



INNOVATIVE DESIGN. CLASSIC RESULTS.

**STORMWATER MANAGEMENT PLAN**

**FOR**

**REDTAIL RANCH FILING NO. 1**

**SF-18-021**

Prepared for:

MIKE LUDWIG

4255 ARROWHEAD DRIVE

COLORADO SPRINGS, CO 80908

Prepared by:

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Job no. 2525.00

SWMP Administrator:

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- **PROPOSED CONSTRUCTION ACTIVITY**

Proposed construction activities within this project include grading of the proposed roadways, stormwater quality ponds and utility/road installation for the construction of single family homes.

- **PROPOSED SEQUENCE OF ACTIVITY/CONSTRUCTION TIMING**

Proposed construction activities within this project include grading and utility/road construction for the proposed residential subdivision. Sequence of activities will be based upon site contractor timing and scheduling. Upon site contractor selection, contractor to include sequence of activities schedule in the section provided in the Appendix of this report. A standard sequence of events typically includes the following:

- 1) Install perimeter, interior & exterior BMPs
- 2) Clear and grub site for proposed roadways and pond areas
- 3) Excavation & installation of dry utilities
- 5) Building construction including drilling for individual wells and installation of septic systems
- 6) Paving, installation of erosion control measures within the sideroad ditches

Are 5 and 6 reversed? ✓

permanent? ✓

The anticipated start and completion time period for site grading operations is to start in Spring 2019 with site final site stabilization by Spring 2020. This time schedule could vary depending on individual home sales and construction schedules.

- **EROSION AND SEDIMENT CONTROL**

Erosion control measures shall be implemented in a manner that will protect properties and public facilities from the adverse effects of erosion and sedimentation as a result of construction and earthwork activities. In order to prevent a net increase of sediment load, Best Management Practices will be implemented during the construction life of this project. A silt fence will be installed per the approved grading and erosion control plan in order to protect undisturbed areas. All roads will be inspected to ensure that sediment from on-site construction activity is not being discharged with the stormwater. Roadways shall be swept as needed for controlling tracking of mud

site. Reference the Appendix of this report for the SWMP permit application which names the individual/entity applying for the permit and naming the Administrator of the SWMP.

- **POTENTIAL POLLUTANT SOURCES**

Potential pollutant sources which shall be evaluated for potential to contribute pollutants to stormwater discharge from the subject site may include the following:

- Disturbed and stored soils
- Vehicle tracking of sediments
- Management of contaminated soils
- Loading and unloading operations
- Outdoor storage activities (building materials, fertilizers, chemicals, etc.)
- Vehicle and equipment maintenance and fueling
- Significant dust or particulate generating processes
- Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
- On-site waste management practices (waste piles, liquid wastes, dumpsters)
- Concrete truck/equipment washing, including the concrete truck chute associated fixtures and equipment
- Dedicated asphalt and concrete batch plans — Is this proposed? *As removed.*
- Non-industrial waste sources such as worker trash and portable toilets
- Other areas or procedures where potential spills can occur.

The location and description of these areas are shown on the attached SWMP Site Map.

- **BMPS FOR POLLUTANT PREVENTION**

The following are common practices to mitigate potential pollutants:

- Wind erosion shall be controlled by sprinkling site roadways and/or temporary stabilizing stockpiles. Each dump truck hauling material from the site will be required to be covered with a tarpaulin.
- Sanitary facilities shall be placed at a minimum of 10' from any curblin and 50' from any inlet. If not feasible for the project, use of a secondary containment shall be implemented.



- Equipment fueling and Maintenance Services – a designated fueling area will be established to contain any spill resulting from fueling, maintenance, or repair of equipment. Contractors will be responsible for containment, cleanup, and disposal of any leak or spill and any costs associated with the cleanup and disposal.
- Chemical products shall be protected from precipitation, free from ground contact, and stored properly to prevent damage from equipment or vehicles.
- Material stockpiles (soils, soil amendments, debris/trash piles) – All construction trash and debris will be deposited in the dumpster.
- Sediment and Migration of Sediment – Sweeping operations will take place as needed to keep roadways maintained. The perimeter of the site will be evaluated for any potential impact resulting from trucking operations or sediment migration from the site. BMP devices will be placed to protect storm system inlets should any roadway tracking or sediment migration occur.
- Snow removal and/or stockpiling will be considered prior to placement at the site. Snow stockpiles must be kept away from any stormwater conveyance system (i.e., inlets, ponds, outfall locations, roadway surfaces, etc.)

● **BMP SELECTION**

Selection of the appropriate BMP will limit the source of the pollutant. Guidance for the selection process can be found by referencing the City of Colorado Springs/El Paso County “Drainage Criteria Manual Volume 2”.

Are these shown  
on the GEC plan?

*No. removal.*

During grading and construction activity for the subject site, silt fence will be installed per the approved plan in order to protect undisturbed areas. Check dams will be installed along all permanent and temporary sideroad swales to minimize erosion in areas of concentrated stormwater. Temporary diversion swales will be installed to a minimum of 1% slope to divert stormwater to several proposed sediment basins intended to collect stormwater and filter the sediment before conveyance further downstream. Inlet protection will be installed at all proposed culverts to ensure no downstream pollutants will leave the site. Vehicle tracking control pads will be installed at all access points to the property. Regular maintenance and inspection of these



Does this sentence make sense?

Re-worded

- **NON-STORMWATER DISCHARGES**

Except for emergency fire fighting activities, landscape irrigation return flow, uncontaminated springs, and concrete washout water, the SWMP permit covers only discharges composed entirely of stormwater.

- **STORMWATER DEWATERING**

The discharge of pumped water, ONLY from excavations, ponds, depressions, etc., to surface waters or to a municipal separate storm-sewer system 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 the BMPs are implemented in accordance with the SWMP. Where applicable, all stormwater and groundwater dewatering practices implemented to control stormwater pollution for dewatering must be amended in the SWMP and Site Map by the contractor.

must? ✓

- **REVISING BMPs AND THE SWMP**

The implemented BMPs will need to be modified and maintained regularly to adapt to changing site conditions and to ensure that all potential stormwater pollutants are properly managed. The BMPs and pollutant sources must be reviewed on an ongoing basis by the Administrator as assigned by the Permit. With any construction project, special attention must be paid to construction phasing and therefore revisions to the SWMP to include any additional or modification to the BMPs and SWMP report. The SWMP must be modified or amended to accurately reflect the field conditions. Examples include - but are not limited to – removal of BMPs, identification of new potential pollutant procedures, and changes to information provided in the site map/overlot grading plan. SWMP revisions must be made prior to changes in site conditions. The SWMP should be viewed as a “living document” throughout the lifetime of the project.

## **FINAL STABILIZATION AND**

## **LONG-TERM STORMWATER MANAGEMENT**

Permanent stabilization of the site includes seeding and mulching the site. Seeding and mulching consists of loosening soil, applying topsoil (if permanent seeding) and drill seeding disturbed areas with grasses and



Describe where / how records are to be kept.

*Added to previous page*

- Deviations from the minimum inspection schedule
- Descriptions of corrective action for items above including dates and measures taken to prevent future violations
- Signed statement of compliance added to the report after correction action has been taken

**EROSION CONTROL COST OPINION**

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST
1.	Permanent Seeding	4.5 AC.	\$582/AC.	\$ 2,619.00
2.	Mulching	4.5 AC.	\$507/AC.	\$ 2,281.00
3.	Vehicle Tracking Control	2 EACH	\$1,625/EA	\$ 3,250.00
4.	Silt Fence	1,790 LF	\$4.00/LF	\$ 7,160.00
5.	Temporary Seeding	3.3 AC.	\$485/AC.	\$ 1,600.50
6.	Temporary Mulch	3.3 AC.	\$507/AC.	\$ 1,637.10
7.	Inlet Protection	3 EACH	\$153/EA	\$ 459.00
8.	Sediment Basin	2 EACH	\$1,625/EA	\$ 3,250.00
9.	Concrete Washout	1 EA.	\$776/EA.	\$ 776.00
<b>TOTAL</b>				<b><u>\$ 23,069.10</u></b>

Classic Consulting Engineers & Surveyors cannot and does not guarantee that the construction cost will not vary from these opinions of probable construction costs. These opinions represent our best judgment as design professionals familiar with the construction industry and this development in particular.

PREPARED BY:

**Classic Consulting Engineers & Surveyors, LLC**



Marc A. Whorton, P.E.  
Project Manager

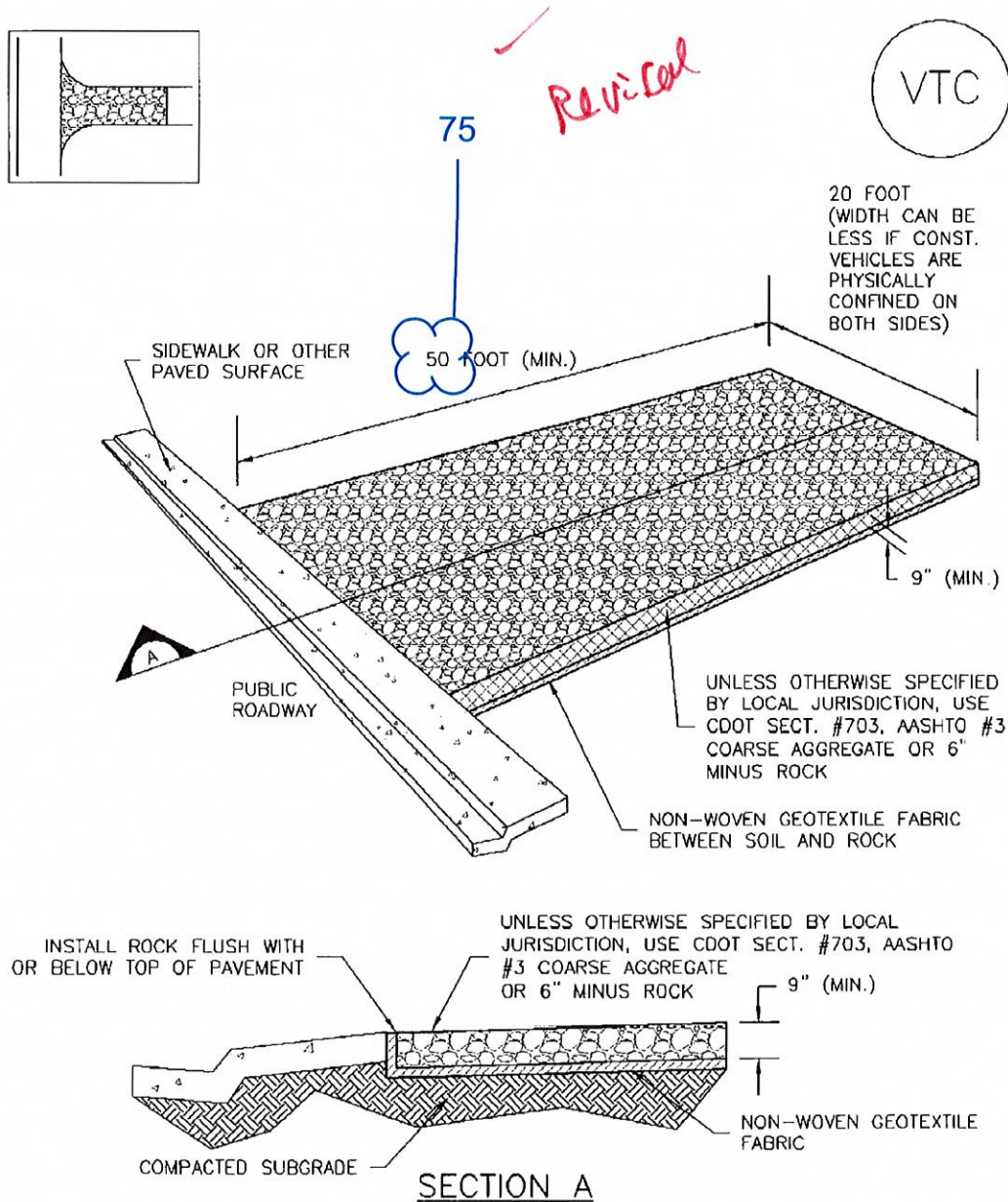
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STANDARD BMP DETAILS  
W/ INSTALLATION AND MAINTENANCE REQUIREMENTS

Provide all proposed including ~~diversion swale,~~  
TSB. ✓

*not from proposal*



## VTC-1. AGGREGATE VEHICLE TRACKING CONTROL