

**STORMWATER MANAGEMENT REPORT
FOR
HOMESTEAD AT STERLING RANCH FILING NO. 2**

Prepared For:

Sr. Land, LLC
20 Boulder Crescent
Suite 201
Colorado Springs, CO 80903

Contractor Information

: _____

Qualified Stormwater Manager:

: _____


Prepared By:

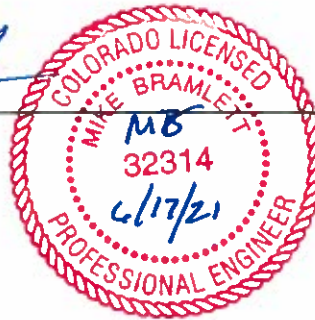
JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, CO 80919
719-593-2593

March 24, 2021
Project No. 25188.00
City Project No. CDR-20-021

Engineer's Certification

This Grading, Erosion, and Sediment Control Report was prepared under my direction and supervision, and is correct to the best of my knowledge and belief. If such work is performed in accordance with the Grading and Erosion Control Plan, the work will not become a hazard to life and limb, endanger property, or adversely affect the safety, use, or stability of a public way, drainage channel, or other property.


Mike Bramlett, Colorado P.E. 32314
For and On Behalf of JR Engineering, LLC



Date

6/17/21

Developer's/Owner's Certification

The owner will comply with the requirements of this Grading, Erosion, and Sediment Control Report including temporary BMP inspection requirements and final stabilization requirements. I acknowledge the responsibility to determine whether the construction activities outlined in this report require Colorado Discharge Permit System (CDPS) permitting for Stormwater discharges associated with Construction Activity.


Name of Owner/Developer

James F. Morley
Authorized Signature

Date

6/17/2021

TABLE OF CONTENTS

TABLE OF CONTENTS	iii
Introduction – Urban Collection at Briargate Square.....	1
Project Description	1
Site Description	1
Existing Site Conditions	2
Receiving Waters	2
Adjacent Areas.....	2
Soils... ..	2
Description of Potential Pollutants	3
Soil Borings/Tests and Groundwater	3
Areas and Volume Statement.....	3
Stormwater Management Controls.....	3
SWMP Administrator	3
Erosion and Sediment Control	4
Structural Practices	4
Non-Structural Practices	6
Potential Pollutant Sources.....	6
Other Potential Pollution	9
Material Handling, and Spill Prevention and Response	9
Timing Schedule.....	10
Permanent Stabilization	10
Owner Inspection & Maintenance of Construction BMP'S	11
APPENDIX A – VICINITY MAP.....	12
APPENDIX B – SOILS MAPS.....	13
APPENDIX C – SWMP PLANS AND DETAILS.....	14

Introduction – Homestead at Sterling Ranch Filing NO. 2

This document is the “Storm Water Management Plan for Homestead at Sterling Ranch Filing No. 2 – Colorado Springs.” It has been prepared to meet the regulatory requirements of the County of El Paso, the Colorado Department of Health - Water Quality Control Division, and to satisfy the provisions set forth by the Colorado Water Quality Control Act and Federal Water Pollution Control Act.

Project Description

The Homestead at Sterling Ranch Filing No. 2 is an installation of Sand Filters along the western side of Sand Creek drainage basin. It includes proposed 12 inch storm HDPE pipe as well as proposed 15 inch storm HDPE. Also, grading will be performed after installation of Sand Filter. All practical practices for erosion control will be utilized during construction.

Site Description

The site is currently being designed to accommodate approximately 264 single-family residential lots and development is to be completed in two phases (totaling approximately 88 acres). The project site is located to the south of existing developments near the southeast intersection of Vollmer Road and Briargate Parkway. Refer to Appendix A for the vicinity map. The site is comprised of residential back yards with landscaping or grass and native grasses along the Sand Creek that generally slope(s) downward to the east at 3 to 8% towards the Sand Creek tributary basin.

Soil characteristics are comprised of mostly pring coarse sandy loam, 3 to 8% slopes. Refer to the soil survey map in Appendix B for additional information.

There are no major drainage ways on the site, although a tributary to the Sand Creek basin is immediately to the east of the site. Currently, Kiowa Engineering Corp. is performing studies and plans to address Sand Creek stabilization.

There are no known irrigation facilities located on the project site.

Existing Site Conditions

The existing site is developed with existing trails along the Sand Creek drainage basin. Slopes ranging from 3 to 8% and is covered by sparse native grasses, trees, shrubs, and vegetation. Vegetative cover on the site is estimated to be 70% and was confirmed by visual inspection.

Receiving Waters

The site lies within the Sand Creek Drainage Basin based on the "Sand Creek Drainage Basin Planning Study" (DBPS) completed by Kiowa Engineering Corporation in January 1993, revised March 1996. The Sand Creek Drainage Basin covers approximately 54 square miles and is divided into major sub-basins.

The Sand Creek DBPS assumed the Homestead North at Sterling Ranch property to have a "large lot residential" use for the majority of the site. However, the proposed Sterling Ranch master plan is a mix of; school, multi-family, single-family, and commercial land uses, resulting in higher runoff. The site generally drains from north to south consisting of rolling hills. Currently, the site is used as pasture land for cattle. Sand Creek is located east of the site running north to south. This reach of drainage conveyance is not currently improved. There are a few stock ponds within the creek channel used for cattle watering. Currently, Kiowa is performing studies and plans to address Sand Creek stabilization adjacent to the site.

There are no known streams that cross the project site.

Adjacent Areas

The project lies west of the Sand Creek drainage basin. The project is adjacent to Sterling Ranch Filing No. 1 REC No. 218714151 located west of the project boundaries. To the Southwest of the project boundaries, is Sterling Ranch Filing No. 1 REC No. 218714151. Also, major roadways that are adjacent to the project are Vollmer Road and Briargate Parkway.

Soils

The site is comprised of a major amount of pring coarse sandy loam, 3 to 8 percent slopes, which are classified as a Hydrologic Group B soil by the NRCS. Soils Group B is defined as having 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. A NRCS soil survey map is presented in Appendix A.

Description of Potential Pollutants

Proposed construction activities are not anticipated to generate any non-stormwater discharge.

- Concrete washout shall be placed on the site.
- Dewatering is not expected for the site.

Soil Borings/Tests and Groundwater

Currently no soil boring tests or groundwater tests have been made for this project.

Areas and Volume Statement

The Homestead at Sterling Ranch Filing No. 2 site consists of 29.658 acres. However, only the area near the back of the lots will be disturbed with the proposed improvements. The total estimated area of disturbance will be 2.5 acres. The construction of the sand filters will require approximately 60 CY of fill, 1862 CY of cut, and a net amount of 1802 CY of cut.

- GEC Plans - Refer to the attached plans for locations of BMPs and BMP Details including installation, maintenance, and inspection requirements.

Stormwater Management Controls

SWMP Administrator

The SWMP Administrator will be determined upon selection of the general contractor. The SWMP Administrator shall be the individual(s), position, or title who is responsible for developing, implementing, maintaining, and updating the SWMP. The activities and responsibilities of the administrator shall address all aspects of the facility's SWMP.

Erosion and Sediment Control

Erosion and sediment control measures that will be used during the project are as follows:

Structural Practices

Silt Fence

Purpose:

- To act as a barrier to interrupt runoff to allow sediment to settle out during construction operations.
- Used to filter shallow sheet flow.

Typical Applications:

- Perimeter control on lots or tracts
- Perimeter control around dirt stockpiles
- Utilized as a temporary feature.

Inlet Protection

Purpose:

- Intercept and filter sediment laden runoff and prevent it from entering storm sewer systems.

Typical Applications:

- For any type of storm drain inlet in streets, paved areas, or landscaped areas.
- Utilized as a temporary feature.

Curb Sock

Purpose:

- Sock filled with rock and debris, intended to serve as a hydraulic barrier.

Typical Applications:

- For use as a hydraulic barrier in streets at handicapped sidewalk ramp locations, back of walk locations
- To slow and filter runoff on slopes or in swales
- Perimeter protection for a stockpile

Straw Bale Barrier

Purpose:

- To act as a barrier to interrupt runoff to allow sediment to settle out during construction operations.

Typical Applications:

- Used in swales to prevent erosive velocities from developing

Erosion Control Blanket

Purpose:

- To protect soil from impact of precipitation and overland flow, and retain moisture for vegetation establishment.

Typical Applications:

- Can be installed on seeded areas for temporary use or can utilized for permeant use on landscape areas.

Vehicle Tracking Control

Purpose:

- to reduce the amount of sediment leaving an area via vehicle's tires

Typical Applications:

- long-term stockpiles (30days+)
- construction access points
- on-site trailer parking/access

Stabilized Staging Area

Purpose:

- Designated onsite construction area for trailers, onsite construction parking, and material storage area.

Typical Applications:

- Material Storage
- Onsite Construction parking
- Temporary construction trailer parking

Non-Structural Practices

Temporary/Permanent Seeding

Purpose:

- To provide stabilization of disturbed soil

Typical Applications:

- Any disturbed areas
- Stockpiles
- Slopes

Mulching

Purpose:

- Apply to disturbed soils to reduce erosion by protecting bare soil from rainfall impact, increase infiltration, and reduce runoff.

Typical Applications:

- Use in conjunction with temporary or permanent seeding.
- Use as a means of temporary stabilization for areas that cannot be reseeded due to seasonal constraints
- Slopes

Potential Pollutant Sources

Potential pollution sources include; debris, emissions from construction vehicles, possible refueling incidents and accidental materials or chemical spills. Specific pollution components and their solutions are listed below:

- All exposed and stored soils – all exposed soils will be seeded and mulched upon completion of construction within the vicinity. Silt fence will be utilized to contain sediment deposited by runoff until seeding can take. Silt fence or a similar barrier should be installed as needed around long-term stockpiles (30 days+). Stockpiles that exceed 8 to 10 feet in height may require additional erosion protection by way of an additional row of silt. Vehicle Tracking Control should be installed at access points to minimize sediment deposition from vehicles exiting the site.

- Vehicle tracking of sediments – if sediment is tracked onto the street, a reasonable attempt shall be made to clean up sediment and mud deposits as soon as possible. A street sweeper may be used as necessary. Vehicle Tracking Control shall be installed at all vehicular access points to the site.
- Vehicle Tracking Control - The contractor will be responsible for placement of vehicle tracking control measures at the locations of site entrances. Vehicle tracking control measures include, but are not limited to: minimizing site access; street sweeping or scraping; tracking pads; graveled parking areas; wash racks; and contractor education. As well, if sediment is tracked onto the street, a reasonable attempt will be made to clean up any large deposits as soon as possible and if necessary, a street sweeper may be used.
- Management of contaminated soils – appropriate measures will be taken to cleanup the cause of the contaminated soil. All contaminated soils must be disposed of offsite in an appropriate manner.
- Loading and unloading operations – should a spill occur during a loading or unloading operation it shall be cleaned up immediately and the on-site personnel shall be contacted.
- Outdoor storage activities – materials with potential to contaminate stormwater runoff will be stored so as to prevent/minimize exposure of toxic materials. Storage areas containing toxic materials shall be designated accordingly. Onsite areas used for material storage that are exposed to the elements, namely precipitation, shall be inspected for evidence of, or the potential for, pollutants entering the drainage system.
- Vehicle, equipment maintenance, and fueling – all designated fueling and maintenance areas shall be located a minimum of 100 feet from any drainage course whenever possible. If the fueling area is located on a pervious surface, the area shall be covered with a non-pervious lining so as to prevent soil contamination by way of infiltration. Any spillage shall be cleaned up immediately.

- Significant dust or particulate generating processes – dust-reducing measures will be taken during construction until appropriate seeding and mulching can be placed. A water truck capable of misting soils susceptible to wind dispersion may be used.
- Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. – oil, grease, coolants, etc. that leak onto the soil or impervious surface should be cleaned up as soon as possible and on-site personnel notified.
- On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.) – dumpsters will be utilized as needed to remove trash from the site. Any waste material found on-site or generated by construction activities will be disposed of in a manner that prevents polluting of storm water discharges. In the event that waste is to be stored on-site, it shall be in an area located a minimum of 100 feet from any drainage course whenever possible. Whenever waste is in a porous container, it shall be in an area enclosed by a 12-inch high compacted earthen ridge (or equal measure). If the enclosed waste area is located on porous soil, the area shall be covered with a non-porous lining to prevent soil contamination. Whenever precipitation is predicted, the waste shall be covered with a non-porous cover, anchored on all sides to prevent its removal by wind, in order to prevent precipitation from leaching out potential pollutants from the waste.
- Non-industrial waste sources such as worker trash and portable toilets – all portable toilets should be kept a minimum of 50 feet from a storm drain inlet or drainage course and secured to the ground.
- Landscaping Materials - may be stored temporarily in the street until work is completed. If top-soil, mulch, or similar material is to be kept in the street or gutter over-night, containment measures should be taken to minimize any pollution discharge potential.
- Other areas or procedures where potential spills can occur – no other areas have been identified at this time.

Other Potential Pollution

Exact location of the following potential pollution sources will be determined and documented during construction.

- Concrete washout - The contractor will be responsible for placement of concrete washout area. They will be placed such that concrete washout activities do not result in the discharge of materials, or contribute pollutants to stormwater runoff.
- Batch Plant - A dedicated asphalt or concrete batch plant is not planned to be utilized. If plans change and at such time a batch plant is used it will be the responsibility of the contractor to update the SWMP report and plans in addition to receiving/obtaining all necessary permits.
- Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment – concrete truck/equipment washing will take place in a designated concrete wash-out area. Said area shall be placed a minimum of 100' from any drainage/water sources and shall serve to contain wash water generated by equipment washing. Remnants of concrete and cement that are left behind at the concrete washout area(s) shall be transported and disposed of offsite.

Material Handling, and Spill Prevention and Response

There will be a designated individual on-site who will receive training on what to do when a hazardous spill occurs. There will be a small spill kit on-site containing clean-up supplies, emergency contact information, and report(s) to document occurrences.

Spills must be cleaned up as soon as possible and contaminated soil/materials must be properly disposed of off-site.

Timing Schedule

Development of the project site will follow standard construction sequencing characteristic of site construction. The anticipated start date is Spring 2021. The anticipated date of completion and final stabilization is Summer 2021. Sequencing of development will commence in the following manner:

1. Installation of initial temporary erosion control measures as noted on the plans. Implementation of BMPs shall precede initial construction operations. The time schedule may vary depending on plan approvals and weather. The initial BMP's for this project shall include silt fencing as shown on the plans, vehicle tracking control at the staging entrance, a stabilized staging area, a concrete washout area, and installation of inlet protection around existing inlets that are subject to debris or sediment deposition.
2. Site clearing and grading will occur within the project limits.
3. Subgrade preparation and compaction for hardscaped areas.
4. Installation of underground utilities and connections to main lines.
5. Installation of site landscaping.

Removal of temporary erosion controls and final site cleanup should not occur until site vegetation is fully restored. Once full site stabilization has been achieved, all temporary BMP's should be removed and final site cleaning performed.

Permanent Stabilization

Seeding and mulching will be utilized to replace vegetation in areas where existing ground cover was disturbed. Seeding and mulching shall be per City of Colorado Springs requirements (See Drainage Criteria Manual Volume 1, Chapter 14. Final Stabilization will be completed once construction activities have ceased and 70% of the vegetative cover for the site has been re-instated, as compared to pre-disturbance levels, or once equivalent permanent erosion control measures have been implemented (pavement, concrete, etc.).

Owner Inspection & Maintenance of Construction BMP'S

All necessary BMPs will be installed and maintained until the completion of the project. Long term stormwater management may begin once final stabilization of the site has been implemented.

Inspections of erosion & sediment control measures will occur every 14 days and within 24 hours of any precipitation or snowmelt 'event' that incurs runoff. The operator shall keep a record of inspections. Uncontrolled release of mud, muddy water, or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measure taken to clean up the sediment that has left the site. Any items in need of correction must occur as soon as possible to ensure continuous implementation of BMPs. Based on the results of the inspection and the description of potential pollutant sources, pollution prevention and control measures shall be revised and modified as appropriate as soon as practicable after such inspection.

All temporary and permanent erosion and sediment control facilities shall be maintained and repaired as needed to assure continued performance of their intended function. Silt fences will require periodic replacement. Sediment traps and sediment basins shall be cleaned when accumulated sediments equal approximately one-half of trap storage capacity. Also, refer to the attached GESC Plans for additional installation, inspection, and maintenance requirements.

The contractor shall maintain records of all inspection reports, including: signed inspection logs, at the project site. Site inspection records shall include the following: inspection date, name and title of personnel making the inspection, location of discharges of sediment or other pollutants from the site, location(s) of BMPs in need of maintenance, location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location, locations(s) where additional BMPs are needed that were not in place in time of the inspection, and deviation from the minimum inspection schedule. The permittee shall document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage.

This project does not rely on control measures owned or operated by another entity.

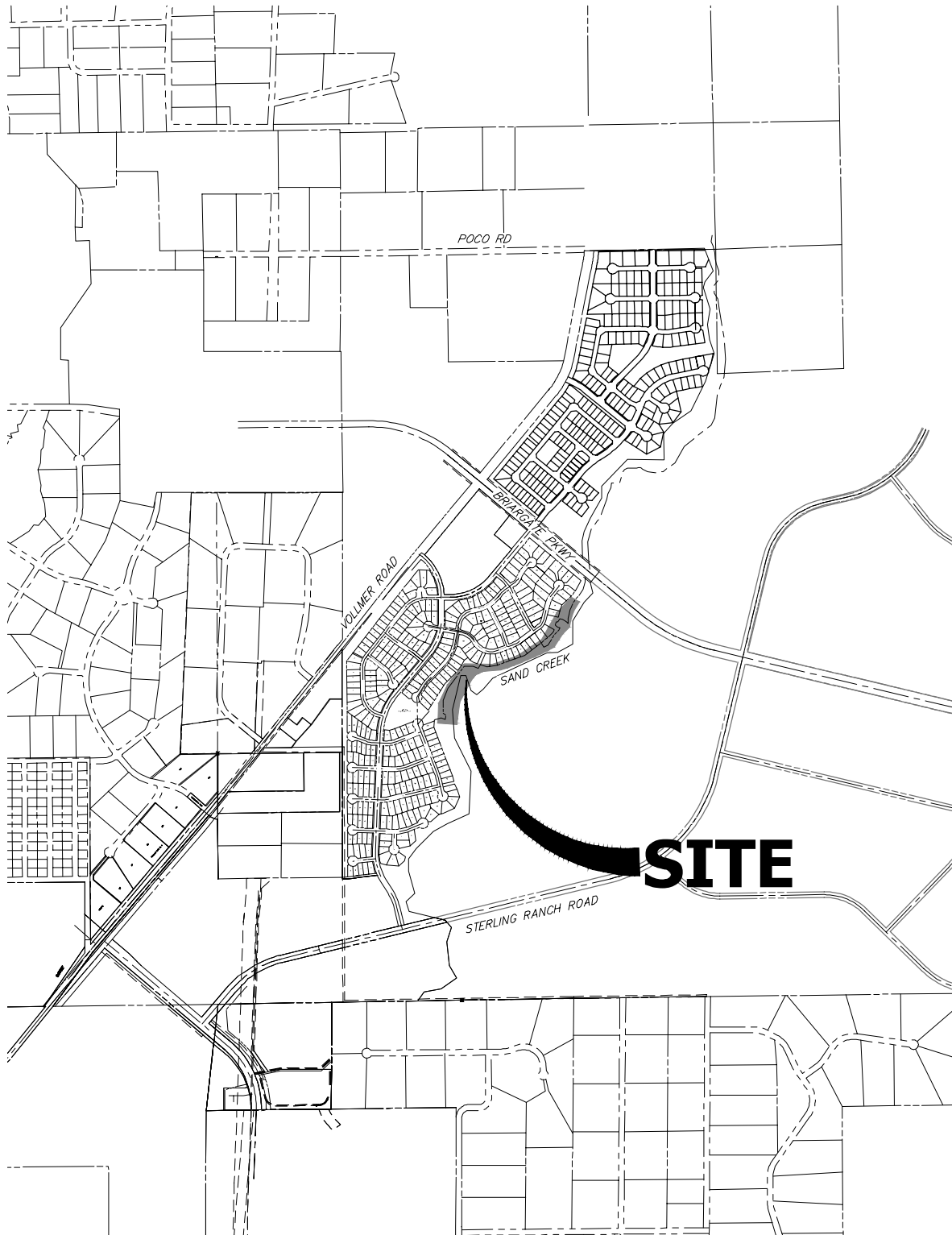
APPENDIX A – VICINITY MAP

HOMESTEAD AT STERLING RANCH FILING NO. 2

COUNTY OF EL PASO, STATE OF COLORADO

CDR-20-012

VICINITY MAP



SITE



500 250 0 500 1000
ORIGINAL SCALE: 1" = 500'

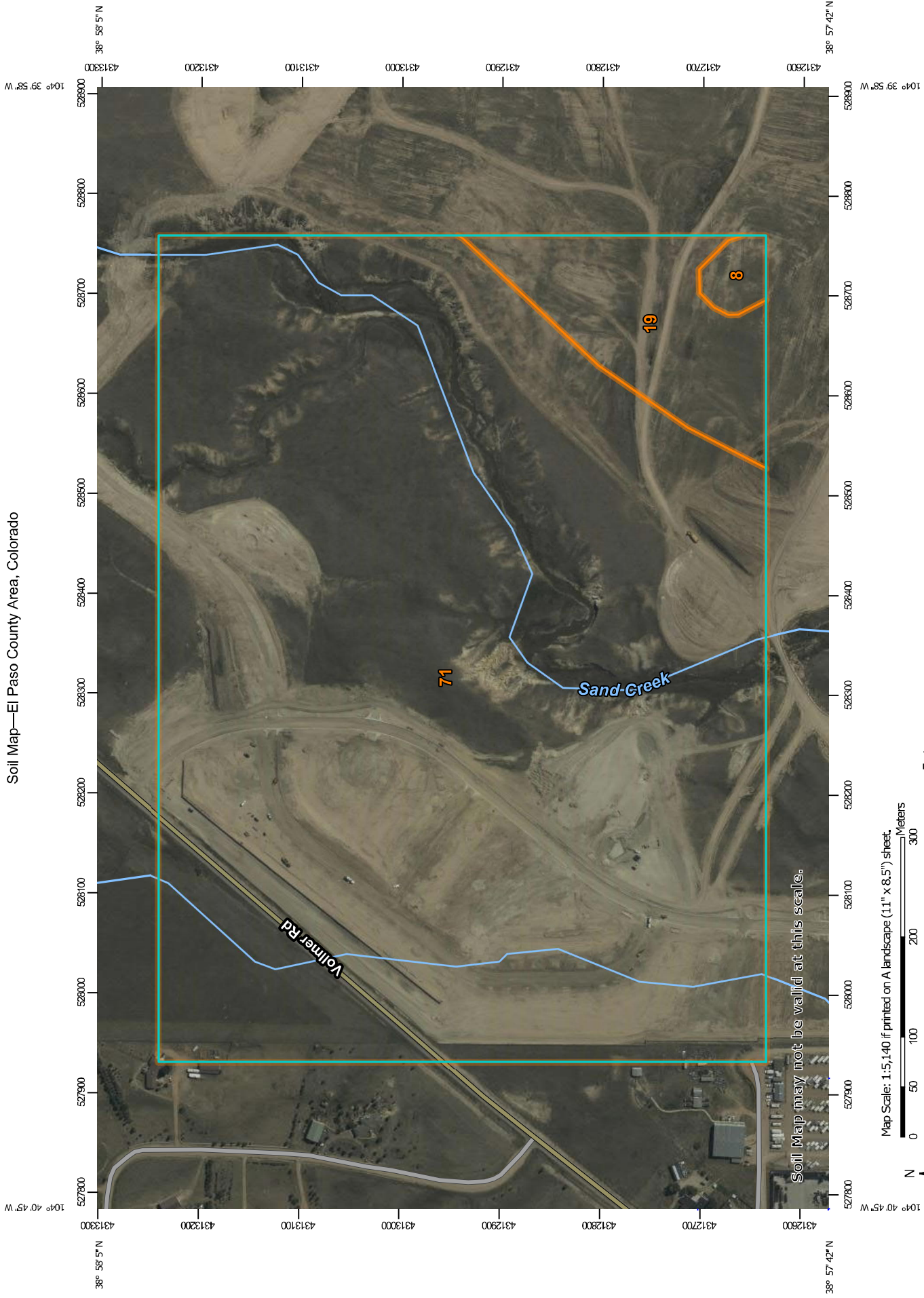
VICINITY MAP
HOMESTEAD AT STERLING RANCH FILING NO. 2
JOB NO.: 25168.00
11/30/20
SHEET 1 OF 1

J&R ENGINEERING
A Westbrain Company

Central 303-740-8989 • Colorado Springs 719-598-2693
Fort Collins 970-491-9888 • www.jrengineering.com


APPENDIX B – SOILS MAPS

Soil Map—El Paso County Area, Colorado





MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points


Special Point Features


 Blowout


 Borrow Pit


 Clay Spot


 Closed Depression


 Gravel Pit


 Gravelly Spot


 Landfill


 Lava Flow


 Marsh or swamp


 Mine or Quarry


 Miscellaneous Water


 Perennial Water


 Rock Outcrop


 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot


 Other


 Special Line Features


Water Features


 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 18, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	1.0	0.8%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	8.9	7.1%
71	Pring coarse sandy loam, 3 to 8 percent slopes	114.5	92.0%
Totals for Area of Interest		124.4	100.0%

APPENDIX C – GEC PLANS AND DETAILS

LAYER LINETYPE LEGEND

EXISTING	PROPOSED
PHASE LINE	---
MATCH LINE	---
BOUNDARY LINE	---
PROPERTY LINE	---
EASEMENT LINE	---
RIGHT OF WAY	---
CONTRIBUTORY	---
CITY LIMITS	---
WIRE FENCE	---
CHAIN LINK FENCE	---
WOOD FENCE	---
MASONRY FENCE	---
QUADRANT	---
CORNER BAR	---
CABLE TV	---
ELECTRIC	---
FIBER OPTIC	---
IRIGATION MAIN	---
OL/PETRO. MAIN	---
OVERHEAD UTILITY	---
SANITARY SEWER	---
STORM DRAIN	---
TELEPHONE	---
RAW WATER LINE	---
SHALE/WATERWAY FLOWLINE	---
DIVERSION DITCH	---
MAJOR DRAINAGE BASIN	---
MINOR DRAINAGE BASIN	---
TOP OF SLOPE	---
EDGE OF WATER	---
INDEX CONTOUR	---
INTERMEDIATE CONTOUR	---
DEPRESSION CONT. (INDEX)	---
DEPRESSION CONT. (INTER)	---
TOP OF CUTS	---
OUT AND FILL LINE	---
TOP OF FILLS	---
SILT FENCE	---
100 YEAR FLOODPLAIN	---
500 YEAR FLOODPLAIN	---
BASE FLOOD ELEVATION	---
EDGE OF WETLANDS	---
STONE WALL	---

UTILITIES LEGEND

EXISTING	PROPOSED
STORM SEWER	---
MANHOLE	---
STORM INLET	---
AREA INLET - SQUARE	---
AREA INLET - ROUND	---
FLARED END SECTION	---
RIPRAP	---
SANITARY SEWER	---
LINE MARKER	---
SERVICE MARKER	---
CLEAN-OUT	---
MANHOLE W/ DIRECTIONAL	---
FLOW ARROW	---
WATER LINE	---
LINE MARKER	---
SERVICE MARKER	---
FIRE HYDRANT	---
FIRE CONNECTION	---
MANHOLE	---
BEND	---
BLOW-OFF VALVE	---
WELL	---
METER	---
VALVE	---
REDUCER	---
THRUST BLOCK	---
PLUG W/ THRUST BLOCK	---
WELDE ANCHOR	---
ANCHOR	---
AIR & VACUUM	---
VALVE ASSEMBLY	---
BLOW-OFF ASSEMBLY	---
GAS LINE	---
MARKER	---
SERVICE MARKER	---
METER	---
VALVE	---
PLUG	---
TELEVISION	---
CABLE TELEVISION	---
ELECTRIC SERVICE MARKER	---
ELECTRIC PEDestal	---
ELECTRICAL METER	---
ELECTRICAL MANHOLE	---
FIBER-OPTIC MARKER	---
IRRIGATION PEDestal	---
TELEPHONE MARKER	---
TELEPHONE PEDestal	---
TELEPHONE MANHOLE	---
UTILITY POLE	---
GUY ANCHOR	---
GUY POLE	---
MISC. UTILITIES	---
VENT PIPE	---
TEST HOLE DESIGNATOR	---

STORM WATER MANAGEMENT

KEY	SYMBOL
CHECK DAM	---
CONSTRUCTION ROAD	---
STABILIZATION	---
CURB SOCK INLET PROTECTION	---
CONCRETE WASHOUT AREA	---
DIVERSION DITCH AND DIKE	---
DIVERSION CHANNEL	---
TEMPORARY	---
DEMATERING	---
EROSION CONTROL BLANKET	---
INLET FILTER	---
INLET PROTECTION	---
MULCHING	---
OUTLET PROTECTION	---
PAVED FLUME	---
PERMENENT SEEDING	---
REMOVED CONCRETE DAM	---
ROUGH CUT STREET CONTROL	---
SEDIMENT BASIN	---
SEDIMENT CONTROL LOG	---
SILT FENCE	---
SURFACE ROUGHENING	---
STABILIZED STAGING AREA	---
SEDIMENT TRAP	---
STRAW BALE BARRIER	---
TERRACING	---
TEMPORARY SEEDING	---
TEMPORARY STREAM CROSSING	---
TEMPORARY STREAM CROSSING	---
TEMPORARY STREAM CROSSING	---
FORD TYPE	---
TEMPORARY SLOPE DRAIN	---
VEHICLE TRACKING CONTROL	---
VEHICLE TRACKING CONTROL	---
WITH WASH RACK	---

LANDSCAPE LEGEND

EXISTING	PROPOSED
TREE - CONIFEROUS	---
TREE - DECIDUOUS	---
SHRUB/BUSH	---
SHRUBS AND BUSHES	---
IRRIGATION BOX	---
IRRIGATION SPRINKLER	---
IRRIGATION VALVE	---
BOLLARD	---
FLAPPOLE	---



Know what's below.
Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF J.R. ENGINEERING

WIKIE A. BRAMLETT, P.E.

COLORADO P.E. 33314

FOR AND ON BEHALF OF J.R. ENGINEERING



HOMESTEAD 2 COMMON SAND
FILTER GEC PLANS
LEGEND

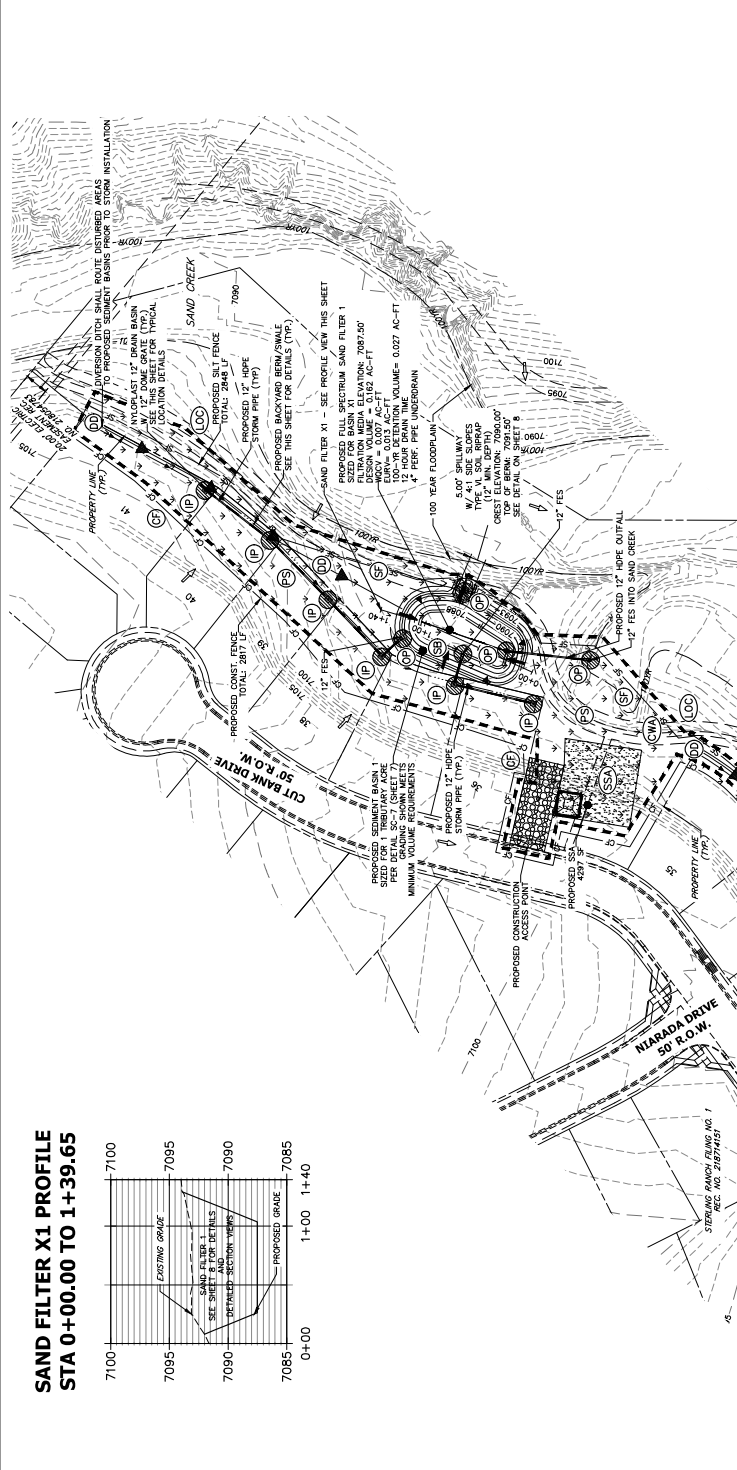
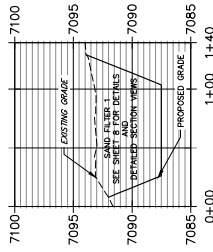
NO.	REVISION
BY	DATE

J.R. ENGINEERING
A Western Company
Central 303-740-0000 • Colorado Springs 719-593-2588
Fax 303-740-0000 • www.jrengineering.com

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
(719) 471-1742

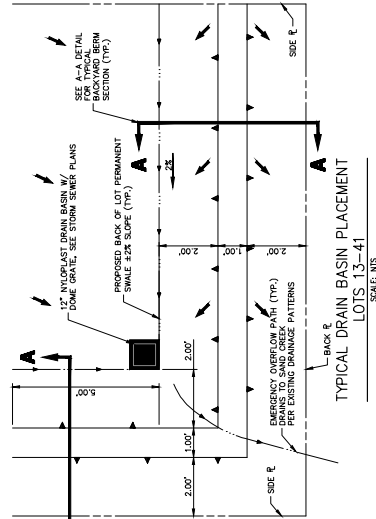
UNTIL SUCH TIME AS
THESE DRAWINGS ARE
APPROVED BY THE
APPROPRIATE REVIEWING
AGENCIES, J.R. ENGINEERING
APPROVES THEIR USE
ONLY FOR THE PURPOSES
DESIGNATED BY WRITTEN
AUTHORIZATION.

SAND FILTER X1 PROFILE
STA 0+00.00 TO 1+39.65



LEGEND

KEY	SYMBOL
CHECK DAM	(C)
CURB SODD INLET PROTECTION	(S)
CONCRETE WASHOUT AREA	(CWA)
EROSION DITCH AND DIME	(D)
TEMPORARY DIVERSION CHANNEL	(V)
EROSION CONTROL BLANKET	(ECB)
INLET PROTECTION	(IP)
OUTLET PROTECTION	(OP)
PERMANENT SEEDING	(FS)
SEEDING BASIN	(SB)
SEEDMENT CONTROL LOG	(SCL)
SILT FENCE	(SF)
STABILIZED STAGING AREA	(SSA)
STRAW BALE BARRIER	(STB)
TEMPORARY SEEDING	(TS)
VEHICLE TRACKING CONTROL	(VTC)
SILT FENCE	(C)
LIMIT OF CONSTRUCTION/DISTURBANCE	(LOC)
TEMPORARY SEDIMENT BASIN	(TSB)



NOTES

- THE EXISTING VEGETATION LOCATED ON THE PROJECT SITE SHALL BE MAINTAINED AND NOT REMOVED UNLESS NECESSARY FOR ACCESS TO THE PERMANENT BASIN. THE PERMANENT BASIN SHALL BE PROVIDED WITH THE ACCESS TRAIL ON WEST SIDE OF SAND CREEK SHALL BE MAINTAINED.
- INITIAL BASINS TO BE INSTALLED PRIOR TO CONSTRUCTION.
- INITIAL BASINS TO BE INSTALLED DURING CONSTRUCTION. THE BASINS SHALL BE INSTALLED DURING CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- THESE WILL BE NO BATCH PLANTS ON-SITE.



ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY PERSONAL SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID PLAN HAS BEEN PREPARED ACCORDING TO THE US CUSTOMARY PRACTICES AND STANDARDS FOR GRADING AND EROSION CONTROL. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREIN. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREIN.

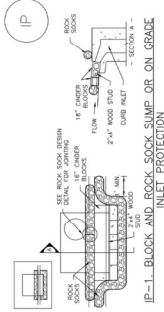


ORIGINAL SCALE: 1" = 50'

Call before you dig.

NE 1/4 SEC. 32, T.125 N. 67W. 67N. PL.

SC-6 Inlet Protection (IP)



- IP-1. BLOCK AND ROCK SOCK SUMP, OR ON GRADE INLET PROTECTION**
- ROCK SOCK AND CURB SUMP INLET PROTECTION INSTALLATION NOTES
- SEE ROCK SOCK SUMP DETAIL FOR INSTALLATION REQUIREMENTS.
 - CONCRETE "TONGUE" BLOCKS SHALL BE Laid ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB. ANOTHER AND ADJACENT TONGUES IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL. USE 1/2" SAND FILL BETWEEN TONGUES.
 - SEE ROCK SOCK SUMP DETAIL FOR INSTALLATION REQUIREMENTS.
 - AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

IP-4 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Clients Manual Volume 3

EC-8 Temporary Outlet Protection (TOP)

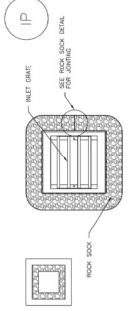
TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR INLET PROTECTION.
- SEE DETAIL FOR INLET PROTECTION.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE USED FOR SHORT-TERM PROTECTION OF THE OUTLET. IT IS NOT INTENDED TO BE USED FOR LONG-TERM PROTECTION OF THE OUTLET.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE USED FOR SHORT-TERM PROTECTION OF THE OUTLET. IT IS NOT INTENDED TO BE USED FOR LONG-TERM PROTECTION OF THE OUTLET.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE USED FOR SHORT-TERM PROTECTION OF THE OUTLET. IT IS NOT INTENDED TO BE USED FOR LONG-TERM PROTECTION OF THE OUTLET.

(DETAILS ADAPTED FROM ADAMS, COLUMBIA AND PEPPER, SERIES OF VOLUME 1, NOT AVAILABLE IN ARCHIVE)

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Clients Manual Volume 3

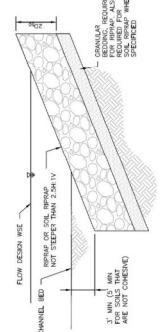
SC-6 Inlet Protection (IP)



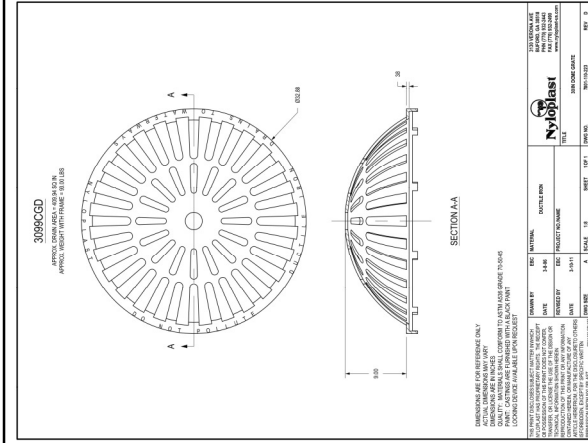
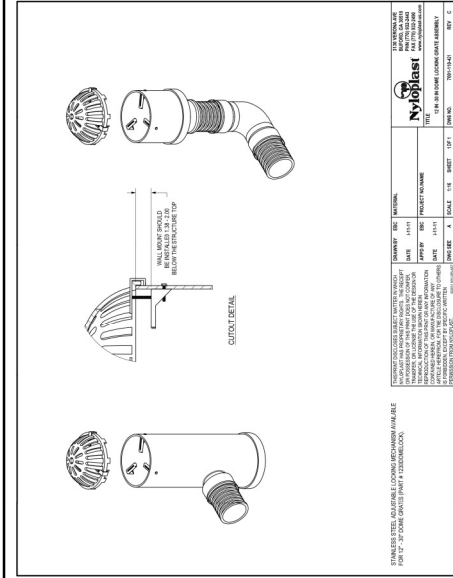
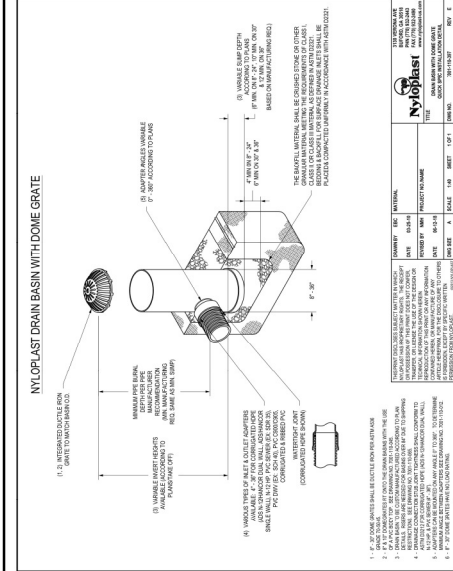
- IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION**
- ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES
- SEE ROCK SOCK SUMP DETAIL FOR INSTALLATION REQUIREMENTS.
 - CONCRETE "TONGUE" BLOCKS SHALL BE Laid ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB. ANOTHER AND ADJACENT TONGUES IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL. USE 1/2" SAND FILL BETWEEN TONGUES.
 - SEE ROCK SOCK SUMP DETAIL FOR INSTALLATION REQUIREMENTS.
 - AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

IP-4 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Clients Manual Volume 3

EC-8 Temporary Outlet Protection (TOP)

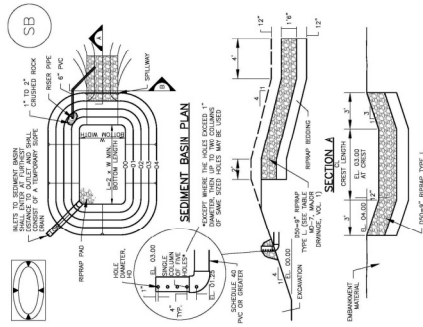


REFRUIT DESIGNATION	MIN. LAYER THICKNESS (INCHES)	MIN. LAYER WEIGHT (POUNDS)	MIN. LAYER DENSITY (PCF)
TYPE A	20 - 30	2 - 10	2
TYPE B	30 - 40	3 - 15	3
TYPE C	40 - 50	4 - 20	4
TYPE D	50 - 60	5 - 25	5
TYPE E	60 - 70	6 - 30	6
TYPE F	70 - 80	7 - 35	7
TYPE G	80 - 90	8 - 40	8
TYPE H	90 - 100	9 - 45	9
TYPE I	100 - 110	10 - 50	10
TYPE J	110 - 120	11 - 55	11
TYPE K	120 - 130	12 - 60	12
TYPE L	130 - 140	13 - 65	13
TYPE M	140 - 150	14 - 70	14
TYPE N	150 - 160	15 - 75	15
TYPE O	160 - 170	16 - 80	16
TYPE P	170 - 180	17 - 85	17
TYPE Q	180 - 190	18 - 90	18
TYPE R	190 - 200	19 - 95	19
TYPE S	200 - 210	20 - 100	20
TYPE T	210 - 220	21 - 105	21
TYPE U	220 - 230	22 - 110	22
TYPE V	230 - 240	23 - 115	23
TYPE W	240 - 250	24 - 120	24
TYPE X	250 - 260	25 - 125	25
TYPE Y	260 - 270	26 - 130	26
TYPE Z	270 - 280	27 - 135	27
TYPE AA	280 - 290	28 - 140	28
TYPE AB	290 - 300	29 - 145	29
TYPE AC	300 - 310	30 - 150	30
TYPE AD	310 - 320	31 - 155	31
TYPE AE	320 - 330	32 - 160	32
TYPE AF	330 - 340	33 - 165	33
TYPE AG	340 - 350	34 - 170	34
TYPE AH	350 - 360	35 - 175	35
TYPE AI	360 - 370	36 - 180	36
TYPE AJ	370 - 380	37 - 185	37
TYPE AK	380 - 390	38 - 190	38
TYPE AL	390 - 400	39 - 195	39
TYPE AM	400 - 410	40 - 200	40
TYPE AN	410 - 420	41 - 205	41
TYPE AO	420 - 430	42 - 210	42
TYPE AP	430 - 440	43 - 215	43
TYPE AQ	440 - 450	44 - 220	44
TYPE AR	450 - 460	45 - 225	45
TYPE AS	460 - 470	46 - 230	46
TYPE AT	470 - 480	47 - 235	47
TYPE AU	480 - 490	48 - 240	48
TYPE AV	490 - 500	49 - 245	49
TYPE AW	500 - 510	50 - 250	50
TYPE AX	510 - 520	51 - 255	51
TYPE AY	520 - 530	52 - 260	52
TYPE AZ	530 - 540	53 - 265	53
TYPE BA	540 - 550	54 - 270	54
TYPE BB	550 - 560	55 - 275	55
TYPE BC	560 - 570	56 - 280	56
TYPE BD	570 - 580	57 - 285	57
TYPE BE	580 - 590	58 - 290	58
TYPE BF	590 - 600	59 - 295	59
TYPE BG	600 - 610	60 - 300	60
TYPE BH	610 - 620	61 - 305	61
TYPE BI	620 - 630	62 - 310	62
TYPE BJ	630 - 640	63 - 315	63
TYPE BK	640 - 650	64 - 320	64
TYPE BL	650 - 660	65 - 325	65
TYPE BM	660 - 670	66 - 330	66
TYPE BN	670 - 680	67 - 335	67
TYPE BO	680 - 690	68 - 340	68
TYPE BP	690 - 700	69 - 345	69
TYPE BQ	700 - 710	70 - 350	70
TYPE BR	710 - 720	71 - 355	71
TYPE BS	720 - 730	72 - 360	72
TYPE BT	730 - 740	73 - 365	73
TYPE BU	740 - 750	74 - 370	74
TYPE BV	750 - 760	75 - 375	75
TYPE BV	760 - 770	76 - 380	76
TYPE BW	770 - 780	77 - 385	77
TYPE BX	780 - 790	78 - 390	78
TYPE BY	790 - 800	79 - 395	79
TYPE BZ	800 - 810	80 - 400	80
TYPE CA	810 - 820	81 - 405	81
TYPE CB	820 - 830	82 - 410	82
TYPE CC	830 - 840	83 - 415	83
TYPE CD	840 - 850	84 - 420	84
TYPE CE	850 - 860	85 - 425	85
TYPE CF	860 - 870	86 - 430	86
TYPE CG	870 - 880	87 - 435	87
TYPE CH	880 - 890	88 - 440	88
TYPE CI	890 - 900	89 - 445	89
TYPE CJ	900 - 910	90 - 450	90
TYPE CK	910 - 920	91 - 455	91
TYPE CL	920 - 930	92 - 460	92
TYPE CM	930 - 940	93 - 465	93
TYPE CN	940 - 950	94 - 470	94
TYPE CO	950 - 960	95 - 475	95
TYPE CP	960 - 970	96 - 480	96
TYPE CQ	970 - 980	97 - 485	97
TYPE CR	980 - 990	98 - 490	98
TYPE CS	990 - 1000	99 - 495	99
TYPE CT	1000 - 1010	100 - 500	100
TYPE CU	1010 - 1020	101 - 505	101
TYPE CV	1020 - 1030	102 - 510	102
TYPE CW	1030 - 1040	103 - 515	103
TYPE CX	1040 - 1050	104 - 520	104
TYPE CY	1050 - 1060	105 - 525	105
TYPE CZ	1060 - 1070	106 - 530	106
TYPE DA	1070 - 1080	107 - 535	107
TYPE DB	1080 - 1090	108 - 540	108
TYPE DC	1090 - 1100	109 - 545	109
TYPE DD	1100 - 1110	110 - 550	110
TYPE DE	1110 - 1120	111 - 555	111
TYPE DF	1120 - 1130	112 - 560	112
TYPE DG	1130 - 1140	113 - 565	113
TYPE DH	1140 - 1150	114 - 570	114
TYPE DI	1150 - 1160	115 - 575	115
TYPE DJ	1160 - 1170	116 - 580	116
TYPE DK	1170 - 1180	117 - 585	117
TYPE DL	1180 - 1190	118 - 590	118
TYPE DM	1190 - 1200	119 - 595	119
TYPE DN	1200 - 1210	120 - 600	120
TYPE DO	1210 - 1220	121 - 605	121
TYPE DP	1220 - 1230	122 - 610	122
TYPE DQ	1230 - 1240	123 - 615	123
TYPE DR	1240 - 1250	124 - 620	124
TYPE DS	1250 - 1260	125 - 625	125
TYPE DT	1260 - 1270	126 - 630	126
TYPE DU	1270 - 1280	127 - 635	127
TYPE DV	1280 - 1290	128 - 640	128
TYPE DW	1290 - 1300	129 - 645	129
TYPE DX	1300 - 1310	130 - 650	130
TYPE DY	1310 - 1320	131 - 655	131
TYPE DZ	1320 - 1330	132 - 660	132
TYPE EA	1330 - 1340	133 - 665	133
TYPE EB	1340 - 1350	134 - 670	134
TYPE EC	1350 - 1360	135 - 675	135
TYPE ED	1360 - 1370	136 - 680	136
TYPE EE	1370 - 1380	137 - 685	137
TYPE EF	1380 - 1390	138 - 690	138
TYPE EG	1390 - 1400	139 - 695	139
TYPE EH	1400 - 1410	140 - 700	140
TYPE EI	1410 - 1420	141 - 705	141
TYPE EJ	1420 - 1430	142 - 710	142
TYPE EK	1430 - 1440	143 - 715	143
TYPE EL	1440 - 1450	144 - 720	144
TYPE EM	1450 - 1460	145 - 725	145
TYPE EN	1460 - 1470	146 - 730	146
TYPE EO	1470 - 1480	147 - 735	147
TYPE EP	1480 - 1490	148 - 740	148
TYPE EQ	1490 - 1500	149 - 745	149
TYPE ER	1500 - 1510	150 - 750	150
TYPE ES	1510 - 1520	151 - 755	151
TYPE ET	1520 - 1530	152 - 760	152
TYPE EU	1530 - 1540	153 - 765	153
TYPE EV	1540 - 1550	154 - 770	154
TYPE EW	1550 - 1560	155 - 775	155
TYPE EX	1560 - 1570	156 - 780	156
TYPE EY	1570 - 1580	157 - 785	157
TYPE EZ	1580 - 1590	158 - 790	158
TYPE FA	1590 - 1600	159 - 795	159
TYPE FB	1600 - 1610	160 - 800	160
TYPE FC	1610 - 1620	161 - 805	161
TYPE FD	1620 - 1630	162 - 810	162
TYPE FE	1630 - 1640	163 - 815	163
TYPE FF	1640 - 1650	164 - 820	164
TYPE FG	1650 - 1660	165 - 825	165
TYPE FH	1660 - 1670	166 - 830	166
TYPE FI	1670 - 1680	167 - 835	167
TYPE FJ	1680 - 1690	168 - 840	168
TYPE FK	1690 - 1700	169 - 845	169
TYPE FL	1700 - 1710	170 - 850	170
TYPE FM	1710 - 1720	171 - 855	171
TYPE FN	1720 - 1730	172 - 860	172
TYPE FO	1730 - 1740	173 - 865	173
TYPE FP	1740 - 1750	174 - 870	174
TYPE FQ	1750 - 1760	175 - 875	175
TYPE FR	1760 - 1770	176 - 880	176
TYPE FS	1770 - 1780	177 - 885	177
TYPE FT	1780 - 1790	178 - 890	178
TYPE FU	1790 - 1800	179 - 895	179
TYPE FV	1800 - 1810	180 - 900	180
TYPE FW	1810 - 1820	181 - 905	181
TYPE FX	1820 - 1830	182 - 910	182
TYPE FY	1830 - 1840	183 - 915	183
TYPE FZ	1840 - 1850	184 - 920	184
TYPE GA	1850 - 1860	185 - 925	185
TYPE GB	1860 - 1870	186 - 930	186
TYPE GC	1870 - 1880	187 - 935	187
TYPE GD	1880 - 1890	188 - 940	188
TYPE GE	1890 - 1900	189 - 945	189
TYPE GF	1900 - 1910	190 - 950	190
TYPE GG	1910 - 1920	191 - 955	191
TYPE GH	1920 - 1930	192 - 960	192
TYPE GI	1930 - 1940	193 - 965	193
TYPE GJ	1940 - 1950	194 - 970	194
TYPE GK	1950 - 1960	195 - 975	195
TYPE GL	1960 - 1970	196 - 980	196
TYPE GM	1970 - 1980	197 - 985	197
TYPE GN	1980 - 1990	198 - 990	198
TYPE GO	1990 - 2000	199 - 995	199
TYPE GP	2000 - 2010	200 - 1000	200
TYPE GQ	2010 - 2020	201 - 1005	201
TYPE GR	2020 - 2030	202 - 1010	202
TYPE GS	2030 - 2040	203 - 1015	203
TYPE GT	2040 - 2050	204 - 1020	204
TYPE GU	2050 - 2060	205 - 1025	205
TYPE GV	2060 - 2070	206 - 1030	206
TYPE GW	2070 - 2080	207 - 1035	207
TYPE GX	2080 - 2090	208 - 1040	208
TYPE GY	2090 - 2100	209 - 1045	209
TYPE GZ	2100 - 2110	210 - 1050	210
TYPE HA	2110 - 2120	211 - 1055	211
TYPE HB	2120 - 2130	212 - 1060	212
TYPE HC	2130 - 2140	213 - 1065	213
TYPE HD	2140 - 2150	214 - 1070	214
TYPE HE	2150 - 2160	215 - 1075	215
TYPE HF	2160 - 2170	216 - 1080	216
TYPE HG	2170 - 2180	217 - 1085	217
TYPE HH	2180 - 2190	218 - 1090	218
TYPE HI	2190 - 2200	219 - 1095	219
TYPE HJ	2200 - 2210	220 - 1100	220
TYPE HK	2210 - 2220	221 - 1105	221
TYPE HL	2220 - 2230	222 - 1110	222
TYPE HM	2230 - 2240	223 - 1115	223
TYPE HN	2240 - 2250	224 - 1120	224
TYPE HO	2250 - 2260	225 - 1125	225
TYPE HP	2260 - 2270	226 - 1130	226
TYPE HQ	2270 - 2280	227 - 1135	227
TYPE HR	2280 - 2290	228 - 1140	228
TYPE HS	2290 - 2300	229 - 1145	229
TYPE HT	2300 - 2310	230 - 1150	230
TYPE HU	2310 - 2320	231 - 1155	231
TYPE HV	2320 - 2330	232 - 1160	232
TYPE HW	2330 - 2340	233 - 1165	233
TYPE HX	2340 - 2350	234 - 1170	234
TYPE HY	2350 - 2360	235 - 1175	235
TYPE HZ	2360 - 2370	236 - 1180	236
TYPE IA	2370 - 2380	237 - 1185	237
TYPE IB	2380 - 2390	238 - 1190	238
TYPE IC	2390 - 2400	239 - 1195	239
TYPE ID	2400 - 2410	240 - 1200	240
TYPE IE	2410 - 2420	241 - 1205	241
TYPE IF	2420 - 2430	242 - 1210	242
TYPE IG	2430 - 24	243 - 1215	243



Sediment Basin (SB)

SC-7



Sediment Basin (SB)

SC-7

TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN

Basin Diameter (ft.)	Basin Length (ft.)	Basin Depth (ft.)	Basin Volume (cu. ft.)	Basin Area (sq. ft.)
1	1.5	1.5	1.5	1.5
2	3.0	1.5	3.0	3.0
3	4.5	1.5	4.5	4.5
4	6.0	1.5	6.0	6.0
5	7.5	1.5	7.5	7.5
6	9.0	1.5	9.0	9.0
7	10.5	1.5	10.5	10.5
8	12.0	1.5	12.0	12.0
9	13.5	1.5	13.5	13.5
10	15.0	1.5	15.0	15.0
11	16.5	1.5	16.5	16.5
12	18.0	1.5	18.0	18.0
13	19.5	1.5	19.5	19.5
14	21.0	1.5	21.0	21.0
15	22.5	1.5	22.5	22.5

1. SEE PLAN VIEW FOR DIMENSIONS.
2. SEE SECTION A-A FOR DIMENSIONS.
3. SEE SECTION B-B FOR DIMENSIONS.
4. SEE SECTION C-C FOR DIMENSIONS.
5. SEE SECTION D-D FOR DIMENSIONS.
6. SEE SECTION E-E FOR DIMENSIONS.
7. SEE SECTION F-F FOR DIMENSIONS.
8. SEE SECTION G-G FOR DIMENSIONS.
9. SEE SECTION H-H FOR DIMENSIONS.
10. SEE SECTION I-I FOR DIMENSIONS.
11. SEE SECTION J-J FOR DIMENSIONS.
12. SEE SECTION K-K FOR DIMENSIONS.
13. SEE SECTION L-L FOR DIMENSIONS.
14. SEE SECTION M-M FOR DIMENSIONS.
15. SEE SECTION N-N FOR DIMENSIONS.

Sediment Basin (SB)

SC-7

1. SEE PLAN VIEW FOR DIMENSIONS.
2. SEE SECTION A-A FOR DIMENSIONS.
3. SEE SECTION B-B FOR DIMENSIONS.
4. SEE SECTION C-C FOR DIMENSIONS.
5. SEE SECTION D-D FOR DIMENSIONS.
6. SEE SECTION E-E FOR DIMENSIONS.
7. SEE SECTION F-F FOR DIMENSIONS.
8. SEE SECTION G-G FOR DIMENSIONS.
9. SEE SECTION H-H FOR DIMENSIONS.
10. SEE SECTION I-I FOR DIMENSIONS.
11. SEE SECTION J-J FOR DIMENSIONS.
12. SEE SECTION K-K FOR DIMENSIONS.
13. SEE SECTION L-L FOR DIMENSIONS.
14. SEE SECTION M-M FOR DIMENSIONS.
15. SEE SECTION N-N FOR DIMENSIONS.

HOMESTEAD 2 COMMON SAND	H-SCALE	N/A	NO. REVISION	BY	DATE
DETAILS	DESIGNED BY	MCS	CHECKED BY	MCS	
DATE	06/16/21				
V-SCALE	N/A				
FILTER GEC PLANS					
HOMESTEAD 2 COMMON SAND					



ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION ON BEHALF OF J.R. ENGINEERING

Know what's below.
Call before you dig.

MIKE A. BRAMLEY, P.E.
COLORADO P.E. 33174
FOR AND ON BEHALF OF J.R. ENGINEERING



SHEET 7 OF 8	JOB NO. 25188.00
--------------	------------------

bioRxiv preprint doi: <https://doi.org/10.1101/2022.04.16.494019>; this version posted April 16, 2022. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

APPENDIX D – SWMP CHECKLIST



3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: July 2019

		Applicant	EPC
1. STORMWATER MANAGEMENT PLAN			
1	Applicant (owner/designated operator), SWMP Preparer, Qualified Stormwater Manager, and Contractor Information. (On cover/title sheet)		
2	Table of Contents		
3	Site description and location to include: vicinity map with nearest street/crossroads description		
4	Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures)		
5	Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide “living maps” that can be revised in the field as conditions dictate		
6	Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed		
7	Estimates of the total site area and area to undergo disturbance; current area of disturbance must be updated on the SWMP as changes occur		
8	Soil erosion potential and impacts on discharge that includes a summary of the data used to determine soil erosion potential		
9	A description of existing vegetation at the site and percent ground cover and method used to determine ground cover		
10	Location and description of all potential pollution sources including but not limited to: disturbed and stored soils; vehicle tracking; management of contaminated soils; loading and unloading operations; outdoor storage of materials; vehicle and equipment maintenance and fueling; significant dust generating process; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.; on-site waste management; concrete truck/equipment washing; dedicated asphalt, concrete batch plants and masonry mixing stations; non-industrial waste such as trash and portable toilets		
11	Material handling to include spill prevention and response plan and procedures		
12	Spill prevention and pollution controls for dedicated batch plants		
13	Other SW pollutant control measures to include waste disposal and off-site soil tracking		
14	Location and description of any anticipated allowable non-stormwater discharge (ground water, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.)		
15	Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge		
16	Description of all stream crossings located within the project area or statement that no streams cross the project area		



3275 Akers Drive
 Colorado Springs, CO 80922
 Phone 719-520-6460
 Fax 719-520-6879
 www.elpasoco.com

EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number:

Revised: July 2019

		Applicant	EPC
17	SWMP Map to include:		
17a	construction site boundaries		
17b	flow arrows to depict stormwater flow directions		
17c	all areas of disturbance		
17d	areas of cut and fill		
17e	areas used for storage of building materials, soils (stockpiles) or wastes		
17f	location of any dedicated asphalt / concrete batch plants		
17g	location of all structural control measures		
17h	location of all non-structural control measures		
17i	springs, streams, wetlands and other surface waters, including areas that require maintenance of pre-existing vegetation within 50 feet of a receiving water		
18	Narrative description of all structural control measures to be used. Modifications to EPC standard control measures must meet or exceed County-approved details		
19	Description of all non-structural control measures to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc.		
20	Technical drawing details for all control measure installation and maintenance; custom or other jurisdiction's details used must meet or exceed EPC standards		
21	Procedure describing how the SWMP is to be revised		
22	Description of Final Stabilization and Long-term Stormwater Quality (describe nonstructural and structural measures to control SW pollutants after construction operations have been completed, including detention, water quality control measure etc.)		
23	Specification that final vegetative cover density is to be 70% of pre-disturbed levels		
24	Outline of permit holder inspection procedures to install, maintain, and effectively operate control measures to manage erosion and sediment		
25	Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site		
26	If this project relies on control measures owned or operated by another entity, a documented agreement must be included in the SWMP that identifies location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s)		
	Please note: all items above must be addressed. If not applicable, explain why, simply identifying "not applicable" will not satisfy CDPHE requirement of explanation.		
2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS			
a	Grading and Erosion Control Plan (signed)		
b	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)		



3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

EL PASO COUNTY STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: CDR-20-012



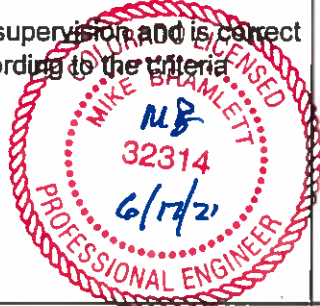
Revised: July 2019

Applicant	EPC
-----------	-----

3. APPLICANT COMMENTS

a			
b			
c			

4. CHECKLIST REVIEW CERTIFICATIONS

a	<p>Engineer of Record: The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.</p> <p> </p> <p>Engineer of Record Signature Date</p> 		
b	<p>Review Engineer: The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.</p> <p>_____ Review Engineer Date</p>		