STORMWATER MANAGEMENT PLAN (SWMP)

EROSION CONTROL REPORT

2437 Marksheffel Road

El Paso County, Colorado

Prepared for:

QQ Colorado, LLC

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Prepared by:

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Table of Contents

Appendices

APPENDIX A – Site Maps

APPENDIX B – Erosion Control Details

APPENDIX C – Copies of Permits/Applications

APPENDIX D – Inspection Logs

APPENDIX E – Contractor Inserts

VICINITY MAP

Lot 3 Claremont Ranch Filing No. 9B
El Paso County, State of Colorado

1.0 General Requirements

1.1 *Objectives*

The objective of a Stormwater Management Plan (SWMP) is to pinpoint the potential sources of pollution that are caused by construction activity and explain the practices that will be used to reduce pollutants in stormwater discharges from the site. The SWMP must be completed and implemented at the time of ground breaking. The SWMP is a living document and must be revised where necessary during the construction process to accurately reflect the conditions and practices at the site.

1.2 *SWMP Availability*

The report shall remain on site as it may be updated and/or reviewed during site inspections.

1.3 *Definitions*

Best Management Practices (BMPs) – BMPs included a variety of erosion and sediment control measures, both structural and non-structural. BMPs are put in place to remove or reduce potential water quality impacts from stormwater runoff.

Erosion Control BMPs – These are used to prevent erosion of soil. Examples include: temporary stabilization, preserving existing vegetation and minimizing the amount of disturbed area through phasing.

Sediment Control BMPs – These are designed to remove and reduce sediment from runoff. Some examples are as follows: straw wattles, silt fence, and inlet protections.

Non-structural BMPs – These prevent or otherwise limit the entry of pollutants into stormwater at the source through operational or managerial techniques. Examples: preservation of natural vegetation, preventative maintenance and spill response procedures.

Structural BMPs – These are designed to control on-site erosion and prevent sediment from migrating within the project site as well as off-site during construction. Examples: diversion structures, inlet protection and silt fence.

2.0 Narrative Site Description

2.1 *Existing Site Description*

The site is located in El Paso County, Colorado. The site is a portion of the Northwest quarter of Section 4, Township 14 South, Range 65 West of the 6th P.M.

2.2 *Soil Erosion Potential*

The likelihood of erosion and sediment problems occurring on this site after final improvements is minimal due to the landscaping and placement of impervious areas that will permanently stabilize the site disturbed by construction activity. The BMPs used on this site have been selected to prevent erosion and limit sediment migration.

2.3 *Nature of Construction Activity*

The proposed construction is a car wash that will be completed in one phase and will consist of utility line construction, pavement, and structure installation and all required BMP's.

2.4 *Sequence of Major Activities*

The project will be completed in one phase from May 2019 to September 2019. Critical BMPs to include: silt fence, inlet protection, stabilized construction entrance and vehicle wash-down areas.

	Construction Activity for Demolition, Utility & New Docks	***Approximate Timing of Activity:***
1.	Site Clearing/Grubbing	Week 1
2.	Grading	Week 1-2
3.	Sewer & Water Utility Installation	Week 2-5
4.	Footing/Foundation Construction	Week 3-5
5.	Vertical Construction	Week 6-15
6.	Gas & Power Utility Installation	Week 5-7
7.	C&G Installation	Week 7-11
8.	Pavement Installation	Week 9-13
9.	Landscaping/Final Stabilization	Week 12-15

2.5 *Site Disturbance*

The total area of the project site is 1.04 acres. The total area of disturbance of the project site is .89 acres.

2.6 *Existing Data*

In order to complete the associated construction plans, a topographical survey was completed by Forth Land Surveying, Inc. on October 25th, 2018.

2.7 *Existing Vegetation*

The existing vegetation consists of seeded grasses. The pre-disturbance individual plant density is over 70 percent. Final stabilization will include an individual plant density of at least 70 percent of pre-disturbance levels or equivalent permanent, physical erosion reduction methods. Most of the total disturbed area will be permanently stabilized with concrete. The remaining area will be stabilized with landscaping such as sod and planting beds. Pre-construction photos were taken in September of 2018 that clearly document vegetative conditions prior to any disturbance activities.

2.8 *Potential Pollution Sources*

Potential pollutants and sources, other than sediment, to storm water runoff:

Potential Pollutant Material	Pollutant Source -Management Practice	Found on Site
Sediment/Total Suspended Solids	Erosion where soil is disturbed because of construction presents potential problems of sediment and suspended solids due to runoff. **Erosion/Sediment controls described on site map will be utilized.**	√
Soil Stabilization Material	Disturbed areas where slopes or susceptible soil types are exposed. **Install Sediment/Pollutant control where material is present up-slope.**	√
Concrete-white/solid grey-**limestone, sand, pH, chromium**	Concrete found in curb, gutter, sidewalk, walkway, and parking garage areas on project and on vertical footing foundations. **Excess and extra concrete will be cleaned up or dumped in designated area.**	√
Oils-brown oily petroleum hydrocarbon-**Mineral Oil**	Vehicles performing earth moving and construction activities-also steel and drilling work. **Drip pans will be used when changing oil. Also, it will be recommended to not change oil on site.**	√
Asphalt and Paving-black solid-**oil petroleum distillates**	During street production and roofing of structures activities. **Paving operations will not be performed immediately before an anticipated major storm event.**	√
Grease	Vehicles performing earth moving and construction activities-also steel and drilling work. **Clean up where visual and keep equipment clean and wiped down.**	√

Refrigerants	AC units. **Any AC servicing will be performed by HVAC trained technicians.**	√
Excavation Pump Out water-**TSS/Sediments**	Excavated low areas where water could pool. **Pump onto vegetated area or through filter bag to contain sediment.**	√
Fuels-colorless-pale brown/yellow-pink-blue green hydrocarbon-**Benzene, ethyl benzene, toluene, xylene, MTBE, petroleum distillate, oils/greases, naphthalene, coal oil**	Used by vehicles performing dirt work and construction activities. **Secondary containment will be provided for tanks to contain leaks and spills.**	√
Trash	Trash from empty cardboard, paint, plastic, scrap wood, and metal containers. **Will be properly contained on the site and removed frequently for off-site disposal.**	√

Stucco, Painting, Stone, Brick Wash Waters	Structure's exterior finishing. **Contained on the site in designated areas where possible.**	√
Pesticides-insecticides, fungicides, herbicides, -**Chlorinated Hydrocarbons, organophosphates, carbonates, arsenic**	Pesticides may be used as a preparation before the foundation is poured and for pest control during construction to control fire ants, etc. Herbicides also used for noxious weed control. **Pesticides will be used according to the manufacturer's labeled instructions, and will not be applied just before a storm event. Excess pesticides will be removed from the site once application is complete.**	√
Concrete Curing Compound-creamy white liquid-**Naphtha**	Curing compound will be used as needed. **Concrete contractor will remove remaining compound from the site.**	√
Concrete Washout Waters-grey liquid-**pH**	Concrete trucks or pump trucks. **Wash water from concrete trucks will be washed out at a designated site.**	√
Solvents-colorless, blue, or yellow liquid-**perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates**	Used by utility and painting contractors and will be removed from the site by contractors. **No equipment cleaning allowed in project limits**.	√
Paints-various color liquid-**metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic, petroleum distillates, copper, chromium**	Used by painting contractor. **Paints and stains may be stored inside the structure and the contractor will remove waste paints and stains from the site.**	√
Sanitary Waste Management-**bacteria, parasites, viruses**	Fecal coli form bacteria may occur in surrounding waters as a result of the overflow of domestic sewage or non-point sources of human and animal waste that could impact the river or other water sources. **Portable toilets will be contained on the site in designated areas. Licensed sanitary services will ensure facilities are in working order at all times.**	√
Fertilizers-liquid/solid grains-**Nitrogen, phosphorous**	Fertilizer is seldom used during final site preparation when vegetated areas are sodded or seeded. **Fertilizer will not be applied just before a storm event, and will not be stored on the site for any length of time.**	√

Note: There will not be any dedicated asphalt or concrete batch plants constructed on this site.

2.9 *Non-Stormwater Discharges*

Authorized Non-Storm Water Discharges*	Comments
Discharges from fire-fighting activities.	Only in case of emergency.
Fire Hydrant flushing's.	New hydrant installation included flushing of the fire hydrants to ensure lines are clean and have no residual chlorine. No hyper-chlorinated water discharges (from water line disinfection) will be allowed.
Waters used to wash vehicles where detergents are not used.	Concrete trucks are rinsed on the site without the use of detergents. Wash water is retained on the site.
Water used to control dust.	Water is used during development to control dust on roadways under construction.
Potable water sources including waterline flushing	Domestic drinking water supply lines are flushed to ensure lines are clean and have no residual chlorine. No hyper-chlorinated water discharge (from water lines disinfection) will be allowed.
Routine external building wash down that does not use detergents.	Pressure washing of buildings occurs on a regular basis. Do not use detergents, or that have received chemicals to alter pH
Pavement wash waters where spill or leaks of toxic or hazardous material have not occurred (unless all spilled material has been removed) and where detergents are not used.	Roadways and flatwork are pressure washed on a regular basis. No chemicals are used and after all leaks or spills have been cleaned up.
Uncontaminated air conditions or compressor condensate.	Air conditioning condensate from the construction trailer during construction.
Uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with process materials such as solvents (non-turbid).	Unusual unless ground water is encountered during excavation. Ground water in excavations will be pumped out onto the ground and not allowed to directly discharge from the site.
Uncontaminated excavation dewatering.	Pump out water will be discharged to the ground and not allowed to directly discharge from the site.
Landscape irrigation.	Temporary and permanent vegetation may be irrigated to establish and enhance growth.

*The Stormwater Construction Permit only covers discharges composed entirely of stormwater. Emergency firefighting water is the only authorized exception. Concrete Washout water can NOT be discharged to surface waters or to storm sewer systems without separate permit coverage. The discharge of Concrete Washout water to the ground, under specific conditions, may be allowed by the Stormwater Construction Permit when appropriate BMPs are implemented.

Construction Dewatering water can NOT be discharged to surface waters or to storm sewer systems without separate permit coverage. The discharge of Construction Dewatering water to the ground, under specific conditions, may be allowed by the Stormwater Construction Permit when appropriate BMPs are in place.

The discharge of pumped stormwater, ONLY, from excavations, ponds, depressions, etc., to surface waters, or to a municipal separate storm-sewer system (MS4) is allowed by the Stormwater Construction Permit, as long as the dewatering activity and associated BMPs are identified in the SWMP (including location of activity), and BMPs are in place accordance with the SWMP.

2.10 *Receiving Waters*

The East Fork Sub Tributary of Sand Creek is the ultimate receiving water.

3.0 Stormwater Management Controls

3.1 *SWMP Administrator*

A SWMP Administrator must be assigned in conjunction with the Stormwater Permit. This individual is responsible for developing and maintaining and revising the SWMP. The SWMP Administrator will also be the contact for all SWMP-related issues and will be responsible for the accuracy and completeness of the SWMP. The administrator should have authority to adequately manage and direct daily stormwater quality management activities on site.

The SWMP Administrator for this site is:

Name:
Company:
Phone:
Email:

3.2 *Best Management Practices (BMPs) for Stormwater Pollution Prevention*

Best Management Practices (BMPs) are methods, activities, maintenance procedures or other management practices utilized for reducing the amount of pollution entering a body of water. BMPs may be installed in phases, or not at all, depending on actual conditions encountered on site. The contractor is responsible to determine what BMPs should be implemented and when. In the event a review agency deems BMPs are insufficient, it is the responsibility of the contractor to make necessary modifications as directed.

The SWPPP (Stormwater Pollution Prevention Plan) Exhibit illustrates the placement and assumed location for each of the BMPs (See sheet C-6 in Appendix A). Details for recommended BMPs are included in Appendix B.

3.3 *Structural Practices for Erosion and Sediment Control*

Structural BMPs are physical devices that prevent or minimize water quality impacts associated with construction site stormwater runoff. Refer to the SWPPP Plan in Appendix A for assumed location of all BMPs. The final determination of which BMPs will be installed, where they will be located and when they will be installed is the responsibility of the contractor, along with all documentation throughout the construction process.

The use of a perimeter controls reduces the transport of sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow. The perimeter controls will be placed along down-stream property lines. Sediment controls shall be located on contour as much as possible,

except at the ends, where it shall be turned uphill such that the control captures the runoff water and prevents water from flowing around the end of it.

Silt Fence	
BMP Description: Silt Fence - prevent sediment from flowing off site.	
Installation Schedule:	Beginning of Project to stop runoff
Maintenance and Inspection:	Maintain weekly – inspect for tears or holes in fence and check for slumping sections in fence or undercut areas that allow flows to bypass the fencing
Responsible Staff:	Lonestar Builders Inc.

Vehicle Tracking Control Pad	
*BMP Description: a stabilized pad of crushed stone located where construction traffic enters a paved surface.**	
Installation Schedule:	Beginning of Project
Maintenance and Inspection:	Inspect daily for loss of gravel or sediment buildup.
Responsible Staff:	Lonestar Builders Inc.

*The current plan shows one vehicle tracking control pad at the southeast corner of the property where a proposed entrance/exit will be located.

Curb Inlet Protection	
BMP Description: geotextile inlet bags (Dandy Bag, Silt Sifter, Etc.)	
Installation Schedule:	Before initial construction for existing inlets and as soon as possible for new storm drain inlets; install at inlets in paved or unpaved areas where up-gradient area is to be disturbed by construction activities and have the potential of collecting runoff from the disturbance area.
Maintenance and Inspection:	Inspect inlet protection after every large storm event and at a minimum of once monthly. Remove sediment accumulated when it reaches 25% in depth. Replace or clean when needed.
Responsible Staff:	Lonestar Builders Inc.

Concrete Washout Area	
*BMP Description: Perform washout of concrete trucks on designated areas; Do not washout concrete trucks into storm drains, open ditches, streets or streams; Intercept any concrete slurry from concrete cutting activities on the streets. Designate a wash out area on a long, flat, shallow area, or use a concrete washout pan, train employees and subcontractors**	
Installation Schedule:	Before concrete work activities begin
Maintenance and Inspection:	Inspect subcontractors to ensure that concrete wastes are being properly managed. Dispose hardened concrete on a regular basis.
Responsible Staff:	Lonestar Builders Inc.

*The concrete washout area must be located a minimum of 400 feet from any natural drainage way or body of water and at least 1000 feet from any wells or drinking water sources. If not lined, the concrete washout area should not be located in an area where shallow groundwater may be present. Clear signage should be posted at the location of the washout area.

3.4 *Non-Structural Practices for Erosion and Sediment Control*

Non-Structural BMPs are practices or activities that are put in place to prevent erosion from happening or to limit erosion once it occurs. These BMPs can be a practice resulting in a physical change to a site, such as mulching or slope stabilization.

Preserve Natural Vegetation	
*BMP Description: The purpose of preserving natural vegetation is to reduce erosion wherever practicable. Limiting site disturbance is the single most effective method for reducing erosion.**	
Installation Schedule:	Mark property boundaries prior to any earth moving activities
Maintenance and Inspection:	Inspect flagged areas to make sure flagging has not been removed. Bi-weekly maintenance schedule
Responsible Staff:	Lonestar Builders Inc.

*Install construction fence around area requiring protection.

Stockpile Management	
*BMP Description: Stockpile management should be utilized to minimize erosion and sediment transport BMPs should be placed around the perimeter of the stockpile, and a designated from soil stockpiles.**	
Installation Schedule:	Before the end of the work shift once stockpiles are created
Maintenance and Inspection:	Inspected with every storm water inspection and maintenance conducted as needed
Responsible Staff:	Lonestar Builders Inc.

*In general, soil stockpiles should be located a minimum of 100 feet from any drainage way and 50 feet from any storm sewer inlets. Where practical, choose a stockpile location that will remain undisturbed for the longest period of time as the phases of construction progress. Sediment control access point on the upstream side of the stockpile should be identified.

Mulching or Hydraulic Mulching (Temporary)	
BMP Description: applied to bare slopes or other bare areas to provide temporary stabilization.*	
Installation Schedule:	Within 14 days, unless disturbing activities will resume within 21 days.
Maintenance and Inspection:	Periodically inspect for damage caused by wind, water, or human disturbance
Responsible Staff:	Lonestar Builders Inc.

*The Contractor shall mulch all planted areas within twenty-four (24) hours after planting. Only weed-free and seed-free straw mulch may be used. Straw mulch should be applied at two (2) tons per acre, and shall be adequately secured by crimping, tackifier, netting or blankets. Hydraulic mulching may also be used on steep slopes or where access is limited. In the case that hydraulic mulching is utilized, the contractor shall use wood cellulose fibers mixed with water at two thousand to two thousand five hundred (2,000-2,500) pounds per acre and organic tackifier at one hundred to four hundred (100-400) pounds per acre.

Wind Erosion/Dust Control	
BMP Description: Water Truck - In order to avoid pollutants from being discharged into surface waters to the extent feasible, the application of water will be applied to disturbed soils for dust suppression.	
Installation Schedule:	During construction, especially during windy periods
Maintenance and Inspection:	It will be determined on as needed basis when water is needed to inhibit the creation of dust.
Responsible Staff:	Lonestar Builders Inc.

3.5 *Good Housekeeping Practices*

Good Housekeeping Practices	
BMP Description: Street Sweeping – remove sediment that is tracked onto adjacent roadways.	
Installation Schedule:	Beginning of construction through the end of the project.
Maintenance and Inspection:	Daily or as needed.
Responsible Staff:	Lonestar Builders Inc.

Good Housekeeping Practices	
BMP Description: Waste Management – designate waste collection areas. Hazardous materials should be separated from other solid waste. Waste collection areas should not be located near streets, gutters, watercourses and storm drains. Dumpsters should be near entrances to minimize traffic on disturbed soils and should be placed on a level surface.	
Installation Schedule:	Beginning of construction through the end of the project.
Maintenance and Inspection:	Daily or as needed.
Responsible Staff:	Lonestar Builders Inc.

*Train personnel not to over spread pesticides, herbicides, insecticides and fertilizer, follow manufacturers recommendations for application, clean up and disposal.

Establish Proper Building Material Staging Areas - Construction material will likely be stored onsite. All stored material should be place in such a way to reduce the potential impact to storm water.	
BMP Description: Area Control Procedures, Covering, Curbing, Material Storage - good housekeeping measures such as maintaining indoor or covered material storage and industrial processing areas will reduce the chance of exposed pollutants making contact with storm water.	
Installation Schedule:	Upon delivery of materials.
Maintenance and Inspection:	Ensure no waterways or drainage paths are nearby. Ensure all personnel use the designated storage area. For active use of materials away from the storage area unsure materials are not set directly on the ground and are covered when not in use.
Responsible Staff:	Lonestar Builders Inc.

Establish Proper Building Material Staging Areas	
BMP Description: Prevent spill and leaks, and reduce their impacts to storm water fueling and doing maintenance in designated areas only, this area must be located away from drainage courses.*	
Installation Schedule:	At all times while fueling and doing equipment maintenance
Maintenance and Inspection:	Train employees to not over fill and to stay with the equipment while fueling.
Responsible Staff:	Lonestar Builders Inc.

*A designated area will be determined after mobilization where minor maintenance, such as adding oil or lubricants for proper operation of equipment, will be conducted. No large scale maintenance will be conducted on-site. Fueling of machinery will be conducted by mobile units, no large scale fuel cells will be kept on-site.

3.6 *Material Handling and Spill Prevention*

Potential pollution sources are to be identified by the site contractor. Spill prevention procedures are to be decided and put in place by the contractor prior to any construction activities. A spill and flooding response procedure should also be put in place prior to construction by the contractor.

A notification procedure must be implemented by the contractor, where workers first notify the site superintendent, who then notifies the SWMP Administrator. Depending on the severity of the spill, the site superintendent and SWMP Administrator would notify the Colorado Department of Public Health and Environment – Water Quality Control Division, downstream water users or other appropriate agencies. The release of any chemical, oil, petroleum product, sewage, etc., which enter waters of the State of Colorado (which include surface water, ground water, and dry gullies or storm sewers leading to surface water) must be reported immediately to the Division's emergency spill reporting line at (877) 518-5608. As spills that will require cleanup, even if the spill is minor and does not need to be reported to the state, should still be reported to the El Paso County Engineering office at (719) 520-7276.

3.7 *Vehicle Tracking Control*

Additional actions can be taken to minimize and control sediment discharges from the site due to vehicle tracking. These actions can include fencing around the site to control access points. Regular street sweeping can also be used to minimize tracking of sediment from the site due to vehicles leaving the site. Utilizing gravel parking areas and wash racks will also reduce the amount of sediment leaving the site. Limiting the number of vehicles accessing the site and/or restricting deliveries when the site is muddy is also recommended as solutions.

3.8 *Waste Management and Disposal*

It is the responsibility of the on-site contractor to assign a concrete truck chute washout area and to clearly identify that area. At no time should untreated wash water be allowed to discharge from the site or to enter a storm drain system or stream. Any waste material that exists on the site or that is generated by construction should be disposed properly so as to not cause pollutants in stormwater discharges. If waste is stored on-site, the designated area should be located a minimum of 100 feet from all drainage courses. Whenever waste is not stored in a non-porous container, it should be enclosed by a 12 inch high compacted earthen berm or other approved secondary containment device.

On-site waste disposal practices, such as dumpsters, should be covered or otherwise contained to prevent dispersion of waste materials by wind. It is the contractor's responsibility to maintain a clean jobsite and to prevent the dispersion of waste material and pollutants into adjacent properties or waterways. The location of and protective measures for, temporary restroom facilities are the responsibility of the SWMP Administrator.

3.9 *Groundwater and Stormwater Dewatering*

The BMPs selected for construction dewatering vary depending on the site-specific features, such as soils, topography, discharge quantities and discharge location. Dewatering typically involves pumping water from an inundated area to a BMP, prior to the water being released downstream into a receiving waterway, sediment basin or well-vegetated area.

4.0 Final Stabilization and Long-Term Stormwater Management

4.1 *Final Stabilization*

The majority of this site will be covered by the building(s) or concrete. The remainder of the site disturbed areas will be stabilized toward the end of the project with sod, landscaping plants, mulches, seeding or other landscaping techniques until the final resulting measures reach 100% coverage and 70% density of historic coverage.

Soil amendments shall be tilled into the soil to a minimum depth of 6". As defined by the Colorado Department of Public Health and Environment (CDPHE) in the General Permit Application for Stormwater Discharges, "Final stabilization is reached when all soil disturbing activities at the site have been completed, and uniform vegetative cover has been established with a density of at least 70 percent of pre-disturbance levels or equivalent permanent, physical erosion reduction methods have been employed."

4.2 *Long-Term Stormwater Management*

The primary method of long-term stormwater management will be a developed site mostly comprised of rooftops roads and drives.

5.0 Inspection, Maintenance and Record Keeping

5.1 *BMP Inspection*

All temporary erosion control facilities shall be inspected at a minimum of once every 2 weeks and after each significant storm event or snowmelt. Repairs or reconstruction of BMPs, as necessary, shall occur as soon as possible in order to ensure the continued performance of the BMPs. It is the responsibility of the SWMP Administrator to conduct bi-weekly inspections, maintain BMPs if needed, keep records of site conditions and inspections and to update the SWMP as necessary.

The construction site disturbed areas, all applicable/installed erosion and sediment control measures and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWMP shall be observed to ensure that they are operating correctly. Particular attention should be paid to areas that have a significant potential for stormwater pollution, such as demolition areas, concrete washout locations and vehicle entries to the site. The inspection must be documented to ensure compliance with the permit requirements.

5.2 *BMP Maintenance*

BMPs not operating in accordance with the SWMP must be addressed as soon as possible to prevent the discharge of pollutants. If modifications are necessary, such modifications shall be documented so that the SWMP accurately reflects on-site conditions. The SWMP needs to accurately represent field conditions at all times.

Uncontrolled releases of mud, muddy water or measurable amounts of sediment found off-site will be recorded with a brief explanation of the measures taken to clean-up the sediment that has left the site, as well as the measures taken to prevent future releases. This record shall be made available to the appropriate public agencies (Colorado Department of Public Health and Environment, Water Quality Control Division; Environmental Protection Agency; El Paso County Engineering; etc.) upon request.

Preventative maintenance of all temporary and permanent erosion control BMPs shall be provided in order to ensure the continued performance of their intended function. Temporary erosion control measures are to be removed after the site has been sufficiently stabilized as determined by the City of Colorado Springs. Maintenance activities and actions to correct problems shall be noted and recorded during inspections.

5.3 *Record Keeping*

Documentation of site inspections must be maintained. The following items are to be recorded and kept with the SWMP:

- Date of Inspection
- Name(s) and title(s) of personnel making the inspection
- Location(s) of sediment discharges or other pollutants from the site
- Location(s) of BMP's that need to be maintained
- Location(s) of BMP's that failed to operate as designed or proved inadequate
- Locations(s) where additional BMP's are needed that were not in place at the time of inspection.
- Deviations from the minimum inspection schedule
- Descriptions of corrective action taken to remedy deficiencies that have been identified
- The report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief after corrective actions have been taken.

Records of spills, leaks or overflows that result in the discharge of pollutants must be documented and maintained. A record of other spills that are responded to, even if they do not result in a discharge of pollutants, should be made. Information that should be recorded for all occurrences includes the time and date, weather conditions, reasons for the spill, etc. Some spills may need to be reported to authorities immediately. Specifically, a release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported to the CDPHE.

Additionally, the "Dynamic Site Plan" is intended to be a "living document" where the SWMP Administrator can hand write the location of BMPs as they are installed to accurately reflect the current site conditions. Also on the "Dynamic Site Plan" should be a "Table of Construction Sequence and BMP Application/Removal" that the SWMP Administrator can use to document when BMPs were installed or removed in conjunction with construction activities. These items will be included as an aid to the SWMP Administrator, and other methods of record keeping are at his or her discretion.

The Stormwater Management Plan (both the text and map) is not a static document, it is a dynamic device intended to be kept current and logged as construction takes place. It shall be the responsibility of the SWMP Administrator and/or the permit holder (or applicant thereof) to ensure the plan is properly maintained and followed. Diligent administration is critical, including processing the Notice to Proceed and noting on the Stormwater Management Plan the dates that various construction activities occur and respective BMPs are installed and/or removed.

6.0 Additional SWMP and BMP Resources

Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual - Volume 3 “Best Management Practices”

Colorado Department of Transportation
Erosion Control and Stormwater Quality Guide
BMP Field Academy

EPA Menu of BMP’s
Construction Site Storm Water Runoff Control

International Stormwater Best Management (BMP) Database
Rocky Mountain Education Center

Rocky Mountain Education Center
Red Rocks Community College, Lakewood

Keep It Clean Partnership
Boulder

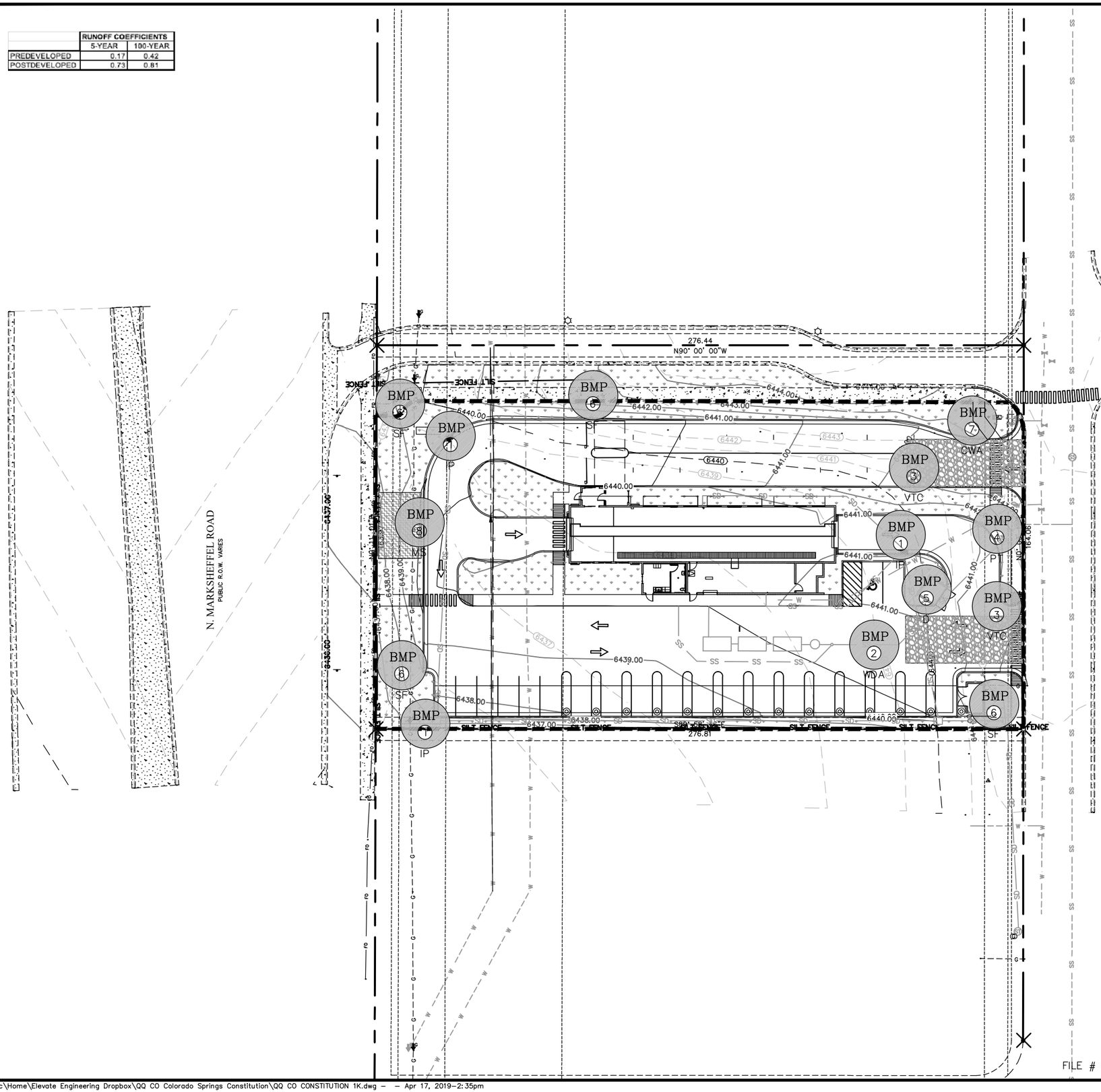
References

1. Soil Resource Report for Larimer County Area, Colorado, Natural Resources Conservation Service, United States Department of Agriculture.
2. Urban Storm Drainage Criteria Manual, Volumes 1-3, Urban Drainage and Flood Control District, Water Resources Publications, LLC., Denver, Colorado, Updated November 2010.
3. Natural Resources Conservation Service Web Soil Survey at websoilsurvey.nrcs.usda.gov/app.

APPENDIX A

(Site Maps)

	RUNOFF COEFFICIENTS	
	5-YEAR	100-YEAR
PREDEVELOPED	0.17	0.42
POSTDEVELOPED	0.73	0.81



LEGEND

PROPERTY/ROW LINE	
EXISTING CURB AND GUTTER	
PROPOSED CURB AND GUTTER	
PROPOSED STORM DRAIN LINE	—SD—SD—SD—
EXISTING STORM DRAIN LINE	--SD----SD----SD-
EXISTING SEWER LINE	-SS-----SS-----SS-
EXISTING WATER LINE	--W----W----W--
EXISTING CONTOUR LINE	2732
FINISHED CONTOUR LINE	21.00
EXISTING FENCE	x
SILT FENCE	SILT FENCE
CLEAN OUT BOX	
LIMITS OF DISTURBANCE (LOD)	
MATERIAL STORAGE AREA	
BEST MANAGEMENT PRACTICE SEE BEST MANAGEMENT PRACTICE INDEX AND SHEET C-7 FOR DETAILS.	BMP XX

NOTES:

DURING CONSTRUCTION

1. ALL EROSION CONTROL BEST MANAGEMENT PRACTICES SHALL BE INSPECTED AND MAINTAINED REGULARLY (ONCE A WEEK) AND AFTER EVERY STORM EVENT

2. LAND DISTURBANCE SHALL BE KEPT TO MINIMUM TO CONTROL RUNOFF FROM THE SITE

3. LIMIT LAND CLEARING AND RESTORE ALL GRADING AS SOON AS POSSIBLE

4. STAGED SEEDING TO RE-VEGITATE CUT AND FILL SLOPES AS THE WORK IS IN PROGRESS

5. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND OTHER EROSION

6. MAINTENANCE OF STREET: STREETS TO BE KEPT CLEAN AND FREE FROM DEBRIS.

7. CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES AT ALL TIMES DURING CONSTRUCTION.

8. A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE KEPT ON THE SITE DURING ALL CONSTRUCTION ACTIVITY

POST CONSTRUCTION

SEE SHEET C-7

BEST MANAGEMENT PRACTICE INDEX

1	IP	INLET PROTECTION
2	WDA	EQUIPMENT AND VEHICLE WASH DOWN AREA
3	VTC	VEHICLE TRACKING CONTROL
4	PT	PORTABLE TOILET
5	D	DUMPSTER LOCATION
6	SF	SILT FENCE
7	CWA	CONCRETE WASHOUT AREA
8	MS	MATERIAL STORAGE AREA

ADDITIONAL BMP's TO BE ONSITE:
- SPILL CLEANUP
- VEHICLE & EQUIPMENT FUELING

SEE SHEET C-7 FOR BMP DETAILS

811 Know what's below. Call before you dig.

N

0 20 40 60
Scale in Feet

FILE # PPR-19-004

NO.	REVISIONS	BY	DATE

PROJECT ENGINEER: LP
DESIGNER: DL

ELEVATE ENGINEERING
492 WEST 1200 NORTH
SPRINGVILLE, UT 84663
PHONE: (801) 376-5983
taylor@elevateeng.com

ELEVATE ENGINEERING

QUICK QUACK CONSTITUTION EROSION CONTROL PLAN

2437 MARKSHEFFEL ROAD COLORADO SPRINGS, CO 80951

COLORADO LICENSED TAYLOR POULTON 4/17/2019 0054520 PROFESSIONAL ENGINEER

SHEET: C-3

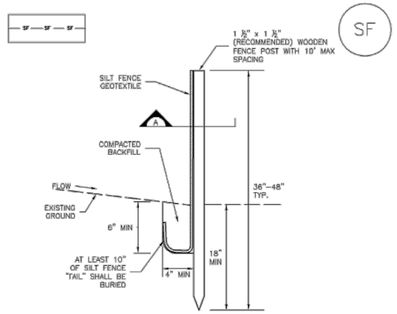
DATE: Apr 17, 2019

\\Mac\Home\Elevate Engineering Dropbox\QQ CO Colorado Springs Constitution\QQ CO CONSTITUTION 1K.dwg – – Apr 17, 2019-2:35pm

APPENDIX B

(Erosion Control Details)

Silt Fence (SF) — SC-1

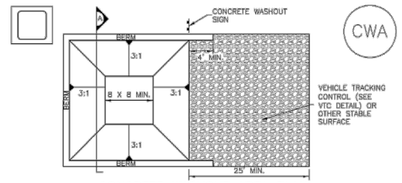


SILT FENCE

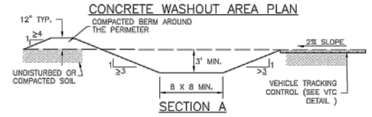
SECTION A

SF–1. SILT FENCE

Concrete Washout Area (CWA) — MM-1



CONCRETE WASHOUT AREA PLAN



SECTION A

CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (18 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

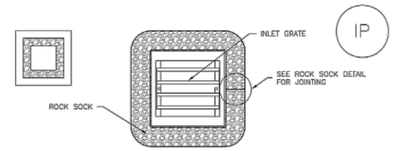
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

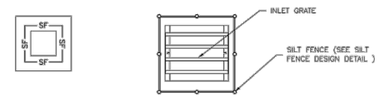
Inlet Protection (IP) — SC-6



IP–3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP–4. SILT FENCE FOR SUMP INLET PROTECTION

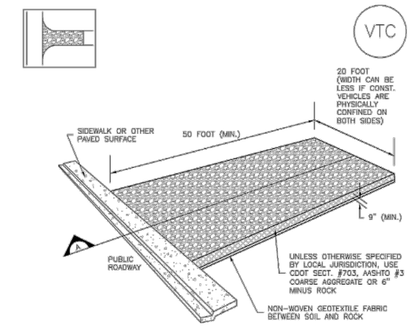
SILT FENCE INLET PROTECTION INSTALLATION NOTES

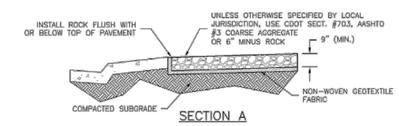
1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

Vehicle Tracking Control (VTC) — SM-4





SECTION A

VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

SC-1 — Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2–5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J–HOOK." THE "J–HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

MM-1 — Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.

6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SC-6 — Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF INLET PROTECTION.
   –TYPE OF INLET PROTECTION (P.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ½ OF THE HEIGHT FOR STRAW BALES.

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

SM-4 — Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   –TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT–OF–WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON–WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

NO.	REVISIONS	BY	DATE

PROJECT ENGINEER: LP
DESIGNER: DL

ELEVATE ENGINEERING
492 WEST 1200 NORTH
SPRINGVILLE, UT 84663
PHONE: (801) 718-5993
lorin@elevateeng.com

QUICK QUACK CONSTITUTION
EROSION CONTROL PLAN DETAILS
2437 MARKSHEFFEL ROAD COLORADO SPRINGS, CO 80951

COLORADO LICENSED LORIN POLLOCK 7/28/2016 0024820 PROFESSIONAL ENGINEER

SHEET: C–7
DATE: Feb 28, 2019

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APPENDIX C

(Copies of Permits/Applications)

EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP)
EL PASO COUNTY PUBLIC SERVICES DEPARTMENT
APPLICATION AND PERMIT

PERMIT NUMBER _____

APPLICANT INFORMATION

Applicant Contact Information	
Owner	
Name (person of responsibility)	
Company/Agency	
Position of Applicant	
Address (physical address, not PO Box)	
City	
State	
Zip Code	
Mailing address, if different from above	
Telephone	
FAX Number	
Email Address	
Cellular Phone Number	

CONTRACTOR INFORMATION

Contractor	
Name (person of responsibility)	
Company	
Address (physical address, not PO Box)	
City	
State	
Zip Code	
Mailing address, if different from above	
Telephone	
FAX number	
Email Address	
Cellular Phone number	
Erosion Control Supervisor (ECS)*	
ECS Phone number*	
ECS Cellular Phone number*	

*Required for all applicants. May be provided at later date pending securing a contract when applicable.

PROJECT INFORMATION

Project Specifications	
Project Name	
Legal Description	
Address (or nearest major cross streets)	
Acreage (total and disturbed)	Total: acres Disturbed: acres
Schedule	Start of Construction: Completion of Construction: Final Stabilization:
Project Purpose	
Description of Project	
Tax Schedule Number	

FOR OFFICE USE ONLY

The following signature from the ECM Administrator signifies the approval of this ESQCP. All work shall be performed in accordance with the permit, the El Paso County Engineering Criteria Manual (ECM) Standards, City of Colorado Springs Drainage Criteria Manual, Volume 2 (DCM2) as adopted by El Paso County Addendum, approved plans, and any attached conditions. The approved plans are an enforceable part of the ESQCP. Construction activity, except for the installation of initial construction BMPs is not permitted until issuance of a Construction permit and Notice to Proceed.

Signature of ECM Administrator: _____ Date _____

1.1 REQUIRED SUBMISSIONS

In addition to this completed and signed application, the following items must be submitted to obtain an ESQCP:

- Permit fees;
- Stormwater Management Plan (SWMP) meeting the requirements of DCM2 and ECM either as part of the plan set or as a separate document;
- Cost estimates of construction and maintenance of construction and permanent stormwater control measures (Cost estimates shall be provided on a unit cost basis for all stormwater BMPs);
- Financial surety in an amount agreeable to the ECM Administrator based on the cost estimates of the stormwater quality protection measures provided. The financial surety shall be provided in the form of a Letter of Credit, Surety with a Bonding Company, <u>or other forms acceptable to El Paso County</u>;
- Operation and Maintenance Plan for any proposed permanent BMPs; and
- **Signed Private Detention Basin/Stormwater Quality Best Management Practice Maintenance Agreement and Easement, if any Permanent Best Management Practices are to be located on site**.

1.2 RESPONSIBILITY FOR DAMAGE

The County and its officers and employees, including but not limited to the ECM Administrator, shall not be answerable or accountable in any manner, for injury to or death of any person, including but not limited to a permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, or for damage to property resulting from any activities undertaken by a permit holder or under the direction of a permit holder. The permit holder shall be responsible for any liability imposed by law and for injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder, or damage to property arising out of work or other activity permitted and done by the permit holder under a permit, or arising out of the failure on the permit holder's part to perform the obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit.

To the extent allowed by law, the permit holder shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of injuries to or death of any person, including but not limited to the permit holder, persons employed by the permit holder, persons acting in behalf of the permit holder and the public, or damage to property resulting from the performance of work or other activity under the permit, or arising out of the failure on the permit holder's part to perform his obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by state law. The permit holder waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees.

1.3 APPLICATION CERTIFICATION

I, as the Applicant or the representative of the Applicant, hereby certify that this application is correct and complete as per the requirements presented in this application and the El Paso County Engineering Criteria Manual and Drainage Criteria Manual, Volume 2 and El Paso County Addendum.

I, as the Applicant or the representative of the Applicant, have read and will comply with all of the requirements of the specified Stormwater Management Plan and any other documents specifying stormwater best management practices to be used on the site including permit conditions that may be required by the ECM Administrator. I understand that the Best Management Practices are to be maintained on the site and revised as necessary to protect stormwater quality as the project progresses. I further understand that a Construction Permit must be obtained and all necessary stormwater quality control BMPs are to be installed in accordance with the SWMP and the El Paso County Engineering Criteria Manual and Drainage Criteria Manual, Volume 2 and El Paso County Addendum before land disturbance begins and that failure to comply will result in a Stop Work Order and may result in other penalties as allowed by law. I further understand and agree to indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BOCC and ECM Administrator, from all claims, suits or actions of every name, kind and description as outlined in Section 1.2 Responsibility for Damage.

_____ Date: _____

Signature of Applicant or Representative

_____

Print Name and Title of Applicant or Representative

Permit Fee $_____

Surcharge $_____

Financial Surety $_____ Type of Surety _____

Total $_____

EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

Revised 5/21/07

1) Applicant (owner/ designated operator), Prepared By, SWMP Administrator, and Contractor Information.
☐

2) Table of Contents.
☐

3) Site description and location to include vicinity map (not just Section, Township, Range)
☐

4) Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures).
☐

5) Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide “living maps” that can be revised in the field as conditions dictate.
☐

6) Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed.
☐

7) Estimates of the total site area and area to undergo disturbance.
☐

8) An estimate of runoff coefficients before and after project construction (may not be required with next State update).
☐

9) Soil erosion potential and potential impacts upon discharge.
☐

10) A description of existing vegetation at the site and percent ground cover.
☐

11) The location and description of any other potential pollution sources such as fueling (mobile or stationary), chemical storage, etc.
☐

12) Material handling to include spill prevention and response procedures.
☐

13) Spill prevention and pollution controls for dedicated batch plants.
☐

14) Other SW pollutant control measures to include waste disposal and off site soil tracking.
☐

15) The location and description of any anticipated non-stormwater components of discharge (springs, irrigation, etc.).
☐

16) The name of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge.
☐

17) SWMP Map to include:

a) construction boundaries
☐

b) all areas of disturbance
☐

c) areas of cut and fill
☐

d) areas used for storage of building materials, soils or wastes (stockpiles)
☐

e) location of any dedicated asphalt / concrete batch plants
☐

f) major erosion control facilities or structures (sedimentation ponds, etc.)
☐

g) springs, streams, wetlands and other surface waters
☐

h) boundaries of FEMA mapped 100 year flood plain
☐

18) Narrative description of structural BMPs to be used, including silt fence, straw bales, check dams, sediment basins, drainage swales,etc. Ensure method is ECM / DCM approved.
☐

19) Description of non-structural BMPs to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc.
☐

20) Technical drawing details for BMP installation and maintenance.
☐

21) Procedure for how the SWMP will be revised.
☐

22) Description of Final Stabilization and Long-term Stormwater Quality (describe measures to control SW pollutants after construction operations have been completed.
☐

23) Provide for vegetative cover density to be 70% of pre-disturbed levels.
☐

24) Outline of permit holder inspection procedures to install, maintain, and effectively operate BMPs, to manage erosion and sediment.
☐

25) Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site.
☐

Please note: all items need to be addressed. If not applicable, explain; simply identifying “not applicable” will not satisfy CDPHE requirement of explanation.

APPENDIX D

(Inspections Logs)

COLORADO DEPARTMENT OF TRANSPORTATION

DAILY STORMWATER LOG

In accordance with subsection 208.03(c) daily stormwater compliance inspections are required on all projects holding a Colorado Discharge Permit System – Stormwater Construction Permit (CDPS-SCP).

This form is to be used as the daily diary to evaluate BMPs used during construction activities.

See the instructions for more information.

Date:	Project number:	Sub-account number:

The entire site shall be inspected to determine whether BMPs are being implemented and maintained in accordance with the project's site specific SWMP and the CDPS-SCP. The Erosion Control Supervisor (ECS) or Superintendent shall identify if additional BMPs are needed, can be removed, or need maintenance. The **condition** of the currently used BMPs shall be recorded, using one or more of the following letters: (**I**) Incorrect Installation; (**M**) Maintenance is needed; (**F**) BMP failed to operate; (**A**) Additional BMP is needed; (**R**) Remove BMP. Only BMPs with the conditions above need be recorded. (Use the extra page at the end of this form if needed.)

The Project Engineer will approve and the Superintendent shall direct the work associated with any BMPs identified in this daily log to ensure compliance with the site specific SWMP and the CDPS-SCP.

CDPS-SCP States: "BMPs that are not operating effectively, have proven to be inadequate, or have failed must be addressed as soon as possible, immediately in most cases."

Location	BMP Type	Condition	Notes/Comments	Date Completed & Initials

**** ALL BMPS ARE IN OPERATING CONDITION AND NO MAINTENANCE IS NEEDED.**
(initial the box to the right when this applies)

Comments/General notes:(attach photos if necessary)

Inspection signature:

Superintendent or ECS Name:(Print)	Signature:	Date signed:

Stormwater Management Field Daily Inspection Report Instructions

Inspect all erosion and sediment control BMPs throughout the entire construction site – observe, record, and determine their effectiveness. If additional BMPs are needed or any BMP is not operating effectively, it shall be recorded on this form and addressed immediately.

Location: Record the site location (e.g., project station number, mile marker, intersection quadrant, etc.).

BMP Type: Indicate the type of BMP at this location that requires attention (e.g., silt fence, erosion logs, soil retention blankets, etc.).

Condition: Identify the condition of the BMP, using one or more of the following letters: (**I**) Incorrect Installation, (**M**) Maintenance is needed (i.e., sediment needs to be removed), (**F**) BMP Failed to operate, (**A**) Additional BMP is needed, (**R**) Remove the BMP.

** If all BMPs are in operating condition and no BMP maintenance is needed, sign and initial the box to the right of the statement.

Notes/Comments: Provide the proposed corrective action needed to bring the area or BMP into compliance.

Date Completed & Initials: Date and initial when the corrective action was completed.

Inspection Signature: Sign the form when the inspection has been completed.

Place the completed daily stormwater log sheet(s) in the SWMP Notebook.

APPENDIX E

(Contractor Inserts)