

**Construction
Stormwater Training
Workbook**

**Certified Inspector
Training Program**

Construction Stormwater Training

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Construction Stormwater(CSW) Class Welcome!

1

Steve Rose P.E.

- Kansas University Graduate
- Began as a Project Engineer in Hutchinson for KDOT
- Currently the Field Construction Engineer for the Bureau of Construction and Materials



2

Mervin Lare P.E.

- Kansas State University Graduate
- Became the Stormwater Compliance Engineer July 2018
- 15 years experience in KDOT



3

Stormwater Field Lab and Testing



4

Thank You

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Stormwater Compliance Engineer

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KDOT Stormwater Compliance

Construction Stormwater Training



1

Background

- EPA project visits / inspections
-



2

EPA Project Visits

- 2008 Visited US 69 in District 4
- 2010 Visited US 59 in District 1
- 2012 Visited K 18 in District 1



3

US 59 Erosion Control Review 2010

- The rock ditch checks were performing well. In some areas there were two checks placed back to back (Attachment C) are very effective. The contractor needs to complete the required maintenance form such as for stream crossings. The project overall is in good condition.



4



This shows an effective rock check. The sediment does need to be removed from behind the check.



5







Background

- Multiple violations of NPDES permit and Clean Water Act



6


Internet select 6

News  Comment      [Follow This Article](#)

Federal government suing KDOT for pollution violations

KDOT allegedly violated the Clean Water Act

Posted: July 1, 2013 - 5:20pm

 United States Environmental Protection Agency

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News Releases from Region 7

Kansas Department of Transportation to Pay \$477,500 Penalty to Settle Violations of Clean Water Act at Three Construction Sites


Release Date: 07/02/2013
Contact Information: Ben Washburn, 913-551-7364, washburn.ben@epa.gov

Environmental News


FOR IMMEDIATE RELEASE

(Lenexa, Kan., July 2, 2013) - The Kansas Department of Transportation (KDOT) has agreed to pay a \$477,500 civil penalty to settle alleged violations of the Clean Water Act at three road construction sites that are located near

The Associated Press
Advanc... CHITA — Environmental regulators have accused... as of polluting water at three road construction...
... federal government sued the Kansas Department... transportation on Monday alleging violations of the

Search or search  Via release History


Rece 07/02/2013




7

Consent Decree

- Effective September 5, 2013
- Compliance requirements
 - Designation of Roles/Responsibilities
 - Training
 - Oversight Inspections
 - Reporting
 - Stipulated Penalties





8

Consent Decree

- Effective September 5, 2013
- Terminated January 30, 2018
- Developed a Compliance Plan after termination
 - KDOT made adjustments based on lessons learned



9

Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT (or LPA)
 - Submit Notice of Intent (NOI) and obtain conditional Authorization
 - Provide Project Plans and Contract Documents
 - Estimated quantities for devices and seeding
 - Submit Request for Joint Owner/Operator (RJOO) to KDHE
 - RJOO not applicable for Local Projects



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Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT
 - Issue Notice of Acceptance (Relieves contractor of responsibility)
 - Submit Notice of Termination to KDHE (Relieves KDOT of responsibility)



11

Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT
 - Stormwater Compliance Engineer (SWCE)
 - Mervin Lare is current SWCE
 - Point of contact for agency-wide issues
 - Responsible for compliance program
 - Training
 - Oversight inspections



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Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT
 - Area/Metro Engineer
 - Point of contact for the project
 - Training required
 - Review and approve Contractor SWPPP
 - Attend Project EC Preconstruction Conference
 - Review project inspection reports
 - Enforcement of specifications



13

Stormwater Compliance Plan

- Roles and Responsibilities
 - Contractor
 - Submit RJOO to KDOT
 - Develop and Submit SWPPP for approval
 - Obtain permit coverage when required for borrow/plant sites
 - Designate WPCM and Environmental Inspector for the Project



14

Stormwater Compliance Plan

- Roles and Responsibilities
 - Contractor
 - Water Pollution Control Manager
 - Point of contact for the contractor
 - Ensure SWPPP Implementation and Contractor Compliance
 - Must have CSW Training
 - Attend Project EC Preconstruction Conference



15

Stormwater Compliance Plan

- Roles and Responsibilities
 - Contractor
 - Water Pollution Control Manager
 - Authority to direct work
 - On site frequently (at least weekly)
 - Familiar with SWPPP
 - Update and maintain SWPPP documents



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Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT and Contractor
 - Environmental Inspector
 - Certified in CSW
 - Identifies deficiencies
 - Joint Inspections for Compliance
 - Submit Inspection Reports to Area/Metro Engineer and WPCM



17

Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT and Contractor
 - Joint Owner/Operator
 - Responsible and Accountable
 - Work together
 - Be proactive not reactive



18

Stormwater Compliance Plan

- Roles and Responsibilities
 - KDOT and Contractor
 - Comply with permit!!!
 - Do not get lax with requirements!!!



19

Stormwater Compliance Plan



- Construction Stormwater (CSW) Training
- Same requirements for all roles
 - 4 year cycle



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Stormwater Compliance Plan

- Pre-Construction Conference
 - Required for projects with Permit coverage
 - Separate from regular Pre-Con
 - Area / Metro Engineer, WPCM and Environmental Inspectors required to attend
 - Erosion control subcontractors required to attend
 - Discuss SWPPP, Inspection Procedures, Communications
 - Minutes kept with SWPPP



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Stormwater Compliance Plan

- Independent Oversight
 - Outside perspective / Quality Assurance
 - Consultants, HQ, District
 - Based on project size / complexity and potential environmental impact
 - Frequency determined by SWCE but no longer than 90 days



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Complying with the Clean Water Act while building projects



KANSAS STATE
POLYTECHNIC

The goal of the Clean Water Act is to make U.S. waters fishable and swimmable



KANSAS STATE
POLYTECHNIC

Rivers in Kansas

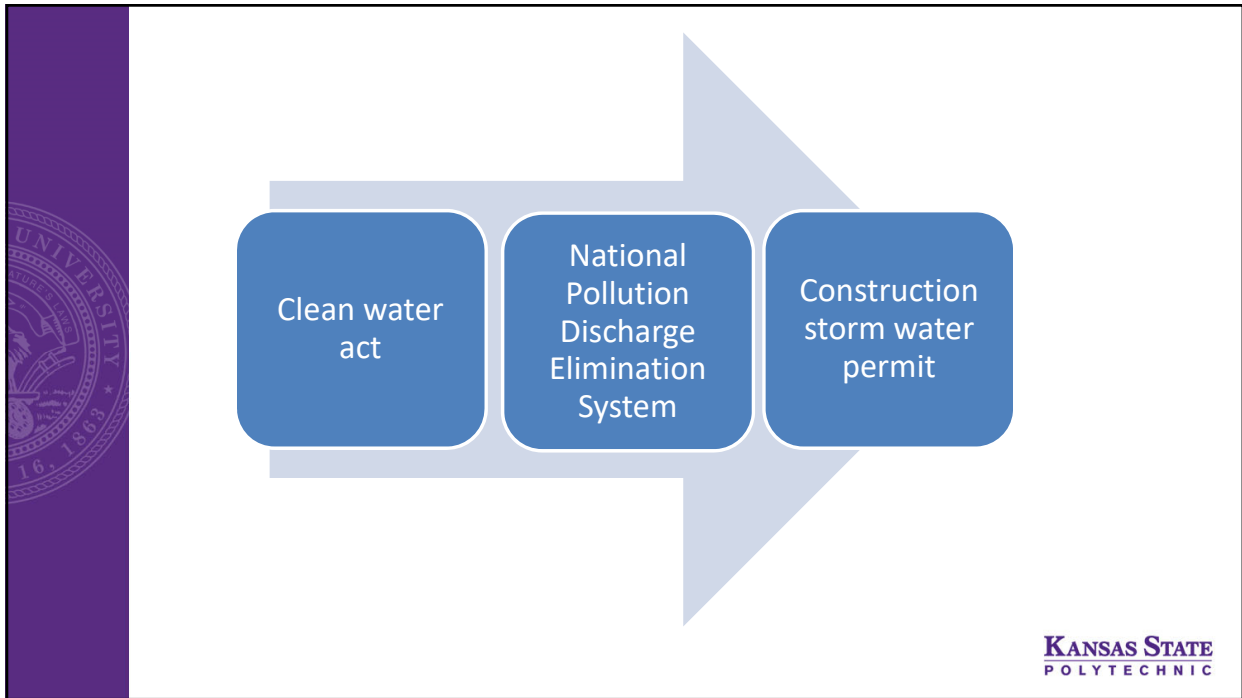


KANSAS STATE
POLYTECHNIC

Fishable or swim-able?



KANSAS STATE
POLYTECHNIC



NPDES is a.....National Pollution Discharge Elimination System

- The purpose is to improve water quality in the United States through a program of issuing and enforcing permits
- This is a federal program under the Clean Water Act enacted in 1972.
- The overall goal is to protect and improve the water resources across the United States

KANSAS STATE
POLYTECHNIC

Construction Storm Water Permit

- Permit program started in the States in 1992
- Permit required for all projects over 1 acre
- Owner and Contractor are Responsible
- The permit states what is permissible and what needs to be done
- Allows a construction site to discharge storm water by following the requirements contained in permit

KANSAS STATE
POLYTECHNIC



KANSAS STATE
POLYTECHNIC

Why construction??



1 ½ years later .. Can still see effects of the project downstream



Another project: Installing new culvert.
Sediment Buried Fish Spawning Area



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Sediment covers bottom substrate in rivers,
reducing the diversity and abundance of aquatic
insects

KS STATE
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Sediment in Wetland Area Changes Wetland Vegetation and Wetland Functions



KANSAS STATE
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Erosion and sedimentation also affects work on the project



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Construction Stormwater Training

Stormwater Discharge Permit Part 1




1

Introduction

Kansas Water Pollution Control
and
National Pollutant Discharge Elimination System (NPDES)
Stormwater Runoff from Construction Activities
General Permit

Effective August 1, 2022
Expires July 2027



2

Part 1 – Who Must Obtain Authorization to Discharge

- Owners or operators of construction activities which may disturb **one or more acres of soil** or are part of a *common plan of development* which may disturb one or more acres
- Projects less than 1 acre may require coverage
- Disturbing activities in response to public emergencies



3

Part 1 – Support Activities

Support Activities:

- Sites at or adjacent to the project are considered part of the common plan of development
- May be considered as stand-alone projects if runoff is not anticipated to significantly impact the same surface waters and stream segments as the supported project



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Part 1 – Exceptions

EXCEPTIONS:

- Routine maintenance less than 5.0 acres
- Structural demolition activities (including pavement removal) which do not involve soil excavation, grading, clearing, grubbing or other soil disturbing activities
- Linear opening of soil in a single line of two feet or less using soil plow trenching



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Part 2 – What is Covered

- Covered Activities
 - Stormwater discharges
 - Non-stormwater discharges



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Part 2: Stormwater Discharges and Protected Waters of Kansas

- Tier 1-Waters that accommodate existing uses
- Tier 2- High Quality Waters. Water Quality is higher than needed for intended uses
- Tier 3-Outstanding National Resource Waters
- Tier 3 Kansas Waters: Quivira Big and Little Salt Marsh, Cheyenne Bottoms, Flint Hills National Wildlife Refuge, Kirwin Lake and Wildlife Refuge, and the Cimarron National Grasslands



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Part 2 – Non-Stormwater Discharges

- Non-Stormwater discharges
 - Water for rinsing streets or structures w/o detergents or other additives
 - Irrigation of vegetation
 - Fire-fighting
 - Dust control
 - A/C or compressor condensate
 - Flushing hydrants / water lines
 - Uncontaminated non-turbid groundwater
 - Uncontaminated construction dewatering



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Part 3 – What is not Covered

- Does not authorize discharges of:
 - Hazardous substances or oil from on-site spill or improper handling or disposal;
 - Wash and/or rinse water from concrete mixing equipment and trucks;
 - Waste water from various industrial processes(asphalt plants)
 - Contaminated groundwater
 - Discharge that threatens endangered species
 - Violations of Municipal Separate Storm Sewer(MS-4) permits



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Part 4 How to Apply

- Notice of Intent(NOI) form
- \$60 First year annual permit fee
- Map showing project boundaries, topographic features and elevation contours
- Sequence of Construction Activities
- Detailed Site Plan showing proposed BMP installments
- Narrative summary of Erosion and Sediment Control Practices
- Design calculations for sediment basins
- Documentation of coordination with Local, State and Federal agencies
- Kansas Environmental Information System(KEIMS)



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Part 5. Starting Construction Activities

- DO NOT START CONSTRUCTION ACTIVITIES UNTIL YOU HAVE A SIGNED NOI



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Part 6. Continuing Coverage

- The permit must be renewed annually.
- If coverage is lost, the permit holder must submit a new NOI with all corresponding information.
- The permit holder is subject to civil and criminal punishment for not renewing.
- All permits expire 5 years after being issued.



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Thank You

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Construction Stormwater Training

Stormwater Discharge Permit Part 2



1

Part 7 – SWPPP Requirements and Guidelines

- Stormwater Pollution Prevention Plan (SWP2 plan = SWPPP)
 - Design, Implementation, management and maintenance of BMPs
 - Site Specific
 - Minimizes erosion, sediment and other pollutants
 - Complies with Kansas Surface Water Quality Standards
 - Ensures compliance



2

Part 7 – SWPPP

- Select BMPs with best professional judgement, generally accepted and scientifically defensible guidance
 - EPA 832-R-92-005- Stormwater Management for Construction Activities
 - EPA 833-R-06-004- Developing your Stormwater Pollution Prevention Plan
 - Other Professionally Developed Guidance



3

Part 7.1 SWP2 Plan Requirements

- 7.1
 - Developed under supervision of a licensed PE, Geologist, Architect, Landscape Architect or Certified Professional in Erosion & Sediment Control(CPESC)
 - Runoff from disturbed areas shall pass through appropriate sediment control before leaving the construction site



4

Part 7 – SWPPP

- 7.2.1 Site Description
 - Expand on Notice Of Intent(NOI) information
 - Make the SWPPP a working document which can be used to guide the installation and maintenance of BMPs and pollution controls.



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Part 7 – SWPPP

- 7.2.2 BMPs – General
 - a physical description of the BMP and/or pollution control
 - the site and physical conditions which must be met for effective use of the BMP and/or pollution control
 - the BMP and/or pollution control installation/construction procedures, including typical drawings
 - operation and maintenance procedures for the BMP and/or pollution control



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Part 7 – SWPPP

- 7.2.2 BMPs - Specifics
 - where, in relation to other site features, the BMP and/or pollution control is to be located;
 - when, in relation to each phase of construction, the BMP and/or pollution control will be installed
 - what site conditions must be met before removal of the BMP and/or pollution control, if it is not permanent.



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Part 7 – SWPPP

- 7.2.3 Detailed SWP2 Plan Requirements
 - Minimize exposed soil
 - Preserve Topsoil
 - Provide and Maintain natural buffers
 - Control stormwater volume and velocity
 - Minimize disturbance of steep slopes(40%/2.5:1)
 - Control discharges-sediment and stormwater
 - Minimize dust
 - Minimize off-site tracking
 - Protect storm drain inlets



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Part 7 – SWPPP

- 7.2.4 Steep Slope
 - 2.5:1 or steeper
 - Required to stabilize **immediately** where activity ceases and will not resume for a period exceeding 7 calendar days
 - Geotextiles or erosion control mats
 - Divert flow or install slope drains where feasible



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Part 7 – SWPPP

- 7.2.5 Non-Structural BMPs
 - Seeding, mulching etc.
 - Sod
 - Geotextiles, erosion control blankets/mats
 - Protecting existing vegetation/buffer strips
 - Limiting work / storage near drainage ways
 - Protecting trees



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Part 7 – SWPPP

- Stabilization – Exception if intended function necessitates
 - Stockpiles (structural soils)
 - Areas reserved for landscaping
- Ice, frozen soil or snow cover
 - Affecting 70% or more of area
 - Complete stabilization within 14 days of first inspection finding thawed conditions



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Part 7 – SWPPP

7.2.6 Structural BMPs

- Diverting flows
- Silt fences
- Filter logs
- Wattle rows
- Diversion Dikes
- Drainage swales
- Sediment traps
- Rock check dams
- Inlet / outlet protection
- Subsurface drains
- Pipe slope drains
- And many others

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Part 7 – SWPPP

- 7.2.7 Sedimentation Basins
 - Required for each drainage area with 10 or more acres disturbed at one time
 - 3,600 cubic feet of storage / acre
 - No more than 20 percent of required capacity shall be taken up with sediment
- 7.2.8 Permanent Controls
 - Include if applicable
 - Drainage channels, outlet control devices, detention ponds, catch basins

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Part 7 – SWPPP

- 7.2.9 Additional BMPs
 - Equipment washing and maintenance
 - Building materials and trash
 - Chemical spills / leaks
 - Solid and hazardous waste Management
 - Portable toilets
 - Proper material storage
 - Eliminate the potential to discharge wash and/or rinse waters from concrete mixing equipment



17

Part 7 – SWPPP

- 7.2.10 Site Inspections
 - Once within each inspection monitoring window (every 7 days regardless of rain fall)
 - **OR**
 - Once within each inspection monitoring period (every 14 calendar days)
 - Or after a .5" rain event
 - Or after two consecutive rain events totaling .5"



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Part 7 – SWPPP

- 7.2.10 Site Inspections
 - Inspection report completed by the end of the next standard weekday of the inspection (except weekends/holidays etc.)
 - The report is signed by the inspector
 - Deficiencies documented and corrected within seven calendar days of the inspection



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Part 7 – SWPPP

- 7.2.10 Site Inspections
 - Deficiencies documented and corrected within seven calendar days of the inspection unless infeasible
 - Document why infeasible
 - Monitor daily until inspection can be complete
 - Provide specific timeframe for completing and documented corrections



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Part 7 – SWPPP

- 7.2.10 Site Inspections
 - If weather or site conditions make it unsafe or infeasible to access and observe the conditions on the project:
 - Document the reason why.
 - Inspect any portions of the project and devices that are accessible.
 - Monitor daily (standard weekday) until access is safe/feasible
 - Inspection of previously inaccessible areas is required by the end of the next business day once it is safe/feasible



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Part 7 – SWPPP

- Part 7.2.10 Site Inspection
 - Disturbed areas are temporarily stabilized due to one of the following conditions: ice, frozen soil, or consistent snow cover extending across 70 percent or more of the area.



23

Part 7 – SWPPP

- 7.2.10 Site Inspections – Inactive Sites
 - Post-rainfall inspections not required
 - Construction activities permanently ceased
 - Stabilization activities completed
 - Vegetative density not established



24

Part 7 – SWPPP

- 7.3.1 Modifications
 - Modifications required to better control erosion and sediment based on field conditions or site phasing changes
 - Note changes on plan sheets
 - Maintain a modification log
 - Modifications do not require professional approval or submittal to KDHE



25

Part 7 – SWPPP

- 7.3.2 Amendments
 - Amend if scope change increases disturbed area by more than 1.0 acre
 - Discharge to a surface water not originally receiving stormwater from permitted activity
 - Discovery of contaminated soil/groundwater, historic/archeological sites, or threatened & endangered species impacts



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Thank You

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Construction Stormwater Training

Stormwater Discharge Permit Part 3



1

Part 8 – Transfer of Ownership

- NPDES permit allows for the permit to be transferred
 - KDHE must approve transfer
 - All parties must agree to the transfer
 - Notice of Transfer of Owner/Operator(NOTO)
 - Requested 2 weeks prior to transfer
- Not allowed on KDOT let projects
 - Includes Local Public Authority(LPA) projects



2

Part 9 – Completion

- Notice of Termination(NOT)
 - Submitted to KDHE
 - Activities complete and final stabilization achieved
 - Perennial Vegetation
 - 70% density of undisturbed areas at or near the site



3

Part 10 – General

- 10.1 - Records
 - Maintained for 3 years after NOT
 - NOI, SWPPP, Inspection reports, Clearance Letters, NOT
 - Kept on site until final stabilization complete
- 10.3 – Duty to Comply
 - Non-compliance violates CWA
 - Enforcement actions



4

Part 10 – General

- 10.4 – Duty to provide Info and Access
 - KDHE, EPA, local agencies
 - Information to determine compliance
 - Allow access to:
 - Review records
 - Sample waters
 - Inspect the site



5

Part 10 – General

- 10.5 –Signatory Requirements
- 10.6- Chemical and Sewage Spills
- 10.7-Hazardous Substance and Oil Spill Reporting
- 10.8- Sewage, Wastes, Materials, and Substance Spills
- 10.9- Requiring a Different NPDES Permit
- 10.10- Electronic Data Monitoring Report



6

Part 11 – Standard Conditions

- 11.1 – Proper Operation and Maintenance
- 11.2-Severability
- 11.3-Permit Modification and Termination
- 11.4- Change in Discharge
- 11.5- Discovery During Construction
- 11.6- Removed Substances
- 11.7- Civil, Criminal and Administrative Liability
- 11.8- Property Rights
- 11.9- Duty to Mitigate
- 11.10- Bypass



7

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8

KDOT Stormwater Specifications



1

Stormwater Related Specification and Special Provision

15-09002-R05

- Current Special Provision
- Post Consent Decree Termination as of 1/30/2018
- 2022 KDHE Permit
- All Projects (Local Project Authority (LPA) and KDOT)



2

901.1 Description

<u>Bid ITEMS</u>	<u>UNITS</u>
• SWPPP Design	Lump Sum
• SWPPP Inspection	EACH
• Water Pollution Control Manager	EACH
• Stormwater Compliance Disincentive Assessment	EACH



3

901.3 Construction Requirements

- 901.3a(1): Projects which require permit coverage
 - KDOT or Local Project Authority (LPA) will submit Notice of Intent (NOI) for project
 - NOI does not cover contractor plant, borrow or waste sites outside of project limits
 - Request for Joint Owner/Operator (RJOO)
 - Not allowed for LPA projects
 - Required for KDOT projects, must be signed **before** Contract is signed



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901.3 Construction Requirements

- 901.3a(2) Projects not requiring permit coverage
 - Use Best Management Practices (BMP's) to minimize pollution
 - Everything under 901.3b
 - SWPPP is not required
 - WPCM is not required (no bid item)
 - Inspection and Maintenance reports are not required (no bid item)
 - Stormwater Erosion Control Conferences are not required



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901.3 Construction Requirements

- General Requirements 901.3b
 - Provide copies of permits/clearances for borrow, waste and/or plant sites outside project limits
 - Assume responsibility for ALL erosion and sediment control measures within the project limits
 - Begins at the Notice to Proceed regardless of who installed the devices
 - Perimeter Controls must be installed before or simultaneously with Clearing and Grubbing Operations



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901.3b General Requirements

- General Requirements 901.3b
 - Designated Disturbed Areas
 - Determined at SWPPP Pre-Construction Conference
 - Limit of 750,000 sqft per equipment spread
 - When do areas not count towards 750,000 sqft?
 - Areas that will NOT be disturbed again **DUE TO PROJECT PHASING**
 - Finish grade the completed area
 - Stabilize & maintain stabilization according to section 902
 - Do not disturb again without written permission
 - Areas that will be disturbed again **DUE TO PROJECT PHASING**
 - Rough Grade
 - Stabilize & maintain stabilization according to section 902



7



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901.3b General Requirements

- General Requirements 901.3b
 - Projects less than 750,000 SQFT(17.2 acres)
 - Open areas based on project phasing and physical separations
 - Areas are documented on the 247 form



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901.3b General Requirements

- General Requirements 901.3b
 - Clearing and Grubbing
 - **Do NOT** clear and grub unless meaningful work toward the completion of the project will actively be performed in the exposed area within 7 calendar days on steep slopes
 - If not part of project phasing or no meaningful work toward the completion of the project is performed in area, stabilize at no cost to KDOT within the above timeframe



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901.3b General Requirements

- General Requirements 901.3b
 - Use CLEAN AGGREGATE fill for temporary crossings, work platforms, etc. in Rivers, streams and other water impoundments
 - Promptly remove all obstructions when no longer required
 - **Do not ford live streams with equipment**



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901.3b General Requirements

- General Requirements 901.3b
 - Work around rivers and streams
 - No storage within 50 feet of surface water
 - No storage in flow lines of ditches
 - Written permission required for exceptions
 - When storage is necessary additional BMPs may be needed to account for loss of buffer space
 - Stabilize the stockpile



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901.3b General Requirements

- General Requirements 901.3b
 - Steep Slope Stabilization
 - Immediately initiate placement of appropriate erosion control Best Management Practices (BMPs) in any exposed steep slope areas (2.5:1 or greater) where construction activities have permanently or temporarily ceased and will not resume for a period exceeding 7 calendar days utilize other appropriate erosion control practices such as geotextiles or erosion control mats. Divert stormwater flows around steep slopes or install slope drains where feasible.



19



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901.3b General Stabilization



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901.3b General Stabilization



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901.3b General Requirements

- Immediately - Defined to mean “as soon as practicable, but no later than the end of the next workday, following the day when the earth-disturbing activities have temporarily or permanently ceased”
- Stabilization is initiated when physical work on the project to install stabilizing BMPs has begun
- Prosecute stabilization work continuously and diligently until completed



23

901.3b General Requirements

- General Requirements 901.3b
 - Minimum required BMPs
 - Control volume and velocity within the site
 - Control discharges to minimize channel erosion and scour
 - Minimize pollutant discharge
 - Maintain natural buffers around Waters of the US where feasible
 - Prevent contamination of adjacent water
 - Coordinate temporary BMPs with permanent to provide continuous erosion control
 - ***Install permanent features as soon as practicable***



24

901.3b Spill Reporting

- Spill reporting
 - Notify in writing to the Engineer within 24 hours of any reportable spill
 - Reportable spills covered in Sec 10 of NPDES
 - Notification to Engineer does not relieve Contractor's responsibility to report to KDHE, EPA or others as required



25

901.3b General Requirements

- If erosion and pollution control requirements are not met, the Area Engineer/Metro Engineer may suspend all or part of the work on the project



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901.3b General Requirements

- Notice of Acceptance
 - Not issued until all necessary maintenance, corrective actions, removal of unnecessary devices and stabilization is complete
 - All SWPPP documentation retained by the Engineer upon Acceptance
 - KDOT/LPA continues inspections until the Notice of Termination (NOT) for the permit



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Section 901 Stormwater Pollution Management



1

901.3c SWPPP Design

- Project Stormwater Pollution Prevention Plan
 - 3 original copies to field engineer
 - Submitted BEFORE the precon
 - Designed to comply with NPDES and meet requirements of the specifications
 - Reviewed and approved by KDOT Metro/Area Engineers
 - No contract work can begin until SWPPP is approved



2

901.3c SWPPP Design

- Project Notice of Intent
- Request for Joint Owner/Operator
- Planned Construction Sequence and Phasing
- Erosion Control Site Plan
- Current Certifications for WPCM and Environmental Inspector
- Local and other Permit Requirements
- Detailed BMP Description
- Minimize
 - Exposed soils
 - Steep slope exposure
 - Stockpile discharge
 - Dust generation
 - Off-site tracking
- Downgrade Inlet Protection



3

901.3c SWPPP Design

- KDOT form 219, Approval of SWPPP
- KDOT form 248, Checklist for Contractor's SWPPP
- Current KDOT, LPA and Consultant Inspectors Certification
- KDOT form 247, SWPPP Inspection and Maintenance Report
- Complete NPDES Permit
- Contract Documents for Temporary Erosion and Pollution Control



4

901.3d Water Pollution Control Manager(WPCM)

- Water Pollution Control Manager (WPCM)
 - Visit the project frequently (*no less than once per week*)
 - Supervise and direct all work (including subs and prime) with regards to Stormwater
 - Order actions to correct or avoid violations
 - Update SWPPP and site maps
 - Point of contact for KDOT
 - Complete KDOT form 280
 - Review & sign inspection reports w/in 3 calendar days of receipt
 - Maintain and monitor an active e-mail account
 - WPCM may perform SWPPP inspections
 - When changing WPCM, must notify Area/Metro Engineer in writing



5

901.3d Water Pollution Control Manager(WPCM)

- KDOT Form 280, Water Pollution Control Manager Weekly Report
 - Documents Weekly SWPPP Updates
 - Planning for Future Project Needs
 - Contemplate Previous Week's Lessons
 - Way to easily document WPCM visit



6

901.3d Water Pollution Control Manager(WPCM)

- Complete and maintain Construction Storm Water certification (CSW)
- CSW Training is good for 4 years



7

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8

KDOT Stormwater Specifications Inspections



1

901.3e SWPPP Inspections

- Construction Stormwater Certification
- Joint Inspections
- Inspections begin and end during daylight hours
- Joint inspections by KDOT/Contractor continue until Notice of Acceptance (NOA)
- Inspections by KDOT continue until Notice of Termination (NOT)



2

901.3e SWPPP Inspections

- Minimum of 7 days between inspections
- One Inspection per Day
- KDOT Form 247, SWPPP Inspection and Maintenance
- List all maintenance/corrective deficiencies



3

901.3e SWPPP Inspections

- Do not exceed 7 calendar days between inspections.
 - Make sure there is good record keeping of the inspections
 - Disincentive will be assessed if an inspection is done outside the 7 days



4

901.3e SWPPP Inspections

On Friday morning the rain gauge read 0.2”
On Monday morning the rain gauge read of 0.5”
On Tuesday morning the rain gauge read of 0.4”
On Wednesday the routine inspection is scheduled
Is an inspection required and when?



5

901.3e SWPPP Inspections

- Answer
 - The Friday reading does not trigger an inspection
 - The Monday reading does not trigger an inspection
 - The Tuesday reading does not trigger an inspection
 - The Wednesday routine inspection is completed



6

901.3e SWPPP Inspections

- Remedy Deficiencies in 7 calendar days
- No additional time granted unless Infeasible
- Only the District Engineer can grant Extensions



7



8



9

General Permit Requirements

- Part 7.2.10 Site Inspection by Permittee
 - Disturbed areas are temporarily stabilized due to one of the following conditions: ice, frozen soil, or consistent snow cover extending across 70 percent or more of the area. This shall be noted on the inspection report. The thawing of these areas shall be noted during the first subsequent inspection when these conditions are no longer present.

10



11

901.3e SWPPP Inspections

- SWPPP Inspections
 - What happens if only KDOT shows for a joint inspection?
 - Perform the inspection! If the Contractor is not there, they assume the result of the inspection and disincentive is assessed



12

901.3e SWPPP Inspections

- Submit completed report within 24 hours
- WPCM has 3 days to sign report
- Monitor Project Daily
- Risk of losing CSW certification



13

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14

Section 901 Stormwater Pollution Management



1

901.3f Oversight Inspections

- Quality Assurance
- Construction Managers/Engineers, Area/Metro Engineers, District Staff, SWCE
- Disincentive Applies
- 10 Calendar Days



2

901.3g Stormwater Erosion Control Conference

- Before construction, major phases and winter shutdown start
- Add attendance and minutes for each meeting to the SWPPP notebook
- Attendees: KDOT Area/Metro Engineer, WPCM, Environmental Inspector(s) for project and erosion control subcontractors



3

901.3h Stormwater Compliance Disincentive Assessment

- Failing to Perform an Inspection
- Not Completing Deficiencies



4

901.3h Stormwater Compliance Disincentive Assessment

TABLE 901-1: TABLE OF STORMWATER COMPLIANCE DISINCENTIVES

Original Contract Amount Range		Each SWPPP Inspection not performed according to 901.3e	Each deficiency per day not corrected within allowable time
\$0	\$1,000,000.	\$250.00	\$250.00
\$1,000,000.01	\$2,500,000.	\$500.00	\$500.00
\$2,500,000.01	\$5,000,000.	\$750.00	\$500.00
\$5,000,000.01	\$10,000,000.	\$1,000.0	\$500.00
Over \$10,000,000.00		\$1,500.0	\$500.00



5

901.3h Stormwater Compliance Disincentive Assessment

- \$4,500,000 Contract, \$500/day Disincentive
- Routine Inspection
- 10 of 20 deficiencies remain after 7 days
- 12 calendar days have past
- How much is the disincentive assessment?

12 days – 7 days = 5 days of disincentive assessment
5 days x 10 deficiencies x \$500/day/deficiency = \$25,000 of disincentive!



6

901.3h Stormwater Compliance Disincentive Assessment

- Correct any deficiencies within 7 or 10 calendar days of inspection **unless infeasible**
- If infeasible, notify the Area/Metro Engineer and the District Engineer **immediately**. Submit to the District Engineer within 3 days written documentation of the reason why such correction is infeasible and provide a specific plan for completing all needed corrections as soon as feasible. No additional time will be granted unless approved in writing by the District Engineer.



7

901.3i Penalties and Fines

- KDHE or EPA
- Failure to comply with:
 - Applicable laws
 - Regulations
 - Ordinances
 - NPDES Permit
 - Other Permits
 - SWPPP
 - Govt Admin Compliance Orders or Project Corrective Orders
- In addition to any disincentive already assessed



8

901.4 Measurement and Payment

- Measurement and Payment
 - SWPPP design
 - Paid for once SWPPP is approved
 - Revisions to SWPPP are subsidiary
 - SWPPP Inspection
 - Paid for each routine or rainfall event inspection
 - Stormwater Compliance Disincentive Assessment
 - Each assessment



9

901.4 Measurement and Payment

- Measurement and Payment - WPCM
 - Specification “The engineer will measure each Water Pollution Control Manager (WPCM). Each is defined as each calendar week (Sunday-Saturday) that the Contractor provides a WPCM according to subsection 901.3.d. Each week will be measured only once, regardless of the number of site visits or time spent performing WPCM duties for that week”



10

901.4 Measurement and Payment

- How do you pay when the WPCM is also performs the inspections?
- They are two separate bid items so pay for each individually even though same person is performing the work.



11

901.4 Measurement and Payment

- Example: The contractor has a scheduled WPCM visit on Monday. They come back to the project on Wednesday to update the SWPPP plan. How many WPCM are paid?



12

901.4 Measurement and Payment

- Answer
 - 1, there will be only one WPCM paid per week no matter how many WPCM visits are performed



13

901.4 Measurement and Payment

- The contractor's WPCM and Environmental Inspector are the same person. They have a scheduled WPCM visit on Monday and come out on Wednesday to update the plan. There are rain events on Monday and Wednesday. The WPCM performs the SWPPP inspection on Wednesday. How many WPCM visits and SWPPP inspections are paid?



14

901.4 Measurement and Payment

- Answer
 - 1 WPCM visit, remember these are only paid once per week no matter how many visits are required
 - 1 Inspection, the environmental inspector only needs to perform 1 inspection per week no matter how much rain fell on the project.



15

901.4 Measurement and Payment

- How do you change WPCM for a project
 - There can be more than one WPCM over the life of the project but only one can be active at a time
 - Notify Area/Metro Engineer in writing, usually an email
 - We don't want to change every other week



16

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Section 902 Temporary Erosion and Sediment Control



1

902

15-09004-R01- Current Special Provision



2

902.1 Description

BID ITEMS

Temporary Berm (Set Price)
 Temporary Slope Drain
 Silt Fence
 Biodegradable Log (***)
 Synthetic Sediment Barrier
 Filter Sock (***)
 Temporary Ditch Check (Rock)
 Temporary Inlet Sediment Barrier
 Temporary Sediment Basin
 Temporary Stream Crossing
 Sediment Removal (Set Price)
 Temporary Fertilizer (**)
 Temporary Seed (**)
 Soil Erosion Mix
 Erosion Control (*)(**)
 Mulching
 Water (Erosion Control) (Set Price)
 Geotextile (Erosion Control)
 * Class
 ** Type
 *** Size

UNITS

Linear Foot
 Linear Foot
 Linear Foot
 Linear Foot
 Linear Foot
 Linear Foot
 Cubic Yard
 Each
 Cubic Yard
 Each
 Cubic Yard
 Pound
 Pound
 Pound
 Square Yard
 Ton
 M Gallon
 Square Yard



3

902.2 Materials

- 2100 Materials for Roadside Improvements
 - Erosion Control devices
 - Sediment barriers
 - Fertilizers
 - Seeds
 - Soil Erosion Mix
 - Erosion Control Materials
 - Mulch
- 1100 Aggregates
- 2400 Water
- 1710 Geosynthetics



4

902.3 Construction Requirements

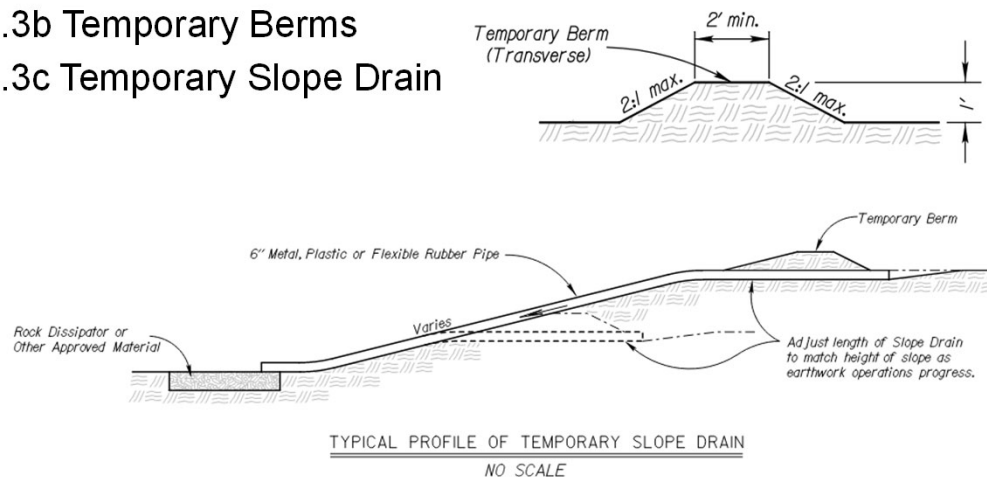
- 902.3a General
 - KDOT's Temporary Erosion Control Manual
 - EPA Stormwater Menu of BMP
 - Mn/DOT Erosion and Sediment Control Pocketbook Guide
 - NDOT Construction Stormwater Pocket Guide



5

902.3 Construction Requirements

- 902.3b Temporary Berms
- 902.3c Temporary Slope Drain



6

902.3 Construction Requirements

- 902.3d Silt Fence



7

902.3 Construction Requirements

- 902.3e- Biodegradable Logs



8

902.3 Construction Requirements

- 902.3f- Synthetic Sediment Barriers



9

902.3 Construction Requirements

- 902.3g- Filter Socks



10

902.3 Construction Requirements

- 902.3h- Temporary Ditch Checks(rock)



11

902.3 Construction Requirements

- 902.3i- Temporary Inlet Sediment Barrier



12

902.3 Construction Requirements

- 902.3j- Temporary Sediment Basins



13

902.3 Construction Requirements

- 902.3j- Temporary Sediment Basins



14

902.3 Construction Requirements

- 902.3k- Temporary Stream Crossing



15

902.3 Construction Requirements

- 902.3l- Temporary Fertilizer, Seed and Mulch



16

902.3 Construction Requirements

- 902.3m- Soil Erosion Mix
- 902.3o- Erosion Control



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902.3 Construction Requirements

- 902.3o- Erosion Control



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902.3 Construction Requirements

- 902.3p- Geotextile (Erosion Control)



19

902.3 Construction Requirements

- 902.3j- Maintenance and Removal of Temporary Erosion and Pollution Control Devices



20

902.4 Measurement and Payment

- **For linear foot devices**
 - Measure along top of device
 - Do not include length up the side slopes beyond level with top of device in ditch bottom
- **Rock Checks**
 - Cubic Yard
- **Inlet Sediment Barrier**
 - Each
- **Temporary Stream Crossing**
 - Each when called out in the contract
- **Sediment Basins**
 - Per Cubic Yard excavated
- **Sediment removal option**
 - Over 50 cubic yards in one location, may pay using force account



21

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22



KDOT Stormwater Specifications Section 903 Fertilizer, Agricultural Limestone and Peat Moss








1

903.1 Description

<u>BID ITEMS</u>	<u>UNITS</u>
Fertilizer (*-**-***)	Pound
Agricultural Limestone	Ton
Peat Moss	Ton
*Percent Nitrogen	
**Percent Phosphorous	
***Percent Potassium	



2

903.2 Materials

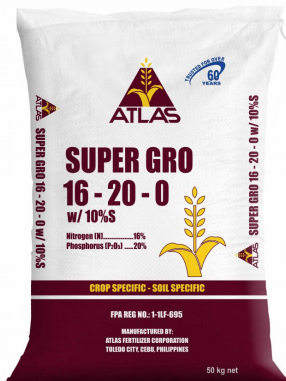
- 2107- Agricultural Limestone
- 2108- Fertilizer
- 2109- Peat Moss



3

903.3 Construction Requirements

- 903.3a Fertilizer



4

903.3 Construction Requirements

- 903.3b Agricultural Limestone



5



903.3 Construction Requirements

- 903.3c Peat Moss

6

903.4 Measurement and Payment

- Fertilizer- Bag Weight or Commercial Scale Tickets
- Agricultural Limestone- Commercial Scale Tickets
- Peat Moss- Scale Ticket



7

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8

KDOT Stormwater Specifications Section 904 Seeding



1

904.1 Description

- Bid Items

- Seed(*)
- Seed(Hydro)(*)
- Seeding
 - *Type of Seed

- UNITS

- Pound
- Pound
- Lump Sum



2



904.2 Materials

• Section 2103

- Noxious Weed Laws
 - No Sericea Lespedeza, Multiflora Rose
- Kansas Seed law
- Acceptance
 - Kansas Seed Law Registration
 - Certification of Seed Law Compliance
 - Label Verification
 - Pure Live Seed Verification



3

904.3 Construction Requirements

- 904.3a Seeding Seasons

TABLE 904-1: GRASS & WILDFLOWER SEEDING SEASONS	
Type	Season
Cool Season Grasses	February 15 thru April 20 August 15 thru September 30
Warm Season Grasses and Wildflowers	November 15 thru June 1



Prairie June Grass



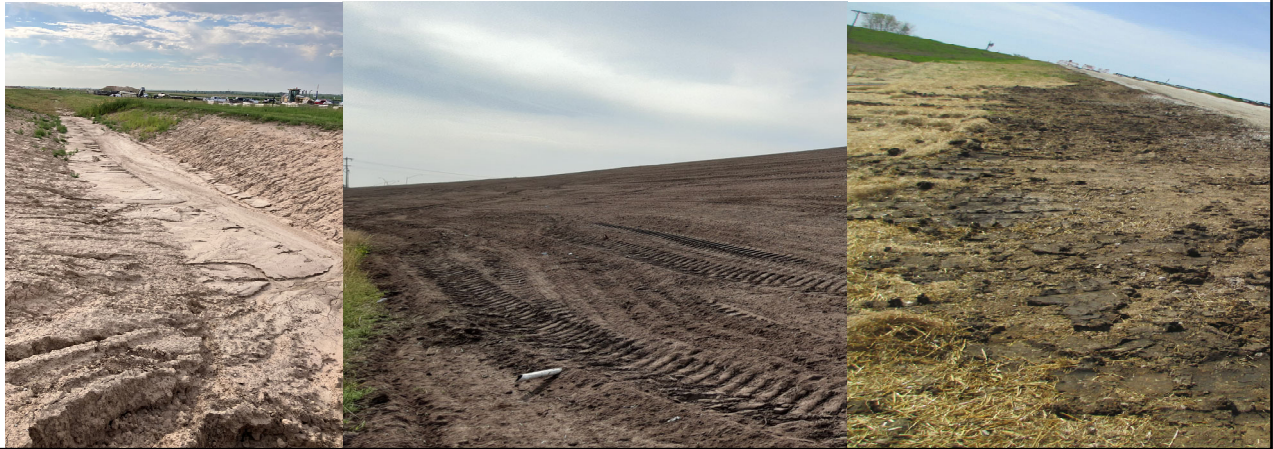
Indiangrass



4

904.3 Construction Requirements

- 904.3b Preparation of the Seedbed



5

904.3 Construction Requirements

- 904.3c Seeding



6

904.3 Construction Requirements

- 904.3d Hydroseeding



7

904.3 Construction Requirements

- 904.3e Seeding/Lump Sum



Kentucky bluegrass



Fescue



8

904.4 Measurement and Payment

- Measure Pure Live Seed(PLS) by the pound
- Tracer Hydromulch is subsidiary
- No measurement will be made for Lump Sum Seeding



9

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10

KDOT Stormwater Specifications

Section 905 Mulching



1

905.1 Description

- Bid Items

- Mulching
- Mulching Tacking Slurry
- HECP*
 - *Hydraulic Erosion Control Products Type

- UNITS

- Ton
- Pound
- Pound



2

905.2 Materials

- **Section 2110**
 - General Mulch Materials
 - Prairie Hay Preferred
 - Weed-Free Certification
 - Shredded or Chipped Wood Mulch
 - Compost Mulch
 - HECP
 - 3 Types
 - Prequalified, PQL 34.2
 - Type C Certification



3

905.3 Construction Requirements

- **905.3a Mulching**



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4

905.3 Construction Requirements

- 905.3b Mulch Tacking Slurry



5

905.3 Construction Requirements

- 905.3c Hydraulic Erosion Control Products(HECP)



6

905.3 Construction Requirements

- 905.3c Hydraulic Erosion Control Products(HECP)
Table 905-1 HECP Typical Applications

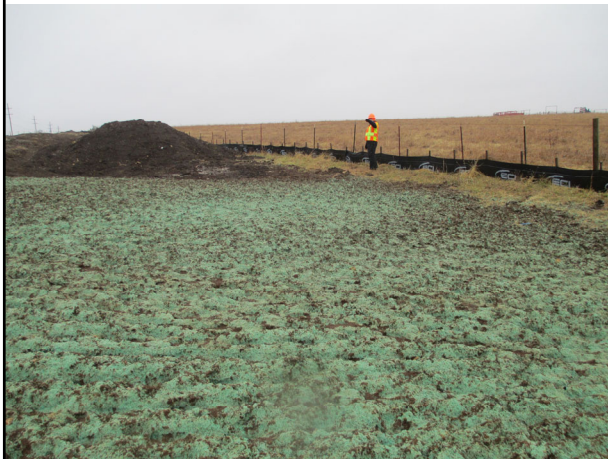
<u>Type</u>	<u>Application Rate(lb/acre)</u>	<u>Maximum Slope</u>
A	1800	4:1
B	2500	3:1
C	3500	2:1



7

905.3 Construction Requirements

- 905.3c Hydraulic Erosion Control Products(HECP)



8

905.4 Measurement and Payment

- Mulch- paid by ton placed
- Mulch Tacking Slurry and HECP- paid by the pound of dry weight packaging
- Water subsidiary



9

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10

KDOT Stormwater Specifications Section 907 Sodding



1

907.1 Description

- Bid Items

- Sod(*)(**)

*Variety

**Form of sod: Roots,
plugs or strips

- UNITS

- Square Yard



2

907.2 Materials

- **Section 2104**

- General
 - Cut Uniformly
 - Broken, torn or dry unacceptable
- Types
 - Kentucky Blue Grass
 - Bermuda or Zoysia Grass
 - Turf Type Fescue
 - Perennial Wildflower
 - Buffalo Grass



3

907.3 Construction Requirements

- **907.3a Sodding Seasons**

TABLE 907-1: SODDING SEASONS	
Type	Season*
Cool Season Grasses	March 1 thru April 15 September 1 thru November 15
Warm Season Grasses	May 15 thru September 1



4

907.3 Construction Requirements

- 907.3b Construction Sequence



5

907.3 Construction Requirements

- 907.3c Soil Preparation
 - Repair Erosion
 - Remove weeds and stone
 - Undercut
 - Pulverize soil 1"
 - Smooth and place Fertilizer



6

907.3 Construction Requirements

- **907.3d Placing the Sod**

- 2 ½:1 or steeper- 6 stakes per square yard
- 20:1 to 2 ½:1- 2 to 4 stakes per square yard
- Wood lath or wire staples



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907.3 Construction Requirements

- **907.3e Watering the Sod**



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8

907.4 Measurement and Payment

- Sod- paid by square yard installed
- Water subsidiary



9

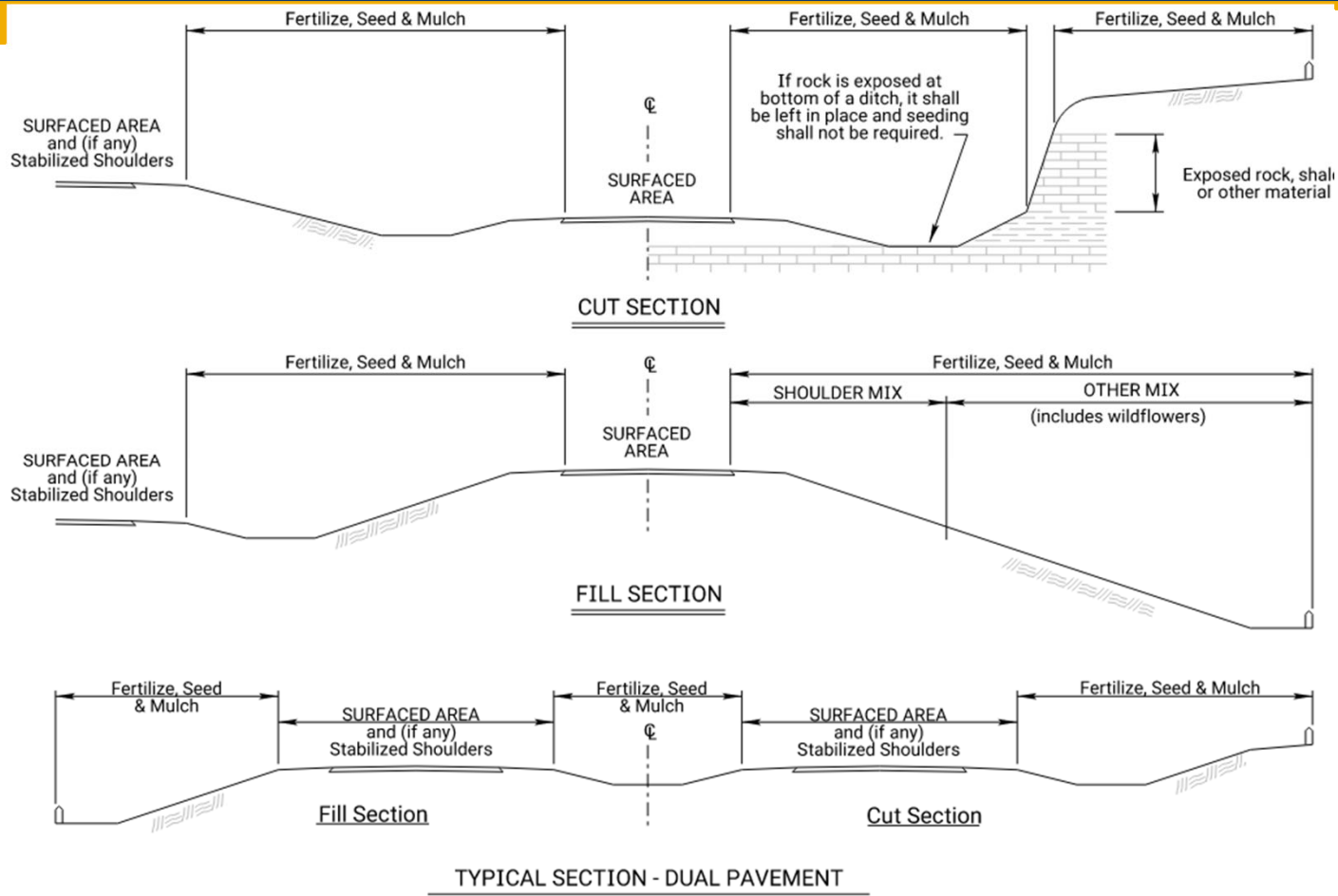
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10

LA 850



LA 850

GRASS & WILDFLOWER SEEDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES & WILDFLOWERS
February 15 thru April 20 August 15 thru September 30	November 15 thru June 1
SPECIES	SPECIES
Bluegrasses	Bermuda Grass
Brome Grasses	Big Bluestem
Canada Wildrye	Blue Grama
Fescues	Buffalo Grass
Prairie Junegrass	Indiangrass
Ryegrasses	Little Bluestem
Sterile Wheatgrass	Sand Bluestem
Tall Dropseed	Sand Dropseed
Western Wheatgrass	Sand Lovegrass
	Side Oats Grama
	Switchgrass
	Wildflower Mixes
<p>When the area to be seeded is 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season.</p> <p>When the area to be seeded is less than 1 acre, seed the area any time of the year.</p>	



LA 850

SODDING SEASONS	
COOL SEASON GRASSES	WARM SEASON GRASSES
March 1 thru April 15 September 1 thru November 15	May 15 thru September 1
SPECIES	SPECIES
Bluegrass Sod	Buffalo Grass Sod
Fescue Sod	
<p>If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.</p>	

LA 850

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.

All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.

If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P₂O₅, K₂O listed in Summary of Seeding Quantities will be acceptable.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.



LA 850

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE			ACRES				BID ITEM	QUANTITY	UNIT
SHLDR	OTHER		SHLDR	OTHER					
200			34.1				Fertilizer (13 - 13 - 13)	6820	Lbs
	80			68.4			Fertilizer (16 - 20 - 0)	5472	Lbs
	2			68.4			Seed (Big Bluestem (Kaw))	136.8	Lbs
0.5			34.1				Seed (Blue Grama (Lovington))	17.1	Lbs
4.5			34.1				Seed (Buffalograss (Treated))	153.5	Lbs
	10			68.4			Seed (Canada Wildrye)	684	Lbs
	2			68.4			Seed (Indiangrass (Osage))	136.8	Lbs
	2			68.4			Seed (Little Bluestem (Aldous))	136.8	Lbs
45			34.1				Seed (Perennial Ryegrass)	1534.5	Lbs
2.6			34.1				Seed (Prairie Junegrass)	88.7	Lbs
6.3	6.3		34.1	68.4			Seed (Side Oats Grama (ElReno))	645.8	Lbs
	10			68.4			Seed (Sterile Wheatgrass)	684	Lbs
	1			68.4			Seed (Switchgrass (Blackwell))	68.4	Lbs
	0.5			68.4			Seed (Tall Dropseed)	34.2	Lbs
45			34.1				Seed (Tall Fescue (Endophyte Free))	1534.5	Lbs
6	4		34.1	68.4			Seed (Western Wheat (Barton))	478.2	Lbs
	10.3			68.4			Seed (Native Wildflower Mix I)	704.5	Lbs

Mulching *

LA 850

NATIVE WILDFLOWER MIX 1		
PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	20.52
0.3	Common Milkweed	20.52
0.3	Black Eyed Susan	20.52
0.5	Blanket Flower	34.20
0.5	False Sunflower	34.20
0.5	Lance-Leaf Coreopsis	34.20
0.2	Maximilian Sunflower	13.68
0.1	New England Aster	6.84
0.2	Pinnate Prairie Coneflower	13.68
0.2	Plains Coreopsis	13.68
0.3	Purple Coneflower	20.52
0.3	Upright Prairie Coneflower	20.52
0.3	Dames Rocket	20.52
0.3	Lemon Mint	20.52
0.2	Pitcher Sage	13.68
0.2	Wild Bergamot	13.68
1.0	Illinois Bundleflower	68.40
0.2	Common Evening Primrose	13.68
0.1	Hoary Verbena	6.84
0.8	Purple Prairie Clover	54.72
0.3	Roundhead Lespedeza	20.52
3.0	Showy Partridge Pea	205.20
0.2	White Prairie Clover	13.68
10.3	Total (lb)	704.5

NATIVE WILDFLOWER MIX 2		
PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	20.52
0.3	Black Eyed Susan	20.52
0.5	Black Sampson Coneflower	34.20
1.0	Blanket Flower	68.40
0.2	Maximilian Sunflower	13.68
0.2	Plains Coreopsis	13.68
0.2	Upright Prairie Coneflower	13.68
0.2	Western Yarrow	13.68
0.3	Lemon Mint	20.52
0.4	Pitcher Sage	27.36
1.5	Illinois Bundleflower	102.60
0.2	Common Evening Primrose	13.68
1.0	Blue Wild Indigo	68.40
0.4	Leadplant	27.36
0.4	Purple Prairie Clover	27.36
0.3	White Prairie Clover	20.52
7.4	Total (lb)	506.2



LA 852a

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES						
P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
150		88.4		Temporary Fertilizer (16 - 20 - 0)	13260	LB
20		88.4		Temporary Seed (Canada Wildrye)	1768	LB
45		88.4		Temporary Seed (Grain Oats)	3978	LB
45		88.4		Temporary Seed (Sterile Wheatgrass)	3978	LB
	47.8		2.2	Soil Erosion Mix	105.2	LB
				Erosion Control(Class 1, Type C)	4940	SQ YD
				Erosion Control(Class 2, Type E)	5923	SQ YD
				Sediment Removal(Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)	2287	CU YD
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain	500	LF
				Biodegradable Log (9")	3560	LF
				Biodegradable Log (12")	4746	LF
				Biodegradable Log (20")	1620	LF
				Filter Sock (12")	3560	LF
				Filter Sock (18")	1620	LF
				Geotextile (Erosion Control)		SQ YD
				Silt Fence	214	LF
				SWPPP Design †	Lump Sum	LS
				SWPPP Inspection †	45	EACH
				Water Pollution Control Manager †	77	EACH
900 lbs / acre		43		Mulch Tacking Slurry	38700	LB
2 tons / acre		86.2		Mulching	258.6	TON
				Water (Erosion Control) (Set Price)	1	MGAL

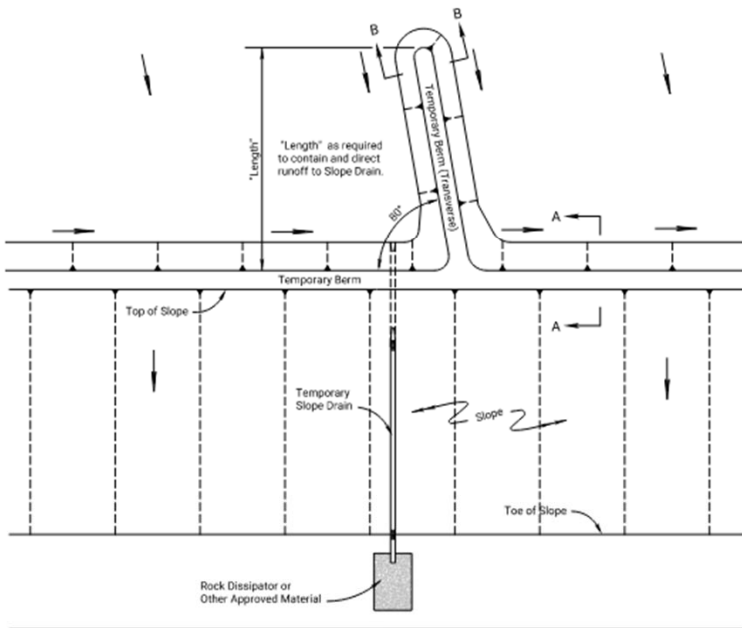


LA 852a

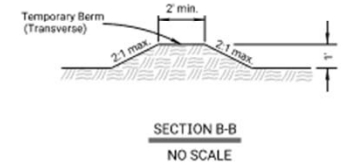
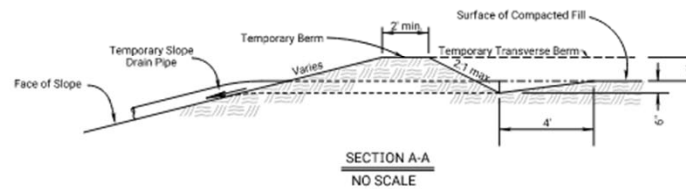
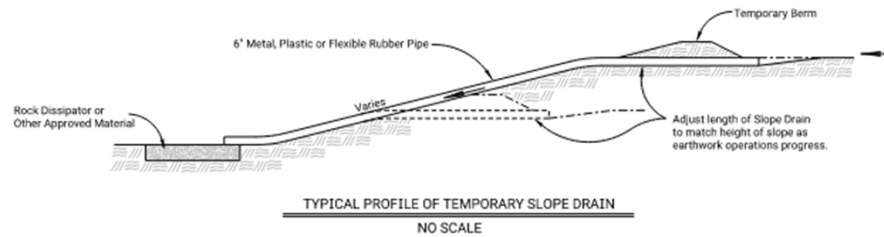
SOIL EROSION MIX		
PLS RATE	NAME	QTY (lb)
0.5	Blue Grama Grass Seed (Lovington)	0.2
4.5	Buffalo Grass Seed (Treated)	1.4
45	Perennial Ryegrass	13.5
2.6	Prairie Junegrass	0.8
6.3	Side Oats Grama Grass Seed (El Reno)	1.9
45	Tall Fescue (Endophyte Free)	13.5
6	Western Wheatgrass (Barton)	1.8
0	Fertilizer (15-30-15)	*
	Total (lb)	33.0

LA 852b

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



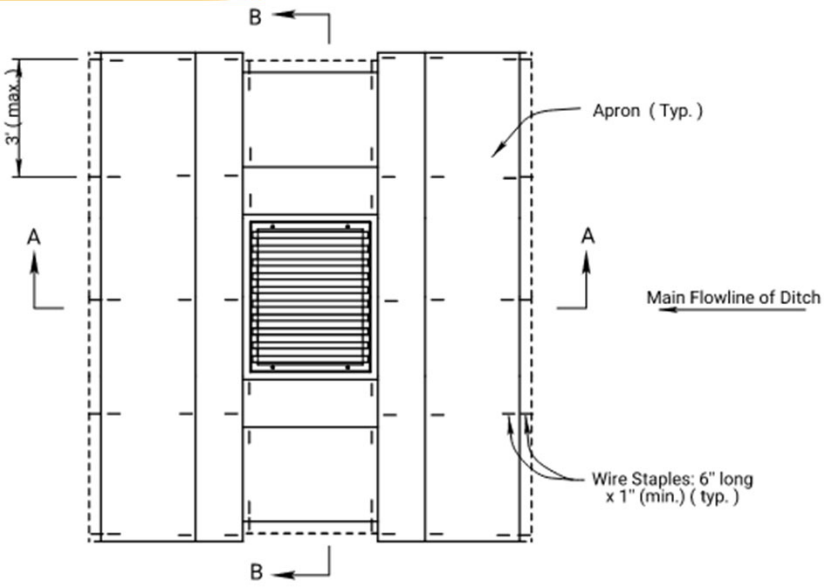
TYPICAL PLAN VIEW OF
TEMPORARY BERM AND
TEMPORARY SLOPE DRAIN
NO SCALE



TYPICAL PROFILE OF TEMPORARY BERM
NO SCALE

- NOTES:
- 1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.
 - 2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
 - 3) Pipe shall be secured in place as approved by Engineer.
 - 4) Temporary Berms under 2,000 feet shall be bid by Set Price.

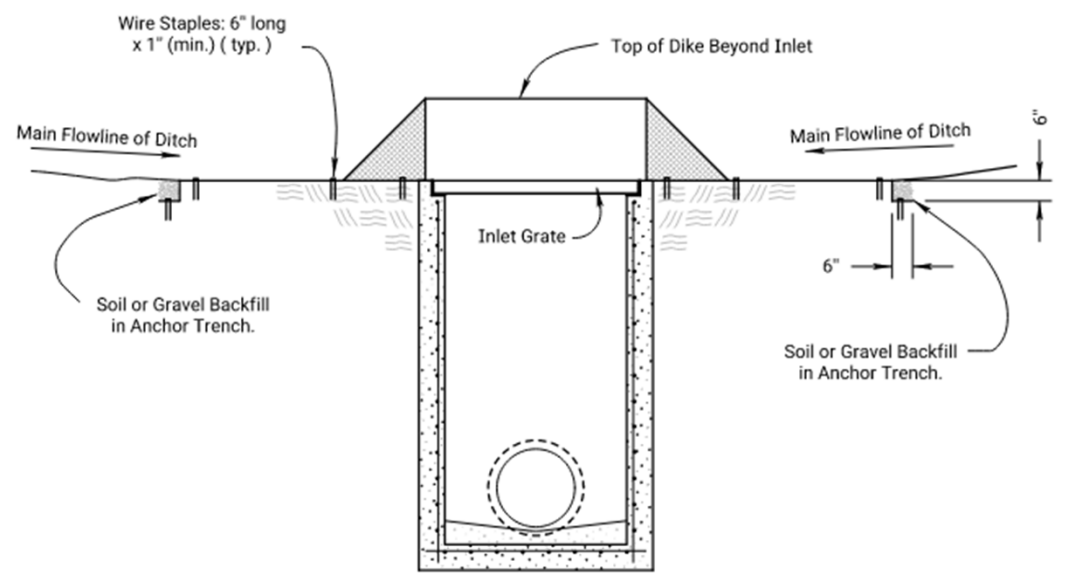
LA 852c



PLAN

TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)

NO SCALE



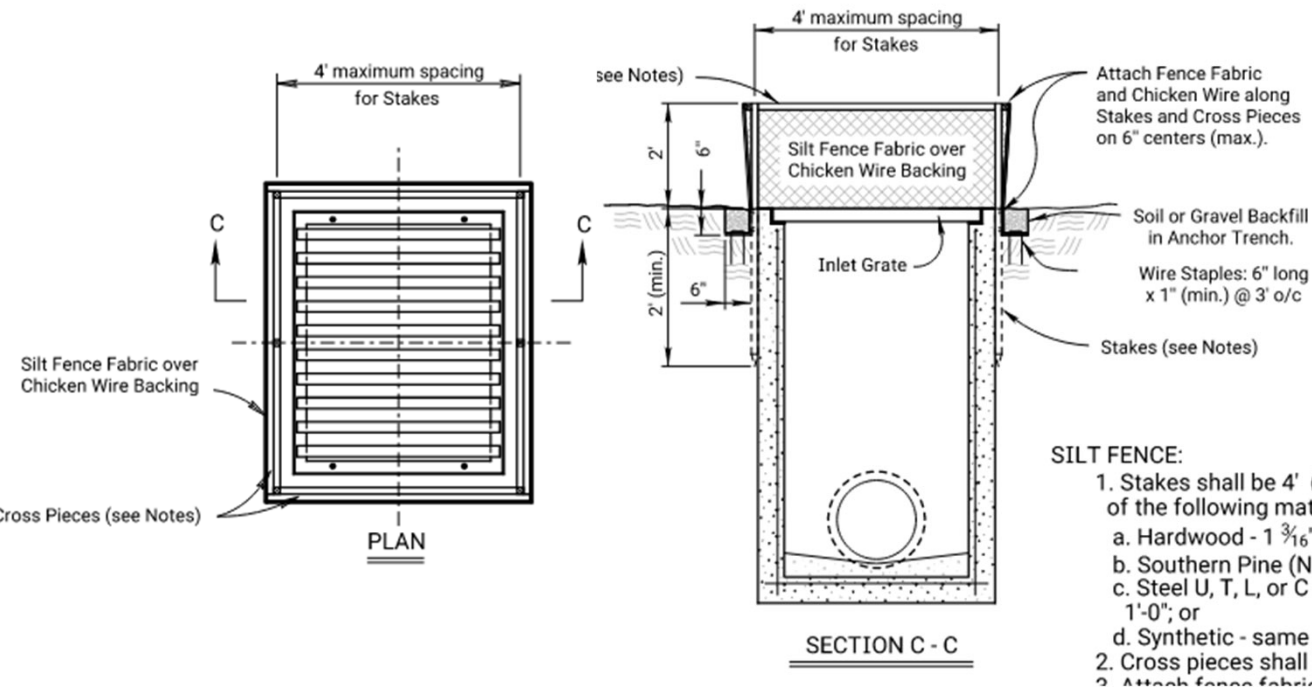
SECTION A - A



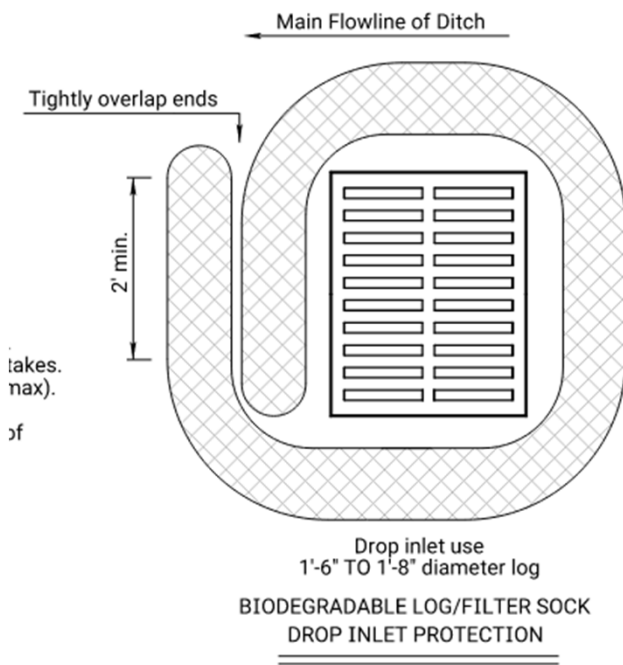
LA 852c



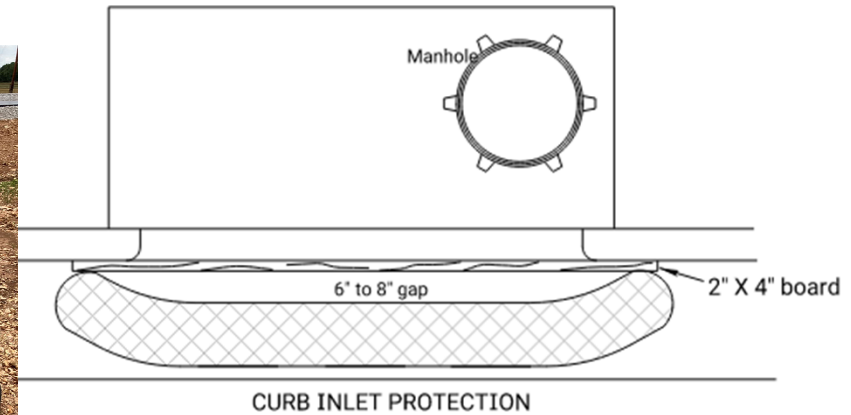
LA 852c



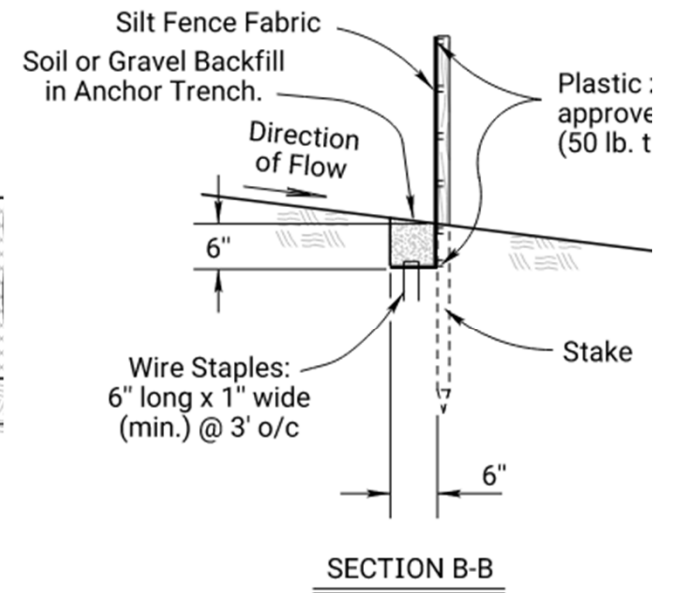
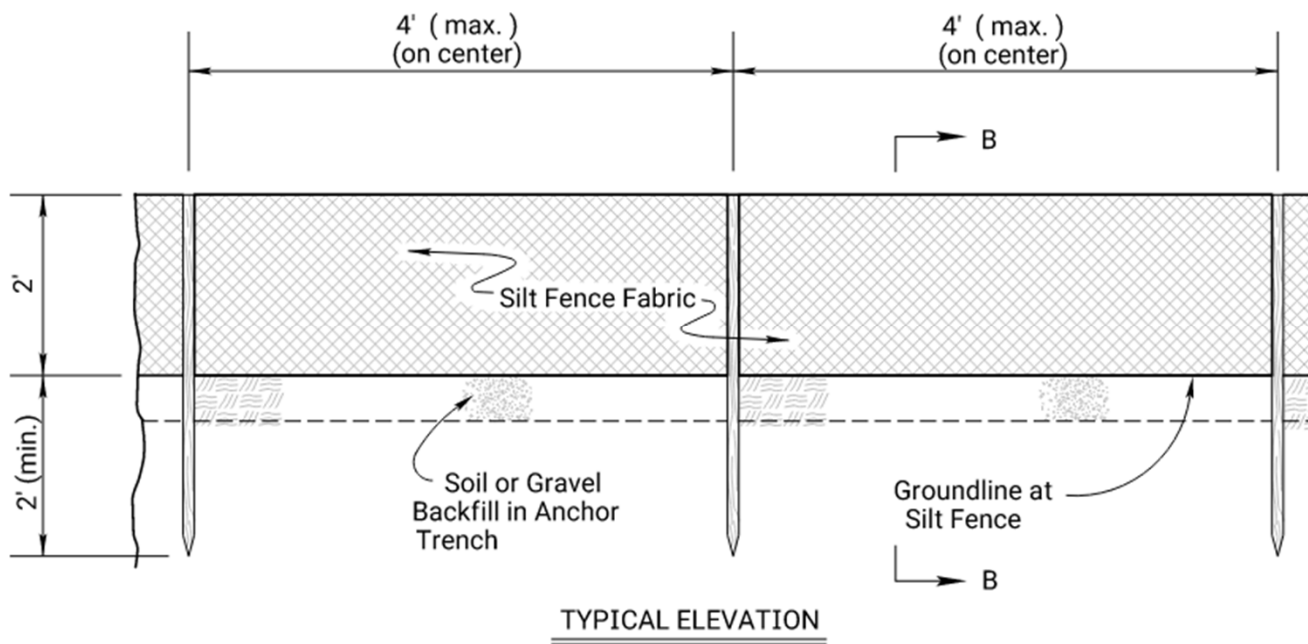
LA 852c



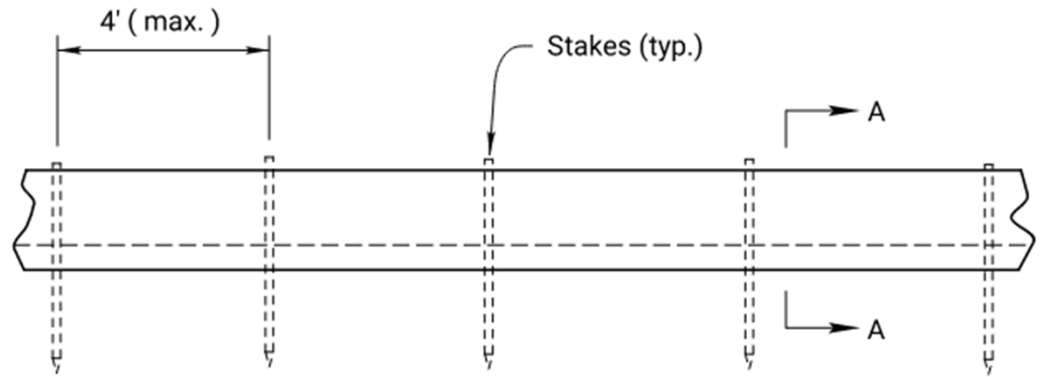
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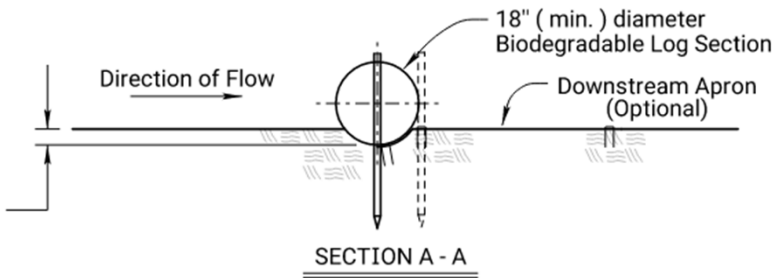
LA 852d



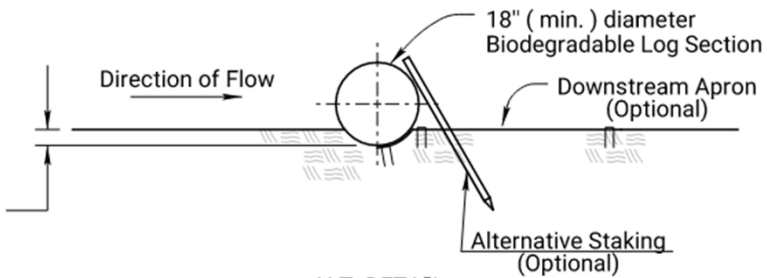
LA 852d



TYPICAL ELEVATION



SECTION A - A

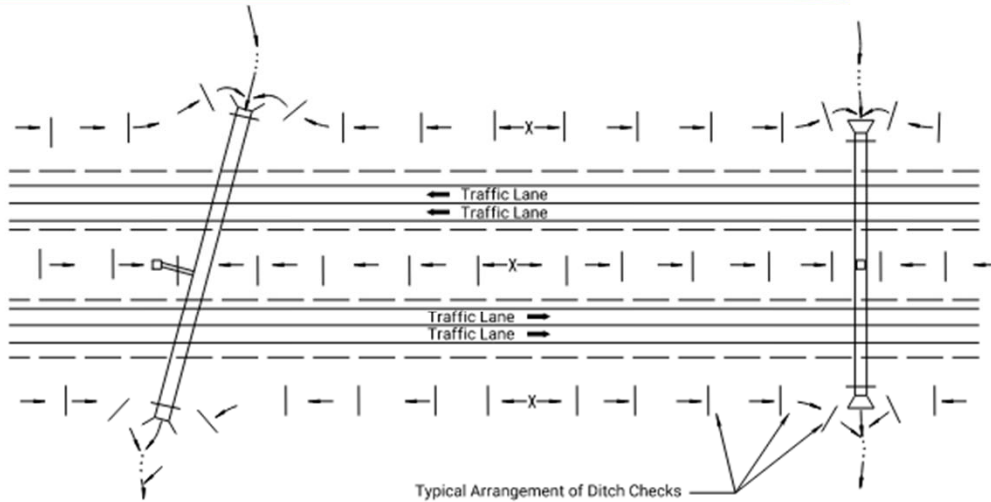


ALT. DETAIL
OPTIONAL

B



LA 852e



TYPICAL DITCH CHECK LAYOUT PLAN
NO SCALE

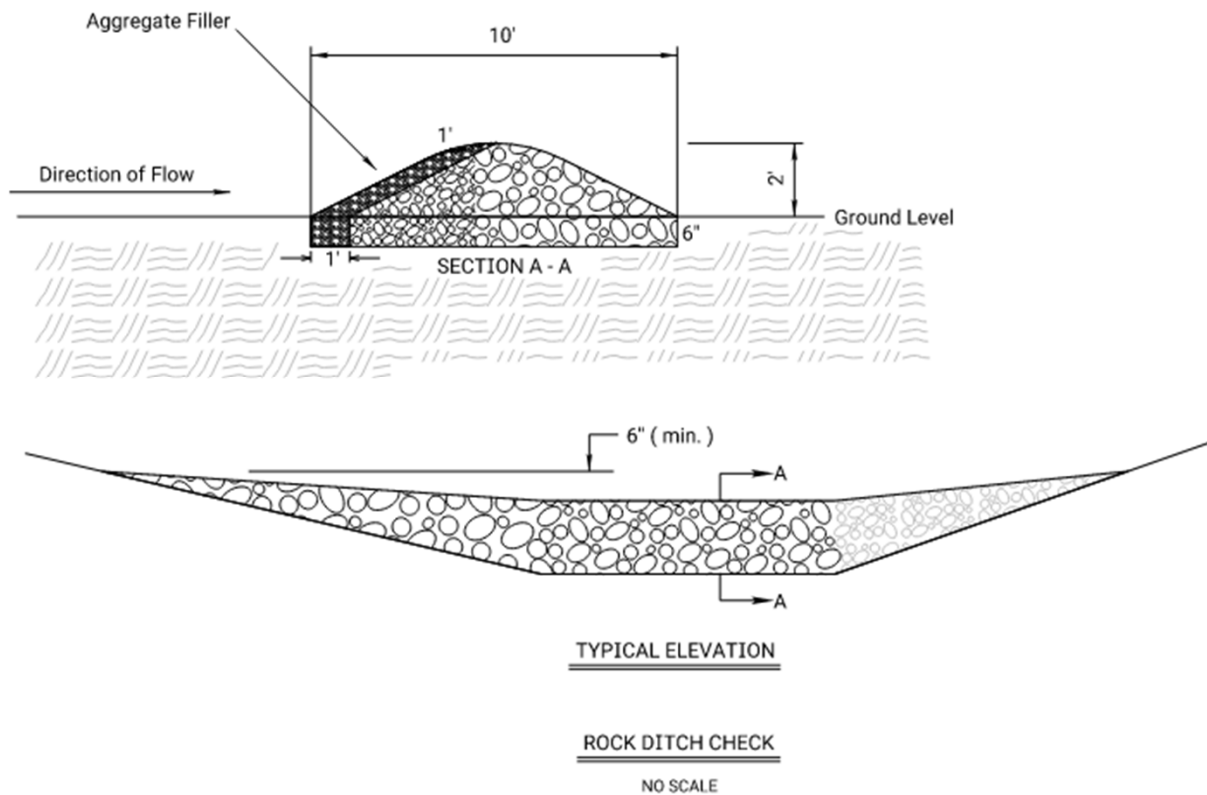
20" BIOLOG CHECK SPACING	
DITCH ϕ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	125
2.0	60
3.0	40
4.0	30
5.0	25

NOTE: Use this spacing for all
except Rock Ditch Checks.

18" FILTER SOCK CHECK SPACING	
DITCH ϕ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	110
2.0	55
3.0	35
4.0	25
5.0	20

NOTE: Use this spacing for all
except Rock Ditch Checks.

LA 852g

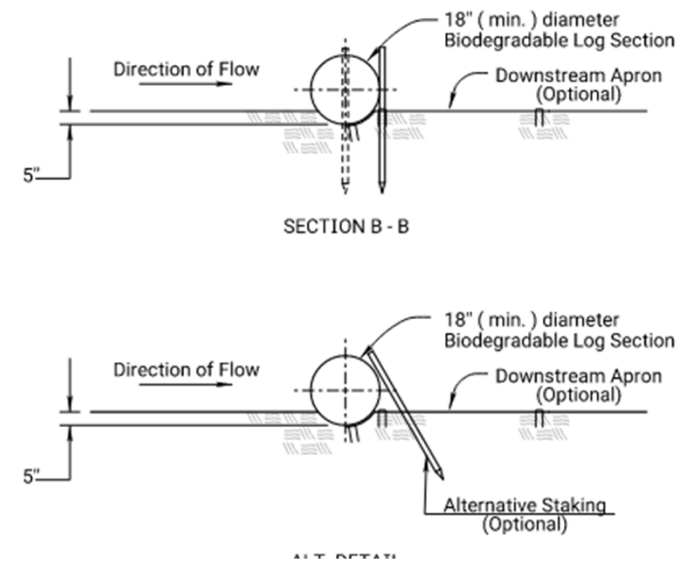
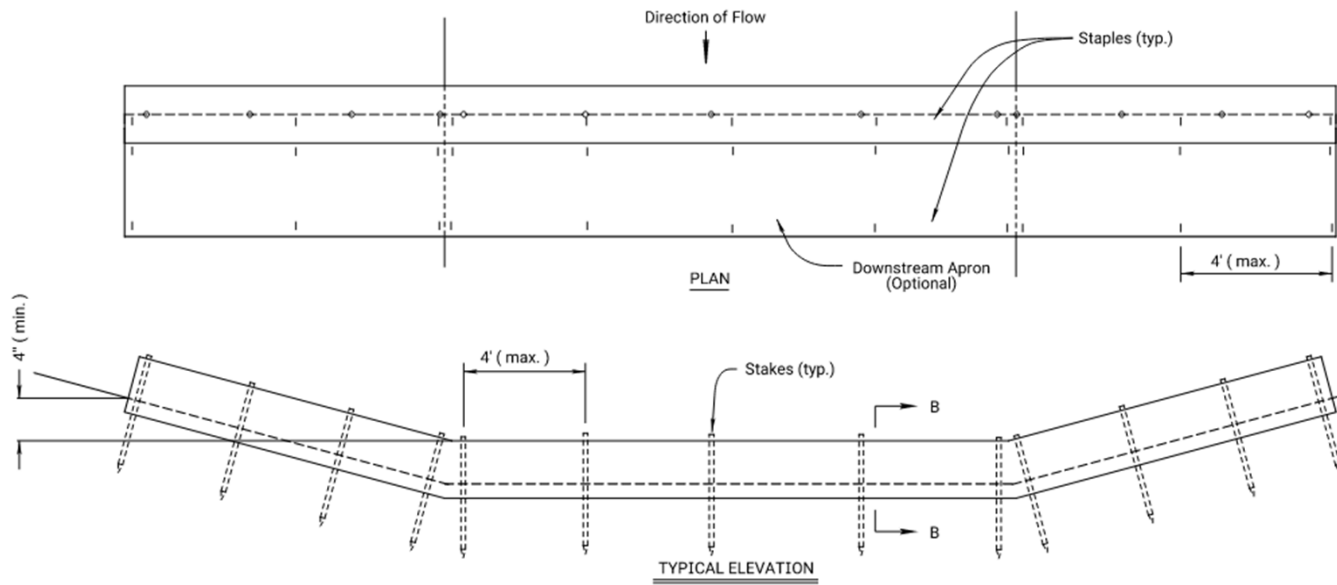


TEMPORARY ROCK DITCH CHECK SPACING	
DITCH \oslash SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

LA 852g



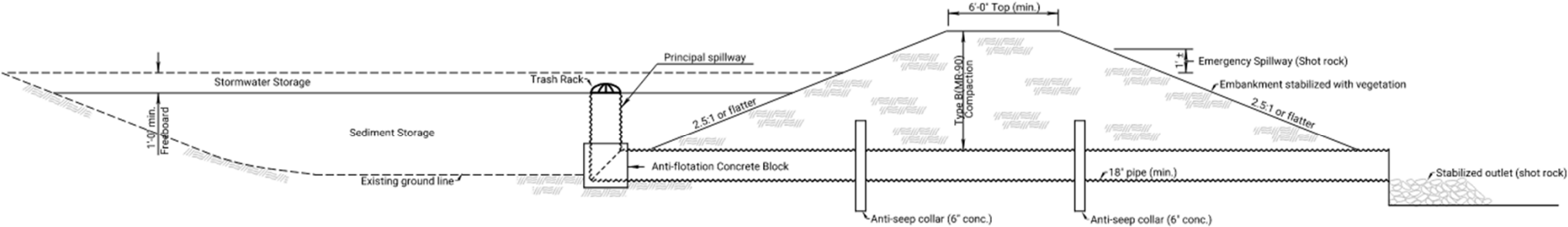
LA 852g



LA 852g



LA 852h



SEDIMENT STORAGE BASIN (ELEVATION)



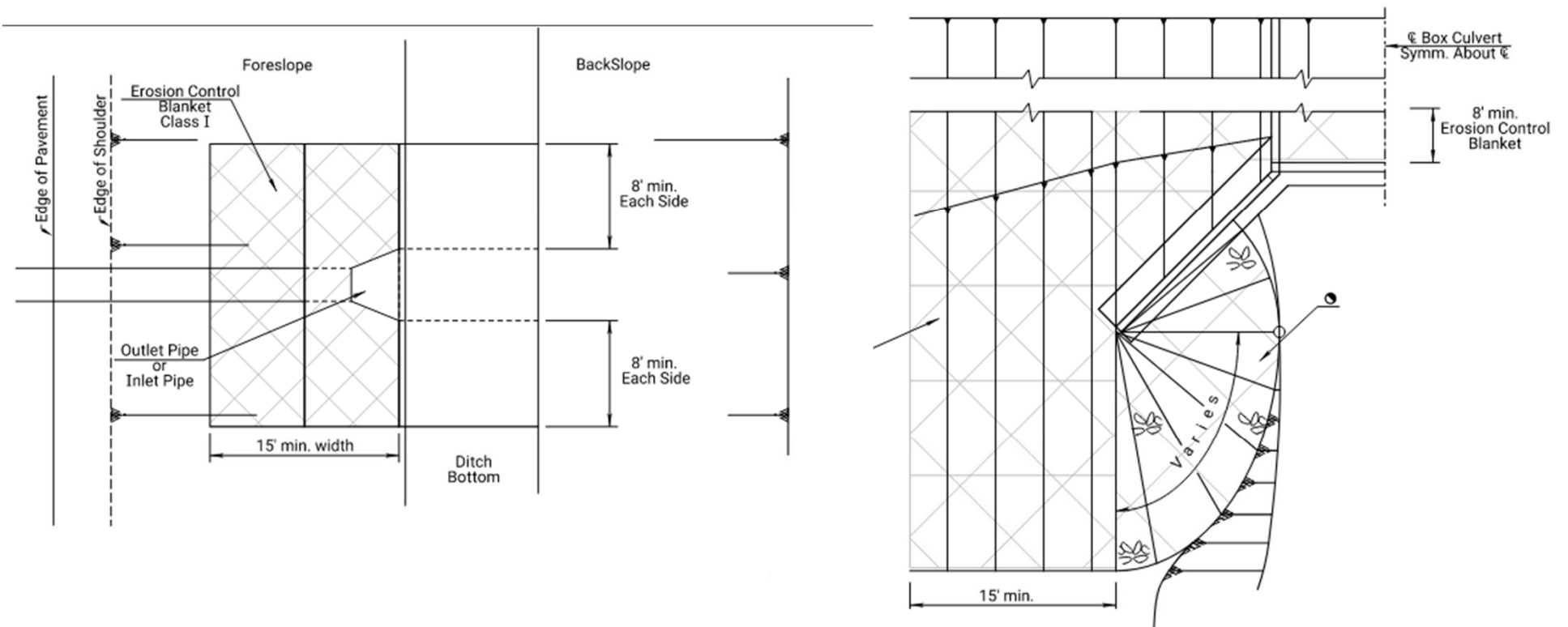


A 85





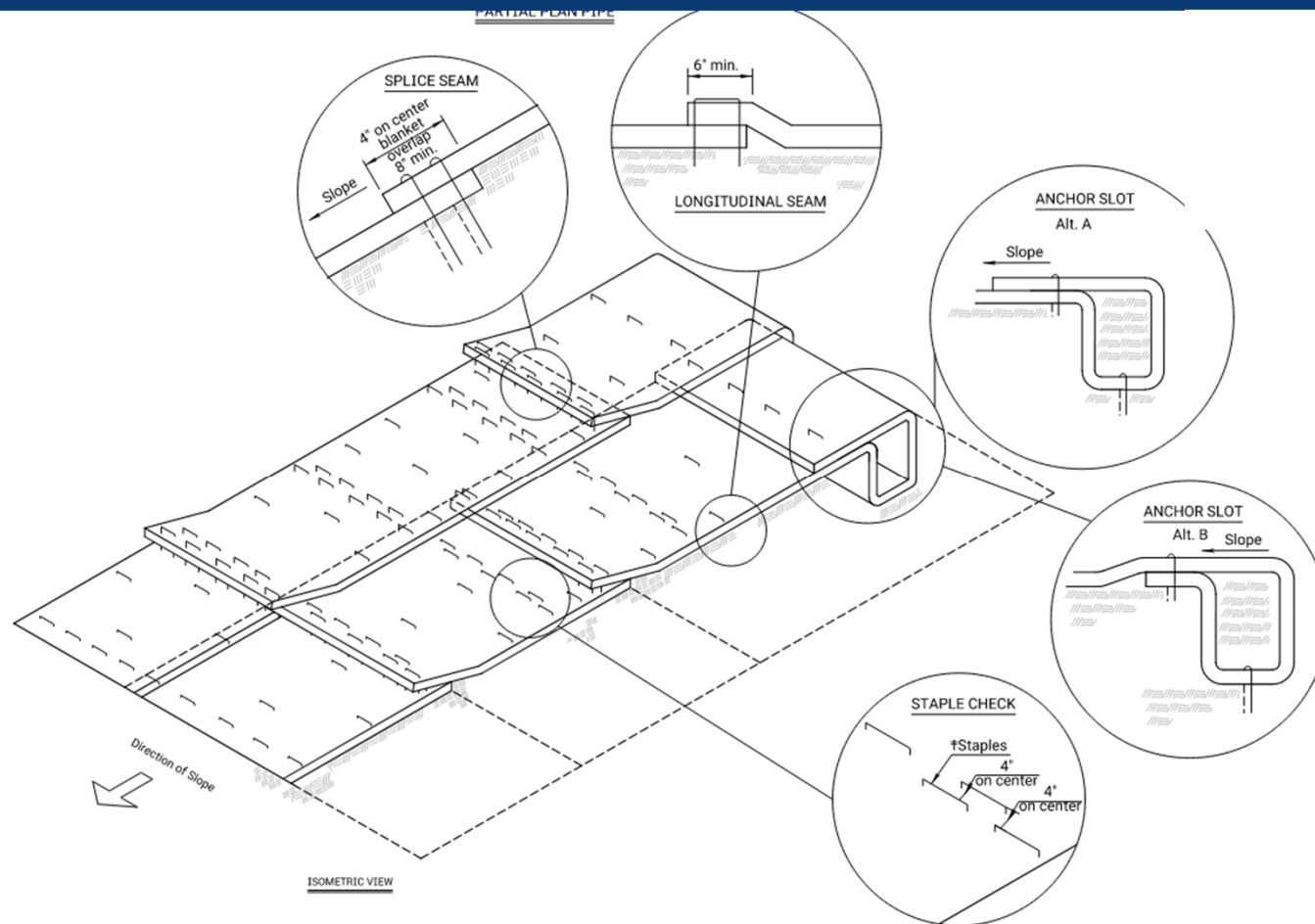
LA 855



LA 856



LA 855



LA 855



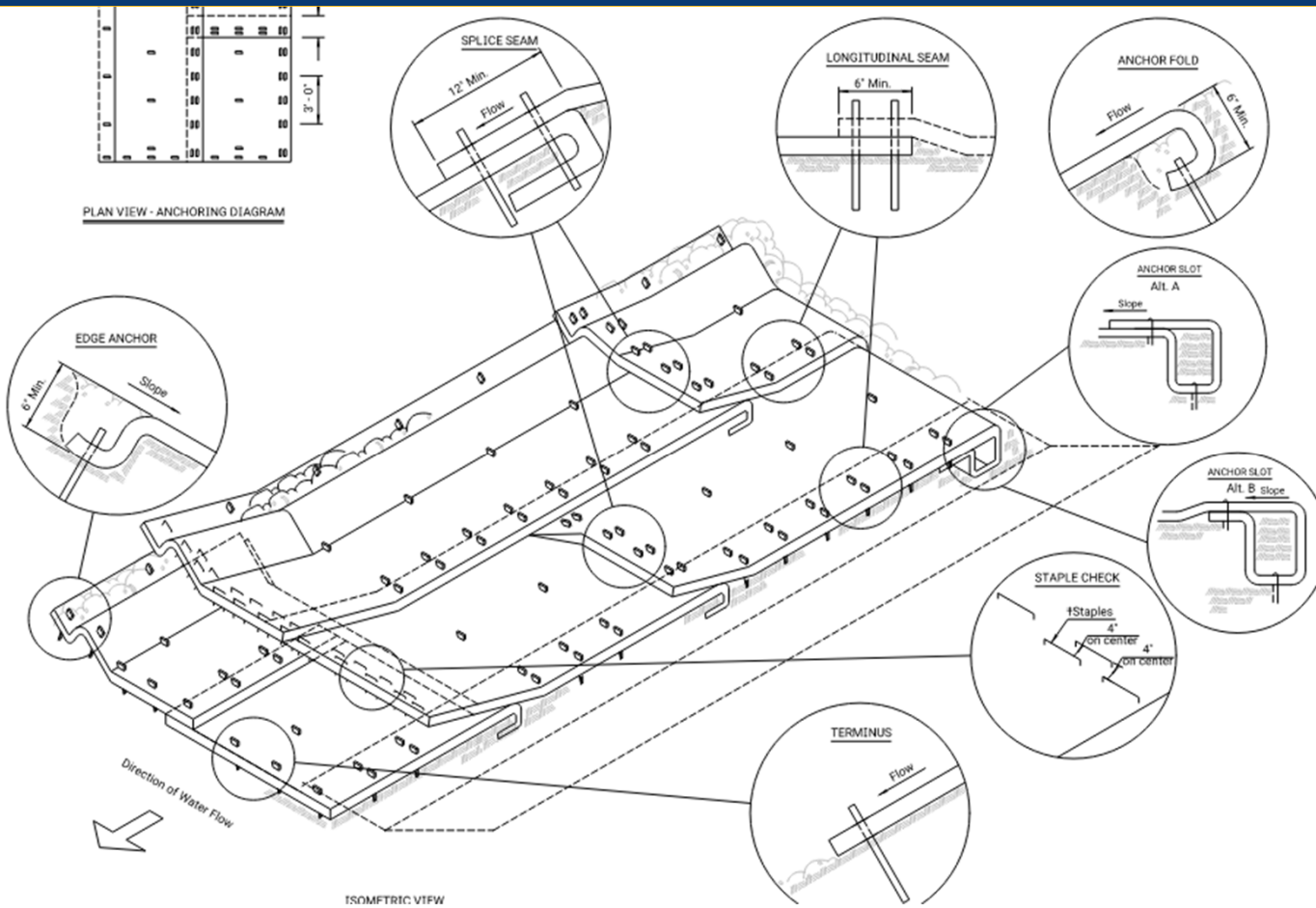
LA 855



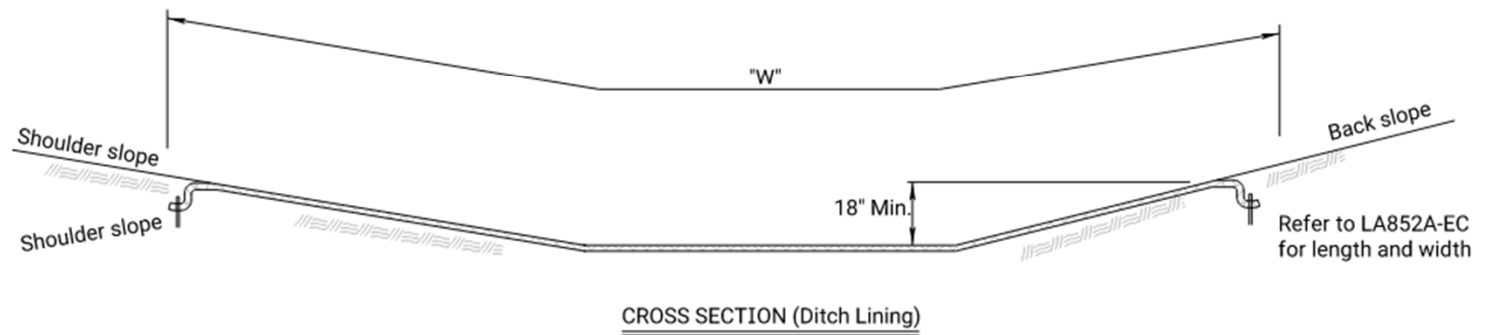
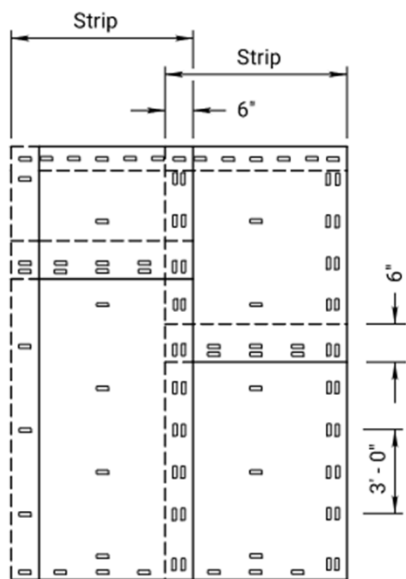
LA 855



LA 856



LA 856



LA 856

- Example

- You have a 10ft ditch bottom with a 4:1 backslope and a 6:1 foreslope. How wide should the Class II blanket be installed?

•	<u>Backslope(4:1)</u>		<u>Foreslope(6:1)</u>		<u>Ditch Bottom</u>	<u>Total Width</u>
•	4*1.5ft	+	6*1.5ft	+	10ft	= 25ft
•	(6ft)	+	(9ft)	+	10ft	= 25ft



LA 856



LA 860

NOTES:

- TREES WITH BROKEN LEADERS WILL NOT BE ACCEPTABLE.
- ALL TREES LARGER THAN 2" CALIPER SHALL BE GUYED IN ACCORDANCE WITH GUYING DETAIL, THIS SHEET.
- CONTRACTOR SHALL RETURN AFTER THE FOLLOWING PLANTING SEASON TO REMOVE THE STAKES AND WRAPPING.
- ROOT BALLS SHALL BE WRAPPED IN NATURAL OURLAP ONLY. PLASTIC OR SYNTHETIC OURLAP MATERIAL WILL NOT BE ACCEPTABLE.

WRAP TRUNK WITH APPROVED MATERIAL, STARTING AT BASE OF TRUNK AND WORKING UP WITH OVERLAPPING WRAPS. WRAP SHALL EXTEND TO APPROXIMATELY 2' ABOVE TREE TIE WIRES. SECURE WRAP WITH DEGRADABLE TWINE.

SECURE TIES TO STAKES AND TO TRUNK ABOVE FIRST SUBSTANTIAL BRANCH. USE NO. 12 GAUGE SOFT WIRE WITH RUBBER HOSE AROUND TRUNK OR COMMERCIAL TREE TIES.

3 STAKES; 2" X 2" WOOD POSTS OR STEEL FENCE POSTS

3 WOOD STAKES; 2" X 2" X 3' MIN.

4" RADIUS - 6" DEPTH SHREDDED OR CHIPPED WOOD MULCH

SET TOP OF ROOT BALL 2" ABOVE GROUND LINE

WATERING BASIN DIKE

12"

6' MIN.

2' MIN.

PLANTING SOIL MIX

FERTILIZER TABLETS

DIG PLANT PIT TO DEPTH NECESSARY TO PLACE TOP OF ROOT BALL 2" ABOVE GROUND LINE

NATURAL OURLAP TO REMAIN. LOOSEN OURLAP FROM TOP OF BALL. CUT TWINE AROUND STEM AND BALL TO PREVENT GIRDLING.

STAKING, FERTILIZING & MULCHING DECIDUOUS TREES 1 1/4" TO 2" CALIPER
NO SCALE

ALUMINUM OR STEEL EDGING: 1/4" X 4" MIN.

TURF AREA

ALUMINUM OR STEEL STAKES: 1/4" X 1 1/2" X 12" LONG; STAKES SET 4' ON CENTER

PLANT BED

120°

120°

120°

DEPTH

PLAN VIEW FOR 3-POINT STAKING AND GUYING
NO SCALE

PLANT BED EDGING DETAIL
NO SCALE

NOTE: ALL ASPECTS OF TREE PLANTING WITH GUYING DETAIL SHALL REMAIN THE SAME AS WITH THE STAKING DETAIL.

NOTE: 1-1" X 15" MIN. VINYL IMPREGNATED WOVEN NYLON TIE PER TREE. OTHER TREE TIE METHODS AND MATERIALS MAY BE USED IF APPROVED BY THE ENGINEER. TIE STAKE TO TRUNK ABOVE FIRST SUBSTANTIAL BRANCH.

TREE TIE DETAIL

3-8" STEEL STAPLES

30"

SET TOP OF ROOT BALL 2" ABOVE GROUND LINE

2" X 2" WOOD STAKE

FERTILIZER TABLETS

WATERING BASIN DIKE

4" RADIUS - 6" DEPTH SHREDDED OR CHIPPED WOOD MULCH

12"

2' MIN.

PLANTING SOIL MIX

DIG PLANT PIT TO DEPTH NECESSARY TO PLACE TOP OF ROOT BALL 2" ABOVE GROUND LINE

NATURAL OURLAP TO REMAIN. LOOSEN OURLAP FROM TOP OF BALL. CUT TWINE AROUND STEM AND BALL TO PREVENT GIRDLING.

STAKING, FERTILIZING & MULCHING DECIDUOUS TREES LESS THAN 1 1/4" CALIPER
NO SCALE

SPREAD MULCH AFTER INSTALLATION OF WEED CONT. FABRIC.

INSTALLATION OF WEED CONTROL FABRIC DETAIL
NO SCALE

CONTAINER GROWN: SET CONTAINER SOIL LINE 2" ABOVE GROUND LINE

WATERING BASIN DIKE

4" TYP.

4" TYP.

10" TYP.

30"

4" SHREDDED OR CHIPPED WOOD MULCH

WEED CONTROL FABRIC

PEAT MOSS SHALL BE INCORPORATED INTO CULTIVATED AREA.

SHRUB PLANTING DETAIL
NO SCALE

SPACING CHART

SPACING	"D" ROW	"A" NUMBER OF PLANTS	AREA
6" O.C.	5.2'	4.61	1 SQ. FT.
12" O.C.	10.4'	1.15	1 SQ. FT.
18" O.C.	15.6'	0.51	1 SQ. FT.
24" O.C.	20.8'	0.29	1 SQ. FT.
30" O.C.	26.0'	0.16	1 SQ. FT.
36" O.C.	31.2'	0.10	1 SQ. FT.

AREAS OF OVERLAP

POTTED VINES & GROUND COVER PLANTS SHALL BE AT LEAST ONE YEAR OLD AND SHALL HAVE BEEN GROWN IN POTS LONG ENOUGH TO INSURE SUFFICIENT ROOT GROWTH TO HOLD SOIL IN PLACE AND RETAIN THE ORIGINAL SHAPE WHEN REMOVED FROM THE POT. VINES SHALL HAVE A MINIMUM OF 4 RUNNERS, 12" LONG.

STATE KANSAS
PROJECT NO. Project No.
YEAR 20XX
SHEET NO. 0
TOTAL SHEETS 0

5/20/99 Revised Standard
NO. REVISIONS
W.C. FOR
DATE BY APP

KANSAS DEPARTMENT OF TRANSPORTATION

ROADSIDE IMPROVEMENT PLANTING DETAILS

LA860

DESIGN RICHARD B. ROSS
DESIGN RICHARD B. ROSS
DATE 5/20/99
APP RICHARD B. ROSS
DATE 5/20/99

Thank You

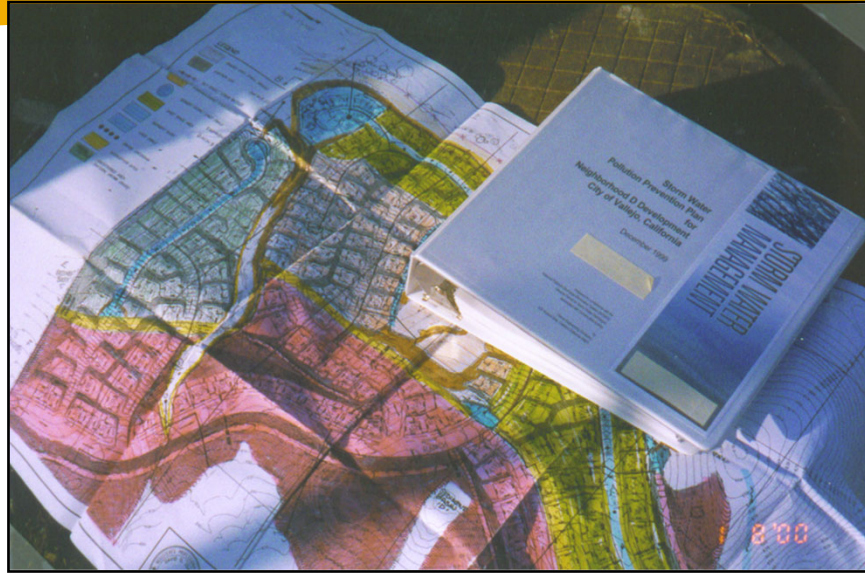
Mervin Lare
Stormwater Compliance Engineer

Email: Mervin.Lare@ks.gov

Cell: 785-250-4793

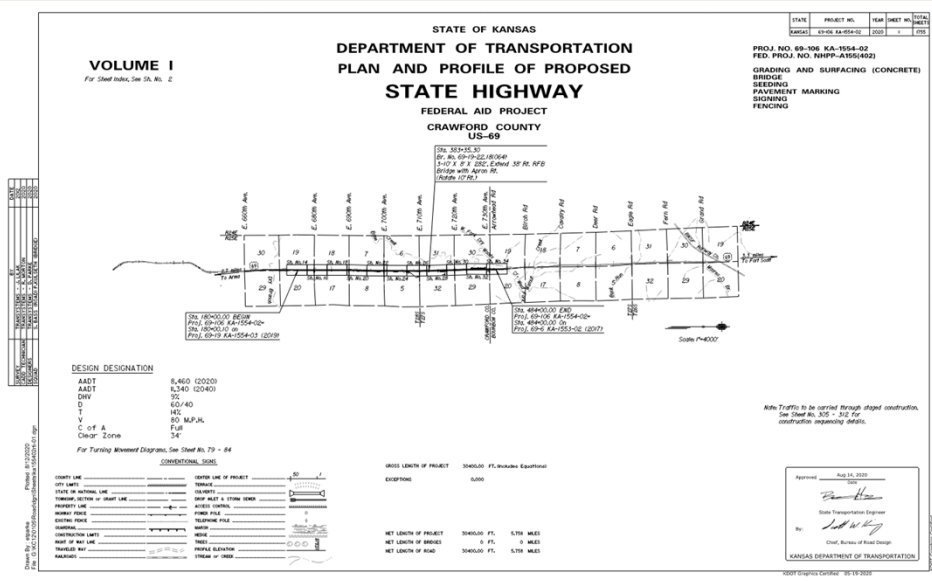


The SWPPP Design and Approval Process



1

The SWPPP Design and Approval Process



2

The SWPPP Design and Approval Process

NOTICE OF INTENT (NOI)
For Authorization to Discharge Stormwater Runoff from Construction Activities
In accordance with the Kansas Water Pollution Control General Permit
Under the National Pollutant Discharge Elimination System (NPDES)

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form requests authorization for coverage under the Kansas Water Pollution Control general permit, or KIDHE issued successor permits, issued for stormwater runoff from construction activities in the State of Kansas. Becoming a permittee obligates the discharger to comply with the terms and conditions of the general permit. A complete request for Authorization for coverage under the general permit must be submitted or the request will not be processed. KIDHE will notify owners or operators whose Notice of Intent (NOI) and supporting documentation for Authorization of stormwater runoff associated with construction activities are incomplete, deficient, or denied.

I. OWNER OR OPERATOR ADDRESS, BILLING, CONTACT & RECORDS LOCATION INFORMATION

Owner/Operator: KDOT Environmental Services Section	Mailing Address: 700 SW HARRISON ST 14TH FLOOR, ENV SERVICES TOPEKA, KS 66603
Company Name: Kansas Department of Transportation	City, State Zip: TOPEKA, KS 66603
Phone: (785) 296-5297	E-mail: mark.wendt@ks.gov

Contact Name: Mark Wendt	Mailing Address: 700 SW HARRISON ST 14TH FLOOR, ENV SERVICES TOPEKA, KS 66603
Company Name: Kansas Department of Transportation	City, State Zip: TOPEKA, KS 66603
Phone: (785) 296-5297	E-mail: mark.wendt@ks.gov

PERMIT FEE BILLING INFORMATION

Billing Contact: Mark Wendt	Billing Address: 700 SW HARRISON ST 14TH FLOOR, ENV SERVICES TOPEKA, KS 66603
Phone: (785) 296-5297	E-mail: mark.wendt@ks.gov

II. SITE INFORMATION


Project Name: I-22 K.S. 5722-01
Street Address: Bridge #014 Replacement along K-7 over Mill Creek located 12.45 miles northwest of the west U.S. White Cloud, KS 66904
County: Doniphan

Legal Site Description:
Qtr: SW Qtr; NW Qtr; NE Section 26, Township: 01S Range: 19E
Decimal Degree Latitude: 39.942200 Decimal Degree Longitude: -95.253800

Submission Received: 8/9/2023	Submission Number: KPW-508Y-3W3M1Q	AUTHORIZED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Reviewer: <i>Greg D. Hook</i>	Is Authorization Conditional: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <small>(If yes, see Section V for conditions)</small>	
Larry Hook:	Are there any Considerations: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> <small>(If yes, see Section V for considerations)</small>	
Authorized By: <i>Joe Steiner</i>	KS Permit No.: S-MO24-0002	
Secretary, Kansas Department of Health and Environment	Federal Permit No.: KSR121732	
Issued: September 11, 2023		

KIDHE Watermark
KSR121732-11.0
Issued: December 11, 2023

Effective: August 1, 2022 Notice of Intent (NOI) for Discharge of Stormwater Runoff from Construction Activities Page 1 of 4



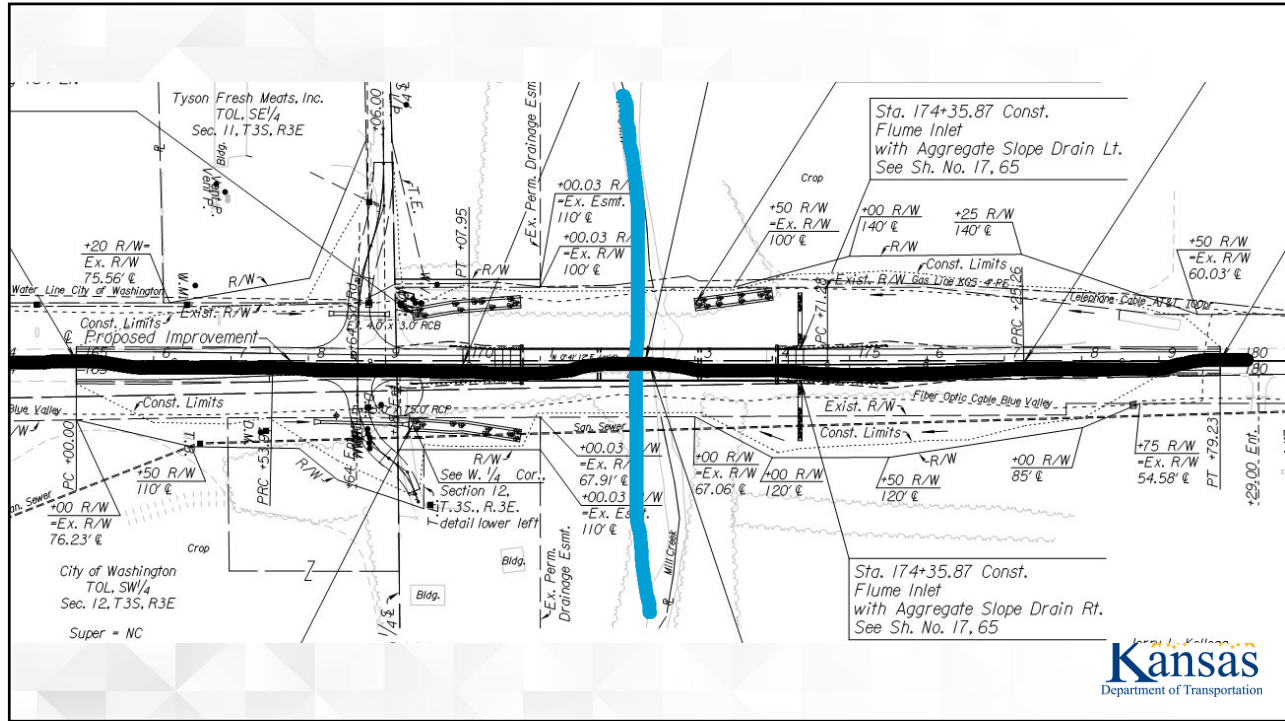
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Local Contact

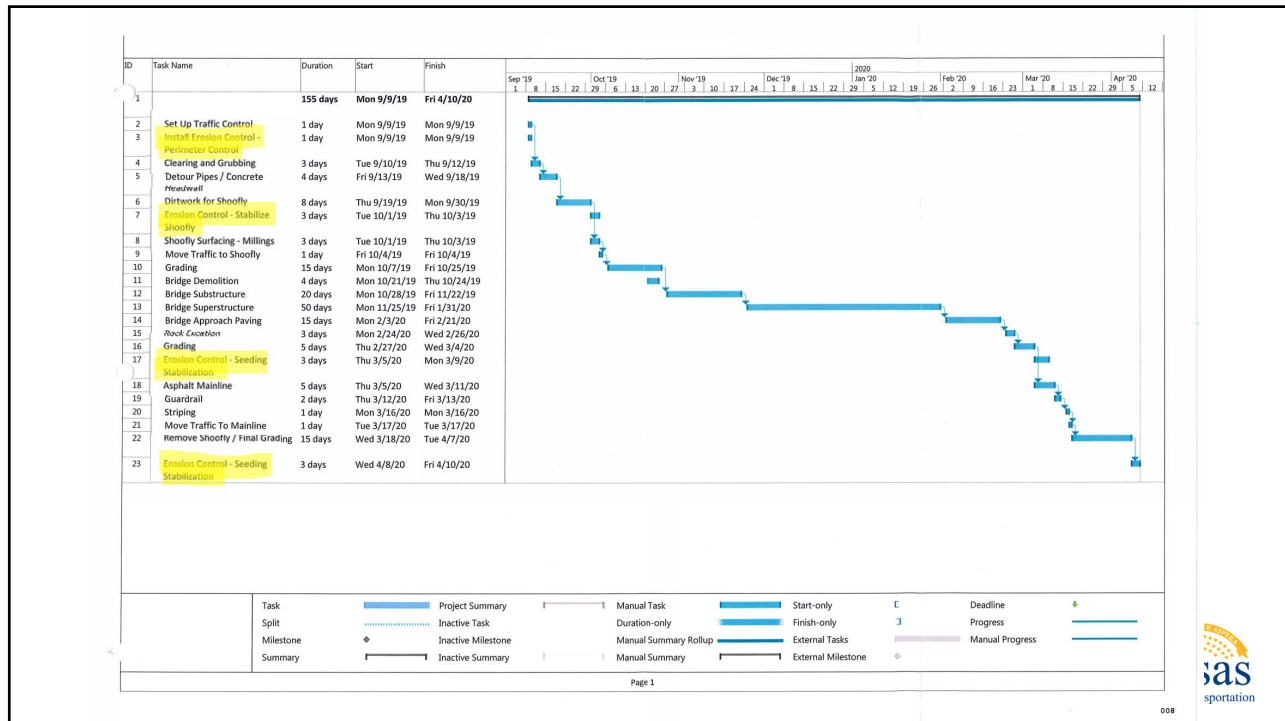
- Verify compliance with Local requirements
- Who did you contact?
- Local Permits?



4



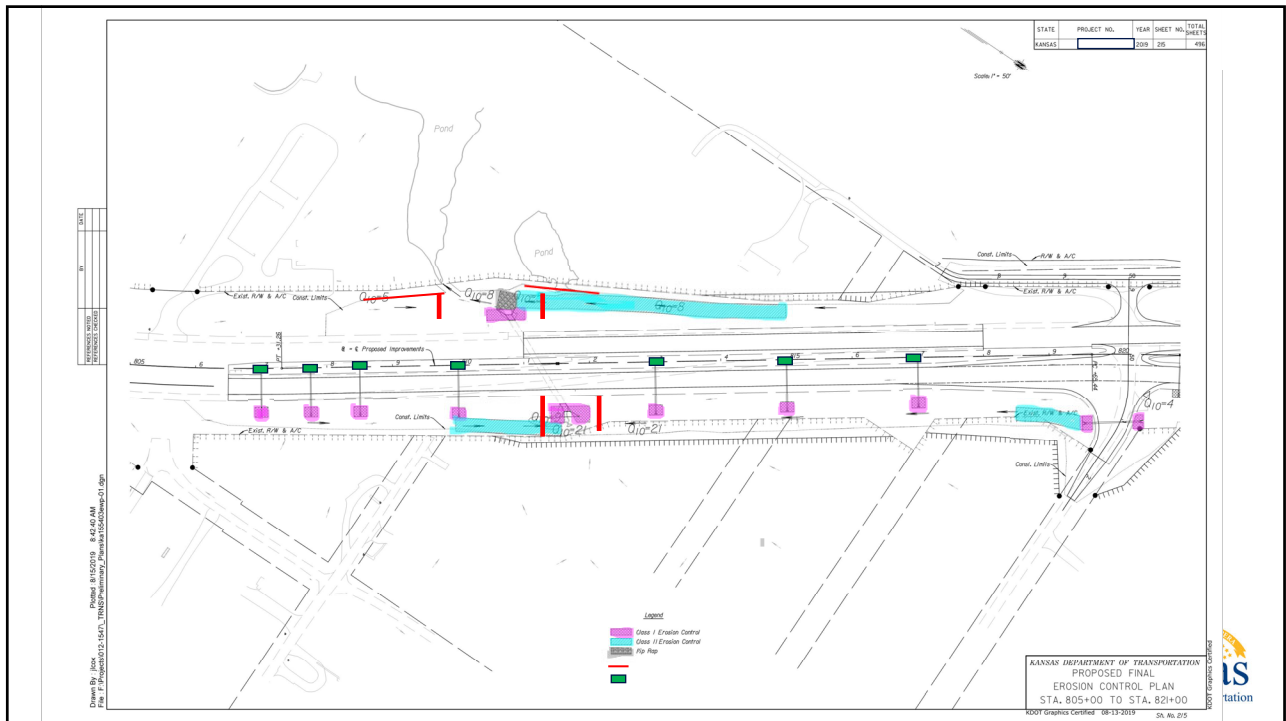
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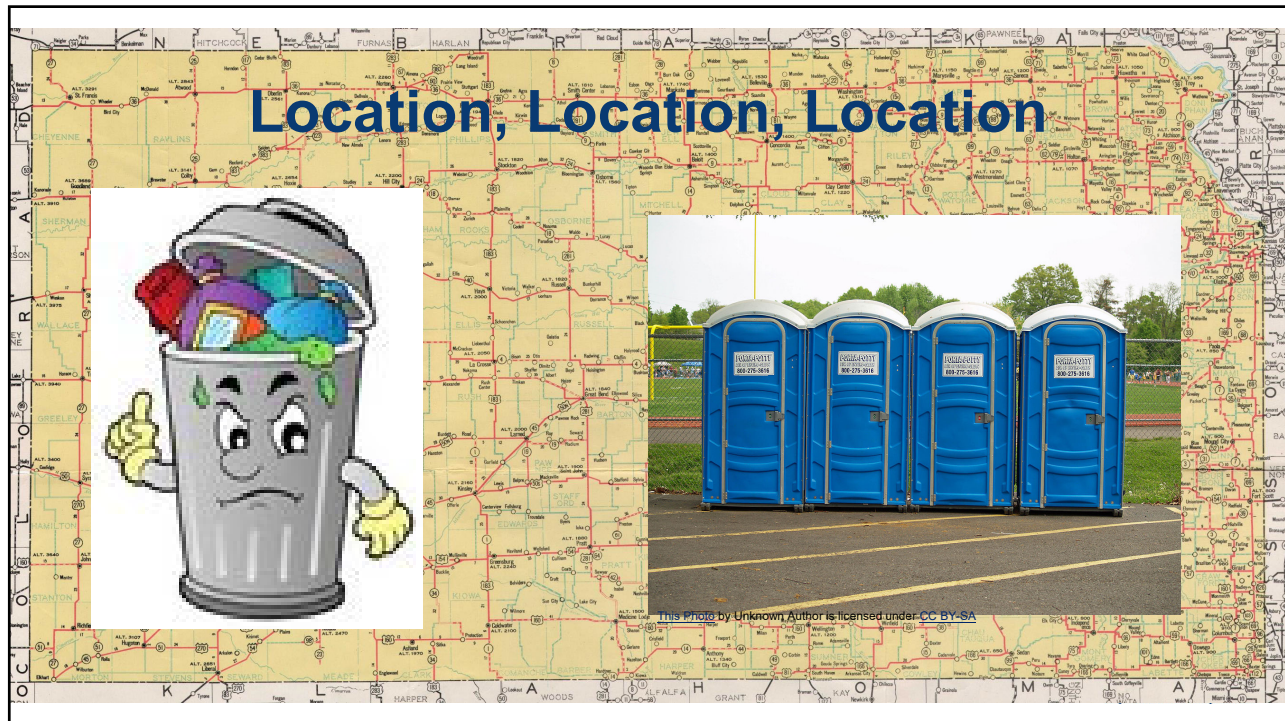
8

BMP Narrative

1. Project and Site Description
 - a. This project consists of grading and seeding located at Sneider's Inc. Office site, off Broad St near Overhill, KS. The total area of the site is 12.32 acres with a total disturbed area of 7.38 acres.
 - b. This project lies within the Arkansas River basin and stormwater runoff drains into the straight right of way. No stormwater drains onto this project due to the railroad to the east and the Wichita Valley Center Floodway dike to the west. Both features converge to the south of the project.
 - c. Soil on this project consists of a brown to dark brown clay, silt, sand, and gravel. Additional soil information can be found in the geology report in appendix 55.
2. Sequence of Construction Activities
 - a. This project is less than 750,000 sqft and will be broken up into 4 parts: 1 Entrance Area, 2 Endangered Species Pond, 3 Flood Area, and 4 Grading and Stockpile Area. The project will be constructed as follows: 1, 2, 3, and 4. Any changes to his order will be documented on the swap revision sheet.
 - b. Project documents do not identify any areas as being steep sloped (40% or greater). If steep slopes are encountered on this project, they will be handled according to 901.3b paragraph 13.
 - c. 1 Entrance Area
 - i. The Entrance Area consists of stripping off the top 5 foot of soil then constructing a 24 ft wide 6 foot tall fill.
 - ii. A construction entrance consisting of clean aggregate fill, 50ft long, 24 ft wide, will be placed as indicated on the site map. This entrance will remain in place for the duration of the project. Additional rock will be placed as needed to prevent tracking onto the existing roadway.
 - iii. Before striping of topsoil, silt fence will be placed along the construction limits near the east and west pond to prevent any soil runoff. Care will be taken to make sure the silt fence follows the same contour line to prevent failure.
 - iv. Within 24 hours of completing the grading work stabilization practices will begin. Class I erosion control blanket will be placed along the edge of each pond, the remainder of the area will be seeded, mulched and stony tacked. Temporary seed will be placed if outside of the permanent seeding zones.
 - d. Endangered Species Pond
 - i. The endangered species pond area adds 6 ft of fill in the area. Part of that fill will be used into the pond.
 - ii. Before construction starts a silt curtain will be placed as indicated on the site map to isolate the work area from the rest of the pond.
 - iii. Because of the sensitivity of the pond, stabilization will begin the same day as the grading finishes. Class 1 mat will be placed in the entire area. The silt curtain will be removed once the mat is placed.
3. Flood Area
 - a. This area consists of building a drainage area that will flow through an inlet into the adjacent pond. Construction will begin at the downstream side.
 - i. The inlet will be protected by 20" lining.
 - ii. Ditch checks will be placed throughout the area as the drainage is being built.
 - iii. Once complete class II mat will be placed in the bottom of the ditch and the rest will be stabilized with mulch and stony tacked.
- 4 Grading Area and Stockpiles
 - i. The graded area is to be leveled out and used for stockpiles. Perimeter controls will be placed on the south and east locations.
 - ii. Topsoil piles will be seeded and mulched.
 - iii. Structural soil piles will have perimeter controls placed on the downstream side of the piles to provide access.
 - iv. Once completed the area will be stabilized.
3. Other Practices
 - a. The plan complies with local requirements. The environmental packet is included in the appendix. John Doe was the local contact.
 - b. Dust Control: The project will be monitored daily for dust issues. A water truck will be on site and used as needed to keep dust at a minimum.
 - c. A broom will be used at least once per day to eliminate any offsite tracking the construction entrance does not prevent.
 - d. If construction activities cease before an area is complete and won't re-start within 14 days (7 days for steep slope areas) the area will be temporarily seeded and mulch.
 - e. During an inspection, if an area appears inactive, it will be made a deficiency until area is properly stabilized or meaningful work resumes.
 - f. All BMPs will be installed according to Section 902 of the standard specifications and KDOT standard Landscape sheets. Specifications and Landscape sheets can be found in the appendix. Other BMPs not called out in specifications but which may be used during the life of the project are described in the appendix.
 - g. No sedimentation basins are required on this project.
 - h. The construction site will be monitored for trash daily. All trash will be placed in a covered dumpster. The location for the dumpster is marked on the site map.
 - i. Portable toilet locations are marked on the site map.
 - j. Small petroleum products will be stored in a weatherproof structure. Larger tanks will have a berm built around them that can contain the tank capacity. Any captured stormwater will be pumped through a filter system. Tank and storage locations are marked on the site map.



9



10



11

Items to Minimize

- Exposed soil
- Steep Slopes
- Dust Generation
- Off-site Tracking
- Discharge of Pollutants via Washing
- Pollutants from Spills and Leaks
- Exposure to:
 - Waste
 - Trash
 - Pesticides
 - Herbicides
 - Detergents
 - Sanitary Waste



12

Contractor Forms

- Request for Joint Owner/Operator(RJOO)
- Current Contractor Certification
- Form 246
- Form 247
- NPDES Permit
- Specifications
- Landscape Standard Sheets
- Additional Referenced Documents



13

KDOT Approval

- RJOO
- Approval of Storm Water Pollution Prevention Plan(Form 219)
- Checklist for Contractors SWPPP (Form 248)
- Current Area Engineer and Inspector Certifications



14

SWPPP Forms and Supporting Documents

**Kansas Department of Transportation
Storm Water Pollution Prevention Plan
Inspection and Maintenance Report**

Project #: 10-23 KA-899-01 Permit #: ks0000
 Area / Metro Engineer: _____ Water Pollution Control Manager: _____
 Date of Last Significant Rain Event: 1/1/2018 Date of Last Inspection: 12/25/2017
 Inspection Type: _____ Inspection Date: 1/1/2018
 (optional) Report #: 7

CONTENTS

FORM ID #	DESCRIPTION	REQUIRED?
247A	General Issues / Housekeeping	YES
247B	Disturbed Areas / Site Erosion	YES
247C	Sediment Control and Other Structural BMPs	YES

FORM ID #	DESCRIPTION	REQUIRED?
247D	Rainfall Log	YES
247E	BMP Deficiencies	YES


INSPECTOR CERTIFICATION STATEMENT

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


TITLE	PRINT NAME	CERT ID #	EXP. DATE	SIGNATURE	DATE
KDOT INSP.	_____	_____	_____	_____	_____
CONT. INSP.	_____	_____	_____	_____	_____
AREA ENG	_____	_____	_____	_____	_____

*WPCM Signature acknowledges awareness of all deficiencies noted. All documented deficiencies are required to be remedied within 7 days of this inspection unless determined to be infeasible by the Stormwater Compliance Engineer. Failure to do so will result in the assessment of stormwater compliance discontinue.

FORM 247
Rev. 2018



1



Environmental Permit Status

KDOT Project No.: 10-23 KA-3634-03
 County: Douglas
 Web Link: _____
 Date: 5/28/2024


	YES	NO
Mitigation measures required for project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Archeological Salvage	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural/Historic Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wildlife	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Permitting Agency and Permit Type	Permit Required		Notes:
	YES	NO	
Corps of Engineers (COE) Section 404 Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	published when received
KS Dept. of Ag. Division of Water Resources (DWR) Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
National Pollutant Discharge Elimination System (NPDES)- Annual Renewal Date <u>8/22/2025</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
KDWPT Threatened and Endangered Species Action Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other- Local Floodplain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other-	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Mitigation Measures and Special Provisions:

None

Signature of ESS Representative



2

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Under the National Pollutant Discharge Elimination System (NPDES)

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form requests authorization for coverage under the Kansas Water Pollution Control general permit, or KDHE issued successor permits, issued for stormwater runoff from construction activities in the State of Kansas. Becoming a permittee obligates the discharger to comply with the terms and conditions of the general permit. A complete request for Authorization for coverage under the general permit must be submitted or the request will not be processed. KDHE will notify owners or operators whose Notice of Intent (NOI) and supporting documentation for Authorization of stormwater runoff associated with construction activities are incomplete, deficient, or denied.

I. OWNER OR OPERATOR ADDRESS, BILLING, CONTACT & RECORDS LOCATION INFORMATION

Owner/Operator	KDOT Environmental Services Section	Mailing Address:	700 SW HARRISON ST ESOB - 14TH FLOOR, ENVIRONMENTAL SERVICES SECTION TOPEKA, KS 66603
Company Name:	KDOT- Kansas Department of Transportation	City, State Zip:	TOPEKA, KS 66603
Phone:		Email:	

Contact Name:		Mailing Address:	700 SW HARRISON ST ESOB-14TH FLOOR ENVIRONMENTAL SERVICE SECTION TOPEKA, KS 66603
Company Name:	KDOT	City, State Zip:	TOPEKA, KS 66603
Phone:		E-mail:	

PERMIT FEE BILLING INFORMATION

Billing Contact:		Billing Address:	700 SW HARRISON ST ESOB-14TH FLOOR ENVIRONMENTAL SERVICE SECTION TOPEKA, KS 66603
Phone:		E-mail:	

II. SITE INFORMATION

Project Name: 10-23 3634-03
Street Address: US-40: Junction K-10/US-40 thence Southeast to Junction K-10/US-59/US-40 Iowa Street, K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to Junction K-10/US-40 US-40: Junction K-10/US-40 thence Southeast to Junction K-10/US-59/US-40 Iowa Street, K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to Junction K-10/US-40 Lawrence, KS 66044
County: Douglas

Decimal Degrees Latitude: 38.935359 **Decimal Degrees Longitude:** -95.306661

Submission Received: 1/24/2024	Submission Number: 1HQ0-R6TK-KFBET	AUTHORIZED:	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Reviewer:	<i>Larry Hook</i>	Is Authorization Conditional	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Authorized By:	<i>Janice Steiner</i>	Are there any Considerations	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

Secretary, Kansas Department of Health and Environment
Issued: February 22, 2024

KS Permit No.: S-KS31-0549
Federal Permit No.: KSR122106

KEIMS Watermark
KSR122106 v1.0
Page 1 of 4
Issued On: 02/22/2024
Expires On: 07/31/2027

Kansas
Department of Transportation

Effective: August 1, 2022 Notice of Intent (NOI) for Discharge of Stormwater Runoff from Construction Activities Page 1 of 4

KS Permit No.: S-KS31-0549
Federal Permit No.: KSR 122 106

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Project Name: 10-23 3634-03 Notice of Intent (NOI)

B. Existing Conditions/Uses

- Is any part of the project located on Indian Country Land? **No**
- If stormwater runoff drains to or through a Municipal Separate Storm sewer System (MS4): MS4 Name: **No**
- Name of the first receiving water, stream, or lake **Wakarusa River, River Basin LR - LOWER REPUBLICAN**
- Are contaminated soils present on the site or is there groundwater contamination located within the site boundary? **No**
- Are there any contaminated soils that will be disturbed or any contaminated groundwater that will be pumped by the proposed construction activity? **No**
- Are there any surface water intakes for public drinking water supplies located within 1/2 mile of the site discharge points? **No**
- Are there any known historical or archeological sites present within the site boundary or any historic structures located within 1000 feet of the project site? **No**
Note: Include documentation of project-specific coordination with the Kansas Historical Society in making this determination.
- Is any threatened or endangered species habitat located within the site boundary or in the receiving water body? **Yes**
Note: Include documentation of project-specific coordination with the Kansas Department of Wildlife, Parks & Tourism in making this determination.
- Will the project impact the line or grade of a stream or does it include dredge or fill of a potential jurisdictional water body or wetlands? **Yes**
Include documentation of project-specific coordination with the US Army Corps of Engineers and/or the Kansas Department of Agriculture, Division of Water Resources in making this determination.
- Are any Critical Water Quality Management Areas, Special Aquatic Life Use Waters, or Outstanding National Resource Waters located within 1/2 mile of the facility boundary? **No**

C. Project Description

- Project Description:**
US-40: Junction K-10/US-40 thence southeast to junction K-10/US-59/US-40 Iowa Street, K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to junction K-10/US-40.
Does this NOI include all proposed soil disturbing activities associated with the entire common plan of development? **Yes**
- Anticipated project Start Date: **June 19, 2024** and Completion Date: **December 1, 2027**
- Estimated total area to be disturbed: **372.00 Acres**
- Total area of the site: **428.00 Acres**
- Do you plan to disturb ten or more acres that are within a common drainage area? **Yes**
Will a sedimentation basin be installed in that drainage area? **Yes**
(Attach design calculations for each sedimentation basin.) If a sediment basin is not feasible, on a separate sheet describe similarly effective erosion and sediment control measures to be implemented in lieu of a sedimentation basin.

D. Maps

KEIMS Watermark
KSR122106 v1.0
Page 2 of 4
Issued On: 02/22/2024
Expires On: 07/31/2027

Kansas
Department of Transportation

Effective: August 1, 2022 Notice of Intent (NOI) for Discharge of Stormwater Runoff from Construction Activities Page 2 of 4

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Project Name: 10-23 3634-03 Notice of Intent (NOI)

Include an area map showing the outline of the construction site and the topographic features of the area at least one mile beyond the project site.

E. Erosion Control Plan and Best Management Practices

- 1) Provide a summary of the sequence of major soil disturbing activities including installation of the corresponding stormwater management and pollution control features.
See attachment
- 2) Provide one or more site plans covering the anticipated soil disturbing activities showing the limits of disturbance, the existing and proposed elevation contours, the types and locations of erosion/sediment control measures and stormwater management/pollution control features during each phase of construction and the locations where stormwater runoff leaves the construction site.
- 3) Provide a description of the best management practices to be utilized to control erosion and the discharge of sediment and other pollutants in stormwater runoff throughout construction and the design calculations for each sediment basin including total drainage area and storage capacity below the elevation of the mass volume flow outlet device.
See attachment
- 4) Provide the name and License or Certification Number of the engineer, geologist, architect, landscape architect, or Certified Professional in Erosion and Sediment Control (CPESC) under which the construction stormwater pollution prevention plan has been developed.

Kansas Department of Transportation	KDOT- State Transportation Engineer	KDOT- State Transportation Engineer
Name	License or Certification Number	Profession or Field

III. ANNUAL FEES


The first year of the annual permit fee specified in K.A.R. 28-16-56 et seq. as amended is currently \$60.00 and can be paid through the KEIMS system at time of submittal. The fee must be paid before this NOI will be processed. An invoice for the annual permit fee will be sent to the contact person requesting a permit until such time as the permittee submits a Notice of Termination (NOT). Failure to pay the annual fee timely may result in termination of the construction stormwater discharge Authorization.

IV. OWNER OR OPERATOR CERTIFICATIONS

I, the undersigned, certify that a Stormwater Pollution Prevention Plan (SWP2 Plan) will be or has been developed for the construction site described in this NOI and supporting documentation. I further certify that the plan will be implemented at the time construction begins, and, as required by the NPDES general permit for Stormwater Runoff from Construction Activity, will revise the SWP2 plan if necessary.

I understand that continued coverage under the NPDES general permit for Stormwater Runoff from Construction Activities is contingent upon maintaining eligibility as provided for in the requirements and conditions of the general permit, and paying the annual fee.

Effective: August 1, 2022 Notice of Intent (NOI) for Discharge of Stormwater Runoff from Construction Activities Page 3 of 4
 Issued On: 08/22/2024
 Expires On: 07/31/2025



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Project Name: 10-23 3634-03 Notice of Intent (NOI)

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, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

KDOT Environmental Services Section 1/24/2024 11:15:37 AM
 Signature (owner or operator) Date

Official Title

V. CONDITIONS AND/OR CONSIDERATIONS OF APPROVAL

Conditions of Authorization - For Official Use Only:
 When indicated, Conditions of Authorization are as follows:

Authorization for this project, based on KDOT oversight of the preparation of the Stormwater Pollution Prevention Plan, is conditioned on KDHE receiving the following documents prior to the start of any soil disturbing activities:


- 1) A copy of the "Approval of Contractor's Stormwater Pollution Prevention Schedule" form signed by the Area Engineer,
- 2) The completed "Contractor's Stormwater Pollution Prevention Schedule Checklist", and
- 3) A copy of the Area Engineer approved erosion and sedimentation control plan.

This condition is considered fulfilled upon receipt by KDHE of the specified documents and approved erosion and sedimentation control plan.

Notes on Consideration - For Official Use Only:

NONE

Effective: August 1, 2022 Notice of Intent (NOI) for Discharge of Stormwater Runoff from Construction Activities Page 4 of 4
 Issued On: 08/22/2024
 Expires On: 07/31/2025



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REQUEST FOR JOINT OWNER/OPERATOR

For Authorization to Discharge Stormwater Runoff from Construction Activity
In accordance with Kansas Water Pollution Control General Permit No. 5-MCST-1703-1
Under the National Pollutant Discharge Elimination System



Use this form only when stormwater discharge and control responsibility for the entire permitted area will be jointly held by adding an owner/operator to an existing Kansas Department of Transportation (KDOT) authorized permit. Submission of the Request for Joint Owner/Operator (RJO) constitutes notice of a request for joint authorization for coverage with KDOT under the Kansas Water Pollution Control General Permit, or KDHE issued separate permits, issued for discharge of Stormwater Runoff from Construction Activities in the State of Kansas. Completion of this RJO does not provide automatic coverage under the general permit to the added owner/operator. Coverage is provided and discharge permitted for the joint owner/operators when the Kansas Department of Health and Environment (KDHE) authorizes the Request for Joint Owner/Operator. TO CONTINUE COVERAGE, KDOT AND THE ADDED OWNER/OPERATOR MUST CONTINUE TO IMPLEMENT THE STORMWATER POLLUTION PREVENTION PLAN DEVELOPED FOR THE PERMITTED AREA AND KDOT CONTINUES TO PAY THE ANNUAL PERMIT FEE.

Submission of this RJO to KDHE does not relinquish the KDOT's authorization to discharge stormwater runoff from construction activity at the site described herein. Completion of this RJO does not automatically relieve KDOT of any civil, criminal and/or administrative penalties. To be considered complete, the RJO must be signed by the added owner/operator and KDOT or a duly authorized representative of the added owner/operator, and must include the permit number assigned to the construction site. KDHE will notify KDOT and the added Owner/Operator when the RJO is incomplete, deficient or denied.

TO BE COMPLETED BY THE ADDED OWNER/OPERATOR:
I hereby confirm that the Added Owner/Operator identified below shares joint stormwater discharge and operational control responsibility with KDOT and accepts being added to the below identified authorization under the Kansas Stormwater Runoff from Construction Activities General Permit. On Added Owner/Operator's behalf, I have reviewed the terms and conditions of the General Permit and accept full responsibility, coverage, and liability with KDOT under the General Permit. This addition will be effective when KDHE authorizes the RJO form. I understand KDHE and other regulatory entities can take action against one or all authorized Owner/Operators for permit violations.

The ADDED OWNER/OPERATOR is:

Owner or Operator's Name: _____ Contact Name: _____
 Company Name: _____ Company Name: _____
 Owner or Operator's Phone: _____ Contact Phone: _____
 Mailing Address: _____ Mailing Address: _____
 City: _____ State: _____ Zip Code: _____ City: _____ State: _____ Zip Code: _____

I certify that I have personally examined and am familiar with the information described herein.
 Added Owner/Operator's Signature: _____ Date: _____
 Name (typed or printed): _____ Title: _____

TO BE COMPLETED BY KDOT
 As original Owner/Operator for the authorized project indicated below, I hereby certify the above Added Owner/Operator meets the General Permit definition of Owner/Operator and agree to the shared responsibilities with the Added Owner/Operator under the General Permit and continuance of my responsibilities thereunder. I understand that the addition of the Added Owner/Operator to the permit is effective when KDHE authorizes the RJO form.

Name of Project: _____
 Address: _____ City: _____ County: _____ State: KS, Zip Code: _____
 Kansas Permit No. _____ Federal Permit No. _____
 Permittee Signature: _____ Date: _____
 Permittee Name: _____ Title: _____ Phone Number: _____

Submit the RJO with original signatures to:
 Kansas Department of Health and Environment
 Bureau of Water, Industrial Programs Section
 1000 SW Jackson, Suite 420
 Topeka, KS 66612-1367

Authorized: Y; N
 Reviewer: _____ Date: _____

Effective August 1, 2017 RJO Request for Joint Owner/Operator Page 1 of 1

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Kansas Department of Transportation


Storm Water Pollution Prevention Plan (SWPPP)

Contractor's Certification

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of the certification.

Project #: _____

Signature	Date	Company, Address, Phone Number	Items Responsible For:



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Kansas Department of Transportation

Checklist for Contractor's Stormwater Pollution Prevention Plan (SWPPP)

Project Number: _____ **County:** _____
Contractor: _____ **Special Provision #:** _____
Area Engineer: _____ **Review Date:** _____

General			
	Yes	No	Comments
Project and site description, including receiving waters and general soil types?	<input type="checkbox"/>	<input type="checkbox"/>	
General project schedule or sequence of operations?	<input type="checkbox"/>	<input type="checkbox"/>	
Contact information including email address for Contractor's WPCM?	<input type="checkbox"/>	<input type="checkbox"/>	
Contact information for subcontractors?	<input type="checkbox"/>	<input type="checkbox"/>	
Erosion Control BMPs			
	Yes	No	Comments
Disturbed area limited to 750,000 square feet per equipment spread?	<input type="checkbox"/>	<input type="checkbox"/>	
Disturbed areas to be finish graded and stabilized before exposing additional areas?	<input type="checkbox"/>	<input type="checkbox"/>	
Drainage structures and permanent erosion control features scheduled for construction as soon as practical?	<input type="checkbox"/>	<input type="checkbox"/>	
Stabilization with mulch or other similarly effective BMPs to be initiated immediately after activities have permanently caused an portion of the site?	<input type="checkbox"/>	<input type="checkbox"/>	
Stabilization with mulch or other similarly effective BMPs to be initiated immediately after activities have temporarily caused an portion of the site and will not resume for 14 days (7 days for steep slope areas)?	<input type="checkbox"/>	<input type="checkbox"/>	
Geotextiles, erosion control mats or other appropriate BMPs included for stabilization of steep slope areas?	<input type="checkbox"/>	<input type="checkbox"/>	
Appropriate BMPs included to minimize erosion and discharge from soil stockpiles?	<input type="checkbox"/>	<input type="checkbox"/>	
BMPs to reduce erosion of concentrated stormwater flows by velocity dissipation (e.g. ditch checks) and channel liners (e.g. geotextiles, erosion control blankets)?	<input type="checkbox"/>	<input type="checkbox"/>	
Sediment Control BMPs			
	Yes	No	Comments
Appropriate sediment control BMPs (silt fences, wattles, rock checks, etc.) included as perimeter controls for potential discharge locations?	<input type="checkbox"/>	<input type="checkbox"/>	
Perimeter controls to be installed prior to beginning soil disturbing activities?	<input type="checkbox"/>	<input type="checkbox"/>	
Additional BMPs used as necessary within the site to limit stormwater volume/velocity and to minimize sediment transport?	<input type="checkbox"/>	<input type="checkbox"/>	

KDOT Form 248
9/16/2014 Page 1 of 2



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Kansas Department of Transportation

Checklist for Contractor's Stormwater Pollution Prevention Plan (SWPPP)

	Yes	No	Comments
Storm drain inlets to be protected with suitable BMPs?	<input type="checkbox"/>	<input type="checkbox"/>	
Sedimentation basins required?	<input type="checkbox"/>	<input type="checkbox"/>	
Sedimentation basins included?	<input type="checkbox"/>	<input type="checkbox"/>	
If included, do the sedimentation basins meet the permit requirements for capacity and for surface withdrawal of impounded water?	<input type="checkbox"/>	<input type="checkbox"/>	
If included, are the sedimentation basins to be constructed prior to or concurrently with construction activity in the basin's drainage areas?	<input type="checkbox"/>	<input type="checkbox"/>	
Site Management BMPs			
	Yes	No	Comments
Construction entrances/exits identified? Are practices included to minimize off-site tracking of sediment? Are practices included for daily clean-up of any tracked sediment?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices for management of trash and construction waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Portable toilets for the management of sanitary waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices to address washout of concrete mixers/equipment and concrete wastes?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices for proper storage of construction materials, fuels, lubricants or other potential contaminants?	<input type="checkbox"/>	<input type="checkbox"/>	
Attachments			
	Yes	No	Comments
Proof of WPCM having completed CSW certification?	<input type="checkbox"/>	<input type="checkbox"/>	
Proof of Contractor's Environmental Inspector(s) having completed CSW certification?	<input type="checkbox"/>	<input type="checkbox"/>	
Form 246 completed and signed by Contractor and all subcontractors?	<input type="checkbox"/>	<input type="checkbox"/>	
Request for Joint Owner/Operator form (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>	
Relevant special provisions?	<input type="checkbox"/>	<input type="checkbox"/>	

General Observations / Comments


KDOT Form 248
9/16/2014 Page 2 of 2



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INSPECTOR CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 known violations."



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Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE: 01/01/18
10-23 KA-999-01

REPORT #7


General Issues / Housekeeping

Carefully review all questions on this form. This is an overview of the project housekeeping and documentation.

	BMP/Activity	Yes / No / NA	Observations / Remarks	Deficiency (Yes / No)
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	Yes / No / NA		
2	Are natural resource areas (e.g. streams, wetlands, mature trees) protected with barriers or other BMPs?	Yes / No / NA		
3	Are perimeter controls and barriers adequately installed (keyed into substrate) and maintained?	Yes / No / NA		
4	Are discharge points and receiving waters free of sediment deposits?	Yes / No / NA		
5	Are storm drain inlets properly protected?	Yes / No / NA		
6	Are construction exits preventing sediment from being tracked into the roadway?	Yes / No / NA		
7	Is trash/litter from work areas collected and placed in covered dumpsters?	Yes / No / NA		
8	Are portable toilets available for sanitary waste?	Yes / No / NA		
9	Are washout facilities (e.g. paint, concrete) available, clearly marked, and maintained?	Yes / No / NA		
10	Are equipment fueling, cleaning and maintenance areas free of spills, leaks or other contaminants?	Yes / No / NA		
11	Are materials that are potential stormwater contaminants stored inside or under cover?	Yes / No / NA		
12	Are non-stormwater discharges (e.g. wash water, dewatering) properly controlled?	Yes / No / NA		
13	Are temporary sediment basins (if required) properly constructed and maintained?	Yes / No / NA		
14	Are soil stockpiles protected with perimeter barriers and appropriately stabilized?	Yes / No / NA		

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FORM 247A
Rev. 2018



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Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE: 01/01/18
10-23 KA-999-01

REPORT #7


BMP Deficiencies

Document all deficiencies in maintenance, operation, effectiveness, adequacy or coverage extent of all BMPs installed or required to be installed. Include any required maintenance, corrective action, documentation updates or other items requiring action to maintain permit compliance.

Location	Date First Identified	Remedy Required	Date Action Completed	Elapsed Days	Inspector

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FORM 247E
2018



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Water Pollution Control Manager Weekly Report

Date: _____
 Project#: _____
 WPCM: _____
 WPCM Report #: _____

What updates were made to the SWPPP and site map this week?

What BMP repairs need to be made this week?

Which open areas have changed since last report? Are they still active? If not, are they documented as inactive on the 247?

Based on the project schedule, what BMPs need installed/modified and what open areas need identified for the coming week?

What is the status of any temporary stream crossings on the project?


What de-watering practices are currently being used on the project?

What is the status of temporary/permanent vegetation in stabilized areas?

Additional Comments:

WPCM signature: _____

FORM 280
Rev. 09/08/21



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Thank You

Mervin Lare
Stormwater Compliance Engineer

Email: Mervin.Lare@ks.gov

Cell: 785-250-4793



PQLs and Erosion Control Manuals



1

PQL 34.1 Erosion Control Products



2

PQL 34.1 Erosion Control Products



3

PQL 34.2 Hydraulic Erosion Control Products(HECP)



4

PQL 34.2 Hydraulic Erosion Control Products



5

KDOT Erosion Control Manual

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION CONTROL MANUAL

GENERAL INFORMATION

Version	Version Date	Notes



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KDOT Erosion Control Manual

BMP Category	Condition	BMP Type
Ditches	Grade Less Than or Equal to 6%?	Erosion Control Blankets/Mulch
		Biodegradable Log Ditch Check
		Rock Ditch Check
	Grade Greater Than 6%?	Erosion Control Blankets
		Aggregate Ditch Lining
		Erosion Control Blankets/Geotextiles
High Flows Expected?	Aggregate Ditch Lining	
	Rock Ditch Check	
Slopes	Erosion Control?	Temporary and/or Permanent Seeding
		Erosion Control Blankets/Mulch
		Geotextiles
	Sediment Control?	Hydraulic Erosion Control Products
		Rock Slope Protection
		Biodegradable Log Slope Interruptions
Inlet Protection	(No Decision Needed)	Silt Fence Slope Interruptions
		Hydraulic Erosion Control Products
		Rock Slope Protection
		Biodegradable Log and Filter Sock Drop Inlet Protection
Sediment Basin	>=10 acres	Silt Fence Sediment Barrier
		TSD Inlet Sediment Barrier
		Curb Inlet Protection
		Sediment Basin



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KDOT Erosion Control Manual

- **Stabilization**
 - Temporary & Permanent Seeding
 - Erosion Control Blankets
 - HECPs
 - Aggregate Ditch Lining
 - Rock Slope Protection
 - Dust Control
 - Natural Vegetation
- **Temporary Devices**
 - Biolog & filter sock Installations
 - Rock Ditch checks
 - Temporary Berms
 - Temporary Stream Crossings
 - Slope Interruptions
- **Geotextiles**
 - geotextiles
- **Inlet Protections**
 - Biolog & Filter Sock
 - Silt Fence
 - Triangular Silt Dike
 - Curb Inlet Protection
- **Sediment Storage Basins**
 - Sediment Basins



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Thank You

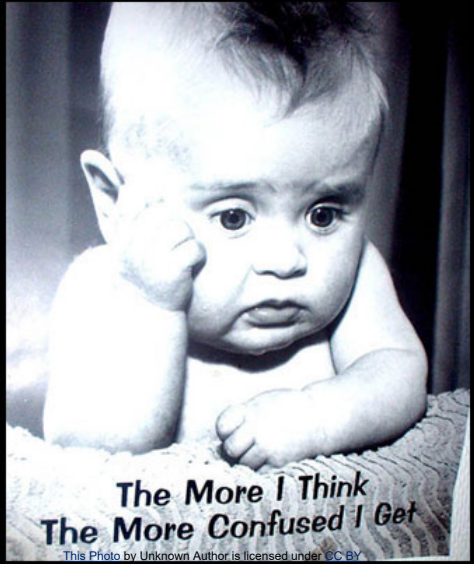

Mervin Lare
Stormwater Compliance Engineer

Email: Mervin.Lare@ks.gov

Cell: 785-250-4793



The SWPPP Inspection

*The More I Think
The More Confused I Get*

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Kansas Department of Transportation
Storm Water Pollution Prevention Plan
Inspection and Maintenance Report

INSPECTION DATE: 01/01/18
10-23 KA-999-01

REPORT #7


General Issues / Housekeeping

Carefully review all questions on this form. This is an overview of the project housekeeping and documentation.

	BMP/Activity	Yes / No / NA	Observations / Remarks	Deficiency (Yes / No)
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	Yes / No / NA		
2	Are natural resource areas (e.g. streams, wetlands, mature trees) protected with barriers or other BMPs?	Yes / No / NA		
3	Are perimeter controls and barriers adequately installed (keyed into substrate) and maintained?	Yes / No / NA		
4	Are discharge points and receiving waters free of sediment deposits?	Yes / No / NA		
5	Are storm drain inlets properly protected?	Yes / No / NA		
6	Are construction exits preventing sediment from being tracked into the roadway?	Yes / No / NA		
7	Is trash/litter from work areas collected and placed in covered dumpsters?	Yes / No / NA		
8	Are portable toilets available for sanitary waste?	Yes / No / NA		
9	Are washout facilities (e.g. paint, concrete) available, clearly marked, and maintained?	Yes / No / NA		
10	Are equipment fueling, cleaning and maintenance areas free of spills, leaks or other contaminants?	Yes / No / NA		
11	Are materials that are potential stormwater contaminants stored inside or under cover?	Yes / No / NA		
12	Are non-stormwater discharges (e.g. wash water, dewatering) properly controlled?	Yes / No / NA		
13	Are temporary sediment basins (if required) properly constructed and maintained?	Yes / No / NA		
14	Are soil stockpiles protected with perimeter barriers and appropriately stabilized?	Yes / No / NA		

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FORM 247A
Rev. 2018



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8



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Are natural resource areas (e.g. streams, wetlands, mature trees) protected with barriers or other BMPs?



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10



11



12



13



14



15



16



17



18



19



20

Are discharge points and receiving waters free of sediment deposits?



21



22

Are storm drain inlets properly protected?



23



24



25

Are construction exits preventing sediment from being tracked into the roadway?



26



27

Is trash/litter from work areas collected and placed in covered dumpsters?



28



29



30

Are portable toilets available for sanitary waste?



31



32



33



34

Are washout facilities (e.g. paint, concrete) available, clearly marked, and maintained?



35



36



37



38



39



40

Are equipment fueling, cleaning and maintenance areas free of spills, leaks or other contaminants?



41



42

Are materials that are potential stormwater contaminants stored inside or under cover?



43

Are non-stormwater discharges (e.g. wash water, dewatering) properly controlled?

44



45



46



47



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49



50



51



52



53

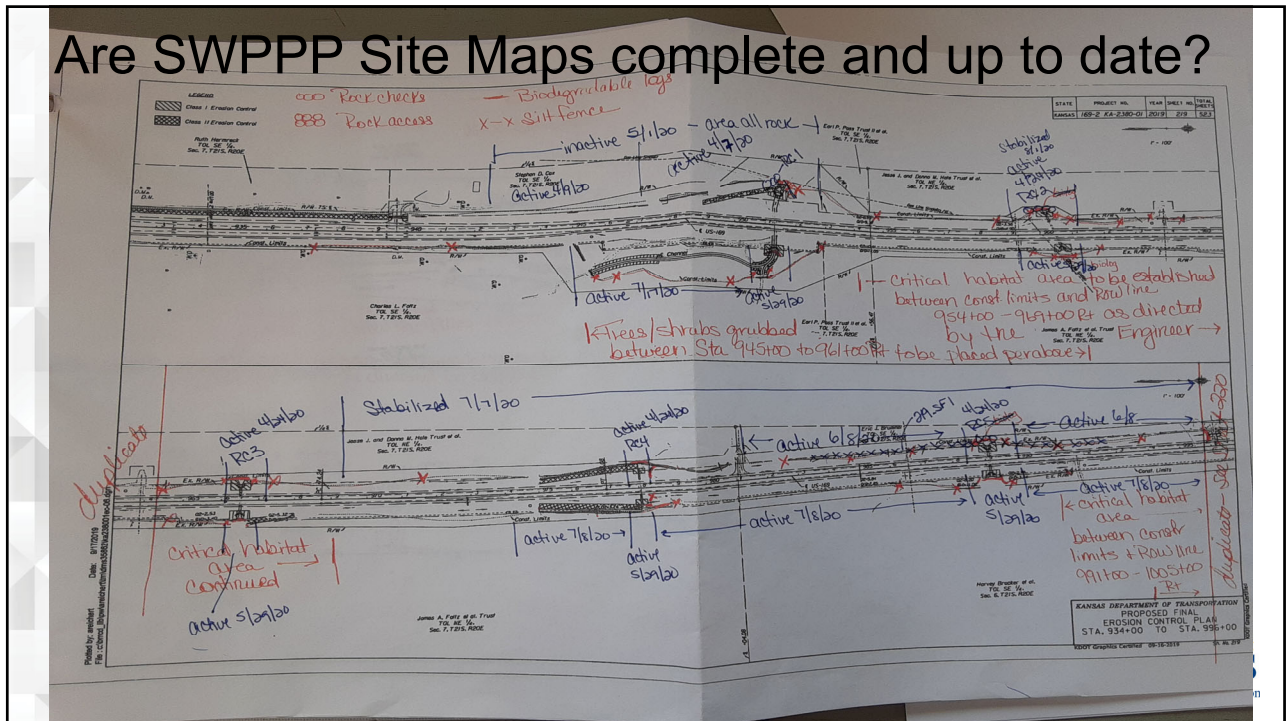


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Are SWPPP Site Maps complete and up to date?



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Are there any outstanding deficiencies from previous inspections?

INS

Dc


Location	Date First Identified	Remedy Required	Date Action Completed	Elapsed Days	Inspector
276+52	10/8/2020	Install rock check log #31	10/13/20	5	
260+00-272+00 LT	10/8/2020	Ready to Seed Fert and Mulch Left Slope	10/14/20	6	
261+00-268+00 RT	10/8/2020	Blanket 2:1 Slope No Seed, No Fert, and No Mulch	10/14/20	6	
26000 - 20900	10/22/20	Ready to Seed, Fert & mulch ()			
217+09	10/22/20	Tracking on roadway, cleaned off with grader it helped but didn't eliminate the problem			
264+09 Lgr	10/22/20	Channel lined 100 pound Rock ()			
250 + 170 Lgr	10/22/20	Big log entrance of pipe ()			
252+70 RT	10-22-20	Seed Fert Mulch			
180+35 RT	10-22-20	Construction exit needs aggregate			

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FORM 247E
2/21/18

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Other remarks / observations



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Thank You

Mervin Lare
Stormwater Compliance Engineer

Email: Mervin.Lare@ks.gov

Cell: 785-250-4793



Construction Stormwater Training Workbook

Appendices

Stormwater Runoff from Construction Activities General Permit

Definitions and Acronyms

These definitions pertain to the Kansas Water Pollution Control General Permit and Authorization to Discharge STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES under the National Pollutant Discharge Elimination System. Persons subject to the NPDES general permit for Stormwater Runoff from Construction Activities should make themselves familiar with this list of definitions.

"Antidegradation" means the regulatory actions and measures taken to prevent or minimize the lowering of water quality in surface waters of the state, including those streams, lakes, and wetlands in which existing water quality exceeds the level required for maintenance and protection of existing uses.

"Authorization" means written authorization from KDHE to discharge stormwater runoff from construction activities. Upon acceptance and approval of the Construction Stormwater Notice of Intent (NOI) and required supporting documentation, KDHE will indicate the authorization and date on the front page of the NOI form by the Secretary of KDHE's signature on the form and assign State and Federal Authorization numbers. Upon receipt of this Authorization, the permittee is authorized to discharge stormwater runoff from construction activities from the construction site identified in the NOI and supporting documents.

"Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Borrow Sites" means areas where materials are excavated for use as fill.

"Buffer" means for the purposes of this permit, an area of natural vegetation surrounding streams, rivers, lakes, wetlands, or other waters of the U.S. within which construction activities are restricted.

"Bypass" means any diversion of contaminated stormwater runoff away from BMPs.

"Combined Sewer System" means sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe.

"Commencing Construction" means starting to remove vegetation or disturb the soil located at the site.

"Construction Activity" means any construction practices or work including, but not limited to, clearing, grubbing, grading, and excavation which disturbs one (1.0) acre or more; or which is part of a larger common plan of development or sale which disturbs a cumulative total area of one (1.0) acre or more during the life of the project.

"Construction and Development Effluent Guidelines" as published in 40 CFR § 450 is the regulation requiring effluent limitations guidelines (ELG's) and new source performance standards (NSPS) for controlling the discharge of pollutants from construction sites.

"Construction Site" means the land or water area where construction activities will occur and where stormwater controls will be installed and maintained. The construction site includes construction support activities, which may be located at a different part of the property where the primary construction activity will take place, or on a different piece of property altogether. The construction site is often a smaller subset of the lot or parcel within which the project is taking place.

"Construction Support Activities" means the various construction-related activities that occur alongside the construction activity and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

"Contaminated Groundwater" means groundwater where an actual or potential environmental or public health threat may be deemed to exist as a result of physical, chemical, biological, or radiological substances, or a combination of these substances, has been released into subsurface waters of the state and results in a concentration or amount of a substance in excess of the numerical criteria designated for aquatic life protection, agricultural use, or public

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health protection as provided in the Kansas Surface Water Quality Standards: Table of Numeric Criteria or have groundwater concentration levels exceeding the most current version of the KDHE "Risk-based Standards for Kansas (RSK)" manual, Tier 2 for Residential Scenarios - Soil to Groundwater Pathways, or if above RSK levels, the concentrations are not significantly different than area natural background concentrations (RSK Tier 1 evaluation). The manual can be downloaded from the following webpage: www.kdhe.ks.gov/775/Risk-based-Standards-for-Kansas. Contaminated groundwater is not authorized for discharge by this permit.

"Contaminated Soil" are soils that have soil concentration levels exceeding the lowest concentration of those included in the most current version of the KDHE "Risk-based Standards for Kansas (RSK)" manual, Tier 2 for Residential Scenarios or if above the RSK levels, the concentrations are not significantly different than area natural background concentrations (RSK Tier 1 evaluation). The manual can be downloaded from the following webpage: www.kdhe.ks.gov/775/Risk-based-Standards-for-Kansas.

"Control Measure" refers to any stormwater control, BMP, or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

"Critical Water Quality Management Area" means a watershed, or a portion of a watershed, in which application of minimum state or national wastewater and water quality management practices and procedures cannot be reasonably expected to result in attainment of water quality goals, attainment of water quality standards, protection of resources of the state, prevention of excessive sediment deposition in stream beds, lakes or reservoirs, or prevention of destruction of fishery habitat; or an area in which additional treatment and control of pollutants can result in additional cost effective benefits.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., as amended on February 4, 1987.

"Defined Drainage" means any water course which has a well-defined bed and banks and a drainage area above the point in question exceeding 160 acres or a greater acreage designated by the Chief Engineer, Kansas Department of Agriculture. The stream need not flow continuously and may flow only briefly after a rain in the watershed.

"Department" means the Kansas Department of Health and Environment.

"Dewatering" means the act of draining or pumping accumulated stormwater and/or groundwater from excavations, building foundations, vaults, trenches, etc., and also the removing of water from an aquifer to lower the aquifer water level.

"Director" means the Director of the Division of Environment, of the Kansas Department of Health and Environment.

"Discharge Monitoring Requirement" means a requirement to observe or evaluate a discharge and note the conditions observed.

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, a discharge of pollutants in stormwater from areas where land-disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants), are located.

"Discharge Point" means for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the construction site.

"Drainage Courses or Drainage Swales" means an open linear depression, whether constructed or natural, that functions for the collection and drainage of surface water.

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"Duly Authorized Representative" means somebody who speaks, acts or votes on behalf of others. For the purposes of this stormwater general permit, the duly authorized representative either 1) has operational control over the facility; or 2) has the day-to-day operational control of those activities at the facility necessary to ensure compliance.

"Effluent Limitation" means any restriction established by the Director on quantities, rates, and concentrations of chemical, physical, biological and other constituents which are discharged from point sources.

"Effluent Limitations Guideline" (ELG) - defined in 40 CFR § 122.2 as a regulation published by the EPA Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

"Entrance and Exit Points" means any points of entry to and exit from the construction site to be used by vehicles and equipment during construction activities.

"EPA" means the U.S. Environmental Protection Agency.

"Exceptional State Waters" means any of the surface waters or surface water segments that are of remarkable quality or of significant recreational or ecological value, are listed in the surface water register, as defined in K.A.R. 28-16-28b, and are afforded the level of water quality protection under the anti-degradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

"Final Stabilization" means all soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70% of the cover which is typical for undisturbed areas, unpaved areas, or areas not covered by permanent structures, in the geographic location of the construction site, has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. Certain exceptions to this exist for final stabilization of individual lots or completion of construction activities within a larger common plan of development.

"Hazardous Substance" means elements and compounds designated as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR 116.4.

"ILC" means the Individual Lot Certification which is to be completed by the permittee and the purchaser of an individual lot or parcel of the overall tract subject to the general NPDES permit for Stormwater Runoff from Construction Activity.

"Impaired Water", "Water Quality Limited Segment" means a surface water that has been identified by KDHE pursuant to Section 303(d) of the Clean Water Act as not meeting applicable Kansas Surface Water Quality Standards. Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established. (Note: To view the Section 303(d) list and TMDLs go to www.kdhe.ks.gov/1443/Total-Maximum-Daily-Loads-TMDLs.)

"Indian Country Land" means (1) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation; (2) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of the State; and (3) All Indian allotments, the Indian titles to which have not been extinguished, including rights of way running through the same.

"Infeasible" means not technologically possible, or not economically practicable and achievable in light of best industry practices.

"Install" or "Installation" means when used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

"KDHE" means the Kansas Department of Health and Environment.

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"KEIMS" means the Kansas Environmental Information Management System.

"Material Handling and Staging Area" means a temporary area on the construction site used for receiving, processing, storing materials to prevent the material from being spilled or coming into contact with runoff.

"Material Washout Area" means a temporary containment area used for the washing of applicators and containers of paint, concrete, and other materials.

"Minimize" means to reduce and/or eliminate to the extent achievable using stormwater controls (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

"Municipal Separate Storm Sewer System (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are owned or operated by a state, city, town, borough, county, parish, district association, or other public body which is designed or used for collecting or conveying stormwater.

"National Pollutant Discharge Elimination System" means the national system for the issuance of permits under 42 U.S.C. Section 1342 and includes any state or interstate program which has been approved by the administrator, in whole or in part, pursuant to 42 U.S.C. Section 1342.

"NOI" means the Notice of Intent form which is to be used to apply for authorization to discharge under this general permit [A copy of the NOI form is provided as part of the general permit.].

"Non-Stormwater Discharges" means discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, noncontact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

"NOT" means the Notice of Termination form which is to be completed by the permittee once the project is completed and the site is stabilized. [A copy of the NOT form is provided as part of the general permit.]

"NOTO" means the Notice of Transfer of Ownership form which is to be completed by the permittee and the new site owner or operator when sale of the entire permitted tract occurs. [A copy of the NOTO form is provided as part of the general permit.]

"Oil and Gas Exemption" means changes to the Federal Clean Water Act (CWA) which exempt oil and gas exploration, production, processing, or treatment operations, and transmission facilities from National Pollutant Discharge Elimination System (NPDES) stormwater permitting requirements associated with stormwater runoff from construction activities. (see 40 CFR 122.26 (c) (1) (iii) for exclusions to the CWA exemption.)

"Operational" for the purpose of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

"Outfall" see "Discharge Point".

"Outstanding National Resource Water" (ONRW) means any of the surface waters or surface water segments of extraordinary recreational or ecological significance identified in the Kansas Surface Water Register and afforded the highest level of water quality protection under the antidegradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

"Owner", "Owner or operator", or "owner/operator" means the party or parties that either individually or taken together who are the responsible party liable under the Clean Water Act and meet the following criteria: they have operational control over the site specifications; and, they have the day-to-day operational control of those activities at the site necessary to ensure compliance. For a typical commercial construction site, KDHE herein defines the

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owner or general contractor to be the "owner or operator". For a typical residential development (subdivision), KDHE herein defines the owner or an authorized representative to be the "owner or operator". Each owner or operator who individually does not engage in construction activity of greater than one (1.0) acre must apply when the construction activity is part of a larger common plan of development.

"Permit" means an authorization, license, or equivalent control document issued by the Director to implement the requirements of K.A.R. 28-16-57. Permit includes a 'general permit' (K.A.R. 28-16-150). Permit does not include any document which has not yet been subject to final agency action, such as a "draft permit" or "proposed permit."

"Permittee" means the individual, company, corporation, institution, municipality, township, county, federal agency, owner, operator, or legally constituted sewer district which is authorized by a Kansas Water Pollution Control permit to discharge to the waters of the State and which has operational control of the permitted discharge by specifying activities at the site.

"Point Source" means any discernible, confined, and discrete conveyance, including, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or floating craft from which pollutants are or may be discharged. This term may include structures or site conditions that act to collect and convey stormwater runoff from roadways, urban areas, or industrial sites. This term shall not include agriculture stormwater discharges or return flows from irrigated agricultural land.

"Rainfall Erosivity Waiver" means a waiver of the applicable requirements of the general NPDES permit for Stormwater Runoff from Construction Activities. Owners or operators of construction activities between one and five acres which are eligible for coverage under the general NPDES permit for Stormwater Runoff from Construction Activities may receive a waiver from KDHE provided the value of the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation) is less than five (5) during the period of construction activity.

"Run-on" means sources of stormwater that drain from land located upslope or upstream from the regulated site in question.

"Sediment Basin Design Criteria" are requirements for sedimentation structures to be designed to provide a detention volume at least 3,600 cubic feet of storage per acre of total area draining into the sediment basin. KDHE may approve alternate storage volumes if a significant portion of undisturbed area drains to the sediment basin or for areas in Western Kansas where the 2-year, 30-minute rain event is less than 1.3 inches. Runoff calculations based on a detention volume from a 2-year, 30-minute rainfall event with a minimum runoff coefficient of 0.77 for disturbed acreage and appropriate runoff coefficients for undisturbed acreage must be provided to document and justify the revised storage volume requirement.

Sediment basins must be designed to provide the required storage volume below the elevation of the overflow weir, spillway or riser top that allows mass volume of discharge. Designs shall include outlet structures that withdraw water from the surface, unless infeasible.

"Severe Property Damage" means substantial physical damage to property or substantial and permanent loss of natural resources which would be reasonably expected to occur in the absence of a bypass.

"Significant Materials" includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

"Significant Pollution Potential" means the discharge or potential discharge of one or more pollutants that does or has the potential to degrade water quality, violate a water quality standard, or impair a designated use of a classified water. KDHE, in making a determination as to whether a discharge has a significant pollution potential will consider the size and location of the discharge, the quantity and nature of the discharge, and other relevant factors. Examples of a significant pollution potential would include, but not be limited to, contaminated soils or groundwater

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within the construction site, uncovered salt or salt/sand storage piles; spilled or leaking toxic or hazardous waste; spilled or leaking fuel, oils, grease, solvents; etc.

"Soil Exposed" means for the purposes of this permit, soils that have been disturbed due to the commencement of construction activities.

"Special Aquatic Life Use waters" means surface waters which contain combinations of habitat types and indigenous biota not found commonly in the state, or surface waters which contain representative populations of threatened or endangered species.

"Stabilization" means the use of vegetative and/or non-vegetative cover to prevent erosion and sediment loss in areas exposed through the construction process.

"Standard Weekday" means each day of the week from Monday through Friday, not including Saturday and Sunday and excluding days that have been established for the observance of a Federal Holiday and also the day after Thanksgiving.

"Steep Slope" means any slope occurring on the construction site that is 2.5 horizontal to 1 vertical or greater (approximately 40 percent).

"Storm Sewer" means a system of pipes (separate from sanitary sewers) that carries stormwater runoff from buildings and land surfaces.

"Stormwater" means stormwater runoff induced by atmospheric precipitation, including snow melt runoff, and surface runoff and drainage.

"Stormwater Control" See "Control Measure"

"Stormwater Pollution Prevention Plan (SWP2 Plan)" means a site-specific, written document and construction plans that: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

"Stormwater Runoff from Construction Activities" means stormwater runoff from areas where construction activities are located. Construction activities include clearing, grading and excavating that result in land disturbance of equal to or greater than one (1.0) acre of total land area. Construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1.0) acre. Construction activities do not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. (See 40 CFR 122.26(b)(14 -15) for further clarification.)

"Stormwater Runoff from Industrial Activities" means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the Kansas Water Pollution Control program.

For the categories of industries identified in this definition, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials; and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

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For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on the plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded area is not mixed with stormwater drained from the above described areas.

Industrial facilities (including industrial facilities which are Federally, State or municipally owned or operated and meet the description of the facilities listed in this paragraph (i)-(xi) of this definition) include those facilities designated under 40 CFR 122.26(a)(1)(v).

The following categories of facilities are considered to be engaging in industrial activity for the purpose of this general permit/definition:

Category (i) - Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N. Limits and/or standards for this category are subject to change and new limits and standards may be adopted. To verify applicability, see 40 CFR subchapter N.

Stormwater Effluent Guidelines

For a discharge to be covered under stormwater effluent guidelines, the facility must have a stormwater discharge subject to stormwater effluent guidelines. At the time of permit issuance, facilities that have stormwater effluent limitations guidelines for at least one of their subcategories include the following:

40 CFR Subchapter N

- Part 411 Cement manufacturing
- Part 412 Concentrated Animal Feeding Operations (CAFOs)
- Part 418 Fertilizer manufacturing
- Part 419 Petroleum refining
- Part 420 Iron & steel manufacturing
- Part 422 Phosphate manufacturing
- Part 423 Steam electric power generating
- Part 434 Coal mining
- Part 436 Mineral mining & processing
- Part 440 Ore mining & dressing
- Part 442 Transportation equipment cleaning
- Part 443 Paving and roofing materials
- Part 449 Airport Deicing

A facility that falls into one of these Parts should examine the effluent guideline to determine if it is categorized in one of the subcategories that have stormwater effluent guidelines. If a facility is classified in one of those subcategories, that facility is subject to the standards listed in the CFR for that category, and as such is required to submit an NOI for any stormwater discharge subject to the stormwater effluent guideline.

Toxic Pollutant Effluent Standards

Facilities subject to toxic pollutant effluent standards refers to the standards established pursuant to CWA section 307(a)(2) and codified at 40 CFR Part 129. Part 129 applies only to manufacturers of six pesticide products which are defined as toxic pollutants. Please note that the phrase "facilities subject to toxic pollutant effluent standards" does not refer to those industries subject to effluent limitation guidelines for toxics under 40 CFR sub-chapter N.

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Manufacturers of the following pesticides are subject to regulation under these provisions:

(a) Aldrin/Dieldrin, (b) DDT, (c) Endrin, (d) Toxaphen (e) Benzidine, and (f) Polychlorinated Biphenyls (PCBs):

(a) Aldrin/Dieldrin---Aldrin means the compound aldrin as identified by the chemical name, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4-endo-5,8-exo-dimethanonaphthalene; "Dieldrin" means the compound the dieldrin as identified by the chemical name 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-exo-dimethanonaphthalene.

(b) DDT---DDT means the compounds DDT, DDD, and DDE as identified by the chemical names:(DDT)-1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane and some o,p '-isomers; (DDD) or (TDE)-1,1-dichloro-2,2-bis(p-chlorophenyl) ethane and some o,p '-isomers; (DDE)-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene.

(c) Endrin---Endrin means the compound endrin as identified by the chemical name 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-endodimethanonaphthalene.

(d) Toxaphene---Toxaphene means a material consisting of technical grade chlorinated camphene having the approximate formula of C₁₀ H₁₀ Cl₈ and normally containing 67--69 percent chlorine by weight.

(e) Benzidine---Benzidine means the compound benzidine and its salts as identified by the chemical name 4,4 '-diaminobiphenyl.

(f) Polychlorinated Biphenyls (PCBs) polychlorinated biphenyls (PCBs) means a mixture of compounds composed of the biphenyl molecule which has been chlorinated to varying degrees.

New Source Performance Standards (NSPS)

For a stormwater discharge associated with industrial activity to be covered under NSPS, the facility must have an activity subject to the NSPS. The new source varies based on the publication date of a particular effluent guideline. Most effluent guidelines listed in 40 CFR Subchapter N contain NSPS.

The following categories of 40 CFR Subchapter N do not have new source performance standards. All other categories have at least one subcategory with new source performance standards.

Part 454 Gum and wood chemicals manufacturing
Part 459 Photographic
Part 460 Hospital

Category (ii) - Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

Category (iii) - Facilities classified as SIC codes 10-14 including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990), and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that

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discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/ operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

A facility with an existing or new discharge composed entirely of stormwater from oil or gas exploration, production, processing, or treatment operations or transmission facility is not required to submit a request for authorization under this general permit unless the facility:

(A) Has a discharge of stormwater composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying collection runoff and which are contaminated by contact with, or come into contact with, any overburden, raw material, intermediate products, finished products, byproducts, or waste products on the site of such operations; or

(B) Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6, 40 CFR 117.21 or 40 CFR 302.6 at anytime since November 16, 1987; or

(C) Causes or contributes to a violation of a water quality standard.

Category (iv) - Hazardous Waste Hazardous waste treatment, storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA.

Category (v) - Landfills, land application sites, and open dumps that receive or have received any industrial waste (waste that is received from any of the facilities described under categories (i) - (xi)) including those that are subject to regulations under Subtitle D of RCRA.

Category (vi) - Recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and SIC 5093 (scrap and waste materials).

Category (vii) - Steam electric power generating facilities, including coal handling sites.

Category (viii) - Transportation facilities classified by the SIC codes 40, 41, 42 (except 4221-4225), 43, 44, 45, and 5171 listed below which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under categories (i)-(vii) or (ix)-(xi) of this definition are associated with industrial activity, and need permit coverage. Based on a potential for being a significant contributor of pollutants, KDHE has determined Aerial Spray Operations at Airports are subject to coverage for stormwater runoff associated with industrial activity.

Category (ix) - Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 MGD or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not

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physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act.

Category (x) - Construction activity is not covered under this definition. The construction "operator" of both large and small construction activities must apply for coverage under an individual permit or the General Stormwater Permit for Construction Activity requirements.

Category (xi) - Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-25.

"Surface water" means all of the following:

- (1) streams, including rivers, creeks, brooks, sloughs, draws, arroyos, canals, springs, seeps and cavern streams, and any alluvial aquifers associated with these surface waters;
- (2) lakes, including oxbow lakes and other natural lakes and man-made reservoirs, lakes and ponds; and
- (3) wetlands, including water bodies meeting the technical definition for jurisdictional wetlands given in the "corps of engineers wetlands delineation manual," as published in January 1987, which is hereby adopted by reference.

"Surface Waters of the State" means all surface waters occurring within the borders of the state of Kansas or forming a part of the border between Kansas and one of the adjoining states.

"Temporary Stabilization" means a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

"Tier 1 Water" means, in regard to antidegradation, a level of protection that provides a "floor" which protects water quality and existing designated uses. Water quality must be preserved to protect and maintain those existing uses. Activities that would lower water quality below levels necessary to maintain existing designated uses are prohibited.

"Tier 2 Water" means, in regard to antidegradation, high quality waters where water quality exceeds the criteria associated with the assigned designated uses. Limited water quality degradation is allowed in high quality water where the degradation is necessary to accommodate important social or economic development, but only if designated uses are still maintained and the highest statutory and regulatory requirements for all point sources of pollution and all cost effective and reasonable best management practices for nonpoint sources of pollution are achieved.

"Tier 2½ Water" means in regard to antidegradation, means a water classified as an Exceptional State Water (see definition of "Exceptional State Waters" in Appendix 1).

"Tier 3 Water" means, in regard to antidegradation, any waters designated as an Outstanding National Resource Water (ONRW) (see definition of Outstanding National Resource Water in Appendix 1).

"Total Maximum Daily Load (TMDL)" is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes waste load allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background and must include a margin of safety and account for seasonal variations. (Note: To view TMDLs go to www.kdhe.ks.gov/1443/Total-Maximum-Daily-Loads-TMDLs .)

"Uncontaminated Groundwater" means water removed from excavation or pumped from an aquifer for dewatering purposes. The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of

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the discharge. Suspended solids and turbidity are not sources of contamination for the purposes of this definition, but the excavation dewatering discharge must be treated as necessary to remove suspended solids and turbidity to prevent any violation of water quality standards.

"Urbanized Area" means a land area comprising one or more places; central place(s); and the adjacent densely settled surrounding area; or urban fringe; that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.

List of Acronyms

BMPS - Best Management Practices
C & D - Construction & Development
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CFR - Code of Federal Regulations
CGP – Construction General Permit
CWA - Clean Water Act
CWQMA - Critical Water Quality Management Area
EPA - U.S. Environmental Protection Agency
ESW - Exceptional State Water
ILC - Individual Lot Certification
K.A.R. - Kansas Administrative Regulations
KDHE - Kansas Department of Health and Environment
KDWPT - Kansas Department of Wildlife, Parks and Tourism
KEIMS - Kansas Environmental Information Management System
K.S.A. - Kansas Statutes Annotated
KSHPO - Kansas State Historic Preservation Office
KSHS – Kansas Historical Society
MS4 - Municipal Separate Storm Sewer System
NOI - Notice of Intent
NOT - Notice of Termination
NOTO - Notice of Transfer of Ownership
NPDES - National Pollutant Discharge Elimination System
NRDC - Natural Resources Defense Council
NTIS - National Technical Information Service
ONRW - Outstanding National Resource Water
RCRA - Resource Conservation and Recovery Act
SALU - Special Aquatic Life Use
SHPO - State Historic Preservation Officer
SMCRA - Surface Mining Control and Reclamation Act
SPCC - Spill Prevention Control Countermeasures
SWP2 Plan or SWPPP - Stormwater Pollution Prevention Plan
U.A. - Urbanized Areas
U.S.C. - United States Code.

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These definitions pertain to the Kansas Water Pollution Control General Permit and Authorization to Discharge STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES under the National Pollutant Discharge Elimination System. Persons subject to the NPDES general permit for Stormwater Runoff from Construction Activities should make themselves familiar with this list of definitions.

"Antidegradation" means the regulatory actions and measures taken to prevent or minimize the lowering of water quality in surface waters of the state, including those streams, lakes, and wetlands in which existing water quality exceeds the level required for maintenance and protection of existing uses.

"Authorization" means written authorization from KDHE to discharge stormwater runoff from construction activities. Upon acceptance and approval of the Construction Stormwater Notice of Intent (NOI) and required supporting documentation, KDHE will indicate the authorization and date on the front page of the NOI form by the Secretary of KDHE's signature on the form and assign State and Federal Authorization numbers. Upon receipt of this Authorization, the permittee is authorized to discharge stormwater runoff from construction activities from the construction site identified in the NOI and supporting documents.

"Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Borrow Sites" means areas where materials are excavated for use as fill.

"Buffer" means for the purposes of this permit, an area of natural vegetation surrounding streams, rivers, lakes, wetlands, or other waters of the U.S. within which construction activities are restricted.

"Bypass" means any diversion of contaminated stormwater runoff away from BMPs.

"Combined Sewer System" means sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe.

"Commencing Construction" means starting to remove vegetation or disturb the soil located at the site.

"Construction Activity" means any construction practices or work including, but not limited to, clearing, grubbing, grading, and excavation which disturbs one (1.0) acre or more; or which is part of a larger common plan of development or sale which disturbs a cumulative total area of one (1.0) acre or more during the life of the project.

"Construction and Development Effluent Guidelines" as published in 40 CFR § 450 is the regulation requiring effluent limitations guidelines (ELG's) and new source performance standards (NSPS) for controlling the discharge of pollutants from construction sites.

"Construction Site" means the land or water area where construction activities will occur and where stormwater controls will be installed and maintained. The construction site includes construction support activities, which may be located at a different part of the property where the primary construction activity will take place, or on a different piece of property altogether. The construction site is often a smaller subset of the lot or parcel within which the project is taking place.

"Construction Support Activities" means the various construction-related activities that occur alongside the construction activity and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

"Contaminated Groundwater" means groundwater where an actual or potential environmental or public health threat may be deemed to exist as a result of physical, chemical, biological, or radiological substances, or a combination of these substances, has been released into subsurface waters of the state and results in a concentration or amount of a substance in excess of the numerical criteria designated for aquatic life protection, agricultural use, or public

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health protection as provided in the Kansas Surface Water Quality Standards: Table of Numeric Criteria or have groundwater concentration levels exceeding the most current version of the KDHE "Risk-based Standards for Kansas (RSK)" manual, Tier 2 for Residential Scenarios - Soil to Groundwater Pathways, or if above RSK levels, the concentrations are not significantly different than area natural background concentrations (RSK Tier 1 evaluation). The manual can be downloaded from the following webpage: www.kdhe.ks.gov/775/Risk-based-Standards-for-Kansas. Contaminated groundwater is not authorized for discharge by this permit.

"Contaminated Soil" are soils that have soil concentration levels exceeding the lowest concentration of those included in the most current version of the KDHE "Risk-based Standards for Kansas (RSK)" manual, Tier 2 for Residential Scenarios or if above the RSK levels, the concentrations are not significantly different than area natural background concentrations (RSK Tier 1 evaluation). The manual can be downloaded from the following webpage: www.kdhe.ks.gov/775/Risk-based-Standards-for-Kansas.

"Control Measure" refers to any stormwater control, BMP, or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

"Critical Water Quality Management Area" means a watershed, or a portion of a watershed, in which application of minimum state or national wastewater and water quality management practices and procedures cannot be reasonably expected to result in attainment of water quality goals, attainment of water quality standards, protection of resources of the state, prevention of excessive sediment deposition in stream beds, lakes or reservoirs, or prevention of destruction of fishery habitat; or an area in which additional treatment and control of pollutants can result in additional cost effective benefits.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., as amended on February 4, 1987.

"Defined Drainage" means any water course which has a well-defined bed and banks and a drainage area above the point in question exceeding 160 acres or a greater acreage designated by the Chief Engineer, Kansas Department of Agriculture. The stream need not flow continuously and may flow only briefly after a rain in the watershed.

"Department" means the Kansas Department of Health and Environment.

"Dewatering" means the act of draining or pumping accumulated stormwater and/or groundwater from excavations, building foundations, vaults, trenches, etc., and also the removing of water from an aquifer to lower the aquifer water level.

"Director" means the Director of the Division of Environment, of the Kansas Department of Health and Environment.

"Discharge Monitoring Requirement" means a requirement to observe or evaluate a discharge and note the conditions observed.

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, a discharge of pollutants in stormwater from areas where land-disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants), are located.

"Discharge Point" means for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the construction site.

"Drainage Courses or Drainage Swales" means an open linear depression, whether constructed or natural, that functions for the collection and drainage of surface water.

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"Duly Authorized Representative" means somebody who speaks, acts or votes on behalf of others. For the purposes of this stormwater general permit, the duly authorized representative either 1) has operational control over the facility; or 2) has the day-to-day operational control of those activities at the facility necessary to ensure compliance.

"Effluent Limitation" means any restriction established by the Director on quantities, rates, and concentrations of chemical, physical, biological and other constituents which are discharged from point sources.

"Effluent Limitations Guideline" (ELG) - defined in 40 CFR § 122.2 as a regulation published by the EPA Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

"Entrance and Exit Points" means any points of entry to and exit from the construction site to be used by vehicles and equipment during construction activities.

"EPA" means the U.S. Environmental Protection Agency.

"Exceptional State Waters" means any of the surface waters or surface water segments that are of remarkable quality or of significant recreational or ecological value, are listed in the surface water register, as defined in K.A.R. 28-16-28b, and are afforded the level of water quality protection under the anti-degradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

"Final Stabilization" means all soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70% of the cover which is typical for undisturbed areas, unpaved areas, or areas not covered by permanent structures, in the geographic location of the construction site, has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. Certain exceptions to this exist for final stabilization of individual lots or completion of construction activities within a larger common plan of development.

"Hazardous Substance" means elements and compounds designated as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR 116.4.

"ILC" means the Individual Lot Certification which is to be completed by the permittee and the purchaser of an individual lot or parcel of the overall tract subject to the general NPDES permit for Stormwater Runoff from Construction Activity.

"Impaired Water", "Water Quality Limited Segment" means a surface water that has been identified by KDHE pursuant to Section 303(d) of the Clean Water Act as not meeting applicable Kansas Surface Water Quality Standards. Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established. (Note: To view the Section 303(d) list and TMDLs go to www.kdhe.ks.gov/1443/Total-Maximum-Daily-Loads-TMDLs.)

"Indian Country Land" means (1) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation; (2) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of the State; and (3) All Indian allotments, the Indian titles to which have not been extinguished, including rights of way running through the same.

"Infeasible" means not technologically possible, or not economically practicable and achievable in light of best industry practices.

"Install" or "Installation" means when used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

"KDHE" means the Kansas Department of Health and Environment.

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"KEIMS" means the Kansas Environmental Information Management System.

"Material Handling and Staging Area" means a temporary area on the construction site used for receiving, processing, storing materials to prevent the material from being spilled or coming into contact with runoff.

"Material Washout Area" means a temporary containment area used for the washing of applicators and containers of paint, concrete, and other materials.

"Minimize" means to reduce and/or eliminate to the extent achievable using stormwater controls (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

"Municipal Separate Storm Sewer System (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are owned or operated by a state, city, town, borough, county, parish, district association, or other public body which is designed or used for collecting or conveying stormwater.

"National Pollutant Discharge Elimination System" means the national system for the issuance of permits under 42 U.S.C. Section 1342 and includes any state or interstate program which has been approved by the administrator, in whole or in part, pursuant to 42 U.S.C. Section 1342.

"NOI" means the Notice of Intent form which is to be used to apply for authorization to discharge under this general permit [A copy of the NOI form is provided as part of the general permit.].

"Non-Stormwater Discharges" means discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, noncontact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

"NOT" means the Notice of Termination form which is to be completed by the permittee once the project is completed and the site is stabilized. [A copy of the NOT form is provided as part of the general permit.]

"NOTO" means the Notice of Transfer of Ownership form which is to be completed by the permittee and the new site owner or operator when sale of the entire permitted tract occurs. [A copy of the NOTO form is provided as part of the general permit.]

"Oil and Gas Exemption" means changes to the Federal Clean Water Act (CWA) which exempt oil and gas exploration, production, processing, or treatment operations, and transmission facilities from National Pollutant Discharge Elimination System (NPDES) stormwater permitting requirements associated with stormwater runoff from construction activities. (see 40 CFR 122.26 (c) (1) (iii) for exclusions to the CWA exemption.)

"Operational" for the purpose of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

"Outfall" see "Discharge Point".

"Outstanding National Resource Water" (ONRW) means any of the surface waters or surface water segments of extraordinary recreational or ecological significance identified in the Kansas Surface Water Register and afforded the highest level of water quality protection under the antidegradation provisions of K.A.R. 28-16-28c(a) and the mixing zone provisions of K.A.R. 28-16-28c(b).

"Owner", "Owner or operator", or "owner/operator" means the party or parties that either individually or taken together who are the responsible party liable under the Clean Water Act and meet the following criteria: they have operational control over the site specifications; and, they have the day-to-day operational control of those activities at the site necessary to ensure compliance. For a typical commercial construction site, KDHE herein defines the

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owner or general contractor to be the "owner or operator". For a typical residential development (subdivision), KDHE herein defines the owner or an authorized representative to be the "owner or operator". Each owner or operator who individually does not engage in construction activity of greater than one (1.0) acre must apply when the construction activity is part of a larger common plan of development.

"Permit" means an authorization, license, or equivalent control document issued by the Director to implement the requirements of K.A.R. 28-16-57. Permit includes a 'general permit' (K.A.R. 28-16-150). Permit does not include any document which has not yet been subject to final agency action, such as a "draft permit" or "proposed permit."

"Permittee" means the individual, company, corporation, institution, municipality, township, county, federal agency, owner, operator, or legally constituted sewer district which is authorized by a Kansas Water Pollution Control permit to discharge to the waters of the State and which has operational control of the permitted discharge by specifying activities at the site.

"Point Source" means any discernible, confined, and discrete conveyance, including, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or floating craft from which pollutants are or may be discharged. This term may include structures or site conditions that act to collect and convey stormwater runoff from roadways, urban areas, or industrial sites. This term shall not include agriculture stormwater discharges or return flows from irrigated agricultural land.

"Rainfall Erosivity Waiver" means a waiver of the applicable requirements of the general NPDES permit for Stormwater Runoff from Construction Activities. Owners or operators of construction activities between one and five acres which are eligible for coverage under the general NPDES permit for Stormwater Runoff from Construction Activities may receive a waiver from KDHE provided the value of the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation) is less than five (5) during the period of construction activity.

"Run-on" means sources of stormwater that drain from land located upslope or upstream from the regulated site in question.

"Sediment Basin Design Criteria" are requirements for sedimentation structures to be designed to provide a detention volume at least 3,600 cubic feet of storage per acre of total area draining into the sediment basin. KDHE may approve alternate storage volumes if a significant portion of undisturbed area drains to the sediment basin or for areas in Western Kansas where the 2-year, 30-minute rain event is less than 1.3 inches. Runoff calculations based on a detention volume from a 2-year, 30-minute rainfall event with a minimum runoff coefficient of 0.77 for disturbed acreage and appropriate runoff coefficients for undisturbed acreage must be provided to document and justify the revised storage volume requirement.

Sediment basins must be designed to provide the required storage volume below the elevation of the overflow weir, spillway or riser top that allows mass volume of discharge. Designs shall include outlet structures that withdraw water from the surface, unless infeasible.

"Severe Property Damage" means substantial physical damage to property or substantial and permanent loss of natural resources which would be reasonably expected to occur in the absence of a bypass.

"Significant Materials" includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

"Significant Pollution Potential" means the discharge or potential discharge of one or more pollutants that does or has the potential to degrade water quality, violate a water quality standard, or impair a designated use of a classified water. KDHE, in making a determination as to whether a discharge has a significant pollution potential will consider the size and location of the discharge, the quantity and nature of the discharge, and other relevant factors. Examples of a significant pollution potential would include, but not be limited to, contaminated soils or groundwater

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within the construction site, uncovered salt or salt/sand storage piles; spilled or leaking toxic or hazardous waste; spilled or leaking fuel, oils, grease, solvents; etc.

"Soil Exposed" means for the purposes of this permit, soils that have been disturbed due to the commencement of construction activities.

"Special Aquatic Life Use waters" means surface waters which contain combinations of habitat types and indigenous biota not found commonly in the state, or surface waters which contain representative populations of threatened or endangered species.

"Stabilization" means the use of vegetative and/or non-vegetative cover to prevent erosion and sediment loss in areas exposed through the construction process.

"Standard Weekday" means each day of the week from Monday through Friday, not including Saturday and Sunday and excluding days that have been established for the observance of a Federal Holiday and also the day after Thanksgiving.

"Steep Slope" means any slope occurring on the construction site that is 2.5 horizontal to 1 vertical or greater (approximately 40 percent).

"Storm Sewer" means a system of pipes (separate from sanitary sewers) that carries stormwater runoff from buildings and land surfaces.

"Stormwater" means stormwater runoff induced by atmospheric precipitation, including snow melt runoff, and surface runoff and drainage.

"Stormwater Control" See "Control Measure"

"Stormwater Pollution Prevention Plan (SWP2 Plan)" means a site-specific, written document and construction plans that: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

"Stormwater Runoff from Construction Activities" means stormwater runoff from areas where construction activities are located. Construction activities include clearing, grading and excavating that result in land disturbance of equal to or greater than one (1.0) acre of total land area. Construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1.0) acre. Construction activities do not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. (See 40 CFR 122.26(b)(14 -15) for further clarification.)

"Stormwater Runoff from Industrial Activities" means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the Kansas Water Pollution Control program.

For the categories of industries identified in this definition, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials; and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.

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For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on the plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded area is not mixed with stormwater drained from the above described areas.

Industrial facilities (including industrial facilities which are Federally, State or municipally owned or operated and meet the description of the facilities listed in this paragraph (i)-(xi) of this definition) include those facilities designated under 40 CFR 122.26(a)(1)(v).

The following categories of facilities are considered to be engaging in industrial activity for the purpose of this general permit/definition:

Category (i) - Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N. Limits and/or standards for this category are subject to change and new limits and standards may be adopted. To verify applicability, see 40 CFR subchapter N.

Stormwater Effluent Guidelines

For a discharge to be covered under stormwater effluent guidelines, the facility must have a stormwater discharge subject to stormwater effluent guidelines. At the time of permit issuance, facilities that have stormwater effluent limitations guidelines for at least one of their subcategories include the following:

40 CFR Subchapter N

- Part 411 Cement manufacturing
- Part 412 Concentrated Animal Feeding Operations (CAFOs)
- Part 418 Fertilizer manufacturing
- Part 419 Petroleum refining
- Part 420 Iron & steel manufacturing
- Part 422 Phosphate manufacturing
- Part 423 Steam electric power generating
- Part 434 Coal mining
- Part 436 Mineral mining & processing
- Part 440 Ore mining & dressing
- Part 442 Transportation equipment cleaning
- Part 443 Paving and roofing materials
- Part 449 Airport Deicing

A facility that falls into one of these Parts should examine the effluent guideline to determine if it is categorized in one of the subcategories that have stormwater effluent guidelines. If a facility is classified in one of those subcategories, that facility is subject to the standards listed in the CFR for that category, and as such is required to submit an NOI for any stormwater discharge subject to the stormwater effluent guideline.

Toxic Pollutant Effluent Standards

Facilities subject to toxic pollutant effluent standards refers to the standards established pursuant to CWA section 307(a)(2) and codified at 40 CFR Part 129. Part 129 applies only to manufacturers of six pesticide products which are defined as toxic pollutants. Please note that the phrase "facilities subject to toxic pollutant effluent standards" does not refer to those industries subject to effluent limitation guidelines for toxics under 40 CFR sub-chapter N.

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Manufacturers of the following pesticides are subject to regulation under these provisions:

(a) Aldrin/Dieldrin, (b) DDT, (c) Endrin, (d) Toxaphen (e) Benzidine, and (f) Polychlorinated Biphenyls (PCBs):

(a) Aldrin/Dieldrin---Aldrin means the compound aldrin as identified by the chemical name, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4-endo-5,8-exo-dimethanonaphthalene; "Dieldrin" means the compound the dieldrin as identified by the chemical name 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-exo-dimethanonaphthalene.

(b) DDT---DDT means the compounds DDT, DDD, and DDE as identified by the chemical names:(DDT)-1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane and some o,p '-isomers; (DDD) or (TDE)-1,1-dichloro-2,2-bis(p-chlorophenyl) ethane and some o,p '-isomers; (DDE)-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene.

(c) Endrin---Endrin means the compound endrin as identified by the chemical name 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-endodimethanonaphthalene.

(d) Toxaphene---Toxaphene means a material consisting of technical grade chlorinated camphene having the approximate formula of C₁₀ H₁₀ Cl₈ and normally containing 67--69 percent chlorine by weight.

(e) Benzidine---Benzidine means the compound benzidine and its salts as identified by the chemical name 4,4 '-diaminobiphenyl.

(f) Polychlorinated Biphenyls (PCBs) polychlorinated biphenyls (PCBs) means a mixture of compounds composed of the biphenyl molecule which has been chlorinated to varying degrees.

New Source Performance Standards (NSPS)

For a stormwater discharge associated with industrial activity to be covered under NSPS, the facility must have an activity subject to the NSPS. The new source varies based on the publication date of a particular effluent guideline. Most effluent guidelines listed in 40 CFR Subchapter N contain NSPS.

The following categories of 40 CFR Subchapter N do not have new source performance standards. All other categories have at least one subcategory with new source performance standards.

Part 454 Gum and wood chemicals manufacturing
Part 459 Photographic
Part 460 Hospital

Category (ii) - Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373;

Category (iii) - Facilities classified as SIC codes 10-14 including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990), and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that

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discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/ operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

A facility with an existing or new discharge composed entirely of stormwater from oil or gas exploration, production, processing, or treatment operations or transmission facility is not required to submit a request for authorization under this general permit unless the facility:

(A) Has a discharge of stormwater composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying collection runoff and which are contaminated by contact with, or come into contact with, any overburden, raw material, intermediate products, finished products, byproducts, or waste products on the site of such operations; or

(B) Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6, 40 CFR 117.21 or 40 CFR 302.6 at anytime since November 16, 1987; or

(C) Causes or contributes to a violation of a water quality standard.

Category (iv) - Hazardous Waste Hazardous waste treatment, storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA.

Category (v) - Landfills, land application sites, and open dumps that receive or have received any industrial waste (waste that is received from any of the facilities described under categories (i) - (xi)) including those that are subject to regulations under Subtitle D of RCRA.

Category (vi) - Recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and SIC 5093 (scrap and waste materials).

Category (vii) - Steam electric power generating facilities, including coal handling sites.

Category (viii) - Transportation facilities classified by the SIC codes 40, 41, 42 (except 4221-4225), 43, 44, 45, and 5171 listed below which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under categories (i)-(vii) or (ix)-(xi) of this definition are associated with industrial activity, and need permit coverage. Based on a potential for being a significant contributor of pollutants, KDHE has determined Aerial Spray Operations at Airports are subject to coverage for stormwater runoff associated with industrial activity.

Category (ix) - Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 MGD or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not

Stormwater Runoff from Construction Activities General Permit

Definitions and Acronyms

physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act.

Category (x) - Construction activity is not covered under this definition. The construction "operator" of both large and small construction activities must apply for coverage under an individual permit or the General Stormwater Permit for Construction Activity requirements.

Category (xi) - Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-25.

"Surface water" means all of the following:

- (1) streams, including rivers, creeks, brooks, sloughs, draws, arroyos, canals, springs, seeps and cavern streams, and any alluvial aquifers associated with these surface waters;
- (2) lakes, including oxbow lakes and other natural lakes and man-made reservoirs, lakes and ponds; and
- (3) wetlands, including water bodies meeting the technical definition for jurisdictional wetlands given in the "corps of engineers wetlands delineation manual," as published in January 1987, which is hereby adopted by reference.

"Surface Waters of the State" means all surface waters occurring within the borders of the state of Kansas or forming a part of the border between Kansas and one of the adjoining states.

"Temporary Stabilization" means a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

"Tier 1 Water" means, in regard to antidegradation, a level of protection that provides a "floor" which protects water quality and existing designated uses. Water quality must be preserved to protect and maintain those existing uses. Activities that would lower water quality below levels necessary to maintain existing designated uses are prohibited.

"Tier 2 Water" means, in regard to antidegradation, high quality waters where water quality exceeds the criteria associated with the assigned designated uses. Limited water quality degradation is allowed in high quality water where the degradation is necessary to accommodate important social or economic development, but only if designated uses are still maintained and the highest statutory and regulatory requirements for all point sources of pollution and all cost effective and reasonable best management practices for nonpoint sources of pollution are achieved.

"Tier 2½ Water" means in regard to antidegradation, means a water classified as an Exceptional State Water (see definition of "Exceptional State Waters" in Appendix 1).

"Tier 3 Water" means, in regard to antidegradation, any waters designated as an Outstanding National Resource Water (ONRW) (see definition of Outstanding National Resource Water in Appendix 1).

"Total Maximum Daily Load (TMDL)" is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes waste load allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background and must include a margin of safety and account for seasonal variations. (Note: To view TMDLs go to www.kdhe.ks.gov/1443/Total-Maximum-Daily-Loads-TMDLs .)

"Uncontaminated Groundwater" means water removed from excavation or pumped from an aquifer for dewatering purposes. The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of

Stormwater Runoff from Construction Activities General Permit

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the discharge. Suspended solids and turbidity are not sources of contamination for the purposes of this definition, but the excavation dewatering discharge must be treated as necessary to remove suspended solids and turbidity to prevent any violation of water quality standards.

"Urbanized Area" means a land area comprising one or more places; central place(s); and the adjacent densely settled surrounding area; or urban fringe; that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.

List of Acronyms

BMPS - Best Management Practices
C & D - Construction & Development
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CFR - Code of Federal Regulations
CGP – Construction General Permit
CWA - Clean Water Act
CWQMA - Critical Water Quality Management Area
EPA - U.S. Environmental Protection Agency
ESW - Exceptional State Water
ILC - Individual Lot Certification
K.A.R. - Kansas Administrative Regulations
KDHE - Kansas Department of Health and Environment
KDWPT - Kansas Department of Wildlife, Parks and Tourism
KEIMS - Kansas Environmental Information Management System
K.S.A. - Kansas Statutes Annotated
KSHPO - Kansas State Historic Preservation Office
KSHS – Kansas Historical Society
MS4 - Municipal Separate Storm Sewer System
NOI - Notice of Intent
NOT - Notice of Termination
NOTO - Notice of Transfer of Ownership
NPDES - National Pollutant Discharge Elimination System
NRDC - Natural Resources Defense Council
NTIS - National Technical Information Service
ONRW - Outstanding National Resource Water
RCRA - Resource Conservation and Recovery Act
SALU - Special Aquatic Life Use
SHPO - State Historic Preservation Officer
SMCRA - Surface Mining Control and Reclamation Act
SPCC - Spill Prevention Control Countermeasures
SWP2 Plan or SWPPP - Stormwater Pollution Prevention Plan
U.A. - Urbanized Areas
U.S.C. - United States Code.

Kansas Water Pollution Control General Permit
and Authorization to Discharge

STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES

Under the National Pollutant Discharge Elimination System

Pursuant to the Provisions of Kansas Statutes Annotated 65-164 and 65-165; the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.; the "Clean Water Act"); and the Kansas Surface Water Quality Standards (K.A.R. 28-16-28 et seq.); this NPDES general permit provides the requirements and conditions under which the permittee is authorized to discharge stormwater runoff from construction activities.

Coverage is provided and construction Stormwater discharge is authorized when the Kansas Department of Health and Environment (KDHE) issues an Authorization to discharge stormwater runoff from construction activities until the Authorization is revoked/terminated. A signed and dated copy of the Authorization or notification that the Authorization has been issued and is available to access or download will be provided to the permittee.

Upon Authorization, the Permittee is allowed to discharge stormwater runoff from construction activities described in the Notice of Intent for Stormwater Runoff from Construction Activities and supporting documents in accordance with the requirements and conditions of this NPDES General Permit and the Stormwater Pollution Prevention Plan developed for the identified construction activities.

This NPDES general permit is effective August 1, 2022 through July 31, 2027.

(signed by Secretary Janet Stanek)
Secretary, Kansas Department of Health and Environment

July 29, 2022
Date

AUTHORIZED ACTIVITY DESCRIPTION:

Construction Activities

Construction activities consist of any activity (e.g. clearing, grubbing, excavating, and grading) which disturbs a cumulative total of one (1.0) or more acres or when the site is a part of a larger common plan of development or sale which will disturb a cumulative total of one or more acres.

Owners or operators of construction activities which disturb less than one acre (<1.0 acre), and which are not part of larger common plan of development or sale, must have authorization to discharge stormwater runoff from construction activities under this NPDES general permit when KDHE notifies the owner or operator that the water quality impact from discharge of stormwater runoff from construction activity warrants consideration because the proposed construction activities constitute a significant pollution potential.

Permit coverage is not required for routine maintenance (see endnote 7, page 21), for certain demolition and linear projects and for certain project support activities as specified in Part 1.1 of this permit.

Upon issuance of this NPDES General Permit, owners or operators who intend to engage in construction activities as indicated above shall obtain authorization to discharge stormwater runoff under this NPDES general permit prior to commencing construction activities at the project site. To obtain authorization to discharge stormwater runoff, the owner or operator of a construction site needs to submit a Notice of Intent (NOI) for the discharge of stormwater runoff from construction activities at least 60 days prior to removing vegetation or disturbing soil at the site to avoid any unplanned delays in the start of construction. The NOI form is a request for coverage under the requirements and conditions of this NPDES general permit. To obtain authorization, the NOI form and supporting documents shall be submitted in accordance with Part 4 of this NPDES general NPDES permit. Upon acceptance of the NOI and supporting documents, KDHE will indicate the authorization for coverage under the NPDES general permit on the NOI form, assign permit numbers, and indicate the KDHE issuance of the Authorization with the Department Secretary's signature. The owner or operator is then authorized to discharge stormwater runoff from construction activities under the provisions of this NPDES general permit and may commence construction activities at the site described in the NOI and supporting documents in accordance with the terms and conditions expressed in this NPDES general permit and in conformance with the stormwater pollution prevention plan developed for the site.

Owners or operators who received authorization to discharge under the previous Stormwater Runoff from Construction Activities General Permit S-MCST-1703-1, may continue to operate under those permit provisions, conditions, requirements, limits, site specific authorized Best Management Practices (BMPs), and site specific authorized Stormwater Pollution Prevention Plan (SWP2 Plan) until 18 months after permit issuance as provided for in Part 6.1 of this permit.

Rather than submitting an NOI, owners or operators who intend to engage in construction activity that will disturb between one (1) and five (5) acres may request a rainfall erosivity waiver. To receive a waiver, the owner or operator of a construction site shall submit a rainfall erosivity waiver application form prior to removing vegetation or disturbing soil at the site. KDHE recommends the rainfall erosivity waiver application form and supporting documentation be submitted at least 60 days prior to the start of construction activities. Prior to initiation of construction activities at the site the owner or operator must receive a copy of the authorized rainfall erosivity waiver or notification that authorization has been issued and the authorized form is available to access or download from KDHE. To be authorized, the small construction activity must have a low predicted rainfall potential that corresponds to a rainfall erosivity factor of less than 5 as calculated by the Revised Universal Soil Loss Equation [RUSLE]. The rainfall erosivity waiver application form is available on the [Kansas Stormwater Website](#) (see endnote 1, page 21). Copies can also be obtained by writing or e-mailing KDHE at the addresses in Part 10.2.

Any owner or operator who is subject to NPDES permit requirements for stormwater runoff from construction activities and who discharges stormwater runoff from construction activities prior to receiving authorization from KDHE is in violation of both State and Federal laws.

PREFACE

The purpose of this NPDES general permit is to implement the Federal Water Pollution Control statutes and regulations; permit discharges of stormwater runoff from construction sites subject to National Pollutant Discharge Elimination System (NPDES) permit requirements; and to protect waters of the State from sediment and other contaminants.

The issuance of an authorization to discharge under this NPDES general permit allows a project owner or operator, after implementation of the project site stormwater pollution prevention plan, to commence construction site soil disturbing activities that can produce or potentially produce a discharge of contaminated stormwater runoff to surface waters of the State of Kansas. In the absence of information demonstrating otherwise, KDHE expects that compliance with provisions and conditions in this permit will result in the discharge of stormwater being controlled as necessary to meet applicable Kansas surface water quality standards.

This NPDES general permit does not authorize the placement of fill materials in a flood plain, the obstruction of stream flow, directing stormwater runoff across private property, increasing stormwater runoff flow, changing the channel of a defined drainage course, etc. This NPDES general permit is intended to address only the quality of the stormwater runoff and to minimize off-site migration of sediments or other pollutants.

KDHE administers a number of regulatory programs that may preclude the initiation of construction activities until such time as a specific permit is issued or authorization is granted. This NPDES general permit authorization solely addresses NPDES stormwater discharge requirements for construction activities. It is the obligation of the permittee to ensure compliance with all other KDHE, State, Federal and local statutory and regulatory requirements.

Owners or operators seeking coverage under this NPDES general permit which have the potential to impact threatened or endangered species or historical sites can obtain information regarding regulatory requirements or special conditions which may be applicable to the activities covered by this permit from the Kansas Department of Wildlife and Parks (KDW&P) or the Kansas Historical Society (KSHS) respectively (See NOI instructions for contact information).

Other appropriate agencies should be contacted to determine the need for additional permits, authorizations, or requirements, if any. In particular the applicant should contact the local municipal separate storm sewer system

(MS4) agency (see endnote 2, page 21). Other agencies the applicant should contact include the United States Army Corps of Engineers; Kansas Department of Agriculture, Division of Water Resources; and any other local governments or agencies that are not listed herein that may have jurisdiction.

Authorization to Discharge under this NPDES general permit does not constitute approval of the project under the provisions of the Kansas Water Projects Environmental Coordination Act and does not relieve the permittee of the responsibility to comply with the requirements of other Agencies prior to commencement of construction activities.

Part 1. WHO MUST OBTAIN AUTHORIZATION TO DISCHARGE

Owners or operators of construction activities which may disturb one (1.0) or more acres of soil or are part of a larger common plan of development or sale which may disturb a cumulative total of one (1.0) or more acres of soil must obtain authorization to discharge stormwater runoff from construction activities.

Owners or operators of construction activities which disturb less than one acre (<1.0 acre) of soil, and are not part of larger common plan of development or sale, must have authorization to discharge stormwater runoff from construction activities under this NPDES general permit when KDHE believes the water quality impact warrants consideration or KDHE determines the construction activities constitute a significant pollution potential (i.e., sites that will disturb contaminated soils, contaminated groundwater, or sites adjacent to sensitive waters).

Soil disturbing activities where contaminated soils or contaminated groundwater may be present on the site are reviewed by KDHE on a case-by-case basis and may require coverage under this NPDES general permit or an individual permit even if less than one acre (< 1.0 acre) of soil is disturbed. For sites where contaminated soil or groundwater is present, contact KDHE Bureau of Water - Industrial Programs Unit at (785) 296-5549 for a determination on the need for coverage under this NPDES general permit.

Platted subdivision projects must obtain coverage for all areas of the subdivision site. Subdivision projects that have roads and/or utilities constructed under separate contract (e.g., city assessment district) may need to have two concurrent discharge authorization requests (NOIs) for coverage under the NPDES general permit submitted. The owner (developer) of the subdivision project must maintain coverage for the individual lot construction sites. Owners that have control over the construction activities

of the entire subdivision site, including roads and utilities, need only submit one discharge authorization request (NOI) for coverage under the NPDES general permit.

Soil disturbing activities in response to a public emergency (e.g., tornado, earth quake, flood, ice storm, rail or highway incidents) where the related work requires immediate soil disturbance to avoid imminent endangerment to the public health or the environment is allowed without formal submittal and authorization by KDHE if the owner or operator implements soil erosion and sediment control as soon as possible after the emergency conditions have been resolved and a Notice of Intent application form for coverage under this permit is submitted within 30 days after the start of emergency soil disturbing activities showing the areas disturbed and the soil and erosion controls provided.

1.1 Activities that Do Not Require Permit Coverage –

Construction activities do not include the following types of projects:

- a. routine maintenance that disturbs less than 5 acres (see endnote 7, page 21);
- b. structural demolition activities, including filling of basements, removal of debris and removal and replacement of pavement (even when exposing erodible soils or subsoils), which do not involve soil excavation, grading, clearing, grubbing or other soil disturbing construction activities;
- c. the linear opening of soil in a single line of two (2) feet or less in width utilizing soil plow trenching equipment that immediately closes the opening as part of the plow equipment's normal operation by filling the opening with removed soil or by the closure of the sidewalls to their original configuration after passage of the plow; however, areas disturbed by soil plow operations that open a width of more than one (1) foot must immediately be seeded with an appropriate variety of vegetative cover or stabilized with mulch or a similarly effective soil stabilizing BMP after passage of the plow equipment.

Soil disturbing activities associated with construction support activities, such as concrete batch plants, asphalt plants, soil disposal sites and borrow sites at or immediately adjacent to the supported project site are considered part of the common plan of development for the project and will need coverage under this permit through separate authorization if the support activity is not included in the supported project's stormwater pollution prevention plan. Asphalt and concrete batch plants might also need to obtain a separate water pollution control permit for wastewater generated by these facilities.

Support activities such as concrete batch plants, asphalt plants and areas of offsite soil borrow and soil disposal/fill activities may be treated as stand-alone construction projects which are not considered part of the supported project's common plan of development if runoff from the support activity site is not anticipated to significantly impact the same surface waters and stream segments that receive runoff from the supported project site.

Part 2. WHAT THIS PERMIT COVERS

Coverage under this NPDES general permit authorizes the discharge of stormwater runoff from construction activities for sites where the discharge point is located in Kansas and for discharges and construction activities that are conducted in accordance with the provisions and requirements of this permit and in accordance with the site specific stormwater pollution prevention plan from the date of Authorization until the site conditions meet the closure requirements specified in Part 9 of this permit and a Notice of Termination (NOT) is received by KDHE or the permit is revoked/terminated or placed on inactive status for cause by KDHE.

Proposed new or existing unpermitted construction stormwater dischargers, in regard to antidegradation, are eligible for authorization under this general permit to discharge to a Tier 1, 2, or 2½ Water only if the discharge will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, KDHE expects that development, installation, operation, appropriate maintenance of site specific BMPs and the SWP2 Plan as well as compliance with the provisions, conditions, requirements, and limits of this general permit will result in discharges that will not lower the water quality of the receiving surface water.

Proposed new or existing unpermitted construction stormwater dischargers that will discharge directly into Tier 3 waters (Outstanding National Resource Waters) are, in regard to antidegradation, considered temporary discharges and eligible for authorization under this general permit to discharge stormwater from construction activities but only if the discharge will not lower the water quality of the receiving water, all enhanced (significantly better and more reliable) levels of controls and best management practices are evaluated and implemented to minimize off-site migration of sediments or other pollutants. In the absence of information demonstrating otherwise, KDHE expects that development, installation, operation, appropriate maintenance of enhanced site specific BMPs and the SWP2 Plan as well as compliance with the provisions, conditions, requirements, and limits of this general permit will result in discharges that will not lower the water quality of the receiving surface water and provide the highest protection reasonably available.

This NPDES general permit also authorizes the following non-stormwater discharges from construction sites during the life of the project:

1. Flushing water hydrants and potable water lines provided appropriate sediment and erosion controls are implemented,
2. Water used for rinsing streets or structures that does not contain cleansers, detergents, solvents or additives;
3. Irrigation to establish vegetation;
4. Discharges of uncontaminated non-turbid groundwater provided that appropriate sediment and erosion controls are implemented;
5. Discharges from emergency fire-fighting activities;
6. Water used to control dust;
7. Uncontaminated air conditioning or compressor condensate;
8. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated groundwater;
9. Uncontaminated construction dewatering wastewaters that have been treated by an appropriate control such as bag filters or equivalent technology. Wastewaters that have been treated by an appropriate control but still contain trace amounts of sediment are not considered contaminated; and
10. Discharges of stormwater listed above, or authorized non-stormwater commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

Part 3. WHAT THIS PERMIT OR THE RAINFALL EROSION WAIVER DOES NOT COVER

This NPDES general permit does not authorize or address:

1. A discharge of stormwater runoff from construction activities which violates the provisions of this NPDES general permit;
2. Construction activities on sites within Kansas which are located on Indian Country lands, (see endnote 3, page 21);
3. Construction activities which may discharge

stormwater runoff one-half stream mile or less from a Critical Water Quality Management Area; an Exceptional State Water; a Special Aquatic Life Use Water; or to an Outstanding National Resource Water unless KDHE specifically grants coverage by this NPDES general permit (see endnote 4, page 21).

4. Construction activities that result in the discharge of stormwater runoff which violates the Kansas Surface Water Quality Standards;
5. Construction activities that result in the discharge of stormwater runoff which violates the applicable requirements of a Municipal Separate Storm Sewer program or local stormwater pollution prevention program;
6. Construction activities that may adversely affect threatened or endangered species as listed in K.A.R. 115-15-1 et seq. unless the KDW&P has been specifically consulted with;
7. Construction activities that may affect any identified archeological sites or historic sites listed or eligible for listing on the National Register of Historic Places unless the KSHS has been specifically consulted with;
8. Projects that are exempt under the Oil & Gas Exemption (see definition). However, if coverage under the NPDES general permit is requested, an Authorization will be issued, and permit requirements will be enforced. However, dewatering discharges (e.g., well point or groundwater dewatering wells) and trench dewatering from groundwater infiltration are not exempt activities under the Oil and Gas Exemption and require KDHE approval, permitting, or authorization under the NPDES general permit. KDHE will review discharges based on management by appropriate controls, discharge quality and quantity, and proposed location of the discharge to determine the need for approval or permitting requirements on a case-by-case basis. Acceptable discharges of uncontaminated groundwater dewatering shall meet Kansas Surface Water Quality Standards, control sediment by employing bag filters or equivalent technology, and prevent down gradient scouring and soil erosion.
9. Agricultural construction activities are generally exempt unless construction of a drainage structure will drain an area that exceeds the definition of a stream as defined by the Kansas Department of Agriculture under K.A.R. 5-45-1(t), or the construction is for a livestock pen or feature related to concentrated animal feeding operations or a structure such as a garage, barn, shed, stall, storage building, residence or office;

10. The discharge of stormwater from sites where construction activities will result in the disturbance of one or more acres or are a part of a common plan of development or sale which may disturb a cumulative total of one or more acres where a discharge is directed to an "impaired water" where the impairment is for total suspended solids, nitrogen, or phosphorous or a waterbody for which KDHE has developed, and EPA has approved, a Total Maximum Daily Load (TMDL) for total suspended solids, nitrogen, or phosphorous. Authorization of coverage under this general permit for such sites may be granted only if the stormwater discharge will not cause or contribute to a violation of surface water quality standards and the permittee implements, operates, and maintains appropriate BMPs, erosion and sediment control measures, and complies with all provisions of this NPDES general permit. In the absence of information demonstrating otherwise, KDHE expects that compliance with the provisions, conditions, and limits in this general permit will result in stormwater discharges being controlled, as necessary, to meet applicable water quality standards and satisfy current provisions in Kansas developed and EPA approved TMDLs directed at total suspended solids and indirectly address releases associated with nitrogen and phosphorus. KDHE may impose additional water-quality based limitations on a site-specific basis or require coverage under an NPDES individual permit if information in the NOI and associated materials, required reports, site inspections conducted by KDHE or EPA, or from other sources indicate that stormwater discharges from the site are not controlled as necessary to meet applicable water quality standards or the provisions of a specific TMDL for the waterbody receiving the discharge.
11. Discharges of water mixed with non-stormwater discharges, unless they are listed as allowable non-stormwater discharges in Part 2 above or are determined by KDHE as not requiring authorization;
12. Discharges of fill or dredged materials regulated by part 401 or 404 of the Clean Water Act unless permits under 401 or 404 so stipulate;
13. Stormwater discharges associated with construction activities that are authorized under an individual permit or a different NPDES general permit, unless coverage under this permit is authorized by KDHE Bureau of Water;
14. Stormwater and/or allowable non-stormwater discharges associated with construction activities that are discharged to a combined sewer system; and

15. The modification of stormwater drainage (the routing of flows or the change in quantity of flow) onto or across private property.

This NPDES general permit does not relieve the permit holder of the obligation to obtain other approvals, permits, licenses, or documents of sanction that may be required by other federal, state, or local government agencies.

This NPDES general permit also does not authorize any other discharge of sewage, pollutants or wastewater to waters of the State including for example:

- a. Hazardous substances or oil from an on-site spill or improper handling and disposal practices;
- b. Wash and/or rinse waters from concrete mixing equipment including ready mix concrete trucks;
- c. Wastewater generated from wet air pollution control equipment including asphalt plants, or the containment of asphalt plant scrubber water in lined ponds;
- d. Contaminated groundwater (see definitions);
- e. Wastewater from washout and clean out of stucco, paint, form release oils, curing compounds and other construction materials;
- f. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- g. Soaps or solvents used in vehicle or equipment washing; or
- h. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed by appropriate controls.

KDHE reserves the right to deny coverage under this NPDES general permit to applicants for stormwater runoff from construction or earth disturbing activities at sites which have contaminated soils which will be disturbed by the construction activity or have contaminated groundwater which could be discharged by the construction activity.

3.1 Individual Permits Required Due to Denial or Non-Compliance –

If the NOI for coverage under this NPDES general permit is denied by KDHE, then the applicant is not eligible for coverage under this NPDES general permit and shall apply for an individual NPDES permit.

The permittee shall apply for an individual NPDES permit at least 180 days prior to commencing construction

activities. Construction activities as defined in this permit shall not commence until the individual NPDES permit is issued.

Part 4. HOW TO APPLY

The owner or operator of a construction site needing to discharge stormwater runoff from construction activities shall submit a complete request for coverage under this NPDES general permit to obtain authorization under this NPDES general permit from KDHE prior to removing vegetation or disturbing soil at the site. The person requesting coverage under this general permit shall submit an NOI via the Kansas Environmental Information System (KEIMS); or shall submit an NOI as a paper or electronic document in a format acceptable to the Department along with a completed request for a temporary waiver of the NPDES Electronic Reporting Rule requirements, or a copy of an approved permanent waiver request form and verification of the continuing need for the permanent waiver of the electronic reporting requirements, in accordance with Part 10.10 of this permit.

A complete request for Authorization to discharge stormwater runoff from construction activities under this NPDES general permit must be submitted or the request will not be processed. A complete request for Authorization includes:

- An NOI form (construction stormwater) with all information provided and an original authorized signature; or completion and submittal of an equivalent form by the owner or operator or their duly authorized representative;
- A payment for the first year of the annual permit fee. Checks are to be made payable to "KDHE". Per K.A.R. 28-16-56 et seq., as amended, the current annual permit fee for this NPDES general permit is \$60;
- An area map delineating the boundary of the construction site and the general topographic features of the area, including elevation contours, at least one mile beyond the construction site boundary and indicating the location of all streams and other surface water bodies within one mile of the site boundary that receive runoff from the construction site;
- A summary of the sequence of major soil disturbing activities including installation of the corresponding stormwater management and pollution control features;

- A detailed site plan covering the entire scope of the project construction activities showing the existing contours, proposed contours, erosion and sediment control features, and locations where stormwater runoff leaves the construction site;
- Design calculations for any proposed sedimentation basin, if applicable;
- Copies of letters, e-mails, website requests or similar documentation of coordination with appropriate local, state or federal agencies; and
- For sites where contaminated soil or groundwater is known or reasonably believed present and contaminated soil could be disturbed and/or contaminated groundwater could be discharged, provide the potential locations and concentrations of the contaminants reasonably anticipated to be present. Provide a narrative summary of best management practices proposed to eliminate or minimize discharge of the contaminants in stormwater runoff, dewatering flows and other discharges that leave the site. See Appendix 1 for definitions of contaminated soil and contaminated groundwater.

KDHE recommends the NOI and supporting documentation be submitted at least 60 days prior to the start of construction activities to avoid unplanned delays in the start of construction. Submittal of a Notice of Intent (NOI) to discharge Stormwater Runoff from Construction Activities and all supporting documentation indicated above, even 60 days after submittal, does not provide automatic coverage under the NPDES general permit. Coverage under this NPDES general permit begins when KDHE authorizes the discharge of stormwater runoff from construction activities identified in the NOI and supporting documentation.

An NOI form can be downloaded from the [KDHE Stormwater Website](#) (see endnote 1, page 21) or obtained from KDHE at the address given in Part 10.2 of this NPDES general permit.

If the construction activities will be conducted within the boundaries of a Municipal Separate Storm Sewer System (MS4), the permittee shall submit a copy of the KDHE Authorization and all supporting documentation to the operator of the local MS4 and obtain any permits or approvals that may be required under the local Stormwater Management Program. A list of NPDES permitted MS4 operators which are required to develop a Stormwater Management Program is available on the [KDHE Stormwater Website](#) (endnote 2, page 21) or upon written request to KDHE Bureau of Water - Municipal

Programs Unit.

Upon KDHE's Authorization to discharge stormwater runoff from construction activities for the site indicated on the NOI and supporting documents, the owner or operator and, if appropriate, the company, corporation, partnership, or government entity they represent becomes the permittee under this NPDES general permit.

Part 5. STARTING CONSTRUCTION ACTIVITY

The owner or operator who has applied for coverage under this NPDES general permit shall not initiate construction activities and discharge or have the potential to discharge stormwater runoff from construction activities described in the NOI until receiving Authorization from KDHE for the discharge.

When the owner or operator receives KDHE's Authorization to discharge stormwater from construction activities, the owner or operator may commence construction activities at the site described in the NOI and supporting documentation under the provisions of this NPDES general permit and in accordance with the construction site stormwater pollution prevention plan (SWP2 Plan).

A copy of the KDHE Authorized NOI and the project specific SWP2 Plan including the erosion and sediment control plan for the specific project shall be readily available at the construction site, with a paper or electronic copy of the plan being available at the site within 1 hour of request.

Part 6. CONTINUING COVERAGE - ANNUAL PERMIT FEE AND RENEWAL REQUIREMENTS

The permit holder shall pay an annual permit fee as specified in K.A.R. 28-16-56 et seq. as amended as long as stormwater discharges from the facility continue to meet the definition of stormwater discharges from construction activities. Checks are to be made payable to "KDHE".

An annual invoice for the annual fee will be sent to the designated billing contact listed in the NOI. Payment of the annual permit fee is required to maintain continued coverage under this NPDES general permit until such time as a request for a transfer of ownership is received and accepted by KDHE or until the site is stabilized or otherwise meets the requirements of Part 9 of this permit and a Notice of Termination (NOT) is received by KDHE or the permit is revoked/terminated.

KDHE reserves the right to revoke/terminate coverage under this NPDES general permit to applicants for stormwater runoff from construction or soil disturbing

activities where annual payment for continuing coverage has not been received or reasonable application of best management practices or pollution controls have not been implemented or maintained following notification by KDHE staff.

Authorization under this general permit will be placed on inactive status by KDHE without further notice for any of the following reasons:

- a) Failure to pay the annual permit fee after the mailing or electronic transmittal of the annual invoice and with no payment received for 3 months after the date of the invoice;
- b) Failure to provide KDHE with a valid current mailing address or electronic contact information which results in an invoice or other KDHE correspondence being returned by the post office without a forwarding address or rejected by email or other communication service.

Projects that have been inactivated will no longer have permit coverage under this general permit.

Projects for which a Notice of Intent has been submitted but not Authorized and for which a response to a KDHE request for additional documentation has not been received within one year of NOI submittal will be administratively closed.

Owners or operators of projects that have been placed on Inactive Status, administratively closed or denied Authorization and who want to obtain coverage under this general permit must submit a complete new request for Authorization in accordance with Part 4 of this permit.

6.1 Continuing Coverage Authorization under Previous Permit –

The permittee is not required to submit a new NOI for continuing coverage under the successor NPDES general permit unless modifications, changes or discoveries are made which may affect coverage under the successor NPDES general permit or the information in the current NOI is inaccurate, needs to be updated, or KDHE requests the submission of a new NOI.

Owners or operators of constructions activities that received KDHE authorization for coverage under the previous Kansas Water Pollution Control and National Pollutant Discharge Elimination System General Permit (General Permit No. S-MCST-1703-1) prior to the effective date of this permit may continue to operate under those permit provisions, conditions, requirements, limits, site specific authorized Best Management Practices (BMPs), and site specific authorized Stormwater Pollution

Prevention Plan (SWP2 Plan) for a period of 18 months after issuance of this permit. If by 18 months after the effective date of this permit all construction activities authorized by General Permit No. S-MCST-1703-1 have not been completed, the construction site stabilized, a Notice of Termination (NOT) completed and submitted in conformance with the permit requirements and the Notice of Termination received by KDHE, then prior to the end of this 18-month period the permittee shall modify or amend the current SWP2 Plan in conformance with all permit provisions, conditions, requirements, and limits as established in this permit. The permittee shall also implement the modified or amended SWP2 Plan prior to the end of this 18-month period and shall install, modify and continue maintaining all BMPs as specified in the modified or amended SWP2 Plan. The intent of this 18-month transition period is to enable permittees that received authorization for construction activities under the previous general permit (S-MCST-1703-1) time to either complete construction activities and terminate permit coverage or retain the services of a licensed professional engineer, geologist, architect, landscape architect, or a Certified Professional in Erosion and Sediment Control (per Part 7.1 of this permit) to modify the SWP2 Plan and implement revised BMPs in conformance with all provisions, conditions, requirements, and limits of this permit, which includes EPA's Construction and Development Effluent Guideline Standards (40 CFR 450) in effect at the time this permit was issued.

6.2 Request for an Individual NPDES Permit –

On and after the effective date of this NPDES general permit, the permit holder must comply with the terms and conditions of this permit and continue paying the annual permit fee; or request an individual NPDES permit within 90 days after the publication of this permit. The facility will continue coverage under the previous NPDES general stormwater permit (General Permit No. S-MCST-1703-1) and comply with the provisions of the previous NPDES general permit until the individual NPDES permit is issued. If coverage under an individual permit is denied the owner or operator may continue to operate under General Permit S-MCST-1703-1 for 18 months after denial of the application for an individual permit and shall modify or amend the SWP2 Plan, implement the modified or amended SWP2 Plan and install appropriate BMPs in conformance with this permit within 18 months after said denial.

6.3 Continuing Coverage Authorization after Permit Expiration –

This NPDES general permit will expire five (5) years from issuance. Should KDHE fail to issue a new NPDES general permit with an effective date on or before the expiration date of this permit, the conditions of this NPDES general permit continue in force until the effective

date of a new NPDES general permit.

If the permittee wishes to continue construction activities regulated by this NPDES general permit after the expiration date of this permit, the permittee must continue to pay the annual fee; and continue to comply with the terms and conditions of this NPDES general permit until the effective date of the successor NPDES general permit.

A permittee who has a valid authorization to discharge stormwater runoff from construction activities under the conditions of this NPDES general permit will continue to be covered until the effective date of the new NPDES general permit and shall comply with the conditions of this NPDES general permit until the effective date of the successor NPDES general permit. Upon the effective date of the successor NPDES general permit, the permittee shall continue to comply with the terms and conditions of the successor NPDES general permit or obtain coverage for construction stormwater discharges under alternative provisions of this permit.

Part 7. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS AND GUIDELINES

Before initiating construction activities, the permittee shall develop a Stormwater Pollution Prevention Plan (SWP2 Plan) which is specific to the construction activities which are to be employed at the site authorized by this NPDES general permit to discharge stormwater runoff. The permittee shall fully implement the provisions of the SWP2 Plan required under this part as an enforceable condition of this NPDES general permit throughout the term of the construction project.

The purpose of the SWP2 Plan is to ensure the design, implementation, management, and maintenance of "Best Management Practices" (BMPs) in order to eliminate or minimize erosion, sediment; and other pollutants in stormwater runoff from construction activities; comply with the Kansas Surface Water Quality Standards; and ensure compliance with the terms and conditions of this NPDES general permit.

The SWP2 plan itself does not contain effluent limits but the SWP2 plan must include the specific control measures that will be used to meet the limits contained in the permit (i.e. the technology-based BMP limits).

The permittee shall select, install, utilize, operate, and maintain effective BMPs in accordance with best professional judgment, generally accepted and scientifically defensible guidance, and the concepts and methods described in Environmental Protection Agency (EPA) document number EPA 832-R-92-005, entitled *Stormwater Management for Construction Activities - Developing Pollution Prevention Plans and Best*

Management Practices, published in September, 1992 and EPA document number EPA 833-R-06-004 entitled *Developing your Stormwater Pollution Prevention Plan, A Guide for Construction Sites* published in May, 2007 (see endnote 5, page 21). The permittee is not limited to the BMPs provided in the EPA guidance manuals. Other pollution or erosion controls must utilize practices with similar effectiveness, and the permittee should develop BMPs with the goal of site-specific effectiveness in mind.

7.1 General SWP2 Plan Requirements -

Stormwater Pollution Prevention (SWP2) Plans shall be developed and prepared under the supervision of a licensed Kansas professional engineer, geologist, architect, or landscape architect or a Certified Professional in Erosion and Sediment Control (see endnote 6, page 21). Please note: It is unlawful for a person to perform any assignment involving a specific technical profession unless licensed or specifically exempted by the Kansas Board of Technical Professions and is qualified by education and expertise in that profession to perform such work.

Stormwater runoff from disturbed areas which leave the site shall pass through an appropriate sediment control, such as a sedimentation basin, sediment trap, silt fence, buffer area or similar control measure prior to leaving the construction site. An appropriate sediment control, such as a ditch check or turbidity curtain, may also be provided below disturbed stream channel sections where typical channel flow during construction might cause a non-negligible discharge of sediment. The permittee shall ensure the BMPs and/or pollution controls are properly installed and maintained at the locations and relative timeframes specified in the SWP2 Plan. Margin or border BMPs, such as a buffer area or vegetation strips, to control stormwater runoff where it leaves the site boundary, shall be installed or marked for preservation before general site clearing is started.

7.2 Contents of SWP2 Plan

7.2.1 Site Description –

The permittee's SWP2 Plan shall include all of the information provided in the NOI. The SWP2 Plan shall expand upon the NOI information in order to make the SWP2 Plan a working document which contractors and site construction workers can use to guide the installation and maintenance of BMPs and pollution controls.

7.2.2 Description of Best Management Practices –

The permittee's SWP2 Plan shall include a description of the BMPs and/or pollution controls they will use at the site. The SWP2 Plan shall provide the following general information for each BMP and/or pollution control which will be used one or more times at the site:

- a physical description of the BMP and/or pollution control;
- the site and physical conditions which must be met for effective use of the BMP and/or pollution control;
- the BMP and/or pollution control installation/construction procedures, including typical drawings; and
- operation and maintenance procedures for the BMP and/or pollution control.

The SWP2 Plan shall provide the following information for each specific instance where a BMP and/or pollution control is to be installed:

- where, in relation to other site features, the BMP and/or pollution control is to be located;
- when, in relation to each phase of construction, the BMP and/or pollution control will be installed; and
- what site conditions must be met before removal of the BMP and/or pollution control, if it is not permanent.

7.2.3 Detailed SWP2 Plan Requirements -

The SWP2 Plan must provide BMPs and/or pollution controls that, at a minimum, are designed, installed, and maintained to:

- (1) Control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges.
- (2) Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
- (3) Minimize the amount of soil exposed during construction activity;
- (4) Minimize the disturbance of steep slopes [slopes of forty (40) percent (2.5:1 horizontal to vertical ratio) or steeper, see definitions];
- (5) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

- (6) Provide and maintain natural buffers around waters of the United States, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible;
- (7) Minimize soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;
- (8) Unless infeasible, preserve topsoil. Preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed;
- (9) Minimize discharges from stream crossings, including open-cut trenched crossings, by immediately stabilizing the areas from top of bank to waters edge to the extent feasible and providing appropriate controls to minimize any stream scour. Appropriate sediment controls shall also be provided down gradient from bore pit stockpiles;
- (10) Control discharges from sediment or soil stockpiles;
- (11) Minimize the generation of dust through the application of water or other dust suppression techniques;
- (12) Minimize off-site tracking of soils by utilizing wheel washing facilities or an appropriately designed construction entrance and exit. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge. Off-site track out shall be cleaned up at the end of each work day. Sites with contaminated soils must provide wheel washing and tanks for holding of the spent wash water, if feasible, or other equivalent practices if the vehicles can track the contaminated soil from the site;
- (13) Provide structures to divert significant flows of stormwater from off-site drainage, if feasible;
- (14) Reduce erosion of concentrated flows of stormwater in channelized drainage through the use of velocity dissipation devices, (e.g., check dams, riprap, and wattles), installation of channel liners (e.g., riprap, geotextiles, and erosion control blankets), or the combined use of both methods of erosion control; and
- (15) Provide storm drain inlet protection (such as rock bags) for inlets down gradient of disturbed project areas that are not fully stabilized or where construction activity will soon be started.

7.2.4 Steep Slope Stabilization Requirements -

When construction activities on steep slopes [slopes of forty (40) percent (2.5:1 horizontal to vertical ratio) or steeper, see definitions] cannot be avoided, the SWPP

Plan must require the contractor to immediately initiate placement of appropriate erosion control BMPs in any exposed steep slope areas where construction activities have permanently or temporarily ceased, and will not resume for a period exceeding 7 calendar days. For vegetative cover areas, in addition to seeding, watering, mulching, and any other required activities related to the planting and establishment of vegetation, other appropriate erosion control practices such as geotextiles or erosion control mats shall be utilized. Diversion of concentrated or channelized stormwater flows around steep slopes or slope drains shall be utilized where feasible.

7.2.5 Temporary and Permanent Non-Structural BMPs

Examples of non-structural BMPs which the permittee should consider specifying in the SWP2 Plan include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, protection of existing vegetation for use as buffer strips (especially along drainage courses), protection of trees, preserving existing stream channels as overflow areas when channel shortening is allowed, soil stabilizing emulsions and tackifiers, mulch tackifiers, preservation of mature vegetation, stabilized site entrances/exits, wheel brushing or washing, clean-up of soils on roadways, dust control and other appropriate BMPs.

The permittee's SWP2 Plan shall require existing vegetation to be preserved where practical, and the time period for soil areas to be without vegetative cover is to be minimized to the extent practical.

Clearing and grubbing within 50 feet of a defined drainage course shall be avoided, if feasible.

Where changes to defined drainage courses are to occur as part of the project, clearing and grubbing within 50 feet of the defined drainage course shall be delayed until all materials and equipment necessary to complete the drainage change are on site.

Changes to defined drainage courses shall be completed as quickly as possible once the work has been initiated. The area impacted by the construction of the drainage course change is to be re-vegetated or stabilized to minimize the length of time the area is exposed.

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other soil disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. The disturbed areas shall be protected from erosion by stabilizing the area with mulch or other similarly effective

soil stabilizing BMPs. Activities required to stabilize disturbed areas with mulch or other similarly effective soil stabilizing BMPs must be completed within 14 days after soil disturbing activities cease.

Stabilization of disturbed areas is not required if the intended function of a specific area of the site necessitates that it remains disturbed. Such areas include stockpiles of soil materials (such as structural soils and clays, but not stockpiles of topsoil) that are intended for a use that prohibits introduction of vegetation, mulch or other foreign materials into the soil, areas reserved for landscaping, including areas prepared for final sod application, that prohibits the introduction of vegetation, mulch or other foreign materials prior to placement of final landscaping features, dirt tracks, courts and other amenities designed or otherwise intended to remain unstabilized, and disturbed floors and banks below the anticipated pool elevation of ponds and basins. Appropriate sediment control measures shall be provided below all such areas where the intended function necessitates that the area remain disturbed.

Disturbed areas that exhibit ice, frozen soil conditions, or have a consistent snow cover extending across 70 percent or more of the area are considered to be temporarily stabilized until thawing occurs across the affected area. Stabilization of such iced, frozen or snow-covered areas must be completed within 14 days following the first subsequent inspection required under Part 7.2.10 of this permit that finds the affected area thawed and no longer stabilized due to ice, frozen soil conditions or snow cover.

7.2.6 Temporary and Permanent Structural BMPs -

Examples of structural BMPs which the permittee should consider specifying in the SWP2 Plan include: diverting flows from undisturbed areas away from disturbed areas and providing silt (filter fabric or straw bale) fences, filter log or wattle rows, earthen diversion dikes, drainage swales, sediment traps, rock check dams, subsurface drains (to gather or transport water for surface discharge elsewhere), pipe slope drains (to carry concentrated flow down a slope face), level spreaders (to distribute concentrated flow into sheet flow), storm drain inlet protection and outlet protection, reinforced soil retaining systems, gabions, temporary or permanent sediment basins, and other appropriate BMPs.

7.2.7 Sedimentation Basins -

The permittee's SWP2 Plan shall require a sedimentation basin, where feasible, for each drainage area with 10 or more acres disturbed at one time.

The sediment basin needs to be designed and maintained to provide at least 3,600 cubic feet of storage per acre

drained. Where use of a sediment basin of this size is impractical, the SWP2 Plan shall evaluate and specify other similarly effective BMPs to be employed to minimize erosion and control sediment. Where large areas of undisturbed or stabilized areas can drain into the sediment basin or in certain areas of Western Kansas, alternative design detention volumes can be used. See the definition of Sediment Basin Design Criteria for additional clarification and alternatives for sizing and volume requirements.

Outlet structures must be designed and constructed to withdraw water from the surface, unless infeasible. If infeasible, the reason it is infeasible shall be provided as a part of the NOI and SWPP Plan submittal to KDHE.

The permittee's SWP2 Plan shall require that the sediment basin be cleaned to ensure adequate detention is available. No more than 20 percent of the required sediment basin capacity shall be taken up with sediment. The basin shall be maintained until less than 10 acres of area needing final stabilization within the drainage basin remains. If a sedimentation basin is removed, other appropriate and effective BMP's and/or pollution controls shall be provided, as needed.

The 3,600 cubic feet of storage area per acre drained criteria does not apply to flows from areas where such flows are diverted around both the disturbed area and the sediment basin.

The permittee's SWP2 Plan shall require both temporary and permanent sedimentation basins to have a stabilized emergency spillway to minimize the potential for erosion of the emergency spillway or sediment basin embankment.

7.2.8 Permanent Stormwater Controls -

If applicable, the permittee's SWP2 Plan shall include a description of the measures that will be installed during construction to control pollutants in stormwater runoff that will occur after construction activities have been completed. These would include drainage channels or systems; outlet control devices, detention basins, oil water separators, catch basins, etc. This NPDES general permit does not require the permittee or his contractors to operate or maintain these measures beyond the date of the Notice of Termination unless otherwise notified by KDHE.

7.2.9 Additional Site Management BMPs -

The permittee's SWP2 Plan shall address other BMPs, as required by site activities, to minimize or eliminate contamination of stormwater runoff. At a minimum, such measures must be designed, installed, implemented and maintained to:

- (1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be free of detergents, soaps, or solvents and must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- (2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater except where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use);
- (3) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
- (4) Require the contractor to provide solid and hazardous waste management including: providing trash containers and regular site clean-up for proper disposal of solid waste such as scrap building material, product/material shipping waste, food containers, and cups; and providing containers and proper disposal for waste paints, solvents, and cleaning compounds;
- (5) Require portable toilets for proper disposal of sanitary sewage;
- (6) Require storing construction materials away from drainage courses and low areas;
- (7) Require containment berms and drip pans at fuel and liquid storage tanks and containers excluding containment of uncontaminated water;
- (8) Provide procedures to eliminate or minimize the potential to discharge environmental contaminants from contaminated soil or groundwater; and
- (9) Provide procedures and practices to eliminate the potential to discharge wash and/or rinse waters from concrete mixing equipment including ready mix concrete trucks.

7.2.10 Site Inspections by Permittee –

The permittee shall ensure the entire construction site including but not limited to disturbed areas, BMPs, waste and construction storage areas, drainage areas, locations where stormwater can flow from the construction site, and temporarily stabilized areas is inspected at least once within every 7-day inspection monitoring period, or is

inspected at least once within every 8 to 14-day inspection monitoring period and by the end of the next standard weekday following a rain event which results in a rainfall total of 0.5 inches or greater. The next standard weekday is the next day Monday through Friday following the observed rain event, not including Saturday and Sunday and excluding days that have been established for the observance of a Federal Holiday and also the day after Thanksgiving.

Rainfall totals used to establish when a construction site inspection is required shall be determined from local weather station reports of daily rainfall totals such as the 1200 GMT end-of-day totals available through the National Weather Service and their cooperative observers or from regularly scheduled on-site rain gauge monitoring performed and recorded each work day by project personnel. For sites where inspections are scheduled once every 8 to 14 days, a rain event site inspection is required whenever a rainfall total of 0.5 inches or greater is observed based a single monitoring event; or based on the cumulative total of two consecutive monitoring events when the rainfall total of the first monitoring event is less than 0.5 inches.

The permittee shall, upon initiation of construction activities, determine an initial routine inspection monitoring period based on the start date of construction activities and a routine monitoring frequency of either 14 days or a different monitoring frequency established in the SWP2 Plan that does not exceed 14 days. Subsequent routine inspection monitoring periods shall be established based on the chosen routine monitoring frequency and the initial inspection monitoring period determined at the start of construction, without regard to the dates of routine or rain event inspections that are conducted. At a minimum, a single routine or rain event site inspection shall be conducted within each routine inspection monitoring period.

For disturbed areas that have not been finally stabilized all installed BMPs and other pollution control measures shall be inspected for proper installation, operation and maintenance. Locations where stormwater runoff leaves the site shall be inspected for evidence of erosion or sediment deposition. Once a portion of the project area meets the final stabilization criteria specified in Part 9 of this permit, then no further inspection of that final stabilized portion is required provided that the area is identified in the SWP2 Plan as having obtained final stabilization; however, the permittee shall remain responsible to correct any conditions within such areas that are identified as contributing to the discharge of sediment or other pollutants from the project site.

A report of each regularly scheduled inspection and required rain event inspection shall be prepared. The inspection report is to include the following minimum information: inspector's name, date of inspection, observations relative to the effectiveness of the BMPs, actions taken or necessary to correct deficiencies, listing of areas where construction operations have permanently or temporarily stopped, and observations of stormwater discharge locations with respect to the effectiveness of the upgradient BMPs. The inspection report shall be completed by the end of the next standard weekday following the inspection and shall be signed by the person performing the inspection.

Any deficiencies in the operation or maintenance, effectiveness, adequacy or coverage extent of all installed BMPs, temporary stabilization measures and other pollution control measures identified during the inspection shall be noted in the inspection report and corrected within seven calendar days of the inspection unless infeasible. The permittee shall promptly notify the site contractors responsible for operation and maintenance of BMPs of deficiencies. When correction of any noted deficiency within seven calendar days is infeasible, the inspection report shall document the reason why such correction is infeasible and provide a specific timeframe for completing all needed maintenance and repairs of installed control measures and installation or modification of all control measures and management practices identified as missing, ineffective or inadequate as soon as feasible.

If weather or site conditions render access to any portion of the site to be unsafe or infeasible for inspection activities, the inspection report shall document the reason why access is unsafe or infeasible. Weather and site conditions shall then be monitored and recorded each standard weekday until access for inspection activities is determined to be safe and feasible. Inspection of the affected area shall then be performed by the end of the next standard weekday after determining that access is safe and feasible.

Disturbed project areas that are temporarily stabilized due to ice, frozen soil conditions or consistent snow cover extending across 70 percent or more of the area shall be noted on the inspection report. For such areas, the observation of disturbed soils, sediment and erosion control BMPs, drainage areas and locations where stormwater can flow from the construction site is not required during site inspections while one or more of the listed conditions are present. The thawing of these areas shall be noted during the first subsequent inspection when iced, frozen or snow-covered conditions are no longer present.

For inactive project sites where soil disturbing construction activities have permanently ceased and final stabilization activities have been completed and documented as such in the SWP2 Plan but vegetative density does not meet the final stabilization criteria specified in Part 9 of this permit, inspections in response to rain events are not required; however, at a minimum, a single routine inspection shall still be conducted at the inactive project site within each established routine inspection monitoring period.

The permittee shall maintain the site inspection reports on-site or at the records storage location identified in the NOI. The permittee shall provide a copy of the site inspection reports to KDHE or EPA upon request.

7.3 Modifications and Amendments to SWP2 Plan –

The permittee shall modify or amend the SWP2 Plan as appropriate during the term of the construction activity until the site is stabilized. The permittee, an authorized representative, and/or the contractor(s) responsible for installation, operation, and maintenance of the BMPs shall keep a current copy of the SWP2 Plan on the project site.

7.3.1 Modification of Control Measures and Management Practices –

Modifications to the SWP2 Plan shall be made to better control the site erosion and sediment discharges based on field conditions or site phasing that was not considered during SWP2 Plan development. The permittee shall indicate the changes on the erosion and sediment control plan sheets, maintain a log showing dates of all SWP2 Plan modifications, a brief description of the SWP2 Plan modifications, and the name and title of the person authorizing the modification. Changes to the SWP2 Plan that are not an amendment (see below) are considered modifications and do not need to be submitted to KDHE. Modification of site erosion and sediment controls based on field conditions or site phasing do not require preparation or approval by a professional; however, modifications that involve the relocation or reconfiguration of any sedimentation basin or corresponding outlet structure required under Part 7.2.7 of this permit shall be prepared under the supervision of a licensed or certified professional as specified in Part 7.1 of this permit.

7.3.2 Amendment of the SWP2 Plan –

The SWP2 Plan shall be amended:

- when a change in the project scope increases the amount of soil disturbed by more than 1.0 acre;
- when stormwater will discharge into a surface water not originally receiving stormwater from the permitted site construction activities; and

- when determined as significant by KDHE upon notification of any discovery of contaminated soil or groundwater, potential historic or archeological sites, or threatened or endangered species during the construction that was not identified and addressed in the SWP2 Plan.

For projects requiring an amendment the permittee shall provide an explanation of the changes referencing the originally issued State and Federal permit numbers, a modified erosion and sediment control plan, and a new NOI form indicating the new acreage anticipated to be disturbed. Soil disturbing activities shall not occur on the added or discovered areas until Authorization from KDHE is provided. Amendments shall be prepared under the supervision of a Licensed Kansas professional engineer, geologist, architect, or landscape architect or a Certified Professional in Erosion and Sediment Control (CPESC) and need to be submitted at least 60 days prior to implementing the proposed changes at the site. Authorization for the revised project will be indicated in similar fashion as the initially authorized NOI and a copy of the newly authorized NOI or notification that the authorization has been issued and is available to access or download will be provided to the permittee.

The permittee shall modify or amend the SWP2 Plan, at a minimum, whenever:

- there is a change in design, operation, or maintenance of BMPs, pollution controls, or pollution prevention measures;
- there is a change in the design or scope of the construction project which could significantly affect the quality of the stormwater runoff or the use of designated BMPs or pollution controls;
- the construction site inspections indicate deficiencies in the SWP2 Plan or any BMP;
- KDHE or EPA notifies the permittee of deficiencies in the SWP2 Plan, BMP's, and/or pollution controls;
- the SWP2 Plan is determined to be ineffective in significantly minimizing or controlling erosion and sedimentation (e.g. there is evidence, such as excessive site erosion, excessive sediment leaving the site, or excessive sediment deposits in drainage channels, streams, or lakes);
- KDHE determines violations of Surface Water Quality Standards may occur or have occurred; or
- KDHE determines the activities at the site constitute a significant pollution potential which the current

SWP2 Plan does not adequately address.

The permittee shall provide a copy of the most current SWP2 Plan to KDHE or EPA upon request.

7.4 Contractor Notification -

The permittee shall notify each contractor or entity (including utility crews, and city employees or their agents) that will perform work at the site of the existence of the SWP2 Plan and what action or precautions shall be taken while on-site to minimize the potential for erosion and the potential for damaging any BMP or pollution control. However, the permittee is ultimately responsible for ensuring compliance with this permit.

The permittee shall provide contractors who are responsible for installation, operation, or maintenance of any BMP a copy of or access to the SWP2 Plan.

Part 8. TRANSFER OF OWNERSHIP

8.1 Transfer of Entire Permitted Area -

Coverage under and the requirements of this NPDES general permit are transferable but transfer is not automatic and must be accepted by KDHE. The permit may be transferred only to a party that meets the definition of "Owner", "Owner or operator", or "owner/operator" for the entire authorized project scope. The current permittee and the new permittee shall complete a Notice of Transfer of Owner/Operator (NOTO) form as a paper or electronic document in a format acceptable to the Department and bearing original signatures, and submit to KDHE. If the original permittee is unavailable or unwilling to sign the NOTO (normally due to bankruptcy) the NOTO shall be filled out as much as possible by the new owner and submitted to the Department with an explanation of the situation.

Transfers shall be requested at least two weeks in advance of transfer of ownership or operational control to ensure KDHE has accepted the transfer and/or provisions that needed to be addressed by the two parties covering continued responsibility by the original permittee until such time as KDHE formally accepts the permit transfer.

8.2 Partial Permitted Area Transfer of One (1.0) or More Acres -

If ownership or operational control of a contiguous area, one (1.0) or more acres in size, within the overall project or subdivision area is sold or otherwise transferred by the permittee to a new owner, then a new complete request for Authorization for the area being sold or otherwise transferred shall be submitted in accordance with Part 4 of this NPDES general permit. This procedure is required for all projects including residential, commercial and industrial subdivisions. Lots for construction of residential homes of greater than one (1.0) acre can utilize

procedures under this section or under Part 8.3. Previous clearances issued for the original permitted project area (e.g., Kansas Historical Society, Kansas Department of Wildlife and Parks, United States Army Corps of Engineers) may be referenced.

8.3 Partial Permitted Area Transfer of Less than One (1.0) Acre or a Residential Home Lot -

Both the permittee and the new owner or operator including a contractor, who obtains ownership of a lot or contiguous portion of an overall permitted area that is less than one (1.0) acre in size shall jointly complete an Individual Lot Certification (ILC) form for each lot, lots or portions sold or otherwise transferred, or shall incorporate requirements into the contract for sale that are equivalent to those specified on the ILC form. The ILC or equivalent statements in the contract for sale do not constitute a transfer of the Authorization to discharge. The agreement is between the new owner or operator of the lot or portion and the permittee to implement the SWP2 Plan and the conditions of the general NPDES permit cooperatively, however, the original permittee maintains responsibility for discharges from the project site.

The permittee shall maintain the ILC form or a copy of the contract for sale covering the same requirements either on-site or at the Records Address location identified on the NOI. The permittee shall provide ILC forms or copies of contracts for sale to KDHE, EPA, or any other government agency upon request.

Part 9. PROJECT COMPLETION

The permittee shall notify KDHE of the project completion by submitting a Notice of Termination (NOT). The permittee shall sign the NOT and submit it to KDHE as a paper or electronic document in a format acceptable to the Department.

When the soil disturbing activities are complete and final stabilization of all disturbed areas has been achieved, the permittee can terminate coverage under this NPDES general permit by submitting the NOT. The project is considered to be stabilized when perennial vegetation, pavement, buildings, or structures using man-made materials cover all areas which have been disturbed. Vegetation must have a density of at least 70 percent of the density of undisturbed areas at or near the site.

For projects disturbing agricultural land, disturbed areas that are restored to their preconstruction agricultural use are not subject to the above stabilization criteria. Areas that are not being returned to preconstruction agricultural use, must meet the conditions for final stabilization in this Part.

For subdivision development projects, termination of coverage may be requested after three years, provided the entire subdivision is stabilized and the rate of home construction disturbs less than one (1.0) acre per year (approximately 5 lots) or less than one (1.0) acre of land remains to be developed (approximately 5 lots).

The permittee may also terminate coverage under this NPDES general permit prior to completion of the project construction activities provided that duplicate authorization for coverage under this general permit or KDHE authorized successor permits has been issued and is in effect for all remaining construction activities including all areas disturbed by previous construction activities that have not obtained final stabilization or otherwise met the completion requirements of this part.

Part 10. GENERAL REQUIREMENTS OF THIS PERMIT

10.1 Records -

The permittee shall maintain all records required by this NPDES general permit for a period of three (3) years following the date on the NOT. All records shall be kept on-site or in a readily available location identified in the NOI until final stabilization has been completed. Electronic versions of the required records are acceptable but must show or otherwise document all relevant signatures and be readily available for copying and contractor access as per Part 7.4 and agency review as per Part 10.4 of this general permit. After final stabilization has been completed, records may be maintained at the permittee's main office.

Records shall be readily available during normal business hours.

Records which shall be maintained by the permittee include, but are not limited to:

- the NOI indicating the Authorization by KDHE to discharge stormwater runoff from the construction activities and supporting documentation used to apply for authorization under this NPDES general permit;
- the SWP2 Plan for the construction site named in the Authorization to discharge stormwater runoff, and any amendments to the SWP2 Plan;
- all site inspection records;
- any clearance letters, from KDW&P, KSHS, COE, or any other agency providing clearance;
- Individual Lot Certification (ILC) forms or portions of the contract for land sale with equivalent wording; and
- a copy of the Notice of Termination submitted to

KDHE.

Except for data determined to be confidential *under 33 USC Section 1318*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential. Knowingly making any false statement on any such report or tampering with equipment to falsify data may result in the imposition of criminal penalties as provided for in 33 USC Section 1319 and KSA 65-170c.

10.2 Contact Address -

All notifications, forms, reports, or other correspondence which must be submitted to KDHE as required by this NPDES general permit shall be submitted via the Kansas Environmental Information System (KEIMS) or, upon KDHE acceptance of an electronic reporting waiver per Part 10.10 of this permit, may be sent to:

Kansas Department of Health and Environment
Bureau of Water, Industrial Programs Unit
1000 SW Jackson, Suite 420
Topeka, KS 66612 – 1367

Applicants can download copies of all forms, references, or the NPDES general permit from the following [KDHE Stormwater Websites](#):

www.kdhe.ks.gov/757/Construction-Stormwater-Program

www.kdhe.ks.gov/DocumentCenter

Copies may also be requested by e-mailing KDHE at:

kdhe.stormwater@ks.gov

10.3 Duty to Comply -

The permittee shall comply with all conditions of this NPDES general permit. Any noncompliance with this NPDES general permit constitutes a violation of the CWA, K.S.A. 65-164 and 65-165, and/or K.A.R. 28-16-28 et seq. Noncompliance may result in enforcement action; revocation/termination of this authorization; or amendment of this authorization.

It shall not be a defense for a permittee in an enforcement action to contend that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of the NPDES general permit.

After implementation of the stormwater pollution prevention plan, if stormwater discharges adversely affect water quality, or cause violations of any other provision of

this NPDES general permit, the permittee shall modify and implement the stormwater pollution prevention plan to address the non-compliance.

Failure to comply with the requirements of the NPDES general permit may subject the permittee to enforcement actions including revocation/termination of the authorization to discharge under this NPDES general permit, a requirement to discontinue the permitted activity, fines and/or possible imprisonment.

Projects which have received authorization under this Permit that are placed on Inactive Status will no longer have permit coverage under this Permit. KDHE will place previously permitted facilities on Inactive Status for failure to pay the annual permit fee without further notice if payment is not received within 3 months of the date of the invoice (see Part 6).

10.4 Duty to Provide Information and Site Access –

The permittee shall furnish to KDHE; the EPA; or any local agency having jurisdiction for any aspect of the project, any information which is requested to determine compliance with this NPDES general permit.

When the permittee becomes aware that they failed to submit any relevant facts or submitted incorrect information to KDHE, they shall promptly submit such facts or information to KDHE at the address given in Part 10.2.

The permittee shall allow the Director or an authorized representative of KDHE, the EPA, or, local agency having jurisdiction over the project, upon the presentation of proper credentials and other documents as may be required by law, to:

- enter upon the site where a regulated construction project or activity is located or conducted or where records must be kept under the conditions of this NPDES general permit;
- obtain samples of any discharge to waters of the State;
- have access to and copy at reasonable times, any records which must be kept under the conditions of this NPDES general permit; and
- inspect the construction site and any facilities or equipment (including monitoring equipment, stormwater controls, and BMPs).

10.5 Signatory Requirements -

The Notice of Intent (NOI), the Notice of Termination (NOT), and the Notice of Transfer of Owner/Operator (NOTO) shall be signed by the owner, operator, or

designee. All forms, reports, or other correspondence which must be submitted to KDHE as required by this NPDES general permit shall be signed by the permittee or a duly authorized representative.

10.6 Chemical and Sewage Spills -

In case of a spill emergency call:

U.S. EPA National Response Center:

(24 hours a day) (800) 424-8802

Kansas Division of Emergency Management:

(KDEM)

(24 hours a day) (785) 291-3333

Website: www.ksready.gov

KDHE Spill Report Hotline:

(24 hours a day) (785) 296-1679

10.7 Hazardous Substance and Oil Spill Reporting -

The permittee or authorized representative is required to notify the U.S. EPA National Response Center (800-424-8802) in accordance with the requirements of 40 CFR 117 and 40 CFR 302 as soon as the discharge of any hazardous substance or oil in excess of the reportable quantity has been discovered. A reportable quantity of oil is the quantity which causes a "film or sheen upon or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines." Reportable quantities for hazardous substances are listed in the cited CFRs.

The permittee is also required to notify the Local Emergency Planning Agency and the [Kansas Division of Emergency Management](#) (KDEM) at the phone numbers and/or website listed above in permit paragraph 10.6.

Nothing in this permit shall be construed to preclude the initiation of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under 33 USC Section 1321 or KSA 65-164 et seq.

10.8 Sewage, Wastes, Materials, and Substances Spill Reporting -

Any discharge or escape of sewage, substances, materials, or wastes, as set forth in K.S.A. 65-171d, which are, or threaten to contaminate or alter any of the properties of the waters of the State or pollute soil in a detrimental, harmful, or injurious manner or create a nuisance, shall immediately be reported to the Kansas Department of Health and Environment at (785) 296-1679. The report shall be made by the permittee, or the owner of the spilled materials, or their respective authorized representative.

In the case of discharges under conditions other than those allowed in a valid NPDES permit, the report shall be made by the permittee or an authorized representative. The report shall be made by telephone to [KDHE](#) at 785- 296-1679 in accordance with K.A.R. 28-48-1 et seq.

Nothing in this NPDES general permit shall be construed to preclude KDHE's institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the CWA (33 U.S.C. Section 1321); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); K.S.A. 65-161 et seq.; or under state or federal statutes or regulations governing oil or hazardous substances or wastes.

10.9 Requiring a Different NPDES Permit -

The Director may require the permittee to apply for and obtain an individual permit or different general permit if:

- the permittee is not in compliance with the conditions of this NPDES general permit;
- the discharge no longer qualifies for this NPDES general permit due to changed site conditions or regulations; or
- information becomes available which indicates water quality standards have been or may be violated.

The permittee will be notified in writing of the need to apply for an individual permit or a different NPDES general permit. When an individual permit or different general permit is issued to the authorized permittee, this NPDES general permit is automatically revoked/terminated upon the effective date of the individual or different general permit, whichever the case may be.

10.10 Electronic Data Monitoring Report -

EPA has promulgated a final rule requiring regulated entities to report discharge monitoring report (DMR) data electronically by December 21, 2016. Refer to Parts 11.5 and 11.10 of this Permit for such required reporting. Also, K.A.R. 28-16- 63 requires permittees to report NPDES data in a form required by KDHE. KDHE has developed the Internet based Kansas Environmental Information System (KEIMS) to assist permittees in complying with the EPA electronic reporting rule and K.A.R. 28-16-63. Unless a waiver has been approved by KDHE, permittees are required to submit reports electronically.

KDHE accepts the following types of electronic reporting waivers;

A. Temporary Waivers – A temporary waiver is good for five years and must clearly state the need or reason for the waiver and be signed by an authorized representative. Temporary Waivers are approved only for the following reasons:

- The permittee's Internet connection is not fast enough to upload documents to comply with NPDES Electronic Reporting Rule.
- The permittee does not have a computer for routine business functions to comply with the NPDES Electronic Reporting Rule.
- The permittee does not have an Internet connection; or
- "Other" which is determined on a case by case basis.

B. Permanent Waivers – Permanent waivers will be issued and approved for permittees that own or operate NPDES permitted facilities and do not utilize modern technologies due to religious beliefs. The permittee must verify that the permanent waiver is still required when submitting an NOI.

C. Episodic Waiver- Episodic waivers cannot last more than 60 days. Episodic waivers are issued immediately by KDHE staff without the need for waiver submission by the permittee. These waivers are strictly for permittees in emergency situation. Emergencies would consist of large-scale power outages greater than 96 hours, floods, tornados, other natural disasters or catastrophic circumstances beyond the control of the facilities. KDHE must receive the hardcopy (paper) submissions when an episodic waiver is in effect.

Part 11. STANDARD CONDITIONS

In addition to the conditions specified in this NPDES general permit, the permittee shall comply with the following Standard Conditions.

11.1 Proper Operation and Maintenance -

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the requirements of this NPDES general permit, Kansas law, and Federal law. Proper operation and maintenance also include adequate laboratory controls, if applicable, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the requirements

of this permit. Pollution control systems, erosion control measures or best management practices which require maintenance shall be maintained, repaired or replaced in a timely manner to avoid discharging stormwater runoff laden with pollutants or sediment which adversely impacts water quality.

The permittee shall take all necessary steps to minimize or prevent any adverse impact to human health or the environment resulting from noncompliance with any requirements specified in this permit, including any monitoring as necessary to determine the nature and

impact of the stormwater discharge. When necessary to maintain compliance with the permit requirements, the permittee shall halt or reduce those activities under its control.

When necessary to achieve compliance with the terms and conditions of this NPDES general permit, the permittee shall install, operate and maintain backup systems or auxiliary facilities to supplement the erosion control measures and best management practices proposed in the NOI.

11.2 Severability -

The provisions of this NPDES general permit are severable. If any provision of this NPDES general permit or any circumstance is held invalid, the application of such provision to other circumstances and the remainder of the NPDES general permit shall not be affected thereby.

11.3 Permit Modifications and Terminations -

As provided by KAR 28-16-62, after notice and opportunity for a hearing, this permit may be modified, suspended or revoked or terminated in whole or in part during its term for cause as provided, but not limited to those set forth in KAR 28-16-62 and KAR 28-16-28b through g.

The permittee shall furnish to the Director, within a reasonable amount of time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish upon request, copies of all records required to be kept by this permit. The filing of a request by the permittee for a permit modification or revocation and reissuance, or a notification of termination, planned changes or anticipated noncompliance does not stay any permit condition.

11.4 Change in Discharge -

All discharges authorized herein shall be consistent with the requirements and conditions of this NPDES general permit.

The SWP2 Plan shall be amended or modified to reflect significant changes to the project and/or the stormwater discharges in accordance with the applicable requirements of Part 7.3 of this NPDES general permit.

11.5 Discovery During Construction -

In the event contaminated soil, groundwater contamination, or contamination from hazardous substances are discovered at the site during construction activities, the permittee shall report the discovery to KDHE verbally within 24 hours to (785) 296-5549, and within 5 business days shall report the discovery via the Kansas Environmental Information System (KEIMS) or, upon KDHE acceptance of an electronic reporting waiver per Part 10.10 of this permit, may report the discovery in writing at the stated address in Part 10.2 of this permit. Until site evaluations have been completed and instruction has been provided by KDHE, construction activities in the contaminated area shall cease and additional provisions shall be provided to immediately mitigate discharges from the contaminated area.

Any discovery during construction activities of threatened or endangered species on the site or in the downstream receiving waters, or of a historical or archeological site, that were not previously identified or addressed in the SWP2 Plan needs to be reported to the KDW&P or KSHS and KDHE - Bureau of Water. Reporting to the KDHE – Bureau of Water shall be via the Kansas Environmental Information System (KEIMS) or, upon KDHE acceptance of an electronic reporting waiver per Part 10.10 of this permit, may be submitted in writing at the stated address in Part 10.2 of this permit. Until site evaluations have been completed and instruction has been provided by the appropriate agencies, construction activities in the affected area shall cease.

If soil contamination, hazardous substances, threatened or endangered species, or historical or archeological sites are discovered during construction activities, the SWP2 Plan shall be modified or amended to reflect this new information in accordance with the requirements and conditions of Part 7.3 of this NPDES general permit.

11.6 Removed Substances –

Solids, sludge, sediment, filter backwash, or other pollutants removed in the course of treatment or control of stormwater runoff shall be properly managed, utilized, and/or disposed of in accordance with applicable statutes and regulations to prevent pollution of surface water, groundwater, or soil.

11.7 Civil, Criminal, and Administrative Liability - Kansas law provides for civil and criminal punishment

including fines and imprisonment for violations of this NPDES general permit. The permittee shall comply with all requirements of this NPDES general permit. Except as authorized in paragraph 11.10 below, nothing in this permit shall be construed to relieve the permittee from administrative, civil or criminal penalties for noncompliance as provided for in KSA 65-161 et seq., and 33 USC Section 1319.

11.8 Property Rights –

The issuance of this NPDES general permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property, nor any invasion of personal rights, nor any infringement or violation of Federal, State or local laws or regulations. This NPDES general permit in no way reduces or eliminates the permittee's responsibilities to landowners whose property may be traversed by stormwater runoff from the project site either before, during, or after construction of the planned project. It is the permittee's responsibility to obtain any necessary approvals from any affected property owner.

11.9 Duty to Mitigate –

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this NPDES general permit which has a reasonable likelihood of adversely affecting human health or the environment.

11.10 Bypass –

Any diversion or bypass of facilities necessary to maintain compliance with this NPDES general permit is prohibited except where necessary to prevent loss of human life, personal injury, or severe property damage, and where no feasible alternative to the bypass exists.

Any bypass which occurs during construction activities which may affect a threatened or endangered species, or a historical or archeological site, on site or in the receiving water body, shall be reported to KDHE verbally within 24 hours to (785) 296-5549, and within 5 business days shall be reported via the Kansas Environmental Information System (KEIMS) or, upon KDHE acceptance of an electronic reporting waiver per Part 10.10 of this permit, may be reported in writing at the stated address in Part 10.2 of this permit.

If a bypass occurs during construction activities, the SWP2 Plan shall be modified or amended to prevent future occurrences in accordance with the requirements and conditions of this NPDES general permit.

ENDNOTES

1. The NPDES general permit, application forms, guidance material, the rainfall erosivity waiver application, and reference material is available on the [KDHE Stormwater Website](http://www.kdhe.ks.gov/757/Construction-Stormwater-Program) at www.kdhe.ks.gov/757/Construction-Stormwater-Program. The website also provides links to EPA guidance documents and the instructions for the rainfall erosivity calculation, [Fact Sheet 3.1 - Storm Water Phase II Final Rule Construction Rainfall Erosivity Waiver](#)

Material available on the [KDHE Stormwater Website](http://www.kdhe.ks.gov/757/Construction-Stormwater-Program) includes the NPDES general Permit, Notice of Intent, Notice of Termination, Notice of Transfer of Owner/Operator, Individual Lot Certification, and the Definitions and Acronyms in Adobe Acrobat Reader format (pdf).

Reference material available on the [KDHE Stormwater Website](http://www.kdhe.ks.gov/757/Construction-Stormwater-Program) includes the Fact Sheet, Rainfall Erosivity Waiver Application, a list of Exceptional State Waters, Special Aquatic Life Use Waters and Outstanding National Resource Waters, and a link to the current Kansas Surface Water Register and maps.

2. The owner or operator must determine whether discharging stormwater runoff from construction activities on the site is subject to any local applicable requirements. To determine the local requirements applicable to each construction project, the owner or operator must contact the local Municipal Separate Storm Sewer System (MS4) operator. A list of MS4 operators who have or may be required to have a local stormwater pollution prevention program is available on the [KDHE Stormwater Website](http://www.kdhe.ks.gov/1051/Municipal-Stormwater-Program) at www.kdhe.ks.gov/1051/Municipal-Stormwater-Program. This list is provided and maintained for information only and will not necessarily include all MS4 operators with a local program.

3. If the applicant is uncertain if the project is located on Indian Country land, please contact the Bureau of Indian Affairs Southern Plains Regional Office - Natural Resources Department at (405) 247-6673 and the EPA Region VII Tribal Program at (913) 551-7164 or (913) 551-7374. EPA is the permitting authority on Indian Country land. To request authorization to discharge stormwater runoff from construction activities conducted on Indian Country land the applicant must contact EPA.

4. To determine if your project is located near one of these areas find the stream segment(s) or lake(s) which receive(s) the stormwater runoff on the Kansas Surface Water Register Maps, then check the designated uses of the stream segment(s) or lake(s) in the Kansas Surface Water Register. Applicants can download a copy of the Surface Water Register from the [KDHE Stormwater Website](http://www.kdhe.ks.gov/757/Construction-Stormwater-Program) at www.kdhe.ks.gov/757/Construction-Stormwater-Program. At the time of this general NPDES permit issuance there were no Critical Water Quality Management Areas established. The stormwater website includes the most current list should an area be established.

5. The referenced guidance documents are available on-line at: <http://nepis.epa.gov/>. Links to the referenced guidance are also available at the KDHE website: www.kdhe.ks.gov/757/Construction-Stormwater-Program.

6. Certification as a professional in erosion and sediment control is available through CPESC, Inc. CPESC information can be obtained through the internet at www.cpesc.org, or by calling (828) 655-1600. For other additional educational opportunities and information, contact the International Erosion Control Association at www.ieca.org or by calling (800) 455-4322.

7. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility that disturbs less than 5 acres is not considered to be construction activity, and therefore is not subject to construction stormwater permitting requirements.

03 NPDES Permit Outline

01. Preface

- a. Slide 2: The Kansas Department of Health and Environment acts for the EPA to implement the Federal Water Pollution Control statutes and regulations and permits stormwater discharge for construction sites subject to the National Pollutant Discharge Elimination System(NPDES) permit requirements. The current permit became effective August 1, 2022 and expires July 2027.

02. Part 1 Who Must Obtain Authorization to Discharge

- a. Slide 3: An NPDES permit is needed on all projects that disturb 1 acre or more of soil or are part of a common plan of development. KDHE may require coverage on projects less than 1 acre if construction may have water quality effects or soils/ground water is contaminated. Contact KDHE if you have questions about contaminated soils or groundwater. Disturbances of 1 acre or greater can happen without a permit if there is an immediate threat to the public. Notify KDHE if a situation occurs and begin implementing erosion and sediment control measures as soon as possible. A permit is needed within 30 days of soil disturbing activities.
- b. Slide 4: Read verbatim from slide then- Support activities can include borrow pits and staging areas if they are adjacent to the project. This is only an issue if the let project is less than 1 acre. County bridge projects with an adjacent borrow pit or staging area may need permit coverage. Remember an acre is roughly 90% of a football field.
- c. Slide 5: This is an example of an adjacent borrow pit. Water is flowing from KDOT ROW to this pit. This would be considered part of a common plan of development. In this case, the KDOT project and the Contractor's borrow pit have separate permits. KDOT requires Contractors to obtain their own NPDES permits for staging and borrow pit areas that are outside of KDOT Right of Way. On small projects (less than 1 acre with no permit) adjacent pits can increase the common plan to over an acre requiring a permit. If this happens, construction activities have to stop until a permit is obtained(which may take up to 60 days to receive).
- d. Slide 6: In this instance the contractor is required to repair the washout. FYI this washout is over 5ft deep.
- e. Slide 7: -Routine maintenance is defined as: Projects maintaining the original line and grade, hydraulic capacity, or original purpose of the facility. Guardrail replacement projects are a good example of routine maintenance that maintains the original purpose of the facility. A single guardrail replacement is well under 1 acre, but 5 or 6 of these lumped together into one project will be greater than 1 acre. -Full depth asphalt and concrete replacement projects are exempt as long as the base and subgrade are minimally disturbed. The Contractor is still required to get a permit if their construction activities disturb adjacent soil. An example of this would be a haul road adjacent to the removed pavement. A 15ft haul road a 1/2 mile long is about an acre for reference- The linear opening of soil usually means utility installation.

03. Part 2 What this Permit Covers

- a. Slide 8: This permit covers all stormwater discharges into Tier 1, 2, and 3 waters, and several types of non-stormwater related discharges.
- b. Slide 9: The EPA defines 3 water quality tiers. Tier 1 waters cover nearly all lakes and watersheds in Kansas. Tier 2 waters do not show up on EPA's 303d list. 303d waters are considered Impaired and Threatened according to the Clean Water Act. KDHE maintains this list for Kansas. Kansas has no waters that are considered tier 2. The Kansas River and the majority of Lakes in Kansas could be considered Tier 2 if they were not on the 303d list. Common water impairments are Siltation and high nutrient loads(fertilizers). See KDHE's website for a list of all impairments across Kansas. Tier 3- waters include Quivira Big and Little Salt Marsh, Cheyenne Bottoms, Flint Hills National Wildlife Refuge, Kirwin Lake and Wildlife Refuge, and the Cimarron National Grasslands. Any national park is considered an Outstanding National Resource Waters.
- c. Slide 10- Here is a condensed list of Non-Stormwater discharge sources. Non-stormwater discharge includes all non-polluted discharge that could wash sediment into Kansas watersheds. When discharging make sure appropriate erosion and sediment controls are in place according what is called out in the swppp.
- d.

04. Part 3 What This Permit or The Rainfall Erosivity Waiver Does not Cover

- a. Slide 11- Besides what is shown on this slide, part 3 has 15 sections explaining what is not covered along with 8 types of sewage, pollutants and wastewater that cannot be discharged. On KDOT let projects, review the environmental packet to see if any special conditions exist that may prevent the discharge of stormwater.

05. Part 4 How to Apply

- a. Slide 12: For KDOT owned projects our Environmental Services Section submit the Notice of Intent and obtain the NPDES permit. Cities and Counties(LPAs) must obtain their own permits even for Local Public Authority(LPA) projects that are let by KDOT. The Kansas Environmental Information System is KDHEs online system for submitting paperwork electronically. With the 2022 permit all NOIs will need to be submitted using this system. Make sure and submit the NOI with all relevant information at least 60 days before construction activities begin. No permit no construction activities.

06. Part 5 Starting Construction Activity

- a. Slide 13: Part 5 reinforces that construction activities cannot begin until KDHE approves the Notice of Intent. For KDOT let projects the Area Engineer must approve the Contractor's SWPPP plan and submit it to the Stormwater Compliance Engineer. Once submitted construction activities can begin.

07. Part 6 Continuing Coverage- Annual Permit Fee and Renewal Requirements

- a. Slide 14- The permit must be renewed annually until the Notice of Termination is issued. The Stormwater Compliance Engineer is responsible for authorizing the annual permit renewal for KDOT permitted projects. Permits are renewed until an Area Engineer submits a project to be reviewed for the Notice of Termination.
- b. Slide 15- This is the end of part 1 of the Kansas NPDES general permit presentation. Thankyou.

08. Part 7 Stormwater Pollution Prevention Plan Requirements and Guidelines

- a. Slide 1- Welcome to Part 2 of the NPDES permit. Part 7 provides requirements for the Stormwater Pollution Prevention Plan which are specific to the construction site.
- b. Slide 2- The purpose of the SWP2 Plan is to ensure the design, implementation, management, and maintenance of "Best Management Practices" (BMPs) in order to eliminate or minimize erosion, sediment; and other pollutants in stormwater runoff from construction activities; comply with the Kansas Surface Water Quality Standards; and ensure compliance with the terms and conditions of this NPDES general permit.
- c. Slide 3- The permittee shall select, install, utilize, operate, and maintain effective BMPs in accordance with best professional judgment, generally accepted and scientifically defensible guidance, and the concepts and methods described in Environmental Protection Agency. Other professionally developed guidance can also be used when developing a SWPPP.
- d. Slide 4- All SWPPPs are developed under the supervision of a Professional Engineer, Geologist, Architect, Landscape Architect or Certified Professional in Erosion and Sediment Control. Any stormwater runoff from disturbed areas must pass through an appropriate sediment control device. Examples are Sediment basins, sediment traps, , silt fence, buffer areas or similar control measure. The permittee shall ensure that all BMPs are properly installed and maintained in a timely manner.
- e. Slide 5- The NOI only give the basics with regards to the project. The SWPPP designer is responsible for expanding on the NOI. This includes (but is not limited to) locating where water is coming into and leaving the project; the order of construction activities; how each activity will be protected; when said activities will begin and end and when will stabilization begin. The SWPPP is a living document and should be changed as needed to fit the current conditions.
- f. Slide 6- Here is a general list of BMP requirements from the NPDES permit. Read Verbatim.
- g. Slide 7- The locations of the BMPs should be shown on the site map. Multiple site maps may be needed to show when and how BMPs will change with the Phasing of the project. Always make sure you document what conditions are needed for stabilization to begin.
- h. Slide 8- Section 7.2.3 tells the designer to (read slide)

- i. Slide 9- 2.5:1 slopes are typically encountered on bridges and boxes. Once bridge berms are built or the box slopes have been cut stabilize immediately. If the permanent stabilization cannot be placed(riprap) use geotextile for temporary stabilization. Erosion mat is normally used as a permanent stabilization practice but can be used as temporary stabilization in rare circumstances. Diverting flows allows you to concentrate your efforts into a small area.
- j. Slide 10- This slope is an example of a 2.5:1 temporary slope. This temporary slope remained in place for 6 to 7 months, but no notes were in the plans on how to stabilize it. In this case, I instructed the Construction Office to use Erosion mat for long term temporary stabilization in lieu of geotextile.
- k. Slide 11- Non-Structural BMPs are typically anything that will stabilize an area. Devices, such as filter socks and bio-logs, are not considered stabilizing bmps. Avoid clearing and grubbing within 50ft of defined drainage if possible. When working in defined drainage have all equipment and materials on hand before beginning the work to minimize the amount of time the area is exposed. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other soil disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
- l. Slide 12- Structural Soil Stockpiles and Landscaping areas still need their perimeters protected to prevent runoff. An example would be placing a filter sock on the downstream side of a stock pile. Frozen and snow-covered soil are considered temporary stable.
- m. Slide 13- The left picture shows high flow areas protected with Riprap with erosion mat surrounding it. The open area between the riprap and erosion blanket are planted willows. The right picture shows geotextile protecting the temporary slopes and ditch bottom.
- n. Slide 14- Most structural BMPs are considered temporary unless called out on the plan sheets. Temporary structural BMPs require constant monitoring and maintenance and should be removed once stabilization practices begin.
- o. Slide 15- These are examples of temporary Structural BMPs. The first one is silt fence installed as perimeter control. The Contractor has tried to minimize the undercutting of the device with rock, but the device still failed with water overtopping the device. With the amount of grass growing on either side this device can be removed. Picture 2 is a hybrid approach at inlet protection, but sediment was still able to reach the inlet potentially requiring the inlet to be cleaned out. Picture 3 shows a biolog with the alternate staking method that the Landscape sheets call out. This works unless the water flows in an unanticipated direction.

- p. Slide 16-Sediment basins are required when 10 or more acres are disturbed in a drainage area. 10 acres is equal to 36,000 cuft of storage or roughly the size of 1 Olympic sized swimming pool. If impracticable other similarly effective measures can be specified. Sediment basins shall be maintained until less than 10 acres of the disturbed area has been stabilized. Permanent erosion control examples include Drainage channels, outlet control devices, detention ponds, and catch basins. The NOI only requires these devices to be maintained until the Notice of Termination is issued.
- q. Slide 17- The goal of the SWPPP is not only to minimize sediment running into our waterways but also minimize the discharge of other pollutants, this includes human waste, chemicals and other potentially harmful materials.
- r. Slide 18- In the 2022 permit KDHE has given the option of either doing 7-day inspections regardless of rain or once every 14-days, after a .5" rain event or after 2 consecutive rain events totaling over .5".
- s. Slide 19- KDOT uses form 247A thru E for all SWPPP inspections. This form must be completed by the end of the next standard weekday after the inspection. Any documented deficiencies should show up on page E and must be completed within 7 calendar days.
- t. Slide 20- Infeasible means "impossible to complete within 7 days." Severe storms (flooding or blizzards) constitutes infeasible.
- u. Slide 21- A SWPPP inspection is not worth risking lives to compete. Continue to monitor the situation until it is safe to resume project inspections.
- v. Slide 22- This is an example of what a project may look like after a flood event. Complete your inspection(if possible). Then start planning how to complete the laundry list of deficiencies found.
- w. Slide 23- Temporarily stabilized areas shall be noted on the inspection report. The thawing of these areas shall be noted during the first subsequent inspection when these conditions are no longer present.
- x. Slide 24- Inactive sites only require inspections once every 14 days regardless of rain. These inspections cease once the Notice of Termination is issued.
- y. Slide 25- An active project has many moving parts. Sometimes mother nature throws wrenches into those parts causing unforeseen changes. The SWPPP must be able to switch gears to keep up with these changes.
- z. Slide 26- Activity on the project must stop and the NOI resubmitted covering the new findings. Amendments require professional approval to be added to the SWPPP. KDHE will provide direction for contaminated soil or groundwater, historic or archeological sites, or threatened & endangered species impacts. Activity cannot begin until KDHE approves the new NOI.

09. Part 8 Transfer of Ownership

- a. Slide 1- Welcome to Part 3 of the NPDES permit. This is the final presentation covering KDHE's NPDES Stormwater Discharge Permit.
- b. Slide 2- KDHE allows a permit to be transferred from one Owner to another. An example would be a Designer of a commercial site applies for an NOI. Once the

project is awarded the NOI is transfer from the Designer to the Contractor. Once the project is complete the Contractor then transfers the permit to the Commercial Owner. Each transfer requires a Notice of Transfer of Owner/Operator to be filled out and approved by KDHE. The NOTO needs submitted 2 weeks prior to the transfer. KDOT does not allow permit transfer on any KDOT let projects. This includes Local Public Authority projects let by KDOT.

10. Part 9 Project Completion

- a. Slide 3- The notice of Termination can be issued on a project once all construction activities are completed and the project has attained 70% perennial vegetation compared to the adjacent properties. On KDOT-owned projects, the Stormwater Compliance Engineer is solely responsible for submitting the NOT to KDHE

11. Part 10 General Requirements of this Permit

- a. Slide 4- SWPPP records shall be kept 3 years after the Notice of Termination is issued. These records include the NOI, SWPPP, Inspection Reports and NOT. Section 10.2 provides the contact information for KDHE's Bureau of Water. Section 10.3 discusses that non-compliance violates the Clean Water Act and that Enforcement actions can include fines and Jail Time. Non-compliance violates the Clean Water Act which could lead to fines and possible imprisonment. Who wants to go to jail for putting dirt in the water?
- b. Slide 4- The permit holder will allow KDHE, EPA or other governing Local agencies to review project SWPPP documentation, access to the construction site, and sample waters as needed. This information is needed to determine if the project is in compliance.
- c. Slide 5- 10.5 requires the NOI, NOT and all other relevant documentation to be signed by the owner. 10.6 provides emergency call numbers for the EPA, KDEM, and KDHE. 10.7 requires the immediate reporting of an oil spill to the EPA response center. 10.8 requires the immediate reporting of any sewage, materials, wastes or substance spills to the KDHE. 10.9 Reserves the right for KDHE to require new NOI if information on non-compliance arises. 10.10 requires that permit holders submit their documentation electronically through the Kansas Environmental Information System. This section also calls out what waivers can be submitted electronically.

12. Part 11 Standard Conditions

- a. Slide 7- 11.1 states that all facilities and systems of treatment will be maintained by the permittee. BMPs are considered systems of treatment. If needed construction activities may be reduced to stay within compliance. 11.2 – Severability means if a part of this permit is deemed invalid the remainder of the permit still apply. 11.3. KDHE may modify/suspend or revoke a permit. The permittee is responsible for providing all information KDHE needs for making a determination on a permit. 11.4 states the SWPPP shall be amended or modified as needed. 11.5 outlines when verbal and written documentation needs turned into KDHE. Notify KDHE verbally within 24 hours and in writing with 5 business days upon discovering any environmental hazards, threaten/endangered species, or archeological sites that were not previously identified on the original NOI and SWPPP. 11.6 states that all

solids, sludge, sediments and other elements removed in the treatment of stormwater will be properly disposed of. 11.7 reinforces that Kansas has Civil, Criminal and administrative penalties for not complying with the NPDES permit. 11.8 states that this permit does not grant any personal property rights over an area. 11.9 The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this NPDES general permit which has a reasonable likelihood of adversely affecting human health or the environment. 11.10 Diversions or bypasses of the construction site are only permitted to prevent injury or loss of human life.

- b. Slide 8- This is the end of section 3 and the end of the NPDES module for Construction stormwater training. For the test you will need to have a copy of the NPDES permit available. The needed permit is available as part of the class documentation. Thank you.

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2015 EDITION**

Delete SECTION 901 and replace with the following:

SECTION 901

STORMWATER POLLUTION MANAGEMENT

901.1 DESCRIPTION

Design, implement, inspect and maintain appropriate best management practices to minimize or eliminate erosion, sediment and other pollutants in stormwater runoff from the project.

BID ITEMS

SWPPP Design
SWPPP Inspection
Water Pollution Control Manager
Stormwater Compliance Disincentive Assessment

UNITS

Lump Sum
Each
Each
Each

901.2 MATERIALS

None Required.

901.3 CONSTRUCTION REQUIREMENTS

a. Permits.

(1) Projects requiring permit coverage:

(a) KDOT with 1.0 acre or more of erodible surface:

KDOT will submit the Notice of Intent (NOI) for authorization to discharge stormwater runoff from construction activities in accordance with the Kansas Water Pollution Control General Permit. This authorization does not cover Contractor plant sites and Contractor-Furnished borrow and waste sites outside the project limits.

The Contractor shall accept full responsibility, coverage, and liability for the permit, along with KDOT. Within 10 business days after notice of the award of contract, or within any time extension the Bureau Chief of Construction and Materials has granted for completion of documents required in the Bidding Proposal Form, complete, sign and return to KDOT the KDHE form "REQUEST FOR JOINT OWNER/OPERATOR" (RJOO). A blank copy of the form is attached. The Secretary will not sign the contract until the Contractor has returned the completed, signed RJOO. If the Contractor fails to complete, sign, and return the RJOO within the required time, the Secretary will cancel the award of contract as provided in **SECTION 103**. KDOT will submit the completed form to KDHE for authorization. After approved by KDHE, copies will be distributed to KDOT and the Contractor.

(b) Local Public Authority with 1.0 acre or more of erodible surface:

The local governmental agency will submit the Notice of Intent (NOI) for authorization to discharge stormwater runoff from construction activities in accordance with the Kansas Water Pollution Control General Permit. This authorization does not cover Contractor plant sites and Contractor-Furnished borrow and waste sites outside the project limits.

(2) Projects not requiring permit coverage: The Contractor is required to comply with **subsection 901.3b** and use appropriate Best Management Practices (BMPs) to minimize stormwater pollution.

Select Contractor-furnished borrow or plant sites from which runoff will not significantly impact the same surface waters and stream segments that receive runoff from the project site. Selecting a site which does significantly impact the same surface waters may result in the project requiring permit coverage.

A Storm Water Pollution Prevention Plan (SWPPP) (**subsection 901.3c.**) is not required.
A Water Pollution Control Manager (**subsection 901.3d.**) is not required.
Inspection and Maintenance Reports (**subsection 901.3e.**) are not required.
Stormwater Erosion Control Conferences (**subsection 901.3f.**) are not required.

b. General. When Contractor-furnished borrow or plant sites are outside the project limits, obtain all required permits and clearances required for compliance, **SECTION 107**. Provide copies of all such permits and clearances to the Engineer.

Take all measures necessary to minimize or eliminate erosion, sediment and other pollutants in stormwater runoff from the project and project related borrow areas.

Assume responsibility for inspection and maintenance of all erosion and sediment control measures within the project limits, whether originally implemented by the Contractor, KDOT or a third party. Obtain information regarding the SWPPP and active Best Management Practices (BMPs) from the Area Engineer. Maintenance or removal of BMPs not installed by the Contractor may be considered Extra Work, **SECTION 104**, unless addressed by other items of the contract (e.g. sediment removal).

Install BMPs to establish a perimeter control of the project in areas where it is anticipated that stormwater runoff will leave the project. Install perimeter control BMP's prior to or simultaneously with the clearing and grubbing operations. Do not perform grading until perimeter control BMP's are in place and approved by the Engineer.

Unless requested in writing from the Contractor, and approved in writing by the Engineer, or specified otherwise in the Contract Documents, do not exceed 750,000 square feet of surface area of erodible earth material per designated disturbed area at one time. Permanently record all designated disturbed areas on KDOT Form 247 - SWPPP Inspection and Maintenance Report at the stormwater erosion control conference. The Engineer will limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow (within right-of-way) and embankment operations. Limit the exposed erodible earth material according to the capability and progress, and in keeping with the approved schedule.

Areas will not count toward the 750,000 square feet limit, when the following conditions are met:

For areas that will not be disturbed again due to project phasing:

- Finish grade the completed area;
- Stabilize and maintain stabilization according to **SECTION 902**; and
- Do not disturb the area again without a written request from the Contractor and written approval from the Engineer;

For areas that will be disturbed again due to project phasing:

- Rough grade; and
- Stabilize and maintain stabilization according to **SECTION 902**.

For permitted projects disturbing less than 750,000 square feet, the Engineer and Contractor will determine disturbed areas based on project phasing and physical separations (roadway, streams etc.). Permanently record these areas on KDOT Form 247 - SWPPP Inspection and Maintenance Report at the stormwater erosion control conference.

Additional areas may be added or divided according to contractors meaningful work by the Engineer or WPCM to reduce the disturbed area remaining during the life of the project.

DO NOT clear and grub areas unless meaningful work toward the completion of the project will actively be performed in the exposed area (or portions of the exposed area) within 7 calendar days.

If areas are cleared and grubbed and not finish graded, not part of project phasing and no meaningful work toward the completion of the project is performed within the exposed area (or portions of the exposed area) for 7 calendar days on exposed steep slope areas (2.5:1 or greater) or within 7 calendar days of being documented on KDOT Form 247, stabilize and maintain stabilization of the exposed areas according to **SECTION 902** at no cost to KDOT.

If on-site or state-furnished off-site borrow areas are to be excavated below the ground water elevation, construct a temporary berm around the borrow area to prevent stormwater runoff from entering the excavated area.

Do not ford live streams with construction equipment.

Restrict construction operations in rivers, streams and other water impoundments to those areas that must be entered for the construction of temporary or permanent structures. Only use clean aggregate fill for temporary crossing, work platforms, etc. When no longer required, promptly remove all falsework, piling, temporary crossings and other obstructions caused by the construction.

Do not store equipment or materials (including soil stockpiles) within 50 feet of rivers, streams or other surface waters. Avoid storing equipment or materials (including soil stockpiles) in flowlines of ditches or other drainage courses. Where such storage is necessary, obtain the Area or Metro Engineer's written approval and include in the project SWPPP appropriate best management practices for the storage area.

Immediately initiate placement of appropriate erosion control Best Management Practices (BMPs) in any exposed steep slope areas (2.5:1 or greater) where construction activities have permanently or temporarily ceased, and will not resume for a period exceeding 7 calendar days. For vegetative cover areas, in addition to seeding, watering, mulching, and any other required activities related to the planting and establishment of vegetation, utilize other appropriate erosion control practices such as geotextiles or erosion control mats. Divert stormwater flows around steep slopes or install slope drains where feasible.

Immediately initiate temporary or permanent stabilization on areas that have been disturbed after construction activities have permanently ceased on that portion of the project site. Immediately initiate temporary stabilization measures on areas that have been disturbed after construction activities have temporarily ceased on documented and undocumented portions of the project site and when meaningful construction activities will not resume for a period exceeding 7 calendar days.

Temporary stabilization may include temporary seeding, geotextiles, mulches or other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further meaningful construction activities take place to re-disturb the area.

Stabilization is initiated when physical work on the project to install stabilizing BMPs has begun. "Immediately" in the context of the above provisions is defined to mean as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Prosecute stabilization work continuously and diligently until completed.

Install and maintain temporary erosion and pollution control devices as shown in the Contract Documents, **SECTION 902**, the SWPPP and as directed by the Engineer.

Provide and implement Best Management Practices (BMPs) that, at a minimum, are designed, installed and maintained to:

- Control stormwater volume and velocity within the site to minimize soil erosion ;
- Control stormwater discharges to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
- Minimize sediment discharges from the site;
- Provide and maintain natural buffers around Waters of the United States, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges where feasible;
- Prevent contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment;
- Coordinate temporary BMPs with the construction of permanent erosion control features to provide continuous erosion control;
- Schedule the construction of drainage structures as soon as practicable;
- and
- Schedule construction of permanent erosion control features as soon as practicable;

Notify the Engineer in writing within 24 hours of any chemical, sewage or other material spill which is required to be reported to the KDHE under part 10 of the NPDES permit. The notification shall include at a minimum the material spilled, location of the spill, and a description of containment or remediation actions taken. This notice to the Engineer does not relieve the Contractor of responsibility to report to the KDHE or to any other agency.

If temporary erosion and pollution control is not implemented and maintained according to this specification, the approved SWPPP, or the NPDES permit, the Area/Metro Engineer may suspend all or part of the work on the project until conditions are brought into compliance, as determined by the Area/Metro Engineer.

KDOT will not issue the Notice of Acceptance, **SECTION 105**, until all necessary maintenance, corrective actions, removal of unnecessary devices and temporary stabilization is completed for the project. Failure to complete this work within the contract time may result in liquidated damages, **SECTION 108**.

All SWPPP related documentation including the original SWPPP, all revisions/amendments, and inspection reports shall be retained by the Engineer upon Acceptance of the project.

c. SWPPP Design. Before the preconstruction conference, submit to the Field Engineer a minimum of 3 original copies of the SWPPP. No physical work on the project may begin until the Area/Metro Engineer has approved the SWPPP.

Design the SWPPP to comply with the NPDES permit for the project. At a minimum, the submittal shall include:

- A copy of the Project Notice of Intent Form (NOI) for Stormwater Runoff from Construction Activities. (obtained from KDOT);
- A copy of the “Request for Joint Owner/Operator” form signed by the Contractor and the Area/Metro Engineer (if applicable);
- The planned sequence of major construction activities;
- The Contractor’s Erosion Control Site Plan or Plans accounting for project phasing;
- Current training certification(s) for the designated WPCM (subsection 901.3d);
- Current training certification(s) for Contractor’s Environmental Inspector (subsection 901.3e);
- The SWPPP Contractor Certification Form 246. The Contractor and all subcontractors are required to certify that they understand the terms and conditions of the general NPDES permit. The Engineer will provide the SWPPP Certification Form (Form No. 246), or it can be found on the KDOT Internet;
- An acknowledgement that State and Local requirements have been included in the SWPPP. Review all applicable permits (Corps of Engineers, Department of Agriculture, etc.) for special conditions affecting stormwater pollution control. Include relevant permit documents with the SWPPP;
- A detailed description of Best Management Practices (BMPs) which will be used one or more times at the site for erosion and sediment control. In addition to the requirements of **subsection 901.3.b**, design, install and maintain BMPs to:
 - Minimize the amount of soil exposed during construction activity;
 - Minimize the disturbance of steep slopes (slopes of 40% or greater);
 - Control discharges from sediment or soil stockpiles;
 - Minimize the generation of dust;
 - Minimize off-site tracking of soils;
 - Provide storm drain inlet protection for inlets down gradient of disturbed project areas not fully stabilized or where construction will soon be started;
- A description of site management BMPs which minimize or eliminate contamination of stormwater runoff. Design, install and maintain such BMPs to:
 - Minimize discharge of pollutants from equipment and vehicle washing;
 - Minimize the exposure of construction waste, trash, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater;
 - Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
 - BMPs in this category include but are not limited to:
 - Waste management including trash containers and regular site cleanup for proper disposal of solid waste such as scrap material, product/material shipping waste, food containers and cups;
 - Containers and proper disposal for waste, paints, solvents, and cleaning compounds;
 - Portable toilets for proper disposal of sanitary waste;
 - Storage for construction materials away from drainage courses and low areas;
 - Procedures and practices to eliminate the potential to discharge wash and/or rinse waters from concrete mixing equipment including ready-mix concrete trucks.

Update the erosion control site plan as work progresses to show changes due to revisions in work schedules or sequence of construction, or as directed by the Engineer. Update the site map to reflect BMPs that have been installed or removed.

Maintain a complete and updated copy of the project SWPPP on the project site or at the location approved by the Area/Metro Engineer. At a minimum, the complete project SWPPP shall include:

- The approved Contractor’s submittal as detailed above;
- KDOT Form 219, Approval of Storm Water Pollution Prevention Plan (SWPPP) completed by the Area or Metro Engineer;

- KDOT Form 248, Checklist for Contractor's Stormwater Pollution Prevention Plan (SWPPP) completed by the Area or Metro Engineer;
- Current training certifications for KDOT, LPA or Consultant inspectors;
- KDOT Form 247 - SWPPP Inspection and Maintenance Report;
- Complete copy of the NPDES permit for the project;
- Reference Contract Documents pertaining to temporary erosion and water pollution control.

d. Water Pollution Control Manager. Designate a Water Pollution Control Manager (WPCM) who shall visit the project during normal work hours on a frequent basis and at least once per week until all physical work is complete and the Engineer issues the Notice of Acceptance or a partial Notice of Acceptance. The required 180-day observation period for pavement markings is not considered to be physical work. The WPCM shall thoroughly review the project and meet with the project inspector or Engineer during the weekly site visits to discuss, proactively plan, and verify the Contractor's compliance with this specification and with the NPDES permit. In addition, the WPCM shall:

- Have the authority to supervise all work performed by the Contractor and subcontractors that involves stormwater requirements or affects stormwater compliance;
- Have the responsibility and authority to order Contractor employees and subcontractors to take appropriate action to comply with stormwater requirements, including requiring any such person to cease or correct a violation of stormwater requirements and to order or recommend such other actions or sanctions as necessary to meet stormwater requirements;
- Be familiar with the Project SWPPP;
- Ensure BMPs are properly installed and maintained as necessary to maintain compliance;
- Be responsible for updating the Project SWPPP and site maps to accurately reflect the BMPs in use on the project;
- Complete KDOT Form 280- Water Pollution Control Manager Weekly Report, and place in the project SWPPP.
- Be the point of contact for KDOT regarding stormwater compliance;
- Have completed and maintain current certification in KDOT's Certified Inspection and Testing Training (CIT) Program Construction Stormwater (CSW) course.
- Review and sign SWPPP inspection reports within 3 days after receiving such reports, acknowledging awareness of any deficiencies and ensuring the correction of all deficiencies.
- Maintain and monitor an active email account capable of receiving electronic communications including inspection reports, photos and other documents relevant to stormwater compliance.

The WPCM may, when approved by the Engineer, perform SWPPP Inspections according to **subsection 901.3e.**

Immediately notify the Engineer in writing if the designated WPCM is replaced. The replacement WPCM shall comply with the above requirements. The notification shall include training certificates and contact information for the replacement WPCM.

Failure to adequately perform the required duties may result in disqualification of the WPCM in accordance with the procedures outlined in the KDOT Policy and Procedure Manual for The Certified Inspection and Testing Training (CIT) Program.

e. SWPPP Inspections. The Contractor's Environmental Inspector shall have completed KDOT's CIT Construction Stormwater (CSW) training and maintain a current certification while performing SWPPP Inspections.

KDOT's Inspector and the Contractor's Environmental Inspector shall perform joint inspections of the project in compliance with the NPDES permit. Perform joint inspections on site beginning and ending during daylight hours. Continue inspections as required until all physical work is complete and the Engineer issues the Notice of Acceptance or a partial Notice of Acceptance. The required 180-day observation period for pavement markings is not considered to be physical work.

Inspect the entire construction site and all BMPs according to the requirements in part 7.2.10 of the permit.

Schedule routine SWPPP Inspections such that a minimum of one Inspection is performed within every 7-day period.

Perform additional SWPPP inspections if directed by the Engineer. Do not perform multiple inspections on the same calendar day.

Document the SWPPP inspections on KDOT Form 247 - SWPPP Inspection and Maintenance Report. KDOT and Contractor Inspectors shall each sign the report.

Include in the inspection report any maintenance or corrective actions necessary to remedy deficiencies in maintenance, operation, effectiveness, adequacy or coverage extent of all BMPs installed or required to be installed on the project. Deficiencies to be documented include any required maintenance, corrective action, documentation updates, inactive disturbed areas or any other item requiring action necessary to maintain permit compliance.

Remedy any deficiencies noted during a SWPPP Inspection within 7 days of the inspection despite weather conditions that make it difficult (but not impossible) to perform corrections. No additional time shall be granted to remedy deficiencies on the basis of weather unless it is infeasible due to flooding or frozen ground conditions for the Contractor to complete the remedy within the 7 days allowed. No additional time will be granted to remedy deficiencies unless approved by the District Engineer.

Submit completed copies of KDOT Form 247 - SWPPP Inspection and Maintenance Report to the Area/Metro Engineer and the Contractor's WPCM within 24 hours after an inspection has been made.

The WPCM shall review and sign the report within 3 calendar days of receiving the completed inspection report. The WPCM's signature acknowledges awareness of all reported deficiencies and actions required to be taken within 7 calendar days of the inspection.

The Contractor Inspector's signature acknowledges awareness of all reported deficiencies and actions required to be taken immediately and completed within 7 calendar days of the inspection.

The obligation to conduct formal inspections and complete an associated report does not limit or otherwise modify the Contractor's obligation to monitor and maintain temporary erosion and pollution control devices daily.

Failure to adequately perform the required duties may result in disqualification of the Contractor's Environmental Inspector in accordance with the procedures outlined in the KDOT Policy and Procedure Manual for The Certified Inspection and Testing Training (CIT) Program.

f. Oversight Inspections. KDOT will assign oversight inspectors to provide quality assurance on projects with an NPDES permit. Remedy any deficiencies noted during a SWPPP Inspection within 10 days of receiving the inspection report despite weather conditions that make it difficult (but not impossible) to perform corrections. No additional time shall be granted to remedy deficiencies on the basis of weather unless it is infeasible due to flooding or frozen ground conditions for the Contractor to complete the remedy within the 10 days allowed. No additional time will be granted to remedy any deficiencies unless approved by the District Engineer.

g. Stormwater Erosion Control Conferences. Each project shall have a stormwater erosion control pre-construction conference before the start of construction activities.

KDOT and the Contractor shall also hold stormwater erosion control conferences before the start of each major phase of construction and before the winter shutdown period begins.

These conferences shall be attended by the KDOT Area/Metro Engineer, the WPCM, and Environmental Inspector(s) for the Project, and any erosion control subcontractor(s). The attendance sheet and minutes of the conference will be kept in the SWPPP notebook.

h. Stormwater Compliance Disincentive Assessment. If the Contractor's Environmental Inspector fails to perform a SWPPP Inspection as required according to **subsection 901.3e**, the Contractor shall be liable for a disincentive assessment. The disincentive assessment charged and owing shall be determined using **TABLE 901-1**. Failure to participate in the joint inspection does not relieve the Contractor of the responsibility to correct deficiencies noted by KDOT's Inspector.

If deficiencies noted during SWPPP inspections performed according to **subsection 901.3e or f**, are not corrected within 7 calendar days of the inspection, 10 calendar days for oversight findings, or within a time extension approved by the District Engineer, the Contractor shall be liable for a disincentive assessment. The disincentive assessment charged and owing shall be determined using **TABLE 901-1**.

Should it be infeasible to perform corrections within the allowed time, notify the Area/Metro Engineer and the District Engineer immediately. Within 3 days of the notification, submit in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; and a schedule for implementation of any measures to be taken to prevent or mitigate the delay. Include with the submittal any relevant documentation supporting the claim of infeasibility and that best efforts were made to

complete the required corrections and to minimize any delay to the extent possible. No additional time will be granted to submit the required information unless approved in writing by the District Engineer.

The Engineer will deduct and withhold from contract funds the Stormwater Compliance Disincentive Assessment under **subsection 901.3g**. The assessments are to be computed in the same manner as damages under **SECTION 108** (Liquidated Damages and Disincentive Assessments) except calendar days include Sundays, Holidays and the Winter Holiday Period. If contract funds are insufficient, the Contractor shall pay KDOT the balance owed. If the Contractor fails to pay KDOT the amount owed within 10 days after demand from KDOT, the Contractor shall be considered in breach of contract under **SECTION 108**.

The disincentive assessments under **subsection 901.3h** are in addition to federal and state statutory penalties and fines that are allowed against the Contractor under the Clean Water Act and other environmental laws for violations of those laws. See also **subsection 901.3i**.

TABLE 901-1: TABLE OF STORMWATER COMPLIANCE DISINCENTIVES			
Original Contract Amount Range		Each SWPPP Inspection not performed according to 901.3e	Each deficiency per day not corrected within allowable time
\$0	\$1,000,000.	\$250.00	\$250.00
\$1,000,000.01	\$2,500,000.	\$500.00	\$500.00
\$2,500,000.01	\$5,000,000.	\$750.00	\$500.00
\$5,000,000.01	\$10,000,000.	\$1,000.0	\$500.00
Over \$10,000,000.00		\$1,500.0	\$500.00

i. Penalties and Fines. Nothing in **SECTION 901** prevents KDHE, EPA or both from assessing penalties and fines against the Contractor because of the Contractor’s failure to comply with applicable laws, regulations, ordinances, NPDES permit, other permits, the SWPPP, governmental administrative compliance orders or corrective orders for the Project, or a combination thereof.

Nothing in this **SECTION 901** prevents KDHE, EPA, or both from assessing penalties and fines against the Contractor because of the Contractor’s failure to comply with an administrative claims settlement or consent decree that governs KDOT projects and that is included in the Proposal Form or that is added "Extra Work", **SECTION 104**.

Understand that penalties/fines may be imposed against KDOT, the Contractor, or both because of “shared” responsibility/liability under applicable environmental law, regulations, ordinances; the NPDES permit, other permits, the SWPPP, administrative corrective action orders, administrative claims settlements, consent decrees, legal judgments or a combination thereof. The Contractor shall have no claim that such shared responsibility/liability voids the Contractor’s liability for disincentive assessments under **subsection 901.3h** or for penalties/fines under **subsection 901.3i**.

901.4 MEASUREMENT AND PAYMENT

The Engineer will measure each SWPPP inspection performed in compliance with this specification. No more than one SWPPP Inspection will be measured each calendar day.

The Engineer will measure each Water Pollution Control Manager (WPCM). Each is defined as each calendar week (Sunday-Saturday) that the Contractor provides a WPCM according to **subsection 901.3.d**. Each week will be measured only once, regardless of the number of site visits or time spent performing WPCM duties for that week.

The Engineer will measure SWPPP design for payment as a lump sum upon the Area Engineer’s approval. All revisions or updates to the SWPPP shall be subsidiary.

The Engineer will assess disincentives under the bid item "Stormwater Compliance Disincentive Assessment."



REQUEST FOR JOINT OWNER/OPERATOR

For Authorization to Discharge Stormwater Runoff from Construction Activity
In accordance with Kansas Water Pollution Control General Permit No. S-MCST-1703-1
Under the National Pollutant Discharge Elimination System

Use this form only when stormwater discharge and control responsibility for the entire permitted area will be jointly held by adding an owner/operator to an existing Kansas Department of Transportation (KDOT) authorized permit.

Submission of this RJOO to KDHE does not relinquish the KDOT's authorization to discharge stormwater runoff from construction activity at the site described herein.

TO BE COMPLETED BY THE ADDED OWNER/OPERATOR:
I hereby confirm that the Added Owner/Operator identified below shares joint stormwater discharge and operational control responsibility with KDOT and accepts being added to the below identified authorization under the Kansas Stormwater Runoff from Construction Activities General Permit.
The ADDED OWNER/OPERATOR is:
Owner or Operator's Name: Contact Name:
Company Name: Company Name:
Owner or Operator's Phone: Contact Phone:
Mailing Address: Mailing Address:
City: State: Zip Code: City: State: Zip Code:
I certify that I have personally examined and am familiar with the information described herein.
Added Owner/Operator's Signature: Date:
Name (typed or printed): Title:
TO BE COMPLETED BY KDOT
As original Owner/Operator for the authorized project indicated below, I hereby certify the above Added Owner/Operator meets the General Permit definition of Owner/Operator and agree to the shared responsibilities with the Added Owner/Operator under the General Permit and continuance of my responsibilities thereunder.
Name of Project:
Address: City: County: State: KS Zip Code:
Kansas Permit No. Federal Permit No.
Permittee Signature: Date:
Permittee Name: Title: Phone Number:

Submit the RJOO with original signatures to:
Kansas Department of Health and Environment
Bureau of Water, Industrial Programs Section
1000 SW Jackson, Suite 420
Topeka, KS 66612 - 1367

Authorized: [] Y; [] N
Reviewer Date

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTION 902 and replace with the following:

**SECTION 902
TEMPORARY EROSION AND SEDIMENT CONTROL**

902.1 DESCRIPTION

Install, maintain and remove temporary erosion and pollution control devices as required during the construction of the project.

BID ITEMS

Temporary Berm (Set Price)
Temporary Slope Drain
Silt Fence
Biodegradable Log (***)
Synthetic Sediment Barrier
Filter Sock (***)
Temporary Ditch Check (Rock)
Temporary Inlet Sediment Barrier
Temporary Sediment Basin
Temporary Stream Crossing
Sediment Removal (Set Price)
Temporary Fertilizer (**)
Temporary Seed (**)
Soil Erosion Mix
Erosion Control (*)(**)
Mulching
Water (Erosion Control) (Set Price)
Geotextile (Erosion Control)
* Class
** Type
*** Size

UNITS

Linear Foot
Linear Foot
Linear Foot
Linear Foot
Linear Foot
Linear Foot
Cubic Yard
Each
Cubic Yard
Each
Cubic Yard
Pound
Pound
Pound
Square Yard
Ton
M Gallon
Square Yard

902.2 MATERIALS

Provide erosion control devices, sediment barriers, fertilizers, seeds, soil erosion mix, erosion control materials and mulch that comply with **DIVISION 2100**.

Provide aggregate that complies with aggregate ditch lining, $D_{50} = 6$ inches, **DIVISION 1100**. Existing aggregate from the project may be used under this specification, provided all applicable physical requirements are met.

Provide water for erosion control that complies with **DIVISION 2400**.

Provide geotextile (erosion control) that complies with **DIVISION 1700** for separation geotextile.

Provide aggregate filler that complies with Filter Course Type I, **DIVISION 1114**. The Engineer will accept this material on the basis of visual inspection at the point of usage.

Provide metal pipe, plastic pipe or flexible rubber pipe for temporary slope drains. The Engineer will accept the material for temporary slope drain based on the condition of the pipe and visual inspection of the installed drain.

902.3 CONSTRUCTION REQUIREMENTS

a. General. If the contract does not include temporary erosion and sediment control bid items, and such work is required, items will be added as provided for in **SECTION 104**.

Use [KDOT's Temporary Erosion Control Manual](#) and standard plan sheets or approved alternate reference documents as a guide for the design, installation and maintenance of temporary erosion and sediment control best management practices (BMPs.).

Alternate BMP references include:

- EPA – Stormwater Menu of BMP:
(<http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control.cfm>)
- Mn/DOT – Erosion and Sediment Control Pocketbook Guide:
(<http://www.dot.state.mn.us/environment/erosion/pdf/2006mndotecfieldhandbook.pdf>)
- NDOR – Construction Stormwater Pocket Guide:
(<http://www.transportation.nebraska.gov/environment/guides/Const-Strmwtr-Pocket%20Guide.pdf>)
- Additional reference material available on KDOT's internet website:
(<http://www.ksdot.org/bureaus/burconsmain/Connections/swppp.asp>).

b. Temporary Berms. Use temporary berms to divert storm runoff to stabilized slopes or temporary slope drains. Construct temporary berms as shown in the Contract Documents. Compact the berms until no further consolidation is observed, using a dozer track, grader wheel or other equipment.

c. Temporary Slope Drains. Use temporary slope drains to carry storm runoff down fill slopes and cut backslopes. Construct the temporary slope drains as shown in the Contract Documents.

d. Silt Fence. Install silt fence for slope barriers or ditch checks as shown in the SWPPP. When conditions warrant, supplement the temporary silt fence with a support fence. Reduce the post spacing and drive the posts further in the ground in low and soft, swampy areas. Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{3}$ the height of the silt fence.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

e. Biodegradable Logs. Install biodegradable logs for slope barriers or ditch checks as shown in the SWPPP. Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{2}$ the height of the biodegradable log.

Do not use straw logs for ditch checks or inlet sediment barriers.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

f. Synthetic Sediment Barriers. Install synthetic sediment barriers for slope barriers or ditch checks as shown in the SWPPP. Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{2}$ the height of the barrier.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

g. Filter Sock. Install filter socks with approved filler as shown in the SWPPP. Use coarse aggregate filler for protection of curb and gutter inlets.

h. Temporary Ditch Check (Rock). Use rock and aggregate filler to construct temporary rock ditch checks as shown in the SWPPP or the Contract Documents. When deposits reach approximately $\frac{1}{2}$ the height of the temporary rock ditch check, remove and dispose of the accumulated sediment. Aggregate filler may be part of an aggregate ditch lining.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

i. Temporary Inlet Sediment Barrier. Use any of the materials listed in the Contract Documents or the SWPPP to construct temporary inlet sediment barriers. Prefabricated protection devices or alternative systems may be used with the Engineer's approval. Provide the Engineer with a complete description, literature, test reports, etc. on the proposed system. Submit this information with the SWPPP documents for approval under **subsection 901.3.c.**

When temporary silt fence is used, reduce post spacing and drive the posts further into the ground in low and soft, swampy areas. Remove and dispose of the sediment when deposits reach approximately $\frac{1}{3}$ the height of the silt fence.

When synthetic sediment barriers are used, remove and dispose of the sediment when deposits reach approximately $\frac{1}{2}$ the height of the barrier.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

j. Temporary Sediment Basins. Before constructing a temporary sediment basin, clear the area of all vegetation. Construct the temporary sediment basin with a wide cross-section and a minimum grade, as shown in the Contract Documents. Dispose of excess excavated material.

Remove and dispose of the accumulated sediment when deposits reach approximately 20% of the basin capacity.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

k. Temporary Stream Crossing.

(1) General. When the Contractor's operations require a temporary stream crossing, and one is not shown in the Contract Documents, the Contractor may install the crossing at no cost to KDOT. Comply with all applicable rules and regulations, obtain all required permits and provide copies of all permits to the Field Engineer. An unanticipated stream crossing may require a permit from the Corps of Engineers if work is performed within Waters of the U.S. and/or a stream obstruction permit from the Kansas Department of Agriculture if the crossing is in a designated stream.

Before beginning work in the streambed, record existing stream channel elevations.

Construct temporary stream crossings as shown in the Contract Documents or the SWPPP.

Place 1 pipe buried 6 inches into the stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing. If the OHW is not designated in the Contract Documents, the Engineer will determine the OHW. The OHW means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Submit to the Engineer for review and approval, the design flow calculations to determine the number and diameter of pipes required. A minimum 12 inch diameter pipe is required.

Place pipes parallel to flow.

Cover pipes with a minimum of 12 inches of clean aggregate fill.

Dispose of sediment on the project at locations approved by the Engineer. When necessary, stabilize the material as directed by the Engineer.

(2) Maintenance. At a minimum, perform weekly inspections to verify that drift and debris are not blocking the flow of water through the pipes. Perform additional inspections, as needed. Remove drift and debris when blockage occurs. Repair eroded areas, if necessary, to prevent washout and allow passage of flows.

(3) Removal. Remove the temporary crossing and all materials as soon as no longer needed. Restore the disturbed bed and bank area of the stream channel to its pre-existing elevations.

l. Temporary Fertilizer, Seed and Mulch. Repair any rills, gullies or other erosion damage prior to seeding. Prepare the seedbed, fertilize, seed and mulch according to **DIVISION 900**. Apply the temporary fertilizer, seed and mulch at the rates shown in the Contract Documents. Apply water to seeded and mulched areas when approved by the Stormwater Compliance Engineer or Local Public Authority to promote the establishment of vegetation in critical areas.

m. Soil Erosion Mix. Prepare the seedbed, fertilize and seed according to **DIVISION 900**. Lightly hand rake broadcasted seed before placement of the erosion control.

Only use the soil erosion mix under Erosion Control (Class 1) or Erosion Control (Class 2).

There are no seasonal placement limitations for the soil erosion mix.

o. Erosion Control. After seeding and fertilizing according to **DIVISION 900**, install erosion control according to the manufacturer's requirements for edge and junction overlaps, staple size and staple pattern. Installation areas shall be free of erosion rills, rocks, clods or other debris that may cause "tenting" or otherwise inhibit uniform contact.

When shown in the plans, install erosion control materials within the time allowed for temporary stabilization under **subsection 901.3b**.

Use Erosion Control materials for the stabilization of all steep slopes (2 ½:1 or steeper) where construction activities have permanently or temporarily ceased and will not resume for a period exceeding 7 calendar days

(1) Areas with Erosion Control (Class 1). Place the Erosion Control (Class 1) on slopes according to the SWPPP. Do not mulch over the Erosion Control (Class 1).

(2) Areas with Erosion Control (Class 2). Place the Erosion Control (Class 2) in channels, ditches or areas of concentrated flow according to the SWPPP.

Do not cover erosion control materials with soil or mulch unless recommended by the manufacturer and approved by the Engineer.

Apply water to completed erosion control installations when approved by the Stormwater Compliance Engineer or Local Public Authority to promote the establishment of vegetation in critical areas.

p. Geotextile (Erosion Control). Install geotextile (erosion control) as a temporary measure to protect steep slopes and other areas where timely installation of the permanent (aggregate or concrete) slope protection is impractical. The installation area should be free of rills, rocks, clods or other debris. Secure geotextile to the ground with staples or other similarly effective methods to achieve uniform contact with minimal "tenting."

Remove geotextile prior to placement of the permanent slope protection.

Install geotextile (erosion control) as a temporary measure to protect temporary slopes, soil stockpiles and other areas where mulching or other means of stabilization is impractical. Preparation of the slopes and the method of securing the fabric shall be as approved by the Engineer.

q. Maintenance and Removal of Temporary Erosion and Pollution Control Devices. Maintain the effectiveness of the temporary erosion and pollution control devices as long as required to contain sediment runoff. Monitor temporary erosion and pollution control devices daily.

Remove the temporary devices according to the SWPPP or when directed by the Engineer. After removing the temporary erosion and pollution control devices, remove and dispose of the silt accumulation. Grade, fertilize, seed and mulch any bare areas.

When temporary erosion and pollution control devices are installed according to the Contract Documents, SWPPP, or as approved by the Engineer and such devices are no longer effective because of deterioration or functional incapacity, payment will be made for replacement of these devices, as directed by the Engineer. No payment will be made for replacing temporary erosion control devices that become ineffective because of improper installation, lack of maintenance or the Contractor's failure to pursue timely installation of permanent erosion control devices according to the Contract Documents.

902.4 MEASUREMENT AND PAYMENT

The Engineer will measure temporary berms, temporary slope drains, silt fence, biodegradable logs, synthetic sediment barriers, and filter sock by the linear foot. The Engineer will measure the top of the device from point to point or each bend/turn in the device, add them together from beginning to end to come up with the total liner feet per device. The length installed up side slopes beyond a point level from the top of the device in the ditch bottom will not be measured for payment.

The Engineer will measure temporary rock ditch checks by the cubic yard.

The Engineer will measure each temporary inlet sediment barrier.

The Engineer will measure each temporary stream crossing when shown as a bid item in the contract.

The Engineer will measure temporary sediment basins by the cubic yard excavated to construct the basin.

The Engineer will measure sediment removal by the cubic yard of sediment removed. If the quantity of sediment removal is approximately 50 cubic yards or greater in one location, the Engineer may pay for sediment removal by force account (**SECTION 109**) rather than paying the contract set price for the bid item "Sediment Removal". Whether paid as a set price or by force account, the Engineer will not pay for a quantity or cost that is incurred because of the Contractor's failure to install seed timely or failure to remove sediment timely as **SECTION 901** requires.

The Engineer will measure temporary fertilizer, temporary seed and soil erosion mix by the pound.

The Engineer will measure erosion control by the square yard.

The Engineer will measure mulching by the ton.

The Engineer will measure water used for establishment of vegetation by the M Gallon using calibrated tanks or meters.

The Engineer will measure geotextile (erosion control) by the square yard.

Payment for the various items of temporary erosion and pollution control is full compensation for the specified work. Contract unit prices will govern regardless of overruns or underruns of the estimated quantity unless specifically stated otherwise.

Payment for "Sediment Removal (Set Price)" at the contract set unit prices is full compensation for the specified work.

The Engineer will not measure for separate payment any erosion control devices or seeding installed in Contractor-Furnished borrows and waste locations or plant site locations outside the project limits.

**SECTION 904
 SEEDING**

Page 900-13, delete subsection 904.3a and replace with the following:

a. Seeding Seasons.

(1) Projects less than 1 acre (bid item "Seeding" per lump sum). Seed the area anytime of the year with the seed specified in the Contract Documents.

(2) Projects 1 acre or greater (bid item "Seed (*)" or "(Hydro)(*)" per pound). Determine the seeding season using **TABLE 904-1**.

TABLE 904-1: GRASS & WILDFLOWER SEEDING SEASONS	
Type	Season
Cool Season Grasses	February 15 thru April 20 August 15 thru September 30
Warm Season Grasses and Wildflowers	November 15 thru June 1

If cool season grasses are mixed with warm season grasses, seed the area during the seeding season for warm season grasses.

Seed the project during the proper seeding season to protect the finished grading. This may require seeding different parts of the project at different times or seasons. Complete permanent seeding during the first season after the grading work is finished. Complete the area once the seeding operations begin in an area.

The Environmental Scientist or Stormwater Compliance Engineer may extend the seeding season a few days in special situations depending on area and weather conditions.

Page 900-14, delete subsection 904.3e and replace with the following:

e. Seeding/Lump Sum. This item is only used on projects with less than 1 acre of seeding.

Prepare the seedbed, fertilize, seed and mulch all disturbed or cultivated areas within the right-of-way and construction easements according to **DIVISION 900**. This item includes all seeding and mulching necessary to meet stabilization requirements in **SECTION 901**, and includes both temporary and final surfaces. Multiple mobilizations may be required depending on how the Contractor pursues the work.

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTION 905 and replace with the following:

SECTION 905

MULCHING

905.1 DESCRIPTION

Provide and uniformly place mulching materials as shown in the Contract Documents.

BID ITEMS

Mulching
Mulching Tacking Slurry
HECP*

UNITS

Tons
Pound
Pound

* Hydraulic Erosion Control Products Type

905.2 MATERIALS

Provide materials that comply with the applicable requirements.

Mulch, HECP and Mulching Tacking Slurry **DIVISION 2100**
Water **DIVISION 2400**

905.3 CONSTRUCTION REQUIREMENTS

a. Mulching. Place and punch the mulch immediately after the fertilizing and seeding operations. Do not allow the mulching operations to lag behind the fertilizing and seeding operations more than 24 hours. If rain is forecast, make every effort to mulch areas the same day they are seeded.

A sufficient length of mulching material is needed for the mulch to interlap and bind together. Short stemmed mulching material is more vulnerable to wind action. When the mulching is applied with a straw blower, if required, remove the cutting knives to prevent cutting the mulch too short.

After an area is fertilized and seeded, uniformly spread the mulch over the area. Apply the mulch at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide. The Engineer will determine if the applied mulch is sufficient to protect the seeded area.

After the mulch is applied to an area, punch the mulching material (except wood chips) approximately 2 inches into the ground. Perform the punching operation longitudinally, using a mulch puncher. When needed, use weights on the mulch puncher to punch the mulching material into the soil.

When the slope is too steep to use a mulch puncher, "pat" the mulch with forks as it is placed on the slope. Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

On lawns and small areas in urban areas, apply the mulch material using hand methods, unless otherwise approved by the Engineer. As the mulch is placed, "pat" the mulch with a fork.

Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

b. Mulching Tacking Slurry. Place and punch the mulch immediately after the fertilizing and seeding operations according to **subsection 905.3a**.

Immediately after the designated areas are mulched and punched, use hydraulic slurry equipment to apply the mulching tacking slurry. Unless shown otherwise in the Contract Documents, apply the mulching tacking slurry at the rate of 900 pounds per acre. Distribute the mulching tacking slurry uniformly over the mulch, leaving no bare spots. Arrange work so the mulching tacking slurry can be placed within 24 hours after each area has been mulched.

c. Hydraulic Erosion Control Product (HECP). Apply the HECP over the specified areas by means of a standard hydraulic slurry seeding machine. Demonstrate, to the Engineer's satisfaction, that the equipment and methods will result in a uniform application of the HECP. Mix the dry HECP with water and agitate according to the recommendations of the product manufacturer.

Apply the HECP immediately after the seeding and cultipacking to maximize adhesion and minimize slumping. Obtain complete coverage from a consistent angle of approach while applying HECP. Achieve no more than 65% coverage from the primary angle of application, and at least 35% coverage from the secondary angle of coverage. Maintain secondary angles of coverage of between 175° and 185° from the primary angle.

The typical application rates in **TABLE 905-1** may be adjusted based on the manufacturer's recommendations with the approval of the Engineer.

TABLE 905-1: HECP Typical Applications		
Type	Application Rate (lbs/acre)	Maximum Slope
A	1800	4:1
B	2500	3:1
C	3500	2:1

905.4 MEASUREMENT AND PAYMENT

a. Measured Quantities. All area measurements in this section will be based upon slope measurements.

The Engineer will measure the mulching by the ton.

The Engineer will measure mulching tacking slurry by the pound. Payment will be made based on the dry package weight of the recycled paper fibers and tacking agent. Water will not be measured separately, but is subsidiary to the mulching tacking slurry.

The Engineer will measure HECP by the pound. Payment will be made based on the dry package weight of the HECP. Water will not be measured separately, but is subsidiary to the HECP.

b. Payment. Payment for "Mulching Tacking Slurry", "HECP (Type *)" and "Mulching" at the contract unit prices is full compensation for the specified work.

When the quantity of "Mulching Tacking Slurry," "HECP (Type *)" and "Mulching" overruns or underruns the contract quantity by any amount, the contract unit price shall govern.

Delete SECTION 2110 and replace with the following:

SECTION 2110

MULCH

2110.1 DESCRIPTION

This specification covers material suitable for use as mulch.

2110.2 REQUIREMENTS

a. General Mulch Materials. Prairie hay is the preferred mulch material. Use prairie hay containing primarily Bluestem grasses, switchgrass, indiagrass and other desirable perennial grasses, normally found in Bluestem pastures. Additional materials acceptable for mulching include sudan grass hay or excelsior mulch.

Provide written evidence to the Engineer if none of the preferred/additional mulching materials are available. The Engineer may permit the use of wheat straw, oat straw, sawdust, shredded wood, peat moss or pulverized corn cobs.

Do not provide mulching material containing *Sericea Lespedeza*, *Multiflora Rose* or any noxious weed identified by the Kansas Department of Agriculture.

b. Shredded or Chipped Wood Mulch. Provide shredded or chipped hardwood, cypress or cedar wood mulch for use around trees, shrubs and other plants as designated in the Contract Documents. Chipped wood mulch is to be substantially free of mineral, organic or vegetative matter other than wood. The mulch is to have no more than one calendar year between the time of cutting and shredding or chipping and the time of application to the current project. Do not use this chipped wood mulch around small perennials and vines.

c. Composted Mulch. Use only composted wood mulch around small perennials and vines.

d. Hydraulic Erosion Control Products. Provide a Hydraulic Erosion Control Product (HECP) manufactured from non-toxic, degradable fibers combined with an organic or synthetic tackifier that contains no growth or germination inhibiting factors. The HECP shall contain a visible dye to facilitate placement and inspection of the application. The dye shall be nontoxic to plants, animals and aquatic life and shall not stain concrete or painted surfaces. All HECPs shall comply with **TABLE 2110-2**:

TABLE 2110-2: HECP General Requirements	
Property	Requirement
Organic matter	90% minimum
“Dry” Moisture Content	15% maximum
pH	5.5 – 7.5
Water holding capacity	800% minimum

HECPs will be designated by Type according to **TABLE 2110-3**:

TABLE 2110-3: HECP Types		
Type	Maximum Cover Factor (ASTM D6459) at R=162	Minimum Germination Enhancement (ASTM D7322)
A	0.20	200%
B	0.10	400%
C	0.01	400%

Other products not meeting the requirements of this subsection may be approved provided they meets the following criteria:

- (1) Contain non-toxic tackifiers that, upon drying, become insoluble and non-dispersible to eliminate direct raindrop impact on soil according to ASTM D7101 and EPA 2021.0-1.
- (2) Contain no germination or growth inhibiting factors and do not form a water-resistant crust that can inhibit plant growth.
- (3) Contain a minimum 90% organic material (ASTM D2974).
- (4) Have a rainfall event (R-factor) greater than 140 (ASTM D6459).
- (5) Have a cover factor no greater than 0.03 (ASTM D6459).
- (6) Have a minimum Vegetation Establishment of 400% (ASTM D7322).
- (7) Have a minimum Water Holding Capacity of 600% (ASTM D7367).

2110.3 PREQUALIFICATION

Hydro-mulches must be prequalified. Submit a written request to be evaluated for prequalification to the Bureau of Right of Way, Environmental Services Section. Provide the following for each brand and type of material to be evaluated:

- (1) Name, address, and telephone number of the manufacturer and the preferred contact person.
- (2) Name of product and manufacturers application recommendations.
- (3) Material Safety Data Sheets.

(4) Results of tests from the AASHTO National Transportation Product Evaluation Program (NTPEP) or other independent testing laboratory demonstrating compliance with the above criteria.

2110.4 BASIS OF ACCEPTANCE

a. The Engineer will accept straw or hay bales based on the following:

- North American Weed Management Association (NAWMA) Standards.
- Receipt of a statement that this material “meets the North American Weed Free Forage Standards” on a Transit certificate with the vehicle tag number, the type and number of bales being transported or a Forage tag on each bale.

Contact the Kansas Department of Agriculture to request inspection or for certifications. For a Certified Weed-Free Forage/Mulch Growers Listing contact the Kansas Department of Agriculture.

b. Hydraulic Erosion Control Products will be accepted based on visual inspection of the container label to verify compliance with this specification and receipt and approval of a Type C certification as specified in **DIVISION 2600**.

c. All other mulch materials are accepted based on a visual inspection by the Engineer.

07-24-20 C&M (LAL)

Sept-2021 Letting

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTION 907 and replace with the following:

SECTION 907

SODDING

907.1 DESCRIPTION

Provide and place living sod at the locations shown in the Contract Documents.

BID ITEM

Sod (*) (**)

*Variety

**Form of Sod: roots, plugs or strips

UNITS

Square Yard

907.2 MATERIALS

Provide sod that complies with **DIVISION 2100**. Provide sod that is in vigorous growing condition.

907.3 CONSTRUCTION REQUIREMENTS

a. **Sodding Seasons.** Determine the sodding season using **TABLE 907-1**.

TABLE 907-1: SODDING SEASONS	
Type	Season*
Cool Season Grasses	March 1 thru April 15 September 1 thru November 15
Warm Season Grasses	May 15 thru September 1

*If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.

b. Construction Sequence. Sod the project during the proper sodding season to protect the finished grading. This may require sodding different parts of the project at different times or seasons. Complete the area once the sodding operations begin in an area.

c. Soil Preparation. Before preparing the soil, repair any eroded areas, and remove all weeds and surface stones greater than 1 inch in diameter. Undercut the soil below the adjacent areas so that the top of the new sod is flush with adjacent seedbeds or turfed areas, and 1 inch below sidewalks and tops of curbs.

Cultivate or pulverize the soil to a minimum depth of 1 inch. Smooth the soil, maintaining the grades established by the Grading Contractor. Before sodding, place the fertilizer as specified in the Contract Documents.

d. Placing the Sod. Place and fit sod strips as close together as possible. Stagger the joints between horizontal rows. Fill gaps between sod strips with sod pieces cut to the shape and size of the gaps.

Lay sod strips horizontally on slopes, starting at the bottom and working upwards, unless directed otherwise by the Engineer.

If the sod is placed on slopes of 2½:1 or steeper, or in ditch bottoms, secure the sod with 6 stakes per square yard or per roll of sod. If the sod is placed on slopes steeper than 20:1 and flatter than 2½:1, secure the sod with 2 to 4 stakes per square yard or per roll of sod. Use wooden lath (approximately 6 inches long) or similar wooden materials or ungalvanized wire staples (½ inch wire diameter approximately 6 inches long) to stake the sod. Drive the stakes and staples flush with the sod surface.

After the sod is placed and secured, firm the sod using a small roller, tamper or other method approved by the Engineer.

e. Watering the Sod. Immediately after placing the sod, thoroughly water to a depth of 3 inches. Continue watering the sod every other day for 20 days after the sod is placed. The sod shall be thoroughly watered and growing when it is accepted.

907.4 MEASUREMENT AND PAYMENT

The Engineer will measure sod by the square yard.

Payment for the various types of sod at the contract unit prices is full compensation for the specified work.

04-22-19 C&M (ML)

Aug-19 Letting

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2015 EDITION**

SECTION 2103

SEEDS

Page 2100-4, delete subsections 2103.2b. and c. and replace with the following:

b. Seed Quality and Definitions. Purchase all seed which complies with the rules and regulations as prescribed by the Association of Official Seed Analysts (AOSA) and Kansas Seed Law.

Cleaning and conditioning of seed must result in a product that meets or exceeds minimum standards. The product must also be clean enough to plant using existing drilling equipment without further processing.

c. Pure Live Seed (PLS) Requirements and Determination. Planting must occur within 12 months of a valid germination test. Compute percent pure live seed (%PLS) by adding percent germination to percent firm or hard seed. Divide the sum by 100. Multiply this product by the percent purity.

$$\% \text{ PLS} = \frac{(\% \text{ Germ.} + \% \text{ Firm or Hard Seed}) \times \% \text{ Purity}}{100}$$

Minimum PLS requirements are shown in **TABLES 2103-1** and **2103-2**. The Engineer may grant permission to use seeds that fail to comply with the required PLS provided the following conditions are met.

(1) The Contractor can provide suitable evidence to the Engineer that seeds comply with **TABLE 2103-1** or **2103-2** are not readily available.

(2) The Contractor is willing to increase the quantity of seeds, at no additional cost to KDOT, to provide the minimum quantity of PLS required.

Page 2100-5, add a new subsection 2103.2g.:

g. Labeling. Label each seed container with the following information in accordance with the Kansas Seed Law:

(1) The commonly accepted name of the kind and variety or the kind and the words "variety not stated" of each agricultural seed component in excess of 5% of the whole and the percentage by weight of each in order of its predominance, except for the annual grain crops wheat, oats, barley, and soybeans for which the label shall include kind and variety. For blends of wheat, oats, barley or soybeans, the label shall include the kind followed by the word "blend". For brands of wheat, oats, barley, and soybeans, the brand mark or term must precede the word "brand". Components of blends and brands of wheat, oats, barley and soybeans shall be registered with the secretary unless all varieties and the percentage thereof are listed on the label. Blends and brands so registered may be labeled by kind and the words "variety (varieties) not stated". The composition of registered blends and brands shall remain consistent from year to year. Where more than one component is required to be named, the word "mixture" or the word "mixed" shall be shown conspicuously on the label;

(2) the percentage by weight of pure seed;

(3) the percentage by weight of all weed seeds;

(4) the percentage by weight of inert matter;

(5) for each named agricultural seed: (1) The percentage of germination, exclusive of hard seed; (2) the percentage of hard seeds, if present; (3) total germination percentage including hard seed may be shown; (4) the calendar month and year the test was completed to determine such percentages;

(6) the percentage by weight of agricultural seeds (which may be designated as "crop seeds") other than those required to be named on the label;

- (7) the lot number or other lot identification;
- (8) the origin: i.e., the state of foreign country where grown, except grass seeds in quantities of less than 10 pounds for lawn seeding purposes, or a declaration that origin of seed is unknown to seller.
- (9) the name and rate of occurrence per pound of each kind of restricted weed seed present, which shall not be more than the number per pound of restricted weed seed in agricultural seed, as provided in subsection (k) of K.S.A. 2-1415;
- (10) the name and address of person responsible for the label;
- (11) agricultural seed which has been treated with chemicals for insect or disease control, shall be labeled to show the following:
 - (a) A word or statement indicating that the seed has been treated;
 - (b) the commonly accepted, coined, chemical or abbreviated chemical (generic) name of the applied substance;
 - (c) if the substance in the amount applied is harmful to human or other vertebrate animals, a caution statement, such as: "Do not use for food, feed or oil purposes". The caution for mercurials and similarly toxic substances must include in a contrasting color the word "poison" and skull and crossbones; and
 - (d) a separate label may be used to show this information, or it may be a component part of the main label.

Page 2100-5, delete subsections 2103.5c. and replace with the following:

- c. Verification that each seed container is labeled according to subsection 2103.2g.**

07-01-15 C&M/ESS
Jul-15 Letting

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

Delete SECTION 905 and replace with the following:

SECTION 905

MULCHING

905.1 DESCRIPTION

Provide and uniformly place mulching materials as shown in the Contract Documents.

BID ITEMS

Mulching
Mulching Tacking Slurry
HECP*

UNITS

Tons
Pound
Pound

* Hydraulic Erosion Control Products Type

905.2 MATERIALS

Provide materials that comply with the applicable requirements.

Mulch, HECP and Mulching Tacking Slurry **DIVISION 2100**
Water **DIVISION 2400**

905.3 CONSTRUCTION REQUIREMENTS

a. Mulching. Place and punch the mulch immediately after the fertilizing and seeding operations. Do not allow the mulching operations to lag behind the fertilizing and seeding operations more than 24 hours. If rain is forecast, make every effort to mulch areas the same day they are seeded.

A sufficient length of mulching material is needed for the mulch to interlap and bind together. Short stemmed mulching material is more vulnerable to wind action. When the mulching is applied with a straw blower, if required, remove the cutting knives to prevent cutting the mulch too short.

After an area is fertilized and seeded, uniformly spread the mulch over the area. Apply the mulch at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide. The Engineer will determine if the applied mulch is sufficient to protect the seeded area.

After the mulch is applied to an area, punch the mulching material (except wood chips) approximately 2 inches into the ground. Perform the punching operation longitudinally, using a mulch puncher. When needed, use weights on the mulch puncher to punch the mulching material into the soil.

When the slope is too steep to use a mulch puncher, "pat" the mulch with forks as it is placed on the slope. Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

On lawns and small areas in urban areas, apply the mulch material using hand methods, unless otherwise approved by the Engineer. As the mulch is placed, "pat" the mulch with a fork.

Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.

b. Mulching Tacking Slurry. Place and punch the mulch immediately after the fertilizing and seeding operations according to **subsection 905.3a**.

Immediately after the designated areas are mulched and punched, use hydraulic slurry equipment to apply the mulching tacking slurry. Unless shown otherwise in the Contract Documents, apply the mulching tacking slurry at the rate of 900 pounds per acre. Distribute the mulching tacking slurry uniformly over the mulch, leaving no bare spots. Arrange work so the mulching tacking slurry can be placed within 24 hours after each area has been mulched.

c. Hydraulic Erosion Control Product (HECP). Apply the HECP over the specified areas by means of a standard hydraulic slurry seeding machine. Demonstrate, to the Engineer's satisfaction, that the equipment and methods will result in a uniform application of the HECP. Mix the dry HECP with water and agitate according to the recommendations of the product manufacturer.

Apply the HECP immediately after the seeding and cultipacking to maximize adhesion and minimize slumping. Obtain complete coverage from a consistent angle of approach while applying HECP. Achieve no more than 65% coverage from the primary angle of application, and at least 35% coverage from the secondary angle of coverage. Maintain secondary angles of coverage of between 175° and 185° from the primary angle.

The typical application rates in **TABLE 905-1** may be adjusted based on the manufacturer's recommendations with the approval of the Engineer.

TABLE 905-1: HECP Typical Applications		
Type	Application Rate (lbs/acre)	Maximum Slope
A	1800	4:1
B	2500	3:1
C	3500	2:1

905.4 MEASUREMENT AND PAYMENT

a. Measured Quantities. All area measurements in this section will be based upon slope measurements.

The Engineer will measure the mulching by the ton.

The Engineer will measure mulching tacking slurry by the pound. Payment will be made based on the dry package weight of the recycled paper fibers and tacking agent. Water will not be measured separately, but is subsidiary to the mulching tacking slurry.

The Engineer will measure HECP by the pound. Payment will be made based on the dry package weight of the HECP. Water will not be measured separately, but is subsidiary to the HECP.

b. Payment. Payment for "Mulching Tacking Slurry", "HECP (Type *)" and "Mulching" at the contract unit prices is full compensation for the specified work.

When the quantity of "Mulching Tacking Slurry," "HECP (Type *)" and "Mulching" overruns or underruns the contract quantity by any amount, the contract unit price shall govern.

Delete SECTION 2110 and replace with the following:

SECTION 2110

MULCH

2110.1 DESCRIPTION

This specification covers material suitable for use as mulch.

2110.2 REQUIREMENTS

a. General Mulch Materials. Prairie hay is the preferred mulch material. Use prairie hay containing primarily Bluestem grasses, switchgrass, indiagrass and other desirable perennial grasses, normally found in Bluestem pastures. Additional materials acceptable for mulching include sudan grass hay or excelsior mulch.

Provide written evidence to the Engineer if none of the preferred/additional mulching materials are available. The Engineer may permit the use of wheat straw, oat straw, sawdust, shredded wood, peat moss or pulverized corn cobs.

Do not provide mulching material containing *Sericea Lespedeza*, *Multiflora Rose* or any noxious weed identified by the Kansas Department of Agriculture.

b. Shredded or Chipped Wood Mulch. Provide shredded or chipped hardwood, cypress or cedar wood mulch for use around trees, shrubs and other plants as designated in the Contract Documents. Chipped wood mulch is to be substantially free of mineral, organic or vegetative matter other than wood. The mulch is to have no more than one calendar year between the time of cutting and shredding or chipping and the time of application to the current project. Do not use this chipped wood mulch around small perennials and vines.

c. Composted Mulch. Use only composted wood mulch around small perennials and vines.

d. Hydraulic Erosion Control Products. Provide a Hydraulic Erosion Control Product (HECP) manufactured from non-toxic, degradable fibers combined with an organic or synthetic tackifier that contains no growth or germination inhibiting factors. The HECP shall contain a visible dye to facilitate placement and inspection of the application. The dye shall be nontoxic to plants, animals and aquatic life and shall not stain concrete or painted surfaces. All HECPs shall comply with **TABLE 2110-2**:

TABLE 2110-2: HECP General Requirements	
Property	Requirement
Organic matter	90% minimum
“Dry” Moisture Content	15% maximum
pH	5.5 – 7.5
Water holding capacity	800% minimum

HECPs will be designated by Type according to **TABLE 2110-3**:

TABLE 2110-3: HECP Types		
Type	Maximum Cover Factor (ASTM D6459) at R=162	Minimum Germination Enhancement (ASTM D7322)
A	0.20	200%
B	0.10	400%
C	0.01	400%

Other products not meeting the requirements of this subsection may be approved provided they meets the following criteria:

- (1) Contain non-toxic tackifiers that, upon drying, become insoluble and non-dispersible to eliminate direct raindrop impact on soil according to ASTM D7101 and EPA 2021.0-1.
- (2) Contain no germination or growth inhibiting factors and do not form a water-resistant crust that can inhibit plant growth.
- (3) Contain a minimum 90% organic material (ASTM D2974).
- (4) Have a rainfall event (R-factor) greater than 140 (ASTM D6459).
- (5) Have a cover factor no greater than 0.03 (ASTM D6459).
- (6) Have a minimum Vegetation Establishment of 400% (ASTM D7322).
- (7) Have a minimum Water Holding Capacity of 600% (ASTM D7367).

2110.3 PREQUALIFICATION

Hydro-mulches must be prequalified. Submit a written request to be evaluated for prequalification to the Bureau of Right of Way, Environmental Services Section. Provide the following for each brand and type of material to be evaluated:

- (1) Name, address, and telephone number of the manufacturer and the preferred contact person.
- (2) Name of product and manufacturers application recommendations.
- (3) Material Safety Data Sheets.

(4) Results of tests from the AASHTO National Transportation Product Evaluation Program (NTPEP) or other independent testing laboratory demonstrating compliance with the above criteria.

2110.4 BASIS OF ACCEPTANCE

a. The Engineer will accept straw or hay bales based on the following:

- North American Weed Management Association (NAWMA) Standards.
- Receipt of a statement that this material “meets the North American Weed Free Forage Standards” on a Transit certificate with the vehicle tag number, the type and number of bales being transported or a Forage tag on each bale.

Contact the Kansas Department of Agriculture to request inspection or for certifications. For a Certified Weed-Free Forage/Mulch Growers Listing contact the Kansas Department of Agriculture.

b. Hydraulic Erosion Control Products will be accepted based on visual inspection of the container label to verify compliance with this specification and receipt and approval of a Type C certification as specified in **DIVISION 2600**.

c. All other mulch materials are accepted based on a visual inspection by the Engineer.

07-24-20 C&M (LAL)

Sept-2021 Letting

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2015 EDITION**

SECTION 2111

MULCH TACKING SLURRY

2111.1 DESCRIPTION

This specification covers the materials to be used as tacking slurry applied to mulch.

2111.2 REQUIREMENTS

a. Tacking Material. Provide a commercially available tacking material that complies with the following:

- Free of synthetic or plastic materials or other foreign material
- Biodegradable
- Disperses in water and forms a homogeneous slurry, and remains in suspension when agitated by the hydraulic slurry equipment.
- When sprayed uniformly over the mulch, forms an absorbent cover allowing percolation of water to the underlying soil.
- Packaged in moisture resistant bags with the net weight (mass) of the packaged material plainly shown on each bag.
- Non-water soluble fibers.

Complies with the following minimum requirements for wood cellulose mulch:

Applied Color	Green
Organic Matter, percent by weight	Min. 80
Tacking Agents, percent by weight	>4
Moisture Content, percent by weight	12 ± 3
Water Holding Capacity	>1200 (grams of H ₂ O per 100 grams of fiber)
pH Range	5.5 ± 3

b. Tacking Agent. Add an organic or synthetic tacking agent to the tacking material in the hydraulic slurry at a rate and manner recommended by the manufacturer. The tacking agent must be biodegradable and comply with the following:

Density	30 grams per cc
Hazardous Components	None
Percent Volatile	0 at 70°F
Appearance	Cream Colored Powder
Water Miscibility	Thickener
Odor	Mild

c. Water. Use water for mulch tacking slurry that complies with the **DIVISION 2400**.

d. Toxicity. Do not use tacking materials and/or tacking agents that are toxic to vegetation, hazardous to the germination of seed or may be injurious to personnel handling and applying the materials.

2111.3 TEST METHODS

None Specified.

2111.4 PREQUALIFICATION

None Required.

2111.5 BASIS OF ACCEPTANCE

Receipt and approval of a Type D certification as specified in **DIVISION 2600**.

10-31-22 C&M (ML)
Feb-2023 Letting

903 –FERTILIZER, AGRICULTURAL LIMESTONE AND PEAT MOSS

SECTION 903

FERTILIZER, AGRICULTURAL LIMESTONE AND PEAT MOSS

903.1 DESCRIPTION

Provide and apply the designated materials as shown in the Contract Documents.

<u>BID ITEMS</u>	<u>UNITS</u>
Fertilizer (*-**-***)	Pound
Agricultural Limestone	Ton
Peat Moss	Ton
*Percent Nitrogen	
**Percent Phosphorous	
***Percent Potassium	

903.2 MATERIALS

Provide fertilizer, agricultural limestone and peat moss that comply with **DIVISION 2100**.

903.3 CONSTRUCTION REQUIREMENTS

a. Fertilizer. Apply the fertilizer to the prepared seedbed (**subsection 904.3b.**) at the rates designated in the Contract Documents. Use an agricultural type broadcast spreader or a fertilizer attachment on the seed drill to apply the fertilizer. Spread the fertilizer uniformly by hand methods in areas where it is impracticable to use a seed drill.

When fertilizer is designated for use with sod, apply the fertilizer before placing the sod.

b. Agricultural Limestone. Before the areas are seeded, apply the agricultural limestone at the rates designated in the Contract Documents. Use a standard lime spreader to apply the agricultural limestone. Fertilizer may be blended with agricultural limestone. When blended, apply before the areas are seeded.

c. Peat Moss. Thoroughly blend the peat moss with soil from the planting pit, or blend the peat moss with the subsoil to the depth shown in the Contract Documents. Apply peat moss at the rates shown in the Contract Documents. Before backfilling, planting, seeding or sodding, blend the peat moss by tilling, cultivating or shovel mixing.

903.4 MEASUREMENT AND PAYMENT

The Engineer will measure the fertilizer by the pound. Bag weight or commercial scale tickets are acceptable.

The Engineer will measure the agricultural limestone by the ton. Commercial scale tickets are acceptable.

The Engineer will measure peat moss by ton.

Payment for "Fertilizer", "Agricultural Limestone" and "Peat Moss" at the contract unit prices is full compensation for the specified work.

904 - SEEDING

SECTION 904

SEEDING

904.1 DESCRIPTION

Prepare the seedbed, provide the seed and plant at the rate and in the locations designated in the Contract Documents.

BID ITEMS

- Seed (*)
- Seed (Hydro) (*)
- Seeding
- * Type of Seed

UNITS

- Pound
- Pound
- Lump Sum

904.2 MATERIALS

Provide seeds and nitrogen-fixing bacteria that comply with **DIVISION 2100**. Do not change seed or seed mixture without approval of the Environmental Scientist (Bureau of Right of Way, Environmental Services Section).

904.3 CONSTRUCTION REQUIREMENTS

a. Seeding Seasons. Determine the seeding season using **TABLE 904-1**.

TABLE 904-1: GRASS & WILDFLOWER SEEDING SEASONS	
Type	Season
Cool Season Grasses	February 15 thru April 20 August 15 thru September 30
Warm Season Grasses and Wildflowers	November 15 thru June 1

If cool season grasses are mixed with warm season grasses, seed the area during the seeding season for warm season grasses.

When the area to be seeded is less than 1 acre (bid item "Seeding" per lump sum), seed the area during the seeding seasons specified for either cool season grasses or warm season grasses. Plant temporary seeding any time of the year.

Seed the project during the proper seeding season to protect the finished grading. This may require seeding different parts of the project at different times or seasons. Complete permanent seeding during the first season after the grading work is finished. Complete the area once the seeding operations begin in an area.

The Environmental Scientist or Stormwater Compliance Engineer may extend the seeding season a few days in special situations depending on area and weather conditions.

b. Preparation of the Seedbed. Unless shown otherwise in the Contract Documents, prepare the seedbed and seed all disturbed or cultivated areas within the right-of-way and construction easements. Seed and mulch the area within 24 hours of seedbed preparation.

Repair eroded areas before the seedbed is prepared.

In urban areas, use a landscape box to level the seedbed. Grade seedbeds to the elevations of abutting sidewalks. Remove rocks and other debris detrimental to lawn maintenance equipment.

Before seeding, use tillage equipment that penetrates 2 to 3 inches to prepare a firm, friable and weed-free seedbed. If the use of disks and harrows is impracticable, prepare the seedbed using hand methods.

Prepare seedbeds in developed urban and residential areas using rotary tillers or similar equipment. Tractor mounted equipment is permitted if the area is large enough to facilitate the use of such equipment.

Do not injure trees while preparing the seedbed. If the Engineer designates areas of desirable perennial native grasses to remain, do not till such areas. If areas of annual grasses such as cheat, crabgrass or triple-awn are encountered, destroy such grasses by thorough disking.

904 - SEEDING

Do not till areas if temporary or existing grasses provide stable slopes with no erosion. Seed the permanent grasses into the existing cover using a no-till drill.

c. Seeding. In rural areas, use seed drills that comply with **subsection 156.1**. If it is impracticable to operate a seed drill, broadcast the seed with a standard manufacture grass seeder. A hydro-seeder may be used in place of the broadcast seeder, when approved by the Engineer.

On lawn areas and small areas in developed urban areas, apply the seed with equipment suitable for the size of the area. Use manually operated drop-seeders, cyclone spreaders or other similar equipment when appropriate. After the seeding, but before mulching, hand rake the seeded lawn areas.

Similar size seeds may be mixed before drilling. The seed company may mix the seeds before delivery, or the Contractor may mix the seeds at the project site. If the seed company mixes the seeds, each bag of mixed seeds shall have a tag indicating the quantity (pounds) of each type seed and the total weight (pounds) of the bag. If the Contractor mixes the seeds, the Engineer must witness the mixing.

If required, inoculate the seeds according **DIVISION 2100**.

The drill used for seeding shall accommodate the seed sizes and weight of seed by the use of as many compartments as required. Seeds of compatible size and weight may be mixed and placed in the same compartment. Drill seed at the rate and in the locations shown in the Contract Documents. Drills shall comply with **subsection 156.1**.

Drill the seeds into the prepared seedbed. The maximum depth for drilling grass seeds is ½ inch. Unless shown otherwise in the Contract Documents, the maximum depth for drilling wildflower seeds is ¼ inch. If grasses and wildflowers are seeded on the same area, drill the grasses first, then the wildflowers.

After an area is fertilized and seeded, use a seed drill with press wheels or separate cultipacker to firm the soil.

d. Hydro-seeding. On steep slopes or other areas inaccessible with a seed drill or broadcast seeder, a hydro seeder may be used when approved by the Engineer. Apply the seed-fertilizer-water slurry within 1 hour after the seed is added to the hydro-seeder tank. Apply seed evenly over the entire site. Use a fan-type nozzle with approximately 500 gallons of water per acre. Add 50 pounds of hydro-mulch per 500 gallons of water for a visual tracer. After the seeding, but before mulching, hand rake the seeded areas inaccessible by a cultipacker.

Immediately apply bonded fiber matrix mulching according to **subsection 905.3c**. Do not apply hydro-seed and bonded fiber matrix in one application.

e. Seeding/Lump Sum. This item is only used on projects with less than 1 acre of seeding.

Prepare the seedbed, fertilize, seed and mulch all disturbed or cultivated areas within the right-of-way and construction easements according to **DIVISION 900**.

904.4 MEASUREMENT AND PAYMENT

The Engineer will measure the total quantity for each type of pure live seed used by the pound.

The Engineer will not measure hydromulch used as a visual tracer for separate payment. This work is subsidiary to the hydro-seeding item.

Bonded fiber matrix mulching will be measured and paid for according to **SECTION 905**.

The Engineer will measure "Seeding" by the lump sum. No measurement will be made of the area seeded.

Payment for the various types of "Seed", "Seed (Hydro)" and "Seeding" at the contract unit prices is full compensation for the specified work.

906 - TOPSOIL

SECTION 906

TOPSOIL

906.1 DESCRIPTION

Provide and place topsoil at the locations shown in the Contract Documents.

BID ITEM

Topsoil

UNITS

Cubic Yard

906.2 MATERIALS

Provide topsoil that complies with **DIVISION 2100**.

The Contractor-furnished site (for excavation of the topsoil) is subject to the environmental clearance provisions noted in **SECTION 107**.

906.3 CONSTRUCTION REQUIREMENTS

Before excavating topsoil from the Contractor-furnished site, remove all grass, weeds, brush, stumps and other objectionable material from the site.

Spread the topsoil at the locations and to the depths shown in the Contract Documents. Do not harm existing plants or structures when placing and spreading the topsoil. Do not spill the topsoil on the roadway. Do not handle or spread topsoil when it is wet enough to form a 1 ½ inch soil ball without easily breaking.

Use only pulverized topsoil where 3 inches or less of topsoil is required.

After the topsoil is spread over the designated areas, remove any stones, roots, large clods (greater than 6 inches) and other objectionable material.

906.4 MEASUREMENT AND PAYMENT

a. Contract Quantities. The Engineer will use the contract quantities for payment, provided the project is constructed essentially to the lines and grades shown in the Contract Documents.

If the Contract Documents are altered, or if the Engineer or Contractor questions the accuracy of the contract quantities for topsoil, either party may request measurement of the quantities involved, when excavated, or after placed.

b. Measured Quantities. The Engineer will measure (by cross-sectioning) topsoil by the cubic yard. The Engineer will compute the quantities by the average end area method. Where it is impractical to measure material by the cross-section method, the Engineer may use three-dimensional measurements.

c. Payment. Payment for "Topsoil" at the contract unit price is full compensation for the specified work.

2103 - SEEDS

SECTION 2103

SEEDS

2103.1 DESCRIPTION

This specification covers the material requirements for seeds.

2103.2 REQUIREMENTS

a. General. Provide seeds which comply with the seed and noxious weed laws of the State of Kansas and applicable Kansas Department of Agriculture Rules and Regulations except as specifically noted in this Section.

Do not provide *Sericea Lespedeza* and *Multiflora Rose* with any seed.

b. Seed Quality and Definitions. Conduct all seed analyses in accordance with rules and regulations as prescribed by the Association of Official Seed Analysts (AOSA) and Kansas Seed Law. The Kansas Seed Law specifies the kind and amount of weed seed permitted; the requirement for a current analysis report; and labeling of all seed to show its purity, germination, date of last germination test, and weed seed content.

Cleaning and conditioning of seed must result in a product that meets or exceeds minimum standards. The product must also be clean enough to plant using existing drilling equipment without further processing.

(1) Kansas Seed Law. The germination test is valid for 9 months after the end of the month the test was made, so long as the seed remains in Kansas.

(2) Federal Seed Law. For seed shipped across state lines, the germination test is valid for 5 months after the end of the month the test was made.

(3) Interpretation of Current Analysis Report. For seed purchased during the valid period of the germination test, the analysis report may be considered current for the full seeding period in effect at the time of purchase. (If seed is purchased March 1, and the valid date expires March 31, the analysis report may be considered current if the seed is planted by April 30, which is the end of the spring seeding period. If the seed is to be planted during a later seeding season, a new germination test is required.) This interpretation may be amended by the Engineer for those projects in which KDOT delayed seeding to a later seeding season. In these situations the seed need not be retested only for the next season.

c. Pure Live Seed (PLS) Requirements and Determination. Compute percent pure live seed (%PLS) by adding percent germination to percent firm or hard seed. Divide the sum by 100. Multiply this product by the percent purity.

$$\% \text{ PLS} = \frac{(\% \text{ Germ.} + \% \text{ Firm or Hard Seed}) \times \% \text{ Purity}}{100}$$

Minimum PLS requirements are shown in **TABLES 2103-1** and **2103-2**. The Engineer may grant permission to use seeds that fail to comply with the required PLS provided the following conditions are met.

(1) The Contractor can provide suitable evidence to the Engineer that seeds comply with **TABLE 2103-1** or **2103-2** are not readily available.

(2) The Contractor is willing to increase the quantity of seeds, at no additional cost to KDOT, to provide the minimum quantity of PLS required.

d. Origin of Seed. Where named or numbered strains are not available, use of seed from native stands is permitted if the seed is harvested within range of its planting location not to exceed:

(1) 300 miles south, 150 miles north or west and 1500 feet in higher elevation.

(2) Native seed sources must be identified as to state and county where seed was harvested in order to certify location and elevation.

e. Buffalo Grass Seed (*Buchloe dactyloides*). Buffalo grass seed may be an improved strain, hybrid or named variety as specified on the Contract Documents. Stain with a dye. Treat all buffalo grass seed to enhance germination.

2103 - SEEDS

f. Bulk Seed Determination. Determine the amount of bulk seed needed for each bid item based on PLS requirements and the following formula:

$$\text{Total Bulk Mass} = \frac{\text{Bid Item PLS Plan Quantity}}{\% \text{ PLS}}$$

2103.3 TEST METHODS

As prescribed by the AOSA and The Kansas Seed Law.

2103.4 PREQUALIFICATION

None Required. Seed supplier must follow all registration and licensing requirements stated in The Kansas Seed Law.

2103.5 BASIS OF ACCEPTANCE

The Engineer will accept each seed shipment to a project work site based on the following:

- a. Receipt of a copy of the seed supplier's "Kansas Seed Law Business Registration" certificate.
- b. Receipt and approval of a certification from the seed supplier stating the compliance of the supplied seed with this specification and The Kansas Seed Law.
- c. Verification that each seed container is labeled as required by The Kansas Seed Law.
- d. Verification of compliance with the minimum required % PLS as stated in **TABLE 2103-1** and **2103-2**.

TABLE 2103-1: GRASS SEED	
Bid Item	Minimum % PLS
Bluegrass, Kentucky	64.0
Bluestem, Big (Kaw)	35.0
Bluestem, Little (Aldous)	28.0
Bluestem, Sand (Garden)	35.0
Bromegrass, Smooth	72.0
Buffalograss (Sharp's Improved)	72.0
Canarygrass,(Reed)	63.0
Dropseed, Sand	57.0
Fescue, Tall, (K-31), (Rebel II)	80.0
Foxtail, Creeping (Garrison)	60.0
Grama, Blue (Lovington)	21.0
Grama, Sideoats (El Reno)	35.0
Indiangrass (Osage)	42.0
Lovegrass, Sand (Bend)	58.0
Millet, Foxtail	77.0
Ryegrass, Perennial	83.0
Sacaton, Alkali (Salado)	57.0
Sandreed, Big	15.0
Sandreed, Prairie	28.0
Sudangrass	76.0
Switchgrass (Blackwell)(Kanlow)	81.0
Timothy	76.0
Wheatgrass, Intermediate	72.0
Wheatgrass, Streambank (Sodar)	63.0

2103 - SEEDS

TABLE 2103-1: GRASS SEED	
Bid Item	Minimum % PLS
Wheatgrass, Western (Barton)	60.0
Wheat x Wheatgrass Hybrid (Regreen)(TM)	85.0
Wild-rye, Canada	**
Ryegrass, Common	83.0
Ryegrass, Italian	83.0

** No Industry Standard

TABLE 2103-2: WILDFLOWER SEED		
Common Name	Bid Item	Minimum % PLS
Golden yarrow	Achillea filipendulina	**
Yarrow	Achillea millefolium	68.0
Red yarrow	Achillea millefolium f. rubra	**
Lead-plant	Amorpha canescens*	**
False-indigo	Amorpha fruticosa*	**
Swamp milkweed	Asclepias incarnata	**
Common milkweed	Asclepias syriaca	**
Butterfly milkweed	Asclepias tuberosa	**
Drummond's aster	Aster drummondii	**
Fendler's aster	Aster fendleri	**
New England aster	Aster novae-angliae	**
Aromatic aster	Aster oblongifolius	**
Azure aster	Aster oolentangiensis	**
Single-stemmed bog aster	Aster paludosus subsp. hemisphericus	**
	Aster patens var. patentissimus	**
Willowleaf aster	Aster praealtus var. praealtus	**
Silky aster	Aster sericeus	**
Blue false-indigo	Baptisia australis var. minor*	**
Plains wild-indigo	Baptisia bracteata var. glabrescens	**
Purple poppy-mallow	Callirhoe involucrata	**
Showy partridge-pea	Cassia chamaecrista*	**
Indian paintbrush	Castilleja coccinea	**
Citron paintbrush	Castilleja purpurea var. citrina	**
Downy paintbrush	Castilleja sessiliflora	**
Cornflower	Centaurea cyanus	80.0
Ox-eye daisy	Chrysanthemum leucanthemum	78.0
Chicory	Cichorium intybus	83.0
Bigflower coreopsis	Coreopsis grandiflora	**
Lance-leaved coreopsis	Coreopsis lanceolata	71.0
Plains coreopsis	Coreopsis tinctoria	83.0
Rough-leaf dogwood	Cornus drummondii	**
Gray dogwood	Cornus foemina	**
Crownvetch	Coronilla varia*	**
Cosmos	Cosmos bipinnatus	76.0
Golden prairie-clover	Dalea aurea*	**
White prairie-clover	Dalea candida*	**
Nine-anther prairie-clover	Dalea enneandra*	**
Round-head prairie-clover	Dalea multiflora*	**
Kaneb purple prairie-clover	Dalea purpurea 'Kaneb'*	58.0
Silky prairie-clover	Dalea villosa*	**
Illinois bundleflower	Desmanthus illinoensis*	**
Shooting star	Dodecatheon meadia	**

2103 - SEEDS

TABLE 2103-2: WILDFLOWER SEED		
Common Name	Bid Item	Minimum % PLS
Purple coneflower	Echinacea angustifolia	**
Pale coneflower	Echinacea pallida	**
Englemann's daisy	Engelmannia pinnatifida	**
Button snakeroot	Eryngium yuccifolium	**
Tall joe-pye weed	Eupatorium altissimum	**
Joe-pye weed	Eupatorium maculatum var. bruneri	**
Boneset	Eupatorium perfoliatum	**
Sweet joe-pye weed	Eupatorium purpureum	**
Indian blanket flower	Gaillardia pulchella	63.0
Prairie gentian	Gentiana puberulenta	**
Snakeweed	Gutierrezia sarothrae	**
Maximilian sunflower	Helianthus maximiliani	**
Dame's rocket	Hesperis matronalis	83.0
Bush morning-glory	Ipomoea leptophylla	**
Perennial Sweetpea	Lathyrus latifolius*	**
Round-head lespedeza	Lespedeza capitata*	**
Rough gayfeather	Liatris aspera	**
Dotted gayfeather	Liatris punctata	**
Eureka thickspike gayfeather	Liatris pycnostachya 'Eureka'	**
Cardinal flower	Lobelia cardinalis	**
Indian-tobacco	Lobelia inflata	**
Blue cardinal flower	Lobelia siphilitica	**
Palespike lobelia	Lobelia spicata	**
Bird's foot trefoil	Lotus corniculatus*	80.0
Tahoka daisy	Machaeranthera tanacetifolia	**
Black-foot daisy	Melampodium leucanthum	**
Wild bergamot	Monarda fistulosa var. fistulosa	**
Missouri eveningprimrose	Oenothera macrocarpa	73.0
White eveningprimrose	Oenothera speciosa	58.0
White beardtongue	Penstemon albidus	**
Buckley's penstemon	Penstemon buckleyi	**
Cobaea penstemon	Penstemon cobaea	**
Large beardtongue	Penstemon grandiflorus	**
Tube penstemon	Penstemon tubaeformis	**
Blue phlox	Phlox divaricata subsp. laphamii	**
Prairie phlox	Phlox pilosa subsp. fulgida	**
Prairie phlox	Phlox pilosa subsp. pilosa	**
White milkwort	Polygala alba	**
Blood polygala	Polygala sanguinea	**
Sand cherry	Prunus pumila var. besseyi	**
Upright prairieconeflower	Ratibida columnifera	76.0
Mexican hat prairieconeflower	Ratibida columnifera f. pulcherrima	76.0
Grayhead prairieconeflower	Ratibida pinnata	76.0
Sunglow prairieconeflower	Ratibida pinnata 'Sunglow'	**
Black-eyed susan	Rudbeckia hirta	78.0
Brown-eyed susan	Rudbeckia triloba var. triloba	**
Nekan blue sage	Salvia azurea 'Nekan'	**
Lance-leaved sage	Salvia reflexa	**
Catclaw sensitive brier	Schrankia nuttallii	**
Compass plant	Silphium laciniatum	**
Cup plant	Silphium perfoliatum	**

2103 - SEEDS

TABLE 2103-2: WILDFLOWER SEED		
Common Name	Bid Item	Minimum % PLS
Prairie goldenrod	<i>Solidago missouriensis</i> var. <i>fasciculata</i>	**
Rigid goldenrod	<i>Solidago rigida</i> var. <i>rigida</i>	**
Red false-mallow	<i>Sphaeralcea coccinea</i>	**
Prince's plume	<i>Stanleya pinnata</i> var. <i>pinnata</i>	**
Rockpink flameflower	<i>Talinum calycinum</i>	**
Prairie flameflower	<i>Talinum parviflorum</i>	**
Bracted spiderwort	<i>Tradescantia bracteata</i>	**
Prairie spiderwort	<i>Tradescantia occidentalis</i>	**
Ohio spiderwort	<i>Tradescantia ohiensis</i>	**
Shortstem spiderwort	<i>Tradescantia tharpaii</i>	**
White clover	<i>Trifolium repens</i> *	**
Venus'looking glass	<i>Triodanis perfoliata</i>	**
Moth mullein	<i>Verbascum blattaria</i>	**
Dakota vervain	<i>Verbena bipinnatifida</i>	**
Rose vervain	<i>Verbena canadensis</i>	**
Hoary vervain	<i>Verbena stricta</i>	**
Arkansas ironweed	<i>Vernonia arkansana</i>	**
Western ironweed	<i>Vernonia baldwinii</i> subsp. <i>interior</i>	**
Western ironweed	<i>Vernonia fasciculata</i> subsp. <i>fasciculata</i>	**
Rocky Mountain zinnia	<i>Zinnia grandiflora</i>	**

*Inoculate legume seeds with their specific nitrogen fixing bacteria listed in TABLE 2103-3 and in accordance with SECTION 2106.

** No Industry Standard

TABLE 2103-3: NITROGEN FIXING BACTERIA			
Genus	Inoculant	Genus	Inoculant
Amorpha	Amorpha Spec 1	Desmanthus	Desmanthus Spec 1
Baptisia	Baptisia Spec 1	Lathyrus	Type C
Cassia	Type EL	Lespedeza	Type EL
Dalea	UMR6815		

2104 - SODS

SECTION 2104

SODS

2104.1 DESCRIPTION

This specification covers the material requirements for various types of sod.

2104.2 REQUIREMENTS

a. General. Cut the sod uniformly and according to the industry standard for the kind of sod being supplied. Torn, broken, or dry sod is not acceptable. The sod must be strong enough to hold together when rolled and unrolled 3 times; reinforcement netting may be added to sod.

Sods containing noxious weeds or quantities of foreign grass will not be accepted. Do not furnish sod containing orchard grass, crabgrass, wiregrass (barnyard Bermuda), giant foxtail, bindweed or yellow nut sedge.

b. Kentucky Bluegrass Sod. Cut sod strips approximately 1 inch thick, 24 inches wide, and 54 inches long, or in similar dimensions that will produce 1 sq yd. Other dimensions may be approved by the DME.

c. Bermuda Grass or Zoysia Grass Sod, Plugs or Strips. Cut this sod approximately 3 inches thick and 12 to 14 inches wide. Further division into plugs is to be done at the planting site.

d. Turf Type Tall Fescue Sod. Cut the sod strips 1¼ in. thick ($\pm\frac{1}{4}$ in.), approximately 18 inches wide and 72 inches long, or in similar dimensions that will produce 1 sq yd. Sod content equal to approximately 60% of one or more hybrid varieties of turf type tall fescue and 40% Kentucky bluegrass is required.

e. Perennial Wildflower Sod. Cut wildflower sod in pads 20 inches wide and 36 inches long, or some similar measurements that will produce 5 square feet and weighing approximately 15 lbs. Provide sod pads composed of densely packed, 3 inches tall perennial wild flower plants with well developed root systems. Provide plants mature enough to bloom within 6 to 8 weeks after planting. Sod containing a minimum of 11 varieties of hardy perennial plants, including: Black-Eyed Susan, Purple Coneflower, Dame's Rocket, Gaillardia, Johnny Jump-Up, Shasta Daisy, Rockcress, and Wallflower is required. Do not allow any grasses in the sod. Use a net-like fabric to allow handling of the sod pads.

f. Buffalograss Sod. Cut the sod strips 1¼ inches thick, 18 inches wide and 72 inches long, or in similar dimensions that will produce 1 square yard. Provide sod containing a minimum of 95% buffalograss.

2104.3 TEST METHODS

None Specified.

2104.4 PREQUALIFICATION

None Required.

2104.5 BASIS OF ACCEPTANCE

Visual inspection by the Engineer.

2107 - AGRICULTURAL LIMESTONE

SECTION 2107

AGRICULTURAL LIMESTONE

2107.1 DESCRIPTION

This specification covers material requirements for agricultural limestone.

2107.2 REQUIREMENTS

Use ground limestone, ground dolomite or a mixture of the two having an effective calcium carbonate (E.C.C.) value of at least 50%. The E.C.C. value is calculated as follows:

$$\begin{aligned} \text{E.C.C} &= (\text{AB}) \times \text{Calcium Carbonate Equivalent} \\ \text{A} &= (\% \text{passing a No. 8 sieve} - \% \text{passing a No. 60 sieve}) \times 0.50 \\ \text{B} &= \% \text{passing No.60 sieve} \end{aligned}$$

Calcium Carbonate Equivalent is calculated from the Neutralization Value as determined according to the Official Methods of Analysis of the Association of Official Analytical Chemists.

2107.3 METHODS OF TEST

None Specified.

2107.4 PREQUALIFICATION

Registration of each manufacturing/distribution facility with the Kansas Department of Agriculture.

2107.5 BASIS OF ACCEPTANCE

Provide a copy of the agricultural limestone distributor's registration with the State Department of Agriculture as required by the Kansas Agricultural Liming Materials Act. Bulk shipments must be accompanied by a certified delivery slip showing the minimum percentage of Effective Calcium Carbonate as defined by the Kansas Agricultural Liming Materials Act.

2108 - FERTILIZERS

SECTION 2108

FERTILIZERS

2108.1 DESCRIPTION

This specification covers the material requirements for fertilizers.

2108.2 REQUIREMENTS

a. Fertilizers used on KDOT projects must comply with the applicable sections of the “Kansas Commercial Fertilizer Law” as administered by the Kansas State Board of Agriculture.

b. Fertilizer Grade. The grade for each commercial fertilizer will be shown in the Contract Documents. The fertilizer grade shown in the Contract Documents shall be read as follows:

- the first number represents the percentage of nitrogen required (expressed as available N),
- the second number represents the percentage of phosphorous required (expressed as the percent of available P₂O₅),
- the third number represents the percentage of potassium required (expressed as the percent of available K₂O).

A mixed fertilizer such as 12-24-12 would contain 12% N, 24% P₂O₅ and 12% K₂O.

A tolerance of -0.5% will be permitted for each of the designated ingredients in commercial fertilizers.

c. Sources of Fertilizer. Use one of the following types of commercial fertilizers on KDOT work:

(1) Package fertilizers in granulated or tablet form, manufactured by firms registered by the Kansas State Board of Agriculture annually on July 1st.

Fertilizer tablets are commercially prepared, tightly compressed material used when planting trees and plants. They are formulated to be long-lasting (2 year minimum) with a slow-release analysis of 20-10-5 derived from urea-formaldehyde, calcium phosphates, potassium sulfate, calcium sulfate, ferrous sulfate and comply with the following minimum guaranteed analysis.

Total Nitrogen (N)*	20.0%
7% Water Soluble Organic Nitrogen	
13% Water Insoluble Nitrogen	
Available Phosphoric Acid (P ₂ O ₅)	10.0%
Soluble Potash (K ₂ O)	5.0%
Calcium (Ca)	2.6%
Sulfur (S)	1.6%
Iron (Fe)	0.35%
*17% slowly available nitrogen from urea-formaldehyde	

(2) Bulk fertilizers blended by custom blenders licensed by the Kansas State Board of Agriculture annually on January 1st. Liquid fertilizers are considered to be bulk fertilizers.

2108.3 TEST METHODS

None specified.

2108.4 PREQUALIFICATION

Comply with registration and licensing requirements of the Kansas State Board of Agriculture as specified in subsection 2108.2c.(2).

2108 - FERTILIZERS

2108.5 BASIS OF ACCEPTANCE

a. Package Fertilizers.

(1) Receipt of the current certificate of registration issued by the Kansas State Board of Agriculture for annual registration of the product.

(2) The grade of commercial package fertilizers will be determined and accepted on the basis of the label analysis, which must appear on each package. Show on the label analysis the following information as required by the applicable provisions of the "Kansas Commercial Fertilizer Law":

- (a) the name and address of the person registering the commercial fertilizer;
- (b) the brand and grade of the commercial fertilizer;
- (c) the net mass in the package or container;
- (d) the registered guaranteed analysis. The guaranteed analysis includes the minimum percentages of plant foods in the following order and form:

Nitrogen, minimum ___ percent

Available phosphoric acid, minimum ___ percent

Soluble potash, minimum ___ percent,

except as follows:

- unacidulated mineral phosphatic materials and basic slag show the guaranteed analysis in the following order and form:
 - Total phosphoric acid, minimum ___ percent
 - Available phosphoric acid, minimum ___ percent
 - Fineness of grind: ___ percent through mesh screen, and
- bone, tankage, and other natural organic phosphate materials shall show the guaranteed analysis in the following form:
 - Total phosphoric acid, minimum ___ percent;

(e) Commercial fertilizers containing any ingredient which is injurious to plants must be labeled to show:

- the name and percentage of each such active ingredient;
- adequate directions for use, and
- adequate warnings against misuse;

(f) the minimum percentage of any and all other plant food elements or compounds contributing to the value of the commercial fertilizer, and

(g) any other information as may be prescribed by rules and regulations.

(3) Small quantities of package fertilizers may be accepted on brand name. Only high quality fertilizer of a recognized brand, and of the proper grade and type for the intended use, will be accepted in this manner.

b. Bulk.

(1) Receipt of a copy of custom blender's current license issued by the Kansas State Board of Agriculture.

(2) Receipt of a certified label or a certified delivery slip covering each shipment, and showing the information required in **subsection 2108.05(a)(2)**.

c. Verification Tests. Verification tests may be conducted by KDOT on samples obtained at frequencies and locations designated by the Engineer to determine the reliability of bag label analysis and custom blender certified labels or a certified delivery slip.

If a product of any supplier is found to consistently deviate from the bag level analysis or the custom blenders certified analysis, the acceptance of that product will be discontinued. Copies of the failing test reports will be furnished to the Kansas State Board of Agriculture for appropriate action under the "Kansas Commercial Fertilizer Law".

2109 - PEAT MOSS

SECTION 2109

PEAT MOSS

2109.1 DESCRIPTION

This specification covers the materials requirements for peat moss.

2109.2 REQUIREMENTS

The peat moss is to be dark in color, finely divided or granular, with a pH value between 5.0 and 7.0, and substantially free of mineral and woody matter. Provide peat moss that is free of weed seeds, nematodes, soil borne diseases, and concentrations of any substances in sufficient amount to be harmful to plant growth.

2109.3 TEST METHODS

None Specified.

2109.4 PREQUALIFICATION

None Required.

2109.5 BASIS OF ACCEPTANCE

Visual inspection by the Engineer for compliance with **subsection 2109.2**.

2113 - EROSION CONTROL MATERIALS

SECTION 2113

EROSION CONTROL MATERIALS

2113.1 DESCRIPTION

This specification covers erosion control products manufactured from wood, straw or coconut fiber mat, synthetic mat, paper mat, jute mesh or other material that is placed on slopes or ditches for short-term or long-term protection of seeded areas.

2113.2 REQUIREMENTS

a. Provide prequalified erosion control materials of the class and type specified in the Contract Documents.

b. Erosion control products are categorized in **TABLE 2113-1 and 2113-2**:

TABLE 2113-1: CLASS 1. "SLOPE PROTECTION		
Type	Uses	Soil Type
Type C	Slopes > 3:1	Clay soils
Type D	Slopes > 3:1	Sandy soils

TABLE 2113-2: CLASS 2 FLEXIBLE CHANNEL LINER		
Type	Duration	Shear Stress t_a
Type E	Short-term (≤ 5 years)	up to 2 lbs/sq ft
Type F	Short-term (≤ 5 years)	up to 4 lbs/sq ft
Type G	Long-term (> 5 years)	up to 6 lbs/sq ft
Type H*	Long-term (> 5 years)	up to 8 lbs/sq ft

*Use Only 100% synthetic products

c. **Anchors.** Provide and use anchors as recommended by the erosion control product manufacturer. In the absence of any recommendations by the manufacturer, provide material in **TABLE 2113-3**:

TABLE 2113-3: WIRE, STAPLE AND ANCHORS	
Property	minimum size
Slope Protection	
Wire Diameter	11 gauge
Leg Length (Heavy Soil)	6 inch
Leg Length (Light Soil)	8 inch
Crown Width	1 inch
Flexible Channel Liner - Wire Staple Anchors	
Wire Diameter	8 gauge
Leg Length (Heavy Soil)	10 inch
Leg Length (Light Soil)	14 inch
Crown Width	2 inch
Flexible Channel Liner - Metal Stake Pin Anchors	
Pin Diameter	3/16 inch
Pin Length (Heavy Soil)	10 inch
Pin Length (Light Soil)	14 inch
Steel Washer Diameter	1½ inch, nominal
Flexible Channel Liner - Hardwood Stake Anchors	
Light Soil	1 x 3 x 12 inch
Heavy Soil	1 x 3 x 18 inch

2113 - EROSION CONTROL MATERIALS

2113.3 TEST METHODS

Erosion Control products will be tested and evaluated by the Texas Department of Transportation and the Texas Transportation Institute following procedures outlined in the Texas DOT Erosion Control Report. Anchors are evaluated on the basis of their performance in the field.

2113.4 PREQUALIFICATION

Prequalification procedures may be obtained by writing to the Texas Department of Transportation, Director of Construction and Maintenance, 125 East 11th Street, Austin, TX 78701-2483. A list of prequalified materials based on the annual Texas DOT Erosion Control Report and field performance within Kansas will be maintained by the KDOT Bureau of Construction and Materials. The KDOT prequalified list establishes the acceptable materials to be incorporated into KDOT projects. Products will remain on the KDOT list provided field performance is satisfactory or the manufacturer requests the removal of their own product.

2113.5 BASIS OF ACCEPTANCE

a. Erosion Control Materials.

- (1) Prequalification as required by **subsection 2113.4**.
- (2) Receipt and approval of a Type C certification as specified in **DIVISION 2600**.
- (3) Field observation before or during material installation.

b. Anchors. Field observation before or during installation.

2114 - TEMPORARY SEDIMENT BARRIERS

SECTION 2114

TEMPORARY SEDIMENT BARRIERS

2114.1 DESCRIPTION

This specification is applicable to materials used as ditch checks or barriers designed to reduce water velocity and temporarily contain sediment.

2114.2 REQUIREMENTS

a. Geotextile Fabric for Temporary Silt Fence. Provide material that complies with AASHTO M 288 for unsupported silt fence, with 4 ft. maximum post spacing. Actual post spacing is as shown in the Contract Documents.

b. Posts. Provide wood, steel, or synthetic posts of sufficient strength to resist damage during installation and to support the applied loads. Length is to be as shown in the Contract Documents. Hardwood posts having dimensions of at least 1 3/16 x 1 3/16 inch, No. 2 Southern Pine at least 2 5/8 x 2 5/8 inch or steel posts of U, T, L, or C shape, weighing 0.95 lbs per foot minimum are satisfactory.

c. Prefabricated Silt Fence. Prefabricated silt fence systems that comply with geotextile fabric and posts in subsection 2114.2a. and 2114.2b.

d. Biodegradable Logs. Provide commercially available biodegradable logs manufactured from straw, excelsior wood fiber, coconut fiber, jute or other biodegradable material bound with an open mesh fabric of jute or light-weight plastic.

Do not use biodegradable logs manufactured from straw for ditch checks or inlet sediment barriers.

e. Synthetic Sediment Barriers. Provide synthetic sediment barrier materials such as Geo-Ridge Permeable Berm™, Triangular Silt Dike™ or equivalent. The Stormwater Compliance Engineer will consider an equivalent of the brand names specified. Provide the Engineer with a complete description, literature, test reports, etc. on the proposed equivalent prior to installation.

f. Filter Sock. Provide burlap or synthetic mesh bags, coarse aggregate, wood chips, compost or other permeable filler material to slow and filter stormwater runoff. Use only coarse aggregate filler for curb inlet protection.

2114.3 TEST METHODS

a. Silt Fence. As specified in AASHTO M 288.

b. Biodegradable Logs, Synthetic Sediment Barriers, and Filter Sock. None Required.

2114.4 PREQUALIFICATION

None Required.

2114.5 BASIS OF ACCEPTANCE

a. Geotextile for silt fence. Receipt and approval of a Type D certification as specified in **DIVISION 2600**, and visual inspection at the point of usage.

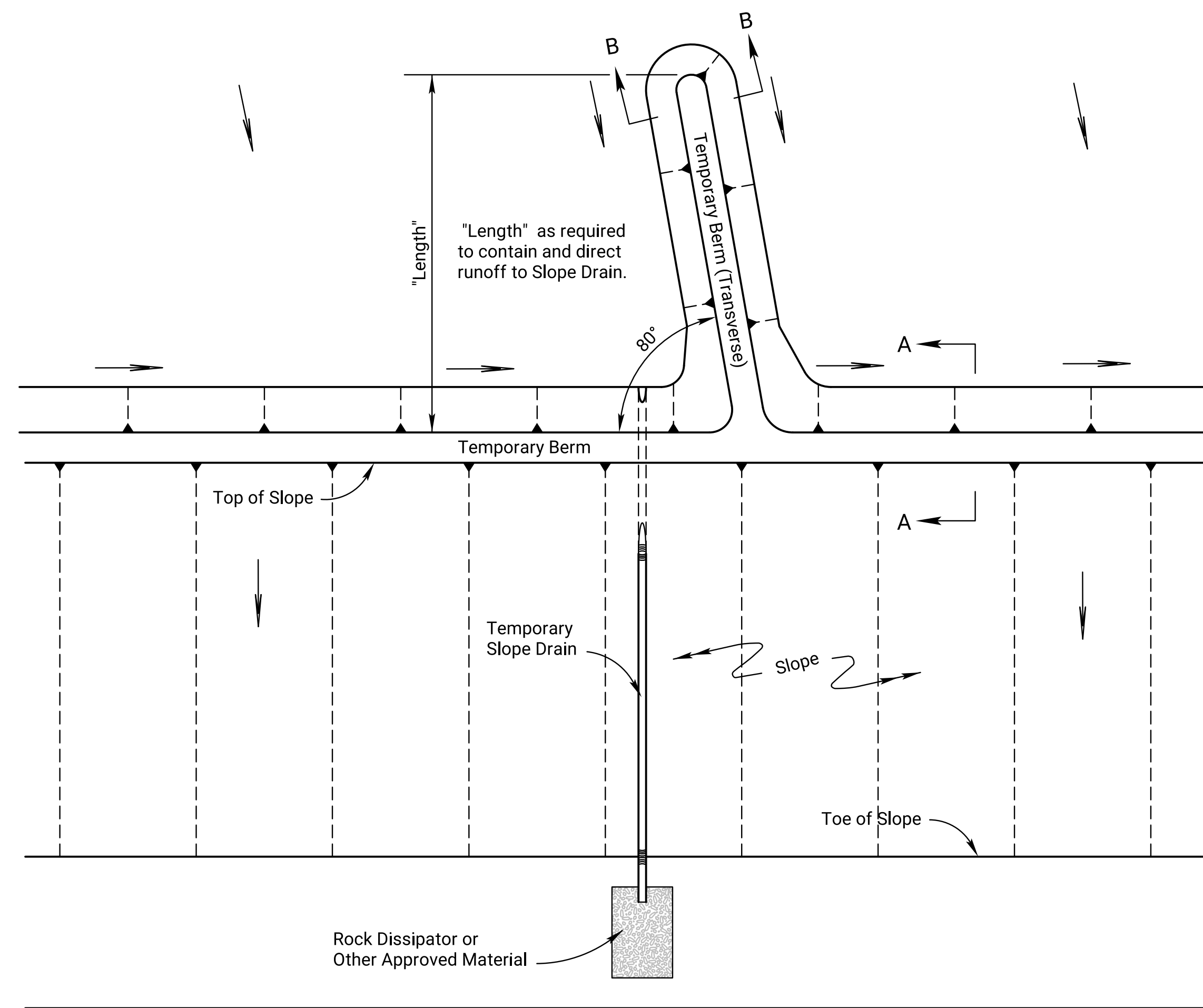
b. Posts. Visual inspection for condition and dimensional requirements at the point of usage.

c. Biodegradable Logs. Dimensional and other requirements shown in the Contract Documents, and visual inspection of the installed material.

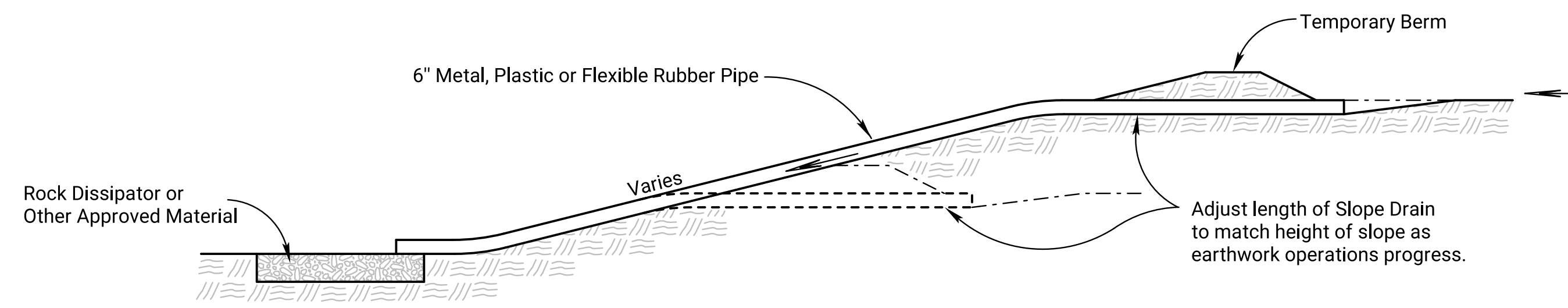
d. Synthetic Sediment Barriers. Brand name and visual inspection of the installed material.

e. Filter Sock. Visual inspection and compliance with requirements in the Contract Documents.

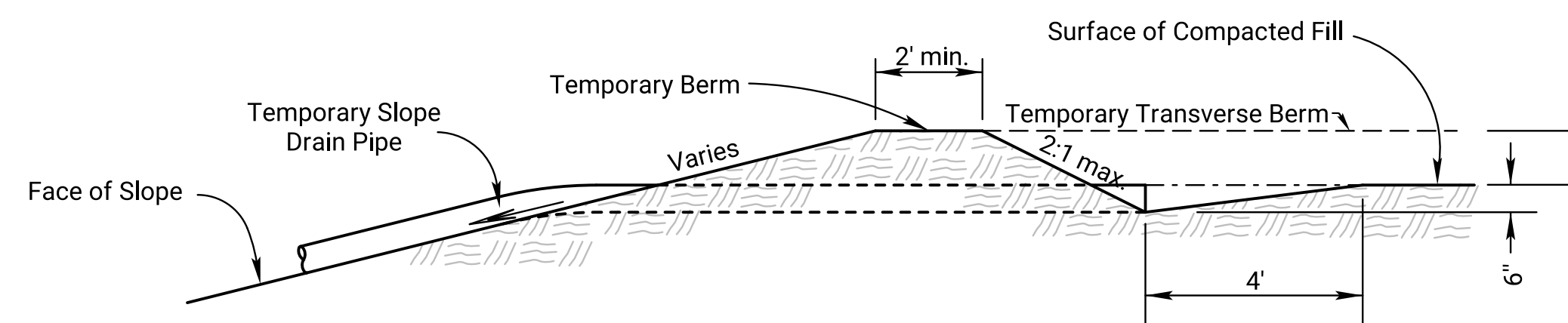
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



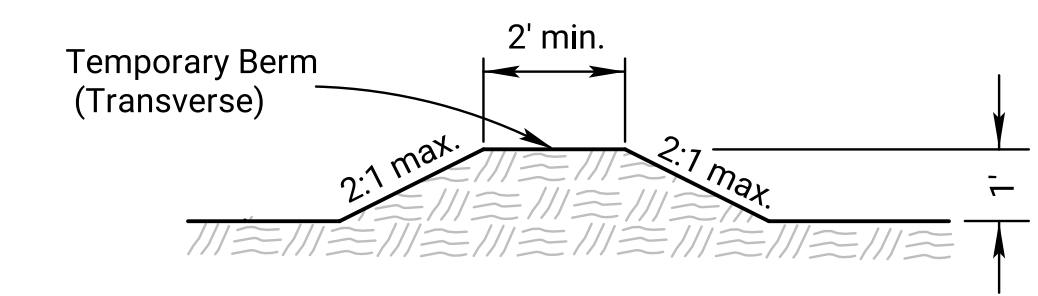
TYPICAL PLAN VIEW OF
TEMPORARY BERM AND
TEMPORARY SLOPE DRAIN
NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN
NO SCALE



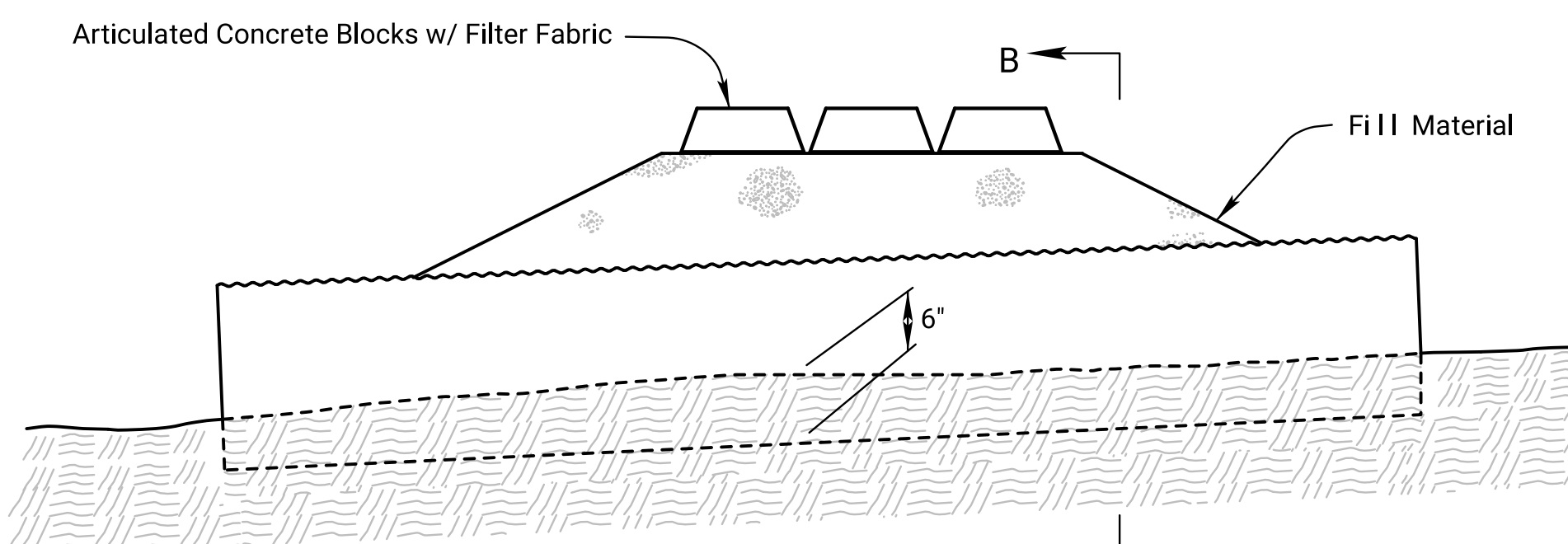
SECTION A-A
NO SCALE



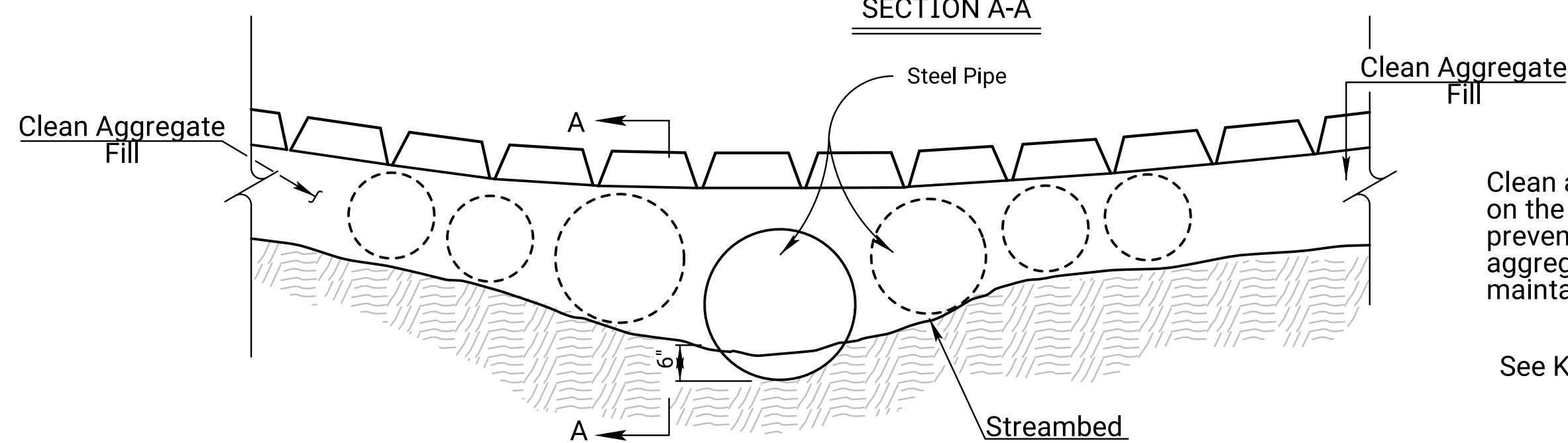
SECTION B-B
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM
NO SCALE

- NOTES:
- 1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.
 - 2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
 - 3) Pipe shall be secured in place as approved by Engineer.
 - 4) Temporary Berms under 2,000 feet shall be bid by Set Price.



SECTION A-A



SECTION B-B

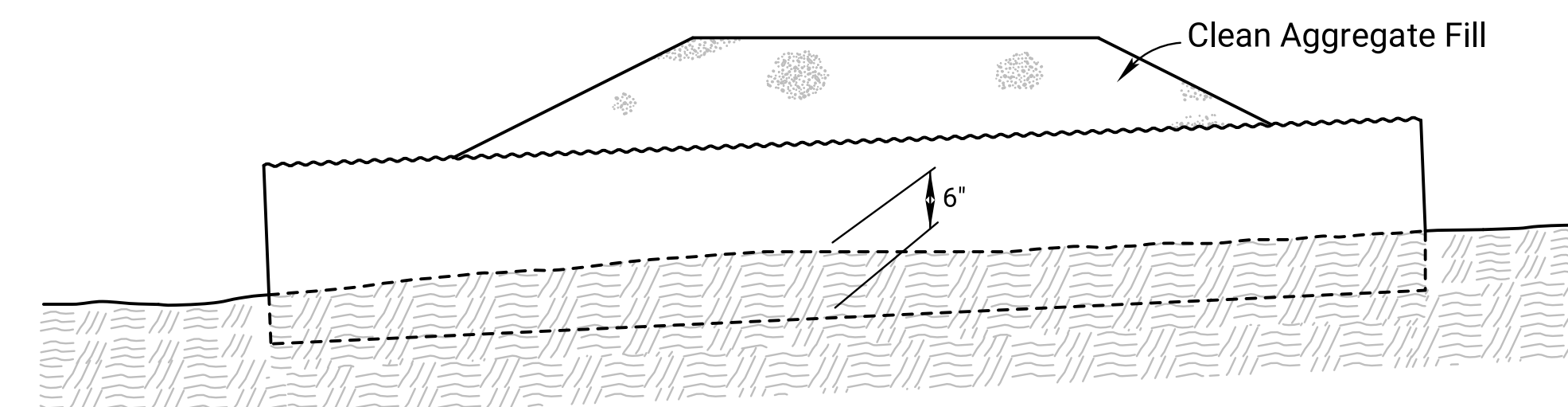
TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)
NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.



SECTION B-B

TEMPORARY STREAM CROSSING (AGGREGATE)
NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

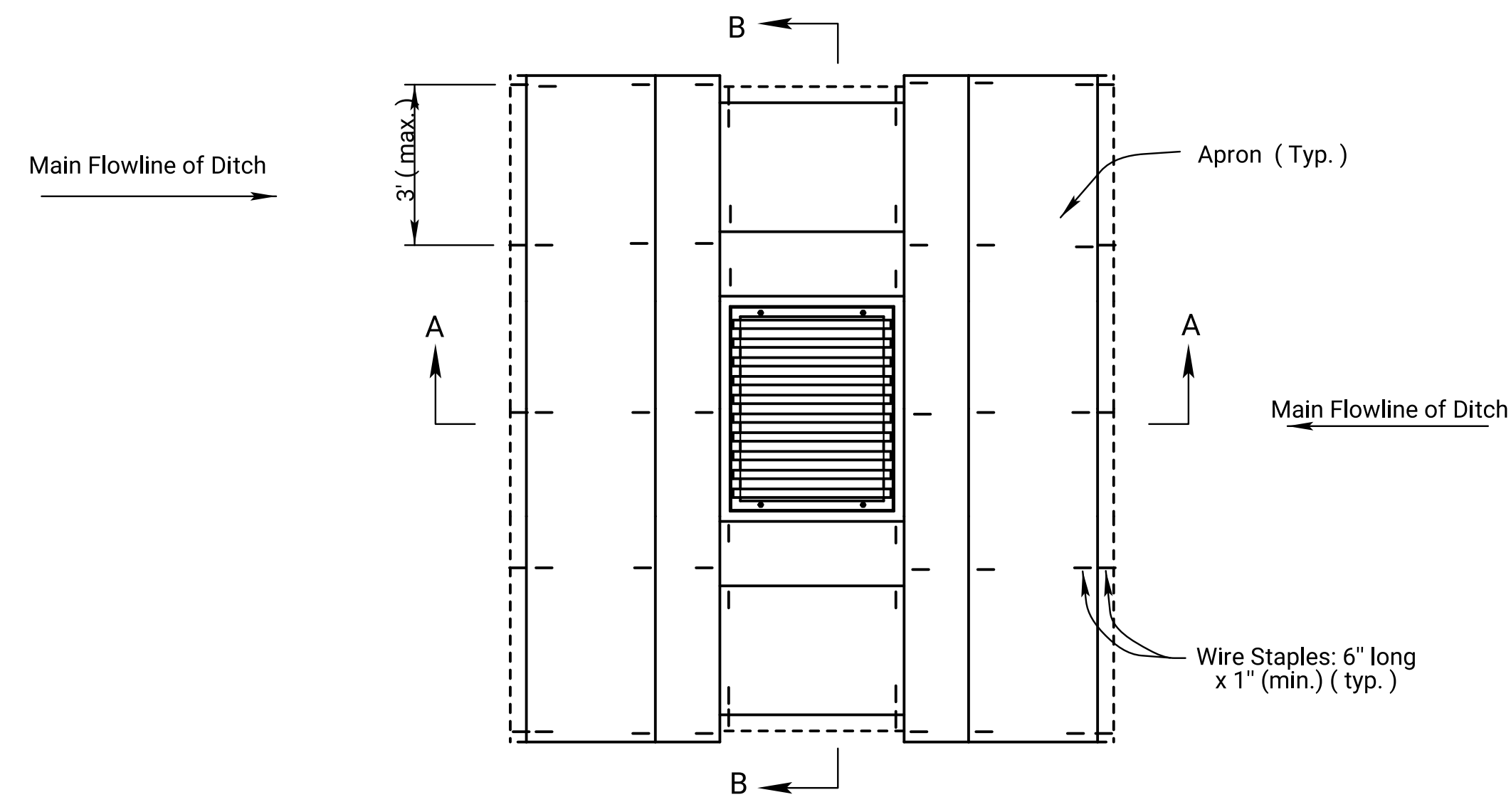
Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.

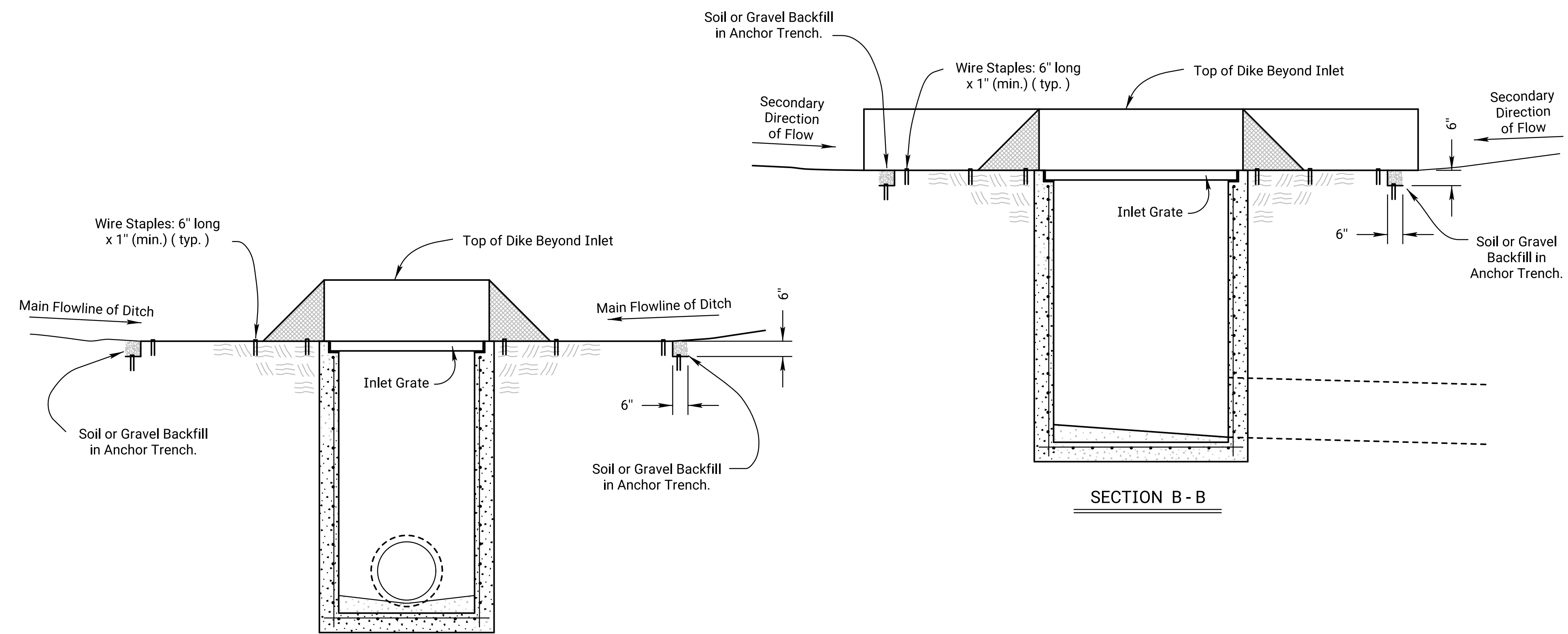
NO.	DATE	REVISIONS	BY	APPROV
03	01-21-22	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
02	08-24-21	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
01	06-11-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION			
TEMPORARY EROSION AND POLLUTION CONTROL			
TEMPORARY SLOPE DRAIN, TEMPORARY STREAM CROSSING (AGGREGATE)			
LA852B			
DESIGNED	01-21-22	APPD.	Mervin Lare
DESIGN CK.	DETAIL CK.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0

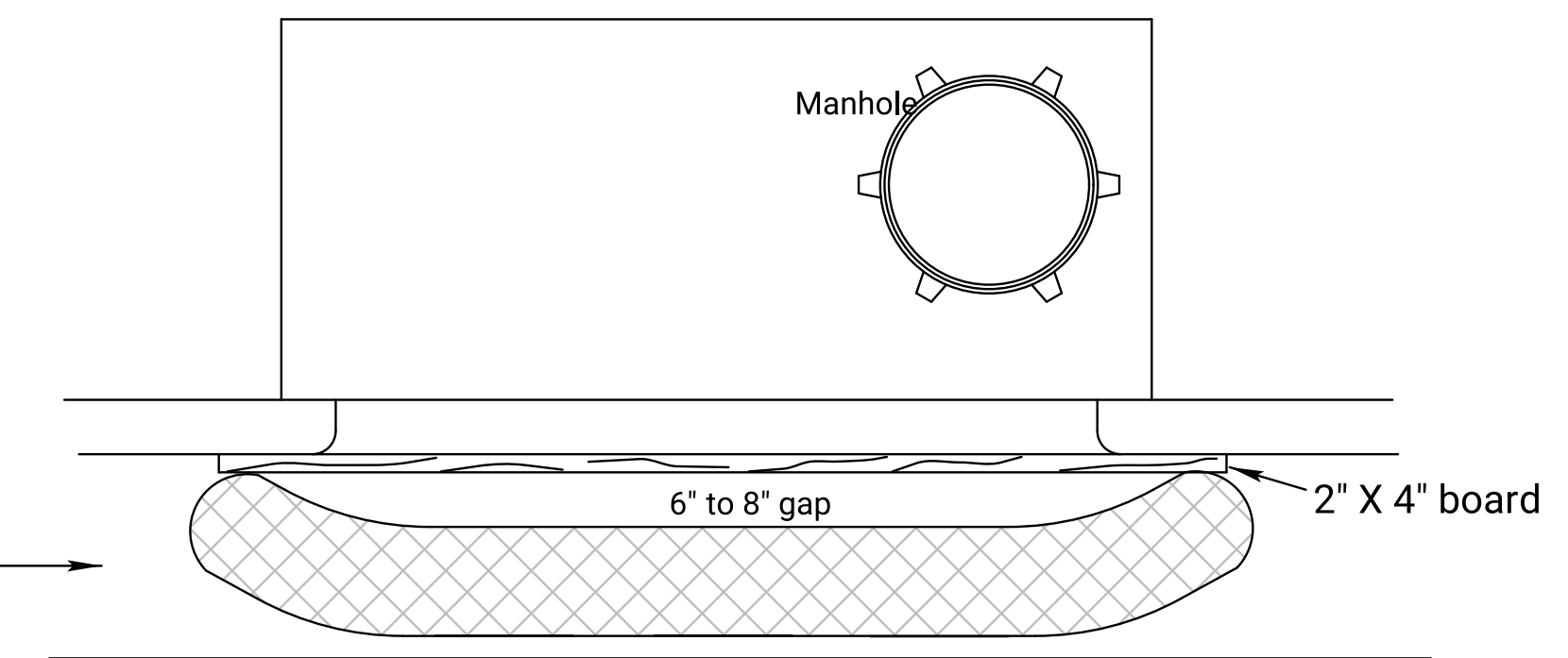


PLAN
TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)
 NO SCALE



SECTION A - A

SECTION B - B

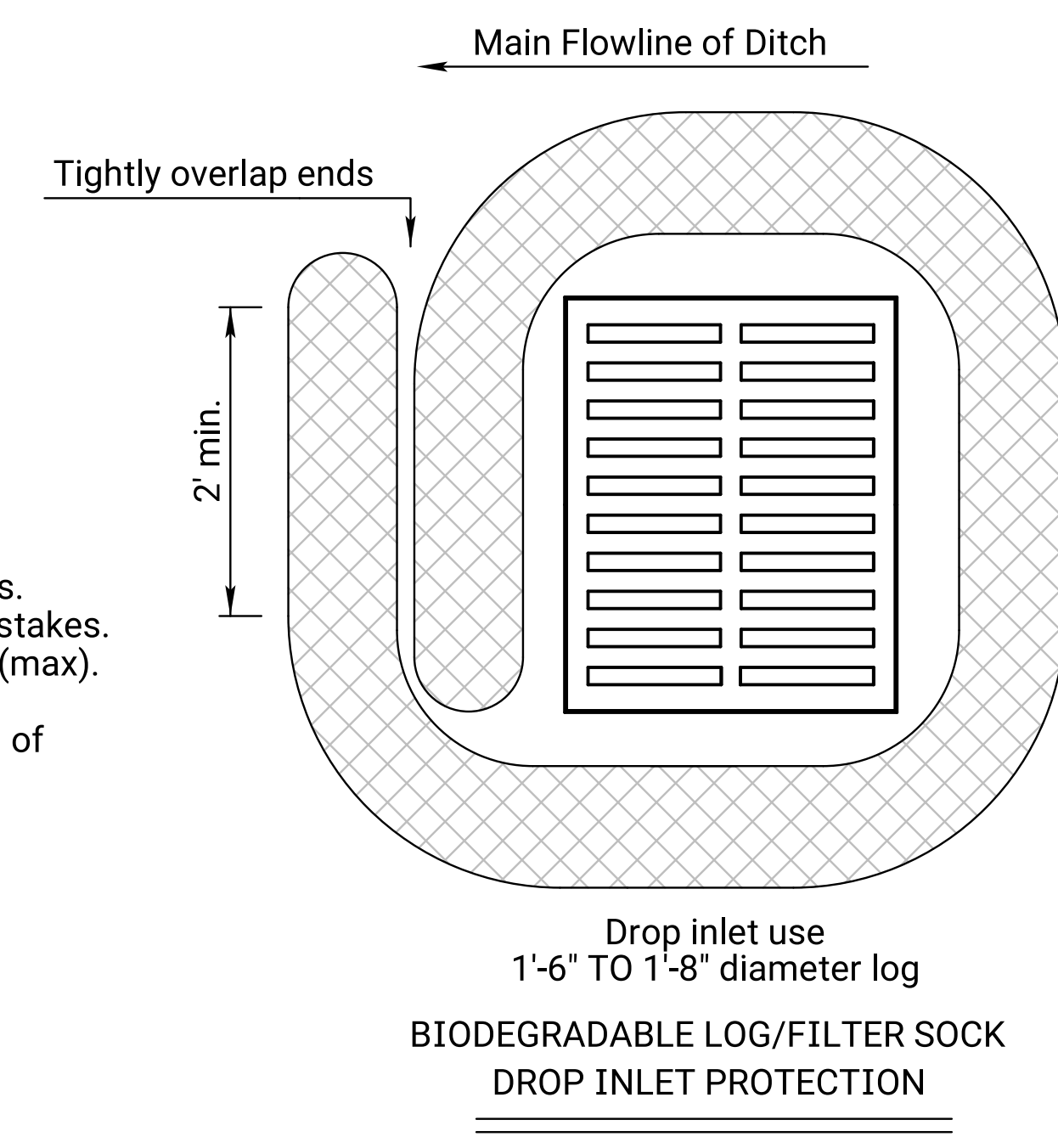


CURB INLET PROTECTION

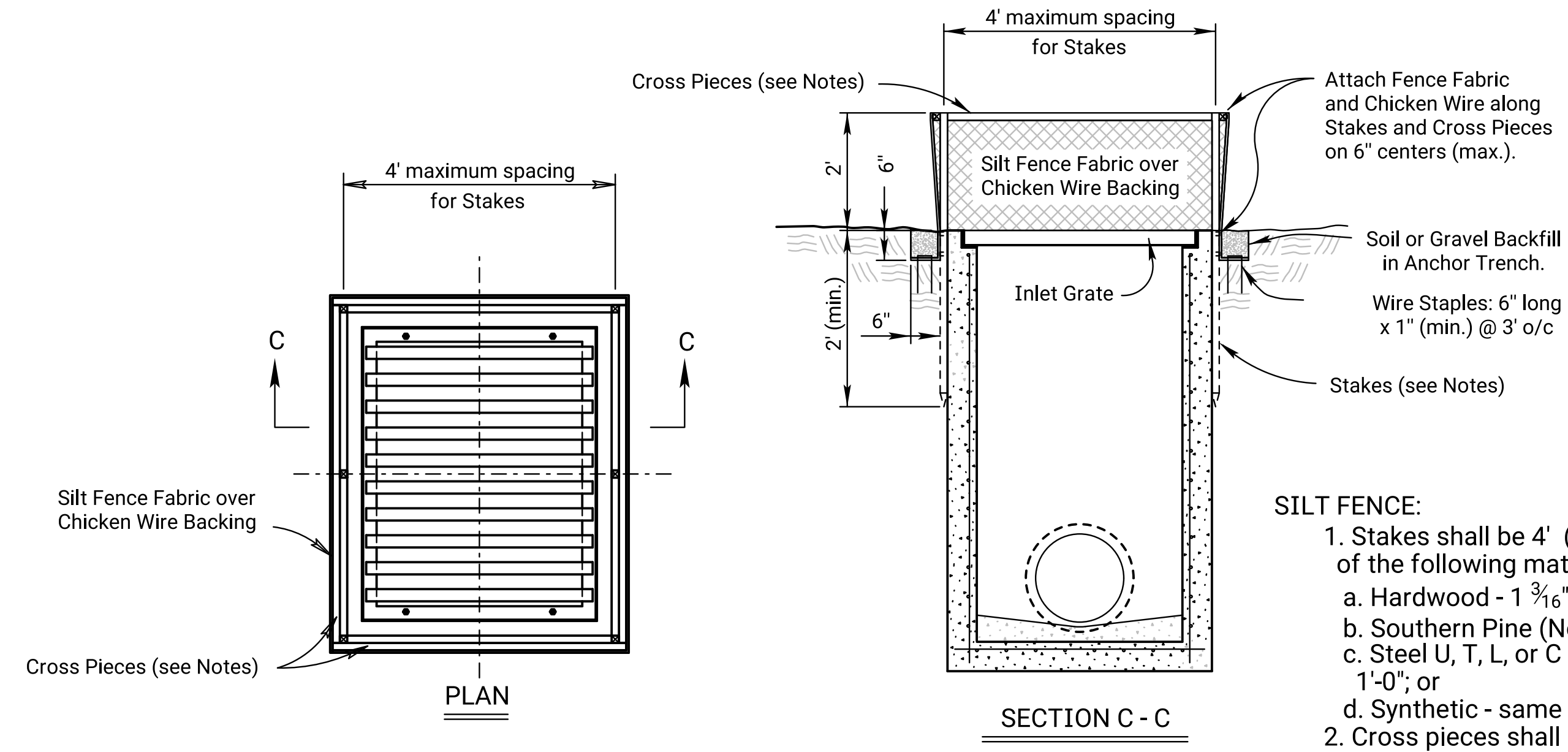
1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.

Material Requirements	
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.	
No compost or fines.	
No hay or straw.	
Do not use material which prohibits water infiltration.	
Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill material in place.	

Bags = synthetic net (3mm mesh) or burlap bags
 Rock = approximately 1" to 2" diameter



Note: 25% of log shall be keyed into ground during installation.
 Stake every 4'



PLAN
TEMPORARY INLET SEDIMENT BARRIER
(SILT FENCE METHOD)
 NO SCALE

- SILT FENCE:**
1. Stakes shall be 4' (min.) long and of one of the following materials:
 - a. Hardwood - 1 3/16" x 1 3/16";
 - b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
 - c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
 - d. Synthetic - same strength as wood stakes.
 2. Cross pieces shall be of same material as stakes.
 3. Attach fence fabric securely on 6" centers (max).
 4. Use of high flow material is acceptable.
 5. Refer to plan sheets to estimate the length of silt fence required.

Plotted by: Melissa.Davidson@ks.gov 15-SEP-2022 20:35
 File: LA852C.dgn

NO.	DATE	REVISIONS	BY	APPD
03	09-26-19	Changed Direction of Main Flowline of Ditch Arrow	M.R.D.	S.H.S.
02	03-10-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION
TEMPORARY EROSION AND POLLUTION CONTROL, TEMPORARY INLET SEDIMENT BARRIER (SILT FENCE) TEMP. INLET SEDIMENT BARRIER (T.S.D.)
 LA852C

DESIGNED	R.A.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.

Scott H. Shields
 Scott H. Shields
 Scott H. Shields

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS		0	0	

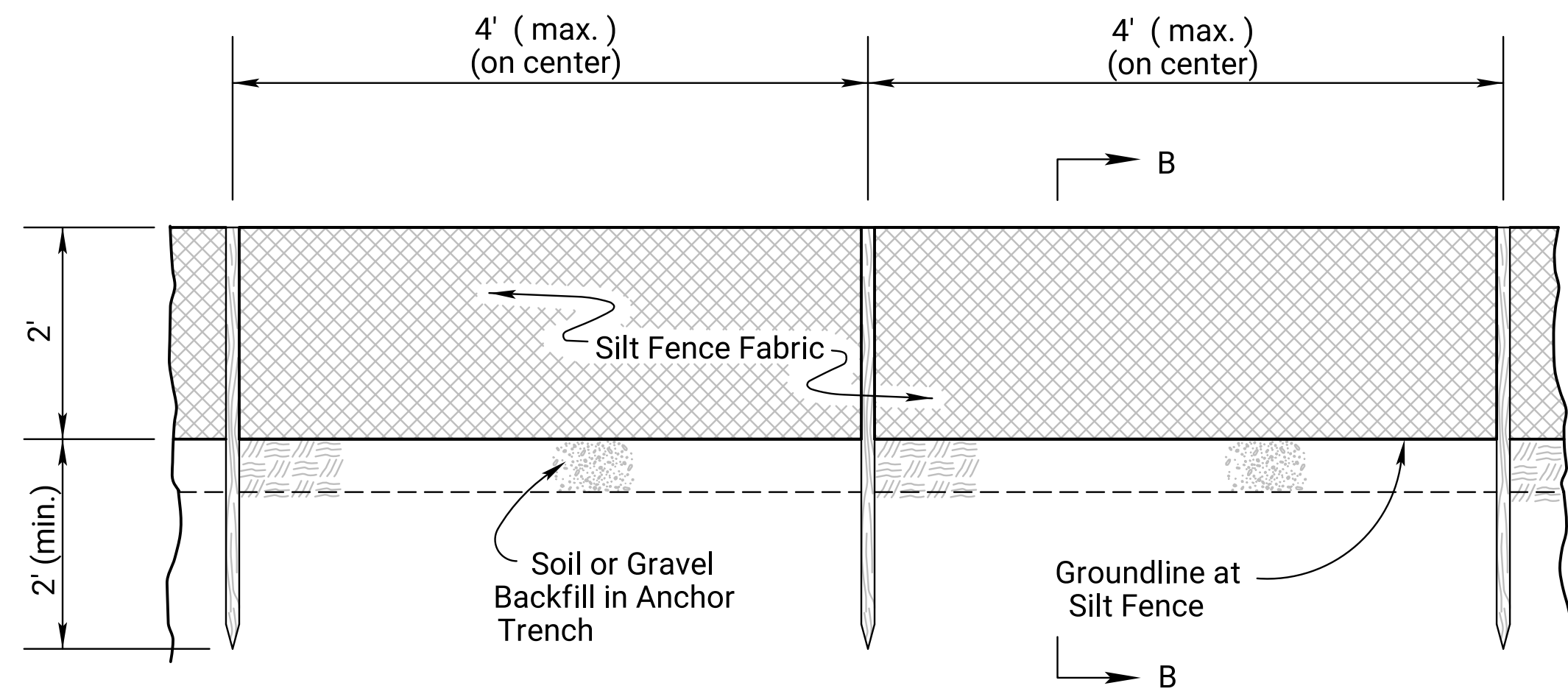
INSTALLATION NOTES

SILT FENCE:

- Stakes shall be 4' (min.) long and of one of the following materials:
 - Hardwood - 1 3/16" x 1 3/16";
 - Southern Pine (No. 2) - 2 5/8" x 2 5/8";
 - Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
 - Synthetic - same strength as wood stakes.
- Attach fence fabric with 3 zip ties within the top 8" of the fence. Alternate attachment methods may be approved by the Engineer on a performance basis.
- Use of high flow material is acceptable.
- Refer to plan sheets to estimate the length of silt fence required.

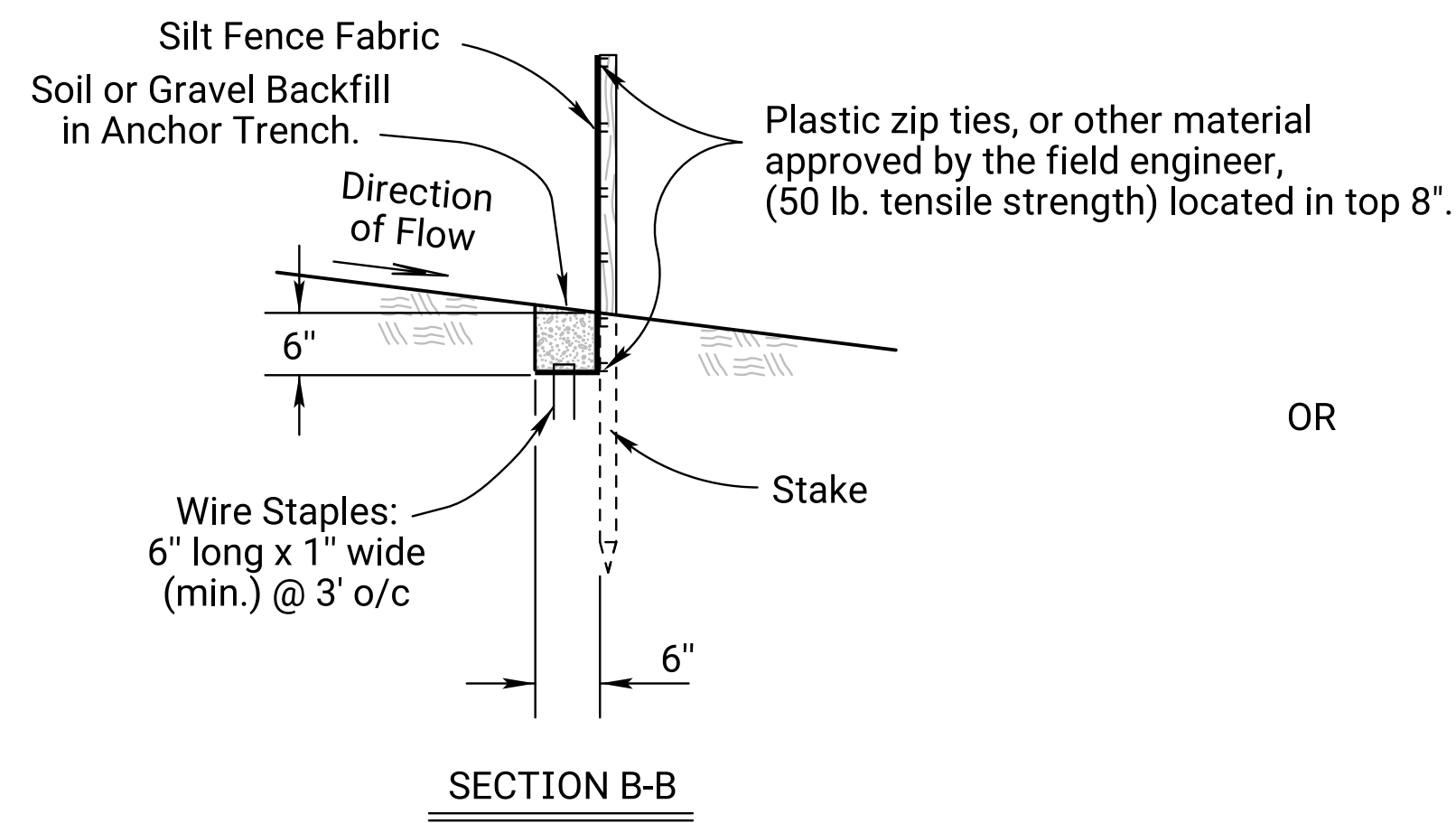
BIODEGRADABLE LOG OR FILTER SOCK

- Place biodegradable logs or filter sock tightly together minimum overlap of 18".
- Wood stakes shall be 2" x 2" (nom.).
- Refer to plan sheets to estimate length of biodegradable log and filter sock required.
- Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
- Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.



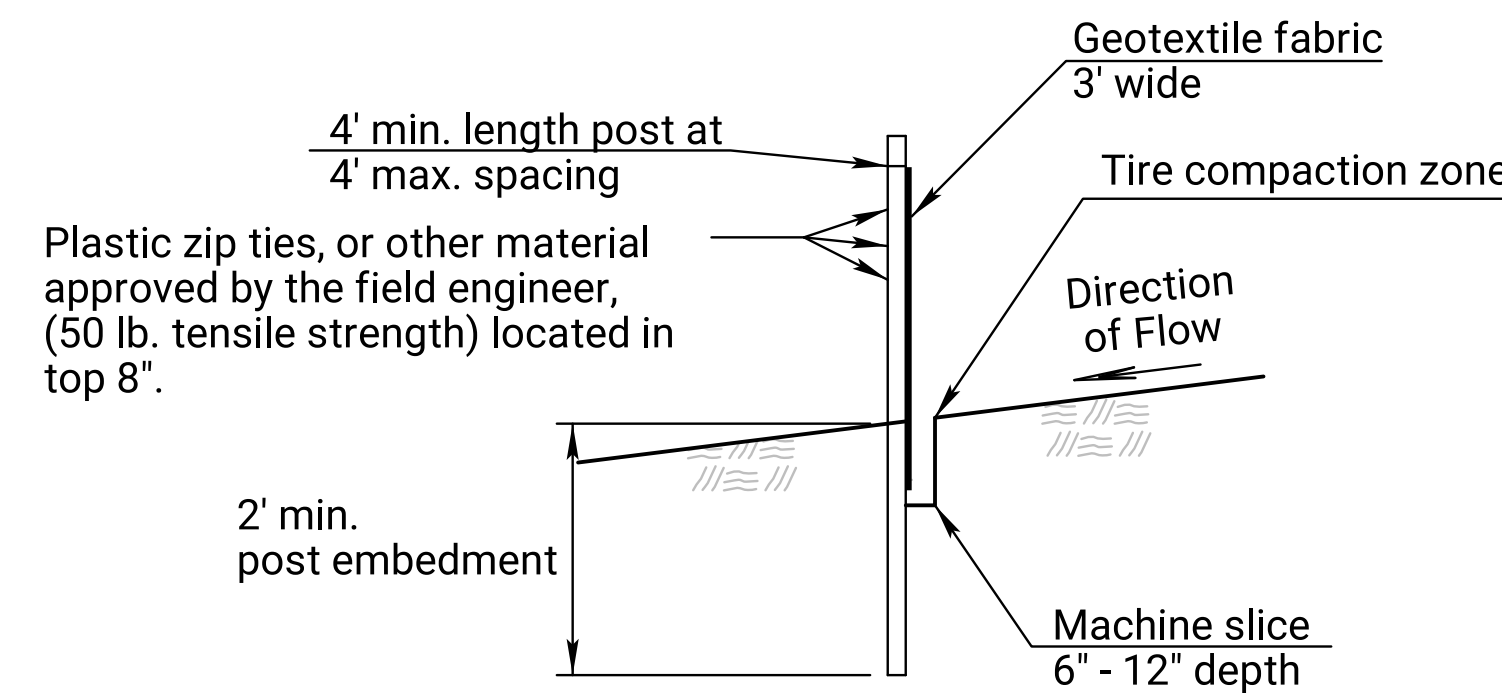
TYPICAL ELEVATION

SILT FENCE BARRIER
NO SCALE



SECTION B-B

OR



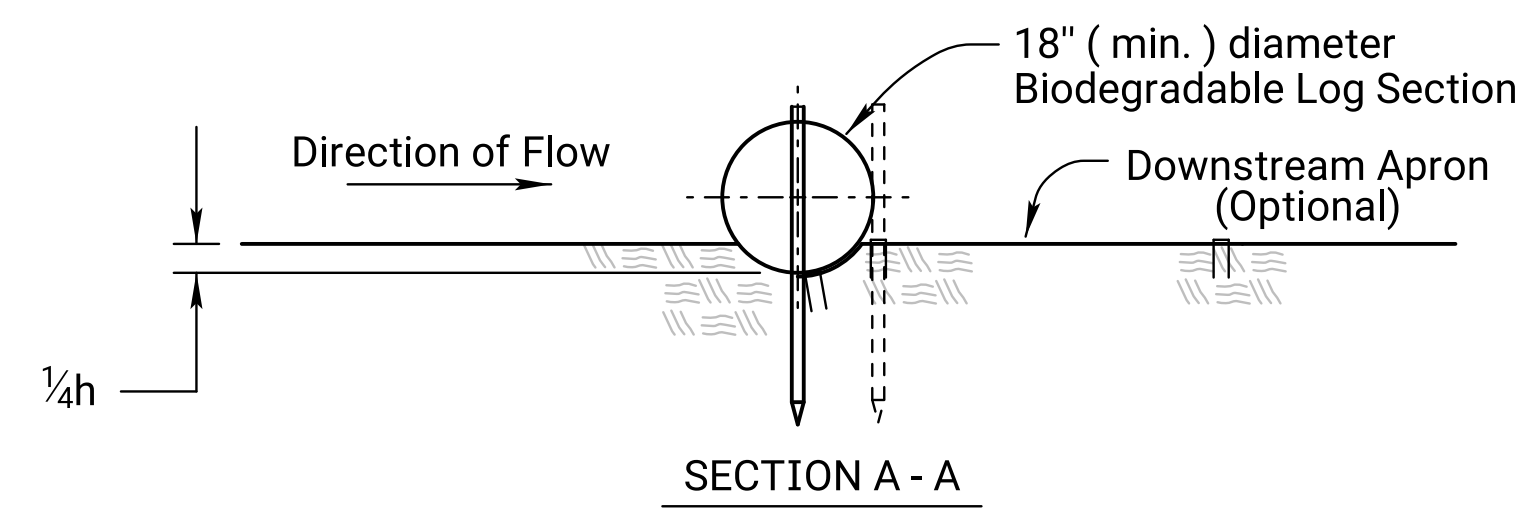
SECTION B-B

Biodegradable Log or Filter Sock Slope Interruptions

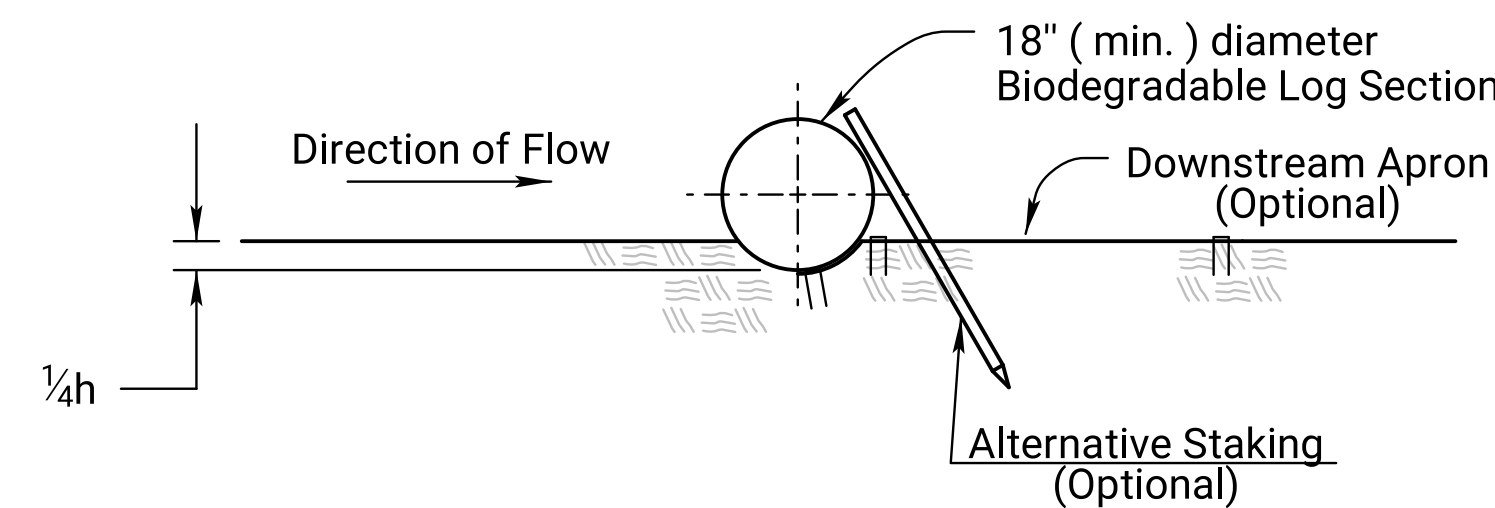
		PRODUCT		
		9" Sediment Log or 8" Filter Sock (ft)	12" Sediment Log or 12" Filter Sock (ft)	20" Sediment Log or 18" Filter Sock (ft)
Slope Gradient	≤4H:1V	40	60	80
	3H:1V	30	45	60

BIODEGRADABLE LOG MATERIAL		
	LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

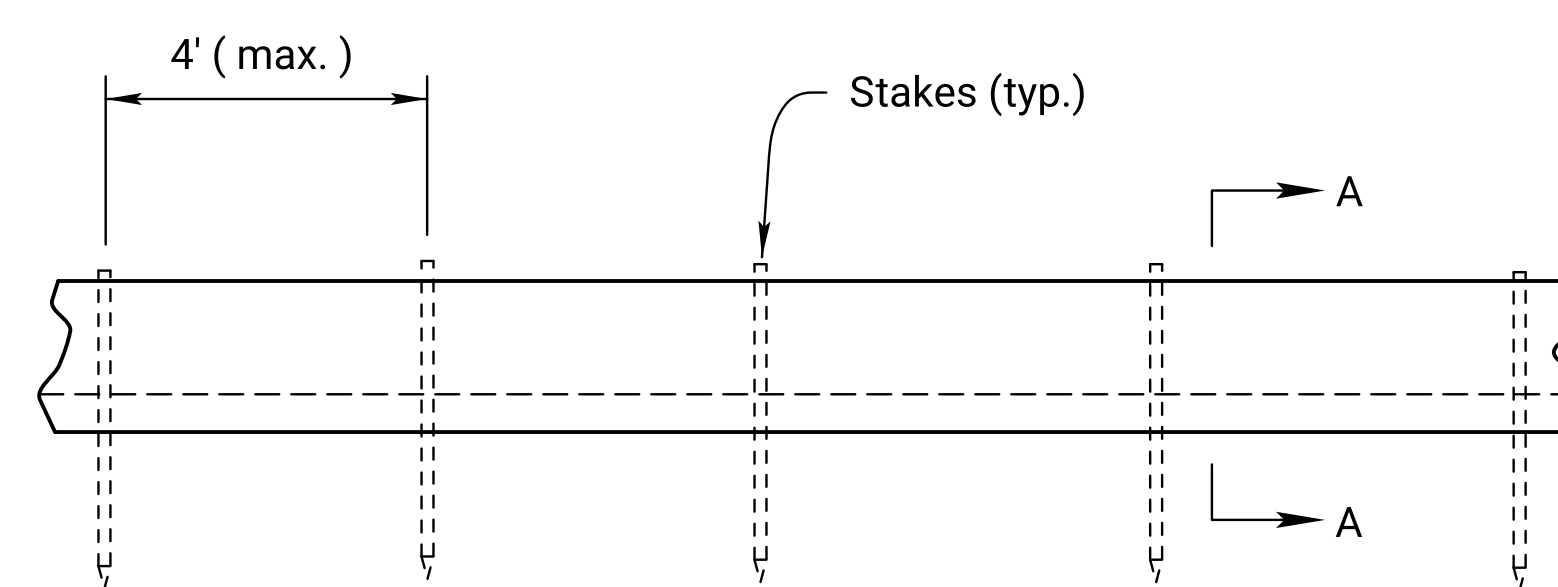
Deviations should be approved by the Field Engineer.



SECTION A - A



ALT. DETAIL
OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS
OR Filter Sock

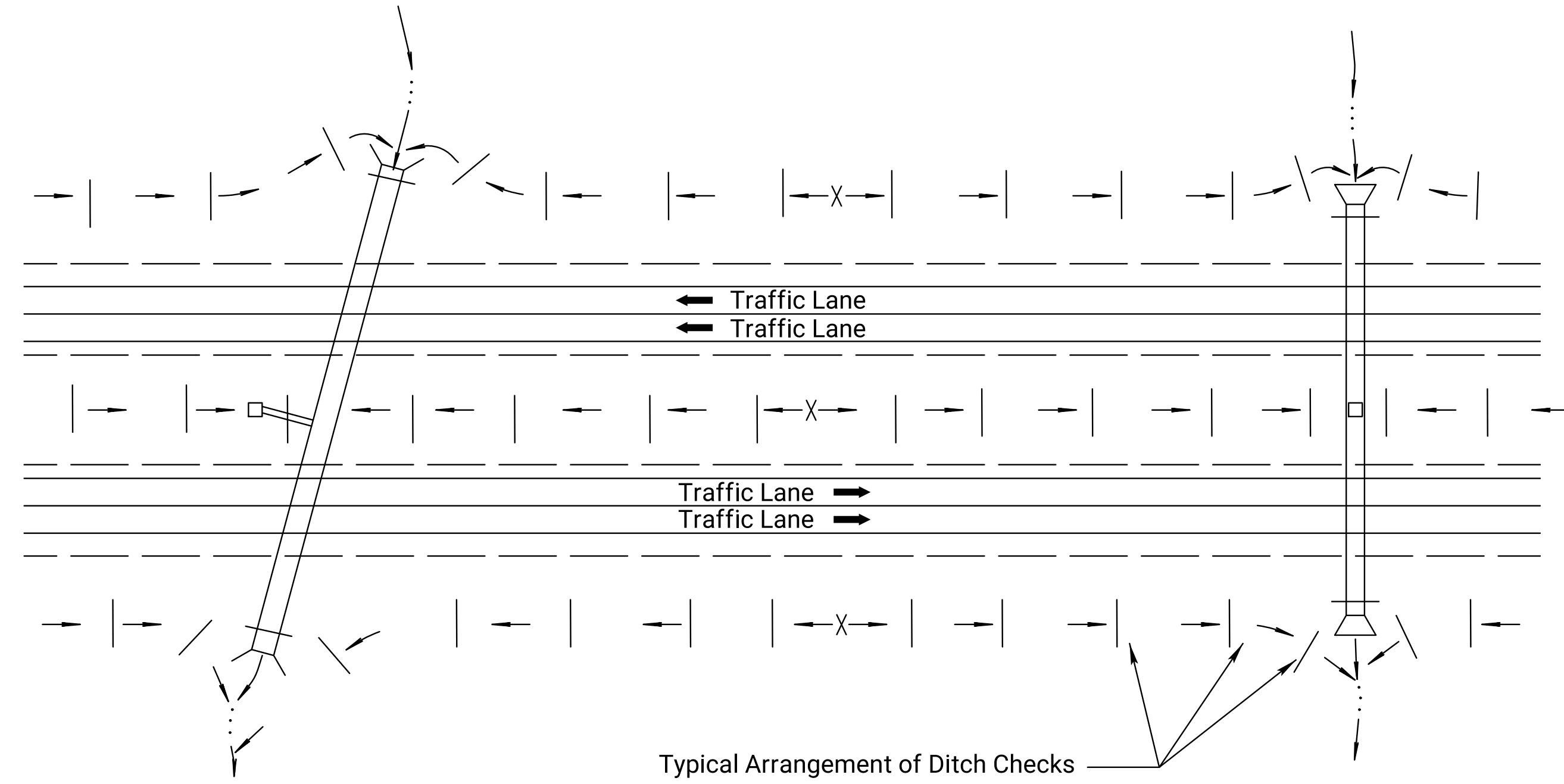
GENERAL NOTES

- Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
- The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
- Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
- Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

03	06-28-16	Revised Standard	R.A.	S.H.S.
02	03-01-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.
NO.	DATE	REVISIONS	BY	APPD

KANSAS DEPARTMENT OF TRANSPORTATION				
TEMPORARY EROSION AND POLLUTION CONTROL SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE				
LA852D				
FHWA APPROVAL	09-14-16	APPD	Scott H. Shields	
DESIGNED	S.H.S.	DETAILED	R.A.	QUANTITIES
DESIGN CK.	S.H.S.	DETAIL CK.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS		0	0	



TYPICAL DITCH CHECK LAYOUT PLAN
NO SCALE

20" BIOLOG CHECK SPACING	
DITCH @ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	125
2.0	60
3.0	40
4.0	30
5.0	25

NOTE: Use this spacing for all except Rock Ditch Checks.

18" FILTER SOCK CHECK SPACING	
DITCH @ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	110
2.0	55
3.0	35
4.0	25
5.0	20

NOTE: Use this spacing for all except Rock Ditch Checks.

GENERAL NOTES

- 1) The choice of ditch check methods is at the option of the Contractor.
- 2) Use only rock checks in situations where the ditch slope is 6 percent or greater.
- 2) Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.

Plotted by : KDOT#CADD.Support_Lks.gov 1-JUL-2022 00:14
File : la852e.dgn

NO.	DATE	REVISIONS	BY	APPD
03	08-10-16	Revised Standard	R.A.A.	S.H.S.
02	06-28-16	Revised Standard	R.A.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL DITCH CHECKS

LA852E

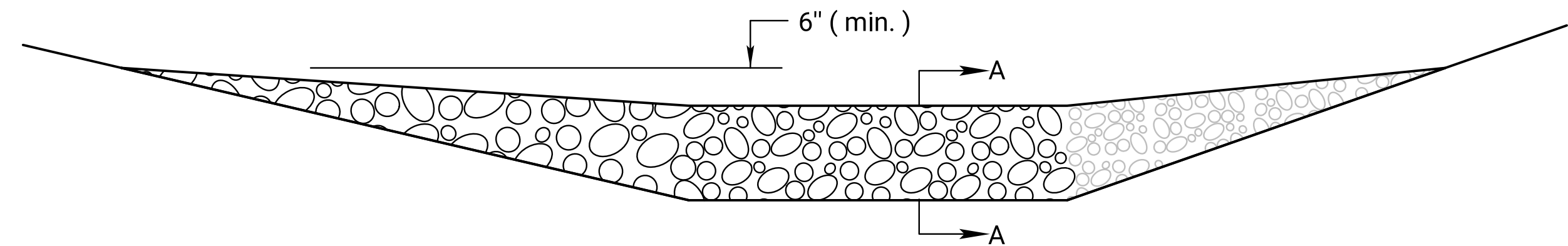
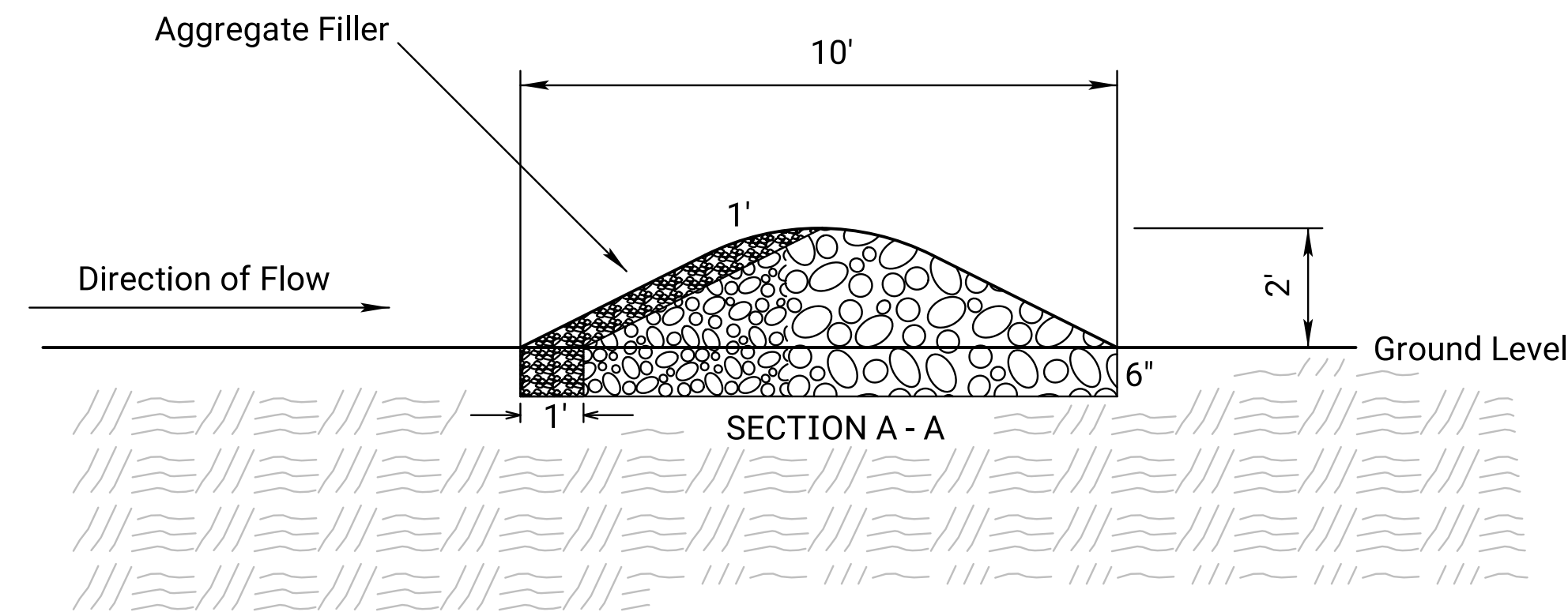
DESIGNED	S.H.S.	DETAIL CD	R.A.A.	QUANTITIES	TRACED	R.A.A.
DESIGN CK	S.H.S.	DETAIL CK	S.H.S.	QUAN.CK	TRACE CK	S.H.S.

FHWA APPROVAL 09-14-16 APPD. Scott H. Shields

KDOT Graphics Certified 06-18-2022 Sh. N# 0

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



TYPICAL ELEVATION

ROCK DITCH CHECK

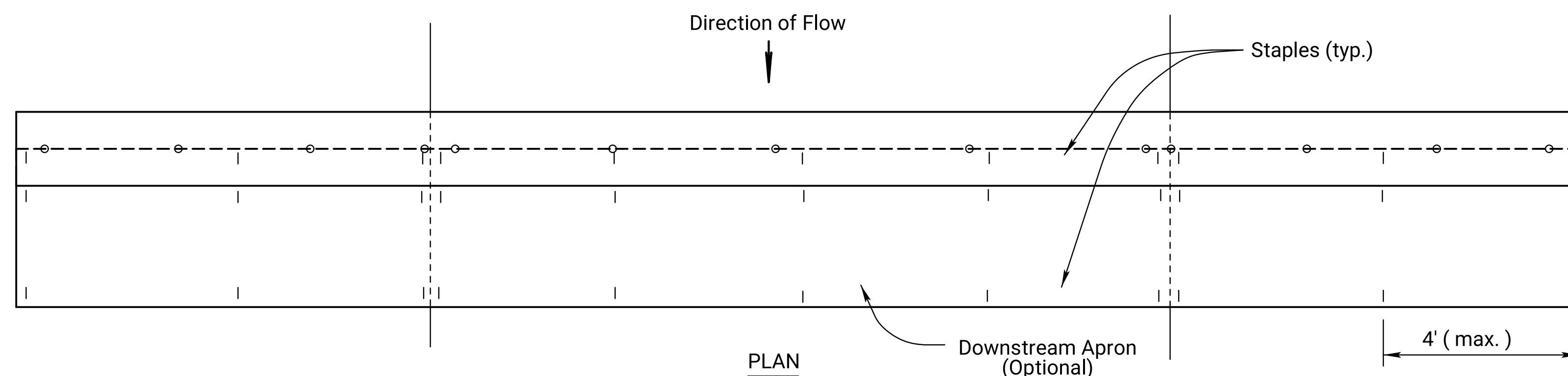
NO SCALE

TEMPORARY ROCK DITCH CHECK SPACING	
DITCH @ SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29

NOTE: Use this spacing for Rock Ditch Checks only.

ROCK DITCH CHECK NOTES

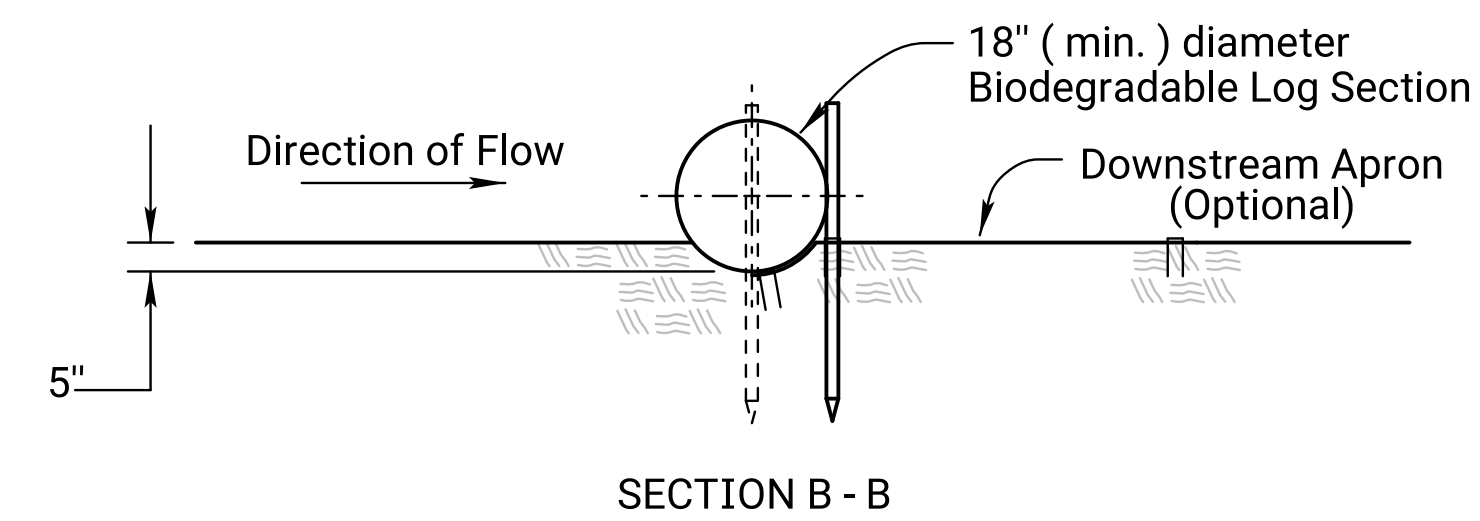
1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6" (150mm). After placement of the rock, backfill and compact any over-excavated soil to ditch grade. This work shall be subsidiary to the bid item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
8. Aggregate filler will be placed on the upstream face of the ditch check. Aggregate filler will comply with Filter Course Type I, Division 1114.



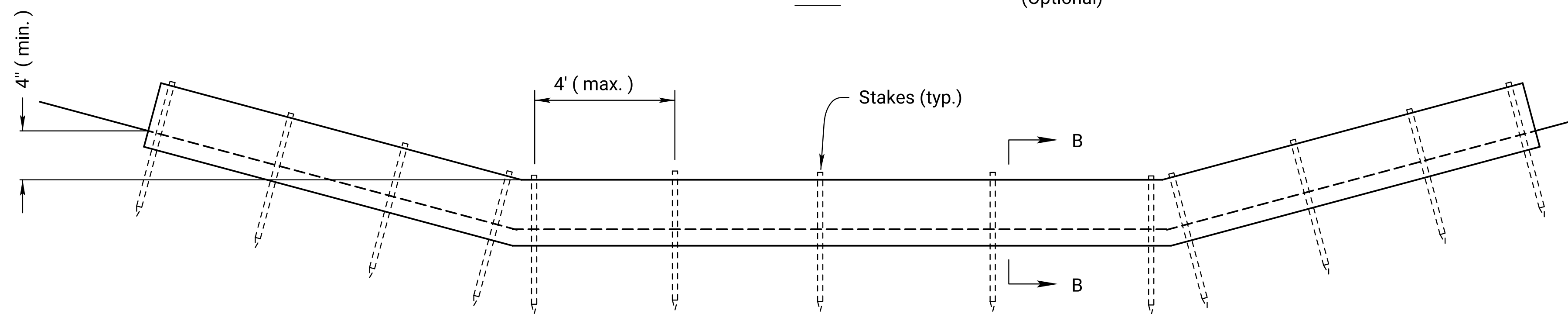
PLAN

Downstream Apron (Optional)

4' (max.)



SECTION B - B



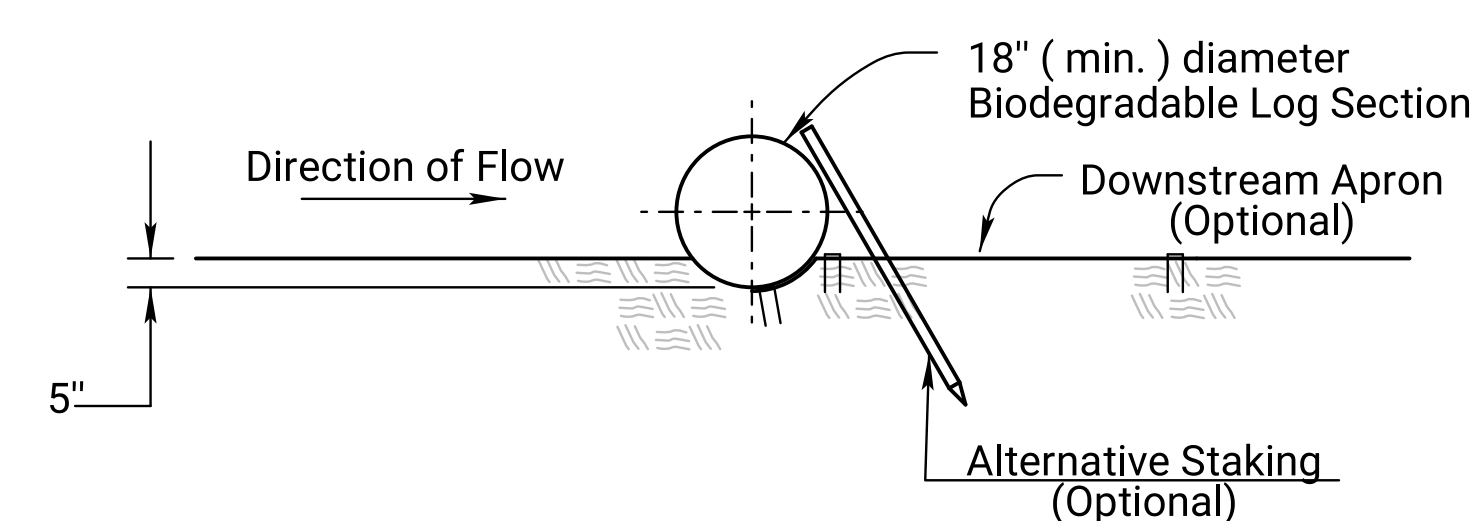
TYPICAL ELEVATION

BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check
NO SCALE

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18".
3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at the contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.



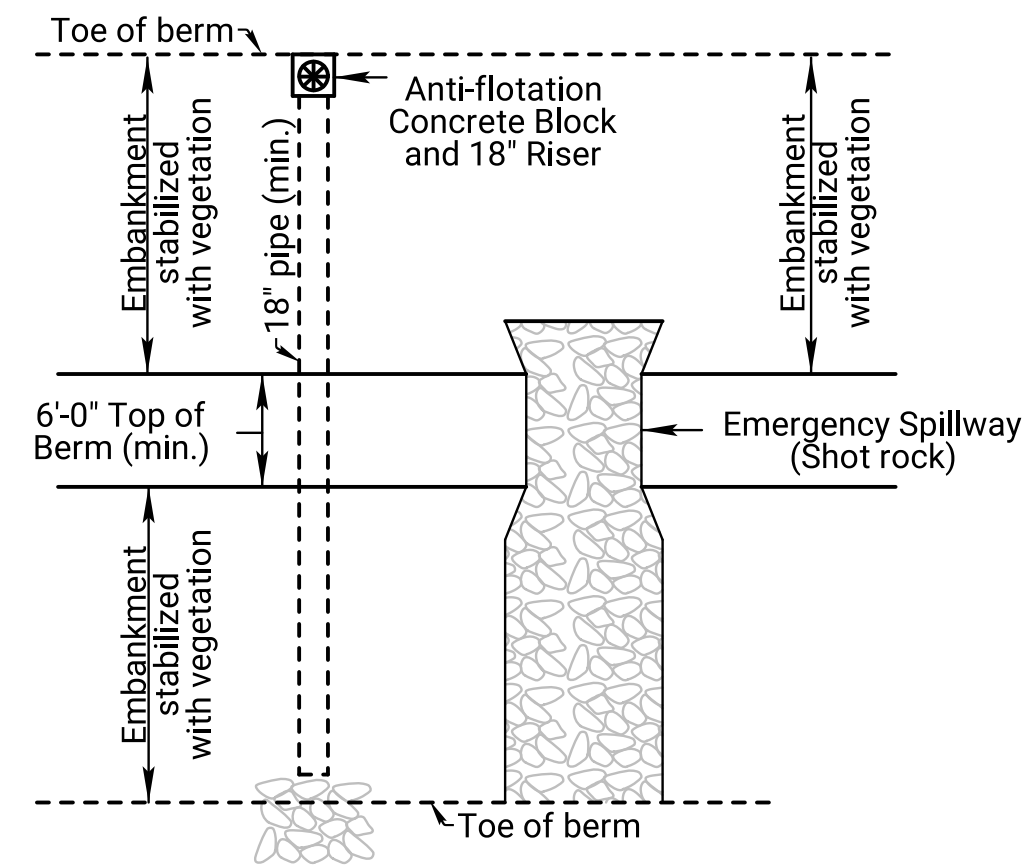
ALT. DETAIL OPTIONAL

NO.	DATE	REVISIONS	BY	APPD
03	11-19-20	Revised Standard	M.R.D.	M.L.
02	08-10-16	Revised Standard	R.A.A.	S.H.S.
01	10-21-15	Revised Standard	R.A.A.	S.H.S.

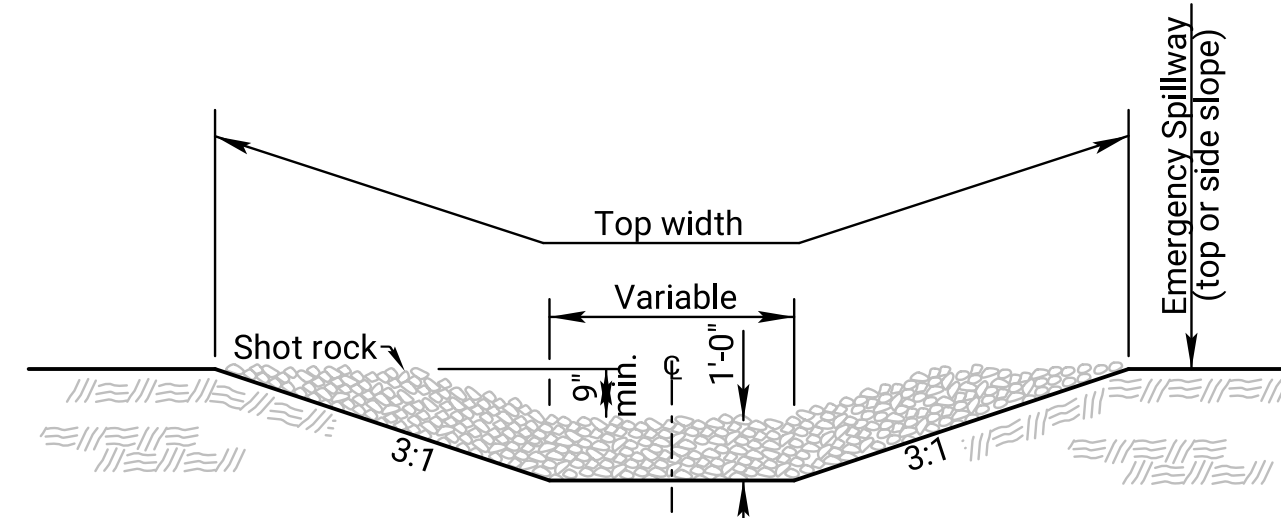
KANSAS DEPARTMENT OF TRANSPORTATION					
TEMPORARY EROSION AND POLLUTION CONTROL					
ROCK DITCH CHECKS					
BIODEGRADABLE LOG DITCH CHECKS					
LA852G					
FHWA APPROVAL		11-19-20		APPD	
DESIGNED	M.L.	DETAILED	D.K.	QUANTITIES	TRACED
DESIGN CK.	M.L.	DETAIL CK.	M.L.	QUAN. CK.	TRACE CK.
		Mervin Lare			

Plotted by: Melissa.Davidson@ks.gov 15-SEP-2022 20:36
File: LA852G.dgn

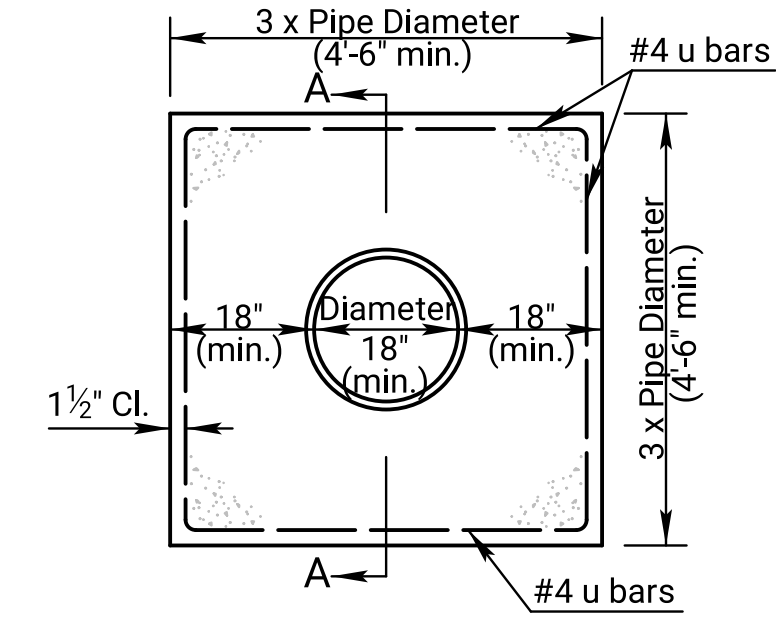
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



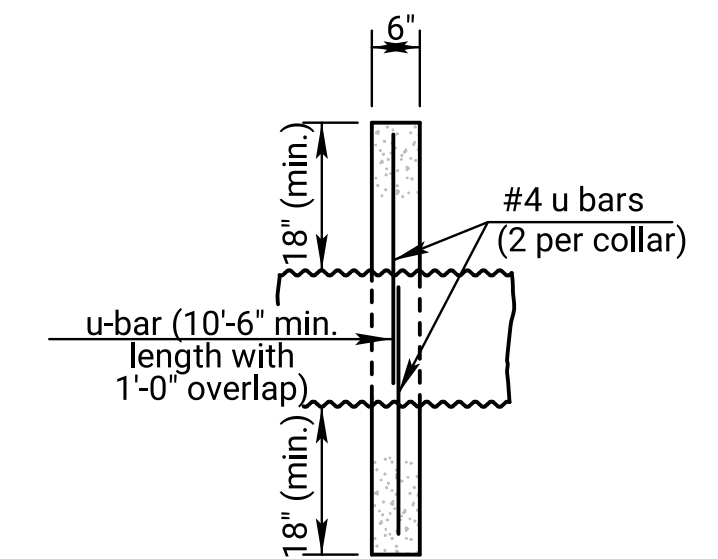
SEDIMENT STORAGE BASIN (PLAN)



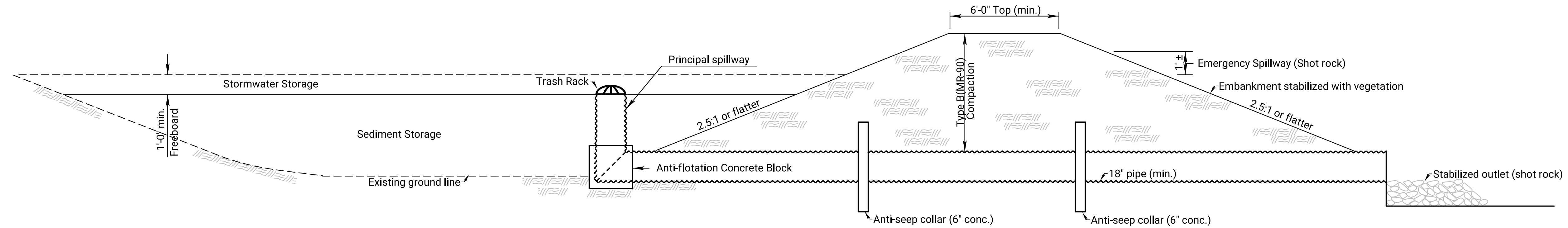
CROSS SECTION (EMERGENCY SPILLWAY)



CONCRETE ANTI-SEEP COLLAR



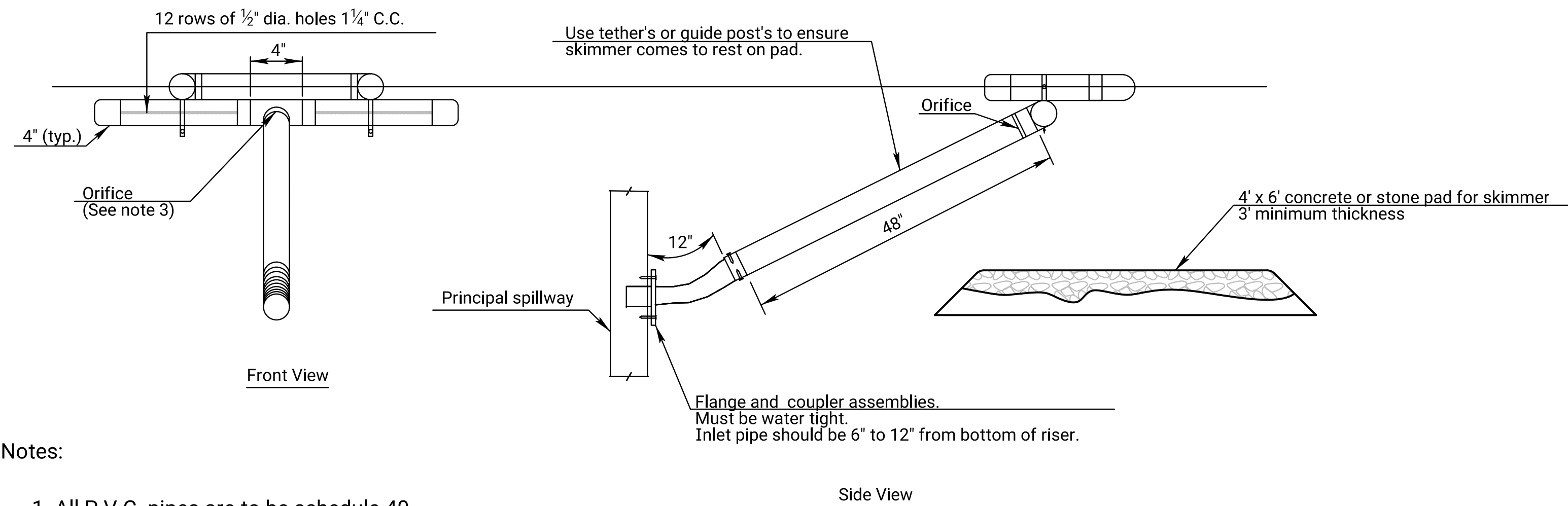
SECTION A-A



SEDIMENT STORAGE BASIN (ELEVATION)

NOTES:

- 1) Temporary Sediment Basins shall be constructed at locations as directed by the Engineer or as approved in the SWPPP Schedule. All work and materials necessary, including but not limited to, the fill material, compaction, drainage pipes, aggregates and all other incidentals necessary to construct the basin, shall be paid as "Temporary Sediment Basin".
- 2) Lengths and top dimensions shall be determined in the field by the Engineer.
- 3) Skimmer dewatering device required and must be used regardless the size of the drainage area.



SKIMMER DEWATERING DEVICE

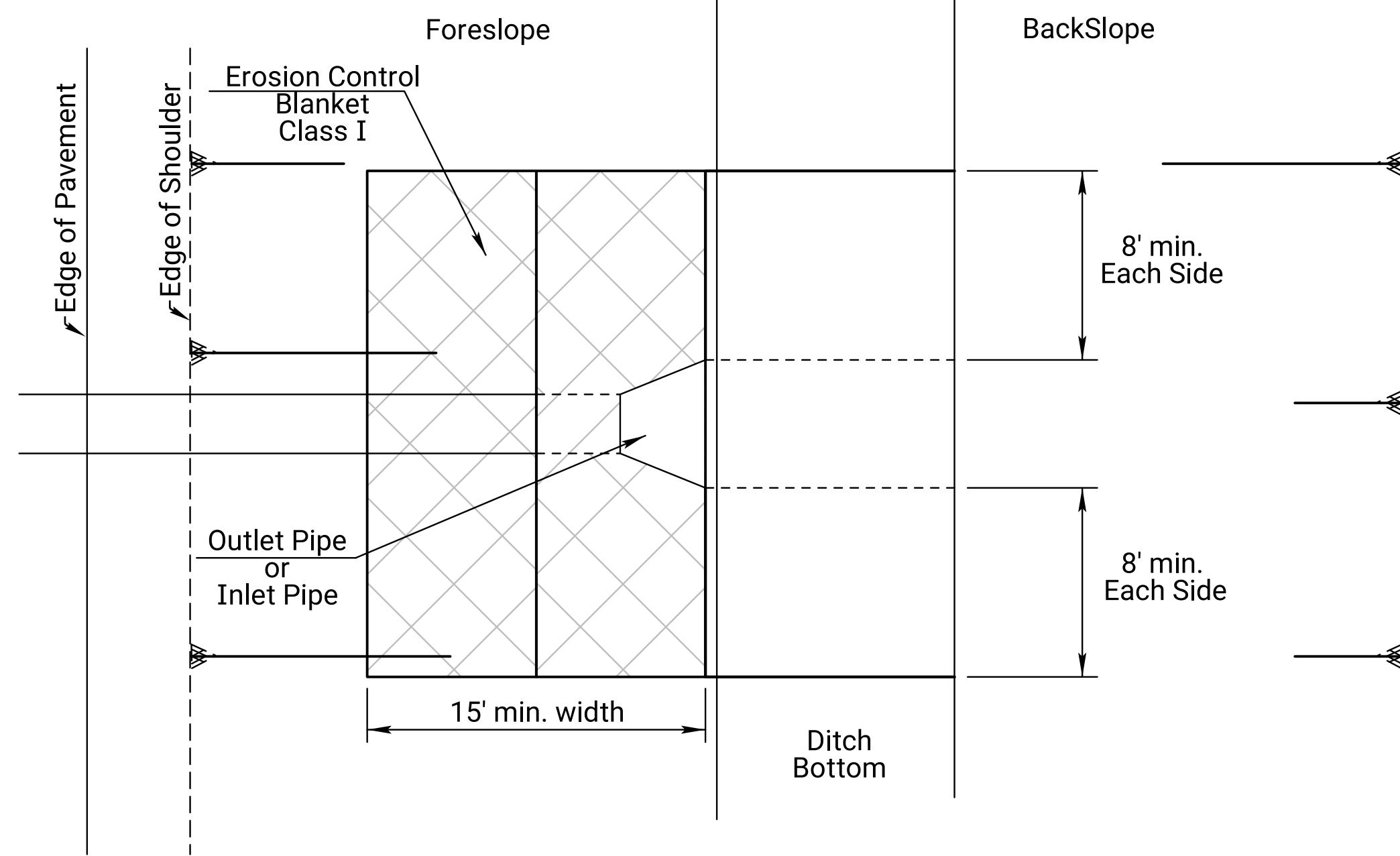
Notes:

1. All P.V.C. pipes are to be schedule 40.
2. HDPE flexible drain pipes is to be attached to the pond outlet structure with water-tight connections.
3. The orifice shall be sized of to provide drawdown time to 2 to 5 days and approved by the engineer.
4. Other skimmer designs maybe used that dewateres from the surface at a controlled rate. The design must be approved by the engineer.

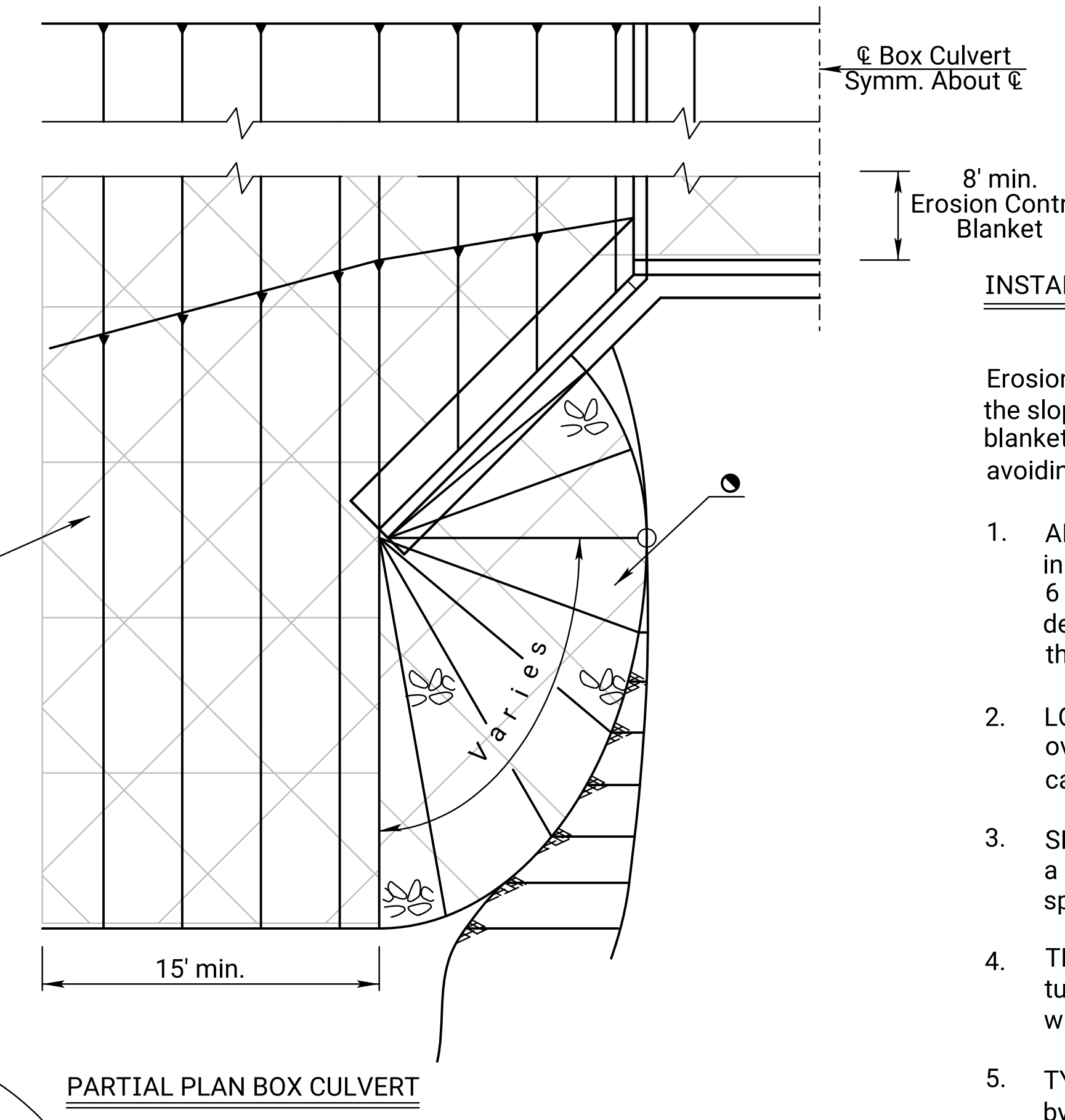
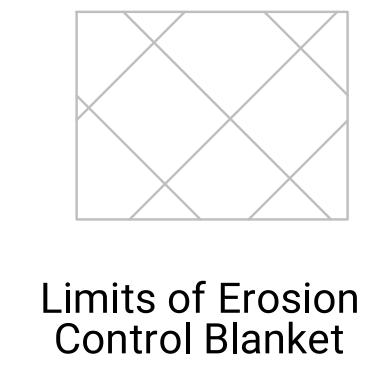
SEDIMENT STORAGE BASIN LOCATIONS		
STATION TO STATION	SIDE	REQUIRED STORAGE CAPACITY

02	09-03-13	Added Skimmer Dewatering Device	M.R.M.	S.H.S.
01	07-17-13	Revised Standard	M.R.M.	S.H.S.
NO.	DATE	REVISIONS	BY	APPD
KANSAS DEPARTMENT OF TRANSPORTATION				
TEMPORARY EROSION AND POLLUTION CONTROL SEDIMENT STORAGE BASIN				
LA852H				
DESIGNED	B.B.	DETAILED	B.B.	QUANTITIES
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN. CK.
TRACED	B.B.	TRACE CK.	S.H.S.	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0



PARTIAL PLAN PIPE

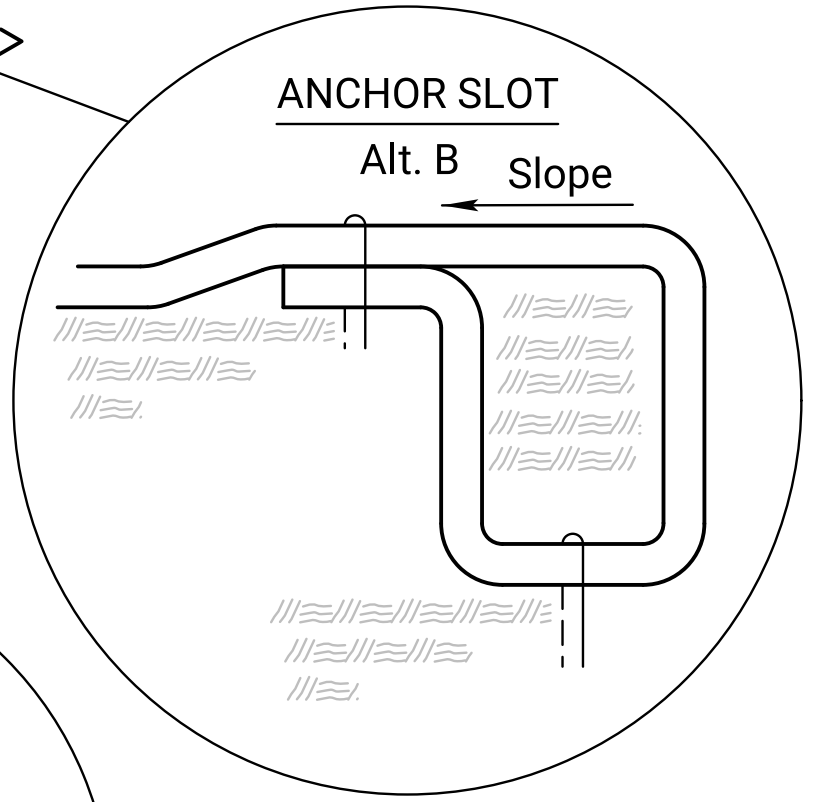
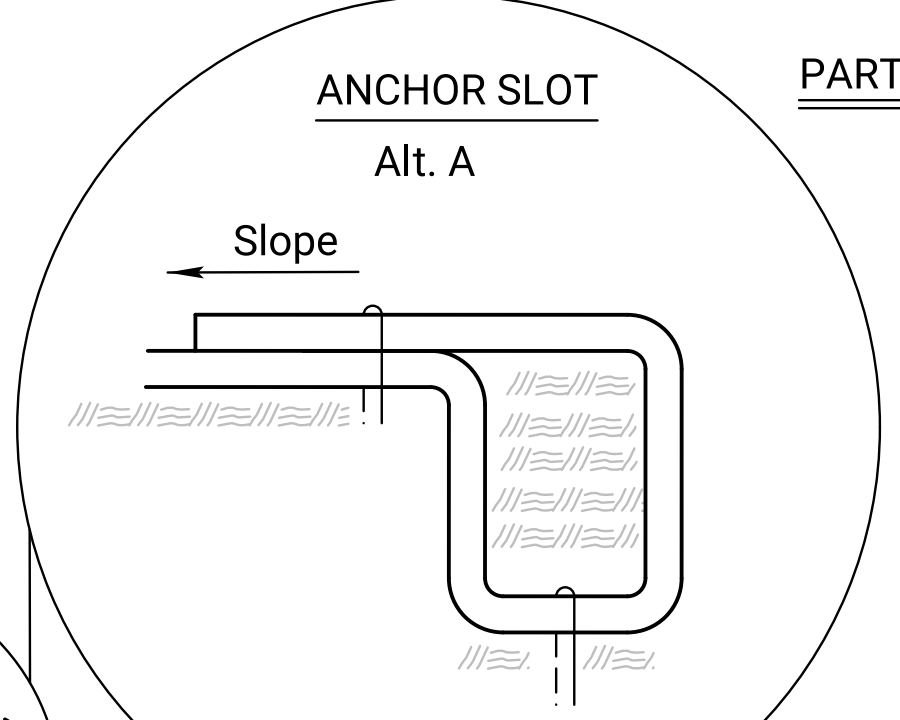
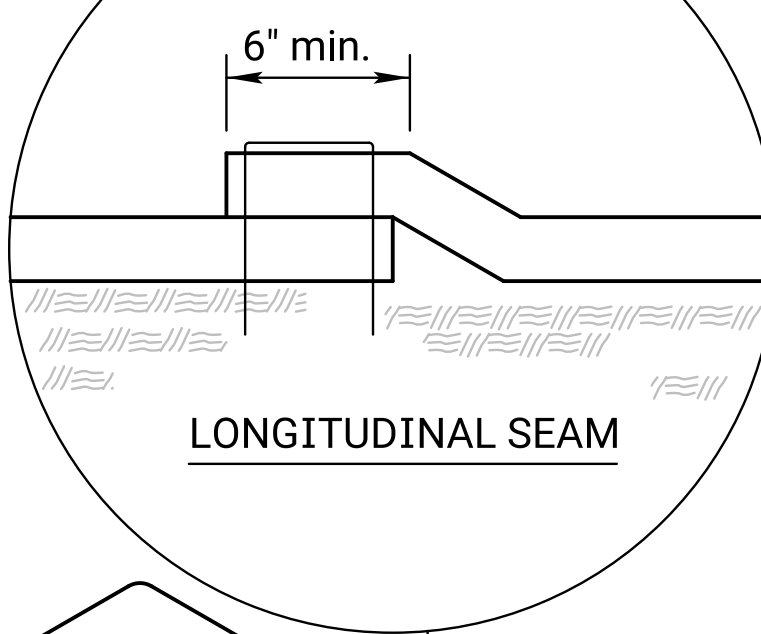
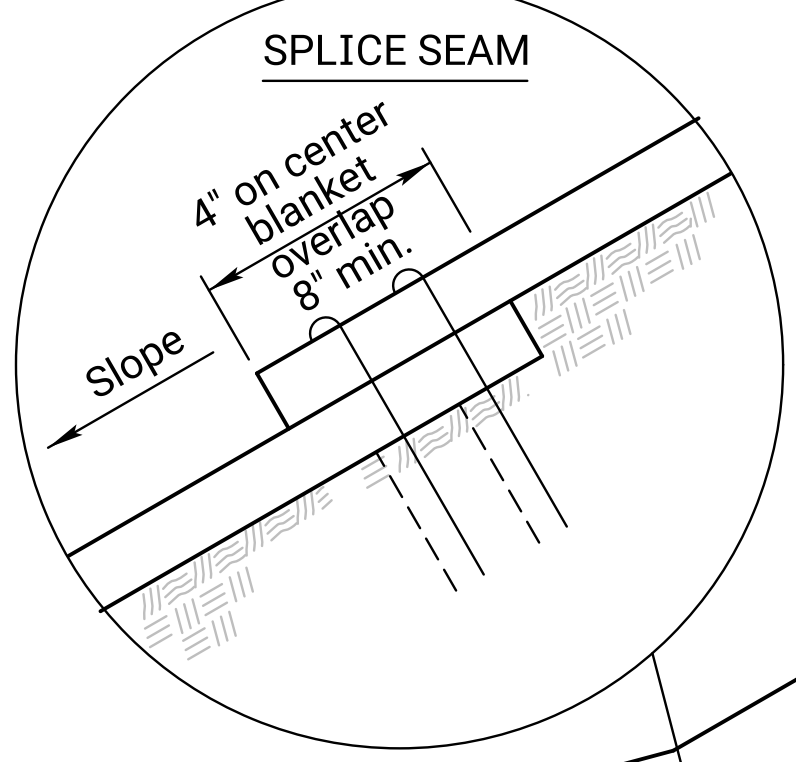


PARTIAL PLAN BOX CULVERT

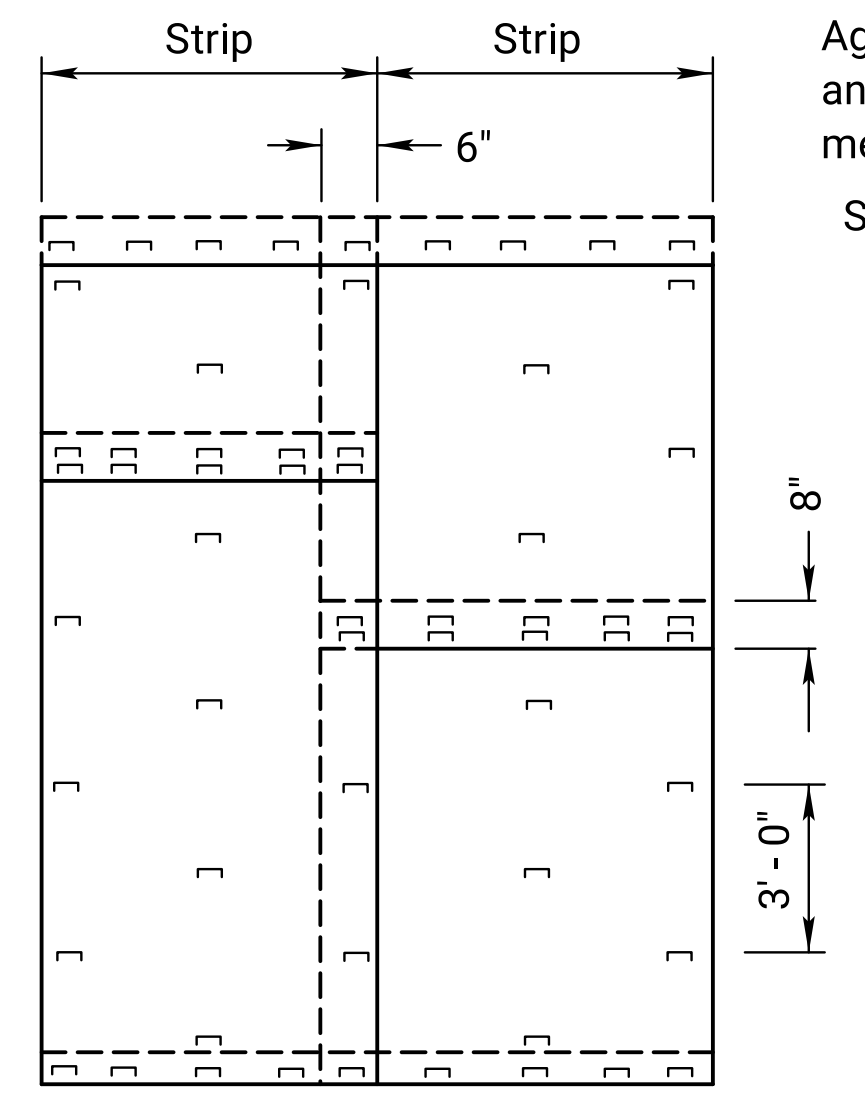
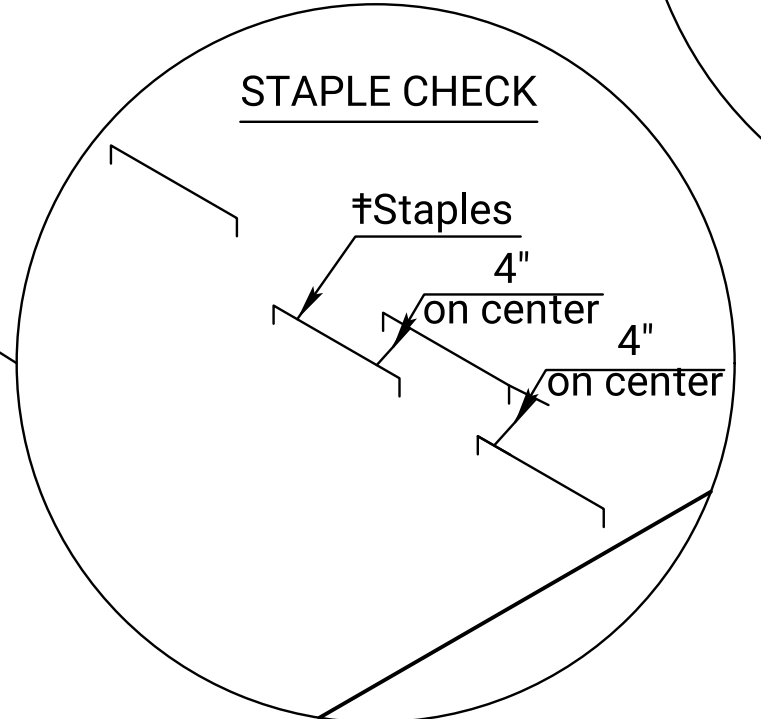
INSTALLATION DETAILS FOR EROSION CONTROL CLASS 1

Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

- ANCHOR SLOTS:** The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
- LONGITUDINAL SEAMS:** The edges of the blanket should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.
- SPLICE SEAM:** When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.
- TERMINAL FOLD:** The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.
- TYPICAL ANCHORS:** Anchor design shall be as recommended by the manufacturer.
- STAPLE CHECK:** Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.

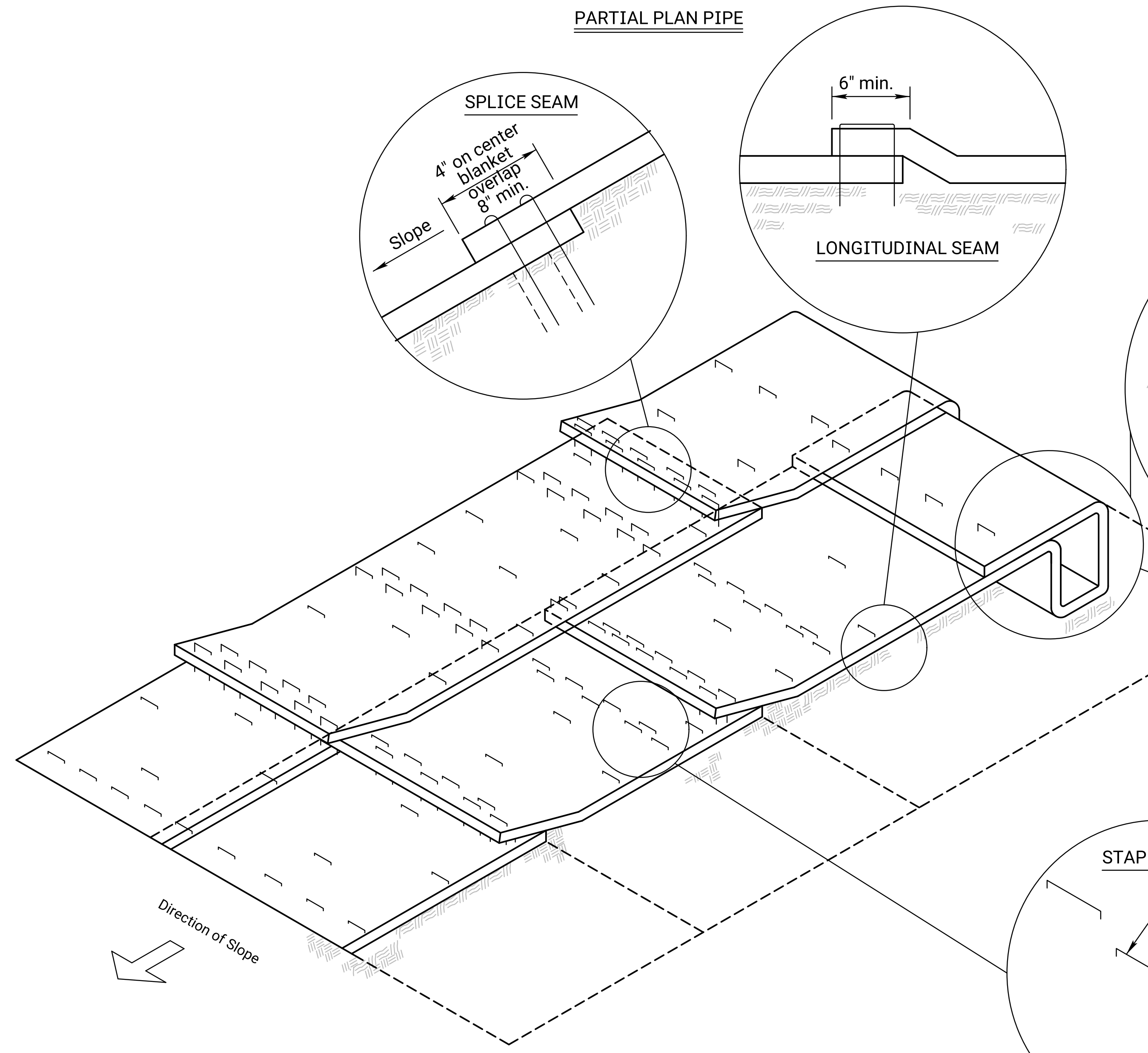


● Erosion Control Class I may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans).



PLAN VIEW - ANCHORING DIAGRAM

NOTE: Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards. Single post ring and shank staple is acceptable.



ISOMETRIC VIEW

Plotted by: Melissa.Davidson@ks.gov 15-SEP-2022 20:36
File: LA855.dgn

NO.	DATE	REVISIONS	BY	APPD
04	03-01-15	Revised Standard	R.A.A.	S.H.S.
03	02-23-15	Revised Standard	R.A.A.	S.H.S.
02	09-15-14	Revised Standard	M.R.M.	S.H.S.

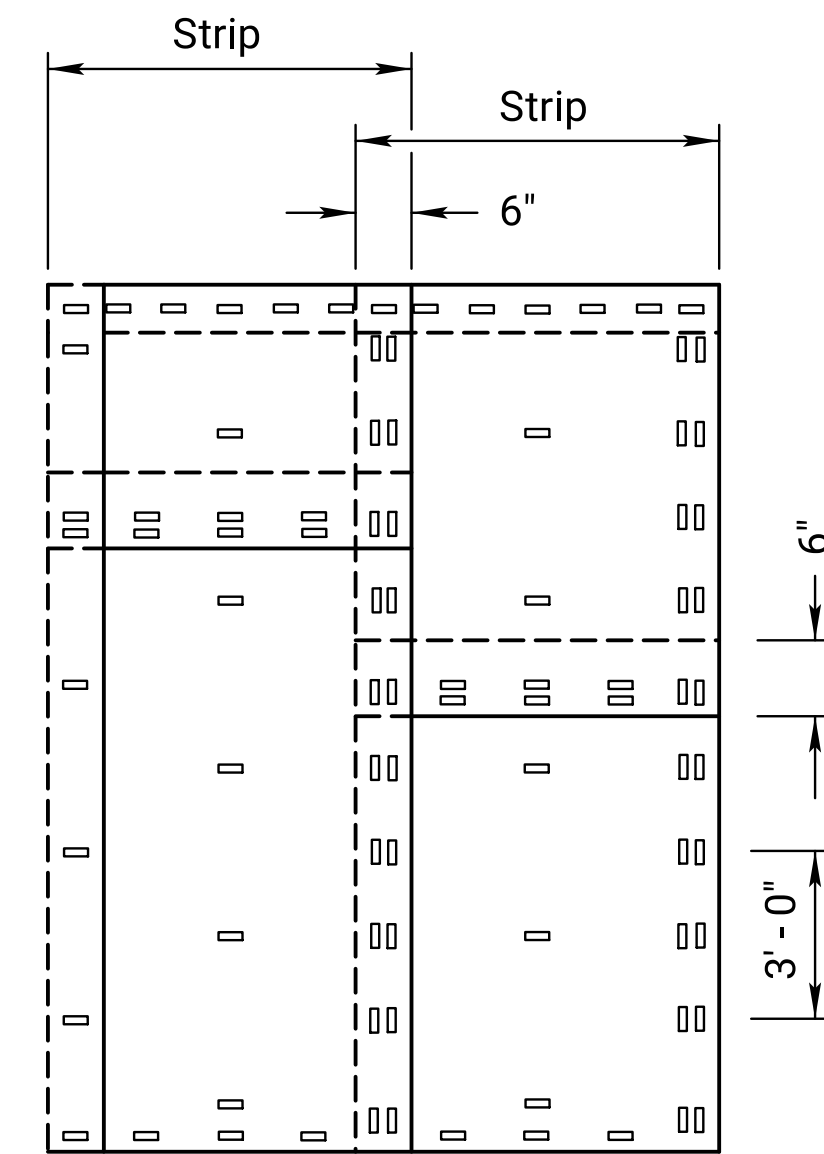
KANSAS DEPARTMENT OF TRANSPORTATION

**INSTALLATION DETAIL
EROSION CONTROL CLASS 1
SLOPE PROTECTION**

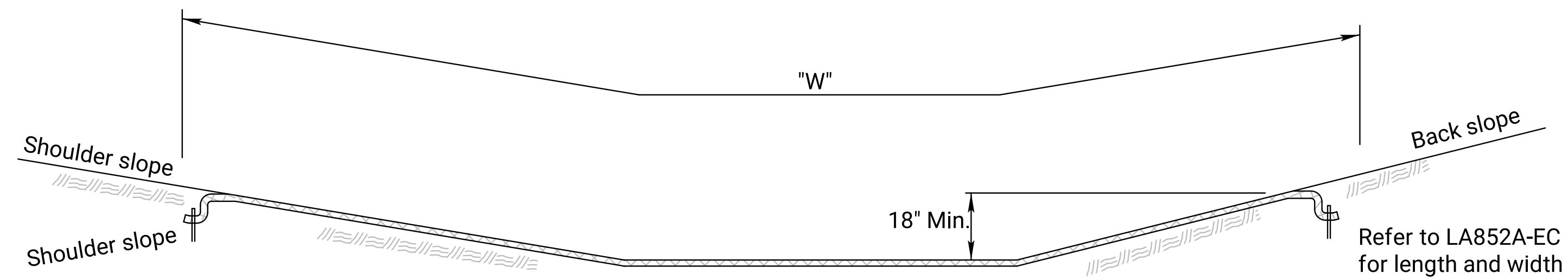
LA855

DESIGNED	R.A.A.	APPD.	Scott H. Shields
DETAIL CK.	DETAIL CK.	QUANTITIES	TRACE CK.
DESIGN CK.	DESIGN CK.	QUAN. CK.	TRACE CK.

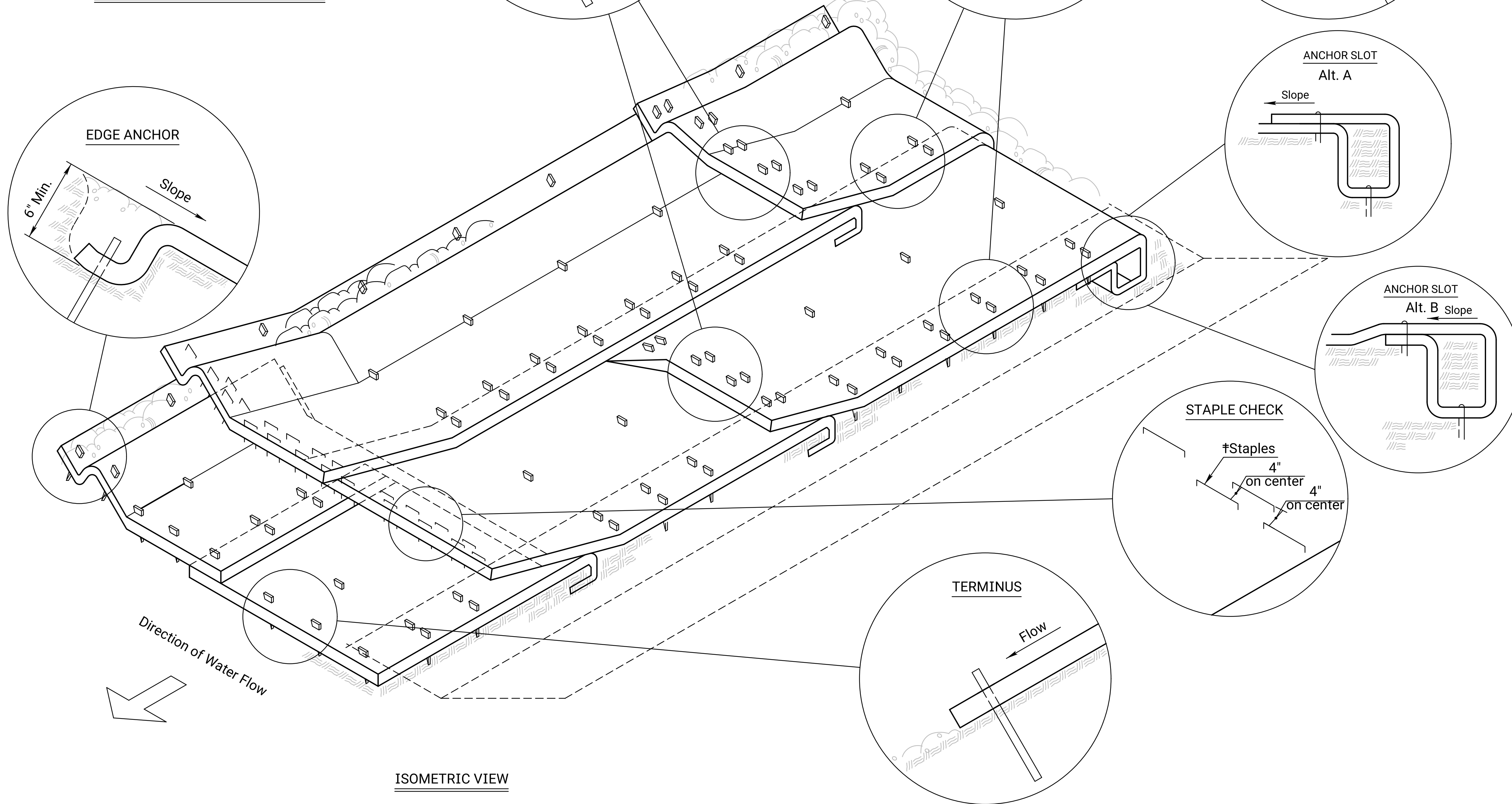
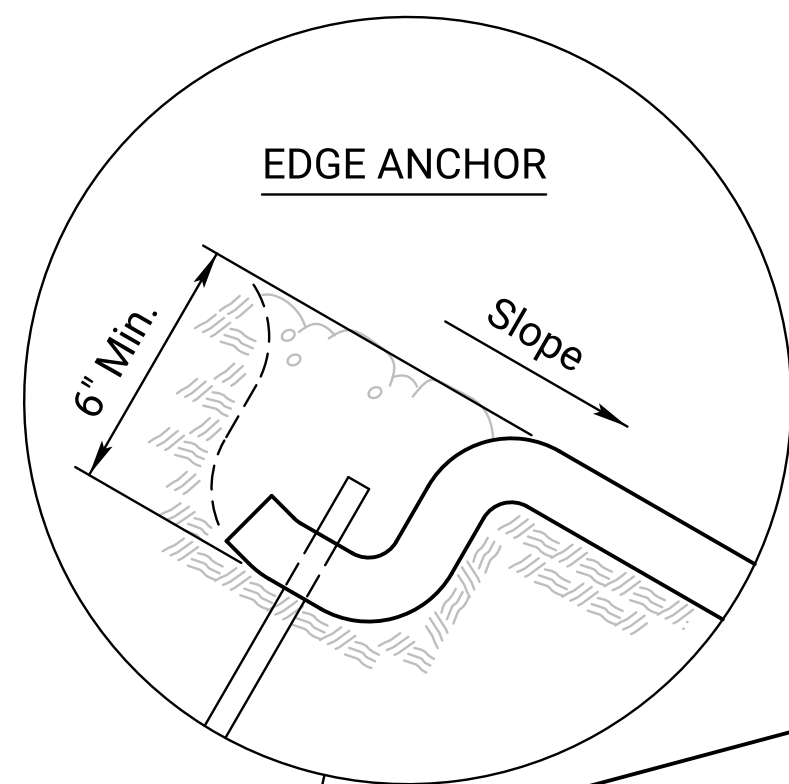
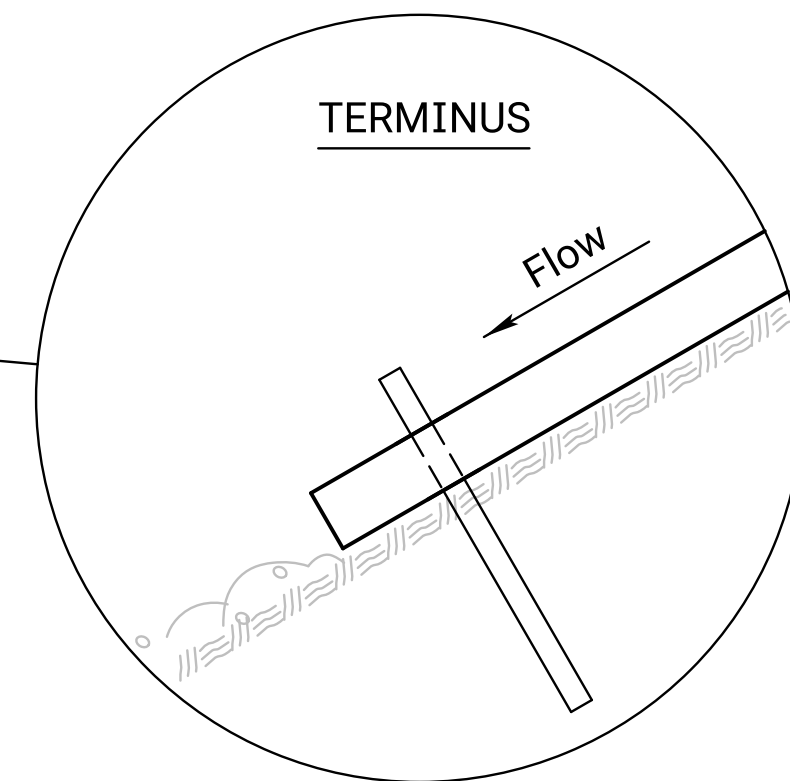
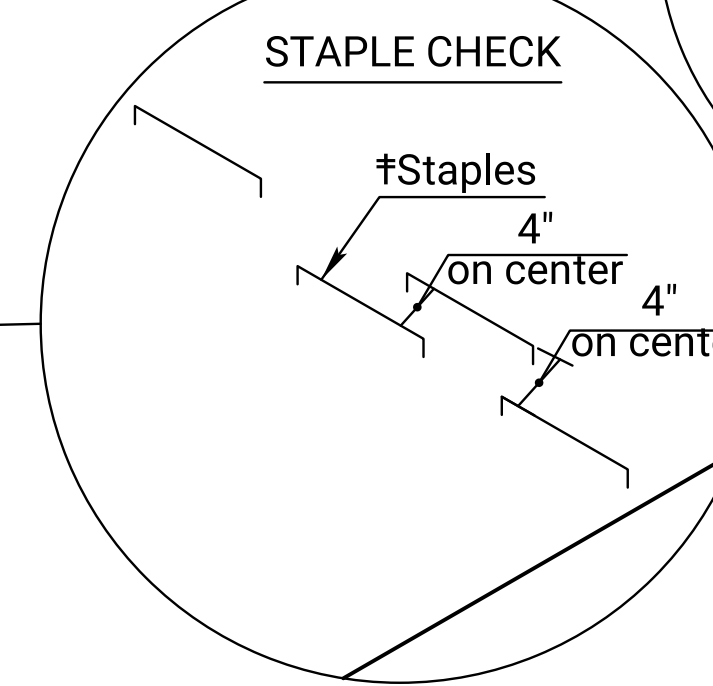
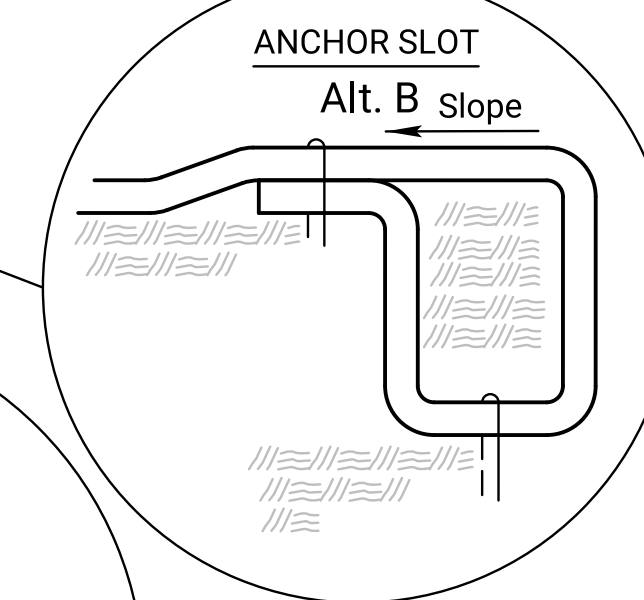
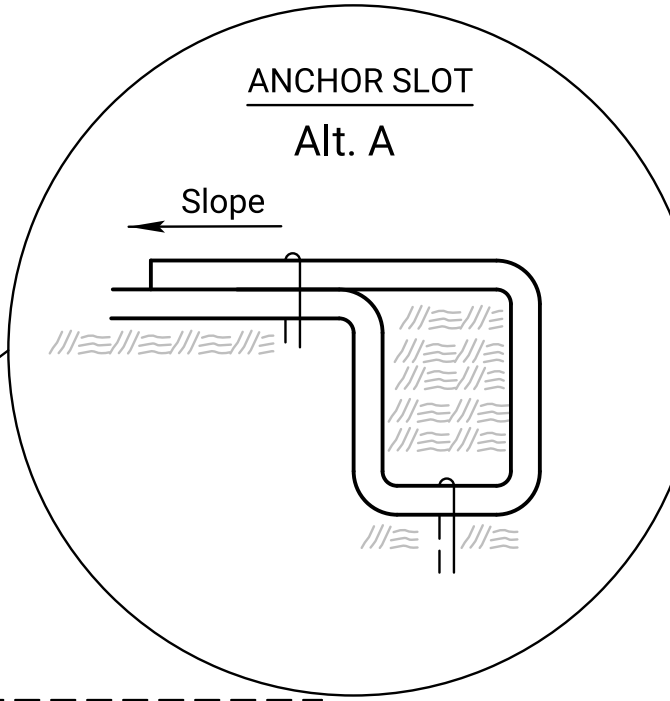
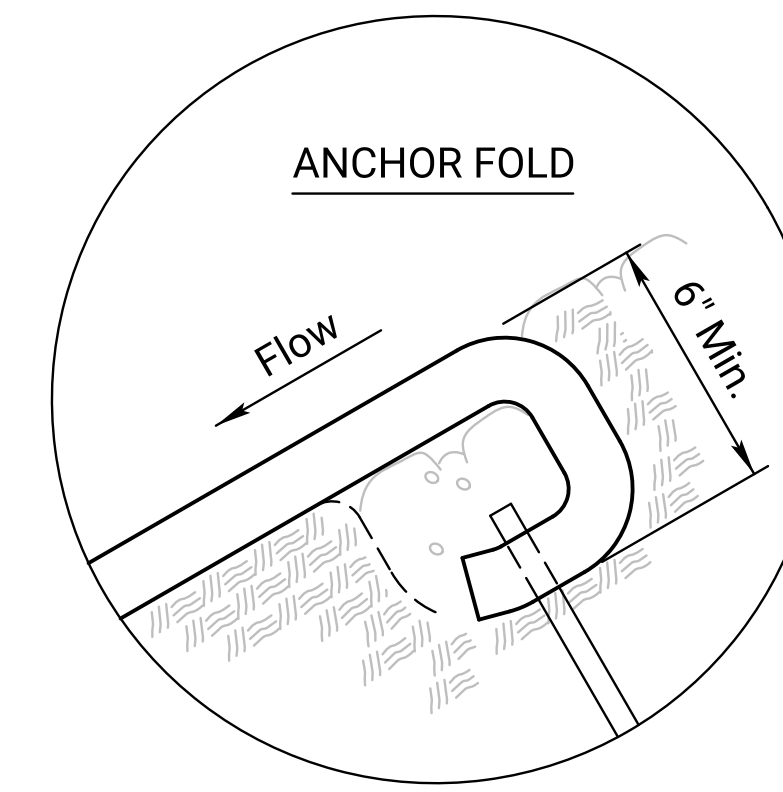
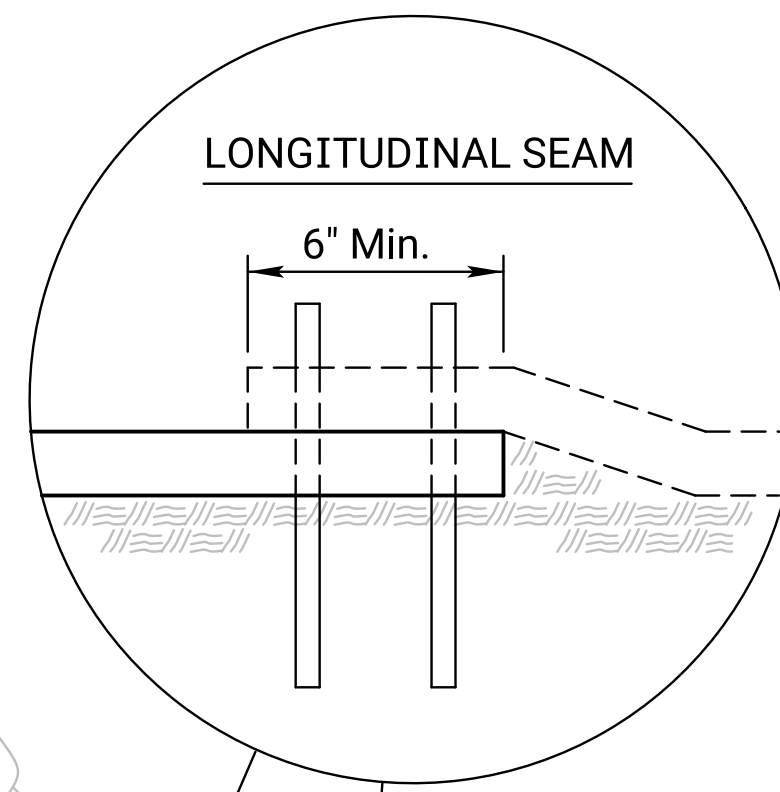
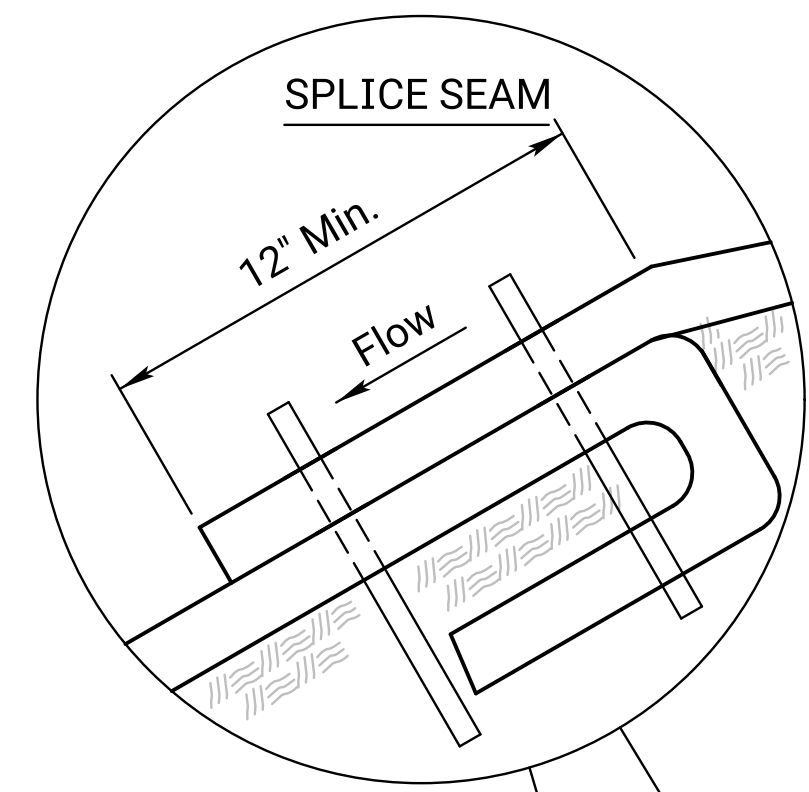
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS		0	0	



PLAN VIEW - ANCHORING DIAGRAM



CROSS SECTION (Ditch Lining)



ISOMETRIC VIEW

INSTALLATION DETAILS FOR EROSION CONTROL CLASS 2

Erosion Control Mats shall be laid loosely in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.

1. ANCHOR FOLD: The top of the mat should be folded under, buried and secured with approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot, 6 inches wide x 6 inches deep; anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.
2. LONGITUDINAL SEAMS: The adjacent edges of the mat should overlap a minimum of 6 inches, with anchors catching the edges of both mats.
3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.
4. STAPLE CHECK: *Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.
5. EDGE ANCHOR: Lay outside edge of mat into trench at top of side slope. Anchor at 3 foot intervals along trench.
6. TERMINUS: The bottom edge of the mat shall be anchored in place with anchors spaced at 9 inch intervals along the terminating edge.
7. TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.

Plotted by : KDOT#CADD.Support_Lks.gov 1-JUL-2022 00:22
File : la856.dgn

NO.	DATE	REVISIONS	BY	APPD
04	09-25-15	Modified Staple Check	R.A.A.	S.H.S.
03	09-15-14	Revised Standard	R.A.A.	S.H.S.
02	03-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

**INSTALLATION DETAIL
EROSION CONTROL CLASS 2
FLEXIBLE CHANNEL LINER**

LA856

DESIGNED	R.A.A.	DETAILD	R.A.A.	QUANTITIES	TRACED	R.A.A.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN. CK.	TRACE CK.	

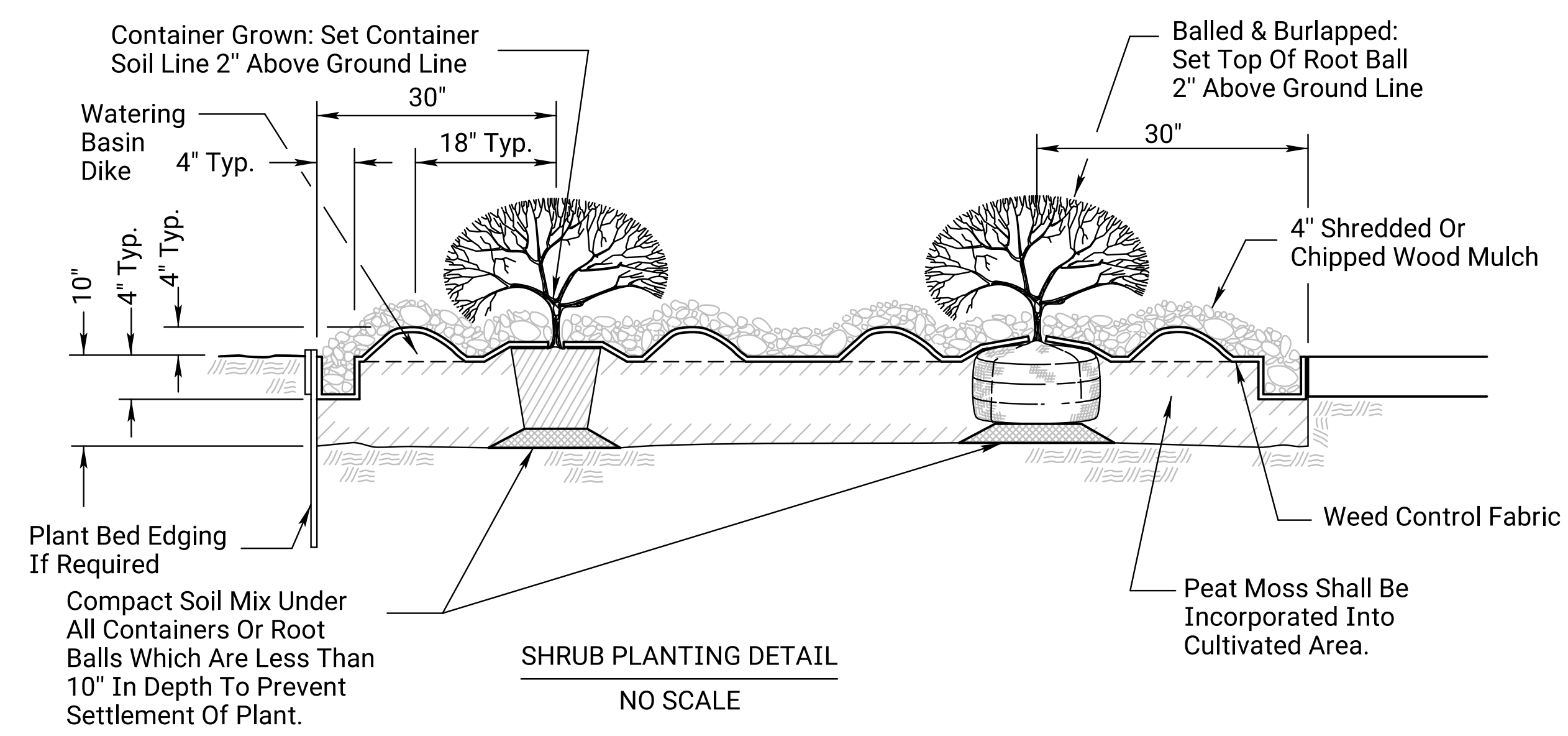
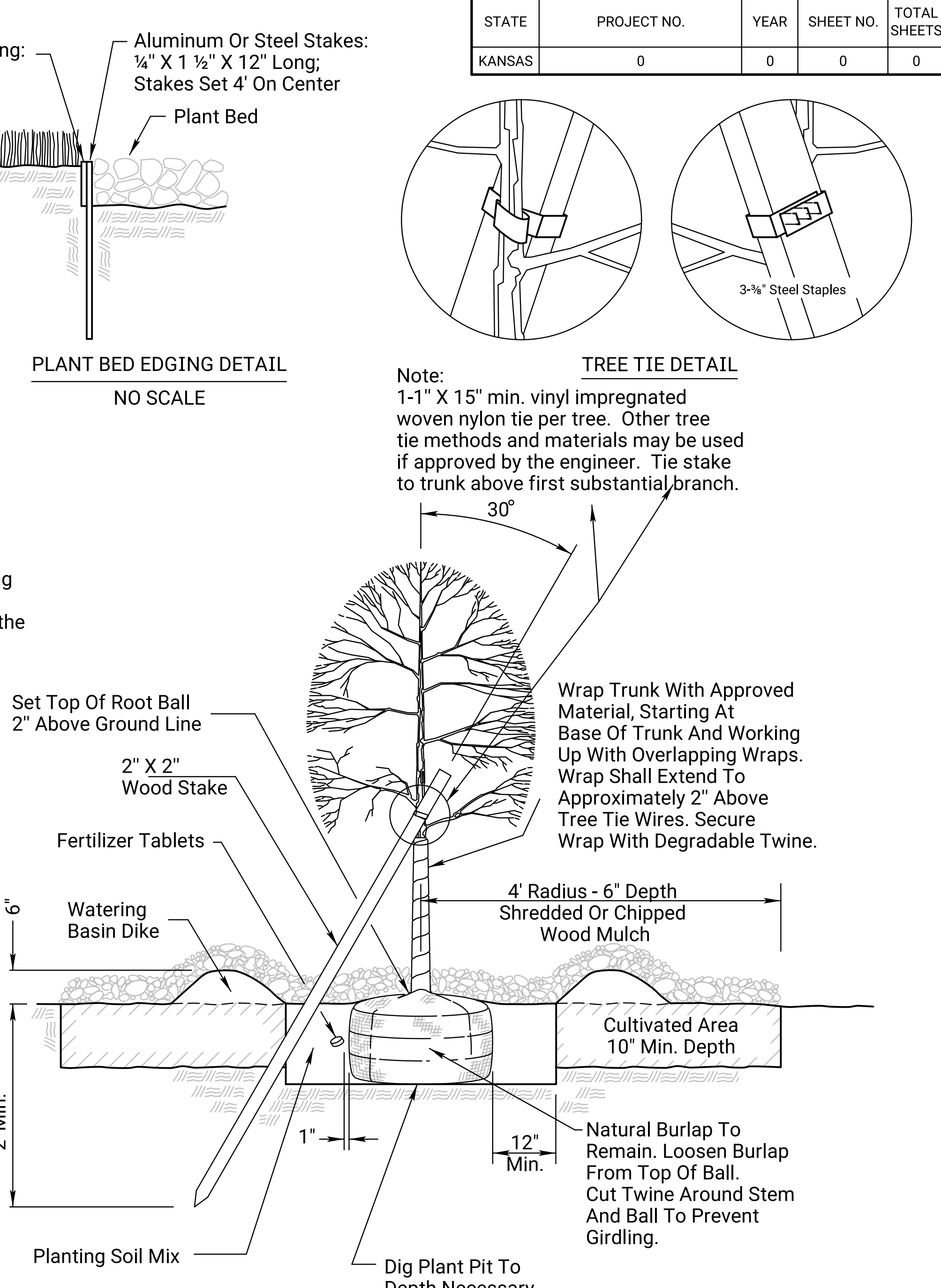
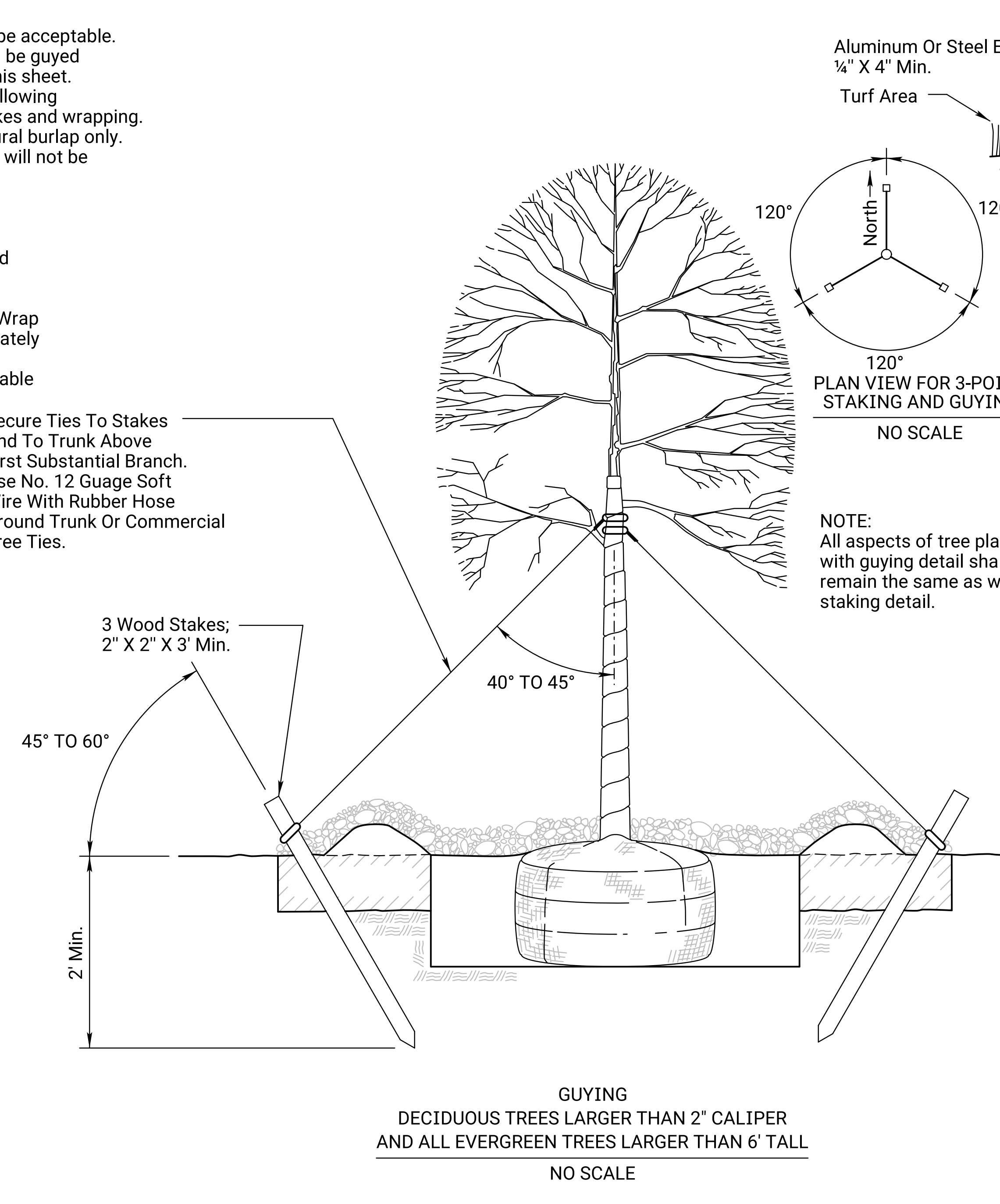
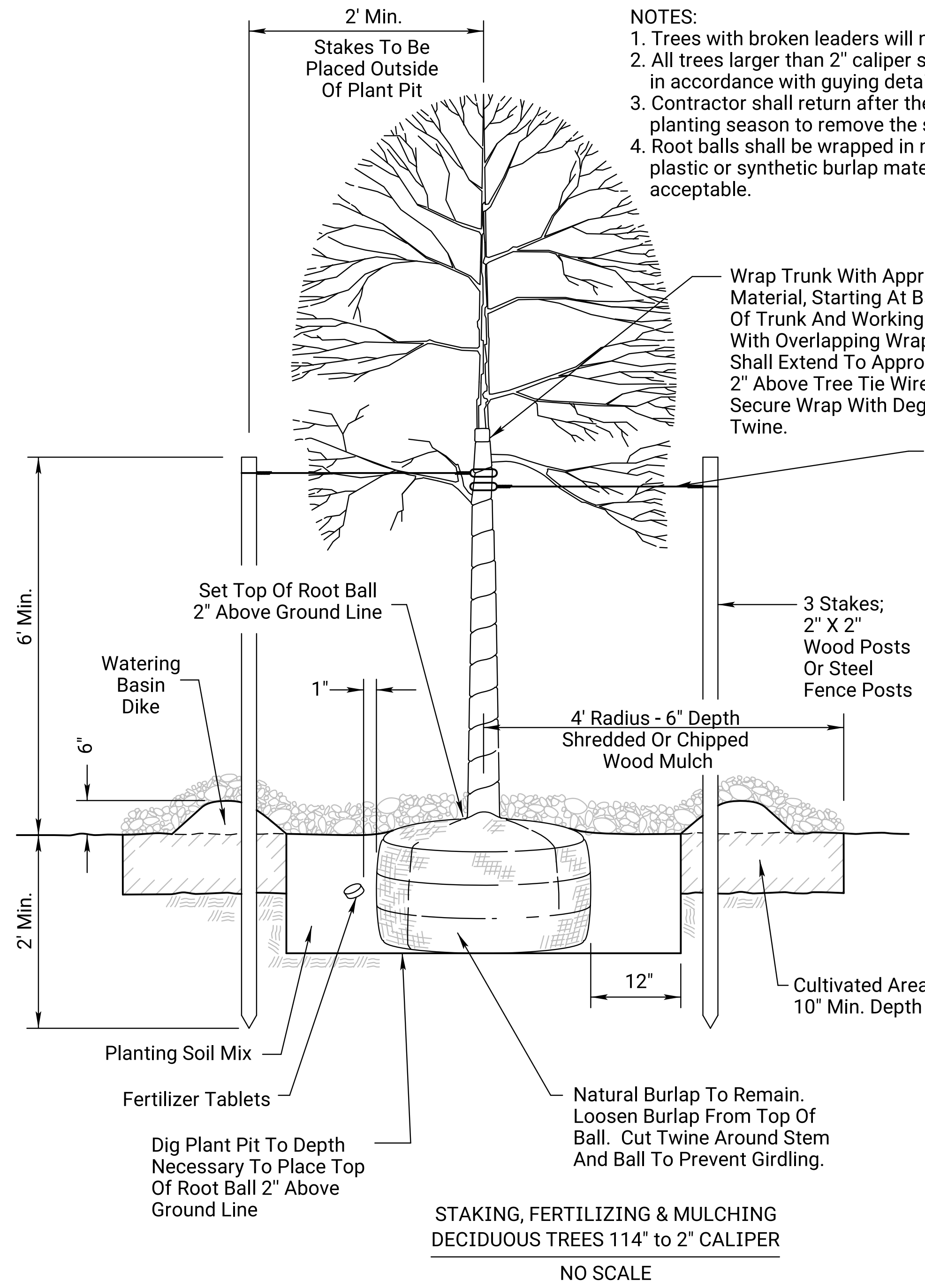
Scott H. Shields

KDOT Graphics Certified 06-20-2022 Sh. N84 0

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	0	0	0	0

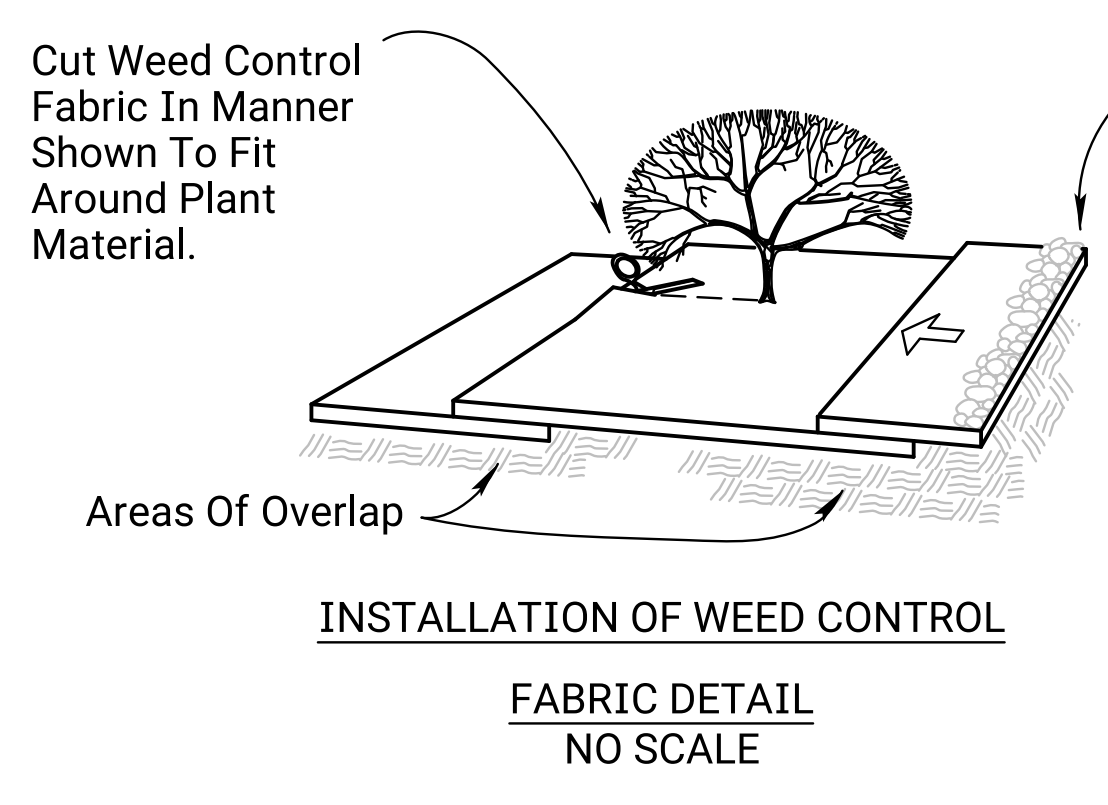
- NOTES:
1. Trees with broken leaders will not be acceptable.
 2. All trees larger than 2" caliper shall be guyed in accordance with guying detail, this sheet.
 3. Contractor shall return after the following planting season to remove the stakes and wrapping.
 4. Root balls shall be wrapped in natural burlap only, plastic or synthetic burlap material will not be acceptable.



PLANT SPACING CHART

SPACING "D"	ROW "A"	NUMBER OF PLANTS	AREA
6" O.C.	5.2"	4.61	1 SQ. FT.
12" O.C.	10.4"	1.15	1 SQ. FT.
18" O.C.	15.6"	5.12	10 SQ. FT.
24" O.C.	20.8"	2.91	10 SQ. FT.
30" O.C.	26.0"	1.65	10 SQ. FT.
36" O.C.	31.2"	1.28	10 SQ. FT.

Potted vines & ground cover plants shall be at least one year old and shall have been grown in pots long enough to insure sufficient root growth to hold soil in place and retain the original shape when removed from the pot. vines shall have a minimum of 4 runners, 12" long.



01	05-10-99	Revised Standard	W.C.L.	R.D.R.
NO.	DATE	REVISIONS	BY	APPD

KANSAS DEPARTMENT OF TRANSPORTATION

ROADSIDE IMPROVEMENT PLANTING DETAILS

LA860

DESIGNED	W.C.L.	05-20-99	APPD.	Richard D. Ross
DESIGN CK.	R.C.R.	DETAIL CK.	R.C.R.	QUAN. CK.
TRACED	W.C.L.	QUANTITIES	TRACED	W.C.L.
R.D.R.	R.D.R.	R.D.R.	R.D.R.	R.D.R.

KDOT Graphics Certified 06-20-2022 Sh. N8 0

Plotted by: Melissa Davidson@ks.gov 15-SEP-2022 20:37
File: LA860.dgn

KDOT Graphics Certified



NOTICE OF INTENT (NOI)

For Authorization to Discharge Stormwater Runoff from Construction Activities
 In accordance with the Kansas Water Pollution Control General Permit
 Under the National Pollutant Discharge Elimination System (NPDES)

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form requests authorization for coverage under the Kansas Water Pollution Control general permit, or KDHE issued successor permits, issued for stormwater runoff from construction activities in the State of Kansas. Becoming a permittee obligates the discharger to comply with the terms and conditions of the general permit. A complete request for Authorization for coverage under the general permit must be submitted or the request will not be processed. KDHE will notify owners or operators whose Notice of Intent (NOI) and supporting documentation for Authorization of stormwater runoff associated with construction activities are incomplete, deficient, or denied.

I. OWNER OR OPERATOR ADDRESS, BILLING, CONTACT & RECORDS LOCATION INFORMATION

Owner/Operator	KDOT Environmental Services Section	Mailing Address:	700 SW HARRISON ST ESOB - 14TH FLOOR, ENVIRONMENTAL SERVICES SECTION
Company Name:	KDOT- Kansas Department of Transportation	City, State Zip:	TOPEKA, KS 66603
Phone:		Email:	

Contact Name:		Mailing Address:	700 SW HARRISON ST ESOB-14TH FLOOR ENVIRONMENTAL SERVICE SECTION
Company Name:	KDOT	City, State Zip:	TOPEKA, KS 66603
Phone:		E-mail:	

PERMIT FEE BILLING INFORMATION

Billing Contact:		Billing Address:	700 SW HARRISON ST ESOB-14TH FLOOR ENVIRONMENTAL SERVICE SECTION TOPEKA, KS 66603
Phone:		E-mail:	

II. SITE INFORMATION

Project Name:	10-23 3634-03
Street Address:	US-40: Junction K-10/US-40 thence Southeast to Junction K-10/US-59/US-40/Iowa Street. K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to Junction K-10/US-40 US-40: Junction K-10/US-40 thence Southeast to Junction K-10/US-59/US-40/Iowa Street. K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to Junction K-10/US-40 Lawrence, KS 66044
County:	Douglas

Decimal Degrees Latitude: 38.935359 **Decimal Degrees Longitude:** -95.306661

Submission Received: 1/24/2024	Submission Number: HQ0-R6TK-KFBET	AUTHORIZED:			
		YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Reviewer:	<i>Larry O. Hook</i>	Is Authorization Conditional			
		YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Larry Hook		Are there any Considerations			
		YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Authorized By:	<i>Janet Stanek</i>	KS Permit No.: S-KS31-0549			
Secretary, Kansas Department of Health and Environment		Federal Permit No.: KSR122106			
Issued: February 22, 2024					

B. Existing Conditions/Uses

- 1) Is any part of the project located on Indian Country Land? **No**
- 2) If stormwater runoff drains to or through a Municipal Separate Storm sewer System (MS4): MS4 Name:
- 3) Name of the first receiving water, stream, or lake **Wakarusa River , River Basin LR - LOWER REPUBLICAN**
- 4) Are contaminated soils present on the site or is there groundwater contamination located within the site boundary? **No**
- 5) Are there any contaminated soils that will be disturbed or any contaminated groundwater that will be pumped by the proposed construction activity? **No**
- 6) Are there any surface water intakes for public drinking water supplies located within ½ mile of the site discharge points? **No**
- 7) Are there any known historical or archeological sites present within the site boundary or any historic structures located within 1000 feet of the project site? **No**
Note: Include documentation of project-specific coordination with the Kansas Historical Society in making this determination
- 8) Is any threatened or endangered species habitat located within the site boundary or in the receiving water body? **Yes**
Note: Include documentation of project-specific coordination with the Kansas Department of Wildlife, Parks & Tourism in making this determination.
- 9) Will the project impact the line or grade of a stream or does it include dredge or fill of a potential jurisdictional water body or wetlands? **Yes**
Include documentation of project-specific coordination with the US Army Corps of Engineers and/or the Kansas Department of Agriculture, Division of Water Resources in making this determination.
- 10) Are any Critical Water Quality Management Areas, Special Aquatic Life Use Waters, or Outstanding National Resource Waters located within ½ mile of the facility boundary? **No**

C. Project Description

- 1) Project Description:
US-40: Junction K-10/US-40 thence southeast to junction K-10/US-59/US-40/Iowa Street. K-10: 1.214 miles South of Junction I-70/KTA/K-10 thence South to junction K-10/US-40.

Does this NOI include all proposed soil disturbing activities associated with the entire common plan of development? **Yes**

- 2) Anticipated project Start Date: **June 19, 2024** and Completion Date: **December 1, 2027**
- 3) Estimated total area to be disturbed: **372.00** Acres
- 4) Total area of the site: **428.00** Acres
- 5) Do you plan to disturb ten or more acres that are within a common drainage area? **Yes**

Will a sedimentation basin be installed in that drainage area? **Yes**

(Attach design calculations for each sedimentation basin.) If a sediment basin is not feasible, on a separate sheet describe similarly effective erosion and sediment control measures to be implemented in lieu of a sedimentation basin.

D. Maps

Include an area map showing the outline of the construction site and the topographic features of the area at least one mile beyond the project site.

E. Erosion Control Plan and Best Management Practices

- 1) Provide a summary of the sequence of major soil disturbing activities including installation of the corresponding stormwater management and pollution control features.
See attachment
- 2) Provide one or more site plans covering the anticipated soil disturbing activities showing the limits of disturbance, the existing and proposed elevation contours, the types and locations of erosion/sediment control measures and stormwater management/pollution control features during each phase of construction and the locations where stormwater runoff leaves the construction site.
- 3) Provide a description of the best management practices to be utilized to control erosion and the discharge of sediment and other pollutants in stormwater runoff throughout construction and the design calculations for each sediment basin including total drainage area and storage capacity below the elevation of the mass volume flow outlet device.
See attachment
- 4) Provide the name and License or Certification Number of the engineer, geologist, architect, landscape architect, or Certified Professional in Erosion and Sediment Control (CPESC) under which the construction stormwater pollution prevention plan has been developed.

Kansas Department of Transportation	KDOT- State Transportation Engineer	KDOT- State Transportation Engineer
Name	License or Certification Number	Profession or Field

III. ANNUAL FEES

The first year of the annual permit fee specified in K.A.R 28-16-56 et seq. as amended is currently \$60.00 and can be paid through the KEIMS system at time of submittal. The fee must be paid before this NOI will be processed. An invoice for the annual permit fee will be sent to the contact person requesting a permit until such time as the permittee submits a Notice of Termination (NOT).

Failure to pay the annual fee timely may result in termination of the construction stormwater discharge Authorization.

IV. OWNER OR OPERATOR CERTIFICATIONS

I, the undersigned, certify that a Stormwater Pollution Prevention Plan (SWP2 Plan) will be or has been developed for the construction site described in this NOI and supporting documentation. I further certify that the plan will be implemented at the time construction begins, and, as required by the NPDES general permit for Stormwater Runoff from Construction Activity, will revise the SWP2 plan if necessary.

I understand that continued coverage under the NPDES general permit for Stormwater Runoff from Construction Activities is contingent upon maintaining eligibility as provided for in the requirements and conditions of the general permit, and paying the annual fee.

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, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

KDOT Environmental Services Section
Signature (owner or operator)

1/24/2024 11:15:37 AM
Date

Official Title

V. CONDITIONS AND/OR CONSIDERATIONS OF APPROVAL

Conditions of Authorization - For Official Use Only:

When indicated, Conditions of Authorization are as follows:

Authorization for this project, based on KDOT oversight of the preparation of the Stormwater Pollution Prevention Plan, is conditioned on KDHE receiving the following documents prior to the start of any soil disturbing activities:

- 1) A copy of the “Approval of Contractor’s Stormwater Pollution Prevention Schedule” form signed by the Area Engineer,
- 2) The completed “Contractor’s Stormwater Pollution Prevention Schedule Checklist”, and
- 3) A copy of the Area Engineer approved erosion and sedimentation control plan.

This condition is considered fulfilled upon receipt by KDHE of the specified documents and approved erosion and sedimentation control plan.

Notes on Consideration – For Official Use Only:

NONE



NOTICE OF TERMINATION

To Relinquish the Authorization to Discharge Stormwater Runoff from Construction Activities at the Construction Site Described Herein

Submission of this Notice of Termination (NOT) constitutes notice that the party identified below relinquishes authorization for coverage under the Kansas Stormwater Runoff from Construction Activities general permit, or KDHE authorized successor permits, issued for discharge of stormwater runoff for the construction activity at the site named herein. Completion of this NOT does not automatically relieve the former permittee of any civil, criminal and/or administrative penalties.

To be considered complete, the NOT must be signed by the current permittee or a duly authorized representative of the current permittee, and must include the permit number assigned to the construction activity. KDHE will notify any permittee whose NOT is incomplete or deficient.

Please Print or Type:

Name of Project: _____

City: _____ County: _____ State: KS

Kansas Permit No. _____ Federal Permit No. _____

Company Name: _____ Phone: _____

This Notice of Termination is being submitted because: (check one)

- checkbox The construction project or larger common plan of development is finished and final site stabilization has been completed (pavement, buildings, structures, or perennial vegetation having a density of at least 70% of undisturbed areas at the site cover all areas which have been disturbed - See Part 9 of the NPDES general permit S-MCST-1703-1).
checkbox This project is a house development subdivision project that has had a construction stormwater discharge Authorization for at least 3 years, the vacant lots are all stabilized, and the rate of home construction within the development disturbs less than one (1.0) acre (approximately 5 lots) per year or less than one (1.0) acre of land (approximately 5 lots) remain available for development (see Part 9 of the NPDES general permit S-MCST-1703-1).
checkbox The construction project or larger common plan of development is not finished; however, duplicate authorization for permit coverage* under NPDES general permit S-MCST-1703-1 or KDHE authorized successor permits has been issued and is in effect for all remaining construction activities and all areas disturbed by previous construction activities that have not obtained final stabilization.

* The duplicate Kansas Permit Number is: _____

- checkbox The project was cancelled prior to initiating construction activities. The project construction will not be actively pursued under the current authorization for coverage. It is understood that should the project be revived in the future, a new complete application packet with first year annual permit fee will need to be submitted.

I certify under penalty of law that all soil disturbances associated with the construction activity at the construction site named herein meet one of the four criteria indicated above in accordance with Part 9 of the NPDES general permit S-MCST-1703-1. I understand that by submitting this Notice of Termination, I am no longer authorized under the NPDES general permit S-MCST-1703-1 to discharge stormwater associated with construction activity at this construction site. I understand that discharging pollutants in stormwater associated with construction activity to waters of the State is unlawful under K.S.A. 65-164 and 65-165 and the Clean Water Act without authorization by a valid Kansas Water Pollution Control Permit. I understand that by submitting this Notice of Termination, I am not released from liability for any violations of the NPDES general permit S-MCST-1703-1, K.S.A. 65-164 and 65-165, the Kansas Surface Water Quality Standards (K.A.R. 28-16-28 et seq.), or the Clean Water Act. I also hereby certify that I am authorized to sign this Notice of Termination as a representative of the permittee named herein.

Signature: _____ Date: _____

Name and Official Title: _____
(Please print or type)

Submit the NOT with original signature to:

Kansas Department of Health and Environment
Bureau of Water, Industrial Programs Section
1000 SW Jackson, Suite 420
Topeka, KS 66612 - 1367

Instructions for Form 0219

This form must be completed, signed by the KDOT Area or Metro Engineer responsible for the project and submitted to the District office before any physical work begins on the project. For projects that do not require a SWPPP, this form does not require the signature of the Area or Metro Engineer and may be signed by a Construction Manager/Engineer or FEA for submittal to the District office.

Complete the header information with the KDOT Project and Contract #, the County or Counties where the project is located and the erosion control specification (e.g. 07-PS0360-R3) in the contract.

The KDHE Permit # is obtained from the NPDES permit issued for the project. Make one selection based on the disturbed area of the project being greater than 1 acre, less than one acre or the project disturbs no erodible surface. This information can be obtained from the contract bid items or referring to Standard Sheet LA852A. If the project disturbs one acre or more, requiring a Storm Water Prevention Plan from the Contractor, also check the box that a copy of the form and the Contractor's SWPPP with site map has been mailed to the KDHE. The address is provided at the bottom of this form. This mailing must be completed to meet the requirements established by the KDHE.

For projects with the bid item "SWPPP Design" the signature of the Area Engineer on this form is the basis for payment.

Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

Project #: _____

Permit #: _____

Area / Metro Engineer: _____

Water Pollution Control Manager: _____

Date of Last Significant Rain Event: _____

Date of Last Inspection: _____

Inspection Type: _____

Inspection Date: _____

(optional) Report # _____

CONTENTS

FORM ID #	DESCRIPTION	REQUIRED?
247A	General Issues / Housekeeping	YES
247B	Disturbed Areas / Site Erosion	YES
247C	Sediment Control and Other Structural BMPs	YES

FORM ID #	DESCRIPTION	REQUIRED?
247D	Rainfall Log	YES
247E	BMP Deficiencies	YES

INSPECTOR CERTIFICATION STATEMENT

" I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 known violations."

TITLE	PRINT NAME	CERT ID #	EXP. DATE	SIGNATURE	DATE
KDOT INSP.					
CONT. INSP.					
AREA ENG					
WPCM*					

*WPCM Signature acknowledges awareness of all deficiencies noted. All documented deficiencies are required to be remedied within 7 days of this inspection unless determined to be infeasible by the Stormwater Compliance Engineer. Failure to do so will result in the assessment of stormwater compliance disincentive.

Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE:
PROJECT NUMBER:

REPORT #

General Issues / Housekeeping

Carefully review all questions on this form. This is an overview of the project housekeeping and documentation.

	BMP/Activity	Yes / No / NA	Observations / Remarks	Deficiency (Yes / No)
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	Yes / No / NA		
2	Are natural resource areas (e.g. streams, wetlands, mature trees) protected with barriers or other BMPs?	Yes / No / NA		
3	Are perimeter controls and barriers adequately installed (keyed into substrate) and maintained?	Yes / No / NA		
4	Are discharge points and receiving waters free of sediment deposits?	Yes / No / NA		
5	Are storm drain inlets properly protected?	Yes / No / NA		
6	Are construction exits preventing sediment from being tracked into the roadway?	Yes / No / NA		
7	Is trash/litter from work areas collected and placed in covered dumpsters?	Yes / No / NA		
8	Are portable toilets available for sanitary waste?	Yes / No / NA		
9	Are washout facilities (e.g. paint, concrete) available, clearly marked, and maintained?	Yes / No / NA		
10	Are equipment fueling, cleaning and maintenance areas free of spills, leaks or other contaminants?	Yes / No / NA		
11	Are materials that are potential stormwater contaminants stored inside or under cover?	Yes / No / NA		
12	Are non-stormwater discharges (e.g. wash water, dewatering) properly controlled?	Yes / No / NA		
13	Are temporary sediment basins (if required) properly constructed and maintained?	Yes / No / NA		
14	Are soil stockpiles protected with perimeter barriers and appropriately stabilized?	Yes / No / NA		

Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE:
PROJECT NUMBER:

REPORT #

General Issues / Housekeeping

Carefully review all questions on this form. This is an overview of the project housekeeping and documentation.

	BMP/Activity	Yes / No / NA	Observations / Remarks	Deficiency (Yes / No)
15	Are SWPPP Site Maps complete and up to date?	Yes / No / NA		
16	Are there any outstanding deficiencies from previous inspections?	Yes / No / NA		
17	Other remarks / observations			

Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE:
PROJECT NUMBER:

REPORT #
PREVIOUS INSPECTION DATE:

Rainfall Log

Use this form to record rainfall observations beginning with the date of the previous inspection.

Observe and record rainfall totals on each business day at a minimum. Rainfall occurring on non-business days may be collected and measured on the subsequent business day.

A SWPPP inspection is required whenever a rainfall total of 0.5 inches or greater is recorded for a single observation.

A SWPPP inspection is required whenever a rainfall total of 0.5 inches or greater is recorded over two consecutive observations if the first is less than 0.5 inches.

Date	Observed Rainfall Amount	Inspection Required?	Remarks		Date	Observed Rainfall Amount	Inspection Required?	Remarks

Kansas Department of Transportation Storm Water Pollution Prevention Plan Inspection and Maintenance Report

INSPECTION DATE:
PROJECT NUMBER:

REPORT #

BMP Deficiencies

Document all deficiencies in maintenance, operation, effectiveness, adequacy or coverage extent of all BMPs installed or required to be installed. Include any required maintenance, corrective action, documentation updates or other items requiring action to maintain permit compliance.

Location	Date First Identified	Remedy Required	Date Action Completed	Elapsed Days	Inspector

Kansas Department of Transportation Stormwater Disincentive Assessment Recap

Project Number: _____
Contract Number: _____
Special Provision: _____
Contractor: _____

Date: _____
Total Disincentive: \$8,500.00

Inspection Report Date	Deficiency Completed Date	Days in Deficiency	Missed Inspection Report	Violation Description	Total Violations	Disincentive/ Violation	Disincentive Amount
10/22/2020	11/2/2020	4			4	\$250.00	\$1,000.00
10/24/2020	11/30/2020	30			30	\$250.00	\$7,500.00

Title	Signature	Date

Kansas Department of Transportation

Checklist for Contractor's Stormwater Pollution Prevention Plan (SWPPP)

Project Number: _____

County: _____

Contractor: _____

Special Provision #: _____

Area Engineer: _____

Review Date: _____

General			
	Yes	No	Comments
Project and site description, including receiving waters and general soil types?	<input type="checkbox"/>	<input type="checkbox"/>	
General project schedule or sequence of operations?	<input type="checkbox"/>	<input type="checkbox"/>	
Contact information including email address for Contractor's WPCM?	<input type="checkbox"/>	<input type="checkbox"/>	
Contact information for subcontractors?	<input type="checkbox"/>	<input type="checkbox"/>	
Erosion Control BMPs			
	Yes	No	Comments
Disturbed area limited to 750,000 square feet per equipment spread?	<input type="checkbox"/>	<input type="checkbox"/>	
Disturbed areas to be finish graded and stabilized before exposing additional area?	<input type="checkbox"/>	<input type="checkbox"/>	
Drainage structures and permanent erosion control features scheduled for construction as soon as practical?	<input type="checkbox"/>	<input type="checkbox"/>	
Stabilization with mulch or other similarly effective BMPs to be initiated immediately after activities have permanently ceased on portions of the site?	<input type="checkbox"/>	<input type="checkbox"/>	
Stabilization with mulch or other similarly effective BMPs to be initiated immediately after activities have temporarily ceased on portions of the site and will not resume for 14 days (7 days for steep slope areas)?	<input type="checkbox"/>	<input type="checkbox"/>	
Geotextiles, erosion control mats or other appropriate BMPs included for stabilization of steep slope areas?	<input type="checkbox"/>	<input type="checkbox"/>	
Appropriate BMPs included to minimize erosion and discharge from soil stockpiles?	<input type="checkbox"/>	<input type="checkbox"/>	
BMPs to reduce erosion of concentrated stormwater flows by velocity dissipation (e.g. ditch checks) and channel liners (e.g. geotextiles, erosion control blankets)?	<input type="checkbox"/>	<input type="checkbox"/>	
Sediment Control BMPs			
	Yes	No	Comments
Appropriate sediment control BMPs (silt fences, wattles, rock checks, etc.) included as perimeter controls for potential discharge locations?	<input type="checkbox"/>	<input type="checkbox"/>	
Perimeter controls to be installed prior to beginning soil disturbing activities?	<input type="checkbox"/>	<input type="checkbox"/>	
Additional BMPs used as necessary within the site to limit stormwater volume/velocity and to minimize sediment transport?	<input type="checkbox"/>	<input type="checkbox"/>	

Kansas Department of Transportation

Checklist for Contractor's Stormwater Pollution Prevention Plan (SWPPP)

	Yes	No	Comments
Storm drain inlets to be protected with suitable BMPs?	<input type="checkbox"/>	<input type="checkbox"/>	
Sedimentation basins required?	<input type="checkbox"/>	<input type="checkbox"/>	
Sedimentation basins included?	<input type="checkbox"/>	<input type="checkbox"/>	
If included, do the sedimentation basins meet the permit requirements for capacity and for surface withdrawal of impounded water?	<input type="checkbox"/>	<input type="checkbox"/>	
If included, are the sedimentation basins to be constructed prior to or concurrently with construction activity in the basin's drainage area?	<input type="checkbox"/>	<input type="checkbox"/>	
Site Management BMPs			
	Yes	No	Comments
Construction entrances/exits identified? Are practices included to minimize off-site tracking of sediment? Are practices included for daily clean-up of any tracked sediment?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices for management of trash and construction waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Portable toilets for the management of sanitary waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices to address washout of concrete mixers/equipment and concrete waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Practices for proper storage of construction materials, fuels, lubricants or other potential contaminants?	<input type="checkbox"/>	<input type="checkbox"/>	
Attachments			
	Yes	No	Comments
Proof of WPCM having completed CSW certification?	<input type="checkbox"/>	<input type="checkbox"/>	
Proof of Contractor's Environmental Inspector(s) having completed CSW certification?	<input type="checkbox"/>	<input type="checkbox"/>	
Form 246 completed and signed by Contractor and all subcontractors?	<input type="checkbox"/>	<input type="checkbox"/>	
Request for Joint Owner/Operator form (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>	
Relevant special provisions?	<input type="checkbox"/>	<input type="checkbox"/>	

General Observations / Comments

Water Pollution Control Manager Weekly Report

Date: _____

Project#: _____

WPCM: _____

WPCM Report #: _____

What updates were made to the SWPPP and site map this week?

What BMP repairs need to be made this week?

Which open areas have changed since last report? Are they still active? If not, are they documented as inactive on the 247?

Based on the project schedule, what BMPs need installed/modified and what open areas need identified for the coming week?

What is the status of any temporary stream crossings on the project?

What de-watering practices are currently being used on the project?

What is the status of temporary/permanent vegetation in stabilized areas?

Additional Comments:

WPCM signature: _____



REQUEST FOR JOINT OWNER/OPERATOR

For Authorization to Discharge Stormwater Runoff from Construction Activity
In accordance with Kansas Water Pollution Control General Permit No. S-MCST-1703-1
Under the National Pollutant Discharge Elimination System

Use this form only when stormwater discharge and control responsibility for the entire permitted area will be jointly held by adding an owner/operator to an existing Kansas Department of Transportation (KDOT) authorized permit.

Submission of this RJOO to KDHE does not relinquish the KDOT's authorization to discharge stormwater runoff from construction activity at the site described herein.

TO BE COMPLETED BY THE ADDED OWNER/OPERATOR:
I hereby confirm that the Added Owner/Operator identified below shares joint stormwater discharge and operational control responsibility with KDOT and accepts being added to the below identified authorization under the Kansas Stormwater Runoff from Construction Activities General Permit.
The ADDED OWNER/OPERATOR is:
Owner or Operator's Name: Contact Name:
Company Name: Company Name:
Owner or Operator's Phone: Contact Phone:
Mailing Address: Mailing Address:
City: State: Zip Code: City: State: Zip Code:
I certify that I have personally examined and am familiar with the information described herein.
Added Owner/Operator's Signature: Date:
Name (typed or printed): Title:
TO BE COMPLETED BY KDOT
As original Owner/Operator for the authorized project indicated below, I hereby certify the above Added Owner/Operator meets the General Permit definition of Owner/Operator and agree to the shared responsibilities with the Added Owner/Operator under the General Permit and continuance of my responsibilities thereunder.
Name of Project:
Address: City: County: State: KS Zip Code:
Kansas Permit No. Federal Permit No.
Permittee Signature: Date:
Permittee Name: Title: Phone Number:

Submit the RJOO with original signatures to:
Kansas Department of Health and Environment
Bureau of Water, Industrial Programs Section
1000 SW Jackson, Suite 420
Topeka, KS 66612 - 1367

Authorized: Y; N
Reviewer Date

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION CONTROL MANUAL

GENERAL INFORMATION

Version	Version Date	Notes
1	9/12/2023	

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BMPs	best management practices
Drainage Design Manual	Design manual Volume I (Part C) Bureau of Road Design, Elements of Drainage and Culvert Design
EPA	Environmental Protection Agency
General Permit	KDHE General Permit No. S-MCST-2208-1
HECPs	Hydraulic Erosion Control Products
KART	KDOTs Authentication and Resource Tracking
KDHE	Kansas Department of Health and Environment
KDOT	Kansas Department of Transportation
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
Standard Specifications	Standard Specifications for State Road & Bridge Construction – 2015
SWP2	Stormwater Pollution Prevention Plan
TSD	Triangular Silt Dike

NPDES PERMITS

In an effort to limit the pollution of the nation's streams, rivers, and lakes, the Environmental Protection Agency (EPA), directed by Congress, enacted Section 402 of the Clean Water Act. Section 402 established the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants from point sources. The EPA requires a NPDES Permit for stormwater discharges from construction activities that disturb one (1) or more acres of land or from smaller sites that are part of a larger, common plan of development or sale which will disturb a cumulative total of one (1) or more acres. For the purposes of the NPDES program, construction activities are defined as clearing, grubbing, grading, and excavation.

In the State of Kansas, the NPDES program has been delegated to the Kansas Department of Health and Environment (KDHE). Construction projects that will disturb one (1) or more acres of land are issued a certificate of coverage under KDHE General Permit No. S-MCST-2208-1 (General Permit), which authorizes the discharge of stormwater associated with construction activities into State waters. KDHE administers two types of NPDES Permits: general and individual. To apply for a general permit, a site owner (in this case, the Kansas Department of Transportation (KDOT)) must file a Notice of Intent (NOI). The NOI application requires basic information about the site's location, existing condition, future use, and stormwater pollution control measures. The general permit will apply to most projects. An individual permit is only required when certain pre-existing site conditions are encountered. These conditions concern proximity to one or more of the following: Indian Lands, contaminated soils, drinking water intakes, historical or archeological sites, and threatened or endangered species. Sites within one-half mile of a Critical Water Quality Management Area, Special Aquatic Life Use Waters, or an Outstanding Water Quality Management Area are also included. If any one of these site conditions is met, KDHE will investigate potential impacts and determine whether coverage under an individual permit is needed.

The core of the stormwater permit process is the Stormwater Pollution Prevention Plan (SWP2). A SWP2 is a listing of all planned erosion and sediment control practices on site. The SWP2 also addresses inspection and maintenance procedures. The SWP2 is not a required attachment to the NOI; however, it is necessary to have the SWP2 developed prior to NOI submission and to have a copy onsite at all times. Currently, the KDOT Environmental Services Section files the NOI for most projects. In addition to the NOI, the general contractor must complete and sign the Contractor's Certification Form. By signing this form, the contractor signifies that they understand the terms and conditions of the General Permit. This form should be kept on site with the SWP2. KDOT has a standard SWP2 policy for all its projects. This policy requires the contractor to develop a SWP2 which includes or references special provisions, standard drawings and specifications, inspection and maintenance report forms, the contractor's erosion control site plan, the KDOT policy on stormwater discharges, and a memorandum for design and field engineers.

Upon completion of the project and final stabilization of all disturbed areas, the owner files the Notice of Termination (NOT). A disturbed area achieves final stabilization when a uniform perennial vegetative cover with a density of 70% of the cover which is typical of undisturbed areas for that area has been established. Filing the NOT signifies that coverage under the General Permit is no longer needed.

If further information is needed, consult the [KDHE Construction Stormwater General Permit 2022](#) and the [KDHE CSGP Definitions and Acronyms](#) packages.

DESIGN OBJECTIVES

This document is to be used as guidance for temporary erosion and sediment control practices on construction sites carried out by KDOT. The Best Management Practice (BMP) devices listed in this resource are to be taken as a recommendation and do not replace any project plan, specification, special provision, SWP2, or other specific project commitments. These BMPs have been approved by KDOT for use on projects; other means and methods can be proposed as long as it meets the same end goal.

Note that this manual was prepared using the KDOT Standard Specifications for State Road & Bridge Construction – 2015 (Standard Specifications) as of October 1st, 2022. Any updates to the KDOT Standard Specifications would supersede references/links provided in this manual. KDOT Standard Specifications can be found on the KDOT website (<https://ksdot.org/>).

When developing a temporary erosion control plan (as part of the SWP2) at a site, decide which of the following three design objectives is most feasible:

- **Keep the soil at its original location.**
Keeping the soil at its original location is the preferred objective. This option causes the least amount of harm to the environment. Not only does this option protect the surrounding land and water, but it also prevents costly regrading and redressing of slopes and ditches. However, keeping the soil at its original location is not always feasible due to challenging topography and other site variables.
- **Keep the soil close to its original location.**
If the soil cannot remain at its original location, every attempt should be made to use the soil at adjacent locations to keep it close. This option will require some regrading and redressing of slopes and ditches.
- **Keep the soil on site.**
Finally, if site conditions are such that neither of the first two objectives can be met, efforts should be made to prevent the soil from leaving the site. Soil transported offsite can cause far-reaching damage to the downstream environment. Loss of soil from the site should be avoided to the extent practicable.

BMP SELECTION TABLE

The following table provides general guidance for the selection of the most appropriate temporary erosion and sediment control measures known as BMP's. The table progression is generalized and does not represent every condition that may be encountered in the field. The selection of temporary erosion and sediment control measures for some situations must be based on good judgment and experience with similar conditions. When first selecting BMPs, emphasis should be placed on implementing stabilization measures to minimize the amount of erosion occurring on a site. If erosion cannot be prevented, then temporary sediment control BMPs should be implemented to control the resulting sedimentation.

BMP Category	Condition	BMP Type
Ditches	Grade Less Than or Equal to 6%?	Erosion Control Blankets/Mulch
		Biodegradable Log Ditch Check
	Grade Greater Than 6%?	Rock Ditch Check
		Erosion Control Blankets
		Aggregate Ditch Lining
	High Flows Expected?	Erosion Control Blankets/Geotextiles
		Aggregate Ditch Lining
		Rock Ditch Check
	Slopes	Erosion Control?
Erosion Control Blankets/Mulch		
Geotextiles		
Hydraulic Erosion Control Products		
Rock Slope Protection		
Sediment Control?		Biodegradable Log Slope Interruptions
		Silt Fence Slope Interruptions
		Hydraulic Erosion Control Products
		Rock Slope Protection
Inlet Protection		(No Decision Needed)
	Silt Fence Sediment Barrier	
	TSD Inlet Sediment Barrier	
	Curb Inlet Protection	
Sediment Basin	>=10 acres	Sediment Basin

Erosion and Sediment Control BMP Selection Table

REFERENCES & ADDITIONAL RESOURCES

1. City of Omaha Environmental Quality Control Division. *Omaha Regional Stormwater Design Manual – Chapter 9 Erosion and Sediment Control*, 2014.
2. Environmental Protection Agency. *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*, 2007.
3. Iowa Department of Transportation. *Erosion and Sediment Control Field Guide*, 2020.
4. Kansas City Metropolitan Chapter of the American Public Works Association. *Erosion and Sediment Control*, American Public Works Association Division V Section 5100, September 2010.
5. Kansas Department of Transportation. *Design Manual Volume I (Part C) Bureau of Road Design, Elements of Drainage and Culvert Design*, 2016.
6. Kansas Department of Health and Environment. *General Construction Stormwater Program*, 2022.
7. Kansas Department of Transportation. *KDOT Authentication & Resource Tracking*, September 2022.
8. Kansas Department of Transportation. *KDOT Temporary Erosion-Control Manual*, January 2007.
9. Kansas Department of Transportation. *Standard Specifications for State Road & Bridge Construction*, 2015.
10. Missouri Department of Natural Resources. *Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri*, 2011
11. Nebraska Department of Transportation. *Construction Stormwater Best Management Practices Pocket Guide*.
12. Nebraska Department of Transportation. *Drainage Design and Erosion Control Manual*, 2006.
13. Ohio Department of Natural Resources, Division of Soil and Water Conservation. *Rainwater and Land Development, Third Edition*, 2006.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION CONTROL MANUAL

SECTION 1 STABILIZATION

Version	Version Date	Notes
1	9/12/2023	

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SECTION 1 STABILIZATION

TEMPORARY SEEDING

Purpose and Operation

Temporary stabilization measures for disturbed soils are necessary while conducting construction activities. Temporary seeding is by far the most efficient and cost-effective method for controlling onsite erosion. The key to controlling erosion with temporary seeding is the timeliness of the application. Temporary seeding should be initiated immediately whenever any clearing, grading, excavating, or other soil disturbing activities have temporarily or permanently ceased on any portion of the site and will not resume for a period exceeding 7 calendar days. Onsite erosion and offsite sedimentation will continue to occur as long as a section of exposed earth remains open.

To view KDOTs Standard Drawings for the temporary seeding, select the following link to the standard drawing with relevant detailed design information: [Landscape Standard LA 852A](#). This file can also be found on KDOTs Authentication and Resource Tracking (KART) webpage with a free account.

Design

Material Specification

- Use approved seed mixtures as referenced in the Contract Documents and KDOTs Standard Specifications [Section 2103 – Seeds](#) and [Section 904 – Seeding](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 2100](#) and [Division 900](#)).
- Current temporary seed mixes for use in design are available for download from the KDOT KART website (<https://kart.ksdot.gov/>). Mixes are identified for rural areas in each district as well as a statewide mix for use in urban areas.
- Seed and seed mixtures should comply with the seed and noxious weed laws of the State of Kansas and applicable Kansas Department of Agriculture Rules and Regulations.
- Use approved fertilizers as referenced in the Contract Documents and KDOTs Standard Specifications [Section 903 – Fertilizer, Agricultural Limestone and Peat Moss](#), [Section 2107 – Agricultural Limestone](#), [Section 2108 – Fertilizers](#), and [Section 2109 – Peat Moss](#).
- Use approved mulching as referenced in the Contract Documents and KDOTs Standard Specifications [Section 2110 – Mulch](#) and [Section 905 – Mulching](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 2100](#) and [Division 900](#)).

Installation

Seedbed Preparation

- Unless shown otherwise in the Contract Documents, prepare the seedbed and seed all disturbed or cultivated areas within the right-of-way and construction easements.
- Seed and mulch the area within 24 hours of seedbed preparation.
- Repair eroded areas before the seedbed is prepared.
- In urban areas, use a landscape box to level the seedbed. Grade seedbeds to the elevations of abutting sidewalks. Remove rocks and other debris detrimental to lawn maintenance equipment.
- Before seeding, use tillage equipment that penetrates 2 to 3 inches to prepare a firm, friable and weed-free seedbed. If the use of disks and harrows is impracticable, prepare the seedbed using hand methods.

- Prepare seedbeds in developed urban and residential areas using rotary tillers or similar equipment. Tractor mounted equipment is permitted if the area is large enough to facilitate the use of such equipment.
- Do not injure trees while preparing the seedbed. If the Engineer or Designer designates areas of desirable perennial native grasses to remain, do not till such areas. If areas of annual grasses such as cheat, crabgrass or triple-awn are encountered, destroy such grasses by thorough disking.
- Do not till areas if temporary or existing grasses provide stable slopes with no erosion.

Fertilizer

- Apply any fertilizers or soil amendments to the prepared seedbed at the rates designated in the Contract Documents.
- Use an agricultural type broadcast spreader or a fertilizer attachment on the seed drill to apply the fertilizer.
- Spread the fertilizer uniformly by hand methods in areas where it is impracticable to use a seed drill.

Seed installation

- Seed can be implemented using a seed drill, broadcaster seeder, or a hydro-seeder and should be applied at rates specified in the Contract Documents.
- In rural areas, use seed drills. If it is impracticable to operate a seed drill, broadcast the seed with a standard manufacture grass seeder. A hydro-seeder may be used in place of the broadcast seeder, when approved by the Engineer or Designer.
- In urban areas, apply the seed with equipment suitable for the size of the area. Use manually operated drop-seeders, cyclone spreaders or other similar equipment when appropriate. After the seeding, but before mulching, hand rake the seeded lawn areas.

Mulching

- After an area is fertilized and seeded, uniformly spread mulch over the area or apply hydromulch.
- Mulch or hydromulch should be applied at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide. The Engineer or Designer will determine if the applied mulch is sufficient to protect the seeded area.
- Do not allow the mulching operations to lag behind the fertilizing and seed operations more than 24 hours.
- If rain is in the forecast, make every effort to mulch areas the same day as they are seeded.

Inspection and Maintenance

Seeded areas should be inspected at least once within every 7-day inspection monitoring period to verify that a uniform vegetative cover is achieved. The following is a general list of questions that should be addressed during each inspection:

- Do the seeded areas show signs of erosion or washout?

Areas with erosion and where seed has been washed out should be repaired and reseeded.

- Are seeded areas still bare or lack appropriate vegetative cover?

Areas that fail to establish vegetative cover should be reseeded.

- Does the vegetation appear yellow/brown or stunted.

Additional fertilizer applications or scheduled watering can promote vegetative growth. Seasonal watering should be performed as necessary.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

PERMANENT SEEDING

Purpose and Operation

Permanent stabilization measures for disturbed soils are necessary while conducting construction activities. Permanent seeding consists of the establishment of perennial vegetation. Permanent seeding is typically installed as long-term erosion control for areas that will be inactive for prolonged periods of time or in areas that have reached final grade. Permanent seeding is an efficient and cost-effective method for controlling onsite erosion. The key to controlling erosion with Permanent seeding is the timeliness of the application and use of designated regional seed mixes. Permanent seeding should be initiated immediately whenever any clearing, grading, excavating, or other soil disturbing activities have temporarily or permanently ceased on any portion of the site and will not resume for a period exceeding 7 calendar days. Onsite erosion and offsite sedimentation will continue to occur as long as a section of exposed earth remains open.

To view KDOTs Standard Drawings for the permanent seeding, select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 850](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Use approved seed mixtures as referenced in the Contract Documents and KDOTs Standard Specifications [Section 2103 – Seeds](#) and [Section 904 – Seeding](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 2100](#) and [Division 900](#)).
- Current permanent seed mixes for use in design are available for download from the KDOT KART website (<https://kart.ksdot.gov/>). Permanent seed mixes are identified for both rural and urban areas by District. Rural seed mixes are also identified by soil type and include wildflower mixes. Urban seed mixes also include warm season and cool season lawn mixes.
- Seed and seed mixtures should comply with the seed and noxious weed laws of the State of Kansas and applicable Kansas Department of Agriculture Rules and Regulations.
- Use approved fertilizers as referenced in the Contract Documents and KDOTs Standard Specifications [Section 903 – Fertilizer, Agricultural Limestone and Peat Moss](#), [Section 2107 – Agricultural Limestone](#), [Section 2108 – Fertilizers](#), and [Section 2109 – Peat Moss](#).
- Use approved mulching as referenced in the Contract Documents and KDOTs Standard Specifications [Section 2110 – Mulch](#) and [Section 905 – Mulching](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 2100](#) and [Division 900](#)).
- For mowing specifications refer to KDOTs Standard Specifications [Section 909 – Mowing](#).

Installation

Seedbed Preparation

- Unless shown otherwise in the Contract Documents, prepare the seedbed and seed all disturbed or cultivated areas within the right-of-way and construction easements.
- Seed and mulch the area within 24 hours of seedbed preparation.
- Repair eroded areas before the seedbed is prepared.
- In urban areas, use a landscape box to level the seedbed. Grade seedbeds to the elevations of abutting sidewalks. Remove rocks and other debris detrimental to lawn maintenance equipment.
- Before seeding, use tillage equipment that penetrates 2 to 3 inches to prepare a firm, friable and weed-free seedbed. If the use of disks and harrows is impracticable, prepare the seedbed using hand methods.
- Prepare seedbeds in developed urban and residential areas using rotary tillers or similar equipment. Tractor mounted equipment is permitted if the area is large enough to facilitate the use of such equipment.
- Do not injure trees while preparing the seedbed. If the Engineer or Designer designates areas of desirable perennial native grasses to remain, do not till such areas. If areas of annual grasses such as cheat, crabgrass or triple-awn are encountered, destroy such grasses by thorough disking.
- Do not till areas if temporary or existing grasses provide stable slopes with no erosion. Seed the permanent grasses into the existing cover using a no-till drill.

Fertilizer

- Apply any fertilizers or soil amendments to the prepared seedbed at the rates designated in the Contract Documents.
- Use an agricultural type broadcast spreader or a fertilizer attachment on the seed drill to apply the fertilizer.
- Spread the fertilizer uniformly by hand methods in areas where it is impracticable to use a seed drill.

Seed installation

- Seed can be implemented using a seed drill, broadcaster seeder, or a hydro-seeder and should be applied at rates specified in the Contract Documents.
- In rural areas, use seed drills. If it is impracticable to operate a seed drill, broadcast the seed with a standard manufacture grass seeder. A hydro-seeder may be used in place of the broadcast seeder, when approved by the Engineer or Designer.
- In urban areas, apply the seed with equipment suitable for the size of the area. Use manually operated drop-seeders, cyclone spreaders or other similar equipment when appropriate. After the seeding, but before mulching, hand rake the seeded lawn areas.

Mulching

- After an area is fertilized and seeded, uniformly spread mulch over the area or apply hydromulch.
- Mulch or hydromulch should be applied at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide. The Engineer or Designer will determine if the applied mulch is sufficient to protect the seeded area.
- Do not allow the mulching operations to lag behind the fertilizing and seed operations more than 24 hours.
- If rain is in the forecast, make every effort to mulch areas the same day as they are seeded.

- Hydraulic mulching slurry can be applied on top of punched mulch to provide additional erosion protection if in windy or high traffic areas.

Mulch Tacking Slurry

- When the mulching is applied with a straw blower, if required, remove the cutting knives to prevent cutting the mulch too short.
- Apply the mulch at the rates shown in the Contract Documents. The rates shown in the Contract Documents are a guide, the Engineer or Designer will determine if the applied mulch is sufficient to protect the seeded area.
- After the mulch is applied to an area, punch the mulching material (except wood chips and excelsior material) approximately 2" into the ground.
- Perform the punching operation longitudinally, using a mulch puncher.
 - When needed, use weights on the mulch puncher to punch the mulching material into the soil.
 - When the slope is too steep to use a mulch puncher, "pat" the mulch with forks as it is placed on the slope.
- Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.
- On lawns and small areas in urban areas, apply the mulch material using hand methods, unless otherwise approved by the Engineer or Designer.
- As the mulch is placed, "pat" the mulch with a fork. Apply mulching tacking slurry or cover with a light application of soil or sand to reduce wind loss.
- Immediately after the designated areas are mulched and punched, use hydraulic slurry equipment to apply the mulching tacking slurry.
- Unless shown otherwise in the Contract Documents, apply the mulching tacking slurry at the rate of 900 pounds per acre.
- Distribute the mulching tacking slurry uniformly over the mulch, leaving no bare spots.
- Arrange work so the mulching tacking slurry can be placed within 24 hours after each area has been mulched.

Sodding

- Sod the project during the proper sodding season to protect the finished grading. This may require sodding different parts of the project at different times or seasons.
- Prepare the soil by repairing any eroded areas and remove all weeds and surface stones greater than 1" diameter.
 - Undercut the soil below the adjacent areas so that the top of the new sod is flush with the adjacent seedbeds or turfed areas, and 1" below sidewalks and tops of curbs.
 - Cultivate or pulverize the soil to a minimum depth of 1". Smooth the soil, maintaining the grades established by the Grading Contractor.
- Before sodding, place fertilizer as specified in the Contract Documents.
- Place and fit sod strips as close together as possible. Stagger the joints between horizontal rows. Fill gaps between sod strips with sod pieces cut to the shape and size of the gaps.
- Lay sod strips horizontally on slopes, starting at the bottom and working upwards, unless directed otherwise by the Engineer or Designer.

- If the sod is placed on slopes of 2½:1 or steeper, or in ditch bottoms, secure the sod with 6 stakes per square yard or per roll of sod. If the sod is placed on slopes steeper than 20:1 and flatter than 2½:1, secure the sod with 2 to 4 stakes per square yard or per roll of sod. Use wooden lath (approximately 6" long) or similar wooden materials or ungalvanized wire staples (1/8" wire diameter approximately 6" long) to stake the sod. Drive the stakes and staples flush with the sod surface.
- After the sod is placed and secured, firm the sod using a small roller, tamper or other method approved by the Engineer or Designer.
- Immediately after placing the sod, thoroughly water to a depth of 3". Continue watering the sod every other day for 20 days after the sod is placed.

Mowing

- Mowing can be implemented in areas that require vegetation management.
- Properly timed mowing can suppress unwanted weedy vegetation while favoring desired perennial plant species.
- Mowing can reduce competitiveness of temporary vegetative cover or unwanted weedy vegetation by opening the canopy to allow more sunlight to reach permanent seedlings that are beginning to establish.
- Mowing activities should avoid saturated ground conditions to minimize compaction and rutting of the right-of-way.
- If mowing produces enough clippings and debris to impede the growth of grass, remove and dispose of the clippings and debris.

Inspection and Maintenance

Seeded areas should be inspected at least once within every 7-day inspection monitoring period to verify that a uniform vegetative cover is achieved. The following is a general list of questions that should be addressed during each inspection:

- Do the seeded areas show signs of erosion or washout?

Areas with erosion and where seed has been washed out should be repaired and reseeded.

- Are seeded areas still bare or lack appropriate vegetative cover?

Areas that fail to establish vegetative cover should be reseeded.

- Does the vegetation appear yellow/brown or stunted.

Additional fertilizer applications or scheduled watering can promote vegetative growth. Seasonal watering should be performed as necessary.

- Do seeded areas contain weedy or unwanted vegetative growth?

Weedy and unwanted vegetation can be managed through mowing.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

EROSION CONTROL BLANKETS

Purpose and Operation

Erosion control blankets are used to help limit erosion and establish vegetation on slopes and in ditches where conventional seeding and/or structural methods would be inadequate. By reducing the negative effects of rainfall impact and runoff, erosion control blankets help to minimize erosion and provide slopes and ditches with a stable environment for seed to germinate.

Erosion control blankets are constructed of a variety of materials. These include straw, wood excelsior, coconut, or some combination thereof. These materials are then usually stitched or glued to some type of natural fiber netting. This netting is biodegradable.

Erosion control blankets can be used in a variety of locations:

- Slopes and disturbed soils where mulch would have to be anchored and other methods such as crimping or tackifying are not feasible and/or adequate.
- Steep slopes (generally 3:1 or steeper) or slopes where concentrated flows exist, or highly erodible soils are present.
- Locations where seeding is likely to be too slow in providing adequate protective cover.
- Critical slopes adjacent to sensitive areas, such as streams, wetlands, shorelines, and existing development.
- Areas prone to sloughing of topsoil.

To view KDOTs Standard Drawings for erosion control blankets select the following links which show the detailed drawings with relevant design information: [Landscape Standard LA 855](#) and [Landscape Standard LA 856](#). These files can also be downloaded from KDOTs KART webpage with a free account.

Design

Material Specification

- Use approved erosion control materials as referenced in the Contract Documents and KDOTs Standard Specifications [Section 2113 – Erosion Control Materials](#) and [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Installation

Prior to the installation of erosion control blankets the site should be shaped and graded to the appropriate grade. Installation areas shall be free of erosion rills, rocks, clods, or other debris that may cause “tenting” or otherwise inhibit uniform contact. Appropriate soil preparation and the application of soil amendments, fertilizers, and seeding should be done so prior to the installation of the erosion control blankets.

Erosion control blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. For the blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

- Anchor slots: The top of the blanket should be “slotted in” at the top of the slope and anchored in place with anchors 6” apart. The slots should be 6” wide x 6” deep with the blanket anchored in the bottom of the slot, then backfilled, tamped, and seeded.

- Longitudinal Seams: The edges of the blanket should overlap each other a minimum of 6", with anchors catching the edges of both blankets.
- Splice Seam: When splices are necessary, overlap end a minimum of 8" in direction of water flow. Stagger splice seams.
- Terminal Fold: The bottom edge of blanket shall be turned under a minimum of 4", then anchored in place with anchors 9" apart.
- Typical Anchors: Anchor design shall be as recommended by manufacturer.
- Staple Check: Establish Staples in 2 rows 4' on center apart. Staple Checks shall be 30' apart.

Other anchoring methods such as wooden stakes, bio-degradable plastic staples, live willows, or steel pins that provide proper embedment and support may also be used per the manufacturer's recommendations.

Inspection and Maintenance

Erosion control blankets should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does the erosion control blanket exhibit signs of "tenting" or is stormwater flowing under the blanket?

Verify that there is uniform contact with the soil surface (tenting is unacceptable), all seams and splices are secure, and all anchors are driven flush with the soil surface.

- Are there signs of erosion or washout under or adjacent to the erosion control blanket?

If erosion, washouts, or undermining are visible under the blankets, blankets should be reinstalled after damage to the soil surface is repaired. Consider implementing additional BMPs upslope to reduce stormwater velocities and minimize erosion and washout.

- Is the erosion control blanket dislodged, ripped, torn, or damaged?

Any dislodging or failure of the erosion control blankets should be repaired as per the manufacturer recommendations.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

HYDRAULIC EROSION CONTROL PRODUCTS

Purpose and Operation

Hydraulic Erosion Control Products (HECPs) consists of mulches and adhesive polymers that are mixed with water and then sprayed onto the soil surface. HECPs can provide temporary erosion protection and assist with the establishment of vegetative cover. HECPs can be applied to disturbed areas to provide protection from wind and soil erosion.

Design

Material Specification

- Use approved HECPs referenced in the Contract Documents and KDOTs Standard Specifications [Section 905 – Mulching](#), [Section 2110 – Mulch](#), and [Section 2111 – Mulch Tacking Slurry](#). and. See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#) and [Division 2100](#)).

- Do not use mulching material containing noxious weeds identified by the Kansas Department of Agriculture in the [“Kansas Noxious Weed List”](#).

Installation

Hydraulic Erosion Control Products (HECPs)

- Apply the hydromulch by means of a standard hydraulic slurry seeding machine.
- Demonstrate, to the Engineer’s or Designer’s satisfaction, that the equipment and methods will result in a uniform application of the hydromulch.
- Mix and apply the hydromulch at the rate according to KDOT specifications or as recommended by the manufacturer.
- Obtain complete coverage from a consistent angle of approach while applying hydromulch.
- Achieve no more than 65% coverage from the primary angle of application, and 35% coverage from the secondary angle of coverage.
 - Maintain secondary angles of coverage of between 175° and 185° from the primary angle.
- Mixing proportions, application methods and rates may be adjusted based on the manufacturer’s recommendations.

Inspection and Maintenance

HECPs should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Do areas where HECPs have been applied show signs of erosion or washout?

Areas where HECPs have eroded, washed out, or breakage occurs, repair damage or erosion to the area and reapply HECPs. Once the surface is broken, the matrix material must be reapplied.

- Do areas where HECPs have been applied lack appropriate coverage?

HECPs should be applied from two different angles to obtain appropriate coverage of disturbed soils.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

AGGREGATE DITCH LINING

Purpose and Operation

Aggregate lined ditches operate by removing stormwater from the road and carrying it along and across the right-of-way. Aggregate ditch lining helps to reduce stormwater velocities, minimize erosion potential, and provide bank stabilization. These linings can often be less expensive than concrete lined ditches, however, grass and weedy vegetative growth can present additional maintenance problems if left unmaintained. Aggregate ditch lining is most common in areas where right-of-way restrictions require steeper ditch side slopes and in areas where there are rapid changes in ditch geomorphology.

To view KDOTs Standard Drawing for the aggregate ditch lining, select the following link which shows the detailed drawing with relevant design information: [Road Standard RD 502](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Design criteria for temporary erosion protection is documented in the most current edition of the KDOT Design Manual Volume I (Part C) Bureau of Road Design, Elements of Drainage and Culvert Design (Drainage Design Manual). Permanent aggregate ditch lining should be placed as soon as possible following final grading of the ditches to manage erosion throughout construction. Aggregate ditch lining design is based on Section 12.7 Design of Road Ditches with Aggregate Linings found in the Drainage Design Manual.

Material Specification

- Use approved aggregate referenced in the Contract Documents and KDOTs Standard Specifications [Section 1114 – Stone for Riprap, Ditch Lining, and Other Miscellaneous Uses](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 1100](#)).

Installation

Proper Installation Method

- Construct the ditch to the lines and grades shown in the Contract Documents before placing the ditch lining.
- Prepare for the ditch lining by undercutting the finished ditch to the depth required for the ditch lining.
- When required, compact the excavated area.
- The subgrade shall be well compacted prior to placing ditch lining.
- After the ditch lining is completed, backfill and compact around the structures.
- Dumped aggregate shall be spread in reasonable conformity with the ditch section as shown in the Contract Documents and as directed by the Engineer or Designer.

Placement

- Construct the aggregate ditch lining and aggregate backslope ditch lining according to the Contract Documents.

Inspection and Maintenance

Aggregate ditch liners should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow around the aggregate ditch lining?

This is usually caused by insufficient depth/undercutting of the ditch line or incorrect grade/slope of the ditch and/or the ditch side slopes. If this occurs, ditches and aggregate ditch lining should be returned to appropriate grade/slope as specified in the Contract Documents or as directed by the Engineer or Designer. Aggregate should also be spread in reasonable conformity with the ditch section to promote positive drainage.

- Have high-velocity flows displaced any aggregate from the ditch lining?

Sometimes high-velocity flows can carry away portions of the aggregate ditch lining. After a large rainstorm, inspect the ditch lining for any displaced aggregate, undermining of aggregate, and erosion within or adjacent to the ditch. If a large portion of aggregate has been washed away, fill in void with new aggregate. In areas where erosion and undermining are present the lining should be maintained as specified to complete the work.

- Does sediment or debris need to be removed from the aggregate ditch lining?

Sediment accumulation within the aggregate ditch lining can impact the ditches' ability to reduce stormwater velocities resulting in higher erosion potential. In addition, accumulated sediments can provide a suitable environment for unwanted vegetation. Removal of accumulated debris should also be performed to promote positive drainage.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

ROCK SLOPE PROTECTION

Purpose and Operation

Rock slope protection can be used to minimize erosion on steep slopes or slopes with highly erodible soils. Rock slope protection can help reduce stormwater velocities, minimize erosion potential, and provide stabilization.

To view KDOTs Standard Drawings for rock slope protection, select the following links which shows the detailed drawings, [Bridge Standard BR 131](#), [Bridge Standard BR 132A](#), and [Bridge Standard BR 132B](#). These files can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Use approved aggregate referenced in the Contract Documents and KDOTs Standard Specifications [Section 1114 – Stone for Riprap, Ditch Lining, and Other Miscellaneous Uses](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 1100](#)).
- Use approved geotextiles referenced in the Contract Documents and KDOTs Standard Specifications [Section 1710 – Geosynthetics](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 1700](#)).

Installation

Proper Installation Method

- Construct the bridge berms, fill slopes and channels to the lines and grades shown in the Contract Documents.
- Prepare for the slope protection by undercutting the finished berms, slopes, and channels to the depth necessary for the slope protection.
- After the slope protection is completed, backfill and compact around the structure.
- Construct the slope protection to the lines and grades shown in the Contract Documents. A tolerance of +6" from the slope lines and grades is allowed.
- Underlay the slope protection with geotextile fabric at the locations designated in the Contract Documents. Provide the Engineer or Designer with a copy of the manufacturer's recommendation.
- Install and secure the geotextile fabric as recommended by the manufacturer. Replace any geotextile fabric damaged or displaced during construction.
- Place the bedding for the slope protection at the locations designated in the Contract Documents.
 - Place the bedding in its full course thickness in one operation, using methods of placement that will not segregate the material.
 - The finished surface of the bedding shall be uniform. Compaction of the bedding is not required.

- Place the slope protection the full course thickness in one operation.
- Place the slope protection to produce a reasonably well-graded mass of rocks with a minimum number of voids.
- The finished slope protection shall be free of pockets of small rocks and clusters of larger rocks.
- Rearrange individual rocks (by hand or mechanical equipment) to the extent necessary to obtain a reasonably well-graded distribution of rock sizes.

List of common placement/installation mistakes to avoid

- Do not use methods of placing the rocks that will segregate the various sizes of rocks.
- Do not use heavy equipment (working on the slope protection) to spread the rocks.
- Do not place oversized rocks on the slopes.

Inspection and Maintenance

Rock slope protection should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow around the rock slope protection?

This is usually caused by incorrect excavation or grading of slope protection. If this occurs, slopes should be returned to the appropriate grade as specified in the Contract Documents or as directed by the Engineer or Designer. Rock should be spread in reasonable conformity to promote positive drainage and reduce concentrated flows.

- Have areas of rock slope protection been displaced or washed out?

Sometimes stormwater flows can cause erosion that undermines sections of rock slope protection. After a large rainstorm, inspect the slope protection for any displaced rock, undermining of rock aggregate, and erosion of the slope. If a large portion of aggregate has been displaced, fill in the void with additional rock. Repair geotextile fabric as needed.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

DUST CONTROL

Purpose and Operation

The purpose of dust control is to minimize the spread of surface dust via air movements as it originates from unstabilized, fugitive, and/or tracked out soils that occur during construction. It also helps reduce the spread of hazardous airborne particles that can pose problems to pedestrians and construction staff on the site. Dust control can be achieved with many different options.

Design

Material Specification

- Control Measure Options
 - Vegetative Cover: Review the [Temporary Seeding Section](#) for options of vegetative cover.
 - Mulch: Review KDOTs Standard Specifications [Section 2110 – Mulch](#) and [Section 905 – Mulching](#) for mulch. See additional Special Provisions for KDOTs Standard Specifications ([Division 2100](#) and [Division 900](#)).

- HECPs: Review the [HECPs Section](#) for application options.
- Tillage: No outside material needed.
- Irrigation: Water from water trucks or other connections.
- Sweeping: Use of streetsweepers or sweeper attachments to collect and remove soils from paved surfaces.
- Aggregate: Standard base coarse aggregate.
- Geotextiles: Review the [Geotextiles Section](#) for options.
- Barriers: Can consist of board fence, wind fence, sediment fence or other barrier to limit the spread of dust. Engineer or Designer to specify if needed.
- Permanent Vegetation: Review the [Permanent Seeding Section](#) for options of permanent vegetation.

Placement

- Placement of device/control measure depends on the site and area of construction.
- Vegetation is best placed on steep slopes or in areas of little traffic to avoid killing plants.
- If being used, aggregate shall be placed on dirt roads or areas on a site where construction traffic is common.
- Barriers shall be placed perpendicular to the air currents on a site if they are used.
- If using tillage as a control measure, till the side of the site that faces the wind.

Installation

Proper Installation Method

- Installation method and implementation shall be decided by the designer or contractor on site. Not all components are required to be used for dust control, as each site varies in needs for control.
- The control measures shall be installed or implemented in areas where movement of dust in the air is likely to occur.

List of common placement/installation mistakes to avoid

- Do not place vegetation or mulch in areas where trucks commonly drive on construction sites, or it will result in loss of plants.
- Do not place barriers parallel to the air currents on the site or they will prove to be ineffective.
- Only use measures in areas where dust is commonly a problem.

Inspection and Maintenance

If structures for dust control are implemented, they should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Is dust a problem on the site?

If yes, verify that the current devices/control measures are in place and in working order. Work with the Engineer or Designer or contractor to implement new methods of dust control or repair existing methods to minimize the amount of dust generated onsite.

- Is the vegetation used for dust control not growing?

This is usually a result of vehicles or other equipment driving over seeded areas. In some cases, lack of vegetative growth can be a result of improper seedbed preparation or lack of scheduled watering

during dry periods. Check to confirm that seeding was placed in areas where construction traffic is not common. Educate crews and equipment operators to avoid seeded areas to minimize potential impacts and unnecessary re-work. Appropriate measures should be implemented during seeding (i.e., seedbed preparation, fertilizing, mulching, watering, etc.) to encourage favorable growing conditions for vegetative establishment.

- If a barrier is being used, is it damaged?

This can be caused by high winds or interference with equipment onsite. Verify the barriers are in places that are not obstructing traffic and repair if needed.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

PRESERVING NATURAL VEGETATION

Purpose and Operation

Preserving natural vegetation protects existing stands of established vegetation which helps to reduce compaction of topsoil, minimize the overall area of disturbance, and reduce erosion. The existing vegetation can absorb stormwater, reduce runoff, and improve the water quality of runoff through natural filtration. It is best used in areas that already have healthy existing vegetation, especially around perimeter areas of the construction site, onsite overland flow paths, channels, streams, creeks, lakes, ponds, wetlands, steep slopes, or areas where constructed stabilization may be hard to put into place. Preservation of natural vegetation should be considered for all projects involving ground disturbance.

Design

Material Specification

- Existing natural vegetation.
- Barrier or fence of some type to surround and designate the area being preserved.

Placement

- Preserve the natural vegetation in areas where there is not going to be development (no grading, no construction traffic). This is often beneficial around onsite channels, streams, creeks, lakes, ponds, wetlands, steep slopes, or areas where constructed measures would be complicated to construct. The placement is site dependent.

Preservation

Proper Preservation Method

- Effectively mark the preservation area with spray paint, flags, or other devices before construction.
- Install barriers around the preservation area so that vehicles or people do not disturb the natural vegetation.
- If vegetation is being preserved for conservation reasons and is destroyed during construction, engage a landscape architect to design a replacement and establishment plan.

List of common placement/preservation mistakes to avoid

- Do not designate areas for preservation where grading or traffic will be occurring.
- Do not remove existing vegetation in areas that are under local, state, or federal regulations.

- Do not remove existing vegetation where native wildlife live, nest, or obtain food from.

Inspection and Maintenance

Preserved natural vegetation should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Have markings and/or boundaries been removed from the preserved area?

Inspect to confirm these devices for the boundary have not been removed and if so repair and replace these to keep a set boundary around the preserved area.

- Is the natural vegetation damaged because of grading or construction traffic?

This damage could be caused by the preservation area being within the construction traffic area or within the grading limits. Reevaluate the preservation area so it does not result in this problem. Reiterate to crews and equipment operators the location of the preserved areas to avoid/protect before and during construction.

- Is the natural vegetation damaged?

Damaged natural vegetation could be a result of construction activities accidentally impacting the preserved area or from stormwater runoff and sediment discharging from the site. Repair or replace the vegetation to preconstruction conditions and/or until the reestablished vegetation has achieved a density of at least 70 percent of the native background vegetative cover. Consider installing additional temporary BMP devices to control runoff prior to discharging from site. If fertilizer is being used while reestablishing vegetation, confirm that the amount of fertilizer used is kept to a minimum to avoid water quality issues.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION CONTROL MANUAL

SECTION 2 TEMPORARY DEVICES

Version	Version Date	Notes
1	9/12/2023	

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SECTION 2 TEMPORARY DEVICES

BIODEGRADABLE LOG AND FILTER SOCK DITCH CHECK AND PERIMETER CONTROLS

Purpose and Operation

Biodegradable logs and filter socks are devices used for ditch checks, slope interruption, or inlet protection. They provide sediment control by reducing the water velocity allowing the soil particles to drop out of the water column.

To view KDOTs Standard Drawings for a biodegradable log ditch check select the following links which show the detailed drawings with relevant design information: [Landscape Standard LA 862G](#) and [Landscape Standard LA 852E](#). These links can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- For low flow, construct logs using compost.
- For high flow, construct the logs using excelsior/wood chips/coconut fiber.
- Do not use straw logs for ditch checks.
- Stakes shall be wood or steel according to KDOTs Standard Specifications [Section 2114 – Silt Fence](#). Length of stakes shall be a minimum of 2 times the diameter of the log.
- For further specifications regarding biodegradable logs and filter socks refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Placement

- Biodegradable logs and filter socks shall extend up the fore and back slopes 4” vertically above the top of the device in the ditch bottom. See [Landscape Standard LA 852G](#).
- Overlap sections a minimum of 18”.
- Each log (except compost filter logs) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the log and soil.
- Stakes need to be placed along the log with a maximum width of 4’ between them.
- The tables on [Landscape Standard LA 852E](#) provide the spacing details for biodegradable logs and filter socks when being used as ditch checks.

Installation

Proper Installation Method

- Excavate a trench along the length of the planned biodegradable log so that the depth of the trench is 25% of the height of the biodegradable log. Verify that the trench is excavated inside of a channelized flow path.
- Install the biodegradable logs perpendicular to flow of water and parallel to the slope contour.
- Optional: A downstream apron is required when directed by the Engineer or Designer.

- Once the biodegradable logs have been installed and anchored, excavated soils should be placed on both sides of the device and compacted to minimize water piping under the device.

List of common placement/installation mistakes to avoid

- Follow the prescribed ditch check spacing guidelines. If spacing guidelines are exceeded erosion will occur between the ditch checks.
- Do not allow water to flow around the ditch check. Verify that the ditch check is long enough so that the ground level at the ends of the check is higher than the top of the center of the log.
- Do not place biodegradable log ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

Inspection and Maintenance

Biodegradable log ditch checks should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow around the ditch check?

This is usually caused by insufficient ditch check length. If this occurs, extend the check far enough so that the ground level at the ends of the check is higher than the top of the lowest center log.

- Does water flow under the ditch check?

This is usually caused by the log not having full contact with the soil surface and not properly staked. If the problem is insufficient compaction, add more soil directly upstream of the check and recompact. If the problem is improperly trenched logs, the entire check should be removed and a new one installed, using the proper trench depth.

- Are logs degrading due to age and/or water damage?

Inspect the logs for signs of decomposition or damage and replace as necessary.

- Is there significant erosion between the ditch checks?

This is because there is too much space in between ditch checks. Install an additional ditch in between and follow the spacing guide for installation.

- Is there significant scour on the downstream side of the ditch check?

This is usually caused by too much water flowing into the ditch. Either install the optional apron on the downstream side of the biodegradable log or consult Engineer or Designer for alternative measures.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

ROCK DITCH CHECK

Purpose and Operation

Rock ditch checks operate by intercepting and ponding sediment-laden runoff. Ponding the water dissipates the energy of any incoming flow and allows a large portion of the suspended sediment to settle out. Water exits the ditch check by flowing over its crest. Rock ditch checks are ideal for ditches that will eventually have a riprap lining. Upon completion of the project, the rock ditch checks can be spread out to form the riprap channel lining. Only use rock ditch checks where the ditch slope is 5% or greater.

To view KDOTs Standard Drawings for a rock ditch check select the following links which show the detailed drawings with relevant design information: [Landscape Standard LA 862G](#) and [Landscape Standard LA 852E](#). These links can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Rock ditch checks should be constructed of clean aggregate, D50-6" and aggregate filler.
- Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer or Designer.
- Aggregate filler will comply with Filter Course Type 1, see KDOTs Standard Specifications [Section 1114 – Stone for Riprap, Ditch Lining, and Other Miscellaneous Uses](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 1100](#)).
- For further specifications regarding a ditch check refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Placement

- Rock ditch checks should be placed perpendicular to the flow line of the ditch.
- Rock ditches must be designed so that water can flow over them and not around them. The ditch check should extend far enough so that the ground level at the ends of the check are higher than the low point on the crest of the check.
- Rock ditch checks are best located in ditches that will eventually be lined with riprap so that the rock won't have to be removed at the completion of construction.
- The Engineer or Designer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
- When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
- Aggregate filler will be placed on the upstream face of the ditch check.
- The table on [Landscape Standard LA 852G](#) provides ditch check spacing for a given ditch grade.

Installation

Proper Installation Method

- Using approved aggregate material, construct a rock ditch check perpendicular to the ditch flow line. The ditch check should be 2' high and have side slopes no steeper than 1:1. The rock ditch check must be constructed so that water can flow over the top and not around the ends (i.e., the

ground level at the ends of the ditch check must be higher than the low point on the crest of the ditch check).

- The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the rock ditch check and to a minimum of 6" depth. After placement of the rock, backfill and compact any over-excavated soil to ditch grade.

List of common placement/installation mistakes to avoid

- Increasing the spacing between ditch checks. If spacing guidelines are exceeded, erosion may occur between the ditch checks.
- Do not allow water to flow around the ditch check. Confirm that the ditch check is long enough so that the ground level at the ends of the ditch check are higher than the low point on the crest of the ditch check.

Inspection and Maintenance

Rock ditch checks should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow around the ditch check?

This is usually caused by insufficient ditch check length. If this occurs, extend the check a sufficient length so that the ground level at the ends of the check are higher than the low point on the crest of the check.

- Have high-velocity flows displaced any stones from the check?

Sometimes high-velocity flows can carry away portions of a rock ditch check. After a large rainstorm, inspect the rock ditch check for any displaced stones. If a large portion of a rock ditch check has washed away, fill in the void with new stone immediately. If stones from the ditch check are constantly displaced, consult the Engineer or Designer about increasing the diameter of rock used to construct the ditch check or decreasing the distance between ditch checks to further reduce high-velocity-flows.

- Does sediment need to be removed from the ditch check?

Sediment accumulated in front of the ditch check should be removed when it reaches one-half of the original exposed height of the rock ditch check. Allowing too much sediment to accumulate in front of a ditch check drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from surrounding slopes to completely fill the space behind the ditch check. Therefore, it is extremely important to inspect ditch checks within 24 hours of a large rainfall event. The easiest way to remove sediment from in front of a rock ditch check is with a bulldozer or backhoe.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

TEMPORARY BERM

Purpose and Operation

A temporary berm operates by diverting stormwater runoff to stabilized slopes or a temporary slope drain. The temporary berm is used in conjunction with the slope drain whenever stormwater needs to be carried down fill slopes and cut backslopes. This device can be used on either project fore slopes or backslopes depending on where it is most needed. This device may also be used for storm sewer culvert protection.

To view KDOTs Standard Drawings for the temporary berm with and without the slope drain option, select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852B](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Compacted fill for berm and surface of berm.
- 6" metal, plastic, or flexible rubber pipe for optional temporary slope drain.
- Rock dissipator or other approved material for optional temporary slope drain.
- For further specifications regarding the temporary berm refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Placement

- Temporary berms can be placed on either project fore slopes or back slopes. It may also be placed at the inlet of storm sewer culverts.
- The length of a slope drain is determined by the length that is required to contain and direct runoff to the optional slope drain or sediment basin.
- The optional slope drain is placed in conjunction with berms whenever the flow of runoff needs to be discharged into a stabilized ditch or sediment basin without causing erosion.
- The length of the optional slope drain needs to match the height of the slope as earth operations progress.

Installation

Proper Installation Method

- Construct temporary berms with a 2' minimum width. Construct the berm using compacted fill and compact the berms until no further consolidation is observed, using a dozer track, grader wheel or other equipment. The slope of the berm should be a maximum of 2:1.
- If an optional temporary slope drain is being installed construct it as shown in the contract documents. The length of the specified slope drainpipe will depend on the height of the slope. The pipe will outflow at a rock dissipator and will discharge into a stabilized ditch or sediment basin.
- When the project is finished and the berm is no longer needed, remove the berm to blend with the natural ground. Remove any type of temporary slope drain if applicable.

List of common placement/installation mistakes to avoid

- Do not undersize the temporary berm or the flows from the site will overtop the berm and will cause the structure to become ineffective.
- Do not use fill that is uncompacted or it will lead to a breakdown of the temporary berm.

Inspection and Maintenance

A temporary berm should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Is erosion occurring at the outlet of the temporary berm's slope drain?

If yes, this is due to the outlet of the berm not being stabilized and will require BMP's to be designed and installed to prevent this erosion at the outfall.

- Is the structure falling apart after rainfall events?

This is most likely because the berm was not constructed using compacted fill. If this is occurring use a dozer track, grader wheel or other equipment to further compact the fill that is used to construct the berm.

- Is the berm experiencing erosion at high rates?

This high rate of erosion may be caused by too steep of a slope to the temporary berm. Confirm that the slope is 2:1 and if it is more restructure it to match this slope requirement.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

TEMPORARY STREAM CROSSING

Purpose and Operation

A temporary stream crossing minimizes construction traffic from fording a waterway during a construction project. KDOT stream crossings can be surfaced with either articulated concrete blocks or aggregate fill. To view KDOTs Standard Drawings for the two temporary stream crossing options, select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852B](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Articulated concrete blocks with filter fabric or clean aggregate fill for surface of stream crossing.
- Steel pipes with a minimum pipe size of 12". Note that design flow calculations will determine required number and diameter of pipes after review and approval from Engineer or Designer.
- Clean aggregate fill to cover the pipe(s).
- For further specifications regarding temporary stream crossings refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Placement

- Place one pipe buried 6" into the stream bottom at the lowest point of the channel.
- Pipes should be placed parallel to the channel flow.
- Additional pipes may need to be placed to avoid overtopping. Engineer or Designer to specify based on conveyance capacity in the stream.
- Depending on the crossing type, place either more aggregate or articulated concrete blocks on top of this aggregate fill to allow for traffic crossings to occur. Engineer or Designer to specify.
- Temporary stream crossings should be constructed in the areas where they will cause the least amount of disturbance to the stream and adjacent vegetation.

Installation

Proper Installation Method

- Prior to construction, record and document existing stream channel elevations and adjacent vegetation types.

- Excavate the foundation in the stream for the stream crossing and divert the stream flow to a bypass channel during installation.
- Place one pipe buried 6” into the stream bottom at the lowest point in the channel to allow the passage of aquatic organisms. Place additional pipes along the remainder of the stream bottom if necessary for conveyance flows.
- Cover these pipes with a minimum of 12” of clean aggregate fill.
- Remove crossing as soon as it is no longer needed. Restore the streambed and bank areas to their preexisting conditions.
- Refer to the Contract Documents for any project specific requirements.

List of common placement/installation mistakes to avoid

- Avoid steep slopes on the embankment of the channel which can create safety hazards.
- Do not place the pipes in a direction that will alter/inhibit stream flow.
- Stream crossings should not have a pipe that is set above the low point of the stream channel.
- Use of “dirty” or repurposed aggregate fill material in the construction of temporary stream crossings can increase silt/sediment pollution into the stream during construction. In addition, minimize the amount of fines contained with the aggregate fill used for construction of temporary stream crossings.

Inspection and Maintenance

A temporary stream crossing should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Are the embankment slopes of the temporary stream crossing eroded?

This is caused by improper grading of the embankment slopes and should be repaired with erosion protection measures to stabilize the slopes surrounding the crossing.

- Is the streambank caving in or is erosion occurring below the pipe of the temporary stream crossing?

This is due to erosion control measures not being in place at the entrance and exit of the temporary stream crossing. Add appropriate stabilization measure for adequate protection such as rip rap.

- Is the roadway or surface of the temporary stream crossing overtopping with water?

This could be occurring for a variety of reasons including incorrect pipe diameter, not enough piping placed underneath/within the temporary stream crossing, or the pipe placement is too high, relative to the streambed. The Engineer or Designer either needs to redesign the pipe system to meet the needs of the stream or reevaluate the location of the pipe.

- Is there debris or materials blocking the flow of water through the pipes?

Streams naturally carry debris and other materials. If flow is obstructed, remove the debris or material from the blocked areas.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

BIODEGRADABLE LOG SLOPE INTERRUPTION

Purpose and Operation

Biodegradable logs are devices used for ditch checks, slope interruption, or inlet protection. They prevent erosion by slowing the rate of water leaving a site and catching the sediments that are in that runoff. For slope interruption purposes the primary use is to slow sheet flow and collect sediments on a slope.

To view KDOTs Standard Drawings for a biodegradable log slope interruption select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852D](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- For low flow, construct logs using straw/compost.
- For high flow, construct the logs using excelsior/wood chips/coconut fiber.
- Stakes shall be 2"x2" (Nom.).
- Stakes shall be wood or steel according to KDOTs Standard Specifications [Section 2114 – Temporary Sediment Barriers](#). Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log.
- The table on [Landscape Standard LA 852D](#) includes the guide to sizing the biodegradable log based on the slope gradient.
- For further specifications regarding the biodegradable log refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#) and [Section 2114 – Temporary Sediment Barriers](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#) and [Division 2100](#)).

Placement

- Place as many biodegradable logs as necessary so that water does not flow around the end of the slope.
- Place logs tightly together with a minimum overlap of 18".
- Each log (except compost filter logs) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the log and soil.
- Stakes need to be placed along the log with a maximum width of 4' between them.

Installation

Proper Installation Method

- Excavate a trench the length of the planned slope interruption that is 25% of the height of the log deep and a log's width wide. Confirm that the trench is excavated along a single contour. When practicable, slope interruptions should be placed along contours to avoid a concentration of flow.
- Place the logs in the trench close together to avoid any gaps between them. Stakes should be driven into the logs with a 4' maximum distance between the stakes.
- Optional: A downstream apron is required when directed by the Engineer or Designer. Apron material will be paid at the contract unit price.

List of common placement/installation mistakes to avoid

- When practicable, do not place biodegradable log slope interruptions across contours. Slope interruptions should be placed along contours to avoid concentrated flows. Concentrated flow over a slope interruption can cause it to degrade faster and lead to scour.
- Do not place biodegradable slope interruptions in channels with shallow soils underlain by rock. If the log is not anchored sufficiently, it will wash out.
- Do not allow the slope interruption length to exceed 250'.

Inspection and Maintenance

Biodegradable log slope interruptions should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Are there any points along the slope interruption where water is concentrating?

When slope interruptions are not placed along contours, water concentrates at low points of the slope interruption. This concentrated flow usually causes a failure of the slope interruption. Even if the interruption does not fail, the concentration of flow drastically reduces the overall storage capacity of the slope interruption. The only solution to this problem is reinstalling the slope interruption (or sections of it) so that it is level.

- Does water flow under the slope interruption?

This is usually caused by the log not having full contact with the soil surface and not properly staked. If the problem is insufficient compaction, add more soil directly upstream of the check and recompact. If the problem is improperly trenched logs, the entire check should be removed and a new one installed, using the proper trench depth.

- Are logs decomposing due to age and/or water damage?

Inspect the logs for signs of decomposition or damage and replace as necessary.

- Is there significant scour on the downstream side of the slope interruption?

This is usually caused by too much water flowing into the log. Either install the optional apron on the downstream side of the biodegradable log or consult design Engineer or Designer for alternative measures.

- Is the biodegradable log undercut, scoured out, or incorrectly trenched in?

Biodegradable logs that have been undercut, scoured out, or incorrectly trenched in should be retrenched.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

SILT FENCE SLOPE INTERRUPTION

Purpose and Operation

Silt fence slope interruptions operate by intercepting and ponding sediment-laden slope runoff. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out. Water exits the silt fence by percolating through the silt fence fabric. Silt Fence Slope Interruptions should only be used as perimeter controls at the base of sheet flow areas. Do not use as intermediate interruptions on a slope!

To view KDOTs Standard Drawings for a silt fence slope interruption select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852D](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Silt fence fabric should conform to the AASHTO M288 silt fence specification.
- Stakes or posts shall be 4 ft. (min.) long and of one of the following materials:
 - Hardwood – 1 3/16" x 1 3/16" ;
 - Southern Pine – 2 5/8" x 2 5/8" ;
 - Steel U, T, L, or C Section – 0.95 lbs. per 1'-0"; or
 - Synthetic – same strength as wood stakes.
- Silt fence fabric should be attached to the wooden stakes or steel posts with three zip ties within the top 8" of the fence. Alternate attachment methods may be approved by the Engineer or Designer on a performance basis.
- The staples used should be wire staples that are 6" long x 1" wide (min.).
- For further specifications regarding silt fence refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#) and [Section 2114 – Temporary Sediment Barriers](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#) and [Division 2100](#)).

Placement

- Silt fence should be used at the toe of a slope when a ditch does not exist. The silt fence should be placed on nearly level ground 5' - 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out of sediment.
- When practicable, silt fence should be placed along contours to avoid a concentration of flow.
- Silt fence can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the silt fence will not likely follow contours. This is not a substitute for construction fence.

Installation

Proper Installation Method

- Excavate a trench the length of the planned silt fence that is 6" deep by 6" wide. Confirm that the trench is excavated along a single contour. When practicable silt fence should be placed along contours to avoid a concentration of flow. Place the excavated soil on the upslope side of the trench for later use.
- Roll out a continuous length of silt fence fabric on the down slope side of the trench. Place the edge of the fabric in the trench starting at the top upslope edge. Line the bottom and the

downslope sides of the trench with the fabric. Wires staples (6" long x 1" wide) should be used to pin the fabric to the bottom of the trench and spaced 3' on center. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.

- Lay the exposed silt fence upslope of the trench to clear an area for driving in the stakes or posts. Just down slope of the trench, drive stakes/posts into the ground to a depth of at least 24". Place stakes/posts no more than 4' apart.
- Attach the silt fence to the anchored post with zip ties. Alternate attachment methods may be approved by the Engineer or Designer on a performance basis

List of common placement/installation mistakes to avoid

- When practicable, do not place silt fence across contours. Silt fences should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier, and the silt fence quickly deteriorates.
- Do not place silt fence stakes/posts on the upslope side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the zip ties. The silt fence will rip and fail.
- Do not place silt fence in areas with shallow soils underlain by rock. If the silt fence fabric is not sufficiently anchored, it will wash out.
- Silt fence must be dug into the ground – silt fence at ground level does not work because water will flow underneath.
- Silt fence should be properly trenched in and compacted to minimize scouring or undermining of the silt fence fabric.
- Do not allow the silt fence length to exceed 250'.

Inspection and Maintenance

Silt fence should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Are there any points along the silt fence where water is concentrating?

When silt fence is not placed along contours, water concentrates at low points in the silt fence. This concentrated flow usually causes a failure. Even if the silt fence does not fail, the concentration of flow drastically reduces the overall storage capacity of the silt fence. The only solution to this problem is reinstalling the silt fence (or sections of it) so that it is level.

- Does water flow under the silt fence?

This can be caused by posts that are too far apart, a trench that is too shallow, or an improper burial procedure. Stakes/posts should be no more than 4' apart. The trench should be at least 6" wide by 6" deep. The bottom edge of the silt fence should be anchored securely by installing wire staples to pin the fabric to the bottom of the trench and backfilling over the fabric in the trench with the excavated soil and then compacting. If these guidelines have not been met, the silt fence should be reinstalled, or the deficiencies should be remedied.

- Does the silt fence sag excessively?

Sagging silt fence is caused by excessive stake/post spacing and/or overtopping of the silt fence. Silt fence stakes/posts should be no more than 4' apart. If the stake/post spacing exceeds 4', additional stakes/posts should be added to decrease spacing between stakes/posts. Water should flow through

the silt fence and not over it. Silt fence installations quickly deteriorate when water overtops them. If a section of silt fence is regularly overtopped, it has probably been placed in a location that receives flows beyond its intended capacity. If this is the case, discontinue the use of silt fence in this area and try something different.

- Has the silt fence torn or become detached from the posts?

Silt fence can be torn by the force of ponded water, or by winds that rip the silt fence fabric away from the stakes/posts. If a silt fence develops tears for any reason, it should be replaced.

- Does sediment need to be removed from the silt fence?

Sediment accumulated in front of the silt fence, should be removed when it reaches one-half of the original exposed height of the silt fence. Allowing too much sediment to accumulate in front of the silt fence drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from surrounding slopes to completely overtop the silt fence. That is why it is extremely important to inspect silt fences within 24 hours of a large rainfall event. When removing sediment from in front of the silt fence with a bulldozer or backhoe, take care not to damage the fabric or undermine the entrenched silt fence.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

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SECTION 3 GEOTEXTILES

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SECTION 3 GEOTEXTILES

GEOTEXTILES

Purpose and Operation

Geotextiles are flexible, porous, woven or nonwoven fabrics that can be used for erosion and sediment control purposes on construction sites. Geotextiles protect steep slopes, soil stockpiles, and other areas where mulching or other timely installation of the permanent slope protection is impractical. Geotextiles can also be used in combination with other BMPs (i.e., rock stabilization, riprap culvert protection, sediment basins, etc.) to minimize erosion, scouring, and washout.

To view KDOT's Standard Specifications for all geosynthetics click the attached link. This link provides more information about requirements of geotextiles as well as tables with minimum roll values: [Section 1710 – Geosynthetics](#).

Design

Material Specification

- To view a list of geotextile fabrics approved by KDOT for stabilization click the following link and find products that are approved for Subgrade Stabilization: [List of Prequalified Geotextile Fabrics](#).
- Staples or similar devices shall be used to secure the geotextiles to the ground to achieve uniform contact with the surface. Method of securing the fabric will need to be approved by the Engineer or Designer.

Placement

- Geotextiles shall be placed over temporary slopes, soil stockpiles, or other areas where stabilization on a site is needed during construction.
- Geotextiles can be placed in conjunction with other BMPs to minimize erosion, scouring, and washout.

Installation

Proper Installation Method

- It is recommended that the geotextile be installed where vegetative cover such as grass or weeds are not in place to provide support during construction.
- Install geotextiles in areas that are free of rills, rocks, clods, or other debris. The geotextile should be placed flat against the soil surface with no wrinkles or folds.
- Once placed in their designated area, secure the geotextile to the ground using staples or another device that is specified by the Engineer or Designer.

List of common placement/installation mistakes to avoid

- Do not place the geotextile in a spot where it can lead to the fabric to be easily ripped. For example, these areas can include high traffic areas, places where construction equipment will be used, or areas where there are debris or rocks on the soil surface.

Inspection/Maintenance

Geotextile products should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Is the geotextile ripped or damaged?

This is due to the fabric being torn or impacted by some sort of outside source. Repair or replace the section of damaged geotextile as per the manufacturer recommendations.

- Is the geotextile loose?

This is due to missing or damaged staples or other devices. Replace or add additional staples or other devices to secure loose fabric in place.

- Does the geotextile exhibit signs of “tenting” or is stormwater flowing under the geotextile?

Verify that there is uniform contact with the soil surface (tenting is unacceptable), all seams and splices are secure, and all anchors are driven flush with the soil surface.

- Are there signs of erosion or washout under or adjacent to the geotextile?

If erosion, washouts, or undermining are visible under the geotextile, the geotextile should be reinstalled after damage to the soil surface is repaired. Consider implementing additional BMPs upslope to reduce stormwater velocities and minimize erosion and washout.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

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SECTION 4 INLET PROTECTIONS

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SECTION 4 INLET PROTECTIONS

BIODEGRADABLE LOG AND FILTER SOCK DROP INLET PROTECTION

Purpose and Operation

Biodegradable logs and filter socks are devices used for ditch checks, slope interruption, or inlet protection. They provide sediment control by reducing the water velocity allowing the soil particles to drop out of the water column. For inlet protection purposes the primary use is to intercept, pond, and filter the sediment-laden runoff that would enter a drop inlet.

To view KDOTs Standard Drawings for a biodegradable log drop inlet protection, select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852C](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
- Use log mesh with ¼" openings or larger. It must allow water infiltration.
- Stakes shall be wood or steel according to KDOTs Standard Specifications [Section 2114 – Temporary Sediment Barriers](#).
- For further specifications regarding the biodegradable log and filter sock refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#) and [Section 2114 – Temporary Sediment Barriers](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#) and [Division 2100](#)).
-

Placement

- Stakes should be placed every 4' along the biodegradable log or filter sock.
- Surround the entire drop inlet with a biodegradable log or filter sock. The ends of the biodegradable log or filter sock should overlap each other tightly to prevent unfiltered water from entering the drop inlet.
- 25% of the height of the biodegradable log or filter sock shall be keyed into ground during installation.

Installation

Proper Installation Method

- Excavate a trench around the perimeter of the drop inlet so that the depth of the trench is 25% of the height of the biodegradable log or filter sock.
- Place the biodegradable log or filter sock in the trench. The ends of the biodegradable log or filter sock should be pressed together tightly and overlap each other by a minimum of 2'.
- Drive stakes into the biodegradable log or filter sock every 4'. The diameter of the biodegradable log or filter sock can range from 1'-6" to 1'-8". The Engineer or Designer is to specify the diameter of biodegradable log or filter sock to be used for drop inlet protection.
- Note: When a biodegradable log or filter sock drop inlet protection is placed in a shallow median ditch, the top of the barrier should not exceed the height of the adjacent paved road.

When the height of the barrier exceeds the height of the adjacent paved road, water may spread onto the roadway causing a hazardous condition.

List of common placement/installation mistakes to avoid

- Biodegradable logs and filter socks should be placed directly against the perimeter of the drop inlet. This allows overtopping water to flow directly into the inlet instead of flowing onto nearby soil, causing scour.
- Biodegradable log or filter socks drop inlet protection must be properly trenched in. Biodegradable logs and filter socks at ground level do not work as they can allow water to flow under the barrier.

Inspection and Maintenance

Biodegradable log and filter sock drop inlet protections should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow under the biodegradable log or filter sock?

This is usually caused by not trenching in the biodegradable log or filter sock deep enough. If the problem is an improperly trenched biodegradable log or filter sock, the drop inlet barrier should be removed and a new one installed using the proper trench depth.

- Does water flow through gaps in the biodegradable log or filter sock?

This is usually caused by not tightly overlapping the ends of the biodegradable log or filter sock. If this is the case, then confirm that the biodegradable log or filter sock ends are placed together tightly or inspect the biodegradable logs or filter socks for any other gaps. The ends of the biodegradable log or filter sock should overlap each other by a minimum of 2'.

- Are the biodegradable logs or filter socks decomposing due to age and/or water damage?

This is usually due to the life span of a biodegradable log or filter sock. Inspect the biodegradable logs or filter socks for signs of decomposition and replace as necessary.

- Does sediment need to be removed from the drop inlet protection?

Sediment accumulated in front of the drop inlet barrier should be removed when it reaches one-half of the original exposed height of the biodegradable log or filter sock. Allowing too much sediment to accumulate in front of the drop inlet protection drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from the drainage basin to completely overtop the drop inlet protection. Therefore, it is extremely important to inspect drop inlet protection within 24 hours of a large rainfall event. When removing sediment from a biodegradable log or filter sock drop inlet protection with a bulldozer or backhoe, take care not to damage or undermine the entrenched biodegradable logs or filter socks.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

SILT FENCE INLET SEDIMENT BARRIER

Purpose and Operation

Silt fence inlet sediment barriers work just like a ditch check or a slope barrier: the silt fence intercepts, ponds, and filters sediment-laden runoff. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out. As the ponded water percolates through the silt fence fabric, much of the remaining suspended sediment is filtered out.

To view KDOTs Standard Drawings for a silt fence inlet sediment barriers select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852C](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Silt fence fabric should conform to the AASHTO M288 silt fence specification.
- Stakes or posts shall be 4 ft. (min.) long and of one of the following materials:
 - Hardwood – 1 3/16" x 1 3/16";
 - Southern Pine – 2 5/8" x 2 5/8";
 - Steel U, T, L, or C Section – 0.95 lbs. per 1'-0"; or
 - Synthetic – same strength as wood stakes.
- Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.
- Cross pieces shall be of same material as stakes.
- For further specifications regarding silt fence refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#) and [Section 2114 – Temporary Sediment Barriers](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#) and [Division 2100](#)).

Placement

- Place a silt fence inlet sediment barrier in a location where it is unlikely to be overtopped. Water should flow through silt fence and not over it. Silt fence drop inlet barriers often fail when repeatedly overtopped.
- When used as a drop inlet barrier, silt fence fabric and posts must be supported at the top by a frame that is constructed of the same material as the stakes.
- When a silt fence inlet sediment barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Installation

Proper Installation Method

- Excavate a trench around the perimeter of the inlet that is at least 6" deep by 4" wide.
- Drive posts to a depth of at least 24" around the perimeter of the drop inlet. The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add more posts between them.

- Connect the tops of all the posts with a frame made of 2" by 4" boards of the same material as stakes. Use nails or screws for fastening.
- Attach the wire or polymeric mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
- Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the drop inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
- Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.
- Note: When a silt fence drop inlet sediment barrier is placed in a shallow median ditch, confirm that the top of the barrier is not higher than the paved road. If the top of the barrier exceeds the height of the adjacent paved road, water may spread onto the roadway, causing a hazardous condition.

List of common placement/installation mistakes to avoid

- Water should flow through a silt fence drop inlet sediment barrier and not over it. Place a silt fence inlet sediment barrier in a location where it is unlikely to be overtopped. Silt fence inlet sediment barriers often fail when repeatedly overtopped.
- Do not place posts on the outside of the silt fence inlet sediment barrier. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip-ties, nails, etc.). The silt fence will rip and fail.
- Do not install silt fence inlet sediment barriers without framing the top of the posts. The corner posts around inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance

Silt fence inlet sediment barriers should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow under the silt fence?

This can be caused by posts that are too far apart, a trench that is too shallow, or an improper burial procedure. Posts should be no more than 4' apart. The trench should be at least 6" wide by 6" deep. The bottom edge of the silt fence should be anchored securely by backfilling over the fabric in the trench with the excavated soil and then compacting. If these guidelines have not been met, the silt fence inlet sediment barrier should be reinstalled, or the deficiencies should be remedied.

- Does the silt fence sag excessively?

Sagging silt fence is caused by excessive post spacing or the lack of a frame connecting the posts. Silt fence posts should be no more than 4' apart. If the post spacing exceeds 4' additional posts should be added to decrease spacing between posts. If no post frame exists, one should be added. A sagging silt fence should be repaired immediately because it has the potential to create a bigger problem: flooding. If a silt fence falls over onto an inlet during a storm, the inlet can become blocked, causing flooding of the roadway.

- Has the silt fence torn or become detached from the posts?

Silt fence can be torn by the force of ponded water, or by winds that rip the silt fence fabric away from the posts. If a silt fence develops tears for any reason, it should be replaced.

- Does sediment need to be removed from the drop inlet barrier?

Sediment accumulated in front of the inlet sediment barrier should be removed when it reaches one-half of the original exposed height of the silt fence. Allowing too much sediment to accumulate in front of an inlet sediment barrier drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from the drainage basin to completely overtop the inlet sediment barrier. Therefore, it is extremely important to inspect inlet sediment barriers within 24 hours of a large rainfall event. When removing sediment from a silt fence inlet sediment barrier with a bulldozer or backhoe, take care not to damage or undermine the entrenched silt fence.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

TRIANGULAR SILT DIKE INLET SEDIMENT BARRIER

Purpose and Operation

Triangular Silt Dike (TSD) inlet sediment barriers operate by intercepting and ponding sediment-laden runoff. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out. When the pond height reaches the top of the barrier, water flows over the TSDs and into the inlet.

To view KDOTs Standard Drawings for a Triangular Silt Dike inlet sediment barriers select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852C](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- Triangular Silt Dikes™
- Metal landscape staples used to anchor the TSDs should be a minimum of at least 6” long.

Placement

- TSD inlet sediment barriers should be placed directly around the perimeter of an inlet.
- When a TSD inlet sediment barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Installation

Proper Installation Method

- For an inlet sediment barrier installation, orient the TSD so that the side bordering the inlet is vertical. Orient the TSD aprons so that the shorter of the two aprons lies beneath the longer one. Neither apron should be under the foam portion of the TSD.
- Place two full sections (approximately 7’ long each) of TSD against opposite sides of the inlet. These sections should extend beyond the edges of the drop sides of the drop-inlet – do not cut these to fit. Excavate trenches that are at least 6” deep by 6” wide near the ends of the TSD apron so that the outer 8” to 10” of the apron can be buried. Lay the outer 8” to 10” of apron into the trench and anchor it with minimum 6” long landscape staples on 18” centers. Backfill the trench with the excavated soil and compact. Anchor the remainder of the apron with a row of minimum 6” long landscape staples on 18” centers along the seam of the TSD.
- In the spaces where the TSDs extend beyond the edges of the inlet, cut new TSDs to fit. There should be a tight fit achieved between the cut TSDs and the existing TSDs. These cut sections should be oriented and anchored in the same manner as the initial sections.
- Note: When a TSD inlet sediment barrier is placed in a shallow median ditch, the top of the barrier should not exceed the height of the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

List of common placement/installation mistakes to avoid

- TSDs should be placed directly against the perimeter of the inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil, causing scour.
- Orient the TSD properly. The side in contact with the inlet should be vertical and the shorter apron should lie beneath the longer one.
- If the receiving apron of a TSD is not dug into the ground, water will flow underneath.

Inspection and Maintenance

TSD inlet sediment barriers should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Does water flow under the TSDs?

This is usually caused by not properly anchoring the TSD. Verify that the receiving apron is trenched in and that an adequate number of staples have been used.

- Does water flow through spaces between abutting TSDs?

This is usually caused by incorrect sizing of the cut sections. If the cut sections are too small, re-cut new sections so that they fit properly.

- Does sediment need to be removed from the TSDs?

Sediment accumulated in front of the TSDs should be removed when it reaches one-half of the dike height. Allowing too much sediment to accumulate in front of a TSD barrier drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from surrounding slopes to completely overtop the inlet sediment barrier. Therefore, it is extremely important to inspect drop-inlet barriers within 24 hours of a large rainfall event. When removing sediment from behind a TSD with a bulldozer or backhoe, take care not to hook the receiving apron with the blade. This will damage the barrier and it will have to be replaced.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

CURB INLET PROTECTION

Purpose and Operation

Curb inlet protection devices operate by intercepting, ponding, and filtering sediment-laden runoff that would enter a curb inlet. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out. When the pond height reaches the top of the device, water flows over the device and into the curb inlet.

To view KDOTs Standard Drawings for curb inlet protection select the following link which shows the detailed drawing with relevant design information: [Landscape Standard LA 852C](#). This file can also be found on KDOTs KART webpage with a free account.

Design

Material Specification

- The bags shall be made of synthetic net (3 mm mesh) or burlap.
- The bags shall be filled with rock that is 1" to 2" diameter.
- A 2"x4" wooden board.
- Alternative products or fill material may be used. These products or materials must be approved by the Engineer or Designer.

Installation

Proper Installation Method

- Place a 2"x4" wooden board in a standing position at the opening of the curb inlet.
- Place the bag(s) in front of the wooden board with the ends of the bags against the ends of the board, leaving a gap of 6" to 8" between the curb inlet opening and the bag. The height of the bag(s) (8" minimum diameter) must not be above the top of curb. If multiple bags are required, place them in such a way that no gaps are evident to avoid unfiltered water from leaking into the inlet.

List of common placement/installation mistakes to avoid

- Do not allow the height of the bag to be above the top of the curb.
- Do not allow water to flow between gaps if multiple bags are being used. Place bags closely together to avoid this.
- Do not allow water to flow around the bags into the curb inlet opening. Place bags close to the wooden board to avoid this.

Inspection and Maintenance

Curb inlet protection bags should be inspected at least once within every 7-day inspection monitoring period. The following is a general list of questions that should be addressed during each inspection:

- Are the bags damaged and not properly filtering sediment-laden runoff?

This is due to either a rip in the bag or degradation of the material on the outside of the bag. Replace the damaged bag with a new one to avoid sediment-laden runoff from entering the curb inlet.

- Is unfiltered water entering the curb inlet opening?

This is caused by gaps in between bags or between the wood board and the bags. Fix this issue by placing bags closely together with other bags or the wooden board to avoid any gaps in the protection.

- Does sediment need to be removed from the curb inlet protection?

Sediment accumulated in front or behind the curb inlet protection should be removed when it reaches one-half of the original exposed height of the bag(s). Allowing too much sediment to accumulate in front or behind the curb inlet protection drastically reduces its effectiveness. One high-intensity rainfall can dislodge enough sediment from the drainage basin to completely fill the space behind the curb inlet protection. Therefore, it is extremely important to inspect curb inlet protection within 24 hours of a large rainfall event. When removing sediment from the curb inlet protection with a bulldozer or backhoe, take care not to damage or undermine bags.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.

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SECTION 5 SEDIMENT STORAGE BASINS

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SECTION 5 SEDIMENT STORAGE BASINS

SEDIMENT BASIN

Purpose and Operation

A sediment basin is a barrier, embankment, or excavated area with a controlled stormwater release structure formed by constructing an embankment of compacted earth fill to collect runoff before it discharges from a project site. This practice applies where erosion control measures are insufficient to prevent offsite sedimentation. In addition, sediment basins are required for each drainage area with 10 or more acres disturbed at one time. The purpose of a sediment basin is to detain sediment-laden runoff from disturbed areas in “wet” or “dry” storage long enough for most of the sediment to settle out.

To view KDOTs Standard Drawings for sediment basins select the following link which shows the detailed drawings with relevant design information: [Landscape Standard LA 852H](#). This file can also be found on KDOTs KART webpage with a free account.

For further specifications regarding the sediment basin refer to KDOTs Standard Specifications [Section 902 – Temporary Erosion and Sediment Control](#). See additional Special Provisions for KDOTs Standard Specifications ([Division 900](#)).

Design

Design Considerations

Prior to the start of construction, sediment basins should be designed by a registered design professional. Plans and specifications should be referred to by field personnel throughout the construction process. The sediment basin should be built according to planned grades and dimensions.

Placement

The best location to construct a sediment basin is in a low area or natural drainage way. These basins should not be in protected waterways. The location of the basin should not be in an area where it can pose a threat to public safety. The placement of the basin should also not be where public roads or utilities would be disturbed if ponding were to occur.

Embankment

The maximum embankment height from the downstream toe to crest is 15'. The minimum top width is 6'; maximum slope of embankment face is 2.5:1. The embankment crest elevation will include 5% of the embankment height for settling. The embankment shall have cover approved for steep slopes. The fill material of the embankment shall be stable moist soil.

Volume

The required volume for a sediment basin is 3,600 cubic feet per acre of contributing drainage area. This specific drainage area can include offsite areas that flow into the basin unless the offsite flows are diverted from the disturbed area. The storage volume is calculated up to the rim elevation of the principal spillway overflow riser.

- A portion of the total volume is allotted for sediment storage. The General Permit restricts the sediment storage volume to 20% of the total.

According to the [KDHE CSGP Definitions and Acronyms](#) package, alternative storage volumes may also be approved for areas in Western Kansas where the 2-year, 30-minute rainfall event is less than 1.3”.

If this design is approved the minimum runoff coefficient for disturbed areas shall be 0.77 and undisturbed area runoff coefficients must be documented and justified.

Surface Area

The surface area of the primary spillway of the sediment basin needs to meet at least one of the following requirements:

- The minimum surface area shall be 1,000 square feet per acre of drainage area, or
- Flow length from the major inlet to primary spillway shall be twice the average top width of the pond, or where A is the surface area at the top of the riser and L is the distance from entry of the largest flow volume to the riser. The flow length may be increased by use of wire backed silt fence or other baffle. If baffles are required, they shall be arranged to not interfere with silt removal.

$$L \geq (2*A)^{0.5}$$

Skimmer Dewatering Device

The skimmer dewatering device shall be included in the design and will need to be sized to provide a drawdown time of 2 to 5 days. This device serves to release cleaner water from the surface rather than the bottom of a sedimentation basin. The dewatering device also occurs at a constant rate.

To view KDOTs Standard Drawings for the skimmer dewatering device, select the following link which shows the detailed drawings with relevant design information: [Landscape Standard LA 852H](#). This file can also be found on KDOTs KART webpage with a free account.

- All PVC pipes used for this device are to be schedule 40.
- HDPE flexible drainpipes are to be attached to the pond outlet structure with water-tight connections.
- The orifice shall be sized to provide a drawdown time of 2 to 5 days and will need to be approved by the Engineer or Designer.
- Other skimmer designs may be used that also dewater from the surface at a constant rate and they must be approved by the Engineer or Designer.

Principal Spillway

The principal spillway shall consist of a conduit, riser pipe with a trash rack, and an anti-flotation block. The conduit shall go under the embankment and exit at a stabilized outlet. Refer to the drawings linked above to see a standard configuration of the principal spillway for a sediment basin. The riser shall be held in place with an anchor or large foundation to avoid the device from becoming buoyant. Anti-seep devices are also recommended to be used on the principal spillway conduit. One device option includes anti-seep collars around the outlet conduit, and they should project 1'-3' from the pipe. Engineer or Designer to specify what type of anti-seep device to be used.

Emergency Spillway

The emergency spillway shall be constructed in a location that will not cause erosion to the embankment. It shall be trapezoidal in shape and have side slopes that are 3:1 or steeper. It should also be level and at least 20' long with a minimum width of 10'.

Erosion Control

Erosion control measures also need to be followed for the construction of the sediment basin. It is important to vegetate and stabilize the area as soon as construction is complete. Refer to the

[Stabilization Section](#) of this manual for guidance on different stabilization measures. Use temporary diversion structures to prevent surface water from running into disturbed areas. Sediment-laden runoff should be diverted to the upper end of the sediment pool to improve trap effectiveness.

Installation

Proper Installation Method

- Follow the appropriate placement criteria that were mentioned in the previous section.
- Locate all the utilities on site where construction is occurring.
- Place any fencing or warning signs around the constructed area if trespassing is going to be likely.
- Remove any existing debris and excavate the basin. Save the fill excavated to use for other purposes.
- For the principal spillway, place the pipe and riser on a secure, flat ground and then surround the pipe with a 4" layer of fill soil and compact it to match the density of the foundation soil. This keeps the pipe secure. The lower half of the riser should then be perforated with 1/2" diameter holes spaced 3" apart. Embed the riser at least 12" into the concrete anchor or other foundation structure used to keep the device from becoming buoyant. Surround the riser with 2' of clean, uniformly graded stone. Place a trash rack at the opening of the riser. The type and size are to be dependent on the design and the Engineer or Designer will need to specify. Install a riprap apron at the pipe outlet that is at least 5' wide and 10' long to a stable grade.
- For the embankment, first scarify the foundation before placing any fill. The fill must be clean and should not contain debris. The most permeable fill is to be placed on the downstream section of the embankment and the least permeable fill in the center of the embankment. Compact the fill material to be 6"-8" continuous layers over the length of the embankment. Protect the spillway barrier with 2' of fill that has been compacted before traversing over with equipment. Construct and compact the embankment to an elevation 5% above the design height to allow for settling to occur. After construction place a reference stake at the sediment clean out elevation.
- For the emergency spillway, construct this structure in undisturbed soil around one end of the embankment, and locate it so that any flow will return to the receiving channel without any damage to the embankment. Stabilize the spillway as soon as grading is complete with vegetation or erosion control blankets. Install paving material to finished grade if the spillway is not to be vegetated.
- Once the sediment basin is installed verify that the basin drains between storm events.
- The basin shall remain until less than 10 acres remain of sediment basin contributing area needing final stabilization within the drainage basin. Whenever the basin is no longer needed, remove the basin. This is done by draining any water, removing the sediment in the basin, and smoothing the site to blend in with the surrounding area. After this has occurred then stabilize the area.

List of common placement/installation mistakes to avoid

- Do not construct the sediment basin in an area that serves as a high point. The sediment basin should be located in an area that is easily accessed for maintenance purposes.
- Attach an anchor or foundation to the riser to reduce flotation.
- Do not make the principal spillway too small or this could result in an increased amount of erosion at the emergency spillway.

- Do not undersize the basin or place the spillways too high that could result in overtopping.
- Do not make the slopes of the embankment too steep or it could result in slumping.
- Apply proper erosion control measures to the sediment basin during construction.

Inspection/Maintenance

A sediment basin should be inspected at least once within every 7-day inspection monitoring period. The sediment basin should also be inspected after each storm event. The following is a general list of questions that should be addressed during each inspection:

- Is the pipe failing along the conduit?

This is due to improper compaction, omission of an anti-seep collar, leaking of pipe joints, or use of unsuitable soil. To fix this, identify the problem and repair the embankment using proper construction methods and materials.

- Are the spillway or embankment slopes eroding?

This is most likely due to inadequate vegetation or improper grading or sloping. To fix this issue, repair by using proper grades and slopes or establish adequate vegetation to reduce erosion.

- Is the riser blocked and not allowing water to enter?

This problem is most likely due to the riser being blocked with debris. To fix this problem clean out the debris and confirm a trash rack is installed to filter debris from entering the riser.

- Is the sediment basin overtopping?

This overtopping is most likely due the elevation of the principal and emergency spillway being too high compared to the top of embankment elevation. To fix this, re-evaluate the spillway design and repair erosion damage. Consider re-sizing the sediment basin to have a larger storage capacity.

- Does the sediment basin water level seem to be too high or look dirty?

This problem could be due to gravel clogging the drainage system. To fix this problem, clean out the dewatering system regularly and after major storms.

- Does the emergency spillway seem to be used often and have extensive erosion?

This issue is due to the principal spillway being too small and causing the emergency spillway to be used in excess. Since this can also cause increased erosion potential, the solution should be to install a larger principal spillway or to investigate some type of supplemental spillway.

- Does the embankment look to be slumped or have settled too much?

This problem could be due to inadequate compaction or not using suitable fill soil. To fix this problem, add compacted fill material that is without debris to the embankment.

- Does there appear to be a slumping failure on slopes?

This is most likely due to the slopes being too steep. To fix this, flatten the slopes and verify they do not exceed the maximum slope of 2.5:1 on the embankment.

- Is there severe erosion below the principal spillway?

This problem is likely due to there not being adequate outlet protection. To fix this, install outlet protection like rip rap into place.

- Is maintenance to the sediment basin becoming difficult and costly?

This is most likely due to the basin not being adequately placed in an area that is easily accessible. Depending on the scope of the project and the site, consider relocating the basin or improving access to the site.

- Does the storage capacity seem to become inadequate over time?

This problem is most likely caused by the sediment not being properly removed from the sediment basin. To fix this issue, remove accumulated sediment more frequently and after major storms. Sediment also needs to be removed and properly disposed of whenever it accumulates to $\frac{1}{2}$ of the design volume.

Please refer to the project specific SWP2, Contract Documents, and detailed drawings for additional inspection and maintenance criteria.



LIST OF PREQUALIFIED EROSION CONTROL PRODUCTS [2015 – SS 2113]

PQL – 34.1

REVISED – 11-07-23

CMS MATERIAL CODE GROUP (193)

The Contractor has the option of utilizing the following approved products in accordance with the Class and Type as specified on the plans. **The types are ranked based on their effectiveness with Type C being the lowest and Type H being the highest. Substitution of a more effective product than what is specified is permitted.** The current Approved Products List may be found on KDOT's webpage at: [KDOT: Pre-Qualified Materials Listing \(ksdot.gov\)](http://ksdot.gov/pre-qualified-materials-listing).

Direct all questions to the Stormwater Compliance Engineer, Bureau of Construction and Materials, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS 66603. Phone (785)250-4793. Email ksdot.stormwaterinspection@ks.gov

CLASS 1 "SLOPE PROTECTION"

Type C – Slopes Steeper than 3:1 – CLAY Soils:

AEC Curlex NetFree
Excel SR-1 All Natural
North American Green® S75BN
US-2X NN

CLASS 1 "SLOPE PROTECTION"
Type D – Slopes Steeper than 3:1 – SANDY Soils:

AEC Premier Straw Double Net FibreNet
Curlex™ I FibreNet
ECB S32 BD
ECS-2B
ETRS-2BN Erosion Tech
Excel SS-2 All Natural
KEP-S2 Natural
North American Green® S150BN
US-2S NN
Winters Straw HV BIO

**APPROVED PRODUCT LIST
ITEM 169 "SOIL RETENTION BLANKET"**

**CLASS 2 - "FLEXIBLE CHANNEL LINER"
Type E - Shear Stress Range (Up to 2 Pounds Per Square Foot):**

AEC Premier Coconut FibreNet
AEC Premier Straw/Coconut Fibrenet
Excel CC-4 All Natural
Winters Choice Bio
Excel CS-3 All Natural
KEP-SC2 Natural
KEP-C100 Natural
North American Green® SC150BN
ECX-2B
ECSC-2B
ECC-2B
ETC-100-BN
ETSC-7030-BN

CLASS 2 - "FLEXIBLE CHANNEL LINER"
Type F - Shear Stress Range (Up to 4 Pounds Per Square Foot):

Curlex® II FibreNet
Curlex® III FibreNet
ECB C32BD
ECB SC32 BD
Excel CC-4 All Natural
North American Green® C700BN
North American Green® C125BN

**CLASS 2 - "FLEXIBLE CHANNEL LINER
Type G - Shear Stress Range (Up to 6 Pounds Per Square Foot):**

Curlex® Enforcer
Earth-Lock
Earth-Lock II
ECB EX32
ECP-3 Straw/Coconut TRM
Enkamat 7018
Greenfix CFG 2000
Greenstreak Pec-Mat
Koirmat™ 700
Landlok®TRM 1060
Multimat 100
TMax 3k

**CLASS 2 - "FLEXIBLE CHANNEL LINER
Type H - Shear Stress Range (Up to 8 Pounds Per Square Foot):**

Biomac CC 025.3	
Channel Soxx	Multimat 100
	North American Green® S200
Contech C-35	North American Green® 300
Contech TRM C-45	North American Green® 300 LW
Contech C 50	North American Green® C350
Contech Coconut/Poly Fiber Mat	North American Green® P350
ECB P42 TRM	North American Green® SC250
ECC-3 Coconut TRM	North American Green® P550
ECP-2 10 oz Polypropylene TRM	North American Green® TMax 3K
ECP-3	Pyramat ®
ECSC-3 Straw/Coconut TRM	Recyclex TRM
ETPP-10 Erosion Tech	Recyclex TRM-V
Excel PP5-Heavy Duty	
Excel PP5-8	SEC P2
Excel PP5-10	StayTurf® ~ <i>A fully vegetative product that requires an establishment period</i>
Excel PP5-12	T-RECS
GreenArmor 7020	Webtec Terraguard 44P
Haymark HMI-350PP	Webtec Terraguard 45P
Landlok® TRM 435	Winters Turf
Landlok® TRM 450	WIF WINFAB Diamondback 4030
Landlok® TRM 1051	WIF WINFAB Diamondback 4030V



LIST OF PREQUALIFIED HYDRAULIC EROSION CONTROL PRODUCTS(HECP)

[2015 – SS 2110]

PQL – 34.2

REVISED – 04-24-24

CMS MATERIAL CODE GROUP (???)

The Contractor has the option of utilizing the following approved products in accordance with the Class and Type as specified on the plans. **The types are ranked based on their effectiveness with Class A being the lowest and Class C being the highest. Substitution of a more effective product than what is specified is permitted.** The current Approved Products List may be found on KDOT's webpage at: [KDOT: Pre-Qualified Materials Listing \(ksdot.gov\)](https://ksdot.gov/pre-qualified-materials-listing).

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HECP Class "A"

Maximum Slope 4:1- Minimum Application Rate 1800lb/acre

Hydrostraw Guar Plus Formulation
Hydro-Blanket
Profile Wood with Tack
Rainier Fiber Plus Tackifier

HECP Class "B"
Maximum Slope 3:1- Minimum Application Rate 2500lb/acre

Hydrostraw Bonded Fiber Matrix
Proganics Dual

HECP Class "C"
Maximum Slope 2:1- Minimum Application Rate 3500lb/acre

EarthGuard Fiber Matrix
EcoMatrix
Rainier Supreme
ProMatrix
Rainier Fiber Bonded Fiber Matrix
NaturesOwn X9000
NaturesOwn Evolution
CocoFlex Et-FGM
EcoFlex HP-FGM
Flexterra HP-FGM
Soil Guard