**SWMP Template (Plan Sheets) for Projects with 1 Acre or More of Disturbance 2/25/2022 UPDATE**

[Notes within [ ] are designer directions – delete all directions prior to final plan submittal. The SWMP Administrator for Design will fill in the XXX during design phase] Do Not delete text in black. If you want to delete text in Black, contact the region SWMP Reviewer for the project. Text in Black is a mandatory requirement of the permit and compliments CDOT specifications.]

# 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 for Construction shall update the SWMP to reflect current project site conditions.

## PROJECT SITE LOCATION:

Location or address of construction office:

[include the location, project limits, and the address of the construction office]

## PROJECT SITE DESCRIPTION:

[include a description and nature of the construction activities at the site; type of project; summary of grading activities; installation of utilities; paving; excavation; landscape, etc.; and the final disposition of the property. The SWMP Administrator for Design may refer to the project Form 463 - description available on ProjectWise in the folder 01 Pre-Construction]

## PROPOSED SCHEDULE FOR SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES:

Stabilize all areas that are not paved or landscaped through establishment of vegetation cover.

[Describe the sequence of construction events and planned implementation of control measures for each phase involved in the project, such as clearing and grubbing, grading, drainage, excavation, structures removal and construction activities that may impact water quality etc.]

## ACRES OF DISTURBANCE:

[includes clearing, grading, excavation, stockpiling of fill materials, demolition, areas with heavy

equipment/vehicle traffic, installation of new or improved haul roads and access roads, staging areas,

dedicated borrow/fill areas and storage that will disturb existing vegetative cover. Round area up to the

nearest 100th of an acre or to the nearest sq. ft.]

1. Total area of construction site (LOC (PERMITTED AREA)): [XXX] acres

2. Total area of proposed disturbance (LDA): [XXX] acres [Consider offsetting top of cut and toe of fill lines based on constructability considerations in the field, 10’ offset is recommended]

3. Total area of seeding: [XXX] acres

4. Total area of pre-project impervious surface: [XXX] sq. ft. [Include all existing impervious area within the project LOC]

5. Total area of final impervious surface: [XXX] sq. ft. [Include all new and existing impervious area that remains within the project LOC]

## EXISTING SOIL DATA:

[Provide a summary of any existing soil data that describes the soil types, their erodibility and potential for soil erosion. Include the 12 soil texture(s) from the USDA soil texture classification. Information can be found using the USDA Web Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Provide the source of the data, which may include NRCS, geotechnical reports, and County Soil Conservation maps.]

Data Source(s): [XXX]

## EXISTING VEGETATION, INCLUDING PERCENT OF VEGETATIVE 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 for Construction will conduct the Vegetation Transects. If the site is disturbed, an Adequate Reference Site(s) may be utilized, refer to the permit.

Vegetation Transect instruction is located on CDOT Landscape Architecture website. https://www.codot.gov/programs/environmental/landscape-architecture/swmp/vegetative-transect-procedure.pdf

[SWMP Administrator for Design or SWMP Administrator for Construction is to conduct a survey including general

description of existing vegetation prior to any ground disturbance on the project. The SWMP Administrator shall

photo-document existing vegetation where all work will be occurring. The SWMP Administrator shall perform

the vegetation survey transect(s) and include photo documentation.]

Pre-Construction Date of survey: [XXX] Percent Existing Vegetative Cover: [XXX]

Description of existing vegetation: [XXX]

Method for determining percent vegetative cover: [Recommend using CDOT Vegetative Transect Procedure; if not used, provide a copy of methodology and have SWMP Reviewer pre-approve.]

Include a map or table showing transect locations, photos documenting pre-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

[Transect form is located on CDOT Landscape Architecture website] https://www.codot.gov/programs/environmental/landscape-architecture

Post-Construction Date of survey: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Percent Vegetative Cover: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Description of vegetation:

The method used to determine pre-construction percent cover shall be used to determine post construction percent cover.

Include map or table showing transect locations, photos documenting post-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

[Transect form is located on CDOT Landscape Architecture website] https://www.codot.gov/programs/environmental/landscape-architecture

## POTENTIAL POLLUTANTS SOURCES:

Refer to Potential Pollutant Sources in SWMP Section 4A. The SWMP Administrator for Construction shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25.

## DRAINAGE PATTERNS AND RECEIVING WATER(S):

1. Description of drainage patterns from the Site:

[describe general drainage patterns and flow through the site]

2. Names of immediate and ultimate receiving water(s) on site:

[This includes all watercourses, even if they are usually dry. If stormwater enters a ditch or municipal separate storm sewer system, identify that entity name, location of stormwater discharge and the receiving water(s). Identify if designated as outstanding waters. Does the on-site receiving water(s) have 303d impaired designation: [XXX] Information can be found using the CDPHE Colorado Segmentation Mapping Tool:

3. Description of all stream crossings located within the Construction Site Boundary:

[Include location, stream name and a description of any disturbed upland areas that may contribute to the stream at the stream crossing locations]

|  |  |  |
| --- | --- | --- |
| Location  [Station or Mile Post] | Stream Name | Description Of Any Disturbed Upland Areas |
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## ALLOWABLE NON-STORMWATER DISCHARGES:

[Identify the locations of any anticipated sources of allowable non-stormwater components of the discharge, including those under a separate permit or a Division low risk discharge guidance policy, such as uncontaminated springs and landscape irrigation return flow. SWMP Administrator for Construction shall provide a method statement of how discharge will be handled and applicable control measures installed. See SWMP Sections 11 and 13B in the SWMP.]

|  |  |  |
| --- | --- | --- |
| Discharge Description | Site Map # | Method Statement (Location) |
| Uncontaminated Springs |  |  |
| Concrete Washout Water (in-ground washout structure)# |  |  |
| Landscape Irrigation Return Flows |  |  |
| Discharges from Diversions of State Waters |  |  |
| Emergency Fire Fighting |  |  |

#Concrete washout water associated with the washing of concrete tools and concrete mixer chutes can be discharged to the ground if site is managed accordingly to prevent the water from leaving the site as surface runoff or reaching receiving waters.

## DIVERSION CRITERIA:

1. Is a diversion planned for the Site? Yes \_\_\_\_\_\_ No \_\_\_\_\_\_.

2. If yes, complete information below:

* 1. What is the 2-year peak flow for the waterway being diverted (cubic feet per second)?
  2. What are the monthly averages if available? (provide averages for Jan- Dec if available)
  3. What is the upstream contributing drainage area and imperviousness?
  4. A method statement must be prepared by the Contractor and approved by CDOT for each diversion. Diversion structures must minimize soil transport and erosion within the entire diversion, minimize erosion during discharge, and minimize run-on into the diversion and meet the conditions in the SCP.
  5. If the conditions in the SCP cannot be met and an alternative is required, CDOT must approve the alternative and then it must be submitted and approved by CDPHE’s Water Quality Control Division prior to implementation.

## ALTERNATIVE TEMPORARY STABILIZATION SCHEDULE:

[If applicable, provide a description of the alternative temporary stabilization schedule. If temporary stabilization exceeds the 14-day schedule, then the SWMP must document the constraints necessitating the alternative schedule, provide the alternative

schedule, and identify all the locations where the alternative schedule is applicable on the site map.

Alternative temporary stabilization schedules must be approved by CDOT prior to implementation]

# SITE MAP COMPONENTS:

Pre-construction [The SWMP Administrator for Design will show the following items on the SWMP Site Map and label on the SWMP Site Map. For items A through M, the SWMP Administrator for Design must reference the sheet(s) where they are shown and can be readily accessed. Use CDOT line types for the Limits of Disturbance Area (LDA) and the Limits of Construction (LOC). For a definition of LDA and LOC refer to 107.25. Locations of components are shown in the plan set, e.g. “See SWMP Site Maps”]

## PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES:

[See SWMP Site Maps or reference site map #]

## FLOW ARROWS THAT DEPICT STORMWATER FLOW DIRECTIONS ON-SITE, RUN-ON AND RUNOFF DIRECTION:

[See SWMP Site Maps or reference site map #]

## ALL AREAS OF GROUND SURFACE DISTURBANCE:

[See SWMP Site Maps or reference site map #]

## AREAS OF CUT AND FILL:

[See SWMP Site Maps or reference site map #]

## AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc.) and LOCATIONS OF ALL WASTE ACCUMULATION and BATCH PLANTS INCLUDING MASONRY MIXING STATIONS:

[See SWMP Site Maps or reference site map #, if known at time of design] [Do not include staging areas located outside of CDOT’s ROW and covered with a separate permit].

## LOCATION OF ALL STRUCTURAL CONTROL MEASURES IDENTIFIED IN THE SWMP:

[See SWMP Site Maps or reference site map #]

## LOCATION OF NON-STRUCTURAL CONTROL MEASURES AS APPLICABLE IN THE SWMP:

[See SWMP Site Maps or reference site map #]

## SPRINGS, STREAMS, WETLANDS, DIVERSIONS, AND OTHER STATE WATERS, INCLUDING AREAS THAT REQUIRE PRE-EXISTING VEGETATION BE MAINTAINED WITHIN 50 FEET OF A RECEIVING WATER:

[See SWMP Site Maps or reference site map #]

## LOCATIONS OF ALL STREAM CROSSING LOCATED WITHIN THE CONSTRUCTION SITE BOUNDARY:

[See SWMP Site Maps or reference site map #]

## PROTECTION OF TREES, SHRUBS, SENSITIVE HABITAT, AND CULTURAL RESOURCES:

[See SWMP Site Maps or reference site map #]

## LOCATIONS WHERE ALTERNATIVE TEMPORARY STABILIZATION SCHEDULES APPLY:

If applicable, [See SWMP Site Maps or reference site map #]

# QUALIFIED STORMWATER MANAGERS:

## SWMP ADMINISTRATOR FOR DESIGN:

CDOT Certified Individual responsible for developing SWMP Plan Sheets and SWMP Site Maps during the design phase.

[The 207 and 212 require that topsoil testing and the topsoil amendment requirements be completed by the SWMP Administrator for Design, for additional information see the SWMP development tools on the Landscape Architecture Section Website <https://www.codot.gov/programs/environmental/landscape-architecture/207-and-212-psp-required-swmp-development-tools-1>

|  |  |  |
| --- | --- | --- |
| Name/Title | Contact Information [phone & email] | Certification # |
|  |  |  |

## SWMP ADMINISTRATOR FOR CONSTRUCTION: (As defined in Section 208) The Contractor shall designate a SWMP Administrator for Construction upon accepting co-permittee of the permit. The SWMP Administrator for Construction shall become the operator for the SWMP and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03, the SWMP shall remain the property of CDOT. The SWMP Administrator for Construction shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP Administrator for Construction shall address all aspects of the project’s SWMP. (Update the information below for each new SWMP Administrator for Construction) (A copy of TECS Certification must be included in the SWMP.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name/Title | Contact Information (phone & email) | Certification # | Start Date | Engineer Approval |
|  |  |  |  |  |
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## EROSION CONTROL INSPECTOR: (As defined in Section 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.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name/Title | Contact Information (phone & email) | TECS  Certification # | Start Date | Engineer Approval |
|  |  |  |  |  |
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## PERMANENT STABILIZATION SUBJECT MATTER EXPERT: This qualified individual will be either a Regional Environmental Staff member, or an Independent Contractor Controller (Independent Assurance Program). This expert is a project team leader responsible for ensuring project adherence to requirements of the 207 and 212 Project Special Provisions as follows and will be available for questions regarding permanent stabilization requirements.

[See the Construction Phase Inspection and Verification Checklist on the Landscape Architecture website for regional contacts to address revegetation questions:

<https://www.codot.gov/programs/environmental/landscape-architecture/assets/inspection-and-verification-checklist-for-roadside-revegetation_-111621_v3.pdf>]

1. Review the Topsoil Management Plan and the Permanent Stabilization Site Maps.
2. Attend the Environmental Pre-Construction Conference.
3. Coordinate the Site Pre-Vegetation Conference.
4. Review and recommend approval of products.
5. Review and recommend approval of the Quantities Verification Prerequisite.
6. Attend the Partial Landscape Completion Walkthrough.
7. Attend the Final Landscape Completion Walkthrough.

|  |  |
| --- | --- |
| Name/Title | Contact Information [phone & email] |
|  |  |

# STORMWATER MANAGEMENT CONTROLS FOR FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

## 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. All control measures related to potential pollutants shall be shown on the SWMP Site Map by the Contractor’s SWMP Administrator for Construction.

## OFFSITE DRAINAGE (RUN ON WATER):

Describe and record control measures on the SWMP Site Map that have been implemented to address off site run-on water in accordance with subsection 208.03.

## VEHICLE TRACKING CONTROL:

Control measures shall be implemented in accordance with subsection 208.04.

## 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. Perimeter control shall be in accordance with subsection 208.04

2. Perimeter control may consist of berms, silt fence, erosion logs, existing landforms, or other control measures as approved.

# DURING CONSTRUCTION

RESPONSIBILITIES OF THE SWMP ADMINISTRATOR FOR CONSTRUCTION: Considered a “living document”, the SWMP is continuously reviewed and modified throughout the construction phases. During construction, SWMP Administrator for Construction shall add, update, or amend the items A-G below as needed in accordance with subsection 208.03.

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

## MATERIALS HANDLING AND SPILL PREVENTION AND RESPONSE PLAN: Prior to construction commencing the Contractor shall submit a Spill Response Plan. Materials handling and Spill Response Plan shall be in accordance with subsection 208.06.

## OTHER CDPS PERMITS: List applicable CDPS permits associated with the permitted site and activities.

## STOCKPILE MANAGEMENT: Shall be done in accordance with subsections 107.25 and 208.07.

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

## SAW CUTTING: Shall be done in accordance with subsections 107.25, 208.04, 208.05

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

# INSPECTIONS

## Water Quality Inspections shall be in accordance with subsection 208.03(c).

## Permanent Stabilization Inspections shall be in accordance with subsections 208.04(e)4 and 208.10.

# CONTROL MEASURE MAINTENANCE

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

# RECORD KEEPING

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

# INTERIM, PERMANENT STABILIZATION and LONG-TERM STORMWATER MANAGEMENT

The Contractor shall comply with all interim stabilization and permanent stabilization requirements in accordance with subsection 208.04(e).

## SEEDING PLAN:

Work with Region Environmental Specialist, Biologist, wetland specialist or Regional or Headquarter Landscape Architect to develop project seed mix(es).

The following seed mix(es) and rates are for drill seeding method as shown on the Permanent Stabilization Site Maps shall be used:

|  |  |  |
| --- | --- | --- |
| COMMON NAME | BOTANICAL NAME | LBS. PLS PER ACRE |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | Total |  |

## SEEDING APPLICATION METHOD:

The following seeding methods shall be used for all areas shown on the Permanent Stabilization Site Maps. Soil compaction shall be minimized for areas where permanent stabilization will be achieved through vegetative cover.

[Select seeding methods used on the Permanent Stabilization Site Maps and delete all others. Round area up to the nearest 100th of an acre]

|  |  |  |
| --- | --- | --- |
| **Pay Item** | **Seeding Method (subsection 212.05)** | **Acre** |
| 212-00706 | Seeding (Native) Drill |  |
| 212-00707 | Seeding (Native) Hydraulic |  |
| 212-00708 | Seeding (Native) Broadcast |  |
| 212-00709 | Seeding (Wetland) Drill |  |
| 212-00710 | Seeding (Wetland) Hydraulic |  |
| 212-00711 | Seeding (Wetland) Broadcast |  |
|  | Total |  |

## SOIL STABILIZATION METHODS:

Minimum soil stabilization methods (attached mulch) for all disturbances to receive seeding.

[Select methods used on the Permanent Stabilization Site Maps and delete all others. Add additional soil stabilization methods with an approved project special specification. Round quantities up to the nearest whole number]

1. Apply a minimum of 2 tons/ac certified weed free hay or 2 ½ tons/ac of certified weed free straw and mechanically crimp into the soil in combination with natural mulch tackifier in accordance with Section 213. 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 in accordance with Sections 208 and 213.

2. Apply Spray-on Mulch Blanket hydraulically in accordance with Section 213.

3. Apply Bonded Fiber Matrix hydraulically accordance with Section 213.

4. Install Soil Retention Blankets in accordance with Standard Plan M-216-1 and Section 216.

## SPECIAL REQUIREMENTS:

1. Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished within four working days of placing the topsoil on the de-compacted civil subgrades. If placed topsoil is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e) at no additional cost to the Department.

2. Complete permanent stabilization mulching within 24 hours of hydraulic application of native seed.

3. The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer for approval showing how implementation of SWMP Permanent Stabilization Plans will minimize damage to seeded areas.

## SOIL AMENDMENT REQUIREMENTS: Minimum amendment material requirements for all disturbances to receive seeding.

[Select seeding and topsoil generation method(s) used on the Permanent Stabilization Site Maps and delete all others. If more than one revegetation unit was sampled and produced different soil amendment requirements add additional tables as necessary. Round quantities up to the nearest whole number] [select either High or Low N formulations for organic fertilizer based on recommendation from CDOT’s Amendment Calculator].

**X.XX** **Total Acres of Seeding (Native) Drill With Topsoil Generated From** **[selection one of the following and delete the others: Topsoil (Onsite), Seeding Media and Topsoil (Offsite)]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ****Seeding (Native)****  ****Drill****  ****Pay Item 212-00706**** | Pay Item | Description | Amount/Acre | Units | Total For This Method |
| 212-00700 | Organic Fertilizer High or Low N |  | Pounds |  |
| 212-00701 | Compost (Mechanically Applied) |  | CY |  |
| 212-00703 | Humate |  | Pounds |  |
| 212-00704 | Mycorrhizae |  | Pounds |  |
| 212-00705 | Elemental Sulfur |  | Pounds |  |

**X.XX** **Total Acres of Seeding (Native) Hydraulic With Topsoil Generated From [selection one of the following and delete the others: Topsoil (Onsite), Seeding Media and Topsoil (Offsite)]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ****Seeding (Native) Hydraulic****  ****Pay Item 212-00707**** | Pay Item | Description | Amount/Acre | Units | Total For This Method |
| 212-00700 | Organic Fertilizer High or Low N |  | Pounds |  |
| 212-00702 | Biotic Soil Amendments (Hydraulically Applied) |  | Pounds |  |
| 212-00703 | Humate |  | Pounds |  |
| 212-00704 | Mycorrhizae |  | Pounds |  |

**XX.X Total Acres of Seeding (Native) Broadcast With Topsoil Generated From [selection one of the following and delete the others: Topsoil (Onsite), Seeding Media and Topsoil (Offsite)]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ****Seeding (Native) Broadcast****  ****Pay Item 212-00708**** | Pay Item | Description | Amount/Acre | Units | Total For This Method |
| 212-00700 | Organic Fertilizer High or Low N |  | Pounds |  |
| 212-00701 | Compost (Mechanically Applied) |  | CY |  |
| 212-00703 | Humate |  | Pounds |  |
| 212-00704 | Mycorrhizae |  | Pounds |  |
| 212-00705 | Elemental Sulfur |  | Pounds |  |

## Permanent Stabilization Application Under Structures:

Under structures shade patterns should be considered and the use of Median Cover Material (Stone) or other stabilized options with an approved Project Special Provision should be used. See SWMP Site Map for locations.

[The SWMP Administrator for Design should review the selected material for use under structures with the region environmental staff and hydraulic engineer]

## RESEEDING OPERATIONS/CORRECTIVE STABILIZATION:

Prior to stormwater construction work partial acceptance.

1. All seeded areas shall be reviewed by the SWMP Administrator for Construction 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, at no additional cost to the project.

## LOCATION AND DESCRIPTION OF PLANNED PERMANENT CONTROL MEASURES: Is Permanent Water Quality Required. Yes \_\_\_\_\_\_ No \_\_\_\_\_\_.

[If yes, include a reference to the plan sheets and reports with the permanent water quality design details and data. Coordinate the with design team to determine If installing permanent water quality control measures as part of the project. Include a description of permanent control measures to control pollutants in stormwater discharges that will be implemented after construction operations are completed, including but not limited to, detention ponds, rain gardens, stormwater vaults, etc.]

# PRIOR TO PROJECT FINAL ACCEPTANCE

## When directed by the Engineer, removal and disposal of temporary control measures shall be included in the cost of work.

## At the end of the project, all ditch checks shall consist of either temporary erosion logs (or equivalent) or permanent riprap.

## All storm drains shall be cleaned prior to the Final Acceptance of the project. If required, include work in 202-04002 Clean Culvert. [\*\*Check with Region Water Quality staff to see if CLEAN CULVERT PSP is needed and what Pay Item to use.\*\*]

## Refer to subsection 208.10 for Items to be completed prior to requesting partial acceptance of water quality work.

# NARRATIVES

[Below are the CDOT narratives covered in CDOT’s Standard Specifications and M Standard Plans. Add proposed non-standard control measures specified during design to the matrix. Place an X in the column for M-208 Standard or “X” for Non-Standard and provide a narrative. Include what, when, where and why the control measure is being used in the Narrative. Place an X in the appropriate implementation column(s)] [During design place a “B” in the Initial Activities Column for any control measures that must be installed before construction activity starts.]

**Control Measure Matrixes During Construction:**

1. Control measure narratives have been included for the CDOT Standard Specifications and Standard Plan M-208 and M-216 along with any non-standard control measures approved during the design process. If a Non-Standard Control Measure not included in the SWMP is proposed and approved by the Engineer the SWMP Administrator for Construction shall do the following: Place an “X” in the column for non-standard and complete a Non-Standard Control Measure Specification and Narrative covering the what, when, where and why the control measure is being used shall be add to the SWMP. The appropriate “X” shall also be added to the implementation phase(s).

2. The SWMP Administrator for Construction shall place an “X” in the column In Use On Site when the control measure has been installed.

3. A “B” in the Initial Activities Column indicates that the control measure shall be installed **before** construction activity starts. Locations and quantities will be discussed during the Environmental Pre-Construction Conference with the Regional Water Pollution Control Manager.

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

| ****APPLICATION,****  ****CONTROL MEASURE**** | ****NARRATIVE**** | ****M- 208 STANDARD or “X” for NON-STANDARD**** | ****IN USE ON SITE**** | ****CONTROL MEASURE IMPLEMENTATION PHASE**** | | |
| --- | --- | --- | --- | --- | --- | --- |
| ****INITIAL ACTIVITIES**** | ****INTERIM 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. |  |  | **B or 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 sensitive habitat, mature trees and/or existing landscaping prior to start of construction disturbances. |  |  | **B or 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** |  |
| *Storm Drain Inlet Protection In Paved Roadways (Type 1, 2 and 3 as shown on M-208-1, sheet 5 of 11)* | Manufactured storm drain inlet protection 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 |  | **B or X** | **X** | **X** |
| *Storm Drain Inlet Protection In Native Seed Areas (M-604 Standard Inlets Type C and D)* | Erosion logs or aggregate bags placed around inlet grate to prevent sediment from entering inlet. Place prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets. | M-208 |  | **B or 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 the start of construction disturbances. | M-208 |  | **B or 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 the start of construction disturbances. | M-208 |  | **B or 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 stockpiling, increase control as the stockpile 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 |  | **B or X** | **X** |  |
| *SLOPE CONTROL*  *Silt fence, erosion logs* | Placed on the contour of a slope to contain and slow down construction runoff. Place prior to the start of construction disturbances. | M-208 |  | **X** | **X** |  |
| *TEMPORARY SEDIMENT TRAP* | Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to the start of construction disturbances. Outlets that withdraw water from or near the surface may be installed when discharging from basins and impoundments. | M-208 |  | **X** | **X** |  |
| *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 an energy dissipater to prevent erosion at outlet structure. | M-601-12 |  |  | **X** | **X** |
| *CONCRETE WASHOUT*  *In-ground or fabricated* | Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to the 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 the start of construction disturbances. | M-208 |  | **B or X** | **X** |  |
| *Engineered SEDIMENT BASIN* | Constructed early in the project, prior to storm sewer/ditches and in accordance with 208.05(p) to capture storm flow. Outlet structure and/or outfall shall be modified for temporary sediment control using an approved non-standard detail. Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible |  |  | **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* | 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 groundwater around the disturbance area to prevent it from mixing with construction runoff. |  |  | **X** | **X** |  |
| *OTHER* |  |  |  |  |  |  |

**NON-STRUCTURAL 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 control measures related to construction access and staging. Control Measure locations are indicated on the SWMP Site Map.

\* **Use of vegetative buffer strip requirements.** The CDPHE Water Quality Control Division Technical Memorandum dated August 27, 2015 clarifies the requirements for utilization of existing vegetation as a buffer type of sediment control measure, while maintaining compliance with the CDPS permit for Stormwater Discharges Associated with Construction Activity – CDPS Permit No. COR4000000. In general, the division does not recommend that vegetated buffers be implemented as a sediment removal control measure for runoff from disturbed areas at construction sites, unless implemented as a “finishing” component of a treatment train comprised of additional, adequate up-gradient Control Measures. The entire memorandum can be found at: [**https://www.colorado.gov/pacific/sites/default/files/Vegetative%20Buffer%20Memo.pdf**](https://www.colorado.gov/pacific/sites/default/files/Vegetative%20Buffer%20Memo.pdf)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **APPLICATION,**  **CONTROL MEASURE** | **NARRATIVE** | **M-STANDARD or “For NON-STANDARD** | **IN USE ON SITE** | **CONTROL MEASURE IMPLEMENTATION PHASE** | | |
| **INITIAL ACTIVITY** | **INTERIM ACTIVITIES** | **PERMANENT**  **STABILIZATION** |
| *\* VEGETATIVE BUFFER STRIP* | Finishing component for filtering sediment-laden runoff from disturbance area. Area within CDOT ROW or temporary easement to be identified on SWMP prior to construction starting. |  |  | **X** | **X** | **X** |
| *GRADING APPLICATIONS (LANDFORM)* | Existing or created landforms may be used as a 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. | M-208 |  | **X** | **X** |  |
| *TOPSOIL MANAGEMENT STOCKPILE/SALVAGE*  *Stockpile* | Prior to any site disturbance work commencing, existing topsoil shall be scraped to a depth six inches or as specified, and placed in stockpiles or windrows. Upon completion of final grading, topsoil shall be evenly distributed over embankment to a depth of six inches or as specified. | M-208 |  | **X** | **X** | **X** |
| *SURFACE ROUGHENING / GRADING TECHNIQUES* | 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 or MULCHING (HYDRAULIC)* | Not to be used in areas of concentrated flows, i.e. ditch lines. To be for either Interim or Permanent Stabilization placed as a surface cover for erosion control. May be used as surface cover when work is temporarily halted and as approved by the Engineer for stockpiles. |  |  |  | **X** |  |
| *Straw or Hay MULCH/MULCH TACKIFIER* | Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as Interim Stabilization as a 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.)* | Interim or Permanent 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 PERENNIAL)* | Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. |  |  |  |  | **X** |
| *SOIL RETENTION BLANKET (SRB)* | Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. | M-216 |  |  | **X** | **X** |
| *TURF REINFORCEMENT MAT (TRM)* | Permanent 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** |
| *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** |
| *OTHER* |  |  |  |  |  |  |

# TABULATION OF STORMWATER QUANTITIES

## 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 control measure maintenance shall be included in the cost of the control measure.

## It is estimated that [XXX] hours of blading (140-250 horsepower), dozing (130-250 horsepower) and/or combination loader (80-125 horsepower) may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: [Select appropriate pay item, delete references to others] 203 Blading, 203 Dozing and/or 203 Combination Loader]

## This project includes pay items 214-00008 Extended Landscape Preservation. Refer the project special provision for all work to be performed during the extended landscape maintenance period for this project. [Check with Region Water Quality staff to see if extended landscape maintenance should be included on the project and the number of months (12-36) required]

[**Designer to delete all that do not apply.** Designer to verify SWMP tabulations quantities are included in the Summary of Approximate Quantities]

[The following pay items can be used for interim stabilization as defined in subsections 208.04(e)(2): 213-00002, 213-00003, 213-00004, 213-00007, 213-00012, 213-00013, 213-00061, 213-00150, 213-00151]

[X in the PSP Spec Column refers to approved Project Special Provisions (PSP) located on the Landscape Architecture website. If used on the project the designer should make sure the PSP is included in all reviews and the final contract]

[R1 in the PSP Spec. Column refers to Region 1 only PSP]

[W in the PSP Spec. Column refers to Project Special Provision Worksheets that are available on this website <https://www.codot.gov/business/designsupport/cdot-construction-specifications/2019-construction-specifications/project-special-provision-work-sheets?b_start:int=20>]

| ****PSP****  ****Spec.**** | ****Pay Item**** | ****Description**** | ****Pay Unit**** | ****Initial****  ****Const.**** | ****Interim****  ****Const.**** | ****Permanent****  ****Stabilization**** | ****\*Total****  ****Quantity**** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 202-04002 | Clean Culvert | Each |  |  |  |  |
|  | 203-01500 | Blading | Hour |  |  |  |  |
|  | 203-01550 | Dozing | Hour |  |  |  |  |
| X | 203-01594 | Combination Loader | Hour |  |  |  |  |
|  | 207-00700 | Topsoil (Onsite) | CY |  |  |  |  |
|  | 207-00706 | Seeding Media | CY |  |  |  |  |
|  | 207-00702 | Topsoil (Offsite) | CY |  |  |  |  |
|  | 207-00703 | Topsoil (wetland) | CY |  |  |  |  |
|  | 207-00704 | Subgrade Soil Preparation | SY |  |  |  |  |
|  | 208-00001 | Silt Dike | LF |  |  |  |  |
|  | 208-00004 | Silt Berm | LF |  |  |  |  |
|  | 208-00012 | Erosion Log Type 1 (9 inch) | LF |  |  |  |  |
|  | 208-00002 | Erosion Log Type 1 (12 inch) | LF |  |  |  |  |
|  | 208-00013 | Erosion Log Type 1 (20 Inch) | LF |  |  |  |  |
|  | 208-00007 | Erosion Log Type 2 (8 Inch) | LF |  |  |  |  |
|  | 208-00008 | Erosion Log Type 2 (12 Inch) | LF |  |  |  |  |
|  | 208-00009 | Erosion Log Type 2 (18 Inch) | LF |  |  |  |  |
|  | 208-00011 | Erosion Bales (Weed Free) | Each |  |  |  |  |
| X | 208-00015 | Sand Bag | LF |  |  |  |  |
|  | 208-00030 | Sediment Basin | Each |  |  |  |  |
|  | 208-00020 | Silt Fence | LF |  |  |  |  |
|  | 208-00021 | Silt Fence (Reinforced) | LF |  |  |  |  |
|  | 208-00022 | Erosion Log Type 3 (9 Inch) | LF |  |  |  |  |
|  | 208-00023 | Erosion Log Type 3 (12 Inch) | LF |  |  |  |  |
|  | 208-00024 | Erosion Log Type 3 (20 Inch) | LF |  |  |  |  |
| X | 208-00025 | Plastic Sheeting | SY |  |  |  |  |
| X | 208-00026 | Coir Roll | LF |  |  |  |  |
|  | 208-00033 | Sediment Trap | Each |  |  |  |  |
|  | 208-00035 | Aggregate Bag | LF |  |  |  |  |
|  | 208-00041 | Rock Check Dam | Each |  |  |  |  |
|  | 208-00045 | Concrete Washout Structure | Each |  |  |  |  |
|  | 208-00046 | Pre-fabricated Concrete Washout Structure (Type 1) | Each |  |  |  |  |
|  | 208-00146 | Pre-fabricated Concrete Washout Structure (Type 2) | Each |  |  |  |  |
|  | 208-00051 | Storm Drain Inlet Protection (Type I) | LF |  |  |  |  |
|  | 208-00052 | Storm Drain Inlet Protection (Type II) | LF |  |  |  |  |
|  | 208-00053 | Storm Drain Inlet Protection  (Type I) (84 Inch) | Each |  |  |  |  |
|  | 208-00054 | Storm Drain Inlet Protection (Type II) | Each |  |  |  |  |
| X | 208-00055 | Rigid Inlet Protection Device | Each |  |  |  |  |
|  | 208-00056 | Storm Drain Inlet Protection (Type III) | Each |  |  |  |  |
|  | 208-00057 | Storm Drain Inlet Protection  (Type I)(144 Inch) | Each |  |  |  |  |
|  | 208-00058 | Storm Drain Inlet Protection  (Type I)(204 Inch) | Each |  |  |  |  |
|  | 208-00060 | Temporary Slope Drains | LF |  |  |  |  |
|  | 208-00070 | Vehicle Tracking Pad | Each |  |  |  |  |
|  | 208-00071 | \*\*Maintenance Aggregate (Vehicle Tracking Pad) | CY |  |  |  |  |
|  | 208-00075 | Pre-fabricated Vehicle Tracking Pad | Each |  |  |  |  |
|  | 208-00103 | Removal and Disposal of Sediment (Labor) | Hour |  |  |  |  |
|  | 208-00105 | Removal and Disposal of Sediment (Equipment) | Hour |  |  |  |  |
|  | 208-00106 | Sweeping (Sediment Removal) | Hour |  |  |  |  |
|  | 208-00107 | Removal of Trash | Hour |  |  |  |  |
|  | 208-00207 | Erosion Control Management (ECM) | Day |  |  |  |  |
|  | 208-00300 | Temporary Berm | LF |  |  |  |  |
| X | 208-00301 | Temporary Diversion | LF |  |  |  |  |
| X | 208-0520 | Temporary Stream Crossing | LS |  |  |  |  |
| X | 211-03005 | Dewatering | LS |  |  |  |  |
|  | 212-00700 | Organic Fertilizer | Pounds |  |  |  |  |
|  | 212-00701 | Compost (Mechanically Applied)- | CY |  |  |  |  |
|  | 212-00702 | Biotic Soil Amendments (Hydraulic Applied) | Pounds |  |  |  |  |
|  | 212-00703 | Humate | Pounds |  |  |  |  |
|  | 212-00704 | Mycorrhizae | Pounds |  |  |  |  |
|  | 212-00705 | Elemental Sulfur | Pounds |  |  |  |  |
|  | 212-00706 | Seeding (Native) Drill | Acre |  |  |  |  |
|  | 212-00707 | Seeding (Native) Hydraulic | Acre |  |  |  |  |
|  | 212-00708 | Seeding (Native) Broadcast | Acre |  |  |  |  |
|  | 212-00709 | Seeding (Wetland) Drill | Acre |  |  |  |  |
|  | 212-00710 | Seeding (Wetland) Hydraulic | Acre |  |  |  |  |
|  | 212-00711 | Seeding (Wetland) Broadcast | Acre |  |  |  |  |
|  | 212-00009 | Seeding (Temporary) | Acre |  |  |  |  |
|  | 213-00002 | Mulching (Weed Free Hay) | Acre |  |  |  |  |
|  | 213-00003 | Mulching (Weed Free) | Acre |  |  |  |  |
|  | 213-00004 | Mulching (Weed Free Straw) | Acre |  |  |  |  |
|  | 213-00007 | Mulching Wood Strand | Acre |  |  |  |  |
|  | 213-00012 | Spray-on Mulch Blanket | Acre |  |  |  |  |
|  | 213-00013 | Spray-on Mulch Blanket | LB |  |  |  |  |
| X | 213-00020 | Compost Blanket | SY |  |  |  |  |
|  | 213-00061 | Mulch Tackifier | LB |  |  |  |  |
|  | 213-00150 | Bonded Fiber Matrix | Acre |  |  |  |  |
|  | 213-00151 | Bonded Fiber Matrix | LB |  |  |  |  |
| W | 214-00008 | Extended Landscape Preservation | LS |  |  |  |  |
|  | 216-00101 | Soil Retention Blanket (Straw/Coconut) (Photodegradable Class 1) | SY |  |  |  |  |
|  | 216-00111 | Soil Retention Blanket (Excelsior) (Photodegradable Class 1) | SY |  |  |  |  |
|  | 216-00122 | Soil Retention Blanket (Coconut) (Photodegradable Class 2) | SY |  |  |  |  |
|  | 216-00201 | Soil Retention Blanket (Straw/Coconut) (Biodegradable Class 1) | SY |  |  |  |  |
|  | 216-00211 | Soil Retention Blanket (Excelsior) (Biodegradable Class 1) | SY |  |  |  |  |
|  | 216-00222 | Soil Retention Blanket (Coconut) (Biodegradable Class 2) | SY |  |  |  |  |
|  | 216-00301 | Turf Reinforcement Mat (Class1) | SY |  |  |  |  |
|  | 216-00302 | Turf Reinforcement Mat (Class 2) | SY |  |  |  |  |
|  | 216-00303 | Turf Reinforcement Mat (Class 3) | SY |  |  |  |  |
|  | 217-00000 | Herbicide Treatment | SY |  |  |  |  |
|  | 217-00020 | Herbicide Treatment | Hour |  |  |  |  |
|  | 610-00050 | Median Cover Material (Stone) | Ton |  |  |  |  |
|  | 607-11525 | Fence (Plastic) | LF |  |  |  |  |
| X | 615-00152 | Erosion Protector (Special) | LF |  |  |  |  |
| X | 700-70380 | F/A Erosion Control | FA |  |  |  |  |
| X | 700-70310 | F/A Landscaping | FA |  |  |  |  |

\*It is anticipated that additional control measures and 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 subsections 208.03 and 208.04. **Quantities for all control measures shown above are estimated and have been increased for unforeseen conditions and normal 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.

\*\*Pay Item 208-00071 is included for anticipated maintenance of vehicle tracking pads based on the service life of the control measure in the field. The use of the material shall be directed and approved by the Engineer.

\*\*\* F/A refers to CDOT’s Force Account Pay Items.

# BIOLOGICAL IMPACTS and DEWATERING

## ENVIRONMENTAL IMPACTS:

1. Wetland Impacts: YES NO

[Consult with the Regional Wetland Biologist for assistance] [Remove the answer that does not apply]

2. Stream Impacts: YES NO

[Remove the answer that does not apply]

3. Threatened and Endangered Species:

[As a reference start with the NEPA Biological Assessment for Threatened and Endangered Species impacts or coordinate with the biologist or environmental specialist. If Threatened and Endangered Species are present, identify sensitive habitat/areas impacted by the project or areas to avoid by construction activities with orange plastic construction fencing. Do not list the species. If none, provide the following statement: “No species are anticipated to be impacted by the project.”]

## DEWATERING:

(Not covered under the CDPHE guidance document Low Risk Discharge Guidance Discharges of Uncontaminated Groundwater to Land):

[https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf](https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf%20)

1. Dewatering: Refer to other environmental permits in accordance with subsection 107.02 and the permits contained in Tab 16 of the SWMP.

2. If groundwater does not meet water quality standards for receiving water a separate CDPS Dewatering Permit shall be obtained by the Contractor from CDPHE in accordance with subsections 107.02 and 107.25.

# NOTES

[Use of this section may include, but is not limited to, documenting assumptions made in cost estimating]