SWMP NOTES

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 site is located on westbound (WB) US 50 between milepost 311.0 and milepost 313.0 – from west of Pueblo Blvd to immediately east of the BNSF railroad (RR) crossing. The construction office is located at TBD.

B. PROJECT SITE DESCRIPTION: This US 50 WB improvement project provides for a new of US 50 WB alignment with safety and capacity improvements, as compared to the existing roadway alignment. The existing US 50 westbound bridge over Wild Horse Dry Creek (WHC) will be demolished and a new bridge will be built along the proposed alignment. The construction of this project will include full depth reconstruction of existing WB US 50 lanes for a short segment of US 50 between the WHC bridge and the BNSF RR bridge, converting the existing configuration to a jughandle configuration by using the existing WB lanes as an exit ramp, grading to construct a swale to convey runoff to the two water quality ponds, grading of the two water quality ponds, modification of the existing storm sewer system to accommodate the new design and widening of Pueblo Blvd between its two US 50 intersections. Once grading activities are completed soil retention blankets and seeding will be applied to the swale and embankment areas.

C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES: The US 50 WB improvement project will generally follow the following sequence for events that may impact water quality: Grading, excavating, cross pipe extensions, new cross pipes, new bridge, utility relocation, roadway paving, and demolition of existing bridge. These activities are slated to occur in four construction phases in order to maintain traffic flow by utilizing existing roadway while the proposed design is built.

D. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC (PERMITTED AREA)): 49.7 acres
2. Total area of proposed disturbance (LDA): 49.7 acres
3. Total area of seeding: 14.4 acres
4. Total area of impervious surface: 13.1 acres
5. Total area of NEW impervious surface: 10.4 acres

E. EXISTING SOIL DATA:

Local soils are silt loams, silty clay loams and shale. The National Resource Conservation Service (NRCS) has mapped the area, and has identified the following soil types in the project area:

- CsE - Cascajo Shale outcrop, 5 to 30 percent slopes. This soil type has a hydraulic soils grouping of "A" that is indicative of soils that are well drained and have low runoff potential and a high infiltration rate.
- Ha - Haverson silt loam. This soil type has a hydraulic soils grouping of "B" that is indicative of soils that have a moderate infiltration rate due to the moderately fine to moderately coarse texture.
- He - Heldt silty clay loam, 2 to 6 percent slopes. This soil type has a hydraulic soils grouping of "C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- LnA - Limon silty clay loam, 0 to 2 percent slopes. This soil type has a hydraulic soils grouping of "C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- LvB – Limon silty clay, 0 to 5 percent slopes. This soil type has a hydraulic soils grouping of "C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- MaB - Manvel silt loam, 1 to 5 percent slopes. This soil type has a hydraulic soils grouping of "B" that is indicative of soils that have a moderate infiltration rate due to the moderately fine to moderately coarse texture.
- MpA - Manzanola silty clay loam, 0 to 2 percent slopes. This soil type has a hydraulic soils grouping of "C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- MsD - Midway Shale outcrop, 1 to 9 percent slopes. This soil type has a hydraulic soils grouping of "D" that is indicative of soils having a very slow infiltration rate and high runoff potential, due to a prevalence of clays or other impervious materials, such as shales.
- Mv - Minnequa Manvel loam. This soil type has a hydraulic soils grouping of "C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- PmE - Penrose-Minnequa, 1 to 15 percent slopes. This soil type has c hydraulic soils grouping of "D" that is indicative of soils having a very slow infiltration rate and high runoff potential, due to a prevalence of clays or other impervious materials, such as shales.
- PrF - Penrose Rock outcrop, 25 to 65 percent slopes. This soil type has a hydraulic soils grouping of "D" that is indicative of soils having a very slow infiltration rate and high runoff potential, due to a prevalence of clays or other impervious materials, such as shales.
- Ra - Razor clay loam. This soil type has a hydraulic soils grouping of 'C" that is indicative of soils that have a slow infiltration rate, due to a layer that impedes the downward movement of water due to moderately fine to fine texture.
- SaE - Schamber gravelly sandy loam, 5 to 25 percent slopes. This soil type has a hydraulic soils grouping of "A" that is indicative of soils that are well drained and have a high infiltration rate.
- SqD - Shingle silty clay loam, 1 to 9 percent slopes. This soil type has a hydraulic soils grouping of "D" that is indicative of soils having a very slow infiltration rate and high runoff potential, due to a prevalence of clays or other impervious materials, such as shales.
- Sh - Stoneham loam. This soil type has a hydraulic soils grouping of "B" that is indicative of soils that have a moderate infiltration rate due to the moderately fine to moderately coarse texture.

F. EXISTING VEGETATION, INCLUDING PERCENT COVER:

The contractor 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: _____ %Density: _____

Description of existing vegetation:

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:

Table 1-1

Location	Size	Type	Receiving
US 50 (STA. 512+98.64)	24"	RCP	Outfall off project site, flows to Williams Creek
US 50 (STA. 526+98.39)	24"	CSP	Outfall off project site, flows to Williams Creek
US 50 (STA. 534+91.76)	24"	RCP	Outfall off project site, flows to Williams Creek
US 50 (STA. 542+92.51)	24"	RCP	Outfall off project site, flows to Williams Creek
US 50 (STA. 551+12.37)	23"X14"	RCP	Outfall off project site, flows to Williams Creek
US 50 (STA. 554+00)	24"	RCP	Conveys water quality ditch flow from west to east side of US 50. Eventual outfall in Wild Horse Dry Creek.

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Horiz. Scale: 1:1 Vert. Scale:				Pueblo, CO 81001	Revised:
JFS&A J. F. SATO AND ASSOCIATES 5898 South Rapp Street Littleton, Colorado 80120				Phone: 719-562-5509 FAX: 719-546-5702	Void:
				Region 2 DTD	

US 50 WEST WESTBOUND SWMP NOTES				Project No./Code
				STA 0503-085
Designer: ACE	Structure Numbers			20344
Detailer: ACE				
Subset: SWMP	Subset Sheets: 1 of 7			Sheet Number 157

SWMP NOTES

US 50 (STA. 556+06.20)	24"	RCP	Outfall off project ste, flows to Williams Creek
US 50 (STA. 569+80.78)	24"	RCP	Conveys water quality ditch flow from west to east side of US 50 off-ramp. Eventual outfall in Wild Horse Dry Creek.
US 50 (STA. 576+29.35)	24"	RCP	WQ Pond C outfall To Wild Horse Dry Creek
US 50 (STA. 579+11.55)	24"	RCP	WQ Pond D outfall To Wild Horse Dry Creek

2. Names of receiving water(s) on site: Williams Creek and Wild Horse Dry Creek.
3. Ultimate receiving water: Arkansas River
4. Horizontal distance nearest water of the state is from project: 2.8 mies

I. NON-STORMWATER DISCHARGES: No non-Stormwater discharges are anticipated for this project.

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 Erosion Control Plan.

A. ALL AREAS OF GROUND SURFACE DISTURBANCE:
Erosion Control Plan-Initial sheets 1 - 9

B. AREAS OF CUT AND FILL
Erosion Control Plan-Final sheets 1 - 9

D. LOCATION OF ALL STRUCTURAL BMPs/CONTROL MEASURES IDENTIFIED IN THE SWMP
Erosion Control Plan-Initial sheets 1 - 9

E. LOCATION OF NON-STRUCTURAL BMPs/CONTROL MEASURES AS APPLICABLE IN THE SWMP
Erosion Control Plan-Final sheets 1 - 9

F. SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER
Erosion Control Plan-Final sheets 4 - 6

G. PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION:
N/A

H. AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc.) and BATCH PLANTS
Erosion Control Plan-Initial sheets 4

3. SWMP ADMINISTRATOR:

A. SWMP ADMINISTRATOR FOR DESIGN:

Name/Title	Contact Information
Luke R. Myers, P.E./Hydraulics Engineer	(303)797-1200; LMyers@jfsato.com
Curtis Martin, Water Quality Specialist CDOT oversight	(719) 227-3260; curtis.martin@hdrinc.com

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 shal 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. 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

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

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. 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

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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
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Region 2 DTD

As Constructed
No Revisions:
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Void:

US 50 WEST WESTBOUND
SWMP NOTES

Designer: ACE
Detailer: ACE
Subset: SWMP
Structure Numbers:
Subset Sheets: 2 of 7

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SWMP NOTES

1. 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.
2. Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs/Control Measures as approved.
3. 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 neeced 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 STABILIZATON

A. SEEDING PLAN

Soil preparation, soil conditioning or topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated 14.4 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

1. Revegetation Requirements: Along Wild Horse Dry Creek (Senate Bill 40 Resources) will be completed following the removal of tamarisk per the revised project special specification 217 (Herbicide Treatment).
A. Willow Cutting Zone for Wild Horse Dry Creek will be revegetated with 1,100 Willow Brush Cuttings;

A. Shrub Planting Zone for Wild Horse Dry Creek will be revegetated with 9,950 square feet (0.22 acre) seeded as detailed in the revegetation notes and plans; and the Shrub Planting Zone for Williams Creek will be revegetated with 15,246 square feet seeded as detailed in the revegetation notes and plans.

2. Revegetation Requirements: All Other Areas of Disturbance(outside of revegetation areas)
All other areas of disturbance will be revegetated with 23.3 acres of grass seed-mix, as follows:

Common Name	Botanical Name	Pounds of seed per Acre
Blue Grama	Boutelous gracilis v. Hachita	3.5
Buffalo Grass	Boutelous dactyloides	4.25
Blanketflower	*Gaillardia aristata*	3.5
Scarlet Gilia	*Ipomopsis aggregata*	1.25
Lewis' Flax (Blue Flax)	*Linum lewisii*	3.5
Western Wheatgrass	*Pascopyrum smithii*	4.25
Upright Prairie Coneflower	*Ratibida columnifera*	3.5
Sand Dropseed	*Sporobolus cryptandrus*	2.25
Green Needlegrass	*Stipa viridula*	3
Oats for spring planting or **Regreen** for spring or fall (Cover Crop @ 15 Lbs./Acre)	*Avena sativa (oats)* *Triticum aestivum (Regreen)*	0.5
Total		29.5

Planting of trees and shrubs will follow CDOT's Standard Specification 214 (Planting).

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.

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)	Compost (cys/acre) 1/2 inch depth
300	200	65

*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.

SWMP NOTES

1. All seeded areas shall be reviewed during the 14 day inspections by the SWMP Administrator and or Erosion Control Inspector for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be re-graded, seeded, and have the designated mulching applied as necessary, at no additional cost to the project.
2. 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.

BMP Matrix:

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 a Non-Standard BMP Specification and Narrative for 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 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 SWMP Plans but are anticipated to be used during construction (i.e. Vehicle Tracking Pad, Batch Plants, etc.). The SWMP Administrator shall locate these prior to or during construction and reflect on SWMP Map.
4. 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.

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:

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD/NON-STANDARD	IN USE ON SITE	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 erosion logs*	Fence (plastic) shall be placed in combination with erosion logs 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	
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.					X	X	
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
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				X	X	X
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

SWMP NOTES

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				X	X	X
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	
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	
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	
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	
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				X	X	
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.					X	X	
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					X	X
OUTLET PROTECTION *Riprap, or approved other*	Material placed as energy dissipater to prevent erosion at outlet structure.						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	
VEHICLE TRACKING PAD	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	
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	
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	
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.					X	X	
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff.					X	X	
OTHER								

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.

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JFS&A J. F. SATO AND ASSOCIATES
5898 South Rapp Street
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US 50 WEST WESTBOUND
SWMP NOTES

Designer: ACE
Detailer: ACE
Subset: SWMP
Structure Numbers:
Subset Sheets: 5 of 7

Project No./Code
STA 0503-085
20344
Sheet Number 161

SWMP NOTES

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	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 Fence (plastic)	Filter sediment laden runoff from disturbance area. Area to be identified on SWMP prior to construction starting.					X	X	X
LANDFORM (SWMP Administrator shall add locations to SWMP site maps)	Existing landforms may be used as a BMP/Control Measure if they prevent sediment from entering or leaving the disturbance area. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion. Area to be identified on SWMP prior to construction starting.					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	
SURFACE ROUGHENING / GRADING TECHNIQUES Blading, Backhoe, Dozing, Combination Loader	Temporary stabilization of disturbance and to minimize wind and erosion.						X	
SEEDING (TEMPORARY)	Temporary stabilization usec for over wintering of disturbance or used to control erosion for areas scheduled for future construction.						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	
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
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
SEEDING PERMANENT (NATIVE)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.							X
SOIL RETENTION BLANKET (SRB)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. SRB to be used on all slopes 4:1 or steeper.	M-216					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
OTHER								

12. TABULATION OF STORMWATER QUANTITIES

A. BMP/Control Measure sediment removal and disposal shall be pcid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposa 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 300 hours of blading, dozing, and backhoe may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: 203 Blading, 203 Dozing, and 203 Backhoe.

C. Establishment of seeded areas shall be paid for as: FA Erosion Control, 212 Seeding (native). This shall include mowing, weed control, reseeding/mulch/tackifier.

Print Date: 3/2/2017
File Name: 20344DES_SWMP_Note_6.dgn
Horiz. Scale: 1:1 Vert. Scale:

JFS&A J. F. SATO AND ASSOCIATES
5898 South Rapp Street
Littleton, Colorado 80120

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

As Constructed
No Revisions:
Revised:
Void:

US 50 WEST WESTBOUND
SWMP NOTES

Designer: ACE
Detailer: ACE
Subset: SWMP
Structure Numbers:
Subset Sheets: 6 of 7

Project No./Code
STA 0503-085
20344
Sheet Number 162

SWMP NOTES

Spec.	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
SSP	203-01500	Blading	Hour	100	150	50	300
SSP	203-01510	Backhoe	Hour	100	150	50	300
SSP	203-01550	Dozing	Hour	100	150	50	300
PSP	207-00205	Topsoil	CY			6,762	6,762
SSP	208-00007	Erosion Log Type 2 (8 Inch)	LF	1,300			1,300
SSP	208-00020	Silt Fence	LF	6,900			6,900
SSP	208-00035	Aggregate Bag	LF	400			400
SSP	208-00045	Concrete Washout Structure	Each	4			4
SSP	208-00051	Storm Drain Inlet Protection (Type I)	Each	1			1
SSP	208-00053	Storm Drain Inlet Protection (Type I)	LF	20			20
SSP	208-00070	Vehicle Tracking Pad	Each	4			4
SSP	208-00103	Removal and Disposal of Sediment (Labor)	Hour				400

Spec.	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
SSP	208-00105	Removal and Disposal of Sediment (Equipment)	Hour	150	150	100	400
SSP	208-00106	Sweeping (Sediment Removal)	Hour	250	250	300	800
SSP	208-00107	Removal of Trash	Hour	100	100	100	300
SSP	208-00207	Erosion Control Management (ECM)	Day	75	150	75	300
SSP	212-00006	Seeding (Native)	Acre			14.40	14.40
SSP	212-00032	Soil Conditioning	Acre			14.40	14.40
SSP	213-00002	Mulching (Weed Free Hay)	Acre			7.52	7.52
SSP	213-00061	Mulch Tackifier	LB			1,504	1,504
SSP	216-00201	Soil Retention Blanket (Straw/Coconut) (Biodegradable Class 1)	SY			33,300	33,300
PSP	700-70380	Erosion Control	FA				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:

1. Wetland Impacts: YES NO
2. Stream Impacts: YES NO
3. Threatened and Endangered Species:

Black-tailed prairie dog (*Cynomys ludovicianus*) – *State Threatened Species*
Black Footed ferret (Mustela nigripes) – Federally Endangered and State Endangered Species
Wester Burrowing Owl (Athene cunicularia hypugaea) (State Species of Concern)
Massasuga (Sistrurus catenatus) State Species of Concern
Triploid Colorado checkered whiptail (Aspidoscelis neotesselata) State Species of Concern
Plains leopard frog (Rana blairi) State Species of Concern

4. If YES to any of the above items, are any permits required or additional actions needed (404, etc.)
Permits
Air Pollution Emission Notice - CDPHE
Dewatering Permit - CDPHE
Floodplain Development Permit – City of Pueblo and Pueblo County
MS4 Compliance – CDPHE
404 Nationwide permit – USACE
Senate Bill 40 Certification – CPW
Stormwater Permit - CDPHE

14. NOTES