

**Construction  
Stormwater Training  
Workbook**

**Certified Inspector  
Training Program**



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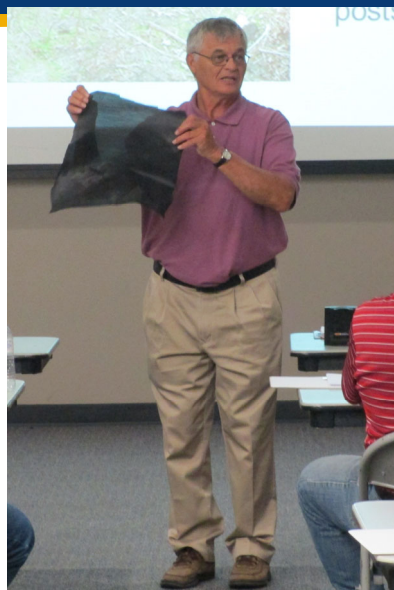


# Construction Stormwater(CSW) Class Welcome!

1

## Leo Holm P.E.

- Retired from Minnesota DOT in 2006
- Over 40 year of Experience in the Field
- Several National Publications
- Helping teach this class since 2013



2

## 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



3

## Aaron Snook, Seeders Inc

- Been in the Erosion Control Business since 2006
- Manages Seeders Inc
- In business for over 40 years



4



## Mervin Lare P.E.

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



5

## Stormwater Field Lab and Testing



6

# Thank You

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Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793





# KDOT Stormwater Compliance

## Construction Stormwater Training



1

## Background

- EPA project visits / inspections
- 



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## EPA Project Visits

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- 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

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- 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](#)

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## 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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**Newsroom**

You are here: [EPA Home](#) » [Newsroom](#) » [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](#)

**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 of 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





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## Consent Decree

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- 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

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- 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

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- 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

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- 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



12

## Stormwater Compliance Plan

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- 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

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- 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

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- 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

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- 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

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- 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



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## Stormwater Compliance Plan

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



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# Stormwater Compliance Plan

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



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# Stormwater Compliance Plan

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



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## Stormwater Compliance Plan

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- 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

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- 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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## Contact Information

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- Steven Rose
- [Steve.Rose@ks.gov](mailto:Steve.Rose@ks.gov)
- Cell 620-727-3709



# Complying with the Clean Water Act while building projects



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



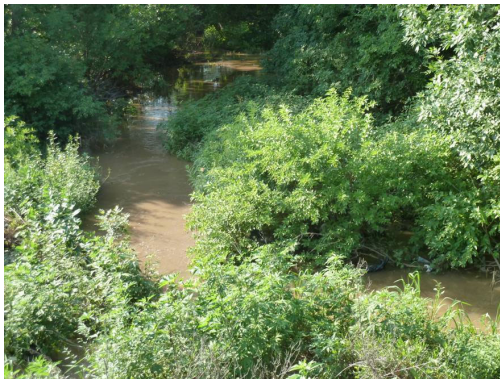
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## Rivers in Kansas

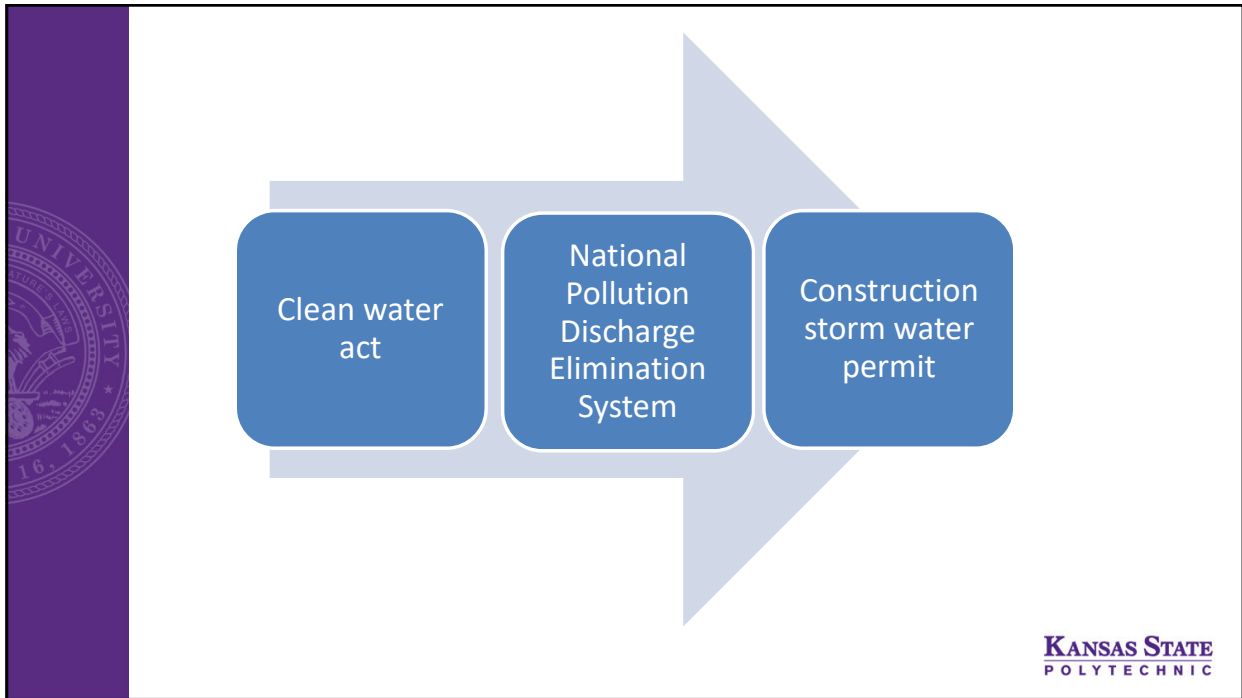


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## Fishable or swim-able?



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## 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



## 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

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## 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



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## Erosion and sedimentation also affects work on the project



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# Construction Storm Water

Effects of Construction on Water Resources

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Storm water and other pollutants

What is storm water?

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# What can be done to prevent or minimize this?



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## Example project



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## More rain....Heavy rain



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# Do ponds work?



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# Temporary stabilization.. bridge and area near a lake



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# Fall



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# Nearing completion....



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## Another source: Inlets in the construction area





## Dirt washing through the pipes



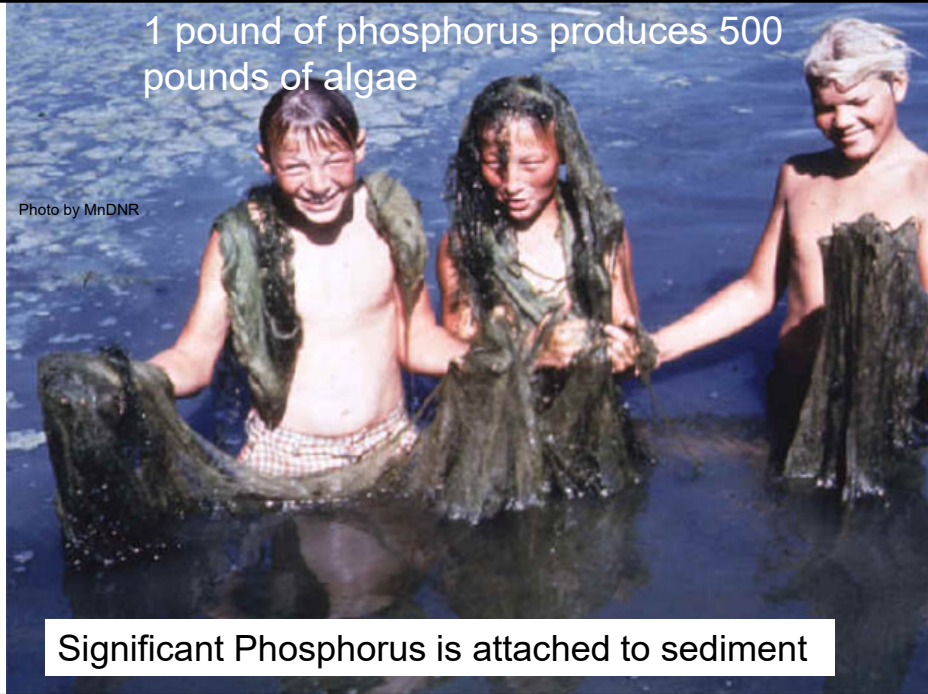
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1 pound of phosphorus produces 500 pounds of algae

Photo by MnDNR



Significant Phosphorus is attached to sediment

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Permit applies to other forms of pollution



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# Control dust



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The best practice of all..... use BMPs and stabilize as the project is constructed



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## Stabilizing areas as the grading work is performed



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## This is our goal



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# Construction Stormwater Training

## Stormwater Discharge Permit Part 1




1

# Introduction

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

Effective August 1,2022



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## Part 1 – Who Must Obtain Authorization to Discharge

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- 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



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## Part 1 – Support Activities

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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

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### 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

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- Covered Activities
  - Stormwater discharges
  - Non-stormwater discharges



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## Part 2: Stormwater Discharges and Protected Waters of Kansas

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- 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



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## Part 2 – Non-Stormwater Discharges

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- 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

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- 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;
  - Contaminated groundwater



11

## 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

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- DO NOT START CONSTRUCTION ACTIVITIES UNTIL YOU HAVE A SIGNED NOI
- The signed NOI and site specific SWPPP must also be onsite



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## Part 6. Continuing Coverage

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- 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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Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793



# Construction Stormwater Training

## Stormwater Discharge Permit Part 2



1

## Part 7 – SWPPP Requirements and Guidelines

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- Stormwater Pollution Prevention Plan (SWP2 plan = SWPPP)
  - Developed and implemented before construction activities begin
  - Specific to the construction site
  - Best Management Practices(BMPs) identified



2

## Part 7 – SWPPP

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- 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
  
- Developed under supervision of a licensed PE, Geologist, Architect, Landscape Architect or Certified Professional in Erosion & Sediment Control(CPESC)



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## Part 7 – SWPPP

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**FULL SWPPP  
IMPLEMENTATION!!!**



4

## Part 7 – SWPPP

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- 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

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- 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



6

## Part 7 – SWPPP

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- 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.



7

## Part 7 – SWPPP

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- 7.2.3 Detailed SWP2 Plan Requirements

- Control stormwater volume and velocity
- Minimize exposed soil
- Minimize disturbance of steep slopes
- Provide and Maintain natural buffers
- Control discharges from stockpiles
- Minimize dust
- Minimize off-tracking
- Protect storm drain inlets



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## Part 7 – SWPPP

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- 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

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



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## Part 7 – SWPPP

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- 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

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- 7.2.6 Structural BMPs
  - Diverting flows
  - Silt fences
  - Sediment traps
  - Rock check dams
  - Inlet / outlet protection



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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

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## Part 7 – SWPPP

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



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## Part 7 – SWPPP

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- 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

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



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## Part 7 – SWPPP

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- 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



20

## 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

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- 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.



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## Part 7 – SWPPP

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



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## Part 7 – SWPPP

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- 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



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## Part 7 – SWPPP

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- 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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Mervin Lare  
Stormwater Compliance Engineer



Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793



# Construction Stormwater Training

## Stormwater Discharge Permit Part 3



1

## Part 8 – Transfer of Ownership

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- NPDES permit allows for the permit to be transferred
- KDHE must approve transfer
- Not allowed on KDOT let projects



2



## Part 9 – Completion

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- Notice of Termination
  - 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

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- 10.1 - Records
  - Maintained for 3 years after NOT
  - NOI, SWPPP, Inspection reports, 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



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## Part 10 – General

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- 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



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## Part 11 – Standard Conditions

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- 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

## Thank You

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Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)




Cell: 785-250-4793




8



# KDOT Stormwater Specifications




1

## Stormwater Related Specification and Special Provision

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### 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



## Special Provision 15-09002-R05 Stormwater Pollution Management

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- 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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## Special Provision 15-09002-R05 Stormwater Pollution Management

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- 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



4

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- There are some projects which have Lump Sum Seeding as a bid item but still require a NOI. This means the project open area is more than an acre but less than an acre is to be seeded. Example the roadway is included in the open area calculation.
- The bid items Water Pollution Control Manager and SWPPP Inspection are included.



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## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- 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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## Special Provision 15-09002-R05 Stormwater Pollution Management

- 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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## **Special Provision 15-09002-R05 Stormwater Pollution Management**

- 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



10





11

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

- 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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## Special Provision 15-09002-R05 Stormwater Pollution Management

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- 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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17

## Special Provision 15-09002-R5 Stormwater Pollution Management

- 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 – include in SWPPP
    - When storage is necessary additional BMPs may be needed to account for loss of buffer space
    - Stabilize the stockpile



18



## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- 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

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- General Requirements 901.3b
  - General Stabilization
    - Immediately initiate temporary 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.



20

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- General Requirements 901.3b
  - 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 construction activities take place to re-disturb the area.



21

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- General Requirements 901.3b
  - 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



22

## Special Provision 15-09002-R05 Stormwater Pollution Management

---

- 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***



23

## Special Provision 15-09002-R05 Stormwater Pollution Management

---

- General Requirements 901.3b
  - 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



24

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- General Requirements 901.3b
  - 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



25

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- General Requirements 901.3b
  - 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



26



## Contact Information

---

- Mervin Lare
- [Mervin.lare@ks.gov](mailto:Mervin.lare@ks.gov)
- Cell 785-250-4793



# KDOT Stormwater Specifications SWPPP and WPCM



1

## Special Provision 15-09002-R05 Stormwater Pollution Management

- SWPPP Design 901.3c
  - Project Stormwater Pollution Prevention Plan
    - 3 original copies to field engineer
    - 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
    - Maintain a complete and updated copy of the SWPPP on the project site



2

## Special Provision 15-09002-R5 Stormwater Pollution Management

---

- Water Pollution Control Manager 901.3d
- Water Pollution Control Manager (WPCM)
  - Visit the project frequently (*no less than once per week*)
  - Supervise all work (including subs and prime) & 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



3

## Special Provision 15-09002-R05 Stormwater Pollution Management

---

- 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



4

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- Water Pollution Control Manager 901.3d

### Training Required for WPCM

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



5

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 901.3f- Oversight Inspections
  - Assigned by Stormwater Compliance Engineer
  - From another District
  - Disincentive assessment applies
  - 10 days to complete deficiencies once report is received



6



## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- Stormwater Erosion Control Conferences 901.3g
  - 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



7

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- Penalties and Fines 901.3h
  - Stormwater Compliance Disincentive Assessments are in addition to any federal and/or state statutory penalties and fines assessed by KDHE and/or EPA.



8

## Special Provision 15-09002-R05 Stormwater Pollution Management

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- Stormwater Compliance Disincentive 901.3h

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 remedied within allowable time
\$0	\$1,000,000.00	\$250.00	\$250.00
\$1,000,000.01	\$2,500,000.00	\$500.00	\$500.00
\$2,500,000.01	\$5,000,000.00	\$750.00	\$500.00
\$5,000,000.01	\$10,000,000.00	\$1,000.00	\$500.00
Over \$10,000,000.00		\$1,500.00	\$500.00



9

## Special Provision 15-09002-R05 Stormwater Pollution Management

---

- 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
    - Lump Sum assessment



10

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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”
  - Can there be payment for more than 1 WPCM per week?



11

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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.



12

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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?



13

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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



14



## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- 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?



15

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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.



16

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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



17

## **Contact Information**

---

- Mervin Lare
- [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)
- Cell 785-250-4793



18

# KDOT Stormwater Specifications Inspections



1

## Special Provision 15-09002-R05 Stormwater Pollution Management

- SWPPP Inspections 901.3e
  - Joint Inspections – KDOT and contractor start after Notice to Proceed (NTP)
  - Inspections begin and end during daylight hours
  - Document inspections on KDOT Form 247
  - KDOT and contractor Inspectors BOTH sign report
  - Contractor submits report to Area/Metro Engineer and Contractor's WPCM by the end of the next business day after inspection
  - Joint inspections by KDOT/Contractor continue until Notice of Acceptance (NOA)
  - Inspections by KDOT continue until Notice of Termination (NOT)



2

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- A SWPPP inspection is only required once per 7 calendar days regardless of the amount of rain that fell on a project.
- Business days exclude Saturday, Sunday, and Federal and State legal holidays.



3

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- SWPPP Inspections 901.3e
  - Schedule SWPPP Inspections such that a minimum of one Inspection is performed within every 7 day period.
  - What does this mean?



4



## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- 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



5

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

---

- SWPPP Inspections 901.3e
  - 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?



6

## Special Provision 15-09002-R05 Stormwater Pollution Management

---

- 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



7

## Special Provision 15-09002-R05 Stormwater Pollution Management

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- SWPPP Inspections 901.3e
  - Correct any deficiencies within 7 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.



8



9



10

## **Special Provision 15-09002-R05 Stormwater Pollution Management**

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- 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



11

## **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.



12



13

## General Permit Requirements

---

- Part 7.2.10 Site Inspection by Permittee
  - If weather or site conditions render access to any portion of the site to be unsafe or infeasible for inspection, document the reason why. Weather and site conditions shall be monitored and recorded daily excluding Saturdays, Sundays and referenced holiday until access is determined to be safe and feasible. Inspection shall then be performed by the end of the next business day excluding Saturdays, Sundays and referenced holidays.



14



## Contact Information

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- Mervin Lare
- [Mervin.lare@ks.gov](mailto:Mervin.lare@ks.gov)
- Cell 785-250-4793



# KDOT Stormwater Specifications



1

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Construction Requirements
  - Biodegradable Logs
    - **Straw** biodegradable logs cannot be used for ditch checks or inlet barriers
    - When used for slope interruptions remove sediment deposits when  $\frac{1}{2}$  height of log



2

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Construction Requirements
  - Filter Sock
  - Needs to be able to drain
    - Use coarse aggregate filler for curb inlet protection



3

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Construction Requirements
  - Temporary Sediment Basins
    - Not optional. Must be built if they are in your plans.
    - Must be built early, before beginning other construction activity in the drainage area for the basin
    - Clear area of vegetation and construct with wide cross section and minimum grade per contract documents
    - Remove sediment when approx. 20% of capacity



4

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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5

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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6

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Construction Requirements
  - Temporary Fertilizer, Seed and Mulch
    - Repair rills, gullies or other erosion damage prior to seeding
    - Prepare seedbed, seed and mulch according to Division 900
    - Apply water if approved by Stormwater Compliance Engineer or the LPA



7

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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8



## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---



9

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Construction Requirements
  - Soil Erosion Mix
    - Prepare seed bed, fertilize and seed per Division 900
    - Only use Soil Erosion Mix under Erosion Control (Class 1) or Erosion Control (Class 2)
    - **No seasonal placement limitations**



11

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Erosion Control Mats Class 1 and Class 2
  - Seed according to Division 900
  - Seed can be placed by drill, hydro-seeder or broadcast
  - Prepare and smooth areas before placement
  - Place Erosion Control (Class 1) on slopes or around pipes/boxes
  - Place Erosion Control (Class 2) in channels, ditches or areas of concentrated flow according to plans



12

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Install erosion mats according to manufacturers details or KDOT standards
- Common Issues
  - Not keying in blankets
  - Not proper amount of staples



13

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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14



## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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15

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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16

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Geotextile (Erosion Control)
  - Can be used to protect slopes and stockpiles
  - Remove prior to placement of permanent protection unless called out on the plans



17

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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18



## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

---

- Maintenance and Removal of Devices
  - Monitor temporary erosion and pollution control devices daily
  - Should be continually maintaining devices
  - Replacing devices
    - If installed properly but no longer effective, pay for replacement
    - No payment if installed improperly, lack of maintenance or failure to install in timely manner
  - Removal of devices
    - Dispose of silt, grade, fertilize, seed and mulch any bare areas



19

## Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX

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20

# Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX



21

# Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX



22

## **Section 902 Temporary Erosion and Sediment Control and Special Provision 15-09004-RXX**

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- 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
  - Sediment removal option
    - Over 50 cubic yards in one location, may pay using force account



23

## **Other Stormwater Related Specifications and Special Provisions**

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### **2015 Specifications**

- Other Key Sections
  - Section 903 Fertilizer, Agricultural Limestone and Peat Moss
  - Section 904 Seeding and Special Provision 15-09004-RXX
  - Special Provision 15-09003-RXX Mulching



24

## **Section 904 Seeding and Special Provision 15-09004-RXX**

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- Special Provision 15-09004-RXX
  - Bid item “Seeding Lump Sum (LSUM)” for projects less than one acre of seeding
  - Bid item includes Temporary and Permanent seeding
  - Multiple mobilizations may be required



25

## **Special Provision 15-09003-RXX Mulching**

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- Hay mulch is paid for by the Ton
- Mulch Tacking Slurry by the pound
- Hydraulic Erosion Control Products (HECP) are paid for by the pound



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## Special Provision 15-09002-RXX Mulching

---

- HECP (Hydraulic Erosion Control Products)
  - Achieve no more than 65% coverage from primary angle
  - Second angle is 175 to 185 degrees from primary angle
  - Application rates based on slope

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



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## Special Provision 15-09002-RXX Mulching

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28

## Special Provision 15-09002-RXX Mulching

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29

## Special Provision 15-09002-RXX Mulching

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30

## Contact Information

---

- Mervin Lare
- [Mervin.lare@ks.gov](mailto:Mervin.lare@ks.gov)
- Cell 785-250-4793







# Construction Storm Water

Basic Principles of Erosion/Sediment Control

Part 1

**KANSAS STATE**  
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## Principles of Erosion/ Sediment Control



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First principle: Contain the site  
Use of soil berm



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Site containment  
Use of berms along project



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POLYTECHNIC



## Use of berms and bio-rolls near wetland



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## Standard method of containing the site..... silt fence



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POLYTECHNIC





Silt fence by itself cannot protect all areas of many construction sites.



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POLYTECHNIC



Silt fence cannot control brown water



**KANSAS STATE**  
POLYTECHNIC

## Silt fence doesn't work to contain brown water



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POLYTECHNIC

## Site containment: Silt fence and stabilization near wetland



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POLYTECHNIC



## Silt fence in combination with Buffers



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POLYTECHNIC

## Options for sediment control Buffers to assist with perimeter control



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UNIVERSITY  
16. 1863

Second principle: Control erosion. Sheet and rill erosion



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POLYTECHNIC

UNIVERSITY  
16. 1863

Water follows the cleat imprints



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POLYTECHNIC



## Direction of caterpillar equipment tracks impacts rill erosion



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POLYTECHNIC

Another method to eliminate ruts, rills, ridges, and track imprints is by back dragging with the dozer blade



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### Principle # 3: Need to stabilize bare slopes



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### Example slope to determine effectiveness of methods



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## Options to stabilize the example slope



- Cat walk the slope surface
- Topsoil the slope
- Place mulch
- Use standard hydro-mulch
- Use bonded fiber hydro mulch
- Use fiber reinforced hydro mulch
- Use erosion control blanket

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## Spray on hydro-mulch options



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Spray-on hydro- mulch products are being used more and more.



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Need 100% soil coverage.



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POLYTECHNIC



Because of cost, rate is frequently reduced and erosion control is compromised



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## Example slope



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## Calculated effectiveness of different methods on the example slope

+ cost based on experiences at MN/DOT

Practice	Soil loss (Tons/Acre)	% Reduction in soil loss	Service life	Cost/acre +
Bare soil	380	None	-----	-----
Cat walk/dozer	253	34 %	2-3 weeks	\$1500
Topsoil slope	222	42%	-----	-----
Mulch	44	89%	8-10 months	\$500
Hydro-mulch	84	78%	1-2 months	\$3600
Bonded fiber hydro-mulch	31	92%	8-10 months	\$6000
Fiber reinforced hydro-mulch	22	94%	12-16 months	\$8500
Erosion blanket	15.5	96%	12-16 months	\$9000

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## Example slope



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## Seed and mulch as the project is built



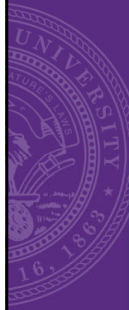
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# Construction Storm Water

Basic Principles of Erosion Control  
part 2 Slopes and Ditches

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## Protection in ditches and channels



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# Be careful with ditch checks



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# Field training conducted



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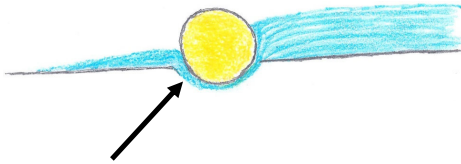


## Flow under the check



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## Piping under the ditch check



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POLYTECHNIC



## Comparison of ditch checks verses erosion control blanket



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## Stabilize with blanket and other products

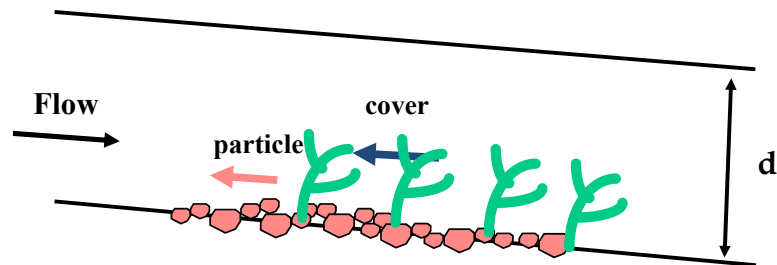


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# Erosion in channels/ditches

Shear is a function of slope and amount of water flowing over the surface

Shear forces exerted



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## Shear force exerted by flowing water



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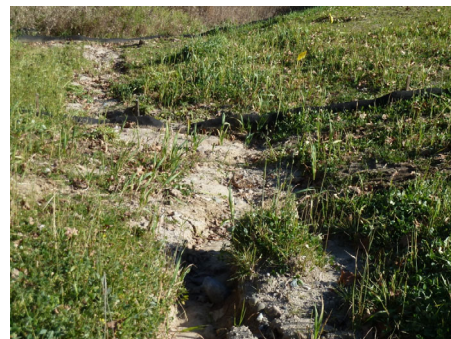


Hydro-mulches  
peel off and  
float away



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Don't use spray  
on hydro-  
mulches in ditch  
bottoms



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## Shear force of water flowing in channel



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Materials tested in channels

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Shear = (unit weight of water)x (depth of water) x slope

$$S = 62.4 \text{ lbs./cubic ft.} \times d \text{ (ft.)} \times \text{slope}$$

Example

**Depth = 1 ft.**

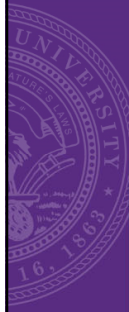
**Slope = 2 percent or 0.02**

$$S = 62.4 \times 1.0 \times 0.02$$

$$S = 1.248 \text{ or } 1.25 \text{ lbs./sq. ft.}$$

Look at chart: double net straw blanket is inadequate

Double net excelsior blanket would be adequate



## Shear= (wt. of water) (d) (s)

<b>Material/product*</b> (*products given as examples only)	<b>Max shear</b> Lbs/sq ft
Double net blanket; straw	1.2
Double net blanket; excelsior	1.5
Straw/coconut, light wt. coconut	2.0
Heavy excelsior, regular coconut	2.8
TRM Recyclex, Enforcer, C350, P42	4.0
TRM Enkamat 7010/7020, Landlock 450	5.0
TRM Enkamat R, Pyramat, P550	6.0
Flexamat	7.5



- Colorado University test laboratory
- Example of 10 lbs/sq ft shear force



### Example 2

Depth = 9 inches, Slope= 3%

Convert Depth to ft. = 9 inches/12= 0.75 ft

Shear = 62.4 lbs/cubic ft x 0.75 ft x 0.03

Shear = 1.40 lbs/square ft.

Look at chart ..... double net excelsior blanket will work

### Example 3

Depth= 1.5 ft Slope = 3%

Shear = 62.4 lbs/cubic ft x 1.5 ft x 0.03

Shear= 2.80 lbs/square ft

Look at chart..... Heavy excelsior and regular coconut blankets are at the maximum shear stress and would likely fail.

Choose next type of product..... TRM such as Recyclex, Enforcer blanket, C 350 blanket or P 42

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Can Use rock rip rap to address the shear flow of the water



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## New channel lining product... flexamat



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## Channel linings with protective vegetation



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## **Dos**

- Contain the site
- Stabilize slopes as project is built
- Use the new hydro mulch products
- Seed and mulch as project is constructed
- Use appropriate materials to stabilize ditch bottoms

## **Don'ts**

- Don't rely just on silt fence
- Don't use hydro mulch in ditch bottoms
- Don't reduce rates of hydro mulches
- Don't rely totally on ditch checks.



# Construction Storm Water

Best Practices to Establish  
Vegetation

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1



Best practices to establish  
vegetation



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POLYTECHNIC

2

Moisture and warmth activates enzymes causing duplication of plant cells..... making the seed pop



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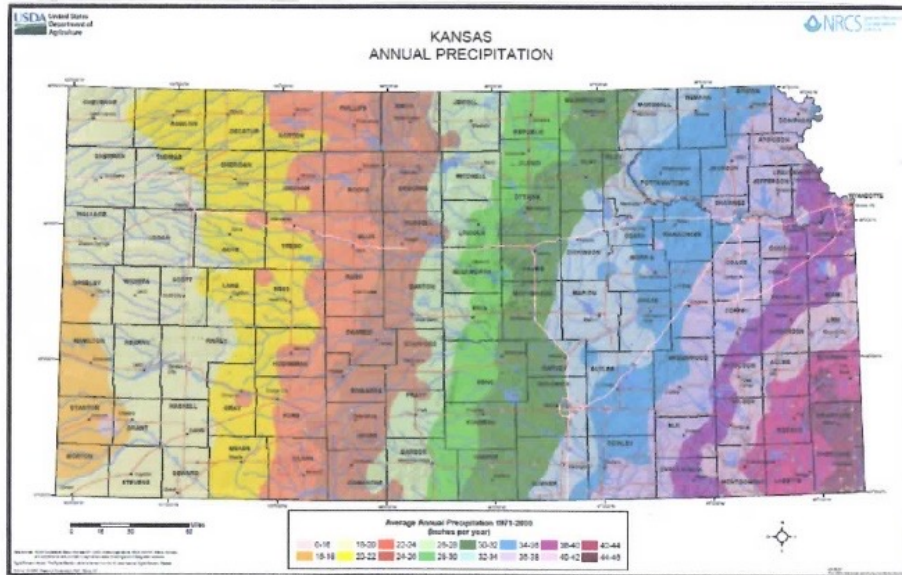
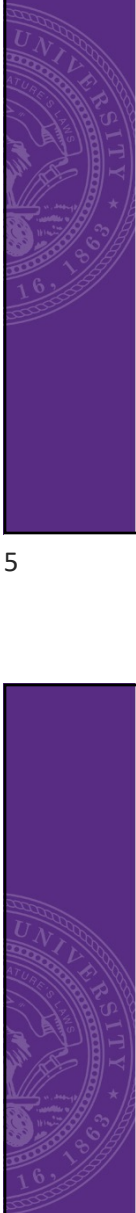
3

The embryo then develops pushing out roots in search of nutrients and moisture to nourish the fledgling plant. Moisture is needed to drive and continue the process.



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4



5

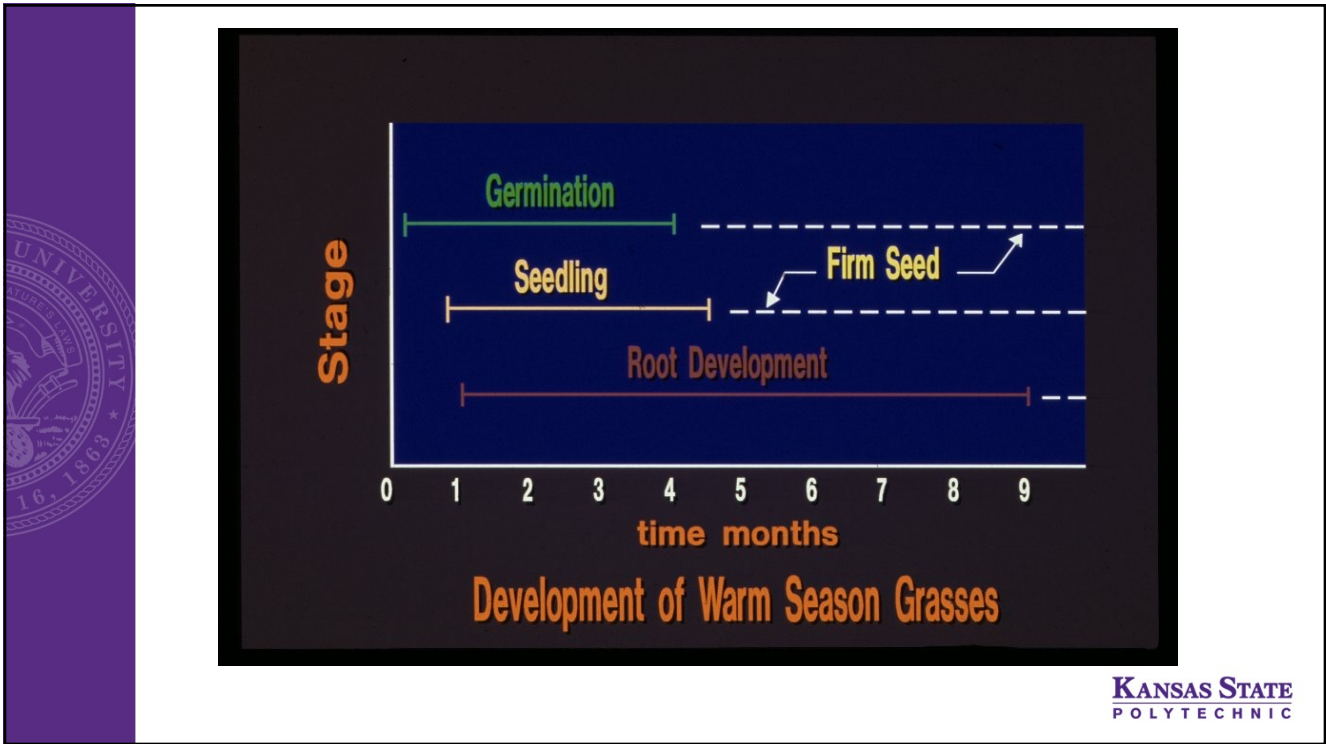
# Native seeding

- Use a native seed drill
- Place fluffy seed in native seed box.
- Place fine seed in fine seed box.
- Seed placement 1/2 to 3/4 inch depth
- Need good seed to soil contact
- Seeding rate based on PLS



6





7



8

# Good soil for stabilization?



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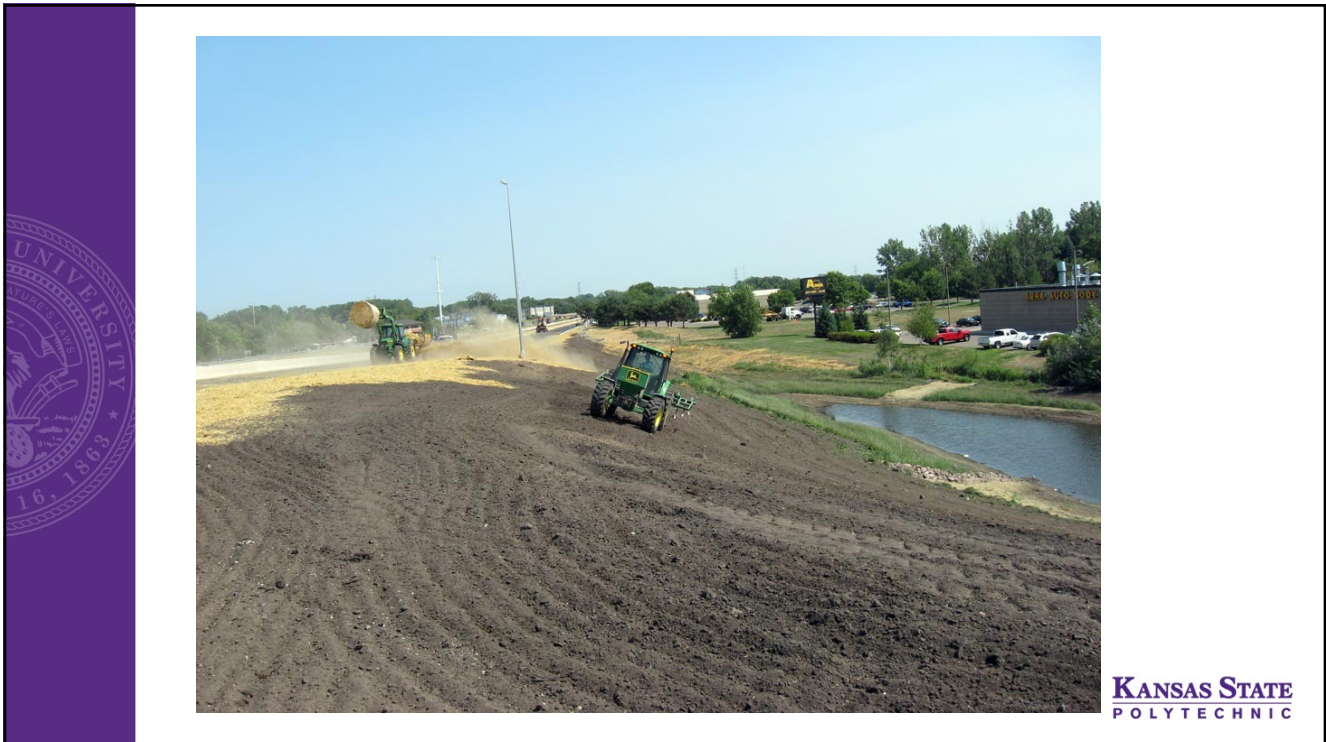
9



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10





11

## Include Soil Amendments Based on Soil Tests

Amendment	Purpose	Typ. Rate/Ac.
Fertilizer	Establishment	200-400 lbs
Lime	Correct acidity	2-4 tons
Gypsum	Correct salinity	1-3 tons
Compost	Organic matter	2-3 inches

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12

## New products to establish vegetation

- Many applied with hydro seeder
- Soil neutralizers
- Biotic soil amendments
- Bio-stimulators



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## Soil neutralizers

- Liquid lime applied by a hydro seeder
- For soils less than pH 6.3
- Application rates vary between 5-10 gals/acre
- High calcium carbonate content for quick pH modification in the seed zone

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14





## Biotic Soil Amendments

- Used to establish vegetation on very poor soils or where topsoil may be lacking.
- Used on soils low in organic matter ( less than 3 % organic matter)
- Applied with a hydro-seeder 75-100 lbs. per 100 gallons water. Must follow detailed mixing instructions from manufacturer.
- Application rates dependent on soil organic level. Must test soil for organic percentage.
- Application rates vary between 3000-5000 lbs. per acre.

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15



## Common biotic soil products include:

- Biotic earth
- Proganics

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16

## New products..Biotic Soil Amendments



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## Mycorrhizae ( soil fungi)

- Microbes that form close association with plant roots and metabolic systems
- Microscopic and grow inside the roots
- Colonize plant roots sending out their own fungal roots increasing absorption of water and nutrients from the soil
- Plants become more tolerant of compaction, drought, and heavy metals

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18



## New heavy discs for hard ground

- Heavy duty 22 inch blades
- Weight 60 lbs/blade at 9 inch spacing
- Notched front blades to dig in hard ground

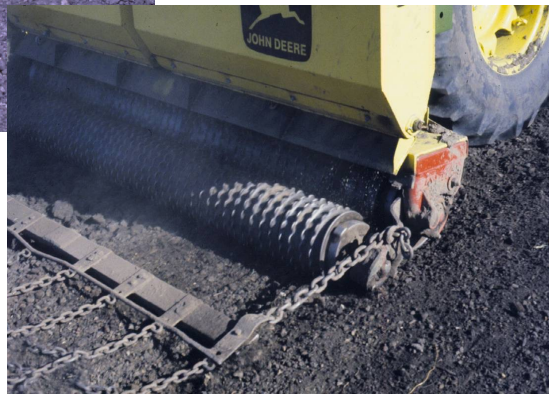


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19



## Drop type seeders with press wheels



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20





21



22



## Skid steer inter-seeding drill with front tillage coulters



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23

## Results of inter-seeding note the drill rows



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24

# Skid steer multi purpose seeder



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# Construction Storm Water

Best Practices to Control Erosion

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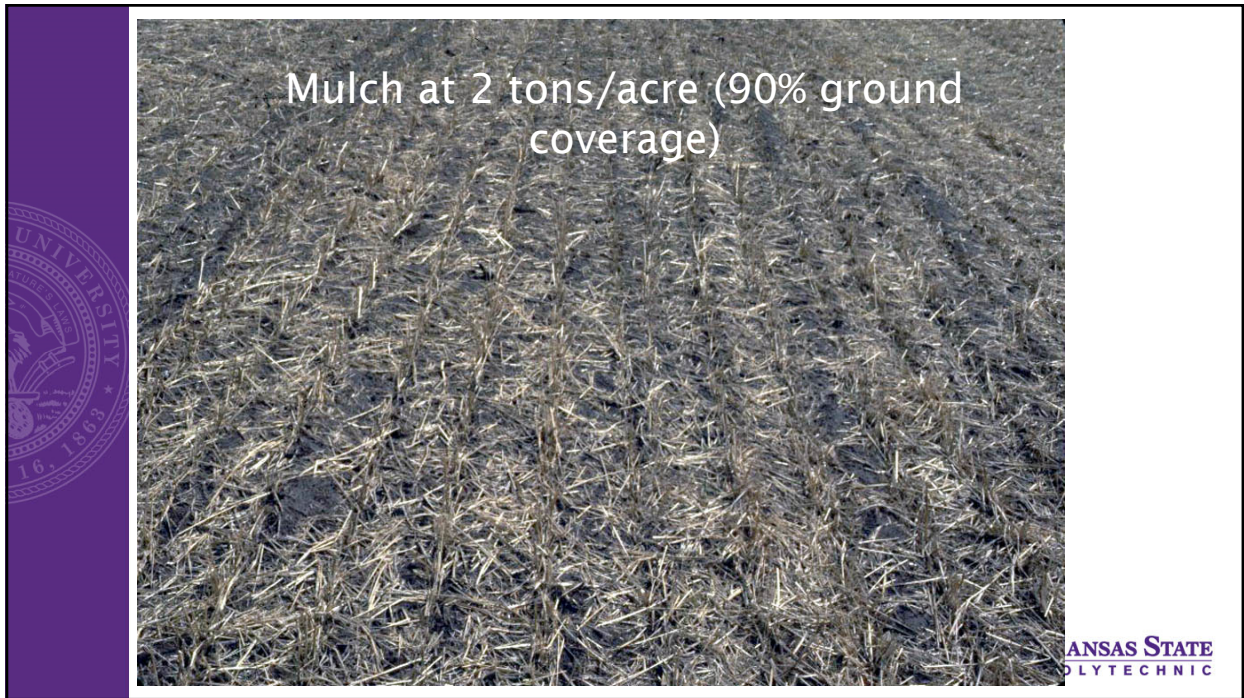


## Mulching



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## Frozen ground mulching



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## Tacking straw mulch

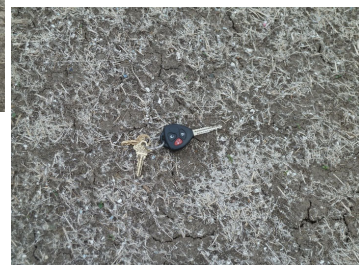


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## Ground paper hydro -mulch with tackifier



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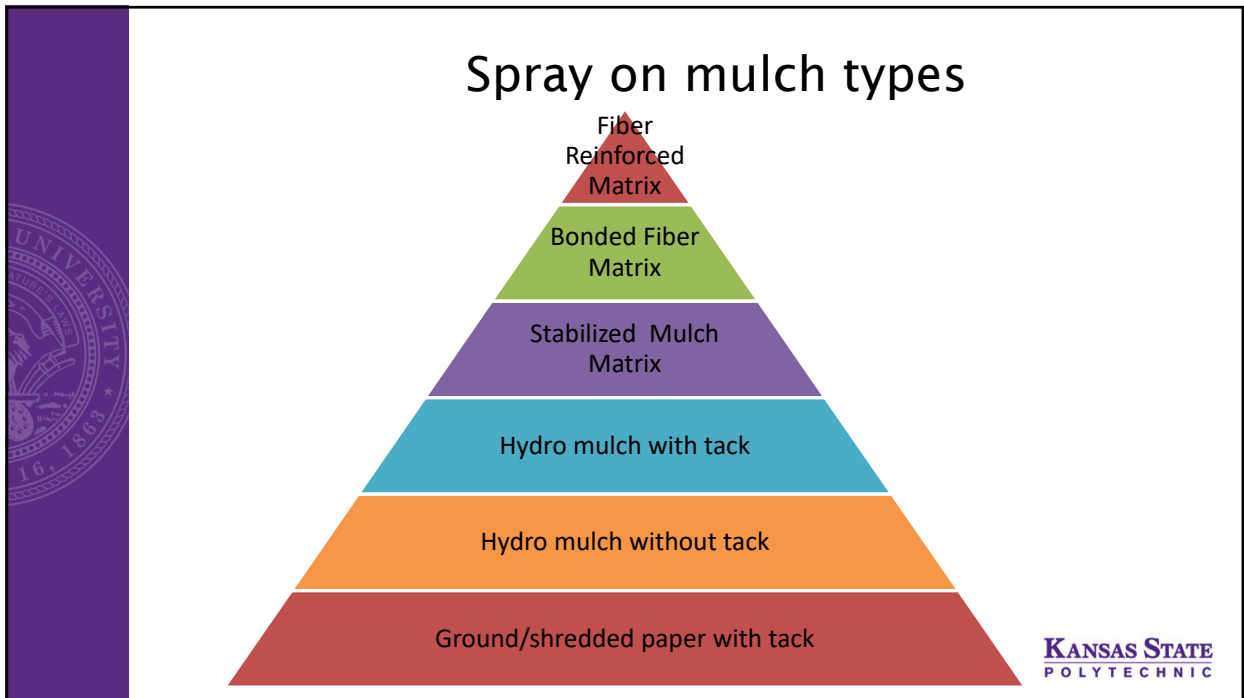
Hydro-mulch???  
Don't use straw  
tack product

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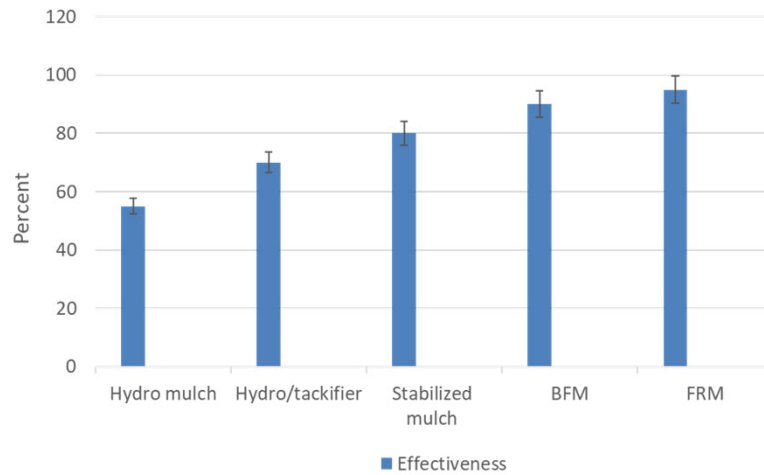


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## Observed effectiveness of various spray on mulches on prepared slopes



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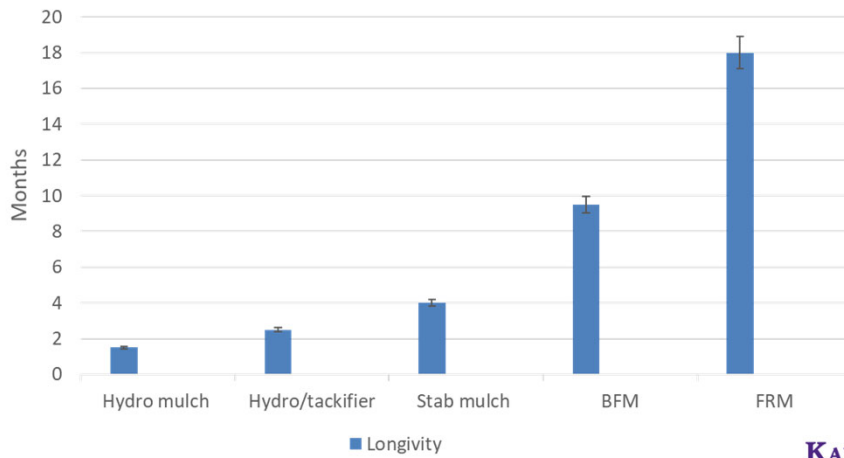
Functional longevity..... how long will the mulch stay in place and perform?



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## Functional longevity of various spray on mulches



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## Regular hydro-mulch with no tackifier



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# Tackifiers



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# Hydro-mulch

- Blend of recycled paper + wood fibers or 100% cellulose
- Need 5% tackifier by weight
- Must have uniform 100% ground coverage
- Must have the soil prepared
- Apply minimum 3000 lbs/acre

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## Bonded Fiber Matrix

- Super duty hydro mulch
- Requires 100% ground coverage
- Application rates 3000-3500lbs/acre
- Apply in two separate applications from two separate directions.
- Needs time to cure

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## Bonded fiber matrix to glue straw



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## Fiber reinforced matrix binds to soil



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## All spray on products require total ground coverage and uniform application



- All products need to be applied from two directions
- All spray on products need 100 % ground coverage
- All products need the soil surface prepared.

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## Need soil prep



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Apply hydro mulch from two directions

Looking up the slope      Looking down the slope



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## Soil conditioner



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## Harley rock rake in action



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# Overspray



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Not for ditch bottoms  
Hydro-mulch peels off



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## Erosion control blankets



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## Material composition



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## Different blanket compositions and weights

Blanket type	Mn/DOT category	Wt.(lbs./sq. yd. )
Straw single net	10	0.43
Straw double net	20	0.50
Straw/coconut	30	0.50
Excelsior net free	15	0.73
Excelsior regular single net	NA	0.73
Excelsior regular wt. double net	25	0.73
Excelsior medium wt. double net	35	0.98
Excelsior extra heavy wt. double net	45	1.50
Coconut double net	NA	0.50-0.70

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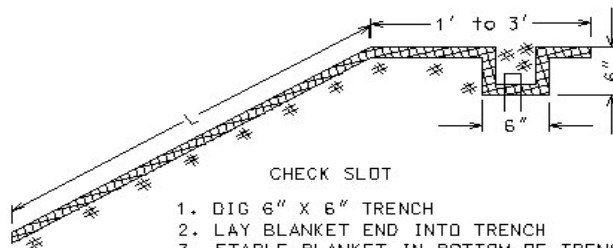
## Comparison of different weights and amount of material in blankets



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## INSTALLATION- BLANKET

- Check Slot at the beginning of all blankets and 1/3 from bottom on slopes 100' or longer



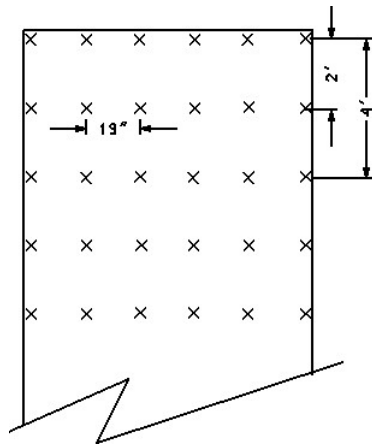
CHECK SLOT

1. DIG 6" X 6" TRENCH
2. LAY BLANKET END INTO TRENCH
3. STAPLE BLANKET IN BOTTOM OF TRENCH EVERY 1 FT
4. BACKFILL TRENCH WITH SOIL AND COMPACT
5. IF SLOPE LENGTH (L) IS GREATER THAN 100 FT DIG A CHECK SLOT 1/3 FROM THE BOTTOM OF THE SLOPE AND STAPLE THE BLANKET IN AS IN THE TOP TRENCH.

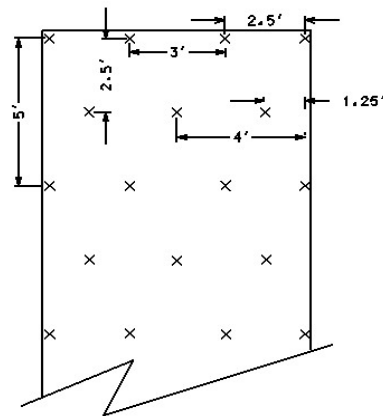
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# Stapling the blankets

## Channels



## Slopes



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# Synthetic turf reinforcement mats



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## Long term turf reinforcement mats



- Do not place wattles over turf reinforcement mats
- Must get vegetation to establish
- Water the installation



# Construction Storm Water

## Best Practices to Contain Sediment

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### Silt fence



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## Misuse of silt fence



## Silt fence doesn't work to contain brown water



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Can't trap sediment that is suspended or in solution



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must be removed and disposed of.



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# Fabric lined Jersey barrier



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# Slope covers



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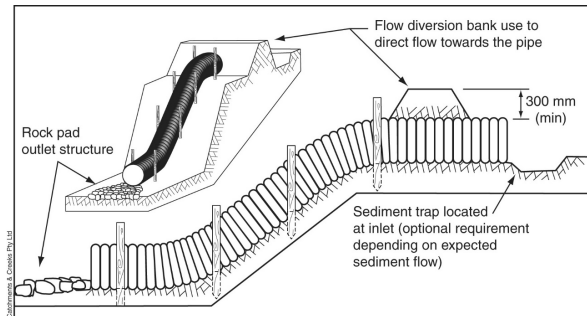




## Down Drains/water bypass on slopes

- Slope drains
- Bridge abutment drainage

TEMPORARY SLOPE DRAIN PIPE SIZE REQUIREMENTS	
Drainage Area (Acres)	Pipe Diameter (In)
0.5	12
1.5	18
2.5	21
3.5	24
5.0	30



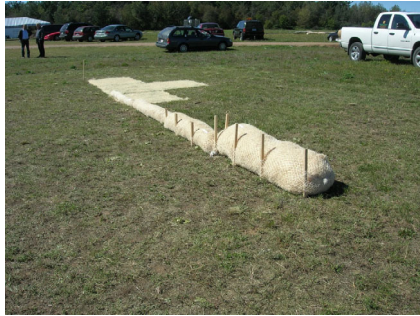
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## Off-street storm drain Inlets

- The potential to cause flooding must always be checked.
- When possible form a depression around the inlet area
- Use monofilament high flow fabric
- Use washed filter rock and wire reinforced cage or wooden frame to support fabric

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## Wattles as filter logs

- Wattles for filtering are available in various sizes
- The two most common wattle types are straw and excelsior
- Excelsior has the highest flow rate and filtering ability

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## In-street inlet protection

- Several types and sizes are available.
- All in-street inlet protection devices must have safety overflow capability

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## Street Inlet protection

- **Do not use** geo-textile fabric under the grate
- Geo-textile fabric under grate may cause flooding and unsafe driving conditions

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Long slotted  
inlets are  
difficult to  
protect



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## Inlet protection needs frequent cleanout



- Check inlet protection every day
- Inlet protection needs clean out after each rain event

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Floatation  
silt curtain

(turbidity  
barrier)

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Floatation silt curtain.  
Place tight against the shoreline



Available for different water depths



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## Use as a Barrier... Channel Cleanout



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Don't use across a channel  
Can't clean out.. Material will wash away



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Must be washed after removal and before transport to another site











# LA 852d

**INSTALLATION NOTES**

**SILT FENCE:**

1. Slope shall be 4' (max.) long and of one of the following materials:
  - a. Hardwood = 1 1/2" x 1 1/2"
  - b. Softwood Pine (D) = 2 1/2" x 2 1/2"
  - c. Steel U.T. or C Section = 1/2" to 1" per 1'-0"
  - d. Synthetic = same strength as wood stakes.
2. Attach fence fabric with 3:1 slope within the top 1/2" of the fence. Alternate attachment methods may be approved by the Engineer as a performance test.
3. Use of top fabric material is optional.
4. Refer to plan sheets to determine the length of silt fence required.

**BIODEGRADABLE LOG OR FILTER SOCK:**

1. Place biodegradable logs or filter sock tightly together minimum overlap of 1/2".
2. Wood stakes shall be 2" x 2" (min.).
3. Refer to plan sheets to determine length of biodegradable log and filter sock required.
4. Each top or steel faced support filter sock should be placed into the ground at a minimum of 25% of its height. Compact filter socks should be placed on smooth granular gravel with 1:1 slope between the sock and soil.
5. Length of stakes should be 5 times the height of the top of a minimum with minimum ground embedment equal to the height of the top of sock.

Slope Category	SLOPE INTERRUPTION			SUSPENSION TIME MAXIMUM	
	1/2" Settlement Log / 1/2" Filter Sock / 1/2" Filter Sock	1/2" Settlement Log / 1/2" Filter Sock / 1/2" Filter Sock	1/2" Settlement Log / 1/2" Filter Sock / 1/2" Filter Sock	1/2" Settlement Log / 1/2" Filter Sock / 1/2" Filter Sock	1/2" Settlement Log / 1/2" Filter Sock / 1/2" Filter Sock
1:1	45	60	60	15	15
3:1	30	45	60	15	15

**GENERAL NOTES**

- 1) Slope interruptions shall be placed along contour lines, with a short section turned upslope at each end of the barrier.
- 2) The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
- 3) Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to AGCOT.
- 4) Agricultural products such as rubber mulch may be used for routing and erosion control purposes, excluding wood based mulch that meet the North American Wood Fibre Particle Standards.



7

# LA 852e

**TYPICAL DITCH CHECK LAYOUT PLAN**  
NO SCALE

SLOPE	INTERVAL FEET
1:1	40
1.5:1	60
2:1	80
3:1	100

SLOPE	INTERVAL FEET
1:1	40
1.5:1	60
2:1	80
3:1	100

**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.
- 3) Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to AGCOT.



8







• Example

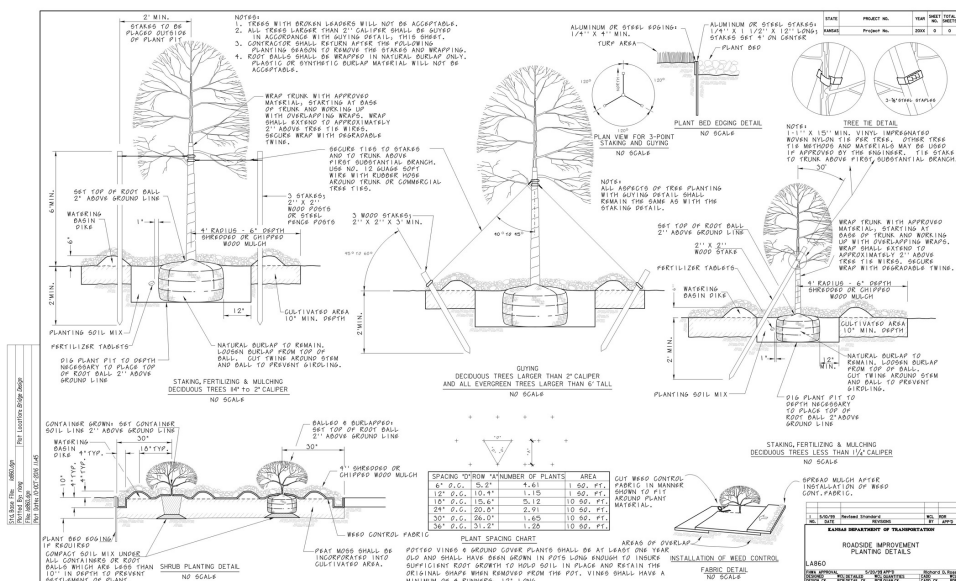
- You have a 10ft ditch bottom with a 4:1 backslope and a 6:1 foreslope. How wide should the Class II blanket be installed?

	<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



13

LA 860



14

# Thank You

---

Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793







# Construction Storm Water

Non-Storm Water Sources of Pollution  
Part 1

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## Demolition dust



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# Sweeping dust



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# Dust from equipment



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# Watering for dust control Retail business nearby



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# Interaction of Personal Safety And The Environment

“What is good for the environment is also good for us as human beings”



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**Usage:** Cutting, crushing or grinding hardened cement, concrete or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.

**Housekeeping:** Avoid actions that cause the cement to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8 below.

**Storage Temperature:** Unlimited. **Storage Pressure:** Unlimited.

**Clothing:** Promptly remove and launder clothing that is dusty or wet with cement. Thoroughly wash skin after exposure to dust or wet cement.

## Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering Controls:** Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.

### Personal Protective Equipment (PPE):

**Respiratory Protection:** Under ordinary conditions no respiratory protection is required. Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

**Eye Protection:** Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

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# Concrete Dust



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**Inhalation (acute):** Breathing dust may cause nose, throat or lung irritation, including choking, depending on the degree of exposure. Inhalation of high levels of dust can cause chemical burns to the nose, throat and lungs.

**Inhalation (chronic):** Risk of injury depends on duration and level of exposure.

**Silicosis:** This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease. See Note to Physicians in Section 4 for further information.

**Carcinogenicity:** Cement is not listed as a carcinogen by IARC or NTP; however, cement contains trace amounts of crystalline silica and hexavalent chromium which are classified by IARC and NTP as known human carcinogens.

**Autoimmune Disease:** Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

**Tuberculosis:** Silicosis increases the risk of tuberculosis.

**Renal Disease:** Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.



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Wet cutting and slurry  
containment



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## Diamond Surfacing



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Concrete slurry wastes and other liquid wastes must not be allowed to leach into the ground



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# Penetration of cement fluid slurry



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## WHAT EXACTLY IS CEMENTITIOUS WASHWATER?

Concrete or cementitious (mortar, grout, plaster, stucco, cement, slurry) washout wastewater is caustic and considered to be corrosive with a pH near 12, essentially the same as Liquid Drano®, Ammonia or other household cleaning detergents. The primary ingredient in ready mixed concrete is Portland Cement, which consists of Portland Cement Clinker, Calcium Sulfate, Calcium and Magnesium Oxide, heavy metals and potassium and sodium sulfate compounds, chromium compounds and nickel compounds. Some of the contaminants contained within concrete washwater include; Aluminum, Barium, Chromium, Hexavalent Chromium (Chromium 6), Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Selenium, Sodium, Vanadium, and Zinc. The washwater may also contain trace elements of petroleum products, admixtures and other materials from processing or treating the material. The graph to the left outlines the contaminants and their respective levels.

Metal / Test	Dirty (S) mg/l
Aluminum	50.0
Antimony	ND
Arsenic	ND
Barium	1.0
Beryllium	ND
Cadmium	ND
Calcium	1900.0
Chromium VI	0.73
Chromium	0.99
Cobalt	ND
Copper	0.24
Iron	66.0
Lead	ND
Magnesium	28.0
Manganese	1.60
Mercury	ND
Nickel	0.10
Potassium	110.0
Selenium	0.24
Silver	ND
Thallium	ND
Sodium	87.0
Vanadium	0.27
Zinc	0.51
Total Dissolved Solids	2700
Total Suspended Solids	5900
Turbidity	15
pH	12.3
Corrosivity	Corrosive

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# Concrete management



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# Self contained concrete washout



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## Other slurry wastes and tool wash off issues



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## Ewoc wash off system



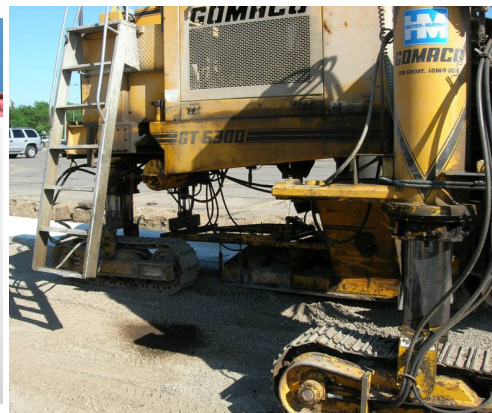
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## Porta potties



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## Storage and equipment leaks



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## Proper handling and disposal



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## Check equipment for invasive species



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# Construction Storm Water

Sources of Pollution Part 2  
Track-out and Dewatering

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Track out on streets  
When its wet/when it dries



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UNIVERSITY  
16. 1863

# Have a strategy for the site

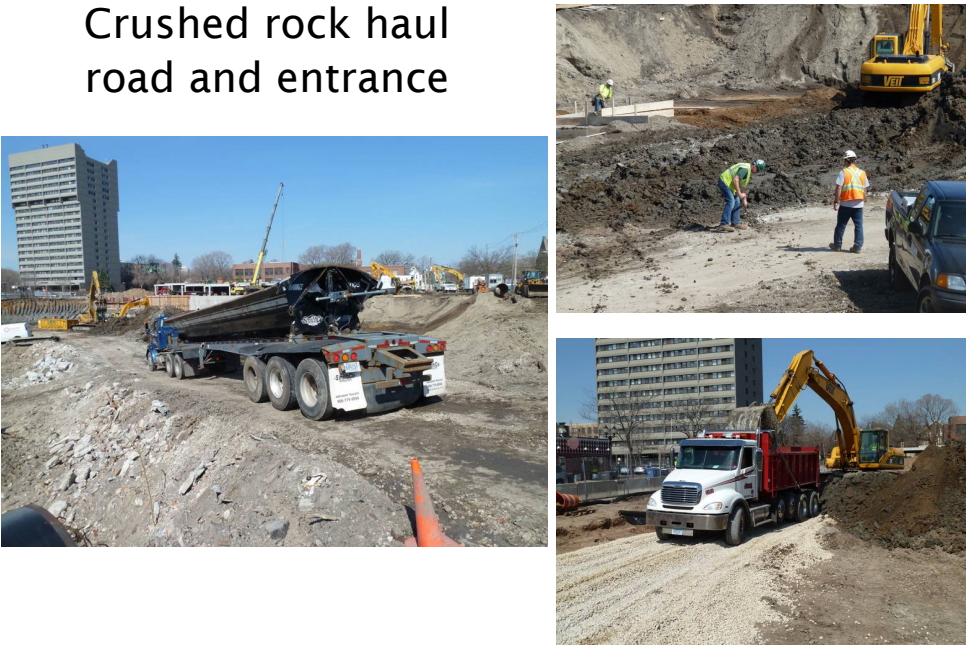


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This slide features a large photograph of a construction site. In the foreground, there is a large, deep excavation pit with a concrete foundation. Several yellow excavators are visible in the background, working on a large pile of earth. A tall, modern building is visible on the right side of the image. The text 'Have a strategy for the site' is centered at the top. The slide is framed by a purple vertical bar on the left containing a university seal and the Kansas State Technic logo in the bottom right corner.

UNIVERSITY  
16. 1863

# Crushed rock haul road and entrance



KANSAS STATE  
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This slide contains three smaller photographs illustrating construction activities. The top-left photo shows a large white truck with a trailer carrying a long, dark object, possibly a pipe or tunnel section, on a dirt road. The top-right photo shows two workers in safety gear standing near a yellow excavator and a blue car on a dirt path. The bottom-right photo shows a white truck with a red dump trailer being loaded with material by a yellow excavator. The text 'Crushed rock haul road and entrance' is centered at the top. The slide is framed by a purple vertical bar on the left containing a university seal and the Kansas State Technic logo in the bottom right corner.



# Managing track-out



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# Other methods Long rock pad and add rock



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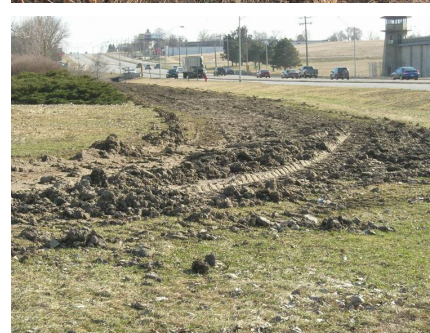
## Fabricated grizzly



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POLYTECHNIC

## Site access???

### Dura Road Pads



**ATE**  
**NIC**

## Dura Road pads for storage



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## Mats are the “in thing”!



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## Mats to work from



## Mats to store materials





# Mats to reduce track out from site

## TRACKING PADS

Reduce mud tracking from job sites. Bridge over grass or muddy areas to keep construction and maintenance vehicles from getting stuck.



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# Light weight mats and heavy mats



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# Dewatering sites



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# First...sample the water



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## Flocculent polymers to clarify the water



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POLYTECHNIC



### Treating water from dewatering

- Permit requires treating sediment laden water from pumping operations
- Various methods can be used including dewatering bags, dewatering dumpsters, sumps, frac tanks, and portable treatment filters

KANSAS STATE  
POLYTECHNIC



## Treating the water with a dumpster setup



**KANSAS STATE**  
POLYTECHNIC

## Contractor built dewatering dumpster



**KANSAS STATE**  
POLYTECHNIC





## Sand media filter with flocculant

Pictured unit 70-90 GPM

From 1000 NTUs to 10 NTUs







# Construction Storm Water

## Part 1 Inspecting random locations

KANSAS STATE  
POLYTECHNIC



### Record of Inspections

- Inspectors name
- Date of inspection
- Observations relative to effectiveness of BMPs
- Actions taken /necessary to correct deficiencies
- Areas where construction operations have stopped
- Observations of storm water discharge locations with respect to effectiveness of upgradient BMPs

**Any deficiencies shall be noted in a report of the inspection**

KANSAS STATE  
POLYTECHNIC

# Inspection information

Location	Deficiency	What needs to be done	When	Status

# Inspection exercise/Random sites



## Location #1 Across the River



**KANSAS STATE**  
POLYTECHNIC

## Location #2



**KANSAS STATE**  
POLYTECHNIC



## Location #3



KANSAS STATE  
POLYTECHNIC

## Location #4



KANSAS STATE  
POLYTECHNIC

# Location #5



**KANSAS STATE**  
POLYTECHNIC

# Location #6



**KANSAS STATE**  
POLYTECHNIC



## Location #7



KANSAS STATE  
POLYTECHNIC

## Location #8



KANSAS STATE  
POLYTECHNIC



# Location #9



**KANSAS STATE**  
POLYTECHNIC



# Construction Storm Water

Part 2 Inspecting a construction site

KANSAS STATE  
POLYTECHNIC



## Site inspections during construction



KANSAS STATE  
POLYTECHNIC

## What's with all the SWPPP Contractor Inspection Reports?



Site inspections by contractors during construction are required by permits with the ultimate goal of protecting adjacent water resources.

Anyone constructing a project that disturbs one acre or more either knows or soon realizes that they have to obtain an NPDES construction storm water permit. One of the requirements contained

in the permit is conducting site inspections on the project and filling out some sort of an inspection report. This is where confusion and the resulting medley usually begin. Compounding the inspection report

issue is the national requirement that inspections be conducted after rainfall events as small as 1/4 inch in 24 hrs. Each inspection requires an inspection report. This article is focused on inspections

Land and Water

www.landandwater.com 45

**KANSAS STATE**  
POLYTECHNIC

## Record of Inspections

- Inspectors name
- Date of inspection
- Observations relative to effectiveness of BMPs
- Actions taken /necessary to correct deficiencies
- Areas where construction operations have stopped
- Observations of storm water discharge locations with respect to effectiveness of upgradient BMPs

**Any deficiencies shall be noted in a report of the inspection**

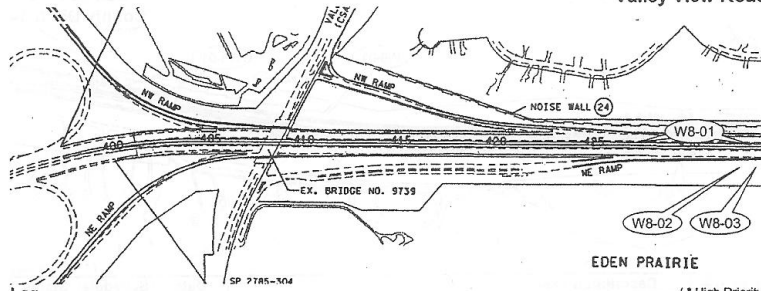
**KANSAS STATE**  
POLYTECHNIC





**ESC INSPECTION REPORT**

**START – Sta. 435  
Valley View Road**



**Log** (\* High Priority)

Item #	Description/Task	Date	Schedule	Status
W5-03 *	Install silt curtains: 1. Bryant Lake (3) 2. Grasshopper Pond 3. Minnetoga Lake 09-23-04 Supplies ordered. 09-30-04 Coordination with NMCWD and/or homeowners required. Grasshopper Pond is done.	09-17-04	TBD	Open
W8-01	Sta. 428 – 470 Intermittent Stabilize exposed soil.	10-07-04	10/8	Open
W8-02	Sta. 431R Install energy dissipation at culver outlet from lateral pond	10-07-04	10/12	Open
W8-03	Sta. 432 Remove sediment from silt fence, stabilize surrounding slopes, draw down water crossing culvert BMP.	10-07-04	10/12	Open



# Inspection information

Location	Deficiency	What needs to be done	When	Status





## Drain in the work area



KANSAS STATE  
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Check where work is  
underway.

KANSAS STATE  
POLYTECHNIC

















# 247 Form

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

Project #: 10-23 KA-999-01

Area / Metro Engineer: \_\_\_\_\_

Date of Last Significant Rain Event: 1/1/2018

Inspection Type: \_\_\_\_\_

Permit #: ks0000

Water Pollution Control Manager: \_\_\_\_\_

Date of Last Inspection: 12/25/2017

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

\*WPCM Signature acknowledges awareness of all deficiencies noted. All documented deficiencies are required to be remediated 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.

1 of 7

FORM 247  
Rev. 2018

1

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

Project #: 10-23 KA-999-01

Area / Metro Engineer: \_\_\_\_\_

Date of Last Significant Rain Event: 1/1/2018

Inspection Type: \_\_\_\_\_

Permit #: ks0000

Water Pollution Control Manager: \_\_\_\_\_

Date of Last Inspection: 12/25/2017

Inspection Date: 1/1/2018

(optional) Report #: 7

**CONTENTS**

FORM ID #	DESCRIPTION	REQUIRED?
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247C	Sediment Control and Other Structural BMPs	YES

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247D	Rainfall Log	YES
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TITLE	PRINT NAME	CERT ID #	EXP. DATE	SIGNATURE	DATE

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1 of 7

FORM 247  
Rev. 2018

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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."



3

**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		

2 of 7

FORM 247A  
Rev. 2018



4











# Stormwater Pollution Prevention Plan Review

## 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.

1 of 7

FORM 247  
Rev. 2018



## STORM WATER POLLUTION PREVENTION PLAN

Project No. Construction Stormwater Class  
 County: Sedgewick  
 Type of Work: Grading, Surfacing, Seeding

Total Disturbed Acres: 7.16  
 Total Area of the Site: 12.32



1021 North Cedar St  
 Marion, KS 66861

Office: (785) 250-4793  
 Fax: (###) ###-####

SWPPP prepared by: Mervin Lare Date: 12-30-19

1

010





**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 KDBE issued successor permits, issued for stormwater runoff from construction activities in the State of Kansas. Becoming a permittee obligates the discharge to comply with the terms and conditions of the general permit. Completion of this NOI does not provide automatic coverage under the general permit. Coverage is provided and discharge permitted when the Kansas Department of Health and Environment (KDHE) authorizes the discharge of stormwater runoff from the construction activities identified on the NOI and supporting documentation. A signed and dated copy of the first page of the NOI indicating the Authorization will be provided to the owner or operator, or all three pages for Conditional Authorizations. Upon authorization of the construction activity discharge, a Kansas permit number and a Federal permit number will be assigned to the construction project. A complete request for Authorization for coverage under the general permit must be submitted or the request will not be processed (see listing on Page 3 of this NOI). 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.  
 Please Print or Type.

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

**A. Owner or Operator's Name:** Cabin Road **C. Contact Name:** Mark Wendt  
 Company Name: Kansas Department of Transportation Company Name: KDDE-Environmental Services  
 Owner or Operator's Phone: (785) 296-3380 Contact Phone: (785) 296-5297  
 Mailing Address: 700 SW Harrison, 3rd Floor West Eisenhower Office Bldg. Mailing Address: 700 SW Harrison, 14th Floor  
 City: Topeka State: KS Zip: 66603 City: Topeka State: KS Zip: 66603  
 E-mail Address (optional): mark.wendt@ks.gov

**B. Billing Contact Name:** Mark Wendt **D. Address where records will be kept (if not on-site):**  
 Billing Contact Address (if different): 14th Floor Eisenhower Bldg. Records Address: Records kept on site  
 City: Topeka State: KS Zip: 66603 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

**II. SITE INFORMATION**

**A. Project Name:** \_\_\_\_\_ **B. LEGAL SITE DESCRIPTION:** Begins at \_\_\_\_\_  
 Site Address: \_\_\_\_\_ QTR of \_\_\_\_\_ QTR of \_\_\_\_\_ QTR Section: 4  
 City: Sturling State: KS Zip: \_\_\_\_\_ Township: 22 South; Range: 7 E X W  
 (Nearest City to Project) County: Rice Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Deg. Min. Sec. Deg. Min. Sec.

For Official Use Only: \_\_\_\_\_

Received	Amount Paid:	Authorized:	<input type="checkbox"/> Y; <input type="checkbox"/> N
	Date:	Is Authorization Conditional?	<input type="checkbox"/> Y; <input type="checkbox"/> N
	Initials:	(if yes, see page 3 of NOI for conditions)	
	Check No.:	Reviewer	<input type="checkbox"/> Y; <input type="checkbox"/> N
Secretary, Kansas Department of Health and Environment		Date	
KS Permit No.:		Federal Permit No.:	



Project Name: \_\_\_\_\_ Notice of Intent (NOI)

- C. EXISTING CONDITIONS/USES**
- Is any part of the project located on Indian Country land?  Y;  N  
 If yes: Contact EPA regarding discharging stormwater runoff from industrial activities on Indian Country land.
  - If stormwater runoff drains to or through a Municipal Separate Storm Sewer System (MS4): MS4 Name: N/A
  - Name of the first receiving water, stream, or lake: Low Creek Drainage Sub-Basin, Cow Creek River Basin, Arkansas River
  - Are contaminated soils present on the site or is there groundwater contamination located within the site boundary?  Y;  N  
 If yes: On separate paper please explain in detail the locations, contaminants and concentrations.
  - Are there any contaminated soils that will be disturbed or any contaminated groundwater that will be pumped by the proposed construction activity?  Y;  N  
 If yes: On separate paper provide a description of the special erosion and sediment control measures to be utilized.
  - Are there any surface water intakes for public drinking water supplies located within 1/2 mile of the site discharge point?  Y;  N
  - 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?  Y;  N  
 Note: Include documentation of project-specific coordination with the Kansas Historical Society in making this determination. **See attachment**
  - Is any threatened or endangered species habitat located within the site boundary or in the receiving water body?  Y;  N  
 Note: Include documentation of project-specific coordination with the Kansas Department of Wildlife, Parks & Tourism in making this determination. **See attachment**
  - 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?  Y;  N  
 If 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. **See attachment**
  - 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?  Y;  N  
 Note: Include documentation of project-specific coordination with the Kansas Department of Wildlife, Parks & Tourism in making this determination. **See attachment**
- If yes, list the names of all such areas and waters: \_\_\_\_\_

**D. PROJECT DESCRIPTION**

- Project Description: K-14 Bay Replacement, Construct 2.1 mi. Roadway on 4-Lane Right-of-Way on an off-ramp. This project will have an interchange at Broadway Avenue. There will be overcrosses on Avenue 3 and 17th Road. K-14 will be carried over Avenue 3 and the K&O Railroad. An at-grade intersection will be constructed at Avenue 4.  Y;  N
- Does this NOI include all proposed soil disturbing activities associated with the entire common plan of development?  Y;  N  
 If no, explain what development areas of the site are not included in this NOI and provide contact information, if available, for the party or parties that own or have operational control of these areas: \_\_\_\_\_
- Anticipated project Start Date: February 15, 2021 Completion Date: November 2, 2022
- Estimated total area to be disturbed: 222.7 Acres Total area of the site: 222.7 Acres
- Do you plan to disturb ten or more acres that are within a common drainage area?  Y;  N  
 If yes, will a sedimentation basin be installed in that drainage area? (Attach design calculations for each sedimentation basin.)  Y;  N  
 If a sediment basin is not feasible, on a separate sheet explain what similarly effective erosion and sediment control measures will be implemented in lieu of a sedimentation basin.

- E. Maps**  
 Include an area map showing the outline of the construction site and the general topographic features of the area at least one mile beyond the project site boundary.
- F. EROSION CONTROL PLAN AND BEST MANAGEMENT PRACTICES**
- Provide a site plan showing the existing contour, proposed contour, the erosion control measures and the locations of stormwater management or pollution control features including BMPs. Incorporate details and notes as necessary to describe the erosion control plans and BMPs.
  - Provide a description of the best management practices which will be utilized to control erosion, sedimentation and other pollutants in stormwater runoff during construction.



Project Name: \_\_\_\_\_ Notice of Intent (NOI)

3) Provide a summary of the sequence of major soil disturbing activities and the corresponding erosion control measures or BMPs.

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.

Name \_\_\_\_\_ License or Certification Number \_\_\_\_\_ Profession or Field (Engineer, Architect, etc.) \_\_\_\_\_

III. ANNUAL FEE

Enclose a check for the first year of the annual permit fee specified in K.A.R. 28-16-56 et seq. as amended. Make the check payable to "KDHE". Per K.A.R. 28-16-56, as amended, the current annual permit fee for this general permit is \$60. 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 will 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.

Mark Wendt for: \_\_\_\_\_ 10/12/2020  
 Signature (owner or operator) Date  
 Cliff A. Ehrlich, Chief, Environmental Services Section-KDOT  
 Name and Official Title (Please print or type. Form with original signature must be sent to KDHE.)

Conditions of Authorization - For Official Use Only:

When indicated, Conditions of Authorization are as follows:

\_\_\_\_\_

\_\_\_\_\_


\_\_\_\_\_

\_\_\_\_\_

A complete request for Authorization for coverage under the general permit must be submitted or the request will not be processed. A complete request for Authorization includes:

- An NOI form (construction stormwater) with an original authorized signature;
- The annual permit fee for the first year (\$60);
- An area map showing the outline of the construction site and the general topographic features of the area at least one mile beyond the project site boundary;
- A detailed site plan showing the existing contours, proposed contours, erosion and sediment control features, locations where stormwater runoff leaves the construction site;
- A narrative summary of the additional erosion and sediment control and other best management practices that will be utilized to prevent or reduce contamination of stormwater runoff from the construction activities;
- Total drainage area, storage capacity and design calculations for each sedimentation basin; and
- Copies of letters or e-mails documenting coordination with appropriate local, state, or federal agencies.

Effective March 2, 2012 NOI for Discharge of Stormwater Runoff from Construction Activities Page 3 of 3



**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 the Request for Joint Owner/Operator (RJOO) constitutes notice of a request for joint authorization for coverage with KDOT under the Kansas Water Pollution Control General Permit, or KDHE issued discharge permit, issued for discharge of Stormwater Runoff from Construction Activities in the State of Kansas. Completion of this RJOO does not provide automatic coverage under the general permit to the added owner/operator. Coverage is provided and discharge permitted for the joint owners/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 RJOO to KDHE does not relinquish the KDOT's authorization to discharge stormwater runoff from construction activity at the site described herein. Completion of this RJOO does not automatically release KDOT of any civil, criminal and/or administrative penalties. To be considered complete, the RJOO 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 RJOO 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 RJOO 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 agrees 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 RJOO 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 RJOO with original signatures to:  
 Kansas Department of Health and Environment  
 Bureau of Water, Industrial Programs Section  
 100 SW Jackson, Suite 420  
 Topeka, KS 66612-1367

Authorized:  Y;  N  
 Reviewer \_\_\_\_\_ Date \_\_\_\_\_

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







**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"/>	

KDOT Form 248  
9/16/2014

Page 1 of 2




**Kansas Department of Transportation**


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

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 EMT certification within 12 months prior to beginning construction?	<input type="checkbox"/>	<input type="checkbox"/>	
Proof of Contractor's Environmental Inspector(s) having completed EIT 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







### Environmental Permit Status

KDOT Project No.:

County:

Web Link:


Date:


	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"/>	
KS Dept. of Ag. Division of Water Resources (DWR) Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
National Pollutant Discharge Elimination System (NPDES)- Annual Renewal Date <a href="#">[7/21/2021]</a>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
KDWPT Threatened and Endangered Species Action Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other- Floodplain Development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other-	<input type="checkbox"/>	<input type="checkbox"/>	

**Mitigation Measures and Special Provisions:**

None



- ## Additional SWPPP Documents
- Project Schedule
  - Site Map
  - BMP Descriptions
  - Kansas NPDES
  - SECTION 900
  - Landscape Sheets
  - Any Additional Relevant Documents
- 



# Thank You

---

Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793



# The SWPPP Inspection



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

INSPECTION DATE: 01/01/18 REPORT #7  
10-23 KA-999-01

**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		

FORM 247A  
Rev. 2018





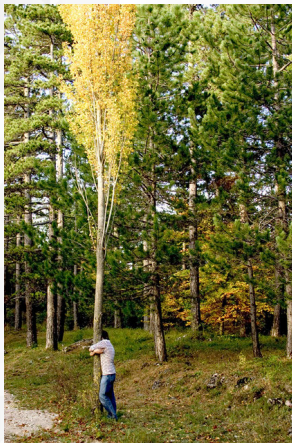








Are natural resource areas (e.g. streams, wetlands, mature trees) protected with barriers or other BMPs?



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Are perimeter controls and barriers adequately installed (keyed into substrate) and maintained?





Are discharge points and receiving waters free of sediment deposits?











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





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







Are portable toilets available for sanitary waste?









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











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







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





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

















Are soil stockpiles protected with perimeter barriers and appropriately stabilized?









# 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	Bio log entrance of pipe ( )			
252+70 RT	10-22-20	Seed Fert Mulch			
180+35 RT	10-22-20	Construction exit needs aggregate			

1 of 1

FORM 247E  
2/21/18

## Other remarks / observations



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# Thank You

Mervin Lare  
Stormwater Compliance Engineer

Email: [Mervin.Lare@ks.gov](mailto:Mervin.Lare@ks.gov)

Cell: 785-250-4793

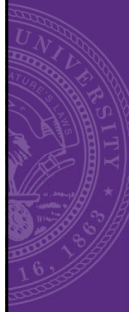




# Construction Storm Water

Developing and Implementing the  
Storm Water Pollution Prevention  
Plan Part 1

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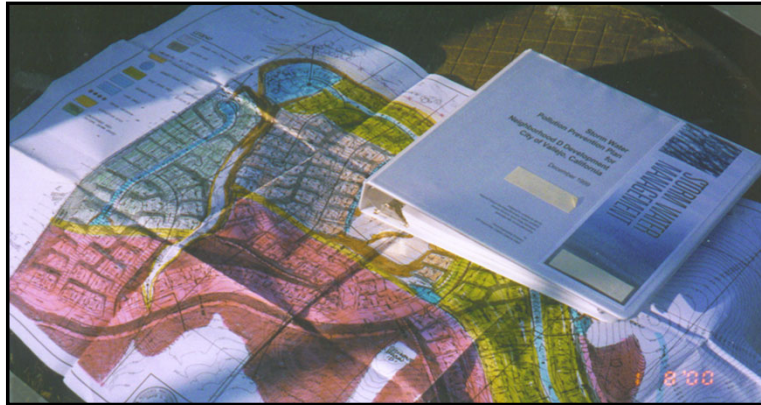
Storm Water Pollution Prevention Plans  
for construction projects



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POLYTECHNIC



## Storm water pollution prevention plan or... A Plan to prevent pollution from storm water



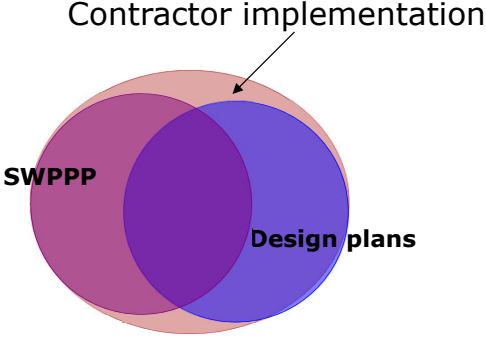
Site-specific, dynamic **plan set** designed to control the discharge of pollutants from construction sites to storm drains, water resources and nearby areas .

**KANSAS STATE**  
POLYTECHNIC

The storm water pollution prevention plan is required by permit

- 1) Must be designed and completed before work can begin
- 2) Must contain BMPs and strategy for compliance during the construction phase of the project
- 3) The SWPPP must be on the project and the provisions therein followed.
- 4) The SWPPP must be updated to reflect conditions on the project and any changes

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A Venn diagram with three overlapping circles. The left circle is purple and labeled 'SWPPP'. The right circle is blue and labeled 'Design plans'. The top circle is light purple and labeled 'Contractor implementation'. An arrow points from the text 'Contractor implementation' to the top circle. The intersection of SWPPP and Design plans is a darker purple. The intersection of SWPPP and Contractor implementation is a lighter purple. The intersection of Design plans and Contractor implementation is a light blue. The intersection of all three is a very light purple.

The SWPPP provides the BMPs to be used on the project and lays out the strategy for implementation

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## Strategy ( from EPA)

**Erosion control (keep dirt in place/ minimize impacts)**

- 1) Minimize disturbed area/protect natural features
- 2) Phase construction activity
- 3) Control storm water flowing from the project and into project
- 4) Stabilize soils promptly, seed and mulch portions of site
- 5) Protect slopes and ditches

**Sediment control (second line of defense)**

- 6) Protect storm drain inlets
- 7) Establish and maintain perimeter controls
- 8) Retain sediment on site and control dewatering practices
- 9) Establish and maintain stabilized site exists
- 10) Inspect and maintain controls

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## What are the goals?



- Comply with the permit requirements
- Do not let sediment or brown water escape the site perimeters
- Be cost effective from an overall approach
- Utilize Permanent Best Practices to the maximum extent
- Provide phasing of work and timely installation of BMPs

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## What BMPs to provide in the SWPPP



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# #1 issue of regulatory agencies Lack of timely stabilization



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# Stabilize portions of site as project is built



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Permit Section 7.2.5 Paragraph 6  
Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any soil disturbing activities have ceased either temporarily or permanently on any portion of the site and will not resume for a period exceeding 14 days.

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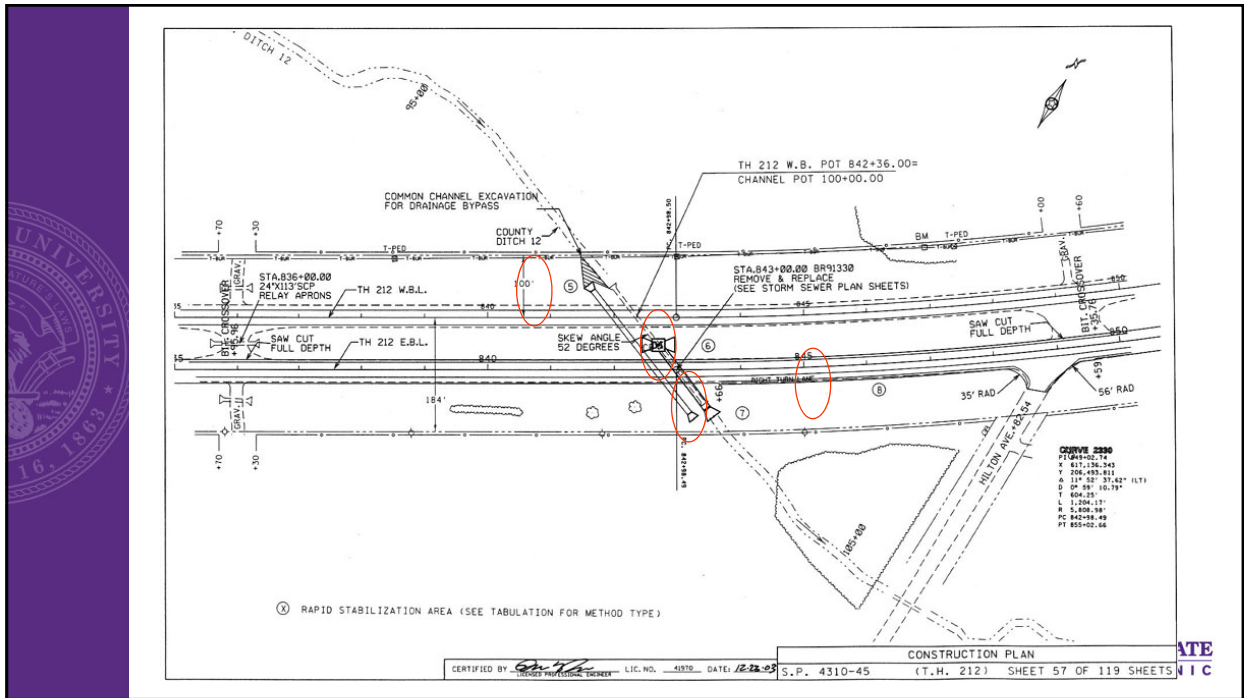
Mulch!! As the work is being done



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## Temporary stabilization.. Bridge area and other areas near a lake



## Section 7.2.3 Detailed SPPPP Requirements

- Best practices to control storm water volumes and velocity and prevent possible storm water discharges from site
- Minimize the amount of disturbed soils at any time and the disturbance to steep slopes
- Best practices to prevent sediment discharges from site and protect buffers near water resources
- Minimize soil compaction and preserve topsoil
- Design stream crossings that include best practices to protect the stream during installation, use, and removal
- Best practices to control sediment discharge from soil stockpiles
- Best practices to minimize generation of dust
- BMPs for off site vehicle tracking and removing sediment from streets in a timely manner
- Stabilization of drainage ways through use of best practices such as rip rap, erosion blankets, liners etc
- Diverting off-site drainage and providing inlet protection with maintenance

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## Stockpile protection



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## Dust coming from unprotected project



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## Dust coming from equipment



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# Inlet protection and maintenance



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## Permit SWPPP Content 7.2.9 Additional Site management BMPs

1. Pollutants from vehicle washing, wheel washing etc.
2. Protect soluble materials from precipitation and storm water such as fertilizer, herbicides etc.
3. Prevent spills and leaks
4. Utilize best solid waste management practices
5. Require portable toilets
6. Store construction materials away from drainage courses and low areas
7. Require containment berms and drip pans at fuel stations
8. Use procedures to eliminate discharge of contaminants from contaminated soils
9. Prevent discharge of concrete washout and rinse water from concrete mixing equipment

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# Storage trailers



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# Impressive handling and disposal



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## Contractor responsibility fuel storage



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## Do not rinse concrete slurry on the ground and use concrete dust control practices



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# Construction Storm Water

Developing and Modifying the Storm  
Water Pollution Prevention Plan Part  
2

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Remember Stabilize disturbed areas promptly  
Maximum permit time allowance 14 days



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Stabilize as work progresses Mix and match the BMPs



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Don't forget asphalt plant locations and lay down yards

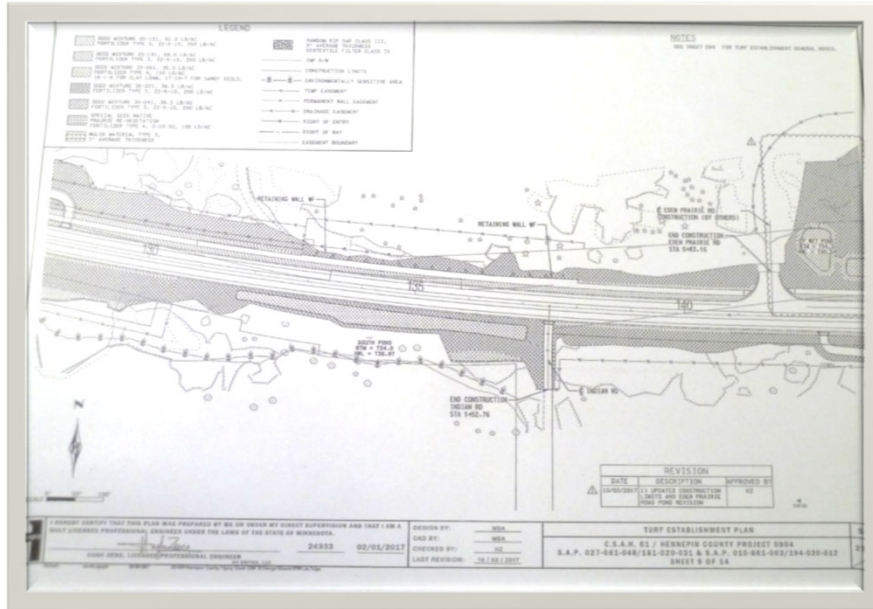


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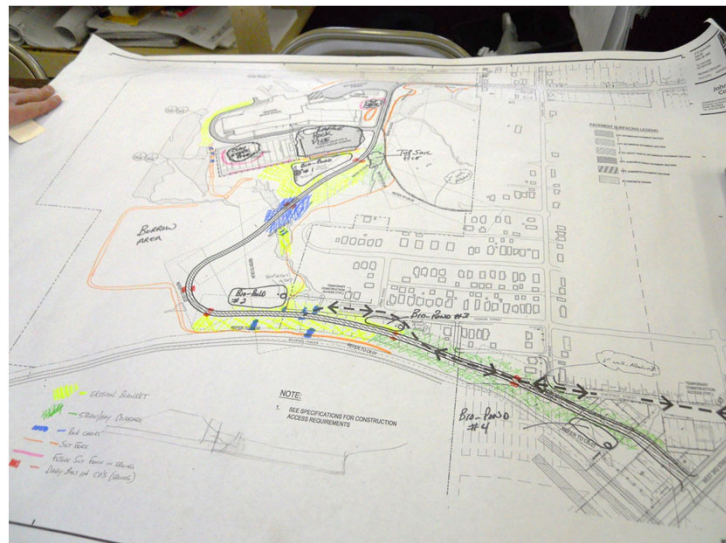


## Review the Plans for the various BMPs

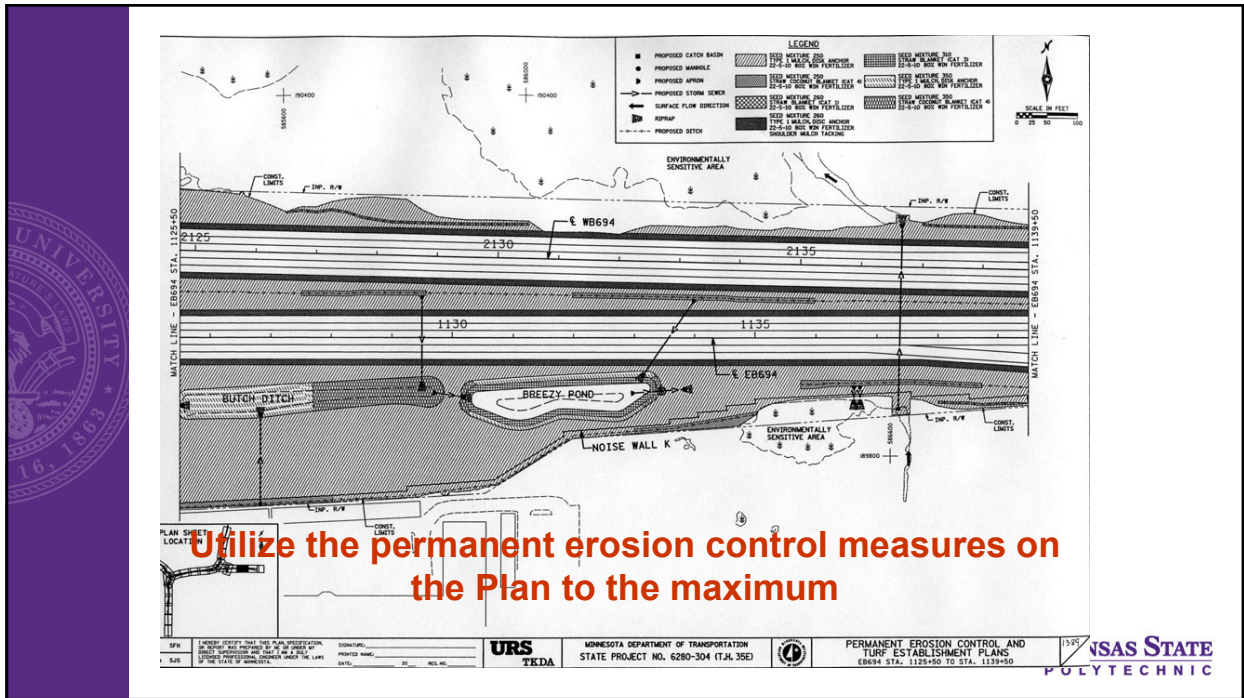


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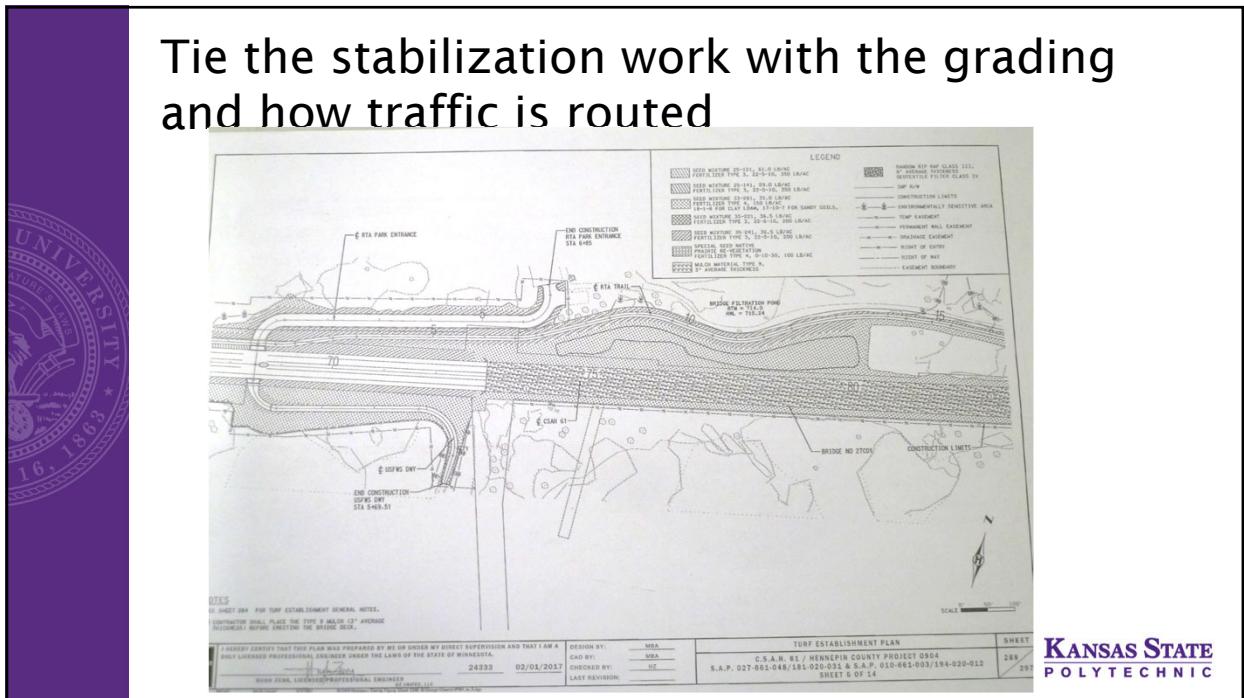
## Making the SWPPP... Mark up the site map (The Layout) .



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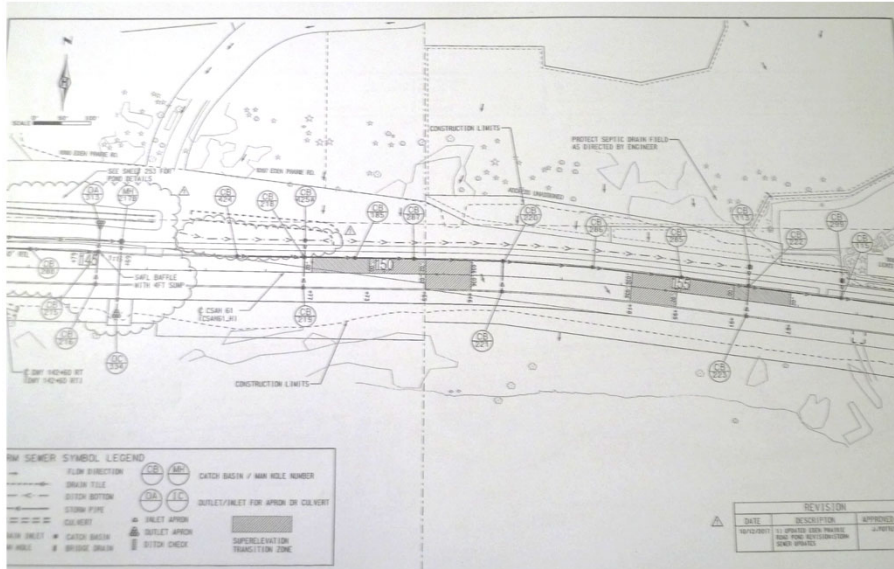


Tie the stabilization work E8694 with the grading and how traffic is routed



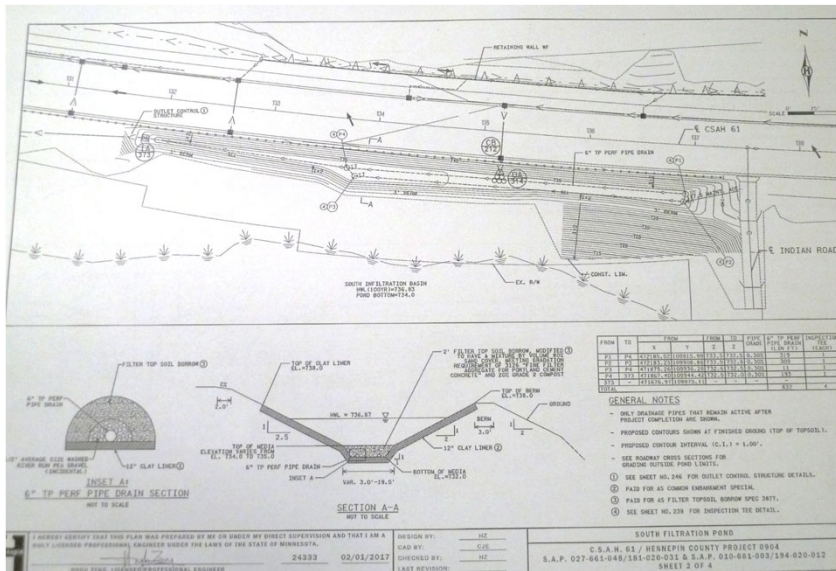


# Inlets needing protection; where they drain.



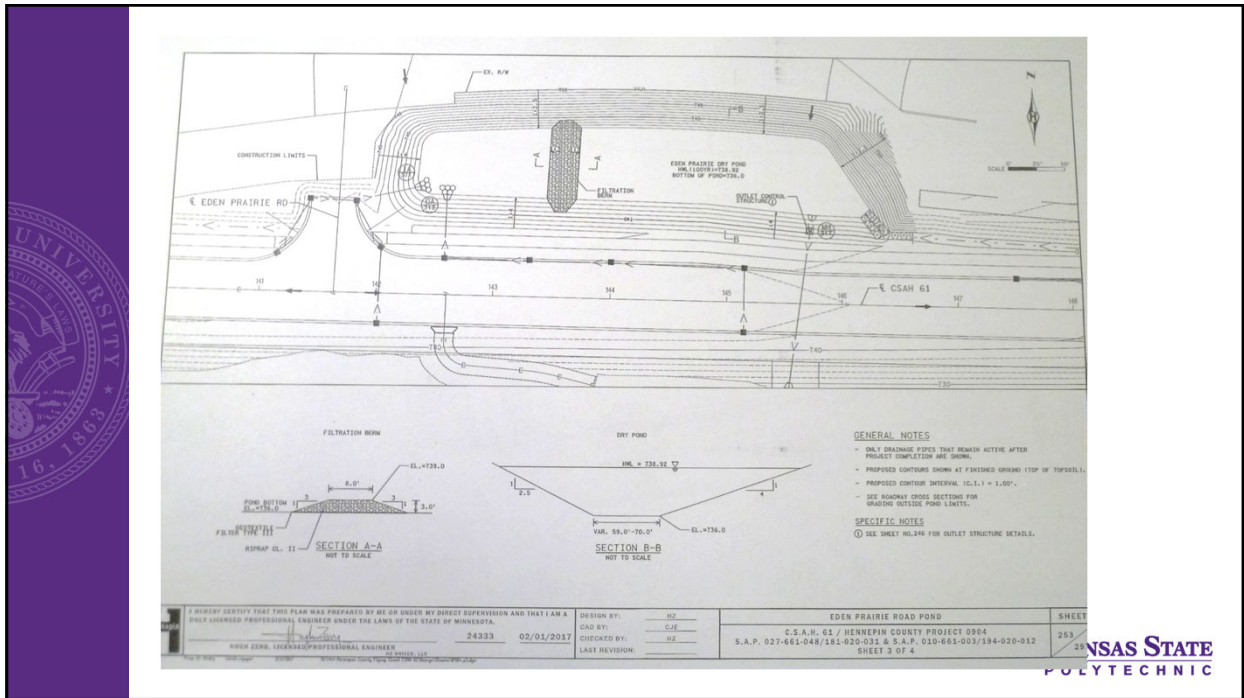
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# Areas of steep slopes, stabilization in 7 days

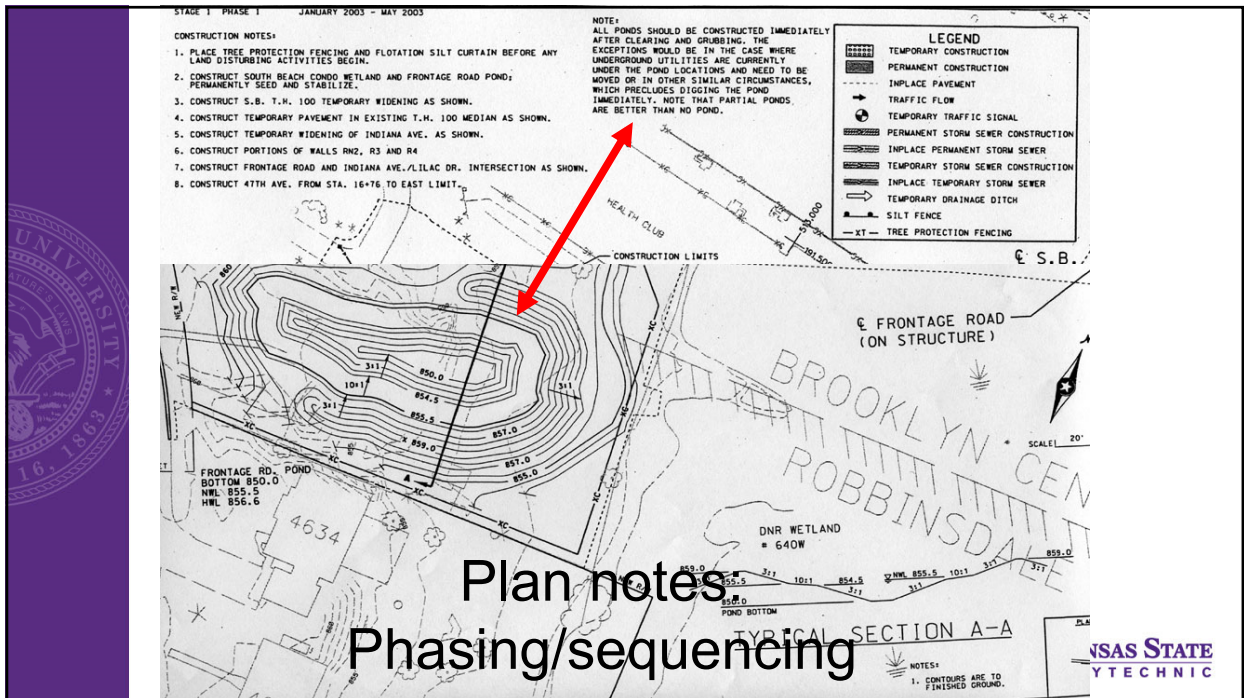


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**NSAS STATE**  
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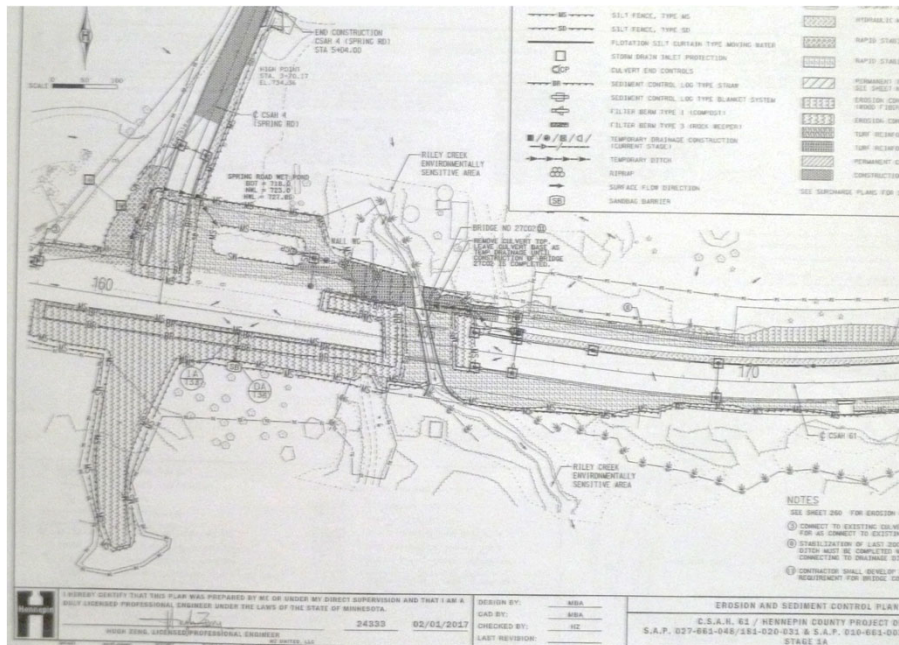


Plan notes  
 Phasing/sequencing

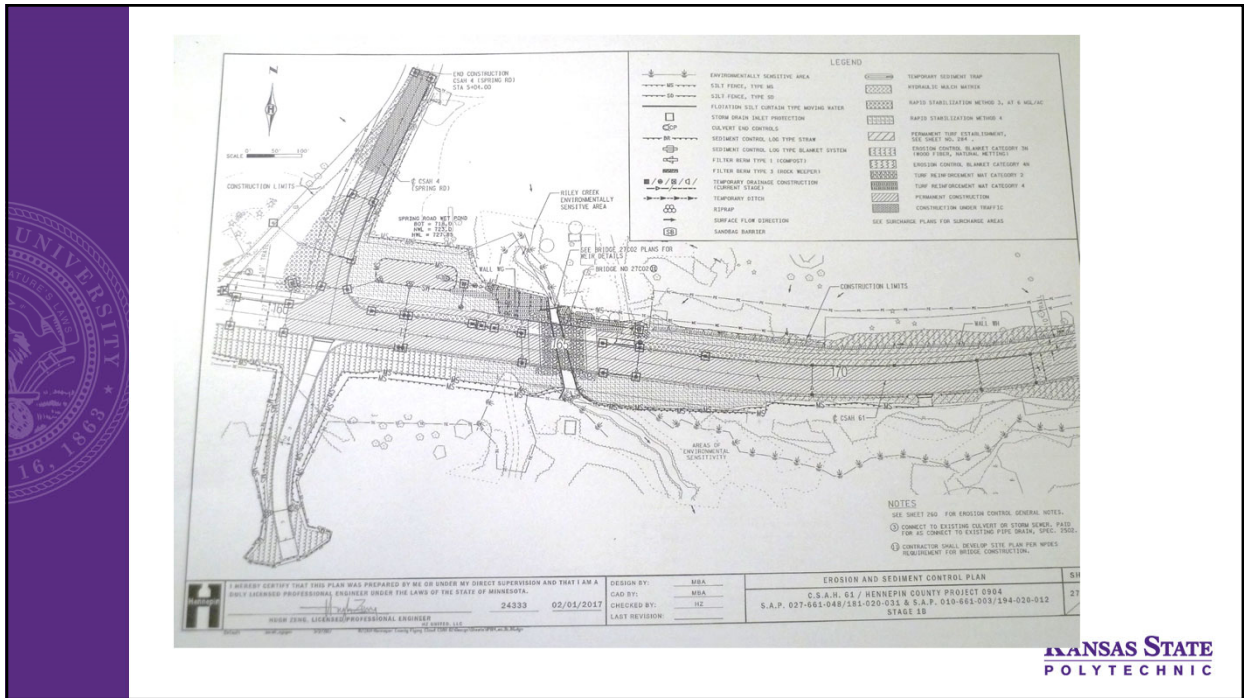
## Section 7.2.7 Providing ponds during construction



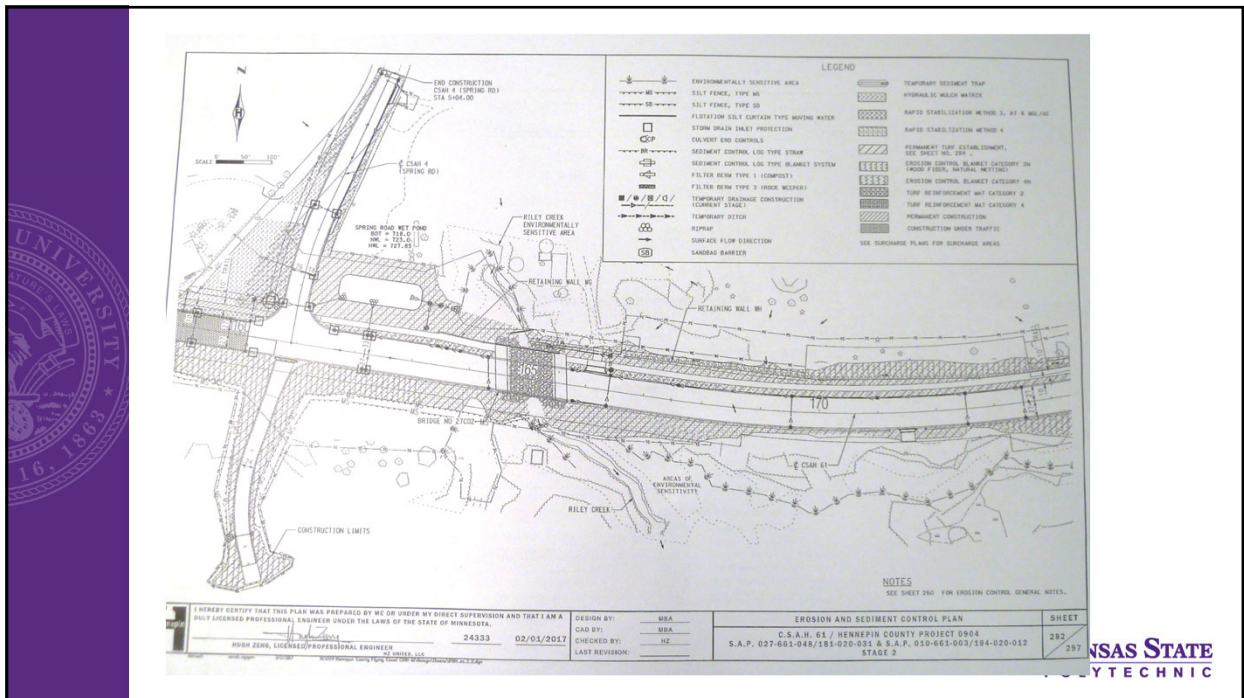
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Use appropriate means and methods to protect water resources



Number 1 **Best** management practice when working in or next to water ...sheeting



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Bridge approach embankments are steep and erodible



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## Fabric lined jersey barrier



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## Blanket for temporary protection

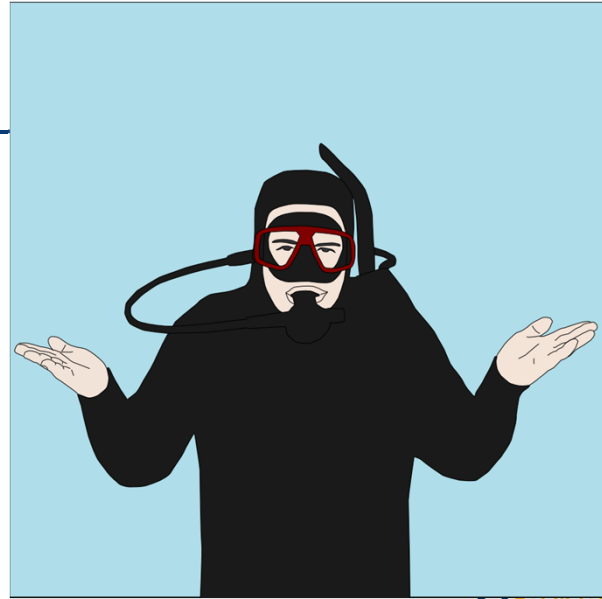


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## You've Been Tasked to Design or Approve a SWPPP for a KDOT Project

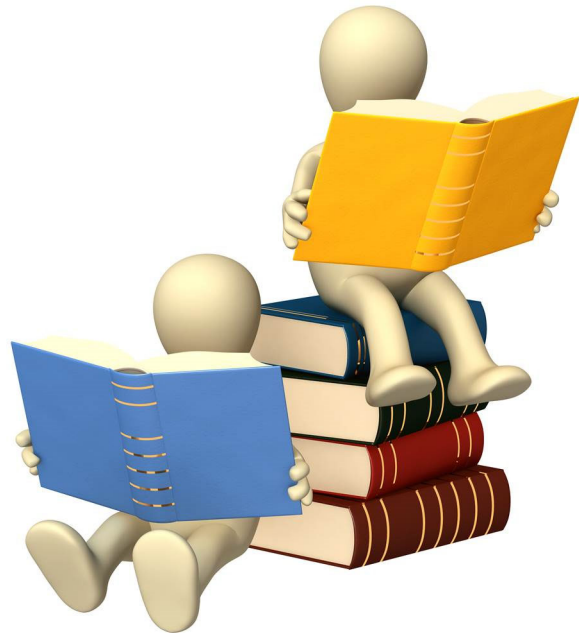


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**Kansas**  
Department of Transportation

## Where to start?

---

- Project Notice of Intent(NOI)
- Project Design Plans
- 901.3c SWPPP Design
- 2017 KDHE Permit



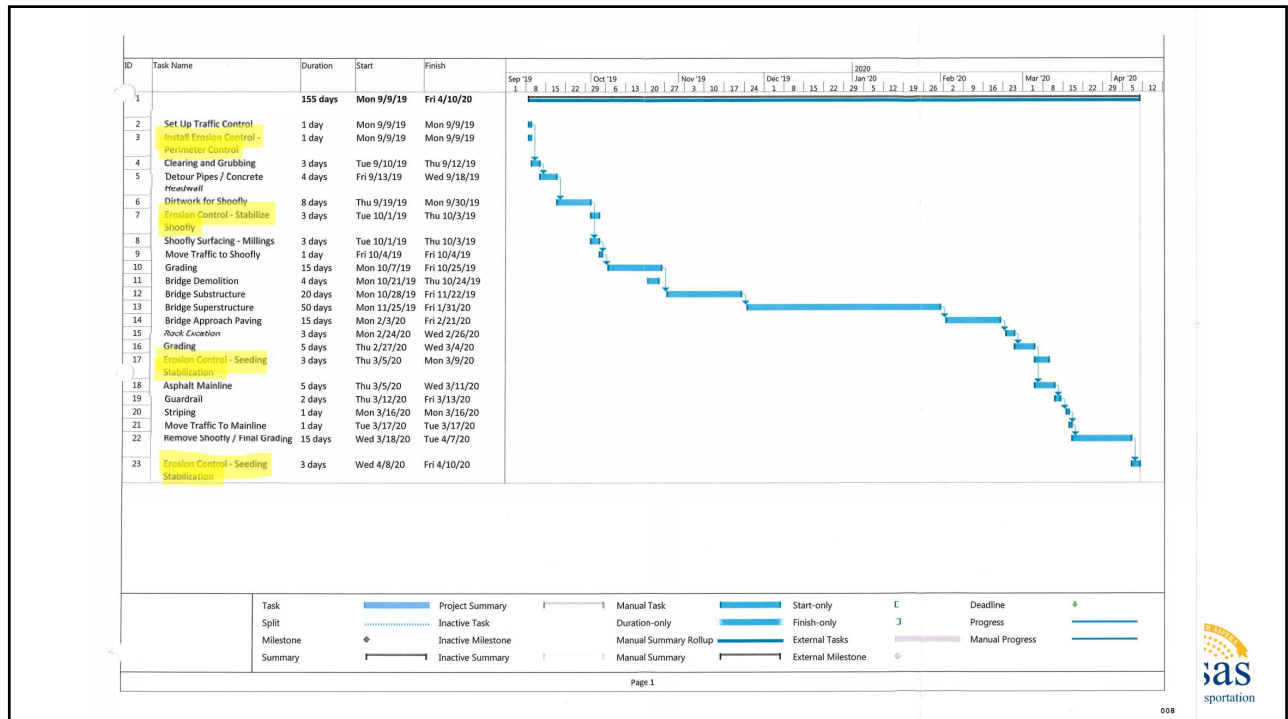


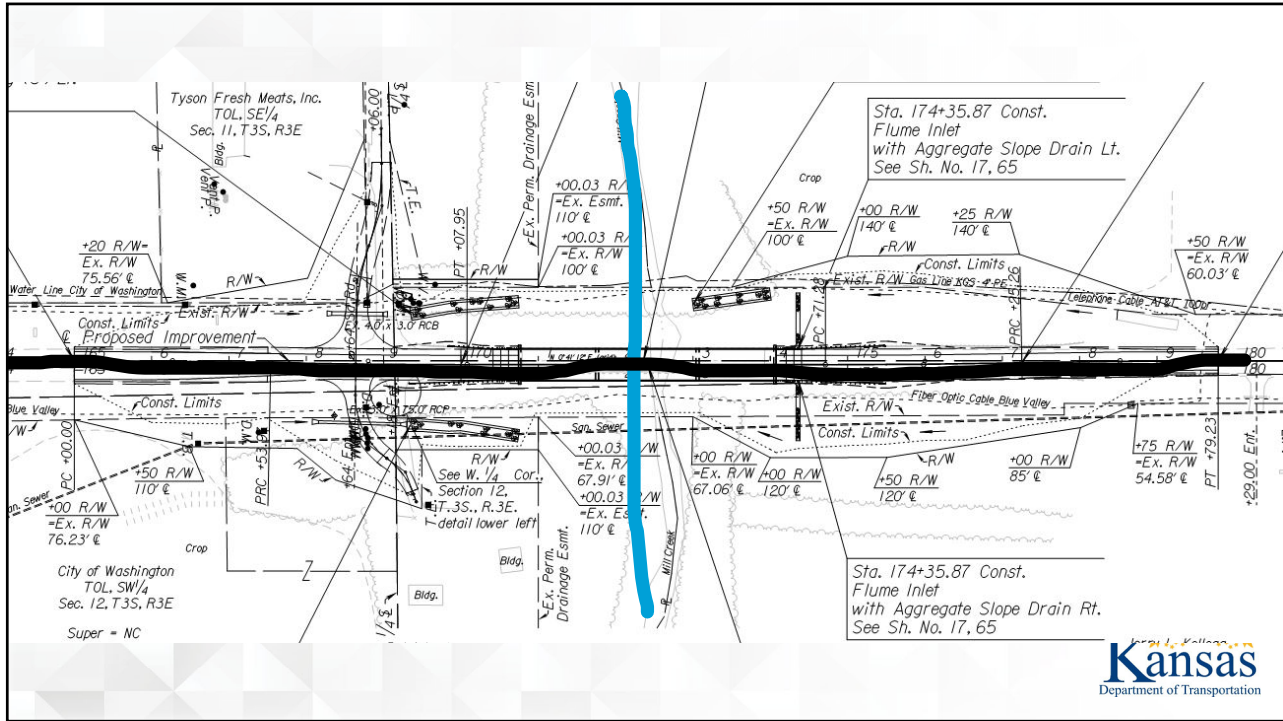
# Local Contact

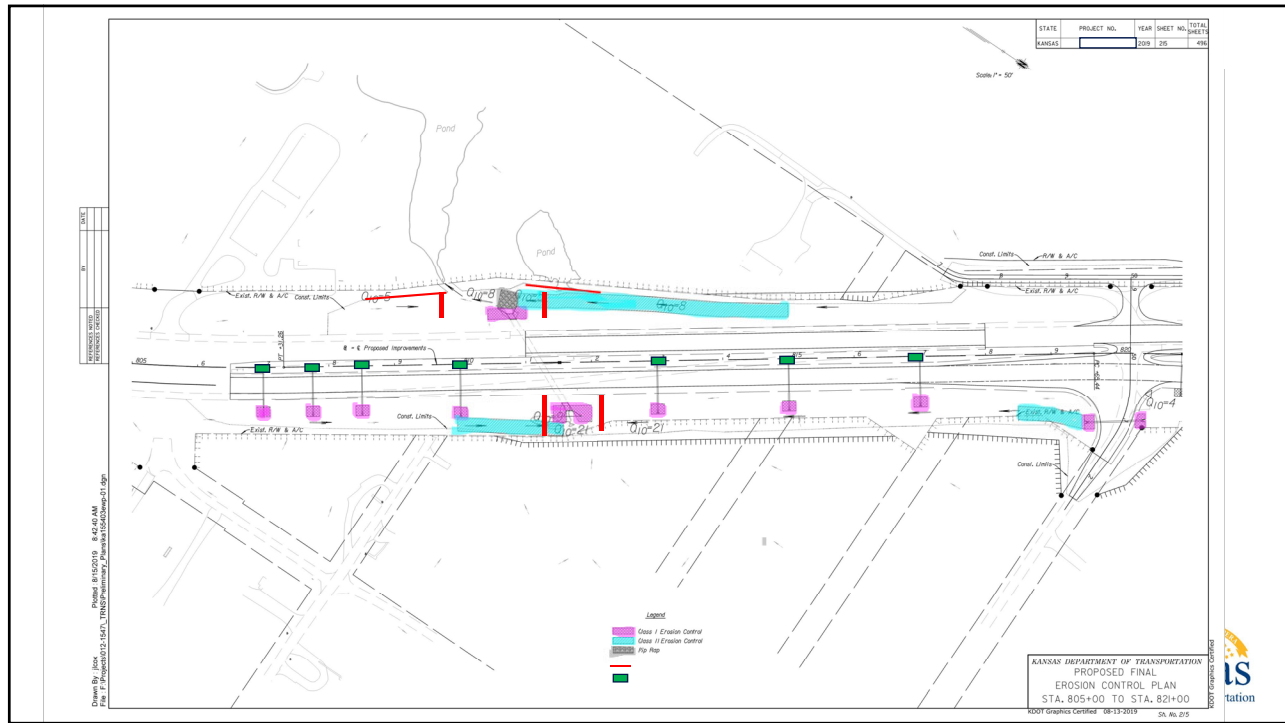
- Verify compliance with Local requirements
- Who did you contact?
- Local Permits?



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Department of Transportation



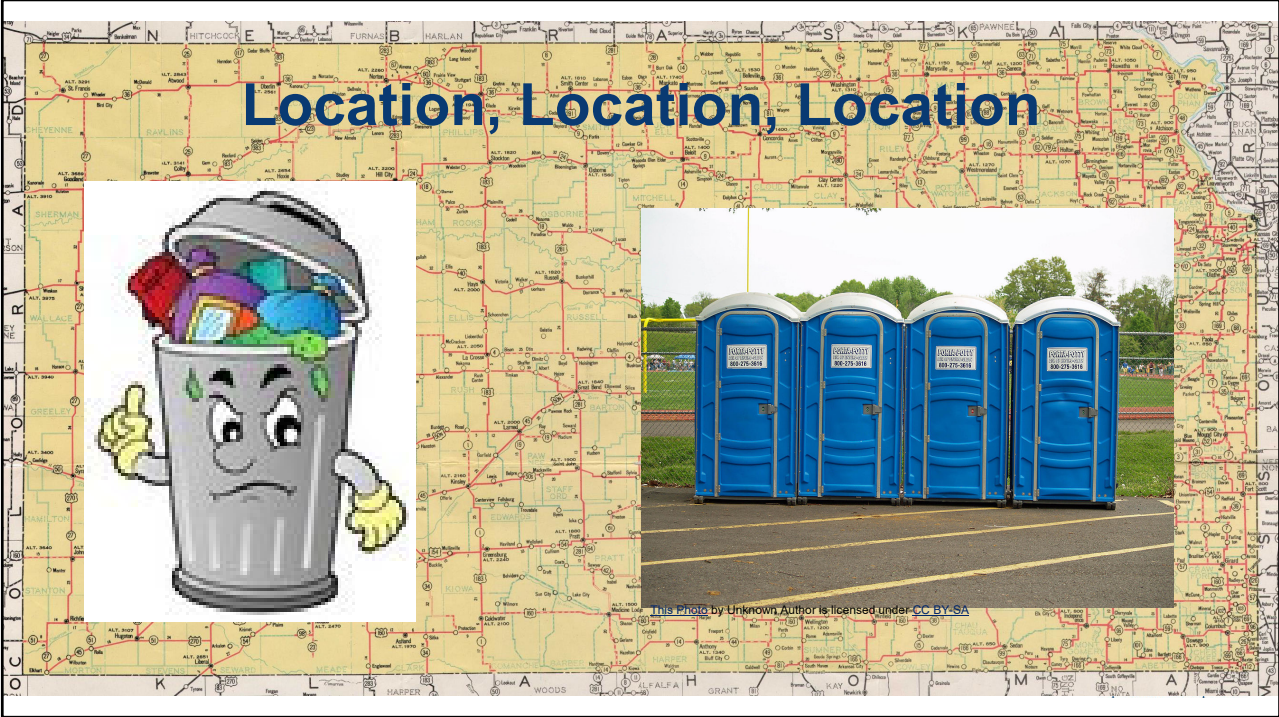




# BMP Narrative

- Project and Site Description
  - This project consists of grading and seeding located at Seader's Inc. Office site, off Broad St near Coville, KS. The total area of the site is 12.32 acres with a total disturbed area of 7.38 acres.
  - This project lies within the Arkansas River basin and stormwater runoff drains into the railroad right of way. No stormwater drains onto this project due to the railroad to the east and the Wichita Valley Center Freeway due to the west. Both features converge to the south of the project.
  - Soil on this project consists of a Brown to dark brown clay, silty, sand, and gravel. Additional soil information can be found in the geology report in appendix E5
- Sequence of Construction Activities
  - This project is less than 750,000 sq ft 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 seppro revision sheet.
  - Project documents do not identify any areas as being steep slopes (40% or greater). If steep slopes are encountered on this project, they will be handled according to 902.3a paragraph 13.
- Entrance Area
  - The Entrance Area consists of stripping off the top 5 feet of soil then constructing a 24 ft wide 8 foot tall fill.
  - 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.
  - Before stripping of topsoil, all fence will be placed along the construction limits near the east and west point to prevent any soil runoff. Care will be taken to make sure the fill fence follows the same contour line to prevent failure.
  - 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 areas will be seeded, mulched and slurry backed. Temporary seed will be placed if available of the permanent seeding seasons.
- Endangered Species Pond
  - The endangered species pond area adds 6 ft of fill in the area. Part of that fill will extend into the pond.
  - 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.
  - Because of the sensitivity of the pond, stabilization will begin the same day as the grading finishes. Class I mat will be placed in the entire area. The silt curtain will be removed once the mat is placed.
- Flood Area
  - 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.
  - The inlet will be protected by 20' biolog.
  - Ditch checks will be placed throughout the area as the drainage is being built. Once complete class II mat will be placed in the bottom of the ditch and the rest will be stabilized with mulch and slurry backed.
- Grading Area and Stockpiles
  - The graded area is to be leveled out and used for stockpiles. Perimeter controls will be placed on the south and east locations.
  - Topsoil piles will be seeded and mulched.
  - Structural soil piles will have perimeter controls placed on the downstream side of the piles to provide access.
  - Once completed the area will be stabilized.
- Other Practices
  - This plan complies with local requirements. The environmental packet is included in the appendix. John Doe was the local contact.
  - 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.
  - A broom will be used at least once per day to eliminate any offsite tracking the construction entrance does not prevent.
  - If construction activities cease before an area is complete and won't re-start within 34 days (7 days for steep slope areas) the area will be temporarily seeded and mulch.
  - During an inspection, if an area appears inactive, it will be made a deficiency until area is properly stabilized or meaningful work resumes.
  - 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.
  - No sedimentation basins are required on this project.
  - The construction site will be monitored for track daily. All trash will be placed in a covered dumpster. The location for the dumpster is marked on the site map.
  - Portable toilet locations are marked on the site map.
  - 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.





## The List 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



## Contractor Forms

---

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







## Checklist for Contractor's Stormwater Pollution Prevention Plan(SWPPP) Form 248

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- A checklist for Area Engineers
- All "yes" means SWPPP should be fully approved
- Included in SWPPP after full approval.





# LIST OF PREQUALIFIED EROSION CONTROL PRODUCTS [2015 – SS 2113]

PQL – 34.1

REVISED – 06/07/22

## 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: <http://www.ksdot.org/Assets/wwwksdotorg/bureaus/burMatrRes/PQL/pql-34-0.pdf>.

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](mailto:ksdot.stormwaterinspection@ks.gov)

### CLASS 1 "SLOPE PROTECTION" Type C – Slopes Steeper than 3:1 – CLAY Soils:

BioMac S1  
BioMac SC  
Excel S-1  
Excel SR-1 All Natural  
Greenfix CFS072R  
Greenfix WS05  
North American Green® S75BN  
S1000 Single Net Straw  
US-2X

**CLASS 1 “SLOPE PROTECTION”**  
**Type D – Slopes Steeper than 3:1 – SANDY Soils:**

AEC Curlex NetFree  
AEC Premier Straw Double Net  
BioMac SS 027.2  
Curlex™ I  
Curlex™ I CL  
Curlex™ II CL  
ECB S32 Double Net Straw  
ECS-2  
ETRS-2 Erosion Tech  
ETRS-2BN Erosion Tech  
Excel RC-1  
Excel SS-2  
GreenSolutions DNS2  
GreenSolutions SNS 1  
Kansas Erosion Product S2  
North American Green® C125  
North American Green® S150  
Rhino Erosion King Single Net  
Tackmat S  
Tackmat X  
TerraGuard DS  
US-2S  
WintersCoir  
Winters Straw HV



**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
- AEC Premier Straw/Coconut
- BioMac N20
- Futerra 7020
- Excel CC-4 All Natural
- Excel CS-3
- Excel CS-3 All Natural
- Greenfix CFG
- KEP-SC2
- KEP-SC2 Natural
- KEP-C100
- KEP-C100 Natural
- North American Green® TMax 3K
- SEC XL2

**CLASS 2 - "FLEXIBLE CHANNEL LINER"**  
**Type F - Shear Stress Range (Up to 4 Pounds Per Square Foot):**

BioMac C  
Contech Coconut Mat w/Kraft Net  
Curlex® II Stitched  
Curlex® II (.98)  
Curlex® II CL  
Curlex® III Stitched  
Curlex® Enforcer I  
ECB PS42  
ECB SC 32 Double Net Extended Term  
ECP-3  
ETSC 7030 Erosion Tech  
Excel CC-4  
Excel R-1  
Excel SD-3  
Greenfix CFG 2000  
Greenfix CFO 72RR  
Landlok® CS2  
Landlok® C2  
North American Green® C125BN  
North American Green® C350  
North American Green® SC150BN  
North American Green® P300





**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 – 06/07/22

**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: <http://www.ksdot.org/Assets/wwwksdotorg/bureaus/burMatrRes/PQL/pql-34-0.pdf>.

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 [kdot.stormwaterinspection@ks.gov](mailto:kdot.stormwaterinspection@ks.gov)

## **HECP Class "A" Maximum Slope 4:1- Minimum Application Rate 1800lb/acre**

- Hydrostraw Guar Plus Formulation
- Hydro-Blanket
- Profile Wood with Tack



**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

**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**.

<b>TABLE 901-1: TABLE OF STORMWATER COMPLIANCE DISINCENTIVES</b>			
<b>Original Contract Amount Range</b>		<b>Each SWPPP Inspection not performed according to 901.3e</b>	<b>Each deficiency per day not corrected within allowable time</b>
\$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



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.

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

## 902 –TEMPORARY EROSION AND SEDIMENT CONTROL

### 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  
Temporary Seeding  
Erosion Control (\*)(\*\*)  
Mulching (Temporary)  
Water (Erosion Control) (Set Price)  
Geotextile (Erosion Control)

##### UNITS

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

\* Class

\*\* Type

\*\*\* Size

##### 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 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:



## 902 –TEMPORARY EROSION AND SEDIMENT CONTROL

(<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 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.

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.

## 902 –TEMPORARY EROSION AND SEDIMENT CONTROL

**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.

**n. Temporary Seeding.** "Temporary Seeding" is to be used only if the project has less than 1 acre of erodible surface. If this item is used: fertilize, seed, and mulch all exposed erodible earth.

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.

**o. Erosion Control.** After seeding 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.

## 902 –TEMPORARY EROSION AND SEDIMENT CONTROL

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 “Temporary Seeding” as a lump sum; no measurement of area is made.

The Engineer will measure erosion control by the square yard.

The Engineer will measure temporary mulching by the ton.



## **902 –TEMPORARY EROSION AND SEDIMENT CONTROL**

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.

**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**.

<b>TABLE 904-1: GRASS &amp; WILDFLOWER SEEDING SEASONS</b>	
<b>Type</b>	<b>Season</b>
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 ⅛ 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.

905 - MULCHING

SECTION 905

MULCHING

905.1 DESCRIPTION

Provide and uniformly place mulching materials as shown in the Contract Documents.

BID ITEMS

- Mulching (Permanent) (Set Price)
- Mulching Tacking Slurry
- Mulching (Hydro)
- Mulching (Hydro BFM\*)
- \*Bonded Fiber Matrix

UNITS

- Tons
- Pound
- Square Yard
- Square Yard

905.2 MATERIALS

Provide materials that comply with the applicable requirements.

Mulch and Mulching Tacking Slurry .....	<b>DIVISION 2100</b>
Water .....	<b>DIVISION 2400</b>

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 and excelsior material) 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 (Hydro).** Apply the hydromulch immediately after the seeding and cultipacking. Apply the hydromulch 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 hydromulch.

Mix the hydromulch at the rate of 50 pounds per 100 gallons of water. Apply the hydromulch at the rate of (dry) 1,800 pounds per acre of seeded and cultipacked slope, immediately after the seeding and cultipacking to maximize adhesion and minimize slumping. 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.

**c. Mulching Tacking Slurry.** Place and punch the mulch immediately after the fertilizing and seeding operations.

**905 - MULCHING**

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 and excelsior material) 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.

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.

**d. Mulching (Hydro BFM).** Apply the BFM 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 bonded fiber matrix.

Mix the BFM at the rate of 50 pounds per 100 gallons of water. Apply the BFM at the rate of (dry) 3,500 pounds per acre of seeded and cultipacked slope, immediately after the seeding and cultipacking to maximize adhesion and minimize slumping. Obtain complete coverage from a consistent angle of approach while applying BFM. 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.

**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 (permanent)(set price) 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 mulching (hydro) and mulching (hydro BFM) by square yard.

**b. Payment.** Payment for "Mulching Tacking Slurry", "Mulching (Hydro)" and "Mulching (Hydro BFM)" at the contract unit prices is full compensation for the specified work.

When temporary seeding and permanent seeding are combined, the Engineer will pay for mulching under the bid item Mulching (Temporary), and the bid item Mulching (Permanent) (Set Price) will be underrun.

When the quantity of "Mulching Tacking Slurry" overruns or underruns the contract quantity by any amount, the contract unit price shall govern.

Payment for "Mulching (Permanent) (Set Price)" at the contract set unit price (subject to the adjustments in **TABLE 905-1**) is full compensation for the specified work.

<b>TABLE 905-1: PERMANENT MULCHING PAYMENT</b>	
<b>Mulching (Permanent) Quantity, M (acres)</b>	<b>Percent of Contract Set Unit Price Per Ton</b>
M ≤ 15	100%
15 < M ≤ 30	90%
30 < M	80%



**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.

<b>TABLE 905-1: HECP Typical Applications</b>		
<b>Type</b>	<b>Application Rate (lbs/acre)</b>	<b>Maximum Slope</b>
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**:

<b>TABLE 2110-2: HECP General Requirements</b>	
<b>Property</b>	<b>Requirement</b>
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**:

<b>TABLE 2110-3: HECP Types</b>		
<b>Type</b>	<b>Maximum Cover Factor (ASTM D6459) at R=162</b>	<b>Minimum Germination Enhancement (ASTM D7322)</b>
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 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**.

<b>TABLE 904-1: GRASS &amp; WILDFLOWER SEEDING SEASONS</b>	
<b>Type</b>	<b>Season</b>
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

## Approval of Storm Water Pollution Prevention Plan (SWPPP)

KDHE Permit #: \_\_\_\_\_  
KDHE Permit #: \_\_\_\_\_  
KDHE Permit #: \_\_\_\_\_  
County: \_\_\_\_\_  
Special Provision: \_\_\_\_\_

Check one:

This is to verify that I have reviewed the Storm Water Pollution Prevention Plan submitted by \_\_\_\_\_, Contractor for the above referenced project and find it to be acceptable pursuant to guidelines established by the KDHE National Pollutant Discharge Elimination System Stormwater Runoff from Construction Activities General Permit, the KDOT Standard Specifications and contractual special provisions, the KDOT Checklist for Contractor's SWPPP (Form No. 248) and associated Best Management Practices.

This project contains less than 1 acre (0.4 hectare) of erodible surface and does not require a SWPPP. The Contractor has acknowledged compliance with the concepts of erosion and pollution control presented in KDOT's Standard Specifications.

This project has no erodible surface and does not require a SWPPP.

XX

A copy of this form, KDOT Checklist for Contractor's SWPPP (Form No. 248), and Project SWPPP with site map has been submitted to KDHE for projects that require a SWPPP according to KDOT Standard Specifications and contractual special provisions.

\_\_\_\_\_ P.E. \_\_\_\_\_  
Signed \_\_\_\_\_ Print Name \_\_\_\_\_  
Date: \_\_\_\_\_ Phone #: \_\_\_\_\_  
Email: \_\_\_\_\_

Submit this form to the District Office before any physical work begins on the project. Keep copies of this form and KDOT Checklist for Contractor's SWPPP (Form No. 248) with the project SWPPP.

Mail copies of this form, KDOT Checklist for Contractor's SWPPP (Form No. 248), and the Project SWPPP with site map to:

KDHE Industrial Programs Section, Bureau of Water, 1000 SW Jackson St., Suite 420, Topeka, KS 66612-1367

Deleted: 5/12/20

9/14/22

Form No. 219

**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.**

| 9/14/22

Form No. 219

Deleted: 5/12/20





# 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

## 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"/>	
<b>Site Management BMPs</b>			
	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"/>	
<b>Attachments</b>			
	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: \_\_\_\_\_

## 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
10/22/20	11/2/20		4			4	\$250.00	\$1,000.00
10/24/20	11/30/20		30			30	\$250.00	\$7,500.00

<b>Title</b>		<b>Signature</b>	<b>Date</b>



### 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 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 successor 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 owners/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 \_\_\_\_\_



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](http://www.kdhe.ks.gov/757/Construction-Stormwater-Program)

[www.kdhe.ks.gov/DocumentCenter](http://www.kdhe.ks.gov/DocumentCenter)

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

[kdhe.stormwater@ks.gov](mailto: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](http://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.

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## 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](http://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](http://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](http://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](http://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](http://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](http://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.



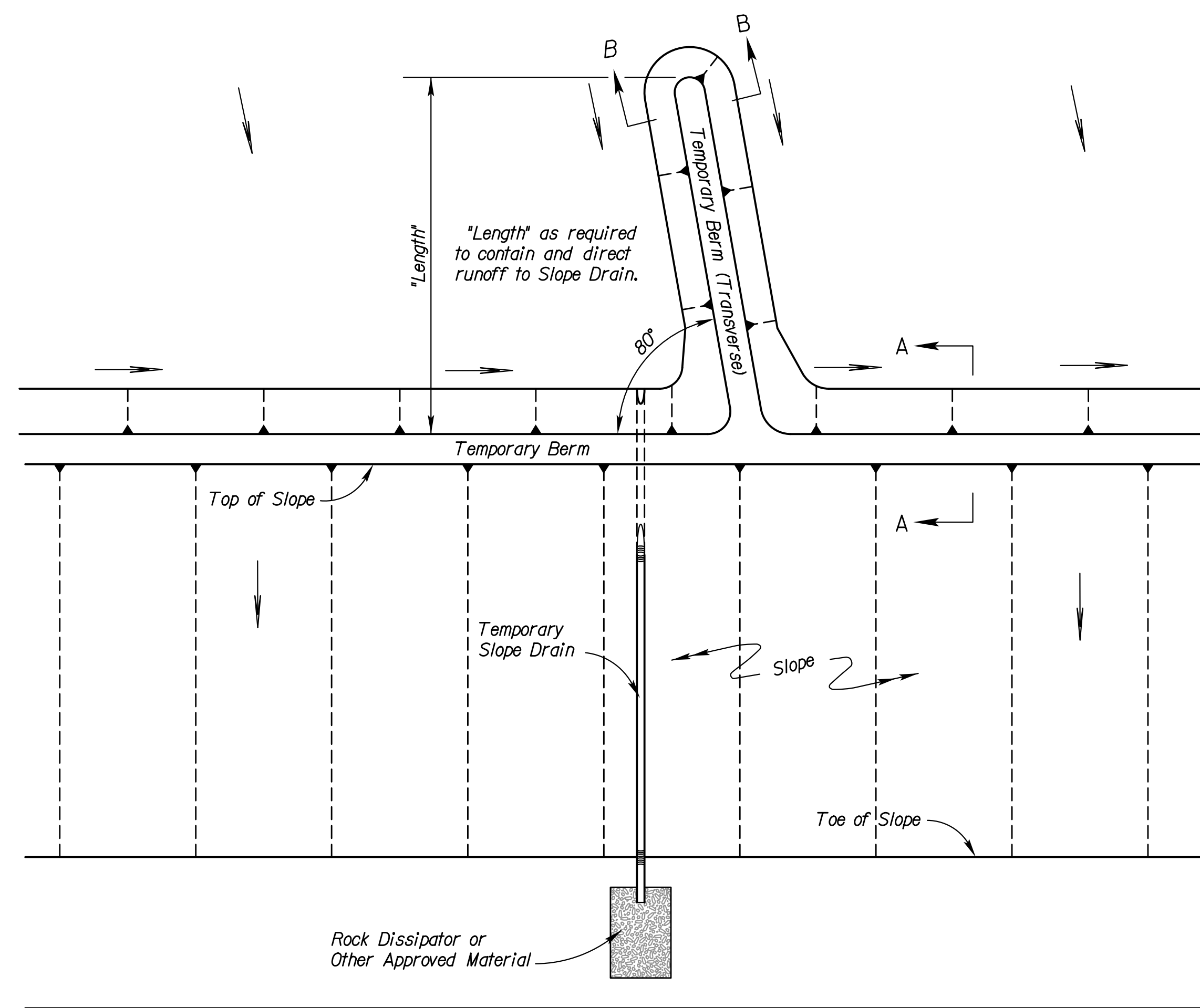




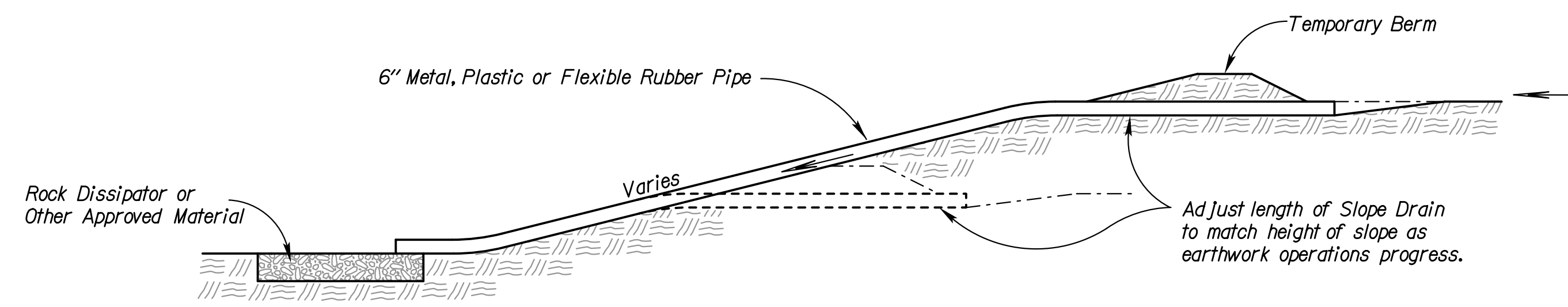




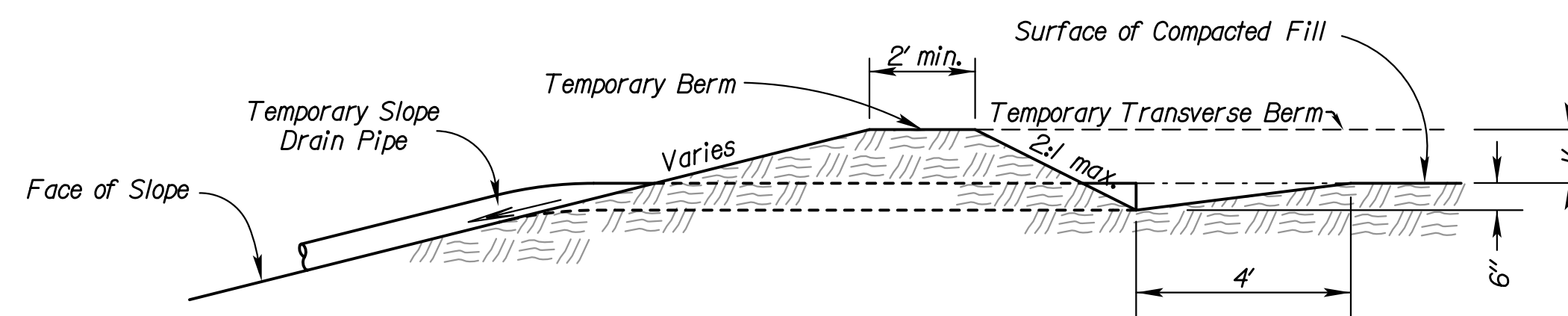
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KANSAS	Project No.	20XX	0	0



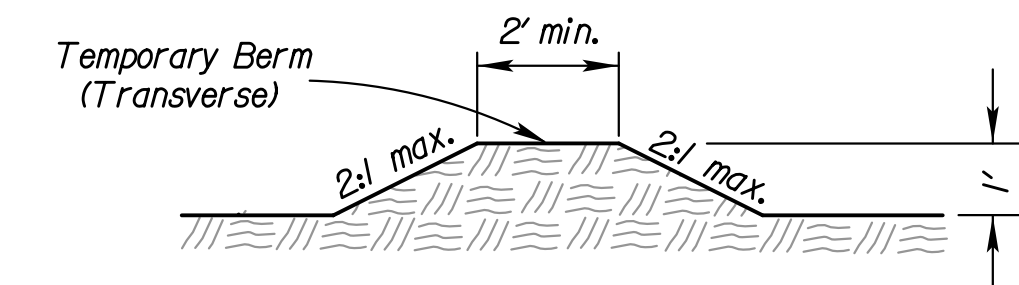
TYPICAL PLAN VIEW OF  
TEMPORARY BERM AND  
TEMPORARY SLOPE DRAIN  
NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN  
NO SCALE



SECTION A-A  
NO SCALE



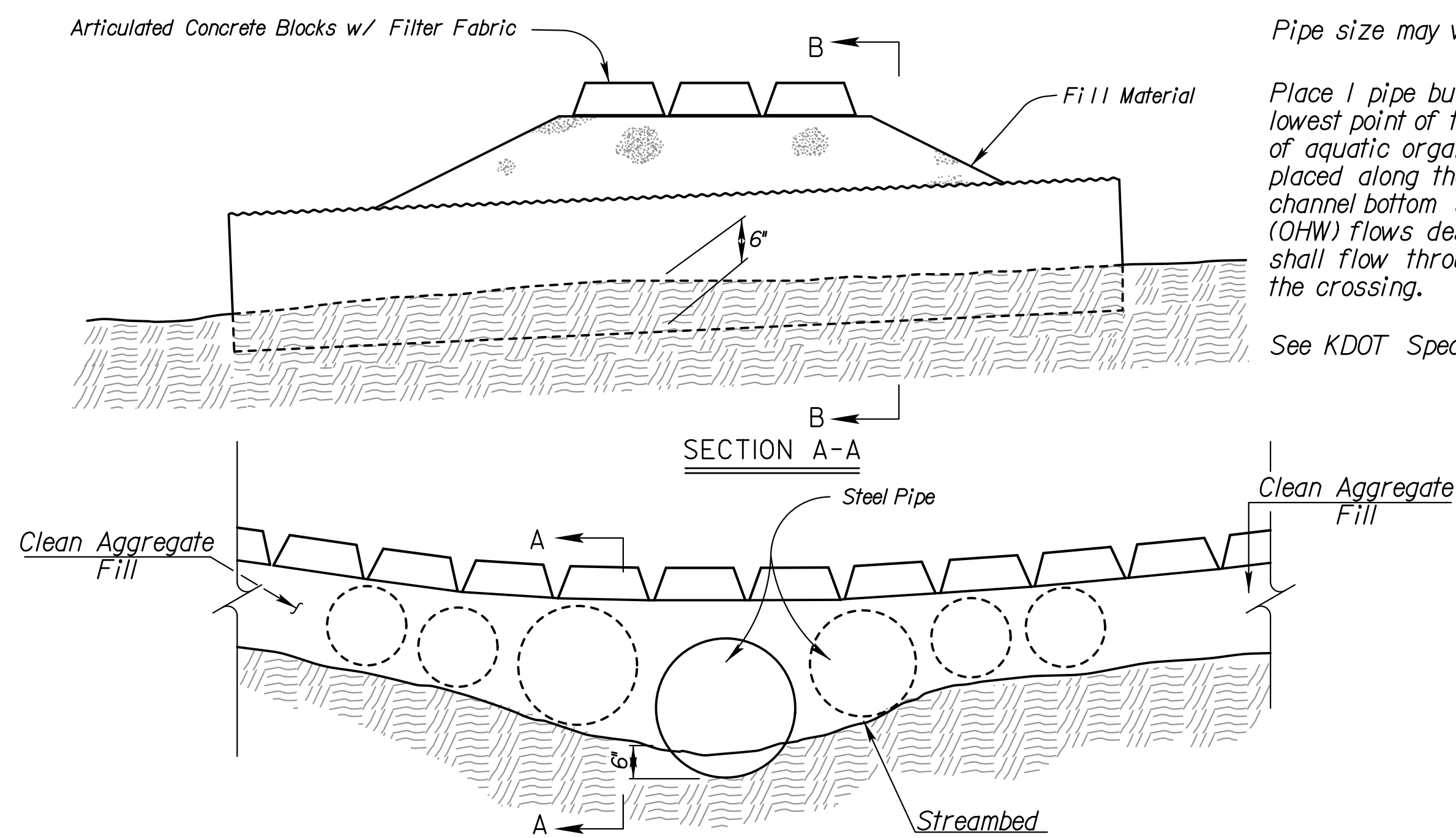
SECTION B-B  
NO SCALE

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.

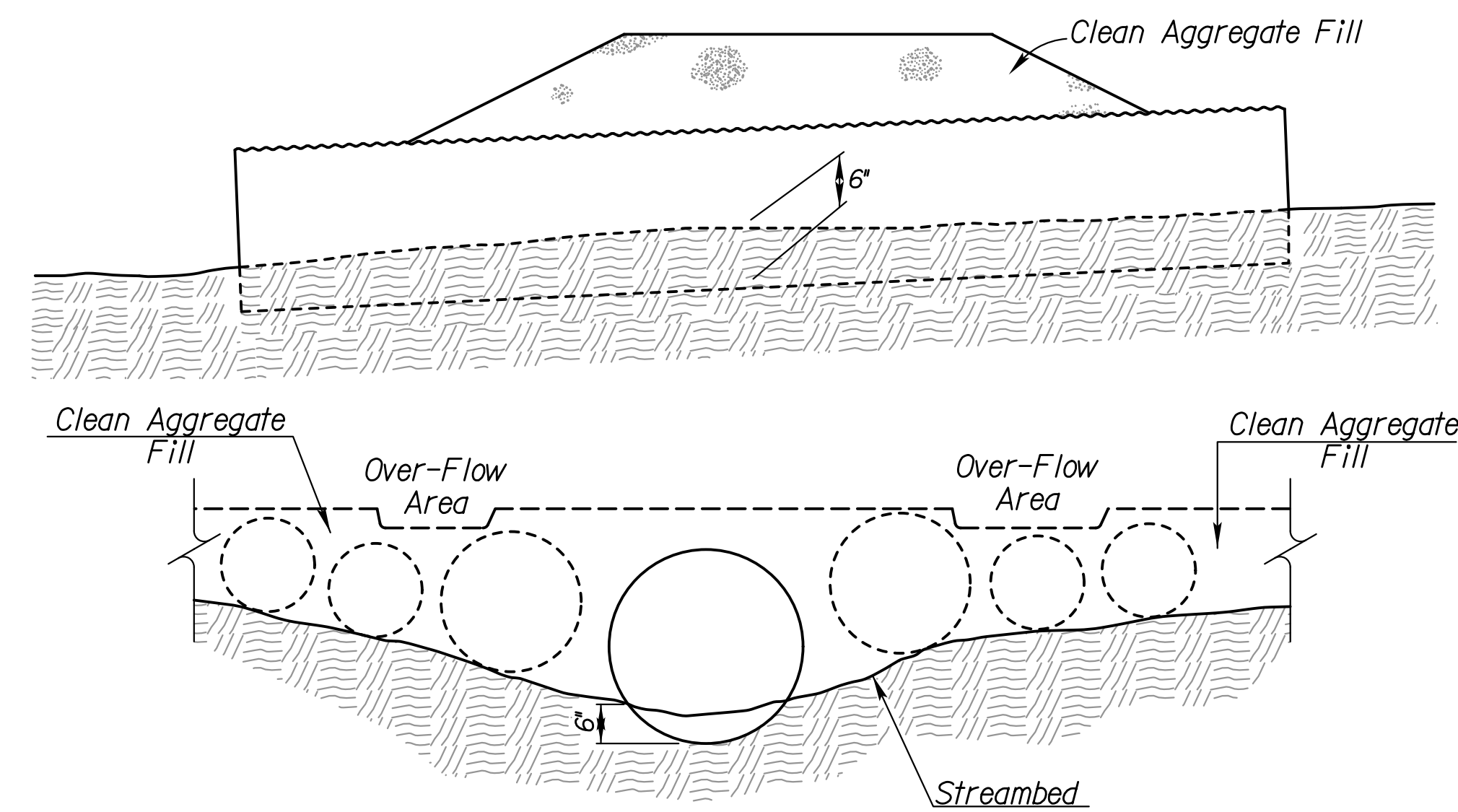
Std. Base File:  
Plotted By: rlong  
File: ta852b.dgn  
Plot Date: 10-OCT-2016 11:44

Plot Location: Bridge Design



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.  
See KDOT Specifications for more information



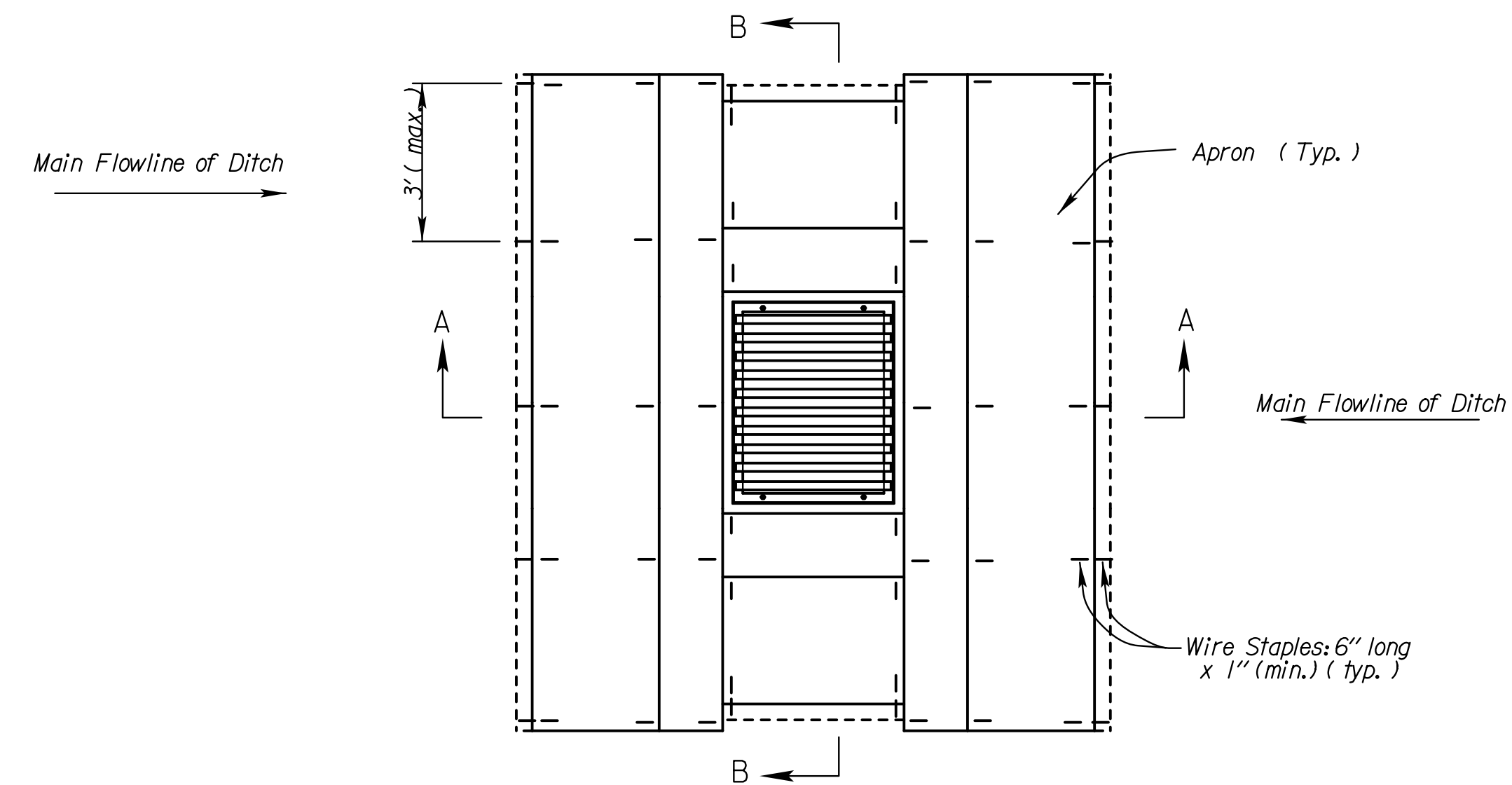
TEMPORARY STREAM CROSSING (AGGREGATE)  
NO SCALE

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.  
See KDOT Specifications for more information

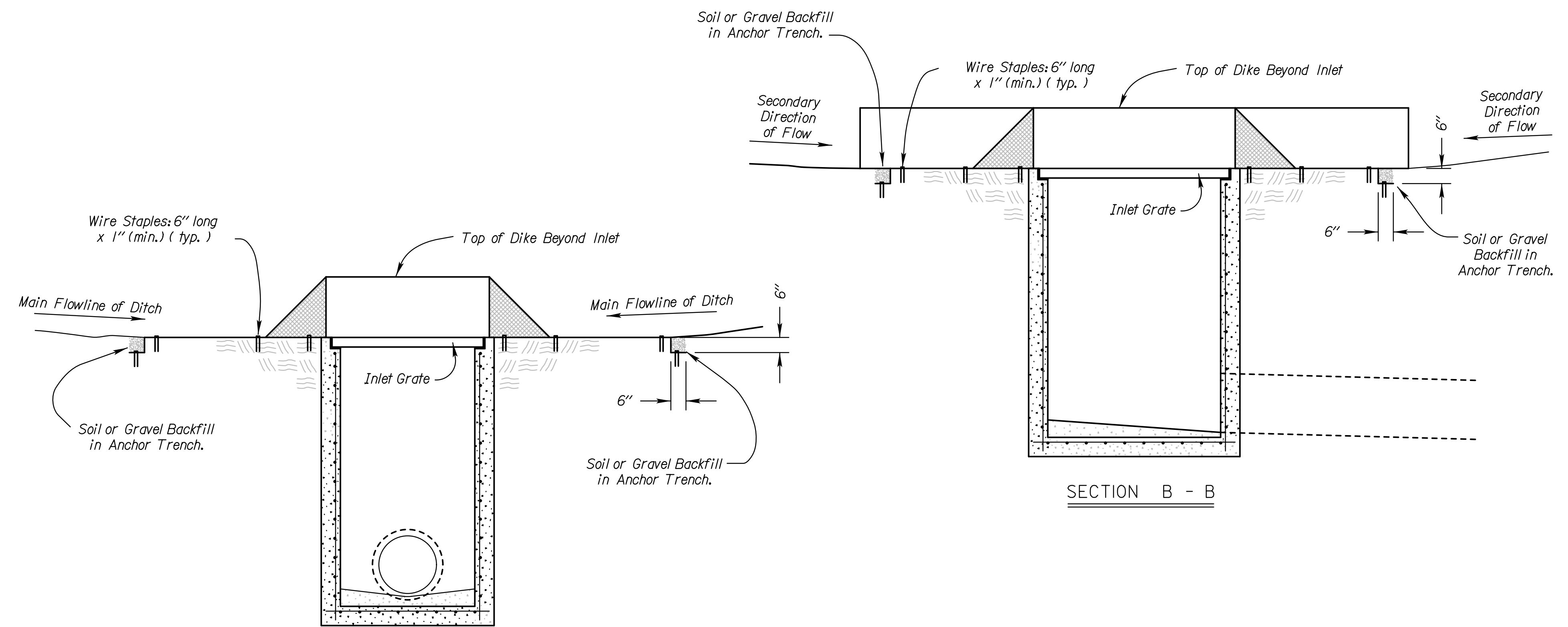
NO.	DATE	REVISIONS	BY	APP'D
3	6/11/13	Revised Standard	MRM	SHS
2	11/01/10	Revised Standard	MRM	SHS
1	10/15/10	Revised Standard	WCL	RDR

KANSAS DEPARTMENT OF TRANSPORTATION  
TEMPORARY EROSION AND POLLUTION CONTROL  
TEMPORARY STREAM CROSSING (AGGREGATE)  
TEMP. STREAM CROSS. (ARTC. CONC. BLOCKS)  
LA852B

DESIGNED	MRM	APP'D	Scott H. Shields
DESIGN CK.	SHS	QUANTITIES	CADD
		QUAN. CK.	CADD CK.

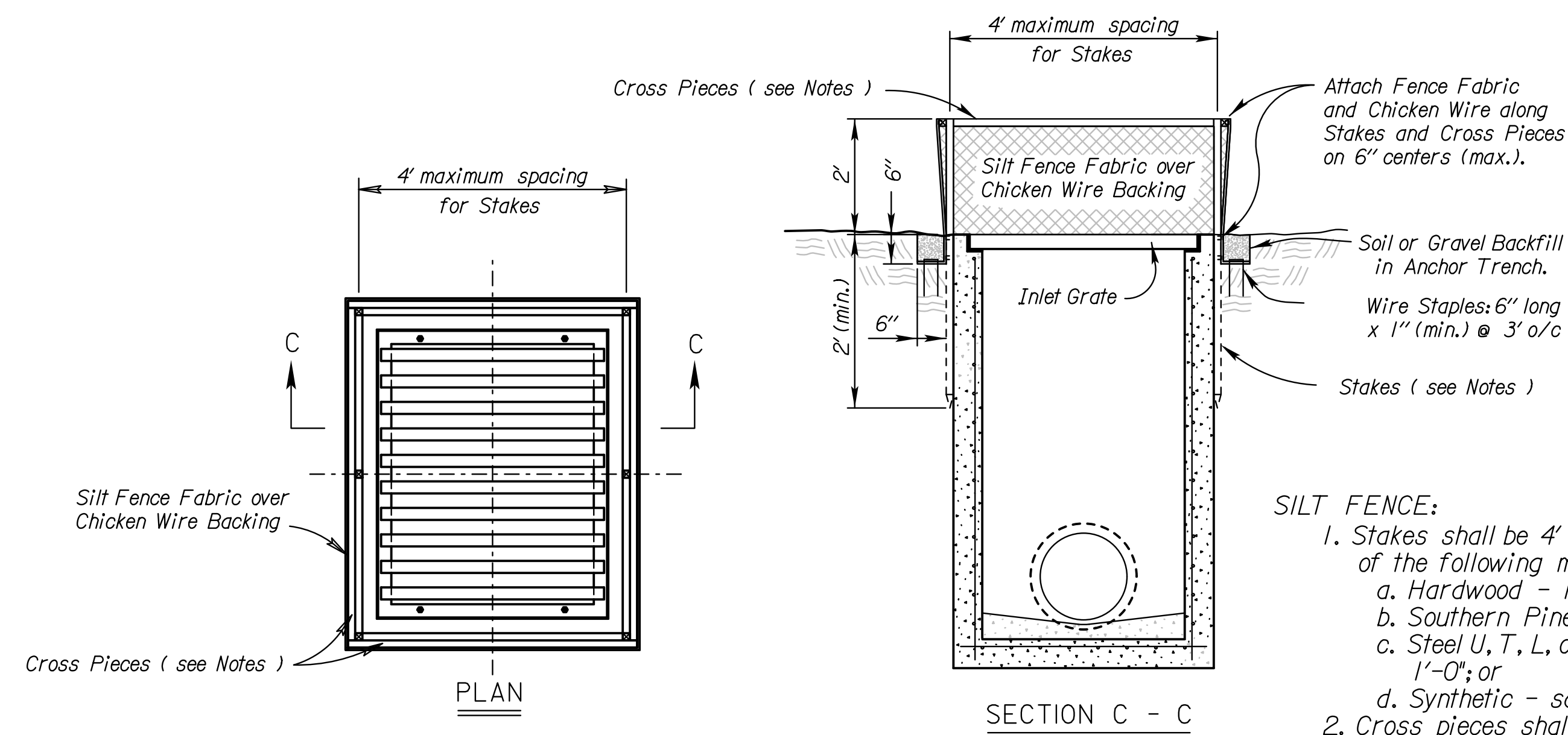


**PLAN**  
**TEMPORARY INLET SEDIMENT BARRIER**  
**(TRIANGULAR SILT DIKE METHOD)**  
 NO SCALE



**SECTION A - A**

**SECTION B - B**

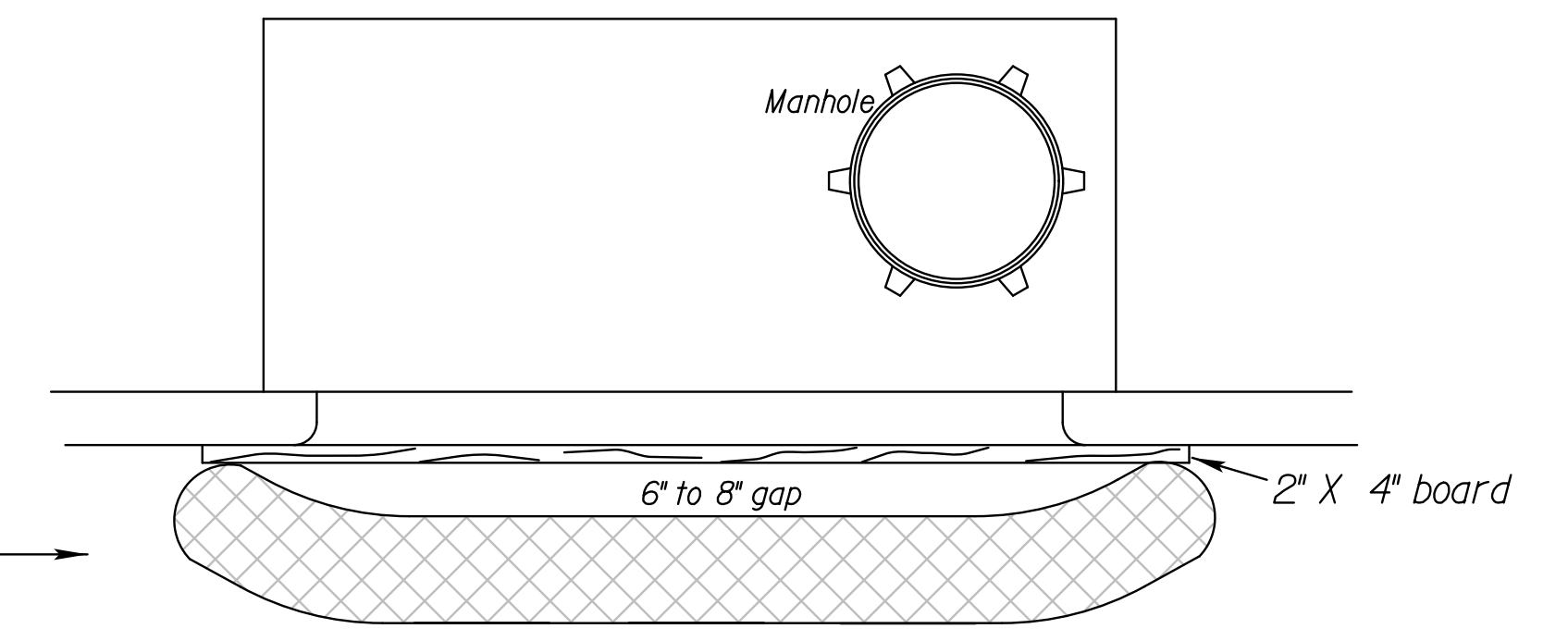


**PLAN**  
**TEMPORARY INLET SEDIMENT BARRIER**  
**(SILT FENCE METHOD)**  
 NO SCALE

**SILT FENCE:**

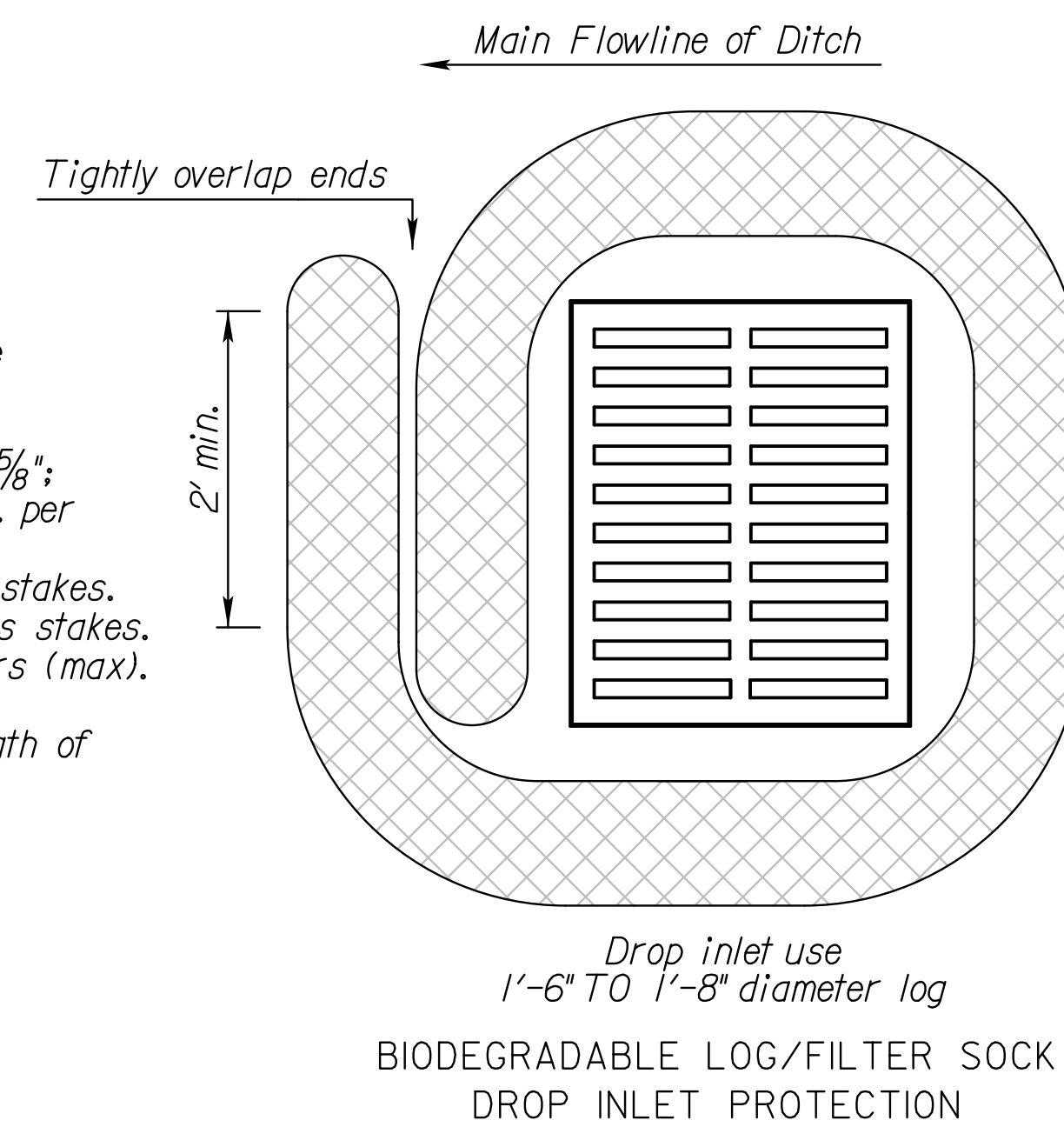
1. Stakes shall be 4' (min.) long and of one of the following materials:
  - a. Hardwood - 1 3/16" x 1 3/16"
  - b. Southern Pine (No. 2) - 2 5/8" x 2 5/8"
  - c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
  - d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material 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.

Bags = synthetic net (3mm mesh) or burlap bags  
 Rock = approximately 1" to 2" diameter



**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.



Drop inlet use  
 1'-6" TO 1'-8" diameter log  
**BIODEGRADABLE LOG/FILTER SOCK**  
**DROP INLET PROTECTION**

Note: 25% of log shall be keyed into ground during installation.  
 Stake every 4'

**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.

3	3/01/15	Revised Standard	RA	SHS
2	6/01/13	Revised Standard	MRM	SHS
1	3/01/13	Revised Standard	MRM	SHS
NO.	DATE	REVISIONS	BY	APP'D

<b>KANSAS DEPARTMENT OF TRANSPORTATION</b>				
<b>TEMPORARY EROSION AND POLLUTION CONTROL</b>				
TEMP. INLET SEDIMENT BARRIER (SILT FENCE)				
TEMP. INLET SEDIMENT BARRIER (T.S.D.)				
CURB INLET PROTECTION				
DROP INLET PROTECTION				
LA852C				
DESIGNED	RA	DATE	3/10/2015	APP'D
DESIGN CK.	SHS	DETAIL CK.	SHS	QUANTITIES
				CADD
				CK.
				Scott H. Shields

Std. Base File:  
 PlotTech: Melissa.Davidson@ks.gov | Plot Location:  
 File: la852c.dgn  
 Plot Date: 26-SEP-2019 16:41

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

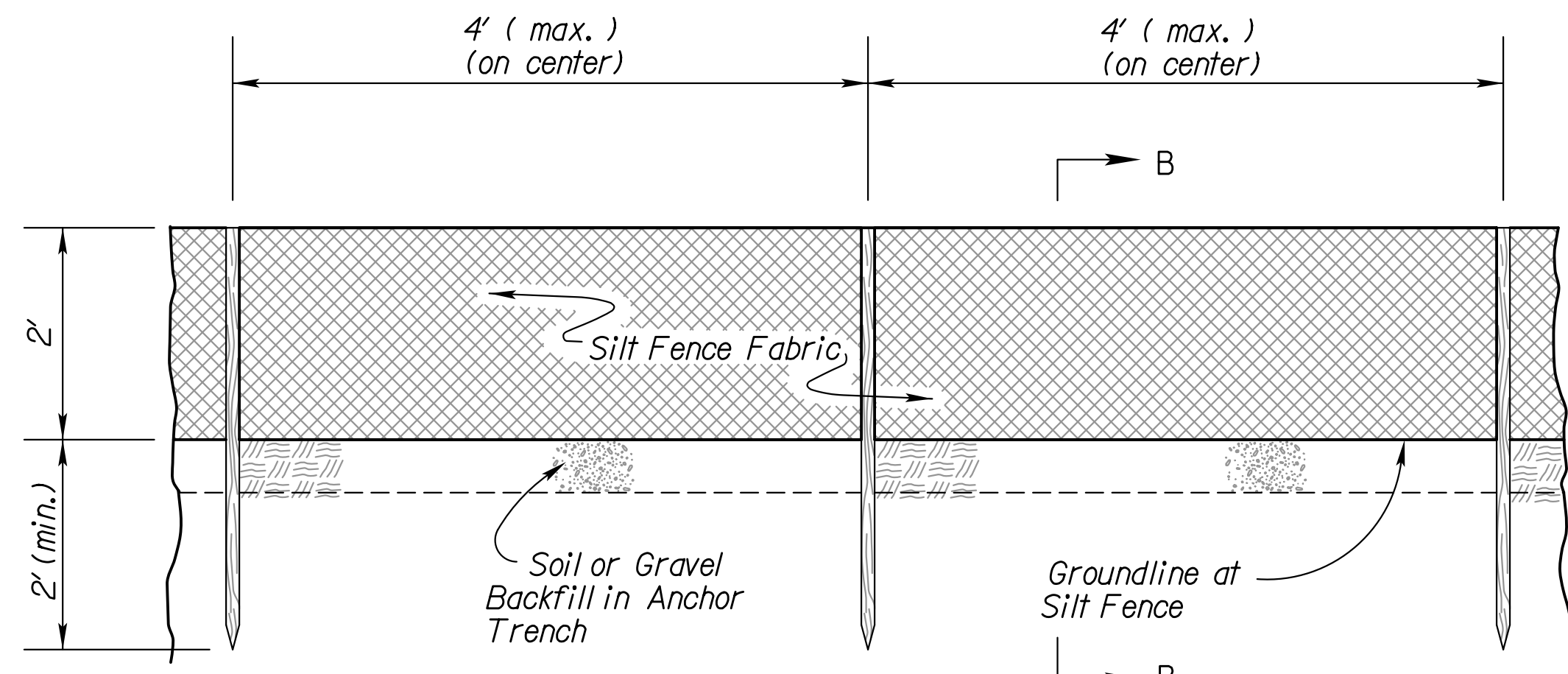
**INSTALLATION NOTES**

**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.

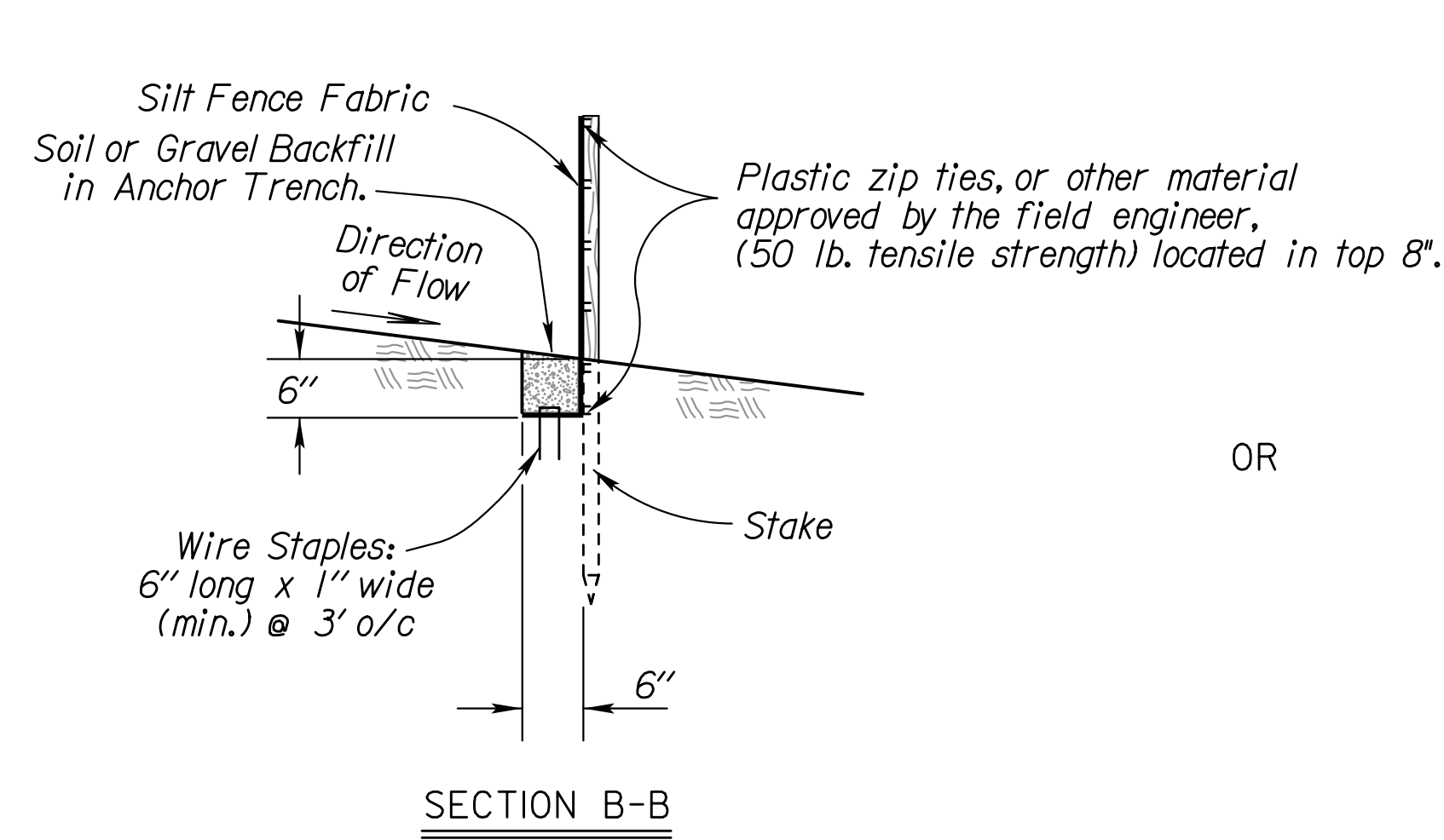
**BIODEGRADABLE LOG OR FILTER SOCK**

- 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.

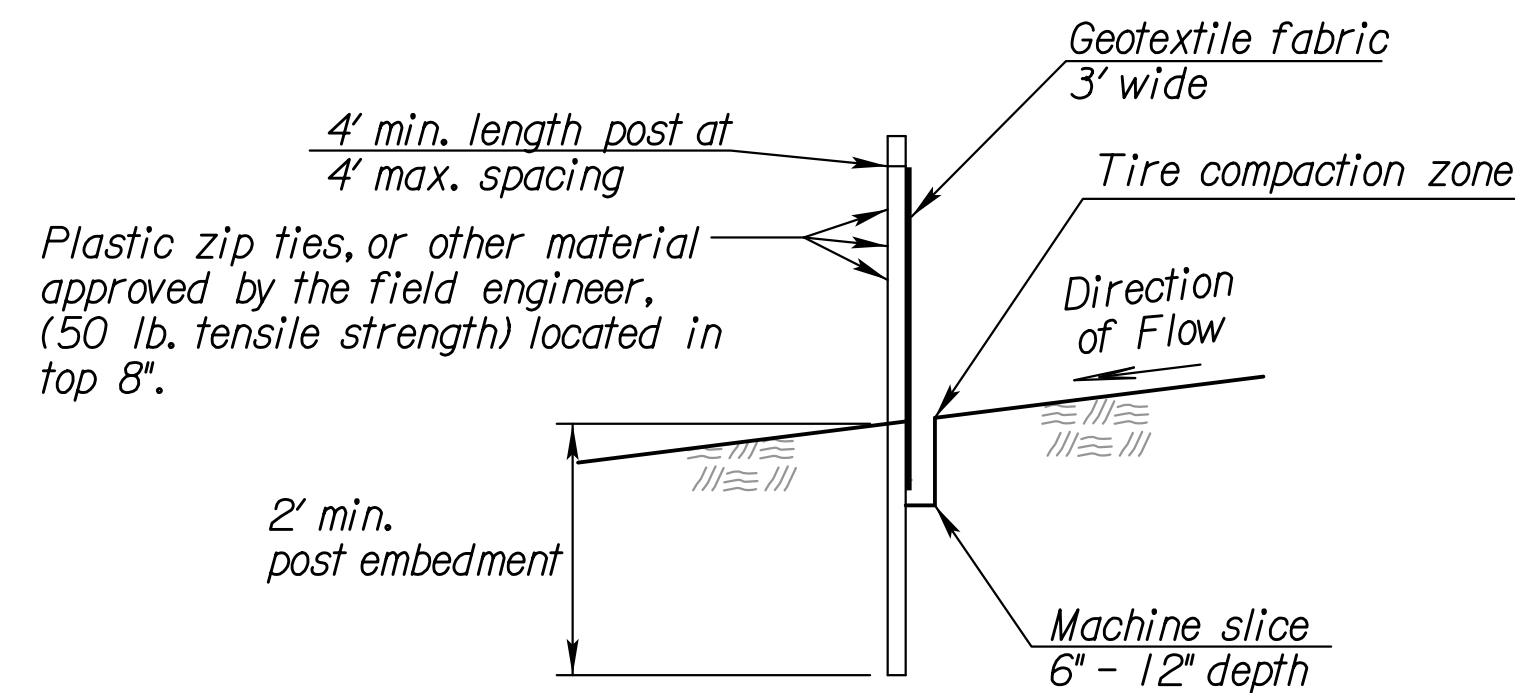


**TYPICAL ELEVATION**

**SILT FENCE BARRIER**  
NO SCALE



**SECTION B-B**



**SECTION B-B**

**Biodegradable Log or Filter Sock Slope Interruptions**

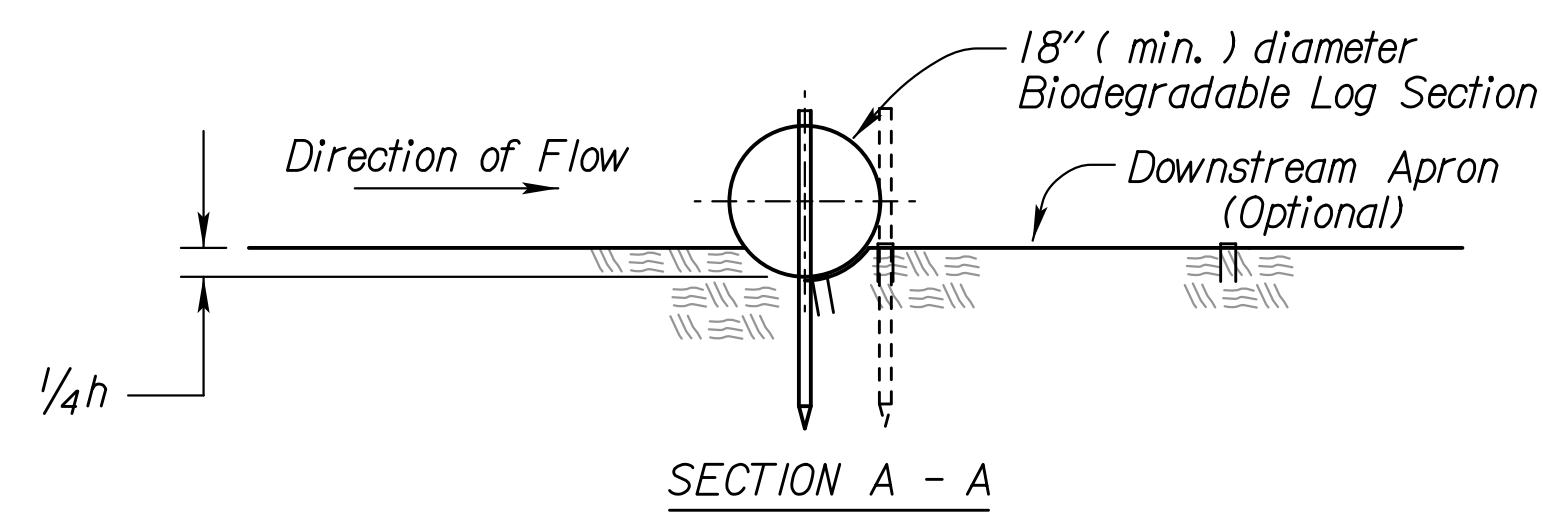
Slope Gradient	PRODUCT	BIODEGRADABLE LOG MATERIAL		
		9" Sediment Log or 8" Filter Sock (ft)	12" Sediment Log or 12" Filter Sock (ft)	20" Sediment Log or 18" Filter Sock (ft)
≤4H:1V		40	60	80
3H:1V		30	45	60

	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

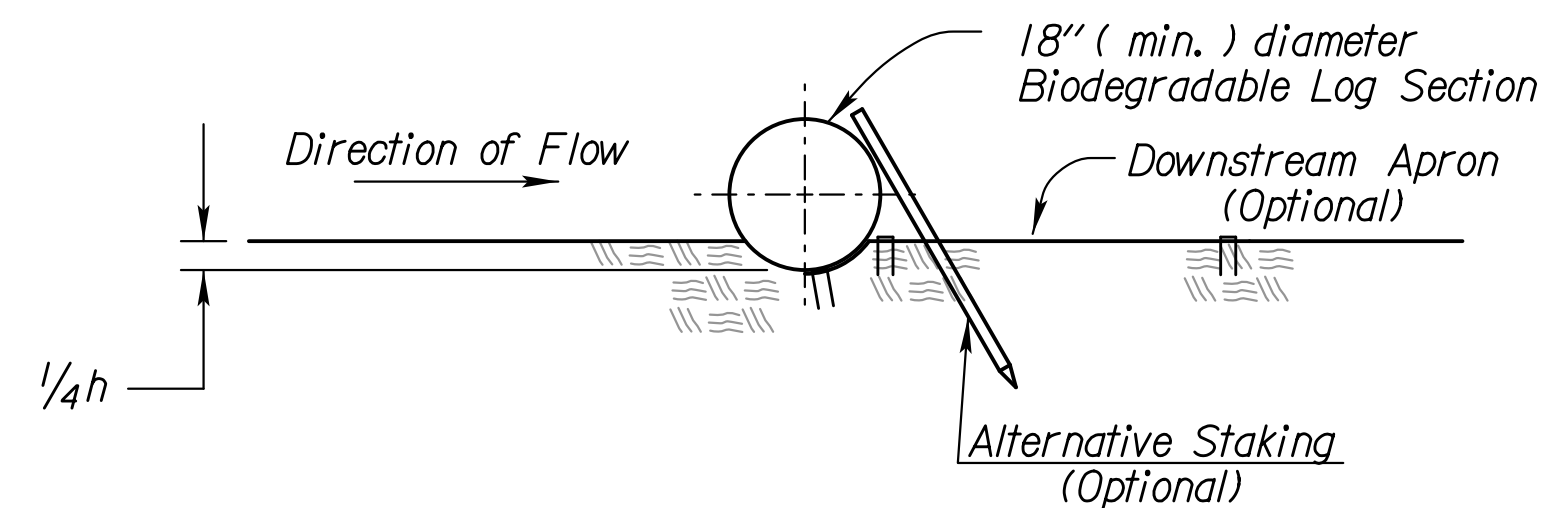
Deviations should be approved by the Field Engineer.

**GENERAL NOTES**

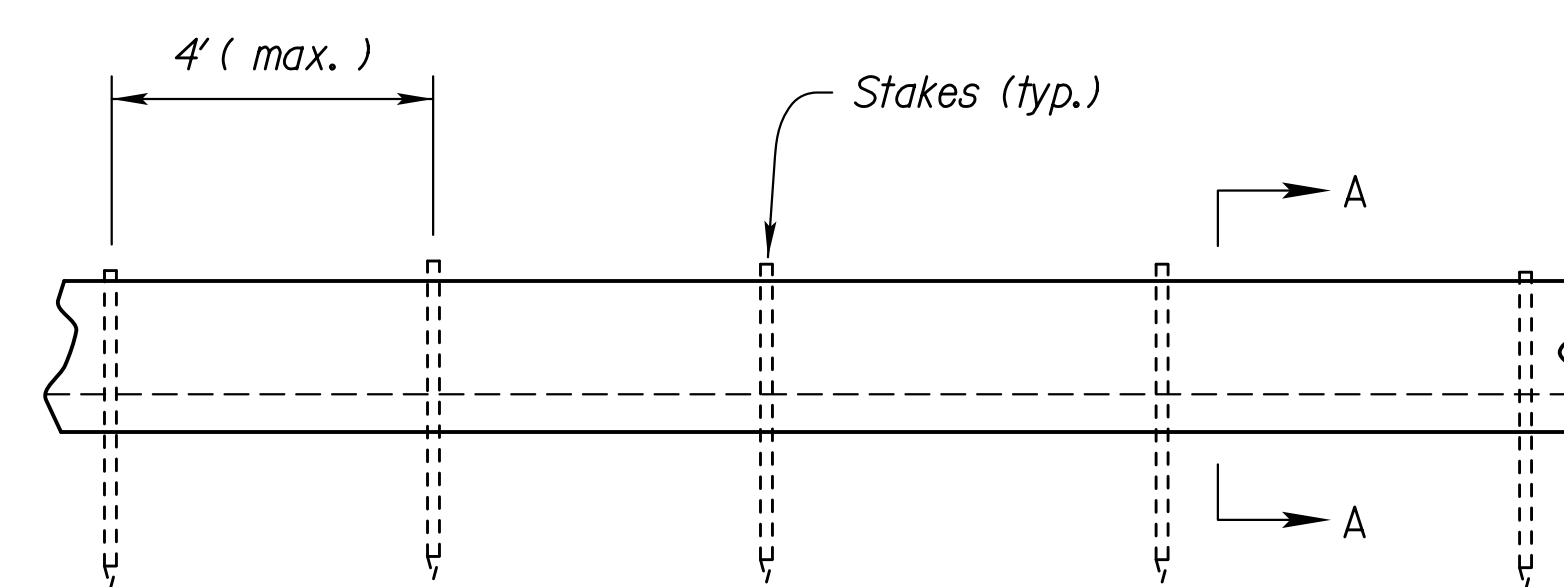
- Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
- The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
- Interruptions damaged by Contractor's negligence, including 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.



**SECTION A - A**



**ALT. DETAIL**  
OPTIONAL



**TYPICAL ELEVATION**

**BIODEGRADABLE LOG SLOPE INTERRUPTIONS**  
OR Filter Sock

Std. Base File:  
Plotted By: melissa  
File: la852d.dgn  
Plot Date: 14-SEP-2016 13:07

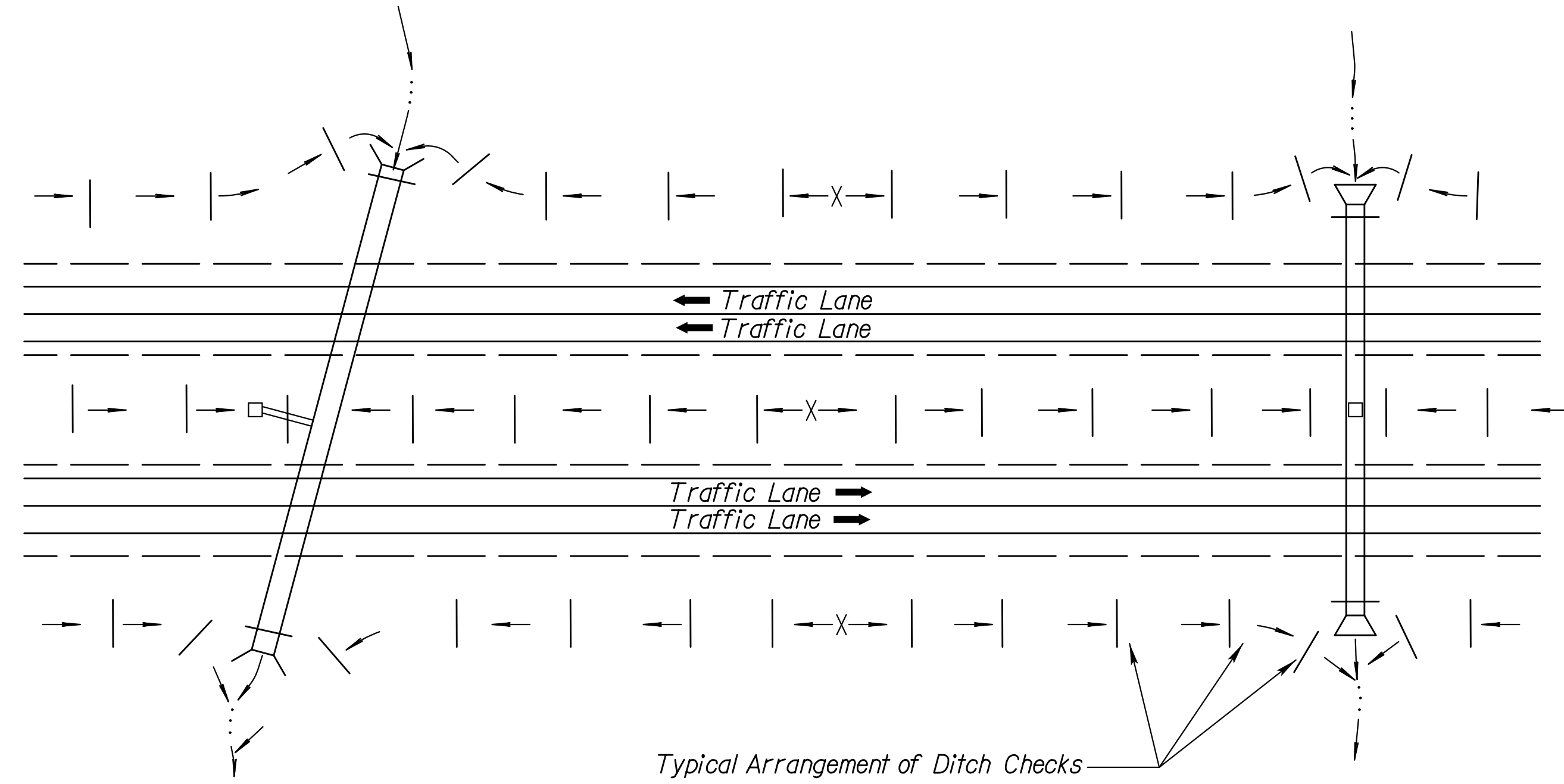
3	6/28/16	Revised Standard	RA	SHS
2	3/01/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS
NO.	DATE	REVISIONS	BY	APP'D

**KANSAS DEPARTMENT OF TRANSPORTATION**  
**TEMPORARY EROSION AND POLLUTION CONTROL**  
**SLOPE INTERRUPTIONS**  
**BIODEGRADABLE LOG / SILT FENCE**  
**LA852D**

DESIGNED	SHS	9/14/2016	APP'D	Scott H. Shields
DESIGN CK.	SHS	DETAIL CK.	QUANTITIES	CADD CK.



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



TYPICAL DITCH CHECK LAYOUT PLAN  
NO SCALE

20" BILOG CHECK SPACING	
DITCH $\alpha$ 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 $\alpha$ 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.

Std. Base File:  
Plotted By: melissa  
File: la852e.dgn  
Plot Date: 14-SEP-2016 13:10

NO.	DATE	REVISIONS	BY	APP'D
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2	6/28/16	Revised Standard	RAA	SHS
1	6/01/13	Revised Standard	MRM	SHS

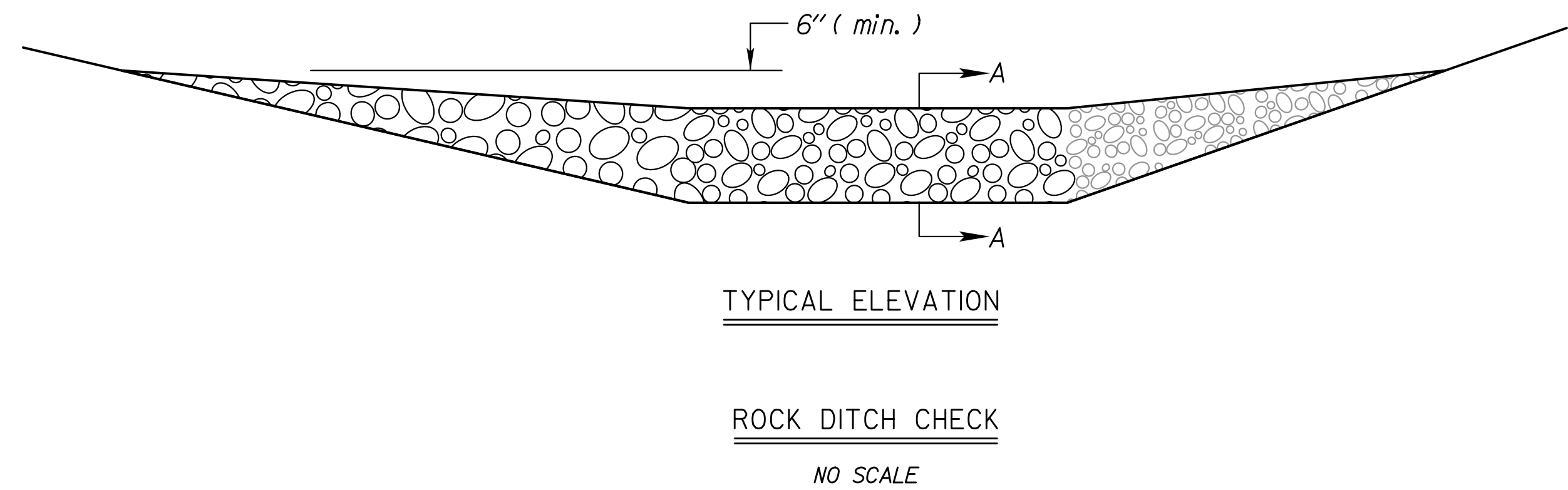
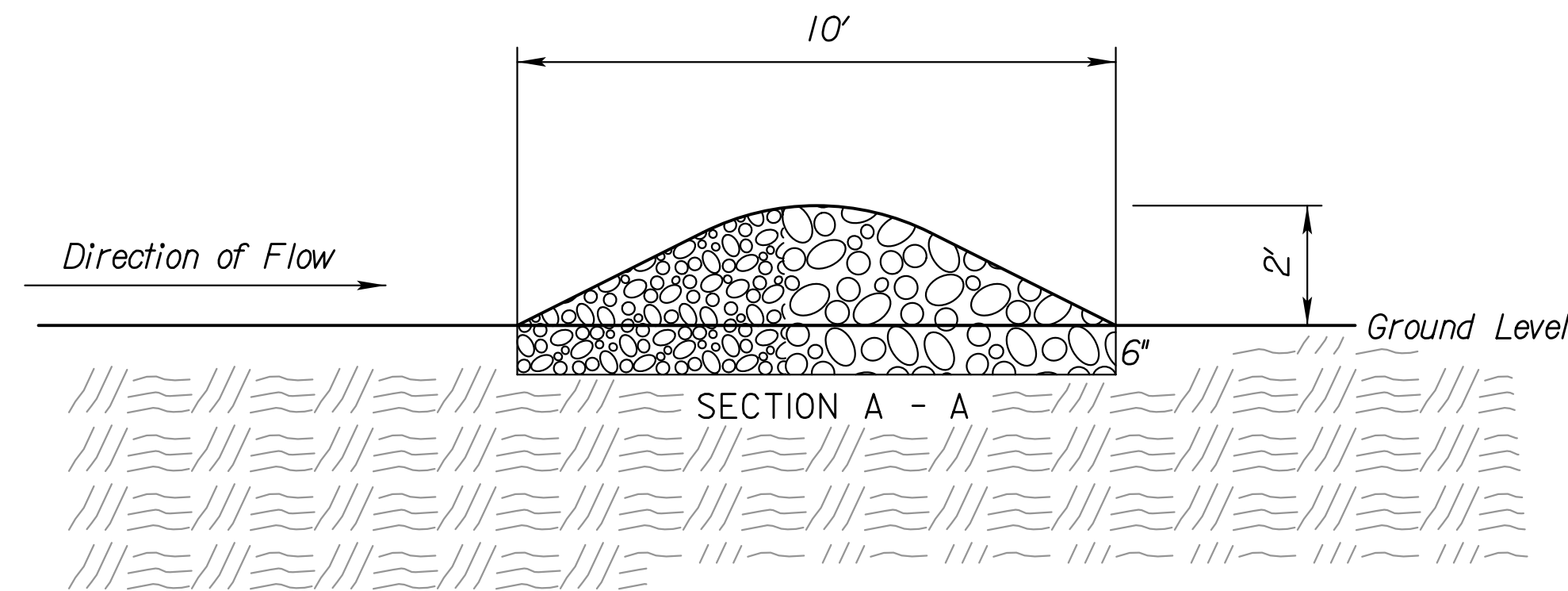
**KANSAS DEPARTMENT OF TRANSPORTATION**  
**TEMPORARY EROSION AND POLLUTION CONTROL**  
**DITCH CHECKS**  
 LA852E

DESIGNED	SHS	DETAILED	RAA	QUANTITIES	CADD	RAA
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN. CK.	CADD CK.	SHS

9/14/2016 | APP'D | Scott H. Shields

**ROCK DITCH CHECK NOTES**

1. Rock shall be clean aggregate, D50 = 6".
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, the upstream portion of the check should be constructed of D50 = 6" or smaller.

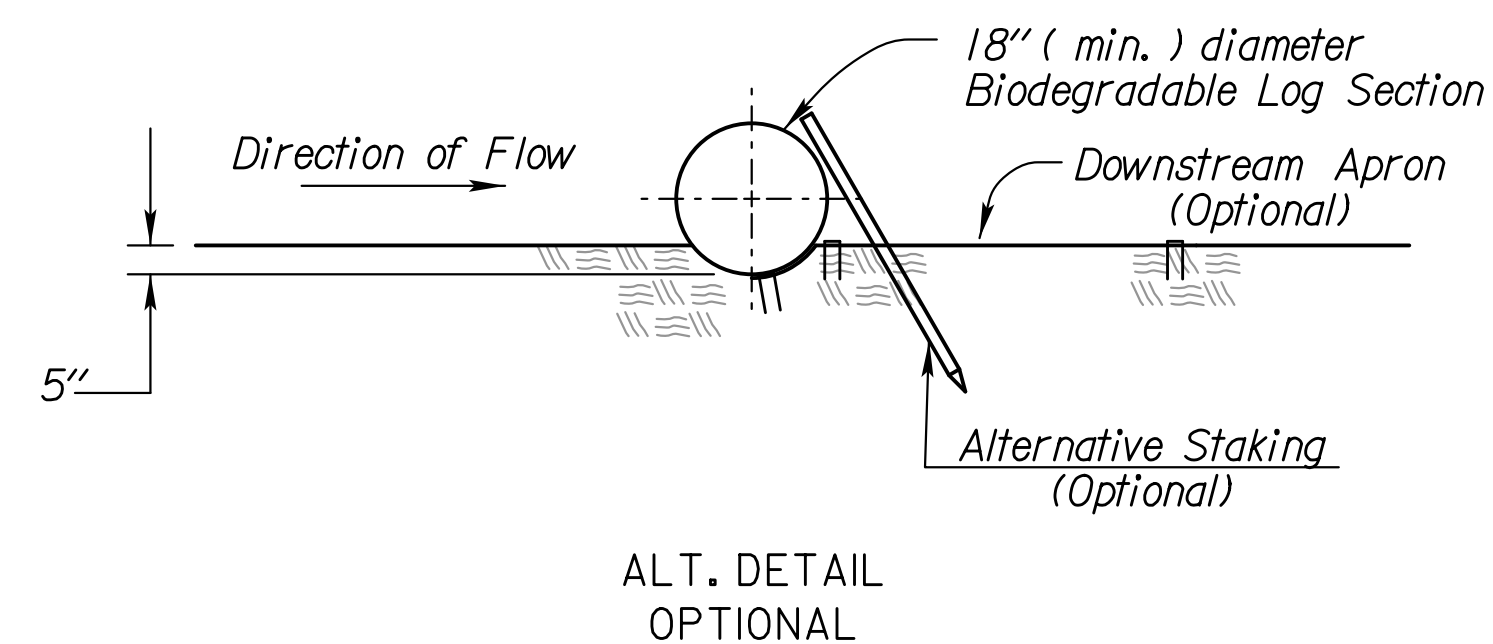
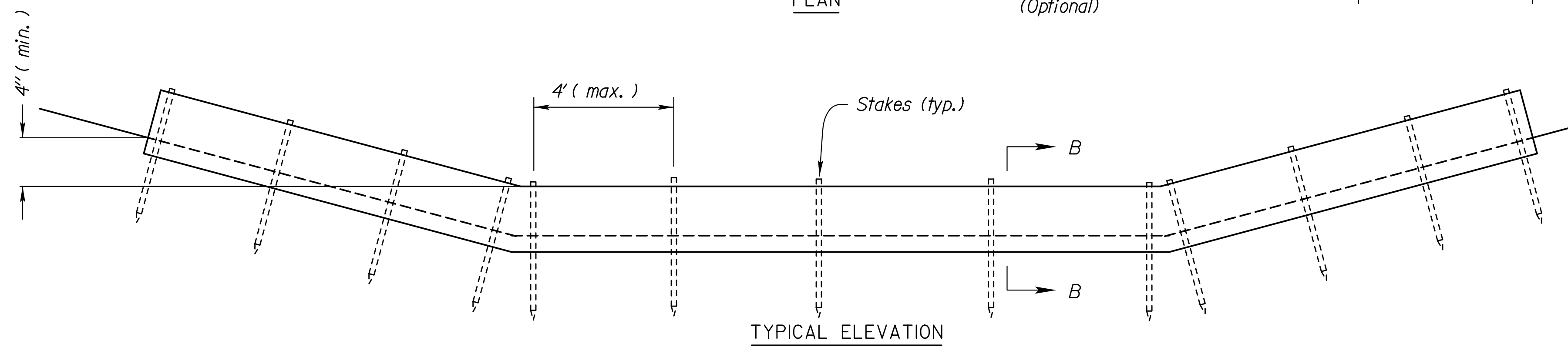
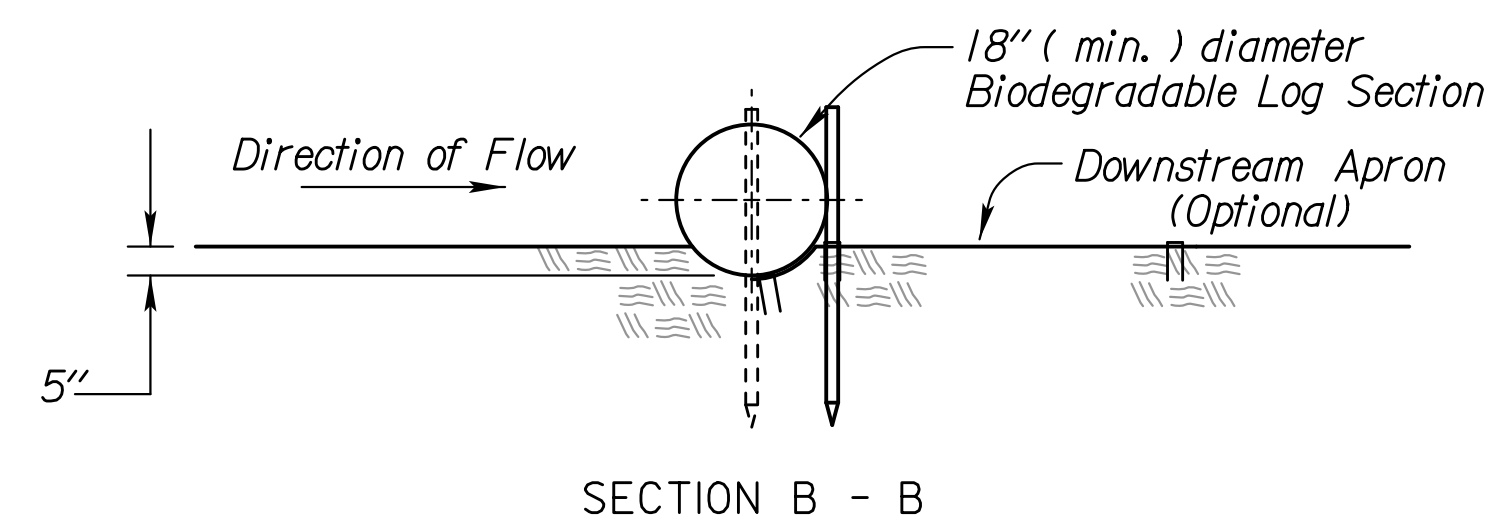
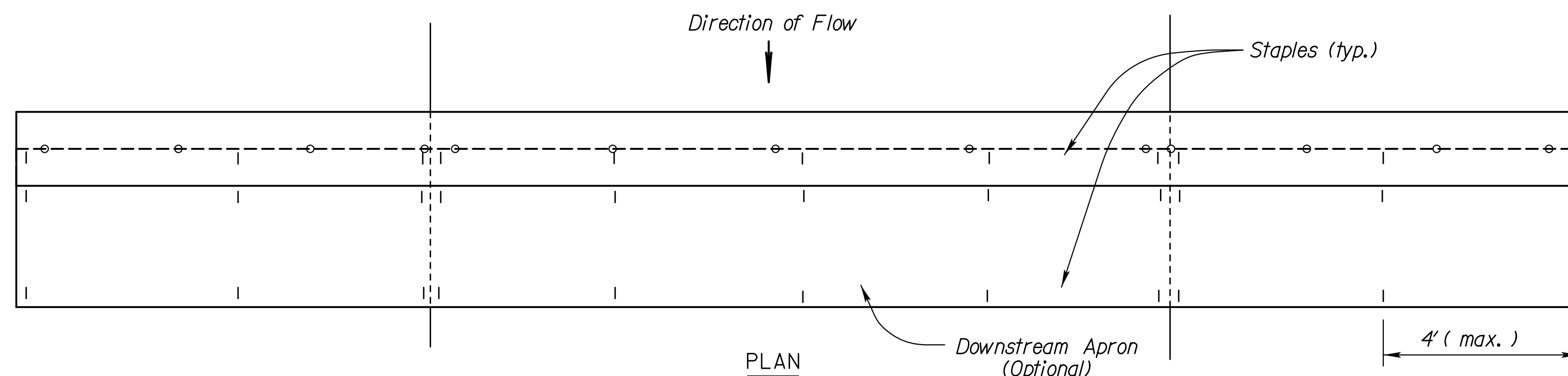


DITCH & SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29

NOTE: Use this spacing only for Rock Ditch Checks.

**BIODEGRADABLE LOG DIKE 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.



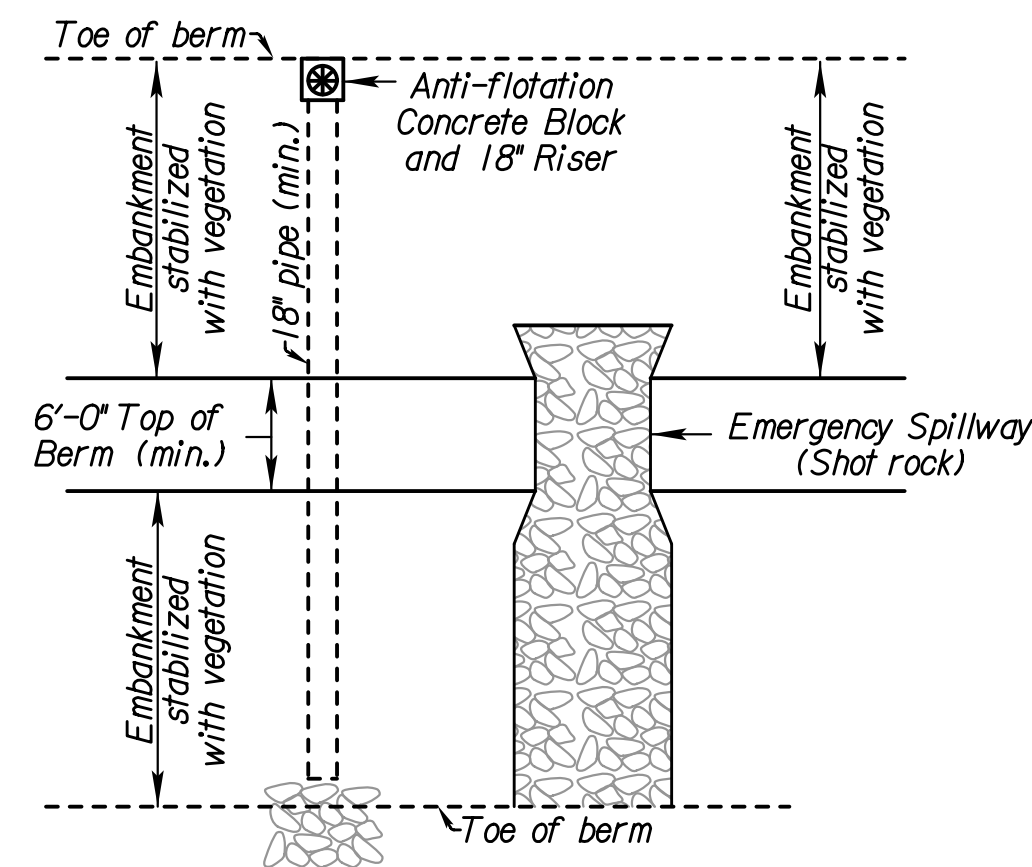
**BIODEGRADABLE LOG DITCH CHECK**  
OR Filter Sock Ditch Check  
NO SCALE

NO.	DATE	REVISIONS	BY	APP'D
3	8/10/16	Revised Standard	RAA	SHS
2	10/21/15	Revised Standard	RAA	SHS
1	9/15/14	Revised Standard	RAA	SHS

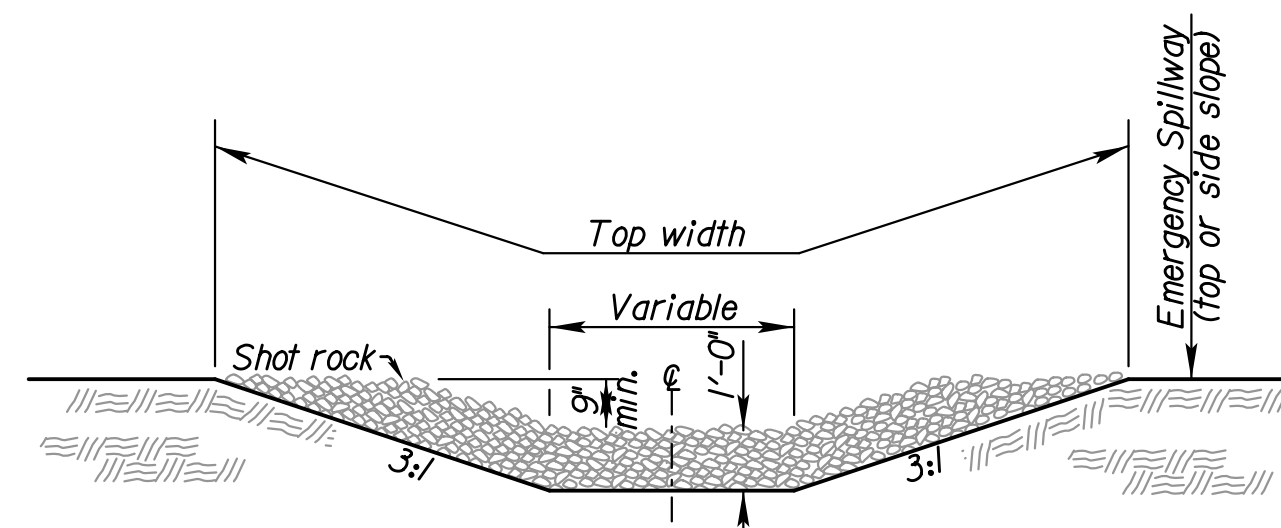
<b>KANSAS DEPARTMENT OF TRANSPORTATION</b>			
<b>TEMPORARY EROSION AND POLLUTION CONTROL</b>			
<b>ROCK DITCH CHECKS</b>			
<b>BIODEGRADABLE LOG DITCH CHECKS</b>			
<b>LA852G</b>			
DESIGNED	SHS	9/14/2016	APP'D Scott H. Shields
DESIGN CK.	SHS	DETAIL CK.	RAA
	SHS	QUAN. CK.	RAA

Std. Base File: la852g.dgn  
 Plotted By: melissa  
 File: la852g.dgn  
 Plot Date: 14-SEP-2016 13:13  
 Plot Location: Landscape

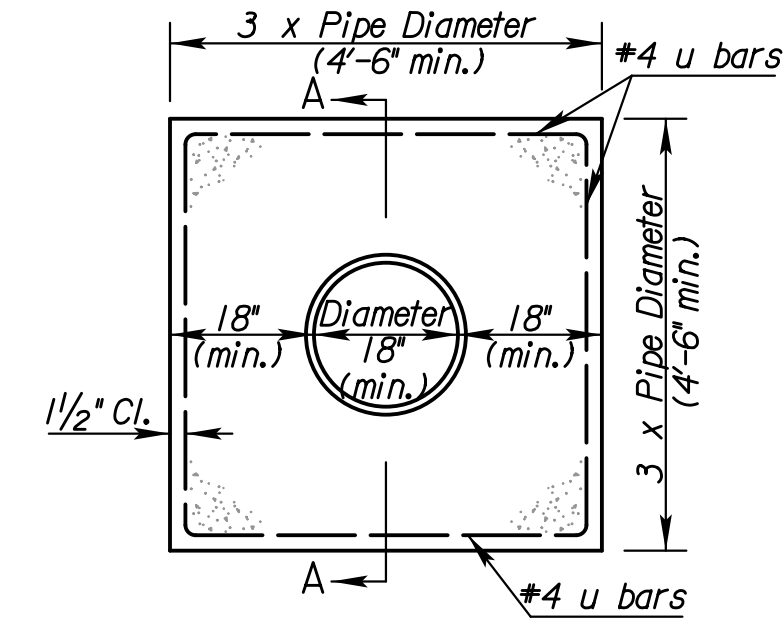
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	Project No.	20XX	0	0



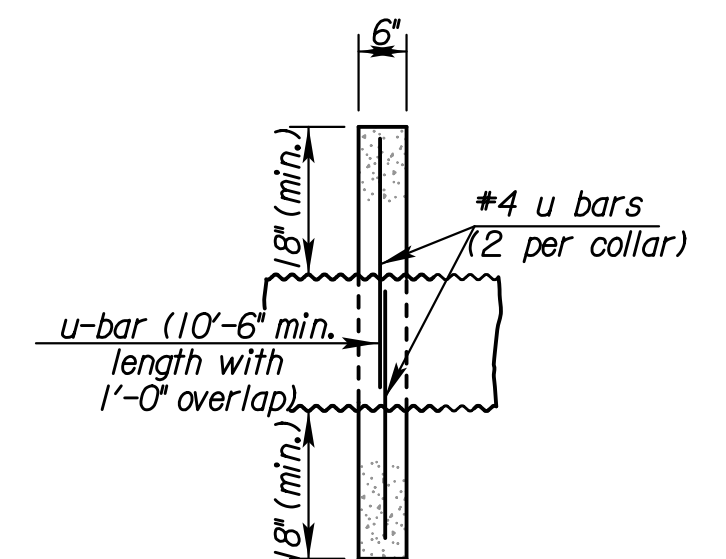
SEDIMENT STORAGE BASIN (PLAN)



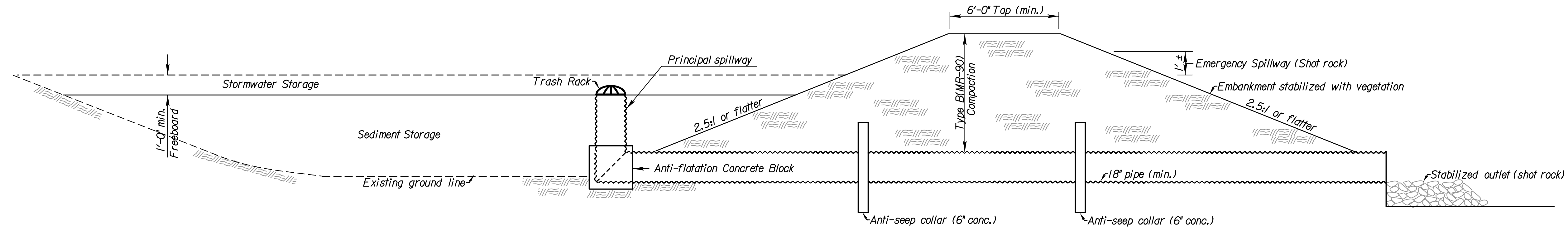
CROSS SECTION (EMERGENCY SPILLWAY)



CONCRETE ANTI-SEEP COLLAR



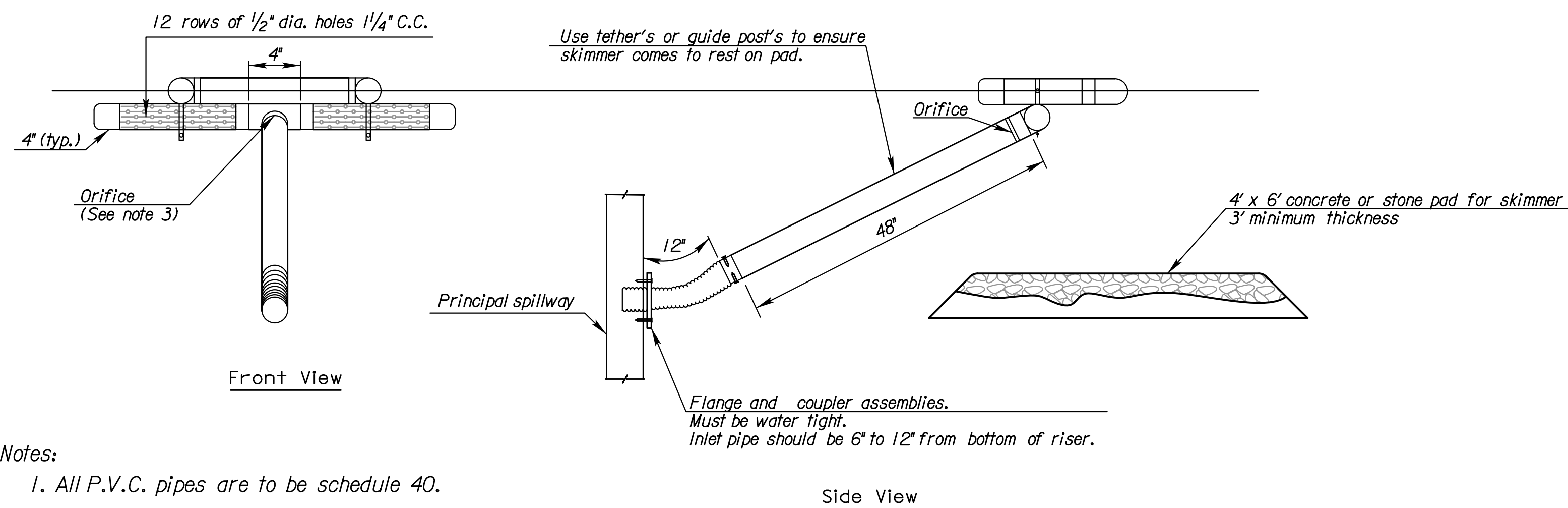
SECTION A-A



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.

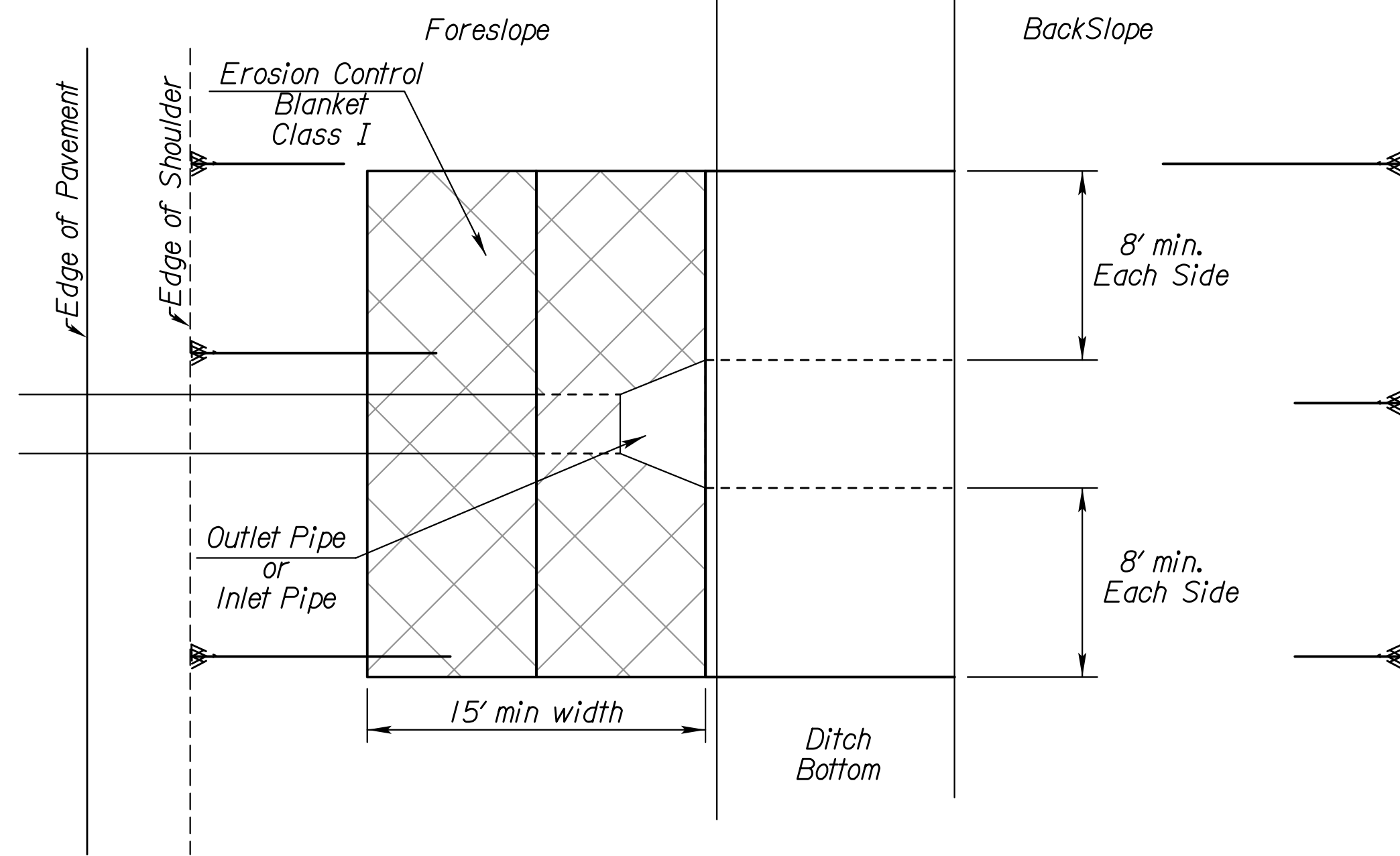
SEDIMENT STORAGE BASIN LOCATIONS		
STATION TO STATION	SIDE	REQUIRED STORAGE CAPACITY

3					
2	9/3/13	Added Skimmer Dewatering Device	MRM	SHS	
1	7/17/13	Revised Standard	MRM	SHS	
NO.	DATE	REVISIONS	BY	APP'D	
<b>KANSAS DEPARTMENT OF TRANSPORTATION</b>					
<b>TEMPORARY EROSION AND POLLUTION CONTROL</b>					
<b>SEDIMENT STORAGE BASIN</b>					
LA852H					
FHWA APPROVAL	09/24/2013	APP'D	Scott H. Shields		
DESIGNED	BB	DETAILED	BB	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN. CK.	CADD CK.

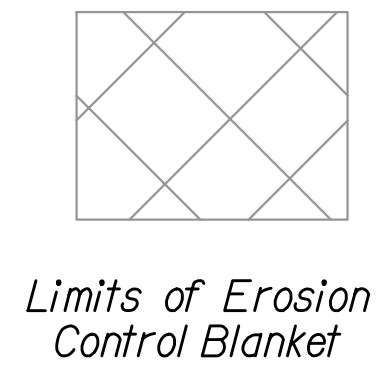
Std. Base File: Plot Location: Bridge Design  
 Plotted By: rlong  
 File: la852h.dgn  
 Plot Date: 10-OCT-2016 11:45



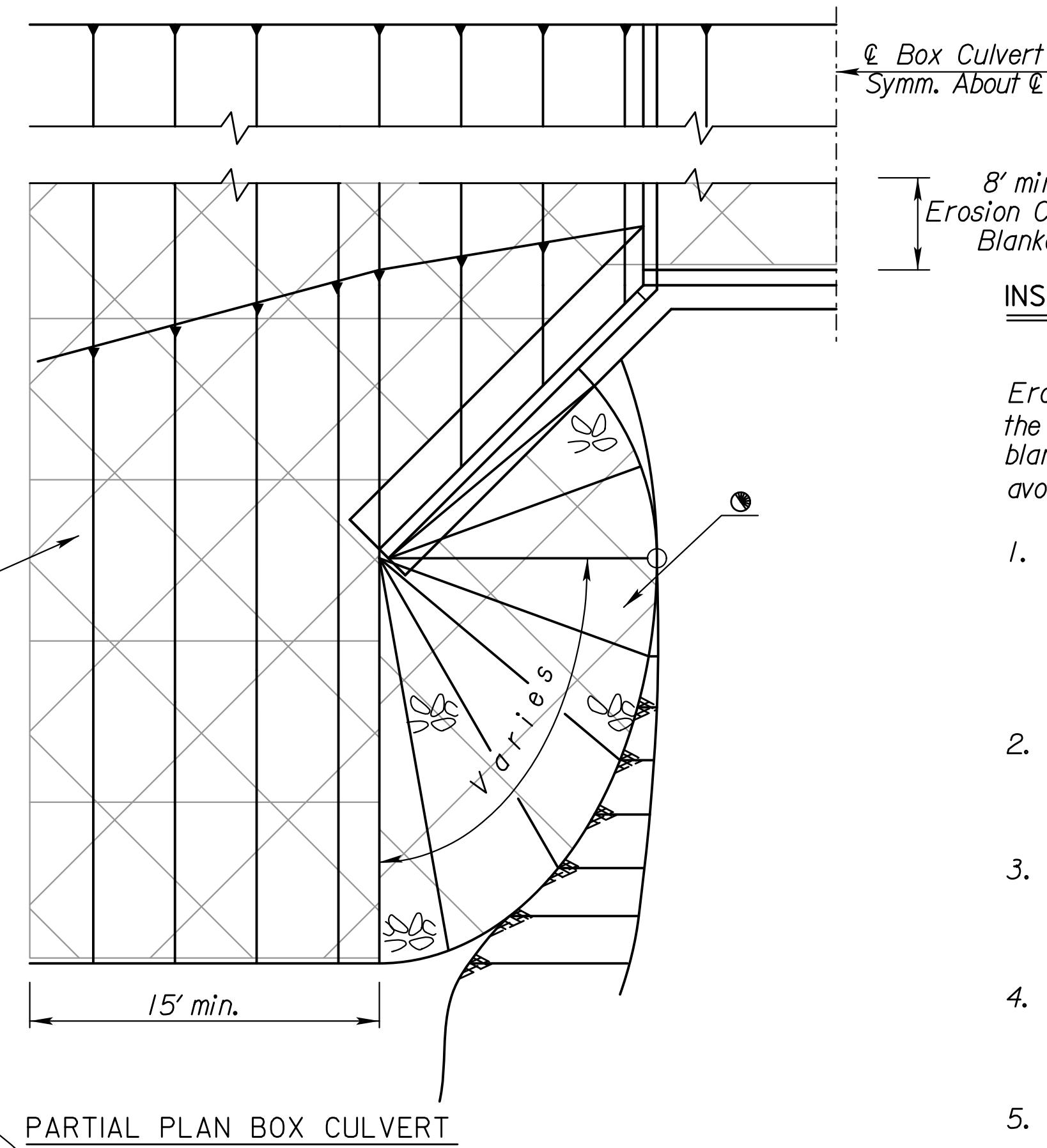
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	Project No.	20XX	0	0



PARTIAL PLAN PIPE



Limits of Erosion Control Blanket

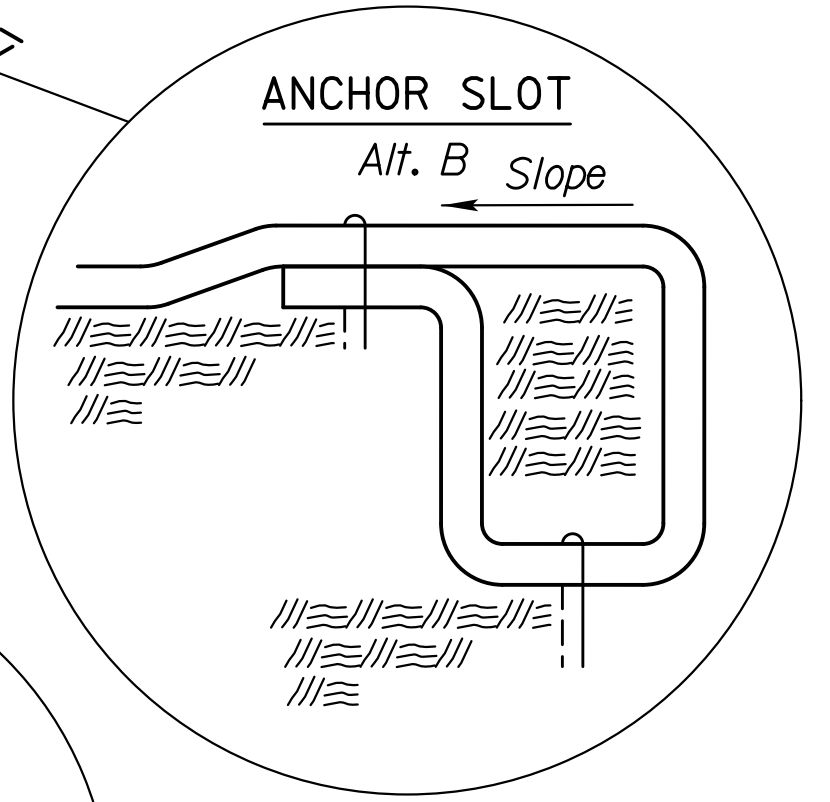
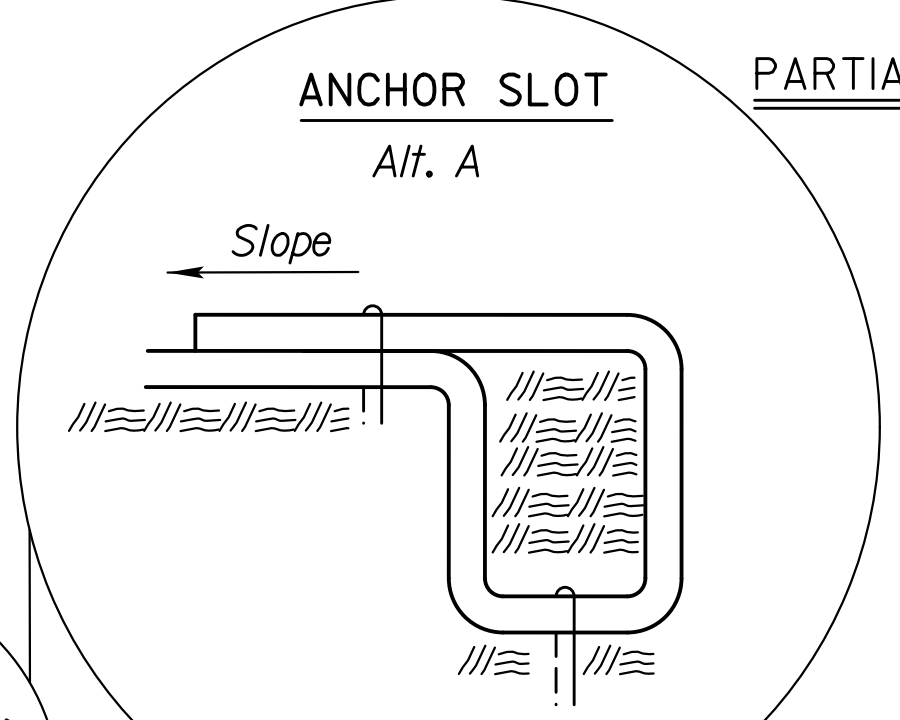
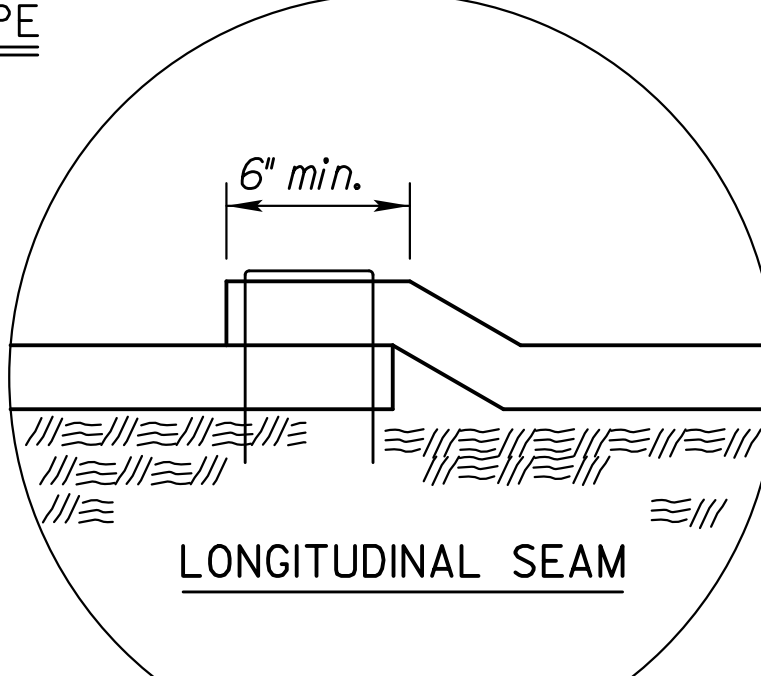
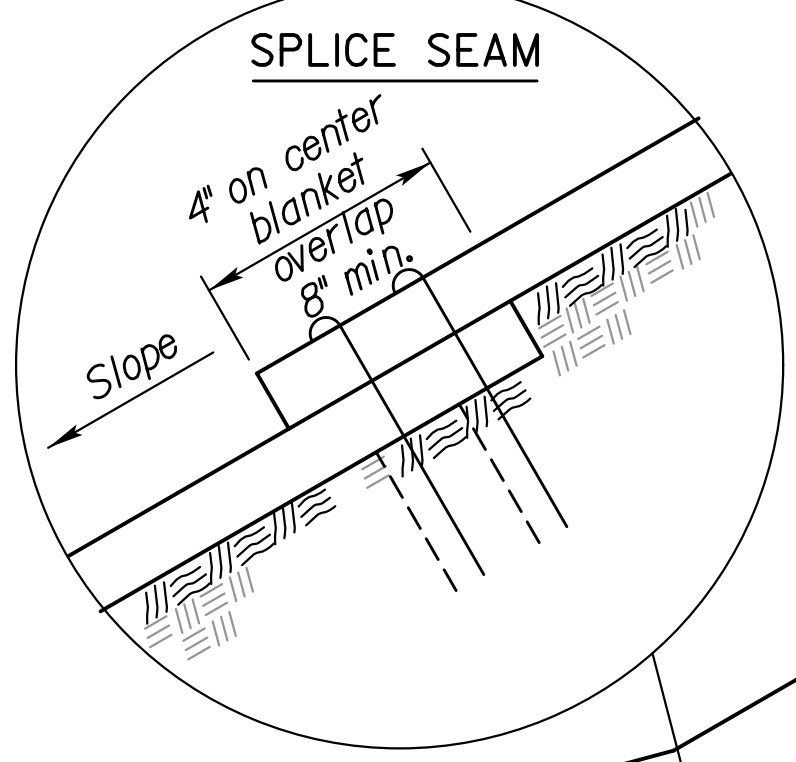


PARTIAL PLAN BOX CULVERT

**INSTALLATION DETAILS FOR EROSION CONTROL CLASS I**

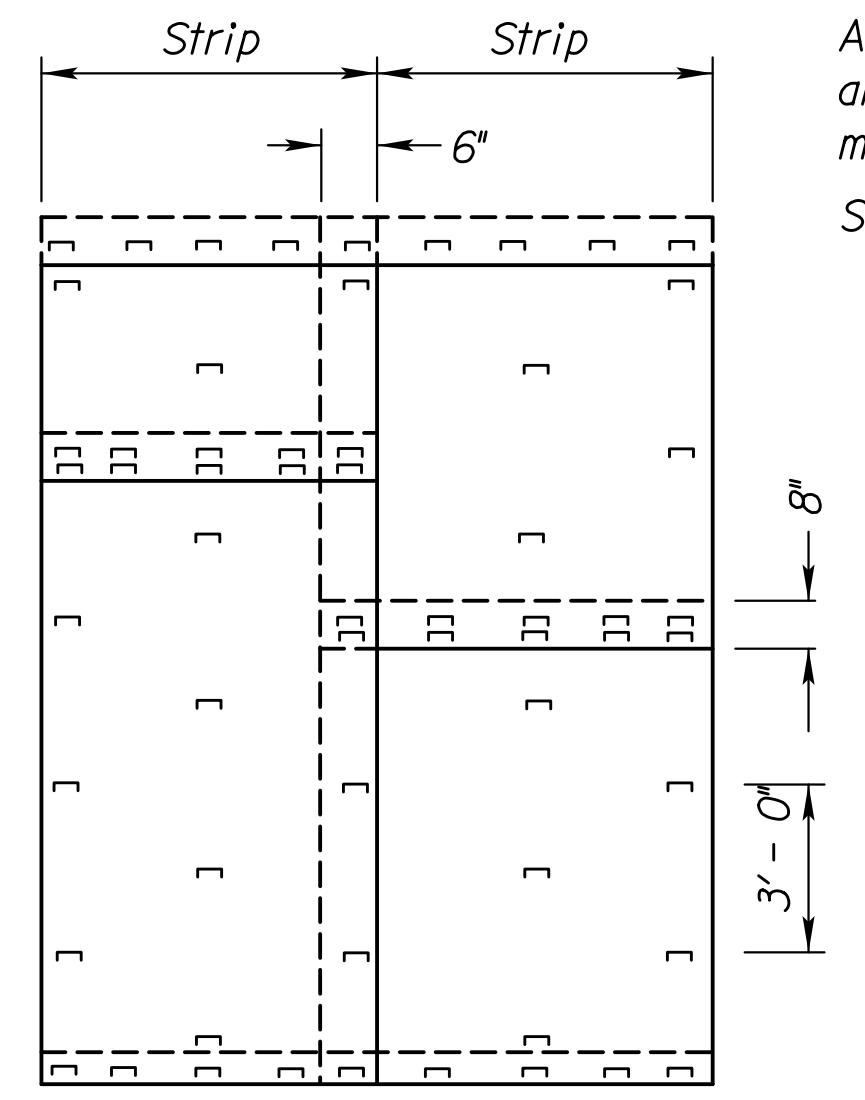
Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

- 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 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.

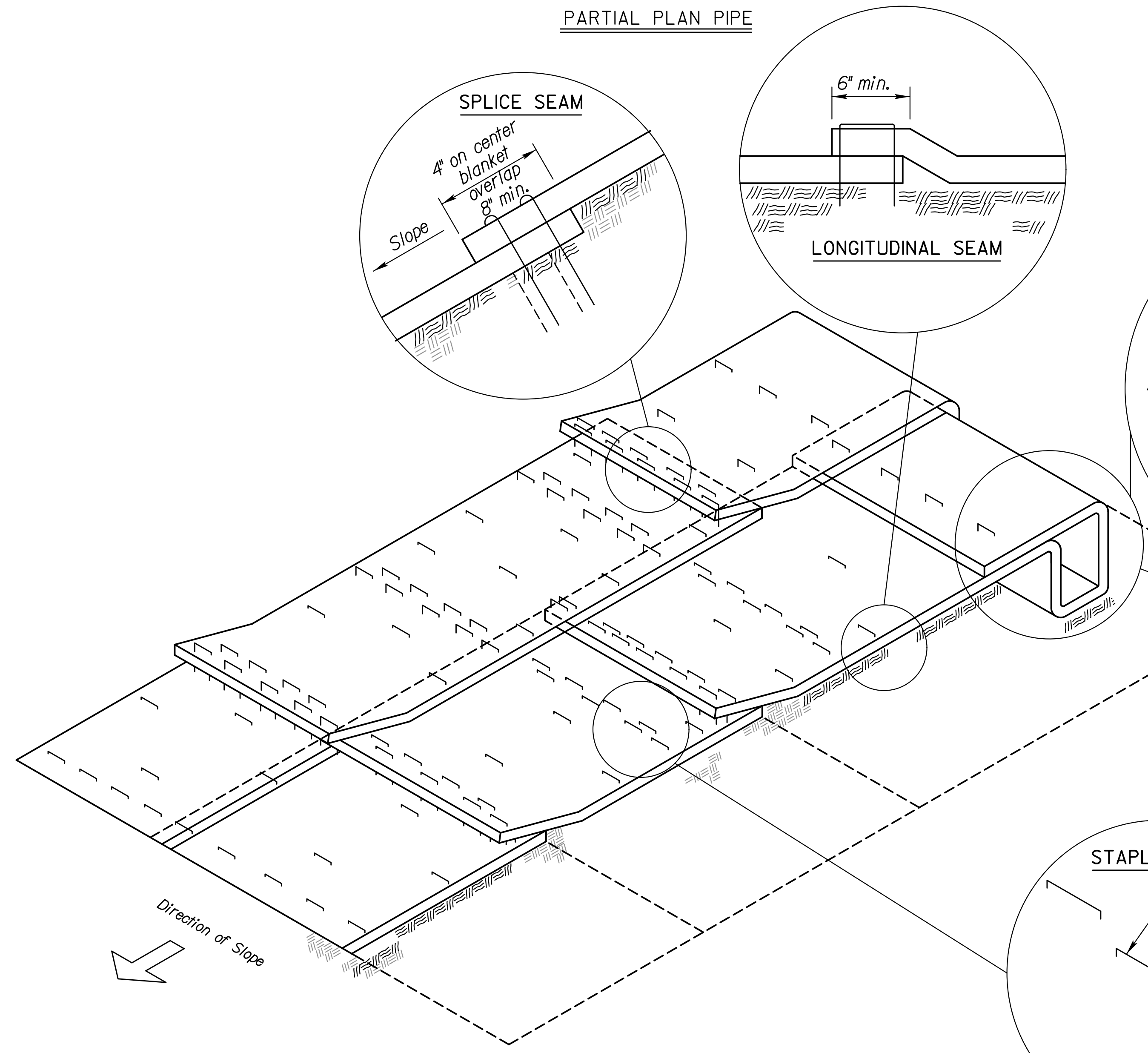
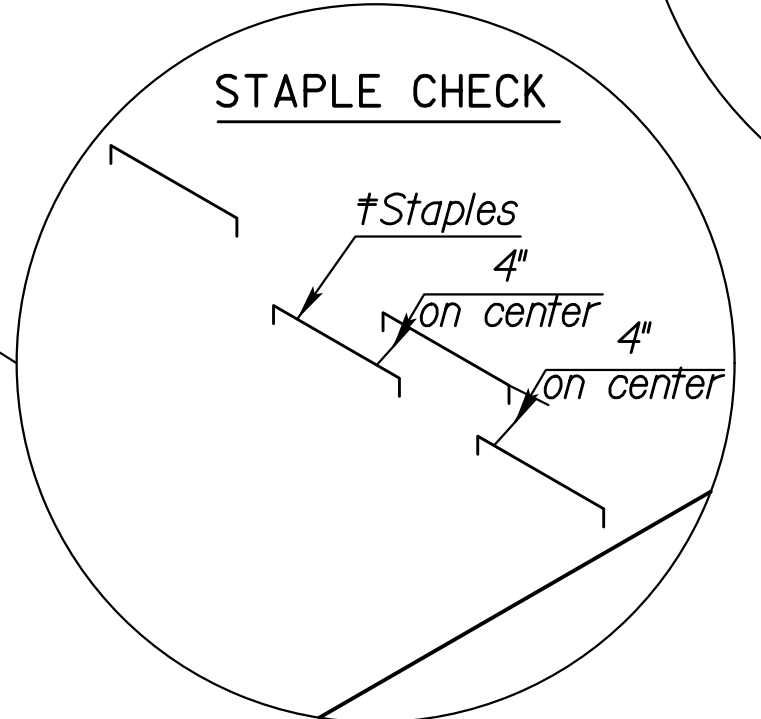


● Erosion Control Class I may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans).

**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.



PLAN VIEW - ANCHORING DIAGRAM



ISOMETRIC VIEW

Std. Base File: la855.dgn  
 Plotted By: rlong  
 File: la855.dgn  
 Plot Date: 10-OCT-2016 11:45

NO.	DATE	REVISIONS	BY	APP'D
4	3/01/15	Revised Standard	RAA	SHS
3	2/23/15	Revised Standard	RAA	SHS
2	9/15/14	Revised Standard	MRM	SHS
1	9/10/07	Revised Standard	MRM	SHS

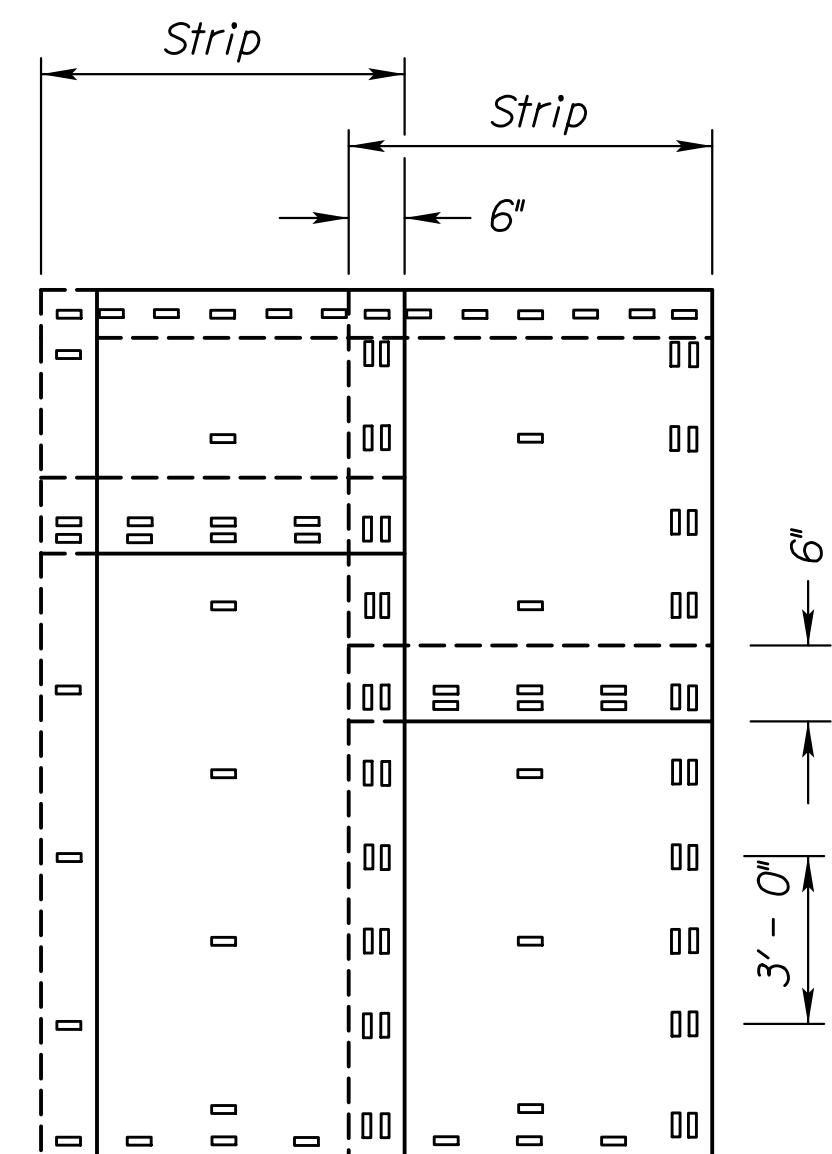
**KANSAS DEPARTMENT OF TRANSPORTATION**

**INSTALLATION DETAIL**  
**EROSION CONTROL CLASS I**  
**SLOPE PROTECTION**

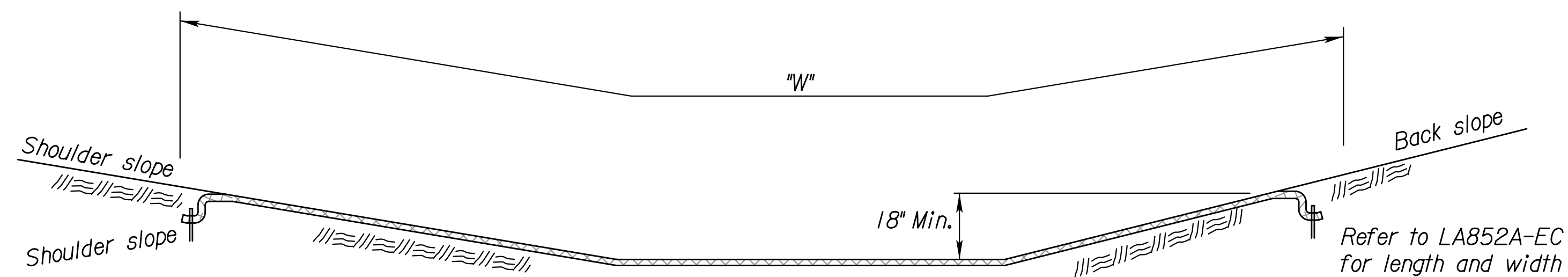
LA855

DESIGNED	RAA	DATE	3/10/2015	APP'D	Scott H. Shields
DESIGN CK.	RAA	DETAIL CK.	RAA	QUANTITIES	CADD CK. RAA
				QUAN.CK.	CADD CK. RAA

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



PLAN VIEW - ANCHORING DIAGRAM

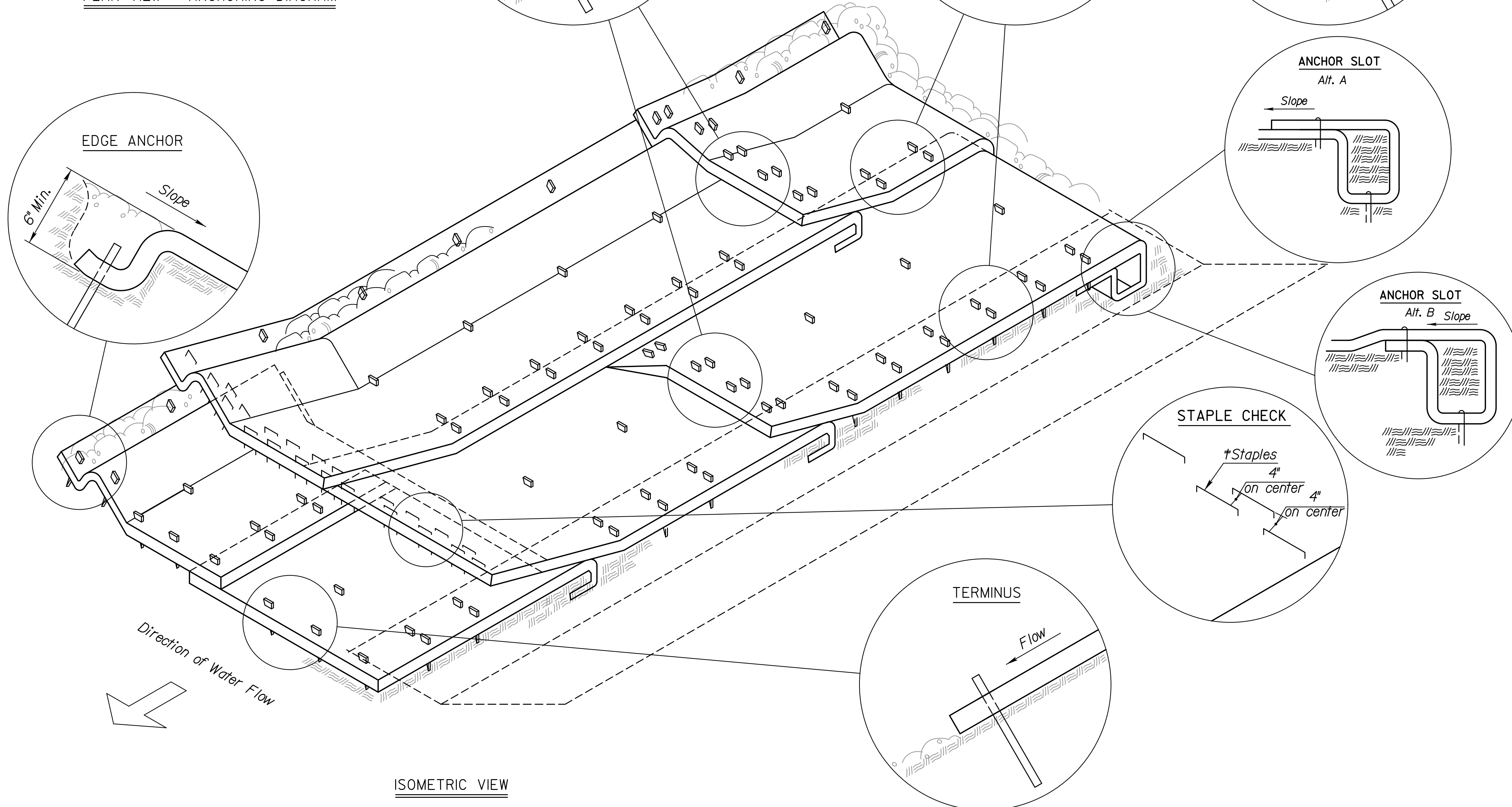
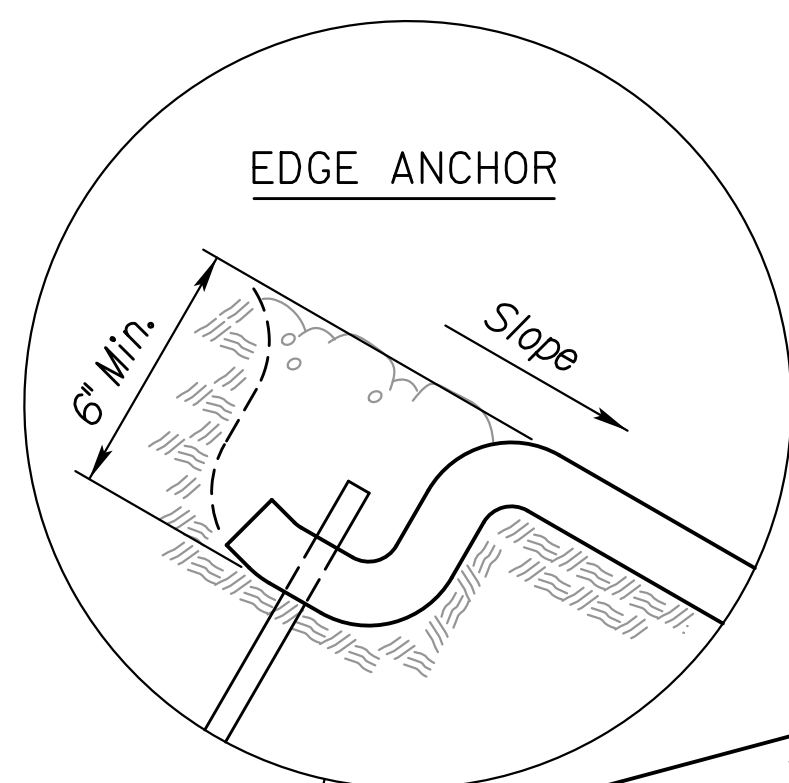
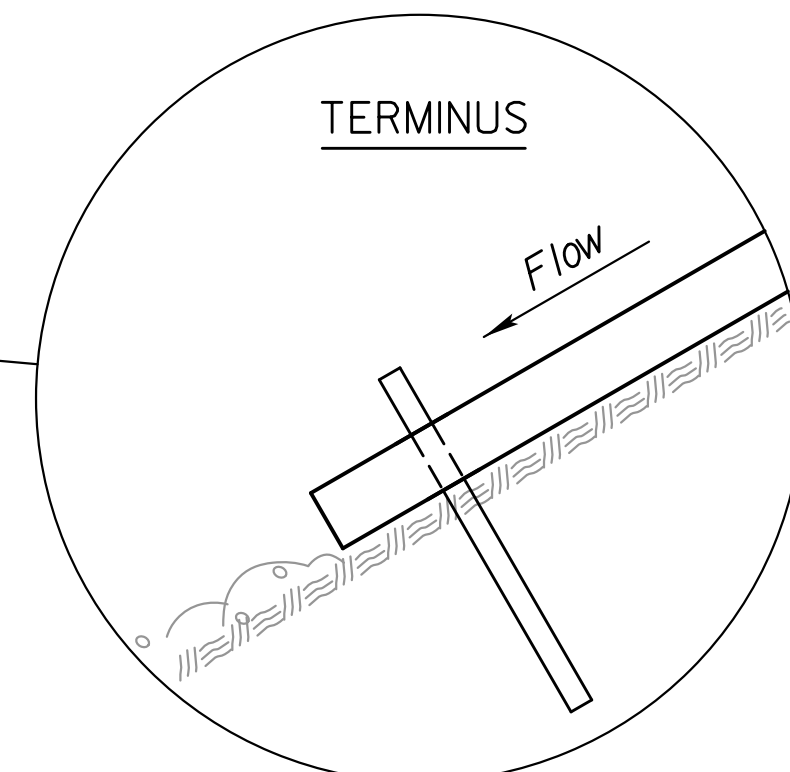
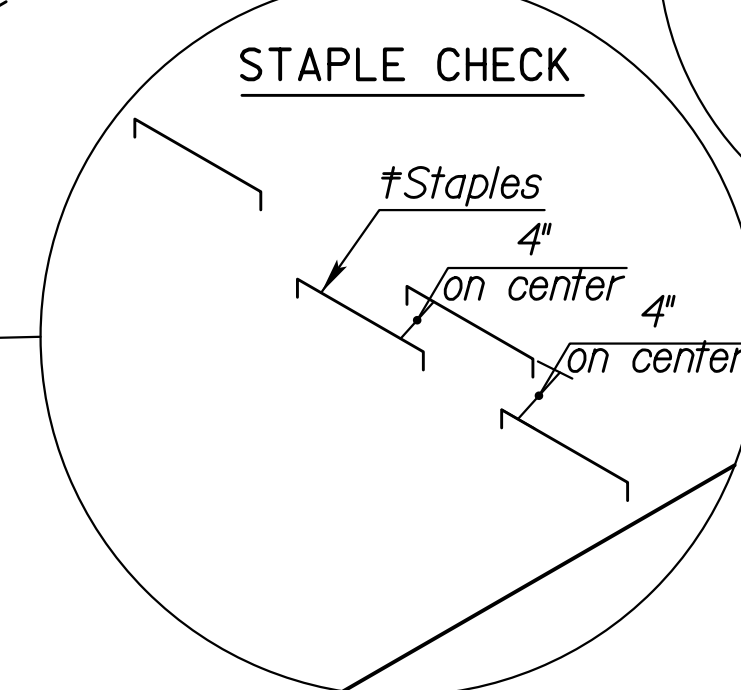
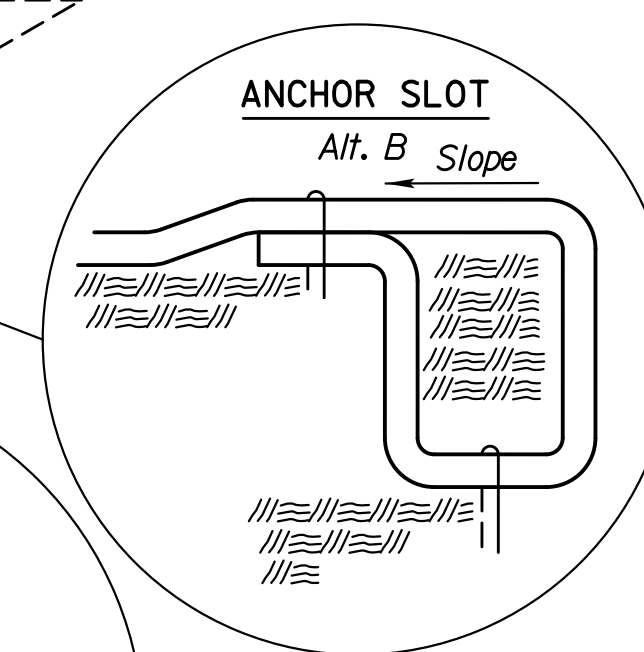
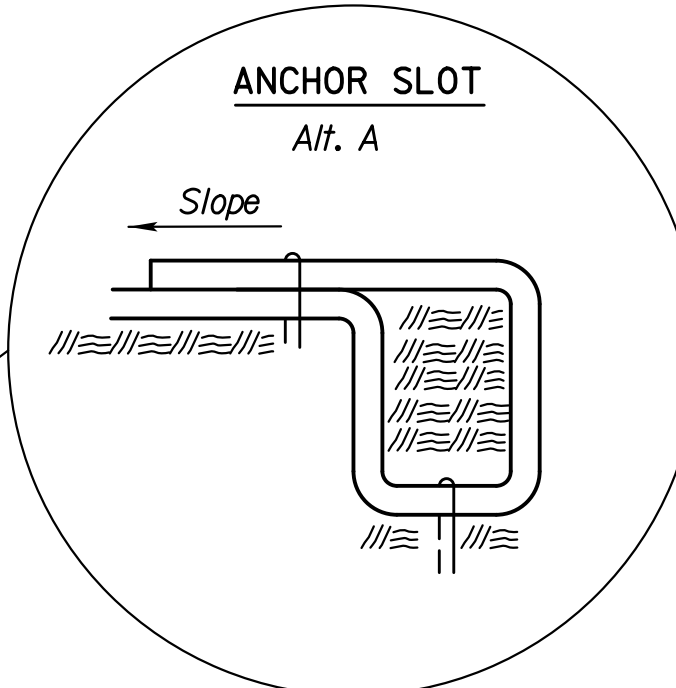
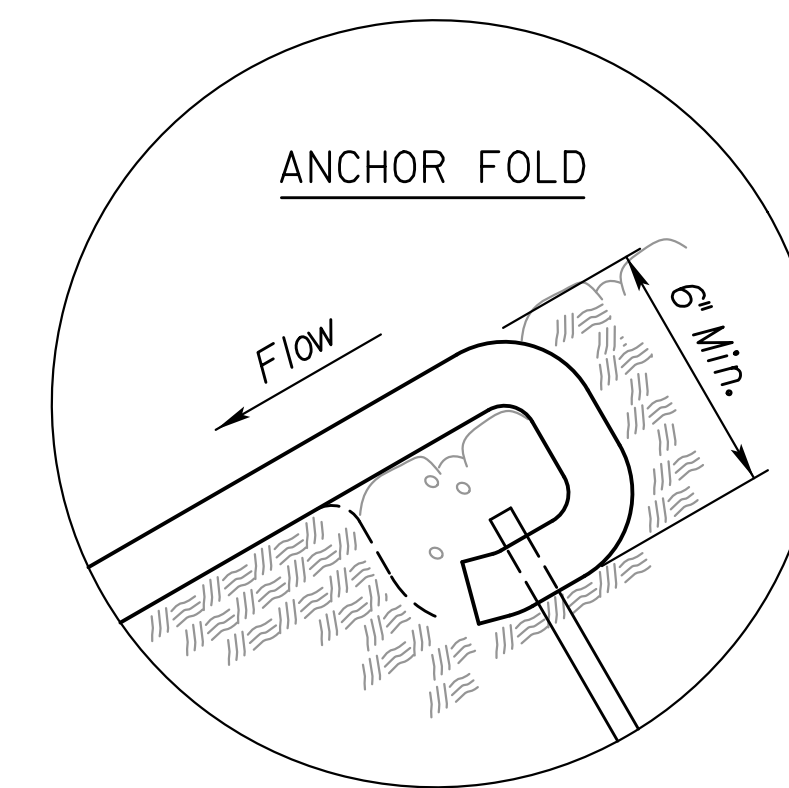
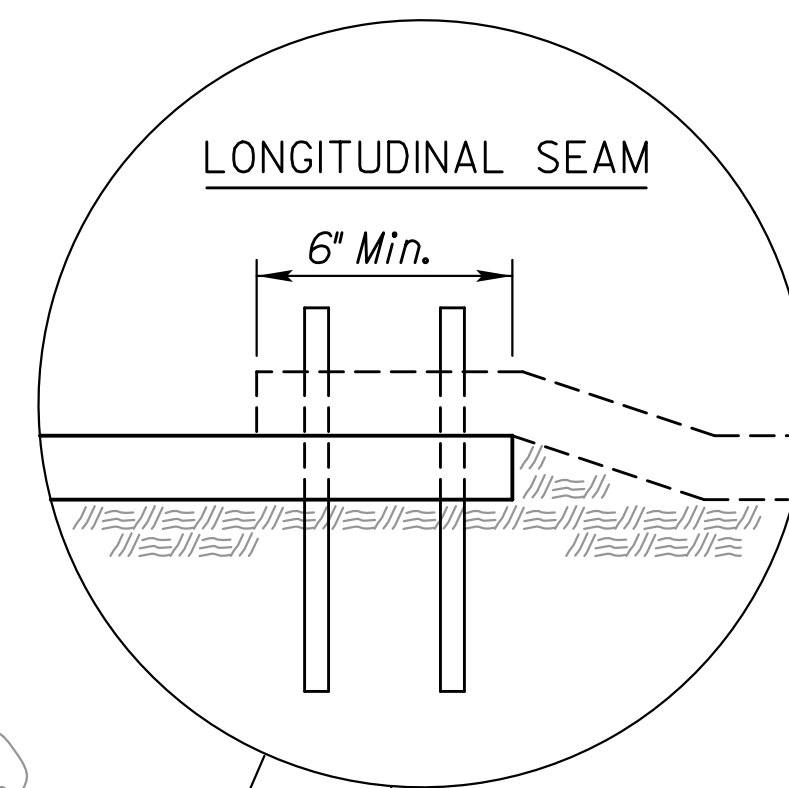
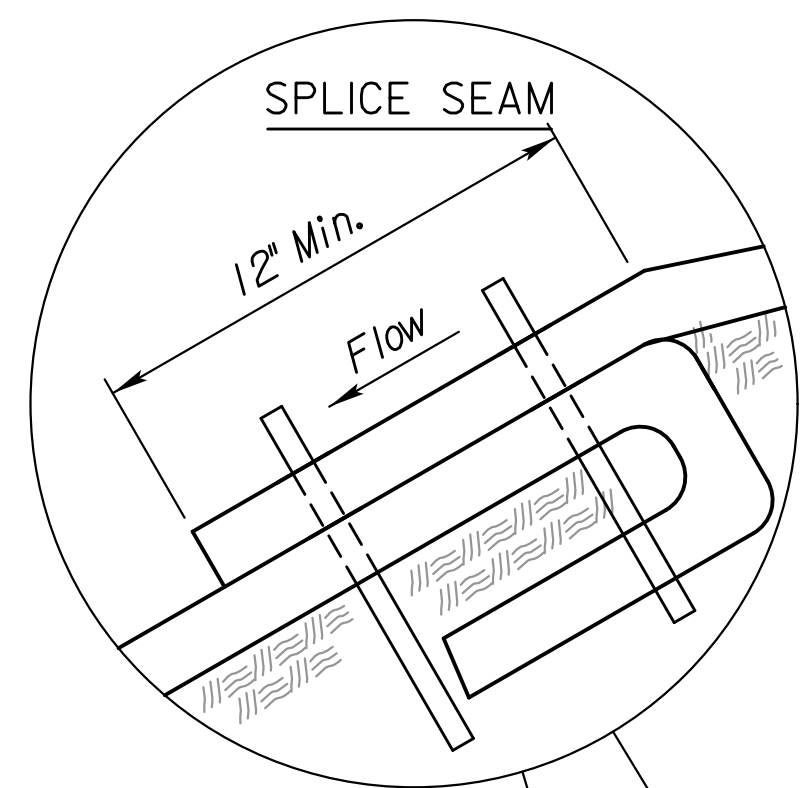


CROSS SECTION (Ditch Lining)

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.

- 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.
- LONGITUDINAL SEAMS:** The adjacent edges of the mat should overlap a minimum of 6 inches, with anchors catching the edges of both mats.
- SPLICE SEAM:** When splices are necessary, overlap a minimum of 12 inches in direction of water flow. Stagger splice seams.
- STAPLE CHECK:** Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.
- EDGE ANCHOR:** Lay outside edge of mat into trench at top of side slope. Anchor at 3 foot intervals along trench.
- TERMINUS:** The bottom edge of the mat shall be anchored in place with anchors spaced at 9 inch intervals along the terminating edge.
- TYPICAL ANCHORS:** Anchor design shall be as recommended by the manufacturer.



ISOMETRIC VIEW

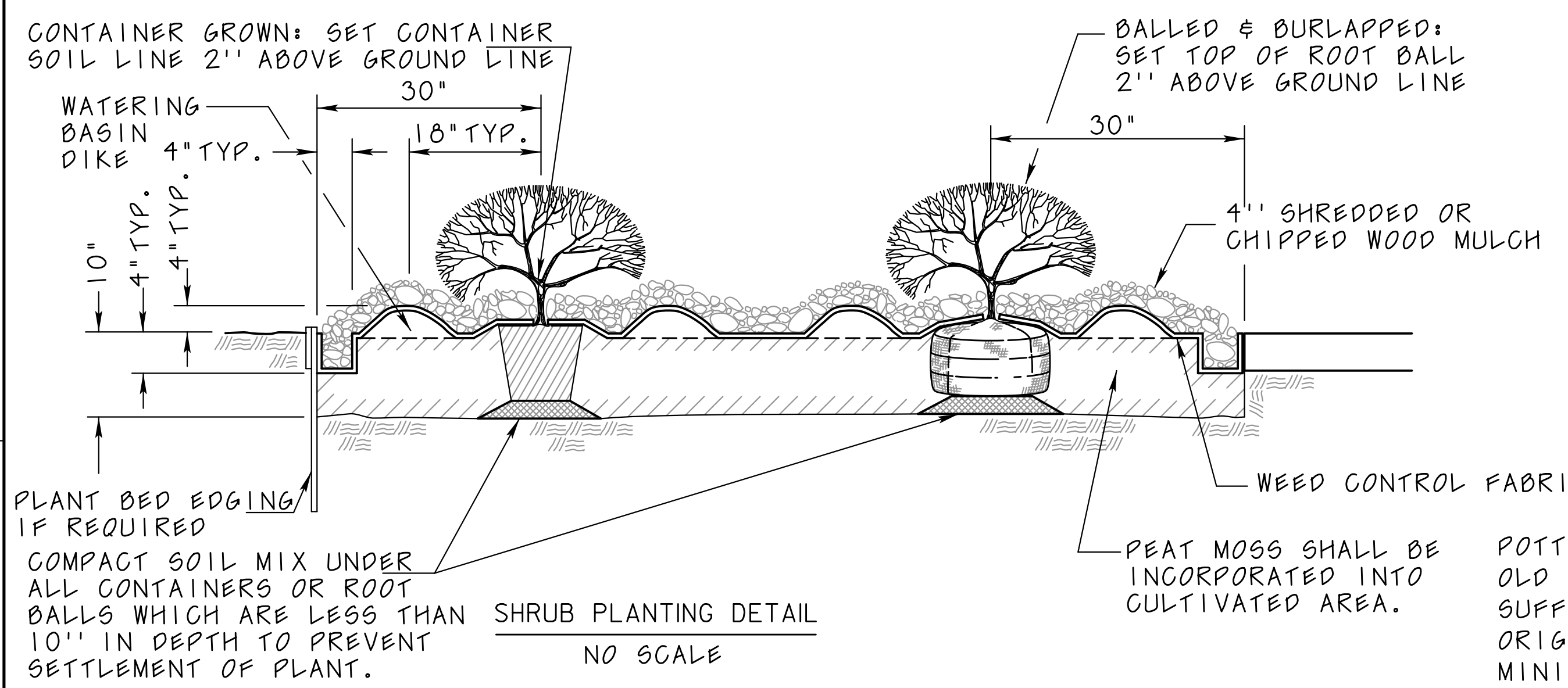
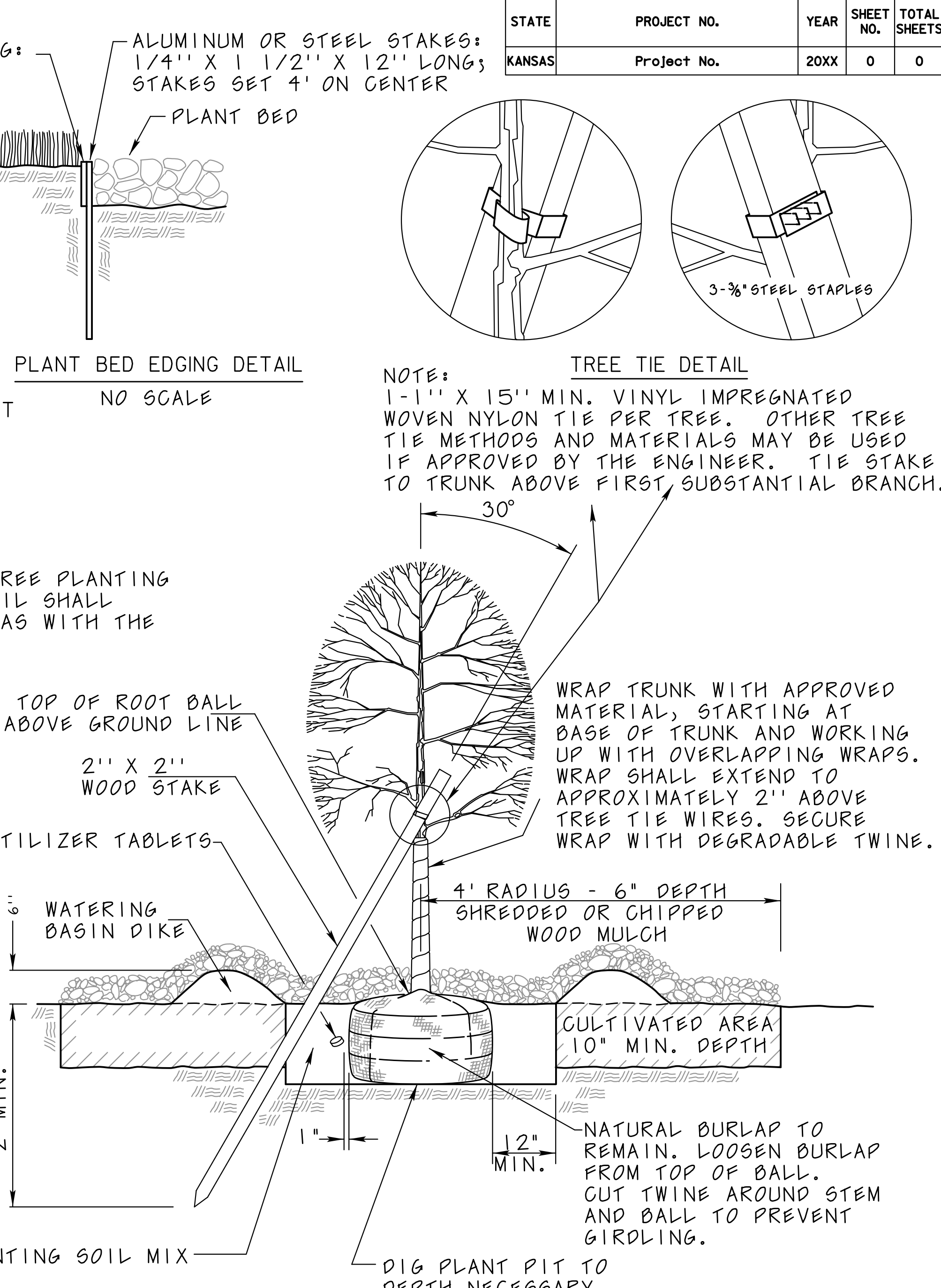
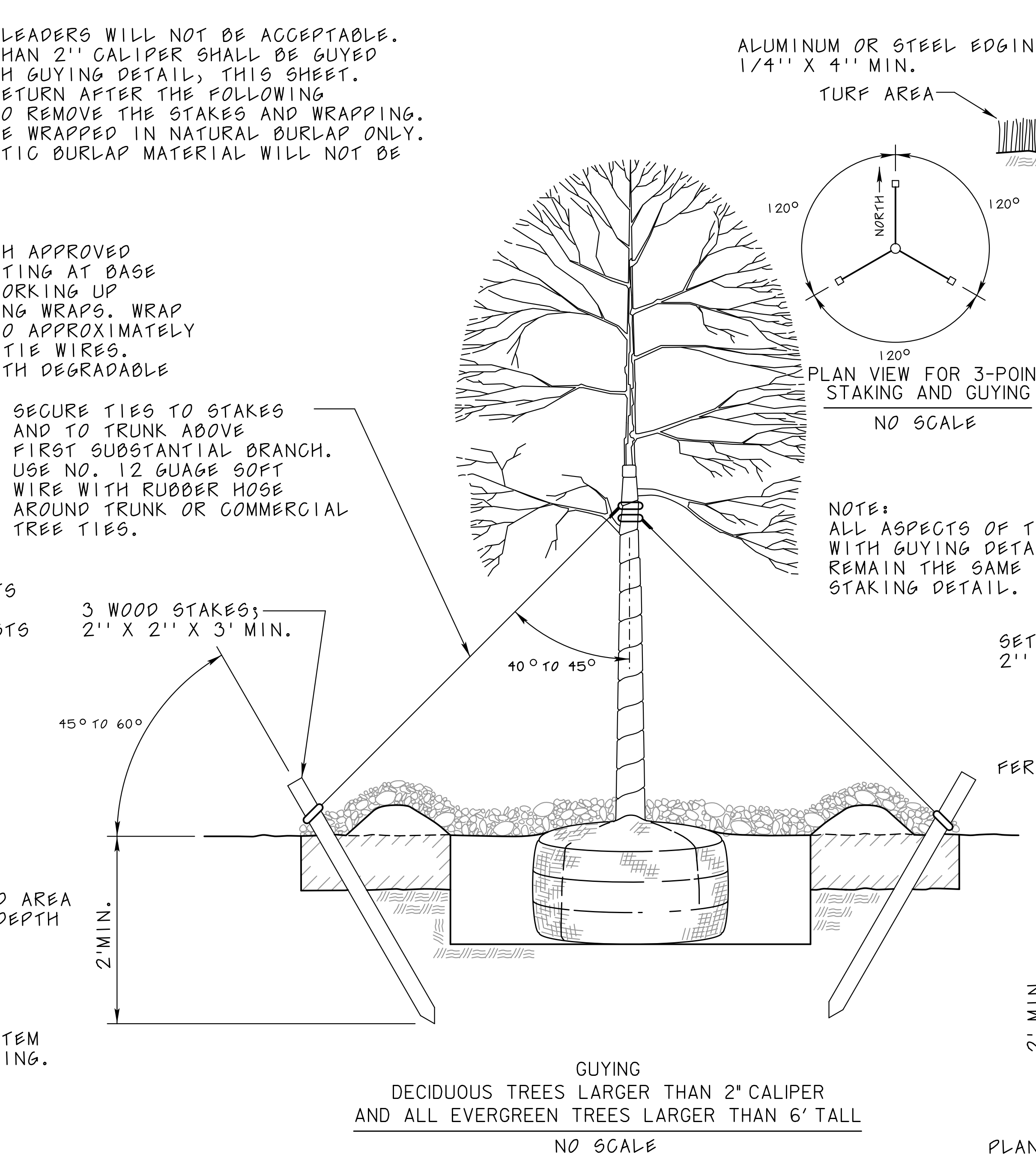
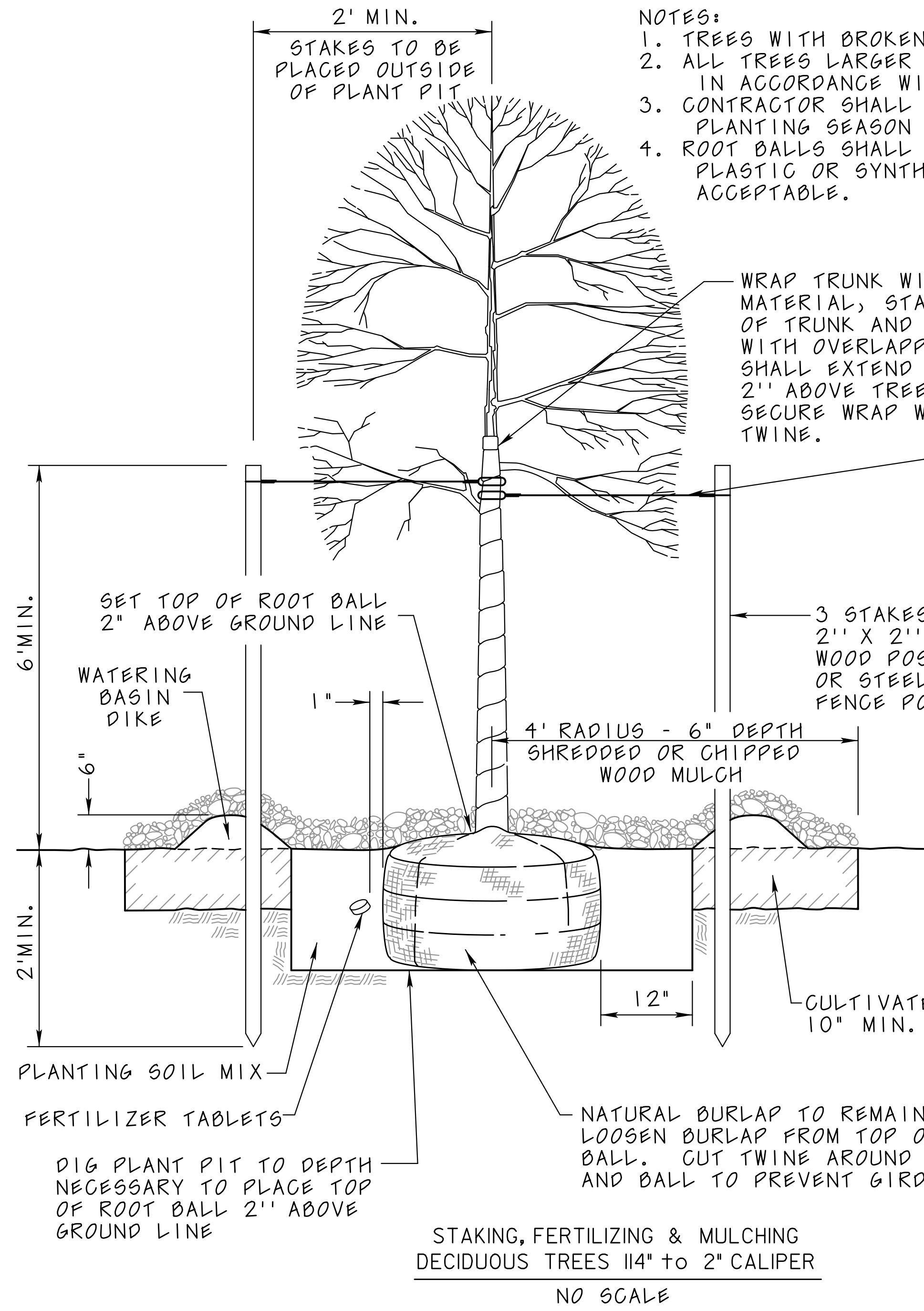
Std. Base File: la856.dgn  
 Plotted By: rlong  
 File: la856.dgn  
 Plot Date: 10-OCT-2016 11:45

NO.	DATE	REVISIONS	BY	APP'D
4	9/25/15	Modified Staple Check	RAA	SHS
3	9/15/14	Revised Standard	RAA	SHS
2	3/01/13	Revised Standard	MRM	SHS
1	9/22/99	Revised Standard	WCL	RDR

<b>KANSAS DEPARTMENT OF TRANSPORTATION</b>				
INSTALLATION DETAIL EROSION CONTROL CLASS 2 FLEXIBLE CHANNEL LINER				
LA856				
DESIGNED	RAA	DATE	11/02/2015	APP'D
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN. CK.
			Scott H. Shields	RAA
			CADD	CK.



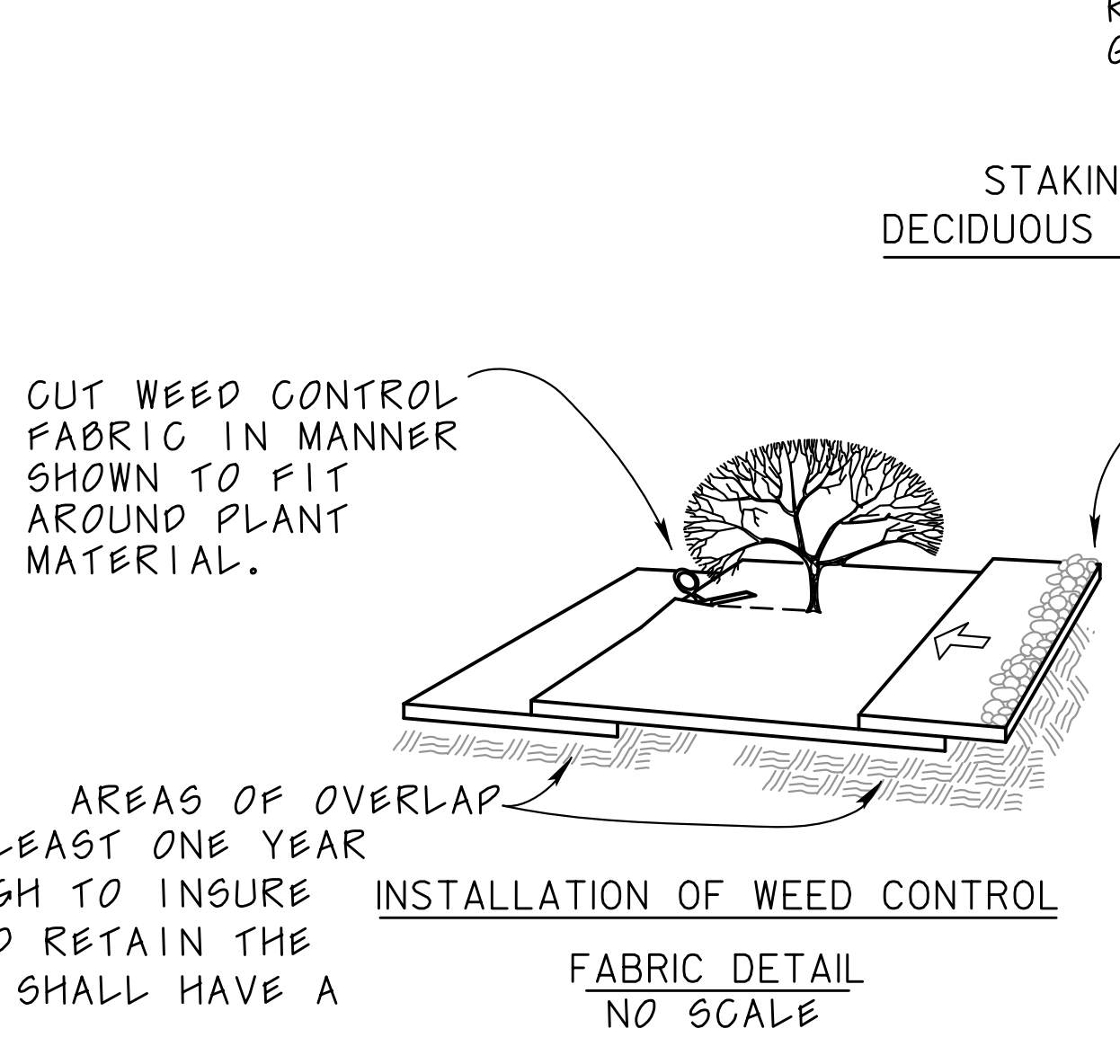
- NOTES:
1. TREES WITH BROKEN LEADERS WILL NOT BE ACCEPTABLE.
  2. ALL TREES LARGER THAN 2" CALIPER SHALL BE GUYED IN ACCORDANCE WITH GUYING DETAIL, THIS SHEET.
  3. CONTRACTOR SHALL RETURN AFTER THE FOLLOWING PLANTING SEASON TO REMOVE THE STAKES AND WRAPPING.
  4. ROOT BALLS SHALL BE WRAPPED IN NATURAL 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.

AREAS OF OVERLAP



KANSAS DEPARTMENT OF TRANSPORTATION			
ROADSIDE IMPROVEMENT PLANTING DETAILS			
LA860			
DESIGNED	WCL DETAILED	WCL QUANTITIES	Richard D. Ross
5/10/99	5/20/99	APP'D	
NO.	DATE	REVISIONS	WCL RDR
			BY APP'D
DESIGN CK.	RCR DETAIL CK.	RCR QUAN. CK.	CADD BY CADD CK.

Std. Base File: la860.dgn  
 Plotted By: rlong  
 File: la860.dgn  
 Plot Location: Bridge Design  
 Plot Date: 10-OCT-2016 11:45



## **Kansas Dot Storm Water Training**

### **List of Abbreviations**

NPDES	National Pollution Discharge Elimination System
EPA	Environmental Protection Agency (United States)
SWPPP	Storm Water Pollution Prevention Plan
BMP	Best Management Practice
TRM	Turf Reinforcement Mat
BFM	Bonded Fiber Matrix
FGM	Flexible Growth Medium
NTU	Nephelometric Turbidity Units
PAM	Polyacrylamide
NOI	Notice of Intent
NOT	Notice of Termination

# Sequencing the work

Work on the project must be conducted in a manner so that the project is substantially in compliance with the permit requirements during all the various operations and for the duration of the project. BMPs must be installed in proper order and in a timely manner. Perimeter control on the edges of the project must be installed before disturbance in the contributing drainage areas is conducted. Inlet protection must be installed, sequenced and maintained as work on the project progresses. Discharge water from pumping must be monitored and if turbid, treated as necessary. Disturbed areas on the project must be stabilized as soon as possible and protection measures installed concurrently in critical areas with the grading work. All BMPs need to be checked on a routine basis that they are functioning properly, that they are cleaned out and are maintained. Exits from the project need to be checked for tracking out onto the streets and street sweeping conducted as necessary. Prior to shutdown for winter or other purposes, disturbed areas on the project need to be protected by temporary mulching, diversions, and supplemental BMPs.

## Assessing the project

Prior to starting work, a field walk should be conducted to determine critical locations and denoted on the project lay out or SWPPP. During the field walk the critical locations and BMPS needed should be cross referenced with the SWPPP. The initial assessment is to gain familiarity “with the lay of the land” and possible project construction phases. On long liner projects such as roads or utility corridors, the project should be assessed on the basis of multiple sites each with its own unique requirements. On commercial or residential projects the whole project may be considered one site.

During the site assessment, discharge points from the project should be denoted as well as any street inlets in the vicinity. Wetlands, lakes, rivers, streams, and other water bodies either within the project or near the project must also be denoted. One of the important issues to determine early on is where the project or sites will be accessed and where the entrances will be located. Another important issue to consider is the type and extent of perimeter control necessary at the each of the critical areas along the project. The initial site assessment becomes the template for the weekly site inspections conducted as the project is constructed.

## Critical work/Non-critical times

After the field assessment of the project has been conducted, a strategy must be formulated on how the work can be conducted with minimal impact. Work exclusion dates such as for fish spawning must be included in the strategy. If possible, culverts should be installed during dry periods and/or low flow times. Work in highly sensitive areas may be scheduled for late fall/early winter or frozen ground conditions. On linear projects, such as for power lines the various sites may be worked on independently with the most critical locations constructed during least critical times. As the work is

conducted in the critical locations, stabilization of disturbed areas follows immediately without delay.

## **Implementing the SWPPP**

Implementing the SWPPP means installing the BMPS that are in the SWPPP in a timely manner and following the provisions described. The goal is to do the construction in a manner such that the BMPs described in the SWPPP will normally be adequate. This means exercising due care, stabilizing portions of the site and sequencing the work. The weekly site inspections become the report card on how the work is being done and the on-going punch down list for SWPPP implementation. The site inspections after a rainfall event become the check list for maintenance of the BMPs, where additional attention is needed, repair of BMPs and supplementing the BMPS.

## **Perimeter control and exit location**

The initial issue on the project is where to locate the site access and/or exit point(s). On many projects, the site access may already be predetermined by the entrance to the road or street. Nonetheless, site access location is very important since it affects the amount of stabilized exit required and the amount of street sweeping that may be needed over the life of the project. On some sites, it may be advantageous to enter in one area and exit at another area. The exit location should be located on high ground with stable soils so that trucks are not plowing through mud and that a stabilized rock entrance will withstand the loaded vehicles. In some cases it is desirable to sub-cut the entrance location and place compacted base prior to placing a rock entrance. In-place bituminous should be left intact as long as possible.

After the entrance(s) are constructed, perimeter control must be installed at the various locations along the edges of the project. Check the SWPPP for locations and BMPs to use. Many times silt fence is used for perimeter control. However, compost logs, rock logs, wood chip logs, and slash mulch berms may also be used. Many of the alternates to silt fence are used in high traffic areas, where utilities are located, near trees, or where site access requires the perimeter control to be moved and reinstalled. One of the best perimeter control BMPs is constructed topsoil berms. On many sites, topsoil is to be stripped. When the topsoil is stripped, it can be placed as a berm along the outer edge of the project. Silt fence may be placed behind the topsoil berm in critical locations. Seeding of the topsoil berm should be conducted as soon as the berm is placed.

## **Storm sewer inlets**

The permit requires protection for all storm sewer inlets that could receive drainage from the project. This applies to the storm sewer inlets in the street as well as inlets within the project site. Do a project reconnaissance to determine all the inlets. Some may not be included in the SWPPP. Also determine the location of pipes connected to the inlets and where the pipes outlet. If possible, you may decide to temporarily block some of the



inlets off if they are not needed. However, always be cognizant of possible flooding both on streets as well as adjacent property. Remember safety is job one!!!

Geo-textile fabric placed under the grate of street inlets should not be used since it can cause flooding on the street and unsafe conditions. In addition sand bags should not be placed around street inlets. Drop-in manufactured bags may be used. However the device must have a safety overflow built into the top of the bag. Inlets must be protected over the life of the adjacent work and as a result, various devices may be required at one inlet as the work and needs change. The devices must also be checked on a constant basis and any conditions that would lead to plugging or safety issues fixed immediately. All inlet protection measures must be frequently inspected and cleaned out as necessary.

## **Soil piles**

Whenever possible, soil piles should be placed internal to the project. They should not be placed where soil can ravel off and fill storm drain inlets nearby. The permit requires perimeter control around stock piles. On sites with little room and bridge projects, jersey barriers wrapped with geo-textile may be the perimeter control selected. On contaminated soil stock piles, the pile is covered with plastic and then compost logs may be placed around the pile for perimeter control. If soil stock piles remain for more than 14 days, the permit requires stabilization. Stabilization or covering the pile with plastic or geo-textile may also be necessary for controlling dust.

## **Exit control and street sweeping**

The most common exit control used to prevent track out from construction vehicles as they exit the site is a rock pad. Soils under the rock pad must be very firm so that the rock does not easily press into the subsoil. The rock must be large enough 3-6 inch size so that it does not lodge between the dual tires of vehicles. In addition, the rock pad must be long enough to obtain at least five rotations of the tires (fifty feet minimum). The rock must be replenished on an as needed basis since it does plug up with fines. To increase the effectiveness of entrance control other BMPs such as wood slash mulch or a 10 ft x 8 ft metal cattle guard near the street may be used in combination with the rock pad.

On severe sites with very sticky soils, rock pads and other common BMPs for exit control may not work. In these cases, a tire wash off system may be the only effective method. Tire wash off systems vary in complexity from automatic systems costing as much as \$150,000 to very simple component systems costing as little as \$1500.

When mud from the construction site tracks out onto streets it must be removed in a timely manner to prevent the material from washing into storm drains and for safety of those traveling the street. Typically the mud must be removed from the street on a daily or 24 hr basis. In order to remove the mud from the street municipal type pickup brooms are commonly used. Most pick brooms do not do a very good job of removing fine construction silt from streets. The silt is very fine and may even be compressed into the

voids of the bituminous surfacing. Adding water during the sweeping operation may also cause a slick condition which is difficult to remove. Cyclonic street sweepers that do not need water are the best choice. Another choice is the dust pan sweeper attachment that fits on the front of a “Bobcat” If the dust pan sweeper is used the street needs to be moist to prevent dust generated from the operation.

## **Sequential stabilization**

Sequential stabilization means stabilizing portions of the site as the construction work progresses. Stabilizing portions of the site is the most cost effective method of staying in compliance with permit requirements. It minimizes the potential for soil leaving the project and also reduces the amount of clean up or maintenance of the devices. In order to stabilize areas on the project, the areas need to be shaped and the topsoil reapplied. Then soil stabilization practices such as seeding, mulch, erosion control blankets or sod can be placed to hold the soil in place.

The permit requires stabilizing portions of the site within 14 days of having active construction operations going on in that portion of the site. This means that active operations that disturb soil must be going on directly in that portion of the site. Once equipment is no longer digging or shaping or is moved from the area in question stabilization must occur within the 14 day window. The 14 day window also applies to work shut downs and winter shutdown. Thus areas on the project must be stabilized prior to any shut downs on the project that last 14 days or longer.

Temporary erosion control- this means protecting the soil surface from erosion for a relatively short period of time with such BMS as mulch, hydro-mulch, erosion control blankets or rock. Usually the area is re-graded or dug up at a later date.

Cover crop seeding- this is temporarily planting a cover crop of oats or winter wheat to stabilize the soil and provide erosion control until permanent seeding is done.

Dormant seeding- this doing the seeding late in the year when the seed remains in a dormant condition until the following spring. Soil temperatures must be less than 40 F. Various seed mixtures are used. Oats does not dormant seed.

Frozen ground mulching- this is placing mulch late in the fall when the ground is frozen. Typically straw mulch is used. Bonded fiber mulch and flexible growth medium may also be used.

Snow mulching- this is placing mulch over disturbed areas on projects that are covered with snow. Once applied, the mulch captures sunlight and melts down into the snow. Straw or hay mulch is used. None of the spray on products should be used since they have to bond to soil.

Establishment erosion control- this is placing materials such as mulch, erosion control blankets, hydro-mulch, BFM or flexible growth medium over a seeded area to protect the

area from erosion while the seed is germinating and establishing. These materials are short lived and rot up as the vegetation takes hold.

Permanent stabilization- this means the area has no active erosion and is permanently stabilized.

Permanent erosion control- this means using and placing practices that will lead to permanently stabilizing the area from erosion.

In order to stabilize portions of the project required by permit either temporary erosion control practices or permanent erosion control practices may be used. Temporary erosion control practices may be used on soil piles, during dry weather when seed wouldn't grow or on areas where additional work needs to take place at a later date. Whenever possible portions of the project should be shaped up, topsoil reapplied and permanent erosion control practices installed. Proceeding with permanent stabilization as quickly as possible is the most cost effective way of sequencing the work.



# Dewatering and Pumping

## Definition and purpose

Dewatering and pumping on construction projects are defined as operations to remove water from an area so that construction operations can take place. The water to be removed may be from cofferdams, from excavations, from ponds, from traps, from depressions or from any other area where storm water or groundwater accumulates. The water may be stagnant or seeping into the construction area. Dewatering can be by gravity as well as being pumped. Examples of gravity dewatering include flow from the outlet of a sediment trap and flow through a drainage cut. Frequently the water to be dewatered is discolored and contains sediment. Practices to remove sediment must be used before the water can be discharged from the site. Site conditions and equipment available will dictate which practices may be selected.

## Dewatering Plan

A dewatering plan should be put together and submitted to the project manager prior to doing the dewatering/pumping. The plan must indicate how the dewatering or pumping operation is to be conducted. As a minimum, the plan should indicate where dewatering is to take place, flow path of the water, practices to be used at the inlet end to minimize sediment from entering the flow, practices to remove or settle out sediment, energy dissipation at the outlet end, and where the water will discharge. The dewatering plan must also indicate how pollutants other than sediment, if they are present, will be handled.

## Inlet end of hose

The inlet end of hoses used for pumping must have a screen to prevent stones and debris from getting sucked into the pump. If pumping from a natural water body the size of the mesh screen must not allow fish or minnows to get sucked into the hose.

The inlet end must be positioned to draw water from the top and must be raised off the bottom. Flotation devices can be used or the contractor may build their own from 6 inch sewer pipe glued together in a donut shaped fashion. Insulation styrene board can also be cut into sections, bound together and provide floatation for the inlet hose end.

Another method to prevent mud from entering the suction end is to use a barrel with holes and then place filter rock around the barrel. The inlet end of hose is then placed inside the perforated barrel.

## **Sediment capture BMPs**

The BMPs described herein apply to sediment only and not to other pollutants.

Sediment traps-are temporary basins formed by excavation with a stabilized outfall that acts as a weeper or a perforated standpipe supplemented with rock. Sediment traps work best in sandy soils where the water can permeate into the soil. For safety reasons, traps are normally no more than 2-3 ft deep and should have sloped side slopes. Size of traps is highly variable. A large surface area makes the trap more effective. Traps are normally used for large sediment flows. Adding a flocculant to the trapped water and drawing clean water off the top can make traps effective.

Dewatering filter bags – are square or rectangular bags made of non-woven geo-textile. Bags are available in different sizes providing different flow rates. For example a 10ftx 15ft bag may provide 60-100 gpm . Water to be treated is pumped into one end of the bag and then seeps through the bottom, sides and top of bag. Bags are not 100% effective. Fine material can seep through the geo-textile. Normally, either a layer of straw or filter rock is placed as a filter base under the bag. Rock weepers or wattles may be used down stream from the bag to further filter the discharge water.

Dewatering dumpsters- are dumpsters converted by contractor or from a manufacturer to collect, treat and filter water. The dumpster has two main compartments. The inlet end compartment is large and this is where the water is treated with a flocculant. The water then flows through a mesh screen and into the second compartment where it is filtered through a medium such as wood chips or wood excelsior. Flow rate is approximately 100-200 gpm . To increase flow rate additional dumpsters may be used in parallel. When the filtering medium becomes filled with sediment, it is replaced with fresh material.

Weir tanks- are semi-trailer sized tanks delivered to the project by truck. The amount of sediment removed is highly dependent on flow rate through the tank or resonance time. With lower flow rates, typical particle size removed is down to 50 microns. The tanks can also be used as a pretreatment to other methods. The configuration and number of weirs in the tank determines the sediment removal efficiency. Flow rates are typically 60-200 gpm. To increase flow rates, additional tanks may be used in parallel. Periodic cleaning of the inside of the tank is necessary. Frequently a high pressure hose is used to remove fines during cleaning.

Sand media filters-sand media filters generally provide a high level of treatment. Typical particle size removed is down to 5 microns with 95 % efficiency. Sand media filters can be used by themselves or as the final treatment in a treatment train. Sand media filter systems are available in many different sizes from small trailer mounted units to semi trailer units. Thus flow rate is dependent on size of the unit and if pretreatment of the water has been done. Typical flow rates range from 80-1000gpm.

## Flocculants

Flocculants are used to coagulate fine suspended particles in turbid water and make these particles drop out of solution a lot faster than they would if untreated. Flocculants have been used for many years in sewage treatment plants, in row crop irrigation and in food processing. Basically flocculants work by chemical/electrical charge. Flocculants are available as either cationic or anionic. Cationic have a positive charge whereas anionic flocculants have a negative charge. Many of the soil clay minerals are negatively charged and thus cationic flocculants may be more effective. Research conducted in Wisconsin indicates that some flocculants at high rates can be harmful to invertebrates. Thus, tested approved flocculants should be used and it is important that flocculants are not over applied. The manufacture's mixing and dosing formula must be adhered to. Anionic formulations should be used whenever possible. A conditioner can be added to the water to make them more effective. Flocculants must be mixed into the water and generally take 5- 10 minutes to react. The pH of the water must also be in the neutral range of pH 6.5-7.5.

Flocculants are available in granular or liquid formulations. Granular formulations have been sewn into packets and then strung into socks or inserted to wattles. Flocculants are also available as natural or synthetic based products. Synthetic flocculants are generally long chained linear polymers. Natural based flocculants are generally chitosan based derived from the exoskeleton of shell fish

Prior to using flocculants, a treatment protocol must be developed. First, a sample of the water should be obtained and the pH of the water should be tested. For this purpose, litmus paper can be used. If the water is outside the neutral pH range, a water conditioner can be added. Next, add a couple drops of flocculant to the sample and shake it. Observe the results. Once the proper flocculants has been selected, follow the manufacture's recommendations for dose rate and mixing.

Flocculants should be used in batch treatment or filtering systems. That is water is treated in a batch. The sediment is allowed to settle to the bottom. The clear water is discharged off the top and the flocculant is tied up in the sediment which is cleaned out. Flocculants can also be used in a filtering system whereby the water is treated and then filtered through either a sand filter or wood based filter prior to discharge. Flocculants should not be applied to natural water bodies such as lakes. They can tie up the oxygen in the water.



# Soil Loss Equation Charts

# Annual Rainfall Values

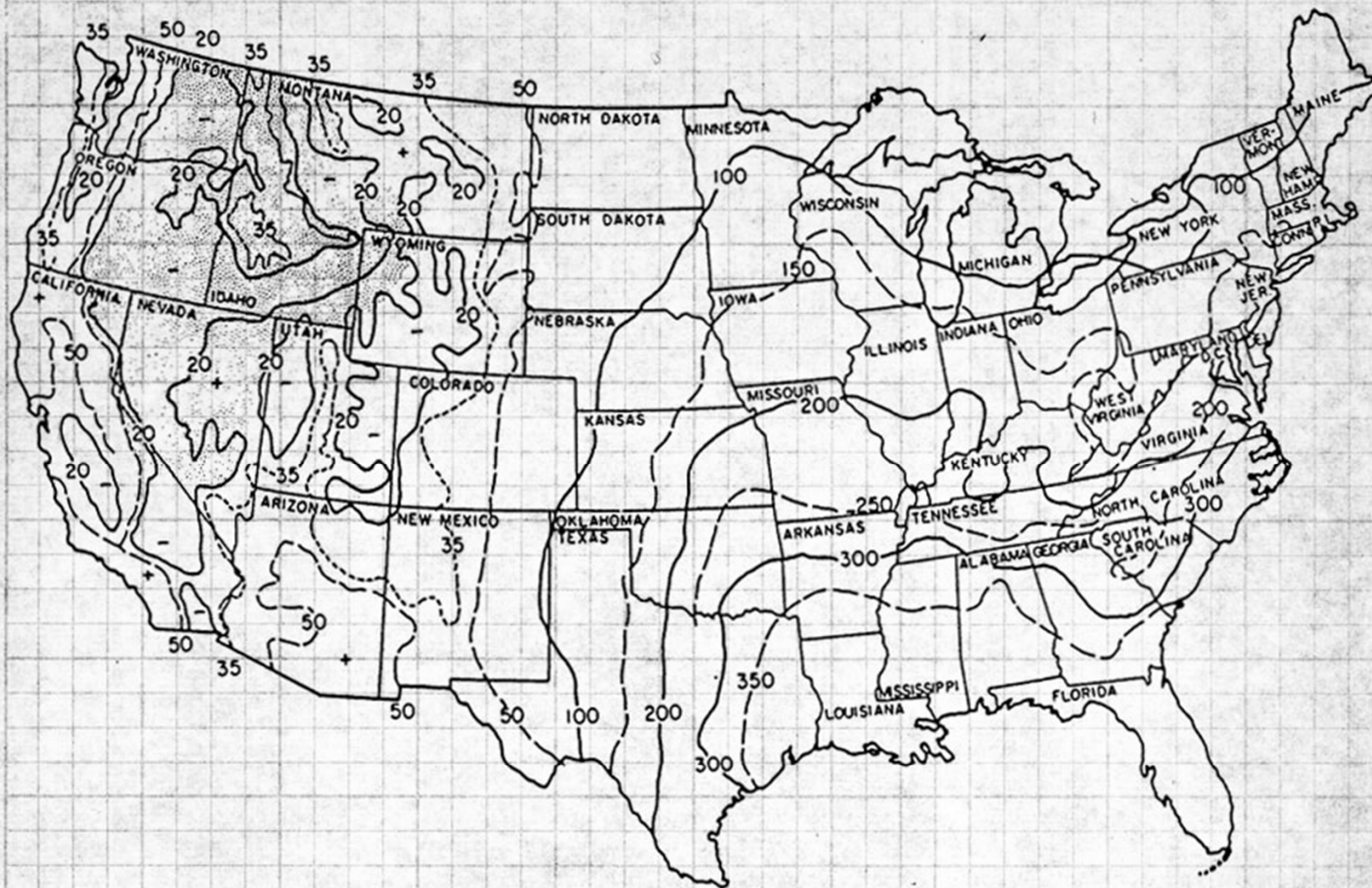


FIGURE 5.1D Values of the annual rainfall energy factor ( $R$ ) in tons/acre. To convert to tonnes/ha, multiply by 2.24.  
(From Stewart et al., 1975.)

Table V.3 Magnitude of Soil Erodibility Factor, K<sup>a</sup>

Technical Class	K for Organic Matter Content ( % )		
	0.5	2	4
Sand	0.05	0.03	0.02
Fine sand	0.16	0.14	0.10
Very fine sand	0.42	0.36	0.28
Loamy sand	0.12	0.10	0.16
Loamy fine sand	0.24	0.20	0.16
Loamy very fine sand	0.44	0.38	0.30
Sandy loam	0.27	0.24	0.19
Fine sandy loam	0.35	0.30	0.24
Very fine sandy loam	0.47	0.41	0.35
Loam	0.38	0.34	0.29
Silt loam	0.48	0.42	0.33
Silt	0.60	0.52	0.42
Sandy clay loam	0.27	0.25	0.21
Clay loam	0.28	0.25	0.21
Silty clay loam	0.37	0.32	0.26
Sandy clay	0.14	0.13	0.12
Silty clay	0.25	0.23	0.19
Clay	0.13 - 0.2		

<sup>a</sup>Adapted from Stewart et al. ( 1975 ). The values shown are estimated average of broad ranges of specific soil values. When a texture is near the border line of two texture classes, use the average of the two K values.

**Table V.7**  
**LS Factors for Construction Sites\***

Degree of Slope	Slope length in feet measured along slope												
	3	6	9	12	15	20	25	30	40	50	60	75	100
10:1	0.35	0.37	0.38	0.39	0.4	0.49	0.57	0.6	0.74	0.91	1.05	1.20	1.46
8:1	0.36	0.42	0.47	0.49	0.5	0.62	0.73	0.8	1.00	1.20	1.45	1.60	1.95
7:1	0.38	0.46	0.52	0.56	0.5	0.74	0.89	1.0	1.21	1.45	1.66	1.93	2.34
6:1	0.40	0.51	0.59	0.67	0.7	0.89	1.03	1.2	1.39	1.71	1.93	2.30	2.87
5:1	0.41	0.54	0.66	0.74	0.8	1.02	1.21	1.3	1.57	2.06	2.42	2.80	3.50
4:1	0.43	0.62	0.78	0.90	1.0	1.26	1.51	1.5	2.23	2.59	3.10	3.56	4.45
3:1	0.48	0.73	0.95	1.12	1.3	1.61	1.93	2.2	2.85	3.42	3.89	4.28	5.87
2½:1	0.49	0.79	1.05	1.27	1.4	1.86	2.24	2.6	3.53	3.94	4.65	5.47	6.92
2:1	0.52	0.86	1.17	1.44	1.7	2.14	2.85	2.9	3.78	4.59	5.43	6.41	8.13

\* Adapted from Agricultural Research Service  
Agricultural Handbook Number 703, 1997



**Table V.5**  
**C Values and Slope – Length Limits (SL)**  
**For Construction Sites\***

**Mulch**

<b>Type</b>	<b>Application in Tons/Acre</b>	<b>Slope Percent</b>	<b>C</b>	<b>SL</b>
No mulch or seeding		All	1.00	
Straw or hay mulch disc anchored on slope	1.0	< 5	0.20	200
	1.0	6 – 10	0.20	100
	1.5	< 5	0.12	300
	1.5	6 – 10	0.12	150
	2.0	< 5	0.06	325
	2.0	6 – 10	0.06	200
	2.0	11 – 15	0.07	150
	2.0	16 – 20	0.11	100
	2.0	21 – 25	0.14	75
	2.0	26 – 35	0.20	75
Erosion Control Blanket	N/A	21 – 25	0.05	300
		26 – 35	0.07	200
		36 – 50	0.14	150
		51 – 67	0.20	100
Wood Chips	6.7	< 15	0.08	75
	6.7	16 – 20	0.08	50
	12.1	< 15	0.05	150
	12.1	16 – 20	0.05	75
	25.0	< 15	0.02	200
	25.0	16 – 20	0.02	150
	25.0	21 – 33	0.02	100

**Table V-6 Estimated C factor**

<b>BMP</b>	<b>Rate (lbs/acre)</b>	<b>Slope (%)</b>	<b>C factor</b>
<b>Hydro mulch</b>	<b>2000</b>	<b>20-26</b>	<b>0.18</b>
		<b>27-35</b>	<b>0.24</b>
		<b>36-50</b>	<b>0.30</b>
<b>Bonded fiber mulch</b>	<b>3500</b>	<b>20-26</b>	<b>0.10</b>
		<b>27-35</b>	<b>0.14</b>
		<b>36-50</b>	<b>0.20</b>
<b>Sod</b>	<b>NA</b>		<b>0.01</b>

Table V.7 Values of P for Construction Sites<sup>a</sup>

**Erosion Control Practice P**

**Surface Condition with No Cover**

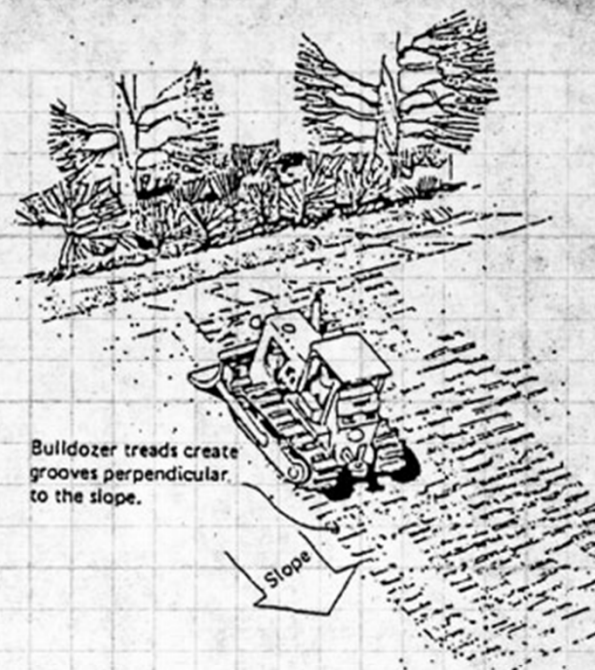
Compact, smooth, scraped with bulldozer or scraper across the slope (track imprint up 8 down).	1.20
Same as above, except raked with bulldozer and root raked across the slope	.90
Loose as a disked plow layer	1.00
Rough irregular surface, equipment tracks in all directions	.90
Loose with rough surface > 0.3 meters depth	.80
Loose with smooth surface < 0.3 meter depth	.90
Compact with bulldozer track imprints perpendicular to the slope	.80

**Structures**

**Small sediment basins**

0.09 ha basin/ha	0.50
0.13 ha basin/ha	0.30
Downstream sediment basin	
With chemical flocculants	0.10
Without chemical flocculants	0.20
Erosion control structures	
Normal rate usage	0.50
High rate usage	0.40
Strip building	0.75

<sup>a</sup>Adapted from Ports ( 1973 )



## KDOT Construction Project Stormwater Compliance Plan

### 1. Personnel

- a. All persons performing inspections shall have a current KDOT Construction Stormwater Training (CSW) certification. See section 10 for additional information regarding the training program.
- b. Contractor's Water Pollution Control Manager (WPCM) and KDOT's Area / Metro Engineer shall maintain a current KDOT CSW certification.
- c. If the WPCM is replaced during the course of a project the replacement shall maintain a current CSW certification. The Area Engineer will be notified in writing of any such change in WPCM.
- d. If, during the course of the project, the designated Area/Metro Engineer is unavailable due to vacation, illness or other similar reasons, their responsibilities shall be assigned to another Area Engineer, the District Construction Engineer or other person of similar authority. The project Inspectors and the WPCM shall be notified of any such change in Area Engineer.
- e. Area / Metro Engineer Responsibilities:
  - i. Review and approve Contractor Stormwater Pollution Prevention Plan (SWPPP)
  - ii. Supervise all work necessary to meet stormwater requirements on the project.
  - iii. Order employees, contractors and sub-contractors to take appropriate action as necessary 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 as necessary to meet stormwater requirements.
  - iv. Be familiar with the project SWPPP and have the authority to modify the project SWPPP or approve modifications recommended by others.
  - v. Review and sign all inspection reports within 3 days after receiving such reports
  - vi. Be the point of contact for the project for regulatory officials, KDOT employees, contractors, sub-contractors and consultants regarding stormwater requirements
- f. WPCM Responsibilities:
  - i. Supervise all work performed by the Contractor and sub-contractors that involves stormwater requirements or affects stormwater compliance.
  - ii. Order Contractor employees and sub-contractors to take appropriate corrective action as necessary 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.
  - iii. Be familiar with the project SWPPP
  - iv. Recommend SWPPP modifications or amendments to the Area Engineer
  - v. Be the point of contact for KDOT regarding stormwater compliance
  - vi. Review and sign inspection reports within 3 days after receiving such reports, acknowledging awareness of any deficiencies and ensuring the correction of all deficiencies.
  - vii. Maintain SWPPP documentation and site maps to track installation and removal of BMPs throughout the project and ensure modifications are properly documented
- g. Inspector Responsibilities
  - i. Be familiar with the project SWPPP
  - ii. Perform project inspections for compliance with the permit
  - iii. Recommend SWPPP modifications to the Area Engineer and WPCM



2. Pre-Construction Conference

- a. A stormwater pollution pre-construction conference shall be held prior to beginning work on each project that requires permit coverage.
- b. The Stormwater Compliance Engineer shall be notified of the meeting schedule
- c. Attendees shall at a minimum include:
  - i. KDOT Area / Metro Engineer
  - ii. Contractor's Water Pollution Control Manager (WPCM)
  - iii. Environmental Inspectors (KDOT and Contractor)
  - iv. Erosion Control subcontractor(s)
- d. Discussion Items shall include at a minimum:
  - i. Inspection schedule, procedures and contacts
  - ii. Initial disturbed areas to be called out on the 247E form
  - iii. Responsibility for installation, inspection and maintenance of devices
  - iv. SWPPP site plan, process for modifying / updating
- e. Minutes shall be kept and maintained with the project SWPPP documentation
- f. A copy of the meeting minutes shall be forwarded to the Stormwater Compliance Engineer

3. General Inspection Requirements

- a. Routine and post-rainfall inspections shall be conducted jointly by Contractor and KDOT.
- b. Inspection requirements begin upon issuance of the Notice to Proceed. Exceptions shall be approved by the Stormwater Compliance Engineer.
- c. Most devices and best management practices (BMPs) cannot be effectively inspected except while on foot. A good inspection will require walking and close examination of devices.
- d. The SWPPP site map shall be consulted and updated during each inspection to ensure inspection and documentation of all BMPs implemented on the project.
- e. The SWPPP should be modified based on site conditions. Modifications shall be documented on the site maps. A modification log shall also be kept with the project SWPPP documents. Minor adjustments to locations or quantities of BMPs may be made based on agreement between the WPCM and KDOT inspectors. Significant changes to types of BMPs used or changes in overall erosion and sediment control strategy may require the approval of the Area/Metro Engineer.
- f. All BMPs present on the project are to be inspected. Multiple inspectors may be required in order to complete the inspections within the required time frame.
- g. Taking pictures is recommended. Photos are an excellent means of documenting conditions on the project. They can also be used to document pre-existing conditions and to assist with the determination of vegetation density for permit termination.
- h. Rainfall shall be jointly measured and documented according to the requirements in the permit.
- i. The Contractor's responsibility to conduct inspections and maintain or correct identified deficiencies shall continue until the Engineer issues the Notice of Acceptance or a partial Notice of Acceptance when all physical work on the project is complete. The required 180-day observation period for pavement markings is not considered to be physical work.

4. Frequency of Inspections
  - a. Projects will be inspected at a frequency compliant with the KDHE General Permit.
  - b. Oversight inspections shall be scheduled according to section 7 of this document.
  - c. Additional project-level or oversight inspections may be scheduled if needed to ensure compliance with the Permit and project specifications. This may be due to changes in construction sequence, completion of major project milestones or at other times as determined by the project staff or the Stormwater Compliance Engineer.
5. Required forms
  - a. Only the approved Form 247 may be used to document each inspection
  - b. Any modification to the form other than adding or deleting blank rows must be approved by the Stormwater Compliance Engineer.
  - c. Electronic Inspection reporting or alternative forms may be used with the approval of the Stormwater Compliance Engineer.
6. Submittal of Reports
  - a. Inspection reports are to be submitted to the Area / Metro Engineer no later than the next business day following the day of the inspection.
  - b. Inspection reports are to be submitted to the Contractor's WPCM no later than the next business day following the day of the inspection.
  - c. Inspection reports signed by the Area / Metro Engineer and WPCM shall be electronically submitted to [KDOT.stormwaterinspection@ks.gov](mailto:KDOT.stormwaterinspection@ks.gov) within 3 business days of the inspection.
7. Oversight Inspections
  - a. Independent inspectors will be assigned to perform oversight inspections on selected projects.
  - b. Independent inspectors will not be assigned to perform Oversight Inspections within their own District.
  - c. Oversight inspection reports will be completed and submitted according to section 6 of this document.
  - d. Oversight inspection frequency will be determined by the Stormwater Compliance Engineer (SWCE) based on the following risk factors:
    - i. Project scope
    - ii. Project size and/or complexity
    - iii. Proximity to environmentally sensitive areas
    - iv. Special environmental concerns or permit requirements
  - e. Oversight inspectors will be assigned as follows:
    - i. 1-5 Acres: No fulltime oversight inspector needed, but at least 1 oversight done during the life of the project. District Mentors, Construction Engineers/Managers (CE/CM) and SWCE will be assigned to these projects.
    - ii. 5.01 to 24.99 Acres: Oversight inspections every 90 days. Mentors, CE/CM and Field Engineering Administrators will be assigned to these projects.
    - iii. 25 to 99.99 Acres: Oversight inspections every 90 days. Area Engineers, District Construction Engineers, and District Maintenance Engineers would handle these projects.
    - iv. 100 and Above: Oversight inspections every 90 days. Headquarter personnel would handle these projects.

8. Post-Construction Inspections

- a. Project site inspections are to be continued by the owner at the same frequency following the Notice of Acceptance or Partial Notice of Acceptance to the Contractor until the Notice of Termination is submitted to KDHE.
- b. Include a copy of the Notice of Acceptance or Partial Notice of Acceptance with the SWPPP documentation.
- c. The Area Engineer is responsible to ensure that any discovered deficiencies are completed in compliance with the Permit.

9. Permit Termination

- a. Once the entire project is stabilized with perennial, permanent vegetation the permit may be terminated. Vegetation must have a density of at least 70 percent of the density of undisturbed areas at or near the site. For assistance in making this determination, contact the Stormwater Compliance Engineer or the Environmental Services Section.
- b. All remaining temporary sediment control devices shall be removed from the project prior to termination.
- c. Once the project is fully stabilized and all devices removed, termination may be requested by email to the Stormwater Compliance Engineer.
- d. The Stormwater Compliance Engineer shall complete the Notice of Termination and provide a copy to the Area Engineer for inclusion with the SWPPP documentation.
- e. All SWPPP documentation shall be maintained at the area office or construction office for no less than three years following submittal of the Notice of Termination or no less than three years following termination of the Consent Decree (if applicable). Notify the Stormwater Compliance Engineer if the records will be kept at an alternate location.

10. Construction Stormwater Training

- a. CSW certifications will be valid for a period of four years.
- b. All Area/ Metro Engineers, Inspectors and WPCMs will be required to be current with the CSW certification.
- c. Individuals may be disqualified and/or lose their certification status in accordance with the procedures outlined in the KDOT Policy and Procedure Manual for The Certified Inspection and Testing Training (CIT) Program.

11. Stormwater Newsletter

- a. The Stormwater Compliance Engineer will prepare and electronically distribute a quarterly newsletter to KDOT staff, contractors and other interested parties.
- b. Stormwater newsletters will contain information relevant to stormwater management on KDOT construction projects.
- c. Stormwater newsletters will be posted and maintained on the KDOT website.

12. Annual Report

- a. The Stormwater Compliance Engineer will prepare an annual report on stormwater compliance for each calendar year.
- b. This report will summarize actions taken to improve state-wide practices related to stormwater management on construction projects.
- c. This report will be posted and maintained on the KDOT website.

# What's with all the SWPPP Contractor Inspection Reports?



**Site inspections by contractors during construction are required by permits with the ultimate goal of protecting adjacent water resources.**

**A**nyone constructing a project that disturbs one acre or more either knows or soon realizes that they have to obtain an NPDES construction storm water permit. One of the requirements contained

in the permit is conducting site inspections on the project and filling out some sort of an inspection report. This is where confusion and the resulting medley usually begin. Compounding the inspection report

issue is the national requirement that inspections be conducted after rainfall events as small as ¼ inch in 24 hrs. Each inspection requires an inspection report.

This article is focused on inspections





**Don't forget to look at the big picture of the overall project when doing site inspections. Are the BMPs sufficient and working in concert to protect the total site?**

done by contractors or on behalf of contractors during construction and subsequent inspection reports filled out as a part of NPDES storm water permit requirements. Site audits and inspections conducted by agency or regulatory personnel to determine site compliance are not discussed herein.

Some states and state organizations such as Departments of Transportation have created inspection forms for contractors to fill out. Most of the forms that I have seen are essentially worthless. Then to complicate the matter, a copy of the filled out form must also be sent to some central location. I am not sure what happens to the copy of the form once it goes to the central location. I assume the form gets filed somewhere. One of values might be that someone actually filled out the form and sent it in. Hopefully someone reviewed the site each time the form was sent in.

I have seen "one line" inspections reports. In other words, the person filled out one line on the form for each inspection they conducted. These are completely ineffective. I suppose on very small sites, one line may work, but the information recorded is not helpful or beneficial to even the smallest project. On one particular project there was over 6000 lineal ft of silt fence,

80 acres of disturbance, 30,000 yards of erosion control blanket required, 6 bridges, 17 ponds, lots of excavation and four miles of complicated grading. Wow I thought, they put down all the information for the whole project each week on one line. Apparently, the goal was to reluctantly conduct the inspection, fill out a minimum report and get it over.

Another common inspection report form is where each BMP is listed separately and the person fills out the form by either checking a box or filling out something according to the BMP. The problem with this form is there is no location given and one cannot determine the extent of the problem. What if the area in question needs more than one BMP? How can all of the silt fence be in compliance? How can all of the silt fence be out of compliance? How much needs maintenance and where is it located? Is additional silt fence needed? How much more is needed and where? Basically, one would have to review the site again just to show the people doing the work where the problems are and what needs to be done. This is when site identification station numbers or photos become very valuable methods of communicating site deficiencies.

What is the goal for doing site inspec-

tions? The purpose of conducting inspections and filling out inspection reports seems pretty straightforward. From an outcome standpoint there are three basic outcomes....

- (1) Do the inspection of the overall project as required by permit.
- (2) Find and identify the deficiencies and
- (3) Get the deficiencies fixed.

The overall objective is to prevent sediment and brown water discharge from the project and to be in compliance with the permits issued for the project. The result of conducting a site inspection is more than filling out forms.

The most important part of conducting a site inspection is the person doing the inspection. The person must know what to look for. He or she must be able

**The overall objective is to prevent sediment and brown water discharge from the project and to be in compliance with the permits issued for the project. The result of conducting a site inspection is more than filling out forms.**

to take the information from the SWPPP and adapt it to field conditions. He or she must also be able to make a determination of what is working and what is still needed. It is easy to walk right past a problem area and not even notice something is out of compliance. Once BMPs are placed, it is a lot easier to determine if maintenance is required or if the BMPs are adequate. It's a lot harder to determine what is required in the first place.

The person doing the site inspection must have construction experience and have authority on the project. Several states also require training and/or certifications. Nonetheless, the person must have authority to get things fixed and in a timely manner. Some states have requirements for stabilization within a 24 hr window. The national permit requires immediate stabilization if an area of the site will not be worked within a 14-day window. Thus, the

person conducting the inspection needs to have authority to get things done right away. The person must look at the site, identify the problems and get the problems fixed. A summer laborer or a subcontractor doesn't have authority to assign equipment or any authority of the prime contractors operations.

First of all, a site must be routinely inspected. Routine inspections on a 7 or 14 day interval are required by permit. As a starting point, review the storm water pollution prevention plan (SWPPP) and compare the provisions in the plan with actual field conditions. During a routine inspection, one would check for BMPs that need to be installed, BMPs that got damaged, safety issues, dust control, storage, fueling and some of the issues that may not be rain or storm water related. The focus of routine inspections should be to get BMPs installed where they are needed along with the repair or maintenance of existing BMPs. If a site is not inspected on a routine basis you will, first of all, be out of compliance and secondly, the construction work will quickly outpace the maintenance or installation of BMPs required.

Conducting an inspection after a rain-



**Conducting site inspections during and after rain events are useful in determining where attention needs to be focused and SWPPP modifications needed.**

fall event is the proof of the pudding. First of all, there should be a rain gauge on the project and this should be checked. Was it

a large rain event or a routine rain event? Compare the rain event to performance of the BMPs. A small rain event with over-

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**Use the inspection report and the SWPPP site plan to document what has been done and to communicate what needs to be done. Mark up the site plan with notes and dates.**

whelmed BMPs indicates that water is concentrating in certain areas. If a ½ inch rain event filled up the silt fence at a critical location, this indicates that the up gradient area needs to be checked.

Discharge locations must be checked and detention pond outlets must be checked for possible discharge of brown water from the project. We need to look at each sub-site location within the project and determine what is required at each location. We write down the location, what is needed and when the work should be done. Basically we are creating a punch down list.

Along with basic project information of inspector's name and date, the inspection report should contain three key elements. The key elements are: location of potential problem areas, what could be done to fix the problem and areas where work should be done. The inspection report should be supplemented with dated photographs of the areas of concern. Then we need to follow up with the work required. Following up and doing the work identified from site inspections is the most critical step. One of the forms that I like is from the Wisconsin Dept. of Natural Resources Form 3400-187.

Conducting site inspections should be considered a valuable construction man-

agement process to keep the project within permit requirements and to keep costs in line. Site inspections help lay out strategy for when various features of the project should be incorporated. Site inspections, when done properly, lower a risk of a construction site's non-compliance. Site inspections may also indicate that the strategy for the project is not working or that the strategy needs to be changed.

- Get the perimeter control BMPs installed before up-gradient areas are dis-

**Conducting site inspections should be considered a valuable construction management process to keep the project within permit requirements and to keep costs in line. Site inspections help lay out strategy for when various features of the project should be incorporated.**

turbed.

- Build the detention ponds as first operation on the project and direct storm water to the ponds.
- Stabilize outlets of culverts and drainage areas right away.
- Stabilize slopes as the slopes are graded and as the project is built.

A comparison process used on most projects for various construction operations is frequently called critical path. Site inspections and the accompanying report information becomes the basis for project management decisions. Site inspections describe what is needed and they are derived from a menu of BMPs that could be used. The SWPPP must contain BMPs that can be used.

The last word..... Site inspections can be a very useful process for keeping the project in compliance on a continuing basis. A note to agency people and others that create forms for contractors to use: don't overwhelm us with useless forms. I think it would be easier if we called the report a punch down list of items to be completed.

**L&W**

*by Leo Holm, PE*

*For more information contact Leo Holm, PE, at 241 Indianhead Shores, Balsam Lake, WI 54810, or by email: leoh@rp-alliance.com.*

Leo Holm is a registered professional engineer. He is a graduate of the University of Minnesota, Department of Bio-systems and Agricultural Engineering; specializing in Soil and Water Conservation Engineering. Leo worked for 37 years at the Minnesota Department of Transportation. Presently he is semi-retired and is on the Associated General Contractors of America National Environmental Committee.

He has received several awards over his career; including Outstanding Contributions to Environmental Protection Award by the Minnesota Pollution Control Agency, Outstanding Contributions to Education and Research In Erosion Control by the University of Minnesota, and Outstanding Contribution to the Storm Water and Erosion Control Industry of Wisconsin 2013, by the North American Storm Water and Erosion Control Association.