## **SECTION 2: EROSION & SEDIMENT CONTROL MEASURES**

Permanent (structural) and temporary (non-structural) control measures are listed below with their respective acronyms and their reference Control sheet from the Mile High UFCD Controls sheets. The subsections that follow described which of these will be implemented at the site to prevent stormwater pollution according to the following priorities. These acronyms and Controls sheets are provided for reference. Some controls listed in subsequent sections are not necessarily called out on the SWMP, rather provided as optional substitutions, or may become necessary as the project progresses. Options are provided to allow for adjustments made based on material availability (supply chain), changed field conditions, changed sequence of project work, and/or in consultation with the SWMP Manager. Controls must be employed to minimize erosion at stormwater discharge locations.

#### 1. Minimize Disturbed Area and Protect Natural Features and Soil

•	Limits of Construction	(LOC)
•	Construction Phasing	(CP)

Protection of Existing Vegetation (PV) SM-2

#### 2. Control Stormwater Flowing onto and through the Project

•	Temporary Slope Drains	(TSD)	EC-7
-	Earth Dikes/Drainage Swales	(ED/DS)	EC-10
-	Sediment Trap	(ST)	SC-8
-	Temporary Diversion Channel	(TDC)	SM-8
-	Dewatering Operations	(DW)	SM-9
•	Temporary Stream Crossing	(TSC)	SM-10

### 3. Soil Stabilization and Slope Protection

•	Surface Roughening	(SR)	EC-1
•	Temporary and Permanent Seeding	(TS/PS)	EC-2
•	Soil Binders	(SB)	EC-3
•	Mulching	(MU)	EC-4
•	Rolled Erosion Control Product	(RECP)	EC-6
•	Temporary Slope Drain	(TSD)	EC-7
•	Temporary Outlet Protection	(TOP)	EC-8
•	Earth Dikes/Drainage Swales	(ED/DS)	EC-10
•	Terracing	(TER)	EC-11
•	Check Dams	(CD)	EC-12
•	Streambank Stabilization	(SS)	EC-13
•	Wind Erosion/Dust Control	(DC)	EC-14

#### 4. Storm Drain Inlet Protection

•	Rock Sock	(RS)	SC-5
•	Inlet Protection	(IP)	SC-6

#### 5. Perimeter Controls and Sediment Barriers

•	Construction Fence	(CF)	SM-3
•	Vehicle Tracking Control	(VTC)	SM-4
•	Vegetated Buffer	(VB)	SC-9

### 6. Retention of Sediment On-Site

•	Silt Fence	(SF)	SC-1
•	Sediment Control Log	(SCL)	SC-2
•	Straw Bale Barrier	(SBB)	SC-3
•	Sediment Basin	(SB)	SC-7
•	Sediment Trap	(ST)	SC-8

### 7. Construction Entrance/Exit Stabilization

•	Vehicle Tracking Control	(VTC)	SM-4
•	Stabilized Construction Roadway	(SCR)	SM-5
•	Stabilized Staging Area	(SSA)	SM-6
•	Street Sweeping	(SS)	SM-7

#### 8. Additional CMs

•	Concrete Washout Areas	(CWA)	MM-1
•	Stockpile Management	(SP)	MM-2
•	Paving and Grinding Operations	(PGO)	SM-12
•	Temporary Cement Mixing Station		MM-3

## 2.1 Minimize Disturbed Area & Protect Natural Features and Soil

Limits of Construction (LOC)		
Permane	nt 🛛 Temporary	
What: Description	LOC is used to designate the area of land that will be disturbed by construction activities.	
When: Installation	The permitted LOC shall be designated prior to land disturbing activities. If land is disturbed <u>outside</u> of the limits, then the State and Local stormwater construction discharge permits and SWMP Plan must be amended.	
Where: Location	The permitted LOC is identified on the SWMP Plan.	
How: Maintenance & Inspection	LOC are typically delineated by silt fence or construction fence. Inspect LOC continuously and maintain the permitted LOC in an effort to not disturb land outside of the boundaries.	

### Protection of Existing Vegetation (PV) SM-2

Permane	nt 🗌 Temporary
What: Description	A construction fence or silt fence shall be installed around or upgradient of native areas that require protection. It may also be necessary to install perimeter controls to prevent sediment loading to those sensitive areas.

When: Installation	CMs installed for protection of existing vegetation shall be installed prior to land disturbing activities or as part of the phasing of the construction project.
Where: Location	PV shall be installed at locations identified on the SWMP to protect the wetlands and riparian habitat areas.
How: Maintenance & Inspection	Install and maintain PV per detail SM-2 (Appendix C). Clearly mark the area on the EC plan to be preserved. No stockpiles, equipment, trailers or parking shall be allowed within the area. Repair or replace damaged or displaced protective barriers around the vegetated area. Inspect and maintain all areas that are designated to be protected. If damage to the vegetation occurs in a protected area, reseed the area with the same or similar species. Construction equipment must not enter a wetland area, except as permitted by the U.S. Army Corps of Engineers (USACE). In advertent placement of fill in a wetland is a 404 permit violation and requires notification to the USACE.

## 2.2 Control Stormwater Flowing onto and through the Project

Offsite flows are not anticipated to flow into the LOD. The below are provided in the event field adjustments are necessary to control runon, as if needed, for dewatering operations.

Earth Dikes/Drainage Swales (ED/DS) EC-10		
t 🗌 Temporary		
ED/DS are temporary storm conveyance channels used to divert runoff around slopes or to convey runoff to additional sediment control CMs prior to discharge from the site.		
nstall ED/DS immediately upon completion of channel grading and maintain in place until the end of construction.		
ED/DS shall be installed if determined necessary in the field and will be added to the SWMP map as field fit. Typically installed around steep slopes or as temporary conveyance feature leading to a sediment basin or trap.		
ED/DS shall be installed per detail EC-10 (Appendix C). Continuously inspect and maintain all ED/DS for stability, compaction and signs of erosion and repair. Inspect side slopes for erosion and damage to erosion control fabric. Stabilize slopes and repair fabric as necessary. Accumulated sediment shall be removed when the sediment has accumulated to ½ of the depth of the ED/DS.		

## Temporary Diversion Channel (TDC) SM-8

Permanent

Temporary

What: Description	TDC diverts water from a stream to allow for construction activities to take place underneath or in the stream.
When: Installation	TDC shall be installed prior to the start of any construction activities within a stream. The TDC shall be removed when the work at the down gradient or natural channel is no longer required. The TDC shall be backfilled and stabilized.
Where: Location	TDC shall be installed if determined necessary in the field and will be added to the SWMP map as field fit. TDC can be used in the following locations: construction of detention ponds, dams, in-stream grade control structures, utility installations or any activity that requires work in a waterway.
How: Maintenance & Inspection	TDC shall be installed per detail SM-8 (Appendix C). Inspect frequently and maintain all TDC throughout construction. Inspect flow barriers at the start and end of each workday. Inspect TDC for signs of erosion. Repair or replace the lining if necessary.

Dewatering Operations (DW) SM-9 (Optional, as needed with CDPHE Permit)

Permane	nt 🛛 Temporary
What: Description	DW involves pumping water from an inundated area to a CM, then downstream to a receiving waterway, sediment basin or well-vegetated area. When pumping water <u>outside</u> of the permitted boundary a separate State of Colorado Dewatering Permit is required.
When: Installation	DW is needed when an area of the construction site is inundated with water as a result of a large storm event, groundwater or existing ponding conditions. Remove DW once the work is no longer required.
Where: Location	Install DW at the locations identified in the field by the SWMP Inspector or SWMP Manager. The SWMP map will then be updated to reflect the dewatering location(s). DW may occur in any area of the site where accumulated water needs to be removed.
How: Maintenance & Inspection	DW shall be conducted per detail SM-9 (Appendix C). All dewatering discharges must be treated to remove sediment (and other pollutants) before discharging from the construction site. Inspect DW regularly and maintain operations throughout construction.

## 2.3 Soil Stabilization and Slope Protection

The below Controls are options that may be used on this site and their use will be determined based on material availability (supply chain), location for use, and in consultation with the SWMP Manager. General stabilization areas will be shown on the SWMP Map as the project progresses to include graded areas that have met final grade and/or disturbed areas that will be inactive.

Surface Roughening (SR) EC-1	
Permane	nt 🛛 Temporary
What: Description	SR is tracking, scarifying, imprinting or tilling a disturbed area to provide temporary stabilization. Variations in the soil are created to help minimize wind and water erosion.
When: Installation	SR shall be performed either after final grading or to temporarily stabilize an area during active construction.
Where: Location	SR shall be used as determined in the field and the SWMP map will be updated to reflect location(s). It can be used on mild and steep slopes.
How: Maintenance & Inspection	SR shall be installed per detail EC-1 (Appendix C). SR shall always be perpendicular to the slope. Continuously inspect and maintain all surfaces that are roughened throughout construction. SR shall be inspected for erosion as it is only a temporary control. Vehicles and equipment shall not be driven over areas that have been surface roughening. Refresh SR as needed.

Temporary and Permanent Seeding (TS/PS) EC-2

🛛 Permane	nt 🗌 Temporary
What: Description	Seed is applied to disturbed areas in an effort to establish vegetation. TS is used to stabilize disturbed areas that will be inactive for an extended period. PM is used to stabilize areas at final grade that will not be otherwise stabilized. Effective seeding includes preparation of a seedbed, selection of an appropriate seed mixture, proper planting techniques, and protection of the seeded area with mulch, geotextile, or other appropriate measures. Mulching helps to protect the bare soil and must be secured by crimping, tackifiers, netting or other measures. Site specific permanent seed mix specifications are included in the Landscaping Plans.
When: Installation	TS/PS shall be performed on temporary inactive surfaces and following the completion of final grading. Temporary soil stabilization is required on all portions of the site where grading and land disturbing activities are complete and on any portion of the site that is inactive for at least 14 days. Temporary stabilization may include use of temporary seeding.
Where: Location	TS/PS shall be completed as determined in the field to stabilize areas at final grade that will not otherwise be stabilized and the SWMP map will be updated to reflect location(s).
How: Maintenance & Inspection	TS/PS and secured mulching shall be installed per seed mix specifications and detail EC-2 (Appendix C). Continuously inspect and maintain TS/PS and secured mulch throughout construction. Prepare the seedbed, select an appropriate seed mixture, use proper planting techniques and protect the seeded area with secured mulch.

Soil Binders (SB) EC-3	
Permane	nt 🛛 Temporary
What: Description	SB involves a broad range of treatments that can be applied to exposed soils for temporary stabilization to reduce wind and water erosion.
When: Installation	Use SB for short term temporary stabilization. Soil binders can break down fast due to natural weathering.
Where: Location	SB can be used on mild and steep slopes including stockpiles. They are often used in areas where work has temporarily stopped but is expected to resume before revegetation can be established. SB will be utilized as determined in the field and the SWMP map will be updated to reflect location(s)
How: Maintenance & Inspection	SB shall be used per detail EC-3 (Appendix C). Continuously inspect and maintain all areas where SB have been applied throughout construction. SB can fail after heavy rainfall events and may require re-application. In particular, SB will generally experience spot failures during heavy rainfall events.

Mulching (MU) EC-4

🛛 Permane	nt 🛛 Temporary
What: Description	MU consists of evenly applying straw, hay, shredded wood mulch, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers or netting.
When: Installation	MU is used in conjunction with TS/PS to help protect the seed bed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed area where there are growing season constraints. After MU application, there shall not be bare ground surface exposed. Reapply mulch, as needed, to cover bare areas.
Where: Location	Temporary and/or permanent MU shall be completed as determined in the field and the SWMP map will be updated to reflect location(s).
How: Maintenance & Inspection	MU shall be installed per detail EC-4 (Appendix C). After MU, the bare ground surface shall not be more than 10% exposed. Re-apply mulch, as needed, to cover bare areas.

## Rolled Erosion Control Product (RECP) EC-6

🔀 Permane	nt 🗌 Temporary
What: Description	RECP consist of a variety of temporary or permanently installed manufactured products designed to control erosion and enhance vegetation establishment and survivability, especially on slopes and in channels. Categories of RECP: mulch control netting, open weave textile, erosion control blanket, and turf reinforcement mat.

When: Installation	RECP shall be installed upon completion of slope grading and when revegetation measures are completed. RECP that are biodegradable do not need to be removed after construction.
Where: Location	RECP shall be installed at the locations identified on the landscape plan and the SWMP will be updated to reflect installed location(s). Install RECP according to manufacturer's specifications.
How: Maintenance & Inspection	RECP shall be installed per EC-6 (Appendix C). Continuously inspect and maintain all RECP throughout construction. Check for signs of erosion, including voids under the mat. Also check for damaged or loose stakes and secure loose sections of the blanket.

## Temporary Outlet Protection (TOP) EC-8

Permane	nt 🛛 Temporary
What: Description	TOP consist of riprap rock placed at the outlet to help reduce erosion immediately downstream of a pipe, culvert, slope drain rundown or other conveyance with concentrated flow. TOP is intended for less than 2 years.
When: Installation	TOP shall be installed immediately upon the completion of grading and removed once the pipe is no longer draining upstream area or once the downstream area has been sufficiently stabilized.
Where: Location	TOP shall be installed at the locations identified on the SWMP, where there is a potential for accelerated erosion due to concentrated flow.
How: Maintenance & Inspection	TOP shall be installed and maintain per EC-8 detail (Appendix C). The Inspect regularly and maintain TOP as the rocks may be displaced. Accumulated sediment shall be removed before the TOP becomes buried and ineffective.

### Earth Dikes/Drainage Swales (ED/DS) EC-10

Permane	nt 🛛 Temporary
What: Description	Refer to Section 2.2
When: Installation	Refer to Section 2.2
Where: Location	Refer to Section 2.2
How: Maintenance & Inspection	Refer to Section 2.2

## Check Dams (CD) EC-12

🔀 Permanent

Temporary

What: Description	CDs are temporary or permanent grade control structures use in drainage channels to reduce the velocity of runoff and concentrated flows. They can be constructed from rock, gravel bags, sandbags or proprietary devices.
When: Installation	CD shall be installed prior to earth disturbing activities or immediately upon completion of channel grading. Temporary CDs shall be removed, and area shall be stabilized. Permanent CDs shall be cleaned and remain in place.
Where: Location	CD shall be installed at the locations identified on the SWMP. Typically, they are placed in drainage channels, swales or on mild to moderate steep slopes.
How: Maintenance & Inspection	CDs shall be installed per detail EC-12 (Appendix C). They shall be placed at regularly spaced intervals along the drainage swale or ditch. The height of the CD shall allow for pooling of the runoff. Inspect regularly and maintain CD as rocks can be displaced, and gravel bags or sandbags can be torn. Accumulated sediment shall be removed before it reaches ½ the height of the CD.

### Wind Erosion/Dust Control (DC) EC-14

Permane	nt 🛛 Temporary
What: Description	DC helps keep sediments (from soils and stockpiles) from entering the air as a result of land disturbing construction activities. A variety of practices that focus on grading disturbed areas may be used.
When: Installation	Implement DC during conditions which result in dust from either construction activities or from naturally occurring winds. Do not overwater.
Where: Location	Dust abatement shall be completed throughout the project area where any material exists that has the potential to become airborne.
How: Maintenance & Inspection	DC measures shall be performed per detail EC-14 (Appendix C). Apply water or magnesium chloride, seed and mulch or use spray-on soil binders on disturbed areas. Water and magnesium chloride shall be applied such that concentrated flows do not form.

## 2.4 Storm Drain Inlet Protection

Inlet protection is planned during installation of infrastructure as an inlet is completed and tied into the site storm system. Some inlet protection Controls may be interchangeable, and their selection based on material availability (supply chain) and in consultation with the SWMP Manager.

Rock Sock (RS) SC-5	
Permane	nt 🗌 Temporary
What: Description	RS is an elongated cylindrical filter constructed of gravel wrapped by wire mesh or woven geotextile (aka "curb socks" if placed at angles at curb line).
When: Installation	Install RS prior to land disturbing activities, once upstream stabilization is complete. Accumulated sediment shall be removed and properly disposed of.
Where: Location	RS shall be installed at the locations as determined in the field and the SWMP map will be updated to reflect location(s). They are used for perimeter control of a disturbed area, or as part of IP.
How: Maintenance & Inspection	Install RS per detail SC-5 (Appendix C). Inspect regularly and maintain RS as they are susceptible to displacement and breakage due to vehicle traffic. Accumulated sediment shall be removed to maintain functionality.

## Inlet Protection (IP) SC-6

Permane	nt 🛛 Temporary
What: Description	IP is a permeable barrier that is installed around an inlet drain to filter runoff and remove sediment before entering the storm system. IP can be constructed of: RS, SCL, SF, blocks and RS, or other materials.
When: Installation	Install IP for existing catch basins prior to land disturbing activities upslope from the inlet. IP for proposed catch basins shall be installed immediately after the drain is constructed. IP and associated sediment must be removed and properly disposed of when the drainage area upstream is stabilized.
Where: Location	Install IP at the inlets as they are constructed and connected to the pipe network. The SWMP map will be updated as IP is added. IP is not a stand-alone measure. It shall be used in conjunction with other up gradient measures.
How: Maintenance & Inspection	Install IP per detail SC-6 or other proprietary product manufacturer's specifications included in Appendix C. IP shall enable the drain to function without completely blocking the flow. Inspect regularly and maintain IP throughout construction as it is the final measure before runoff enters the storm drain. Accumulated sediment shall be removed when it has reached ½ of the height of the IP or loses functionality, whichever comes first. IP is not standalone measure and shall be part of redundant system.

# 2.5 Perimeter Control, Sediment Control & Barriers

As shown on the SWMP Map, the site will receive perimeter controls in the form of construction fencing, and either wattle or silt fence on the downhill portions of the site, where sheet flow has the potential to exit the site. Selection of control type will be based on material availability, time of year installed (wattles weather over the winter better), and soil type relative to installation methods. Vehicle tracking will be installed at the construction exit and sweeping will additionally be completed as needed to reduce or eliminate offsite tracking. In addition, the permittee must mitigate any accumulation of sediment outside of the site boundaries. The site will utilize Basins A and C to meet the city storage requirement of 1,600CF per acre disturbed during the 2024 construction season (100-yr volume = 5,058 CF). The ponds will be utilized for construction sedimentation from June-November 2024 as the site will be stabilized as part of winterization. Capacity requirements for temporary sed traps/basins will be re-evaluated for each subsequent phase of work.

### Construction Fence (CF) SM-3

Permane	nt 🛛 Temporary
What: Description	CF restricts site access to designated entrances and exits, delineates construction site boundaries, and keeps construction out of sensitive locations such as natural areas to be preserved as open space, wetlands and riparian areas.
When: Installation	CF shall be installed prior to earth disturbing activities; and removed once construction is complete.
Where: Location	Install CF along the site perimeter or any area within the site where access shall be restricted. Location of CF will be determined by JSM as part of site mobilization.
How: Maintenance & Inspection	CF shall be installed, maintained and removed per detail SM-3 (Appendix C). Inspect CF for damages and slumping. The CF shall be tight and any areas with slumping or fallen posts shall be reinstalled or replaced.

### Vehicle Tracking Control (VTC) SM-4

Permane	nt 🛛 Temporary
What: Description	VTC is a stabilized site access point that helps remove sediment from vehicle tires and reduces tracking of sediment onto paved surfaces.
When: Installation	Install VTC prior to any land disturbing activities; and removed when there is no longer the potential for vehicle tracking to occur.
Where: Location	VTC shall be installed at the location identified on the SWMP where the site transitions from disturbed soil to asphalt roadway. Locate VTC where frequent vehicle traffic will exit the construction site onto a paved roadway.

How: Maintenance & Inspection	VTC shall be installed per detail SM-4 (Appendix C) or approved alternative proprietary materials such as FODs or tracking pads. All aggregate VTC must have non-woven geotextile fabric between the soil and rock pad. <u>Recycled concrete aggregate is not allowed because concrete dust elevates pH in stormwater</u> . Inspect regularly and maintain VTCs throughout construction. If the area becomes clogged with sediment, remove and dispose of excess sediment or replace material with a fresh layer of rock. Any sediment that is tracked onto adjacent roadways shall be cleaned with brooms, shovels (no water washing), or mechanically cleaned with a street vacuum sweeper.
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## Silt Fence (SF) SC-1

Permane	nt 🛛 Temporary
What: Description	SF is a woven geotextile fabric attached to wooden posts and trenched into the ground. It is used to intercept sheet flow runoff from disturbed areas. It may be used upgradient of vegetative buffers (VF).
When: Installation	SF shall be installed prior to land disturbing activities. SF shall be removed when the upstream area is stabilized.
Where: Location	SF shall be installed at the locations identified on the SWMP, and flexibility is offered to use SF or SCL. SF does not stand up to snow nor high winds. SF is typically installed along the contour of slopes, which is down slope of a disturbed area to accept sheet flow and placed along the perimeter of a construction site. <i>SF is not designed to receive concentrated flow, or to be used a filter fabric.</i>
How: Maintenance & Inspection	SF shall be installed per detail SC-1 (Appendix C). Inspect regularly and maintain SF throughout construction. Any section of SF that has a tear, hole, slumping, undercutting or has been bypassed shall be replaced. Accumulated sediment shall be removed before it reaches a depth of 6 inches.

# Sediment Control Log (SCL) SC-2 (Wattle, Weighted Wattle)

Permane	nt 🛛 Temporary
What: Description	SCL, including wattle, weighted wattles, Filtrexx, and Big Reds, is a linear roll made of natural materials (straw, coconut fiber or other fibrous material) or recycled/reusable materials, used to intercept and filter sheet flows from disturbed areas.
When: Installation	SCL shall be installed during land disturbing activities, and it may also be installed after formation of a stockpile. Once the upstream area is stabilized, remove and properly dispose of the SCL. If disturbed areas exist after removal, the area shall be covered with topsoil, seeded and mulched.
Where: Location	SCL shall be installed at the locations identified on the SWMP map and flexibility is offered to use SF or SCL. SCL are typically used for stockpile control, IP, and CD in small drainage ditches, on disturbed slopes to shorten flow lengths

	and/or as part of multi-layered perimeter control along receiving water such as a stream, pond or wetland. SCL work well in combination with other layers of erosion and sediment controls. Stockpiles stored on impervious surfaces shall not be placed in a flowline and SCL shall be weighted. Stockpiles stored on pervious surfaces may be protected by pervious SCL, SF or adequate vegetative cover. SCL requires less maintenance is snow than SE
How: Maintenance & Inspection	SCL shall be installed per detail SC-2, or other proprietary material manufacturer's specifications (Appendix C), along (parallel) the slope contour to avoid concentrating flows. Inspect regularly and maintain SCL throughout construction as they will eventually degrade. Accumulated sediment shall be removed before the depth is ½ the height of the SCL.

Straw Bale Barrier (SBB) SC-3

Permane	nt 🛛 Temporary
What: Description	SBB is a linear barrier of straw bales used to intercept and capture sheet flow and to trap sediment before runoff exits a disturbed area. Typically used as CD, or as IP.
When: Installation	Install SBB prior to land disturbing activities. Remove and properly dispose of the SBB once the upstream area has been stabilized. Areas of disturbance beneath the SBB shall be seeded and mulched when bales are removed.
Where: Location	Straw bale barriers shall be installed at the locations identified in the field and the SWMP map will be updated to show location(s).
How: Maintenance & Inspection	SBB shall be installed per detail SC-3 (Appendix C). Inspect regularly and maintain SBB throughout construction as they may be bypassed or undercut by flows and will degrade and rot. Accumulated sediment shall be removed when the depth reaches ¼ the height of the bale.

Sediment Trap (ST) SC-8

🛛 Permane	nt 🗌 Temporary
What: Description	ST is a temporary hole or depression designed to capture sediment transported in runoff and slowly release flows to allow time for settling of the sediment prior to discharge from the site
When: Installation	Install ST in conjunction with land disturbing activities. STs can be converted to permanent detention basins. For conversion, remove accumulated sediment and re-configure the basin and outlet to meet the requirements of the final design. For ST that are temporary, remove or backfill when is no longer needed and stabilizing accordingly, or converting to the permanent sand filter.
Where: Location	ST shall be installed at the locations identified on the SWMP and as determined appropriate in the field. Where feasible, the STs shall be installed in the same

	location where the permanent post-construction detention basins/ sand filters will be located. ST may also be used during temporary construction dewatering.
How: Maintenance & Inspection	The SB shall be installed per detail SC-8 Inspect regularly and maintain ST to be effective. Accumulated sediment shall be dredged from the basin when it reaches no more than <sup>1</sup> / <sub>3</sub> of the design storage volume.

## 2.6 Construction Entrance/Exit Stabilization

Vehicle tracking is important at this site as the construction exit is to a paved public roadway. Onsite tracking and street sweeping both onsite and offsite may be necessary to maintain good housekeeping and reduce or eliminate offsite tracking of site soils.

## Vehicle Tracking Control (VTC) SM-4

Permane	nt 🗌 Temporary
What: Description	Refer to Section 2.5
When: Installation	Refer to Section 2.5
Where: Location	Refer to Section 2.5
How: Maintenance & Inspection	Refer to Section 2.5

Stabilized Staging Area (SSA) SM-6

Permane	nt 🛛 Temporary
What: Description	SSA is a clearly designated area where construction equipment and vehicles, stockpiles, waste bins and other construction-related materials are stored. If the construction site is big, more than one SSA may be necessary.
When: Installation	SSA shall be installed prior to any land disturbing activities.
Where: Location	SSA shall be installed at the location identified on the SWMP and may be adjusted in the field as appropriate.
How: Maintenance & Inspection	SSA shall be installed per detail SM-6 (Appendix C). Inspect regularly and maintain SSA throughout construction. A stable surface cover of rigid gravel shall be maintained as well as repairing any perimeter controls and following good housekeeping practices.

Street Sweeping (SS) SM-7		
Permanent		
What: Description	SS is used where vehicles track sediment onto paved roadways to reduce the transport of it into storm drain systems or surface waterways.	
When: Installation	Manual SS or mechanical vacuuming SS shall be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site including Weiss Circle, Weiss Drive, and the access to US40. SS shall be completed prior to any precipitation events, at the end of the workday as needed, and at the end of construction.	
Where: Location	SS shall be utilized throughout the site as pavement is installed, and on adjacent roadways as conditions warrant.	
How: Maintenance & Inspection	SS shall be performed per detail SM-7 (Appendix C). Use standard SS equipment to adequately remove sediment from roadways adjacent to the construction site.	

# 2.7 Additional Control Measures (CMs)

## Concrete Washout Areas (CWA) MM-1

Permane	nt 🛛 Temporary
What: Description	CWA is a specific area for concrete and masonry work washing activities. It can be an excavation of a pit in the ground, above ground storage area or prefabricated haul-away container.
When: Installation	CWA shall be installed prior to any concrete delivery to the construction site; and remove upon termination of use of the washout. Accumulated solid waste, including concrete waste and any contamination soils, must be removed from the site to a designated disposal location.
Where: Location	CWA shall be installed at the locations identified on the SWMP and should be either lined pit or above ground containment (kiddy pool, eco pan).
How: Maintenance & Inspection	CWA shall be installed per detail MM-1 (Appendix C). Inspect regularly and maintain CWA throughout construction. Ensure adequate signage is in place identifying the location of the CWA. Remove concrete waste when filled to about <sup>3</sup> / <sub>4</sub> of CWA capacity to maintain functionality.

### Stockpile Management (SP) MM-2

Permanent

Temporary

What: Description	SP includes measures to minimize erosion and sediment transport from stockpiles. SP shall be used when soils or other erodible materials are stored.
When: Installation	SP locations shall be determined during construction. If temporary removal of a CM is necessary to access the SP, ensure CMs area re-installed per detail drawing. When SP is no longer needed, properly dispose of excess materials and re-vegetate or stabilize the ground surface where the SP was located.
Where: Location	SP locations shall be placed away from areas where concentrated stormwater flow is anticipated, major drainageways, gutters, and storm sewer inlets. SP locations shall be noted on the SWMP.
How: Maintenance & Inspection	SP shall be installed per detail MM-2 (Appendix C). Inspect regularly and maintain SP throughout construction. It is recommended to place SP on a pervious surface and protected from sediment transport with measures such as SCL, VB and/or SF. SP are only allowed on impervious surfaces if no other practical alternative exists. Provide weighted sediment control measures around the perimeter of the SP, such as RS or sandbags.

# Temporary Cement Mixing Area MM-3

Permane	nt 🛛 Temporary
What: Description	Contained area for concrete, cement, mortar, drywall, mud and stucco mixing activities.
When: Installation	Install prior to any material mixing activity; and remove upon termination of use of the area.
Where: Location	Installed at the locations identified on the SWMP.
How: Maintenance & Inspection	Install per detail (attach to Appendix C). Inspect regularly and maintain capacity throughout construction. Clean-up if there are spills.