SWMP TEMPLATE FOR PROJECTS WITH LESS THAN AN ACRE OF DISTURBANCE

1. SITE DESCRIPTION

A. PROJECT SITE LOCATION: US 24, between MP 350.8 and MP 356.7.

B. PROJECT SITE DESCRIPTION: This is a resurfacing project on US 24 through the Town of Simla, between MP 350.8 and MP 356.7. There will be no replacing or adding guardrails, replacing CBS/pipes or bridge work as part of the project scope.

C. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC): 41.4 acres
2. Total area of disturbance (LDA): 34.32 acres
3. Acreage of seeding: .15 acres
4. Total area of new impervious surface: 0 acres

D. RECEIVING WATER:

1. Outfall locations: See SWMP Site Map
2. Names of receiving water(s) Big Sandy Creek within 1 mile.
3. Ultimate receiving water: Arkansas River
4. Horizontal distance nearest water of the state is from project: 136 miles

E. EXISTING SOIL DATA: Nunn clay loam, natural drainage class- well drained, runoff class-medium, hydrologic soil group-C.

F. EXISTING VEGETATION, INCLUDING PERCENT COVER:

Vegetative transects are *not required*, by permit, on projects with under an acre of disturbance. However, it is advised that transects be completed prior to construction, as a quality control for post construction revegetation assessment. If transects are not completed on a project, at a minimum describe the quality of the existing vegetation.

Pre-Construction: Date of survey: _____ %Density: _____
Description of existing vegetation:
Map or table showing transect locations in SWMP Notebook:
Post-Construction: Date of survey: _____ %Density: _____
Description of existing vegetation:
Map or table showing transect locations in SWMP Notebook:

2. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

1. Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any BMPs/Control Measures required to contain potential pollutants.

B. OFFSITE DRAINAGE (RUN ON WATER)

1. Place BMPs/Control Measures to address run-on water in accordance with subsection 208.03.

C. CONSTRUCTION DEWATERING:

1. Obtain a dewatering permit from CDPHE if conditions of their low risk guidance for Discharges of Uncontaminated Groundwater to Land are not met; see subsection 107.25(b) 8.

D. VEHICLE TRACKING PAD

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

E. PERIMETER CONTROL

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.

3. SWMP ADMINISTRATOR:

A. SWMP ADMINISTRATOR FOR DESIGN:

Name/Title	Contact Information
Greg Fischer / Landscape Specialist	303-757-9507 Greg.fischer@state.co.us

B. SWMP ADMINISTRATOR FOR CONSTRUCTION: (See Subsection 208 Under an Acre Specification) 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. 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.) ***The SWMP Administration for construction is not a separate pay item but is included in the cost of the work.***

Name/Title	Contact Information	Certification #	Start Date	Engineer Approval

4. 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 Contractor in accordance with Section 208

A. MATERIALS HANDLING AND SPILL PREVENTION: prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.

B. STOCKPILE MANAGEMENT: shall be done in accordance with subsection 107.25 and 208.07

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

D. SAW CUTTING: shall be done in accordance with subsection 107.25, 208.04, 208.05
E. STREET SWEEPING: shall be done in accordance with subsection 208.04

5. BMP/CONTROL MEASURE MAINTENANCE

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

6. INTERIM AND FINAL STABILIZATION

A. SEEDING PLAN

Soil conditioning, seeding (native) and soil retention blanket will be required for disturbed areas. The following types and rates shall be used:

% of Mix	COMMON NAME	SCIENTIFIC NAME	LBS. PLS PER ACRE	SEEDS PER POUND	SEEDS PER S.F. BASED ON PROPOSED SEEDING RATE (PLS PER ACRE)
13%	Inland Saltgrass	Distichlis spicata	1	520,000	11.94
10%	Blue grama	Bouteloua gracilis	0.5	825,000	9.47
13%	Western wheatgrass	Pascopyrum smithii	5	110,000	12.63
22%	Alkali sacaton	Sporobolus airoides	0.5	1,758,000	20.18
6%	Little bluestem	Schizachyrium scoparium	1	260,000	5.97
3%	Prairie sandreed	Calamovilfa longifolia	0.5	273,000	3.13
32%	Sand Dropseed	Sporobolus cryptandrus	0.25	5,298,000	30.41
N/A	Blanket flower	Gaillardia aristata	0.5	132,000	N/A
N/A	Prairie coneflower	Ratibida columnifera	0.5	737,000	N/A
100%		**TOTAL**	**9.75**	9,913,000	93.72

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 at double the rate and rake 0.25 inch to 0.5 inch into the soil.

C. MULCHING APPLICATION: Install biodegradable soil retention blanket.

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) **All areas <2:1** (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. BLANKET APPLICATION: On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch tackifier.

7. PRIOR TO FINAL ACCEPTANCE

A. Partial Acceptance shall be in accordance with subsection 107.25 (d) and 208.10 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% reestablishment 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.

8. 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.

1. 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.
2. 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 ADMINSTRATOR	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		
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		
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				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	Place prior to slope/embankment work to capture sediment and protect and delineate	M-208				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	
*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		
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		
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	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		
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		
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.

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINSTRATOR	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 used 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	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	
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	X

Print Date: 1/25/2017	SWMP PLAN SHEET			Project No./Code
File Name: -				STA 0243-087
Horiz. Scale: N/A				
Vert. Scale: As Noted	Designer: GAF		Region: 04	20856
Unit Information	Detailer: GAF		Unit Leader: TAM	
Unit Leader Initials	Sheet Subset: SWMP		Sheet: 5 of 8	Sheet Number 34

SOIL RETENTION BLANKET (SRB)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	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	
OTHER								

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.

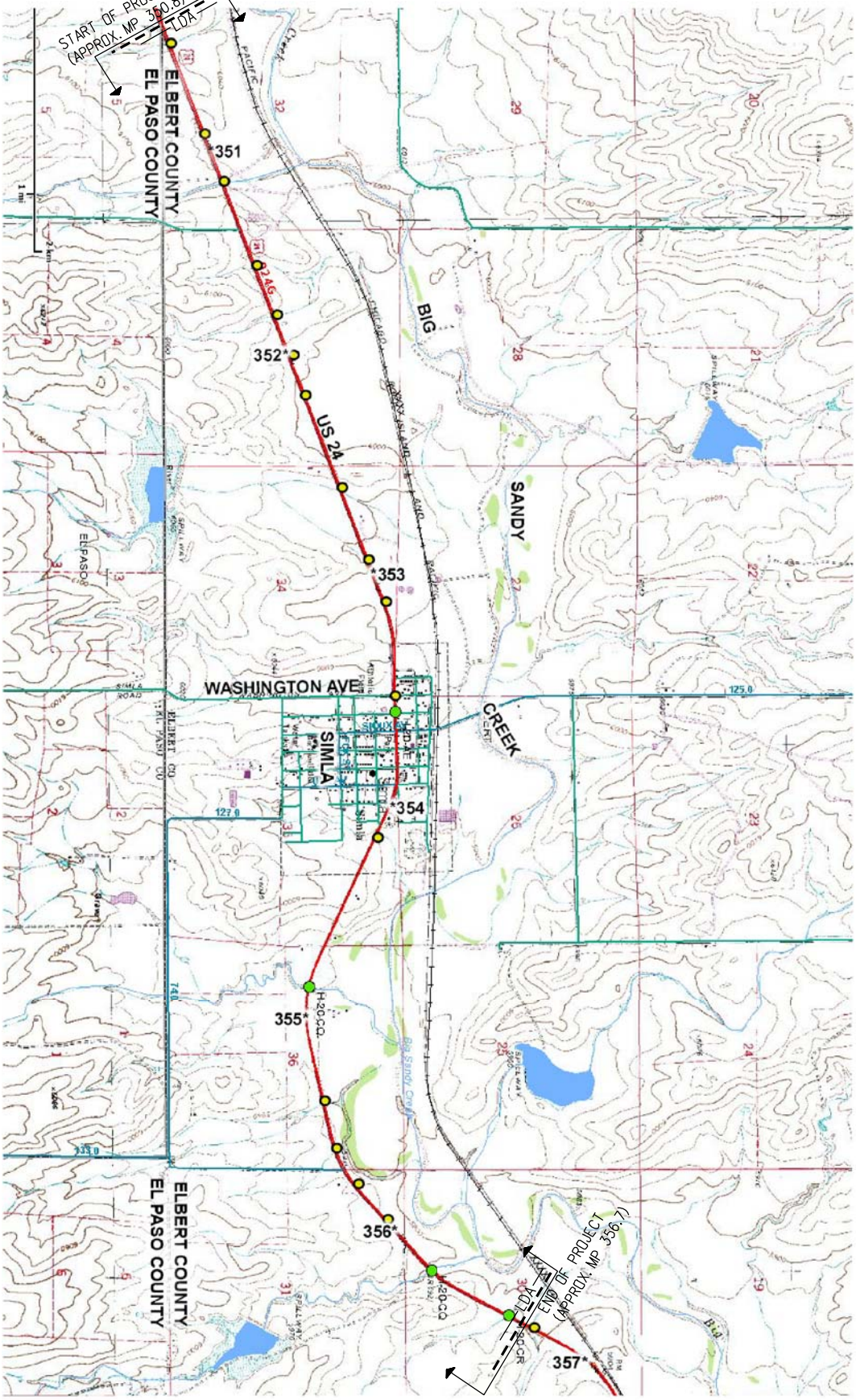
	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
	208-00035	Aggregate Bag	LF		500 (b)		500
	208-00103	Removal and Disposal of Sediment (Labor)	Hour		10		10
	208-00105	Removal and Disposal of Sediment (Equipment)	Hour		4		4
	208-00106	Sweeping (Sediment Removal)	Hour		144 (c)		144
	208-00107	Removal of Trash	Hour	40			40
	212-00006	Seeding (Native)	Acre			.15	.15
	212-00032	Soil Conditioning	Acre			.15	.15
	216-00101	Soil Retention Blanket (Straw/Coconut) (Photodegradable Class 1)	SY			730	730

*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

(a) Labor hours are anticipated to maintain the minimum 4" vertical grade separation to provide perimeter control of reconstructed area.
(b) Aggregate bags are anticipated for stockpile management and adjacent to minor and major structures.
(c) Sweeping has been estimated as on average days a week during active construction.
(d) Engineers estimate to complete the work is 45 days.

13. BIOLOGIC IMPACTS

A. ENVIRONMENTAL IMPACTS:
1. Wetland Impacts: NO
2. Stream Impacts: NO
3. Threatened and Endangered Species: No species are anticipated to be impacted by the project.



SWMP NOTES:

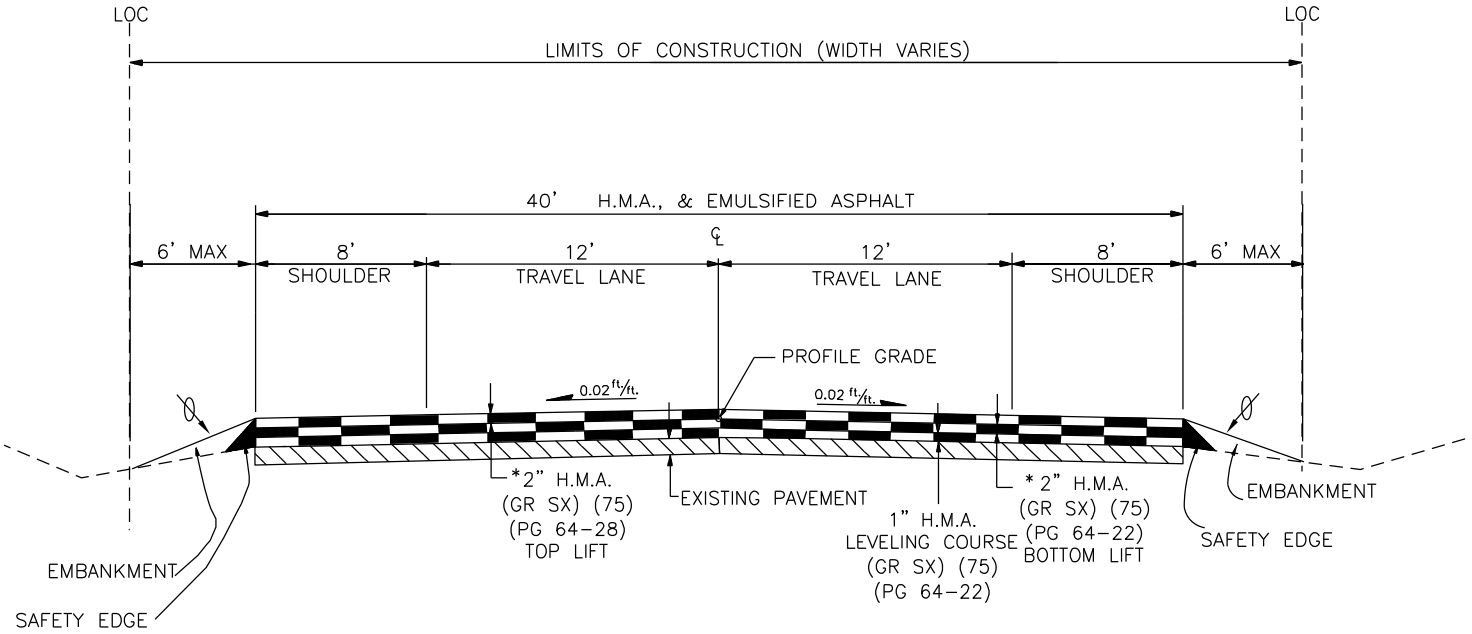
1. SEE TYPICAL SWMP SECTION FOR LIMITS OF CONSTRUCTION.
2. USE THIS SITE MAP TO SHOW THE LOCATIONS OF ALL INSTALLED BMPS THROUGHOUT THE CONSTRUCTION OF THE PROJECT.

NORTH

LEGEND

- *354 — MILE POST
- MINOR STRUCTURE
- MAJOR STRUCTURE
- DRAINAGE
- LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE

Print Date: 1/25/2017	SWMP SITE MAP			Project No./Code
File Name: -				STA 0243-087
Horiz. Scale: N.T.S.				
Vert. Scale: As Noted	Designer: GAF	CDOT	Region: 04	20856
Unit Information	Detailer: GAF		Unit Leader: TAM	
Unit Leader Initials	Sheet Subset: SWMP		Sheet: 7 of 8	Sheet Number 36



US 24 TYPICAL SECTION

Not To Scale

SWMP TYPICAL SECTION NOTES:

1. SHOULDERING MATERIAL ALONG THE SAFETY EDGE SHOULD BE ADDED ON TOP OF UNDISTURBED GRADE.

Print Date: 1/25/2017	SWMP TYPICAL SECTION			Project No./Code
File Name: SWMP_Sheets _over an acre.dgn				STA 0243-087
Horiz. Scale: N.T.S.				
Vert. Scale: As Noted	Designer: GAF	CDOT CO	Region: 04	20856
Unit Information	Detailer: GAF		Unit Leader: TAM	
Unit Leader Initials	Sheet Subset: SWMP		Sheet: 8 of 8	Sheet Number 37