GRADING, EROSION AND STORMWATER QUALITY CONTROL PLAN

for

WINDERMERE

N. Marksheffel Road
El Paso County, Colorado

September 2020

Updates:
1) 03/19/2021: jbc
2) 6/2/2021 jbc
3) 8/1/2021 jbc

PCD File No.:
SP-19-003

CDPS Permit Certification No:
COR412120

Prepared For:

Windsor Ridge Homes
4164 Austin Bluffs Pkwy #361
Colorado Springs, CO 80918
Contact: James Todd Stephens
(719) 200-9594

Prepared by:

Drexel, Barrell & Co.
3 S. 7th Street
Colorado Springs, CO 80905
Contact: Tim McConnell, P.E.
(719) 260-0887

Qualified Stormwater Manager:
Chavez Consulting Inc., LLC
John B. Chavez
13880 Gymkhana Rd.
Peyton, CO 80831
(719) 251 5580

Contractor:

Dwire Earth Moving

EarthX: Erosion Control

GRADING, EROSION AND STORMWATER QUALITY CONTROL PLAN
WINDERMERE

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APPENDIX

1.0 STORMWATER QUALITY STATEMENT & OBJECTIVES

Stormwater quality best management practices shall be implemented to minimize soil erosion, sedimentation, increased pollutant loads and changed water flow characteristics resulting from land disturbing activity, to the maximum extent practicable, so as to minimize pollution of receiving waters.

Per Appendix A of the Colorado Department of Health, Water Quality Control Division's (the Division) "General Permit Application for Stormwater Discharge Associated with Construction Activities", the goal of the Stormwater Management Plan (SWMP) is:

> "To identify possible pollutant sources that may contribute pollutants to stormwater, and identify Best Management Practices (BMPs) that, when implemented, will reduce or eliminate any possible water quality impacts. The SWMP must be completed and implemented at the time the project breaks ground, and revised if necessary as construction proceeds to accurately reflect the conditions and practices at the site."

This document is not intended to address training, site specific operational procedures, logistics, or other "means and methods" required to construct this project.

This document must be kept at the construction site at all times. Inspections are to be made at least every 14 days and after any precipitation event. El Paso County requires that the inspector be contacted 48 hours prior to initial and final inspections. An inspection report shall be completed with each inspection performed. The completed inspection reports shall be kept with the SWMP. The conditions of the SWMP and General Permit for Stormwater Discharges associated with the construction activity will remain in effect until final stabilization is achieved, and a notice of inactivation is sent to CDPHE Stormwater Quality Division. All pertinent records must be kept for at least 3 years from the date the site is stabilized.

Drexel, Barrell & Co. has been retained to provide civil engineering services for the design of this project. Drexel, Barrell & Co. is not responsible for implementation and maintenance of the Stormwater Management Plan.

2.0 SITE DESCRIPTION

2.1 DESCRIPTION OF CONSTRUCTION ACTIVITIES

The project involves the development of Windermere in El Paso County, CO, a single family home subdivision. The proposed development consists of approximately 52.07 acres of residential development which will consist of 202 single family lots. The entire project area of 54.9 acres will be disturbed. The current area of disturbance is required to be updated by the Contractor on the SWMP as changes occur.

The site work will include overlot grading, utility and drainage infrastructure, and roadway construction followed by single-family home construction.

2.2 EXISTING SITE CONDITIONS

The site is currently undeveloped and is 90% covered with native grass and vegetation, as determined by visual site inspection. Photographs representing vegetation density of the area prior to disturbance will be taken and maintained in the SWMP to document predisturbance vegetation. Historically, this site drains in all directions with a large hill in the southern half of the site and an existing temporary detention facility located at the northern end. There is a large roadside ditch adjacent to Marksheffel Road that routes off-site runoff to the existing 24" CMP storm culvert under Marksheffel Road. There are no stream crossings located within the project area.

2.3 ADJACENT AREAS

The site is bound on the west by Antelope Ridge Dr., on the north by the Chateau at Antelope Ridge subdivision, on the east by Marksheffel Rd., and on the south by N. Carefree Cir. All of the construction activities are to take place on the site. The surrounding areas should not be affected by the land disturbing and stabilization activities.

2.4 SOILS

From the Natural Resources Conservation Service (NRCS), the soils on the site as mapped by the Soil Conservation Service (SCS) are of the Truckton sandy loam, which is a hydrologic soil group A soil. This soil has an erosion K factor of 0.28, which indicates that it has a moderate erosion potential. Hydrologic Soil Group A soils have a high infiltration rate when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water

transmission. Potential effects of soil erosion include compaction, loss of soil structure, nutrient degradation, soil salinity and increased sediment load downstream.

2.5 AREAS AND VOLUME STATEMENT

The project site consists of approximately 54.9 acres. Unadjusted overlot earthwork volumes within the construction site are approximately 150,000 CY of cut to fill.

2.6 CONTROLS AND MEASURES DURING CONSTRUCTION

Stabilization activities are anticipated to begin in the fall/winter of 2021. A construction schedule will be prepared by the contractor prior to land disturbing activities. Installation of stabilization measures will be completed in one phase. The general sequence of major construction activities is as follows:

1. Temporary Erosion Control Measures – Temporary erosion control measures, such as silt fence and construction of vehicle tracking pads and staging area will be completed prior to any other large scale activity. The vehicle tracking pad will ensure a reduction of tracking of soil on and off the construction site. The staging area will house the materials, petroleum product storage (if any), trash dumpster, sanitary facilities and hazardous spill clean-up areas. These are all potential pollutants that are not sediment related.

2. Trash and Debris Removal – Existing trash and debris shall be removed from the site and hauled to designated receiving facility.

3. Site Clearing – The area to be disturbed for construction will be cleared and grubbed, as necessary to the perimeter of erosion control. The sequence of the areas to be cleared and grubbed are subject to the contractor's means and methods of construction of the site; however, the general plan is to work towards where the vehicle tracking pads are located in order to eliminate backtracking over areas that have already been completed.

4. Overlot Grading – Overlot grading will occur to bring the site to the proposed sub–grade elevations in paved areas, and to finished grade elevations in the

6/2/2021: utilizing pump to remove accumulated stormwater from detention area. Need to dry area to finish grading. Detail added to SWMP on site. (jbc)

landscape and detention areas. Spoils from the site will be removed from the site and hauled to a designated receiving facility or location.

5. Utility Installation – Utility installation will consist of water, sanitary sewer, electric, and telephone and natural gas service lines. Storm drain lines will also be installed. Utility locations will be obtained prior to commencement of construction activities.

6. Final Grading – The site will be brought to final elevations with the installation of the proposed paving and final blending to existing grades on the perimeter of the improvement area.

8/1/2021: utilizing low risk discharge guidance for dewatering of uncontaminated groundwater during sanitary sewer tie-in.

7. Permanent Re-vegetation – Erosion control blanket will be installed at all areas graded to a 3:1 slope and greater. Areas not paved will be re-vegetated and/or landscaped by the contractor or owner on an as-needed basis. Vegetation and stabilization of soil will aid in the trapping of sediment and reducing soil erosion.

8. Removal of Temporary BMP's – Temporary erosion control measures may be removed once the site has achieved final 70 percent of pre disturbance levels and vegetation cover is capable of reducing soil erosion. All permanent BMPs shall be cleaned and functioning before any temporary BMPs are removed.

9. Housekeeping – The best BMP for a job site is good housekeeping around the site. Routine site trash pickup and routine BMP inspection and maintenance are paramount for keeping a job site clean and tidy. All petroleum storage areas in the staging area should be checked daily for leaks. Any leaks shall be reported to the site foreman for clean up. All personnel on site for both the contractor and subcontractors should be briefed on spill cleanup and containment procedures. Employees shall also be briefed as to where the spill cleanup materials can be found if a spill should occur. The spill plan shall be produced by the general contractor for the project and remain onsite for the duration of the project. Contractor shall coordinate with the County to obtain the necessary contacts in the case that a spill occurs.

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

2.7 POTENTIAL POLLUTION SOURCES

Any substances with the potential to contaminate either the ground or ground surface water shall be cleanup up immediately following discovery, or contained until appropriate cleanup methods can be employed. Manufacturer's recommended methods for cleanup shall be followed, along with proper disposal methods. All waste and debris created by construction at the site or removed from the site shall be disposed of in accordance with all laws, regulations and ordinances of the Federal, State and local agencies. The following is a summary of potential pollution sources and their associated measures intended to minimize the risk of pollution for this project.

1) Disturbed and stored soils: Straw waddles/fiber rolls, straw bale check dams and gravel bag check dams.

2) Vehicle tracking and sediments: VTC and Street Sweeping

3) Vehicle and equipment maintenance and fueling: Spill prevention procedures.

4) Dust or particulate generation from earthmoving activities and vehicle movement: water trucks for site watering.

5) On site waste management of solid wastes (construction debris): Waste container placement, covering and disposal.

6) Worker trash and portable toilets: Container placement, covering and disposal.

7) Equipment repair or maintenance beyond normal fueling operations: Spill prevention procedures.

The following items are not anticipated to be potential pollution sources for this project:

1) Management of contaminated soils.

2) Outdoor storage of fertilizers, chemicals or potentially polluting construction material.

3) Dedicated asphalt or concrete batch plants.

2.8 NON-STORMWATER DISCHARGES

Non-stormwater discharges possibly encountered during construction may include: watering down of the site to minimize dust, construction staging area, and excess dirt storage during high winds to minimize wind erosion and water utilized in soil compaction efforts.

2.9 RECEIVING WATER

Runoff generated by the proposed project will be passed to the onsite storm sewer system and detention ponds prior to discharging into the existing storm sewer system that continues to Sand Creek to the south. The Extended Detention Basins will provide for both stormwater detention and water quality for the site.

3.0 SITE MAP

Attached as part of this plan is a Site Map (See Appendix C). The drawing identifies the following:

1) Project area boundary

2) Area used for staging area

3) Location of erosion control facilities or structures (BMP's)

4) Boundaries of 100-year floodplains (if applicable)

The following items may not be indicated on the attached drawings, but will be determined by the individual contractors prior to and during construction activities:

1) Areas used for storage of construction materials, soils, or wastes

2) Location of portable toilets and waste receptacles (required to be a minimum of 50 feet from state waters. They shall be adequately

staked and cleaned on a weekly basis. They will be inspected daily for spills).

3) Location of additional BMP's that may become necessary as work progresses

These items shall be added to the Site Map by the Contractor.

4.0 BMP's FOR STORMWATER POLLUTION PREVENTION

Best management practices (BMPs) used throughout the site shall include: surface roughening, silt fence, inlet protection, vehicle tracking control, temporary sediment basins, straw bale check dams, mulching and reseeding and concrete washout.

4.1 EROSION CONTROL – STRUCTURAL PRACTICES

A list of the Structural BMP's for erosion and sediment control implemented on the site to minimize erosion and sediment are as follows. Refer to the SWMP Drawings for installation and maintenance requirements and location for each structural BMP.

a) Concrete Washout Area (CWA): A shallow excavation with a small perimeter berm to isolate concrete truck washout operations.
b) Erosion Control Blanket (ECB): Slopes steeper than or equal to 3 (horizontal) to 1 (vertical) shall be protected with an erosion control blanket.
c) Inlet Protection (IP): Installed to filter stormwater before entering any watercourses.
d) Temporary Sediment Basin (TSB): An impoundment that captures sediment laden runoff and releases it slowly, providing prolonged settling times to capture coarse and fine grained soil particles.
e) Straw Bale Check Dams (CD): Consists of straw bales designed to form a semi-porous filter able to withstand overstopping.
f) Seeding and Mulching (SM): Temporary seeding and mulching can be used to stabilize disturbed areas that will be inactive for an extended period of time. Permanent seeding should be used to stabilize areas at final grade that will not otherwise be stabilized.

6/2/2021: pump used to remove accumulated stormwater from TSB.

8/1/2021: pump used to remove accumulated groundwater during sanitary sewer tie in; using Low Risk Guidance: pump to temp. sediment trap with no discharge.

g) Silt Fence (SF): A temporary sediment barrier constructed of woven fabric stretched across supporting posts.

h) Stabilized Staging Area (SSA): Consists of stripping the topsoil and spreading a layer of granular material in the area to be used for a trailer, parking, storage, unloading and loading.

i) Temporary Stockpile Areas (SP): Temporary stockpiles of excess excavated material and stockpiles for imported materials. Slopes shall not be steeper than 3 to 1.

j) Vehicle Tracking Control (VTC): Consists of a rock pad that is intended to help strip mud from tires prior to vehicles leaving the construction site. Installed at all entrance/exit points to the site. The number of access points shall be minimized.

k) Full-spectrum Extended Detention Basin: There are to be 2 EDB's on site, one on the north end and one in the southeast corner of the site. Each are designed to capture the flows produced by a rainfall event, then provide water quality before slowly releasing the flows back into the existing storm sewer system.

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

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

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

4.2 EROSION CONTROL – NON-STRUCTURAL PRACTICES

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

a) Seeding and mulching and landscape installation in areas that will not be hard surfaced, while minimizing the amount of vegetation to be removed during construction, leaving native vegetation in place when possible.

b) Street sweeping around the construction site will be utilized when tracking of mud occurs on paved streets. The sweeping will be required after any significant tracking has occurred; significant meaning any visible amount that cannot be completely cleaned by hand. The adjacent offsite paved drive surfaces will be cleaned at the end of each day of construction activities. Sweeping efforts will continue as necessary until construction operations are completed. Other non-structural practices may be used.

4.3 MATERIALS HANDLING & SPILL PREVENTION

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

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

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

a) Notification procedures to be used in the event of an accident. At the very least, the SWMP administrator should be notified. Depending on the nature of the spill and the material involved, the Colorado Department of Public Health

and Environment (24-hour spill reporting line (877) 518-5608), downstream water users or other agencies may also need to be informed.

b) Instructions for clean up procedures and identification of spill kit location(s).

c) Provisions for absorbents to be made available for use in fuel areas and for containers to be available for used absorbents.

d) Procedures for properly washing out concrete truck chutes and other equipment in a manner and location so that the materials and wash water cannot discharge from the site and never into a storm drain system or stream.

4.4 DEDICATED CONCRETE OR ASPHALT BATCH PLANTS

No dedicated concrete or asphalt batch plants will be used.

4.5 GROUNDWATER & STORMWATER DEWATERING

In the event that groundwater is encountered or stormwater enters an excavation and dewatering is necessary, a separate CDPHE construction discharge (dewatering) permit will be required for groundwater dewatering and shall be obtained by the SWMP administrator. During groundwater or stormwater dewatering, locations and practices to be implemented to control stormwater pollution from excavations, etc., must be noted on the SWMP. Construction dewatering cannot be discharged to surface water or to storm sewer systems without separate permit coverage. The discharge of Construction Dewatering water to the ground, under specific conditions, may be allowed by the Stormwater Construction Permit when appropriate BMP's are implemented. Refer to USDCM Volume III (UDFCD) for County acceptable means of dewatering.

5.0 TIMING SCHEDULE

The project is anticipated to begin construction in the winter/spring of 2021 and be completed by fall of 2021. The contractor shall be responsible for producing a schedule that will show at a minimum: start and completion times including site grading operations, utility construction and the removal of the temporary erosion and sediment control measures.

6.0 FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

Final stabilization shall not be considered complete until 70% of uniform vegetated cover is established on areas not to be hard-surfaced. Temporary sediment and erosion control measures listed in Section 4.0 installed prior to the construction phase will remain in place until this time. Any sediment that collects within the site's drainage system is considered unstabilized soil and must be removed prior to the site being considered finally stabilized.

At final stabilization, stormwater pollutants will be controlled by on site landscaping and by the detention and water quality facilities located at the north end of the site and southeast corner.

7.0 INSPECTION AND MAINTENANCE

A site inspection of all erosion control facilities will be conducted by the Qualified Stormwater Manager every 14 days and within 24 hours after every precipitation event or snowmelt event that causes surface erosion.

The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWMP shall be observed to ensure that they are operating correctly.

All temporary and permanent erosion and sediment control facilities shall be maintained and repaired per manufacturer's specifications to assure continued performance of their intended function. Repairs should be completed within 24 to 48 hours. Silt fences may require periodic replacement.

Based on the results of the inspection, the description of potential pollutant sources and the pollution prevention and control measures that are identified in this plan shall be revised and modified as appropriate as soon as practicable after such inspection. Modification to control measures shall be implemented in a timely manner, but in no case more than seven (7) calendar days after the inspection.

The Qualified Stormwater Manager shall be responsible for documenting inspections, maintaining records and signing the inspection reports. Uncontrolled releases of mud or 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. All signed inspection reports should be kept on site and made available to the El Paso County or CDPHE personnel upon request. Per ECM Appendix I.5, all inspections will be performed by the Qualified Stormwater Manager. The Qualified Stormwater Manager shall have documentation of their credentials (PE, certified erosion control inspector/specialist, certified in a City-approved inspection training program, etc.).

The inspection reports shall be kept with the SWMP onsite (the exact location is TBD). This document is to be viewed as a "living document" and shall be updated regularly and kept currently accurate. It is to be revised and maintained in order to evaluate and manage the ongoing stormwater quality issues at the site. The Qualified Stormwater Manager shall amend the SWMP when there is a change in design, construction, operation or maintenance of the site which would require the implementation of new or revised BMPs or if this document proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity of when BMPs are no longer necessary and are removed

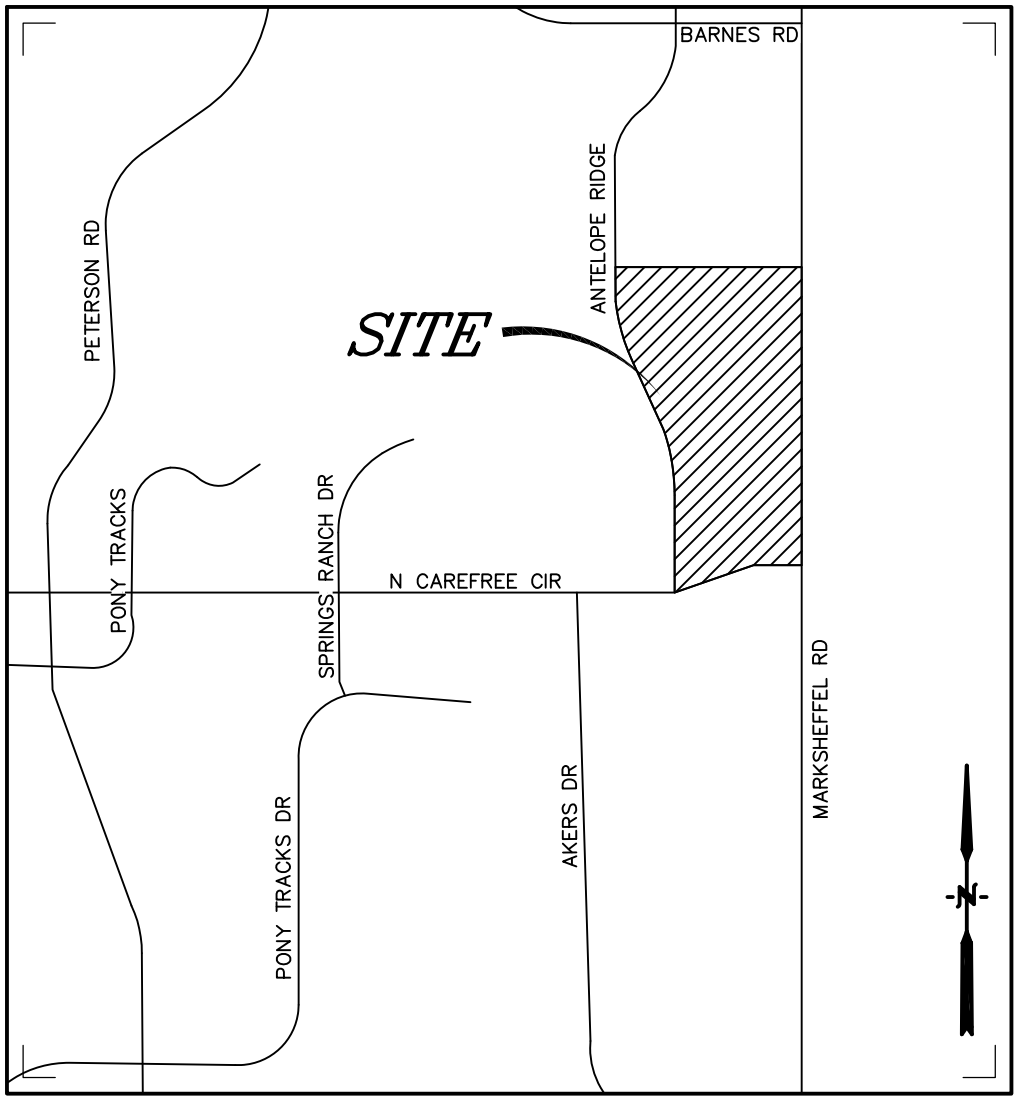
8.0 REFERENCES

[1] General Permit Application and Stormwater Management Plan Preparation Guidance for Stormwater Discharges Associated with Construction Activities. Prepared by the Colorado Department of Health, Water Quality Control Division. Revised 7/2009.

[2] City of Colorado Springs– Drainage Criteria Manual, Volume 2 “Stormwater Quality Procedures and Best Management Practices (BMPs). November 1, 2002, amended August 10, 2010.

[3] NRCS Web Soil Survey, www.websoilsurvey.nrcs.usda.gov

APPENDIX



Vicinity Map
Not to scale

WINDERMERE
COLORADO SPRINGS, CO
VICINITY MAP

Drexel, Barrell & Co.
Engineers • Surveyors

DATE:

JOB NO: 21187-00CSCV

DWG. NO. VMAP

SHEET 1 OF 1

Map Scale: 1:4,170 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 15, Oct 10, 2017

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

Date(s) aerial images were photographed: Apr 15, 2011—Jun 17, 2014

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
97	Truckton sandy loam, 3 to 9 percent slopes	A	56.4	100.0%
Totals for Area of Interest			**56.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils 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.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

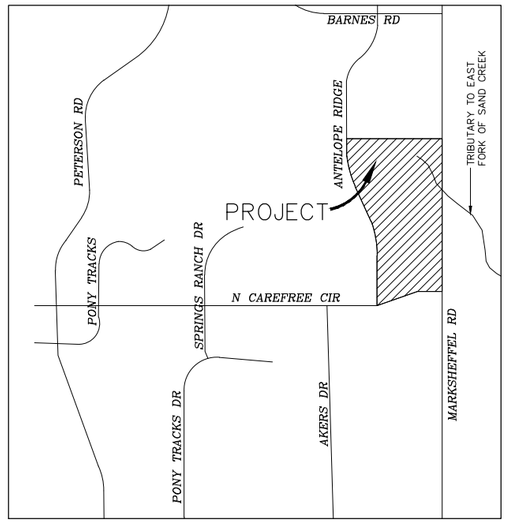
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

WINDERMERE
EROSION CONTROL AND STORMWATER QUALITY PLAN
E 1/2 OF SECTION 29,
T13S, R65W OF THE 6TH P.M.
EL PASO COUNTY, COLORADO



VICINITY MAP
NOT TO SCALE

SHEET INDEX

NOTES

1. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.
2. AT LEAST 10 DAYS PRIOR TO THE ANTICIPATED STASRT OF CNSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF THE CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

   COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
   WATER QUALITY CONTROL DIVISION
   WQCD--PERMITS
   4300 CHERRY CREEK DRIVE SOUTH
   DENVER, CO 80246-1530
   ATTN: PERMITS UNIT

DESIGN ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO CRITERIA ESTABLISHED BY THE COUNTY FOR THE DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

TIM D. MCCONNELL P.E.# 33797 — DATE

AGENCY CONTACTS

COUNTY	EL PASO COUNTY PLANNING & COMMUNITY DEVELOPMENT KARI PARSONS, PROJECT MANAGER/PLANNER II 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 (719) 520-6300	
FIRE	CIMARRON HILLS FIRE DEPARTMENT STEVE CONNER, FIRE CHIEF 1835 TUSKEGEE PL COLORADO SPRINGS, CO 80915 (719)591-0960	
WATER	CHEROKEE METROPOLITAN DISTRICT JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER 6250 PALMER PARK BLVD COLORADO SPRINGS, CO 80915 (719) 597-5080	
WASTEWATER	CHEROKEE METROPOLITAN DISTRICT JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER 6250 PALMER PARK BLVD COLORADO SPRINGS, CO 80915 (719) 597-5080	
ELECTRIC	MOUNTAIN VIEW ELECTRIC ASSOCIATION LES ULFERS 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
GAS	COLORADO SPRINGS UTILITIES TODD STURTEVANT 1521 HANCOCK EXPRESSWAY COLORADO SPRINGS, CO 80947 (719) 668-3556
TELEPHONE	CENTURY LINK PATTY MOORE (719) 636-6096 (LOCATORS) (719) 597-8418 AT&T (LOCATORS) (719) 635-3674
CABLE	COMCAST DALE STEWART 213 N. UNION BLVD COLORADO SPRINGS, CO 80909 (719) 442-4733

ESTIMATED COST OF TEMPORARY & PERMANENT BMPs INCLUDING INSTALLATION AND MAINTENANCE UNTIL FINAL STABILIZATION (FINAL & INTERIM STAGE)

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining	
SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)								
* Earthwork								*
less than 1,000; $5,300 min		CY	$ 8.00	=	$ -		$ -	*
1,000-5,000; $8,000 min		CY	$ 6.00	=	$ -		$ -	*
5,001-20,000; $30,000 min		CY	$ 5.00	=	$ -		$ -	*
20,001-50,000; $100,000 min		CY	$ 3.50	=	$ -		$ -	*
50,001-200,000; $175,000 min	140,000	CY	$ 2.50	=	$ 350,000.00		$ 350,000.00	*
greater than 200,000; $500,000 min		CY	$ 2.00	=	$ -		$ -	*
* Permanent Seeding (inc. noxious weed mgmnt.)		AC	$ 800.00	=	$ -		$ -	*
* Mulching		AC	$ 750.00	=	$ -		$ -	*
* Permanent Erosion Control Blanket		SY	$ 6.00	=	$ -		$ -	*
* Permanent Pond/BMP Construction		CY	$ 20.00	=	$ -		$ -	*
* Permanent Pond/BMP (Spillway)		EA		=	$ -		$ -	*
* Permanent Pond/BMP (Outlet Structure)		EA		=	$ -		$ -	
Safety Fence		LF	$ 3.00	=	$ -		$ -	
Temporary Erosion Control Blanket		SY	$ 3.00	=	$ -		$ -	
Vehicle Tracking Control	2	EA	$ 2,370.00	=	$ 4,740.00		$ 4,740.00	
Silt Fence	4,195	LF	$ 2.50	=	$ 10,487.50		$ 10,487.50	
Temporary Seeding	52	AC	$ 628.00	=	$ 32,656.00		$ 32,656.00	
Temporary Mulch	52	AC	$ 750.00	=	$ 39,000.00		$ 39,000.00	
Erosion Bales	75	EA	$ 25.00	=	$ 1,875.00		$ 1,875.00	
Erosion Logs/Straw Waddle		LF	$ 5.00	=	$ -		$ -	
Rock Check Dams		EA	$ 500.00	=	$ -		$ -	
Inlet Protection	3	EA	$ 167.00	=	$ 501.00		$ 501.00	
Sediment Basin	3	EA	$ 1,762.00	=	$ 5,286.00		$ 5,286.00	
Concrete Washout Basin	1	EA	$ 900.00	=	$ 900.00		$ 900.00	
				=	$ -		$ -	
[insert items not listed but part of construction plans]				=	$ -		$ -	
MAINTENANCE (35% of Construction BMPs)				=	$ 33,405.93		$ 33,405.93	
* - Subject to defect w arranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)			**Section 1 Subtotal**	=	**$478,851.43**		**$ 478,851.43**	

STRUCTURAL FILL

DURING EARTHWORK BALANCING ACROSS THE SITE, AREAS TO RECEIVE STRUCTURAL FILL SHOULD HAVE TOPSOIL, ORGANIC MATERIAL, OR DEBRIS REMOVED. LOOSE, WET SOILS, ESPECIALLY THOSE FROM NOTED DRAINAGE AREAS, SHOULD BE EXCAVATED TO DRY SOLID MATERIAL, STOCKPILED AND EVALUATED FOR SUITABILITY OF RE-USE AS STRUCTURAL FILL. IF SOIL IS FOUND TO BE UNSUITABLE AS STRUCTURAL FILL, IT MAY STILL BE SUITABLE AS BACKFILL IN NON-STRUCTURAL APPLICATIONS.

STRUCTURAL FILL COMPOSED OF ON-SITE SOILS SHOULD CONSIST OF GRANULAR, NIL TO LOW-EXPANSIVE MATERIAL. IF CLAYSTONE IS ELECTED TO BE RE-USED IT SHOULD BE THOROUGHLY PROCESSED, MOISTURE CONDITIONED AND BLENDED WITH SAND SOIL. FILL SHOULD BE SPREAD ACROSS THE SITE AND PLACED IN EVEN LOOSE LIFTS NOT EXCEEDING 10-INCHES, MOISTURE CONDITIONED TO FACILITATE COMPACTION (USUALLY WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT), AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROTOR TEST, ASTM D-698. THE MATERIALS SHOULD BE SPREAD AND COMPACTED BY MECHANICAL MEANS.

STRUCTURAL FILL PLACED ON SLOPES SHOULD BE BENCHED INTO THE SLOPE. MAXIMUM BENCH HEIGHTS SHOULD NOT EXCEED 4 FEET, AND BENCH WIDTHS SHOULD BE WIDE ENOUGH TO ACCOMMODATE COMPACTION EQUIPMENT. MATERIALS USED FOR STRUCTURAL FILL SHOULD BE APPROVED BY RMG PRIOR TO USE. STRUCTURAL FILL SHOULD NOT BE PLACED ON FROZEN SUBGRADE OR ALLOWED TO FREEZE DURING MOISTURE CONDITIONING AND PLACEMENT.

BENCHMARK

ELEVATIONS ARE BASED ON COLORADO SPRINGS UTILITIES FACILITIES INFORMATION SYSTEM (FIMS), A 2" ALUMINUM CAP STAMPED "BLT100" IN SE CORNER OF CATCH BASIN ON EAST SIDE OF ANTELOPE RIDGE DRIVE 1500'± NORTH OF NORTH CAREFREE CIR., WITH AN ELEVATION OF 6607.03 (NGVD 29).

LEGAL DESCRIPTION

THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO.

FLOODPLAIN STATEMENT

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) PANEL #08041C0543 G (DECEMBER 7, 2018) THE PROJECT SITE IS WITHIN A DESIGNATED ZONE X AREA DESCRIBED AS "AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN".

TIMING

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: FALL/WINTER 2020-SUMMER 2021

AREAS

TOTAL AREA OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED: APPROXIMATELY 54.9 ACRES

RECEIVING WATERS

SAND CREEK

SOILS

HYDROLOGIC TYPE A: TRUCKTON SANDY LOAM

VEGETATION

EXISTING SITE IS UNDEVELOPED AND COVERED WITH NATIVE GRASSES

OWNER'S STATEMENT

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JAMES TODD STEPHENS — DATE

EL PASO COUNTY

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, AND ENGINEERING CRITERIA MANUAL AS AMENDED. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEAR FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JENNIFER IRVINE, P.E. COUNTY ENGINEER — DATE

ENGINEER OR 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.

ENGINEER OF RECORD SIGNATURE — DATE

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.

REVIEW ENGINEER — DATE

COUNTY FILE NO.: SP-19-003

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719)260-0887
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:

4164 AUSTIN BLUFFS PKWY. #361
COLORADO SPRINGS, CO 80918
(719) 200-9594
CONTACT: JAMES TODD STEVENS

WINDERMERE
PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	9/15/20

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

COVER SHEET

PROJECT NO. 21187-01CSCV
DRAWING NO.

EC01

SHEET: 1 OF 6

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT MAY CONTRIBUTE POLLUTANTS TO STORMWATER. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES IS NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN PRIOR TO IMPLEMENTATION.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE STABILIZED.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLAN DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE HYDROLOGY OR HYDRAULICS OF A PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE, UNLESS INFEASIBLE.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUT SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY.

14. DEWATERING OPERATIONS: UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT MAY NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF.

15. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.

16. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMP'S MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

17. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

19. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

22. BULK STORAGE OF PETROLEUM PRODUCTS OR OTHER LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL HAVE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCH FLOW LINE.

24. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY _____ AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

COUNTY FILE NO.: SP-19-003

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719)260-0887
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:

4164 AUSTIN BLUFFS PKWY. #361
COLORADO SPRINGS, CO 80918
(719) 200-9594
CONTACT: JAMES TODD STEVENS

WINDERMERE
PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	9/15/20

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

NOTES

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC02

SWMP Map Updates:
4/1/2021 (initial): jbc
4/5/2021 (initial post precon); jbc
6/2/2021 (dewater) jbc
8/1/2021 (groundwater dewater); jbc

SF in use 4/6/21: jbc

Strawbales and fabric slope protection in use 5/15/2021; jbc
Extended south 9/8/2021; jbc

Temp sed. Trap in use; 6/15/2021; jbc

Inlet protection in use 4/6/2021; jbc

Groundwater dewatering (pump and TST) in use 8/1/2021;
Removed 8/9/2021; jbc

Silt fence in use 4/6/2021; jbc

I/P removed 7/26/2021; jbc

Pump with filter bag in use (intermittent) 6/2/2021; jbc

Staging area in use 4/5/2021; jbc

SF in use 4/6/21: jbc
Center portion removed for sidewalk grading; 9/3/2021; jbc

TSB in use 4/5/2021; jbc

VTC in use 4/6/21: jbc

SF with "J" hooks in use 4/6/21: jbc
Removed "j" hooks 6/2/2021; jbc

Silt fence in use 6/2/2021; jbc

IP in use 4/6/21: jbc
Removed 7/26/2021; jbc

NOTES:
1. WASTE DISPOSAL BIN LOCATIONS ARE TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
2. ONSITE LOCATION OF THE SWMP IS TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
3. THE NEED FOR DEWATERING IS NOT ANTICIPATED. IN THE EVENT THAT DEWATERING BECOMES NECESSARY THE CONTRACTOR, WITH INPUT FROM THE COUNTY STORMWATER INSPECTOR, WILL DESIGN THE LOCATIONS OF DIVERSION, PUMP & DISCHARGES.

PROPOSED INTERMEDIATE CONTOUR 5522
PROPOSED INDEX CONTOUR 5520
EX. INTERMEDIATE CONTOUR 5364
EX. INDEX CONTOUR 5365
EX. SPOT ELEVATIONS ..... × 45.34
DIRECTION OF FLOW .....
100 YEAR DETENTION POND OVERFLOW 100YR
HIGH POINT ..... HP
LOW POINT ..... LP
PROPOSED INLET .....
PROPOSED MANHOLE .....
PROJECT BOUNDARY .....
LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY .....
CUT/FILL LINE ..... CUT / FILL

FINAL SEEDING/MULCHING (SEE DETAIL SHEET 4) ..... SM
FINAL STOCKPILE (SEE DETAIL SHEET 4) ..... SP
FINAL INLET PROTECTION (SEE DETAIL SHEET 3) ..... IP
FINAL SILT FENCE (SEE DETAIL SHEET 4) ..... SF

NOTE:
FIBER ROLL EROSION LOG CAN BE UTILIZED AS AN ALTERNATIVE TO SILT FENCING OR STRAW BALES. SEE CDOT STANDARD PLAN M-208-1 DETAIL ON SHEET 8.

FINAL CONCRETE WASHOUT AREA (SEE DETAIL SHEET 4) ..... CWA
FINAL VEHICLE TRACKING CONTROL (SEE DETAIL SHEET 3) ..... VTC
FINAL STRAW BALE CHECK DAM (SEE DETAIL SHEET 3) ..... CD
FINAL STABILIZED STAGING AREA (SEE DETAIL SHEET 4) ..... SSA
FINAL TEMPORARY SEDIMENT BASIN (SEE DETAIL SHEET 5) ..... TSB

Control Measure Color Coding:
- In Use
- Requested
- Stabilized
- Lot Sold

811 Know what's **below.** **Call** before you dig.
CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.: SP-19-003

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
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WINDERMERE
PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	9/15/20

DESIGNED BY:	GES
DRAWN BY:	GES
CHECKED BY:	TDM
FILE NAME:	21187-01EC1

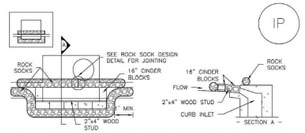
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: 1" = 100'
VERTICAL: N/A

PRELIMINARY EROSION CONTROL PLAN

PROJECT NO. 21187-01CSCV
DRAWING NO.
EC03

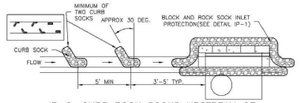
SHEET: 3 OF 6



IP-1, BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

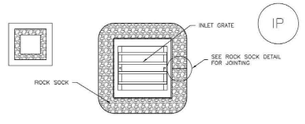
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2, CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

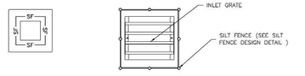
CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.



IP-3, ROCK SOCK SUMP/AREA INLET PROTECTION

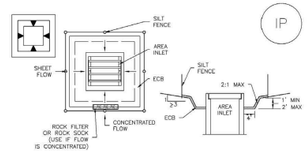
ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-4, SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

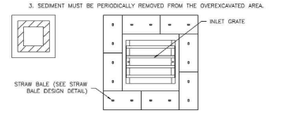
1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-5, OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

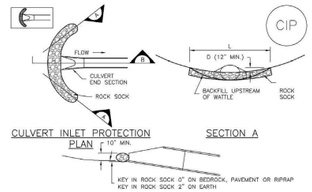
1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



IP-6, STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.



CIP-1, CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CULVERT INLET PROTECTION.
2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE ROCK SOCK.
5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF INLET PROTECTION.
   –TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

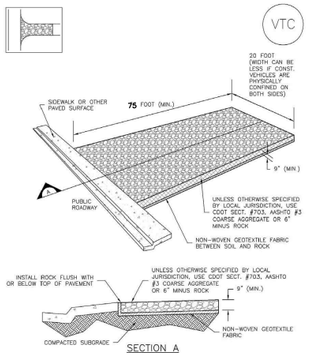
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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

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

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



VTC–1, AGGREGATE VEHICLE TRACKING CONTROL

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

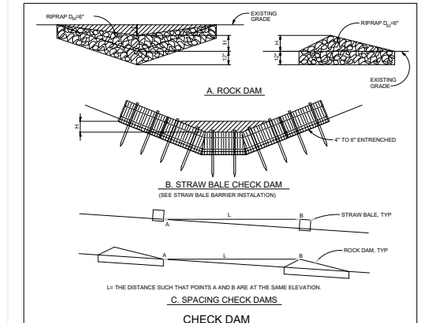
1. SEE PLAN VIEW FOR
   –LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S)
   –TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

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

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



CHECK DAM

NTS

CHECK DAM NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SSB-2.
2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs Stormwater Quality

CD

Figure CD-1
Check Dam
Construction Detail and Maintenance Requirements

3-20

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).
2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").
4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.
5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.
5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL, DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, 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.

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WINDERMERE
PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	9/15/20

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187–01ECDT

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

EROSION CONTROL DETAILS

PROJECT NO. 21187–01CSCV

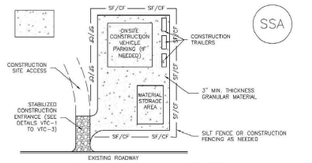
DRAWING NO.

EC04

SHEET: 4 OF 6

811 Know what's below. Call before you dig.
CALL 2–BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.: SP–19–003



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

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

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

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

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

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

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA MAINTENANCE NOTES

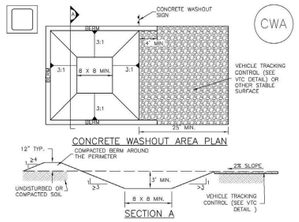
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. 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)



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

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

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

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

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

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

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

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

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

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

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

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

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

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

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

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

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

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

SF-1. SILT FENCE

SILT FENCE INSTALLATION NOTES

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

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

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

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

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

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

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

SILT FENCE MAINTENANCE NOTES

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

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

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

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

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

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

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

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

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

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; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS MAY BE SUITABLE. SILT FENCE MAY NOT BE THE MOST EFFECTIVE OR SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).

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.

STOCKPILE PROTECTION MAINTENANCE NOTES

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

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

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

STOCKPILE PROTECTION MAINTENANCE NOTES

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.

TEMPORARY SEEDING NOTES

1. SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER OR LIME.

2. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.

3. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1 AND 1 INCH FOR SLOPES STEEPER THAN 2:1.

4. ANNUAL GRASSES LISTED IN THE TABLE BELOW ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.

5. THE TABLE BELOW ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.

6. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.

7. ALL SEEDED AREAS ARE TO BE MULCHED.

8. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED-AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM.

2. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL.

3. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS PER ACRE.

4. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES) OR WITH A TACKIFIER.

5. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.

2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDED.

SEEDING PLAN

NATIVE SEEDING MIX

SOIL PREPARATION, FERTILIZER, SEEDING, MULCHING AND MULCH TACKIFIER WILL BE REQUIRED FOR DISTURBED AREAS EXCLUDING THE RIGHT-OF-WAYS.

THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	SCIENTIFIC NAME	LBS PLS/ACRE
SAND BLUESTEM V. ELIDA	ANDROPOGON HALLII	2.0
WESTERN WHEATGRASS V. ARRIBA	PASCOPYRUM SMITHII	7.0
SIDEOATS GRAMA V. VAUGHN	BOUTELOUA CURTIPENDULA	4.0
GALLETA V. VIVA (CARYOPSIS)	HILARIA JAMESII	1.0
LITTLE BLUESTEM V. PASTURA	SCHIZACHYRIUM SCOPARIUM	3.0
PRARIE SANDREED V. GASHEN	CALAMOVILFA LONGIFOLIA	2.0
SWITCHGRASS V. NEBR 28	PANICUM VIRGATUM	1.0
BLANKETFLOWER	GAILLARDIA ARISTATA	1.0
PRARIE CONEFLOWER	RATIBIDA COLUMINIFERA	0.5
BLUE FLAX	LINUM LEWISII	1.0
OATS	AVENA SATIVA	3.0
WINTER WHEAT	TRITICUM AESTIVUM	3.0
TOTAL/POUNDS/ACRE		28.5

FERTILIZER	RATE PER ACRE
NITROGEN	27
PHOSPHORUS (P205)	69

SEEDING APPLICATION: DRILL SEED 0.25"-0.5" INTO TOPSOIL. AREA NOT ACCESSIBLE TO A DRILL SEEDER AND SLOPES STEEPER THAN 2:1 SHALL BE HAND BROADCAST AT DOUBLE THE ABOVE SEED RATE AND RAKED AT 1/4 TO 1/2 INTO THE TOPSOIL.

MULCHING APPLICATION: 1 1/2 TONS CERTIFIED WEED FREE NATIVE HAY PER ACRE MECHANICALLY CRIMED IN TOPSOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER.

811 Know what's **below.** **Call** before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

COUNTY FILE NO.: SP-19-003

PREPARED BY:

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CLIENT:

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WINDERMERE
PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	9/15/20

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECDT

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

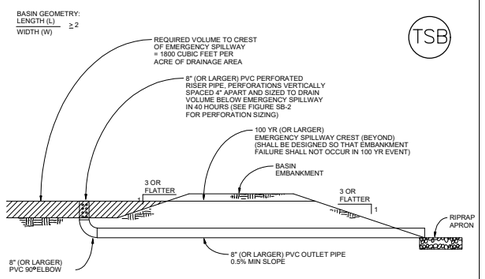
EROSION CONTROL DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC05

SHEET: 5 OF 6



SEDIMENT BASIN
NTS

SEDMENT BASIN NOTES

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.

2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.

3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.

4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BAFFLES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.

5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.

3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure SB-1 Sediment Basin Construction Detail and Maintenance Requirements

Required Area per Row (in^2)

Design Volume (acre-ft)	Depth at Outlet (ft)								
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
	2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
	1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
	0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
	0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
	0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17
	0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09
	0.06	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05
	0.04	0.30	0.15	0.10	0.08	0.06	0.05	0.04	0.03
	0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02
	0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

TABLE SB-1

Circular Perforation Sizing

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in^2)		
		n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
n = Number of columns of perforations				
Minimum steel plate thickness		1/4"	5/16"	3/8"

TABLE SB-2

City of Colorado Springs Stormwater Quality	Figure SB-2 Outlet Sizing Application Techniques and Maintenance Requirements

Know what's **below.**
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COUNTY FILE NO.: SP-19-003

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WINDERMERE PRELIMINARY PLAN
N. MARKSHEFFEL ROAD
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DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

EROSION CONTROL DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC06

Description

The BMPs selected for construction dewatering vary depending on site-specific features such as soils, topography, anticipated discharge quantities, and discharge location. Dewatering typically involves pumping water from an inundated area to a BMP, and then downstream to a receiving waterway, sediment basin, or well-vegetated area. Dewatering typically involves use of several BMPs in sequence.

Photograph DW-1. A relatively small dewatering operation using straw bales and a dewatering bag.

Appropriate Uses

Dewatering operations are used when an area of the construction site needs to be dewatered as the result of a large storm event, groundwater, or existing ponding conditions. This can occur during deep excavation, utility trenching, and wetland or pond excavation.

Photograph DW-2. Dewatering bags used for a relatively large dewatering operation.

Design and Installation

Dewatering techniques will vary depending on site conditions. However, all dewatering discharges must be treated to remove sediment before discharging from the construction site. Discharging water into a sediment trap or basin is an acceptable treatment option. Water may also be treated using a dewatering filter bag, and a series of straw bales or sediment logs. If these previous options are not feasible due to space or the ability to passively treat the discharge to remove sediment, then a settling tank or an active treatment system may need to be utilized. Settling tanks are manufactured tanks with a series of baffles to promote settling. Flocculants can also be added to the tank to induce more rapid settling. This is an approach sometimes used on highly urbanized construction sites. Contact the state agency for special requirements prior to using flocculents and land application techniques.

Some commonly used methods to handle the pumped water without surface discharge include land application to vegetated areas through a perforated discharge hose (i.e., the "sprinkler method") or dispersal from a water truck for dust control.

Dewatering Operations	
Functions	
Erosion Control	Moderate
Sediment Control	Yes
Site/Material Management	Yes

Dewatering discharges to non-paved areas must minimize the potential for scour at the discharge point either using a velocity dissipation device or dewatering filter bag.

Design Details are provided for these types of dewatering situations:

DW-1. Dewatering for Pond Already Filled with Water

DW-2 Dewatering Sump for Submersed Pump

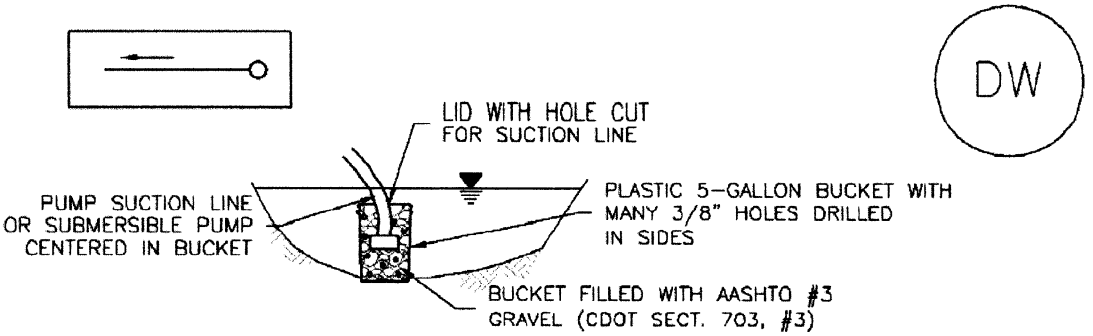
DW-3 Sump Discharge Settling Basin

DW-4 Dewatering Filter Bag

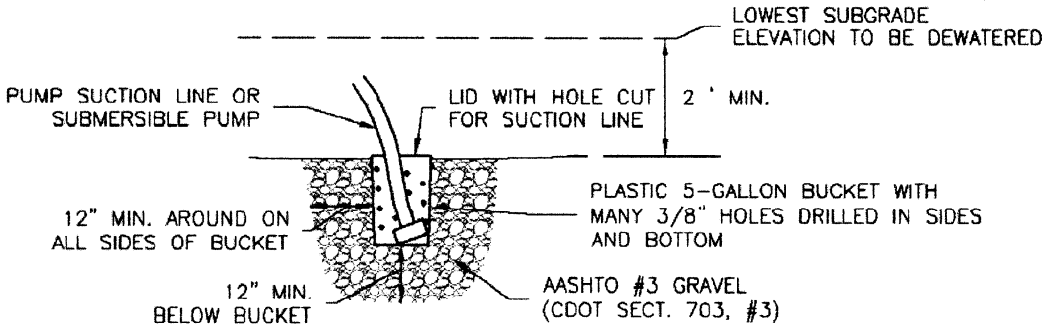
Maintenance and Removal

When a sediment basin or trap is used to enable settling of sediment from construction dewatering discharges, inspect the basin for sediment accumulation. Remove sediment prior to the basin or trap reaching half full. Inspect treatment facilities prior to any dewatering activity. If using a sediment control practice such as a sediment trap or basin, complete all maintenance requirements as described in the fact sheets prior to dewatering.

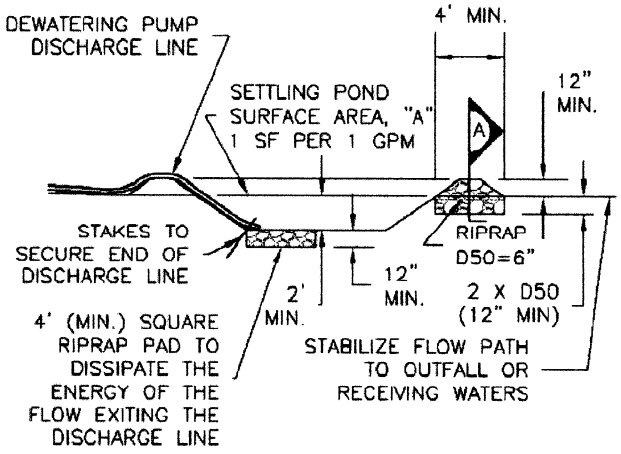
Properly dispose of used dewatering bags, as well as sediment removed from the dewatering BMPs. Depending on the size of the dewatering operation, it may also be necessary to revegetate or otherwise stabilize the area where the dewatering operation was occurring.



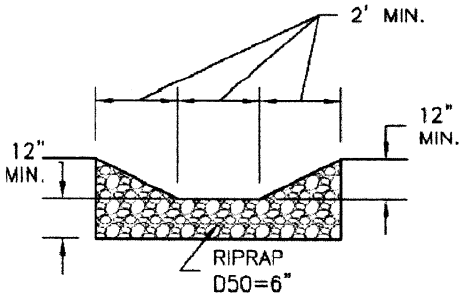
DW-1. DEWATERING POND ALREADY FILLED WITH WATER



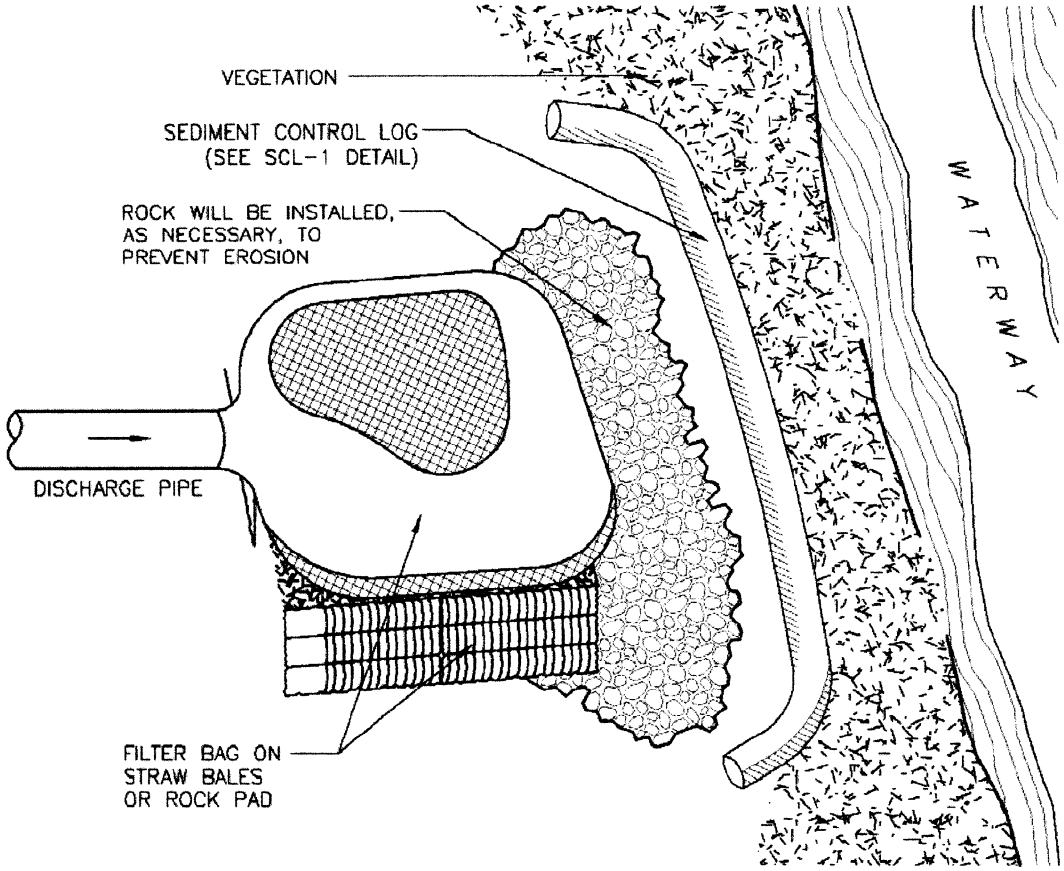
DW-2. DEWATERING SUMP FOR SUBMERSED PUMP



DW-3. SUMP DISCHARGE SETTLING BASIN



SETTLING BASIN SECTION A



DW-4. DEWATERING FILTER BAG

DEWATERING INSTALLATION NOTES

1. SEE PLAN VIEW FOR;
   -LOCATION OF DEWATERING EQUIPMENT.
   -TYPE OF DEWATERING OPERATION (DW-1 TO DW-4).

2. THE OWNER OR CONTRACTOR SHALL OBTAIN A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT FROM THE STATE PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT.

3. THE OWNER OR OPERATOR SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2-FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACK-FILLED TO FINAL GRADE.

DEWATERING INSTALLATION NOTES

4. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE, WELL POINTS, OR OTHER MEANS APPROVED BY THE LOCAL JURISDICTION TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL PROVIDE A TEMPORARY SEDIMENT BASIN OR FILTRATION BMP TO REDUCE SEDIMENT TO ALLOWABLE LEVELS PRIOR TO RELEASE OFF SITE OR TO A RECEIVING WATER. A SEDIMENT BASIN MAY BE USED IN LIEU OF SUMP DISCHARGE SETTLING BASIN SHOWN ABOVE IF A 4-FOOT-SQUARE RIPRAP PAD IS PLACED AT THE DISCHARGE POINT AND THE DISCHARGE END OF THE LINE IS STAKED IN PLACE TO PREVENT MOVEMENT OF THE LINE.

DEWATERING MAINTENANCE NOTES

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

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

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

4. DEWATERING BMPs ARE REQUIRED IN ADDITION TO ALL OTHER PERMIT REQUIREMENTS.

5. TEMPORARY SETTLING BASINS SHALL BE REMOVED WHEN NO LONGER NEEDED FOR DEWATERING OPERATIONS. ANY DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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)

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

Facility Name		Permittee	
Date of Inspection		Weather Conditions	
Permit Certification #		Disturbed Acreage	
Phase of Construction		Inspector Title	
Inspector Name			

	YES	NO
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)	☐	☐

INSPECTION FREQUENCY	
Check the box that describes the minimum inspection frequency utilized when conducting each inspection	
At least one inspection every 7 calendar days	☐
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	☐
• This is this a post-storm event inspection. Event Date: _____	☐
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	☐
• Post-storm inspections at temporarily idle sites	☐
• Inspections at completed sites/area	☐
• Winter conditions exclusion	☐

	YES	NO
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	☐	☐

INSPECTION REQUIREMENTS*
i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications
ii. Determine if there are new potential sources of pollutants
iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges
iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action
*Use the attached **Control Measures Requiring Routine Maintenance** and **Inadequate Control Measures Requiring Corrective Action** forms to document results of this assessment that trigger either maintenance or corrective actions

AREAS TO BE INSPECTED

Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?

	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions **Inadequate Control Measures Requiring Corrective Action** form
Construction site perimeter	☐	☐	
All disturbed areas	☐	☐	
Designated haul routes	☐	☐	
Material and waste storage areas exposed to precipitation	☐	☐	
Locations where stormwater has the potential to discharge offsite	☐	☐	
Locations where vehicles exit the site	☐	☐	
Other: _____	☐	☐	

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

Definition: Any control measure that is still operating in accordance with its design and the requirements of the permit, but requires maintenance to prevent a breach of the control measure. These items are not subject to the corrective action requirements as specified in Part I.B.1.c of the permit.

Are there control measures requiring maintenance?	NO	YES	
	☐	☐	If "YES" document below

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

Definition: Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. This includes control measures that have not been implemented for pollutant sources. If it is infeasible to install or repair the control measure immediately after discovering the deficiency the reason must be documented and a schedule included to return the control measure to effective operating condition as possible.

	NO	YES	
Are there inadequate control measures requiring corrective action?	☐	☐	If "YES" document below

	NO	YES	
Are there additional control measures needed that were not in place at the time of inspection?	☐	☐	If "YES" document below

Date Discovered	Location	Description of Inadequate Control Measure	Description of Corrective Action	Was deficiency corrected when discovered? YES/NO if "NO" provide reason and schedule to correct	Date Corrected

REPORTING REQUIREMENTS

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit

a. Endangerment to Health or the Environment

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

This category would primarily result from the discharge of pollutants in violation of the permit

b. Numeric Effluent Limit Violations

- o Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- o Daily maximum violations (See Part II.L.6.d of the Permit)

Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	☐	☐	If "YES" document below

Date and Time of Incident	Location	Description of Noncompliance	Description of Corrective Action	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification *

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

Name of Qualified Stormwater Manager	Title of Qualified Stormwater Manager
Signature of Qualified Stormwater Manager	Date

Notes/Comments