

Storm Water Pollution Prevention Plan (SWPPP) Completeness Checklist

Permittee: Southwestern Electric Power Company
 Project Name: Flint Creek Power Plant, Landfill
 Project City: Gentry

Tracking Number: ARR15 4678
 Location of SWPPP on-site: AEP landfill construction office

Yes = Complete
 No = Incomplete/Deficient
 N/A = Not applicable to project

			Permit Section Citation	Notes
<input checked="" type="checkbox"/>			Part II.A.4.I	
<input checked="" type="checkbox"/>			Part I.B.12.C	
I. Identification of allowable non-storm water discharges				
<input checked="" type="checkbox"/>				
				-Appropriate controls for dewatering, if present
J. Post construction stormwater management.				
<input checked="" type="checkbox"/>			Part II.A.4.J	
K. State or local requirements incorporated into the plan.				
<input checked="" type="checkbox"/>			Part II.A.4.K	
L. Inspections				
<input checked="" type="checkbox"/>			Part II.A.4.L.1	
			Part II.A.4.L.2	
<input checked="" type="checkbox"/>				
				1. Inspection frequency listed?
				2. Inspection form
				Ours.
				If not ours, does it contain the following items:
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.a	a. Inspector name and title
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.b	b. Date of inspection.
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.c	c. Amount of rainfall and days since last rain event (14 day only)
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.d	d. Approx beginning and duration of storm event
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.e	e. Description of any discharges during inspection
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.f	f. Locations of discharges of sediment/other pollutants
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.g	g. BMPs in need of maintenance
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.h	h. BMPs in working order, if maintenance needed (scheduled and completed)
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.i	i. Locations that are in need of additional controls
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.j	j. Location and dates when major construction activities begin, occur or cease
		<input checked="" type="checkbox"/>	Part II.A.4.L.2.k	k. Signature of responsible/cognizant official
<input checked="" type="checkbox"/>			Part II.A.4.L.3	3. Inspection Records
<input checked="" type="checkbox"/>			Part II.A.4.L.4	4. Winter Conditions
<input checked="" type="checkbox"/>			Part II.A.4.L.5	5. Adverse Weather Conditions
M. Maintenance Procedures				
<input checked="" type="checkbox"/>			Part II.A.4.M	
N. Employee Training				
<input checked="" type="checkbox"/>			Part II.A.4.N	
Signed Plan Certification				
<input checked="" type="checkbox"/>			Part II.A.7. and Part II.B.10	
F. Site Map showing:				
<input checked="" type="checkbox"/>			Part II.A.4.F.1	
<input checked="" type="checkbox"/>			Part II.A.4.F.2	
<input checked="" type="checkbox"/>			Part II.A.4.F.2	
<input checked="" type="checkbox"/>			Part II.A.4.F.3	
<input checked="" type="checkbox"/>			Part II.A.4.F.4	
<input checked="" type="checkbox"/>			Part II.A.4.F.5	
<input checked="" type="checkbox"/>			Part II.A.4.F.6	
		<input checked="" type="checkbox"/>	Part II.A.4.F.7	
<input checked="" type="checkbox"/>			Part II.A.4.F.8	
<input checked="" type="checkbox"/>			Part II.A.4.F.9	
<input checked="" type="checkbox"/>			Part II.A.4.F.10	
<input checked="" type="checkbox"/>			Part II.A.4.F.11	
		<input checked="" type="checkbox"/>	Part II.A.4.F.12	

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Yes = Complete
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 N/A = Not applicable to project

Yes	No	N/A		Permit Section Citation	Notes
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A. A site description, including:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Project description, intended use after NOT	Part II.A.4.A.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Sequence of major activities	Part II.A.4.A.2	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Total & disturbed acreage	Part II.A.4.A.3	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Pre- and post-construction runoff coefficient OR soil/discharge data	Part II.A.4.A.4	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. Responsible Parties: All parties dealing with the SWPPP and the areas they are responsible for on-site.	Part II.A.4.B	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. Receiving Water.	Part II.A.4.C	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	-MS4 Name	Part II.A.4.C	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-Ultimate Receiving Water	Part II.A.4.C	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. Documentation of permit eligibility related to Impaired Water Bodies and Total Maximum Daily Loads (TMDLs).		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Identify pollutant on 303(d) list or TMDL	Part II.A.4.D.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Is construction activity or the specific site listed as cause?	Part II.A.4.D.2	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Measures taken to reduce pollutants from the site.	Part II.A.4.D.3	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. Attainment of Water Quality Standards After Authorization.	Part II.A.4.E	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. Site Map --- See End of Evaluation Form	Part II.A.4.F	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	G. Description of Controls:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Erosion and sediment controls, including:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Initial site stabilization	Part II.A.4.G.1.a	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	b. Erosion and sediment controls	Part II.A.4.G.1.b	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	c. Replacement of inadequate controls	Part II.A.4.G.1.c	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d. Removal of off-site accumulations	Part II.A.4.G.1.d	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Off-site storage areas and controls	Part II.A.4.G.1.g	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Stabilization practices:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Description and schedule for stabilization	Part II.A.4.G.2.a	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	b. Description of buffer areas	Part II.A.4.G.2.b	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	c. Records of stabilization	Part II.A.4.G.2.c	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d. Deadlines for stabilization	Part II.A.4.G.2.d	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Structural Practices:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-Describe structural practices to divert flows, store flows, or otherwise limit runoff	Part II.A.4.G.3	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Sediment basins	Part II.A.4.G.3.a.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-Are more than 10 acres draining to a common point? If so, are sediment basins included?	Part II.A.4.G.3.a.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H. Other controls including:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Solid waste control measures	Part II.A.4.H.1	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Vehicle off-site tracking controls	Part II.A.4.H.2	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Compliance with sanitary waste disposal	Part II.A.4.H.4	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Does the site have a concrete washout area controls?	Part II.A.4.H.5	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash areas controls?	Part II.A.4.H.6	



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Corporation Name	SOUTHWESTERN ELECTRIC POWER COMPANY
Fictitious Names	AEP SOUTHWESTERN ELECTRIC POWER COMPANY AEP SWEPCO
Filing #	100066219
Filing Type	Foreign For Profit Corporation
Filed under Act	For Bus Corp: 958 of 1987
Status	Good Standing
Principal Address	1 RIVERSIDE PLAZA COLUMBUS, OH 43215
Reg. Agent	THE CORPORATION COMPANY
Agent Address	425 WEST CAPITOL AVE SUITE 1700 LITTLE ROCK, AR 72201
Date Filed	10/08/1912
Officers	SEE FILE, Incorporator/Organizer POLLY LUTZ , Tax Preparer VENITA MCCCELLON-ALLEN , President DAVID M. FEINBERG , Secretary MARK A. PYLE , Vice-President CHARLES E. ZEBULA , Treasurer JOSEPH M. BUONAIUTO , Controller
Foreign Name	N/A
Foreign Address	X WILMINGTON,
State of Origin	DE
<u>Purchase a Certificate of Good Standing for this Entity</u>	<u>Pay Franchise Tax for this corporation</u>



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Entity Details

File Number: 0032233 **Incorporation Date / Formation Date:** 06/29/1912 (mm/dd/yyyy)

Entity Name: SOUTHWESTERN ELECTRIC POWER COMPANY

Entity Kind: CORPORATION **Entity Type:** GENERAL

Residency: DOMESTIC **State:** DE

Status: GOOD STANDING **Status Date:** 08/23/2013

REGISTERED AGENT INFORMATION

Name: THE CORPORATION TRUST COMPANY

Address: CORPORATION TRUST CENTER 1209 ORANGE ST

City: WILMINGTON **County:** NEW CASTLE

State: DE **Postal Code:** 19801

Phone: (302)658-7581

Additional Information is available for a fee of \$20.00. This information will include current franchise tax assessment, current filing history and more..

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ARR150000 Checklist

ARR15 4678 New Renewal Modification

Discharges to SWEPCO Lake → Little Flint Creek → Flint Creek → Illinois River → Arkansas River

HUC 11110103 Stream Segment 3J

Ecologically Sensitive Waterbody (ESW):	No <input type="checkbox"/>	Yes <input type="checkbox"/>	_____
Extraordinary Resource Water (ERW):	No <input type="checkbox"/>	Yes <input type="checkbox"/>	_____
Natural and Scenic Waterway (NSW):	No <input type="checkbox"/>	Yes <input type="checkbox"/>	_____
Losing Stream Area:	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	_____
303(d) list:	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	<u>SWEPCO Lake</u>

Pollutant: UN - turbidity not necessarily due to excessive silt Cat 4 Cat 5

- Secretary of State
- Permit Fee → invoice
- Complete SWPPP
- Information entered into Access

Other Comments: _____

Cousins, Sarah

From: Green, Jessie
Sent: Wednesday, January 07, 2015 4:32 PM
To: Cousins, Sarah
Subject: ARR154678 - Flint Creek Power Plant SWPPP Comments

Project area is characterized as a highly sensitive karst area, as detailed in the "Karst Area Sensitivity Map For Northwest Arkansas: Benton County". The Nature Conservancy and US Fish and Wildlife Service recommend development within moderately to highly sensitive karst areas incorporate "Community Growth Best Management Practices for Conservation of Karst Recharge Zones" in project BMPs, specifically recommending that that surveys for karst features such as caves, sinkholes, losing streams, and springs take place prior to development.

Little Flint Creek is within distribution range of *Orconectes meeki brevis* (State Rank: S2; Threatened) with specific occurrence data from Arkansas Natural Heritage Commission upstream of proposed construction.

Language in Section C.2, "Any disturbance adjacent to the stream will maintain a minimum buffer of 25 feet, *when possible.*", seems lax.

Jessie J. Green
Aquatic Ecologist
ADEQ Water Division
5301 Northshore Dr.
NLR, AR 72118
501-683-2789

**STORMWATER POLLUTION
PREVENTION PLAN FOR THE
INTERMEDIATE LINER, LEACHATE
COLLECTION SYSTEM AND FINAL
COVER SYSTEM**

FOR THE:
**SOUTHWESTERN ELECTRIC POWER COMPANY
FLINT CREEK POWER PLANT ASH LANDFILL**

PREPARED FOR:
**SOUTHWESTERN ELECTRIC POWER COMPANY
428 TRAVIS STREET
SHREVEPORT, LA 71101**

PREPARED BY:
**HULL & ASSOCIATES, INC.
3401 GLENDALE AVENUE
SUITE 300
TOLEDO, OHIO 43614**

MAY 2014



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Figure 1 Vicinity Map

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INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) for construction activities has been developed by Hull & Associates, Inc. (Hull) for the Southwestern Electric Power Company (SWEPCO) to be used for activities associated with the construction of the Intermediate Liner, Leachate Collection System and Final Cover System (Site) located at SWEPCO's Flint Creek Power Plant Ash Landfill (Facility), near Gentry, Benton County, Arkansas. The objective of this SWPPP is to comply with the requirements listed in Parts II.A.4 and II.A.5 of the General Permit Number ARR150000 (General Permit), effective November 1, 2011, for the National Pollution Discharge Elimination System (NPDES) and the Arkansas Water and Air Pollution Control Act as regulated by the Arkansas Department of Environmental Quality (ADEQ). The information contained in this SWPPP is consistent with the criteria established in the General Permit associated with Construction Activities and meets Best Management Practices (BMPs).

As stipulated under Parts II.A.4 and II.A.5 of the General Permit, this construction SWPPP has been prepared in accordance with good engineering and/or conservation practices to meet the following objectives:

- Identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction and development of the Intermediate Liner, Leachate Collection System and Final Cover System at the Flint Creek Power Plant Ash Landfill.
- Assure compliance with the terms and conditions of the General Permit.

As a condition of the General Permit, SWEPCO and the Contractor will implement and comply with the practices and procedures established in this SWPPP. This SWPPP includes appropriately detailed maps and provides a means to record site-specific information including dates of construction activities, specific location of the project, and methods of sediment and erosion control.

This document contains relevant guidelines for pollution prevention, including sediment, runoff, and erosion control practices to be used during development of the Site. All contractors and subcontractors will be informed of the contents of this document and the terms and conditions of the General Permit that authorizes the discharge of stormwater from construction activities being performed at the Facility. All contractors and subcontractors will be required to understand the conditions and standards of this SWPPP and will be required to adhere to the necessary control measures during the duration of construction and development activities.

This SWPPP shall be made readily available for review upon the request of the ADEQ or other appropriate regulatory agencies. The SWPPP will be amended accordingly, should the Facility be notified of any deficiencies in this plan.

CONTENTS OF THE SWPPP

This SWPPP, at a minimum, addresses the requirements as outlined in the ADEQ NPDES and the Arkansas Water and Air Pollution Control Act, General Permit Number ARR150000. This SWPPP and its contents will be implemented in conjunction with commencement of construction activities.

A. Site Description

The Facility is located northeast of SWEPCO's Flint Creek Power Plant (Plant) on SWEPCO Plant Road just west of Gentry, Benton County, Arkansas. The Facility is a Class 3 Non-Commercial (3N) Landfill per ADEQ Regulation No. 22 (Reg. 22), Solid Waste Management Rule.

A.1 Vicinity Map and Pre-construction Topographic view

The work area is located in the northeastern portion of SWEPCO's property (see Vicinity Map - Figure 1). The existing topographic contours (as of April 27, 2011) are shown on the Site Map (Plate A-1) in Appendix A.

A.2 Project Description

General construction activities that will take place at the Facility are: (1) installation of the leachate/contact water pond and associated infrastructure (e.g. leachate conveyance pipe, pond inlets, pump station, etc.), (2) construction of the intermediate liner system, and (3) construction of the landfill final cover system over a portion of the landfill. The Facility will be used to dispose of ash generated from the Flint Creek Power Plant. Soil erosion, runoff, and sediment control measures to be used per good housekeeping practices and the BMPs in this SWPPP are discussed in Sections G and H of this document.

A.3 Sequence of Activities

The intended sequence of major activities for controlling stormwater is:

1. installation of erosion and sediment control devices
2. clearing and grubbing (complete in areas, as needed, for upcoming construction activities)
3. installation of construction access and support areas
4. sediment basin construction
5. borrow excavation and on-site stockpiling
6. construction of the final cover system, which will consist of (from top to bottom), a six-inch vegetative soil layer, an 18-inch protective cover soil layer, a geocomposite drainage layer; LLDPE geomembrane, and 8-oz. non-woven geotextile

7. construction of stormwater controls such as diversion berms, culverts, and letdowns
8. construction of the intermediate liner system, which will consist of an HDPE geomembrane placed over regraded ash
9. placement of the leachate collection system, which will consist of, from top to bottom, an 18-inch protective layer and a geocomposite drainage layer (12-inch perforated pipes surrounded by gravel and a geotextile will also be installed above the geocomposite in some locations)
10. construction of the leachate collection pond and contact water pond
11. installation of approximately 750 feet of a 30-inch contact water conveyance pipe

The sequence of activities stated above could change per the contractor's schedule, timing of permits, etc. However, appropriate BMPs will be in-place in the specific areas before construction activities begin in these areas. The construction area will be evaluated to ensure that appropriate measures will be taken to minimize and control erosion and sediment-laden runoff. A general implementation schedule describing the construction activities and the erosion, runoff, and sediment control practices that will be implemented is located in Section G.

A.4 Total Acres Available/Total Disturbed Area

The Facility construction site consists of approximately 72.6 acres. The potential area of soil disturbance will be approximately 49.8 acres. Therefore, the ratio between total facility construction site area and total disturbed area is **72.6/49.8**. The intermediate liner area is approximately 22.5 acres; however, sediment-laden runoff will not be generated from this area. Runoff from the ash will be managed as contact water and be transported to the primary ash pond via facility ditches or pipeline.

A.5 Existing Site Information

An assumed runoff coefficient is used to model the impact of the activities on runoff during and after the project is complete. The runoff coefficient is the fractional amount of total precipitation that is estimated to become runoff. Low runoff coefficients indicate that the Site will absorb stormwater and minimize the discharge of sediments and pollutants from the Site. High runoff coefficients predict that the Site will shed large amounts of the precipitation, thus encouraging erosion and sediment transport.

A.5.a Runoff Coefficient

Runoff coefficients (c) have been calculated based on Appendix C and the conditions expected to be encountered at the Site during pre-development and post-development (with established vegetation) periods. The runoff coefficients and areas are listed below.

Construction Area:

Pre-development Condition

C = 0.35 – open, bare, pasture (silty sand & clay – see section A.5.b)

Post-Development Conditions

C = 0.29 – open, lawn, pasture (silty sand & clay – see section A.5.b)

A.5.b Soil Information

The construction area is currently a grassy pasture with some wooded areas, or is within the existing landfill area.

The predominant soils within the landfill area have been identified by means of borings drilled within the construction area and have been identified as loose to very dense tan, brown and/or gray fly ash that extended to the termination depths of the soil borings. The ground surface in the immediate area of the borings was bare, with no vegetation, and appeared to have fly ash at the surface. Laboratory analyses identified the fly ash as a silty sand (SM) or sandy silt (ML) soil based on the USCS designation. Moisture content determinations on selected samples within boring B09-01 indicate an increase in moisture content from 30.4 to 60.5 percent with an increase in depth. Moisture content determinations on selected samples within borings B09-02 and B09-03 indicate that the moisture contents range from 39.4 to 36.5 and 33.4 to 47.4 percent, respectively, with no direct correlation to the depth of the sample.

All soil borings that were drilled outside of the landfill limits (B09-04 through B09-06) encountered a clayey topsoil that extended to depths ranging from 0.4 to 0.6 feet below the existing ground surface. Underlying the clayey topsoil was a brown and/or gray lean clay (CL) with varying amounts of gravel, sand, silt and chert fragments, which was encountered in all of the soil borings. This lean clay layer extended in soil borings B09-04 through B09-06 to approximate depths of 19.7, 15.0 and 9.5 feet below the existing ground surface, respectively. Underlying the lean clay layer in all borings was a clayey chert gravel and fragments layer that extended to the termination depths of the borings. Soil boring B09-05 also had interbedded silt layers (ML) within the clayey chert gravel and fragments layer.

B. Responsible Parties

All parties and the particular services they provide will be identified below (as soon as information is known). Said parties will comply with the requirements of this SWPPP for the project site along with the

areas over which the party has control. If the parties change or if new parties are added, this SWPPP should be updated to reflect these changes.

Owner: SWEPCO

Construction Project Manager: (to be determined)

Contractor: (to be determined)

C. Receiving Waters

The majority of the stormwater runoff from the construction area will be managed with the use of silt fences, diversion berms, drainage ditches, sediment basins, and the primary ash pond. Most areas of the landfill cover will have runoff that is redirected by diversion berms and drainage ditches and collected by sediment basins. Other areas of the site and the landfill will be redirected to the leachate/contact water pond and the primary ash pond. Runoff from the leachate/contact water pond will be pumped to a sediment basin or will be directed to the primary ash pond via drainage ditches during construction activities. The primary ash pond receives all stormwater and low volume wastewater from the plant and discharges through Outfall 101 to SWEPCO Reservoir in accordance with the plant's NPDES permit. Appropriate sediment control measures, as described in Section G of this SWPPP, will be implemented such that sediments in runoff are minimized and/or controlled.

C.1 Location of Surface Water on the Construction Site

There is an unnamed, intermittent stream located on the eastern portion of the site. This stream only flows following significant rain events. No other surface waters are present within two miles of the discharge locations, other than the water bodies discussed in Section D below.

C.2 Bodies of Water that Receive Runoff

A small portion of the final cover system construction area (less than 3 acres) will discharge to an existing unnamed stream adjacent to the landfill. Rows of silt fence will be used in this area to minimize the sediment discharge to the stream. Disturbances adjacent to the stream will be minimized as much as possible. Any disturbance adjacent to the stream will maintain a minimum buffer of 25 feet, when possible. The Arkansas River is the Ultimate Receiving Water body

D. TMDL and 303(d) List

Stormwater discharges from the site do not directly enter water bodies that are on the most recent 303(d) list or with an approved TMDL. Construction stormwater discharges will be directed to either sediment basins (North or West) or the Flint Creek Power Plant Primary Ash Pond via ditches and/or pipes. The Primary Ash Pond subsequently discharges to the Secondary Ash Pond, which eventually discharges to

SWEPCO Lake, which is on the ADEQ 303(d) list due to its turbidity level. The Primary Ash Pond and the Secondary Ash Pond are separated by an earthen dike and water is discharged via a stop log with a flow monitoring device, as well as an emergency spillway. The Secondary Ash Pond discharges via a weir to a ditch that subsequently discharges to SWEPCO Lake. The Secondary Ash Pond weir is the Plant's NPDES Permit Outfall 101. As construction stormwater will be managed as described in this SWPPP by additional BMPs, and the Primary and Secondary Ash Pond will also act as sediment control structures, it is not anticipated that construction activities will impact the water quality of SWEPCO Lake.

E. Attainment of Water Quality Standards after Authorization

Selection, installation, implementation, and maintenance of BMPs at the construction site shall be performed to minimize pollutants in the discharge as necessary to meet applicable water standards. If there is an excursion above any applicable Water Quality Standard (WQS) after authorization, this SWPPP will be amended to comply with the WQS. Any response required by the Department under this part must include a signed certification.

F. Site Map

Included in Appendix A is a site map which identifies the following:

- pre-construction topographic map
- location of construction entrance and exit
- direction of stormwater flow and approximate slopes anticipated after major grading activities are complete
- areas of soil disturbances and areas that will not be disturbed
- location of structural and nonstructural controls; location of main construction entrance and exit
- location of stabilization practices that will occur
- location of off-site materials, waste, borrow area, or equipment storage area
- location of concrete wash-out area
- location of surface water bodies
- locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system
- location where stormwater is discharged off-site
- areas where final stabilization has been accomplished and no further construction phase permit requirements apply

G. Stormwater Controls

This section includes a description of appropriate controls and measures that will be implemented at the Site. Each major construction activity will describe the control measures associated with the activity and the schedule during the construction process that the measures will be implemented. Perimeter controls will be installed before clearing and grubbing of the entire site has commenced, and will be actively maintained until final stabilization of the portions of the site, upstream of the perimeter control, is achieved. The Contractor shall utilize additional control measures as deemed necessary by SWEPCO, Facility personnel, Engineer, and/or Contractor. The controls will include the following minimum components:

- Initial Site Stabilization, Erosion, and Sediment Controls
- Stabilization Practices
- Structural Practices

The controls and measures listed above are discussed in the following sections and will satisfy the conditions of the General Permit and meet the standards and specifications in the latest edition of the "Arkansas State Highway and Transportation Department (AHTD) Erosion and Sediment Control Design and Construction Manual". These sections identify the most commonly used control measures and are not intended to be inclusive of all technologies available. The Contractor (and its subcontractors) will be encouraged to implement the best possible control measures attainable for construction of the Intermediate Liner, Leachate Collection System and Final Cover System and will not be limited to the measures identified in this SWPPP. SWEPCO's construction site personnel will be responsible for ensuring that the necessary controls are implemented by the Contractor and its subcontractors.

Control measures not specifically identified in this SWPPP will be documented and recorded as part of the construction documentation. Such documentation will include the type of control used and a sketch showing the general location of controls implemented. Control measures may be used alone or in combination to minimize the effects of land disturbance on stormwater. The number and type of control measures shall be selected based on degree of slope, soils, seasonal and climate conditions, and other factors determined by the attributes of the activities at the specific project location being addressed.

G.1 Initial Stabilization, Erosion and Sediment Controls, and Best Management Practices

Only construction activities such as roads, drainage, utility areas and areas for stormwater structures will be disturbed prior to initial stabilization. Upon stabilization of initial areas, additional areas may be disturbed. Erosion and sediment controls utilized during the construction phase have been designed to retain sediment on-site. Manufacturer's specifications and good engineering and construction practices will

be followed to properly select, install and maintain all control measures. Some of these controls are silt fencing, ditch checks, sediment basins, mulching/seeding, gravel at construction entrances and dust suppression. These controls will be replaced or modified if indications from periodic inspections or other information show that a control has been used inappropriately or incorrectly, or that it is not obtaining the intended result. Sediment that escapes the site will be removed, with the permission of neighboring land owners, at a frequency sufficient to minimize off-site impacts. Once design capacity of a sediment basin has been reduced by 50%, the sediment will be removed. Litter, construction debris, and construction chemicals will be maintained and properly disposed of in order to prevent them from becoming a pollutant to the stormwater discharges. There will not be any off-site storage areas utilized during this construction process.

G.2 Stabilization Practices

Note that during construction, temporary, or where required, permanent stabilization measures shall be initiated within 14 days where construction activities have temporarily or permanently ceased in accordance with Sections G.2.a and G.2.b of this SWPPP. These measures will generally include vegetative practices and will be performed in accordance with the appropriate timing per Section H.2.a. Other devices may be used if deemed necessary.

G.2.a Description and Schedule for Stabilization

The following is a list of the construction activities, listed in the general order that they may be performed, and the general control measures that shall be implemented (at a minimum). The specific schedule provided is a guide and the order noted is intended to be a general guideline. Modifications may be needed due to weather conditions or contractor's constraints. However, if modifications are made, the necessary controls will be in-place to accommodate the change and still meet the requirements of this SWPPP. See Plates A-1 and A-2 for the location, details and specifications of the construction components and controls:

Phase 1 Site Preparation

- Step 1 Install silt fence.
- Step 2 Construct north and west sediment basins.
- Step 3 Install and stabilize clean water diversions (if applicable) around areas to be disturbed. Stabilization of these diversions must be achieved prior to becoming functional. Install ditch checks.
- Step 4 Clear and grub necessary areas, preserving vegetation where possible to minimize runoff during construction and minimize the extent of re-vegetation needed once construction is complete. Topsoil shall

be stockpiled for future use. [Soil stockpiles will be placed within a designated soil spoil/stockpile area with appropriate controls in place (e.g., silt fence surrounding the stockpile and seeding and mulching completed per requirements listed below within the current Section of this SWPPP).

Phase 2 Site Construction

- Step 5 Perform proposed work and install any additional sediment, runoff and erosion control measures as deemed necessary in accordance with Section G.3 of this SWPPP. The measures currently anticipated are shown on Plate A-1 in Appendix A; however, modifications may be implemented by the Contractor if they meet the specifications of the BMPs and the intent of the proposed device(s) is met.
- Step 6 Finish proposed work and appropriately stabilize disturbed areas per requirements listed below within the current Section of this SWPPP.

Phase 3 Permanent Site Stabilization

- Step 7 Revegetate all pervious areas disturbed during construction that have not already been stabilized during the previous phases. The measures shall be initiated within 14 days of the areas reaching final grade. Note that depending on the length of the construction project, re-vegetation may be performed during construction at the timeframes listed below within the current Section of this SWPPP. The Site is considered stabilized when 100% of the disturbed areas are covered with 80% density.
- Step 8 Remove temporary control measures that were installed for construction in areas where permanent stabilization has been achieved and are not intended to remain as part of the final project design.

Preserving vegetation is the most effective way to control erosion at a construction site. In addition to minimizing runoff from the site during construction, preserving vegetation will minimize the time and effort necessary to revegetate an area after construction is complete. All areas to be disturbed are clearly marked on the site maps and will be identified in the field. Some general guidelines to help preserve vegetation at the construction site are identified below.

- Trees provide effective erosion and sediment control, watershed protection, dust and pollution control, noise reduction, shade, and other benefits during and after construction is complete. Care will be taken to preserve any trees outside of the construction areas.
- Existing natural conditions in the area will be preserved, to the extent practicable, through practices such as preserving riparian areas adjacent to surface waters of the state, preserving existing vegetation and vegetative buffer strips whenever possible.

Several vegetative practices, such as temporary and permanent seeding will generally be used to control erosion at the Site. These practices are listed below.

- Temporary seeding shall be employed for the purpose of reducing erosion and controlling sedimentation by stabilizing disturbed areas that will undergo future construction activities. Temporary seeding generally uses fast-growing grasses and will be used in areas where construction activities have ceased but are likely to re-occur or where permanent plant growth is not necessary. Fertilization and mulching requirements will ensure that temporary seeding is taking root. Temporary seeding and mulching shall be performed consistent with Section 2.1 and 2.2 of Appendix E. The actual seed type, method and application rate shall be as described below, but may vary depending on availability and contractor and/or Facility preferences. If weather conditions are unsuitable for seeding, mulching or matting by itself may be used.
 - March 15 – June 15

Bermuda Grass (Common) unhulled	5 lbs/acre
Bermuda Grass (Common) hulled	10 lbs/acre
Lespedeza (Korean)	10 lbs/acre
 - June 16 – August 31

Bermuda Grass (Common) unhulled	5 lbs/acre
Bermuda Grass (Common) hulled	10 lbs/acre
 - September 1 – March 14

Rye Grass (Annual)	10 lbs/acre
Crimson Clover (Dixie)	10 lbs/acre
Bermuda Grass (Common) unhulled	20 lbs/acre
- Permanent seeding shall be employed for the purpose of permanently stabilizing disturbed areas that have reached final grade. Permanent seeding of grasses, trees and brush will minimize the transport of soil by wind or stormwater flowing over the area. Permanent seeding and mulching shall be performed consistent with Section 3.1 of Appendix E. Mulch shall be applied with tacifier. The actual seed type, method and application rate shall be as described above, but may vary depending on availability and contractor and/or Facility preferences. Hydroseeding shall only be performed if approved by the owner.
- Optimum seeding dates will generally be from April through May, and from mid-August through September. Permanent seeding will be limited to these timeframes when possible. Temporary seeding between June and mid-August shall be as described above. Between June and mid-August, water will be applied if it is needed to provide growth due to insufficient rainfall. Hydroseeding alone, if approved by the owner, shall only be conducted between March 31 and September 1; otherwise, a non-vegetative stabilization method shall be performed in conjunction with hydroseeding.

Methods of temporary or permanent vegetative stabilization other than those listed in this section may be used at the Site and will be dependent on the conditions encountered during construction activities and the preference of the Contractor with the concurrence of SWEPCO and/or Facility personnel. Other stabilization measures anticipated include matting of ditches that do not have established vegetation (see Section 2.5 and 2.6 in Appendix E).

Several non-vegetative practices such as construction phasing, mulching, and matting shall be used to control erosion at the Site. Measures may also need to be undertaken to dissipate the velocity of rapidly flowing runoff from the work area, permanently stabilize channels and outfalls, and prevent erosive flows from undermining the structures. These may include geotextile and rip-rap. Matting may also be needed if channelized erosion is present in drainage channels. The anticipated practices to be employed at the Site are listed below.

- Mulching is a temporary soil stabilization or erosion prevention technique used where materials such as grass, hay, wood chips, straw, or gravel are placed on the soil surface. Mulching will help to keep soil particles and their associated attached chemicals from entering surface water. Additionally, mulching will reduce the speed of stormwater runoff over the area. Mulching, in combination with seeding, offers immediate sediment and erosion control while providing seed protection from adverse weather conditions. Use of mulch may require a retaining measure to be added such as netting or anchoring to keep it in place.
- Matting is used to stabilize easily eroded areas such as drainage channels and slopes while vegetation is being established. This protection shall meet the specifications listed in Section 2.5 of Appendix E. Seeding shall occur prior to installation of any matting.
- Construction phasing can minimize the time an area is to be exposed, thereby minimizing erosion for an area. Through planning and careful scheduling, SWEPCO and the Contractor can ensure that the BMPs are implemented at the most appropriate time and that the timing of land disturbance is completed in an efficient manner.
- Rip-rap Inlet/Outlet and Diversion Protection is an erosion control device used at the end or beginning of culverts and constructed open channels as an erosion-resistant transition area where concentrated high-velocity flows occur. To protect the underlying soil, geotextile shall be placed under the rip-rap.

G.2.b Buffer Areas

Buffer zones will be established between the top of stream bank and the disturbed areas of the site. The Facility will maintain the zones with temporary and permanent stabilization practices in accordance with the following requirements:

- If clearing and grading activities occur, a buffer zone of 25 feet must be provided from any named or unnamed streams, creeks, rivers, lakes or other water bodies. The disturbed areas are not within 50 feet of any 303(d)-listed water bodies, Extraordinary Resource Waters, Ecologically Sensitive Water Bodies, or Natural and Scenic Waterways.
- If the site is to be disturbed within the recommended buffer zone, then the buffer zone area must be stabilized as soon as possible.

- Exceptions from this requirement for areas such as water crossings, limited water access, and restoration of the buffer are allowed if the permittee fully documents in this SWPPP the circumstances and reasons for the buffer zone encroachment.
- The above requirements shall not interfere with any other ordinance, rule or regulation, statute or other provision of law.
- Above-grade clearing that does not disturb the soil in the buffer zone area does not have to comply with buffer zone requirements.

G.2.c Records for Stabilization

Records of stabilization shall list the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated. The records will be completed, updated and included in the plan for three (3) years.

G.2.d Deadlines for Site Stabilization

- Stabilization controls used at the Site to minimize runoff and reduce the sediment load in stormwater both temporarily and permanently will be initiated as soon as practical, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Exceptions may be applied such that if snow or ice cover prevents initiation of temporary or permanent stabilization within the 14-day timeframe, the stabilization measures shall be initiated as soon as conditions allow.

G.3 Structural Practices

Runoff controls may be used at the Site to minimize erosion by diverting the flow away from disturbed areas when possible, and controlling the flow of runoff from disturbed areas. Several practices may be used to control runoff at the Site. Some of these practices include drainage diversion channels and preventative grading practices. These practices are listed below.

- Drainage Diversion Channels such as ditches and swales convey stormwater with minimal channel erosion. Any channels will be vegetated, stoned or matted prior to becoming functional to minimize channel erosion.
- Protective Grading Practices can also control runoff and minimize erosion. The grading and drainage plan was designed so that runoff patterns and directions of flow remain the same, where possible. Grades were also designed to avoid significant grade changes, when possible.

Sediment controls may be used, if needed, at the Site to control erosion and prevent sediment-laden water from leaving the area. The controls shall store runoff, allowing sediments to settle, and/or divert flows away from exposed soils to limit runoff from exposed areas. Sediment control practices shall be functional

throughout the duration of the project. If used, they shall be implemented prior to the start of clearing, grubbing, and grading activities. Sediment control practices may need to be modified as construction progresses if the topography is altered such that the drainage patterns are changed.

Silt fences shall be used in the locations shown on Plate A-1 in Appendix A. Several other practices may be used to control sediment transport at the site and improve the quality of stormwater discharged from the Site. These practices include, but are not limited to, stabilized drainage ditches and swales (diversions) that direct runoff to the sediment basins and primary ash pond, ditch checks, road stabilization and dust control practices. These practices are listed below.

- Drainage Ditches, Swales, and Diversion Berms (Diversions) direct the flow of runoff from or around disturbed areas. Only diversions installed or utilized to direct runoff to a sediment basin shall be considered a sediment control practice. Diversions shall be stabilized via vegetative or structural methods prior to becoming functional.
- Sediment Basins are larger sediment settling areas that release runoff at a controlled rate. The outlet structure of the sediment basins will be a riser pipe and a combination of a culvert discharge pipe and a drainage swale. There shall be rip-rap and underlying geotextile installed at the discharge end of the pipe. Sediment shall be removed from the sediment basin when sediment occupies 50 percent of the detention area storage volume. The rip-rap and geotextile at the spillway channels should decrease sediment loading in the discharge water even further. Baffle curtain(s) or other methods of directing flow may be installed within the basin(s) to promote suspended sediment settling. Pumps, swales and drainage ditches shall be used, as needed, to manage stormwater that does not drain directly into the basins.
- Ditch Checks are rock dams placed in diversions to reduce concentrated flow velocities, channel erosion and sediment loads. Similarly functioning devices and prefabricated checks may be substituted if conditions warrant and are allowed by the Facility. Ditch checks shall meet the requirements set forth in Section 2.8 of Appendix E.
- Road stabilization is required to meet the stabilization requirements of the general permit, in addition to minimize dust generation. Road stabilization will be accomplished by the installation of stone, if needed, where traffic will be moving into and from the Site. Construction roads shall be sloped to direct drainage to an appropriately stabilized diversion(s) and/or water bar(s) installed as deemed necessary. Construction entrances shall meet the requirements set forth in Section 2.11 of Appendix E.
- Silt Fence is a sediment-trapping device that utilizes a geotextile fence and topography to cause sediment deposition from sheet flow, typically at the perimeter of a disturbed area. Silt fence shall only be used on relatively flat areas and never within discrete water conveyance channels. To maximize soil deposition, silt fence must be placed on the level contour of the land so that flows are dissipated into uniform sheet flow. Super silt fence shall be used on steep slopes. Super silt fence shall also be used at the toe of a slope when no other control can be utilized and placed several feet away from the toe of slope, when possible. A drop inlet silt fence shall be installed around the drainage box adjacent to the leachate sump. Silt fence shall meet the requirements set forth in Section 2.9 of Appendix E.

- Dust control may be needed if the Site generates excessive dust in order to maintain compliance with other permits. There are various methods to control dust generation at the construction site. Establishing vegetative cover provides an effective barrier against wind. Mulching, watering, stone covering, or wind barriers will minimize dust generation by protecting the ground surface. Dust control shall meet the requirements set forth in Section 2.4 of Appendix E.

G.3.a Sediment Basins

The North and West Sediment Basins were designed to handle stormwater runoff from the final landfill slopes; however, they will also be used as sediment control during construction activities. They were designed based on the runoff volume of a 10-year, 24-hour storm. The hydraulic design of the outlet will allow the basin to drain the dry storage volume within 24 to 72 hours in accordance with the General Permit. The Leachate/Contact Water Ponds may be utilized as a temporary sediment basin during construction. Accumulated water shall be pumped to the West Sediment Basin after storm events during the modification of the landfill.

G.3.b Velocity Dissipation Devices

Velocity dissipation devices will be provided at the discharge points and other required areas. Measures may need to be undertaken to dissipate the velocity of rapidly flowing runoff from the work area, permanently stabilize channels and outfalls, and prevent erosive flows from undermining the structures. These may include geotextile and rip-rap. Matting may also be needed if channelized erosion is present in drainage channels.

H Other Controls

H.1 Solid Material Control, Debris and Wastes

No solid materials, including building materials, will be discharged to the waters of the State. Solid wastes will be disposed of in accordance with applicable federal and state regulations.

H.2 Off-Site Vehicle Tracking

Off-site vehicle tracking of sediments can have a significant impact on the quality of stormwater discharged from the Site and surrounding areas. Sediments and the generation of dust will be minimized by stabilizing the entrance and access roadways at the Site as discussed in Section G.3. Other measures to reduce off-site vehicle tracking include cleaning of vehicle wheels to remove mud prior to leaving the Site or sweeping of adjacent roadways to remove excess mud, dirt, or rocks tracked from the Site.

H.3 Temporary Sanitary Facilities

The contractor will supply temporary sanitary facilities as required by OSHA.

H.4 Concrete Waste Area

No liquid concrete waste will be discharged to waters of the State. Any concrete washout waters will be controlled by means of designating and constructing a concrete wash out pit and properly disposing of all materials from the area. A concrete wash out pit is shown on the Site Map in Appendix A.

H.5 Fuel Storage, Hazardous Materials and Truck Washing Areas

No solvents, paints, stains, gasoline, diesel fuel, used motor oil, hydraulic fluid, anti-freeze, and other such liquid, or hazardous wastes will be discharged to the waters of the State. Methods for protecting these areas will include but are not limited to, locating areas away from water bodies and using BMPs discussed further in Section J.

I. Non-Stormwater Discharges

The non-stormwater discharges presented below are authorized in the General Permit to be discharged along with stormwater from a construction site. Any anticipated authorized non-stormwater discharge must be identified in this SWPPP.

- Waters used to wash vehicles where detergents or other chemicals are not used.
- Water used for dust control.
- Non-potable water sources including pipeline testing.
- Uncontaminated groundwater from well point dewatering or excavation.
- Potable water sources.
- Uncontaminated foundation or footing drains.

BMPs for the above anticipated non-stormwater discharges will include directing the runoff to detention areas and sediment basins, and applying the water (where applicable) evenly to minimize potential erosive forces.

If groundwater is encountered during construction, clear water shall be pumped to nearby ditches, swales, or pipes and turbid water shall be pumped to one of the sediment basins similarly to other stormwater management practices. Prior to completion, the Leachate/Contact Water Ponds may be temporarily used as a sediment control device if approved by SWEPCO. There shall be no turbid discharges of groundwater to waters of the State.

Good housekeeping procedures shall be implemented to maintain a clean and orderly work environment in areas which may contribute pollutants to stormwater discharges. These procedures shall include the following:

- Careful material storage and disposal practices shall be employed.
- Chemical substances in the work place shall be properly labeled and stored.
- Cleanup operations shall be conducted on a routine basis.
- Work areas shall be well organized.
- Employees shall be trained about good housekeeping practices.
- Housekeeping inspections shall be routinely conducted.

J. Post-Construction Stormwater Management

Post-construction stormwater practices are included in this SWPPP to provide perpetual management of runoff quality and quantity, and protect the physical, chemical, and biological characteristics of the receiving water.

The post-construction BMPs chosen shall be able to detain stormwater runoff for protection of the stream channels, erosion control, and improve water quality. The chosen BMPs includes the North and West Sediment Basins; drainage ditches, swales and diversion berms; rip-rap inlet and outlet protection; and vegetative cover.

Conditions at the Site are such that post-construction runoff will not negatively impact any receiving streams. Runoff from open (active) portions of the landfill will be collected and managed via the Contact Water Pond. Runoff from sideslopes of the landfill's final cover system will either be collected in sediment basins by means of drainage ditches, diversion berms or swales, or will be diverted by sheet flow into the adjacent unnamed stream, as it currently does. Runoff being collected and directed to sediment basins and the Contact Water Pond will gravity drain to the current discharge location (the primary ash pond) by means of a conveyance pipe, drainage channels/culverts, or the unnamed stream.

The Intermediate Liner, Leachate Collection System and Final Cover System Project shall not include activities that will discharge dredge or fill material into surface waters unless in accordance with applicable federal and state regulations.

K. State or local Plans

The county in which the construction activity will occur was contacted to determine if there are erosion control and/or stormwater runoff requirements in the city code, city ordinance or city permits. All applicable requirements will be met. Documentation of compliance will be provided in Appendix F of this SWPPP. This plan will be updated as necessary to reflect any changes to the applicable federal, state, or local requirements that affect the stormwater controls implemented on the site.

L. Inspections

Sediment, runoff, and erosion control measures installed at the Site will be inspected by SWEPCO, or other designated personnel fully knowledgeable of the requirements of this SWPPP. SWEPCO personnel, or designated representatives, will have sufficient knowledge of the policies and procedures established under this SWPPP and the technical ability to ensure that the pollution prevention practices are in good working order. Inspections will cover:

- disturbed areas at the Site or material storage areas that are exposed to precipitation
- structural control measures
- accessible locations or points where discharges occur

In general, the inspector(s) will determine if the control measures have been installed correctly and within the required timeframes, whether or not damage has occurred to the measure since it was installed, and what needs to be done to correct problems should they be identified. In addition to a general inspection of the Site, the General Permit requires the inspection of the following:

- Disturbed areas exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Stabilization measures installed for erosion and sediment control identified in this SWPPP will be observed to ensure that they are operating as intended. Inspection of disturbed areas will ensure that seeding or other vegetative practices are taking root and that excessive sediment is not entering the stormwater discharged from the Site. Areas where materials or equipment are temporarily stored will be inspected for evidence of pollutants entering the drainage system. Maintenance of stabilization areas will be implemented as appropriate.
- Structural control measures shall be inspected to ensure that they are in proper working condition. Each control device installed at the Site will be inspected to determine if damage has occurred and to identify the necessary repairs to return the measure to the proper working order. Additionally, the inspector will determine if the control device is adequate to prevent excessive sediment from entering the stormwater drainage systems.
- Accessible locations or points where discharges occur shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. The discharge points are to be observed for evidence of significant erosion. If stormwater is being discharged at the time of the inspection, it will be

examined for sediment loading and debris. If erosion at the point of discharge or excessive sediment loading of the discharge is observed, control measures to correct the incident will be specified and implemented.

- Locations where vehicles enter or exit the Site shall be monitored to ensure that excess dust generation is not occurring. As discussed under Section I.2 of this SWPPP, land that is subject to vehicle travel may require road stabilization to provide dust control. Required maintenance of these areas is to be noted and implemented.

L.1 Inspection Frequency

The project area shall be inspected at least once every seven calendar days.

L.2 Inspection Form

An example of an inspection form to be utilized at the facility is included in Appendix B of this SWPPP. The ADEQ inspection form shall be used for all inspections, if possible. If a different form is used, it must at a minimum contain the following information:

- inspector name and title
- date of inspection
- amount of rainfall and days since the last rain event
- approximate beginning and duration of the storm event
- description of any discharges during the inspection
- location of discharges of sediment and/or other pollutants
- location of BMPs in need of maintenance or where maintenance was performed
- if BMPs are in working order and if maintenance is required
- locations that are in need of additional controls
- location and dates when major construction activities begin, occur or cease
- report signature of inspector

L.3 Inspection Records

Completed inspection forms will be kept on file as part of this SWPPP at the Site for a minimum of three (3) years following completion of final site stabilization. Working copies of the drawings showing erosion and sediment control measures implemented at the Site will be maintained with the inspection reports.

L.4 Winter Conditions

Inspections are not required at the construction site where snow cover exists over the entire site for an extended period, and melting conditions do not exist. Regular inspections are required at all other times as specified in this permit.

L.5 Adverse Weather Conditions

Inspections should not be performed during adverse conditions that are dangerous or create inaccessibility for personnel. Such conditions include, but are not limited to, flooding, high winds, electrical storms, and extended frozen conditions. An inspection shall be completed as soon as adverse conditions are no longer present and an inspection can be performed safely.

If adverse weather conditions prevent compliance with the General Permit, the beginning and ending date of such conditions shall be documented and included in Appendix J of this SWPPP.

L.6 Inspector Authorization

The Contractor shall submit a letter to ADEQ (Water Division) and SWEPCO with a list of authorized inspectors to perform site inspections. Additional letters may be submitted, as needed, to authorize other inspectors. The list of authorized inspectors and a copy of the authorization letter(s) shall be included in Appendix I of this SWPPP.

M. Maintenance

The effectiveness of control measures established by this SWPPP is dependent on the continual maintenance of the stabilization and structural devices. The function of the control measures shall be maintained until all upslope areas they control are permanently stabilized. This SWPPP includes a description of the procedures which will be followed to ensure the timely maintenance of vegetation and that the erosion and sediment control measures and other protective measures identified in this SWPPP remain in good and effective operating condition.

This SWPPP will be revised, as needed, based on the results of the inspections and in accordance with the following:

- In general, if an inspection indicates that a control measure needs repair or maintenance, it must be repaired or maintained within three (3) business days of the inspection, weather permitting. However, if conditions do not permit large equipment to be used, a longer timeframe is allowed if the condition is thoroughly documented on the inspection form.

- If the inspection indicates that the control measure does not meet its intended function, and that a more appropriate control measure is required, the new control device shall be installed within three (3) business days from the date of the inspection if approved by SWEPCO.
- If the inspection indicates that a control measure has not been implemented in accordance with the permit and this SWPPP, the control device must be implemented prior to the next storm event that produces runoff from the Site, but in no case later than three (3) business days from the date of the inspection. If the inspection indicates that the control measure is not needed, the record must explain why this is the case.

If this SWPPP proves to be ineffective in preventing sediment-laden water from leaving the Site or if the project expands beyond what is discussed in this SWPPP, it shall be revised accordingly.

Maintenance issues will be evaluated during the regular inspection that will be performed in accordance with Section M of this document. General maintenance items include the following:

- The sediment basins shall be cleaned when sediment fills 50 percent of the wet detention volume, as indicated by a mark on a stake in the sediment basins.
- Accumulated sediment shall be removed from the silt fence when the sediment reaches one-half the fence height, or when it causes the fence to bulge.
- Drainage ditches and swales (diversions) shall be inspected periodically. Damaged or unstabilized diversions shall be repaired in a timely fashion.
- Grassed areas shall be inspected periodically until the stand is successfully established. Damaged, bare, or sparse areas will be repaired by filling any gullies, re-fertilizing, over-seeding or re-seeding, matting, and mulching.
- Rip-rap inlet/outlet protection will be inspected after storm events for stone displacement and for erosion at the sides and ends. Needed repairs will be made soon after problems are discovered.

N. Employee Training

Employee training shall be provided by SWEPCO to all personnel responsible for implementing the activities identified in the SWPPP, including, but not limited to, contractors, subcontractors, and inspectors. Training will be given by a knowledgeable and qualified trainer, and will address the components and goals of this SWPPP, as well as how and why the components are to be implemented. Observation of current job procedures for the proper installation, repair and maintenance of sediment control structures will be stressed. Employees will be trained on their responsibility to ensure stormwater and groundwater protection. Contract employees will follow the procedures and specifications written in or attached to this SWPPP. Training will occur before employees are actively engaged in any land-disturbing activities, and

at suitable intervals thereafter, based on weekly inspection results, environmental conditions encountered, or other criteria.

A list of the authorized inspectors and their respective training records shall be included in Appendix I of this SWPPP. Electronic records may not be included in Appendix I but shall be made available upon request.

CONTRACTORS

Construction activities associated with the Intermediate Liner, Leachate Collection System, and Final Cover System will require the use of outside Contractors (and/or subcontractors) to complete the scope of work. The Contractor(s) that will perform the work will comply with the measures included in this SWPPP. The Contractor(s) will also be required to sign a certification statement to verify that they understand the terms of the General Permit and shall implement the requirements of this SWPPP.

SWEPCO personnel shall review with each appropriate Contractor (and/or subcontractor) the requirements for runoff, sediment, and erosion control to be implemented as described in this SWPPP. The Contractor responsible for maintaining temporary erosion control measures shall be notified of any necessary maintenance or upkeep as recorded on the inspection report.

The Contractor Certification shall be made in accordance with the signatory requirements outlined below. All certifications shall be included as part of this SWPPP in Appendix G and/or maintained at the Site or Facility. If additional contractors are added to the project, the list of contractors should be updated accordingly.

Contractor Certification

Each Contractor and Subcontractor performing construction and remediation activity under this SWPPP shall sign the following certification:

I certify under penalty of law that I understand the conditions and responsibilities of this Stormwater Pollution Prevention Plan (SWPPP) and the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the stormwater discharges associated with construction activity from the Site covered by this SWPPP.

Contractor Signatory Authority

Title

Date

PLAN CERTIFICATION

The Stormwater Pollution Prevention Plan Certification requires a signature by either the operator or the cognizant official identified on the Notice of Intent. All documents required by the General Permit and other information requested by the Director of the ADEQ shall be signed by the operator or by a duly authorized representative of the operator. The plan certification shall be made in accordance with the signatory requirements outlined below. All certifications shall be included as part of this SWPPP in Appendix G and/or maintained at the Site or Facility.

Plan Certification

This SWPPP includes the following plan certification:

I, BRUCE W. MOORE, certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate 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.

Bruce W Moore
Name

AEP/SWEPSCO
Company

MGR, AIR & WATER QUALITY
Title

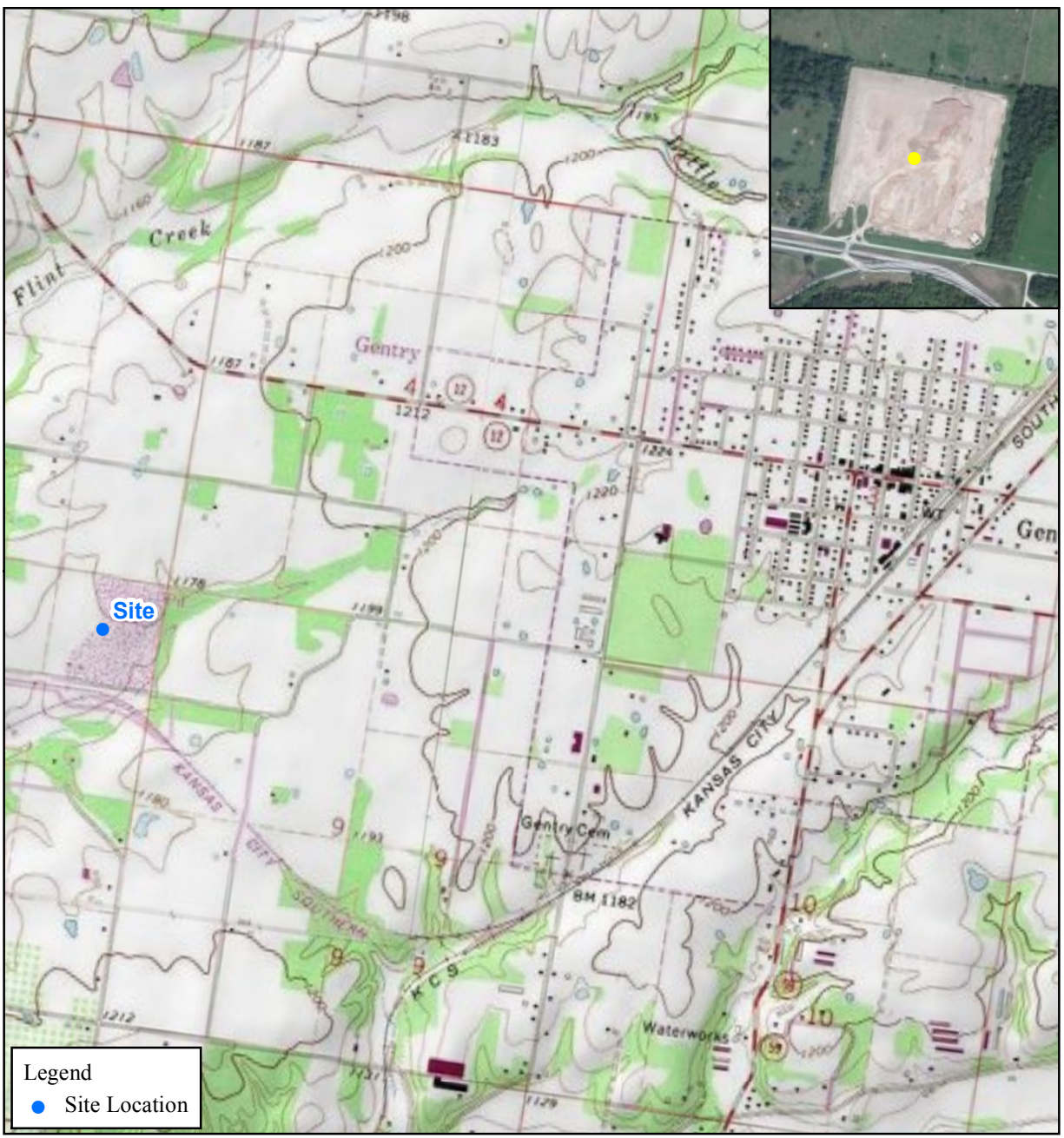
12/9/14
Date

REFERENCES

NPDES Permit No. ARR150000 - Authorization to Discharge Stormwater under the National Pollutant Discharge Elimination System and the Arkansas Water and Air Pollution Control Act. Arkansas DEQ. November 2011.

Erosion and Sediment Control Design and Construction Manual. Arkansas State Highway and Transportation Department. 2004.

FIGURES



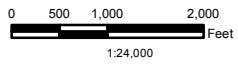
Legend
 ● Site Location



Quadrangle Location

Source: The topographic map was acquired through the OGRIP/OIT ArcIMS website, <http://gis1.oit.ohio.gov>. Quadrangle name: Cherokee City, Gentry, Siloam Springs and Gallatin, Arkansas, all revised in 1980, published in 1982.

The aerial photo was obtained from the Ohio Geographically Referenced Imagery Program and is courtesy of the Ohio Statewide Imagery Program and is dated 2006.



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Southwestern Electric Power Company (SWEPCO)
 Flint Creek Power Plant Landfill
 Stormwater Pollution Prevention Plan for the Intermediate Liner,
 Leachate Collection System and Final Cover System

Vicinity Map

Gentry, Arkansas

Date:
February 2012

Project Number: APO033
 Geodatabase: Hull.mdb
 File Name: APO033_02_Fig01_SiteLocMap.mxd

Figure
1

Produced using ArcGIS 9.3

APPENDIX A

Site Map and Details

SEDIMENTATION AND EROSION CONTROL NOTES:

- 1) DURING CONSTRUCTION THE CONTRACTOR SHALL PROVIDE PROPER SOIL EROSION MEASURES FOR PROTECTION OF ALL ADJACENT ROADS, LANDS AND STREAMS AS DESCRIBED BY THE CURRENT APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS AND IN ACCORDANCE WITH THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
- 2) THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL AT: 1) ALL POINTS WHERE PROJECT WATERS LEAVE THE LIMITS OF THE PROJECT, 2) ALL POINTS WHERE PROJECT WATERS ENTER PORTIONS OF COMPLETED UNDERGROUND PIPING, AND 3) AROUND ANY AREA DESIGNATED FOR SOIL STOCKPILING OR MATERIAL STAGING. ACCEPTED METHODS OF PROVIDING EROSION/SEDIMENT CONTROL INCLUDE BUT ARE NOT LIMITED TO: EROSION CONTROL BLANKETS, SEDIMENT BASINS, SEDIMENT TRAPS, BORROW AREA AND STOCKPILE PROTECTION/STABILIZATION, SILT FENCE, TEMPORARY GROUND COVER, OR COMBINATIONS OF THEM.
- 3) THE CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE (CONSISTENT WITH SEDIMENT/EROSION CONTROL PRACTICES) OF THE WORK AREA AT ALL TIMES.
- 4) NECESSARY REPAIRS TO DAMAGED BARRIERS AND/OR REPLACEMENT OF SAME SHALL BE ACCOMPLISHED IMMEDIATELY.
- 5) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL OR WHEN LEVEL OF DEPOSIT REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE REGRADED AS NECESSARY AND THE AREA SEEDED.
- 6) EROSION CONTROL SILT FENCE SHALL BE INSTALLED DURING CONSTRUCTION ACTIVITIES AT A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF EACH BERM, SOIL STOCKPILE, ETC.
- 7) ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE SILT FENCE BEFORE RUNOFF OVERTOPS THE FENCE. SEDIMENT SHOULD TYPICALLY BE REMOVED WHEN IT REACHES ONE-HALF THE FENCE HEIGHT OR WHEN IT CAUSES THE FENCE TO BULGE.
- 8) THE CONTRACTOR SHALL SEED AND MULCH THE STOCKPILE AND SPOIL AREAS IN ACCORDANCE WITH THIS SWPPP, OR AS REQUIRED BY THE OWNER. THE CONTRACTOR SHALL MAINTAIN THE STABILIZED SPOIL/STOCKPILE AREAS.
- 9) THERE IS AN UNNAMED STREAM ADJACENT TO THE WORK AREAS. THERE SHALL BE A MINIMUM BUFFER OF 25 FEET FROM THE STREAM AT ALL TIMES.
- 10) THE CLEARING OF TREES SHALL BE MINIMIZED AS MUCH AS POSSIBLE.
- 11) EXCAVATED MATERIAL SHALL BE USED AS FILL IN OTHER AREAS OF THE PROJECT. ALL UNUSED MATERIAL SHALL BE PLACED IN EXISTING PERMITTED ON-SITE SPOIL/STOCKPILE AREA FOR FUTURE USE.
- 12) THE CONTRACTOR SHALL USE EXISTING ON-SITE HAUL AND ACCESS ROADS FOR THIS PROJECT. ADDITIONAL HAUL AND/OR ACCESS ROADS SHALL BE ADDED, AS NEEDED, IN LOCATIONS APPROVED BY THE OWNER AND OWNER'S ENGINEER.
- 13) STABILIZATION MEASURES (IN ACCORDANCE WITH THIS SWPPP) SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, EXCEPT WHERE THE INITIATION OF STABILIZATION MEASURES BY THE FOURTEENTH (14th) DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY SNOW COVER. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
- 14) STORMWATER FROM THE EAST SIDE OF THE LANDFILL SHALL BE MANAGED VIA THE NORTH SEDIMENT BASIN AND DISCHARGED TO THE EXISTING STREAM EAST OF THE LANDFILL. THE SMALL PORTION OF THE EAST SIDE THAT WILL NOT BE MANAGED VIA THE NORTH SEDIMENT BASIN SHALL BE MANAGED WITH SILT FENCE, AS SHOWN ON THIS DRAWING.
- 15) STORMWATER FROM THE NORTH SIDE AND PART OF THE WEST SIDE OF THE LANDFILL SHALL BE MANAGED VIA THE WEST SEDIMENT BASIN AND DISCHARGED TO THE PERIMETER DITCH WEST OF THE LANDFILL, AS SHOWN ON THIS DRAWING.
- 16) STORMWATER FROM PART OF THE WEST SIDE OF THE LANDFILL, AS WELL AS THE LEACHATE AND CONTACT WATER POND AREA, SHALL BE MANAGED VIA THE PRIMARY ASH POND.
- 17) STORMWATER FROM THE PROPOSED SPOIL/STOCKPILE AREA SHALL BE MANAGED VIA THE WEST SEDIMENT BASIN.
- 18) STORMWATER FROM THE SOUTH SIDE OF THE LANDFILL SHALL BE MANAGED VIA SILT FENCE AND DITCH CHECKS, AND DISCHARGED TO THE EXISTING CONCRETE CULVERTS IN THE SOUTHEAST CORNER OF THE LANDFILL, AS SHOWN ON THIS DRAWING.

GENERAL CONSTRUCTION COMPONENTS/SCHEDULE:

- INSTALL ALL SILT FENCE, SEDIMENT BASINS, DIVERSION BERMS, DRAINAGE SWALES/DITCHES, AND DITCH CHECKS;
- INSTALL TEMPORARY EROSION CONTROL MATTING ON DIVERSION BERMS AND DRAINAGE SWALES/DITCHES;
- CONSTRUCT ACCESS ROADS (AS NEEDED);
- CLEAR AND GRUB CONSTRUCTION AREAS, PRESERVING VEGETATION WHERE POSSIBLE TO MINIMIZE THE RE-VEGETATION NEEDED ONCE CONSTRUCTION IS COMPLETE;
- PERFORM WORK ACCORDING TO SCHEDULE AND SEQUENCE SHALL BE DETERMINED IN THE FIELD;
- FINISH GRADING AND RE-VEGETATE ALL PERVIOUS AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADES;
- REMOVE TEMPORARY COMPONENTS (I.E., SILT FENCES) THAT WERE INSTALLED FOR CONSTRUCTION AND ARE NOT INTENDED TO REMAIN.

GENERAL NOTES

- 1) THE TOPOGRAPHY WAS OBTAINED FROM A MARCH 31, 2010 SURVEY PERFORMED BY HENDERSON AERIAL SURVEYS INC. AND BY THE CIVIL LAB SECTION ON APRIL 25, 2013. HORIZONTAL DATUM: NAD27 ARN. VERTICAL DATUM: NGVD29.
- 2) THE CONTRACTOR OFFICE/STAGING AREA BOUNDARY SHOWN IS APPROXIMATE. THE REMOVAL OF TREES SHALL BE AVOIDED AS MUCH AS POSSIBLE.
- 3) IF ADDITIONAL ON-SITE ACCESS/HAUL ROADS ARE ADDED AND APPROVED BY THE OWNER, THE CONTRACTOR SHALL ESTABLISH APPROPRIATE EROSION AND SEDIMENT CONTROLS.
- 4) THE LIMITS OF THE FINAL COVER SHALL BE EXTENDED, AS NEEDED, TO COVER THE EXISTING ASH DISPOSAL LIMITS. ANY MODIFICATIONS TO THE LIMITS SHOWN ON THE DRAWING SHALL BE APPROVED BY THE OWNER AND OWNER'S ENGINEER, AND APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE EXPANDED ACCORDINGLY.
- 5) THE LIMITS OF EARTH DISTURBING ACTIVITIES SHALL BE EXPANDED, IF NEEDED, TO ACCOMMODATE ANY EXPANSION OF THE FINAL COVER SYSTEM. IF ADDITIONAL AREA IS REQUIRED TO BE DISTURBED, A MODIFIED LIMIT SHALL BE APPROVED BY THE OWNER. THIS SWPPP WILL BE REVISED AND APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE EXPANDED ACCORDINGLY.
- 6) THIS DRAWING SHOWS SEVERAL STAGES OF CONSTRUCTION ACTIVITIES THAT MAY OR MAY NOT OCCUR CONCURRENTLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED PER THE NEED OF EACH ACTIVITY THROUGHOUT ALL STAGES OF CONSTRUCTION.
- 7) THIS DRAWING SHOWS GENERAL LOCATIONS WHERE SILT FENCE WILL BE NEEDED. IT SHALL BE INSTALLED PERPENDICULAR TO THE DIRECTION OF FLOW. IT SHALL NOT BE USED AS A DIVERSION, INSTALLED IN STREAMS OR SWALES, OR IN ANY AREA WHERE THERE IS A REASONABLE CHANCE OF CONCENTRATED FLOWS. SILT FENCE MAY BE NEEDED IN AREAS NOT SHOWN ON THIS DRAWING BASED ON THE ACTUAL PHASING/STAGES OF CONSTRUCTION (E.G., SILT FENCE MAY BE NEEDED ALONG SWECO ROAD NEAR THE LANDFILL PRIOR TO CONSTRUCTING THE NEW ACCESS ROADS, ETC.).
- 8) THE LOCATION OF THE TEMPORARY CLEAN WATER DIVERSION BERMS AND/OR SWALES ARE APPROXIMATE AND SHALL BE DETERMINED IN THE FIELD BASED ON CURRENT SITE CONDITIONS. THE CLEAN WATER DIVERSIONS SHALL DISCHARGE TO EXISTING STREAMS, CULVERTS, OR DRAINAGE CHANNELS.
- 9) THE DIVERSION BERM ALONG THE EAST SIDE OF THE LANDFILL MAY BE EXTENDED UP FROM THE HIGH POINT SHOWN (AT THE SAME SLOPE) TO INCREASE THE RUNOFF AREA THAT IS DIRECTED TO IT.
- 10) THE LOCATION OF A CONCRETE WASH-OUT PIT IS TO BE DETERMINED PRIOR TO CONSTRUCTION AND APPROVED BY THE OWNER.
- 11) IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL PUBLIC AND PLANT ROADS CLEAN FROM ASH, DIRT, MUD AND OTHER MATERIALS.
- 12) THE CONTRACTOR SHALL PLACE A STAKE IN THE NORTH AND WEST SEDIMENT BASINS TO INDICATE THE CLEANOUT ELEVATIONS, WHICH CORRESPOND TO 1176.1 AND 1167.5, RESPECTIVELY. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASINS ONCE IT REACHES THE RESPECTIVE LEVELS AND TRANSPORTED TO THE SPOIL/STOCKPILE AREA.
- 13) THE DRAINAGE DITCHES, SWALES AND DIVERSION BERMS THAT WILL REMAIN AFTER CONSTRUCTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE INTERMEDIATE LINER, LEACHATE COLLECTION SYSTEM AND FINAL COVER SYSTEM CONSTRUCTION PLANS. THEY MAY NEED CLEANED AND RE-ESTABLISHED/STABILIZED FOLLOWING CONSTRUCTION ACTIVITIES.
- 14) THE ORANGE SNOW FENCE REPRESENTS A BARRIER FROM THE EXISTING UNNAMED STREAM EAST OF THE LANDFILL. NO WORK ACTIVITY SHALL OCCUR EAST OF THE ORANGE SNOW FENCE WITHOUT PRIOR APPROVAL FROM THE OWNER.

LEGEND - EXISTING

- PROPERTY BOUNDARY
- 1200- INDEX CONTOUR
- 1200-- USGS INDEX CONTOUR
- - - - - USGS INTERMEDIATE CONTOUR
- TREE LINE
- FENCE LINE
- WATER METER
- TELEPHONE BOX
- CULVERT
- POWER POLE
- RAILROAD TRACKS
- B-1
- EXISTING MONITORING WELL

LEGEND - PROPOSED

- - - - - APPROXIMATE LIMITS OF INTERMEDIATE LINER
- - - - - LIMIT OF FINAL COVER GEOMEMBRANE
- - - - - APPROXIMATE LIMIT OF DISTURBANCE ACTIVITIES
- DRAINAGE DITCH
- DRAINAGE SWALE
- DIVERSION BERM
- - - - - APPROXIMATE LIMITS OF TEMPORARY SOIL OR SPOIL STOCKPILE AREA
- PIPE/CULVERT
- APPROXIMATE LOCATION OF ON-SITE ACCESS/HAUL ROAD TO BE USED BY THE CONTRACTOR
- B-9
- MONITORING WELL (TO BE INSTALLED BY OWNER)
- RIP-RAP EROSION PROTECTION
- DIRECTION OF STORMWATER FLOW
- OSF
- ORANGE SNOW FENCE
- 4:1
- APPROXIMATE FINAL SLOPE
- sc
- SILT CURTAIN
- b
- BAFFLE
- SF
- SILT FENCE

REFERENCE DRAWINGS

- 1-30206-NORTH SEDIMENT BASIN PLAN AND DETAILS
- 1-30207-WEST SEDIMENT BASIN PLAN AND DETAILS
- 1-30241-DETAILS

DATE	NO.	DESCRIPTION	APPROVED
2/24/14	1	RE-ISSUED FOR BD	AMG
2-8-12	0	ISSUED FOR BD	AMG

REVISIONS

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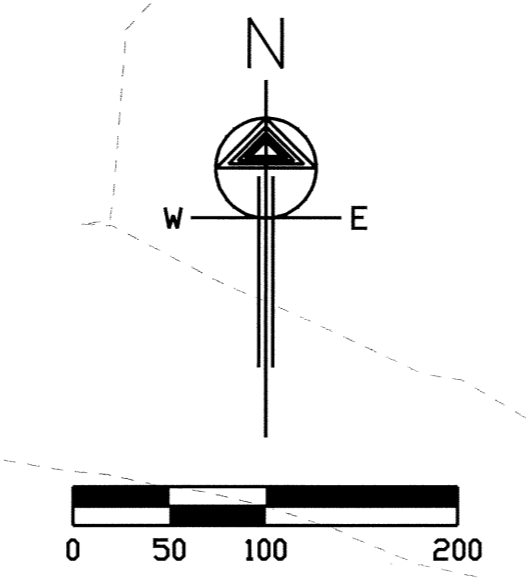
SOUTHWESTERN ELECTRIC POWER COMPANY (SWPCO)
FLINT CREEK POWER PLANT
GENTRY, ARKANSAS
FLINT CREEK POWER PLANT LANDFILL

PLATE A-1
SITE MAP

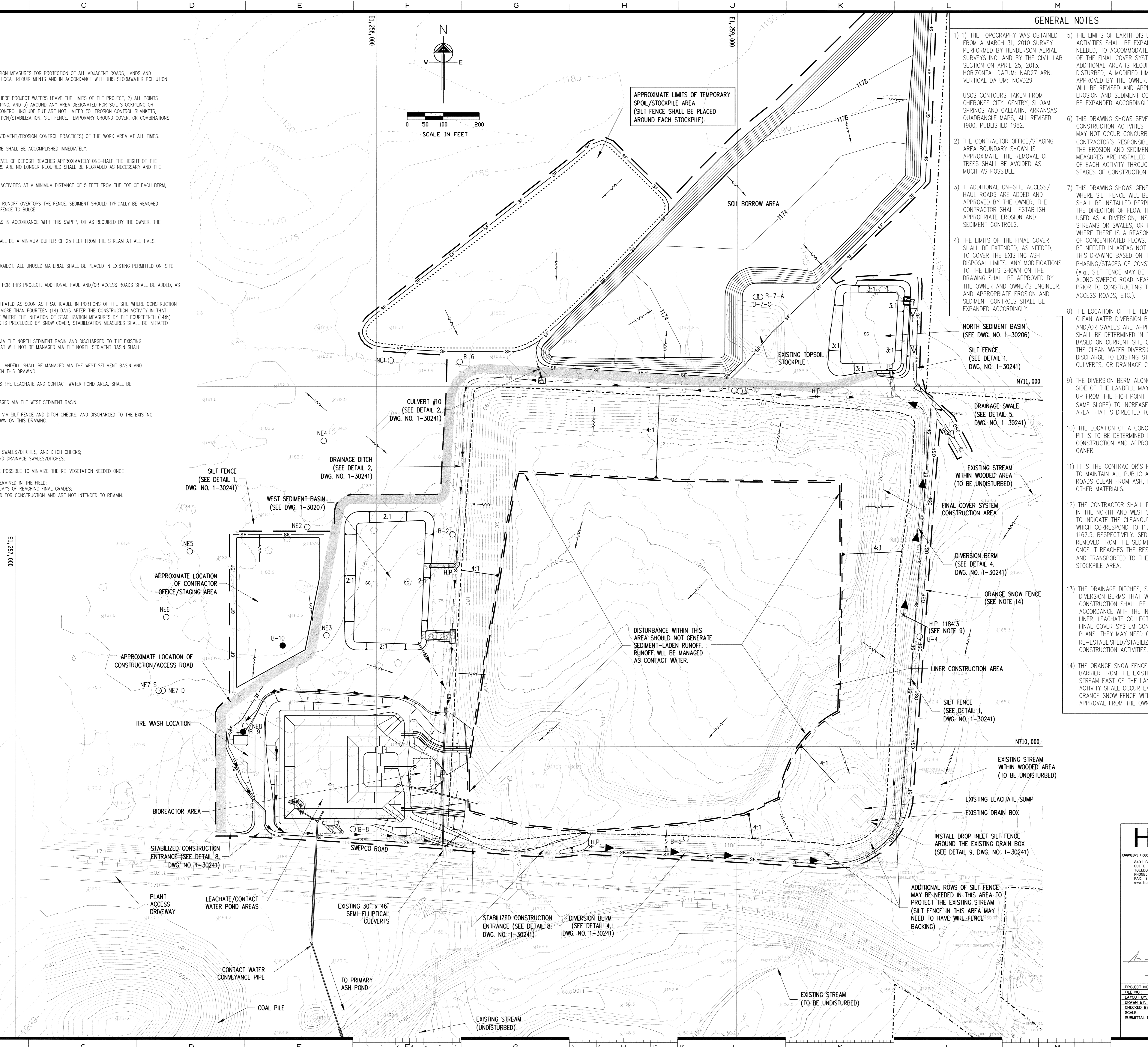
DWG. NO. 1-30240-1

CIVIL ENGINEERING DIVISION

1 RIVERSIDE PLAZA
COLUMBUS, OH 43215



APPROXIMATE LIMITS OF TEMPORARY SPOIL/STOCKPILE AREA (SILT FENCE SHALL BE PLACED AROUND EACH STOCKPILE)



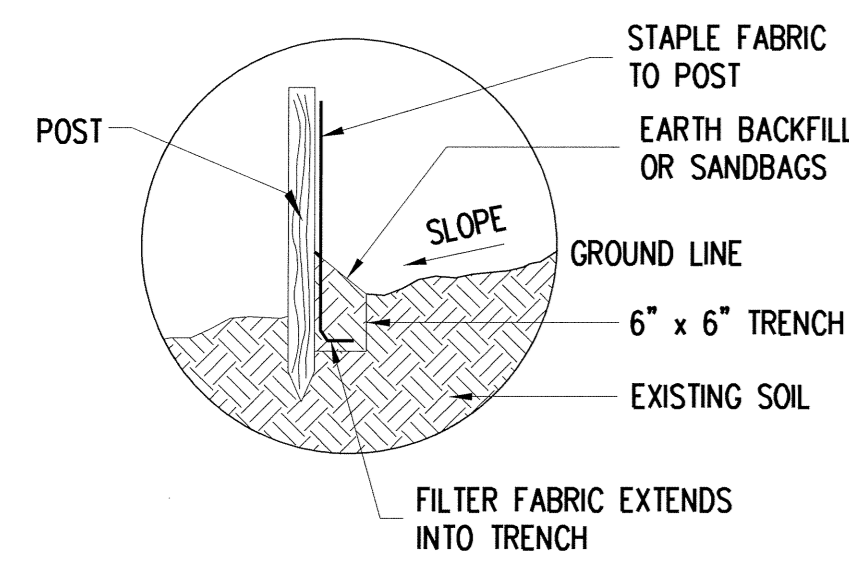
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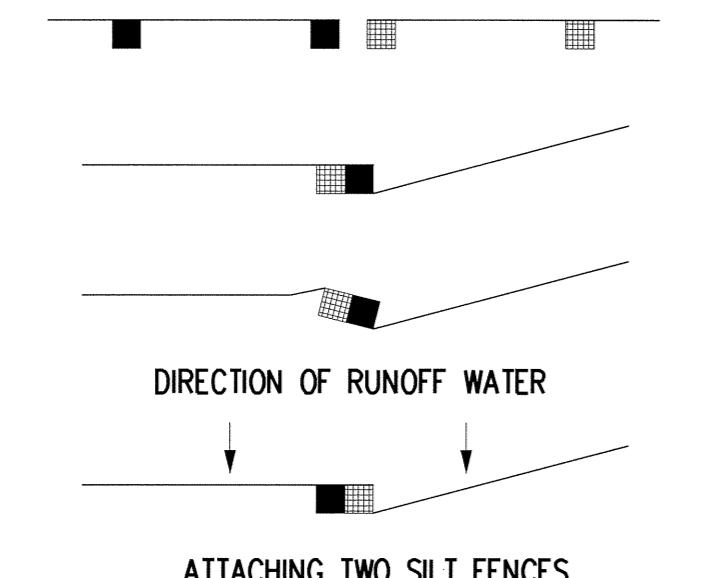
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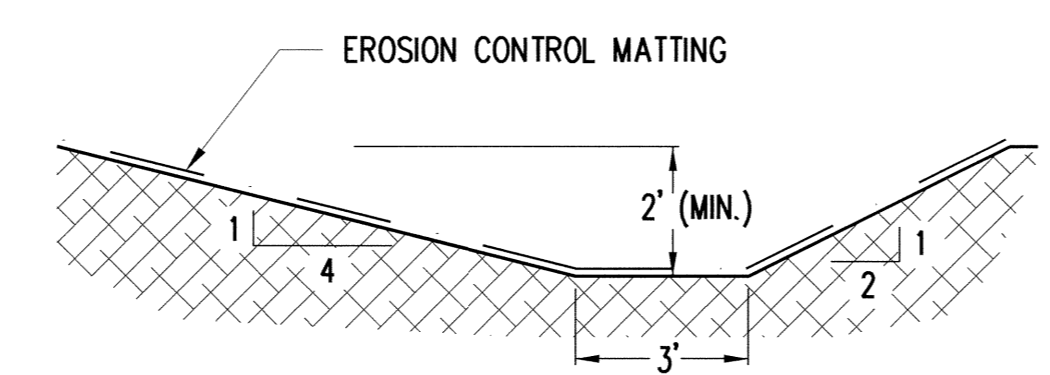
NOTE: SILT FENCE TO BE INSTALLED PERPENDICULARLY TO SLOPE.



PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
 ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
 DRIVE BOTH POSTS ABOUT 10-IN. INTO THE GROUND AND BURY THE FLAP.

1 SILT FENCE DETAILS
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTE:
 THE SILT FENCES SHALL BE CONSTRUCTED, OPERATED AND MAINTAINED IN ACCORDANCE WITH SECTION 2.9 OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT 2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL (SEE APPENDIX E OF THIS STORMWATER POLLUTION PREVENTION PLAN).



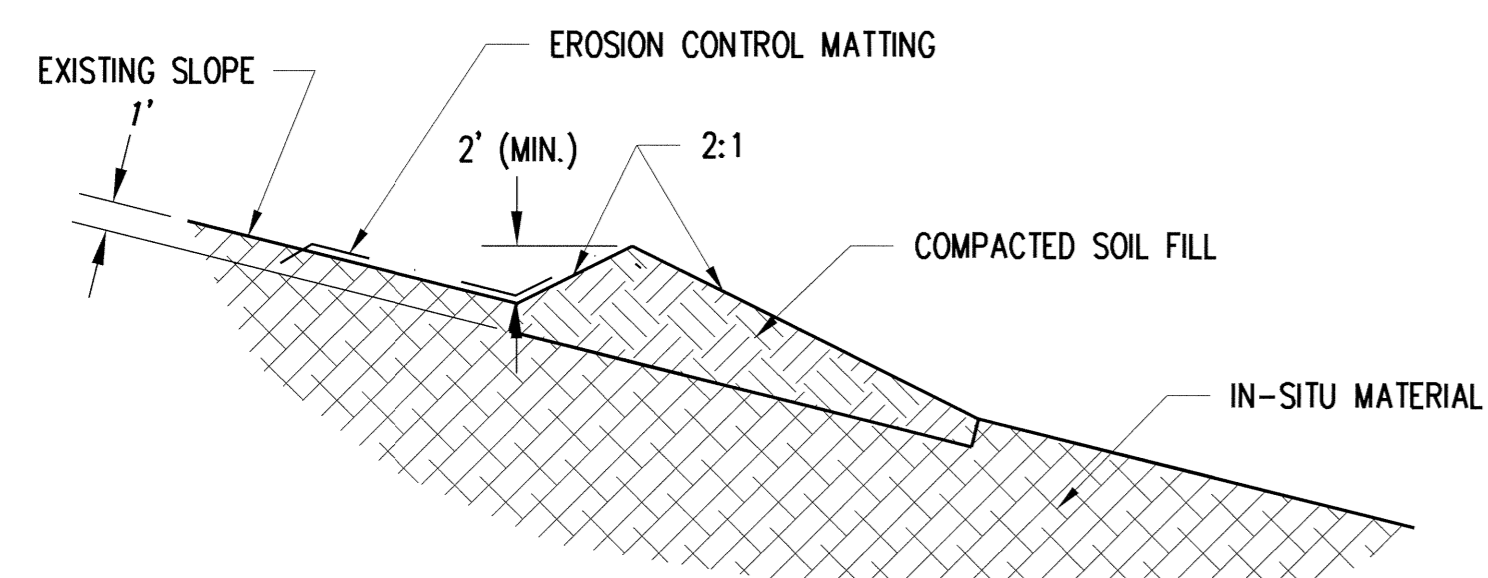
2 TYPICAL DRAINAGE DITCH DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTE:
 1) THE EROSION CONTROL MATTING SHALL BE NORTH AMERICAN GREEN® P-300 OR APPROVED EQUIVALENT. IT MAY BE REPLACED BY RIP-RAP UNDERLAIN BY AN 8 oz. NON-WOVEN GEOTEXTILE.
 2) THIS DETAIL REPRESENTS THE DRAINAGE DITCH AT THE PERIMETER OF THE LANDFILL IN AREAS OUTSIDE OF THE PERIMETER OF THE LANDFILL, BOTH SIDESLOPES SHALL BE 2:1.

CULVERT SPECIFICATIONS					
CULVERT NO.	LOCATION	SIZE (in)	TYPE	LENGTH ³ (H)	SLOPE (%)
1	NORTH SEDIMENT POND INLET	24" x 72"	RECTANGULAR RCP	25'	1.3%
2	UNDER EAST ROAD AT NORTHEAST CORNER OF THE LANDFILL	30"	DUAL-WALL CPE	60'	0.5%
3	UNDER EAST ROAD NEAR EAST LETDOWN	24"	DUAL-WALL CPE	105'	2.2%
4	UNDER LEACHATE SUMP ACCESS ROAD	18"	DUAL-WALL CPE	130'	4%
5	UNDER CONTACT WATER POND SOUTH INLET CHANNEL	30"	DUAL-WALL CPE	175'	0.6%
6	UNDER POND COMPLEX WEST ACCESS ROAD	12"	DUAL-WALL CPE	40'	0.6%
7	UNDER CONTACT WATER POND NORTH INLET CHANNEL AT DRAINAGE DITCH	24"	DUAL-WALL CPE	160'	2.7%
8	UNDER CONTACT WATER POND NORTH INLET CHANNEL AT DIVERSION BERM	30"	DUAL-WALL CPE	110'	1%
9	UNDER POND COMPLEX EAST ACCESS ROAD	18"	DUAL-WALL CPE	50'	4%
10 ⁴	UNDER ACCESS ROAD NEAR THE NORTHWEST CORNER OF THE LANDFILL	24"	DUAL-WALL CPE	(SEE NOTE 4) 1% (MIN.)	

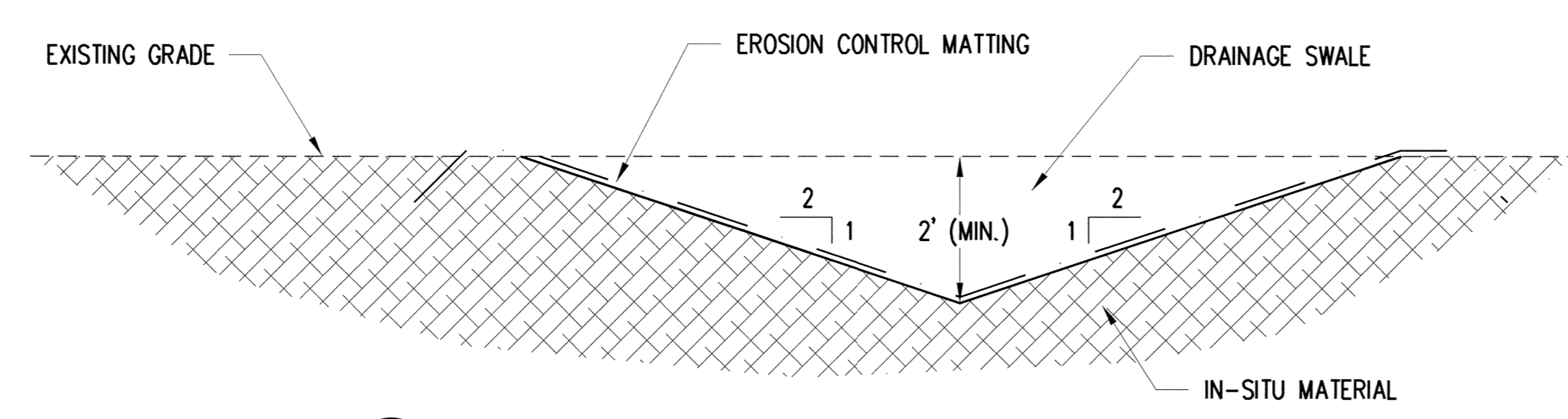
GENERAL NOTES

1) TYPICAL DETAILS APPLY TO ENGINEERED COMPONENTS THAT ARE PRESENT IN MULTIPLE LOCATIONS OF THE LANDFILL AND LEACHATE/CONTACT WATER PONDS (i.e., LINER SYSTEM, LEACHATE COLLECTION PIPE, ETC.).



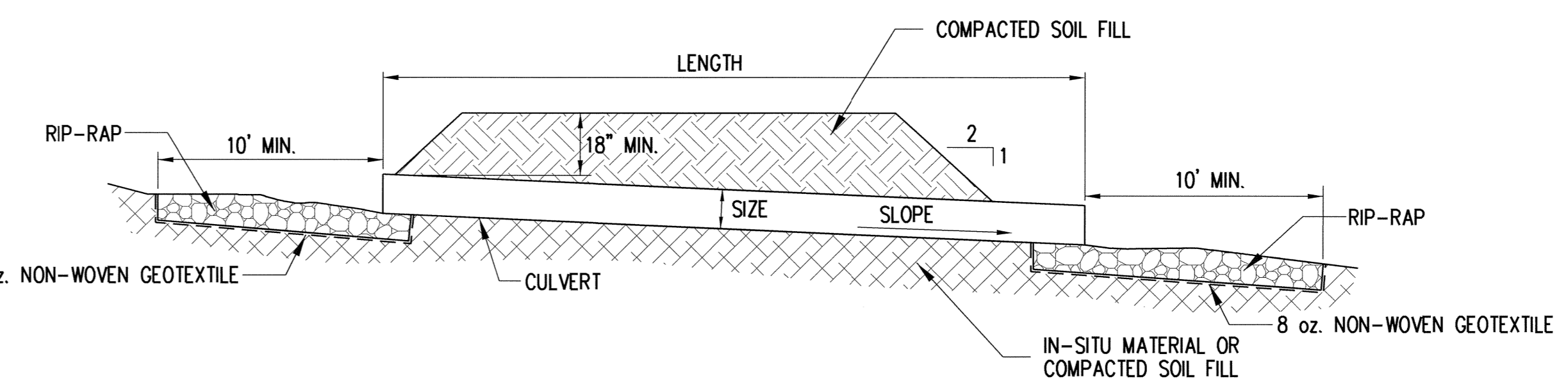
4 TEMPORARY DIVERSION BERM DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTES:
 1) THE CONTRACTOR SHALL CONSTRUCT TEMPORARY DIVERSION BERMS IN ANY AREAS WHERE THEY ARE NEEDED TO DIVERT SURFACE WATER FLOW AROUND CONSTRUCTION AREAS.
 2) THE EROSION CONTROL MATTING SHALL BE NORTH AMERICAN GREEN® P-300 OR APPROVED EQUIVALENT. IT MAY BE REPLACED BY RIP-RAP UNDERLAIN BY AN 8 oz. NON-WOVEN GEOTEXTILE.



5 TYPICAL DRAINAGE SWALE DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTES:
 1) THE DRAINAGE SWALES SHALL BE INSTALLED AT A MINIMUM 1% SLOPE, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
 2) THE EROSION CONTROL MATTING SHALL BE NORTH AMERICAN GREEN® P-300 OR APPROVED EQUIVALENT. IT MAY BE REPLACED BY RIP-RAP UNDERLAIN BY AN 8 oz. NON-WOVEN GEOTEXTILE.

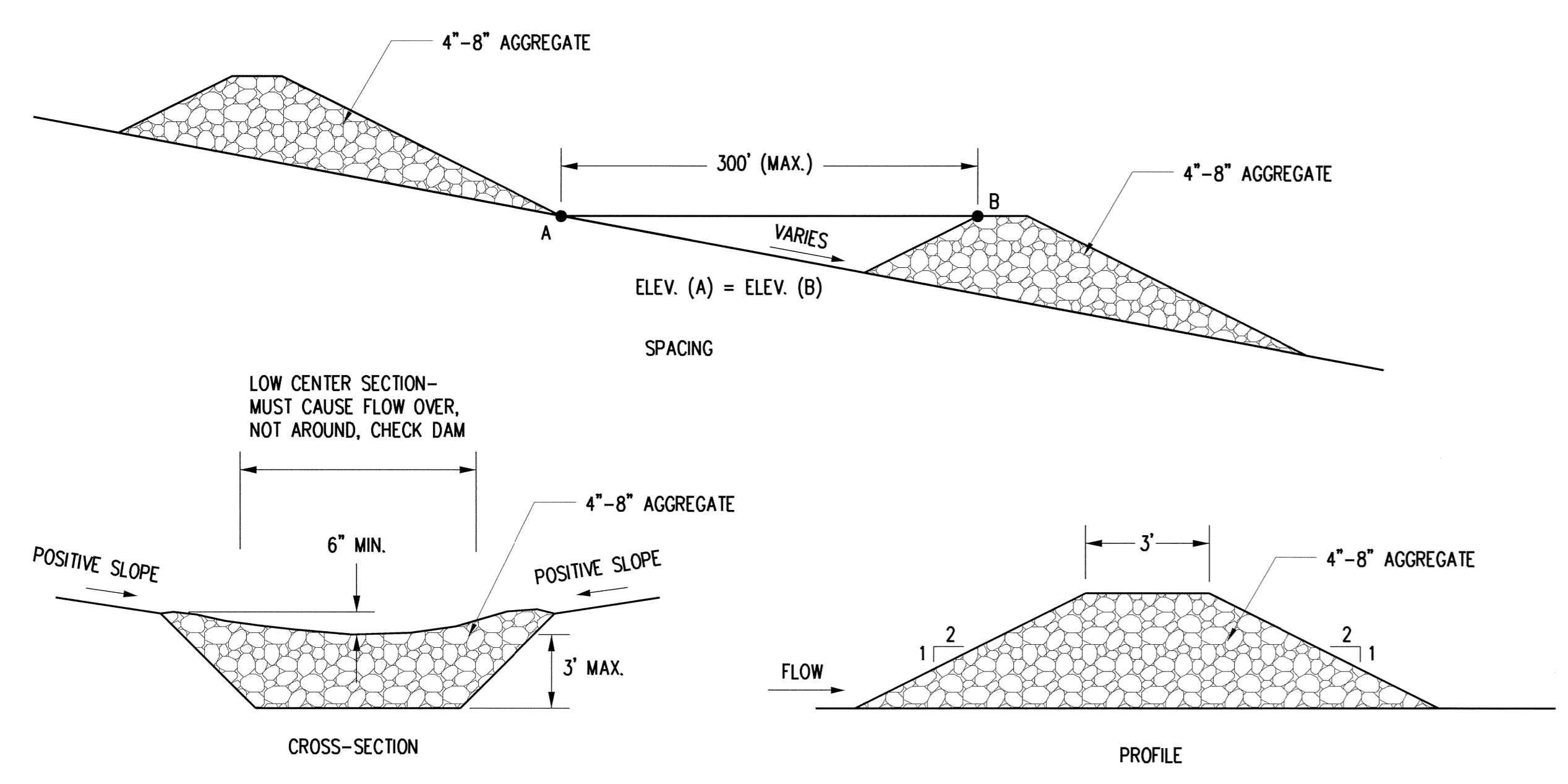


3 TYPICAL CULVERT DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30214, 1-30227 AND 1-30240)

NOTES:
 1) SEE DWG. NO. 1-30227 FOR THE LOCATIONS OF THE STORMWATER MANAGEMENT CULVERTS.
 2) SEE DWG. NO. 1-30206 FOR CONTACT WATER INLET BOX CULVERT INFORMATION.
 3) THE LENGTHS SHOWN ABOVE WERE OBTAINED BY SCALING OFF THE DRAWINGS. THE CONTRACTOR SHALL ENSURE THAT SUFFICIENT PIPE IS AVAILABLE ON-SITE IN THE EVENT THAT A PIPE NEEDS TO BE LONGER DUE TO CHANGE IN FIELD CONDITIONS.
 4) THE LOCATION, LENGTH AND ELEVATIONS FOR CULVERT NO. 10 SHALL BE DETERMINED IN THE FIELD BASED ON ACTUAL LOCATION OF ACCESS ROAD AND TOPOGRAPHIC CONDITIONS ENCOUNTERED. IT SHALL HAVE A MINIMUM SLOPE OF 1%.

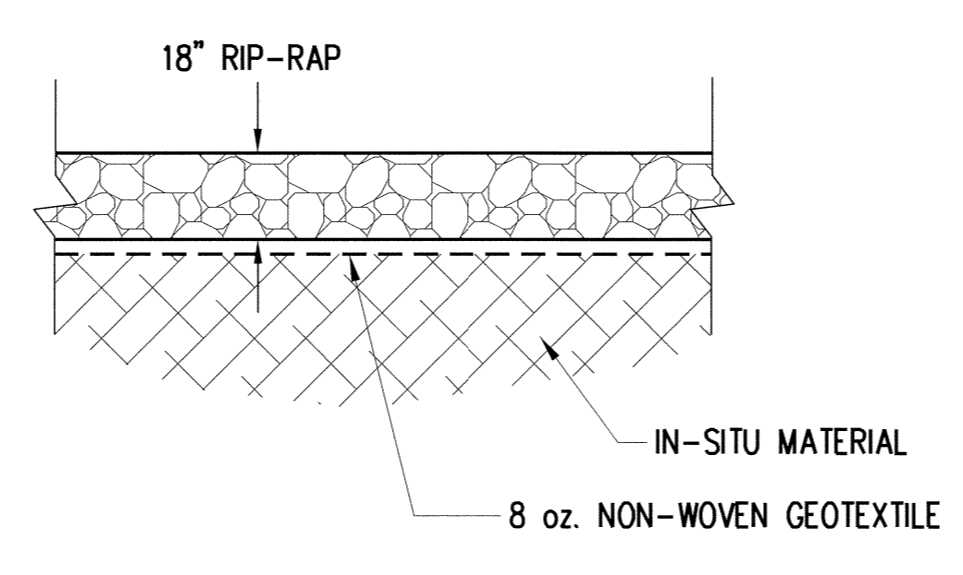
REFERENCE DRAWINGS

1-30214-LEACHATE/CONTACT WATER POND REINFORCED CONCRETE PLAN
 1-30227-SURFACE WATER MANAGEMENT PLAN
 1-30241-SITE MAP



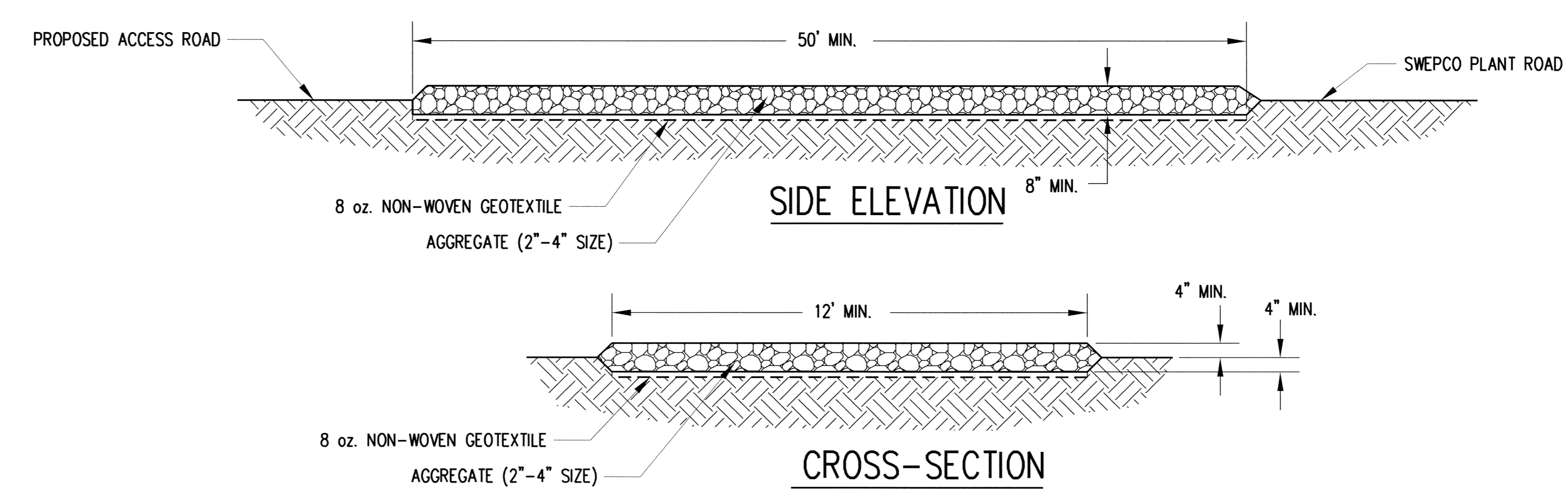
6 TYPICAL DITCH CHECK DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTE:
 DITCH CHECK CONSTRUCTION, OPERATION AND MAINTENANCE SHALL BE IN ACCORDANCE WITH SECTION 2.8 OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT 2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL (SEE APPENDIX E OF THIS STORMWATER POLLUTION PREVENTION PLAN).



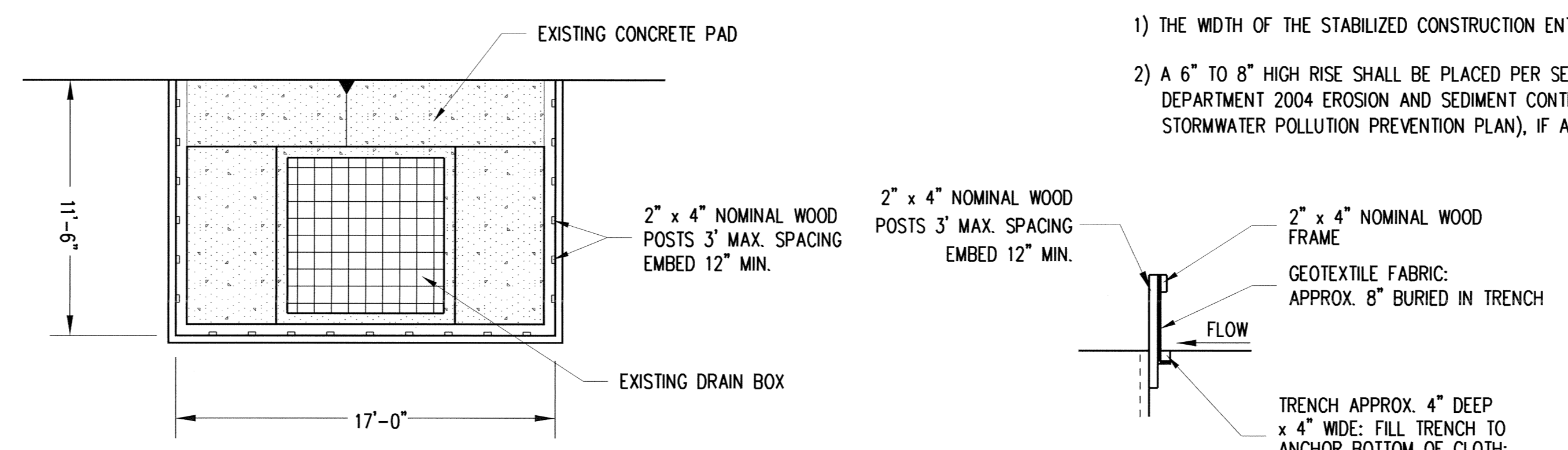
7 TYPICAL INLET/OUTLET RIP-RAP EROSION PROTECTION
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTE:
 AT THE INLET AND OUTLET OF DITCHES, SWALES AND CULVERTS, THE RIP-RAP EROSION PROTECTION SHALL BE A MINIMUM OF 10 FEET LONG.



8 STABILIZED CONSTRUCTION ENTRANCE DETAILS
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTES:
 1) THE WIDTH OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL COVER THE ENTIRE WIDTH OF THE ENTRANCE.
 2) A 6" TO 8" HIGH RISE SHALL BE PLACED PER SECTION 2.11 OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT 2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL (SEE APPENDIX E OF THIS STORMWATER POLLUTION PREVENTION PLAN), IF APPLICABLE.



9 DROP INLET SILT FENCE DETAIL
 NOT TO SCALE (SEE DWG. NO. 1-30240)

NOTE:
 THE DROP INLET SILT FENCE SHALL BE CONSTRUCTED, OPERATED AND MAINTAINED IN ACCORDANCE WITH SECTION 2.9 OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT 2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL (SEE APPENDIX E OF THIS STORMWATER POLLUTION PREVENTION PLAN).

DATE	NO.	DESCRIPTION	APPD.
2/21/0	1	RE-ISSUED FOR BID	
2-8-12	0	ISSUED FOR BID	AMG

REVISIONS

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 ENGINEERS & ARCHITECTS, INC.
 8401 GLENDALE AVENUE
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 WWW.HULLINC.COM

SOUTHWESTERN ELECTRIC POWER COMPANY (SWEPCO)
FLINT CREEK POWER PLANT
 GENTRY ARKANSAS
 FLINT CREEK POWER PLANT LANDFILL

PLATE A-2
 DETAILS

DWG. NO. 1-30241-1

SCALE: CIVIL ENGINEERING DIVISION

SIGNATURE
 DATE
 PROJECT NO.: AP0003
 FILE NO.: 1-30241-1
 LAYOUT BY: FMC/JMG
 DRAWN BY: GAC
 CHECKED BY: AMG/JMC
 SCALE: NOT TO SCALE
 SUBMITTAL DATE: FEBRUARY 2012

APPROVED BY:
 ENGR.
 ENGR.
 ENGR.
 DATE: 5/28/14

AMERICAN ELECTRIC POWER
 1 RIVERSIDE PLAZA
 COLUMBUS, OH 43215

Flint Creek Power Plant

Location of the Concrete Washout Pit



APPENDIX B

Inspection and Maintenance Report Form

ARR150000 Inspection Form – Stormwater Pollution Prevention Plan

Inspector Name: _____ Date of Inspection: _____

Inspector Title: _____

Date of Rainfall: _____ Duration of Rainfall: _____

Days Since Last Rain Event: _____ days Rainfall Since Last Rain Event: _____ inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occurring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By

Changes required to the SWPPP: _____ Reasons for changes: _____

SWPPP changes completed (date): _____

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate 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 Responsible or Cognizant Official: _____ Date: _____

Title: _____

USE ADDITIONAL SHEETS IF NEEDED

APPENDIX C

Computation Sheet for Determining Runoff Coefficients

COMPUTATION SHEET FOR DETERMINING RUNOFF COEFFICIENTS

$$\text{Total Site Area} = \underline{72.6} \quad (\text{A})$$

Existing Site Conditions

$$\text{Impervious Site Area}^1 = \underline{0.0 \text{ Acres}} \quad (\text{B})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{0.95} \quad (\text{C})$$

$$\text{Pervious Site Area}^3 = \underline{72.6 \text{ Acres}} \quad (\text{D})$$

$$\text{Pervious Site Area Run-off Coefficient}^4 = \underline{0.35} \quad (\text{E})$$

$$\text{Existing Site Area Run-off Coefficient} \frac{(\text{B} \times \text{C}) + (\text{D} \times \text{E})}{(\text{A})} = \underline{0.35} \quad (\text{F})$$

Proposed Site Conditions (after construction)

$$\text{Impervious Site Area}^1 = \underline{5.7 \text{ Acres}} \quad (\text{G})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{0.95} \quad (\text{H})$$

$$\text{Pervious Site Area}^3 = \underline{64.3 \text{ Acres}} \quad (\text{I})$$

$$\text{Pervious Site Area Run-off Coefficient}^4 = \underline{0.29} \quad (\text{J})$$

$$\text{Proposed Site Area Run-off Coefficient} \frac{(\text{G} \times \text{H}) + (\text{I} \times \text{J})}{(\text{A})} = \underline{0.34} \quad (\text{K})$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher run-off coefficient can be verified.
3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. Refer to local Hydrology Manual for typical C values.

APPENDIX D

Computation Sheet for Determining Runon Discharges

COMPUTATIONAL SHEET FOR DETERMINING RUNON DISCHARGES

Existing Site Conditions

Area Runoff Coefficient	=	<u>0.35</u>	(A)
Area Rainfall Intensity	=	<u>0.24 in/hr</u>	(B)
Drainage Area	=	<u>72.6 Acres</u>	(C)
Site Area Run-on Discharge (A) x (B) x (C)	=	<u>6.10 ft³/sec</u>	(D)

APPENDIX E

Erosion and Sediment Control Design and Construction Manual

**2004 EROSION AND SEDIMENT CONTROL
DESIGN AND CONSTRUCTION MANUAL**

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

MINUTE ORDER

Statewide

Page 1 of 1 Pages

WHEREAS, on October 1, 1992, the National Pollutant Discharge Elimination System Permit was issued by the Arkansas Department of Pollution Control and Ecology to authorize the discharge of storm water from construction sites; and



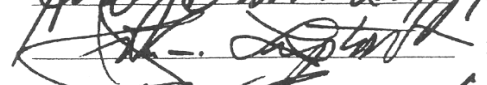

WHEREAS, the Department is required by law to comply with the Permit conditions; and

WHEREAS, to comply with the Permit conditions, an Erosion and Sediment Control Design and Construction Manual has been written to assist designers in developing proper plans and to provide inspectors with standard procedures to follow; and

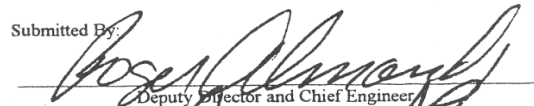
WHEREAS, the Manual will be used by other State and Federal agencies to monitor Department compliance with the Permit conditions:

NOW THEREFORE, the June 1, 1994 edition of the Manual and future revisions are adopted as Department guidelines in the control of erosion and sedimentation.

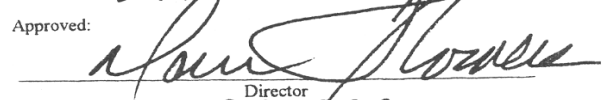
Approved:


Chairman

Vice-Chairman

Member

Member

Submitted By:


Deputy Director and Chief Engineer

Approved:


Director

Minute No.

94 209

Date Passed

JUN 1 1994

Form D-456

**2004 EROSION AND SEDIMENT CONTROL
DESIGN AND CONSTRUCTION MANUAL**

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**2004 EROSION AND SEDIMENT CONTROL
DESIGN AND CONSTRUCTION MANUAL**

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2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

PREFACE

Phase II of the National Pollutant Discharge Elimination System (NPDES) became effective March 1, 2003. As a result of this, a new NPDES General Construction Permit was issued by Arkansas Department of Environmental Quality (ADEQ) effective November 1, 2003. (A copy of this permit is found in Appendix VIII of this Manual.) In order to comply with this new NPDES General Construction Permit on its construction projects, the Arkansas State Highway and Transportation Department was required to change several of its policies and procedures.

This Manual supercedes all previous versions. To prevent confusion, it is recommended that all older versions of this Manual be discarded.

The term “construction projects” when used in this manual refers not only to projects let to contract by the Department, but also to any work undertaken by the Department’s own forces that may be of such size or scope as to fall under the NPDES General Construction Permit.

This Manual is considered an integral part of the Storm Water Pollution Prevention Plan (SWPPP). As such, **A COPY MUST BE ON EACH CONSTRUCTION PROJECT AT ALL TIMES, along with the rest of the SWPPP.** Additional copies may be obtained by contacting the Construction Office or the Maintenance Division Office, as appropriate.

Since the NPDES General Construction Permit issued by ADEQ requires that each project maintain the SWPPP on site, as much of the SWPPP for a particular project as is practical is to be placed in the loose leaf binder accompanying this Manual and kept on a project site. Sufficient copies of this Manual are provided so that each loose leaf notebook containing this Manual may be used as a “shell” for a project SWPPP. See Section 5.3 of this Manual for complete details of the SWPPP components.

Among the project specific SWPPP components that can be added to this notebook for a particular project are:

- Copy of completed SWPPP Special Provision included in the Contract
- Copy of any additional Special Provisions relating to the SWPPP
- Copy of the completed Notice of Intent (NOI) included in the executed Contract
- Copy of “Medium & Large Construction Permit Certificate” or “Small (1 – 5 Acres) Construction Site Notice”
- Copy of that Portion of Plans relating to Erosion & Sediment Control (Appropriate Half-size Plan Sheets)

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

- Copy of any Erosion Control or SWPPP related correspondence and/or Change Orders
- Copy of completed SWPPP Inspection Forms (Optional – may be maintained in separate file but kept with this project SWPPP manual).
- Updated “as built” plans Forms (Optional – may be maintained in separate file but kept with this project SWPPP manual).
- Copy of Subcontractor certifications (Optional – may be maintained in separate file but kept with this project SWPPP manual).

Hopefully, most of the SWPPP on a project can be maintained on the project in this notebook for the convenience of the Department and persons outside the Department who desire to review it.

Again, refer to Section 5.3 of this Manual for complete details of the SWPPP components. Once the Notice of Termination is filed on a project, the project specific information on a construction job may be removed from the notebook and the notebook - with this manual contained in it - reused on another project.




2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

1.0 INTRODUCTION

Soil erosion is a natural process whereby soil particles are dislodged by rainfall and carried away by runoff. The removal rate of the soil particles is proportional to the intensity and duration of the rainfall, the volume and characteristics of the water flow, the terrain characteristics and soil properties. This erosion process is accelerated where the land has been disturbed by removing the vegetative or other natural protective cover of the soil.

Sedimentation is the natural process of deposition of the eroded soil. This eroded soil in the form of sediment may modify the characteristics of lakes, streams, and reservoirs, restrict drainage, plug culverts, affect adjacent properties, and affect the ecosystems of streams.

Since modern highway construction may involve the disturbance of large land areas, control of erosion and sedimentation is a major concern. This manual was developed to assist the designer by providing the guidelines and procedures to develop erosion and sediment control plans and to assist construction personnel in managing storm water runoff from construction projects as required by:

-  Plans and Specifications,
-  NPDES General Construction Permit issued by the Arkansas Department of Environmental Quality (ADEQ), and
-  U. S. Corp of Engineers Section 404 Permit requirements.

This manual will assist Department personnel in the development of Storm Water Pollution Prevention Plans (SWPPP's). It will also assist Construction personnel in implementing and in adapting or adjusting SWPPP's to achieve an acceptable level of erosion and sediment control.

NOTE: It is Department policy to install appropriate erosion and sediment control devices on all Department construction projects as needed without regard to the area of disturbed land. It is the Designers' intent to include needed pay items in all contracts to accommodate this. In other words, the intent of the Department is to authorize installation and maintenance of appropriate erosion control items on projects with no formal SWPPP with the same care and judgment used on projects with many more acres exposed.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

The basic goal of storm water management is simple:

Improve water quality by reducing pollutants in storm water discharges.

At least one copy of this Manual should be available for easy reference at each job site.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

1.1 ABBREVIATIONS AND DEFINITIONS

The following acronyms and definitions should be understood before proceeding:

ADEQ *Arkansas Department of Environmental Quality.* Arkansas is currently authorized by **EPA** to implement the **NPDES**. The **Permit** under which the AHTD operates was issued by the Arkansas Department of Environmental Quality (**ADEQ**) on September 30, 2003, and became effective on November 1, 2003. The **ADEQ** is an Arkansas state agency.

BMP *Best Management Practice.* A measure or practice used to reduce the amount of pollutants entering the waters of the United States. Use of **BMP**'s is incorporated into the **SWPPP**.

EPA *U. S. Environmental Protection Agency.* This is the Federal agency responsible for, among other things, the oversight of the **NPDES**.

Large Construction Site Large Construction Sites are defined differently - depending upon the location (County) of the site.

Sites that disturb ten (10) acres or more are considered "Large Construction sites" if they are located in one of the following counties:

Baxter	Garland	Newton	Sharp
Benton	Hot Spring	Perry	Stone
Boone	Howard	Pike	Van Buren
Carroll	Independence	Polk	Washington
Clark	Izard	Pope	White
Cleburne	Johnson	Pulaski	Yell
Conway	Lawrence	Randolph	
Crawford	Logan	Saline	
Faulkner	Madison	Scott	
Franklin	Marion	Searcy	
Fulton	Montgomery	Sebastian	

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Sites that disturb twenty (20) acres or more are considered “Large Construction sites” if they are located in one of the following counties:

Arkansas	Crittenden	Jefferson	Nevada
Ashley	Cross	Lafayette	Ouachita
Bradley	Dallas	Lee	Phillips
Calhoun	Desha	Lincoln	Poinsett
Chicot	Drew	Little River	Prairie
Clay	Grant	Lonoke	Sevier
Cleveland	Greene	Miller	St. Francis
Columbia	Hempstead	Mississippi	Union
Craighead	Jackson	Monroe	Woodruff

The **NPDES** Construction Permit requires that the **SWPPP** be submitted for **ADEQ** review and a NOI be filed with the **ADEQ** on all construction projects designated as “Large Construction Sites” and that this **SWPPP** be fully implemented.

Medium Construction Site The **NPDES** General Construction Permit requires that a NOI be filed with the **ADEQ** on all construction projects with five or more acres of disturbed land and the associated SWPPP be fully implemented.

MS4 *Municipal Separate Storm Sewer System.* A system of conveyances (including roads with drainage systems, municipal streets, curbs, gutters, ditches, and storm drains) designed or used for collecting or conveying storm water. Refer to Appendix XII and Appendix XIII.

NOI *Notice of Intent.* The NPDES General Construction Permit requires the Department and contractors to file a Notice of Intent (NOI) if the disturbed area is more than five acres. When the NOI is signed and filed, the signer is agreeing to the terms of the permit. (Also on Department contracts where the NOI is required, the Contractor must sign a separate certification that he understands the terms and conditions of the Permit.) Refer to Appendix III of this Manual for an example of a NOI. This Word document may be found on the Construction Directory of the LAN under:
 \\Csd4\Construc\Misc\NPDES\11-03 Notice of Intent.doc.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

NOT *Notice of Termination.* Upon completion of the permit requirements on Medium and Large Construction Site projects, a Notice of Termination (**NOT**) must be filed with the **ADEQ**. The DISTRICT ENGINEER is responsible for filing this as per instructions in Construction Memorandum 92-19. Refer to *Appendix IV* of this Manual for an example of a Notice of Termination form. This Word document may be found on the LAN under:
\\Csd4\Construc\Misc\NPDES\11-03 Notice of Termination.doc.

NPDES *National Pollutant Discharge Elimination System.* This is a national program for issuing permits under the authorization of **EPA** or an approved State to discharge pollutants into Waters of the United States.

Small Construction Site On all construction projects from a minimum of one acre to less than five acres exposed, the **NPDES** permit requires that a SWPPP be fully developed and implemented, complete with inspection reports and other documentation. **NOIs** and **NOTs** are not filed, however, with the **ADEQ** for Small Construction Sites.

NOTE: It is Department policy to install appropriate erosion and sediment control devices on all Department construction projects as needed without regard to the area of disturbed land. It is the Designers' intent to include needed pay items in all contracts to accommodate this. In other words, the intent of the Department is to authorize installation and maintenance of appropriate erosion control items on projects with less than one acre exposed with the same care and judgment used on projects with many acres exposed.

STAA *Short Term Activity Authorization.* This permit is requested by the AHTD Central Office Staff from **ADEQ** prior to the beginning of work. Once acknowledgement is received by the Department from **ADEQ**, a copy is sent to the Resident Engineer. This provides short-term authorization to conduct approved work in Extraordinary Resource Waters, Ecologically Sensitive Waterbodies, Natural and Scenic Rivers, and impaired waters listed on ADEQ's 303(d) list for sediment.

Specifications This is also referred to as the "Standard Specifications". Both terms refer to the current AHTD Standard Specifications for Highway Construction.

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SWPPP *Storm Water Pollution Prevention Plan.* The Permit requires that a **SWPPP** be developed for each construction site covered by the General Construction Permit. The **SWPPP** must use good engineering practices or Best Management Practices (**BMP's**) that reduce the pollution in storm water discharges. It includes both permanent and temporary erosion control devices, procedures, restrictions, and other requirements set forth by **ADEQ** that must be followed. Specific requirements are detailed later in this Manual.

TMDL *Total Maximum Daily Load.* The Permit requires that the SWPPP includes any documentation supporting a determination of Permit eligibility with regard to waters that have an established **TMDL**.




Waters of the United States For all practical purposes, this refers to any natural or manmade body of water not built to catch sediment.

There are many other definitions and concepts contained in this manual with which you should become familiar. In order to avoid repeating or paraphrasing permits, rules and regulations, a complete copy of the NPDES General Construction Permit is included in this Manual as *Appendix VIII*. The Permit is the 'source document'. All of it should be read and understood by key project personnel.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

2.0 TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

Temporary erosion and sediment control measures can be defined as those devices or procedures employed during construction to control erosion and sediment until such time that permanent protection can be provided. These temporary measures can be categorized into three general areas of effort.

-  Measures that provide direct protection to the soil surface (ground cover, channel liners, riprap, etc.)
-  Measures which tend to control the runoff pattern to an area of acceptable flow conditions (diversion ditches and slope drains)
-  Measures which serve to remove sediment from waters by filtering or slowing the velocity of the sediment laden water to such an extent that it can no longer keep the particles in suspension or moving along the channel bed (ditch checks, silt fences, sediment basins, etc.)

The following sections address the application and design criteria for the various temporary erosion control measures.

2.1 LIMITATION OF DISTURBED AREA

Section 110 of the Standard Specifications requires the Engineer to limit the amount of disturbed ground on each construction site to a maximum of 25 acres. The Engineer has the authority to increase or decrease this limit based upon the Contractor's capability to effectively control erosion and sediment on the disturbed areas and to contain sediment within the Right-of-Way area.

Definition:

Disturbed soil is defined as exposed bare soil denuded of vegetative cover or lacking stabilization. Stabilized soil is defined as soil that is covered by grass, seeded and mulched, mulched, covered by erosion control matting, or covered by permanent stabilization as shown on the plans or directed by the Engineer.






Application:

Limiting the amount of disturbed soils and minimizing the time of exposure should be applied to all projects as a primary objective to control erosion and sediment.

Design Criteria:

Unless modified on the plans or directed by the Engineer, the Standard Specifications limit the total surface area of disturbed soil on the right-of-way at any one time to a maximum of 25 acres. Design plans should take into consideration this limitation.

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-  The Engineer will have the authority to increase or decrease the limitation on surface area of disturbed land based upon the Contractor's capability to effectively control erosion and sedimentation on these areas and contain sediment within the Right-of-Way limits.
-  This limitation will include any area on the right-of-way that the contractor requests to utilize for his operations, such as borrow sites.
-  Disturbed areas that are temporarily abandoned shall be stabilized within 14 days unless work will be resumed within 21 calendar days.
-  Cut and fill slopes shall be stabilized in increments as construction progresses.
-  Completed areas shall receive permanent seeding, temporary seeding, or mulch cover within 14 days of completion.

2.2 GROUND COVER



Definition:

Ground cover is vegetation, mulch, or a combination of both used to protect the soil from the erosive force of water.

Application:

Ground covers are used on disturbed areas that are not to final grade and will be exposed for a period of time, or in areas where seasonal limitations or a delay in final construction preclude permanent seeding. In areas of steep slopes or when mulch is applied during dry or cold periods and prompt vegetative establishment is not expected, mulch control netting should be considered. Ground covers are also to be used in areas at final grade that are erodable and will be exposed for an extended period of time.

Design Criteria:

-  Provide temporary seeding and mulch cover for entire area of disturbed soil.
-  Provide Erosion Control Matting for steep slopes (normally 2:1 or steeper) in selected problem areas.

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2.3 TRACKING

Definition:

A method of surface roughening that is achieved by operating tracked machinery up and down the slope to leave horizontal depressions in the soil.

Application:

Tracking is used on all slopes for the following purposes:

-  To reduce runoff velocity and increase infiltration.
-  To reduce erosion and provide for sediment trapping (the formation of erosion rills is encouraged by tracking across the slope).
-  To aid in the establishment of vegetative cover with seed.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

2.4 DUST CONTROL

Section 110 of the Standard Specifications requires dust generation to be minimized. The following information provides some of the methods that may be used by the contractor to meet this requirement. The Contractor is not paid for this directly. Compensation for dust control is included in the unit prices for the various items of work in the contract (per Subsection 110.09 of the Standard Specifications For Highway Construction).

Definition:





Methods used to prevent surface and air movement of dust from exposed soil surfaces and reduce the presence of airborne substances that may present health hazards, traffic safety problems or harm animal or plant life.

Application:

In areas where dust may migrate off-site.

Design Criteria:

Several measures can be taken to control dust. Some commonly used measures include:

-  Irrigation – This is the most commonly used dust control practice. The site is sprinkled with water until the surface is wet. This offers fast protection for haul roads and other heavy traffic area.
-  Mulch – When properly applied, mulch offers a fast effective means of controlling dust. This is not recommended for areas with heavy traffic pathways.
-  Vegetative Covers –Undisturbed vegetation can be very helpful in dust control when left as buffers between work areas and protected areas.
-  Spray-on Adhesives – Many of the spray-on adhesives will withstand heavy traffic.

NOTE: Since this is not paid for directly, the method used for controlling dust is the Contractor's option. The Department's only concern is that the option utilized is effective.

2004 EROSION AND SEDIMENT CONTROL DESIGN AND CONSTRUCTION MANUAL

2.5 EROSION CONTROL MATTING

Definition:

Erosion control matting consists of various types of materials used to allow the establishment of vegetative growth in an area of concentrated water flow.

Application:

Erosion control matting is used in ditches, swales, or channels where excessive or detrimental water flow velocities are encountered.

Design Criteria:

Choose type of erosion control matting consistent with the velocity and amount of water flow.

2.6 DIVERSION DITCHES






Definition:

A diversion ditch is a temporary berm or berm and channel combination used to divert water flow.

Application:

Diversion ditches are to be used to intercept surface runoff and direct it to a desirable collection or discharge point. These ditches shall be constructed to intercept and divert flow away from disturbed areas. They should also be used within a disturbed area to control flow. Diversion ditches should be one of the first features installed on the construction site.






Diversion ditches can be used in the following situations:

-  Above disturbed existing slopes and above cut or fill slopes to prevent runoff over the slope.
-  Across unprotected slopes, as slope breaks, to reduce slope length.
-  Below slopes to divert excess runoff to stabilized outlets.
-  To divert sediment laden water to sediment basins.
-  At or near the perimeter of the construction area to keep sediment from leaving the site.

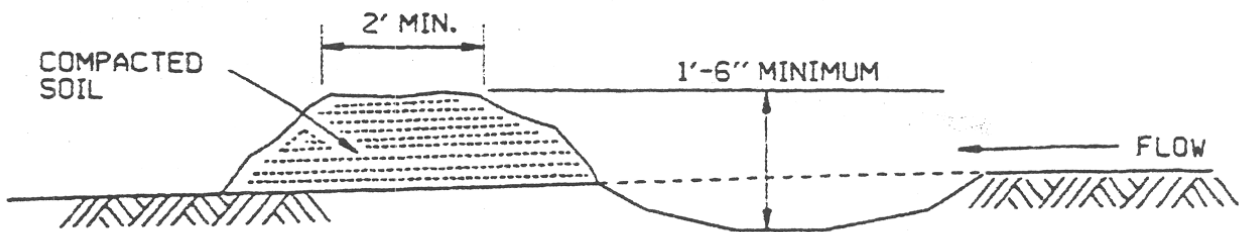
Design Criteria:

The design shall conform to FIGURE 2.01 unless a special design is required.

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-  Maximum drainage area is 5 acres.
-  Use special design if drainage area is greater than 5 acres.
-  Provide diversion ditches at top of embankments when fill height exceeds approximately 20 feet or in areas of erodible soils.
-  Diversion ditches used as perimeter controls should be located as to minimize damages by construction operation and traffic.
-  For diversion ditches at the top of cut slopes or in other designated areas, consider stabilization of ditch as follows:

<u>Channel Grade</u>	<u>Type of Treatment</u>
0.5% -5%	Seed and Mulch
5% -8%	Seed and Erosion Control Matting
8%	Dumped Riprap



DIVERSION DITCH (E-8)

FIGURE 2.01

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2.7 SLOPE DRAINS

Definition:

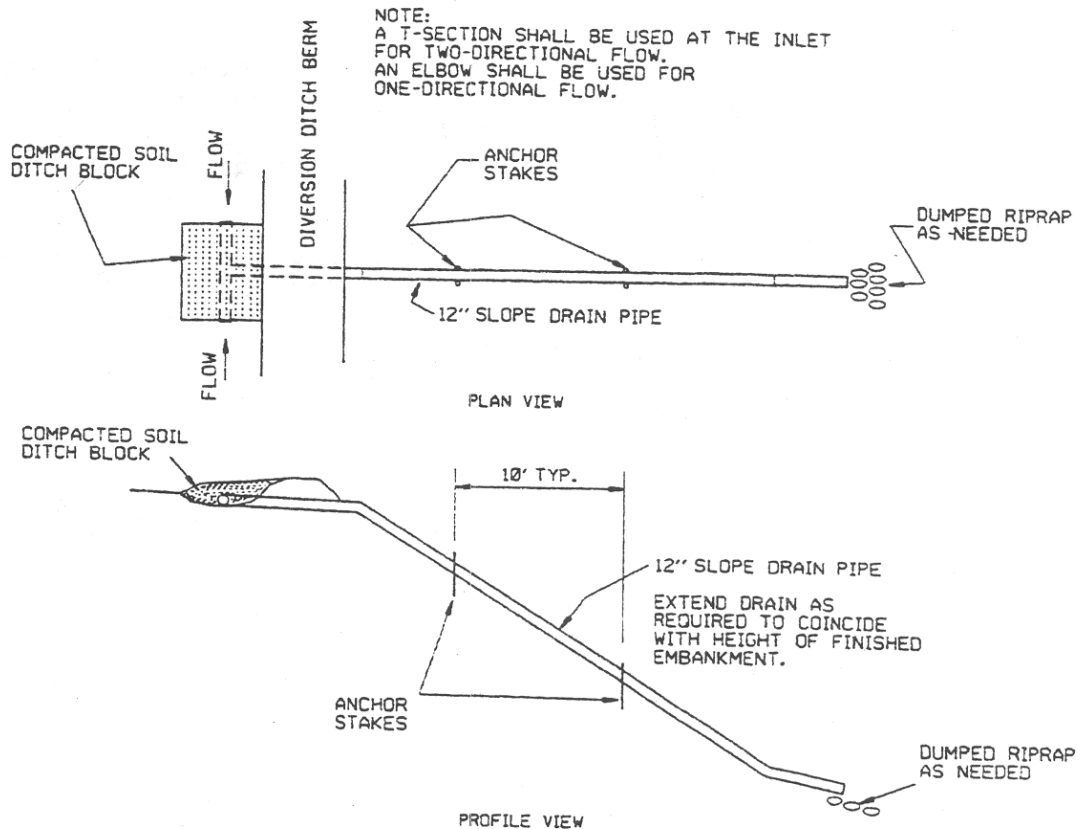
A slope drain is a device to confine and transport surface water from one elevation to another, normally down an unprotected slope.

Application:

Slope drains are normally used as outlets for diversion ditches running along the top of fill slopes. Other uses could include conveying runoff from undisturbed areas across the construction site.

Design Criteria:

- 🌲 The design shall conform to FIGURE 2.02 unless a special design is required.
- 🌲 Maximum drainage area is 5 acres.
- 🌲 Maximum spacing for draining diversion ditches is 500 ft.



SLOPE DRAIN (E-12)

FIGURE 2.02

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2.8 DITCH CHECKS







Definition:

Ditch checks are temporary barriers constructed of rock, sand bags, or baled straw placed across a natural or artificial channel.

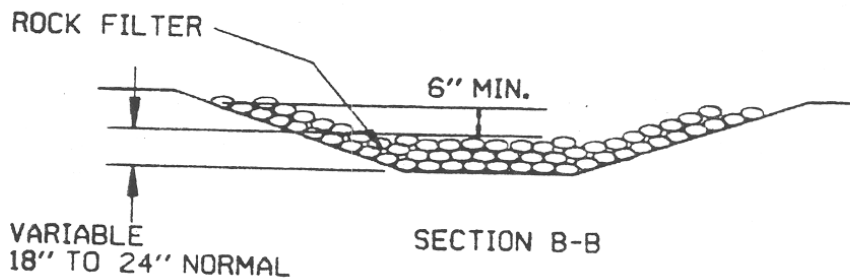
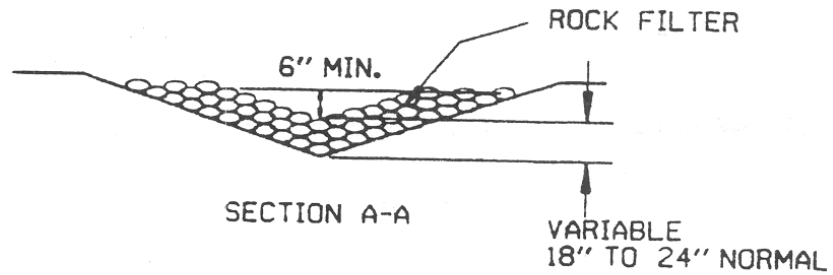
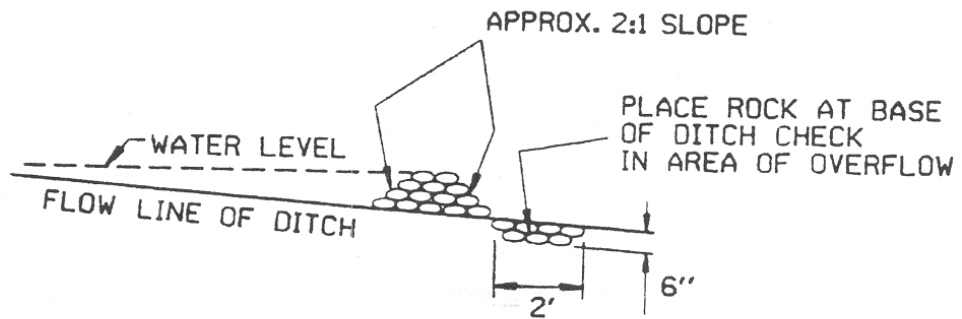
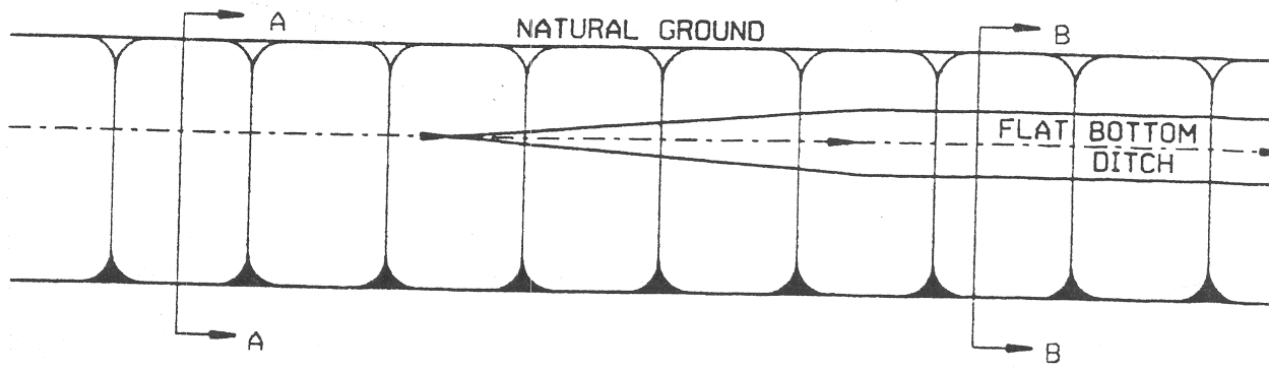
Application:

Ditch checks should be placed in drainage ditches to reduce the velocity of flow. Normally ditch checks will be required in ditches where vegetation has not yet been established. Baled straw ditch checks are to be used **only** in conjunction with other erosion control devices. Ditch checks may be used as permanent devices in appropriate locations. Ditch checks should never be used in a live stream.

Design Criteria:

-  The design shall conform to FIGURES 2.03, 2.04, and 2.05 unless special designs are required.
-  Maximum drainage area is 10 acres.
-  In general, space so that the toe of the upstream ditch check is no higher than the top of the downstream ditch check.
-  Sediment removal and disposal is required for ditch checks whenever sediment has reduced the capacity by half.
-  Sediment basins may be excavated behind ditch checks to help trap additional sediment.
-  Baled straw ditch checks shall only be used in conjunction with sediment basins diversion ditches, other ditch checks, or other site-specific locations.

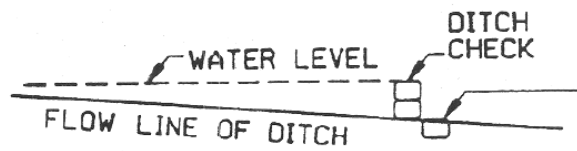
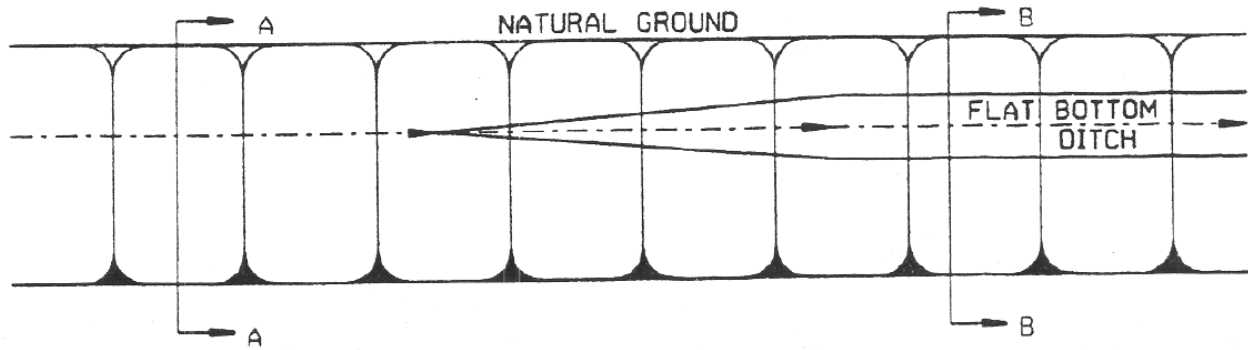
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ROCK DITCH CHECK (E-6)

FIGURE 2.03

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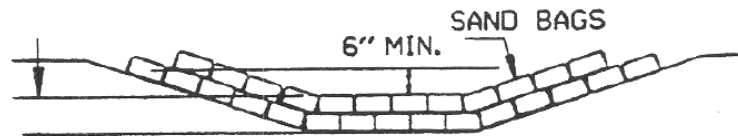
PLACE SAND BAGS
AT BASE OF DITCH
CHECK IN AREA OF
OVERFLOW

NUMBER OF SAND BAGS
AND ARRANGEMENT VARIABLE
WITH ON-SITE CONDITIONS.



SECTION A-A

VARIABLE
18" TO 24" NORMAL



SECTION B-B

VARIABLE
18" TO 24" NORMAL

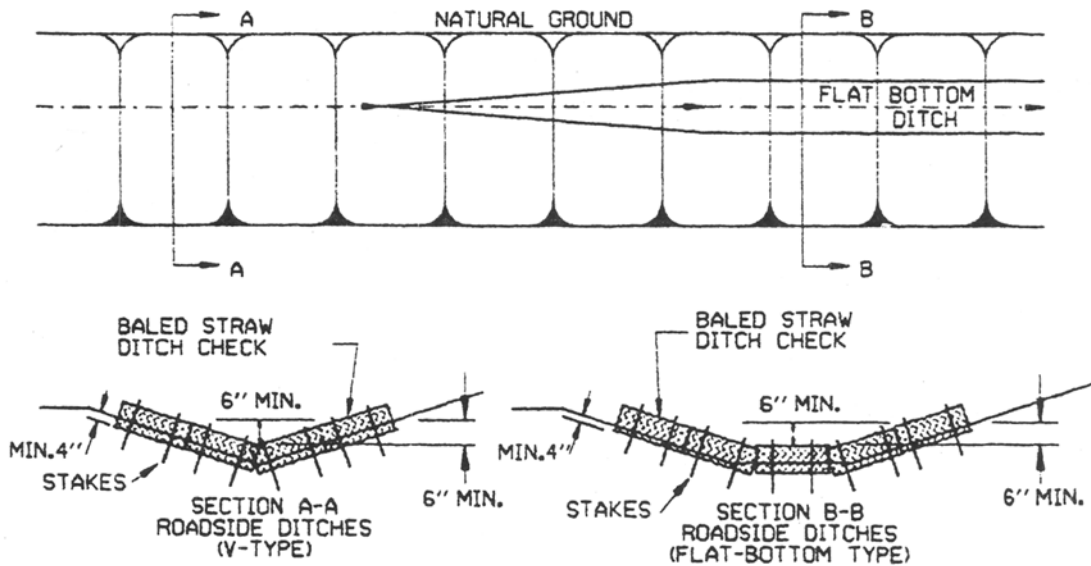
SAND BAG DITCH CHECK (E-5)

FIGURE 2.04

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GENERAL NOTES

1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. STRAW BALES SHALL BE KEYED INTO SOIL A MINIMUM OF 4' AND NO GAPS SHALL BE LEFT BETWEEN BALES.



BALED STRAW DITCH CHECK (E-1)

NOTE: Subsection 621.03(e) of the Specifications also allows "wiring and/or other methods" to secure Baled Straw Ditch Checks.

FIGURE 2.05

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2.9 SILT FENCE









Definition:

A silt fence is a vertical barrier of filter fabric used to contain sediment.

Application:

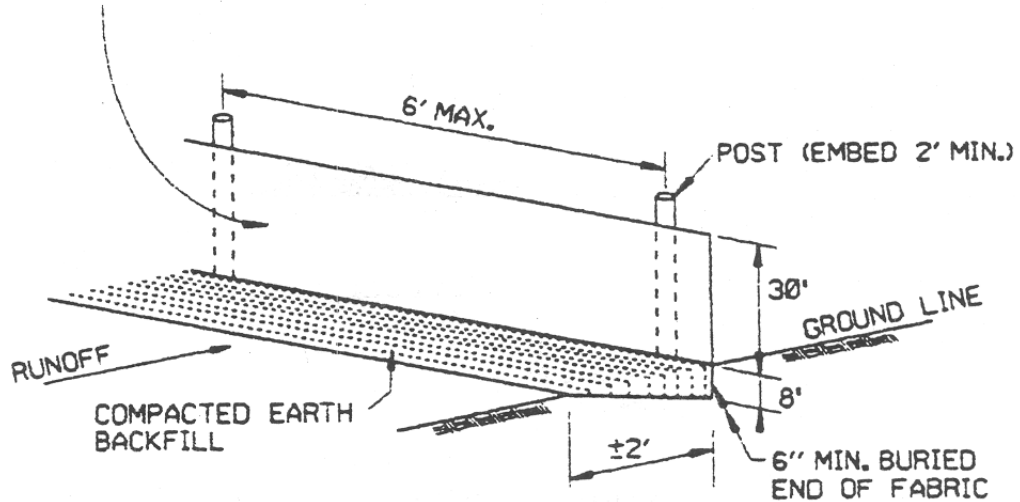
Silt fences are placed around drop inlets, at the toe of fill slopes, and along areas to be protected, such as natural streams, wetlands, and developed property. They are also used at the perimeter of a project to ensure that eroded sediment does not leave the site. Silt fence should NOT be utilized as a ditch check. Because of the pressure of water behind them, silt fences should not be used where large flows are expected and therefore should not be constructed in streams. Silt fence use should normally be limited to overland and sheet flows.

Design Criteria:

-  The design shall conform to FIGURE 2.06 or 2.07 unless a special design is required.
-  The design of a Drop Inlet Silt Fence shall conform to FIGURE 2.08 unless a special design is required.
-  The drainage area should not exceed 0.25 acre per 100 feet of barrier length.
-  The fence should follow the contour of the slope and have no dips or low areas where water will accumulate and pool. Pooled water is a major cause of failure because of the high pressure it places on the fence.
-  Ends of the fence should always be angled up slope so water cannot flow around them.
-  The maximum up slope grade perpendicular to the fence line should not exceed 1:1.
-  The drainage area for drop inlet silt fence should not exceed one acre.
-  Sediment removal and disposal is required when sediment covers 1/3 of the height of the fence.

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GEOTEXTILE FABRIC
(TYPE 4) IN ACCORDANCE
WITH SECTION 625



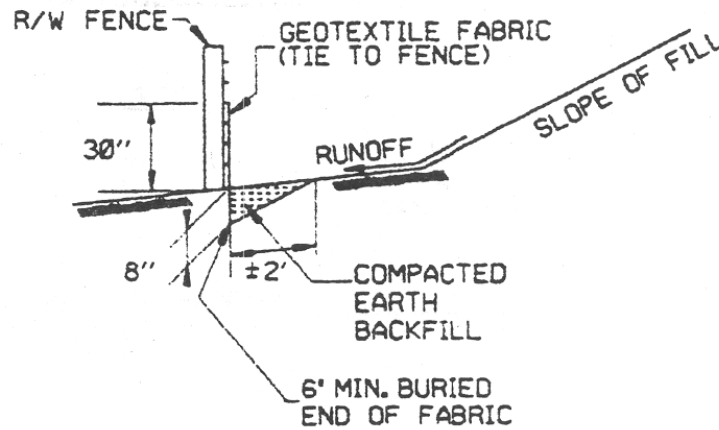
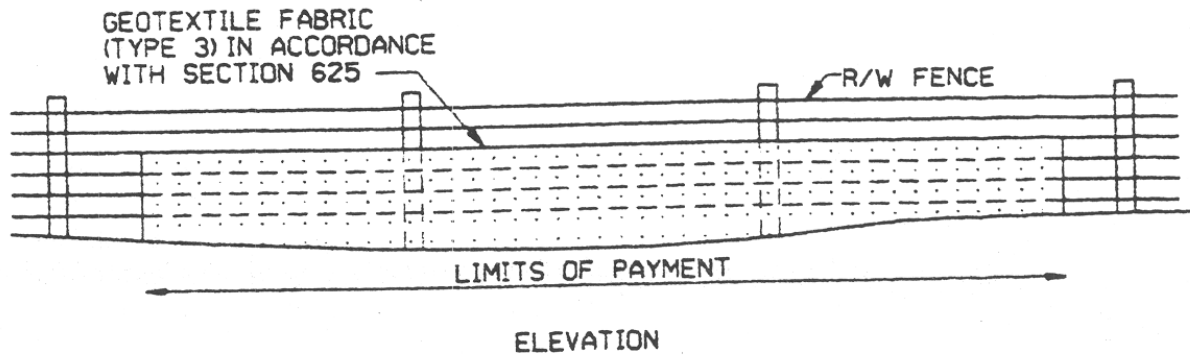
SILT FENCE (E-11)

GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

FIGURE 2.06

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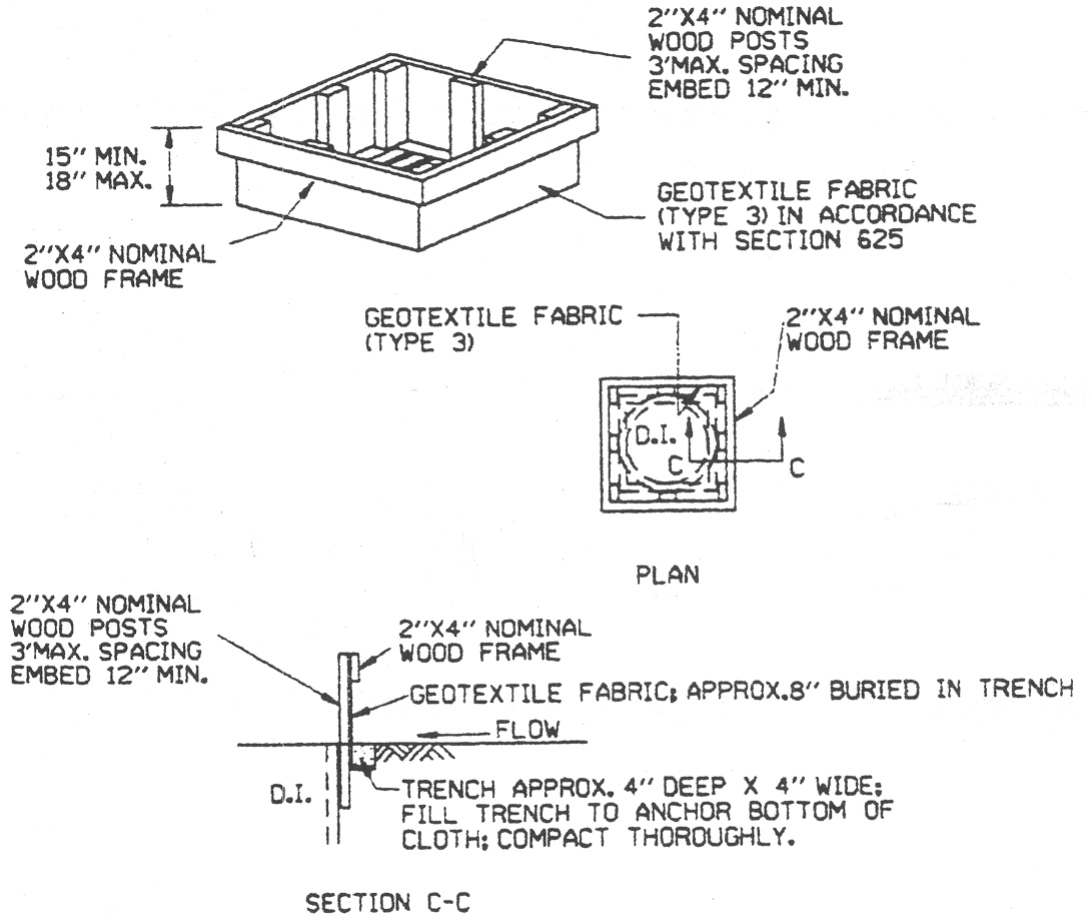
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

FIGURE 2.07

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DROP INLET SILT FENCE (E-7)

FIGURE 2.08

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2.10 SEDIMENT BASINS





Definition:

A sediment basin is a water storage area provided by excavating a pond or by placing an earthen embankment across a low area or drainage swale.




Application:


The General Construction Permit states that for **common drainage locations** that serve an area with **10 or more disturbed acres** at one time, a temporary or permanent detention basin based on either the smaller of **3,600 cubic feet per acre**, or a size based on the runoff volume of a **10 year, 24 hour storm**, shall be provided **where attainable** until stabilization of the site.

Sediment basins are recommended at the following locations:


-  At the outlet or located periodically along excavated roadway ditches or diversion ditches.
-  At the end of drainage structures.
-  At the outlet of slope drains.
-  At any location deemed necessary to trap sediment laden water prior to discharge offsite or into a stream. Sediment basins should not be used in live streams.

Design Criteria:

-  The design shall conform to FIGURES 2.09, 2.10, or 2.11 unless a special design is required.
-  The capacity of the sedimentation pool should provide a storage volume for 3600 cubic feet per acre of drainage area.
-  The drainage area for each type of sediment basin is as follows:

<u>Sediment Basin Type</u>	<u>Drainage Area</u>
E-14	Less than 10 acres
E-9	10 to 20 acres
E-10	20 acres or greater
-  Sediment basins must be located and designed such that failure of the basin would not result in damage to homes, businesses, streets, or highways.

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 Sediment removal and disposal is required for all sediment basins whenever their capacity is reduced by half.

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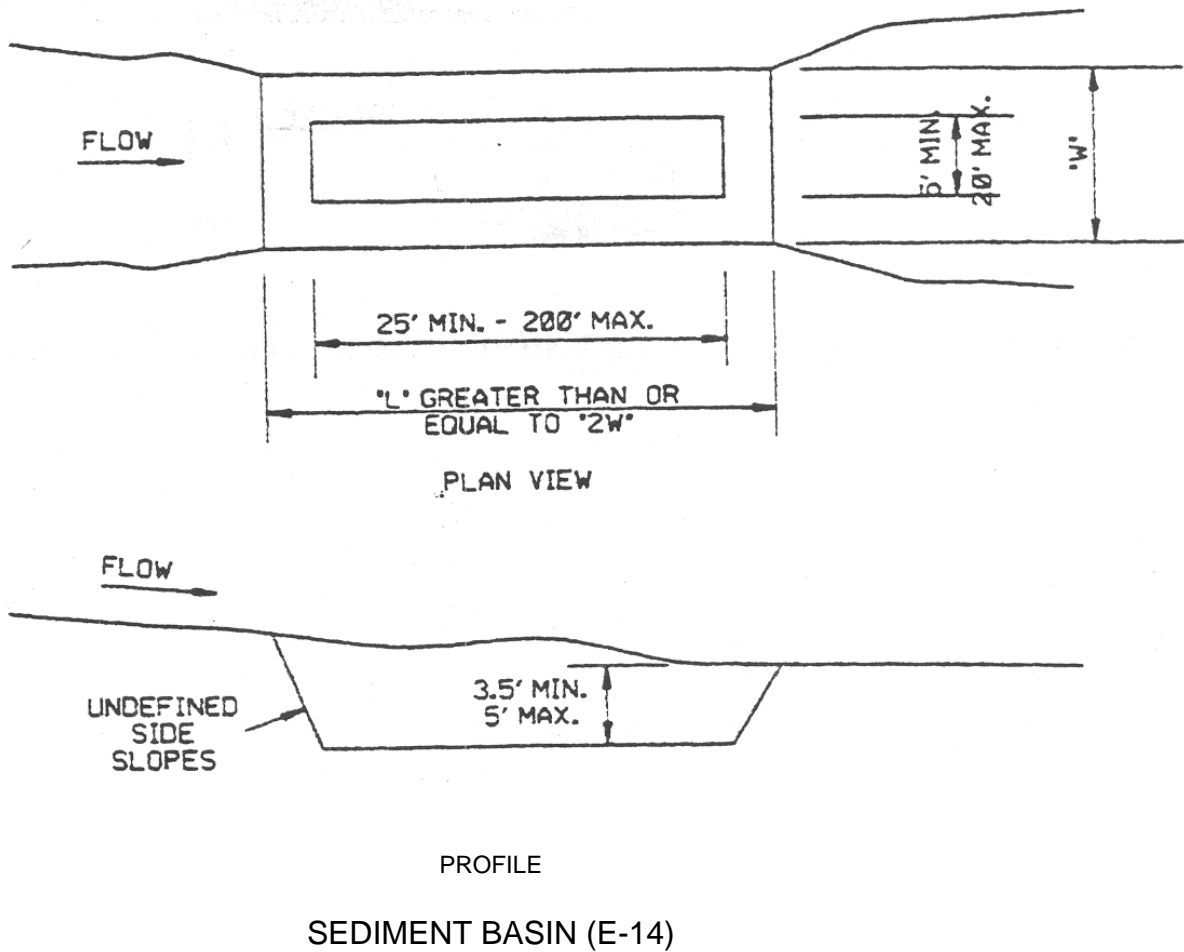
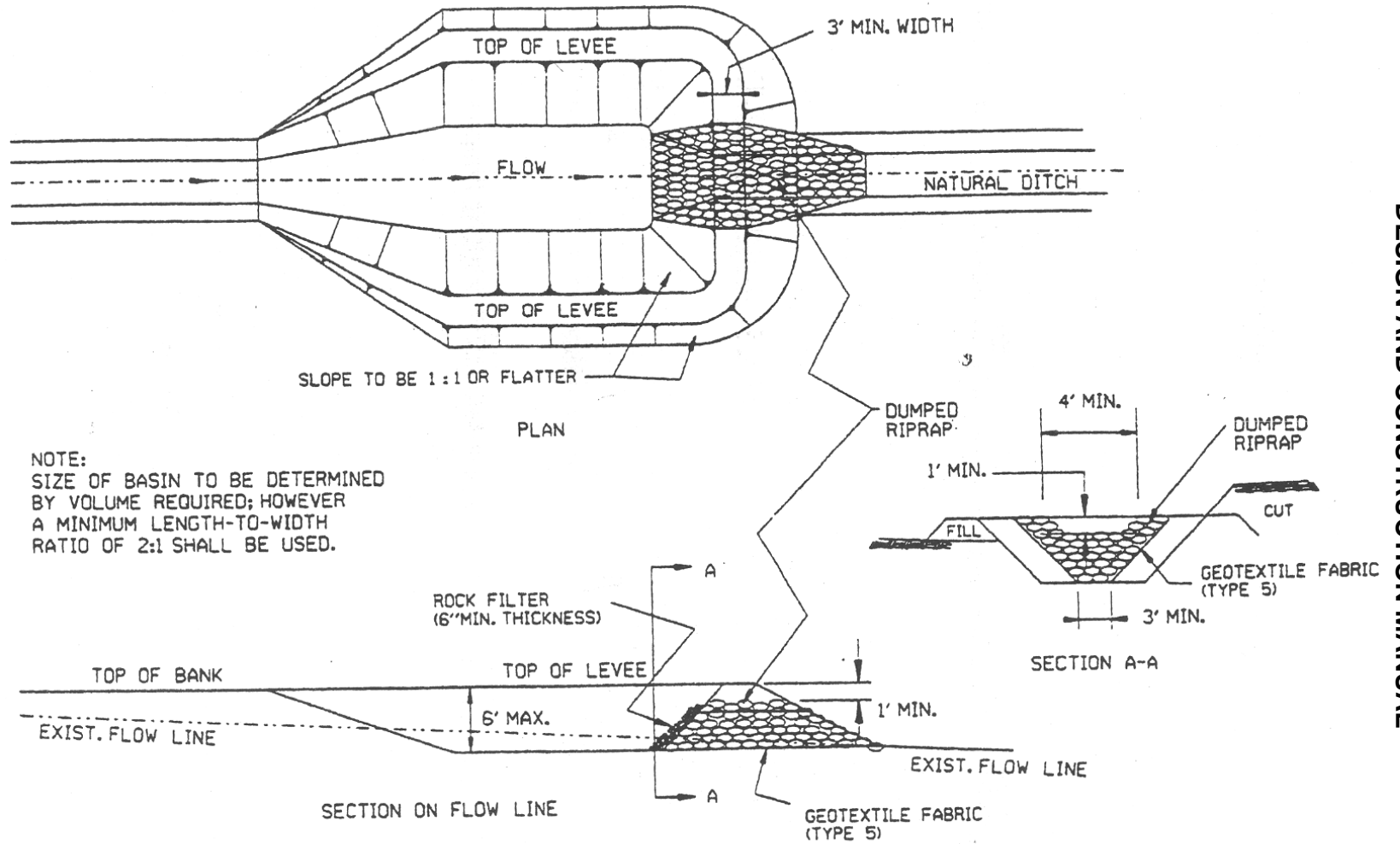


FIGURE 2.09

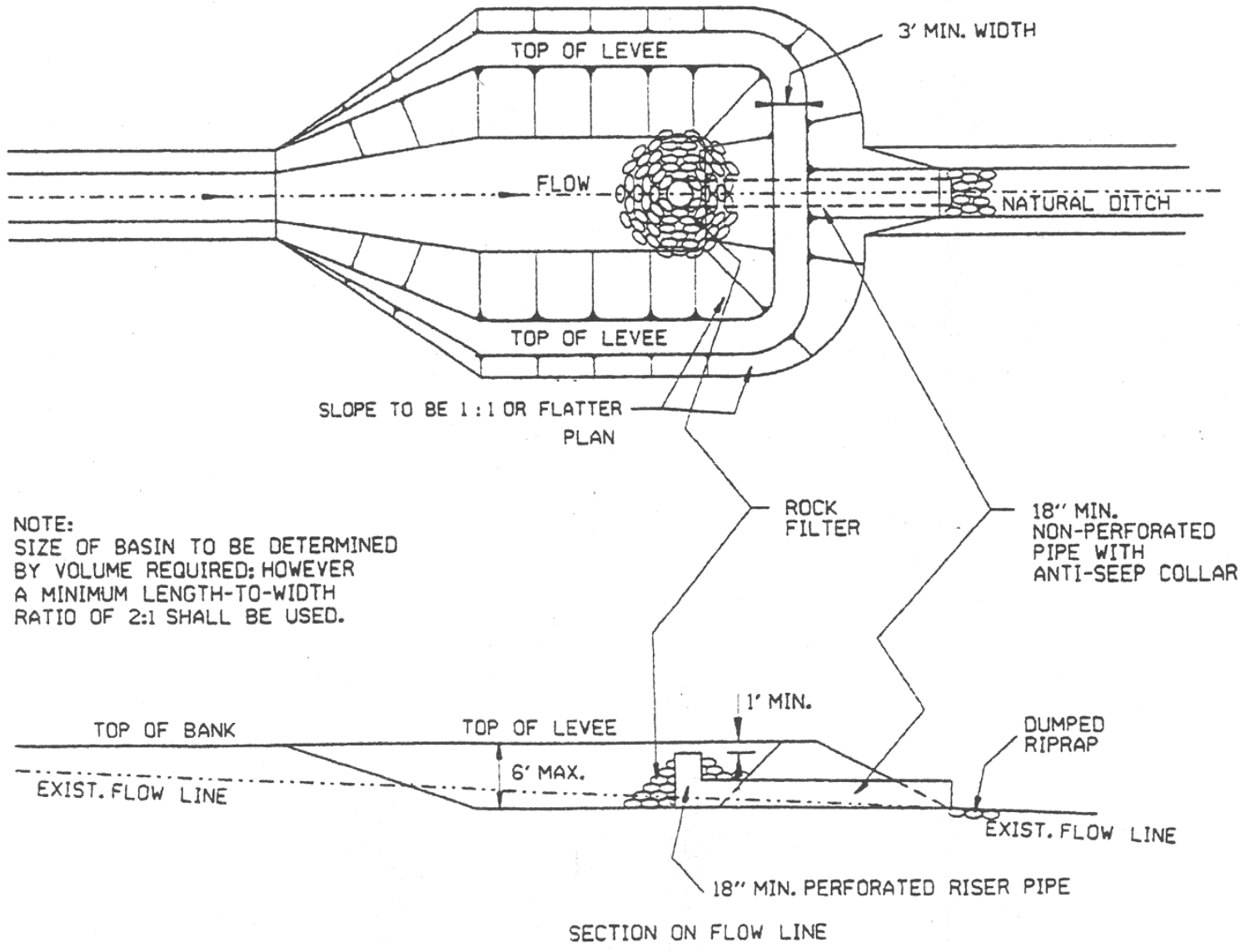


NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

FIGURE 2.10

FIGURE 2.11



NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH PIPE OUTLET (E-10)

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2.11 STABILIZED CONSTRUCTION ENTRANCE

Both Section 110 of the Standard Specifications For Highway Construction and the General NPDES Permit require that off-site tracking of sediment be minimized. The following information may be used to meet this requirement.

NOTE: The actual design and expense of stabilization of entrances to prevent tracking of material off-site is the responsibility of the Contractor. The main criteria are that these be installed - when needed - and work satisfactorily at all times.

Definition:

A stabilized construction entrance is used to reduce the amount of soil being tracked off-site.







Application:

Whenever traffic will be moving directly onto a public road or other paved areas.

Design Criteria:

Stabilized construction entrances are to be provided if off-site tracking occurs or is reasonably anticipated, in which case construction traffic should not be allowed to move directly onto public areas other than at locations of stabilized exits.

An example of design criteria that has been known to be effective in “normal” instances which the Contractor might use is as follows:

-  Coarse aggregate (2-3 inch stone) should be used.
-  Entrance should have a minimum width of 12 feet extending the entire length of the entrance.
-  The entrance length should be AT LEAST 50 feet.
-  Filter cloth should be used below the coarse aggregate.
-  If conditions exist such that a majority of mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles should be washed before entering the public road.
-  If slope towards the exiting end of the entrance exceeds 2 percent, a 6 to 8-inch high rise with 3:1 side slopes should be constructed across the entire width of the entrance to divert runoff away from the exiting end of the entrance. This berm should be approximately 15 feet from the exit end.






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3.0 PERMANENT EROSION AND SEDIMENT CONTROL MEASURES

Permanent control measures are those design features that are incorporated into a project to control long-term sediment in the project area. These permanent measures include, but are not limited to the following:

	Vegetative Cover
	Slope Design
	Channel Linings
	Culverts
	Underdrains

The following sections address these permanent features.

3.1 VEGETATIVE COVER

A good vegetative cover is one of the best erosion control measures available. Its ability to absorb the energy from falling rain and to hold soil together through extensive root systems makes it of primary importance. The best vegetative cover is preserved vegetation.

Methods to provide vegetative cover consist of seeding with mulch cover, sod mulch with overseeding, and solid sodding. Each project should be evaluated to determine the best method of application.

Stripping and stockpiling of topsoil to be spread over slopes prior to the placement of permanent vegetation should be considered where practical. In some cases additional topsoil from off the job site may be necessary.

A uniform perennial **vegetative cover with a density of at least 70%** (or other permanent stabilization measures such as riprap) must be established on unpaved areas before final stabilization is considered to be achieved and the Notice of Termination (NOT) can be filed.

3.2 SLOPE DESIGN

Roadway embankment or cut slopes vary with the height of cut or fill and, depending on the erosiveness of the materials involved, can directly affect erosion control and revegetation measures. While flat slopes (2:1 or flatter) facilitate the establishment and maintenance of vegetation, they do increase the total surface area that is subject to erosion. However, experience has shown that the advantages of the slope flattening outweigh the disadvantages of the additional exposed area. Benching is an effective method of breaking and controlling sheet flow on long steep slopes.

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Flat slopes allow better compaction of the fill surface reducing slump problems and slide potential in cut sections. Serrated cuts have been utilized in decomposed or fragmented rock to provide areas in which vegetation can become established.

3.3 CHANNEL LININGS

Channel linings should be considered when expected velocity, depth of flow, and/or particular geometric channel features are such that a scour problem would be anticipated.

Channel linings may consist of erosion control matting, solid sod, concrete paving, and/or rock riprap. In areas of high flow and high velocities flexible liners such as riprap should be considered in lieu of concrete paving. Consideration should be given to specifying a stone larger than dumped riprap where velocities are excessive.

Sharp bends and sudden changes to steeper gradients should be avoided since these conditions increase the scour potential of the channel.

3.4 CULVERTS

Culverts generally constrict flood flows and increase velocities, giving a much higher than normal erosion potential for a particular site. In many instances, erosion and scour at culvert crossings are damaging to either the highway embankment, the structure itself, or the downstream channel if not designed and protected properly. A good indication of the need for outlet protection at culverts is the performance of other culverts in the area.

Selection of a structure size may be dependent on acceptable outlet velocities. The outlet velocity should be determined and where a potential for erosion at the outlet exists, proper protective measures should be taken. This protective measure usually consists of reduction of the velocity by means of some energy dissipation device or the provision for a channel lining protection.

Culverts should be located to minimize channel changes where practical. The invert grade of the culvert should closely match that of the natural channel.

3.5 UNDERDRAINS

Subsurface water is a frequent cause of landslides, unstable shoulders, and other soil disturbances that contribute to the surface water erosion problem. Underdrain systems can alleviate these unstable conditions by preventing sloping soils from becoming excessively wet and subject to sloughing.

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4.0 WHEN IS A NPDES GENERAL CONSTRUCTION PERMIT REQUIRED?

Generally, all construction sites that will result in the disturbance of greater than or equal to one (1) acre must be covered by a NPDES discharge permit. However, some sites may actually be considered "maintenance" by ADEQ.

If a project is going to provide for the restoration or re-establishment of the "constructed" line, grade and typical section of the roadway, including, but not limited to, repaving, gravel road grading, shoulder and slope restoration, and adjacent ditch maintenance, it will probably be considered a maintenance activity by ADEQ and not require a permit. Where clearing, grading, or excavating (i.e., down to bare soils) takes place, permit coverage is required if more than one acre is disturbed. If in doubt, the designer must contact the District Engineer (or Division head). If necessary, the District Engineer (or Division Head) should contact Environmental Division for guidance.

4.1 DIFFERENCES IN LARGE, MEDIUM, AND SMALL CONSTRUCTION SITES

ADEQ has established permit requirements for three sizes of construction sites, with the permit providing specific guidance for each size. After you have determined that your project is not considered "maintenance," the next step is to determine which of these definitions your project meets. All of these sites have the following basic requirements for the SWPPP:

- A *SWPPP must be developed* in accordance with *Sections 2 through 5* of this Manual. Generally, Roadway Design Division or State Aid Division will develop this. However, if the project is designed by the District and is considered to be a construction site as defined under the Permit, the designer at the District level is responsible for the SWPPP development.
- The *SWPPP must be implemented* in accordance with *Sections 5 through 11* of this Manual. This includes (but is not limited to) keeping detailed documentation of the plan, the inspection efforts, and the implementation efforts of the Department and making same available to ADEQ and EPA personnel when requested.
- A *copy of the entire SWPPP* must be kept on the project.
- The *status of erosion control devices (ECDs)* installed on a project must be current for ADEQ review. This is normally a set of plans with the installed devices noted on them and updated every 14 days.

The differences between the three sizes of sites basically deal with the following requirements:

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REQUIREMENT	LARGE SITE	MEDIUM SITE	SMALL SITE
Submit SWPPP to ADEQ for review	Yes	No	No
File a NOI with ADEQ	Yes	Yes	No
Type of Discharge Notice posted on site	Medium & Large Construction Permit Certificate	Medium & Large Construction Permit Certificate	Small Construction Site Notice
File a NOT with ADEQ	Yes	Yes	No

Further details about these requirements are provided below.

4.1.a LARGE CONSTRUCTION SITES: As noted in *Section 1.1* of this Manual, a project meeting a “large construction site” is any project that will disturb/expose a total of either ten acres or more or twenty acres or more, depending on the County in Arkansas the site is in. (See Section 1.1 or the Permit in the Appendices for specific counties.)

The NPDES General Construction Permit requires the following for all large construction sites:

- The SWPPP that is developed per above *must be submitted to ADEQ* prior to the beginning of construction. This is to be done by the SWPPP designer. ADEQ may elect to require additional features be added to certain SWPPP’s as a result of their review of the SWPPP and/or a field inspection. Should this occur, Department personnel (Design and Construction) should cooperate with ADEQ in meeting their stipulations.
- A *Notice of Intent (NOI)* must be submitted to ADEQ prior to the beginning of construction. This is signed by the Division Head of Roadway Design or State Aid, or the District Engineer if the Project was designed at the District level, and then submitted through the Programs and Contracts (P & C) Division to ADEQ. P & C pays the initial permit fee. In addition to being included in the Contract documents, the Resident Engineer is to provide a copy of the NOI to the Contractor, who must post it where it is available at all times for public viewing.
- A *Medium & Large Construction Permit Certificate* should be provided by ADEQ when acknowledging a NOI. This certificate must be completed by the Resident Engineer, signed by the District

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Construction Engineer (DCE) and a copy provided to the Contractor to post where it is available at all times for public viewing. After posting of this certificate, the posting of the NOI is not required.

- Once the project is permanently stabilized, a *Notice of Termination* (NOT) must be submitted to ADEQ. This is to be submitted by the District Engineer. NOTE: The Resident Engineer normally completes and submits this to the District Engineer for signature.

4.1.b MEDIUM CONSTRUCTION SITES: As noted in *Section 1.1* of this Manual, a project meeting a “medium construction site” is any project that will disturb/expose a total of five acres (or more) but does not meet the criteria for a “Large Construction Site”. Generally, the Permit requirements for projects meeting this criteria are the same as those for “Large Construction Sites” except that the SWPPP is not submitted to ADEQ unless specifically requested by them.

The NPDES General Construction Permit requires the following for all projects meeting this criteria:

- The SWPPP that is developed is not submitted to ADEQ, unless they specifically request it.
- A *Notice of Intent* (NOI) must be submitted to ADEQ prior to the beginning of construction. This is signed by the Designer (or District Engineer if the Project was designed at the District level) and submitted by the Programs and Contracts Division (P & C), to ADEQ. P & C also pays the initial Permit fee. In addition to being included in the Contract documents, the Resident Engineer is to provide a copy of the NOI to the Contractor to post where it is available at all times for public viewing.
- A Medium & Large Construction Permit Certificate should be provided by ADEQ when acknowledging a NOI. This certificate must be completed by the Resident Engineer, signed by the DCE and a copy provided to the Contractor to post where it is available at all times for public viewing. After posting of this certificate, the posting of the NOI is not required.
- Once the project is permanently stabilized, a *Notice of Termination* (NOT) must be submitted to ADEQ. This is to be submitted by the District Engineer. NOTE: The Resident Engineer normally completes and submits this to the District Engineer for signature.

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4.1.c SMALL CONSTRUCTION SITES: As noted in *Section 1.1* of this Manual, a project meeting a “Small Construction Site” is any project that will disturb/expose a total of one acre (or more) but less than five acres. Generally, the field requirements for projects meeting this criteria are the same as those for “Medium Construction Sites” except that the SWPPP, the NOI, and the NOT are not submitted to ADEQ unless specifically requested by them.

The NPDES General Construction Permit requires the following for all projects meeting this criteria:

- The SWPPP that is developed is not submitted to ADEQ, unless they specifically request it.
- A Notice of Intent (NOI) is not submitted to ADEQ.
- A “Small Construction Site Notice” must be completed by the Resident Engineer and provided to the Contractor, who must post it where it is available at all times for public viewing, normally the project bulletin board. This Word document may be found on the LAN under:
\\Csd4\Construc\Misc\NPDES\09-04 SM CONS Site Notice.doc.
- Once the project is permanently stabilized, a Notice of Termination (NOT) is not submitted to ADEQ.

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5.0 DEVELOPMENT OF STORM WATER POLLUTION PREVENTION PLANS (SWPPP)

5.1. GENERAL

The NPDES General Construction Permit has many requirements for a SWPPP besides providing an erosion and sediment control plan. The information shown in the erosion and sediment control plans is not all of the SWPPP for a project. More information about the various components of the SWPPP can be found in Section 5.3. This section discusses the information that must be provided by the designer of the project. Design for the SWPPP will typically be developed by the Roadway Design Division or the State Aid Division. However, if the design work is performed by the District, District personnel are responsible for development of the SWPPP.

5.2.a SWPPP DEVELOPMENT ADEQ has a checklist that is used to determine the completeness of the SWPPP. If you do not have everything discussed in this section, they will consider it incomplete! If you wish to use a copy of this checklist for a final review of your SWPPP, it can be found in Appendix XI and FIGURE 5.01.

5.2.b REQUEST INFORMATION NEEDED FOR SWPPP The Environmental Division NPDES Section **MUST** be contacted for some of the information to be used. This may be done by sending a project location map (title sheet is okay), either mailing it, faxing it to (501) 546-2009 or e-mailing it to *EnvironmentalClearance@arkansashighways.com*. The following information that will be inserted at various places in the SWPPP Special Provision should be requested:

- Acres of wetland impacted by project (Remember, if wetlands are present, you will need to provide plans of sufficient detail to the Environmental Division to estimate wetland impacts!)
- Endangered Species Statement
- Approved State or Local Plans information
- TMDL Statement

5.2.c SWPPP REQUIREMENTS IN THE JOB PLANS

Ensure that the job plans show the following information.

- 1) Drainage patterns,
- 2) Approximate slopes after major grading activities,
- 3) Areas of soil disturbance,








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- 4) Outline of areas that will not be disturbed,
- 5) Location of major structural and non-structural controls,
- 6) Areas where stabilization practices will be utilized,
- 7) Surface waters, including wetlands, labeled with names whenever possible,
- 8) Locations where storm water will be discharged to surface waters.

Before one begins the SWPPP development, site conditions must be reviewed. All existing conditions at the site, including soils topography, drainage patterns, and existing vegetation should be considered. Modifications to site topography will require well-engineered erosion and sediment controls during and after construction. Using information regarding existing and proposed drainage patterns on the project, the guidance information included in Chapters 2 and 3 of this manual and personal experience, the types and specific locations of erosion and sediment control devices to be used and complete erosion and sediment control plans must be developed.




Erosion and sediment control devices typically are shown on separate sheets in the construction plans or on the plan and profile sheets along with all the other information normally shown there.

The erosion and sediment control process suggests some basic principles for development of this control plan. Some of these principles are:

-  The plan should emphasize erosion control measures with sediment control measures used as a last line of defense.
-  Divide the site into drainage areas. BMPs should fit the existing terrain and soil conditions.
-  Divert up slope runoff. Overland flow from up slope areas should be diverted around disturbed areas using BMPs (usually stabilized ditches with ditch checks), to minimize the amount of erosion generating runoff from the disturbed area.
-  Limit the area of unprotected soil exposure. Natural cover should be retained where feasible and scheduling of the project should limit the size of disturbed areas.
-  Minimize the duration of unprotected soil exposure. Schedule clearing and grubbing to minimize exposure and stabilize disturbed areas.
-  Protect soil with vegetative cover, mulch, or erosion resistant material.
-  Design slopes consistent with soil properties. Keep runoff velocities low. Measures that break slopes, disperse flows, and divert flows to stabilized

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outlets can reduce problems associated with concentrated flows and velocities.

-  Control concentrated runoff. Protect on-site drainage against scour and erosion, and to handle concentrated or increased runoff. Slope drains, rock, sod, erosion control matting or other means of stabilization can be used on outlets providing conveyance to the storm drainage system.
-  Retard runoff with planned engineering measures.
-  Retain sediment on-site. Trap sediment with temporary or permanent barriers, basins or other measures as close to the source as possible, but always on-site!

Erosion and sediment control during construction is highly dependent on the temporary and permanent measures contained in the plans and available to field personnel and their prudent use by these personnel.

REMEMBER: If the designer includes a BMP in the plans, it gives the Engineer a bid price in the contract and the flexibility to utilize that BMP “as needed” in other places on the project. This is very important! If the Engineer has to change order in a BMP, the price increase from the contractor could effectively prohibit its use.

When selecting BMPs for a site, consider effectiveness, availability, feasibility, durability, compatibility, cost, and operation. Think about the following:

- FEASIBILITY - The material must be capable of relatively quick and easy application considering the existing field conditions. *Example - Silt fence and straw bale ditch checks are very difficult to install in rocky areas. Better choices would be diversion ditches and rock ditch checks. Paved ditches can utilize sand bag ditch checks, but not straw bale ditch checks.*
- DURABILITY - Given the site conditions and the length of construction, the materials must maintain their structural integrity during installation and endure until vegetation has established effective cover. *Example – Straw bale ditch checks typically do not have a very long life expectancy when exposed to large or concentrated flows.*
- COMPATIBILITY – BMPs should be selected with regard to public acceptability and environmental sensitivity, including visual or aesthetic impacts. *Example – large sediment basins could be considered hazardous in some areas, such as near a school.*
- OPERATION – Regardless of the BMPs selected, maintenance will be required. While the cost of operation is seldom considered in erosion control planning, lack of maintenance is usually the primary cause of the failure of an erosion and sediment control plan. *Example – Sediment control features will require clean out. Access to clean these features must be considered as a part of your plan.*
- EFFECTIVENESS – Some BMPs are more effective than others. *Example –Baled straw ditch checks often lose out here. They are difficult*

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to install correctly, have problems with durability, and need constant maintenance. However, they are easily available.

- COST - Factors to be considered relative to costs include material costs, preparation costs, installation costs, and maintenance. *Example - Rock for rock ditch checks may be cheaper in some areas of the state and be more cost effective than sand bag ditch checks.*
- AVAILABILITY - The material must be readily available from a local supplier or capable of immediate shipment when needed. *Example - Rock for rock ditch checks may not be easily obtained in the delta area of the state, increasing the cost of the BMP. Consider an alternative material.*

5.2.d SWPPP SPECIAL PROVISION REQUIREMENTS

Obtain the latest version of the SWPPP Special Provision found on the Construction subdirectory of the LAN under \\Csd4\Construc\Misc\WPDES\10-04 SWPPP-SP.doc. This is the basis of the SWPPP Special Provision that must be prepared. Complete the SWPPP Special Provision template, inserting the appropriate information as discussed below.

5.2.d(1) SITE DESCRIPTION:

- a) Site Description: Insert the description of the construction activity (This can be taken from the description in the contract.)
- b) List the sequence of major soil disturbing activities that will take place (You have to figure this one out.)
- c) The total area of the site.
- d) Estimate area of the site that will be disturbed.
- e) Estimate Runoff Coefficient of area after construction using information found in Appendix II.
- f) List general information available about the type of soils at the site.
- g) If storm water from the project will discharge into a local storm sewer system, list the name of the system and/or the local receiving stream.
- h) Utilize the map attached to the NOI on the LAN under \\Csd4\Construc\Misc\WPDES\11-03 Notice of Intent.doc (or found in Appendix III), to determine the Ultimate Receiving Water for the project area.
- i) Wetland acreage impacted will be provided by the Environmental Division. (Can't happen until after the plans are available!)
- j) The Environmental Division will indicate to you which Statement to select for the Endangered Species. If Statement 2 is selected, additional information will be provided to complete the statement.

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5.2.d(2) CONTROLS

This portion of the SWPPP requires a list of construction activities that will occur on the project, a description of the types of erosion and sediment controls that will be used for each construction activity (from the prepared plans), and when that E&SC control will be installed. You may have to use a crystal ball to try to foresee all the activities, but you have to have the controls in the plans. Here's an example of this:

Construction Activity/Control/Timing

1) Clearing and grubbing – The perimeter of the construction area and area for the sediment basins will be cleared. Diversion ditches, rock ditch checks and sediment basins will be installed around the perimeter of the site, and temporary seeding will be used to stabilize the ditches and basins before further clearing of the site will occur.

Next, select (that means **X** marks the spot) from the lists provided in the SWPPP Special Provision template those Erosion and Sediment Controls to be used on the project, and insert the information telling when they will be implemented. Some of these controls should be standard operating procedure on most jobs, and may already be filled out for you. If the control measure is not provided in the template, it should be added to the list under "Other".

Select from the lists provided in the SWPPP template of the Permanent Storm Water Management and Velocity Dissipation devices to be used on the project. If a control measure is not provided in the template, it should be added to the list under "Other". The ADEQ General Construction Permit guidance says that "a goal of 80 percent removal of total suspended solids from flows that exceed predevelopment levels" should be used in designing storm water management controls.

5.2.d(3) APPROVED STATE OR LOCAL PLANS

The Environmental Division will indicate which Statement to select. If Statement 2 is selected, additional information will be provided to complete the statement.

5.2.d(4) DOCUMENTATION OF TMDL REQUIREMENTS

The Environmental Division will indicate which Statement to select. If Statement 3 is selected, additional information will be provided to complete the statement.

5.2.d(5) CERTIFICATION OF SWPPP

The last page of the SWPPP Special Provision contains a certification statement that must be signed by the Roadway Design Division Head, State Aid Division Head, Bridge Design Division Head, the District Engineer, or the State

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Maintenance Engineer, according to who had oversight of the SWPPP preparation.

5.2.e THE FINAL STEPS BEFORE LETTING THE PROJECT:

- **SWPPP Review for Large Projects** – If it is defined as a “Large” construction project, the SWPPP must be submitted to ADEQ for their review and pre-approval before work on the project can begin. A template letter for this submittal can be found on the Construction subdirectory of the LAN under:

\\Csd4\Construc\Misc\WPDES\ADEQ Standard SWPPP Submittal Letter.doc.

Each division or district is responsible for submitting to ADEQ for review the SWPPP of projects they are designing. ADEQ will respond either with a letter deeming the SWPPP acceptable or incomplete. If the SWPPP is incomplete, you must supplement the SWPPP with the additional information needed and resubmit it to ADEQ.

- **NOI Submittal for Large and Medium Projects** - A NOI must be submitted if the project is a "medium" or "large" project, as defined by the permit. See Section 1.1 of this Manual for these definitions. The Programs and Contracts Division (P&C) fills out, obtains all required signatures, and submits the NOIs to ADEQ for construction projects. They will assume this responsibility when the designer sends a project package to them for letting that includes a SWPPP Special Provision. P&C must submit the NOI a minimum of two weeks prior to the actual beginning of work.
- **Small Projects** – Go to work! If it is considered a “Small” project, as defined by the Permit, the project may now be let to contract. No other submittal to ADEQ is required. (Small projects will contain the SWPPP Special Provision in the Contract. However, the NOI will normally not be completed and submitted to ADEQ. Therefore no tracking number will be issued.)

5.3 SWPPP COMPONENTS - CONSTRUCTION PROJECTS

The following is a list of items that make up the SWPPP. **Copies of these items must be retained on the project** for review by ADEQ/EPA personnel in the event of an inspection. **The SWPPP for a particular project (as much as is practical) is to be placed in a loose leaf binder with this Manual and kept on the project site.** The updated SWPPP must be available in the AHTD field office on-site, if possible. If no field office is available, the updated SWPPP must be maintained in the AHTD project inspector's vehicle.

Copies of SWPPP documents that should be included in this manner are as follows:

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- **Completed SWPPP Special Provision** included in the Contract. This should be copied and placed in the project SWPPP notebook on the project.
- **Any additional Special Provisions** from the Contract relating to the SWPPP (Typically Water Pollution Control, related to water quality issues or endangered species protection). This should be copied and placed in the project SWPPP notebook on the project.
- **Completed NOI** included in the Contract. (Not required for "Small" construction sites under five acres.) This should be copied and placed in the project SWPPP notebook on the project.
- **ADEQ's Medium & Large Construction Permit Certificate or ADEQ's Small (1 – 5 Acres) Construction Site Notice.** This should be copied and placed in the project SWPPP notebook on the project (in addition to required posting).
- **Updated As-Built Erosion & Sediment Control Plans.** A set of half size plan sheets showing all erosion and sediment control measures currently in place must be available on the project. These must be updated at least on a biweekly basis. This may be placed in the project SWPPP notebook on the project or filed separately on the project with the SWPPP.
- **Prime Contractor Certification.** A certification is included in the contract to be signed by the Prime Contractor. This should be copied and placed in the project SWPPP notebook on the project.
- **Subcontractor Certifications.** Depending on the revision date of the Special Provision in the Contract, the SWPPP SP requires that all subcontracts contain the required certification or that subcontractors sign separate certifications. The certifications accompanying subcontracts should be copied, including the subcontractor signature, and placed in the project SWPPP notebook retained on the project.
- **Any SWPPP related correspondence and/or Change Orders.** This should be copied and placed in the project SWPPP notebook on the project.
- **SWPPP Inspection Reports.** Once the report is signed by the Resident Engineer, a copy MUST be given to the Contractor and another copy returned to the Project. AHTD Personnel are responsible for updating the SWPPP, if needed. (These inspections must be performed a minimum of every two weeks and after every storm event of ½" or more.) (These may be placed in the project SWPPP notebook on the project or filed separately on the project with the SWPPP.).
- **Standard Specifications.** A copy of most applicable Standard Specifications regarding erosion control is found in Appendix VII of this Manual. However, it is recommended that the project inspector keep a

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copy of the Standard Specifications for Highway Construction on the project.

- **Plans.** A complete set of plans for the project.
- **Quantity Listing For All Erosion And Sediment Control Devices.** - This is found in the plans and the executed Contract. Wherever possible, plans should list planned locations for these devices.
- **NPDES General Construction Permit.** A copy is found in Appendix VIII of this Manual.
- **Endangered Species Clearance.** This information is included in the SWPPP Special Provision, with reference to additional special provisions if needed.
- **Hazardous Materials Handling.** This is found in the SWPPP Special Provision, combined with Subsections 107.01(f) and 110.07(c) of the Standard Specifications.
- **Approved State or Local Plans.** This indicates that approved State or Local storm water management plans are incorporated into the SWPPP and is found in the SWPPP Special Provision.
- **Total Maximum Daily Load (TMDL).** The Permit requires that the SWPPP include documentation supporting a determination of Permit eligibility with regard to waters that have an established TMDL. This is found in the project SWPPP Special Provision.
- **Wetland Information.** The acreage of wetlands impacted is found in the SWPPP Special Provision. The permit also requires wetlands to be shown on the plans.
- **Rainfall Records.** Rainfall information is to be recorded and maintained in the project diary and made available on each project site. While not required by the NPDES General Construction Permit, it is recommended that a rain gage be placed on each project to ensure accurate records.
- **Resident Engineer's Construction Diary** - Project diaries, kept by the Resident Engineer, are considered part of the SWPPP since they describe when, where and how the SWPPP is implemented, maintained, and altered (when needed) to fit conditions. For projects utilizing Site Manager, computer files and a laptop computer should be maintained on the Project, since hard copies of this information will not exist.

NOTE: If printed diaries are being utilized in lieu of SiteManager, the Resident Engineer must distribute a copy of the RE Diary to the project site on a weekly basis.

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6.0 IMPLEMENTING A SWPPP

A review of all components of the SWPPP shows that there is much more involved than installing and paying for the erosion and sediment control devices shown in the plans. While the plans are under development, Construction personnel in the district should utilize the Plan in Hand Field Inspection meetings with design personnel to review the SWPPP and request changes, when needed, to make the SWPPP as effective as possible. This is also the time to request any additional BMPs that are not included in the plans but that field experience indicates are needed. **After the project has been let to contract, Construction personnel have the final responsibility of making the SWPPP into a working plan. If the design of the plan is not adequate, changes must be instituted by Construction personnel.**

To successfully carry out a SWPPP, some previously acceptable procedures and attitudes must be changed. For example, traditionally it was generally left up to the Contractor to determine when to install erosion and sediment control devices, and how and where the Contractor washed out a concrete truck was generally ignored. Now all activities must take into account the requirements of the SWPPP. **AHTD Construction personnel must closely monitor and instruct the Contractor with regard to SWPPP compliance on the project Right-of-Way.**

Section 110 of the Standard Specifications provides much of the guidance to make the Contractor's actions coincide with the General Construction Permit requirements. In general, the Department is responsible for developing and implementing a SWPPP to cover all disturbed areas on the Right-of-Way on projects that exceed one acre of total disturbed area. The devices and procedures required to do this are part of the contract, and the Contractor is to be paid to install and maintain them. On project related facilities off the Right-of-Way, the Contractor shall be responsible for this, including obtaining necessary permits and all related costs.









There are other specific requirements in various parts of the Specifications that also must be followed.

DISCUSSION OF THE SWPPP IS MANDATORY AT PRECONSTRUCTION CONFERENCES.

The Contractor needs to understand what the Department expects and Construction personnel must know in advance how the Contractor plans to handle the Permit requirements.

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To successfully implement a SWPPP, the components and goal that were previously pointed out must be understood. The erosion and sediment controls must be installed and used in accordance with good engineering practices. **Construction personnel should make themselves aware of the various controls and the proper use of each.** Sections 2, 3, 5, and 7 of this Manual contain information to help in this effort. The following general guidelines will be helpful when implementing a SWPPP:

-  Limiting the area disturbed is better than trying to control erosion.
-  Preventing erosion is better than trying to control sediment. Retaining vegetation or reestablishing it (seeding and mulching) will virtually eliminate erosion. All other methods to retain sediment on the construction site will, on the average, only recover about 50% of the sediment.
-  Permanent erosion controls are generally better than temporary controls.
-  Routing clean water through or around a project is better than trying to remove sediment from it.
-  Slow moving water will erode less soil than fast moving water.
-  Slow moving water will drop more sediment than fast moving water. If erosion is not prevented, the next best practice is to pond the silt laden water for as long as possible and allow the silt to settle out.
-  One of the most effective ways of reducing erosion and sediment problems on a project is to build it and permanently stabilize it as quickly as possible.
-  It is virtually impossible for a designer to know every significant detail regarding the characteristics of a project and develop a flawless SWPPP. Even a good SWPPP, however, will not produce the desired result (minimizing and controlling sediment) unless the erosion and sediment control devices are installed and maintained in a timely manner. Therefore, the above guidelines and the overall goal should always be considered when installing the erosion control devices as shown in the Plan. **It is also important to recognize when something is not working even though it may be built according to the SWPPP. If it is obvious something different is needed, it MUST be addressed. Ignoring this is a violation of the Permit and might waste money or defeat the purpose.**

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7.0 DIVISION OF RESPONSIBILITIES – CONTRACT CONSTRUCTION PROJECTS

7.1 GENERAL.


Section 110 of the Specifications and applicable Special Provisions tie the NPDES Permit to the Contract. Generally the Contractor is responsible for all off R/W facilities, and the Department is responsible for implementing the SWPPP within its R/W.


7.2 AHTD RESPONSIBILITIES DURING CONSTRUCTION

On Department R/W, ADEQ, EPA, and the Corps of Engineers hold the AHTD (the owner and/or operator) responsible for compliance with NPDES requirements. These agencies monitor projects in regard to the work performed by Contractors on the R/W. In addition, the Resident Engineer should be aware that the General Public may also take action against the AHTD for violations of the Permit if the Contractor fails to comply with the Storm Water Pollution Prevention Plan as required by the Plans and Specifications. The Department is similarly responsible for contracts it administers such as State Aid projects.

The AHTD Central Office Staff (or sometimes the District staff) will normally develop Storm Water Pollution Prevention Plans for projects and file the Notice Of Intent (NOI) when required. The District Engineer is responsible for submittal of the Notice of Termination (NOT).


Among the Resident Engineer's responsibilities with regard to NPDES permit compliance are:


 **Location of the Updated SWPPP.** Both public notice forms, the ADEQ Medium & Large Construction Permit Certificate and the Small (1-5 Acres) Construction Site Notice require the location of the SWPPP to be posted. On projects with an AHTD field office, this should be the noted location for the SWPPP, including a brief description of the field office location, if possible. On projects without a field office, the updated SWPPP must be maintained in the AHTD inspector's vehicle. In that case, on the public notice, the location of the SWPPP should be listed as the AHTD inspector's vehicle, and request the Contact person be called to determine the present location of the SWPPP and when it can be made available on-site for review (ASAP).

 **Public Notice for Large or Medium Construction Sites.** ADEQ will send a Medium & Large Construction Permit Certificate if the project is over five acres. This certificate must be reviewed to make sure the information ADEQ has supplied is correct, and then completed with the appropriate information by the RE. The certification on the form should be signed by the District Construction Engineer. This certification states that the construction project meets ADEQ's definition of a large or medium site

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(five acres or greater) and that a SWPPP has been prepared and will be implemented as appropriate for either a large or medium construction site. ***If the construction site falls with a regulated small, medium, or large MS4, a copy of this completed form with signed certification must be provided to the operator of the MS4. A list of the regulated MS4 operators and their contact information is provided in Appendix XII. When a construction site falls within one of the cities/counties listed, the Resident Engineer must send a copy of the completed certificate to the contact provided.***

 **Public Notice for Small Construction Sites.** If the construction project is under five acres, ADEQ's Small (1-5 Acres) Construction Site Notice (found on the Construction subdirectory of the LAN under \\Csd4\Construc\Misc\NPDES\09-04 SM CONS SITE NOTICE) must be completed with the appropriate information and the certification signed by the District Construction Engineer. This certification states that the construction project meets ADEQ's definition of a small site (under five acres but more than one acre) and that a SWPPP has been prepared and will be implemented as appropriate for a small construction site. ***If the construction site falls with a regulated small, medium, or large MS4, a copy of this completed form with signed certification must be provided to the operator of the MS4. A list of the MS4 entities and their contact information is provided in Appendix XII. When a construction site falls within one of the cities/counties listed, the Resident Engineer must send a copy of the completed certificate to the contact provided.***

 **Ensure that the Contractor posts the completed ADEQ's Medium & Large Construction Permit Certificate or Small Construction Site Notice** (whichever is appropriate) in a place available at all times for public viewing. If the ADEQ Medium & Large Construction Permit Certificate has not been received, the NOI must be posted. (The Resident Engineer furnishes these to the Contractor.) These must be posted prior to work beginning and available until the NOT is filed and/or project is completed.

 **Ensure that the Contractor adheres to the Storm Water Pollution Prevention Plan as described by the plans.**

 **Ensure that the Storm Water Pollution Prevention Plan is effective.**


 **Modify the Storm Water Pollution Prevention Plan as necessary to produce effective results and keep it current.**

 **Fully document ALL modifications to the SWPPP including the reason(s) for the modifications.**

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 **Perform inspections.**

 **Document inspections and instructions** to the Contractor concerning temporary and permanent erosion control.

 **Ensure that the Contractor's sequence of operations conforms** to Standard Drawing TEC-3 (contained in the plans), the SWPPP Special Provision contained in the Contract, and the Plans.

 **MAINTAIN A COPY OF THE SWPPP ON EACH PROJECT.**
Refer to Section 5 of this Manual.

 **KEEP AS-BUILT PLANS, UPDATED AT LEAST EVERY TWO WEEKS, OF EROSION CONTROL MEASURES INSTALLED AND IN USE ON A PROJECT.** Refer to Section 5 of this Manual.

 **File NOT** when appropriate. (District Engineer Responsibility)

"Best Management Practices" (BMP's) must be utilized when controlling storm water and erosion. The Resident Engineer has a major responsibility in seeing that the Contractor complies with this Plan. The BMP's are, to a great extent, determined in the field (i.e., when to seed/temporary seed, where ditch checks are needed, etc). **If conformance to a particular project's SWPPP is not giving the desired results, it is the Resident Engineer's responsibility to initiate and document appropriate changes.**

The permit also requires that efforts with regard to the SWPPP be documented. The Resident Engineer, therefore, must maintain a separate file on this for each project, ready for the scrutiny of others. A copy of this **MUST** be kept at the project site. Refer to Section 5 of this Manual.

One of the principal vehicles the Resident Engineer uses for documentation of NPDES efforts is the "Storm Water Pollution Prevention Plan Inspection Report." A copy of this Report, along with instructions for completing it, is found in Section 10.0 of this Manual.

The Resident Engineer and field personnel should be aware that persons within the AHTD and from other governmental agencies might periodically arrive on a project and review **both the documentation and the project itself** regarding erosion and sedimentation control. Cooperation from the Resident Engineer and field personnel with these people is expected. **The Resident Engineer should be contacted immediately and whenever possible be present to accompany inspectors from governmental agencies during an inspection.**

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7.3 CONTRACTOR RESPONSIBILITIES

A. Department Right-of-Way. (This section also applies to project Right-of-Way owned by other entities on Department administered contracts, such as State Aid Projects.) The Contractor's duties on Arkansas State Highway and Transportation Department project R/W are to perform temporary and permanent erosion control work in accordance with the Plans and Specifications and as required by the Resident Engineer. The Contractor is paid for this work in accordance with each item's applicable Specification. **The Resident Engineer should note that the Contractor's prompt installation and maintenance of erosion and sedimentation control items is a significant part of compliance with Storm Water Pollution Prevention Plans.**

During the Preconstruction Conference, the Resident Engineer should discuss the need for designated areas to discharge concrete wastes and sanitary facility locations. (These must be documented in the SWPPP).

The NPDES General Construction Permit and Section 110 of the Standard Specifications state that off-site vehicle tracking of sediment must be minimized. (One design for a Stabilized Construction Entrance is provided in Section 2.11 of this Manual for information purposes.) Since the number and location of entrances to the construction site are choices of the Contractor, minimizing off-site tracking is not a pay item but is considered to be included in the other items of the contract. Therefore, this BMP is not shown in the SWPPP, nor is a pay quantity provided in the plans. Measures to minimize off-site tracking must be taken by the Contractor if needed, however.

Subsection 110.08 of the Standard Specifications details the actions that the Department may take in the event the Contractor fails to comply with contractual responsibility.

B. Sites Not On Department Right-of-Way. The Contractor (and the property owner) is responsible for obtaining any and all NPDES permits required for borrow pits, waste areas, plant sites, storage areas, quarries, and any other areas utilized in conjunction with construction projects outside the Department's R/W. This includes developing and adhering to a Storm Water Pollution Prevention Plan (SWPPP), filing a NOI, inspections, filing a NOT, etc. AHTD personnel generally do not monitor the Contractor's compliance with the NPDES requirements in areas that are not on the R/W. In addition, the Contractor is not paid directly for compliance with these Federal and State mandated requirements on off-site areas. Payment for temporary and permanent erosion control measures in these off-site areas is considered subsidiary to the other items of the contract.









NOTE: Some municipalities such as Little Rock require additional permits to clear and excavate within their city limits. The Contractor is responsible for being familiar and being in compliance with these local requirements.

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While the primary enforcement of requirements for off-site locations rests with the applicable regulatory agency, the Department retains the right and authority to inspect and enforce contractor compliance should violations come to the attention of the Department.











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7.4 SUMMARY OF INSPECTION DUTIES

-  Become familiar with the applicable plans and Specifications.
-  Become familiar with Storm Water Pollution Prevention Plan.
-  Prior to the beginning of construction, review all aspects of the Storm Water Pollution Prevention Plan. Check inasmuch as reasonable for possible errors, potential ineffectiveness, additional R/W needed, etc., and recommend any appropriate changes through the Change Order process.
-  Prior to the beginning of construction, discuss in detail the project's Storm Water Pollution Prevention Plan requirements:
 - ⇒ With the Department Job Inspector, and
 - ⇒ With the Contractor's personnel -- at both the Preconstruction Conference and on the site as needed, especially limitations on the amount of area that can be disturbed.
-  Prior to the beginning of construction, complete the public notice as detailed in Section 7.2 of this Manual.
-  Provide the Contractor with a copy of the appropriate public notice and ensure that the Contractor posts same in a place available at all times for public viewing.
-  Ensure that erosion and sedimentation control measures are installed in accordance with the Storm Water Pollution Prevention Plan requirements. This includes proper installation along with required maintenance, both of which must be performed in a timely manner.
-  Ensure inasmuch as is possible that the Contractor minimizes at all times the area, which has been disturbed and not stabilized.
 - ⇒ Instruct the contractor to take appropriate temporary stabilization measures within 14 days of his temporarily abandoning an area (if the site is to be temporarily abandoned for a total of 21 days or more) and ensure that this work is performed as instructed. This work (often involving temporary seeding) is to be paid for by the AHTD if the area is abandoned due to no fault of the Contractor. If, however, the Contractor abandons an area for his own convenience or due to his negligence (clears more area than he can work, etc.) it shall NOT be paid for by the AHTD.
 - ⇒ Instruct the contractor to perform planned permanent stabilization measures (seeding, mulch cover, ditch paving, etc.) within 14 days

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after completion of an area and ensure that this work is performed as instructed.

-  Perform inspections as needed to monitor the effectiveness and condition of the Erosion and Sedimentation Control Plan and the Devices installed. As a MINIMUM, the project should be inspected every 14 days and within 24 hours after the end of any storm event of 0.5" or more accumulated precipitation.
-  Limit the exposed acreage per specifications and per the contractor's and subcontractor's ability to implement and maintain the SWPPP.
-  Ensure that sediment is not being tracked off-site. If so, limit the number of places that vehicles are entering and leaving the site, and advise the Contractor to install some sort of Stabilized Construction Entrances.
-  Ensure that concrete drum wash water and grinding material is disposed of properly, i.e., an excavation or footing in fill material, or other contained area where the wash water cannot leave the site. NEVER near or into a waterbody or ditch. This must be a designated area that is documented in the SWPPP.
-  Ensure the public notice remains posted.
-  Ensure that the Contractor maintains "good housekeeping," i.e., proper storage of materials, proper disposal of trash and construction waste, and cleans up and reports spills appropriately.
-  Instruct the Contractor to take appropriate maintenance actions of E&SC BMPs as necessary.
-  **SIMPLY INSTALLING THE BMPs AS SHOWN ON THE PLANS IS NOT ENOUGH TO MEET PERMIT REQUIREMENTS. IT IS THE CONSTRUCTION PERSONNEL'S RESPONSIBILITY TO INSTITUTE CHANGES AS NEEDED TO CREATE AND MAINTAIN AN EFFECTIVE EROSION AND SEDIMENT CONTROL PLAN.**
-  **DOCUMENT ALL DEPARTMENT AND CONTRACTOR ACTION REGARDING SEDIMENTATION AND EROSION CONTROL.**
-  **MAINTAIN A COPY OF THE SWPPP ON EACH PROJECT.**
Refer to Section 5 of this Manual.

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** KEEP CURRENT AS-BUILT PLANS OF EROSION CONTROL
MEASURES INSTALLED AND IN USE ON THE PROJECT.
Refer to Section 5 of this Manual.**

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7.5 UTILITY COMPANY RESPONSIBILITIES

Utility companies performing work both on and off the right-of-way are responsible for developing and implementing their own SWPPP's and obtaining their own NPDES Permits. It is the Department's best interest to work with the Utilities making adjustments to ensure that erosion and sediment are kept to a minimum and applicable permits are complied with.

On highway construction projects, the Department's Resident Engineer should first make every effort to have the responsible utility perform erosion control needed resulting from a utility adjustment whether on or off the R/W. The Resident Engineer should contact the Department's R/W Utilities Section (or the Construction Office's Staff Construction Engineer for the area) if a utility fails to do so. It may be necessary for the Resident Engineer to shut down the utility adjustment efforts until cooperation is obtained. If the utility work is on the R/W and a utility does not cooperate, the Resident Engineer may need to authorize and instruct the Highway Contractor to perform needed erosion control. This is not, however, relieving the Utility company from its permit responsibilities.

7.6 OTHER ENTITIES AND AGENCIES

Sometimes the Department is involved in funding a project (often not on Department Right-of-Way) but does not perform day-to-day inspection of the work. Instead, the owner of the Right-of-Way (or sponsor of the project) inspects the work or hires a consultant to do it. Examples of this type of project are Enhancement Projects and "owner inspected projects". In these types of projects, the responsible entity (normally the project sponsor and/or owner of the project Right-of-Way) is responsible for submittal of their own NOI for the project.

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8.0 OTHER WATER QUALITY RELATED CONCERNS

The Clean Water Act of 1972 (as amended) addresses various issues related to improving water quality and requires permitting programs to be established in support of this effort. Section 402 governs the NPDES, just one of these permitting programs. Various agencies in Arkansas have oversight of these programs, chiefly the US Army Corp of Engineers, EPA, and the ADEQ. Three of these programs affect the Department's construction projects and will be briefly discussed below. For further information about any of these programs, contact the Environmental Division.

Within Arkansas, certain water bodies and areas are designated for special protection. Waterbody designations that affect the Department's construction and maintenance activities and need to be considered within the erosion and sediment control plans are:

- 1) **Extraordinary Resource Waters.** These waters have a combination of chemical, physical and/or biological characteristics that are expressed in terms of outstanding scenic beauty, aesthetics, scientific value, broad scope recreation potential, and intangible social values.
- 2) **Ecologically Sensitive Waterbodies.** These are special aquatic areas known to provide habitat for threatened, endangered or sensitive species of aquatic or semi-aquatic plants or animals.
- 3) **Natural and Scenic Rivers.** Federal and state legislation creates extra protection for some rivers that have been selected as having special natural, scenic or recreational qualities.
- 4) **Impaired Waters.** ADEQ is required by the Clean Water Act to prepare a list of waters in Arkansas that are considered overly "impaired" (translated polluted). These waters are cataloged on ADEQ's 303(d) list and targeted for clean-up. Some of these waters are listed because they contain too much sediment and turbidity and can become further impaired by construction or maintenance activities.
- 5) **Public Drinking Water.** The Arkansas Department of Health oversees regulations related to public drinking water. Many public drinking water intakes and wellhead protection areas are found across the state.

The Department is required to submit the SWPPP for projects crossing Extraordinary Resource Waters and Ecologically Sensitive Waterbodies, (regardless of acreage opened during construction) to the ADEQ for review and approval. The SWPPP must be approved by ADEQ prior to issuance of the NPDES permit and Water Quality Certification for projects in these areas. For projects in the vicinity of public water supplies, coordination with the Arkansas Department of Health and local water works is required. Basic information about these programs is found below.

General guidance regarding standard conditions for protection of water quality is

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found in Section 110 of the Standard Specifications. Specific guidance pertaining to each project will be found in the Contract Special Provisions. These may include special provisions in the contract documents for Section 404 Permits, protection of public drinking water surface water intakes or wellhead protection areas, and endangered species protection.




8.1 INFORMATION NEEDED FOR WATER RELATED PERMITTING PROCESSES

If proposed work is within a waterbody, information concerning the proposed project **MUST** be provided to the Environmental Division Special Studies Section. A project location map (plan title sheet is satisfactory), and design data regarding the scope of the proposed project or change order is required. A conceptual plan regarding all work in waters of the U.S. or wetlands that includes quantity of excavation, quantity of temporary and/or permanent fill, sizes of pipes, culverts, or bridges installed, and approximate area impacted is required to apply for Section 404 permits, water quality certification, and STAA. Digital photographs of the proposed project area are also helpful. Information may be submitted by either mailing it, faxing it to (501) 546-2009 or e-mailing it to *EnvironmentalClearance@arkansashighways.com*. For more information, contact Environmental Division, Special Studies at (501) 569-2595.

8.2 SECTION 404 PERMITS

Section 404 of the Clean Water Act established a permitting program to control discharge of dredged or fill material into waters of the United States. Waters of the United States include lakes, rivers, streams (including intermittent streams), mud flats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, and impoundments of waters otherwise defined as waters of the United States. Sewage lagoons, water treatment systems, and farm reservoirs are not considered waters of the U.S.

The General Conditions for issuance of a Section 404 Permit (regardless of type) include:

-  **Prior Water Quality Certification.** A state water quality certification must be obtained,
-  **Proper maintenance.** Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety, and;
-  **Erosion and siltation controls.** Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.

Change orders on AHTD construction projects involving waterbodies or wetlands must be coordinated with the Special Studies Section of the Environmental

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Division to determine if modification to the project's Section 404 permit is required. General guidance regarding Section 404 standard conditions for construction are found in Section 110.06 of the Standard Specifications For Highway Construction. Specific guidance pertaining to each project will be found in a Contract's Special Provisions.

8.3 WATER QUALITY CERTIFICATION

State Water Quality Certification requires reasonable assurance that the project will be constructed in a manner that will not physically alter a significant segment of a water body and will not violate ADEQ water quality standards. In Arkansas, water quality certification pursuant to Section 401 of the Clean Water Act, or waiver thereof, must be issued by the ADEQ for the Section 404 permit to be valid. The Special Studies Section of the Environmental Division requests Water Quality Certifications for those projects requiring a Section 404 Permit.

8.4 SHORT TERM ACTIVITY AUTHORIZATION (STAA).

The STAA provides the short term authorization from ADEQ that is needed to conduct approved work in Extraordinary Resource Waters, Ecologically Sensitive Waterbodies, Natural and Scenic Rivers, and impaired waters listed on ADEQ's 303(d) list for sediment. The Environmental Division reviews the overall list of projects being let to contract and notifies the Construction Division which of these jobs will require a STAA. The STAA is then requested by the Central Construction Office Staff from ADEQ prior to the beginning of work. The submittal to ADEQ must contain information showing the location of the project, the type of activity(s) needing a STAA, and the duration of that activity. Once acknowledgement is received by the Department from ADEQ, a copy is sent to the Resident Engineer. If additional activities not covered by the original request are to occur, these must also be authorized by a resubmittal to ADEQ. Maintenance activities that occur in any of the waterbodies listed above should be coordinated with Environmental Division to determine if the STAA is required.

8.5 PENALTIES

Failure to implement or maintain the SWPPP for any project can result in the revocation of either the Water Quality Certification and/or the Section 404 Permit for the project. Revocation of either results in a Cease and Desist order from the Corp of Engineers. Construction on the project is discontinued until the problems are corrected.

Any person who knowingly violates any provision of the Endangered Species Act may be assessed a civil penalty of not more than \$25,000 for each violation.

Failure to acquire a STAA may result in fines or penalties by ADEQ for water quality violations. Violations of the STAA may result in the revocation of the STAA and further fines or penalties by ADEQ.









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9.0 GOOD HOUSEKEEPING

The NPDES permit also restricts discharge of wastes. Among the Contractor procedures and Resident Engineer responsibilities in this area are:

-  Ensure that storage areas are kept clean and spills cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS), and standard specifications.
-  Ensure that used oil, transmission fluid, etc. expended when servicing equipment are disposed of properly, not discharged on the job site.
-  Ensure that wash water from concrete ready-mix trucks is emptied into a contained area designated for that purpose, i.e., an excavation or some other contained area where the wash water cannot leave the site. **NEVER** near or into a waterbody or ditch.
-  Ensure that the Contractor properly disposes of concentrated waste water resulting from concrete pavement grinding. This material cannot be discharged near waterbodies or ditches. Due to the high pH of the material, it can be classified as hazardous, especially in large amounts. If an area is being considered for disposal of this material, be sure to provide the information to the Environmental Division when obtaining off-site clearance.
-  Ensure that flammable “trade waste” (i.e., lumber, plywood, etc.) are NOT disposed of by burning unless used for warming in a “burn barrel”.
-  Ensure that material spills are cleaned up and disposed of properly. Spills of "reportable" quantities of hazardous substances must be reported to ADEQ.
-  Inspect Contractor materials, stockpiles, petroleum and other pollutants located on the R/W and ensure that adequate measures are taken to prevent their discharge. Use of containment berms in fueling and maintenance areas and where the potential for spills is high is recommended. Storage of these materials in a floodplain must be limited by the Resident Engineer. If unsure about the Contractor's proposed storage location, the Department's Environmental Division is available for consultation.
-  “Normal” inspection of the Contractor's housekeeping procedures.

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9.1. CONCRETE WASTE MANAGEMENT




Discharge of surplus concrete, concrete wash water, or water containing concentrated concrete grinding material is considered an illegal discharge unless these discharges are properly addressed by the construction plans and documented in the SWPPP.

Section 110.07(b)(3) of the Standard Specifications For Highway Construction requires that the Engineer designate and document specific area(s) in the SWPPP for the discharge of surplus concrete, concrete wash water, and concrete grinding material. These areas cannot be located where the discharge can enter a nearby waterbody, or leave the construction site either directly or with storm water runoff. The following information provides some of the methods that may be used by the contractor to meet this requirement.




Definition:

These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or nearby waterbodies.

Application:





-  On construction sites where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
-  Where slurries containing concrete are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
-  Where concrete trucks or other concrete-coated equipment are washing on site.

Design Criteria:

-  Perform washout of concrete mixers, delivery trucks and other delivery systems in designated area only.
-  Temporary concrete washout facilities shall be located a minimum of 50 feet from storm drain inlets, open drainage facilities, and Waterbodies unless determined infeasible by the Engineer. Each facility is to be located away from construction traffic or access areas to prevent disturbance or tracking.
-  Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities must be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations. Temporary concrete washout facilities should be maintained to provide adequate holding capacity. (A minimum freeboard

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of 4 inches for above ground facilities and 12 inches for below ground facilities is recommended.)

-  Washout may be collected in an impermeable bag or other impermeable containment devices for disposal.
-  Once concrete wastes are washed into the designated area and allowed to harden, the concrete may be broken up, removed and disposed of.
-  It is recommended that significant concentrated residue from saw cutting, coring, and grinding operations be picked up by means of a vacuum device. This concentrated residue is not to be allowed to flow across the pavement and cannot be left on the surface of the pavement.
-  Concentrated concrete slurry residue can be temporarily stored in a facility as described above, or within an impermeable containment vessel.

NOTE: Since this is not paid for directly, the method used for managing concrete and grinding wastes is the Contractor's option. The Department's only concern is that the option utilized is effective.



Because industrial discharges are considered adequately covered in other instructions to the Resident Engineer, they will not be addressed further in this Manual.

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10.0 INSPECTION AND MAINTENANCE OF CONTROLS

10.1 GENERAL

Maintenance can be divided into two areas:

-  The actual repair or replacement of erosion and sediment control devices after they have been damaged, destroyed, or deteriorated beyond use.
-  The removal and disposal of sediment collected by some devices. Failure to do this can lead to the unnecessary failure of the devices and unnecessary cost to the Department. Guidelines for removing sediment are included in Section 621.03(l) of the Specifications, Sediment Removal and Disposal. If this item of work is not included in the contract, it should be added by addendum or change order.

It may be appropriate to allow some devices, like sediment basins, to remain in place at the completion of the project and never be removed. This needs to be determined at the beginning of the project and allowed only if it does not defeat the purpose of the Plan and only if it will not be a future maintenance problem. In some locations it may also be appropriate to not remove ditch checks at the completion of the project. To allow this would depend on the nature and use of the adjoining land and planned maintenance of the Right-of-Way.

Maintenance is not limited to temporary devices. Until the NOT is filed, inspections and maintenance should include all completed permanent devices and structures to determine if they have been damaged, if they are performing as intended, or need other maintenance, such as sediment removal.

A pre-winterizing meeting should be held with the Contractor to discuss the items that need to be completed if the project is to be shut down for the winter, the earthwork is shut down for the winter, or any other reason. This meeting must be held early enough to allow time to complete the needed work. Seeding and Temporary seeding should be accomplished – inasmuch as possible – early enough to allow establishment prior to cold weather. A plan to maintain the project during the shut down should be established at that time.

Regardless of whether the erosion and sediment control devices are permanent or temporary, or if it is winter or the height of the construction season, deficiencies should be corrected in a timely manner in order to have them ready for the next storm event.

Maintenance of erosion and sediment control devices is considered important enough to warrant a formal inspection program. This program is a requirement of the Permit and is the Department's policy. To comply with the NPDES Permit, the "STORM WATER POLLUTION PREVENTION PLAN INSPECTION REPORT" form has been developed for use by field personnel.

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The "STORM WATER POLLUTION PREVENTION PLAN INSPECTION REPORT" form is to be filled out both a MINIMUM of every 14 days and within 24 hours after the end of any storm event of 0.5" or more rainfall. It is suggested that these inspections be performed the Friday before an estimate period ends and after every storm event of 0.5" or more. As-built plans of erosion control items currently in place must also be updated a minimum of every 14 days.

Department job inspectors should work closely with the contractors and be familiar with their schedules. A supplemental SWPPP inspection should be performed when the contractor is shutting down work in an area and the contractor instructed to perform the required seeding and other measures required. The inspectors can inspect the areas of non-work separately. Inspectors should also not wait until the next inspection interval to see that the contractor is addressing deficiencies to erosion and sediment controls.

After final stabilization has been established, monthly reports are acceptable.

A copy must be given to the Contractor the day of the inspection to document the Instructions and one copy must be placed in the Project files with an additional copy kept at the project site. Specifications – and the NPDES General Construction Permit - require that the Contractor perform the work within 7 days of being instructed to do it (i.e., date of inspection). The inspector should document contractor compliance with these instructions in the job diary.

NOTE: A computerized version of the "STORM WATER POLLUTION PREVENTION PLAN INSPECTION REPORT" form may be found on the Construction subdirectory of the LAN under:

\\CSD4\CONSTRUC\MISC\NPDES\11-04 INSP FORM.xls.

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**10.2 INSTRUCTIONS FOR PREPARATION OF INSPECTION REPORT
FORM**

PAGE 1

- Item 1. Enter the Job Number.
- Item 2. Enter the date.
- Item 3. Enter the Date of the last Inspection (Previous Report)
- Item 4. Reports shall be numbered consecutively and represent one inspection. If an inspection requires more than one form, the aggregate of the forms is considered one Report. Enter the Report Number.
- Item 5. Determine if the Public Notice needs to be posted or replaced. Check Yes or No.
- Item 6. Determine if the SWPPP needs to be updated to existing conditions on-site by AHTD Construction Personnel. Check Yes or No.
- Item 7. Determine:
- ⇒ If all "Silt Fences" existing on the project are in satisfactory condition.
 - ⇒ If there is a need to construct additional silt fences on the project at present.
- If all are in satisfactory condition and there is no present need to construct additional ones, insert an "X" under "Satisfactory". If this item is not applicable to the project, insert "N/A" under "Satisfactory".
- If Maintenance is required or additional silt fences are needed, leave blank.
- Item 8. If Item 7 was "N/A" or "Satisfactory" leave this item blank.
- If Item 7 was left blank, insert the Location(s) where maintenance and/or new installation(s) are needed.
- Example: "Sta 10 -15 Lt."
- Item 9. For locations designated as needing Maintenance in Item 6, specify by location number the reason for the need for maintenance.

After completion of the information required for I ("Silt Fences"), repeat Items 7 through 9 for II through VIII.

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STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT**

rev. 10-15-04

JOB No. 1 DATE 2 DATE OF LAST INSPECTION 3 REPORT No. 4
 5 PUBLIC NOTICE NEEDS POSTED- YES NO 6 SWPPP UPDATED BY AHTD AS REQUIRED - YES NO

	SATISFACTORY	MAINT. REQ. (LOCATION)	ADDITIONAL. REQ. (LOCATION)
I. SILT FENCES: _____	<u>7</u>	(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
POOLED WATER <u>9</u> () TORN/SAGGING FABRIC ()		(2) _____	8 (2) _____
SED. ³ 1/3 FENCE HEIGHT () POST LEANING ()			
OTHER _____ ()		(3) _____	(3) _____
II. DIVERSION DIKES/DRAINAGE SWALES: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
OVERTOPPING WATER () WASHOUTS ()		(2) _____	(2) _____
AREA NEEDS STABILIZATION/ VEGETATION ()			
OTHER _____ ()		(3) _____	(3) _____
III. BARRIERS / CHECK DAMS: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
DAMAGED ()		(2) _____	(2) _____
SED. ³ 1/2 HEIGHT OF BARRIER/DAM ()			
OTHER _____ ()		(3) _____	(3) _____
IV. SEDIMENT BASINS: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
SIDE SLOPES &/OR OUTFALL IN NEED OF REPAIR ()		(2) _____	(2) _____
³ 50 % FILLED WITH SEDIMENT ()			
EMBANKMENT CONTAINMENT OVERTOPPED ()		(3) _____	(3) _____
OTHER _____ ()			
V. SLOPE DRAINS: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
EXCESSIVE EROSION ()		(2) _____	(2) _____
OTHER _____ ()		(3) _____	(3) _____
VI. DISPOSAL OF CONCRETE WASTES: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
_____ ()		(2) _____	(2) _____
		(3) _____	(3) _____
VII. GOOD HOUSEKEEPING: _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
_____ ()		(2) _____	(2) _____
		(3) _____	(3) _____
VIII. OTHER specify) _____		(1) _____	(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.			
_____ ()		(2) _____	(2) _____
_____ ()		(3) _____	(3) _____

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STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT

JOB No. _____ **1** _____

STABILIZATION

REQUIRED WORK NOT YET PERFORMED

FROM STATION	TO STATION	TEMP. SEEDING	PERM. SEEDING	MULCH COVER	SOLID SODDING	EROSION CONTROL MAT.	WATER	SEED REPAIR
_____ 10 _____	_____	()	11 ()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()

OTHER WORK REQUIRED

	12	DESCRIPTION	13
_____	_____	_____	_____
_____	_____	DESCRIPTION	_____

REMARKS :

_____ **14** _____

15 STATE INSPECTOR SIGNATURE: _____ TITLE _____ DATE: _____

16 I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 and 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.

RESIDENT ENGINEER / DIST. MAINT ENGINEER SIGNATURE: _____ DATE: _____

NOTE: The Contractor, upon receipt of a copy of this Report, is hereby formally instructed to perform the above work within 7 calendar days.

TO BE COMPLETED EVERY 14 DAYS AND AFTER EVERY 1/2" RAIN.

Distribution: orig. - RE files; copy - Contractor*

* The Contractor is to receive a copy of this report.

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PAGE 2:

- Item 10 IF WORK IS REQUIRED, enter the location(s) of areas that have been disturbed but where the Contractor is not planning to work. (Temporary or permanent seeding is to be placed within 14 days of the date work ceased IF the Contractor is not going to work in an area for a total of 21 days or more.).
If no work is required, enter "NONE".
- Item 11. "Check" the type work required for each area noted in Item 10.
- Item 12. Enter the location of any other work required with regard to sedimentation and erosion control not previously addressed.
- Item 13. Describe the work required at the location(s) identified in item 12.
- Item 14. Enter any pertinent Remarks.
- Item 15. The Inspector will sign and date the Report. The Inspector must also place his or her Job Title on the form.

Construction Division Personnel with the following Arkansas State Highway and Transportation Department Job Titles are considered qualified and may sign the inspection report:

Construction Helper I
Construction Helper II
Construction Aide I
Construction Aide II
Construction Aide III
Inspector
Senior Inspector
Construction Materials Inspector
Senior Construction Materials Inspector
Construction Project Coordinator
Civil Engineering Technician
Civil Engineer
Civil Engineer I
Construction Field Engineer I
Construction Field Engineer II
Advanced Construction Field Engineer
Assistant Resident Engineer
Resident Engineer
Resident Office Technician

- Item 16. The Resident Engineer or the Assistant Resident Engineer, as cognizant officials for the project, will sign and date the certification statement.

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11.0 SURVIVING ADEQ & EPA INSPECTIONS

Department personnel should expect ADEQ and/or EPA inspectors to visit projects they work on at unexpected times. These inspectors have every right to make these visits. There are several things Department personnel should remember when these inspectors make their visits:

- All Department personnel on a project should have at least basic knowledge of Permit requirements. If nothing else, they should know to call the Resident Engineer or project inspector instead of trying to answer questions to which they might not know the answers.
- When an ADEQ or EPA inspector visits a project, the Department's project inspector should inform the Resident Engineer as soon as possible. The Resident Engineer should be present during the inspection, if possible. The Resident Engineer should immediately let the District Construction Engineer and the Construction Office Staff Construction Engineer know of any problems/citations anticipated as a result of an ADEQ or EPA inspection.
- Only project inspectors familiar with the project, the contractor operations, the Department records for the project, and the Department policies regarding NPDES compliance, should speak for the Department to EPA/ADEQ inspectors. If the project inspector is not present on site, the Resident Engineer's office **MUST, SHALL, AND WILL** be contacted by the Department personnel on the project so the Resident Engineer (or his Assistant if it is impossible for the Resident Engineer to be present) can meet with the ADEQ/EPA personnel.
- The Department's job inspector or Resident Engineer should **ALWAYS** accompany the ADEQ/EPA personnel on their inspection.
- Department personnel should only answer questions they are asked and not volunteer information. **ALWAYS TELL THE TRUTH.**
- Department personnel should always be polite to ADEQ and EPA inspectors, even if there is disagreement.
- Know what the SWPPP consists of and keep it on the project for ADEQ/EPA review. Plans, Specifications, a copy of the Contract, a copy of the SWPPP manual, SWPPP Inspection reports, etc. (Refer to Section 5 of this Manual.)
- Perform inspections in accordance with the permit requirements and document contractor's compliance with instructions contained in it.

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Document Department actions when a contractor fails to comply with SWPPP related instructions and keep copies of documentation with the rest of the SWPPP on the Project.

- Update as-built plans as related to erosion control devices currently installed on a project every 14 days and keep this available on the project with the rest of the SWPPP.
- Regularly check and ensure that the required public notice is properly posted where it is available at all times for public viewing.
- If ADEQ/EPA inspectors instruct that certain additional actions/controls be implemented, Department personnel should cooperate with them inasmuch as **reasonably** possible.
- If ADEQ/EPA requests copies of all of the SWPPP paperwork, the permit requires you to provide this information.
- Allow and assist ADEQ/EPA inspectors if they request to view electronic documents – namely SiteManager documents - since the Department does not make hard copies of some documentation. This should be done on the project using the Department’s laptop computers. **NOTE:** The best source for accessing Daily Work Reports with notes regarding erosion and sediment control issues is to utilize the “Erosion & Sediment Control” report in the SiteManager Access Reports System (SARS).
- FULLY DOCUMENT the ADEQ/EPA inspector's visit in the form of a diary note or memo to the file as soon as possible, listing any concerns brought out by them and Department action. Observe and record anything the ADEQ/EPA inspector observes or records.
- TAKE PICTURES. If a camera isn’t available at the time of the ADEQ or EPA inspection, one should be obtained and pictures taken for documentation as quickly as possible to document violations noted by them. (No later than the next day.)
- Respond to all complaints involving water quality, etc., in a timely manner and fully document both the complaint and the response.
- Keep the Contractor informed of these inspections and - if possible - have the Contractor represented when they occur.
- Request the Contractor contact the Department’s inspector or Resident Engineer IMMEDIATELY if they observe ADEQ or EPA performing an inspection without an AHTD representative present.

PROJECTS BY DEPARTMENT FORCES

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12.0 IMPLEMENTATION OF THE SWPPP

On projects to be undertaken by Department forces, the requirements of the NPDES regulations apply just as they do on projects let to contract by the Department. Unlike with projects let to contract, the design, implementation, review, and maintenance of the plan and erosion control items are all the responsibility of Department forces on construction projects undertaken by Department forces.

All projects undertaken by Department forces, regardless of the area of disturbed land, appropriate erosion and sediment control devices shall be installed.

When warranted by the area of disturbed land, the SWPPP will be developed, usually by the District or the Maintenance Division, in the manner described in other portions of this Manual. The implementation of the plan will be in accordance with this Section of the Manual.

Signatory authority for these projects is normally the District Engineer or the State Maintenance Engineer. The cognizant official for these projects is normally the District Maintenance Engineer. The Contact Person to be listed on the Notice of Intent (NOI) is normally the Area Supervisor for the Maintenance Area where the work will be undertaken.

Personnel should review the SWPPP and request changes, when needed, before work begins to make the SWPPP as effective as possible. **After the project begins, field personnel have the final responsibility of making the SWPPP into a working plan. If the design of the plan is not adequate, changes must be instituted by the field personnel.**

To successfully carry out a SWPPP, some previously acceptable procedures and attitudes must be changed. For example, traditionally it was generally accepted that work by Department did not require the installation of erosion and sediment control devices, and how and where the truck driver washed out a concrete truck was generally ignored. Now all activities must take into account the requirements of the SWPPP. **The field personnel must closely monitor the work with regard to SWPPP compliance.**

The AHTD Standard Specifications should be utilized for guidance in the construction and maintenance of BMP's.

Section 110 of the Standard Specifications provides guidance that can be utilized on projects by Department forces to ensure that actions coincide with the General Construction Permit requirements. In general, the Department is responsible for developing and implementing a SWPPP to cover all disturbed areas on projects that exceed one acre of total disturbed area.

Maintenance Division personnel should become familiar with the various temporary and permanent erosion and sediment control measures and possible project requirements included in this Manual so that they can effectively address the needs of the project during construction. **Department personnel should make themselves aware of the various controls and the proper use of each.** Other portions of this Manual

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contain information to help in this effort. The following general guidelines will be helpful when implementing a SWPPP:



Limiting the area disturbed is better than trying to control erosion.



Preventing erosion is better than trying to control sediment. Retaining vegetation or reestablishing it (seeding and mulching) will virtually eliminate erosion. All other methods to retain sediment on the construction site will, on the average, only recover about 50% of the sediment.



Permanent erosion controls are generally better than temporary controls.



Routing clean water through a project is better than trying to remove sediment from it.



Slow moving water will erode less soil than fast moving water.



Slow moving water will drop more sediment than fast moving water. If erosion is not prevented, the next best practice is to pond the silt laden water for as long as possible and allow the silt to settle out.



One of the most effective ways of reducing erosion and sediment problems on a project is to build it and permanently stabilize it as quickly as possible.



It is virtually impossible for a designer to know every significant detail regarding the characteristics of a project and develop a flawless SWPPP. Even a good SWPPP, however, will not produce the desired result (minimizing and controlling sediment) unless the erosion and sediment control devices are installed and maintained in a timely manner. Therefore, the above guidelines and the overall goal should always be considered when installing the erosion control devices as shown in the Plan. **It is also important to recognize when something is not working even though it may be built according to the SWPPP. If it is obvious something different is needed, it MUST be addressed. Ignoring this is a violation of the Permit and might waste money or defeat the purpose.**

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12.1 RESPONSIBILITIES DURING CONSTRUCTION

On Department R/W, ADEQ, EPA, and the Corps of Engineers hold the AHTD (the owner and/or operator) responsible for compliance with NPDES requirements. In addition, the General Public may also take action against the AHTD for violations of the Permit if the Department fails to comply with the Storm Water Pollution Prevention Plan.

The District or Maintenance Division will normally develop the Storm Water Pollution Prevention Plans for projects and file the Notice Of Intent (NOI) when required. The District Engineer is responsible for submittal of the Notice of Termination (NOT). The District Maintenance Engineer will coordinate with the Area Supervisor to see that the requirements of the Plan are met.

Among the Department's responsibilities with regard to NPDES permit compliance are to:



Location of the Updated SWPPP - Both public notice forms, the ADEQ Medium & Large Construction Permit Certificate and the Small (1-5 Acres) Construction Site Notice require the location of the SWPPP to be posted. The updated SWPPP must be maintained in the AHTD Area Supervisor's vehicle. On the public notice, the location of the SWPPP should be listed as the AHTD Area Supervisor's vehicle, and request the Contact person be called to determine the present location of the SWPPP and when it can be made available on-site for review (ASAP).



Public Notice for Large or Medium Construction Sites - ADEQ will send a Medium & Large Construction Permit Certificate if the project is over five acres. This certificate must be reviewed to make sure the information ADEQ has supplied is correct, and then completed with the appropriate information by the District Maintenance Engineer. The certification on the form should be signed by the District Maintenance Engineer. This certification states that the construction project meets ADEQ's definition of a large or medium site (five acres or greater) and that a SWPPP has been prepared and will be implemented as appropriate for either a large or medium construction site. **If the construction site falls within a regulated small, medium, or large MS4, a copy of the certification must be provided to the operator of the MS4. A list of the regulated MS4 operators and their contact information is provided in Appendix XII. If the construction site falls within one of the cities/counties listed, a copy of the completed certificate must be sent to the contact provided.**



Public Notice for Small Construction Sites - If the construction project is under five acres, ADEQ's Small (1-5 Acres) Construction Site Notice (found on the LAN under *Csd4 /Misc/NPDES/09-04 SM CONS SITE NOTICE*) must be completed with the appropriate information and the certification signed by the DME. This certification states that the construction project meets ADEQ's definition of a small site (under five acres) and that a SWPPP has been prepared and will be

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implemented as appropriate for a small construction site. **If the construction site falls within a regulated small, medium, or large MS4, a copy of the certification must be provided to the operator of the MS4. A list of the MS4 entities and their contact information is provided in Appendix XII. If the construction site falls within one of the cities/counties listed, a copy of the completed certificate must be sent to the contact provided.**



Ensure that the completed ADEQ's Medium & Large Construction Permit Certificate or Small Construction Site Notice (whichever is appropriate) is posted on the construction site in a place available at all times for public viewing. If the ADEQ Medium & Large Construction Permit Certificate has not been received, the NOI must be posted. These must be posted prior to work beginning and available until the NOT is filed and/or project is completed.



Ensure that the work adheres to the Storm Water Pollution Prevention Plan as described by the plans.



Ensure that the Storm Water Pollution Prevention Plan is effective.



Modify the Storm Water Pollution Prevention Plan as necessary to produce effective results and keep it current.



Fully document ALL modifications to the SWPPP including the reason(s) for the modifications.



Perform inspections.



Document inspections and work concerning temporary and permanent erosion control.



Ensure that the sequence of operations conforms to Standard Drawing TEC-3 (contained in the plans), the SWPPP, and the Plan.



MAINTAIN A COPY OF THE SWPPP ON EACH PROJECT.



KEEP AS-BUILT PLANS, UPDATED AT LEAST EVERY TWO WEEKS, OF EROSION CONTROL MEASURES INSTALLED AND IN USE ON A PROJECT.



File NOT when appropriate. (District Engineer Responsibility)

"Best Management Practices" (BMP's) must be utilized when controlling storm water and erosion. The Area Supervisor has a major responsibility in seeing that the work complies with the Plan. The BMP's are, to a great extent, determined in the field (i.e.,

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when to seed/temporary seed, where ditch checks are needed, etc). A brief "Checklist" summary of inspection duties is found below. **If conformance to a particular project's SWPPP is not giving the desired results, it is the Area Supervisor's responsibility, in coordination with the DME, to initiate and document appropriate changes.**

The permit also requires that efforts with regard to the SWPPP be documented. The Area Supervisor, therefore, must maintain a separate file on this for each project. A copy of this **MUST** be kept at the project site. Refer to Section 5 and other portions of this Manual.

One of the principal methods for documentation of NPDES efforts is the "Storm Water Pollution Prevention Plan Inspection Report." A copy of this Report, along with instructions for completing it is found in Section 12.4.a of this Manual.

The Area Supervisor and field personnel should be aware that persons within the AHTD and from other governmental agencies might periodically arrive on a project and review **both the documentation and the project itself** regarding erosion and sedimentation control. Cooperation from the Area Supervisor and field personnel with these people is expected. **The District Maintenance Engineer should be contacted immediately and whenever possible be present to accompany inspectors from governmental agencies during an inspection.**

It is the Department's duty to perform temporary and permanent erosion control work in accordance with the Plans and Specifications and as required by conditions. **Prompt installation and maintenance of erosion and sedimentation control items is a significant part of compliance with Storm Water Pollution Prevention Plans.**

The NPDES General Construction Permit states that off-site vehicle tracking of sediment must be minimized. A proposal for a Stabilized Construction Entrance design is provided for information in Section 2.11 of this Manual. This should be considered in the development of the SWPPP.

12.2 SUMMARY OF THE DEPARTMENT PERSONNEL'S DUTIES



Become familiar with the applicable plans and Specifications.



Become familiar with Storm Water Pollution Prevention Plan.



Prior to the beginning of construction, review all aspects of the Storm Water Pollution Prevention Plan. Check inasmuch as reasonable for possible errors, potential ineffectiveness, and recommend any appropriate changes.



Prior to the beginning of construction, discuss in detail the project's Storm Water Pollution Prevention Plan requirements with Department personnel who will be

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involved with the project, especially limitations on the amount of area that can be disturbed should be discussed.



Prior to the beginning of construction, complete the public notice as detailed above and post it in a place available at all times for public viewing.



Ensure that erosion and sedimentation control measures are installed in accordance with the Storm Water Pollution Prevention Plan requirements. This includes proper installation along with required maintenance, both of which must be performed in a timely manner.



Ensure inasmuch as is possible that at all times the area disturbed and not stabilized is minimized.

- ⇒ Provide appropriate temporary stabilization measures within 14 days of temporarily abandoning an area (if the site is to be temporarily abandoned for a total of 21 days or more).
- ⇒ Perform planned permanent stabilization measures (seeding, mulch cover, ditch paving, etc.) within 14 days after completion of an area.



Perform inspections as needed to monitor the effectiveness and condition of the Erosion and Sedimentation Control Plan and the Devices installed. As a MINIMUM, the project should be inspected every 14 days and within 24 hours after the end of any storm event of 0.5" or more accumulated precipitation.



Limit the exposed acreage per the Department's ability to implement and maintain the SWPPP.



Ensure that sediment is not being tracked off-site. If so, limit the number of places that vehicles are entering and leaving the site, and install Stabilized Construction Entrances.



Ensure that concrete drum wash water and grinding material is disposed of properly, i.e., an excavation or footing in fill material, or other contained area where the wash water cannot leave the site. NEVER near or into a waterbody or ditch. This must be a designated area that is documented in the SWPPP.



Ensure the public notice remains posted.



Ensure "good housekeeping," i.e., proper storage of materials, proper disposal of trash and construction waste, clean up and report spills appropriately.



Take appropriate maintenance actions of E&SC BMPs as necessary.

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SIMPLY INSTALLING THE BMPs AS SHOWN ON THE PLANS IS NOT ENOUGH TO MEET PERMIT REQUIREMENTS. IT IS THE DEPARTMENT PERSONNEL'S RESPONSIBILITY TO INSTITUTE CHANGES AS NEEDED TO CREATE AND MAINTAIN AN EFFECTIVE EROSION AND SEDIMENT CONTROL PLAN.



DOCUMENT ALL ACTION REGARDING SEDIMENTATION AND EROSION CONTROL.



MAINTAIN A COPY OF THE SWPPP ON EACH PROJECT.



KEEP CURRENT AS-BUILT PLANS OF EROSION CONTROL MEASURES INSTALLED AND IN USE ON THE PROJECT.

12.3 UTILITIES, OTHER ENTITIES, AGENCIES, AND INDIVIDUALS

Utility companies performing work on the right-of-way are responsible for developing and implementing their own SWPPP's and obtaining their own NPDES Permits. It is the Department's best interest to work with the Utilities performing work to ensure that erosion and sediment are kept to a minimum and applicable permits are complied with.

The Department often permits other entities, agencies and individuals to perform work on highway Right-of-Way. This work may be to provide improvements at intersections, improvements to the Right-of-Way associated with adjoining property development or other reasons. The other entity, agency, or individuals are responsible for submittal of their own NOI for these project.

The Area Supervisor should work through the District Permit Officer and District Staff to make every effort to have the responsible party perform erosion control resulting from their work on the R/W. It may be necessary for the District Engineer to shut down the work until cooperation is obtained. This is not relieving the permitted party from it's permit responsibilities.

The Department does not approve or inspect these operations. They are the responsibility of the utility, other entity, agency, or individuals.

12.4 INSPECTION AND MAINTENANCE OF CONTROLS

Maintenance can be divided into two areas:



The actual repair or replacement of erosion and sediment control devices after they have been damaged, destroyed, or deteriorated beyond use.

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The removal and disposal of sediment collected by some devices. Failure to do this can lead to the unnecessary failure of the devices and unnecessary cost to the Department. Guidelines for removing sediment are included in Section 621.03(l) of the Specifications, Sediment Removal and Disposal.

It may be appropriate to allow some devices, like sediment basins, to remain in place at the completion of the project and never be removed. This needs to be determined at the beginning of the project and allowed only if it does not defeat the purpose of the Plan and only if it will not be a future maintenance problem. In some locations it may also be appropriate to not remove ditch checks at the completion of the project. To allow this would depend on the nature and use of the adjoining land and planned maintenance of the Right-of-Way.

Maintenance is not limited to temporary devices. Until the NOT is filed, inspections and maintenance should include all completed permanent devices and structures to determine if they have been damaged, if they are performing as intended, or need other maintenance, such as sediment removal.

A pre-winterizing review should be made if the project is to be shut down for the winter or shut down for any other reason. This review must be held early enough to allow time to complete the needed work. Seeding and Temporary seeding should be accomplished – inasmuch as possible – early enough to allow establishment prior to cold weather. A plan to maintain the project during the shut down should be established at that time.

Regardless of whether the erosion and sediment control devices are permanent or temporary, or if it is winter or the height of the construction season, deficiencies should be corrected in a timely manner in order to have them ready for the next storm event.

Maintenance of erosion and sediment control devices is considered important enough to warrant a formal inspection program. This program is a requirement of the Permit and is the Department's policy. To comply with the NPDES Permit, the "STORM WATER POLLUTION PREVENTION PLAN INSPECTION REPORT" form has been developed for use by field personnel.

The "STORM WATER POLLUTION PREVENTION PLAN INSPECTION REPORT" form is to be filled out both a MINIMUM of every 14 days and within 24 hours after the end of any storm event of 0.5" or more rainfall. It is suggested that these inspections be performed the Wednesday before a Department pay day and after every storm event of 0.5" or more. As-built plans of erosion control items currently in place must also be updated a minimum of every 14 days.

Department personnel should review their work schedules closely. A supplemental SWPPP inspection should be performed when the work is shutting down work in an area and the required seeding and other measures performed promptly. The areas of

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non-work should be inspected separately. Corrective work should not be delayed until the end of the inspection interval but deficiencies to erosion and sediment controls should be completed immediately following an inspection.

After final stabilization has been established, monthly reports are acceptable.

A copy must be provided to the personnel to undertake the work the day of the inspection and one copy must be placed in the Project files with an additional copy kept at the project site. The NPDES General Construction Permit requires that the work be preformed within 7 days of the inspection. The Area Supervisor should document compliance with these inspection in the job diary.

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12.4.a INSTRUCTIONS FOR PREPARATION OF INSPECTION REPORT FORM

PAGE 1

- Item 1. Enter the Job Number (This will likely be the Special Project Number).
- Item 2. Enter the date.
- Item 3. Enter the Date of the last Inspection (Previous Report).
- Item 4. Reports shall be numbered consecutively and represent one inspection. If an inspection requires more than one form, the aggregate of the forms is considered one Report. Enter the Report Number.
- Item 5. Determine if the Public Notice needs to be posted or replaced. Check Yes or No.
- Item 6. Determine if the SWPPP needs to be updated to existing conditions on-site. Check Yes or No.
- Item 7. Determine:
- ⇒ If all "Silt Fences" existing on the project are in satisfactory condition.
 - ⇒ If there is a need to construct additional silt fences on the project at present.
- If all are in satisfactory condition and there is no present need to construct additional ones, insert an "X" under "Satisfactory". If this item is not applicable to the project insert "N/A" under "Satisfactory".
- If Maintenance is required or additional silt fences are needed, leave blank.
- Item 8. If Item 7 was "N/A" or "Satisfactory" leave this item blank.
- If Item 7 was left blank, insert the Location(s) where maintenance and/or new installation(s) are needed.
- Example: "Sta 10 -15 Lt."
- Item 9. For locations designated as needing Maintenance in Item 6, specify by location number the reason for the need for maintenance.

After completion of the information required for I ("Silt Fences"), repeat Items 7 through 9 for II through VIII.

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STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT rev. 10-15-04

JOB No. 1 DATE 2

DATE OF LAST INSPECTION 3

REPORT No. 4

5 PUBLIC NOTICE NEEDS POSTED- YES NO

6 SWPPP UPDATED BY AHDT AS REQUIRED - YES NO

	SATISFACTORY	MAINT. REQ. (LOCATION)		ADDITIONAL. REQ. (LOCATION)
I. SILT FENCES: _____	7	(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
POOLED WATER <u>9</u> ()	TORN/SAGGING FABRIC ()	(2) _____	8	(2) _____
SED. ³ 1/3 FENCE HEIGHT ()	POST LEANING ()	(3) _____		(3) _____
OTHER _____ ()				
II. DIVERSION DIKES/DRAINAGE SWALES: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
OVERTOPPING WATER ()	WASHOUTS ()	(2) _____		(2) _____
AREA NEEDS STABILIZATION/ VEGETATION ()		(3) _____		(3) _____
OTHER _____ ()				
III. BARRIERS / CHECK DAMS: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
DAMAGED ()		(2) _____		(2) _____
SED. ³ 1/2 HEIGHT OF BARRIER/DAM ()		(3) _____		(3) _____
OTHER _____ ()				
IV. SEDIMENT BASINS: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
SIDE SLOPES &/OR OUTFALL IN NEED OF REPAIR ()		(2) _____		(2) _____
³ 50 % FILLED WITH SEDIMENT ()		(3) _____		(3) _____
EMBANKMENT CONTAINMENT OVERTOPPED ()				
OTHER _____ ()				
V. SLOPE DRAINS: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
EXCESSIVE EROSION ()		(2) _____		(2) _____
OTHER _____ ()		(3) _____		(3) _____
VI. DISPOSAL OF CONCRETE WASTES: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
_____ ()		(2) _____		(2) _____
		(3) _____		(3) _____
VII. GOOD HOUSEKEEPING: _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
_____ ()		(2) _____		(2) _____
		(3) _____		(3) _____
VIII. OTHER specify) _____		(1) _____		(1) _____
IF MAINTENANCE REQUIRED SPECIFY REASON, BY LOCATION #.				
_____ ()		(2) _____		(2) _____
_____ ()		(3) _____		(3) _____

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STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT

JOB No. _____ **1** _____

STABILIZATION

REQUIRED WORK NOT YET PERFORMED

FROM STATION	TO STATION	TEMP. SEEDING	PERM. SEEDING	MULCH COVER	SOLID SODDING	EROSION CONTROL MAT.	WATER	SEED REPAIR
_____ 10 _____	_____	()	11 ()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()
_____	_____	()	()	()	()	()	()	()

OTHER WORK REQUIRED

12	DESCRIPTION _____	13
	DESCRIPTION _____	

REMARKS : _____ **14** _____

15 STATE INSPECTOR SIGNATURE: _____ TITLE _____ DATE: _____

16 I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 and 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.

RESIDENT ENGINEER / DIST. MAINT. ENGINEER SIGNATURE: _____ DATE: _____

NOTE: The Contractor, upon receipt of a copy of this Report, is hereby formally instructed to perform the above work within 7 calendar days.

TO BE COMPLETED EVERY 14 DAYS AND AFTER EVERY 1/2" RAIN.

Distribution: orig. - RE files; copy - Contractor*

* The Contractor is to receive a copy of this report when work is required.

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PAGE 2:

Item 10 IF WORK IS REQUIRED, enter the location(s) of areas that have been disturbed but work is not planned. (Temporary or permanent seeding is to be placed within 14 days of the date work ceased IF work is not going to occur in an area for a total of 21 days or more.).

If no work is required, enter "NONE".

Item 11. "Check" the type work required for each area noted in Item 10.

Item 12. Enter the location of any other work required with regard to sedimentation and erosion control not previously addressed.

Item 13. Describe the work required at the location(s) identified in Item 12.

Item 14. Enter any pertinent Remarks.

Item 15. The Inspector (person authorized to perform the inspection) will sign and date the Report. The Inspector must also place their Job Title on the form.

Maintenance Division Personnel with the following Arkansas State Highway and Transportation Department Job Titles are considered qualified and may sign the inspection report:

Crew Leader
Maintenance Aide II
Area Maintenance Supervisor
District Maintenance Engineer

Item 16. The District Maintenance Engineer, as cognizant official for the project, will sign and date the certification statement.

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12.5 SURVIVING ADEQ & EPA INSPECTIONS

Department personnel should expect ADEQ and/or EPA inspectors to visit projects they work on at unexpected times. These inspectors have every right to make these visits. There are several things Department personnel should remember when these inspectors make their visits:

- All Department personnel on a project should have at least basic knowledge of Permit requirements. If nothing else, they should know to call the Area Supervisor or District Maintenance Engineer instead of trying to answer questions to which they might not know the answers.
- When an ADEQ or EPA inspector visits a project, the Department's project personnel should inform the Area Supervisor or District Maintenance Engineer as soon as possible. The Area Supervisor or District Maintenance Engineer should be present during the inspection, if possible. The Area Supervisor or District Maintenance Engineer should immediately let the District Engineer know of any problems/citations anticipated as a result of an ADEQ or EPA inspection.
 - Only project inspectors familiar with the project, the Department operations, the Department records for the project, and the Department policies regarding NPDES compliance, should speak for the Department to EPA/ADEQ inspectors. If such a project personnel is not present on site, the Area Supervisor or District Maintenance Engineer **MUST, SHALL, AND WILL** be contacted **BY THE** Department personnel on the project so the Area Supervisor or District Maintenance Engineer can meet with the ADEQ/EPA personnel.
 - The Area Supervisor or District Maintenance Engineer should **ALWAYS** accompany the ADEQ/EPA personnel on their inspection.
 - Department personnel should only answer questions they are asked and not volunteer information. **ALWAYS TELL THE TRUTH.**
 - Department personnel should always be polite to ADEQ and EPA inspectors, even if there is disagreement.
 - Know what the SWPPP consists of and keep it on the project for ADEQ/EPA review. Plans, Specifications, SWPPP, a copy of the SWPPP manual, SWPPP Inspection reports, etc. (Refer to Section 5 of this Manual.)
 - Perform inspections in accordance with the permit requirements and document compliance.

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- Update as-built plans as related to erosion control devices currently installed on a project every 14 days and keep this available on the project with the rest of the SWPPP.
- Regularly check and ensure that the required public notice is properly posted where it is available at all times for public viewing.
- If ADEQ/EPA inspectors instruct that certain additional actions/controls be implemented, Department personnel should cooperate with them inasmuch as **reasonably** possible.
- If ADEQ/EPA requests copies of all of the SWPPP paperwork, the permit requires you to provide this information.
- Allow and assist ADEQ/EPA inspectors if they request to view documents. This should be done on the project.
- FULLY DOCUMENT the ADEQ/EPA inspector's visit in the form of a diary note or memo to the file as soon as possible, listing any concerns brought out by them and Department action. Observe and record anything the ADEQ/EPA inspector observes or records.
- Respond to all complaints involving water quality, etc., in a timely manner and fully document both the complaint and the response.
- TAKE PICTURES. If a camera isn't available at the time of the ADEQ or EPA inspection, one should be obtained and pictures taken for documentation as quickly as possible to document violations noted by them. (No later than the next day.)
- Respond to all complaints involving water quality, etc., in a timely manner and fully document both the complaint and the response.

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APPENDIX F

State or Local Compliance

APPENDIX G

Additional Plan Certifications

PLAN CERTIFICATION PAGE

I, _____, certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate 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.

Name

Company

Title

Date

APPENDIX H

Contractors Certification/Identification

CONTRACTOR CERTIFICATION PAGE

I certify under penalty of law that I understand the conditions and responsibilities of this Stormwater Pollution Prevention Plan (SWPPP) and the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the stormwater discharges associated with construction activity from the Site covered by this SWPPP.

Contractor Signatory Authority

Title

Date

APPENDIX I

List of Authorized Inspectors, Authorization Letter(s), and Training Records

APPENDIX J

Adverse Weather Conditions Records

Flint Creek Power Plant

Documentation of Adverse Weather Conditions

The purpose of this form is to document adverse weather conditions that would endanger the safety of personnel performing the weekly inspections.

Date	Adverse Weather Description	Documented by: