EROSION CONTROL AND STORMWATER MANAGEMENT PLAN FOR HANNAH RIDGE AT FEATHERGRASS FILING NO. 4

Prepared for:
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Job no. 1116.04

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EROSION & STORMWATER QUALITY CONTROL PLAN FOR HANNAH RIDGE AT FEATHERGRASS FILING NO. 4

COLORADO DISCHARGE PERMIT SYSTEM STATEMENT (CDPS)/ EROSION AND STORMWATER QUALITY CONTROL PLAN (ESQCP)

Site Inspector

The following Erosion and Stormwater Quality Control Plan (ESQCP) is a detailed account of the requirements of the City of Colorado Springs Drainage Criteria Manual, Volume 2 – Stormwater Quality Policies, Procedures and Best Management Practices. The main objective of this plan is to help mitigate the increased soil erosion and subsequent deposition of sediment off-site and other potential stormwater quality impacts during the period of construction from start of earth disturbance until final landscaping and other potential permanent stormwater quality measures are effectively in place.

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

This report is also proposed to meet all requirements of the Colorado Discharge Permit System for Construction Activity. If any discrepancies between this report and Volume 2 exist, the City Manual will prevail.

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EROSION & STORMWATER QUALITY CONTROL PLAN FOR HANNAH RIDGE AT FEATHERGRASS FILING NO. 4

SITE DESCRIPTION

The proposed Hannah Ridge development is located in the south one-half of Section 32, Township 13 South, Range 65 west of the 6th p.m. and the northeast one-quarter of Section 5, Township 14 South, Range 65 West of the 6th p.m., in El Paso County, Colorado. The project site is on Constitution Avenue, west of Marksheffel Road and east of the Old Rock Island Railroad right of way. The majority of the site is located on the north side of Constitution Avenue with a minor portion on the south side of Constitution Avenue, adjacent to Marksheffel Road. A portion of the land was previously platted as Akers-Acres Subdivision Filing No. 1.

The property is located in the south one-half of Section 32, Township 13 South, and in the northeast quarter of Section 5, Township 5 South Range 65 West of the 6th Principal Meridian, in County of El Paso, State of Colorado. The project site is shown on the Vicinity Map in the Appendix of this report.

No wetlands, springs, landscape irrigation return flows or construction dewatering is anticipated on this site. Should any of the above items occur unexpectedly, BMPs shall be implemented immediately. The local regulatory agency shall be notified for approval of the BMPs and methods.

- **RECEIVING WATERS**

Name of Receiving Water(s)	Sand Creek east fork
Size/Type/Location of Outfall(s)	Existing Concrete box culvert at Constitution Ave.
Discuss discharge connection to Municipal system (include system name, location, and ultimate receiving water(s):	Site runoff to be conveyed in existing channel north of Constitution Ave then discharged into existing box culvert

- **PROPOSED CONSTRUCTION ACTIVITY**

  Proposed construction activities within this project include overlot grading to of the project site, roadway infrastructure and utility infrastructure.

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

  Proposed construction activities within this project include overlot grading, installation of wastewater mainline, storm sewer pipe, water mainline, curb & gutter, asphalt, dry utilities (gas/electric/telecom) as

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well as future home building construction. Sequence of activities will be based upon site contractor timing and scheduling. Upon site contractor selection, contractor to include sequence of activities schedule in the section provided in the Appendix of this report. A standard sequence of events typically includes the following, as applicable:

1) Install perimeter, interior & exterior BMPs
2) Clear and grub site
3) Rough overlot grading
4) Excavation & installation of utilities
5) Building construction
6) Paving, curb & gutter, sidewalk, landscaping.

- **EROSION AND SEDIMENT CONTROL**

Erosion control measures shall be implemented in a manner that will protect properties and public facilities from the adverse effects of erosion and sedimentation as a result of construction and earthwork activities. In order to prevent a net increase of sediment load, Best Management Practices will be implemented during the construction life of this project. A silt fence will be built around the perimeter of the disturbed areas. All roads will be inspected to ensure that sediment from on-site construction activity is not being discharged with the stormwater. Roadways shall be swept as needed for controlling tracking of mud onto public roadways. Vehicle tracking control pads will aid in minimizing soil tracking onto roadways. All disturbed areas, not sodded, will be reseeded with a native seed mix and watered until a mature stand is established. All areas disturbed will be protected with silt fence, diversion swales and temporary sediment traps until such time as the site has been re-vegetated. Vegetation and vegetated buffers shall be preserved as much as possible. Wherever feasible, vegetated buffers shall be maintained free from vehicle/equipment parking, storage, stockpiles, or other impacts.

- **DEVELOPMENT AREA**

Total Site Area	10.12	Acres
Site area to be disturbed	10.12	Acres
Percent disturbance	100	%

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- **SOILS INFORMATION**

The average soil condition reflects Hydrologic Group "A" and "B" (Blakeland, Blendon, Truckton sandy loam) as determined by the "Soil Survey of El Paso County Area", prepared by the Soil Conservation Service. Based upon the current proposed development of this site, the following runoff coefficients would be realized:

Existing site runoff coefficient =	=___0.25_____
Developed site runoff coefficient	=0.8/.35 lots & streets/ landscaped &seeded areas

- **EXISTING SITE CONDITIONS**

The site is located within the Sand Creek Drainage Basin. Currently, the majority of this site drains to the center of the site in a southerly direction. Stormwater drains to the south across this site and is conveyed to the east along existing Constitution Avenue. An existing concrete box culvert under Constitution Avenue will conveys the stormwater to the south along the historic drainage path.

This site is currently 90 % vegetated with native grasses and has existing slopes ranging from approximately 2% to 30% percent. The site was previously disturbed.

There are no areas designated as wetlands within the development limits for this report.

SITE MAP

Included in the appendix of this report is the approved overlot grading plan for the subject property which will serve as the SWMP site map. This document contains site specific grading and erosion control BMP measures as required and approved by the El Paso County Engineering division. Limits of disturbance, areas of cuts/fills, proposed stockpile areas, areas used for storage of materials, equipment, soil, or waste, batch plants, minimum and maximum cut/fill slopes, existing limits of significant vegetation, locations of springs, streams, and/or wetlands, and existing facilities (including but not limited to: detention/drainage facilities, structures, retaining walls, gas main, water main, wastewater main, electric and telecom vaults, fences, sidewalks, trails, curbs and streets) will be

represented on this plan as applicable. The site map will depict locations of specific interim and ultimate stormwater management BMPs throughout the lifetime of the project. Erosion control cost assurances must be posted to City Engineering in the amount listed on the Title Page of the overlot grading plan prior to approval of the overlot grading plan. The site map/overlot grading plan shall be amended to include any additional interim or phased BMPs over and above measures included on the site map, as required by contractor's construction schedule. All construction BMP details will be included in the appendix of this report. Detail sheets include installation and maintenance requirements. Also reference "Drainage Criteria Manual, Volume 2 Stormwater Quality Policies, Procedure, and Best Management Practices" for additional information and guidance regarding construction BMPs.

STORMWATER MANAGEMENT

- **SWMP ADMINISTRATOR**

  The SWMP Administrator can be an individual(s), position, or title – this entity is responsible for developing, implementing, maintaining, and revising the SWMP. The Administrator is the contact for all SWMP related issues and is the entity responsible for its accuracy, completeness, and implementation. Therefore, the SWMP Administrator should be a person with authority to adequately manage and direct day to day stormwater quality management activities on the subject site. Reference the Appendix of this report for the SWMP permit application which names the individual/entity applying for the permit and naming the Administrator of the SWMP.

- **POTENTIAL POLLUTANT SOURCES**

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

  - Disturbed and stored soils
  - Vehicle tracking of sediments
  - Management of contaminated soils
  - Loading and unloading operations
  - Outdoor storage activities (building materials, fertilizers, chemicals, etc.)
  - Vehicle and equipment maintenance and fueling
  - Significant dust or particulate generating processes
  - Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.

- On-site waste management practices (waste piles, liquid wastes, dumpsters)
- Concrete truck/equipment washing, including the concrete truck chute associated fixtures and equipment
- Dedicated asphalt and concrete batch plans
- Non-industrial waste sources such as worker trash and portable toilets
- Other areas or procedures where potential spills can occur.

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

- **BMPS FOR POLLUTANT PREVENTION**

The following are common practices to mitigate potential pollutants:

- Wind erosion shall be controlled bye sprinkling site roadways and/or temporary stabilizing stockpiles. Each dump truck hauling material from the site will be required to be covered with a tarpaulin.
- Sanitary facilities shall be placed at a minimum of 10' from any curbline and 50' from any inlet. If not feasible for the project, use of a secondary containment shall be implemented.
- Equipment fueling and Maintenance Services – a designated fueling area will be established to contain any spill resulting from fueling, maintenance, or repair of equipment. Contractors will be responsible for containment, cleanup, and disposal of any leak or spill and any costs associated with the cleanup and disposal.
- Chemical products shall be protected from precipitation, free from ground contact, and stored properly to prevent damage from equipment or vehicles.
- Material stockpiles (soils, soil amendments, debris/trash piles) – All construction trash and debris will be deposited in the dumpster.
- Sediment and Migration of Sediment – Sweeping operations will take place as needed to keep roadways maintained. The perimeter of the site will be evaluated for any potential impact resulting from trucking operations or sediment migration from the site. BMP devices will be placed to protect storm system inlets should any roadway tracking or sediment migration occur.
- Snow removal and/or stockpiling will be considered prior to placement at the site. Snow stockpiles must be kept away from any stormwater conveyance system (i.e., inlets, ponds, outfall locations, roadway surfaces, etc.).

- **BMP SELECTION**

Selection of the appropriate BMP will limit the source of the pollutant. Guidance for the selection process can be found by referencing the City of Colorado Springs "Drainage Criteria Manual Volume 2".

During grading and construction activity for the subject site, silt fence will be installed along the perimeter of the site as well as at the limits of grading within the project. Check dams will be installed along all permanent and temporary diversion swales to minimize erosion in areas of concentrated stormwater. Temporary diversion swales will be installed to a minimum of 1% slope to divert stormwater to several proposed sediment basins intended to collect stormwater and filter the sediment before conveyance into the proposed storm systems. Inlet protection will be installed at all proposed and adjacent inlets to ensure no downstream pollutants will enter storm sewer facilities. Vehicle tracking control pads will be installed at all access points to the property. Regular maintenance and inspection of these facilities will be necessary throughout grading operations and until vegetation is reestablished to ensure proper function of the sediment basin temporary outlet structures.

- **MATERIAL HANDLING & SPILL PREVENTION**

Where materials can impact stormwater runoff, existing and planned practices that reduce the potential for pollution must be included in a spill prevention plan, to be provided by the contractor. Spill prevention plans shall include

  - Notification procedures to be used in the event of an accident
  - Instruction for clean-up procedures, and identification of a spill kit location
  - Provisions for absorbents to be made available for use in fuel areas, and for containers to be available for used absorbents
  - Procedures for properly washing out concrete truck chutes and other equipment in a manner and location so that the materials and wash water can not discharge from the site and never into a storm sewer system or stream.

- **CONCRETE/ASPHALT BATCH PLANTS**

Where applicable, the SWMP must be amended by the contractor to describe and locate on the Site Map all practices used to control stormwater pollution from dedicated asphalt or concrete batch plants.

- **WASTE MANAGEMENT AND DISPOSAL INCLUDING CONCRETE WASHOUT**

  Where applicable, the SWMP must be amended by the contractor to describe and locate on the Site Map all practices implemented at the site to control stormwater pollution from all construction site wastes (liquid and solid) including concrete washout activities.

- **DOCUMENTING SELECTED BMPS**

  As discussed in the SITE MAP section of this report, documentation of the selected BMPs will be included on the site map / overlot grading plan included in this report. The site map/overlot grading plan shall be amended to include any additional interim or phased BMPs over and above measures included on the site map, as required by contractor's construction schedule.

- **NON-STORMWATER DISCHARGES**

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

- **STORMWATER DEWATERING**

  The discharge of pumped water, ONLY from excavations, ponds, depressions, etc., to surface waters or to a municipal separate storm-sewer system is allowed by the Stormwater Construction Permit as long as the dewatering activity and associated BMPs are identified in the SWMP (including location of activity), and the BMPs are implemented in accordance with the SWMP. Where applicable, all stormwater and groundwater dewatering practices implemented to control stormwater pollution for dewatering must be amended in the SWMP and Site Map by the contractor.

- **REVISING BMPs AND THE SWMP**

  The implemented BMPs will need to be modified and maintained regularly to adapt to changing site conditions and to ensure that all potential stormwater pollutants are properly managed. The BMPs and pollutant sources much be reviewed on an ongoing basis by the Administrator as assigned by the Permit.

With any construction project, special attention must be paid to construction phasing and therefore revisions to the SWMP to include any additional or modification to the BMPs and SWMP report. The SWMP must be modified or amended to accurately reflect the field conditions. Examples include - but are not limited to – removal of BMPs, identification of new potential pollutant procedures, and changes to information provided in the site map/overlot grading plan. SWMP revisions must be made prior to changes in site conditions. The SWMP should be viewed as a "living document" throughout the lifetime of the project.

FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

Permanent stabilization of the site includes seeding and mulching the site. Seeding and mulching consists of loosening soil, applying topsoil (if permanent seeding) and drill seeding disturbed areas with grasses and crimping in straw mulch to provide immediate protection from raindrop and wind erosion. As the grass cover becomes established, provide long term stabilization of exposed soils.

Once the construction activity ceases permanently, the area will be stabilized with permanent seed and mulch. All areas that will not be impacted by construction of buildings will be seeded and landscaped as feasible. After seeding, each area will be mulched with straw. The straw mulch is to be tacked into place by a disc with blades set nearly straight. Topsoil stockpiles will be stabilized with temporary seed and mulch. Areas of the site that are to be paved will be temporarily stabilized until asphalt is applied.

The temporary perimeter controls (silt fence or equivalent) will not be removed until all construction activities at the site are complete and soils have been stabilized. Upon completion of construction activities, the site shall be inspected to ensure all equipment, waste materials, and debris have been removed. All other BMPs or other control practices and measure that are to remain after completion of construction will be inspected to ensure they are properly functioning. Final stabilization is reached when all soil disturbing activities at the site have been completed and uniform vegetative cover has been established with a density of at least 70% of pre-disturbance levels. For purposes of the SWMP, establishment of a vegetative cover capable of providing erosion control equivalent to the pre-existing conditions at the site can be considered final stabilized.

INSPECTION AND MAINTENANCE PROCEDURES

All drainage facilities will be monitored using the enclosed "Monitoring and Maintenance Inspection Record" checklist (Appendix II).

- **SWMP OWNER/ADMINISTRATOR INSPECTION PROCEDURES & SCHEDULES**

  The Owner/Administrator shall adhere to the following inspection procedures during the development of the site:

  1. Make thorough inspection of the stormwater management system at least every 14 days.
  2. Make thorough inspection of the stormwater management system within 24 hrs of each precipitation event that creates runoff.
  3. If any system deficiencies are noted, corrective actions must begin immediately. Documentation of inspection must be available if requested.
  4. Records of the site inspections or facility replacement modifications must be kept at the site within this report.
  5. 30 day inspections must take place on this site where construction activity is complete, but vegetative cover is still being established.

In this report's appendix, a site inspection form has been included for use by the Inspector. Upon completion of this form, the document is to be kept in the provided folder also in the rear of this report.

- **BMP MAINTENANCE / REPLACEMENT & FAILED BMPs**

  The Stormwater Construction Permit requires that all erosion and sediment control practices and other protective measures identified in the SWMP be maintained in effective and operation condition. A preventative maintenance program should be in place to prevent BMP breakdowns and failures by proactively maintaining or replacing BMPs and equipment. The inspections process should also include procedures to ensure that BMPs are replaced or new BMPs added to adequately manage the pollutant sources at the site. This procedure is part of the ongoing process of revising the BMPs and SWMP as previously discussed, and any changes shall be recorded in the SWMP.

- **RECORD KEEPING AND DOCUMENTING INSPECTIONS**

  The following items must be documented as part of the site inspections:

  - Inspection date

- Name(s) and title(s) of personnel making inspection
- Location(s) of discharges of sediment or other pollutants from site
- Location(s) of BMPs that need to be maintained
- Location(s) of BMPs that fail to operate as designed or proved inadequate in a particular location
- Location(s) where additional BMPs are needed that were not in place at time of inspection
- Deviations from the minimum inspection schedule
- Descriptions of corrective action for items above including dates and measures taken to prevent future violations
- Signed statement of compliance added to the report after correction action has been taken

PREPARED BY:

Classic Consulting Engineers & Surveyors, LLC

Kyle R. Campbell, P.E.
Division Manager

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VICINITY MAP

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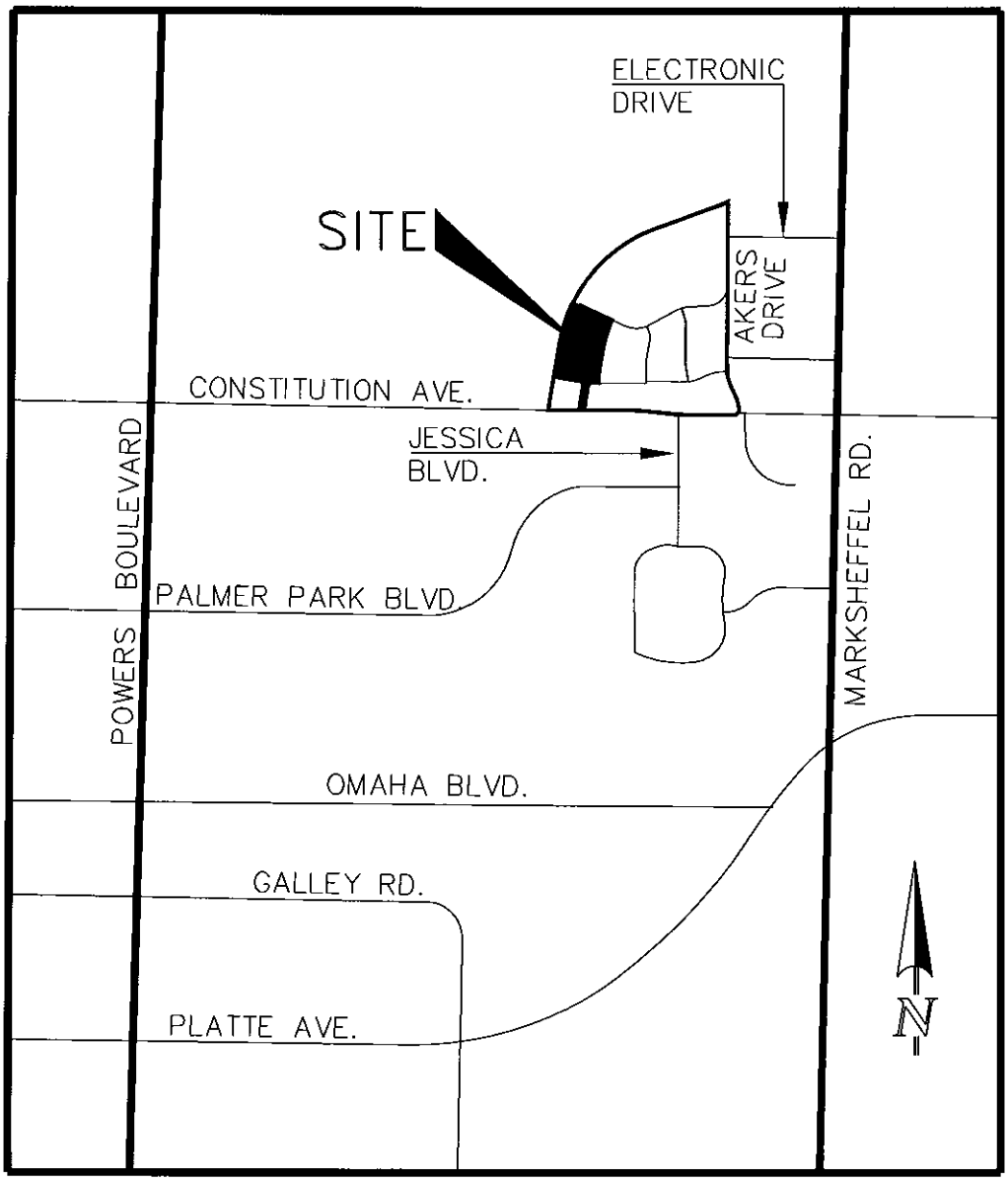

VICINITY MAP
NOT TO SCALE

COPY OF PERMIT APPLICATION

General permit application for stormwater discharges associated with construction activity.

(TO BE PROVIDED PRIOR TO PLAN APPROVAL)

SYSTEM (CDPS) CHECKLIST
Operation & Maintenance Inspection Record

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

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Action: _____ Project Type: _____ Zip Code: _____

Project Name: _____ Subdivision: _____

Address/Location: _____ Assigned Inspector: _____

Action Date: _____ Date Next Routine: _____ Date Next Follow-up: _____

Owner: _____ Owner Phone: _____ Stage of Construction: _____

Rep. Name: _____ Rep. Phone: _____ Inspected By: _____

	Items	Is Used	Maint. Required	Remarks / Actions Necessary
1	**Check Dam** ➢ Has accumulated sediment and debris been removed per maintenance requirements?	No	 No	
2	**Erosion Control Blanket** ➢ Is the erosion control blanket fabric damaged, loose, or in need of repair?	No	 No	
3	**Inlet Protection** ➢ Is the inlet protection damaged, ineffective or in need of repairs? ➢ Does sediment remain in inlets?	No	 No No	
4	**Mulching** ➢ Uneven mulch distribution on disturbed areas? ➢ Is the mulch application rate inadequate? ➢ Any evidence of mulch being blown or washed away? ➢ Do areas require additional mulching?	No	 No No No No	
5	**Sediment / Basin Trap** ➢ Is the sediment basin improperly constructed or inoperable? ➢ Is there sediment and/or debris in the basin?	No	 No No	
6	**Silt Fence** ➢ Is the silt fence damaged, collapsed, un-trenched or ineffective? ➢ Is the excess sediment against the barrier? ➢ Is the silt fence improperly located?	No	 No No No	
7	**Slope Drain** ➢ Is water bypassing or undercutting the inlet or pipe? ➢ Is there any evidence of erosion?	No	 No No	
8	**Straw Bale Barrier** ➢ Are the straw bales damaged, ineffective or un-trenched? ➢ Is there excess sediment against the barrier? ➢ Are the bales installed and positioned incorrectly?	No	 No No No	
9	**Surface Roughening** ➢ Is the surface roughening inconsistent on slopes? ➢ Is there any evidence of surface roughening erosion?	No	 No No	
10	**Seeding** ➢ Are the seedbeds unprotected? ➢ Has any erosion occurred in the seeded area? ➢ Any evidence of vehicle tracking on seeded area?	No	 No No No	
11	**Temporary Swales** ➢ Has any sediment or debris been deposited within the swales? ➢ Have the slopes of the swale eroded or has damage occurred to the lining? ➢ Are the swales improperly located?	No	 No No No	
12	**Vehicle Tracking** ➢ Is gravel surface clogged with mud or sediment? ➢ Is the gravel surface sinking into the ground? ➢ Has sediment been tracked onto any roads? ➢ Is inlet protection missing around curb inlets near construction entrance?	No	 No No No No	
13	**Diversion Structure** ➢ Has the structure been damaged or show signs of erosion? ➢ Is the structure properly located?	No	 No No	

14	**Outlet Protection** ➢ Is erosion taking place?	No	 No	
15	**Rough-Cut Street Control** ➢ Have structures been properly located and installed? ➢ Is there excess sediment against the structures?	No	 No No	
16	**Concrete Washout** ➢ Has material been removed per maintenance requirements? ➢ Does structure have adequate signage? ➢ Is there adequate tracking-pad material for access, if necessary? ➢ Is there adequate protection around the structure?	No	 No No No No	
17	**Erosion Logs** ➢ Are the erosion logs damaged, collapsed, or ineffective? ➢ Is there excess sediment against the barrier? ➢ Are the erosion logs improperly located?	No	 No No No	
18	**GEC Management** ➢ Is the GEC notebook located on site? ➢ Are changes to the GEC documents noted and approved? ➢ Are the inspection reports retained on-site? ➢ Are corrective actions from the last inspection completed?	No	 No No No No	
19	**Materials and Pollution** ➢ Are stockpiles being managed properly? ➢ Are materials being managed properly? ➢ Is solid waste and trash being managed properly? ➢ Is street sweeping being managed properly? ➢ Are the sanitary facilities being managed properly? ➢ Are the vehicles and equipment being managed properly? ➢ Are there other materials or pollution issues being properly maintained?	No	 No No No No No No No	

Project Status:_____ Const. Start Date:_____ Size of Disturbance (acres):_____

Additional Comments:

COMPLETED OPERATION AND MAINTENANCE INSPECTION RECORDS

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STANDARD BMP DETAILS
W/ INSTALLATION AND MAINTENANCE REQUIREMENTS

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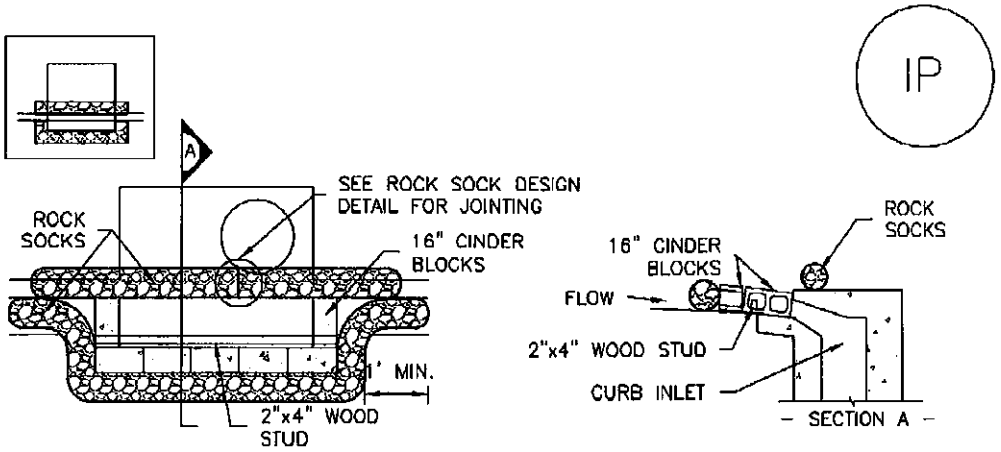


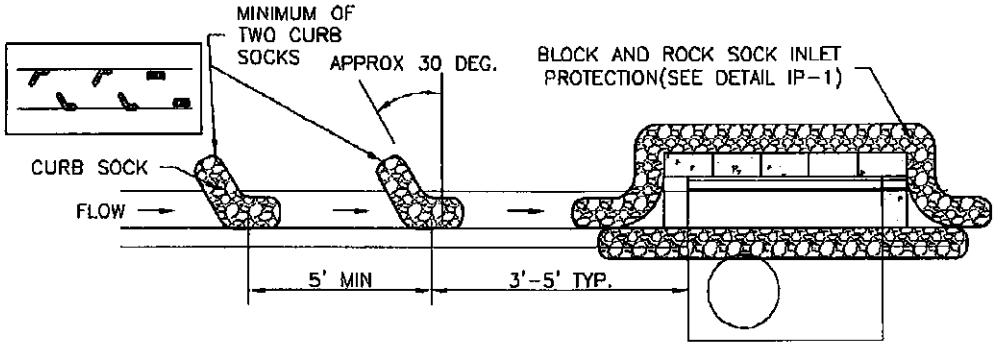
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

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

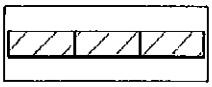
CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

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.



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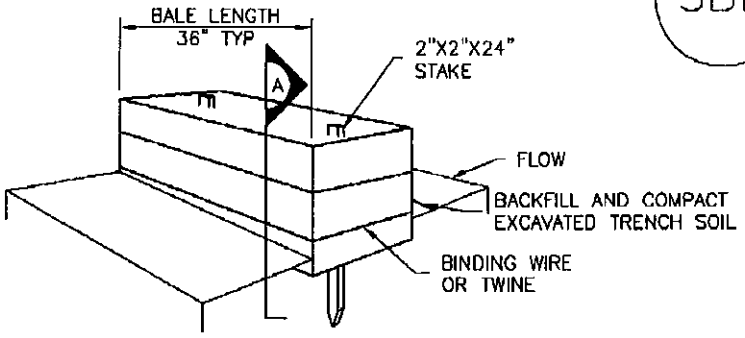
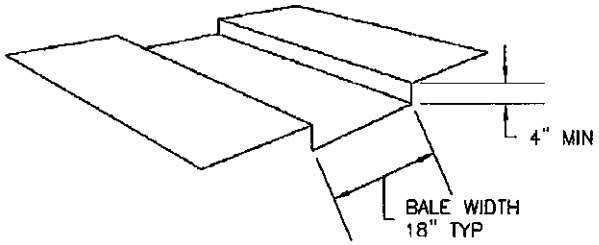
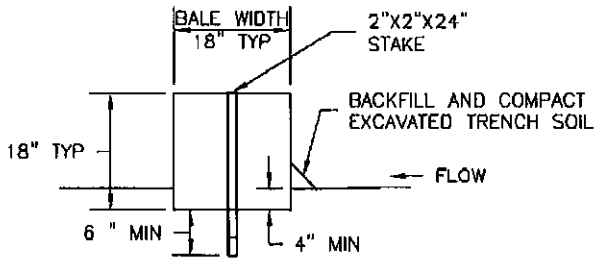


STRAW BALE



TRENCH FOR STRAW BALE



SECTION A

SBB–1. STRAW BALE

STRAW BALE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION(S) OF STRAW BALES.

2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.

3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.

4. WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.

5. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"X18"X18".

6. A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S). ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.

7. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"X2"X24". WOODEN STAKES SHALL BE DRIVEN 8" INTO THE GROUND.

STRAW BALE 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. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.

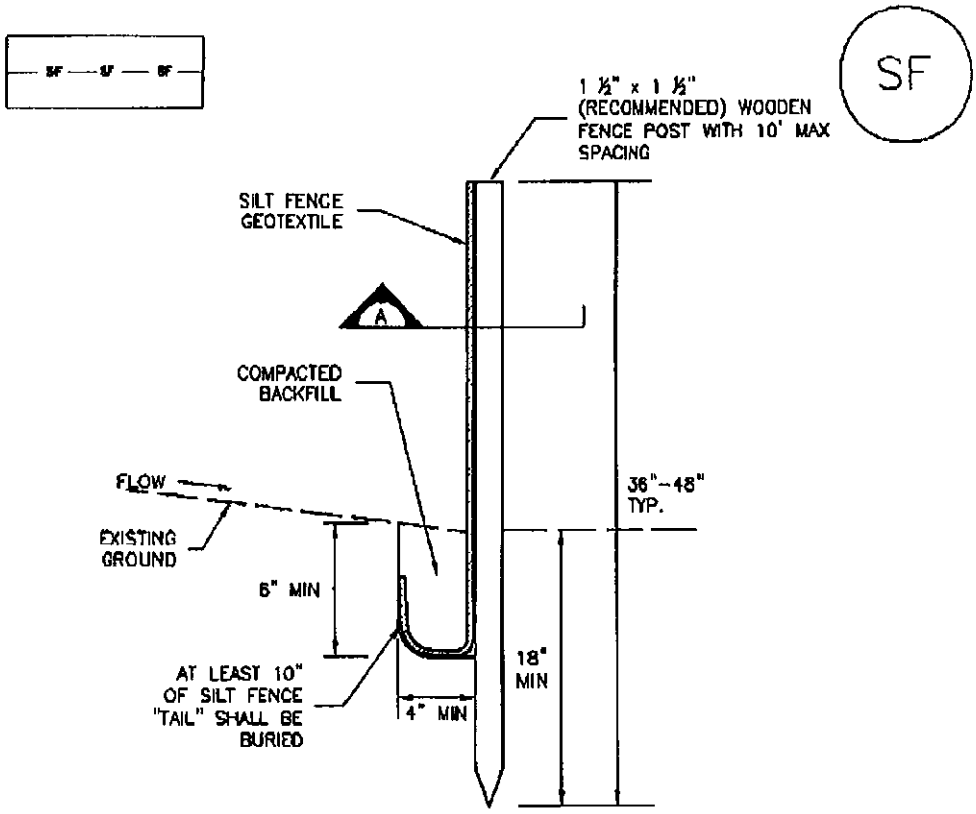
5. SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ¼ OF THE HEIGHT OF THE STRAW BALE BARRIER.

6. STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

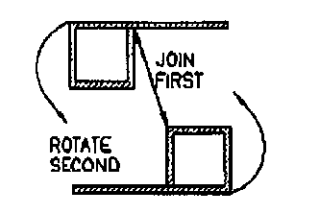
7. WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

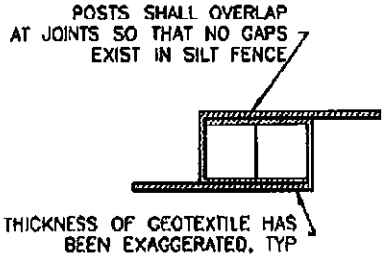
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



SILT FENCE



POSTS SHALL BE JOINED AS SHOWN, THEN ROTATED 180 DEG. IN DIRECTION SHOWN AND DRIVEN INTO THE GROUND



SECTION A

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".

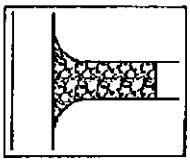
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

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.

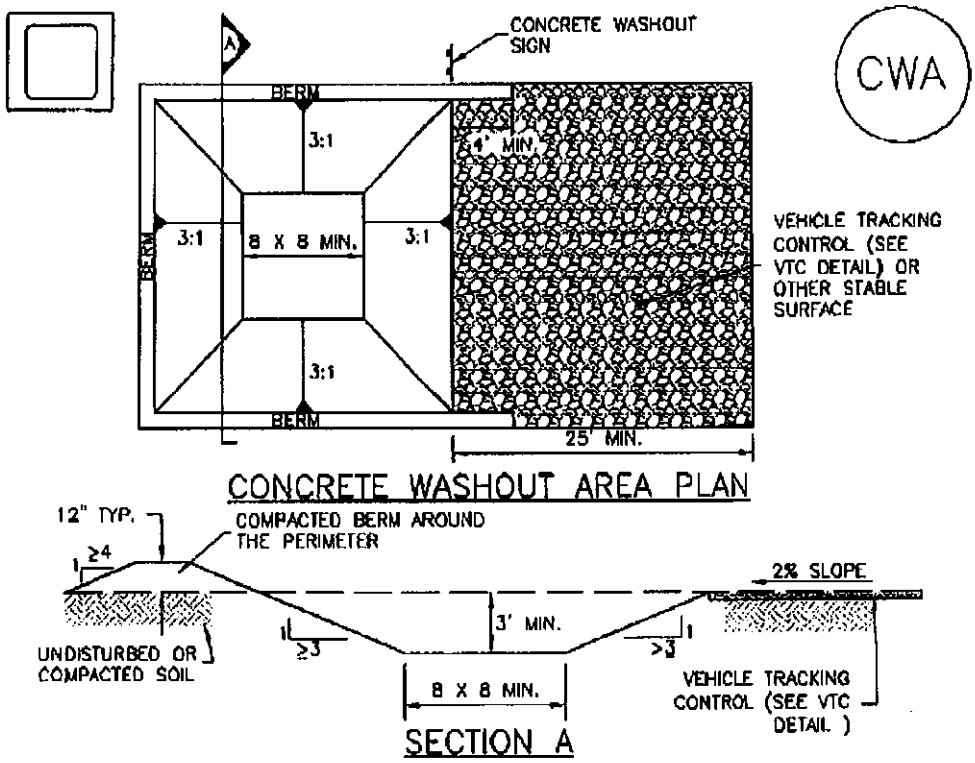
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(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.



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL



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.

MM-1 Concrete Washout Area (CWA)

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 REPAIRED, 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.

SITE MAP/ EROSION AND STORMWATER QUALITY CONTROL PLAN

CLASSIC
CONSULTING
ENGINEERS & SURVEYORS

HANNAH RIDGE AT FEATHERGRASS FILING NO. 4

COUNTY OF EL PASO, STATE OF COLORADO

OVERLOT GRADING PLAN

INCLUDING EROSION CONTROL

MAY 2017

GENERAL CONSTRUCTION NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
4. ALL BACKFILL, SUB-BASE AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED TO THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION.
5. TYPE L RIP-RAP WITH MIRAFI FW 700 OR EQUAL IS REQUIRED UNDER ALL RIP-RAP PADS.
6. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH ANY AND ALL APPLICABLE EL PASO COUNTY STANDARDS.

EL PASO COUNTY GRADING AND EROSION CONTROL NOTES:

1. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM DEVELOPMENT SERVICES AND A PRECONSTRUCTION CONFERENCE IS HELD WITH DEVELOPMENT SERVICES INSPECTIONS.
2. 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.
3. 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.
4. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) 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 AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
5. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE ESQC. 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 ESQC INSPECTIONS STAFF.
6. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE, BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
7. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
8. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
9. ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS SCHED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE 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.
11. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY
12. 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.
13. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1
14. 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. BMPS MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
15. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
16. 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.
17. 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 DUST THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
18. 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.
19. 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.
20. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
21. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
22. 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.
23. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
24. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
25. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
26. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC., TITLED "SOIL, GEOLOGY, GEOLOGIC HAZARD AND PRELIMINARY SUBSURFACE SOIL INVESTIGATION – WATERBURY – PHASE 1", DATED MARCH 22, 2013, AND SHALL BE CONSIDERED A PART OF THESE PLANS.
27. AT LEAST TEN 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:

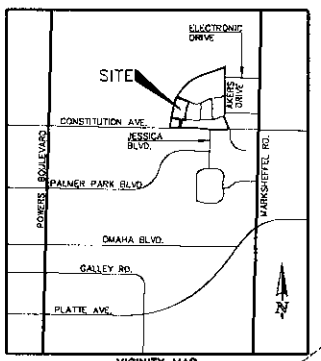
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

BENCHMARK:

THE BENCHMARK FOR THESE PLANS IS THE TOP OF #6 REBAR, PANEL POINT NO. 1, LOCATED ON THE SOUTH SIDE OF CONSTITUTION AVE. AND THE WEST EDGE OF THE ROCK ISLAND TRAIL, 535 FEET WEST OF THE CENTERLINE OF SHAMROCK DR.
ELEVATION = 6465.83 (EPC DATUM ELEVATION = 6465.29)

BASIS OF BEARINGS:

BEARING REFERRED TO HEREIN ARE BASED ON THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 32, TOWNSHIP 13 SOUTH, RANGE 66 WEST OF THE 6TH P.M. ASSUMED TO BEAR N88°53'30"E



VICINITY MAP
NOT TO SCALE

KEY MAP
SCALE: 1" = 200'

AGENCIES:

OWNER:
FEATHERGRASS INVESTMENTS, LLC
4713 N. CHESTNUT STREET
COLORADO SPRINGS, CO 80907
MR. KENNETH P. DRISCOLL (719) 593-8387

CIVIL ENGINEER:
CLASSIC CONSULTING ENGINEERS & SURVEYORS
619 N. CASCADE AVENUE, SUITE 200
COLORADO SPRINGS, COLORADO 80903
MR. KYLE R. CAMPBELL, P.E. (719) 785-0790

ENGINEERING DIVISION:
EL PASO COUNTY DEVELOPMENT SERVICES
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, COLORADO 80910
MR. RICH HARVEY, P.E. (719) 520-6862

GAS DEPARTMENT:
BLACK HILLS ENERGY
7060 ALEGRE ST.
FOUNTAIN, COLORADO 80817 NR
GEORGE PETERSON (719) 383-8825

ELECTRIC DEPARTMENT:
MOUNTAIN VIEW ELECTRIC ASSOCIATION
11140 E. WOODMEN RD.
FALCON, COLORADO 80831
MR. DARRYL COWARD, (719) 495-2283

TELEPHONE COMPANY:
AT & T
(LOCATIONS) (719) 635-3674
CENTURY LINK
(LOCATIONS) 811

FIRE DEPARTMENT:
FALCON FIRE PROTECTION DISTRICT
7030 N. MERIDIAN RD.
FALCON, COLORADO 80831
CHIEF HARMS (719) 495-4000

APPROVALS:

ENGINEER'S STATEMENT:

GRADING AND EROSION CONTROL PLAN ENGINEER'S STATEMENT:
THESE GRADING AND EROSION CONTROL PLANS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CONSULT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS.

I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE
FOR AND ON THE BEHALF OF CLASSIC CONSULTING ENGINEERS & SURVEYORS

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE DRAINAGE REPORT AND PLAN AND THIS SET OF CONSTRUCTION DOCUMENTS. THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

FEATHERGRASS INVESTMENTS, LLC — DATE:
4713 N. CHESTNUT STREET
COLORADO SPRINGS, CO 80907
MR. KENNETH P. DRISCOLL

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 COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E. — DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

SHEET INDEX

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION OF COLORADO
IT'S THE LAW

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO	REVISION	DATE

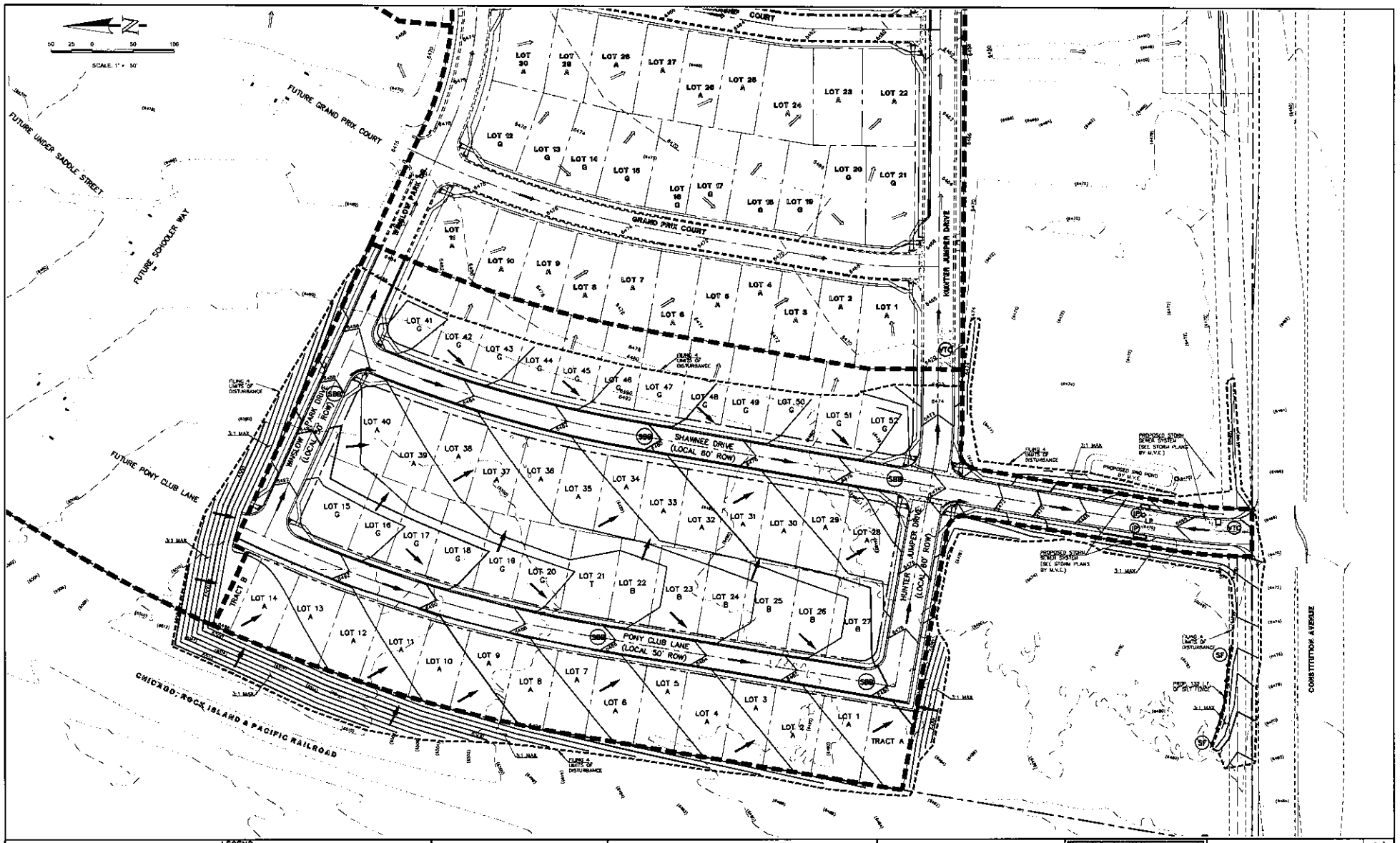
REVIEW:
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

KYLE R. CAMPBELL COLORADO P.E. #29794 — DATE

CLASSIC CONSULTING ENGINEERS & SURVEYORS
5385 Corporate Drive, Suite 101 (719)785-0790
Colorado Springs, Colorado 80919 (719)785-0799(Fax)

HANNAH RIDGE AT FEATHERGRASS
FILING NO. 4
OVERLOT GRADING PLAN
INCLUDING EROSION CONTROL – TITLE SHEET

DESIGNED BY	KNC	SCALE:		DATE	05/15/17
DRAWN BY	JRH	(H) 1"=VARIES	SHEET	1	OF 3
CHECKED BY		(V) 1"= N/A	JOB NO.	1116.04	



LEGEND

EXISTING CONTOUR	(6060)	PROPOSED FLOW	
PROPOSED CONTOUR	6060	EXISTING FLOW	
PHASE LINE		INLET PROTECTION	IP
A LOT	"A"	SILT FENCE	SF
B LOT	"B"	VEHICLE TRACKING CONTROL	VTC
WALKOUT LOT	"W/O"	(2) STRAW BALE CHECK DAM (BOTH SIDES OF ROADWAY)	SBB
GARDEN LOT	"G"		
TRANSITION LOT	"T"		

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION OF COLORADO
IT'S THE LAW

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NO.	REVISION	DATE

REVIEW:

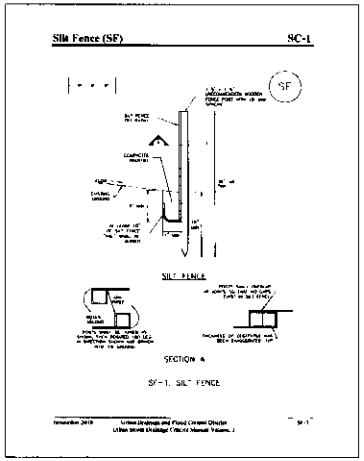
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

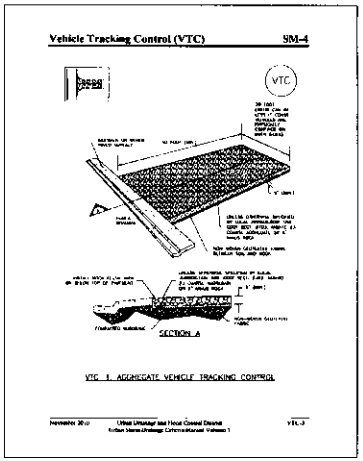
KYLE R. CAMPBELL, COLORADO P.E. #29794 DATE

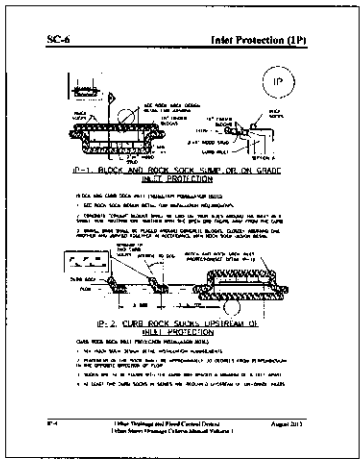
CLASSIC CONSULTING ENGINEERS & SURVEYORS
5265 Corporate Drive, Suite 101 (719)785-0790
Colorado Springs, Colorado 80919 (719)785-0799(Fax)

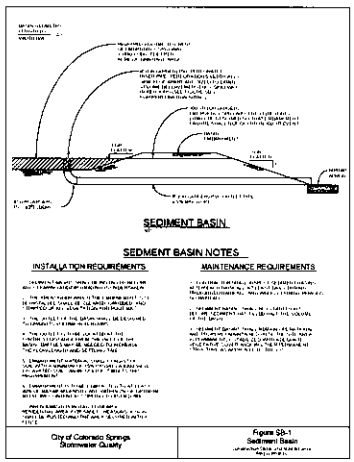
HANNAH RIDGE AT FEATHERGRASS
FILING NO. 4
OVERLOT GRADING PLAN
INCLUDING EROSION CONTROL

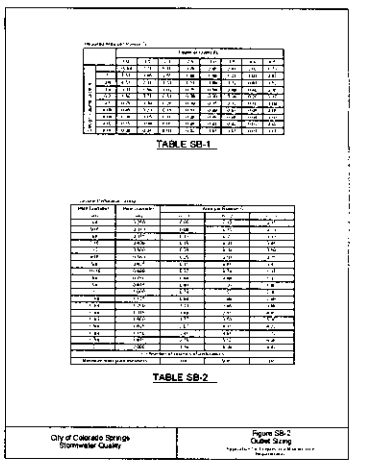
DESIGNED BY	KRC	SCALE		DATE	05/16/17
DRAWN BY	JRH	(H) 1"= 50'		SHEET	2 OF 3
CHECKED BY		(V) 1"= N/A		JOB NO.	1116.04

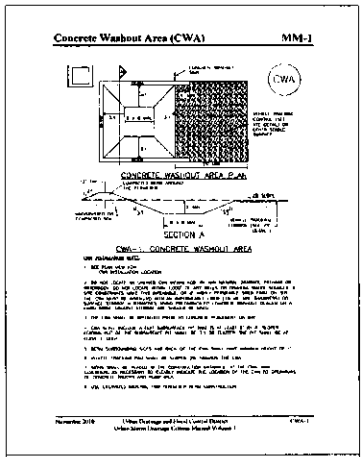


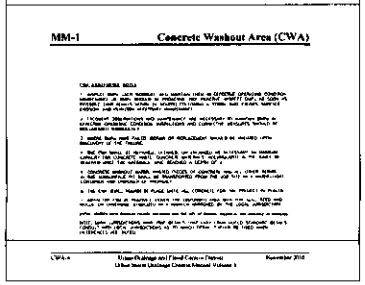


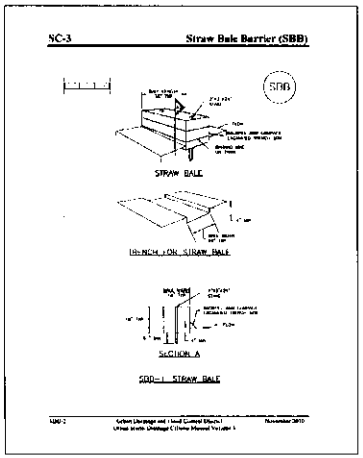


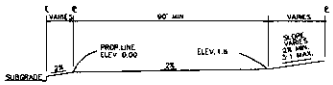


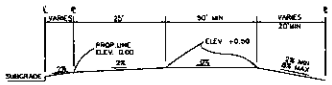


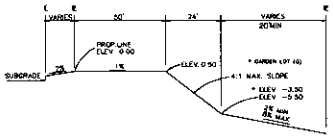












NOTE:
"I" LOTS OR "TRANSITION " LOTS OCCUR IN PLACES WHERE BOTH PROPERTY LINES CANNOT BE GRADED AS THE TYPICAL STANDARD LOT TEMPLATES SHOWN. THESE LOTS WILL STILL BE GRADED TO CREATE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE.

SEEDING GUIDELINES

1. SEEDBED PREPARATION
THE SEEDBED SHOULD BE WELL-SETTLED AND FIRM, BUT FRIABLE ENOUGH THAT THE SEED CAN BE PLACED AT THE SPECIFIED DEPTH. CONCRETE STAINS OF WASTE THAT ARE PRESENT BEFORE SEEDING MUST BE CONTROLLED BY SHALLOW TILLAGE OR BY APPLICATION OF HYDROSEED SEALS THAT HAVE BEEN OVER-COMPACTED BY TRAFFIC OR EQUIPMENT, ESPECIALLY WHEN WET, SHOULD BE TILLED TO BREAK UP HOOFING—INDISCRIMINATE LAYERS, THEN HARROWED, ROLLED, OR PACKED TO PREPARE THE REQUIRED FIRM SEEDBED.

2. FERTILIZER
FERTILIZER SHOULD BE APPLIED AT A RATE OF 60 POUNDS OF AVAILABLE NITROGEN PER ACRE AND 40 POUNDS OF AVAILABLE PHOSPHATE PER ACRE. THE TIME OF APPLICATION SHOULD BE IMMEDIATELY PRIOR TO SEEDING, AT THE TIME OF SEEDING, OR IMMEDIATELY FOLLOWING SEEDING, DEPENDING ON THE KIND OF FERTILIZER AND TYPE OF EQUIPMENT USED.

3. SEEDING
SEED SHOULD BE PLANTED WITH A GRAIN DRILL OR ALL BLOWER OF 3/8 INCH OR FINER. SEED MAY BE BROADCAST BY HAND, BY MECHANICAL SPREADER, OR BY HYDRAULIC EQUIPMENT ON AREAS THAT ARE SMALL, TOO STEEP, OR NOT ACCESSIBLE FOR SEED DRILL OPERATIONS.
SEED PLANTED WITH A GRAIN DRILL SHOULD BE COVERED WITH SOIL TO A DEPTH OF 1/4 TO 3/4 INCH. SEED COVERED BY THE BROADCAST METHOD SHOULD BE INCORPORATED INTO THE SOIL SURFACE, NOT TO EXCEED A DEPTH OF 3/4 INCH, BY RAKING, HARROWING, OR OTHER PROPER METHOD.
THE TIME OF SEEDING IS FROM OCTOBER 15TH – MAY 31ST. SEED PLANTED IN THE LATE FALL WILL REMAIN DORMANT UNTIL SPRING, WHEN IT WILL GERMINATE.

4. MULCHING
SEEDED AREAS SHOULD BE MULCHED TO CONSERVE MOISTURE, PREVENT SURFACE COMPACTION OR CRUSTING, REDUCE RUNOFF AND ENDANGER CONTROL INSECTS AND HELP ESTABLISH PLANT COVER.
MULCH MAY OR STRAW SHOULD BE APPLIED AT A RATE OF 4,000 POUNDS PER ACRE AND CRIMPED INTO THE GROUND. ON SLOPES GREATER THAN 3:1, AN AGRONOMY BLANKET SHOULD BE USED.

5. SUPPLEMENTAL WATER
IN LOW RAINFALL AREAS, WHERE WATER IS AVAILABLE AND WHERE RAPID ESTABLISHMENT IS NEEDED, IRRIGATION OF NEW SEEDING SHOULD BE PERFORMED DURING THE FIRST GROWING SEASON. WATER SHOULD BE APPLIED AT APPROXIMATELY ONE WEEK INTERVALS AT A RATE OF 3/4 TO 1 INCH PER APPLICATION, WHEN RAINFALL IS DEFICIENT FOR PLANT DEVELOPMENT.

EROSION CONTROL CRITERIA:

EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES WITHIN THE PROJECT SITE.

1.) THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.

2.) DURING GRADING OPERATIONS, LOCATE AND SET THE STRAW BALE CHECK DAMS AND SILT FENCES AS SHOWN ON THE EROSION CONTROL PLAN. AT THIS TIME RESEED ALL DISTURBED AREAS WITH AN EL PASO COUNTY APPROVED SEED MIX.

3.) SEEDING APPLICATION: DRILLED TO A DEPTH OF .25" TO .50" INTO SOIL WHERE POSSIBLE. BROADCAST AND RAKED TO COVER ON STEEPER THAN 3:1 SLOPES WHERE ACCESS IS LIMITED OR UNSAFE FOR EQUIPMENT.

4.) MULCHING REQUIREMENT AND APPLICATION: 1.5 TONS PER ACRE NATIVE HAY MECHANICALLY CRIMPED INTO SOIL.

5.) THE STRAW BALE CHECK DAMS AND SILT FENCES SHALL BE KEPT IN PLACE AND MAINTAINED UNTIL EROSION AND SEDIMENTATION POTENTIAL IS MITIGATED (REMOVAL OF SILT AND SEDIMENT COLLECTED BY THE STRAW BALES IS REQUIRED ONCE IT REACHES HALF THE HEIGHT OF THE STRAW BALES OR SILT FENCE.

6.) DISTURBED SOIL SHALL BE VEGETATED WITHIN 90 DAYS AFTER SUBSTANTIAL FINAL GRADING IS COMPLETE. PROVIDE TEMPORARY VEGETATION TO DISTURBED AREAS THAT WILL HAVE A PERIOD OF EXPOSURE OF 6 MONTHS OR LONGER PRIOR TO FINAL STABILIZATION.

7.) ALL FACILITIES, VEGETATION AND OTHER ITEMS REQUIRED BY THE APPROVED FINAL GRADING, EROSION CONTROL AND REVEGETATION PLAN SHALL BE PROPERLY MAINTAINED BY THE OWNERS OF THE PROPERTY. SUCH MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, KEEPING ALL EROSION CONTROL FACILITIES IN GOOD WORKING ORDER AND FUNCTIONAL, REPAIRING ANY EROSION DAMAGE THAT OCCURS, KEEPING ALL VEGETATION HEALTHY AND IN ORDERLY CONDITION AND REPLACING ANY DEAD VEGETATION AS SOON AS PRACTICABLE.

8.) ALL SILT FENCES ARE TO BE REGULARLY INSPECTED AND REPAIRED AS NEEDED.

9.) THE CONTRACTOR SHALL PROVIDE VEHICLE TRACKING CONTROL FACILITIES FOR EACH ENTRANCE/EXIT TO THE SITE. THE CONTRACTOR SHALL SUBMIT A PLAN WHICH WILL ASSURE USAGE OF THIS FACILITY BY ALL VEHICLES LEAVING THE SITE.

10.) EROSION CONTROL MEASURES SHALL BE CHECKED AFTER EACH STORM EVENT AND REPAIRED WHEN NECESSARY.

11.) CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION CONTROL FACILITIES IN GOOD WORKING ORDER UNTIL SUCH TIME AS PERMANENT FACILITIES ARE IN PLACE AND THE CONSTRUCTION MANAGER HAS APPROVED THEIR REMOVAL.

12.) ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.

13.) THE EROSION CONTROL MEASURES OUTLINED ON THE PLAN ARE THE RESPONSIBILITY OF THE DEVELOPER TO ADDITION AND REPLACE, REGRADE AND REBUILD AS NECESSARY UNTIL VEGETATION IS ESTABLISHED.

14.) MAXIMUM ACREAGE OPEN AT ANY GIVEN TIME IS TO BE 30 ACRES.

SCHEDULE OF ANTICIPATED CONSTRUCTION ACTIVITY:

1. INSTALL INITIAL BMP'S
2. INSPECTION OF INITIAL BMP'S BY COUNTY STAFF
3. PRECONSTRUCTION MEETING WITH COUNTY STAFF

BEGIN CONSTRUCTION	ACTIVITY	COMPLETION	EROSION CONTROL
UPON APPROVAL	ALL SITE ROADWAY GRADING AND UTILITY INSTALLATION	6 MONTHS	ALL SHOWN ON GRADING PLAN

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NO	REVISION	DATE

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Colorado Springs, Colorado 80919 (719)785-0799(fax)

HANNAH RIDGE AT FEATHERGRASS
FILING NO. 4
OVERLOT GRADING PLAN
DETAILS

DESIGNED BY	KRC	SCALE		DATE	05/15/17
DRAWN BY	JRH	(H) 1"= N/A		SHEET	3 OF 3
CHECKED BY		(V) 1"= N/A		JOB NO.	1116.04