

Stormwater Management Plan

1830 MAIN STREET
BRADLEY CROSSROADS LOT 4A FILING NO. 1B
COLORADO SPRINGS, COLORADO
80911

PROPERTY OWNER:

CKW PROPERTIES, LLC.
1965 DOMINION WAY STE. 110
COLORADO SPRINGS, CO 80918

DEVELOPER & GENERAL CONTRACTOR:

CHARLES HOLLIDAY
WESTERN STATES MANAGEMENT GROUP
13990 BARBWIRE LANE
COLORADO SPRINGS, CO 80930

QUALIFIED STORMWATER MANAGER:

TO BE DETERMINED

March 2, 2020

Prepared by

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Rocky Mountain Group

2910 Austin Bluffs Parkway | Colorado Springs, CO 80918



PCD File No.: PPR19-038

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1.0 Existing Conditions

Lot 4A of the Bradley Crossroads subdivision is located at the address of 1830 Main Street in Colorado Springs in El Paso County within the northern limits of the census-designated area of Security-Widefield. The 1.50 acre lot is located west of Main Street or the Hancock Expressway, south of Bradley Road, east of Service Road, and north of Gladiator Drive. The parcel number is 6502407105 and is platted as Plat No. 14143 and zoned as CC CAD-O. The parcel is surrounded by commercial development to the south and east and there is residential and school property further south of Gladiator Road. A vicinity map is shown on the next page.

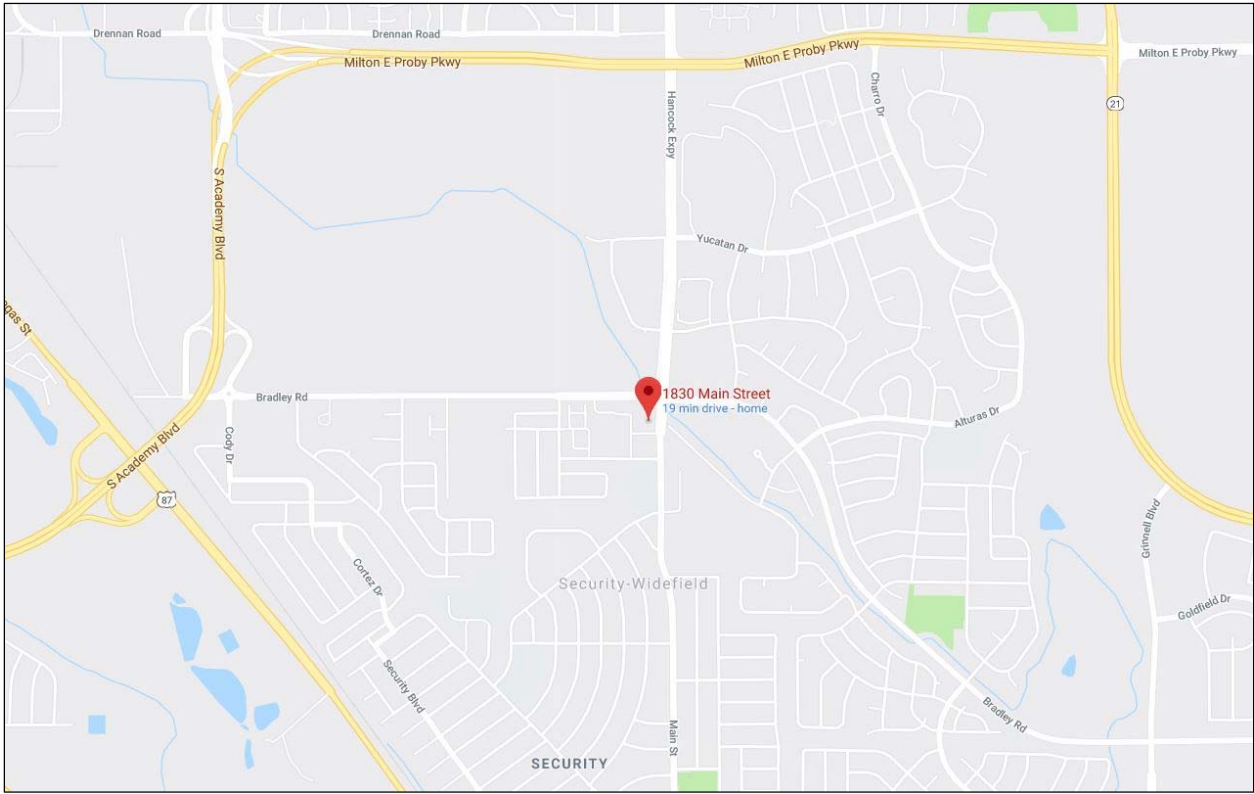


Figure 1: Vicinity Map

The property is currently empty for development with approximately 78 percent ground cover containing native grasses, shrubs, and trees based on site survey and aerial photography. The site is surrounded by developed right of way such as asphalt paved roads, concrete curb and gutter with curb cuts for designated ingress/egress of the development, and utilities for service line extensions to the development. The site area is generally flat as it flows from its northeast property corner to the southwest at an average grade of 3 percent.

2.0 Construction Activities Proposed

The development plans propose to build a 7,440 square foot commercial building with a concrete foundation and an asphalt and concrete paved parking and driving access area totaling approximately 1.3 acres.

As part of the construction process, proper erosion control measures will be required for development of the site including silt fencing along downstream limits of disturbance to minimize off-site transport of construction sediment and inlet protection of nearby and downstream storm sewer inlets. Other control measures such as rock socks along channelized flow areas, a vehicle tracking pad, a concrete washout area, and erosion blankets are to be installed in appropriate areas. A stormwater management plan is provided as a guide to proper control measure placement.

Other construction activities include pavement installation, foundation excavation and erection, and building framing and finishing. The grading activities will include surface roughening for the majority of the site where hardscape will be installed and fine grading will take place within landscape areas and along flowlines as needed. Removal of temporary control measures labelled as interim on the erosion control and SWMP plan are to be removed according to construction phasing activities.

The Stormwater Management Plan includes the following notes for Builders and Property Owners:

1. Proposed site conditions shall not significantly vary from the conditions presented in this report. The degree to which variance from the proposed conditions allowed is at the discretion of the County. The most critical variable is the percent impervious of the site.
2. Individual builders shall provide positive drainage away from structures and account for potential cross-lot drainage impacts within the lot.
3. The builders and property owner shall implement and maintain erosion control best management practices/control measures for protection of downstream properties and facilities.
4. Recognizing the location of this subdivision adjacent to the storm inlets and developed downstream properties, the builders and property owner shall take extra care in providing and maintaining erosion control BMP's/control measures at downstream property boundaries.

The SWMP is presented as a comprehensive erosion and sediment control plan for stormwater quality management by displaying control measures with labels for initial, interim, and final. The initial phasing is to include clearing and grubbing, surface roughening, and pavement demolition. The interim phases include overlot grading, foundation excavation, and activities up to final pavement installation and foundation erection. The final phase is for final stabilization and permanent seeding. Utility installations are subject to SWMP/erosion control measures as needed.

3.0 Timing and Schedule

The anticipated start time period for site grading is upon the receipt of the permit, assumed to be the beginning of April of 2020. Construction sequencing of major activities includes 2 days for clearing and grubbing, installation of BMPs, and excavation followed immediately by foundation erection and overlot grading anticipated to take place by end of April 2020. Utility installations and waterproofing followed by backfill will commence by the first week of May 2020. Final phase construction and landscape will be completed by middle to end of May 2020. All erosion and sediment control measures are constant throughout the construction with the exception of stabilized drive access that may be removed after they are no longer needed. The project end date and expected date on which the final stabilization will be completed is anticipated to be June 2020.

4.0 Site Disturbance

The total limits of disturbance is 55,350 square feet or 1.27 acres. Of this disturbance, approximately 7,440 square feet is dedicated to the new building and the remainder of the site not within the roadways is to be disturbed for the parking lot, landscaping, and utilities. Roadway disturbance will occur for tie in of the sanitary sewer service.

5.0 Structural Erosion and Sediment Controls

The initial construction phase shall include inlet protection installed as shown on the SWMP BMP site plan layout for all existing storm drain inlets and structures that may receive runoff from the site in the vicinity of the area of disturbance. Inlet protection reduces sediment deposition in storm drains and culverts and reduces sediment pollution in stormwater by filtering out some of the sediment carried by runoff flowing through the inlet protection. The details for the installation and maintenance of the inlet protection are included in the Appendix. In addition to the inlet protection indicated on the SWMP BMP site plan, inlet protection should be installed wherever the contractor deems them necessary or helpful in the prevention of sediment runoff during construction. Inlet protection installed at the discretion of the contractor may not be shown on the SWMP BMP site plan.

Prior to construction or demolition activity, vehicle tracking controls will be installed at designated access points. Vehicle tracking control helps reduce the deposition of sediment, dirt, mud, and debris by vehicles exiting the site onto the adjacent streets. The location of the site entrance called out for a gravel vehicle tracking control with wash rack is shown on the SWMP BMP site plan along with installation and maintenance of the controls within the details sheets.

Before any grading or other significant disturbance activities, silt fence is to be installed along any edge of an area to be disturbed where runoff would otherwise go untreated. Silt fence will be installed along those portions of the site perimeter where potentially sediment-laden runoff may flow into adjacent properties or into nearby private storm sewer grates. Silt fence is also to

be installed as a perimeter around the stockpile area, especially on downstream sides. Silt fences help reduce pollution of stormwater by filtering out some of the sediment carried by runoff flowing through the fences and by facilitating deposition of sediment by slowing the runoff. Silt fences also assist in reducing erosion by slowing and distributing runoff. The locations in which to install silt fence are on the SWMP BMP site plan. As with other BMPs, silt fences can be installed wherever the contractor deems them to be necessary or helpful and these locations may not be shown on the site plan.

6.0 Non-Structural Erosion and Sediment Controls

Prior to commencement of construction activities, the construction vehicle traffic areas to and around the project site including all construction roads, parking areas, loading and unloading zones, storage areas, and staging areas, are to be stabilized through proper grading, compaction, and surfacing. Stabilization of large vehicle traffic areas reduces erosion and vehicle tracking thus helping to eliminate potential pollution of stormwater by sediment. Designated construction ingress and egress with tracking control is to be used as shown on the SWMP BMP site plan. Should significant soil still be deposited on the surrounding roadways, street sweeping will be utilized to remove the soil from roadways immediately following deposition.

Mulch is to be applied to all disturbed areas that are not otherwise stabilized immediately if possible or within 14 days of completion of final grading. Additionally, mulch is to be applied to all disturbed areas that are not yet at final grade but will remain dormant or undisturbed for longer than 30 days. Mulch helps prevent erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.

When seasonally appropriate, seed is to be applied to all disturbed areas that are not otherwise stabilized immediately if possible or within 14 days of completion of final grading. Additionally, seed is to be applied to all undisturbed areas that are not yet at final grade but will remain dormant or undisturbed for longer than one year. When the season is inappropriate for seed application, surface roughening and mulch is to be applied within 14 days and seed is to be applied as soon as the appropriate seasonality commences.

7.0 Potential Erosion and Discharge

The SWMP calls for control measures to be implemented for initial, interim, and final phases of construction to ensure that erosion and sediment runoff is minimized and that there is no negative impact on downstream water quality. There is no anticipated discharge of pollutants from the site as long as the contractor implements control measures appropriately. Similarly, the developed conditions of a commercial store property and parking lot are not anticipated to have erosion issues following permanent stabilization and seeding.

Any contaminated soils are to be properly disposed of by the contractor immediately. Loading and unloading operations are to occur on-site and large vehicular mobilization will require traffic control measures. Any waste disposal is to be done off-site at the designation of the contractor at a location approved by the County. Waste disposal, spill prevention, and response procedures are to be according to the Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division. Appropriate spill prevention and response measures will be implemented on the site. The details and specifications referenced within this section provide general and specific guidelines for spill prevention and response measures relating to the various potential non-sediment pollution sources.

Only chemicals and materials necessary for the described construction activities may be stored on site, and then only in the smallest amounts reasonable and for the shortest time possible. Fueling and minor preventative maintenance of vehicles and equipment may occur only on areas specifically stabilized for construction vehicle traffic. Appropriate procedures will be taken to limit the potential of stormwater pollution from spills and leaks. No significant maintenance of vehicles and equipment and no vehicle and equipment washing will be allowed on site.

Rinsing of construction vehicles and equipment mixing or carrying concrete will be only performed in designed concrete rinse facilities. A concrete washout is to be located on site and no groundwater is to be present at any time within the washout. Dedicated asphalt and concrete patch plants and masonry mixing stations are to be designated by the contractor and approved by the County prior to construction. The contractor is responsible for the cleaning of trash on site and prevention of any loose trash leaving the site at all times during construction. A portable toilet is required on site.

The contractor is responsible for dust control at all times during construction. Sediment runoff is controlled by use of silt fencing on all downstream sides of the disturbance area within the lot and the contractor is to prevent sediment flow off-site at all times. End of day procedures include BMP inspection by the contractor and removal of any sediment.

The contractor shall not track mud/dirt off-site and project site cleanup including sweeping and waste disposal is to occur at the end of each working day.

No groundwater and/or stormwater dewatering activities are proposed or expected for the proposed construction activities.

No significant waste generation is expected as a result of the proposed construction activities. Any minor waste that is produced is to be disposed of properly and promptly.

8.0 Non-Stormwater Discharge

There is no anticipated non-stormwater surface discharge. The only non-stormwater discharge to occur is via the sanitary sewer grease line from the commercial building units. A proposed

2,500 gallon grease interceptor two-compartment settling tank is implemented for the commercial properties for grease discharge treatment prior to connection to the public sanitary sewer main.

9.0 Receiving Waters

The drainage concept of Lot 4A consists of collection of runoff from the site through the main subdivision private storm water system via a private storm sewer grated inlet (5.5'x3.5') within Service Road to the west of the property as well as a downstream CDOT Type which are a part of the private storm sewer system connecting the Bradley Crossroads, The Townhomes at Bradley Crossroads (PPR1846), and Lincoln Commons Townhome sites via private 24" and 30" RCP storm sewer pipes. The private storm water system connects to a join-use storm water detention pond located within the Lincoln Commons Townhomes site (SF07012) dedicated to the Lincoln Commons Townhomes, The Townhomes at Bradley Crossroads, and Bradley Crossroads development sites, including Lot 4A. The outfall is a private 30" RCP storm sewer pipe that flows to the southeast inlet and forebay of the detention pond.

The site is contained within the Little Johnson Drainage Basin and is part of the Little Johnson/Security Creek Drainage Basin Planning Study dated April 1988 and compiled by Kiowa Engineering Corporation. The ultimate receiving waters are Fountain Creek.

There are no stream crosses located within the project area nor do any cross the project area.

10.0 Permanent Stabilization

The site will be stabilized at final grades as indicated by the engineering plan set with compaction to the standards described in the subsoil surface investigation and geotechnical report developed by RMG-Rocky Mountain Group for this lot entitled "Geotechnical Report Bradley Crossroads Lot 4A Filing No. 1B" dated June 27, 2019. All swales and drainage measures are to be implemented according to the engineering plan set in order to convey storm water according to the proposed drainage patterns consistent with the subdivision drainage report. Final stabilization will include seeding of hydro seed and hydro mulch to revegetate the landscape of the lot and improve the site drainage.

According to the Stormwater Construction Permit, 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 percent of pre-disturbance levels or equivalent permanent, physical erosion reduction methods have been employed. This vegetative cover is to be established within one year of completion of construction activities on all disturbed areas not otherwise stabilized. Unless otherwise indicated on a landscape plan, revegetation will be achieved through seedbed preparation, including but not necessarily limited to soil roughening, seeding, mulching, and irrigating when specified. The landscaping plans and schedules are included in the construction documents.

The structural BMPs described in section 5.0 Structural Erosion and Sediment Controls are to remain in place until final stabilization in order to prevent erosion and pollution of stormwater by sediment after completion of construction activities. BMPs that must remain in place until final stabilization shall be removed following final stabilization and the resulting disturbed areas shall be seeded and mulched.

11.0 Owner Inspections and Maintenance of Construction BMPs

The contractor is to be familiar with all requirements of the erosion and sediment control plans and notes. The contractor shall protect the existing structures and reroute any runoff as necessary during construction activities to prevent erosion and damage. All exposed and unworked soils shall be stabilized by suitable application of best management practices such as vegetative cover, mulching, plastic covering or application of gravel surfaces in areas to be graveled. No exposed and unworked soils shall remain unstabilized. Once construction activity is completed, permanent seeding shall be installed. All temporary and permanent erosion and sediment control facilities shall be inspected, maintained, and repaired by the contractor as needed to assure continued performance of their intended use. All on-site erosion and sediment control measures shall be inspected by the contractor at least once every seven days and within 24 hours of any storm event equal to or greater than 0.25" of rain per 24 hour period. An inspection report file shall be maintained by the contractor and kept on site. The owner is responsible for inspection and maintenance of BMPs after final stabilization.

The Stormwater Construction Permit requires that a thorough inspection of the stormwater management system be performed and documented at least every 14 days and after any precipitation or snowmelt event that results in stormwater running across the ground according to CDPHE App. A Section C.6 (a).

The regular inspections of the site are to include observation of the construction site perimeter and all stormwater discharge points including storm drain system inlets and culverts. BMPs applied within the site perimeter or around stormwater discharge points include inlet protection, site entrance vehicle tracking control, silt fence, rock socks, and a temporary sediment basin. Specific inspection and maintenance requirements for each of these BMPs are included in the Appendix.

The regular inspections of the site will also include observation of all disturbed areas and all stabilized and revegetated areas. Inspection of these areas should be given special attention to identify any potential erosion issues. Specifications for surface stabilization and revegetation are included in the Appendix and provide specific inspection and maintenance requirements.

The regular inspections of the site will also include observation of material storage areas including waste collection areas and topsoil stockpiles. Inspection of these areas require special attention for potential leaks and spills. The topsoil stockpile is to be inspected for any potential runoff.

All structural BMPs on the site are to be thoroughly examined during each inspection to determine if they still meet the design and operational criteria in the SWMP and that they continue to adequately control pollutants on the site as directed in the CDPHE App. A, Section C.6 (b). Following each inspection, repairs will be performed on BMPs that are found to no longer function as needed and designed, and preventative maintenance will be exercised on BMPs as needed to ensure continued operation. BMPs that have failed or have the potential to fail without maintenance or modifications will be addressed immediately to prevent the discharge of pollutants. When a BMP is found to be ineffective in preventing discharge of pollutants, even though the BMP is in good repair and is functioning as designed, that BMP will be modified or an alternative or additional BMP will be installed promptly.

An Inspection Log is to be maintained on site and include a record of all stormwater management system inspections along with all BMP maintenance and repair activities. All inspection, maintenance, and repair requirements for each BMP, as described in this SWMP and as outlined in the details, will be performed as specified and will be recorded in the Inspection Log. The Inspection Log will also include a description of any incidence of non-compliance, such as uncontrolled releases of pollutants including mud, muddy water or measurable quantities of sediment found off the site along with a description of measures to be taken to prevent future pollutive discharges. Records of any spills, leaks, or overflows of non-sediment potential pollutants, whether or not such a spill, leak, or overflow results in pollution of stormwater, will be included.

Following an inspection that does not reveal any incidents of non-compliance, or following the completion of measures taken to correct any non-compliance issues, A Certification indicating the site is in compliance will be signed and dated.

In addition to regularly maintaining an Inspection Log and Certification, this SWMP will be updated regularly to reflect the actual stormwater management system as implemented on the site.

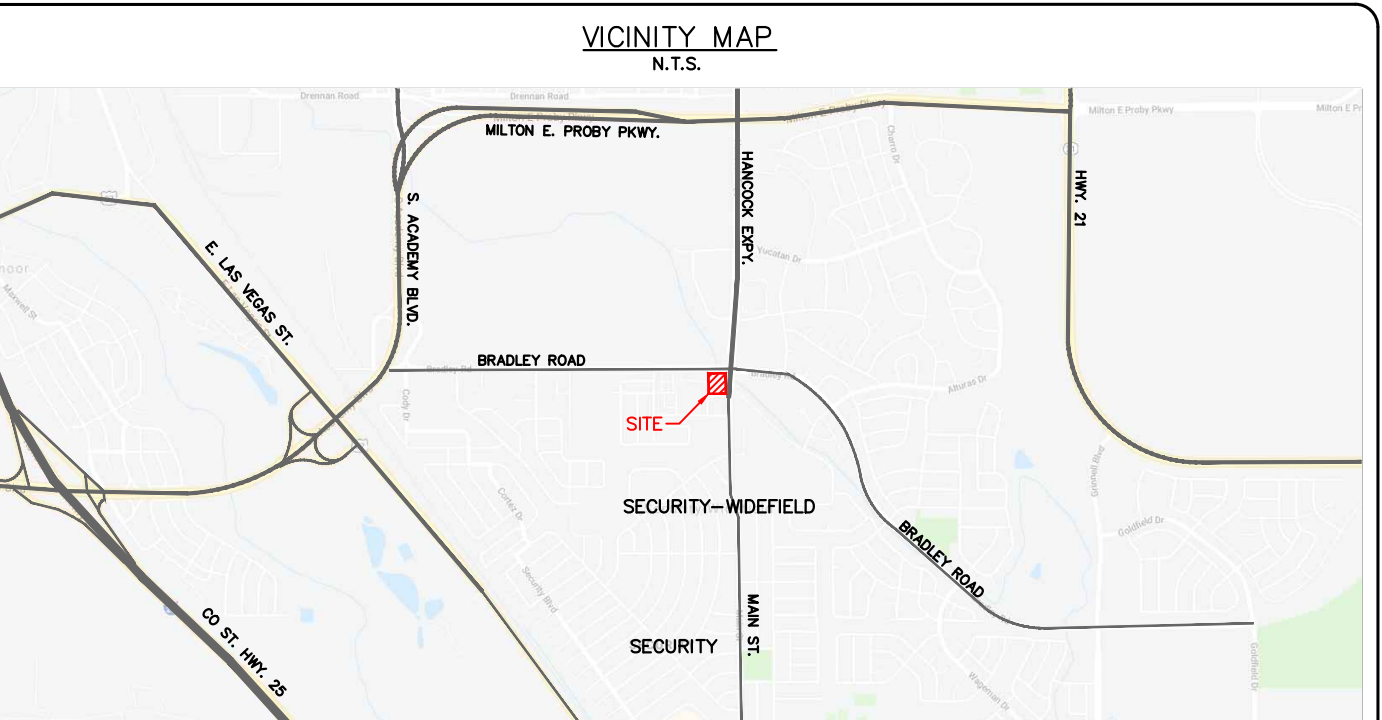
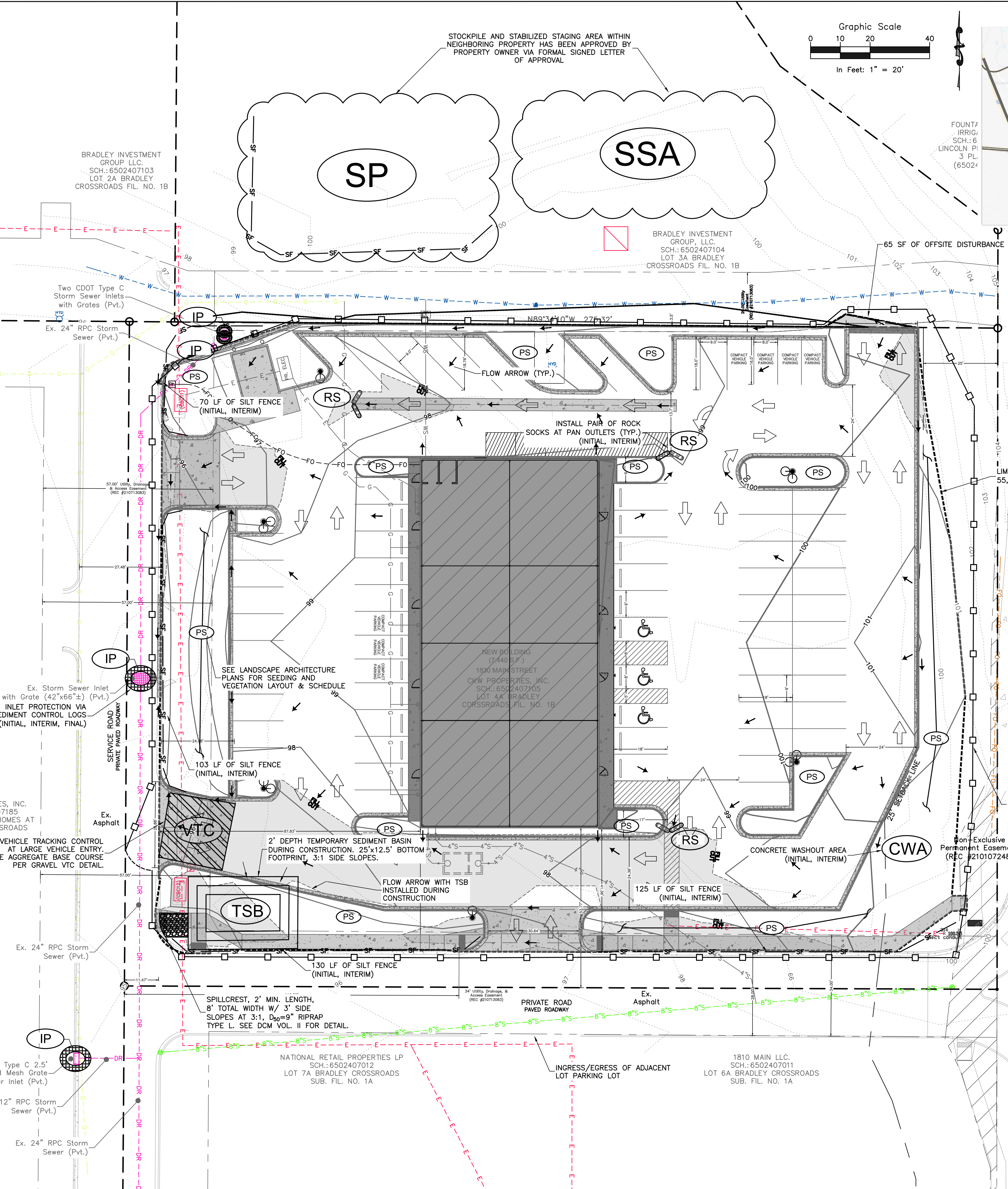
Should this project rely on control measures owned or operated by another entity other than Western States Management Group, a documented agreement must be submitted to El Paso County identifying location, installation and design specifications, and maintenance requirements and responsibility of the control measures.

12.0 SWMP Revisions and Record Keeping Procedures

The contractor and/or qualified stormwater manager shall keep a log of all BMP inspections as well as revisions during all construction phases. The records shall be kept at the job trailer or a designated location on site such as a foreman's vehicle, a specified on site lockbox, etc. This designated location is to be communicated to the County and Owner. The SWMP inspection and revisions records are to include the date, description, and the signature of the qualified stormwater manager for each respective inspection or revision. An appendix document of the logs that may be utilized for the project is provided.

Appendix A: SWMP BMP Plan and Details

- EL PASO COUNTY GRADING AND EROSION CONTROL PLAN STANDARD NOTES:**
- 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.
 - UNLESS OTHERWISE SPECIFIED IN THESE PLANS OR 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 EDITION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
 - A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SMWP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SMWP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
 - ONCE THE ESQP 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.
 - CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LANDSHAPES SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
 - ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITIONS UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
 - TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBED CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
 - FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBED AREAS ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBED 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.
 - ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE EROSION CONTROL ADMINISTRATOR PRIOR TO IMPLEMENTATION.
 - EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBED AREAS 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 WATER USES UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
 - CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITY. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
 - DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
 - EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES GREATER THAN 3:1.
 - 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 BUILT, DUMPED, OR DISCHARGED AT THE SITE.
 - 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. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
 - TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROMPTLY DISPOSED OF IMMEDIATELY.
 - THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DISTURBANCE. MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THE ORIGINAL CONTAINER, WITH ORIGINAL MANUFACTURER'S LABELS.
 - NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASD IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ERM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
 - BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 50 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
 - NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
 - OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, RS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE LAND REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ERM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (0441, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS APPLY.
 - ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
 - PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
 - A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
 - THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG-ROCKY MOUNTAIN GROUP, DATED JUNE 24, 2019 AND ENTITLED "GEOTECHNICAL REPORT BRADLEY CROSSROADS LOT 4A FILING NO. 1B 1830 MAIN STREET COLORADO SPRINGS, CO" AND SHALL BE CONSIDERED A PART OF THESE PLANS.
 - AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (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 (SMWP), 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, WQAD - PERMITS, 4200 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246.1530 ATTN: PERMITS UNIT.



- GENERAL NOTES:**
- THE SWMP IS TO BE REVISED IF SITE CONDITIONS AND GRADING PLAN IS ALTERED IN SUCH A WAY THAT STORMWATER MANAGEMENT BMP LAYOUTS REQUIRED, RELOCATION OR ADDITIONAL CONTROL MEASURES. A REVISED SWMP IS TO BE DEVELOPED AND APPROVED BY THE COUNTY PRIOR TO FURTHER CONSTRUCTION.
 - FINAL STABILIZATION AND LONG-TERM STORMWATER QUALITY IS TO TAKE PLACE VIA PERMANENT STABILIZATION VIA PROCEDURES AND STANDARDS Laid OUT IN THE GEOTECHNICAL REPORT. PERMANENT SEEDING INCLUDING MULCH AND HYDROSEEDING, LONG-TERM STORMWATER QUALITY IS TO BE MAINTAINED BY THE OWNER.
 - THE FINAL VEGETATIVE COVER DENSITY IS TO BE 70 PERCENT OF PRE-DISTURBED LEVELS OR AS DESIGNED AND APPROVED ON THE LANDSCAPE ARCHITECTURE DEVELOPMENT PLAN.
 - THE CONTRACTOR IS TO BE FAMILIAR WITH ALL REQUIREMENTS OF THE STORMWATER MANAGEMENT PLAN AND SHALL PROTECT THE EXISTING STRUCTURES AND RETAINMENT WALLS AS NECESSARY DURING CONSTRUCTION ACTIVITIES TO PREVENT EROSION AND DAMAGE.
 - ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BEST MANAGEMENT PRACTICES SUCH AS VEGETATIVE COVER, MULCHING, PLASTIC COVERING OR APPLICATION OF GRAVEL SURFACES IN AREAS TO BE GRAVELED. NO EXPOSED AND UNWORKED SOILS SHALL REMAIN UNSTABILIZED.
 - ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AT LEAST ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS OF ANY STORM EVENT EQUAL TO OR GREATER THAN 0.25" OF RAIN PER 24 HOUR PERIOD. AN INSPECTION REPORT FILE SHALL BE MAINTAINED BY THE CONTRACTOR AND KEPT ON SITE.
 - THE OWNER IS RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF BMPs ARE FINAL STABILIZATION.
 - IF THIS PROJECT RELIES ON CONTROL MEASURES OWNER AND OPERATED BY ANOTHER ENTITY, A DOCUMENTED AGREEMENT MUST BE INCLUDED IN THE SWMP THAT IDENTIFIES LOCATION, INSTALLATION AND DESIGN SPECIFICATIONS, AND MAINTENANCE REQUIREMENTS AND RESPONSIBILITY OF THE CONTROL MEASURE(S).
 - CONTRACTOR SHALL INDICATE ANY DEDICATED ASPHALT/CONCRETE BATCH PLANTS FOR COUNTY APPROVAL.
 - NO STRUCTURAL CONTROL MEASURES ARE INDICATED ON THIS PLAN.

ENGINEER OF RECORD:
THE STORMWATER MANAGEMENT PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY AND STATE FOR STORMWATER MANAGEMENT PLANS.

ENGINEER OF RECORD SIGNATURE DATE

REVIEW ENGINEER:
THE STORMWATER MANAGEMENT PLAN WAS REVIEWED AND FOUND TO MEET THE CHECKLIST REQUIREMENT EXCEPT WHERE OTHERWISE NOTED OR ALLOWED BY AN APPROVED DEVIATION REQUEST.

REVIEW ENGINEER DATE

EROSION CONTROL LEGEND

SF — SF	SILT FENCE	VTC	VEHICLE TRACKING CONTROL
IP	INLET PROTECTION	SSA	STABILIZED STAGING AREA
RS	ROCK SOCKS	CWA	CONCRETE WASHOUT AREA
PS	PERMANENT SEEDING	TSB	TEMPORARY SEDIMENT BASIN
SP	STOCKPILE LOCATION		

ROCKY MOUNTAIN GROUP
Civil/Structural/Stormwater/Erosion Control Planning

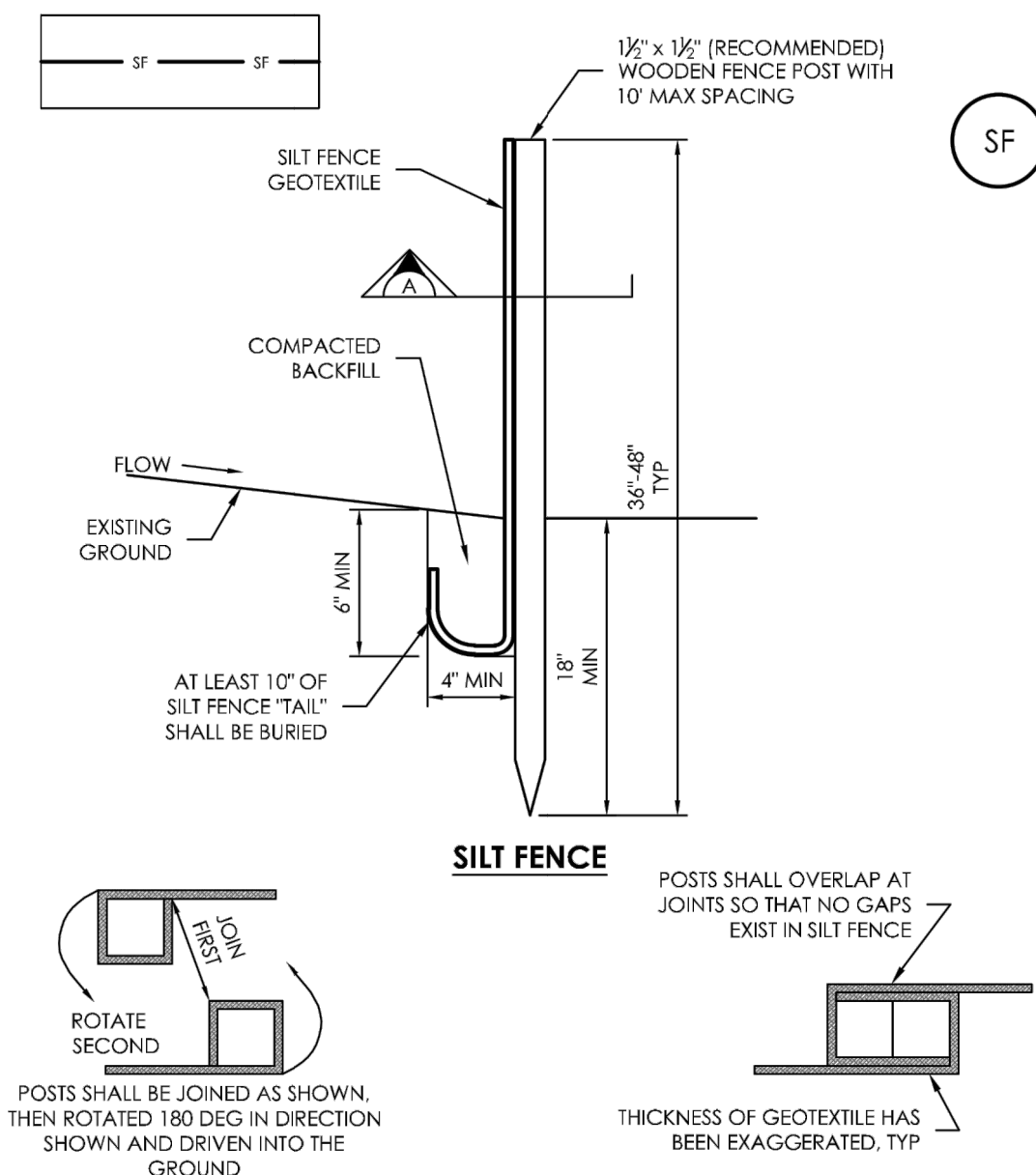
BRADLEY CROSSROADS LOT 4A
1830 MAIN STREET
COLORADO SPRINGS, CO

WESTERN MANAGEMENT GROUP

SWMP
PERMIT REVIEW

DATE: 02/04/20

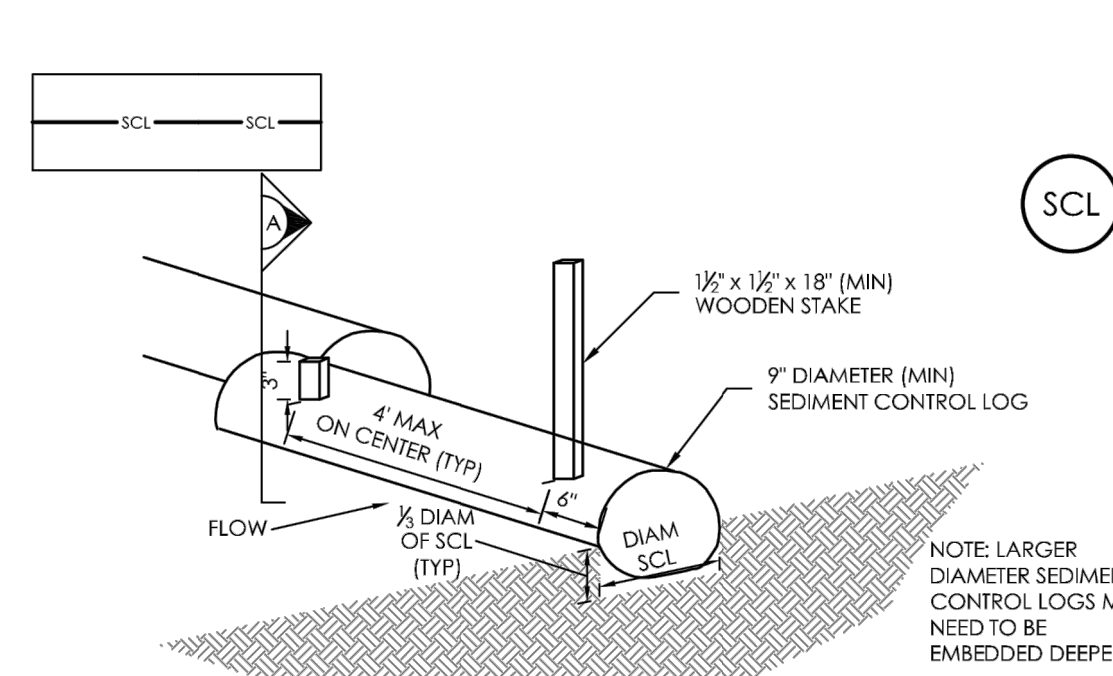
#	REVISION	DATE
1	SWMP 1	02/02/19
2	CHY-REV.3	02/04/20
3		
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7		
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10		
JOB NO.		170736
SHEET NO.		C-EX-03



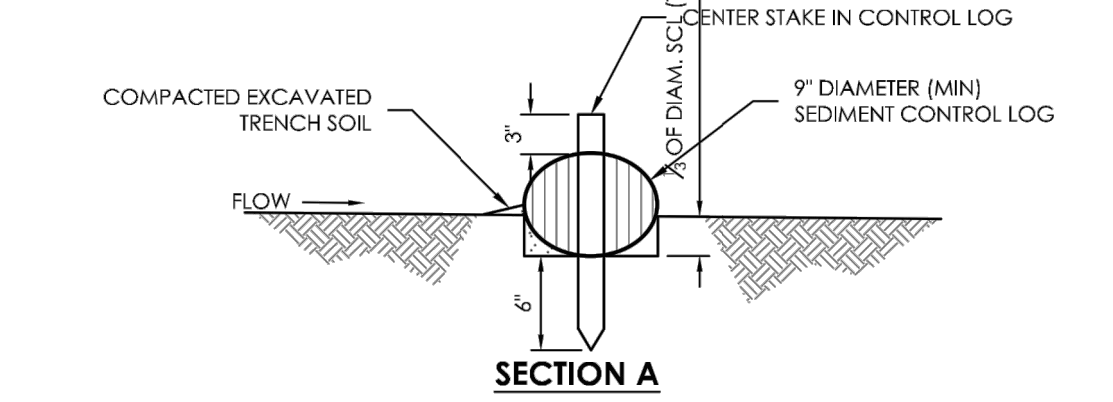
**SECTION A
SF-1. SILT FENCE**

- SILT FENCE INSTALLATION NOTES:**
- 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.
 - 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.
 - 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.
 - 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.
 - SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 7" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3' ALONG THE FABRIC DOWN THE STAKE.
 - 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').
 - SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

- SILT FENCE MAINTENANCE NOTES:**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - 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".
 - REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
 - 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.
 - WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



SEDIMENT CONTROL LOG

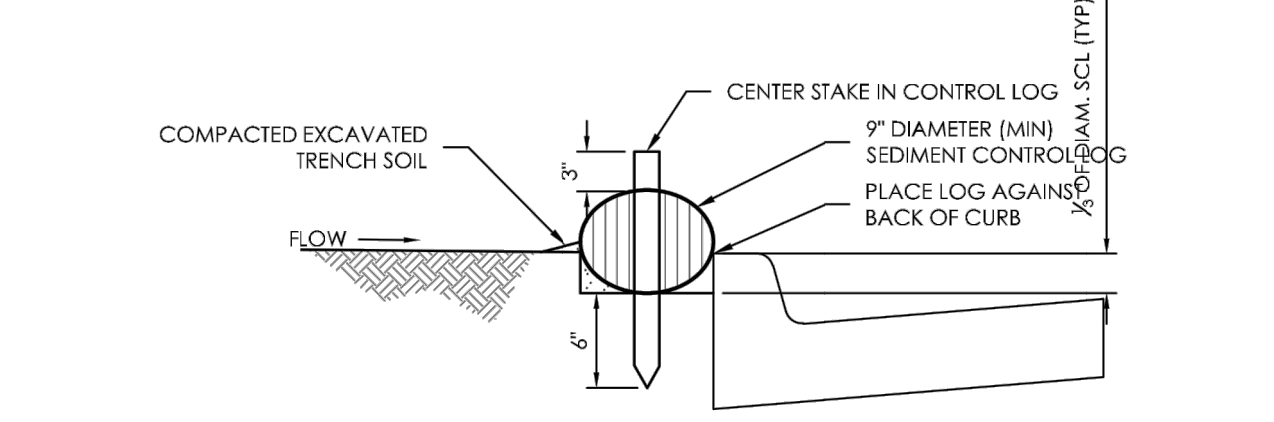


**SECTION A
SEDIMENT CONTROL LOG JOINTS**

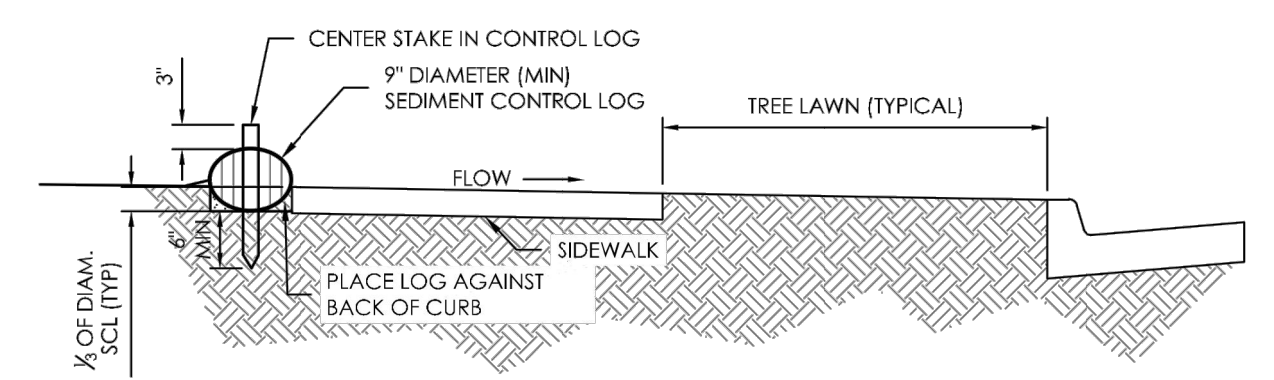
SCL-1. SEDIMENT CONTROL LOG

- SEDIMENT CONTROL LOG INSTALLATION NOTES:**
- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
 - SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE/REPAIR OF DISTURBING ACTIVITIES.
 - SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
 - SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
 - IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
 - THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
 - FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

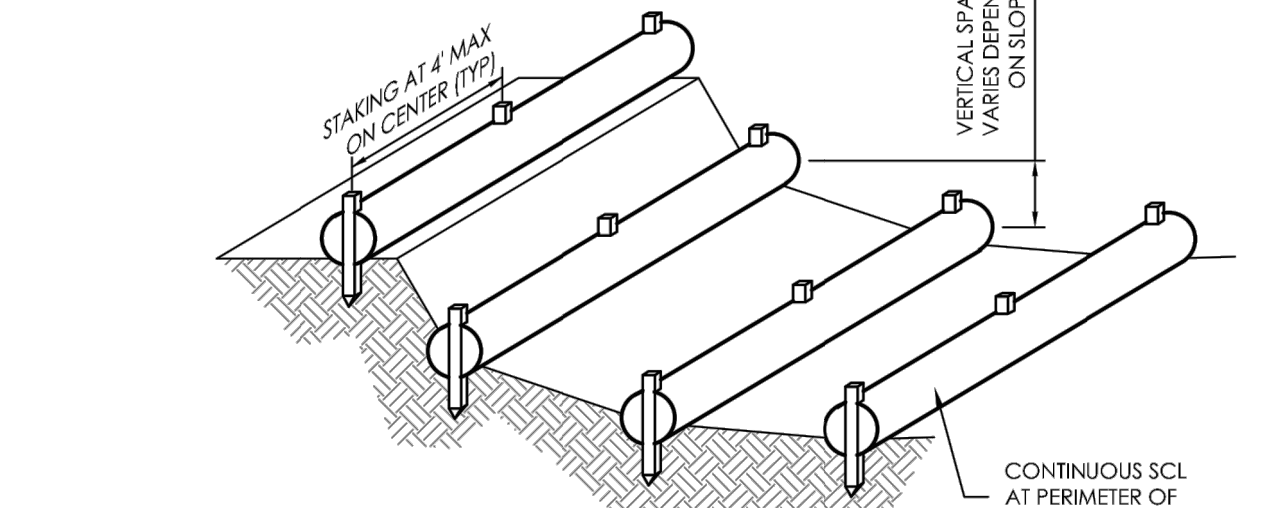
- SEDIMENT CONTROL LOG MAINTENANCE NOTES:**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
 - SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.



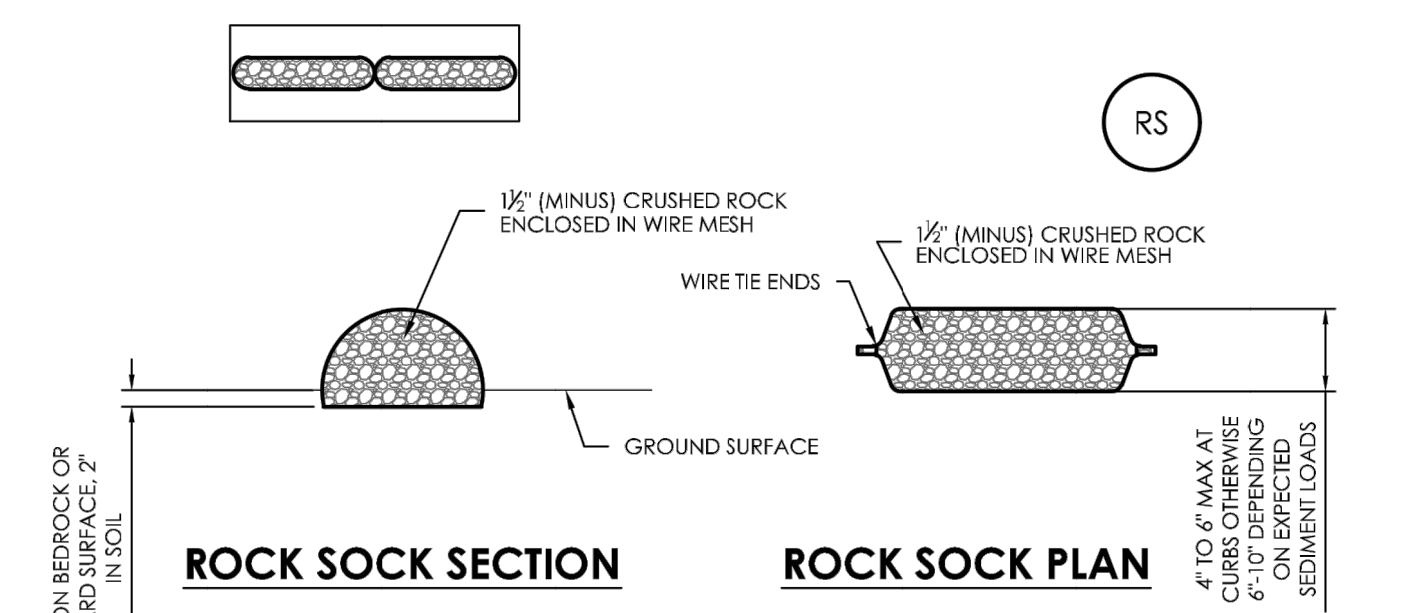
SCL-2. SEDIMENT CONTROL LOG AT BACK OF CURB



SCL-3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN



SCL-4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH



ROCK SOCK SECTION

ROCK SOCK PLAN

ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 1/2" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE OVERLAPPED (TYPICALLY 12" OVERLAP) TO AVOID GAPS.

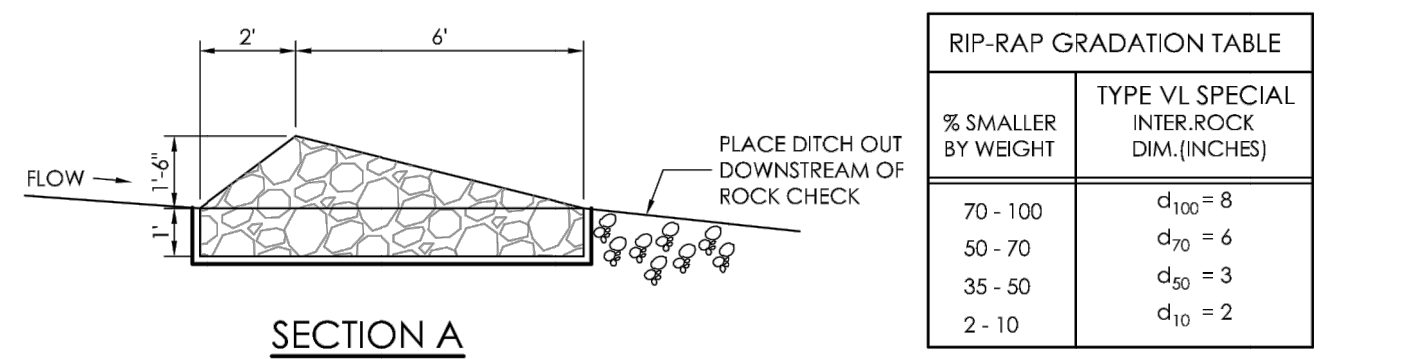
GRADATION TABLE

SIEVE SIZE	PASSING SQUARE MESH	MASS PERCENT
NO. 4		100
2"		90 - 100
1 1/2"		20 - 55
3/4"		0 - 15
3/8"		0 - 5

MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.

- ROCK SOCK INSTALLATION NOTES:**
- SEE PLAN VIEW FOR LOCATION(S) OF ROCK SOCKS.
 - CRUSHED ROCK SHALL BE 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 10 GAUGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2". RECOMMENDED MINIMUM ROLL WIDTH OF 48".
 - WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
 - SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

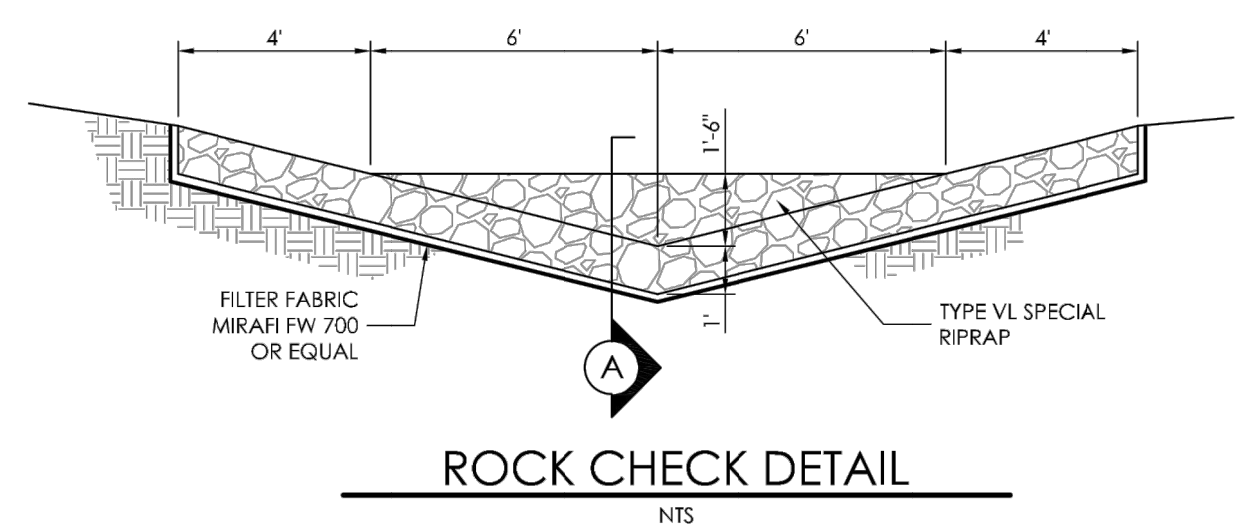
- ROCK SOCK MAINTENANCE NOTES:**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
 - SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
 - ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



SECTION A

RIP-RAP GRADATION TABLE

% SMALLER BY WBGHT	TYPE VL SPECIAL INTER-ROCK DIM. (INCHES)
70 - 100	d ₁₀₀ = 8
50 - 70	d ₅₀ = 6
35 - 50	d ₃₀ = 3
2 - 10	d ₁₀ = 2



ROCK CHECK DETAIL

ROCKY MOUNTAIN GROUP
ARCHITECTS
ENGINEERS
Geotechnical
Materials Testing
Civil Planning
Architectural
Structural
Forensics

SOUTHERN COLORADO
19375 BEACON LITE RD., MONUMENT, CO 80132
719.586.1145 WWW.RMENGINEERS.COM
Sedimentation, Erosion Control, Stormwater Management

FOR CONSTRUCTION FOR CIVIL ONLY

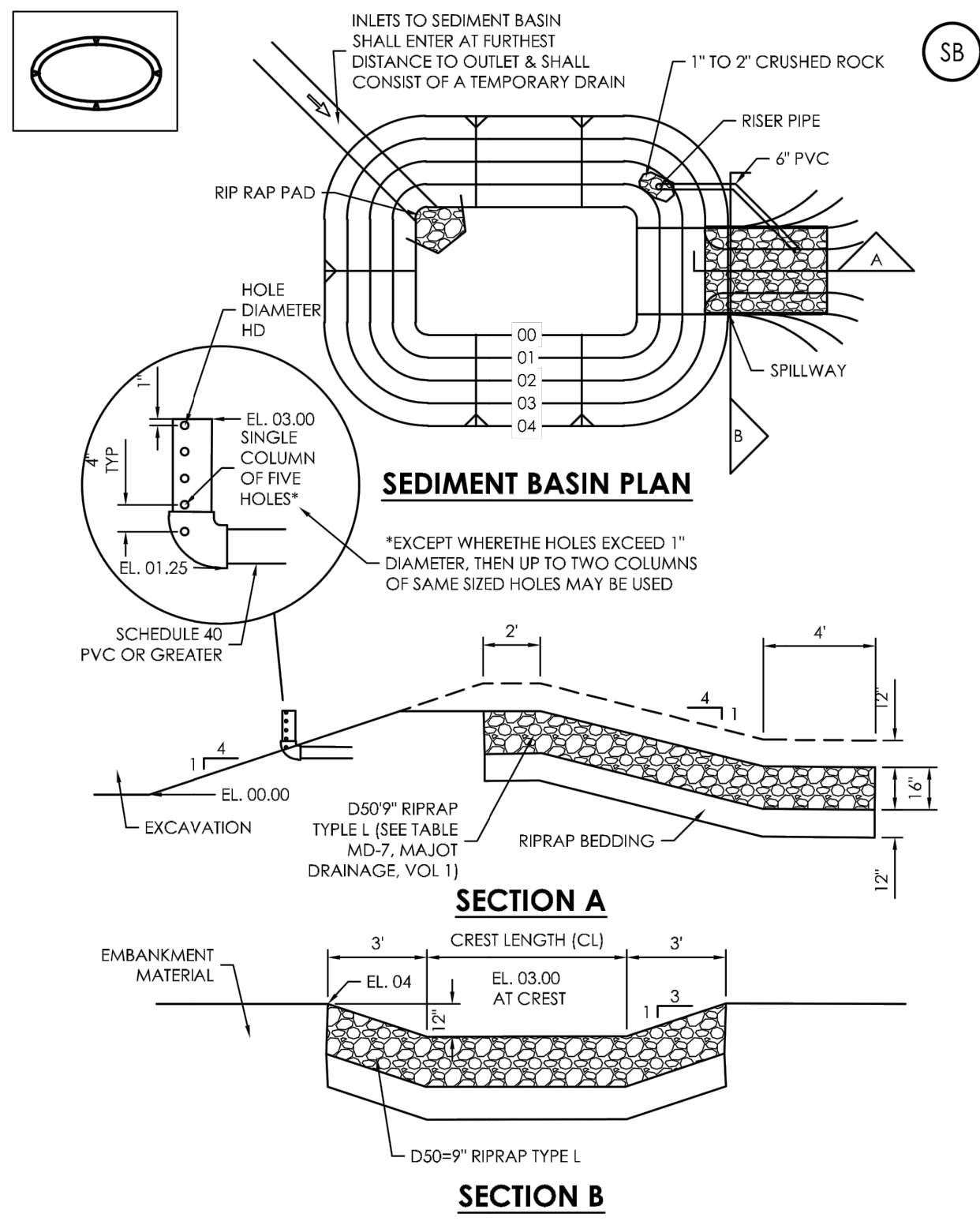
BRADLEY CROSSROADS LOT 4A
1830 MAIN STREET
COLORADO SPRINGS, CO
WESTERN MANAGEMENT GROUP

EROSION CONTROL DETAILS 1
SHEET NAME
PROJECT STATUS
PERMIT REVIEW

ENG: RDL
DRAWN: RDL
CHECKED: RDL
DATE: 02/04/20

#	REVISION	DATE
1	GEN REV. 1	08/28/19
2	CNTY REV. 2	12/02/19
3	CNTY REV. 3	02/04/20
4		
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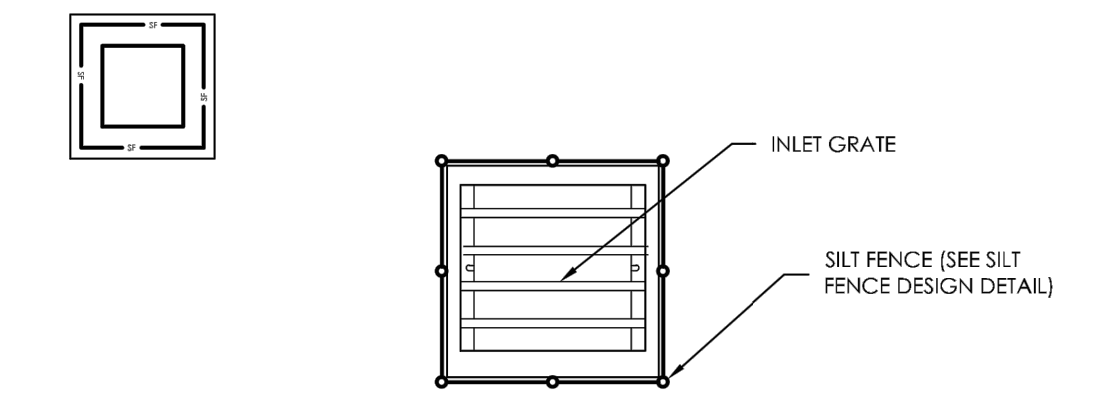
JOB NO.: 170736
SHEET NO.: EC-2 of 20



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

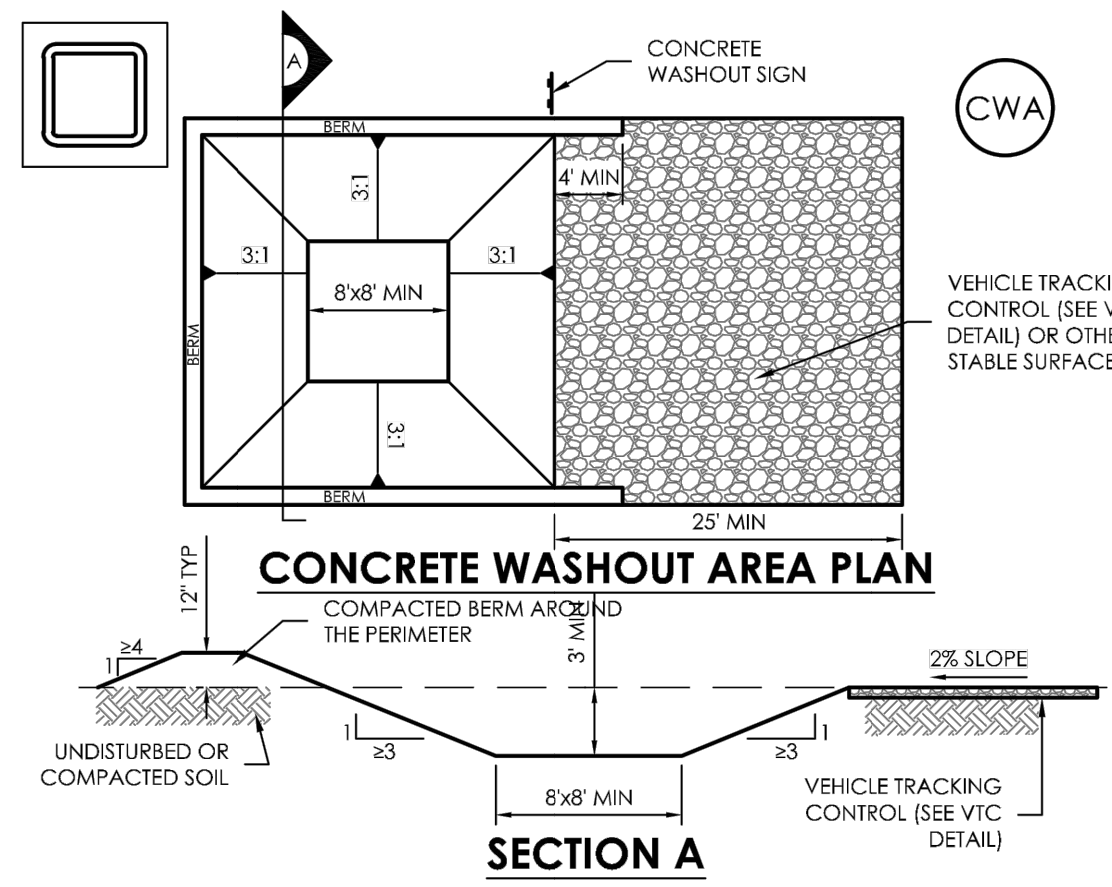
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

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



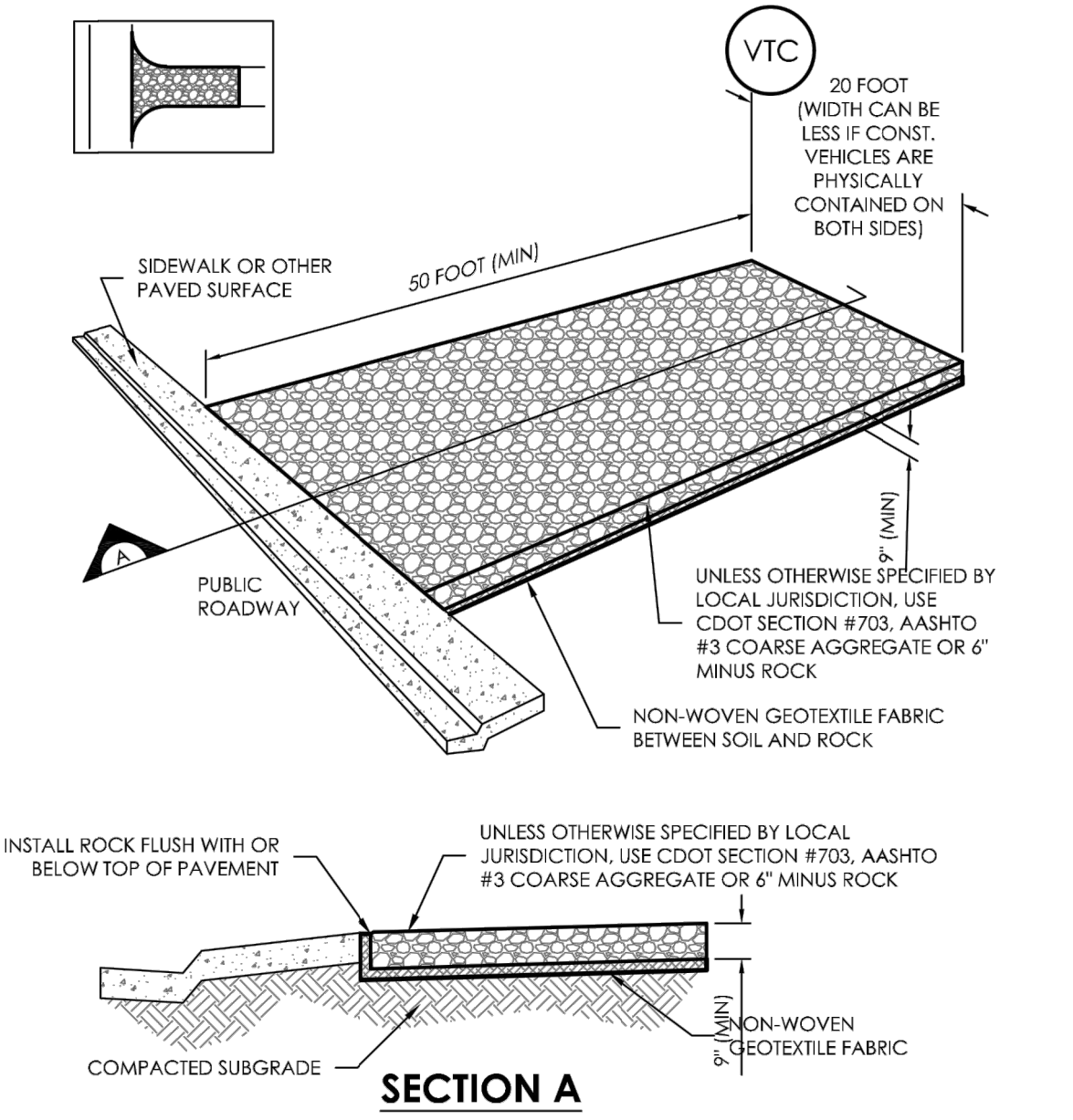
CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - CWA INSTALLATION LOCATION.
- 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 AREA SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- 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.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- 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.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

- INSPECT BMPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPS AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- 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'.
- 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.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- 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.

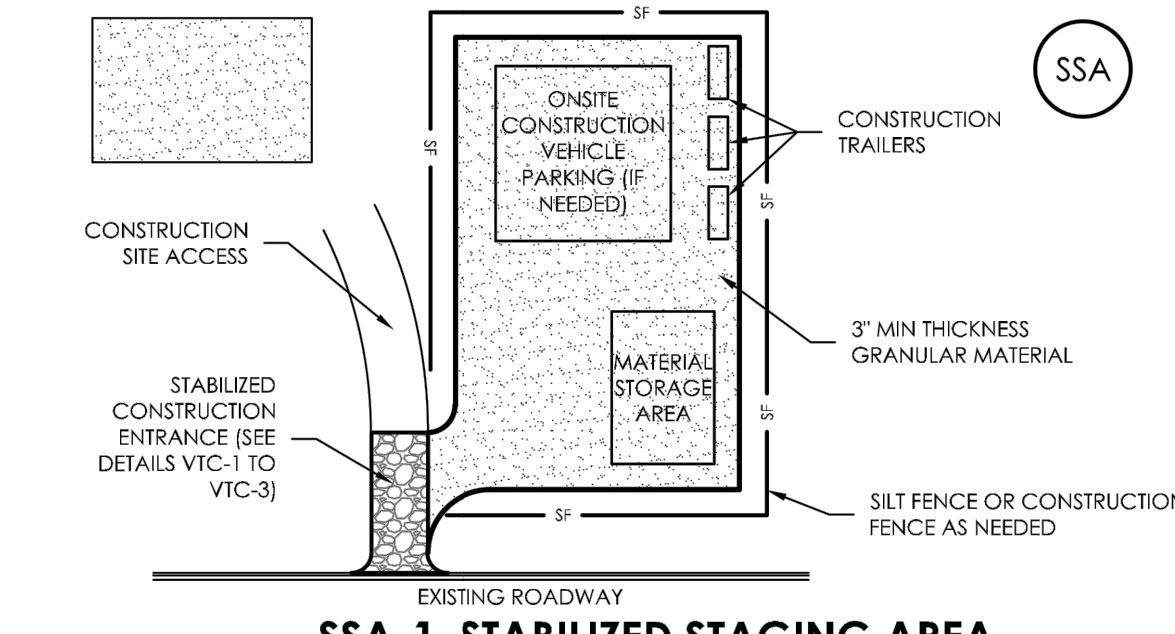


STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- 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).
- 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.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- 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

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

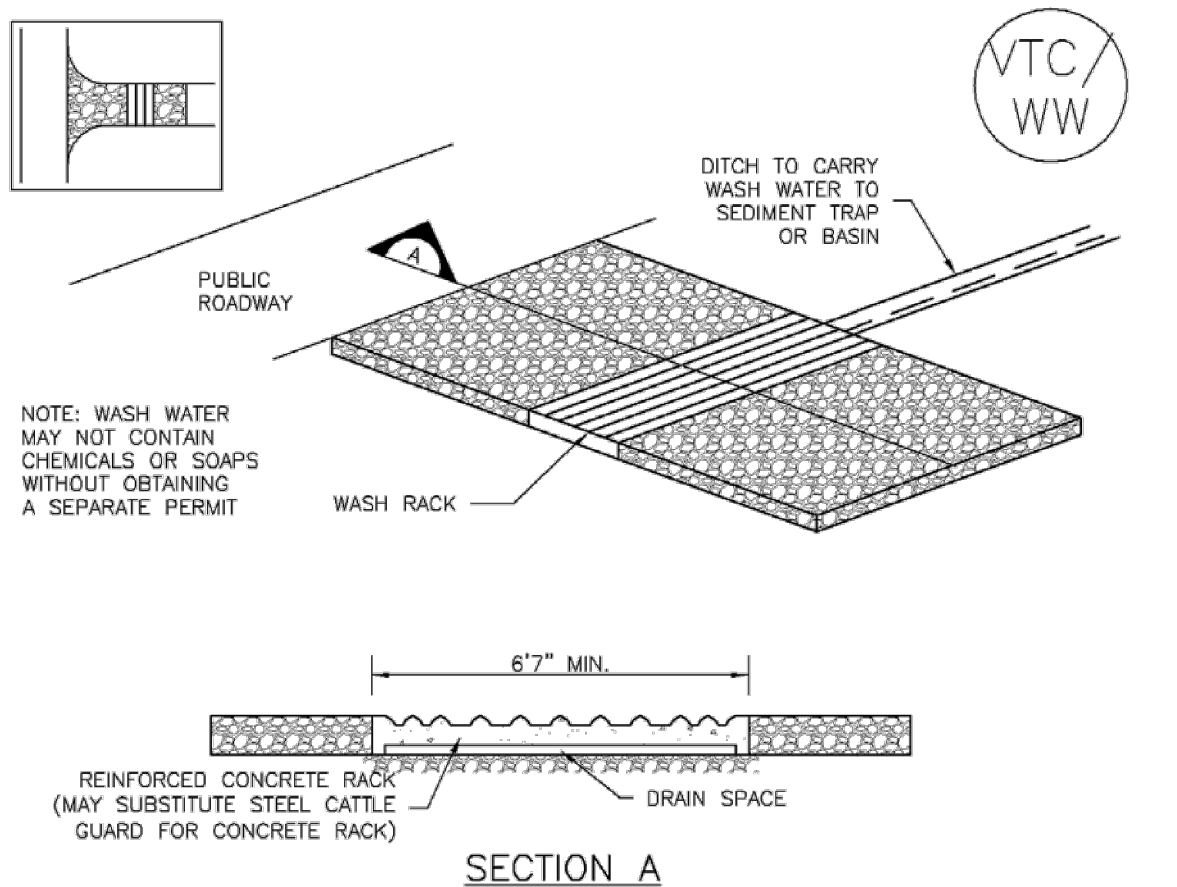


STABILIZED STAGING AREA INSTALLATION NOTES

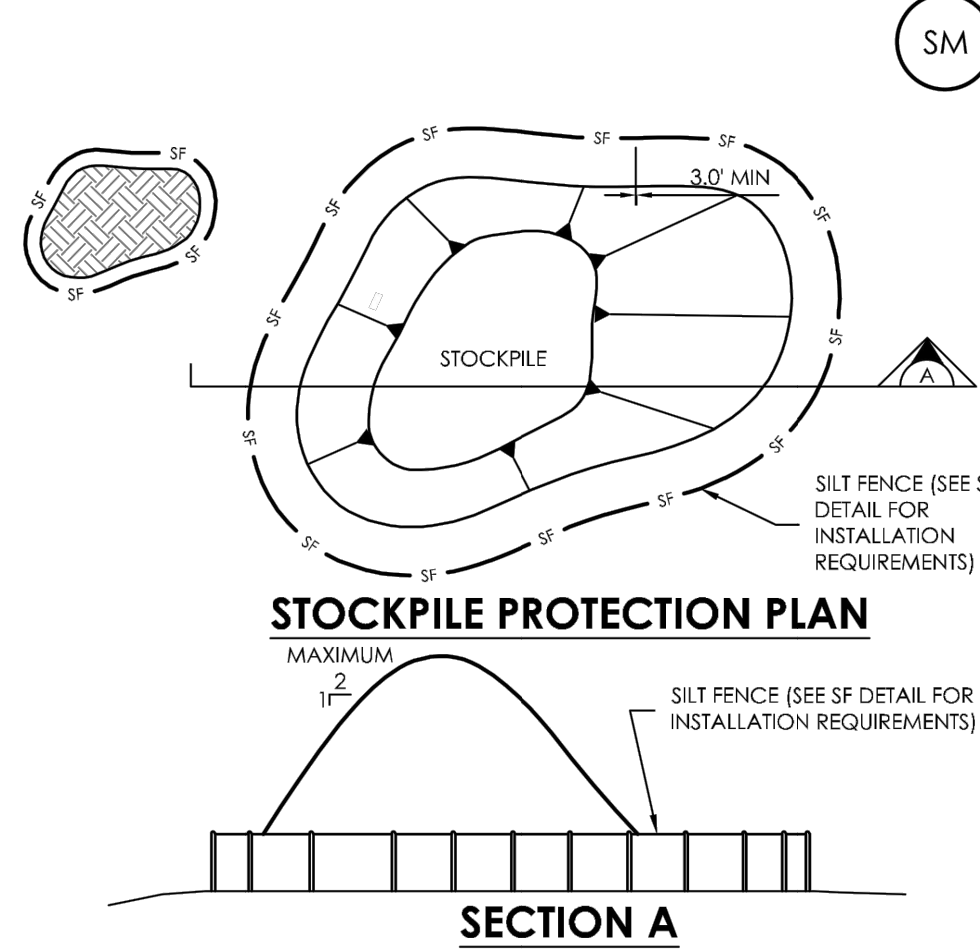
- SEE PLAN VIEW FOR:
 - LOCATION(S) OF STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
- STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.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

STABILIZED CONSTRUCTION ENTRANCE EXIT MAINTENANCE NOTES

- INSPECT BMPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPS AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
- THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF STOCKPILES.
 - TYPE OF STOCKPILE PROTECTION.
- 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 INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE 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.
- 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).
- FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADE CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

STOCKPILE PROTECTION MAINTENANCE NOTES

- INSPECT BMPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPS AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

ROCKY MOUNTAIN GROUP

ARCHITECTS

Geotechnical
Materials Testing
Civil Training

RMG

ENGINEERS

Architectural
Structural
Forensics

SOUTHERN COLORADO
19375 BEACON LITE RD., MONUMENT, CO 80132
719.586.5145 WWW.ROCKYMOUNTAINENGINEERS.COM
Structural Engineering, Geotechnical Engineering, Agricultural Engineering

FOR CONSTRUCTION FOR CIVIL ONLY

BRADLEY CROSSROADS LOT 4A

1830 MAIN STREET

COLORADO SPRINGS, CO

WESTERN MANAGEMENT GROUP

EROSION CONTROL DETAILS 2

SHEET NAME

PROJECT STATUS

PERMIT REVIEW

ENG:	ROL	
DRAWN:	ROL	
CHECKED:	ROL	
DATE	02/04/20	
#	REVISION	DATE
	DEC REV. 1	08/28/19
	CNTY REV. 2	12/02/19
	CNTY REV. 3	02/04/20
JOB NO.	170736	
SHEET NO.	EC-3	

Appendix B: FEMA Floodplain Map

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NINGS12
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

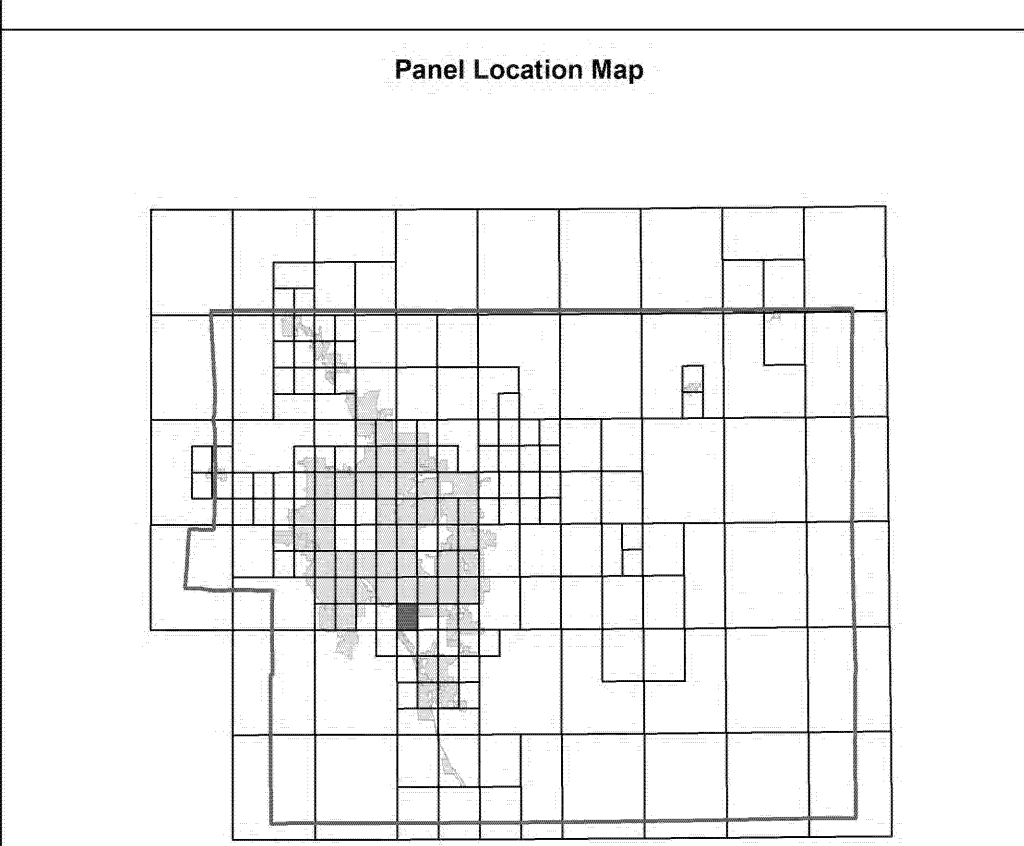
Contact **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfp>.

El Paso County Vertical Datum Offset Table

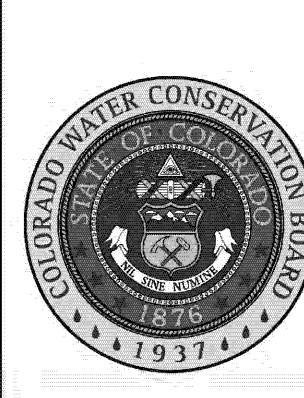
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map

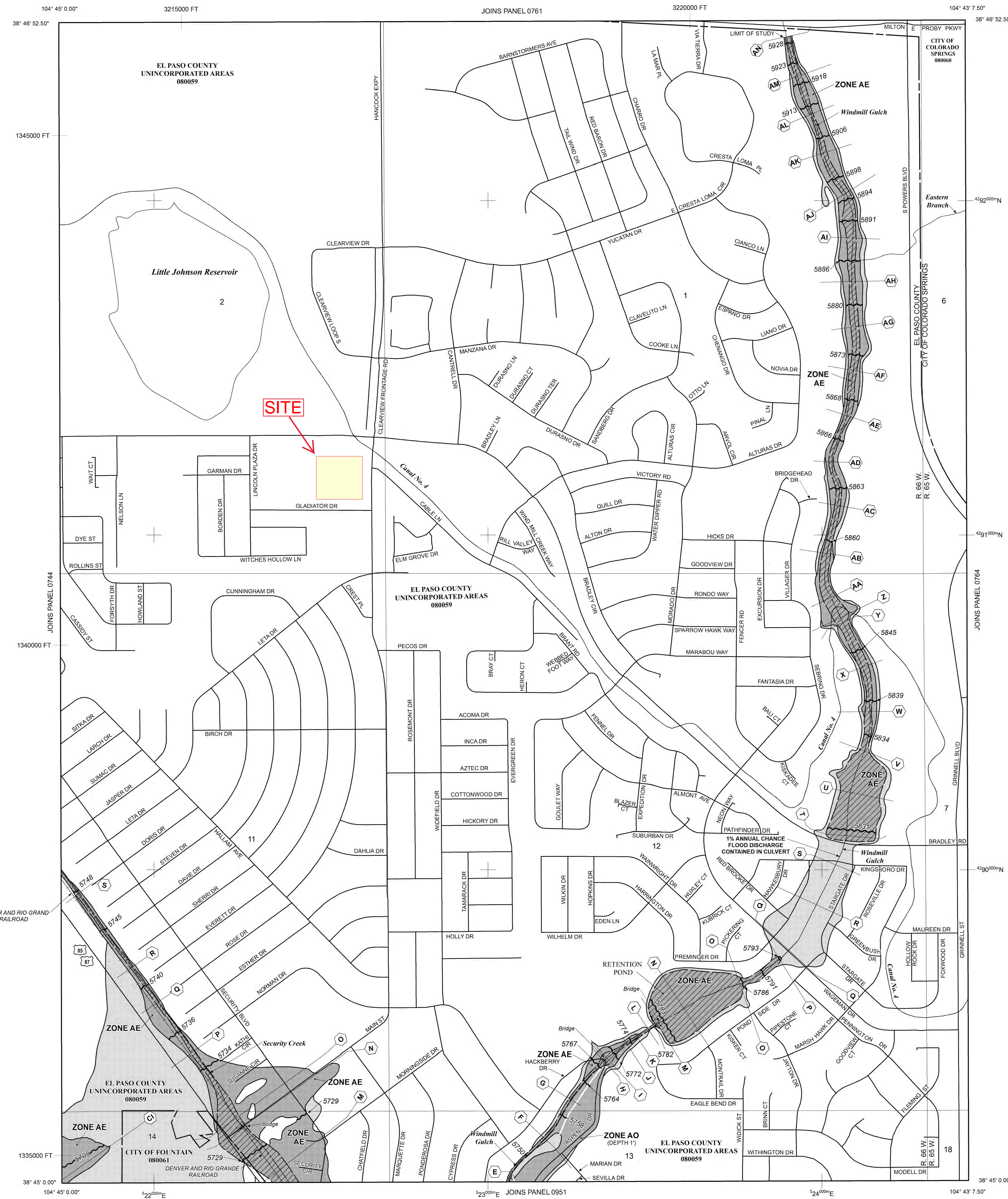


This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



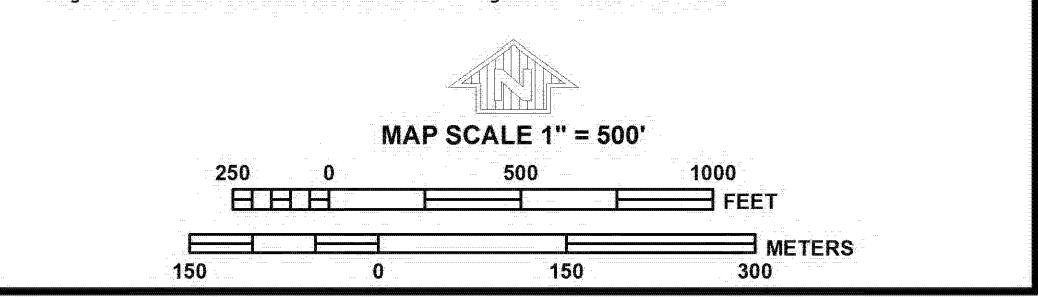
Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 65 WEST, AND TOWNSHIP 15 SOUTH, RANGE 66 WEST.

LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently dewatered. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AV** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.
- OTHER AREAS
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet* (EL 987)
- * Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transsect line
- 97° 07' 30.00" 32° 22' 30.00" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4726500N 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 6000000 FT 5000-foot grid ticks; Colorado State Plane coordinate system, central zone (FIPS ZONE 0902), Lambert Conformal Conic Projection
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRMA panel)
- M1.5 River Mile
- MAP REPOSITORIES**
 Refer to Map Repository list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
 MARCH 17, 1997
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
 DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.
- For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.
- To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



NFP

PANEL 0763G

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 763 OF 1300
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	08060	0763	G
EL PASO COUNTY	08059	0763	G
FOUNTAIN, CITY OF	08081	0763	G

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 08041C0763G

MAP REVISED
 DECEMBER 7, 2018

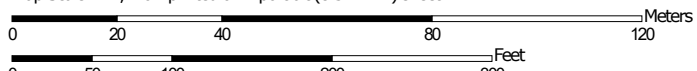
Federal Emergency Management Agency

Appendix C: USGS Soils Map

Hydrologic Soil Group—El Paso County Area, Colorado
(1830 Main Street - Hydrologic Soil Group Map)



Map Scale: 1:1,440 if printed on A portrait (8.5" x 11") sheet.



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




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/6/2019
Page 1 of 4

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 16, Sep 10, 2018

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

Date(s) aerial images were photographed: Jun 3, 2014—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
8	Blakeland loamy sand, 1 to 9 percent slopes	A	8.6	100.0%
Totals for Area of Interest			8.6	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

Tie-break Rule: Higher

Appendix D: SWMP Inspection/Revisions Log Template

