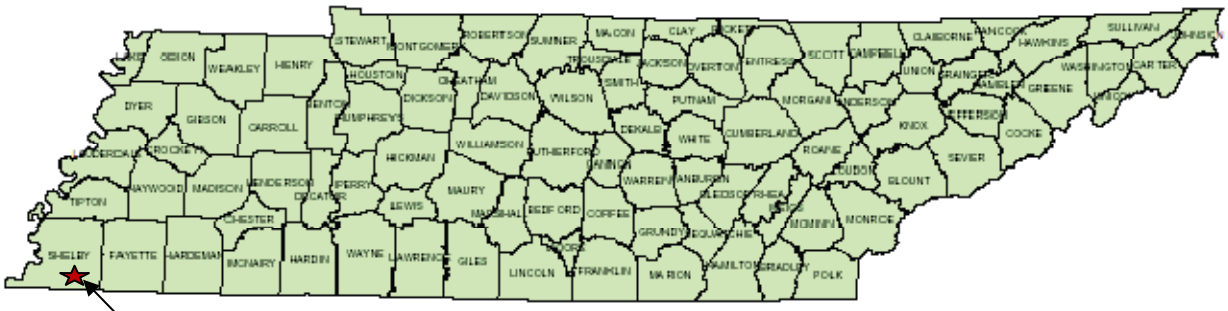
Storm Water Pollution Prevention Plan

Tennessee Department of Environment and Conservation
General NPDES Permit for Discharges of Storm Water Associated with Construction Activities
Permit No. TNR100000
Storm Water Pollution Prevention Plan (SWPPP)
Project No.: STP-M-9420
PIN: 101615.00
Project Name: Wolf River Boulevard
Shelby County, Tennessee



Project Location

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1.0 INTRODUCTION

This document is the Storm Water Pollution Prevention Plan (SWPPP) for land disturbing activities related to the construction of a 114' right-of-way, four-lane roadway project that will connect two existing segments of Wolf River Boulevard between Kimbrough Road and Farmington Boulevard located in Germantown, TN, hereinafter referred to as the Project. The Project length is approximately 2.0 miles. A Vicinity Map showing the limits of proposed construction for the project is provided in Appendix A to this plan.

This SWPPP has been prepared to meet the requirements of the State of Tennessee General Permit No. TNR 10-0000, General NPDES Permit for Discharges of Storm Water Associated with Construction Activity issued by the State of Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control. The TNR 10-0000 authorizes the discharge of storm water from sites that are under construction provided that the permit provisions are adhered to and the State of Tennessee receives formal application from the parties responsible for the construction. Under this general permit both the owner/developer of the property and the contractor performing the construction activities are responsible for complying with the permit.

The "Operators" for this Project are as follows:

- The City of Germantown has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.

- The construction contractor will have day-to-day operational control of the construction activities at the Project, which are necessary to ensure compliance with this Plan for the site or other permit conditions.

The individual designated to be responsible for erosion and sediment controls for this Project is as follows:

Name: Mr. Tim Gwaltney, P.E.
Title: City Engineer
Company: City of Germantown, Engineering Division
City/State/Zip: Germantown, TN 38138
Telephone: (901)757-7281

2.0 PURPOSE AND SCOPE

This SWPPP has been prepared in accordance with the requirements of Section III of TNR 10-0000 and in accordance with good engineering practices to address only storm water discharges from the construction and support activities, and certain non-storm water discharges. There will be no discharges of storm water that are mixed with sources of non-storm water, except as described in Section III of this plan.

Storm water discharges from construction activities for this Project should not cause violations of water quality standards and has received 401 Water Quality Certification from TDEC, permit NRS 09.222. Furthermore, it is believed that storm water discharges from construction of the Project will not impact legally protected listed or proposed threatened or endangered aquatic fauna in the receiving streams, nor will it affect a property that is listed or is eligible for listing in the National Historic Register maintained by the Secretary of Interior as an Environmental Assessment (EA) was conducted in October 2006. A “Finding of No Significant Impact” (FONSI) was issued after review of the EA.

This SWPPP does not address storm water discharges that originate from the construction site after construction activities have been completed, the site has undergone final stabilization, and a Notice of Termination has been received.

3.0 PROJECT DESCRIPTION

3.1 General Description of Project Construction

The primary purpose of this project is to construct a four-lane roadway to connect Wolf River Boulevard at the existing west terminus at Kimbrough Road and existing east terminus at Farmington Boulevard. This connector will complete the route between Germantown and Collierville, TN, linking these cities to Memphis, providing an east-west route that relieves the existing road system. There are bridges proposed over Wolf River Laterals 'C' and 'D', and pipes/culverts proposed at no less than 3 unnamed tributaries to the Wolf River and a few wet weather conveyances. The total project length is approximately 2.0 miles.

Construction of the roadway will require clearing, grubbing, and cutting/ filling for the roadbed. Approximately 601,000± yd^3 of fill material will be needed to create the necessary slopes and embankments, of which 45,000± yd^3 will be collected on-site (via cut) within the roadway cross section. The remaining 556,000± yd^3 of fill material will come from an off-site source chosen by the contractor. The fill material must be approved prior to being used. No borrow pits will be created along the roadway corridor.

The construction of the roadway will require significant channel alterations. A portion of Lateral 'C' will be relocated parallel to and then bisect the roadbed alignment to allow for flow to pass through the bridge crossing perpendicularly. The channel slopes will be protected by installing rip-rap armoring up the slopes to the 25-year storm water surface elevation. Voids in the rip-rap will be grouted with a compost grout which is impregnated with seeds of native grasses and forbs of the area. Slopes above this elevation will be hydro-seeded and protected with an erosion control blanket. To further protect the banks and the bridge crossing, inter-locking sheet pile grade control structures will be installed. Riparian buffers will be installed along the top banks where construction activities have taken place.

An unnamed tributary of the Wolf River, located east of Lateral 'C', will be relocated just north of the roadway due to its proximity parallel to and under the proposed road bed alignment. Flow from the tributary will enter a 12'x10' reinforced concrete box culvert on the upstream side of the roadway and discharge into the newly excavated tributary. The tributary slopes will be protected with rip-rap armoring up to the 25-year storm water surface elevation. Voids in the rip-rap will be grouted with a compost grout which is impregnated with seeds of native grasses and forbs of the area. Slopes existing above this elevation will be hydro-seeded and protected with an erosion control blanket.

Riparian buffers will be installed along the top banks where construction activities have taken place.

Lateral 'D' will not be relocated but will undergo channel improvements. The channel slopes will be protected by installing rip-rap armoring up the slopes to the 25-year storm water surface elevation. Voids in the rip-rap will be grouted with a compost grout which is impregnated with seeds of native grasses and forbs of the area. Slopes above this elevation will be hydro-seeded and protected with an erosion control blanket. To further protect the banks and the bridge crossing, inter-locking sheet pile grade control structures will be installed. Riparian buffers will be installed along the top banks where construction activities have taken place.

It has been determined that the construction of this new roadway will result in the impact of approximately 2.6 acres of jurisdictional wetlands and 2,800 linear feet of "other water" regulated by the Corps of Engineers. All construction activities to be performed within jurisdictional wetlands or "waters of the U.S." must be authorized by a Department of the Army Section 404 permit prior to commencement of work.

3.2 Construction Sequencing

The following construction sequence will be followed in order to reduce erosion and prevent sediment from leaving the construction site:

a. Clearing with concurrent installation of initial sedimentation and erosion control devices (silt fence, inlet protection…etc.)
b. Grubbing and topsoil stripping/ stockpiling
c. Temporary stabilization of those areas with no plans to be active for 15 days
d. Permanent ditch installation/ stream relocation
e. Drainage pipe and associated drainage structure installation, excavation of associated diversion channels, installation of outlet protection, and installation of any additional sedimentation and erosion control devices
f. Temporary stabilization of those areas with no plans to be active for 15 days
g. Begin hauling in fill material and roadbed construction
h. Install permanent slope stabilization and temporary slope drains
i. Begin bridge construction
j. Temporary stabilization of those areas with no plans to be active for 15 days
k. Installation of base stone and paving
l. Final stabilization (topsoil, seeding, erosion control blanket, etc.)

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.

3.3 Maps

3.7.1 General Location Map – A Vicinity Map indicating the location of the Project in relation to major roadways, drainage ways, surface waters, receiving stream and other significant structures within the area is provided in **Appendix A** to this plan.

3.7.2 Site Map – A Site Map (USGS Quad Map) is provided in **Appendix A** to this plan.

3.7.3 Erosion Prevention and Sediment Control Plan – Project erosion control features are shown on the Erosion and Sediment Control Plan as indicated in **Appendix B**.

3.4 Disturbed Area – The amount of denuded area located on-site that is associated with construction activities for the Project is 45.85 acres. The off-site borrow pit will be required to obtain separate permit coverage.

3.5 Estimated Percent Slope – Site topography is generally flat with most of the site being located along the floodplain of the Wolf River. The percent slope ranges from approximately 1-3 %.

3.6 Soil Information – According to the USDA NRCS Web Soil Survey, the predominant soil found within the Project is Falaya silt loam which is an alluvial soil commonly found in flood plains. The drainage class is somewhat poorly drained and has a depth to water table of about 6 to 24 inches.

3.7 Runoff Coefficient – The pre-developed runoff coefficient was calculated using the 45.85 acre footprint of the project. The pre-developed project area is depicted in Table 1.

Table 1

Existing Conditions

AREA TYPE	AREA (AC)	Runoff Coefficient
Forested Areas	43.36	0.2
Surface Water	1.97	0
Sheet Asphalt	0.52	0.8

A pre-developed runoff coefficient was developed from the above information and was determined to be 0.20.

The runoff coefficient will change from pre-developed conditions due to an increase in impervious areas and grassed areas accompanied with a decrease in forested areas. The post-construction runoff coefficient was calculated using the 45.85 acre footprint of the project. The post-construction project area is depicted in Table 2.

Table 2
Post-Construction Conditions

AREA TYPE	AREA (AC)	Runoff Coefficient
Steep Grassed Areas	24.84	0.6
Sheet Asphalt	14.78	0.8
Gravel Shoulder	5.20	0.5
Surface Water	1.03	0

A post-construction runoff coefficient was calculated from the above information and was determined to be 0.65.

3.8 **Outfalls** – See **Appendix D** for outfall information.

3.9 **Non-Storm Water Discharges** – Potential sources of non-storm water that may be combined with storm water discharges associated with this Project include the dewatering of work areas of collected storm water and ground water; water used to wash vehicles of dust and soil (not processed material such as concrete) to minimize off-site vehicle tracking of sediments; water used to control dust generated by vehicular traffic.

3.10 **401 Water Quality Certification** - See **Appendix E** for a detailed description of any anticipated alteration of on-site jurisdictional waters.

3.11 **Receiving Waters** – The Wolf River is the receiving water for all discharging of storm water from this construction site. It is included in the final version 2008 Section 303(d) list.

303(d) Special Requirements:
Discharges from the project enter the Wolf River, which is listed as being impaired by siltation. Discharges that would add loadings of a pollutant that is identified as causing or contributing to an impairment of a water body on the list of impaired waters or which would cause degradation to waters designated by

TDEC as high quality waters are not authorized by this permit (see subpart 1.3 TNCGP). To be eligible to obtain and maintain coverage under this permit, the operator must satisfy, at a minimum, the following additional requirements for discharges into waters impaired by siltation (or discharges upstream of such waters and because of the proximity to the impaired segment and the nature of the discharge is likely to contribute pollutants of concern in amounts measurable in the impaired segment that may affect the impaired waters) and for discharges to waters identified by TDEC as high quality waters:

a) The SWPPP must certify that erosion prevention and sediment controls used at the site are designed to control storm runoff generated by a 5-year, 24-hour storm event. When clay and other fine particle soils are found on sites, additional physical or chemical treatment of storm water runoff may be used.

b) The permittee shall perform inspections at least twice every calendar week. Inspections shall be performed at least 72 hours apart.

c) The permittee must certify on a quarterly basis, on the form provided in Appendix C of this permit: **i).** that the twice weekly inspections of erosion and sediment controls and of outfall points were performed; and **ii).** whether or not all planned and designed erosion prevention and sediment controls are installed and in working order. The certification must be executed by a person who meets the signatory requirements of section 6.7.2 TNGCP. The record of certifications must be kept at the construction site with a copy of the SWPPP.

d) In the event the division finds that a discharger is complying with the SWPPP, but contributing to the impairment of receiving stream, then the discharger will be notified by the director in writing that the discharge is no longer eligible for coverage under the general permit. The permittee may update the SWPPP and implement the changes designed to eliminate further impairment of the receiving stream. If the permittee does not implement the SWPPP changes within 7 days of receipt of notification, the permittee will be notified in writing that continued discharges must be covered by an individual permit. To obtain the individual permit, the operator must file an individual permit application. The project must be stabilized until such time as the SWPPP is re-developed and the individual permit is issued. No earth disturbing activities, except those necessary for stabilization, are authorized to continue until the individual permit is issued.

e) For an outfall in a drainage area of a total of 5 or more acres, a temporary (or permanent) sediment basin that provides storage for a calculated volume of

runoff from a 5 year, 24 hour storm and runoff from each acre drained, or equivalent control measures, shall be provided until final stabilization of the site. A drainage area of 5 or more acres includes both disturbed and undisturbed portions of the site or areas adjacent to the site, all draining through the common outfall. Where an equivalent control measure is substituted for a sediment retention basin, the equivalency must be justified. Runoff from any undisturbed acreage should be diverted around the disturbed area and the sediment basin and, if so, can be omitted from the volume calculation. Sediment storage expected from the disturbed areas must be included and a marker installed signifying a cleanout need.

f) The director may require revisions to the SWPPP necessary to prevent a negative impact to legally protected state or federally listed aquatic fauna, their habitat, or the receiving waters.

3.12 **Buffer Zones** – Existing riparian buffers will be preserved as much as possible. Exceptions include Lateral "C" which will be relocated and will require establishment of riparian buffers along the new drainage course. This buffer will range between 40-150 feet. The unnamed tributary located east of Lateral "C" will have a minimal buffer established between the proposed roadway and the south slope of the relocated unnamed tributary. However, a buffer consisting of bottomland hardwoods will be preserved between the south slope and the Wolf River. This buffer will exceed 150 feet at its widest. Existing riparian buffers consisting of bottomland hardwoods will be preserved on either side of Lateral "D", which will exceed 300 feet at its widest.

3.13 **Construction Phasing** – This project does not disturb more than 50 acres, therefore construction phasing is not needed.

3.14 **Limited Land Disturbance** – There are no portions within the project area that are to remain undisturbed, therefore no protections are needed.

4.0 EROSION PREVENTION AND SEDIMENT CONTROL

This section provides a site-specific plan to minimize the discharge of silt and other pollutants into water of the State of Tennessee resulting from construction activities at the Project. This Plan was developed through a systematic process consisting of the following components:

- **Control Selection and Plan Design** – Based on the evaluation and assessment of site conditions for this Project, various types of sediment controls were evaluated and selected to minimize and control the pollution of storm water runoff from the construction site. The location and type of sediment controls are indicated on the Erosion Prevention and Sediment Control Plan in **Appendix B** to this plan.

- **Construction/ Implementation** – The Owner, contractors, and subcontractors (i.e., the Operators) performing the construction of the Project are responsible for implementation of this SWPPP. Implementation of this SWPPP includes certification of this Plan; filing of the required notices with appropriate regulatory agencies; construction/ installation of erosion and sediment controls as specified in the Construction Documents and in this Plan; inspecting and maintaining the controls; keeping records of control inspections and maintenance; amending the Plan to keep it current; and making the Plan and records accessible to governmental agencies.

- **Final Stabilization and Termination** – Upon completion of the construction of the Project including installation of all permanent erosion and sediment controls, construction of all storm water management controls, and final stabilization of all disturbed areas in accordance with the Construction Documents, the Operator of the construction site can be relieved of the requirements of the General Permit for Storm Water Discharges from Construction Activities and this SWPPP by completing and submitting a Notice of Termination (NOT) to TDEC.

The following subsections describe the storm water runoff controls that will be the Contractor's responsibility to implement during the construction of this Project. The technical basis for selection of the controls and practices used to minimize the pollution of storm water runoff from the Project include the Tennessee Department of Environment and Conservation's (TDEC) "Erosion and Sediment Control Handbook", and good engineering practices proven in the past experience to be effective when properly maintained.

4.1 Pre-construction and During Construction

Pre-construction planning should be used to sequence major grading activities to minimize exposure time of grade 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. Pre-construction 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 B**.

4.2 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. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications. 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.

4.2.1 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 for such work that 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 water of the State and United States.

Stabilization Practices: Interim and permanent stabilization practices at site-specific locations are detailed on the erosion prevention and sediment control plans in **Appendix B**. 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 or erosion control blanket) 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.

Structural and Non-structural Practices: Structural practices include enhanced rock check dams with silt traps, silt fencing with backing, inlet and culvert protection, compost filter socks, and rip-rap. 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.

4.2.2 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 the waters State and United States.

Stabilization Practices: Stabilization practices for culvert construction rely primarily on installation of inlet protection and outlet protection, enhanced rock check dams with silt traps, sod (drainage ditches), and permanent seeding (with mulch or erosion control blanket) of cleared and grubbed areas prior to other construction activities. Stabilization will be completed within fifteen (15) days of final grading or earth-moving activities. Additionally, diversion channels will be stabilized with rock and seeding while culvert and bridge structures are constructed.

Structural and Non-structural Practices: Construct diversion channels and temporary culvert crossings, if required, for culvert construction. Divert flow through new structures. Backfill structures as required and construct final contours. Stabilize with final erosion control measures (rip-rap, inlet/outlet protection, erosion control blankets, etc.).

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

4.2.3 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 the waters State and United States.

Stabilization Practices: Stabilization practices for this sequence include channel improvements and bringing cut and fill slopes to final grade and stabilizing during the embankment construction with erosion control blankets, Reinforced Soil Slope (RSS), rip-rap, grade control structures, and seeding and mulching as construction allows. Stabilization measures shall be initiated as soon as practicable on portions of the site where constructions 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 fifteen (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 fifteen (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 seed groups and seeding dates that will be followed, unless otherwise specified in the project plans.

Structural and Non-structural Practices: Structural practices for grading and excavation will include the following: installation of silt fence with backing, compost filter socks, Reinforce Soil Slope (RSS), construction of temporary berm and slope drains, construction of enhanced rock check dams with silt traps (drainage ditches), inlet/outlet protection, rip-rap (channel armoring), interlocking sheet pile grade control structures (channels), and sediment filter bags. This will include final dressing of slopes, placement of topsoil, sod, seed, and mulch. Machined rip-rap 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.

4.2.4 Final Stabilization

General Requirements: Project plans, proposal contract, and TDOT standard drawings referenced in the project plans provide additional information

regarding requirements for erosion prevention and sediment control and protection of the waters of the State and United States.

Stabilization Practices: Place aggregate base to protect earth roadway sub-grade from erosion until paving is complete. Unpacked gravel containing fines or rusher 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 seed groups and seeding dates that will be followed, unless otherwise specified in the project plans. The project plans specify the seed mix to be used on the roadway slopes and is listed below:

ROADWAY SLOPE SEED MIX

COMMON NAME	SCIENTIFIC NAME	Lbs.
Indiangrass	*SORGHASTRUM NUTANS*	12 - 18
Little Bluestem	*SCHIZACHYRIUM SCOPARIU*	16 - 24
Side Oats Grama	*BOUTELOUA CURTIPENDULA*	8 - 12
Switchgrass	*PANICUM VIRGATUM*	4 - 6

*Planting dates are March 1 – June 15
**The seeding rate for this seed mix is 40 – 60 lbs/ac

The project plans specify the seed mix to be used on the channel slopes and is listed below:

CHANNEL SLOPE SEED MIX

COMMON NAME	SCIENTIFIC NAME	Lbs.
Annual Ryegrass	*Lolium multiflorum*	20
Illinois Bundle Flower	*Desmanthus illinoensis*	2
Partridge Pea	*Chamaecrista fasciculata*	2
Switchgrass	*Panicum virgatum*	20
Wheat	*Triticum aestivum*	20

*Planting dates are March 1 – June 15
**The seeding rate for this seed mix is 64 lbs/ac

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, and enhanced rock check dams with silt traps 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.

4.3 Post-Construction

It is not anticipated that 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 waterways. Although maintenance 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 City of Germantown does provide for routine maintenance of the roadway facilities.

4.3.1 Pollutant Controls: Such procedures will include debris removal from drainage structures and trash removal and disposal from the right-of-way. Additionally, the City of Germantown has a continuous maintenance program to mow and maintain the turf grasses as this project. Grassed waterways provide for water quality improvements through pollutant removal (sediment) and nutrient uptake. Typically, solid or liquid spills from over the road vehicles are kept from entering water of the State by cooperative efforts of TDOT, 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.

4.3.2 Velocity Controls: The project includes the installation of rip-rap, temporary enhanced rock check dams with silt traps, filter sock check dams, sod, and mulch to reduce flow velocities on site. If warranted, the filter sock check dams will be left in place to reduce flow velocities after construction is complete. Additionally, the large grassed swales and wetland mitigation areas incorporated into this design will minimize the velocities generated from this project after completion.

5.0 STORM WATER MANAGEMENT

5.1 Required Records

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

a. The dates when major grading activities occur;
b. The dates when construction activities temporarily or permanently cease on a portion of the site;
c. The dates when stabilization measures are initiated;
d. Records of inspections and corrective measures, including photographs of representative items requiring correction and the corrective action taken for it; and

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

5.2 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. Storm 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 rainfall monitoring 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.

5.2.1 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 (150 mm) 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 0.1 mm). An aluminum bracket with screws may be used for mounting the gauge on a wooden support.

5.2.2 Location

The rain gauge will be located at or along the project site, as defined in the Notice of Intent (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.

5.2.3 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.

5.3 Maintenance

Maintenance activities will be undertaken to ensure that vegetation, erosion, and sediment control measures and other protective measures identified in the project Erosion Protection and Sediment Control plan are kept in good and effective operating condition. Maintenance needs identified in the 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 monitored through the inspection procedures listed below, and will include, but are not 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 that have not reached a stream such that off-site impacts are minimized (Note: Sediment accumulations that have reached streams must not be removed until after consultation with TDEC);
c. Removal of sediment from sediment traps, silt fences, and other sediment controls when the design capacity has been reduced by 50%; and
d. Pickup or otherwise prevention of litter, construction debris, and construction chemicals from becoming a pollutant source prior to the anticipated storm events.

In addition to the practices listed above, the project will be monitored as required by this SWPPP to ensure the maintenance and effectiveness of the erosion control measures. In case of failure of the operator to control project related erosion or siltation, either on or off the right-of-way, payment may be withheld of future progress estimates until the operator has satisfactorily performed the necessary corrective measures. If deemed necessary, outside assistance may be employed 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 estimate.

5.4 Inspections

The inspection schedule and documentation procedures have been designed to ensure that vegetation, erosion prevention and 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

appropriately, but no later than seven (7) calendar days following the inspection identifying the need.

5.4.1 Inspector Training and Certification

Inspectors must have successfully completed the "Fundamentals of Erosion Prevention and Sediment Control" course, or an equivalent course, for individuals involved in land disturbing activities which provides a working knowledge of erosion prevention and sediment controls. An engineer or landscape architect that prepared the drainage and structure design portion of the SWPPP may also conduct the required inspections. A copy of the certification or training record for inspector certification should be kept on site.

5.4.2 Schedule of Inspections

a. Inspections described in paragraphs b, c, and d below. Shall be performed at least twice every calendar week. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g. site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes. Inspection requirements do not apply to definable areas that have been finally stabilized. Written notification of the intent to conduct only monthly inspections and the justification for such request must be submitted to the local Environmental Field Office, or the division's Nashville Central Office for projects of the Tennessee Department of Transportation (TDOT) and the Tennessee Valley Authority (TVA).
b. Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.
c. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion prevention and sediment control measures identified in the SWPPP shall be observed to ensure they are operating correctly.
d. Outfall points (where discharges leave the site or enters the waters of the State) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected.

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

e. 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, before the next rain event if possible, but in no case more than seven (7) days after the need is identified.

f. Based on the results of the inspection, the site description and pollution prevention measures identified in the SWPPP shall be revised as appropriate, but in no case more than seven (7) days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than fourteen (14) days following the inspection.

g. Inspections shall be documented and include the scope of the inspection, name(s), and title of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan (including the location(s) of discharges of sediment or other pollutants from the site and of any control device that failed to operate as designed or proved inadequate for a particular location), and actions taken. Inspection documentation will be maintained on site and made available upon request. Inspection reports must be submitted to the division within ten (10) days of the request.

A sample inspection form for this project is included as **Appendix F**.

6.0 OTHER ITEMS REQUIRING CONTROL

6.1 Construction Materials

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

Lumber	Concrete	Traffic control devices
Reinforcing steel	Plastic pipe	Earth
Guardrail	Curing compound	Rock
Structural steel	Mineral aggregates	Paint
Traffic striping materials	Asphalt	Corrugated metal pipe

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.

6.2 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 Resource Alteration Permit(s), Army Corps of Engineers Section 404 permit, and TVA Section 26 permit to dispose of waste material.

6.3 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:

a. Lime and fertilizers
b. Diesel and gas
c. Machinery lubricants (grease and oil)

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 from construction machinery.

The operator will be responsible for compliance with all applicable 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.

6.4 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 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; and
d. Water used to wash vehicles (where detergents are not used and detention and/or filtering is 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.

7.0 REQUIREMENTS FOR PLANS AND REPORTS

7.1 Keeping SWPPP Current

The SWPPP shall be amended when any of the following conditions apply:

a. Whenever there is a change in the scope of the project, which would be expected to have a significant effect on the discharge of pollutants to 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.

7.2 Making SWPPP Accessible

The operator will retain a copy of the 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 SWPPP implementation) will have a copy of the SWPPP available at the location where work is occurring on-site for the use of all 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 if the site is inactive or does not have an on-site location 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. If the construction project is a linear project (e.g., pipeline, highway, etc.), the notice must be placed in a publicly accessible location where the construction is actively underway and moved as necessary.

7.3 Notice of Termination

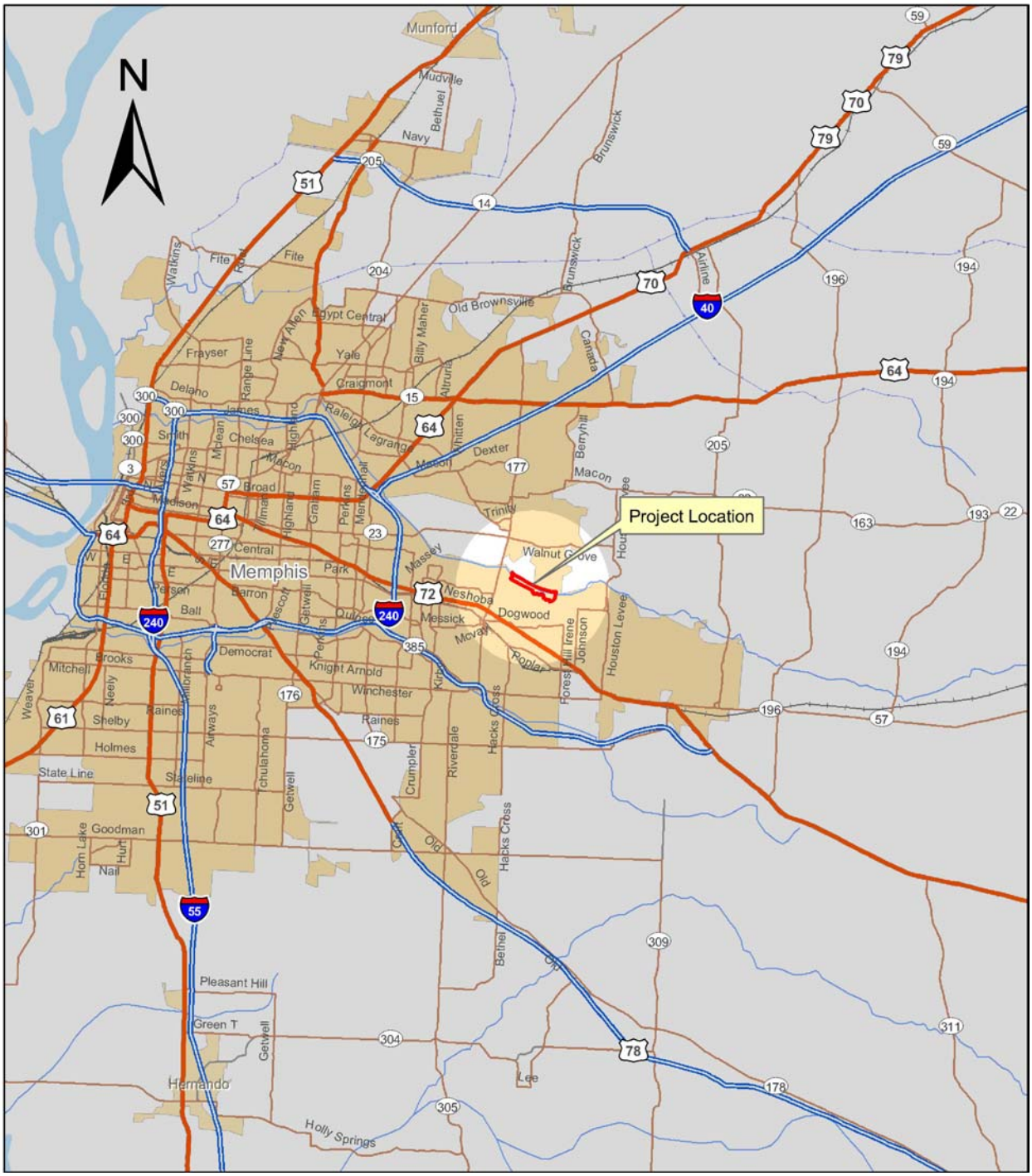
When all storm water discharges from construction activities that are authorized by the Permit are eliminated by final stabilization, the permittee will submit a Notice of Termination (NOT) that is signed in accordance with the Permit. For the purposes of the certification required by the NOT, the elimination 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; and
b. Temporary erosion and sediment control measures have been or will be removed at an appropriate time to insure final stabilization is maintained; or
c. That all storm water discharges associated with construction activities form 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 NOT form provided in **Appendix G** of this SWPPP.

APPENDIX A

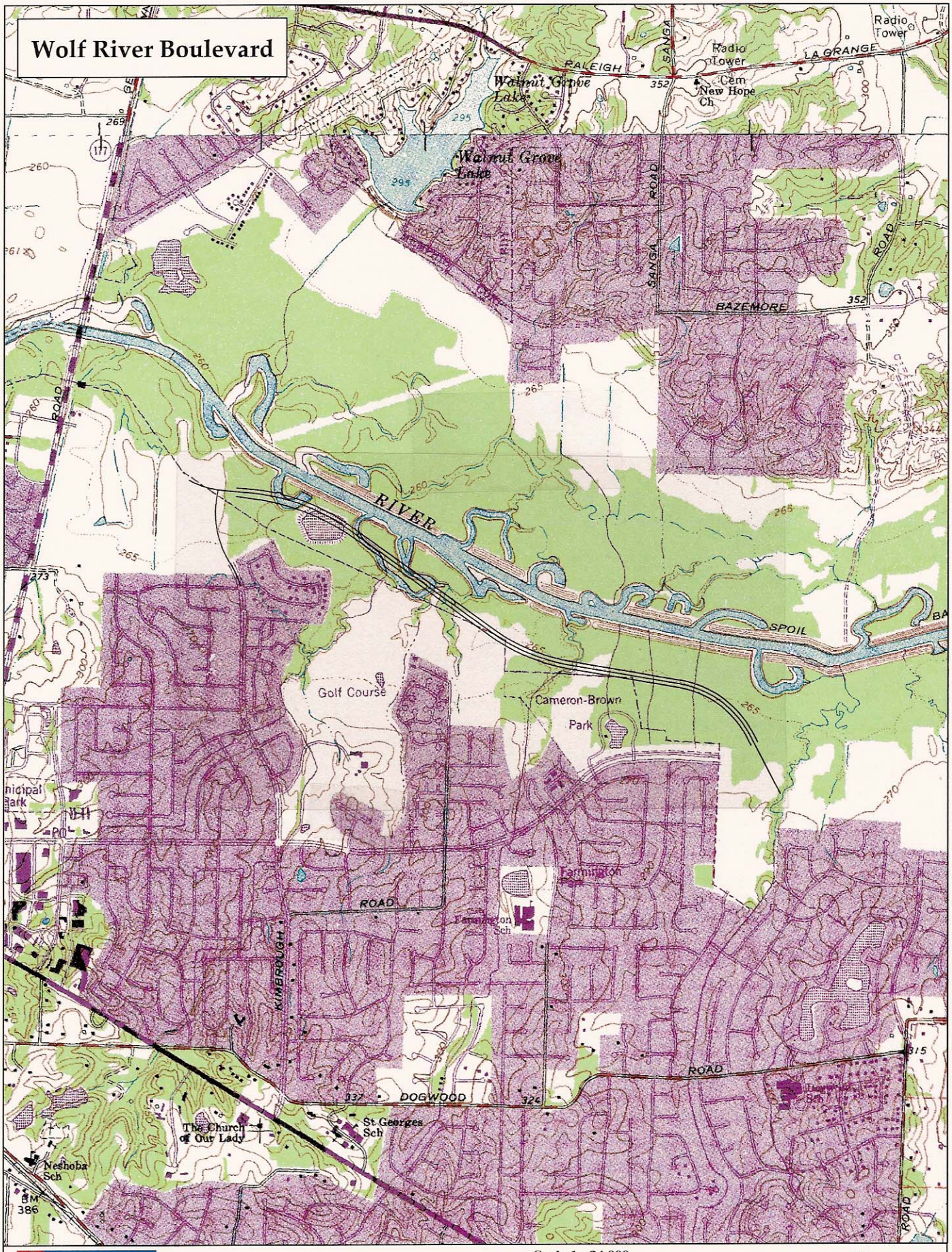
Maps



0 2 4 8 12 16 Miles

Wolf River Boulevard Connector Project Area Vicinity Map

Wolf River Boulevard



DeLORME

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Zoom Level: 13-6 Datum: WGS84

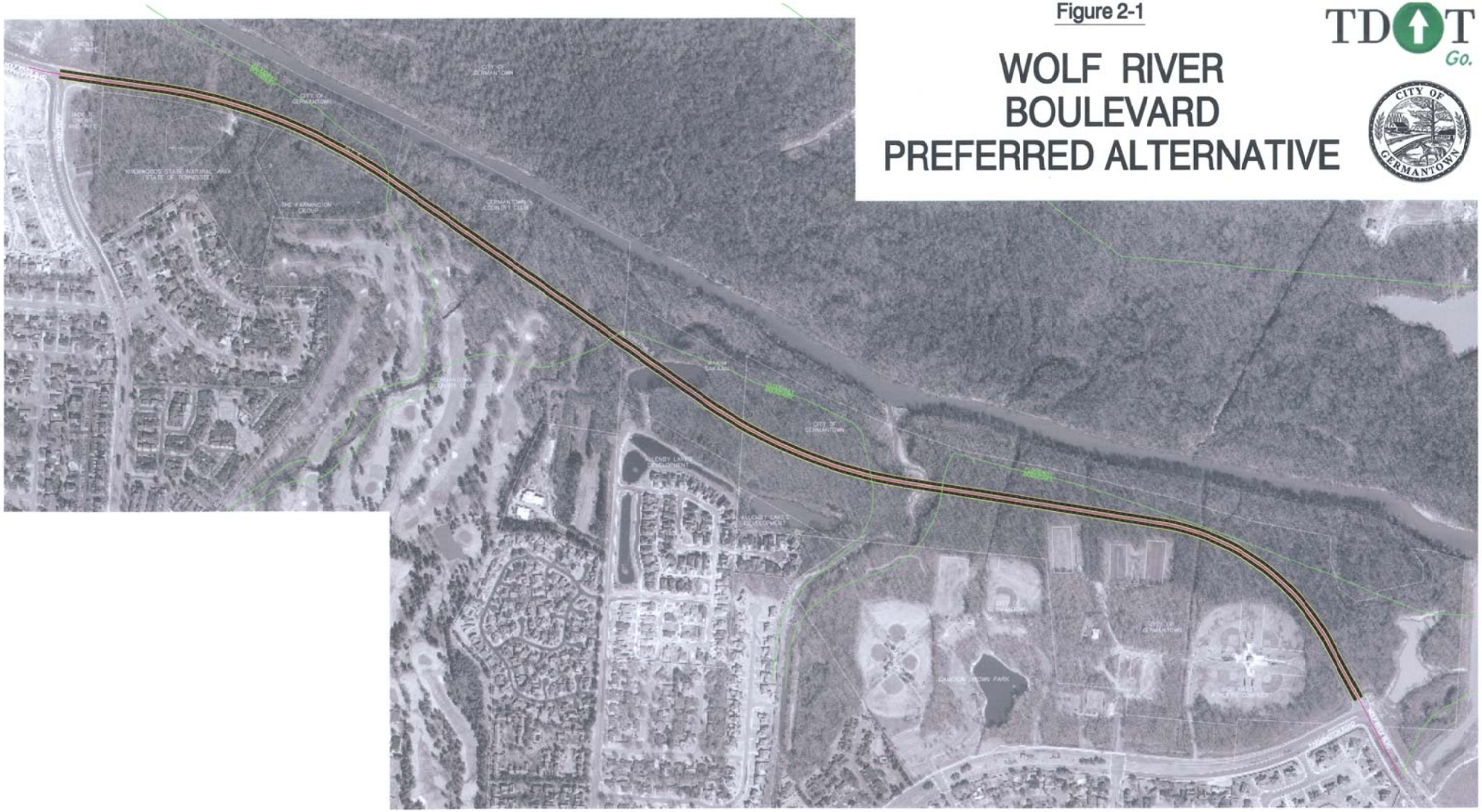
Scale 1 : 24,000
1" = 2,000 ft

0 800 1600 2400 3200 4000 ft
0 200 400 600 800 1000 m

TN
MN
0.3°E

Figure 2-1

WOLF RIVER BOULEVARD PREFERRED ALTERNATIVE



APPENDIX B

Erosion Prevention and Sediment Control Plans

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	20
CONST.	2010	STP-M-9420(1)	20

EROSION PREVENTION AND SEDIMENT CONTROL (EPSC)
GENERAL NOTES

DISTURBED AREA

(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 MULCHED, SEEDED WITH MULCH, 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 EPSC MEASURES OVER TEMPORARY EPSC MEASURES ON ALL PROJECTS.
(4) 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.

SEDIMENT CONTROL

(5) EPSC MEASURES SHALL BE INSTALLED CONCURRENTLY WITH CLEARING OPERATIONS, SHALL BE FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
(6) 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.
(7) WATER PUMPED FROM WORK AREAS AND EXCAVATION MUST BE HELD IN SETTLING BASINS OR TREATED BY FILTRATION PRIOR TO ITS DISCHARGE INTO SURFACE WATERS. WATER MUST BE HELD IN SETTLING BASINS UNTIL AT LEAST AS CLEAR AS THE RECEIVING WATERS. SETTLING BASINS SHALL NOT BE LOCATED CLOSER THAN 20 FEET FROM THE TOP BANK OF A STREAM. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED ACCORDING TO THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE OR WELL-VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT.
(8) 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.
(9) FOR AN OUTFALL IN A DRAINAGE AREA OF 10 ACRES OR MORE, A TEMPORARY (OR PERMANENT) SEDIMENT BASIN OR EQUIVALENT CONTROL MEASURES THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A MINIMUM 2-YEAR/ 24-HOUR STORM EVENT, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. THE ENVIRONMENTAL AND DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS.
(10) IF PERMANENT OR TEMPORARY VEGETATION IS TO BE USED AS AN EPSC MEASURE, THEN THE TIMING OF PLANTING OF VEGETATION SHALL BE SHOWN IN THE SWPPP. DELAYING PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.
(11) 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.
(12) TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REPLACED AT THE END OF THE WORKDAY.

STREAM/WETLAND

(13) SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EPSC MEASURES TO PROTECT WATER QUALITY MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. APPROPRIATE EPSC 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.
(14) NEW CHANNEL CONSTRUCTION SHALL BE COMPLETED IN THE DRY AND STABILIZED FOR AT LEAST 72 HOURS PRIOR TO DIVERTING WATER FROM THE EXISTING AND/OR TEMPORARY CHANNEL.
(15) INSTREAM EPSC DEVICES ARE NOT APPROVED, UNLESS SPECIFIED IN WRITING BY THE ENVIRONMENTAL DIVISION.
(16) THE OPERATION OF EQUIPMENT IN WATERS OF THE STATE/U.S., INCLUDING WETLANDS, SHALL BE ONLY AS SHOWN ON THE PROJECT PLANS AND/OR AS SO SPECIFIED IN THE ARAP/401, SECTION 404 PERMIT(S) AND/OR TVA26(A), IF APPLICABLE. ANY ADDITIONAL PERMITS REQUIRED BY THE CONTRACTOR'S METHOD OF OPERATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN, AFTER RECEIVING THE APPROVAL OF TDOT ENVIRONMENTAL DIVISION.
(17) THE WIDTH OF THE FILL ASSOCIATED WITH TEMPORARY CROSSINGS SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR THE ACTUAL CROSSING.
(18) STREAM BEDS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR CONSTRUCTION EQUIPMENT. TEMPORARY CROSSINGS MUST BE LIMITED TO ONE POINT PER STREAM AND EPSC MEASURES MUST BE USED WHERE THE STREAM BANKS ARE DISTURBED. WHERE THE STREAMBED IS NOT COMPOSED OF BEDROCK, A PAD OF CLEAN ROCK MUST BE USED AT THE CROSSING POINT AND CULVERTED TO PREVENT THE IMPOUNDMENT OF WATER FLOW. CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, DEPENDING UPON APPLICATION, WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS. OTHER MATERIALS USED FOR ALL TEMPORARY FILLS MUST BE COMPLETELY REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED AND THE AFFECTED AREAS RETURNED TO THEIR PREEXISTING ELEVATION. ALL TEMPORARY CROSSINGS MUST BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. EC-STR-25 UNLESS SPECIFICALLY ADDRESSED IN THE EPSC PLANS. ALTERNATIVELY, PLACING A TEMPORARY BRIDGE (BAILEY BRIDGE OR EQUIVALENT, TIMBERS, ETC.) FROM TOP OF BANK TO TOP OF BANK OR THE APPROPRIATE USE OF BARGES AT THE CROSSING TO AVOID DISTURBANCE OF THE STREAMBED IS AN ACCEPTABLE OPTION.
(19) HEAVY EQUIPMENT WORKING IN WETLANDS MUST BE PLACED ON MATS, OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE UNLESS SPECIFICALLY ADDRESSED IN THE EPSC PLANS. ANY MATS AND OTHER MEASURES USED FOR HEAVY EQUIPMENT MUST BE REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED.
(20) WETLANDS SHALL NOT BE USED AS EQUIPMENT STORAGE, STAGING, OR TRANSPORTATION AREAS, UNLESS PROVIDED FOR IN THE PLANS.

SPECIES

(21) NO ACTIVITY MAY SUBSTANTIALLY DISRUPT THE MOVEMENT OF THOSE SPECIES OF AQUATIC LIFE INDIGENOUS TO THE WATER BODY, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA. THE SWPPP SHALL BE MODIFIED TO INCLUDE EPSC MEASURES TO PREVENT NEGATIVE IMPACTS TO LEGALLY PROTECTED STATE OR FEDERAL FAUNA OR FLORA OR AS INDICATED IN THE ECOLOGICAL STUDIES OR ON THE PERMIT(S).

INSPECTION, MAINTENANCE, REPAIR

(22) INSPECTION, REPAIR, AND MAINTENANCE OF EPSC MEASURES/STRUCTURES IS TO BE PERFORMED ON A REGULAR BASIS. 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 EPSC MEASURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE STRUCTURES AT THE CONTRACTOR'S OWN EXPENSE.
(23) 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.
(24) 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 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.
(25) INSPECTION OF EPSC MEASURES SHALL BE DONE AT LEAST TWICE PER CALENDAR WEEK AT LEAST 72 HOURS APART. A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY.
(26) OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER 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.
(27) UPON CONCLUSION OF THE INSPECTIONS, 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 PRACTICAL 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.

MATERIALS

(28) WASTE AND BORROW 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.

SWPPP, PERMITS, PLANS, RECORDS

(29) THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS, INCLUDING BUT NOT LIMITED TO TDEC ARAP/401, USACE SECTION 404, TVA SECTION 26A, AND TDEC NPDES PERMITS, FROM FEDERAL, STATE AND/OR LOCAL AGENCIES REGARDING THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS.
(30) 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.
(31) 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, EPSC INSPECTION RECORDS AND PRECIPITATION RECORDS.
(32) ALL WATER QUALITY AND STORM WATER PERMITS, INCLUDING THE LOCATION OF THE 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.
(33) 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.
(34) THE SWPPP SHALL BE UPDATED BY CONSTRUCTION WHENEVER EPSC INSPECTIONS INDICATE EPSC MEASURES ARE PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR ARE 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.
(35) PROJECT INSPECTORS AND SUPERVISORS (INCLUDING TDOT STAFF, CONSULTANTS AND CONTRACTOR STAFF) RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF EPSC PLANS SHALL SUCCESSFULLY COMPLETE THE TDEC "LEVEL I - FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" COURSE OR EQUIVALENT COURSE. A COPY OF CERTIFICATION RECORDS FOR THIS COURSE SHALL BE KEPT ON SITE AND AVAILABLE UPON REQUEST.

(36) 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.

LITTER, DEBRIS, WASTE, PETROLEUM

(36) 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.
(37) 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.

SPECIAL NOTES

DISTURBED AREA

(1) ANY WORK WITHIN THE STREAM CHANNEL AREA (E.G., FOR PIER FOOTING, RIP-RAP PLACEMENT, MULTI-BARREL CULVERT/BRIDGE CONSTRUCTION, ETC.) SHALL BE SEPARATED FROM FLOWING WATER OR EXPECTED FLOW PATH AND PERFORMED DURING LOW FLOW CONDITIONS. ALL ITEMS USED WITHIN THE STREAM CHANNEL AREA FOR DIVERSION OF FLOW (OR EXPECTED FLOW), UNLESS SPECIFIED IN THE PLANS, SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. THIS NOTE EXCLUDES ANY ITEMS SPECIFIED IN THE PLANS FOR THE TEMPORARY DIVERSION CHANNELS, EC-STR-31 AND TEMPORARY DIVERSION CULVERTS, EC-STR-32 FOR SINGLE BARREL CULVERT CONSTRUCTION.

HIGH QUALITY WATERS

(2) FOR PROJECTS THAT DISCHARGE INTO HIGH QUALITY WATERS OR WATERS IMPAIRED BY SILTATION, AN OUTFALL IN A DRAINAGE AREA OF 5 ACRES OR MORE, A TEMPORARY (OR PERMANENT) SEDIMENT BASIN THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A 5-YEAR/ 24-HOUR STORM EVENT AND RUNOFF FROM EACH ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. THE ENVIRONMENTAL AND DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CONSTRUCTION GENERAL PERMIT.
(3) FOR PROJECTS THAT DISCHARGE INTO HIGH QUALITY WATERS OR WATERS IMPAIRED BY SILTATION, A 60 FOOT NATURAL RIPARIAN BUFFER ZONE ADJACENT TO AND ON BOTH SIDES OF THE RECEIVING STREAM WITH THIS DESIGNATION SHALL BE PRESERVED, TO THE MAXIMUM EXTENT PRACTICABLE, DURING CONSTRUCTION ACTIVITIES AT THE SITE. BUFFER ZONES ARE NOT SEDIMENT CONTROL MEASURES AND SHOULD NOT BE RELIED UPON AS PRIMARY SEDIMENT CONTROL MEASURES. THE RIPARIAN BUFFER ZONE SHALL BE ESTABLISHED BETWEEN THE TOP OF THE STREAM BANK AND THE DISTURBED CONSTRUCTION AREA. THE 60 FOOT CRITERION FOR THE WIDTH OF THE BUFFER ZONE CAN BE ESTABLISHED ON AN AVERAGE WIDTH BASIS AT A PROJECT, AS LONG AS THE MINIMUM WIDTH OF THE BUFFER ZONE IS MORE THAN 25 FEET AT ANY MEASURED LOCATION. EVERY ATTEMPT SHALL BE MADE FOR CONSTRUCTION ACTIVITIES NOT TO TAKE PLACE WITHIN THE BUFFER ZONES. BEST MANAGEMENT PRACTICES (BMPS) PROVIDING EQUIVALENT PROTECTION AS THE NATURAL RIPARIAN ZONE MAY BE USED. A JUSTIFICATION FOR USE AND DESIGN EQUIVALENCY SHALL BE DOCUMENTED WITHIN THE SWPPP. THE ENVIRONMENTAL AND DESIGN DIVISIONS SHALL REVIEW AND APPROVE THIS REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE SITE PROCEEDS, UNLESS PREVIOUSLY EXEMPT IN THE NPDES CONSTRUCTION GENERAL PERMIT. WHERE ISSUED, ARAP/401 REQUIREMENTS WILL PREVAIL IF IN CONFLICT WITH THESE BUFFER ZONE REQUIREMENTS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN GENERAL NOTES

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	21
CONST.	2010	STP-M-9420(1)	21

EROSION PREVENTION AND SEDIMENT CONTROL (EPSC)
SPECIAL NOTES (cont.)

NPDES

(4) 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 EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE BASIC EPSC DEVICES ON THE EPSC PLAN CONTAINED IN THE APPROVED SWPPP.
(5) THE EPSC MEASURES AND/OR PLAN SHALL BE MODIFIED AS NECESSARY SO THAT THEY ARE EFFECTIVE AT ALL TIMES THROUGHOUT THE COURSE OF THE PROJECT.
(6) THE ACCEPTED EPSC PLAN SHALL REQUIRE THAT 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 EPSC MEASURES IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
B. NO OTHER CLEARING AND GRUBBING OPERATIONS SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
C. NO CULVERT OR BRIDGE CONSTRUCTION SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
D. NO GRADING, EXCAVATION, CUTTING, FILLING, OR OTHER EARTHWORK SHALL BE STARTED BEFORE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.
(7) PERMANENT 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.
(8) 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.

UTILITY RELOCATION

(10) RAIN WATER WHICH COLLECTS IN THE UTILITY TRENCH SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND MAINTAINED.
(11) SILT FENCE SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF STOCKPILED SOIL. TRENCHING ACROSS WET WEATHER CONVEYANCES SHALL BE DONE DURING NO FLOW CONDITIONS AND STABILIZED BY THE END OF THE WORK DAY.
(12) UTILITY CROSSINGS FOR PERENNIAL STREAMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO UTILITIES IN THIS PROJECT IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC). THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP).
(13) IT IS THE RESPONSIBILITY OF THE STATE UTILITY CONTRACTOR INSTALLER TO PROTECT FROM EROSION EXPOSED EARTH RESULTING FROM THEIR OPERATIONS AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THEIR WORK. PRIOR TO BEGINNING WORK, ADEQUATE MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF THEIR WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME SHALL EXPOSED EARTH RESULTING FROM THEIR OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.
(14) FOR THE INSTALLATION OF BURIED UTILITIES (PIPES AND CABLES), TRENCHES SHALL BE BACKFILLED DAILY AS CONSTRUCTION PROCEEDS. BACKFILLED TRENCHES SHALL BE SEEDED AND MULCHED OR SODDED DAILY IF POSSIBLE, BUT NO LATER THAN SEVEN DAYS AFTER BEING BACKFILLED. ANY TEMPORARY SPOIL OF EXCAVATED EARTH SHALL BE LOCATED WITHIN TDOT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES OR RECEIVE SEPARATE EPSC MEASURES. IF TRENCHES ARE NOT BACKFILLED OVERNIGHT, APPROPRIATE EPSC MEASURES WILL BE INSTALLED BY THE STATE UTILITY CONTRACTOR UNTIL SUCH TIME AS THE TRENCH IS BACKFILLED.
(15) IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC), TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS IN THIS PROJECT, THEREFORE, THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTIONS PREVENTION PLANS (SWPPP). THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT WORK.

(15) IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC), TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS IN THIS PROJECT, THEREFORE, THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTIONS PREVENTION PLANS (SWPPP). THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT WORK.
(16) TRENCHES FORMED FOR THE INSTALLATION OF BURIED UTILITIES MAY CAUSE STORM WATER RUNOFF TO CONCENTRATE AT THE TRENCH LINE. ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES MAY BE REQUIRED TO BE INSTALLED AS APPROVED BY THE TDOT PROJECT ENGINEER.
(17) FOR THE INSTALLATION OF UNDERGROUND UTILITIES OUTSIDE OF THE TDOT RIGHT-OF-WAY, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) SHALL BE INSTALLED PRIOR TO CLEARING (TRENCHING AND ASSOCIATED BLASTING) IN THOSE AREAS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA. THESE EPSC MEASURES SHALL REMAIN UNTIL THE BACKFILLED TRENCH IS STABILIZED WITH FINAL VEGETATIVE COVER.
(18) THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS (AS APPROVED BY THE TDOT PROJECT ENGINEER).
(19) THE UTILITY CONTRACTOR WILL PROVIDE APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES TO REPLACE IN-PLACE EPSC MEASURES REMOVED TO FACILITATE THE INSTALLATION OF UTILITIES. REPLACEMENT OF EPSC MEASURES WILL BE COORDINATED WITH THE TDOT PROJECT ENGINEER BEFORE COMMENCING WORK.

ESTIMATED EROSION CONTROL QUANTITIES

	ITEM NO.	DESCRIPTION	QUANTITY	UNIT
	209-02.03	8" TEMPORARY SLOPE DRAIN	2,839	L.F.
	209-02.05	12" TEMPORARY SLOPE DRAIN	241	L.F.
1	209-03.21	FILTER SOCK (12 INCH)	28,295	L.F.
2	209-03.24	FILTER SOCK (12 INCH) - PERMANENT CHECK DAM	313	L.F.
3	209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	2,882	L.F.
	209-08.08	ENHANCED ROCK CHECK DAM	12	EA
	209-09.03	SEDIMENT FILTER BAG (15'X15')	42	EA
	209-09.40	CURB INLET PROTECTION (TYPE 1)	3	EA
9	209-40.47	CATCHBASIN FILTER ASSEMBLY (TYPE 7)	2	EA.
	209-10.20	TEMPORARY SEDIMENT TRAP	883	C.Y.
	209-65.03	TEMPORARY DIVERSION CHANNEL	865	L.F.
4	303-10.01	MINERAL AGGREGATE (SIZE 57)	132	TON
	621-03.08	54" TEMPORARY DRAINAGE PIPE	169	L.F.
	621-03.09	60" TEMPORARY DRAINAGE PIPE	250	L.F.
	621-03.11	72" TEMPORARY DRAINAGE PIPE	200	L.F.
5	709-05.05	MACHINED RIPRAP (CLASS A-3)	273	TON
6	709-05.06	MACHINED RIPRAP (CLASS A-1)	9,332	TON
7	740-10.03	GEOTEXTILE (TYPE III) EROSION CONTROL	6,358	S.Y.
8	801-02.04	ROADWAY SLOPE SEED MIXTURE (WITHOUT MULCH)	66	UNIT
	805-12.01	EROSION CONTROL BLANKET (TYPE I)	1,182	S.Y.
	805-12.02	EROSION CONTROL BLANKET (TYPE II)	5,949	S.Y.

1 TO BE FILTREXX® BANK STABILIZATION OR APPROVED EQUIVALENT
2 TO BE FILTREXX® DITCHCHEXX OR APPROVED EQUIVALENT
3 INCLUDES 677 L.F. FOR TEMPORARY SEDIMENT FILTER BAGS, 1,821 L.F. FOR TEMPORARY DIVERSION CHANNELS, AND 384 L.F. FOR MISCELLANEOUS APPLICATIONS
4 INCLUDES 8 TONS FOR CULVERT PROTECTION (TYPE I), 59 TONS FOR TEMPORARY SEDIMENT FILTER BAGS, 65 TONS FOR CULVERT PROTECTION (TYPE II)
5 FOR USE IN TEMPORARY CULVERT CROSSINGS
6 INCLUDES 414 TONS FOR TEMPORARY SLOPE DRAINS, 45 TONS FOR CULVERT PROTECTION (TYPE I), 2,181 TONS FOR TEMPORARY DIVERSION CHANNELS, AND 6,692 TONS FOR TEMPORARY CULVERT CROSSINGS
7 INCLUDES 108 S.Y. FOR CULVERT PROTECTION (TYPE I), 204 S.Y. FOR TEMPORARY SEDIMENT FILTER BAGS, 194 S.Y. FOR CULVERT PROTECTION (TYPE II), 3,445 S.Y. FOR TEMPORARY DIVERSION CHANNELS, AND 2,407 S.Y. FOR TEMPORARY CULVERT CROSSINGS
8 ROADWAY SLOPE SEED MIXTURE (SEE SHEET 2 FOR DETAIL)
9 TO BE USED AT PROPSED TYPE 14 INLETS PRIOR TO CONSTRUCTION OF CURB

EROSION CONTROL LEGEND

SYMBOL	ITEM	STD. DWG.
SF SF SF	TEMPORARY SILT FENCE	EC-STR-3B
SFB SFB SFB	TEMPORARY SILT FENCE WITH BACKING	EC-STR-3C
	TEMPORARY BERM	EC-STR-27
	TEMPORARY SLOPE DRAIN	EC-STR-27
	RIP-RAP	EC-STR-27
	SLOPE SURFACE ROUGHENING	EC-STR-
	EROSION CONTROL BLANKET	EC-STR-34
	TEMPORARY SEDIMENT TRAP WITH TEMPORARY SILT SCREEN CHECK DAM	EC-STR-7
SFB SFB SFB SFB	TEMPORARY SEDIMENT FILTER BAG	EC-STR-2
	SEDIMENT BASIN WITH DAM	EC-STR-17
	COMPOST SOCKS	SEE DETAIL
CFB	TEMPORARY COMPOST FILTER BERM	EC-STR-35
	SAND BAGS	
ST ST	TEMPORARY SEDIMENT TUBE	EC-STR-37
	TEMPORARY ROCK CHECK DAM IN V-DITCH	EC-STR-6
	TEMPORARY ROCK SILT SCREEN USED IN ROADSIDE DITCHES	EC-STR-11
	TEMPORARY DIVERSION CULVERT (DESCRIPTION)	EC-STR-32
TCC	TEMPORARY CULVERT CROSSING	EC-STR-25
	TEMPORARY PIPE FOR BOX CULVERT EXTENSION	EC-STR-33 EC-STR-33A
	TEMPORARY ROCK SEDIMENT DAM	EC-STR-12
1	CURB INLET PROTECTION (TYPE 1)	EC-STR-39
	CULVERT PROTECTION (TYPE 1)	EC-STR-11
	CULVERT PROTECTION (TYPE 2)	EC-STR-11A

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN SPECIAL NOTES

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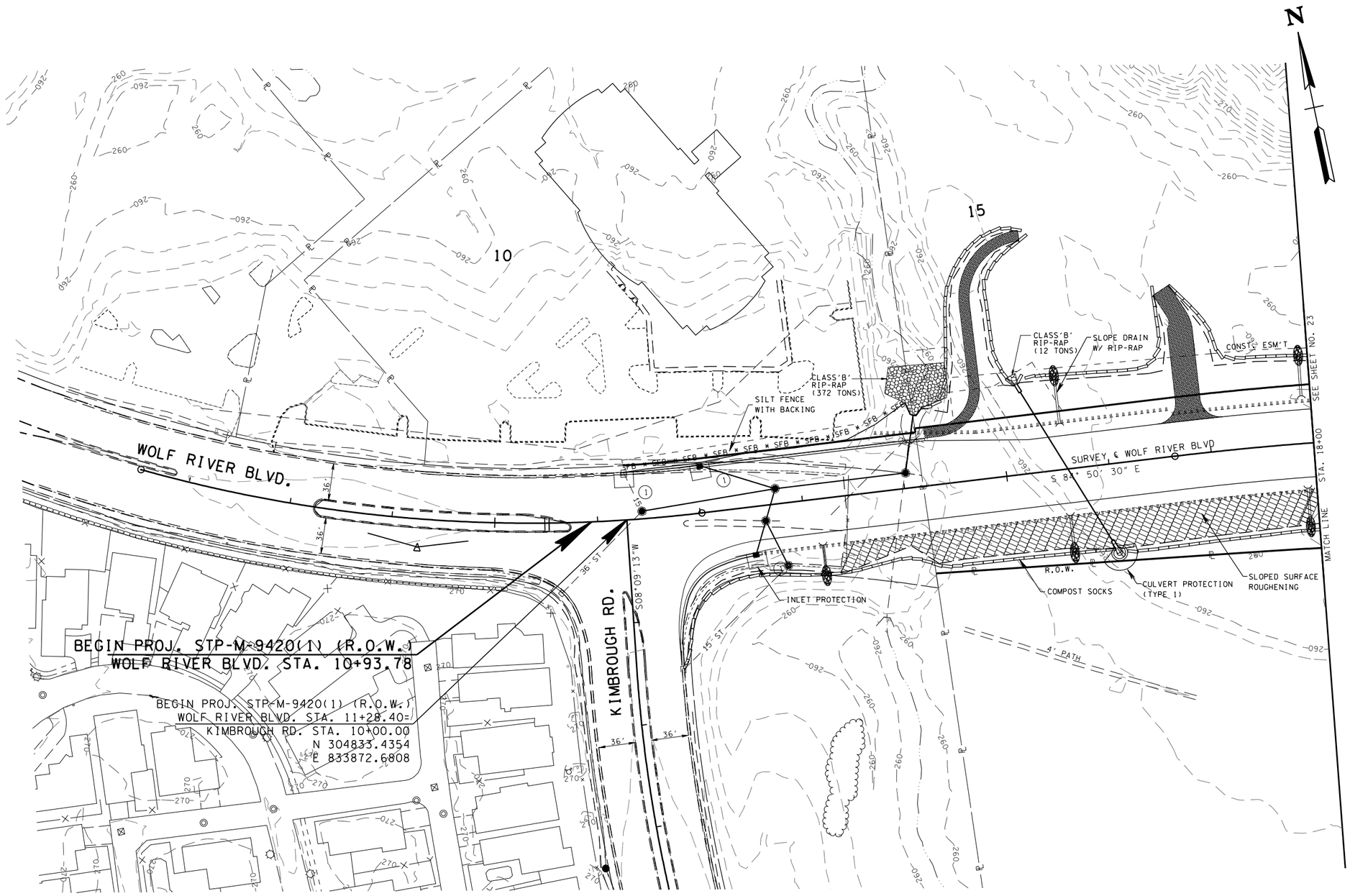
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	22
CONST.	2010	STP-M-9420(1)	22



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

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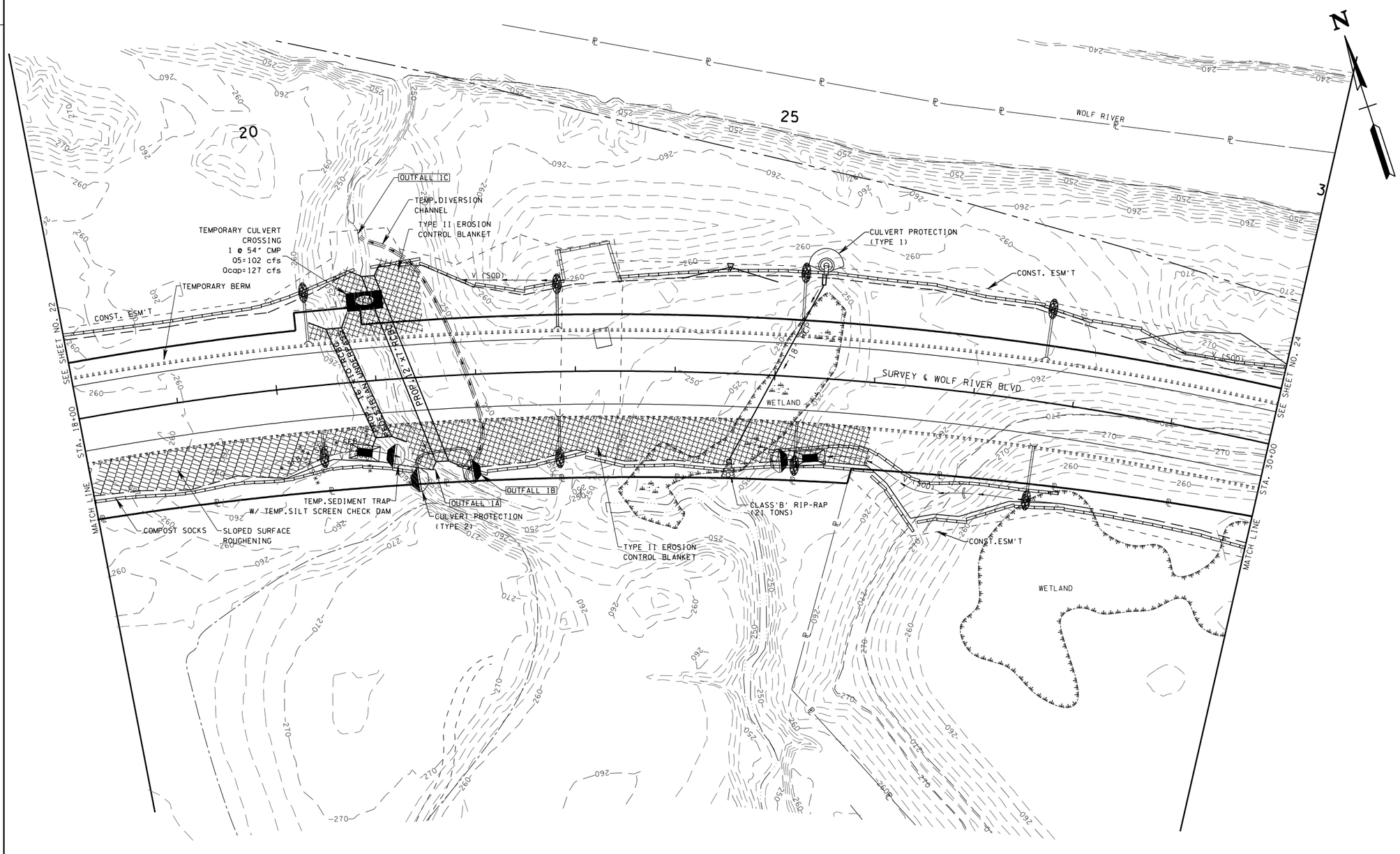
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	23
CONST.	2010	STP-M-9420(1)	23



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
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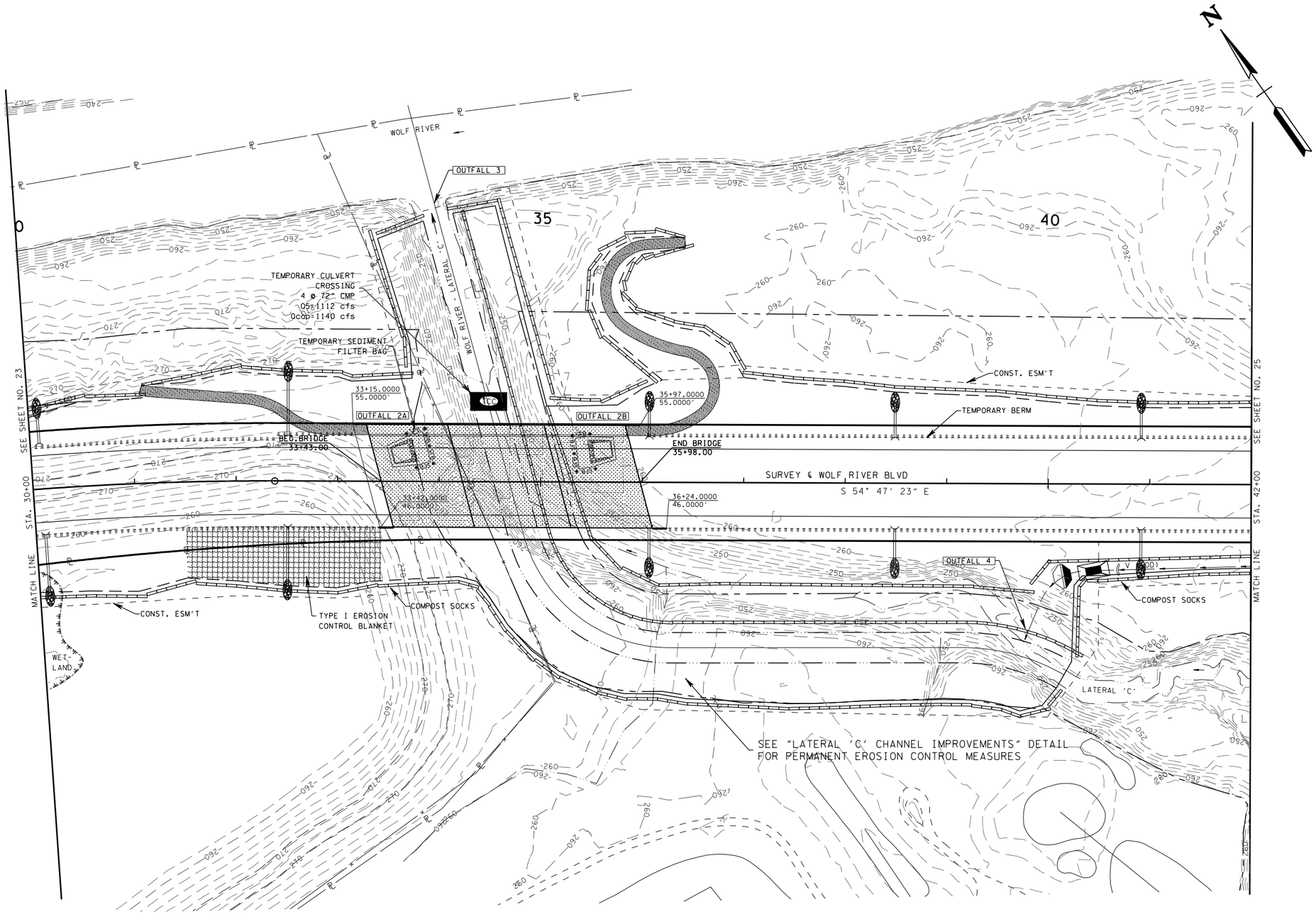
CONST.	2010	STP-M-9420(1)	24



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

STA. 30+00 TO STA. 42+00
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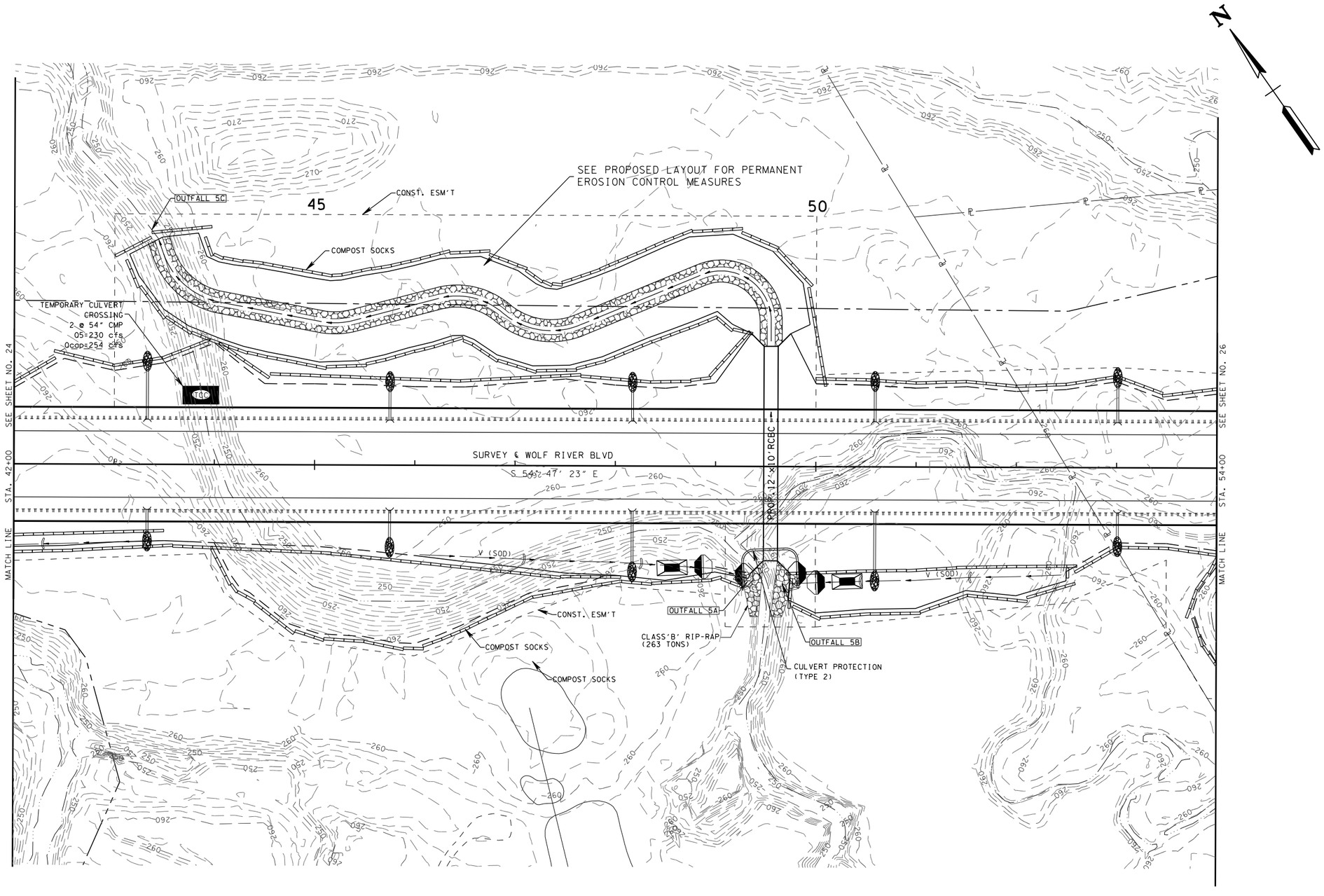
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	25
CONST.	2010	STP-M-9420(1)	25



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	26
CONST.	2010	STP-M-9420(1)	26

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

STA. 54+00 TO STA. 66+00
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TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
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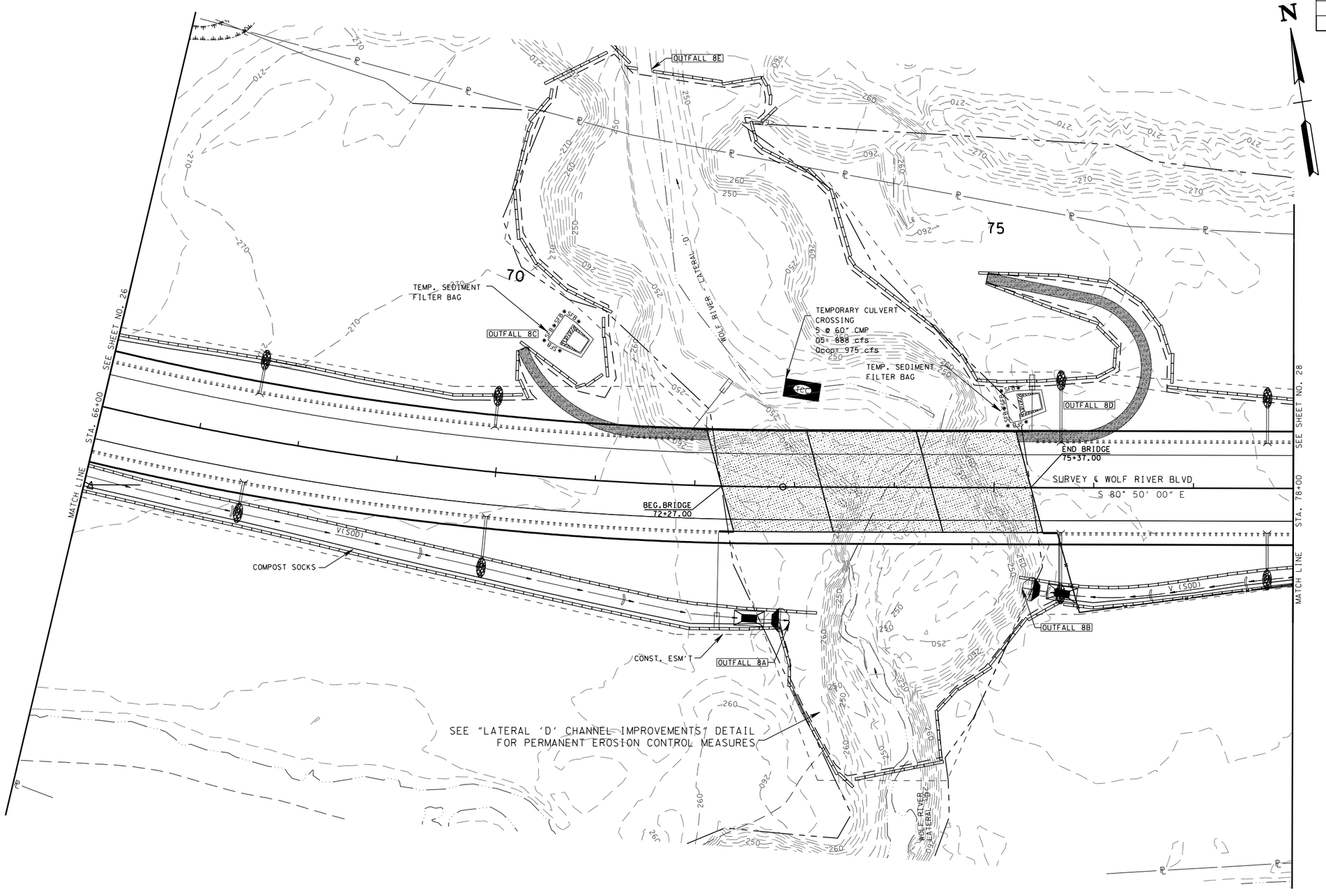
CONST.	2010	STP-M-9420(1)	27



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

STA. 66+00 TO STA. 78+00
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TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
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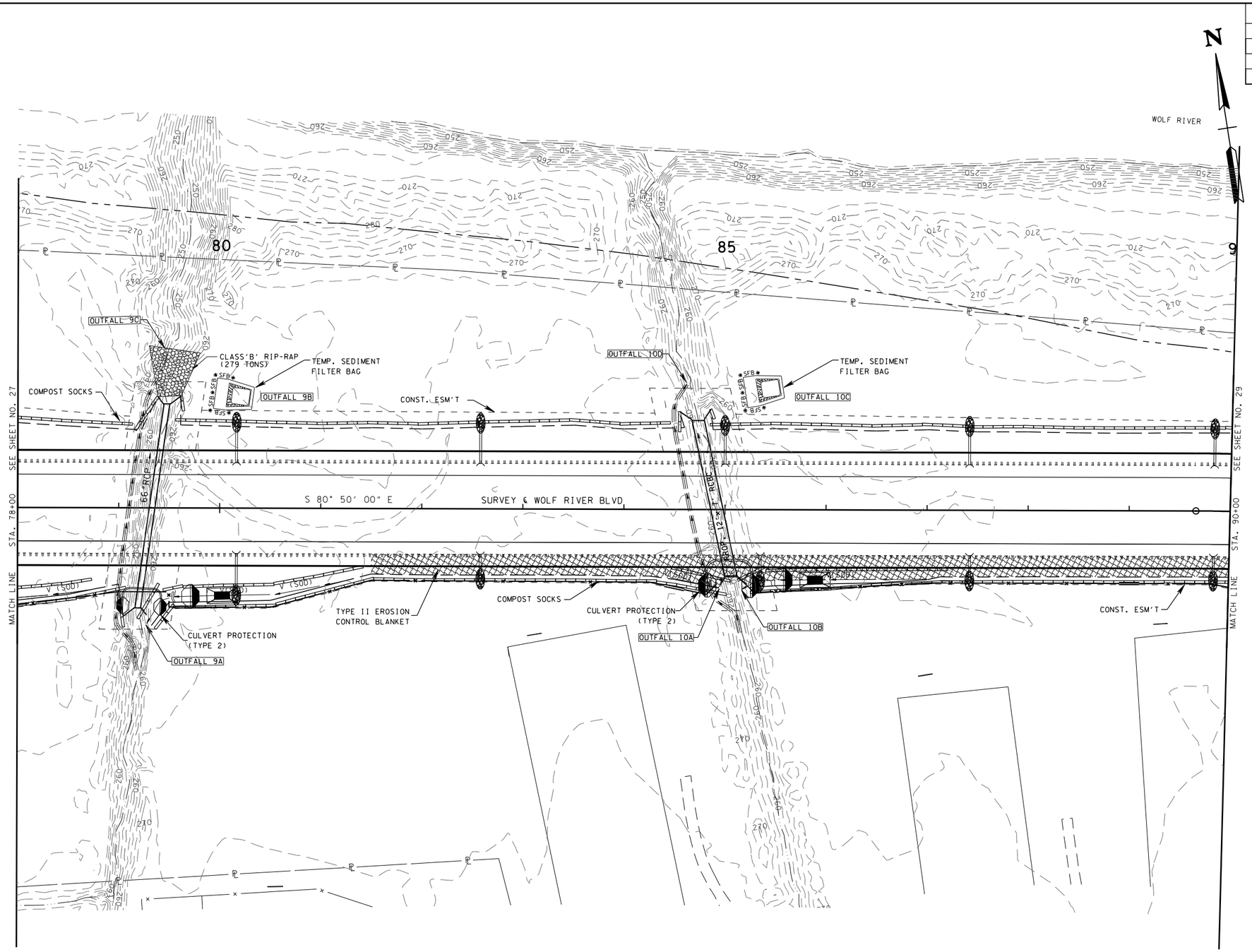
CONST.	2010	STP-M-9420(1)	28



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

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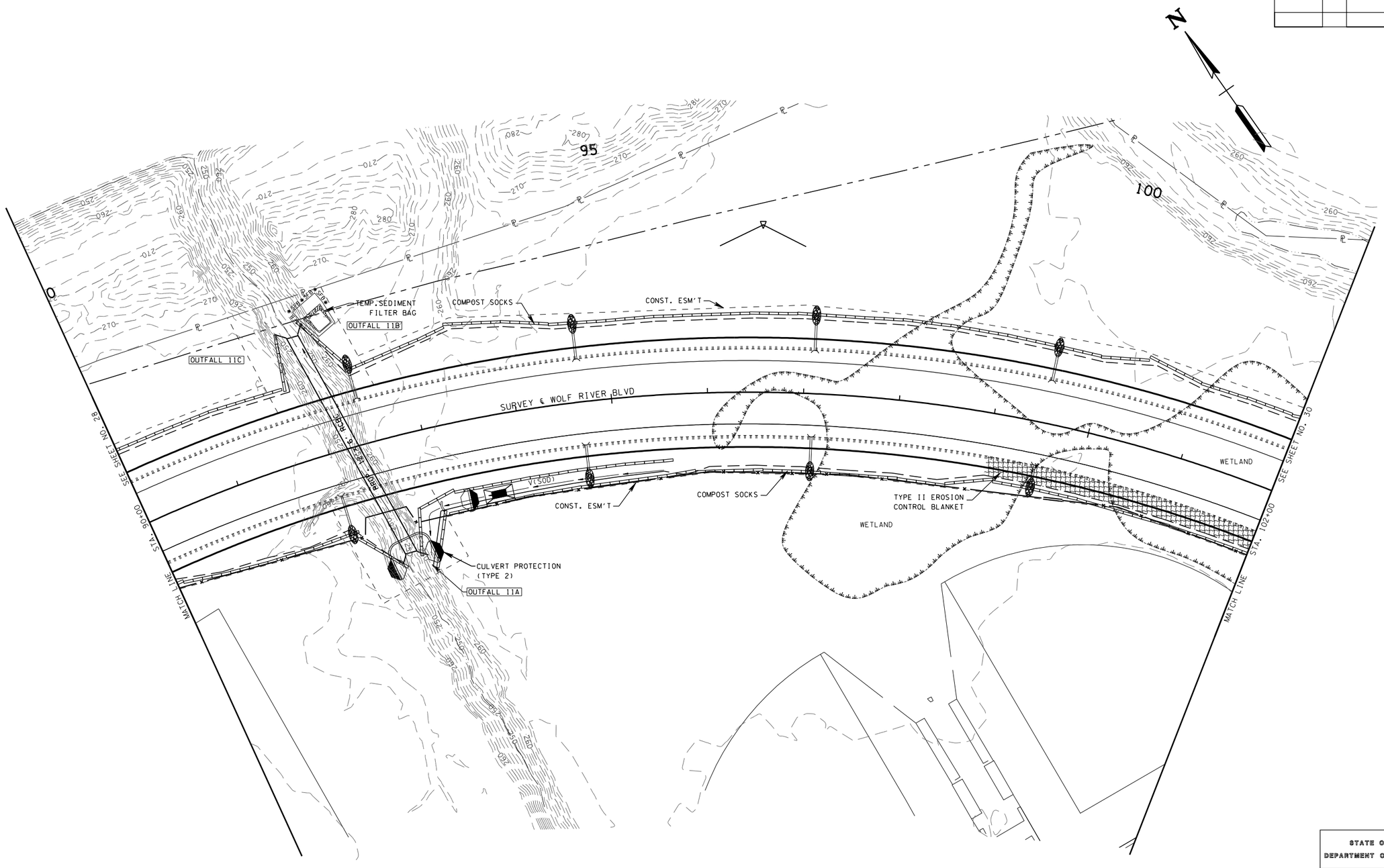
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	29
CONST.	2010	STP-M-9420(1)	29

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



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

STA. 90+00 TO STA. 102+00
SCALE: 1"= 50'

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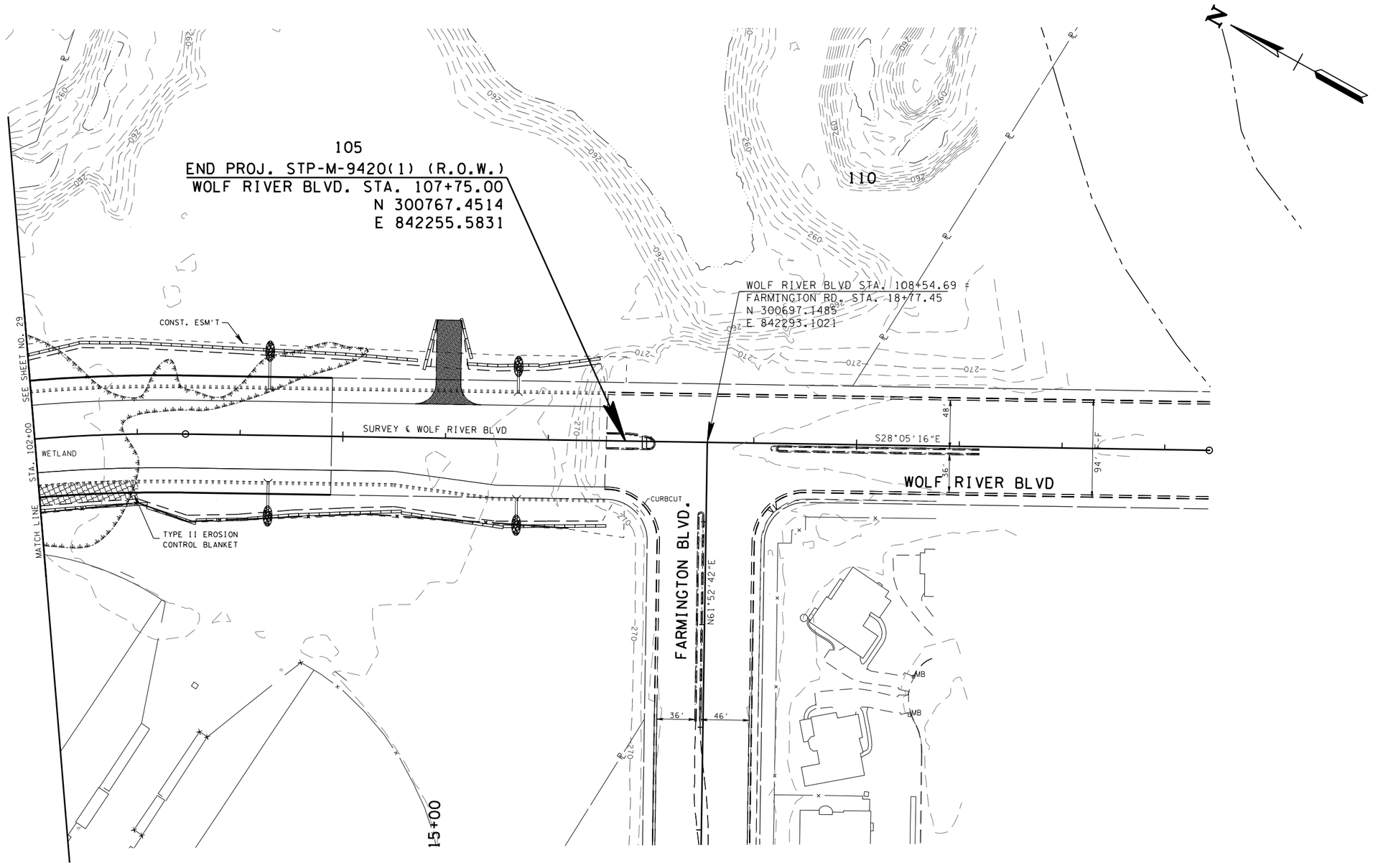
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2009	STP-M-9420(1)	30
CONST.	2010	STP-M-9420(1)	30



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN

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SCALE: 1"= 50'

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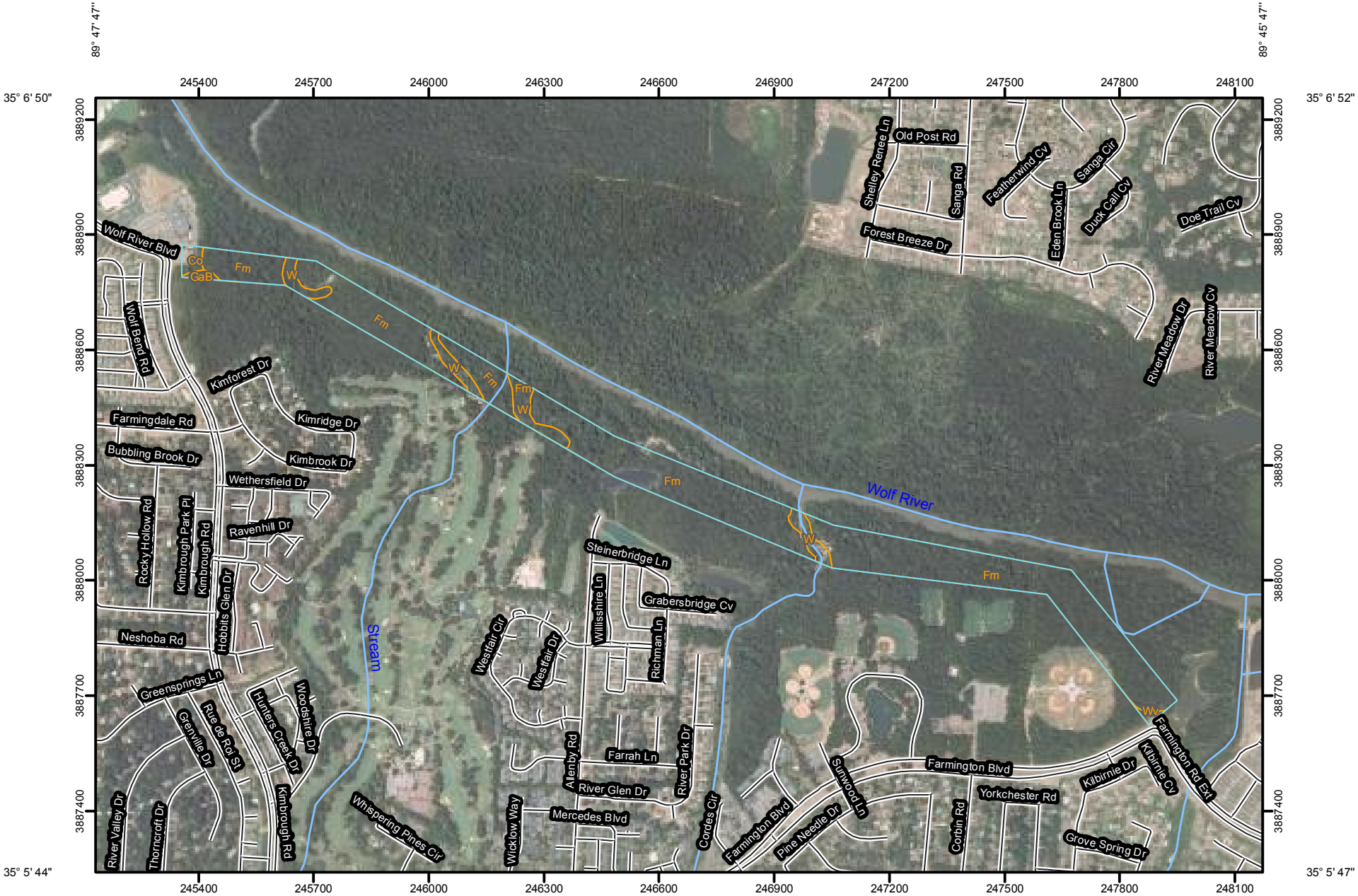
APPENDIX C

Soils Information

Soil Map—Shelby County, Tennessee
(Wolf River Boulevard)



Map Scale: 1:14,400 if printed on A size (8.5" x 11") sheet.

N

Meters: 0 200 400 800 1,200

Feet: 0 500 1,000 2,000 3,000

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Gully

Short Steep Slope

Other

Political Features

Cities

Water Features

Oceans

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:14,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Shelby County, Tennessee
Survey Area Data: Version 6, Sep 23, 2008

Date(s) aerial images were photographed: 7/21/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Shelby County, Tennessee (TN157)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Co	Collins silt loam	0.9	1.3%
Fm	Falaya silt loam	59.2	88.9%
GaB	Grenada silt loam, 2 to 5 percent slopes	0.4	0.6%
W	Water	5.8	8.7%
Wv	Waverly silt loam	0.3	0.5%
Totals for Area of Interest		**66.6**	**100.0%**

APPENDIX D

Outfalls

Wolf River Boulevard

Outfall Information

Outfall Point Number	Road Station from project centerline	Drainage Location		Impacted Drainage Feature
		LT or RT	Desc.	
1A	21+50	RT	Ditch	Tributary
1B	22+00	RT	Ditch	Tributary
1C	21+00	LT	Channel	Tributary
2A	33+50	LT	Filter Bag	Lateral C
2B	35+50	LT	Filter Bag	Lateral C
3	34+50	LT	Channel	Lateral C
4	40+00	RT	Ditch	Lateral C
5A	49+00	RT	Ditch	Tributary
5B	50+00	RT	Ditch	Tributary
5C	44+00	LT	Channel	Tributary
6	56+00	LT	Wetland	Pond
7	60+00	RT	Ditch	Sheet Flow
8A	73+00	RT	Ditch	Lateral D
8B	75+50	RT	Ditch	Lateral D
8C	71+00	LT	Filter Bag	Lateral D
8D	75+50	LT	Filter Bag	Lateral D
8E	71+50	LT	Channel	Lateral D
9A	80+00	RT	Ditch	Tributary
9B	80+00	LT	Filter Bag	Tributary
9C	79+50	LT	Channel	Tributary
10A	85+00	RT	Ditch	Tributary
10B	85+00	RT	Ditch	Tributary
10C	85+50	LT	Filter Bag	Tributary
10D	84+50	LT	Channel	Tributary
11A	92+50	RT	Ditch	Tributary
11B	92+50	LT	Filter Bag	Tributary
11C	92+00	LT	Channel	Tributary

APPENDIX E

401 Water Quality Certification

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
401 CHURCH STREET
7th FLOOR L & C ANNEX
NASHVILLE, TENNESSEE 37243-1534

Tim Gwaltney, P.E.
City of Germantown
1920 Germantown Rd.
Germantown, TN 38138

Subject: Aquatic Resource Alteration Permit **NRS 09.222**

Dear Mr. Gwaltney:

We have reviewed your application for the proposed stream alterations. Pursuant to the *Tennessee Water Quality Control Act of 1977* (T. C. A. § 69-3-101 et seq.) and supporting regulations, the Division of Water Pollution Control is required to determine whether the activity proposed will violate applicable water quality standards.

Subject to conformance with accepted plans, specifications and other information submitted in support of application NRS 09.222, the state of Tennessee hereby issues an aquatic resources alteration permit (enclosed). Failure to comply with the terms of this permit or other violations of the *Tennessee Water Control Act of 1977* is subject to penalty in accordance with T.C.A. § 69-3-115.

It is the responsibility of the permittee to ensure that all contractors involved with this project have read and understood the permit conditions before the project begins. If you need any additional information or clarification, please contact Brian Canada at 615-532-0660 or by e-mail at brian.canada@tn.gov.

Sincerely,

Brian Canada,
Natural Resources Section

Cc: Memphis Environmental Field Office
U.S. Army Corps of Engineers, Memphis District
file copy

STATE OF TENNESSEE

§401 WATER QUALITY CERTIFICATION

NRS09.222

Pursuant to §401 of *The Federal Clean Water Act* (33 U.S.C. 1341), the State of Tennessee is required to certify whether the activity described below will violate applicable water quality standards. Accordingly, the Division of Water Pollution Control requires reasonable assurance that the activity will not violate provisions of *The Tennessee Water Quality Control Act of 1977* (T.C.A. §69-3-101 et seq.) or provisions of §§301, 302, 303, 306 or 307 of *The Clean Water Act.*

Subject to conformance with accepted plans, specifications and other information submitted in support of the application, pursuant to 33 U.S.C. 1341 the State of Tennessee hereby certifies the activity described below. This shall serve as authorization under T.C.A. §69-3-101 et seq.

PERMITTEE City of Germantown

AUTHORIZED WORK: Construction of a connector road between the existing termini at Kimbrough Road to Farmington Road

LOCATION: Wolf River Blvd, Shelby County N lat35.1046702 W long-89.7794326

EFFECTIVE DATE: January 19, 2010

EXPIRATION DATE: January 18, 2015

Paul E. Davis, P.E.
Director, Division of Water Pollution Control

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PART I

Special Conditions:

a. Station 21+00+/-: Unnamed tributary. Install 150+/- ft. of 66" RCP with U-shaped End wall.

b. Station 34+75+/-: "Lateral C" trib. of Wolf River. Install 3-span deck bridge with 972' of relocated channel (no length loss) south of the alignment from Station 40+00+/- to 34+75+/- to facilitate perpendicular crossing and allow for channel improvements and vegetative plantings.

c. Station 49+70+/-: Unnamed tributary to Wolf River. Install 200+/- ft. of 12X6 ft. RCBC with relocation of 893' of channel north of the alignment into a channel 1017' in length from Station 49+70+/- to 43+60+/- to facilitate perpendicular crossing and allow from channel improvements and vegetative plantings along the new channel.

d. Station 55.20+/-: Unnamed tributary to the Wolf River. Install 170+/- ft. of 60" RCP with u-shaped end walls.

e. Station 72+62+/-: Lateral "D" tributary to Wolf River. Install 3-span concrete deck bridge.

f. Station 79.78+/-: Unnamed tributary to Wolf River. Install 150+/- ft. 66" RCP.

g. Station 85+00+/-: Unnamed tributary to Wolf River. Install 130+/- ft. 66" RCP.

h. Station 94+00+/-: Unnamed tributary to Wolf River. Install 170+/- ft. 10X4 ft. RCBC.

i. Station 95+50+/- to Sta. 98+00+/-: Wetland. Permanent impact to 0.6 acre of wetlands.

j. Station 100+10+/- to Station 105+05+/-: Wetland. Permanent impact to 2.0 acre of wetlands..

General Conditions:

a. It is the responsibility of the applicant to convey all terms and conditions of this permit to all contractors. A copy of this permit, approved plans and any other documentation pertinent to the activities authorized by this permit shall be maintained on site at all times during periods of construction activity.

b. Work shall not commence until the applicant has received the federal §404 permit from the U. S. Army Corps of Engineers, a §26a permit from the Tennessee Valley Authority or authorization under a Tennessee NPDES Storm Water Construction Permit where necessary. The applicant is responsible for obtaining these permits.

c. The work shall be accomplished in conformance with the accepted plans, specifications, data and other information submitted in support of application NRS09.222 and the limitations, requirements and conditions set forth herein.

d. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 1200-4-3-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated by Rule 1200-4-4. These uses include fish and aquatic life (including trout streams and naturally reproducing trout streams), livestock watering and wildlife, recreation, irrigation, industrial water supply, domestic water supply, and navigation.

e. Impacts to waters of the state other than those specifically addressed in the plans and this permit are prohibited. All streams, springs and wetlands shall be fully protected prior, during and after construction until the area is stabilized. Any questions, problems or concerns that arise regarding any stream, spring or wetland either before or during construction, shall be addressed to the Division of Water Pollution Control's Memphis Environmental Field Office (901-368-7939), or the permit coordinator in the division's Natural Resources Section (615-532-0660).

f. Adverse impact to formally listed state or federal threatened or endangered species or their critical habitat is prohibited.

g. This permit does not authorize adverse impacts to cultural, historical or archeological features or sites.

PART II

Mitigation Requirements and Monitoring Procedures

Required Mitigation Activities

The permittee must provide mitigation for the above referenced impacts. Impacts to stream from relocation shall be mitigated on site by restoring sinuosity to relocated channel, channel improvements by adjusting bank slope and profile to not less than 2:1 and

installation of toe of bank stabilization and tree planting. Wetland impacts (2.6 acres) shall be mitigated by enhancement of 2.15 acres of existing wetlands through improved hydrology and plantings and the permanent preservation of 3.79 acres of bottomland hardwood wetlands. Impacts are further offset by existing wetland conservation easements set aside by the City of Germantown.

Monitoring Requirements and Procedures

a. Qualitative Habitat Assessment - The RBP (Rapid Bioassessment Protocols) Habitat Assessment score for the mitigation project must be greater than 75% of the median ecoregion reference score at the end of the monitoring period.

b. Vegetation - A minimum of 200 stems per acre, comprised of both planted and desirable seedlings from natural regeneration shall remain growing at the end of the monitoring period. Vegetative species must be on approved native species planting list.

Recording of Results

a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

    1. The exact place, date and time of sampling;
    2. The exact person(s) collecting samples;
    3. The dates and times the analyses were performed;
    4. The person(s) or laboratory who performed the analyses;
    5. The analytical techniques or methods used;
    6. The results of all required analyses;
    7. Narrative descriptions, photo-documentation, riparian vegetation surveys, channel morphology surveys, stability assessments, and hydrology surveys/documentation, and;
    8. A habitat assessment using EPA Rapid Bioassessment Protocol will be conducted and submitted in Year 5.

b. In the event any portion or aspect of the mitigation project does not meet the specified success criteria based on reporting and/or additional visual observations in a monitoring year, the nature and cause(s) of the resulting condition shall be investigated and documented. If it is determined that corrective actions are not warranted at the time, the rationale for the decision shall be stated. Continued monitoring of the condition or area using more detailed methodology may be appropriate and must be documented. In instances where corrective actions are necessary, a plan shall be prepared that includes proposed actions, a time schedule for activities, and revised monitoring plan.

Additional Monitoring by Permittee

a. The applicant shall provide documentation of all conservation easements, land-use restrictions, and/or any other binding negotiated documentation regarding all mitigation sites in association with this project. This documentation should be sent to the division's Natural Resources Section located at the address referenced above.

Submission of Monitoring Results

a. The permittee shall submit the following monitoring information on an annual basis, for a term of five years (5 years):

b. All monitoring reports and information shall be submitted in report-form to the division's Natural Resources Section, located in the L&C Annex, 7th Floor, 401 Church Street, Nashville, Tennessee 37243. Copies shall also be provided to the appropriate Water Pollution Control Environmental Field Office, and the U.S. Army Corps of Engineers-Memphis District Office.

c. The first monitoring report shall be due by October 31st of each monitoring year upon completion of mitigation activities.

Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of five (5) years, or longer, if requested by the Division of Water Pollution Control.

Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

PART III

Duty to Reapply

Permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Pollution Control. Such applications must be properly signed and certified.

Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

Other Information

If the permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he/she shall promptly submit such facts or information.

Changes Affecting the Permit

Transfer/Change of Ownership

a. This permit may be transferred to another party, provided there are no activity or project modifications, no pending enforcement actions, or any other changes which might affect the permit conditions contained in the permit, by the permittee if:

b. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;

c. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and contractual liability between them; and

d. The Director does not notify the current permittee and the new permittee, within 30 days, of his intent to modify, revoke, reissue, or terminate the permit, or require that a new application be filed rather than agreeing to the transfer of the permit.

e. The permittee must provide the following information to the division in their formal notice of intent to transfer ownership:

    1. the permit number of the subject permit;
    2. the effective date of the proposed transfer;
    3. the name and address of the transferor;
    4. the name and address of the transferee;
    5. the names of the responsible parties for both the transferor and transferee;
    6. a statement that the transferee assumes responsibility for the subject permit;
    7. a statement that the transferor relinquishes responsibility for the subject permit;
    8. the signatures of the responsible parties for both the transferor and transferee, and;
    9. a statement regarding any proposed modifications to the permitted activities or project, its operations, or any other changes which might affect the permit conditions contained in the permit.

Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

Noncompliance

Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

Reporting of Noncompliance

24-Hour Reporting

a. In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Pollution Control in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Field Office should be contacted for names and phone numbers of environmental response personnel).

b. A written submission must be provided within five (5) days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

    1. A description of the discharge and cause of noncompliance;
    2. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
    3. The steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph a. above, the permittee shall report the noncompliance by contacting the permit coordinator, and provide all information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including but not limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Liabilities

Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of pollutants to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its discharge activities in a manner such that public or private nuisances or health hazards will not be created.

Liability under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

This permit does not preclude requirements of other federal, state or local laws. This permit also serves as a State of Tennessee Aquatic Resource Alteration Permit (ARAP) pursuant to the Tennessee Water Quality Control Act of 1977 (T.C.A. §69-3-101 et seq.).

The State of Tennessee may modify, suspend or revoke this permit or seek modification or revocation should the state determine that the activity results in more than an insignificant violation of applicable water quality standards or violation of the act. Failure to comply with permit terms may result in penalty in accordance with T.C.A. §69-3-115.

An appeal of this action may be made to the Water Quality Control Board. In order to appeal, a petition requesting a hearing before the Board must be filed within **THIRTY (30) DAYS** after receipt of the permit. In such petition, each contention should be stated in numbered paragraphs that describe how the proposed activity would be lawful and the action of the state is inappropriate. The petition must be prepared on 8½" x 11" paper, addressed to the Water Quality Control Board and filed in duplicate at the following address: Paul E. Davis, Director, Division of Water Pollution Control, 6th Floor L & C Annex, 401 Church Street, Nashville, Tennessee 37243-1534. Any hearing would be in accordance with T.C.A. §§69-3-110 and 4-5-301 et seq.

APPENDIX I

Topographic Maps

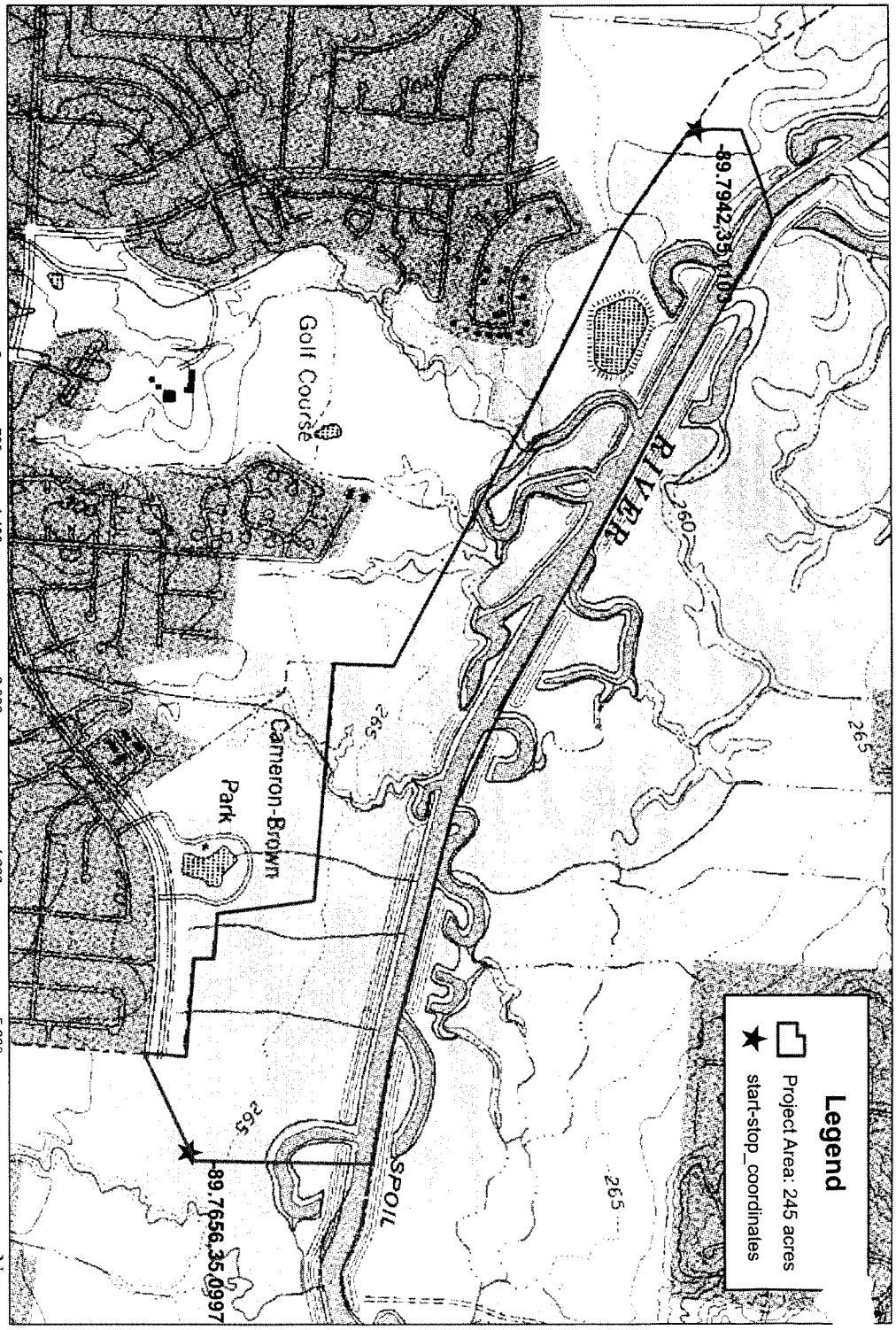
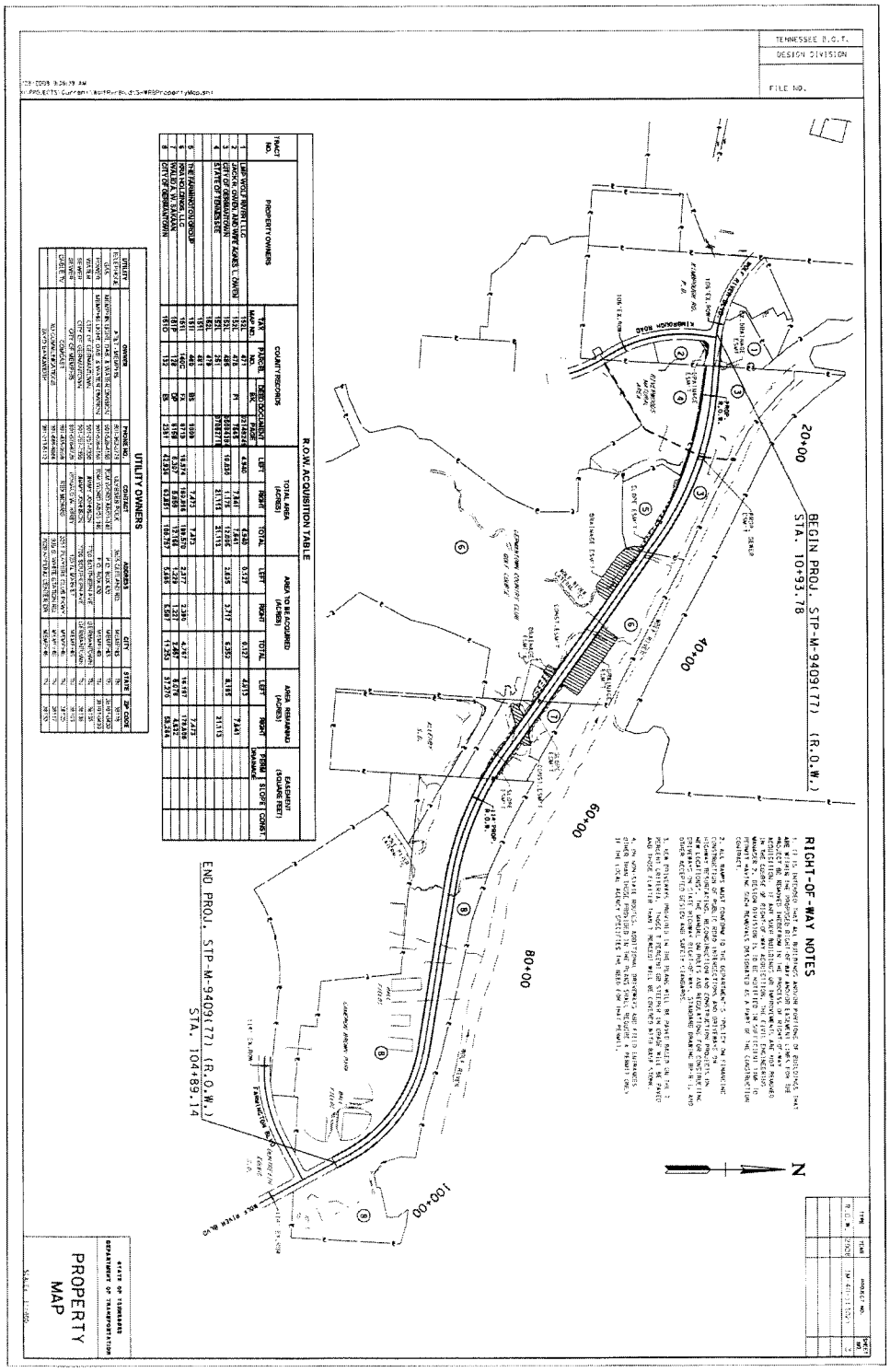


Figure 2
Wolf River Boulevard Project Area
7.5-minute quadrangle-Germantown, TN 1983


TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.
BEGIN PROJ. STP-M-9409(77) (R.O.W.)
STA. 104+93.78
END PROJ. STP-M-9409(77) (R.O.W.)
STA. 104+89.14
20+00
40+00
60+00
80+00
100+00
RIGHT-OF-WAY NOTES
R.O.W. ACQUISITION TABLE
UTILITY OWNERS
PROPERTY MAP

APPENDIX F

Inspection Forms

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 ***See Weekly Inspection Form for Outfall Specific Documentation of EPSC Measures**

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	362 Carriage House Drive	38305-2222	Chattanooga	540 McCallie Avenue, Suite 550	37402-2013
Nashville	711 R.S. Gass Blvd	37243	Knoxville	2700 Middlebrook Pike, Suite 220	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

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.: TNR	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							

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

If No, explain and initial:

(Additional pages may be attached, if needed)

[1]Predicted Precipitation Source: _____

State/US Route or Road Name: _____ TDOT Construction No.: _____ TDOT Contract No.: _____

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 Rdwy. 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)
R Replacement Needed
M Maintenance Needed
FM Future Maintenance
C Cleaning Needed
I Increase Measures
S Stable (No Action Needed)
R Repeat Occurrence
Other (O#1): _____
Other (O#2): _____
Other (O#3): _____

State/US Route or Road Name: _____ TDOT Construction No.: _____ TDOT Contract No.: _____

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 Rdwy. 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)
R Replacement Needed
M Maintenance Needed
FM Future Maintenance
C Cleaning Needed
I Increase Measures
S Stable (No Action Needed)
R 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	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								
31								

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

[2]Predicted Precipitation Source: _____

Instructions for Completing TDOT's
Erosion Prevention/Sediment Control
Inspection Report – April 06 Revision

Page 1: Contains all project specific information including rainfall since the last inspection report and signature blocks for EPSC inspector and the TDOT Project Supervisor/Designee.

All project identifying information in the upper left had corner boxes should be copied verbatim from the NPDES Notice of Coverage (NOC) in ensure that the inspection reports can be tracked back to a NOC.

On projects with a 107FP amendment that requires the contractor to participate in the inspection, the contractor must sign this form to document their participation. On contracts with no such provision, the contractor is not required to sign the inspection report. The EPSC inspector and TDOT Project Supervisor shall sign the report when complete. Comments on the report by any of these parties can be made in the lower right hand box or on additional sheets if necessary. If none of the parties has comments on the report, circle the "NO" in that box.

The required rainfall data shall be recorded on this form daily. Start recording rainfall data on a new report the day after you complete an inspection. Continue recording on that new form until the next inspection (e.g., performed inspection Monday, Tuesday started recording rainfall on new form and continued on that form until it was used to document Friday's inspection).

Page 2: Used to record outfall specific information observed during the inspection and recommended corrective actions to keep the site in compliance with the permit.

The first several columns will be repeated on all reports. Date last disturbed is important to determining when temporary or permanent stabilization is required by the permit. Existing control measures is used to document the major EPSC measures employed within the outfall at the time of the inspection. Current codes identifies the overall condition of the outfall and the corrective actions or comments box should be used for specific recommendations or documentation of effective measures.

Page 3: Not part of the inspection report. This form is provided so that a monthly summary of rainfall data can be provided to the QA/QC team.

The TDOT Project Supervisor, or their designee, is to be informed of the inspection outcome prior to leaving the site. The inspection report should be signed and placed in the SWPPP within 48 hrs. of the inspection completion.

The EPSC inspection reports shall be posted to a location and method determined by the Environmental Division – Storm Water Section on a weekly basis. This means that all inspections in any calendar week (Sunday-Saturday) shall be posted as Adobe files no later than close of business the following Monday.

EPSC Chronological Log Sheet – Quarter 1 2 3 4 (Circle One)			
Date and Time	Type of Visit (Rainfall Event Visit, Weekly Inspection, QA/QC meeting, Construction meeting etc.)	Representative of EPSC inspection services consultant	TDOT Project Supervisor (or designee)

APPENDIX G

Notice of Termination

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