

**Construction Activities Stormwater Management Plan (SWMP)  
Grading, Erosion and Stormwater Quality Control Plan  
East Fork Jimmy Camp Creek Channel Design  
Creekside at Lorson Ranch Filing No.1  
El Paso County, Colorado  
39.73166°N, -104.64.55°W**

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August 1, 2019

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## STATE STORMWATER DISCHARGE PERMIT REQUIREMENTS

At least ten days prior to the anticipated start of construction activities (i.e. the initial disturbance of soils associated with clearing, grading, excavation activities, installation of structural Best Management Practices, or other activities), for projects that will disturb one (1.0) acre or more, the owner or operator of the construction activity must submit an application as provided by the Colorado Department of Public Health and Environment, Water Quality Control Division (Division). This form may be reproduced and is also available from the Division's web site. Applications received by the Division are processed and a permit certification and other relevant materials will be sent to the attention of the legally responsible person. The application contains certification of completion of a storm water management plan (SWMP). Do not include a copy of the Stormwater Management Plan, unless requested by the Division.

For information or application materials contact:

Colorado Department of Public Health and Environment  
Water Quality Control Division  
WQCD-P-B2  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530  
<https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits>

Electronic Application – CDPHE website:

<https://www.colorado.gov/pacific/cdphe/WQ%20permits%20construction%20electronic%20application>

## I. STORMWATER MANAGEMENT PLAN OBJECTIVES

The objective of the Stormwater Management Plan (SWMP) is “to identify possible pollutant sources that may contribute pollutants to stormwater and identify Best Management Practices (BMPs) that, when implemented, will reduce or eliminate any possible water quality impacts. The SWMP must be completed and implemented at the time the project breaks ground and revised as construction proceeds, to accurately reflect the conditions and practices at the site (CDPHE *Stormwater Management Plan Preparation Guidance*)”. A general schedule or phasing of BMPs will be determined by construction schedule and ground disturbances necessitating required erosion control methods/BMPs. The SWMP shall be implemented until expiration or inactivation of permit coverage. Evaluations of and modifications to this plan may be necessary during the length of the construction project until the site is finally stabilized.

SWMP Plan Availability: A copy of the Stormwater Discharge Permit from the State of Colorado, SWMP Report, SWMP Site Map, SWMP Notes and Details; and inspection reports shall be kept on site by the SWMP Administrator at all times, as to be available for use by the operator/SWMP Administrator and to be available for inspection by federal, state and local agencies. If an office location is not available at the site, the SWMP must be managed so that it is available at the site when construction activities are occurring (for example: by keeping the SWMP in the superintendent’s vehicle). The permittee shall retain copies of the SWMP and all reports required by the Permit and records of all data used to complete the Permit application for three (3) years minimum after expiration or inactivation of permit coverage, unless the community requires a longer period.

This SWMP should be viewed as a “living document” that is continuously being reviewed and modified as a part of the overall process of evaluating and managing stormwater quality issues at the site. The SWMP Administrator shall amend the SWMP when there is a change in design, construction, operation or maintenance of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity or when BMPs are no longer necessary and are removed. If the SWMP Administrator feels that modifications to the BMPs shown on the SWMP are necessary to provide for a more effective plan, the SWMP Administrator should contact the County Inspector to obtain acceptance of the proposed modifications prior to installing the BMPs. The process will include: 1) Evaluate pollutant sources, 2) Select BMPs, 3) Document BMPs, 4) Implement BMPs. Minor field modifications to the BMPs may be approved by the County inspector. All other requested major modifications shall be in writing and submitted to the County for approval.

SWMP revisions must be made prior to changes in the site conditions, except for “Responsive SWMP Changes” as follows:

- SWMP revision must be made immediately after changes are made in the field to address BMP installation and/or implementation issues; or
- SWMP revisions must be made as soon as practicable, but in no case more than 72 hours, after change(s) in BMP installation and/or implementation occur at the site that require development of materials to modify the SWMP
  - ◊ A notation must be included in the SWMP prior to the site change(s) that includes the time and date of the change(s) in the field, and identification of the BMP(s) removed or added and the location(s) of the BMP(s). Modifications to the SWMP shall be submitted to the County within seven days.

An El Paso County Erosion and Stormwater Quality Control Permit (ESQCP) is required along with a Colorado Discharge Permit System (CDPS), Stormwater Discharge Associated with Construction

Activities Permit from the Colorado Department of Public Health and Environment for this project. The general conditions associated with the permits must be followed through the duration of the land disturbing activities at the site. For additional details or more specific information on the CDPS permit, consult the CDPS General Permit No. COR-030000. County ESQCP: Signoff and acceptance of both the Grading Plan and the Erosion Control Plan, or a combined plan, by the County constitutes an ESQCP authorizing the approved land disturbance and implementation of the approved erosion and stormwater quality control measures.

#### **A. State Permit Applicant**

The State Permit applicant (also referred to as the Permittee) must be a legal entity that meets the definition of the owner and/or operator of the construction site, in order for this application to legally cover the activities occurring at the site. The applicant must have day-to-day supervision and control over activities at the site and implementation of the SWMP. Although it is acceptable for the applicant to meet this requirement through the actions of a contractor, as discussed in the examples below, the applicant remains liable for violations resulting from the actions of their contractor and/or subcontractors. Examples of acceptable applicants include:

Owner or Developer - An owner or developer who is operating as the site manager or otherwise has supervision and control over the site, either directly or through a contract with an entity such as those listed below.

General Contractor or Subcontractor - A contractor with contractual responsibility and operational control (including SWMP implementation) to address the impacts construction activities may have on stormwater quality.

Other Designated Agents/Contractors - Other agents, such as a consultant acting as construction manager under contract with the owner or developer, with contractual responsibility and operational control (including SWMP implementation) to address the impacts construction activities may have on stormwater quality.

Refer to the CDPHE, *Stormwater Management Plan Preparation Guidance* for additional information.

The Permittee shall be legally responsible for compliance with the State Permit.

#### **B. SWMP Terms**

Best Management Practices (BMPs): BMPs encompass a wide range of erosion and sediment control practices, both structural and non-structural in nature, that are intended to reduce or eliminate any possible water quality impacts from stormwater leaving a construction site. The individual BMPs appropriate for a particular construction site are largely dependent of the types of potential pollutant sources present, the nature of the construction activity, and specific-site conditions.

Nonstructural BMPs, such as preserving natural vegetation, preventive maintenance and spill response procedures, schedules of activities, prohibition of specific practices, education, and other management practices are mainly operational or managerial techniques.

Structural BMPs include treatment processes and practices ranging from diversion structures and silt fences, to retention ponds and inlet protection.

Construction Start Date: This is the day when ground disturbing activities are expected to begin, including grubbing, stockpiling, excavating, demolition, and grading activities.

Disturbance Area Determination: Aside from clearing, grading and excavation activities, disturbed areas also include areas receiving overburden (e.g., stockpiles), demolition areas, and areas with heavy equipment/vehicle traffic and storage that disturb existing vegetative cover.

Final Stabilization Date: In terms of permit coverage, this is when the site is finally stabilized. This means that all ground surface disturbing activities at the site have been completed, and all disturbed areas have been either built on, paved, or a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels (refer to Final Stabilization Section). Permit coverage must be maintained until the site has reached Final Stabilization. Even if only one part of the project is being done, the estimated final stabilization date must be for the overall project. If permit coverage is still required once your part is completed, the permit certification may be transferred or reassigned to a new responsible entity(s).

SWMP Drawings: Also known as the SWMP Site Map.

### **C. Contractor Required Items**

The Contractor shall include and/or provide the following items prior to beginning land disturbing activities:

- ☐ Add the SWMP Administrator and Alternate with phone numbers to this plan.
- ☐ Construction Dates – Verify the construction dates indicated in this report. Update as necessary to reflect the planned schedule.
- ☐ Material Handling and Spill Prevention procedures – See Section IV-4.
- ☐ Application - Insert Application for CDPS Stormwater Discharge Associated with Construction Activities Permit into Appendix.
- ☐ Permit - Insert Permit for CDPS Stormwater Discharge Associated with Construction Activities into Appendix.
- ☐ Location of SWMP and Records: The most current version of the SWMP. Construction activities discharge permit, inspection reports and other related files shall be onsite by the Contractor during the period of construction.

## **II. SITE DESCRIPTION**

### **A. Nature of the Construction Activity**

The proposed development will be channel improvements along the East Fork Jimmy Camp Creek. Included in the project is the stabilization of the existing floodplain along the East Fork Jimmy Camp Creek. Stabilization measures include soil/riprap bank linings, boulder low flow channel, soil riprap benches above the boulder linings that will range from 20 to 40-feet, and soil riprap bank lining to the height of the 100-year water surface at outside bends and native revegetation. Low flow channel grade control is accomplished by PZ22 sheet piling in two locations. The bottom width of the low-flow channel will range from 12 to 20-feet. All soil/riprap will be un-grouted and will be revegetated.

#### **i. Site Location**

The site is located southeasterly from the Lorson Boulevard Bridge over the East Fork of Jimmy Camp Creek continuing to the property line at Peaceful Valley Subdivision starting at the downstream end of the existing re-configured channel. The site is

located within the portions of Section 23, Township 15 South, Range 65 West of the 6th Principal Meridian, in El Paso County, Colorado. The location of the site is shown on the Vicinity Map (Figure 1).

**ii. Adjacent Areas**

The site is bounded to the west/northwest by Creekside at Lorson Ranch Subdivision Filing No. 1 on the east/southeast by undeveloped land owned by the developer, and on the south by the Peaceful Valley Ranch Subdivision.

**B. Sequence of Major Activities**

The major construction activities associated with this project are shown in the table below along with an approximate timing of the sequence. In general, the SWMP Administrator and the Contractor will identify the precise schedule to be used during the term of this project and modify this schedule as needed. Minimal clearing and grubbing may be necessary to install the initial erosion control features.

Approximate Sequence of Major Construction Activities:

Installation of Initial BMPs	October 2019
Clearing and grubbing	October 2019
Drainageway Construction	October 2019-March 2020
Site Restoration	Spring 2020
End Construction (refer to <i>Final Stabilization...</i> section)	Fall 2020

The temporary erosion control measures can be removed when Final Stabilization has occurred. Refer to the Final Stabilization section for a description of the requirements.

**C. Estimate of Area and Volume Disturbed**

The total site area associated with the channel construction is 19.0 acres and approximately 14.7 acres will be subject to disturbance. The estimated area of disturbance corresponds to that necessary to perform grading and proposed improvements for the East Fork Jimmy Camp Creek). Locations of disturbed areas are as shown on the SWMP Site Maps included in Appendix D. All other areas are planned to remain undisturbed.

Earthwork operations will involve be roughly 7,500 cubic yards of Cut-to-Fill. Fill will be placed onsite. The earthwork quantity is approximate and assumes a shrinkage factor of 10 percent for the placement of fill material.

**D. Soil Data**

Soils within the area of disturbance are classified to be within Hydrologic Soils Group C and B as shown in the El Paso County Soils Survey. Specifically, the site includes Ascalon sandy loam (Soil Group B) and Manzanola loamy clay (Soil Group C). Hydrologic Soil Group C soils have a low infiltration rate when thoroughly wet. These consist mainly of deep clay loams with a low rate of water transmission and a high hazard of erosion. Hydrologic Soil Group B soils have a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission and a moderate erosion hazard. Discharges of these soils into the receiving waterways could cause localized areas of sediment deposition. Deposition of excessive amounts of sediment could in turn cause a decrease in the hydraulic capacity of the drainageway.

Pre-construction 100-year runoff coefficient for the site is 0.25 and the post-construction runoff coefficient will be roughly 0.25.

#### **E. Existing Vegetation and Ground Cover**

The existing site is undeveloped, and the vegetative cover is in fair condition with non-native and native grasses and herb. The channel banks are lined with trees, most notably Russian olive and Siberian elms. The existing ground slopes on the overbanks are moderate and range from 1 to 6 percent. Slopes along the channel are moderate to extreme, nearly vertical at some locations.

It is recommended that the contractor take pictures of the existing vegetation cover prior to construction and any calculations they feel necessary to make the Final Stabilization comparison (refer to Final Stabilization section for additional information). The contractor will be responsible for providing the documentation to make this comparison to the County and the State of Colorado, Water Quality Control Division.

#### **F. Potential Pollution Sources**

The potential pollution sources for the site that may have an impact to stormwater include the following items:

1. Ground disturbing activities and grading - Sediment
2. Off-site vehicle tracking - Sediment
3. Vehicle maintenance or fueling - Fuel, oil, chemicals
4. Storage of demolition and disposal items - Sediment, asphalt, concrete
5. Soil, aggregate and sand stockpiling - Sediment
6. Storage of fertilizers, materials or chemicals - Chemicals
7. Haul routes - Sediment, fuel, oil
8. Landscaping - Fertilizers, sediment, over-watering, pesticides
9. Portolet - Chemicals, human waste

#### **G. Non-stormwater Discharges**

In the existing condition there are no known non-stormwater discharges from the project site, such as springs and landscape irrigation return flows. During construction, the following non-stormwater discharges from the project site could occur.

1. Construction dewatering - is not anticipated, but in the case groundwater is encountered, a CDPHE construction dewatering permit will be required prior to performing the dewatering activities. A dewatering bag or other approved BMP shall be used during dewatering.
2. Release of concrete washout water - Not anticipated.
3. Runoff from water used for dust control - Not anticipated. The contractor should limit the amount of water used for dust control to an amount less than would result in runoff. Perimeter control BMPs are planned to filter water that may cause runoff.

If any other non-stormwater discharges from the site become apparent during the term of construction, the occurrence and mitigation shall be addressed by the SWMP Administrator.

#### **H. Receiving Waters**

In the existing condition, the site drains by the East Fork Jimmy Camp Creek flowing from the northeast in a southeasterly manner to join the mainstem of Jimmy Camp Creek a short distance downstream.

Immediate Receiving water(s): East Fork Jimmy Camp Creek

Ultimate Receiving Water(s): Jimmy Camp Creek



East Fork Jimmy Camp Creek is a major drainageway that crosses through the northwest portion of the site from northeast to southwest. The subject property is located within a Zone AE FEMA regulated floodplain based on Flood Insurance Rate Map 08041C0957G, dated December 7, 2018. The planned improvements to East Fork Jimmy Camp Creek will modify the existing floodplain. A Letter of Map Revision (LOMR) has been submitted to FEMA for the major drainageway construction that began at the upstream limit of this project and extending north to the north property line of Lorson Ranch. The FIRM panel for the project area is contained in the Appendix. The 100-year floodplain will be contained within the proposed channel section and will not extend into the proposed lots.

### **III. SWMP SITE MAP CONTENTS**

The SWMP Site Map and SWMP Drawings are considered a part of this plan. It identifies the following:

1. Construction site boundaries;
2. All areas of ground disturbance;
3. Areas of cut and fill;
4. Areas used for storage of building materials, equipment, soil, or waste;
5. Locations of all structural BMPs;
6. Locations of non-structural BMPs where applicable;
7. Locations of springs, streams, wetlands, detention basins, irrigation canals, roadside ditches and other surface waters.

The SWMP Site Map must be updated/red lined by the SWMP Administrator on a regular basis to reflect current conditions of the site at all times.

### **IV. STORMWATER MANAGEMENT CONTROLS**

#### **A. SWMP Administrator**

The Permittee shall designate the SWMP Administrator. The SWMP Administrator is typically the Contractor or his/her designated representative and is responsible for developing, implementing, maintaining and revising the SWMP. The SWMP Administrator is the contact person with the County and State for all matters pertaining to the SWMP. The SWMP Administrator is the person responsible for the SWMP accuracy, completeness and implementation. Therefore the SWMP Administrator should be a person with authority to adequately manage and direct day to day stormwater quality management activities at the site. The SWMP Administrator shall have the authority to act on behalf of the Permittee(s) to ensure the site remains in compliance with the CDPS Stormwater Discharge Associated with Construction Activities Permit and the County's ESQCP. An Alternate SWMP Administrator who is able to serve in the same capacity as the SWMP Administrator shall also be selected.

The SWMP Administrator shall be present at the project site a majority of the time and (along with the Alternate SWMP Administrator) shall provide the County with a 24-hour emergency contact number.

If the SWMP Administrator or Alternate changes for any reason, it shall be noted/redlined on this Plan. The County shall be notified in writing of any change.

SWMP Administrator: \_\_\_\_\_

Phone: \_\_\_\_\_

Alternate SWMP Administrator: \_\_\_\_\_

Phone: \_\_\_\_\_

**B. Identification of Potential Pollutant Sources:**

At a minimum, the following sources and activities shall be evaluated for the potential to contribute pollutants to stormwater discharges and identified in the SWMP if found to have such potential. The sources of any potential pollutants must be controlled through BMP selection and implementation. Each pollutant source recognized through this process as having the potential to contribute pollutants to stormwater, must be identified in the SWMP along with the specific stormwater management control (BMPs) that will be implemented to adequately control the source. (Note: the actual evaluation of the potential pollutant sources does NOT need to be included in the SWMP – just the resultant pollutant sources and their associated BMPs.). The SWMP Administrator shall determine the need for and locations of each of the following potential pollutant sources during the course of the construction project.

Could it Contribute?	Potential Pollutant Source	BMP Implemented to Control Source
Yes	All disturbed and stored soils	Silt fence, sediment control logs, sediment basin, inlet protection, rock socks, seed and mulch
No	Vehicle tracking of sediments	
No	Management of contaminated soils	
Yes	Loading and unloading operations	Stabilized staging area, materials storage area, vehicle tracking control, silt fence
Yes	Outdoor storage activities (building materials, fertilizers, chemicals, etc.)	Stabilized staging area, materials storage area, silt fence
Yes	Vehicle and equipment maintenance and fueling	Stabilized staging area, materials storage area, silt fence
Not expected	Significant dust or particulate generating processes	Control by sprinkling with water and other appropriate means.
Yes	Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc	Use as recommended by manufacturer and in areas specified, inlet protection
Yes	On-site waste management practices (waste piles, liquid wastes, dumpsters, etc)	Stabilized staging area, silt fence, inlet protection, sediment basin, non-structural BMPs
No	Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment	
No	Dedicated asphalt and concrete batch plants	
Yes	Non-industrial waste sources such as worker trash and portable toilets	Stabilized staging area, construction fence, non-structural BMPs
Yes	Other areas or procedures where potential spills can occur	Construction fence

The Air Pollution Control Division of the Colorado Department of Public Health and Environment (CDPHE) has passed air quality regulations consistent with Federal legislation. Regulation No. 3 requires submittal of an Air Pollutant Emission Notice (APEN) for sources of fugitive dust from construction sites, as well as other sources. Regulation No. 1 defines particulate emission control regulations for haul roads and roadways. Additional controls, such as road watering, may be necessary to fully comply with these regulations at a construction site. The Contractor should contact CDPHE about APENs and other air quality requirements.

**C. Best Management Practices (BMPs) for Pollution Prevention**

1. A list of the Structural BMPs for erosion and sediment control implemented on the site to minimize erosion and sediment are as follows. Refer to the SWMP Drawings for Installation and Maintenance requirements for each structural BMP and refer to the SWMP drawings for the location of the BMPs.
  - a) Seeding and Mulching (SM): Temporary seeding and mulching can be used to stabilize disturbed areas that will be inactive for an extended period of time. Permanent seeding should be used to stabilize areas at final grade that will not otherwise be stabilized.
  - b) Hydro-mulching (MU): Temporary hydro-mulching can be used to stabilize disturbed areas that will be inactive for an extended period of time. Permanent seeding should be used to stabilize areas at final grade that will not otherwise be stabilized.
  - c) Sediment control logs (SCL): A temporary sediment barrier constructed of straw waddles placed continuously behind the back of the boulder low flow linings.
  - d) Stabilized Staging Area (SSA): Consists of stripping topsoil and spreading a layer of granular material in the area to be used for a trailer, parking, storage, unloading and loading.
  - e) Vehicle Tracking Control (VTC): Consists of a rock pad that is intended to help strip mud from tires prior to vehicles leaving the construction site. Installed at all entrance/exit points to the site. The number of access points shall be minimized.

Minimal clearing and grubbing may be necessary prior to installing the initial erosion control features.

No clearing, grading, excavation, filling or other land disturbing activities shall be permitted until signoff and acceptance of the Grading Plan and Erosion Control Plan (or the combined plan) is received from the County.

Once signoff and acceptance is received, the approved erosion and sediment control measures must be installed before land-disturbing activities are initiated so that no adverse effect of site alteration will impact surrounding property.

2. Non-structural practices for erosion and sediment control to be used to minimize erosion and sediment transport are:

Seeding and mulching/hydro-mulching and landscape installation in areas that will not be hard surfaced. Minimize the amount of existing vegetation to be removed during construction, leaving native vegetation in place when possible. Only the existing vegetation that is specified or requiring removal shall be disturbed or

removed. If possible, leave existing ground cover, including asphalt in place or remove just prior to grading to minimize the length of soil exposure.

3. Phased BMP Implementation:

The SWMP Administrator shall update the BMP Implementation if necessary to meet and/or address the Contractor's schedule. The SWMP shall be updated as necessary to reflect the BMPs installed.

a) Installation of Initial BMPs

Prior to any construction activities, erosion control facilities shall be installed. Minimal demolition, clearing and grubbing may be necessary prior to installing the initial erosion control features. Stabilization of demolished asphalt and cleared or grubbed areas to be completed the same day if possible. The "initial" BMPs include, but may not be limited to, vehicle tracking control, silt fence (perimeter control and stockpile area(s)), stabilized staging area, materials storage area and concrete washout area. Designate areas for construction trailer (if used), trash container, portotolets, vehicle and equipment parking and material storage. If these areas are not indicated on the plan, the contractor must "red line" the plan with the locations. Provide a confined area for maintenance and fueling of equipment from which runoff will be contained and filtered. BMP / Erosion Control facility waste shall be disposed of properly.

b) Clearing, grubbing and site clearing

The measures included in the previous sequence shall be maintained and continue. The removal debris and dead vegetation shall be disposed of properly. If a soil stockpile area is needed, the area shall be protected in accordance with the DCM and the stockpile area shall be redlined onto the plan. Existing vegetation to remain shall be protected. Wind erosion shall be controlled on the site by sprinkling and other appropriate means.

c) Site Grading and Drainageway Construction

The measures included in the previous sequence shall be maintained and continue. The earthwork will occur within the 100-year floodplain of the drainageway when the stabilization measures are installed. It is the intent to minimize the disturbance of the native vegetation by limiting access points and haul roads within the drainageway. The contractor shall not leave any equipment in the bottom of the creek in times when precipitation is expected or when the contractor is not on site. Sediment control logs shall be placed along the low flow channel that forms the low flow channel. Dewatering is not anticipated for the work within and adjacent to the drainageway. Any dewatering details if needed should be followed and a CDPHE construction dewatering permit is required prior to performing the dewatering activities. Excess and removed asphalt and concrete shall be disposed of properly. Materials associated with drainageway construction shall be stored in the designated areas delineated on the plan. If an area is not delineated on the plan, the contractor shall "red line" the plan to show the location. Material waste from drainageway construction shall be disposed of properly. Solvents, paints and chemicals shall be stored and disposed properly.

d) Landscaping

The measures included in the previous sequence shall be maintained and continue, unless the work requiring the measure is completed. Seeding and mulching shall be installed. Avoid excess watering and placing of fertilizers and chemicals.

e) Final Stabilization

The necessary erosion control measures included in the previous sequence shall continue until Final Stabilization is reached. Refer to Final Stabilization section for requirements.

The SWMP Administrator shall amend the SWMP if necessary and as required, refer to Section I.

4. Materials handling and spill prevention:

The SWMP Administrator will inspect daily to ensure proper use and disposal of materials on-site including building materials, paints, solvents, fertilizers, chemicals, waste materials and equipment maintenance or fueling procedures. All materials stored on-site will be stored in a neat and orderly manner in the original containers with the original manufacturer's label, and if possible under a roof or other enclosure to prevent contact with stormwater. Chemicals should be stored within berms or other secondary containment devices to prevent leaks and spills from contacting stormwater runoff. Before disposing of the container, all of a product will be used up whenever possible and manufacturer's recommendations for proper disposal will be followed according to state and local regulations.

Material and equipment necessary for spill cleanup will be kept in the material storage area on-site. Manufacturer's recommendations for spill cleanup will be posted and site personnel will be made aware of the procedures along with the location of the information and cleanup supplies.

The contractor shall have spill prevention and response procedures that include the following:

- a) Notification procedures to be used in the event of an accident. At the very least, the SWMP Administrator should be notified. Depending on the nature of the spill and the material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line - 877-518-5608), downstream water users or other agencies may also need to be notified.
- b) Instructions for clean-up procedures and identification of spill kit location(s).
- c) Provisions for absorbents to be made available for use in fuel areas and for containers to be available for used absorbents.
- d) Procedures for properly washing out concrete truck chutes and other equipment in a manner and location so that the materials and wash water cannot discharge from the site and never into a storm drain system or stream.

5. Dedicated concrete or asphalt batch plants:

No dedicated concrete or asphalt batch plants will be used.

6. Waste management and disposal including concrete washout:

A concrete washout area is specified on the SWMP. Concrete wash water shall not be discharged to state waters, to storm sewer systems or from the site as surface runoff. The washout area shall be a shallow excavation with a small perimeter berm to isolate concrete truck washout operations. At the end of construction, all concrete shall be removed from the site and disposed of at an approved waste site. Signs shall be placed at the washout to clearly indicate the concrete washout area to operators of concrete trucks and pump rigs. Refer to the standard detail for requirements.

All construction site waste both liquid and solid must be contained in approved waste containers and disposed of off-site according to state and local regulations. Portable sanitary facilities shall be provided at the site throughout the construction phase and must comply with state and local sanitary or septic system.

7. Groundwater and stormwater dewatering:

Groundwater dewatering is not anticipated for the work within channel. During groundwater or stormwater dewatering, locations and practices to be implemented to control stormwater pollution from excavations, etc. must be noted on the SWMP. A separate CDPHE construction discharge (dewatering) permit will be required for groundwater dewatering and shall be obtained by the SWMP Administrator. Construction dewatering water cannot be discharged to surface water 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 implemented. Refer to USDCM Volume III (UDFCD) for County acceptable means of dewatering.

## **V. FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT**

"Final stabilization is reached when all ground surface disturbing activities at the site have been completed and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed." When vegetation is used to achieve final stabilization, the 70% vegetation requirement applies to a uniform plant density, which means that all areas of the site that rely on a vegetative cover to achieve stabilization must be uniformly vegetated. The contractor will be responsible for providing the documentation to make this comparison to the County and the State of Colorado, Water Quality Control Division. The stormwater permit allows the permittee to use alternatives to vegetation to achieve final stabilization. All alternatives to vegetation must meet specific criteria to be considered equivalent to vegetation, specifically: Stabilization must be permanent, all disturbed areas must be stabilized, and alternatives must follow good practices, refer to CDPHE Memo, dated March 5, 2013 (see References).

Temporary seeding for the project site shall include drilled seeding and mulching and hydro-mulching. For the application methods, soil preparation and seeding and mulching and hydro-mulching requirements, refer to SWMP Drawings. All slopes steeper than four-to-one (4:1) must be covered with an erosion control blanket meeting the County requirements.

Management of storm water after completion of construction will be accomplished by utilizing the practices listed below.

- Upon completion of construction, the site shall be inspected to ensure that all equipment, waste materials and debris have been removed.
- The site will be inspected to make certain that all graded surfaces have been paved, landscaped or seeded with an appropriate ground cover.

- All silt fence, inlet protection, sediment logs, rock socks, etc. and all other control practices and measures that are to remain after completion of construction will be inspected to ensure their proper functioning.
- The contractor shall remove erosion control measures that are not required to remain.

After all construction activities are completed on the site, but final stabilization has not been achieved, the contractor shall make a thorough inspection of the stormwater management system at least once every month.

The contractor shall be responsible for maintaining the BMPs and stormwater controls in good working order and shall also be responsible for the costs incurred until such time as final stabilization is reached. Once final stabilization has been achieved the contractor shall be responsible for removal of the erosion control measures.

Should any of the erosion control facilities (BMPs) become in disrepair prior to the establishment of the native or natural erosion control measures, the Contractor is responsible for the cost of such maintenance. The Contractor is also responsible for the clean-up of offsite areas affected by any sediment that may leave the site. Control of erosion from areas disturbed by drainageway, utility or building construction will be the responsibility of the respective contractor. All erosion control measures shown on the plan shall be installed and maintained in accordance with Best Management Practices.

Inactivation of permit coverage: Coverage under the Stormwater Construction Permit may be inactivated by the permittee when the site has attained final stabilization, all temporary erosion and sediment control measures have been removed, and all components of the SWMP are complete.

## VI. RECOMMENDED INSPECTION AND MAINTENANCE PROCEDURES

### A. Minimum Inspection Schedule

1. Frequency. Contractor should inspect and document Construction BMP's at the following times and intervals.
  - a) After installation of any Construction BMP;
  - b) At least once every 14 days, but a more frequent inspection schedule may be necessary to ensure that BMPs continue to operate as needed to comply with the permit.
  - c) Within 24 hours after a precipitation or snowmelt event that produces runoff or causes surface erosion.
2. Consult State Permit No. COR-030000 for alternate inspection requirements at temporarily idle sites, at completed sites, or for winter conditions.
3. Refer to the Standard Details for the maintenance procedures associated with each BMP.
4. Inspection Procedures. The inspection must include observation of:
  - a) The construction site perimeter and discharge points (including discharges into a storm sewer system);
  - b) All disturbed areas;
  - c) Areas used for material/waste storage that are exposed to precipitation
  - d) Other areas determined to have a significant potential for stormwater pollution, such as demolition areas or concrete washout locations, or locations where vehicles enter or leave the site;
  - e) Erosion and sediment control measures identified in the SWMP; and any other structural BMPs that may require maintenance, such as secondary containment around fuel tanks, or the condition of spill response kits.

The inspection must determine if there is evidence of, or the potential for, pollutants entering the drainage system. BMPs should be reviewed to determine if they still meet the design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site. Any BMPs not operating in accordance with the SWMP must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants, and the SWMP must be updated as described.

5. Record Keeping and Documenting Inspections: Keeping accurate and complete records serves several functions. First, keeping records of spills, leaks, inspections, etc. is a requirement of the State Stormwater Construction Permit; therefore, enforcement action, including fines, could result if records are not adequate. Second, by keeping accurate and detailed records, you will have documentation of events which could prove invaluable should complications arise concerning the permit, lawsuits, etc.
6. Inspection Checklist/Report. The Permittee must document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage. These records must be made available to CDPHE, the County or EPA upon request. The SWMP Administrator should record the inspection results on a site-specific standardized inspection report or County Inspection Checklist to be maintained and kept on the construction site. An example template for the inspection report format is included in the Appendix. The SWMP Administrator should develop a site-specific inspection report that itemizes the selected Construction BMP's for their site. At a minimum the following information from each inspection should be recorded on the site-specific report:
  - a) Date of inspection;
  - b) Name and title of inspector;
  - c) Location(s) of discharges of sediment or other pollutants from the site;
  - d) Location(s) of BMPs that need to be maintained;
  - e) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
  - f) Location(s) where additional BMPs are needed that were not in place at the time of inspection;
  - g) Deviations from the minimum inspection schedule as provided in the permit;
  - h) Descriptions of corrective actions for any item above, date(s) of corrective actions taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary and
  - i) After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective actions, 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.
7. Inspection Checklists/Reports to County: Completed Inspection Checklists will be submitted electronically to the assigned County Engineering inspector within 5 business days of the inspection. The inspections checklists must also be kept on-site. In the location designated,



**B. BMP Operation and Maintenance.**

The SWMP Administrator is responsible for operation and maintenance of construction BMPs. The SWMP Administrator will inspect the site per inspection and monitoring protocol outlined above and will make any necessary repairs to construction BMPs immediately after a defect or other need for repair is discovered. The project site and the adjacent streets impacted by the construction shall be kept neat, clean and free of debris. The erosion control measures and facilities will be maintained in good working order until final st

abilization. Any items that are not functioning properly or are inadequate will be promptly repaired or upgraded. Records of inspections must be kept and be available for review by the State of Colorado Water Quality Control Division or the County.

## VII. REFERENCES

- 1) CDPS General Permit: Stormwater Discharges Associated with Construction Activity Permit No. COR-030000. Colorado Department of Public Health and Environment, dated July 1, 2007. Administratively continued effective July 1, 2012.
- 2) CDPHE, Stormwater Discharges Associated with Construction Activity, Stormwater Management Plan Preparation Guidance, prepared by CDPHE, dated April 2011.
- 3) CDPHE Memorandum, Final Stabilization requirements for stormwater construction permit termination, Alternatives to the 70% plant density re-vegetation requirement, prepared by CDPHE, dated March 5, 2013.
- 4) El Paso County Drainage Criteria Manual (Volumes 1 and 2) and Engineering Criteria Manual, current editions.
- 5) Volume 3, Urban Storm Drainage Criteria Manual, by Urban Drainage and Flood Control District, current edition.
- 6) Soil Survey of El Paso County Area, Colorado, prepared by United States Department of Agriculture Soil Conservation Service.
- 7) Flood Insurance Rate Map, Map Number 08041C0757G, by Federal Emergency Management Administration, dated December 7, 2018.

## **APPENDIX TABLE OF CONTENTS**

### **APPENDIX**

**Figure 1 - Vicinity Map**

**Figure 2 – FIRM Panel 957G**

### **APPENDIX A**

\*\*Permittee Provided: Application for CDPS Stormwater Discharge Associated with Construction Activities Permit

### **APPENDIX B**

\*\*Permittee Provided: CDPS Stormwater Discharge Associated with Construction Activities Permit

### **APPENDIX C**

Example – Exhibit A: Erosion and Sediment Control Field Inspection Report

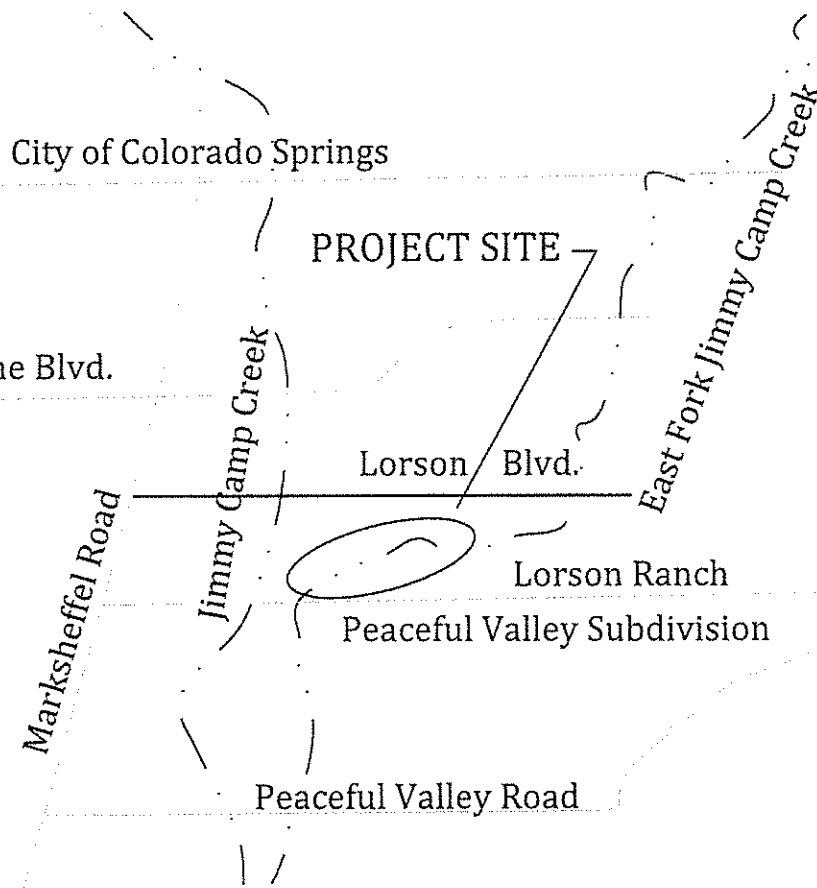
Example – Exhibit B: Corrective Action Report

### **APPENDIX D**

SWMP Plans

## **APPENDIX**

**Figure 1 - Vicinity Map  
FEMA FIRM Panel 957G**



VICINITY MAP  
SCALE: N.T.S.



# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

Without Base Flood Elevation (BFE)  
Zone A, V, AE, AH, VE, AR  
Regulatory Floodway

0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile  
Future Conditions 1% Annual Chance Flood Hazard  
Area with Reduced Flood Risk due to Levee. See Notes, Zone X  
Area with Flood Risk due to Levee

**OTHER AREAS OF FLOOD HAZARD**

Area of Minimal Flood Hazard  
Effective LOMRs  
Area of Undetermined Flood Hazard

**GENERAL STRUCTURES**

Channel, Culvert, or Storm Sewer  
Levee, Dike, or Floodwall

**OTHER FEATURES**

Cross Sections with 1% Annual Chance Water Surface Elevation  
Coastal Transect  
Base Flood Elevation Line (BFE)  
Limit of Study  
Jurisdiction Boundary  
Coastal Transect Baseline  
Profile Baseline  
Hydrographic Feature

**MAP PANELS**

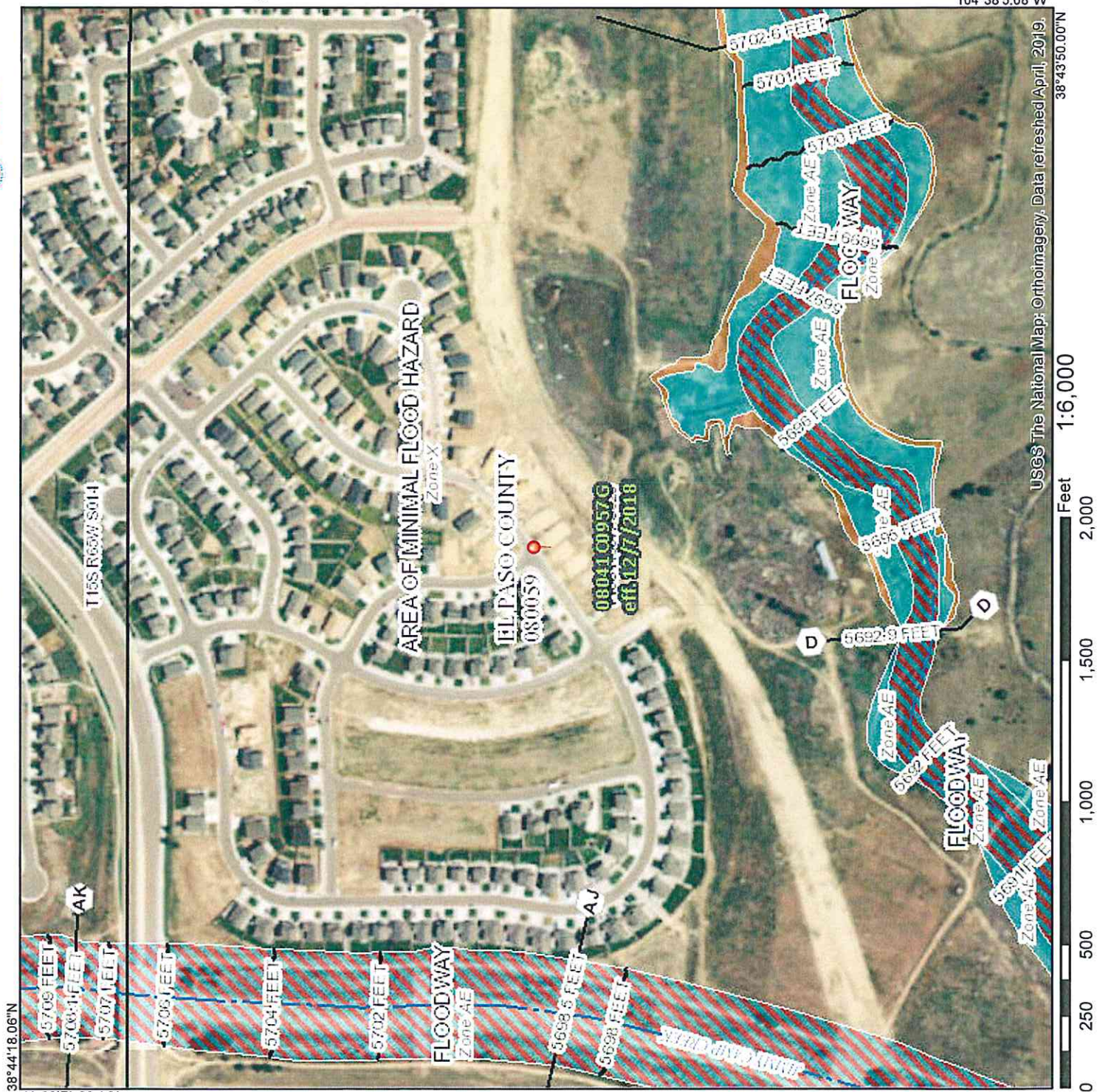
Digital Data Available  
No Digital Data Available  
Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/25/2019 at 6:08:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.





## **APPENDIX B**

**\*\*Permittee Provided:** CDPS Stormwater Discharge Associated with Construction Activities Permit

## **APPENDIX C**

**Example – Exhibit A: Erosion and Sediment Control Field Inspection Report**

**Example – Exhibit B: Corrective Action Report**



**Exhibit A**  
**Erosion and Sediment Control Field Inspection Report**

Project Name:	Date of Inspection:
Project Address/Location:	Time of Inspection:
Contractor:	Name of Inspector:

Reason for Inspection:
------------------------

BMP for Erosion Control	Practice Used		Maintenance or Sediment Removal Required		Explain Required Action
	Yes	No	Yes	No	
Check Dams					
Concrete Washout Area					
Construction Fence					
Diversion Ditch/Swales/Berms					
Erosion Control Blankets					
Inlet Protection					
Reinforced Rock Berms					
Reinforced Rock Berms - Culvert					
Sediment Basin					
Sediment Control Log					
Seed & Mulch (Temp. or Permanent)					
Silt Fence					
Sodding					
Stabilized Staging Area					
Straw Bale Barrier					
Surface Roughening					
Vehicle Tracking Control Pad					

Contractor's Comments:
Inspector's Comments:

I certify this Erosion and Sediment Control Field Inspection Report is complete and accurate, to my knowledge and belief.	
Inspector Signature and Date:	Reviewed By:

**Exhibit B**  
**Corrective Action Report**

Site: \_\_\_\_\_

Inspector: \_\_\_\_\_

Date: \_\_\_\_\_

.....

Erosion Control Measure/Facility Requiring Attention:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Recommended Corrective Action:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Scheduled Completion Date: \_\_\_\_\_ Date Completed: \_\_\_\_\_

.....

Erosion Control Measure/Facility Requiring Attention:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Recommended Corrective Action:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Scheduled Completion Date: \_\_\_\_\_ Date Completed: \_\_\_\_\_

.....

Erosion Control Measure/Facility Requiring Attention:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

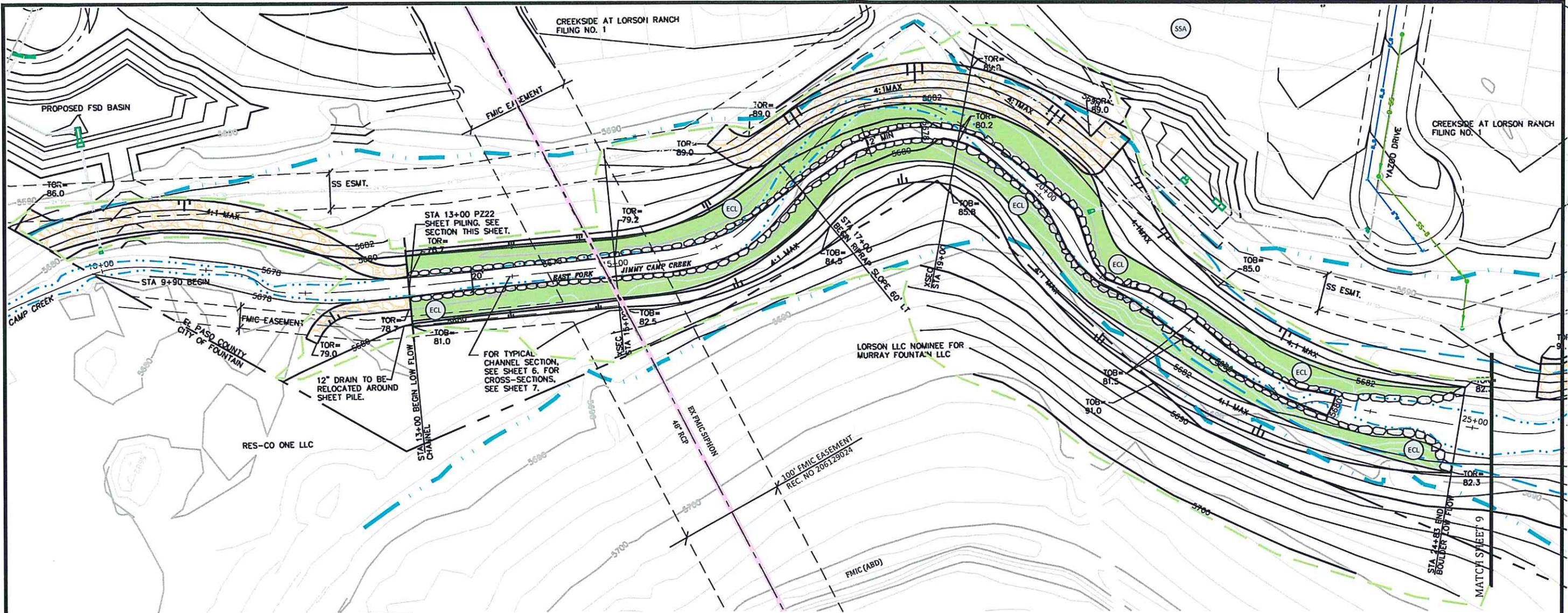
Recommended Corrective Action:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Scheduled Completion Date: \_\_\_\_\_ Date Completed: \_\_\_\_\_

**APPENDIX D**  
**SWMP Plans**





#### PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

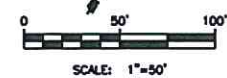
- All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
- Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any undisturbed fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
- Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
- Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
- The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
- All grading shall be in conformance with the Geotechnical Report for the area.
- Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
- Grading contours shown on this plan are to final grade.
- Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
- No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
- Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
- Contractor is responsible for providing erosion control measures as approved by the El Paso County PCD Engineering Division and as may be required by the El Paso County Inspector.
- All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocor 700 or equal.
- The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
- All soils used for fill must be approved by a representative of the Geotechnical Engineer.
- All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
- The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
- No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompact after rainfall if necessary, to obtain proper moisture density relation.
- Additional erosion control structures and/or grading may be required at the time of construction.
- Sediment removal for erosion control facilities shall be performed continuously for proper function.
- Base mapping was provided by Core Engineering. The date of the last survey update was January 2016.
- Proposed Construction Schedule:
  - Begin Construction: pending
  - End Construction: pending
- Total Site Area = 9.2 Acres
- Area to be disturbed = 14.7 Acres (est.)
  - Existing 100-year runoff coefficient = 0.25
  - Proposed 100-year runoff coefficient = 0.25
  - Existing Hydrologic Soil Groups: B/C
  - (B ASCALON SANDY LOAM)
  - (C MANZANIST CLAY LOAM)
- Site is currently undeveloped and covered with native grasses on mild to moderate to steep slopes (1%-4%).
- Site is located in the Jimmy Camp Creek Drainage Basin.

#### SEED MIX

AREAS DISTURBED BY THE EARTHWORK SHALL BE PERMANENTLY REVEGETATED WITH NATIVE GRASSES. NATIVE SEED MIX FOR THIS PROJECT SHALL BE AS FOLLOWS:

SPECIES	lbs/acre
WESTERN WHEAT GRASS	3.0
SIDEWINDS GRAMA	2.0
SLENDER WHEAT GRASS	2.0
LITTLE BLUESTEM	2.0
BLUE GRAMA	0.5
SWITCH GRASS	2.0
JUNE GRASS	0.5
SAND DROPSEED	0.5
	12.5 lbs

SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS UNACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1 1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRAMPED INTO THE TOPSOIL OR HYDROMULCH.

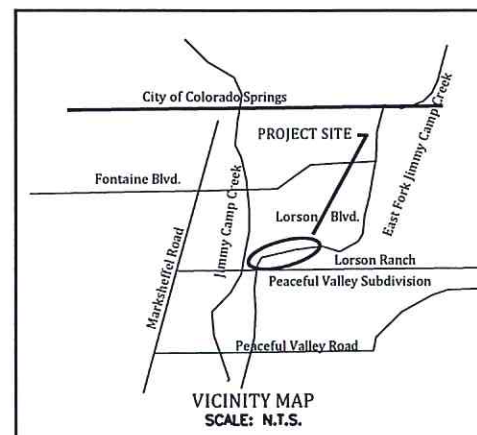


#### NOTES:

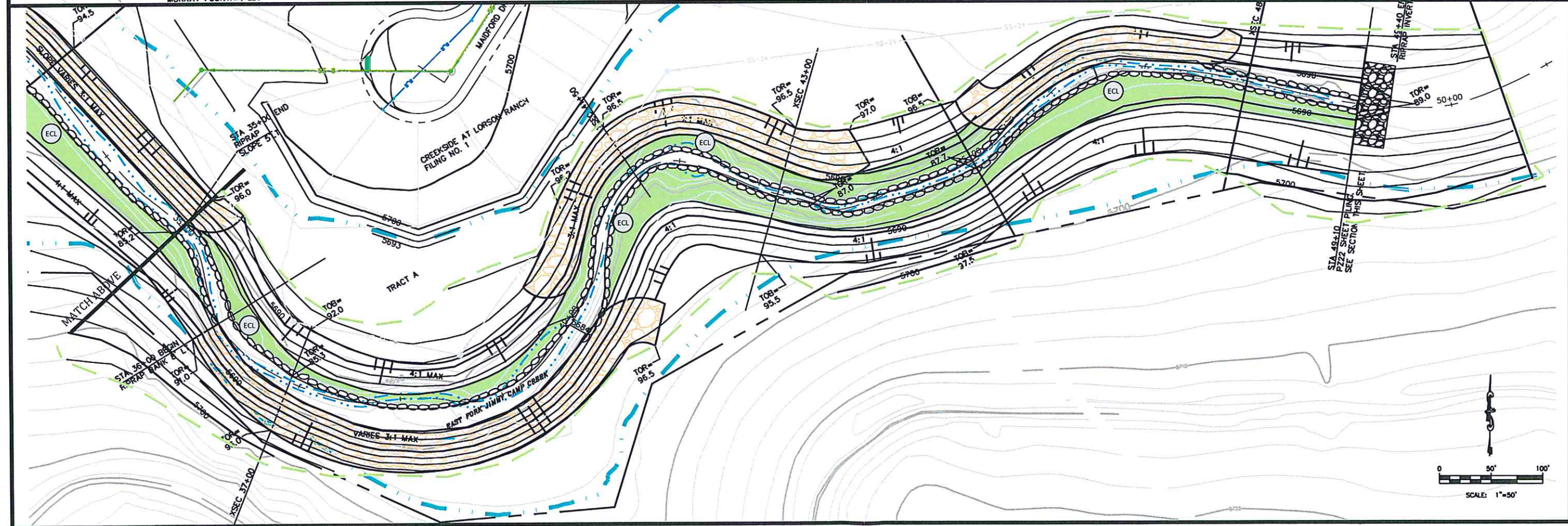
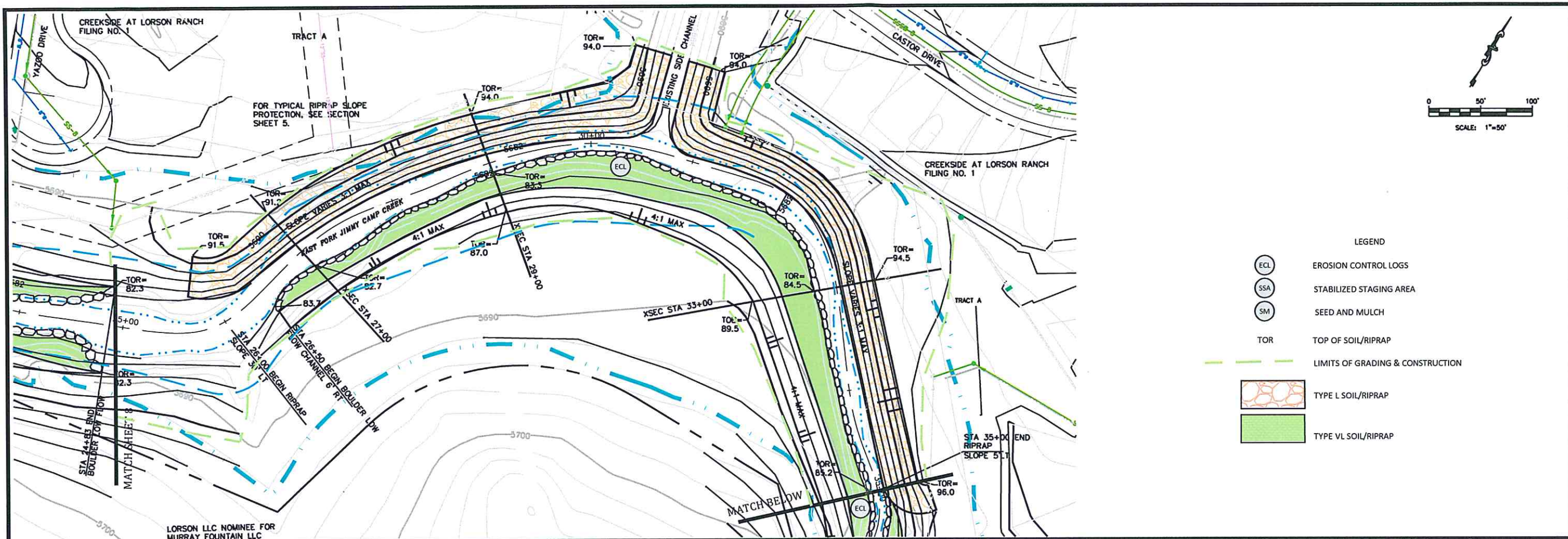
- CONTRACTOR TO IDENTIFY MATERIAL AND SOIL STOCKPILES AREA ON THE SWMP PRIOR TO THE COMMENCEMENT OF MOBILIZATION.
- CONTRACTOR TO IDENTIFY STABILIZED STAGING AREA PRIOR TO THE COMMENCEMENT OF MOBILIZATION.

#### LEGEND

- SCL SEDIMENT CONTROL LOGS
- SSA STABILIZED STAGING AREA
- SM SEED AND MULCH
- TOR TOP OF SOIL/RIPRAP
- LIMITS OF GRADING & CONSTRUCTION
- TYPE I SOIL/RIPRAP
- TYPE VL SOIL/RIPRAP







- LEGEND
- (ECL) EROSION CONTROL LOGS
  - (SSA) STABILIZED STAGING AREA
  - (SM) SEED AND MULCH
  - TOR TOP OF SOIL/RIPRAP
  - LIMITS OF GRADING & CONSTRUCTION
  - [Pattern] TYPE I SOIL/RIPRAP
  - [Green] TYPE VL SOIL/RIPRAP

LORSON RANCH  
CREEKSIDE DEVELOPMENT  
EAST FORK JIMMY CAMP CREEK  
GRADING AND EROSION CONTROL PLAN  
EL PASO COUNTY, COLORADO

Project No.:	18020
Date:	7/30/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

SWMP2



1. SEE PLAN VIEW FOR:

- a. AREA OF SEEDING AND MULCHING.
- b. TYPE OF SEED MIX.

2. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS WEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINWEEED, JOHNSON GRASS, KNAIP WEED AND LEAFY SPURGE.

3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. THE SEEDS MUST HAVE BECOME VET. HOLLY OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO REGULATING AGENCY UPON REQUEST.

4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT.

5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUB-CONTRACTOR MUST COMPLY WITH THE FOLLOWING FORMULA FOR DETERMINING THE QUANTITY OF PURITY OR GERMINATION TO FURNISH SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO CONTRACTOR AND FORWARDED TO THE REGULATING AGENCY'S GEO SCInspector.

6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) ÷ POUNDS OF PURE LIVE SEED (PLS)

7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY THE REGULATING AGENCY.

8. ALL AREAS TO BE SEEDDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE).

9. DITCH, HAIL, ROAD, AND OTHER COMPACTED AREAS SHALL BE LOOSESED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.

10. SOIL IS TO BE THOROUGHLY LOOSESED UNTIL TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE FREE OF ROCKS, STONES, OR OTHER MATERIALS LARGER THAN 4 INCHES, AND SOIL CLODS GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVE BEEN THOROUGHLY LOOSESED SHALL BE REJECTED.

11. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH, ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL BE STRAW, LONG, OR LONG, OR LONG, AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. OF STRAW/PER ACRE.

12. IF THE PERMITTEE DEMONSTRATES TO THE REGULATING AGENCY THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.

13. SEEDING AND MULCHING SHALL BE COMPLETED WITHIN 30 DAYS OF INITIAL EXPOSURE OR 7 DAYS AFTER GRADING IS SUBSTANTIALLY COMPLETE IN A GIVEN AREA (A) AS DEFINED BY THE REGULATING AGENCY. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.

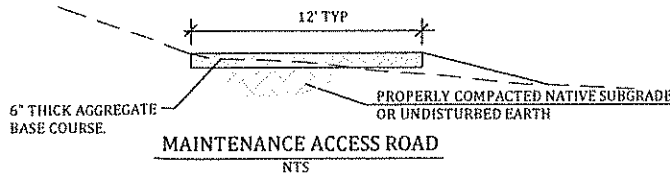
14. MULCH SHALL BE APPLIED WITHIN 24 HOURS OF SEEDING.

15. TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

**SEEDING AND MULCHING**

NTS

1. SEEDS AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING, REPAIRS AND RE-SEEDING AND MULCHING SHALL BE REPLACED AFTER EACH GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
  - a. TURF GRASS AREAS SHALL BE SEEDING AT A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE DOUGLAS COUNTY-APPROVED MIX.
  - b. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
  - c. FREE OF BROOD AREAS.
  - d. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 8.4 OF THE GESC CRITERIA MANUAL.
3. REQUIRED COVERAGE FOR TURF GRASS AREAS SHALL BE DEFINED AS FOLLOWS:
  - a. AT LEAST 80% VEGETATIVE COVER OF GRASS SPECIES PLANTED.
  - b. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
  - c. FREE OF BROOD AREAS.
  - d. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 8.4 OF THE GESC CRITERIA MANUAL.
4. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE COUNTY.



## Revised 7/02/19

1. Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.
2. Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent revision of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.
3. A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SMWP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SMWP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
4. Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.
5. Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.
6. All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.
7. Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.
8. Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.
9. All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that affect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.

Diagram 1: A cylindrical log with a flag at one end and a vertical rod passing through its center. The rod is labeled "ROD" and "ROD". The log is labeled "LOG" and "LOG".

Diagram 2: A cross-section of the log with a vertical rod passing through its center. The rod is labeled "ROD" and "ROD". The log is labeled "LOG" and "LOG".

Diagram 3: A cross-section of the log with a vertical rod passing through its center. The rod is labeled "ROD" and "ROD". The log is labeled "LOG" and "LOG".

Diagram 4: A cross-section of the log with a vertical rod passing through its center. The rod is labeled "ROD" and "ROD". The log is labeled "LOG" and "LOG".

SECTION ②

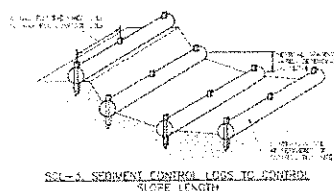
COMPOSITE SEDIMENT CONTROL LOG

LOG JOINTS

WCL-7 COMPOSITE SEDIMENT CONTROL LOG (WEIGHTED)

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## SC-2



SOL-1 SEDIMENT CONTROL LOGS TO CONTROL  
SLOPE LENGTH

- 1. SEE PLANT VIEW FOR LOCATION AND LENGTH OF TREATMENT CHANNEL LAYOUT.
- 2. SEWAGE CONTROL LINES MUST NOT ACT AS A FLOODLINE CONTROL SHALL BE INSTALLED ABOVE THE 100 YEAR FLOOD ELEVATION.
- 3. SEWAGE CONTROL LINES SHALL COMPLY WITH CODES OF PRACTICE. CONSIDERATION OF SOILS, FLOOD, AND STAGE OF FLOOD OF THE WATERSHED, WITH SPECIAL CONCERN FOR DRAINAGE PLANNING, MUST, HOWEVER, BE OBTAINED FIRST.
- 4. SEWAGE CONTROL LINES SHALL BE INSTALLED TO DRAIN LOWLAND AREAS IN URBAN AND SUBURBAN AREAS. THEY SHALL NOT BE USED AS DRAINAGE SYSTEMS.
- 5. IT IS RECOMMENDED THAT SEWAGE CONTROL LINES BE PROVIDED WITH THE STORM DRAIN AND ARE LOCATED IN THE SAME TRENCHES OR ARE LOCATED IN THE SAME TRENCHES AS THE STORM DRAIN.
- 6. IT IS NOT PERMITTED TO USE SEWAGE CONTROL LINES FOR FLOOD CONTROL. SEWAGE CONTROL LINES ARE NOT TO BE USED AS A DRAINAGE SYSTEM. SEWAGE CONTROL LINES ARE NOT TO BE USED AS A DRAINAGE SYSTEM.

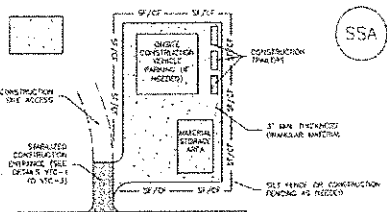
1. EFFICIENT RATES OF GROWTH AND GROWTH THEMSELVES EFFECTIVE MEANS OF PROMOTING THE WELFARE OF MAN AND HIS ENVIRONMENT. THE ECONOMIC AND SOCIAL POLICY THAT GROWTH IS POSSIBLE AND NECESSARY SHOULD FOLLOW FROM A VIEW THAT GROWTH IS NECESSARY, AND PROMOTE NECESSARY CONDITIONS.

A. SERVIENT ASSOCIATED COMPANY OF SERVIENT CONTROL LTD SHALL BE REMOVED AS  
 REFERRED TO IN PARAGRAPH 1.1.1.1 OF THE A.P. OFFICIAL AND VENDOR OF ASSOCIATED

5. SEGMENT CONTACT LOGS SHALL BE PLACED AT THE END OF CONSTRUCTION LOGS FOR  
FROM CUMULATIVE LOGS MAY BE LEFT IN PLACE AS LONG AS ANGLES ARE RECORDED AND THE  
AND SOILED. IF DISTURBED AREAS EXIST AFTER RESECTION, THEY SHALL BE COVERED WITH  
TOP SOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCORDANT AT  
THE LOCAL JURISDICTION.

NOTE: MAYNARD'S COMMENTS WERE NOT RETURNED THAT HEAVY FOCUS ON JAMES STANDARD DETAILS  
COULD BE WITH LOCAL JURISDICTIONS AS TO BARRON BEING THOUGHT RE USED WHEN  
DIFFERENCES ARE MADE

## SMI-6



## SSA-1. STABILIZED STAGING AREA

## STANDARD STANDARD AREA WITHIN NORTH

- [illegible]

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### Stabilized Staging Area (SSA)

## STARRING STACEY KEE, MARGARET FLOCKS

1. STAGNATED STANDING WATER SHALL BE REMOVED IF NECESSARY TO CONTAIN FLOODING STORMWATER, AND UNDESIRABLE OPERATIONS.
2. THE STAGNATED STANDING WATER SHALL BE REMOVED AT THE END OF CONSTRUCTION OR PERMANENT WATERFILL, SHOULD BE REMOVED OR IF IMPOSED BY THE LOCAL JURISDICTION, AND USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDING AND MAINTAINED OR REIMPOSED STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
3. ANY USES THAT REQUIRE PROTECT THE USE OF MEDICINES CONSIDER AS CARBONARY VARIATION, STAGNATED STANDING WATER SHALL BE DISPERSED WITH RE-ESTABLISHMENT OF VEGETATION, AND OTHER MEANS OF PROTECT.
4. WILL ANY STAGNATED WATER HAVE SUCH DETAILS THAT WATER FROM STAGNATED STANDING DETAILS COULD BE USED AS A SOURCE OF WATER TO WHICH DETAILS COULD BE USED WHEN DETAILS ARE MOVED.
- DETAILS SUPPORT FROM STAGNATED WATER, DETAILS ARE NOT REMOVED OR REMOVED

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**LORSON RANCH  
CREEKSIDE DEVELOPMENT  
EAST FORK JIMMY CAMP CREEK  
EROSION CONTROL PLAN DETAILS  
EL PASO COUNTY, COLORADO**

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