007	13951-1516-04	6
CONST	2008	13951-3516-04	6

S.I.A. CLAIBORNE CO.

BEGIN PROJ. 13951-3516-04
STA. 10+10.00 (CONST.)

STA. 10+00.00
N 771928.6921
E 2671177.7910

10 OLD S.R. 33

INV-1441.12
18" CMP
INV-1443.01

18" C.M.P.

TCR

S 30° 03' 43" E

WIRE

BARN

15

INV-1451.71
18" CMP
12" PVC
INV-1452.16
INV-1452.03
INV-1457.09
STOP
DOCK
INV-1457.32
6" PVC
DIR. ONLY
INV-1461.95
GATE
SWITCH
12" PVC
INV-1456.15
TOP=1461.96
INV-1457.87
INV-1453.69
6" PVC
1-S-BRICK
GRAV
INV-1455.71
INV-1456.23
CHAIN LINK
ASPH.
METAL
WATER
ASPHALT
COFFEE ROAD
20
30" CMP
CONC.
ASPH.
CONC.
GATE
ASPH.
INV-1481.14
6" CMP
INV-1481.93
GRAV
DRAINAGE BY OTHERS
36" RCP
CMP
SLOPE ESMT.
10' CONST. ESMT.
N 84° 09' 43" E
GRAVEL
GRAVEL
GRAVEL
SLOPE ESMT.
10' CONST. ESMT.
GRAVEL
BARN
INV-1479.29
2X2 SF
6" PVC
GRAIN LINE
SF
SF
INV-1484.37
N 62° 40' 23" E
IPS-SP102
IPS-SP104
POINT ON LINE
IPS-SP101
IPS-SP103
POINT ON LINE
MC IN IPS-SP100

END PROJ. 13951-3516-04
STA. 23+50.00 (CONST.)

STA. 23+96.77
N 771700.8564
E 2672352.7130

N

EROSION CONTROL LEGEND		
SYMBOL	ITEM	STD. DWG.
* SF * SF * SF *	TEMPORARY SILT FENCE	EC-STR-3B
③ ③	CATCHBASIN FILTER ASSEMBLY (TYPE 3)	EC-STR-43 EC-STR-40
△	TEMPORARY ROCK CHK DAM	EC-STR-6
═(	TEMPORARY SLOPE DRAIN	EC-STR-27
BERM	TEMPORARY BERM	EC-STR-27
TCR	TEMPORARY CONSTRUCTION ROAD ENTRANCE and/or EXIT	EC-STR-25

GREGORY A. GREEN
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 102091
STATE OF TENNESSEE
7/9/08

COORDINATE VALUES ARE NAD/83(1995) AND ARE DATUM ADJUSTED BY THE FACTOR 1.00 & TIED TO THE TGRN.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION AND SEDIMENT CONTROL PLAN

STA. 10+10 TO STA. 23+50

SCALE: 1"= 50'

7/9/2008 1:04:48 PM
L:\TDOT\06904\cbsld-03ErosionControl.dgn

TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
ROW	2007	13951-1516-04	7
CONST	2008	13951-3516-04	7

S.I.A. CLAIBORNE CO.

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

(1) PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED (I.E. CLEARING AND GRUBBING INITIATED) MORE THAN 10 CALENDAR DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS SEEDED AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED.

(2) CLEARING, GRUBBING, AND OTHER DISTURBANCE TO RIPARIAN VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.

(3) ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AS SOON AS PRACTICABLE. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL MEASURES OVER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ON ALL PROJECTS.

(4) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED CONCURRENTLY WITH CLEARING OPERATIONS, AND SHALL BE FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS.

(5) CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS AND SHALL BE PHASED FOR PROJECTS THAT HAVE OVER 50 ACRES OF SOIL DISTURBANCE. NO MORE THAN 50 ACRES OF ACTIVE SOIL DISTURBANCE IS ALLOWED AT ANY TIME DURING THE CONSTRUCTION PROJECT, UNLESS APPROVED IN WRITING BY THE ENVIRONMENTAL DIVISION.

(6) EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) INSPECTION, REPAIR, AND MAINTENANCE OF STRUCTURES IS TO BE PERFORMED ON A REGULAR BASIS AND SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT (50%). DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE CARE TO ENSURE THAT STRUCTURAL COMPONENTS OF EROSION PREVENTION AND SEDIMENT CONTROL STRUCTURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE STRUCTURES AT THE CONTRACTOR'S OWN EXPENSE.

(7) SEDIMENT REMOVED FROM SEDIMENT CONTROL STRUCTURES SHALL BE PLACED AND BE TREATED IN A MANNER SO THAT THE SEDIMENT IS CONTAINED WITHIN THE PROJECT LIMITS AND DOES NOT MIGRATE INTO WATERS OF THE STATE/U.S. COST FOR THIS TREATMENT IS TO BE INCLUDED IN PRICE BID FOR ITEM NO. 209-05 SEDIMENT REMOVAL, C.Y.

(8) THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT ON ROADWAYS USED BY THE GENERAL PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS (E.G., FUGITIVE SEDIMENT THAT HAS ESCAPED THE CONSTRUCTION SITE AND HAS COLLECTED IN A STREET MUST BE REMOVED SO THAT IT IS NOT SUBSEQUENTLY WASHED INTO STORM SEWERS AND STREAMS BY THE NEXT RAIN AND/OR SO THAT IT DOES NOT POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS). ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT.

(9) SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES TO PROTECT WATER QUALITY MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED ALONG THE BASE OF ALL FILLS AND CUTS, ON THE DOWNHILL SIDE OF STOCKPILED SOIL, AND ALONG STREAM BANKS IN CLEARED AREAS TO PREVENT SEDIMENT MIGRATION INTO STREAMS IN ACCORDANCE WITH TDOT STANDARDS. THEY MUST BE INSTALLED ON THE CONTOUR, ENTRENCHED AND STAKED, AND EXTEND THE WIDTH OF THE AREA TO BE CLEARED.

(10) CHECK DAMS SHALL BE USED WHERE RUNOFF IS CONCENTRATED. CLEAN ROCK, BRUSH, GABION, OR SANDBAG CHECK DAMS SHALL BE PROPERLY CONSTRUCTED TO REDUCE VELOCITY AND CONTROL EROSION.

(11) CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, DEPENDING UPON APPLICATION WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS.

(12) PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES SHALL BE INITIATED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OF ANY SEQUENCE OR PHASE. TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR WHEN CONSTRUCTION ACTIVITIES ON A PORTION OF THE SITE ARE TEMPORARILY CEASED AND EARTH DISTURBING ACTIVITIES WILL NOT RESUME UNTIL AFTER 15 CALENDAR DAYS. PERMANENT STABILIZATION WITH PERENNIAL VEGETATION OR OTHER PERMANENTLY STABLE, NON-ERODING SURFACE, SHALL REPLACE ANY TEMPORARY MEASURES AS SOON AS PRACTICABLE. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER RUNS WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE.

(13) THE CONTRACTOR SHALL INSTALL A RAIN GAUGE EVERY LINEAR MILE AT ALL SITES WHERE CLEARING, GRUBBING, EXCAVATION, GRADING CUTTING OR FILLING IS BEING ACTIVELY PERFORMED, OR EXPOSED SOIL HAS NOT YET BEEN PERMANENTLY STABILIZED. IF THE PROJECT LENGTH IS LESS THAN ONE LINEAR MILE, ONE RAIN GAUGE SHALL BE INSTALLED AT THE CENTER OF THE PROJECT OR AS INDICATED BY THE TDOT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT EACH GAUGE IS MAINTAINED IN GOOD WORKING CONDITION. TDOT AND/OR THE CONTRACTOR SHALL RECORD DAILY PRECIPITATION AND FORECASTED PERCENTAGE OF PRECIPITATION IN DETAILED RECORDS OF RAINFALL EVENTS INCLUDING DATES, AMOUNTS OF RAINFALL PER GAUGE, THE ESTIMATED DURATION (OR STARTING AND ENDING TIMES), AND FORECASTED PERCENTAGE OF PRECIPITATION FOR THE PROJECT. THIS INFORMATION SHALL BE PROVIDED TO THE ENGINEER ON A MONTHLY BASIS. THE COST FOR THE RAIN GAUGES IS TO BE INCLUDED IN THE UNIT BID PRICES FOR OTHER ITEMS. RAIN GAUGES SHALL BE AS SPECIFIED IN THE APPROVED TDOT RAINFALL MONITORING PLAN.

(14) INSPECTION OF EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE DONE BEFORE ANTICIPATED STORM EVENTS (OR SERIES OF STORM EVENTS SUCH AS INTERMITTENT SHOWERS OVER ONE OR MORE DAYS), DURING OR WITHIN TWENTY-FOUR (24) HOURS AFTER THE END OF A STORM EVENT OF 0.5 INCH OR GREATER, AND AT LEAST TWICE PER CALENDAR WEEK AT LEAST 72 HOURS APART. A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY. AN ANTICIPATED STORM EVENT IS DEFINED AS A 50% OR GREATER CHANCE OF RAINFALL ACCORDING TO A DOCUMENTED LOCAL OR NATIONAL SOURCE (I.E., NOAA, WEATHER.COM, LOCAL NEWSPAPER).

(15) OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO SURROUNDING WATERS. WHERE DISCHARGE LOCATIONS ARE INACCESSIBLE, NEARBY DOWNSTREAM LOCATIONS SHALL BE INSPECTED. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.

(16) UPON CONCLUSION OF THE INSPECTIONS, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES FOUND TO BE INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT, IF POSSIBLE, BUT IN NO CASE MORE THAN 24 HOURS AFTER THE INSPECTION OR WHEN THE CONDITION IS IDENTIFIED. IF THE REPAIR, REPLACEMENT OR MODIFICATION IS NOT PRACTICABLE WITHIN THE TIMEFRAME, WRITTEN DOCUMENTATION MUST BE PROVIDED IN THE FIELD BOOK AND AN ESTIMATED REPAIR, REPLACEMENT OR MODIFICATION SCHEDULE SHALL BE DOCUMENTED WITHIN 24 HOURS AFTER IDENTIFICATION.

(17) THE CONTRACTOR SHALL MAINTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN ON-SITE (OR AT NEARBY OFFICE) AND SHALL PLACE COPIES OF ANY PROJECT-RELATED PERMITS ON THE PROJECT BULLETIN BOARD.

(18) THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION WASTES FROM ENTERING WATERS OF THE STATE/U.S.

(19) THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO ENSURE THAT PETROLEUM PRODUCTS OR OTHER CHEMICAL POLLUTANTS ARE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. ALL EQUIPMENT REFUELING, SERVICING, AND STAGING AREAS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDINANCES, INCLUDING THOSE OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). APPROPRIATE CONTAINMENT MEASURES FOR THESE AREAS SHALL BE USED. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE/U.S., INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

(20) BORROW AND WASTE DISPOSAL AREAS SHALL BE LOCATED IN NON-WETLAND AREAS AND ABOVE THE 100-YEAR, FEDERAL EMERGENCY MANAGEMENT AGENCY FLOODPLAIN. BORROW AND WASTE DISPOSAL AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY AN ARAP, 404, OR NPDES PERMIT, OBTAINED SOLELY BY THE CONTRACTOR.

(21) ANY DISAGREEMENT BETWEEN THE PROJECT PLANS, THE PROJECT AS CONSTRUCTED, AND THE PERMIT(S) ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE TDOT PROJECT ENGINEER. THE ENVIRONMENTAL DIVISION, DESIGN DIVISION, AND HEADQUARTERS CONSTRUCTION OFFICE SHALL BE CONTACTED IN THESE INSTANCES AND DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

(22) EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REPLACED AT THE END OF THE WORKDAY. ALL EPSC MEASURES AS WELL AS BUFFER ZONES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE KEPT IN GOOD AND EFFECTIVE OPERATION CONDITION.

(23) THE FOLLOWING INFORMATION SHALL BE MAINTAINED ON OR NEAR THE SITE: DATES THAT MAJOR GRADING ACTIVITIES OCCUR, DATES WHERE CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, DATES WHEN STABILIZATION MEASURES ARE INITIATED, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) INSPECTION RECORDS AND PRECIPITATION RECORDS.

(24) ALL WATER QUALITY AND STORM WATER PERMITS, INCLUDING THE LOCATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE POSTED NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE ACCESSIBLE TO THE PUBLIC. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE, THE INFORMATION SHALL BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION NEAR WHERE THE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY. THIS LOCATION SHALL BE POSTED AT THE CONSTRUCTION SITE.

(25) IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE ENVIRONMENTAL DIVISION SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS ARE NEEDED. THE DESIGN DIVISION SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.

(26) THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE UPDATED BY CONSTRUCTION WHENEVER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) INSPECTIONS INDICATE THE SWPPP IS PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR IS OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORM WATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY. THE ENVIRONMENTAL DIVISION SHALL BE CONTACTED WHEN MAJOR DESIGN REVISIONS ARE REQUESTED BY CONSTRUCTION. THE ENVIRONMENTAL DIVISION MAY BE CONTACTED FOR GUIDANCE ON SPECIFIC SWPPP NEEDS.

(27) IF PERMANENT OR TEMPORARY VEGETATION IS TO BE USED AS AN EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURE, THEN THE TIMING OF PLANTING OF VEGETATION SHALL BE SHOWN IN THE STORM WATER POLLUTION PREVENTION PLAN. DELAYING PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.

(28) OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ACCESS (A POINT OF ENTRANCE/EXIT TO THE CONSTRUCTION PROJECT) SHALL BE PROVIDED, AS NEEDED, TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.

(29) PROJECT INSPECTORS AND SUPERVISORS (INCLUDING TDOT STAFF, CONSULTANTS AND CONTRACTOR STAFF) RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANS SHALL SUCCESSFULLY COMPLETE THE TDEC "FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL" (REFERRED TO AS "LEVEL ONE") COURSE OR EQUIVALENT COURSE. A COPY OF CERTIFICATION RECORDS FOR THIS COURSE SHALL BE KEPT ON SITE AND AVAILABLE UPON REQUEST.

(30) NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE BASIC EROSION PREVENTION AND SEDIMENT CONTROL DEVICES ON THE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN, CONTAINED IN THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP), TO PROVIDE ACCEPTABLE EROSION PREVENTION AND SEDIMENT CONTROLS DURING ALL STAGES OF CONSTRUCTION.

GREGORY A. GREEN
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 100004
STATE OF TENNESSEE

7/9/08

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL NOTES

7/9/2008 7:23:30 AM
i:\tdot\06904\cbsia-03ErosionControl.dgn

TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
ROW	2007	13951-1516-04	8
CONST	2008	13951-3516-04	8

S.I.A. CLAIBORNE CO.

(32) THE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES AND/OR PLAN SHALL BE MODIFIED AS NECESSARY SO THAT THEY ARE EFFECTIVE AT ALL TIMES THROUGHOUT THE COURSE OF THE PROJECT.

(33) THE ACCEPTED EPSC PLAN SHALL REQUIRE THAT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES BE IN PLACE BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES, INCLUDING WITHOUT LIMITATION AS FOLLOWS:

A. INITIAL CLEARING AND GRUBBING SHALL BE LIMITED TO THAT NECESSARY FOR THE INSTALLATION OF APPLICABLE EROSION PREVENTION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE ACCEPTED EROSION PREVENTION AND SEDIMENT CONTROL PLAN INCORPORATED INTO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).

B. NO OTHER CLEARING AND GRUBBING OPERATIONS SHALL BE STARTED BEFORE APPLICABLE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EROSION PREVENTION AND SEDIMENT CONTROL PLAN INCORPORATED INTO THE SWPPP.

C. NO CULVERT OR BRIDGE CONSTRUCTION SHALL BE STARTED BEFORE APPLICABLE EROSION PREVENTION AND SEDIMENT CONTROL ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EROSION PREVENTION AND SEDIMENT CONTROL PLAN INCORPORATED INTO THE SWPPP.

D. NO GRADING, EXCAVATION, CUTTING, FILLING, OR OTHER EARTHWORK SHALL BE STARTED BEFORE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EROSION PREVENTION AND SEDIMENT CONTROL PLAN INCORPORATED INTO THE SWPPP.

(33) EXCEPT AS OTHERWISE SPECIFIED, THERE ARE NO KNOWN SPECIAL ENVIRONMENTAL FACTORS PRESENT ON THIS PROJECT THAT INDICATE A NEED FOR SEASONAL LIMITATIONS ON THE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OPERATIONS OR ON THE TOTAL AREA OF EXPOSED SOIL.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL NOTES

7/9/2008 7:23:29 AM
i:\tdot\06904\cbsla-03ErosionControl.dgn

Appendix C

Soils Information

SOIL SURVEY

Claiborne County Tennessee

Series 1939, No. 5 Issued May 1948

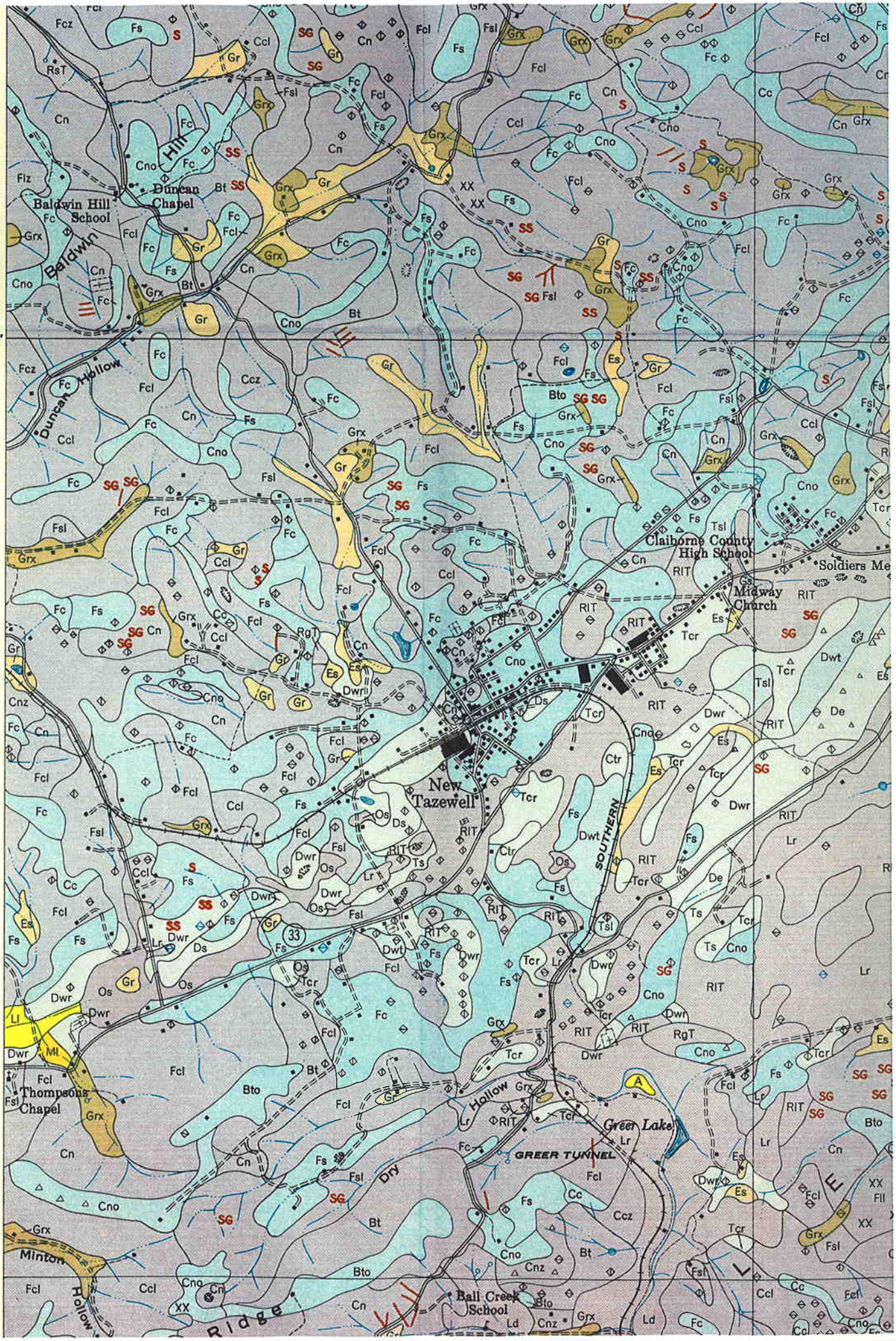
UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Administration
Bureau of Plant Industry, Soils, and Agricultural Engineering
In cooperation with the
TENNESSEE AGRICULTURAL EXPERIMENT STATION
and the
TENNESSEE VALLEY AUTHORITY

Soils of Claiborne County
Coffee Road Relocation: SIA Serving Homesteader Trailers in New Tazewell
TDOT PIN 107611.00

Bt Bolton silt loam – Soils of hilly and steep ridge slopes underlain by cherty dolomites; moderate internal drainage

Fcl Fullerton cherty silt loam, hilly phase – Soils of hilly and steep ridge slopes underlain by cherty dolomites; moderate internal drainage

Fs Fullerton silt loam – Soils of rolling ridge tops underlain by cherty dolomites; moderate internal drainage


Baldwin Hill School
Duncan Chapel
Baldwin Hill
Duncan Hollow
27'30"
Claiborne County High School
Soldiers Me
Midway Church
New Tazewell
SOUTHERN
Thompsons Chapel
Greer Lake
GREER TUNNEL
Dry Hollow
Minton Hollow
Ball Creek School
Ridge

Sheet No. 8

sedges with cattails and willows in the wettest places. No soil amendments are used, and no practices for improving drainage are followed. As a result, corn yields are very low, usually less than 10 bushels to the acre, and the carrying capacity of pastures is small because of the large proportion of unpalatable plants in the mixture.

Management requirements vary from place to place depending upon the frequency of overflow and drainage conditions and the feasibility of improving them. Where the soil is subject to very frequent overflow and where it is very poorly drained and drainage cannot be improved at moderate cost, it is best used for forestry or, if necessary, allowed to remain in low-grade pasture of native plants. Where the soil is better drained or where drainage can be improved by the use of open ditches, pastures of legumes and tame grasses can be obtained. Management requirements for such pastures should be about the same as those for Melvin silt loam.

BOLTON SERIES

The Bolton series includes the most desirable agricultural soils of the cherty ridges. These soils occur on the upper slopes of the ridges and are apparently underlain by nearly chert-free sandy dolomites. They were formed under a mixed hardwood forest in association with the Claiborne, Fullerton, and Clarksville soils.

Although the soils are throughout the cherty ridge section in the central part of the county, the largest proportionate acreage is west of New Tazewell between State Highway No. 33 and the Powell River. About 25 percent of the soils have rolling relief, 38 percent are hilly, and 37 percent steep. They are practically free of stone and chert, and practically none of them is severely eroded.

The dark reddish-brown friable silt loam surface layer is about 12 inches thick. The subsoil is dark-red friable silty clay loam with a weakly developed fine nut structure. This layer is about 4 or 5 feet thick and is underlain by red silty clay with a well-developed nut structure. Some faint mottlings and a small quantity of fine chert fragments may be present. Bedrock is at a depth of 30 feet or more below the surface.

On rolling and hilly relief the Bolton soils are suited to growing tilled crops, whereas the steep areas are best used for pasture. Management requirements are less exacting than for other soils of the cherty ridges; but special practices for furnishing lime, phosphorus, and possibly potash are needed, and moderate measures for runoff and erosion control are required, especially on the stronger slopes. Three types, the silt loam and its rolling and steep phases, are mapped.

Bolton silt loam.—This chert-free soil is on the upper slopes of cherty ridges underlain by sandy dolomite. Slopes range from 15 to 30 percent, and both internal and external drainage are moderate. Although locally called "brown chestnut land," this soil was developed under a mixed hardwood forest of maple, beech, tuliptree (yellowpoplar), and chestnut. Second-growth forest is a mixed stand of yellowpoplar and shortleaf pine in most places.

The largest proportionate acreages are in the vicinities of New Tazewell, Goins, and Clouds on the cherty ridges, but areas are widely distributed over all parts of the cherty ridge section of the county.

These areas are irregular in shape, of variable size, and associated most closely with other types of Bolton soils and with soils of the Claiborne series. Types or phases of Fullerton and Clarksville soils are on the rolling ridge crests above this soil in many places. The total area is 1,604 acres.

Where uneroded, the dark reddish-brown mellow friable silt loam surface soil is about 12 inches thick. In most places enough of the surface layer remains so that the subsoil is not turned by plowing. The upper few inches are well supplied with humus. Recently cleared areas are only slightly acid, but where crops have been grown for several years the reaction is medium or strongly acid. Good tilth is easily maintained—most tillage operations are accomplished with ease and over a fairly wide range of moisture conditions. Some farmers, however, report that the furrow slice does not scour from the plow moldboard, and the local name of "push soil" is given. By using a plow with a correctly designed moldboard this difficulty can probably be eliminated. Another local name, "puffy land," indicates that farmers recognize its friable consistence. The soil is absorptive of water, and surface runoff is probably less than for other soils of the county of similar slopes. Soil, air, and water circulate freely; and moisture conditions for crop growth are excellent. Some farmers report frost heaving of hay and small grains in winter months. In some places a small quantity of fine chert fragments may be on the surface and in the soil.

In most places a yellowish-brown friable heavy silt loam transitional layer 6 or 8 inches thick is between the surface soil and the subsoil. The subsoil is dark-red silty clay loam. It is friable and easily crushed to a soft granular mass. Reaction is strongly acid. A large quantity of small spherical dark-brown concretions and a small quantity of small angular weathered chert fragments are present. This layer is 4 to 5 feet thick and is underlain by red silty clay with a well-developed nut structure. This substratum is faintly mottled with gray, yellow, and brown in some places and is moderately friable when moist but sticky and plastic when wet. A small or moderate quantity of angular chert fragments is present. Dolomite bedrock is at depths of 30 to 50 feet or more.

Included variations are those due chiefly to color differences of the surface soil. In the northeastern part of the county the surface soil is somewhat lighter in color than is normal, being brown or yellowish brown rather than reddish brown. In many places, where the soil is immediately adjacent to areas of Claiborne soils, the boundaries between the soils are not distinct and the soil near the edges of a delineated area of Bolton silt loam may be more like the Claiborne soil than normal Bolton silt loam.

Use and management.—Bolton silt loam is not exacting in its requirements for good use and management, but in general, present practices are not very well adjusted to the physical character of the soil. Practically all the soil has been cleared and cultivated, but about 10 percent has been abandoned to forest because of depletion of fertility and soil material by continued cropping and erosion. About 30 percent is used for growing corn, 15 percent for small grains, 10 percent for tobacco and vegetable crops, and 35 percent for hay and pasture.

Few farmers use systematic rotations, and row crops may be grown for several years in succession followed by hay crops or rest periods. Corn and small grains generally receive small applications of 0–10–4 fertilizer or superphosphate and, where available, barnyard manure. Tobacco and vegetable crops are treated with heavy applications of barnyard manure and large quantities of complete commercial fertilizers as a 3–8–6 mixture. Very little of this soil receives any lime. Special methods for the control of runoff, as terracing, strip cropping, or the use of winter cover crops, are not ordinarily practiced, but most tillage operations are on the contour. Under common management practices, acre yields of about 25 bushels of corn, 900 pounds of burley tobacco, 10 bushels of wheat, 1 ton of lespedeza hay, 1 ton of mixed hay, and 2 tons of alfalfa may be expected.

The chief requirements for good management are concerned with supplying lime, phosphorus, and potash; maintaining the supply of organic matter; and preventing erosion. If other management requirements are met, the soil can be conserved under a rotation including a row crop once in 4 or 5 years. Legumes as alfalfa and clover are effective in maintaining the humus supply, and sods are formed that are beneficial in preventing erosion. Lime, phosphorus, and potash are needed to insure good stands of legumes that should remain on the soil for much of the rotation.

Corn, tobacco, and vegetables do well if they are properly fertilized. Tobacco and vegetables require heavy applications of complete fertilizers containing nitrogen, phosphorus, and potash, but corn following legumes may need only phosphorus and light applications of potash. Rotations should be planned so that lime is not applied immediately prior to planting tobacco or potatoes. Row crops can well be seeded to winter cover crops as soon as they are harvested in order to prevent erosion in winter. Wheat and other small grains are useful in this respect, and good yields may be expected if moderate applications of fertilizers containing nitrogen, phosphorus, and potash are used. Stands of small grain, however, are occasionally injured by frost heaving in winter. The effectiveness of terracing as a means of controlling erosion is doubtful, but strip cropping or contour tillage may be used on the longer slopes. Check dams can be used to control the larger gullies.

Under good management, acre yields of 35 bushels of corn, 15 bushels of wheat, 1.3 tons of lespedeza, and 1,125 pounds of burley tobacco may be expected.

Bolton silt loam, rolling phase.—This phase is on the rolling crests of ridges underlain by slightly cherty sandy dolomite of the Knox formation. Slopes are from 8 to 15 percent. Most of the soil is in long narrow strips along the ridge crests, in association with the other Bolton soils and with the Claiborne, Fullerton, and Clarksville soils. The total area of 1,060 acres is widely distributed throughout the cherty ridge section, but the largest proportionate acreage is northwest of New Tazewell. Both internal and external drainage are moderate. Native vegetation was a mixed hardwood forest of maple, beech, chestnut, oak, and yellowpoplar.

The profile is essentially the same as that of the normal phase, but the surface soil may be thicker. To a depth of 8 to 12 inches the

ash should be somewhat higher. Legumes require large quantities of both phosphorus and potash but ordinarily no nitrogen. Lime is necessary to establish and maintain stands of legumes, and it increases yields of other crops. Contour tillage can be practiced where practicable as an aid to conserving moisture and preventing erosion, and strip cropping also may be useful, especially on the longer slopes. Terraces may be beneficial in some places; but they must be carefully planned, constructed, and maintained to be effective.

Fullerton cherty silt loam, hilly phase.—This phase is on slopes of ridges underlain by cherty dolomites of the Copper Ridge and Beekmantown formations. The total of 16,639 acres occurs in irregularly shaped areas of medium or large size associated with other Fullerton soils and Clarksville soils in the uplands and with Greendale soils in the floors of the adjoining lime sinks. The soil also is throughout all the other cherty ridge sections of the county; where it is in areas of variable size and shape on slopes along intermittent streams in association with other Fullerton, Claiborne, and Bolton soils. Slopes range from 12 to 25 percent. Internal drainage is moderate and external drainage, rapid. Native vegetation was a mixed forest of oak, hickory, blackgum, sweetgum, dogwood, and possibly some shortleaf pine. The largest proportionate acreages of the soil are in the central part of the county in a broad belt extending from Tazewell northward to the Powell River and in the general vicinities of Clouds, Goins, and Little Barren Church.

The profile is similar to that of the normal phase; but the various soil layers generally are less thick and, where cleared, a larger part of the surface soil has been lost by erosion. In many cleared areas much of the upper subsoil is turned by the plow and mixed with the remaining surface soil material. Under forest, the surface 8 to 10 inches is gray friable cherty silt loam with a fine crumb structure. The organic-matter content is relatively low; and when the soil is cleared, this small supply is rapidly dissipated through cropping and erosion losses. Reaction is strongly acid. Where used for crops, good tilth is moderately difficult to maintain, and soil moisture conditions are only fair owing to loss of water caused by the strong slopes and the low absorptive capacity of the present surface layer.

The subsoil is yellowish-red or light-red cherty silty clay loam with a well-developed nut structure. It is about 2 feet thick and grades into a mottled red silty clay with a well-developed nut structure. As much as half the volume of these layers may consist of angular chert fragments. Cherty dolomite bedrock is at depths of 20 feet or more.

The chief variations mapped are those having differences in the degree of accelerated erosion. In many places small areas of Clarksville cherty silt loam, hilly phase, are included either because they are too small to delineate on the soil map or because the boundary is not clear.

Use and management.—Where Fullerton cherty silt loam, hilly phase, is cleared, its present use and management are poorly adjusted to its physical properties. About 40 percent of the soil is in forest, 15 percent in corn, 10 percent in hay (pl. 7, *B*), 15 percent in pasture, and 20 percent in idle land, with small acreages of tobacco and small grains. Systematic rotation of crops is not commonly practiced—corn is grown for a few years until yields become unprofitable, and

the soil is then allowed to rest for several years or is abandoned. Lespedeza is the principal hay crop but some timothy and redtop also are grown. Most pastures are chiefly broomsedge, but some are lespedeza. Small quantities of commercial fertilizer are used on corn and small grains, but fairly heavy applications are used on tobacco. Very little of the soil is limed. Contour tillage is practiced in many places, but no other special practices for erosion control are used. Average yields that may be expected under common management are about 13 bushels of corn, 8 bushels of wheat, 450 pounds of burley tobacco, and less than ¾ ton of lespedeza or mixed hay to the acre.

Management requirements vary according to the use of the soil. Where cropland is scarce and the soil must be used for crops, careful management is needed. Practices similar to those for Fullerton silt loam, hilly phase, are required—proper choice and rotation of crops, use of soil amendments, control of runoff, prevention of erosion, and conservation of soil moisture are needed. Wherever it is feasible, however, the soil is best used for pasture because of the relatively low fertility, poor moisture conditions, poor workability, and poor conservability.

Bluegrass, white clover, orchard grass, redtop, lespedeza, hop clover, bur-clover, and Bermuda grass are suitable for pasture. A mixture of bluegrass and legumes makes pastures of the best quality and highest carrying capacity. Moderate to heavy applications of phosphorus are necessary, and potash is possibly needed. Soil acidity can be corrected by lime.

On some of the more severely eroded areas under proper management, pastures of Bermuda grass and lespedeza may improve soil conditions so that better pastures may be established. Clipping of pastures may be necessary to control weeds. Grazing should be carefully controlled, especially during periods of adverse moisture conditions, to prevent injury to pasture stands and to prevent erosion. Gullies should be stabilized by check dams and tree plantings; thin shading by widely spaced locust trees may be beneficial, especially where bluegrass is grown. Much of this soil is far from springs or flowing streams, and furnishing water to livestock on pastures is a serious problem. Ponds or reservoirs for collecting and storing rain are necessary in many places, whereas piping water from springs, wells, or cisterns may be practical in others.

Fullerton cherty silt loam, steep phase.—Areas of this phase are on steep slopes of ridges underlain by cherty dolomites of the Beekmantown and Copper Ridge formations. Relief ranges from 25 to 50 percent, slopes from 30 to 40 percent gradient being commonest. Internal drainage is moderate and external drainage, very rapid. As on other Fullerton soils, native vegetation was a mixed forest of oak, hickory, sweetgum, blackgum, and dogwood, and possibly shortleaf pine in some places. The soil is chiefly adjacent to the Powell River and its tributaries, but it is throughout all the cherty ridge sections of the county. It is in relatively broad, long, continuous strips in large areas associated chiefly with other Fullerton soils and Clarksville soils on the ridges and with Greendale, Sequatchie, and Roane soils in the adjoining colluvial lands, terrace lands, and bottom lands. Small areas are associated with Bolton or Claiborne soils on the steep slopes

It is similar to the hilly phase, but it is on stronger slopes, and consequently is less fertile and more difficult to work and to conserve. It is physically poorly suited to crops, but if properly managed it is fairly well suited to pasture.

The soil is on steep slopes of 25 to 50 percent on cherty ridges. It was developed from parent material weathered from cherty sandy dolomite chiefly of the Copper Ridge formation under a mixed forest of oak, hickory, blackgum, sweetgum, and shortleaf pine. Internal drainage is moderate, but external drainage is very rapid. Most of the soil is in small or medium-sized irregularly shaped areas in the belt of cherty ridges extending from Tazewell northward to the Powell River. It is associated chiefly with other loam types and phases of Fullerton soils.

The soil profile is essentially the same as that of the hilly phase and similar variations in the mapping separation were allowed.

Use and management.—Present use and management of Fullerton loam, steep phase, are poorly adjusted to the physical suitability of the soil. The present practices used and requirements for good management are similar to those for the comparable silt loam phase.

Fullerton silt loam.—Widely distributed areas of this soil, totaling 2,317 acres, are in all the cherty ridge sections of the county. The soil was developed from parent materials weathered from cherty dolomites of the Copper Ridge and Beekmantown formations. Slopes are 5 to 12 percent, and both internal and external drainage are moderate. Long narrow areas are on ridge crests closely associated with other types and phases of Fullerton soils, soils of the Clarksville and Claiborne series, and to a lesser extent with Bolton soils. Native vegetation was a mixed forest of oak, hickory, sweetgum, blackgum, shortleaf pine, and dogwood.

This soil is darker in color and less cherty than comparable types or phases of Clarksville soils, but it is less favorable in these respects than Bolton or Claiborne soils. Where uneroded, the surface soil is light brownish-gray friable silt loam with a fine crumb structure. On most cleared and cultivated areas, part of the layer has been lost by erosion; but in nearly all places enough remains to form the plow layer and the subsoil is not ordinarily turned by tillage operations. Tillage can be accomplished over a wide range of moisture conditions without seriously impairing tilth. The original content of humus was probably relatively low, and most of it has been dissipated through cropping and by erosion losses. Reaction is strongly acid. The soil is permeable to soil moisture, air, and plant roots and is absorptive of water, making loss of moisture through surface runoff less severe than on the heavier limestone soils. Some angular chert fragments are on the surface and in the soil.

The subsoil is yellowish-red or light-red silty clay loam with a well-developed nut structure. It is somewhat hard and brittle when dry, sticky and plastic when wet, but moderately friable when moist. It contains a large quantity of angular chert fragments and is 2 to 3 feet thick. This grades into a heavy red or yellowish-red silty clay with a well-developed coarse nut structure. This material is very cherty and contains mottlings of gray, ocher, rust brown, and yellow. Cherty dolomite bedrock is at depths of 30 feet or more.

The principal variations are those due to the indistinct boundaries between this soil and some other type or phase of Fullerton soil. For example, in many places where this soil is adjacent to Fullerton cherty silt loam, the soil gradually changes from this type to that one over a considerable area. In such places the line between the two soils must be arbitrarily drawn somewhere in the transitional zone. Some small areas of cherty soil too small to delineate on the soil map are included in this mapping separation. Small areas of Fullerton loam are included where the boundary between this and the associated soil is not clear.

Use and management.—The present use of Fullerton silt loam is fairly well adjusted to its physical properties, but prevailing management practices are not designed to compensate for the soil deficiencies or to conserve it. At present practically all the soil is cleared; about 30 percent is in corn, 20 percent in wheat, 15 percent in burley tobacco, 20 percent in hay and pasture, 5 percent in fruits and vegetables, and 10 percent in idle or fallow land. A few farmers use a rotation of corn, small grain, and hay; but much of the soil is used for growing row crops for several years in succession followed by several years of idleness after the soil has been depleted.

Corn and small grains ordinarily receive about 100 pounds an acre of 0–10–4 fertilizer. Heavy applications of a complete commercial fertilizer are used under tobacco, and vegetables usually receive at least moderate applications of similar material. Where available, barnyard manure is used on all row crops. Hay and pastures are not ordinarily fertilized and only a small part of the soil is limed at periodic intervals. Some farmers practice contour tillage, but other special methods for controlling runoff and preventing erosion are not ordinarily used. Under these common management practices average yields of about 25 bushels of corn, 15 bushels of wheat, 900 pounds of burley tobacco, and 1 ton of lespedeza hay to the acre are expected. Where lime is used in addition to other common practices, about 1½ tons of red clover and 2 tons of alfalfa to the acre are obtained.

Several special management requirements that can be attained without difficulty center about supplying lime and mineral plant nutrients, increasing the supply of humus, and properly choosing and rotating crops. Special practices for runoff control also are needed. Tillage can be accomplished over a fairly wide range of moisture conditions without seriously impairing tilth. Where practical, all tillage operations should be on the contour. Carefully planned and constructed broad-base terraces may be effective in conserving moisture and preventing erosion if they are properly maintained.

A rotation including a row crop once in 4 years is well suited to the soil. Corn, small grains, lespedeza, red clover, timothy, tomatoes and other vegetables, and fruits may be expected to do well. The soil is especially well suited to growing burley tobacco, and crops of excellent quality are obtained; although yields are not so high as on soils of the limestone valleys. Alfalfa can be successfully grown, if the soil is limed and heavily fertilized. Legumes are effective in increasing the supply of humus and nitrogen, improving the tilth of the surface soil, and controlling runoff. Corn and small grains require large applications of phosphorus and moderate quantities of nitrogen and potash; whereas tobacco and vegetables need large applications of

both phosphorus and potash and small to moderate quantities of nitrogen where legumes are included in the rotation. These requirements can probably best be met by using complete commercial fertilizers. Legumes require large quantities of both phosphorus and potash, but no nitrogen. Barnyard manure is effective in increasing the humus and nitrogen supplies and furnishing potash, but it should be supplemented with phosphate fertilizers to obtain a proper balance of plant nutrients. Lime is essential to legumes and also gives increased yields of other crops. It can best be applied immediately before the legume in the rotation is seeded.

Fullerton silt loam, hilly phase.—This phase is in the uplands on the slopes of cherty ridges underlain by folded and faulted dolomites of the Copper Ridge and Beekmantown formations. Much of the soil is in sections with karst topography, where the land surface is very irregular in conformation. It is in irregularly shaped tracts on the slopes around sink holes and is associated with Greendale soils in the lime sinks and other Fullerton soils on the uplands. In dissected sections, it is in comparatively large areas on the hilly slopes associated chiefly with other Fullerton soils but also with soils of the Clarksville, Claiborne, and Bolton series. Slopes range from 12 to 25 percent. Internal drainage is moderate and external drainage rapid. Native vegetation was a mixed forest of oak, hickory, sweetgum, blackgum, dogwood, and some shortleaf pine. The aggregate area mapped is 3,869 acres, the largest proportionate acreages of which are in the general vicinities of Tazewell, New Tazewell, Goins, and Clouds.

The profile is essentially the same as that of the normal phase, but more of the original surface layer has been lost through erosion. Where the soil is cleared, the surface 6 inches is gray or brownish-gray friable silt loam with a fine granular structure, but under forest this layer is 10 or 12 inches thick. Many small tracts have lost all the original surface layer, and the present plow layer is the upper part of the original subsoil. In such places the surface is hard when dry and sticky when wet and good tilth is maintained with difficulty, but the rest of the soil generally has favorable tilth. Reaction is strongly acid. The present organic-matter content is low because of losses from erosion and through cropping. The soil is moderately low in potassium, phosphorus, and nitrogen. It is permeable to moisture, air, and plant roots; but because of the stronger slopes and eroded condition it is less favorable than the normal phase. Loss of water through surface runoff is greater, and moisture conditions for plant growth are generally less favorable. Some angular chert fragments are on the surface and in the soil.

The subsoil is essentially identical to that of the normal phase. It is light-red or yellowish-red cherty silty clay loam with a well-developed nut structure. It is moderately friable when moist but somewhat sticky and plastic when wet; soil moisture and plant roots, however, easily penetrate it. This layer is about 2 feet thick and grades into mottled red very cherty silty clay with a very distinct coarse nut structure. Cherty dolomite bedrock is at depths of 30 feet or more.

The principal variations other than those caused by differences in erosion are due to differences in the texture of the subsoil and the indistinct boundaries between this soil and the associated soils. On the ridge slopes on the southeast side of Powell Valley many small areas

creased, further decreasing runoff. Grazing should be controlled so that good pasture stands can be maintained, and weeds should be controlled by clipping or other means to eliminate competition with the pasture plants for moisture and plant nutrients. Check dams are needed in the larger gullies. Shading by thin plantings of locust or black walnut may be beneficial on pastures.

Talbott silty clay loam, eroded phase.—This soil is on slopes of 7 to 15 percent on low rolling hills in the limestone valleys. Clayey limestone of the Black River and Stone River formations (*9*) underlies it. Surface drainage is fairly rapid, but internal drainage is moderately slow because of the heavy subsoil. Native vegetation was a mixed hardwood forest of oak, hickory, and maple. Medium-sized irregularly shaped areas of the 3,166 acres mapped are in Powell Valley and in the vicinity of New Tazewell, and small areas are in Cedar Fork and Little Sycamore Valleys and in the southwestern part of the county in the vicinity of Little Barren Church. It is associated chiefly with other Talbott soils and the miscellaneous land types of Talbott soil material, but in some places it is mingled with Dewey, Caylor, and Allen soils.

Much of the original surface layer has been lost by accelerated erosion. The present 3- to 6-inch surface layer is grayish-brown moderately friable silty clay loam with a fine granular structure. Reaction is strongly acid. The original organic-matter content was probably moderately low, but it has been greatly depleted by cropping and erosion losses. Good tilth is generally difficult to maintain because of the mixing of heavy subsoil material with the remaining surface soil. This material is sticky and plastic when wet and hard and intractable when dry. A small quantity of chert may be on the surface and in the soil. Small flaggy slabs of limestone are on the surface and bedrock outcrops are in some places.

The reddish-yellow subsoil is sticky plastic tenacious compact silty clay with a coarse nut or lumpy structure. When dry it is extremely hard and intractable. It is about 2 feet thick, and small black concretions are in the lower part. The substratum is yellow or reddish-yellow silty clay mottled with gray, ocher, and dark brown. It has a fairly well developed nut structure and is less sticky and tenacious than the above subsoil layer. Clayey limestone bedrock is at an average depth of 5 feet, but the rock floor is uneven and jagged and surface outcrops are in some places.

The maintenance of favorable tilth and moisture conditions is difficult. The tight compact subsoil greatly impedes the percolation of water, the penetration of roots, and the movement of air. Slow moisture movement causes alternate wet and dry conditions in the surface soil, and crops are injured by droughts or extended wet periods. Slow percolation of water through the subsoil layer causes heavy surface runoff and may result in serious soil erosion. As erosion becomes more severe, conditions for absorption and percolation of moisture become less favorable and the susceptibility to further erosion becomes increasingly greater.

Variations are chiefly due to differences in the degree of accelerated erosion. In many places nearly all of the original surface soil is missing and the present plow soil is heavy, sticky, and plastic; whereas

in the few areas only slightly eroded, the surface is moderately friable. Bedrock outcrops are more numerous in the more severely eroded areas, and the rock is at shallower depths.

Use and management.—In the past the use and management of Talbott silty clay loam, eroded phase, have not been well adjusted to the physical suitability of the soil, and little change has taken place in recent years. Practically all the soil is cleared; about 35 percent is used for corn, 25 percent for hay, 20 percent for pasture, 10 percent for other crops, and 10 percent is idle land. Very little burley tobacco is grown. Systematic rotation of crops is not commonly practiced—many farmers grow corn for a few years in succession followed by several years of idleness; others alternate corn and hay according to their farm needs.

Corn usually receives about 100 pounds an acre of 0–10–4 or 0–20–0 fertilizer, and small grains are treated similarly. Hay and pasture ordinarily receive no fertilizer. Very little of the soil used for tilled crops receives periodic applications of lime, but areas that are used chiefly for pasture are limed at fairly regular intervals. Mechanical means for the control of runoff are not commonly used, but tillage is generally on the contour. Under common prevailing management practices, acre yields of about 20 bushels of corn, 12 bushels of wheat, 750 pounds of burley tobacco, and 1 ton of lespedeza hay may be expected. Where lime is used in addition to other practices, 1 ton of red clover and 1½ tons of alfalfa an acre are obtained.

Requirements for good management include careful practices for (1) controlling runoff and erosion, (2) improving tilth of the surface soil, (3) improving moisture conditions for plant growth, and (4) increasing the humus, lime, and mineral plant-nutrient supplies. Where practical from the standpoint of good farm management the soil is best suited to hay and pasture crops, but under careful soil management it can be conserved under a rotation including intertilled crops once in 6 years. It is not well suited to tobacco, but corn followed by small grain seeded to a pasture or hay makes a desirable rotation.

Alfalfa, red clover, and sod-forming grasses—especially bluegrass—are effective in increasing the humus and nitrogen contents, improving tilth, increasing moisture-absorbing qualities, and preventing erosion. Cover crops should be on the soil in fall and winter. Grazing of pastures should be carefully controlled during periods of adverse moisture conditions. Potash and phosphorus in liberal applications are necessary for good growth of legumes and grasses. Lime is required. Runoff and erosion can be controlled largely by proper choice and rotation of crops and the use of adequate amendments, but in most places some other practices are necessary. Strip cropping is beneficial on some of the longer slopes, and tillage should always be on the contour. Terraces may be effective on some areas to control erosion, but they must be well planned and carefully maintained to be effective. Check dams are required to control gullies.

TYLER SERIES

The soil of the Tyler series is on old stream terraces in nearly level or slightly depressed positions. The parent material of old alluvium

Appendix D

Runoff Curve Number
Calculations (TR-55 Worksheets)

MACTEC

MACTEC Project: 3079070050.01 Sheet 1 of 1

Job Name: SIA Serving Homesteader Trailers in New Tazewell

Prepared by: Jim Goddard Date: June 27, 2007

Checked by: Stan Rudzinski Date: August 13, 2007

CALCULATION OF RUNOFF COEFFECIENT - RATIONAL METHOD

Pre-Disturbance

Total Project Area = 4.32 acres

Type of Area	Acre(s)	25-Year Return[1,2] Runoff Coefficient	Acre x Coefficient
Impervious (Existing Pavement, Sidewalks, Etc.)	0	0.95	0
Grassed Areas	4.32	0.42	1.814
Wooded Areas	0	0.35	0

Runoff Coefficient = Sum of (Acre x Coefficient) / Total Project Area = 0.42

Post-Disturbance

Total Project Area = 4.32 acres

Type of Area	Acre(s)	25-Year Return[1,2] Runoff Coefficient	Acre x Coefficient
Impervious (New Pavement and Bridges)	0.68	0.95	0.646
Grassed Areas	3.64	0.42	1.529
Wooded Areas	0	0.35	0

Runoff Coefficient = Sum of (Acre x Coefficient) / Total Project Area = 0.50

1.) Applied Hydrology and Sedimentology For Disturbed Areas; Barfield, Warner and Haan; 1983.
2.) Municipal Storm Water Management; Debo and Reese; 1995.

DISTURBANCE CALCULATIONS

The area of disturbance was considered to be all areas within the proposed project right-of-way. No road or areas of paving existed within construction limits to be included in the total area and disturbance calculations.

The total disturbed area was calculated using a Placom Digital Planimeter and equaled 4.32-acres. The total project area is the same as the disturbed area.

Appendix E

Drainage Map

(NOT APPLICABLE)

Appendix F

Ecology Report

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900 - JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334

MEMORANDUM

To: Paul Beebee
TDOT Design

From: Mark Doty
Ecology Section

Date: May 10, 2007

Subject: ENVIRONMENTAL BOUNDARIES AND MITIGATION DESIGN FOR:
SIA Serving Homesteader Trailers Relocation of Coffee Road Town of New Tazewell
Claiborne County
PIN 107611.00
P.E. # 13951-1516-04

An ecological evaluation of the subject project has been conducted with the following results:

_____ Wetlands present:

__X__ **No wetlands identified:**

_____ Streams present:

__X__ **No streams present:**

_____ Protected species identified in project impact area:

__X__ **Protected species not present within one mile:** Spotfin Chub Present within 1-mile radius, but will not be impacted due to absence of streams within project area.

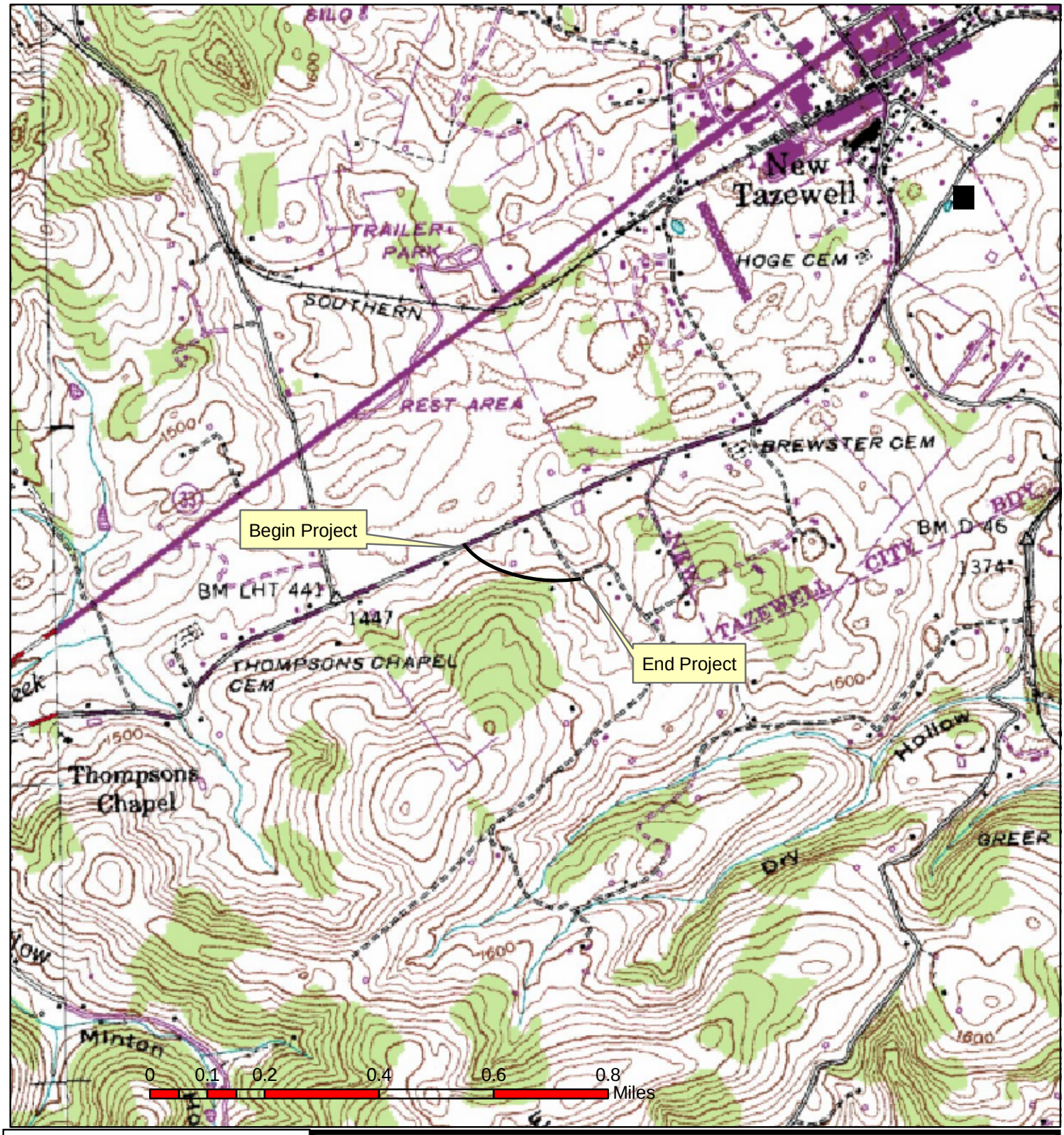
Thank you for your assistance with this project. If you have any questions or comments please contact me at Mark.Doty@state.tn.us or 865-594-2439.

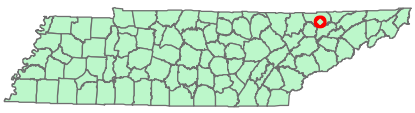
Copy: Mike Agnew – w/attachment G, J
John Hewitt: - w/attachments G, J, N
Project file: - w/attachments G, J, N
Reading file:- w/attachments G, J, N

Ecology Field Data Sheet: **Water Resources** Form G

County: Claiborne **Route: SIA** **LM: N/A** **PE No.: 13951-1516-04** **PIN: 107611.00**
Project Description: SIA Serving Homesteader Trailers, Relocation of Coffee Road, Town of New Tazewell
Date of survey: 5-1-07 **Biologist: Mark Doty** **Affiliation: TDOT**

1-Station: from plans		**No Features Present**
2-Map label		
3-Potential impact		
4-Feature name		
5-Feature description:		
what is it		
blue-line on topo? (y/n)		
defined channel (y/n)		
channel bottom width		
top of bank width		
bank height		
substratum		
riffle/run/pool		
width of buffer zone LB, RB		
water flow (y/n)		
water depth		
water width		
groundwater connection		
bank stability LB, RB		
dominant species LB, RB		
overhead canopy (%)		
benthos		
fish		
algae		
other aquatic life		
habitat assessment score		
photo number (s)		
rainfall information		
6-Watershed	HUC code	
	HUC name	
7-Determination: TDOT/ consultant		
8-Determination: Confirmed? By?		
9-Mitigation: to be included in design		
10-Notes Indicate if stream is Tier II/III or on 303(d) list		





Claiborne County: SIA Serving Homesteader Trailers/Relocation of Coffee Road
Tazewell Quad (154-NE)
PE No. 12951-1516-04
PIN 107611.00

TDOT

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

May 10, 2007

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▶ 1

To Mark Doty	From Dave Pelren
Dept./Agency TDOT	Phone # 931-528-6481
Fax 865-594-2441	Fax # 7075

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Mr. Mark Doty
Tennessee Department of Transportation
7345 Regions Lane
Knoxville, Tennessee 37914

Subject: SIA serving Homesteader Trailers/relocation of Coffee Road, PE No. 12951-1516-04, PIN 107611.00, Claiborne County, Tennessee.

Dear Mr. Doty:

U.S. Fish and Wildlife Service (Service) biologists have reviewed your description of the subject project proposal. We are not aware of any environmental concerns that may be associated with this project.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. Based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Thank you for the opportunity to review your description of the subject proposed project. Please contact David Pelren of my staff at 931/528-6481 (ext. 204) if you have questions about these comments.

Sincerely,

Lee A. Barclay, Ph.D.
Field Supervisor

Appendix G

Water Quality Permit Application

Appendix H

Inspection and Quarterly Report Forms

TENNESSEE DEPARTMENT OF TRANSPORTATION
EROSION PREVENTION/SEDIMENT CONTROL
INSPECTION REPORT

Reason For Inspection (Circle One): Pre-Rainfall / 0.5 Inch Rain Event / 1st Weekly / 2nd Weekly

DATE: _____

State Route (SR) / US Route or Road Name and Description:			**Are corrective actions required by this inspection report (Y/N):**			
County(ies):	**TDOT PIN:**	**NPDES Permit (NOC) No.:**	**Number of New Corrective Actions Required:**	#	**Number of Recurring Corrective Actions Required:**	#
TDOT Construction No.:	**TDOT Contract No.:**		**Number of Previously Reported New Corrective Actions Required:**	#	**Number of Previously Reported Recurring Corrective Actions Required:**	#

I certify, under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated information presented. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that inspections of storm water discharge points (outfalls) and of erosion and sediment controls have been performed as recorded in the table above. I certify that erosion and sediment controls in the drainage area of the identified outfall were installed as planned and designed in working order as recorded in the table above. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	**TDOT/Consultant EPSC Inspector and Title (print or type):**	**Signature:**
	Contractor EPSC Inspector and Title (print or type):	**Signature:**
	TDOT Project Supervisor/Designee and Title (print or type):	**Signature:**

TDOT EPSC Inspection Weekly Rainfall Data Log

Date	Day of Week	Predicted Precipitation (%)[1]	Rainfall Gage 1 (in)	Rainfall Gage 2 (in)	Rainfall Gage 3 (in)	Rainfall Gage 4 (in)	Rainfall Gage 5 (in)	Duration (hr)
	Sunday							
	Monday							
	Tuesday							
	Wednesday							
	Thursday							
	Friday							
	Saturday							

[1]Predicted Precipitation Source: WWW.WEATHER.COM

TDOT/Contractor Agrees with Inspection Report: NO or YES (Circle One)

If No, explain and initial:

(Additional pages may be attached, if needed)

State/US Route or Road Name: SR449 (Future) TDOT Construction No.: 78449-3202-04 TDOT Contract No.: 1659

Date: _____

Outfall Name or Station No.	Approx. Station No. From/To	Rain Gage No.	LT, RT or Centerline	Date Last Disturbed	Date of Stabilization and T=Temp. P=Perm.	Existing EPSC Control Measure Codes*	Current Condition Codes*	Corrective Action(s) or Comments
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

EROSION AND SEDIMENT CONTROL MEASURE CODES

1. Temporary Silt Fence / Filter Barrier
2. Temporary Diversion Berm or Ditch
3. Temporary Slope Drain
4. Rock Check Dams
5. Brush Barrier
6. Sediment Removal
7. Straw Bale Check
8. Sand Bags
9. Sediment Trap / Basin
10. Temporary Sediment Filter Bag
11. Polyethylene Sheeting
12. Machined Rip Rap
13. Geotextile
14. Permanent Seeding with Mulch or Sod
15. Temporary Seeding with Mulch
16. Temporary Mulching
17. Erosion Control Blanket
18. Flexible Channel Liner
19. Catch Basin / Storm Inlet Protection
20. Riprap Outlet Structure
21. Riprap Energy / Velocity Dissipater
22. Curb, Gutter, or Storm Sewer Protection
23. Temporary at Construction Exit
24. Temporary Stream Crossing
25. Turbidity Barrier / Silt Boom
26. Temporary Stream Diversion
27. Preserve Natural Resource / Buffer Zone
28. Mineral Aggregate Base on Subgrade
29. Excess Dirt Removed from Roadway. Daily
30. Haul Roads Dampened for Dust Control
31. Ditch Liner
32. Rock Silt Screen
33. Silt Fence with Backing
34. Enhanced Silt Fence
35. _____
36. _____

CONDITION CODES

U Upgrade Needed (Failure Noted)
RN Replacement Needed
M Maintenance Needed
FM Future Maintenance
C Cleaning Needed
I Increase Measures
S Stable (No Action Needed)
RO Repeat Occurrence
Other (O#1): _____
Other (O#2): _____
Other (O#3): _____

State Route (SR) / US Route or Road Name:_____TDOT Construction No.:_____ TDOT Contract No.:_____

TDOT EPSC Inspection Monthly Rainfall Data Log

Month: **Year:**

Date: _____

Outfall Name or Station No.	Approx. Station No. From/To	Rain Gage No.	LT, RT or Centerline	Date Last Disturbed	Date of Stabilization and T=Temp. P=Perm.	Existing EPSC Control Measure Codes*	Current Condition Codes*	Corrective Action(s) or Comments

EROSION AND SEDIMENT CONTROL MEASURE CODES

1. Temporary Silt Fence / Filter Barrier
2. Temporary Diversion Berm or Ditch
3. Temporary Slope Drain
4. Rock Check Dams
5. Brush Barrier
6. Sediment Removal
7. Straw Bale Check
8. Sand Bags
9. Sediment Trap / Basin
10. Temporary Sediment Filter Bag
11. Polyethylene Sheeting
12. Machined Rip Rap
13. Geotextile
14. Permanent Seeding with Mulch or Sod
15. Temporary Seeding with Mulch
16. Temporary Mulching
17. Erosion Control Blanket
18. Flexible Channel Liner
19. Catch Basin / Storm Inlet Protection
20. Riprap Outlet Structure
21. Riprap Energy / Velocity Dissipater
22. Curb, Gutter, or Storm Sewer Protection
23. Temporary at Construction Exit
24. Temporary Stream Crossing
25. Turbidity Barrier / Silt Boom
26. Temporary Stream Diversion
27. Preserve Natural Resource / Buffer Zone
28. Mineral Aggregate Base on Subgrade
29. Excess Dirt Removed from Roadway. Daily
30. Haul Roads Dampened for Dust Control
31. Ditch Liner
32. Rock Silt Screen
33. Silt Fence with Backing
34. Enhanced Silt Fence
35. _____
36. _____

CONDITION CODES

U Upgrade Needed (Failure Noted)
RN Replacement Needed
M Maintenance Needed
FM Future Maintenance
C Cleaning Needed
I Increase Measures
S Stable (No Action Needed)
RO Repeat Occurrence
Other (O#1): _____
Other (O#2): _____
Other (O#3): _____

te Route (SR) / US Route or Road Name:_____TDOT Construction No.:_____ TDOT Contract No.:_____

TDOT EPSC Inspection Monthly Rainfall Data Log

Month: **Year:**

Date	Day of Week[1]	Predicted Precipitation (%)[2]	Rainfall Gage 1 (in)	Rainfall Gage 2 (in)	Rainfall Gage 3 (in)	Rainfall Gage 4 (in)	Rainfall Gage 5 (in)	Duration (hr)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

[1] Day of Week= Su,M,Tu,W,Th,F,Sa

[2] Predicted Precipitation Source: www.weather.com or www.wunderground.com

Department of Environment and Conservation
Division of Water Pollution Control

Construction Storm Water Inspection Certification

(Twice weekly inspections are required for all sites.)

Construction Site Information **Outfall No.___ (or station no. or other identifier of drainage area represented)**

NPDES Permit No. TNR ____________ Notice of Coverage (NOC) Date: ______________ County: _________________

Name of Project: ____

Developer and/or Contractor Name: ______________________________________

Month/Year	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
	Yes or ***No*** / Initials	***Yes*** or ***No*** / Initials	***Yes*** or ***No*** / Initials	***Yes*** or ***No*** / Initials	***Yes*** or ***No*** / Initials
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/
________ , ______	Date:	Date:	Date:	Date:	Date:
Inspections Performed	/	/	/	/	/
E&S Controls in Order	/	/	/	/	/

Provide the following information for the person(s) who have performed and initialed the above inspections. If more than two persons have performed these inspections, give information for the two persons who performed the most numbers of inspections.

Initials: ________	Name: ______________________	Phone No. ______________________
Initials: ________	Name: ______________________	Phone No. ______________________

Quarterly Inspection Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated information presented. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that inspections of storm water discharge points (outfalls) and of erosion and sediment controls have been performed as recorded in the table above. I certify that erosion prevention and sediment controls in the drainage area of the identified outfall were installed as planned and designed and in working order as recorded in the table above. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name ____________________ Title ____________________ Signature ______________________

Company ______________________________________ Date ______________________

CN-1173 (Rev. 05-05)

RDAs 2399 and 2400

Appendix C

(continued on reverse)

Environmental Field Offices - Division of Water Pollution Control - Addresses

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	2510 Mt. Moriah Road, Suite E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue, Suite 550	37402-2013
Nashville	711 R.S. Gass Blvd	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601

Information and Instructions

The purpose of this form is to certify that inspections of storm water discharge points and erosion prevention and sediment controls (E&S Controls) at the construction site have been performed. You are required to record your twice-weekly inspections for all sites, but you are only required to record your twice-weekly inspections on this form if discharges from the construction site enter waters that have been identified as being impaired by siltation, or if they enter high quality waters. You can determine whether you are discharging to an impaired or high quality stream by looking at the Notice of Coverage (NOC) returned to you after you applied for coverage under the TNCGP. You may also call your local Environmental Field Office (EFO) at the toll-free number of 1-888-891-TDEC.

You are required to inspect outfall points (where discharges leave the site or enter waters of the state) to ascertain whether your erosion prevention and sediment control measures are effective in preventing soil from leaving the construction site and entering nearby streams. You are also required to inspect the erosion prevention and sediment control measures being used at the site, whether these controls have been installed according to the storm water pollution prevention plan (SWPPP), and whether these controls are in working order. These inspections must be performed at the frequency indicated in the appropriate section of the permit.

To record the inspections and observations, write the date that inspections were performed, in the appropriate week's column; write ***Yes*** or ***No*** to indicate if the inspections, both of the outfall points and of the erosion prevention and sediment control measures, were performed; and write ***Yes*** or ***No*** to indicate whether or not erosion prevention and sediment controls are installed and in working order. Sign your initials under the date for that week and to the right of the Yes or No. Certification of inspections is required at the end of each quarter and covers all inspections performed during the quarter.

The inspection results shall be kept at the construction site with a copy of the SWPPP. Use a new form for each quarter until the Notice of Termination is filed.

Appendix C

Appendix I

Notice of Termination Form

Department of Environment and Conservation
Division of Water Pollution Control

NOTICE OF TERMINATION (NOT) – STORM WATER DISCHARGES CONSTRUCTION ACTIVITY

This form is required to be submitted when requesting termination of coverage from the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities. The purpose of this form is to notify the Tennessee Department of Environment and Conservation that you, as a permitted operator of storm water discharges from a construction activity, no longer have responsibilities related to erosion and sediment controls at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local Division of Water Pollution Control, Environmental Field Office (EFO) address (see table below), and marked "**Storm Water Notice of Termination**". For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). **Type or print clearly, using ink and not markers or pencil.**

Site Name:	**Tracking No.**
Street Address or Location:	
Site Description:	

Site Owner/Developer: (person, company, or legal entity that has operational or design control over construction plans and specifications) **Tennessee Department of Transportation**			
Site Owner/Developer Contact: (individual responsible for site)	Title or Position:		
Mailing Address: **Suite 900 James K Polk Building; 505 Deaderick Street**	City: **Nashville**	State: **TN**	Zip: **37243-0334**
Phone: **(615)**	E-mail: **Environmental. Permits.TDOT@state.tn.us**		

Check the reason for termination of permit coverage:

☒	Storm water discharge associated with construction activity is no longer occurring and the area previously under construction has been restabilized (i.e., termination of initial permittee coverage). Explain: **Project disturbed areas have been stabilized**
☐	You are no longer the operator of the facility/site (i.e., termination of primary or secondary permittee coverage). Name of Permittee requesting termination of coverage: Explain:

Certification and Signature (must be signed by president, vice-president or equivalent, or ranking elected official)

I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

Operator name; print or type	Signature	Date
Suzanne B. Herron, PE, CPESC; Director-Env. Division		

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	2510 Mt. Moriah Road STE E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601

Department of Environment and Conservation
Division of Water Pollution Control

NOTICE OF TERMINATION (NOT) – STORM WATER DISCHARGES CONSTRUCTION ACTIVITY

This form is required to be submitted when requesting termination of coverage from the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities. The purpose of this form is to notify the Tennessee Department of Environment and Conservation that you, as a permitted operator of storm water discharges from a construction activity, no longer have responsibilities related to erosion and sediment controls at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local Division of Water Pollution Control, Environmental Field Office (EFO) address (see table below), and marked "**Storm Water Notice of Termination**". For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). **Type or print clearly, using ink and not markers or pencil.**

Site Name:	**Tracking No.**
Street Address or Location:	
Site Description:	

Site Owner/Developer: (person, company, or legal entity that has operational or design control over construction plans and specifications)			
Site Owner/Developer Contact: (individual responsible for site)	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone: ( )	E-mail:		

Check the reason for termination of permit coverage:

☐	Storm water discharge associated with construction activity is no longer occurring and the area previously under construction has been restabilized (i.e., termination of initial permittee coverage). Explain:
☐	You are no longer the operator of the facility/site (i.e., termination of primary or secondary permittee coverage). Name of Permittee requesting termination of coverage: Explain:

Certification and Signature (must be signed by president, vice-president or equivalent, or ranking elected official)

I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

Operator name; print or type	Signature	Date

EFO	**Street Address**	**Zip Code**	**EFO**	**Street Address**	**Zip Code**
Memphis	2510 Mt. Moriah Road STE E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601