

**STORM WATER MANAGEMENT PLAN  
FOR  
TIMBERRIDGE ESTATES  
PHASE 1 OF THE RETREAT AT TIMBERRIDGE  
(NORTH OF ARROYA LANE)  
9210 ARROYA LANE, COLORADO SPRINGS**

May 2019

Prepared For:

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c/o Scott Hente

Prepared By:

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**Engineering Review**

07/18/2019 5:02:45 PM

*dsdrice*

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**EPC Planning & Community  
Development Department**

Job No. 1733.00

Note: If you have not already, please familiarize yourself with the new CDPHE Stormwater Discharge Requirements at <https://www.colorado.gov/pacific/cdphe/cor400000-stormwater-discharge>. All Stormwater Management Plans (SWMPs) for projects under review, already approved, and under construction need to be updated to meet the State requirements. If a project is already approved we do not need the SWMP resubmitted to EPC PCD but all SWMPs in the field need to be updated as part of the regular revision process. Please reference the CDPHE checklist and requirements – County checklists and criteria were updated in July, 2019.

## CONTACT INFORMATION

### **SWMP APPLICANT:**

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### **CONTRACTOR:**

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### **EROSION CONTROL SUPERVISOR/ SWMP ADMINISTRATOR:**

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(719) 499-6752

**SWMP is to be maintained on site in the construction trailer whenever work is occurring. If construction trailer is not available, another alternative must be provided.**

## **COLORADO DISCHARGE PERMIT SYSTEM (CDPS)**

TO: Site Inspector Responsible For All CDPS Requirements

The following storm water pollution management plan (SWMP) is a detailed account of the requirements for the CDPS permit. The main objective of this plan is to prevent any contamination of the storm water while construction activity is taking place.

This document must be kept at the construction site at all times and be made available to the public and any representative of the Colorado Department of Health – Water Quality Control Division, if requested.

Enclosed are temporary erosion control details for the construction site and storm sewer outfall points (Detail A). The operation and maintenance inspection record should be used as a guideline for the inspection of permanent and temporary control devices. Items to be inspected are not limited to those listed. The inspections should be made at regular intervals and before and after storm events. The inspection records must be signed and kept in this binder for no less than three (3) years.

**STORM WATER MANAGEMENT PLAN FOR  
Timberridge Estates – 9210 Arroya Lane**

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# **STORM WATER MANAGEMENT PLAN FOR Timberridge Estates – 9210 Arroya Lane**

## **SITE DESCRIPTION & EXISTING CONDITIONS**

This site is approximately 35.30 acres of undeveloped land located in the northern part of El Paso County off of Volmer Road and Arroya Lane. This site is being developed by our client to include 10 single family lots consisting of 2.5 acre lots. The site is located in the south west quarter of Section 22, Township 12 South, Range 65 West of the 6<sup>th</sup> Principal Meridian currently within El Paso County, Colorado. The site is bounded to the north, and west by open space (rural residential), to the east by Vantage Point farm (rural residential) and to the south by Arroya Lane. The site is contained within the Sand Creek Basin and runoff flows into Sand Creek. The site is currently undeveloped and is open space. The site consists mostly of natural vegetative grass and weeds, with some areas of trees.

Soils for this project are delineated by the map in the appendix as Kettle gravelly loamy sand (40), 3 to 8 percent slopes, Kettle gravelly loamy sand (41), 8 to 40 percent slopes and Pring Coarse sandy loam (71), 3 to 8 percent slopes. Soils in the study area are shown as mapped by S.C.S. in the “Soils Survey of El Paso County Area” and contains soils of Hydrologic Group B. These soils are primarily sand and are fairly easy to erode.

No sources of non-stormwater discharge have been identified onsite.

## **CONSTRUCTION ACTIVITY AND STORAGE**

Proposed construction activities include regrading, realignment, widening of Arroya Lane, construction of Nature Refuge Way, installation of culverts at the crossing of Sand Creek and at two road crossings, construction of drainage channels along the roads and onsite, and construction of a detention basin. Potential pollutants at the site include suspended solids, fuels, and lubricants.

No known toxic materials have been treated, stored, disposed, spilled or leaked onto the construction site. Practices to minimize contact of construction materials, equipment, and vehicles within the storm water include installation of silt fencing and sedimentation control logs, the use of erosion control blankets in

drainage channels and on the detention basin sides, installation of vehicle tracking control, and sub-contractor cleaning and hauling of excess debris and material upon completion of work. Construction material loading and unloading, and access to such areas occur from gravel staging areas shown on the map. See Erosion Control plan for Vehicle Tracking access point during construction. The concrete washout area will be removed and disposed of as required by this permit as well as the SWMP permit.

There will be no on-site mobile fueling. Contractor shall have the Hazardous Material emergency response number posted on the site. No concrete or asphalt batch plants are planned for the construction site. The site will be considered stabilized when site vegetation is 70% established and grading and building construction has been completed. There will be 19 acres of disturbed soil area. The estimate for cut on this site is 25,652 cy and for fill it is 15,581 cy for a net cut of 10,071 cy. Extra earthen material will be transported offsite, likely to other areas of the Retreat at Timberridge development.

### **BEST MANAGEMENT PRACTICES AND OTHER CONTROLS**

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.

Grading will begin in Summer 2019 with completion of this site anticipated to be in the Fall 2020.

Before clearing and grubbing may begin the first level of BMP'S are to be installed. These measures include silt fence (SF) and vehicle tracking control (VTC) at all construction exit points onto a paved road.

The second level of BMP'S shall be installed once the previous BMP'S and construction are completed. This level includes any disturbed areas and stockpiles which are not at final grade, but will remain dormant for longer than 30 days to be mulched within 21 days after interim grading. Any area that is going to remain in an interim state for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP's shall be maintained until permanent soil erosion control measures are implemented and

vegetation has been established to 70% on areas not to be covered with gravel. Permeant stabilization will be achieved by seeding disturbed areas and the use of landscaping. These temporary BMPS's are to be removed once the 70% vegetation or permanent landscaping has been established. At this point in the construction process, all landscaping should be in place and maintained for a period of time that allows for its establishment on the site.

## **WASTE MANAGEMENT AND DISPOSAL**

All waste and debris created by construction activities at the site shall be disposed of in compliance with all laws, regulations, and ordinances of the federal, state, and local agencies.

## **SPILL PREVENTION AND CONTROL PLAN**

The SITE SUPERINTENDENT will act as the point of contact for any spill that occurs at this jobsite. The project manager will be responsible for implementation of prevention practices, spill containment / cleanup, worker training, reporting and complete documentation in the event of a spill. The ECO shall immediately notify the Owner, /Construction Manager, STATE and the Local Fire Department in addition to the legally required Federal, State, and Local reporting channels (including the National Response Center, 800.424.8802) if a reportable quantity is released to the environment

## **SPILL PREVENTION BEST MANAGEMENT PRACTICES**

This section describes spill prevention methods Best Management Practices (BMP) that will be practiced to eliminate spills before they happen.

### **Equipment Staging and Maintenance**

- Store and maintain equipment in a designated area.
- Reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials.

- Use secondary containment (drain pan) to catch spills when removing or changing fluids.
- Use proper equipment (pumps, funnels) to transfer fluids Keep spill kits readily accessible.
- Check incoming vehicles for leaking oil and fluids.
- Transfer used fluids and oil filters to waste or recycling drums immediately following generation.
- Inspect equipment routinely for leaks and spills.
- Repair equipment immediately, if necessary implement a preventative maintenance schedule for equipment and vehicles.

### Fueling Area

- Perform fueling in designated fueling area minimum 50' away from federal waters
- Use secondary containment (drain pan) to catch spills
- Use proper equipment (pumps, funnels) to transfer fluids
- Keep spill kits readily accessible
- Inspect fueling areas routinely for leaks and spills
- Hazardous Material Storage Areas: Reduce the amount of hazardous materials by substituting non-hazardous or less hazardous materials.

### Hazardous Material Storage Areas

- Minimize the quantity of hazardous materials brought onsite
- Store hazardous materials in a designated area away from drainage points.

### Unexpected Contaminated Soil and Water

- Investigate historical site use
- Perform all excavation activities carefully and only after the Owner/Construction
- Manager directs any activities

## SPILL CONTAINMENT METHODS

The following discussion identifies the types of secondary containment that will be used in the event of a spill. Table 1 summarizes the containment methods for each potential source.

- Equipment Staging and Maintenance Area: An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill containment cell placed beneath all stationary potential leak sources. An undetected leak from parked equipment will be cleaned up using hand shovels and containerized in a 55-gallon steel drum for offsite disposal.
- Fueling Area: A small spill during fueling operations will be contained using fuel absorbent pads at the nozzle. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump and a spill pad used to absorb any incidental spills/drips. Any leaking tanks or drums will have fluids removed and transferred to another tank, drum, or container for the fluids. A spill response kit will be located near the fueling area or on the fuel truck for easy access. The spill response kit will include plastic sheeting, tarps, over pack drums, absorbent litter, and shovels.
- Hazardous Material Storage Area: A spill from containers or cans in a hazardous material storage area will be contained within the storage cabinet these materials are kept in.
- Unexpected Contaminated Soil: If contaminated soil is encountered during the project, the
- Owner/Construction Manager will be notified immediately. Small quantities of suspected contaminated soil will be placed on a 6-mil plastic liner and covered with 6-mil plastic. A soil berm or silt fence will be used to contain the stockpile and prevent migration of contaminated liquids in the soil.

**Table 1: Spill Prevention and Containment Methods**

Potential Spill Source	Containment Method(s)
Equipment staging and maintenance area	Spill containment pad, spill kit, pumps, funnels
Fueling area (site equipment only)	Spill containment pad, spill kit, pumps, funnels
Hazardous material staging area	Spill containment pad, spill kit, pumps, funnels
Unexpected contaminated soil	Plastic liner, plastic cover, soil berm, hay bales, lined super sacks

SPILL COUNTERMEASURES

Every preventative measure shall be taken to keep contaminated or hazardous materials contained. If a release occurs, the following actions shall be taken:

1. **Stop the Spill:** The severity of a spill at the site is anticipated to be minimal as large containers/quantities of Hazardous Materials are not anticipated. The type of spill would occur while dispensing material at the hazardous materials storage facility and would likely be contained in secondary containment. Thus, the use spill kits or other available absorbent materials should stop the spill.

2. **Warn Others:** Notify co-workers and supervisory personnel of the release. Notify emergency responders if appropriate. For site personnel, an alarm system will consist of three one second blasts on an air horn sounded by the person discovering a spill or fire. In the event of any spill, the Superintendent and Project Manager shall be notified if the spill is 5 gallons or more the STATE will be contacted along with the Fire Department.

3. **Isolate the Area:** Prevent public access to the area and continue to minimize the spread of the material. Minimize personal exposure throughout emergency response actions.

4. **Containment:** A spill shall only be contained by trained personnel and if it is safe to do so. DO NOT PLACE YOURSELF IN DANGER. Attempt to extinguish a fire only if it is in the incipient stage; trash can size or smaller. For larger spills, wait for the arrival of emergency response personnel and provide directions to the location of the emergency.

5. **Complete a Spill and Incident Report:** For each spill of a Hazardous Material a spill and incident report shall be completed and submitted to the Owner/Construction Manager and if applicable to the Engineer and the State of Colorado Department of Public Health and Environment

### **MAINTENANCE, INSPECTION, RECORDKEEPING AND REPAIR**

The owner or his representative shall inspect and monitor all drainage facilities using the enclosed “Monitoring and Maintenance Inspection Record” checklist in the appendix. In order to ensure that all graded surfaces, structures, vegetation, erosion and sediment control measures and other protective devices identified in the erosion control plan are maintained in good and effective condition, an Operation and Maintenance Inspection Monitoring Program will be implemented by the permit holder during the construction phase. A systematic inspection of all the above mentioned protective devices will be performed by trained personnel using the operation and maintenance inspection record form in the appendix every 14 days. Additional inspections may be required prior to anticipated precipitation events and after precipitation events. Post-storm event inspections must be conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. All monitoring records are to include the signature of the inspector and are to be kept with the SWMP for a period of no less than three (3) years. All maintenance of temporary and permanent erosion and sediment control facilities shall be per the details included in this report.

This site will be considered stabilized when all construction activities have been completed and vegetation has been established. Erosion control measures including silt fence, sedimentation control logs, and vehicle tracking control must be removed after final stabilization.

Any major revisions or modification to this Storm Water Management Plan will require a report addendum and erosion control map revision. Minor revisions may be signed off by the County Storm Water Field Inspector.

The onsite SWMP will be located at:

Address day-to-day SWMP updates.  
(Who makes the updates and how?)  
The County does not need to approve minor revisions to the SWMP.

**REQUIREMENTS THAT ARE NOT APPLICABLE**

The requirement for a phasing plan is not applicable as only one phase is proposed.

The requirement for spill prevention and pollution controls for dedicated batch plants is not applicable as no batch plants are proposed.

The requirement to show the location of any dedicated asphalt / concrete batch plants is no applicable as no batch plants are proposed.

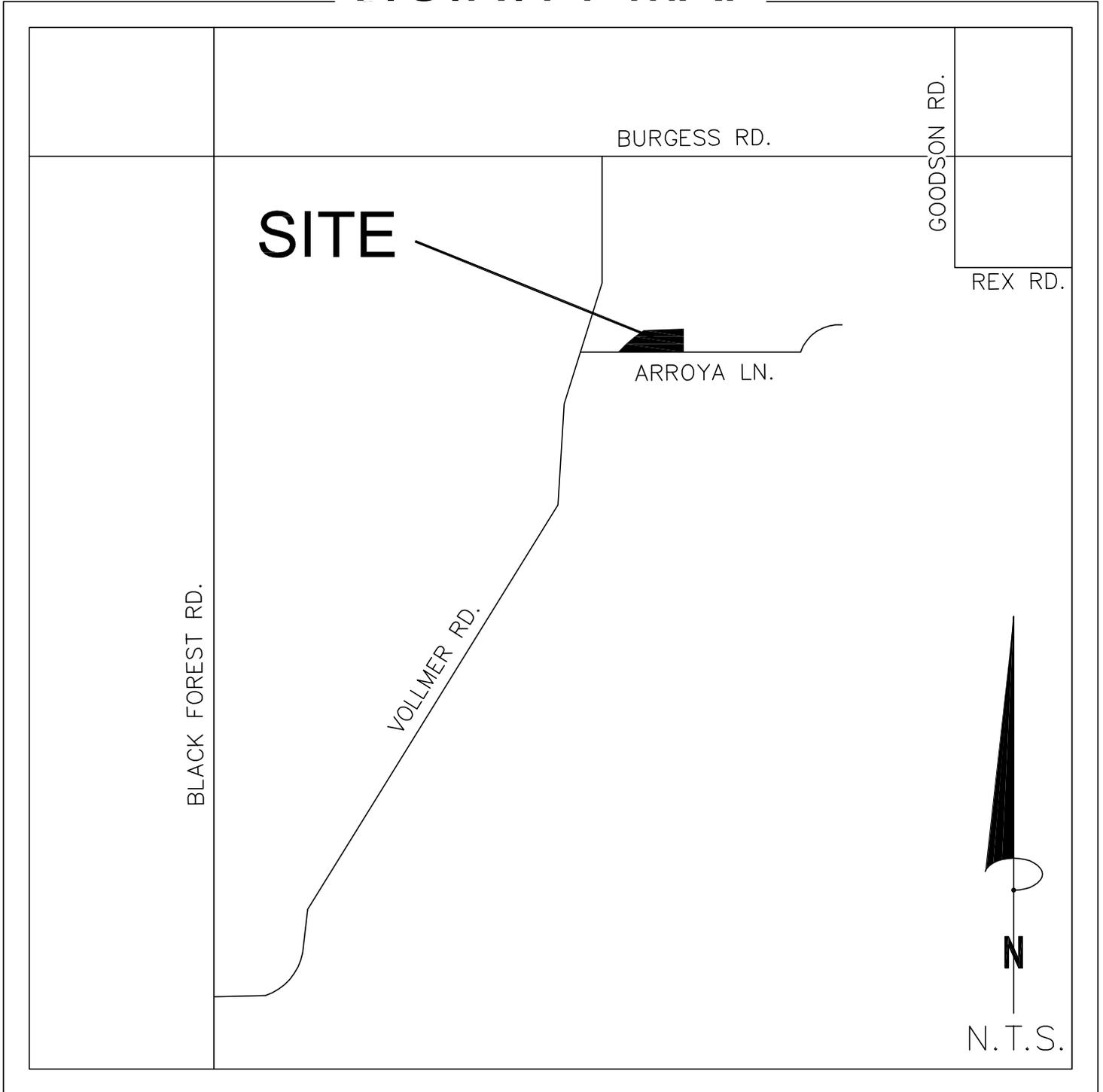
**PREPARED BY:**

**Terra Nova Engineering, Inc.**  
L Ducett, P.E.  
President

## **APPENDIX**

**GENERAL LOCATION MAP**

# VICINITY MAP



**TEMPORARY EROSION CONTROL DETAILS**  
**(See Sheets 8 and 9 of Grading & Erosion Control Plan)**

## CONSTRUCTION SCHEDULE AND SEQUENCE

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.

Grading will begin in Summer 2018 and the site will be considered stabilized in the Fall 2019.

Before clearing and grubbing may begin the first level of BMP'S are to be installed. These measures include silt fence (SF) and vehicle tracking control (VTC) at all construction exit points onto a paved road. The Staging Area (SSA) also is setup with appropriate measures to protect downstream (i.e. silt fence).

The second level of BMP'S shall be installed once the previous BMP'S and construction are completed. This level includes any disturbed areas and stockpiles which are not at final grade, but will remain dormant for longer than 30 days to be mulched within 21 days after interim grading. Any area that is going to remain in an interim state for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP'S shall be maintained until permanent soil erosion control measures are implemented and vegetation has been established to 70% on areas not to be covered with gravel. Permanent stabilization will be achieved by seeding disturbed areas and the use of landscaping. These temporary BMPS's are to be removed once the 70% vegetation or permanent landscaping has been established. At this point in the construction process, all landscaping should be in place and maintained for a period of time that allows for its establishment on the site.

**GENERAL PERMIT APPLICATION**

## **OPERATION AND MAINTENANCE INSPECTION RECORD**

**The following inspection records are to be used at each bi-monthly stormwater management system inspection and after any precipitation or snowmelt event that causes surface runoff. As a result of these inspections, the SWMP may need to be revised. The inspection records and revised SWMP shall be made available to the division upon request. If the construction activity lasts more than 12 months, a copy of the inspection records and revised SWMP shall be sent to the division by May 1 of each year covering April 1 to March 31.**

# Appendix C Inspection Checklist – Grading Erosion, and Stormwater Quality Controls

## EL PASO COUNTY

DATE/TIME:
INSPECTOR:
TYPE OF INSPECTION: Self-Monitoring_____
Initial _____ Compliance_____ Follow-Up_____
Reconnaissance_____ Complaint_____ Final_____

SITE:	DATE OF PERMIT:
ADDRESS:	
CONTRACTOR:	OWNER/OWNER'S REPRESENTATIVE:
CONTACT:	CONTACT:
PHONE:	PHONE:
STAGE OF CONSTRUCTION: Initial BMP Installation/Prior to Construction_____ Clearing & Grubbing_____	
Rough Grading_____ Finish Grading_____ Utility Construction_____ Building Construction_____	
Final Stabilization_____	

OVERALL SITE INSPECTION	YES/NO/N.A.	REMARKS/ACTIONS
Is there any evidence of sediment leaving the construction site? If so, note areas.		
Have any adverse impacts such as flooding, structural damage, erosion, spillage, or accumulation of sediment, debris or litter occurred on or within public or private property, wetlands or surface waters –to include intermittent drainageways and the City's stormwater system (storm sewers, gutters, ditches, etc.)?		
Are the BMPs properly installed and maintained?		
Have the BMPs been placed as shown on approved plans?		
Are the BMPs functioning as intended?		
Is work being done according to approved plans and any phased construction schedule?		
Is the construction schedule on track?		
Are drainage channels and outlets adequately stabilized?		
Is there any evidence of discharges or spills of fuels, lubricants, chemicals, etc.?		

<b>BMP MAINTENANCE CHECKLIST</b>	<b>YES/NO/N.A.</b>	<b>REMARKS/ACTIONS NECESSARY</b>
<p>CHECK DAM</p> <p>Has accumulated sediment and debris been removed per maintenance requirements?</p>		
<p>EROSION CONTROL BLANKET</p> <p>Is fabric damaged, loose or in need of repairs?</p>		
<p>INLET PROTECTION</p> <p>Is the inlet protection damaged, ineffective or in need of repairs?</p> <p>Has sediment been removed per maintenance requirements?</p>		
<p>MULCHING</p> <p>Distributed uniformly on all disturbed areas?</p> <p>Is the application rate adequate?</p> <p>Any evidence of mulch being blown or washed away?</p> <p>Has the mulched area been seeded, if necessary?</p>		
<p>SEDIMENT BASIN</p> <p>Is the sediment basin properly constructed and operational?</p> <p>Has sediment and debris been cleaned out of the basin?</p>		
<p>SILT FENCE</p> <p>Is the fence damaged, collapsed, unentrenched or ineffective?</p> <p>Has sediment been removed per maintenance requirements?</p> <p>Is the silt fence properly located?</p>		
<p>SLOPE DRAIN</p> <p>Is water bypassing or undercutting the inlet or pipe?</p> <p>Is erosion occurring at the outlet of the pipe?</p>		
<p>STRAW BALE BARRIER</p> <p>Are the straw bales damaged, ineffective or unentrenched?</p> <p>Has sediment been removed per maintenance requirements?</p> <p>Are the bales installed and positioned correctly?</p>		

<b>BMP MAINTENANCE CHECKLIST</b>	<b>YES/NO/N.A.</b>	<b>REMARKS/ACTIONS NECESSARY</b>
<p><b>SURFACE ROUGHENING</b></p> <p>Is the roughening consistent/uniform on slopes??</p> <p>Any evidence of erosion?</p>		
<p><b>TEMPORARY SEEDING</b></p> <p>Are the seedbeds protected by mulch?</p> <p>Has any erosion occurred in the seeded area?</p> <p>Any evidence of vehicle tracking on seeded areas?</p>		
<p><b>TEMPORARY SWALES</b></p> <p>Has any sediment or debris been deposited within the swales?</p> <p>Have the slopes of the swale eroded or has damage occurred to the lining?</p> <p>Are the swales properly located?</p>		
<p><b>VEHICLE TRACKING</b></p> <p>Is gravel surface clogged with mud or sediment?</p> <p>Is the gravel surface sinking into the ground?</p> <p>Has sediment been tracked onto any roads and has it been cleaned up?</p> <p>Is inlet protection placed around curb inlets near construction entrance?</p>		
<p><b>OTHER</b></p>		

FINAL INSPECTION CHECKLIST	YES/NO/N.A.	REMARKS/ACTIONS NECESSARY
Has all grading been completed in compliance with the approved Plan, and all stabilization completed, including vegetation, retaining walls or other approved measures?		
Has final stabilization been achieved – uniform vegetative cover with a density of at least 70 percent of pre-disturbance levels, and cover capable of adequately controlling soil erosion; or permanent, physical erosion methods?		
Have all temporary measures been removed?		
Have all stockpiles, construction materials and construction equipment been removed?		
Are all paved surfaces clean (on-site and off-site)?		
Has sediment and debris been removed from drainage facilities (on-site and off-site) and other off-site property, including proper restoration of any damaged property?		
Have all permanent stormwater quality BMPs been installed and completed?		

ADDITIONAL COMMENTS:          
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The items noted as needing action must be remedied no later than \_\_\_\_\_.

The contractor shall notify the inspector when all the items noted above have been addressed.

By signing this inspection form, the owner/owner's representative and the contractor acknowledge that they have received a copy of the inspection report and are aware it is their responsibility to take corrective actions by the date noted above. Failure to sign does not relieve the contractor and owner/owner's representative of their responsibility to take the necessary corrective action and of their liability for any damages that have occurred or may occur.

INSPECTOR'S SIGNATURE:	DATE:
OWNER/OWNER'S REPRESENTATIVE SIGNATURE:	DATE:
CONTRACTOR'S SIGNATURE:	DATE:

## **EROSION CONTROL PLAN**

# TIMBERRIDGE ESTATES - 9210 ARROYA LANE

## EL PASO COUNTY

### GRADING & EROSION CONTROL PLAN

#### JUNE 2019

#### BENCHMARKS

A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER.  
ELEV = 7,319.85' (NGVD-1929)

#### EROSION CONTROL NOTES

1. PERMANENT SEEDING AND MULCH IS TO BE APPLIED TO ALL DISTURBED AREAS OTHER THAN ROADWAYS. EROSION CONTROL BLANKETS MUST BE USED ALONG FLOW LINE PROPOSED DRAINAGE CHANNELS (3 FEET WIDE) AND ON DETENTION BASIN SIDES.
2. REINFORCE PROPOSED SWALES PR3, PR4, PR7, PR8, PR9, PR10, & PR11 WITH PERMANENT ROCK CHECK DAMS PER COUNTY CONSTRUCTION DETAIL CD-1 (IN DCM VOL 2). CHECK DAMS ARE NOT REQUIRED FOR SWALE AREAS WITH RIPRAP.
3. FUTURE SAND FILTERS TO BE INSTALLED PRIOR TO THE PAVING OF ARROYA LANE. SAND FILTERS WILL NOT BE PUT INTO OPERATION WHILE ARROYA LANE IS STILL A GRAVEL ROAD. FUTURE SAND FILTERS WILL BE ACCESSED FROM THE ADJACENT FUTURE ROADS. FINAL SAND FILTER DESIGN TO BE PREPARED WITH FINAL DESIGN OF PAVED ARROYA LANE.

#### EROSION CONTROL QUANTITIES

SILT FENCE: 2,525 LF  
SEDIMENT CONTROL LOG: 2,500 LF  
SEED & MULCH: 8.8 AC  
EROSION CONTROL BLANKET: 3,700 SF  
ROCK CHECK DAMS: 86

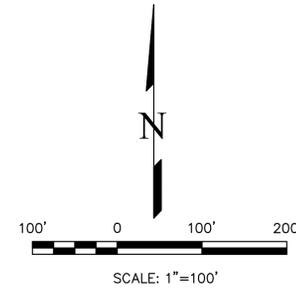
#### CHECK DAM SPACING

CHECK DAM SPACING IS BASED ON SLOPE AND CHECK DAM HEIGHT. THE TOP OF THE DOWNHILL CHECK DAM SHOULD BE AT THE SAME ELEVATION AS THE BOTTOM OF THE NEXT CHECK DAM UPSTREAM. SPECIFIC CHECK DAM LOCATIONS TO BE SET BY CONTRACTOR BASED ON FIELD CONDITIONS. A MINIMUM OF 9' TO BE MAINTAINED BETWEEN THE TOP OF CHECK DAMS AND THE TOP OF THE SWALE. MAX CHECK DAM HEIGHTS AND CHECK DAM SPACING RANGES ARE SHOWN BELOW. PRELIMINARY CHECK DAM LOCATIONS ARE SHOWN ON THE PLAN (CONTRACTOR TO FINALIZE).

SWALE	CHECK DAM MAX HEIGHT	CHECK DAM SPACING AT MAX HEIGHT
PR3	2.0'	31'-42'
PR4	2.0'	20'-60'
PR7	2.5'	58'-65'
PR8	3.0'	60'
PR9	2.5'	58'-65'
PR10	2.5'	40'-120'
PR11	2.5'	40'-120'

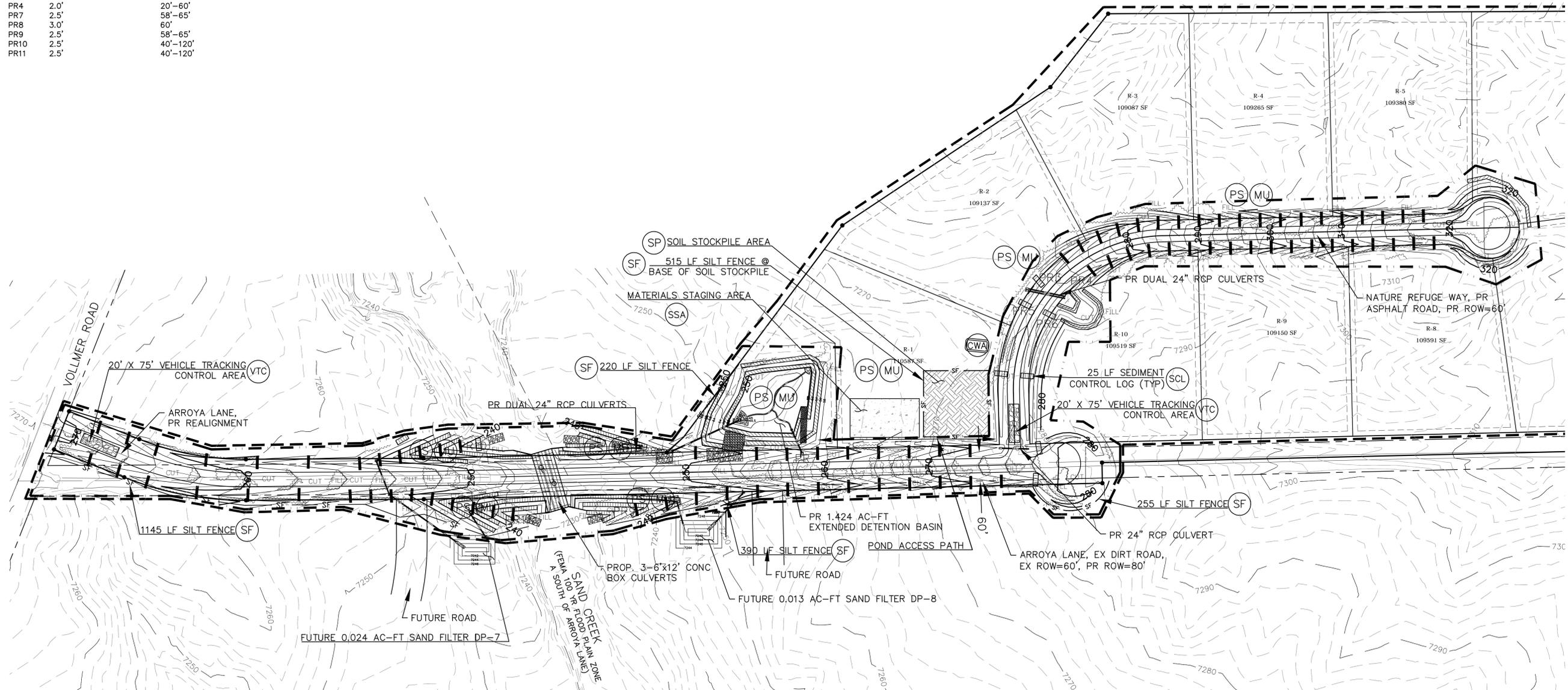
#### LEGEND

- EXISTING 2' CONTOUR
- 7260 EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- 260 PROPOSED 10' CONTOUR
- SURFACE FLOW CHANNEL
- PROPOSED DRAINAGE EASEMENT
- W EXISTING WATER LINE
- CONSTRUCTION SITE BOUNDARY
- AREA OF SOIL DISTURBANCE
- EXISTING TREE
- CUT FILL AREA BOUNDARY
- EX# / PR# OPEN CHANNEL FLOW CALC POINT



#### EROSION CONTROL LEGEND

- | KEY | TITLE   | SYMBOL    |
|-----|---|-----------|
| SF  | SILT FENCE  | —SF—      |
| SSA | STABILIZED STAGING AREA   | [Pattern] |
| VTC | VEHICLE TRACKING CONTROL  | [Pattern] |
| SP  | STOCKPILE MANAGEMENT WITH PROTECTION  | [Pattern] |
| CWA | CONCRETE WASHOUT AREA   | [Pattern] |
| SCL | SEDIMENT CONTROL LOG  | [Symbol]  |
| MU  | MULCHING - HYDROSEED OR EROSION CONTROL BLANKET, ECB MUST BE USED WITHIN DRAINAGE CHANNELS & ON POND SIDES          | [Symbol]  |
| PS  | PERMANENT SEEDING - HYDROSEED, SEED MIX PER COLORADO SPRINGS DRAINAGE CRITERIA MANUAL (MAY 2014) VOL 1, TABLE 14-12 | [Symbol]  |
| CD  | ROCK CHECK DAM, PRELIM LOCATION, CONTRACTOR TO FINALIZE   | [Symbol]  |



REVISIONS	NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE LOCAL AGENCIES, THE REVIEWING AGENCIES, TETRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND FOR THE COST OF WRITTEN AUTHORIZATION.

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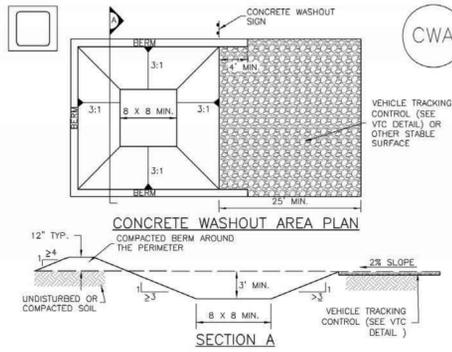
**TIMBERRIDGE ESTATES**  
9210 ARROYA LANE  
GRADING & EROSION CONTROL PLAN  
EROSION CONTROL PLAN

DESIGNED BY LD
DRAWN BY DLF
CHECKED BY LD
H-SCALE 1"=100'
V-SCALE NA
JOB NO. 1733.00
DATE ISSUED 06/03/19
SHEET NO. 7 OF 14

N:\jobs\1733.00\Drawings\CD\173300\_GEC.dwg, 6/6/2019 10:03:18 AM

Concrete Washout Area (CWA)

MM-1



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...
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...
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.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CWA-3

Concrete Washout Area (CWA)

MM-2

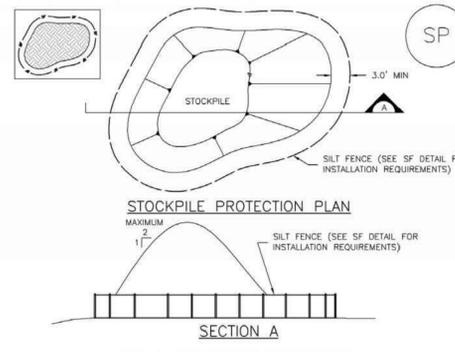
CWA MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...
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...
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE...
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...
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.

CWA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Stockpile Management (SP)

MM-2



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION OF STOCKPILES -TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS...
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING...
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SP-3

Stockpile Management (SM)

MM-2

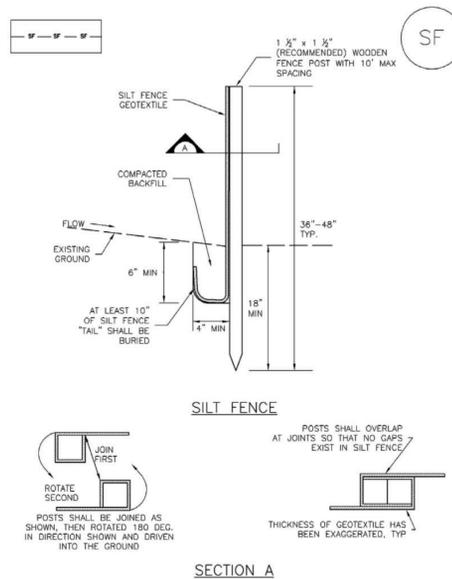
STOCKPILE PROTECTION MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.
DETAILS ADAPTED FROM 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.

SP-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Silt Fence (SF)

SC-1



SF-1. SILT FENCE

Silt Fence (SF)

SC-2

SILT FENCE INSTALLATION NOTES

- 1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING...
2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE...
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING...
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES...
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS...
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR...
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

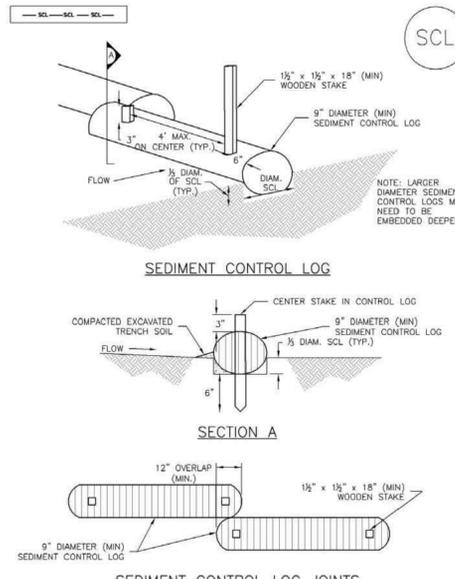
SILT FENCE MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION...
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...
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...
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR...
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED...
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDING AND MULCH OR OTHERWISE STABILIZED...
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.

SF-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Sediment Control Log (SCL)

SC-2



SCL-1. SEDIMENT CONTROL LOG

Sediment Control Log (SCL)

SC-2

SEDIMENT CONTROL LOG INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR OR COCONUT FIBER...
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES...
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND...
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL...
7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING...
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.

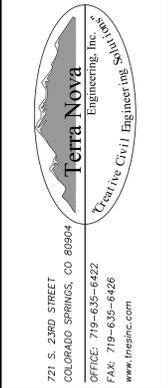
SEDIMENT CONTROL LOG MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION...
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED...
5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION...
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.

SCL-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Table with columns: REVISIONS, NO., DESCRIPTION, DATE. Includes a note: UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE REVIEWING AGENCIES, THE TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND FOR THE MOST RECENT DATE OF WRITTEN AUTHORIZATION.

PREPARED FOR: TIMBRIDGE ESTATES, LLC ATTN: SCOTT HENIE 2760 BROGANS BLUFF COLORADO SPRINGS, CO 80919 719.499.6752

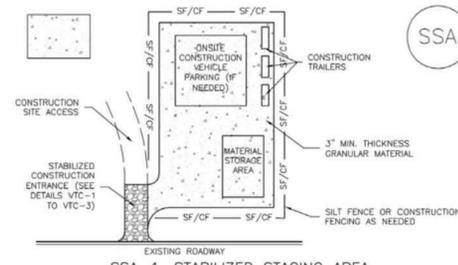


TIMBRIDGE ESTATES 9210 ARROYA LANE GRADING & EROSION CONTROL PLAN - DETAILS EROSION CONTROL PLAN - DETAILS

Table with columns: DESIGNED BY LD, DRAWN BY DLF, CHECKED BY LD, H-SCALE NA, V-SCALE NA, JOB NO. 1733.00, DATE ISSUED 06/03/19, SHEET NO. 8 OF 14

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**Stabilized Staging Area (SSA) SM-6**



**SSA-1. STABILIZED STAGING AREA**

**STABILIZED STAGING AREA INSTALLATION NOTES**

- SEE PLAN VIEW FOR:
  - LOCATION OF STAGING AREA(S).
  - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
- STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
- STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
- THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

**STABILIZED STAGING AREA MAINTENANCE NOTES**

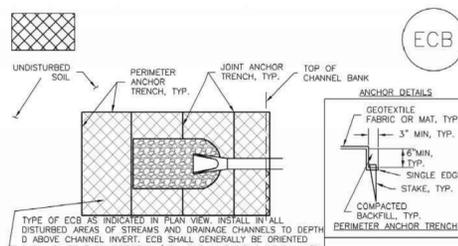
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

**SM-6 Stabilized Staging Area (SSA)**

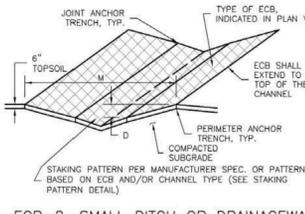
**STABILIZED STAGING AREA MAINTENANCE NOTES**

- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
  - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- 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 DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

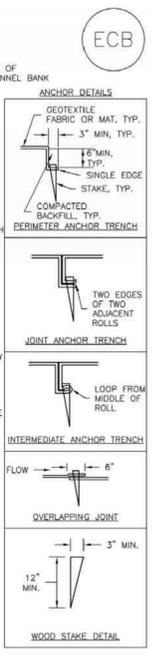
**EC-6 Rolled Erosion Control Products (RECP)**



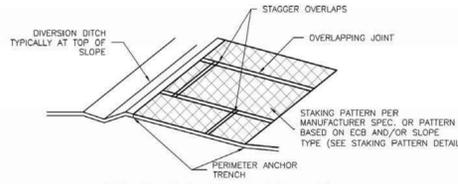
**ECB-1. PIPE OUTLET TO DRAINAGEWAY**



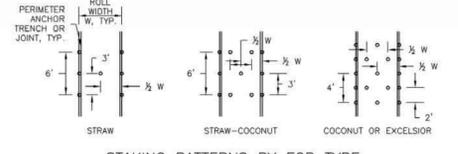
**ECB-2. SMALL DITCH OR DRAINAGEWAY**



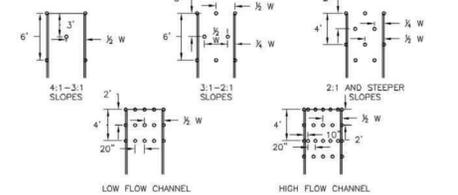
**EC-6 Rolled Erosion Control Products (RECP)**



**ECB-3. OUTSIDE OF DRAINAGEWAY**



**STAKING PATTERNS BY ECB TYPE**



**STAKING PATTERNS BY SLOPE OR CHANNEL TYPE**

**EC-6 Rolled Erosion Control Products (RECP)**

**EROSION CONTROL BLANKET INSTALLATION NOTES**

- SEE PLAN VIEW FOR:
  - LOCATION OF ECB.
  - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
  - AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
- DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

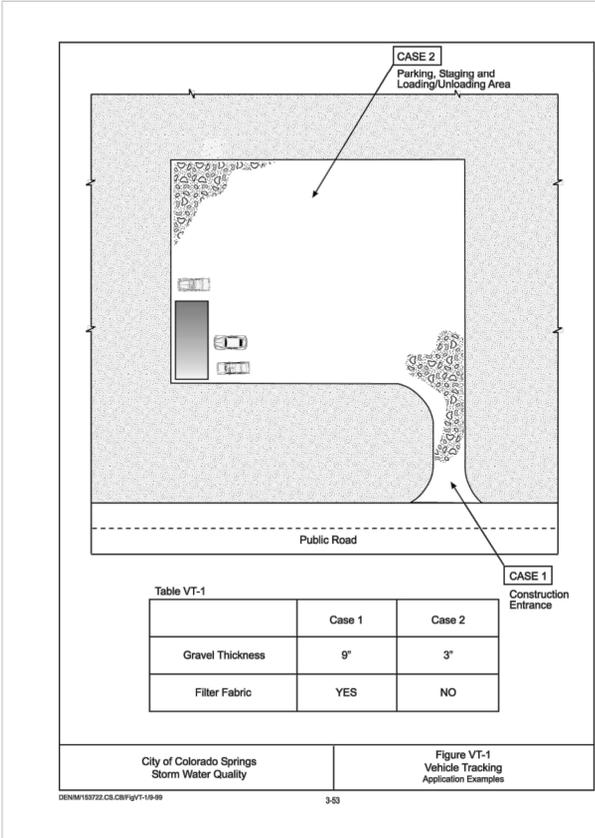
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	-	100%	-	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

\*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STRAW AND DRAINAGE CHANNEL.  
\*\*ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

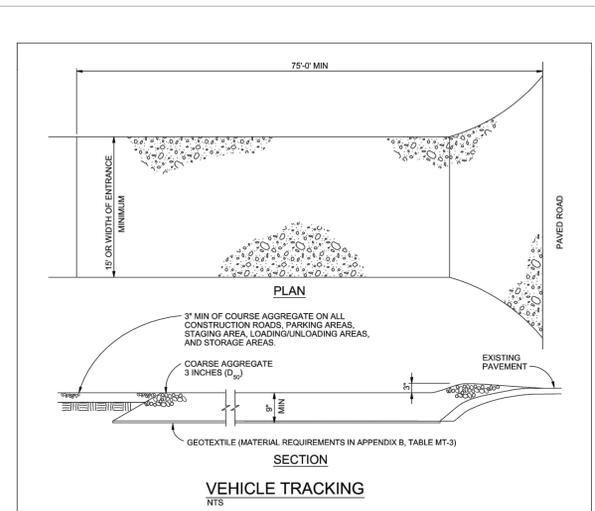
**EC-6 Rolled Erosion Control Products (RECP)**

**EROSION CONTROL BLANKET MAINTENANCE NOTES**

- 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.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
  - ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.
- 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 DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)



City of Colorado Springs Storm Water Quality Figure VT-1 Vehicle Tracking Application Examples



City of Colorado Springs Stormwater Quality Figure VT-2 Vehicle Tracking Application Examples

**VEHICLE TRACKING NOTES**

- INSTALLATION REQUIREMENTS**
- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
  - CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
  - AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
  - CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
  - CONSTRUCTION ROADS ARE TO BE CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.
- MAINTENANCE REQUIREMENTS**
- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
  - STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
  - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
  - STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
  - OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

UNTL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE REVISIONS NO. DESCRIPTION DATE

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DESIGNED BY LD  
DRAWN BY DLF  
CHECKED BY LD

H-SCALE NA  
V-SCALE NA

JOB NO. 1733.00  
DATE ISSUED 06/03/19  
SHEET NO. 9 OF 14

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**OPERATION AND MAINTENANCE INSPECTION RECORD**

# ENG-SF18027-R3-SWMP-Redlines.pdf Markup Summary

1 (2)



**Subject:** EPC ENG Review  
**Page Index:** 1  
**Date:** 7/18/2019 5:02:56 PM  
**Author:** dsdrice  
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**Page Index:** 1  
**Date:** 7/18/2019 5:06:17 PM  
**Author:** dsdrice  
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Note: If you have not already, please familiarize yourself with the new CDPHE Stormwater Discharge Requirements at <https://www.colorado.gov/pacific/cdphe/cor400000-stormwater-discharge>. All Stormwater Management Plans (SWMPs) for projects under review, already approved, and under construction need to be updated to meet the State requirements. If a project is already approved we do not need the SWMP resubmitted to EPC PCD but all SWMPs in the field need to be updated as part of the regular revision process. Please reference the CDPHE checklist and requirements – County checklists and criteria were updated in July, 2019.

12 (1)



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**Date:** 7/19/2019 8:34:56 AM  
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Address day-to-day SWMP updates. (Who makes the updates and how?) The County does not need to approve minor revisions to the SWMP.

17 (1)



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**Date:** 7/18/2019 5:02:04 PM  
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Summer 2018 and the site will be considered stabilized in the Fall 2019