



**COLORADO**  
Department of Transportation  
Division of Transportation Development

# Transportation Erosion Control Supervisor (TECS) Certification



## Official Training Stormwater Management Plan



# TRANSPORTATION EROSION CONTROL SUPERVISOR (TECS) CERTIFICATION

## TRAINING SWMP

Version 2

# 1 SWMP Plan Sheets

- Notes and Tabulation Template

## 1.1 Site Description

### 1.1.1 Construction activities, Sequence for Major Activities, Areas of Disturbance, Existing Soil Data, Existing Vegetation Percent Cover, Potential Pollutant Sources, Receiving Water, Non Stormwater Discharges and Environmental Impacts

## 1.2 Site Map Components

- Preconstruction items labeled in the Site Plan
- Refer to the Site Map for locations

## 1.3 SWMP Administrator for Design

## 1.4 Best Management Practices (BMPs)

### 1.5.1 Narratives and Matrix

#### 1.5.1.1 Offsite Drainage

#### 1.5.1.2 Perimeter Control

#### 1.5.1.3 Design BMPs and Additional BMPs

## 1.6 Inspections, BMP Maintenance and Record

- Refer to Items 8 through 10 of the notebook

## 1.7 Temporary, Interim and Final Stabilization

## 1.8 Tabulation of Quantities and Notes Related to Items

## 1. SITE DESCRIPTION

The Contractor shall comply with all CDOT contractual requirements and all requirements associated with the CDPS-SCP on this project. The SWMP Administrator shall update to reflect current project site conditions.

A. **PROJECT SITE LOCATION:** Project is located on US994 at MP 400. Limits of the project between STA 812+00 to 854+00. No construction office required, construction trailer located at STA 814+00.

B. **PROJECT SITE DESCRIPTION:** This project consists of culvert extension, concrete reconstruction with a 10.75 inch concrete overlay. The new roadway width will include two 12 foot lanes with 8 foot shoulders for a total width of 40 feet. This work will require guardrail, signing, and delineator replacement.

### C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES:

1-Pipe/culvert extension

2-Embankment and shoulder work is proposed to be accomplished during the following phases of concrete paving.

The contractor shall perform the concrete paving in the following phases:

Phase I: Concrete paving in the eastbound lanes, utilizing the westbound lanes for the pilot car operation.

Phase II: Concrete paving in the westbound lanes, utilizing the eastbound lanes for the pilot car operation.

### D. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC (PERMITTED AREA)): 17 acres
2. Total area of proposed disturbance (LDA): 6.7 acres
3. Total area of seeding: 3.5 acres
4. Total area of impervious surface: 3.2 acres
5. Total area of NEW impervious surface: 0 acres

### E. EXISTING SOIL DATA:

Soils in construction area are a combination of clay and clay loam soils. The soils have saline contents ranging from non- to moderate. Hydrologic Soil Group: C, Natural drainage class: Well drained

### F. EXISTING VEGETATION, INCLUDING PERCENT COVER:

During design the SWMP Administrator for Design in consultation with the Engineer will determine if the SWMP Administrator for Design or the SWMP Administrator will conduct the Vegetation Transects as outlined in Chapter 4.11.2 of the Erosion Control and Stormwater Quality Guide.

Pre-Construction Date of survey: May 1, 2015 %Density: 63%

Description of existing vegetation: Consists of native and introduced grasses

Map or table showing transect locations in SWMP notebook tab 17:

Post-Construction Date of survey: \_\_\_\_\_ %Density: \_\_\_\_\_

Description of existing vegetation: \_\_\_\_\_

Date of CDPS-SCP Closure: \_\_\_\_\_

Map or table showing transect locations in SWMP notebook tab 17:

### G. POTENTIAL POLLUTANTS SOURCES:

See First Construction Activities under Potential Pollutant Sources. The SWMP Administrator shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25.

### H. RECEIVING WATER:

1. Outfall locations:

Location (STA)	Size	type	Receiving Water
845+75	(2)20'x8'	CBC	Unnamed Tributary
845+75	24 Inch	CSP	Unnamed Tributary

2. Names of receiving water(s) on site: There is an unnamed tributary on the project site.

3. Ultimate receiving water: Willow River

4. Horizontal distance nearest water of the state is from project: Willow River is approximately 0.5-1.0 miles from the project.

## I. NON-STORMWATER DISCHARGES

### ALLOWABLE:

1. Groundwater and stormwater dewatering: Discharges to the ground of water from construction dewatering activities may be authorized provided that:
  - a. the source is groundwater and/or groundwater combined with stormwater that does not contain pollutants
  - b. the source and BMPs/Control Measures are identified in the SWMP
  - c. discharges do not leave the site as surface runoff or to surface waters
  - d. The contractor shall protect all work areas and facilities from water at all times. Areas and facilities subject to flooding, regardless of the source of water, shall be promptly dewatered and restored at no cost to the owner. This shall include removal of any debris caused by flooding. Any dewatering shall be done in accordance with Subsection 107.25

### CONTAMINATED:

2. If discharges do not meet the above criteria a separate CDPS permit shall be obtained by the Contractor from the CDPHE. See standard special provision 250 Hazardous Waste and Contaminated Water.

## 2. SITE MAP COMPONENTS:

Pre-construction

A. **PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES** See SWMP Site Maps.

B. **ALL AREAS OF GROUND SURFACE DISTURBANCE** See SWMP Site Maps.

C. **AREAS OF CUT AND FILL** See SWMP Site Maps.

D. **LOCATION OF ALL STRUCTURAL BMPs/CONTROL MEASURES IDENTIFIED IN THE SWMP** See SWMP Site Maps.

E. **LOCATION OF NON-STRUCTURAL BMPs/CONTROL MEASURES AS APPLICABLE IN THE SWMP** See SWMP Site Maps.

F. **SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER** See SWMP Site Maps.

G. **PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION** See SWMP Site Maps.


H. **AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc.) and BATCH PLANTS** To be determined in the field prior to construction commencing. SWMP Administrator shall update locations on SWMP Site Maps.

## 3. SWMP ADMINISTRATORS:

### A. SWMP ADMINISTRATOR FOR DESIGN:

Name/Title	Contact Information	Certification #
CDOT Landscape Specialist	<u>Greg Fisher</u> <u>555-555-5555</u>	<u>1234</u>

B. **SWMP ADMINISTRATOR FOR CONSTRUCTION:** (As defined in Subsection 208) The Contractor shall designate a SWMP Administrator for Construction upon ownership of the SWMP. The SWMP Administrator shall become the owner/operator and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03. The SWMP Administrator shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information.

Print Date: 4-12-17		<b>Sheet Revisions</b>			<b>Colorado Department of Transportation</b> XXXXX, XXXXXX XXXXXX, CD XXXXX Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX <b>Region 0</b>	<b>As Constructed</b> No Revisions: Revised: Void:	<b>STORMWATER MANAGEMENT PLAN</b> <b>PLAN SHEET</b>			<b>Project No./Code</b> Project Number 12345	
File Name: 12345_SWMP PLAN SHEET_1.dgn		Date:	Comments	Init.							Designer: HRED Detailer: HRED
Horiz. Scale: N/A		Vert. Scale: As Noted									
Unit Information		Unit Leader Initials									

The activities and responsibilities of the SWMP administrator shall address all aspects of the projects SWMP. (Update the information below for each new SWMP Administrator) (Copy of TECS Certification must also be included in the SWMP Notebook.)

Name/Title	Contact Information	Certification #	Start Date	Engineer Approval
Tripp Minges	303-757-9788	1390	5/28/15	

C. EROSION CONTROL INSPECTOR: (As defined in Subsection 208) The Contractor may designate an Erosion Control Inspector. The Erosion Control Inspector shall complete duties in accordance with subsection 208.03 (c) (Copy of TECS Certification must also be included in the SWMP Notebook.)

Name/Title	Contact Information	Certification #	Start Date	Engineer Approval
Tripp Minges	303-757-9788	1390	5/28/15	

#### 4. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

##### A. POTENTIAL POLLUTANT SOURCES

Evaluate, identify, locate and describe all potential sources of pollutants at the site in accordance with subsection 107.25, CDPS-SCP and place in the SWMP notebook Tab 12. All BMPs/Control Measures related to potential pollutants shall be shown on the SWMP site map by the Contractor's SWMP Administrator.

##### B. OFFSITE DRAINAGE (RUN ON WATER)

1. Describe and record BMPs/Control Measures on the SWMP site map that have been implemented to address off site run-on water in accordance with subsection 208.03.

##### C. VEHICLE TRACKING PAD/VEHICLE TRACKING CONTROL

1. BMPs/Control Measures shall be implemented in accordance with subsection 208.04.

##### D. PERIMETER CONTROL

- Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
- Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs/Control Measures as approved.
- Perimeter control shall be in accordance with subsection 208.04

#### 5. DURING CONSTRUCTION

##### RESPONSIBILITIES OF THE SWMP ADMINISTRATOR DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator in accordance with subsection 208.

During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP notebook indicate below what section the discussion takes place.

A. STOCKPILE MANAGEMENT: Shall be done in accordance with subsection 107.25 and 208.07

B. CONCRETE WASHOUT: Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

C. SAW CUTTING: Shall be done in accordance with subsection 107.25, 208.04, 208.05

D. STREET SWEEPING: Shall be done in accordance with subsection 208.04

#### 6. INSPECTIONS

A. Inspections shall be in accordance with subsection 208.03 (c).

#### 7. BMP/CONTROL MEASURE MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04 (f).

#### 8. RECORD KEEPING

A. Records shall be kept in accordance with subsection 208.03 (d).

#### 9. INTERIM AND PERMANENT STABILIZATION

##### A. SEEDING PLAN

Topsoil salvage/placement, Soil conditioning and seeding (native) will be required for an estimated 3.5 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

Percentage of Mix	COMMON NAME	SCIENTIFIC NAME	LBS. PLS PER ACRE	SEEDS PER POUND	SEEDS PER S.F. (PLS PER ACRE)
8%	Inland Saltgrass	Distichlis spicata	1	520,000	11.94
8%	Slender Wheatgrass	Elymus trachycaulus	1	159,000	3.65
4%	Blue grama	Bouteloua gracilis Hachita	0.5	825,000	9.47
16%	Western wheatgrass	Pascopyrum smithii	2	110,000	5.05
8%	Switchgrass	Panicum virgatum Dacotah	1	389,000	8.93
2%	Prairie Junegrass	Koeleria macrantha	0.2	2,315,400	10.63
1%	Alkali sacaton	Sporobolus airoides Saltalk	0.1	1,758,000	4.04
4%	Streambank wheatgrass	Elymus lanceolatus ssp. Psammophilus	0.5	156,000	1.79
4%	Buffalograss	Bouteloua dactyloides VNS	0.5	56,000	0.64
16%	Little bluestem	Schizachyrium scoparium Blaze	2	260,000	11.94
24%	Oats	Avena sativa	3		
2%	Blanket flower	Gaillardia aristata	0.25	132,000	0.76
3%	Purple prairie clover	Dalea purpurea var. purpurea	0.4	210,000	1.93
1%	Prairie coneflower	Ratibida columnifera	0.1	737,000	1.69
100%		<b>TOTAL</b>	<b>12.55</b>		<b>72.45</b>

B. SEEDING APPLICATION: Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast or hydroseed at double the rate and rake 0.25 inch to 0.5 inch into the soil per subsection 212.

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Horiz. Scale: N/A      Vert. Scale: As Noted						Void:	Sheet Subset: SWMP Subset Sheets: 2 of 18		Sheet Number <b>S-1</b>
Unit Information      Unit Leader Initials									

C. **MULCHING APPLICATION:** Apply a minimum of 2 tons of certified weed free hay or 2 1/2 tons of certified weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

1. Prior to winter shutdown or the summer seeding window closure: Uncompleted slopes shall be mulched with 2 tons of mulching (weed free) per acre, mechanically crimped into the topsoil in combination with an organic mulch tackifier per subsections 208 and 213.

D. **SPECIAL REQUIREMENTS:**

1. Due to high failure rates, hydroseeding will not be allowed for permanent stabilization.

E. **SOIL CONDITIONING AND FERTILIZER REQUIREMENTS:** Minimum requirements for all disturbances to receive seeding (native).

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)			
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	<b>COMPOST</b> (cys/acre) 1/2 inch depth	<b>SPRAY-ON AMENDMENTS</b> (lbs/acre)
300	200	65	2500

\*Biological nutrient shall not exceed 8-8-8 (N-P-K).

Humate based material shall be in accordance to Standard Special Provision 212 and compost shall be in accordance to Standard Special Provision 212.

F. **SOIL RETENTION COVERING:** On slopes and ditches requiring a blanket or turf reinforcement mat (trm), the blanket/trm shall be placed in lieu of mulch and mulch tackifier and placed after seeding (native). See SWMP site map for blanket/trm locations.

G. **RESEEDING OPERATIONS/CORRECTIVE STABILIZATION**

Prior to partial acceptance.

1. The Contractor shall maintain seeding/mulch/tackifier/blanket/TRM, mow to control weeds or apply herbicide to control weeds in the seeded areas until Partial Acceptance of the stormwater construction work.

## 10. PRIOR TO PROJECT FINAL ACCEPTANCE

- A. Partial Acceptance shall be in accordance with subsection 107.25 (d), 208.10 and 214.04 at the Partial Acceptance of the project, it shall be determined by the SWMP Administrator and the Engineer which temporary BMPs/Control Measures shall remain until 70% revegetation is established or which shall be removed.
- B. At the end of the project, all ditch checks shall either consist of temporary erosion logs (or equivalent) or permanent rip-rap.
- C. All storm drains shall be cleaned prior to the Final Acceptance of the project. Work shall be included in 202 Clean Culvert.

## 11. NARRATIVES:

A. **ADDITIONAL BMPS/CONTROL MEASURES AND NARRATIVES:**

BMP/Control Measure details and narratives not covered by the SWMP or Standard Plan M-208, M-216 shall be added to the SWMP notebook by the SWMP Administrator and have it approved by the Engineer.

**STRUCTURAL BMPs/Control Measures** that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:


1. M-Standards have been included along with standard BMP narratives. If a Non-Standard BMP will be used or the standard narrative does not apply the SWMP Administrator shall write a Non-Standard BMP narrative, place an "X" in the column and complete the Non-Standard BMP form in the SWMP notebook.
2. The SWMP Administrator shall place an "X" in the column In Use on Site when the BMP/Control Measure has been installed.
3. Place an "X" in the column for all BMP/Control Measures as Designed that are in the pay item tabulation, SWMP Plans or anticipated to be used onsite. Some BMP/Control Measures will not be listed in the Pay Item tabulation (Vegetated buffer strip) but shall still receive an "X".
4. Place an "X" in the column BMP/Control Measure to be located by SWMP Administrator if the SWMP Administrator shall locate the BMP/Control Measure during construction. These BMP/Control Measures are not currently located on plans but are anticipated to be used during construction.
5. Place an "X" in the column Installation BMP/Control Measure Pre-Construction if the BMP/Control Measure is to be installed prior to construction activity.

*Refer to map for specific dates 1/19/15 TM*

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE AS DESIGNED	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINISTRATOR	INSTALLATION BMP/CONTROL MEASURE PRE-CONSTRUCTION	BMP/CONTROL MEASURE PHASING		
							FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING WETLANDS Fence (plastic) and temporary berms	Fence (plastic) shall be placed in combination with temporary berms to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.		X	X		X	X		


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APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE AS DESIGNED	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINISTRATOR	INSTALLATION BMP/CONTROL MEASURE PRE-CONSTRUCTION	BMP/CONTROL MEASURE P		
							FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING TREES/LANDSCAPING Fence (plastic)	Fence (plastic) shall be used in areas indicated in the plans to prevent encroachment of construction traffic and sediment for the protection of mature trees and/or existing landscaping prior to start of construction disturbances.								
CHECK DAM/DITCH CHECK Erosion log, silt berm, silt dike, rock check dam	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.	M-208	X	X	X		X	X	
TYPE R AND TYPE 16 INLET PROTECTION Storm drain inlet protection (Type 1,2 and 3)	Placed prior to construction disturbances as detailed in M-208-1, to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.	M-208							
CULVERT INLET/OUTLET PROTECTION Erosion logs, aggregate bags	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.	M-208	X	X			X	X	
TYPE C, TYPE D AND TYPE 13 PROTECTION Erosion logs, aggregate bags, erosion bales	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.	M-208							
STOCKPILE PROTECTION Temporary berm, erosion logs, aggregate bags*	Placed within specified distance, in accordance with subsection 208.06, from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stock pile, increase control as stock pile increases size.	M-208	X		X			X	
TOE OF FILL PROTECTION Erosion logs, temporary berm, silt fence, topsoil windrow*	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208	X	X			X	X	
PERIMETER CONTROL Erosion logs, silt fence, temporary berm, topsoil windrow*	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208	X	X			X	X	
SEDIMENT CONTROL/ SLOPE CONTROL Silt fence, erosion logs	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208	X	X			X	X	
TEMPORARY SEDIMENT TRAP (SWMP Administrator shall add locations to SWMP site maps)	Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to start of construction disturbances.	M-208							
PERMANENT SEDIMENT BASIN Extended detention basin or other Permanent Water Quality features	Constructed early in project, prior to storm sewer/ditches to capture storm flow as a temporary sediment trap. Outlet structure shall be modified for contaminants of construction runoff a non-standard detail is needed.								
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.	M-208							
OUTLET PROTECTION Riprap, or approved other	Material placed as energy dissipater to prevent erosion at outlet structure.		X		X			X	X
CONCRETE WASHOUT In-ground or fabricated	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208	X		X		X	X	
7/14/15 <sup>TM</sup> VEHICLE TRACKING PAD (modified)	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208	X		X		X	X	
SWEEPING	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.		X		X		X	X	
DEWATERING (Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)	Shall be done in such a manner to prevent potential pollutants from entering state waters.		X		X			X	
TEMPORARY STREAM CROSSING (SWMP Administrator shall add locations to SWMP site maps)	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into water.								
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff.								
OTHER									

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**NON-STRUCTURAL BMPs/Control Measures** that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:  
 Erosion control devices are used to limit the amount of soil loss on site  
 Sediment control devices are designed to capture sediment on the project site.  
 Construction controls are BMPs/Control Measures related to construction access and staging.  
 BMP/Control Measure locations are indicated on the SWMP site map.

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE AS DESIGNED	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINISTRATOR	INSTALLATION BMP/CONTROL MEASURE PRE-CONSTRUCTION	BMP/CONTROL MEASURE PHASING		
							FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	PERMANENT STABILIZATION
VEGETATIVE BUFFER STRIP	Filter sediment laden runoff from disturbance area. Area to be identified on SWMP prior to construction starting.			X			X	X	X
Existing Terrain and Grading Techniques (SWMP Administrator shall add locations to SWMP site maps)	Both existing terrain and grading techniques may be used as a BMP/Control Measure if they prevent sediment from entering or leaving the disturbance area. If terrain directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion. Area(s) to be identified on SWMP prior to construction starting.		X	X			X	X	
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE Windrow or stockpile	Prior to embankment work commencing, existing topsoil shall be scraped to a depth of 4 inches, and placed in stockpiles or windrows. Upon completion of slope work/final grading (less 4 inches), topsoil shall be evenly distributed over embankment to a depth of 4 inches.		X		X		X	X	
SURFACE ROUGHENING / GRADING TECHNIQUES Blading, Backhoe, Dozing, Combination Loader	Temporary stabilization of disturbance and to minimize wind and erosion.		X		X			X	
SEEDING (TEMPORARY)	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.				X			X	
BONDED FIBER MATRIX/HYDRAULIC MULCH	Not to be used in areas of concentrated flows, i.e. ditch lines. To be used in combination with surface roughening for temporary stabilization of disturbed soils, when work is temporarily halted and as approved by the Engineer. May be used as surface cover for temporary topsoil stockpiles				X			X	
MULCH/MULCH TACKIFIER	Temporary or Final Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer		X		X			X	X
SPRAY-ON MULCH BLANKET (Not to be used in areas of concentrated flows, i.e. ditch lines.)	Temporary or Final Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer			X				X	X
SEEDING PERMANENT (NATIVE)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.		X		X				X
SOIL RETENTION BLANKET (SRB)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	M-216	X	X				X	X
TURF REINFORCEMENT MAT (TRM)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. Placed in channels or on slopes for erosion control, channel liner and seeding establishment.	M-216	X	X					X
OTHER									
OTHER									

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## 12. TABULATION OF STORMWATER QUANTITIES

- A. BMP/Control Measure sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP/Control Measure maintenance shall be included in the cost of the BMP/Control Measure.
- B. It is estimated that 30 hours of labor, blading may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as 203 Blading.
- C. Establishment of seeded areas shall be paid for as: 214 Landscape Maintenance Lump Sum. This shall include mowing, weed control, reseeding/mulch/tackifier.

Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
203-01500	Blading	Hour		40		40
207-00205	Topsoil	CY			2825	2825
207-00210	Stockpile Topsoil	CY	2825			2825
208-00002	Erosion Log Type 1 (12 inch)	LF	1130	1640 (A)		2770
208-00020	Silt Fence	LF	2475 (A)			2475
208-00033	Sediment Trap	Each		1		1
208-00041	Rock Check Dam	Each		10 (B)		10
208-00046	Pre-fabricated Concrete Washout Structure	Each		4		4
208-00070	Vehicle Tracking Pad	Each	1	5 (C)		6
208-00071	Maintenance Aggregate (Vehicle Tracking Pad)	CY		70		70
208-00075	Pre-fabricated Vehicle Tracking Pad	Each	1	1		2
208-00103	Removal and Disposal of Sediment (Labor)	Hour	20	60		80
208-00105	Removal and Disposal of Sediment (Equipment)	Hour	4	16		20

Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
208-00106	Sweeping (Sediment Removal)	Hour		160		160
208-00107	Removal of Trash	Hour	40			
208-00207	Erosion Control Management (ECM)	Day	30	100	30	160 (D)
208-00300	Temporary Berm	LF	600			600
212-00006	Seeding (Native)	Acre			4.5 (E)	4.5
212-00009	Seeding (Temporary)	Acre		.5		.5
212-00032	Soil Conditioning	Acre			5.5 (E)	4.5
213-00004	Mulching (Weed Free Straw)	Acre			1.6 (E)	1.6
213-00012	Spray-on Mulch Blanket	Acre			1.8 (E)	1.8
213-00061	Mulch Tackifier	LB			360(E)	360
213-00150	Bonded Fiber Matrix	Acre		1.5 (F)		1.5 (F)
214-00000	Landscape Maintenance	LS				1.0
216-00201	Soil Retention Blanket (Straw/Coconut) (Biodegradable Class 1)	SY			10074	10074
216-00302	Turf Reinforcement Mat (Class 2)	SY			2255	2255
217-00020	Herbicide Treatment	Hour	20			20
607-11525	Fence (Plastic)	LF	520			520
700-70380	Erosion Control	FA			1	1


\*It is anticipated that additional BMPs/Control Measures and BMP/Control Measure quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.03 and 208.04. **Quantities for all BMPs/Control Measures shown above are estimated, and have been increased for unforeseen conditions and normal BMP/Control Measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

## 13. BIOLOGIC IMPACTS

- A. ENVIRONMENTAL IMPACTS: *W/11/15 TM*
  - 1. Wetland Impacts:  YES  NO *For headwall work*
  - 2. Stream Impacts: YES  NO
  - 3. Threatened and Endangered Species: Yes (Protection of delineated area is shown on sheet 9 of 18)

## 14. NOTES

- A. Additional 30% additional BMP/Control Measures not shown were added to the quantity.
- B. Not shown on Site Maps, anticipated for perimeter of concentrated flows.
- C. Not shown on Site Maps, SWMP Administrator for Construction to locate on plans as needed.
- D. Projected project schedule provided by Engineer.
- E. Additional 30% additional seeding and mulching were added to the total quantity.
- F. Anticipated for interim stabilization.

Print Date: 4-12-17		<b>Sheet Revisions</b>	<b>Colorado Department of Transportation</b>	<b>As Constructed</b>	<b>STORMWATER MANAGEMENT PLAN PLAN SHEET</b>	<b>Project No./Code</b>
File Name: 12345_SWMP PLAN SHEET_1.dgn		Date:      Comments      Init.	 XXXXX, XXXXXX XXXXXX, CD XXXXX Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX	No Revisions:	Designer:      HRED      Structure Detailer:      HRED      Numbers Sheet Subset:      SWMP      Subset Sheets:      6 of 18	Project Number
Horiz. Scale: N/A      Vert. Scale: As Noted				Revised:		12345
Unit Information      Unit Leader Initials				Void:		Sheet Number
						<b>S-1</b>
			<b>Region 0</b>			

## **2 Site Map and Project Plan Title Sheet**

### **2.1 Title Sheet containing Project Location Map**

### **2.2 Site Map Revisions and Recording in Accordance to 208.03 (c)**

### **2.3 Site Map Components**

- **Area of Disturbance (AD), Construction Site Boundary/Limits of Construction (LOC), Limits of Disturbed Area (LDA), Areas of Cut and Fill, Flow Arrows, Structural BMPs, Non Structural BMPs, Springs, Streams, Wetlands and other Surface Water and Protection of Trees, Shrubs, Cultural Resources and Mature Vegetation**

### **2.4 Locations of Potential Pollutants**

### **2.5 Perimeter Control**

# COLORADO DEPARTMENT OF TRANSPORTATION

## PLAN AND PROFILE OF PROPOSED COLORADO PROJECT NO. TM 0123-456 US994 / IVYL SKEETER PASS JACKSON COUNTY

### OVERSIGHT / NHS

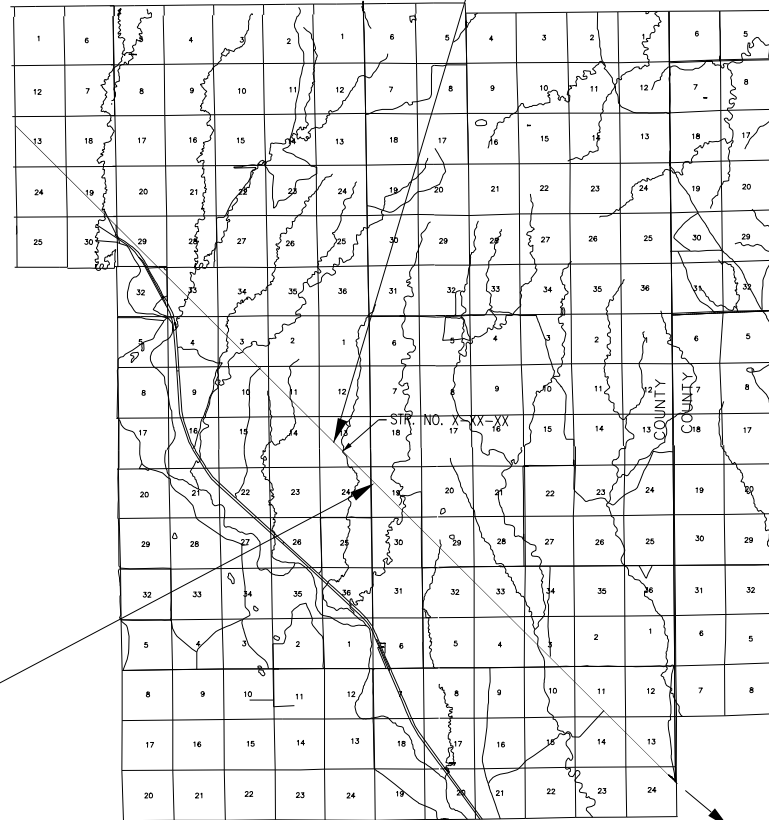
FULL FHWA OVERSIGHT	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES

### INDEX OF SHEETS

SHEET NO.	SHEET NO.
TITLE SHEET . . . . .	1
STANDARD PLANS LIST . . . . .	2
TYPICAL SECTIONS . . . . .	3
GENERAL NOTES . . . . .	4
SUMMARY OF APPROXIMATE QUANTITIES . . . . .	5-7
TABULATION OF DELINEATORS . . . . .	8
TABULATION OF FENCE AND GUARDRAIL . . . . .	9
ROAD AND FIELD APPROACH PROFILES . . . . .	9a-9d
PLAN AND PROFILE SHEETS . . . . .	10-43
TABULATION OF TRAFFIC ENGINEERING ITEMS . . . . .	44
TABULATION OF PAVEMENT MARKINGS . . . . .	45
SWMP . . . . .	46-61

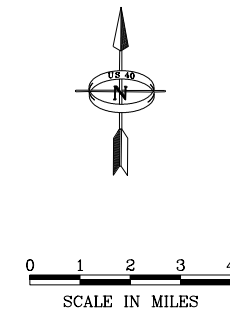
### TABULATION OF LENGTH AND DESIGN DATA

LOCATION - STATION -	ROADWAY		MAJOR STRUCTURE	
	LIN.FT.	MILES	LIN.FT.	MILES
BEG. PROJ. TM 0123-456 STA. 815+00 = APPROX. MP 399.9 ON MAIN ST.				
STRUCTURE X-XX-XX			XX	XX
END PROJ. TM 0123-456 STA. 853+00 = APPROX. MP 400.8 ON MAIN ST.	XXX	XXX		
<b>TOTAL</b>	XXX	XXX	XX	XX
<u>SUMMARY</u>		LIN.FT.	MILES	
ROADWAY		XXX	XXX	
STRUCTURE X-XX-XX		XX	XX	
<b>GROSS &amp; NET LENGTH</b>		XXXX	XXX	
<u>DESIGN DATA</u>				
MAXIMUM DEGREE OF CURVE . . . . .		0° 30' 00"		
MAXIMUM GRADE . . . . .		3.32%		
MINIMUM S.S.D. - HORIZONTAL . . . . .		NA		
MINIMUM S.S.D. - VERTICAL . . . . .		730'		
MAXIMUM DESIGN SPEED . . . . .		70 M.P.H.		
<u>YEAR</u>	2008	2028		
ADT	2,200	2794		
DHV	176	224		
DHV % TRUCKS	63.0	63.0		



END PROJECT MP 400.80  
STATION 853+00

BEGIN PROJECT MP 399.9  
STATION 815+00



\$PLOT\_INFO\_FILE AND LOCATION

Print Date: 5/6/16	0000	<b>Sheet Revisions</b>			 Colorado Department of Transportation Region 0 TEB	<b>As Constructed</b>	<b>STORMWATER MANAGEMENT PLAN PLAN SHEET</b>		<b>Project No./Code</b>
File Name: Project Title Sheet.dgn		Date:	Comments	Init.		No Revisions:			TM 0123-456
Horiz. Scale: N/A      Vert. Scale: As Noted						Revised:	Designer: HRED	Structure Numbers	12345
Unit Information      Unit Leader Initials						Void:	Detailer: HRED	Subset Sheets:	Sheet Number 1

**INITIAL SWMP NOTES:**

1. THE INITIAL SWMP REPRESENTS BMPS THAT SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION (ANY DISTURBANCE OF EXISTING VEGETATION).
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE AND USE THE INTERIM SWMP TO REPRESENT CURRENT INSTALLED CONTROL MEASURES.
3. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.
4. VEGETATIVE TRANSECTS WERE DONE BY THE SWMP ADMINISTRATOR FOR DESIGN PRIOR TO THE START OF CONSTRUCTION.
5. WETLANDS WERE DELINEATED BY THE REGION 0 WETLAND BIOLOGIST AND ANY QUESTIONS SHOULD BE DIRECTED TO SAELEA PUCKUCCO AT XXX-XXX-XXXX.
6. THREATENED AND ENDANGERED SPECIES AREA WAS DELINEATED BY RTURICH AND AT NO TIME SHALL CONSTRUCTION ACTIVIES TAKE PLACE WITHIN THE FENCED OFF AREA. ANY QUESTIONS SHOULD BE DIRECTED TO THE REGION ENVIRONMENTAL STAFF XXX-XXX-XXXX.
7. REFER TO SECTION 207-TOPSOIL FOR TOPSOIL SALVAGE REQUIREMENTS.

**INITIAL SWMP LEGEND:**

SYMBOL	DESCRIPTION (PROPOSED QUANTITY)	SYMBOL	DESCRIPTION (PROPOSED QUANTITY)
	TRANSECT LOCATION		TEMPORARY BERM (LF)
	FENCE (PLASTIC) (LF)		EROSION LOG (TYPE 1) (12 INCH)
	LIMIT OF DISTURBANCE		SILT FENCE (LF)
	CONSTRUCTION SITE BOUNDARY / LIMITS OF CONSTRUCTION		REINFORCED SILT FENCE (LF)
	TOE OF FILL		EXISTING WETLANDS
	TOP OF CUT		VEGETATIVE BUFFER
	FLOW ARROW (DIRECTION OF FLOW)		DELINEATED THREATENED AND ENDANGERED SPECIES AREA

Print Date: 5/12/16		<b>Sheet Revisions</b>			<b>Colorado Department of Transportation</b>  Region 0 XXXXX, XXXXXX XXXXXX, CD XXXXX Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX <b>TEB</b>	<b>As Constructed</b>	<b>STORMWATER MANAGEMENT PLAN</b>		<b>Project No./Code</b>
File Name: 12345_SWMP SITE MAP INITIAL_1.dgn		Date:	Comments	Init.		No Revisions:	<b>SITE MAP - INITIAL</b>		Project Number
Horiz. Scale: 1"=100'      Vert. Scale: As Noted						Revised:	Designer: HRED	Structure Numbers	12345
Unit Information      Unit Leader Initials						Void:	Detailer: HRED	Subset Sheets: 7 of 18	Sheet Number <b>S-7</b>

PLOT\_INFO FROM DESIGNER

BEG. PROJ. TM 0123-456 STA. 812+00 = APPROX. MP 399.9

MATCH LINE STA 826+00.00

SALAVAGE TOPSOIL (6" THICK) AND STOCKPILE PRIOR TO BEGINNING GRADING OPERATIONS. SHOW LOCATION OF TOPSOIL STOCKPILES WITH PERIMETER CONTROLS ON INTERIM MAPS.

EROSION LOGS J-HOOKED OFF ENDS OF WINGWALLS BOTH WALLS (120 LF)  
VEGETATIVE BUFFER

VEGETATIVE BUFFER

EROSION LOG (220 LF)

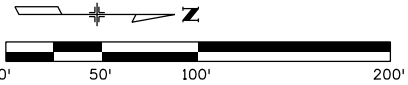
SALAVAGE TOPSOIL (6" THICK) AND STOCKPILE PRIOR TO BEGINNING GRADING OPERATIONS. SHOW LOCATION OF TOPSOIL STOCKPILES WITH PERIMETER CONTROLS ON INTERIM MAPS.

EROSION LOGS J-HOOKED OFF ENDS OF WINGWALLS BOTH WALLS (220 LF)

TRANSECT #1  
70% VEGETATIVE COVER  
SWMP ADMINISTRATOR OF DESIGN (5-1-16)

PRIOR TO CONSTRUCTION COMMENCING PLACE COMBINATION FENCE (PLASTIC) AND A TEMPORARY BERM AT LIMITS OF DISTURBANCE TO PREVENT SEDIMENT AND CONSTRUCTION TRAFFIC FROM ENTERING EXISTING WETLANDS

IMMEDIATELY UPON COMPLETION OF WORK IN THIS AREA REMOVE AND DISPOSE OF ANY DEBRIS/SEDIMENT LEFT IN CHANNEL AND REMOVE BMP AND FENCE (PLASTIC)



Print Date: 5/12/16	
File Name: 12345_SWMP SITE MAP INITIAL_1.dgn	
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Unit Information	Unit Leader Initials

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Colorado Department of Transportation

Region 0

XXXXX, XXXXXX  
XXXXXX, CO XXXXX  
Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX

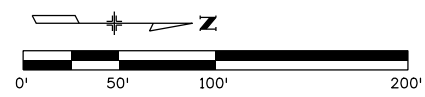
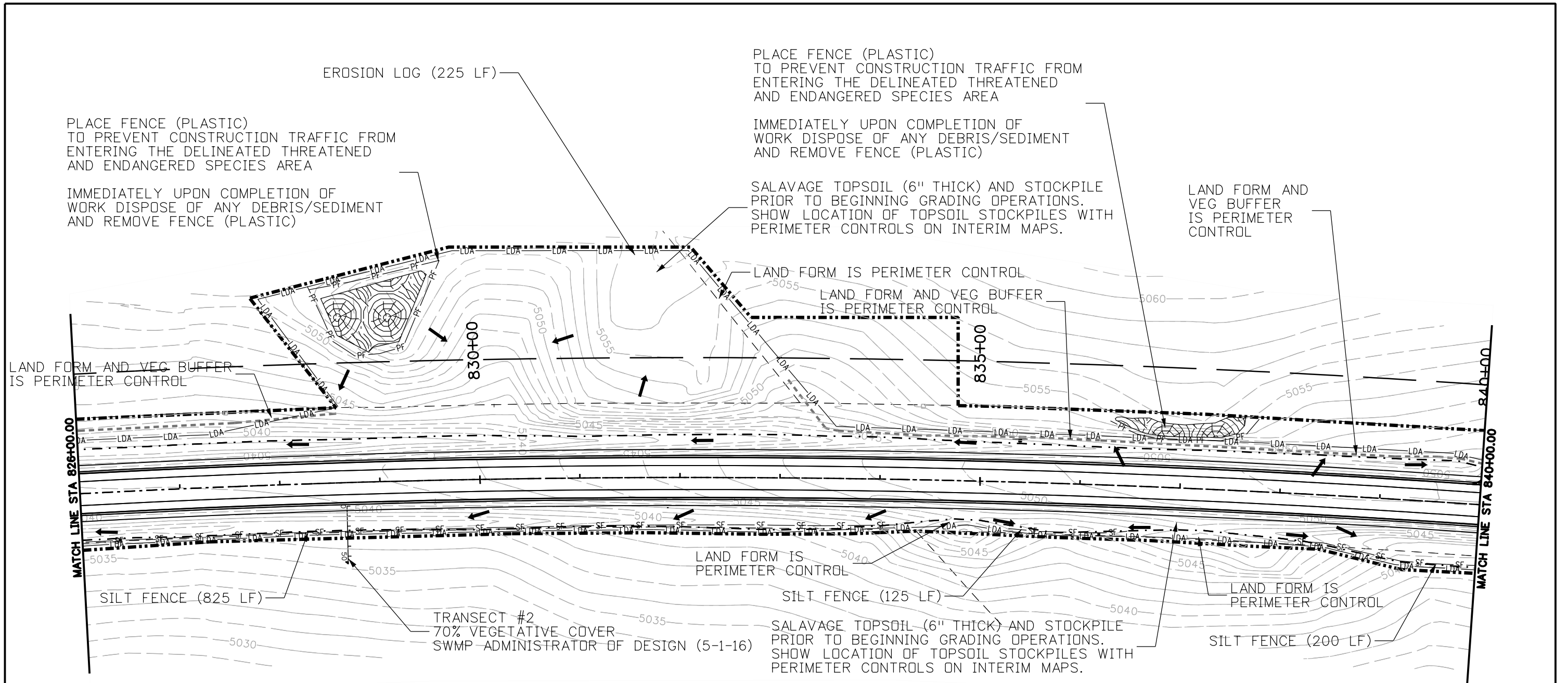
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STORMWATER MANAGEMENT PLAN SITE MAP - INITIAL			
Designer:	HRED	Structure Numbers	
Detailer:	HRED	Subset Sheets:	8 of 18
Sheet Subset:	SWMP		

Project No./Code	
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PLOT\_INFO FROM DESIGNER



Print Date: 5/12/16	
File Name: 12345_SWMP SITE MAP INITIAL_2.dgn	
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Unit Information	Unit Leader Initials

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Colorado Department of Transportation

Region 0 TEB

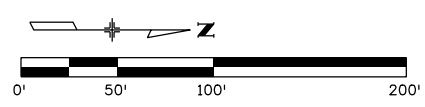
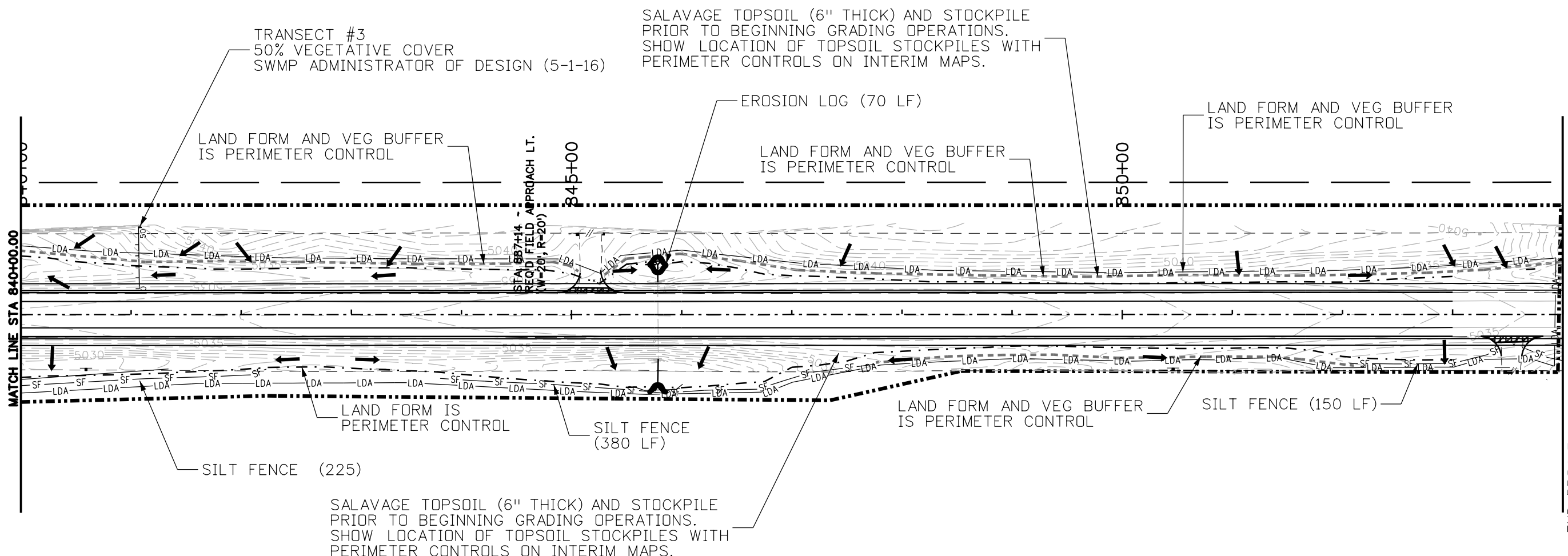
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STORMWATER MANAGEMENT PLAN SITE MAP - INITIAL			
Designer:	HRED	Structure Numbers	
Detailer:	HRED		
Sheet Subset:	SWMP	Subset Sheets:	9 of 18

Project No./Code	Project Number
	12345
Sheet Number	S-8

PLOT\_INFO FROM DESIGNER



Print Date: 5/12/16	0000	Sheet Revisions			Colorado Department of Transportation  Region 0 TEB XXXXX, XXXXXX XXXXXX, CO XXXXX Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX	As Constructed		STORMWATER MANAGEMENT PLAN		Project No./Code	
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Horiz. Scale: 1"=100'      Vert. Scale: As Noted						Revised:	Designer: HRED	Structure Numbers			12345
Unit Information      Unit Leader Initials						Void:	Detailer: HRED	Subset Sheets: 10 of 18			Sheet Number S-9

PLOT\_INFO FROM DESIGNER

INTERIM SWMP NOTES:

1. THE INTERIM SWMP REPRESENTS BMPS THAT SHALL BE INSTALLED AFTER GRADING ACTIVITIES START. PROPOSED INTERIM BMPS ARE LABELED WITH QUANTITIES AND SHOWN GRAPHICALLY. AREAS OF INTERIM STABILIZATION SHALL BE SHOWN ON THESE SHEETS.
2. ONCE DISTURBANCE OF EXISTING VEGETATION STARTS THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL OUTLINE THE AREA WITH THE AREA OF DISTURBANCE LINE. ALL CONTROL MEASURES USED SHALL BE SHOWN ON THE INTERIM SWMP UNTIL SALVAGED TOPSOIL IS PLACED AND PERMANENT STABILIZATION MEASURES ARE STARTED. AT THAT TIME THE REQUIREMENTS FROM THE PERMANENT STABILIZATION SITE MAPS SHALL BE USED.
3. BMPS ARE NOT DRAWN TO SCALE AND LOCATIONS ARE APPROXIMATE.
4. SELECTED BMPS FROM THE INITIAL SWMP SITE MAP ARE SHOWN ON THESE SHEETS BUT NOT LABELED WITH MATERIALS AND QUANTITIES.
5. WETLANDS WERE DELINEATED BY THE REGION 0 WETLAND BIOLOGIST AND ANY QUESTIONS SHOULD BE DIRECTED TO SAELEA PUCKUCCO AT XXX-XXX-XXXX.
6. THREATENED AND ENDANGERED SPECIES AREA WAS DELINEATED BY RTURICH AND AT NO TIME SHALL CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN THE FENCED OFF AREA. ANY QUESTIONS SHOULD BE DIRECTED TO THE REGION ENVIRONMENTAL STAFF XXX-XXX-XXXX.

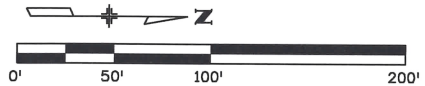
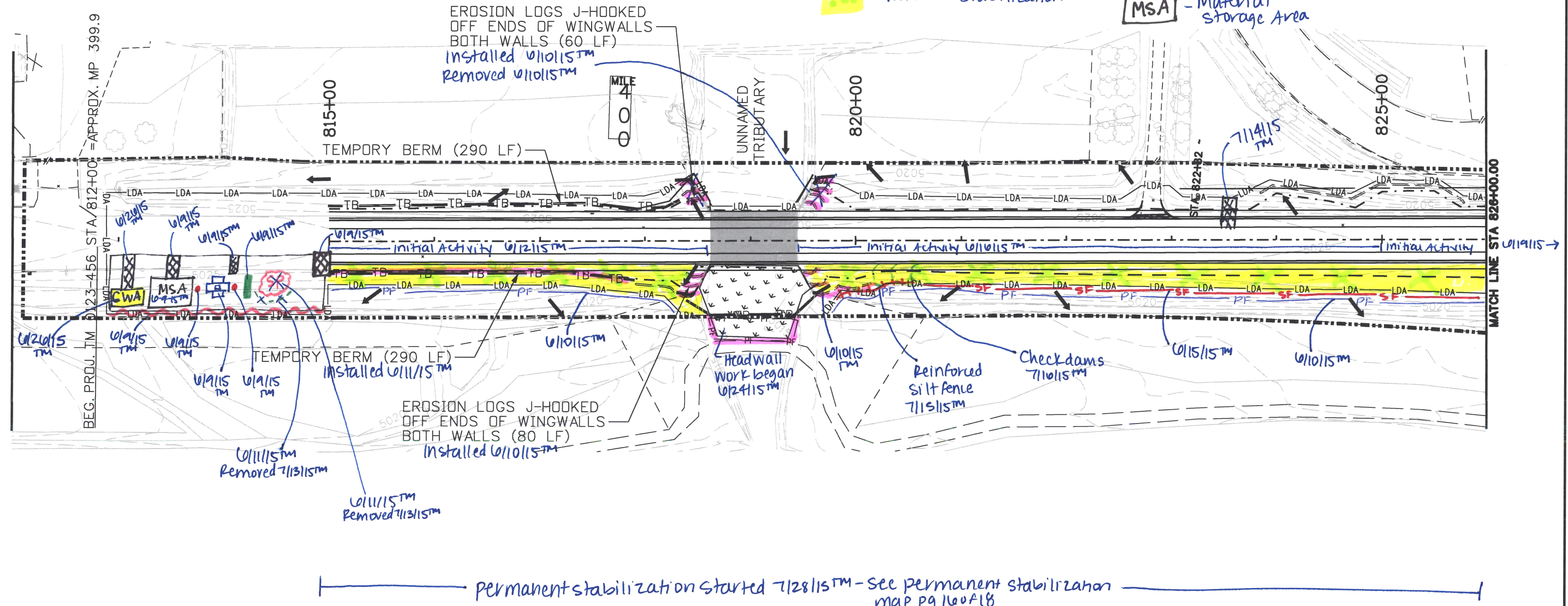
INTERIM SWMP LEGEND:

SYMBOL	DESCRIPTION (PROPOSED QUANTITY)	SYMBOL	DESCRIPTION (PROPOSED QUANTITY)	SYMBOL	DESCRIPTION (PROPOSED QUANTITY)
	-PF- PF- PF- FENCE (PLASTIC) (LF)		-TB- TB- TEMPORARY BERM (LF)		EROSION LOG CHECK DAM (TYPE 1) (20 INCH) (LF)
	-LDA- LDA- LDA- LIMIT OF DISTURBANCE		EROSION LOG (TYPE 1) (12 INCH)		VEHICLE TRACKING PAD (AGGREGATE M-208-1)
	CONSTRUCTION SITE BOUNDARY / LIMITS OF CONSTRUCTION		-SF- SF- SF- SILT FENCE (LF)		CONCRETE WASHOUT STRUCTURE (BELOW GRADE)
	AREA OF DISTURBANCE / BY SWMP ADMINISTRATOR FOR CONSTRUCTION		-RSF- RSF- RSF- REINFORCED SILT FENCE (LF)		TEMPORARY SLOPE DRAIN
	TOE OF FILL		EXISTING WETLANDS		
	TOP OF CUT		DELINEATED THREATENED AND ENDANGERED SPECIES AREA		
	FLOW ARROW (DIRECTION OF FLOW)		INTERIM STABILIZATION BY SWMP ADMINISTRATOR OF CONSTRUCTION		

Print Date: 5/12/16		<b>Sheet Revisions</b>			<b>Colorado Department of Transportation</b>  XXXXX, XXXXXX XXXXXX, CO XXXXX Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX <b>Region 0</b> <span style="float: right;"><b>TEB</b></span>	<b>As Constructed</b>	<b>STORMWATER MANAGEMENT PLAN</b>		<b>Project No./Code</b>
File Name: 12345_SWMP SITE MAP INTERIM_1.dgn		Date:	Comments	Init.		No Revisions:	<b>SITE MAP - INTERIM</b>		
Horiz. Scale: 1"=100'      Vert. Scale: As Noted						Revised:	Designer: HRED	Structure Numbers	12345
Unit Information      Unit Leader Initials						Void:	Detailer: HRED	Sheet Subset: SWMP      Subset Sheets: 11 of 18	Sheet Number <b>S-10</b>



- installed BMPs (pre-printed on map)
- Removed BMPs
- Disturbed Areas (temporarily stabilized at the end of each day)
- Permanent BMPs applied - See permanent stabilization maps for type of BMP
- Interim Stabilization
- SP - Stockpiled materials
- Trash Receptacle
- CT - Construction Trailer
- VTP - Vehicle Tracking Pad - modified to reflect modified VTP 7/14/15
- CWA - Concrete Washout Area
- MSA - Material Storage Area
- port-o-let
- X - Dewatering Filter Bag



Print Date: 5/12/16
File Name: 12345_SWMP SITE MAP INTERIM_1.dgn
Horiz. Scale: 1"=100'      Vert. Scale: As Noted
Unit Information      Unit Leader Initials

Sheet Revisions		
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Colorado Department of Transportation

Region 0      TEB

XXXXX, XXXXX  
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Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX

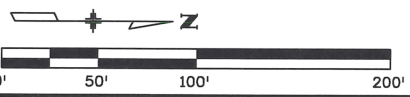
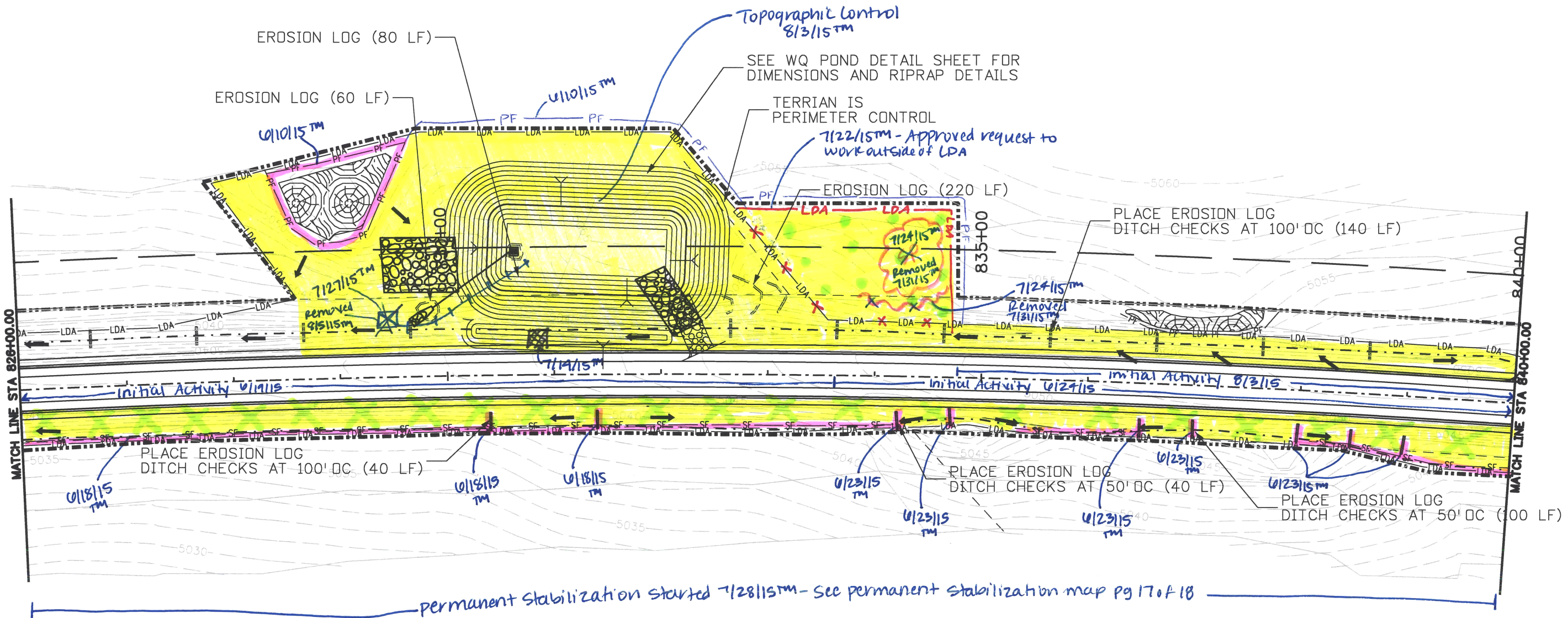
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STORMWATER MANAGEMENT PLAN SITE MAP - INTERIM		
Designer:	HRED	Structure Numbers
Detailer:	HRED	
Sheet Subset:	SWMP	Subset Sheets: 12 of 18

Project No./Code
Project Number
12345
Sheet Number S-10

PLOT\_INFO FROM DESIGNER

Work Began 7/23/15 TM ————— Work Began 7/24/15 TM



See pages 11 and 12 of 18 for SWMP Legend

Print Date: 5/12/16  
 File Name: 12345\_SWMP SITE MAP INTERIM\_2.dgn  
 Horiz. Scale: 1"=100' Vert. Scale: As Noted  
 Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

Region 0

XXXXX, XXXXXX  
 XXXXXX, CO XXXXX  
 Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX

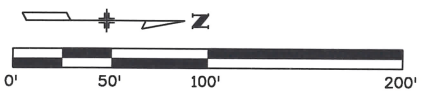
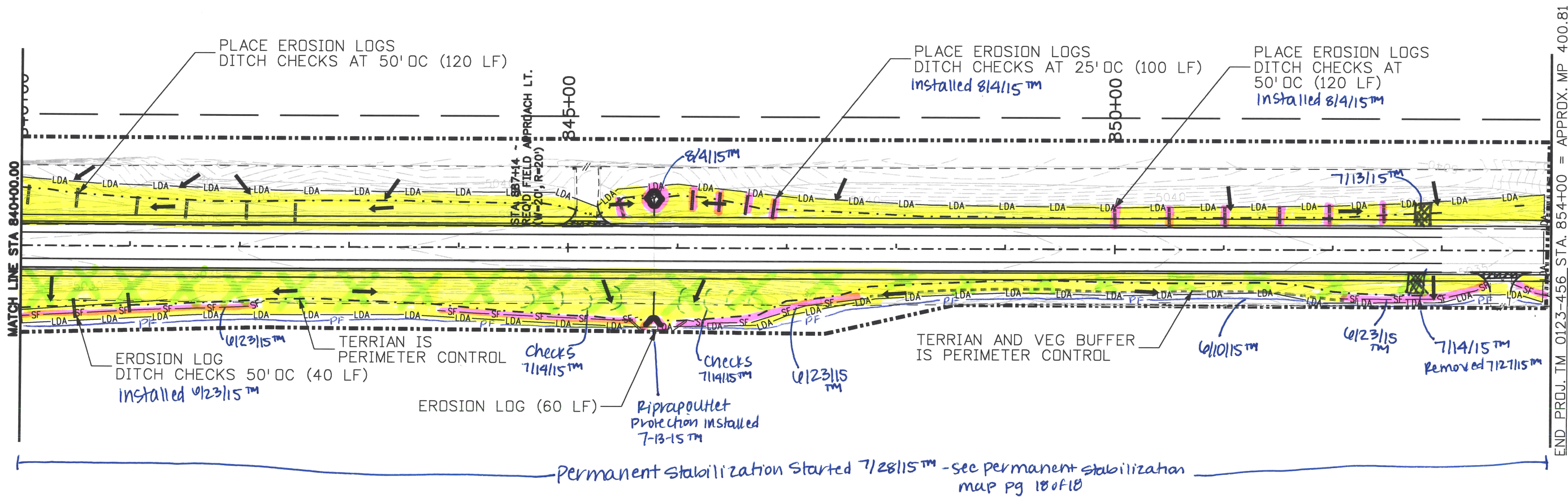
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STORMWATER MANAGEMENT PLAN SITE MAP - INTERIM		
Designer:	HRED	Structure Numbers
Detailer:	HRED	
Sheet Subset:	SWMP	Subset Sheets: 13 of 18

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Project Number
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PLOT\_INFO FROM DESIGNER



See pages 11 and 12 of 18 for SWMP legend

Print Date: 5/12/16
File Name: 12345_SWMP SITE MAP INTERIM_3.dgn
Horiz. Scale: 1"=100'      Vert. Scale: As Noted
Unit Information      Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

Region 0      TEB

XXXXX, XXXXX  
XXXXXX, CO XXXXX  
Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX

As Constructed
No Revisions:
Revised:
Void:

STORMWATER MANAGEMENT PLAN SITE MAP - INTERIM			
Designer:	HRED	Structure	
Detailer:	HRED	Numbers	
Sheet Subset:	SWMP	Subset Sheets:	14 of 18

Project No./Code
Project Number
12345
Sheet Number
S-12

PLOT\_INFO FROM DESIGNER

**PERMANENT SWMP NOTES:**

1. THE PERMANENT SWMP SITE MAPS SPECIFY THE SOIL CONDITIONING, SEEDING AND MULCH REQUIREMENTS FOR THE AREAS ONCE SALVAGED TOPSOIL IS PLACED AND GRADES APPROVED. THE REQUIREMENTS OF THE PLANS ARE BASED ON DECISIONS THROUGH THE PROJECT DEVELOPMENT PROCESS AND SPECIFIC SITE CONDITIONS IDENTIFIED.
2. ONCE AN AREA HAS BEEN PERMANENT STABILIZED THE SWMP ADMINISTRATOR FOR CONSTRUCTION SHALL IDENTIFY THE AREA ON THE PLANS AND DATE WHEN THE WORK WAS COMPLETED.
3. NO BMPS FROM THE INITIAL OR INTERIM SWMP SHEETS ARE SHOWN. ALL BMP THAT THE CDOT REGION WATER POLLUTION CONTROL MANAGER AND THE ENGINEER DETERMINE WILL REMAIN AFTER PERMANENT STABILIZATION ACTIVITIES SHALL BE SHOWN ON THE INTERIM SWMP SITE MAPS.

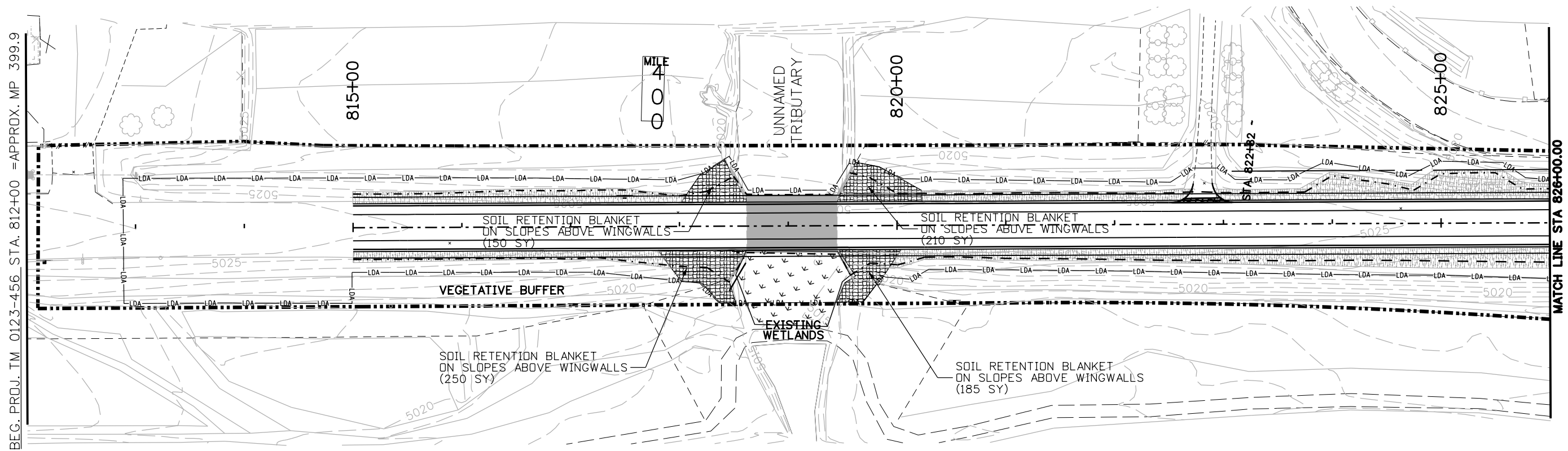
**PERMANENT SWMP LEGEND:**

SYMBOL	DESCRIPTION (PROPOSED QUANTITY)
	LIMIT OF DISTURBANCE
	CONSTRUCTION SITE BOUNDARY / LIMITS OF CONSTRUCTION
	TOE OF FILL
	TOP OF CUT
	EXISTING WETLANDS
	DELINEATED THREATENED AND ENDANGERED SPECIES AREA

SYMBOL	SOIL CONDITIONING (PAY ITEM 212-00032)	SEED MIX (PAY ITEM 212-00006)	TURF REINFORCEMENT MAT	CHANNEL APPLICATION M-216-1 (SHEET 1 OF 2)	SLOPE APPLICATION M-216-1 (SHEET 2 OF 2)	MULCH/ PERMENANT SEED COVER	PROJECT QUANTITY
	ORGANIC FERTILIZER, HUMATE AND COMPOST	NATIVE (UPLAND)	N/A	N/A	N/A	WEED FREE STRAW (PAY ITEM 213-00004)	1.6 ACRES
	ORGANIC FERTILIZER, HUMATE AND COMPOST	NATIVE (UPLAND)	TRM (CLASS 2) (PAY ITEM 216-00302)	YES	N/A	SOIL RETENTION BLANKET (PAY ITEM 216-00201)	560 SY
	ORGANIC FERTILIZER, HUMATE AND COMPOST	NATIVE (UPLAND)	N/A	YES	N/A	SOIL RETENTION BLANKET (PAY ITEM 216-00201)	605 SY (5445 SF)
	ORGANIC FERTILIZER, HUMATE AND COMPOST	NATIVE (UPLAND)	N/A	N/A	YES	SOIL RETENTION BLANKET (PAY ITEM 216-00201)	4695 SY (42255 SF)
	ORGANIC FERTILIZER, HUMATE AND SPRAY-ON AMENDMENTS	NATIVE (UPLAND)	N/A	N/A	N/A	SPRAY-ON MULCH BLANKET (PAY ITEM 213-00012)	1.8 ACRES

Print Date: 5/12/16		<b>Sheet Revisions</b>			Colorado Department of Transportation  Region 0 TEB	<b>As Constructed</b>	<b>STORMWATER MANAGEMENT PLAN</b>			<b>Project No./Code</b> Project Number 12345 Sheet Number <b>S-13</b>
File Name: 12345_SWMP SITE MAP PERMANENT_1.dgn		Date:	Comments	Init.		No Revisions:	<b>SITE MAP - PERMANENT STABILIZATION</b>			
Horiz. Scale: 1":100'      Vert. Scale: As Noted						Revised:	Designer: HRED	Structure Numbers		
Unit Information      Unit Leader Initials						Void:	Detailer: HRED	Subset Sheets: 15 of 18		

PLOT\_INFO FROM SWMP DESIGNER



BEG. PROJ. TM 0123-456 STA. 812+00 = APPROX. MP 399.9

MATCH LINE STA 826+00.00

MILE  
0.4

815+00

820+00

825+00

SOIL RETENTION BLANKET  
ON SLOPES ABOVE WINGWALLS  
(150 SY)

SOIL RETENTION BLANKET  
ON SLOPES ABOVE WINGWALLS  
(210 SY)

VEGETATIVE BUFFER

EXISTING  
WETLANDS

SOIL RETENTION BLANKET  
ON SLOPES ABOVE WINGWALLS  
(250 SY)


SOIL RETENTION BLANKET  
ON SLOPES ABOVE WINGWALLS  
(185 SY)



Print Date: 5/12/16
File Name: 12345_SWMP SITE MAP PERMANENT_1.dgn
Horiz. Scale: 1":100'      Vert. Scale: As Noted
Unit Information      Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



Region 0      TEB

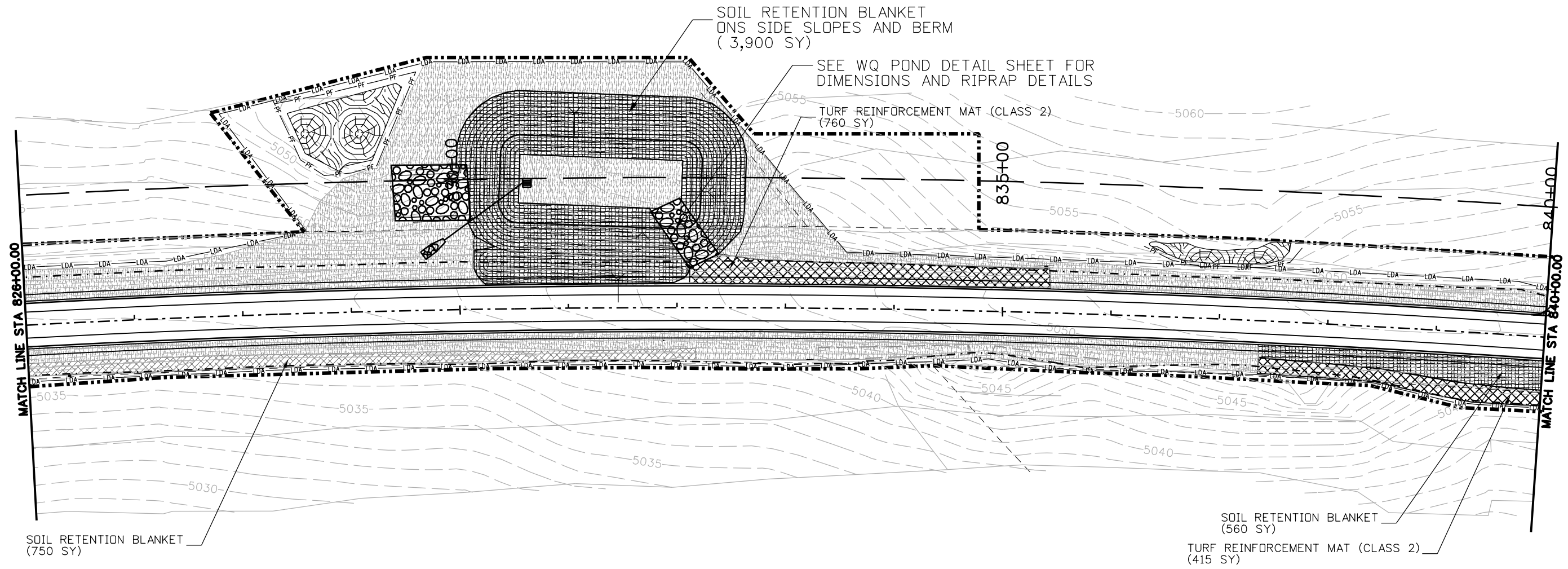
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As Constructed
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Revised:
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STORMWATER MANAGEMENT PLAN SITE MAP - PERMANENT STABILIZATION			
Designer:	HRED	Structure	
Detailer:	HRED	Numbers	
Sheet Subset:	SWMP	Subset Sheets:	16 of 18

Project No./Code
Project Number
12345
Sheet Number
S-13


PLOT\_INFO FROM SWMP DESIGNER



Print Date: 5/12/16	0000
File Name: 12345_SWMP SITE MAP PERMANENT_2.dgn	
Horiz. Scale: 1"=100'      Vert. Scale: As Noted	
Unit Information      Unit Leader Initials	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



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 Phone: XXX-XXX-XXXX FAX: XXX-XXX-XXXX

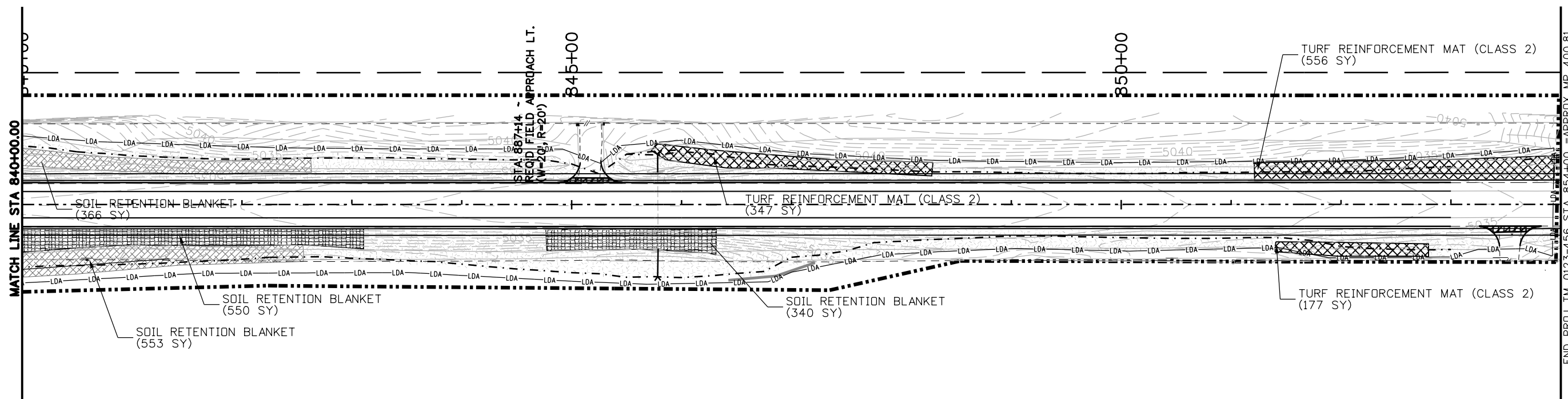
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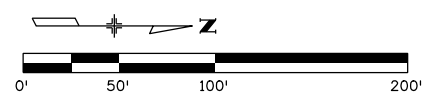
STORMWATER MANAGEMENT PLAN SITE MAP- PERMANENT STABILIZATION			
Designer:	HRED	Structure	
Detailer:	HRED	Numbers	
Sheet Subset:	SWMP	Subset Sheets:	17 of 18

Project No./Code
Project Number
12345
Sheet Number
S-14

PLOT\_INFO FROM SWMP DESIGNER



END PROJ. TM 0123-456 STA. 854+00 =APPROX. MP 400.81



Print Date: 5/12/16	0000
File Name: 12345_SWMP SITE MAP PERMANENT_3.dgn	
Horiz. Scale: 1"=100'      Vert. Scale: As Noted	
Unit Information      Unit Leader Initials	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

Region 0      TEB

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As Constructed
No Revisions:
Revised:
Void:

STORMWATER MANAGEMENT PLAN SITE MAP- PERMANENT STABILIZATION			
Designer:	HRED	Structure	
Detailer:	HRED	Numbers	
Sheet Subset:	SWMP	Subset Sheets:	18 of 18

Project No./Code
Project Number
12345
Sheet Number
S-15

PLOT\_INFO FROM SWMP DESIGNER

### **3 Specifications**

#### **3.1 Project and Standard Special Provisions**

#### **3.2 Standard Specifications**

#### **3.3 Modified or Added Specifications**



REVISION OF SECTION 208  
SAND BAG

Section 208 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.02 shall include the following:

(o) *Sand Bag.*

The sand bag shall consist of a woven polypropylene, polyethylene or polyamide fabric weighing a minimum of four ounces per square yard of fabric. The fabric shall have the following properties (fabric minimum weight: four ounces per square yard):

Property	Requirement	Test Method
Mullen Burst	300 psi	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

Burlap is not an acceptable fabric and shall not be used for sand bag material.

Sand bags shall consist of permeable material free from clay and deleterious material having the following properties:

Sieve Size	Percentage Passing
3/8"	100%
No. 4	70-100%

Permeable material shall have a sand equivalent value of not less than 75%

Fill material shall be submitted to the Engineer for approval prior to installation.

Completed sand bag shall meet the following requirements for size and weight:

Dimensions * (inches)	Weight-Minimum (pounds)
18 (Length) x 12 (Width) x 3 (thickness)	33

\*All dimensions are nominal

Substitutions for size, weight or both may be allowed, if preapproved by the Engineer.

Subsection 208.11 shall include the following:

Sand bags will be measured by the actual number of sand bags which are installed and accepted.

Subsection 208.12 shall include the following:

Pay Item	Pay Unit
Sand Bag	Each

REVISION OF SECTION 208  
Erosion Log (Type 3)

Section 208 of the Standard Specifications is hereby revised for this project as follows:

Subsection 208.02(h) shall include the following:

- (3) Erosion Log (Type 3) shall be curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, 100% biodegradable natural fiber tube netting (compostable) and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log called for on the plans. Netting shall be a woven cotton mesh with a maximum mesh size of .075 (inch) and have the index values as shown on Table 208-2. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.

Erosion log (Type 3) shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log.

**Table208-1  
NOMINAL DIMENSIONS OF EROSION LOGS**

Diameter Type 1 (Inches)	Length (feet)		Weight (minimum) (pounds/foot)	Stake Dimensions (Inches)
	Min.	Max.		
9	10	25	1.6	1.5 by 1.5 (nominal) by 18
12	10	10	2.5	1.5 by 1.5(nominal) by 24
20	10	10	4.0	2 by 2 (nominal) by 30

**Table208-2  
INDEX VALUES OF BIODEGRADABLE NETTING**

Property	Requirement	Test Method
Fabric Tensile Strength	>70 (lbs)	ASTM D3822
Biodegradable	100%	ASTM D 5988
Mesh Pattern	Rib	

Natural biodegradable fiber netting shall not contain any synthetic material woven into the netting such as polypropylene, nylon, polyethylene or polyester. Oxo-degradable or oxi-biodegradable petrochemical-based plastics shall also not be part of the netting material.

Burlap is not an acceptable netting material and shall not be used for Erosion Log (Type 3).

Prior to start of work the Contractor shall submit a Certified Test Report (CTR) in accordance with subsection 106.13 confirming all material requirements.

Subsection 208.12 shall include the following:

Pay Item	Pay Unit
Erosion Log (Type 3) (9 Inch)	Linear Foot
Erosion Log (Type 3) (12 Inch)	Linear Foot
Erosion Log (Type 3) (20 Inch)	Linear Foot

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
(CONTRACTOR OBTAINED STORMWATER PERMIT)

## NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

### **Instructions for use on CDOT construction projects:**

Use in projects having more than one acre of disturbed area for which the Contractor obtains the CDPS-SCP stormwater permit.

The Designer should coordinate with the Resident Engineer and the Region Water Pollution Control Manger on the use of this standard special provision.

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
(CONTRACTOR OBTAINED STORMWATER PERMIT)

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 107.25 and replace with the following:

**107.25 Water Quality Control.** The project work shall be performed using practices that minimize water pollution during construction. All the practices listed in (b) below shall be followed to minimize the pollution of any State waters, including wetlands.

*(a) Definitions.*

1. Areas of Disturbance (AD). Locations where any activity has altered the existing soil cover or topography, including vegetative and non-vegetative activities during construction.
2. Construction Site Boundary/Limits of Construction (LOC). The project area defined by the Stormwater Construction Permit.
3. Discharge of Pollutants. One or more pollutants leaving the LOC or entering State waters or other conveyances.
4. Limits of Disturbed Area (LDA). Proposed limits of ground disturbance as shown on the Plans.
5. Pollutant. Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal, or agricultural waste, as defined in the Colorado Code of Regulations (CCR) [5 CCR 1002-61, 2(76)]
6. Pollution. Man-made, man-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water. [25-8-103 (16), CRS]
7. State waters. Defined in subsection 101.77.

*(b) Construction Requirements.*

1. The Contractor shall comply with the "Colorado Water Quality Control Act" (Title 25, article 8, CRS), the "Protection of Fishing Streams" (Title 33, Article 5, CRS), the "Clean Water Act" (33 USC 1344), regulations promulgated, certifications or permits issued, and to the requirements listed below. In the event of conflicts between these requirements and water quality control laws, rules, or regulations of other Federal, or State agencies, the more restrictive laws, rules, or regulations shall apply.
2. If the Contractor determines construction of the project will result in a change to the permitted activities or LDA, the Contractor shall detail the changes in a written report to the Engineer. Within five days after receipt of the report, the Engineer, after coordination with Region Planning and Environmental Manager (RPEM), will approve or reject in writing the request for change, or detail a course of action including revision of existing permits or obtaining new permits.
3. If construction activities result in noncompliance of any permit requirement, the project will be suspended and the permitting agency notified, if required. The project will remain suspended until the Engineer receives written approval by the permitting agency.
4. The Contractor is legally required to obtain all permits associated with specific activities within, or off the Right of Way, such as borrow pits, concrete or asphalt plant sites, waste disposal sites, or other facilities. It is the Contractor's responsibility to obtain these permits. The Contractor shall consult with the Engineer, and contact the Colorado Department of Public Health and Environment (CDPHE) or other appropriate federal, state, or local agency to determine the need for any permit.

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
(CONTRACTOR OBTAINED STORMWATER PERMIT)

5. The Contractor shall conduct the work in a manner that prevents pollution of any adjacent State waters. Erosion control work shall be performed in accordance with Section 208, this subsection, and all other applicable parts of the Contract.
6. Prior to the Environmental Pre-construction Conference the SWMP Administrator, identified in subsection 208.03(c), shall identify and describe all potential pollutant sources, including materials and activities, and evaluate them for the potential to contribute pollutants to stormwater discharges associated with construction activities. The list of potential pollutants shall be continuously updated during construction. At a minimum, each of the following shall be evaluated for the potential for contributing pollutants to stormwater discharges and identified in the SWMP, if found to have such potential:
  - (1) All exposed and stored soils
  - (2) Vehicle tracking of sediments
  - (3) Management of contaminated soils
  - (4) Vehicle and equipment maintenance and fueling
  - (5) Outdoor storage activities (building materials, fertilizers, chemicals, etc.)
  - (6) Significant dust or particle generating processes
  - (7) Routine maintenance involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
  - (8) On site waste management practices (waste piles, dumpsters, etc.)
  - (9) Dedicated asphalt and concrete batch plants
  - (10) Concrete truck and equipment washing, including the concrete truck chute and associated fixtures and equipment
  - (11) Concrete placement and finishing tool cleaning
  - (12) Non-industrial waste sources that may be significant, such as worker trash and portable toilets
  - (13) Loading and unloading operations
  - (14) Other areas or procedures where spills could occur

The SWMP Administrator shall record the location of potential pollutants on the site map. Descriptions of the potential pollutants shall be added to the SWMP notebook.

At or prior to the Environmental Pre-construction Conference the Contractor shall submit a Spill Response Plan for any petroleum products, chemicals, solvents, or other hazardous materials in use, or in storage, at the work site. See subsection 208.06(c) for Spill Response Plan requirements. Work shall not be started until the plan has been submitted to and approved by the Engineer.

On site above ground bulk storage containers with a cumulative storage shell capacity greater than 1,320 U.S. gallons, or storage containers having a "reasonable expectation of an oil discharge" to State waters, are subject to the Spill Prevention, Control and Countermeasure Plan (SPCC) Rule. Oil of any type and in any form is covered, including, but not limited to: petroleum; fuel oil; sludge; oil refuse; oil mixed with wastes other than dredged spoil. EPA Region 8 is responsible for administering and enforcing the SPCC plan requirements in Colorado. Prior to start of work, the Contractor shall submit a SPCC Form which has been approved by the EPA for the project.

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
(CONTRACTOR OBTAINED STORMWATER PERMIT)

7. The Contractor shall obtain a Construction Dewatering (CDW) permit from CDPHE anytime uncontaminated groundwater, including groundwater that is commingled with stormwater or surface water, is encountered during construction activities and the groundwater or commingled water needs to be discharged to State waters. If contaminated groundwater is encountered, a Remediation permit may be needed from CDPHE in accordance with Section 250.
8. Water from dewatering operations shall not be directly discharged into any State waters, unless allowed by a permit. Water from dewatering shall not be discharged into a ditch unless:
  - (1) Written permission is obtained from the owner of the ditch.
  - (2) It is covered in the approved CDW or Remediation permit that allows the discharge.
  - (3) A copy of this approval is submitted to the Engineer. A copy of the Permit shall be submitted to the Engineer prior to dewatering operations commencing.

If the site is covered by a Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) and the following conditions are met, a separate CDW permit will not be required for discharge to the ground:

- (1) The source is identified in the Stormwater Management Plan (SWMP) as updated by the SWMP Administrator.
- (2) The SWMP describes and locates the practices implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater.
- (3) The SWMP describes and locates the practices to be used that will ensure that no groundwater from construction dewatering is discharged from the LOC as surface runoff or to surface waters or storm sewers.
- (4) Groundwater and groundwater combined with stormwater do not contain pollutants in concentrations exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42.

If surface water are diverted around a construction area and no pollutants are introduced during the diversion, a CDW Permit is not required. If the diverted water enters the construction area and contacts pollutant sources (e.g. disturbed soil, concrete washout, etc.), the Contractor shall obtain a CDW permit for the discharge of this water to State waters or to the ground.

Construction Dewatering may be discharged to the ground on projects that are not covered by a CDPS-SCP if the conditions of the CDPHE's low risk guidance document for Discharges of Uncontaminated Groundwater to Land are met. The conditions of this guidance are:

- (1) The source of the discharge is solely uncontaminated groundwater or uncontaminated groundwater combined with stormwater and does not contain pollutants in concentrations that exceed water quality standards for groundwater referenced above.
- (2) Discharges from vaults or similar structures shall not be contaminated. Potential sources of contamination include process materials used, stored, or conveyed in the structures, or introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.
- (3) The groundwater discharge does not leave the project boundary limits where construction is occurring.
- (4) Land application is conducted at a rate and location that does not allow for any runoff into State waters or other drainage conveyance systems, including but not limited to streets, curb and gutter, inlets, borrow ditches, open channels, etc.

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
(CONTRACTOR OBTAINED STORMWATER PERMIT)

- (5) Land application is conducted at a rate that does not allow for any ponding of the groundwater on the surface, unless the ponding is a result of implementing BMPs that are designed to reduce velocity flow. If the BMPs used result in ponding, the land application shall be done in an area with a constructed containment, such as an excavation or berm area with no outfall. The constructed containment shall prevent the discharge of the ponding water offsite as runoff.
- (6) A visible sheen is not evident in the discharge.
- (7) BMPs are implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.
- (8) All BMPs used shall be selected, installed, implemented, and maintained according to good Engineering, hydrologic and pollution control practices. The selected BMPs shall provide control for all potential pollutant sources associated with the discharge of uncontaminated groundwater to land. The discharge shall be routed in such a way that it will not cause erosion to land surface. Energy dissipation devices designed to protect downstream areas from erosion by reducing the velocity of flow (such as hose attachments, sediment and erosion controls) shall be used when necessary to prevent erosion.

Discharged water shall be drained slowly so that it soaks into the ground without running outside the project boundary or causing flooding issues. The discharge shall be routed in such a way that it will not contact petroleum products or waste.

9. At least 15 days prior to commencing dredging or fill operations in a watercourse, the Contractor shall provide written notification to owners or operators of domestic or public water supply intakes or diversion facilities, if these facilities are within 20 miles downstream from the dredging or fill operations. Notification shall also be given to Owners or operators of other intakes or diversions that are located within five miles downstream from the site of the project. Identities of downstream owners and operators can be obtained from Colorado Division of Water Resources, Office of the State Engineer.
10. Temporary fill into wetlands or streams will not be allowed, except as specified in the Contract and permits. If such work is allowed, upon completion of the work all temporary fills shall be removed in their entirety and disposed of in an upland location outside of flood plains unless otherwise specified in the Contract.
11. Construction operations in waters of the United States as defined in 33 CFR Part 328.3, including wetlands, shall be restricted to areas and activities authorized by the U.S. Army Corps of Engineers as shown in the Contract. Fording waters will be allowed only as authorized by the U.S. Army Corps of Engineers 404 Permit.
12. Wetland areas outside of the permitted limits of disturbance shall not be used for storage, parking, waste disposal, access, borrow material, or any other construction support activity.
13. Pollutant byproducts of highway construction, such as concrete, asphalt, solids, sludges, pollutants removed in the course of treatment of wastewater, excavation or excess fill material, and material from sediment traps shall be handled, stockpiled, and disposed of in a manner that prevents entry into State waters, including wetlands. Removal of concrete waste and washout water from mixer trucks, concrete finishing tools, concrete saw and all concrete material removed in the course of construction operations or cleaning shall be performed in a manner that prevents waste material from entering State waters. A minimum of ten days prior to the start of the construction activity, the Contractor shall submit in writing a Method Statement for Containing Pollutant Byproducts to the Engineer for approval.
14. The use of chemicals such as soil stabilizers, dust palliatives, herbicides, growth inhibitors, fertilizers, deicing salts, etc., shall be in accordance with the manufacturer's recommended application rates, frequency, and instructions.

REVISION OF SECTION 107  
WATER QUALITY CONTROL  
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15. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with the original manufacturer's label. Materials shall not be stored in a location where they may be carried into State waters at any time.
16. Spill prevention and containment measures conforming to subsection 208.06 shall be used at storage, and equipment fueling and servicing areas to prevent the pollution of any State waters, including wetlands. All spills shall be cleaned up immediately after discovery, or contained until appropriate cleanup methods can be employed. Manufacturer's recommended methods for spill cleanup shall be followed, along with proper disposal methods. When required by the Colorado Water Quality Control Act, Regulation 5 CCR 1002-61, spills shall be reported to the Engineer and CDPHE in writing.
17. The Contractor shall prevent construction activities from causing grass or brush fires.
18. The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.
19. Prior to start of work, the Contractor shall certify in writing to the Engineer that construction equipment has been cleaned prior to initial site arrival. Vehicles and equipment shall be free of soil and debris capable of transporting noxious weed seeds or invasive species onto the site. Additional equipment required for construction shall also be certified prior to being brought onto the project site.
20. Vehicles which have been certified by the Contractor as having been cleaned prior to arrival on site may be cleaned on site at an approved area where wash water can be properly contained. Vehicles leaving and reentering the project site shall be recertified.
21. At the end of each day the Contractor shall collect all trash and dispose of it in appropriate containers.
22. Construction waste that is considered a pollutant or contaminant shall be collected and disposed of in appropriate containers. This material may be stockpiled on the project when it is contained or protected by an appropriate BMP.

(c) *Measurement and Payment.*

1. All the work listed in (b) above, including but not limited to dewatering, erosion control for dewatering, and disposal of water resulting from dewatering operations, including all costs for CDPHE concurrences and permits, will not be measured and paid for separately, but shall be included in the work.
2. The Contractor shall be liable for any penalty (including monetary fines) applied to the Department caused by the Contractor's noncompliance with any water quality permit or certification. Monetary fines shall be deducted from any money due to the Contractor. If the monetary fine is in excess of all the money due to the Contractor, then the Contractor shall pay to the Department the amount of such excess.
3. The Contractor will not receive additional compensation, or time extensions, for any disruption of work or loss of time caused by any actions brought against the Contractor for failure to comply with good Engineering, hydrologic and pollution control practices.
4. If a spill occurs as a direct result of the Contractor's actions or negligence, the clean-up of such spill shall be performed by the Contractor at the Contractor's expense.
5. Areas exposed to erosion by fire resulting from the Contractor's operations shall be stabilized in accordance with Section 208 by the Contractor and at the Contractor's expense.

(d) *Contractor Obtained Stormwater Construction Permit.* The Contractor shall obtain a Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) for any project work that disturbs at least 1 acre of land. The Contractor shall apply for and obtain the permit upon award of the Contract. The Contractor shall provide a copy of permit certification or the submitted CDPS-SCP application to the Engineer prior to or



REVISION OF SECTION 107  
WATER QUALITY CONTROL  
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at Pre-construction Conference. No work shall begin until the CDPS-SCP permit has been approved from CDPHE, unless otherwise directed. A copy of the Permit and application to obtain a permit shall be placed in the project SWMP notebook.

If a Utility Company has pulled a permit for the area prior to the Contractor being on site, then the Contractor shall coordinate with the Utility Company to transfer those areas over to the Contractor prior to work commencing. The Contractor shall not commence construction until Application for Transfer of Ownership for All Permits, Certifications and Authorizations has been approved by CDPHE and submitted to the Engineer.

To initiate Partial Acceptance of the stormwater construction work (including seeding and planting required for erosion control), the Contractor shall request in writing a Stormwater Completion Walkthrough. The Engineer will set up the walkthrough and will include: the Engineer or designated representative, Superintendent or designated representative, Stormwater Management Plan (SWMP) Administrator, Region Water Pollution Control Manager (RWPCM) and Landscape Architect representing the region. Unsatisfactory and incomplete erosion control work will be identified in this walkthrough, and will be summarized by the Engineer in a punch list. The Water Quality Permit Transfer to Maintenance Punch List may be used as a template in creating the Engineer's punch list.

The Engineer will coordinate with CDOT Maintenance on regular inspections of the corrective work. The completed action items associated with the corrective work shall be shown as completed on the Punch List. Upon completion of all items shown, the Contractor shall submit the completed Punch List to the Engineer for review. Upon written approval of the Punch List, the Contractor shall submit the "Application for Transfer of Ownership for All Permits, Certifications and Authorizations" to the CDPHE requesting transfer of ownership of the CDPS-SCP to CDOT Maintenance. When requested by CDOT Maintenance and approved by the Engineer, the Permit may be transferred by the Contractor to the Resident Engineer instead of CDOT Maintenance.

Until the transfer of the permit has been approved by the CDPHE the Contractor shall continue to adhere to all permit requirements. Requirements shall include erosion control inspections, BMP installation, BMP maintenance, BMP repair, including seeded areas, and temporary BMP removal. All documentation shall be submitted to the Engineer and placed in the SWMP notebook.

All costs associated with the Contractor applying for, holding, and transferring the CDPS-SCP permit between parties will not be measured and paid for separately, but shall be included in the work in accordance with subsection 107.02.

## **SECTION 207 TOPSOIL**

### **DESCRIPTION**

**207.01** This work consists of salvaging and stockpiling topsoil, and excavating suitable topsoil from stockpiles, contractor sources, available sources, or from the approved natural ground cover to place on designated areas. It shall include the placing of topsoil upon constructed cut and fill slopes after grading operations are completed.

### **MATERIALS**

**207.02** Topsoil shall consist of loose friable soil from the zone of major root development free of subsoil, refuse, stumps, woody roots, rocks, brush, noxious weed seed and reproductive plant parts from current state and county weed lists, heavy clay, hard clods, toxic substances, or other material which would be detrimental to its use on the project.

Wetland topsoil material shall consist of the moist, organic soil, including any existing wetland vegetation and seeds, to be excavated from areas as shown on the plans or as directed.

### **CONSTRUCTION REQUIREMENTS**

**207.03** Wetland topsoil material shall be excavated from the designated area to a maximum depth of 12 inches, or as otherwise designated, and placed within 24 hours in the specified area. The Contractor shall prepare the relocation site to elevations specified and approved by the Engineer prior to excavating the wetlands. If the Engineer determines that this is not possible, then the Contractor shall stockpile the material in an approved area, to remain undisturbed until the relocation site has been prepared. Storage time within the stockpile shall be as short as possible. Wetland topsoil material shall be placed over the prepared relocation areas to a depth of 12 inches, or as otherwise designated.

Topsoil within the limits of the roadway shall be salvaged prior to beginning hauling, excavating, or fill operations by excavating and stockpiling the material at designated locations in a manner that will facilitate measurement, minimize sediment damage, and not obstruct natural drainage. Topsoil shall be placed directly upon completed cut and fill slopes whenever conditions and the progress of construction will permit.

Topsoil shall be placed at locations and to the thickness provided in the Contract and shall be keyed and tracked to the underlying material without creating a compacted surface by the use of harrows, bulldozers, rollers, or other equipment suitable for the purpose.

Salvaged topsoil exceeding the quantity required under the Contract shall be disposed of at locations acceptable to the Engineer.

## METHOD OF MEASUREMENT

**207.04** Topsoil salvaged from the roadway and placed in stockpiles shall be measured in the stockpile in cubic yards by the method of average end areas and paid for as Stockpile Topsoil.

Topsoil salvaged from the roadway, taken from stockpiles or from approved pits, hauled and placed directly upon completed cut and fill slopes shall be measured at its source in cubic yards, as described in subsection 203.13, and paid for as Topsoil.

Topsoil generated from the roadway and placed in windrows will be measured at its source in cubic yards, as described in subsection 203.13, and paid for as Stockpile Topsoil. When it is subsequently placed upon the completed cut and fill slopes, the same quantity will be paid for as Topsoil, except that adjustment in quantity shall be made if the total windrowed quantity is not utilized.

Wetland topsoil material excavated from areas within the right-of-way and placed in stockpiles will be measured in the stockpile by the method of average end areas and paid for as Stockpile Wetland Topsoil.

Wetland topsoil material excavated from areas within the right-of-way or from stockpiles, hauled and placed directly on a relocated site will be measured at its source in cubic yards, as described in subsection 203.13, and paid for as Wetland Topsoil.

Topsoil secured from the Contractor's source will be measured in place by measuring random depths of topsoil, and computing the volume by multiplying the area times the average depth

## BASIS OF PAYMENT

**207.05** The accepted quantities measured as provided above will be paid for at the contract unit price per cubic yard for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Stockpile Topsoil	Cubic Yard
Topsoil	Cubic Yard
Stockpile Wetland Topsoil	Cubic Yard
Wetland Topsoil	Cubic Yard

April 20, 2017

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**NOTICE**

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in all projects having erosion control.

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Section 208 is hereby deleted from the Standard Specifications for this project and replaced with the following:

**DESCRIPTION**

**208.01** This work consists of constructing, installing, maintaining, and removing when required, Best Management Practices (BMPs) during the life of the Contract to prevent or minimize erosion, sedimentation, and pollution of any State waters as defined in subsection 107.25, including wetlands.

The Contractor shall coordinate the construction of temporary BMPs with the construction of permanent BMPs to assure economical, effective, and continuous erosion and sediment control throughout the construction period.

When a provision of Section 208 or an order by the Engineer requires that an action be immediate or taken immediately, it shall be understood that the Contractor shall at once begin effecting completion of the action and pursue it to completion in a manner acceptable to the Engineer, and in accordance with the Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) requirements.

**MATERIALS**

**208.02** Erosion control materials are subject to acceptance in accordance with subsection 106.01. Erosion control materials shall be subject to the following approval process:

Material	Approval Process	Notes:
Erosion Bales (Weed Free)	COC	The Contractor shall provide a transit certificate number or a copy of the transit certificate as supplied from the producer.
Silt Fence	COC	
Silt Berm	APL	
Erosion Log (Type 1 and 2)	COC	
Silt Dikes	COC	
Pre-fabricated Concrete Washout Structures (above ground)	APL	
Pre-fabricated Vehicle Tracking Pad	APL	
Aggregate Bag	COC	
Storm Drain Inlet Protection (Type I, II and III)	APL	

The material for BMPs shall conform to the following:

- (a) *Erosion Bales.* Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free erosion bale shall be identified by blue and orange twine binding the bales.

The Contractor shall not place certified weed free erosion bales or remove their identifying twine until the Engineer has inspected and accepted them.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the Colorado Department of Agriculture, Weed Free Forage Program, 305 Interlocken Pkwy, Broomfield, CO 80021, Contact: Weed Free Forage Coordinator at (303) 869-9038. Also available at [www.colorado.gov/ag/csd](http://www.colorado.gov/ag/csd).

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Bales shall be approximately 5 cubic feet of material and weigh at least 35 pounds. Stakes shall be wood and shall be 2 inch by 2 inch nominal.

- (b) *Silt Fence*. Silt fence posts shall be wood with a minimum length of 42 inches. Wood posts shall be 1.5 inch by 1.5 inch nominal. Geotextile shall be attached to wood posts with three or more staples per post.

Silt fence geotextile shall conform to the following requirements:

**Physical Requirements for Silt Fence Geotextiles**

Property	Wire Fence Supported Requirements	Self-Supported Requirements Geotextile Elongation <50%	Test Method
Grab Strength, lbs	90 minimum	124 minimum	ASTM D 4632
Permittivity sec-1	0.05	0.05	ASTM D 4491
Ultraviolet Stability	Minimum 70% Strength Retained	Minimum 70% Strength Retained	ASTM D 4355

Silt Fence (Reinforced). Silt fence posts shall be metal "studded tee" T-post with a minimum length of 66 inches. Metal posts shall be "studded tee" with .095 inch minimum wall thickness. Wire fabric reinforcement for the silt fence geotextile shall be a minimum of 14 gauge, with a maximum mesh spacing of 6 inches. Geotextile shall be attached to welded wire fabric with ties or nylon cable ties 12 inch O.C. at top, mid and bottom wire. Welded wire fabric shall be attached to the post with a minimum three 12 gauge wire ties per post. Vinyl or rubber safety caps shall be installed on all T-post.

- (c) *Temporary Berms*. Temporary berms shall be constructed of compacted soil.
- (d) *Temporary Slope Drains*. Temporary slope drains shall consist of fiber mats, plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber or other materials suitable to carry accumulated water down the slopes. Outlet protection riprap shall conform to section 506. Erosion control geotextile shall be a minimum Class 2, conforming to subsection 712.08.
- (e) *Silt Berm*. Silt berm shall consist of an ultraviolet (UV) stabilized high-density polyethylene, shall be triangular in shape, and shall have the following dimensions:

Width	6 - 11 inches
Height	6 - 10 inches
Weight	0.3 - 1.4 lbs./sq. ft.
Percent Open Area	30 – 50%

Securing spikes shall be 10 to 12 inch x 0.375 inch diameter (minimum).

- (f) *Rock Check Dam*. Rock Check dams shall be constructed of stone. Stone shall meet the requirements of Section 506.
- (g) *Sediment Trap*. In constructing an excavated Sediment Trap, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of subsection 203.03. Outlet protection riprap shall be the size specified in the Contract and shall conform to Section 506. Erosion control geotextile shall be a minimum Class 1, conforming to subsection 712.08.

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(h) *Erosion log.* Shall be one of the following types unless otherwise shown on the plans:

- (1) Erosion Log (Type 1) shall be curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, photo-degradable tube netting and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log called for on the plans. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.
- (2) Erosion Log (Type 2) shall consist of a blend of 30-40 percent weed free compost and 60-70 percent wood chips. The compost/wood blend material shall pass a 50 mm (2 inch) sieve with a minimum of 70 percent retained on the 9.5 mm (3/8 inch) sieve and comply to subsection 212.02 for the remaining compost physical properties. The compost/wood chip blend may be pneumatically shot into a geotextile cylindrical bag or be pre-manufactured. The geotextile bag shall consist of material with openings of 1/8 to 3/8 inches of HDPE or polypropylene mesh (knitted, not extruded), and contain the compost/wood chip material while not limiting water infiltration.

Erosion log (Type 1 and Type 2) shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log.

**Table208-1**  
**NOMINAL DIMENSIONS OF EROSION LOGS**

Diameter Type 1 (Inches)	Diameter Type 2 (Inches)	Length (feet)		Weight (minimum) (pounds/foot)	Stake Dimensions (Inches)
		Min.	Max.		
9	8	10	180	1.6	1.5 by 1.5 (nominal) by 18
12	12	10	180	2.5	1.5 by 1.5(nominal) by 24
20	18	10	100	4.0	2 by 2 (nominal) by 30

Stakes to secure erosion logs shall consist of pinewood or hardwood.

- (i) *Silt Dikes.* Silt dikes shall be pre-manufactured triangular shaped urethane foam covered with a woven geotextile fabric. The fabric aprons shall extend a minimum of two feet beyond each side of the triangle.

Each silt dike shall have the following dimensions:

Dimension	Length
Center height	8 to 10 inches
Base	16 to 21 inches
Section length	3 to 7 feet
Section width including fabric extensions	5.6 feet

Staples shall be 6 gauge and at least 8 inches long.

- (j) *Concrete Washout Structure.* The Contractor shall construct a washout structure that will contain washout from concrete placement and construction equipment cleaning operations. Embankment required for the concrete washout structure may be excavated material, provided that this material meets the requirements of Section 203 for embankment.

A pre-fabricated concrete washout structure shall only be used when specified in the Contract. It shall consist of a watertight container designed to contain liquid and solid waste from concrete washout.

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- (k) *Vehicle Tracking Pad.* Aggregate for the vehicle tracking pad shall be crushed natural aggregate with at least two fractured faces that meets the following gradation requirements:

Sieve size	Percent by weight Passing Square Mesh Sieves
75 mm (3 inch)	100
50 mm (2 inch)	0-25
19.0 mm (¾ inch)	0-15

Recycled crushed concrete or asphalt shall not be used for vehicle tracking pads.

Erosion Control Geotextile shall be Class 2 and conform to the requirements of subsection 712.08.

Pre-fabricated vehicle tracking pads if specified in the Contract shall have the following properties.

Minimum overall dimensions of the modular systems shall be:

Width of pad along edge of roadway	14 feet
Length of pad	30 feet

Weight (min.) (lbs./sq. ft.)	8
Crush strength (min.) (psi)	400

- (l) *Aggregate Bag.* Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter (inches)	Weight (minimum) (pounds per foot)
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to subsection 703.09, Table 703-7 for Class C.

The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D 4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D 4533
Mullen Burst	300 psi	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

- (m) *Storm Drain Inlet Protection.* Storm drain inlet protection shall consist of aggregate filled fabric with the following dimensions:



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Storm Drain Inlet Protection Properties	Protection Types		
	<sup>1</sup> Type I	Type II	<sup>3</sup> Type III
Diameter	4 in.	4 in.	N/A
Minimum Section Length	7 ft.	5 ft.	5 ft.
Apron Insert	---	30 in. or sized to grate	30 in or sized to grate
<sup>1</sup> Type I protection shall be used with Inlet Type R. <sup>2</sup> Type II protection shall be used with Combination Inlet. Option A or B <sup>3</sup> Type III protection Inlet Vane Gate only. Option A or B			

The storm drain inlet protection (Type I, II and III) shall consist of a woven geotextile fabric with the following properties:

Property	Test Method	Unit	Requirement
Grab tensile strength	ASTM D 4632	lbs.	minimum 350X280
Mullen Burst Strength	ASTM D 3786	lbs.	600
Trapezoid Tear Strength	ASTM D 4533	lbs.	minimum 110X95
Percent Open Area	COE-22125-86	%	28
Water Flow Rate	ASTM D 4491	gal./min./sq. ft.	250
Ultraviolet Resistance	ASTM D 4355	%	70

Curb roll for storm drain inlet protection (Type I and II) shall have an approximate weight of 7 to 10 pounds per linear foot of device. The device shall be capable of conforming to the shape of the curb. Aggregate contained in the storm drain inlet device shall consist of gravel or crushed stone conforming to Table 703-7 for Class C.

Storm drain inlet protection (Type III) shall have insert containment (option A) or insert without storage capacity (option B).

**CONSTRUCTION REQUIREMENTS**

**208.03 Project Review, Schedule, and Erosion Control Management.** Prior to construction, an on-site Environmental Pre-construction Conference shall be held. The conference shall be attended by:

- (1) The Engineer,
- (2) The Superintendent,
- (3) The Contractor's SWMP Administrator
- (4) Supervisors or Foremen of subcontractors working on the project,
- (5) The Region Water Pollution Control Manager (RWPCM), and

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- (6) CDOT personnel (e.g., CDOT Landscape Architect) who prepared or reviewed the Stormwater Management Plan (SWMP).

At this conference, the attendees shall discuss the SWMP, CDPS-SCP, sensitive habitats on site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.

Prior to beginning construction the Contractor shall evaluate the project site for storm water draining into or through the site. When such drainage is identified, BMPs (i.e., Control Measures) shall be used if possible to divert stormwater from running on-site and becoming contaminated with sediment or other pollutants. The diversion may be accomplished with a temporary pipe or other conveyance to prevent water contamination or contact with pollutants. Run-on water that cannot be diverted shall be treated as construction runoff and adequate BMPs shall be employed.

The SWMP Administrator shall evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, BMPs shall be used to protect off-site water from becoming contaminated with sediment or other pollutants.

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented BMP added to the SWMP site map.

Prior to construction, the Contractor shall implement appropriate BMPs for protection of wetlands, sensitive habitat and existing vegetation from ground disturbance and other pollutant sources, in accordance with the approved project schedule as described in subsection 208.03(b).

When additional BMPs are required and approved by the Engineer, the Contractor shall implement the additional BMPs and the SWMP Administrator shall record and describe them on the SWMP site map. The approved BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12.

- (a) *Project Review.* The Contractor may submit modifications to the Contract's BMPs in a written proposal to the Engineer. The written proposal shall include the following information:

- (1) Reasons for changing the BMPs.
- (2) Diagrams showing details and locations of all proposed changes.
- (3) List of appropriate pay items indicating new and revised quantities.
- (4) Schedules for accomplishing all erosion and sediment control work.
- (5) Effects on permits or certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within 5 working days after the submittal. The Engineer may require additional control measures prior to approving the proposed modifications. Additional modifications and additional BMPs will be paid for at the Contract Unit Price for the specific items involved. If no items exist, they will be paid for as extra work in accordance with subsection 109.04.

- (b) *Erosion and Sediment Control Activities.* The erosion and sediment control activities shall be included in the weekly meeting update. The project schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features and stabilization. Project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage and asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's BMPs, the Contractor shall propose revised BMPs to the Engineer for approval in writing. If necessary, the SWMP Administrator shall update proposed sequencing of major activities in the SWMP. Revisions shall not be implemented until the proposed measures have been approved in writing by the Engineer.
- (c) *Erosion Control Management (ECM).* Erosion Control Management for this project shall consist of Erosion Control Inspection and the SWMP Administration. All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisory Certificate Training (TECS) as provided by the Department. The Superintendent will not be permitted to serve in an ECM role. The Erosion Control Inspector (ECI) and the SWMP Administrator may be the same person in projects involving less than 40 acres of disturbed area.

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1. SWMP Administration. The SWMP shall be maintained by a SWMP Administrator. In the case of a project requiring only one TECS, the SWMP Administrator may also be the ECI for the project. The name of the SWMP Administrator shall be recorded on the SWMP Section 3. B. The SWMP Administrator shall have full responsibility to maintain and update the SWMP and identify to the Superintendent critical action items needed to conform to the CDPS-SCP as follows:
  - (1) Complete the SWMP Notebook as described in subsection 208.03 (d).
  - (2) Participate in the Environmental Pre-construction Conference
  - (3) Attend weekly meetings
  - (4) Attend all Headquarter and Region water quality control inspections. The Contractor and the Contractor's SWMP Administrator will be notified a minimum of five days in advance of each inspection by the CDOT region or headquarter water quality staff.
  - (5) Coordinate with the Superintendent to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
  - (6) Coordinate with the Superintendent to ensure that all labor, material, and equipment needed to install, maintain, and remove BMPs are available as needed.
  - (7) During construction, update and record the following items on the SWMP site map as changes occur:
    - (i) Limits of Construction (LOC).
    - (ii) Areas of disturbance (AD)
    - (iii) Limits of Disturbance (LDA)
    - (iv) Limits of cut and fill.
    - (v) Areas used for storage of construction materials, equipment, soils, or wastes.
    - (vi) Location of any dedicated asphalt or concrete batch plants.
    - (vii) Location of construction offices and staging areas.
    - (viii) Location of work access routes during construction.
    - (ix) Location of borrow and waste.
    - (x) Location of temporary, interim and permanent stabilization.
    - (xi) Location of outfall(s)
    - (xii) Arrows showing direction of surface flow
    - (xiii) Structural and non-structural BMPs
    - (xiv) LDA and LOC lines as defined in subsection 107.25
  - (8) Amend the SWMP whenever there are: additions, deletions, or changes to BMPs. SWMP revisions shall be recorded immediately. Items shall be dated and initialed by the SWMP Administrator. Specifically, amendments shall include the following:
    - (i) A change in design, construction, operation, or maintenance of the site which would require the implementation of new or revised BMPs; or

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- (ii) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
  - (iii) Changes when BMPs are no longer necessary and are removed.
- (9) Complete vegetative survey transects when required in accordance with CDOT Erosion Control and Stormwater Quality Guide.
- (10) Start a new site map before the current one becomes illegible. All site maps shall remain in the SWMP notebook.
- (11) Document all inspection and maintenance activities. The SWMP and documentation shall be kept on the project site.
- (12) When adding or revising BMPs on the SWMP, add a narrative explaining what, when, where, why, and how the BMP is being used, and add a detail to the SWMP notebook.
- (i) How to install and inspect the BMP
  - (ii) Where to install the BMP
  - (iii) When to maintain the BMP
- (13) If using existing topography, vegetation, etc. as a BMP, label it as such on the SWMP site map; add a narrative as to when, where, why, and how the BMP is being used.
- (14) Indicate BMPs in use or not in use by recording on Standard Plans M-208-1, M-216-1, and M-615-1 in the SWMP notebook
- (15) Record on the SWMP, the approved Method Statement for Containing Pollutant Byproducts.
- (16) Update the potential pollutants list in the SWMP notebook and Spill Response Plan throughout construction.
2. Erosion Control Inspection.
- One ECI is required for every 40 acres of total disturbed area which is currently receiving temporary and interim stabilization measures as defined in subsection 208.04 (e). An ECI shall not be responsible for more than 40 acres in the project. Accepted permanent stabilization methods as defined in subsection 208.04 (e) will not be included in the 40 acres.
- ECI duties shall be as follows:
- (1) Coordinate with the SWMP Administrator on reporting the results of inspections
  - (2) Review the construction site for compliance with the Stormwater Construction Permit.
  - (3) Inspect with the Superintendent and the Engineer (or their designated representatives) the stormwater management system at least every seven calendar days. Post storm event inspections shall be conducted within 24 hours after the end of any precipitation or snow melt event that may cause surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to commencing construction activities, but no later than 72 hours following the storm event. The occurrence of delay in inspections shall be documented in the inspection report. Form 1176 shall be used for all 7 day inspections and inspections following storm events. The Contractor shall notify the Erosion control inspector when a storm event occurs. Failure to perform inspections on time will result in liquidated damages in accordance with subsection 208.09.

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Inspections are not required at sites when construction activities are temporarily halted, when snow cover exists over the entire site and melting conditions do not pose a risk of surface erosion. This exception shall be applicable only during the period where melting conditions do not exist, and applies to the routine 7 day, Headquarters and Region inspections, as well as the post-storm event inspections. The following information shall be documented on Form 1176 for use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began.

The order of precedence for required inspections shall be as follows:

- (i) Headquarter water quality inspections
- (ii) Region water quality inspections
- (iii) Post-storm event inspections
- (iv) 7 day inspections

When one of the listed inspections is performed, the inspections listed below it need not be performed on that day if the required CDOT and Contractor personnel participated in the inspection.

For example: A 7 day inspection is not required on the same day a headquarters or Region inspection is conducted. A sheet shall be placed in the inspections area of the SWMP Notebook to refer to the date inspection performed.

- (4) Follow all other agency Stormwater requirements and inspections unless a waiver or other agreement has been made.
  - (5) The ECI shall immediately report to the Contractor's Superintendent and the SWMP Administrator the following instances of noncompliance:
    - (i) Noncompliance which may endanger health or the environment.
    - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of waters of the State.
    - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
    - (iv) Upset conditions that occur on site.
  - (6) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the Form 1176 by the ECI. The ECI shall record the time and date, weather conditions, reasons for spill, and how it was remediated.
- (d) *Documentation Available on the Project.* The following Contract documents and references will be made available for reference at the CDOT field office during construction:
1. SWMP Notebook. The Engineer will provide a SWMP Notebook at the Preconstruction Conference, which is and shall remain the property of CDOT. CDOT will initially provide the documentation for the first four items when available. The Contractor shall provide the contents required for items (5) through (18). The notebook shall be stored in the CDOT field office or at another on-site location approved by the Engineer. The SWMP Administrator shall modify and update the notebook as needed to reflect actual site conditions, prior to or as soon as practicable but in no case more than 72 hours after the change. The following Contract documents and reports shall be kept, maintained, and updated in the notebook under the appropriate items by the SWMP Administrator:

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- (1) SWMP Plan Sheets - Notes, tabulation, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.
- (2) SWMP Site Maps and Plan Title Sheet - Construction site boundaries, ground surface disturbance, limits of cut and fill, flow arrows, structural BMPs, non-structural BMPs, Springs, Streams, Wetlands and surface water. Also included on the sheets is the protection of trees, shrubs and cultural resources.
- (3) Specifications - Standard and Project special provisions related to Stormwater and Erosion Control.
- (4) Standard Plans M-208-1, M-216-1 and M-615-1
- (5) BMP Details not in Standard Plan M-208-1 - Non-standard details.
- (6) Weekly meeting sign in sheet.
- (7) Calendar of Inspections -Calendar of inspections marking when all inspections take place.
- (8) Form 1176 – Weekly meeting notes and inspection report
- (9) Region and Headquarter Water Quality Reports and Form 105(s) relating to Water Quality.
- (10) Description of Inspection and Maintenance Methods - Description of inspection and maintenance methods implemented at the site to maintain all BMPs identified in the SWMP and Items not addressed in the design
- (11) Spill Response Plan - Reports of reportable spills submitted to CDPHE
- (12) List and Evaluation of Potential Pollutants - List of potential pollutants as described in subsection 107.25 and approved Method Statement for Containing Pollutant Byproducts.
- (13) Other Correspondence e.g., agreements with other MS4s, approved deferral request, CDPHE audit documentation, Water Quality Permit Transfer to Maintenance Punch List and other miscellaneous documentation.
- (14) TECS Certifications of the SWMP Administrator and all ECIs, keep current through the life of the project.
- (15) Environmental Pre-construction Conference – Conference agenda with a certification of understanding of the terms and conditions of the CDPS-SCP and SWMP. The certification shall be signed by all attendees. A certification shall also be signed by all attendees of meetings held for new subcontractors beginning work on the project that could adversely affect water quality after the Environmental Pre-construction Conference has been held.
- (16) All Project Environmental Permits - All project environmental permits and associated applications and certifications, including, CDPS-SCP, Senate Bill 40, USACE 404, temporary stream crossings, dewatering, biological opinions and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging area on private property, asphalt or concrete plant, etc.
- (17) Photographs Documenting Existing Vegetation – Project photographs shall be time stamped on paper with a maximum of four colored images per 8 ½ inch by 11 inch sheet and/or a digital copy of all photographs on CD-ROM/Flash Drive in (JPG format), documenting existing vegetation prior to construction commencing. On the bottom of each photograph shall be a description using Station Number or Mile Post of where the photograph was taken.
- (18) Permanent Water Quality Plan Sheets - Plan sheets and specifications for permanent water quality structures, riprap.

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The Engineer will incorporate the documents and reports available at the time of award. The Contractor shall provide and insert all other documents and reports as they become available during construction.

The SWMP Administrator shall finalize the SWMP for CDOT Maintenance use upon completion of the project. SWMP completeness shall be approved by the Engineer, corrections to the SWMP shall be at the Contractor's expense. The following Reference materials shall be used:

- (1) CDOT Erosion Control and Stormwater Quality Guide.
- (2) CDOT Erosion Control and Stormwater Quality Field Guide.

(e) *Weekly Meetings.* The Engineer, Superintendent and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities that could adversely affect water quality. The meeting shall follow an agenda prepared by the Engineer or a designated representative, and have a sign in sheet on which the names of all attendees shall be recorded. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting, and place the agenda and sign in sheet in the SWMP notebook. At this meeting the following shall be discussed and documented on Form 1176:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection
- (4) BMPS that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will effect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings

All subcontractors who were not in attendance at the Environment Pre-construction conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator prior to start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees, and added the SWMP Notebook.

#### **208.04 Best Management Practices (BMPs) for Stormwater.**

The SWMP Administrator shall modify the SWMP to clearly describe and locate all BMPs implemented at the site to control potential sediment discharges.

Vehicle tracking control shall be used at all vehicle and equipment exit points from the site to prevent sediment exiting the Limits of Construction (LOC) of the project site. Access shall be provided only at locations approved by the Engineer. The SWMP Administrator shall record vehicle tracking control pad locations on the SWMP site map.

New inlets and culverts shall be protected during their construction. Appropriate protection of each culvert and inlet shall be installed immediately. When riprap is called for at the outlet of a culvert, it shall be installed within 24 hours of completion of each pipe. The Contractor shall remove sediment, millings, debris, and other pollutants from within the newly constructed drainage system in accordance with the CDPS-SCP, prior to use, at the Contractor's expense. All removed sediment shall be disposed of outside the project limits in accordance with all applicable regulations.

Concrete products wasted on the ground during construction shall include, but shall not be limited to: excess concrete removed from forms, spills, slop, and all other unused concrete are potential pollutants that shall be contained or protected by an approved BMP at a pre-approved containment area. The concrete shall be picked up and recycled in accordance with 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as directed. The uses of recycled concrete from approved recycling facilities shall be in accordance with Section 203.

- (a) *Unforeseen Conditions.* The Contractor shall design and implement erosion and sediment BMPs for correcting conditions unforeseen during the design of the project, or for emergency situations, that develop during construction. The Department's "Erosion Control and Stormwater Quality Guide" shall be used as a reference document for the purpose of designing erosion and sediment BMPs. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.
- (b) *Other Agencies.* If CDPHE, US Army Corps of Engineers (USACE), or the Environmental Protection Agency (EPA)

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reviews the project site and requires additional measures to prevent and control erosion, sediment, or pollutants, the Contractor shall cease and desist activities resulting in pollutant discharge and immediately implement these measures. If the work may negatively affect another MS4, the Contractor shall cease and desist activities resulting in the discharge and shall implement appropriate measures to protect the neighboring MS4, including installing additional measures. . Implementation of these additional measures will be paid for at contract unit price.

- (c) *Work Outside the Right of Way.* Disturbed areas, including staging areas, which are outside CDOT ROW and outside easements acquired by CDOT for construction, are the responsibility of the Contractor. These areas may be subject to a separate CDPS-SCP or other permits. The Contractor shall acquire these permits and submit copies to the Engineer prior to any disturbance. These permits, shall be acquired and all erosion and sediment control work performed at the Contractor's expense. These areas are subject to inspections by CDOT or any other agency, as agreed upon in writing.
- (d) *Construction Implementation.* The Contractor shall incorporate BMPs into the project as outlined in the accepted schedule.
- (e) *Stabilization.* Once earthwork has started, the Contractor shall continue erosion BMPs until permanent stabilization of the area has been completed and accepted. Clearing, grubbing and slope stabilization measures shall be performed regularly to ensure final stabilization. Failure to properly maintain erosion control and stabilization methods, either through improper phasing or sequencing will require the Contractor to repair or replace sections of earthwork at his expense. The Contractor shall schedule and implement the following stabilization measures during the course of the project:
- (1) *Temporary Stabilization.* At the end of each day, the Contractor shall stabilize disturbed areas by surface roughening, vertical tracking, or a combination thereof. Disturbed areas are locations where actions have been taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, road bed preparation, soil compaction, and movement and stockpiling of top soils. Other stabilization measures may be implemented, as approved. The maximum area of temporary stabilization shall not exceed 20 acres.
  - (2) *Interim Stabilization.* Stockpiles and disturbed areas as soon as known with reasonable certainty that work will be temporarily halted for 14 days or more shall be stabilized using one or more of the specified following methods:
    - (i) Application of 1.5 tons of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.
    - (ii) Placement of bonded fiber matrix in accordance with Section 213.
    - (iii) Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, in accordance with Section 213.
    - (iv) Application of spray-on mulch blanket in accordance with Section 213. Magnesium Chloride, Potassium Chloride and Sodium Chloride, or other salt products, will not be permitted as a stabilization method. Protection of the interim stabilization method is required. Reapplication may be required as approved.
  - (3) *Summer and Winter Stabilization.* Summer and winter stabilization is defined as months when seeding will not be permitted. As soon as the Contractor knows shutdown is to occur, interim stabilization shall be applied to the disturbed area. Protection of the interim stabilization method is required. Reapplication of interim stabilization may be required as directed.
  - (4) *Permanent Stabilization.* Permanent stabilization is defined as the covering of disturbed areas with seeding, mulching with tackifier, soil retention coverings, and such non-erodible methods such riprap, road shouldering, etc., or a combination thereof as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used when approved in writing by the Engineer. Permanent stabilization shall begin within 48 hours after topsoil placement, soil conditioning, or combination thereof starts and shall be pursued to completion.



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(5) Final Stabilization. Final stabilization is defined as when all ground disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed.

(f) *Maintenance*. Erosion and sediment control practices and other protective measures identified in the SWMP as BMPs for stormwater pollution prevention shall be maintained in effective operating condition until the CDPS-SCP has been transferred to CDOT. BMPs shall be continuously maintained in accordance with good engineering, hydrologic and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the height of the erosion control device. When possible, the Contractor shall use equipment with an operator rather than labor alone to remove the sediment.

Maintenance of erosion and sediment control devices shall include replacement of such devices upon the end of their useful service life as recommended by the Contractor and approved by the Engineer. Maintenance of rock check dams and vehicle tracking pads shall be limited to removal and disposal of sediment or addition of aggregate. Damages resulting from failure to maintain BMPs shall be paid at the contractors expense.

Complete site assessment shall be performed as part of comprehensive inspection and maintenance procedures, to assess the adequacy of BMPs at the site and the necessity of changes to those BMPs to ensure continued effective performance. Where site assessment results in the determination that new or replacement BMPs are necessary, the BMPs shall be installed to ensure continuous effectiveness. When identified, BMPs shall be maintained, added, modified or replaced as soon as possible, immediately in most cases.

Approved new or replaced BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12. Devices damaged due to the Contractor's negligence shall be replaced at Contractor's expense.

From the time seeding and mulching work begins until the date the Contract work is accepted, the Contractor shall maintain all seeded areas. Damage to seeded areas or to mulch materials shall be immediately restored. Damage to seeded areas or to mulch materials due to Contractor negligence shall be immediately restored at the Contractor's expense. Restoration of other damaged areas will be measured and paid for under the appropriate bid item.

Temporary BMPs may be removed upon completion of the project, as determined by the Water Quality Partial Acceptance walk-through. If removed, the area in which these BMPs were constructed shall be returned to a condition similar to that which existed prior to its disturbance. Removed BMPs shall become the property of the Contractor.

If a project delay occurs, the Contractor shall be responsible to continue erosion and sediment control operations beyond the original contract time.

Sediment removed during maintenance of BMPs and material from street sweeping may be used in or on embankment, provided it meets conditions of Section 203 and is distributed evenly across the embankment.

Whenever sediment collects on the paved surface, the surface shall be cleaned. Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping, or vacuuming. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed.

Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A BMP, such as a berm, shall be placed to contain slurry from joint flushing operations until the residue can be removed from the soil surface. Aggregate bags, erosion logs or other permeable BMPs shall not be used. Residue shall not flow into driving lanes. It shall be removed and disposed of in accordance with subsection 107.25(b) 13. Material containment and removal will not be paid for separately, but shall be included in the work.

**208.05 Construction of BMPs.** BMPs shall be constructed in accordance with Standard Plans M-208-1, M-216-1 and with the following.

(a) *Seeding, Mulching, Sodding, Soil Retention Blanket*. Seeding, mulching, sodding, and soil retention blanket shall be performed in accordance with Sections 212, 213, and 216.

(b) *Erosion Bales*. The bales shall be anchored securely to the ground with wood stakes.

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- (c) *Silt Fence*. Silt fence shall be installed in locations specified in the Contract prior to any grubbing or grading activity.
- (d) *Temporary Berms*. Berms shall be constructed to the dimensions shown in the Contract, and sufficiently compacted to prevent erosion or failure. If the berm erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (e) *Temporary Diversion*. Diversions shall be constructed to the dimensions shown in the Contract, and graded to drain to a designated outlet. The berm shall be sufficiently compacted to prevent erosion or failure. If the diversion erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (f) *Temporary Slope Drains*. Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion.
- (g) *Silt Berm*. Prior to installation of silt berms, the Contractor shall prepare the surface of the areas in which the berms are to be installed such that they are free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. Silt berms shall be secured with spikes. The Contractor shall install the silt berm in a manner that will prevent water from going around or under the silt berm. Silt berms shall be installed on top of soil retention blanket.
- (h) *Rock Check Dam*. Rock shall be installed at locations shown on the plans. Rock check dams shall conform to the dimensions shown on the plans.
- (i) *Riprap Outlet Protection*. Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be 1 foot minimum. Riprap size shall be as shown on the plans.
- (j) *Storm Drain Inlet Protection*. Prior to installation, the Contractor shall sweep the surface of the area in which the storm drain inlet protection devices are to be installed such that the pavement is free of sediment and debris. The ends of the inlet protection Type 1 and Type 2 shall extend a minimum of 1 foot past each end of the inlet.

The Contractor shall remove all accumulated sediment and debris from the surface surrounding all storm drain inlet protection devices after each rain event or as directed. The Contractor shall remove accumulated sediment from Type II and III containment area when it is more than a maximum one third full of sediment, or as directed.

The Contractor shall protect storm drain facilities adjacent to locations where pavement cutting operations involving wheel cutting, saw cutting, sand blasting, or abrasive water jet blasting are to take place.

- (k) *Sediment Trap*. Sediment traps shall be installed to collect sediment laden water and to minimize the potential of pollutants leaving the project site. Locations shall be as shown on the plans or as directed.

Sediment traps shall be constructed prior to disturbance of upslope areas and shall be placed in locations where runoff from disturbed area can be diverted into the trap.

The area under the embankment shall be cleared, grubbed and stripped of any vegetation and roots.

Fill material for the embankment shall be free of roots or other vegetation, organic material, large stones, and other objectionable material.

Sediment shall be removed from the trap when it has accumulated to one half of the wet storage depth of the trap and shall be disposed of in accordance with subsection 208.04(f).

- (l) *Erosion Logs*. Erosion logs shall be embedded 2 inches into the soil. Stakes shall be embedded to a minimum depth of 12 inches. At the discretion of the Engineer, a shallower depth may be permitted if rock is encountered.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs.

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- (m) *Silt Dikes*. Prior to installation of silt dikes, the Contractor shall prepare the surface of the areas in which the silt dikes are to be installed such that they are free of materials greater than two inches in diameter and are suitably smooth for the installation of the silt dikes, as approved by the Engineer.
- (n) *Concrete Washout Structure*. The concrete washout structure shall meet or exceed the dimensions shown on the plans or be used in accordance with manufacturer's recommendations. Work on this structure shall not begin until written acceptance is provided by the Engineer.

Concrete washout structure shall conform to standard plan M-208-1 and shall meet the following requirements:

- (1) Structure shall contain all washout water.
- (2) Stormwater shall not carry wastes from washout and disposal locations.
- (3) The site shall be located a minimum of 50 horizontal feet from State waters and shall meet all requirements for containment and disposal as defined in subsection 107.25.
- (4) The site shall be signed as "Concrete Washout".
- (5) The site shall be accessible to appropriate vehicles.
- (6) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation events.
- (7) The Contractor shall prevent tracking of washout material out of the washout structure.
- (8) Solvents, flocculents, and acid shall not be added to wash water.
- (9) The structure shall be surrounded on three sides by a compacted berm.
- (10) The structure shall be fenced with orange plastic construction fencing to provide a barrier to construction equipment and to aid in identification of the concrete washout area.
- (11) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.

Pre-fabricated concrete washout structures shall meet the following requirements:

- (1) Structure shall contain all washout water.
- (2) Structure shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be as approved by the Engineer. The site shall signed as "Concrete Washout".
- (3) The site shall be accessible to appropriate vehicles.
- (4) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation event.
- (5) Solvents, flocculants, and acid shall not be added to wash water.

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- (6) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.
- (7) Prefabricated structures cannot be moved when they contain liquid, unless otherwise approved.
- (8) The concrete washout structure shall be completed and ready for use prior to concrete placement operations.
- (9) Washout areas shall be checked and maintained as required. On site permanent disposal of concrete washout waste is not allowed.

All liquid and solid wastes, including contaminated sediment and soils generated from concrete washout shall be hauled away from the site and disposed of properly at the Contractor's expense.

- (o) *Vehicle Tracking Pad (VTP)*. Vehicle tracking pads shall be constructed to the minimum dimensions shown in the Contract, unless otherwise directed by the Engineer. Construction of approved vehicle tracking pads shall be completed before any disturbance of the area.

The Contractor shall maintain each vehicle tracking pad during the entire time that it is in use for the project. The vehicle tracking pad shall be removed at the completion of the project unless otherwise directed by the Engineer. Additional aggregate may be required for maintenance and will be paid for under Pay Item, Maintenance Aggregate (Vehicle Tracking Pad).

- (p) *Detention Pond*. Permanent detention ponds shown on the construction plans may be used as temporary BMPs if all the following conditions are met:

- (1) The pond is designated as a construction BMP in the SWMP.
- (2) The pond outfall and outlet are designed and implemented for use as a BMP during construction in accordance with good engineering, hydrologic, and pollution control practices. The stormwater discharges from the outfall shall not cause degradation or pollution of State waters, and shall have BMPs, as appropriate.

- (3) All silt shall be removed and the pond returned to the design grade and contour prior to project acceptance

- (q) *Aggregate Bag*. Aggregate bags shall be placed on a stable surface, consisting of pavement, grass or gravel. Aggregate bags shall be placed to conform to the surface without gaps. Discharge water shall not cause erosion.
- (r) *Surface Roughening*. Surface roughening creates horizontal grooves along the contour of the slope. Roughening may be accomplished by furrowing, scarifying, ripping or disking the soil surface to create a 2 to 4 inch minimum variation in soil surface. Surface roughening will not be paid for separately, but shall be included in the work.
- (s) *Vertical Tracking*. Vertical tracking involves driving a tracked vehicle up and down the soil surface and creating horizontal grooves and ridges along the contour of the slope. Sandy soils or soils that are primarily rock need not be tracked. Vertical tracking will not be paid for separately, but shall be included in the work.

**208.06 Materials Handling and Spill Prevention.** The SWMP Administrator shall clearly describe and record on the SWMP, all practices implemented at the site to minimize impacts from procedures or significant material that could contribute pollutants to runoff. Areas or procedures where potential spills can occur shall have a Spill Response Plan in place as specified in subsections 107.25(b) 6 or 208.06(c). Construction equipment, fuels, lubricants, and other petroleum distillates shall not be stored or stockpiled within 50 horizontal feet of any State waters or more if the Contractor determines necessary. Equipment fueling and servicing shall occur only within approved designated areas.

- (a) *Bulk Storage Structures*. Bulk storage structures for petroleum products and other chemicals shall have impervious secondary containment or equivalent adequate protection so as to contain all spills and prevent any spilled material from entering State waters. Secondary containment shall be capable of containing the combined volume of all the storage containers plus at least 10 percent freeboard. For secondary containment that is used and may result in accumulation of stormwater within the containment, a plan shall be implemented to properly manage and dispose of all accumulated stormwater which is deemed to be contaminated (e.g., has an unusual odor or sheen).

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- (b) *Lubricant Leaks.* The Contractor shall inspect equipment, vehicles, and repair areas daily to ensure petroleum, oils, and lubricants (POL) are not leaking onto the soil or pavement. Absorbent material or containers approved by the Engineer shall be used to prevent leaking POL from reaching the soil or pavement. The Contractor shall have onsite approved absorbent material or containers of sufficient capacity to contain any POL leak that can reasonably be foreseen. The Contractor shall inform all Spill Response Coordinators in accordance with the Spill Response Plan if unforeseen leakage is encountered. All materials resulting from POL leakage control and cleanup shall become the property of the Contractor and shall be removed from the site. Control, cleanup, and removal of by-products resulting from POL leaks shall be performed at the Contractor's expense.
- (c) *Spill Response Plan.* A spill Response Plan shall be developed and implemented to establish operating procedures for handling potential pollutants and preventing spills.

The Response Plan shall contain the following information:

- (1) Identification and contact information of each Spill Response Coordinator
- (2) Locations of areas on project site where equipment fueling and servicing operations are permitted.
- (3) Location of cleanup kits.
- (4) Quantities of chemicals and locations stored on site.
- (5) Label system for chemicals and Safety Data Sheets (SDS) for products.
- (6) Clean up procedures to be implemented in the event of a spill that does not enter State waters or ground water.
- (7) Procedures for spills of any size that enter surface waters or ground water, or have the potential to do so. CDOT's Erosion Control and Stormwater Quality Guide contains Spill notification contacts and phone numbers required in the Spill Response Plan.
- (8) A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP Notebook when they change.

**208.07 Stockpile Management.** Material stockpiles shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be approved by the Engineer.

Erodible stockpiles (including topsoil) shall be contained with acceptable BMPs at the toe (or within 20 feet of the toe) throughout construction. BMPs shall be approved by the Engineer. The SWMP Administrator shall describe, detail, and record the sediment control devices on the SWMP.

**208.08 Limits of Disturbance.** The Contractor shall limit construction activities to those areas within the limits of disturbance shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other action which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense. The SWMP Administrator shall tabulate additional disturbances not identified in the CDPS\_SCP application and indicate changes to locations and quantities on the SWMP. The Contractor shall report the changes and additional disturbances to the Engineer, Water Quality Control Division of CDPHE and all other involved agencies.

The Contractor shall pursue and stabilize all disturbances to completion.

**208.09 Failure to Perform Erosion Control.** Failure to implement the Stormwater Management Plan is a violation of the CDPS – SCP and CDOT specifications. CDOT is obligated to implement enforcement mechanisms in accordance with CDOT's MS4 Permit COS000005 for Stormwater Management and erosion control Best Management Practices. Penalties may be assessed to the Contractor by the appropriate agencies. Penalties will be assessed by the Department

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as liquidated damages for failure to meet the Permit. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from monies due the Contractor in accordance with subsection 107.25(c) 2.

The Contractor will be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with the CDPS-SCP and these specifications, including the following:

- (1) Failure to include erosion control in the project schedule or failure to include erosion control in each schedule update as specified in subsection 208.03(b).
- (2) Failure of the Contractor to perform the inspections required by subsection 208.03(c) 2.
- (3) Failure of the Contractor to implement necessary actions required by the Engineer as required by subsection 208.03(c).
- (4) Failure to amend the SWMP and implement BMPs as required by subsection 208.04.
- (5) Failure to keep documentation and records current.
- (6) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's approved schedule as required by subsection 208.06(c).
- (7) Failure to limit temporary stabilization to 20 or fewer acres as required by subsection 208.04 (e).
- (8) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer or from a water quality inspection as required by subsection 208.04(f).
- (9) Failure to remove and dispose of sediment from BMPs as required.
- (10) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.
- (11) Failure to perform stabilization as required by subsection 208.04 (e).
- (12) Failure of the Superintendent or designated representative to attend inspections as required by subsection 208.03(c) and record findings in the appropriate form.
- (13) Failure to prevent discharges not composed entirely of stormwater from leaving the Construction Site.
- (14) Failure to provide the survey of Permanent Water Quality BMPs when required on the project in accordance with 208.10.

The Engineer will immediately notify the Contractor of each incident of failure to perform erosion control in accordance with the CDPS-SCP and these specifications, including items (1) through (14) above by issuing the Form 105. Correction shall be made as soon as possible but no later than 48 hours from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of \$970 for each day after the 48 hour period has expired, that one or more of the incidents of failure to perform the requirements for each Form 105 remains uncorrected. Liquidated damages will begin at Midnight of the date the 48 hours has expired.

This deduction will not be considered a penalty, but will be considered liquidated damages based on estimated additional construction engineering costs. The liquidated damages will accumulate, for each cumulative day that one or more of the incidents remain uncorrected. The number of days for which liquidated damages are assessed will be cumulative for the duration of the project; that is: the damages for a particular day will be added to the total number of days for which

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liquidated damages are accumulated on the project. The liquidated damages will be deducted from any monies due the Contractor.

If all other failures are not corrected within 48 hours after liquidated damages have begun to be assessed, the Engineer will issue a Stop Work Order in accordance with subsection 105.01. Work shall not resume until the Engineer has approved a written corrective action plan submitted by the Contractor that includes measures to prevent future violations and a schedule for implementation.

If the Contractor requires more than 96 hours to perform the corrective work from the date on the Form 105, the Contractor shall submit a request for deferment. The deferment request shall be in writing and shall include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator and the Contractor shall concur on this deferral and set a proposed date of completion. If approved, the Contractor shall complete the corrective measures by Midnight of the proposed completion date. If corrective work is not corrected by the completion date the Engineer will issue a Stop Work Order. Liquidated Damages will apply retroactively back to the 48 hours after the 105 date of notification. Liquidated Damages will be assessed until the corrective work has been completed and accepted.

Deferment of work to correct failures to perform erosion control will not affect the Contractor's other contractual responsibilities, notifications for other non-compliance, nor the final completion date of the project. Liquidated Damages for other non-compliance notifications will continue to apply during the deferment period in addition to liquidated damages associated with the deferment.

Based on the submittal date of the approved deferment Liquidated Damages and a Stop Work Order may not be mandated to the Contractor.

Disagreements regarding the suggested corrective action for a BMP compliance issue between the Project Engineer, SWMP Administrator, and Superintendent, shall be discussed with the Resident Engineer and Region Water Pollution Control Manager. If after the discussions, the Project Engineer and the Contractor are still in disagreement and feel that additional compensation is owed, the Contractor will follow the decision of the Project Engineer, keep track of the costs and negotiate further with the Project Engineer. If after pursuing the issue, the Contractor is unable to reach agreement with the Project Engineer, then the Contractor can follow the dispute process outlined in subsection 105.22.

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the CDPS-SCP and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any monies due or to become due to the Contractor pursuant to subsection 105.17. Delays due to these Stop Work Orders shall be considered non-excusable. The Stop Work Order shall be in place until the project is in CDPS-SCP compliance.

If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default or Contract termination procedures in accordance with subsections 108.09 and 108.10. CDOT will proceed with corrective or disciplinary action in accordance with the Rules for Prequalification, Debarment, Bidding and Work on Transportation, Road, Highway and Bridge Public Projects.

When a failure meets any one of the following conditions, the Engineer will immediately issue a Stop Work Order in accordance with subsection 105.01 irrespective of any other available remedy:

- (1) It may endanger health or the environment.
- (2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
- (3) It consists of a discharge which may cause a violation of a water quality standards.

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**208.10 Items to Be Completed Prior to Requesting Partial Acceptance of Water Quality Work.**

- (a) *Reclamation of Washout Areas.* After concrete operations are complete, washout areas shall be reclaimed in accordance with subsection 208.05(n) at the Contractor's expense.
- (b) *Survey.* When Permanent Water Quality BMPs (Permanent BMP) are required on the project, the Contractor shall survey the BMPs to confirm that they conform to the configuration and grade shown on the Plans. The survey shall conform to Section 625. The results of the survey shall be submitted as Microstation or AutoCad drawing files and PDF files, showing both designed and final elevations and configurations. Paper versions of the drawings shall be submitted with the stamp and seal of the Contractor's Surveyor.

The Engineer and the CDOT Hydraulics Engineer for the region will perform a walkthrough of the Permanent BMPs to confirm conformance to material requirements, locations and dimensions of the Permanent BMPs. Permanent BMPs not meeting the Contract requirements will be identified in writing by the Engineer, and shall be repaired or replaced at the Contractor's expense. Correction surveys shall be performed at the Contractor's expense to confirm the locations and dimensions of each Permanent BMP. Final as-built plans of the Permanent BMPs shall be provided to the Engineer and the CDOT Region and Headquarter Permanent Water Quality Control Specialist for their records.

- (c) *Locations of Temporary BMPs.* The Engineer will identify locations where modification, cleaning or removal of temporary BMPs are required, and will provide these in writing to the Contractor. Upon completion of work required, the SWMP Administrator shall modify the SWMP to provide an accurate depiction of BMPS to remain on the project site.

**METHOD OF MEASUREMENT**

**208.11** Erosion Control Management will be measured as the actual number of days of ECM work performed, regardless of the number of personnel required for SWMP Administration and Erosion Control Inspection, including erosion control inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP notebook. If the combined hours of SWMP Administration and Erosion Control Inspection is four hours or less in a day, the work will be measured as ½ day. If the combined hours of SWMP Administration and Erosion Control Inspection is more than four hours in a day, the work will be measured as one day. Total combined hours of ECM work exceeding eight hours in a day will still be paid as one day.

Erosion bales will be measured by the actual number installed and accepted.

Silt fence, silt berms, erosion logs, aggregate bags, silt dikes, temporary berms, rock check dams, temporary diversions, and temporary slope drains, will be measured by the actual number of linear feet that are installed and accepted. Measured length will not include required overlap.

Concrete washout structure will be measured by the actual number of structures that are installed and accepted.

Storm drain inlet protection will be measured by linear foot or actual number of devices that are installed and accepted.

Sediment trap quantities will be measured by the actual number installed and accepted.

Removal of trash that is not generated by construction activities will be measured by the actual number of hours that Contractor workers actively remove trash from the project. Each week the Contractor shall submit to the Engineer a list of workers and the hours spent collecting such trash.

Removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and other clean out excavation of accumulated sediment, and the disposal of such sediment, will be measured by the number of hours that equipment, labor, or both are used for sediment removal.

Vehicle tracking pads will be measured by the actual number constructed and accepted.

Additional aggregate required for maintaining vehicle tracking pads will be measured as the actual number of cubic yards installed and accepted.



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**BASIS OF PAYMENT**

**208.12** ECM and BMPs will be paid for at the Contract unit price for each of the items listed below that appear in the bid schedule.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Aggregate Bag	Linear Foot
Concrete Washout Structure	Each
Erosion Bales (Weed Free)	Each
Erosion Control Management	Day
Erosion Log (Type 1) (____ Inch)	Linear Foot
Erosion Log (Type 2) (____ Inch)	Linear Foot
Pre-Fabricated Concrete Washout Structure	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Maintenance Aggregate (Vehicle Tracking Pad)	Cubic Yard
Removal and Disposal of Sediment (Equipment)	Hour
Removal and Disposal of Sediment (Labor)	Hour
Removal of Trash	Hour
Rock Check Dam	Each
Sediment Basin	Each
Sediment Trap	Each
Silt Berm	Linear Foot
Silt Dike	Linear Foot
Silt Fence	Linear Foot
Silt Fence (Reinforced)	Linear Foot
Storm Drain Inlet Protection (Type__)	Linear Foot
Storm Drain Inlet Protection (Type__)	Each
Sweeping (Sediment Removal)	Hour
Temporary Berm	Linear Foot
Temporary Diversion	Linear Foot
Temporary Slope Drains	Linear Foot
Vehicle Tracking Pad	Each

Payment for Erosion Control Management (ECM) will be full compensation for all labor, materials and equipment necessary for the SWMP Administrator and Erosion Control Inspectors to perform all the work described in this specification. This includes assembling items 5-19 and required updates to the SWMP Notebook on site.

The SWMP Administrator and ECI's commute times will not be measured and paid for separately, but shall be included in the work.

Modifications to the SWMP Notebook due to construction errors or survey errors by the contractor shall be at the Contractor's expense.

Temporary erosion control will be measured and paid for by the BMPs used. Surface roughening and vertical tracking will not be measured and paid for separately but shall be included in the work. Payment for each BMP item will be full compensation for all work and materials required to furnish, install, maintain and remove the BMP when directed.

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Payment for Removal and Disposal of Sediment (Equipment) will be full compensation for use of the equipment, including the operator. Payment for Removal and Disposal of Sediment (Labor) will be full compensation for use of the labor.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. Maintenance and relocation, as required, of these structures throughout the duration of the project will not be measured and paid for separately, but shall be included in the work.

Silt berm spikes will not be measured and paid for separately, but shall be included in the work. When required, soil retention blankets will be measured and paid for in accordance with Section 216. Silt dike staples will not be measured and paid for separately, but shall be included in the work.

Spray-on mulch blankets required by the Contract, including those used in both interim and final stabilization, will be measured and paid for in accordance with Section 213.

Payment for storm drain inlet protection will be full compensation for all work, materials, and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of the work. Aggregate will not be measured and paid for separately, but shall be included in the work.

Sweeping, when used as a BMP as shown in the Contract, will be measured by the number of hours that a pickup broom or equipment capable of collecting sediment, authorized by the Engineer, is used to remove sediment from the roadway or other paved surfaces. Each week the Contractor shall submit to the Engineer a statement detailing the type of sweeping equipment used and the number of hours it was used to pick up sediment. Operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Payment for vehicle tracking pad will be full compensation for all work, materials and equipment required to construct, maintain, and remove the entrance upon completion of the work. Aggregate and geotextile will not be measured and paid for separately, but shall be included in the work. If additional aggregate for maintenance of vehicle tracking pads is required, it will be measured by the cubic yard in accordance with Section 304 and will be paid for under this Section.

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.

Geotextile (Erosion Control) (Class 2) will be measured and paid for in accordance with Section 420.

All work and materials required to perform the permanent BMP survey and furnish the electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

Payment will be made for BMPs replaced as approved by the Engineer. Temporary erosion and sediment BMPs required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor's expense. If the Contractor fails to complete construction within the contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the contract time. These items shall be provided at the Contractor's expense.

## SECTION 209 WATERING AND DUST PALLIATIVES

### DESCRIPTION

**209.01** This work consists of applying water to soils or aggregates for moisture and density control, landscaping, prewetting an excavation area, and dust palliatives. It also includes applying magnesium chloride dust palliative for the control of dust and the stabilization of soil and aggregate surfaced roads.

### MATERIALS

**209.02** Water applied for moisture and density control, as dust palliative, and for prewetting shall be free from injurious matter. Water for landscaping shall be free from oil, acids, alkalis, salts, or any substance injurious to plant life.

When the water source proposed for use by the Contractor is not of known quality and chemical content, samples of the water shall be submitted for approval prior to use.

Magnesium chloride dust palliative shall consist of a magnesium chloride base agent, water, and other enhancing or nondetrimental ions. The chemical analysis shall conform to the following:

Chemical Constituents	Percent by Weight
Magnesium Chloride (MgCl <sub>2</sub> )	28 to 35
Enhancing or Non-detrimental Ions	0 to 5
Water	65 to 72

### CONSTRUCTION REQUIREMENTS

**209.03 Moisture and Density Control.** Sprinkling equipment shall deliver uniform and controlled distribution of water without ponding or washing. Water for finishing operations shall be uniformly applied by spraying across the full width of the course.

**209.04 Prewetting.** Prewetting material in excavation areas prior to its removal for placement in embankments will be allowed when approved. The Contractor shall furnish a prewetting layout for each area to be prewetted including nozzle size, spacing, number of lines, and other equipment to be used. The Contractor shall obtain the approval of the Engineer for each prewetting layout prior to each prewetting operation.

**209.05 Dust Palliative.** The Contractor shall furnish and apply a dust palliative on portions of the roadway and on haul roads at the locations and in the amounts as provided in the Contract.

Dust palliative shall consist of water. Application of water shall be done with acceptable sprinkling equipment at an appropriate rate as approved by the Engineer.

Magnesium Chloride dust palliative shall be applied as follows:

- (1) Scarify the top 2 inches of the existing road surface and wet with water to approximately four percent moisture content, or as directed.
- (2) Apply the magnesium chloride dust palliative in two applications of 0.25 gallon per square yard in each application.
- (3) Allow to soak for 30 minutes after each application.
- (4) Roll the surface with a pneumatic tire roller, as specified in the Contract.
- (5) Do not permit traffic on the treated surface until approved.

**209.06 Landscaping.** The Contractor shall furnish water for seeding, mulching, planting, transplanting, sodding, herbicide treatment, and any other landscaping work when called for on the plans or when designated.

### **METHOD OF MEASUREMENT**

**209.07** Water will be measured by the number of thousand gallons (M Gallon) used and accepted. Measurement of water may be made in the vehicle at point of delivery or by meter. When water is to be metered for measurement, the Contractor shall provide and use an approved metering device.

Magnesium Chloride dust palliative will be measured by the number of gallons applied and accepted.

### **BASIS OF PAYMENT**

**209.08** The accepted quantities of water measured as provided above will be paid for at the contract unit price per M Gallon. The accepted quantities of Magnesium Chloride dust palliative measured as provided above will be paid for at the contract unit price per Gallon.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Water	(M Gallon)
Water (Landscaping)	(M Gallon)
Dust Palliative (Magnesium Chloride)	Gallon

Water required for all items of work will not be measured and paid for separately, but shall be included in the work, except that water for dust palliative, and water ordered for the benefit or safety of the public will be measured and paid for separately in accordance with the Contract.

If the area for landscape work is irrigated by a Department-owned system, the Contractor may use the water from this source. Water used from a Department source will not be measured and paid for.

## SECTION 212 SEEDING, FERTILIZER, SOIL CONDITIONER, AND SODDING

### DESCRIPTION

**212.01** This work consists of soil preparation, application of fertilizer, soil conditioners, or both, and furnishing and placing seed and sod. The work shall be in accordance with the Contract and accepted horticultural practices.

### MATERIALS

#### **212.02 Seed, Soil Conditioners, Fertilizers, and Sod.**

- (a) *Seed.* All seed shall be furnished in bags or containers clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percent of weed seed content, the guaranteed percentage of purity and germination, pounds of pure live seed (PLS) of each seed species, and the total pounds of PLS in the container. All seeds shall be free from noxious weed seeds in accordance with current state and local lists and as indicated in Section 213. The Contractor shall furnish to the Engineer a signed statement certifying that the seed is from a lot that has been tested by a recognized laboratory for seed testing within six months prior to the date of seeding. Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

Seed types and amount of PLS required per acre shall be provided in accordance with the Contract.

Seed and seed labels shall conform to all current State and Federal regulations and will be subject to the testing provisions of the Association of Official Seed Analysis. Computations for quantity of seed required on the project shall include the percent of purity and percent of germination.

The formula used for determining the quantity of PLS shall be:

Bulk Pounds of Seed Species • (%Purity • %Germination) = Pounds of PLS

- (b) *Soil Conditioners and Fertilizer.*
1. **Fertilizer:** Fertilizer (plant nutrients) shall conform to the applicable State fertilizer laws. It shall be uniform in composition, dry, and free flowing, and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Fertilizer which becomes caked or damaged will not be accepted.
  2. **Soil Conditioner:** Soil conditioner shall consist of compost, biological nutrient, biological culture, or humic acid based material.

Humic acid based material (Humate) shall include the following:

- (1) pH 3 to 5
- (2) Maximum 20 percent inert ingredient
- (3) Minimum 80 percent organic matter with 40 percent minimum humic acid.

Compost shall be weed-free, organic compost derived from a variety of feed stocks including agricultural, biosolids, forestry, food, leaf and yard trimmings, manure, tree wood with no substances toxic to plants. Material shall be aerobically composted in a facility permitted by the Colorado Department of Public Health and Environment (CDPHE) to produce or sell compost in accordance with House Bill (HB) 1181. The Contractor shall submit a copy of this permit to the Engineer for approval and the project records. The compost shall be tested in accordance with the U.S. Composting Council’s Test Methods for Examining of Composting and Compost (TMECC) manual.

The compost manufacturer shall be a participating member of in the U.S. Composting Council’s Seal of Testing Assurance Program (STA). The Contractor shall provide a participation certificate and test data on a Compost Technical Data Sheet.

Compost shall have the following physical properties:

<b>Compost Parameters</b>	<b>Reported as</b>	<b>Requirements</b>	<b>Test Method</b>
pH	pH units	6.0 - 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS m <sup>-1</sup> or mmhos cm <sup>-1</sup>	Maximum 10dS/m	TMECC 04.10-A
Moisture Content	%, wet weight basis	30 - 60%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	30 - 65%	TMECC 05.07-A
Particle Size (Sieve Sizes)	%, dry weight basis for each sieve fraction	<u>Passing</u> 1 inch - 100% ½ inch - 95%	TMECC 02.02-B
Man-made Inert Contamination	%, dry weight basis	< 1%	TMECC 03.08-A
Stability (Respirometry)	mg CO <sub>2</sub> -C per g TS per day mg CO <sub>2</sub> -C per g OM per day	8 or below	TMECC 05.08-B
Select Pathogens	(PASS/FAIL) Limits: Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella

<b>Compost Parameters (cont.)</b>	<b>Reported as (cont.)</b>	<b>Requirements (cont.)</b>	<b>Test Method (cont.)</b>
Trace Metals	(PASS/FAIL) Limits (mg kg <sup>-1</sup> dw basis): As 41, Cd 39, Cu 1500, Pb 300, Hg 17, Ni 420, Se 100, Zn 2800	Pass	TMECC 04.06
Maturity (Bioassay)			
Percent Emergence	%, (average)	> 80%	TMECC 05.05-A
Relative Seedling Vigor	%, (average)	> 80%	
The Contractor shall provide a CTR in accordance with subsection 106.13 confirming that the material has been tested in accordance with TMECC.			

- (c) *Sod.* Sod shall be nursery grown and 99 percent weed free. Species shall be as shown on the plans. Other sod types may be used only if approved in writing by the Engineer. The one percent allowable weeds shall not include any undesirable perennial or annual grasses or plants defined as noxious by current State statute. Soil thickness of sod cuts shall not be less than  $\frac{3}{4}$  inch nor more than 1 inch. Sod shall be cut in uniform strips with minimum dimensions of 18 inches in width and 48 inches in length. The Contractor shall submit a sample of the sod proposed for use, which shall serve as a standard. Any sod furnished, whether in place or not, that is not up to the standard of the sample may be rejected. Sod that was cut more than 24 hours prior to installation shall not be used.

Each load of sod shall be accompanied by a certificate from the grower stating the type of sod and the date and time of cutting.

## CONSTRUCTION REQUIREMENTS

**212.03 Seeding Seasons.** Seeding in areas that are not irrigated shall be restricted according to the following time table and specifications.

<b>Zone</b>	<b>Spring Seeding</b>	<b>Fall Seeding</b>
<b>Areas other than the Western Slope</b>		
Below 6000'	Spring thaw to June 1	September 15 until consistent ground freeze
6000' to 7000'	Spring thaw to June 1	September 1 until consistent ground freeze
<b>Zone (cont.)</b>	<b>Spring Seeding (cont.)</b>	<b>Fall Seeding (cont.)</b>
7000' to 8000'	Spring thaw to July 15	August 1 until consistent ground freeze
Above 8000'	Spring thaw to consistent ground freeze	
<b>Western Slope</b>		
Below 6000'	Spring thaw to May 1	August 1 until consistent ground freeze
6000' to 7000'	Spring thaw to June 1	September 1 until consistent ground freeze
Above 7000'	Spring thaw to consistent ground freeze	

- (1) "Spring thaw" shall be defined as the earliest date in a new calendar year in which seed can be buried ½ inch into the surface soil (topsoil) thru normal drill seeding methods.
- (2) "Consistent ground freeze" shall be defined as that time during the fall months in which the surface soil (topsoil), due to freeze conditions, prevents burying the seed ½ inch thru normal drill seeding operations. Seed shall not be sown, drilled, or planted when the surface soil or topsoil is in a frozen or crusted state.

Seeding accomplished outside the time periods listed above will be allowed only when ordered by the Engineer or when the Contractor's request is approved in writing. When requested by the Contractor, the Contractor must agree to perform the following work at no cost to the Department: reseed, remulch, and repair areas which fail to produce species indicated in the Contract.

When seeding is ordered by the Engineer outside the time periods listed above, the cost of additional material will be paid for by the Department. The Contractor will not be responsible for failure of the seeded area to produce species indicated in the Contract due to reasons beyond the control of the Contractor.

The seeding, the soil conditioning, and the fertilizing application rate shall be as specified. The Engineer may establish test sections for adjusting the seeding and the fertilizing equipment to assure the specified rate. The Engineer may order equipment readjustment at any time.

Seed, soil conditioner and fertilizer shall not be applied during inclement weather including rain and high winds, or when soil is frozen or soil moisture is too high to evenly incorporate seed, soil conditioner or fertilizer.



**212.04 Lawn Grass Seeding.** Lawn grass seeding shall be accomplished in the seeding seasons described in subsection 212.03.

- (a) *Soil Preparation.* Preparatory to seeding lawn grass, irregularities in the ground surface, except the saucers for trees and shrubs, shall be removed. Measures shall be taken to prevent the formation of low places and pockets where water will stand.

Immediately prior to seeding, the ground surface shall be tilled or hand worked into an even and loose seedbed to a depth of 4 inches, free of clods, sticks, stones, debris, concrete, and asphalt in excess of 2 inches in any dimension, and brought to the desired line and grade.

- (b) *Fertilizing and Soil Conditioning.* The first application of fertilizer, soil conditioner, or both shall be incorporated into the soil prior to seeding, and shall consist of a soil conditioner, commercial fertilizer, or both as designated in the Contract. Fertilizer called for on the plans shall be worked into the top 4 inches of soil at the rate specified in the contract. Biological nutrient, culture or humic acid based material called for on the plans shall be applied in a uniform application onto the soil service. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

The second application of fertilizer shall consist of a fertilizer having an available nutrient analysis of 20-10-5 applied at the rate of 100 lbs. per acre. It shall be uniformly broadcast over the seeded area three weeks after germination or emergence. The area shall then be thoroughly soaked with water to a depth of 1 inch.

Fertilizer shall not be applied when the application will damage the new lawn.

- (c) *Seeding.* After the surface is raked and rolled, the seed shall be drilled or broadcast and raked into the top  $\frac{1}{4}$  inch of soil. Seeding shall be accomplished by mechanical landscape type drills. Broadcast type seeders or hydraulic seeding will be permitted only on small areas not accessible to drills. Seed shall not be drilled or broadcast during windy weather or when the ground is frozen or untillable. All loose exposed rock larger than 2 inches shall be removed from slopes that are to be seeded by drilling.

Hydraulic seeding equipment shall include a pump capable of being operated at 100 gallons per minute and at 100 pounds per square inch pressure, unless otherwise directed. The equipment shall have a nozzle adaptable to hydraulic seeding requirements. Storage tanks shall have a means of estimating the volume used or remaining in the tank.

### **212.05 Sodding.**

- (a) *Soil Preparation.* Preparatory to sodding, the ground shall be tilled or hand worked into an even and loose sod bed to a depth of 4 inches, and irregularities in the ground surface shall be removed. Sticks, stones, debris,

clods, asphalt, concrete, and other material more than 2 inches in any dimension shall be removed. Any depressions or variances from a smooth grade shall be corrected. Areas to be sodded shall be smooth before any sodding is done.

- (b) *Sodding.* The sod shall be laid by staggering joints with all edges touching. On slopes, the sod shall run approximately parallel to the slope contours. Where the sod abuts a drop inlet, the subgrade shall be adjusted so that the sod shall be 1 ½ inch below the top of the inlet.

Within one hour after the sod is laid and fertilized it shall be watered. After watering the sod shall be permitted to dry to the point where it is still wet enough for effective rolling. It shall then be rolled in two directions with a lawn roller weighing at least 150 pounds.

- (c) *Fertilizing and Soil Conditioning.* Prior to laying sod, the 4 inches of subsoil underlying the sod shall be treated by tilling in fertilizer, soil conditioner, or both. The rate of application shall be as designated in the Contract. Fertilizer called for on the plans shall be worked into the top 4 inches of soil at the rate specified in the contract. Biological nutrient, culture or humic acid based material called for on the plans shall be applied **uniformly** onto the soil **surface**. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

After laying, the sod shall be fertilized with a fertilizer having an available nutrient analysis of 20-10-5 at the rate of 200 pounds per acre. Fertilizer shall not be applied when the application will damage the sod.

**212.06 Native Seeding.** Areas that are unirrigated shall be seeded in accordance with subsection 212.03.

- (a) *Soil Preparation.* Slopes flatter than 2:1, shall be tilled into an even and loose seed bed 4 inches deep. Slopes 2:1 or steeper shall be left in a roughened condition. Slopes shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension, and brought to the desired line and grade.
- (b) *Fertilizing and Soil Conditioning.* Prior to seeding, fertilizer, soil conditioner, or both shall be applied. The fertilizer and soil conditioner type and rate of application shall be as designated in the Contract. Fertilizer called for on the plans shall be worked into the top 4 inches of soil at the rate specified in the contract. Biological nutrient, culture or humic acid based material called for on the plans shall be applied in a uniform application onto the soil service. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil. **No measurable quantity of organic amendment shall be present on the surface after incorporation.**

- (c) *Seeding.* Seeding shall be accomplished within 24 hours of tilling or scarifying to make special seed bed preparation unnecessary. The seeding application rate shall be as designated in the Contract. All slopes flatter than 2:1 shall be seeded by mechanical power drawn drills followed by packer wheels or drag chains. Mechanical power drawn drills shall have depth bands set to maintain a planting depth of at least  $\frac{1}{4}$  inch and shall be set to space the rows not more than 7 inches apart. Seed that is extremely small shall be sowed from a separate hopper adjusted to the proper rate of application.

If strips greater than 7 inches between the rows have been left unplanted or other areas skipped, the Engineer will require additional seeding at the Contractor's expense.

When requested by the Contractor and approved by the Engineer, seeding may be accomplished by broadcast or hydraulic type seeders at twice the rate specified in the Contract at no additional cost to the project.

All seed sown by broadcast-type seeders shall be "raked in" or covered with soil to a depth of at least  $\frac{1}{4}$  inch. Broadcasting seed will be permitted only on small areas not accessible to machine methods.

Hydraulic seeding equipment and accessories shall conform to the equipment and accessories described in subsection 212.04(c).

Seeded areas damaged due to circumstances beyond the Contractor's control shall be repaired and reseeded as ordered. Payment for this corrective work, when ordered, shall be at the contract prices.

Multiple seeding operations shall be anticipated as portions of job are completed to take advantage of growing conditions and to comply with Section 208 and subsection 212.03.

## **METHOD OF MEASUREMENT**

**212.07** The quantities of lawn seeding and native seeding will not be measured but shall be the quantities designated in the Contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract. The quantity of lawn seeding shall include soil preparation, water, fertilizer, and seed, completed and accepted. The quantity of native seeding shall include soil preparation, fertilizer, soil conditioner, and seed applied, completed, and accepted.

The quantity of sod to be measured will be the actual number of square feet, including soil preparation, water, fertilizer, and sod, completed and accepted.

**When soil conditioner is measured and paid for separately, it will be measured by the actual number of acres to which soil conditioner is applied and will be paid for as Soil Conditioning.**

The Contractor shall furnish the Engineer with seed certifications and analysis, fertilizer analysis, and bag weight tickets prior to placing any seed or fertilizer. Any seed or fertilizer placed by the Contractor without the Engineer's approval will not be paid for.

Measurement for acres will be by slope distances.

### **BASIS OF PAYMENT**

**212.08** The accepted quantities of lawn seeding, native seeding, soil conditioning, and sod will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Seeding (Lawn)	Acre
Seeding (Native)	Acre
Sod	Square Foot
Soil Conditioning	Acre

Soil preparation, water, seed, fertilizer, and soil conditioner, incorporated into the seeding sodding or soil conditioning will not be paid for separately but shall be included in the work.

Adjusting or readjusting seeding or fertilizing equipment will not be paid for separately but shall be included in the work.

April 26, 2012

REVISION OF SECTION 212  
SEED

**NOTICE**

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in projects having seeding.

REVISION OF SECTION 212  
SEED

Section 212 of the Standard Specifications is hereby revised for this project as follows:

In subsection 212.02 (a), delete the first paragraph and replace with the following:

- (a) *Seed.* All seed shall be furnished in bags or containers clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percent of weed seed content, the guaranteed percentage of purity and germination, pounds of pure live seed (PLS) of each seed species, and the total pounds of PLS in the container. All seeds shall be free from noxious weed seeds in accordance with current state and local lists and as indicated in Section 213. The Contractor shall furnish to the Engineer a signed statement certifying that the seed is from a lot that has been tested by a recognized laboratory for seed testing within thirteen months prior to the date of seeding. The Engineer may obtain seed samples from the seed equipment, furnished bags or containers to test seed for species identification, purity and germination. Seed tested and found to be less than 10 percent of the labeled certified PLS and different than the specified species will not be accepted. Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

## SECTION 213 MULCHING

### DESCRIPTION

**213.01** This work consists of mulching the seeded areas, furnishing and placing wood chip mulch in the planting beds and plant saucers, furnishing and applying hydromulch with tackifier on roadway ditches and slopes, furnishing and placing tackifier on mulch or soil on roadway ditches or slopes, and furnishing and installing metal landscape border for the separation of planting beds, in accordance with the Contract or as directed. Mulching may be accomplished by the crimping method using straw or hay, by the hydraulic method using wood cellulose fiber mulch, or by other approved methods with approved materials. When a specific mulching method is required, it will be designated in the Contract.

**This work includes furnishing and applying spray-on mulch blanket on top of rock cuts and slopes after seeding or as temporary stabilization as shown on the plans or as directed by the Engineer.**

### MATERIALS

**213.02** Materials for mulching shall consist of Certified Weed Free field or marsh hay or straw of oats, barley, wheat, rye or triticale certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free mulch bale shall be identified by one of the following:

- (1) One of the ties binding the bale shall consist of blue and orange twine, or**
- (2) The bale shall have a regional Forage Certification Program tag indicating the Regional Forage Certification Program Number.**

Mulch shall be inspected for and Regionally Certified as weed free based on the Regionally Designated Noxious Weed and Undesirable Plant List for Colorado, Wyoming, Montana, Nebraska, Utah, Idaho, Kansas and South Dakota.

The Contractor shall not unload certified weed free mulch bales or remove their identifying twine, wire, or tags until the Engineer has inspected and accepted them.

The Contractor shall provide a transit certificate that has been filled out and signed by the grower and by the Department of Agriculture inspector.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the Colorado Department of Agriculture, Division of Plant Industry.

Straw or hay in a stage of decomposition (discolored, brittle, rotten, or moldy) or old, dry mulch which breaks in the crimping process will not be accepted.

The type and application rate of mulch material shall be as designated in the Contract.

The hydromulch material for hydraulic mulching shall consist of virgin wood fibers manufactured expressly from clean whole wood chips. The chips shall be processed

in such a manner as to contain no growth or germination inhibiting factors. Fiber shall not be produced from recycled materials such as sawdust, paper, cardboard, or residue from pulp and paper plants. The wood cellulose fiber mulch shall be dyed green to aid in visual metering during application. The dye shall be biodegradable and not inhibit plant growth. The wood cellulose fibers of the mulch must maintain uniform suspension in water under agitation. Upon application, the mulch material shall form a blotter-like mat covering the ground. This mat shall have the characteristics of moisture absorption and percolation and shall cover and hold seed in contact with the soil. The Contractor shall obtain certifications from suppliers that laboratory and field testing of their product has been accomplished, and that it meets all of the foregoing requirements pertaining to wood cellulose fiber mulch.

The wood cellulose fiber mulch shall conform to the following specifications:

(1)	Percent moisture content	10.0% ± 3.0%
(2)	Percent Organic Matter* (Wood Cellulose Fiber)	99.3% ± 0.2%
(3)	Percent Ash Content*	0.7% ± 0.2%
(4)	pH	4.9 ± 0.5
(5)	Water Holding Capacity*	1200-1600 grams**

\*Oven-Dried Basis

\*\*Per 100 grams of fiber

The wood cellulose fiber mulch shall be packaged in units containing current labels, with the manufacturer’s name, the net weight, and certification that the material meets the foregoing requirements for wood cellulose fiber mulch.

Material for mulch tackifier shall consist of a free flowing, noncorrosive powder produced from the natural plant gum of *Plantago insularis* (Desert Indianwheat), applied in a slurry with water and wood fiber. The powder shall possess the following properties:

(1)	Protein content	1.6 ± 0.2%
(2)	Ash content	2.7 ± 0.2%
(3)	Fiber	4.0 ± 0.4%
(4)	pH 1% solution	6.5 - 8.0

The material used for mulch tackifier shall not contain any mineral filler, recycled cellulose fiber, clays, or other substances which may inhibit germination or growth of plants. Water shall conform to subsection 209.02.

Wood chip mulch shall consist of fresh, moist pole peelings material having approximate dimensions;

Width: ¼ to ½ inch; Length: 3 to 4 inches

The Contractor shall submit a sample to the Engineer for approval at least 30 days prior to placing on the project.



The metal landscape border shall consist of a strip of metal such as steel conforming to ASTM A 1011 or approved equal.

Spray-on mulch blanket shall consist of wood fibers bound together by adhesive and photodegradable synthetic fibers and premixed in an air stream at the factory. The fibers may be crimped or un-crimped. The wood fibers shall be manufactured expressly from clean whole wood chips and contain a range of fiber lengths, with a minimum of 25 percent of the fibers averaging 0.4 inches long. The adhesive binder shall be formulated to form a water resistant bond. The fibers shall be colored yellow or green with a water-soluble, non-toxic dye to help the operator apply the material uniformly. The mixture shall also contain a copolymer gel. A sample of the spray-on mulch blanket shall be submitted for approval at least two weeks in advance of its use on the project.

## CONSTRUCTION REQUIREMENTS

### 213.03

- (a) *Hay or Straw Mulching.* After seeding has been completed or when required for erosion control, hay or straw shall be uniformly applied, with no bare soil showing, at the rate designated in the Contract or as directed. It shall be crimped in with a crimper or other approved equipment. The Engineer may order hand-crimping on areas where mechanical methods cannot be used.

The seeded area shall be mulched and crimped within four hours after seeding. Areas not mulched and crimped within four hours after seeding or prior to precipitation or damaging winds on site shall be reseeded with the specified seed mix at the Contractor's expense, prior to mulching and crimping.

When tackifier is required in the Contract it shall be applied in the following order: (1) hydraulic mulching, (2) mulch tackifier.

- (b) *Hydraulic Mulching.* Cellulose fiber mulch and tackifier shall be added to water to form a homogeneous slurry. The operator shall spray apply the slurry mixture uniformly over the designated seeded area.

Hydraulic mulching shall not be done in the presence of free surface water.

1. Mixing procedure for the hydraulic mulch and tackifier mixture shall be as follows:
  - (1) Fill tank with water approximately  $\frac{1}{4}$  full.
  - (2) Continue filling while agitating with engine at full rpm.
  - (3) Pour tackifier, at a moderate rate, directly into area of greatest turbulence.
  - (4) With the recommended amount of tackifier in solution, add wood cellulose fiber mulch. Do not add fertilizer.

Apply the hydromulch and tackifier mixture at the following rate:

<b>Wood Cellulose Fiber Mulch</b>	<b>Tackifier</b>
2000 lbs./Acre	100 lbs./Acre

2. Mixing procedure for Mulch Tackifier shall be as follows:
  - (1) Fill tank with desired amount of water and run engine at full R.P.M.
  - (2) Add wood fiber. Agitate until a homogenous, non-lumpy slurry is formed. Do not add fertilizer
  - (3) Slowly sift powdered tackifier into slurry and continue to agitate for at least five minutes.
  - (4) Spray onto mulch or soil using a nozzle that will disperse the spray into a mist that will uniformly cover the mulch.

Application Rate: Apply this as an overspray at the following rate or as approved by the Engineer.

<b>Powder</b>	<b>Fiber</b>	<b>Water</b>
200 lbs./Acre	300 lbs./Acre	1000 gal./Acre

- (c) *General.* Mulch shall be tacked simultaneously or immediately upon completion of mulching and crimping to avoid non-uniform coverage. Areas not properly mulched, or areas damaged due to the Contractor’s negligence, shall be repaired and remulched as described above, at the Contractor’s expense.

Mulch removed by circumstances beyond the Contractor’s control shall be repaired and remulched as ordered. Payment for this ordered corrective work shall be at the contract prices.

The Engineer may order test sections be established for adjusting the mulching equipment to assure conformance with the specified application rate. The Engineer may order equipment readjustment at any time.

- (d) *Wood Chip Mulch.* A 4-inch layer, unless otherwise shown in the plans, of wood chip mulch shall be uniformly applied to all planting beds as shown on the plans or as directed. Wood chip mulch shall be placed in all tree and shrub saucers in seeded areas. Wood chip mulch shall be capable of matting together to resist scattering by the wind.
- (e) *Metal Landscape Border.* Metal Landscape border shall be installed along the lines and at the grades shown on the plans by an approved method that will not damage the border. Ends of metal landscape border shall overlap the next adjacent section a minimum of 6 inches. Metal landscape border shall be anchored with wire tie-downs at intervals of approximately 2 feet. Wire tie-downs shall be 9 gage wire at least 14 inches long. Metal landscape border shall be inserted into the ground by driving against the wire tiedowns; ground may be moistened to ease entrance into the ground. Driving on edge of metal landscape border will not be permitted except when the edge is properly shielded. Metal landscape border may be bent for sharp angles, and overlapped at closure of perimeter.

- (f) *Spray-On Mulch Blanket.* A technical representative of the manufacturer or authorized distributor shall be present for the initial mixing and application of the spray-on mulch blanket.

Spray-on mulch blanket shall be mixed and applied according to the following procedure:

- (1) Mix spray-on mulch blanket at a ratio of 50 lbs. of spray-on mulch blanket per 125 gallons of water. Seed will not be mixed into the spray-on mixture.
- (2) Fill tank with water sufficient to reach the level of the agitator shaft.
- (3) Start mixing agitators and regulate throttle throughout the loading process to achieve agitation.
- (4) Load machine with spray-on mulch blanket and the balance of the required water. Load spray-on mulch blanket through breaker or break by hand.
- (5) Vigorously agitate the mixture for a minimum of ten minutes after loading to allow thickening. Reduce agitation to a minimum.
- (6) Apply mixture in even layers, working back and forth between top and bottom of the slope, to uniformly cover soil with the mixture. Spray the product through a fan or slit type nozzle (22 to 50 degree tip). The nozzle shall create a fine, uniformly dispersed spray that “rains down” on the soil.

Spray-on mulch blanket shall be applied at the rate of 2600 pounds per acre.

Spray-on mulch blanket shall have no cure time once applied.

Spray-on mulch blanket shall not be applied in ditches or other areas of concentrated flow.

## **METHOD OF MEASUREMENT**

**213.04** The quantity of hay and straw mulch, wood chip mulch, wood cellulose fiber hydromulch, and tackifier will not be measured but shall be the quantity designated in the Contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract. Measurement for acres will be by slope distances.

The quantity of mulch tackifier to be measured will be the actual number of pounds of dry tackifier powder used.

Metal landscape border will be measured by the linear foot of completed and accepted metal border. Measured length of metal landscape border will not include required overlap splices.

Spray-on mulch blanket will be measured by the actual number of acres to which it is applied based on slope distances.

### BASIS OF PAYMENT

**213.05** The accepted quantities will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Mulching (___)	Acre
Mulching (Weed Free Hay)	Acre
Mulching (Weed Free Straw)	Acre
Mulching (Wood Chip)	Cubic Foot
Mulch Tackifier	Pound
Metal Landscape Border ___ Inch	Linear Foot
<b>Spray-on Mulch Blanket</b>	<b>Acre</b>

Water, wood fiber, mixing and application for mulch tackifier will not be measured and paid for separately but shall be included in the work.

Adjusting or readjusting mulching equipment will not be paid for separately but shall be included in the work.

**Payment for spray-on mulch blanket will be full compensation for all work and materials necessary to complete the item.**

January 31, 2013

REVISION OF SECTION 213  
MULCHING

**NOTICE**

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in all projects having mulching.

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 REVISION OF SECTION 213  
 MULCHING

Section 213 of the Standard Specifications is hereby revised for this project as follows:

In subsection 213.01, delete the last paragraph and replace with the following:

This work includes furnishing and applying spray-on mulch blanket or bonded fiber matrix on top of rock cuts and slopes after seeding or as temporary stabilization as shown on the plans or as directed by the Engineer.

In subsection 213.02, delete the eighth paragraph and replace with the following:

The hydromulch material for hydraulic mulching shall consist of virgin wood fibers manufactured expressly from clean whole wood chips. The chips shall be processed in such a manner as to contain no growth or germination inhibiting factors. Fiber shall not be produced from recycled materials such as sawdust, paper, cardboard, or residue from pulp and paper plants. The wood cellulose fibers of the mulch must maintain uniform suspension in water under agitation. Upon application, the mulch material shall form a blotter like mat covering the ground. This mat shall have the characteristics of moisture absorption and percolation and shall cover and hold seed in contact with the soil. The Contractor shall obtain certifications from suppliers that laboratory and field testing of their product has been accomplished, and that it meets all of the foregoing requirements pertaining to wood cellulose fiber mulch.

In subsection 213.02, delete the eleventh paragraph and replace with the following:

Material for mulch tackifier shall consist of a free-flowing, noncorrosive powder produced either from the natural plant gum of *Plantago Insularis* (Desert Indianwheat) or pre-gelatinized 100 percent natural corn starch polymer. The powders shall possess the following properties:

*Plantago Insularis* (Desert Indianwheat):

Property	Requirement	Test Method
(1) pH 1% solution	6.5 - 8.0	
(2) Mucilage content	75% min.	ASTM D7047

Pre-gelatinized 100 percent natural corn starch polymer:

(1) Organic Nitrogen as protein	5.5-7%
(2) Ash content	0-2%
(3) Fiber	4-5%
(4) pH 1% solution	6.5 – 8.0
(5) Size	100% thru 850 microns (20 mesh)
(6) Settleable solids	<2%

All fibers shall be colored green or yellow with a biodegradable dye.

Delete the last paragraph in subsection 213.02 and replace with the following:

(a) *Spray-on Mulch Blanket*. Spray on mulch blanket shall be one of the following, unless otherwise shown on the plans:

- (1) Spray-on Mulch Blanket (Type 1) shall be a hydraulically applied matrix containing organic fibers, water soluble cross-linked tackifier, reinforcing natural and/or synthetic interlocking fibers. Mulch Blanket (Type 1) shall conform to the following:

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REVISION OF SECTION 213  
MULCHING

<b>Properties</b>	<b>Requirement</b>	<b>Test Method</b>
Organic Fibers	71% Min.	ASTM D 2974
Cross linked Tackifiers	10% +/- 2% Min.	
Reinforcing Interlocking Fibers	10% +/- 1% Min.	
Biodegradability	100%	ASTM D 5338
Ground Cover @ Application Rate	90% Min.	ASTM D 6567
Functional Longevity	12 Months Min.	
Cure Time	< 8 hours	
<b>Application</b>		
Application Rate	3,000 lb./acre	

The organic fiber shall not contain lead paint, printing ink, varnish, petroleum products, seed germination inhibitors, or chlorine bleach. The organic fibers and reinforcing interlocking fibers cannot be produced from sawdust, cardboard, paper, or paper by-products.

- (2) Spray-on Mulch Blanket (Type 2) shall be a hydraulically applied matrix pre-packaged in 50 pound bags containing both a soil and fiber stabilizing compound and thermally processed wood fiber.

The sterilized weed-free wood fiber mulch shall be manufactured through a thermo-mechanical defibrating process containing a specific range of fiber lengths averaging 0.25 inches or longer.

Mulch Blanket (Type 2) shall meet the following requirements:

<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Fiber Retention On 28-Mesh Screen	≥ 40%	Tyler Ro-Tap Method
Moisture Content	12% ± 2%	Total Air Dry Weight Basis
Organic Matter	99.2% ± 0.2%	Oven Dry Weight Basis
Ash Content	0.8% ± 0.2%	Oven Dry Weight Basis
pH At 3% Consistency In Water	4.5-7.0 ± 0.5%	
Sterilized Weed-Free	Yes	
Non-Toxic To Plant Or Animal Life	Yes	

The soil and fiber stabilizing compound shall be composed of linear anionic copolymers of acrylamide pre-packed within the bag having a minimum content of 1.0 percent. The compound shall conform to the following:

<b>Property</b>	<b>Requirement</b>
Molecular Weight	≥ 12x10 <sup>6</sup>
Charge Density	> 25%
Non-Toxic To Plant Or Animal Life	Yes

- (b) *Bonded Fiber Matrices (BFM)*. BFM shall consist of hydraulically-applied matrix with a minimum of 70 percent non-toxic thermally processed or refined long strand organic fibers and water soluble tackifier to provide erosion control and designed to be functional for a minimum of 9 months. BFMs form an erosion-resistant

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 REVISION OF SECTION 213  
 MULCHING

blanket that promotes vegetation and prevents soil erosion. The BFM shall be 100 percent biodegradable. The binder in the BFM should also be biodegradable. Biodegradable BFMs should not be applied immediately before, during, or immediately after rainfall if the soil is saturated. BFM shall conform to the following requirements:

<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Ground Cover (%)	95	ASTM 6567
Bio-degradability (%)	100	ASTM 5338
Functional Longevity (months)	9 month minimum	
Cure Time (hours)	24-48	
Cross-linked tackifier	10% minimum	

<b>Application</b>	
Application Rate (lbs./Acre)	3000

The fibers shall not contain lead paint, printing ink, varnish, petroleum products, seed germination inhibitors, or chlorine bleach. Fiber shall not be produced from sawdust, cardboard, paper, or paper by-products.

In subsection 213.03 (b) 2, delete the second paragraph and replace with the following:

Application Rate: Apply this as an overspray at the following rate or as approved by the Engineer.

<b>Powder</b>	<b>Fiber</b>	<b>Water</b>
200 lbs./Acre	300 lbs./Acre	2000 gal./Acre

In subsection 213.03, delete (f) and replace with the following:

- (f) *Spray-on Mulch Blanket.* Spray-on Mulch Blanket shall strictly comply with the Manufacturer’s mixing recommendations and installation instructions. No chemical additives with the exception of fertilizer, soil pH modifiers, extended-term dyes and bio nutrients will be permitted. Apply Spray-on mulch blanket in a uniform application using a minimum 22 degree arc type nozzle. Apply hydro slurry in two direction (from top of slope down and from toe of the slope up, as well as, be applied at a minimum of two layers).

Hydromulching vessel shall be filled with water to at least 1/3 capacity (high enough to cover agitators) prior to adding any material. Continue to fill vessel with water and slowly add the fibers while agitators are in motion. Run agitators at ¾ speed. Continue to mix tank a minimum of 10 minutes prior to application.

Co-polymer shall not be used use in channels, swales, or other areas where concentrated flows are anticipated and should not be used on saturated soils that have groundwater seeps.

Subsection 213.03 shall include the following:

- (g) *Bonded Fiber Matrices (BFM).* Bonded fiber matrices shall strictly comply with the Manufacturer’s mixing recommendations and installation instructions. No chemical additives with the exception of fertilizer, soil pH modifiers, extended-term dyes and bio stimulant materials shall be permitted. BFM shall be applied in a uniform application using a minimum 22 degree arc type nozzle. Apply BFM in two direction (from top of slope down and from toe of the slope up, as well as, be applied at a minimum of two layers).

Biodegradable BFMs should not be applied immediately before, during, or immediately after rainfall if the soil is saturated.



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 MULCHING

Product shall not be used use in channels, swales, or other areas where concentrated flows are anticipated and should not be used on saturated soils that have groundwater seeps.

Foot traffic, mechanical traffic or grazing shall not be permitted on treated areas until vegetated. Treated areas damaged due to circumstances beyond Contractor's control shall be repaired or re-applied as ordered. Payment for corrective work, when ordered, shall be at contract rates.

In subsection 213.04, delete the first paragraph and replace with the following:

The quantity of hay and straw mulch, wood chip mulch, wood fiber and, spray-on mulch tackifier, bonded fiber matrix and tackifier will not be measured but shall be the quantity designated in the Contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract. Measurement for acres will be by slope distances.

In subsection 213.04, delete the fourth paragraph and replace with the following:

Spray-on Mulch Blanket and Bonded Fiber Matrix will be measured by the acre or by the actual pounds of product applied, as shown on the plans. The area will be calculated on the basis of actual or computed slope measurements. The Contractor shall verify prior to application, weight of spray on mulch blanket and bonded fiber matrix bags for certification of materials and application rate.

Subsection 213.05 shall include the following:

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Bonded Fiber Matrix	Acre
Bonded Fiber Matrix	Pound
Spray on Mulch Blanket	Pound

Payment for spray-on mulch blanket and bonded fiber matrix will be full compensation for all work and materials necessary to complete this item.

## SECTION 214 PLANTING

### DESCRIPTION

**214.01** This work consists of furnishing and planting trees, shrubs, wetland perennials, and other plant material, hereinafter referred to as “plants” and obtaining live brush layer cuttings from on-site willow species designated by the Engineer near the project site and planting them in moist areas as shown on the plans or as directed.

### MATERIALS

**214.02 General.** Plants shall be of the species or variety designated in the Contract, in healthy condition with normal well developed branch and root systems, and shall conform to the requirements of the current *American Standard for Nursery Stock*. The Contractor shall obtain certificates of inspection of plant materials that are required by Federal, State, or local laws, and submit the certificates to the Engineer.

All plants shall be free from plant diseases and insect pests. All shipments of plants shall comply with all nursery inspection and plant quarantine regulations of the State of origin and destination, and the Federal regulations governing Interstate movement of nursery stock.

The minimum acceptable sizes of all plants, with branches in normal position, shall conform to the measurements specified in the Contract.

Plants hardy in hardiness zones 2, 3, 4, and 5 only will be accepted. Hardiness zones are defined in U.S. Department of Agriculture publications.

All container grown plants shall be those plants that have been growing in a nursery for at least one growing season, or plants that have established themselves in accordance with definitions set forth in the Colorado Nursery Act, Title 35, Article 26, CRS.

Trees and shrubs shall have been root-pruned during their growing period in the nursery in accordance with standard nursery practice.

If plants of acceptable quality and specified variety or size are not available locally, the Contractor may:

- (1) Substitute acceptable plants that are larger than specified at no change in contract price.
- (2) On written approval, substitute smaller plants than those specified in the Contract at the adjusted price stated in the written approval.
- (3) On written approval, substitute plants of a different genus, species, or variety at the adjusted price stated in the written approval.

Before any substitution of plants will be considered, the Contractor shall furnish to the Engineer written statements from three sources verifying that the plants designated on the plans are not available.

At the landscape pre-construction conference, the Contractor shall name the nursery stock supplier for all items. The Contractor shall tag all nursery stock for inspection by the Engineer. The Engineer will reject any nursery stock not meeting the Contract at any of the three following times and locations:

- (1) At the named supplier's location. The Engineer will notify the Contractor when nursery stock will be inspected at the supplier's location.
- (2) On the project site at the time of delivery, prior to planting.
- (3) At the time of installation. Final acceptance of all plant material will be made at the time of installation on the project site.

Deciduous plants, broadleaf evergreens, and conifers shall be balled and burlapped, or in containers used in standard nursery practice. Balling and burlapping shall conform to the recommended specifications in the *American Standard for Nursery Stock*. The ball of the plant shall be natural, not made, and the plant shall be handled by the ball at all times. No balled and burlapped plant shall be accepted if the ball is broken or the trunk is loose in the ball.

Each species shall be identified by means of grower's label affixed to the plant. The grower's label shall include the data necessary to indicate conformance to specifications.

Plants for fall planting shall be furnished balled and burlapped or container-grown unless otherwise designated in the Contract or approved.

- (a) *Brush Layer Cuttings*. Brush layer cuttings taken from designated plants shall be at least 0.5 inch in diameter or larger. Brush layer cuttings shall be 24 to 36 inches long with the bottom end cut off at an angle and the top end with a straight cut. Cuttings shall be taken and installed while dormant in early spring. Cuttings shall not be planted when the ground is frozen. Brush layer cuttings shall be stored no longer than one week. The cuttings shall be stored by submerging them at least  $\frac{2}{3}$  of their length in containers of water, free from any harmful oil, chemical, sprays, or other materials. The containers shall be kept in the shade.
- (b) *Wetland Perennial Plants*. Perennial wetland plants shall be supplied in containers as designated in the Contract; no bare root material will be allowed. The original plant stock for the plants shall be from Colorado. Perennial plants shall have been growing at least one growing season in the nursery. Perennial shall not be shipped while in a dormant condition. Perennials shall be a minimum of 6 inches in height when applicable to the species. Water shall be applied to wetland perennial plants until soil is saturated. Wetland perennial plants shall be watered thoroughly every day for a period of one month.

- (c) *Stakes.* Wood stakes shall be 2 inches x 2 inches square, or 2 ½ inch diameter and 6 feet long free from bends. Metal stakes shall be 6 feet long standard T-bar steel fence post or #4 or larger rebar. Wood stakes shall be made of untreated wood guaranteed to last in the ground at least two growing seasons. The bottom of wood stakes shall be pointed.
- (d) *Soil Conditioners and Fertilizer.* Soil conditioner shall consist of composted plant material, 90 percent ¼ inch or less with a carbon to nitrogen ratio of 15:1 to 25:1. A sample of the soil conditioner and certificate of compliance shall be provided to the Engineer to verify the organic matter content, and carbon matter to nitrogen ratio shall be submitted one month prior to planting for approval.

Fertilizer for planting shall be used as specified in the Contract.

## CONSTRUCTION REQUIREMENTS

**214.03 General.** All plants shall be protected from drying out or other injury. Broken and damaged roots shall be pruned before planting.

- (a) *Planting Seasons.* Plants shall be planted in accordance with the Contract.

Areas to be planted shall be brought to the lines and grades designated or approved. The location of plants shown in the Contract is approximate to the degree that unsuitable planting locations shall be avoided. Trees shall be planted at least 30 feet from the edge of the traveled way, except when guardrail or vertical curb exists, this distance may be reduced to 20 feet. Locations and layouts shall be approved before preparatory work for planting is started. Shrubs shall not be planted closer than 6 feet from the edge of pavement.

All layout staking for planting shall be done by the Contractor and shall be approved by the Engineer before planting holes are prepared.

The Contractor shall place all plant material according to the approved planting plans, or as directed.

- (b) *Excavation.* Planting pits shall be circular in outline with vertical or sloped sides. Pits for trees and shrubs shall be at least two times greater in diameter than the earth ball.
- (c) *Planting.* Planting shall be done in accordance with good horticultural practices. Plants of upright growth shall be set plumb and plants of prostrate type shall be set normal to the ground surface. Plants with dry, broken, or crumbling roots will not be accepted for planting.

Planting pits shall be dug 2 to 4 inches shallower than the height of the rootball for trees, and 2 inches shallower for shrubs. In non-irrigated areas, planting pits shall be dug so that the top of the rootball is level with the final grade. The tree rootball shall be set in the center of the planting pit on undisturbed soil. Trees shall be stabilized and then the wire basket, any twine or wire, and burlap shall be removed before the pit is backfilled. Shrubs shall

be planted in the center of the pit. Plastic, metal, fabric, or peat containers shall be removed. Shallow scores  $\frac{1}{4}$  to  $\frac{1}{2}$  inch deep shall be made along the edges of the rootball.

Areas to be planted with ground cover shall be prepared by placing topsoil and a  $\frac{1}{2}$  inch layer of soil conditioner on the ground surface, and roto-tilling to a depth of 6 inches. Ground cover shall be planted by excavating to a depth sufficient to accommodate the root structure of plant materials without crimping or bending roots. After planting, backfill shall be placed around the ground cover and compacted firmly around the roots. The planted areas shall be brought to a smooth and uniform grade, and then top dressed with a 2 inch mulch cover of the type specified on the plans.

- (d) *Backfilling.* When soil conditioner is specified, composted plant material shall be added and thoroughly mixed into the backfill material at the rate of 0.5 cubic foot per tree and 0.1 cubic foot per shrub.

Backfill shall be thoroughly worked and watered-in to eliminate air pockets. Watering shall be done immediately after the plant is placed. Backfilling of the planting pit shall be resumed after this water is absorbed. Roots and crown shall be covered with soil at this time. After the soil has settled, plants must be in the proper position and at the proper depth. Saucers shall be prepared around each plant to the dimensions shown on the planting details. When saucers are required they shall be covered with a 4 inch thick layer of fresh moist wood chip mulch conforming to Section 213. After completion of all planting and before acceptance of the work, the Contractor shall water plants installed under this Contract, as needed to maintain a moist root zone optimum for plant growth. Plants damaged by the Contractor's operations shall be replaced at the Contractor's expense.

Surplus soil remaining after backfilling is completed shall be used for constructing water retention berms, or, if not needed for berms, shall be thinly distributed (wasted) in the vicinity, subject to approval of the Engineer.

- (e) *Pruning.* All deciduous trees and shrubs shall be pruned in accordance with standard horticultural practice, preserving the natural character of the plant. Guidelines for pruning are indicated in the planting details. Pruning cuts shall be made with sharp clean tools.

All clippings shall become the property of the Contractor and be removed from the site.

- (f) *Staking.* All deciduous trees 2 inch caliper and greater shall be staked with two stakes. Stakes shall conform to subsection 214.02(c). Stakes shall be driven 2 feet into the ground with one stake on the side of the prevailing wind (generally the west side) and the other stake on the opposite side. Stakes shall be driven at least 1 foot outside each edge of the planting pit. Trees shall be guyed with 1 to 2 inch wide strips of nylon webbing with metal grommets.

Coniferous trees 4 feet or taller shall be staked as designated in the Contract or directed.

Stakes shall be spaced equally around the tree.

Trees specified to be guyed with wire shall be secured with No. 12 gage annealed galvanized steel wire free of bends and kinks.

- (g) *Wrapping Materials.* Wrapping material shall be horticulturally approved waterproof wrapping paper. Wrapping shall be applied from the base of the tree upward to the second scaffold branch and secured with arbor tape. *Populus sp.* are exempt from tree wrap. The Contractor shall submit the manufacturer's certification for the wrapping material requirements. Wrapping shall be done in the fall months prior to freeze, and removed in the spring. Wrapping shall not remain on any trees throughout the summer months. Wrapping shall be removed by the Contractor.

All plant tags shall be removed from plants and all packing or other material used by the Contractor shall be removed from the site.

- (h) *Brush Layer Cuttings.* Using a rock bar or other tool, holes at least 20 inches deep shall be made in the stream bank or other areas. A cutting shall be placed in each hole. If in riprap, the hole shall be backfilled with soil to within 3 inches of the riprap surface. The top 3 inches of the void shall be filled with gravel from the stream bank or streambed and compacted slightly. The remaining exposed length shall be cut off 2 to 3 inches above the ground line. The placement of these cuttings shall be in areas shown on the plans that remain damp or are seasonally inundated, as directed. Brush layer cuttings shall be planted at a density of one cutting per square yard on streambank or other designated areas that have been regraded, ripped, or disturbed. The strip that is most successful for brush layer cutting establishment is only several yards wide and approximately, plus or minus, 2 feet from the ordinary high water line.

Water shall be applied to the brush layer cuttings planted areas until the soil mass is saturated. Brush layer cuttings shall be watered thoroughly every day for a period of one month.

- (i) *Irrigation.* Plantings that are to be irrigated shall be planted so that the irrigation system is operating and supplying the designated amount of water as planting is occurring. Plants shall be watered within 15 minutes of planting.

**214.04 Landscape Establishment.** From the time of installation, during construction, and throughout the Landscape Establishment period the Contractor shall maintain all plant material and seeded areas in a healthy and vigorous growing condition, and ensure the successful establishment of vegetation. This includes performing establishment, replacement work, and landscape maintenance work as described below.

The beginning of the Landscape Establishment period depends upon receipt of the written *Notice of Substantial Landscape Completion* from the Engineer. Substantial Landscape Completion occurs when all plant materials in the Contract

have been planted and all work under Sections 212, 213, 214 and 623 has been performed, except for the Section 214 pay item, Landscape Maintenance. If the Notice of Substantial Landscape Completion is issued during the spring planting season, the Landscape Establishment period begins immediately and lasts for a period of 12 months. If the Notice of Substantial Landscape Completion is issued at any other time, the Landscape Establishment period begins at the start of the next spring planting season and lasts for a period of 12 months.

- (a) *Establishment and Replacement.* After all planting on the project is complete, a plant inspection shall be held including the Contractor, Engineer and CDOT Landscape Architect to determine acceptability of plant material. During the inspection, an inventory of rejected material will be made, and corrective and necessary cleanup measures will be determined.

Dead, dying, or rejected material shall be removed each month during the Landscape Establishment period as directed. Plant replacement shall be performed during the spring planting seasons at the beginning and end of the Landscape Establishment Period. Plant replacement stock shall be planted in accordance with the Contract and is subject to all requirements specified for the original material. Plant replacement shall be at the Contractor's expense.

- (b) *Landscape Maintenance.* During the Landscape Establishment period the Contractor shall perform landscape maintenance as described herein. The Contractor shall maintain all landscaped areas in the condition they were in when first installed and accepted.

Prior to the Notice of Substantial Landscape Completion, the Contractor shall submit a detailed maintenance plan which includes a schedule showing the number of hours or days personnel will be present, the type of work to be performed, supervision, equipment and supplies to be used, emergency program and responsible person to contact for emergency work, and inspection schedule. The detailed maintenance plan is subject to review and approval by the Engineer. The Engineer will not issue the Notice of Substantial Completion until the Engineer has received and approved the maintenance plan.

The proposed types, brand names, material safety data sheets, and rates of application of herbicides, pesticides, and fertilizers to be used shall be submitted for approval with the detailed maintenance plan. Herbicides, pesticides, and fertilizers shall meet all local, state, and federal regulations and shall be applied by a licensed applicator.

The Contractor shall perform start-up, watering, programming, operation, and fall winterization of the irrigation system. The Contractor shall do a spring start-up of the irrigation system prior to Final Acceptance and perform all irrigation system warranty work as specified in Section 623.

The Contractor shall keep a project diary documenting all landscape and irrigation maintenance activities including work locations and time spent. The Contractor shall provide copies of the diary to the Engineer upon request.

The Contractor shall restore and reseed eroded areas and areas of poor establishment in accordance with Sections 212 and 213. The Contractor shall maintain staking and guying until the end of the Landscape Establishment period. The Contractor shall remove all guying wire, straps, and stakes at the end of the Landscape Establishment period.

During the landscape establishment period, the Contractor shall water, cultivate, and prune the plants and repair, replace, or readjust guy material, stakes, and posts as required or directed by the Engineer. The Contractor shall reshape plant saucers, repair washouts and gullies, replace lost wood chip mulch, keep all planting sites free from weeds and do other work necessary to maintain the plants in a healthy and vigorous growing condition. This includes seasonal spraying or deep root watering with approved insecticides or fungicides as required.

1. *Watering in Irrigated Areas.* Trees planted at all locations on the project shall be watered once per month at the rate of 30 gallons per tree for the months November through April until the Landscape Establishment period ends.

Shrubs planted at all locations on the project shall be watered once per month at the rate of 10 gallons per shrub for the months November through April until the Landscape Establishment period ends.

2. *Watering in Non-irrigated Areas.* Trees planted shall be watered twice per month by the Contractor at the rate of 30 gallons per tree per watering for the months May through October, and once per month at the rate of 30 gallons per tree for the months November through April of the 12 month period following planting.

Shrubs planted in upland areas shall be watered twice per month by the Contractor at the rate of 10 gallons per shrub per watering for the months May through October, and shall be watered once per month at the rate of 10 gallons per shrub for the months November through April of the 12 month period following planting.

The contract performance bond, required by subsection 103.03, shall guarantee replacement work during the plant establishment period.

If all other work is completed on a project, no contract time will be charged during the plant establishment period.

## **METHOD OF MEASUREMENT**

**214.05** The quantity of planting to be measured will be the number of plants, of the types and sizes designated in the Contract, that are actually planted and accepted.

The quantity of brush layer cuttings will be measured by the actual number planted, complete in place and accepted.

Landscape Maintenance will not be measured, but will be paid for on a lump sum basis.



**BASIS OF PAYMENT**

**214.06** The accepted quantities of planting, and brush layer cuttings will be paid for at the contract unit price for each of the various items listed below that appear in the bid schedule.

Payment for the total cost of the item will be made at the completion of planting.

Cost of the performance bond shall be included in the cost of the plant items.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
____ Tree ____ Inch Caliper	Each
____ Tree ____ Foot	Each
____ Shrub (____ Gallon Container)	Each
Perennials (____ Quart Container)	Each
Perennials (____ Gallon Container)	Each
Brush Layer Cuttings	Each
Landscape Maintenance	Lump Sum

Water required for all items of work will not be measured and paid for separately, but shall be included in the work.

Payment shall be full compensation for all work necessary to complete the item.

For each month that landscape maintenance is performed and accepted during the Landscape Maintenance period as specified in subsection 214.04, payment for Landscape maintenance will be made in installments as follows:

- (1) 10 percent of the lump sum amount will be paid for each of the eight growing season months, March through October.
- (2) 5 percent of the lump sum amount will be paid for each of the winter months, November through February.

Landscape maintenance performed during construction will not be measured and paid for separately, but shall be included in the work.

Landscape Establishment, except for landscape maintenance, will not be paid for separately, but shall be included in the work.

## SECTION 215 TRANSPLANTING

### DESCRIPTION

**215.01** This work consists of transplanting trees, shrubs, plugs of wetland material including root mats from existing wetlands, and other plant material, hereinafter referred to as “plants,” of the designated species in accordance with this specification and accepted standard horticultural practice at the designated locations. Transplanting season is that period when plants are in a dormant condition and can be moved. Dormant means that deciduous material is without leaves and coniferous material is without new candle growth. Transplanting done in periods not considered dormant transplanting season shall require advance approval.

### MATERIALS

**215.02** Plants to be transplanted shall be those which are flagged on the project site within the right of way, or as directed.

Plugs shall be dug from areas noted in the Contract or as directed by the Engineer. Removal shall be dispersed throughout the areas so as not to impact the existing wetland. Plugs shall be taken in early spring, when plants are emerging. Plugs shall be a minimum of 4 inches in diameter and 6 inches to 8 inches deep with the root mat to remain intact. Plugs shall not be stockpiled but shall be transplanted directly to wetland mitigation sites as directed. Transplanting shall be accomplished the day they are dug. Plugs shall be kept moist and shall not be placed in holding beds

### CONSTRUCTION REQUIREMENTS

**215.03** Plants shall be dug, properly pruned, and prepared for transplanting in accordance with standard practice. The root system shall be kept moist and plants shall be protected from adverse conditions due to climate and transporting from the time they are dug to the actual planting.

Prior to removal for transplanting, all coniferous trees shall be sprayed with an approved anti-desiccant.

The following table represents the minimum diameter of root balls for collected plants.

**Type 6 - Collected Pinon Pine**

Caliper	Min. Ball Dia.
1 to 1½ inch	15 inch
1½ to 2 inch	17 inch
2 to 2½ inch	20 inch
2½ to 3 inch	24 inch
3 to 3½ inch	26 inch
3½ to 4 inch	28 inch
4 to 4½ inch	30 inch
4½ to 5 inch	32 inch

**Type 7 - All Collected Plants Other than Pinon Pine**

<b>Caliper</b>	<b>Min. Ball Dia.</b>
1 to 1½	14 inch
1½ to 2 inch	16 inch
2 to 2½ inch	20 inch
2½ to 3 inch	24 inch
3 to 3½ inch	28 inch
3½ to 4 inch	32 inch
4 to 4½ inch	36 inch
4½ to 5 inch	40 inch

For caliper sizes larger than those given under Type 7, the ratio of ball diameter to caliper shall be 8:1.

Planting pits for balled and burlapped trees shall be circular in outline with vertical sides. Pits shall be at least two times greater in diameter than the earth ball. Before a tree is placed in a plant pit, the pit shall be filled half full of water. Backfill shall be thoroughly worked and watered to eliminate air pockets. Unsuitable backfill soils shall be replaced.

Trees shall be machine transplanted with tree spades. The following table represents the minimum size of spade machine equipment to be used for transplanting plants based upon caliper size. The table also represents the minimum diameter of root-balls for machine transplanted plants.

<b>Caliper</b>	<b>Min. Spade Machine Size (Based upon root ball width)</b>
1 to 3 inch	44 inch
3 to 6 inch	65 inch
6 to 9 inch	80 inch
9 to 12 inch	90 + inch

Each tree shall be transported to the new site using the same spade with which it was dug, or several trees may be spade-dug and transported in a pod trailer manufactured specifically for this purpose. Trees shall not be removed from spade or transported in a haul truck. The Contractor shall give the Engineer one week notice prior to transplanting trees. At the time of transplanting the Engineer will designate a Department landscape architect to be on the site to oversee all tree planting.

Planting pits for machine-dug trees shall have the same dimension as the machine ball being placed. Before a tree is placed in a planting pit, the pit shall be filled half full of water and allowed to drain. Once the tree is placed, voids in the pit shall be filled with clean suitable backfill and tamped. If unsuitable soil is encountered in the planting pits, the Contractor shall dispose of said material and backfill with suitable material as determined by the Engineer.

After the tree is planted (collected or machine transplanted), a basin shall be built to hold at least 30 gallons of water. For each inch of trunk diameter greater than 3 inches, the basin capacity shall be increased by 10 gallons. The depth of saucer shall not be below the top of the root system of the tree. The basin shall be filled with water three times and allowed to stand each time until empty before refilling. Saucers shall be covered with a 4 inch thick layer of fresh moist wood chip mulch as shown on the plans. The size of mulch shall be approximately ¼ to ½ inch wide and 3 to 4 inches long. A sample shall be submitted in advance to the Engineer for approval.

Transplanting shall be accomplished within one day. Trees shall not be placed in holding beds.

All transplanted trees shall be subject to a 180-day maintenance period during one or more growing seasons and shall be watered every seven calendar days. Each watering shall be 100 gallons per tree.

All transplanted trees shall be guyed in accordance with Standard Plan M-214-1. Guying material shall be removed at the end of the 180 day maintenance period. All trees damaged by the Contractor's operations shall be replaced and replanted at the Contractor's expense as approved. At the end of the 180 day maintenance period all dead trees shall be replaced and replanted with trees at the Contractor's expense. Further maintenance will not be required.

The Contractor shall not damage existing landscaped areas, including but not limited to turf, irrigation equipment, and other plants, during the transplanting operation. The Contractor may use suitable platform material over existing turf to prevent damage from heavy machinery.

Wetland plugs shall be a minimum of 4 inches in diameter and 6 to 8 inches in depth. Holes left in the existing wetlands from plug removal shall be filled with topsoil and tamped lightly. After tamping, the filled hole shall be at the same elevation as the existing surrounding wetlands.

Transplant plugs shall be placed in containers (one plug per container) after harvesting to facilitate handling and placing of material.

Plugs shall be spaced as directed in the Contract. Plugs shall be planted to match surrounding grade.

Water shall be applied to plugs until soil is saturated. Plugs shall be watered thoroughly every day for a period of one month.

## **METHOD OF MEASUREMENT**

**215.04** The quantity of transplanting to be measured will be the actual number of plants of the various types transplanted and accepted.

The quantity of transplanted trees to be measured will be the actual number of trees of the various calipers and types transplanted and accepted in their final location.

Caliper measurement shall conform to the USA Standard for Nursery Stock, sponsored by the American Association of Nurserymen, Inc.

Only living plants in healthy condition at the end of the maintenance period will be accepted. If all other work is completed on the project, contract time will not be charged during the maintenance period.

The quantity of transplanted plugs to be measured will be the actual number of plugs transplanted and accepted in their final locations.

**BASIS OF PAYMENT**

**215.05** The accepted quantities of transplanting measured as provided above will be paid for at the contract unit price each.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Transplant Tree __Inch	Each
Transplant Shrub	Each
Transplant Plug	Each

Water required will not be measured and paid for separately, but shall be included in the work.

Hauling plants to their new location, removing unsuitable backfill, and providing clean suitable backfill for planting pit voids will not be measured and paid for separately but shall be included in the work

July 16, 2015

REVISION OF SECTION 216  
SOIL RETENTION COVERING

## NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in projects having soil retention blanket or turf reinforcement mat.

REVISION OF SECTION 216  
SOIL RETENTION COVERING

Section 216 of the Standard Specifications is hereby deleted for this project and replaced with the following:

**DESCRIPTION**

**216.01** This work consists of furnishing, preparing, applying, placing, and securing soil retention blankets and turf reinforcement mats for erosion control on roadway slopes or channels as designated in the Contract.

**MATERIALS**

**216.02** Soil retention covering shall be either a soil retention blanket or a turf reinforcement mat as specified in the Contract. It shall be one of the products listed on CDOT's Approved Products List and shall conform to the following:

- (a) *Soil Retention Blanket*. Soil retention blanket shall be composed of degradable natural fibers mechanically bound together between two slowly degrading synthetic or natural fiber nettings to form a continuous matrix and shall conform to the requirements of Tables 216-1 and 216-2. The blanket shall be of consistent thickness with the fiber evenly distributed over the entire area of the mat.

When specified lightweight polypropylene netting shall be 1.5 pounds per 1000 square feet; heavyweight netting shall be 2.9 pounds per 1000 square feet.

When biodegradable blanket is specified, the thread shall be 100 percent biodegradable; polypropylene thread is not allowed.

When photodegradable netting is specified the thread shall be polyester, biodegradable or photodegradable.

Blankets and nettings shall be non-toxic to vegetation and shall not inhibit germination of native seed mix as specified in the Contract. The materials shall not be toxic or injurious to humans. Class 1 blanket shall be an extended term blanket with a typical 24 month functional longevity. Class 2 blanket shall be a long term blanket with a typical 36 month functional longevity. The class of blanket is defined by the physical and performance characteristics.

1. *Soil Retention Blanket (Straw-Coconut)*. Soil Retention Blanket (Straw-Coconut) shall be a machine produced mat consisting of 70 percent certified weed free agricultural straw or Colorado native grass straw and 30 percent coconut fiber. The blanket shall be either biodegradable or photodegradable. Blankets shall be sewn together on a maximum 2 inch centers.

Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave unattached at intersections which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom side shall be lightweight polypropylene. The top side shall be heavyweight or lightweight polypropylene.

2. *Soil Retention Blanket (Excelsior)*. Soil Retention Blanket (Excelsior) blanket shall consist of a machine produced mat of 100 percent curled wood excelsior, 80 percent of which shall be 6 inches or longer in fiber length. It shall be either biodegradable or photodegradable. Blankets shall be sewn together at a maximum of 4 inch centers.

Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave unattached at intersections which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom side shall be lightweight polypropylene. The top side shall be heavyweight or lightweight polypropylene.

3. *Soil Retention Blanket (Coconut)*. Soil Retention Blanket (Coconut) shall be a machine produced mat consisting of 100 percent coconut fiber. It shall be either biodegradable or photodegradable.

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Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave which is unattached at the intersections, and which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom and top side shall be heavyweight polypropylene.

**Table 216-1  
PHYSICAL REQUIREMENTS FOR SOIL RETENTION BLANKET –  
PHOTODEGRADABLE OR BIODEGRADABLE BLANKETS**

Photo/Bio Degradable Class	Minimum Roll Width	Minimum Thickness ASTM D 6525	Acceptable Matrix Fill Material	Min. Mass per Unit Area ASTM D 6475	Size of Net Opening	
					Photo-degradable	Bio-degradable
1	6.5 ft.	250 mils	Straw/Coconut	8 oz/sy	Minimum: 0.50"x0.50" Maximum: 0.75"x0.75"	Minimum: 0.50"x0.50" Maximum: 0.5"x1.0"
1	6.5 ft.	250 mils	Excelsior	8 oz/sy	Minimum: 0.50"x0.50" Maximum: 1.0"x2.0"	NONE
2	6.5 ft.	200 mils	Coconut	8oz/sy	Minimum: 0.50" x0.5" Maximum: 0.75"x0.75"	Minimum: 0.50"x0.50" Maximum: 0.5"x1.0"

**Table 216-2  
PERFORMANCE REQUIREMENTS FOR SOIL RETENTION BLANKET –  
PHOTODEGRADABLE OR BIODEGRADABLE BLANKETS**

Photo/Bio Degradable Class	Slope Application "C" Factor <sup>1</sup> ASTM D 6459	Minimum Tensile Strength MD <sup>2</sup> ASTM D 6818
1	≤ 0.10@3:1	8.33 lb/in
2	≤ 0.10@3:1	10.42 lb/in
<b>Notes:</b> <sup>1</sup> "C" Factor calculated as ratio of soil loss from soil retention blanket protected slope (tested at specified or greater gradient, 3H:1V) to ratio of soil loss from unprotected (control) plot in large-scale testing. <sup>2</sup> MD is for machine direction testing (along the length of the roll).		

Blankets shall be tested for physical properties and have published data from an independent testing facility. Large scale testing of Slope Erosion Protection ("C" factor) shall be performed by an independent testing facility.



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(b) *Turf Reinforcement Mat.* Turf reinforcement mat (TRM) shall be a rolled mat consisting of UV stabilized, corrosion resistant, non-degradable synthetic fibers, filaments, or nets processed into a permanent three-dimensional matrix of the thickness specified in Tables 216-3 and 216-4. TRMs shall provide sufficient thickness, strength and void space to permit soil filling and retention, and the development of vegetation within the matrix. The class of TRM is defined by the physical and performance characteristics as specified in the following tables.

**Table 216-3  
PHYSICAL REQUIREMENTS<sup>1</sup> FOR TURF REINFORCEMENT MAT**

Product Class	Minimum Roll Width	Minimum Thickness ASTM D 6525	Acceptable Matrix Fill Material <sup>2</sup>	Size of Net Opening <sup>2</sup>
1	6.5 ft.	250 mils	Excelsior, Straw/Coconut, Coconut, or Polymer fibers	Minimum: 0.50"x0.50" Maximum: 0.75"x0.75"
2	6.5 ft.	250 mils	100% UV Stabilized Synthetic or Coconut Fibers	Maximum 0.50"x 0.50"
3	6.5 ft.	250 mils	100% UV Stabilized Synthetic Fibers	Maximum 0.50"x 0.50"

**Notes:**

<sup>1</sup> For TRMs containing degradable components, all property values shall be obtained on the non-degradable portion of the matting alone.

<sup>2</sup> For TRMs with nets and fill material. Netted TRMs shall be sewn together on a maximum 2 inch centers.

**Table 216-4  
PERFORMANCE REQUIREMENTS FOR TURF REINFORCEMENT MAT**

Product Class	Tensile Strength MD ASTM D 6818	Minimum UV Stability @ 500 Hours ASTM D 4355	Minimum Permissible Shear Stress <sup>1</sup> (Unvegetated) ASTM D 6460
1	125 lbs/ft	80%	1.8 lbs/sf
2	150 lbs/ft	80%	2.5 lbs/sf
3	175 lbs/ft	80%	3.1 lbs/sf

**Notes:**

<sup>1</sup> Permissible shear stress is the minimum shear stress that a product must be able to sustain when placed on a channel un-vegetated without physical damage or excess soil loss. Failure is defined as ½ inch of soil loss during a 30 minute flow event in large scale testing.

TRMs shall be tested for physical properties and have published data from an independent testing facility.

Large scale testing of Permissible Shear Stress will be performed by an independent testing facility.

(c) *Staples.* Staples shall be made of ductile steel wire, 0.165 inches in diameter, 8 inches long and have a 1 inch crown. "T" shaped staples will not be permitted.

A sample of the staples and a Certificate of Compliance (COC) including the manufacturer's product data showing that the product meets the Contract requirements shall be submitted for approval at the

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environmental preconstruction conference. Installation of the blanket will not begin until approval has been received from the Engineer in writing.

- (d) *Earth Anchors*. The mechanical earth anchor shall be composed of a load bearing face plate, a tendon rod or wire rope, and a locking head or percussion anchor. Each element of the anchor shall be composed of corrosion resistant materials. The anchor and wire rope shall have a breaking strength of 9,500 pounds utilizing standard tensile testing and ASTM A1007 - 07. The anchor shall have a minimum 1,000 pounds ultimate holding strength in normal soil and a manufacturer's recommended minimum driven depth of 3.5 feet.

A sample of the anchors and a Certificate of Compliance (COC) including the manufacturer's product data showing that the product meets the Contract requirements shall be submitted for approval at the environmental preconstruction conference. Installation of the blanket will not begin until approval has been received from the Engineer in writing.

### CONSTRUCTION REQUIREMENTS

**216.03** The Contractor shall install soil retention coverings in accordance with Standard Plan M-216-1 and the following procedure:

- (1) Prepare soil in accordance with subsection 212.06 (a).
- (2) Apply topsoil or soil conditioning as directed in the Contract to prepare seed bed.
- (3) Place seed in accordance with the Contract.
- (4) Unroll the covering parallel to the primary direction of flow.
- (5) Ensure that the covering maintains direct contact with the soil surface over the entirety of the installation area.
- (6) Do not stretch the material or allow it to bridge over surface inconsistencies.
- (7) Staple the covering to the soil such that each staple is flush with the underlying soil.
- (8) Ensure that staples or earth anchors are installed full depth to resist pull out. No bent over staples will be allowed. Install anchor trenches, seams, and terminal ends as shown on the plans.

The Contractor shall install TRMs using the following procedure:

- (1) Place 3 inches of topsoil or soil amended with soil conditioning.
- (2) Apply half of the specified seed at the broadcast rate and rake into soil.
- (3) Install TRM
- (4) Place 1 inch of topsoil or soil amended with soil conditioning into the matrix to fill the product thickness.
- (5) Apply the remaining half of the specified seed at the broadcast rate and rake into soil.
- (6) Install soil retention blanket (Photodegradable or Biodegradable Class 1) over the seeded area and TRM.

When applicable, the covering shall be unrolled with the heavyweight polypropylene netting on top and the lightweight polypropylene netting shall be in contact with the soil.

**216.04 Slope Application.** Soil retention coverings shall be installed on slopes as follows:

The upslope end shall be buried in a trench 3 feet beyond the crest of the slope if possible. Trench depth shall be a minimum of 6 inches unless required by the manufacture to be deeper. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and secured with staples or earth anchors at 1 foot on center.

There shall be an overlap wherever one roll of fabric ends and another begins with the uphill covering placed on top of the downhill covering. Staples shall be installed in the overlap.

There shall be an overlap wherever two widths of covering are applied side by side. Staples shall be installed in the overlap.

Staple checks shall be installed on the slope length at a maximum of every 35 feet. Each staple check shall consist of two rows of staggered staples.

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The down slope end shall be buried in a trench 3 feet beyond the toe of slope. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and secured with staples or earth anchors. If a slope runs into State waters or cannot be extended 3 feet beyond the toe of slope, the end of covering shall be secured using a staple check as described above.

Coverings shall be securely fastened to the soil by installing staples or earth anchors at the minimum rate shown on the Standard Plan M-216-1. Staple or earth anchor spacing shall be reduced where required due to soil type or steepness of slope.

**216.05 Channel Application.** Soil retention coverings shall be installed as follows on a channel application:

Coverings shall be anchored at the beginning and end of the channel across its entire width by burying the end in a trench. Trench depth shall be a minimum of 6 inches, unless a larger depth is specified by the manufacturer recommendations. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil and compacted by foot tamping, and seeded. Fabric shall be brought back over the trench and stapled.

Covering shall be unrolled in the direction of flow and placed in the bottom of the channel first. Seams shall not be placed down the center of the channel bottom or in areas of concentrated flows when placing rolls side by side.

There shall be an overlap wherever one roll of covering ends and another begins with the upstream covering placed on top of the downstream covering. Two rows of staggered staples shall be placed.

There shall be an overlap wherever two widths of covering are applied side by side. Staples shall be placed in the overlap.

The covering shall have a channel check slot every 30 feet along the gradient of the flowline. Check slots shall extend the entire width of the channel. The covering shall be buried in a trench. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and continued down the channel.

Coverings shall be securely fastened to the soil by installing staples at the minimum rate shown on the plans. Staple spacing shall be reduced where needed due to soil type or high flows.

**216.06 Maintenance.** The Contractor shall maintain the soil retention coverings until all work on the Contract has been completed and accepted. Maintenance shall consist of the repair of areas where damage is due to the Contractor's operations. Maintenance shall be performed at the Contractor's expense. Repair of those areas damaged by causes not attributable to the Contractor's operations shall be repaired by the Contractor and will be paid for at the contract unit price. Areas shall be repaired to reestablish the condition and grade of the soil and seeding prior to application of the covering.

#### METHOD OF MEASUREMENT

**216.07** Soil retention coverings, including staples, complete in place and accepted, will be measured by the square yard of finished surface, excluding overlap, which is installed and accepted. Earth Anchors will be measured by the actual number of earth anchors complete in place and accepted.

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 SOIL RETENTION COVERING

**BASIS OF PAYMENT**

**216.08** The accepted quantities of soil retention coverings will be paid for at the contract unit price per square yard. The accepted quantities of earth anchors will be paid for at the contract unit price per each installed.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Soil Retention Blanket ( ) (Photodegradable Class _)	Square Yard
Soil Retention Blanket ( ) (Biodegradable Class _)	Square Yard
Turf Reinforcement Mat (Class _)	Square Yard
Earth Anchors	Each

Preparation of seedbed, fertilizing, and seeding will be measured and paid for in accordance with Section 212.

Placing and preparation of seedbed, fertilizing, and seeding of soil under the TRM layer will be measured and paid for in accordance with Section 212.

Topsoil or amended soil and seed placed on the TRM will be measured and paid for in accordance with Sections 207 and 212.

Staples will not be measured and paid for separately, but shall be included in the work.

## **SECTION 217 HERBICIDE TREATMENT**

### **DESCRIPTION**

**217.01** This work consists of furnishing and applying herbicides to prevent or control plant growth in areas shown on the plans or designated.

### **MATERIALS**

**217.02** Herbicides shall be designated in the contract.

All herbicide labels shall be currently registered with the Colorado Department of Agriculture and the U.S. Environmental Protection Agency. All herbicides shall be supplied to the project in labeled containers. The labels shall show the product name, chemical composition, expiration date, and directions for use.

### **CONSTRUCTION REQUIREMENTS**

**217.03** All herbicides shall be applied by commercial pesticide applicators licensed by the Colorado Department of Agriculture as qualified applicators. The Contractor shall furnish documentation of such licensing prior to herbicide application. Herbicide mixing and application shall be done in accordance with instructions on the registered product label. The Engineer shall be furnished such label information prior to mixing and application.

The Contractor shall notify the Engineer at least 24 hours prior to each herbicide application and shall indicate the time and location application will begin. Application will not be allowed on Saturdays, Sundays, or holidays unless otherwise approved by the Engineer.

Herbicides shall not be applied when weather conditions, including wind conditions, are unsuitable for such work. Herbicides shall not be applied when soil is extremely dry.

Herbicide application method shall be such that plant growth outside the designated treatment areas will not be damaged. All damage caused by improper herbicide application shall be repaired at the Contractor's expense.

Herbicides shall not be used on areas that are to be topsoil sources unless otherwise approved by the Engineer.

### **METHOD OF MEASUREMENT**

**217.04** The quantity of herbicide treatment to be measured will be the actual number of square yards treated in accordance with the foregoing requirements or the actual number of hours the Contractor spends applying the herbicide and accepted by the Engineer. Areas designated to receive herbicide treatment will be measured once for each designated application. Reapplication of herbicide required due to inappropriate timing of the original application will not be measured or paid for.

**BASIS OF PAYMENT**

**217.05** The accepted quantities of herbicide treatment will be paid for at the contract unit price per square yard or per hour.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Herbicide Treatment	Square Yard
Herbicide Treatment	Hour

Water will not be measured and paid for separately but shall be included in the work.

**SECTION 615  
WATER CONTROL DEVICES**

**DESCRIPTION**

**615.01** This work consists of the construction of water and erosion control devices in accordance with these specifications, details shown on the plans and to the lines and grades established.

**MATERIALS**

**615.02** Slide headgates and automatic drain gates shall be of the sizes designated and shall be approved by the Engineer.

Parshall measuring flumes including wings shall be made of galvanized sheet steel material. Galvanize coating shall be “light commercial” minimum. Thickness of material and fabrication method shall be as approved. Measuring flumes shall have reinforced edges and an inlet throat of the dimensions designated on the plans.

Embankment protectors shall be made from material conforming to the applicable sections of these specifications.

**CONSTRUCTION REQUIREMENTS**

**615.03** Construction methods shall conform to the requirements of Section 603.

**METHOD OF MEASUREMENT**

**615.04** Automatic drain gates, Parshall measuring flumes and embankment protectors will be measured by the number of units of the various sizes installed. Slide headgates will be measured by the number of units of the various sizes and frame heights installed.

**BASIS OF PAYMENT**

**615.05** The accepted quantities will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
_____Inch Slide Headgate (_____Foot Frame)	Each
_____Inch Automatic Drain Gate	Each
_____Inch x _____Inch Parshall Measuring Flume	Each
Embankment Protector (Type_____)	Each

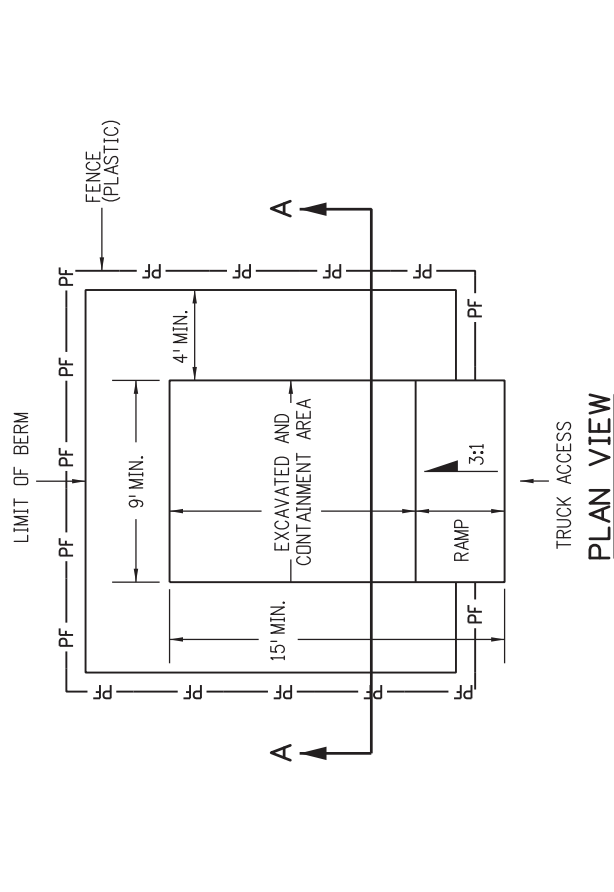
Pipe, concrete, or other material used with any of the above items will be bid under the appropriate Section.

## **4 CDOT Standard Plans**

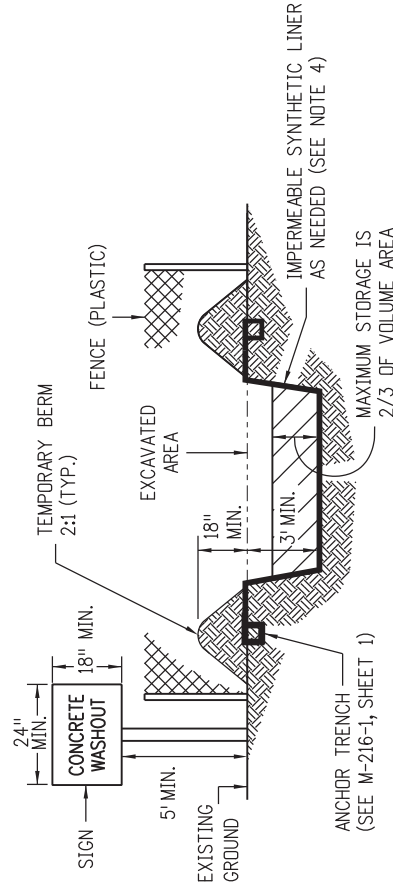
### **4.1 M-208-1, M-216-1 and M-615-1**



# BLANK TEMPLATE



**PLAN VIEW**



**SECTION A-A**

**NOTES:**

1. A FENCE (PLASTIC) CONFORMING TO SECTION 607 SHALL BE INSTALLED AROUND THE CONCRETE WASHOUT AREA, EXCEPT AT THE OPENING.
2. THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 INCHES HIGH AND CONFORM TO SUBSECTION 630.02.
3. ALL MATERIALS AND LABOR TO COMPLETE THE CONCRETE WASHOUT STRUCTURE SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
4. THE BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF FIVE FEET ABOVE GROUND WATER. IF NOT, IT SHALL BE LINED WITH AN IMPERMEABLE SYNTHETIC LINER THAT IS DESIGNED TO CONTROL SEEPAGE AT A MAXIMUM RATE OF 6 TO 10 CENTIMETERS PER SECOND.
5. THE PAY ITEM NUMBER FOR CONCRETE WASHOUT STRUCTURE (EACH) IS 208-00045.

**CONCRETE WASHOUT STRUCTURE**

<b>Computer File Information</b>	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080101011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

<b>Sheet Revisions</b>	
Date:	Comments
07/16/15	Deleted the two SoilRetention Blanket detail sheets. They are now standard M-216-1 SoilRetention Covering.
03/29/16	Minor revisions to some dimensions and General Notes.
(R-X)	
(R-X)	
(R-X)	

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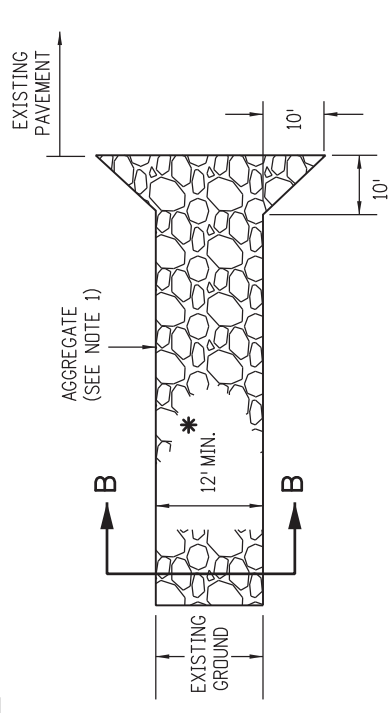
**TEMPORARY  
EROSION CONTROL**

Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.

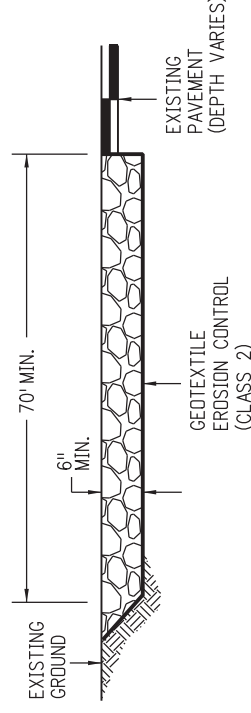
M-208-1

Sheet No. 1 of 11

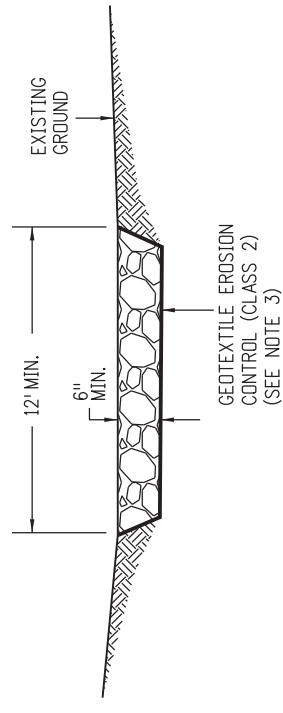


**PLAN VIEW**

\* SHALL EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.



**ELEVATION SECTION**



**SECTION B-B**

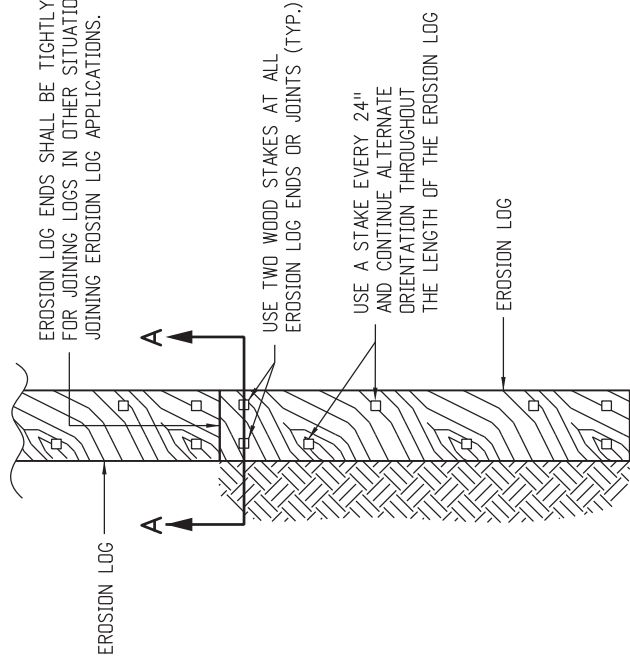
**NOTES:**

1. AGGREGATE SHALL CONFORM TO SUBSECTION 208.02 (K).
2. THE CONTRACTOR SHALL PROTECT CURB AND GUTTER THAT CROSSES THE ENTRANCE FROM DAMAGE. PROTECTION OF THE CURB AND GUTTER SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
3. GEOTEXTILE SHALL CONFORM TO SUBSECTION 712.08.
4. ALL MATERIALS AND LABOR TO COMPLETE THE VEHICLE TRACKING PAD SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
5. THE PAY ITEM NUMBER FOR VEHICLE TRACKING PAD (EACH) IS 208-00070.

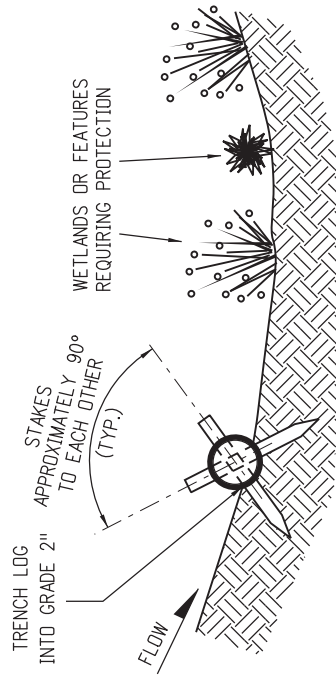
**VEHICLE TRACKING PAD**

# BLANK TEMPLATE

EROSION LOG ENDS SHALL BE TIGHTLY ABUTTING. FOR JOINING LOGS IN OTHER SITUATIONS, SEE THE JOINING EROSION LOG APPLICATIONS.

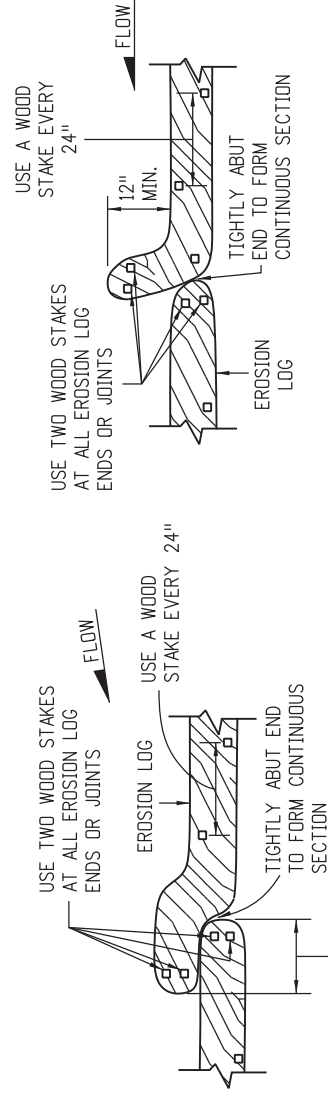


**PLAN VIEW**



**SECTION A-A**

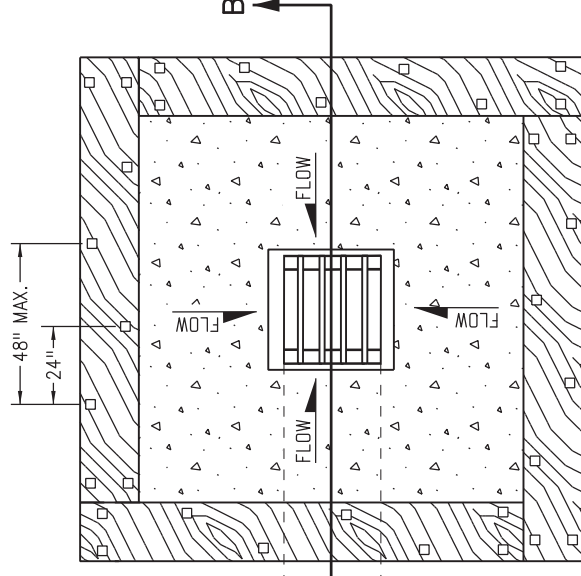
### TYPICAL STAKE INSTALLATION



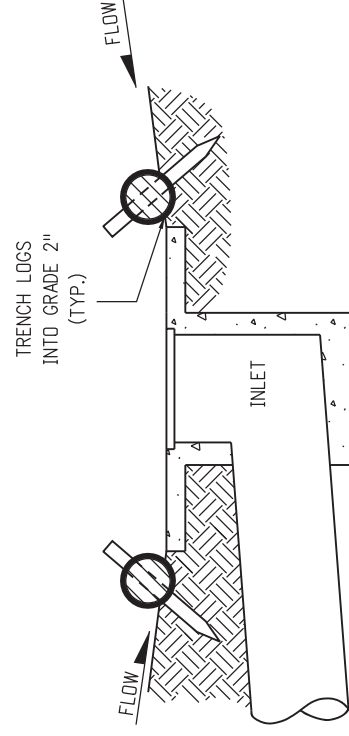
### OVERLAP JOINING DETAIL

### J-HOOK JOINING DETAIL

EROSION LOGS PAY ITEMS NUMBER	DESCRIPTION
208-00012	TYPE 1 (9")
208-00002	TYPE 1 (12")
208-00013	TYPE 1 (20")
208-00007	TYPE 2 (8")
208-00008	TYPE 2 (12")
208-00009	TYPE 2 (18")



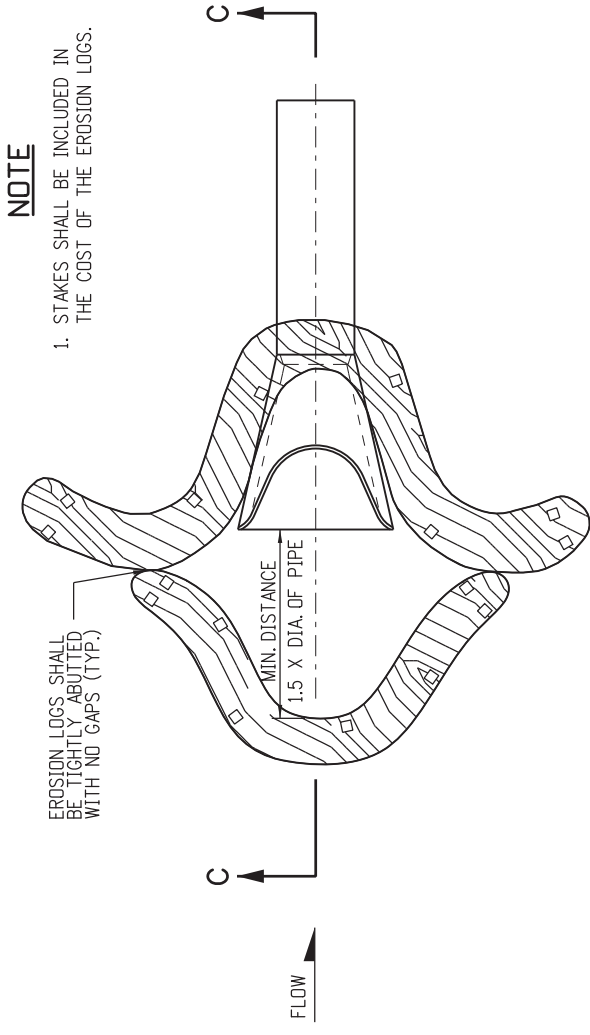
**PLAN VIEW**



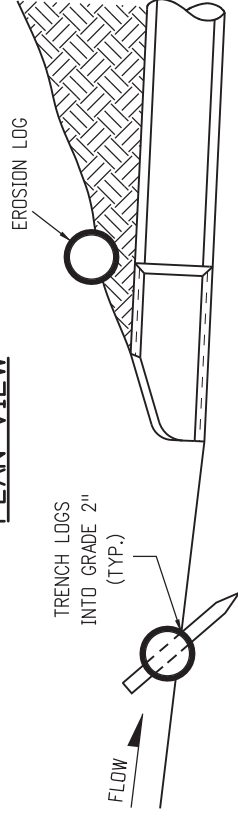
**SECTION B-B**

NOTE: LOCATE EROSION LOGS AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

### EROSION LOG FILTER AT DROP INLET

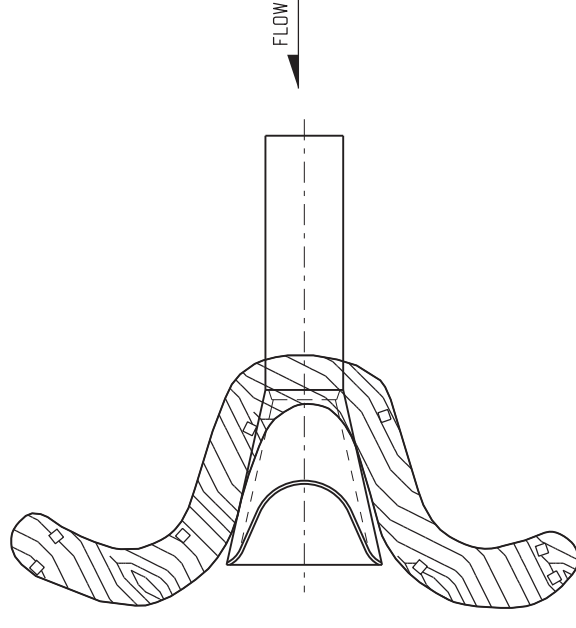


**PLAN VIEW**



**SECTION C-C**  
(NOT ALL LOGS SHOWN)

### EROSION LOG CULVERT INLET PROTECTION



### OVERLAP JOINING DETAIL

### JOINING EROSION LOG APPLICATIONS

### Computer File Information

Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080102011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

### Sheet Revisions

Date:	Comments
(R-X) 03/29/16	Minor revisions to some dimensions. Added Erosion Logs Pay Item table.
(R-X)	
(R-X)	
(R-X)	

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Division of Project Support JBK/LTA

TEMPORARY

EROSION CONTROL

Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.

M-208-1

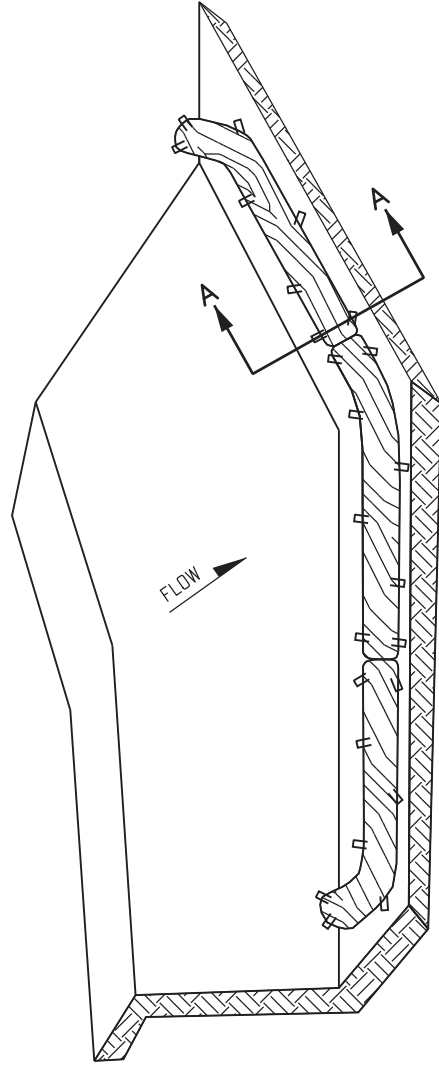
Sheet No. 2 of 11

### EROSION LOG CULVERT OUTLET PROTECTION

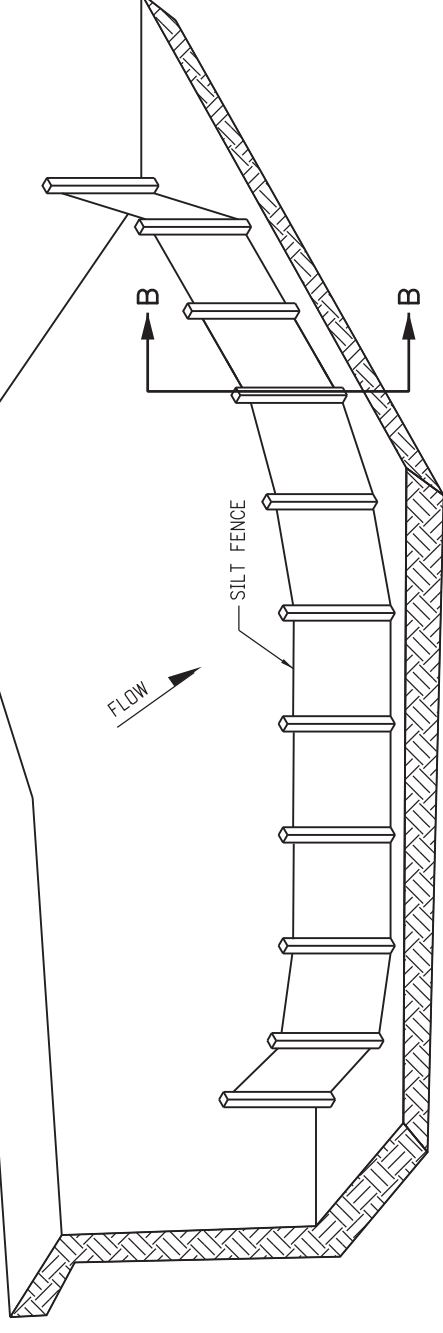
# BLANK TEMPLATE

## NOTES

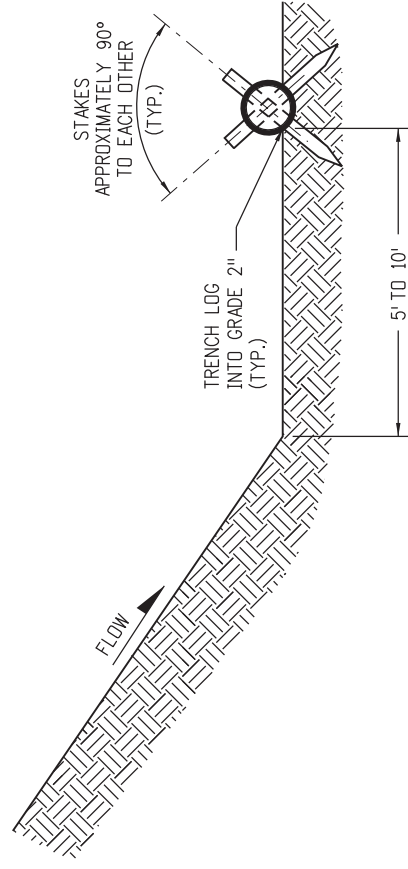
1. SILT FENCE SHALL HAVE A MAXIMUM DRAINAGE AREA OF ONE-QUARTER ACRE PER 100 FEET OF SILT FENCE LENGTH; MAXIMUM SLOPE LENGTH BEHIND BARRIER IS 100 FEET; MAXIMUM GRADIENT BEHIND THE BARRIER IS 2:1.
2. SILT FENCE USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
3. SILT FENCE SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
4. THE MAXIMUM LENGTH OF EROSION LOGS OR SILT FENCES WITHOUT A FLARED END TURNING UPSLOPE IS 150 FEET.



**ISOMETRIC VIEW**



**ISOMETRIC VIEW**



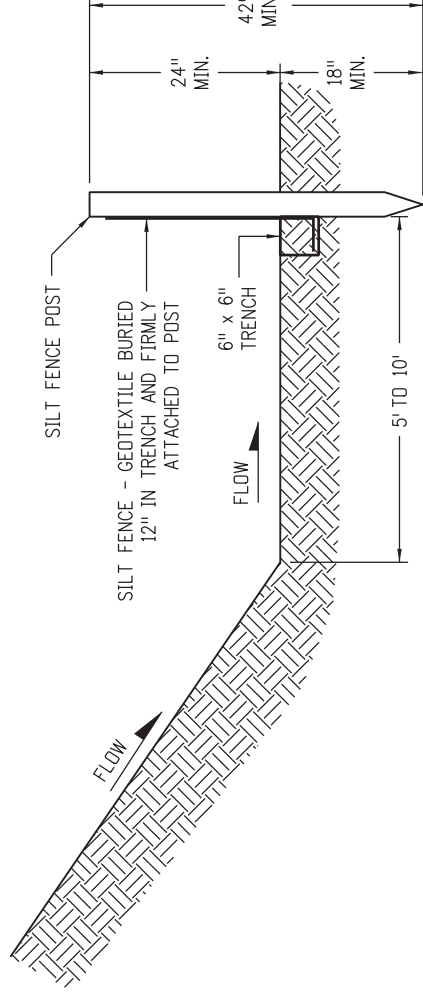
**SECTION A-A**

### NOTES:

1. EROSION LOGS USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
2. EROSION LOGS SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
3. SEE SHEET 2 OF 11 FOR JOINING LOGS DETAIL.

EROSION LOGS PAY ITEMS	
NUMBER	DESCRIPTION
208-00012	TYPE 1 (9")
208-00002	TYPE 1 (12")
208-00013	TYPE 1 (20")
208-00007	TYPE 2 (8")
208-00008	TYPE 2 (12")
208-00009	TYPE 2 (18")

**EROSION LOG TOE OF SLOPE PROTECTION**



**SECTION B-B**

**SILT FENCE TOE OF SLOPE PROTECTION**

NOTE: THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.

## TOE OF SLOPE PROTECTION APPLICATIONS

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080103011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
03/29/16	Minor revisions to some dimensions. Added Erosion Logs Pay Item table.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

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STANDARD PLAN NO.

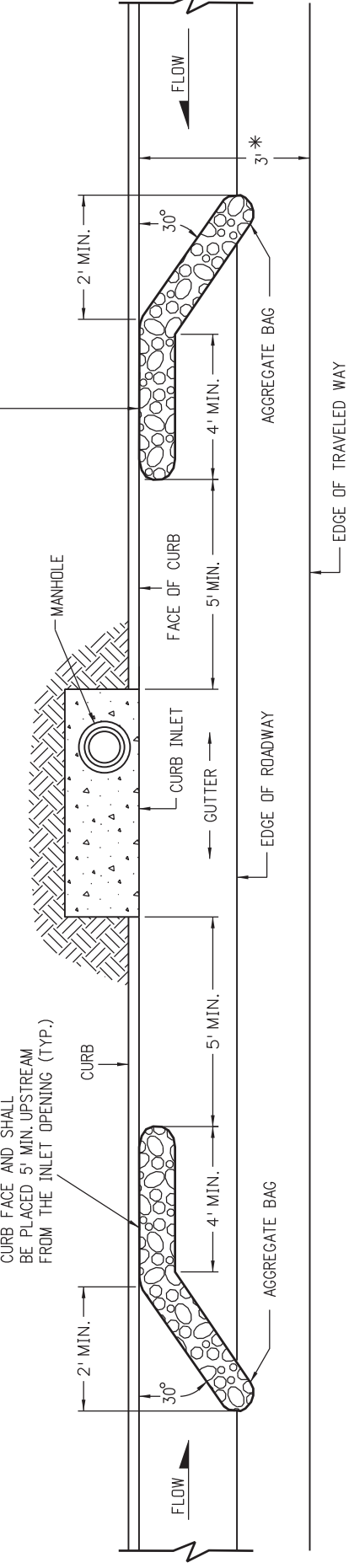
M-208-1

Sheet No. 3 of 11

# BLANK TEMPLATE

AGGREGATE BAG SHALL BE PLACED TIGHTLY AGAINST CURB FACE AND SHALL BE PLACED 5' MIN. UPSTREAM FROM THE INLET OPENING (TYP.)

THE TOPS OF AGGREGATE BAGS SHALL ALWAYS BE 1" BELOW THE HEIGHT OF THE ADJACENT CURB



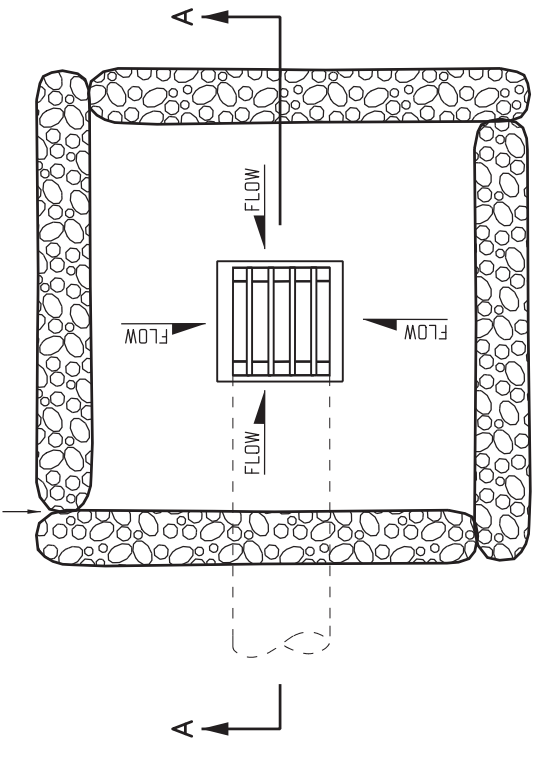
**PLAN VIEW**

\* NOTE: USE AGGREGATE BAGS ONLY WHEN THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY TO THE FACE OF CURB.

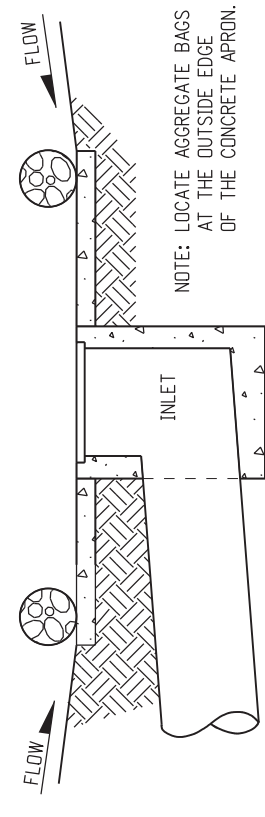
LENGTH OF INLET (L)	NUMBER OF AGGREGATE BAGS UPSTREAM OF INLET
0' - 5'	1
6' - 10'	2
L > 10'	3

**AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I)**

AGGREGATE BAGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS (TYP.)



**PLAN VIEW**



**SECTION A-A**

**AGGREGATE BAGS AT DROP INLET**


NOTE: LOCATE AGGREGATE BAGS AT THE OUTSIDE EDGE OF THE CONCRETE APRON.

## AGGREGATE BAG APPLICATIONS

NOTE: THE PAY ITEM NUMBER FOR AGGREGATE BAG (LF) IS 208-00035

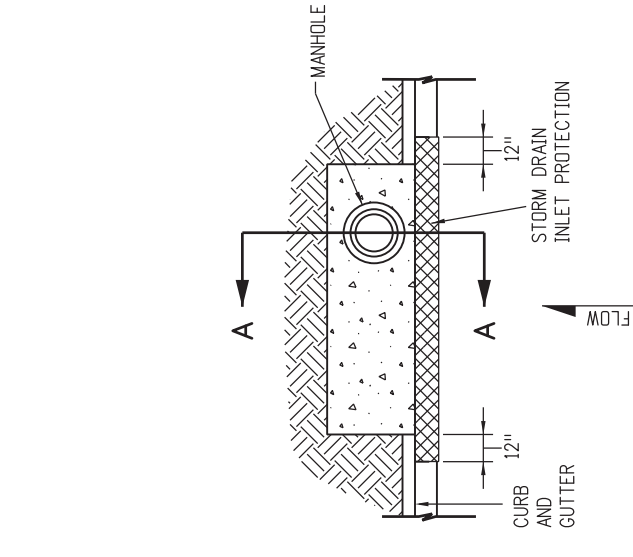
Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080104011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
03/29/16	Added some dimensions and Note.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

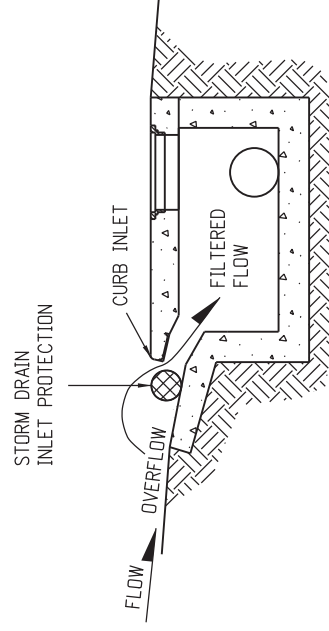
Colorado Department of Transportation  
  
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 Denver, CO 80222  
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**TEMPORARY EROSION CONTROL**  
 Issued By: Project Development Branch on July 4, 2012  
 STANDARD PLAN NO. **M-208-1**  
 Sheet No. 4 of 11

# BLANK TEMPLATE

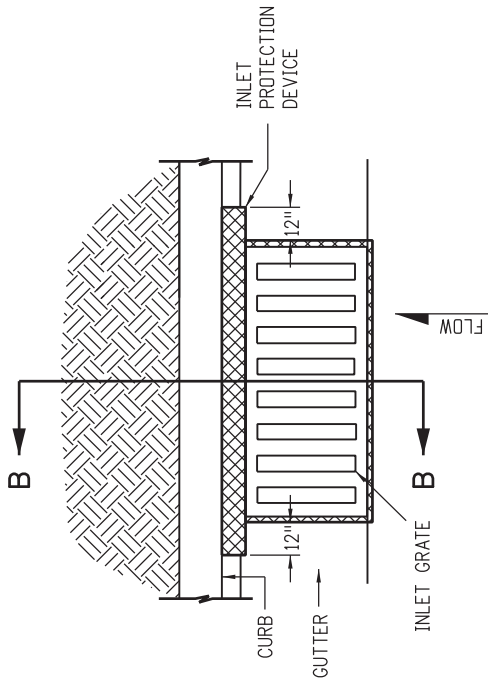


### SECTION A-A

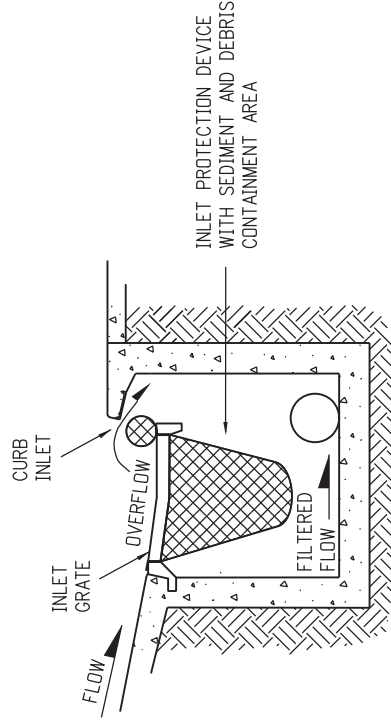


### STORM DRAIN INLET PROTECTION (TYPE I)

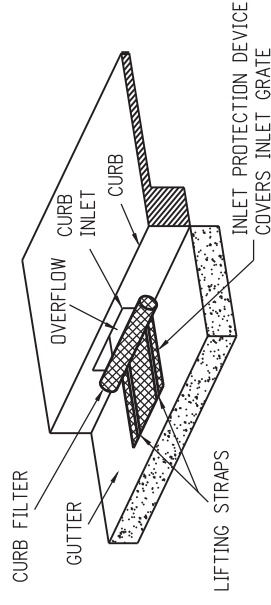
- NOTES**
1. INLET PROTECTION DEVICE SHALL EXTEND 12 INCHES PAST EACH END OF THE INLET.
  2. THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE I) (EACH) IS 208-00051.
  3. FOR STORM DRAIN INLET TYPES I AND II, IF THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY TO THE FACE OF CURB, USE THE AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I) DETAIL ON SHEET 4 INSTEAD.



### SECTION B-B



### STORM DRAIN INLET PROTECTION (TYPE II)

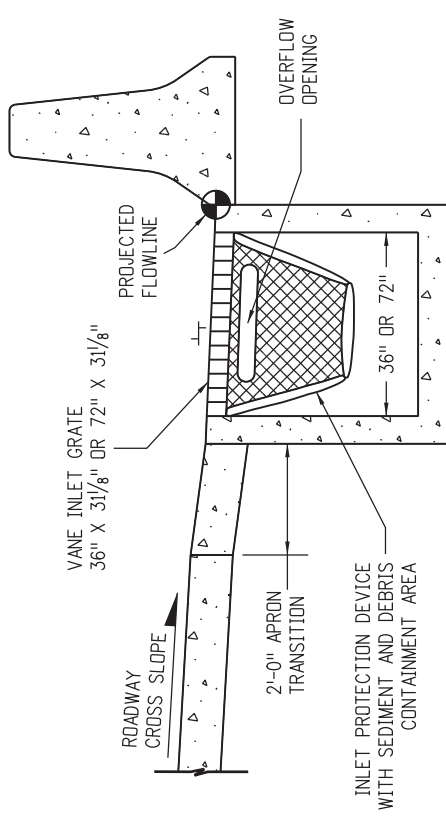


### OPTION A

### OPTION B

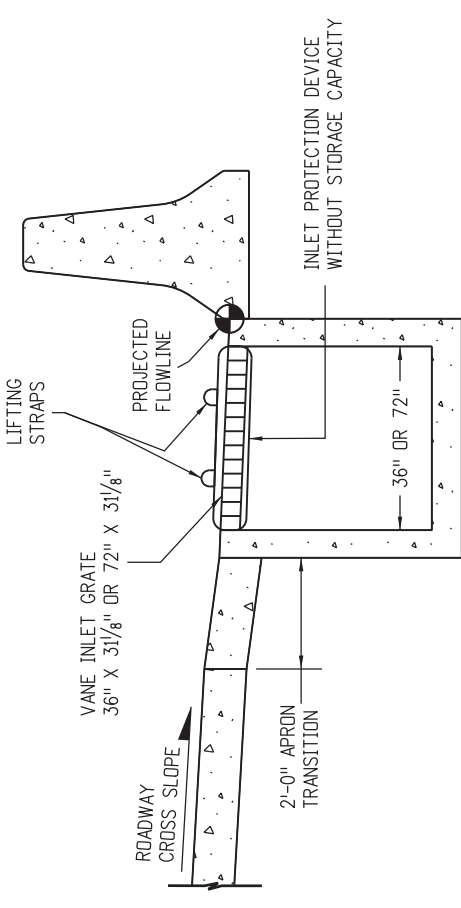
### STORM DRAIN INLET PROTECTION (TYPE II)

NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE II) (EACH) IS 208-00052.



### OPTION A

### STORM DRAIN INLET PROTECTION (TYPE III)



### OPTION B

### STORM DRAIN INLET PROTECTION (TYPE III)

NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE III) (EACH) IS 208-00056.

#### Computer File Information

Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080105011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

#### Sheet Revisions

Date:	Comments
03/29/16	Added Note 3.
(R-X)	
(R-X)	
(R-X)	

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Division of Project Support **JBK/LTA**

#### TEMPORARY

#### EROSION CONTROL

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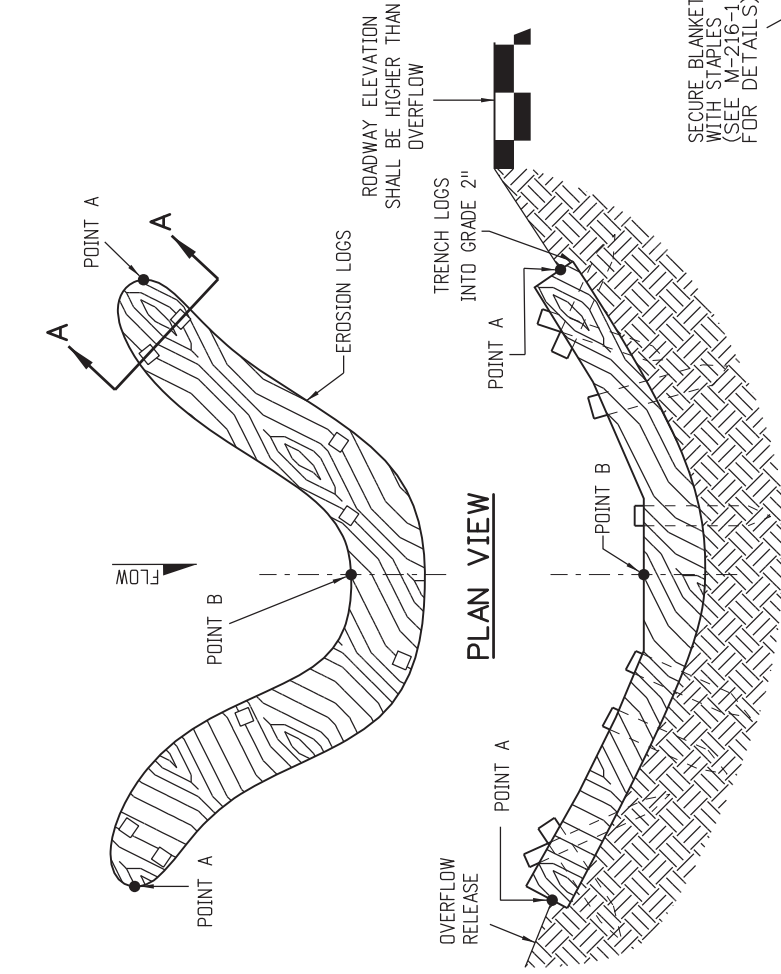
#### STANDARD PLAN NO.

M-208-1

Sheet No. 5 of 11

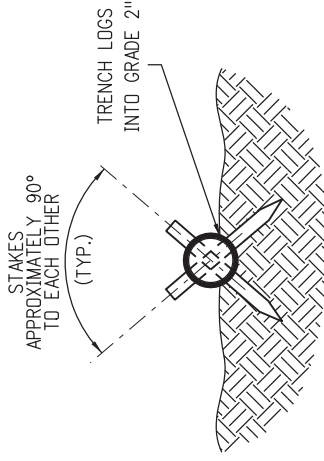
### STORM DRAIN INLET PROTECTION TYPES

# BLANK TEMPLATE



**ELEVATION**

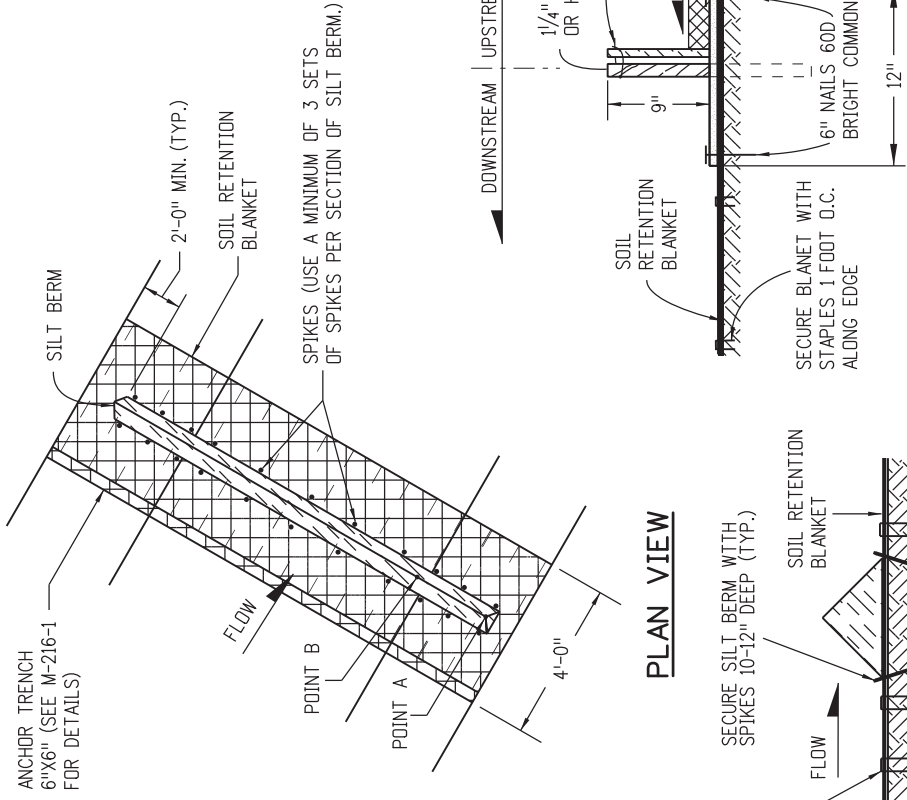
NOTE: POINTS "A" SHALL BE A MINIMUM 4" HIGHER THAN POINT "B".



## SECTION A-A

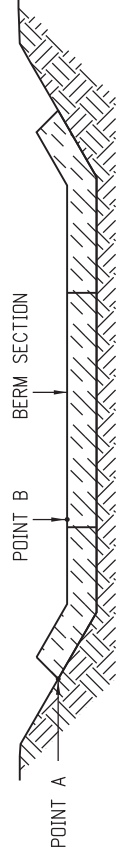
- NOTES
1. EROSION LOGS SHALL BE EMBEDDED 2 INCHES INTO THE SOIL.
  2. STAKES SHALL BE EMBEDDED TO A MINIMUM DEPTH OF 12 INCHES.
  3. EROSION LOGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS.
  4. V-SHAPED TEMPORARY DITCHES SHALL NOT BE USED. DITCHES SHALL BE GRADED IN A PARABOLIC OR TRAPEZOIDAL SHAPE.

## EROSION LOG INSTALLATION



- NOTES:
1. MINIMUM 4 NAILS PER SEGMENT (UPSTREAM).
  2. MINIMUM 2 NAILS PER SEGMENT (DOWNSTREAM).

## SILT BERM (2) SECTION VIEW

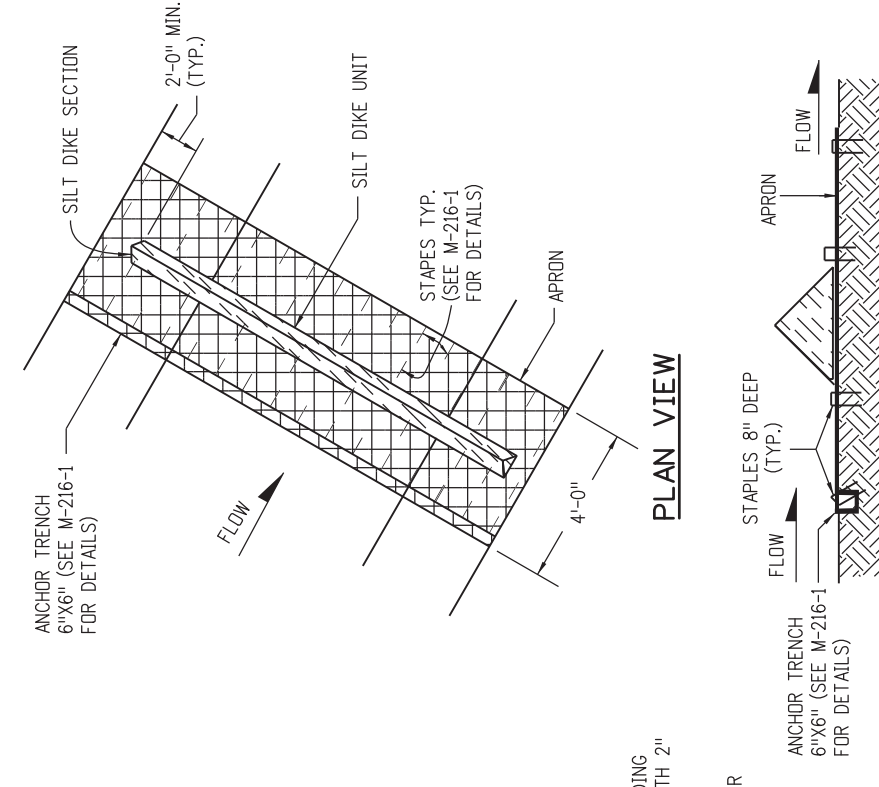


## FRONT VIEW

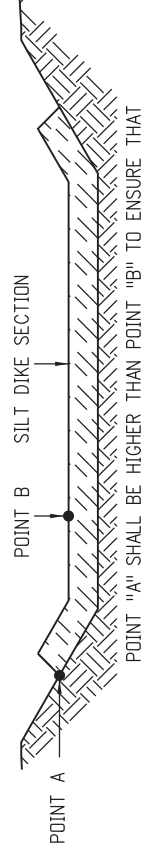
- NOTES
1. ANCHOR SOIL RETENTION BLANKET INTO TRENCH WITH 8 INCHES MIN. STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
  2. FILL AND COMPACT TRENCH.
  3. SECTIONS OF THE SILT BERM SHALL BE OVERLAPPED WITH NO GAPS.
  4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
  5. SOIL RETENTION BLANKET SHALL ALWAYS BE REQUIRED.
  6. THE PAY ITEM NUMBER FOR SILT BERM (LF) IS 208-00004.

## SILT BERM INSTALLATION

## DRAINAGE DITCH APPLICATIONS



## TYPICAL SECTION



## FRONT VIEW

- NOTES
1. ANCHOR APRON INTO TRENCH WITH 8 INCH MINIMUM STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
  2. FILL AND COMPACT TRENCH.
  3. THE APRON SHALL EXTEND A MINIMUM OF 2 FEET BEYOND EACH SIDE OF THE TRIANGLE.
  4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
  5. THE PAY ITEM NUMBER FOR SILT DIKE (LF) IS 208-00001.

## SILT DIKE INSTALLATION

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080106011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
	(R-X)
	(R-X)
	(R-X)
	(R-X)

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TEMPORARY  
EROSION CONTROL

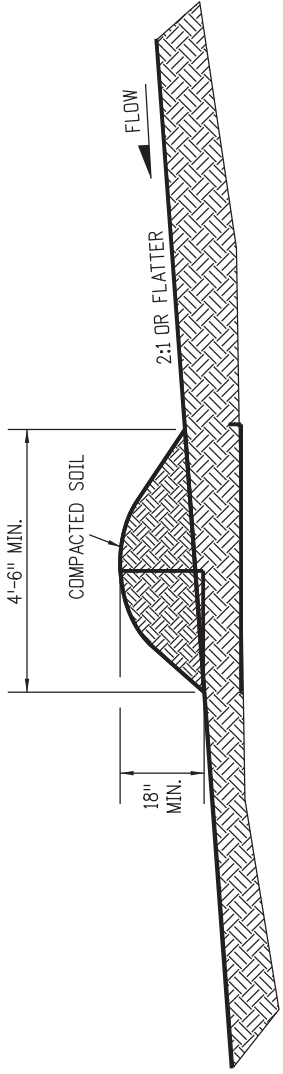
Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.

M-208-1

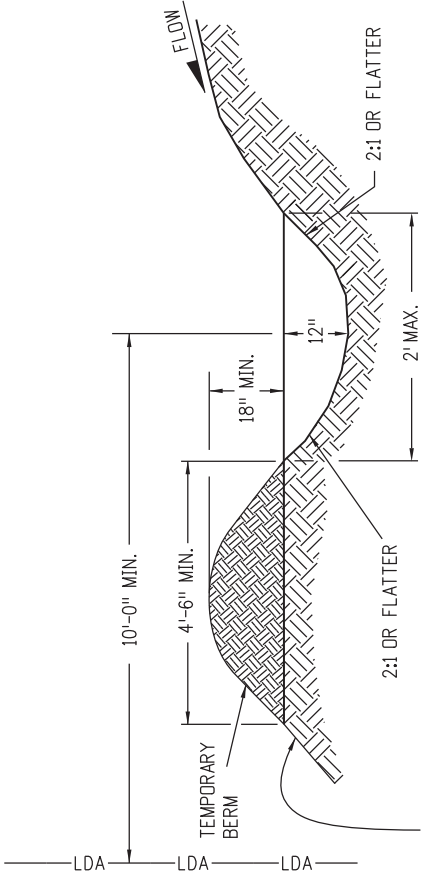
Sheet No. 6 of 11

# BLANK TEMPLATE

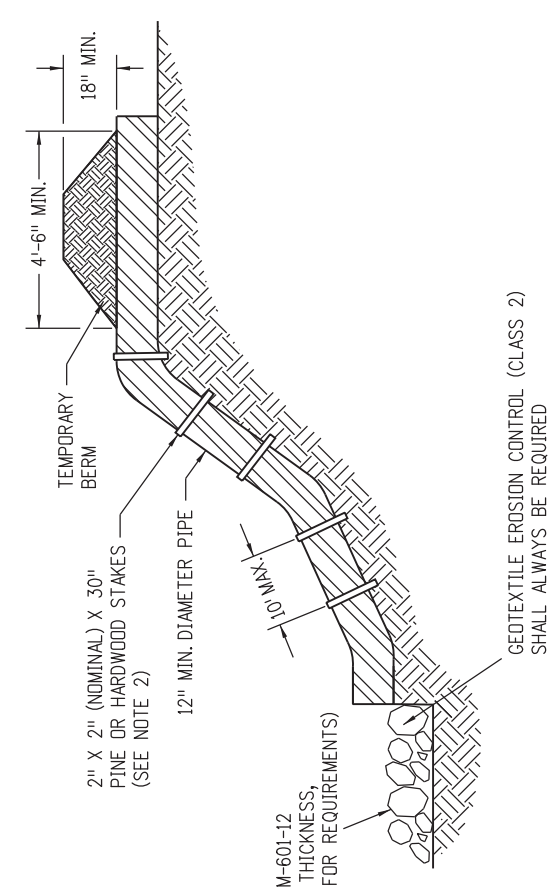


- NOTES:
- BERMS SHALL HAVE A HEIGHT OF 18 INCHES, SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM BASE WIDTH OF 4'-6" FEET.
  - BERMS SHALL BE USED TO INTERCEPT AND DIVERT DRAINAGE TO A DESIGNATED OUTLET.
  - BERMS SHALL NOT BE USED WHERE DRAINAGE AREA EXCEEDS 10 ACRES.
  - BERMS SHALL BE CONSTRUCTED OUT OF MATERIAL COMPACTED WITH AT LEAST A MINIMUM OF ONE WHEEL ROLLED COMPACTION.
  - THE PAY ITEM NUMBER FOR TEMPORARY BERM (LF) IS 208-00300.
  - BERMS SHALL BE CONSTRUCTED OUT OF ACCEPTABLE MATERIAL THAT CAN BE COMPACTED AND RECEIVE AT A MINIMUM HEAVY EQUIPMENT WHEEL ROLLED COMPACTION.

## TEMPORARY BERM



- FOR BERMS TALLER THAN 2', INSTALL TOE OF SLOPE BMP. SEE SHEET 3 OF 11 FOR DETAILS.
- NOTES
- TEMPORARY DIVERSION DITCHES SHALL BE CONSTRUCTED ACROSS THE SLOPE TO INTERCEPT RUNOFF AND DIRECT IT TO A STABLE OUTLET OR SEDIMENT TRAP.
  - USE THE TEMPORARY DIVERSION DITCH IMMEDIATELY ABOVE A NEW CUT, FILL SLOPE, OR AROUND THE PERIMETER OF A DISTURBED AREA.
  - THE GRADIENT ALONG THE FLOW PATH SHALL HAVE A POSITIVE GRADE TO ASSURE DRAINAGE, BUT SHALL NOT BE SO STEEP AS TO RESULT IN EROSION DUE TO HIGH VELOCITY.
  - THE DIVERSION FLOWLINE SHALL ALWAYS BE LOCATED A MINIMUM 10 FEET FROM THE OUTSIDE LIMITS OF DISTURBED AREA BOUNDARY.
  - THE PAY ITEM NUMBER FOR TEMPORARY DIVERSION (LF) IS 208-00301.



\* RIPRAP OUTLET PROTECTION (SEE M-601-12 FOR MIN. HORIZONTAL LAYOUT AND THICKNESS, AND SPECIFICATION 506 "RIPRAP" FOR REQUIREMENTS)

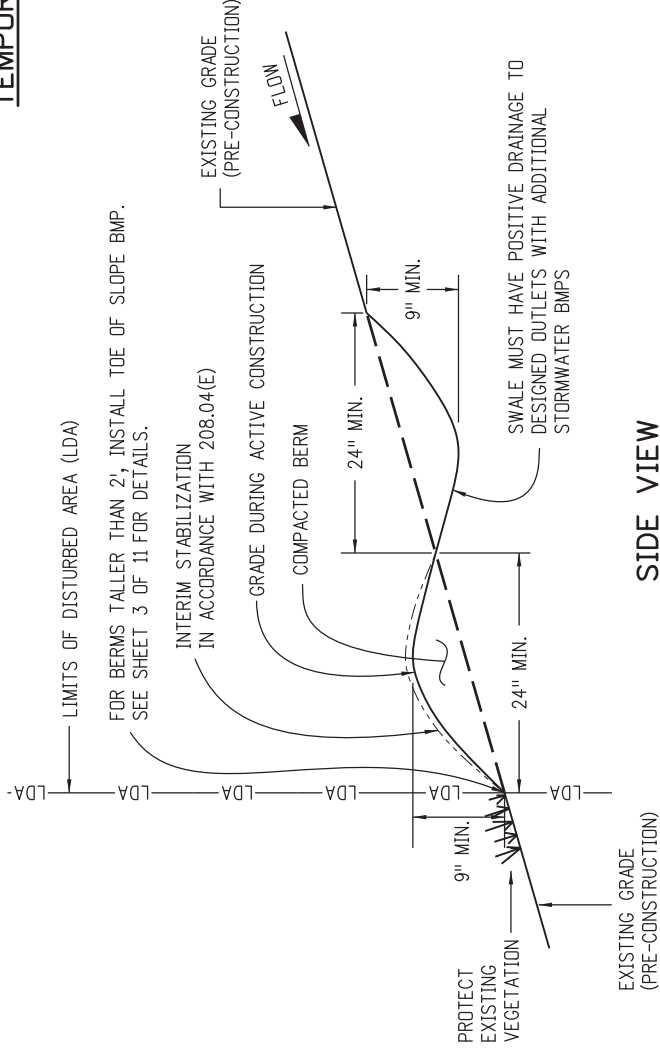
\* RIPRAP SIZE  $D_{50} = 6$  IN. OR AS SHOWN ON THE PLANS.

GEOTEXTILE EROSION CONTROL (CLASS 2) SHALL ALWAYS BE REQUIRED

### NOTES

- ANCHOR SIZE VARIES ACCORDING TO PIPE SIZE
- TO SECURE THE PIPE, DRIVE STAKES INTO GROUND, THEN TIE A 12 GAUGE WIRE BETWEEN THEM ABOVE AND ACROSS THE PIPE'S WIDTH.
- THE OUTLET SHALL BE ALIGNED WITH THE FLOW DIRECTION OF THE EXISTING GRADE. PERPENDICULAR DISCHARGE TO A CHANNEL SHALL NOT BE ACCEPTABLE.
- THE GRADE AROUND THE INLET TO THE PIPE SHALL BE COMPACTED.
- THE PAY ITEM NUMBER FOR TEMPORARY SLOPE DRAINS (LF) IS 208-00060.

## TEMPORARY SLOPE DRAINS



### SIDE VIEW

## TEMPORARY BERM (AT EDGE OF DISTURBANCE)

## GRADING APPLICATIONS

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080107011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
03/29/16	Revisions to some dimensions and Notes.
(R-X)	
(R-X)	
(R-X)	

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TEMPORARY

EROSION CONTROL

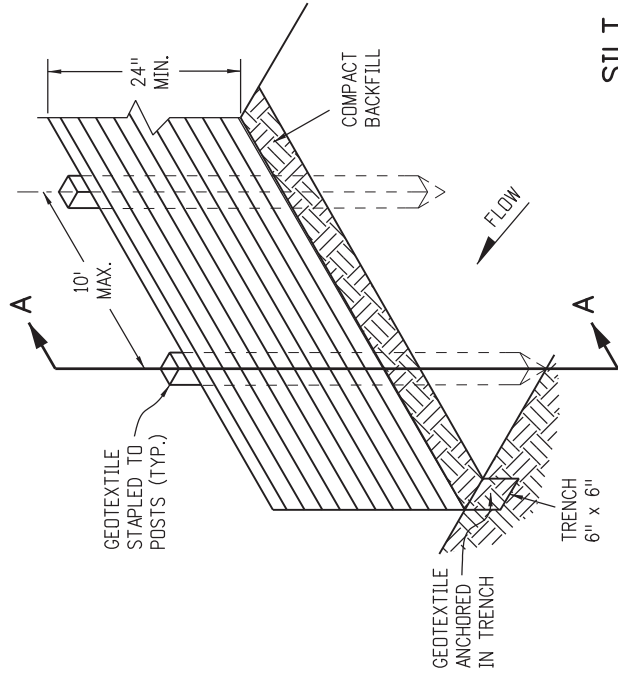
Issued By: Project Development Branch on July 4, 2012

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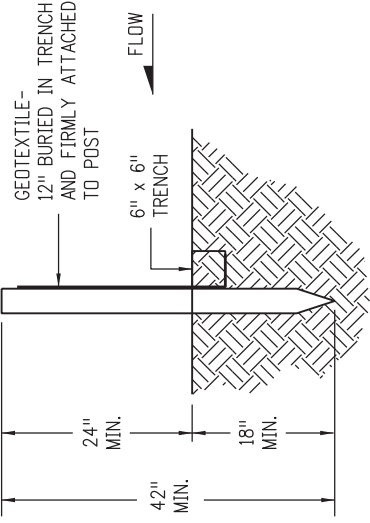
M-208-1

Sheet No. 7 of 11

# BLANK TEMPLATE



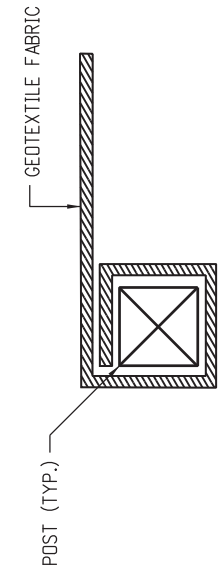
**SECTION A-A**



## SILT FENCE

**NOTES**

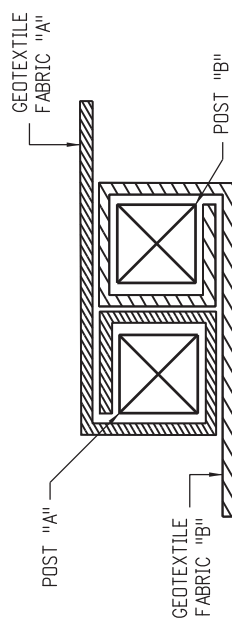
1. GEOTEXTILE SHALL BE ATTACHED TO WOOD POSTS WITH THREE OR MORE STAPLES PER POST. STAPLES SHALL BE HEAVY DUTY WIRE AND AT LEAST 1" INCH LONG
2. WOOD POST SHALL BE 1/2" X 1 1/2" NOMINAL.
3. THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.
4. THE SILT FENCE SHALL BE PLACED ON THE CONTOUR (AT THE SAME ELEVATION ±6"). THE ENDS SHALL BE FLARED UP SLOPE (MINIMUM ELEVATION GAIN OF 18").



**END SECTION DETAIL (PLAN VIEW)**

**NOTE**

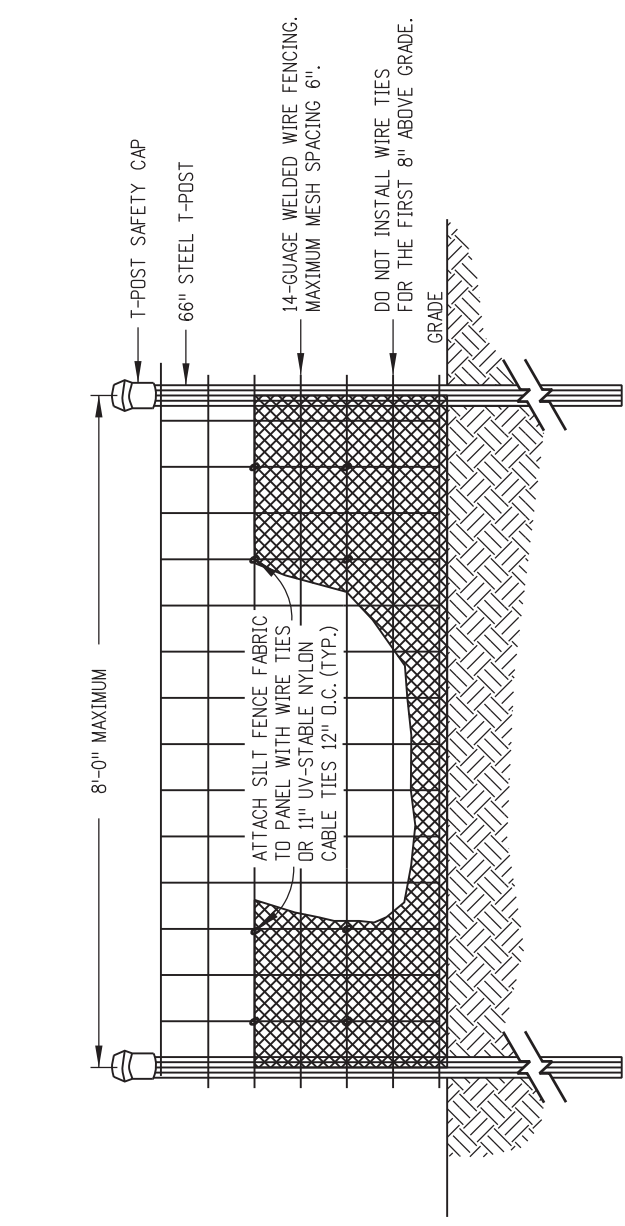
1. THE END OF THE SILT FENCE FABRIC SHALL BE WRAPPED APPROX. 6 INCHES AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH WIRE STAPLES AT LEAST 1 INCH LONG.



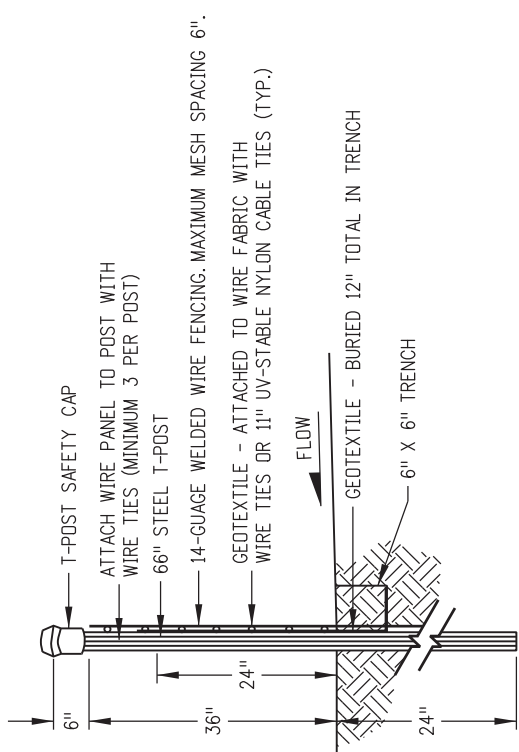
**JOINING SECTION DETAIL (PLAN VIEW)**

**NOTES**

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
2. POSTS SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.



**ELEVATION VIEW**



**SIDE VIEW**

**NOTES**

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
2. SILT FENCES SHALL NOT BE USED FOR CHECK DAMS.
3. THE PAY ITEM NUMBER FOR SILT FENCE (REINFORCED) (LF) IS 208-00021.

## SILT FENCE (REINFORCED)

## SILT FENCE APPLICATIONS

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080108011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
03/29/16	Minor revisions to some dimensions and Notes.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

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**TEMPORARY EROSION CONTROL**

STANDARD PLAN NO. **M-208-1**

Sheet No. 8 of 11

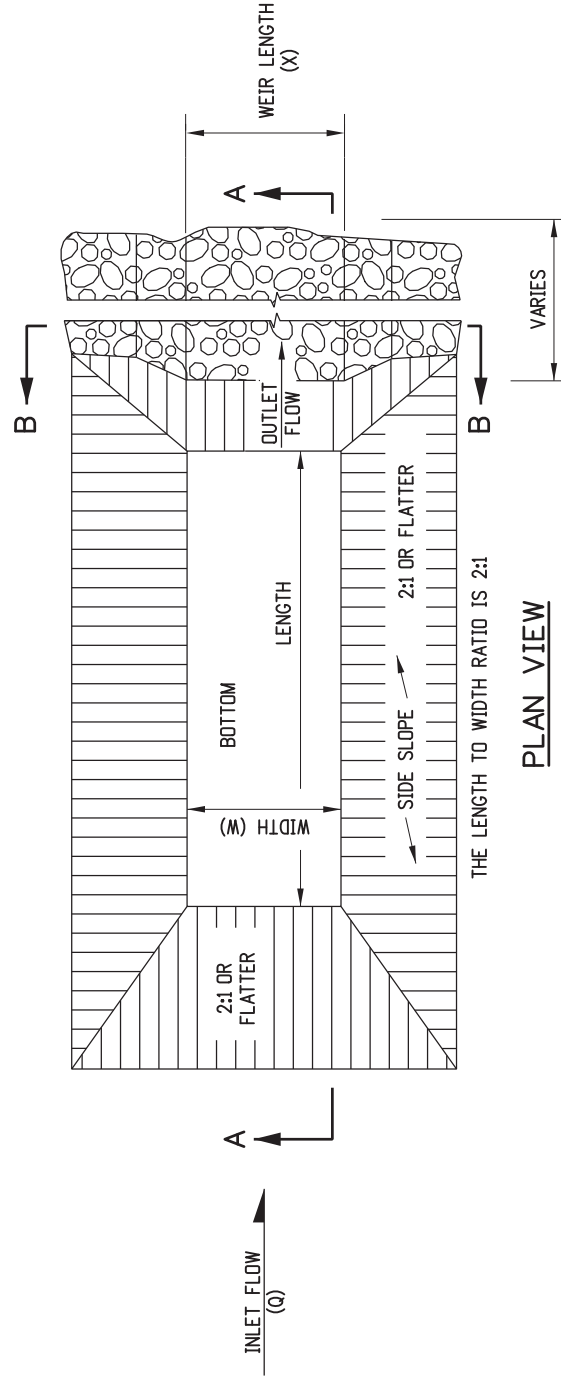
Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO. **M-208-1**

Sheet No. 8 of 11

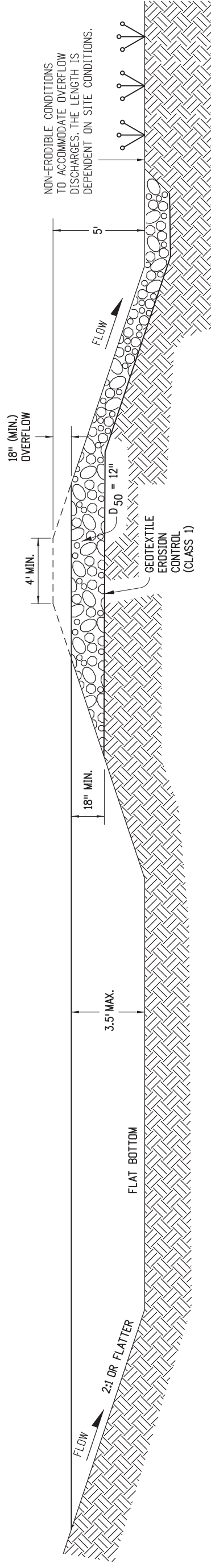


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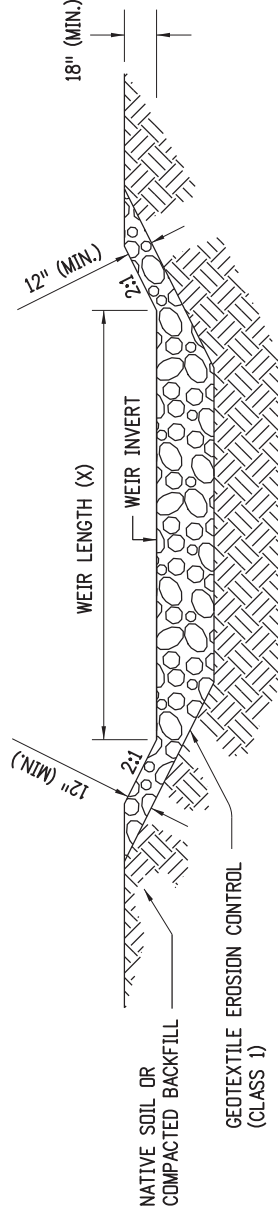


## NOTES

1. THE MAXIMUM DRAINAGE AREA IS 5 ACRES.
2. THE MAXIMUM STRUCTURE LIFE IS 2 YEARS.
3. THE STORAGE AREA IS 1800 CUBIC FEET PER ACRE.
4. THE MAXIMUM EMBANKMENT HEIGHT SHALL BE 5 FT. MEASURED ON THE DOWNSTREAM SIDE.
5. THE LENGTH/WIDTH RATIO MAY BE ADJUSTED TO MEET SITE CONDITIONS WHEN APPROVED BY THE ENGINEER.
6. WIDTH (W) OF SEDIMENT TRAP IS APPROXIMATELY EQUAL TO THE WEIR LENGTH (X).
7. SEDIMENT TRAP DESIGN SHALL BE APPROVED BY THE ENGINEER.
8. THE DOWN GRADE FROM WEIR SHALL BE STABLE AND NON-ERODIBLE.
9. THE PAY ITEM NUMBER FOR SEDIMENT TRAP (LF) IS 208-00033.



SECTION A-A



SECTION B-B


DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	4
2	6
3	8
4	10
5	12

WEIR LENGTH TABLE

## SEDIMENT TRAP

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080109010.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date: 03/29/16	Comments: Minor revisions to some dimensions.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

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# TEMPORARY EROSION CONTROL

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STANDARD PLAN NO.

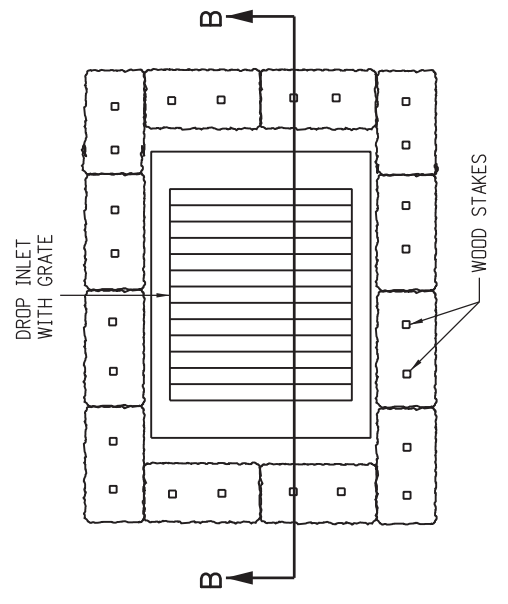
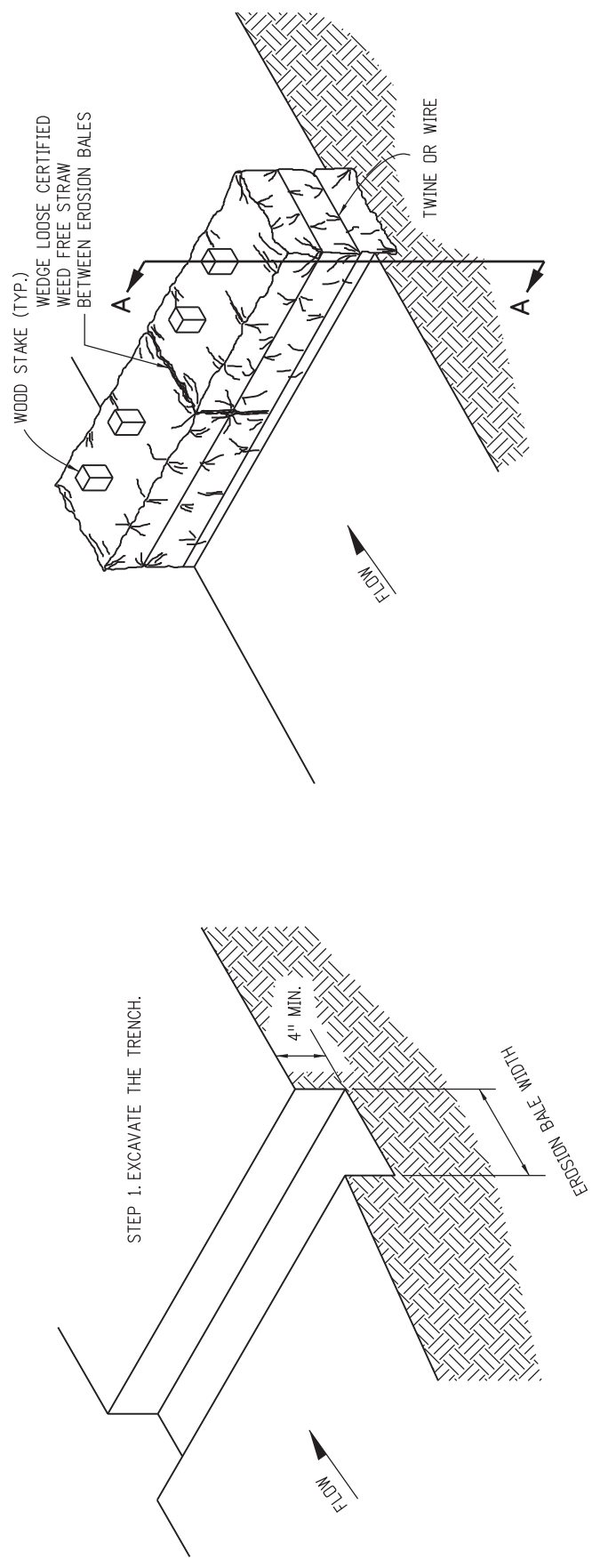
M-208-1

Sheet No. 9 of 11

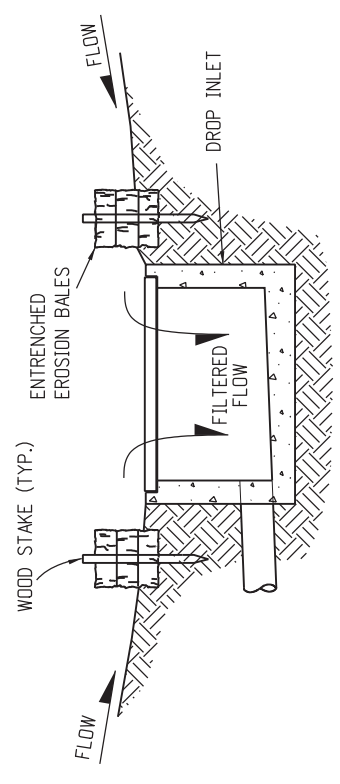
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## NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" X 30" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL, TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.
4. EROSION BALES CANNOT BE USED FOR CHECK DAMS.
5. THE PAY ITEM NUMBER FOR EROSION BALES (WEED FREE) (EA) IS 208-00011.

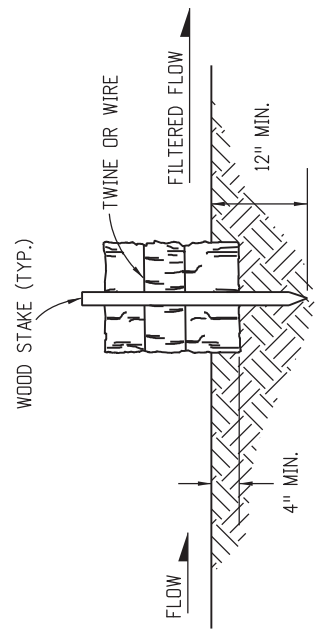


PLAN VIEW



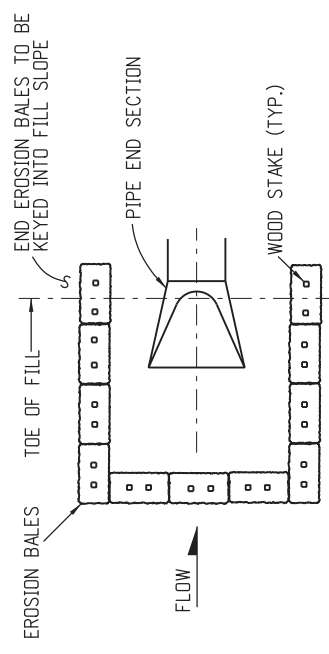
SECTION B-B

EROSION BALE FILTER AT DROP INLET



SECTION A-A

EROSION BALE TRENCHING AND STAKING




PLAN VIEW

EROSION BALE CULVERT INLET PROTECTION

## EROSION BALE APPLICATIONS

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 20801010011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

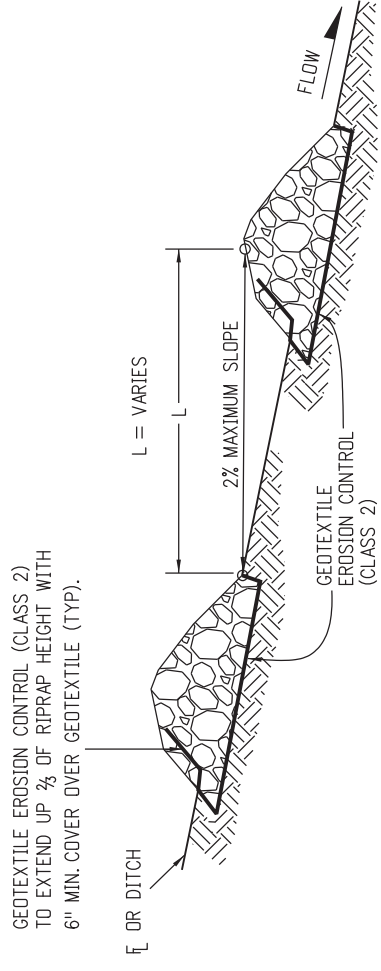
Sheet Revisions	
Date:	Comments
03/29/16	Minor revisions to some dimensions.
(R-X)	
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(R-X)	
(R-X)	

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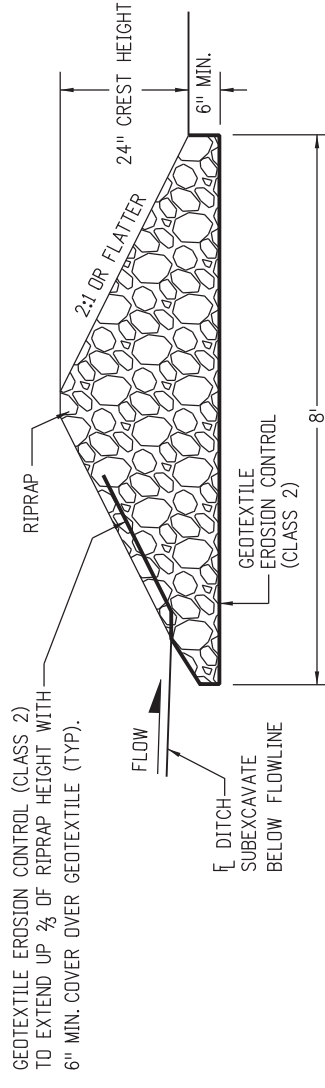
**TEMPORARY**  
**EROSION CONTROL**  
 Issued By: Project Development Branch on July 4, 2012

**STANDARD PLAN NO.**  
 M-208-1  
**Sheet No. 10 of 11**

# BLANK TEMPLATE



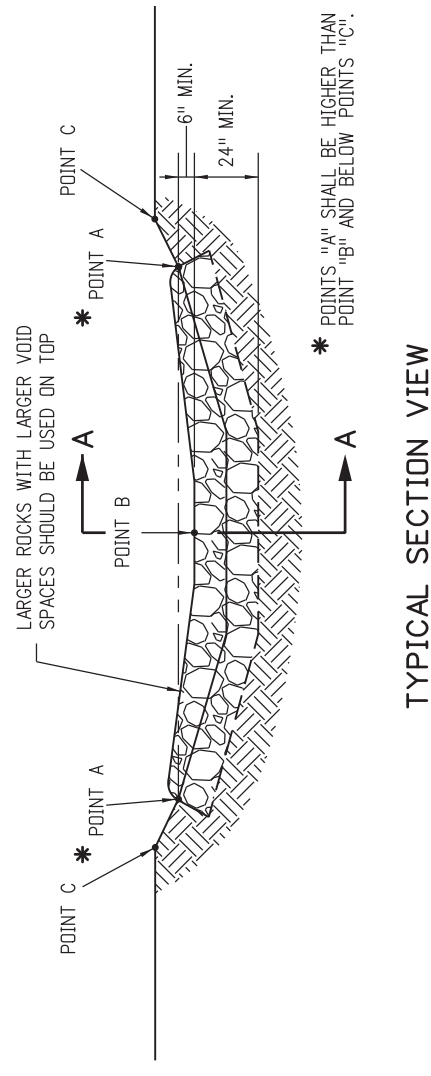
## SECTION VIEW ALONG DITCH FLOWLINE



## SECTION A-A

### NOTES:

1. RIPRAP SIZE  $D_{50} = 6"$  OR AS SHOWN ON THE PLANS.
2. THE GEOTEXTILE EROSION CONTROL SHALL BE CLASS 2 AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 712.08.
3. THE ENDS OF RIPRAP CHECK DAM SHALL BE A MINIMUM OF 6 IN. HIGHER THAN CENTER OF CHECK DAM.
4. FOR USE AS TEMPORARY CHECK DAMS ONLY AND NOT FOR PERMANENT INSTALLATIONS.
5. THE PAY ITEM NUMBER FOR ROCK CHECK DAM (EA) IS 208-00041.



## ROCK CHECK DAM

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 20801011011.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
03/29/16	Minor revisions to some Notes.
(R-X)	
(R-X)	
(R-X)	

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## TEMPORARY EROSION CONTROL

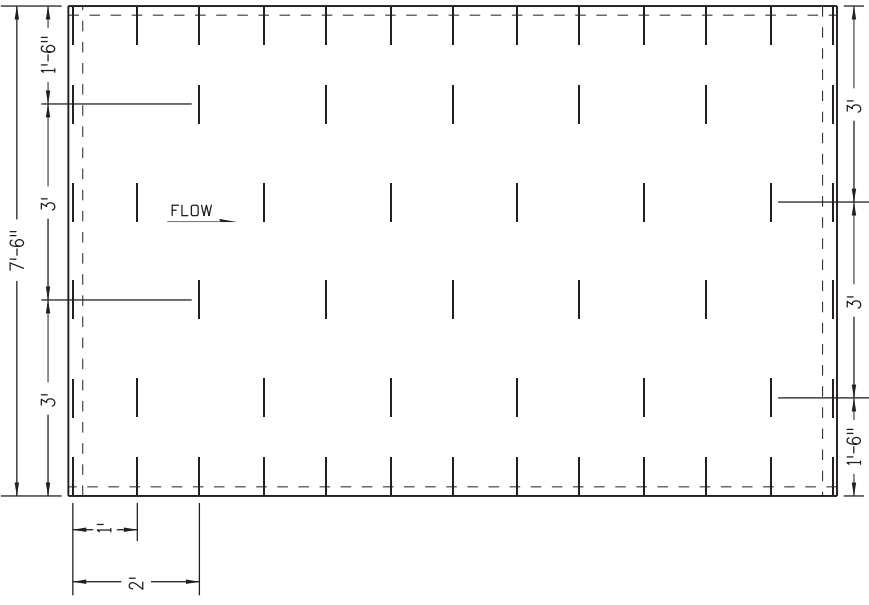
Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.

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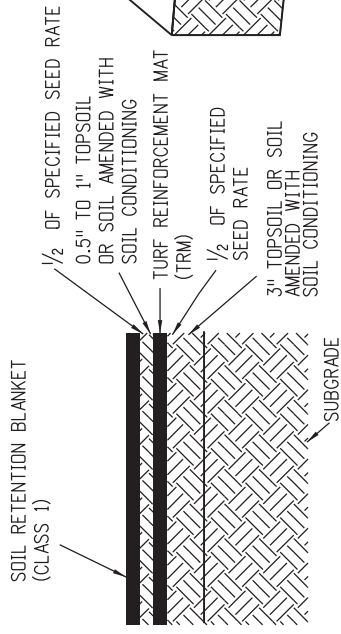
Sheet No. 11 of 11

# BLANK TEMPLATE



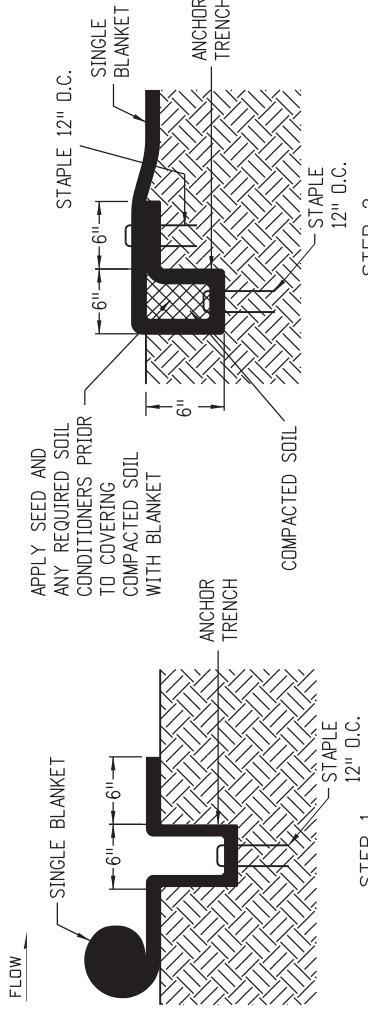
**TYPICAL STAPLE PATTERN FOR CHANNEL APPLICATION**

SEE SUBSECTION 216.05.



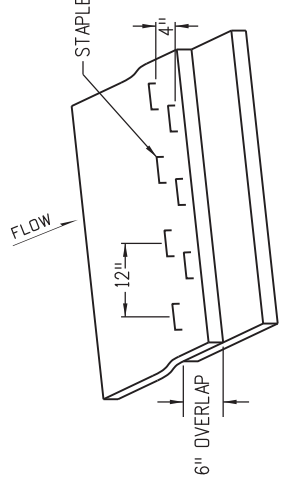
**SOIL FILLED TRM APPLICATION**

1. PLACE 3" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
2. APPLY SEED AND RAKE INTO SOIL.
3. INSTALL TRM.
4. PLACE 0.5" TO 1" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
5. APPLY SEED AND RAKE INTO SOIL.
6. INSTALL SOIL RETENTION BLANKET (CLASS 1).



**ANCHOR TRENCH (A)**

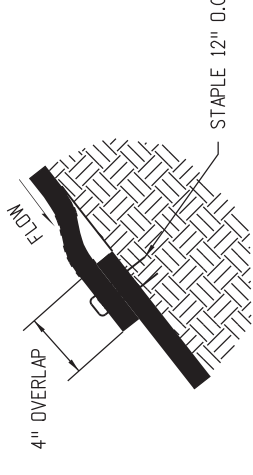
TO BE USED AT THE BEGINNING AND END OF THE CHANNEL ACROSS ITS ENTIRE WIDTH.



**CONSECUTIVE ROLL OVERLAP (B)**

TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH UPSTREAM BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNSTREAM SIDE.

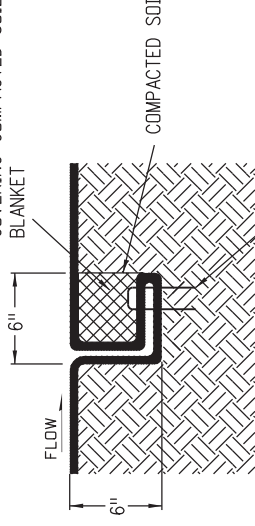
- GENERAL NOTES**
1. Z SHAPED FOLD TO BE USED ON SLOPE EVERY 35 FEET MAXIMUM.
  2. STAPLE CHECK LOCATIONS SHOULD BE AT LEAST 15 FEET FROM THE BOTTOM OF SLOPE.



**SIDE SEAM OVERLAP (C)**

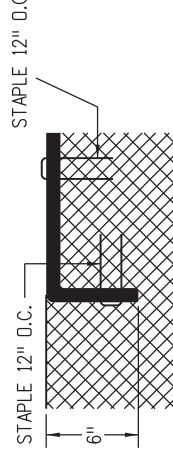
TO BE USED FOR OVERLAP WHEN 2 WIDTHS OF BLANKET ARE APPLIED SIDE BY SIDE WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.

APPLY SEED AND ANY REQUIRED SOIL CONDITIONERS PRIOR TO COVERING COMPACTED SOIL WITH BLANKET

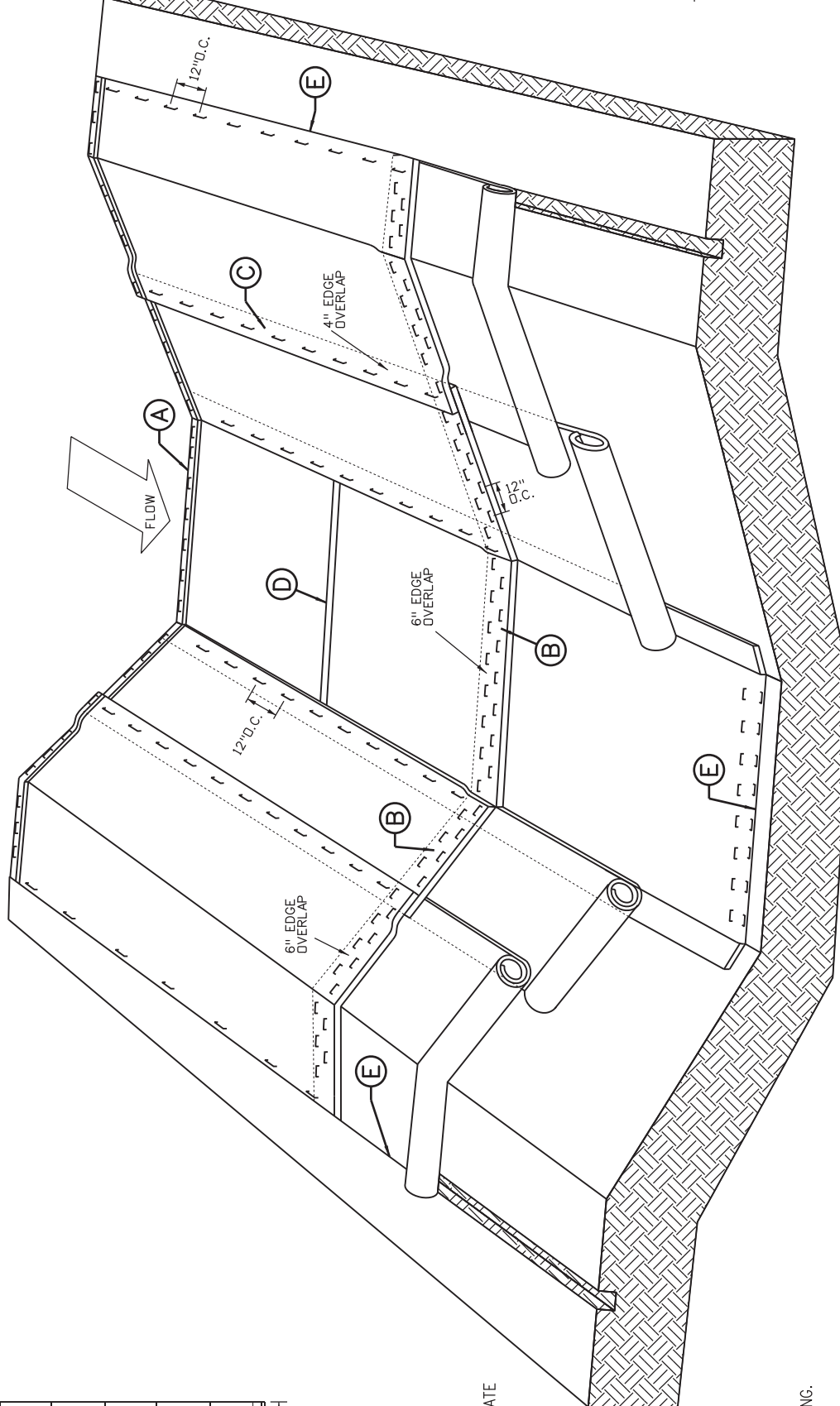


**CHANNEL CHECK SLOT (D)**

TO BE USED AT 30' INTERVALS IN CHANNEL FLOWLINE.



**TERMINATION OF CHANNEL (E)**



**SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) CHANNEL APPLICATION**

IN ACCORDANCE WITH SECTION 216.

**Computer File Information**

Creation Date: 07/04/12	Initials: DLM
Last Modification Date: 07/16/15	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2016010102.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

**Sheet Revisions**

Date:	Comments

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**SOIL RETENTION COVERING**

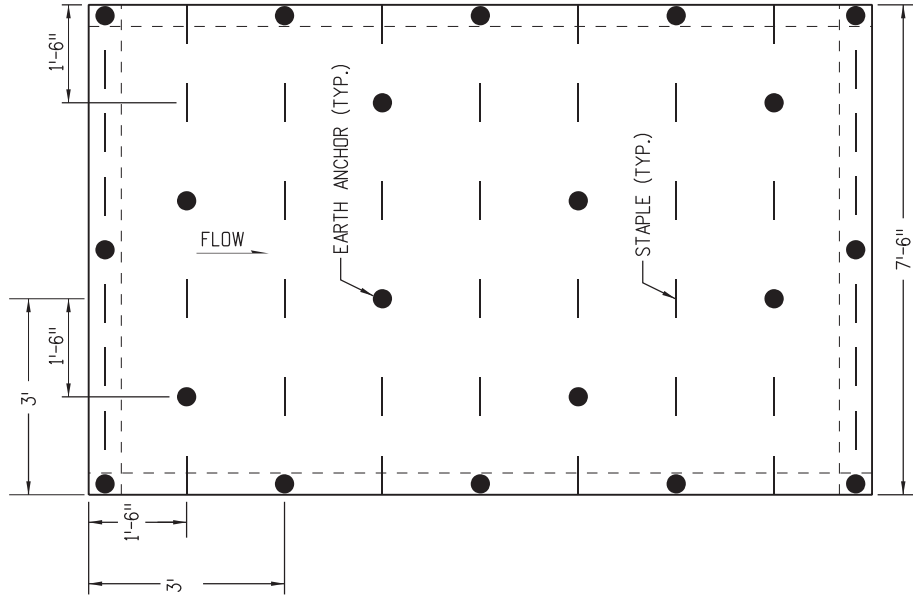
STANDARD PLAN NO.

M-216-1

Sheet No. 1 of 2

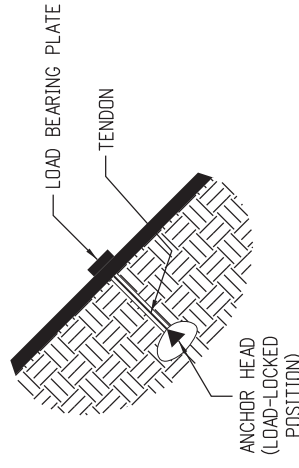
Issued By: Project Development Branch on July 16, 2015

# BLANK TEMPLATE



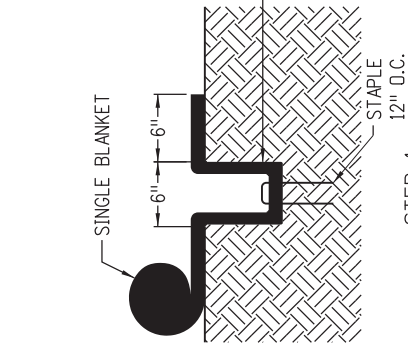
## TYPICAL STAPLE OR EARTH ANCHOR PATTERN FOR SLOPE APPLICATION

IF EARTH ANCHORS ARE NOT SPECIFIED ON THE PLANS, ONLY STAPLES SHALL BE USED. SEE SUBSECTION 216.04



## EARTH ANCHOR

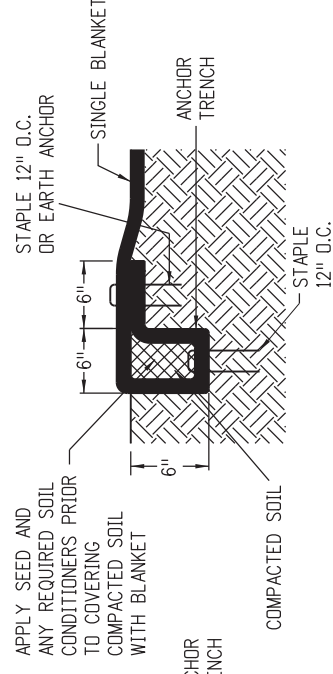
- NOTES: 1. EARTH ANCHORS WILL BE USED INSTEAD OF STAPLES WHEN SPECIFIED IN THE PLANS.  
2. EARTH ANCHORS SHALL BE PAID FOR SEPARATELY AS SPECIFIED IN SECTION 216.



STEP 1

## ANCHOR TRENCH (A)

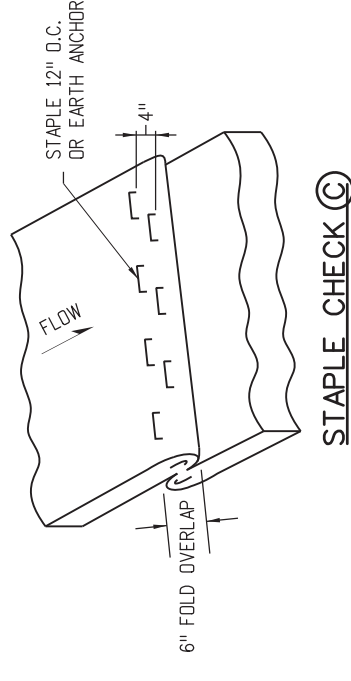
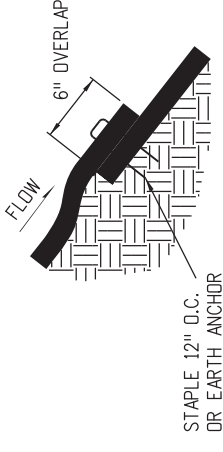
TO BE USED AT THE UPSLOPE AND DOWNSLOPE ENDS OF BLANKET ACROSS THE ENTIRE WIDTH OF SLOPE UNLESS SLOPE RUNS INTO RECEIVING WATER. (SEE DOWNSLOPE END STAPLE CHECK).



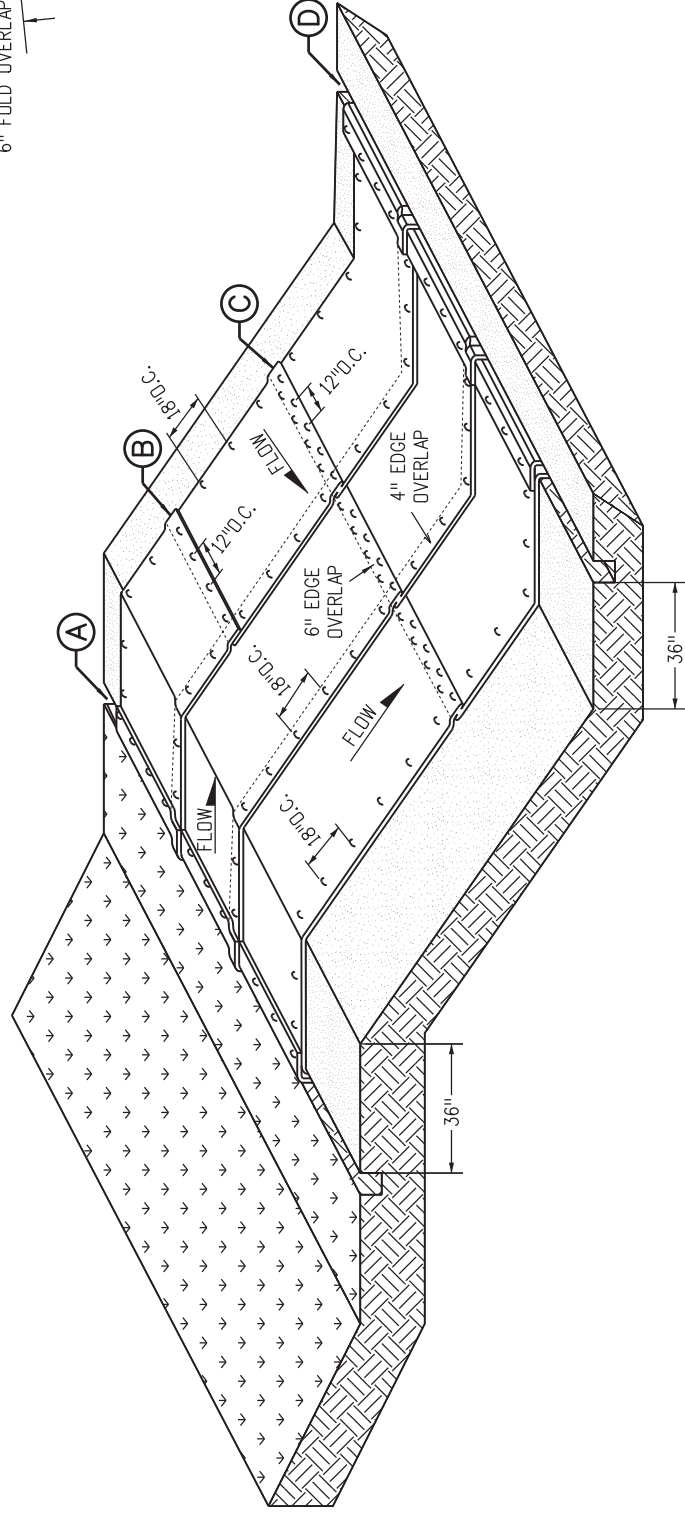
STEP 2

## CONSECUTIVE ROLL OVERLAP (B)

TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.

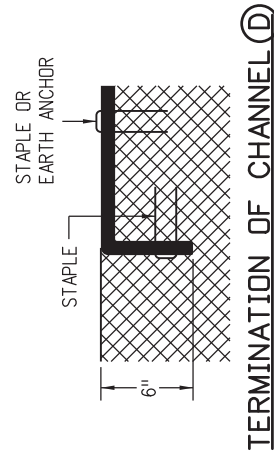


## STAPLE CHECK (C)

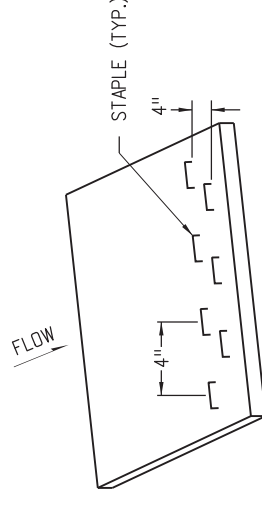


## SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) SLOPE APPLICATION

IN ACCORDANCE WITH SECTION 216.



## TERMINATION OF CHANNEL (D)



## DOWNSLOPE END STAPLE CHECK

TO BE USED WHEN SLOPE RUNS INTO A RECEIVING WATER AND CANNOT BE EXTENDED 3 FEET BEYOND SLOPE.

### Computer File Information

Creation Date: 07/04/12 Initials: DLM  
Last Modification Date: 07/16/15 Initials: LTA  
Full Path: www.coloradodot.info/business/designsupport  
Drawing File Name: 2016010202.dgn  
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

### Sheet Revisions

Date:	Comments

### Colorado Department of Transportation

4201 East Arkansas Avenue  
CDOT HQ, 4th Floor  
Denver, CO 80222  
Phone: 303-757-9021 FAX: 303-757-9868



### Division of Project Support

DLM/LTA

## SOIL RETENTION COVERING

Issued By: Project Development Branch on July 16, 2015

STANDARD PLAN NO.

M-216-1

Sheet No. 2 of 2

# BLANK TEMPLATE

## GENERAL NOTES

1. IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A VERTICAL CURVE, FLARE THE CURB ON EACH SIDE OF THE INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
2. DETAILS OF GUARD RAIL INSTALLATION ARE SHOWN IN STANDARD PLAN M-606-1.
3. THE END SECTION-TO-PIPE STUB JOINT FOR CORRUGATED METAL PIPE SHALL BE IN ACCORDANCE WITH THE TYPE 3 TYPICAL CONNECTION DETAILED IN STANDARD PLAN M-603-10. THE TYPE 1 OR TYPE 2 TYPICAL CONNECTIONS ARE NOT ACCEPTABLE. (AS AN OPTION, THE END SECTION MAY BE CONNECTED DIRECTLY TO A SECTION OF PIPE). JOINTS BETWEEN THE STUB AND PIPE, OR SECTIONS OF PIPE, SHALL BE IN ACCORDANCE WITH SECTION 603. CONNECTIONS FOR PLASTIC PIPE SHALL PROVIDE A FIRM DIRECT CONNECTION SIMILAR TO THE TYPE 3. PLASTIC END SECTIONS ARE NOT ALLOWED. ALL PLASTIC PIPE JOINTS SHALL BE AS RECOMMENDED BY THE PIPE MANUFACTURER AND APPROVED BY THE ENGINEER.
4. PLASTIC PIPE SHALL CONFORM TO AASHTO M 294 TYPE C.
5. DETAILS OF BITUMINOUS CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
6. STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED WITH THE EMBANKMENT PROTECTOR (TYPE 3). EMBANKMENT MATERIAL SHALL BE USED WITH CONSTRUCTION REQUIREMENTS IN ACCORDANCE WITH SECTION 203. PAYMENT FOR THIS EMBANKMENT MATERIAL SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 3).

PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:

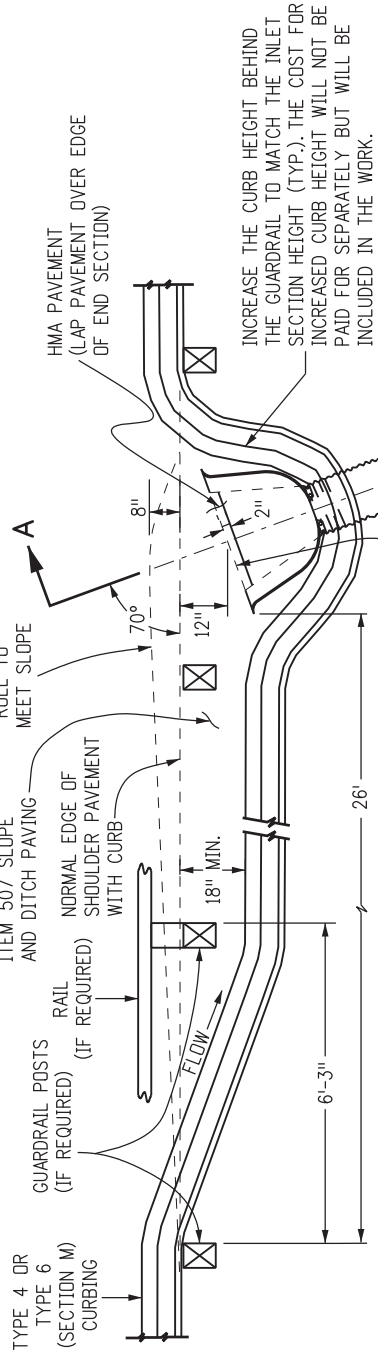
506 OR 507 - PAY ITEMS AS SPECIFIED ON THE PLANS.

609 - CURB, TYPE 4 OR TYPE 6 (SECTION M) .....LINEAR FT.

615 - EMBANKMENT PROTECTOR (TYPE 3) .....EACH

NOTE: THIS PAYMENT INCLUDES THE END SECTION, THE TRASH GUARD (WHEN SPECIFIED ON THE PLANS), PIPE CONNECTION, STRUCTURE EXCAVATION, EMBANKMENT MATERIAL AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.

603 - 12 IN. TO 18 IN. PIPE .....LINEAR FT.



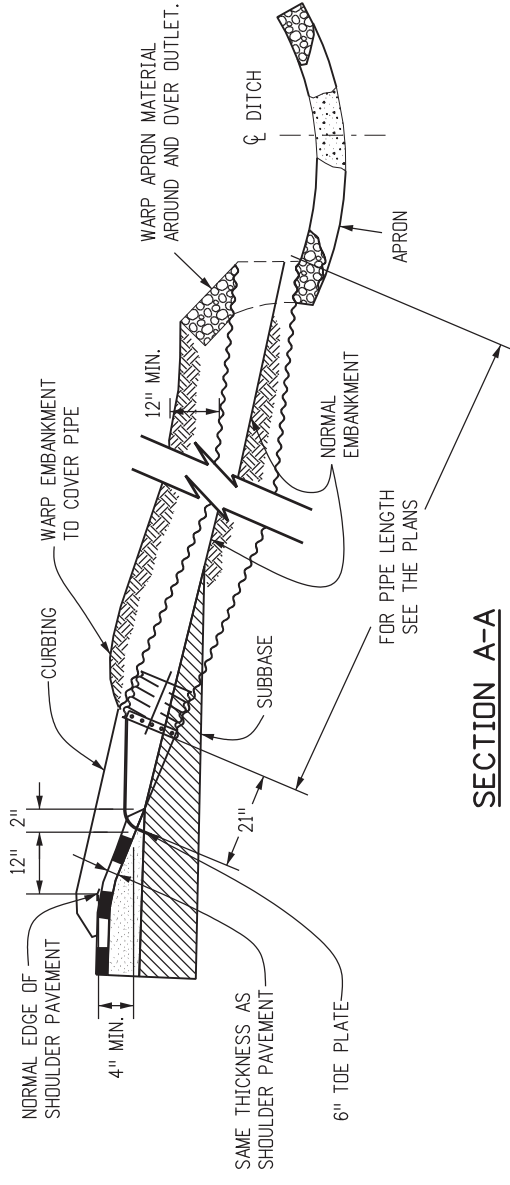
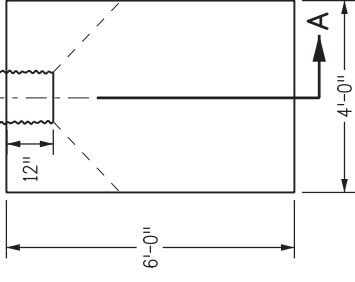
TRASH GUARD REQUIRED WHEN SPECIFIED ON THE PLANS

FLEXIBLE PIPE: PLASTIC OR METAL PIPE (PLASTIC PIPE SHOWN)

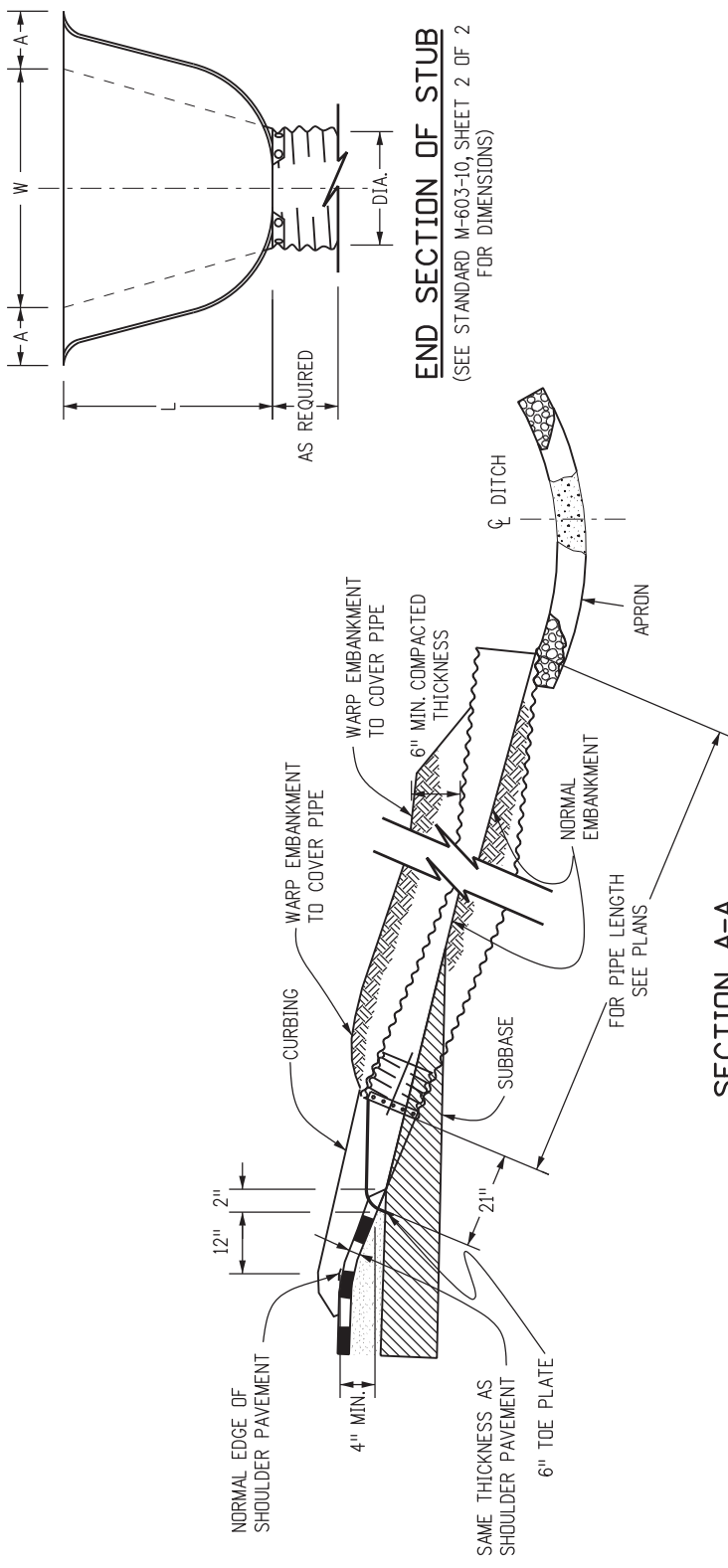
### TYPE 3 PLAN VIEW

SHOWING DRAINAGE FLOW FROM LEFT TO RIGHT. REVERSE DETAIL WHEN DRAINAGE FLOW IS RIGHT TO LEFT.

TYPE OF APRON MATERIAL	THICKNESS IN.
SLOPE AND DITCH PAVING (507)	6
DRY RUBBLE	4
CONCRETE	4
HMA	4
GROUTED RUBBLE	4
RIPRAP (506)	9 (MIN.)



### SECTION A-A FOR PLASTIC PIPE



### SECTION A-A FOR METAL PIPE

END SECTION OF STUB  
(SEE STANDARD M-603-10, SHEET 2 OF 2 FOR DIMENSIONS)

#### Computer File Information

Creation Date: 07/04/12 Initials: DD  
 Last Modification Date: 07/04/12 Initials: LTA  
 Full Path: www.coloradodot.info/business/designsupport  
 Drawing File Name: 615010101.dgn  
 CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

#### Sheet Revisions

Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

Colorado Department of Transportation

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Project Development Branch

DD/LTA

Issued By: Project Development Branch July 4, 2012

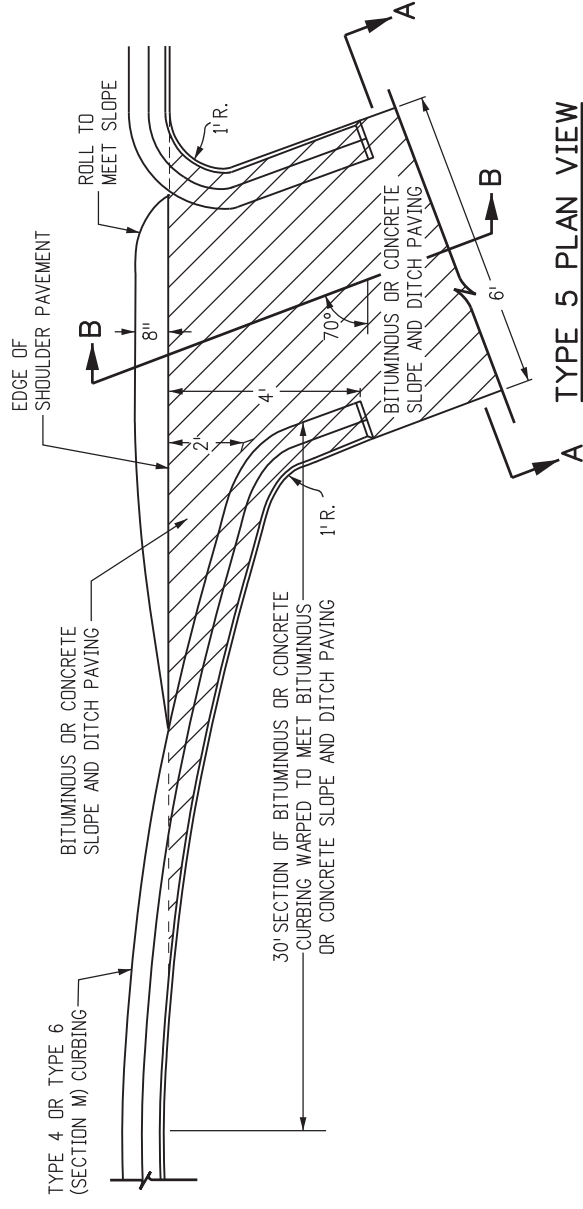
EMBANKMENT  
 PROTECTOR TYPE 3

STANDARD PLAN NO.

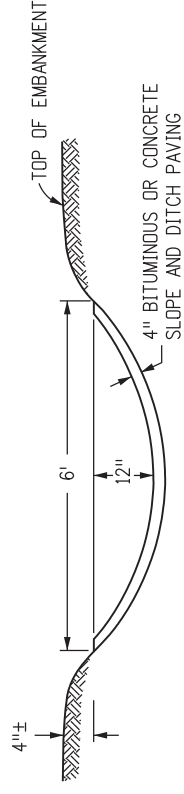
M-615-1

Sheet No. 1 of 1

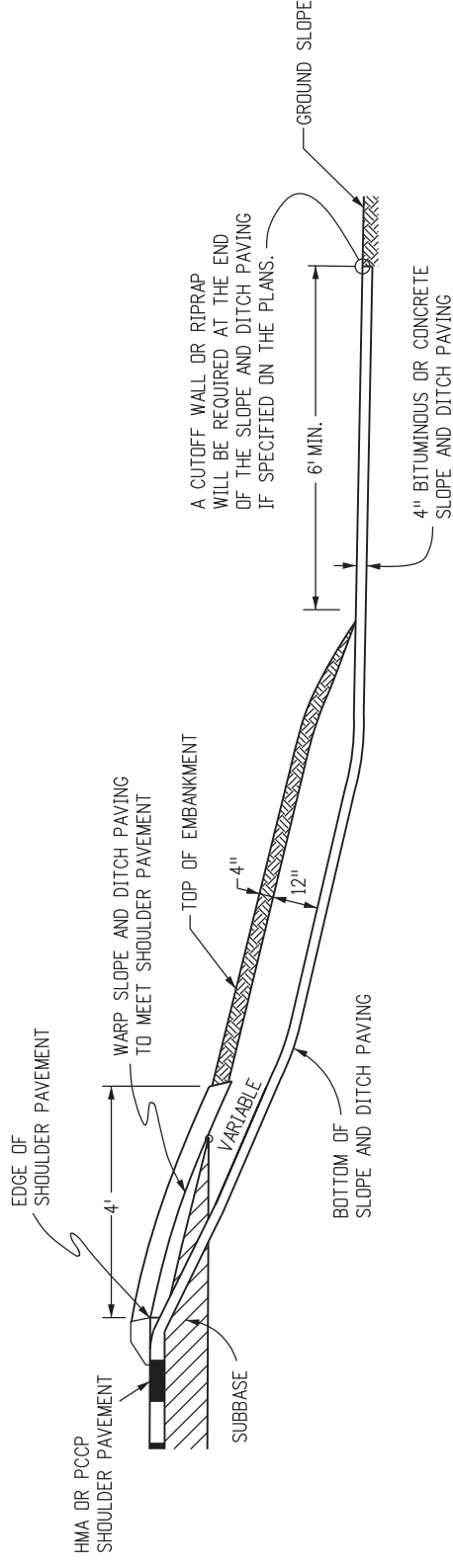
# BLANK TEMPLATE



**TYPE 5 PLAN VIEW**



**SECTION A-A**



**SECTION B-B**

(WITH 4 IN. BITUMINOUS OR CONCRETE SLOPE AND DITCH PAVING)

## GENERAL NOTES

1. IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A SAG VERTICAL CURVE, FLARE THE CURB ON EACH SIDE OF THE INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
2. DETAILS OF CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
3. STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED IN THIS WORK. EMBANKMENT MATERIAL SHALL BE USED WITH CONSTRUCTION REQUIREMENTS IN ACCORDANCE WITH SECTION 203. EMBANKMENT MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 5).
4. PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:  
 507 - BITUMINOUS SLOPE AND DITCH PAVING (ASPHALT) ..... TON  
 507 - CONCRETE SLOPE AND DITCH PAVING ..... CU. YD.  
 609 - CURB, TYPE 4 OR TYPE 6 (SECTION M) ..... LINEAR FT.  
 615 - EMBANKMENT PROTECTOR (TYPE 5) ..... EACH  
 NOTE: THIS PAYMENT INCLUDES THE STRUCTURE EXCAVATION, ANY OTHER EARTHWORK, AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.

Computer File Information	
Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 615020101.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

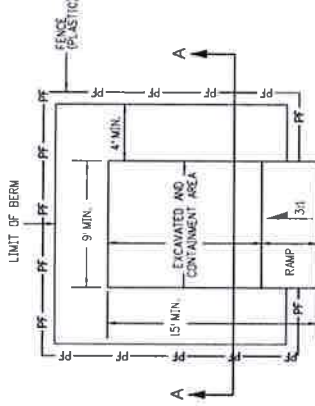
Sheet Revisions	
Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

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	Issued By: Project Development Branch July 4, 2012	

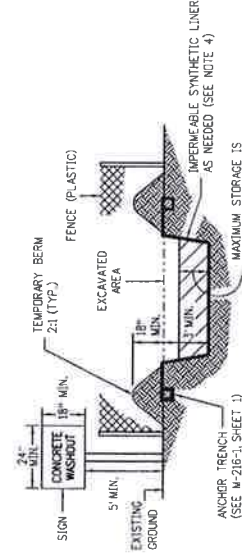
EMBANKMENT PROTECTOR TYPE 5	STANDARD PLAN NO. M-615-2
Sheet No. 1 of 1	

# EXAMPLE

- BMP in use  
- BMP not in use



PLAN VIEW

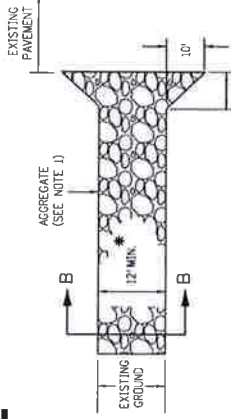


SECTION A-A

NOTES:

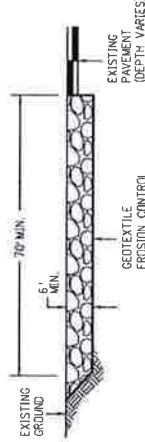
1. A FENCE (PLASTIC) CONFORMING TO SECTION 607 SHALL BE INSTALLED AROUND THE CONCRETE WASHOUT AREA, EXCEPT AT THE OPENING.
2. THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 INCHES HIGH AND CONFORM TO SUBSECTION 65002.
3. ALL MATERIALS AND LABOR TO COMPLETE THE CONCRETE WASHOUT STRUCTURE SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
4. THE BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF FIVE FEET ABOVE GROUND WATER. IF NOT, IT SHALL BE LINED WITH AN IMPERMEABLE SYNTHETIC LINER THAT IS DESIGNED TO CONTROL SEEPAGE AT A MAXIMUM RATE OF 6 TO 10 CENTIMETERS PER SECOND.
5. THE PAY ITEM NUMBER FOR CONCRETE WASHOUT STRUCTURE (EACH) IS 208-00045.

CONCRETE WASHOUT STRUCTURE

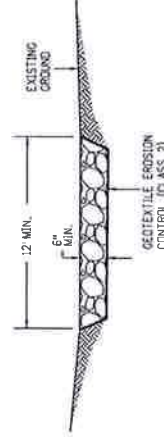


PLAN VIEW

\* SHALL EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.



ELEVATION SECTION



SECTION B-B

NOTES:

1. AGGREGATE SHALL CONFORM TO SUBSECTION 20602 (K).
2. THE CONTRACTOR SHALL PROTECT CURB AND GUTTER THAT CROSSES THE ENTRANCE FROM DAMAGE. PROTECTION OF THE CURB AND GUTTER SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
3. GEOTEXTILE SHALL CONFORM TO SUBSECTION 712.06.
4. ALL MATERIALS AND LABOR TO COMPLETE THE VEHICLE TRACKING PAD SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
5. THE PAY ITEM NUMBER FOR VEHICLE TRACKING PAD (EACH) IS 208-00070.

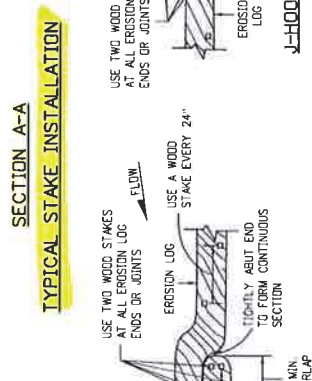
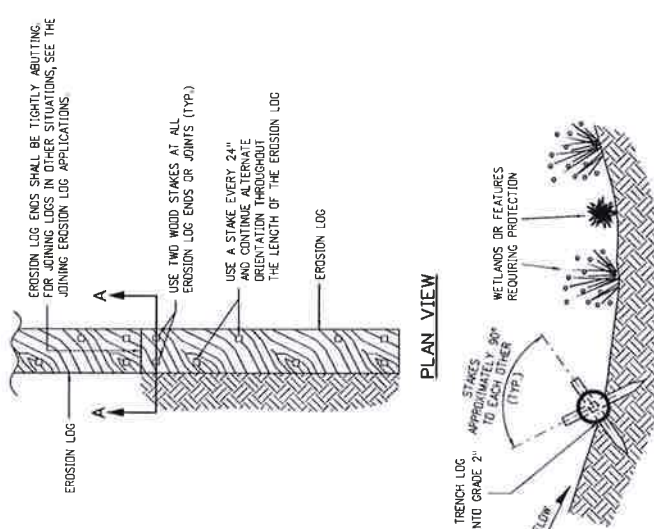
VEHICLE TRACKING PAD Modified on 7/14/15 (See non-standard)

<b>Computer File Information</b> Creation Date: 07/04/12    In: JBK Last Modifier: Date: 03/29/16    Initials: LTA File Path: www.co.orcood.ct/info/business/gis/gisupport Drawing File Name: 208010101.dwg CAD Ver.: MicroStation V8    Scale: Not to Scale    Units: English		<b>Sheet Revisions</b> Date: 07/16/15    Comments: Modified on 7/14/15 Date: 03/29/16    Comments: Add revision to some elements and General Note.		Colorado Department of Transportation 4201 East Arkansas Avenue CDOT HQ, 4th Floor Denver, CO 80222 Phone: 303-757-9021    FAX: 303-757-9868 Division of Project Support    JBK/LTA		STANDARD PLAN NO. M-208-1 Sheet No. 1 of 11	
<b>TEMPORARY EROSION CONTROL</b>							
Issued By: Project Development Branch on July 4, 2012							

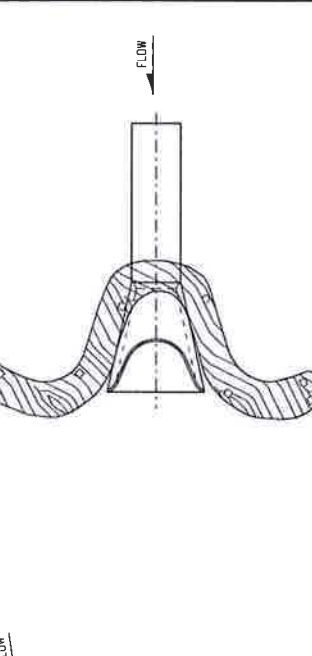
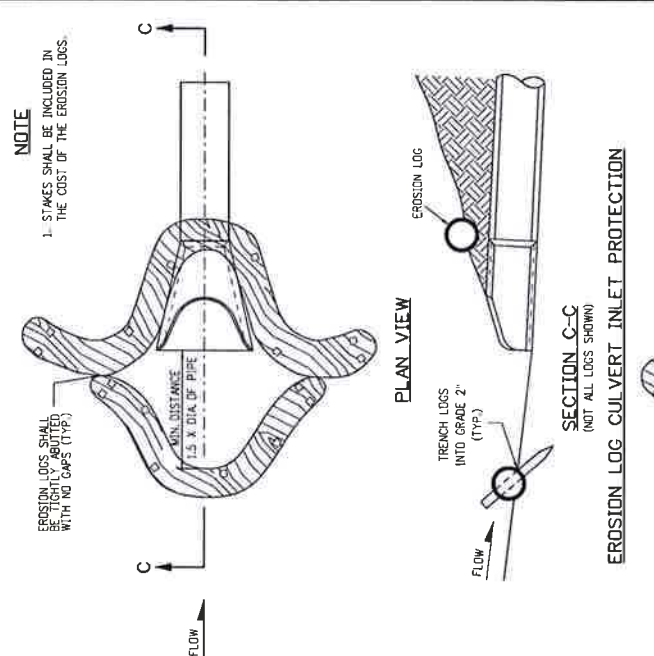
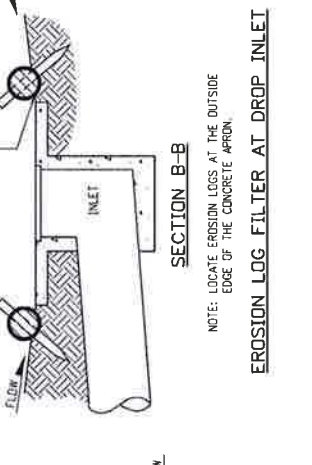
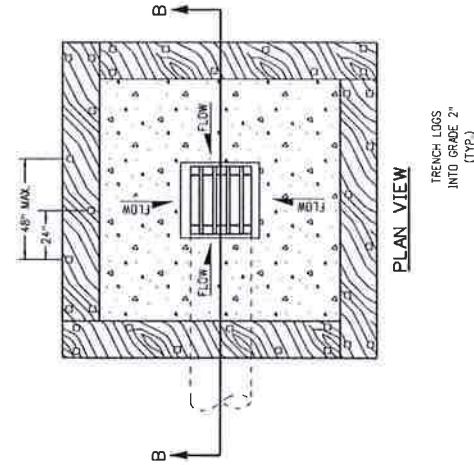
SEE SWMP MAP FOR DATES OF INSTALLATION/REMOVAL OF EACH BMP 6-10-15



# EXAMPLE



EROSION LOGS PAY ITEMS	
NUMBER	DESCRIPTION
Z08-00012	TYPE 1 (8")
Z08-00022	TYPE 1 (12")
Z08-00033	TYPE 1 (20")
Z08-00007	TYPE 2 (8")
Z08-00008	TYPE 2 (12")
Z08-00009	TYPE 2 (18")



**EROSION LOG APPLICATIONS**

**EROSION LOG APPLICATIONS**

**JOINING EROSION LOG APPLICATIONS**

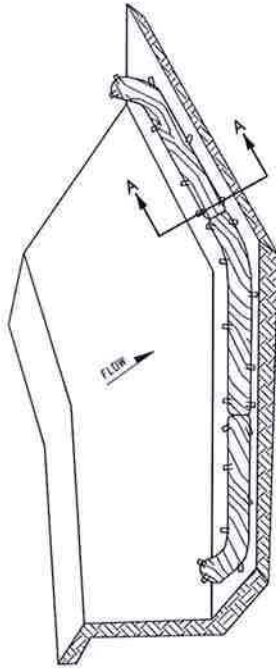
**OVERLAP JOINING DETAIL**

<b>Computer File Information</b> Creation Date: 07/04/12    In: JBK Last Modification Date: 03/29/16    In: LTA File Path: www.colorado.info/business/designsupport/ Drawing File Name: 2060102011.dwg CAD Ver.: MicroStation V8    Scale: Not to Scale    Units: English		<b>Sheet Revisions</b> Date: 03/29/16    Comments:	
<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue CDOT HQ, 4th Floor Denver, CO 80222 Phone: 303-757-9021    FAX: 303-757-9868		<b>TEMPORARY EROSION CONTROL</b> STANDARD PLAN NO. M-208-1 Issued By: Project Development Branch on July 4, 2012 Sheet No. 2 of 11	
<b>Division of Project Support</b> JBK/LTA		<b>EROSION LOG CULVERT OUTLET PROTECTION</b>	

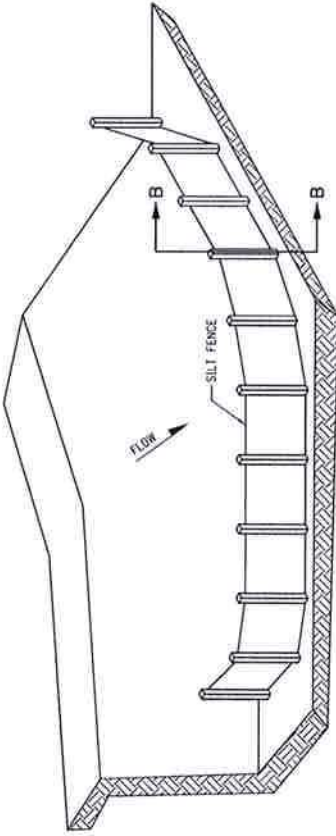
# EXAMPLE

## NOTES

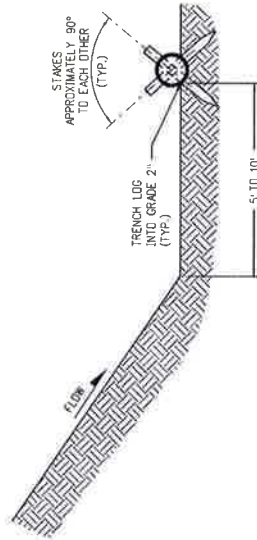
1. SILT FENCE SHALL HAVE A MAXIMUM DRAINAGE AREA OF ONE-QUARTER ACRE PER 100 FEET OF SILT FENCE LENGTH; MAXIMUM SLOPE LENGTH BEHIND BARRIER IS 100 FEET; MAXIMUM GRADIENT BEHIND THE BARRIER IS 2:1.
2. SILT FENCE USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
3. SILT FENCE SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
4. THE MAXIMUM LENGTH OF EROSION LOGS OR SILT FENCES WITHOUT A FLARED END TURNING UPSLOPE IS 150 FEET.



ISOMETRIC VIEW



ISOMETRIC VIEW



SECTION A-A

- NOTES:
1. EROSION LOGS USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
  2. EROSION LOGS SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
  3. SEE SHEET 2 OF 11 FOR JOINING LOGS DETAIL.

EROSION LOGS PAY ITEMS NUMBER	DESCRIPTION
208-00002	TYPE 1 (6")
208-00002	TYPE 1 (12")
208-00013	TYPE 1 (20")
208-00007	TYPE 2 (6")
208-00008	TYPE 2 (12")
208-00009	TYPE 2 (18")

## EROSION LOG TOE OF SLOPE PROTECTION

## TOE OF SLOPE PROTECTION APPLICATIONS

## SILT FENCE TOE OF SLOPE PROTECTION

NOTE: THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.

### Computer File Information

Creation Date: 07/04/12  
 Last Modification Date: 03/29/16  
 Full Path: www.coloradoat.info/business/designsupport  
 Drawing File Name: 2080103011.dgn  
 CAD Ver.: MicroStation V8  
 Sheet: 103 to 306  
 Units: English

### Sheet Revisions

Date:	Revisions:	Comments:
03/29/16	(R)X	ADD REVISIONS TO COMMENTS
	(R)X	ADD REVISIONS TO COMMENTS
	(R)X	ADD REVISIONS TO COMMENTS
	(R)X	ADD REVISIONS TO COMMENTS

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 Division of Project Support JBK/LTA

## TEMPORARY EROSION CONTROL

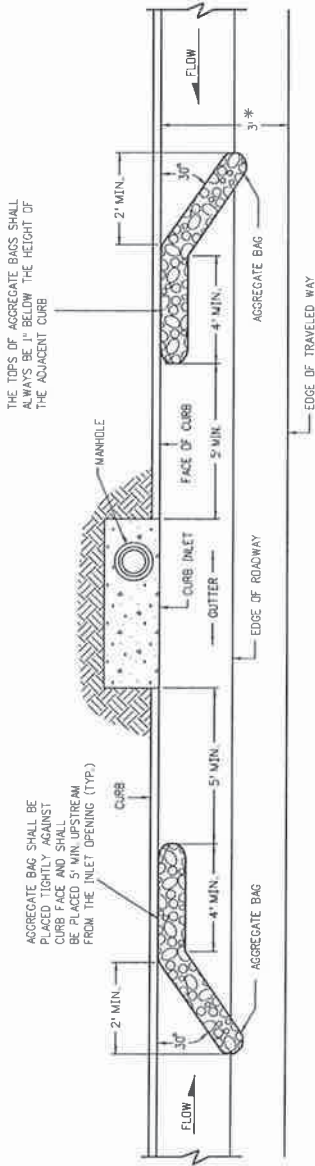
Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.

M-208-1

Sheet No. 3 of 11

# EXAMPLE

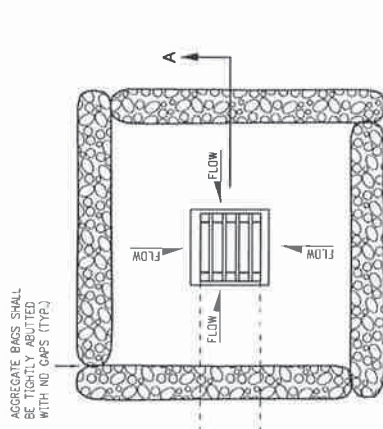


PLAN VIEW

\* NOTE: USE AGGREGATE BAGS ONLY WHEN THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY TO THE FACE OF CURB.

LENGTH OF INLET (L)	NUMBER OF AGGREGATE BAGS UPSTREAM OF INLET
0'-5'	1
6'-10'	2
L > 10'	3

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I)



PLAN VIEW



SECTION A-A

AGGREGATE BAGS AT DROP INLET

## AGGREGATE BAG APPLICATIONS

NOTE: THE PAY ITEM NUMBER FOR AGGREGATE BAG (LF) IS 208-00035

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 03/29/16	Initials: LTA
Full Path: www.coloradoact.info/business/designsupport/	
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CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

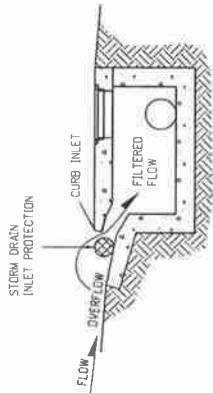
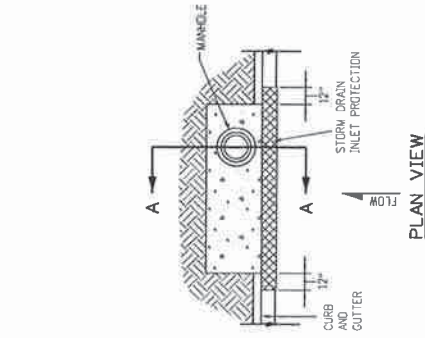
Sheet Revisions	
Date:	Comments
03/29/16	Added some dimensions and Note.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

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 Division of Project Support JBK/LTA

TEMPORARY  
 EROSION CONTROL  
 Issued By: Project Development Branch on July 4, 2012

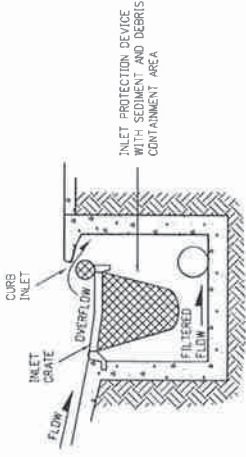
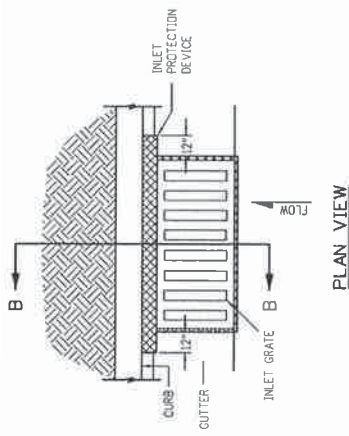
STANDARD PLAN NO.  
 M-208-1  
 Sheet No. 4 of 11

# EXAMPLE

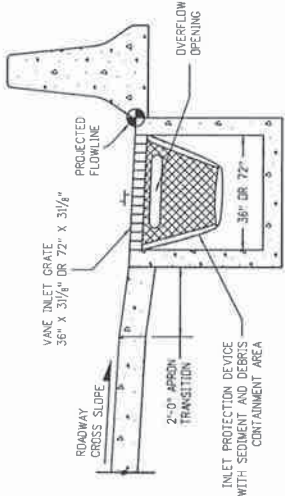


**STORM DRAIN INLET PROTECTION (TYPE I)**

- NOTES
1. INLET PROTECTION DEVICE SHALL EXTEND 12 INCHES PAST EACH END OF THE INLET.
  2. THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE I) EACH IS 208-00051.
  3. FOR STORM DRAIN INLET TYPES I AND II, IF THERE IS A MINIMUM CLEARANCE OF 3 FEET FROM THE EDGE OF THE TRAVELED WAY TO THE FACE OF CURB, USE THE AGGREGATE BAGS AT STORM DRAIN INLET (TYPE I) DETAIL ON SHEET 4 INSTEAD.

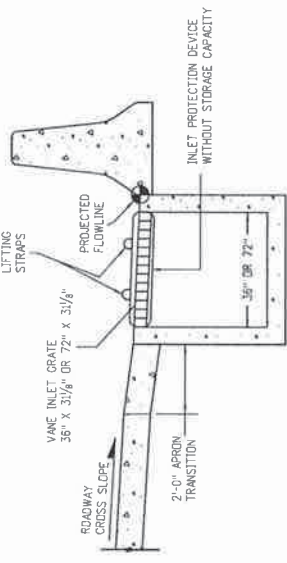


**STORM DRAIN INLET PROTECTION (TYPE II)**



**OPTION A**

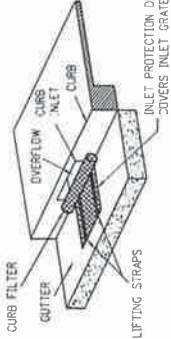
**STORM DRAIN INLET PROTECTION (TYPE III)**



**OPTION B**

**STORM DRAIN INLET PROTECTION (TYPE III)**

NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE III) EACH IS 208-00056.



**ISOMETRIC VIEW**

**OPTION B**

**STORM DRAIN INLET PROTECTION (TYPE II)**

NOTE: THE PAY ITEM NUMBER FOR STORM DRAIN INLET PROTECTION (TYPE II) EACH IS 208-00052.

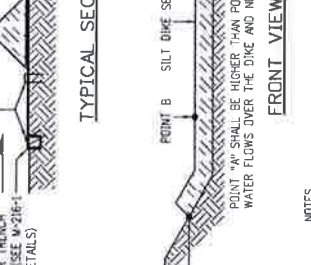
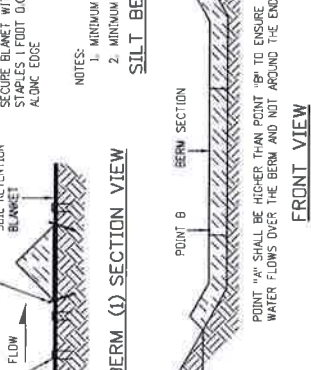
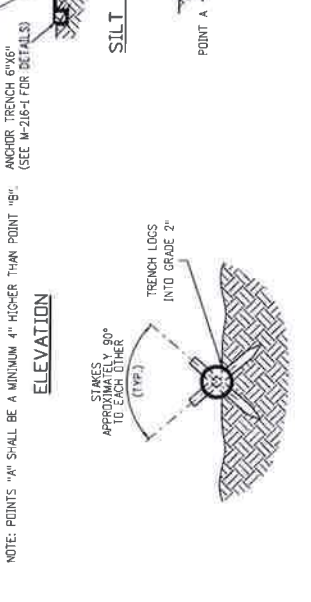
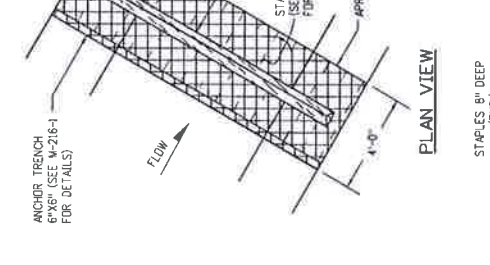
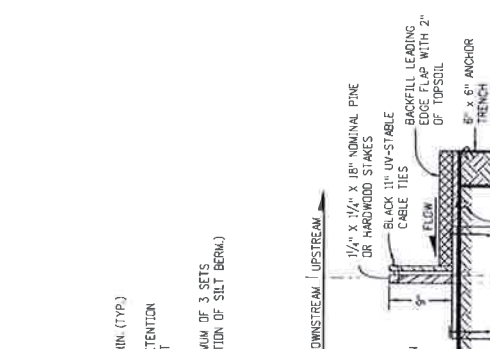
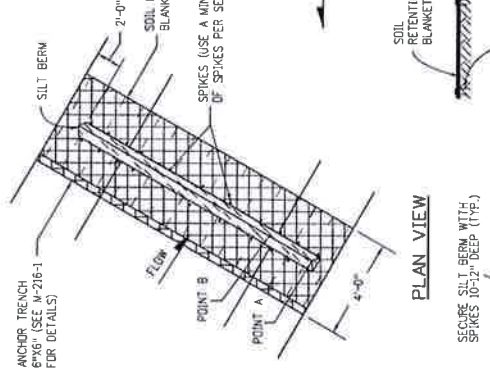
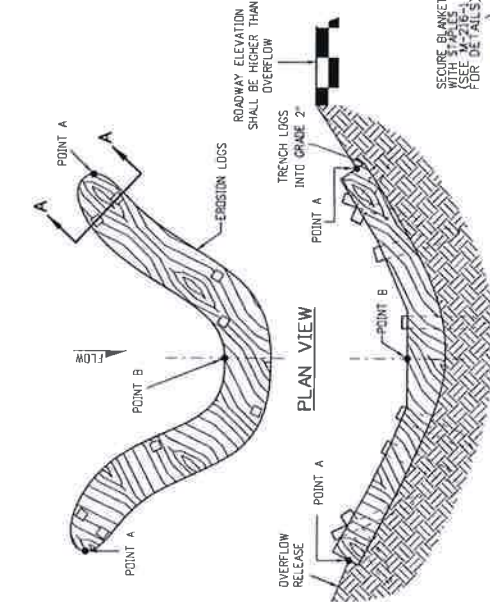
**STORM DRAIN INLET PROTECTION TYPES**

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Author: JBK	Date:	Comments
Last Modification Date: 03/29/16	Initials: LTA	03/29/16	Added Note 3
Full Path: www.coloradoinfo/business/dealingsupport			
Drawing File Name: 2080105011.dgn			
CAD Ver.: MecSoftV8	Scale: units: English		

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Division of Project Support JBK/LTA		Sheet No. 5 of 11

# EXAMPLE



- NOTES**
1. EROSION LOGS SHALL BE EMBEDDED 2 INCHES INTO THE SOIL.
  2. STAKES SHALL BE EMBEDDED TO A MINIMUM DEPTH OF 12 INCHES.
  3. EROSION LOGS SHALL BE TIGHTLY ADJUTED WITH NO GAPS.
  4. V-SHAPED TEMPORARY DITCHES SHALL NOT BE USED. DITCHES SHALL BE GRADED IN A PARABOLIC OR TRAPEZOIDAL SHAPE.

- NOTES**
1. ANCHOR SOIL RETENTION BLANKET INTO TRENCH WITH 8 INCHES MIN.
  2. STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
  3. SECTIONS OF THE SILT BERM SHALL BE OVERLAPED WITH NO GAPS.
  4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
  5. SOIL RETENTION BLANKET SHALL ALWAYS BE REQUIRED.
  6. THE PAY ITEM NUMBER FOR SILT BERM (LF) IS 208-00004.

- NOTES**
1. ANCHOR APRON INTO TRENCH WITH 8 INCH MINIMUM STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
  2. FILL AND COMPACT TRENCH.
  3. THE APRON SHALL EXTEND A MINIMUM OF 2 FEET BEYOND EACH SIDE OF THE TRIANGLE.
  4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
  5. THE PAY ITEM NUMBER FOR SILT DIKE (LF) IS 208-00001.

- NOTES**
1. ANCHOR APRON INTO TRENCH WITH 8 INCH MINIMUM STAPLES PLACED AT 1 FOOT INTERVALS ALONG EDGE.
  2. FILL AND COMPACT TRENCH.
  3. THE APRON SHALL EXTEND A MINIMUM OF 2 FEET BEYOND EACH SIDE OF THE TRIANGLE.
  4. FOR SLOPE AND CHANNEL SPACING SEE THE "SECTION VIEW ALONG DITCH FLOWLINE" DETAIL ON SHEET 11 OF 11.
  5. THE PAY ITEM NUMBER FOR SILT DIKE (LF) IS 208-00001.

## EROSION LOG INSTALLATION

## SILT BERM INSTALLATION

## SILT DIKE INSTALLATION

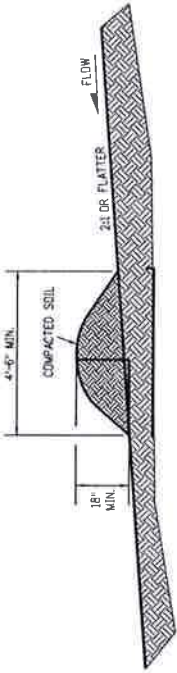
## DRAINAGE DITCH APPLICATIONS

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Last Modification Date: 03/29/16	Initials: LTA		
Full Path: www.colorado.gov/infoc/business/designsupport			
Drawing File Name: 2080108011.dgn			
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English	

 <b>TEMPORARY EROSION CONTROL</b>	STANDARD PLAN NO.
	M-208-1
Issued By: Project Development Branch on July 4, 2012	Sheet No. 6 of 11

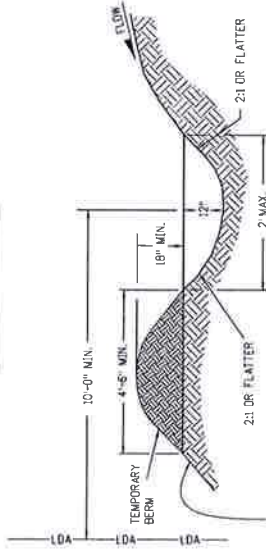
Colorado Department of Transportation  
 4201 East Arkansas Avenue  
 CO DOT HQ, 4th Floor  
 Denver, CO 80222  
 Phone: 303-757-9821 FAX: 303-757-9868  
 Division of Project Support JSK/LTA

# EXAMPLE

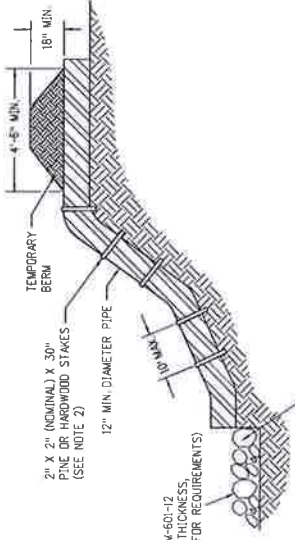


- NOTES:
1. BERMS SHALL HAVE A HEIGHT OF 18 INCHES, SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM BASE WIDTH OF 4'-6\"/>
  - 2. BERMS SHALL BE USED TO INTERCEPT AND DIVERT DRAINAGE TO A DESIGNATED OUTLET.
  - 3. BERMS SHALL NOT BE USED WHERE DRAINAGE AREA EXCEEDS 10 ACRES.
  - 4. BERMS SHALL BE CONSTRUCTED OUT OF MATERIAL COMPACTED WITH AT LEAST A MINIMUM OF ONE WHEEL ROLLED COMPACTION.
  - 5. THE PAY ITEM NUMBER FOR TEMPORARY BERM (LF) IS 208-00300.
  - 6. BERMS SHALL BE CONSTRUCTED OUT OF ACCEPTABLE MATERIAL THAT CAN BE COMPACTED AND RECEIVE AT A MINIMUM HEAVY EQUIPMENT WHEEL ROLLED COMPACTION.

## TEMPORARY BERM

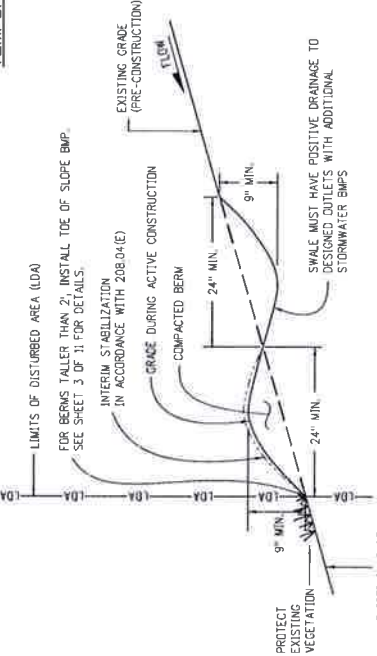


- FOR BERMS TALLER THAN 2', INSTALL TOP OF SLOPE BMP. SEE SHEET 3 OF 11 FOR DETAILS.
- NOTES:
1. TEMPORARY DIVERSION DITCHES SHALL BE CONSTRUCTED ACROSS THE SLOPE TO INTERCEPT RUNOFF AND DIRECT IT TO A STABLE OUTLET OR SEDIMENT TRAP.
  2. USE THE TEMPORARY DIVERSION DITCH IMMEDIATELY ABOVE A NEW CUT, FILL SLOPE, OR AROUND THE PERIMETER OF A DISTURBED AREA.
  3. THE GRADE ALONG THE FLOW PATH SHALL HAVE A POSITIVE GRADE TO ASSURE DRAINAGE, BUT SHALL NOT BE SO STEEP AS TO RESULT IN EROSION DUE TO HIGH VELOCITY.
  4. THE DIVERSION FLOWLINE SHALL ALWAYS BE LOCATED A MINIMUM 10 FEET FROM THE OUTSIDE LIMITS OF DISTURBED AREA BOUNDARY.
  5. THE PAY ITEM NUMBER FOR TEMPORARY DIVERSION (LF) IS 208-00300.



- \* RIPRAP OUTLET PROTECTION (SEE M-601-12 FOR MIN HORIZONTAL LANDFILL AND THICKNESS, AND SPECIFICATION 306 RIPRAP FOR REQUIREMENTS)
- \* RIPRAP SIZE D<sub>50</sub> = 6 IN. OR AS SHOWN ON THE PLANS.
- NOTES:
1. ANCHOR SIZE VARIES ACCORDING TO PIPE SIZE
  2. TO SECURE THE PIPE, DRIVE STAKES INTO GROUND, THEN TIE A 12 GAUGE WIRE BETWEEN THEM ABOVE AND ACROSS THE PIPE'S WIDTH.
  3. THE OUTLET SHALL BE ALIGNED WITH THE FLOW DIRECTION OF THE EXISTING GRADE. PERPENDICULAR DISCHARGE TO A CHANNEL SHALL NOT BE ACCEPTABLE.
  4. THE GRADE AROUND THE INLET TO THE PIPE SHALL BE COMPACTED.
  5. THE PAY ITEM NUMBER FOR TEMPORARY SLOPE DRAINS (LF) IS 208-00080.

## TEMPORARY SLOPE DRAINS



- NOTES:
1. BERMS CAN ONLY BE USED IF CONDITIONS ALLOW UNINTERRUPTED POSITIVE GRADE (MAXIMUM GRADIENT 3:2) TO AN OUTLET PROTECTED WITH ADDITIONAL BMPs.
  2. MAXIMUM DRAINAGE AREA FOR EACH OUTLET FROM THE SWALE SHALL BE LIMITED TO 2 ACRES.
  3. CONTRACTOR SHALL SALVAGE TOPSOIL AND PLACE AFTER BERM IS REMOVED FOR FINAL SEEDING OF ALL DISTURBED AREAS.
  4. ALL ACTIVITIES REQUIRED TO ACCOMPLISH TEMPORARY BERM (EXCLUDING SURFACE MULCHING) SHALL BE INCLUDED IN THE COST OF WORK AND WILL NOT BE PAID FOR SEPARATELY.
  5. BERMS SHALL BE CONSTRUCTED OUT OF ACCEPTABLE MATERIAL THAT CAN BE COMPACTED AND RECEIVE AT A MINIMUM HEAVY EQUIPMENT WHEEL ROLLED COMPACTION.
  6. THE PAY ITEM NUMBER FOR TEMPORARY BERM (LF) IS 208-00300.

## TEMPORARY BERM (AT EDGE OF DISTURBANCE)

## TEMPORARY DIVERSION

## GRADING APPLICATIONS

Colorado Department of Transportation  
 4201 East Arkansas Avenue  
 CDOT HQ, 4th Floor  
 Denver, CO 80226  
 Phone: 303-757-9821 FAX: 303-757-9868

Division of Project Support JBK/LTA

TEMPORARY EROSION CONTROL

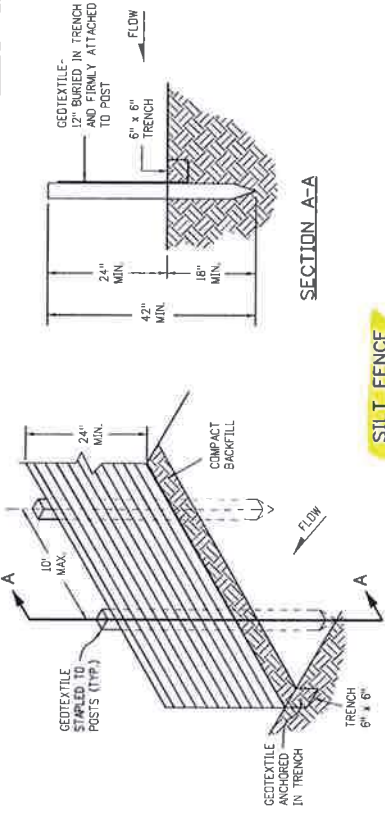
STANDARD PLAN NO. M-208-1

Sheet No. 7 of 11

Issued By: Project Development Branch on July 4, 2012

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Initials: JBK	Date:	Comments
Last Modification Date: 03/29/16	Initials: LTA	03/29/16	Revisions to some dimensions and Notes
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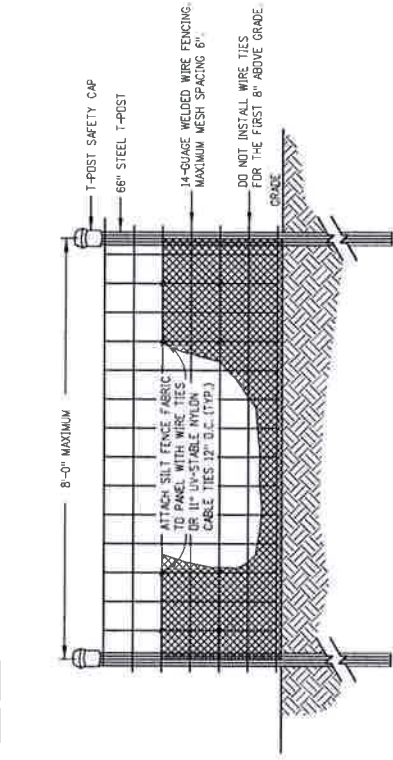
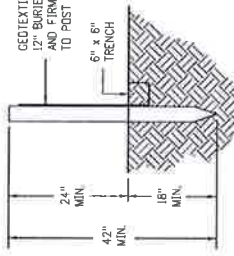
# EXAMPLE



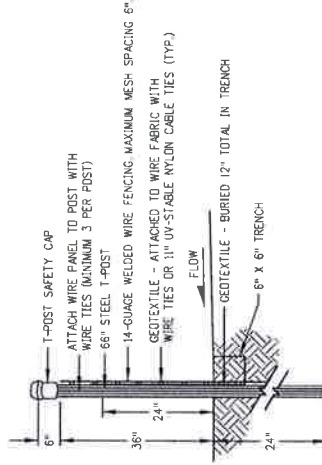
### SILT FENCE

- NOTES**
1. GEOTEXTILE SHALL BE ATTACHED TO WOOD POSTS WITH THREE OR MORE STAPLES PER POST. STAPLES SHALL BE HEAVY DUTY WIRE AND AT LEAST 1" INCH LONG.
  2. WOOD POST SHALL BE 1/2" x 1 1/2" NOMINAL.
  3. THE PAY ITEM NUMBER FOR SILT FENCE (L.F.) IS 208-00020.
  4. THE SILT FENCE SHALL BE PLACED ON THE CONTOUR (AT THE SAME ELEVATION ±6"). THE ENDS SHALL BE FLAGGED UP SLOPE (MINIMUM ELEVATION GAIN OF 18").

### SECTION A-A



### ELEVATION VIEW



### SIDE VIEW

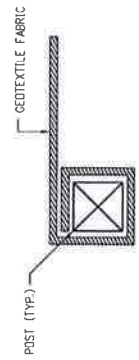
- NOTES**
1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
  2. SILT FENCES SHALL NOT BE USED FOR CHECK DAMS.
  3. THE PAY ITEM NUMBER FOR SILT FENCE (REINFORCED) (L.F.) IS 208-00021.

### SILT FENCE (REINFORCED)



### JOINING SECTION DETAIL (PLAN VIEW)

- NOTES**
1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
  2. POSTS SHALL BE TIGHTLY ADJUTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.



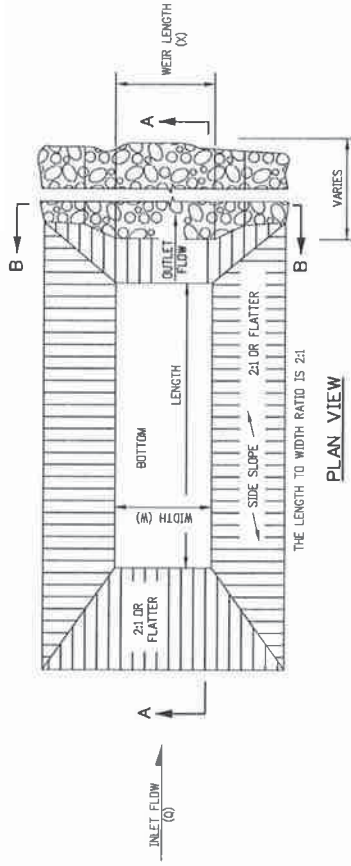
### END SECTION DETAIL (PLAN VIEW)

- NOTE**
1. THE END OF THE SILT FENCE FABRIC SHALL BE WRAPPED APPROX 6 INCHES AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.

### SILT FENCE APPLICATIONS

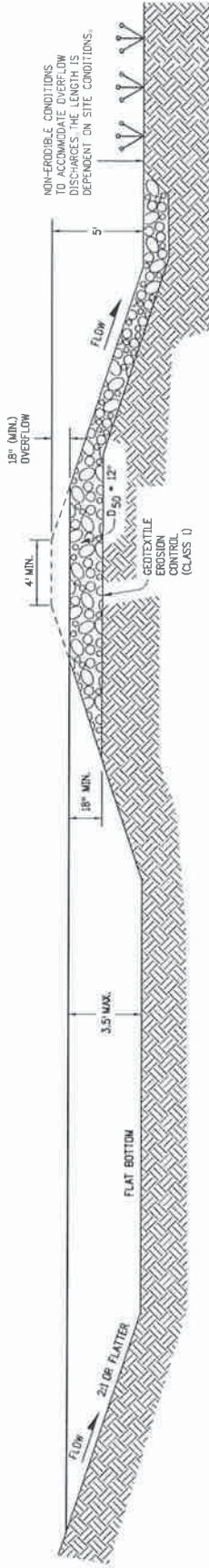
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Date:	Comments										
03/29/16	Minor revisions to some dimensions and notes										
<b>TEMPORARY EROSION CONTROL</b>				Issued By: Project Development Branch on July 4, 2012							

# EXAMPLE

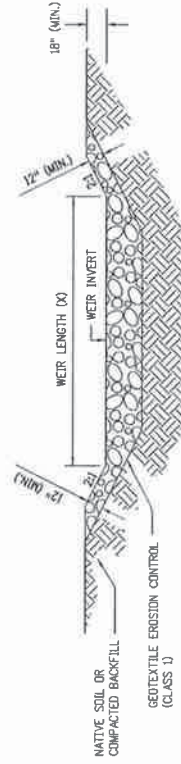


## NOTES

1. THE MAXIMUM DRAINAGE AREA IS 5 ACRES.
2. THE MAXIMUM STRUCTURE LIFE IS 2 YEARS.
3. THE STORAGE AREA IS 1800 CUBIC FEET PER ACRE.
4. THE MAXIMUM EMBANKMENT HEIGHT SHALL BE 5 FT., MEASURED ON THE DOWNSTREAM SIDE.
5. THE LENGTH/WIDTH RATIO MAY BE ADJUSTED TO MEET SITE CONDITIONS WHEN APPROVED BY THE ENGINEER.
6. WIDTH (W) OF SEDIMENT TRAP IS APPROXIMATELY EQUAL TO THE WEIR LENGTH (L).
7. SEDIMENT TRAP DESIGN SHALL BE APPROVED BY THE ENGINEER.
8. THE DOWN GRADE FROM WEIR SHALL BE STABLE AND NON-ERODIBLE.
9. THE PAY ITEM NUMBER FOR SEDIMENT TRAP (LF) IS 208-00033.



SECTION A-A



SECTION B-B

DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	4
2	5
3	6
4	10
5	12

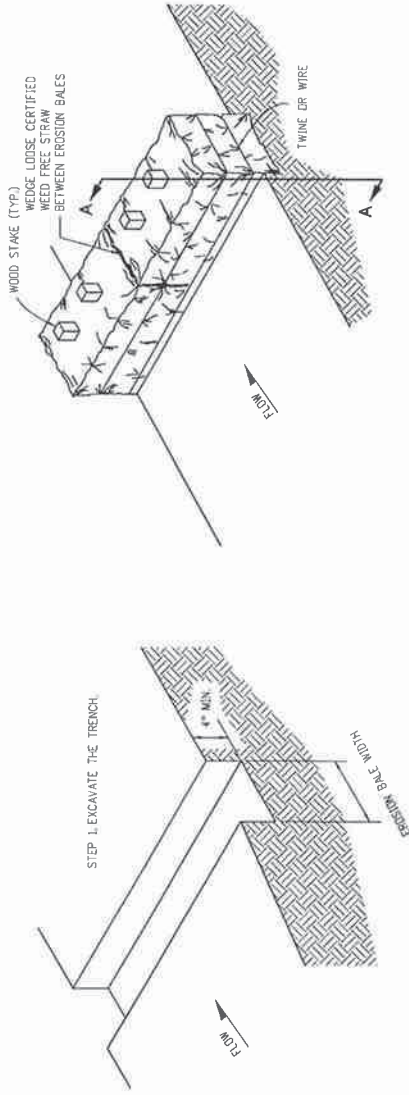
WEIR LENGTH TABLE

## SEDIMENT TRAP

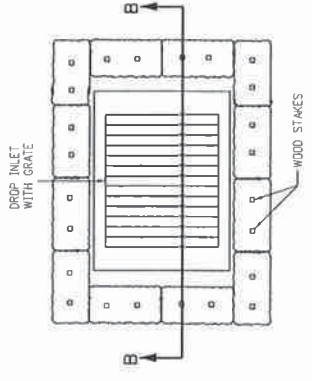
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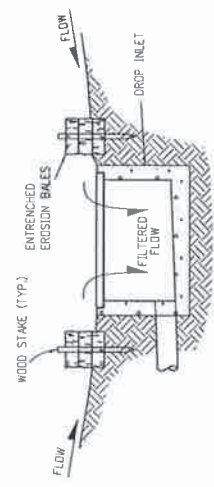
# EXAMPLE



- NOTES**
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" X 30" NOMINAL.
  2. EROSION BALES SHALL BE 18" X 18" X 36".
  3. EROSION BALES SHALL BE ENTRENCHED 4" IN MINIMUM INTO THE SOIL, THOROUGHLY ADJUTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.
  4. EROSION BALES CANNOT BE USED FOR CHECK DAMS.
  5. THE PAY ITEM NUMBER FOR EROSION BALES (WEED FREE) (EA) IS 208-0001.

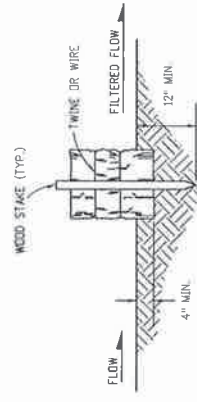


PLAN VIEW



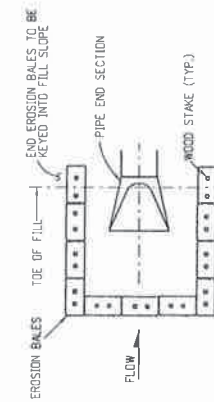
SECTION B-B

EROSION BALE FILTER AT DROP INLET



SECTION A-A

EROSION BALE TRENCHING AND STAKING



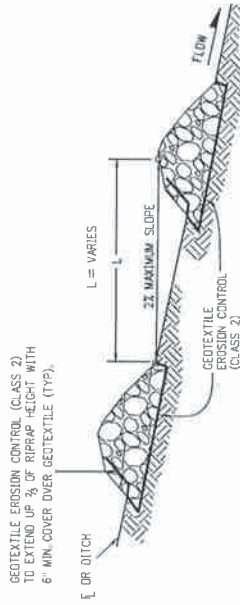
PLAN VIEW

EROSION BALE CULVERT INLET PROTECTION

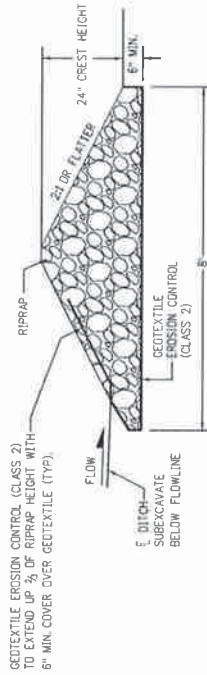
## EROSION BALE APPLICATIONS

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<b>Colorado Department of Transportation</b> 4201 East Arapahoe Avenue CDDT HQ, 4th Floor Denver, CO 80222 Phone: 303-757-9021 FAX: 303-757-9868		<b>TEMPORARY EROSION CONTROL</b> Issued By: Project Development Branch on July 4, 2012	
Division of Project Support JBK/LTA		Sheet No. 10 of 11	

# EXAMPLE

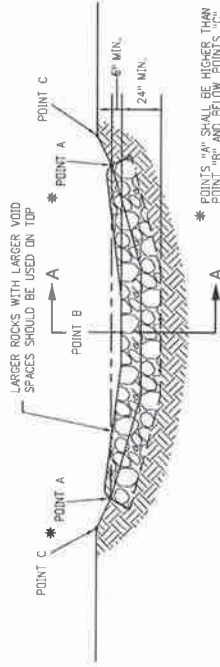


**SECTION VIEW ALONG DITCH FLOWLINE**



**SECTION A-A**

- NOTES:
- RIPRAP SIZE  $D_{95}$  = 6" OR AS SHOWN ON THE PLANS.
  - THE GEOTEXTILE EROSION CONTROL SHALL BE CLASS 2 AND CONFORM TO THE REQUIREMENTS OF SUBSECTION 712.08.
  - THE ENDS OF RIPRAP CHECK DAM SHALL BE A MINIMUM OF 6 IN HIGHER THAN CENTER OF CHECK DAM.
  - FOR USE AS TEMPORARY CHECK DAMS ONLY AND NOT FOR PERMANENT INSTALLATIONS.
  - THE PAY ITEM NUMBER FOR ROCK CHECK DAM (EA) IS 208-0004L.

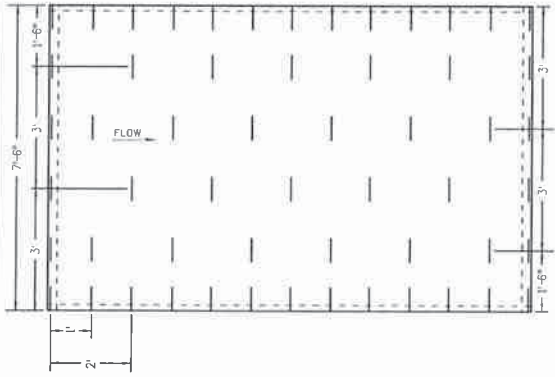


**TYPICAL SECTION VIEW**

## ROCK CHECK DAM

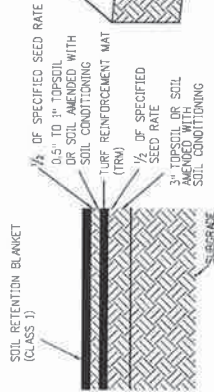
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Creation Date: 07/04/12	Intest: JBK	Date:	Comments			
Last Modification Date: 03/29/16	Intest: LTA	03/29/16	Minor revisions to some notes.	<b>Division of Project Support</b> JBK/LTA	<b>Issued By:</b> Project Development Branch on July 4, 2012	<b>Sheet No. 11 of 11</b>
Full Path: www.coloradot.info/business/designsupport	Intest: LTA					
Drawing File Name: 2080011011.dgn	Intest: LTA					
CAD Ver.: MercStation V8 - Scale: Not to Scale	Unit: English					

# EXAMPLE



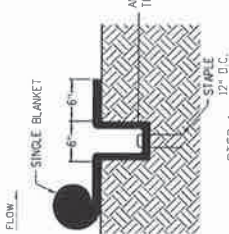
TYPICAL STAPLE PATTERN FOR CHANNEL APPLICATION

SEE SUBSECTION 216.05.



### SOIL FILLED TRM APPLICATION

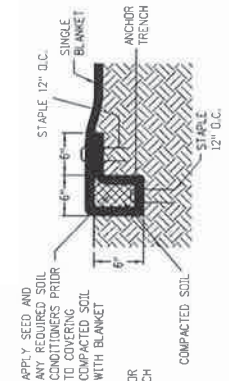
1. PLACE 3" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
2. APPLY SEED AND RAKE INTO SOIL.
3. INSTALL TRM.
4. PLACE 0.5" TO 1" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
5. APPLY SEED AND RAKE INTO SOIL.
6. INSTALL SOIL RETENTION BLANKET (CLASS 3).



STEP 1

### ANCHOR TRENCH (A)

TO BE USED AT THE BEGINNING AND END OF THE CHANNEL ACROSS ITS ENTIRE WIDTH.



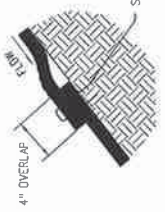
STEP 2



### CONSECUTIVE ROLL OVERLAP (B)

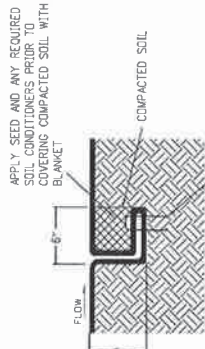
TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH UPSTREAM BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNSTREAM SIDE.

- GENERAL NOTES:**
1. Z SHAPED FOLD TO BE USED ON SLOPE EVERY 35 FEET MAXIMUM.
  2. STAPLE CHECK LOCATIONS SHOULD BE AT LEAST 15 FEET FROM THE BOTTOM OF SLOPE.



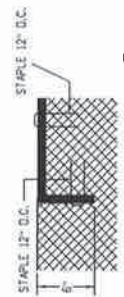
### SIDE SEAM OVERLAP (C)

TO BE USED FOR OVERLAP WHEN TWO ROLLS OF BLANKET ARE APPLIED SIDE BY SIDE. THE DOWNHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.

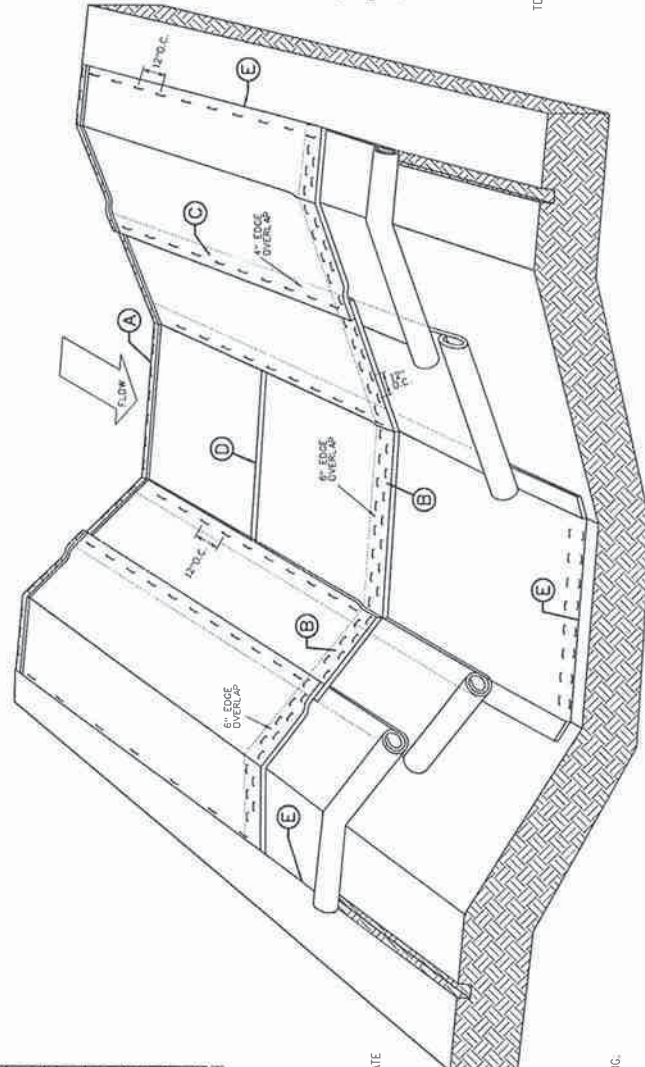


### CHANNEL CHECK SLOT (D)

TO BE USED AT 30' INTERVALS IN CHANNEL FLOWLINE.



### TERMINATION OF CHANNEL (E)

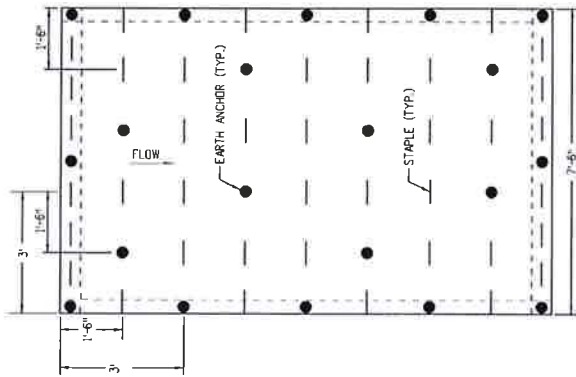


### SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) CHANNEL APPLICATION

IN ACCORDANCE WITH SECTION 216.

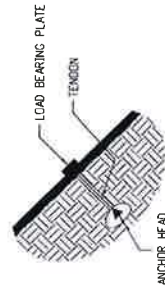
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Date:	Comment:										
Colorado Department of Transportation 4201 East Arapahoe Avenue CDOT - 4th Floor Denver, CO 80202 Phone: 303-757-9921 FAX: 303-757-9868		<b>SOIL RETENTION COVERING</b> M-216-1 Sheet No. 1 of 2									
Division of Project Support DLM/LTA		Issued By: Project Development Branch on July 16, 2015									

# EXAMPLE



**TYPICAL PATTERN FOR SLOPE APPLICATION**

IF EARTH ANCHORS ARE NOT SPECIFIED ON THE PLANS, ONLY STAPLES SHALL BE USED. SEE SUBSECTION 216.04



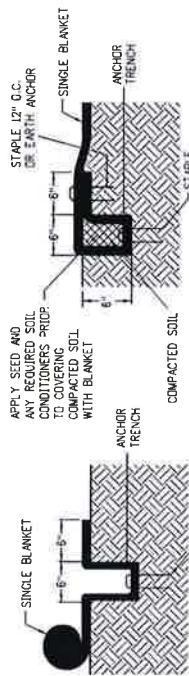
**EARTH ANCHOR**

- NOTES:
1. EARTH ANCHORS WILL BE USED INSTEAD OF STAPLES WHEN SPECIFIED IN THE PLANS.
  2. EARTH ANCHORS SHALL BE PAID FOR SEPARATELY AS SPECIFIED IN SECTION 216.



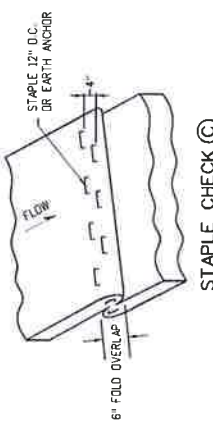
**CONSECUTIVE ROLL OVERLAP (B)**

TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.

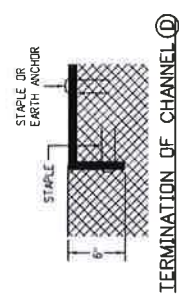


**ANCHOR TRENCH (A)**

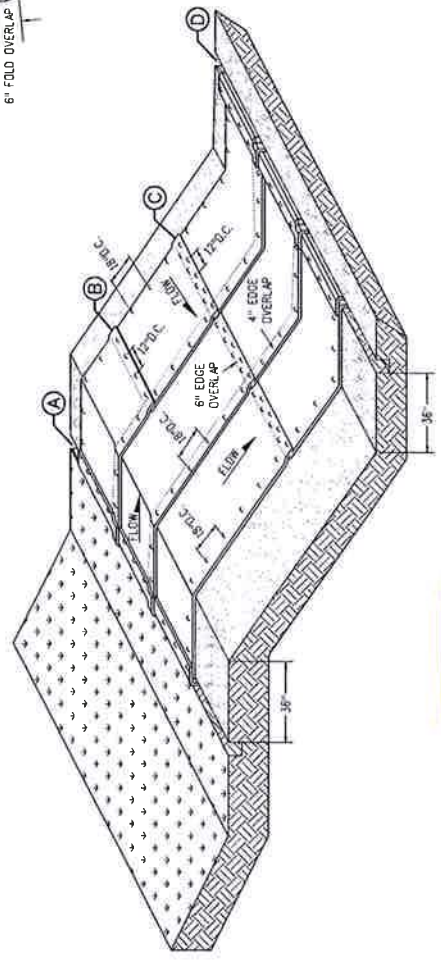
TO BE USED AT THE UPSLOPE AND DOWNHILL ENDS OF BLANKET ACROSS THE ENTIRE WIDTH OF SLOPE UNLESS SLOPE RUNS INTO RECEIVING WATER (SEE DOWNSLOPE END STAPLE CHECK).



**STAPLE CHECK (C)**



**TERMINATION OF CHANNEL (D)**



**SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) SLOPE APPLICATION**

IN ACCORDANCE WITH SECTION 216.

**DOWNSLOPE END STAPLE CHECK**  
TO BE USED WHEN SLOPE RUNS INTO A RECEIVING WATER AND CANNOT BE EXTENDED 3 FEET BEYOND SLOPE.

Computer File Information	
Creation Date: 07/04/12	Initials: DLM
Last Modification Date: 07/16/15	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport/	
Drawing File Name: 2016010202.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

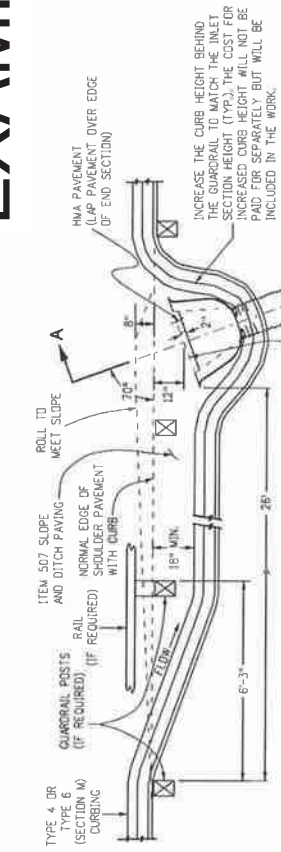
Sheet Revisions	
Date:	Comments

Colorado Department of Transportation  
 4201 East Arapahoe Avenue  
 CDOT HQ, 4th Floor  
 Denver, CO 80222  
 Phone: 303-737-9021 FAX: 303-757-9868  
 Division of Project Support DLN/LTA

SOIL RETENTION COVERING	
STANDARD PLAN NO.	M-216-1
Sheet No. 2 of 2	

Issued By: Project Development Branch on July 16, 2015

# EXAMPLE

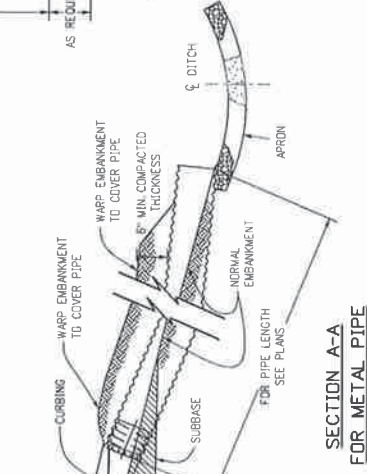
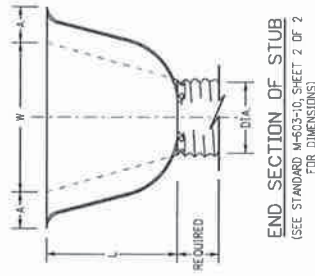


TYPE OF APRON MATERIAL	THICKNESS IN.
SLOPE AND DITCH PAVING (S07)	6
DRY RUBBLE	4
CONCRETE	4
HMA	4
CRUSHED RUBBLE	4
RIPPAP (S06)	9 (MIN.)

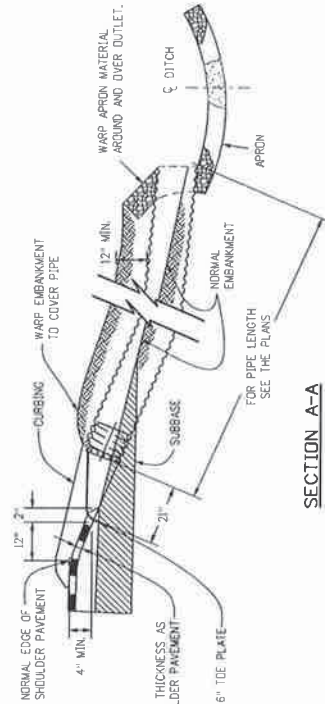
**TYPE 3 PLAN VIEW**  
SHOWING DRAINAGE FLOW FROM LEFT TO RIGHT. REVERSE DETAIL WHEN DRAINAGE FLOW IS RIGHT TO LEFT.

## GENERAL NOTES

- IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A VERTICAL CURVE, FLARE THE CURB ON EACH SIDE OF THE INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
  - DETAILS OF GUARD RAIL INSTALLATION ARE SHOWN IN STANDARD PLAN M-606-1.
  - THE END SECTION TO PIPE STUB JOINT FOR CORRUGATED METAL PIPE SHALL BE IN ACCORDANCE WITH THE TYPE 3 TYPICAL CONNECTION DETAIL IN STANDARD PLAN M-603-10. THE TYPE 1 OR TYPE 2 TYPICAL CONNECTIONS ARE NOT ACCEPTABLE. AS AN OPTION, THE END SECTION MAY BE CONNECTED DIRECTLY TO A SECTION OF PIPE. JOINTS BETWEEN THE STUB AND PIPE, OR SECTIONS OF PIPE, SHALL BE IN ACCORDANCE WITH SECTION 603. CONNECTIONS FOR PLASTIC PIPE SHALL PROVIDE A FIRM DIRECT CONNECTION SIMILAR TO THE TYPE 3 PLASTIC END SECTIONS ARE NOT ALLOWED. ALL PLASTIC PIPE JOINTS SHALL BE AS RECOMMENDED BY THE PIPE MANUFACTURER AND APPROVED BY THE ENGINEER.
  - PLASTIC PIPE SHALL CONFORM TO AASHTO M 254 TYPE C.
  - DETAILS OF BITUMINOUS CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
  - STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED WITH THE EMBANKMENT PROTECTOR. BACKFILL SHALL BE AS SPECIFIED IN SECTION 201 PAYMENT CONSTRUCTION REQUIREMENTS. IN ACCORDANCE WITH SECTION 201 PAYMENT FOR THIS EMBANKMENT MATERIAL SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 3).
- PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:
- 506 OR 507 - PAY ITEMS AS SPECIFIED ON THE PLANS.
  - 609 - CURB TYPE 4 OR TYPE 6 (SECTION M) ..... LINEAR FT.
  - 615 - EMBANKMENT PROTECTOR (TYPE 3) THE END SECTION ..... EACH
- THESE QUANTITIES INCLUDE THE END SECTION, THE TRASH GUARD, STRUCTURE EXCAVATION, EMBANKMENT PIPE CONNECTION, STRUCTURE EXCAVATION, EMBANKMENT MATERIAL AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.
- 603 - 12 IN. TO 18 IN. PIPE ..... LINEAR FT.



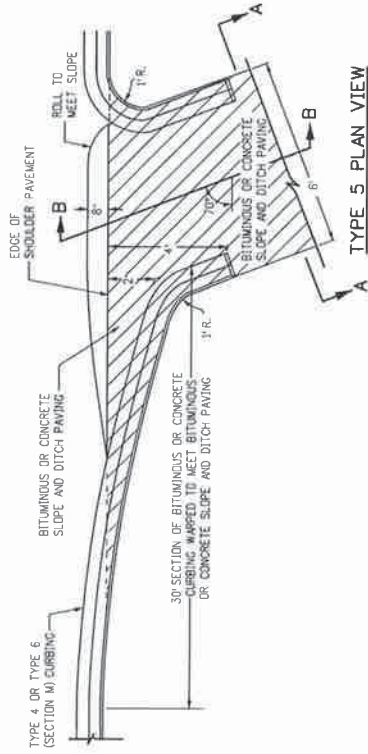
**SECTION A-A FOR METAL PIPE**



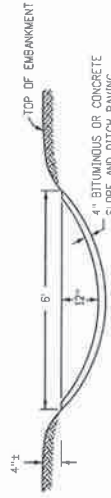
**SECTION A-A FOR PLASTIC PIPE**

<b>Computer File Information</b>		<b>Sheet Revisions</b>		<b>STANDARD PLAN NO.</b>	
Creation Date: 07/04/13	Inch/L: DD	Date:	Comments:	M-615-1	
Last Modification Date: 07/04/12	Inch/L: LTA			Sheet No. 1 of 1	
Full Path: www.coloradodot.info/business/designsupport	CRX			<b>EMBANKMENT PROTECTOR TYPE 3</b>	
Drawing File Name: 615010101.dgn	CRX				
CAD User: MicroStation VE	CRX				
Issued By: Project Development Branch July 4, 2012				Project Development Branch	
Colorado Department of Transportation				DD/LTA	
4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-5083 Fax: (303) 757-9840				707 PROJECT DEVELOPMENT	

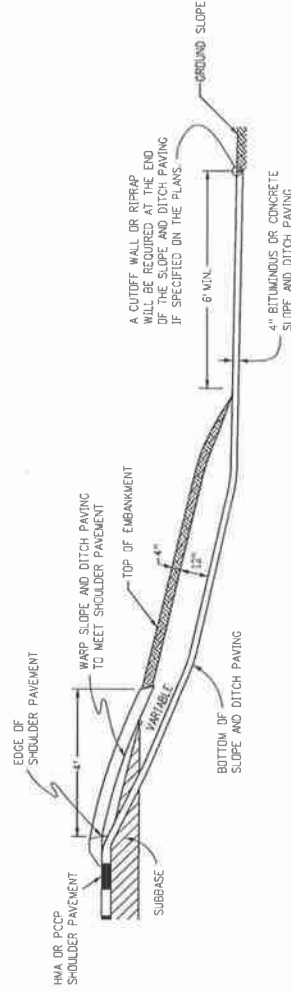
# EXAMPLE



TYPE 5 PLAN VIEW



SECTION A-A



SECTION B-B

(WITH 4 IN BITUMINOUS OR CONCRETE SLOPE AND DITCH PAVING)

## GENERAL NOTES

- IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A SAG VERTICAL CURVE FLARE THE CURB ON EACH SIDE OF THE INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
- DETAILS OF CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
- STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED IN THIS WORK. EMBANKMENT SHALL BE CONSTRUCTED WITH CONSTRUCTION MATERIALS IN ACCORDANCE WITH SECTION 203 EMBANKMENT. MATERIALS WILL NOT BE COURSED UNLESS SPECIFIED, BUT SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 5).
- PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:
  - 507 - BITUMINOUS SLOPE AND DITCH PAVING (ASPHALT) ..... CU. YD.
  - 507 - CONCRETE SLOPE AND DITCH PAVING (ASPHALT) ..... CU. YD.
  - 609 - CURB, TYPE 4 OR TYPE 6 (SECTION M) ..... LINEAR FT.
  - 615 - EMBANKMENT PROTECTOR (TYPE 5) ..... EACH
 NOTE: THIS PAYMENT INCLUDES THE STRUCTURE EXCAVATION, ANY OTHER EARTHWORK, AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.

<b>Computer File Information</b> Creation Date: 07/04/13    Initials: DD Last Modification Date: 07/04/13    Initials: LTA Full Path: www.colorado001.info/business/ees-ghnugport Drawing File Name: 615020101.dgn CAD Ver.: MicroStation V8    Scale: Not to Scale    Units: English		<b>Sheet Revisions</b> <table border="1"> <thead> <tr> <th>Date:</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td></td> <td>(R-X)</td> </tr> <tr> <td></td> <td>(R-X)</td> </tr> <tr> <td></td> <td>(R-X)</td> </tr> </tbody> </table>	Date:	Comments		(R-X)		(R-X)		(R-X)	<b>EMBANKMENT PROTECTOR TYPE 5</b> Issued By: Project Development Branch July 4, 2012	<b>STANDARD PLAN NO.</b> M-615-2 <b>Sheet No.</b> 1 of 1
Date:	Comments											
	(R-X)											
	(R-X)											
	(R-X)											
<b>Colorado Department of Transportation</b> 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820		<b>Project Development Branch</b>	<b>DD/LTA</b>									

## **5 BMP Details not in CDOT Standard Plans**

### **5.1 New or Revised BMPs (208.03 (c) 12)**

- **How to install and inspect the BMP**
- **Where to install the BMP**
- **When to maintain the BMP**

### **5.2 New Narratives**

# BLANK TEMPLATE

Provide Sketch of Non-Standard BMP Detail

Created By: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer Approval Through Form 105?     YES     NO



# BLANK TEMPLATE

Company Name
--------------

Name of BMP

<b>What:</b>	
<b>When:</b>	
<b>Where:</b>	
<b>Why:</b>	
<b>How:</b>	

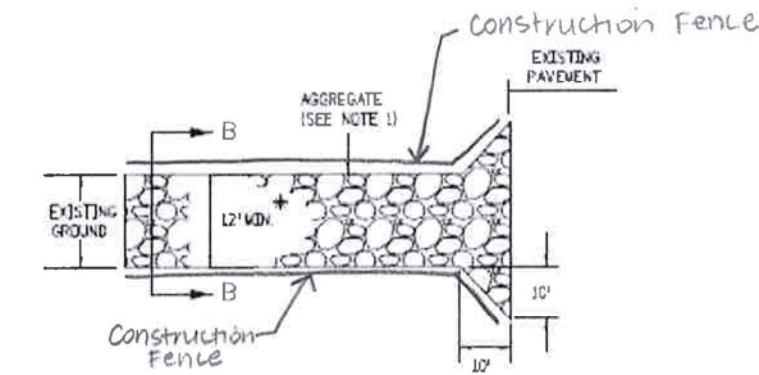
Submitted By: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer Approval Through Form 105?

YES

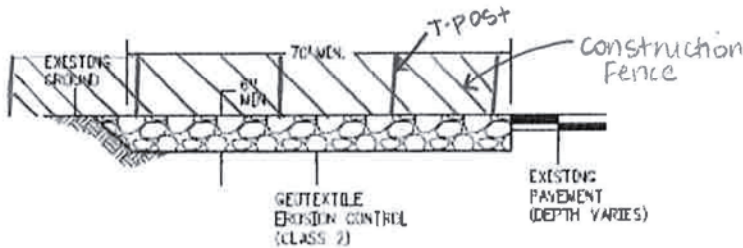
NO

Modified VTP Non-Standard Detail

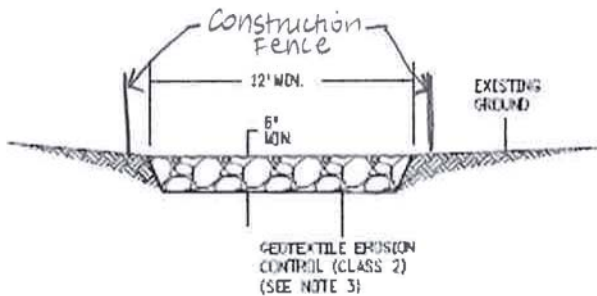


PLAN VIEW

\* SHALL EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.



ELEVATION SECTION



SECTION B-B

NOTES:

1. AGGREGATE SHALL CONFORM TO SUBSECTION 208.02 (D).
2. THE CONTRACTOR SHALL PROTECT CURB AND GUTTER THAT CROSSES THE ENTRANCE FROM DAMAGE. PROTECTION OF THE CURB AND GUTTER SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
3. GEOTEXTILE SHALL CONFORM TO SUBSECTION 712.06.
4. ALL MATERIALS AND LABOR TO COMPLETE THE VEHICLE TRACKING PAD SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
5. THE PAY ITEM NUMBER FOR VEHICLE TRACKING PAD (EACH) IS 208-00070.

VEHICLE TRACKING PAD w/Construction Fence Containment

on  7-9868 /LTA	<b>TEMPORARY EROSION CONTROL</b>	STANDARD PLAN NO. M-208-1
	Issued By: Project Development Branch on July 4, 2012	Sheet No. 1 of 11

Submitted By: Tripp Minges Date: 7/10/15

Engineer Approval Through Form 105?  YES  NO

Company Name

**GBM** INCORPORATED

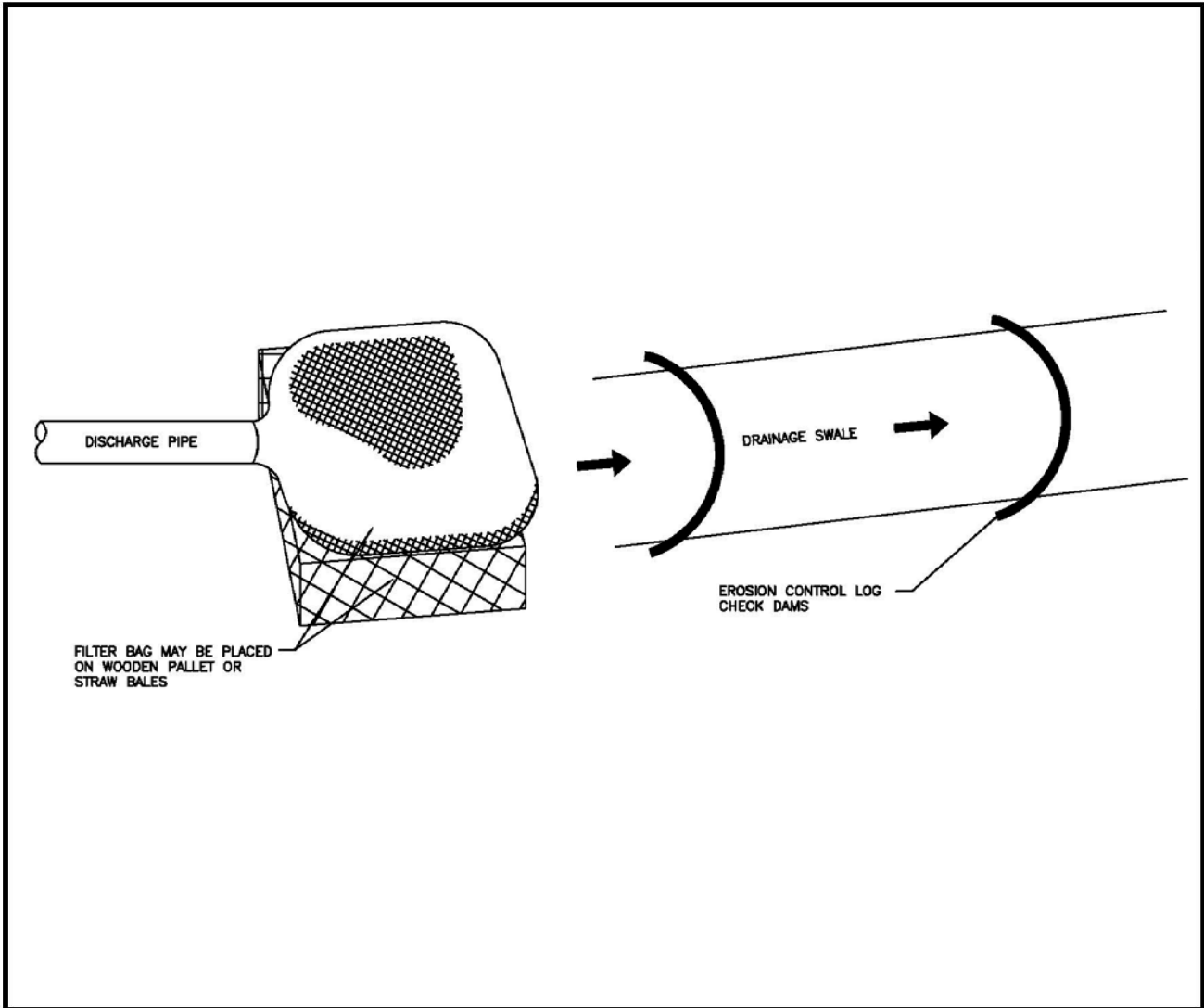
## Modified Vehicle Tracking Pad

<b>What:</b>	Modified Vehicle Tracking Pad consists of a CDOT M-208-1 Standard with additional construction fence along the two long sides of pad supported by metal T-posts.
<b>When:</b>	To be used when approved by the Project Engineer.. The Modified Vehicle Tracking Pad BMP to be used when construction vehicles are not using full length of tracking pad when exiting site.
<b>Where:</b>	A Modified Vehicle Tracking Pad BMP should be used at designated exit points to the point where construction traffic is directed.
<b>Why:</b>	A Modified Vehicle Tracking Pad BMP is being used due to construction vehicles not using full length of M-208-1 Standard Vehicle Tracking Pad.
<b>How:</b>	Installation and maintenance of reinforced the Modified Vehicle Tracking Pad is the same as the CDOT M-208-1 standard for Vehicle Tracking Pad. Ensure that plastic construction fence is maintained when damaged.

Submitted By: Tripp Minges Date: 7/10/15

Engineer Approval Through Form 105?  YES  NO

Dewatering BMP Set-up Non-Standard Detail



Created By: Tripp Minges Date: 7/10/15

Engineer Approval Through Form 105?  YES  NO

Company Name

**GBM** INCORPORATED

## Dewatering

<b>What:</b>	Dewatering filter bag and erosion control log check dams installed in the downgradient drainage swale.
<b>When:</b>	To be used when approved by the Project Engineer and when a dewatering permit has been obtained from the Colorado Department of Public Health and Environment.
<b>Where:</b>	A dewatering filter bag and erosion control log check dams will be installed near the excavation for the water quality pond.
<b>Why:</b>	Groundwater will be encountered when excavating the water quality pond.
<b>How:</b>	Dewatering filter bag will be placed on a straw bale or wooden pallet. Discharge water will drain to a drainage swale with erosion log check dams. Dewatering filter bags will be maintained or replaced when full to capacity.

Submitted By: Tripp Minges Date: 7/10/15

Engineer Approval Through Form 105?  YES  NO

## **6 Weekly Meeting Sign In Sheet**

### **6.1 Attend Weekly Meeting in Accordance to 208.03 (c) 1. (3)**



# EXAMPLE

## Weekly Meeting Log

**208.03(e) Weekly Meetings:** The Engineer, Superintendent and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities that could adversely affect water quality. The meeting shall follow an agenda prepared by the Engineer or a designated representative, and have a sign in sheet on which the names of all attendees shall be recorded. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting, and place the agenda and sign in sheet in the SWMP notebook. At this meeting the following shall be discussed and documented on Form 1176:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection.
- (4) BMPs that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will affect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings.
- (7) Other

All subcontractors who were not in attendance at the Environment Pre-construction conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator prior to start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees, and add to the SWMP Notebook.

Date: 6-15-15

Engineer: *[Signature]*

Superintendent: *[Signature]*

SWMP Admin: *[Signature]*

### Topics to be Discussed

- 1) Requirements of the SWMP: INITIAL INSTALLATION OF BMPs PRIOR TO DISTURBANCE USE OF TRACKING CONTROLS. SPILLS REPORT TO THE ECI ANY BMPs THAT NEED ATTENTION. DO NOT ACCESS OR DISTURB WETLAND AREAS OR BUFFER STRIPS.
- 2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs: PLASTIC FENCE INSTALLED TO PROTECT VEGETATIVE BUFFER STRIPS AND WETLAND AREAS.
- 3) Unresolved issues from inspections and concerns from last inspection: NONE AT THIS TIME.
- 4) BMPs that are to be installed, removed, modified, or maintained: ADDITIONAL BMPs ADDED PER 1176 DATED 6/10/15. BMPs TO BE INSTALLED PER M208 STANDARDS - TWO CORRECTIVE ACTIONS IDENTIFIED ON 6/10/15 1176 HAVE BEEN ADDRESSED
- 5) Planned activities that will affect stormwater in order to proactively phase BMPs: CONSTRUCTION ALONG NORTHBOUND LANE FROM STA 819 TO 825 TO BEGIN TOMORROW.
- 6) Recalcitrant inspection findings: NONE
- 7) Other: NONE

### Sign-in (Name/Company)

<i>Tom Boyce CDOT PE</i>	Tom Boyce
<i>TRIPP MINGES ECS GBM</i>	TRIPP MINGES
<i>Sandy Bolt Project Mgr. Thompson Ex</i>	Sandy Bolt
<i>Macy Doan SuperC. Green-Gold</i>	Macy Doan
<i>Jennifer Lance / Matron</i>	Jennifer Lance
<i>Thomas Boxelder VRS Tralling</i>	Thomas Boxelder
<i>Jane Doe / Matron</i>	Jane Doe
<i>Rick Willard GBM INC</i>	Rick Willard



# EXAMPLE

## Weekly Meeting Log

**208.03(e) Weekly Meetings:** The Engineer, Superintendent and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities that could adversely affect water quality. The meeting shall follow an agenda prepared by the Engineer or a designated representative, and have a sign in sheet on which the names of all attendees shall be recorded. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting, and place the agenda and sign in sheet in the SWMP notebook. At this meeting the following shall be discussed and documented on Form 1176:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection.
- (4) BMPs that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will affect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings.
- (7) Other

All subcontractors who were not in attendance at the Environment Pre-construction conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator prior to start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees, and add to the SWMP Notebook.

Date: 10-22-15

Engineer: *[Signature]*

Superintendent: *[Signature]*

SWMP Admin: *[Signature]*

### Topics to be Discussed

1) Requirements of the SWMP: DISCUSSED BMP MAINTENANCE AND INSTALLATION PRIOR TO DISTURBANCE. BE CAREFUL NOT TO HIT BMPs AND REPORT ANY DAMAGED BMPs.

2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs:

EXCAVATORS ARE HITTING PERIMETER CONTROLS RESULTING IN DAMAGED BMPs. BE CAREFUL NOT TO HIT BMPs + REPORT DAMAGED BMPs FOR REPAIR.

3) Unresolved issues from inspections and concerns from last inspection:

ALL ITEMS UP TO DATE

4) BMPs that are to be installed, removed, modified, or maintained: ADDITIONAL EROSION CONTROL LOGS BEING INSTALLED @ STA 835-845 (NB). PLANNING INTERIM STABILIZATION FOR INACTIVE DISTURBED AREAS; REFRAIN FROM ENTERING THESE AREAS

5) Planned activities that will affect stormwater in order to proactively phase BMPs:

PLANNING ON INSTALLING ADDITIONAL BMPs PRIOR TO GRUBBING OF AREA @ STA 835-845 (NB)

6) Recalcitrant inspection findings:

STREET SWEEPING IDENTIFIED ON 0110115 AND 0117115 1170s.

7) Other: NONE

### Sign-in (Name/Company)

*[Signature]* *[Signature]* PE  
*[Signature]* Proj. Mgr. Thompson  
 TRIPP MINGES GBM  
 Jane Doe / Maltron  
 Macky Doan Super C. Green-God  
 Jennifer Lance  
 Rick Willard GBM INC

TOM BOYCE  
 SANDY BOLT  
 TRIPP MINGES  
 JANE DOE  
 MACKY DOAN  
 JENNIFER LANCE  
 RICK WILLARD

## 7 Calendar of Inspections



# Calendar for Year 2017 (United States)

## BLANK TEMPLATE

### January

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### February

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

### March

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

### April

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

### May

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

### June

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

### July

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

### August

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### September

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### October

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### November

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		




### December

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

# EXAMPLE

## 2015

January							February							March								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14		
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18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28		
25	26	27	28	29	30	31								29	30	31						
April							May							June								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
			1	2	3	4						1	2				1	2	3	4	5	6
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13		
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26	27	28	29	30			24	25	26	27	28	29	30	28	29	30						
							31															
July							August							September								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
			1	2	3	4							1				1	2	3	4	5	
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12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19		
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26		
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30					
							30	31														
October							November							December								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
				1	2	3							1				1	2	3	4	5	
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12		
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19		
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26		
25	26	27	28	29	30	31	29	30						27	28	29	30	31				

-  7 DAY INSPECTION (1176)
-  POST-STORM INSPECTION (1176)
-  HEADQUARTER OR REGION WATER QUALITY INSPECTION

**8 Form 1176 - Inspection Reports and Weekly Meeting Notes in Accordance to 208.03 (c) 2. (3) and 208.03 (e)**

# COLORADO DEPARTMENT OF TRANSPORTATION STORMWATER FIELD INSPECTION REPORT AND WEEKLY MEETING NOTES - ACTIVE CONSTRUCTION

(1) Project Name:	(2) Project Contractor:	(3) SWMP Administrator:	Erosion Control Inspector:
(4) CDOT Project Engineer/CDOT Designee:	(5) Other Attendee(s) (Name and Title):		
(6) CDOT Project Number:	(7) Project Code (Sub Account #):	(8) CDPS-SCP Certification#:	(9) CDOT Region:
(10) Date of Project Inspection:	(11) Weather at Time of Inspection:		

## (12) REASON FOR INSPECTION / EXCLUSION

Routine Inspection: (minimum every 7 Calendar Days)

Runoff Event: (Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record.) Routine inspections still must be conducted every 7 calendar days.  
 Storm Start Date: \_\_\_\_\_ Approximate End Time of Storm (hrs): \_\_\_\_\_

Third Party Request:

Winter Conditions Inspections Exclusion: Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the **entire site** for an extended period, **and melting conditions posing a risk of surface erosion do not exist**. This exception is applicable only during the period where **melting conditions do not exist**, and applies to the routine 7-day inspections, as well as the post-storm-event inspections. If **visual inspection** of the site verifies that all of these conditions are satisfied, document the conditions in section 18 (General Notes) and proceed to section 19 (Inspection Certification). Documentation must include: dates when snow cover occurred, date when construction activities ceased, and date when melting conditions began.

Other:

## (13) SWMP MANAGEMENT

	Yes	No	NA	(g) Reason for N/A
(a) Is the SWMP notebook located on site?				
(b) Are changes to the SWMP documents noted and approved?				
(c) Are the inspection reports retained in the SWMP notebook?				
(d) Are corrective actions from the last inspection completed?				
(e) Is the Spill Response Plan updated in the SWMP notebook?				
(f) Is a list of potential pollutants updated in the SWMP notebook?				

## (14) CURRENT CONSTRUCTION ACTIVITIES

(a) Describe current construction Activities

(b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e):

	Acres	Notes
Temporary Stabilization		
Interim Stabilization		
Permanent Stabilization Completed		

(c) Has the SWMP Phased BMP Implementation Matrix been updated?  Yes  No

## (15) WEEKLY MEETING NOTES

Notes from last meeting (date \_\_\_\_\_)

Items to discuss at next meeting (date \_\_\_\_\_)

**(16) CONSTRUCTION SITE ASSESSMENT & CORRECTIVE ACTIONS** **\*\*Off site Pollutant Discharges are a Violation of the Permit and Reason for Immediate Project Suspension\*\***

The Construction Site Boundary/Limits of Construction (LOC) , all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the LOC, entering the stormwater drainagesystem, or discharging to State waters. If there is evidence of sediment or other pollutants discharging from the site, see section 17 (Construction Site Assessment).

All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly. Identify the condition of the BMP, using more than one letter if necessary: **(I)** Incorrect Installation; **(M)** Maintenance is needed; **(F)** BMP failed to operate; **(A)** Additional BMP is needed; **(R)** Remove BMP. Keep copies of this blank page for additional room if needed.

Continuous maintenance is required on all BMPs. **BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases.**

Location	BMP	Condition	Comments:	Date Completed & Initials
			Description of Corrective Action and Preventative Measure Taken	

**(17) CONSTRUCTION SITE ASSESSMENT: \*\*OFF SITE POLLUTANT DISCHARGES ARE A VIOLATION OF THE PERMIT AND REASON FOR IMMEDIATE PROJECT SUSPENSION\*\***

- (a) Is there evidence of discharge of sediment or other pollutants from the site?  Yes  No  
 \*If yes, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).
- (b) Has sediment or other pollutants discharging from the site reached State waters?  Yes  No  
 \*If yes, see subsection 208.03(c) and Part II A.2 and 3 of the permit for reporting requirements.

**(18) GENERAL NOTES**


**(19) INSPECTION CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Contractor's SWMP Administrator Print Name: _____	Signature Required: _____	Date: _____
Contractor's Erosion Control Inspector (If Needed) Print Name: _____	Signature Required: _____	Date: _____
Contractor's Superintendent/Approved Designee Print Name: _____	Signature Required: _____	Date: _____
CDOT Project Engineer/CDOT Designee Print Name: _____	Signature Required: _____	Date: _____

**(20) COMPLIANCE CERTIFICATION**

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Contractor's SWMP Administrator Print Name: _____	Signature Required: _____	Date: _____
CDOT Project Engineer/CDOT Designee (Signature Required) Print Name: _____	Signature Required: _____	Date: _____



## Stormwater Management Field Inspection Report Instructions

**State waters** are defined to be any and all surface and subsurface waters which are contained in or flow through the state, including, streams, rivers, lakes, drainage ditches, storm drains, ground water, and wetlands, but not including waters in sewage systems, waters in treatment works or disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed. (Per subsection 107.25 and 25-8-103 (19) CRS)

**(3) SWMP Administrator and Erosion Control Inspector:** Indicate the name(s) of the individual responsible for implementing, maintaining and revising the SWMP. An Erosion Control Inspector(s) may be required see 208.03(c)2. for requirements.

**(4) CDOT Project Engineer/CDOT Designee:** Indicate the name of the CDOT representative performing the inspection with the SWMP Administrator/Erosion Control Inspector(s). This person should be the Project Engineer or an authorized representative.

**(9) CDPS-SCP Certification #:** Indicate the Colorado Discharge Permit System (CDPS) Stormwater Construction Permit (SCP) (for Stormwater Discharges Associated with Construction Activities) certification number, issued by CDPHE, for the project which the report is being completed. Certification number can be found on the first page of the SCP.

**(12) Reason(s) for Inspection / Exclusion:** Indicate the purpose for the inspection or exclusion. These inspections are required to comply with the CDOT Specifications and the CDPS-SCP.

- Routine Inspections. These inspections are required at least every 7 calendar days during active construction. Suspended projects require the 7 calendar day inspection unless snow cover exists over the entire site for an extended period of time, and melting conditions do not exist (see, Winter Conditions Inspections Exclusions).
- Runoff Event Inspection for Active Sites. See page 1 for definition.
- Third Party Request. Indicate the name of the third party requesting the inspection and, if known, the reason the request was made.
- Winter Conditions Inspections Exclusions. See page 1 for definition. An inspection does not need to be completed, but use this form to document the conditions that meet the Exclusion.
- Other. Specify any other reason(s) that resulted in the inspection.

**(13) SWMP Management:** Review the SWMP records and documents and use a ✓ to answer the question. To comply with CDOT Standard Specifications and the CDPS-SCP, all of the items identified must be adhered to. If No is checked, indicate the necessary corrective action in section 16 (Construction Site Assessment & Corrective Actions).

**(a)** Is the SWMP notebook located on site? A copy of the SWMP notebook must be retained on site, unless another location, specified by the permit, is approved by the Division.

**(b)** Are changes to the SWMP documents noted and approved? Indicate all changes that have been made to any portion of the SWMP notebook documents during construction. Changes shall be dated and signed at the time of occurrence. Amendments may include items listed in subsection 208.03(d).

**(c)** Are the inspection reports retained in the SWMP notebook? The SWMP Administrator shall keep a record of inspections. Inspection reports must identify any incidents of non-compliance with the terms and conditions of the CDOT specifications or the CDPS-SCP. Inspection records must be retained for three years from expiration or inactivation of permit coverage.

**(d)** Are corrective actions from the last inspection completed? Have corrective actions from the last inspection been addressed? Is a description of the corrective action(s), the date(s) of the corrective action(s), and the measure(s) taken to prevent future violations (including changes to the SWMP, as necessary) documented?

**(e)** Is a Spill Response Plan retained in the SWMP notebook? Subsection 208.06(c) requires that a Spill Response Plan be developed and implemented to establish operating procedures and that the necessary employee training be provided to minimize accidental releases of pollutants that can contaminate stormwater runoff. Records of spills, leaks or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences include the time and date, weather conditions, reasons for spill, etc. Some spills may need to be reported to the Water Quality Control Division immediately.

**(f)** Is a list of potential pollutants retained at the site? Subsection 107.25(b)6 requires the Erosion Control Supervisor to identify and describe all potential pollutant sources, including materials and activities, and evaluate them for the potential to contribute pollutants to stormwater discharge.

**(g)** If NA is checked for any of the items (a) through (f), indicate why in the space provided, if additional space is needed indicate in section 18 (General Notes).

## Stormwater Management Field Inspection Report Instructions (continued)

### (14) Current Construction Activities:

- (a) Provide a short description of the current construction activities/phase at the project site; include summary of grading activities, installation of utilities, paving, excavation, landscaping, etc.
- (b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e). Estimate the acres of disturbed area at the time of the inspection. Include clearing, grading, excavation activities, areas receiving overburden (e.g. stockpiles), demolition areas and areas with heavy equipment/vehicle traffic, installation of new or improved haul roads and access roads, staging areas, borrow areas and storage that will disturb existing vegetative cover.
- (c) Has the Phased BMP Implementation Matrix on the SWMP been updated? As part of the inspection the Phased BMP Implementation matrix for both the structural and non-structural BMPs found at the beginning of the SWMP sheets must be reviewed to ensure that "In use on site" box is checked for BMPs currently use at the time of the inspection.

(15) **Weekly Meeting Notes:** The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting. At the meeting the following shall be discussed and documented:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection
- (4) BMPs that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will effect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings

(16) **Construction Site Assessment & Corrective Actions:** Inspect the construction site and indicate where BMP feature(s) identified in section 13 (SWMP Management), require corrective action. Erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are operating correctly.

- Location. Site location (e.g., project station number, mile marker, intersection quadrant, etc.).
- BMP. Indicate the type of BMP at this location that requires corrective action (e.g., silt fence, erosion logs, soil retention blankets, etc.).
- Condition. Identify the condition of the BMP, using more than one letter (identified in section 16) if necessary.
- Description of Corrective Action and Preventative Measure Taken. Provide the proposed corrective action needed to bring the area or BMP into compliance. Once corrective actions are completed, state the measures taken to prevent future violations and ensure that the BMPs are operating correctly, including the required changes made to the SWMP.
- Date Completed & Initials. Date and initial when the corrective action was completed and the preventative measure statement finished.

(17) **Construction Site Assessment:** Was there any off site discharge of sediment at this site since the last inspection?

(a) Is there evidence of discharge of sediment or other pollutants from the site? **Off site pollutant discharges are a violation of the permit.** The construction site perimeter, all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to State water.

(b) Has sediment or other pollutants discharging from the site reached State waters? **Off site pollutant discharges are a violation of the permit.** If off site discharge has occurred, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).

(18) **General Notes:** Indicate any additional notes that add detail to the inspection; this may include positive practices noted on the project.

(19) **Inspection Certification:** In accordance with Part I, F.1.c of the CDPS-SCP, all reports for submittal shall be signed and certified for accuracy.

(20) **Compliance Certification:** In accordance with Part I, D.6.b.2.viii of the CDPS-SCP, compliance shall be certified through signature.

## COLORADO DEPARTMENT OF TRANSPORTATION STORMWATER FIELD INSPECTION REPORT AND WEEKLY MEETING NOTES - ACTIVE CONSTRUCTION

(1) Project Name: <b>IVYL SKEETER PASS ROAD IMPROVEMENTS</b>	(2) Project Contractor: <b>GBM INCORPORATED</b>	(3) SWMP Administrator: <b>TRIPP MINGES</b>	Erosion Control Inspector: <b>TOM BOYCE-PE TRIPP MINGES</b>
(4) CDOT Project Engineer/CDOT Designee:  <b>TOM BOYCE</b>	(5) Other Attendee(s) (Name and Title):   		
(6) CDOT Project Number: <b>TM-0123-456</b>	(7) Project Code (Sub Account #): <b>12345</b>	(8) CDPS-SCP Certification#: <b>COR03P076</b>	(9) CDOT Region: <b>1</b>
(10) Date of Project Inspection: <b>6-10-15</b>	(11) Weather at Time of Inspection: <b>SUNNY, 70's, SOIL IS DRY</b>		

### (12) REASON FOR INSPECTION / EXCLUSION

Routine Inspection: (minimum every 7 Calendar Days)

Runoff Event: (Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record.) Routine inspections still must be conducted every 7 calendar days.  
Storm Start Date: \_\_\_\_\_ Approximate End Time of Storm (hrs): \_\_\_\_\_

Third Party Request:

Winter Conditions Inspections Exclusion: Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the **entire site** for an extended period, **and melting conditions posing a risk of surface erosion do not exist**. This exception is applicable **only** during the period where **melting conditions do not exist**, and applies to the routine 7-day inspections, as well as the post-storm-event inspections. If **visual inspection** of the site verifies that all of these conditions are satisfied, document the conditions in section 18 (General Notes) and proceed to section 19 (Inspection Certification). Documentation must include: dates when snow cover occurred, date when construction activities ceased, and date when melting conditions began.

Other:

### (13) SWMP MANAGEMENT

	Yes	No	NA	(g) Reason for N/A
(a) Is the SWMP notebook located on site?	✓			
(b) Are changes to the SWMP documents noted and approved?	✓			
(c) Are the inspection reports retained in the SWMP notebook?			✓	<b>INITIAL INSPECTION</b>
(d) Are corrective actions from the last inspection completed?			✓	<b>INITIAL INSPECTION</b>
(e) Is the Spill Response Plan updated in the SWMP notebook?	✓			
(f) Is a list of potential pollutants updated in the SWMP notebook?	✓			

### (14) CURRENT CONSTRUCTION ACTIVITIES

(a) Describe current construction Activities: **INITIAL INSPECTION**

(b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e): **0.2 ACRE**

	Acres	Notes
Temporary Stabilization	0.2	<b>STAGING AREA</b>
Interim Stabilization	0	
Permanent Stabilization Completed	0	

(c) Has the SWMP Phased BMP Implementation Matrix been updated?  Yes  No

### (15) WEEKLY MEETING NOTES

Notes from last meeting (date \_\_\_\_\_)

**N/A- INITIAL INSPECTION**

Items to discuss at next meeting (date **6-15-15**)

**ADDITIONAL BMPs TO BE ADDED PER IOS DATED 6-9-15**

The Construction Site Boundary/Limits of Construction (LOC), all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the LOC, entering the stormwater drainagesystem, or discharging to State waters. If there is evidence of sediment or other pollutants discharging from the site, see section 17 (Construction Site Assessment).

All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly. Identify the condition of the BMP, using more than one letter if necessary: (I) Incorrect Installation; (M) Maintenance is needed; (F) BMP failed to operate; (A) Additional BMP is needed; (R) Remove BMP. Keep copies of this blank page for additional room if needed.

Continuous maintenance is required on all BMPs. **BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases.**

Location	BMP	Condition	Comments: Description of Corrective Action and Preventative Measure Taken	Date Completed & Initials
MATERIAL STORAGE AREA 3, ENTRANCE TO CONSTRUCTION TRAILER	VTP	I	VEHICLE TRACKING PAD NOT INSTALLED PER M-208 STANDARD REMOVE ROCK AND INSTALL CLASS 2 GEOTEXTILE FABRIC	10-11-15 TM
STA 818+50 + 819+00	EROSION CONTROL LOG	I	EROSION CONTROL LOG NOT INSTALLED PER M-208 STANDARD TRENCH PROPERLY + STAKE ACCORDING TO SPEC	10-10-15 TM
STA 810+00 - 817+00 NB PERIMETER	EARTHEN BERM (TEMPORARY)	A	INSTALL TEMPORARY BERM ALONG PERIMETER	10-11-15 TM
CONSTRUCTION TRAILER	TRACKING CONTROL	M	SWEEP STREETS	10-10-15 TM
CONSTRUCTION TRAILER	PORT-O-LET	I	STAKE/SECURE PORT-O-LETS PROPERLY	10-10-15 TM
STA 820+00 IN CHANNEL	EROSION CONTROL LOG	R	EROSION LOG CHECK DAMS NOT NEEDED UNTIL AREA IS DISTURBED	10-10-15 TM
VEHICLE CLEANING STATEMENT MISSING FROM SWMP	SWMP	M	SIGNED COPY OF VEHICLE CLEANING STATEMENT REQUIRED PRIOR TO DELIVERY OF EQUIPMENT	10-11-15 TM

EXAMPLE

**(17) CONSTRUCTION SITE ASSESSMENT:\*\*\*OFF SITE POLLUTANT DISCHARGES ARE A VIOLATION OF THE PERMIT AND REASON FOR IMMEDIATE PROJECT SUSPENSION\*\***

(a) Is there evidence of discharge of sediment or other pollutants from the site?  Yes  No  
\*if yes, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).  
(b) Has sediment or other pollutants discharging from the site reached State waters?  Yes  No  
\*if yes, see subsection 208.03(c) and Part II A.2 and 3 of the permit for reporting requirements.


**(18) GENERAL NOTES**

\* INSTALLATION OF PERIMETER CONTROLS PRIOR TO DISTURBANCE HAS BEGUN  
\* PROJECT ENGINEER HAS REQUESTED ADDITIONAL BMPs PER IOS DATED 10-9-15

EXAMPLE

**(19) INSPECTION CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Contractor's SWMP Administrator Print Name: <b>TRAPP MINGES</b>	Signature Required:		Date: <b>10-10-15</b>
Contractor's Erosion Control Inspector (If Needed) Print Name:	Signature Required:		Date:
Contractor's Superintendent/Approved Designee Print Name: <b>JOHN SMITH</b>	Signature Required:		Date: <b>10-10-15</b>
CDOT Project Engineer/CDOT Designee Print Name: <b>TOM BOYCE</b>	Signature Required:		Date: <b>10/10/15</b>

**(20) COMPLIANCE CERTIFICATION**

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Contractor's SWMP Administrator Print Name: <b>TRAPP MINGES</b>	Signature Required:		Date: <b>10-11-15</b>
CDOT Project Engineer/CDOT Designee (Signature Required) Print Name: <b>TOM BOYCE</b>	Signature Required:		Date: <b>10/11/15</b>

# EXAMPLE

## COLORADO DEPARTMENT OF TRANSPORTATION STORMWATER FIELD INSPECTION REPORT AND WEEKLY MEETING NOTES - ACTIVE CONSTRUCTION

(1) Project Name: <u>NYL SKEETER PASS ROAD IMPROVEMENTS</u>	(2) Project Contractor: <u>GBM INCORPORATED</u>	(3) SWMP Administrator: <u>TRIPP MINGES</u>	Erosion Control Inspector: <u>TRIPP MINGES</u>
(4) CDOT Project Engineer/CDOT Designee:  <u>TOM BOYLE</u>	(5) Other Attendee(s) (Name and Title):   		
(6) CDOT Project Number: <u>TM-0123-456</u>	(7) Project Code (Sub Account #): <u>12345</u>	(8) CDPS-SCP Certification#: <u>COR 03P076</u>	(9) CDOT Region: <u>1</u>
(10) Date of Project Inspection: <u>0-17-15</u>	(11) Weather at Time of Inspection: <u>SUNNY, 80's, SOIL IS DRY</u>		

### (12) REASON FOR INSPECTION / EXCLUSION

- Routine Inspection: (minimum every 7 Calendar Days)
- Runoff Event: (Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record.) Routine inspections still must be conducted every 7 calendar days.  
Storm Start Date: \_\_\_\_\_ Approximate End Time of Storm (hrs): \_\_\_\_\_
- Third Party Request:
- Winter Conditions Inspections Exclusion: Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the **entire site** for an extended period, **and melting conditions posing a risk of surface erosion do not exist**. This exception is applicable **only** during the period where **melting conditions do not exist**, and applies to the routine 7-day inspections, as well as the post-storm-event inspections. If **visual inspection** of the site verifies that all of these conditions are satisfied, document the conditions in section 18 (General Notes) and proceed to section 19 (Inspection Certification). Documentation must include: dates when snow cover occurred, date when construction activities ceased, and date when melting conditions began.
- Other:

### (13) SWMP MANAGEMENT

	Yes	No	NA	(g) Reason for N/A
(a) Is the SWMP notebook located on site?	✓			
(b) Are changes to the SWMP documents noted and approved?	✓			
(c) Are the inspection reports retained in the SWMP notebook?	✓			
(d) Are corrective actions from the last inspection completed?	✓			
(e) Is the Spill Response Plan updated in the SWMP notebook?	✓			
(f) Is a list of potential pollutants updated in the SWMP notebook?	✓			

### (14) CURRENT CONSTRUCTION ACTIVITIES

(a) Describe current construction Activities <u>GRADING NB SHOULDER FROM STA 815+00 - 818+00 AND STA 820+00 - 825+00</u>		
(b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e): <u>0.5 acre</u>		
	Acres	Notes
Temporary Stabilization	<u>0.5</u>	
Interim Stabilization	<u>0</u>	
Permanent Stabilization Completed	<u>0</u>	
(c) Has the SWMP Phased BMP Implementation Matrix been updated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

### (15) WEEKLY MEETING NOTES

Notes from last meeting (date <u>0-15-15</u> )
<u>ADDITIONAL BMPs HAVE BEEN INSTALLED PER IOS DATED 0-8-15</u>
Items to discuss at next meeting (date <u>0-22-15</u> )
<u>BMPs BEING DAMAGED BY EQUIPMENT- NEED TO REPORT FOR REPAIR</u>

**(16) CONSTRUCTION SITE ASSESSMENT & CORRECTIVE ACTIONS** \*\*Off site Pollutant Discharges are a Violation of the Permit and Reason for Immediate Project Suspension\*\*

The Construction Site Boundary/Limits of Construction (LOC), all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the LOC, entering the stormwater drainagesystem, or discharging to State waters. If there is evidence of sediment or other pollutants discharging from the site, see section 17 (Construction Site Assessment).

All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly. Identify the condition of the BMP, using more than one letter if necessary: (I) Incorrect Installation; (M) Maintenance is needed; (F) BMP failed to operate; (A) Additional BMP is needed; (R) Remove BMP. Keep copies of this blank page for additional room if needed.

Continuous maintenance is required on all BMPs. **BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases.**

Location	BMP	Condition	Comments: Description of Corrective Action and Preventative Measure Taken	Date Completed & Initials
STA 815-818 (NB)	SWEEP	M	SWEEP STREETS	10-10-15 TM
STA 810 (NB)	PLASTIC FENCE	M	REPAIR DAMAGED PLASTIC FENCE	10-10-15 TM

**EXAMPLE**

**(17) CONSTRUCTION SITE ASSESSMENT:\*\*OFF SITE POLLUTANT DISCHARGES ARE A VIOLATION OF THE PERMIT AND REASON FOR IMMEDIATE PROJECT SUSPENSION\*\***

(a) Is there evidence of discharge of sediment or other pollutants from the site?  Yes  No  
\*If yes, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).  
(b) Has sediment or other pollutants discharging from the site reached State waters?  Yes  No  
\*If yes, see subsection 208.03(c) and Part II A.2 and 3 of the permit for reporting requirements.



**(18) GENERAL NOTES**

ONGOING TRACKING - STREET SWEEPING NEEDED

EXAMPLE

**(19) INSPECTION CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Contractor's SWMP Administrator Print Name: <b>TRIPP MINGES</b>	Signature Required:		Date: <b>6-17-15</b>
Contractor's Erosion Control Inspector (If Needed) Print Name:	Signature Required:		Date:
Contractor's Superintendent/Approved Designee Print Name: <b>JOHN SMITH</b>	Signature Required:		Date: <b>6-17-15</b>
CDOT Project Engineer/CDOT Designee Print Name: <b>TOM BOYCE</b>	Signature Required:		Date: <b>6/17/15</b>

**(20) COMPLIANCE CERTIFICATION**

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Contractor's SWMP Administrator Print Name: <b>TRIPP MINGES</b>	Signature Required:	Date: <b>6-18-15</b>
CDOT Project Engineer/CDOT Designee (Signature Required) Print Name: <b>TOM BOYCE</b>	Signature Required:	Date: <b>6/18/15</b>



COLORADO DEPARTMENT OF TRANSPORTATION

## STORMWATER FIELD INSPECTION REPORT AND WEEKLY MEETING NOTES - ACTIVE CONSTRUCTION

(1) Project Name: <u>W/L SKEETER</u> <u>PASSROAD IMPROVEMENTS</u>	(2) Project Contractor: <u>GBM INCORPORATED</u>	(3) SWMP Administrator: <u>TRIPP MINGES</u>	Erosion Control Inspector: <u>TRIPPMINGES</u>
(4) CDOT Project Engineer/CDOT Designee:  <u>TOM BOYCE</u>	(5) Other Attendee(s) (Name and Title):  		
(6) CDOT Project Number: <u>TM-0123-456</u>	(7) Project Code (Sub Account #): <u>12345</u>	(8) CDPS-SCP Certification#: <u>COR03P076</u>	(9) CDOT Region: <u>1</u>
(10) Date of Project Inspection: <u>6-24-15</u>	(11) Weather at Time of Inspection: <u>SUNNY, 85°, SOIL IS DRY</u>		

**(12) REASON FOR INSPECTION / EXCLUSION**

Routine Inspection: (minimum every 7 Calendar Days)

Runoff Event: (Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record.) Routine inspections still must be conducted every 7 calendar days.  
Storm Start Date: \_\_\_\_\_ Approximate End Time of Storm (hrs): \_\_\_\_\_

Third Party Request:

Winter Conditions Inspections Exclusion: Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day inspections, as well as the post-storm-event inspections. If visual inspection of the site verifies that all of these conditions are satisfied, document the conditions in section 18 (General Notes) and proceed to section 19 (Inspection Certification). Documentation must include: dates when snow cover occurred, date when construction activities ceased, and date when melting conditions began.

Other:

**(13) SWMP MANAGEMENT**

	Yes	No	NA	(g) Reason for N/A
(a) Is the SWMP notebook located on site?	✓			
(b) Are changes to the SWMP documents noted and approved?	✓			
(c) Are the inspection reports retained in the SWMP notebook?	✓			
(d) Are corrective actions from the last inspection completed?	✓			
(e) Is the Spill Response Plan updated in the SWMP notebook?	✓			
(f) Is a list of potential pollutants updated in the SWMP notebook?	✓			

**(14) CURRENT CONSTRUCTION ACTIVITIES**

(a) Describe current construction Activities:  
GRADING NB SHOULDER FROM STA 825+00 TO STA 845+00

(b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e): 2.1 ACRES

	Acres	Notes
Temporary Stabilization	2.1	
Interim Stabilization		
Permanent Stabilization Completed		

(c) Has the SWMP Phased BMP Implementation Matrix been updated?  Yes  No

**(15) WEEKLY MEETING NOTES**

Notes from last meeting (date 6-22-15)  
BE CAREFUL NOT TO HIT BMPs & REPORT ANY DAMAGED BMPs.  
ADDITIONAL EROSION CONTROL LOGS INSTALLED AT STA. 835-845(NB)

Items to discuss at next meeting (date 6-29-15)  
TEMPORARY STABILIZATION  
USE ENTIRE STRETCH OF VEHICLE TRACKING PAD

**(16) CONSTRUCTION SITE ASSESSMENT & CORRECTIVE ACTIONS** \*\*Off site Pollutant Discharges are a Violation of the Permit and Reason for Immediate Project Suspension\*\*

The Construction Site Boundary/Limits of Construction (LOC), all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the LOC, entering the stormwater drainagesystem, or discharging to State waters. If there is evidence of sediment or other pollutants discharging from the site, see section 17 (Construction Site Assessment).

All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly. Identify the condition of the BMP, using more than one letter if necessary: (I) Incorrect Installation; (M) Maintenance is needed; (F) BMP failed to operate; (A) Additional BMP is needed; (R) Remove BMP. Keep copies of this blank page for additional room if needed.

Continuous maintenance is required on all BMPs. **BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases.**

Location	BMP	Condition	Comments: Description of Corrective Action and Preventative Measure Taken	Date Completed & Initials
STA 835-837, STA 815-820	SWEEPING	M	SWEEP STREETS	10-24-15 TM
STA 823+50(NB), 830+50(NB)	SILT FENCE	M	REPAIR SILT FENCE	10-24-15 TM
STA 810-817+50(NB)	CONTOURING (SURFACE ROUGHENING)	I	WHEN SURFACE ROUGHENING, ENSURE THAT IT IS ALONG THE CONTOUR	10-25-15 TM
STA 813(NB)	CONCRETE WASHOUT	A	INSTALL CONCRETE WASHOUT PER M-208 STANDARD	10-20-15 TM
STA 835(NB)	EROSION LOG	M	REPAIR EROSION CONTROL LOG	10-20-15 TM

EXAMPLE

**(17) CONSTRUCTION SITE ASSESSMENT:\*\*OFF SITE POLLUTANT DISCHARGES ARE A VIOLATION OF THE PERMIT AND REASON FOR IMMEDIATE PROJECT SUSPENSION\*\***

(a) Is there evidence of discharge of sediment or other pollutants from the site?  Yes  No  
\*If yes, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).  
(b) Has sediment or other pollutants discharging from the site reached State waters?  Yes  No  
\*If yes, see subsection 208.03(c) and Part II.A.2 and 3 of the permit for reporting requirements.

**(18) GENERAL NOTES**

APPROXIMATELY 3 GALLONS OF DIESEL FUEL WAS SPILLED IN THE MSA THIS MORNING. THE SPILL DID NOT ENTER STATE WATERS AND WAS UNDER THE REPORTING LIMIT OF 25 GALLONS. THE ONSITE SPILL CLEANUP COORDINATORS WERE CONTACTED IMMEDIATELY. THE CDOT PROJECT ENGINEER WAS ALSO NOTIFIED PER THE DIRECTION OF THE SPILL CLEANUP COORDINATOR, MIKE KENLEY, THE SPILL WAS CONTAINED WITH A SPILL CLEANUP KIT AND THE DEBRIS WAS REMOVED AND DISPOSED OF PROPERLY OFFSITE.

- "METHOD STATEMENT FOR INSTALLATION OF A CONCRETE WASHOUT AND SAW CUTTING CLEANED" SUBMITTED IN WRITING AND APPROVED BY PROJECT ENGINEER.

**EXAMPLE**

**(19) INSPECTION CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Contractor's SWMP Administrator Print Name: <b>TRIPP MINGES</b>	Signature Required:	Date: <b>0-24-15</b>
Contractor's Erosion Control Inspector (If Needed) Print Name:	Signature Required:	Date:
Contractor's Superintendent/Approved Designee Print Name: <b>JOHN SMITH</b>	Signature Required:	Date: <b>0-24-15</b>
CDOT Project Engineer/CDOT Designee Print Name: <b>TOM BOYLE</b>	Signature Required:	Date: <b>0/24/15</b>

**(20) COMPLIANCE CERTIFICATION**

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Contractor's SWMP Administrator Print Name: <b>TRIPP MINGES</b>	Signature Required:	Date: <b>0-20-15</b>
CDOT Project Engineer/CDOT Designee (Signature Required) Print Name: <b>TOM BOYLE</b>	Signature Required:	Date: <b>0/20/15</b>

## COLORADO DEPARTMENT OF TRANSPORTATION STORMWATER FIELD INSPECTION REPORT AND WEEKLY MEETING NOTES - ACTIVE CONSTRUCTION

(1) Project Name: <b>NYL SKETER PASS ROAD IMPROVEMENTS</b>	(2) Project Contractor: <b>GBM INCORPORATED</b>	(3) SWMP Administrator: <b>TRIPP MINGES</b>	Erosion Control Inspector: <b>TRIPP MINGES</b>
(4) CDOT Project Engineer/CDOT Designee: <b>TOM BOYCE</b>	(5) Other Attendee(s) (Name and Title):		
(6) CDOT Project Number: <b>TM-0123-456</b>	(7) Project Code (Sub Account #): <b>12345</b>	(8) CDPS-SCP Certification#: <b>COR03P076</b>	(9) CDOT Region: <b>1</b>
(10) Date of Project Inspection: <b>7-21-15</b>	(11) Weather at Time of Inspection: <b>PARTLY CLOUDY, 92°, SOIL IS DRY</b>		

### (12) REASON FOR INSPECTION / EXCLUSION

Routine Inspection: (minimum every 7 Calendar Days)

Runoff Event: (Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record.) Routine inspections still must be conducted every 7 calendar days.  
Storm Start Date: \_\_\_\_\_ Approximate End Time of Storm (hrs): \_\_\_\_\_

Third Party Request:

Winter Conditions Inspections Exclusion: Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the **entire site** for an extended period, and **melting conditions posing a risk of surface erosion do not exist**. This exception is applicable **only** during the period where **melting conditions do not exist**, and applies to the routine 7-day inspections, as well as the post-storm-event inspections. If **visual inspection** of the site verifies that all of these conditions are satisfied, document the conditions in section 18 (General Notes) and proceed to section 19 (Inspection Certification). Documentation must include: dates when snow cover occurred, date when construction activities ceased, and date when melting conditions began.

Other:

### (13) SWMP MANAGEMENT

	Yes	No	NA	(g) Reason for N/A
(a) Is the SWMP notebook located on site?				
(b) Are changes to the SWMP documents noted and approved?				
(c) Are the inspection reports retained in the SWMP notebook?				
(d) Are corrective actions from the last inspection completed?				
(e) Is the Spill Response Plan updated in the SWMP notebook?				
(f) Is a list of potential pollutants updated in the SWMP notebook?				

### (14) CURRENT CONSTRUCTION ACTIVITIES

(a) Describe current construction Activities:

(b) Estimate of disturbed area at the time of the inspection, use guidance found in 208.04 (e):

	Acres	Notes
Temporary Stabilization		
Interim Stabilization		
Permanent Stabilization Completed		

(c) Has the SWMP Phased BMP Implementation Matrix been updated?  Yes  No

### (15) WEEKLY MEETING NOTES

Notes from last meeting (date \_\_\_\_\_)

Items to discuss at next meeting (date \_\_\_\_\_)

**(16) CONSTRUCTION SITE ASSESSMENT & CORRECTIVE ACTIONS** \*\*Off site Pollutant Discharges are a Violation of the Permit and Reason for Immediate Project Suspension\*\*

The Construction Site Boundary/Limits of Construction (LOC), all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the **potential** for, pollutants leaving the LOC, entering the stormwater drainagesystem, or discharging to State waters. If there is evidence of sediment or other pollutants discharging from the site, see section 17 (Construction Site Assessment).

All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly. Identify the condition of the BMP, using more than one letter if necessary: (I) Incorrect Installation; (M) Maintenance is needed; (F) BMP failed to operate; (A) Additional BMP is needed; (R) Remove BMP. Keep copies of this blank page for additional room if needed.

Continuous maintenance is required on all BMPs. **BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases.**

Location	BMP	Condition	Comments: Description of Corrective Action and Preventative Measure Taken	Date Completed & Initials
			SEE RECAT	

EXAMPLE

**(17) CONSTRUCTION SITE ASSESSMENT:\*\*OFF SITE POLLUTANT DISCHARGES ARE A VIOLATION OF THE PERMIT AND REASON FOR IMMEDIATE PROJECT SUSPENSION\*\***

- (a) Is there evidence of discharge of sediment or other pollutants from the site?  Yes  No  
\*If yes, explain the discharge and the corrective actions in section 16 (Construction Site Assessment & Corrective Actions) or section 18 (General Notes).
- (b) Has sediment or other pollutants discharging from the site reached State waters?  Yes  No  
\*If yes, see subsection 208.03(c) and Part II A.2 and 3 of the permit for reporting requirements.

**(18) GENERAL NOTES**

SECRET  
RECALL

EXAMPLE

**(19) INSPECTION CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Contractor's SWMP Administrator Print Name: <b>TRIPP MINGES</b>	Signature Required:		Date: <b>7-21-15</b>
Contractor's Erosion Control Inspector (If Needed) Print Name:	Signature Required:		Date:
Contractor's Superintendent/Approved Designee Print Name: <b>JOHN SMITH</b>	Signature Required:		Date: <b>7-21-15</b>
CDOT Project Engineer/CDOT Designee Print Name: <b>TOM BOYLE</b>	Signature Required:		Date: <b>7/21/15</b>

**(20) COMPLIANCE CERTIFICATION**

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Contractor's SWMP Administrator Print Name:	Signature Required:	Date:
CDOT Project Engineer/CDOT Designee (Signature Required) Print Name:	Signature Required:	Date:

**9 Region and Headquarter Water Quality Reports and Form 105(s)  
relating to Water Quality**

<b>COLORADO DEPARTMENT OF TRANSPORTATION SPEED MEMO</b>	Project No.:	Project Code (SA#):
	Location:	

<b>MESSAGE</b>	Date: / /
To:	
Subject:	

Signed (CDOT)	Title:
---------------	--------

By Signing Below I Acknowledge Receipt of This Document

Signed:	Title:
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<b>REPLY</b>	Date: / /
To:	

Signed:	Title:
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# EXAMPLE

<b>COLORADO DEPARTMENT OF TRANSPORTATION</b> <b>SPEED MEMO</b>	Project No.: TM 0123-456	Project Code (SA#): 12345
Location: Ivyl Skeeter Pass Road Improvement Project		
<b>MESSAGE</b>	To: GBM Incorporated	Date: 6/9/15
Subject: Barricade vegetated buffers		
Install plastic fence along southern perimeter to protect vegetative buffers prior to disturbance.		
Install plastic fence around all wetland areas prior to construction.		
Signed (CDOT)	019/15	Title: <i>Engineer</i>
By Signing Below I Acknowledge Receipt of This Document		
Signed:	0110/15	Title: <i>superintendent</i>
<b>REPLY</b>	To: Tom Boyce (Engineer)	Date: 6/10/15
All areas are protected by plastic fencing to minimize disturbance.		
Signed:	0110/15	Title: <i>superintendent</i>

Distribution:  
 Contractor  
 Resident Engineer  
 Project Engineer

# EXAMPLE

<b>COLORADO DEPARTMENT OF TRANSPORTATION SPEED MEMO</b>	Project No.: TM 0123-456	Project Code (SA#): 12345
	Location: Ivyl Skeeter Pass Road Improvement Project	

<b>MESSAGE</b> To: GBM Incorporated	Date: 7/9/15
--	--------------

Subject: Modified Vehicle Tracking Pad

Create a BMP modifying the Vehicle Tracking Pad to ensure that the BMP is being used by vehicles

exiting the site. Ensure that the BMP matrix, a non-standard narrative, the SWMP map and a non-standard spec have been created and/or updated.

Signed (CDOT) <i>Tom Boyce</i> 7/9/15	Title: <i>Engineer</i>
---------------------------------------	------------------------

By Signing Below I Acknowledge Receipt of This Document

Signed: <i>Mark Burt</i> 7/9/15	Title: <i>Superintendent</i>
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<b>REPLY</b> To: Tom Boyce (Engineer)	Date: 7/13/15
--	---------------

Signed: <i>Mark Burt</i> 7/13/15	Title: <i>Superintendent</i>
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Distribution:  
Contractor  
Resident Engineer  
Project Engineer

# EXAMPLE

MAR-AC-09

**COLORADO DEPARTMENT OF TRANSPORTATION  
MONTHLY AUDIT REPORT -**

Project Name: Ivyl Skeeter Pass	Project Contractor: GBM Incorporated	Region Water Pollution Control Manager: Amber Law
CDOT Project Engineer/Representative: Tom Boyce	CDOT Project Number: TM-0123-456	Project Code (Sub Account #): 12345
CDPS-SCP Certification#: CDR-01A366	CDOT Region: Region 7	Date of Audit: 6/29/2012
Total area currently disturbed per most recent 1176 (acres): 3	Project status: Active	Inspector: Amber Law

**Records Review / Administrative Findings**

**Administrative/document findings are displayed in the section below.  
FINDINGS THAT WERE RECORDED PREVIOUSLY AND HAVE NO RESPONSE IN THE CARL SYSTEM ARE HIGHLIGHTED BELOW  
THE DATE AT WHICH THE NON-COMPLIANT BMP WAS CORRECTED MUST BE ENTERED AND INITIALED IN THE COLUMN AT THE RIGHT\***

Findings					Corrective Action Response	
Date of finding	Location	BMP Type/Problem	BMP non-compliance	Guidance	Description of Corrective Action or Preventative Measure Taken	*Date Completed & Initials
6/29/2012	Admin	Other Documentation/Administrative	The current Erosion Control Supervisor's certification, and Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, is missing.	Copy of Tripp Minges's CDOT TECS certification needed in SWMP  Provide the current Erosion Control Supervisor's certification, and/or Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, and insert into SWMP.	<p style="font-size: 1.2em; font-weight: bold;">CITY OF TRIPP MINGES'S TECS CERTIFICATION PLACED IN SWMP</p>	<p style="font-size: 1.2em; font-weight: bold;">9M 6-30-12 6-29-12</p>

# EXAMPLE

6/29/2012	Admin	Standard Specs / M-208-1 / BMP Narratives / Calendar/Administrative	M-208-1: The SWMP standard plan M-208-1 in the SWMP notebook has not been updated to reflect BMPs currently in use on the site (applicable BMPs highlighted or those not applicable crossed out)	Highlight BMPs used on site  Update the SWMP standard plan M-208-1 in the SWMP notebook to reflect BMPs currently in use on the site (cross out BMPs that are not applicable or highlight those that are applicable).	HIGHLIGHTED M-208-1/S USED ON SITE IN THE SWMP 6-29-12 TM
6/29/2012	Admin	Other Documentation/Administrative	The agenda(s) for weekly meeting(s) to discuss erosion and sediment control and the meeting sign in sheet(s) is missing.	Weekly meetings discussing erosion and sediment control with meeting sign in sheet is missing from SWMP.  Provide the missing agenda (s) for weekly meeting(s) to discuss erosion and sediment control and/or the meeting sign in sheet(s) and insert into the SWMP.	WEEKLY MEETINGS AGENDA SHEETS PLACED IN SWMP 6-29-12 TM

## Field Findings

**BMPs not functioning effectively, have proven to be inadequate, or have failed, must be addressed as soon as possible, immediately in most cases.**

**FINDINGS THAT WERE RECORDED PREVIOUSLY AND HAVE NO RESPONSE IN THE CARL SYSTEM ARE HIGHLIGHTED BELOW**

**THE DATE AT WHICH THE NON-COMPLIANT BMP WAS CORRECTED MUST BE ENTERED AND INITIALED IN THE COLUMN AT THE RIGHT\***

Findings					Corrective Action Response	
Date of finding	Location	BMP Type/Problem	BMP non-compliance	Guidance	Description of Corrective Action or Preventative Measure Taken	*Date Completed & Initials
6/29/2012	Station 845 North Bound	Erosion Logs/Failure to maintain BMP per specification	Sediment is passing over and/or under the erosion control log	Maintain erosion control log per M-208-1 Specification.  Maintain the erosion logs so that sediment does not pass over the logs	EROSION CONTROL LOGS HAVE BEEN PROPERLY MAINTAINED	6-29-12 TM

# EXAMPLE

6/29/2012	Construction trailer	Sanitary Facilities/BMP installation not per specification	The sanitary facilities have not been anchored	Anchor portable toilet property.  Anchor the sanitary facility to prevent movement or overturning	Portable TOILET HAS BEEN ANCHORED WITH STAKES  6-29-12 T/M
6/29/2012	Station 817 Northbound	General Materials Handling/BMP not Implemented	Pollutant by-products of highway construction have not been handled, stockpiled, and disposed of in a manner that prevents entry into state waters	Contain pollutants properly  Handle, stockpile, and dispose of pollutant by-products of highway construction in a manner that prevents entry into state waters	GAS CAN AND HYDRAULIC FLUID CONTAINER HAVE BEEN STORED PROPERLY  6-29-12 T/M

## Previous Findings Summary

Findings from previous monthly audit shall be reviewed at the next subsequent monthly audit to ensure corrective action(s) have occurred and were implemented in a timely, appropriate, and consistent manner.

Number of findings outstanding: 0

Number of findings corrected since previous audit: N/A

Note the number of days it took to implement corrective action for each finding in the table below. If corrective actions were not taken for findings recorded during the last audit, these will appear highlighted in the Field Findings section below.

There are no entries for this section.

**Outstanding records findings from previous audits.**

There are no entries for this section.

**Outstanding field findings from previous audits.**

There are no entries for this section.

## General Questions

Inspection Comments:

Good use of phasing. Temporary stabilization put in place on areas that are not active.

**\*\*Off site Pollutant Discharges are a Violation of the Permit and Cause for Immediate Project Suspension\*\***

## Summary Comments

Good use of surface roughening on site.

No assigned photos.

**Compliance Certification** ? To be signed when all non-compliant items identified during the Audit have been addressed

# EXAMPLE

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

  
Contractor's Erosion Control Supervisor (Signature Required)

6.29.12  
Date

  
CDOT Project Engineer/CDOT Designee (Signature Required)

6/29/12  
Date

#### AUDIT REPORT AT TIME OF COMPLETION

- If the project is found to be out of compliance with the Permit or the requirements of the site-specific SWMP, the RWPCM shall recommend, and the Project Engineer shall direct, changes to bring the site into compliance.
- A copy of the report shall be provided to the Project Engineer to pass on to the Contractor to correct any action items (findings) found at the time of inspection.
- ECS shall place monthly audit report in SWMP notebook.

#### INSPECTION CERTIFICATION - To be signed at the conclusion of the Monthly Audit

I, Tripp Minges, certify 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. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

(This document has been electronically signed by Amber Law on 6/29/2012 1:41:22 PM)

CDOT WPCM/CDOT Designee (Signature Required)

Date

report printed on 6/29/2012 using satellite software version 924

# EXAMPLE

<b>COLORADO DEPARTMENT OF TRANSPORTATION SPEED MEMO (FORM 105)</b>	<b>Project No.</b>	<b>Project Code (SA#)</b>	<b>Ref#</b>
	TM-0123-456	12345	2
	<b>Location</b> Ivyl Skeeter Pass 39.332N - 104.563W		

## MESSAGE

<b>Memo to</b>	<b>Date prepared</b>	<b>Most recent inspection</b>
Tripp Minges	6.29.2012	6.29.2012
<b>From</b>	<b>Subject</b>	
	Notification of Findings: Stormwater Management Erosion and Sediment Control Assessment	

Please refer to the attached Inspection Report conducted on 6.29.2012, which in conjunction with this Speed Memo and pursuant to 208.06 (208.09 rev 2011) of the CDOT Standard Special Provisions, serves as written notification to Tripp Minges ("The Contractor") of each incident of failure to perform erosion and sediment control so identified during that inspection.

Additionally, 208.06 (208.09 rev 2011) goes on to state that "Correction shall be made as soon as possible, but no later than 48 hrs from the date of the notification to correct the failure."

If circumstances exist which are beyond the control of The Contractor and affects the ability to comply with the prescribed timeframe in 208.06 (208.09 rev 2011), a written response may be acceptable if it clearly states:

- What the conditions are which prohibit compliance within the prescribed timeframe;
- What interim measures have been implemented to minimize or eliminate the potential for a non-permitted discharge resultant from the failure to perform; and
- The date at which the corrective action will be implemented.

NOTE: All corrective actions and responses are subject to approval by the Project Engineer.

### 1: Erosion Logs

**Location**

Station 845 North Bound

**Non-compliance**

Sediment is passing over and/or under the erosion control log

### 2: Sanitary Facilities

**Location**

Construction trailer

**Non-compliance**

The sanitary facilities have not been anchored

### 3: General Materials Handling

**Location**

Station 817 Northbound

**Non-compliance**

Pollutant by-products of highway construction have not been handled, stockpiled, and disposed of in a manner that prevents entry into state waters

### 4: Other Documentation

**Location**

Admin

**Non-compliance**

The current Erosion Control Supervisor's certification, and Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, is missing.

# EXAMPLE

## 5: Standard Specs / M-208-1 / BMP Narratives / Calendar

**Location**

Admin

**Non-compliance**

M-208-1: The SWMP standard plan M-208-1 in the SWMP notebook has not been updated to reflect BMPs currently in use on the site (applicable BMPs highlighted or those not applicable crossed out)

## 6: Other Documentation

**Location**

Admin

**Non-compliance**

The agenda(s) for weekly meeting(s) to discuss erosion and sediment control and the meeting sign in sheet(s) is missing.

**Comments/Additional instructions**

Please correct the following items within 48 hours.

**CDOT (Name/Signature)**

Tom Boyce



**Title**


PS

**Date**

6/29/12

By signing below I acknowledge receipt of this document.

**Contractor (Name/Signature)**

MICHAEL BANOVICH | 

**Title**

SUPER

**Date**

6-29-12

REPLY

**To**

Mike Banovich

**Date**

**Contractor Signature**

**Title**

**Date**

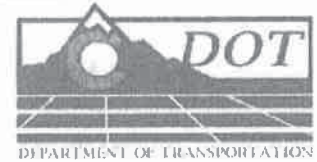
CDOT Form #105 Office record #1031



# EXAMPLE

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION  
REGIONAL EROSION CONTROL ASSESSMENT TEAM  
REGION 7



## RECAT Inspection Report Ivyl Skeeter Pass

Prepared for:	Tom Boyce / Tripp Minges
CDOT Project Number:	TM-0123-456
Stormwater Constuction Permit#:	CDR-01A366
Prepared by RECAT Team:	Amber Law/Richard Willard
Inspection Date:	7/23/2012

### Introduction

A RECAT inspection was conducted for the Ivyl Skeeter Pass project in accordance with CDOT's CDPS Stormwater Construction and Municipal Separate Storm Sewer System (MS4) Permits.

### Site Description

The project is located Ivyl Skeeter Pass 39.332N - 104.563W and involves Ivyl Skeeter Pass Road Improvement. The soils on site can generally be described as Clay to clay-loam with saline content., and the site is 62% density of 100% grasses. The receiving water for the project is Unnamed tributary through site leading to Willow Creek .

### Inspection Findings

The RECAT inspection evaluated the effectiveness of the stormwater Best Management Practices (BMPs) being used and their level of implementation. A list of findings, or instances of non-compliance with the Stormwater Construction permit either in the record keeping and documentation or in the field or with CDOT specifications, is provided in the following tables to support the project's efforts in complying with CDOT's CDPS Stormwater Construction Permit and Municipal Separate Storm Sewer System Permit. **At the time of inspection, this project was in compliance with CDOT's Stormwater Construction permit.**

### Records Review / Administrative Findings

# EXAMPLE

## Field Inspection Findings

A field inspection was conducted to determine if there is evidence of, or the potential for, pollutants entering the drainage system. Structural and non-structural Best Management Practices (BMPs) were reviewed to determine if they still meet the design and operational criteria in the stormwater management plan (SWMP), and if they continue to adequately control pollutants at the site. All BMPs mentioned in the below findings must be installed according to CDOT specifications and design criteria and as outlined in the SWMP. These specifications and design criteria must meet engineering practice requirements. BMPs that are identified as requiring maintenance, that were not operating effectively, or have failed, must be addressed as soon as possible, immediately in most cases, to minimize the discharge or discharge potential of pollutants.

A finding includes the following elements:

- a. Statement of the violation and type (e.g application, installation, maintenance)
- b. If there is a discharge or potential discharge to State waters, a clear statement will be provided on how this is to be addressed.
- c. A "why statement" for finding (why BMP is inadequate, why BMP needed, etc. and reference to CDOT specifications, permit, M Standards, etc)
- d. Corrective Action - what must the permittee do to correct the violation.
- e. RECAT team suggestion on how to correct finding.

## Previous Findings Summary

**Findings from previous monthly audit shall be reviewed at the next subsequent monthly audit to ensure corrective action(s) have occurred and were implemented in a timely, appropriate, and consistent manner.**

Number of findings outstanding: N/A

Number of findings corrected since previous audit: 6

**Note the number of days it took to implement corrective action for each finding in the table below. If corrective actions were not taken for findings recorded during the last audit, these will appear highlighted in the Field Findings section below.**

Findings				Corrective Action Respon.		
Date of finding / Location	BMP Type/ Problem	BMP non-compliance	Guidance	Description of Corrective Action or Preventative Measure Taken	*Date Completed & Initials	#of days
6/29/2012 Station 845 North Bound	Erosion Logs/ Failure to maintain BMP per specification	Sediment is passing over and/or under the erosion control log	Maintain the erosion logs so that sediment does not pass over the logs;	Erosion control logs have been properly maintained	Tripp Minges 6/29/2012	1
6/29/2012 Construction trailer	Sanitary Facilities/ BMP installation not per specification	The sanitary facilities have not been anchored	Anchor the sanitary facility to prevent movement or overturning;	Portable toilet has been staked properly	Tripp Minges 6/29/2012	1
6/29/2012 Station 817 Northbound	General Materials Handling/ BMP not Implemented	Pollutant by-products of highway construction have not been handled, stockpiled, and disposed of in a manner that prevents entry into state waters	Handle, stockpile, and dispose of pollutant by-products of highway construction in a manner that prevents entry into state waters;	Gas can and hydraulic fluid container has been stored properly	Tripp Minges 6/29/2012	1

# EXAMPLE

6/29/2012 Admin	Other Documentation/ Administrative	The current Erosion Control Supervisor's certification, and Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, is missing.	Copy of Tripp Minges's CDOT TECS certification needed in SWMP  Provide the current Erosion Control Supervisor's certification, and/or Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, and insert into SWMP.; Copy of Tripp Minges's CDOT TECS certification needed in SWMP	Copy of Tripp Minges's TECS Certificate was placed in the SWMP.	Tripp Minges 6/29/2012	1
6/29/2012 Admin	Standard Specs / M-208-1 / BMP Narratives / Calendar/ Administrative	M-208-1: The SWMP standard plan M-208-1 in the SWMP notebook has not been updated to reflect BMPs currently in use on the site (applicable BMPs highlighted or those not applicable crossed out)	Highlight BMPs used on site  Update the SWMP standard plan M-208-1 in the SWMP notebook to reflect BMPs currently in use on the site (cross out BMPs that are not applicable or highlight those that are applicable).; Highlight BMPs used on site	BMPs used on site are highlighted on the M-208-1 Standards	Tripp Minges 6/29/2012	1
6/29/2012 Admin	Other Documentation/ Administrative	The agenda(s) for weekly meeting(s) to discuss erosion and sediment control and the meeting sign in sheet(s) is missing.	Weekly meetings discussing erosion and sediment control with meeting sign in sheet is missing from SWMP.  Provide the missing agenda(s) for weekly meeting(s) to discuss erosion and sediment control and/or the meeting sign in sheet(s) and insert into the SWMP.; Weekly meetings discussing erosion and sediment control with meeting sign in sheet is missing from SWMP.	Weekly meeting agenda with sign-in sheets were placed in SWMP.	Tripp Minges 6/29/2012	1

**Outstanding records findings from previous audits.**

There are no entries for this section.

**Outstanding field findings from previous audits.**

There are no entries for this section.

**Summary Questions**

**Inspection Comments:**

Great use of temporary stabilization practices and use of phasing. ECS is doing a great job. SWMP matched site conditions; great job!

# EXAMPLE

## Summary Comments

BMPs well maintained.

### Inspection Photos



Good use of surface roughening and tracking



Good use of surface roughening and tracking



Well maintained concrete washout.

At the time of inspection, the project was in compliance with CDOT's Stormwater Construction Permit. In the Administrative and Record Keeping part of the inspection there were 0 Finding(s), while in the Field part of the inspection there were 0 Finding(s) for a total of 0 Finding(s). Please provide an email with photo documentation to Tom Boyce by close of business on 7/23/2012 confirming that findings identified in this report have been addressed. Follow-up visit may occur at the discretion of the Regional Environmental staff.

*(This document has been electronically signed by Amber Law on 7/23/2012 7:03:32 AM)*

report printed on 7/23/2012 using satellite software version 924

# EXAMPLE

<b>COLORADO DEPARTMENT OF TRANSPORTATION SPEED MEMO</b>	Project No.: TM 0123-456	Project Code (SA#): 12345
	Location: Ivy Skeeter Pass Road Improvement Project	

<b>MESSAGE</b> To: GBM Incorporated	Date: 7/23/12
--	---------------

Subject: Successful RECAT Audit

Congratulations on a successful RECAT Audit with 0 findings. This success is based on your preventative approach to compliance and use of phasing on the project. Thank you.


Signed:  7/23/12	Title: Project Engineer
---	----------------------------

<b>REPLY</b> To: Tom Boyce (Project Engineer)	Date: 7/23/12
--	---------------


Signed: 	Title:
---	--------



# EXAMPLE

MAR-AC-09

## COLORADO DEPARTMENT OF TRANSPORTATION

### ENHANCED MONTHLY AUDIT REPORT -

Project Name: Ivyl Skeeter Pass	Project Contractor: Tripp Minges (ECS)	Region Water Pollution Control Manager: Amber Law
CDOT Project Engineer/Representative: Tom Boyce	CDOT Project Number: TM-0123-456	Project Code (Sub Account #): 12345
CDPS-SCP Certification#: CDR-01A366	CDOT Region: Region 7	Date of Audit: 8/28/2012
Total area currently disturbed per most recent 1176 (acres): 7.2	Project status: Active	Inspector: Amber Law
Inspection notes:		

#### Records Review / Administrative Findings

##### Audit / Exclusion

There are no entries for this section.

#### Field Findings

**BMPs not functioning effectively, have proven to be inadequate, or have failed, must be addressed as soon as possible, immediately in most cases.**

**FINDINGS THAT WERE RECORDED DURING THE PREVIOUS AUDIT AND STILL IN VIOLATION ARE HIGHLIGHTED BELOW**

**THE DATE AT WHICH THE NON-COMPLIANT BMP WAS CORRECTED MUST BE ENTERED AND INITIALED IN THE COLUMN AT THE RIGHT\***

# EXAMPLE

## Findings

Date of finding	Location	BMP Type/Problem	BMP non-compliance	Guidance
8/28/2012	STA 857+50 SB	Erosion Logs/Failure to maintain BMP per specification	Sediment is passing over and/or under the erosion control log	Remove sediment from log caused by excavation in area  Maintain the erosion logs so that sediment does not pass over the logs

Applicable Regulations

Applicable Regulations

CDOT Standard Specifications Rev. 8/26/2010, 208.05.(1) The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs

No assigned photos.

To be completed by PE or ECS:

Description of Corrective Action or Preventative Measure Taken

*(Faint mirrored text from the reverse side of the page is visible here)*

Completed by:	Date action taken:	Date action submitted:	Date action approved:	Approved by:
TRIPP MINGES	8/28/12	8/29/12	8/28/12	AMBER LAW



# EXAMPLE

## Findings

Date of finding	Location	BMP Type/Problem	BMP non-compliance	Guidance
8/28/2012	Material storage area	Trash Collection/BMP not Implemented	Trash has not been collected and disposed of in an appropriate manner	Remove trash along perimeter of material storage area and contain properly. Acquire a lid to trash receptacle if trash/debris is being blown out of the receptacle.

Collect trash at the end of each day and dispose of in it an appropriate containers.

**Applicable Regulations**

**Applicable Regulations**

CDOT Standard Specifications Rev. 8/26/2010, 107.25.(b).22 At the end of each day the Contractor shall collect all trash and dispose of it in appropriate containers

No assigned photos.

To be completed by PE or ECS:

Description of Corrective Action or Preventative Measure Taken

Completed by:	Date action taken:	Date action submitted:	Date action approved:	Approved by:
TRIPPMINGES	8/29/12	8/29/12	8/28/12	AMBER LAW

**Previous Findings Summary**

Findings from previous monthly audit shall be reviewed at the next subsequent monthly audit to ensure corrective action(s) have occurred and were implemented in a timely, appropriate, and consistent manner.

Number of findings outstanding: 0

Number of findings corrected since previous audit: 6

Note the number of days it took to implement corrective action for each finding in the table below. If corrective actions were not taken for findings recorded during the last audit, these will appear highlighted in the Field Findings section below.

Findings				Corrective Action Response		
Date of finding / Location	BMP Type/ Problem	BMP non-compliance	Guidance	Description of Corrective Action or Preventative Measure Taken	*Date Completed & Initials	#of days
6/29/2012 Station 845 North Bound	Erosion Logs/ Failure to maintain BMP per specification	Sediment is passing over and/or under the erosion control log	Maintain the erosion logs so that sediment does not pass over the logs;	Erosion control logs have been properly maintained	Tripp Minges 6/29/2012	1

# EXAMPLE

6/29/2012 Construction trailer	Sanitary Facilities/ BMP installation not per specification	The sanitary facilities have not been anchored	Anchor the sanitary facility to prevent movement or overturning;	Portable toilet has been staked properly	Tripp Minges  6/29/2012	1
11/19/2012 Station 817 Northbound	General Materials Handling/ BMP not Implemented	Pollutant by-products of highway construction have not been handled, stockpiled, and disposed of in a manner that prevents entry into state waters	Handle, stockpile, and dispose of pollutant by- products of highway construction in a manner that prevents entry into state waters;	Gas can and hydraulic fluid container has been stored properly	Tripp Minges  11/21/2012	
6/29/2012 Admin	Other Documentation/ Administrative	The current Erosion Control Supervisor's certification, and Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, is missing.	Copy of Tripp Minges's CDOT TECS certification needed in SWMP  Provide the current Erosion Control Supervisor's certification, and/or Superintendent's ECS certification if acting as a substitute for the ECS for daily inspections, and insert into SWMP.; Copy of Tripp Minges's CDOT TECS certification needed in SWMP	Copy of Tripp Minges's TECS Certificate was placed in the SWMP.	Tripp Minges  6/29/2012	1
6/29/2012 Admin	Standard Specs / M-208-1 / BMP Narratives / Calendar/ Administrative	M-208-1: The SWMP standard plan M-208-1 in the SWMP notebook has not been updated to reflect BMPs currently in use on the site (applicable BMPs highlighted or those not applicable crossed out)	Highlight BMPs used on site  Update the SWMP standard plan M-208-1 in the SWMP notebook to reflect BMPs currently in use on the site (cross out BMPs that are not applicable or highlight those that are applicable).; Highlight BMPs used on site	BMPs used on site are highlighted on the M-208-1 Standards	Tripp Minges  6/29/2012	1
6/29/2012 Admin	Other Documentation/ Administrative	The agenda(s) for weekly meeting(s) to discuss erosion and sediment control and the meeting sign in sheet(s) is missing.	Weekly meetings discussing erosion and sediment control with meeting sign in sheet is missing from SWMP.  Provide the missing agenda(s) for weekly meeting(s) to discuss erosion and sediment control and/or the meeting sign in sheet(s) and insert into the SWMP.; Weekly meetings discussing erosion and sediment control with meeting sign in sheet is missing from SWMP.	Weekly meeting agenda with sign in sheets were placed in SWMP.	Tripp Minges  6/29/2012	1

**Outstanding records findings from previous audits.**

There are no entries for this section.

**Outstanding field findings from previous audits.**

There are no entries for this section.

# EXAMPLE

## General Questions

Inspection Comments:

**\*\*Off site Pollutant Discharges are a Violation of the Permit and Cause for Immediate Project Suspension\*\***

## Summary Comments

Great use of stabilization methods

No assigned photos.

## Compliance Certification ? To be signed when all non-compliant items identified during the Audit have been addressed

Corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.



Contractor's Erosion Control Supervisor (Signature Required)

8.28.12

Date



CDOT Project Engineer/CDOT Designee (Signature Required)

8/28/12

Date

### AUDIT REPORT AT TIME OF COMPLETION

- If the project is found to be out of compliance with the Permit or the requirements of the site-specific SWMP, the RWPCM shall recommend, and the Project Engineer shall direct, changes to bring the site into compliance.
- A copy of the report shall be provided to the Project Engineer to pass on to the Contractor to correct any action items (findings) found at the time of inspection.
- ECS shall place monthly audit report in SWMP notebook.

## INSPECTION CERTIFICATION - To be signed at the conclusion of the Monthly Audit

I, **Amber Law**, certify 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. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

*(This document has been electronically signed by Amber Law on 8/28/2012 7:58:58 AM)*

CDOT WPCM/CDOT Designee (Signature Required)

Date

report printed on 8/28/2012 using satellite software version 924

# EXAMPLE

<b>COLORADO DEPARTMENT OF TRANSPORTATION SPEED MEMO (FORM 105)</b>	Project No.	Project Code (SA#)	Ref#
	TM-0123-456	12345	8.28.12
	Location Ivyl Skeeter Pass 39.332N -104.563W		
To	Date prepared	Most recent inspection	
Tripp Minges (ECS)	8.28.12	8.28.12	
From	Subject		
Tom Boyce	Monthly Audit Report Corrections		



Please correct the two findings noted on the MAR dating 8.28.12 within 48 hours.

Comments/Additional instructions

Please correct the two findings noted on the MAR dating 8.28.12 within 48 hours.

Summary of Liquidated Damages


There are no liquidated damages charged at this time.

CDOT (Name/Signature)	Title	Date
Tripp Minges / 	PE	8/28/12
By signing below I acknowledge receipt of this document.		
Contractor (Name/Signature)	Title	Date
TRIPP MINGES 	TECS	8/28/12

REPLY

To	Date
Tripp Minges	8/28/12

ALL ITEMS COMPLETE

Contractor Signature	Title	Date
	SUPER	8/28/12

office record #1057

## **10 Description of Inspection and Maintenance Methods in Accordance with Section 208 and items not Addressed in the Design**

- 10.1 Cleaning of Equipment Letter of Certification**
- 10.2 Street Cleaning if Different from the Design**
- 10.3 Stockpile Management**

# EXAMPLE

## INSPECTION AND MAINTENANCE METHOD STATEMENT

Stormwater management for the project will be performed in accordance with the Colorado Department of Public Health and Environment, Colorado Discharge Permitting System – Stormwater Construction Permit (CDPS-SCP) and CDOT Specifications, Standard Plans and project Stormwater Management Plan (SWMP)

Installation of BMPs will be completed by:

RIM CONSTRUCTION (BMP INSTALLATION), GBM INCORPORATED (INTERIM STABILIZATION), ECHMELING SEEDING (PERMANENT STABILIZATION)

(Including initial BMPs as shown in the plans, temporary stabilization measures during construction and permanent/final stabilization items upon completion of work.)

The SWMP Administrator for Construction is: TRIPP MINGES

The Erosion Control Inspector (ECI) is: TRIPP MINGES

Is the SWMP Administrator for Construction the same person as the Erosion Control Inspector?  Y or N

Prior to construction commencing, initial BMPs required by the site specific SWMP shall be installed in accordance with CDOT Standard Plans. After their installation, the Superintendent and ECI shall attend a meeting with the Project Engineer and the Region Water Pollution Control Manager to inspect installation; to ensure they have been installed and located correctly.

Inspections of the project shall be performed by the project ECI and/or the Superintendent: CHARLES SPENCER as required by the CDOT Specifications.

- Minimum 7 Day Inspections: The ECI, Superintendent and Project Engineer shall perform 7-day inspections as required by the CDOT Specifications. A field inspection of all BMPs shall be completed to check adequacy, installation and maintenance that may be required. (Form 1176 shall be used for the inspection.)
- Post Storm Inspections: In addition to the 7 day inspections, the ECI or Superintendent shall perform post storm inspections within 24 hours after the end of precipitation or snowmelt events which cause surface erosion. If construction activities have not occurred on-site following a storm event, an inspection shall occur prior to commencing construction activities but in no case more than 72 hours following the end of the storm event. The occurrence of any delayed inspection shall be documented on the 1176 inspection form.

Maintenance: If findings occur on the 7 day or post-storm event inspections, a list of action items shall be given to the Superintendent on the day of the inspection.

TRIPP MINGES is responsible for correcting any problem areas/addressing action items or scheduling the appropriate Subcontractor to return to the project site for any assistance needed.

# EXAMPLE

RJM CONSTRUCTION \_\_\_\_ is responsible for installing or repairing BMPs.

RJM CONSTRUCTION \_\_\_\_ is responsible for maintenance of and to clean installed BMPs (removal and disposal of accumulated sediment by laborers and/or equipment)

TRIPP MINGES



# EXAMPLE



Ivyl Skeeter Pass Road Improvement  
CDOT Project#: TM 0123-456

## Cleaning of all Vehicles and Equipment Statement

Please be advised that per section 107.25.(b) stating:

The Contractor shall certify in writing to the Engineer that construction equipment has been cleaned prior to initial site arrival. Vehicles shall be free of soil and debris.

GBM has cleaned all equipment and vehicles prior to mobilizing to this project. Vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds and/or roots per the specification noted above.

Sincerely,

A handwritten signature in black ink that reads "Michael Banovich". The signature is written in a cursive, flowing style.

Michael Banovich  
Project Manager

01/11/15

## 11 Spill Response Plan in Accordance to 208.06

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## Spill Response Plan

### Introduction

In accordance with CDOT Standard Specification subsection 208.06;  
\_\_\_\_\_ has developed this Spill Response Plan to establish standard operation procedures and the necessary employee training to minimize the likelihood of accidental releases of pollutants that can contaminate stormwater runoff.

### 1. Identification and contact information of each Spill Response Coordinator

All responsible personnel and their corresponding contact information are presented in the table below.

Name and Title	Phone Number

### 2. Locations of areas on project site where equipment fueling and servicing operations are permitted

### 3. Location of cleanup kits

The kit will contain an absorbent boom, absorbent rags, absorbent litter and an over-pack drum to store the material.

Type of spill kit	Location(s)

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## 4. Quantities of chemicals and locations stored on site

The following is a table of chemical quantities and where they are located on site.

Material	Quantity	Staging/Storage Location

## 5. Label system for chemicals and Safety Data Sheets (SDS) for products

Any products/chemicals that are located or stored onsite shall be properly labeled as to the contents of the material. The Safety Datasheets for all products/chemicals utilized onsite can be found in a notebook onsite.

## 6. Notification and cleanup procedures to be implemented in the event of a spill for spills which do not enter state waters or are under reporting limits of the chemical of concern (diesel fuel, hydraulic fluid, motor oil, used hydraulic fluid and motor oil, tack oil)

- Immediately notify onsite Spill Cleanup Coordinator (see table above)
- Immediately notify CDOT Project Engineer
- Under the direction of Spill Cleanup Coordinator; contain the spill with spill cleanup kit, remove and dispose of debris properly offsite

## 7. Procedures for spills of any size that enter surface waters or ground water, or have the potential to do so

For non-hazardous materials, the following measures shall be implemented:

- Contact the CDPHE Environmental Emergency Spill Reporting Line (1-877-518-5608) within 24 hours of the spill event. A written notification to the CDPHE-EMP is necessary within 5 days.
- Contact the Colorado State Patrol 24-hour hotline (1-303-239-4501) if the spill is on a state highway.
- Report spill to the Project Engineer and CDOT maintenance personnel on patrol.
- Call the CDOT illicit discharge hotline (303 - 512 - 4H2O (4426)) if spilled material spreads to a CDOT storm drain or a waterway adjacent to CDOT right-of-way.

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For spills involving **hazardous** materials, the following measures shall be implemented:

- Contact the local emergency response team by dialing 911.
- Contact the CDPHE Environmental Emergency Spill Reporting Line (1-877-518-5608) within 24 hours of the spill event. A written notification to the CDPHE-EMP is necessary within 5 days.
- Contact the Colorado State Patrol 24-hour hotline (1-303-239-4501) if the spill is on a state highway.
- Report spill to Project Engineer and CDOT maintenance personnel on patrol.
- Call the CDOT illicit discharge hotline (303 - 512 - 4H2O (4426)) if spilled material spreads to a CDOT storm drain or a waterway adjacent to CDOT right-of-way.

## **8. Spill Prevention and Response Training**

Prior to project startup, \_\_\_\_\_ personnel have been trained in the following spill control procedures:

- Spill control
- Containment
- Spill response, containment and clean-up
- Company policies on reporting and responding to spills
- Protection of environmentally sensitive areas

# EXAMPLE

## Spill Response Plan

### Introduction

In accordance with CDOT Standard Specification subsection 208.06; GBM Incorporated has developed this Spill Response Plan to establish standard operation procedures and the necessary employee training to minimize the likelihood of accidental releases of pollutants that can contaminate stormwater runoff.

### 1. Identification and contact information of each Spill Response Coordinator

All responsible personnel and their corresponding contact information are presented in the table below.

<b>Name and Title</b>	<b>Phone Number</b>
Tripp Minges – ECI	555-555-5550
Mike Kenley – Heavy Equipment Supervisor	555-555-5551
Joseph Alm – Materials Supervisor	555-555-5552
Bryan Gunter – CDOT Spill Coordinator	555-555-5553

### 2. Locations of areas on project site where equipment fueling and servicing operations are permitted

Equipment fueling and servicing operations are permitted in the material staging area.

### 3. Location of cleanup kits

The kit will contain an absorbent boom, absorbent rags, absorbent litter and an over-pack drum to store the material.

<b>Type of spill kit</b>	<b>Location(s)</b>
Absorbent litter, rags, and booms with over pack	Construction Trailer
Absorbent litter and booms	Material Storage Area
Boom kits	Coordinator's Vehicles

# EXAMPLE

## 4. Quantities of chemicals and locations stored on site

The following is a table of chemical quantities and where they are located on site.

Material	Quantity	Staging/Storage Location
Diesel	30 gallons	Material Storage Area
Concrete drying agent	200 gallons	Material Storage Area
Hydraulic fluid (machinery)	100 gallons	Equipment
Gasoline	250 gallons	Fueling station within Material Storage Area

## 5. Label system for chemicals and Safety Data Sheets (SDS) for products

Any products/chemicals that are located or stored onsite shall be properly labeled as to the contents of the material. The Safety Datasheets for all products/chemicals utilized onsite can be found in a notebook onsite. SDS are located in the Project Engineers construction trailer

## 6. Notification and cleanup procedures to be implemented in the event of a spill for spills which do not enter state waters or are under reporting limits of the chemical of concern (diesel fuel, hydraulic fluid, motor oil, used hydraulic fluid and motor oil, tack oil)

- Immediately notify onsite Spill Cleanup Coordinator (see table above)
- Immediately notify CDOT Project Engineer
- Under the direction of Spill Cleanup Coordinator; contain the spill with spill cleanup kit, remove and dispose of debris properly offsite

## 7. Procedures for spills of any size that enter surface waters or ground water, or have the potential to do so

For non-hazardous materials, the following measures shall be implemented:

- Contact the CDPHE Environmental Emergency Spill Reporting Line (1-877-518-5608) within 24 hours of the spill event. A written notification to the CDPHE-EMP is necessary within 5 days.
- Contact the Colorado State Patrol 24-hour hotline (1-303-239-4501) if the spill is on a state highway.
- Report spill to the Project Engineer and CDOT maintenance personnel on patrol.
- Call the CDOT illicit discharge hotline (303 - 512 - 4H2O (4426)) if spilled material spreads to a CDOT storm drain or a waterway adjacent to CDOT right-of-way.

# EXAMPLE

For spills involving **hazardous** materials, the following measures shall be implemented:

- Contact the local emergency response team by dialing 911.
- Contact the CDPHE Environmental Emergency Spill Reporting Line (1-877-518-5608) within 24 hours of the spill event. A written notification to the CDPHE-EMP is necessary within 5 days.
- Contact the Colorado State Patrol 24-hour hotline (1-303-239-4501) if the spill is on a state highway.
- Report spill to Project Engineer and CDOT maintenance personnel on patrol.
- Call the CDOT illicit discharge hotline (303 - 512 - 4H2O (4426)) if spilled material spreads to a CDOT storm drain or a waterway adjacent to CDOT right-of-way.

## **8. Spill Prevention and Response Training**

Prior to project startup, the 3 persons noted above as spill cleanup coordinators have been trained in the following spill control procedures:

- Spill control
- Containment
- Spill response, containment and clean-up
- Company policies on reporting and responding to spills
- Protection of environmentally sensitive areas



**12 List and Evaluation of Potential Pollutants as Described in Subsection 107.25**

**12.1 Approved Method Statement for Containing Pollutant Byproducts for Concrete and Asphalt Saw Cutting, Grinding and Milling Containment and Removal**

# BLANK TEMPLATE

## Potential Pollutants List for CDOT Projects

POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
<p><b>All disturbed and stored soils</b></p> <ul style="list-style-type: none"> <li>• Stockpiled soils (i.e. topsoil, embankments, wetland, spoils, etc)</li> <li>• Disturbed soils (exposed areas, staging areas, parking, etc)</li> </ul>			<p>Potential during all phases of construction activities, including but not limited to excavating, grading, cutting, filling, landscaping, etc. Potential pollutants include disturbed eroded sediment entering state waterways, inlets and sewers, and off CDOT right of way.</p> <p><u>BMPs</u></p> <p>Sediment control and stockpile containment may include usage of: silt fence, temporary berms, temporary sediment basin, gravel bags, check dams, landforms, asphalt diversion berms, and inlet protection as outlined in the SWMP narratives.</p> <p>Erosion Control may include: soil roughening, mulch/mulch tackifier application, seeding/mulching, temporary slope drains, and vegetative buffers.</p> <p>Administrative BMPs include site management and limiting number and locations of stockpiles. Phased construction to reduce the amount of open area at any given time.</p>
<p><b>Vehicle tracking of sediments</b></p>			<p>Potential during all construction activities.</p> <p><u>BMPs</u></p> <p>Sediment control including: vehicle tracking pads, street sweeping, and inlet protection.</p> <p>Minimize the number of entry and exit points, add orange perimeter fence to define construction entries/exits and establish perimeter control, and require equipment to be cleaned prior to arrival on site.</p>
<p><b>Management of contaminated soils</b></p>			<p>If contaminated soils/water are encountered, all activity shall be stopped until the situation can be assessed. The CDOT Project Manager will be contacted for further direction.</p>
<p><b>Loading and unloading operations</b></p>			<p>Potential during delivery and staging of materials, equipment, soil, debris, etc.</p> <p><u>BMPs</u></p> <p>Loading and unloading operations shall occur within the disturbance limits of the project using designated vehicle tracking pads.</p> <p>Administrative controls include site management to minimize the number of areas at which loading/unloading occurs. Education as to where access points are on the project to prevent vehicle tracking.</p>

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POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
<b>Outdoor storage activities (building materials, fertilizers, chemicals, etc)</b>			<p>Potential during all phases of construction activities including delivery, staging/storage and use of various materials.</p> <p><u>BMPs</u></p> <p>Containment of the storage or staging areas using temporary berms. Use of secondary containment device for storage of chemicals and petroleum products. Chemicals shall not be used, stored or stockpiled within 50 feet of state waters.</p> <p>Administrative controls including site management to ensure limited amount of materials are stored on site and are placed in proper designated areas.</p>
<b>Vehicle and equipment maintenance and fueling</b>			<p>Fueling of equipment or vehicles and equipment or vehicle repair activities may occur during all phases of construction activity.</p> <p><u>BMPs</u></p> <p>Limit areas where fueling occurs (no less than 50 feet from any state water, inlet, flow line). Ensure Spill Response kit is accessible where fueling is taking place. Use of plastic sheeting, drip pans, dirt berms and other measures to contain fluids. Immediate clean-up and disposal of spoils as detailed in the Spill Prevention, Control and Countermeasure Plan.</p> <p>Administrative controls include site management to limit equipment and vehicle maintenance that occurs on site.</p>
<b>Significant dust or particulate generating processes</b>			<p>Potential during clearing and grubbing, cut/fill activities, sawcutting/sanding work and final stabilization.</p> <p><u>BMPs</u></p> <p>Water truck on site for use as needed to minimize dust production. Use of pickup broom or vacuum during or immediately following sawcutting projects.</p>
<b>Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.</b>			<p>Very few routine maintenance activities will occur on site. See Vehicle and Equipment maintenance for activities associated with those items.</p> <p><u>BMPs</u></p> <p>See Vehicle and Equipment Maintenance</p>

# BLANK TEMPLATE

POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
<b>On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.)</b>			<p>All activities including clear and grubbing, demolition activities, et.</p> <p><u>BMPs</u></p> <p>Trash receptacles will be placed on site and garbage disposed of when full. Public trash will be routinely picked up around the site (daily) and disposed of in proper containers. Wastepiles shall be placed a minimum of 50 feet from state waters, contained by earthen berms, silt fence, erosion logs, and landforms. Wastepiles shall be placed in areas where stormwater runoff would not result in contamination of state waters.</p> <p>Liquid wastes will be contained and removed from site and properly disposed of by the subcontractors/contractor generating wastes in accordance with the Spill Prevention, Control and Countermeasure Plan.</p>
<b>Non-industrial waste sources such as worker trash and portable toilets</b>			<p>Potential throughout construction.</p> <p><u>BMPs</u></p> <p>See onsite waste management.</p> <p>Cleanup of trash will occur daily. A dumpster will be placed on site, at our office trailer. This will be emptied on a weekly basis, and more often, if waste amounts warrant extra pick-ups. Portable toilets will be located a minimum of 50 feet from state waters.</p> <p>They shall be adequately staked and cleaned on a weekly basis. They will be inspected daily for spills. Administrative controls will include site management practices to ensure workers are placing trash in the appropriate dumpsters. Monitoring to ensure trash dumpsters are removed from the site when full. Monitoring to ensure portable toilets are cleaned as needed, and repaired or removed if found to be leaking.</p>
<b>Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment</b>			<p>Activities associated with this pollution source are concrete pours.</p> <p><u>BMPs</u></p> <p>Dedicated concrete washout areas that are clearly marked and maintained.</p>
<b>Dedicated asphalt and concrete batch plants</b>			<p>Activities associated with asphalt and concrete batch plants.</p> <p><u>BMPs</u></p> <p>Perimeter controls, concrete washout area, and vehicle tracking pad.</p>
<b>Other areas or procedures where spills can occur</b>			<p>Any additional potential pollutants shall be identified below.</p>

Note: If "Yes" is marked, identified items/products will be used on site during construction and therefore have the potential for being a pollution source if not properly handled.

\* For exact dates, please refer to map in SWMP

## EXAMPLE

### Potential Pollutants List for CDOT Projects

POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
<b>All disturbed and stored soils</b> <ul style="list-style-type: none"> <li>• Stockpiled soils (i.e. topsoil, embankments, wetland, spoils, etc)</li> <li>• Disturbed soils (exposed areas, staging areas, parking, etc)</li> </ul>	X		<p>Potential during all phases of construction activities, including but not limited to excavating, grading, cutting, filling, landscaping, etc. Potential pollutants include disturbed eroded sediment entering state waterways, inlets and sewers, and off CDOT right of way.</p> <p><u>BMPs</u></p> <p>Sediment control and stockpile containment may include usage of: silt fence, temporary berms, temporary sediment basin, gravel bags, check dams, landforms, asphalt diversion berms, and inlet protection as outlined in the SWMP narratives.</p> <p>Erosion Control may include: soil roughening, mulch/mulch tackifier application, seeding/mulching, temporary slope drains, and vegetative buffers.</p> <p>Administrative BMPs include site management and limiting number and locations of stockpiles. Phased construction to reduce the amount of open area at any given time.</p>
<b>Vehicle tracking of sediments</b>	X		<p>Potential during all construction activities.</p> <p><u>BMPs</u></p> <p>Sediment control including: vehicle tracking pads, street sweeping, and inlet protection.</p> <p>Minimize the number of entry and exit points, add orange perimeter fence to define construction entries/exits and establish perimeter control, and require equipment to be cleaned prior to arrival on site.</p>
<b>Management of contaminated soils</b>		X	<p>If contaminated soils/water are encountered, all activity shall be stopped until the situation can be assessed. The CDOT Project Manager will be contacted for further direction.</p>
<b>Loading and unloading operations</b>	X		<p>Potential during delivery and staging of materials, equipment, soil, debris, etc.</p> <p><u>BMPs</u></p> <p>Loading and unloading operations shall occur within the disturbance limits of the project using designated vehicle tracking pads.</p> <p>Administrative controls include site management to minimize the number of areas at which loading/unloading occurs. Education as to where access points are on the project to prevent vehicle tracking.</p>

POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
Outdoor storage activities (building materials, fertilizers, chemicals, etc)	X		<p>Potential during all phases of construction activities including delivery, staging/storage and use of various materials.</p> <p><u>BMPs</u>            Containment of the storage or staging areas using temporary berms. Use of secondary containment device for storage of chemicals and petroleum products. Chemicals shall not be used, stored or stockpiled within 50 feet of state waters.</p> <p>Administrative controls including site management to ensure limited amount of materials are stored on site and are placed in proper designated areas.</p>
Vehicle and equipment maintenance and fueling	X		<p>Fueling of equipment or vehicles and equipment or vehicle repair activities may occur during all phases of construction activity.</p> <p><u>BMPs</u>            Limit areas where fueling occurs (no less than 50 feet from any state water, inlet, flow line). Ensure Spill Response kit is accessible where fueling is taking place. Use of plastic sheeting, drip pans, dirt berms and other measures to contain fluids. Immediate clean-up and disposal of spoils as detailed in the Spill Prevention, Control and Countermeasure Plan.</p> <p>Administrative controls include site management to limit equipment and vehicle maintenance that occurs on site.</p>
Significant dust or particulate generating processes	X		<p>Potential during clearing and grubbing, cut/fill activities, sawcutting/sanding work and final stabilization.</p> <p><u>BMPs</u>            Water truck on site for use as needed to minimize dust production. Use of pickup broom or vacuum during or immediately following sawcutting projects.</p>
Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.	X		<p>Very few routine maintenance activities will occur on site. See Vehicle and Equipment maintenance for activities associated with those items.</p> <p><u>BMPs</u>            See Vehicle and Equipment Maintenance</p>

POTENTIAL POLLUTANT SOURCE	POTENTIAL WITH THIS PROJECT?		ACTIVITIES ASSOCIATED WITH THIS POLLUTION SOURCE AND BMPs SELECTED TO CONTROL THE SOURCE
	Y	N	
On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.)	X		<p>All activities including clear and grubbing, demolition activities, et.</p> <p><u>BMPs</u></p> <p>Trash receptacles will be placed on site and garbage disposed of when full. Public trash will be routinely picked up around the site (daily) and disposed of in proper containers. Wastepiles shall be placed a minimum of 50 feet from state waters, contained by earthen berms, silt fence, erosion logs, and landforms. Wastepiles shall be placed in areas where stormwater runoff would not result in contamination of state waters.</p> <p>Liquid wastes will be contained and removed from site and properly disposed of by the subcontractors/contractor generating wastes in accordance with the Spill Prevention, Control and Countermeasure Plan.</p>
Non-industrial waste sources such as worker trash and portable toilets	X		<p>Potential throughout construction.</p> <p><u>BMPS</u></p> <p>See onsite waste management.</p> <p>Cleanup of trash will occur daily. A dumpster will be placed on site, at our office trailer. This will be emptied on a weekly basis, and more often, if waste amounts warrant extra pick-ups. Portable toilets will be located a minimum of 50 feet from state waters.</p> <p>They shall be adequately staked and cleaned on a weekly basis. They will be inspected daily for spills. Administrative controls will include site management practices to ensure workers are placing trash in the appropriate dumpsters. Monitoring to ensure trash dumpsters are removed from the site when full. Monitoring to ensure portable toilets are cleaned as needed, and repaired or removed if found to be leaking.</p>
Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment	X		<p>Activities associated with this pollution source are concrete pours.</p> <p><u>BMPs</u></p> <p>Dedicated concrete washout areas that are clearly marked and maintained.</p>
Dedicated asphalt and concrete batch plants		X	<p>Activities associated with asphalt and concrete batch plants.</p> <p><u>BMPs</u></p> <p>Perimeter controls, concrete washout area, and vehicle tracking pad.</p>
Other areas or procedures where spills can occur			Any additional potential pollutants shall be identified below.

Note: If "Yes" is marked, identified items/products will be used on site during construction and therefore have the potential for being a pollution source if not properly handled.

7/20/15 TM	Mulch	X		Excess mulch washing off into inlets. <u>BMPs</u> - Mulch will be applied at appropriate rate; inlet protection on downgradient inlets.
8/11/15 TM	Hydroseeding/ mulching tack	X		Activities associated with this pollution source is stabilization. <u>BMPs</u> - Inlet protection on downgradient inlets, applied during dry, non-windy conditions, stored within the material storage area.



# EXAMPLE

SUBMITTED BY TRIPP MINGES  
ON 6/23/15

Ivyl Skeeter Pass Road Improvement  
CDOT Project#: TM 0123-456

## Method Statement for Containing Pollutant Byproducts

**Installation of Concrete Washout-** GBM Inc. will install concrete washout structure(s) as detailed on the CDOT M-208-1 specification. A concrete washout will be installed in the material storage area and additional locations may be used if needed. If additional locations are needed, approval from the Project Engineer will be requested prior to installation. All washouts will be located a minimum of 50 horizontal feet from any Waters of the State and also shown on the SWMP site map when installed and removed. All waste/spoils generated from concrete work on site will be disposed of properly in the designated concrete washout area by the end of every shift. The concrete wash out area will be maintained per the 107.25 standard. Waste concrete from the maintenance of the concrete washout will be removed from the site and disposed of properly at an approved disposal site.

**Saw Cutting Operations-** Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A BMP, such as a berm, shall be placed to contain slurry from joint flushing operations until the residue can be removed from the soil surface. Residue shall be removed and disposed in the designated concrete washout.

**Excess Fill Material-** Excess fill material has been arranged to be hauled off site to a local farmer who desires clean fill for his property.

**Material Removed from Sediment Traps-** These materials shall be stockpiled and/or dispersed away from any streams and/or outfalls.

Project Engineer Signature:

Date:

6/23/15



## **13 Other Correspondence**

### **13.1 Agreements with Other MS4s**

### **13.2 Approved Deferral Request**

### **13.3 CDPHE Audit Documentation**

### **13.4 Water Quality Permit Transfer to Maintenance Punch List**

### **13.5 Audits by Other Agencies**

### **13.6 Revisions to the Stormwater Construction Permit**

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## Water Quality Permit Transfer to Maintenance Punchlist

<u>Item</u>	<u>Additional Actions Needed?</u>	<u>Location</u>	<u>Comments</u>
<u>Erosion and Sediment Sources</u>			
Are there signs of <b>erosion</b> ?			
Are there signs of <b>sedimentation</b> ?			
Do the <b>outfalls</b> need to be cleaned?			
Is there sediment in the <b>inlets</b> ?			
<u>Pollutants and Controls (BMP)</u>			
Is the particular pollutant missing a BMP?			
Has the BMP(s) been maintained properly?			
Has an incorrect BMP been used for the particular pollutant?			
Are there <b>stockpiles</b> needing to be removed?			
Does the <b>concrete washout</b> need to be removed?			
Are there signs of <b>spills (including stains)</b> on site that are not controlled?			
Are there signs of <b>concrete, trash/debris</b> or other pollutants not belonging on site?			
<u>BMPs</u>			
Are there any <b>non-standard BMPs</b> ? If so, is there a non-standard spec available?			
Do the <b>perimeter controls</b> need to be maintained or removed?			
Do the BMPs within <b>channelized flows</b> need to be maintained or removed?			
Do the BMPs on <b>sheet flows</b> need to be maintained or removed?			
Do the <b>inlet protectors</b> need to be maintained or removed?			
Are <b>additional BMPs</b> needed?			
Are there BMPs that need to be <b>removed</b> ?			
Are there any <b>vehicle tracking pads</b> that need to be removed?			
Are the <b>permanent water quality features</b> functioning incorrectly?			

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<u>Stabilization Methods</u>	
Are there any areas on site that do not have <b>final stabilization methods</b> applied?	
Are the <b>outfalls</b> lacking stabilization?	
Are there any areas that appear to need <b>rework or additional work</b> ?	
Are there areas that that the soil is compacted and need the <b>soil loosened or roughened</b> to promote vegetation growth?	
Is the <b>stabilizer</b> (Ex. mulch, tackifier, etc.) in need of repair?	
Are there areas with the soil stabilizer (Ex. mulch, tackifier, etc.) <b>disturbed</b> that needs to be reapplied?	
<u>Questions for PE/ECS</u>	
Are there any wetlands on or adjacent to site?	
Are there any areas with special maintenance needs?	
Are there any problem areas that will need extra attention under maintenance control?	
Is there any advice that PE or ECS can give about project?	
Are there any sensitive areas?	
Are there any endangered or threatened species noted on or adjacent to the site?	
Is there any specific information on particular BMPs on site, including soil binders, tackifiers and/or sprayon products?	
Are there any major areas of site run on, ground water or seasonal flows on site?	
Is there any additional work to be conducted after today?	
<p><b>Note: For successful project permit transfer from Engineering to CDOT Maintenance, all answers (except those listed under Questions for PE/ECS) should be answered "no" or have a corrective action associated in the comment section.</b></p>	



# EXAMPLE

## Request to Work Outside of Limits of Disturbance

This request is in accordance to 208.08 which states:

**208.08 Limits of Disturbance.** The Contractor shall limit construction activities to those areas within the limits of disturbance shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other action which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense. The SWMP Administrator shall tabulate additional disturbances not identified in the CDPS\_SCP application and indicate changes to locations and quantities on the SWMP. The Contractor shall report the changes and additional disturbances to the Engineer, Water Quality Control Division of CDPHE and all other involved agencies.

The Contractor shall pursue and stabilize all disturbances to completion.

Due to area constraints near Station 830-835 (sb), we would like to request on 7/22/15 that we work outside of the Limits of Disturbance to insure that the wetlands in the area are not affected when digging out the pond in that area. The area to be used would be used to hold stockpiled material from excavating the pond. All disturbed areas will be stabilized in accordance to Section 9 of the SWMP Plan sheets located in Tab 1 of the SWMP.

Submitted By: Tripp Minges Date: 7.22.15.

Engineer Approval Through Form 105?  YES  NO



Request to Seed Outside of Seeding Season

EXAMPLE

Per Standard Specification 212.03(2) requirement stating:

Seeding accomplished outside the time periods listed above will be allowed only when ordered by the Engineer or when the Contractor's request is approved in writing. When requested by the Contractor, the Contractor must agree to perform the following work at no cost to the Department: reseed, mulch, and repair areas which fall to produce species indicated in the Contract.

We are requesting approval to stabilize the north bound sections of the project at double the seed rate specified in section 9 of the SWMP in tab 1. All specifications noted in 216.06 will be fully incorporated in the final stabilization process. Monitoring of this area will be done every 14 days to determine if proper germination is taking place and no erosion is occurring in the areas seeded.

Submitted By: Tripp Minges Date: 7/22/15

Engineer Approval Through Form 105?  YES  NO

# EXAMPLE Upset Condition

Colorado Department of Public Health and Environment  
Water Quality Control Division  
4300 Cherry Creek Drive South  
Denver CO 80246

July 14, 2015

To whom it may concern:

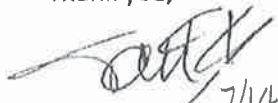
The Colorado Department of Transportation would like to file an instance of non-compliance for the Ivy Skeeter Pass Road Improvement Project (CDPS #: CDR01A366), which has discharged sediment into unnamed tributary of Willow River.

A call to the CDPHE Hotline reported the condition within the mandated 24 hour timeline stated in Part II.A.3 of the CDPS General Permit (COR-030000). The CDPHE Hotline Spill Report reference number is 2012-09774. This letter should act as the required written report needed to be submitted within 5 days of the instance of noncompliance.

During a storm event on 7/13/15 where it rained 2.5 inches the first hour and 1.25 for the following 2 hours overloaded the BMPs that were in place resulting in a discharge into the unnamed tributary of the Willow River. Please note that the amount of rain from this storm event was over the 5 year event for this area. Prior to the failure of noted BMPs; all BMPs on site were up and functioning properly. Following the storm, an inspection occurred and the instance of noncompliance was documented. Immediately following the inspection, all BMPs were maintained and no reoccurrence of noncompliance are foreseen. After correcting the damaged BMPs, a Form 105 was written (form used by CDOT for official communication) stating that additional BMPs would be needed to reinforce this area from discharge. Final stabilization of the area has been scheduled for early next week to act as additional and redundant protection.

I hereby state that the Ivy Skeeter Pass Road Improvement Project (CDPS# CDR01A366) is now in full compliance with the CDPS Permit.

Thank you,



7/14/15

Tom Boyce  
CDOT Project Engineer

# EXAMPLE

CSP Part II.A.5 of the permit to be consistent with the requirements of Regulation 61.8(3)(i). The revised language addresses under what rare occurrences BMPs may be bypassed at a site.

## 5. Bypass

a) A bypass, which causes effluent limitations (i.e., requirements to implement BMPs in accordance with Parts I.B.3 and I.D.2 of the permit) to be exceeded is prohibited, and the Division may take enforcement action against a permittee for such a bypass, unless:

- 1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- 2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities (e.g., alternative BMPs), retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment (e.g., implemented additional BMPs) to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- 3) The permittee submitted notices as required in "Non-Compliance Notification," Part II.A.3.

## 6. Upsets

a) **Effect of an Upset:** An upset constitutes an affirmative defense to an action brought for noncompliance with permit limitations and requirements if the requirements of paragraph b of this section are met. (No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.)

b) **Conditions Necessary for a Demonstration of Upset:** A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- 1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
- 2) The permitted facility was at the time being properly operated;
- 3) The permittee submitted notice of the upset as required in Part II.A.3. of this permit (24-hour notice); and
- 4) The permittee complied with any remedial measures required under 40 CFR Section 122.41(d) of the federal regulations or Section 61.8(3)(h) of the Colorado Discharge Permit System Regulations.

c) **Burden of Proof:** In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

# EXAMPLE

## PART II

PART II  
Permit - Page 17  
Permit No. COR-030000

### MANAGEMENT REQUIREMENTS

#### 1. Amending a Permit Certification

The permittee shall inform the Division (Permits Section) in writing of changes to the information provided in the permit application, including the legal contact, the project legal description or map originally submitted with the application, or the planned total disturbed acreage. The permittee shall furnish the Division with any plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge and receiving stream. If applicable, this notification may be accomplished through submittal of an application for a CDPS process water permit authorizing the discharge. The SWMP shall be updated and implemented prior to the changes (see Part I.D.5.c).

Any discharge to the waters of the State from a point source other than specifically authorized by this permit or a different CDPS permit is prohibited.

#### 2. Special Notifications - Definitions

- a) **Spill:** An unintentional release of solid or liquid material which may cause pollution of state waters.
- b) **Upset:** An exceptional incident in which there is unintentional and temporary noncompliance with permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

- a) The permittee shall report the following instances of noncompliance:
  - 1) Any noncompliance which may endanger health or the environment;
  - 2) Any spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
  - 3) Any discharge of stormwater which may cause an exceedance of a water quality standard.
- b) For all instances of noncompliance based on environmental hazards and chemical spills and releases, all needed information must be provided orally to the Colorado Department of Public Health and Environment spill reporting line (24-hour number for environmental hazards and chemical spills and releases: 1-877-518-5608) within 24 hours from the time the permittee becomes aware of the circumstances.

For all other instances of noncompliance as defined in this section, all needed information must be provided orally to the Water Quality Control Division within 24 hours from the time the permittee becomes aware of the circumstances.

For all instances of noncompliance identified here, a written submission shall also be provided within 5 calendar days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of:

- 1) The noncompliance and its cause;
- 2) The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue;
- 3) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



## 14 TECS Certifications of the SWMP Administrator and Erosion Control Inspectors

# TRANSPORTATION EROSION CONTROL SUPERVISOR (TECS)

## CERTIFICATION



**COLORADO**

**Department of Transportation**

Division of Transportation Development

### TRIPP MINGES

In accordance to the Standard Specifications for Road and Bridge Construction per section 208.03 stating, ... "The ECS shall be experienced in all aspects of construction and have satisfactorily completed an ECS training program authorized by the Department."; I hereby certify that the person noted on this certificate has successfully completed training and is a certified CDOT Transportation Erosion Control Supervisor.

Tripp Minges

CDOT Hydrologic Resources

M54 Construction Program Lead

Certification Number: 1390

Class 2 Completion Date: 11/12/2014

Expiration Date: 1/1/2018

# TRANSPORTATION EROSION CONTROL SUPERVISOR (TECS)

## CERTIFICATION



# COLORADO

Department of Transportation

Division of Transportation Development

## MIKE BANOVICH

In accordance to the Standard Specifications for Road and Bridge Construction per section 208.03 stating, ... "The ECS shall be experienced in all aspects of construction and have satisfactorily completed an ECS training program authorized by the Department."; I hereby certify that the person noted on this certificate has successfully completed training and is a certified CDOT Transportation Erosion Control Supervisor.

Tripp Minges

CDOT Hydrologic Resources

MSA Construction Program Lead

Certification Number: 22643

Class 2 Completion Date: 6/9/2015

Expiration Date: 1/1/2018

# TRANSPORTATION EROSION CONTROL SUPERVISOR (TECS)

## CERTIFICATION



### COLORADO

Department of Transportation

Division of Transportation Development

## NATASHA BURDO

In accordance to the Standard Specifications for Road and Bridge Construction per section 208.03 stating, ... "The ECS shall be experienced in all aspects of construction and have satisfactorily completed an ECS training program authorized by the Department."; I hereby certify that the person noted on this certificate has successfully completed training and is a certified CDOT Transportation Erosion Control Supervisor.

Tripp Minges

CDOT Hydrologic Resources

MSA Construction Program Lead

Certification Number: 17079

Class 2 Completion Date: 10/17/2014

Expiration Date: 1/1/2018

**15 Environmental Pre-construction Conference Agenda with a Certification of Understanding of the Terms and Conditions of the CDPS-SCP and SWMP**

**15.1 The Certification shall be signed by all attendees and new subcontractors**





# BLANK TEMPLATE

## 1. Introductions

	Name	Phone number	Email Address
Project Engineer			
Superintendent			
Contractor's SWMP Administrator			
Supervisors or Foremen			
RWPCM			
CDOT SWMP Preparer or Reviewer			

## 2. Purpose of the Environmental Pre-construction Conference

- To discuss the terms and conditions of the Stormwater Management Plan (SWMP). Review the regulatory enforcement mechanisms outlined in 208.09 Failure to Perform.
- Project site review.
- At the conclusion of the Environmental Preconstruction Conference, each attendee is required to sign the Certificate of Understanding acknowledging that they understand the terms and conditions of the SWMP and the Permit. Any other individuals that comes onto the project site during construction (including sub-contractors and suppliers) shall also be made aware of these requirements and they are required to sign the Certification of Understanding. This Agenda and the Certification of Understanding must be included in Tab 15 of the SWMP Notebook.

## 3. Concept, Goal and Compliance

- Basic concept is that stormwater runoff caused by precipitation is OK. It's the pollutants collected in the runoff as it is conveyed through our construction site that is the problem.
- Our goal is to contain, reduce or eliminate the pollution to the stormwater runoff that is caused by the project's construction activities be it grading, paving, painting, or simply where we park our vehicles and dispose of our trash.
- This project has a Permit from the Colorado Department of Public Health and Environment (CDPHE). Under this Permit, facilities are granted authorization to discharge stormwater associated with construction activities into State waters of Colorado; however, there are regulatory requirements that we need to comply with to protect water quality as defined in the Permit.
- The SWMP must include a description of all stormwater management controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges such as sediment, chemicals and trash.
- The Contractor is responsible for making their own determination as to the adequacy and locations of BMP types, and shall amend the SWMP in accordance with Section 208.

## 4. Project Start Date

- Prior to construction the Region Water Pollution Control Manager (RWPCM) and the contractor's SWMP Administrator shall:



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- Evaluate the project site for stormwater draining into or through the site.
- Evaluate the project site for non-stormwater coming onto the site.
- Review existing inlets and determine if protecting is needed.
- Review and identify sensitive habitats on site, wetlands and other vegetation (including trees) to be protected.

The anticipated start of construction is: \_\_\_\_\_

### 5. Inspections

- **7-day and post-storm event inspections** by the SWMP Administrator and Erosion Control Inspector (if required), Superintendent and Project Engineer per specification 208.03 (c) 2.
- **Headquarter and Region water quality inspections** performed by the RWPCM per CDOT's Municipal Separate Storm Sewer System (MS4) permit. Attendees can include the RWPCM, the Project Engineer, the Superintendent, SWMP Administrator and Erosion Control Inspector (ECI) (if needed). Inspections with aforementioned representatives will perform an audit of the SWMP notebook and a MS4 compliance site inspection. The concept of these inspections is to initially assess each project for their level of environmental risk to adversely impact State waters, and then continually reassess the project's performance throughout the duration of the project. Environmental risk is based upon factors such as proximity to State waters, amount of acres of disturbance, type of project, soil classification, slopes and type of "findings" identified during the inspection. The findings identified in the inspection that need to be corrected must be documented within ESCAN.
- **Local Jurisdictional and Qualifying Local Program inspections** may also be required per Part 1, A.1 of the Permit unless a waiver or other agreement has been made.

### 6. Failure to Perform Erosion Control

- Failure to implement the SWMP is a violation of the Permit and CDOT specifications. Penalties will be assessed to the Contractor by the appropriate agencies. Any penalties (including monetary fines) assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from moneys due the Contractor in accordance with subsection 107.25 (c) 2. See subsection 208.09 for further information about notifying Contractor for incidences of failure to perform, liquidated damages, and stop work orders.
  - **First Engineer Response** – The Engineer will provide immediate verbal notification to Contractor accompanied by a Form # 105 to the Contractor requiring immediate compliance with the Permit. The Contractor has 48 hours from 11:59 p.m. of the day the Form 105 was issued to complete the work. Compliance must be documented by a reply to the Form 105 of the corrected items. Documentation must be submitted to the Engineer by the following business day after the 48 hour period.
  - **Second Engineer Response** – If required work is not completed within 48 hours of the issued Form 105, the Engineer will assess the appropriate liquidated damages. Liquidated damages will continue to accumulate for each calendar day until all corrections are completed as stipulated under revised subsection 208.09.
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- **Third Engineer Response** – If the Contractor fails to correct compliance failures within 48 hours without acceptable justification, once liquidated damages are applied, the Engineer will issue a Stop Work Order in accordance with subsection 105.01.
- **Fourth Engineer Response** – If the Contractor's deferment request including the corrective action plan and schedule are not submitted within 96 hours of the initial notice, the Engineer will schedule an on-site meeting with the Resident Engineer, RWPCM, Superintendent, SWMP Administrator, and the Superintendent's supervisor.
- **Fifth Engineer Response** – If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default and Contract termination procedures in accordance with section 108.8 of the Construction Manual.

The Contractor's deferment request shall be in writing and include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator and the Contractor shall concur on this deferral and set a proposed date of completion. Based on the submittal date of the approved deferment Liquidated Damages and a Stop Work Order may not be mandated to the Contractor.

When a failure meets any one of the following conditions, the Engineer may immediately issue a Stop Work Order in accordance with subsection 105.01 irrespective of any other available remedy:

- It may endanger health or the environment.
- It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
- It consists of a discharge of stormwater which may cause an exceedance of a water quality standard.

### 7. Key Submittals

- SWMP Notebook will be provided to the Contractor at the time of the Environmental Pre-construction Conference. Notebook is and shall remain the property of CDOT. The notebook will be stored in the CDOT field office or at another on-site location approved by the Engineer. Notebook will include the first 4 items per specification 208.03 (d) 1:
  1. SWMP Plan Sheets.
  2. SWMP Site Map(s) and Project Plan Title Sheet.
  3. Copies of subsection 107.25, and Sections 207, 208, 212, 213, and 216 of the Standard Specifications, and the standard and project special provisions that modify them.
  4. Standard Plan M-208-1, M-216-1 and M-615-1.
- Certification that the contractor's appointed SWMP Administrator and ECI (if needed) has completed the Transportation Erosion Control Supervisor (TECS) training program. The SWMP Administrator and ECI shall be a person other than the

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Superintendent. The SWMP Administrator shall be responsible for developing, implementing, maintaining and revising the SWMP for the duration of the project.

- “Spill Response Plan” completed prior to the Environmental Pre-construction Conference. Work shall not be started until the plan has been submitted to and approved by the Engineer. Specification 107.25 (b) 6 and 208.06 (c).
- “List of Potential Pollution Sources” completed prior to the environmental preconstruction conference per specification 107.25 (b) 6.
- “Method Statement for Containing Pollutant Byproducts” statement submitted to the Engineer a minimum of ten days prior to the start of the construction activity per specification 107.25 (b) 13.
- “Clean Equipment Certification” submitted to the Engineer that construction equipment has been cleaned prior to initial site arrival. Vehicles shall be free of soil and debris. Specification 107.25 (b) 20.
- “Construction Dewatering Permit” (CDW) prior to dewatering operations (if any) per specifications 106.02 (b) and 107.25 (b) 8.
- Written notification to downstream owners of water supply at least 15 days prior to dredging or fill operations (if any) per specification 107.25 (b) 9.
- Soil Retention Blankets (Subsection 216.02): A sample of the staples and a copy of the manufacturer's product data showing that the product meets the Contract requirements shall be submitted to the Engineer for approval.

## 8. SWMP Notebook:

This is for the SWMP Administrator to update and revise as needed. Read all areas prior to the start of construction to make sure they are correct and apply to this project.

**208.03 (d)** The following Contract documents and reports shall be kept, maintained, and updated in the notebook by the SWMP Administrator:

- (1) SWMP Plan Sheets - Notes, tabulation, sequence of major activities, area of disturbance, existing soil data, and existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.
- (2) Site Map and Plan Title Sheet - Construction site boundaries, ground surface disturbance, limits of cut and fill, flow arrows, structural BMPs, non-structural BMPs, Springs, Streams, Wetlands and surface water. Also included on the sheets is the protection of trees, shrubs and cultural resources.
- (3) Specifications - Standard and Project special provisions related to Stormwater and Erosion Control.
- (4) Standard Plans M-208-1, M-216-1 and M-615-1
- (5) BMP Details not in Standard Plan M-208-1 or M-216-1 (Non-standard details).
- (6) Weekly meeting sign in sheet.
- (7) Calendar of Inspections -Calendar of inspections marking when all inspections take place.
- (8) Form 1176, Weekly meeting notes and inspection report
- (9) Region and Headquarter Water Quality Reports and Form 105(s) relating to Water Quality.
- (10)Description of Inspection and Maintenance Methods –

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- (11) Spill Response Plan - Reports of reportable spills submitted to CDPHE
- (12) List and Evaluation of Potential Pollutants -
- (13) Other Correspondence e.g., agreements with other MS4s, approved deferral request, CDPHE audit documentation, Water Quality Permit Transfer to Maintenance Punch List and other miscellaneous documentation.
- (14) TECS Certifications of the SWMP Administrator and all ECIs, keep current through the life of the project.
- (15) Environmental Pre-construction Conference – Conference agenda with a certification of understanding of the terms and conditions of the CDPS-SCP and SWMP.
- (16) All Project Environmental Permits - All project environmental permits and associated applications and certifications, including, CDPS-SCP, Senate Bill 40, USACE 404, temporary stream crossings, dewatering, biological opinions and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging area on private property, asphalt or concrete plant, etc.
- (17) Photographs Documenting Existing Vegetation –
- (18) Permanent Water Quality Plan Sheets - Plan sheets and specifications for permanent water quality structures, riprap.

The Contractor shall provide and insert all other documents and reports as they become available during construction. The Region or HQ Environmental staff may need to be contacted to acquire some of the information (e.g., SB 40 reports, 404 permits, etc).

## 9. Environmental issues:

- SWMP should include practices to ensure that existing vegetation is preserved where possible – see 101.78 and Part 1.C.3.c.2 of the Permit.
- SWMP should include practices to ensure protection of existing wetlands – see 101.78.
- Protection of threatened and endangered species (T&E habitat) (Biological Resources Report).

## 10. New requirements from specification updates (includes but not limited to):

- Stabilization is now defined as temporary, interim, permanent and final. The maximum area of temporary stabilization shall not exceed 20 acres.
- One Erosion Control Inspector is required for every 40 acres of total disturbed area which is currently receiving temporary and interim stabilization measures. The Erosion Control Inspector and the Stormwater Administrator may be the same person in projects involving less than 40 acres of disturbed area.
- The SWMP Site Maps must show the Areas of Disturbance (AD). This is the location where any activity has altered the existing soil cover or topography, including vegetative and non-vegetative activities during construction.
- Replaced the daily inspection requirement with a 7-calendar-day minimum inspection frequency.
- Vehicle Tracking Pad aggregate may be required for maintenance and will be paid for under a new Pay Item, Maintenance Aggregate (Vehicle Tracking Pad).

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## 11. Additional Project Specific Notes:


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## Environmental Preconstruction Conference Agenda [For Attendees]

- 1. Introductions**
  
- 2. Purpose of Preconstruction Conference**
  
- 3. Project Schedule/Start Date/Key Submittals**
  
- 4. SWMP Notebook**
  
- 5. New in the 101, 107, 208 Water Quality Control Specification**
  
- 6. Soil Retention Blankets (Subsection 216.02)**
  
- 7. Additional items, as required**
  
- 8. Failure to Implement Stormwater Management Plan**
  
- 9. Inspections**
  
- 10. Environmental issues**
  
- 11. Certificate of Understanding**
  
- 12. Site Review, if needed**

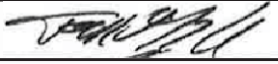

# EXAMPLE

## Environmental Pre-construction Meeting Attendance and Certification of Understanding

Date: 6/3/15

Project Name, Number, and Sub-account: Ivyl Skeeter Pass/TM 0123-456/12345

The following individuals were in attendance at the Environmental Pre-construction meeting and hereby understand the terms and conditions of the CDPS-SCP, the site's associated SWMP.

Name:	Signature:	Company and Title:
TOM BOYCE		CROT PE (PROJECT ENGINEER)
TRIPP MINGES		GBM ECS
Jane Done	Jane Done	Matrix Inc (SUPER)
Rick Willard	Rick Willard	GBM INC (Project Eng)
REGINALD PEEFER	Reginald Peffer	PEEFER SIGNS (OWNER)
Sandy Burns	Sandy Burns	Project Mgr. Thompson Inc
Jennifer Leavis	Jennifer Leavis	Maltron BMP Installer (OWNER)
George Armstrong CHRISTOPHER VR Drilling	George Armstrong	Lyon Retaining Walls (Project Mgr) VR Drilling (PRES)
Jerry Dawson	Jerry Dawson	GD Electric (PRES)
Macy Doan	Macy Doan	Super. C Green-Gold (SUPER)
LIAM LEVI	Liam Levi	#2 PORTABLE TOILETS (OWNER)
Amber Law	Amber Law	Water Pollution Control Manager
Charles Lewis	Charles Lewis	MASON CONCRETE (SUPER)
MICHAEL BAMBURG	Michael Bamburg	SUPER
JENNIFER KLAES	Jennifer Klaes	LANDSCAPE ARCHITECT
<b>NEW CONTRACTORS</b>		
Serge Diaz	Serge Diaz	DIAZ SEEDING

**16 All Project Environmental Permits**

**16.1 Any Local Agency, State, or Federal Permits**

**16.2 Include permit applications, permits, transfers, inactivation, and acceptance of inactivation**

**16.3 Clean Water Diversion, In-stream Work and Work Access Design Related to 404 Permits or Work in or Adjacent to Waters of the State (Subsection 107.25)**



CDPS GENERAL PERMIT  
STORMWATER DISCHARGES ASSOCIATED WITH  
**CONSTRUCTION ACTIVITY**  
AUTHORIZATION TO DISCHARGE UNDER THE  
COLORADO DISCHARGE PERMIT SYSTEM

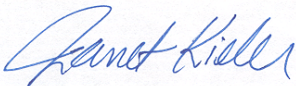
In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities (and specific allowable non-stormwater discharges in accordance with Part I.D.3 of the permit) certified under this permit, from those locations specified throughout the State of Colorado to specified waters of the State. Such discharges shall be in accordance with the conditions of this permit.

This permit specifically authorizes the facility listed on the certification page (page 1) of this permit to discharge, as of this date, in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit and the authorization to discharge shall expire at midnight, **June 30, 2012**.

Issued and Signed this 31<sup>st</sup> day of May, 2007

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT



Janet S. Kieler  
Permits Section Manager  
Water Quality Control Division

**SIGNED AND ISSUED MAY 31, 2007**

**EFFECTIVE JULY 1, 2007**



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PART I

A. COVERAGE UNDER THIS PERMIT

1. **Authority to Discharge**

Under this permit, facilities are granted authorization to discharge stormwater associated with construction activities into waters of the state of Colorado. This permit also authorizes the discharge of specific allowable non-stormwater discharges, in accordance with Part I.D.3 of the permit, which includes discharges to the ground. This includes stormwater discharges from areas that are dedicated to producing earthen materials, such as soils, sand and gravel, for use at a single construction site (i.e., borrow or fill areas). This permit also authorizes stormwater discharges from dedicated asphalt batch plants and dedicated concrete batch plants. (Coverage under the construction site permit is not required for batch plants if they have alternate CDPS permit coverage.) This permit does not authorize the discharge of mine water or process water from such areas.

- a) **Applicable Sections:** In accordance with Part I.A.3 of this permit, some parts of this permit do not apply to sites covered under a Qualifying Local Program, as defined in I.A.2.d. For sites not covered by a Qualifying Local Program, all parts of the permit apply except Part I.A.3. The permittee will be responsible for determining and then complying with the applicable sections.
- b) **Oil and Gas Construction:** Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the Federal Clean Water Act (CWA) do not apply to stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

2. **Definitions**

- a) **Stormwater:** Stormwater is precipitation-induced surface runoff.
- b) **Construction activity:** Construction activity refers to ground surface disturbing activities, which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.
- c) **Small construction activity:** Stormwater discharge associated with small construction activity means the discharge of stormwater from construction activities that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb equal to or greater than one and less than five acres.
- d) **Qualifying Local Program:** This permit includes conditions that incorporate qualifying local erosion and sediment control program (Qualifying Local Program) requirements by reference. A Qualifying Local Program is a municipal stormwater program for stormwater discharges associated with small construction activity that has been formally approved by the Division.

Other Definitions: Definitions of additional terms can be found in Part I.E. of this permit.

3. **Permit Coverage Without Application – for small construction activities under a Qualifying Local Program only**

If a small construction site is within the jurisdiction of a Qualifying Local Program, the operator of the construction activity is authorized to discharge stormwater associated with small construction activity under this general permit without the submittal of an application to the Division.

- a) **Applicable Sections:** For sites covered by a Qualifying Local Program, only Parts 1.A.1, 1.A.2, 1.A.3, I.D.1, I.D.2, I.D.3, I.D.4, I.D.7, I.D.8, I.D.11, I.E and Part II of this permit, with the exception of Parts II.A.1, II.B.3, II.B.8, and II.B10, apply.

A. COVERAGE UNDER THIS PERMIT (cont.)

- b) **Local Agency Authority:** This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.
- c) **Permit Coverage Termination:** When a site under a Qualifying Local Program has been finally stabilized, coverage under this permit is automatically terminated.
- d) **Compliance with Qualifying Local Program:** A construction site operator that has authorization to discharge under this permit under Part I.A.3 shall comply with the requirements of the Qualifying Local Program with jurisdiction over the site.
- e) **Full Permit Applicability:** The Division may require any operator within the jurisdiction of a Qualifying Local Program covered under this permit to apply for and obtain coverage under the full requirements of this permit. The operator must be notified in writing that an application for full coverage is required. When a permit certification under this permit is issued to an operator that would otherwise be covered under Part I.A.3 of this permit, the full requirements of this permit replace the requirements as per Part I.A.3 of this permit, upon the effective date of the permit certification. A site brought under the full requirements of this permit must still comply with local stormwater management requirements, policies or guidelines as required by Part I.D.1.g of this permit.

4. **Application, Due Dates**

- a) **Application Due Dates:** At least **ten calendar days** prior to the commencement of construction activities, the applicant shall submit an application form as provided by the Division, with a certification that the Stormwater Management Plan (SWMP) is complete.

**One** original completed discharge permit application shall be submitted, by mail or hand delivery, to:

Colorado Department of Public Health and Environment  
Water Quality Control Division  
WQCD-Permits-B2  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

- b) **Summary of Application:** The application requires, at a minimum, the following:
  - 1) The applicant's company name; address; telephone number; and email address (if available); whether the applicant is the owner, developer, or contractor; and local contact information;
  - 2) Project name, address, county and location of the construction site, including the latitude and longitude to the nearest 15 seconds of the approximate center of the construction activity;
  - 3) Legal description or map of the construction site;
  - 4) Estimates of: the total area of the site, the area of the site that is expected to be disturbed, and the total area of the larger common plan of development or sale to undergo disturbance;
  - 5) The nature of the construction activity;
  - 6) The anticipated start date and final stabilization date for the project;
  - 7) The name of the receiving water(s), or the municipal separate storm sewer system and the ultimate (i.e., named) receiving water(s);
  - 8) Certification that the SWMP for the construction site is complete (see Part I.C. below); and
  - 9) The signature of the applicant, signed in accordance with Part I.F.1 of this permit.

5. **Permit Certification Procedures**

If this general permit is appropriate for the applicant's operation, then a certification will be developed and the applicant will be authorized to discharge stormwater under this general permit.

- a) **Request for Additional Information:** The Division shall have up to **ten calendar days** after receipt of the above information to request additional data and/or deny the authorization for any particular discharge. Upon receipt of additional information, the Division shall have an additional **ten calendar days** to issue or deny authorization for the particular discharge. (Notification of denial shall be by letter, in cases where coverage under an alternate general permit or an individual permit is required, instead of coverage under this permit.)

A. COVERAGE UNDER THIS PERMIT (cont.)

- b) **Automatic Coverage:** If the applicant does not receive a request for additional information or a notification of denial from the Division dated within ten calendar days of receipt of the application by the Division, authorization to discharge in accordance with the conditions of this permit shall be deemed granted.
- c) **Individual Permit Required:** If, after evaluation of the application (or additional information, such as the SWMP), it is found that this general permit is not appropriate for the operation, then the application will be processed as one for an individual permit. The applicant will be notified of the Division's decision to deny certification under this general permit. For an individual permit, additional information may be requested, and 180 days may be required to process the application and issue the permit. At the Division's discretion, temporary coverage under this general permit may be allowed until the individual permit goes into effect.
- d) **General vs. Individual Permit Coverage:** Any permittee authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual CDPS permit. The permittee shall submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge.
- e) **Local Agency Authority:** This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.

6. **Inactivation Notice**

When a site has been finally stabilized in accordance with the SWMP, the permittee must submit an **Inactivation Notice** form that is signed in accordance with Part I.F.1. of this permit. The Inactivation Notice form is available from the Division and includes:

- a) Permit certification number;
- b) The permittee's name, address, telephone number;
- c) Name, location, and county for the construction site for which the inactivation notice is being submitted; and
- d) Certification that the site has been finally stabilized, and a description of the final stabilization method(s).

7. **Transfer of Permit**

When responsibility for stormwater discharges at a construction site changes from one entity to another, the permittee shall submit a completed **Notice of Transfer and Acceptance of Terms** form that is signed in accordance with Part I.F.1. of this permit. The Notice of Transfer form is available from the Division and includes:

- a) Permit certification number;
- b) Name, location, and county for the construction site for which the Notice of Transfer is being submitted;
- c) Identifying information for the new permittee;
- d) Identifying information for the current permittee; and
- e) Effective date of transfer.

If the new responsible party will not complete the transfer form, the permit may be inactivated upon written request to the Division and completion of the Inactivation Notice if the permittee has no legal responsibility, through ownership or contract, for the construction activities at the site. In this case, the new owner or operator would be required to obtain permit coverage separately.

8. **Reassignment of Permit**

When a permittee no longer has control of a specific portion of a permitted site, and wishes to transfer coverage of that portion of the site to a second party, the permittee shall submit a completed **Notice of Reassignment of Permit Coverage** form that is signed in accordance with Part I.F.1. of this permit. The Notice of Reassignment of Permit Coverage form is available from the Division and includes:

- a) Current permit certification number;
- b) Identifying information and certification as required by Part I.A.4.b for the new permittee;
- c) Identifying information for the current permittee, revised site information and certification for reassignment; and
- d) Effective date of reassignment.

A. COVERAGE UNDER THIS PERMIT (cont.)

If the new responsible party will not complete the reassignment form, the applicable portion of the permitted site may be removed from permit coverage upon written request to the Division if the permittee has no legal responsibility, through ownership or contract, for the construction activities at the portion of the site. In this case, the new owner or operator would be required to obtain permit coverage separately.

9. **Sale of Residence to Homeowners**

For residential construction only, when a residential lot **has been conveyed to a homeowner** and all criteria in paragraphs a through e, below, are met, coverage under this permit is no longer required and the conveyed lot may be removed from coverage under the permittee's certification. At such time, the permittee is no longer responsible for meeting the terms and conditions of this permit for the conveyed lot, including the requirement to transfer or reassign permit coverage. The permittee remains responsible for inactivation of the original certification.

- a) The lot has been sold to the homeowner(s) for private residential use;
- b) the lot is less than one acre of disturbed area;
- c) all construction activity conducted by the permittee on the lot is completed;
- d) a certificate of occupancy (or equivalent) has been awarded to the home owner; and
- e) the SWMP has been amended to indicate the lot is no longer covered by permit.

Lots not meeting all of the above criteria require continued permit coverage. However, this permit coverage may be transferred (Part I.A.7, above) or reassigned (Part I.A.8, above) to a new owner or operator.

10. **Permit Expiration Date**

Authorization to discharge under this general permit shall expire on June 30, 2012. The Division must evaluate and reissue this general permit at least once every five years and must recertify the permittee's authority to discharge under the general permit at such time. Therefore, a permittee desiring continued coverage under the general permit must reapply by March 31, 2012. The Division will initiate the renewal process; however, it is ultimately the permittee's responsibility to ensure that the renewal is submitted. The Division will determine if the permittee may continue to operate under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

11. **Individual Permit Criteria**

Various criteria can be used in evaluating whether or not an individual (or alternate general) permit is required instead of this general permit. This information may come from the application, SWMP, or additional information as requested by the Division, and includes, but is not limited to, the following:

- a) the quality of the receiving waters (i.e., the presence of downstream drinking water intakes or a high quality fishery, or for preservation of high quality water);
- b) the size of the construction site;
- c) evidence of noncompliance under a previous permit for the operation;
- d) the use of chemicals within the stormwater system; or
- e) discharges of pollutants of concern to waters for which there is an established Total Maximum Daily Load (TMDL).

In addition, an individual permit may be required when the Division has shown or has reason to suspect that the stormwater discharge may contribute to a violation of a water quality standard.

B. STORMWATER MANAGEMENT PLAN (SWMP) – **GENERAL REQUIREMENTS**

1. A SWMP shall be developed for each facility covered by this permit. The SWMP shall be prepared in accordance with good engineering, hydrologic and pollution control practices. (The SWMP need not be prepared by a registered engineer.)



B. STORMWATER MANAGEMENT PLAN (SWMP) – **GENERAL REQUIREMENTS** (cont.)

2. The SWMP shall:
  - a) Identify all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the facility;
  - b) Describe the practices to be used to reduce the pollutants in stormwater discharges associated with construction activity at the facility; and ensure the practices are selected and described in accordance with good engineering practices, including the installation, implementation and maintenance requirements; and
  - c) Be properly prepared, and updated in accordance with Part I.D.5.c, to ensure compliance with the terms and conditions of this permit.
3. Facilities must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete, as a condition of this permit. The Division reserves the right to review the SWMP, and to require the permittee to develop and implement additional measures to prevent and control pollution as needed.
4. The SWMP may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under section 311 of the CWA, or Best Management Practices (BMPs) Programs otherwise required by a separate CDPS permit, and may incorporate any part of such plans into the SWMP by reference, provided that the relevant sections of such plans are available as part of the SWMP consistent with Part I.D.5.b.
5. For any sites with permit coverage before June 30, 2007, the permittee's SWMP must meet the new SWMP requirements as summarized in Section II.I of the rationale. Any needed changes must be made by **October 1, 2007**.

C. STORMWATER MANAGEMENT PLAN (SWMP) – **CONTENTS**

The SWMP shall include the following items, at a minimum.

1. **Site Description.** The SWMP shall clearly describe the construction activity, to include:
  - a) The nature of the construction activity at the site.
  - b) The proposed sequence for major activities.
  - c) Estimates of the total area of the site, and the area and location expected to be disturbed by clearing, excavation, grading, or other construction activities.
  - d) A summary of any existing data used in the development of the site construction plans or SWMP that describe the soil or existing potential for soil erosion.
  - e) A description of the existing vegetation at the site and an estimate of the percent vegetative ground cover.
  - f) The location and description of all potential pollution sources, including ground surface disturbing activities (see Part I.A.2.b), vehicle fueling, storage of fertilizers or chemicals, etc.
  - g) The location and description of any anticipated allowable sources of non-stormwater discharge at the site, e.g., uncontaminated springs, landscape irrigation return flow, construction dewatering, and concrete washout.
  - h) The name of the receiving water(s) and the size, type and location of any outfall(s). If the stormwater discharge is to a municipal separate storm sewer system, the name of that system, the location of the storm sewer discharge, and the ultimate receiving water(s).
2. **Site Map.** The SWMP shall include a legible site map(s), showing the entire site, identifying:
  - a) construction site boundaries;
  - b) all areas of ground surface disturbance;
  - c) areas of cut and fill;
  - d) areas used for storage of building materials, equipment, soil, or waste;
  - e) locations of dedicated asphalt or concrete batch plants;
  - f) locations of all structural BMPs;
  - g) locations of non-structural BMPs as applicable; and
  - h) locations of springs, streams, wetlands and other surface waters.

C. STORMWATER MANAGEMENT PLAN (SWMP) – CONTENTS (cont.)

3. **Stormwater Management Controls.**

The SWMP must include a description of all stormwater management controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges. The appropriateness and priorities of stormwater management controls in the SWMP shall reflect the potential pollutant sources identified at the facility.

The description of stormwater management controls shall address the following components, at a minimum:

- a) **SWMP Administrator** - The SWMP shall identify a specific individual(s), position or title who is responsible for developing, implementing, maintaining, and revising the SWMP. The activities and responsibilities of the administrator shall address all aspects of the facility's SWMP.
- b) **Identification of Potential Pollutant Sources** - All potential pollutant sources, including materials and activities, at a site must be evaluated for the potential to contribute pollutants to stormwater discharges. The SWMP shall identify and describe those sources determined to have the potential to contribute pollutants to stormwater discharges, and the sources must be controlled through BMP selection and implementation, as required in paragraph (c), below.

At a minimum, each of the following sources and activities shall be evaluated for the potential to contribute pollutants to stormwater discharges, and identified in the SWMP if found to have such potential:

- 1) all disturbed and stored soils;
  - 2) vehicle tracking of sediments;
  - 3) management of contaminated soils;
  - 4) loading and unloading operations;
  - 5) outdoor storage activities (building materials, fertilizers, chemicals, etc.);
  - 6) vehicle and equipment maintenance and fueling;
  - 7) significant dust or particulate generating processes;
  - 8) routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.;
  - 9) on-site waste management practices (waste piles, liquid wastes, dumpsters, etc.);
  - 10) concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment;
  - 11) dedicated asphalt and concrete batch plants;
  - 12) non-industrial waste sources such as worker trash and portable toilets; and
  - 13) other areas or procedures where potential spills can occur.
- c) **Best Management Practices (BMPs) for Stormwater Pollution Prevention** - The SWMP shall identify and describe appropriate BMPs, including, but not limited to, those required by paragraphs 1 through 8 below, that will be implemented at the facility to reduce the potential of the sources identified in Part I.C.3.b to contribute pollutants to stormwater discharges. The SWMP shall clearly describe the installation and implementation specifications for each BMP identified in the SWMP to ensure proper implementation, operation and maintenance of the BMP.
    - 1) Structural Practices for Erosion and Sediment Control. The SWMP shall clearly describe and locate all structural practices implemented at the site to minimize erosion and sediment transport. Practices may include, but are not limited to: straw bales, wattles/sediment control logs, silt fences, earth dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, and temporary or permanent sediment basins.
    - 2) Non-Structural Practices for Erosion and Sediment Control. The SWMP shall clearly describe and locate, as applicable, all non-structural practices implemented at the site to minimize erosion and sediment transport. Description must include interim and permanent stabilization practices, and site-specific scheduling for implementation of the practices. The SWMP should include practices to ensure that existing vegetation is preserved where possible. Non-structural practices may include, but are not limited to: temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, vegetative buffer strips, protection of trees, and preservation of mature vegetation.

C. STORMWATER MANAGEMENT PLAN (SWMP) – CONTENTS (cont.)

- 3) Phased BMP Implementation. The SWMP shall clearly describe the relationship between the phases of construction, and the implementation and maintenance of both structural and non-structural stormwater management controls. The SWMP must identify the stormwater management controls to be implemented during the project phases, which can include, but are not limited to, clearing and grubbing; road construction; utility and infrastructure installation; vertical construction; final grading; and final stabilization.
- 4) Materials Handling and Spill Prevention. The SWMP shall clearly describe and locate all practices implemented at the site to minimize impacts from procedures or significant materials (see definitions at Part I.E.) that could contribute pollutants to runoff. Such procedures or significant materials could include: exposed storage of building materials; paints and solvents; fertilizers or chemicals; waste material; and equipment maintenance or fueling procedures.

Areas or procedures where potential spills can occur must have spill prevention and response procedures identified in the SWMP.

- 5) Dedicated Concrete or Asphalt Batch Plants. The SWMP shall clearly describe and locate all practices implemented at the site to control stormwater pollution from dedicated concrete batch plants or dedicated asphalt batch plants covered by this certification.
- 6) Vehicle Tracking Control. The SWMP shall clearly describe and locate all practices implemented at the site to control potential sediment discharges from vehicle tracking. Practices must be implemented for all areas of potential vehicle tracking, and can include: minimizing site access; street sweeping or scraping; tracking pads; graveled parking areas; requiring that vehicles stay on paved areas on-site; wash racks; contractor education; and/or sediment control BMPs, etc.
- 7) Waste Management and Disposal, Including Concrete Washout.
  - i) The SWMP shall clearly describe and locate the practices implemented at the site to control stormwater pollution from all construction site wastes (liquid and solid), including concrete washout activities.
  - ii) The practices used for concrete washout must ensure that these activities do not result in the contribution of pollutants associated with the washing activity to stormwater runoff.
  - iii) Part I.D.3.c of the permit authorizes the conditional discharge of concrete washout water to the ground. The SWMP shall clearly describe and locate the practices to be used that will ensure that no washout water from concrete washout activities is discharged from the site as surface runoff or to surface waters.
- 8) Groundwater and Stormwater Dewatering.
  - i) The SWMP shall clearly describe and locate the practices implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater from excavations, wells, etc.
  - ii) Part I.D.3.d of the permit authorizes the conditional discharge of construction dewatering to the ground. For any construction dewatering of groundwater not authorized under a separate CDPS discharge permit, the SWMP shall clearly describe and locate the practices to be used that will ensure that no groundwater from construction dewatering is discharged from the site as surface runoff or to surface waters.

4. **Final Stabilization and Long-term Stormwater Management**

- a) The SWMP shall clearly describe the practices used to achieve final stabilization of all disturbed areas at the site, and any planned practices to control pollutants in stormwater discharges that will occur after construction operations have been completed at the site.
- b) Final stabilization practices for obtaining a vegetative cover should include, as appropriate: seed mix selection and application methods; soil preparation and amendments; soil stabilization practices (e.g., crimped straw, hydro mulch or rolled erosion control products); and appropriate sediment control BMPs as needed until final stabilization is achieved; etc.

C. STORMWATER MANAGEMENT PLAN (SWMP) – CONTENTS (cont.)

- c) Final stabilization is reached when all ground surface disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

The Division may, after consultation with the permittee and upon good cause, amend the final stabilization criteria in this section for specific operations.

5. **Inspection and Maintenance**

Part I.D.6 of the permit includes requirements for site inspections. Part I.D.7 of the permit includes requirements for BMP maintenance. The SWMP shall clearly describe the inspection and maintenance procedures implemented at the site to maintain all erosion and sediment control practices and other protective practices identified in the SWMP, in good and effective operating condition.

D. TERMS AND CONDITIONS

1. **General Limitations**

The following limitations shall apply to all discharges covered by this permit:

- a) Stormwater discharges from construction activities shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any water quality standard, including narrative standards for water quality.
- b) Concrete washout water shall not be discharged to state surface waters or to storm sewer systems. On-site permanent disposal of concrete washout waste is not authorized by this permit. Discharge to the ground of concrete washout waste that will subsequently be disposed of off-site is authorized by this permit. See Part I.D.3.c of the permit.
- c) Bulk storage structures for petroleum products and any other chemicals shall have secondary containment or equivalent adequate protection so as to contain all spills and prevent any spilled material from entering State waters.
- d) No chemicals are to be added to the discharge unless permission for the use of a specific chemical is granted by the Division. In granting the use of such chemicals, special conditions and monitoring may be addressed by separate correspondence.
- e) The Division reserves the right to require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that compliance with the SWMP is a problem, or to measure the effectiveness of the BMPs in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.
- f) All site wastes must be properly managed to prevent potential pollution of State waters. This permit does not authorize on-site waste disposal.
- g) All dischargers must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies regarding any discharges of stormwater to storm drain systems or other water courses under their jurisdiction, including applicable requirements in municipal stormwater management programs developed to comply with CDPS permits. Dischargers must comply with local stormwater management requirements, policies or guidelines including erosion and sediment control.

2. **BMP Implementation and Design Standards**

Facilities must select, install, implement, and maintain appropriate BMPs, following good engineering, hydrologic and pollution control practices. BMPs implemented at the site must be adequately designed to provide control for all potential pollutant sources associated with construction activity to prevent pollution or degradation of State waters.

D. TERMS AND CONDITIONS (cont.)

3. **Prohibition of Non-Stormwater Discharges**

- a) Except as provided in paragraphs b, c, and d below, **all discharges covered by this permit shall be composed entirely of stormwater associated with construction activity.** Discharges of material other than stormwater must be addressed in a separate CDPS permit issued for that discharge.
- b) Discharges from the following sources that are combined with stormwater discharges associated with construction activity may be authorized by this permit, provided that the non-stormwater component of the discharge is identified in the SWMP (see Part I.C.1.g of this permit):
  - emergency fire fighting activities
  - landscape irrigation return flow
  - uncontaminated springs
- c) Discharges to the ground of concrete washout water from washing of tools and concrete mixer chutes may be authorized by this permit, provided that:
  - 1) the source is identified in the SWMP;
  - 2) BMPs are included in the SWMP in accordance with Part I.C.3(c)(7) and to prevent pollution of groundwater in violation of Part I.D.1.a; and
  - 3) these discharges do not leave the site as surface runoff or to surface waters
- d) Discharges to the ground of water from construction dewatering activities may be authorized by this permit, provided that:
  - 1) the source is groundwater and/or groundwater combined with stormwater that does not contain pollutants in concentrations exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42;
  - 2) the source is identified in the SWMP;
  - 3) BMPs are included in the SWMP, as required by Part I.C.3(c)(8); and
  - 4) these discharges do not leave the site as surface runoff or to surface waters.

Discharges to the ground from construction dewatering activities that do not meet the above criteria must be covered under a separate CDPS discharge permit. Contaminated groundwater requiring coverage under a separate CDPS discharge permit may include groundwater contaminated with pollutants from a landfill, mining activity, industrial pollutant plume, underground storage tank, or other source.

4. **Releases in Excess of Reportable Quantities**

This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the Division's Noncompliance Notification Requirements (see Part II.A.3 of the permit).

5. **SWMP Requirements**

- a) **SWMP Preparation and Implementation:** The SWMP shall be prepared prior to applying for coverage under the general permit, and certification of its completion submitted with the application. The SWMP shall be implemented prior to commencement of construction activities. The plan shall be updated as appropriate (see paragraph c, below), below). SWMP provisions shall be implemented until expiration or inactivation of permit coverage.
- b) **SWMP Retention Requirements:** A copy of the SWMP must be retained on site unless another location, specified by the permittee, is approved by the Division.
- c) **SWMP Review/Changes:** The permittee shall amend the SWMP:
  - 1) when there is a change in design, construction, operation, or maintenance of the site, which would require the implementation of new or revised BMPs; or
  - 2) if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity; or

D. TERMS AND CONDITIONS (cont.)

- 3) when BMPs are no longer necessary and are removed.

SWMP changes shall be made prior to changes in the site conditions, except as allowed for in paragraph d, below. SWMP revisions may include, but are not limited to: potential pollutant source identification; selection of appropriate BMPs for site conditions; BMP maintenance procedures; and interim and final stabilization practices. The SWMP changes may include a schedule for further BMP design and implementation, provided that, if any interim BMPs are needed to comply with the permit, they are also included in the SWMP and implemented during the interim period.

- d) **Responsive SWMP Changes:** SWMP changes addressing BMP installation and/or implementation are often required to be made in response to changing conditions, or when current BMPs are determined ineffective. The majority of SWMP revisions to address these changes can be made immediately with quick in-the-field revisions to the SWMP. In the less common scenario where more complex development of materials to modify the SWMP is necessary, SWMP revisions shall be made in accordance with the following requirements:
  - 1) the SWMP shall be revised as soon as practicable, but in no case more than 72 hours after the change(s) in BMP installation and/or implementation occur at the site, and
  - 2) a notation must be included in the SWMP prior to the site change(s) that includes the time and date of the change(s) in the field, an identification of the BMP(s) removed or added, and the location(s) of those BMP(s).

6. **Inspections**

Site inspections must be conducted in accordance with the following requirements and minimum schedules. The required minimum inspection schedules do not reduce or eliminate the permittee's responsibility to implement and maintain BMPs in good and effective operational condition, and in accordance with the SWMP, which could require more frequent inspections.

- a) **Minimum Inspection Schedule:** The permittee shall, at a minimum, make a thorough inspection, in accordance with the requirements in I.D.6.b below, at least once every 14 calendar days. Also, post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Provided the timing is appropriate, the post-storm inspections may be used to fulfill the 14-day routine inspection requirement. A more frequent inspection schedule than the minimum inspections described may be necessary, to ensure that BMPs continue to operate as needed to comply with the permit. The following conditional modifications to this Minimum Inspection Schedule are allowed:
  - 1) **Post-Storm Event Inspections at Temporarily Idle Sites** – If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. The occurrence of any such delayed inspection must be documented in the inspection record. Routine inspections still must be conducted at least every 14 calendar days.
  - 2) **Inspections at Completed Sites/Areas** – For sites or portions of sites that meet the following criteria, but final stabilization has not been achieved due to a vegetative cover that has not become established, the permittee shall make a thorough inspection of their stormwater management system at least once every month, and post-storm event inspections are not required. This reduced inspection schedule is *only* allowed if:
    - i) all construction activities that will result in surface ground disturbance are completed;
    - ii) all activities required for final stabilization, in accordance with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
    - iii) the SWMP has been amended to indicate those areas that will be inspected in accordance with the reduced schedule allowed for in this paragraph.

D. TERMS AND CONDITIONS (cont.)

- 3) **Winter Conditions Inspections Exclusion** – Inspections are not required at sites where construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This exception is applicable only during the period where melting conditions do not exist, and applies to the routine 14-day and monthly inspections, as well as the post-storm-event inspections. The following information must be documented in the inspection record for use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began. Inspections, as described above, are required at all other times.

When site conditions make the schedule required in this section impractical, the permittee may petition the Division to grant an alternate inspection schedule.

b) **Inspection Requirements**

- 1) **Inspection Scope** - The construction site perimeter, all disturbed areas, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site shall be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters. All erosion and sediment control practices identified in the SWMP shall be evaluated to ensure that they are maintained and operating correctly.
- 2) **Inspection Report/Records** - The permittee shall keep a record of inspections. Inspection reports must identify any incidents of non-compliance with the terms and conditions of this permit. Inspection records must be retained for three years from expiration or inactivation of permit coverage. At a minimum, the inspection report must include:
- i) The inspection date;
  - ii) Name(s) and title(s) of personnel making the inspection;
  - iii) Location(s) of discharges of sediment or other pollutants from the site;
  - iv) Location(s) of BMPs that need to be maintained;
  - v) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
  - vi) Location(s) where additional BMPs are needed that were not in place at the time of inspection;
  - vii) Deviations from the minimum inspection schedule as provided in Part I.D.6.a above;
  - vii) Description of corrective action for items iii, iv, v, and vi, above, dates corrective action(s) taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary; and
  - viii) After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

- c) **Required Actions Following Site Inspections** – Where site inspections note the need for BMP maintenance activities, BMPs must be maintained in accordance with the SWMP and Part I.D.7 of the permit. Repair, replacement, or installation of new BMPs determined necessary during site inspections to address ineffective or inadequate BMPs must be conducted in accordance with Part I.D.8 of the permit. SWMP updates required as a result of deficiencies in the SWMP noted during site inspections shall be made in accordance with Part I.D.5.c of the permit.

7. **BMP Maintenance**

All erosion and sediment control practices and other protective measures identified in the SWMP must be maintained in effective operating condition. Proper selection and installation of BMPs and implementation of comprehensive Inspection and Maintenance procedures, in accordance with the SWMP, should be adequate to meet this condition. BMPs that are not adequately maintained in accordance with good engineering, hydrologic and pollution control practices, including removal of collected sediment outside the acceptable tolerances of the BMPs, are considered to be no longer operating effectively and must be addressed in accordance with Part I.D.8, below. A specific timeline for implementing maintenance procedures is not included in this permit because BMP maintenance is expected to be proactive, not responsive. Observations resulting in BMP maintenance activities can be made during a site inspection, or during general observations of site conditions.

D. TERMS AND CONDITIONS (cont.)

8. **Replacement and Failed BMPs**

Adequate site assessment must be performed as part of comprehensive Inspection and Maintenance procedures, to assess the adequacy of BMPs at the site, and the necessity of changes to those BMPs to ensure continued effective performance. Where site assessment results in the determination that new or replacement BMPs are necessary, the BMPs must be installed to ensure on-going implementation of BMPs as per Part I.D.2.

Where BMPs have failed, resulting in noncompliance with Part I.D.2, they must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants.

When new BMPs are installed or BMPs are replaced, the SWMP must be updated in accordance with Part I.D.5(c).

9. **Reporting**

No scheduled reporting requirements are included in this permit; however, the Division reserves the right to request that a copy of the inspection reports be submitted.

10. **SWMP Availability**

A copy of the SWMP shall be provided upon request to the Division, EPA, or any local agency in charge of approving sediment and erosion plans, grading plans or stormwater management plans, and within the time frame specified in the request. If the SWMP is required to be submitted to any of these entities, it must include a signed certification in accordance with Part I.F.1 of the permit, certifying that the SWMP is complete and meets all permit requirements.

All SWMPs required under this permit are considered reports that shall be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the Colorado Discharge Permit System Regulations. The permittee shall make plans available to members of the public upon request. However, the permittee may claim any portion of a SWMP as confidential in accordance with 40 CFR Part 2.

11. **Total Maximum Daily Load (TMDL)**

If a TMDL has been approved for any waterbody into which the permittee discharges, and stormwater discharges associated with construction activity have been assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the Division will either:

- a) Ensure that the WLA is being implemented properly through alternative local requirements, such as by a municipal stormwater permit; or
- b) Notify the permittee of the WLA, and amend the permittee's certification to add specific BMPs and/or other requirements, as appropriate. The permittee may be required to do the following:
  - 1) Under the permittee's SWMP, implement specific management practices based on requirements of the WLA, and evaluate whether the requirements are being met through implementation of existing stormwater BMPs or if additional BMPs are necessary. Document the calculations or other evidence that show that the requirements are expected to be met; and
  - 2) If the evaluation shows that additional or modified BMPs are necessary, describe the type and schedule for the BMP additions/revisions.

Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above. The Division reserves the right to require individual or alternate general permit coverage.



E. ADDITIONAL DEFINITIONS

For the purposes of this permit:

1. **Best Management Practices (BMPs):** schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, pollution prevention, and practices to control site runoff, spillage or leaks, waste disposal, or drainage from material storage.
2. **Dedicated asphalt plants and concrete plants:** portable asphalt plants and concrete plants that are located on or adjacent to a construction site and that provide materials only to that specific construction site.
3. **Final stabilization:** when all ground surface disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. For purposes of this permit, establishment of a vegetative cover capable of providing erosion control equivalent to pre-existing conditions at the site will be considered final stabilization.
4. **Municipal separate storm sewer system:** a conveyance or system of conveyances (including: roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), owned or operated by a State, city, town, county, district, or other public body (created by state law), having jurisdiction over disposal of sewage, industrial waste, stormwater, or other wastes; designed or used for collecting or conveying stormwater.
5. **Operator:** the entity that has day-to-day supervision and control of activities occurring at the construction site. This can be the owner, the developer, the general contractor or the agent of one of these parties, in some circumstances. It is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of 'operator' and that the permit may be transferred as the roles change.
6. **Outfall:** a point source at the point where stormwater leaves the construction site and discharges to a receiving water or a stormwater collection system.
7. **Part of a larger common plan of development or sale:** a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules.
8. **Point source:** any discernible, confined and discrete conveyance from which pollutants are or may be discharged. Point source discharges of stormwater result from structures which increase the imperviousness of the ground which acts to collect runoff, with runoff being conveyed along the resulting drainage or grading pattern.
9. **Pollutant:** dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste.
10. **Process water:** any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product. This definition includes mine drainage.
11. **Receiving Water:** any classified stream segment (including tributaries) in the State of Colorado into which stormwater related to construction activities discharges. This definition includes all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.
12. **Significant Materials** include, but are not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharge.
13. **Stormwater:** precipitation-induced surface runoff.

F. GENERAL REQUIREMENTS

1. **Signatory Requirements**

- a) All reports required for submittal shall be signed and certified for accuracy by the permittee in accordance with the following criteria:
- 1) In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the form originates;
  - 2) In the case of a partnership, by a general partner;
  - 3) In the case of a sole proprietorship, by the proprietor;
  - 4) In the case of a municipal, state, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee, if such representative is responsible for the overall operation of the facility from which the discharge described in the form originates.
- b) **Changes to authorization.** If an authorization under paragraph a) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph a) of this section must be submitted to the Division, prior to or together with any reports, information, or applications to be signed by an authorized representative.
- c) **Certification.** Any person signing a document under paragraph a) of this section shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

2. **Retention of Records**

- a) The permittee shall retain copies of the SWMP and all reports required by this permit and records of all data used to complete the application to be covered by this permit, for three years after expiration or inactivation of permit coverage.
- b) The permittee shall retain a copy of the SWMP required by this permit at the construction site from the date of project initiation to the date of expiration or inactivation of permit coverage, unless another location, specified by the permittee, is approved by the Division.

3. **Monitoring**

The Division reserves the right to require sampling and testing, on a case-by-case basis (see Part I.D.1.e), for example to implement the provisions of a TMDL (see Part I.D.11 of the permit). Reporting procedures for any monitoring data collected will be included in the notification by the Division of monitoring requirements.

If monitoring is required, the following definitions apply:

- a) The **thirty (30) day average** shall be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period.
- b) A **grab** sample, for monitoring requirements, is a single “dip and take” sample.

PART II

A. MANAGEMENT REQUIREMENTS

1. **Amending a Permit Certification**

The permittee shall inform the Division (Permits Section) in writing of changes to the information provided in the permit application, including the legal contact, the project legal description or map originally submitted with the application, or the planned total disturbed acreage. The permittee shall furnish the Division with any plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge and receiving stream. If applicable, this notification may be accomplished through submittal of an application for a CDPS process water permit authorizing the discharge. The SWMP shall be updated and implemented prior to the changes (see Part I.D.5.c).

Any discharge to the waters of the State from a point source other than specifically authorized by this permit or a different CDPS permit is prohibited.

2. **Special Notifications - Definitions**

- a) **Spill:** An unintentional release of solid or liquid material which may cause pollution of state waters.
- b) **Upset:** An exceptional incident in which there is unintentional and temporary noncompliance with permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

3. **Noncompliance Notification**

- a) The permittee shall report the following instances of noncompliance:
  - 1) Any noncompliance which may endanger health or the environment;
  - 2) Any spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
  - 3) Any discharge of stormwater which may cause an exceedance of a water quality standard.
- b) For all instances of noncompliance based on environmental hazards and chemical spills and releases, all needed information must be provided orally to the Colorado Department of Public Health and Environment spill reporting line (24-hour number for environmental hazards and chemical spills and releases: 1-877-518-5608) within 24 hours from the time the permittee becomes aware of the circumstances.

For all other instances of noncompliance as defined in this section, all needed information must be provided orally to the Water Quality Control Division within 24 hours from the time the permittee becomes aware of the circumstances.

For all instances of noncompliance identified here, a written submission shall also be provided within 5 calendar days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of:

- 1) The noncompliance and its cause;
- 2) The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue;
- 3) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

A. MANAGEMENT REQUIREMENTS (cont.)

4. **Submission of Incorrect or Incomplete Information**

Where the permittee failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or report to the Division, or relevant new information becomes available, the permittee shall promptly submit the relevant application information which was not submitted or any additional information needed to correct any erroneous information previously submitted.

5. **Bypass**

a) A bypass, which causes effluent limitations (i.e., requirements to implement BMPs in accordance with Parts I.B.3 and I.D.2 of the permit) to be exceeded is prohibited, and the Division may take enforcement action against a permittee for such a bypass, unless:

- 1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- 2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities (e.g., alternative BMPs), retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment (e.g., implemented additional BMPs) to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- 3) The permittee submitted notices as required in "Non-Compliance Notification," Part II.A.3.

6. **Upsets**

a) **Effect of an Upset:** An upset constitutes an affirmative defense to an action brought for noncompliance with permit limitations and requirements if the requirements of paragraph b of this section are met. (No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.)

b) **Conditions Necessary for a Demonstration of Upset:** A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- 1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
- 2) The permitted facility was at the time being properly operated;
- 3) The permittee submitted notice of the upset as required in Part II.A.3. of this permit (24-hour notice); and
- 4) The permittee complied with any remedial measures required under 40 CFR Section 122.41(d) of the federal regulations or Section 61.8(3)(h) of the Colorado Discharge Permit System Regulations.

c) **Burden of Proof:** In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

7. **Removed Substances**

Solids, sludges, or other pollutants removed in the course of treatment or control of discharges shall be properly disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State.

8. **Minimization of Adverse Impact**

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with any terms and conditions specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A. MANAGEMENT REQUIREMENTS (cont.)

9. **Reduction, Loss, or Failure of Stormwater Controls**

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the permit requirements. Upon reduction, loss, or failure of any stormwater controls, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, or remove all pollutant sources from exposure to stormwater, or both, until the stormwater controls are restored or an alternative method of treatment/control is provided.

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

10. **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 conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

B. RESPONSIBILITIES

1. **Inspections and Right to Entry**

The permittee shall allow the Director of the State Water Quality Control Division, the EPA Regional Administrator, and/or their authorized representative(s), upon the presentation of credentials:

- a) To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
- b) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and
- c) To enter upon the permittee's premises to investigate, within reason, any actual, suspected, or potential source of water pollution, or any violation of the Colorado Water Quality Control Act. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing permittee staff on alleged violations and other matters related to the permit, and access to any and all facilities or areas within the permittee's premises that may have any effect on the discharge, permit, or any alleged violation.

2. **Duty to Provide Information**

The permittee shall furnish to the Division, within the time frame specified by the Division, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or inactivating coverage under this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

3. **Transfer of Ownership or Control**

Certification under this permit may be transferred to a new permittee if:

- a) The current permittee notifies the Division in writing when the transfer is desired as outlined in Part I.A.7; and
- b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; and
- c) The current permittee has met all fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15.

B. RESPONSIBILITIES (cont.)

4. **Modification, Suspension, or Revocation of Permit By Division**

All permit modification, inactivation or revocation and reissuance actions shall be subject to the requirements of the Colorado Discharge Permit System Regulations, Sections 61.5(2), 61.5(3), 61.7 and 61.15, 5 C.C.R. 1002-61, except for minor modifications.

- a) This permit, and/or certification under this permit, may be modified, suspended, or revoked in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:
  - 1) Violation of any terms or conditions of the permit;
  - 2) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit;
  - 3) Materially false or inaccurate statements or information in the application for the permit;
  - 4) Promulgation of toxic effluent standards or prohibitions (including any schedule of compliance specified in such effluent standard or prohibition) which are established under Section 307 of the Clean Water Act, where such a toxic pollutant is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit.
- b) This permit, and/or certification under this permit, may be modified in whole or in part due to a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge, such as:
  - 1) Promulgation of Water Quality Standards applicable to waters affected by the permitted discharge; or
  - 2) Effluent limitations or other requirements applicable pursuant to the State Act or federal requirements; or
  - 3) Control regulations promulgated; or
  - 4) Other available information indicates a potential for violation of adopted Water Quality Standards or stream classifications.
- c) This permit, or certification under this permit, may be modified in whole or in part to include new effluent limitations and other appropriate permit conditions where data submitted pursuant to Part I indicate that such effluent limitations and permit conditions are necessary to ensure compliance with applicable water quality standards and protection of classified uses.
- d) At the request of the permittee, the Division may modify or inactivate certification under this permit if the following conditions are met:
  - 1) In the case of inactivation, the permittee notifies the Division of its intent to inactivate the certification, and certifies that the site has been finally stabilized;
  - 2) In the case of inactivation, the permittee has ceased any and all discharges to state waters and demonstrates to the Division there is no probability of further uncontrolled discharge(s) which may affect waters of the State.
  - 3) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modification, amendment or inactivation;
  - 4) Fee requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met; and
  - 5) Applicable requirements of public notice have been met.

For small construction sites covered by a Qualifying Local Program, coverage under this permit is automatically terminated when a site has been finally stabilized.

B. RESPONSIBILITIES (cont.)

5. **Permit Violations**

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit.

Dischargers of stormwater associated with industrial activity, as defined in the EPA Stormwater Regulation (40 CFR 122.26(b)(14) and Section 61.3(2) of the Colorado Discharge Permit System Regulations, which do not obtain coverage under this or other Colorado general permits, or under an individual CDPS permit regulating industrial stormwater, will be in violation of the federal Clean Water Act and the Colorado Water Quality Control Act, 25-8-101, as amended. Failure to comply with CDPS permit requirements will also constitute a violation.

6. **Legal Responsibilities**

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

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act.

7. **Severability**

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

8. **Renewal Application**

If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least ninety (90) days before this permit expires. If the permittee anticipates that there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can inactivate the certification in accordance with Part II.B.4.d.

9. **Confidentiality**

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and Colorado Discharge Permit System Regulations, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division. The permittee must state what is confidential at the time of submittal.

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

10. **Fees**

The permittee is required to submit payment of an annual fee as set forth in the Water Quality Control Act. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

B. RESPONSIBILITIES (cont.)

11. **Requiring an Individual CDPS Permit**

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

- a) The discharger is not in compliance with the conditions of this general permit;
- b) Conditions or standards have changed so that the discharge no longer qualifies for a general permit; or
- c) Data/information become available which indicate water quality standards may be violated.

The permittee must be notified in writing that an application for an individual or alternate general CDPS permit is required. When an individual or alternate general CDPS permit is issued to an operator otherwise covered under this general permit, the applicability of this general permit to that operator is automatically inactivated upon the effective date of the individual or alternate general CDPS permit.



## **RATIONALE**

### **STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY**

#### **GENERAL PERMIT IN COLORADO THIRD RENEWAL COLORADO DISCHARGE PERMIT NUMBER COR-030000**

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#### **I. INTRODUCTION**

*This permit is for the regulation of stormwater runoff from construction activities, and specific allowable non-stormwater discharges in accordance with Part I.D.3 of the permit. The term "construction activity" includes ground surface disturbing activities, including, but not limited to, clearing, grading, excavation, demolition, installation of new or improved haul and access roads, staging areas, stockpiling of fill materials, and borrow areas. "Stormwater" is precipitation-induced surface runoff. This rationale will explain the background of the Stormwater program, activities which are covered under this permit, how to apply for coverage under this permit, and the requirements of this permit.*

***The forms discussed in the rationale and permit are available on the Water Quality Control Division's website at: [www.cdphe.state.co.us/wq/PermitsUnit](http://www.cdphe.state.co.us/wq/PermitsUnit)***

#### **II. CHANGES IN THIS GENERAL PERMIT**

*Several notable changes from the previous General Permit for Construction Activities have been incorporated into this permit. Significant changes are listed below. Numerous other minor changes were made for clarification purposes only.*

##### ***A. Authority to Discharge***

*This section has been restructured to list all of the types of activities covered by this permit, and to be consistent with the definition of "construction activity." The definition of construction activity has been expanded to provide clarification. See Part I.A.1 of the permit.*

## II. CHANGES IN THIS GENERAL PERMIT (cont.)

### B. Authority to Discharge – Oil and Gas Construction

*This section has been added, to take into account a regulatory change. The federal Energy Policy Act of 2005 exempts nearly all oil and gas construction activities from federal requirements under the Clean Water Act's NPDES stormwater discharge permit program. In January 2006, the Colorado Water Quality Control Commission held a hearing to determine what effects, if any, the change in federal law would have upon Colorado's stormwater regulations. The Commission determined that oil and gas construction sites in Colorado that disturb one or more acres are still required to be covered under Colorado's stormwater permitting regulations (Colorado Discharge Permit System (CDPS) regulations (5CCR 1002-61)). In practice, oil and gas construction sites have the same requirements under this permit as do other types of construction. However, this permit contains some references to the federal Clean Water Act; generally these references are not applicable to oil and gas construction sites to the extent that the references are limited by the federal Energy Policy Act of 2005. See Part I.A.1(b) of the permit.*

### C. Application Requirements

*The permit application requirements have changed slightly, including the addition of an email address, if available. See Part I.A.4(b).*

*The applicant must be either the owner and/or operator of the construction site. An operator at a construction site that is not covered by a certification held by an appropriate entity may be held liable for operating without the necessary permit coverage.*

### D. Temporary Coverage

*Part I.A.5(d) of the previous permit (effective July 1, 2002) dealt with temporarily covering a facility under the general permit even if an individual permit is more appropriate. This permit section essentially duplicated the previous section (see Part I.A.5(c)), and so it has been deleted.*

### E. Reassignment of Permit Coverage

*Procedures have been added to clarify the requirements for the transfer of coverage of specific portions of a permitted site to a second party. See Section VIII.I.3 of the rationale and Part I.A.8 of the permit.*

### F. Individual Permit Criteria

*This section has been modified to include situations involving a Total Maximum Daily Load (TMDL). See Part I.A.11 of the permit.*

### G. Stormwater Management Plan (SWMP)

*The Stormwater Management Plan section has been divided into two parts: Stormwater Management Plan (SWMP) – General Requirements, which provides the basic framework and general requirements for the SWMP, and Stormwater Management Plan (SWMP) – Contents, which specifically identifies each item that must be addressed in the SWMP. See Parts I.B and I.C of the permit.*

### H. Stormwater Management Plan (SWMP) – General Requirements

*The SWMP General Requirements section has been modified to require that the SWMP be updated in accordance with Parts I.D.5(c) and I.D.5(d) of the permit (SWMP Review/Changes). This additional requirement ensures that the SWMP provisions reflect current site conditions. See Part I.B.2(c) of the permit.*

## II. CHANGES IN THIS GENERAL PERMIT (cont.)

### I. Stormwater Management Plan (SWMP) – Contents

The SWMP Contents section has been modified. Some of the changes are limited to organization of information, which does not require modification of an existing permittee's current SWMP. Most of the SWMP changes involve either clarifications, reformatting, or taking recommendations from the Division's SWMP guide and making them permit requirements (e.g., vehicle tracking controls, BMP installation specifications). If an **existing permittee (i.e., those with permit coverage before June 30, 2007)** followed the recommendations in the SWMP guide (Appendix A of the permit application), then their SWMP will presumably meet the new requirements. However, for any existing permittees who did not follow the applicable SWMP guide recommendations, their SWMP must be amended to include the new required items:

-SWMP Administrator

-Identification of potential pollutant sources

-Best Management Practices descriptions and installation specifications, including dedicated concrete or asphalt batch plants; vehicle tracking control; and waste management and disposal (including concrete washout activities).

For existing permittees, any SWMP changes based on the change in permit requirements must be completed by **October 1, 2007**. The plan is not to be submitted to the Division unless requested, but must be available on site as outlined in Part I.D.5(b) of the permit.

The BMP requirement clarifications included in this renewed permit in no way imply that adequate BMPs to address all pollutant sources at a permitted site were not required in previous permits. The revised requirements are intended only to better clarify SWMP content requirements and provide improved direction to permittees.

The SWMP changes are listed below. All new applicants (after June 30, 2007) for permit coverage for their sites must fully comply with the new SWMP organization, plan requirements, and implementation.

1. **Site Description:** The requirement to provide an estimate of the run-off coefficient has been removed. The run-off coefficient as currently utilized in the SWMP may not contribute sufficiently to permit compliance to justify the effort in determining accurate values. See Part I.C.1 of the permit. However, the Division still encourages use of the coefficient as needed to adequately evaluate site-specific BMP selection and design criteria (e.g., pond capacities, BMP location, etc.) See Section C.2 of the SWMP guidance (Appendix A of the permit application).
2. **Site Map:** The requirement to identify boundaries of the 100-year flood plain has been removed. The boundaries as currently utilized in the SWMP may not contribute sufficiently to permit compliance to justify the effort in determining their location. See Part I.C.2 of the permit.
3. **Stormwater Management Controls:** This section has been modified to require identification of a SWMP Administrator and all potential pollutant sources in the SWMP. See Part I.C.3 of the permit.
  - a) The SWMP Administrator is a specific individual(s), position or title who is responsible for the process of developing, implementing, maintaining, and revising the SWMP. This individual serves as the comprehensive point of contact for all aspects of the facility's SWMP. **This requirement may necessitate changes to existing permittees' SWMPs.**

II. CHANGES IN THIS GENERAL PERMIT (cont.)

- b) *The requirement to identify Potential Pollutant Sources has been expanded to include more details for the evaluation of such sources. This evaluation allows for the appropriate selection of BMPs for implementation at a facility or site. Additionally, this section was added to be consistent with the SWMP guide. **This requirement may necessitate changes to existing permittees' SWMPs.***
  
- c) *Best Management Practices (BMPs) for Stormwater Pollution Prevention: This section was modified to require the following items to be addressed in the SWMP. **These requirements may necessitate changes to existing permittees' SWMPs.** This section also requires that the SWMP provide installation and implementation specifications for each BMP identified in the SWMP. For structural BMPs, in most cases, this must include a technical drawing to provide adequate installation specifications. See Part I.C.3(c).*
  - i) *Dedicated concrete or asphalt batch plants. This section requires that the practices used to reduce the pollutants in stormwater discharges associated with dedicated concrete or asphalt batch plants be identified in the SWMP. (Coverage under the construction site SWMP and permit is not required for batch plants if they have alternate CDPS permit coverage.)*
  - ii) *Vehicle tracking control. This section requires that practices be implemented to control sediment from vehicle tracking, and that all such practices implemented at the site be clearly described in the SWMP.*
  - iii) *Waste management and disposal. This section requires that the practices implemented at the site to control stormwater pollution from construction site waste, including concrete washout activities, be clearly described in the SWMP. It also requires that concrete washout activities be conducted in a manner that does not contribute pollutants to surface waters or stormwater runoff.*
  - iv) *Concrete Washout Water. Part I.D.3(c) of the permit has been revised to conditionally authorize discharges to the ground of concrete wash water from washing of tools and concrete mixer chutes when appropriate BMPs are implemented. The permit prohibits the discharge of concrete washout water to surface waters and to storm sewer systems. Part I.C.3(c)(7) of the permit requires that BMPs be in place to prevent surface discharges of concrete washout water from the site.*

*The use of unlined pits to contain concrete washout water is a common practice in Colorado. The Division has further evaluated the need for a permit for discharge of concrete washout water to the ground. The Division has determined that the use of appropriate BMPs for on-site washing of tools and concrete mixer chutes would prevent any significant discharge to groundwater. BMPs to protect groundwater are required by Part I.C.3(c)(7) of the permit. Because pH is a pollutant of concern for washout activities, the soil must have adequate buffering capacity to result in protection of the groundwater standard, or a liner/containment must be used. The following management practices are recommended to prevent an impact from unlined pits to groundwater:*

- (1) the use of the washout site should be temporary (less than 1 year), and*
- (2) the washout site should be not be located in an area where shallow groundwater may be present, such as near natural drainages, springs, or wetlands.*

## II. CHANGES IN THIS GENERAL PERMIT (cont.)

Where adequate management practices are not followed to protect groundwater quality, the Department may require discharges to unlined pits to cease, or require the entity to obtain alternate regulatory approval through notice from either the Water Quality Control Division or the Hazardous Materials and Waste Management Division.

In addition, Part I.D.1(b) of the permit has been revised to clearly state that the permit does not authorize on-site permanent disposal of concrete washout waste, only temporary containment of concrete washout water from washing of tools and concrete mixer chutes. Upon termination of use of the washout site, accumulated solid waste, including concrete waste and any contaminated soils, must be removed from the site to prevent on-site disposal of solid waste.

- v) *Construction Dewatering.* Part I.D.3(d) of the permit has been revised to conditionally authorize discharges to the ground of water from construction dewatering activities when appropriate BMPs are implemented. The permit does not authorize the discharge of groundwater from construction dewatering to surface waters or to storm sewer systems. Part I.C.3(c)(8) of the permit requires that BMPs be in place to prevent surface discharges. The permittee may apply for coverage under a separate CDPS discharge permit, such as the Construction Dewatering general permit, if there is a potential for discharges to surface waters.

The Division has determined that potential pollutant sources introduced into groundwater from construction dewatering operations do not have a reasonable potential to result in exceedance of groundwater standards when the discharge is to the ground. The primary pollutant of concern in uncontaminated groundwater is sediment. Although technology-based standards for sediment do exist in 5 CCR 1002-41, the discharge of sediment to the ground as part of construction dewatering does not have the reasonable potential to result in transport of sediment to the groundwater table so as to result in an exceedance of those standards.

For a discharge of water contaminated with other pollutants that are present in concentrations that may cause an exceedance of groundwater standards, separate CDPS discharge permit coverage is required. Contaminated groundwater may include that contaminated with pollutants from a landfill, mining activity, industrial pollutant plume, underground storage tank, or other source of human-induced groundwater pollution and exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42.

### J. Terms and Conditions, General Limitations and Design Standards

This section reiterates the requirement that facilities select, install, implement, and maintain appropriate BMPs, following good engineering, hydrologic and pollution control practices. In addition, requirements for protection of water quality standards (see Part I.D.1.(a) of the permit) and requirements to adequately design BMPs to prevent pollution or degradation of State waters (see Part I.D.2 of the permit) have been revised and are fully discussed in Part III.B of the rationale, below. Additional language was also added to Section III.B of the rationale further clarifying the expectations for compliance with this permit.

#### 1. Management of Site Waste

This section has been modified to clarify that on-site waste must be properly managed to prevent potential pollution of State waters, and that this permit does not authorize on-site waste disposal. Solid waste disposal is regulated by the Hazardous Materials and Waste Management Division.

## II. CHANGES IN THIS GENERAL PERMIT (cont.)

### K. Terms and Conditions, SWMP Requirements

1. **SWMP Review/Changes:** *This section now requires that when changes are made to site conditions, the SWMP must be revised immediately, except for some BMP description changes which conditionally may occur within 72 hours. This requirement is included to both ensure that the SWMP be kept accurate and up-to-date, and to clarify that stormwater management at a site typically should be proactive instead of responsive, and be integrated into site management to ensure it is calibrated with those changes. The section was also clarified to state that only changes in site conditions that do not require new or modified BMPs do not need to be addressed in the SWMP. See Part I.D.5(c) of the permit.*
2. **SWMP Certification:** *The previous permit was unclear on a requirement that the copy of SWMP that remains at the facility had to be signed in accordance with permit signatory requirements. This requirement has been deleted. The signatory requirement of Part I.F.1 only applies to the SWMP if it is to be submitted to the Division or to EPA. See Part I.F.1 of the permit.*

### L. Terms and Conditions, Post-Storm Inspections

*The previous permit required post-storm inspections, but did not specify the timing of inspections. This section now requires that post-storm event inspections generally be conducted within 24 hours of the event. An alternative timeline has been allowed, only for sites where there are no construction activities occurring following a storm event. For this condition, post-storm event inspections shall instead be conducted prior to commencing construction activities, but no later than 72 hours following the storm event, and the delay noted in the inspection report.*

*Any exception from the minimum inspection schedule is temporary, and does not eliminate the requirement to perform routine maintenance due to the effects of a storm event, including maintaining vehicle tracking controls and removing sediment from impervious areas. In many cases, maintenance needs will require a more frequent inspection schedule than the minimum inspections required in the permit, to ensure that BMPs continue to operate as needed to comply with the permit. See Part I.D.6(a) of the permit.*

### M. Terms and Conditions, Inspections

1. *The Winter Conditions Inspection Exclusion section has been modified to include documentation requirements for this exclusion. See Part I.D.6(a) of the permit. The Inspection Scope has been modified to include the requirement to inspect waste storage areas during inspections conducted in accordance with the permit. See Part I.D.6(b) of the permit.*
2. *The requirements for sites to qualify for reduced inspection frequencies for completed sites have been slightly modified (see Part I.D.6(a)(2) of the permit.). The requirement now is that only construction activities that disturb the ground surface must be completed. Construction activities that can be conducted without disturbance of the ground surface; for example, interior building construction, and some oil well activities, would not prohibit a site from otherwise qualifying for the reduced inspection frequency. In addition, the requirement for the site to be prepared for final stabilization has been slightly modified to allow for sites that have not yet been seeded to qualify, as long as the site has otherwise been prepared for final stabilization, including completion of appropriate soil preparation, amendments and stabilization practice. This will allow for sites with seasonal seeding limitations or where additional seed application may be needed in the future to still qualify.*

II. CHANGES IN THIS GENERAL PERMIT (cont.)

3. *The Inspection Report/Records section (Part I.D.6(b)(2)) was added to clarify requirements for inspection reports generated during an inspection conducted in accordance with Part I.D.6 of the permit. Inspection reports must be signed by the inspector, or the individual verifying the corrective action indicated in the inspection report, on behalf of the permittee. Inspection reports are not typically required to be submitted to the Division, and therefore, are not required to be signed and certified for accuracy in accordance with Part I.F.1 of the permit. However, any inspection reports that are submitted to the Division must follow the signatory requirements contained in that section.*

N. Terms and Conditions, Maintenance, Repair, and Replacement of Control Practices

*These sections have been added to clarify requirements for maintaining the BMPs identified in the SWMP and for addressing ineffective or failed BMPs. BMP maintenance and site assessment to determine the overall adequacy of stormwater quality management at the site must occur proactively, in order to ensure adequate control of pollutant sources at the site. In most cases, if BMPs are already not operating effectively, or have failed, the issue must be addressed immediately, to prevent discharge of pollutants. See Parts I.D.7 and I.D.8 of the permit.*

O. Total Maximum Daily Load (TMDL)

*A section on TMDLs has been added. This section gives a general outline of the additional requirements that may be imposed by the Division if the facility discharges to a waterbody for which a stormwater-related TMDL is in place. See Section VIII.C of the rationale and Part I.D.11 of the permit.*

P. Additional Definitions

*Part I.E of the permit has been modified to remove the definition of runoff coefficient, as it is no longer a permit requirement. The definition for state waters has also been deleted, but can be found in Regulation 61.*

Q. Changes in Discharge

*The section on the types of discharge or facility changes that necessitate Division notification has been clarified. See Part II.A.1 of the permit.*

R. Non-Compliance Notification

*The section on notification to the Division regarding instances of non-compliance has been amended to clarify which types of noncompliance require notification. See Part II.A.3 of the permit.*

S. Short Term Certifications

*The previous permit allowed small short-term construction activities to be authorized for a predetermined period from 3 to 12 months, and then automatically expire (an inactivation request did not need to be submitted). The issuance of these certifications has led to significant confusion and incidents of noncompliance resulting from permittees unintentionally letting their certifications expire prior to final stabilization, as well as issues regarding billing. Therefore, the provisions for short-term certifications have been deleted.*

T. Bypass

*The Division has revised the Bypass conditions in Part II.A.5 of the permit to be consistent with the requirements of Regulation 61.8(3)(i). The revised language addresses under what rare occurrences BMPs may be bypassed at a site.*

### III. BACKGROUND

*As required under the Clean Water Act amendments of 1987, the Environmental Protection Agency (EPA) has established a framework for regulating municipal and industrial stormwater discharges. This framework is under the National Pollutant Discharge Elimination System (NPDES) program (Note: The Colorado program is referred to as the Colorado Discharge Permit System, or CDPS, instead of NPDES.) The Water Quality Control Division ("the Division") has stormwater regulations (5CCR 1002-61) in place. These regulations require specific types of industrial facilities that discharge stormwater associated with industrial activity (industrial stormwater), to obtain a CDPS permit for such discharge. The regulations specifically include construction activities that disturb one acre of land or more as industrial facilities. Construction activities that are part of a larger common plan of development which disturb one acre or more over a period of time are also included.*

#### A. General Permits

*The Division has determined that the use of general permits is the appropriate procedure for handling most of the thousands of industrial stormwater applications within the State.*

#### B. Permit Requirements

*This permit does not impose numeric effluent limits or require submission of effluent monitoring data in the permit application or in the permit itself. The permit instead imposes practice-based effluent limitations for stormwater discharges through the requirement to develop and implement a Stormwater Management Plan (SWMP). The narrative permit requirements include prohibitions against discharges of non-stormwater (e.g., process water). See Part I.D.3 of the permit.*

*The permit conditions for the SWMP include the requirement for dischargers to select, implement and maintain Best Management Practices (BMPs) at a permitted construction site that adequately minimize pollutants in the discharges to assure compliance with the terms and conditions of the permit. Part I.D.2 of the permit includes basic design standards for BMPs implemented at the site. Facilities must select, install, implement, and maintain appropriate BMPs, following good engineering, hydrologic and pollution control practices. BMPs implemented at the site must be adequately designed to control all potential pollutant sources associated with construction activity to prevent pollution or degradation of State waters. Pollution is defined in CDPS regulations (5CCR 1002-61) as man-made or man-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water. Utilizing industry-accepted standards for BMP selection that are appropriate for the conditions and pollutant sources present will typically be adequate to meet these criteria, since construction BMPs are intended to prevent the discharge of all but minimal amounts of sediment or other pollutants that would not result in actual pollution of State waters, as defined above. However, site-specific design, including ongoing assessment of BMPs and pollutant sources, is necessary to ensure that BMPs operate as intended.*

*The permit further requires that stormwater discharges from construction activities shall not cause, have the reasonable potential to cause, or measurably contribute to an excursion above any water quality standard, including narrative standards for water quality. This condition is the basis for all CDPS Discharge permits, and addresses the need to ensure that waters of the State maintain adequate water quality, in accordance with water quality standards, to continue to meet their designated uses. It is believed that, in most cases, BMPs can be adequate to meet applicable water quality standards. If water quality impacts are noted, or the Division otherwise determines that additional permit requirements are necessary, they are typically imposed as follows: 1) at the renewal of this general permit or through a general permit specific to an industrial sector (if the issue is sector-based); 2) through direction from the Division based on the implementation of a TMDL (if the issue is watershed-based); or 3) if the issue is site-specific, through a revision to the certification from the Division based on an inspection or SWMP review, or through an individual permit.*



### III. BACKGROUND (cont.)

Some construction sites may be required to comply with a Qualifying Local Program in place of meeting several of the specific requirements in this permit. Sites covered by a Qualifying Local Program may not be required to submit an application for coverage or a notice of inactivation and may not be required to pay the Division's annual fee. See Section VII of the rationale.

#### C. Violations/Penalties

Dischargers of stormwater associated with industrial activity, as defined in the CDPS regulations (5CCR 1002-61), that do not obtain coverage under this or other Colorado general permits, or under an individual CDPS permit regulating industrial stormwater, will be in violation of the Federal Clean Water Act and the Colorado Water Quality Control Act, 25-8-101. For facilities covered under a CDPS permit, failure to comply with any CDPS permit requirement constitutes a violation. As of the time of permit issuance, civil penalties for violations of the Act or CDPS permit requirements may be up to \$10,000 per day, and criminal pollution of state waters is punishable by fines of up to \$25,000 per day.

### IV. STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

The stormwater regulations (CDPS regulations (5CCR 1002-61)), require that stormwater discharges associated with certain industrial activities be covered under the permit program. Construction activity that disturbs one acre or more during the life of the project is specifically included in the listed industrial activities. This permit is intended to cover most stormwater discharges from construction facilities required by State regulation to obtain a permit.

#### A. Construction Activity

Construction activity includes ground surface disturbing activities including, but not limited to, clearing, grading, excavation, demolition, installation of new or improved haul and access roads, staging areas, stockpiling of fill materials, and dedicated borrow/fill areas. Construction does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility. (The maintenance exclusion is intended for projects such as road resurfacing, and where there will be less than one acre of additional ground disturbed. Improvements or upgrades to existing facilities or roads, where at least one acre is disturbed, would not qualify as "routine maintenance.")

Definitions of additional terms can be found in Part I.E of the permit.

Stormwater discharges from all construction activity require permit coverage, except for operations that result in the disturbance of less than one acre of total land area and which are not part of a larger common plan of development or sale. A "larger common plan of development or sale" is a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules.

#### B. Types of Discharges/Activities Covered

1. **Stormwater:** This permit is intended to cover most new or existing discharges composed **entirely** of stormwater from construction activities that are required by State regulation to obtain a permit. This includes stormwater discharges associated with areas that are dedicated to producing earthen materials, such as soils, sand, and gravel, for use at a single construction site. These areas may be located at the construction site or at some other location. This permit does not authorize the discharge of mine water or process water from borrow areas. This permit may also cover stormwater discharges associated with dedicated asphalt plants and concrete plants located at a specific construction site.

#### IV. STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (cont.)

2. **Process water:** Under certain restrictions, discharges to the ground from construction dewatering, and from concrete washout activities, are also covered (see Parts I.C.3(c)(7), I.C.3(c)(8), I.D.3(c) and I.D.3(d) of the permit).

#### C. Types of Activities NOT Covered

1. **Stormwater:** Aside from the sources listed in subparagraph B.1, above, this permit does not cover stormwater discharged from construction sites that is mixed with stormwater from other types of industrial activities, or process water of any kind. Other types of industrial activities that require stormwater discharge permits pursuant to different sections of the regulations (Regulation 5 CCR 1002-61, Section 61.2(e)(iii)(A-I, K)], are not covered by this permit.
2. **Process water:** This permit also does not cover any discharge of process water to surface waters. If the construction activity encounters groundwater, in order to discharge this groundwater to surface waters, a Construction Dewatering Discharge Permit (permit number COG-070000) must also be obtained. An application for this permit can be obtained from the Division at the address listed in Part I.A.4(a) of the permit, or at the website in Section I of the rationale.

#### V. COVERAGE UNDER THIS GENERAL PERMIT

Under this general permit, owners or operators of stormwater discharges associated with construction activity may be granted authorization to discharge stormwater into waters of the State of Colorado. This includes stormwater discharges associated with industrial activity from areas that are dedicated to producing earthen materials, such as soils, sand and gravel, for use at a single construction site, and dedicated asphalt plants and dedicated concrete plants.

This permit does not pre-empt or supersede the authority of other local, state or federal agencies to prohibit, restrict or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.

Authorization to discharge under the permit requires submittal of a completed application form and a certification that the SWMP is complete, unless the site is covered by a Qualifying Local Program. Upon receipt of all required information, the Division may allow or disallow coverage under the general permit.

#### VI. APPLICATION AND CERTIFICATION

At least **ten days** prior to the commencement of construction activities, the owner or operator of the construction site shall submit an original completed application which includes the signed certification that the SWMP is complete. Original signatures are required for the application to be considered complete. For small construction sites only, if the site is covered by a Qualifying Local Program (see below), submittal of an application is not required.

For the purposes of this permit, the "operator" is the person who has day-to-day control over the project. This can be the owner, the developer, the general contractor or the agent of one of these parties, in some circumstances. At different times during a construction project, different types of parties may satisfy the definition of "operator" and the certification may be transferred as roles change.

(Note - Under the Federal regulations, this application process is referred to as a Notice of Intent, or NOI. For internal consistency with its current program, the Division will continue to use the term "application.") A summary of the permit application requirements is found in the permit at Part I.A.4(b).

If coverage under this general permit is appropriate, then a certification will be developed and the applicant will be certified under this general permit.

## VII. QUALIFYING LOCAL PROGRAMS

For stormwater discharges associated with small construction activity (i.e., one to five acre disturbed area sites), the permit includes conditions that incorporate approved qualifying local erosion and sediment control program (Qualifying Local Program) requirements by reference. A Qualifying Local Program is a municipal stormwater program for stormwater discharges associated with small construction activity that has been formally approved by the Division. The requirements for Qualifying Local Programs are outlined in Part 61.8(12) of the Colorado Discharger Permit System Regulations (also see the Division's "Qualifying Local Programs for Small Construction Sites - Application Guidance"). Such programs must impose requirements to protect water quality that are at least as stringent as those required in this permit.

### A. Approval Termination

A Qualifying Local Program may be terminated by either the Division or the municipality. Upon termination of Division approval of a Qualifying Local Program, any small construction activity required to obtain permit coverage under Section 61.3(2)(h) of the CDPS regulations (5CCR 1002-61), shall submit an application form as provided by the Division, with a certification that the Stormwater Management Plan (SWMP) is complete as required by Part I.A.3 of the permit, within 30 days of Division notification.

### B. Approval Expiration

Division approval of a Qualifying Local Program will expire with this general permit on June 30, 2012. Any municipality desiring to continue Division approval of their program must reapply by March 31, 2012. The Division will determine if the program may continue as an approved Qualifying Local Program.

## VIII. TERMS AND CONDITIONS OF PERMIT

### A. Coverage under a Qualifying Local Program – For Small Construction Sites Only

For small construction sites (disturbing less than 5 acres) covered under a Qualifying Local Program (see Section VII, above), only certain permit requirements apply, as outlined below. The local program must have been formally designated by the Division to qualify. Most municipalities have some type of local program and may require permits and fees. However, simply having a program in place does not necessarily mean that it is a qualifying program and that a State permit is not required. The local municipality is responsible for notifying operators and/or owners that they are covered by a Qualifying Local Program. As of May 31, 2007, the only approved Qualifying Local Programs within the state are for Golden, Durango and Lakewood. An updated list of municipalities with Qualifying Local Programs, including contact information, is available on the Division's website at: <http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html>.

The Division reserves the right to require any construction owner or operator within the jurisdiction of a Qualifying Local Program covered under this permit to apply for and obtain coverage under the full requirements of this permit.

1. **Permit Coverage:** If a construction site is within the jurisdiction of a Qualifying Local Program, the owner or operator of the construction activity is authorized to discharge stormwater associated with small construction activity under this general permit **without** the submittal of an application to the Division. The permittee also is not required to submit an inactivation notice or payment of an annual fee to the Division.

VIII. TERMS AND CONDITIONS OF PERMIT (cont.)

2. **Permit Terms and Conditions:** *The permittee covered by a Qualifying Local Program must comply with the requirements of that Qualifying Local Program. In addition, the following permit sections are applicable:*
  - a) *Parts 1.A.1, 1.A.2, and 1.A.3: Authorization to discharge and discussion of coverage under the permit.*
  - b) *Part I.D.1: General limitations that must be met in addition to local requirements.*
  - c) *Parts I.D.2, I.D.3, I.D.4: BMP implementation, prohibition of non-stormwater discharges unless addressed in a separate CDPS permit, and requirements related to releases of reportable quantities.*
  - d) *Part I.D.11: Potential coverage under a Total Maximum Daily Load (TMDL).*
  - e) *Part I.E: Additional definitions.*
  - f) *Part II (except for Parts II.A.1, II.B.3, II.B.8, and II.B.10): Specifically includes, but is not limited to, provisions applicable in the case of noncompliance with permit requirements, and requirements to provide information and access.*

B. Stormwater Management Plans (SWMPs)

*Prior to commencement of construction, a stormwater management plan (SWMP) shall be developed and implemented for each facility covered by this permit. A certification that the SWMP is complete must be submitted with the permit application. The SWMP shall identify potential sources of pollution (including sediment) which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the facility. In addition, the plan shall describe the Best Management Practices (BMPs) which will be used to reduce the pollutants in stormwater discharges from the construction site. (Note that permanent stormwater controls, such as ponds, that are used as temporary construction BMPs must be adequately covered in the SWMP.) Facilities must implement the provisions of their SWMP as a condition of this permit. The SWMP shall include the following items:*

1. *Site Description*
2. *Site Map*
3. *Stormwater Management Controls*
4. *Long-term Stormwater Management*
5. *Inspection and Maintenance*

*(See Parts I.B. and I.C of the permit for a more detailed description of SWMP requirements.) The Division has a guidance document available on preparing a SWMP. The document is included as Appendix A of the permit application, and is available on the Division's website at [www.cdphe.state.co.us/wq/PermitsUnit](http://www.cdphe.state.co.us/wq/PermitsUnit).*

*Some changes have been made to the SWMP requirements. See Section II.I of the rationale for a discussion on permittee responsibilities regarding those changes.*

VIII. TERMS AND CONDITIONS OF PERMIT (cont.)

**Master SWMP**

Often, a large construction project will involve multiple smaller construction sites that are within a common plan of development, or multiple well pads under construction within an oil and gas well field. Pollutant sources and the types of BMPs used can be relatively consistent in such cases. A permittee could significantly streamline the SWMP development process through the use of a master SWMP. SWMP information must be developed and maintained for all construction activities that exceed one acre (or are part of a common plan of development exceeding one acre) conducted within the permitted area. By developing a single master plan, the permittee can eliminate the need to develop repetitive information in separate plans. Such a plan could include two sections, one containing a reference section with information applicable to all sites (e.g., installation details and maintenance requirements for many standard BMPs, such as silt fence and erosion blankets), and the second containing all of the information specific to each site (e.g., site BMP map, drainage plans, details for BMPs requiring site specific design, such as retention ponds).

As new activities begin, information required in the SWMP is added to the plan, and as areas become finally stabilized, the related information is removed. Records of information related to areas that have been finally stabilized that are removed from the active plan must be maintained for a period of at least three years from the date that the associated site is finally stabilized.

C. Total Maximum Daily Load (TMDL)

If the designated use of a stream or water body has been impaired by the presence of a pollutant(s), development of a Total Maximum Daily Load (TMDL) may be required. A TMDL is an estimate of allowable loading in the waterbody for the pollutant in question. Types of discharges that are or have the potential to be a significant source of the pollutant are also identified. If a TMDL has been approved for any waterbody into which the permittee discharges, and stormwater discharges associated with construction activity have been assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the Division will either:

1. Notify the permittee of the TMDL, and amend the permittee's certification to add specific BMPs and/or other requirements, as appropriate; or
2. Ensure that the TMDL is being implemented properly through alternative local requirements, such as by a municipal stormwater permit. (The only current example of this is the Cherry Creek Reservoir Control Regulation (72.0), which mandates that municipalities within the basin require specific BMPs for construction sites.)

See Part I.D.11 of the permit for further information.

D. Monitoring

Sampling and testing of stormwater for specific parameters is not required on a routine basis under this permit. However, the Division reserves the right to require sampling and testing on a case-by-case basis, in the event that there is reason to suspect that compliance with the SWMP is a problem, or to measure the effectiveness of the BMPs in removing pollutants in the effluent. See Part I.D.1(e) of the permit.

E. Facility Inspections

Construction sites typically must inspect their stormwater management controls at least every 14 days and within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. At sites or portions of sites where ground-disturbing construction has been completed but a vegetative cover has not been established, these inspections must occur at least once per month. (At sites where persistent snow cover conditions exist, inspections are not required during the period that melting conditions do not exist. These

VIII. TERMS AND CONDITIONS OF PERMIT (cont.)

conditions are only expected to occur at high elevations within the Colorado mountains.) For all of these inspections, records must be kept on file. Exceptions to the inspection requirements are detailed in Part I.D.6 of the permit.

F. SWMP Revisions

The permittee shall amend the SWMP whenever there is a change in design, construction, operation, or maintenance of the site, which would require the implementation of new or revised BMPs. The SWMP shall also be amended if it proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity. The timing for completion of SWMP changes is detailed in Parts I.D.5(c) and I.D.5(d) of the permit.

SWMP revisions shall be made prior to change in the field, or in accordance with Part I.D.5(d) of the permit.

G. Reporting

The inspection record shall be made available to the Division upon request. Regular submittal of an annual report is not required in this permit. See Part I.D.9 of the permit.

H. Annual Fee

The permittee is required to submit payment of an annual fee as set forth in the Water Quality Control Act. Permittees will be billed for the initial permit fee within a few weeks of permit issuance and then annually, based on a July 1 through June 30 billing cycle.

I. Responsibility for Permit

The permit certification for a site may be inactivated, once coverage is no longer needed. The certification may be transferred, if another party is assuming responsibility for the entire area covered by the certification. In addition, permit responsibility for **part** of the area covered by the certification may be reassigned to another party. These actions are summarized below. The Stormwater Program construction fact sheet explains these actions in further detail under the section on Multiple Owner/Developer Sites, and is available on the Division website at <http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/ConstFactSheet.PDF>, Section F.

1. **Inactivation Notice:** When a site has been finally stabilized in accordance with the SWMP, the permittee shall submit an **Inactivation Notice** that is signed in accordance with Part I.F.1 of the permit. A summary of the Inactivation Notice content is described in Part I.A.6 of the permit. A copy of the Inactivation Notice form will be mailed to the permittee along with the permit certification. Additional copies are available from the Division.

For sites where all areas have been removed from permit coverage, the permittee may submit an inactivation notice and terminate permit coverage. In such cases the permittee would no longer have any land covered under their permit certification, and therefore there would be no areas remaining to finally stabilize. Areas may be removed from permit coverage by:

- reassignment of permit coverage (Part I.A.8 of the permit);
- sale to homeowner(s) (Part I.A.9 of the permit); or
- amendment by the permittee, in accordance with Division guidance for areas where permit coverage has been obtained by a new operator or returned to agricultural use.

VIII. TERMS AND CONDITIONS OF PERMIT (cont.)

2. **Transfer of Permit:** When responsibility for stormwater discharges for an entire construction site changes from one individual to another, the permit shall be transferred in accordance with Part I.A.7 of the permit. The permittee shall submit a completed **Notice of Transfer form**, which is available from the Division, and at [www.cdphe.state.co.us/wq/PermitsUnit](http://www.cdphe.state.co.us/wq/PermitsUnit). If the new responsible party will not complete the transfer form, the permit may be inactivated if the permittee has no legal responsibility, through ownership or contract, for the construction activities at the site. In this case, the new owner or operator would be required to obtain permit coverage separately.
3. **Reassignment of Permit:** When a permittee no longer has control of a specific portion of a permitted site, and wishes to transfer coverage of that portion of the site to a second party, the permittee shall submit a completed **Notice of Reassignment of Permit Coverage form**, which is available from the Division, and at [www.cdphe.state.co.us/wq/PermitsUnit](http://www.cdphe.state.co.us/wq/PermitsUnit). The form requires that both the existing permittee and new permittee complete their respective sections. See Part I.A.8 of the permit.

J. Duration of Permit

The general permit will expire on June 30, 2012. The permittee's authority to discharge under this permit is approved until the expiration date of the general permit. Any permittee desiring continued coverage under the general permit past the expiration date must apply for recertification under the general permit at least 90 days prior to its expiration date.

Kathleen Rosow  
December 18, 2006

IX. PUBLIC NOTICE – 12/22/06

The permit was sent to public notice on December 22, 2006. A public meeting was requested, and was held on February 2, 2007. Numerous comments were received on the draft permit. Responses to those comments, and a summary of changes made to the draft permit, are in a separate document entitled "Division Response To Public Comments." The permit will be sent to a second public notice on March 23, 2007. Any changes resulting from the second public notice will be summarized in the rationale.

Kathleen Rosow  
March 22, 2007

X. PUBLIC NOTICE – 3/23/07

The permit was sent to public notice for a second time on March 23, 2007. Numerous comments were received on the second draft permit. Responses to those comments, and a summary of the additional changes made to the draft permit, are contained in a separate document entitled "Division Response To Public Comments Part II". This document is part of the rationale. Any changes based on the Division response are incorporated into the rationale and permit. The response document is available online at <http://www.cdphe.state.co.us/wq/PermitsUnit/stormwater/construction.html>, or by emailing [cdphe.wqstorm@state.co.us](mailto:cdphe.wqstorm@state.co.us), or by calling the Division at 303-692-3517.

Kathleen Rosow  
May 31, 2007



## CDPS GENERAL PERMIT

### CONSTRUCTION DEWATERING DISCHARGES

TO DISCHARGE UNDER THE COLORADO DISCHARGE PERMIT SYSTEM

PERMIT NUMBER COG070000

Colorado Department  
of Public Health  
and Environment

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), entities engaged in construction dewatering are authorized to discharge source water from authorized locations throughout the State of Colorado to specified waters of the State. Such discharges shall be in accordance with the conditions of this general permit.

This permit specifically authorizes the entity(s) listed on page 1 of this document (also known as the permit certification) to discharge process generated wastewaters, as of the effective dates stated on page 1 of the certification, in accordance with the permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) days of the date of issuance of the final permit determination, per the Colorado Discharge Permit System Regulations, 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Colorado Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

This permit and the authorization to discharge shall expire at midnight AUGUST 31, 2018

Modified and signed this 24<sup>th</sup> day of July, 2014.

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Janet Kieler, Permits  
Section Manager  
WATER QUALITY CONTROL  
DIVISION

**Permit Action Summary:**

**Minor Modification #2 – Issued July 24, 2014, Effective July 24, 2014: Part I.C.1.b**

**Minor Modification #1—Issued May 16, 2014, Effective May 16, 2014: Part I.E.1; Table B.1**

**Originally Issued and Signed: July 22, 2013, Effective September 1, 2013**



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## PART I

### A. COVERAGE UNDER THIS PERMIT

#### 1. Activities Covered

This permit authorizes the discharge of construction dewatering source water throughout the State of Colorado to waters of the state. Construction dewatering source water means groundwater, surface water, and stormwater that has mixed with the groundwater and/ or surface water (i.e. commingled stormwater runoff) that has come into contact with Construction Activities. This permit only authorizes discharges for which the source water is drawn from the specific area(s) identified in the application, or in subsequent notification(s) in accordance with Part II.A.2 and II.B.5 of the permit.

#### 2. Limitations on Coverage

All effluent limitations for this permit are applied at the point of discharge. Dilution (i.e., mixing zone) considerations are not applicable in this permit.

A discharge that would meet any of the following conditions at the time of the effective date of the permit authorization are not eligible for coverage under this permit and must apply for coverage under another general permit or under an individual permit:

- a. The Division has determined that there is a reasonable potential for a pollutant to be present in the source water at a concentration that is greater than a numeric water quality standard of the receiving water. Note that a numeric water quality standard does not exist for Total Suspended Solids, and therefore permit coverage is available for discharges that require treatment to meet the Total Suspended Solid limitation in this permit. The Division's evaluation to identify potential pollutants will include, but is not limited to:
  - known areas of contamination at or near the facility (e.g., hazardous waste site, leaking underground storage tanks, or additional sources other than what is normally encountered at excavation and construction sites),
  - naturally occurring pollutants that potentially exist in the source water, and
  - pollutants that have the potential to be added to the source water prior to discharge.

An exception to this limitation will be allowed for discharges with a reasonable potential for Benzene, Toluene, Ethylbenzene, and Xylene to be present in the source water at a concentration that is greater than a numeric water quality standard of the receiving water when the applicant can demonstrate that the construction dewatering source water does not have concentrations of these parameters that are greater than the water quality standard of the receiving water.

A discharge subject to this limitation following the effective date of the permit authorization shall be determined to be inconsistent with the conditions of the permit and the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

- b. The discharge(s) is to a receiving water designated as "outstanding waters."
- c. Discharges to ground water only cannot be covered under this general permit if subject to regulation by the EPA or by implementing agencies under Senate Bill 181. This exclusion does not apply to discharges to surface waters, including discharges to groundwater that are tributary to surface waters and for which the Division determines that the requirements of Regulation 61 applicable to surface waters apply.

Discharges that fall under the regulating authority of other agencies include:

- i. Discharges to Class V Injection Wells—Discharges to Class V Injection Wells within the state of Colorado are regulated by the Environmental Protection Agency (EPA), Region 8, through the Underground Injection Control (UIC) program. In accordance with of Colorado Discharge Permit System Regulations Section 61.14(1)(b)(vii), facilities operating under a permit issued pursuant to the UIC provisions are specifically exempt from coverage under the ground water discharge provisions of Regulation 61. A Class V Injection well is defined by EPA as any bored, drilled, or driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system.
- ii. Discharges to Surface Impoundments or Other Engineered Units—Facilities discharging wastewaters into surface impoundments and associated pipelines or other engineered units, even those designed for purposeful seepage (e.g. no liner or a seeping liner) shall be regulated by the Hazardous Materials Waste Management Division (HMWMD), Solid Waste Program.

### 3. Application Requirements

In order to apply for certification under this general permit, the applicant shall submit an application form as provided by the Division by mail or hand delivery **at least 30 days before the anticipated date of discharge**. The application in its entirety shall be submitted to:

Colorado Department of Public Health and Environment  
Water Quality Control Division  
Permits Section, WQCD-PCP-B2  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

Following review of the application, the Division may request additional information or deny the authorization to discharge under this general permit. If the Division determines that a new facility does not fall under the authority of the general permit, then the information received will be processed for an individual permit or the applicant may apply for coverage under an alternative general permit, and the applicant shall be notified of such a determination. If during the renewal process, the Division determines that a facility no longer qualifies for the general permit, then the certification may be revoked or the facility may be allowed to discharge under the general permit, with additional conditions in the amended certification, until an individual permit or alternative general permit is issued.

A permittee desiring continued coverage under the general permit must reapply **at least 180 days in advance of this permit expiration**. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. If a permittee was authorized to discharge under this permit prior to the expiration date, any discharges authorized under this permit will automatically remain covered by this permit until the earliest of:

- a. Authorization for coverage under a reissued permit or a replacement of this permit following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the application;
- b. The issuance and effect of a termination issued by the Division;
- c. The issuance or denial of an individual permit for the facility's discharges;
- d. A formal permit decision by the Division not to reissue this general permit, at which time the Division will identify a reasonable time period for covered dischargers to seek coverage under an

alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

e. The Division has informed the permittee that they are no longer covered under this permit.

#### 4. **Terminating Coverage**

To terminate permit coverage, the legal permit applicant or duly authorized agent must submit a complete and accurate Notice of Termination Form, to the address listed in Part I.A.3. The authorization to discharge under this permit terminates at midnight of the day that the termination is effective as notified by the Division. The permittee is responsible for meeting the terms of this permit until the authorization is terminated. The Notice of Termination must be signed in accordance with Part I.E.8 of this permit.

#### 5. **Modifying Existing Permit Coverage**

To modify an existing permit certification, the legal permit contact or duly authorized agent must submit a complete and accurate Modification Form, to the address listed in Part I.A.3. This form must be submitted to the Division at least 30 days prior to implementing any requested modifications that result in a discharge to state waters. The permittee is not authorized to discharge under the modified conditions until the modified certification is issued and effective. Modifications include but are not limited to: adding or removing discharge outfalls, adding new or additional chemicals to the treatment process or effluent, modifying treatment in a manner that would result in a new or altered discharge in terms of location or effluent quality, etc. The modification form must be signed in accordance with Part I.E.8 of this permit.

### **B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

#### 1. **Permitted Outfall(s)**

Beginning no earlier than the effective date listed on the permit certification and lasting through the expiration date of this permit, the permittee identified on the permit certification is authorized to discharge from the Outfall(s) listed on the permit certification in accordance with the conditions and limitations of this permit.

If requested in the permit application, the permit certification may identify an outfall as an undefined outfall, and the location of the discharge outfall will not be identified on the permit certification. For all undefined outfalls, the permittee must comply with the record keeping requirements in Part I.C.1.c (Discharge Log), reporting requirements in Part I.E.2 (Reporting for Undefined Outfalls), and the outfall location shall not be changed after a discharge has occurred except through a modification in accordance with Part I.A.5.

In order to keep permit certifications, discharge monitoring reports, and administration manageable, the Division is limiting the number of outfalls per permit certification to twenty (20). If the applicant has reason to request more than twenty outfall locations the Division may grant more outfalls on a case-by-case basis.

#### 2. **Numeric Effluent Limitations, Monitoring Frequencies, and Sample Types**

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), 5.C.C.R. 1002-61, the permitted discharge shall not contain effluent parameter concentrations that exceed the limitations specified in Table B.1 or B.2 below, as applicable to the outfall(s). For parameters for which the applicable note states that the analysis or monitoring will be included in the permit certification based on meeting specific

conditions, limitations and monitoring requirements are only applicable if identified in the permit certification for the specified outfall.

The permittee must monitor the effluent for all listed parameters at the frequency and sample types specified in Table B.1 or B.2 below, as applicable to the outfall(s).

Report only monitoring requirements for additional site-specific parameters may be included in the permit certification. Such additional monitoring may be required where this additional information will help the Division verify whether any anticipated changes or additional uncertainties reveal data that more accurately predicts actual effluent concentrations.

All required monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring must be reported on the Discharge Monitoring Report (DMR) form (See Part I.E).

**Table B.1, Numeric Effluent Limitations and Monitoring Requirements for all Discharges to Surface Water**

ICIS Code	Parameter	Note (below)	Discharge Limitations			Monitoring Conditions	
			30-Day Average	7-Day Average	Daily Maximum	Monitoring Frequency	Sample Type
50050	Flow, gpm	1	---	---	Limitation in Certification	Weekly	Instantaneous or Continuous Recorder
00530	Total Suspended Solids, mg/l		30	45	---	Weekly	Grab
84066	Oil and Grease	2	---	----	---	Weekly	Visual
03582	Oil and Grease, mg/l	2	----	----	10	Weekly	Grab
00400	pH, s.u.		----	----	6.5-9.0	Weekly	In-situ or Grab
70295	Total Dissolved Solids, mg/l	3	Report	----	Report	Monthly	Grab
00665	Total Phosphorus, mg/l, as P	4	Report	----	Report	Monthly	Grab
51040	E. Coli bacteria, per 100 ml	5	Limit in Certification	Limit in Certification	----	Weekly	Grab
34030	Benzene, ug/l	6	Limit in Certification	----	Limit in Certification	Weekly	Grab
34010	Toluene, ug/l	6	Limit in Certification	----	Limit in Certification	Weekly	Grab
37371	Ethylbenzene, ug/l	6	Limit in Certification	----	Limit in Certification	Weekly	Grab
81551	Xylene, ug/l	6	Limit in Certification	----	Limit in Certification	Weekly	Grab
	Metals, Organics, Inorganics, Temperature, RADs	7	Report	----	Report	Weekly	Grab

**Table B.2, Numeric Effluent Limitations and Monitoring Requirements for all Discharges to Ground Water**

Parameter ICIS Code	Note (below)	Discharge Limitations			Monitoring Conditions	
		30-Day Average	7-Day Average	Daily Maximum	Monitoring Frequency	Sample Type
50050 Flow, gpm	1	----	----	Limitation in Certification	Weekly	Instantaneous or Continuous Recorder
84066 Oil and Grease	2	----	-----	-	Weekly	Visual
03582 Oil and Grease, mg/l	2	----	-----	10	Weekly	Grab
00400 pH, s.u.		----	-----	6.5-8.5	Weekly	In-situ or Grab
70295 Total Dissolved Solids, mg/l	8	Limit in Certification	-----	Limit in Certification	Monthly	Grab
00665 Total Phosphorus, mg/l, as P	4	Report	-----	Report	Monthly	Grab
74056 Total Coliform, per 100 ml	5	2.2		23	Weekly	Grab
34030 Benzene, ug/l	6	Limit in Certification	-----	Limit in Certification	Weekly	Grab
34010 Toluene, ug/l	6	Limit in Certification	-----	Limit in Certification	Weekly	Grab
37371 Ethylbenzene, ug/l	6	Limit in Certification	-----	Limit in Certification	Weekly	Grab
81551 Xylene, ug/l	6	Limit in Certification	-----	Limit in Certification	Weekly	Grab
Metals, Organics, Inorganics, Temperature, RADs	7	Report	-----	Report	Weekly	Grab

**Notes for Tables B.1 and B.2:**

Note 1: Flow Limit— The acute flow limit will be equal to twice the maximum flow rate provided in the permit application and will be stated on the certification. However, if the discharge flow rate exceeds the maximum flow rate identified in the application, the permittee shall notify the Division in accordance with Part II.A.2. of the Permit. The method for measuring flow rates authorizes estimates.

Note 2: Oil and Grease—A visual observation of the discharge for each permitted outfall must be made once a week. In the event an oil sheen or floating oil is observed, a composite sample shall be collected weekly, analyzed, and reported on the DMR. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken must be included with the DMR.

- Note 3: Total Dissolved Solids (TDS) – Surface Water Outfalls—Analysis for salinity, measured as TDS, will be included in the permit certification for all discharges in the Colorado River Basin. Following the submittal of the initial six sets of monthly data, the Division shall determine whether the permittee is required to submit a report addressing salt removal in accordance with the Colorado River Salinity Standards, Regulation No. (5CCR 1002-39). If the salinity report is required, the Division shall so advise the permittee by letter or through the inclusion of a compliance schedule and the report shall be submitted within 180 days.
- Note 4: Total Phosphorus—Analysis for Total Phosphorus, as P, will be included in the permit certification for all discharges to waters with a control regulation for P. In accordance with the Dillon Reservoir Control Regulation (Regulation 71), monitoring for Total Phosphorus is required. In accordance with the Cherry Creek Reservoir Control Regulation (Regulation 72), monitoring and compliance with the Total Phosphorus chronic numeric effluent limit of 0.05mg/l is required. In accordance with the Chatfield Reservoir Control Regulation (Regulation 73), monitoring and compliance with the Total Phosphorus chronic numeric effluent limit of 1.0 mg/l is required. In accordance with the Bear Creek Watershed Control Regulation (Regulation 74), monitoring for Total Phosphorus is required.
- Note 5: E Coli and Total Coliform—Analysis and limitations for E. Coli and Total Coliform will be included in the permit certification for discharges from construction dewatering operations that involve replacing or repairing existing sanitary sewer lines, are in proximity to septic disposal systems, or other sewage disposal conveyances or vessels, where the Division has made a qualitative reasonable potential determination that E. coli or Total Coliform may be present in the discharge. The E. coli effluent limitation will be applied for discharge to surface water and will reflect the Recreational Class of the receiving stream of the discharge (Class E at 126 per 100 ml, Class P at 205 per 100 ml, and Class N at 630 per 100ml). The Total Coliform effluent limitation will be applied if the discharge is to groundwater. If the construction dewatering operation is considered in-stream (for example, bank stabilization and discharges back to the same water body), monitoring and reporting, or monitoring and compliance with the numeric effluent limitation for E. coli or Total Coliform will not be required.
- Note 6: Benzene, Toluene, Ethylbenzene, and Xylene — Analysis and limitations for Benzene, Toluene, Ethylbenzene, and Xylene will be included in the permit certification for construction dewatering operations where the Division has made a qualitative reasonable potential determination that Benzene, Toluene, Ethylbenzene, or Xylene may be present in the discharge. See Part I A.2.a. of the permit regarding limitations of permit coverage associated with Benzene, Toluene, Ethylbenzene, and Xylene.
- If the construction dewatering operation is considered in-stream (for example bank stabilization and discharges back to the same water body), monitoring and compliance with the additional numeric effluent limitations will not be required.
- Note 7: Metals, Organics, Inorganics, Temperature, and RADS—Analysis for additional parameters may be added to the permit certification in accordance with Part I.B.2.
- If the construction dewatering operation is considered in-stream (for example bank stabilization and discharges back to the same water body), monitoring for the additional parameters will not be required.
- Note 8: Total Dissolved Solids (TDS) – Ground Water Outfalls—Analysis for salinity, measured as TDS, will be added to the permit certification for all discharges to a different aquifer from which the ground water was pulled. If the discharge is to the same aquifer from which it was pulled, sampling for TDS will not be required provided that the remediation activity is not contributing to TDS concentrations.



## C. TERMS AND CONDITIONS

### 1. **Discharge Log**

The permittee shall maintain a documented Discharge Log identifying the following information for each permitted outfall:

- a. the dates and times when a discharge commences and ends,
- b. records for monitoring as required by Part I.E.5.
- c. prior to the start of any discharge from an undefined discharge outfall(s) (see Part I.B.1), the receiving water for the discharge and the location that the outfall will be located at, including the latitude and longitude to the nearest 15 seconds, , general description of the location, and a map showing the discharge locations.
- d. a description of the pollutant control practices used during construction dewatering, including:
  - i. for all filter devices- document the pollutant control filter maximum flow rate that will maintain compliance with the permit effluent limits and a drawing, sketch, and/or written description of the installation and implementation specifications.
  - ii. for all settling devices- document the residence time and maximum flow rate that will maintain compliance with the permit effluent limits and a drawing, sketch, and/or written description of the installation and implementation specifications..
  - iii. for all other techniques and methods implemented to remove pollutants prior to discharge, such as but not limited to pump in gravel-packs, sump conditions, and well screens- document the technique used and its intended purpose, the maximum flow rate for operation that will maintain compliance with the permit effluent limits, and a drawing, sketch, and/ or written description of the installation and implementation specifications.
  - iv. if no treatment has been determined necessary to remove pollutants prior to discharge in order to maintain compliance with the permit effluent limits- a statement identifying that no treatment will be provided.
- e. The method used to measure flow, in accordance with I.E.7.

The log must be updated within 72 hours of the occurrence of any activity requiring documentation in accordance with this subsection.

### 2. **Practice Based Requirements**

- a. **Pollutant Control Practices**: The permittee shall implement pollutant control practices to meet the effluent limitations contained in this permit. The pollutant control practices must be selected, designed, installed, implemented and maintained in accordance with good engineering, hydrologic, pollution control practices, and the manufacturer's specifications including installation and implementation specifications, where applicable. Practices may include treatment, schedules of activities, prohibitions of practices, maintenance procedures, monitoring practices used to document the capability of the treatment practices to remove pollutants, handling and disposal practices, and other management practices necessary to meet the effluent limitations contained in this permit.

### 3. **Practices for Discharges in Exceedance of Applicable Water Quality Standards**

The Division expects that compliance with the effluent limits in this permit will control discharges as necessary to meet applicable water quality standards. If at any time the permittee becomes aware that at the permitted outfall, pollutant concentrations for an effluent parameter **not** subject to an effluent limitation in Part I.B or the permit certification exceeds any applicable water quality standard for the receiving water, the permittee shall:

- a. Halt or reduce any activity if necessary to prevent the discharge of an effluent parameter(s), at the permitted outfall, in concentrations which exceed the applicable water quality standards for the receiving water; and
- b. Mail a written report to the Division containing all relevant monitoring data and the information consistent with that required for noncompliance in Part II.A.4 (a) within five (5) days after becoming aware of the exceedance.

Coverage under this general permit may be modified, suspended, or terminated by the Division if necessary to effectively implement protection of waters of the State. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application, or require coverage under an individual permit or alternative general permit, and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

#### **4. Chemical Additions**

No chemicals are to be added that have the potential to be present in the permitted discharge, including, but not limited to, chemical additions at any point in the treatment process, unless the permittee provides advance notice to the Division of the planned changes in accordance with Part II.A.2 and the Division confirms that the new or altered discharge is appropriate for coverage under this permit. The permit applicant must submit a list of proposed chemicals, including dosage rates, used in the treatment process. Additionally, a MSDS for each chemical proposed for use must be provided to the Division. The addition of chemicals may require permitting under the Remediation Activities general permit that authorizes the discharge from remediation activities (e.g., the discharge requires treatments to remove pollutants resulting from the chemical addition).

Chemicals used in waters that will, or may be, discharged to waters of the State must be used in accordance with all state and federal regulations, and in strict accordance with the manufacturer's site-specific instructions.

#### **4. Discharge Point**

All waters shall be discharged in a manner to prevent erosion, scouring, or damage to stream banks, streambeds, or ditches.

#### **5. Discharges to Conveyances**

All dischargers must comply with the lawful requirements of counties; drainage districts and other state or local agencies regarding any discharges to storm drain systems or other watercourses under their jurisdiction.

#### **6. Mixing Zone**

For this general permit, all numeric effluent limitations are assigned as end of pipe limits based on the Water Quality Standards. Dilution (i.e. mixing zone) considerations are not applicable in this permit. Dischargers who want consideration of a mixing allowance should apply for an individual permit

## 7. Discharges to Waters with Total Maximum Daily Loads (TMDLs)

Discharges to State waters for which an approved or established TMDL has been developed may be authorized provided there are sufficient remaining waste load allocations in the approved or established TMDL. If sufficient remaining waste load allocations are not available, coverage under an Individual permit may be required. If additional effluent limitations or other terms and conditions not included in this permit are required for discharges to segments for which a TMDL has been completed, the discharge cannot be covered under this general permit and must apply for coverage under another general permit or under an individual permit. Factors that will be taken into consideration when making this determination include the plausibility that the pollutant for which the TMDL was developed will be in the discharge, and duration and frequency of the discharge.

## 8. Discharges to 303(d) Listed Waters

Sampling, monitoring and compliance with numeric effluent limitations may be required for discharges to 303(d) listed waters that are impaired for a specified pollutant(s), and that pollutant has the potential to be in the construction dewatering project discharge. If additional effluent limitations or other terms and conditions not included in this permit are required for discharges to 303(d), the discharge cannot be covered under this general permit and must apply for coverage under another general permit or under an individual permit. Factors that will be taken into consideration when making this determination include the plausibility that the pollutant listed on the 303(d) list will be in the discharge, and duration and frequency of the discharge.

## D. DEFINITIONS OF TERMS

1. "**Construction Activities**" refers to ground surface disturbing activities, which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas.
2. "**Continuous**" measurement is a measurement obtained from an automatic recording device which continually measures provides measurements.
3. "**Daily Maximum limitation**" for all parameters except temperature, means the limitation for this parameter shall be applied as an instantaneous maximum (or, for pH or DO, instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any instantaneous value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit.
4. "**Daily Maximum Temperature (DM)**" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2-hour maximum can be determined on every data point after the initial 2 hours of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

For example, data points collected at:

08:15, 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, would be averaged for a single 2 hour average data point

08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, would be averaged for a single 2-hour average data

point

08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, 10:30, would be averaged for a single 2 hour average data point

This would continue throughout the course of a calendar day. The highest of these 2-hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum.

Data from 11 pm to 12:59 am would fall in the previous day. Data collected from 11:01 pm to 1:00 am would fall in the new month.

5. "**Dissolved (D) metals fraction**" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.
6. "**Geometric mean**" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

Method 1: Geometric Mean =  $(a*b*c*d*...)^{(1/n)}$  "\*" - means multiply

Method 2: Geometric Mean = antilog ( [log(a)+log(b)+log(c)+log(d)+...]/n )

Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

- i. A minimum of two samples shall be collected for coliform analysis within the next sampling period.
- ii. If the sampling frequency is monthly or less frequent: For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting coliform results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

If the sampling frequency is more frequent than monthly: Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter

noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

7. **“Good Engineering, Hydrologic and Pollution Control Practices:** means methods, procedures, and practices that a) are based on basic scientific fact(s); b) reflect best industry practices and standards; c) are appropriate for the conditions and pollutant sources; and d) provide appropriate solutions to meet the associated permit requirements, including all effluent limitations.
8. **"Grab"** sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.
9. **“Groundwater”** means any water not visible on the surface of the ground under natural conditions.
10. **"In-situ"** measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.
11. **"Instantaneous"** measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.
11. To be considered an **“Intermittent Discharge”** one of the following must apply:
  - i. the maximum discharge frequency is less than 3 consecutive days (72 hours), and less than 3 days per 7 day period, and less than 10 days total per month
  - ii. the maximum discharge frequency is less than 5 consecutive days (120 hours) and less than 5 total days per month
  - iii. It can be shown that discharge frequency and duration is tied solely to precipitation events, where the discharge starts and stops shortly after the precipitation event starts/stops.
12. **"Maximum Weekly Average Temperature (MWAT)"** is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8<sup>th</sup> day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

Day 1: Average of all temperature data collected during the calendar day.

Day 2: Average of all temperature data collected during the calendar day.

Day 3: Average of all temperature data collected during the calendar day.

Day 4: Average of all temperature data collected during the calendar day.

Day 5: Average of all temperature data collected during the calendar day.

Day 6: Average of all temperature data collected during the calendar day.

Day 7: Average of all temperature data collected during the calendar day.

1<sup>st</sup> MWAT Calculation as average of previous 7 days

Day 8: Average of all temperature data collected during the calendar day.

2<sup>nd</sup> MWAT Calculation as average of previous 7 days

Day 9: Average of all temperature data collected during the calendar day.

3<sup>rd</sup> MWAT Calculation as average of previous 7 days

13. "**Potentially dissolved (PD) metals fraction**" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.
14. "**Practical Quantification Limit (PQL)**" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.D of this permit or the PQLs of an individual laboratory.
15. "**Quarterly measurement frequency**" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected anytime during the quarter that the discharge occurs. Calendar quarters are defined as January-March, April-June, July- September, and October-December.
16. "**Recorder**" requires the continuous operation of a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)
17. "**Seven (7) day average**" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. (See the "**Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.E.3 for guidance on calculating averages and reporting analytical results that are less than the PQL**").
18. "**State Waters**" means any and all surface or subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.
19. "**Stormwater**" means precipitation induced stormwater runoff, snow melt runoff, and surface runoff and drainage
20. "**Surface Water**" means all surface waters that meet the definition of "State Waters" but does not meet the definition of "stormwater runoff."
21. "**Thirty (30) day average**" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. (See the "**Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.E.3 for guidance on calculating averages and reporting analytical results that are less than the PQL**").

22. "**Total Metals**" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.
23. "**Total Recoverable Metals**" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.
24. "**Visual**" observation is observing the discharge to check for the presence of a visible sheen or floating oil.
25. "**Water Quality Control Division**" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)
26. "**Weekly measurement frequency**" means samples may be collected at any time during the week as defined as beginning on Sunday and ending on Saturday. If the discharge is intermittent, a sample must be collected for each week (as defined above) that the discharge occurs. A minimum of one sample must be collected for discharges lasting less than one week. For example, if an intermittent discharge begins on Wednesday, February 2<sup>nd</sup> and ends on Friday, February 4<sup>th</sup>, one sample must be collected on the 2<sup>nd</sup>, 3<sup>rd</sup>, or 4<sup>th</sup>. If the discharge resumes on Sunday, February 13 and is intermittent through Monday, February 14<sup>th</sup> an additional sample must be collected on the 13<sup>th</sup> or 14<sup>th</sup>.

## **E. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS**

### **1. Routine Reporting of Data**

Reporting of data gathered in compliance with Part I.B.2 shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.E. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR services (when available). DMRs **must be** received by the Division no later than the 28th day of the month following the monitoring period (for example, the DMR for discharges occurring in January must be received by the Division by February 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported on the DMR.

If being mailed, the original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment  
Water Quality Control Division  
WQCD-P-B2  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.E.8.

## 2. **Reporting for Undefined Outfalls**

DMRs will be mailed to the permittee for each of the numbered undefined discharge outfalls identified in the permit certification.

Each outfall identified in the permit certification, and the associated DMR forms for that outfall shall only authorize and be used for reporting discharges at a single outfall at a specific location. The permittee shall establish and maintain records that identify, among other information, the exact place for each outfall for which monitoring has occurred in accordance with Part I. B. of the permit.

DMRs for all outfalls must be submitted monthly as long as the certification is in effect. DMRs must be submitted for each outfall even if there was not a discharge from the outfall in a given month. For each outfall where no discharge occurs in a given month, the permittee shall mark 'No Discharge' on the DMR form(s). The permittee shall provide the Division with any additional monitoring data on the permitted discharge collected for entities other than the Division. If forms have not been received, please contact the Division at 303-692-3517.

Sampling is required at the frequency established in the permit certification for each undefined discharge location. For multiple undefined discharge locations, as discharges occur chronologically, the data collected from the sampling event(s) in a given month from the first discharge location shall be summarized and reported on the pre-printed DMR for Discharge Number 001-AU. The data collected from the sampling event(s) in a given month from the second discharge location shall be summarized and reported on the pre-printed DMR for Discharge Number 002-AU; etc. If there is only one undefined outfall location requested in the permit application, the permit certification will only authorize one discharge location (outfall) to state water within the project boundary. The data collected from the sampling event(s) in a given month from the one authorized discharge location shall be summarized and reported on the pre-printed DMR for Discharge Number 001-AU.

## 3. **Representative Sampling**

Discharge points shall be designed or modified so that a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by the Division. The permittee shall provide access to the Division to sample the discharge at these points.

## 4. **Analytical and Sampling Methods for Monitoring and Reporting**

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136 (see text below for specifics on nonylphenol monitoring).

If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.



If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the potential numeric effluent limit(s). If all analytical methods and corresponding PQLs are greater than the potential numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

For parameters such as TIN, the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL, the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the lowest available PQL is used for the analysis. When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

In the calculation of average concentrations (i.e. 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

If all individual analytical results are less than the PQL, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

If one or more individual results is greater than the PQL, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, it must be reported as a value.

Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero. The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

The present lowest PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the table below. A listing of the PQLs for organic parameters that must meet the above requirement can be found in the Division's Practical Quantification Limitation Guidance Document, July 2008.

For nonylphenol, until such time as there is an EPA 40 CFR Part 136 method, the State is approving use of ASTM Methods D7065 and D7485. Until a statewide PQL has been developed, the permittee shall use

either the default PQLs listed in the table below, or develop their own site-specific PQL in accordance with the Practical Quantification Limitation Guidance Document (July 2008) for Organic Parameters. This document is available on the Division’s website at [www.coloradowaterpermits.com](http://www.coloradowaterpermits.com). The delayed effective date for the monitoring requirement allows time for the permittee to develop a site-specific PQL.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Parameter	Practical Quantification Limits,	Parameter	Practical Quantification Limits, µg/l
Aluminum	50 µg/l	Manganese	2 µg/l
Ammonia	1 mg/l	Mercury	0.1 µg/l
Arsenic	1 µg/l	Mercury (low-level)	0.003 µg/l
Barium	5 µg/l	Nickel	50 µg/l
Beryllium	1 µg/l	N-Ammonia	50 µg/l
BOD / CBOD	1 mg/l	N Nitrate/Nitrite	0.5 mg/l
Boron	50 µg/l	N-Nitrate	50 µg/l
Cadmium	1 µg/l	N-Nitrite	10 µg/l
Calcium	20 µg/l	Total Nitrogen	0.5 mg/l
Chloride	2 mg/l	Phenols	100 µg/l
Chlorine	0.1 mg/l	Phosphorus	10 µg/l
Total Residual Chlorine		Radium 226	1 pCi/l
- DPD colorimetric	0.10 mg/l	Radium 228	1 pCi/l
- Amperometric titration	0.05 mg/l	Selenium	1 µg/l
Chromium	20 µg/l	Silver	0.5 µg/l
Chromium, Hexavalent	20 µg/l	Sodium	0.2 mg/l
Copper	5 µg/l	Sulfate	5 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Sulfide	0.2 mg/l
Cyanide, WAD+A47	5 µg/l	Total Dissolved Solids	10 mg/l
Fluoride	0.1 mg/l	Total Suspended Solids	10 mg/l
Iron	10 µg/l	Thallium	1 µg/l
Lead	1 µg/l	Uranium	1 µg/l
Magnesium	20 µg/l	Zinc	10 µg/l

## 5. Records

The permittee shall establish and maintain records. The records shall include the following:

- a. The date, type, exact location, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) the analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used;
- f. The results of such analyses; and
- g. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

The permittee shall retain for the duration of permit coverage or a minimum of three (3) years (whichever is greater) records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, laboratory data sheets, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or EPA. These records must be retained at the facility during active treatment. Once active treatment is complete, the records shall be maintained and made available at the request of the Division.

**6. Additional Monitoring by Permittee**

If the permittee, using the approved analytical methods, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form or other forms as required by the Division. Such increased frequency shall also be indicated.

**7. Flow Measuring Device**

Flow can be measured or determined from estimates based on volume of fill water, dimension of the pipeline, capacity of the pump, or other method documented in accordance with I.C.1.e (Discharge Log).

At the request of the Division, the permittee shall show proof of the accuracy of any flow-measuring device or method used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten(10) percent of the actual flow being discharged from the facility.

**8. Signatory and Certification Requirements**

a. All applications must be signed and certified for accuracy as follows:

- (i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;
- (ii) In the case of partnership, by a general partner;
- (iii) In the case of a sole proprietorship, by the proprietor;
- (iv) In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates.

b. All reports and other information required by the Division shall be signed and certified for accuracy by the permittee in accord with the following criteria:

- i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;
- ii) In the case of a partnership, by a general partner;
- iii) In the case of a sole proprietorship, by the proprietor;

- iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;
- v) By a duly authorized representative of a person described above, only if:
  - 1) The authorization is made in writing by a person described in i, ii, iii, or iv above;
  - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,
  - 3) The written authorization is submitted to the Division.
- c. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"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 for knowing violations."

## Part II

### A. NOTIFICATION REQUIREMENTS

#### 1. Notification to Parties

All notification requirements under this section shall be directed as follows:

- a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section - Industrial Compliance Program  
Water Quality Control Division  
Telephone: (303) 692-3500

- b. Written notification shall be to:

Water Quality Protection Section - Industrial Compliance Program  
Water Quality Control Division  
Colorado Department of Public Health and Environment  
WQCD-WQP-B2  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530

#### 2. Change in Discharge or Wastewater Treatment

The permittee shall notify the Division in writing, of any planned physical alterations or additions to the permitted facility, this includes the treatment process. Notice is required when:

- a. The alteration or addition is likely to result in a new or altered discharge either in terms of location or effluent quality prior to the occurrence of the new or altered discharge, or;
- b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

The permittee shall give advance notice to the Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. For any pollutant for which monitoring requirements are not included in the permit certification, the permittee shall notify the Division as soon as it becomes aware that the pollutant(s) are present in the source water, influent, or effluent in concentrations greater than originally identified in the application.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water.

If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application or a permit modification and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

### 3. Special Notifications Definitions

- a. Bypass: The intentional diversion of waste streams from any portion of a treatment facility.
- b. Severe Property Damage: Substantial physical damage to property at the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. It does not mean economic loss caused by delays in production.
- c. Upset: An exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

### 4. Noncompliance Notification

- a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:
  - i) A description of the discharge and cause of noncompliance;
  - ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and
  - iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.
- b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4 (a) **within five (5) days** after becoming aware of the following circumstances:
  - i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
  - ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
  - iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;
  - iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit and specified as requiring 24-hour notification. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
- c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

## 5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit shall be submitted no later than fourteen (14) days following each scheduled date, unless otherwise provided by the Division.

The permittee shall notify the Division, in writing, thirty (30) days in advance of a proposed transfer of permit as provided in Part II.B.3.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - i) One hundred micrograms per liter (100 µg/l);
  - ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;
  - iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).
  - iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - i) Five hundred micrograms per liter (500 µg/l);
  - ii) One milligram per liter (1 mg/l) for antimony; and
  - iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application
  - iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

## 6. Bypass Notification

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

## 7. **Upsets**

### a. **Effect of an Upset**

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

### b. **Conditions Necessary for a Demonstration of Upset**

Permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and
- ii) The permitted facility was at the time being properly operated and maintained; and
- iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and
- iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

### c. **Burden of Proof**

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## 8. **Discharge Point**

Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

## 9. **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 as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures (40 CFR 122.41(e)). This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

## 10. **Minimization of Adverse Impact**

The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.



## 11. **Removed Substances**

Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in accordance with applicable state and federal regulations and in a manner that will prevent the removed pollutant(s) from entering waters of the State.

For all domestic wastewater treatment works, at industrial facilities, the permittee shall dispose of sludge in accordance with all State and Federal regulations.

## 12. **Submission of Incorrect or Incomplete Information**

Where the permittee failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or report to the Division, the permittee shall promptly submit the relevant information which was not submitted or any additional information needed to correct any erroneous information previously submitted.

## 13. **Bypass**

- a. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:
  - i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
  - ii) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
  - iii) Proper notices were submitted in compliance with Part II.A.4.
- b. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- c. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.
- d. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

## 14. **Reduction, Loss, or Failure of Treatment Facility**

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

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

## **B. RESPONSIBILITIES**

### **1. Inspections and Right to Entry**

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

- a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and
- c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non-compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.
- d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

### **2. Duty to Provide Information**

The permittee shall furnish to the Division, within a reasonable time, any information which the Division 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 to the Division, upon request, copies of records required to be kept by this permit.

### **3. Transfer of Ownership or Control**

- a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.
- b. A permit may be automatically transferred to a new permittee if:
  - i) The current permittee notifies the Division in writing 30 days in advance of the proposed transfer date; and
  - ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and
  - iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

#### 4. **Availability of Reports**

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

#### 5. **Modification, Suspension, Revocation, or Termination of Permits By the Division**

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

- a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:
  - i) Violation of any terms or conditions of the permit;
  - ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or
  - iii) Materially false or inaccurate statements or information in the permit application or the permit.
  - iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.
- b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:
  - i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.
  - ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.
  - iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:
    - (A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and

- (B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and
  - (C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or
  - (D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) days of judicial remand.
- iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.
  - v) The permittee has received a variance.
  - vi) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to §307(a) of the Federal act.
  - vii) When required by the reopener conditions in the permit.
  - viii) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.
  - ix) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.
  - x) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.
  - xi) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.
  - xii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
  - xiii) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.
- c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:
- i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) days of receipt of notification,
  - ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;
  - iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and
  - iv) Requirements of public notice have been met.

- d. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.
- e. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:
  - i) Correcting typographical errors; or
  - ii) Increasing the frequency of monitoring or reporting by the permittee; or
  - iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or
  - iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or
  - v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or
  - vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.
- f. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.
- g. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.
- h. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).

## 6. **Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

## 7. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

## 8. **Permit Violations**

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that

authorized shall constitute a violation of the permit. Except as provided in Part I.E and Part II.A or B, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

**9. Property Rights**

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

**10. Severability**

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

**11. Renewal Application**

If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) days before this permit expires. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.5.

**12. Confidentiality**

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

**13. Fees**

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

**14. Duration of Permit**

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.

**15. Section 307 Toxics**

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

**16. Effect of Permit Issuance**

- a. The issuance of a permit does not convey any property rights or any exclusive privilege.
- b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
- c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.
- d. Compliance with a permit condition which implements a particular standard for sewage sludge use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for sewage sludge use or disposal.

# EXAMPLE



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD  
LITTLETON, COLORADO 80128-6901

April 15, 2015

Ms. Rebecca Pierce  
Department of Transportation  
Environmental Programs  
4201 East Arkansas Avenue  
Shumate Building  
Denver, CO 80222

**RE: Iyvl Skeeter Pass Road Improvements (TM- 0123-456)  
Corps File No. 673-1129-998-ARV-23**

Dear Ms. Pierce:

Reference is made to the above-mentioned project located in the SW ¼ of Section 32, T6S, R71W, Park County, Colorado.

Based on the information provided, this office has determined that the work within Colorado is authorized by the **Department of the Army Nationwide Permit No. 14**, found in the March 12, 2007, Federal Register. Enclosed is a fact sheet, which fully describes this Nationwide Permit and lists the General Conditions, Section 404 Only Conditions, and Colorado Regional Conditions, which must be adhered to for this authorization to remain valid.

**Permit No. 14 (Corps File No. 673-1129-998-ARV-23 Special Conditions:**

- 1) In order for this nationwide permit verification to be valid, 0.15 acre of wetland will be mitigated as stated in the April 15, 2012 letter with the mitigation plan submitted to the Denver Regulatory Office.
- 2) The created wetlands will be considered successful and self-sustaining when the following conditions have been met without intervention in the form of irrigation, removal of undesirable vegetation or replanting of desirable vegetation for a period of 2 consecutive years, as determined by the Corps of Engineers:
  - a) At least 80 % (determined by ocular estimate of herbaceous and shrub foliar cover) of the mitigation site is vegetated, with at least 50% of the total number of dominant species present will consist of species rated as facultative or wetter.
  - b) Tree and shrubs, to include volunteer specimens, will have a survival rate of at least 85%. Species composition shall represent what was planted.
  - c) Those species shown on the Colorado Noxious Weed Inventory list-A shall be 100% eradicated. Those species shown on list-B shall be no more than 10% or less of the total cover in the mitigation area. The lists can be found at <http://www.ag.state.co.us/CSD/weeds/statutes/weedrules.pdf>.
  - d) If the mitigation site is not trending towards success within two years of being constructed and planted, the Corps of Engineers will require remedial measures, to include the possible purchase of credits from an approved mitigation bank.



# EXAMPLE

- 3) A mitigation monitoring report must be sent to the Denver Regulatory Office prior to December 31st of each year, for a period of at least five years, or until the Corps of Engineers determines that the proposed mitigation has successfully developed.
- 4) Annual reports should contain the information identified on the attached page for **Mitigation Monitoring Reports** information. If the authorized work has not yet started, please state so in your annual mitigation monitoring report.

Although an Individual Department of the Army permit will not be required for this work, this does not eliminate the requirement that any other applicable Federal, state, tribal or local permits be obtained as required. Please be advised that deviations from the original plans and specifications of this project could require additional authorization from this office.

The applicant is responsible for all work accomplished in accordance with the terms and conditions of the nationwide permit. If a contractor or other authorized representative will be accomplishing the work authorized by the nationwide permit on behalf of the applicant, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable nationwide permit. Any activity which fails to comply with all the terms and conditions of the nationwide permit will be considered unauthorized and subject to appropriate enforcement action.

**This verification will be valid until May 26, 2015. In compliance with General Condition 26, the attached "Certification of Completed Work" form (blue) must be signed and returned to this office upon completion of the authorized work and any required mitigation.**

Should anyone at any time become aware that either an endangered and/or threatened species or its critical habitat exists within the project area, this office must be notified immediately.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at <http://per2.nwp.usace.army.mil/survey.html>. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax. (Completing the survey is a voluntary action)

If there are any questions call Mr. Terry McKee of my office at (303) 979-4120 and reference Corps File No. NWO-2009-1248-DEN.

Sincerely,



Marcus Knoepler  
Chief, Denver Regulatory Office

- Enclosures

Copies Furnished:

U.S. Fish & Wildlife Service  
Colorado Department of Public Health & Environment  
Environmental Protection Agency  
Colorado Division of Wildlife  
State Historic Preservation Office

**FACT SHEET  
NATIONWIDE PERMIT 14**

**LINEAR TRANSPORTATION PROJECTS.** Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

**Notification:** The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (Sections 10 and 404)

**Note:** Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

**General Conditions:** To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free

navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity

until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWP.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

**18. Historic Properties.** (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background

research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**19. Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those

waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

**20. Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWP's. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP's.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate

form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan:

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

**21. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

**22. Coastal Zone Management.** *Not Applicable.*

**23. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**24. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

**25. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities



associated with compliance with its terms and conditions, have the transferee sign and date below.”

---

(Transferee)

---

(Date)

**26. Compliance Certification.** Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
- (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

**27. Pre-Construction Notification.** *Not Applicable.*

**28. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

#### **Further Information**

- 1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP:
- 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
- 3. NWPs do not grant any property rights or exclusive privileges.
- 4. NWPs do not authorize any injury to the property or rights of others.
- 5. NWPs do not authorize interference with any existing or proposed Federal project.

**Nationwide Permit (March 12, 2007)  
Finalized Regional Conditions for the  
State of Colorado**

**Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado**

**a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects.** In the Colorado River Basin, utility line and road activities crossing perennial waters or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). In addition, post-construction reporting for activities in all other jurisdictional waters is required and must include information required by General Condition 27 (Pre-Construction Notification) including location, supporting drawings and maps. The post-construction reporting must also include a statement certifying that the General Conditions of the nationwide permits have been followed.

*NOTE: The above condition does not apply in the Omaha District portion of Colorado.*

**b. Nationwide Permit No. 13 Bank Stabilization.** In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill\* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [\* See (g) for definition of Suitable Fill]

**c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.**

(1) For activities that include a fishery enhancement component, the Corps will send the Preconstruction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-construction Notification), CDOW will have 10 days from receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to provide those comments. If CDOW raises concerns, the applicant may either modify their plans, in coordination with CDOW, or apply for a standard individual permit.

(2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).

(3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in building structures is not authorized by this nationwide permit.

(4) The construction of water parks (i.e. kayak courses) and flood control projects are not authorized by this nationwide permit.

**d. Nationwide Permits Nos. 29 and 39; Residential Developments and Commercial and Institutional Developments.** A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

## **Regional Conditions Applicable to All Nationwide Permits within Colorado (Continued)**

**e. Removal of Temporary Fills.** General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.

**f. Spawning Areas.** General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, in accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material is not authorized by the following nationwide permits in these waters: NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49 and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38.

**g. Suitable Fill.** In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

**h. Invasive Aquatic Species.** General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond or wetland within 10 days of initiating work, one of the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

(1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days; or

(2) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes; or

(3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

### **Regional Conditions for Revocations Specific to Certain Geographic Areas**

**i. Fens:** All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (<http://soils.usda.gov/technical/classification/taxonomy>).

**j. Springs:** Within the state of Colorado, all NWP's, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A spring source is defined as any location where

groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

#### ADDITIONAL INFORMATION

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mats that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. Designated Critical Resource Waters In Colorado. In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page and will be attached to nationwide permit summaries distributed to the public. A copy is attached (see Enclosure 1).

c. Federally-Listed Threatened and Endangered Species. General Condition 17 requires that non-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: <http://mountain-prairie.fws.gov/endspp/CountyLists/Colorado.htm>

**DESIGNATED CRITICAL RESOURCE WATERS IN COLORADO**

The following waters within the State of Colorado are designated as critical resource waters. In accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material is not authorized by the following nationwide permits in these waters: NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49 and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38.

**a. Outstanding Natural Resource Waters:**

- Cache la Poudre Basin: All tributaries to the Cache La Poudre River system, including all lakes and reservoirs, which are within Rock Mountain National Park;
- Laramie River: All tributaries to the Laramie River system, including all lakes and reservoirs which are in the Rawah Wilderness Area;
- North Fork Gunnison River: All tributaries to North Fork Gunnison River system, including lakes, reservoirs and wetlands within the West Elk and Raggeds Wilderness Area;
- North Platte River: All tributaries to the North Platte River and Encampment Rivers, including all lakes and reservoirs, which are in the Mount Zirkle Wilderness Area;
- San Miguel River: All tributaries, lakes, reservoirs, and wetlands within the boundaries of the Lizard Head and Mt. Sneffels Wilderness Area;
- Roaring Fork River: All tributaries to the Roaring Fork River system, including lakes, reservoirs and wetlands within the Maroon Bells/Snowmass Wilderness Area;
- Uncompahgre River: All tributaries to the Uncompahgre River system, including lakes, reservoirs, and wetlands within the Mt. Sneffels and Big Blue Wilderness Areas;
- Upper Arkansas River Basin: All streams, wetlands, lakes, and reservoirs within the Mount Massive and Collegiate Peaks Wilderness Areas;
- Upper Colorado River: Mainstem of the Colorado River system including tributaries, lakes, reservoirs, and wetlands within Rocky Mountain National Park;
- Upper Gunnison River Basin: All tributaries, lakes, reservoirs, and wetlands in the La Garita Wilderness Area. All tributaries to the Gunnison River system, including lakes, reservoirs, and wetlands within West Elk, Collegiate Peaks, Maroon Bells, Raggeds, Fossil Ridge, Oh-Be-Joyful and Big Blue Wilderness Areas;
- White River: Trapper's Lake and tributaries to Trapper's Lake;
- Yampa River: All tributaries to the Yampa River, including lakes, reservoirs and wetlands within Zirkle Wilderness Area.

**b. Gold Medal Waters.** Gold Medal Waters, as identified by the State of Colorado, are defined in the Colorado Fishing Season Information brochure, on the Colorado Division of Wildlife website (<http://wildlife.state.co.us>) or can be obtained at any Colorado Division of Wildlife or Corps office in Colorado.

**c. Cutthroat Trout Waters.** Waters designated as Cutthroat Trout Waters by the Colorado Division of Wildlife, Colorado Wildlife Commission, as listed in the Colorado Division of Wildlife's regulation at Chapter 0, Appendix C, which can be accessed via the following website address:  
<http://wildlife.state.co.us/NR/rdonlyres/4D6FFAC6-64EB-4516-A5E9-AE91B7392A95/0/Ch00.pdf>

## Certification of Completed Work

Corps File Number: [REDACTED]

Name of Permittee: [REDACTED]

Date of Issuance: [REDACTED]

Expiration Date: [REDACTED]

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U. S. Army Corps of Engineers  
Denver Regulatory Office  
9307 South Wadsworth Blvd.  
Littleton, Colorado 80128-6901

Phone (303) 979-4120  
Fax (303) 979-0602

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit, and required mitigation was completed in accordance with the permit conditions.<sup>1</sup>

[REDACTED]  
Signature of Permittee

[REDACTED]

<sup>1</sup> If your permit included wetlands monitoring and annual reports, these activities will continue after submittal of this form until you are notified by the Denver Regulatory Office that your mitigation is successful and monitoring reports are no longer required.

[REDACTED]

## 17 Photographs Documenting Existing Vegetation

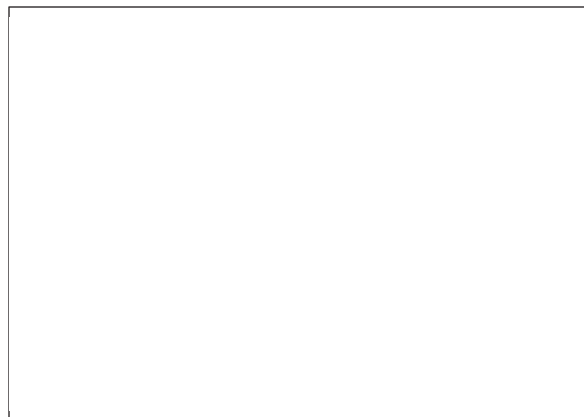
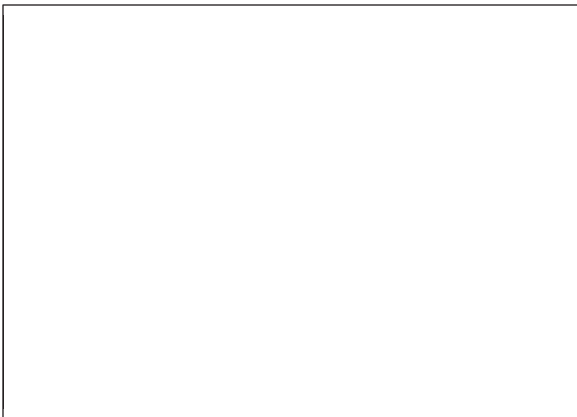
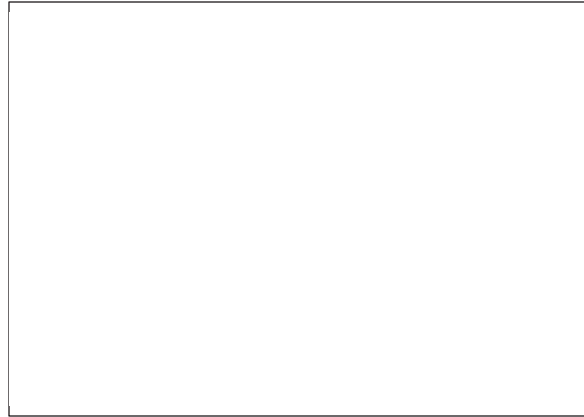
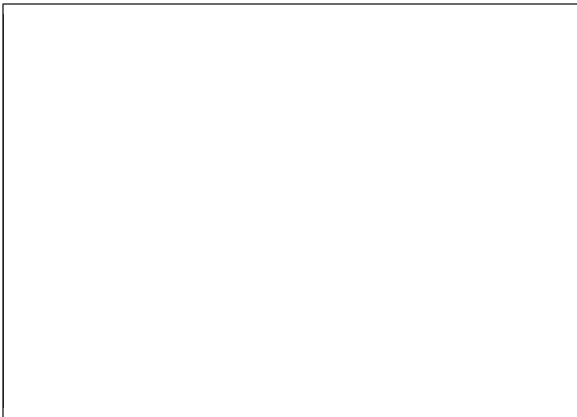
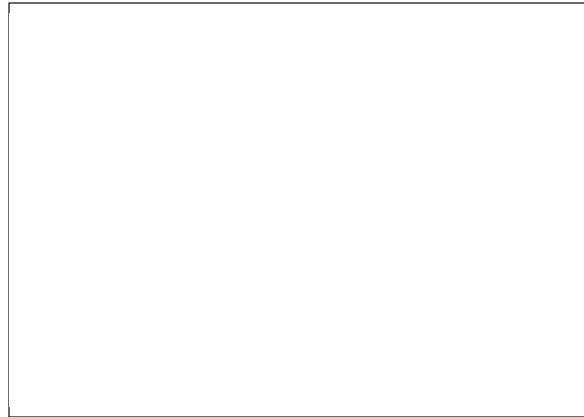
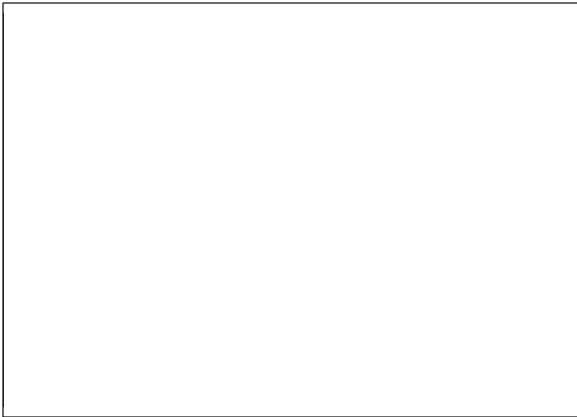
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## Photographs Documenting Existing Vegetation

Project: \_\_\_\_\_

Date of photos: \_\_\_\_\_

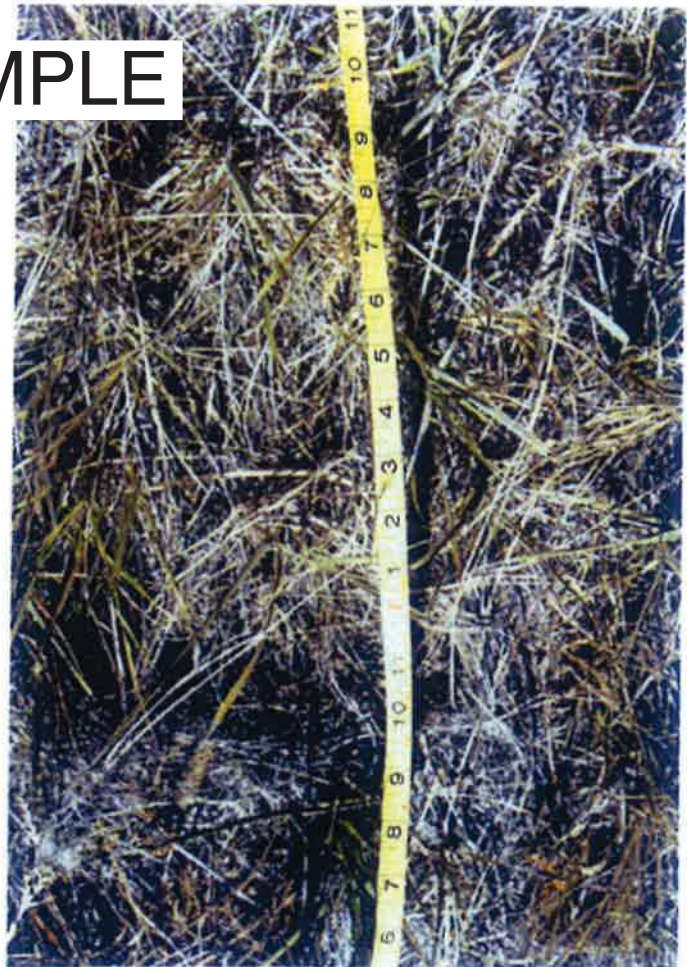
Photos taken by: \_\_\_\_\_





PHOTOS TAKEN 6/8/15 BY KIM MINNIS (203)

# EXAMPLE



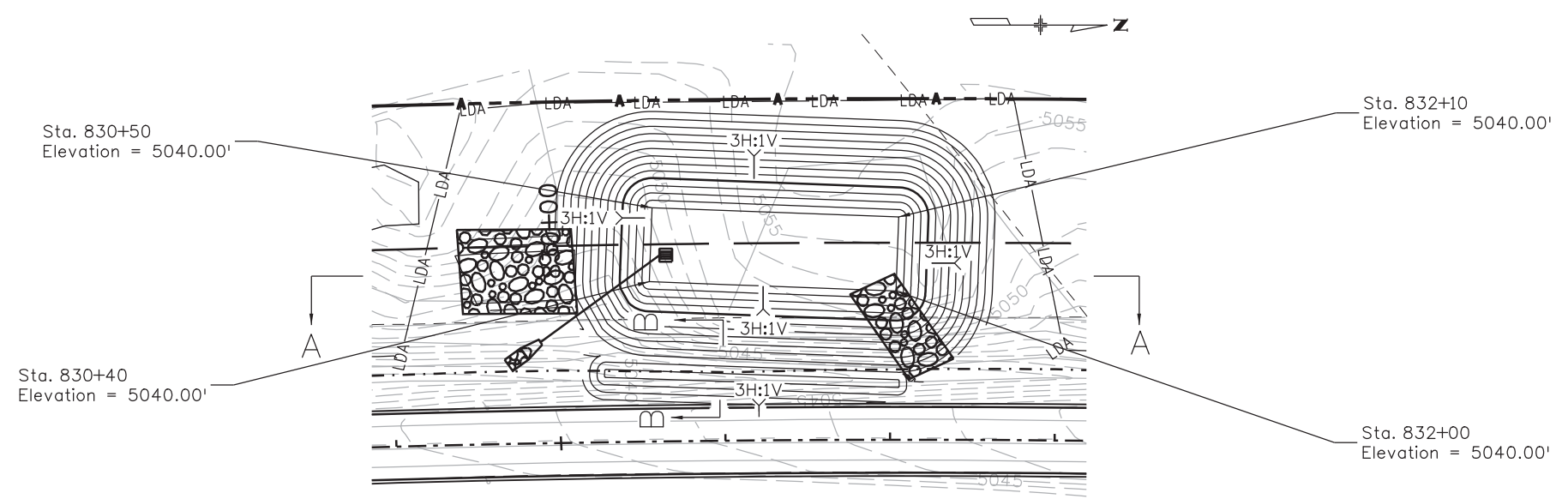
# EXAMPLE



## **18 Permanent Water Quality Plan Sheets**

### **18.1 Plan sheets and specification for permanent water quality structures, riprap.**

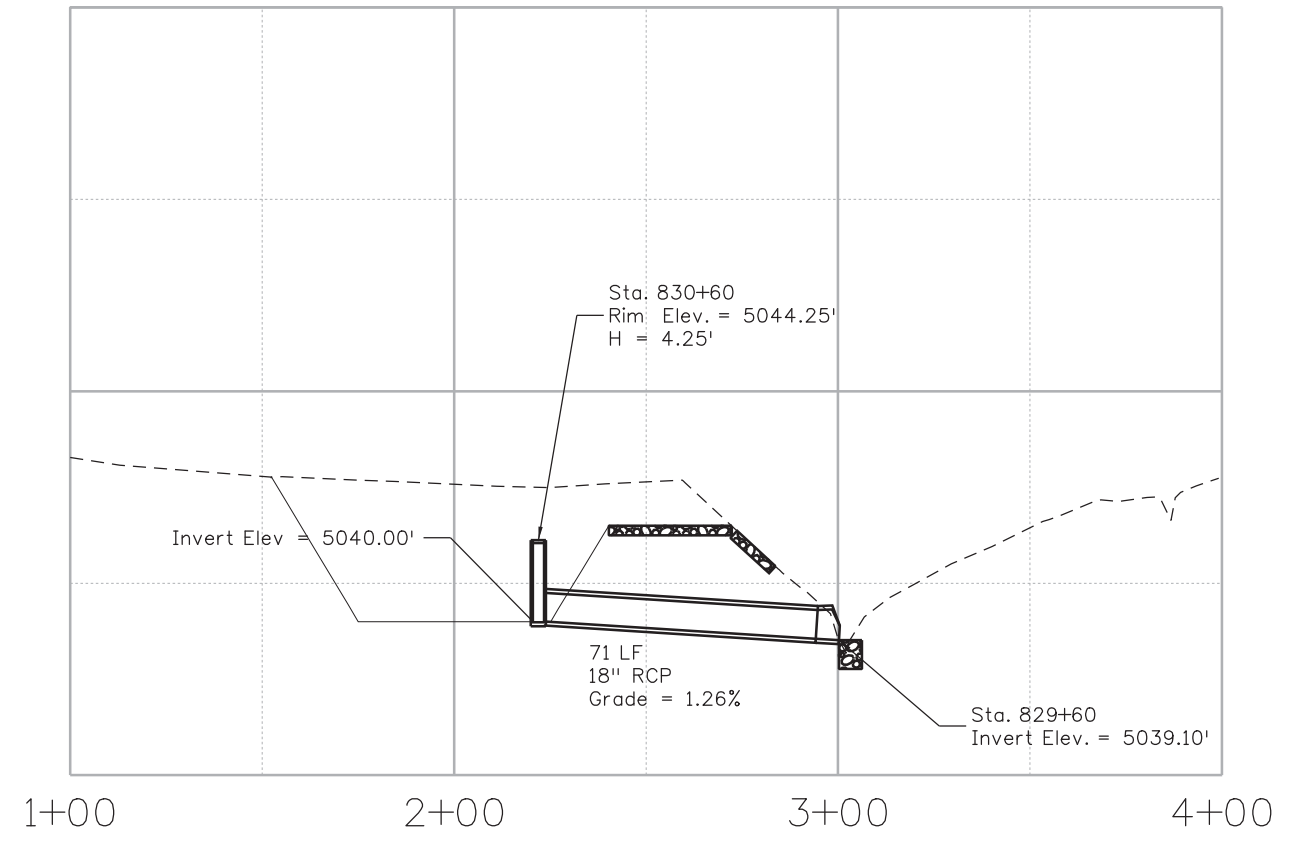
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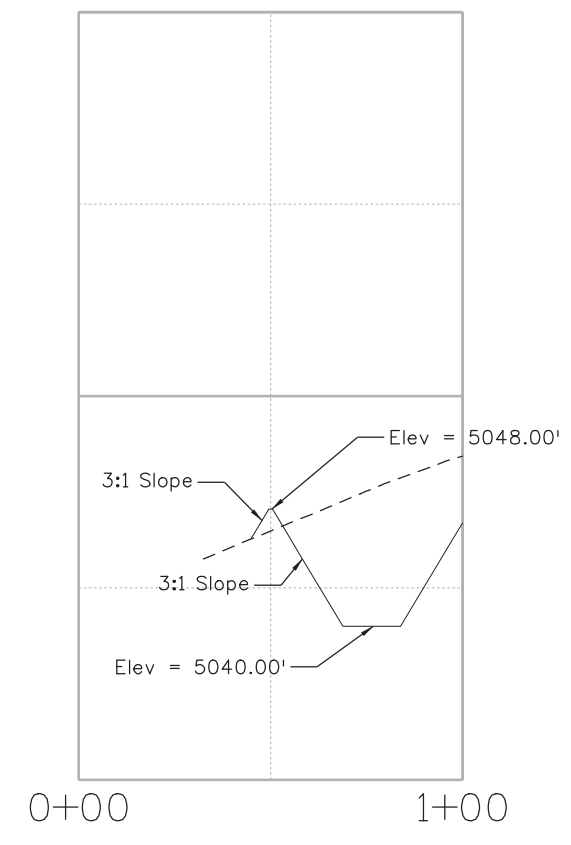
Pond Bottom Dimensions:  
15'W x 50'L x 5'D

Water Quality Capture Volume = X CY

Section A-A Pond Outlet Structure



Section B-B Pond Berm



fishegerg 11:31:11 AM F:\TECS Training Information\2016 Update to TECS SWMP Documents\Revised MicroStation Files\wq\_pond\_GF.dgn

Print Date: 5/5/16		<b>Sheet Revisions</b> Date:      Comments      Init.			<b>Colorado Department of Transportation</b>  Region 0 TEB	<b>As Constructed</b> No Revisions:		<b>WATER QUALITY POND -1</b>		Project No./Code Project Number	
File Name: 12345_WQ PLAN SHEET_1.dgn						Revised:	Designer: HRED Detailer: HRED			Structure Numbers	12345
Horiz. Scale: 1:100      Vert. Scale: As Noted						Void:	Sheet Subset: WQ	Subset Sheets: 1 of 1	Sheet Number	WQ-1	
Unit Information      Unit Leader Initials											