Tennessee Valley Authority, 1101 Market Street, BR4A, Chattanooga, Tennessee 37402

October 7, 2015

TN DEPT OF ENVIRONMENT
AND CONSERVATION
OCT 09 2015
DIV OF WATER RESOURCES
RECEIVED

Mr. Jim McAdoo
Division of Water Resources
Tennessee Department of Environment
and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

Dear Mr. McAdoo:

TENNESSEE VALLEY AUTHORITY (TVA) – KINGSTON FOSSIL PLANT (KIF) – BOTTOM ASH DEWATERING FACILITY CONSTRUCTION – NOTICE OF INTENT (NOI) FOR COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT

Please find enclosed a NOI, project site map, storm water pollution prevention plan, and a check in the amount of $250 to cover processing of this application for coverage under the storm water construction general permit. This NOI is being submitted for TVA to construct a bottom ash dewatering facility at KIF. TVA has yet to select a contractor for the project and will submit an updated NOI with contractor information at a later date.

If you have any questions or need additional information, please contact Brad Love by e-mail at bmlove@tva.gov, or by phone at (423) 751-8518 in Chattanooga.

Sincerely,

Terry E. Cheek

Terry E. Cheek
Senior Manager
Water Permits, Compliance, and Monitoring

Enclosures
cc: Mr. Michael Atchley
Division of Water Resources
Knoxville Environmental Field Office
Tennessee Department of Environment
and Conservation
3711 Middlebrook Pike
Knoxville, Tennessee 37921

United States Treasury 15-51 / 000

TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TN

4912-80289816
Check No.

08/11/15

$250AND00/100

Pay to the order of

TREASURER STATE OF TN

$*********250*00
VOID AFTER ONE YEAR

TENNESSEE VALLEY AUTHORITY
TVA DISBURSING OFFICER TVA

[redacted]

INQUIRY SHOULD INCLUDE COPY OF THIS FORM

DATE 08/11/15

TVA VENDOR NO. 000403578 05

TVA 8262 (FD-5-82)

REMITTANCE INFORMATION FROM TENNESSEE VALLEY AUTHORITY TO:

TVA CHECK NO. 80289816

AMOUNT REMITTED 250.00

VENDOR: TREASURER STATE OF TN

INVOICE NUMBER	INVOICE DATE	AMOUNT	DISCOUNT	REFERENCE	ADJUSTMENT
PO/CNTR#. 081015 Construction storm water general permit for the Kingston bottom Ash Dewatering Facility Construction.		250.00	0.00		

* Discount Taken

DIV OF WATER RESOURCES
RECEIVED
OCT 09 2015
DEPT OF ENVIRONMENT AND CONSERVATION

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

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

Site or Project Name: TVA - Kingston Fossil Plant		Existing NPDES Tracking Number: TNR
Street Address or Location: 714 Swan Pond Road		Start date: 3/1/2016
		Estimated end date: 10/31/2017
Site Activity Description: Bottom Ash Dewatering Facility Construction		Latitude (dd.dddd): N 39.9041
		Longitude (dd.dddd): W 84.5161
County(ies): Roane	MS4 Jurisdiction: N/A	Acres Disturbed: 3.5
		Total Acres: 472

Does a topographic map show dotted or solid blue lines ☐ and/or wetlands ☐ on or adjacent to the construction site?
If wetlands are located on-site and may be impacted, attach wetlands delineation report.
If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.:

Receiving waters: Emory River

Attach the SWPPP with the NOI	■ SWPPP Attached	Attach a site location map	■ Map Attached

Site Owner/Developer Entity (*Primary Permittee*): (person, company, or legal entity that has operational or design control over construction plans and specifications): John C. Kammeyer, Vice President, Civil Projects

Site Owner/Developer Signatory (V.P. level/higher - signs certification below): (individual responsible for site):		Signatory's Title or Position (V.P. level/higher - signs certification below):	
Mailing Address: 1101 Market Street		City: Chattanooga	State: TN / Zip: 37402
Phone: ( ) 423-751-8246	Fax: ( )	E-mail: jckammey@tva.gov	
Optional Contact: Adele Dennison		Title or Position: Environmental Scientist	
Mailing Address: 714 Swan Pond Road		City: Harriman	State: TN / Zip: 37746
Phone: ( ) 865-717-2157	Fax: ( )	E-mail: amdennison@tva.gov	

Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name; (print or type) John C. Kammeyer	Signature: John C Kammeyer	Date: 10-7-2015

Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated.

Contractor company name (print or type):			
Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City: / State:	Zip:
Phone: ( )	Fax: ( )	E-mail:	

Other Contractor company name (print or type):			
Other Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City: / State:	Zip:
Phone: ( )	Fax: ( )	E-mail:	

OFFICIAL STATE USE ONLY

Received Date:	Reviewer:	Field Office:	Permit Number TNR	Exceptional TN Water:
Fee(s):	T & E Aquatic Flora and Fauna:		Impaired Receiving Stream:	Notice of Coverage Date:

(Continued on reverse)

STORMWATER POLLUTION PREVENTION PLAN

BOTTOM ASH DEWATERING

KINGSTON FOSSIL PLANT

TVA PROJECT NUMBER 203537

PWO #414411

REV. NO.	CHANGE DESCRIPTION	REVISED BY	CHECKED BY	PROJECT ENGR.	ENGR. MANAGER		DATE
0	Issued for Construction	Gma			GMF		

REGISTRATION STAMP

ALAN GUENTHER, PE
NUMBER: 118090

WRITTEN BY: Gina Fernandez, P.E.

CHECKED BY: Alan Guenther, P.E.

PROJECT ENGINEER: Travis Guilbault

ENGINEER OF RECORD: Alan Guenther, P.E.

DATE: 08/14/2015

URS

JOB NO. 31843013

KINGSTON FOSSIL PLANT

TENNESSEE VALLEY AUTHORITY

SPECIFICATION NUMBER: -

DISCIPLINE: CIVIL

SPECIFICATION SECTION NO.: -

REVISION: 0

TENNESSEE VALLEY AUTHORITY

STORM WATER POLLUTION PREVENTION PLAN

Kingston Fossil Plant
714 Swan Pond Rd.
Harriman, TN 37748

Prepared by:

URS Corporation
1515 Poydras St.
New Orleans, LA 70115

504-586-8111

August 14, 2015

REVISION 0

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Attachment 2 Minimum Requirements for EPSC

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Attachment 5 Major Activities Log

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Attachment 7 Daily Rainfall Gage Record

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1.0 Purpose of the Construction Stormwater Pollution Prevention Plan (SWPPP)

This Stormwater Pollution Prevention Plan (SWPPP) is being prepared to facilitate compliance with the Tennessee Department of Environment and Conservation (TDEC) General NPDES Permit For Discharges of Stormwater Associated with Construction Activities, Permit No. TNR 100000.

Compliance with the SWPPP is mandatory for the following reasons:

- Protection of water quality, which may be adversely impacted by sediment reaching streams
- Prevention of project delays caused by cease and desist orders
- Prevention of Notices of Violation (NOVs)

Minimizing sediment runoff from the project site is paramount for compliance. The project-specific SWPPP contains specific guidance on controls being selected as well as design and installation requirements. A copy of the plan along with the inspection records must be kept on-site and provided to the site Environmental Scientist. See Attachment 1 for a list of SWPPP specialists and contacts.

Refer to the General NPDES Permit For Discharges of Stormwater Associated with Construction Activities, Permit No. TNR 100000 for additional information regarding discharge limits.

2.0 Construction Description

2.1 Description of Construction Activity

The scope of work includes installation of a new dewatering facility within the current plant boundaries. The facility will consist of new conveyors, filtration systems, above ground tanks, building structures, below ground sumps, and additional access roadways. The existing project site location currently consists of an abandoned ball field currently used as an ash storage area. The site will be re-graded slightly to accommodate the new facility with portions of the site receiving concrete area paving and others receiving a 6" to 12" layer of crushed stone. A smaller portion of the site will also be seeded for natural grass growth once site construction is completed.

2.2 Construction Schedule

Work on the site is anticipated to begin in winter 2016. The expected time frame for construction is approximately fifteen (15) months, depending on weather.

2.3 Construction Sequence

The major soil disturbing activities involved in the construction of this new facility are as follows:

1. Install Best Management Practices (BMPs) prior to construction activities. Attachment 2 shows the locations of proposed BMPs. Also, see Attachment 4, for TVA preferred BMP Details. The majority of the BMPs will entail the following:

    a. silt fencing/erosion eels
    b. construction exits (if required)
    c. reseeding operations (if required)

2. Site clearing and grubbing as required for construction with selective vegetation removal for silt fence installation.
3. Stripping and stockpiling of topsoil. Stockpiles will be stabilized within 7 days.
4. Installation of below ground piles & pile caps
5. Installation of piping/storm water culvert and trench
6. Install riprap at storm water outlets
7. Fill, compaction, and grading of site to specified elevations.
8. Install temporary concrete washout facility
9. Installation of concrete foundations.
10. Installation of gravel and permanent concrete paving.
11. Above grade structure construction and equipment installation.
12. Final stabilization for remaining disturbed areas. Reseed any remaining disturbed areas.
13. Remove all temporary erosion control measures once the site is stabilized.

3.0 Facility Area and Disturbed Area

The estimated area of the Kingston Plant property is approximately 472 acres. The area disturbed by the Bottom Ash Dewatering Facility construction site is limited to approximately 3.4 acres.

4.0 Site Topography

The majority of the existing project area is relatively flat. Following construction, the site will still maintain its relative flatness, with the maximum slope of grade to be 3:1 and a minimum slope to be 100:1.

5.0 Soil Description

The existing soils in the area consist of the following:

Depths are approximate

- Fill material – gravel from 3ft to 8ft with bottom ash to 50ft.
- Alluvium– lean clay with sand and silt from 50ft to 65ft
- Residual soils – weathered shale and lean clay from 65ft to refusal
- Refusal depth – shale and limestone bedrock at approximately 70ft

The fill material planned to be used will consist of the following:

- General engineered fill materials meeting the requirements for suitable materials under Item 204 of the TDOT Standard Specifications for Road and Bridge Construction, except that all fill materials shall be natural soil materials (slag, shale, or other processed rock materials, and processed asphalt or concrete materials shall not be used). Materials placed within three (3) vertical feet of the bearing elevation or base of a structure shall not be classified as a fat clay (CH).

- Materials will be essentially free of organic matter (the organic content of a material to be used as engineered fill should not exceed 3%), frozen materials, cobbles, boulders, and other rubble greater than 6 inches in largest dimension.

- To the extent that they meet the above requirements, on-site soil materials may be used for engineered fill. Material encountered in the borings was variable. Some soil will meet these requirements and some will not.

The fineness of the surface soils dictates the use of silt fences and catch basin filters for runoff control measures. All fill material will be placed in engineered lifts and compacted as it is placed to minimize future settlement and the potential for soil erosion.

6.0 Site Runoff

The development of this project site is expected to slightly increase the current runoff coefficient from 0.85 to approximately 0.875. During construction, all area runoff will be collected and discharged into the existing ash sluice trench south of the project site which discharges into the Stilling Pond and discharges via NPDES Permitted Outfall 001 to the Kingston Intake Channel (Emory River). After the Dewatering Facility is commissioned, approximately half of the area runoff will sheet flow to new swales, catch basins, and pipe culverts which will empty into the same drainage canal. The other half of the rainfall will be collected and routed over a weir into a new pipe and discharged into the existing stilling pond . Erosion control at the discharge outfalls will be provided by rip rap underlain with filter fabric.

7.0 Site Map and Drawings

Contractor shall prepare and submit for approval Erosion Prevention and Sediment Control (EPSC) plans. Recommendations for the site are covered in "Attachment 2 – Minimum Requirements for EPSC" and "Attachment 4 – BMP Details". These drawings depict the construction area, BMP locations and BMP details. These controls are to be in place prior to initial grading and shall be maintained through final grading and stabilization.

8.0 Non-Construction Industrial Discharges

Kingston Fossil Plant industrial discharges are covered under NPDES permit number TN0080870 and TN0005452.

9.0 Receiving Waters

Stormwater runoff from the site will enter the existing ash sluice trench which discharges into the Stilling Pond and discharges via NPDES Permitted Outfall 001 to the Kingston Intake Channel (Emory River).

10.0 Erosion Control Plan

10.1 General Erosion and Sediment Controls During Construction

All construction activities will conform to the following general practices with regard to erosion and sediment control. Best Management Practices (BMPs) specific to this project are described and shown in detail on the Site BMP Details in Attachment 4. In addition, these practices are described in the Tennessee Erosion and Sediment Control Handbook (TESCH).

- Erosion prevention controls shall be designed to minimize, or eliminate if possible, the dislodging and suspension of soil in water. Sediment controls

shall be designed to retain mobilized sediment on site to the maximum extent practicable. Control measures will be properly selected, installed, and maintained. If a measure proves to be ineffective, it must be replaced or modified. Refer to Attachments 2 and 4 for specific erosion and sedimentation control information and details.

- Erosion prevention and sediment controls must be in place and functional before any earth-disturbing activities begin and will be maintained throughout the construction period. Temporary measures may be removed to facilitate work, but must be replaced after the work or at the end of each workday.

- Construction phasing must be sequenced to minimize the exposure time of graded or denuded areas. Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed **more than 15 days** prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed. These activities must be logged in the Major Activities Log included in Attachment 5.

- Clearing and grubbing of existing vegetation must be held to the minimum necessary for grading and equipment operation.

- Dust control measures will be implemented during construction as needed.

- Upland storm water diversion measures to control run-on will not be needed for this project site due to the existing topography.

10.1.1 Roads and Access Areas

Existing roads will be used for site access. Temporary construction exits (CE's) may be implemented, as required, to reduce fugitive sediment collection in access roadways. At a minimum, daily checks of the roads exiting the plant will be conducted. Sediment tracked onto public roads will be removed by the end of that workday. Refer to the Attachment 4 for guidelines on construction exits.

10.1.2 Inspections and Maintenance

All erosion prevention and sediment control measures implemented will be maintained in good and effective operating condition. If a repair is necessary, it will be initiated within 24-hours of report and shall be completed prior to the next rain event or **within seven (7) days**.

The following inspections will be performed by qualified personnel at least twice every calendar week and at least 72 hours apart. Where portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to

winter conditions or extreme drought, these inspections will be conducted once per month until thawing or precipitation results in runoff or construction activity resumes.

a) Disturbed areas and material storage areas exposed to precipitation will be inspected for evidence of, or potential for, pollutants entering the site drainage system;
b) Erosion prevention and sediment control measures will be checked for proper operation; in particular, silt fences will be inspected for depth of sediment, fabric attachment, fabric integrity, and post condition and embedment;
c) Outfall points will be inspected for effectiveness of erosion prevention and sediment control measures in preventing significant impact to receiving waters;
d) Vehicle entry/exit points will be inspected for offsite sediment tracking.

Personnel performing the required inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. A copy of the certification or training record for inspector certification should be kept on site.

All inspections shall be documented on the Daily Inspection Form (Attachment 8), or approved alternative inspection form. Inspection documentation will be maintained on site. Any deficiencies found shall be reported to the TVA Construction Manager or designee immediately. Copies of the inspection reports will be provided to the Construction Manager on a weekly basis, when a report has been filed, and/or when construction is complete. Supplemental photographic documentation is encouraged, but not required. Separate documents will be used for each area or measure being inspected.

Sediment will be removed from control measures periodically allowing no more than one-third of the silt fence height to be covered with sediment. Sediment removal will follow the recommendations in the TESCH. Silt fences will also be inspected for fabric attachment, fabric integrity, and post condition and embedment.

Temporary and permanent seeding/planting will be inspected for bare spots, washouts, and healthy growth. Site inspections for areas that have not received final stabilization should be performed at least twice every calendar week at least 72 hours apart in accordance with the Tennessee Construction Stormwater General Permit. Site inspections for areas that have received final stabilization

will occur a minimum of once per month. An inspection log shall be maintained, and a report form shall be completed for each inspection. Once a definable area has been finally stabilized, the Construction Manager may identify this area on the SWPPP. No further SWPPP or inspection requirements apply to that portion of the site.

During prolonged rainfall, daily inspections are suggested and repairs will be made as needed. The construction inspector or designee will ensure that inspections are made on non-work days (weekends and holidays) if necessary. The official rainfall amount will be the rainfall as recorded at an on-site gage to be installed and maintained for the life of the construction project. Records of rainfall gage readings will be maintained in a log by the Contractor (see example sheet in Attachment 7).

Copies of rainfall logs and inspection records will be provided to the KIF Project Environmental Scientist at the end of each month for the life of the project. A copy of the Major Activities Log will be provided to the Project Environmental Scientist on a monthly basis. These records will be maintained on-site with the environmental records for a minimum of 3 years after the notice to terminate coverage under the general permit has been filed.

TVA's Construction Manager will coordinate with Environmental to address any situation that arises that is not specifically mentioned in the SWPPP. At a minimum, industry standard BMPs shall be used when addressing any new concerns.

Any modifications to this SWPPP that are required in response to an inspection will be implemented within 14 days following that inspection.

10.1.3 Stabilization Requirements

Seeding operations during the winter months will be avoided.

Permanent vegetation on disturbed areas will be implemented in accordance with the TESCH, Vegetative Practice PS – Disturbed Area Stabilization with Permanent Vegetation.

Temporary Stabilization: Topsoil stock piles and disturbed areas of the site where construction activity temporarily ceases for a minimum of 7 days will receive temporary seeding.

Permanent Stabilization: Disturbed areas of the site where construction activities are completed will receive permanent seeding no later than 14 days

after the cessation of construction activity.

10.1.4 Soil and Sediment Control/Sediment Migration

If sediment escapes the permitted area, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g., storm sewers, streams, safety of public streets). The TVA Environmental Scientist shall be notified if and when sediment migration has breached the in-place control measures.

10.1.5 Dewatering of Work Areas/Vehicle Washing & Maintenance/Dust Suppression

Other than the occasional dewatering of isolated footing excavations, frequent or large scale dewatering efforts are not anticipated for this project.

Washout pits for concrete trucks will be utilized near site exits to capture and deter concrete washout water from entering the storm sewer system or site outfall locations.

Dust from vehicle traffic, pedestrian traffic, and wind will be suppressed with water spray.

10.1.6 Housekeeping Requirements

Litter, construction debris, and construction chemicals shall be picked up prior to anticipated storm events or before being carried off of the site by wind (e.g., forecasted by local weather reports), or otherwise prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, daily pick-up, etc.). Litter pickup events need to be recorded on an inspection log sheet and reported to the Erosion and Sedimentation Control representative.

The following additional efforts will be done as part of the housekeeping requirements.

- Site superintendent will perform daily inspections to ensure proper use and disposal of materials.
- All containers shall be inspected for leaks or spillage.
- All materials stored on-site will be stored away from drainage courses and low areas, in a neat, orderly manner in their appropriate containers, and if possible, under a roof or in an enclosure. If practical, materials exposed to precipitation shall be stored in watertight, structurally sound, closed containers.
- An effort will be made to store only enough product required to do the job.

Whenever possible, all of a product will be used up before disposing of the container.

- Products will be kept in their original manufacturer's container.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Manufacturer's recommendations for proper use and disposal will be followed.

10.1.7 General Water Quality Requirements/Other Situations

Stormwater discharges shall not have visible floating scum, oil, or other matter or cause an objectionable color contrast in the receiving waters. If such conditions are observed, controls will be inspected and modified as necessary. The on-site Project Manager shall be notified immediately. Any modifications made will be recorded on the Major Activities Log (see Attachment 5).

TVA's Construction Manager will coordinate with Environmental to address any situation that arises that is not specifically mentioned in the SWPPP. At a minimum, industry standard BMPs shall be used when addressing any new concerns.

10.2 Post-Construction Erosion Controls

The use of long term erosion control measures will be evaluated upon completion of the work.

11.0 Specific Best Management Practices and Spill Prevention

11.1 Materials and Wastes

Waste Materials: All trash and construction debris from the site will be collected in an on-site container supplied by the contractor that complies with local and state solid waste management regulations and hauled to an approved landfill. All trash and construction debris from the site will be deposited in the dumpster. No construction waste material shall be buried on the site. Employee waste and other loose material shall be collected and properly disposed to prevent the release of floatable material during runoff events. Contact the Project Environmental Scientist for approved methods of disposal for clearing debris and/or minor amounts of soil. Notices stating these practices will be posted in the office trailer and the site superintendent will be responsible for seeing that these practices are followed.

Hazardous Waste: In the event that hazardous waste is generated, all hazardous

waste shall be disposed of in accordance with EPA, state, and local regulations. Contact the Project Environmental Scientist for approved methods of disposal. Site personnel will be instructed in these practices, and the site manager will be responsible for seeing that these practices are followed.

Sanitary Waste: Portable sanitary units shall be provided for use by all workers throughout the life of the project. All sanitary waste shall be regularly collected from the portable units by a licensed sanitary waste management contractor.

Material Storage: Construction materials that cannot contaminate stormwater may be stored in the open laydown area. Laydown area must be prepared so that no sediment leaves the site.

Petroleum and other liquid products must have secondary containment if the total quantity stored in one spot is equal to or greater than 55 gallons. Contractor shall coordinate all petroleum and other liquid product storage with TVA construction management to ensure compliance with TVA Integrated Pollution Prevention (IPP).

Hazardous wastes and materials must have secondary containment and must be covered or stored indoors to prevent contact with stormwater. Covered secondary containment must have a manually operated drain valve that can be locked. Secondary containment for inside storage does not need a drain.

Leaks into the secondary containment must be cleaned up when discovered and the source of the leak repaired as soon as possible. Any leaks in earthen secondary containment must be completely cleaned up within two hours of discovery. The on-site Project Manager must be notified of any spills immediately. The Project Environmental Scientist must be notified as soon as possible. Refer to the Reporting and Recording Keeping section below.

Material storage areas will be as small and as few in number as practicable. They shall be established only in designated areas that minimize the disturbance of soil during use and the chance of stormwater runoff sediment/pollutant contamination.

11.2 Product-Specific Practices

Spill potential materials that are anticipated to be used or stored at the project site are as follows:

- Fertilizers, petroleum based products, paints (enamel and latex), cleaning solvents, grout

Special handling beyond Section 11.1 of the above will be in strict accordance with the manufacturer's instructions and recommendations. Contractor to supply all

MSDS sheets for any chemicals that you plan to bring onsite to TVA Environmental for review and approval prior to them being brought onsite. Refer to Sections 11.3 and 11.4 for spills involving the above. No detergents will be allowed onsite. All cleaning to be via other methods including steam pressure washing. Any wash water that may contain oil/hydrocarbons, will be captured, sampled, analyzed, and disposed of in accordance with TVA procedures.

11.3 Spill Control and Response Practices

Equipment: TVA and the Contractor shall ensure that materials and equipment necessary for spill cleanup for their respective materials shall be present on the site at all times. Equipment and materials shall include, but are not limited to, brooms, shovels, rags, absorbent materials, and plastic or metal trash containers specifically designed for this purpose. The materials and equipment necessary for spill cleanup shall be dependent upon the nature and quantity of the material stored on-site. A signed inventory sheet shall be provided to the Project Environmental Scientist on a monthly basis.

Response: All spills shall be cleaned up immediately upon discovery. The Contractor shall report all spills to the Construction Manager. The Construction Manager shall contact the Project Environmental Scientist as soon as possible. Refer to the Reporting and Recording Keeping section below.

Safety: All spill areas shall be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.

11.4 Reporting and Record Keeping

Reporting: In the event of a spill of oil, hazardous substances, or other pollutants, the Contractor will notify the TVA Construction Manager who will in turn notify the Project Environmental Scientist and the TVA Operations Duty Specialist. These individuals will ensure that the National Response Center and Tennessee Emergency Management Agency are notified. The permittee shall submit, within 14 days of knowledge of the release, a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, what actions were taken to mitigate effects of the release, and steps to be taken to minimize the chance of future occurrences, to the appropriate Environmental Field Office.

Records: The TVA Project Manager shall place a write-up of the spill in the SWPPP within 14 days of the event and will coordinate with the NPDES specialist regarding any needed plan modifications to include additional measures as necessary. The write-up shall include a description of the release (i.e., quantity and type of

material), date of the release, circumstances leading to the release, and steps taken to respond and/or address the release.

If a change in project scope occurs, the SWPPP shall be modified within 7 days. If state inspectors require a modification, it shall be accomplished in a timely manner. If any routine inspection warrants a plan modification, the SWPPP shall be modified within 7 days, and the revision shall be implemented within 14 days.

The required records shall be kept on file in the construction office and the final, complete set of records shall be transferred to the Plant Environmental Scientist at the end of construction. TVA is required by the permit to keep records of all spills and inspections for a minimum of three years after the Notice of Termination is filed, or longer if requested by the Tennessee DWPC.

12.0 Posting of Information at Construction Site

A copy of the Notice of Coverage (NOC) provided by the TDEC shall be posted at the entrance to the construction site. In addition, a notice containing the location of the SWPPP and the name and phone number of a local contact must be posted. An example of the contact notice to be posted is included in Attachment 9. Notices will be laminated or otherwise protected from weather.

Attachment 1

SWPPP Information and Certification Statements

SWPPP INFORMATION & CERTIFICATION STATEMENTS

Project Name:

KINGSTON FOSSIL PLANT
DEWATERING FACILITY
ROANE COUNTY, TN

Mailing Address:
John C. Kammeyer
Vice President, Civil Projects
Tennessee Valley Authority
1101 Market Street
Chattanooga, TN 37402
423-751-8246
Phone: (423) 751-8246

Project Location:
Approx. 35 miles West of
Knoxville, TN
N 39.9041°
W 84.5161°

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 ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

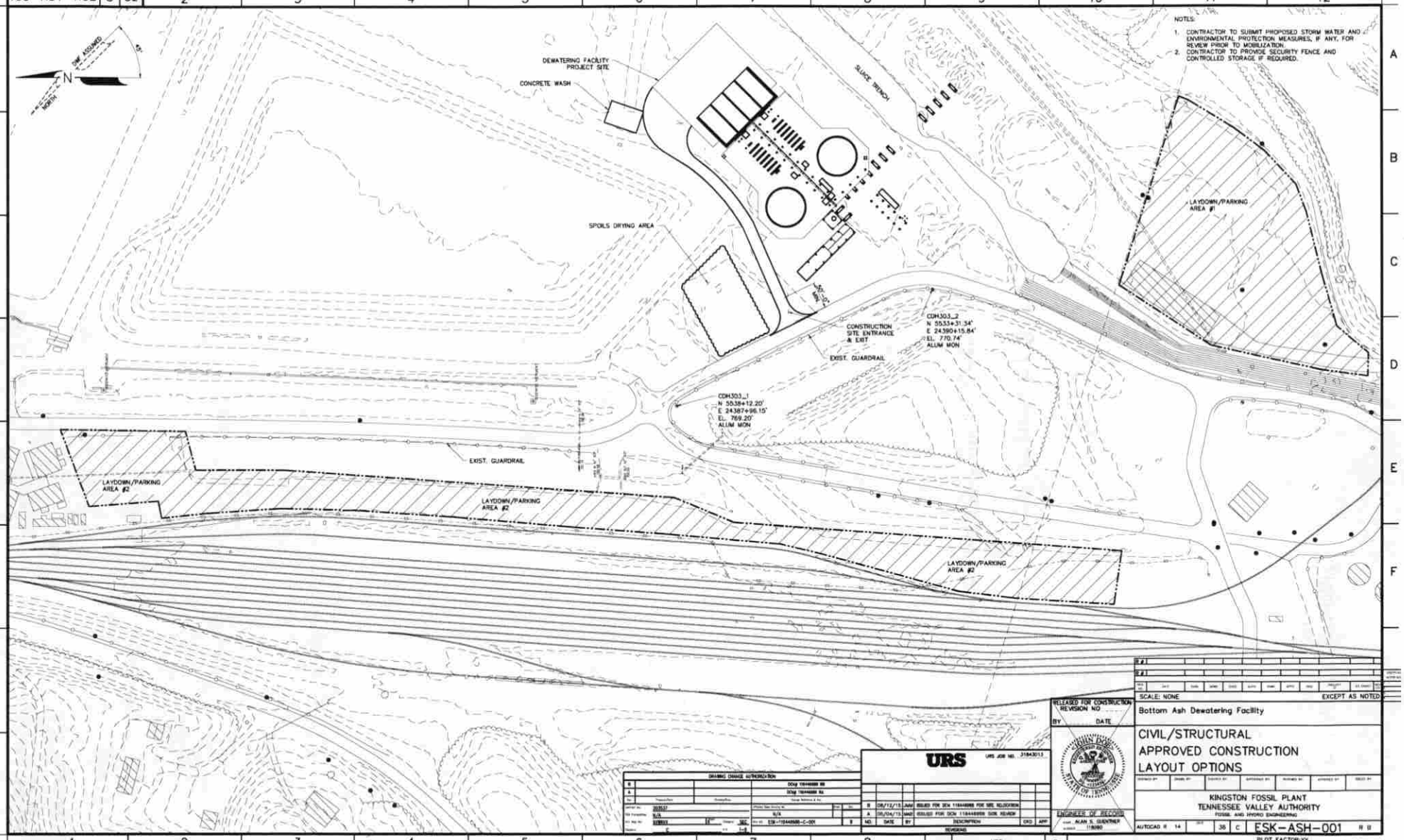
Signature of Principal Executive Officer or Authorized Agent	10-7-2015 Date Signed

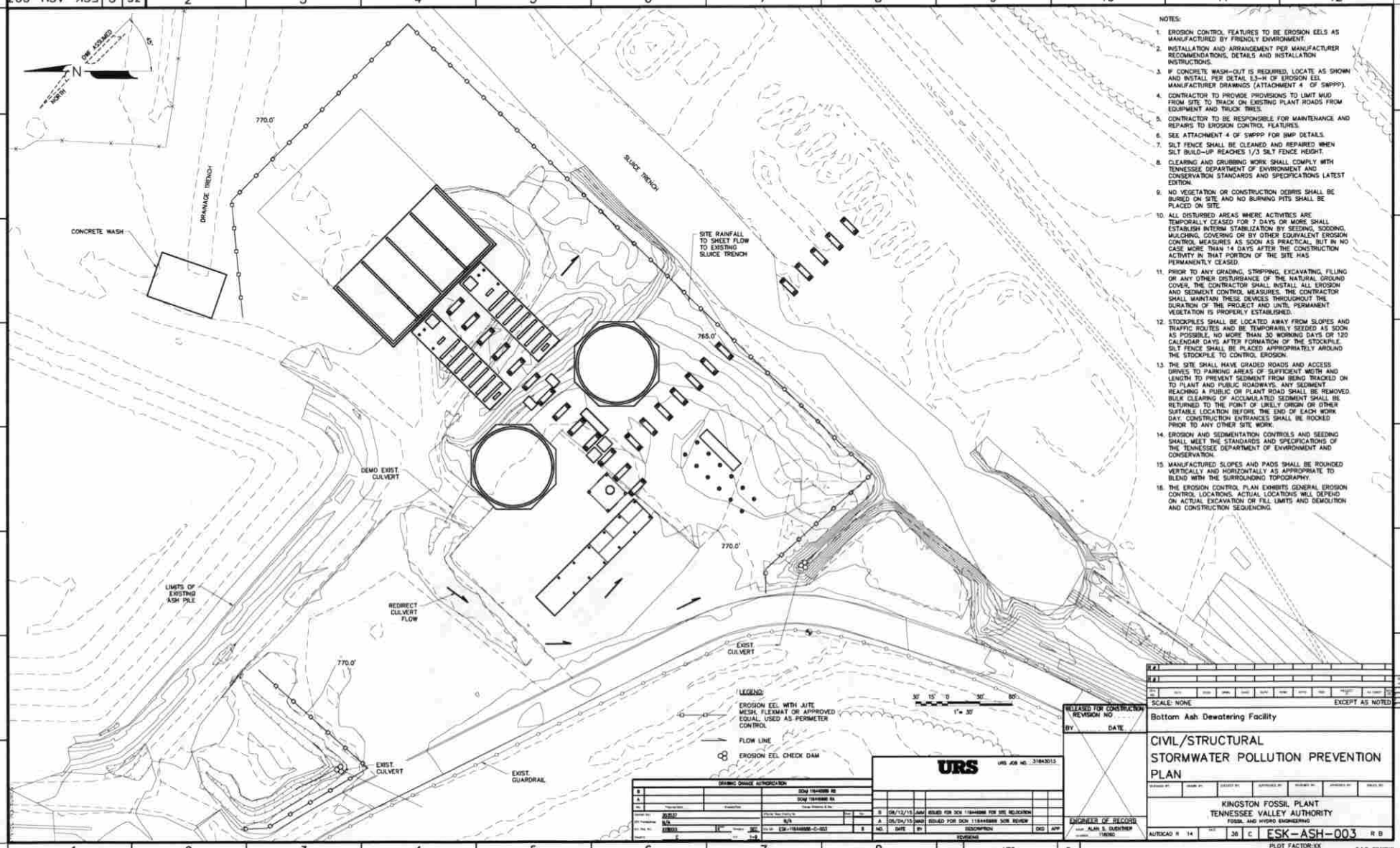
I, Alan Guenther , P.E., certify that this Plan was prepared under my responsible charge.

	Engineer	118090	8-12-15
Signature	Profession	TN License No.	Date

Attachment 2

Minimum Requirements for EPSC


NOTES:
1. CONTRACTOR TO SUBMIT PROPOSED STORM WATER AND ENVIRONMENTAL PROTECTION MEASURES, IF ANY, FOR REVIEW PRIOR TO MOBILIZATION.
2. CONTRACTOR TO PROVIDE SECURITY FENCE AND CONTROLLED STORAGE IF REQUIRED.
N
NORTH
DWG ASSUMED
45°
DEWATERING FACILITY PROJECT SITE
CONCRETE WASH
SLUICE TRENCH
SPOILS DRYING AREA
LAYDOWN/PARKING AREA #1
CONSTRUCTION SITE ENTRANCE & EXIT
CDH303_2
N 5533+31.34'
E 24390+15.84'
EL. 770.74'
ALUM MON
EXIST. GUARDRAIL
CDH303_1
N 5538+12.20'
E 24387+96.15'
EL. 769.20'
ALUM MON
EXIST. GUARDRAIL
LAYDOWN/PARKING AREA #2
LAYDOWN/PARKING AREA #2
LAYDOWN/PARKING AREA #2
SCALE: NONE
EXCEPT AS NOTED
Bottom Ash Dewatering Facility
CIVIL/STRUCTURAL
APPROVED CONSTRUCTION
LAYOUT OPTIONS
KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING
ESK-ASH-001
URS
RELEASED FOR CONSTRUCTION
REVISION NO
BY
DATE
ENGINEER OF RECORD
ALAN S. GUENTHER
STATE OF TENNESSEE
DRAWING CHANGE AUTHORIZATION
REVISIONS
NO. DATE BY DESCRIPTION CKD APP
B 08/12/13 AMM ISSUED FOR DCN 118448888 FOR SEE REVISIONS
A 05/04/13 AMD ISSUED FOR DCN 118448888 DGN REVIEW
URS
TASK COMPLETED BY:
REV NO.
PLOT FACTOR:XX
C.A.D. DRAWING
DO NOT ALTER MANUALLY



NOTES:

1. EROSION CONTROL FEATURES TO BE EROSION EELS AS MANUFACTURED BY FRIENDLY ENVIRONMENT.
2. INSTALLATION AND ARRANGEMENT PER MANUFACTURER RECOMMENDATIONS, DETAILS AND INSTALLATION INSTRUCTIONS.
3. IF CONCRETE WASH-OUT IS REQUIRED, LOCATE AS SHOWN AND INSTALL PER DETAIL E3-H OF EROSION EEL MANUFACTURER DRAWINGS (ATTACHMENT 4 OF SWPPP).
4. CONTRACTOR TO PROVIDE PROVISIONS TO LIMIT MUD FROM SITE TO TRACK ON EXISTING PLANT ROADS FROM EQUIPMENT AND TRUCK TIRES.
5. CONTRACTOR TO BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS TO EROSION CONTROL FEATURES.
6. SEE ATTACHMENT 4 OF SWPPP FOR BMP DETAILS.
7. SILT FENCE SHALL BE CLEANED AND REPAIRED WHEN SILT BUILD-UP REACHES 1/3 SILT FENCE HEIGHT.
8. CLEARING AND GRUBBING WORK SHALL COMPLY WITH TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION STANDARDS AND SPECIFICATIONS LATEST EDITION.
9. NO VEGETATION OR CONSTRUCTION DEBRIS SHALL BE BURIED ON SITE AND NO BURNING PITS SHALL BE PLACED ON SITE.
10. ALL DISTURBED AREAS WHERE ACTIVITIES ARE TEMPORARILY CEASED FOR 7 DAYS OR MORE SHALL ESTABLISH INTERIM STABILIZATION BY SEEDING, SODDING, MULCHING, COVERING OR BY OTHER EQUIVALENT EROSION CONTROL MEASURES AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED.
11. PRIOR TO ANY GRADING, STRIPPING, EXCAVATING, FILLING OR ANY OTHER DISTURBANCE OF THE NATURAL GROUND COVER, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR SHALL MAINTAIN THESE DEVICES THROUGHOUT THE DURATION OF THE PROJECT AND UNTIL PERMANENT VEGETATION IS PROPERLY ESTABLISHED.
12. STOCKPILES SHALL BE LOCATED AWAY FROM SLOPES AND TRAFFIC ROUTES AND BE TEMPORARILY SEEDED AS SOON AS POSSIBLE, NO MORE THAN 30 WORKING DAYS OR 120 CALENDAR DAYS AFTER FORMATION OF THE STOCKPILE. SILT FENCE SHALL BE PLACED APPROPRIATELY AROUND THE STOCKPILE TO CONTROL EROSION.
13. THE SITE SHALL HAVE GRADED ROADS AND ACCESS DRIVES TO PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH TO PREVENT SEDIMENT FROM BEING TRACKED ON TO PLANT AND PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC OR PLANT ROAD SHALL BE REMOVED. BULK CLEARING OF ACCUMULATED SEDIMENT SHALL BE RETURNED TO THE POINT OF LIKELY ORIGIN OR OTHER SUITABLE LOCATION BEFORE THE END OF EACH WORK DAY. CONSTRUCTION ENTRANCES SHALL BE ROCKED PRIOR TO ANY OTHER SITE WORK.
14. EROSION AND SEDIMENTATION CONTROLS AND SEEDING SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION.
15. MANUFACTURED SLOPES AND PADS SHALL BE ROUNDED VERTICALLY AND HORIZONTALLY AS APPROPRIATE TO BLEND WITH THE SURROUNDING TOPOGRAPHY.
16. THE EROSION CONTROL PLAN EXHIBITS GENERAL EROSION CONTROL LOCATIONS. ACTUAL LOCATIONS WILL DEPEND ON ACTUAL EXCAVATION OR FILL LIMITS AND DEMOLITION AND CONSTRUCTION SEQUENCING.

REVISIONS				
B	08/12/15	AMV	ISSUED FOR DCN 118448888 FOR SITE RELOCATION	
A	05/04/15	MAD	ISSUED FOR DCN 118448888 SCR REVIEW	
NO.	DATE	BY	DESCRIPTION	CKD / APP

URS

URS JOB NO. 37843015

DRAWING CHANGE AUTHORIZATION

B			DCN 118448888 RE
A			DCN 118448888 RA
NO.	Description	Drawing/Date	Change Statement & No.
Design Agt.	05/05/07		
CO. Concurrence	N/A		
CO. Dwg. No.	118448888	Design	SEC
Drawn	C	Date	1-9

Drawing Number Tree Drawing No. N/A Rev. No. B

DCN No. ESK-118448888-C-003

RELEASED FOR CONSTRUCTION
REVISION NO.
BY DATE

ENGINEER OF RECORD
NAME ALAN S. GUENTHER
NUMBER 118260

SCALE: NONE EXCEPT AS NOTED

Bottom Ash Dewatering Facility

CIVIL/STRUCTURAL
STORMWATER POLLUTION PREVENTION PLAN

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 14 | 36 | C | ESK-ASH-003 | R B

PLOT FACTOR:XX
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

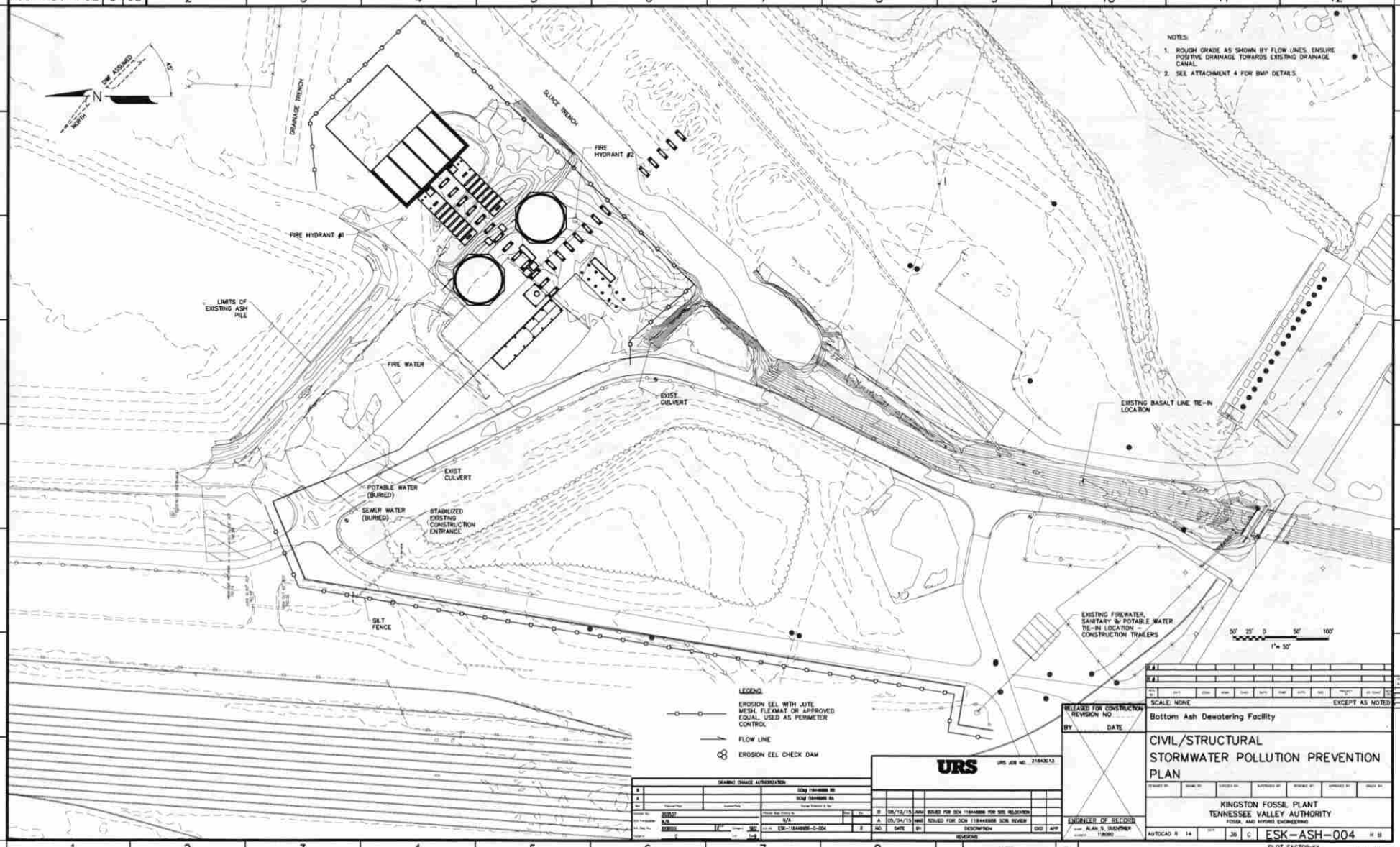
URS
TASK COMPLETED By:
REV NO. B

36 C ESK-ASH-003

36 C ESK-ASH-004

NOTES:

1. ROUGH GRADE AS SHOWN BY FLOW LINES. ENSURE POSITIVE DRAINAGE TOWARDS EXISTING DRAINAGE CANAL.
2. SEE ATTACHMENT 4 FOR BMP DETAILS.



NO.	DATE	BY	DESCRIPTION	CKD	APP
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A	05/04/15	MAG	ISSUED FOR DCN 118446886 SCRN REVIEW		

REVISIONS

URS

URS JOB NO. 31843013

DRAWING CHANGE AUTHORIZATION

DCN# 118446886 RB

DCN# 118446886 RA

Design Criteria & Rev

Drawing Type Existing Rev

N/A

Rev

Rev

ESK-118446886-C-004

B

DATE

Signature

Signature/Date

SCALE: NONE

EXCEPT AS NOTED

RELEASED FOR CONSTRUCTION REVISION NO

BY DATE

ENGINEER OF RECORD

NAME: ALAN S. SUENTHER

NUMBER: 118080

Bottom Ash Dewatering Facility

CIVIL/STRUCTURAL

STORMWATER POLLUTION PREVENTION PLAN

KINGSTON FOSSIL PLANT

TENNESSEE VALLEY AUTHORITY

FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 14

36 C ESK-ASH-004 R B

PLOT FACTOR:XX

M_TVA

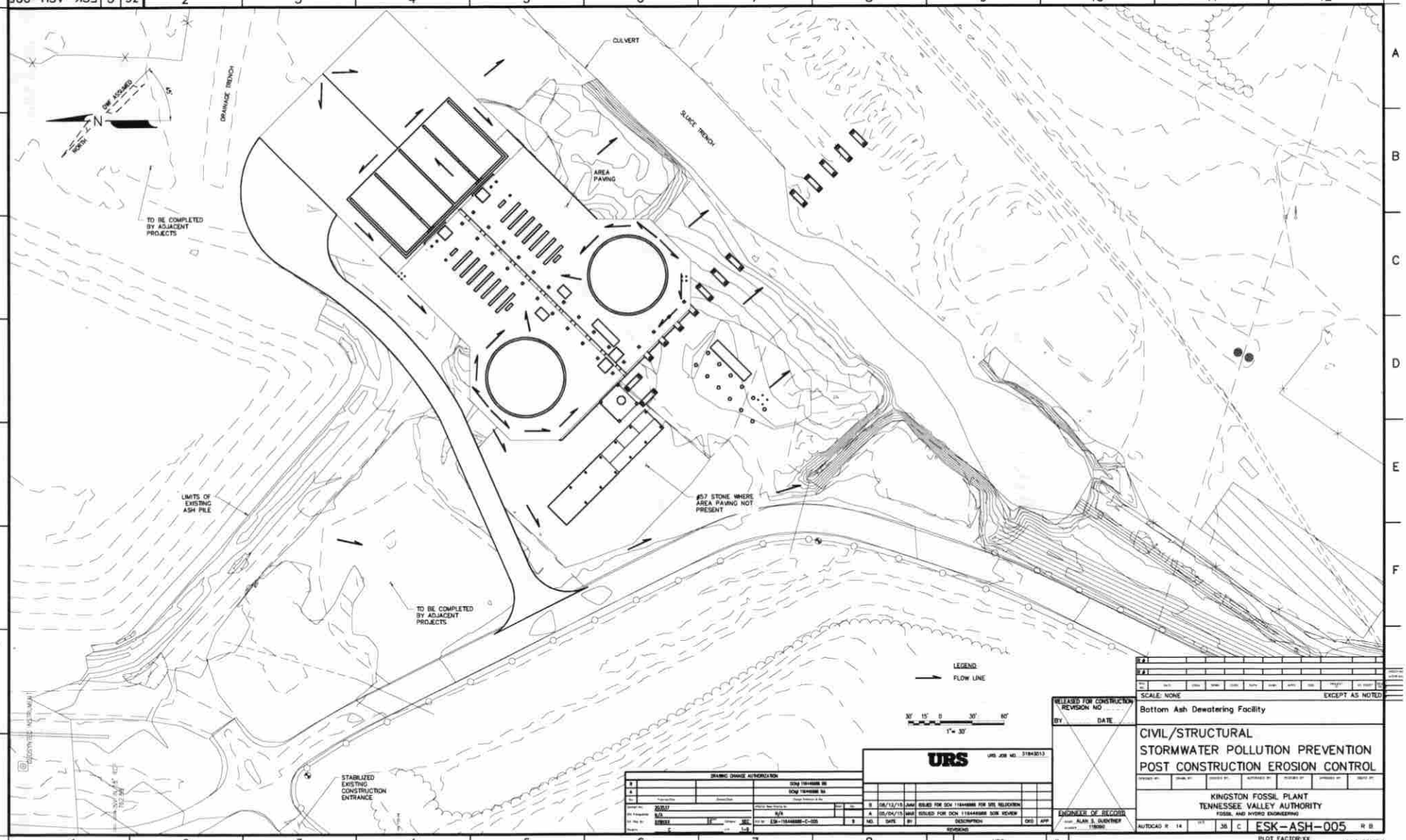
C.A.D. DRAWING DO NOT ALTER MANUALLY

URS

TASK COMPLETED BY:

B

REV NO.



0	06/12/15	JMW	ISSUED FOR DCN 118448886 FOR SITE RELOCATION		
A	05/04/15	MHR	ISSUED FOR DCN 118448886 SOIR REVIEW		
NO.	DATE	BY	DESCRIPTION	CKD	APP

REVISIONS

URS JOB NO. 31843013

URS

TASK COMPLETED BY: URS

REV NO. 0

RELEASED FOR CONSTRUCTION
REVISION NO
BY DATE

ENGINEER OF RECORD
ALAN S. GUENTHER
118090

SCALE: NONE EXCEPT AS NOTED

Bottom Ash Dewatering Facility

CIVIL/STRUCTURAL
STORMWATER POLLUTION PREVENTION
POST CONSTRUCTION EROSION CONTROL

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 14 | 36 | C | ESK-ASH-005 | R 0

PLOT FACTOR:XX
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

36 C ESK-ASH-005

Attachment 3

Storm Water Pollution Prevention Plan Contacts

TVA SWPPP SPECIALIST
CONTACT LIST

Plant Manager
Tennessee Valley Authority Kingston Fossil Plant
Doug Keeling, Plant Manger
Kingston Fossil Plant
714 Swan Pond Rd.
Harriman, TN 37748
Phone: (256) 386-3869
bdkeelin@tva.gov

Construction Manager
Tennessee Valley Authority Kingston Fossil Plant
Gary Wilford, Construction Manager
Kingston Fossil Plant
714 Swan Pond Rd.
Harriman, TN 37748
Phone: (423) 443-6561
gwilford@tva.gov

Plant Environmental Scientist
Tennessee Valley Authority Kingston Fossil Plant
Adele Dennison, Environmental Scientist
Kingston Fossil Plant
714 Swan Pond Rd.
Harriman, TN 37748
Phone:(865) 717-2157
amdennison@tva.gov

TVA SWPPP SPECIALIST
CONTACT LIST

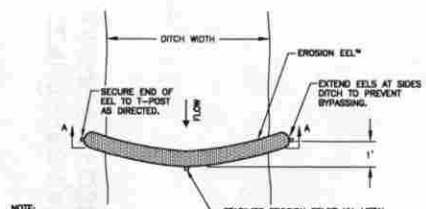
Integrated Pollution Prevention (IPP) Plan Coordinator
Tennessee Valley Authority
Brandi Ruth
1101 Market Street, 5D Lookout Place
Chattanooga, Tennessee 37402
(865) 673-2358
blruth@tva.gov

NPDES Water Specialist
Tennessee Valley Authority
Brad Love
1101 Market Street, 5D Lookout Place
Chattanooga, Tennessee 37402
(423) 751-8518
bmlove@tva.gov

Emergency 24-Hour Contact
Tennessee Valley Authority
Operations Duty Specialist:
(423) 751-1700

Attachment 4

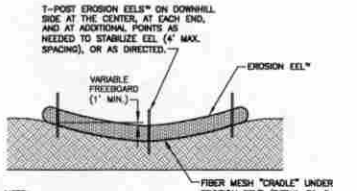
BMP Details



NOTE:
EROSION EELS™ USED FOR CHECK DAMS SHALL USE MIXTURE SPECIFICATION 1.0.

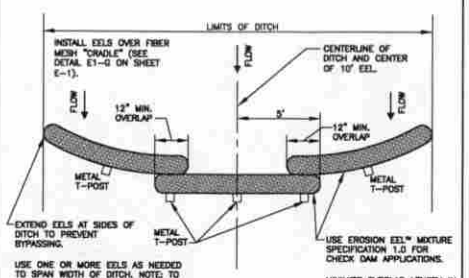
NOTE:
APPLICABLE TO SMALL WIDTH DITCHES WITH TOTAL WIDTH THAT REQUIRES ONLY ONE 10' EEL TO SPAN.

DETAIL E2-A: PLAN VIEW –
SMALL DITCH CHECKS SINGLE EEL (NO STACKING)
N.T.S.



NOTE:
APPLICABLE TO SMALL WIDTH DITCHES WITH TOTAL WIDTH THAT REQUIRES ONLY ONE 10' EEL TO SPAN.

DETAIL E2-B: SECTION – SMALL DITCH CHECKS
N.T.S.



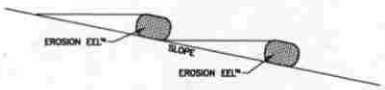
USE ONE OR MORE EELS AS NEEDED TO SPAN WIDTH OF DITCH. NOTE: TO MAXIMIZE FLOW, ARRANGE EELS IN A CURVED, ANGLED PATTERN TO MAXIMIZE EXPOSED SURFACE AREA TO FLOW.

NOTE:
APPLICABLE TO LARGE WIDTH DITCHES WHERE ONE EEL IS NOT SUFFICIENT TO SPAN LENGTH.

MINIMIZE OVERLAP LENGTH IN CHECK DAM APPLICATIONS TO MAXIMIZE FLOW-THROUGH CAPACITY.

DETAIL E2-C: PLAN VIEW –
CHECK DAM ARRANGEMENT FOR LARGER WIDTH DITCHES
N.T.S.

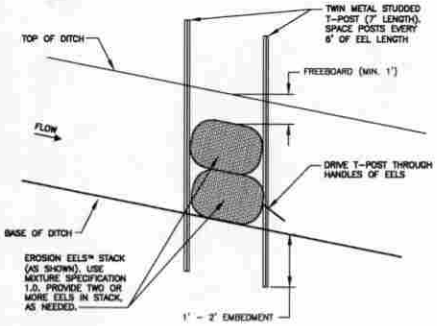
SPACING IS BASED ON DITCH SLOPE AND HEIGHT OF EEL.



DETAIL E2-D: SECTION VIEW
N.T.S.

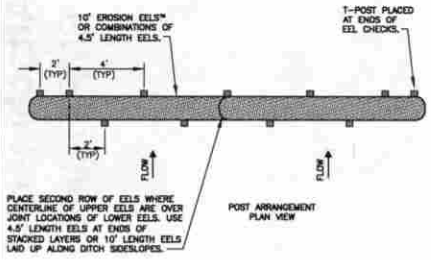
SPACING RECOMMENDATIONS FOR THE EROSION EEL™ FOR CHECK DAMS AND INTERCEPTION OF CONCENTRATED FLOWS

SLOPE(%)	SINGLE EEL SPACING(ft)	STACKED DUAL EEL SPACING(ft)
0.5	115	233
1	55	115
2	29	58
3	19	38
4	14	29
5	12	23
>=5	10	19



DETAIL E2-E: SECTION – TYPICAL DETAIL –
REINFORCED "VERTICAL STACK" CHECK DAM FOR HIGH FLOW APPLICATIONS (OPTION A)
N.T.S.

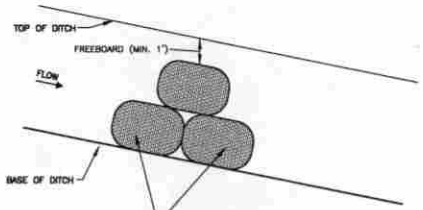
STAGGERED POST ARRANGEMENT FOR VERTICAL STACKED EEL CHECK DAM



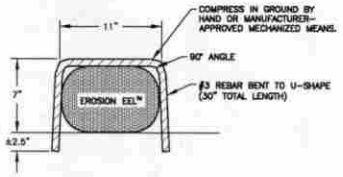
PLACE SECOND ROW OF EELS WHERE CENTERLINE OF UPPER EELS ARE OVER JOINT LOCATIONS OF LOWER EELS. USE 4.5' LENGTH EELS AT ENDS OF STACKED LAYERS OR 10' LENGTH EELS LAID UP ALONG DITCH SIDESLOPES.

POST ARRANGEMENT PLAN VIEW

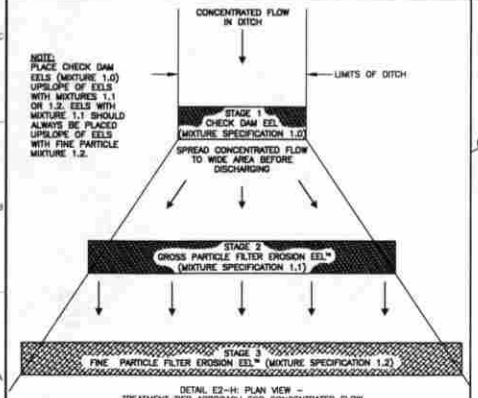
DETAIL E2-E(A): PLAN VIEW –
REINFORCED CHECK DAM FOR HIGH FLOW APPLICATIONS (OPTION A)
N.T.S.



DETAIL E2-F: SECTION – TYPICAL DETAIL – REINFORCED
CHECK DAM FOR HIGH FLOW APPLICATIONS FOR LARGER DITCHES (OPTION B)
N.T.S.

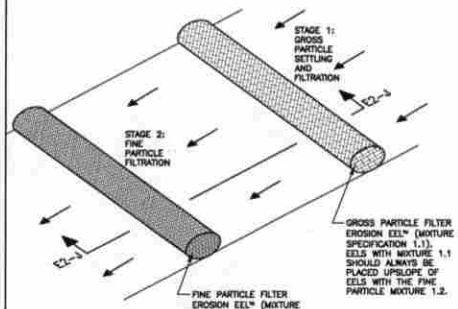


DETAIL E2-G: REBAR PIN DETAIL –
OPTIONAL/IN ADDITION TO T-POSTS
N.T.S.

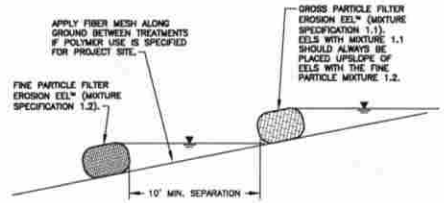


NOTE:
PLACE CHECK DAM EELS (MIXTURE 1.0) UPSLOPE OF EELS WITH MIXTURES 1.1 OR 1.2. EELS WITH MIXTURE 1.1 SHOULD ALWAYS BE PLACED UPSLOPE OF EELS WITH FINE PARTICLE MIXTURE 1.2.

DETAIL E2-H: PLAN VIEW –
TREATMENT TIER APPROACH FOR CONCENTRATED FLOW
N.T.S.



DETAIL E2-I: ISOMETRIC VIEW – TREATMENT TIER APPROACH FOR SHEET FLOW EROSION
N.T.S.



DETAIL E2-J: SECTION E2-J – TREATMENT TIER APPROACH FOR SHEET FLOW EROSION
N.T.S.

GENERAL NOTES:

1. EROSION EELS™ USED IN CHECK DAM APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.0.
   a. MIXTURE SPECIFICATION 1.0. A FILTER MIXTURE COMPRISED OF 100% SHREDDED RUBBER THAT HAS BEEN WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE MATERIAL SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 1/4 INCH.
2. EROSION EELS™ SHALL BE MANUFACTURED FROM A WOVEN GEOTEXTILE COVERING WITH INTERIOR FILTER MATERIALS SUCH AS 100% SHREDDED RUBBER (MIXTURE SPECIFICATION 1.0), 50% SHREDDED RUBBER/50% AASHTO-CERTIFIED WOOD CHIPS (MIXTURE SPECIFICATION 1.1), OR 1/3 SHREDDED RUBBER/1/3 AASHTO-CERTIFIED WOOD CHIPS/1/3 RECYCLED SYNTHETIC FIBERS (MIXTURE SPECIFICATION 1.2).
3. LENGTHS OF EROSION EELS™ SHALL BE EITHER A NOMINAL +/-10 FT. OR +/- 4.5 FT. NOMINAL DIAMETER SHALL BE +/-6.5 INCHES.
4. EROSION EELS™ CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES TO INTERCEPT RUNOFF, REDUCE FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
5. EROSION EELS™ SHALL BE INSTALLED ALONG THE GROUND CONTOUR, AT THE TOE OF SLOPES, AT AN ANGLE TO THE CONTOUR TO DIRECT FLOW AS A DIVERSION BERM, AROUND INLET STRUCTURES, IN A DITCH AS A CHECK DAM TO HELP REDUCE SUSPENDED SOLIDS LOADING AND RETAIN SEDIMENT, OR AS A CONTINUAL FILTER FOR ANY DISTURBED SOIL AREA.
6. NO TRENCHING IS REQUIRED FOR INSTALLATION OF EROSION EELS™
7. PREPARE BED FOR EEL INSTALLATION BY REMOVING ANY LARGE DEBRIS (INCLUDING ROCKS, SOIL CLODS, AND WOODY VEGETATION). EROSION EELS™ CAN ALSO BE PLACED OVER PAVED SURFACES (INCLUDING CONCRETE AND ASPHALT) WITH NO SURFACE PREPARATION REQUIRED.
8. RAKE BED AREA WITH A HAND RAKE OR BY DRAG HARROW.
9. DO NOT PLACE EEL DIRECTLY OVER RILL AND GULLIES UNTIL AREA HAS BEEN HAND-ENGRADED AND RAKED TO PROVIDE A LEVEL BEDDING SURFACE. ALL SURFACES SHALL BE UNIFORMLY COMPACTED FOR MAXIMUM SEATING OF EELS IN PLACE.
10. FOR LOCATIONS WHERE EELS WILL BE PLACED IN CONCENTRATED FLOWS (SUCH AS CHECK DAMS, INLET PROTECTION) AND FOR PERIMETER CONTROLS AT PRIMARY DISCHARGE LOCATIONS, BED THE EELS IN A JUTE MESH CRADLE PER THE DETAILED DRAWINGS.
11. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES.
12. IF MORE THAN ONE EROSION EEL™ IS PLACED IN A ROW, THE EELS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. COMPRESS THE TWO EELS OF THE OVERLAP TIGHTLY TOGETHER EITHER BY HAND OR MANUFACTURER-APPROVED MECHANIZED MEANS.
13. WHEN USED IN DITCHES AS A CHECK DAM, EROSION EELS™ SHALL BE INSTALLED PER MANUFACTURER'S DETAILS.
14. FOR CHECK DAM APPLICATIONS, EROSION EELS™ SHALL BE PLACED PERPENDICULAR TO THE FLOW OF THE WATER. EROSION EELS™ SHALL CONTINUE UP THE SIDES SLOPES A MINIMUM OF 3 FEET ABOVE THE DESIGN FLOW DEPTH.
15. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED OR UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).
16. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T-POSTS (5 TO 7 FT. LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT-DIP GALVANIZED OR COATED WITH A WEATHER-RESISTANT PAINT FOR STEEL APPLICATION. POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHEET.
17. PLACE T-POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T-POSTS ARE TO BE EMBEDDED A MINIMUM OF 2 FT INTO GROUND.

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NOTE: DRAWINGS SUBJECT TO REVISIONS AT DISCRETION OF MANUFACTURER

SHEET	OF
DWG. NO.	E-2
LAST EDIT DATE: JUNE 7, 2007	Drawn BY: LM
DWG. SCALE: N.T.S.	CHECKED BY: KGG
PROJECT NO:	KGG
QUALITY MANAGER APPROVAL:	

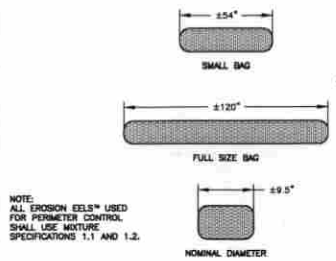
SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION

Authorized Use:
- ☐ Survey
- ☐ Design Dev.
- ☐ Permitting
- ☐ Bidding
- ☐ Construction

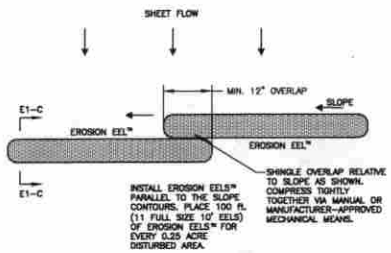
FRIENDLY ENVIRONMENT
100 PRINCE STREET
SHELBYVILLE, TENNESSEE 37160
T-931-807-5853

CHECK DAM DETAILS FOR THE EROSION EEL™

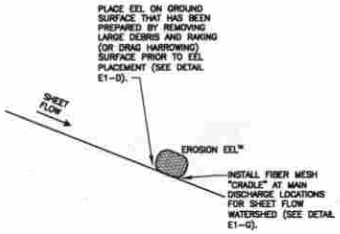


NOTE:
ALL EROSION EELS™ USED FOR PERIMETER CONTROL SHALL USE MIXTURE SPECIFICATIONS 1.1 AND 1.2.

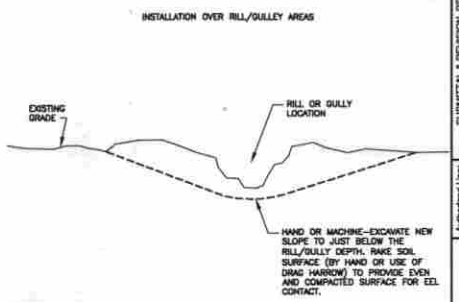
DETAIL E1–A: EROSION EELS™
N.T.S.



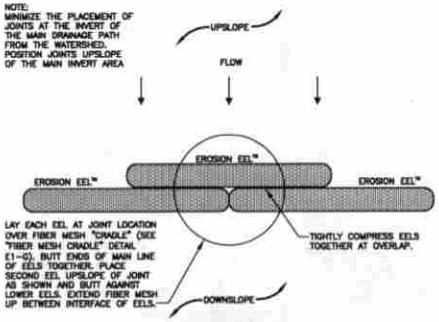
DETAIL E1–B: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH – PLAN VIEW



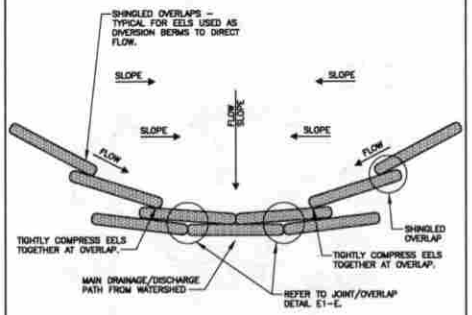
DETAIL E1–C: INTERCEPTING SHEET FLOW
PERPENDICULAR TO FLOW PATH – PLAN VIEW



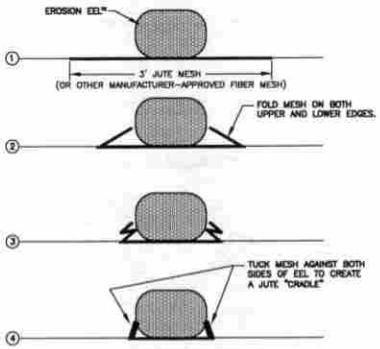
DETAIL E1–D: CROSS–SECTION VIEW
N.T.S.



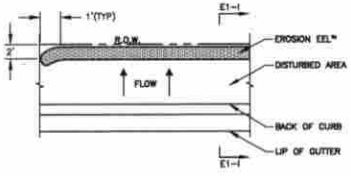
DETAIL E1–E: PLAN VIEW –
OVERLAP/JOINT DETAIL NEAR DISCHARGE POINTS FROM WATERSHED
N.T.S.



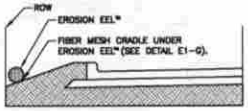
DETAIL E1–F: PLAN VIEW – TYPICAL
ARRANGEMENT OF EELS USED FOR PERIMETER CONTROL
N.T.S.



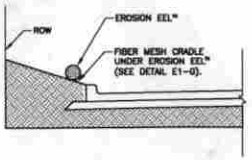
DETAIL E1–G: SECTION – FIBER MESH "CRADLE"
N.T.S.



DETAIL E1–H: EROSION EEL™
PLACED AT EDGE OF ROADWAY RIGHT–OF–WAY
N.T.S.

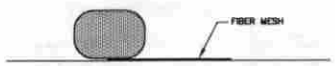


DETAIL E1–I: SECTION
N.T.S.



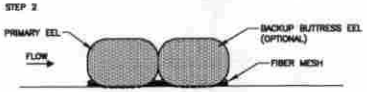
DETAIL E1–J: SECTION
N.T.S.

STEP 1



PLACE EROSION EEL™ NEAR THE INTENDED SETUP LOCATION. PLACE FIBER MESH CRADLE (DETAIL E1–G).

STEP 2



MOVE THE EEL OVER THE MESH AREA.

PLACE A SECOND EEL ADJACENT TO THE INITIAL EEL LOCATION (DOWNSLOPE) TO PROVIDE ADDITIONAL WEIGHT AS A BUTTRESS (OPTIONAL).

DETAIL E1–K: STABILIZING PROCEDURE FOR
EROSION EEL PLACED OVER HARD SURFACE (PAVED, ROCK, ETC.)
N.T.S.

Spacing Recommendations for the Erosion Eel ™ for Perimeter Controls and Interceptor Sheet Flow on Slopes

	*Stacked	
	single eel	Double eel
Slope(%)	spacing (ft)	spacing (ft)
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]
10	[illegible]	[illegible]
15	[illegible]	[illegible]
20	[illegible]	[illegible]
25	[illegible]	[illegible]
30	[illegible]	[illegible]

* DUAL STACK REFERS TO TWO EELS STACKED ATOP ONE ANOTHER AND STABILIZED WITH T–POSTS. SEE DETAIL E2–E ON SHEET E–2.

GENERAL NOTES:

1. EROSION EELS™ USED IN PERIMETER CONTROL APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.1 OR 1.2.

a. MIXTURE SPECIFICATION 1.1. A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MUST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/– 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9–03.

b. MIXTURE SPECIFICATION 1.2. A FILTER MIXTURE COMPRISED OF 1/3 SHREDDED RUBBER, 1/3 WOOD CHIPS, AND 1/3 RECYCLED SYNTHETIC FIBERS. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MUST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/– 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION MP 9–03. THE SYNTHETIC FIBERS SHALL BE PRODUCED FROM RECYCLED, MANUFACTURED MATERIALS, SUCH AS, BUT NOT LIMITED TO, PRE–CONSUMER RONAP CARPET, TIRE CORDS, AND TIRE FIBER MATERIALS.

2. EROSION EELS™ SHALL BE MANUFACTURED FROM A WOVEN GEOTEXTILE COVERING WITH INTERIOR FILTER MATERIALS SUCH AS 100% SHREDDED RUBBER (MIXTURE SPECIFICATION 1.0), 50% SHREDDED RUBBER/50% AASHTO–CERTIFIED WOOD CHIPS (MIXTURE SPECIFICATION 1.1), OR 1/3 SHREDDED RUBBER/1/3 AASHTO–CERTIFIED WOOD CHIPS/1/3 RECYCLED SYNTHETIC FIBERS (MIXTURE SPECIFICATION 1.2).

3. LENGTHS OF EROSION EELS™ SHALL BE EITHER A NOMINAL +/–10 FT. OR +/– 4.5 FT. NOMINAL DIAMETER SHALL BE +/–9.5 INCHES.

4. EROSION EELS™ CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES TO INTERCEPT RUNOFF, REDUCE FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROMOTE REMOVAL OF SEDIMENT FROM THE RUNOFF.

5. EROSION EELS™ SHALL BE INSTALLED ALONG THE GROUND CONTOUR AT THE TOE OF SLOPES, AT AN ANGLE TO THE CONTOUR TO DIRECT FLOW AS A DIVERSION BERM, AROUND INLET STRUCTURES, AS A DITCH AS A CHECK DAM TO HELP REDUCE SUSPENDED SOLIDS LOADING AND RETAIN SEDIMENT, OR AS A GENERAL FILTER FOR ANY DISTURBED SOIL AREA.

6. NO TRENCHING IS REQUIRED FOR INSTALLATION OF EROSION EELS™

7. PREPARE BED FOR EEL INSTALLATION BY REMOVING ANY LARGE DEBRIS INCLUDING ROCKS, SOIL CLODS, AND WOODY VEGETATION. EROSION EELS™ CAN ALSO BE PLACED OVER PAVED SURFACES INCLUDING CONCRETE AND ASPHALT WITH NO SURFACE PREPARATION REQUIRED.

8. RAKE BED AREA WITH A HAND RAKE OR BY DRAG HARROW.

9. DO NOT PLACE EEL DIRECTLY OVER RILL AND GULLEY UNITS. AREA HAS BEEN HAND–EXCAVATED AND RAKED TO PROVIDE A LEVEL BEDDING SURFACE. ALL SURFACES SHALL BE UNIFORMLY COMPACTED FOR MAXIMUM SEATING OF EELS IN PLACE.

10. FOR LOCATIONS WHERE EELS WILL BE PLACED IN CONCENTRATED FLOWS (SUCH AS CHECK DAMS, INLET PROTECTORS) AND FOR PERIMETER CONTROLS AT PRIMARY DISCHARGE LOCATIONS, BIND THE EELS IN A JUTE MESH CRADLE PER THE DETAILED DRAWINGS.

11. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES.

12. IF MORE THAN ONE EROSION EELS™ IS PLACED IN A ROW, THE EELS SHALL BE ENDLAPPED A MINIMUM OF 12 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. COMPRESS THE TWO EELS OF THE OVERLAP TIGHTLY TOGETHER EITHER BY HAND OR MANUFACTURER–APPROVED MECHANICAL MEANS.

13. WHEN USED IN DITCHES AS A CHECK DAM, EROSION EELS™ SHALL BE INSTALLED PER MANUFACTURER'S DETAILS.

14. FOR CHECK DAM APPLICATIONS, EROSION EELS™ SHALL BE PLACED PERPENDICULAR TO THE FLOW OF THE WATER. EROSION EELS™ SHALL CONTINUE UP THE SIDES SLOPES A MINIMUM OF 2 FEET ABOVE THE DESIGN FLOW DEPTH.

15. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED OR UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).

16. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T–POSTS OF 5 TO 7 FT. (LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT–DIP GALVANIZED OR COATED WITH A WEATHER–RESISTANT PAINT FOR STEEL APPLICATION. POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHEET.

17. PLACE T–POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T–POSTS ARE TO BE EMBEDDED A MINIMUM OF 2 FT INTO GROUND.

SUBMITTAL & REVISION RECORD

NO.	DATE	DESCRIPTION
1		
2		
3		
4		

Authorized Uses:
☐ Survey
☐ Design/Dev.
☐ Permitting
☐ Bidding
☐ Construction
☐ .

FRIENDLY ENVIRONMENT
100 PRINCE STREET
SHELBYVILLE, TENNESSEE 37160
1–931–607–5553

PERIMETER CONTROL AND SHEET (INTER-RILL) FLOW INTERCEPTION FOR THE EROSION EEL™

DENNY HASTINGS AND FRIENDLY ENVIRONMENT
NOTE: DRAWINGS SUBJECT TO REVISIONS AT DISCRETION OF MANUFACTURER

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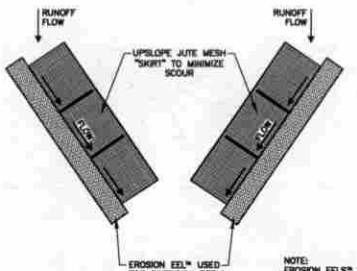
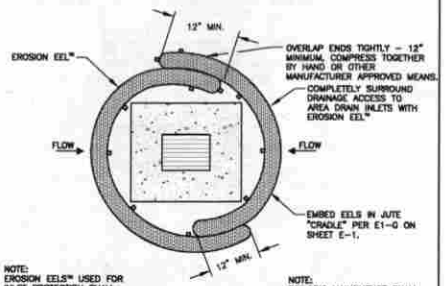
SHEET NO.	OF	1ST ISSUE DATE: JUNE 7, 2007	DRAWN BY: LM
DWG NO.	E-1	DWG SCALE: N.T.S.	CHECKED BY: KAH
		PROJECT NO.	
		CLIENT APPROVAL APPROVAL	



NOTE:
EROSION EELS™ USED AS DIVERSION BERMS SHALL CONSIST OF MIXTURE SPECIFICATION 1.0.

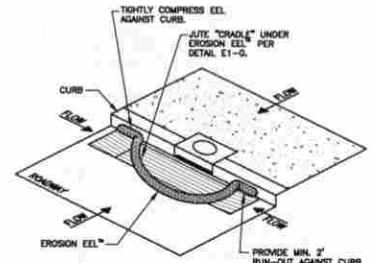
DETAIL E3-A: PLAN VIEW – EELS USED AS DIVERSION BERMS
N.T.S.



NOTE:
EROSION EELS™ USED FOR INLET PROTECTION SHALL CONSIST OF EITHER MIXTURE SPECIFICATION 1.0 OR 1.1, PER ENGINEER'S RECOMMENDATIONS.

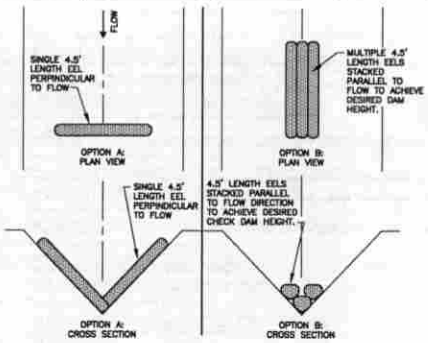
NOTE:
PERIODIC MAINTENENCE SHALL INCLUDE CLEANING EEL SURFACE WITH HIGH PRESSURE WASH OR BRUSHING SURFACE WITH BROOM.

DETAIL E3-B: INLET SEDIMENT TRAP
N.T.S.

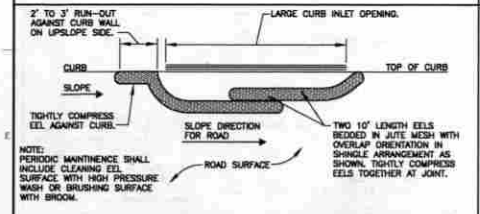


NOTE:
PERIODIC MAINTENENCE SHALL INCLUDE CLEANING EEL SURFACE WITH HIGH PRESSURE WASH OR BRUSHING SURFACE WITH BROOM.

ISOMETRIC DETAIL E3-C: SMALL CURB INLET SEDIMENT TRAP
N.T.S.

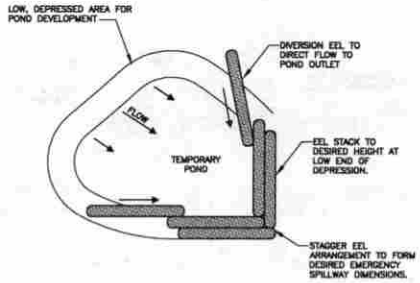


DETAIL E3-D: CHECK DAMS FOR SWALLOW AND NARROW V-DITCHES
N.T.S.



NOTE:
PERIODIC MAINTENENCE SHALL INCLUDE CLEANING EEL SURFACE WITH HIGH PRESSURE WASH OR BRUSHING SURFACE WITH BROOM.

DETAIL E3-E: PLAN VIEW – LARGE CURB INLET
N.T.S.



DETAIL E3-F: PLAN VIEW – TEMPORARY DETENTION POND
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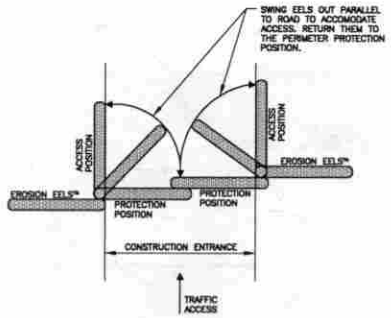
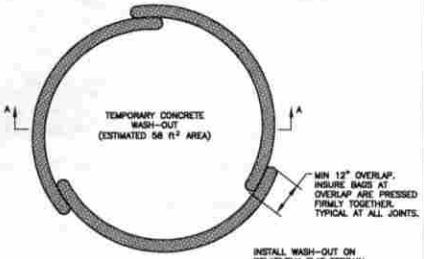
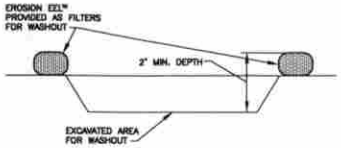


DETAIL E3-G: PLAN VIEW – TEMPORARY CONSTRUCTION ACCESS
N.T.S.

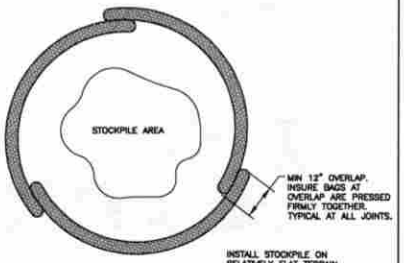


INSTALL WASH-OUT ON RELATIVELY FLAT TERRAIN. PLACE THREE EROSION EELS™ IN CIRCULAR PATTERN AS SHOWN WITH OVERLAPS. PROVIDE MORE EELS TO BROADEN CIRCUMFERENCE FOR LARGER WASHOUTS, IF DESIRED.

DETAIL E3-H: PLAN VIEW – TEMPORARY CONCRETE WASH-OUT
N.T.S.

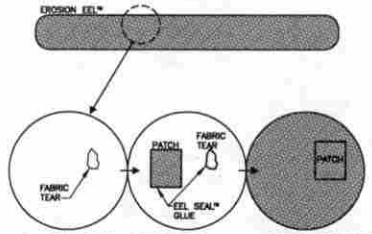


SECTION A FOR DETAIL E3-H: TEMPORARY CONCRETE WASHOUT
N.T.S.



INSTALL STOCKPILE ON RELATIVELY FLAT TERRAIN. PLACE THREE EROSION EELS™ IN CIRCULAR PATTERN AS SHOWN WITH OVERLAPS. PROVIDE MORE EELS TO BROADEN CIRCUMFERENCE FOR LARGER STOCKPILES, IF DESIRED.

DETAIL E3-I: PLAN VIEW – TEMPORARY STOCKPILE AREAS
N.T.S.



STEP 1 – ACQUIRE PATCH REPAIR KIT FROM MANUFACTURER. BRUSH CLEAN AREA OF GEOTEXTILE IMMEDIATELY AROUND TORN FABRIC.

STEP 2 – TAKE MANUFACTURER-PROVIDED FABRIC PATCH PIECE AND PLACE EEL SEAL™ GLUE ON EDGES OF THE PATCH. IN ADDITION, PLACE EEL SEAL™ GLUE ON EDGE OF TEAR LOCATION ON THE EEL BAG ITSELF.

STEP 3 – PLACE PATCH OVER TEAR LOCATION AND PROVIDE PRESSURE PER THE INSTRUCTIONS PROVIDED IN THE PATCH REPAIR KIT.

DETAIL E3-J: GEOTEXTILE REPAIR/PATCHING
N.T.S.

GENERAL NOTES

1. EROSION EELS™ USED IN INLET PROTECTION AND CONCRETE WASHOUT APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.0 (FOR HIGH FLOW APPLICATIONS WHERE ANNUAL FUNDING IS DEEMED) OR 1.1.
   a. MIXTURE SPECIFICATION 1.0: A FILTER MIXTURE COMPRISED OF 100% SHREDDED RUBBER THAT HAS BEEN WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE MATERIAL SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 1 INCH.
   b. MIXTURE SPECIFICATION 1.1: A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 1/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFORM TO AASHTO CERTIFICATION SPECIFICATION M P-02
2. EROSION EELS™ USED IN DIVERSION BERM APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.0.
3. CONSULT WITH THE MANUFACTURER'S REPRESENTATIVE FOR EEL MIXTURE TYPES REQUIRED FOR SPECIFIC POND APPLICATIONS.
4. EROSION EELS™ SHALL BE MANUFACTURED FROM A WOVEN GEOTEXTILE CONTAINING WITH INTERIOR FILTER MATERIALS SUCH AS 100% SHREDDED RUBBER (MIXTURE SPECIFICATION 1.0), 50% SHREDDED RUBBER/50% AASHTO-CERTIFIED WOOD CHIPS (MIXTURE SPECIFICATION 1.1), OR 1/3 SHREDDED RUBBER/1/3 AASHTO-CERTIFIED WOOD CHIPS/1/3 RECYCLED SYNTHETIC FIBERS (MIXTURE SPECIFICATION 1.2).
5. LENGTHS OF EROSION EELS™ SHALL BE EITHER A NOMINAL +/-10 FT. OR +/- 4.5 FT. NOMINAL DIAMETER SHALL BE +/-6.5 INCHES.
6. EROSION EELS™ CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES TO INTERCEPT RUNOFF, REDUCE FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
7. EROSION EELS™ SHALL BE INSTALLED ALONG THE GROUND CONTOUR, AT THE TOE OF SLOPES, AT AN ANGLE TO THE CONTOUR TO DIRECT FLOW (IN A DIVERSION BERM), AROUND INLET STRUCTURES, IN A DITCH AS A CHECK DAM TO HELP REDUCE SUSPENDED SOLIDS LOADING AND NOTCH SEDIMENT, OR AS A GENERAL FILTER FOR ANY DISTURBED SOIL AREA.
8. NO TRENCHING IS REQUIRED FOR INSTALLATION OF EROSION EELS™
9. PROTECT EELS FOR EEL INSTALLATIONS IN WORKING AREAS AND AREAS INCLUDING ROCKS, SOIL CLODS AND WOODY VEGETATION. EROSION EELS™ CAN ALSO BE PLACED OVER HARD SURFACES INCLUDING CONCRETE, ASPHALT AND ASPHALT WITH NO BLEEDING PREFERRED REQUIRED.
10. ANKE BED AREA WITH A HARD RAKE OR BY GRAV HAMMER.
11. DO NOT PLACE EEL DIRECTLY OVER FILL AND ROLLED UNTIL AREA HAS BEEN HARD-COMPACTED AND RAKED TO PROVIDE A LEVEL BEDDING SURFACE. ALL SURFACES SHALL BE UNIFORMLY COMPACTED FOR MAXIMUM BURYING OF EELS IN PLACE.
12. FOR LOCKDOWN WHERE EELS WILL BE PLACED IN CONCENTRATED FLOWS (SUCH AS CHECK DAMS, INLET PROTECTION) AND FOR PERIMETER CONTROLS AT PRIMARY DISCHARGE LOCKDOWN, BED THE EELS IN A JUTE MESH CRADLE PER THE DETAILED DRAWINGS.
13. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES.
14. IF MORE THAN ONE EROSION EELS™ IS PLACED IN A ROW, THE EELS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. COMPRESS THE TWO EELS OF THE OVERLAP TIGHTLY TOGETHER EITHER BY HAND OR MANUFACTURER-APPROVED MECHANIZED MEANS.
15. WHEN USED IN DITCHES AS A CHECK DAM, EROSION EELS™ SHALL BE INSTALLED PER MANUFACTURER'S DETAILS.
16. FOR CHECK DAM APPLICATIONS, EROSION EELS™ SHALL BE PLACED PERPENDICULAR TO THE FLOW OF THE WATER. EROSION EELS™ SHALL CONTAINE UP THE BEED SLOPES A MINIMUM OF 3 FEET ABOVE THE DESIGN FLOW DEPTH.
17. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED ON UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).
18. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T-POSTS (5 TO 7 FT LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT-DIP GALVANIZED OR COATED WITH A WEATHER-RESISTANT PAINT FOR STEEL APPLICATIONS. POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHEET.
19. PLACE T-POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T-POSTS ARE TO BE EMBEDDED A MINIMUM OF 2 FT INTO GROUND.

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NOTE: DRAWINGS SUBJECT TO REVISIONS AT DISCRETION OF MANUFACTURER

SHEET	OF	
DWG NO.	E-3	
DATE ISSUE (DATE)	JUNE 7 2007	DRAWN BY: LM
DWG SCALE:	N.T.S.	CHECKED BY: KSW
PROJECT NO		KSW
QUALITY MANAGER APPROVAL		KSW

Authorized Use:
- ☐ Survey
- ☐ Design Dev.
- ☐ Permitting
- ☐ Bidding
- ☐ Construction

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
A		
A		
A		

FRIENDLY ENVIRONMENT
100 PRINCE STREET
SHELBYVILLE, TENNESSEE 37160
1-931-607-3953

DIVERSION BERM, INLET PROTECTION, PONDS, AND CONCRETE WASHOUT DETAILS FOR THE EROSION EEL™

Construction Exit - CE

DEFINITION

A stone-stabilized pad located at any point where traffic will be leaving a construction site to a public roadway.

PURPOSE

To reduce or eliminate the transport of material from the construction area onto a public roadway.

CONDITIONS

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

DESIGN CRITERIA

Formal design is not required. A typical construction exit is shown in Figure 1. The following standards should be used:

Aggregate Size: Stone should be in accordance with TDOT #1 or #2 stone specifications (1.5 to 3.5 inch stone), washed, and well graded. Refer to specification **Riprap – RR** for aggregate size tables.

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

Pad Length and Width: At a minimum, the width should equal full width of all points of vehicular egress, but not less than 20 feet wide. Pad length should be no less than 50 feet.

Washing: If the action of the vehicle traveling over the gravel pad does not sufficiently remove the material, the tires should be washed prior to exit onto public roadways. When washing is required, the wash rack should be designed for the anticipated traffic loads and placed on level ground, on a pad of coarse aggregate (such as TDOT #57). A typical wash rack is shown in Figure 2. The wash rack design may consist of other materials suitable for truck traffic that remove mud and dirt. The wash rack should have provisions that intercept the sediment-laden runoff and direct it into a sediment trap or sediment basin.

Location: The exit should be located wherever traffic will be leaving a construction site directly onto a public roadway.

CONSTRUCTION SPECIFICATIONS

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

Waterbar Diversion: On sites where the grade toward the public roadway is greater than 2%, a waterbar diversion 6 to 8 inches high with 3:l side slopes should be constructed across the foundation of the construction exit to prevent storm water runoff from leaving the site. Refer to specification **Diversion – DI**. Diverted runoff should be directed into a sediment trap or sediment basin. Refer to specification **Sediment Trap – ST** or **Sediment Basin – SB**.

Geotextile: The geotextile under-liner must be placed the full length and width of the exit. Refer to specification **Geotextile – GE**.

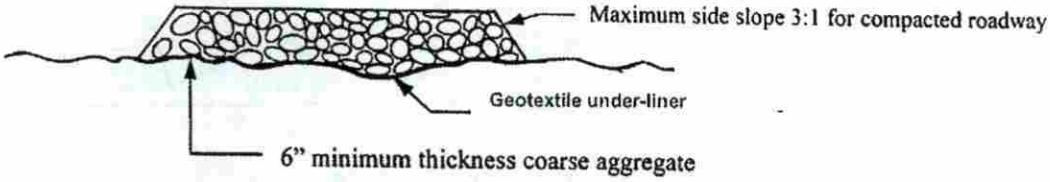
INSPECTIONS

Inspections of construction exit should be made at the end of each shift or workday.

MAINTENANCE

The exit should be maintained in a condition that will prevent tracking or flow of material onto public rights-of-way. This may require periodic top dressing with fresh stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

Construction Exit



SECTION A-A

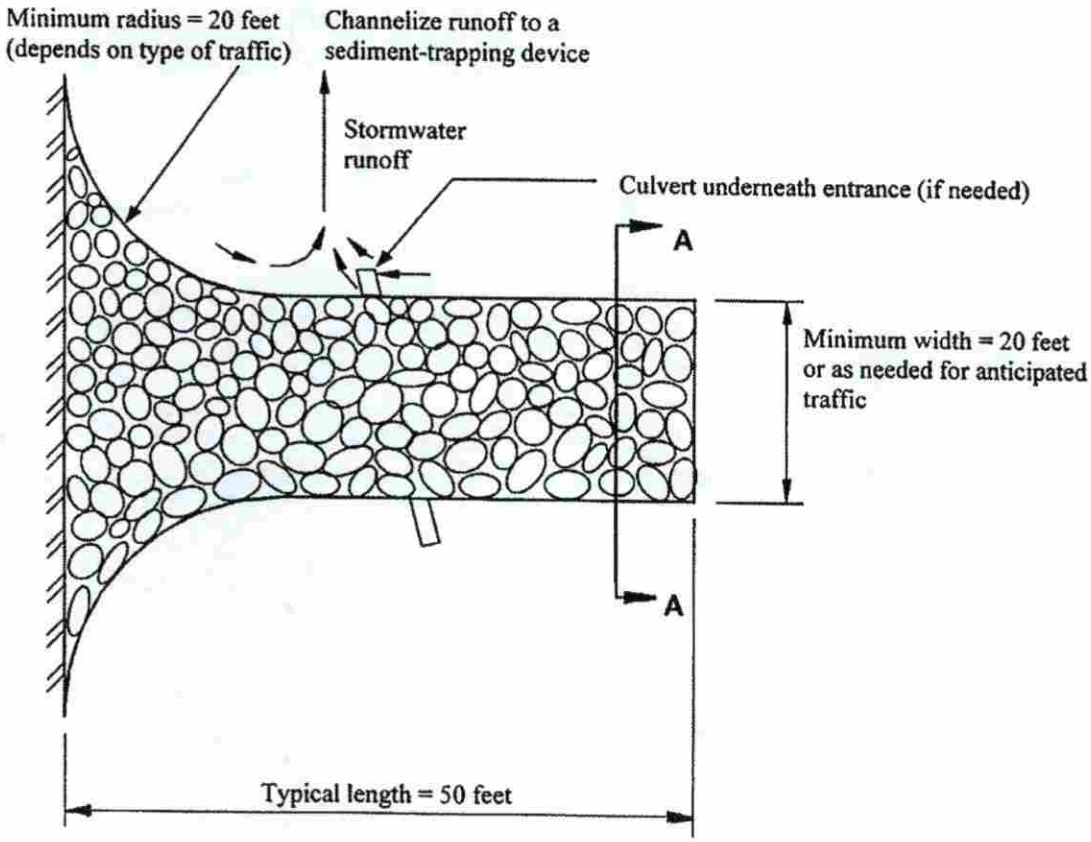
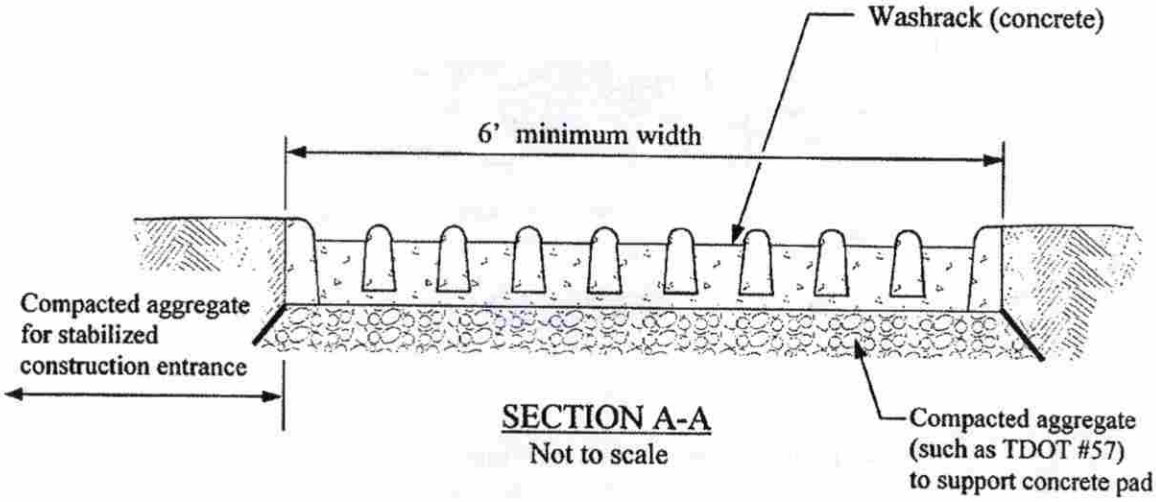
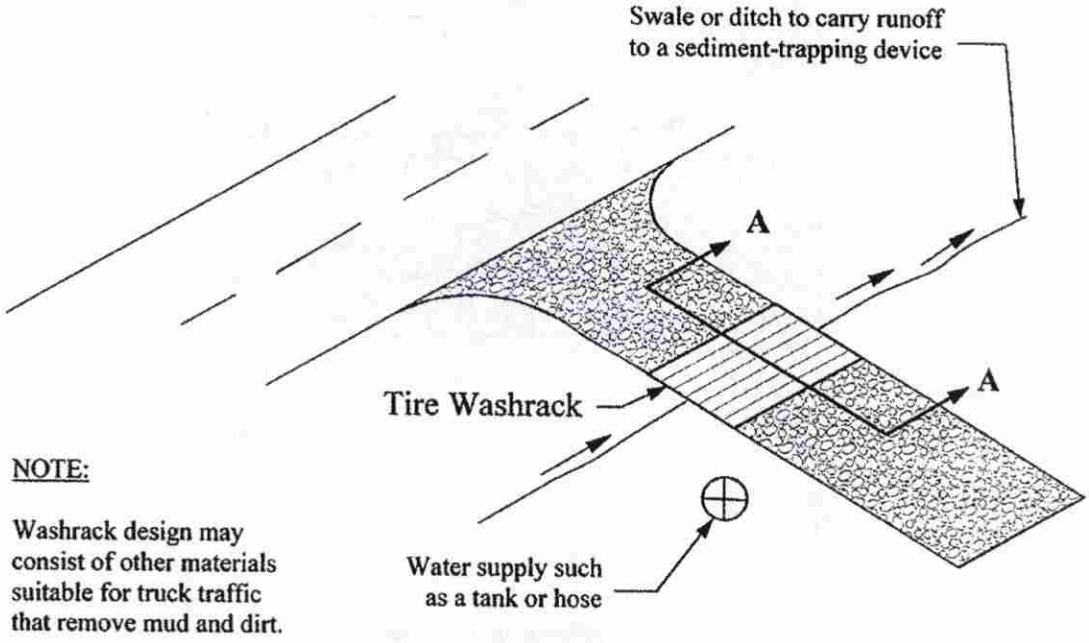


Figure 1

Source: Knoxville Engineering Department

Typical Washrack for Construction Exit





NOTE:

Washrack design may consist of other materials suitable for truck traffic that remove mud and dirt.

Figure 2

Source: Knoxville Engineering Department

Disturbed Area Stabilization (With Permanent Vegetation) – PS

DEFINITION

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

PURPOSE

- To reduce storm water runoff velocity
- To maintain sheet flow
- To protect the soil surface from erosion
- To promote infiltration of runoff into the soil
- To improve wildlife habitat
- To improve aesthetics

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, and other denuded areas that will not be regraded. Permanent stabilization should be applied where topsoil was never stripped, or has been returned and incorporated into the soil surface.

PLANNING CONSIDERATIONS

1. When stripping a site, topsoil should be stockpiled for later use.
2. Stockpiled topsoil should be stabilized using temporary vegetation. Refer to specification **Disturbed Area Stabilization (With Temporary Vegetation) - TS.**
3. Where a suitable planting medium is not present, topsoil shall be imported and incorporated into the site.
4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to specification **Disturbed Area Stabilization (With Sod) - SO.**
5. When mixed plantings are done during marginal planting periods, companion crops shall be used.
6. No-till planting can be effective when planting is done following a summer or winter annual cover crop.
7. Irrigation should be used when the soil is dry or when summer plantings are done.

8. Low maintenance plants, as well as native species, should be used to ensure long-lasting erosion control.
9. Wildlife plantings should be included when applicable.

Wildlife Plantings: Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees: Beech, Black Cherry, Blackgum, Chestnut, Oak, Hackberry, Hickory, Locust, and Persimmon.

Trees that produce nuts or fruits are favored by many game species.

Shrubs and Small Trees: Bayberry, Bicolor Lespedeza, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Rhododendron, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry. Plant shrubs in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for lespedeza, which produces seeds used by quail and songbirds.

CONSTRUCTION SPECIFICATIONS

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

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

Concentrations of water that could cause excessive soil erosion should be diverted to a safe outlet. Diversions and other treatment practices must conform to the appropriate standards and specifications set out in this handbook.

Plant Selection: Refer to Table 1 for suggested species. Plants should be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user.

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

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

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

(PLS = % germination x % purity)

EXAMPLE: Common bermuda seed

70% germination, *80%* purity
PLS = *70%* germination x 80% purity
PLS = 56%

The percent of PLS determines the amount of seed needed. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:

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

An application of 17.9 lbs/acre will provide 10 lbs/acre of pure live seed.

Permanent Cover Seeding Mixtures

Seeding Dates	Grass Seed	Percentages
February 1 to July 1	Kentucky 31 Fescue	80%
	Korean Lespedeza	15%
	English Rye	5%
June 1 to August 15	Kentucky 31 Fescue	55%
	English Rye	20%
	Korean Lespedeza	15%
	German Millet	10%
April 15 to August 15	Bermudagrass (hulled)	70%
	Annual Lespedeza	30%
August 1 to December 1	Kentucky 31 Fescue	70%
	English Rye	20%
	White Clover	10%
February 1 to December 1	Kentucky 31 Fescue	70%
	Crown Vetch	25%
	English Rye	5%

Source: TDOT Standard Specifications

Table 1

Topsoil: Topsoil should be friable and loamy, free of debris, objectionable weeds and stones, and contain no toxic substances that may be harmful to plant growth. When replacing topsoil on disturbed areas, maintain needed erosion and sediment control practices such as diversions, berms, sediment basins, etc. Grades containing these structures should be maintained after the topsoil is applied.

Topsoil should be handled only when it is dry enough to work without damaging soil structure. A uniform application of 5 inches (unsettled) is recommended, but may be adjusted at the discretion of the engineer or landscape architect. See Table 2 for additional information about the volume of topsoil to achieve various depths.

Seedbed Preparation: When conventional seeding is to be used, topsoil should be applied to any area where the disturbance results in subsoil being the final grade surface.

Broadcast plantings

1. Seedbed preparation may not be required where hydraulic seeding equipment is to be used.
2. Tillage, at a minimum, shall adequately loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate topsoil, lime, and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a crimper is to be used.
3. Tillage may be done with any suitable equipment.
4. Tillage should be done parallel to the contour where feasible.
5. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide consecutive beds, 6 to 8 inches apart, in which seed may

lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
3. Where pine seedlings are to be planted, use a subsoiler under the row to a depth of 36 inches on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.
4. Trees should not be planted in power line right-of-ways or under power lines.

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

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

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

Cubic Yards of Topsoil Required to Attain Various Soil Depths

Depth (Inches)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806

Table 2

PLANTING

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

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

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

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

Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at

the nursery. The tips of vines and sprigs must be at or slightly above the ground surface.

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

APPLYING MULCH

Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% soil cover. Select the mulching material from the following and apply as indicated:

1. When using temporary erosion control blankets or block sod, mulch is not required.
2. Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 l/2 tons per acre. *Sericea lespedeza* hay containing mature seed shall be applied at a rate of three tons per acre.
3. Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower type spreading equipment, other spreading equipment or by hand.
4. Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
5. One thousand pounds per acre of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes ¾:1 or steeper.
6. Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to aid in uniform application during seeding.

ANCHORING MULCH

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

1. Emulsified asphalt can be (a) sprayed uniformly onto the mulch as it is ejected from the blower machine or (b) sprayed on the mulch immediately following mulch application when straw or hay is spread by methods other than special blower equipment. The combination of asphalt emulsion and water shall consist of a homogeneous mixture satisfactory for spraying. The mixture shall consist of 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Care shall be taken at all times to protect state waters, the public, adjacent property, pavements, curbs, sidewalks, and all other structures from asphalt discoloration.
2. Hay and straw mulch may be pressed into the soil immediately after the mulch is spread. A special "crimper" or disk harrow with the disks set straight may be used. Serrated disks are preferred, and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
3. Synthetic tackifiers or binders may be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers should be mixed and applied according to manufacturer's specifications. Refer to specification **Tackifiers and Binders - TB**.

BEDDING MATERIAL

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

Material	Depth
Grain straw	4" to 6"
Grass Hay	4" to 6"

Pine needles	3" to 5"
Wood waste	4" to 6"

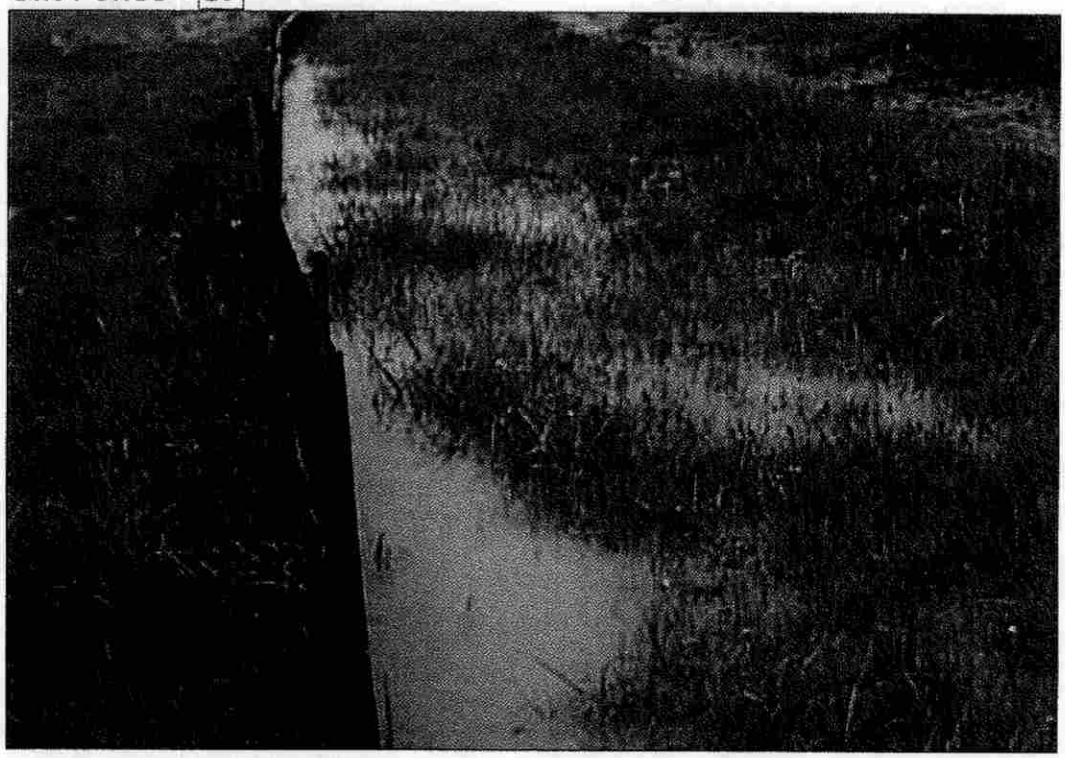
IRRIGATION

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

MAINTENANCE

Inspection of the seeding and mulch application should be performed along with other regularly scheduled erosion and sediment control inspections. Any areas that have washed out due to high storm water flows, areas that have been disturbed by blowing wind, and areas that do not show good germination should be retreated. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, but in no case more than seven days after the need is identified.

Silt Fence - SF



DEFINITION

A silt fence is a temporary sediment barrier made of woven, synthetic filtration fabric supported by steel or wood posts.

PURPOSE

The purpose of a silt fence is to prevent sediment carried by sheet flow from leaving the site and entering natural drainage ways or storm drainage systems by slowing storm water runoff and causing the deposition of sediment at the structure. Silt fencing encourages sheet flow and reduces the potential for development of rills and gullies.

CONDITIONS

Silt fence should be installed where sheet flow runoff can be stored behind the barrier without damaging the barrier or the submerged area behind the barrier.

Silt fence should not be installed across streams, ditches, waterways, or other concentrated flow areas.

DESIGN CRITERIA

All silt fence should be installed along the contour, never up or down a slope.

Where all sheet flow runoff is to be stored behind the fence (where no storm water disposal system is present), maximum slope length behind a silt fence should not exceed those shown in Table 1. **The drainage area should not exceed l/4 acre for every 100 feet of silt fence.**

Criteria for Silt Fence Placement

Land Slope (percent)	Maximum Slope Length Above Fence (feet)
<2	100
2 to 5	75
5 to 10	50
10 to 20	25
>20*	15
* In areas where the slope is greater than 20 %, a flat area length of 10 feet between the toe of the slope and the fence should be provided	

Table 1

Source: GA SWCC

Type A Silt Fence - SF-A: This 36-inch wide filter fabric should be used on developments where the life of the project is six months or greater. See Figure 1.

Type B Silt Fence - SF-B: Though only 22-inches wide, this filter fabric allows the same flow rate as Type A silt fence. Type B silt fence should be limited to use on minor projects, such as residential home sites or small commercial developments where permanent stabilization will be achieved in less than six months. See Figure 2.

Type C Silt Fence - SF-C: Type C fence is 36-inches wide with wire reinforcement. The wire reinforcement is necessary because this fabric allows almost three times the flow rate as Type A silt fence. Type C silt fence should be used where runoff flows or velocities are particularly high or where slopes exceed a vertical height of 10 feet. See Figure 3.

Along stream buffers and other sensitive areas, two rows of Type C silt fence may be used.

Table 2 contains specific information concerning specification requirements for all three types of material.

CONSTRUCTION SPECIFICATIONS

Silt fence should be placed on the contour. On slopes with grades greater than 7%, the silt fence should be located at least 5 to 7 feet beyond the base. Turn the ends of the silt fence upslope so that a certain depth of storm water may be retained in front of the silt fence. The impounded depth should be at least 12 inches, but no more than the height of the silt fence. Hay or straw bales should be staked in place at the end of the row of silt fence as an emergency overflow. This will allow detained water, exceeding the capacity of the silt fence, to be filtered and released quickly (see Figure 4). **The bottom edge of silt fence must be entrenched and backfilled to be effective.**

The silt fence should be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter cloth should be spliced together only at a supporting post, with a minimum 6-inch overlap, and securely sealed. See Figure 5 for splicing requirements.

Post installation should start at the center of the low-point (if applicable) with remaining posts spaced 6 feet apart for Type A and B silt fences and 4 feet apart for Type C silt fence. While Type A and B silt fences can be used with both wood and steel posts, only steel posts should be used with Type C silt fence due to the flow capacity of the fabric. See Table 3, for post size and fasteners requirements. See Figure 6 for fastener placement.

INSPECTION

Inspect silt fence before anticipated storm events (or series of storm events such as intermittent showers over one or more days) and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Where sites have been finally or temporarily stabilized, such inspections may be conducted only once per month.

MAINTENANCE

Sediment should be removed once it has accumulated to one-half the original height of the barrier. Filter fabric should be replaced whenever it has deteriorated to such an extent that the effectiveness of the fabric is reduced (approximately six months). Silt fence should remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the fence should be removed and properly disposed of before the fence is removed.

Silt Fence Specifications

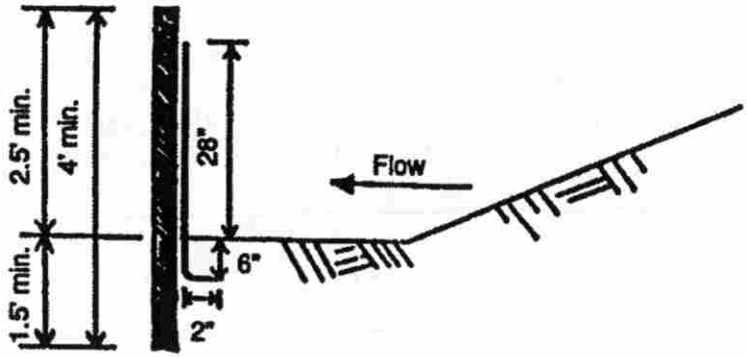
TYPE FENCE	A	B	C
Tensile Strength (Lbs. Min.) (1) (ASTM D-4632)	Warp - 120 Fill - 100	Warp - 120 Fill - 100	Warp - 260 Fill - 180
Elongation (% Max.) (ASTM D-4632)	40	40	40
AOS (Apparent Opening Size) (Max. Sieve Size) (ASTM D-4751)	#30	#30	#30
Flow Rate (Gal/Min/Sq. Ft.) (GDT-87)	25	25	70
Ultraviolet Stability (2) (ASTM D-4632 after 300 hours weathering in accordance with ASTM D-4355)	80	80	80
Bursting Strength (PSI Min.) (ASTM D-3786 Diaphragm Bursting Strength Tester)	175	175	175
Minimum Fabric Width (Inches)	36	22	36

(1) Minimum roll average of five specimens.
(2) Percent of required initial minimum tensile strength.

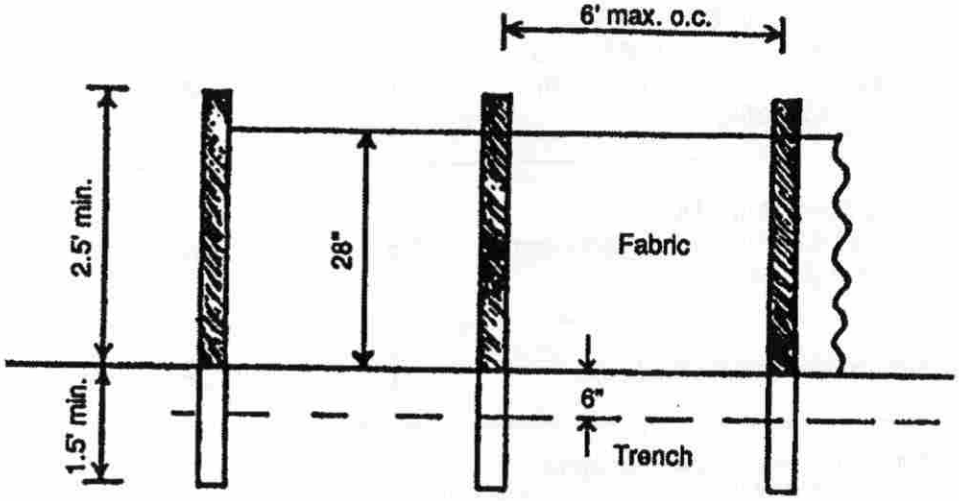
Table 2

Source: GA SWCC

Silt Fence – Type A



SIDE VIEW

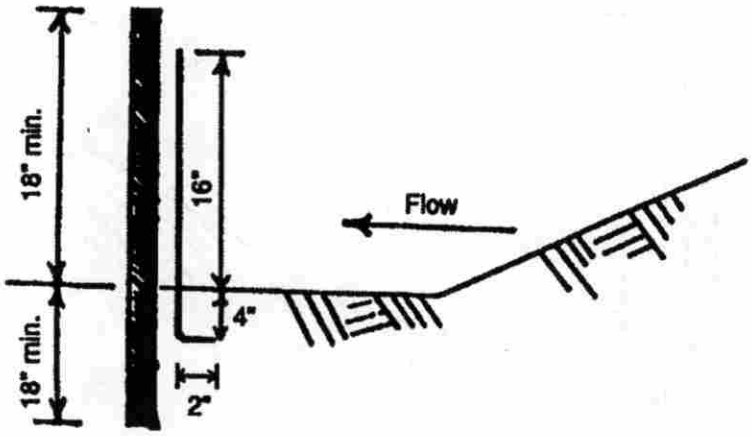


FRONT VIEW

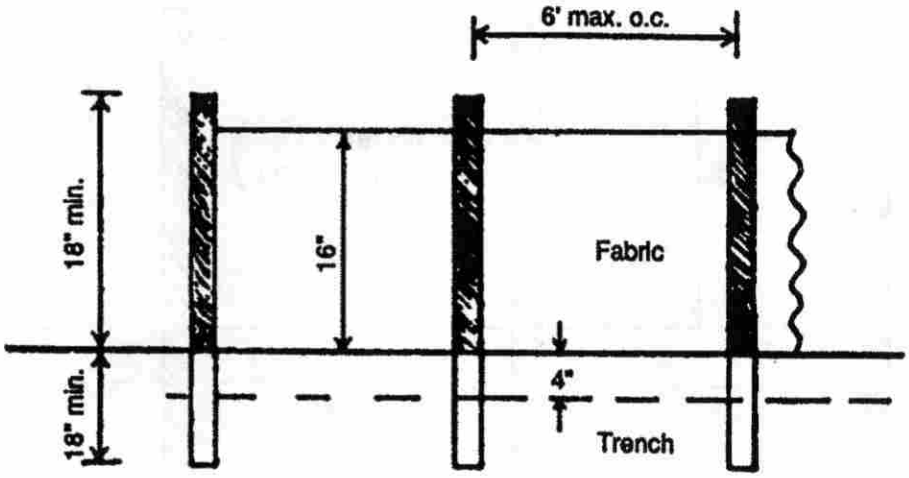
Figure 1

Source: GA SWCC

Silt Fence – Type B



SIDE VIEW

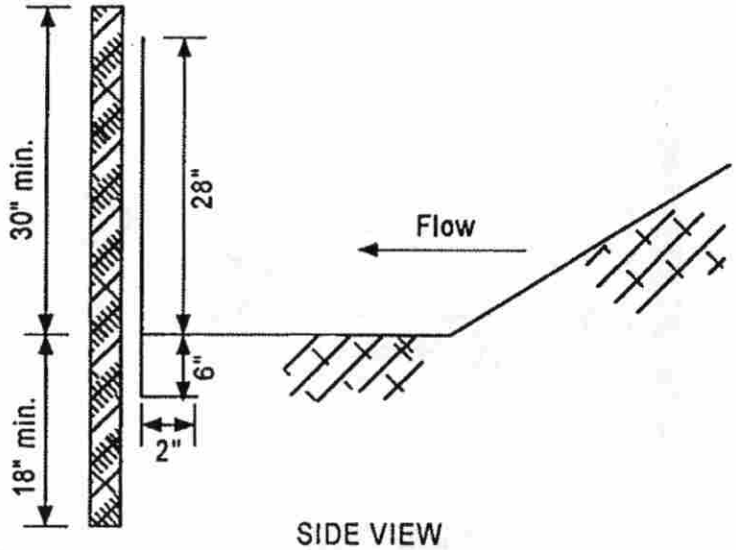


FRONT VIEW

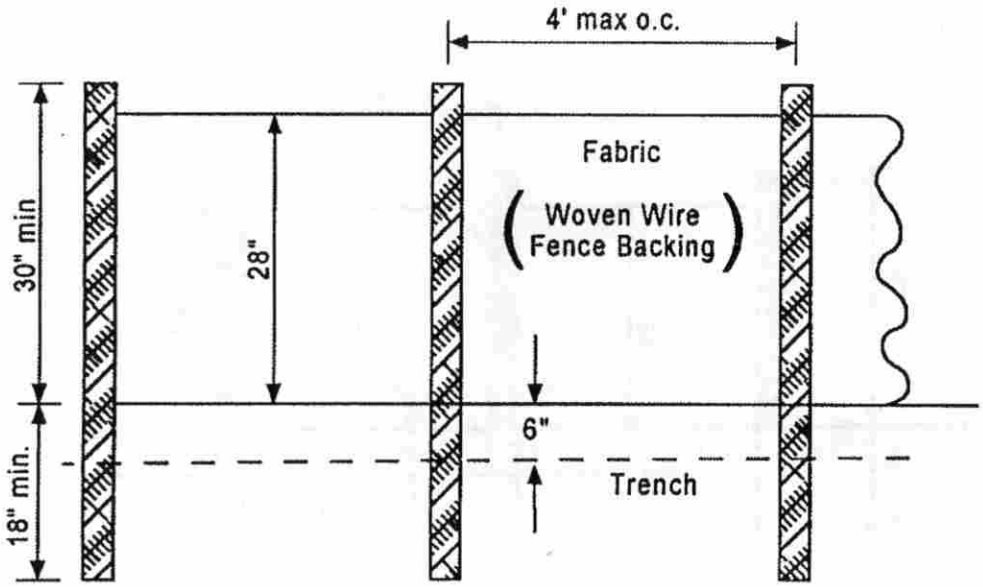
Figure 2

Source: GA SWCC

Silt Fence – Type C



SIDE VIEW



FRONT VIEW

Figure 3

Source: GA SWCC

Silt Fence Below a Steep or Long Grade

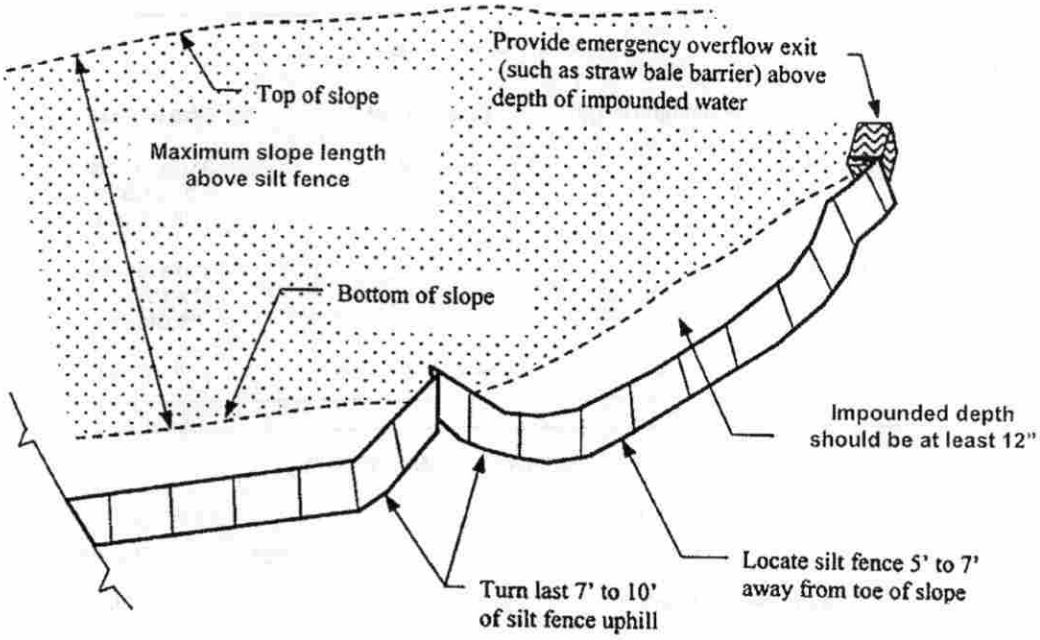


Figure 4

Source: Knoxville Engineering Department

Joining Silt Fence Sections

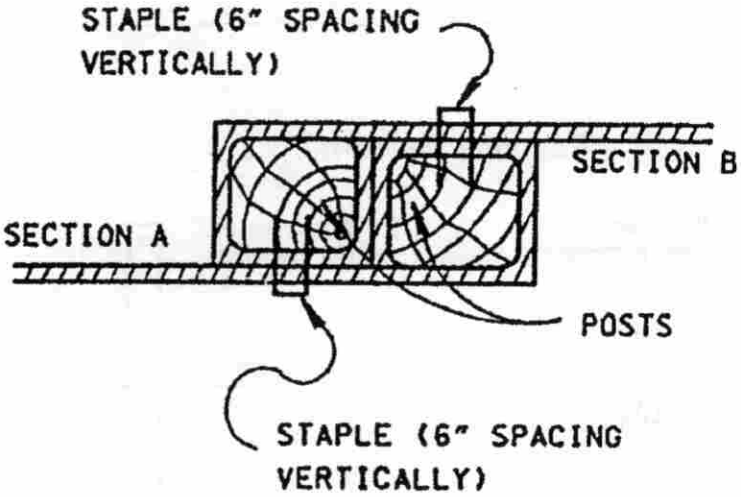


Figure 5

Source: TDOT English Standard Drawings

Post Size and Fastener Requirements

POST SIZE

	Minimum Length	Type of Post	Size of Post
Type A	4'	Soft wood Oak Steel	3" dia. or 2x4 1.5" x 1.5" 1.3lb./ft. min.
Type B	3'	Soft wood Oak Steel	2" dia. or 2x2 1" x 1" .75lb./ft. min.
Type C	4'	Steel	1.3lb./ft. min.

FASTENERS FOR WOOD POSTS

	Gauge	Crown	Legs	Staples/Post
Wire Staples	17 min.	3/4" wide	1/2" long	5 min.

	Gauge	Length	Button Heads	Nail/Post
Nails	14 min.	1"	3/4"	4 min.

Note: Filter fabric may also be attached to the post by wire, cord, and pockets.

Table 3

Source: GA SWCC

Fastener Placement

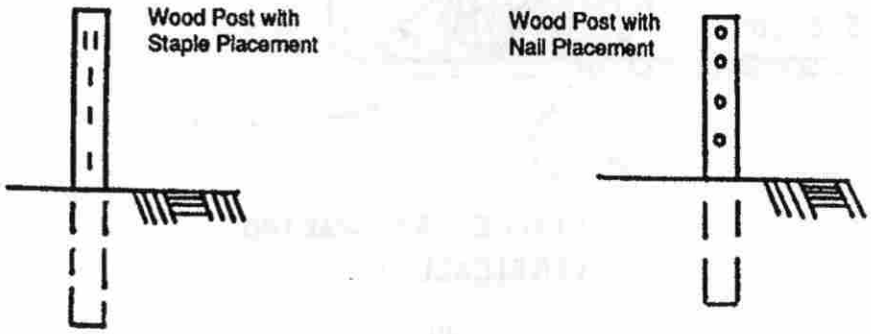


Figure 6

Source: GA SWCC

Attachment 5

Major Activities Log

KINGSTON FOSSIL PLANT
Bottom Ash Dewatering Facility

MAJOR ACTIVITIES LOG

At a minimum the construction manager or designee shall record dates below for beginning of major grading, dates temporarily cease construction, dates re-commence construction, dates permanently cease construction and dates seeding and or stabilization begins. Include name of person recording activity. It is recommended that activity descriptions be recorded each day. Provide a copy of the form to the site PAE when sheet is filled out or on a monthly basis.

Description of Major Activity	Date	Name

Provide to Plant Administrator (Environmental) as completed.

Attachment 6

Sequence of Control Measures Implementation, Maintenance and Removal Log

URS

KINGSTON FOSSIL PLANT
Bottom Ash Dewatering Facility

Sequence of Control Measure Implementation, Maintenance, and Removal Log Form

Log to be maintained onsite and completed each time a control measure is implemented, maintained, or removed

Contractor:_____**Contract No.:**_____ Page_____of_____

Control Measure and Location	Implementation, Maintenance, or Removal	Receiving Water (Channel #, etc.)	Foreman Initials	Date

Attachment 7

Daily Rainfall Gage Record

KINGSTON FOSSIL PLANT
Bottom Ash Dewatering Facility

Daily Rainfall Gage Record

Inspect rainfall gage(s) and record daily inches of rain or "none" in measured rainfall column. Sign sheet for each day and present to designated TVA site representative when sheet has been filled and/or construction is complete. If prolonged storm event occurs, it is recommended that erosion control device checks be performed and results recorded on inspection form. Maintain a copy of this form and provide a copy to the site PAE when the form is complete

Gage Number	Date	Measured Rainfall (inches)	Inspector's Signature

Attachment 8

Daily Inspection Form

Construction Storm Water Pollution Prevention Plan Inspection and Maintenance Report Form

Twice Per Week Inspection

Minimum time between Inspections must be 72 hours apart

Files completed inspection forms in with storm water records

Project Name: TVA - Kingston Fossil Plant - Bottom Ash Dewatering Facility

Location/area/control being Inspected	Date of Inspection	Time of Inspection	Type of Control (See Below)	Date Installed / Modified	Inspection after Significant Rainfall[1]	Condition (See Below)	Corrective Action / Other Remarks	Date Repair Competed
Site dust control								
Housekeeping/litter pickup								
Construction entrance								
Access road condition								
Perimeter silt fence								
Storm water exit points/outfalls								
Material lay down areas								
Permanent vegetation								

Condition Code: G = Good M = Marginal, needs maintenance within 7-days P = Poor, needs immediate maintenance C = Needs to be cleaned O = Other (Explain in Condition Section)

Control Type Codes

1. Silt Fence
2. Earth dikes
3. Structural diversion
4. Swale
5. Sediment Trap
6. Check dam
7. Subsurface drain
8. Pipe slope drain
9. Level spreaders
10. Storm drain inlet protection
11. Vegetative buffer strip
12. Vegetative preservation area
13. Retention Pond
14. Construction entrance stabilization
15. Perimeter ditch
16. Curb and gutter
17. Paved road surface
18. Rock outlet protection
19. Reinforced soil retaining system
20. Gabion
21. Sediment Basin
22. Temporary seed / sod
23. Permanent seed / sod
24. Mulch
25. Hay Bales
26. Geotextile
27. Rip-rap 1. Silt Fence
28. Tree protection
29. Detention pond
30. Retention pond
31. Waste disposal /housekeeping
32. Dam
33. Sand Bag
34. Other

	Rain Data	
Date	Ins.	Amount

Inspector Information				
	Name	Signature	Title	Qualification

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)
General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Construction Stormwater Inspection Certification (Twice-Weekly Inspections)

Site or Project Name:			**NPDES Tracking Number: TNR**	
Primary Permittee Name:			Date of Inspection:	
Current approximate disturbed acreage:		Has rainfall been checked/documented daily? ☐ Yes ☐ No	Name of Inspector:	
Current weather conditions:			Inspector's TNEPSC Certification Number:	

Please check the box if the following items are on-site:

☐ Notice of Coverage (NOC) ☐ Stormwater Pollution Prevention Plan (SWPPP) ☐ Twice-weekly inspection documentation
☐ Site contact information ☐ Rain Gage ☐ Off-site Reference Rain Gage Location: _____

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If "No," describe below in Comment Section			
1.	Are all applicable EPSCs installed and maintained per the SWPPP?	☐Yes	☐No
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?	☐Yes	☐No
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?	☐Yes	☐No
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?	☐Yes	☐No
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4? If "No," describe below the measures to be implemented to address deficiencies.	☐Yes	☐No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2? If "No," describe below each location and measures taken to stabilize the area(s).	☐Yes	☐No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If "No," describe below the measures to be implemented to address deficiencies.	☐Yes	☐No
8.	If a concrete washout facility is located on site, is it clearly identified on the project and maintained? If "No," describe below the measures to be implemented to address deficiencies. ☐ N/A	☐Yes	☐No
9.	Have all previous deficiencies been addressed? If "No," describe the remaining deficiencies in the Comments section. ☐ Check if deficiencies/corrective measures have been reported on a previous form.	☐Yes	☐No

Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken. Otherwise, describe any pertinent observations:

Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Inspector Name and Title:	Signature:	Date:
Primary Permittee Name and Title:	Signature:	Date:

Construction Stormwater Inspection Certification Form (Twice-Weekly Inspections)

Purpose of this form/ Instructions

An inspection, as described in section 3.5.8.2. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at least twice every calendar week and documented on this form. 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.

Inspectors performing the required twice weekly inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. (http://www.tnepsc.org/). A copy of the certification or training record for inspector certification should be kept on site.

Qualified personnel, as defined in section 3.5.8.1 of the Permit (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.

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 site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter 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 offsite sediment tracking.

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 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 3.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 3.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the division's form and the permittee has obtained a written approval from the division to use the alternative form. Inspection documentation will be maintained on site and made available to the division upon request. Inspection reports must be submitted to the division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

Attachment 9

General Information Notice

TVA – KINGSTON PLANT

BOTTOM ASH DEWATERING FACILITY

Description: Construction activities associated with the construction of the dewatering facility

CONTACT: Gary Wilford

For Storm Water Pollution Prevention Plan located at Kingston Fossil Plant

PHONE: (423) 443-6561

Attachment 10

Notice of Intent

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

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

Site or Project Name:		**Existing NPDES Tracking Number: TNR**
Street Address or Location: 714 Swan Pond Rd. Harriman, TN 37748		Start date: 3/1/2016
		Estimated end date: 10/31/17
Site Activity Description: Construction of bottom ash dewatering facility within Kingston Fossil Plant.		Latitude (dd.dddd): N 39.9041°
		Longitude (dd.dddd): W 84.5161°
County(ies): Roane	MS4 Jurisdiction:	Acres Disturbed: 3.5
		Total Acres: 472

Does a topographic map show dotted or solid blue lines ☐ and/or wetlands ☐ on or adjacent to the construction site?
If wetlands are located on-site and may be impacted, attach wetlands delineation report.
If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.:

Receiving waters: Emory River mile 2

Attach the SWPPP with the NOI	☐ SWPPP Attached	Attach a site location map	☐ Map Attached

Site Owner/Developer Entity (*Primary Permittee*): (person, company, or legal entity that has operational or design control over construction plans and specifications): John C. Kammeyer, Vice President, Civil Projects

Site Owner/Developer Signatory (V.P. level/higher - signs certification below): (individual responsible for site):		Signatory's Title or Position (V.P. level/higher - signs certification below):	
Mailing Address: 1101 Market Street		City: Chattanooga	State: TN / Zip: 37402
Phone: ( ) (423) 751-8246	Fax: ( )	E-mail: Jckammey@tva.gov	
Optional Contact: Adele Dennison		Title or Position: Environmental Scientist	
Mailing Address: 714 Swan Pond Rd.		City: Harriman	State: TN / Zip: 37746
Phone: ( ) (865) 717-2157	Fax: ( )	E-mail: amdennison@tva.gov	

Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name; (print or type) John C. Kammeyer	Signature:	Date:

Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated.

Contractor company name (print or type):			
Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City: / State:	Zip:
Phone: ( )	Fax: ( )	E-mail:	

Other Contractor company name (print or type):			
Other Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City: / State:	Zip:
Phone: ( )	Fax: ( )	E-mail:	

OFFICIAL STATE USE ONLY

Received Date:	Reviewer:	Field Office:	Permit Number TNR	Exceptional TN Water:
Fee(s):	T & E Aquatic Flora and Fauna:		Impaired Receiving Stream:	Notice of Coverage Date:

(Continued on reverse)

Attachment 11

Notice of Termination

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

Notice of Termination (NOT) for General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator 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 DWR Environmental Field Office (EFO) address (see table below). For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Type or print clearly, using ink.

Site or Project Name:	**NPDES Tracking Number: TNR**
Street Address or Location: 714 Swan Pond Rd. Harriman, TN 37748	County(ies): Roane

Name of Permittee Requesting Termination of Coverage:			
Permittee Contact Name: John C. Kammeyer	Title or Position: Environmental Scientist		
Mailing Address: 1101 Market Street	City: Chattanooga	State: TN	Zip: 37402
Phone: (423) 751-8246	E-mail: Jckammey@tva.gov		

Check the reason(s) for termination of permit coverage:

☐	Stormwater discharge associated with construction activity is no longer occurring and the permitted area has a uniform 70% permanent vegetative cover OR has equivalent measures such as rip rap or geotextiles, in areas not covered with impervious surfaces.
☐	You are no longer the operator at the construction site (i.e., termination of site-wide, primary or secondary permittee coverage).

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

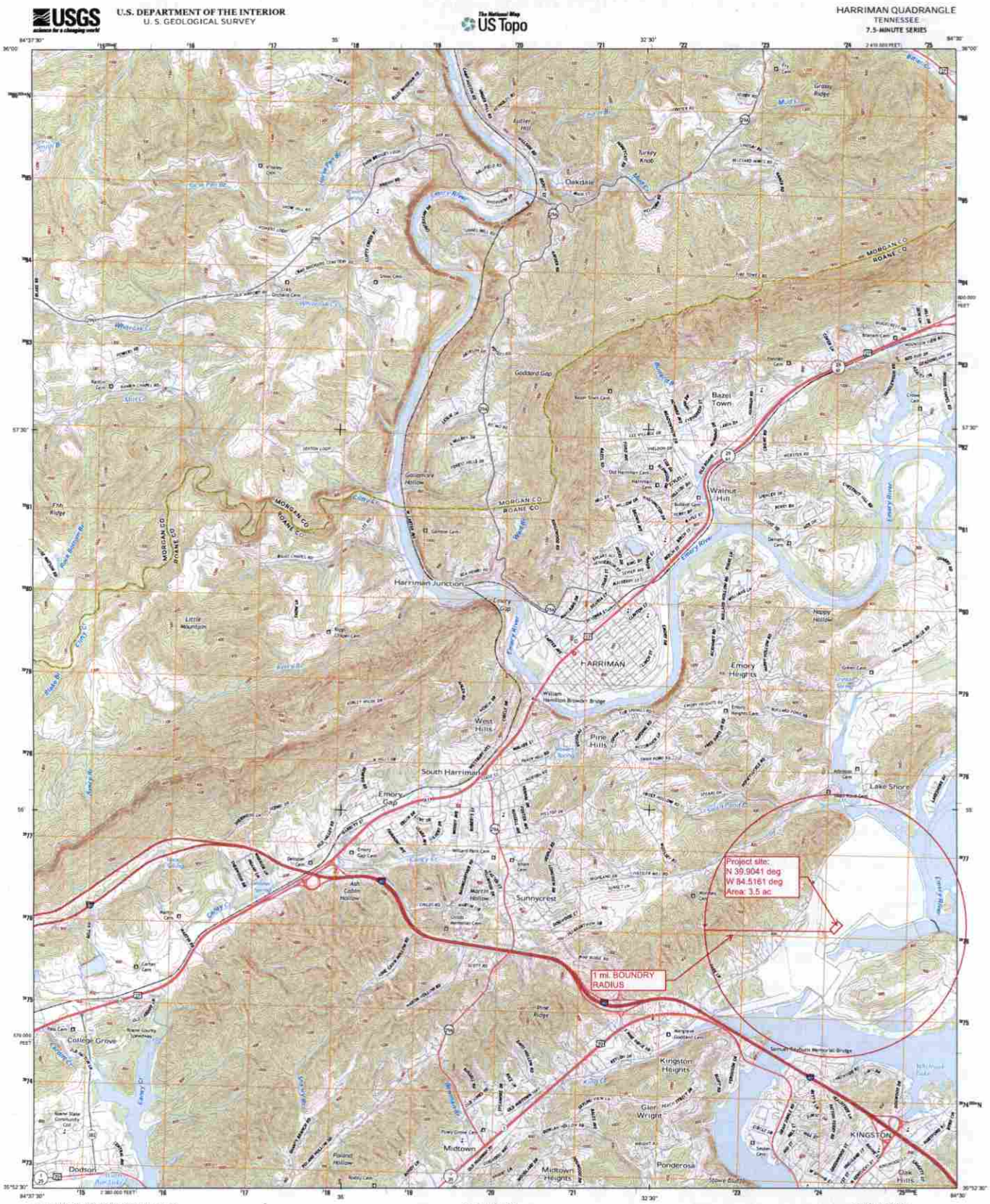
I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater 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 stormwater discharges associated with construction activity means that all stormwater discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have been eliminated from the portion of the construction site where the operator had control. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control.

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type):	Signature:	Date:
Doug Keeling		

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



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North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 16S
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Boundaries	Census, ©DMI, ©ESRI, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NE
6-Char Grid Designator
16S

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
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QUADRANGLE LOCATION

Lancing	Camp Austin	Petros
Cardiff	Harriman	Coalmont
Nemo	Rocky Gap	Lone Creek

ADJOINING 7.5 QUADRANGLES

ROAD CLASSIFICATION
Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

HARRIMAN, TN
2013

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

The National Map US Topo

ELVERTON QUADRANGLE
TENNESSEE
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
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Contours ..... National Elevation Dataset, 1999
Boundaries ..... Census, BMC, IBC, USGS, 1972 - 2012

UTM GRID AND 2012 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011. A digital file associated with this product is draft version 0.6.11

ROAD CLASSIFICATION
Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

Coney Knobs	Fosters	Windrock
Harriman	Elverton	Bethel Valley
Rocky Top	Cove Creek	Lenoir City

40 ADJOINING 7.5' QUADRANGLES

ELVERTON, TN
2013